Service manual

Dumper

DV60
DV90
DV100

Vehicle models	**D24-01/D24-02/D24-03**
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Technical data, dimensions and weights are only given as an indication. Responsibility for errors or omissions not accepted.

The cover features the vehicle with possible optional equipment.

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Refer to the Operator's Manual of the machine for information on labels.

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Diagnosis code list (SPN)

Operation

1 Operation

1.1 Notices on this service manual

This service manual contains important information on how to work safely, correctly and economically with the vehicle. Therefore, it aims not only at new personnel, but it also serves as a reference for experienced personnel. It helps to avoid hazardous situations and reduce repair costs and downtimes.
Furthermore, the reliability and the service life of the machine will be increased by following the instructions in the operator's manual.

Careful and prudent working is the best way to avoid accidents!

Operational safety and readiness of the machine do not only depend on your skill, but also on maintenance and servicing of the machine. This is why regular maintenance and servicing is absolutely necessary.

Extensive maintenance and repair work must always be performed by a Wacker Neuson service center. Use only original spare parts for repairs. This ensures operational safety and readiness of your machine, and maintains its value.

- We reserve the right to improve the technical standard of our machines without adapting the service manual.
- Modifying Wacker Neuson products and fitting them with additional equipment and attachments not included in our delivery program requires Wacker Neuson's written authorization, otherwise warranty and product liability for possible damage caused by these modifications shall not be applicable.
- Subject to modifications and printing errors.

Your Wacker Neuson dealer will be happy to answer any further questions regarding the machine or the service manual.

1.2 Identification of warnings and dangers

Important indications regarding the safety of the personnel and the machine are identified in this manual with the following terms and symbols:

Danger!

Failure to observe the instructions identified by this symbol can cause injury or death for the operator or other persons.

☞ *Measures for avoiding danger*

Attention!

Failure to observe the instructions identified by this symbol can cause damage to the machine.

☞ *Measures for avoiding danger for the vehicle*

Notice!

This symbol identifies instructions for a more efficient and economical use of the vehicle.

Environment!

Failure to observe the instructions identified by this symbol can cause damage to the environment. The environment is in danger if environmentally hazardous material (for example waste oil) is not subject to proper use or disposal.

1.3 Explanation of symbols and abbreviations

- Identifies a list
  - Subdivision within lists.
    Follow the order of the activity.

☞ *Identifies an activity*

☞ Subdivision of an activity
Follow the order of the activity.

➥ Identifies a result after a list

➥ Subdivision of a result after a list.
Follow the order of the activity.

Cross reference: see page *1-1* (page)

Cross reference: **7** (pos. no. or table no.)

Cross reference: *Fig. 1* (Fig. no. 1)

Cross references: *– see chapter “5 Operation” on page 5-1* (see chapter)

Cross references: *– see “Operation” on page 5-1* (– see text)

Abbreviations

Fig.	=	Figure
AUX	=	Auxiliary-hydraulics circuit
B	=	Width
o/h	=	Operating hours
approx.	=	approximately
FGPS	=	Front Guard Protective Structure
FOPS	=	Falling Objects Protective Structure
if nec.	=	if necessary
Hydraulic quickhitch	=	Hydraulic Easy Lock quickhitch
LS	=	Shovel arm
max.	=	maximum
min.	=	minimum
NE	=	Nominal width
Item	=	Position
hp	=	Stabilizer blade
ROPS	=	Roll Over Protective Structure (without losing contact with the ground)
TOPS	=	Tip Over Protective Structure
e.g.	=	for example

Conversion table

The rounded imperial values are indicated in brackets, for example 1060 cm^3 (64.7 in^3)

Volume unit	
1 cm^3	(0.061 in^3)
1 m^3	(35.31 ft^3)
1 ml	(0.034 US fl.oz.)
1 l	(0.26 gal)
1 l/min	(0.26 gal/min)
Unit of length	
1 mm	(0.039 in)
1 m	(3.28 ft)
Weight	
1 kg	(2.2 lbs)
1 g	(0.035 oz)
Pressure	
1 bar	(14.5 psi)
1 kg/cm^2	(14.22 lbs/in^2)
Force/output	
1 kN	(224.81 lbf)
1 kW	(1.34 hp)
1 PS	(0.986 hp)
Torque	
1 Nm	(0.74 ft.lbs.)
Speed	
1 km/h	(0.62 mph)
Acceleration	
1 m/s^2	(3.28 ft/s^2)

1.4 Warranty and liability

Exemption from warranty and liability

Warranty

Warranty claims can be made only if the conditions of warranty have been observed. They are included in the General Conditions of Sales and Delivery for new vehicles and spare parts sold by the dealers of Wacker Neuson Linz GmbH. Furthermore, all instructions in this service manual must be observed.

Have the maintenance, delivery inspection and the entries in the service booklet completed, otherwise warranty claims will not be acknowledged.

Exemption from liability

- Modifying Wacker Neuson products and fitting them with additional equipment and attachments that are not included in our delivery program requires Wacker Neuson's written authorization, otherwise warranty and product liability for possible damage caused by these modifications shall not be applicable.
- The safety of the vehicle can be negatively affected by performing vehicle modifications without proper authority and by using spare parts, equipment, attachments and optional equipment that have not been checked and released by Wacker Neuson. Warranty and product liability for possible damage caused by these modifications shall not be applicable.
- Wacker Neuson Linz GmbH shall not be liable for injury and/or damage to property caused by failure to observe the safety instructions and the service manual, and by the negligence of the duty to exercise due care when:
  - Handling
  - Operating
  - Servicing and performing maintenance
  - Repairing the vehicle. This is also applicable in those cases in which special attention has not been drawn to the duty to exercise due care, in the safety instructions as well as in the Operator's and maintenance manuals.
  - Read and understand the service manual before servicing or repairing the machine. Observe all safety instructions.

1.5 Labels

Attention!

Injury hazard due to missing or damaged labels!

Missing or incomplete warning and information labels can lead to situations with serious injury or death.

☞ *Do not remove warning and information labels.*

☞ *Immediately replace damaged warning and information labels.*

Type labels

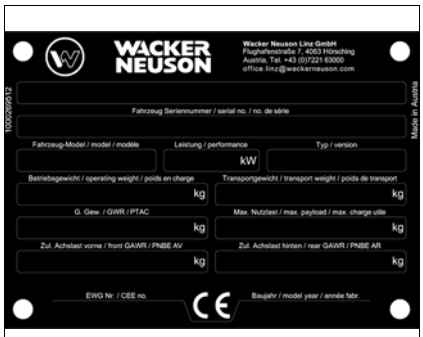


Fig. 1: Type label (symbolic representation)

Serial number

The serial number is stamped on the machine chassis. It is also located on the type label.

Refer to the Operator's Manual of the machine for more information.

Fig. 2: Rollbar type label

Rollbar type label

The type label is located on the right on the rollbar.

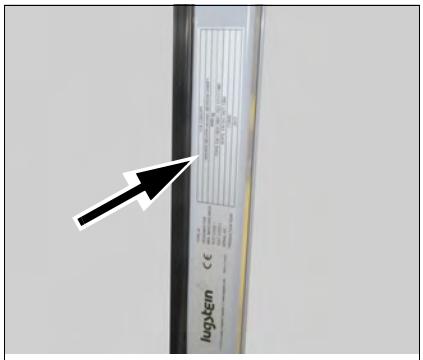


Fig. 3: Cabin type label

Cabin type label (option)

The type label is located on the B pillar on the left.

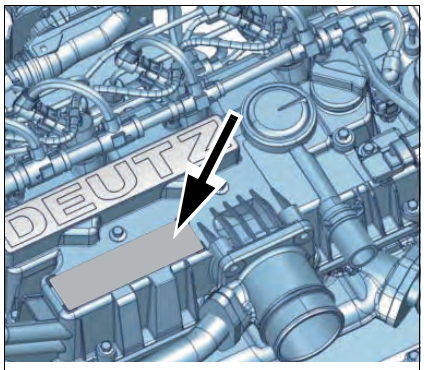


Fig. 4: (symbolic representation)

Engine number type label

The type label is located on the top of the engine block.
There is an additional type label on the vehicle chassis on the right above the mudguard.

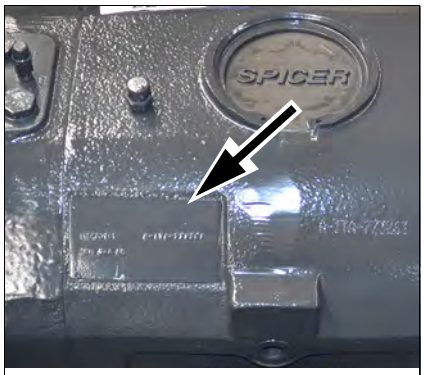


Fig. 5: Rear axle type label

Type label loader unit axle

The type label is located on the top of the axle housing.

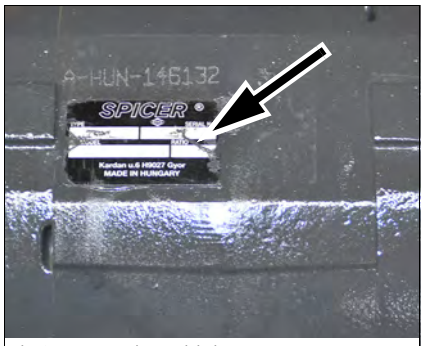


Fig. 6: Front axle type label

Type label drive unit axle

The type label is located on the top of the axle housing.

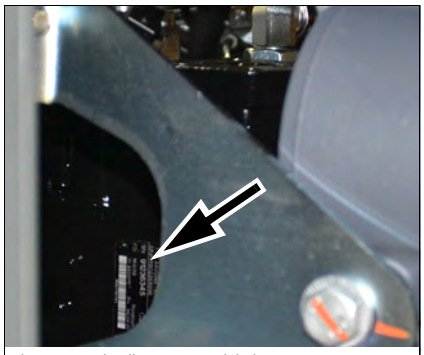


Fig. 7: Hydraulic motor type label

Hydraulic motor type label

The type label is located on the right side of the housing. Access via the maintenance cover behind the right wheel.

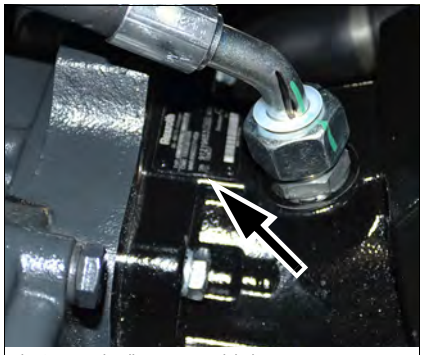


Fig. 8: Hydraulic pump type label

Hydraulic pump type label

The type label is located on the left side of the housing.

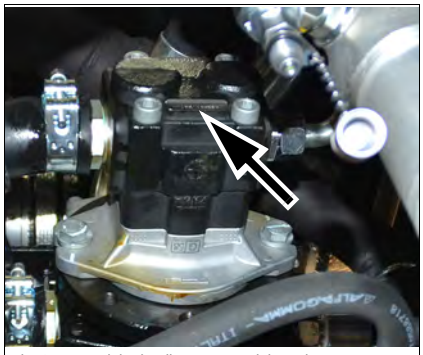


Fig. 9: Work hydraulics pump serial number

Working pump serial number

The serial number is located on top of the housing.

1.6 Machine overview

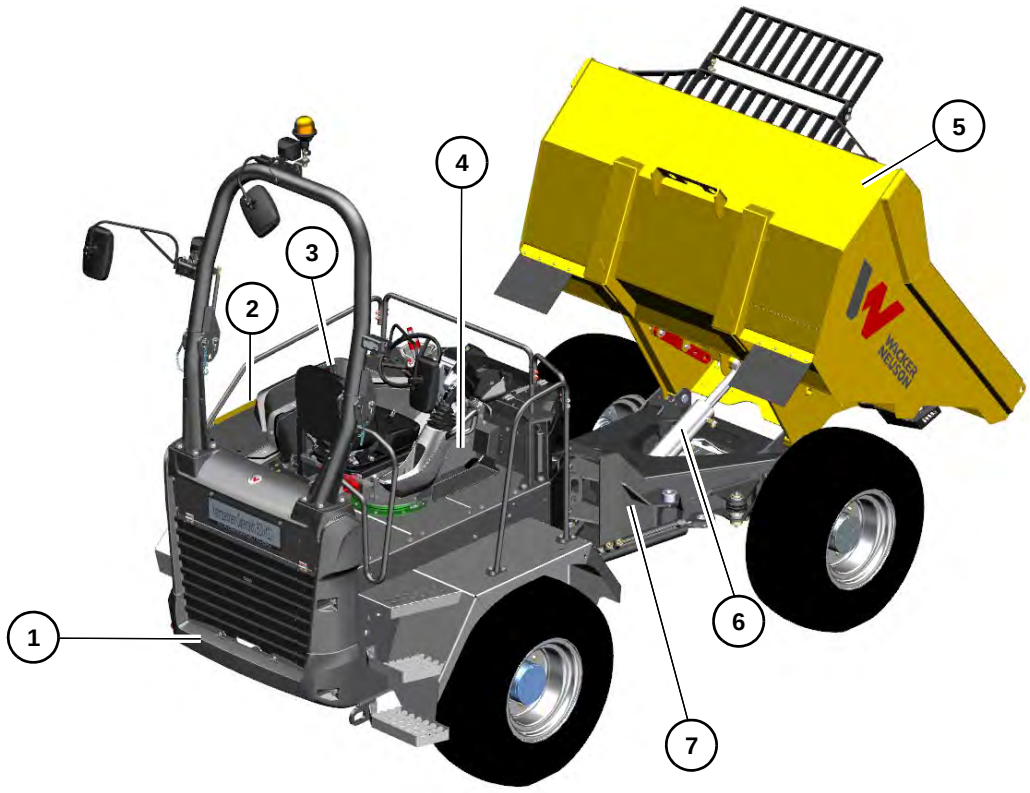


Fig. 10: Front skip (symbolic representation)

Item	Description	Item	Description
1	Drive unit	5	Skip
2	Engine cover/maintenance access	6	Tilt cylinder
3	Control stand	7	Loader unit
4	Seat console		

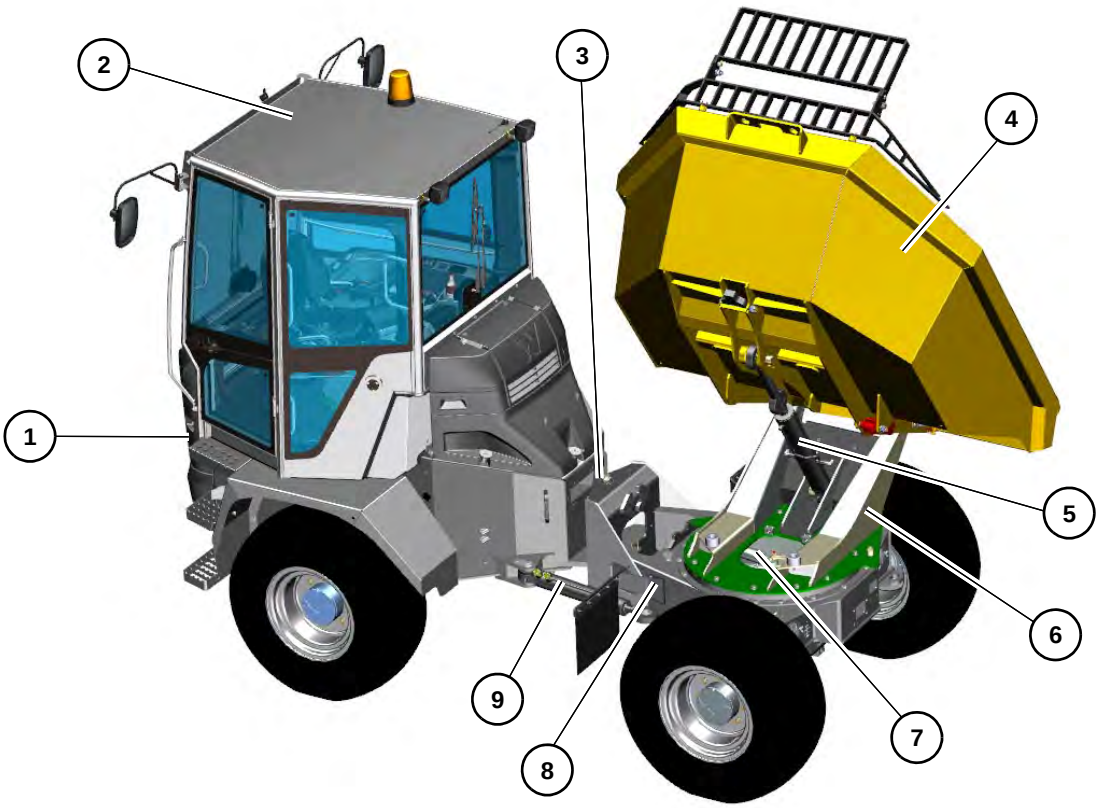


Fig. 11: Swivel skip (symbolic representation)

Item	Description	Item	Description
1	Drive unit	6	Swiveling console
2	Cab	7	Swiveling cylinder
3	Articulation	8	Loader unit
4	Skip	9	Steering cylinder
5	Tilt cylinder		

1.7 Towing the vehicle

Attention!

Accident hazard due to incorrect towing!

Incorrect towing can cause accidents and serious injury or death.

- ☞ *Tow the machine away only from the immediate danger zone until it can be loaded.*
- ☞ *Never tow downhill.*
- ☞ *Only tow the vehicle using suitable towing equipment in connection with suitable towing facilities, such as towing hooks, eyes, etc.*
- ☞ *There must be nobody between the vehicles during towing. The lateral safety distance is equal to 1.5 times the length of the towing equipment.*
- ☞ *Do not tow the vehicle if it is stuck or on a slope. Load the vehicle.*
- ☞ *The machine cannot be steered when the hydraulic oil reservoir is empty.*
- ☞ *Allow the traveling drive to cool down.*
- ☞ *Wear protective equipment.*
- ☞ *Start vehicle travel and tow away slowly.*

Attention!

Burn hazard due to hot surfaces!

Higher towing speeds and longer towing distances cause significant heat to develop. This can cause serious injury or death.

- ☞ *Only tow the machine out of the immediate danger zone until it can be loaded. Do not tow the machine farther than 20 meters (66 ft).*
- ☞ *Tow the machine as slowly as possible – under no circumstances faster than walking speed.*
- ☞ *Wear protective equipment.*

Attention!

Crushing hazard due to vehicle rolling away under its own weight after parking it!

Serious injury or death can be caused by not securing the vehicle.

☞ *The machine may only be towed on level ground or uphill.*

☞ *Secure the machine at the tie-down points with slings of sufficient dimensions.*

☞ *Secure the machine with chocks to prevent it from rolling.*

Notice!

The vehicle can be damaged during towing.

- Tow the machine away only from the immediate danger zone until it can be loaded.
- Do not tow the vehicle if it is stuck or on a slope. Load the vehicle.
- Only tow the vehicle using suitable towing equipment in connection with suitable towing facilities, such as towing hooks, eyes, etc.
- A tractor vehicle of the same weight category must be used as a minimum. In addition, the tractor vehicle must be equipped with a safe braking system and sufficient tractive power.

Notice!

The manufacturer's warranty shall not apply to accidents or damage caused by towing.

☞ *Apply the parking brake.*

☞ *Secure the machine with chocks to prevent it from rolling.*

Disabling the pressure limiting valves

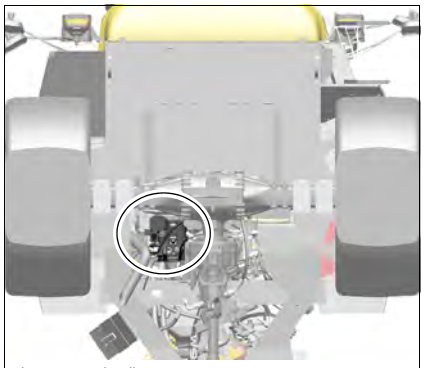


Fig. 12: Hydraulic pump access

☞ *The pressure relief valves on the hydraulic pump are accessible via the underside of the vehicle.*

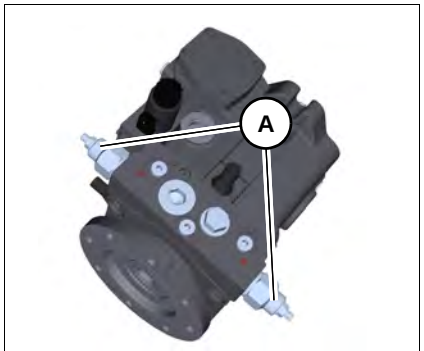


Fig. 13: Pressure relief valves for the hydraulic pump

☞ *Clean the area around the pressure relief valves **A**.*

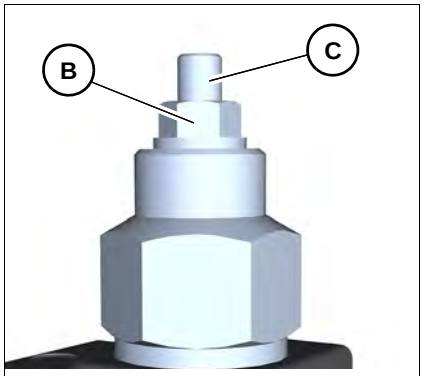


Fig. 14: Pressure relief valve

☞ *Loosen the lock nut **B**.*

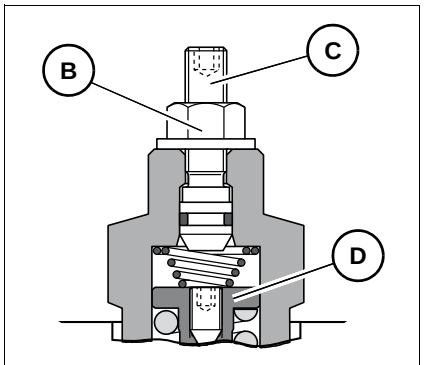


Fig. 15: Pressure limiting valves

☞ *Screw-in screw **C** until it rests against the spring seat **D**.*

➥ Resistance increases.

☞ *Then turn screw **C** half a revolution into the spring seat **D**.*

☞ *Tighten locknut **B** to a torque of 22 Nm.*

Disabling the electronic parking brake

Attention!

Burn hazard due to hot surfaces!

Can cause serious burns or death.

☞ *Stop the engine and let it cool down.*

☞ *Wear protective equipment.*

Notice!

Higher towing speeds and longer towing distances may cause severe damage to the machine.

- Tow the machine away only from the immediate danger zone.
- Do not tow the machine farther than 20 meters (66 ft).
- Wear protective equipment.

☞ *Secure the machine with chocks to prevent it from rolling.*

☞ *Secure the machine at the tie-down points with slings of sufficient dimensions.*

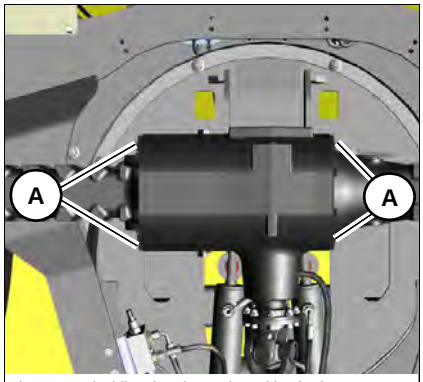


Fig. 16: Disabling the electronic parking brake

☞ *Loosen the lock nut **B**.*

☞ *Screw in the screws **A** alternately all the way to the stop.*

➥ The electronic parking brake is disabled.

☞ *Perform towing.*

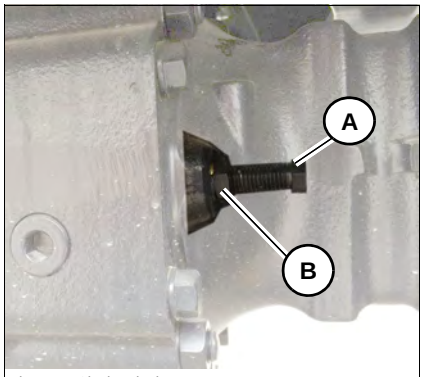


Fig. 17: Slacken locknut

Towing the machine on public roads

Do not tow other vehicles with the dumper, nor must the dumper be towed with another vehicle.

1.8 Vehicle repair after recovery

Notice!

Possible damage to the drive hydraulics from emptying the hydraulic circuit while towing with deactivated pressure relief valves.

- Refill hydraulic oil in the pump housing of the hydraulic pump.
- Bleed the hydraulic pump before commissioning the vehicle.

Enabling the Pressure relief valve

☞ *Secure the machine with chocks to prevent it from rolling.*

☞ *The pressure relief valves on the hydraulic pump are accessible via the underside of the vehicle.*

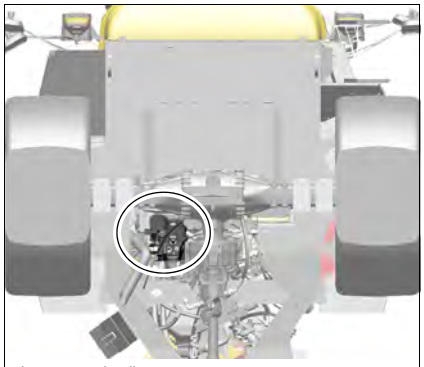


Fig. 18: Hydraulic pump access

☞ *Clean the area around the pressure relief valves **A**.*

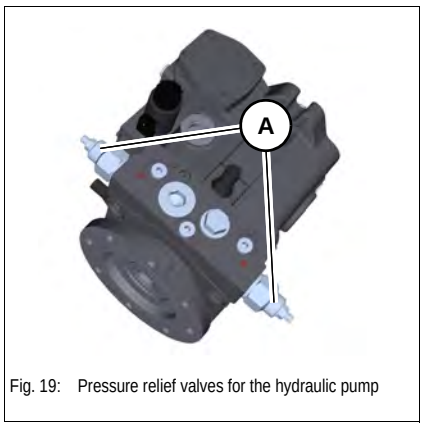


Fig. 19: Pressure relief valves for the hydraulic pump

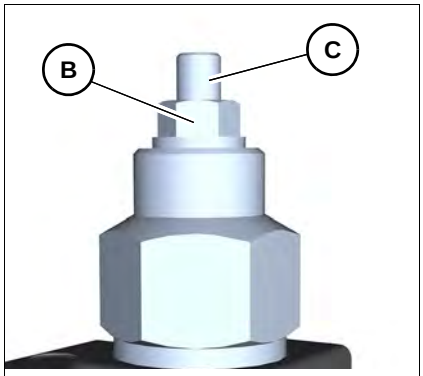


Fig. 20: Pressure relief valve

☞ *Loosen the lock nut **B**.*
☞ *Unscrew screw **C** till stop.*
☞ *Tighten locknut **B** to a torque of 22 Nm.*

Bleed hydraulic pump

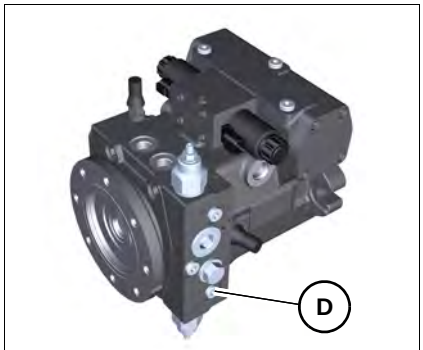


Fig. 21: Hydraulic pump measuring port MA

☞ *Mount 600 bar (8700 psi) pressure gauge at the measuring port MA (**D**).*

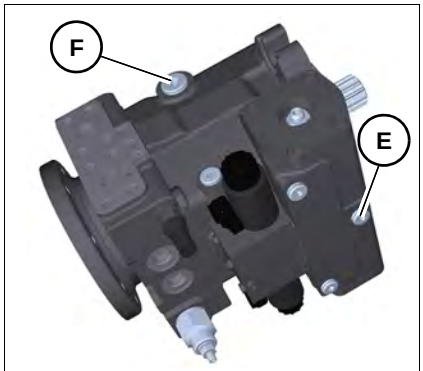


Fig. 22: Bleed hydraulic pump connections

☞ *Open bleed screws **E**.*
☞ *Refill oil in the pump housing via connection **F**.*
➥ Use filler filter (fineness 10 µm).
☞ *Close bleed screw **E** and connection **F**.*
☞ *Press starting motor and let the engine run for 10 seconds.*
☞ *The air in the hydraulic system is flushed out via the flush valve.*
☞ *Check pressure gauge at the measuring port MA.*
➥ The boost pressure must be 25 +/-2 bar (392 +/-29 psi).
☞ *Let the engine idle for at least one minute until the oil in the tank no longer bubbles.*
➥ Visually check the oil level display.
☞ *Check the hydraulic oil level.*
☞ *Dismantle pressure gauge at the measuring port MA.*
☞ *Perform a test run.*
➥ If handling problems occur, repeat the bleeding.

Enabling the mechanical electronic parking brake

☞ *Secure the machine with chocks to prevent it from rolling.*

☞ *Secure the machine at the tie-down points with slings of sufficient dimensions.*

☞ *Remove screws **A**, nuts **B** and seals **C** on both sides.*

☞ *Renew seals **C**.*

☞ *Lubricate screws with Tecno Lube 101 silicone grease.*

☞ *Assemble screws, nuts and new seals.*

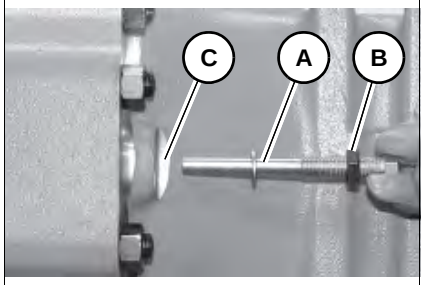


Fig. 23: Mechanical electronic parking brake (symbolic representation)

☞ *Screw in screws **A** at a gap of 34 mm (1.33 in) to the housing.*

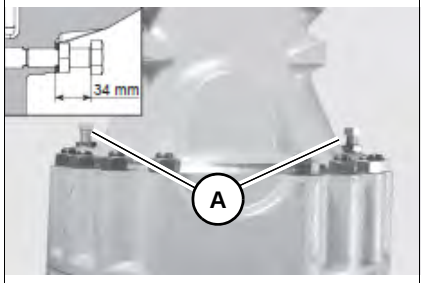


Fig. 24: Mechanical electronic parking brake (symbolic representation)

☞ *Fix screws **A** with a suitable tool.*

☞ *Tighten nuts **B** with a suitable tool.*

- The gap between screws **A** should not change upon tightening of nuts **B**.

☞ *After tightening, check the bag again as necessary.*

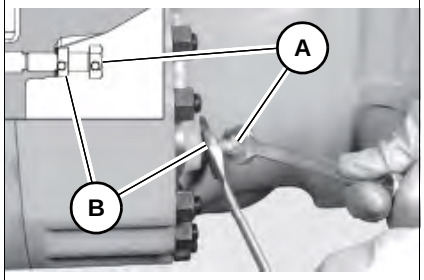


Fig. 25: Mechanical electronic parking brake (symbolic representation)

1.9 Loading the vehicle

Attention!

Accident hazard due to incorrect loading!

Incorrect loading can cause accidents and serious injury or death.

- ☞ *Do not allow anyone to stay in the danger zone.*
- ☞ *Read the transport weight off the type label. Add the weight of subsequently installed equipment to the weight of the machine.*
- ☞ *Get off a transport vehicle only with the help of a bystander.*

Tie-down points

Fig. 26: Tie-down points

Position	Tie-down points	Quantity
A	Front left and right of drive unit	2
B	Rear left and right of loader unit	2

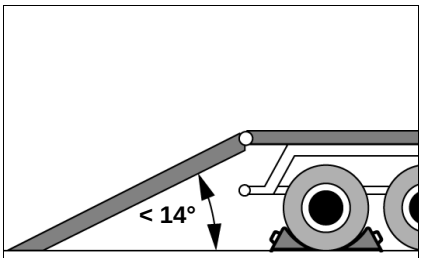


Fig. 27: Access ramp on an incline

Preparations

- ☞ *Position the ramps at the smallest possible angle. Ensure that the grade does not exceed 14° (25%).*
- ☞ *Use access ramps and transport surfaces with an anti-skid surface only.*

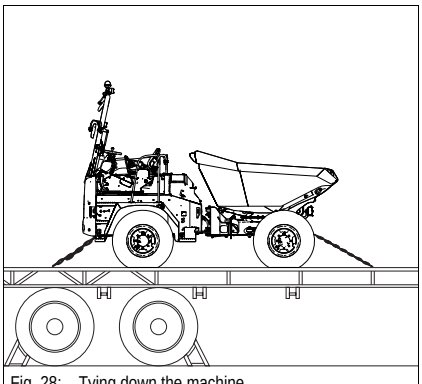


Fig. 28: Tying down the machine

- ☞ *Start the engine.*
- ☞ *Lower the skip.*
- ☞ *Carefully drive the machine backward onto the middle of the transport vehicle.*
- ☞ *Move the machine to transport position.*
- ☞ *Apply the parking brake.*
- ☞ *Stop the engine.*
- ☞ *Remove the starting key and carry it with you.*
- ☞ *Place the rollbar in the middle position.*
- ☞ *Leave the control stand. If the machine is equipped with a cabin (option), close and lock the door, windows and all covers.*

Center-pivot prop

Attention!

Crushing hazard due to machine steered via the articulation!

Can cause serious injury or death.

☞ *Install the center-pivot prop before crane-lifting the machine.*

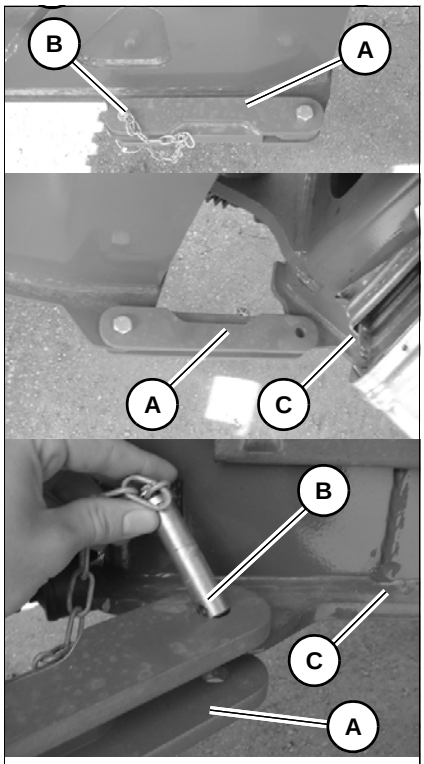


Fig. 29: Center-pivot prop

The center-pivot prop prevents the machine from being steered.

☞ *Remove pin **B**.*

☞ *Rotate center-pivot prop **A** toward the drive unit **C**.*

☞ *Insert pin **B**.*

Notice!

Assemble the center-pivot prop back onto loader unit before the machine is put into operation again.

Crane-lifting

Attention!

Accident hazard due to incorrect loading!

Incorrect loading can cause accidents and serious injury or death.

☞ *Do not allow anyone to stay in the danger zone.*

☞ *Read the transport weight off the type label. Add the weight of subsequently installed equipment to the weight of the machine.*

☞ *The vehicle may only be raised with suitable lifting gear.*

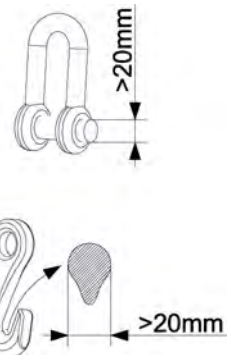


Fig. 30: Shackle

Notice!

Possible damage to lifting eyes due to wrong lifting gear.

- For lifting the machine, use only hooks or shackles with a minimum diameter of 20 mm (0.79 in).

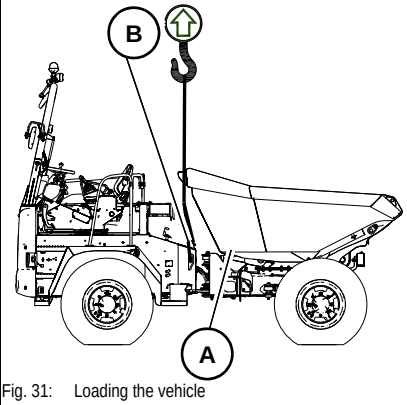


Fig. 31: Loading the vehicle

☞ *Empty the skip and lower it to middle position.*
☞ *Remove all dirt from the vehicle.*
☞ *Park the vehicle on firm, level, and horizontal ground.*
☞ *Activate road mode.*
☞ *Stop the engine.*
☞ *Remove the starting key and carry it with you.*
☞ *Machine with optional cabin:*
☞ *Safely store all loose objects.*
☞ *Close and lock all covers and the door.*
☞ *The rollbar can be lowered to reduce the transport height.*
☞ *Put the articulated steering locking bar in place.*
☞ *Use suitable lifting gear (chain, etc.).*
☞ *Put the lifting gear through bracket **A** on the edge of the skip and fasten it on lifting eyes **B** on the left and right on the chassis with suitable slings.*
☞ *Slowly raise the vehicle until there is no more contact with the ground.*
☞ *Wait until the machine does not swing any more.*
☞ *Slowly raise the vehicle to the required height and load.*
☞ *If the machine balance, and the condition and position of the slings is correct, slowly raise the machine to the required height and load it.*

Notice!

The manufacturer's warranty shall not apply to accidents or damage caused by loading or transporting.

1.10 Transporting the vehicle

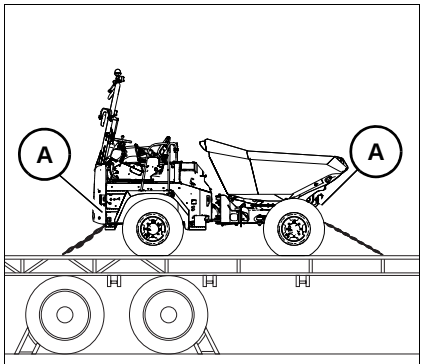


Fig. 32: Tying down the machine

☞ *Install the center-pivot prop.*

☞ *Firmly fasten the vehicle on the loading area with tie-down points **A** with slings of appropriate size. Observe the legal regulations.*

☞ *Before transporting the machine through wet weather:*
Close the exhaust pipe.

☞ *The driver of the transport vehicle must observe the following before departure:*

- Permitted overall height, width and weight of the transport vehicle including the dumper.
- The legal regulations of the countries where transport is to take place.

Notice!

The manufacturer's warranty shall not apply to accidents or damage caused by loading or transporting.

1.11 Fire extinguisher

Fig. 33: Fire extinguisher (symbolic representation)

A fire extinguisher is not supplied with the machine.

Retrofitting a fire extinguisher according to DIN-EN 3 must be performed correctly.

Assembly:

The fire extinguisher can be installed under the operator seat.

Both oblong holes **A** at the seating plate of the turning bracket can be used.

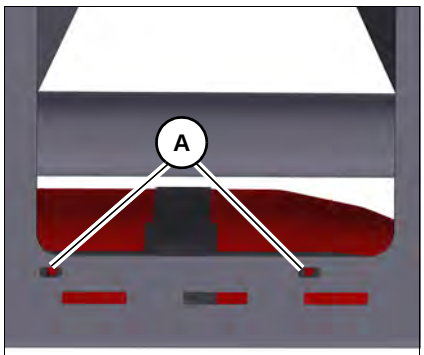


Fig. 34: Installing a fire extinguisher (symbolic representation)

☞ *Install retaining clamp with the corresponding screws (M6), washers and a suitable tool.*

☞ *Install the fire extinguisher on the support bracket according to the manufacturer's instructions enclosed.*

Notice!

Ensure the firm and safe installation of the fire extinguisher. Check the attachment of the fire extinguisher regularly. Observe the inspection intervals of the fire extinguisher.

Wacker Neuson recommends use of fire extinguishers of category ABC.

Technical data

2 Technical data

2.1 Engine

Engine[1]	DV60/DV90/DV100	
Manufacturer	Deutz	
Type	TD 2.9 L4 DOC	TD 2.9 L4 DPF
Design	Water-cooled 4-cylinder diesel engine	
Intake system	Turbo-charging	
Fuel injection system	Direct fuel injection	
Fuel injection pump	Common Rail	
Injection pressure	1600 bar (23,206 psi)	
Engine management	Electronic	
Displacement	2925 cm^3 (178 in^3)	
Nominal bore and stroke	92 x 110 mm (3.6 x 4.3 in)	
Rated output at rated speed	55.4 kW at 2200 rpm (74.3 hp at 2200 rpm)	
Output at set maximum rpm (working mode + ECO)	55.4 kW at 2300 rpm (74.3 hp at 2300 rpm)	
Max. torque	260 Nm at 1800 rpm (192 ft.lbs. at 1800 rpm)	260 Nm at 1600 rpm (192 ft.lbs. at 1600 rpm)
Max. engine speed without load[2]	Road-travel mode	1900 - 2200 +/- 25 rpm
	Operating mode	1850 - 2200 +/- 25 rpm
Idling speed	1200 +/− 25 min^{-1}	
Automatic speed reduction (rpm)	900 +/- 25 rpm	
Activation time for automatic speed reduction (rpm)	5 s	
Starting aid	Glow plugs[3]	
Exhaust Aftertreatment	Exhaust gas recirculation + diesel oxidation catalytic converter	Exhaust gas recirculation + diesel oxidation catalytic converter/diesel particulate filter
Exhaust values according to	EU Stage III B EPA Tier 4 final	EU Stage V EPA Tier 4 final

Engine[1]	DV60/DV90/DV100
Valve clearance	Maintenance-free hydraulic tappets
Compression ratio	1:17.8
Engine oil pressure	1.4 bar (20.3 psi) - 5.7 bar (82.7 psi) Monitored by pressure sensor
Pressure switch for engine oil pump	Rpm-dependent pressure sensor
Thermostat opening temperature Fully open	86°C – 90°C (187°F – 194°F) 99°C – 102°C (210°F – 216°F)
Firing order	1-3-4-2
Direction of rotation	Anticlockwise (as seen from the flywheel)
Cooling system	Pushing fan
Fuel tank	80 liters (21 gal)
Specific fuel consumption at rated power and 100% engine capacity	241 g/kWh (0.396 ls/hph)
Max. permissible slanting position	20°

1. Output values can vary by +/− 5%. Indicated values valid at ambient temperature of 25°C and at 500 m sea level.
2. The ECO mode controls the diesel engine speed according to power consumption.
3. Preheating time controlled by engine control unit.

2.2 Drive/axles

Hydraulic pump		**DV60, DV90, DV100**	
Design		Infinitely variable axial piston pump with electric control	
Displacement		56 cm^3/rev (3.42 in^3/rev)	
Flow rate		123.2 l/min (32.55 gal/min) +/- 1%	
Max. operating pressure		500 bar (7252 psi)	
Starting speed		1300 rpm (rpm) +/- 50	
Boost pump		**DV60, DV90, DV100**	
Design		Gear pump	
Flow rate		11.6 cm^3/rev (0.71 in^3/rev)	
Flow rate		25.5 l/min (6.74 gal/min) +/- 1%	
Min. charging/boost pressure		25 bar (363 psi)	
Max. charging/boost pressure		29 bar (421 psi)	
Hydraulic motor		**DV60**	**DV90, DV100**
Design		Window wiper motor with variable displacement, electrically controlled	
Max. operating pressure		450 bar (6527 psi)	
Max. capacity		125 cm^3 (7.63 in^3)	
Flush valve flow rate		3.5 l/min at 27 bar (0.92 gal/min at 392 psi)	
Transmission ratio	Speed range 1	2,13	2,75
	Speed range 2	2,13	1,62

2.3 Brakes

Service brake		**DV60**	**DV90**	**DV100**
Design		Dual-circuit brake		
		Wet multidisk brake on loader unit axle		
Location		Loader unit axle		
Effect	Wheels of drive unit	Indirectly via cardan shaft	Direct	
	Wheels of drive unit	Direct		
Control		Positive brake, mechanical		
Operating pressure		36 bar +/- 1 (522 psi +/- 14.5)	27 bar +/- 1 (392 psi +/- 14.5)	32 bar +/- 1 (464 psi +/- 14.5)
Secondary brake		Intact circuit of double circuit service brake		
Parking brake		**DV60, DV90, DV100**		
Design		Wet multidisk brake on loader unit axle		
Location		Loader unit axle		
Effect	Wheels of drive unit	Indirectly via cardan shaft		
	Wheels of drive unit	Direct		
Control		Negative brake by spring-applied brake, electrohydraulic		
Opening pressure		min. 15 bar (217.6 psi) - max. 30 bar (435 psi)		

2.4 Tires

Tire type/size		**DV60**			**DV90, DV100**
Tire size		405/70-20 (16/70-20)		41x18LL-22.5	500/60-22.5
Model		MPT01	MPT03	Lawn	500
Tire pressure	Drive unit axle	2 bar (29 psi)		2.5 bar (36 psi)	2.8 bar (41 psi)
	Loader unit axle	3.5 bar (51 psi)			4 bar (58 psi)
Load-bearing capacity at 30 km/h (18 mph)	Drive unit axle	3625 kg (7992 lbs)		2100 kg (4630 lbs)	3000 kg (6614 lbs)
	Loader unit axle			3700 kg (8157 lbs)	5050 kg (11,133 lbs)

2.5 Steering system

	DV60	DV90, DV100
Design	Chassis articulation steering, hydraulic, 2-speed	
Steering mode	Mechanical	
Power supply	Via gear pump	
Priority valve	External from steering valve	
Operating pressure	185 bar +/- 5 (2683 psi +/- 72)	
Flow rate at 1900 rpm	60.6 l/min (16.1 gal/min)	
Secondary pressure protection	250 bar +/-10 bar (3.625 psi +/-145 psi)	
Filter	Pressure filter	
Steering angle	29°	28.3°

2.6 Work hydraulics

Work hydraulics	DV60, DV90, DV100
Exterior gear pump	31.9 cm^3 (1.95 in^3)
Max. flow rate	60.6 l/min (16.1 gal/min)
Max. operating pressure (operating hydraulics)	240 bar (3481 psi)
Regulation method	Throttle control
Hydraulic oil radiator	Yes
Hydraulic reservoir capacity (middle of sight glass)	48 liters (12.7 gal)
Hydraulic reservoir capacity	60 liters (15.8 gal)
Filter	Pressure filter

2.7 Maximum speed

Notice!

Follow the national and regional legal regulations regarding maximum speed.

		Main travel direction	Side travel direction
Speed range 1	Forward	15 km/h (9.3 mph)	
	Reverse[1]		
Speed range 2	Forward	30 km/h (18.6 mph) AT + DE: 25 km/h (15.5 mph)	20 km/h (12.4 mph) GB: 15 km/h (9.3 mph)
	Reverse[1]	15 km/h (9.3 mph)	

1. In GB the maximum reverse speed is limited to 10 km/h (6.2 mph).

Notice!

In work position the maximum speed is limited to 20 km/h (12.4 mph).

Notice!

The specified speeds are the maximum high speeds. The actual achievable speed may be lower, depending on the vehicle load, the driving mode and environmental conditions.

2.8 Coolant

Compound table

Outside temperature[1]	Water	Coolant[2]
till -30°C (-86°F)	50% by volume	50% by volume

1. Use the 1:1 concentration for warm outside temperatures, too, to ensure protection against corrosion, cavitation, and deposits.
2. Do not mix the coolant with other coolants.

2.9 Noise emissions

Refer to the Operator's Manual of the machine for specific data.

2.10 Vibrations

Vibration	
Effective acceleration value for the upper extremities of the body (hand-arm vibration)	< Trigger value < 2.5 m/s^2
Effective acceleration value for the body (whole-body vibration)	< 0.5 m/s^2

Refer to the Operator's Manual of the machine for more information.

2.11 Hose identification code

Example: SLHYDR2SC16PN180PD180L1950D0

SLHYDR	2SC	16	PN	18	0	PD	18	0	L1950	S	0
Hydraulic hose	Hose type	Nominal width (mm)	Fitting 1	Thread (fitting 1)	Angle (fitting 1)	Fitting 2	Thread (fitting 2)	Angle (fitting 2)	Installation length (mm)	Hose protection type	Angle of twist

2.12 Weight

Machine weights

	DV60 kg/lbs	DV90 kg/lbs	DV100 kg/lbs
Front skip ROPS			
Transport weight[1]	4114 (9070)	4614 (10,172)	4644 (10,238)
Operating weight[2]	4232 (9330)	4733 (10,434)	4763 (10,501)
Front skip canopy			
Transport weight[1]	4225 (9315)	4725 (10,417)	4755 (10,483)
Operating weight[2]	4343 (9575)	4844 (10,679)	4874 (10,745)
Front skip cabin			
Transport weight[1]	4434 (9775)	4935 (10,880)	4965 (10,946)
Operating weight[2]	4552 (10,035)	5053 (11,140)	5083 (11,206)
Swivel skip ROPS			
Transport weight[1]	4320 (9524)	4944 (10,900)	--
Operating weight[2]	4438 (9784)	5063 (11,162)	--
Swivel skip canopy			
Transport weight[1]	4431 (9769)	5055 (11,144)	--
Operating weight[2]	4549 (10,029)	5174 (11,407)	--
Swivel skip cabin			
Transport weight[1]	4640 (10,229)	5265 (11,607)	--
Operating weight[2]	4758 (10,490)	5383 (11,867)	--

1. Transport weight: machine + 10% fuel capacity.
2. Operating weight: machine + full fuel tank + skip + operator (75 kg/165 lbs).

Notice!

The weight specified here corresponds to the maximum configuration. The actual machine weight depends on the selected options and can be read off the type label.
Weight indications can vary by +/- 2%.

Ground clearance

	DV60	DV90/DV100
Ground clearance	370 mm (15 in)	358 mm (14 in)

2.13 Payload/stability

	DV60	DV90	DV100
Front skip			
Liquid capacity	1900 liters (502 gal)	2400 liters (634 gal)	2550 liters (674 gal)
Skip capacity (struck)	2700 liters (713 gal)	3750 liters (991 gal)	4150 liters (1096 gal)
Skip capacity (heaped)	3600 liters (951 gal)	4600 liters (1215 gal)	5000 liters (1321 gal)
Swivel skip			
Liquid capacity	1600 liters (423 gal)	2050 liters (542 gal)	--
Skip capacity (struck)	2350 liters (621 gal)	3300 liters (872 gal)	--
Skip capacity (heaped)	3150 liters (832 gal)	4350 liters (1149 gal)	--
Payload	6000 kg (13,228 lb)	9000 kg (19,842 lb)	10,000 kg (22,046 lb)

Notice!

Possible damage to property due to tipping over of machine. Do not exceed the weights indicated in the table.

Maneuvering coupling (optional)

	DIN towing eye	Ball coupling
Drawbar load	200 kg (441 lbs)	150 kg (331 lbs)

Notice!

The total tractor weight must not exceed the maximum permissible weight of the tractor.

Payload kg (lbs)	Skip contents kg (lbs)	Gross weight rating trailer kg (lbs) braked with DIN towing eye (F)	Gross weight rating trailer kg (lbs) braked with ball coupling (E)	Gross weight rating trailer kg (lbs) unbraked with DIN towing eye (F) or ball coupling (E)
6000 (13,230)	1500 (3310)	3500 (7720)	1500 (3310)	750 (1650)
9000 (19,850)	2250 (4970)	3500 (7720)	1500 (3310)	750 (1650)
10,000 (22,050)	2500 (5520)	3500 (7720)	1500 (3310)	750 (1650)

2.14 Electrical system

Electrical components	DV60/DV90/DV100
Alternator	12 V/120 A
Starter	12 V/3.2 kW
Battery[1]	12 V/100 Ah
12 V power outlet	15 A max.

1. According to DIN EN 50342, DIN IEC 60095-2

Bulbs

	DV60	DV90/DV100
Working lights/roof lights	H3 12 V/55 W	
Interior light	C5W 12 V/5 W	
Rotating beacon	LED 12 V/9W	
Flashing lights front/rear	P21W 12 V/21 W	
Parking light	T4W 12 V/4 W	
Low beam	H3 12 V/55 W	
High beam	H7 12 V/55 W	
Rear lights	R10W 12 V/10 W	
Reversing light	P21W 12 V/21 W	
Brake lights	P21W 12 V/21 W	
Clearance light	--	LED 12 V/0.6W

Fuse box

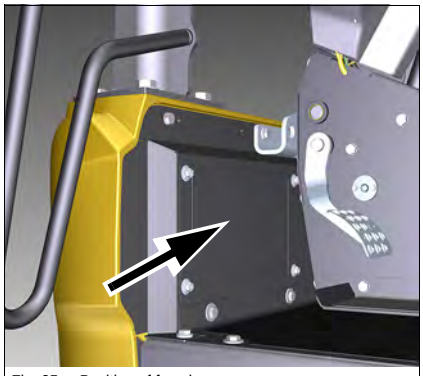


Fig. 35: Position of fuse box

Fuse box is located at the front left in the control console (viewing direction to bumper).

There is an additional relay bracket for the indicator switch beside the brake fluid container.

Optional air conditioning:

There is an additional relay bracket for the air conditioning system under the plastic cover on the left side of the engine compartment.

I
II
III
IV
V
VI
K062
F027 10A
F026 10A
K088
F025 15A
F024 5A
F023 10A
F022 10A
F021 15A
F020 15A
K063
K003
F015 10A
F016 10A
F017 15A
F018 30A
F019 25A
V001 V002 V003 V004
F012 10A
F011 5A
F014 15A
F005 7,5A
F006 7,5A
F007 30A
F008 10A
F009 5A
F010 15A
F013 10A
K001
K005
K030
K130
K114
K131
K003.1
K146
K010
K087
F001 60A
F002 80A
F003 50A
F004 50A
Version 01
1000400197

Fuses/relays	Rated current	Protected circuits
F001	60A	Switched power consumers
F002	80A	Preheating
F003	50A	12V30
F004	50A	12V15, 12V15_1, 12V30
F005	7.5A	Clearance light (left)
F006	7.5A	Clearance light (right)
F007	30A	Engine ECU 12V30
F008	10A	Drive ECU 12V30
F009	5A	CPU drive ECU 12V30
F010	15A	Working light for drive unit, working light for loader unit
F011	5A	Drive ECU 12V15, engine ECU 12V15
F012	10A	Display element + camera, switch lighting, relay coils, telematics 12V15, drive interlock 12V15, radio 12V15
F013	10A	Turn indicators
F014	15A	Rotating beacon, hazard warning light
F015	10A	Telematics, drive interlock, position light, rear lights, license plate lighting, trailer
F016	10A	Radio, interior lighting
F017	15A	Window wiper, washer pump
F018	30A	Heating fan
F019	25A	Air condition coupling, fan condenser
F020	15A	12 V socket
F021	15A	Horn, brake lights
F022	10A	Low beam
F023	10A	High beam
F024	5A	Reversing light, backup warning system
F025	15A	Fuel pump
F026	10A	Optional plug 12V15
F027	10A	Optional plug 12V30
V001	DIODE 1A	Blocking diode
V002	DIODE 1A	Blocking diode
V003	DIODE 1A	Blocking diode
V004	DIODE 1A	Blocking diode
K001	Relay 70A	Switched power consumers
K003	Relay 20/35A	Reversing light, backup warning system
K003.1	Relay 20/35A	Shutdown of the reversing light
K005	Relay 70A	Preheating
K010	Turn indicator relay 180 W	Turn indicators

Fuses/relays	Rated current	Protected circuits
K030	Relay 20/35A	Brake lights
K062	Relay 20/35A	Low beam
K063	Relay 20/35A	High beam
K087	Time lag relay 0.75s	Start time lag relay
K088	Relay 20/35A	Fuel pump
K114	Relay 20/35A	Rotating beacon
K130	Relay 20/35A	Horn
K131	Relay 20/35A	12V15
K146	Relay 20/35A	Green rotating beacon

2.15 Tightening torques

Model-specific tightening torques

Notice!

Refer to the machine's spare parts list for model-specific tightening torques and the adhesive fastening of screws:

The following assemblies have model-specific tightening torques:

- Engine suspension
- Fan blade
- Pump drive

General tightening torques

UNF thread Triple-Lok with O-ring			
Thread	Wrench size	Torque Nm (ft.lbs)	
		Steel	Aluminum
7/16-20	14 / 17	23 (17)	15 (11)
1/2-20	16	28 (20.6)	19 (14)
9/16-18	17 / 19	34 (25)	22 (16.2)
3/4-16	22 / 24	60 (44.2)	39 (28.7)
7/8-14	25 / 27	115 (84.8)	75 (55.3)
1 1/16-12	32 / 36	140 (103.3)	91 (67.1)
1 5/16-12	41 / 46	210 (154.8)	137 (101)
1 5/8-12	48/50/55	290 (213.9)	190 (140)
1 7/8-12	--	325 (239.7)	212 (157.8)

UNF thread Triple-Lok		
Thread	Wrench size	Torque Nm (ft.lbs)
7/16-20	14 / 16	18 (13.2)
1/2-20	17	23 (17)
9/16-18	19	30 (22.1)
3/4-16	22	57 (42)
7/8-14	27	81 (59.7)
1 1/16-12	32	114 (84)
1 5/16-12	38 / 41	160 (118)
1 5/8-12	50	228 (168.2)
1 7/8-12	57 / 60	265 (195.5)
2 1/2-12	72	360 (265.5)

UNF thread O-Lok		
Thread (ORFS)	Wrench size	Torque Nm (ft.lbs)
9/16-18	17	25 (18.4)
11-16-16	21	40 (29.5)
13/16-16	24	57 (42)
1-14	29	85 (62.7)
1 3/16-12	35	123 (90.7)
1 7/16-12	41	160 (118)
1 11/16-12	48	205 (151.2)
2-12	--	278 (205)

Tightening torques for hydraulic screw connections (dry assembly)

Metric hose fittings for hydraulic applications (light execution, DKOL)				
Nominal Ø	Outer Ø	Thread	Wrench size	Torque
				Nm (ft.lbs.)
05	6L	M12X1.5	WS 14	15 (11)
06	8L	M14X1.5	WS 17	20 (14.7)
08	10L	M16X1.5	WS 19	40 (29.5)
10	12L	M18X1.5	WS 22	50 (36.8)
12	15L	M22X1.5	WS 27	75 (55.3)
16	18L	M26X1.5	WS 32	85 (62.7)
20	22L	M30X2	WS 36	100 (73.75)
25	28L	M36X2	WS 41	180 (132.7)
32	35L	M45X2	WS 55	220 (162.3)

Galvanized and dry surface (O-ring slightly oiled). Torque tolerance: −10%

Values determined empirically and to be applied as approximate figures.

Metric hose fittings for hydraulic applications (heavy execution, DKOL)				
Nominal Ø	Outer Ø	Thread	Wrench size	Torque
				Nm (ft.lbs)
05	8S	M16X1.5	WS 19	40 (29.5)
06	10S	M18X1.5	WS 22	50 (36.8)
08	12S	M20X1.5	WS 24	60 (44.3)
10	14S	M22X1.5	WS 27	75 (55.3)
12	16S	M24X1.5	WS 30	90 (66.4)
16	20S	M30X2	WS 36	100 (73.8)
20	25S	M36X2	WS 41	180 (132.8)
25	30S	M42X2	WS 50	270 (199.1)
32	38S	M52X2	WS 60	400 (295)

Galvanized and dry surface (O-ring slightly oiled). Torque tolerance: −10%
Values determined empirically and to be applied as approximate figures.

Metric threaded fittings with various seals for hydraulic applications (Triple-Lok)					
Thread	Straight pipe fitting with thread and screwed plug			Non-return valve with elastic seal	Pipe outside diameter
	Sealing washer	Elastic seal	O-ring		
	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	mm (")
M10X1.0	9 (7)	18 (13)	18 (13)	18 (13)	6 (0.2)
M12X1.5	20 (15)	25 (18)	25 (18)	25 (18)	8 (0.3)
M14X1.5	35 (26)	45 (33)	45 (33)	35 (26)	10 (0.4)
M16X1.5	45 (33)	55 (41)	55 (41)	50 (37)	12 (0.5)
M18X1.5	55 (41)	70 (52)	70 (52)	70 (52)	15 (0.6)
M22X1.5	65 (48)	125 (92)	125 (92)	125 (92)	18 (0.7)
M26X1.5	90 (66)	180 (133)	180 (133)	145 (107)	22 (0.9)
M33X2.0	150 (111)	310 (229)	310 (229)	210 (155)	28 (1.1)
M42X2.0	240 (177)	450 (332)	450 (332)	360 (266)	35 (1.4)
M48X2.0	290 (214)	540 (398)	540 (398)	540 (398)	42 (1.7)

Tolerance for tool repeat accuracy: +10%
Torque reduction for screw-in holes made of aluminum: -35%

Metric threaded fittings with various seals for hydraulic applications in a heavy-duty design (O-Lok)					
Thread	Straight pipe fitting with thread and screwed plug			Non-return valve with elastic seal	Pipe outside diameter
	Sealing washer	Elastic seal	O-ring		
	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	mm (")
M12X1.5	20 (15)	35 (26)	35 (26)	35 (26)	6 (0.2)
M14X1.5	35 (26)	45 (33)	45 (33)	45 (33)	8 (0.3)
M16X1.5	45 (33)	70 (52)	70 (52)	55 (41)	10 (0.4)
M18X1.5	55 (41)	90 (66)	90 (66)	70 (52)	12 (0.47)
M20X1.5	55 (41)	125 (92)	125 (92)	100 (74)	14 (0.55)
M22X1.5	65 (48)	135 (100)	135 (100)	125 (92)	16 (0.6)

Metric threaded fittings with various seals for hydraulic applications in a heavy-duty design (O-Lok)					
M27X2.0	90 (66)	180 (133)	180 (133)	135 (100)	20 (0.8)
M33X2.0	150 (111)	310 (229)	310 (229)	210 (155)	25 (0.98)
M42X2.0	240 (177)	450 (332)	450 (332)	360 (266)	30 (1.2)
M48X2.0	290 (214)	540 (398)	540 (398)	540 (398)	38 (1.5)

Tolerance for tool repeat accuracy: +10%
Torque reduction for screw-in holes made of aluminum: -35%
Tolerance for tool repeat accuracy: +10%

Imperial threaded fittings with various seals for hydraulic applications (Triple-Lok)					
Thread	Straight pipe fitting with thread and screwed plug			RHV with O-ring	Pipe outside diameter
	Sealing washer	Elastic seal	O-ring		
	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	mm (")
G1/8A	9 (7)	18 (13)	18 (13)	18 (13)	6 (0.2)
G1/4A	35 (26)	35 (26)	35 (26)	35 (26)	8 (0.3)
G1/4A	35 (26)	35 (26)	35 (26)	35 (26)	10 (0.4)
G3/8A	45 (33)	70 (52)	70 (52)	50 (37)	12 (0.5)
G1/2A	65 (48)	90 (66)	90 (66)	85 (48)	15 (0.6)
G1/2A	65 (48)	90 (66)	90 (66)	65 (48)	18 (0.7)
G3/4A	90 (66)	180 (133)	180 (133)	140 (103)	22 (0.9)
G1A	150 (111)	310 (229)	310 (229)	190 (140)	28 (1.1)
G1 1/4A	240 (177)	450 (332)	450 (332)	360 (266)	35 (1.4)
G1 1/2A	290 (214)	540 (398)	540 (398)	540 (398)	42 (1.7)

Torque reduction for screw-in holes made of aluminum: -35%

Imperial threaded fittings with various seals for hydraulic applications in a heavy-duty design (O-Lok)					
Thread	Straight pipe fitting with thread and screwed plug			RHV with O-ring	Pipe outside diameter
	Sealing washer	Elastic seal	O-ring		
	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)	mm (")
G1/4A	35 (26)	40 (29)	40 (29)	45 (33)	6 (0.2)
G1/4A	35 (26)	40 (29)	40 (29)	45 (33)	8 (0.3)
G3/8A	45 (33)	80 (59)	80 (59)	60 (44)	10 (0.4)
G3/8A	45 (33)	80 (59)	80 (59)	60 (44)	12 (0.5)
G1/2A	65 (48)	115	115	145 (107)	14 (0.55)
G1/2A	65 (48)	115	115	100 (74)	16 (0.6)
G3/4A	90 (66)	180 (133)	180 (133)	145 (107)	20 (0.8)
G1A	150 (111)	310 (229)	310 (229)	260 (192)	25 (0.98)
G1 1/4A	240 (177)	450 (332)	450 (332)	360 (266)	30 (1.2)
G1 1/2A	290 (214)	540 (398)	540 (398)	540 (398)	38 (1.5)

Tolerance for tool repeat accuracy: +10%
Torque reduction for screw-in holes made of aluminum: -35%

Tightening torques for high-resistance threaded fittings

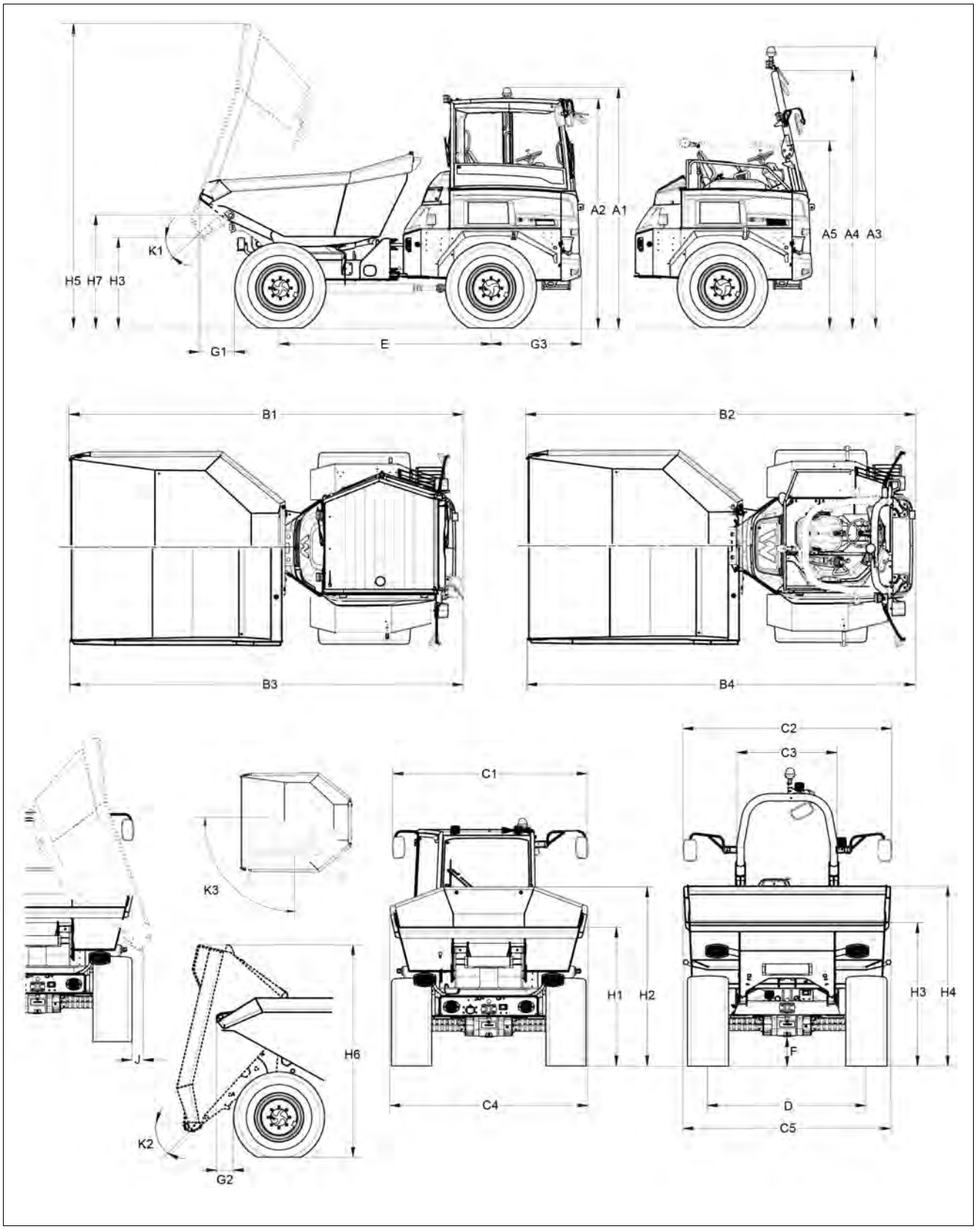
With coarse-pitch thread			
Thread	Screws according to DIN 912, DIN 931, DIN 933, etc.		
	8.8	**10.9**	**12.9**
	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)
M5	5.5 (4)	8 (6)	10 (7)
M6	10 (7)	14 (10)	17 (13)
M8	25 (18)	35 (26)	42 (31)
M10	45 (33)	65 (48)	80 (59)
M12	87 (64)	110 (81)	147 (108)
M14	135 (100)	180 (133)	230 (170)
M16	210 (155)	275 (203)	350 (258)
M18	280 (207)	410 (302)	480 (354)
M20	410 (302)	570 (420)	690 (509)
M22	550 (406)	780 (575)	930 (686)
M24	710 (524)	1000 (738)	1190 (878)
M27	1040 (767)	1480 (1092)	1770 (1305)
M30	1420 (1047)	2010 (1482)	2400 (1770)

DIN 912 - hexagon socket head cap screws; DIN 931/DIN 933 - hexagon bolts with/without shaft;
All values subject to a friction coefficient of $\mu = 0.12$ and are to be used as approximate figures.

With fine-pitch thread			
Thread	Screws according to DIN 912, DIN 931, DIN 933, etc.		
	8.8	**10.9**	**12.9**
	Nm (ft.lbs.)	Nm (ft.lbs.)	Nm (ft.lbs.)
M8X1.0	25 (18)	37 (28)	43 (32)
M10X1.0	50 (37)	75 (55)	88 (65)
M10X1.25	49 (36)	71 (52)	83 (61)
M12X1.25	87 (64)	130 (96)	150 (111)
M12X1.5	83 (61)	125 (92)	145 (107)
M14X1.5	135 (100)	200 (148)	235 (173)
M16X1.5	210 (155)	310 (229)	360 (266)
M18X1.5	315 (232)	450 (332)	530 (391)
M20X1.5	440 (325)	630 (465)	730 (538)
M22X1.5	590 (435)	840 (620)	980 (723)
M24X2.0	740 (546)	1070 (789)	1250 (922)
M27X2.0	1100 (811)	1550 (1143)	1800 (1328)
M30X2.0	1500 (1106)	2150 (1586)	2500 (1844)

DIN 912 - hexagon socket head cap screws; DIN 931/DIN 933 - hexagon bolts with/without shaft;
All values subject to a friction coefficient of $\mu = 0.12$ and are to be used as approximate figures.

2.16 Dimensions



	DV60 mm (in)	DV90 mm (in)	DV100 mm (in)
A1	3078 (10'-1")	3083 (10'-1")	3083 (10'-1")
A2	2938 (9'-8")	2944 (9'-8")	2945 (9'-8")
A3	3617 (11'-10")	3620 (11'-11")	3620 (11'-1")
A4	3302 (10'-10")	3307 (10'-10")	3307 (10'-10")
A5	2400 (95)	2405 (95)	2405 (95)
B1	4799 (15'-9")	4991 (16'-5")	--
B2	4727 (15'-6")	4919 (16'-2")	--
B3	4548 (14'-11")	4722 (15'-6")	4760 (15'-7")
B4	4476 (14'-8")	4650 (15'-3")	4688 (15'-5")
C1	2440 (96)	2440 (96)	2420 (95)
C2	2533 (100)	2533 (100)	2533 (100)
C3	1221 (48)	1221 (48)	1221 (48)
C4	2218 (87)	2453 (97)	--
C5	2328 (92)	2524 (99)	2524 (99)
D	1790 (70)	1920 (76)	1920 (76)
E	2485 (97)	2700 (8'-10")	2700 (8'-10")
F	370 (15)	358 (14)	358 (14)
G1	456 (18)	457 (18)	--
G2	565 (22)	520 (21)	549 (22)
G3	1157 (46)	1157 (46)	1157 (46)
H1	1689 (67)	1728 (68)	--
H2	1981 (78)	2230 (88)	--
H3	1673 (66)	1724 (68)	1745 (69)
H4	2028 (80)	2104 (83)	2184 (86)
H5	3639 (11'-11")	3980 (13'-1")	--
H6	2463 (97)	2723 (8'-11")	2718 (8'-11")
H7	1422 (56)	1444 (57)	--
Y	69 (3)	152 (6)	--
K1	48°	40.1°	--
K2	50°	48°	48°
K3	90°	90°	--

Maintenance

3 Maintenance

Information on special tools is available in our WIKI online portal.

3.1 Fluids and lubricants

Application		Vehicle fluid	Specification	Season/temperature	Capacities[1]
Diesel engine		Engine oil	API CJ-4 ACEA E9 ECF-3	-15°C to +40°C (5°F to 104°F)	min. 8 Liter (2.11 gal) max. 9 Liter (2.38 gal)
Diesel engine		Diesel fuel[2]	EN 590 (EU)[3] American Society for Testing & Materials (ASTM) D975 grade 2D S15 (USA)[3] BS 2869 class A2 (GB)[3]	Summer or winter diesel depending on outside temperatures	80 liters (21.13 gal)
DV60	Axles Drive unit Planetary drive	Gear oil (with LS additive)	UTTO[4] ELF SF3 GL4[7]	Year-round	0.90 l each (0.23 gal)
	Axle Drive unit Central housing				5.6 liters (1.47 gal)
	Axle Loader unit Planetary drive				0.85 l each (0.22 gal)
	Axle Drive unit Central housing				7.9 liters (2.08 gal)
	Gearbox				0.85 liters (0.22 gal)
DV90 / DV100	Axle Drive unit Planetary drive				0.85 l each (0.22 gal)
	Axle Drive unit Central housing				7.9 liters (2.08 gal)
	Axle Loader unit Planetary drive				0.85 l each (0.22 gal)
	Axle Drive unit Central housing				7.9 liters (2.08 gal)
	Gearbox				3.40 l (0.89 gal)
Engine cooling system		Coolant	Distilled water and antifreeze compound ASTM D3306 ASTM D4985 Deutz DQC CA-14	Year-round	12 liters (3.17 gal)

Application	Vehicle fluid	Specification	Season/temperature	Capacities[1]
Hydraulic oil reservoir	Hydraulic oil	Eurolub HVLP 46[5]	Year-round[6]	60 liters (15.85 gal)
	Biodegradable hydraulic oil[7]	Panolin HLP Synth 46		
Service brake	Hydraulic oil	Eurolub HVLP 46[5]	Year-round[6]	200 ml (12.2 in³)
Grease	Grease nipples	KPF 2 K-20[8] ISO-L-X-BCEB 2[9]	Year-round	According to the maintenance plan
Battery terminals	Acid-proof grease[10]	FINA Marson L2	Year-round	As required
Washer system	Cleaning agent	Glass cleaner and antifreeze	Year-round	2 Liter (122 in³)
Air conditioning (option)	Refrigerant	R134a	Year-round	750 g (25 oz)
	Oil for air-conditioning compressor	UCON 244	Year-round	150 cm³ (9.15 in³)

1. The capacities indicated are approximate values; the oil level check alone is relevant for the correct oil level.
   Capacities indicated are not system fills.
2. Using biodegradable diesel fuel is prohibited
3. Sulfur content up to 15 ppm (0.0015%).
4. Gearbox oils with the indicated specifications must not be mixed. When replacing the gearbox oil, drain the gearbox oil from the component before adding another gearbox oil according to the specification.
5. According to DIN 51524 section 3, ISO-VG 46.
6. Depending on local conditions – *see Engine-oil types (temperature-dependent)* on page 3-4.
7. Biodegradable hydraulic oil based on saturated synthetic esters with an iodine value of < 10, according to DIN 51524, section 3, HVLP, HEES.
8. According to DIN 51502, lithium-saponified grease.
9. According to DIN ISO 6743-9, lithium-saponified grease.
10. Standard acid-proof grease NGLI category 2

Engine-oil types (temperature-dependent)

Tier IV engine				
Viscosity grade	**Ambient temperature**			
	min. °C	**min. °F**	**max. °C**	**max. °F**
SAE 0W30	-35	-31	30	86
SAE 0W40	-35	-31	40	104
SAE 5W30	-30	-22	30	86
SAE 5W40	-30	-22	40	104
SAE 10W30	-15	5	30	86
SAE 10W40	-15	5	40	104
SAE 15W40	-15	5	40	104
SAE 20W50	-5	23	>40	>104

Hydraulic oil types (depending on temperature)

Hydraulic oil types				
Viscosity grade	**Ambient temperature**			
HVLP 46[1]	**min. °C**	**min. °F**	**max. °C**	**max. °F**
ISO VG32	-20	-4	30	86
ISO VG46	-5	23	40	104
ISO VG68	5	41	50	122

1. According to DIN 51524 section 3, ISO-VG 46.

Important information regarding operation with biodegradable hydraulic oil

- Use only the biodegradable oils that have been tested and released by Wacker Neuson.
- Add only biodegradable oil of the same type. In order to avoid misunderstandings, attach a label on the hydraulic oil filler inlet providing clear information regarding the type of oil currently used.
  The joint use of two different biodegradable oils can affect the quality of one of the oil types. Therefore ensure that the remaining amount of biodegradable oil complies with the national and regional regulations as you replace it. Observe the manufacturer's indications.
- Do not add mineral oil – the content of mineral oil should not exceed 2% of the system fill in order to avoid foaming problems and to ensure biological degradability.
- When running the vehicle with biodegradable oil, the same oil and filter replacement intervals are valid as for mineral oil.
- The condensation water in the hydraulic oil reservoir must in any case be drained before the cold season. The water content may not exceed 0.1% by weight.
- The instructions in this Operator's Manual concerning environmental protection are also valid for the use of biodegradable oil.
- A subsequent change from mineral oil to biodegradable oil is permitted.

3.2 Maintenance overview

Maintenance label

Maintenance that has to be performed by the operator is indicated on the maintenance label

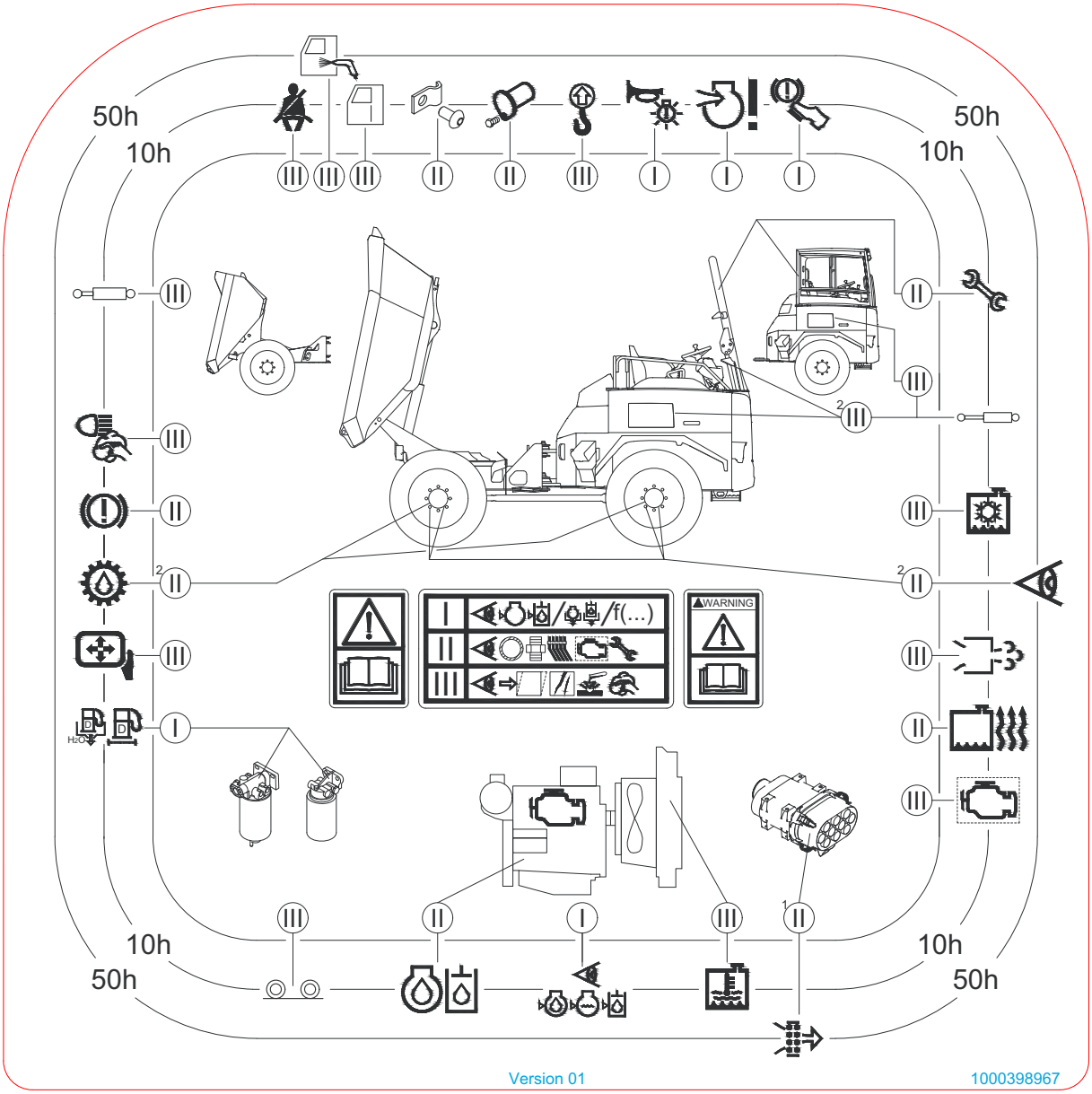


Fig. 36: Maintenance label (symbolic representation)

I Checking functions and levels, filling up and draining

II Checking wear parts, seals, hoses and screw connections

III Checking for damage, corrosion and dirt

Superscript numbers, for example ^{2}: number of lubrication points.

3.3 Lubrication work

Preparing lubrication

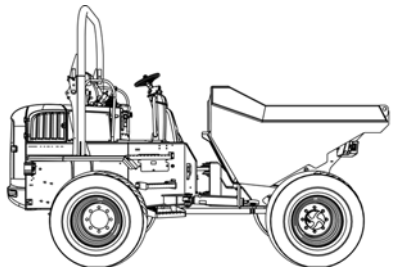


Fig. 37: Preparing lubrication

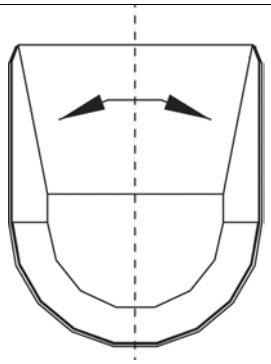


Fig. 38: Middle position for swivel skip

☞ *Park the vehicle on firm, level, and horizontal ground.*

☞ *Lower the skip. Check the middle position if the machine is equipped with a swivel skip.*

☞ *Stop the engine.*

☞ *Operate the joystick repeatedly to release the pressure in the hydraulic system.*

☞ *Remove the starting key and carry it with you.*

☞ *Remove all loose objects inside the machine, or store them safely.*

☞ *Close the windows and doors.*

☞ *Close and lock all covers.*

☞ *Attach a warning label to the control elements (for example “Machine being serviced, do not start”).*

☞ *Wait at least 10 minutes after stopping the engine!*

3.4 Lubrication plan

Lubricate the specified lubrication points once a day. Before starting maintenance, lower the red maintenance prop when the skip is raised and secure the skip with it.

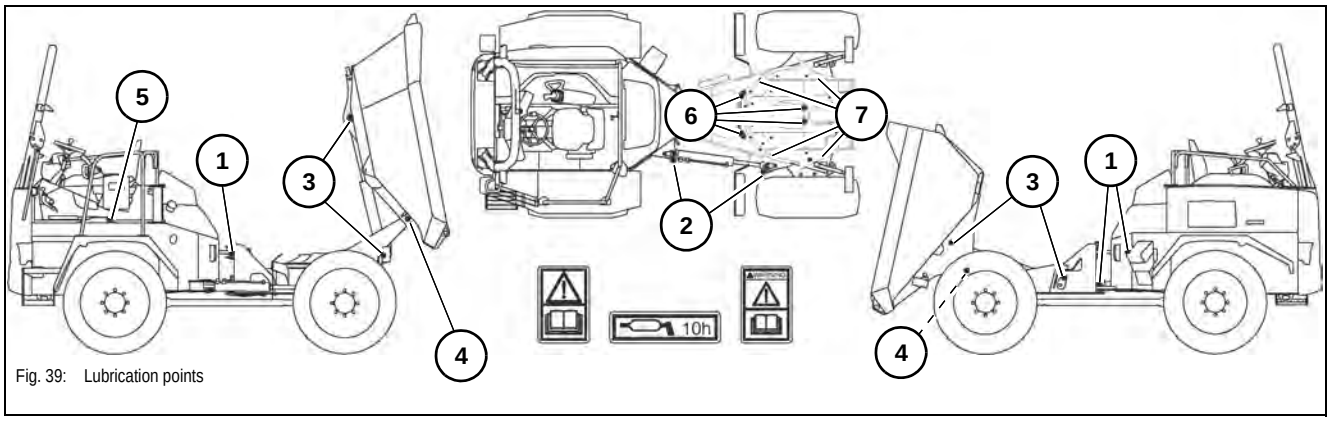
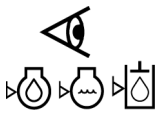


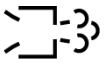
Fig. 39: Lubrication points

Position	Lubrication point	Quantity
1	Articulation	3
2	Steering cylinder	2
3	Tilt cylinder	2
4	Skip	2
5	Seat console	1
6	Swiveling cylinder[1]	4
7	Live ring[1]	4

1. Option for swivel skip

3.5 Maintenance plan

Daily maintenance (operator)		
Symbol	**Inspection work** (Check the following engine/machine fluids. Check the oil levels after a test run and add oil if necessary)	Page
	Check the engine/machine fluids (engine oil, engine coolant, hydraulic oil, brake fluid)	--
	Check the radiators (for example water, hydraulic oil) for dirt, clean them if necessary	--
	Lubricate the vehicle according to the lubrication schedule	--
	Drain the water separator (prefilter) and fuel filter (interval according to indicating instrument)	--
	Check the wheels (damage, inflation pressure, tread depth)	--
	Check the engine air intake	--
	Check pin lock	--
	Check line fixtures	--
	Check the indicator lights and acoustic warning devices	--
	Check the service and parking brake function	--
	Check the threaded fittings of the protective structures (for example the cabin, rollbar) for tightness[1]	--
	Check headlight/light system, signaling system and clean if required	--
Option		
	Adjust the mirrors correctly, clean them and check them for damage, check the fastening screws and tighten them if necessary	--
	Check the condenser for dirt, clean it if necessary	--
	Clean fresh-air and recirculated-air coarse filters with compressed air (heating, air conditioning)	--

Daily maintenance (operator)		
Leakage check		
Check for tightness, leaks and chafing: pipes, flexible lines and screw connections of the following assemblies and components. Have them repaired if necessary		
	Engine and hydraulic system	--
	Drive, axles and transmission/transfer gearbox	--
	Braking system	--
	Cooling systems, heating, and hoses (visual check)	--
Visual check		
Correct function; deformations, damage, surface cracks, wear and corrosion		Page
	Check the exhaust system for damage	--
	Check the insulating mats in the engine compartment for damage	--
	Check the cabin and protective structures for damage (for example the FOPS structure)	--
	Check the piston rods of the cylinders for damage	--
	Check the seat belt for damage	--
	Check gas-filled spring device of the engine cover and hood latch for function	--
	Check the lifting eyes	--

1. Check the threaded fittings and corresponding components/assemblies visually or manually (without using tools) for tightness.
   Replace the threaded fitting in case of irregularities. Pay attention to adhesive connections as you do so!

Weekly maintenance (every 50 operating hours) (operator)		Page
All steps for previous maintenance intervals		--
	Lubricate the vehicle according to the lubrication schedule	--
	Visual check of axle mountings	--
	Check the wheel nuts for tightness (visual check)	--
	Check accesses and exits for dirt	--
	Replace the air filter[1]	--

1. Air filter replacement according to the indicator light, every 1000 o/h or once a year at the latest. (Replace after 50 o/h when in extensive use in environments with acidic air, such as acid production facilities, steel and aluminum mills, chemical plants and other nonferrous-metal plants, independently of the indicator light)

Only once after the first 50 operating hours (Wacker Neuson service center)	
Replace the oil filter of the machine-travel hydraulics	*3-62*
Replace the oil filter of the operating hydraulics	*3-62*
Replacement of gearbox oil in traveling drive, axles, transfer gearbox	*3-69*, *3-71*, *3-73*
Check the threaded fittings for tightness[1]	--
Check labels and Operator's Manual for completeness and condition	--
Pressure check of primary pressure limiting valves	*3-53*
Retighten the wheel nuts	*3-67*
Check and adjustment of parking and service brake	*3-77*
Resetting the maintenance meter	*3-92*
All steps for maintenance once a day and once a week	See operator's manual and service manual

1. Check the threaded fittings and corresponding components/assemblies visually or manually (without using tools) for tightness. Replace the threaded fitting in case of irregularities. Pay attention to adhesive connections as you do so!

Every 500 operating hours or once a year (Wacker Neuson service center)	
Change the engine oil[1]	*3-32*
Change the engine-oil filter[1]	*3-33*
Replace the fuel filter	*3-27*
Replace the prefilter element of the water separator	*3-26*
Replace the oil filter of the machine-travel hydraulics	*3-62*
Replace the oil filter of the operating hydraulics	*3-62*
Checking the V-belt	*3-44*
Check and adjustment of parking and service brake	*3-77*
Check the antifreeze	*3-36*
Check engine control (yearly)	*3-21*
Conduct standstill regeneration (DPF, only if regeneration light blinks)	*3-49*
Drain the condensation water from the hydraulic oil reservoir	*3-63*
Check gearbox oil, drive, axles and transmission/transfer gearbox	*3-69*, *3-71*, *3-73*
Clean the dust valve	*3-42*
Check the electric cables and connectors (cable and grounding connections, etc.)	*3-91*
Check the threaded fittings for tightness[2]	--
Reset the maintenance meter	*3-92*
Option	
Clean the cabin air filter (replace it if necessary)	*3-42*
Check the oil level in the air conditioning compressor and the threaded fittings for tightness	*3-84*
Check the dehumidifier of the air conditioning system (visual check)	*3-85*
Check the refrigerant level of the air conditioning system (visual check)	*3-84*
All steps for maintenance once a day and once a week	See operator's manual and service manual

1. Replacement may be necessary before 500 o/h depending on engine load. Diesel engine output is reduced after 500 o/h.
2. Check the threaded fittings and corresponding components/assemblies visually or manually (without using tools) for tightness. Replace the threaded fitting in case of irregularities. Pay attention to adhesive connections as you do so!

Every 1000 operating hours (Wacker Neuson service center)	
Replace the hydraulic oil	*3-61*
Replace the breather filter of the hydraulic oil reservoir	*3-64*
Replace the breather filter of the fuel tank	*3-29*
Replace gearbox oil, drive, axles and transmission/transfer gearbox	*3-69*, *3-71*, *3-73*
Replace the air filter[1]	*3-41*
Replace fuel pre-filter (1000 o/h or yearly)	*3-26*
Check cold start device	*3-21*
Perform a visual check of the engine bearings, if damaged replace	--
Replacing the V-belt	*3-45*
Check the V-belt tension roller	*3-46*
Pressure check on primary pressure feed pump	*3-55*
Pressure check on primary pressure steering system	*3-56*
Pressure check on primary pressure work hydraulics	*3-55*
Check the battery (charge condition, poles, etc.)	*3-88*
Check battery degassing hose	*3-90*
Check wear on the lifting eyes (at least once a year)	--
Option	
Replace the cabin air filter	*3-42*
All steps for maintenance once a day and once a week (and all steps for maintenance at 500 operating hours)	See operator's manual and service manual

1. Air filter replacement according to the indicator light, every 1000 o/h or once a year at the latest. (Replace after 50 o/h when in extensive use in environments with acidic air, such as acid production facilities, steel and aluminum mills, chemical plants and other nonferrous-metal plants, independently of the indicator light)

Every 2000 operating hours or every 2 years (Wacker Neuson service center)	
Draining coolant	*3-36*
Replace the braking system fluid	*3-75*
Option	
Replace the dehumidifier of the air conditioning system	*3-85*
Replace the air conditioning refrigerant	*3-86*
Replace the air conditioning compressor oil	*3-86*
All steps for maintenance once a day and once a week (and all steps for maintenance at 500 and 1000 operating hours)	See operator's manual and service manual

Every 3000 operating hours or every 3 years (authorized service center)	
Replace the radiator cap	*3-37*
Replace the V-belt tension roller	*3-46*
Option	
Replace the air-conditioning V-belt	*3-48*
All steps for maintenance once a day and once a week (and all steps for maintenance at 500 and 1000 operating hours)	See operator's manual and service manual

Replacement depending on condition (authorized service center or engine manufacturer)	
Replace Diesel particulate filter (DPF; depending on engine design, output in multi-functional display)	*3-52*
Replace engine oil (DPF after long regeneration time; Display in the multifunctional display)	*3-32*

Notice!

Maintenance work with the note **authorized service center** must only be performed by the trained and qualified personnel of an authorized service center.

Notice!

The first maintenance interval starts at 50 operating hours and then at 500 operating hours. The maintenance meter counts down to 0 hours. A wrench symbol flashes as soon as the maintenance meter reaches this value.

3.6 Information on maintenance

Responsibilities and prerequisites

The working order and the service life of machines are heavily dependent on maintenance.

Daily and weekly servicing and maintenance must be performed by specifically trained personnel.

Have the maintenance, delivery inspection and the entries in the service booklet completed, otherwise warranty claims will not be acknowledged.

It is therefore in the interest of the machine owner to perform the mandatory maintenance.

This ensures optimal machine operation. Immediately repair or replace parts that are already damaged or not working properly before they are due for replacement.

Repair or replacement of safety-relevant parts may be performed.

Use only original spare parts for repairs.

The manufacturer shall not be liable for damage to the machine or personal injury caused by failure to observe the specific information and descriptions.

Important safety instructions on maintenance

- Follow all safety instructions given in this Operator's Manual.
- Follow the instructions given in chapter **Safety, safety instructions on maintenance** and **qualification of the operating and maintenance personnel** in this Operator's Manual.
- Wear protective gloves and clothing.
- Observe the danger indications and safety instructions during maintenance.
- In order to avoid injury hazard, do not perform work on a hot and running engine.
- Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.
- Attach a warning label to the control elements (for example **"Machine being serviced, do not start"**).
- Stop and park the vehicle – *see Preparing lubrication* on page 3-7
- In order to avoid damage to electronic components, do not perform welding work on the machine.

3.7 Maintenance accesses

Danger!

Burn hazard due to hot engine parts!

Can cause serious burns.

☞ *Stop the engine and let it cool down.*

☞ *Wear protective equipment.*

Danger!

Injury hazard due to rotating parts!

Rotating parts can cause serious injury or death.

☞ *Maintenance access only at engine standstill.*

Attention!

Injury hazard due to open maintenance access!

Can cause injury.

☞ *Take care to avoid injury hazards when the maintenance access door is open.*

Maintenance accesses

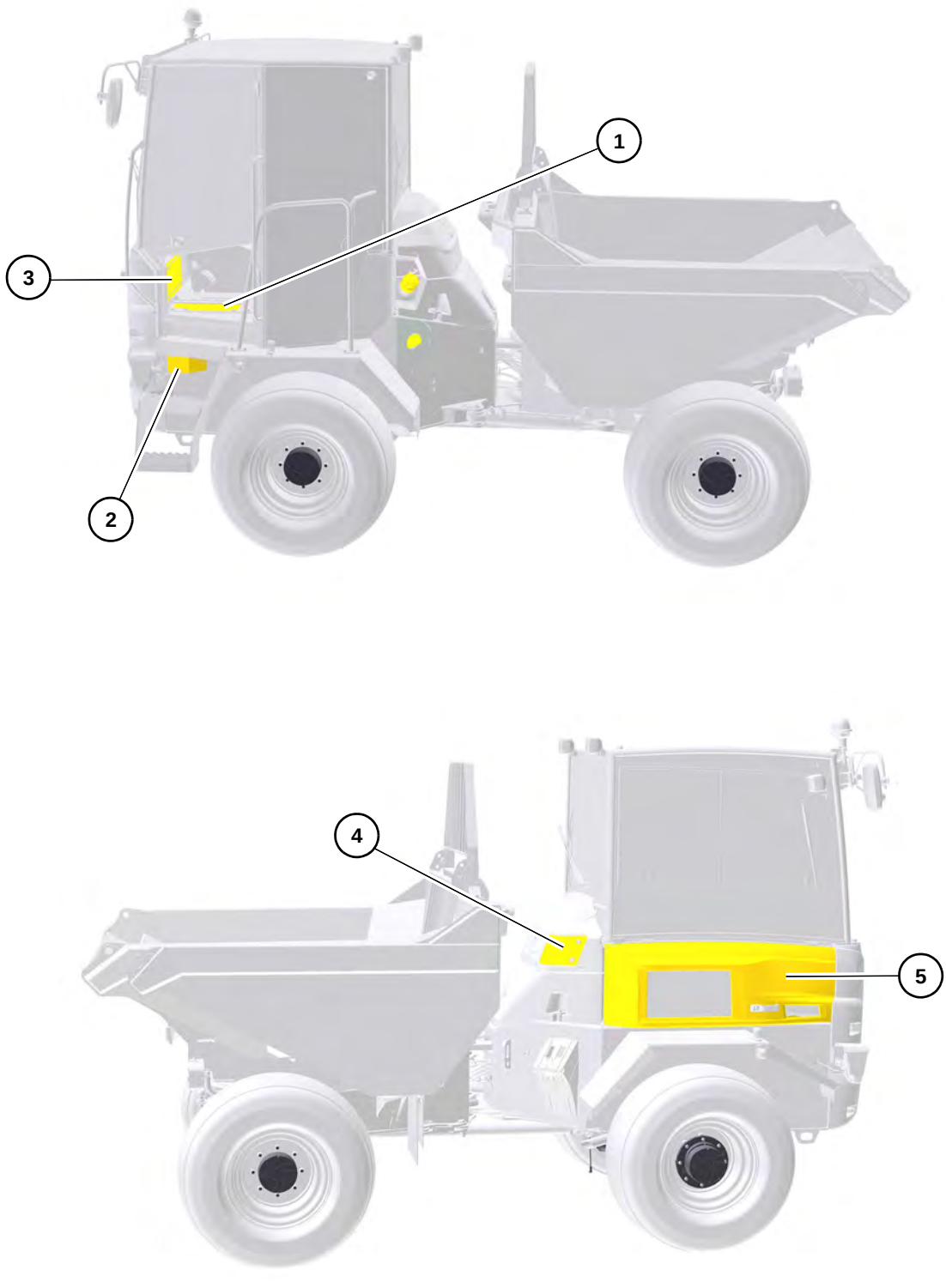


Fig. 37: Maintenance accesses

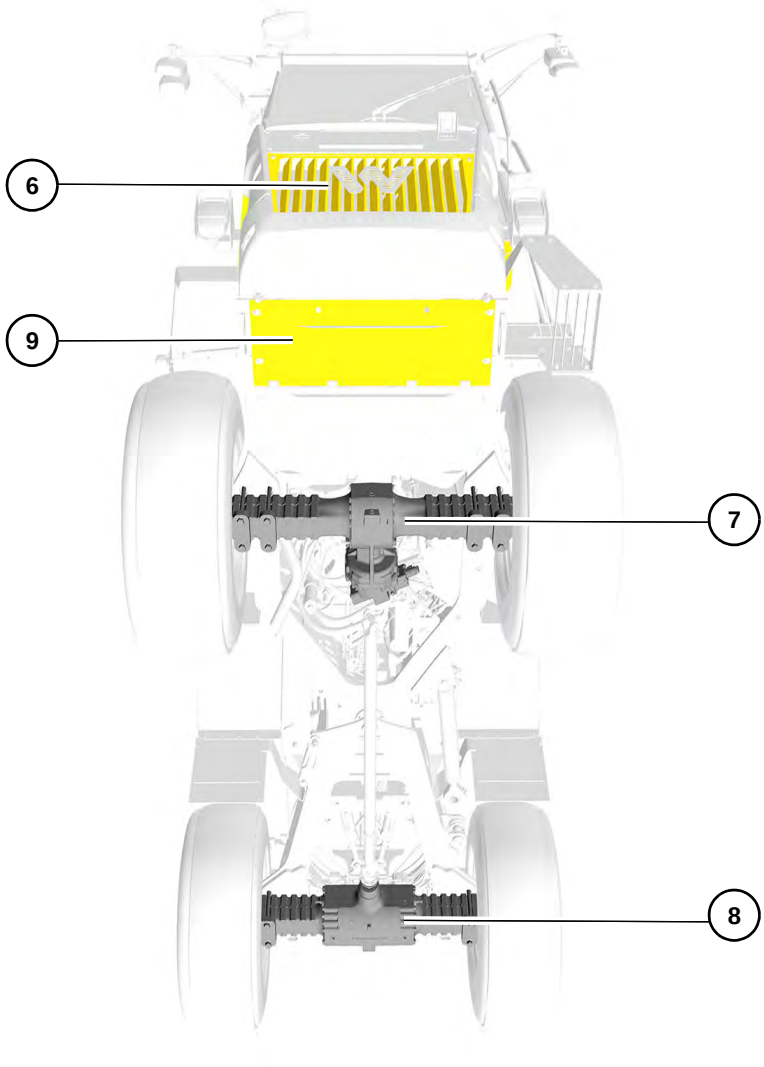


Fig. 40: Maintenance accesses

Item	Description	Item	Description
1	Valve compartment	6	Radiator
2	Battery master switch/jump-start equipment	7	Drive unit axle
3	Fuse box	8	Loader unit axle
4	Air conditioning - relays/filter	9	Underbody
5	Engine compartment		

3.8 battery master switch/jump-start equipment

Attention!

Risk of damage to the engine electronics!

☞ *In order to avoid damage to the engine electronics, wait at least three minutes after stopping the engine before switching off the battery master switch.*

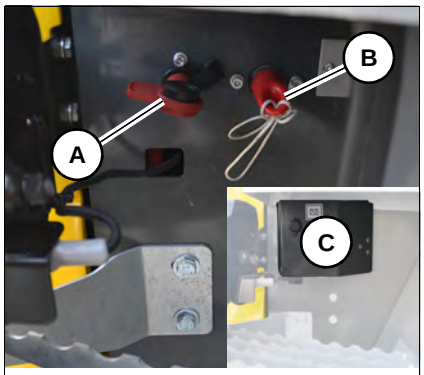


Fig. 41: Battery master switch/jump-start equipment

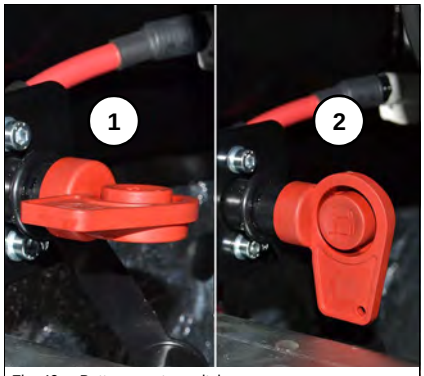


Fig. 42: Battery master switch

Battery master switch **A** and jump start unit **B** are located at the access and exit behind cover **C**.

Power supply	Key position
Established	1
Interrupted	2 (key removed)

3.9 Checking the engine control, warning system

Danger!

Accident hazard due to unintentional operation of the machine

Unintentional operation can cause serious injury or death.

☞ *Only operate the vehicle from the seat with the seat belt fastened.*

☞ *Insert the starting key and turn it to position **1**.*

➥ The indicator lights are tested when the starter is engaged and are illuminated for a few seconds.

☞ *After the indicator lights go off, turn the starting key to position **2** to start.*

➥ When all indicator lights go out, it is ensured that the engine control is fully functional.

3.10 Checking the cold starter

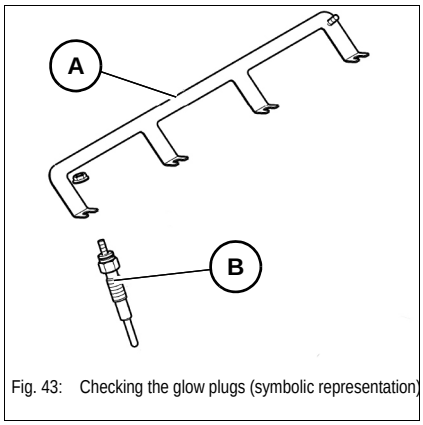


Fig. 43: Checking the glow plugs (symbolic representation)

Performing a visual check of the glow plugs and measuring the resistance

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Turn the starting key to position 1 and check that the preheating indicator light is on and then goes out again.*

➥ This ensures that the preheating relay and the preheating control unit are functional.

Notice!

The cold starter does not preheat at warm temperatures.

☞ *Open the engine cover.*

☞ *Use the battery master switch to interrupt the power supply.*

☞ *Perform a visual check of the power connection, busbar and glow plugs.*

☞ *Remove the busbar **A**.*

☞ *With the multimeter measure the resistance of the glow plugs **B** between the power connection and the ground of the plugs.*

- Infinite resistance
  ➥ Malfunctioning glow plug
- 0- 5 Ohm resistance
  ➥ Glow plug OK (static)
- < 1 Ohm resistance
  ➥ Glow plug OK (static) for ceramic glow plugs

3.11 Fuel system

Important information regarding the fuel system

Attention!

The fuel system is under high pressure.

Contact with fuel under high pressure can cause injury or death.

☞ *Avoid working on the high pressure lines of the fuel system.*

Notice!

In order to prevent the formation of condensation water, fill up the fuel tank nearly completely at the end of each working day.

Notice!

Do not run the fuel tank completely dry. Otherwise, air is drawn into the fuel system. This requires bleeding the fuel system.

Diesel fuel specification

Notice!

Engine damage due to incorrect or dirty diesel fuel.

- Only use clean diesel fuel according to the engine/machine **fluids and lubricants**.
- Do not use any diesel fuel with additives.

– *see chapter 3.1 Fluids and lubricants* on page 3-2

Refueling

Danger!

Burn hazard when refueling!

Fuels develop explosive and flammable mixtures with air that can cause serious burns or death.

☞ *Fire, open flames and smoking is prohibited.*

☞ *Keep the maintenance area clean.*

☞ *Do not refuel in closed rooms.*

☞ *Do not add gasoline to the diesel fuel.*

☞ *Let the engine cool down.*

Attention!

Health hazard due to diesel fuel!

Diesel fuel and fuel vapors are harmful to health!

☞ *Avoid contact with the skin, eyes and mouth.*

☞ *Seek medical attention immediately in case of accidents with diesel fuel.*

☞ *Wear protective equipment.*

Attention!

Fire hazard due to diesel fuel!

Diesel fuel gives off flammable vapors.

☞ *Fire, open flames and smoking is prohibited.*

☞ *Adding gasoline is prohibited.*

Notice!

Do not refuel with cans in order to avoid dirt in the fuel.

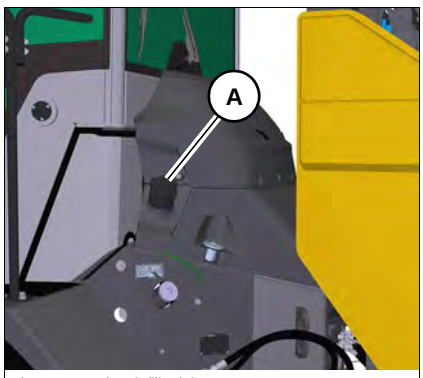


Fig. 44: Fuel tank filler inlet

Filler inlet **A** for the fuel tank is located in the drive unit, on the rear left.

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Unlock and remove filler cap **A**.*

☞ *Refuel the vehicle.*

☞ *Close and lock filler cap **A**.*

Stationary fuel pumps

Even the smallest particles of dirt can cause increased engine wear, malfunctions in the fuel system and reduced effectiveness of the fuel filters.

Refueling from barrels

If refueling from barrels cannot be avoided, note the following points:

- Barrels must neither be rolled nor tilted before refueling
- Protect the suction pipe opening of the barrel pump with a fine-mesh screen.
- Immerse it down to a max. 15 cm (5.9 in) above the bottom of the barrel.
- Only fill the tank using refueling aids (funnels or filler pipes) with an integral microfilmer.
- Keep all refueling containers clean.

Fuel prefilter water separator

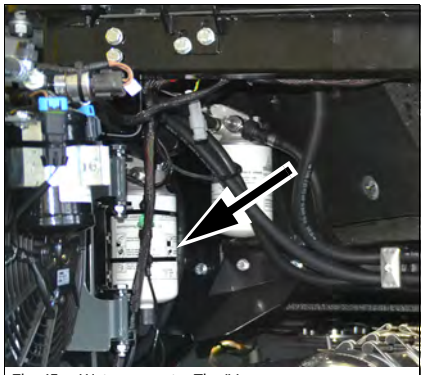


Fig. 45: Water separator Tier IV

The water separator is located on the right in the engine compartment.

A water/fuel mixture is collected in the water separator during operation.

Notice!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Emptying the water separator

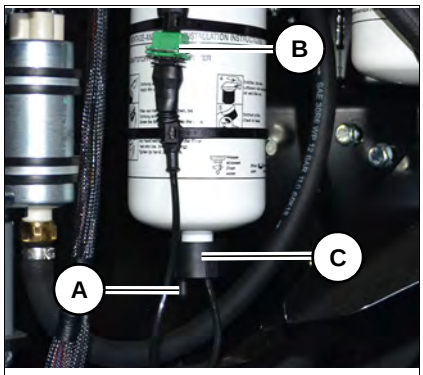


Fig. 46: Empty the water separator.

- If the error message **SPN 97** appears in the multifunctional display, drain the water/fuel mixture.

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Open the engine cover – see Maintenance accesses on page 3-18.*

☞ *Prepare a suitable container for collecting the fuel/water mixture.*

☞ *Connect a suitable hose to the drain device **A**.*

☞ *Disconnect the electrical connection **B**.*

☞ *Open drain valve **C**.*

☞ *Drain the fuel/water mixture into a receptacle until only fuel comes out.*

☞ *Close drain valve **C**.*

☞ *Remove the hose.*

☞ *Connect the electrical connection **B**.*

☞ *Close the engine cover.*

Replacing the water separator fuel filter element

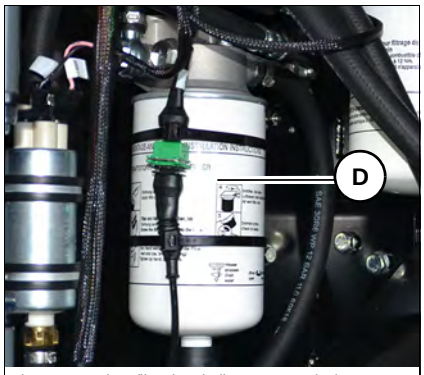


Fig. 47: Fuel prefilter (symbolic representation)

- ☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*
- ☞ *Open the engine cover – see Maintenance accesses on page 3-18.*
- ☞ *Prepare a suitable container for collecting the fuel/water mixture.*
- ☞ *Disconnect the electrical connection **B**.*
- ☞ *Open drain valve **C**.*
- ☞ *Drain fluid.*
- ☞ *Remove filter element **D**.*
- ☞ *Clean the sealing surface of the new filter element and thread pitches in filter housing **E** and slightly grease them with engine oil.*
- ☞ *Screw in new filter element **D**.*
- ☞ *Install drain valve **C**.*
- ☞ *Connect the electrical connection **B**.*
- ☞ *Close the engine cover.*
- ☞ *Bleed the fuel system – see Bleeding the fuel system on page 3-28.*
- ☞ *Check the filter housing for tightness after a short test run.*
- ☞ *Dispose of the old filter element in an environmentally friendly manner.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Replacing the fuel filter

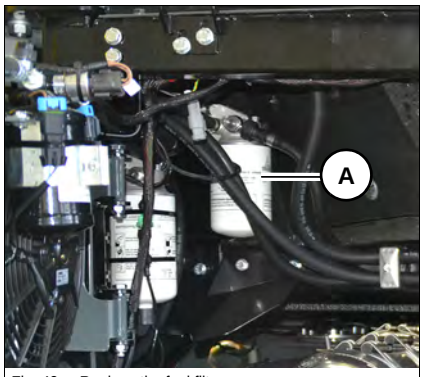


Fig. 48: Replace the fuel filter

Notice!

The engine is equipped with high-pressure injection sensitive to contaminants. Ensuring cleanliness during filter replacement is therefore absolutely necessary.

Notice!

The filter may never be prefilled. There is a risk of contamination!

- ☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*
- ☞ *Open the engine cover – see Maintenance accesses on page 3-18.*
- ☞ *Clean the area around fuel filter **A**.*
- ☞ *Prepare a suitable container for collecting the fuel/water mixture.*
- ☞ *Remove filter **A** with a suitable tool.*
- ☞ *Collect the fuel as it drains.*
- ☞ *Clean the sealing surface of the filter carrier with a clean lint-free cloth.*
- ☞ *Slightly oil the seal of the new filter.*
- ☞ *Screw on the new filter by hand until the seal makes contact and then tighten with a tightening torque of 10 – 12 Nm (7.4 – 8.9 ft.lbs).*
- ☞ *Bleed the fuel system – see Bleeding the fuel system on page 3-28.*
- ☞ *Check the fuel filter for tightness after a short test run.*
- ☞ *Close the engine cover.*
- ☞ *Dispose of the old fuel filter in an environmentally friendly manner.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Bleeding the fuel system

Attention!

Burn hazard due to hot engine components!

Can cause serious burns.

☞ *Stop the engine and let it cool down.*

☞ *Wear protective equipment.*

Bleed the fuel system in the following cases:

- After removing and fitting the fuel filter, prefilter or the fuel lines back on again.
- If the vehicle is put into operation after having been out of operation for more than 30 days.

Bleeding the fuel system

☞ *Stop and park the vehicle. Stop the engine* *– see Preparing lubrication on page 3-7.*

☞ *Fill up and close the fuel tank.*

☞ *Turn the starting key to position **1** and switch on the ignition.*

➥ The electronic fuel pump switches on for 20 seconds to bleed the fuel system and build up the necessary fuel pressure.

☞ *Wait until the electrical fuel pump is switched off by the control unit.*

☞ *Switch off the ignition.*

☞ *Repeat the procedure at least twice until the fuel system has been bled.*

Notice!

The fuel system can also be bled if the engine is at operating temperature.

Replace the breather filter of the fuel tank

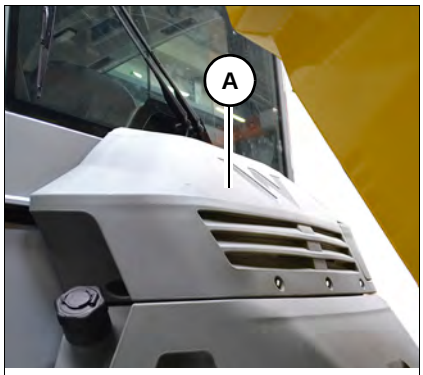


Fig. 49: Air conditioning system cover

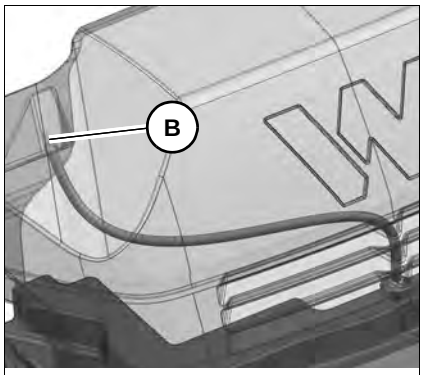


Fig. 50: Fuel tank breather filter

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Remove air conditioning system cover **A**.*

☞ *Unscrew the fuel tank breather filter **B**.*

☞ *Screw on a new fuel tank breather filter **B**.*

☞ *Assemble air conditioning system cover **A**.*

Emptying the fuel tank

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Unlock and remove filler cap.*

☞ *Remove fuel with a commercially available suction device.*

☞ *Refuel with new fuel.*

☞ *Close and lock filler cap **A**.*

☞ *Bleed the fuel system – see Bleeding the fuel system on page 3-28.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

3.12 Engine lubrication system

Important information regarding the engine lubrication system

Attention!

Caution when draining hot engine oil –

Burn hazard!

☞ *Wear protective gloves*

☞ *Use suitable tools*

Notice!

Engine damage due to incorrect engine oil level.

- The oil level must be between the MIN and MAX marks.

Notice!

Damage due to wrong engine oil.

- Use engine oil according to the Fluids and lubricants list.

Notice!

Damage due to adding engine oil too quickly.

- Add the engine oil slowly so it can go down without entering the intake system.

Notice!

Check the oil level once a day. We recommend checking it before starting the engine. After stopping a warm engine, wait at least 5 minutes before checking.

Notice!

Do not add engine oil above the MAX mark. This causes increased ash deposits in the particulate filter and reduces the regeneration and maintenance intervals. Overfilling can also cause engine damage.

Checking the engine oil level

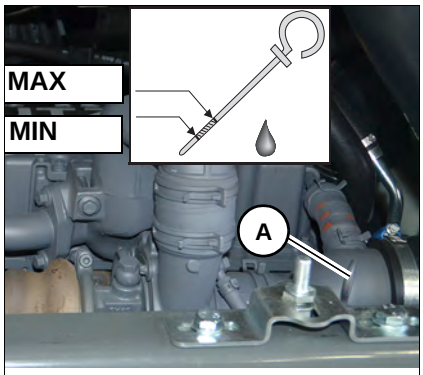


Fig. 51: Checking the engine-oil level

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*
☞ *Open the engine cover – see Maintenance accesses on page 3-18.*
☞ *Clean the area around the oil dipstick with a lint-free cloth.*
☞ *Pull out oil dipstick **A**.*
☞ *Wipe it with a lint-free cloth.*
☞ *Push oil dipstick back until the stop.*
☞ *Pull out the oil dipstick again and read off the oil level.*
➥ The oil level must be between the MIN and MAX marks.
➥ Add engine oil if necessary.
☞ *Push oil dipstick **A** or **B** back in as far as possible.*
☞ *Close the engine cover.*

Filling up engine oil

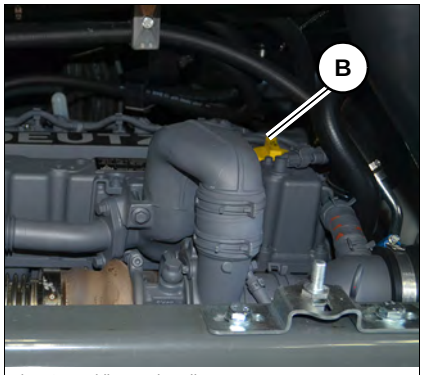


Fig. 52: Adding engine oil

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*
☞ *Open the engine cover – see Maintenance accesses on page 3-18.*
☞ *Clean the area around oil filler cap **B** with a lint-free cloth.*
☞ *Open filler cap **B**.*
☞ *Raise oil dipstick **A** slightly to allow any trapped air to escape.*
☞ *Add engine oil.*
☞ *Wait 5 minutes until all the oil has run into the oil sump.*
☞ *Check the oil level.*
☞ *Add oil if necessary and check the oil level again.*
☞ *Close filler cap **B**.*
☞ *Push oil dipstick **A** back in as far as possible.*
☞ *Close the engine cover.*

Notice!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Changing engine oil

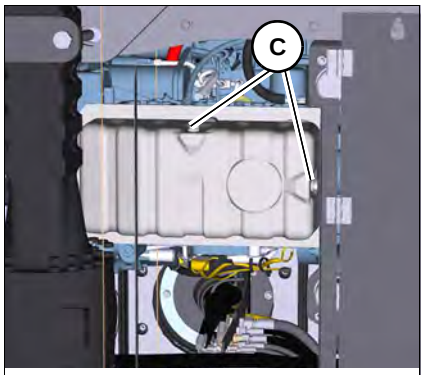


Fig. 53: Change the engine oil

☞ *Let the engine run until it reaches its operating temperature (oil temperature about 80°C/176°F).*

☞ *Park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Remove cover of underbody with a suitable tool.*

☞ *Place a suitable container under oil drain plug **C**.*

☞ *Clean the area around the oil drain plug with a lint-free cloth.*

☞ *Carefully unscrew oil drain plug **A** with a suitable tool.*

☞ *Completely drain the oil.*

☞ *Replace the sealing ring of oil drain plug **A**.*

☞ *Screw in oil drain plug **A**.*

☞ *Add fresh engine oil.*

☞ *Start the engine and let it run briefly at low speed.*

☞ *Stop the engine.*

☞ *Wait about 5 minutes until all the oil has run into the oil sump.*

☞ *Check the oil level with the oil dipstick and add engine oil if necessary.*

☞ *Completely remove all oil spills from the engine.*

☞ *Install the underbody with a suitable tool.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Replacing the engine-oil filter cartridge

Attention!

Hot engine oil –

Burn hazard!

☞ *Wear protective equipment.*

☞ *No smoking, no fire!*

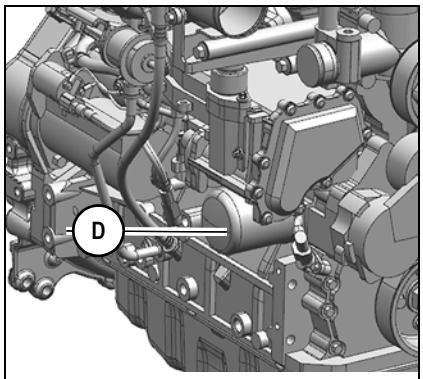


Fig. 54: Engine oil filter cartridge

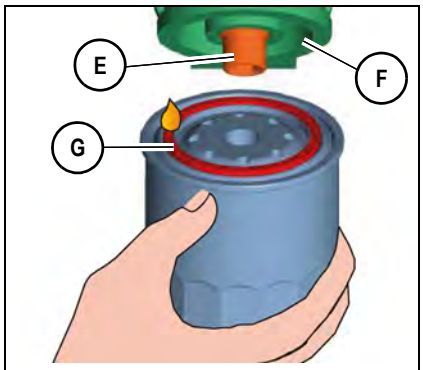


Fig. 55: Unscrewing the engine-oil filter cartridge

Oil filter Tier IV

- The engine-oil filter cartridge **D** is located on the right side of the engine.

☞ *Park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Assemble the maintenance cover behind the right wheel.*

☞ *Place a suitable container under the engine-oil filter cartridge **D**.*

☞ *Slowly loosen engine-oil filter cartridge **D** using a commercially available oil filter wrench.*

☞ *Let the oil drain into the container.*

☞ *Remove engine-oil filter cartridge **D** once the oil is completely drained.*

☞ *Ensure that the thread adapter **E** is correctly placed in the filter head.*

☞ *Clean the sealing surface **F** of the filter carrier with a lint-free, clean cloth.*

☞ *Grease rubber seal **F** of the new engine oil filter cartridge with new engine oil.*

☞ *Screw on the new engine-oil filter cartridge **D** by hand until the seal presses against the surface and then tighten to a tightening torque of 15 – 17 Nm (11 – 12.5 ft.lbs).*

☞ *Ensure that the oil level is correct.*

☞ *Let the engine run briefly.*

☞ *Stop the engine.*

☞ *Check the seal of engine-oil filter cartridge **D** and retighten by hand.*

☞ *Check the oil level and add engine oil if necessary.*

☞ *Completely remove all oil spills from the engine.*

☞ *Assemble the maintenance cover.*

☞ *Dispose of used engine-oil filter cartridges through approved methods for recycling.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

3.13 Cooling system

Important information regarding the cooling system

Danger!

Poisoning hazard due to hazardous substances!

Contact with hazardous substances can cause serious injury or death.

☞ *Wear protective equipment.*

☞ *Do not inhale or swallow coolant.*

☞ *Avoid contact of the coolant or antifreeze with the skin and eyes.*

Danger!

Burn hazard due to coolant or antifreeze!

The coolant and antifreeze are easily flammable fluids that can cause serious burns or death if they are brought into contact with fire or open flames.

☞ *Only perform maintenance on an engine that has cooled down.*

☞ *Do not smoke, avoid fire and open flames.*

Attention!

Burn hazard due to hot coolant!

At high temperatures, the cooling system is under pressure and can cause burning of the skin.

☞ *Wear protective equipment.*

☞ *Let the engine cool down.*

☞ *Carefully open the radiator cap.*

Notice!

Possible engine damage due to wrong coolant.

- Observe the fluids and lubricants table, and the coolant compound table.

Notice!

Possible engine damage due to low coolant level.

- Check the coolant level once a day.

Checking the coolant level

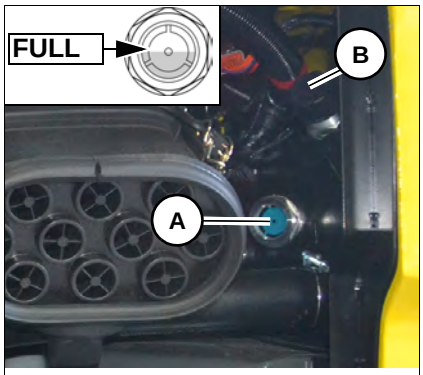


Fig. 56: Check the coolant level

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*
☞ *Let the engine and the coolant cool down.*
☞ *Open the engine cover – see Maintenance accesses on page 3-18.*
☞ *Check the coolant level on sight glass **A**.*
➥ The coolant level should be about in the middle of the sight glass.
☞ *Add coolant if the coolant level is below this mark.*
☞ *Close the engine cover.*

Notice!

Check the coolant level once a day before starting the engine.

Adding coolant

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*
☞ *Let the engine and the coolant cool down.*
☞ *Open the engine cover – see Maintenance accesses on page 3-18.*
☞ *Carefully unscrew filler cap **B** and release the pressure.*
☞ *Open filler cap **B**.*
☞ *Add coolant up to the middle of the sight glass.*
☞ *Close filler cap **B**.*
☞ *Start the engine and let it warm up for about 5 – 10 minutes.*
☞ *Stop the engine.*
☞ *Let the engine and the coolant cool down.*
☞ *Check the coolant level on sight glass **A**.*
➥ The coolant level should be about in the middle of the sight glass.
☞ *If necessary, add coolant and repeat the procedure until the coolant level remains constant.*
☞ *Close the engine cover.*

Leakage check

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*
☞ *Open the engine cover – see Maintenance accesses on page 3-18.*
☞ *Check the coolant hoses, the heater hoses and the hose connections for leaks.*
➥ No signs of leaking fluid may be visible.
☞ In case of damage, replace the hoses or re-establish the connections.
☞ Check the coolant level.
☞ *Close the engine cover.*

Checking the antifreeze compound

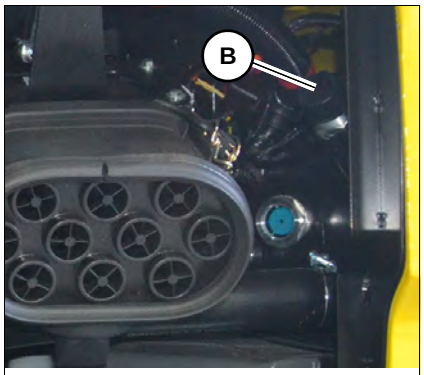


Fig. 57: Check the antifreeze

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Open the engine cover – see Maintenance accesses on page 3-18.*

☞ *Carefully unscrew filler cap **B** and release the pressure.*

☞ *Open filler cap **B**.*

☞ *Check the antifreeze.*

➥ Mixing ratio according to the compound table – *see Compound table* on page 2-8.

☞ Add antifreeze if the mixing ratio is incorrect.

☞ *Close filler cap **B**.*

☞ *Close the engine cover.*

Draining coolant

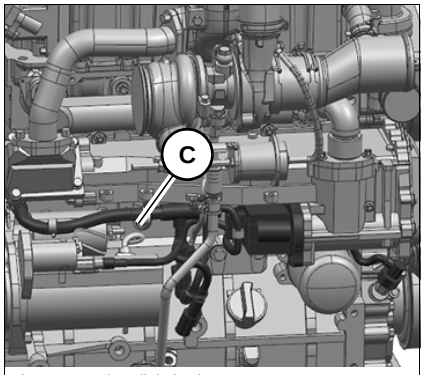


Fig. 58: Engine oil drain plug

Change coolant

☞ *Park the vehicle – see Preparing lubrication on page 3-7.*

☞ *Let the engine and the coolant cool down.*

☞ *Open the engine cover – see Maintenance accesses on page 3-18.*

☞ *Place a suitable container under the machine.*

☞ *Remove drain plug **C** from the engine with a suitable tool.*

☞ *Slowly open filler cap **B** and release the pressure.*

☞ *Remove filler cap **B**.*

☞ Drain the coolant into a receptacle.

☞ *Flush the cooling system with clear water to remove foreign bodies.*

☞ *Install drain plug **C** with a suitable tool.*

☞ *Slowly add clean water to the cooling system.*

☞ *Install filler cap **B**.*

☞ *Start the engine and let it run at idling speed until the coolant temperature reaches 49 to 66°C (120 to 150°F).*

☞ *Stop the engine and let it cool down.*

☞ *Slowly open filler cap **B** and release the pressure.*

☞ *Remove filler cap **B**.*

☞ *Remove drain plug **C** from the engine with a suitable tool.*

☞ Drain the water into a receptacle.

☞ *Flush the cooling system with clear water to remove foreign bodies.*

☞ *Install drain plug **C** with a suitable tool.*

☞ *Slowly add new coolant via filler cap **B**.*

➥ Mixing ratio – *see Coolant* on page 2-8.

☞ *Check the coolant level – see Checking the coolant level on page 3-35.*

☞ *Close the engine cover.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Replace the radiator cap

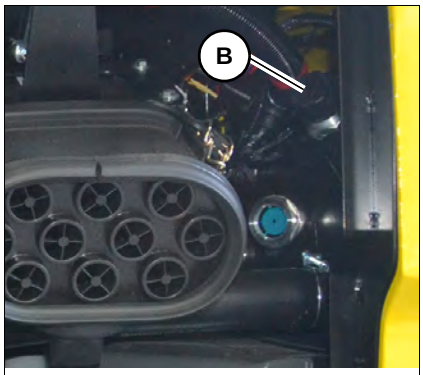


Fig. 59: Replace the radiator cap

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Let the engine and the coolant cool down.*

☞ *Open the engine cover – see Maintenance accesses on page 3-18.*

☞ *Carefully unscrew filler cap **B** and release the pressure.*

☞ *Open and remove filler cap **B**.*

☞ *Close the new filler cap **B**.*

☞ *Close the engine cover.*

Cleaning the radiator

Danger!

Burn hazard during maintenance on radiators!

Hot radiators can cause burns.

☞ *Stop the engine and let it cool down.*

☞ *Wear protective equipment.*

Notice!

Damage to diesel engine and hydraulic system due to dirt on the radiator.

- Check and if necessary clean the radiator once a day.
- In dusty or dirty work conditions, clean more frequently than indicated in the maintenance plan.

Notice!

Damage to radiator fins during cleaning.

- Keep a safe distance from the radiator during cleaning.
- Use oil-free compressed air (2 bar/29 psi max.) to clean.

Fig. 60: Fan grid

The water and hydraulic oil radiators are located behind the fan grid **A**.

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Remove dust and other foreign bodies from the fins with compressed air.*

➥ In case of heavier contaminants also remove fan grid **A**.

Clean condenser (option)

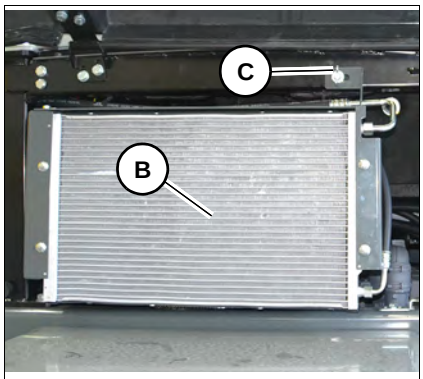


Fig. 61: Air-conditioning condenser

The condenser **B** is located behind the *engine cover*.

☞ *Open the engine cover – see Maintenance accesses on page 3-18.*

☞ *Loosen screw **C** and swivel the condenser to the side.*

☞ *Blow compressed air from the inside to the outside to remove dust and other foreign bodies from the fins of condenser.*

☞ *Close the engine cover.*

3.14 Air filter

Important information regarding the air filter

☞ *Store filters in their original packaging and in a dry place.*

☞ *Check air filter attachments, air intake hoses and the air filter element for damage, and immediately repair or replace them if necessary.*

☞ *Check the screws at the induction manifold and the clamps for tightness.*

Air filter monitoring

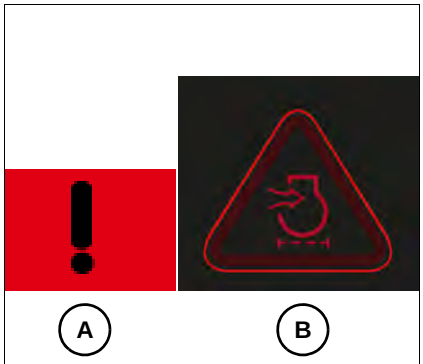


Fig. 62: Indicator lights (symbolic representation)

Damage to diesel engine due to dirty air filter.

- Replace the air filter elements if the indicator light “General malfunction” **A** illuminates red, the buzzer sounds and symbol **B** appears in the multifunctional display.
- Do not clean air filter elements, replace them.
- Do not use any damaged air filter elements.

Checking the air intake

Notice!

Possible damage to the engine due to contaminated air intake.

- Check once a day for cleanliness before commissioning.

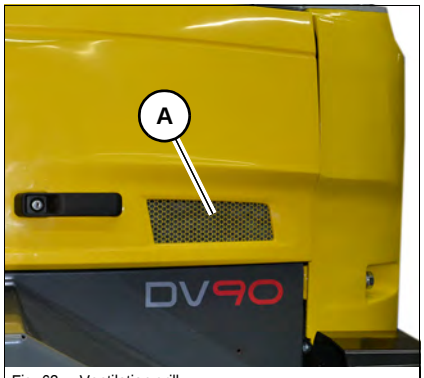


Fig. 63: Ventilation grill

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Check and if necessary clean ventilation grill **A**.*

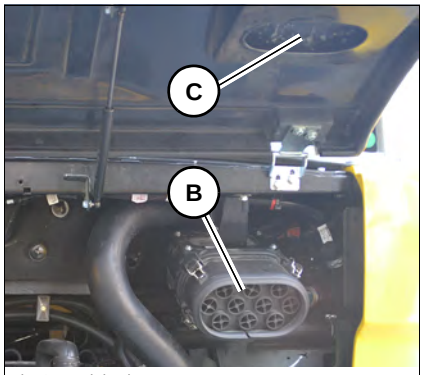


Fig. 64: Air intake

☞ *Open the engine cover – see Maintenance accesses on page 3-18.*

☞ *Check and if necessary clean air intake **B** at the air filter.*

☞ *Check and if necessary clean air duct **C**.*

☞ *Close the engine cover.*

Replacing the air filter

Notice!

Damage to air-filter elements when in use in acidic air for longer periods of time.

- Replace the air filter elements according to the multifunctional display, every 1000 o/h or once a year at the latest.
- Replace after 50 o/h when in extensive use in environments with acidic air, such as acid production facilities, steel and aluminum mills, chemical plants and other nonferrous-metal plants, independently of the multifunctional display.

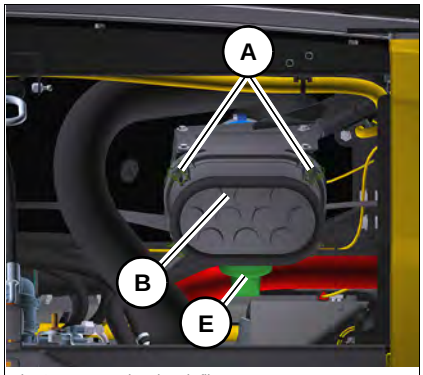


Fig. 65: Removing the air filter cover

☞ *Park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Open the engine cover – see Maintenance accesses on page 3-18.*

☞ *Remove dirt and dust from the air filter housing and the area around it.*

☞ *Fold bow clips **A** on air filter cover **B** to the outside.*

☞ *Remove air filter cover **B**.*

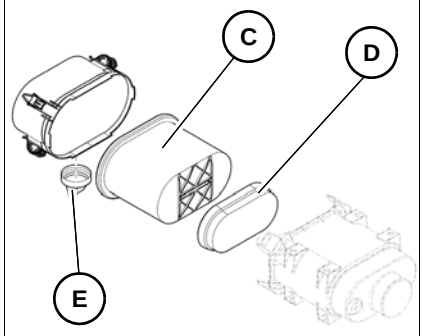


Fig. 66: Removing the air filter element and insert

☞ *Remove air filter element **C**.*

☞ *Remove all dirt (dust) inside the upper and lower housing sections, including dust valve **E**.*

☞ *Clean the parts with a clean lint-free cloth, do not use compressed air.*

☞ *Remove air filter insert **D**.*

☞ *Check the new air filter insert **D** and air filter element **C** for damage and carefully insert them in the housing section.*

☞ *Put the air filter cover **B** in place.*

☞ *Close bow clips **A**.*

☞ *Close the engine cover.*

Notice!

Ensure that dust valve **E** shows downward once it is installed.

Clean the dust valve

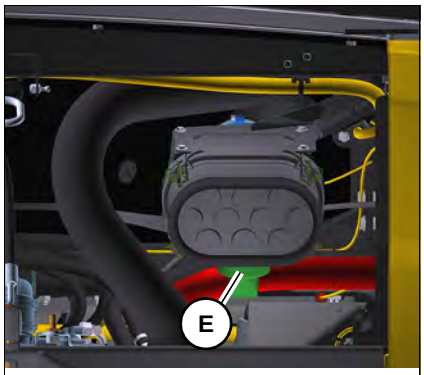


Fig. 67: Service flap on the left

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*
☞ *Open the engine cover – see Maintenance accesses on page 3-18.*
☞ *Strip dust valve **E**.*
☞ *Clean dust valve **E**.*
☞ *Put dust valve **E** back on.*
☞ *Close the engine cover.*

Replacing/cleaning the cabin air filter

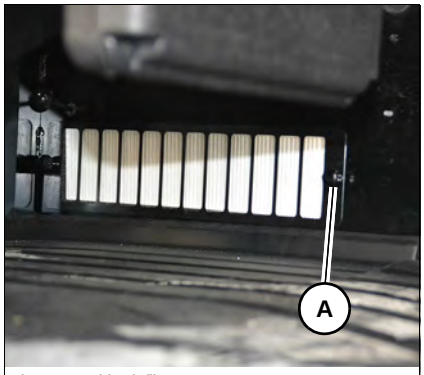


Fig. 68: Cabin air filter

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*
☞ *Remove cover **A**.*
☞ *Remove the cabin air filter.*
☞ *Clean the cabin air filter, insert a new one if necessary.*
☞ *Install cover **A**.*

3.15 Washer system

Important information regarding the washer system

Only use glass cleaner (with antifreeze if necessary) for refilling.

Checking the fluid level and adding fluid

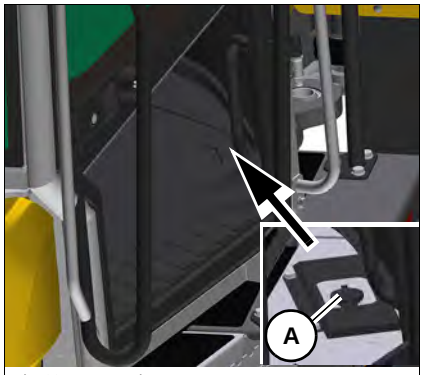


Fig. 69: Reservoir

The tank filler inlet is located at the rear left in the cab under the floor mat.

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Remove foot mat.*

☞ *Check the fluid level in reservoir **A** and add fluid if necessary.*

☞ *Attach the floor mat.*

3.16 V-belt

Danger!

Only check or retension/replace the V-belt when the engine is stopped
–

Risk of injury!

- Stop the engine before performing inspection work in the engine compartment!
- Interrupting power supply
- Let the engine cool down.

Check the V-belt once a day, and retension it if necessary.

Retension new V-belts after about 15 minutes of running time.

Checking the V-belt

Notice!

The V-belts are automatically tensioned by the tension roller. Replace V-belt according to maintenance interval.

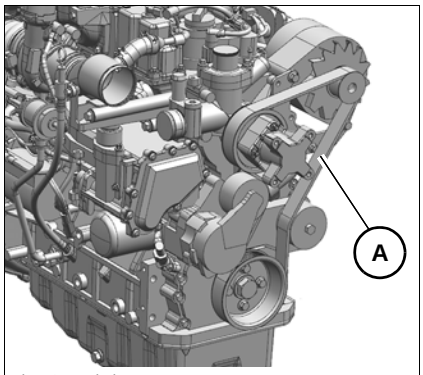


Fig. 70: V-belt

☞ *Stop and park the machine. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Interrupt the power supply.*

☞ *Let the engine cool down.*

☞ *Open the engine cover – see Maintenance accesses on page 3-17.*

☞ *Carefully check V-belt **A** for damage, cracks or cuts.*

- If the V-belt is damaged:

☞ *Replace the V-belt.*

☞ *Replace the V-belt if it touches the base of the V-belt groove or the disks of the pulley.*

Replacing the V-belt

Attention!

Overtensioning the V-belt can damage the V-belt, V-belt guide, alternator and water pump bearing.

☞ *Check the V-belt tension.*

Attention!

Contamination of the V-belt can lead to the V-belt slipping.

☞ *Avoid contact of oil, grease, or similar substances with the V-belt.*

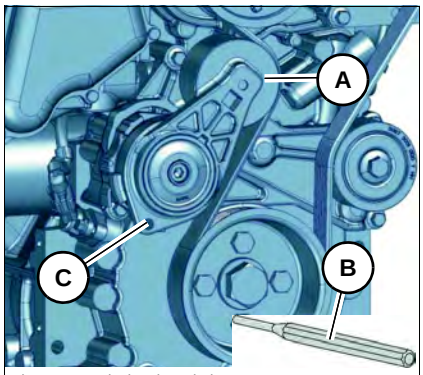


Fig. 71: Replacing the V-belt

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Interrupt the power supply.*

☞ *Let the engine cool down.*

☞ *Open the engine cover – see Maintenance accesses on page 3-17.*

☞ *Press tensioning pulley **A** with a suitable tool anticlockwise until tensioning roller **A** can be fastened in mounting bore **C** with holding pin **B**.*

☞ The V-belt is now tension-free.

☞ *Remove the old V-belt starting with the tensioning pulley.*

☞ *Check all pulleys visually that are driven by the V-belt.*

☞ Ensure that all pulleys are clean and not damaged and rotate freely.

☞ *Insert the new V-belt.*

☞ *Press tension roller anticlockwise with a suitable tool until holding pin **B** can be removed.*

☞ *Tighten the V-belt.*

☞ *Check visually whether the V-belt is aligned correctly.*

☞ *Re-establish the power supply.*

☞ *Close the engine cover.*

Replace the V-belt tension roller

Attention!

Overtensioning the V-belt can damage the V-belt, V-belt guide, alternator and water pump bearing.

☞ *Check the V-belt tension.*

Attention!

Contamination of the V-belt can lead to the V-belt slipping.

☞ *Avoid contact of oil, grease, or similar substances with the V-belt.*

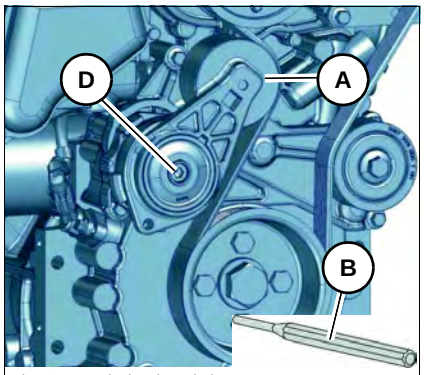


Fig. 72: Replacing the V-belt

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Interrupt the power supply.*

☞ *Let the engine cool down.*

☞ *Open the engine cover – see Maintenance accesses on page 3-17.*

☞ *Remove the V-belt – see Replacing the V-belt on page 3-45.*

☞ *Loosen fastening screw connection **D**.*

☞ *Remove tension roller **A** using holding pin**B**.*

☞ *Insert new holding pin, fasten with holding pin **B** and tighten fastening screw **D**.*

☞ *Re-assemble V-belt – see Replacing the V-belt on page 3-45.*

☞ *Re-establish the power supply.*

☞ *Close the engine cover.*

Checking the V-belt of the air conditioning system (option)

Attention!

If the V-belt is damaged, damage can result on the air-conditioning compressor.

☞ *Replace V-belts with damage, cracks, cuts, etc.*

☞ *Avoid contact of oil, grease or similar substances with the V-belt.*

Notice!

The V-belt is self-tensioning. Replace V-belt according to maintenance interval.

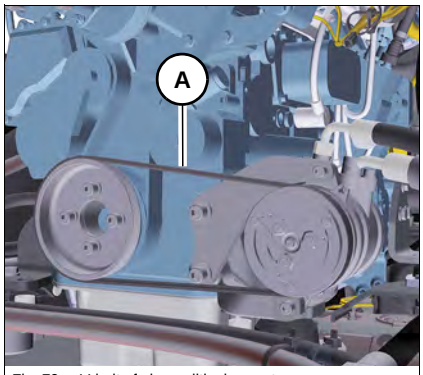


Fig. 73: V-belt of air conditioning system

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Interrupt the power supply.*

☞ *Let the engine cool down.*

☞ *Open the engine cover – see Maintenance accesses on page 3-17.*

☞ *Carefully check V-belt **A** for damage, cracks or cuts.*

- If the V-belt is damaged:

☞ *Replace the V-belt.*

☞ *Replace the V-belt if it touches the base of the V-belt groove or the disks of the pulley.*

Replacing the V-belt of the air conditioning system (option)

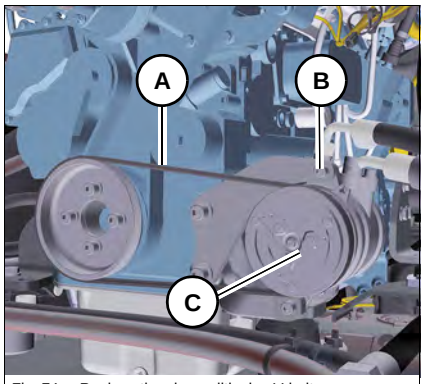


Fig. 74: Replace the air-conditioning V-belt

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Interrupt the power supply.*

☞ *Let the engine cool down.*

☞ *Open the engine cover – see Maintenance accesses on page 3-17.*

☞ *Remove fastening screws **B** with a suitable tool.*

☞ *Carefully press air conditioning compressor **C** in the direction of the engine using a suitable tool.*

☞ The V-belt is now tension-free.

☞ *Remove the V-belt.*

☞ *Insert the new V-belt.*

☞ *Fix the air-conditioning compressor **C** in the correct position with the fastening screw **D**.*

☞ *Check visually whether the V-belt is aligned correctly.*

☞ *Re-establish the power supply.*

☞ *Close the engine cover.*

3.17 Exhaust system

Danger!

Health hazard due to exhaust gases!

Inhaling exhaust gases may be fatal!

☞ *Do not inhale exhaust gases.*

☞ *Use only exhaust gas suction systems that are suitable for the temperatures achieved during regeneration.*

☞ *Ensure sufficient ventilation during operation in enclosed premises.*

Danger!

Burn hazard at the exhaust system! During regeneration, exhaust temperatures of approx. 600°C (1112°F) can occur on the exhaust system.

Can cause burns.

☞ *Avoid contact with the exhaust system.*

The following applies to engines with DPF:

Notice!

The soot produced by burning diesel fuel is collected and burned in the diesel particulate filter at regular intervals. This process is called regeneration. Regeneration takes around 45 minutes. If the dirt in the diesel particulate filter reaches a critical value, engine output is reduced and operation has to be stopped.

Notice!

The soot load is the contamination level in the diesel particulate filter. Among other things, this level depends on the load on the diesel engine.

- High engine load = few deposits
- Low engine load = more deposits

Notice!

Wacker Neuson Linz GmbH recommends not to influence the automatic regeneration system if possible. If it is necessary to stop or deactivate regeneration once, have the system run a new automatic regeneration attempt at next start. This prolongs the service life of the particulate filter. An increasing degree of soiling of the particulate filter is indicated by shorter intervals between the automatic regenerations.

Types of regeneration

Type	Description
Automatic regeneration	Is automatically performed by engine; work may be performed with the vehicle.
Standstill regeneration	Started by the operator; vehicle may not be started or used for work.
Service regeneration	Only necessary if standstill regeneration can no longer be carried out. Done by an authorized service center/engine manufacturer (service tool is necessary)

Standstill regeneration

Attention!

Possible damage to engine or particulate filter.
Fire hazard at the exhaust system.

☞ *There must be no easily flammable material in the direct vicinity of the exhaust system, in particular near the end pipe.*

☞ *Do not perform regeneration in surroundings with easily flammable material.*

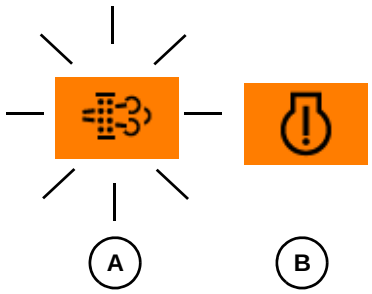


Fig. 75: Indicator lights standstill regeneration

Notice!

Only perform regeneration when the indicator lights **A** flash.
In this case, automatic regeneration is no longer possible. A **standstill** regeneration must be started.
Also, if the indicator lights **B** lights up, the engine out put is reduced. In this case, the vehicle can only be operated to a limited extent.

Initiate standstill regeneration

Notice!

The engine temperature must be 60°C (140°F) for regeneration.

Notice!

Vehicle travel or operation is prohibited during standstill regeneration.

- Do not leave the machine during regeneration.
- Do not interrupt standstill regeneration!

☞ *Drive the vehicle out of the danger zone and into a safe area.*

☞ *Operate engine in idling speed and activate parking brake.*

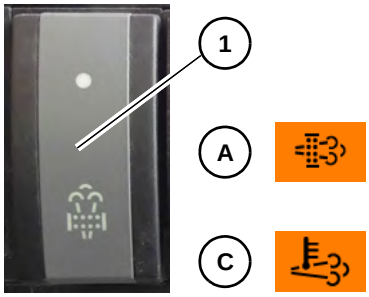


Fig. 76: Starting regeneration

☞ *Keep Regeneration **1** button pressed for 3 seconds.*

☞ *Indicator lights **A** and **C** illuminate during regeneration.*

➥ During the warm-up phase, the symbols for exhaust gas temperature, regeneration and exhaust-gas treatment light up in the display element.
The clock symbol starts flashing and the engine speed is automatically increased to 2000 min^{-1} (2000 rpm).

Notice!

The duration of the warm-up phase depends on the coolant and exhaust gas temperature.

➥ At the end of the standstill regeneration, the clock symbol starts to flash again in the display element and rpm is reduced again.

Replacing the diesel particulate filter

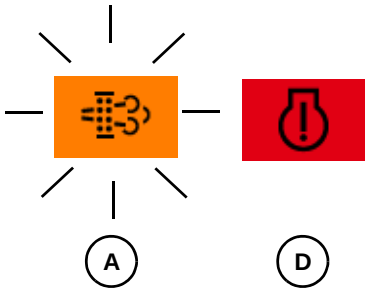


Fig. 77 Indicator lights (regeneration not possible

If a regeneration is no longer possible, the indicator lights **A** start flashing and the indicator lights **D** light up simultaneously.

The engine output is automatically reduced to 1380 min^{-1} (1380 rpm).

In this case, only a service regeneration is possible with the service tool of the engine manufacturer.

The diesel particulate filter must be replaced if necessary, depending on its contamination level.

Notice!

These activities may only be performed by authorized service centers of the engine manufacturer during the warranty period.

3.18 Pressure check

General

- Set the primary pressure limiting valves (PPLV) at maximum engine speed.
- *Perform the checks and settings according to the test report*
  – see Test report on page 3-57.

Fig. 78: Wacker Neuson measuring kit

- We recommend using the Wacker Neuson measuring kit:
  - 6 pressure gages (2 x 60 bar/870 psi, 2 x 400 bar/5802 psi, 2 x 600 bar/8702 psi).
  - Color-coded measuring lines.
  - Magnetic mounting plate for simple attachment to the machine.
  - Sturdy plastic case with additional storage space.
- The Wacker Neuson screw connection set for measurement contains all standard measurement connections and the necessary screw connections to make hydraulic system checks easier.
- The Wacker Neuson vacuum pump is ideal for performing repair work on the hydraulics to reduce hydraulic oil losses to a minimum.

Prerequisites for pressure check

- Run the machine warm before checking the pressure!
  Min. hydraulic oil temperature 50°C (122°F).
- Remove all objects around the machine.
- Do not leave the vehicle during pressure check.

Attention!

A lack of cleanliness and incorrect handling can cause damage and leaks on components!

Preparations

☞ *Stop and park the vehicle. Stop the engine.*

☞ *Carefully open the cap of the hydraulic reservoir to the first notch and fully release the pressure.*

☞ *Open the cap of the hydraulic reservoir.*

☞ *Install the measuring ports at the specific test points – see Measurement connections on page 3-54.*

☞ *Connect the measuring instrument.*

☞ *Bleed the hydraulic pump.*

☞ *Close the cap of the hydraulic reservoir.*

☞ *Conduct pressure release.*

☞ Turn the starting key to position 1.

☞ Move the joystick from side to side until the stop several times.

Measurement connections

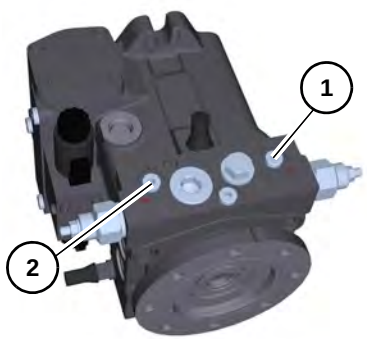


Fig. 79: Hydraulic pump measurement connection

Item	Description
1	Hydraulic pump MA connection
2	Hydraulic pump MB connection

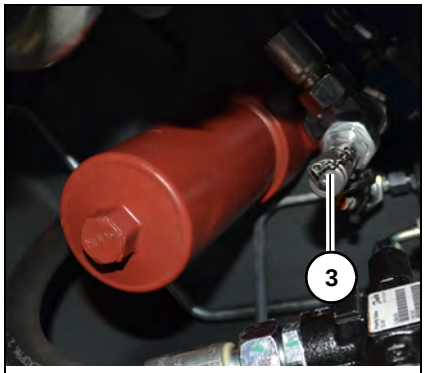


Fig. 80: Work hydraulics measuring port

Item	Description
3	Work hydraulics/priority valve L070 measuring port

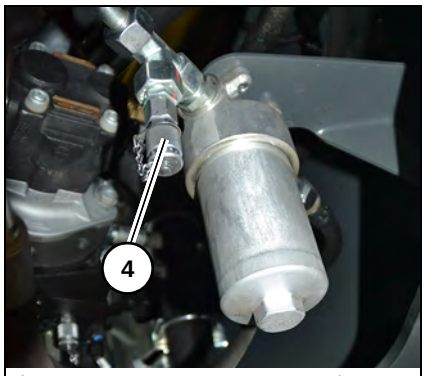


Fig. 81: Boost pressure measurement connection

Item	Description
4	Boost pressure measuring port L068

Checking main pressure

☞ *Install measuring port to hydraulic pump connection MA and MB.*
☞ *Connect the measuring instrument with measuring port.*
☞ *Route the wiring so as to avoid damage.*
☞ *Start the engine.*
☞ *Apply the parking brake.*
☞ *Press the switch for brake test.*
☞ *Select forward travel direction and 2nd speed.*

Notice!

Machine travel against the parking brake is possible only for 30 seconds after switching on the starter!

☞ *Press the accelerator pedal to the limit.*
☞ Check the pressure at maximum engine speed.
☞ *Check and make a note of the pressure values – see Test report on page 3-57.*
☞ *Select reverse travel direction.*
☞ *Press the accelerator pedal to the limit.*
☞ *Check the pressure at maximum engine speed.*
☞ *Check and make a note of the pressure values – see Test report on page 3-57.*
☞ *Stop the engine.*
☞ *Disconnect the measuring instrument from measuring ports **1** and **2**.*
☞ *Dismantle measuring port to hydraulic pump connection MA and MB.*

Checking boost pressure

☞ *Connect the measuring instrument with measuring port **4** (L068).*
☞ *Ensure that no wires or cables can be damaged.*
☞ *Start the engine.*
☞ *Apply the parking brake.*
☞ *Check and make a note of the pressure at idling speed – see Test report on page 3-57.*
☞ *Check and make a note of the pressure at maximum rpm – see Test report on page 3-57.*
☞ *Stop the engine.*
☞ *Disconnect the measuring instrument from connection **4**.*

Checking the operating hydraulics pressure

☞ *Connect the measuring instrument with measurement connection **3**.*
☞ *Ensure that no wires or cables can be damaged.*
☞ *Start the engine.*
☞ *Activate work position.*
☞ *Apply the parking brake.*
☞ *Actuate joystick and operate tilt cylinder (raise/lower skip) to stop.*
☞ *Check and make a note of the pressure at idling speed.*
☞ *Check and make a note of the pressure at maximum speed.*
☞ *Stop the engine.*
☞ *Disconnect measuring instrument from connection **3**.*

Control the pressure of the priority valve (steering system)

☞ *Connect the measuring instrument with measurement connection **3**.*

☞ *Ensure that no wires or cables can be damaged.*

☞ *Start the engine.*

☞ *Turn the steering wheel clockwise up to the stop (steer to the right) and keep the position.*

☞ *Check and make a note of the pressure at idling speed.*

☞ *Turn the steering wheel anticlockwise up to the stop (steer to the left) and keep the position.*

☞ *Check and make a note of the pressure at idling speed.*

☞ *Stop the engine.*

☞ *Disconnect measuring instrument from connection **3**.*

3.19 Test report

Boost pressure

Supply by gear pump in hydraulic pump	Specified values		1st measurement	2nd measurement
Measurement connection	Engine speed	Pressure in bar (psi)		
Measuring port L068	Idling speed	25 $^{+/-2}$ (392 $^{+/-29}$)		
	max.	27 $^{+/-2}$ (392 $^{+/-29}$)		

Work hydraulics

Supply by gear pump T003			Specified values		1st measurement	2nd measurement
Function	Movement	Measurement connection	Engine speed	Pressure in bar (psi)		
Tilting out the skip	UP	Measuring port L070	max.	240$^{+/-5}$ (3481$^{+/-73}$)		
	DOWN					

Priority valve check (steering system)

Measurement connection				Specified values		1st measurement	2nd measurement
				Engine speed	Pressure in bar (psi)		
in fully turned steering system		Measuring port L070		Idling speed	180$^{+10/-0}$ (2611$^{+145/-0}$)		

Main pressure

Supply by hydraulic pump T008			Specified values		1st measurement	2nd measurement
Function	Movement	Measurement connection	Engine speed	Pressure in bar (psi)		
Machine travel	Forward	MA	max.	27 $^{+/-2}$ (392 $^{+/- 29}$)		
		MB		500 $^{+/-10}$ (7252 $^{+/-145}$)		
Machine travel	Reverse	MA	max.	500 $^{+/-10}$ (7252 $^{+/-145}$)		
		MB		27 $^{+/-2}$ (392 $^{+/- 29}$)		

3.20 Hydraulic system

Important information on the hydraulic system

Attention!

Burn hazard due to hot hydraulic oil!

Hot hydraulic oil can cause burning to the skin, serious injury or death.

☞ *Release the pressure in the hydraulic system.*

☞ *Let the engine cool down.*

☞ *Wear protective equipment.*

Attention!

Injury hazard due to fluid escaping under pressure!

Hydraulic oil escaping under pressure can penetrate the skin and cause serious injury or death.

☞ *Do not operate the machine with leaking or damaged hydraulic system components.*

☞ *Open the breather filter carefully to slowly release the pressure inside the reservoir.*

☞ *Wear protective equipment. If oil contacts the eye, flush immediately with clean water and seek medical treatment.*

☞ *Malfunctioning or leaking screw connections, hose connections and pressure lines must be immediately repaired (search for hydraulic leaks with a piece of cardboard).*

Notice!

Damage due to wrong hydraulic oil.

- Use hydraulic oil according to **Fluids and lubricants**.

Notice!

Damage to hydraulic system due to incorrect hydraulic oil level.

- With a warm engine, the hydraulic oil must be about at the middle of the sight glass.
- Check the hydraulic oil level once a day.

Notice!

Damage to hydraulic system due to dirty hydraulic oil.

- Always add hydraulic oil using the filling screen.
- If the hydraulic oil in the sight glass is cloudy, this indicates that water or air has penetrated the hydraulic system.
- If the filter of the hydraulic system is dirty, replace the component.

Checking the hydraulic oil level

Sight glass **A** is located at the rear left on the drive unit above the mudguard.

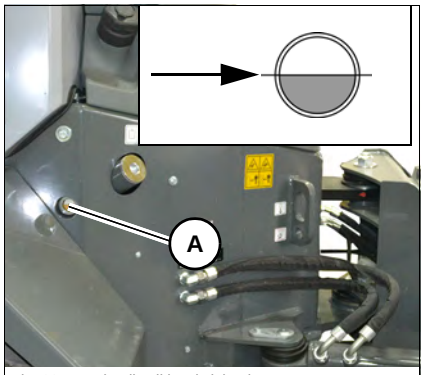


Fig. 82: Hydraulic oil level sight glass

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Operate the joystick repeatedly to release the pressure in the hydraulic system.*

☞ *Check the oil level on sight glass **A**.*

➥ With a warm engine, the oil level must be about at the middle of the sight glass.

☞ *Add hydraulic oil if the oil level is below this mark.*

Adding hydraulic oil

Filler opening **B** for hydraulic oil is located at the rear left on the drive unit above the mudguard.

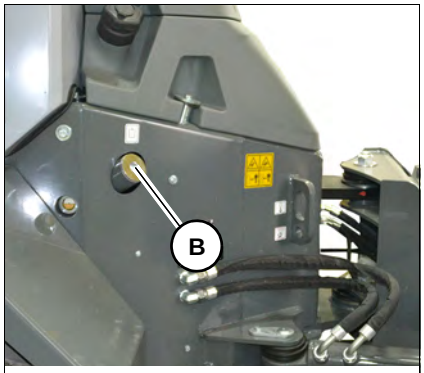


Fig. 83: Hydraulic reservoir cap

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Operate the joystick repeatedly to release the pressure in the hydraulic system.*

☞ *Clean the area around filler opening **B**.*

☞ *Open the cover of the hydraulic oil filler opening a little to release pressure.*

☞ *Remove filler opening cover.*

☞ *Add hydraulic oil until the oil level is approximately in the middle of the sight glass.*

☞ *Place the cover onto the filler opening and screw it tight.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Changing hydraulic oil

Notice!

Only change the hydraulic oil if it is warm (about 50°C).
Lower the skip before replacing the oil.

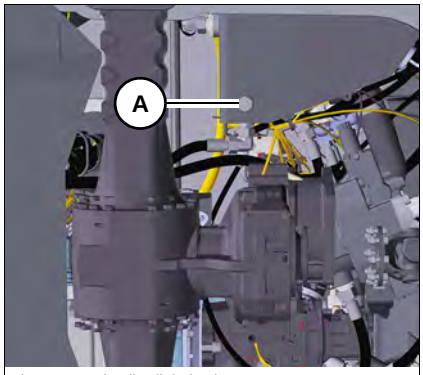


Fig. 84: Hydraulic oil drain plug

- ☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*
- ☞ *Let the engine cool down.*
- ☞ *Operate the joystick repeatedly to release the pressure in the hydraulic system.*
- ☞ *Place a suitable container under oil drain plug **A**.*
- ☞ *Open oil drain plug **A**.*
- ☞ *Completely drain the oil.*
  - ☞ *Check the hydraulic oil reservoir for dirt and clean it if necessary.*
- ☞ *Screw in oil drain plug **A**.*

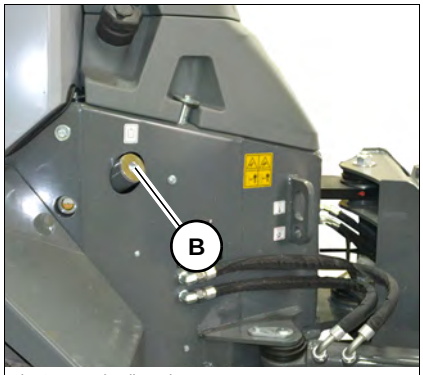


Fig. 85: Hydraulic tank cap

- ☞ *Clean the area around the filler opening **B** for hydraulic oil.*
- ☞ *Open the cover of the filler opening a little to release pressure.*
- ☞ *Remove filler opening cover.*
  - ☞ *Check the hydraulic oil reservoir for dirt and clean it if necessary.*
- ☞ *Add clean hydraulic oil until the oil level is approximately in the middle of the sight glass.*
- ☞ *Place the cover onto the filler opening and screw it tight.*
- ☞ *Start the engine and perform all hydraulic functions.*
- ☞ *Stop the engine.*
- ☞ *Check the hydraulic oil level and add oil if necessary.*
- ☞ *Completely remove all hydraulic oil spills.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Replacing the filter insert of the machine-travel hydraulics

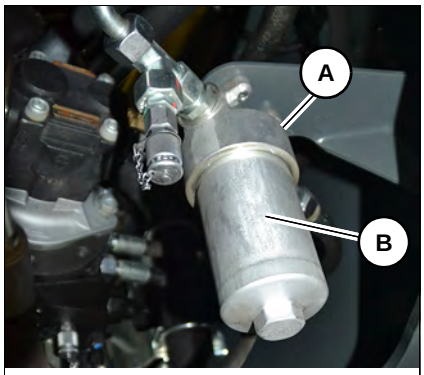


Fig. 86: Machine-travel hydraulics filter

The drive hydraulics filter is located on the right below the drive unit.

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Let the engine cool down.*

☞ *Operate the joystick repeatedly to release the pressure in the hydraulic system.*

☞ *Place a suitable container under the hydraulic filter.*

☞ *Thoroughly clean the outside of hydraulic oil filter element **A**.*

☞ *Remove filter housing **B** with a suitable tool.*

☞ *Remove the old filter element.*

☞ *Insert the new filter element.*

☞ *Install filter housing **B**.*

☞ *Check the hydraulic oil level and add oil if necessary.*

☞ *Completely remove all hydraulic oil spills.*

☞ *Dispose of the replaced filter element in an environmentally friendly manner.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Replacing the filter insert of the operating hydraulics

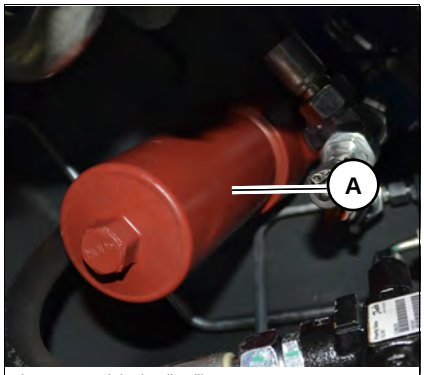


Fig. 87: Work hydraulics filter

The work hydraulics filter is located below at the drive unit near the articulation.

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Let the engine cool down.*

☞ *Operate the joystick repeatedly to release the pressure in the hydraulic system.*

☞ *Place a suitable container under the hydraulic filter.*

☞ *Thoroughly clean the outside of hydraulic oil filter element **A**.*

☞ *Open the cover of the hydraulic oil filler opening a little to release pressure.*

☞ *Remove the cover from the filler opening of the hydraulic oil.*

☞ *Put the vacuum pump on the filler opening and switch it on.*

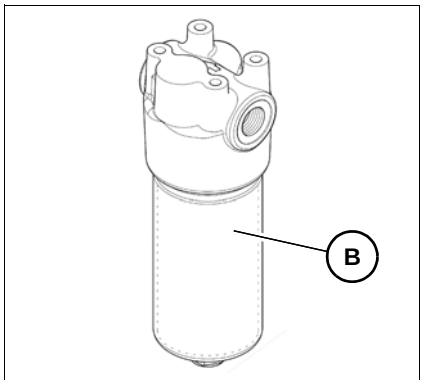


Fig. 88: Work hydraulics filter (symbolic depiction)

☞ *Remove filter housing **B** with a suitable tool.*

☞ *Remove the old filter element.*

☞ *Insert the new filter element.*

☞ *Install filter housing **B**.*

☞ *Switch off and remove the exhauster.*

☞ *Check the hydraulic oil level and add oil if necessary.*

☞ *Completely remove all hydraulic oil spills.*

☞ *Dispose of the replaced filter element in an environmentally friendly manner.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Draining condensation water from the hydraulic oil reservoir

Check the hydraulic oil reservoir after a longer standstill or every 500 o/h. Drain the condensation water if there is any.

The hydraulic oil replacement interval must be shortened if the condensation water is not drained regularly.

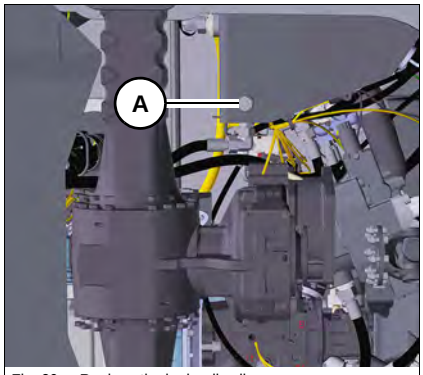


Fig. 89: Replace the hydraulic oil

Draining condensation water from the hydraulic oil reservoir

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Let the engine cool down.*

☞ *Operate the joystick repeatedly to release the pressure in the hydraulic system.*

☞ *Place a suitable container under oil drain plug **A**.*

☞ *Open oil drain plug **A**.*

☞ *Drain the condensation water (mixed with hydraulic oil) until only pure hydraulic oil flows out.*

☞ *Screw in oil drain plug **A**.*

☞ *Check the hydraulic oil level and add oil if necessary.*

☞ *Completely remove all hydraulic oil spills.*

☞ *Close the hydraulic oil reservoir.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Replace the breather filter of the hydraulic oil reservoir

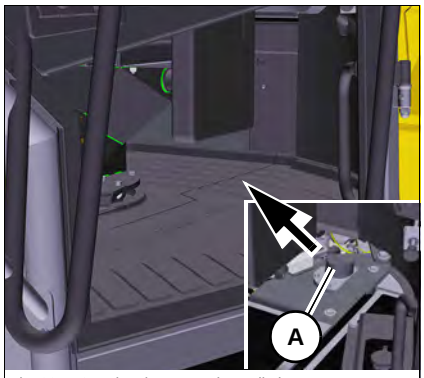


Fig. 90: Opening the reservoir ventilation

The hydraulic tank breather filter is located at the rear left in the drive unit.

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Let the engine cool down.*

☞ *Operate the joystick repeatedly to release the pressure in the hydraulic system.*

☞ *Remove foot mat.*

☞ *Remove the floor panel*

☞ *Remove the insulating mat.*

☞ *Unscrew breather filter **A**.*

☞ *Screw in the new breather filter **A**.*

☞ *Attach the insulating mat.*

☞ *Install the base plate.*

☞ *Attach the floor mat.*

Checking the hydraulic system for leaks

Notice!

Leaks and damaged pressure lines must be immediately repaired or replaced. This not only increases the operating safety of the vehicle but also helps to protect the environment.

- Leaks and damaged pressure lines must be immediately repaired or replaced.
- Have hydraulic hoses replaced every 6 years from the date of manufacture, even if they do not seem to be damaged.

- Do not operate the vehicle with leaking or damaged hydraulic system components.
- Re-tighten leaking screw connections and hose connections only when the system is not under pressure. Release the pressure before working on pressurized lines.
- Do not weld or solder damaged or leaking pressure lines and screw connections, but have them replaced.
- Wear protective equipment.

Checking the condition and age of hydraulic hoses

Notice!

Leaks and damaged pressure lines must be immediately repaired or replaced. This not only increases the operating safety of the vehicle but also helps to protect the environment.

- Malfunctioning or leaking pressure lines must be immediately removed.
- Have hydraulic hoses replaced every 6 years from the date of manufacture, even if they do not seem to be damaged.

In this respect, we recommend that you observe all the relevant safety regulations for hydraulic lines, as well as the safety regulations regarding accident prevention and occupational health and safety in your country. Also observe DIN 20 066, part Tl. 5.

The article number is marked on the clamping section, and the date of manufacture is indicated on the hose of each hose connection.

Have a line replaced if one of the following problems is detected:

- Damaged or leaky hydraulic seals.
- Worn or torn shells or uncovered reinforcement branches.
- Expanded shells in several positions.
- Entangled or crushed movable parts.
- Foreign bodies jammed or stuck in protective layers.

3.21 Tires

Danger!

Accident hazard due to incorrect maintenance!

Can cause serious injury or death.

- *All repair work on wheels, and tires, etc. may be performed only by expert personnel.*

Tires

Notice!

Use only tires and rims that are authorized for the vehicle *– see chapter 2.4 Tires* on page 2-5.

Notice!

Depending on load, work and ground conditions, the extent of wear of the tires can be different, therefore exchange the wheels regularly.

Inspection work

Checking the tires at regular intervals increases operational safety and the service life of the tires, and reduces machine downtimes.

Perform the following maintenance once a day:

☞ *Visual check of the tire condition.*

☞ *Check the tire pressure.*

☞ *Check the tires and rims for damage and wear.*

☞ *Check the wheel nuts for tightness and retighten them if necessary.*

☞ *Remove foreign bodies from the tire tread.*

☞ *Remove dirt, debris, dust, etc. from the tires.*

Wheel change

Attention!

Handling the wheels incorrectly can cause damage (for example to the threads of the wheel bolts).

☞ *Use suitable assembly tools, for example covering sleeves for the studs, a jack.*

Notice!

After changing a wheel, check the wheel nuts for tightness after 10 operating hours. Retighten the wheel nuts if necessary.

Notice!

Always replace both wheels of an axle!

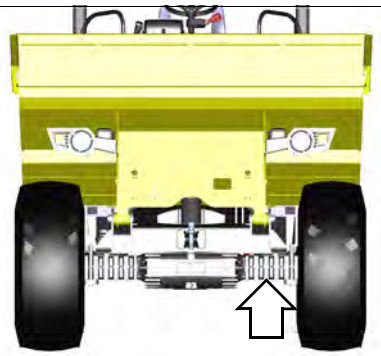


Fig. 91: Raising the machine (symbolic representation)

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Apply the parking brake.*

☞ *Use wheel chocks to prevent the machine from rolling away.*

☞ *Loosen the wheel nuts of the wheel you want to remove.*

☞ *Place a jack with a lift capacity of 5000 kg (11,023 lbs) under the axle mounting ensuring stability.*

☞ *Raise the machine on the side where you want to change a wheel.*

☞ *Check the machine is standing firmly.*

☞ *Secure the machine with trestles in appropriate places.*

Notice!

Trestles must be positioned so as to avoid machine damage.

☞ *Loosen and remove the wheel nuts.*

☞ *Remove the wheel.*

☞ *Place the new wheel onto the wheel bolts.*

➥ Bear in mind the correct direction of rotation of the tires.

☞ *Tighten opposite wheel nuts alternately.*

☞ *Remove the trestles.*

☞ *Lower the side of the machine where the wheel has been changed.*

☞ *Tighten opposite wheel nuts alternately to 450 Nm (332 ft.lbs). .*

3.22 Axles/planetary drives/transfer gearboxes

Attention!

Some components of the machine and the oil are still very hot after switching off the machine –

Burn and injury hazard!

☞ *Wait until the axles have cooled down before taking up work.*

☞ *Slowly open the plug to release the pressure inside.*

Notice!

Drain oil only after running the machine for a longer period of time!

Notice!

Do not lift the vehicle one-sided for the following tasks!

Leakage check

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Check the planetary drives, axles and transfer gearbox for leaks.*

☞ In case of signs for leaked hydraulic oil, detect and seal the leak, repair or replace the damaged component.

☞ Check the oil level.

Checking the oil level of the planetary drive and adding oil

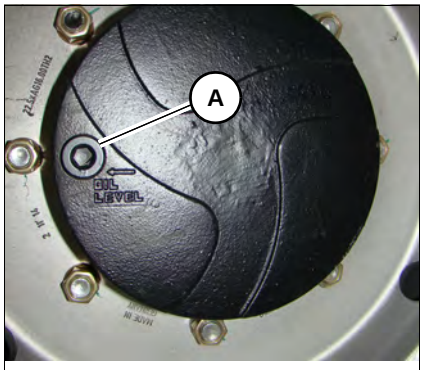


Fig. 92: Checking the oil level of the planetary drive and adding oil

☞ *Position the vehicle so that filler plug **A** is horizontal in the middle of the axle.*

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Allow the axles to cool down.*

☞ *Place a suitable container under the oil plug.*

☞ *Clean the area around oil plug **A**.*

☞ *Remove oil plug **A** with a suitable tool.*

☞ *The oil level must reach the lower edge of the oil plug.*

☞ If the oil level is below the lower edge of *oil plug* **A,** fill until it slightly overflows.

☞ *Assemble oil plug **A** with a suitable tool.*

☞ *Move the machine a few metres.*

☞ *Wait 5 minutes and check the oil level.*

➥ If the oil level is not correct, repeat the procedure.

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Oil change planetary drive

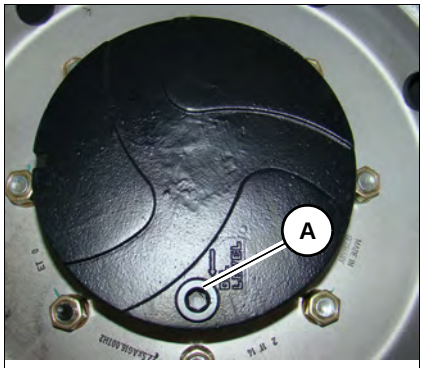


Fig. 93: Oil change planetary drive

☞ *Position the vehicle such that oil plug **A** is at the bottom.*

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Allow the axles to cool down.*

☞ *Place a suitable container under the oil plug.*

☞ *Remove oil plug **A** with a suitable tool.*

➥ The oil flows out of the opening.

☞ *Position the machine so that filler plug **A** is horizontal in the middle of the axle.*

☞ *Add oil through oil plug **A** until it flows out a little.*

☞ *Assemble oil plug **A** with a suitable tool.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Checking the oil level of the axles and adding oil

Notice!

Check oil level at both axles.

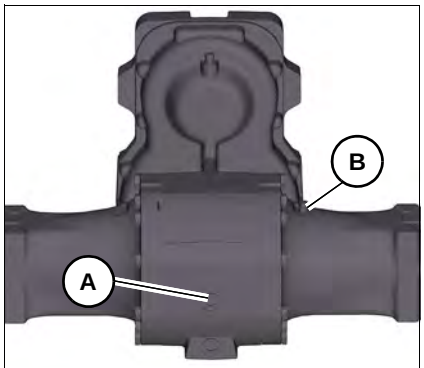


Fig. 94: Check/refill oil level - axle of drive unit

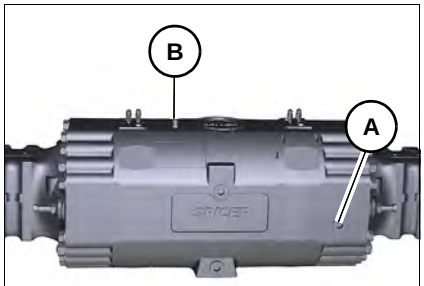


Fig. 95: Check/refill oil level - axle of loader unit

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Allow the axles to cool down.*

☞ *Place a suitable receptacle under the oil check and filler plug **A**.*

☞ *Clean the area around the oil check and filler plug **A**.*

☞ *Remove the oil check and filler plug **A** with a suitable tool.*

☞ *The oil level must reach the lower edge of the opening.*

☞ If the oil level is below the lower edge:

☞ Open vent screw **B**.

☞ Add oil through oil check and filler plug ***A*** until it flows out a little.

☞ Close vent screw **B**.

☞ *Install the oil check and filler plugs **A** with a suitable tool.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Oil change in axles

Notice!

Conduct oil change at both axles.

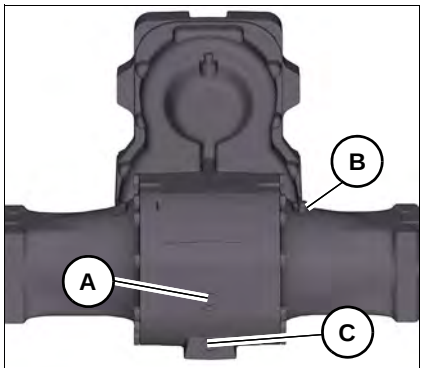


Fig. 96: Oil change in axles drive unit

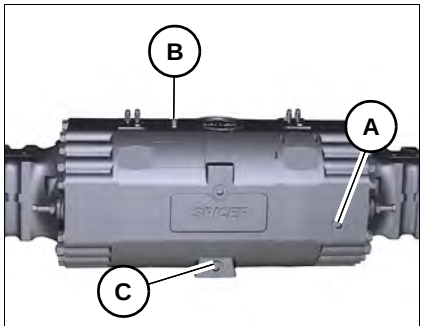


Fig. 97: Oil change in loader unit axle

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Allow the axles to cool down.*

☞ *Place a suitable container under oil drain plug **C**.*

☞ *Remove oil drain plug **C** with a suitable tool.*

➥ The oil flows out of the opening.

☞ *Install oil drain plug **C** with a suitable tool.*

☞ *Remove the oil check and filler plug **A** with a suitable tool.*

☞ *Open vent screw **B**.*

☞ *Add oil through oil check and filler plug **A** until it flows out a little.*

☞ *Close vent screw **B**.*

☞ *Install the oil check and filler plugs **A** with a suitable tool.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Checking the oil level of the transfer gearbox and adding oil

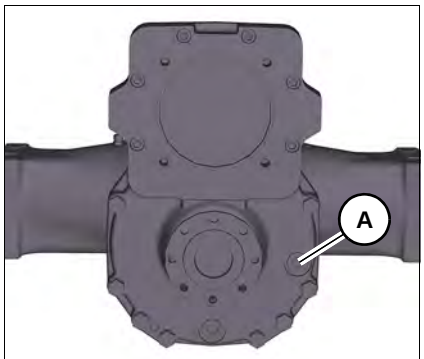


Fig. 98: Checking the oil level of the transfer gearbox and adding oil

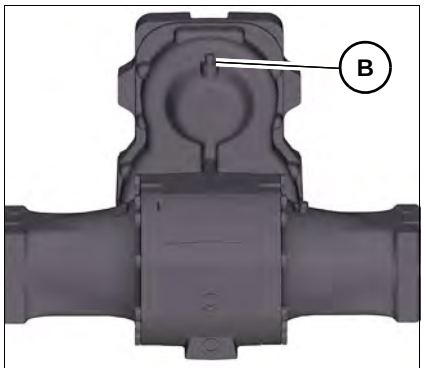


Fig. 99: Checking the oil level of the transfer gearbox and adding oil

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Allow the axles to cool down.*

☞ *Place a suitable receptacle under the oil check and filler plug **A**.*

☞ *Remove the oil check and filler plug **A** with a suitable tool.*

☞ *The oil level must reach the lower edge of the opening.*

- ☞ If the oil level is below the lower edge:
  - ☞ Open vent screw **B**.
  - ☞ Add oil through oil check and filler plug ***A*** until it flows out a little.
  - ☞ Close vent screw **B**.

☞ *Install the oil check and filler plugs **A** with a suitable tool.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

Oil change on transfer gearbox

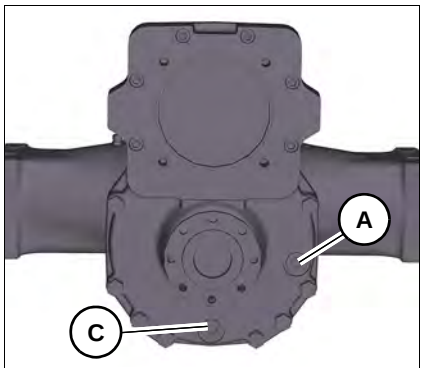


Fig. 100: Oil change on transfer gearbox

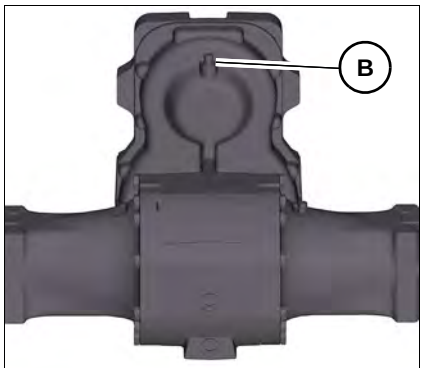


Fig. 101: Oil change on transfer gearbox

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Allow the axles to cool down.*

☞ *Place a suitable container under oil drain plug **C**.*

☞ *Remove oil drain plug **C** with a suitable tool.*

➥ The oil flows out of the opening.

☞ *Install oil drain plug **C** with a suitable tool.*

☞ *Remove the oil check and filler plug **A** with a suitable tool.*

☞ *Open vent screw **B**.*

☞ *Add oil through oil check and filler plug **A** until it flows out a little.*

☞ *Close vent screw **B**.*

☞ *Install the oil check and filler plugs **A** with a suitable tool.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

3.23 Braking system

Danger!

In case of incorrect work on the braking system

Caution, danger!

☞ *Any work or activity on the braking system may be performed only by expert personnel.*

Notice!

The brake circuit is filled with hydraulic oil – *see Fluids and lubricants* on page 3-2.

Leakage check

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Check the brake hoses, brake lines and connections at the brake-fluid reservoir, brake cylinder and axles for leaks.*

☞ In case of damage, replace the brake hoses or re-establish the connections.

☞ Check the brake fluid.

Checking the brake fluid

The brake fluid container is located on the right of the steering wheel.

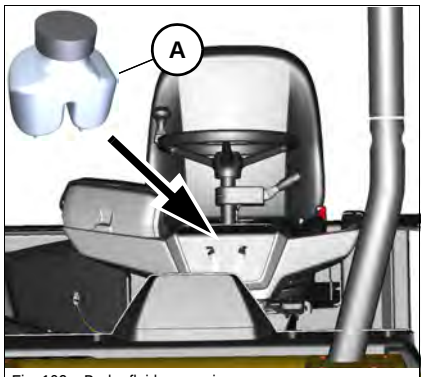


Fig. 102: Brake-fluid reservoir

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Remove cover of operating console.*

☞ *Check the fluid level in oil reservoir **A**.*

➥ The fluid level must reach the mark indicated.

☞ If the oil level is too low, add oil and bleed the braking system if necessary.

☞ *Install cover of operating console.*

Replacing/bleeding the brake fluid

Notice!

Carry out procedure at all the bleed screws of the service brake on the axles.

- DV60: Two bleed screws on the drive unit.
- DV90, DV100: Two bleed screws each per axle.

Notice!

At bleed screw **B2**, air can escape from the system. For checking, mount a transparent hose on the bleed screw.

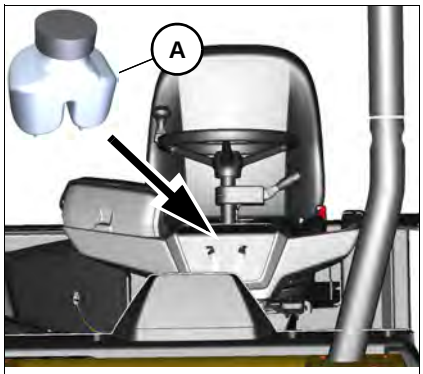


Fig. 103: Brake-fluid reservoir

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Remove the underbody maintenance access with a suitable tool – see Maintenance accesses on page 3-18.*

☞ *Position suitable container under the bleed screw for collecting the hydraulic oil.*

☞ *Fill brake fluid reservoir **A** completely with hydraulic oil.*

Notice!

The brake fluid reservoir should not be completely emptied during the rinsing, so that air does not enter the braking system. If necessary, refill hydraulic oil during the rinsing.

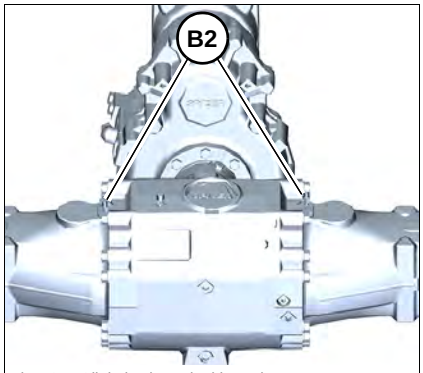


Fig. 104: Oil drain plug axle drive unit

☞ *Open bleed screw **B2**.*

☞ *Rinse the braking system.*

☞ Press through the control pedal completely.

☞ Release pedal and wait 3 seconds.

☞ Repeat the procedure till 0.4 l (0.11 gal) have been drained.

☞ *Close bleed screw **B2**.*

Fig. 105: Oil drain plug - axle loader unit

☞ *Press the brake pedal multiple times to build up pressure.*

☞ Hold pedal.

☞ Open bleed screw **B2**.

☞ Press through the control pedal completely and close the bleed screw **B2**.

☞ Wait 3 seconds.

☞ Repeat process at least four times.

☞ *Press the control pedal and perform a functional check – see Brake test on page 3-77*

➥ The brake pedal must not be “spongy”.

➥ Rinse the braking system again if the brake pedal is “spongy”.

☞ *Check the brake fluid level, correct it if necessary – see Checking the brake fluid on page 3-74.*

☞ *Close brake fluid container **A**.*

☞ *Install the underbody maintenance access with a suitable tool – see Maintenance accesses on page 3-18.*

Environment!

Use a suitable container to collect fluids and lubricants as they flow out and dispose of them in an environmentally friendly manner.

3.24 Check and adjustment of parking and service brake

Brake test

The following tests help check the brake function.

Danger!

Danger of accident due to incorrect brake test!

Can cause serious injury or death.

☞ *Persons or obstacles are not permitted on the test track.*

☞ *Ensure sufficient outlet distance.*

☞ *First test the service brake followed by the parking brake.*

Notice!

Do not put the machine into operation if a brake test gives a negative result or if there are doubts as to the correct brake function.

Requirements

- The test track must be horizontal, even, and have a high load-bearing capacity.
- The subsurface must consist of dry asphalt.
- The skip must be empty.
- The skip must be lowered.

Service brake test

Fig. 106: Forward-reverse spool valve

☞ *Start the vehicle.*

☞ *Release the parking brake.*

☞ *Press the service brake with a foot strength of more than 40 kg and hold it with this strength.*

☞ *Measure service pressure of the service brake with WANDA Diagnostic Tool.*

➥ The specified value should not be fallen short of – *see Brakes* on page 2-5.

☞ *Set the forward-reverse control **A** to position **1** (forward).*

☞ *Increase the engine speed to 1400 rpm while holding down on the gas pedal for 5–10 s.*

➥ The brake pedal must not give way.

➥ The machine must not move.

Parking brake test

Notice!

If the parking brake is activated, the vehicle automatically deactivates the drive system.

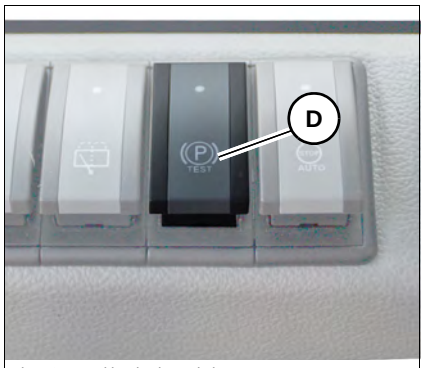


Fig. 107: Parking brake switch test

☞ *Start the vehicle.*

☞ *Apply the parking brake.*

☞ *Set the forward-reverse control **A** to position **1**.*

☞ *Press and hold down the button **D**.*

☞ The selected travel direction appears in the display.

☞ *Press the accelerator pedal and increase the engine speed to 1400 rpm.*

☞ The machine must not move.

☞ *Release accelerator pedal.*

☞ *Release button **D**.*

☞ *Set the forward-reverse control **A** to position **N**.*

Notice!

The test must be carried out within 30 seconds after starting the vehicle. To avoid damage to the vehicle, the drive is switched to the neutral travel direction after 5 seconds. The travel direction **N** appears in the display.

Check the brake clearance

Danger!

Injury hazard due to fluid escaping under pressure!

Hydraulic oil escaping under pressure can penetrate the skin and cause serious injury or death.

- ☞ *Do not operate the vehicle with leaking or damaged hydraulic system components.*
- ☞ *Open the breather filter carefully to slowly release the pressure inside the reservoir.*
- ☞ *Wear protective equipment. If hydraulic oil contacts the eye, flush immediately with clean water and seek medical treatment.*
- ☞ *Malfunctioning or leaking screw connections, hose connections and pressure lines must be immediately removed.*
- ☞ *Search for hydraulic leaks with a piece of cardboard.*

Notice!

Conduct check on both semi axles.

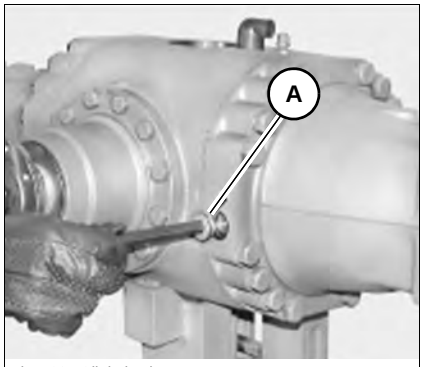


Fig. 108: Oil drain plug

☞ *Loosen oil drain plug **A** at the axle loader unit.*

➥ Release the pressure.

☞ *Removed oil drain plug **A**.*

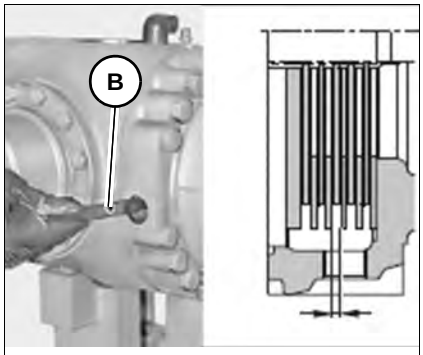
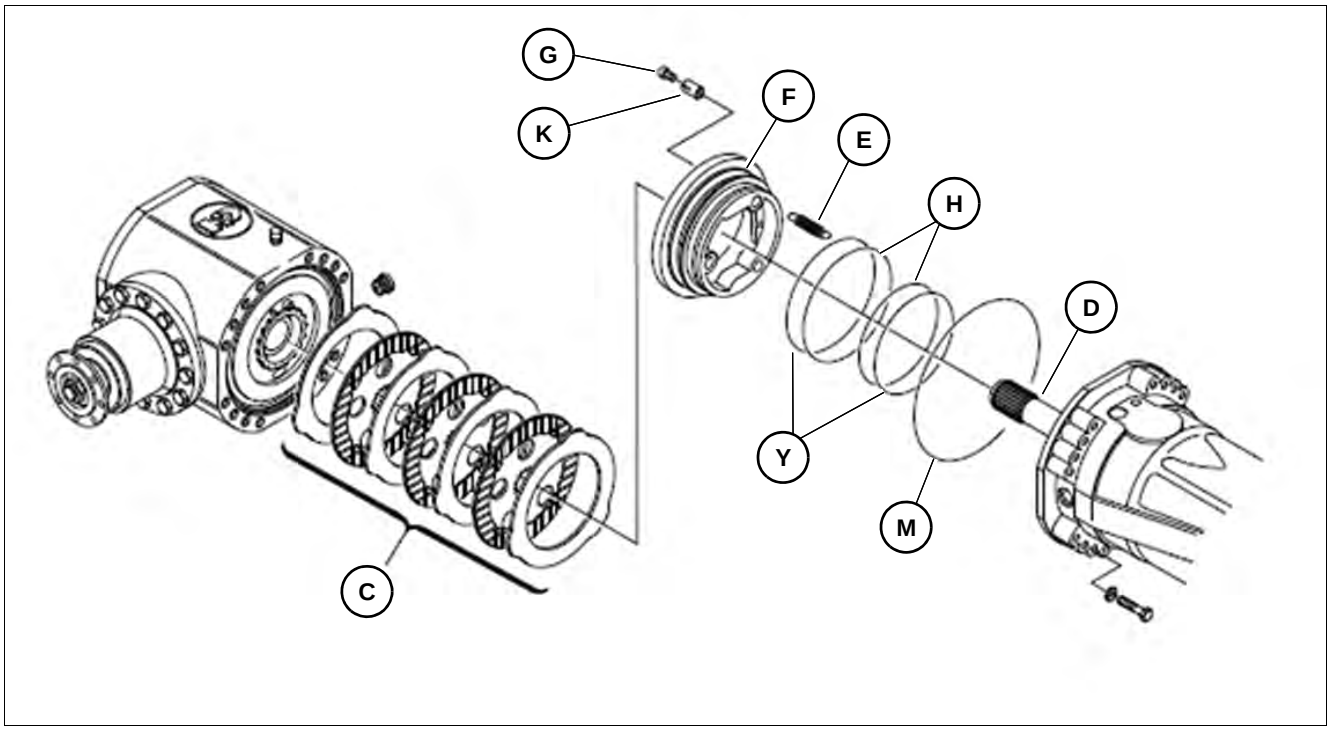


Fig. 109: Check the brake discs

☞ *Press brake once, and when the brake is pressed, use a feeler gauge **B** to check the distance between the brake discs.*

➥ The distance must be at least 4.5 mm (0.18 in).
Otherwise replace the brake discs on both sides.

Replace the brake discs



Item	Description	Item	Description
C	Brake disks	H	O-ring
D	Semiaxle	Y	Retaining rings
E	Return springs	K	Springs for self-regulation of the stroke
F	Piston	L	Catch pin (not to be seen)
G	Studs	M	Piston ring

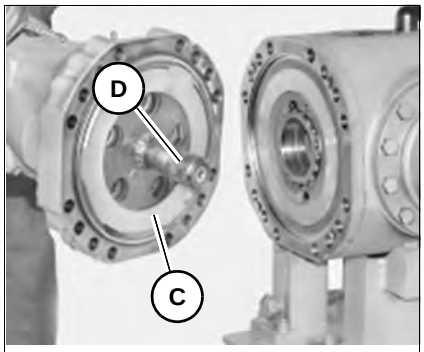


Fig. 110: Axle arm with brake discs

☞ *Remove screws with shims on the axle arm.*

☞ *Remove axle arm together with brake discs **C**.*

☞ *Remove brake discs.*

Notice!

Pay attention to correct sequence for mounting.

☞ *Remove semi axle **D**.*

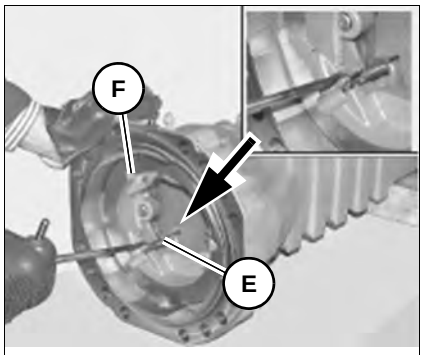


Fig. 111: Axle arm with brake discs

☞ *Remove return springs **E** of the piston **F**.*

➥ Replace misshapen or repositioned springs.

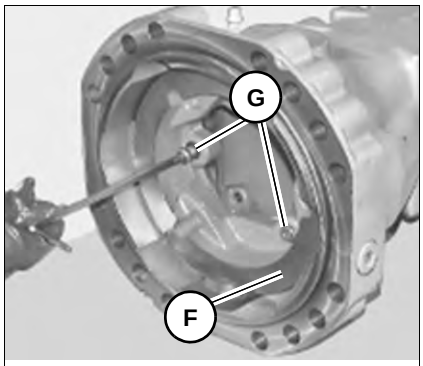


Fig. 112: Stud for piston guide

☞ *Remove studs **G** for piston guide.*

☞ *Pull out piston **F** using compressed air.*

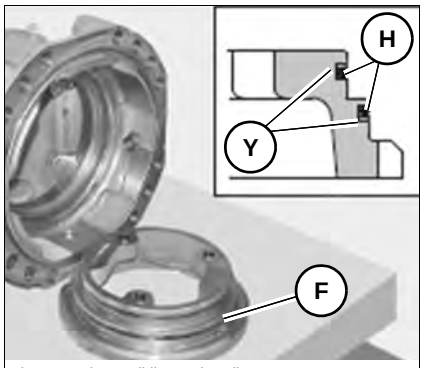


Fig. 113: Piston, sliding and sealing seat

☞ *Clean piston **F**, sliding and sealing seat carefully.*

☞ *Replace O-rings **H** and retaining rings **J**.*

➥ Pay attention to correct positioning of the retaining rings.

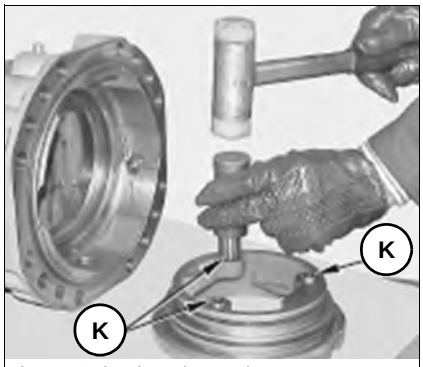


Fig. 114: Springs for stroke control

☞ *Use springs for self-regulation of the stroke **K**.*

☞ *Lubricate O-rings **H** and retaining rings **J**.*

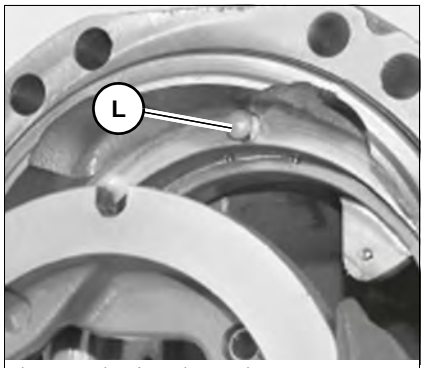


Fig. 115: Springs for stroke control

☞ *Attach piston.*

➥ The piston must absorb the catch pin **L** in the inside of the axle arm.

➥ Insert the piston carefully using a rubber hammer.

☞ *Insert studs **G** again.*

➥ Lubricate thread with Loctite 270.

➥ Tightening torque 5 - 7 Nm (3.7 - 5.2 lbf.ft).

Notice!

The studs must be of the same color.
White: play 1 mm (0.04 in)
Yellow: play 0.75 mm (0.03 in)
Light blue: play 0.5 mm (0.02 in)

☞ *Mount return springs **E**.*

Notice!

Proceed carefully so that the return springs **E** at the connection are not deformed.

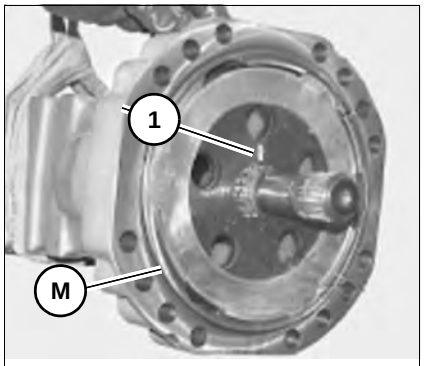


Fig. 116: Mount brake disks

☞ *Mount semi axle.*

☞ *Lightly lubricate brake discs **C** and mount.*

➥ The oil line holes must match the mark **1**.

☞ *Check whether the piston **M** is undamaged and is mounted correctly.*

☞ *Mount axle arm at the central housing.*

☞ *Use a special tool to check whether the axle arms are mounted level.*

☞ *Tighten screws with shims alternately.*

➥ Tightening torque 298 Nm (219 lbf.ft).

3.25 Air conditioning

Attention!

Injury hazard due to evaporating refrigerant!

At normal atmospheric pressure and ambient temperatures, liquid refrigerant evaporates so suddenly that it can freeze tissue when it comes into contact with the skin or eyes (risk of blinding).

☞ *Wear protective gloves and safety glasses.*

Attention!

Suffocation hazard due to toxic gases!

The refrigerant and the compressor oil can cause toxic gases near an open flame!

☞ *Keep the refrigerant and compressor oil away from open flames.*

Attention!

Burn hazard due to hot components!

The heat exchanger or the condenser, the lines and hoses carrying refrigerants or coolants can be pressurized and hot.

☞ *Do not touch the heat exchanger, condenser, and lines and hoses carrying refrigerant or coolant.*

Attention!

Injury hazard due to high pressure!

Cooling circuit under pressure!

☞ *Empty the cooling circuit before removing lines or the oil drain plug from the air-conditioning compressor.*

Environment!

Risk of environmental pollution! *Do not let refrigerant escape into the atmosphere!*
Use suitable extraction and filling stations to remove and add refrigerant.

Checking the air-conditioning compressor

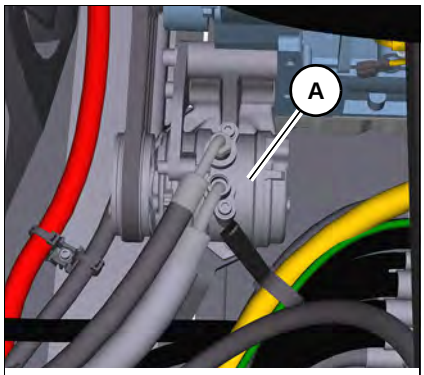


Fig. 117: Air conditioning compressor

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*
☞ *Open the underbody maintenance access – see Maintenance accesses on page 3-18.*
☞ *Remove foot mat.*
☞ *Remove the base plate.*
☞ *Remove the insulating mat.*
☞ *Check the screw connections of air-conditioning compressor **A** for tightness.*
☞ *Remove the refrigerant from the cooling circuit with a pump and refill – see Replace the coolant and air conditioning compressor oil on page 3-86.*
☞ *Attach the insulating mat.*
☞ *Install the base plate.*
☞ *Attach the floor mat.*
☞ *Close the underbody maintenance access.*

Checking the refrigerant level

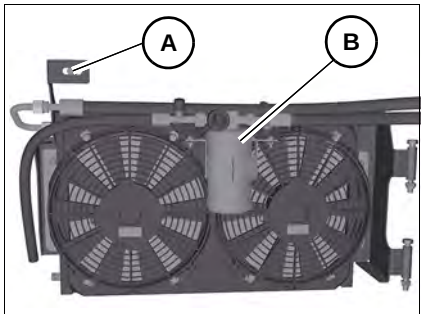


Fig. 118: Air conditioner at rear - dehumidifier

☞ *Open the engine cover – see Maintenance accesses on page 3-17.*
☞ *Slacken screw **A**.*
☞ *Swivel air conditioning system outwards.*
☞ *Start the engine.*
☞ *Switch on the air conditioning.*
☞ *Remove protective cap from the dehumidifier **B** and check the refrigerant level.*
➥ Transparent or slightly milky refrigerant.
☞ *Put on protective cap.*
☞ *Switch off the air conditioning.*
☞ *Stop the engine.*
☞ *Swivel air conditioning system back and assemble using screw **A**.*
☞ *Close the engine cover.*

Checking the dehumidifier

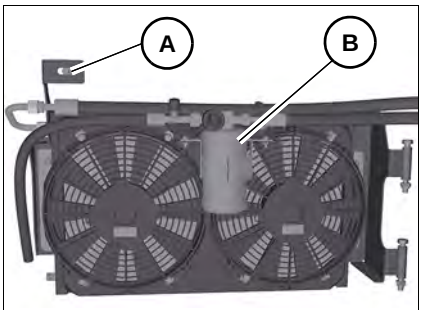


Fig. 119: Dehumidifier

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Open the engine cover – see Maintenance accesses on page 3-18.*

☞ *Slacken screw **A**.*

☞ *Swivel air conditioning system outwards.*

☞ *Check dehumidifier **B** for damage and tight assembly.*

☞ Replace a damaged dehumidifier, tighten a loose clamps.

☞ *Swivel air conditioning system back and assemble using screw **A**.*

☞ *Close the engine cover.*

Replacing the dehumidifier

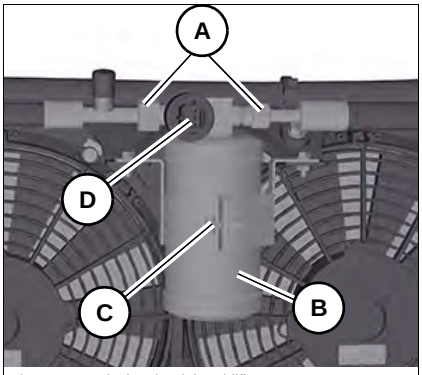


Fig. 120: Replacing the dehumidifier

Notice!

Replace the dehumidifier every time the cooling circuit is opened.

Notice!

Always keep the dehumidifier closed otherwise the dryer is saturated by the humidity in the air and is no longer serviceable.

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Open the engine cover – see Maintenance accesses on page 3-18.*

☞ *Loosen the screw on the bracket for the air conditioning system.*

☞ *Swivel air conditioning system outwards.*

☞ *Remove the refrigerant from the cooling circuit with a pump – see Replace the coolant and air conditioning compressor oil on page 3-86.*

☞ *Remove hoses **A**.*

☞ *Remove the electrical connection of pressure switch **D**.*

☞ *Open clamp **C** and remove dehumidifier **B**.*

☞ *Fasten the new dehumidifier with clamp **C**.*

☞ *Connect hoses **A** to dehumidifier **B**.*

Notice!

Counter the connection under all circumstances as you tighten the hoses.

☞ *Connect the electrical connection of pressure switch **D**.*

☞ *Drain the cooling circuit and fill it up – see Replace the coolant and air conditioning compressor oil on page 3-86.*

☞ *Swivel air conditioning system back and assemble using screw.*

☞ *Close the engine cover.*

Replace the coolant and air conditioning compressor oil

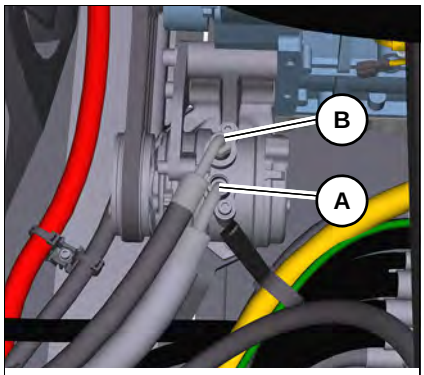


Fig. 121: Connections of the air conditioning compressor

Notice!

The air conditioning system may only be filled by qualified personnel.

- Only use refrigerant R134a according to DIN 8960!
- Fill the system as described in the Operator's Manual of the manufacturer.

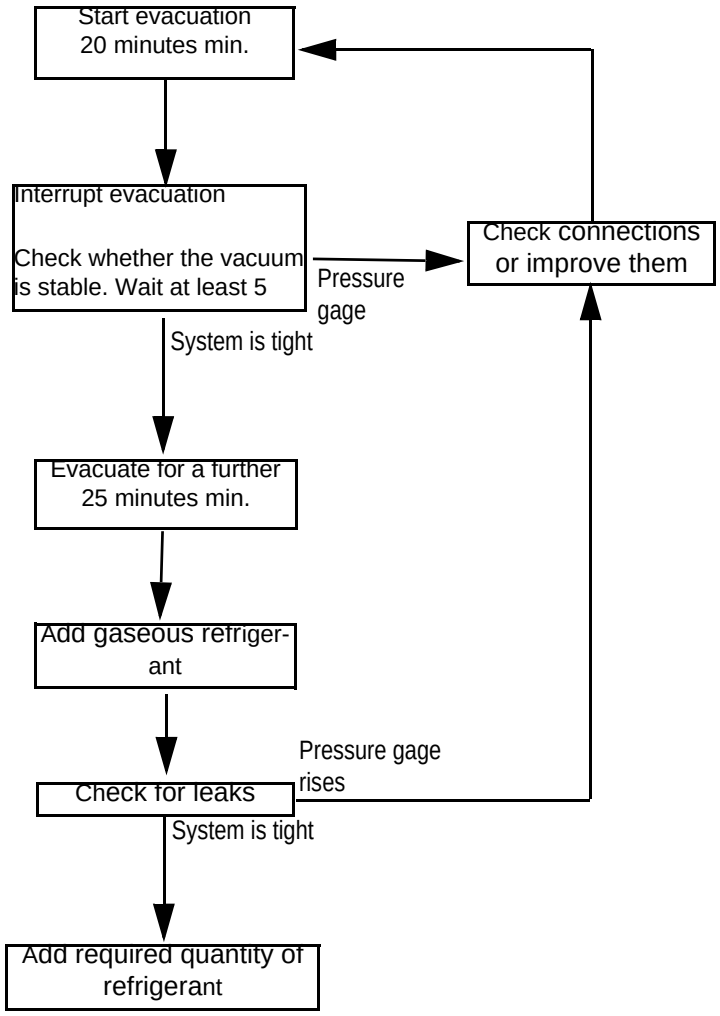
☞ *Remove foot mat.*

☞ *Remove the base plate.*

☞ *Remove the insulating mat.*

☞ *Connect evacuation and filling unit with suction connection **A** draining connection **B**.*

☞ *Remove the refrigerant from the cooling circuit with a pump and refill.*



☞ *Attach the insulating mat.*

☞ *Install the base plate.*

☞ *Attach the floor mat.*

3.26 Electrical system

Important information regarding the electrical system

Maintenance and repair work on the electrical system may only be performed by trained technical personnel!

- Malfunctioning parts of the electrical system must be replaced.
- Light bulbs and fuses may be replaced by the operator.

Alternator

- Start the engine only if the battery is connected.
- When connecting the battery, ensure that the poles are not inverted.
- Have malfunctioning charge indicator lights immediately replaced.

Attention!

Injury hazard due to malfunctioning batteries!

Batteries give off explosive gases that can cause deflagrations if ignited.

☞ *Fire, open flames and smoking is prohibited.*

☞ *Do not place any tools on the battery.*

☞ *Wear protective gloves and safety glasses.*

☞ *Do not attempt to jump-start the vehicle if the battery is frozen or if the acid level is low.*

☞ *Disconnect the grounding strap of the battery before starting repair work on the electrical system.*

Notice!

Damage to electrical components or the engine electronics.

- When connecting the battery leads, ensure that the poles are not inverted.
- Do not place tools or other conductive articles on the battery – risk of short circuit.
- Do not interrupt voltage-carrying circuits at the battery terminals because of the sparking hazard.
- Do not disconnect the battery while the engine is running.

Environment!

Dispose of old batteries in an environmentally friendly manner.

Fuses and relays

- Blown fuses indicate overloading or short circuits. Check the electrical system.
- Only use fuses with the specified amperage.

– *see chapter 2.14 Electrical system* on page 2-11

Battery charge condition

The battery is “maintenance-free”.

However check the battery at regular intervals to ensure that the electrolyte level is between the MIN and MAX marks.

More maintenance is required if:

- The engine does not start easily.
- The battery is used in areas with higher temperatures.
- The machine was out of operation over a longer period of time (2 – 3 months).

Notice!

The battery must be removed before it can be checked.

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Remove foot mat.*

☞ *Remove the base plate.*

☞ *Remove the insulating mat.*

☞ *Check the battery.*

☞ The electrolyte level must be between the MIN and MAX marks.

☞ Correct the electrolyte level if necessary.

☞ *Attach the insulating mat.*

☞ *Install the base plate.*

☞ *Attach the floor mat.*

Charging the battery

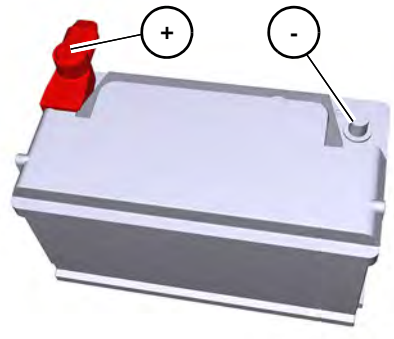


Fig. 122: Battery

☞ *Stop and park the vehicle. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *– see Preparing lubrication on page 3-7.*

☞ *Remove foot mat.*

☞ *Remove the base plate.*

☞ *Remove the insulating mat.*

☞ *Remove battery – see Removing the battery on page 3-89.*

☞ *Charge the battery with a suitable battery charger.*

- Recommended battery charging current: 1/10 of the battery capacity.

☞ *After charging the battery, check the electrolyte level to ensure that it is between the MIN and MAX marks.*

☞ Correct the electrolyte level if necessary.

☞ *Install battery – see Install the battery on page 3-89.*

☞ *Attach the insulating mat.*

☞ *Install the base plate.*

☞ *Attach the floor mat.*

Removing the battery

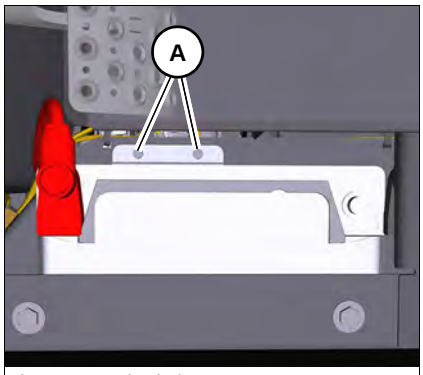


Fig. 123: Removing the battery

Always follow the specific battery safety instructions.

Notice!

In order to avoid damage to the engine electronics, do not disconnect the battery while the engine is running.

Attention!

Risk of damage to the engine electronics!

☞ *In order to avoid damage to the engine electronics, wait at least three minutes before actuating the engine before switching off the battery master switch and disconnecting the battery.*

☞ *Stop and park the machine. Stop the engine – see Preparing lubrication on page 3-7.*

☞ *Actuate the battery master switch – see battery master switch/jump-start equipment on page 3-20.*

☞ *Remove foot mat.*

☞ *Remove the base plate.*

☞ *Remove the insulating mat.*

☞ *Remove brackets **A** with a suitable tool.*

☞ *Remove the black battery lead from the negative terminal (**–**).*

☞ *Remove the red battery lead from the positive terminal (**+**).*

☞ *Remove battery.*

Install the battery

☞ *Position the battery.*

☞ *Install the battery lead on the positive terminal (**+**).*

☞ *Install the battery lead on the negative terminal (**–**).*

☞ *Install brackets **A** with a suitable tool.*

☞ *Attach the insulating mat.*

☞ *Install the base plate.*

☞ *Attach the floor mat.*

☞ *Switch on battery master switch – see battery master switch/jump-start equipment on page 3-20.*

Check battery degassing hose

Danger!

Batteries give off explosive gases that can cause deflagrations if ignited. The squirting battery acid can then cause serious injuries or death.

Caustic injury hazard due to chemicals

☞ *Fire, open flames and smoking is prohibited.*

☞ *Wear protective equipment.*

☞ *In case of contact with battery acid, immediately rinse the affected parts of the body with plenty of clear water and immediately consult a physician.*

Notice!

Possible damage caused by defective or missing battery degassing hose.

- Observe maintenance interval in the maintenance plan.

The battery degassing hose leads gases from the battery to the outside.

Check the battery degassing hose, e.g. for:

- Correct installation
- Condition (no cracks, bruises, contaminants, etc.)

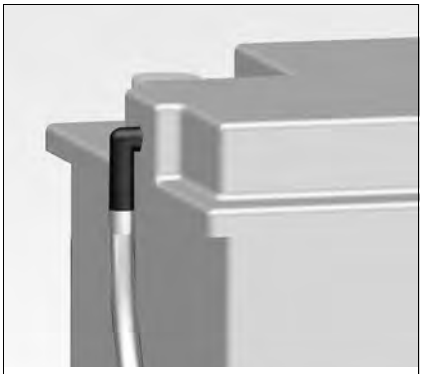


Fig. 124: Battery degassing hose on the battery (symbolic representation)

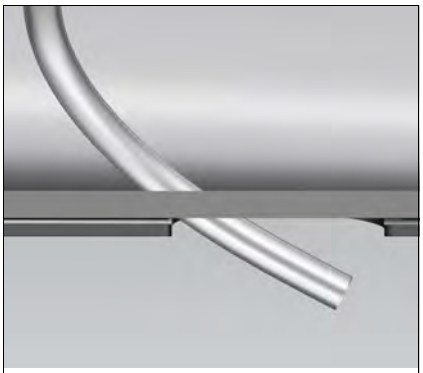


Fig. 125: Passage to the outside (symbolic representation)

Checking electric cables and connectors

☞ *Check the electric cables for chafe marks.*

➥ No chafe marks or bare cables.

☞ Replace damaged cables immediately.

☞ *Check connectors for tightness or damage.*

➥ No loose or damaged connectors.

☞ Fasten loose connectors, replace damaged connectors immediately.

☞ *Check ground connections for tightness and damage.*

➥ No loose or damaged ground connections.

☞ Fasten loose ground connections, replace damaged ground connections.

3.27 Resetting the maintenance meter

Fig. 126: Resetting the maintenance meter (symbolic representation)

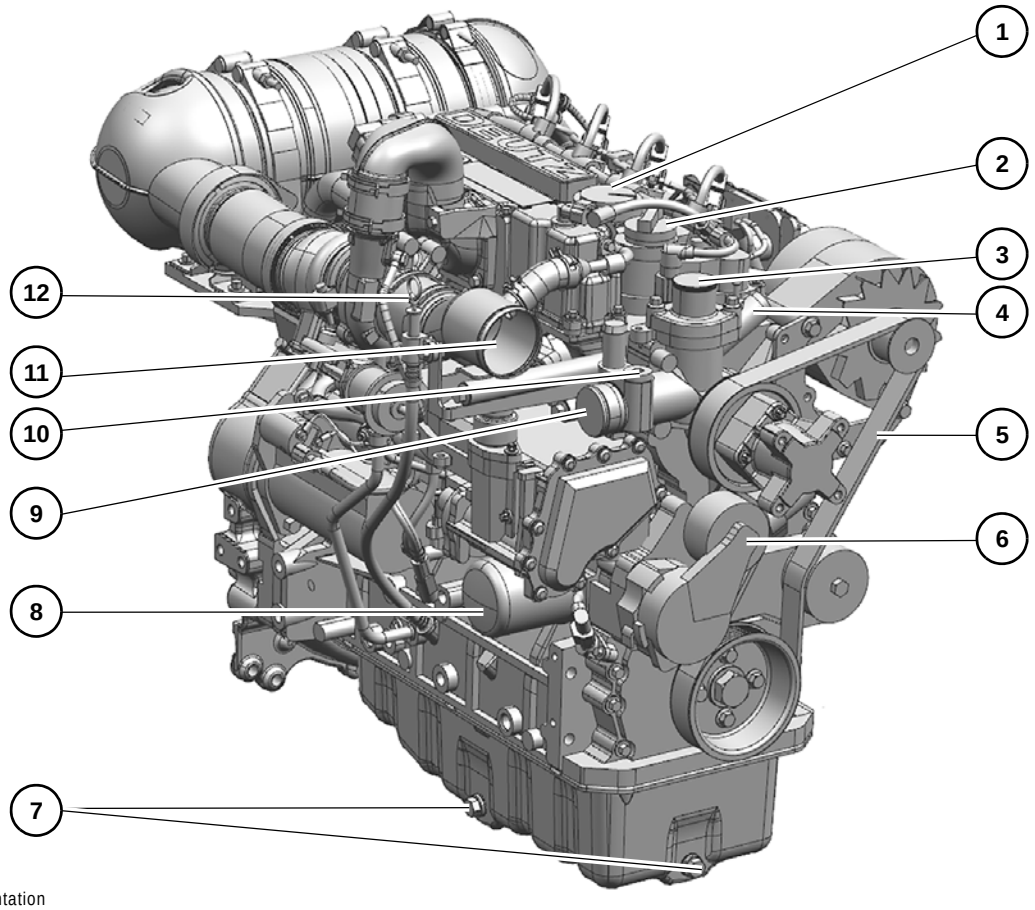
Comply with the documentation for the WANDA diagnostic tool.

Engine

4 Engine

4.1 Deutz TD 2.9 L4 DOC engine

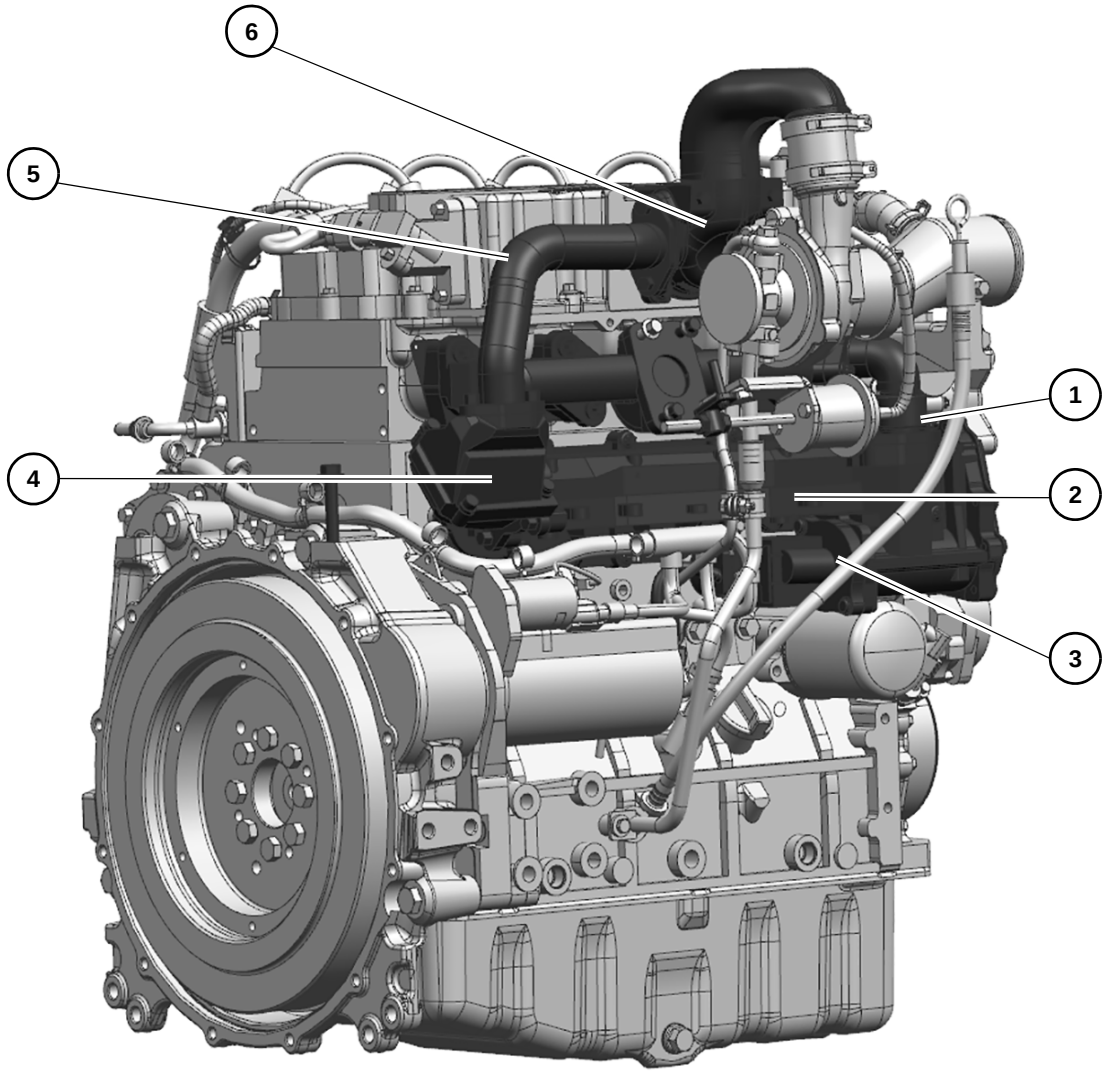
Engine overview



Symbolic representation

Item	Description	Item	Description
1	Crankcase ventilation	7	Engine oil drain plug
2	Oil filler neck	8	Engine oil filter cartridge
3	Coolant outlet	9	Coolant intake
4	Coolant feed cab heating	10	Coolant return cab heating
5	V-belt	11	Combustion air inlet
6	Tensioning roller	12	Oil dipstick

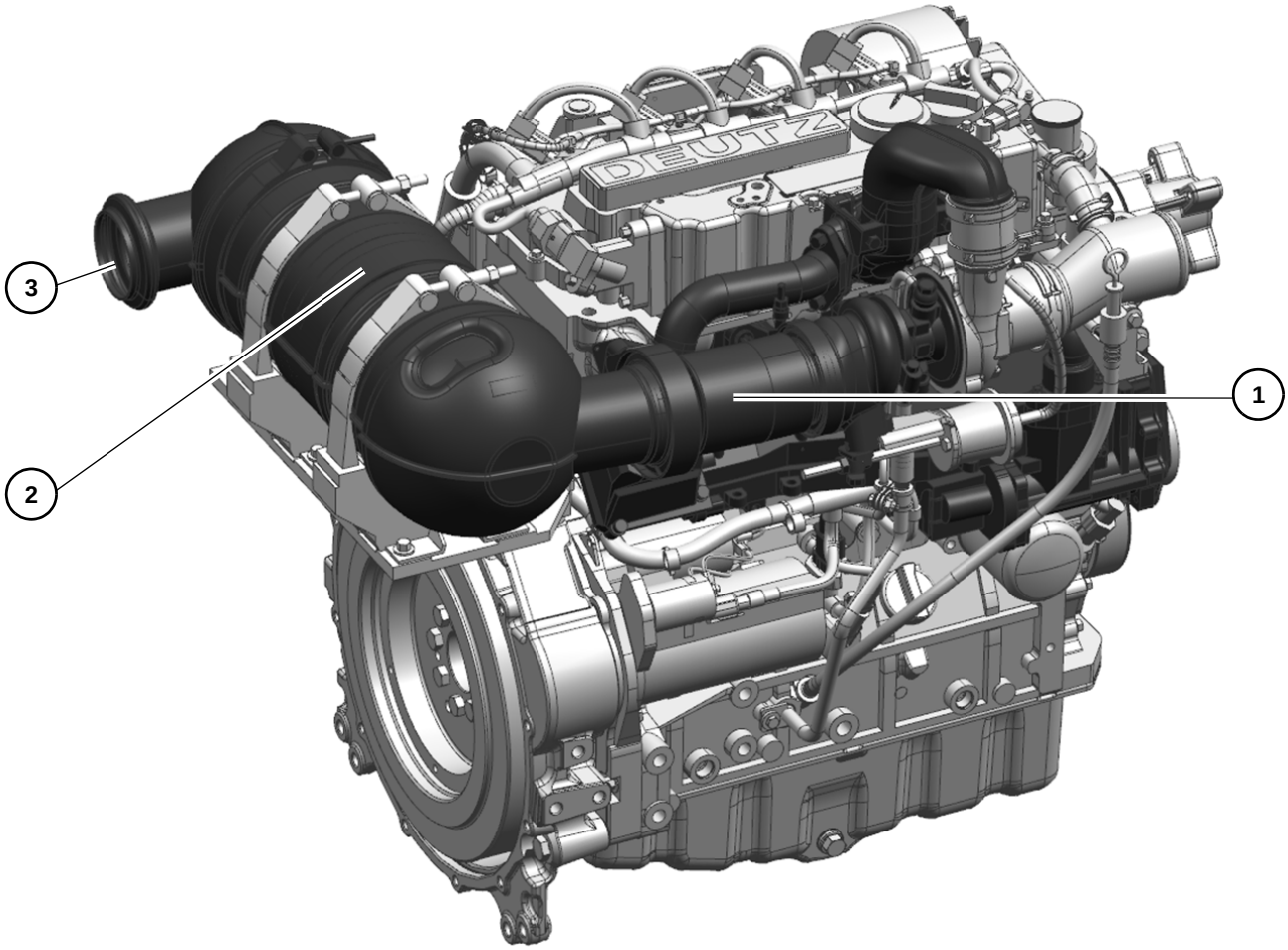
Exhaust gas recirculation



Symbolic representation

Item	Description
1	Exhaust gas flow uncooled
2	EGR cooler
3	Actuator
4	Reed valve
5	Exhaust gas flow cooled
6	Mixer pipe

Exhaust-gas treatment system

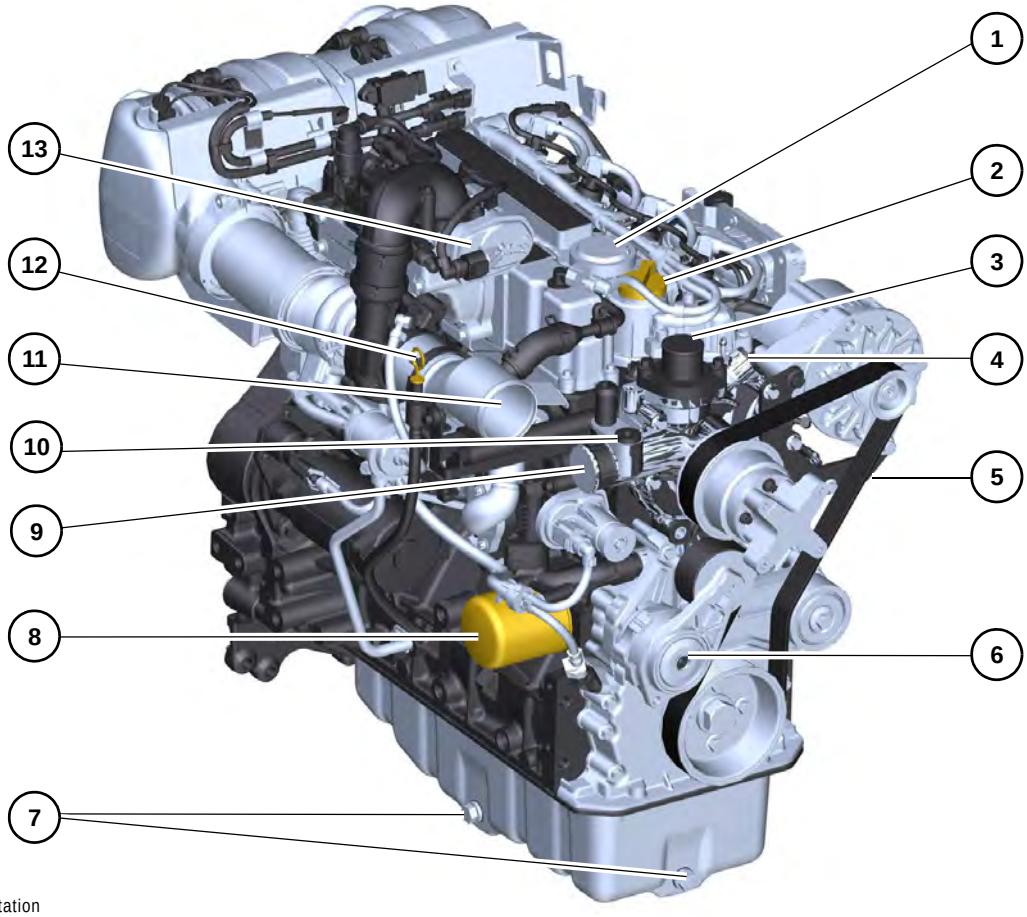


Symbolic representation

Item	Description
1	Decoupling line
2	Diesel oxidation catalyst
3	Exhaust gas outlet

4.2 Deutz TD 2.9 L4 DPF engine

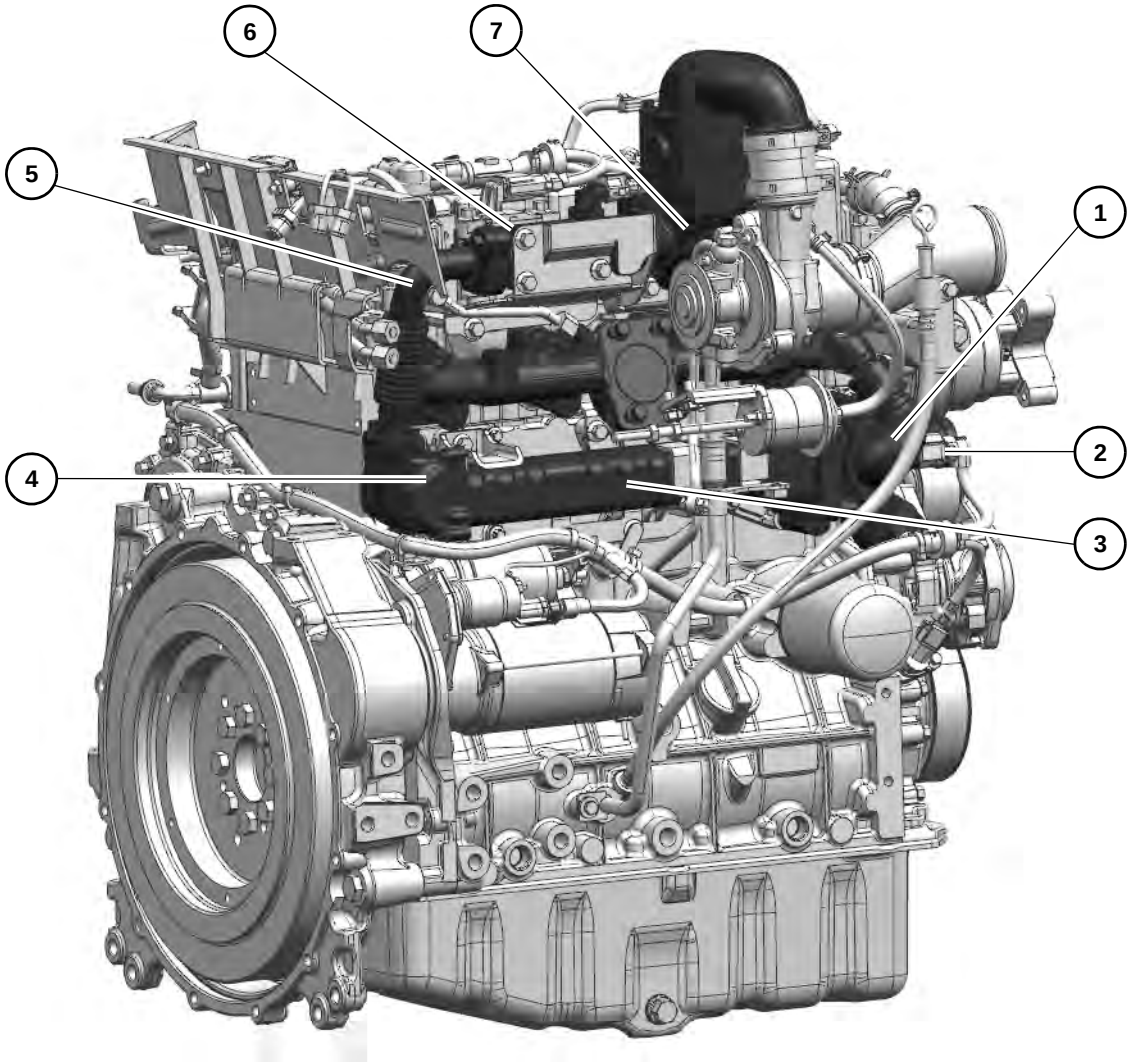
Engine overview



Symbolic representation

Item	Description	Item	Description
1	Crankcase ventilation	8	Engine oil filter cartridge
2	Oil filler neck	9	Coolant intake connection
3	Coolant outlet connection	10	Coolant return cab heating
4	Coolant feed cab heating	11	Combustion air inlet
5	V-belt	12	Oil dipstick
6	Tensioning roller	13	Suction restrictor
7	Engine oil drain plug		

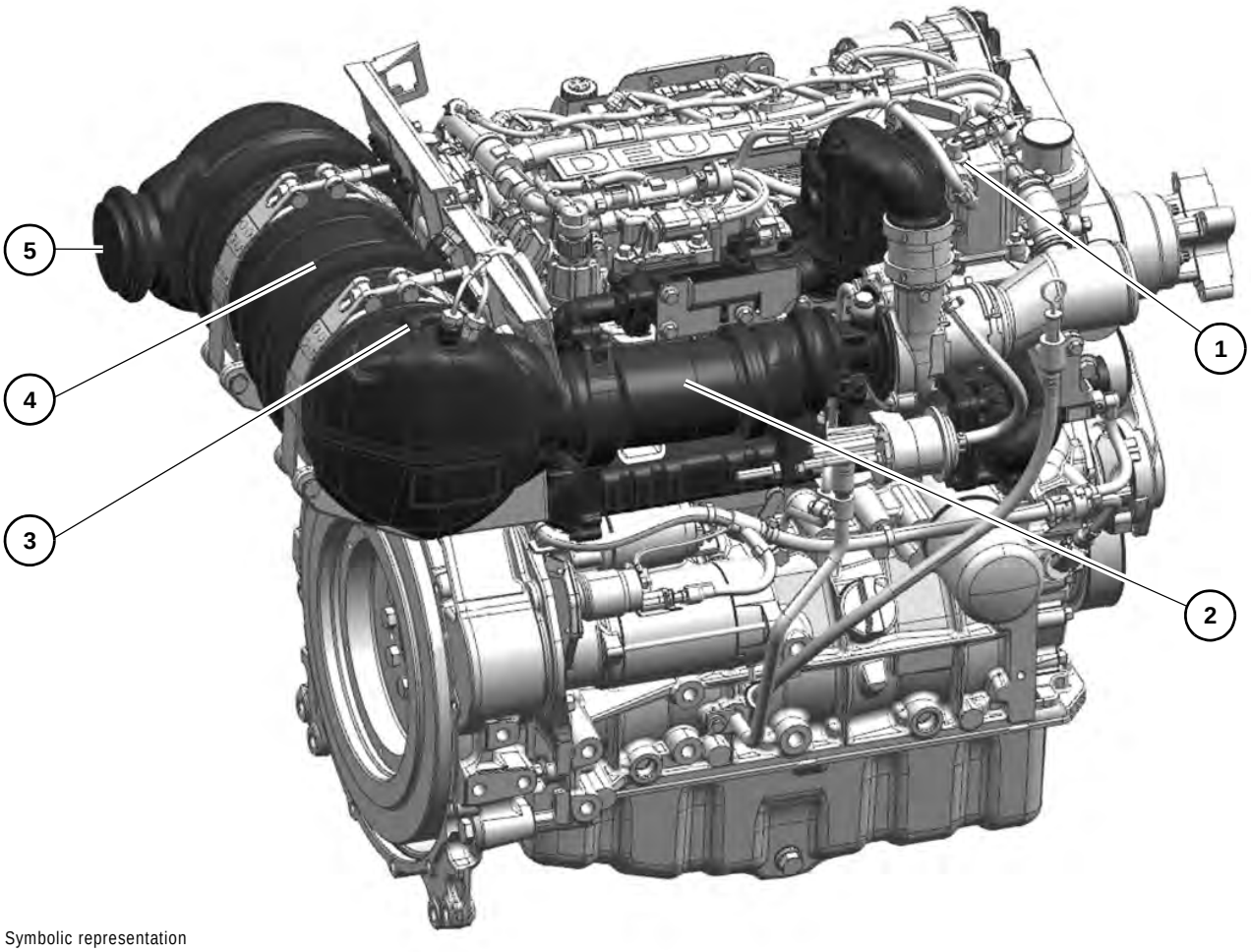
Exhaust gas recirculation



Symbolic representation

Item	Description
1	Exhaust gas flow uncooled
2	Actuator
3	EGR cooler
4	Reed valve
5	Exhaust gas flow cooled
6	Differential pressure flow meter
7	Mixer pipe

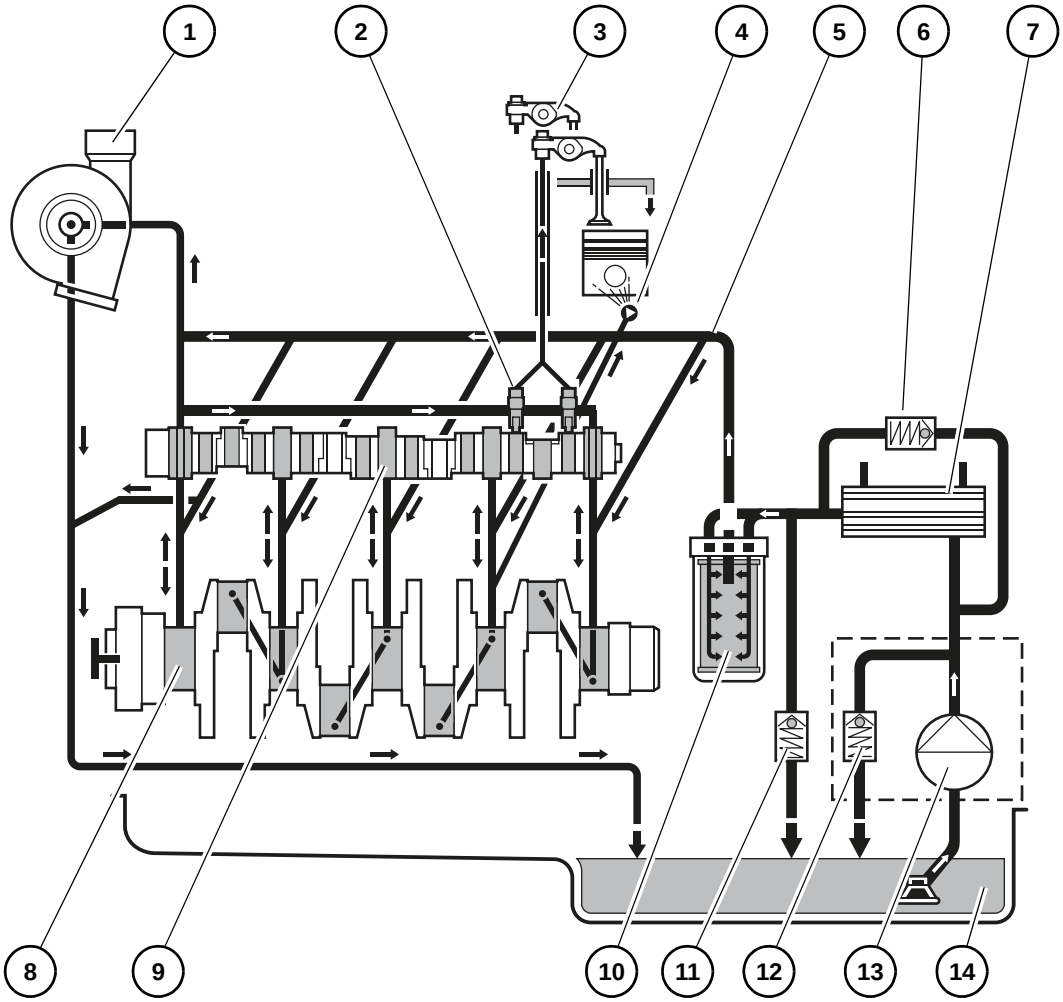
Exhaust-gas treatment system



Symbolic representation

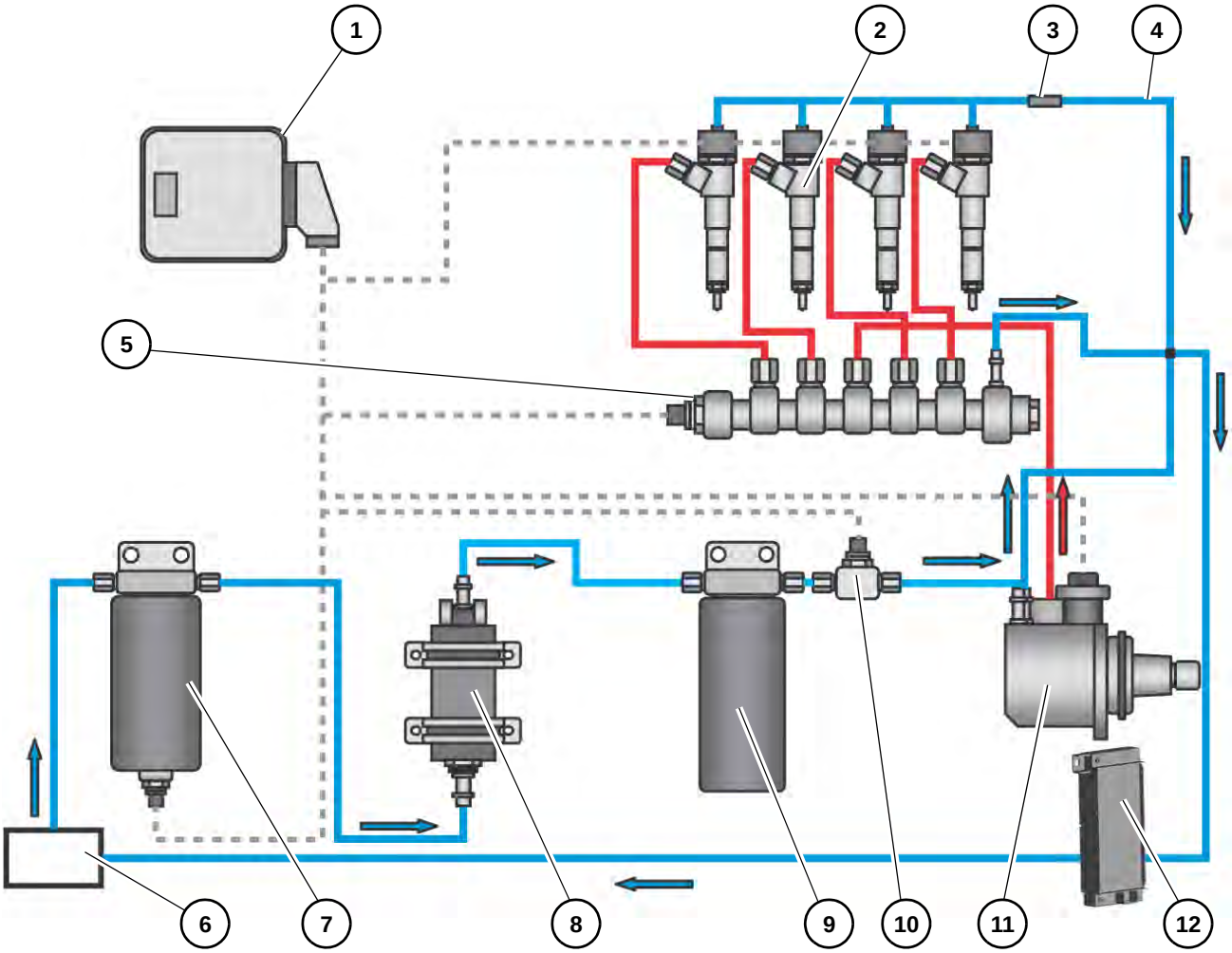
Item	Description
1	Suction restrictor flap
2	Decoupling line
3	Diesel oxidation catalyst
4	Diesel particulate filter
5	Exhaust-gas outlet connection

4.3 Engine lubrication system



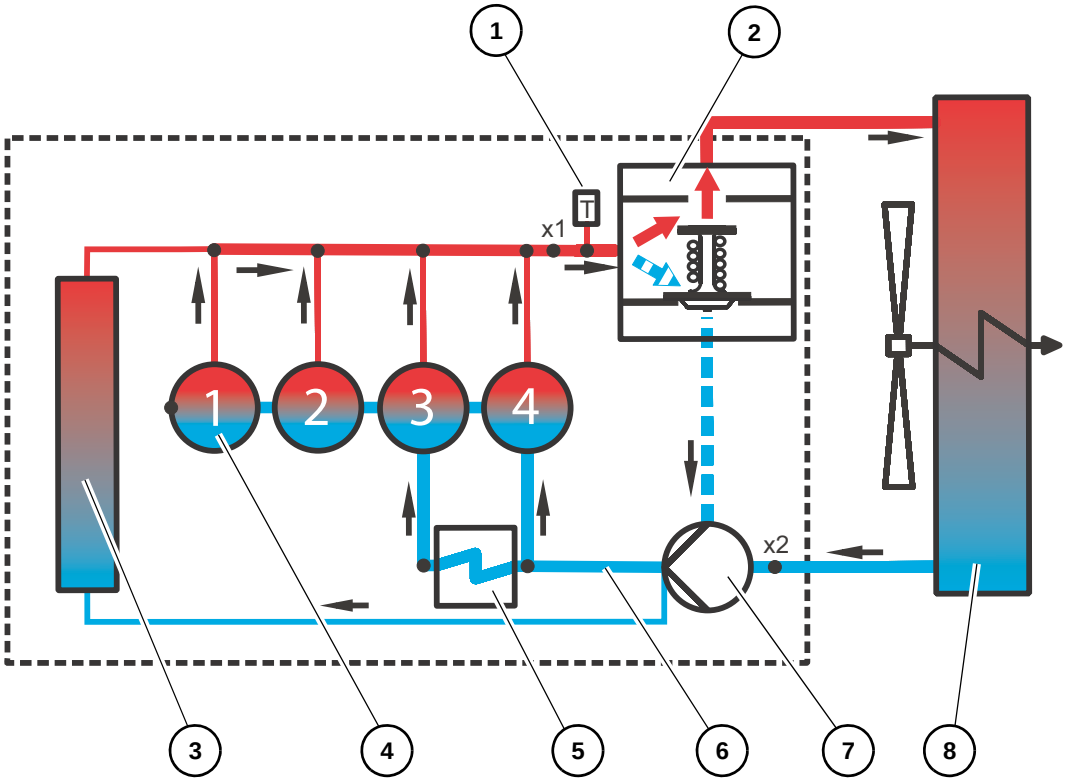
Item	Description	Item	Description
1	Exhaust turbocharger	8	Crankshaft bearing
2	Hydraulic tappet	9	Camshaft bearing
3	Rocker arm	10	Engine oil filter
4	Piston cooling nozzle	11	Pressure regulating valve
5	Main lube oil channel	12	Pressure limiting valve
6	Bypass valve	13	Engine oil pump
7	Engine oil cooler	14	Engine oil sump

4.4 Fuel system



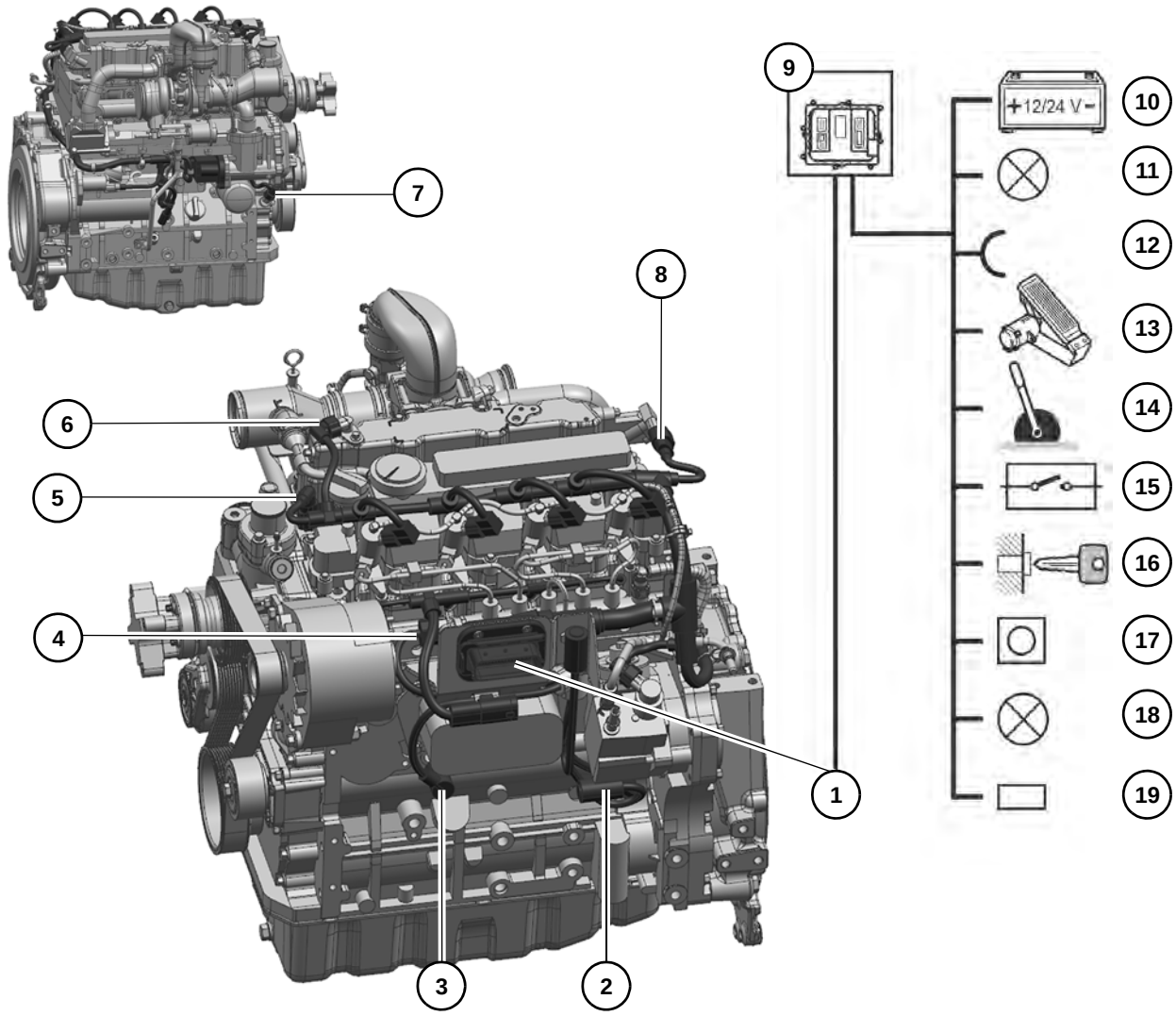
Item	Description	Item	Description
1	Engine Controller	7	Fuel prefilter
2	Injector	8	Fuel pump (electrically driven)
3	Non-return valve	9	Fine fuel filter
4	Return line	10	Fuel pressure sensor
5	High pressure reservoir	11	High pressure pump with control block FCU (fuel control unit)
6	Fuel tank	12	Fuel cooler

4.5 Cooling system



Item	Description	Item	Description
1	Temperature sensor	5	Engine oil cooler
2	Thermostat	6	Coolant inlet for engine cooling
3	Cooler for exhaust gas recirculation	7	Coolant pump
4	Cylinder jacket-/head cooling	8	Radiator

4.6 Electronic engine control unit



Item	Description
Engine-side	
1	Central connection (for motor control unit)
2	Rotational-speed sensor via camshaft (on the opposite side)
3	Engine oil pressure sensor
4	Rail pressure sensor
5	Coolant temperature sensor
6	Charge-air temperature sensor
7	Speed transmitter above crankshaft
8	Charge-air sensor
9	Engine Controller

Item	Description
Vehicle side	
10	Energy supply
11	Signal outputs
12	Inputs
13	Accelerator pedal
14	Manual throttle
15	Function selector switch (optional)
16	Key switch start/stop
17	Diagnosis button
18	Error indicator light
19	Diagnosis interface/CAN-Bus

4.7 Engine malfunctions

Problem	Possible causes	Measures to be taken
Engine does not start or is not easy to start	Empty fuel tank	Refueling
	Engine starting temperature too low	Checking
	Wrong SAE viscosity grade of engine oil	Oil change
	Fuel grade does not comply with Operator's Manual	Fuel change
	Malfunctioning or empty battery	Check the battery
	Cable connections	Check cables
	Malfunctioning starter, or pinion does not engage	Check the starter
	Dirty air filter/exhaust gas turbocharger	Checking/replacing
	Air in fuel system	Bleeding the fuel system
	Compression pressure too low	Checking the compression pressure
	Exhaust gas back pressure too high	Checking
	Leaking fuel system	Check fuel system
Engine will not start and the diagnostic light flashes	Engine electronics preventing start	Check error according to error code, rectify the error if possible
Engine starts, but does not run smoothly or faultless	Exhaust gas back pressure too high	Checking
	Compression pressure too low	Checking the compression pressure
	Air in fuel system	Bleeding the fuel system
	Fuel prefilter or fuel inlet filter dirty	Replacing
	Fuel grade does not comply with Operator's Manual	Fuel change
	Injectors malfunctioning	Replace
	Leaking fuel system	Check fuel system
Changes in speed are possible and the diagnosis lamp illuminates	Engine electronics have detected a system error and activate a different speed	Check error according to error code, rectify the error if possible

Problem	Possible causes	Measures to be taken
Engine overheats. Temperature warning system responds	Vent line to the expansion tank for cooling liquid is clogged	Cleaning
	Wrong SAE viscosity class of engine lubrication oil	Oil change
	Malfunctioning lube oil cooler	Checking/replacing
	Lube oil level too high	Check the oil level, drain the oil if necessary
	Lube oil level too low	Add oil
	Malfunctioning injector	Replace
	Coolant heat exchanger dirty	Clean
	Defective coolant pump (V-belt torn or loose)	Check/replace/tension
	Not enough coolant	Add coolant
	Resistance in cooling system too high, flow capacity too low	Check cooling system
	Malfunctioning cooling fan, torn or loose V-belt	Check/replace/tension
	Exhaust air thermostat defective	Replacing
	Leaking charge-air line	Check the charge-air line
	Dirty charge air cooler	Check/clean
	Dirty air filter or defective air filter maintenance switch/maintenance display	Check/replace/clean
	Defective exhaust turbocharger	Check/replace/clean
	Exhaust gas back pressure too high	Checking
Insufficient engine power	Lube oil level too high	Check the oil level, drain the oil if necessary
	Fuel intake temperature too high	Check the system
	Fuel grade does not comply with Operator's Manual	Fuel change
	Dirty air filter or defective air filter maintenance switch/maintenance display	Checking/replacing
	Defective exhaust turbocharger	Check/replace/clean
	Defective air filter maintenance switch/maintenance display	Checking/replacing
	Defective fan/torn or loose V-belt	Check the fan/V-belt/ replace if necessary
	Leaking charge-air line	Check the charge-air line
	Dirty charge air cooler	Check/clean
	Resistance in cooling system too high, flow capacity too low	Check cooling system
	Leaking fuel system	Check fuel system
	Malfunctioning injector	Replace
Engine has lost output and the diagnosis lamp illuminates	The engine electronics reduces the output	Please contact your DEUTZ partner
Engine does not run on all cylinders	Injection line leaks	Check the fuel injection line
	Malfunctioning injector	Replace

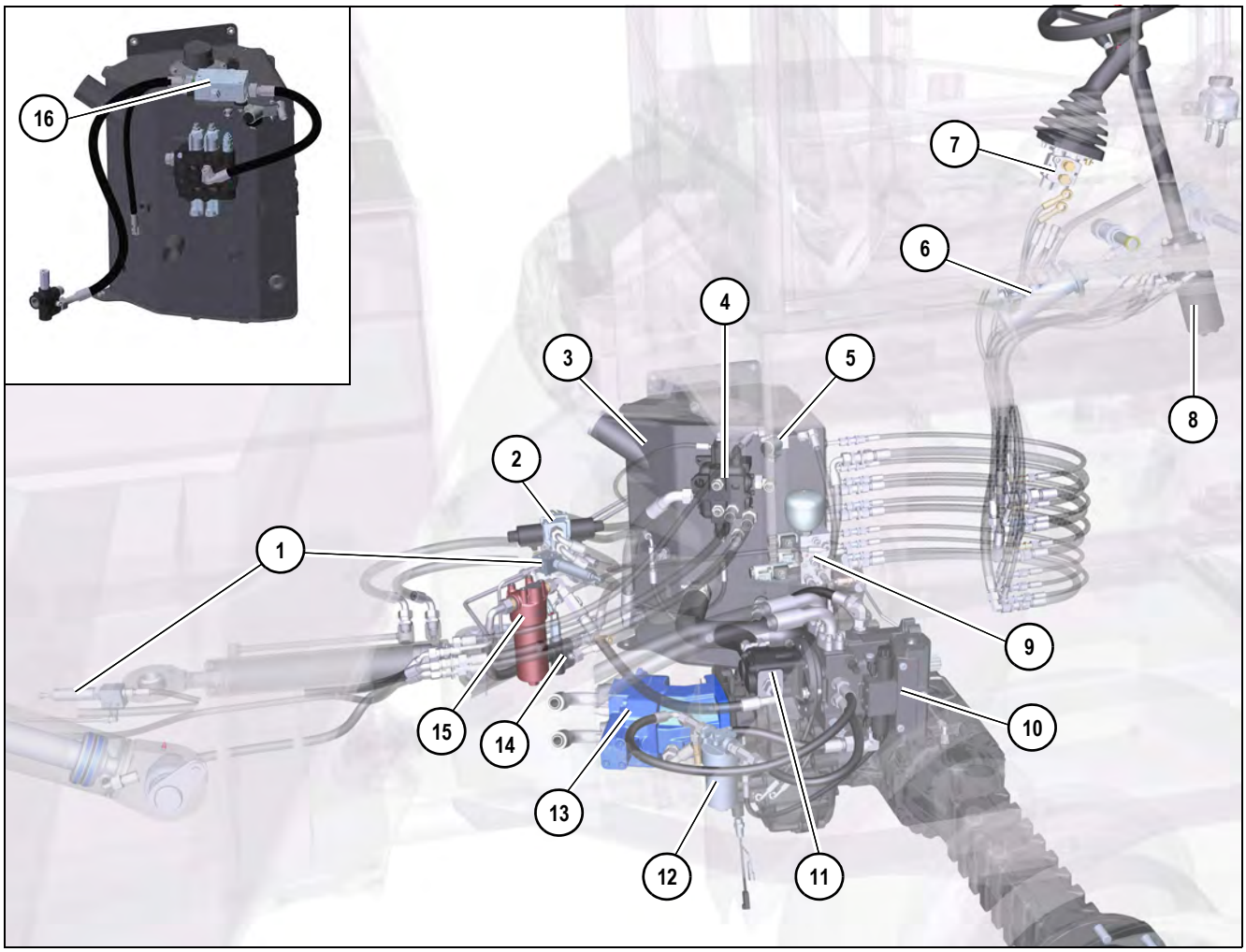
Problem	Possible causes	Measures to be taken
Insufficient or no lube oil pressure	Lube oil level too low	Top off the lube oil
	Engine inclination too high	Check the engine suspension/reduce inclination
	Wrong SAE viscosity class of engine lubrication oil	Oil change
Engine oil consumption too high	Lube oil level too high	Check the lube oil level, drain if necessary
	Engine slanting position too high, Wrong SAE viscosity class of engine lubrication oil	Check the engine suspension/reduce inclination
	Crankcase ventilation	Checking/replacing
Lube oil in exhaust system	Engine continuously run at an insufficient load (< 20%–30%), Wrong SAE viscosity class of engine lubrication oil	Check the load factor
Engine has blue smoke	Lube oil level too high	Check the lube oil level, drain if necessary
	Engine slanting position too high, Wrong SAE viscosity class of engine lubrication oil	Check the engine suspension/reduce inclination
	Worn oil scraper rings	Checking/replacing
Engine has white smoke[1]	Engine starting temperature too low	Checking
	Fuel grade does not comply with Operator's Manual	Change the fuel
Engine has black smoke	Dirty air filter or defective air filter maintenance switch/maintenance display	Checking/replacing
	Defective exhaust turbocharger	Checking/replacing
	Leaking charge-air line	Check the charge-air line
	Malfunctioning injector	Replace

1. With colt temperatures and cold engine, it is normal that the engine produces white smoke in the first 5 minutes (condensate water).

Hydraulic system

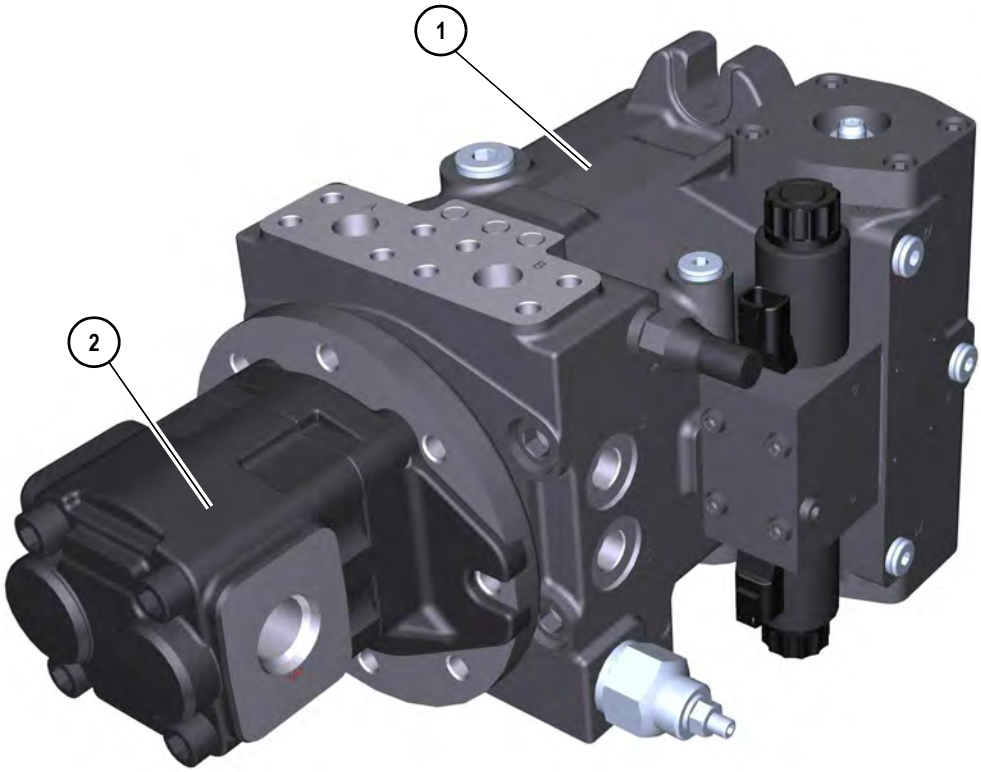
5 Hydraulic system

5.1 Overview of hydraulic components



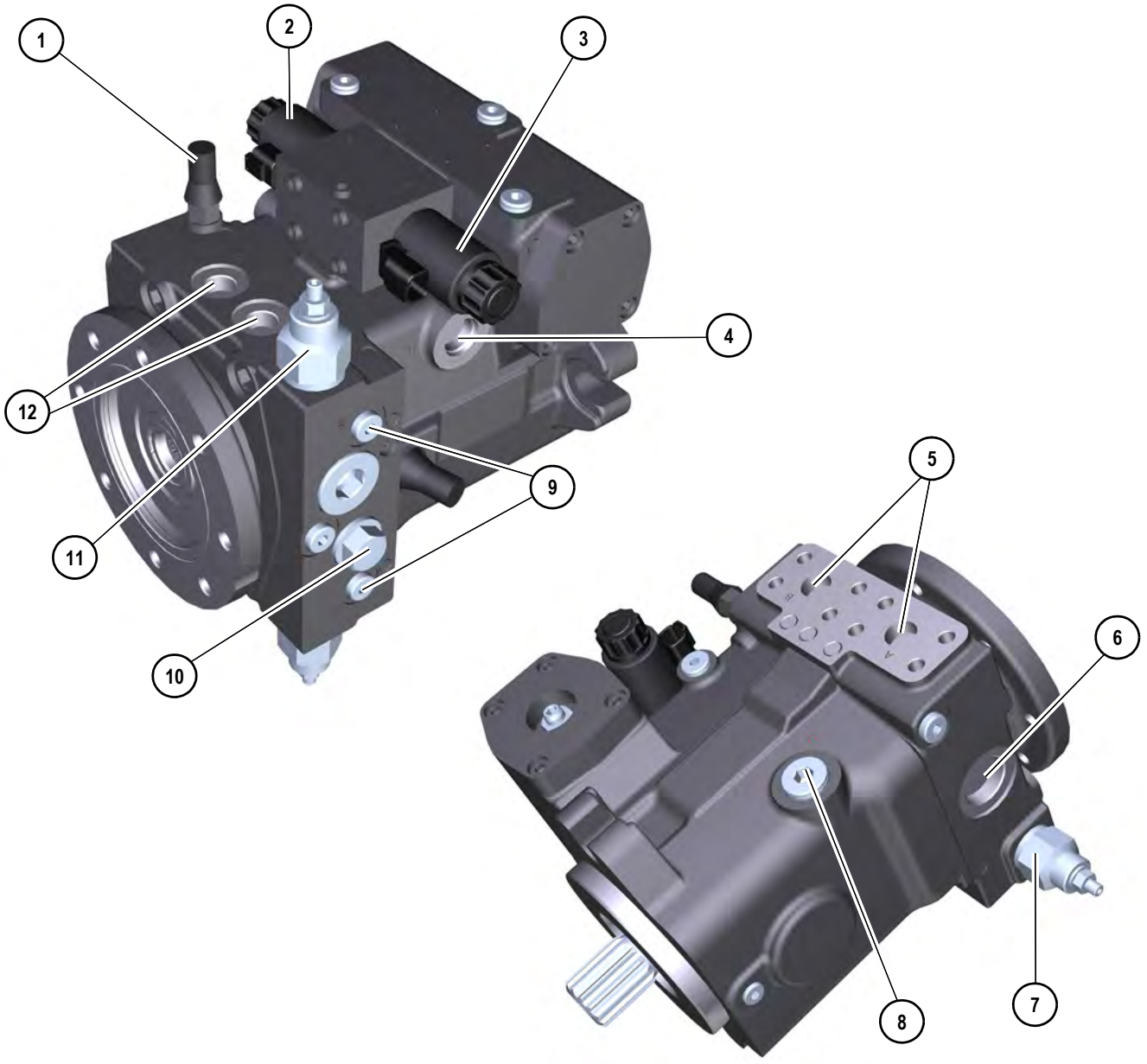
Item	BMK	Description	Item	BMK	Description
1	L011	Brake pressure-pressure relief valve	9	C006	Pilot oil supply unit (with L018 accumulator pilot-control pressure)
2	C015	Steering direction changeover valve	10	T008	Hydraulic pump
3	L042	Hydraulic oil reservoir	11	T003	Hydraulic pump
4	C001	Main valve block	12	Q004	Pressure filter drive hydraulics
5	C053	Shiftable screen	13	T010	Hydraulic motor
6	Z016	Brake cylinder	14	L044	Priority valve
7	C008	Joystick valve	15	Q003	Operating hydraulics pressure filter
8	C014	Steering valve	16	C048	Thermal management valve (only EU Stage V with cab)

5.2 Pump unit



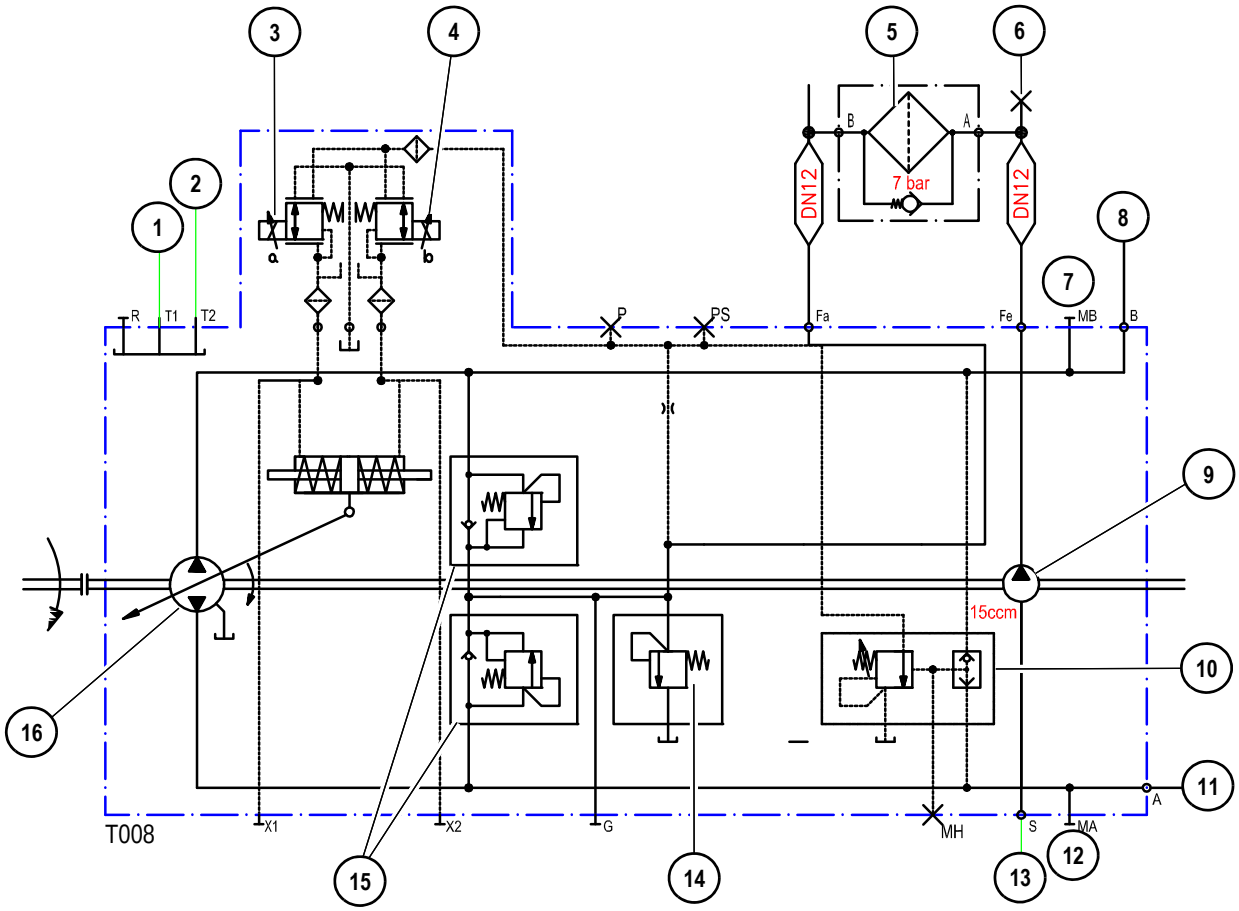
Item	Description
1	Hydraulic pump (axial piston pump)
2	Work pump (gear pump)

Hydraulic pump (T008)



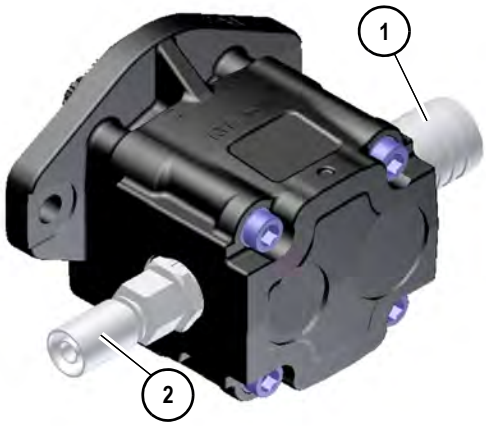
Item	BMK/ connection	Description	Item	BMK/ connection	Description
1	--	Pressure cut-off	7	--	High-pressure limiting valve
2	Y005	Solenoid valve	8	T2	Leak oil line of hydraulic motor
3	Y004	Solenoid valve	9	MA/MB	Measuring port high pressure side
4	T1	Leak oil line in tank	10	--	Boost-pressure limiting valve
5	A/B	Hydraulic motor connection	11	--	High-pressure limiting valve
6	S	Suction line	12	Fa/Fe	Pressure filter connection

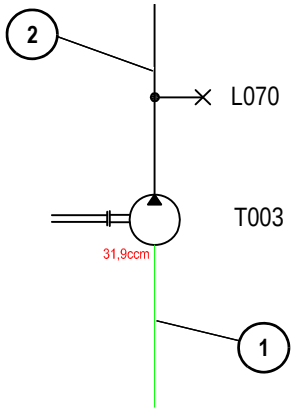
Diagram



Item	BMK/ connec-tion	Description
1	T1	Leak oil line in tank
2	T2	Leak oil line of hydraulic motor
3	Y005	Solenoid valve
4	Y004	Solenoid valve
5	Q004	Pressure filter
6	L068	Measurement connection
7	MB	Measuring port high pressure side
8	B	Hydraulic motor connection
9	--	Boost pump
10	--	Pressure cut-off
11	A	Hydraulic motor connection
12	MA	Measuring port high pressure side
13	S	Suction connection
14	--	Boost-pressure limiting valve
15	--	High-pressure valves
16	--	Axial-piston pump

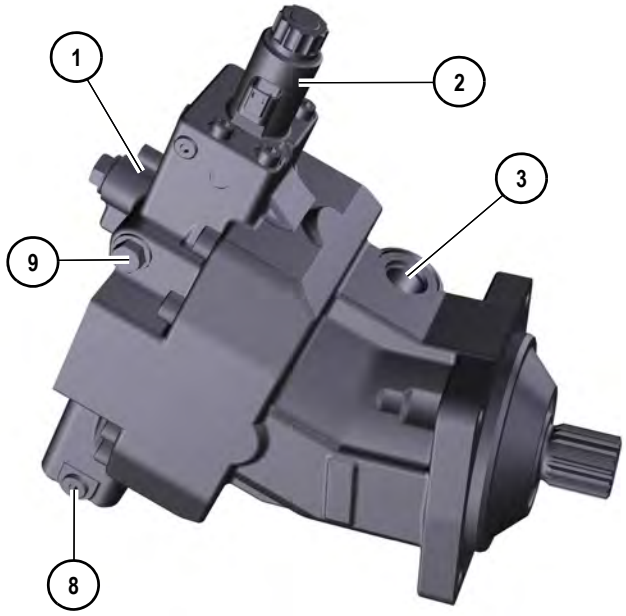
Work pump (T003)

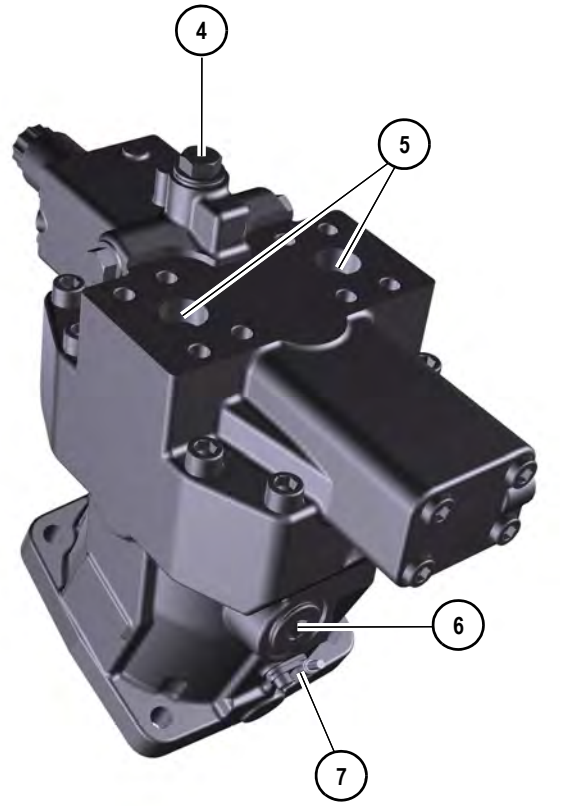




Item	Description
1	Reservoir line
2	Pressure filter connection

5.3 Hydraulic motor (T010)

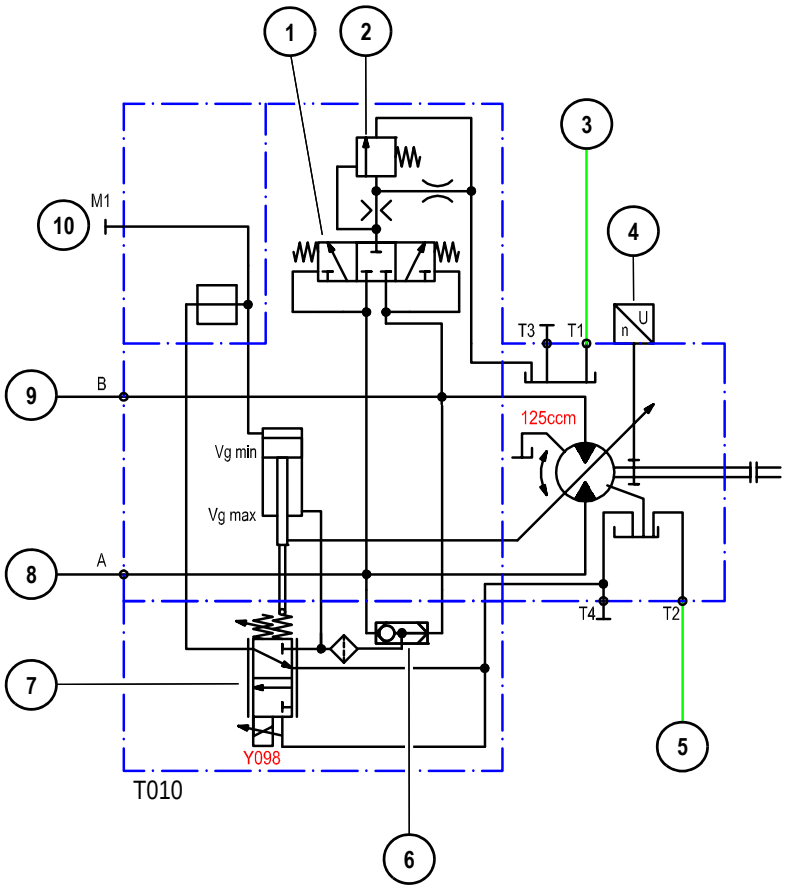




Item	BMK/ connection	Description
1	--	Shuttle valve
2	Y098	Solenoid valve hydraulic motor setting
3	T2	Leak oil line
4	--	Flush valve pressure relief valve
5	A/B	Hydraulic pump connection

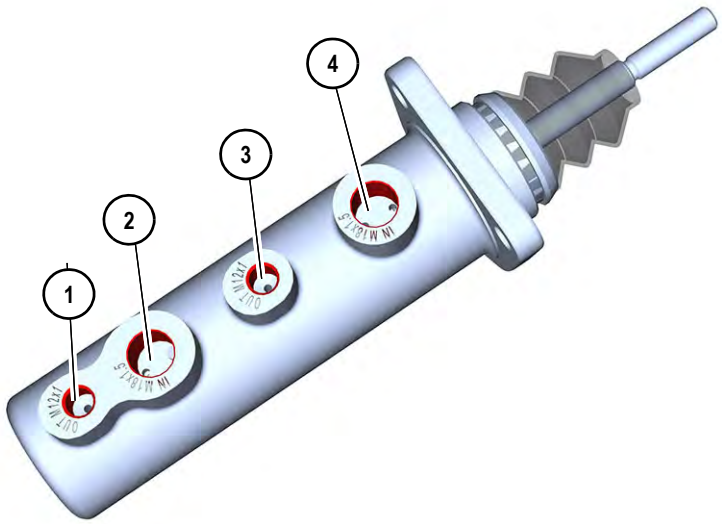
Item	BMK/ connection	Description
6	T1	Return-line port flush valve
7	--	Engine speed sensor
8	M1	Measuring port setting pressure
9	--	Flush valve piston

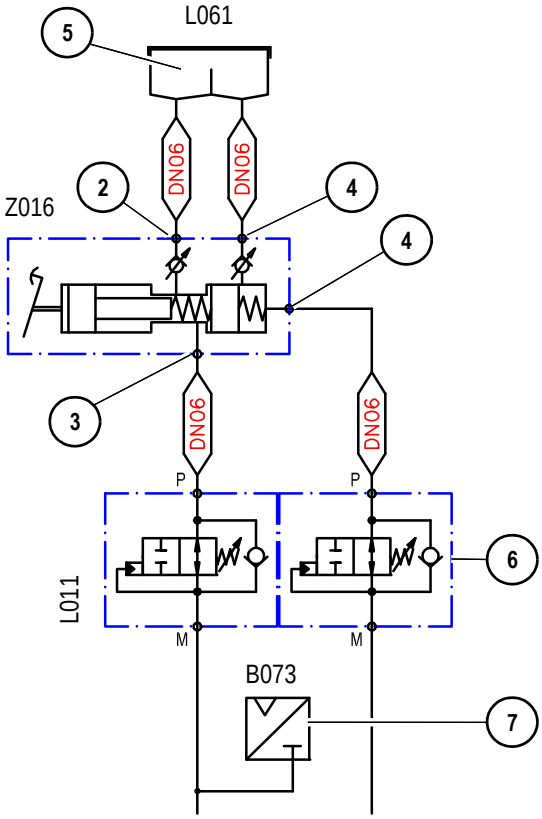
Diagram



Item	BMK/ connection	Description
1	--	Flush valve
2	--	Flush valve pressure relief valve
3	T1	Return-line port flush valve
4	--	Engine speed sensor
5	T2	Leak oil line
6	--	Shuttle valve
7	Y098	Solenoid valve (hydraulic motor setting)
8	A	Hydraulic pump connection
9	B	Hydraulic pump connection
10	M1	Measuring port setting pressure

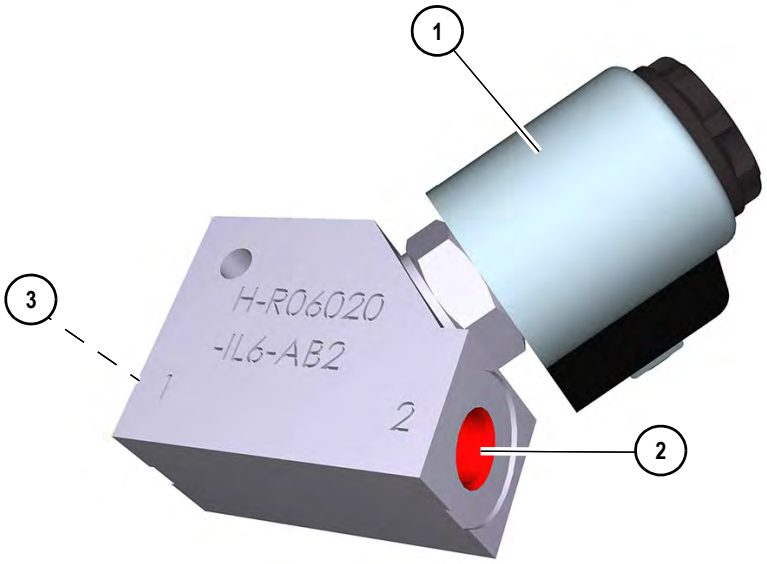
5.4 Brake cylinder (Z016)

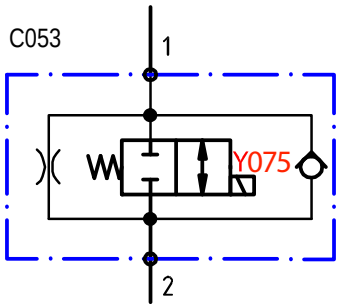




Item	BMK/ connection	Description
1	--	Brake line axle loader unit (via brake-pressure relief valve)
2	--	Supply line from brake fluid reservoir
3	--	Brake line axle drive unit (DV90/DV100) / Brake line axle loader unit (DV60) (via brake-pressure relief valve)
4	--	Supply line from brake fluid reservoir
5	L061	Brake-fluid reservoir
6	L011	Pressure relief valve
7	B073	Pressure sensor for inching function and brake lights

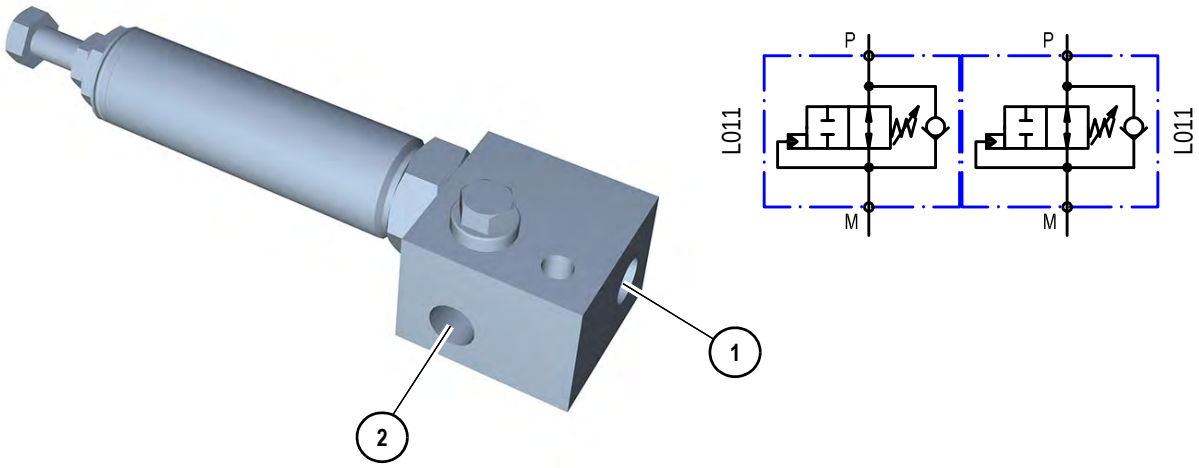
5.5 Shiftable screen (C053)





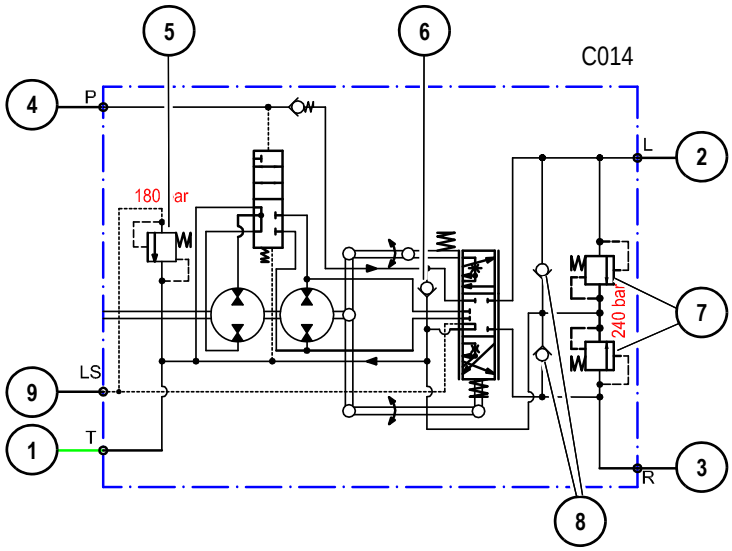
Pos.	BMK/ connection	Description
1	Y075	Solenoid valve
2	2	Axle loader unit connection
3	1	Pilot oil supply unit connection (Y043 magnet parking brake)

5.6 Brake-pressure relief valve (L011)



Pos.	BMK/ connection	Description
1	P	Brake cylinder connection
2	M	Axle connection

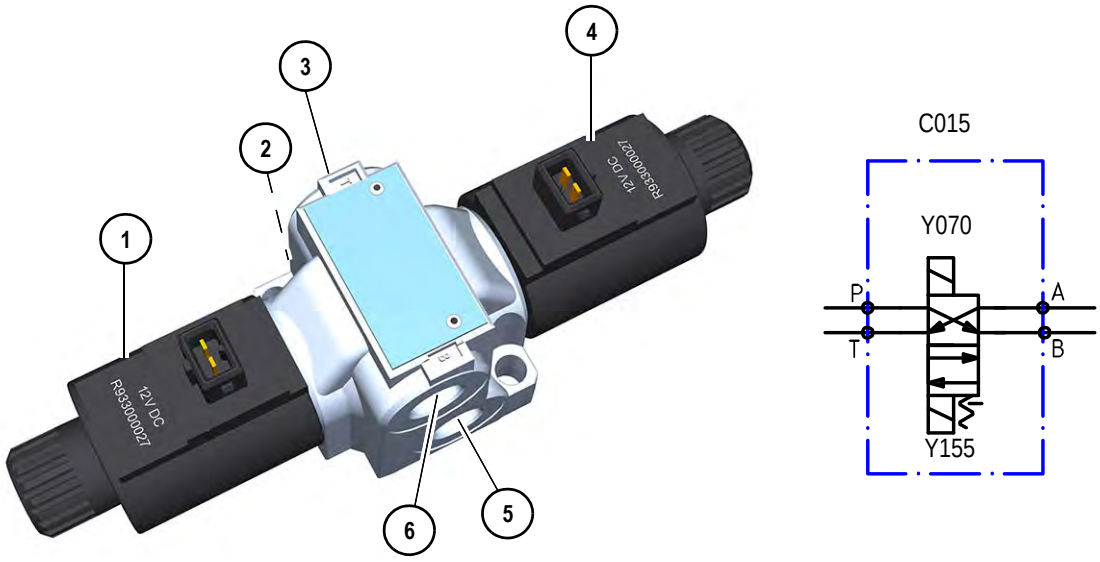
5.7 Steering valve (C014)



Item	BMK/ connection	Description
1	T	Reservoir line
2	L	Steering cylinder connection (left)
3	R	Steering cylinder connection (right)
4	P	Priority valve connection
5	--	Pressure limiting LS

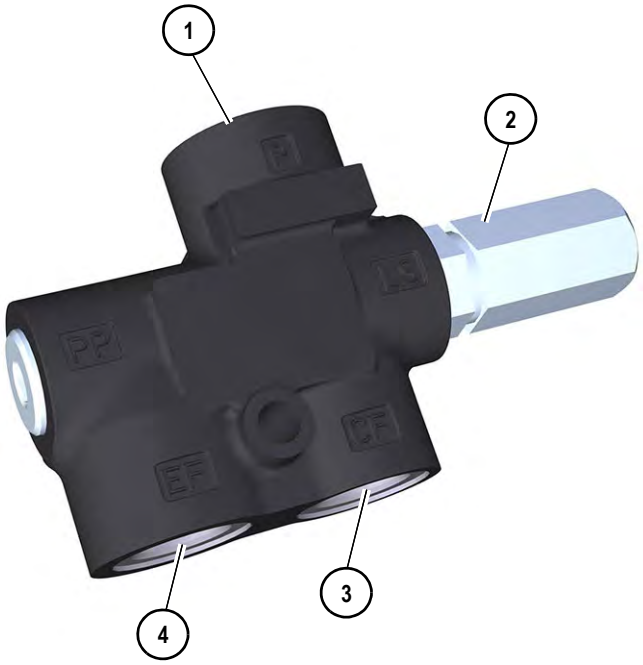
Item	BMK/ connection	Description
6	--	Non-return valve
7	--	Shock valves
8	--	Feeder valves
9	LS	LS-line to the priority valve

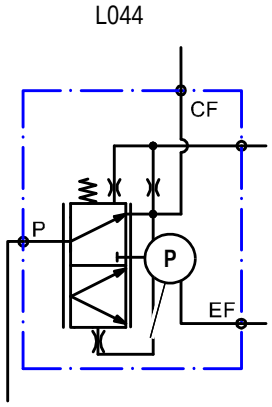
5.8 Steering direction changeover valve (C015)



Pos.	BMK/ connection	Description
1	Y070	Solenoid valve steering direction
2	P	Steering valve connection (L)
3	T	Steering valve connection (R)
4	Y155	Solenoid valve steering direction
5	A	Steering cylinder rod side connection
6	B	Steering cylinder base side connection

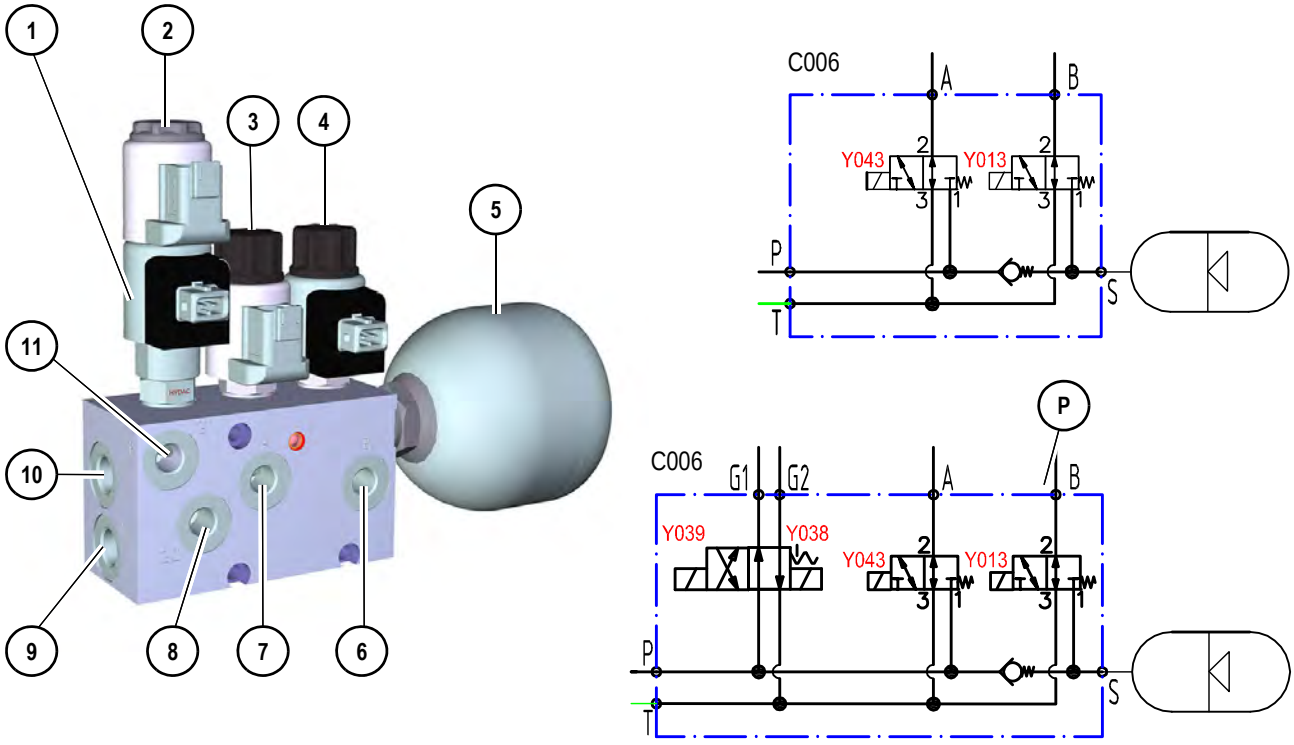
5.9 Priority valve (L044)





Pos.	BMK/ connection	Description
1	P	Working pump connection (via Q003 pressure filter)
2	LS	Steering valve connection (LS)
3	CF	Steering valve connection (P) - high priority
4	EF	Main control block connection (P) - low priority
		For EU Stage V with cab: Connection thermal management valve

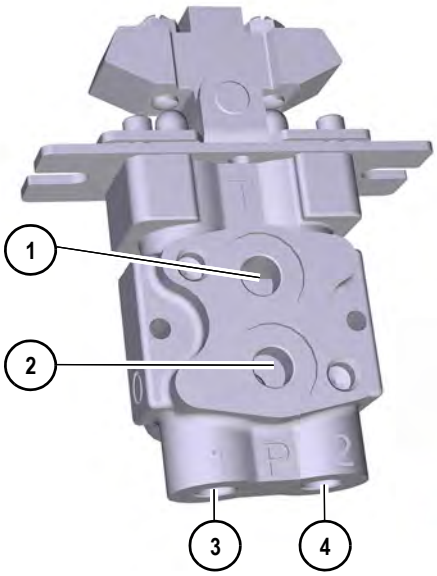
5.10 Control oil unit (C006)



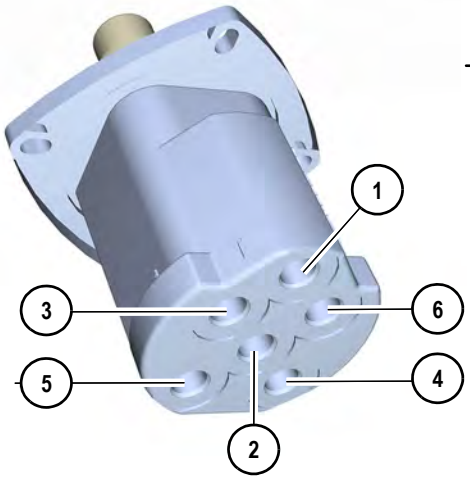
Pos.	BMK/ connection	Description
1	Y039	Speed range 2 (DV90/DV100)
2	Y038	Speed range 1 (DV90/DV100)
3	Y043	Parking brake magnet
4	Y013	Pilot control safety valve
5	L018	Pilot control pressure accumulator
6	B	Joystick connection
7	A	Axle loader unit connection (via C053 shiftable screen)
8	G2	Transfer gearbox connection
9	T	Reservoir connection
10	P	Boost pump connection
11	G1	Transfer gearbox connection

5.11 Joystick valve (C008)

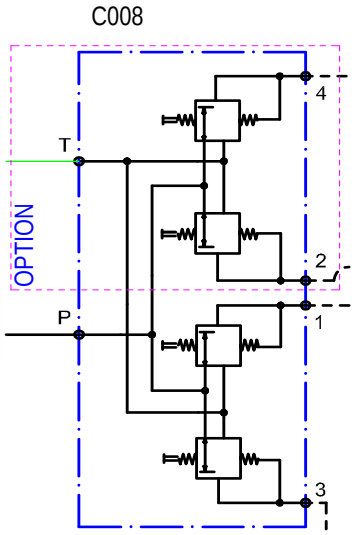
Joystick valve 2-time (front skip)



Joystick valve 4-time (option swivel skip)



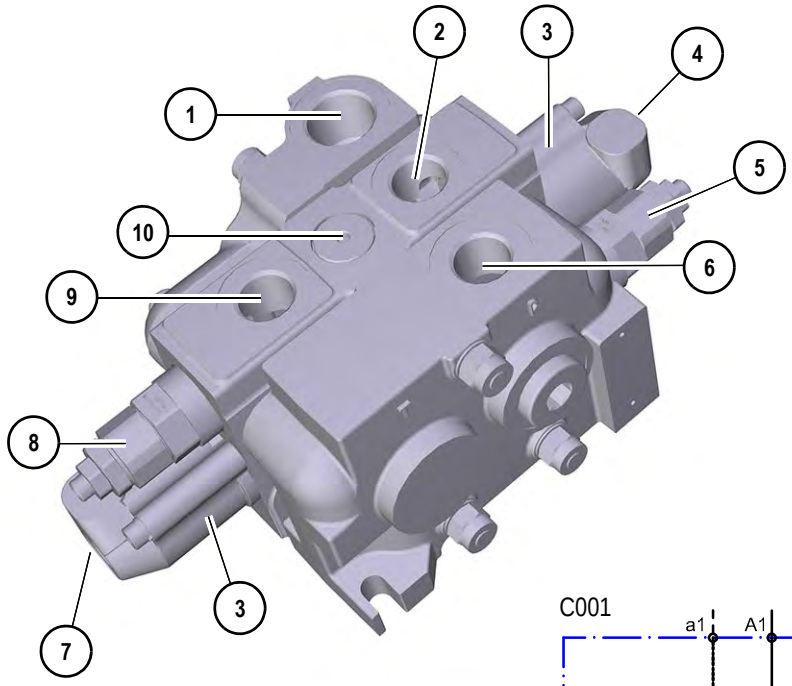
C008

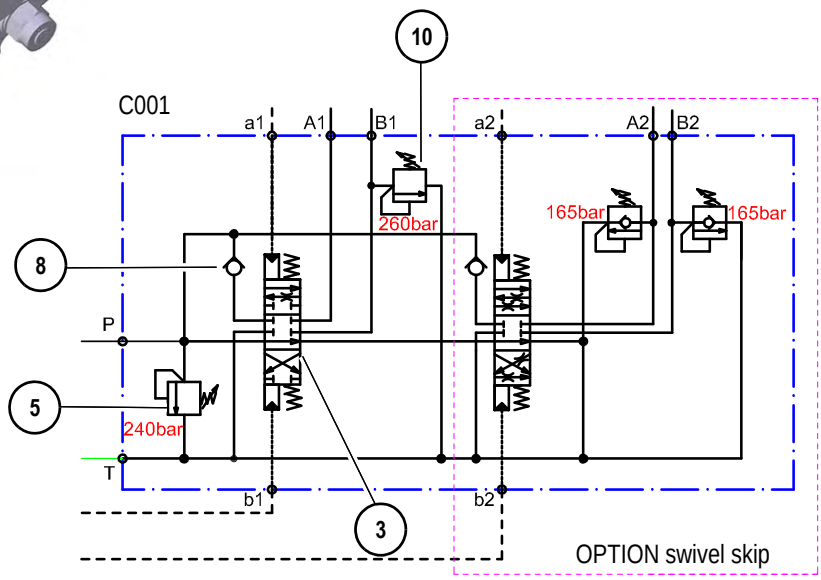


Pos.	BMK/ connection	Description
1	T	Reservoir connection
2	P	Pilot valve connection
3	1	Main valve block connection (a1 - function tilt skip)
4	3	Main valve block connection (b1 - function tilt skip)
5	4	Main valve block connection (a2 - Function turn skip)
6	2	Main valve block connection (b2 - Function turn skip)

5.12 Main valve block (C001)

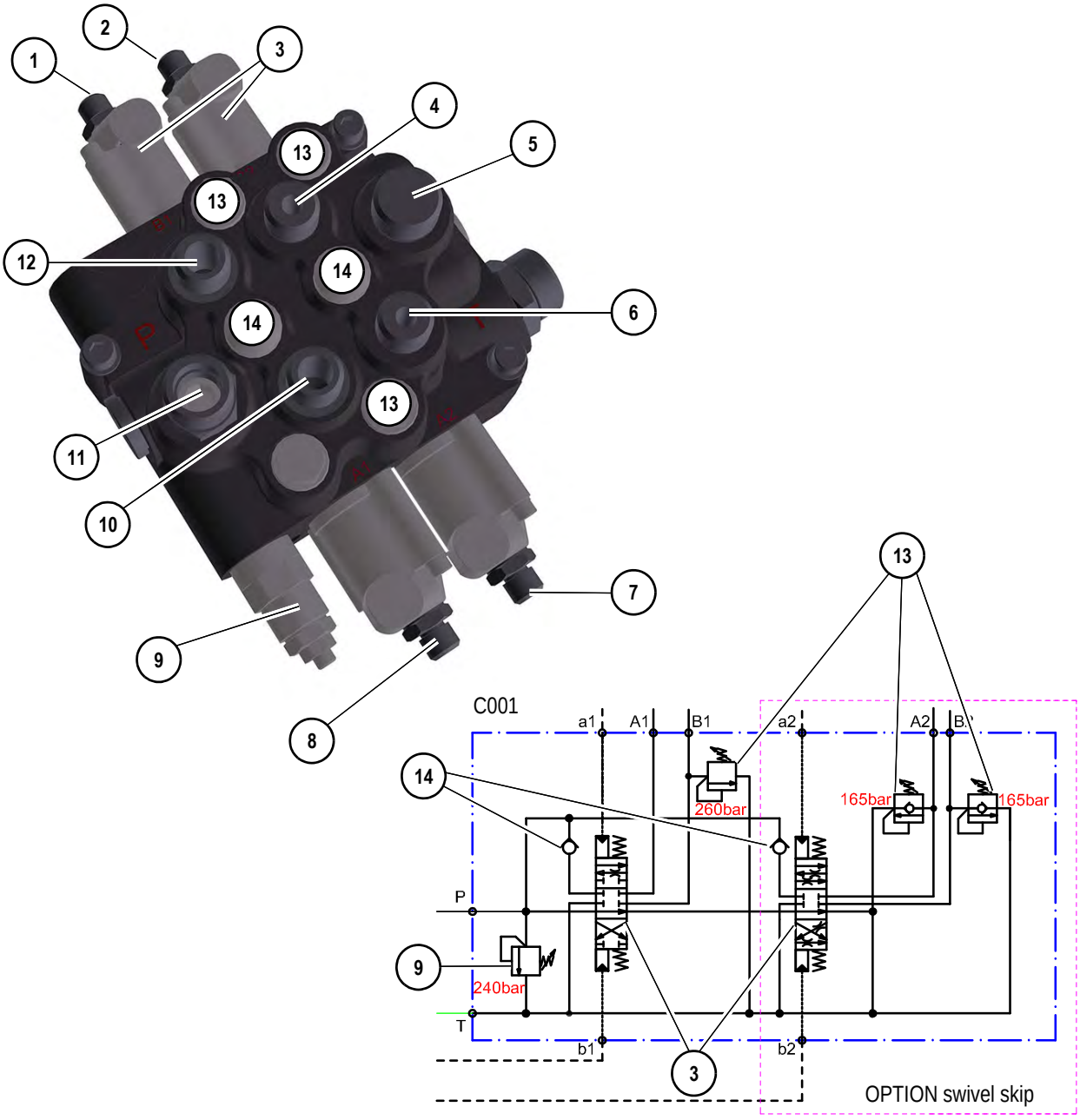
Front skip





Item	BMK/ connection	Description	Item	BMK/ connection	Description
1	T	Reservoir line	6	P	Priority valve connection (EF)
2	A1	Tilt cylinder rod side connection			For EU Stage V with cab: Connection thermal management valve
3	--	6/3 double-action directional valve	7	b1	Joystick valve connection (3)
4	a1	Joystick valve connection (1)	8	--	Secondary pressure limiting valve
5	--	Primary pressure limiting valve operating function	9	B1	Tilt cylinder base side connection
			10	--	Non-return valve

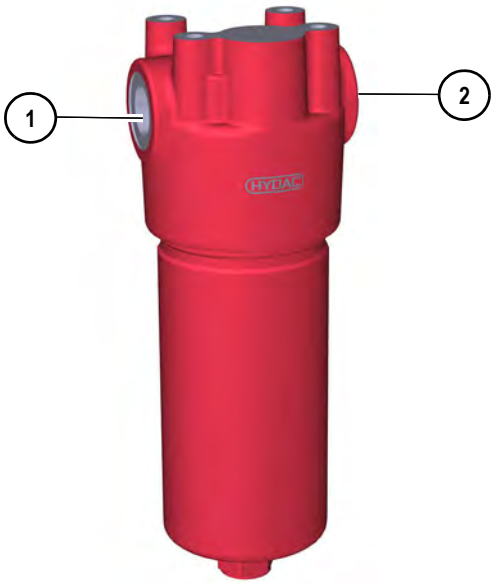
Swivel skip



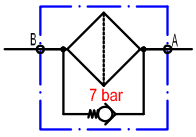
Item	BMK/ connection	Description	Item	BMK/ connection	Description
1	b1	Joystick valve connection (3)	8	a1	Joystick valve connection (1)
2	b2	Joystick valve connection (2)	9	--	Primary pressure limiting valve operating function
3	--	6/3 double-action directional valves	10	A1	Tilt cylinder rod side connection
4	B2	Swivel cylinder connection (turn left)	11	P	Priority valve connection (EF)
5	T	Reservoir line			For EU Stage V with cab: Connection thermal management valve
6	A2	Swivel cylinder connection (turn right)	12	B1	Tilt cylinder base side connection
			13	--	Secondary pressure limiting valves
7	a2	Joystick valve connection (4)	14	--	Non-return valve

5.13 Pressure filter (Q003 / Q004)

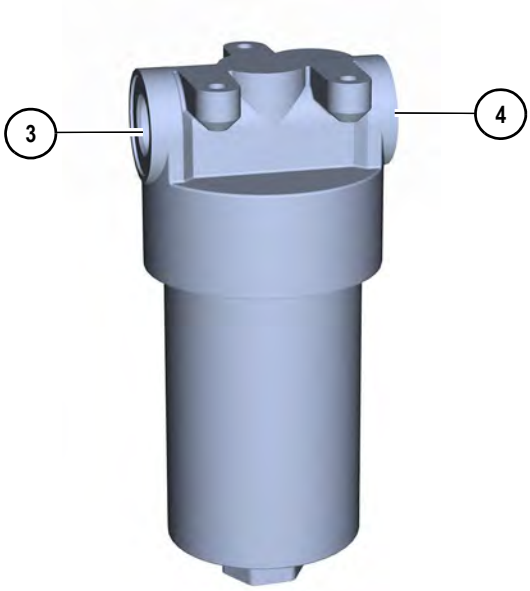
Operating hydraulics pressure filter



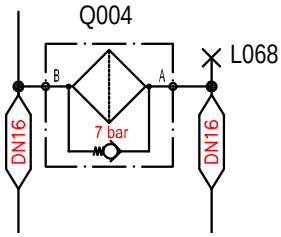
Q003



Pressure filter drive hydraulics



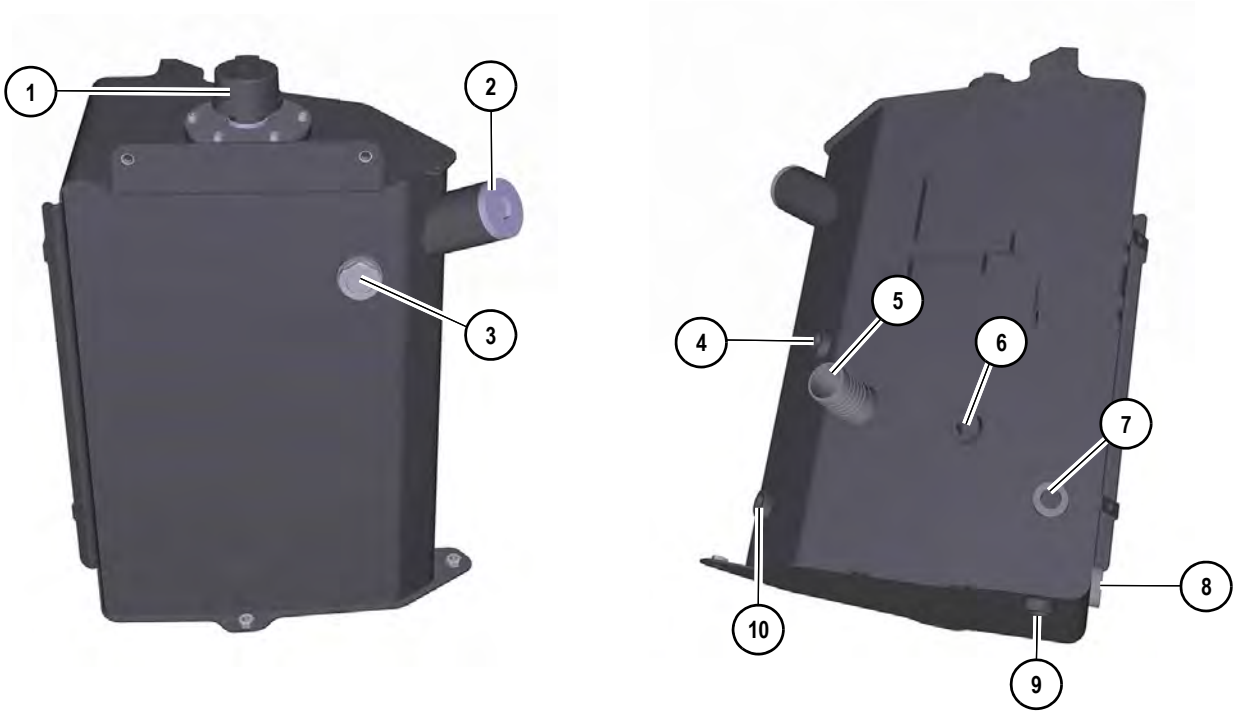
Q004

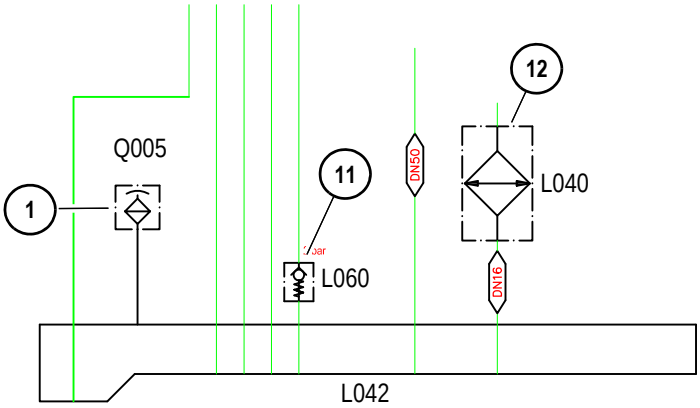


Item	BMK/ connection	Description
1	B	Priority valve connection (P)
2	A	Work pump connection

Item	BMK/ connection	Description
3	A	Hydraulic pump connection (Fe)
4	B	Hydraulic pump connection (Fa)

5.14 Hydraulic oil reservoir (L042)

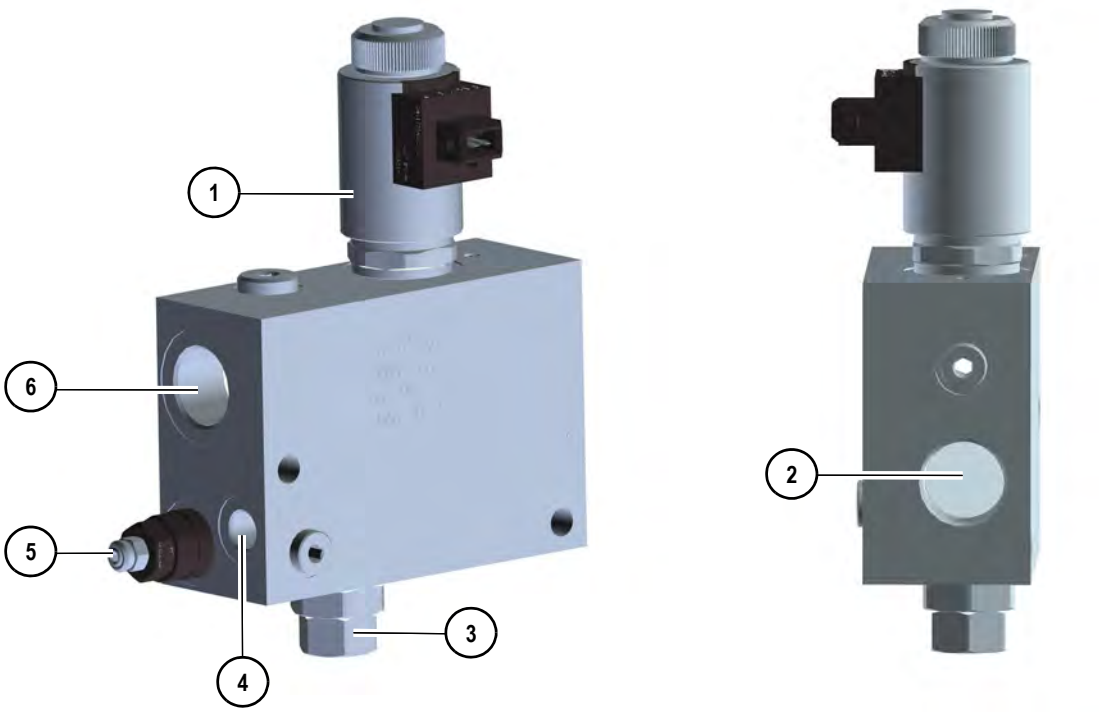


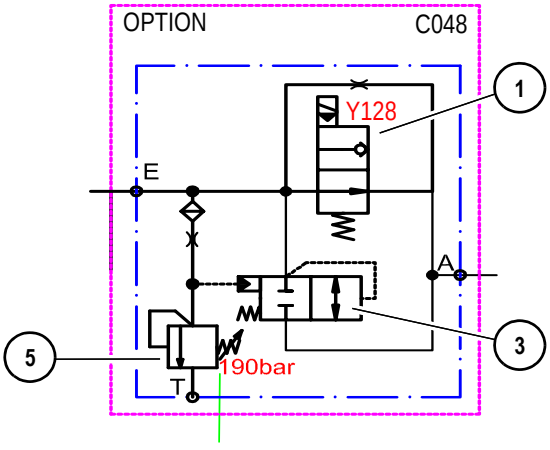


Item	BMK/ connection	Description	Item	BMK/ connection	Description
1	Q005	Breather filter	7	--	Radiator connection
2	--	Hydraulic oil filler inlet	8	--	Steering cylinder connection
3	--	Hydraulic oil level sight glass	9	--	Service valve hydraulic oil tank
4	--	Joystick valve and pilot oil supply unit connection	10	--	Main valve block connection
5		Suction flange	11	L060	Non-return valve
6	--	Hydraulic pump connection (T2)	12	L040	Hydraulic oil radiator

5.15 Thermal management valve (C048)

The thermal management valve is installed in vehicles with cab; from serial number WNCD2401CPAL00353 (DV60), WNCD2402APAL00517 (DV90) and WNCD2403VPAL00217 (DV100).





Item	BMK/ connection	Description	Item	BMK/ connection	Description
1	Y128	Throttle solenoid valve	4	T	Reservoir connection
2	A	Main valve block connection	5	--	Pressure relief valve
3	--	Logic valve	6	E	Priority valve connection

5.16 Malfunctions in the hydraulic system

Problem	Possible causes
Hydraulic system without function	Hydraulic oil level too low
	Malfunctioning pressure limiting valve
	Spool is stuck.
	Hose rupture
	Malfunctioning connection on solenoid valve
	Operating hydraulics lock engaged
Parking brake is released	Malfunctioning brake valve
Parking brake is released	Open the handbrake valve on the brake

Electrical system

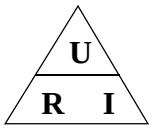
6 Electrical system

6.1 Ohmic law (current, voltage, resistance); Power

It describes the interrelation between current, voltage and resistance.

Current "**I**" – Ampere (A)
Voltage "**U**" – Volt (V)
Resistance "**R**" – Ohm (Ω)

! Mnemonic:



Power

Power "P" – Watt (W)

$P = U \times I = R \times I^2 = U^2 / R$

6.2 Measuring equipment, measuring methods

Multifunction measuring device

- Measurements of values (U, R, I, f)
- Continuity test
- Diode test

Calculate the measuring range using known data (P, U, R, I) and set before measuring.
Observe AC/DC basic setting.

➥ AC = alternating current/voltage;

➥ DC = direct current/voltage

Test device with acoustic and optical signal output

- Continuity test in de-energized vehicle electrical system and of wiring harnesses.

Measuring method – multifunction measuring device

- Measuring current (starter switched on):
  - Black cable in COM socket (ground),
  - Red cable in A socket or mA socket; Connect in series to consumer.
- Measuring voltage (starter switched on):
  - Black cable in COM socket (ground),
  - Red cable in V socket;
  - Connect in parallel to consumer.
- Measuring resistance (starter switched off):
  - Black cable in COM socket (ground),
  - red cable in Ω socket;
  - Connect in parallel to consumer (see measuring voltage).

Test lamp

The test lamp is used for testing lines and functions with the starter switched on.

- Line test (testing voltage):

Connect test lamp between test point (live cable) and vehicle ground or between test point (grounding line) and a live cable.

- Functional check (testing current):

Connect test lamp between a connection on the consumer to be tested and the connection line.

6.3 Cable color coding

Color	Code
Black	bk
Brown	bn
Red	rd
Orange	og
Yellow	ye
Blue	bu
Violet	vt
Gray	gy
White	wh
Pink	pk

6.4 Relays

Use, mode of function

Relays are used for switching electric loads (high currents) whereby the control power of the relay coil is relatively low. Relays can therefore be controlled by microelectronics or microswitches (for example touchpad keyboards, sensors). The switch contacts can be make-contact, break-contact or changeover switches. These undertake the actual switching function.

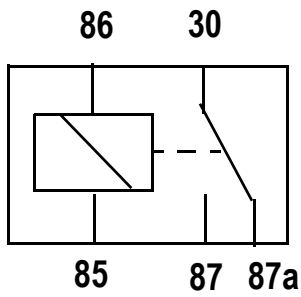


Fig. 127: Terminal description on relay

Zero-center relay

86 Start of coil (control line)

85 End of coil (ground)

30 Input (load line)

87 Make-contact switch output (load line)

87 a Break-contact switch output (load line)

6.5 Electrics department

Alternator

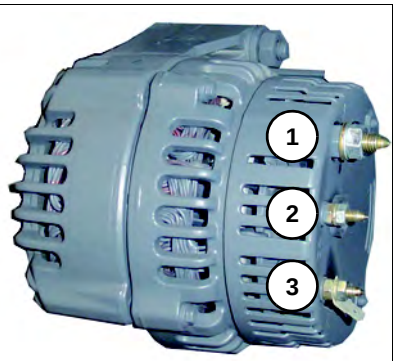


Fig. 128: Alternator

The alternator charges the battery and supplies direct current to electric consumers.

Pos.	Description
1	Connection B (battery)
2	Connection P
3	Connection L indicator light (during service 12 V, otherwise 0 V)

Starter

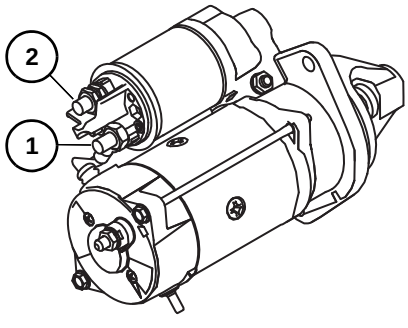


Fig. 129: Starter

Pos.	Description
1	Connection S starting relay
2	Connection B battery

6.6 Control equipment

Total overview of controllers

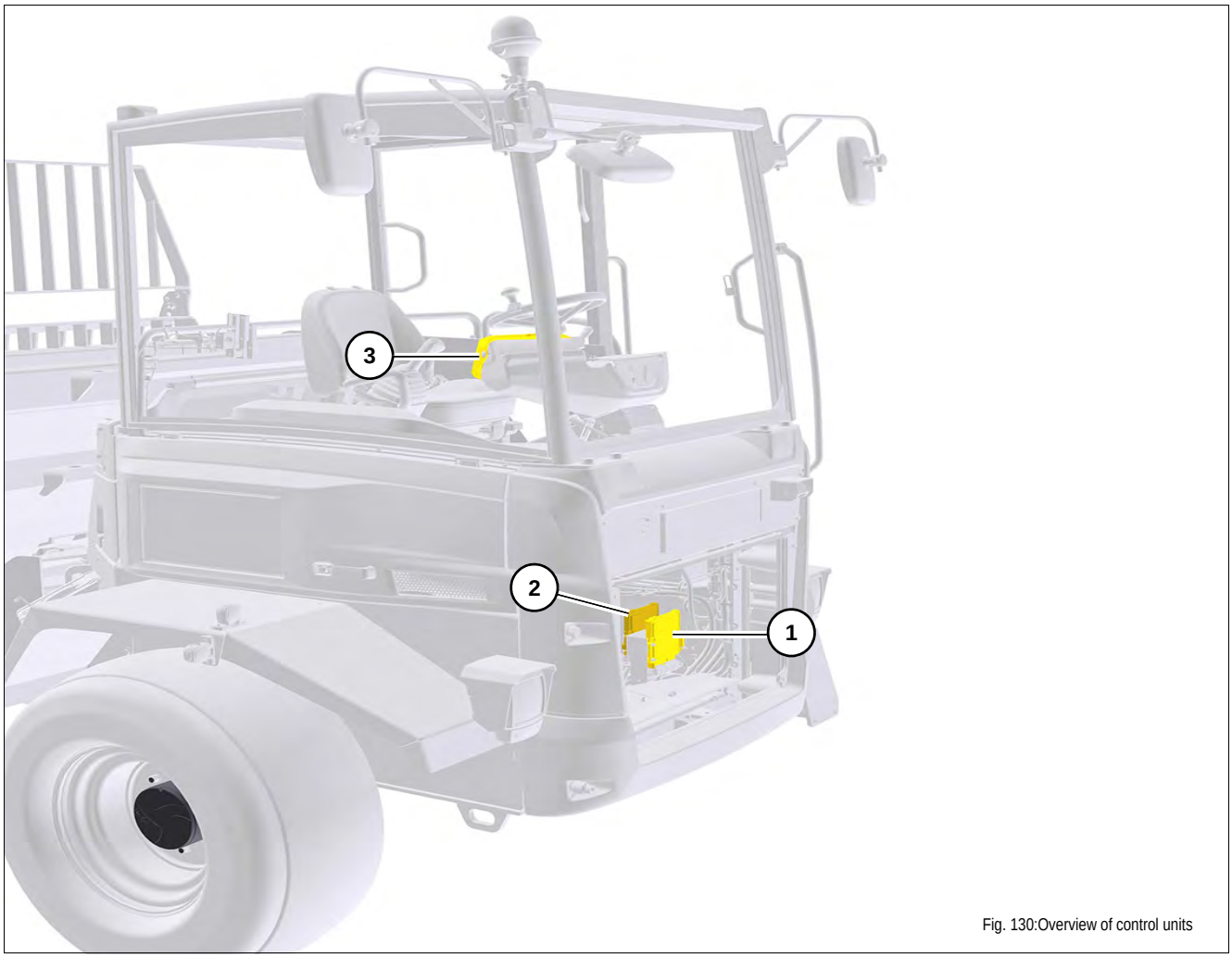


Fig. 130:Overview of control units

Item	BMK	Description
1	N001	Working hydraulics electronics / MVCU Main Vehicle Control Unit
2	N005	Diesel engine electronics
3	P014	Indicating instrument

Control equipment

Fig. 131: Controller N001 - Electronics for work hydraulics

N001 - Work hydraulics electronics / MVCU Main Vehicle Control Unit

The control unit is located under the battery and can be accessed via the maintenance access for underbody panel. From both the control units installed, the MVCU is the control unit installed at the front, near the radiator.

This controller processes the electronic signals for the hydraulically actuated functions.

A detailed representation can be found in the PIN allocation in the circuit diagram.

Fig. 132: Controller N005 - Diesel engine electronics

N005 - Diesel engine electronics

The control unit is located under the battery and can be accessed via the maintenance access for underbody panel.

Fig. 133: Control unit P014 - indicating instrument

P014 - indicating instrument

The display unit is located in the control stand.

6.7 Sensors

Sensors (overview)

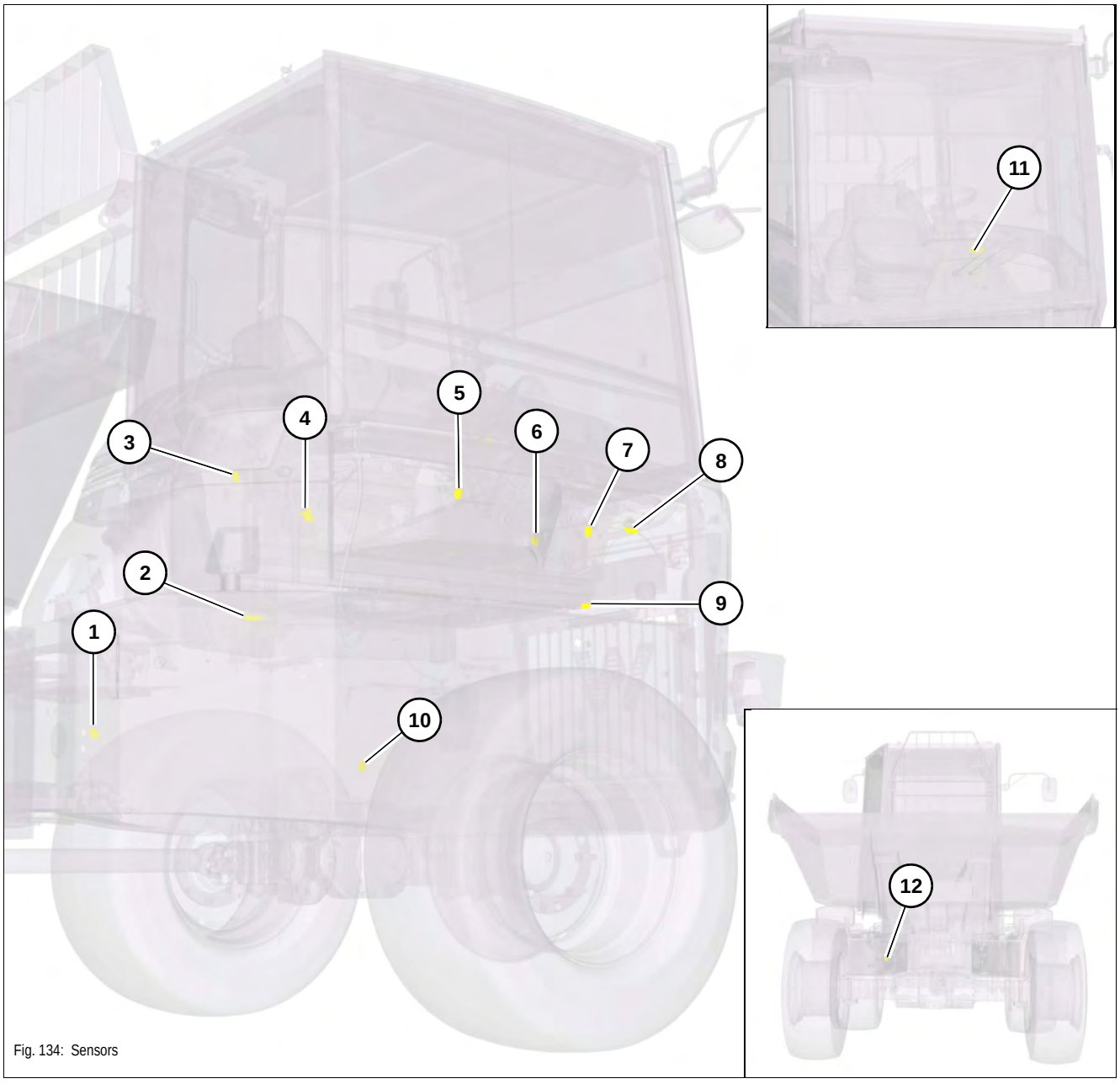


Fig. 134: Sensors

Item	Description	Item	Description
1	B083 - Speed sensor hydraulic motor	7	B057 - Intake air temperature sensor (only EU Stage V)
2	B073 - Pressure sensor for inching pedal	8	B015 - Coolant level sensor (only connector, no sensor installed)
3	B001 - Fuel gauge	9	S004 - Air filter pressure switch
4	B024 - Pressure sensor low pressure fuel	10	B007 - Temperature sensor hydraulic oil (only connector, no sensor installed)
5	S052 - Pressure switch air conditioning	11	B018 - Buzzer
6	B054 - Accelerator pedal	12	B003 - Reversing warning system

Sensors

Fig. 135: B001 - Fuel gauge

B001 - Fuel gauge

The fuel gauge can be accessed via the maintenance lid of the air conditioning system (– *see* *Maintenance accesses* on page 3-18).

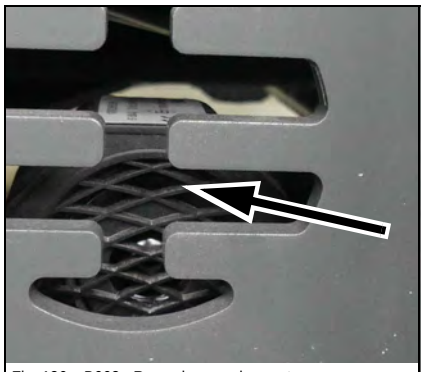


Fig. 136: B003 - Reversing warning system

B003 - Reversing warning system

The reversing warning system is located at the back in the vehicle, on the inside of the vehicle frame.

Fig. 137: B007 Hydraulic oil temperature sensor

B007 Hydraulic oil temperature sensor

Only the connector for the temperature sensor is installed at the factory. The connector is located above the pump.

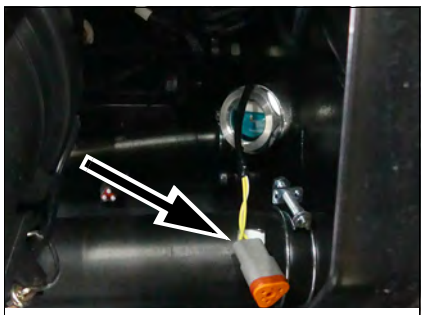


Fig. 138: B015 - Coolant level sensor

B015 - Coolant level sensor

Only the connector for the coolant level sensor is installed at the factory. The connector is located in the engine compartment to the left, behind the combined radiator.

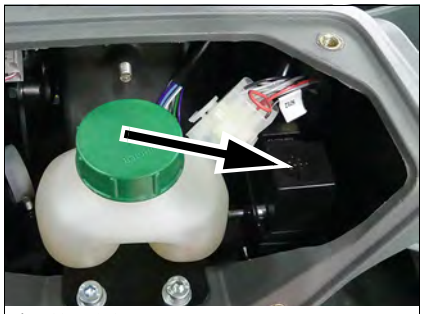


Fig. 139: B018 - Buzzer

B018 - Buzzer

The buzzer is located in the operating console, near the brake fluid reservoir.

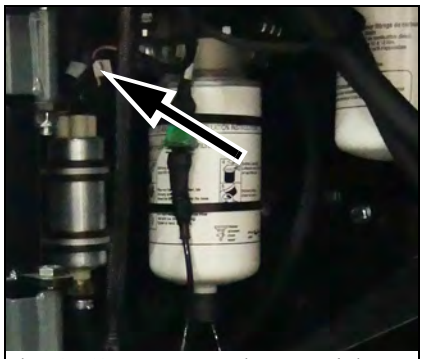


Fig. 140: B024 - Pressure sensor low pressure fuel

B024 - Pressure sensor low pressure fuel

The pressure sensor is located in the engine compartment, above the fuel filter.

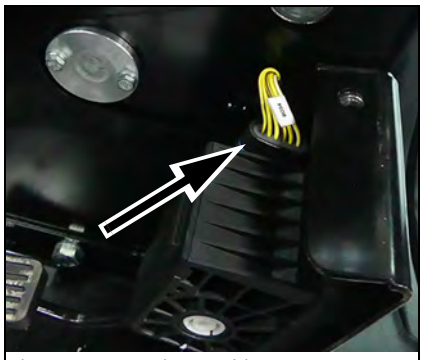


Fig. 141: B054 - Accelerator pedal sensor

B054 - Accelerator pedal sensor

The sensor is located on the turning bracket, near the accelerator pedal.

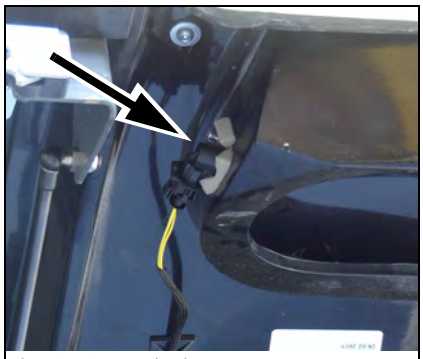


Fig. 142: B054 - Intake air temperature sensor

B057 - Intake air temperature sensor

The sensor is located inside on the engine cover, near the air duct.

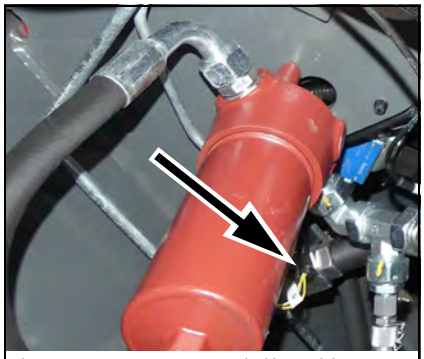


Fig. 143: B073 - Pressure sensor inching pedal

B073 - Pressure sensor for inching pedal

The pressure sensor is located near the work hydraulics filter.

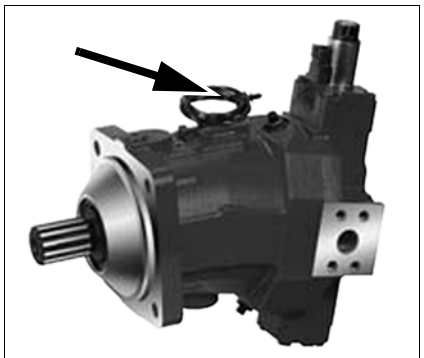


Fig. 144: B083 - Speed sensor

B083 - Speed sensor hydraulic motor

The sensor is located directly on the hydraulic motor.

Fig. 145: S004 - Air filter pressure switch

S004 - Air filter pressure switch

The pressure switch is located in the engine compartment, to the right behind the air filter.

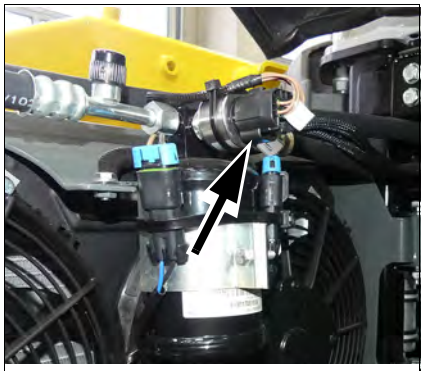


Fig. 146: S052 - Pressure switch for air conditioning system

S052 - Pressure switch for air conditioning system

The pressure sensor is located in the engine compartment, behind the condenser.

6.8 CAN-Bus

The data exchange between the controllers occurs via the CAN bus.

The resistance value must be measured with the ignition off in order to check the status of the CAN bus.

In a proper condition, the resistance value is 60 Ω.

- If the measurement results in a value deviating from 60 Ω, there is an error (e.g. short circuit, defective resistor).

Terminal resistances in the CAN-Bus

The terminal resistances are located

- in the 7" Display (R811)
- in the engine compartment (R810, external terminal resistance, on the frame top center)
- in the fuse box (R812 and R853, external terminal resistances, behind the fuse holder)

The measurement of the resistance value is done via the diagnostic connector XE04 and the engine diagnostic connector XE03. Both connectors are located in the fuse box.

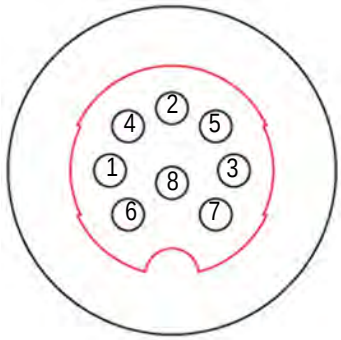


Fig. 147: Diagnostics connector XE04

PIN for the measurement:

Plug XE04	PIN	Correct resistance value
Vehicle-CAN	5	60 Ω
	6	
Rexroth	1	120 Ω[1]
	2	

1. The diagnostics for Rexroth is done in a separate circuit with a separate terminal resistance.

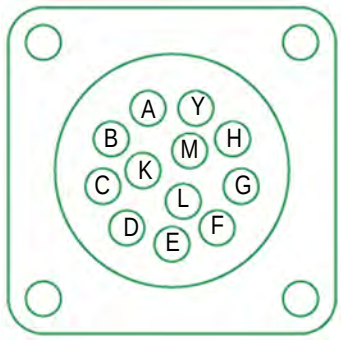


Fig. 148: Engine diagnostic connector XE03

PIN for the measurement:

Plug XE03	PIN	Correct resistance value
Deutz	F	60 Ω
	M	
	G	120 Ω[1]
	H	

1. The diagnostics is done in a separate circuit with a separate terminal resistance.

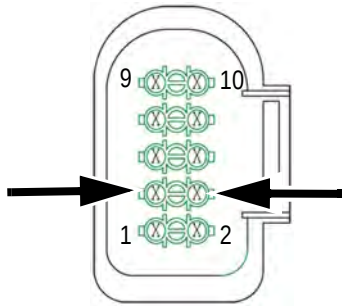


Fig. 149: Display plug XA01

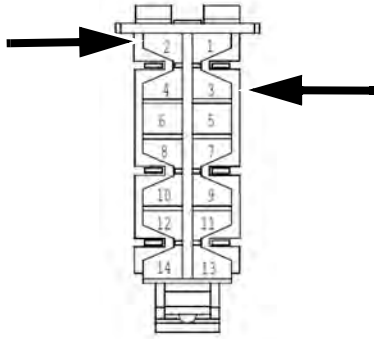


Fig. 150: Plug XE11

Other measuring options:

Connector	PIN	Correct resistance value
Display XA01	3	120 Ω[1]
	4	
XE11	2	60 Ω
	3	

1. To measure the resistance value, the display connector must be unplugged, whereby the CAN bus is interrupted. Therefore, a value of 120 Ω must be measured here.

Wiring harnesses

6.9 Position of wiring harness engine (FRW1)

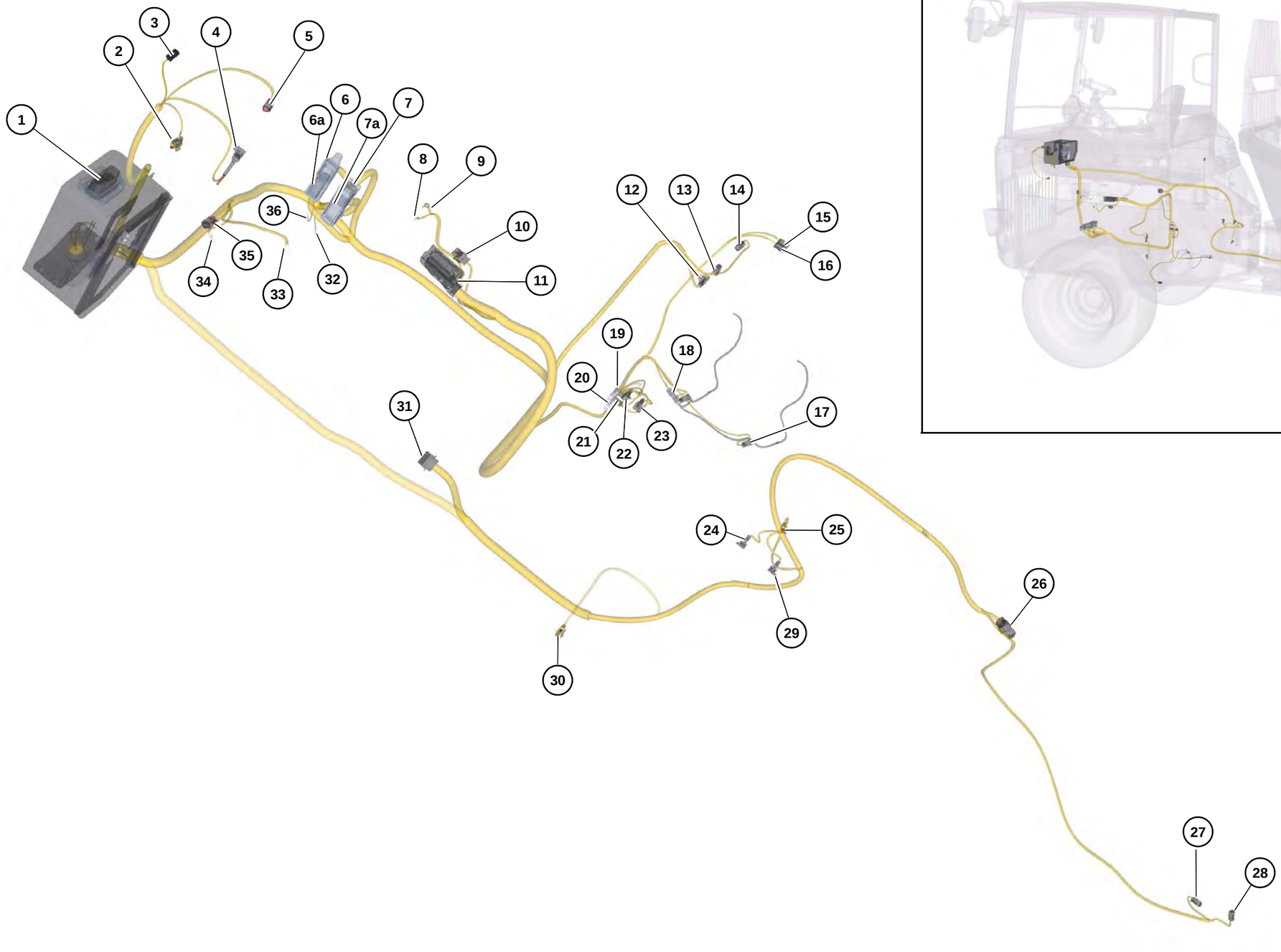
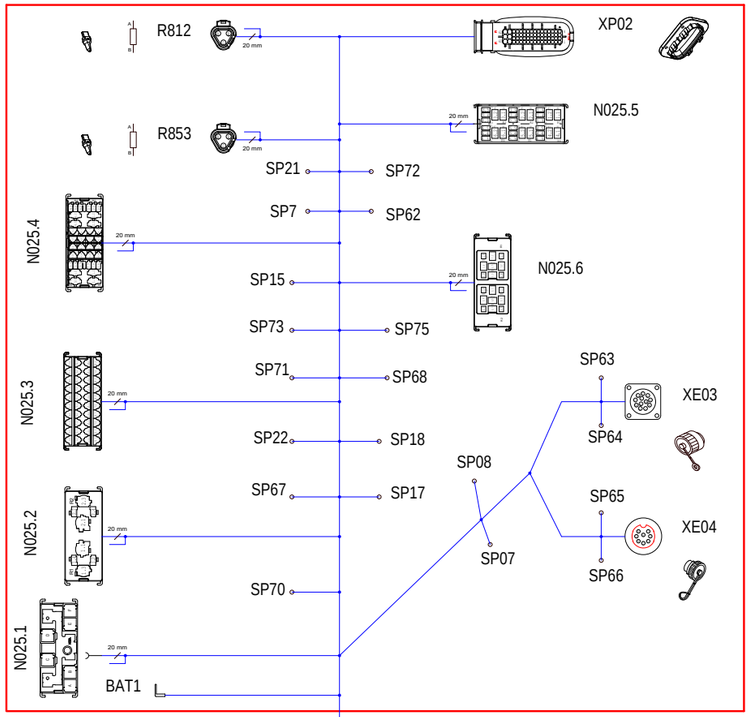


Fig. 151: Position of wiring harness engine

Item	Connector	Function
1	XP02	Fuse box plug
2	S102	Plunger switch connector
3	XR11	Wiring harness rotating beacon green connector
4	S004	Air filter pressure switch connector
5	B015	Coolant level sensor connector
6	N005.A	Diesel engine electronics connector
6a	N005.K	Diesel engine electronics connector
7	N001.1	Drive electronics connector
7a	N001.2	Drive electronics connector
8	G1.1	Cable lug alternator
9	G001	Cable lug alternator
10	X018	Preheating system connector
11	X017	Diesel engine connector
12	B007	Hydraulic oil temperature sensor connector
13	Y004	Reverse travel solenoid valve connector
14	Y005	Forward travel solenoid valve connector
15	S134	Limit switch switching position transmission connector
16	S146	Limit switch switching position transmission connector
17	Y098	Solenoid valve hydraulic motor setting connector
18	B083	Speed sensor connector
19	Y038 (green)	1st speed range solenoid valve connector
20	Y039 (black)	Speed range 2 solenoid valve connector
21	Y075	Screen solenoid valve connector
22	Y013 (blue)	Solenoid valve hydraulic function cut-off connector
23	Y043	Parking brake solenoid valve connector
24	Y155	Solenoid valve changeover steering system connector
25	B073	Pressure sensor for inching pedal connector
26	XS02	Wiring harness lighting rear connector
27	B003 (gray)	Reversing warning system connector
28	E028 (black)	Working light connector
29	Y070	Solenoid valve changeover steering system connector
30	S103	Plunger switch connector
31	XR01	Turning bracket connector
32	GND N001	Cable lug drive electronics
33	GND	Ground
34	S008	Cable lug battery master switch
35	XS01	Wiring harness lighting front connector
36	GND N005	Cable lug drive electronics

6.10 Wiring harness engine (FRW1)



NO25.1		NO25.2		NO25.3				NO25.4				NO25.5	
1	--	R1	K001	1	F005	11	F015	R1	K052	1	F027	R1	K030
2	--	R2	K005	2	F006	12	F016	R2	K063	2	F026	R2	K130
3	F004			3	F007	13	F017	R3	K088	3	F025	R3	K114
4	F003			4	F008	14	F018	R4	K003	4	F024	R4	K131
5	F002			5	F009	15	F019			5	F023	R5	K003.1
6	F001			6	F010	16	--			6	F022	R6	K146
				7	F011	17	V001			7	F021		
				8	F012	18	V002			8	F020		
				9	F013	19	V003						
				10	F014	20	V004						

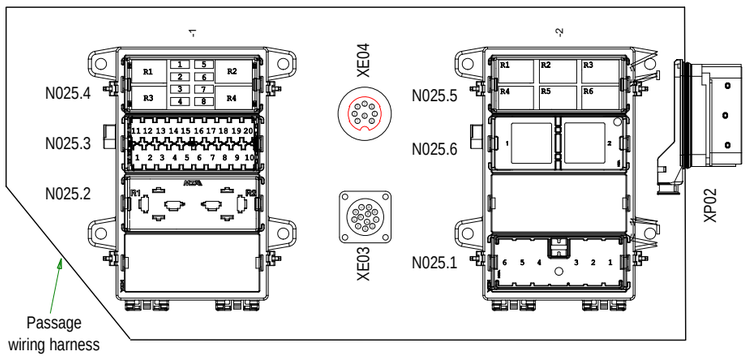


Fig. 152: Wiring harness engine - part 1

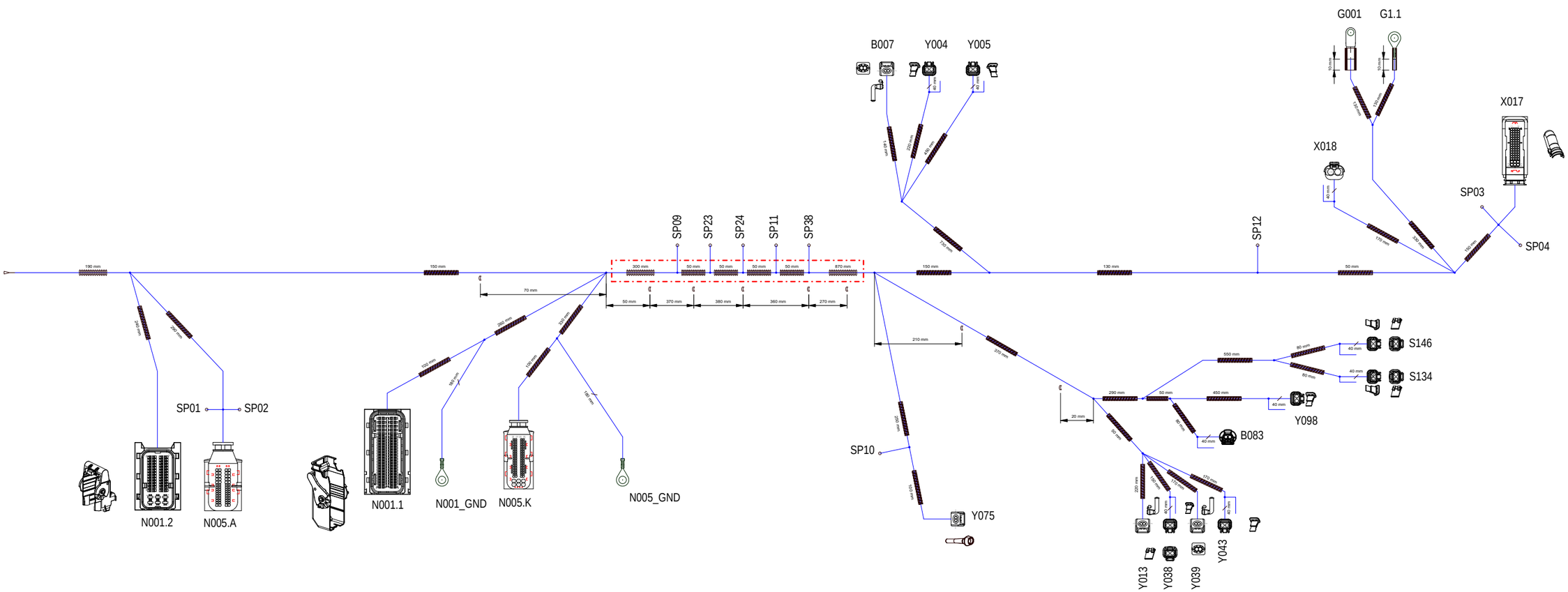


Fig. 153: Wiring harness engine - part 2

6.11 Strand list wiring harness engine (FRW1)

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-B003	1	-SP05	1	BK / 1.00 mm²	GND
2	-B003	2	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
3	-B015	B	-SP30	1	YE-BN / 0.75 mm²	GND sensor
4	-B073	A	-N001.2	55	YE-WH / 0.75 mm²	VSS_3
5	-B073	B	-SP38	1	YE-BN / 0.75 mm²	GND_S1
6	-B073	C	-N001.1	38	YE / 0.75 mm²	Pressure inch valve
7	-B083	1	-SP38	1	YE-BN / 0.75 mm²	GND_S1
8	-B083	2	-N001.1	12	YE / 0.75 mm²	Rpm hydraulic motor
9	-E028	2	-SP05	1	BK / 1.00 mm²	GND
10	-G001	1	-S008	1	RD / 16.00 mm²	12V30
11	-GND	1	-SP35	1	BK / 4.00 mm²	GND
12	-GND	1	-SP50	1	BK / 4.00 mm²	GND
13	-N001.1	15	-XP02	11	PK / 0.75 mm²	Low fuel protection
14	-N001.1	16	-B007	1	YE / 0.75 mm²	Oil temperature
15	-N001.1	20	-N025.3	17.1	BN / 0.75 mm²	Fan
16	-N001.1	22	-SP35	1	BK / 0.75 mm²	GND
17	-N001.1	24	-SP35	1	BK / 1.50 mm²	GND
18	-N001.1	28	-Y043	1	BU / 1.00 mm²	Parking brake HS
19	-N001.1	40	-S134	2	YE / 0.75 mm²	Gear position 2
20	-N001.1	45	-B007	2	YE-BN / 0.75 mm²	GND_S2
21	-N001.1	47	-SP14	1	PK / 0.75 mm²	Start signal
22	-N001.1	53	-Y005	1	BU / 1.00 mm²	Pump forward HS
23	-N001.1	80	-Y013	2	GN / 0.75 mm²	Pilot valve LS
24	-N001.1	89	-N025.2	1.2	OG / 0.75 mm²	F031
25	-N001.1	93	-N025.5	1.3	GY / 0.75 mm²	Brake light
26	-N001.1	94	-N025.4	4.3	GY / 0.75 mm²	Backward lightning/alarm
27	-N001.2	1	-SP20	1	RD / 2.50 mm²	F008
28	-N001.2	2	-SP35	1	BK / 2.50 mm²	GND
29	-N001.2	3	-SP20	1	RD / 2.50 mm²	F008
30	-N001.2	4	-SP20	1	RD / 2.50 mm²	F008
31	-N001.2	5	-SP20	1	RD / 2.50 mm²	F008
32	-N001.2	6	-SP20	1	RD / 2.50 mm²	F008
33	-N001.2	7	-SP35	1	BK / 0.75 mm²	GND
34	-N001.2	20	-SP35	1	BK / 0.75 mm²	GND
35	-N001.2	28	-SP22	1	RD-WH / 0.75 mm²	F012
36	-N001.2	33	-SP35	1	BK / 0.75 mm²	GND
37	-N001.2	34	-XR01	23	BU / 0.75 mm²	Rocker driving red.
38	-N001.2	37	-XR01	20	BU / 0.75 mm²	Switch ECO mode
39	-N001.2	41	-Y070	1	BU / 0.75 mm²	Steering direction 2 HS
40	-N001.2	43	-Y155	1	BU / 0.75 mm²	Steering direction 1 HS
41	-N001.2	45	-SP33	1	RD / 0.75 mm²	F009
42	-N001.2	46	-SP35	1	BK / 0.75 mm²	GND
43	-N001.2	47	-XR01	22	BU / 0.75 mm²	Rocker driving
44	-N001.2	58	-SP33	1	RD / 0.75 mm²	F009
45	-N005.A	2	-X017	61	PK / 1.50 mm²	Injector 3
46	-N005.A	3	-X017	41	PK / 1.50 mm²	Injector 2
47	-N005.A	4	-X017	19	PK / 1.50 mm²	Actuator MPROP
48	-N005.A	5	-X017	20	PK / 1.50 mm²	Actuator MPROP
49	-N005.A	7	-X017	32	PK / 0.75 mm²	Rail pressure
50	-N005.A	16	-X017	35	PK / 1.50 mm²	Injector 1
51	-N005.A	18	-X017	37	PK / 1.50 mm²	Injector 4
52	-N005.A	19	-X017	47	PK / 1.50 mm²	Exhaust gas valve
53	-N005.A	24	-SP11	1	PK / 0.75 mm²	GND sensor
54	-N005.A	25	-X017	31	PK / 0.75 mm²	Rail pressure
55	-N005.A	26	-X017	25	PK / 0.75 mm²	Rail pressure
56	-N005.A	27	-X017	29	PK / 0.75 mm²	Boost pressure
57	-N005.A	28	-X017	24	PK / 0.75 mm²	Cooling temperature
58	-N005.A	29	-SP09	1	PK / 0.75 mm²	Sensor supply
59	-N005.A	32	-X017	38	PK / 1.50 mm²	Injector 3
60	-N005.A	33	-X017	62	PK / 1.50 mm²	Injector 1
61	-N005.A	35	-N025.2	2.4	PK / 0.75 mm²	Pre-heat relay -
62	-N005.A	37	-X017	14	BN / 0.75 mm²	Engine speed, camshaft
63	-N005.A	39	-X017	15	BN / 0.75 mm²	Engine speed, crankshaft
64	-N005.A	40	-X017	28	PK / 0.75 mm²	Boost pressure
65	-N005.A	43	-X017	23	PK / 0.75 mm²	Boost pressure
66	-N005.A	44	-X017	26	PK / 0.75 mm²	Oil pressure
67	-N005.A	46	-X017	40	PK / 1.50 mm²	Injector 2
68	-N005.A	48	-X017	42	PK / 1.50 mm²	Injector 4
69	-N005.A	52	-X017	13	WH / 0.75 mm²	Engine speed, camshaft
70	-N005.A	54	-X017	21	WH / 0.75 mm²	Engine speed, crankshaft
71	-N005.K	1	-SP13	1	RD / 2.50 mm²	F007
72	-N005.K	2	-SP35	1	BK / 2.50 mm²	GND
73	-N005.K	3	-SP13	1	RD / 2.50 mm²	F007
74	-N005.K	4	-SP35	1	BK / 2.50 mm²	GND
75	-N005.K	5	-SP13	1	RD / 2.50 mm²	F007
76	-N005.K	6	-SP35	1	BK / 2.50 mm²	GND
77	-N005.K	13	-B015	C	YE / 0.75 mm²	Coolant level
78	-N005.K	26	-N025.4	3.5	PK / 0.75 mm²	Fuel pump relay -
79	-N005.K	28	-X017	2	PK / 0.75 mm²	Start relay +
80	-N005.K	29	-B015	A	YE-WH / 0.75 mm²	Sensor U-bat
81	-N005.K	35	-N025.6	2.3	PK / 0.75 mm²	Start signal
82	-N005.K	44	-X017	50	PK / 0.75 mm²	DPF/EGR Sensor 5V
83	-N005.K	61	-XP02	8	PK / 0.75 mm²	Low fuel pressure
84	-N005.K	64	-XP02	6	PK / 0.75 mm²	Low fuel pressure
85	-N005.K	73	-X017	3	PK / 0.75 mm²	Start relay -
86	-N005.K	82	-X017	51	PK / 0.75 mm²	EGR sensor GND
87	-N005.K	85	-X017	46	PK / 0.75 mm²	EGR sensor
88	-N005.K	86	-S004	1	YE / 1.00 mm²	Air filter
89	-N005.K	87	-SP30	1	YE-BN / 0.75 mm²	GND sensor
90	-N005.K	90	-N025.4	3.3	PK / 0.75 mm²	Fuel pump relay +

nr.	From	Pin	To	Pin	Color/mm²	Function
91	-N025.1	C	-SP74	1	RD / 6.00 mm²	12V30
92	-N025.1	F	-N025.2	1.1	RD / 10.00 mm²	F001
93	-N025.2	1.4	-SP18	1	BK / 0.75 mm²	GND
94	-N025.2	2.1	-N025.1	E	RD / 10.00 mm²	Preheat
95	-N025.2	2.2	-N005.A	45	PK / 0.75 mm²	Pre-heat relay +
96	-N025.3	1.1	-SP16	1	GY / 0.75 mm²	Side markers
97	-N025.3	2.1	-SP16	1	GY / 0.75 mm²	Side markers
98	-N025.3	3.1	-SP73	1	RD / 4.00 mm²	12V30
99	-N025.3	4.1	-SP73	1	RD / 4.00 mm²	12V30
100	-N025.3	5.1	-SP73	1	RD / 1.50 mm²	12V30
101	-N025.3	6.1	-SP71	1	RD-WH / 1.50 mm²	12V15_1
102	-N025.3	7.1	-SP75	1	RD-WH / 1.50 mm²	12V15
103	-N025.3	8.1	-SP75	1	RD-WH / 1.50 mm²	12V15
104	-N025.3	9.1	-SP72	1	RD-WH / 1.50 mm²	12V15_1
105	-N025.3	10.1	-SP73	1	RD / 2.50 mm²	12V30
106	-N025.3	10.2	-XP02	21	GY / 1.50 mm²	F014
107	-N025.3	11.1	-SP73	1	RD / 1.50 mm²	12V30
108	-N025.3	12.1	-SP74	1	RD / 1.00 mm²	12V30
109	-N025.3	12.2	-XP02	32	RD / 1.00 mm²	F016
110	-N025.3	13.1	-SP71	1	RD-WH / 2.50 mm²	12V15_1
111	-N025.3	13.2	-XP02	31	RD-WH / 1.50 mm²	F017
112	-N025.3	14.1	-SP71	1	RD-WH / 4.00 mm²	12V15_1
113	-N025.3	15.1	-SP71	1	RD-WH / 2.50 mm²	12V15_1
114	-N025.3	17.1	-XP02	50	BN / 0.75 mm²	Fan
115	-N025.3	18.1	-SP17	1	VT / 1.00 mm²	Work lights
116	-N025.3	19.1	-SP67	1	GY / 0.75 mm²	High beam
117	-N025.3	20.1	-SP68	1	GY / 0.75 mm²	Low beam
118	-N025.4	1.2	-SP76	1	GY / 1.50 mm²	Low beam
119	-N025.4	1.5	-SP18	1	BK / 0.75 mm²	GND
120	-N025.4	2.5	-SP18	1	BK / 0.75 mm²	GND
121	-N025.4	4.2	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
122	-N025.4	4.5	-SP18	1	BK / 0.75 mm²	GND
123	-N025.4	5.1	-XP02	33	RD / 1.50 mm²	F020
124	-N025.4	5.5	-SP73	1	RD / 1.50 mm²	12V30
125	-N025.4	6.2	-N025.5	1.1	RD-WH / 1.00 mm²	F021
126	-N025.4	6.2	-N025.5	2.1	RD-WH / 1.00 mm²	F021
127	-N025.4	6.6	-SP72	1	RD-WH / 2.50 mm²	12V15_1
128	-N025.4	7.7	-SP71	1	RD-WH / 1.50 mm²	12V15_1
129	-N025.4	8.8	-SP71	1	RD-WH / 1.50 mm²	12V15_1
130	-N025.4	9.9	-SP73	1	RD-WH / 1.50 mm²	12V30
131	-N025.4	10.10	-SP74	1	RD / 1.50 mm²	12V30
132	-N025.4	11.11	-SP72	1	RD-WH / 1.50 mm²	12V15_1
133	-N025.4	12.12	-SP73	1	RD / 1.50 mm²	12V30
134	-N025.5	1.2	-XS02	1	GY / 1.00 mm²	Brake light
135	-N025.5	1.5	-SP18	1	BK / 0.75 mm²	GND
136	-N025.5	2.3	-SP22	1	RD-WH / 0.75 mm²	F012
137	-N025.5	2.5	-XR01	24	BK-BN / 0.75 mm²	Horn
138	-N025.5	3.1	-N025.3	10.2	RD / 1.00 mm²	F014
139	-N025.5	3.5	-SP18	1	BK / 0.75 mm²	GND
140	-N025.5	4.3	-SP75	1	RD-WH / 1.50 mm²	12V15
141	-N025.5	4.5	-SP18	1	BK / 0.75 mm²	GND
142	-N025.5	5.1	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
143	-N025.5	5.3	-N001.1	90	GY / 0.75 mm²	Changeover direction indicator
144	-N025.5	5.4	-XS02	6	GY / 1.00 mm²	Backward lightning/alarm
145	-N025.5	5.5	-SP18	1	BK / 0.75 mm²	GND
146	-N025.5	6.5	-SP18	1	BK / 0.75 mm²	GND
147	-N025.6	1.3	-XR01	31	GY / 1.00 mm²	Turn signal
148	-N025.6	1.5	-SP18	1	BK / 0.75 mm²	GND
149	-N025.6	2.2	-SP54	1	RD / 0.75 mm²	F011
150	-N025.6	2.4	-SP18	1	BK / 0.75 mm²	GND
151	-R812	A	-SP66	1	GN / 0.75 mm²	CAN2 Low
152	-R812	B	-SP65	1	YE / 0.75 mm²	CAN2 High
153	-R853	B	-SP64	1	YE / 0.75 mm²	CAN1 High
154	-S008	1	-BAT1	1	RD / 16.00 mm²	12V30
155	-S102	2	-N001.1	57	YE / 0.75 mm²	Steering direction 1 red.
156	-S102	4	-N001.2	14	YE / 0.75 mm²	Steering direction 1
157	-S103	2	-N001.2	38	YE / 0.75 mm²	Steering direction 2 red.
158	-S103	4	-N001.2	52	YE / 0.75 mm²	Steering direction 2
159	-S134	1	-SP38	1	YE-BN / 0.75 mm²	GND_S1
160	-S146	1	-SP38	1	YE-BN / 0.75 mm²	GND_S1
161	-S146	2	-N001.1	55	YE / 0.75 mm²	Gear position 1
162	-SP01	1	-N005.A	38	PK / 0.75 mm²	Engine speed, crankshaft shield
163	-SP02	1	-N005.A	53	PK / 0.75 mm²	Engine speed, camshaft shield
164	-SP03	1	-X017	1	PK / 0.75 mm²	Engine speed, crankshaft shield
165	-SP04	1	-X017	9	PK / 0.75 mm²	Engine speed, camshaft shield
166	-SP05	1	-GND	1	BK / 4.00 mm²	GND
167	-SP05	1	-XR01	8	BK / 1.00 mm²	GND
168	-SP06	1	-N025.4	2.2	GY / 1.50 mm²	High beam
169	-SP06	1	-XR01	32	GY / 0.75 mm²	High beam
170	-SP06	1	-XS01	6	GY / 1.50 mm²	High beam
171	-SP07	1	-SP25	1	YE / 0.75 mm²	CAN0 High
172	-SP07	1	-XE03	M	YE / 0.75 mm²	CAN0 High
173	-SP07	1	-XE04	6	YE / 0.75 mm²	CAN0 High
174	-SP07	1	-XP02	14	YE / 0.75 mm²	CAN0 High
175	-SP08	1	-SP26	1	GN / 0.75 mm²	CAN0 Low
176	-SP08	1	-XE03	F	GN / 0.75 mm²	CAN0 Low
177	-SP08	1	-XE04	5	GN / 0.75 mm²	CAN0 Low
178	-SP08	1	-XP02	15	GN / 0.75 mm²	CAN0 Low
179	-SP09	1	-X017	27	PK / 0.75 mm²	Sensor supply
180	-SP10	1	-N001.2	31	BU / 0.75 mm²	Parking brake Feedback
181	-SP10	1	-Y075	1	BU / 0.75 mm²	Parking brake Feedback
182	-SP11	1	-X017	22	PK / 0.75 mm²	GND sensor

nr.	From	Pin	To	Pin	Color/mm²	Function
183	-SP12	1	-N005.A	23	PK / 0.75 mm²	12V30
184	-SP12	1	-N025.2	2.3	RD / 10.00 mm²	12V30
185	-SP12	1	-X018	1	RD / 6.00 mm²	12V30
186	-SP12	1	-X018	2	RD / 6.00 mm²	12V30
187	-SP13	1	-N025.3	3.2	RD / 4.00 mm²	F007
188	-SP14	1	-N025.6	2.1	PK / 0.75 mm²	Start signal
189	-SP14	1	-XP02	4	PK / 0.75 mm²	Start signal
190	-SP15	1	-N025.3	11.2	RD / 1.50 mm²	F015
191	-SP15	1	-XP02	24	RD / 0.75 mm²	F015
192	-SP16	1	-XR01	27	GY / 1.00 mm²	Side markers
193	-SP17	1	-E028	1	VT / 1.00 mm²	Work lights
194	-SP18	1	-SP50	1	BK / 1.50 mm²	GND
195	-SP18	1	-XP02	42	BK / 1.50 mm²	GND
196	-SP20	1	-N025.3	4.2	RD / 4.00 mm²	F008
197	-SP22	1	-N025.3	8.2	RD-WH / 1.50 mm²	F012
198	-SP22	1	-XP02	1	RD-WH / 1.50 mm²	F012
199	-SP23	1	-N005.K	76	GN / 0.75 mm²	CAN0 Low
200	-SP24	1	-N005.K	54	YE / 0.75 mm²	CAN0 High
201	-SP25	1	-N001.2	15	YE / 0.75 mm²	CAN0 High
202	-SP25	1	-SP24	1	YE / 0.75 mm²	CAN0 High
203	-SP26	1	-N001.2	16	GN / 0.75 mm²	CAN0 Low
204	-SP26	1	-SP23	1	GN / 0.75 mm²	CAN0 Low
205	-SP30	1	-S004	2	YE-BN /1.00 mm²	GND sensor
206	-SP31	1	-N001.2	21	OG / 0.75 mm²	Error lamp
207	-SP31	1	-SP55	1	OG / 0.75 mm²	Error lamp
208	-SP31	1	-XR01	12	OG / 0.75 mm²	Error lamp
209	-SP32	1	-G1.1	1	PK / 1.00 mm²	Charge control
210	-SP33	1	-N025.3	5.2	RD / 1.00 mm²	F009
211	-SP35	1	-N001.1	23	BK / 0.75 mm²	GND
212	-SP35	1	-N001_GND	1	BK / 2.50 mm²	GND
213	-SP35	1	-N005_GND	1	BK / 2.50 mm²	GND
214	-SP36	1	-N001.1	79	BU / 0.75 mm²	Steering direction LS
215	-SP36	1	-Y070	2	BU / 0.75 mm²	Steering direction LS
216	-SP36	1	-Y155	2	BU / 0.75 mm²	Steering direction LS
217	-SP37	1	-N001.2	32	YE-WH / 0.75 mm²	VSS_2
218	-SP37	1	-S102	1	YE-WH / 0.75 mm²	VSS_2
219	-SP37	1	-S102	3	YE-WH / 0.75 mm²	VSS_2
220	-SP37	1	-S103	1	YE-WH / 0.75 mm²	VSS_2
221	-SP37	1	-S103	3	YE-WH / 0.75 mm²	VSS_2
222	-SP37	1	-XP02	13	YE-WH / 0.75 mm²	VSS_2
223	-SP38	1	-N001.1	46	BK / 0.75 mm²	GND_S1
224	-SP44	1	-N025.3	1.2	GY / 0.75 mm²	Side markers, left
225	-SP44	1	-XS01	2	GY / 0.75 mm²	Side markers, left
226	-SP44	1	-XS02	2	GY / 0.75 mm²	Side markers, left
227	-SP45	1	-N025.3	2.2	GY / 0.75 mm²	Side markers, right
228	-SP45	1	-XS01	3	GY / 0.75 mm²	Side markers, right
229	-SP45	1	-XS02	3	GY / 0.75 mm²	Side markers, right
230	-SP50	1	-XR01	7	BK / 1.50 mm²	GND
231	-SP50	1	-Y075	2	BK / 0.75 mm²	GND
232	-SP54	1	-N001.2	40	RD-WH / 0.75 mm²	F011
233	-SP54	1	-N005.K	88	RD-WH / 0.75 mm²	F011
234	-SP54	1	-N025.3	7.2	RD-WH / 0.75 mm²	F011
235	-SP56	1	-SP50	1	BK / 0.75 mm²	GND
236	-SP62	1	-N025.3	14.2	RD-WH / 4.00 mm²	F018
237	-SP63	1	-N005.K	53	GN / 0.75 mm²	CAN1 Low
238	-SP63	1	-R853	A	GN / 0.75 mm²	CAN1 Low
239	-SP64	1	-N005.K	75	YE / 0.75 mm²	CAN1 High
240	-SP64	1	-XE03	H	YE / 0.75 mm²	CAN1 High
241	-SP65	1	-N001.2	53	YE / 0.75 mm²	CAN2 High
242	-SP65	1	-XE04	2	YE / 0.75 mm²	CAN2 High
243	-SP66	1	-N001.2	54	GN / 0.75 mm²	CAN2 Low
244	-SP66	1	-XE04	1	GN / 0.75 mm²	CAN2 Low
245	-SP67	1	-N025.4	2.3	GY / 0.75 mm²	High beam
246	-SP67	1	-XR01	25	GY / 1.00 mm²	High beam
247	-SP68	1	-N025.4	1.3	GY / 0.75 mm²	Low beam
248	-SP68	1	-XP02	23	GY / 0.75 mm²	Low beam
249	-SP68	1	-XR01	26	GY / 1.00 mm²	Low beam
250	-SP70	1	-N001.2	26	OG / 0.75 mm²	Status power consumers
251	-SP70	1	-N025.3	17.2	OG / 0.75 mm²	Status power consumers
252	-SP70	1	-N025.3	18.2	OG / 0.75 mm²	Status power consumers
253	-SP70	1	-N025.3	19.2	OG / 0.75 mm²	Status power consumers
254	-SP70	1	-N025.3	20.2	OG / 0.75 mm²	Status power consumers
255	-SP71	1	-N025.2	1.3	RD / 10.00 mm²	12V15_1
256	-SP72	1	-N025.5	4.2	RD-WH / 2.50 mm²	12V15_1
257	-SP73	1	-N025.1	D	RD / 6.00 mm²	12V30
258	-SP74	1	-N025.5	4.1	RD / 2.50 mm²	12V30
259	-SP74	1	-XP02	57	RD / 2.50 mm²	12V30
260	-SP74	1	-XP02	58	RD / 2.50 mm²	12V30
261	-SP75	1	-XP02	59	RD-WH / 2.50 mm²	12V15
262	-SP75	1	-XP02	60	RD-WH / 2.50 mm²	12V15
263	-X017	48	-N005.A	20	PK / 1.50 mm²	Exhaust gas valve
264	-XE03	A	-SP22	1	RD-WH / 0.75 mm²	F012
265	-XE03	B	-SP18	1	BK / 0.75 mm²	GND
266	-XE03	G	-SP63	1	GN / 0.75 mm²	CAN1 Low
267	-XE04	7	-SP22	1	RD-WH / 0.75 mm²	F012
268	-XE04	8	-SP18	1	BK / 0.75 mm²	GND
269	-XP02	2	-N001.2	17	BU / 0.75 mm²	Parking brake Feedback red.
270	-XP02	3	-SP10	1	BU / 0.75 mm²	Parking brake Feedback
271	-XP02	5	-N005.K	57	PK / 0.75 mm²	Boost pressure
272	-XP02	7	-SP11	1	PK / 0.75 mm²	GND sensor
273	-XP02	9	-SP09	1	PK / 0.75 mm²	Sensor supply
274	-XP02	10	-XR01	30	YE / 0.75 mm²	Fuel level

nr.	From	Pin	To	Pin	Color/mm²	Function
275	-XP02	12	-SP32	1	PK / 1.00 mm²	Charge control
276	-XP02	16	-N001.1	67	BU / 0.75 mm²	Switch parking brake
277	-XP02	17	-N001.1	69	BU / 0.75 mm²	Switch parking brake red.
278	-XP02	18	-N001.2	27	BU / 0.75 mm²	Parking brake test
279	-XP02	19	-N001.1	65	GN / 0.75 mm²	Street mode
280	-XP02	20	-N001.1	70	GN / 0.75 mm²	Street mode red.
281	-XP02	22	-N025.3	9.2	GY / 1.50 mm²	F013
282	-XP02	25	-N025.5	2.2	VT / 1.00 mm²	F012
283	-XP02	26	-N025.3	6.2	RD-WH / 1.50 mm²	F010
284	-XP02	27	-N025.5	3.3	VT / 0.75 mm²	Rotating Beacon
285	-XP02	28	-N025.5	3.2	VT / 0.75 mm²	Rotating Beacon
286	-XP02	29	-SP17	1	VT / 1.00 mm²	Work lights
287	-XP02	30	-N025.4	12.16	RD / 1.50 mm²	F027
288	-XP02	34	-N025.3	15.2	RD-WH / 1.50 mm²	F019
289	-XP02	35	-N025.3	15.2	RD-WH / 1.50 mm²	F019
290	-XP02	36	-SP54	1	RD-WH / 0.75 mm²	F011
291	-XP02	37	-N025.6	1.2	GY / 0.75 mm²	Indicator relay +
292	-XP02	38	-N025.6	1.4	GY / 0.75 mm²	Indicator
293	-XP02	39	-SP52	1	GY / 0.75 mm²	Turn indicator (left)
294	-XP02	40	-SP53	1	GY / 0.75 mm²	Turn indicator (right)
295	-XP02	41	-N025.4	11.15	RD-WH / 1.50 mm²	F026
296	-XP02	43	-SP38	1	YE-BN / 0.75 mm²	GND_S1
297	-XP02	44	-N001.1	10	PK / 0.75 mm²	Switch auto stop red.
298	-XP02	45	-N001.1	13	PK / 0.75 mm²	Switch auto stop
299	-XP02	48	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
300	-XP02	49	-N025.4	3.2	PK / 1.50 mm²	Fuel pump
301	-XP02	61	-SP62	1	RD-WH / 2.50 mm²	F018
302	-XP02	62	-SP62	1	RD-WH / 2.50 mm²	F018
303	-XR01	1	-N001.1	59	YE / 0.75 mm²	Throttle signal red.
304	-XR01	2	-N001.1	58	YE / 0.75 mm²	Throttle signal
305	-XR01	3	-N001.2	19	YE-WH / 0.75 mm²	VSS_1
306	-XR01	4	-SP38	1	BK / 0.75 mm²	GND_S1
307	-XR01	5	-N025.5	6.3	VT / 0.75 mm²	Switch Seatbelt
308	-XR01	6	-N001.1	39	YE / 0.75 mm²	Operator seat sensor NO
309	-XR01	9	-SP15	1	RD / 1.50 mm²	F015
310	-XR01	11	-SP22	1	RD-WH / 1.50 mm²	F012
311	-XR01	13	-SP32	1	PK / 1.00 mm²	Charge control
312	-XR01	14	-N025.6	1.4	GY / 1.00 mm²	Indicator
313	-XR01	15	-SP24	1	YE / 0.75 mm²	CAN0 High
314	-XR01	16	-SP23	1	GN / 0.75 mm²	CAN0 Low
315	-XR01	17	-N001.1	41	YE / 0.75 mm²	Operator seat sensor NC
316	-XR01	19	-N001.2	50	BU / 0.75 mm²	Switch 2nd gear
317	-XR01	28	-SP52	1	GY / 0.75 mm²	Turn indicator (left)
318	-XR01	29	-SP53	1	GY / 0.75 mm²	Turn indicator (right)
319	-XR01	33	-SP76	1	GY / 1.00 mm²	Low beam
320	-XR11	1	-N025.5	6.2	VT / 1.00 mm²	Green Beacon
321	-XR11	2	-SP05	1	BK / 1.00 mm²	GND
322	-XS01	1	-SP76	1	GY / 1.50 mm²	Low beam
323	-XS01	4	-SP53	1	GY / 0.75 mm²	Turn indicator (right)
324	-XS01	5	-SP52	1	GY / 0.75 mm²	Turn indicator (left)
325	-XS01	7	-SP05	1	BK / 1.50 mm²	GND
326	-XS02	4	-SP53	1	GY / 1.00 mm²	Turn indicator (right)
327	-XS02	5	-SP52	1	GY / 1.00 mm²	Turn indicator (left)
328	-XS02	7	-SP05	1	BK / 1.50 mm²	GND
329	-XS02	8	-SP05	1	BK / 1.50 mm²	GND
330	-Y004	1	-N001.1	77	BU / 1.00 mm²	Pump backward HS
331	-Y004	2	-N001.1	85	BU / 0.75 mm²	Pump backward LS
332	-Y005	2	-N001.1	84	BU / 0.75 mm²	Pump forward LS
333	-Y013	1	-N001.1	3	GN / 1.00 mm²	Pilot valve HS
334	-Y038	1	-N001.1	78	BU / 0.75 mm²	1st gear
335	-Y038	2	-SP50	1	BK / 0.75 mm²	GND
336	-Y039	1	-N001.1	51	BU / 1.00 mm²	2nd gear
337	-Y039	2	-SP50	1	BK / 0.75 mm²	GND
338	-Y043	2	-N001.1	83	BU / 0.75 mm²	Parking brake LS
339	-Y098	1	-N001.1	54	BU / 0.75 mm²	Hydraulic motor HS
340	-Y098	2	-N001.1	86	BU / 0.75 mm²	Hydraulic motor LS

6.12 Position of wiring harness engine (FRW1) - EU Stage V

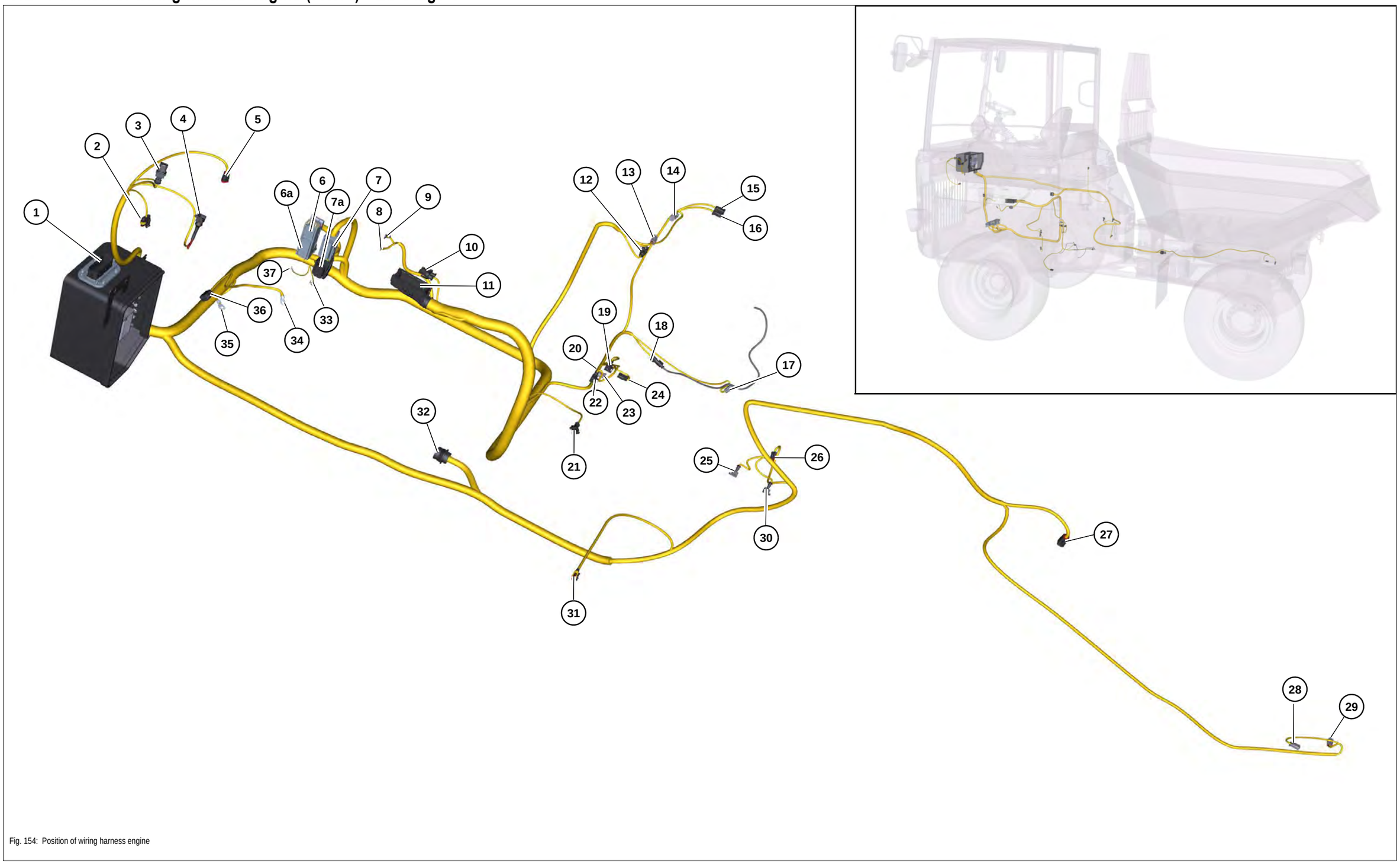
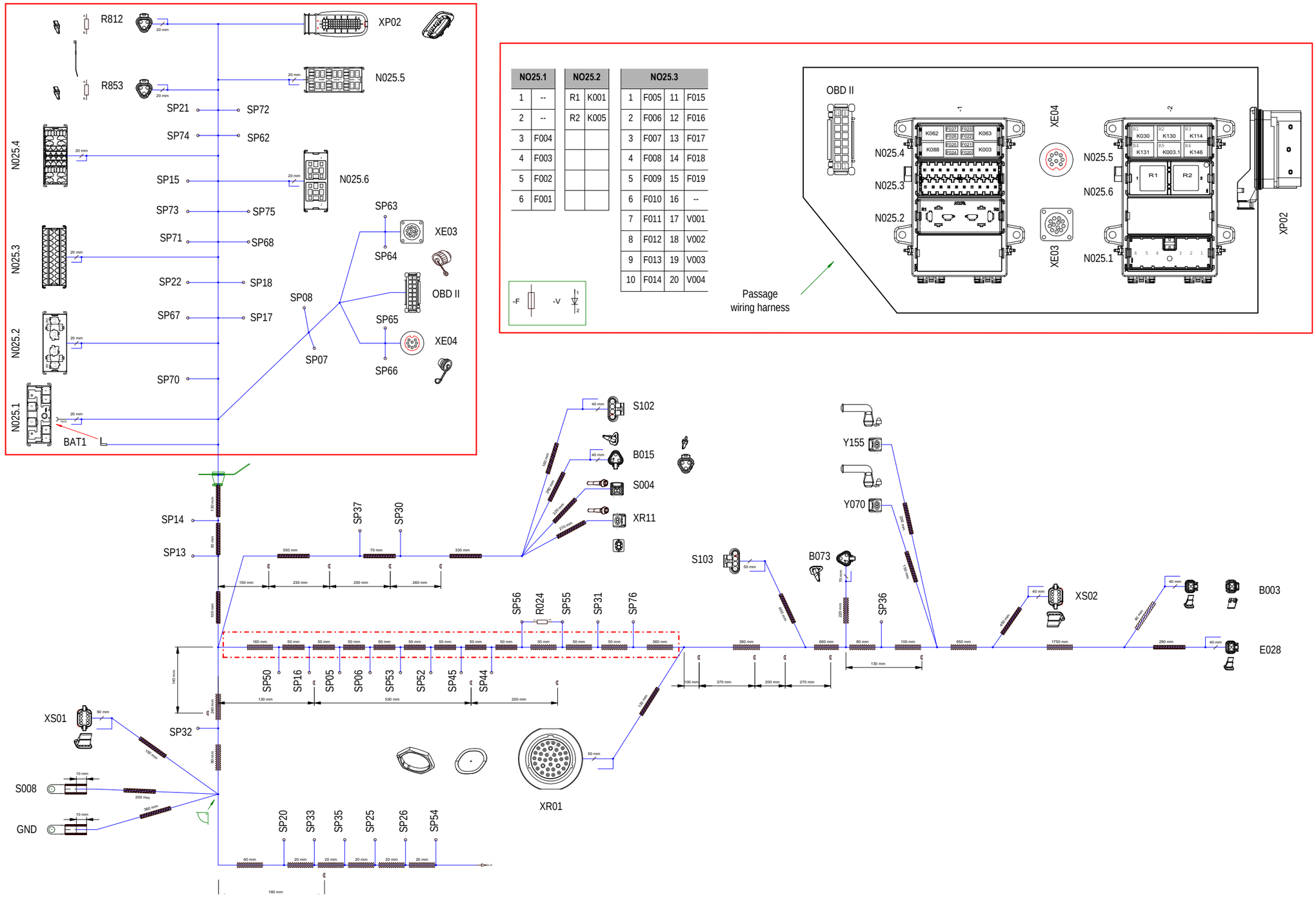


Fig. 154: Position of wiring harness engine

Item	Connector	Function
1	XP02	Fuse box plug
2	S102	Plunger switch connector
3	XR11	Wiring harness rotating beacon green connector
4	S004	Air filter pressure switch connector
5	B015	Coolant level sensor connector
6	N005.A	Diesel engine electronics connector
6a	N005.K	Diesel engine electronics connector
7	N001.1	Drive electronics connector
7a	N001.2	Drive electronics connector
8	G1.1	Cable lug alternator
9	G001	Cable lug alternator
10	X018	Preheating system connector
11	X017	Diesel engine connector
12	B007	Hydraulic oil temperature sensor connector
13	Y004	Reverse travel solenoid valve connector
14	Y005	Forward travel solenoid valve connector
15	S134	Limit switch switching position transmission connector
16	S146	Limit switch switching position transmission connector
17	Y098	Solenoid valve hydraulic motor setting connector
18	B083	Speed sensor connector
19	Y038	1st speed range solenoid valve connector
20	Y039	Speed range 2 solenoid valve connector
21	Y128	Connector Thermal management valve
22	Y075	Screen solenoid valve connector
23	Y013	Solenoid valve hydraulic function cut-off connector
24	Y043	Parking brake solenoid valve connector
25	Y155	Solenoid valve changeover steering system connector
26	B073	Pressure sensor for inching pedal connector
27	XS02	Wiring harness lighting rear connector
28	B003	Reversing warning system connector
29	E028	Working light connector
30	Y070	Solenoid valve changeover steering system connector
31	S103	Plunger switch connector
32	XR01	Turning bracket connector
33	GND N001	Cable lug drive electronics
34	GND	Ground
35	S008	Cable lug battery master switch
36	XS01	Wiring harness lighting front connector
37	GND N005	Cable lug drive electronics

6.13 Wiring harness engine (FRW1) - EU Stage V



NO25.1	
1	--
2	--
3	F004
4	F003
5	F002
6	F001

NO25.2	
R1	K001
R2	K005

NO25.3			
1	F005	11	F015
2	F006	12	F016
3	F007	13	F017
4	F008	14	F018
5	F009	15	F019
6	F010	16	--
7	F011	17	V001
8	F012	18	V002
9	F013	19	V003
10	F014	20	V004

Fig. 155: Wiring harness engine - part 1

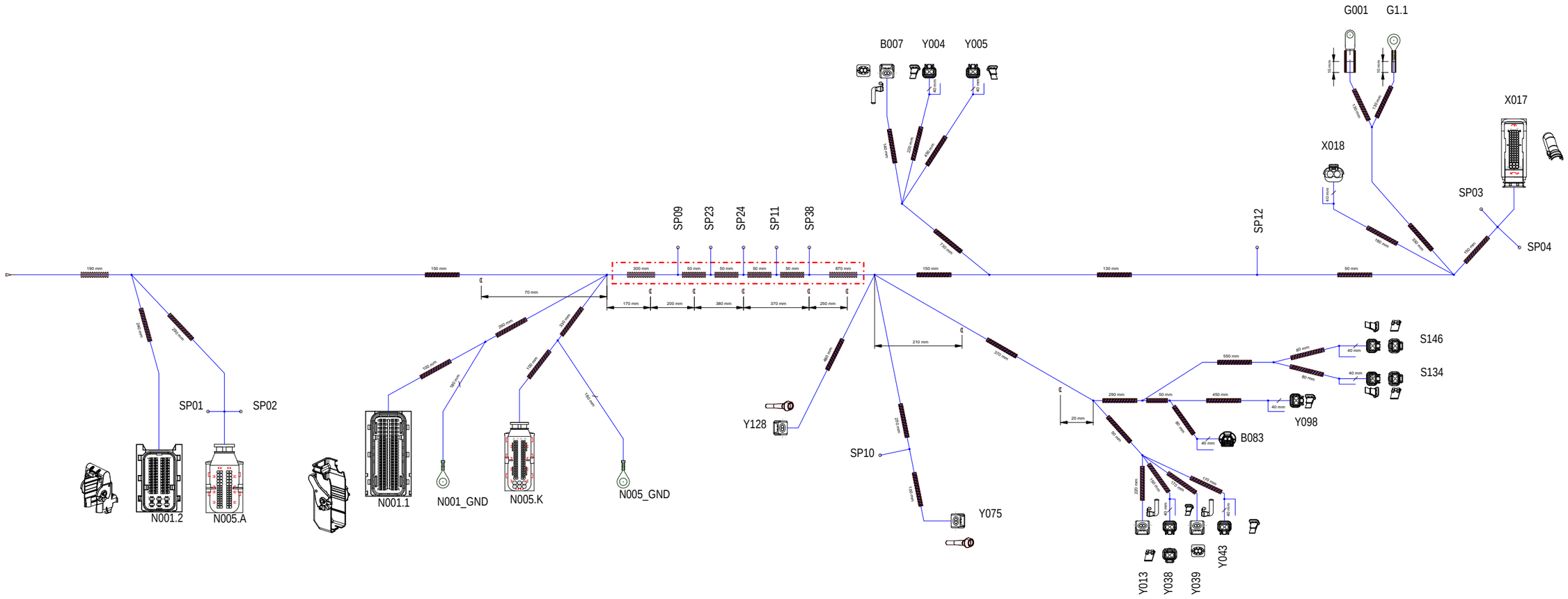


Fig. 156: Wiring harness engine - part 2

6.14 Strand list wiring harness engine (FRW1) - EU Stage V

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-B003	1	-SP05	1	BK / 1.00 mm²	GND
2	-B003	2	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
3	-B015	B	-SP30	1	YE-BN / 0.75 mm²	GND sensor
4	-B073	A	-N001.2	55	YE-WH / 0.75 mm²	VSS_3
5	-B073	B	-SP38	1	YE-BN / 0.75 mm²	GND_S1
6	-B073	C	-N001.1	38	YE / 0.75 mm²	Pressure inch valve
7	-B083	1	-SP38	1	YE-BN / 0.75 mm²	GND_S1
8	-B083	2	-N001.1	12	YE / 0.75 mm²	Rpm hydraulic motor
9	-E028	2	-SP05	1	BK / 1.00 mm²	GND
10	-G001	1	-S008	1	RD / 16.00 mm²	12V30
11	-GND	1	-SP35	1	BK / 4.00 mm²	GND
12	-GND	1	-SP50	1	BK / 4.00 mm²	GND
13	-N001.1	15	-XP02	11	PK / 0.75 mm²	Low fuel protection
14	-N001.1	16	-B007	1	YE / 0.75 mm²	Oil temperature
15	-N001.1	20	-N025.3	17.1	BN / 0.75 mm²	Fan
16	-N001.1	22	-SP35	1	BK / 0.75 mm²	GND
17	-N001.1	24	-SP35	1	BK / 1.50 mm²	GND
18	-N001.1	28	-Y043	1	BU / 1.00 mm²	Parking brake HS
19	-N001.1	40	-S134	2	YE / 0.75 mm²	Gear position 2
20	-N001.1	45	-B007	2	YE-BN / 0.75 mm²	GND_S2
21	-N001.1	47	-SP14	1	PK / 0.75 mm²	Start signal
22	-N001.1	53	-Y005	1	BU / 1.00 mm²	Pump forward HS
23	-N001.1	75	-Y128	1	PK / 1.00 mm²	Thermal management valve
24	-N001.1	80	-Y013	2	GN / 0.75 mm²	Pilot valve LS
25	-N001.1	89	-N025.2	1.2	OG / 0.75 mm²	F031
26	-N001.1	93	-N025.5	1.3	GY / 0.75 mm²	Brake light
27	-N001.1	94	-N025.4	4.3	GY / 0.75 mm²	Backward lightning/alarm
28	-N001.2	1	-SP20	1	RD / 2.50 mm²	F008
29	-N001.2	2	-SP35	1	BK / 2.50 mm²	GND
30	-N001.2	3	-SP20	1	RD / 2.50 mm²	F008
31	-N001.2	4	-SP20	1	RD / 2.50 mm²	F008
32	-N001.2	5	-SP20	1	RD / 2.50 mm²	F008
33	-N001.2	6	-SP20	1	RD / 2.50 mm²	F008
34	-N001.2	7	-SP35	1	BK / 0.75 mm²	GND
35	-N001.2	20	-SP35	1	BK / 0.75 mm²	GND
36	-N001.2	28	-SP22	1	RD-WH / 0.75 mm²	F012
37	-N001.2	33	-SP35	1	BK / 0.75 mm²	GND
38	-N001.2	34	-XR01	23	BU / 0.75 mm²	Rocker driving red.
39	-N001.2	37	-XR01	20	BU / 0.75 mm²	Switch ECO mode
40	-N001.2	41	-Y070	1	BU / 0.75 mm²	Steering direction 2 HS
41	-N001.2	43	-Y155	1	BU / 0.75 mm²	Steering direction 1 HS
42	-N001.2	45	-SP33	1	RD / 0.75 mm²	F009
43	-N001.2	46	-SP35	1	BK / 0.75 mm²	GND
44	-N001.2	47	-XR01	22	BU / 0.75 mm²	Rocker driving
45	-N001.2	58	-SP33	1	RD / 0.75 mm²	F009
46	-N005.A	2	-X017	61	PK / 1.50 mm²	Injector 3
47	-N005.A	3	-X017	41	PK / 1.50 mm²	Injector 2
48	-N005.A	4	-X017	19	PK / 1.50 mm²	Actuator MPROP
49	-N005.A	5	-X017	20	PK / 1.50 mm²	Actuator MPROP
50	-N005.A	7	-X017	32	PK / 0.75 mm²	Rail pressure
51	-N005.A	16	-X017	35	PK / 1.50 mm²	Injector 1
52	-N005.A	18	-X017	37	PK / 1.50 mm²	Injector 4
53	-N005.A	19	-X017	47	PK / 1.50 mm²	Exhaust gas valve
54	-N005.A	24	-SP11	1	PK / 0.75 mm²	GND sensor
55	-N005.A	25	-X017	31	PK / 0.75 mm²	Rail pressure
56	-N005.A	26	-X017	25	PK / 0.75 mm²	Rail pressure
57	-N005.A	27	-X017	29	PK / 0.75 mm²	Boost pressure
58	-N005.A	28	-X017	24	PK / 0.75 mm²	Cooling temperature
59	-N005.A	29	-SP09	1	PK / 0.75 mm²	Sensor supply
60	-N005.A	32	-X017	38	PK / 1.50 mm²	Injector 3
61	-N005.A	33	-X017	62	PK / 1.50 mm²	Injector 1
62	-N005.A	35	-N025.2	2.4	PK / 0.75 mm²	Pre-heat relay -
63	-N005.A	37	-X017	14	BN / 0.75 mm²	Engine speed, camshaft
64	-N005.A	39	-X017	15	BN / 0.75 mm²	Engine speed, crankshaft
65	-N005.A	40	-X017	28	PK / 0.75 mm²	Boost pressure
66	-N005.A	43	-X017	23	PK / 0.75 mm²	Boost pressure
67	-N005.A	44	-X017	26	PK / 0.75 mm²	Oil pressure
68	-N005.A	46	-X017	40	PK / 1.50 mm²	Injector 2
69	-N005.A	48	-X017	42	PK / 1.50 mm²	Injector 4
70	-N005.A	52	-X017	13	WH / 0.75 mm²	Engine speed, camshaft
71	-N005.A	54	-X017	21	WH / 0.75 mm²	Engine speed, crankshaft
72	-N005.K	1	-SP13	1	RD / 2.50 mm²	F007
73	-N005.K	2	-SP35	1	BK / 2.50 mm²	GND
74	-N005.K	3	-SP13	1	RD / 2.50 mm²	F007
75	-N005.K	4	-SP35	1	BK / 2.50 mm²	GND
76	-N005.K	5	-SP13	1	RD / 2.50 mm²	F007
77	-N005.K	6	-SP35	1	BK / 2.50 mm²	GND
78	-N005.K	13	-B015	C	YE / 0.75 mm²	Coolant level
79	-N005.K	26	-N025.4	3.5	PK / 0.75 mm²	Fuel pump relay -
80	-N005.K	28	-X017	2	PK / 0.75 mm²	Start relay +
81	-N005.K	29	-B015	A	YE-WH / 0.75 mm²	Sensor U-bat
82	-N005.K	35	-N025.6	2.3	PK / 0.75 mm²	Start signal
83	-N005.K	44	-X017	50	PK / 0.75 mm²	DPF/EGR Sensor 5V
84	-N005.K	61	-XP02	8	PK / 0.75 mm²	Low fuel pressure
85	-N005.K	64	-XP02	6	PK / 0.75 mm²	Low fuel pressure
86	-N005.K	73	-X017	3	PK / 0.75 mm²	Start relay -
87	-N005.K	82	-X017	51	PK / 0.75 mm²	EGR sensor GND
88	-N005.K	85	-X017	46	PK / 0.75 mm²	EGR sensor
89	-N005.K	86	-S004	1	YE / 1.00 mm²	Air filter
90	-N005.K	87	-SP30	1	YE-BN / 0.75 mm²	GND sensor

nr.	From	Pin	To	Pin	Color/mm²	Function
91	-N005.K	90	-N025.4	3.3	PK / 0.75 mm²	Fuel pump relay +
92	-N025.1	C	-SP74	1	RD / 6.00 mm²	12V30
93	-N025.1	F	-N025.2	1.1	RD / 10.00 mm²	F001
94	-N025.2	1.4	-SP18	1	BK / 0.75 mm²	GND
95	-N025.2	2.1	-N025.1	E	RD / 10.00 mm²	12V30
96	-N025.2	2.2	-N005.A	45	PK / 0.75 mm²	Pre-heat relay +
97	-N025.3	1.1	-SP16	1	GY / 0.75 mm²	Side markers
98	-N025.3	2.1	-SP16	1	GY / 0.75 mm²	Side markers
99	-N025.3	3.1	-SP73	1	RD / 4.00 mm²	12V30
100	-N025.3	4.1	-SP73	1	RD / 4.00 mm²	12V30
101	-N025.3	5.1	-SP73	1	RD / 1.50 mm²	12V30
102	-N025.3	6.1	-SP71	1	RD-WH / 1.50 mm²	12V15_1
103	-N025.3	7.1	-SP75	1	RD-WH / 1.50 mm²	12V15
104	-N025.3	8.1	-SP75	1	RD-WH / 1.50 mm²	12V15
105	-N025.3	9.1	-SP72	1	RD-WH / 1.50 mm²	12V15_1
106	-N025.3	10.1	-SP73	1	RD / 2.50 mm²	12V30
107	-N025.3	10.2	-XP02	21	GY / 1.50 mm²	F014
108	-N025.3	11.1	-SP73	1	RD / 1.50 mm²	12V30
109	-N025.3	12.1	-SP74	1	RD / 1.00 mm²	12V30
110	-N025.3	12.2	-XP02	32	RD / 1.00 mm²	F016
111	-N025.3	13.1	-SP71	1	RD-WH / 2.50 mm²	12V15_1
112	-N025.3	13.2	-XP02	31	RD-WH / 1.50 mm²	F017
113	-N025.3	14.1	-SP71	1	RD-WH / 4.00 mm²	12V15_1
114	-N025.3	15.1	-SP71	1	RD-WH / 2.50 mm²	12V15_1
115	-N025.3	17.1	-XP02	50	BN / 0.75 mm²	Fan
116	-N025.3	18.1	-SP17	1	VT / 1.00 mm²	Work lights
117	-N025.3	19.1	-SP67	1	GY / 0.75 mm²	High beam
118	-N025.3	20.1	-SP68	1	GY / 0.75 mm²	Low beam
119	-N025.4	1.2	-SP76	1	GY / 1.50 mm²	Low beam
120	-N025.4	1.5	-SP18	1	BK / 0.75 mm²	GND
121	-N025.4	2.5	-SP18	1	BK / 0.75 mm²	GND
122	-N025.4	4.2	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
123	-N025.4	4.5	-SP18	1	BK / 0.75 mm²	GND
124	-N025.4	5.1	-XP02	33	RD / 1.50 mm²	F020
125	-N025.4	5.5	-SP73	1	RD / 1.50 mm²	12V30
126	-N025.4	6.2	-N025.5	1.1	RD-WH / 1.00 mm²	F021
127	-N025.4	6.2	-N025.5	2.1	RD-WH / 1.00 mm²	F021
128	-N025.4	6.6	-SP72	1	RD-WH / 2.50 mm²	12V15_1
129	-N025.4	7.7	-SP71	1	RD-WH / 1.50 mm²	12V15_1
130	-N025.4	8.8	-SP71	1	RD-WH / 1.50 mm²	12V15_1
131	-N025.4	9.9	-SP73	1	RD-WH / 1.50 mm²	12V30
132	-N025.4	10.10	-SP74	1	RD / 1.50 mm²	12V30
133	-N025.4	11.11	-SP72	1	RD-WH / 1.50 mm²	12V15_1
134	-N025.4	12.12	-SP73	1	RD / 1.50 mm²	12V30
135	-N025.5	1.2	-XS02	1	GY / 1.00 mm²	Brake light
136	-N025.5	1.5	-SP18	1	BK / 0.75 mm²	GND
137	-N025.5	2.3	-SP22	1	RD-WH / 0.75 mm²	F012
138	-N025.5	2.5	-XR01	24	BK-BN / 0.75 mm²	Horn
139	-N025.5	3.1	-N025.3	10.2	RD / 1.00 mm²	F014
140	-N025.5	3.5	-SP18	1	BK / 0.75 mm²	GND
141	-N025.5	4.3	-SP75	1	RD-WH / 1.50 mm²	12V15
142	-N025.5	4.5	-SP18	1	BK / 0.75 mm²	GND
143	-N025.5	5.1	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
144	-N025.5	5.3	-N001.1	90	GY / 0.75 mm²	Changeover direction indicator
145	-N025.5	5.4	-XS02	6	GY / 1.00 mm²	Backward lightning/alarm
146	-N025.5	5.5	-SP18	1	BK / 0.75 mm²	GND
147	-N025.5	6.5	-SP18	1	BK / 0.75 mm²	GND
148	-N025.6	1.3	-XR01	31	GY / 1.00 mm²	Turn signal
149	-N025.6	1.5	-SP18	1	BK / 0.75 mm²	GND
150	-N025.6	2.2	-SP54	1	RD / 0.75 mm²	F011
151	-N025.6	2.4	-SP18	1	BK / 0.75 mm²	GND
152	-OBDII	1	-SP22	1	RD-WH / 0.75 mm²	F012
153	-OBDII	4	-SP18	1	BK / 0.75 mm²	GND
154	-OBDII	6	-SP64	1	YE / 0.75 mm²	CAN1 High
155	-OBDII	12	-SP08	1	GN / 0.75 mm²	CAN0 Low
156	-OBDII	13	-SP07	1	YE / 0.75 mm²	CAN0 High
157	-OBDII	16	-SP15	1	RD / 0.75 mm²	F015
158	-R812	A	-SP66	1	GN / 0.75 mm²	CAN2 Low
159	-R812	B	-SP65	1	YE / 0.75 mm²	CAN2 High
160	-R853	B	-SP64	1	YE / 0.75 mm²	CAN1 High
161	-S008	1	-BAT1	1	RD / 16.00 mm²	12V30
162	-S102	2	-N001.1	57	YE / 0.75 mm²	Steering direction 1 red.
163	-S102	4	-N001.2	14	YE / 0.75 mm²	Steering direction 1
164	-S103	2	-N001.2	38	YE / 0.75 mm²	Steering direction 2 red.
165	-S103	4	-N001.2	52	YE / 0.75 mm²	Steering direction 2
166	-S134	1	-SP38	1	YE-BN / 0.75 mm²	GND_S1
167	-S146	1	-SP38	1	YE-BN / 0.75 mm²	GND_S1
168	-S146	2	-N001.1	55	YE / 0.75 mm²	Gear position 1
169	-SP01	1	-N005.A	38	PK / 0.75 mm²	Engine speed, crankshaft shield
170	-SP02	1	-N005.A	53	PK / 0.75 mm²	Engine speed, camshaft shield
171	-SP03	1	-X017	1	PK / 0.75 mm²	Engine speed, crankshaft shield
172	-SP04	1	-X017	9	PK / 0.75 mm²	Engine speed, camshaft shield
173	-SP05	1	-GND	1	BK / 4.00 mm²	GND
174	-SP05	1	-XR01	8	BK / 1.00 mm²	GND
175	-SP06	1	-N025.4	2.2	GY / 1.50 mm²	High beam
176	-SP06	1	-XR01	32	GY / 0.75 mm²	High beam
177	-SP06	1	-XS01	6	GY / 1.50 mm²	High beam
178	-SP07	1	-SP25	1	YE / 0.75 mm²	CAN0 High
179	-SP07	1	-XE03	M	YE / 0.75 mm²	CAN0 High
180	-SP07	1	-XE04	6	YE / 0.75 mm²	CAN0 High
181	-SP07	1	-XP02	14	YE / 0.75 mm²	CAN0 High
182	-SP08	1	-SP26	1	GN / 0.75 mm²	CAN0 Low

nr.	From	Pin	To	Pin	Color/mm²	Function
183	-SP08	1	-XE03	F	GN / 0.75 mm²	CAN0 Low
184	-SP08	1	-XE04	5	GN / 0.75 mm²	CAN0 Low
185	-SP08	1	-XP02	15	GN / 0.75 mm²	CAN0 Low
186	-SP09	1	-X017	27	PK / 0.75 mm²	Sensor supply
187	-SP10	1	-N001.2	31	BU / 0.75 mm²	Parking brake Feedback
188	-SP10	1	-Y075	1	BU / 0.75 mm²	Parking brake Feedback
189	-SP11	1	-X017	22	PK / 0.75 mm²	GND sensor
190	-SP12	1	-N005.A	23	PK / 0.75 mm²	Preheat
191	-SP12	1	-N025.2	2.3	RD / 10.00 mm²	Preheat
192	-SP12	1	-X018	1	RD / 6.00 mm²	Preheat
193	-SP12	1	-X018	2	RD / 6.00 mm²	Preheat
194	-SP13	1	-N025.3	3.2	RD / 4.00 mm²	F007
195	-SP14	1	-N025.6	2.1	PK / 0.75 mm²	Start signal
196	-SP14	1	-XP02	4	PK / 0.75 mm²	Start signal
197	-SP15	1	-N025.3	11.2	RD / 1.50 mm²	F015
198	-SP15	1	-XP02	24	RD / 0.75 mm²	F015
199	-SP16	1	-XR01	27	GY / 1.00 mm²	Side markers
200	-SP17	1	-E028	1	VT / 1.00 mm²	Work lights
201	-SP18	1	-SP50	1	BK / 1.50 mm²	GND
202	-SP18	1	-XP02	42	BK / 1.50 mm²	GND
203	-SP20	1	-N025.3	4.2	RD / 4.00 mm²	F008
204	-SP22	1	-N025.3	8.2	RD-WH / 1.50 mm²	F012
205	-SP22	1	-XP02	1	RD-WH / 1.50 mm²	F012
206	-SP23	1	-N005.K	76	GN / 0.75 mm²	CAN0 Low
207	-SP24	1	-N005.K	54	YE / 0.75 mm²	CAN0 High
208	-SP25	1	-N001.2	15	YE / 0.75 mm²	CAN0 High
209	-SP25	1	-SP24	1	YE / 0.75 mm²	CAN0 High
210	-SP26	1	-N001.2	16	GN / 0.75 mm²	CAN0 Low
211	-SP26	1	-SP23	1	GN / 0.75 mm²	CAN0 Low
212	-SP30	1	-S004	2	YE-BN /1.00 mm²	GND sensor
213	-SP31	1	-N001.2	21	OG / 0.75 mm²	Error lamp
214	-SP31	1	-SP55	1	OG / 0.75 mm²	Error lamp
215	-SP31	1	-XR01	12	OG / 0.75 mm²	Error lamp
216	-SP32	1	-G1.1	1	PK / 1.00 mm²	Charge control
217	-SP33	1	-N025.3	5.2	RD / 1.00 mm²	F009
218	-SP35	1	-N001.1	23	BK / 0.75 mm²	GND
219	-SP35	1	-N001_GND	1	BK / 2.50 mm²	GND
220	-SP35	1	-N005_GND	1	BK / 2.50 mm²	GND
221	-SP36	1	-N001.1	79	BU / 0.75 mm²	Steering direction LS
222	-SP36	1	-Y070	2	BU / 0.75 mm²	Steering direction LS
223	-SP36	1	-Y155	2	BU / 0.75 mm²	Steering direction LS
224	-SP37	1	-N001.2	32	YE-WH / 0.75 mm²	VSS_2
225	-SP37	1	-S102	1	YE-WH / 0.75 mm²	VSS_2
226	-SP37	1	-S102	3	YE-WH / 0.75 mm²	VSS_2
227	-SP37	1	-S103	1	YE-WH / 0.75 mm²	VSS_2
228	-SP37	1	-S103	3	YE-WH / 0.75 mm²	VSS_2

nr.	From	Pin	To	Pin	Color/mm²	Function
229	-SP37	1	-XP02	13	YE-WH / 0.75 mm²	VSS_2
230	-SP38	1	-N001.1	46	BK / 0.75 mm²	GND_S1
231	-SP44	1	-N025.3	1.2	GY / 0.75 mm²	Side markers, left
232	-SP44	1	-XS01	2	GY / 0.75 mm²	Side markers, left
233	-SP44	1	-XS02	2	GY / 0.75 mm²	Side markers, left
234	-SP45	1	-N025.3	2.2	GY / 0.75 mm²	Side markers, right
235	-SP45	1	-XS01	3	GY / 0.75 mm²	Side markers, right
236	-SP45	1	-XS02	3	GY / 0.75 mm²	Side markers, right
237	-SP50	1	-XR01	7	BK / 1.50 mm²	GND
238	-SP50	1	-Y075	2	BK / 0.75 mm²	GND
239	-SP54	1	-N001.2	40	RD-WH / 0.75 mm²	F011
240	-SP54	1	-N005.K	88	RD-WH / 0.75 mm²	F011
241	-SP54	1	-N025.3	7.2	RD-WH / 0.75 mm²	F011
242	-SP56	1	-SP50	1	BK / 0.75 mm²	GND
243	-SP62	1	-N025.3	14.2	RD-WH / 4.00 mm²	F018
244	-SP63	1	-N005.K	53	GN / 0.75 mm²	CAN1 Low
245	-SP63	1	-OBDII	14	GN / 0.75 mm²	CAN1 Low
246	-SP63	1	-R853	A	GN / 0.75 mm²	CAN1 Low
247	-SP64	1	-N005.K	75	YE / 0.75 mm²	CAN1 High
248	-SP64	1	-XE03	H	YE / 0.75 mm²	CAN1 High
249	-SP65	1	-N001.2	53	YE / 0.75 mm²	CAN2 High
250	-SP65	1	-OBDII	9	YE / 0.75 mm²	CAN2 High
251	-SP65	1	-XE04	2	YE / 0.75 mm²	CAN2 High
252	-SP66	1	-N001.2	54	GN / 0.75 mm²	CAN2 Low
253	-SP66	1	-OBDII	8	GN / 0.75 mm²	CAN2 Low
254	-SP66	1	-XE04	1	GN / 0.75 mm²	CAN2 Low
255	-SP67	1	-N025.4	2.3	GY / 0.75 mm²	High beam
256	-SP67	1	-XR01	25	GY / 1.00 mm²	High beam
257	-SP68	1	-N025.4	1.3	GY / 0.75 mm²	Low beam
258	-SP68	1	-XP02	23	GY / 0.75 mm²	Low beam
259	-SP68	1	-XR01	26	GY / 1.00 mm²	Low beam
260	-SP70	1	-N001.2	26	OG / 0.75 mm²	Status power consumers
261	-SP70	1	-N025.3	17.2	OG / 0.75 mm²	Status power consumers
262	-SP70	1	-N025.3	18.2	OG / 0.75 mm²	Status power consumers
263	-SP70	1	-N025.3	19.2	OG / 0.75 mm²	Status power consumers
264	-SP70	1	-N025.3	20.2	OG / 0.75 mm²	Status power consumers
265	-SP71	1	-N025.2	1.3	RD / 10.00 mm²	12V15_1
266	-SP72	1	-N025.5	4.2	RD-WH / 2.50 mm²	12V15_1
267	-SP73	1	-N025.1	D	RD / 6.00 mm²	12V30
268	-SP74	1	-N025.5	4.1	RD / 2.50 mm²	12V30
269	-SP74	1	-XP02	57	RD / 2.50 mm²	12V30
270	-SP74	1	-XP02	58	RD / 2.50 mm²	12V30
271	-SP75	1	-XP02	59	RD-WH / 2.50 mm²	12V15
272	-SP75	1	-XP02	60	RD-WH / 2.50 mm²	12V15
273	-X017	48	-N005.A	20	PK / 1.50 mm²	Exhaust gas valve
274	-XE03	A	-SP22	1	RD-WH / 0.75 mm²	F012

nr.	From	Pin	To	Pin	Color/mm²	Function
275	-XE03	B	-SP18	1	BK / 0.75 mm²	GND
276	-XE03	G	-SP63	1	GN / 0.75 mm²	CAN1 Low
277	-XE04	7	-SP22	1	RD-WH / 0.75 mm²	F012
278	-XE04	8	-SP18	1	BK / 0.75 mm²	GND
279	-XP02	2	-N001.2	17	BU / 0.75 mm²	Parking brake Feedback red.
280	-XP02	3	-SP10	1	BU / 0.75 mm²	Parking brake Feedback
281	-XP02	5	-N005.K	57	PK / 0.75 mm²	Boost pressure
282	-XP02	7	-SP11	1	PK / 0.75 mm²	GND sensor
283	-XP02	9	-SP09	1	PK / 0.75 mm²	Sensor supply
284	-XP02	10	-XR01	30	YE / 0.75 mm²	Fuel level
285	-XP02	12	-SP32	1	PK / 1.00 mm²	Charge control
286	-XP02	16	-N001.1	67	BU / 0.75 mm²	Switch parking brake
287	-XP02	17	-N001.1	69	BU / 0.75 mm²	Switch parking brake red.
288	-XP02	18	-N001.2	27	BU / 0.75 mm²	Parking brake test
289	-XP02	19	-N001.1	65	GN / 0.75 mm²	Street mode
290	-XP02	20	-N001.1	70	GN / 0.75 mm²	Street mode red.
291	-XP02	22	-N025.3	9.2	GY / 1.50 mm²	F013
292	-XP02	25	-N025.5	2.2	VT / 1.00 mm²	F012
293	-XP02	26	-N025.3	6.2	RD-WH / 1.50 mm²	F010
294	-XP02	27	-N025.5	3.3	VT / 0.75 mm²	Rotating Beacon
295	-XP02	28	-N025.5	3.2	VT / 0.75 mm²	Rotating Beacon
296	-XP02	29	-SP17	1	VT / 1.00 mm²	Work lights
297	-XP02	30	-N025.4	12.16	RD / 1.50 mm²	F027
298	-XP02	34	-N025.3	15.2	RD-WH / 1.50 mm²	F019
299	-XP02	35	-N025.3	15.2	RD-WH / 1.50 mm²	F019
300	-XP02	36	-SP54	1	RD-WH / 0.75 mm²	F011
301	-XP02	37	-N025.6	1.2	GY / 0.75 mm²	Indicator relay +
302	-XP02	38	-N025.6	1.4	GY / 0.75 mm²	Indicator
303	-XP02	39	-SP52	1	GY / 0.75 mm²	Turn indicator (left)
304	-XP02	40	-SP53	1	GY / 0.75 mm²	Turn indicator (right)
305	-XP02	41	-N025.4	11.15	RD-WH / 1.50 mm²	F026
306	-XP02	43	-SP38	1	YE-BN / 0.75 mm²	GND_S1
307	-XP02	44	-N001.1	10	PK / 0.75 mm²	Switch auto stop red.
308	-XP02	45	-N001.1	13	PK / 0.75 mm²	Switch auto stop
309	-XP02	48	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
310	-XP02	49	-N025.4	3.2	PK / 1.50 mm²	Fuel pump
311	-XP02	61	-SP62	1	RD-WH / 2.50 mm²	F018
312	-XP02	62	-SP62	1	RD-WH / 2.50 mm²	F018
313	-XR01	1	-N001.1	59	YE / 0.75 mm²	Throttle signal red.
314	-XR01	2	-N001.1	58	YE / 0.75 mm²	Throttle signal
315	-XR01	3	-N001.2	19	YE-WH / 0.75 mm²	VSS_1
316	-XR01	4	-SP38	1	BK / 0.75 mm²	GND_S1
317	-XR01	5	-N025.5	6.3	VT / 0.75 mm²	Switch Seatbelt
318	-XR01	6	-N001.1	39	YE / 0.75 mm²	Operator seat sensor NO
319	-XR01	9	-SP15	1	RD / 1.00 mm²	F015
320	-XR01	11	-SP22	1	RD-WH / 1.50 mm²	F012
321	-XR01	13	-SP32	1	PK / 1.00 mm²	Charge control
322	-XR01	14	-N025.6	1.4	GY / 1.00 mm²	Indicator
323	-XR01	15	-SP24	1	YE / 0.75 mm²	CAN0 High
324	-XR01	16	-SP23	1	GN / 0.75 mm²	CAN0 Low
325	-XR01	17	-N001.1	41	YE / 0.75 mm²	Operator seat sensor NC
326	-XR01	19	-N001.2	50	BU / 0.75 mm²	Switch 2nd gear
327	-XR01	28	-SP52	1	GY / 0.75 mm²	Turn indicator (left)
328	-XR01	29	-SP53	1	GY / 0.75 mm²	Turn indicator (right)
329	-XR01	33	-SP76	1	GY / 1.00 mm²	Low beam
330	-XR11	1	-N025.5	6.2	VT / 1.00 mm²	Green Beacon
331	-XR11	2	-SP05	1	BK / 1.00 mm²	GND
332	-XS01	1	-SP76	1	GY / 1.50 mm²	Low beam
333	-XS01	4	-SP53	1	GY / 0.75 mm²	Turn indicator (right)
334	-XS01	5	-SP52	1	GY / 0.75 mm²	Turn indicator (left)
335	-XS01	7	-SP05	1	BK / 1.50 mm²	GND
336	-XS02	4	-SP53	1	GY / 1.00 mm²	Turn indicator (right)
337	-XS02	5	-SP52	1	GY / 1.00 mm²	Turn indicator (left)
338	-XS02	7	-SP05	1	BK / 1.50 mm²	GND
339	-XS02	8	-SP05	1	BK / 1.50 mm²	GND
340	-Y004	1	-N001.1	77	BU / 1.00 mm²	Pump backward HS
341	-Y004	2	-N001.1	85	BU / 0.75 mm²	Pump backward LS
342	-Y005	2	-N001.1	84	BU / 0.75 mm²	Pump forward LS
343	-Y013	1	-N001.1	3	GN / 1.00 mm²	Pilot valve HS
344	-Y038	1	-N001.1	78	BU / 0.75 mm²	1st gear
345	-Y038	2	-SP50	1	BK / 0.75 mm²	GND
346	-Y039	1	-N001.1	51	BU / 1.00 mm²	2nd gear
347	-Y039	2	-SP50	1	BK / 0.75 mm²	GND
348	-Y043	2	-N001.1	83	BU / 0.75 mm²	Parking brake LS
349	-Y098	1	-N001.1	54	BU / 0.75 mm²	Hydraulic motor HS
350	-Y098	2	-N001.1	86	BU / 0.75 mm²	Hydraulic motor LS
351	-Y128	2	-SP50	1	BK / 0.75 mm²	GND

6.15 Position of wiring harness engine (FRW1) - DPF EU Stage V

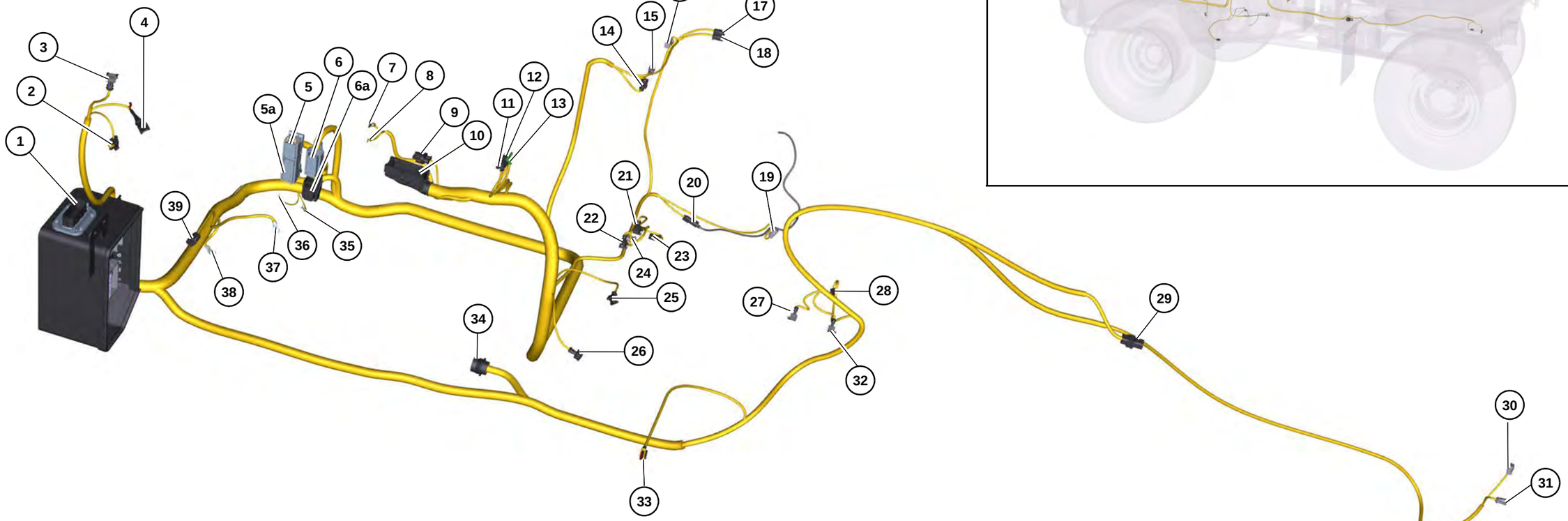
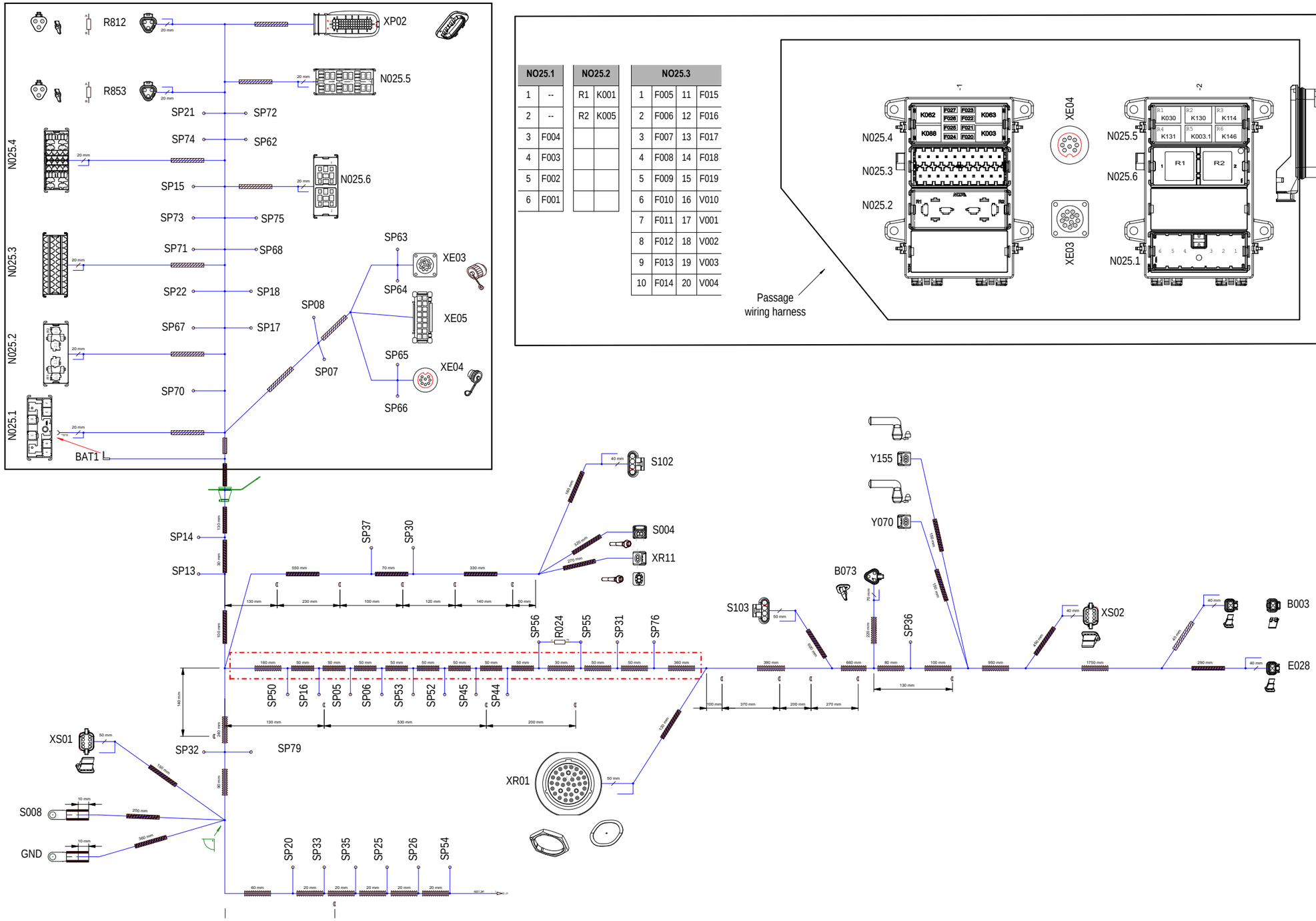


Fig. 157: Position of wiring harness engine

Item	Connector	Function
1	XP02	Fuse box plug
2	S102	Plunger switch connector
3	XR11	Wiring harness rotating beacon green connector
4	S004	Air filter pressure switch connector
5	T1.N1.A	Diesel engine electronics connector
5a	T1.N1.K	Diesel engine electronics connector
6	N001.1	Drive electronics connector
6a	N001.2	Drive electronics connector
7	G1.1	Cable lug alternator
8	G001	Cable lug alternator
9	X018	Preheating system connector
10	X017	Diesel engine connector
11	T1.T1.B092	Pressure DS DPF connector
12	T1.T1.B059	Temperature sensor DPF outlet temperature connector
13	T1.T1.B056	Temperature sensor DOC input temperature connector
14	B007	Hydraulic oil temperature sensor connector
15	Y004	Reverse travel solenoid valve connector
16	Y005	Forward travel solenoid valve connector
17	S134	Limit switch switching position transmission connector
18	S146	Limit switch switching position transmission connector
19	Y098	Solenoid valve hydraulic motor setting connector
20	B083	Speed sensor connector
21	Y038	1st speed range solenoid valve connector
22	Y039	Speed range 2 solenoid valve connector
23	Y043	Parking brake solenoid valve connector
24	Y013	Solenoid valve hydraulic function cut-off connector
25	Y075	Screen solenoid valve connector
26	Y128	Connector Thermal management valve
27	Y155	Solenoid valve changeover steering system connector
28	B073	Pressure sensor for inching pedal connector
29	XS02	Wiring harness lighting rear connector
30	B003	Reversing warning system connector
31	E028	Working light connector
32	Y070	Solenoid valve changeover steering system connector
33	S103	Plunger switch connector
34	XR01	Turning bracket connector
35	GND N001	Cable lug drive electronics
36	GND N005	Cable lug drive electronics
37	GND	Ground
38	S008	Cable lug battery master switch
39	XS01	Wiring harness lighting front connector

6.16 Wiring harness engine (FRW1) - DPF EU Stage V



NO25.1	
1	--
2	--
3	F004
4	F003
5	F002
6	F001

NO25.2	
R1	K001
R2	K005

NO25.3			
1	F005	11	F015
2	F006	12	F016
3	F007	13	F017
4	F008	14	F018
5	F009	15	F019
6	F010	16	V010
7	F011	17	V001
8	F012	18	V002
9	F013	19	V003
10	F014	20	V004

Fig. 158: Wiring harness engine - part 1

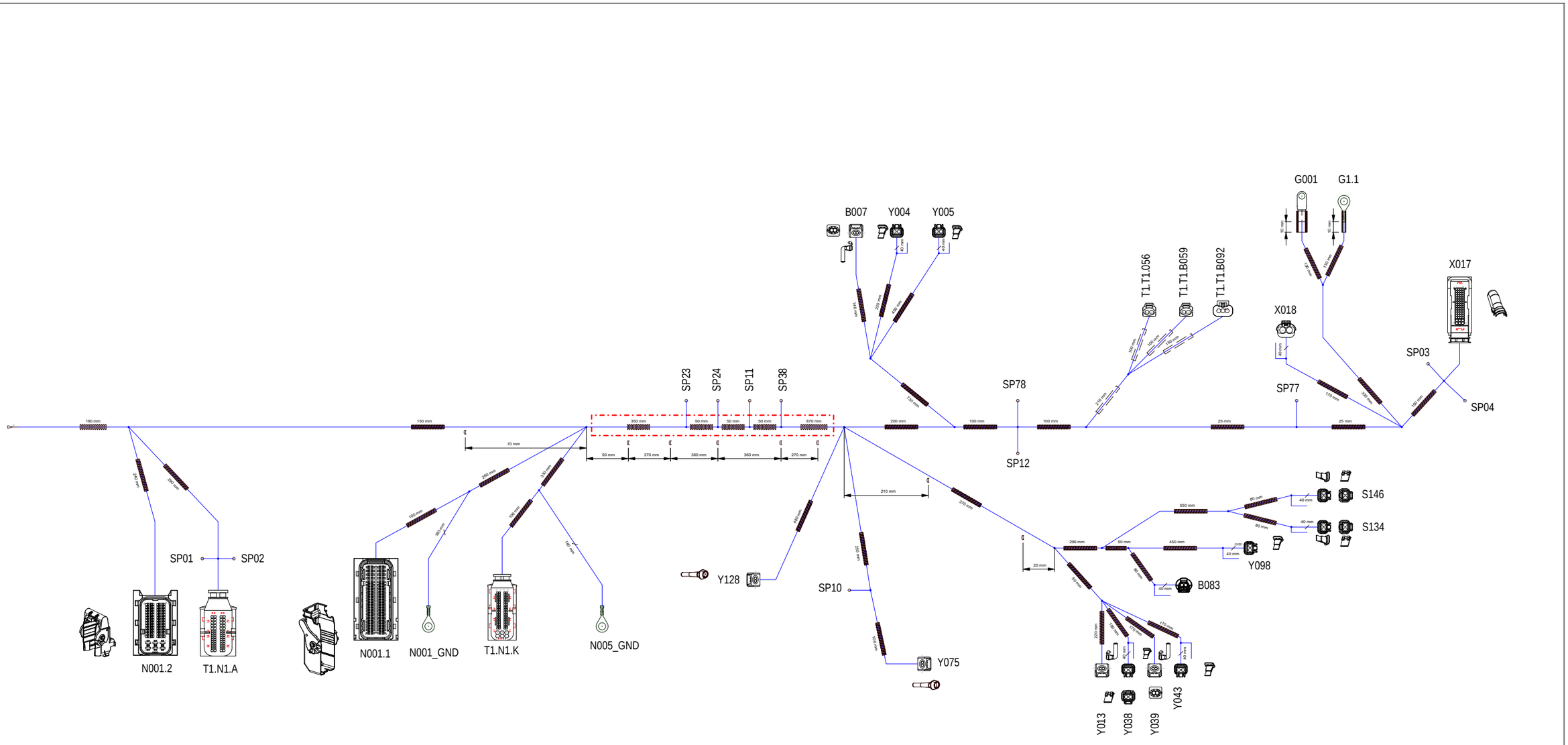


Fig. 159: Wiring harness engine - part 2

6.17 Strand list wiring harness engine (FRW1) - DPF EU Stage V

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-B003	1	-SP05	1	BK / 1.00 mm²	GND
2	-B003	2	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
3	-B073	A	-N001.2	55	YE-WH / 0.75 mm²	VSS_3
4	-B073	B	-SP38	1	YE-BN / 0.75 mm²	GND_S1
5	-B073	C	-N001.1	38	YE / 0.75 mm²	Pressure inch valve
6	-B083	1	-SP38	1	YE-BN / 0.75 mm²	GND_S1
7	-B083	2	-N001.1	12	YE / 0.75 mm²	Rpm hydraulic motor
8	-E028	2	-SP05	1	BK / 1.00 mm²	GND
9	-G001	1	-S008	1	RD / 16.00 mm²	12V30
10	-G1.1	1	-SP32	1	PK / 1.00 mm²	Charge control
11	-GND	1	-SP35	1	BK / 4.00 mm²	GND
12	-GND	1	-SP50	1	BK / 4.00 mm²	GND
13	-N001.1	15	-XP02	11	PK / 0.75 mm²	Low fuel protection
14	-N001.1	16	-B007	1	YE / 0.75 mm²	Oil temperature
15	-N001.1	20	-N025.3	17.1	BN / 0.75 mm²	Fan
16	-N001.1	22	-SP35	1	BK / 0.75 mm²	GND
17	-N001.1	24	-SP35	1	BK / 1.50 mm²	GND
18	-N001.1	28	-Y043	1	BU / 1.00 mm²	Parking brake HS
19	-N001.1	40	-S134	2	YE / 0.75 mm²	Gear position 2
20	-N001.1	45	-B007	2	YE-BN / 0.75 mm²	GND_S2
21	-N001.1	47	-SP14	1	PK / 0.75 mm²	Start signal
22	-N001.1	53	-Y005	1	BU / 1.00 mm²	Pump forward HS
23	-N001.1	80	-Y013	2	GN / 0.75 mm²	Pilot valve LS
24	-N001.1	89	-N025.2	1.2	OG / 0.75 mm²	F031
25	-N001.1	93	-N025.5	1.3	GY / 0.75 mm²	Brake light
26	-N001.1	94	-N025.4	4.3	GY / 0.75 mm²	Backward lightning/alarm
27	-N001.2	1	-SP20	1	RD / 2.50 mm²	F008
28	-N001.2	2	-SP35	1	BK / 2.50 mm²	GND
29	-N001.2	3	-SP20	1	RD / 2.50 mm²	F008
30	-N001.2	4	-SP20	1	RD / 2.50 mm²	F008
31	-N001.2	5	-SP20	1	RD / 2.50 mm²	F008
32	-N001.2	6	-SP20	1	RD / 2.50 mm²	F008
33	-N001.2	7	-SP35	1	BK / 0.75 mm²	GND
34	-N001.2	20	-SP35	1	BK / 0.75 mm²	GND
35	-N001.2	28	-SP22	1	RD-WH / 0.75 mm²	F012
36	-N001.2	31	-SP10	1	BU / 0.75 mm²	Ӂ
37	-N001.2	33	-SP35	1	BK / 0.75 mm²	GND
38	-N001.2	34	-XR01	23	BU / 0.75 mm²	Rocker driving red.
39	-N001.2	37	-XR01	20	BU / 0.75 mm²	Switch ECO mode
40	-N001.2	41	-Y070	1	BU / 0.75 mm²	Steering direction 2 HS
41	-N001.2	43	-Y155	1	BU / 0.75 mm²	Steering direction 1 HS
42	-N001.2	45	-SP33	1	RD / 0.75 mm²	F009
43	-N001.2	46	-SP35	1	BK / 0.75 mm²	GND
44	-N001.2	47	-XR01	22	BU / 0.75 mm²	Rocker driving
45	-N001.2	58	-SP33	1	RD / 0.75 mm²	F009
46	-N025.1	C	-SP74	1	RD / 6.00 mm²	12V30
47	-N025.1	F	-N025.2	1.1	RD / 10.00 mm²	F001
48	-N025.2	1.4	-SP18	1	BK / 0.75 mm²	GND
49	-N025.2	2.1	-N025.1	E	RD / 10.00 mm²	Preheat
50	-N025.3	1.1	-SP16	1	GY / 0.75 mm²	Side markers
51	-N025.3	2.1	-SP16	1	GY / 0.75 mm²	Side markers
52	-N025.3	3.1	-SP73	1	RD / 4.00 mm²	12V30
53	-N025.3	4.1	-SP73	1	RD / 4.00 mm²	12V30
54	-N025.3	5.1	-SP73	1	RD / 1.50 mm²	12V30
55	-N025.3	6.1	-SP71	1	RD-WH / 1.50 mm²	12V15_1
56	-N025.3	7.1	-SP75	1	RD-WH / 1.50 mm²	12V15
57	-N025.3	8.1	-SP75	1	RD-WH / 1.50 mm²	12V15
58	-N025.3	9.1	-SP72	1	RD-WH / 1.50 mm²	12V15_1
59	-N025.3	10.1	-SP73	1	RD / 2.50 mm²	12V30
60	-N025.3	10.2	-XP02	21	GY / 1.50 mm²	F014
61	-N025.3	11.1	-SP73	1	RD / 1.50 mm²	12V30
62	-N025.3	12.1	-SP74	1	RD / 1.00 mm²	12V30
63	-N025.3	12.2	-XP02	32	RD / 1.00 mm²	F016
64	-N025.3	13.1	-SP71	1	RD-WH / 2.50 mm²	12V15_1
65	-N025.3	13.2	-XP02	31	RD-WH / 1.50 mm²	F017
66	-N025.3	14.1	-SP71	1	RD-WH / 4.00 mm²	12V15_1
67	-N025.3	15.1	-SP71	1	RD-WH / 2.50 mm²	12V15_1
68	-N025.3	17.1	-XP02	50	BN / 0.75 mm²	Fan
69	-N025.3	18.1	-SP17	1	VT / 1.00 mm²	Work lights
70	-N025.3	19.1	-SP67	1	GY / 0.75 mm²	High beam
71	-N025.3	20.1	-SP68	1	GY / 0.75 mm²	Low beam
72	-N025.4	1.2	-SP76	1	GY / 1.50 mm²	Low beam
73	-N025.4	1.5	-SP18	1	BK / 0.75 mm²	GND
74	-N025.4	2.5	-SP18	1	BK / 0.75 mm²	GND
75	-N025.4	4.2	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
76	-N025.4	4.5	-SP18	1	BK / 0.75 mm²	GND
77	-N025.4	5.1	-XP02	33	RD / 1.50 mm²	F020
78	-N025.4	5.5	-SP73	1	RD / 1.50 mm²	12V30
79	-N025.4	6.2	-N025.5	1.1	RD-WH / 1.00 mm²	F021
80	-N025.4	6.2	-N025.5	2.1	RD-WH / 1.00 mm²	F021
81	-N025.4	6.6	-SP72	1	RD-WH / 2.50 mm²	12V15_1
82	-N025.4	7.7	-SP71	1	RD-WH / 1.50 mm²	12V15_1
83	-N025.4	8.8	-SP71	1	RD-WH / 1.50 mm²	12V15_1
84	-N025.4	9.9	-SP73	1	RD-WH / 1.50 mm²	12V30
85	-N025.4	10.10	-SP74	1	RD / 1.50 mm²	12V30
86	-N025.4	11.11	-SP72	1	RD-WH / 1.50 mm²	12V15_1
87	-N025.4	12.12	-SP73	1	RD / 1.50 mm²	12V30
88	-N025.5	1.2	-XS02	1	GY / 1.00 mm²	Brake light
89	-N025.5	1.5	-SP18	1	BK / 0.75 mm²	GND
90	-N025.5	2.3	-SP22	1	RD-WH / 0.75 mm²	F012

nr.	From	Pin	To	Pin	Color/mm²	Function
91	-N025.5	2.5	-XR01	24	BK-BN / 0.75 mm²	Horn
92	-N025.5	3.1	-N025.3	10.2	RD / 1.00 mm²	F014
93	-N025.5	3.5	-SP18	1	BK / 0.75 mm²	GND
94	-N025.5	4.3	-SP75	1	RD-WH / 1.50 mm²	12V15
95	-N025.5	4.5	-SP18	1	BK / 0.75 mm²	GND
96	-N025.5	5.1	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
97	-N025.5	5.3	-N001.1	90	GY / 0.75 mm²	Changeover direction indicator
98	-N025.5	5.4	-XS02	6	GY / 1.00 mm²	Backward lightning/alarm
99	-N025.5	5.5	-SP18	1	BK / 0.75 mm²	GND
100	-N025.5	6.5	-SP18	1	BK / 0.75 mm²	GND
101	-N025.6	1.3	-XR01	31	GY / 1.00 mm²	Turn signal
102	-N025.6	1.5	-SP18	1	BK / 0.75 mm²	GND
103	-N025.6	2.2	-SP54	1	RD / 0.75 mm²	F011
104	-N025.6	2.4	-SP18	1	BK / 0.75 mm²	GND
105	-R812	A	-SP66	1	GN / 0.75 mm²	CAN2 Low
106	-R812	B	-SP65	1	YE / 0.75 mm²	CAN2 High
107	-R853	B	-SP64	1	YE / 0.75 mm²	CAN1 High
108	-S008	1	-BAT1	1	RD / 16.00 mm²	12V30
109	-S102	2	-N001.1	57	YE / 0.75 mm²	Steering direction 1 red.
110	-S102	4	-N001.2	14	YE / 0.75 mm²	Steering direction 1
111	-S103	2	-N001.2	38	YE / 0.75 mm²	Steering direction 2 red.
112	-S103	4	-N001.2	52	YE / 0.75 mm²	Steering direction 2
113	-S134	1	-SP38	1	YE-BN / 0.75 mm²	GND_S1
114	-S146	1	-SP38	1	YE-BN / 0.75 mm²	GND_S1
115	-S146	2	-N001.1	55	YE / 0.75 mm²	Gear position 1
116	-SP01	1	-T1.N1.A	53	BK / 0.75 mm²	Engine speed, camshaft shield
117	-SP02	1	-T1.N1.A	38	BK / 0.75 mm²	Engine speed, crankshaft shield
118	-SP05	1	-GND	1	BK / 4.00 mm²	GND
119	-SP05	1	-XR01	8	BK / 1.00 mm²	GND
120	-SP06	1	-N025.4	2.2	GY / 1.50 mm²	High beam
121	-SP06	1	-XR01	32	GY / 0.75 mm²	High beam
122	-SP06	1	-XS01	6	GY / 1.50 mm²	High beam
123	-SP07	1	-SP25	1	YE / 0.75 mm²	CAN0 High
124	-SP07	1	-XE03	M	YE / 0.75 mm²	CAN0 High
125	-SP07	1	-XE04	6	YE / 0.75 mm²	CAN0 High
126	-SP07	1	-XP02	14	YE / 0.75 mm²	CAN0 High
127	-SP08	1	-SP26	1	GN / 0.75 mm²	CAN0 Low
128	-SP08	1	-XE03	F	GN / 0.75 mm²	CAN0 Low
129	-SP08	1	-XE04	5	GN / 0.75 mm²	CAN0 Low
130	-SP08	1	-XP02	15	GN / 0.75 mm²	CAN0 Low
131	-SP10	1	-Y075	1	BU / 0.75 mm²	Ӂ
132	-SP11	1	-T1.T1.B056	1	YE-BN / 0.75 mm²	GND sensor
133	-SP11	1	-X017	33	YE-BN / 0.75 mm²	GND sensor
134	-SP11	1	-X017	45	YE-BN / 0.75 mm²	GND sensor
135	-SP12	1	-N025.2	2.3	RD / 10.00 mm²	Ӻ
136	-SP12	1	-T1.N1.K	20	PK / 0.75 mm²	Ӻ
137	-SP12	1	-X018	1	RD / 6.00 mm²	Ӻ
138	-SP12	1	-X018	2	RD / 6.00 mm²	Ӻ
139	-SP13	1	-N025.3	3.2	RD / 4.00 mm²	F007
140	-SP14	1	-N025.6	2.1	PK / 0.75 mm²	Start signal
141	-SP14	1	-XP02	4	PK / 0.75 mm²	Start signal
142	-SP15	1	-N025.3	11.2	RD / 1.50 mm²	F015
143	-SP15	1	-XP02	24	RD / 0.75 mm²	F015
144	-SP16	1	-XR01	27	GY / 1.00 mm²	Side markers
145	-SP17	1	-E028	1	VT / 1.00 mm²	Work lights
146	-SP18	1	-SP50	1	BK / 1.50 mm²	GND
147	-SP18	1	-XP02	42	BK / 1.50 mm²	GND
148	-SP20	1	-N025.3	4.2	RD / 4.00 mm²	F008
149	-SP22	1	-N025.3	8.2	RD-WH / 1.50 mm²	F012
150	-SP22	1	-XP02	1	RD-WH / 1.50 mm²	F012
151	-SP23	1	-T1.N1.K	76	GN / 0.75 mm²	CAN0 Low
152	-SP24	1	-T1.N1.K	54	YE / 0.75 mm²	CAN0 High
153	-SP25	1	-N001.2	15	YE / 0.75 mm²	CAN0 High
154	-SP25	1	-SP24	1	YE / 0.75 mm²	CAN0 High
155	-SP26	1	-N001.2	16	GN / 0.75 mm²	CAN0 Low
156	-SP26	1	-SP23	1	GN / 0.75 mm²	CAN0 Low
157	-SP31	1	-N001.2	21	OG / 0.75 mm²	Error lamp
158	-SP31	1	-SP55	1	OG / 0.75 mm²	Error lamp
159	-SP31	1	-XR01	12	OG / 0.75 mm²	Error lamp
160	-SP33	1	-N025.3	5.2	RD / 1.00 mm²	F009
161	-SP35	1	-N001.1	23	BK / 0.75 mm²	GND
162	-SP35	1	-N001_GND	1	BK / 2.50 mm²	GND
163	-SP35	1	-N005_GND	1	BK / 2.50 mm²	GND
164	-SP35	1	-T1.N1.K	2	BK / 2.50 mm²	GND
165	-SP35	1	-T1.N1.K	4	BK / 2.50 mm²	GND
166	-SP35	1	-T1.N1.K	6	BK / 2.50 mm²	GND
167	-SP36	1	-N001.1	79	BU / 0.75 mm²	Steering direction LS
168	-SP36	1	-Y070	2	BU / 0.75 mm²	Steering direction LS
169	-SP36	1	-Y155	2	BU / 0.75 mm²	Steering direction LS
170	-SP37	1	-N001.2	32	YE-WH / 0.75 mm²	VSS_2
171	-SP37	1	-S102	1	YE-WH / 0.75 mm²	VSS_2
172	-SP37	1	-S102	3	YE-WH / 0.75 mm²	VSS_2
173	-SP37	1	-S103	1	YE-WH / 0.75 mm²	VSS_2
174	-SP37	1	-S103	3	YE-WH / 0.75 mm²	VSS_2
175	-SP37	1	-XP02	13	YE-WH / 0.75 mm²	VSS_2
176	-SP38	1	-N001.1	46	BK / 0.75 mm²	GND_S1
177	-SP44	1	-N025.3	1.2	GY / 0.75 mm²	Side markers, left
178	-SP44	1	-XS01	2	GY / 0.75 mm²	Side markers, left
179	-SP44	1	-XS02	2	GY / 0.75 mm²	Side markers, left
180	-SP45	1	-N025.3	2.2	GY / 0.75 mm²	Side markers, right
181	-SP45	1	-XS01	3	GY / 0.75 mm²	Side markers, right
182	-SP45	1	-XS02	3	GY / 0.75 mm²	Side markers, right

nr.	From	Pin	To	Pin	Color/mm²	Function
183	-SP50	1	-XR01	7	BK / 1.50 mm²	GND
184	-SP50	1	-Y075	2	BK / 0.75 mm²	GND
185	-SP54	1	-N001.2	40	RD-WH / 0.75 mm²	F011
186	-SP54	1	-N025.3	7.2	RD-WH / 0.75 mm²	F011
187	-SP54	1	-T1.N1.K	88	RD-WH / 0.75 mm²	F011
188	-SP56	1	-SP50	1	BK / 0.75 mm²	GND
189	-SP62	1	-N025.3	14.2	RD-WH / 4.00 mm²	Fan high
190	-SP63	1	-R853	A	GN / 0.75 mm²	CAN1 Low
191	-SP63	1	-T1.N1.K	53	GN / 0.75 mm²	CAN1 Low
192	-SP63	1	-XE05	14	GN / 0.75 mm²	CAN1 Low
193	-SP64	1	-T1.N1.K	75	YE / 0.75 mm²	CAN1 High
194	-SP64	1	-XE03	H	YE / 0.75 mm²	CAN1 High
195	-SP64	1	-XE05	6	YE / 0.75 mm²	CAN1 High
196	-SP65	1	-N001.2	53	YE / 0.75 mm²	CAN2 High
197	-SP65	1	-XE04	2	YE / 0.75 mm²	CAN2 High
198	-SP66	1	-N001.2	54	GN / 0.75 mm²	CAN2 Low
199	-SP66	1	-XE04	1	GN / 0.75 mm²	CAN2 Low
200	-SP67	1	-N025.4	2.3	GY / 0.75 mm²	High beam
201	-SP67	1	-XR01	25	GY / 1.00 mm²	High beam
202	-SP68	1	-N025.4	1.3	GY / 0.75 mm²	Low beam
203	-SP68	1	-XP02	23	GY / 0.75 mm²	Low beam
204	-SP68	1	-XR01	26	GY / 1.00 mm²	Low beam
205	-SP70	1	-N001.2	26	OG / 0.75 mm²	Status power consumers
206	-SP70	1	-N025.3	17.2	OG / 0.75 mm²	Status power consumers
207	-SP70	1	-N025.3	18.2	OG / 0.75 mm²	Status power consumers
208	-SP70	1	-N025.3	19.2	OG / 0.75 mm²	Status power consumers
209	-SP70	1	-N025.3	20.2	OG / 0.75 mm²	Status power consumers
210	-SP71	1	-N025.2	1.3	RD / 10.00 mm²	12V15_1
211	-SP72	1	-N025.5	4.2	RD-WH / 2.50 mm²	12V15_1
212	-SP73	1	-N025.1	D	RD / 6.00 mm²	12V30
213	-SP74	1	-N025.5	4.1	RD / 2.50 mm²	12V30
214	-SP74	1	-XP02	57	RD / 2.50 mm²	12V30
215	-SP74	1	-XP02	58	RD / 2.50 mm²	12V30
216	-SP75	1	-XP02	59	RD-WH / 2.50 mm²	12V15
217	-SP75	1	-XP02	60	RD-WH / 2.50 mm²	12V15
218	-SP77	1	-X017	30	YE-WH / 0.75 mm²	Sensor supply
219	-SP77	1	-X017	43	YE-WH / 0.75 mm²	Sensor supply
220	-SP78	1	-X017	51	YE-BN / 0.75 mm²	GND sensor
221	-SP78	1	-XP02	8	YE-BN / 0.75 mm²	GND sensor
222	-SP79	1	-N025.2	2.2	PK / 1.00 mm²	UB2
223	-SP79	1	-T1.N1.K	15	PK / 0.75 mm²	UB2
224	-SP79	1	-T1.N1.K	68	PK / 1.00 mm²	UB2
225	-T1.N1.A	5	-X017	19	PK / 1.50 mm²	Actuator MPROP
226	-T1.N1.A	7	-X017	32	YE-WH / 0.75 mm²	Rail pressure
227	-T1.N1.A	9	-X017	22	YE-WH / 0.75 mm²	GND sensor
228	-T1.N1.A	11	-X017	44	YE / 0.75 mm²	Exhaust gas valve

nr.	From	Pin	To	Pin	Color/mm²	Function
229	-T1.N1.A	12	-X017	46	YE / 0.75 mm²	EGR sensor
230	-T1.N1.A	16	-X017	35	PK / 1.50 mm²	Injector 1
231	-T1.N1.A	22	-X017	50	YE-WH / 0.75 mm²	DPF/EGR Sensor 5V
232	-T1.N1.A	24	-SP77	1	YE-WH / 1.00 mm²	Sensor supply
233	-T1.N1.A	25	-X017	31	YE-BN / 0.75 mm²	Rail pressure
234	-T1.N1.A	26	-X017	25	YE / 0.75 mm²	Rail pressure
235	-T1.N1.A	27	-X017	29	PK / 0.75 mm²	Boost pressure
236	-T1.N1.A	28	-X017	24	YE / 0.75 mm²	Cooling temperature
237	-T1.N1.A	29	-X017	27	YE-BN / 0.75 mm²	Sensor supply
238	-T1.N1.A	33	-X017	36	PK / 1.50 mm²	Injector 1
239	-T1.N1.A	37	-X017	14	PK / 0.75 mm²	Engine speed, camshaft
240	-T1.N1.A	39	-X017	15	PK / 0.75 mm²	Engine speed, crankshaft
241	-T1.N1.A	40	-SP78	1	YE-BN /1.00 mm²	GND sensor
242	-T1.N1.A	41	-X017	2	PK / 0.75 mm²	Start relay +
243	-T1.N1.A	42	-X017	28	YE-BN / 0.75 mm²	Boost pressure
244	-T1.N1.A	43	-X017	23	PK / 0.75 mm²	Boost pressure
245	-T1.N1.A	49	-XP02	6	BK-BN / 0.75 mm²	̫ ؗ
246	-T1.N1.A	50	-X017	3	PK / 0.75 mm²	Start relay -
247	-T1.N1.A	52	-X017	13	PK / 0.75 mm²	Engine speed, camshaft
248	-T1.N1.A	54	-X017	21	PK / 0.75 mm²	Engine speed, crankshaft
249	-T1.N1.A	57	-SP11	1	YE-BN /1.00 mm²	GND sensor
250	-T1.N1.A	58	-XP02	9	YE / 0.75 mm²	ן
251	-T1.N1.A	59	-T1.T1.B056	2	YE / 0.75 mm²	ͻ DPF
252	-T1.N1.K	1	-SP13	1	RD / 2.50 mm²	F007
253	-T1.N1.K	3	-SP13	1	RD / 2.50 mm²	F007
254	-T1.N1.K	5	-SP13	1	RD / 2.50 mm²	F007
255	-T1.N1.K	7	-X017	8	YE-BN / 0.75 mm²	GND sensor
256	-T1.N1.K	8	-X017	59	PK / 0.75 mm²	Throttle signal
257	-T1.N1.K	9	-X017	60	PK / 0.75 mm²	Throttle signal red.
258	-T1.N1.K	16	-XP02	5	PK / 0.75 mm²	ϯ э
259	-T1.N1.K	17	-S004	1	YE / 1.00 mm²	Air filter
260	-T1.N1.K	19	-SP79	1	PK / 0.75 mm²	UB2
261	-T1.N1.K	21	-XP02	53	YE-BN / 0.75 mm²	GND sensor
262	-T1.N1.K	23	-X017	4	YE-WH / 0.75 mm²	Sensor supply
263	-T1.N1.K	25	-N025.4	3.5	PK / 0.75 mm²	Fuel pump relay -
264	-T1.N1.K	33	-X017	7	YE / 0.75 mm²	EGR sensor ג
265	-T1.N1.K	35	-N025.6	2.3	PK / 0.75 mm²	Start signal
266	-T1.N1.K	39	-XP02	46	YE / 0.75 mm²	֗ г
267	-T1.N1.K	43	-XP02	51	YE-WH / 0.75 mm²	Sensor supply
268	-T1.N1.K	46	-X017	53	YE-WH / 0.75 mm²	Sensor supply
269	-T1.N1.K	56	-T1.T1.B059	2	YE / 0.75 mm²	ͻ Ù DPF
270	-T1.N1.K	58	-XP02	52	YE / 0.75 mm²	Low fuel pressure
271	-T1.N1.K	64	-X017	52	YE-BN / 0.75 mm²	GND sensor
272	-T1.N1.K	72	-N025.2	2.4	PK / 0.75 mm²	Pre-heat relay -
273	-T1.N1.K	73	-N025.4	3.3	PK / 0.75 mm²	Fuel pump relay +
274	-T1.N1.K	80	-X017	49	YE / 0.75 mm²	Throttle signal

nr.	From	Pin	To	Pin	Color/mm²	Function
275	-T1.N1.K	81	-X017	6	YE / 0.75 mm²	Ɩ Venturi
276	-T1.N1.K	82	-X017	5	YE-BN / 0.75 mm²	GND sensor
277	-T1.N1.K	87	-S004	2	YE-BN /1.00 mm²	Sensor_GND
278	-T1.N1.K	91	-T1.T1.B092	1	YE / 0.75 mm²	ӻ DPF
279	-T1.T1.B059	1	-T1.N1.K	55	YE-BN / 0.75 mm²	GND sensor
280	-T1.T1.B092	2	-SP78	1	YE-BN / 0.75 mm²	GND sensor
281	-T1.T1.B092	3	-T1.N1.A	21	YE-WH / 0.75 mm²	Sensor supply
282	-X017	1	-SP04	1	BK / 0.75 mm²	Engine speed, crankshaft shield
283	-X017	9	-SP03	1	BK / 0.75 mm²	Engine speed, camshaft shield
284	-X017	20	-T1.N1.A	4	PK / 1.50 mm²	Actuator MPROP
285	-X017	26	-T1.N1.A	44	YE / 0.75 mm²	Oil pressure
286	-X017	37	-T1.N1.A	18	PK / 1.50 mm²	Injector 3
287	-X017	38	-T1.N1.A	32	PK / 1.50 mm²	Injector 2
288	-X017	39	-T1.N1.A	2	PK / 1.50 mm²	Injector 2
289	-X017	40	-T1.N1.A	46	PK / 1.50 mm²	Injector 4
290	-X017	41	-T1.N1.A	3	PK / 1.50 mm²	Injector 4
291	-X017	42	-T1.N1.A	48	PK / 1.50 mm²	Injector 3
292	-X017	47	-T1.N1.A	19	PK / 1.50 mm²	Exhaust gas valve
293	-X017	48	-T1.N1.A	20	PK / 1.50 mm²	Exhaust gas valve
294	-XE03	A	-SP22	1	RD-WH / 0.75 mm²	F012
295	-XE03	B	-SP18	1	BK / 0.75 mm²	GND
296	-XE03	G	-SP63	1	GN / 0.75 mm²	CAN1 Low
297	-XE04	7	-SP22	1	RD-WH / 0.75 mm²	F012
298	-XE04	8	-SP18	1	BK / 0.75 mm²	GND
299	-XE05	1	-SP22	1	RD-WH / 0.75 mm²	F012
300	-XE05	4	-SP18	1	BK / 0.75 mm²	GND
301	-XE05	8	-SP66	1	GN / 0.75 mm²	CAN2 Low
302	-XE05	9	-SP65	1	YE / 0.75 mm²	CAN2 High
303	-XE05	12	-SP08	1	GN / 0.75 mm²	CAN0 Low
304	-XE05	13	-SP07	1	YE / 0.75 mm²	CAN0 High
305	-XE05	16	-SP15	1	RD / 0.75 mm²	F015
306	-XP02	2	-N001.2	17	BU / 0.75 mm²	Ӂ redundant
307	-XP02	3	-SP10	1	BU / 0.75 mm²	Ӂ
308	-XP02	7	-SP79	1	PK / 0.75 mm²	UB2
309	-XP02	10	-XR01	30	YE / 0.75 mm²	Fuel level
310	-XP02	12	-SP32	1	PK / 1.00 mm²	Charge control
311	-XP02	16	-N001.1	67	BU / 0.75 mm²	Switch parking brake
312	-XP02	17	-N001.1	69	BU / 0.75 mm²	Switch parking brake red.
313	-XP02	18	-N001.2	27	BU / 0.75 mm²	Parking brake test
314	-XP02	19	-N001.1	65	GN / 0.75 mm²	Street mode
315	-XP02	20	-N001.1	70	GN / 0.75 mm²	Street mode red.
316	-XP02	22	-N025.3	9.2	GY / 1.50 mm²	F013
317	-XP02	25	-N025.5	2.2	VT / 1.00 mm²	F012
318	-XP02	26	-N025.3	6.2	RD-WH / 1.50 mm²	F010
319	-XP02	27	-N025.5	3.3	VT / 0.75 mm²	Rotating Beacon
320	-XP02	28	-N025.5	3.2	VT / 0.75 mm²	Rotating Beacon
321	-XP02	29	-SP17	1	VT / 1.00 mm²	Work lights
322	-XP02	30	-N025.4	12.16	RD / 1.50 mm²	F027
323	-XP02	34	-N025.3	15.2	RD-WH / 1.50 mm²	air conditioner
324	-XP02	35	-N025.3	15.2	RD-WH / 1.50 mm²	air conditioner
325	-XP02	36	-SP54	1	RD-WH / 0.75 mm²	F011
326	-XP02	37	-N025.6	1.2	GY / 0.75 mm²	Indicator relay +
327	-XP02	38	-N025.6	1.4	GY / 0.75 mm²	Indicator
328	-XP02	39	-SP52	1	GY / 0.75 mm²	Turn indicator (left)
329	-XP02	40	-SP53	1	GY / 0.75 mm²	Turn indicator (right)
330	-XP02	41	-N025.4	11.15	RD-WH / 1.50 mm²	F026
331	-XP02	43	-SP38	1	YE-BN / 0.75 mm²	GND_S1
332	-XP02	44	-N001.1	10	PK / 0.75 mm²	Switch auto stop red.
333	-XP02	45	-N001.1	13	PK / 0.75 mm²	Switch auto stop
334	-XP02	47	-T1.N1.K	60	YE-BN / 0.75 mm²	GND sensor
335	-XP02	48	-SP21	1	GY / 1.00 mm²	Backward lightning/alarm
336	-XP02	49	-N025.4	3.2	PK / 1.50 mm²	Fuel pump
337	-XP02	61	-SP62	1	RD-WH / 2.50 mm²	Fan high
338	-XP02	62	-SP62	1	RD-WH / 2.50 mm²	Fan high
339	-XR01	1	-N001.1	59	YE / 0.75 mm²	Throttle signal red.
340	-XR01	2	-N001.1	58	YE / 0.75 mm²	Throttle signal
341	-XR01	3	-N001.2	19	YE-WH / 0.75 mm²	VSS_1
342	-XR01	4	-SP38	1	BK / 0.75 mm²	GND_S1
343	-XR01	5	-N025.5	6.3	VT / 0.75 mm²	Switch Seatbelt
344	-XR01	6	-N001.1	39	YE / 0.75 mm²	Operator seat sensor NO
345	-XR01	9	-SP15	1	RD / 1.50 mm²	F015
346	-XR01	11	-SP22	1	RD-WH / 1.50 mm²	F012
347	-XR01	13	-SP32	1	PK / 1.00 mm²	Charge control
348	-XR01	14	-N025.6	1.4	GY / 1.00 mm²	Indicator
349	-XR01	15	-SP24	1	YE / 0.75 mm²	CAN0 High
350	-XR01	16	-SP23	1	GN / 0.75 mm²	CAN0 Low
351	-XR01	17	-N001.1	41	YE / 0.75 mm²	Operator seat sensor NC
352	-XR01	19	-N001.2	50	BU / 0.75 mm²	Switch 2nd gear
353	-XR01	28	-SP52	1	GY / 0.75 mm²	Turn indicator (left)
354	-XR01	29	-SP53	1	GY / 0.75 mm²	Turn indicator (right)
355	-XR01	33	-SP76	1	GY / 1.00 mm²	Low beam
356	-XR11	1	-N025.5	6.2	VT / 1.00 mm²	Green Beacon
357	-XR11	2	-SP05	1	BK / 1.00 mm²	GND
358	-XS01	1	-SP76	1	GY / 1.50 mm²	Low beam
359	-XS01	4	-SP53	1	GY / 0.75 mm²	Turn indicator (right)
360	-XS01	5	-SP52	1	GY / 0.75 mm²	Turn indicator (left)
361	-XS01	7	-SP05	1	BK / 1.50 mm²	GND
362	-XS02	4	-SP53	1	GY / 1.00 mm²	Turn indicator (right)
363	-XS02	5	-SP52	1	GY / 1.00 mm²	Turn indicator (left)
364	-XS02	7	-SP05	1	BK / 1.50 mm²	GND
365	-XS02	8	-SP05	1	BK / 1.50 mm²	GND
366	-Y004	1	-N001.1	77	BU / 1.00 mm²	Pump backward HS

nr.	From	Pin	To	Pin	Color/mm²	Function
367	-Y004	2	-N001.1	85	BU / 0.75 mm²	Pump backward LS
368	-Y005	2	-N001.1	84	BU / 0.75 mm²	Pump forward LS
369	-Y013	1	-N001.1	3	GN / 1.00 mm²	Pilot valve HS
370	-Y038	1	-N001.1	78	BU / 0.75 mm²	1st gear
371	-Y038	2	-SP50	1	BK / 0.75 mm²	GND
372	-Y039	1	-N001.1	51	BU / 1.00 mm²	2nd gear
373	-Y039	2	-SP50	1	BK / 0.75 mm²	GND
374	-Y043	2	-N001.1	83	BU / 0.75 mm²	Parking brake LS
375	-Y098	1	-N001.1	54	BU / 0.75 mm²	Hydraulic motor HS
376	-Y098	2	-N001.1	86	BU / 0.75 mm²	Hydraulic motor LS
377	-Y128	1	-N001.1	75	PK / 1.00 mm²	Thermal management valve
378	-Y128	2	-SP50	1	BK / 0.75 mm²	GND

6.18 Position of main wiring harness cab (FRW3)

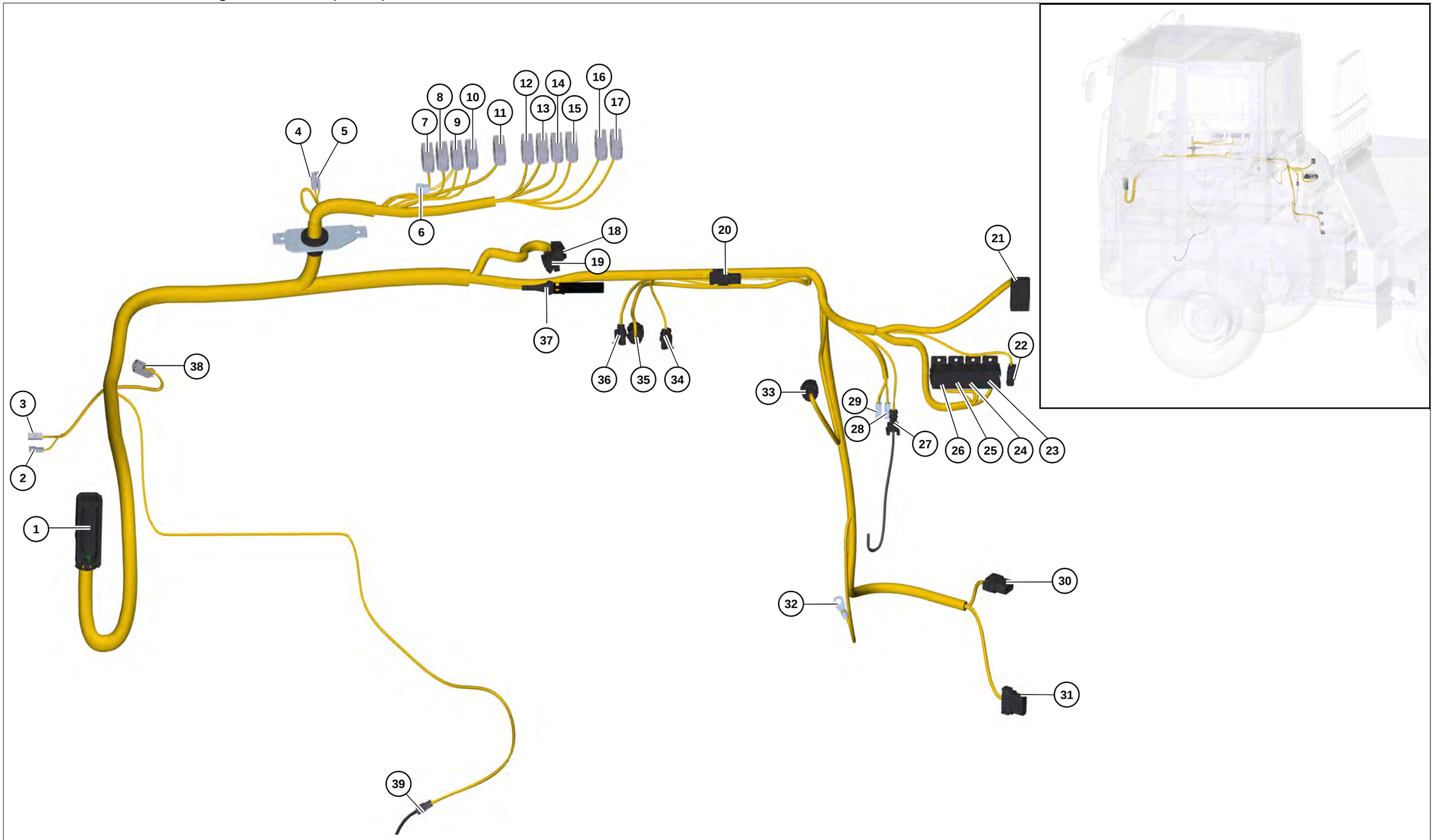


Fig. 160: Position of main wiring harness cab

Item	Connector	Function
1	XP02	Fuse box plug
2	B002.1	Horn plug
3	B002.2	Horn plug
4	XX00.1	Cigarette lighter connector
5	XX00.2	Cigarette lighter connector
6	S212.1	Add-on connector Auto-Stop
7	S210	Parking brake test button connector
8	S212	Auto-Stop switch connector
9	S020	Front wiper/washer switch connector
10	S020.1	Rear wiper/washer switch connector
11	S065	Parking brake switch connector
12	S016	Working light switch plug
13	S018	Rotating beacon switch connector
14	S019	Hazard warning switch connector
15	S085	Switch for cut-off of hydraulic functions connector
16	S015	Heater fan switch connector
17	S051	Air conditioning system switch connector
18	S001.1	Pre-heating start switch connector
19	S001.2	Pre-heating start switch connector
20	R810	CAN terminal resistance
21	X001	Air conditioning connector
22	B001	Fuel gauge connector
23	K011.1	Air conditioning switching relay
24	K011	Air conditioning switching relay
25	K013	Air conditioning switching relay
26	K013.1	Air conditioning switching relay
27	S058	Water separator switch connector
28	M009.1	Fuel feed pump connector
29	M009.2	Fuel feed pump connector
30	XE10	Option connector
31	XE11	Option connector
32	GND	Ground
33	B024	Pressure sensor low pressure fuel connector
34	M018	Air-conditioning fan
35	M018.1	Air-conditioning fan
36	S052	Air conditioning pressure switch
37	R025	22 Ohm resistance
38	XR10	Wiring harness cab/Canopy/ROPS connector
39	Y031	Coupling air-conditioning compressor connector

6.19 Main wiring harness cab (FRW3)

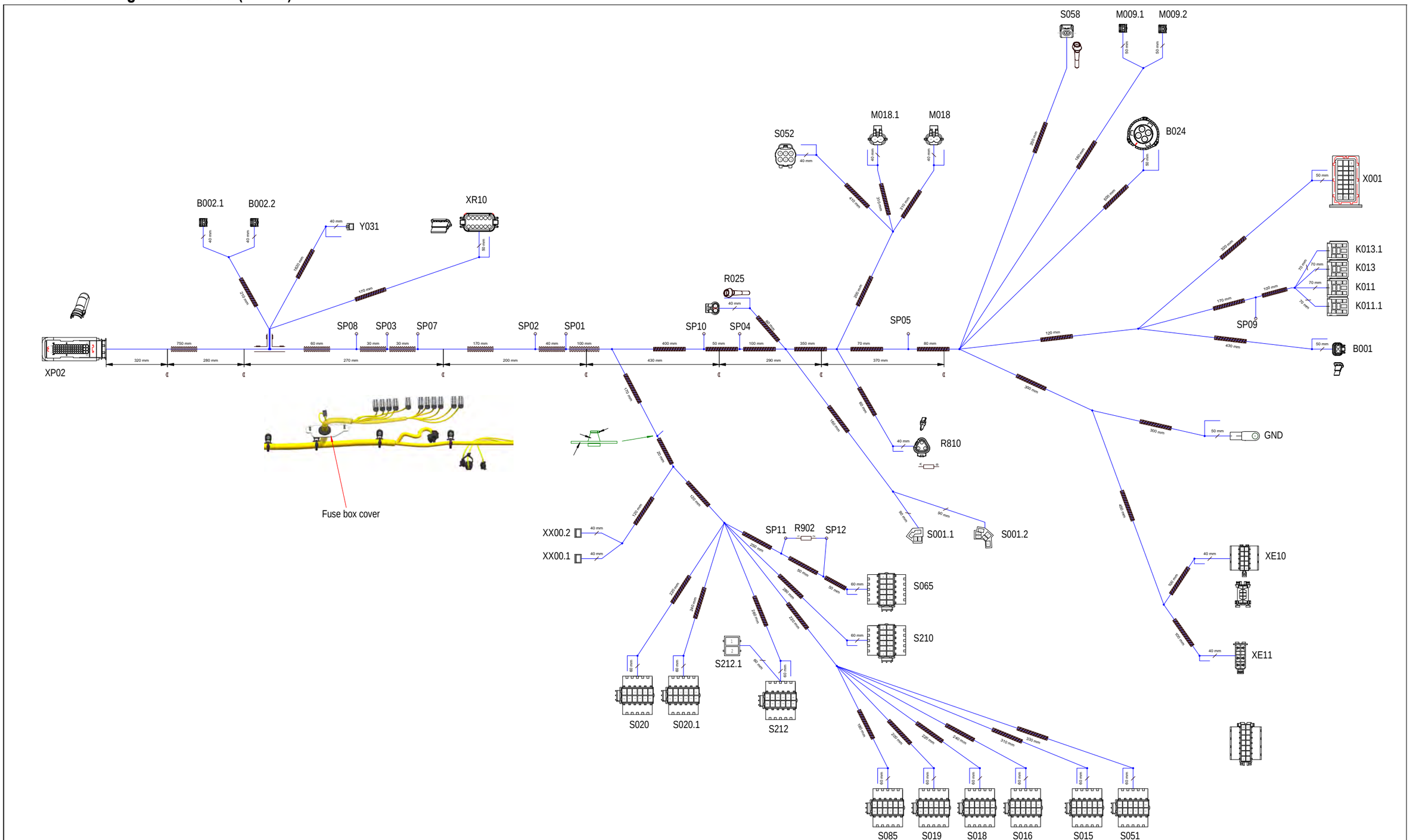


Fig. 161: Main wiring harness cab

6.20 Strand list main wiring harness cab (FRW3)

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-B001	1	-XP02	10	YE / 0.75 mm²	Fuel level
2	-B001	2	-SP04	1	BK / 0.75 mm²	GND
3	-K011	6.4	-SP05	1	BK / 1.00 mm²	GND
4	-K011	8.3	-X001	A1	BN / 2.50 mm²	Fan medium
5	-K011.1	6.4	-SP05	1	BK / 1.00 mm²	GND
6	-K013	4.2	-S052	6	BN / 1.00 mm²	air conditioner
7	-K013	6.4	-SP05	1	BK / 1.00 mm²	GND
8	-K013.1	2.1	-SP03	1	RD-WH / 2.50 mm²	F019
9	-K013.1	4.2	-S052	4	BN / 1.00 mm²	GND
10	-K013.1	6.4	-K013	6.4	BK / 1.00 mm²	GND
11	-M009.2	1	-SP05	1	BK / 1.50 mm²	GND
12	-M018	A	-K013	8.3	BN / 2.50 mm²	Fan air conditioner
13	-M018	B	-SP05	1	BK / 2.50 mm²	GND
14	-M018.1	A	-K013.1	8.3	BN / 2.50 mm²	Fan air conditioner
15	-M018.1	B	-SP05	1	BK / 2.50 mm²	GND
16	-R025	2	-SP01	1	YE-WH / 0.75 mm²	VSS_2
17	-R810	A	-XE11	3	GN / 0.75 mm²	CAN0 Low
18	-R810	B	-XE11	2	YE / 0.75 mm²	CAN0 High
19	-S001.2	5	-XP02	59	RD-WH / 2.50 mm²	12V15
20	-S001.2	6	-XP02	60	RD-WH / 2.50 mm²	12V15
21	-S015	1	-K011.1	4.2	BN / 1.00 mm²	Fan high
22	-S015	8	-K011	4.2	BN / 1.00 mm²	Fan medium
23	-S015	9	-SP04	1	BK / 0.75 mm²	GND
24	-S015	B	-S051	5	BN / 0.75 mm²	Fan
25	-S016	2	-XP02	26	RD-WH / 1.50 mm²	F010
26	-S016	3	-XR10	1	VT / 1.50 mm²	Work lights
27	-S016	9	-SP04	1	BK / 0.75 mm²	GND
28	-S016	10	-SP02	1	RD-WH / 0.75 mm²	F012
29	-S018	1	-SP07	1	VT / 0.75 mm²	Rotating Beacon
30	-S018	5	-S019	2	GY / 0.75 mm²	F014
31	-S018	9	-SP04	1	BK / 0.75 mm²	GND
32	-S018	10	-SP02	1	RD-WH / 0.75 mm²	F012
33	-S019	3	-XP02	40	GY / 0.75 mm²	Turn indicator (right)
34	-S019	8	-XP02	22	GY / 1.50 mm²	F013
35	-S019	9	-SP04	1	BK / 0.75 mm²	GND
36	-S020	5	-XR10	7	OG / 1.00 mm²	Wiper motor front
37	-S020.1	2	-S020	2	RD-WH / 1.50 mm²	F017
38	-S020.1	2	-XR10	6	RD-WH / 1.50 mm²	F017
39	-S020.1	5	-XR10	10	OG / 1.00 mm²	Wiper motor rear
40	-S020.1	9	-S020	9	BK / 0.75 mm²	GND
41	-S020.1	9	-SP04	1	BK / 0.75 mm²	GND
42	-S020.1	10	-S020	10	RD-WH / 0.75 mm²	F012
43	-S020.1	10	-SP02	1	RD-WH / 0.75 mm²	F012
44	-S051	9	-SP04	1	BK / 0.75 mm²	GND
45	-S051	10	-S015	10	RD-WH / 0.75 mm²	F012
46	-S051	10	-SP02	1	RD-WH / 0.75 mm²	F012
47	-S052	2	-X001	C3	BN / 1.00 mm²	air conditioner
48	-S052	3	-SP10	1	BN / 1.00 mm²	air conditioner
49	-S052	5	-Y031	1	BN / 1.00 mm²	air conditioner
50	-S065	1	-XP02	16	BU / 0.75 mm²	Switch parking brake
51	-S065	6	-XP02	36	RD-WH / 0.75 mm²	F011
52	-S065	8	-SP11	1	BU / 0.75 mm²	Parking brake Feedback red.
53	-S065	9	-SP04	1	BK / 0.75 mm²	GND
54	-S065	10	-SP02	1	RD-WH / 0.75 mm²	F012
55	-S085	6	-SP02	1	RD-WH / 0.75 mm²	F012
56	-S085	7	-XP02	20	GN / 0.75 mm²	Street mode red.
57	-S085	9	-SP04	1	BK / 0.75 mm²	GND
58	-S210	1	-XP02	18	BU / 0.75 mm²	Parking brake test
59	-S210	9	-SP04	1	BK / 0.75 mm²	GND
60	-S210	10	-SP02	1	RD-WH / 0.75 mm²	F012
61	-S212	1	-XP02	44	PK / 0.75 mm²	Switch auto stop red.
62	-S212	6	-SP02	1	RD-WH / 0.75 mm²	F012
63	-S212	9	-SP04	1	BK / 0.75 mm²	GND
64	-S212	10	-SP02	1	RD-WH / 0.75 mm²	F012
65	-S212.1	1	-S212	5	YE-BN / 0.75 mm²	GND_S1
66	-S212.1	2	-S212	7	PK / 0.75 mm²	Switch auto stop
67	-SP01	1	-S065	5	YE-WH / 0.75 mm²	VSS_2
68	-SP01	1	-S085	5	YE-WH / 0.75 mm²	VSS_2
69	-SP01	1	-S210	5	YE-WH / 0.75 mm²	VSS_2
70	-SP02	1	-XP02	1	RD-WH / 1.50 mm²	F012
71	-SP03	1	-K013	2.1	RD-WH / 2.50 mm²	F019
72	-SP03	1	-S015	2	RD-WH / 1.50 mm²	F019
73	-SP03	1	-XP02	34	RD-WH / 1.50 mm²	F019
74	-SP03	1	-XP02	35	RD-WH / 1.50 mm²	F019
75	-SP05	1	-B002.2	1	BK / 1.00 mm²	GND
76	-SP05	1	-GND	1	BK / 6.00 mm²	GND
77	-SP05	1	-XR10	3	BK / 1.50 mm²	GND
78	-SP05	1	-XR10	4	BK / 1.50 mm²	GND
79	-SP07	1	-XE10	3	VT / 0.75 mm²	Rotating Beacon
80	-SP07	1	-XP02	27	VT / 0.75 mm²	Rotating Beacon
81	-SP08	1	-XP02	61	RD-WH / 2.50 mm²	F018
82	-SP09	1	-K011	2.1	RD-WH / 2.50 mm²	F018
83	-SP09	1	-K011.1	2.1	RD-WH / 4.00 mm²	F018
84	-SP09	1	-SP08	1	RD-WH / 6.00 mm²	F018
85	-SP10	1	-S051	1	BN / 1.00 mm²	air conditioner
86	-SP10	1	-S051	B	BN / 0.75 mm²	air conditioner
87	-SP12	1	-S065	9	BK / 0.75 mm²	GND
88	-X001	B1	-K011.1	8.3	BN / 2.50 mm²	Fan high
89	-X001	B8	-SP05	1	BK / 2.50 mm²	GND
90	-X001	C1	-K011.1	8.3	BN / 2.50 mm²	Fan high

nr.	From	Pin	To	Pin	Color/mm²	Function
91	-X001	C2	-SP10	1	BN / 1.00 mm²	air conditioner
92	-X001	C8	-SP05	1	BK / 2.50 mm²	GND
93	-XE10	1	-XP02	41	RD-WH / 1.50 mm²	F026
94	-XE10	5	-XP02	30	RD / 1.50 mm²	F026
95	-XE10	7	-SP05	1	BK / 1.50 mm²	GND
96	-XE10	8	-XP02	48	GY / 1.00 mm²	Backward lightning/alarm
97	-XE11	1	-XP02	12	PK / 1.00 mm²	Charge control
98	-XE11	2	-XP02	14	YE / 0.75 mm²	CAN0 High
99	-XE11	3	-XP02	15	GN / 0.75 mm²	CAN0 Low
100	-XE11	4	-SP02	1	RD-WH / 0.75 mm²	F012
101	-XE11	6	-SP05	1	BK / 0.75 mm²	GND
102	-XE11	7	-S001.2	8	PK / 0.75 mm²	Start signal
103	-XE11.1	8	-XE11.1	7	PK / 0.75 mm²	Start signal
104	-XP02	2	-S065	8	BU / 0.75 mm²	Parking brake Feedback red.
105	-XP02	3	-S065	2	BU / 0.75 mm²	Parking brake Feedback
106	-XP02	4	-XE11	8	PK / 0.75 mm²	Start signal
107	-XP02	5	-S058	1	PK / 0.75 mm²	Boost pressure
108	-XP02	6	-S058	2	PK / 0.75 mm²	Low fuel pressure
109	-XP02	7	-B024	1	PK / 0.75 mm²	Boost pressure
110	-XP02	8	-B024	2	PK / 0.75 mm²	Low fuel pressure
111	-XP02	9	-B024	4	PK / 0.75 mm²	Sensor supply
112	-XP02	13	-R025	1	YE-WH / 0.75 mm²	VSS_2
113	-XP02	17	-S065	7	BU / 0.75 mm²	Switch parking brake red.
114	-XP02	19	-S085	1	GN / 0.75 mm²	Street mode
115	-XP02	21	-S019	2	GY / 1.50 mm²	F014
116	-XP02	23	-XE10	2	GY / 0.75 mm²	Low beam
117	-XP02	24	-XE11	5	RD / 0.75 mm²	F015
118	-XP02	25	-B002.1	1	VT / 1.00 mm²	F012
119	-XP02	28	-XR10	2	VT / 0.75 mm²	Rotating Beacon
120	-XP02	29	-S016	6	VT / 1.00 mm²	Work lights
121	-XP02	31	-S020	2	RD-WH / 1.50 mm²	F017
122	-XP02	33	-XX00.1	1	RD / 1.50 mm²	F020
123	-XP02	37	-S019	6	GY / 0.75 mm²	Indicator relay +
124	-XP02	38	-S019	5	GY / 0.75 mm²	Indicator
125	-XP02	39	-S019	1	GY / 0.75 mm²	Turn indicator (left)
126	-XP02	42	-SP04	1	BK / 1.50 mm²	GND
127	-XP02	43	-S212	5	YE-BN / 0.75 mm²	GND_S1
128	-XP02	45	-S212	7	PK / 0.75 mm²	Switch auto stop
129	-XP02	49	-M009.1	1	PK / 1.50 mm²	Fuel pump
130	-XP02	50	-S015	6	BN / 0.75 mm²	Fan
131	-XP02	57	-S001.1	2	RD / 2.50 mm²	12V30
132	-XP02	58	-S001.1	1	RD / 2.50 mm²	12V30
133	-XP02	62	-SP08	1	RD-WH / 2.50 mm²	F018
134	-XR10	5	-XP02	32	RD / 1.00 mm²	F016
135	-XR10	8	-S020	7	OG / 1.00 mm²	Wiper motor front
136	-XR10	9	-S020	4	OG / 1.00 mm²	Windscreen washer pump Front
137	-XR10	11	-S020.1	7	OG / 1.00 mm²	Wiper motor rear
138	-XR10	12	-S020.1	4	OG / 1.00 mm²	Windscreen washer pump Rear
139	-XX00.2	1	-SP05	1	BK / 1.50 mm²	GND

6.21 Position of main wiring harness cab (FRW3) - EU Stage V

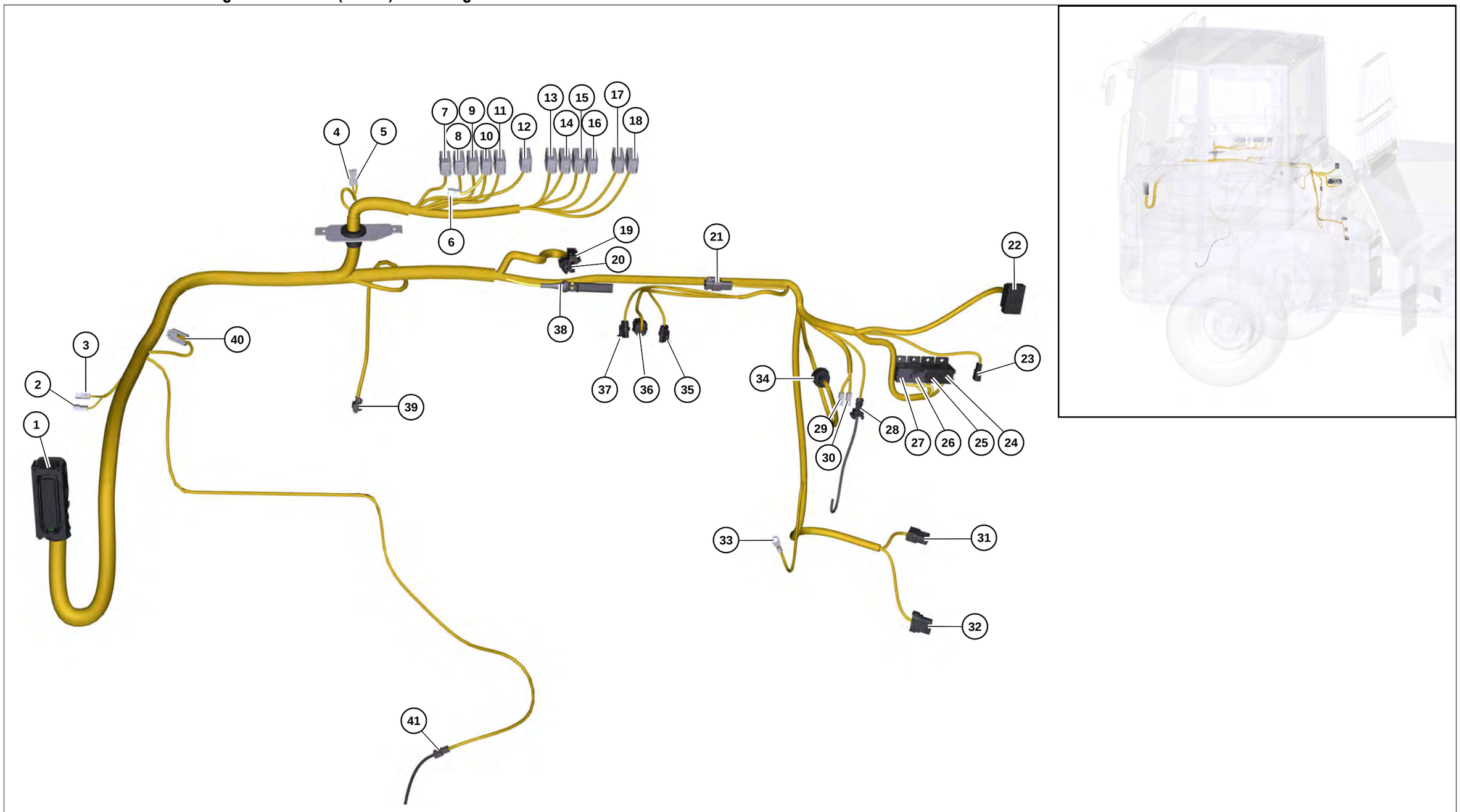


Fig. 162: Position of main wiring harness cab

Item	Connector	Function
1	XP02	Fuse box plug
2	B002.1	Horn plug
3	B002.2	Horn plug
4	XX00.1	Cigarette lighter connector
5	XX00.2	Cigarette lighter connector
6	S212.1	Add-on connector Auto-Stop
7	S119	Activation of diesel particulate filter regeneration (DPF) switch connector
8	S210	Parking brake test button connector
9	S212	Auto-Stop switch connector
10	S020	Front wiper/washer switch connector
11	S020.1	Rear wiper/washer switch connector
12	S065	Parking brake switch connector
13	S016	Working light switch plug
14	S018	Rotating beacon switch connector
15	S019	Hazard warning switch connector
16	S085	Switch for cut-off of hydraulic functions connector
17	S015	Heater fan switch connector
18	S051	Air conditioning system switch connector
19	S001.1	Pre-heating start switch connector
20	S001.2	Pre-heating start switch connector
21	R810	CAN terminal resistance
22	X001	Air conditioning connector
23	B001	Fuel gauge connector
24	K011.1	Air conditioning switching relay
25	K011	Air conditioning switching relay
26	K013	Air conditioning switching relay
27	K013.1	Air conditioning switching relay
28	S058	Water separator switch connector
29	M009.1	Fuel feed pump connector
30	M009.2	Fuel feed pump connector
31	XE10	Option connector
32	XE11	Option connector
33	GND	Ground
34	B024	Pressure sensor low pressure fuel connector
35	M018	Air-conditioning fan
36	M018.1	Air-conditioning fan
37	S052	Air conditioning pressure switch
38	R025	22 Ohm resistance
39	B057	Intake air temperature sensor connector
40	XR10	Wiring harness cab/Canopy/ROPS connector
41	Y031	Coupling air-conditioning compressor connector

6.22 Main wiring harness cab (FRW3) - EU Stage V

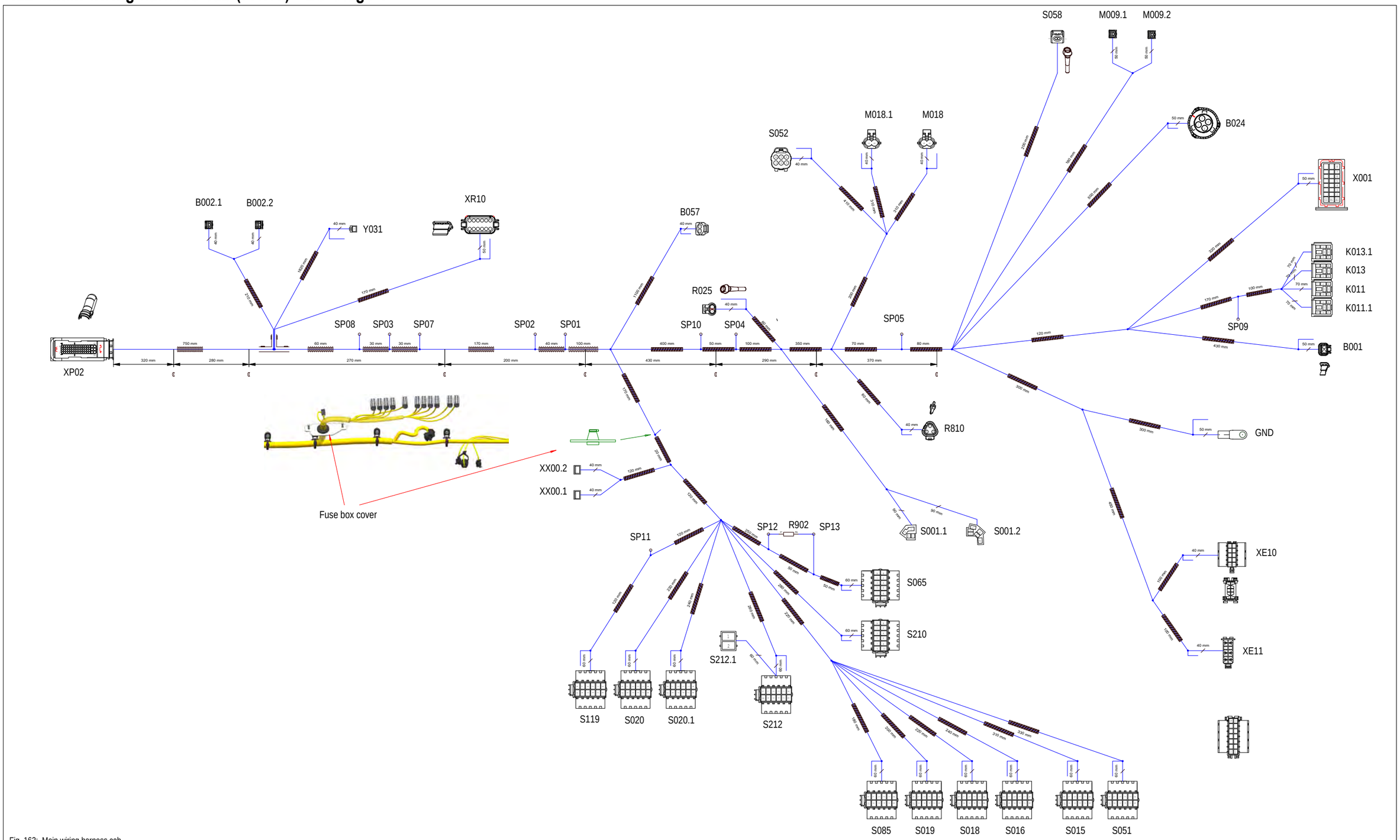


Fig. 163: Main wiring harness cab

6.23 Strand list main wiring harness cab (FRW3) - EU Stage V

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-B001	1	-XP02	10	YE / 0.75 mm²	Fuel level
2	-B001	2	-SP04	1	BK / 0.75 mm²	GND
3	-B024	1	-XP02	51	YE-WH / 0.75 mm²	Sensor supply
4	-B024	2	-XP02	52	YE / 0.75 mm²	Low fuel pressure
5	-B024	4	-XP02	53	YE-BN / 0.75 mm²	GND sensor
6	-B057	1	-XP02	46	YE / 0.75 mm²	Intake air temperature sensor
7	-K011	6.4	-SP05	1	BK / 1.00 mm²	GND
8	-K011	8.3	-X001	A1	BN / 2.50 mm²	Fan medium
9	-K011.1	6.4	-SP05	1	BK / 1.00 mm²	GND
10	-K013	4.2	-S052	6	BN / 1.00 mm²	GND
11	-K013	6.4	-SP05	1	BK / 1.00 mm²	GND
12	-K013	8.3	-M018	A	BN / 2.50 mm²	Fan air conditioner
13	-K013.1	2.1	-SP03	1	RD-WH / 2.50 mm²	air conditioner
14	-K013.1	4.2	-S052	4	BN / 1.00 mm²	GND
15	-K013.1	6.4	-SP05	1	BK / 1.00 mm²	GND
16	-M009.2	1	-SP05	1	BK / 1.50 mm²	GND
17	-M018	B	-SP05	1	BK / 2.50 mm²	GND
18	-M018.1	A	-K013.1	8.3	BN / 2.50 mm²	Fan air conditioner
19	-M018.1	B	-SP05	1	BK / 2.50 mm²	GND
20	-R025	2	-SP01	1	YE-WH / 0.75 mm²	VSS_2
21	-R810	B	-XE11	2	YE / 0.75 mm²	CAN0 High
22	-S001.2	5	-XP02	59	RD-WH / 2.50 mm²	12V15
23	-S001.2	6	-XP02	60	RD-WH / 2.50 mm²	12V15
24	-S015	1	-K011.1	4.2	BN / 1.00 mm²	GND
25	-S015	2	-SP03	1	RD-WH / 1.50 mm²	air conditioner
26	-S015	8	-K011	4.2	BN / 1.00 mm²	Fan medium
27	-S015	9	-SP04	1	BK / 0.75 mm²	GND
28	-S015	B	-S051	5	BN / 0.75 mm²	Fan
29	-S016	2	-XP02	26	RD-WH / 1.50 mm²	F010
30	-S016	3	-XR10	1	VT / 1.50 mm²	Work lights
31	-S016	9	-SP04	1	BK / 0.75 mm²	GND
32	-S016	10	-SP02	1	RD-WH / 0.75 mm²	F012
33	-S018	1	-SP07	1	VT / 0.75 mm²	Rotating Beacon
34	-S018	5	-S019	2	GY / 0.75 mm²	F014
35	-S018	9	-SP04	1	BK / 0.75 mm²	GND
36	-S018	10	-SP02	1	RD-WH / 0.75 mm²	F012
37	-S019	3	-XP02	40	GY / 0.75 mm²	Turn indicator (right)
38	-S019	8	-XP02	22	GY / 1.50 mm²	F013
39	-S019	9	-SP04	1	BK / 0.75 mm²	GND
40	-S020	5	-XR10	7	OG / 1.00 mm²	Wiper motor front
41	-S020.1	2	-S020	2	RD-WH / 1.50 mm²	F017
42	-S020.1	2	-XR10	6	RD-WH / 1.50 mm²	F017
43	-S020.1	5	-XR10	10	OG / 1.00 mm²	Wiper motor rear
44	-S020.1	9	-S020	9	BK / 0.75 mm²	GND
45	-S020.1	9	-SP04	1	BK / 0.75 mm²	GND
46	-S020.1	10	-S020	10	RD-WH / 0.75 mm²	F012
47	-S020.1	10	-SP02	1	RD-WH / 0.75 mm²	F012
48	-S051	9	-SP04	1	BK / 0.75 mm²	GND
49	-S051	10	-S015	10	RD-WH / 0.75 mm²	F012
50	-S051	10	-SP02	1	RD-WH / 0.75 mm²	F012
51	-S052	2	-X001	C3	BN / 1.00 mm²	air conditioner
52	-S052	3	-SP10	1	BN / 1.00 mm²	air conditioner
53	-S052	5	-Y031	1	BN / 1.00 mm²	air conditioner
54	-S065	1	-XP02	16	BU / 0.75 mm²	Switch parking brake
55	-S065	6	-XP02	36	RD-WH / 0.75 mm²	F011
56	-S065	8	-SP12	1	BU / 0.75 mm²	Ӂ redundant
57	-S065	9	-SP04	1	BK / 0.75 mm²	GND
58	-S065	10	-SP02	1	RD-WH / 0.75 mm²	F012
59	-S085	6	-SP02	1	RD-WH / 0.75 mm²	F012
60	-S085	7	-XP02	20	GN / 0.75 mm²	Street mode red.
61	-S085	9	-SP04	1	BK / 0.75 mm²	GND
62	-S119	3	-SP11	1	PK / 0.75 mm²	UB2
63	-S119	10	-SP11	1	PK / 0.75 mm²	UB2
64	-S210	1	-XP02	18	BU / 0.75 mm²	Parking brake test
65	-S210	9	-SP04	1	BK / 0.75 mm²	GND
66	-S210	10	-SP02	1	RD-WH / 0.75 mm²	F012
67	-S212	1	-XP02	44	PK / 0.75 mm²	Switch auto stop red.
68	-S212	6	-SP02	1	RD-WH / 0.75 mm²	F012
69	-S212	9	-SP04	1	BK / 0.75 mm²	GND
70	-S212	10	-SP02	1	RD-WH / 0.75 mm²	F012
71	-S212.1	1	-S212	5	YE-BN / 0.75 mm²	GND_S1
72	-S212.1	2	-S212	7	PK / 0.75 mm²	Switch auto stop
73	-SP01	1	-S065	5	YE-WH / 0.75 mm²	VSS_2
74	-SP01	1	-S085	5	YE-WH / 0.75 mm²	VSS_2
75	-SP01	1	-S210	5	YE-WH / 0.75 mm²	VSS_2
76	-SP02	1	-XP02	1	RD-WH / 1.50 mm²	F012
77	-SP03	1	-K013	2.1	RD-WH / 2.50 mm²	air conditioner
78	-SP03	1	-XP02	34	RD-WH / 1.50 mm²	air conditioner
79	-SP05	1	-B002.2	1	BK / 1.00 mm²	GND
80	-SP05	1	-GND	1	BK / 6.00 mm²	GND
81	-SP05	1	-XR10	3	BK / 1.50 mm²	GND
82	-SP05	1	-XR10	4	BK / 1.50 mm²	GND
83	-SP07	1	-XE10	3	VT / 0.75 mm²	Rotating Beacon
84	-SP07	1	-XP02	27	VT / 0.75 mm²	Rotating Beacon
85	-SP08	1	-XP02	61	RD-WH / 2.50 mm²	Fan high
86	-SP09	1	-K011	2.1	RD-WH / 2.50 mm²	Fan high
87	-SP09	1	-K011.1	2.1	RD-WH / 4.00 mm²	Fan high
88	-SP09	1	-SP08	1	RD-WH / 6.00 mm²	Fan high
89	-SP10	1	-S051	1	BN / 1.00 mm²	air conditioner
90	-SP10	1	-S051	B	BN / 0.75 mm²	air conditioner

nr.	From	Pin	To	Pin	Color/mm²	Function
91	-SP13	1	-S065	9	BK / 0.75 mm²	GND
92	-X001	B1	-K011.1	8.3	BN / 2.50 mm²	Fan high
93	-X001	B8	-SP05	1	BK / 2.50 mm²	GND
94	-X001	C1	-K011.1	8.3	BN / 2.50 mm²	Fan high
95	-X001	C2	-SP10	1	BN / 1.00 mm²	air conditioner
96	-X001	C8	-SP05	1	BK / 2.50 mm²	GND
97	-XE10	1	-XP02	41	RD-WH / 1.50 mm²	F026
98	-XE10	5	-XP02	30	RD / 1.50 mm²	F026
99	-XE10	7	-SP05	1	BK / 1.50 mm²	GND
100	-XE10	8	-XP02	48	GY / 1.00 mm²	Backward lightning/alarm
101	-XE11	1	-XP02	12	PK / 1.00 mm²	Charge control
102	-XE11	2	-XP02	14	YE / 0.75 mm²	CAN0 High
103	-XE11	3	-R810	A	GN / 0.75 mm²	CAN0 Low
104	-XE11	3	-XP02	15	GN / 0.75 mm²	CAN0 Low
105	-XE11	4	-SP02	1	RD-WH / 0.75 mm²	F012
106	-XE11	6	-SP05	1	BK / 0.75 mm²	GND
107	-XE11	7	-S001.2	8	PK / 0.75 mm²	Start signal
108	-XE11.1	8	-XE11.1	7	PK / 0.75 mm²	Start signal
109	-XP02	2	-S065	8	BU / 0.75 mm²	Ӂ redundant
110	-XP02	3	-S065	2	BU / 0.75 mm²	Ӂ
111	-XP02	4	-XE11	8	PK / 0.75 mm²	Start signal
112	-XP02	5	-S119	1	PK / 0.75 mm²	ϯ э
113	-XP02	6	-S119	9	BK-BN / 0.75 mm²	̫ ؗ
114	-XP02	7	-SP11	1	PK / 0.75 mm²	UB2
115	-XP02	8	-S058	2	YE-BN / 0.75 mm²	GND sensor
116	-XP02	9	-S058	1	YE / 0.75 mm²	ן
117	-XP02	13	-R025	1	YE-WH / 0.75 mm²	VSS_2
118	-XP02	17	-S065	7	BU / 0.75 mm²	Switch parking brake red.
119	-XP02	19	-S085	1	GN / 0.75 mm²	Street mode
120	-XP02	21	-S019	2	GY / 1.50 mm²	F014
121	-XP02	23	-XE10	2	GY / 0.75 mm²	Low beam
122	-XP02	24	-XE11	5	RD / 0.75 mm²	F015
123	-XP02	25	-B002.1	1	VT / 1.00 mm²	F012
124	-XP02	28	-XR10	2	VT / 0.75 mm²	Rotating Beacon
125	-XP02	29	-S016	6	VT / 1.00 mm²	Work lights
126	-XP02	31	-S020	2	RD-WH / 1.50 mm²	F017
127	-XP02	33	-XX00.1	1	RD / 1.50 mm²	F020
128	-XP02	35	-SP03	1	RD-WH / 1.50 mm²	air conditioner
129	-XP02	37	-S019	6	GY / 0.75 mm²	Indicator relay +
130	-XP02	38	-S019	5	GY / 0.75 mm²	Indicator
131	-XP02	39	-S019	1	GY / 0.75 mm²	Turn indicator (left)
132	-XP02	42	-SP04	1	BK / 1.50 mm²	GND
133	-XP02	43	-S212	5	YE-BN / 0.75 mm²	GND_S1
134	-XP02	45	-S212	7	PK / 0.75 mm²	Switch auto stop
135	-XP02	47	-B057	2	YE-BN / 0.75 mm²	GND sensor
136	-XP02	49	-M009.1	1	PK / 1.50 mm²	Fuel pump
137	-XP02	50	-S015	6	BN / 0.75 mm²	Fan
138	-XP02	57	-S001.1	2	RD / 2.50 mm²	12V30
139	-XP02	58	-S001.1	1	RD / 2.50 mm²	12V30
140	-XP02	62	-SP08	1	RD-WH / 2.50 mm²	Fan high
141	-XR10	5	-XP02	32	RD / 1.00 mm²	F016
142	-XR10	8	-S020	7	OG / 1.00 mm²	Wiper motor front
143	-XR10	9	-S020	4	OG / 1.00 mm²	Windscreen washer pump Front
144	-XR10	11	-S020.1	7	OG / 1.00 mm²	Wiper motor rear
145	-XR10	12	-S020.1	4	OG / 1.00 mm²	Windscreen washer pump Rear
146	-XX00.2	1	-SP05	1	BK / 1.50 mm²	GND

6.24 Position of main wiring harness ROPS (FRW2)

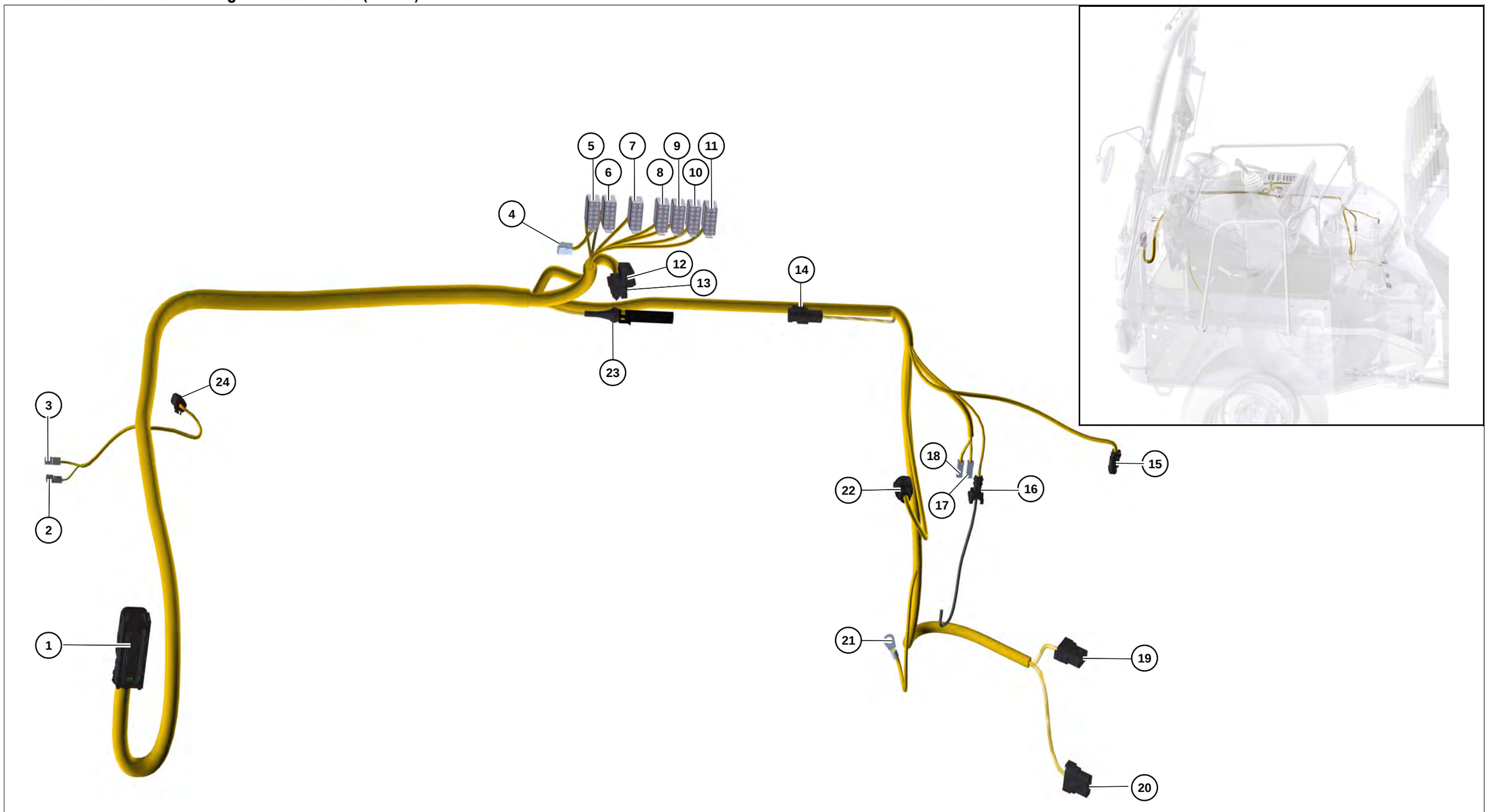


Fig. 164: Position of main wiring harness ROPS

Item	Connector	Function
1	XP02	Fuse box plug
2	B002.1	Horn plug
3	B002.2	Horn plug
4	S212.1	Add-on connector Auto-Stop
5	S210	Parking brake test button connector
6	S212	Auto-Stop switch connector
7	S065	Parking brake switch connector
8	S016	Working light switch plug
9	S018	Rotating beacon switch connector

Item	Connector	Function
10	S019	Hazard warning switch connector
11	S085	Switch for cut-off of hydraulic functions connector
12	S001.1	Pre-heating start switch connector
13	S001.2	Pre-heating start switch connector
14	R810	CAN terminal resistance
15	B001	Fuel gauge connector
16	S058	Water separator switch connector
17	M009.1	Fuel feed pump connector
18	M009.2	Fuel feed pump connector

Item	Connector	Function
19	XE10	Option connector
20	XE11	Option connector
21	GND	Ground
22	B024	Pressure sensor low pressure fuel connector
23	R025	22 Ohm resistance
24	XR10	Wiring harness cab/Canopy/ROPS connector

6.25 Main wiring harness ROPS (FRW2)

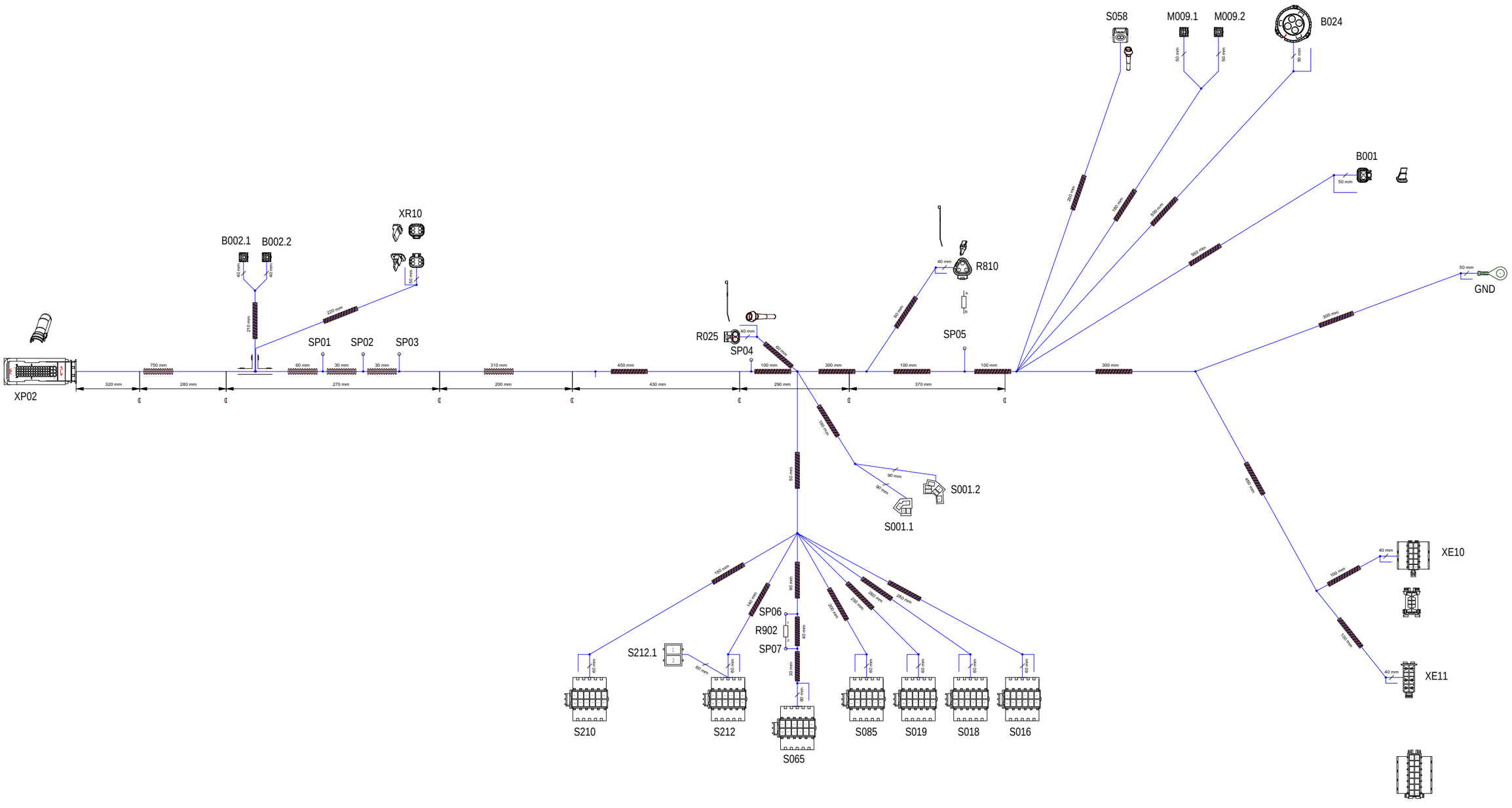


Fig. 165: Main wiring harness ROPS

6.26 Strand list main wiring harness ROPS (FRW2)

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-B001	1	-XP02	10	YE / 0.75 mm²	Fuel level
2	-B001	2	-SP04	1	BK / 0.75 mm²	GND
3	-B002.1	1	-XP02	25	VT / 1.00 mm²	F012
4	-B002.2	1	-SP03	1	BK / 1.00 mm²	GND
5	-B024	1	-XP02	7	PK / 0.75 mm²	GND sensor
6	-B024	2	-XP02	8	PK / 0.75 mm²	Low fuel pressure
7	-B024	4	-XP02	9	PK / 0.75 mm²	Sensor supply
8	-M009.1	1	-XP02	49	PK / 1.50 mm²	Fuel pump
9	-S001.1	1	-XP02	58	RD / 2.50 mm²	12V30
10	-S001.1	2	-XP02	57	RD / 2.50 mm²	12V30
11	-S001.2	5	-XP02	59	RD-WH / 2.50 mm²	12V15
12	-S001.2	6	-XP02	60	RD-WH / 2.50 mm²	12V15
13	-S001.2	8	-XE11	7	PK / 0.75 mm²	Start signal
14	-S016	3	-XR10	1	VT / 1.50 mm²	Work lights
15	-S016	9	-SP04	1	BK / 0.75 mm²	GND
16	-S016	10	-SP02	1	RD-WH / 0.75 mm²	F012
17	-S018	1	-SP05	1	VT / 0.75 mm²	Rotating Beacon
18	-S018	9	-SP04	1	BK / 0.75 mm²	GND
19	-S018	10	-SP02	1	RD-WH / 0.75 mm²	F012
20	-S019	1	-XP02	39	GY / 0.75 mm²	Turn indicator (left)
21	-S019	2	-S018	5	GY / 0.75 mm²	F014
22	-S019	3	-XP02	40	GY / 0.75 mm²	Turn indicator (right)
23	-S019	8	-XP02	22	GY / 1.50 mm²	F013
24	-S019	9	-SP04	1	BK / 0.75 mm²	GND
25	-S058	1	-XP02	5	PK / 0.75 mm²	Boost pressure
26	-S065	2	-XP02	3	BU / 0.75 mm²	Parking brake Feedback
27	-S065	5	-SP01	1	YE-WH / 0.75 mm²	VSS_2
28	-S065	9	-SP04	1	BK / 0.75 mm²	GND
29	-S065	10	-SP02	1	RD-WH / 0.75 mm²	F012
30	-S085	1	-XP02	19	GN / 0.75 mm²	Street mode
31	-S085	6	-SP02	1	RD-WH / 0.75 mm²	F012
32	-S085	9	-SP04	1	BK / 0.75 mm²	GND
33	-S210	5	-SP01	1	YE-WH / 0.75 mm²	VSS_2
34	-S210	9	-SP04	1	BK / 0.75 mm²	GND
35	-S210	10	-SP02	1	RD-WH / 0.75 mm²	F012
36	-S212	6	-SP02	1	RD-WH / 0.75 mm²	F012
37	-S212	9	-SP04	1	BK / 0.75 mm²	GND
38	-S212	10	-SP02	1	RD-WH / 0.75 mm²	F012
39	-S212.1	1	-S212	5	YE-BN / 0.75 mm²	GND_S1
40	-S212.1	2	-S212	7	PK / 0.75 mm²	Switch auto stop
41	-SP01	1	-R025	2	YE-WH / 0.75 mm²	VSS_2
42	-SP01	1	-S085	5	YE-WH / 0.75 mm²	VSS_2
43	-SP03	1	-GND	1	BK / 4.00 mm²	GND
44	-SP03	1	-M009.2	1	BK / 1.50 mm²	GND
45	-SP04	1	-XP02	42	BK / 1.50 mm²	GND
46	-SP05	1	-XP02	27	VT / 0.75 mm²	Rotating Beacon
47	-SP06	1	-S065	8	BU / 0.75 mm²	Parking brake Feedback red.
48	-SP07	1	-S065	9	BK / 0.75 mm²	GND
49	-XE10	1	-XP02	41	RD-WH / 1.50 mm²	F025
50	-XE10	2	-XP02	23	GY / 0.75 mm²	Low beam
51	-XE10	3	-SP05	1	VT / 0.75 mm²	Rotating Beacon
52	-XE10	5	-XP02	30	RD / 1.50 mm²	F026
53	-XE10	7	-SP03	1	BK / 1.50 mm²	GND
54	-XE10	8	-XP02	48	GY / 1.00 mm²	Backward lightning/alarm
55	-XE11	1	-XP02	12	PK / 1.00 mm²	Charge control
56	-XE11	2	-R810	B	WH / 0.75 mm²	CAN0 High
57	-XE11	2	-XP02	14	WH / 0.75 mm²	CAN0 High
58	-XE11	3	-R810	A	WH / 0.75 mm²	CAN0 Low
59	-XE11	3	-XP02	15	WH / 0.75 mm²	CAN0 Low
60	-XE11	4	-SP02	1	RD-WH / 0.75 mm²	F012
61	-XE11	5	-XP02	24	RD / 0.75 mm²	F014
62	-XE11	6	-SP03	1	BK / 0.75 mm²	GND
63	-XE11	8	-XP02	4	PK / 0.75 mm²	Start signal
64	-XE11.1	8	-XE11.1	7	PK / 0.75 mm²	Start signal
65	-XP02	1	-SP02	1	RD-WH / 1.50 mm²	F012
66	-XP02	2	-S065	8	BU / 0.75 mm²	Parking brake Feedback red.
67	-XP02	6	-S058	2	PK / 0.75 mm²	Low fuel pressure
68	-XP02	13	-R025	1	YE-WH / 0.75 mm²	VSS_2
69	-XP02	16	-S065	1	BU / 0.75 mm²	Switch parking brake
70	-XP02	17	-S065	7	BU / 0.75 mm²	Switch parking brake red.
71	-XP02	18	-S210	1	BU / 0.75 mm²	Parking brake test
72	-XP02	20	-S085	7	GN / 0.75 mm²	Street mode red.
73	-XP02	21	-S019	2	GY / 1.50 mm²	F014
74	-XP02	26	-S016	2	RD-WH / 1.00 mm²	F010
75	-XP02	28	-XR10	2	VT / 0.75 mm²	Rotating Beacon
76	-XP02	29	-S016	6	VT / 1.00 mm²	Work lights
77	-XP02	36	-S065	6	RD-WH / 0.75 mm²	F011
78	-XP02	37	-S019	6	GY / 0.75 mm²	Indicator relay +
79	-XP02	38	-S019	5	GY / 0.75 mm²	Indicator
80	-XP02	43	-S212	5	YE-BN / 0.75 mm²	GND_S1
81	-XP02	44	-S212	1	PK / 0.75 mm²	Switch auto stop red.
82	-XP02	45	-S212	7	PK / 0.75 mm²	Switch auto stop
83	-XR10	3	-SP03	1	BK / 1.50 mm²	GND
84	-XR10	4	-SP03	1	BK / 1.50 mm²	GND

6.27 Position of main wiring harness ROPS (FRW2) - EU Stage V

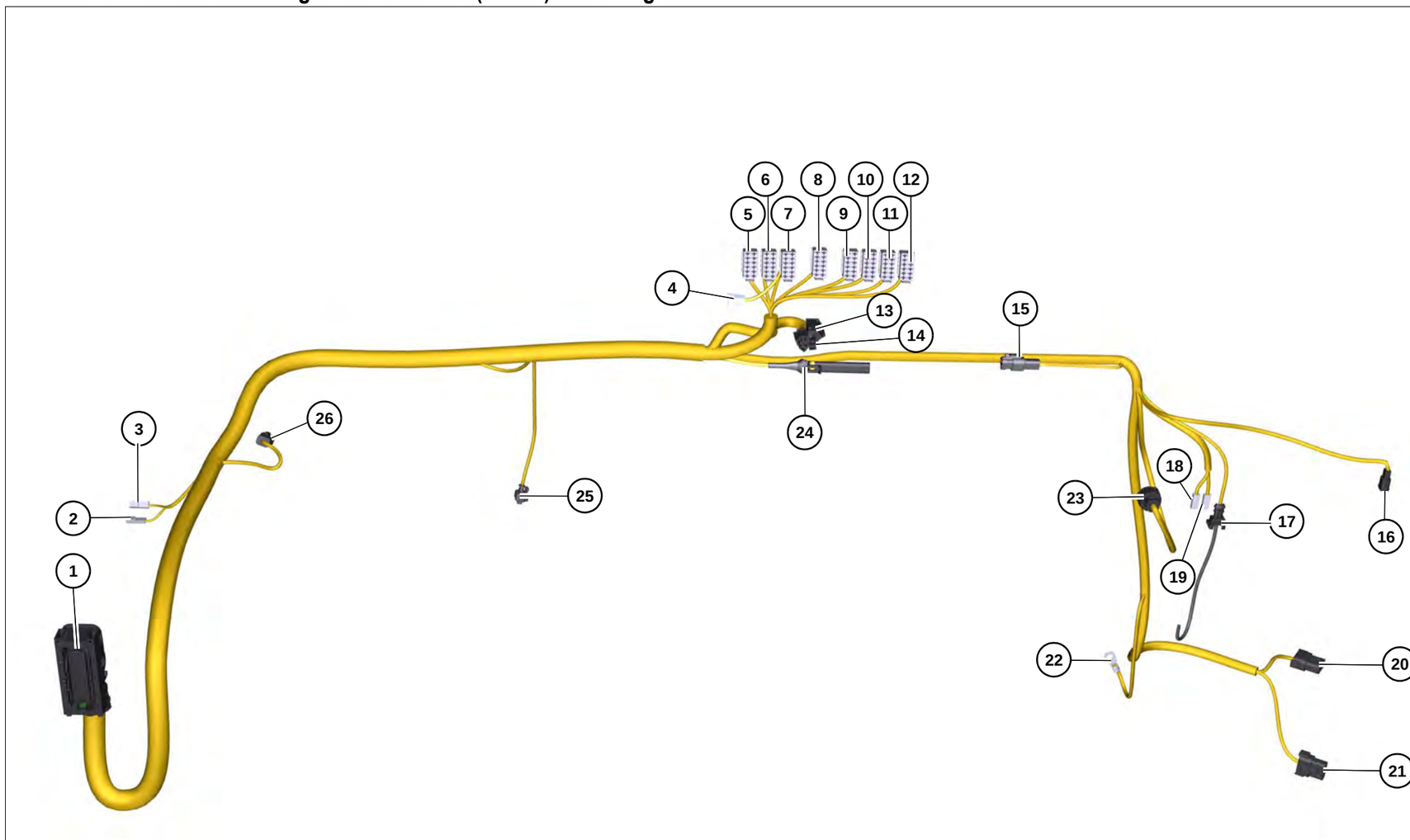


Fig. 166: Position of main wiring harness ROPS

Item	Connector	Function
1	XP02	Fuse box plug
2	B002.1	Horn plug
3	B002.2	Horn plug
4	S212.1	Add-on connector Auto-Stop
5	S119	Activation of diesel particulate filter regeneration (DPF) switch connector
6	S210	Parking brake test button connector
7	S212	Auto-Stop switch connector
8	S065	Parking brake switch connector
9	S016	Working light switch plug
10	S018	Rotating beacon switch connector
11	S019	Hazard warning switch connector
12	S085	Switch for cut-off of hydraulic functions connector
13	S001.1	Pre-heating start switch connector
14	S001.2	Pre-heating start switch connector
15	R810	CAN terminal resistance
16	B001	Fuel gauge connector
17	S058	Water separator switch connector
18	M009.1	Fuel feed pump connector
19	M009.2	Fuel feed pump connector
20	XE10	Option connector
21	XE11	Option connector
22	GND	Ground
23	B024	Pressure sensor low pressure fuel connector
24	R025	22 Ohm resistance
25	B057	Intake air temperature sensor connector
26	XR10	Wiring harness cab/Canopy/ROPS connector

6.28 Main wiring harness ROPS (FRW2) - EU Stage V

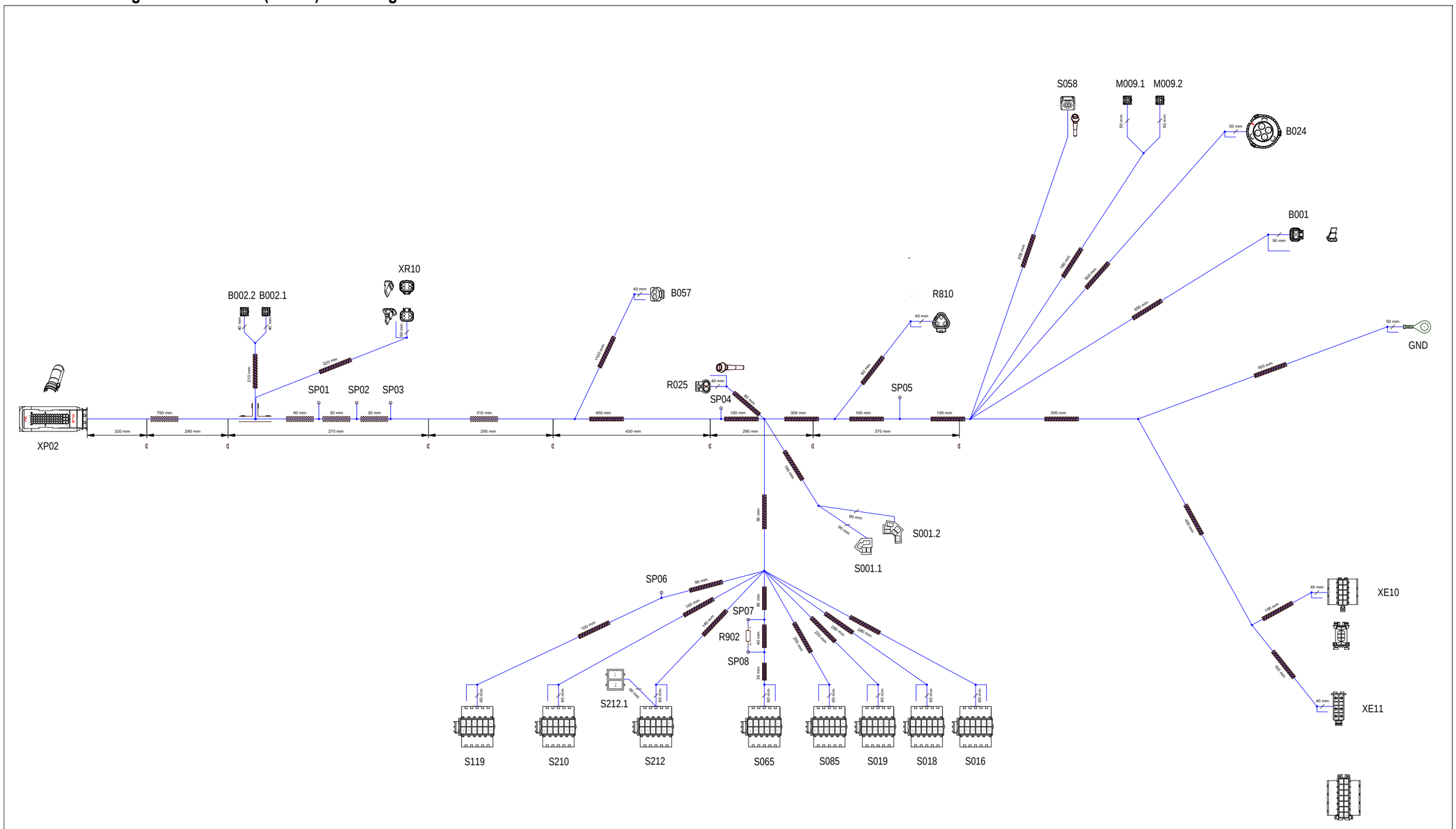


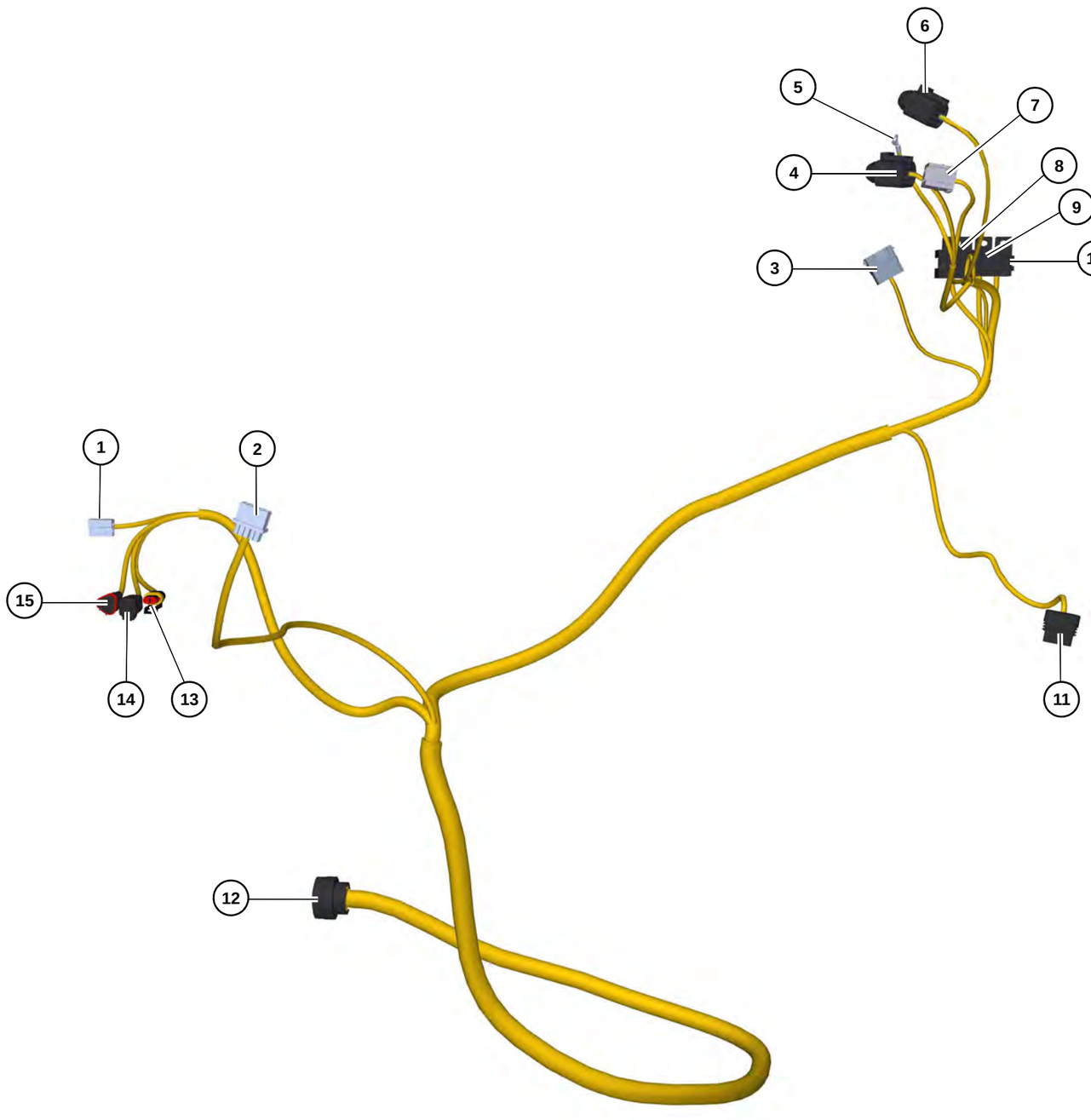
Fig. 167: Main wiring harness ROPS

6.29 Strand list main wiring harness ROPS (FRW2) - EU Stage V

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-B001	1	-XP02	10	YE / 0.75 mm²	Fuel level
2	-B001	2	-SP04	1	BK / 0.75 mm²	GND
3	-B002.1	1	-XP02	25	VT / 1.00 mm²	F012
4	-B002.2	1	-SP03	1	BK / 1.00 mm²	GND
5	-B057	2	-XP02	47	YE-BN / 0.75 mm²	GND sensor
6	-M009.1	1	-XP02	49	PK / 1.50 mm²	Fuel pump
7	-R810	A	-XE11	3	GN / 0.75 mm²	CAN0 Low
8	-R810	B	-XE11	2	YE / 0.75 mm²	CAN0 High
9	-S001.1	1	-XP02	58	RD / 2.50 mm²	12V30
10	-S001.1	2	-XP02	57	RD / 2.50 mm²	12V30
11	-S001.2	5	-XP02	59	RD-WH / 2.50 mm²	12V15
12	-S001.2	6	-XP02	60	RD-WH / 2.50 mm²	12V15
13	-S001.2	8	-XE11	7	PK / 0.75 mm²	Start signal
14	-S016	3	-XR10	1	VT / 1.50 mm²	Work lights
15	-S016	9	-SP04	1	BK / 0.75 mm²	GND
16	-S016	10	-SP02	1	RD-WH / 0.75 mm²	F012
17	-S018	1	-SP05	1	VT / 0.75 mm²	Rotating Beacon
18	-S018	9	-SP04	1	BK / 0.75 mm²	GND
19	-S018	10	-SP02	1	RD-WH / 0.75 mm²	F012
20	-S019	1	-XP02	39	GY / 0.75 mm²	Turn indicator (left)
21	-S019	2	-S018	5	GY / 0.75 mm²	F014
22	-S019	3	-XP02	40	GY / 0.75 mm²	Turn indicator (right)
23	-S019	8	-XP02	22	GY / 1.50 mm²	F013
24	-S019	9	-SP04	1	BK / 0.75 mm²	GND
25	-S065	2	-XP02	3	BU / 0.75 mm²	Ӂ
26	-S065	5	-SP01	1	YE-WH / 0.75 mm²	VSS_2
27	-S065	9	-SP04	1	BK / 0.75 mm²	GND
28	-S065	10	-SP02	1	RD-WH / 0.75 mm²	F012
29	-S085	1	-XP02	19	GN / 0.75 mm²	Street mode
30	-S085	6	-SP02	1	RD-WH / 0.75 mm²	F012
31	-S085	9	-SP04	1	BK / 0.75 mm²	GND
32	-S119	1	-XP02	5	PK / 0.75 mm²	ϯ э
33	-S119	10	-SP06	1	PK / 0.75 mm²	UB2
34	-S210	5	-SP01	1	YE-WH / 0.75 mm²	VSS_2
35	-S210	9	-SP04	1	BK / 0.75 mm²	GND
36	-S210	10	-SP02	1	RD-WH / 0.75 mm²	F012
37	-S212	6	-SP02	1	RD-WH / 0.75 mm²	F012
38	-S212	9	-SP04	1	BK / 0.75 mm²	GND
39	-S212	10	-SP02	1	RD-WH / 0.75 mm²	F012
40	-S212.1	1	-S212	5	YE-BN / 0.75 mm²	GND_S1
41	-S212.1	2	-S212	7	PK / 0.75 mm²	Switch auto stop
42	-SP01	1	-R025	2	YE-WH / 0.75 mm²	VSS_2
43	-SP01	1	-S085	5	YE-WH / 0.75 mm²	VSS_2
44	-SP03	1	-GND	1	BK / 4.00 mm²	GND
45	-SP03	1	-M009.2	1	BK / 1.50 mm²	GND
46	-SP04	1	-XP02	42	BK / 1.50 mm²	GND
47	-SP05	1	-XP02	27	VT / 0.75 mm²	Rotating Beacon
48	-SP06	1	-S119	3	PK / 0.75 mm²	UB2
49	-SP06	1	-XP02	7	PK / 0.75 mm²	UB2
50	-SP07	1	-S065	8	BU / 0.75 mm²	Ӂ redundant
51	-SP08	1	-S065	9	BK / 0.75 mm²	GND
52	-XE10	1	-XP02	41	RD-WH / 1.50 mm²	F025
53	-XE10	2	-XP02	23	GY / 0.75 mm²	Low beam
54	-XE10	3	-SP05	1	VT / 0.75 mm²	Rotating Beacon
55	-XE10	5	-XP02	30	RD / 1.50 mm²	F026
56	-XE10	7	-SP03	1	BK / 1.50 mm²	GND
57	-XE10	8	-XP02	48	GY / 1.00 mm²	Backward lightning/alarm
58	-XE11	1	-XP02	12	PK / 1.00 mm²	Charge control
59	-XE11	2	-XP02	14	YE / 0.75 mm²	CAN0 High
60	-XE11	3	-XP02	15	GN / 0.75 mm²	CAN0 Low
61	-XE11	4	-SP02	1	RD-WH / 0.75 mm²	F012
62	-XE11	5	-XP02	24	RD / 0.75 mm²	F014
63	-XE11	6	-SP03	1	BK / 0.75 mm²	GND
64	-XE11	8	-XP02	4	PK / 0.75 mm²	Start signal
65	-XE11.1	8	-XE11.1	7	PK / 0.75 mm²	Start signal
66	-XP02	1	-SP02	1	RD-WH / 1.50 mm²	F012
67	-XP02	2	-S065	8	BU / 0.75 mm²	Ӂ redundant
68	-XP02	6	-S119	9	BK-BN / 1.00 mm²	̫ ؗ
69	-XP02	8	-S058	2	YE-BN / 0.75 mm²	GND sensor
70	-XP02	9	-S058	1	YE / 0.75 mm²	ן
71	-XP02	13	-R025	1	YE-WH / 0.75 mm²	VSS_2
72	-XP02	16	-S065	1	BU / 0.75 mm²	Switch parking brake
73	-XP02	17	-S065	7	BU / 0.75 mm²	Switch parking brake red.
74	-XP02	18	-S210	1	BU / 0.75 mm²	Parking brake test
75	-XP02	20	-S085	7	GN / 0.75 mm²	Street mode red.
76	-XP02	21	-S019	2	GY / 1.50 mm²	F014
77	-XP02	26	-S016	2	RD-WH / 1.00 mm²	F010
78	-XP02	28	-XR10	2	VT / 0.75 mm²	Rotating Beacon
79	-XP02	29	-S016	6	VT / 1.00 mm²	Work lights
80	-XP02	36	-S065	6	RD-WH / 0.75 mm²	F011
81	-XP02	37	-S019	6	GY / 0.75 mm²	Indicator relay +
82	-XP02	38	-S019	5	GY / 0.75 mm²	Indicator
83	-XP02	43	-S212	5	YE-BN / 0.75 mm²	GND_S1
84	-XP02	44	-S212	1	PK / 0.75 mm²	Switch auto stop red.
85	-XP02	45	-S212	7	PK / 0.75 mm²	Switch auto stop
86	-XP02	46	-B057	1	YE / 0.75 mm²	֗ г
87	-XP02	51	-B024	1	YE-WH / 0.75 mm²	Sensor supply
88	-XP02	52	-B024	2	YE / 0.75 mm²	Low fuel pressure
89	-XP02	53	-B024	4	YE-BN / 0.75 mm²	GND sensor
90	-XR10	3	-SP03	1	BK / 1.50 mm²	GND

nr.	From	Pin	To	Pin	Color/mm²	Function
91	-XR10	4	-SP03	1	BK / 1.50 mm²	GND

6.30 Position of main wiring harness turning bracket (STW1)



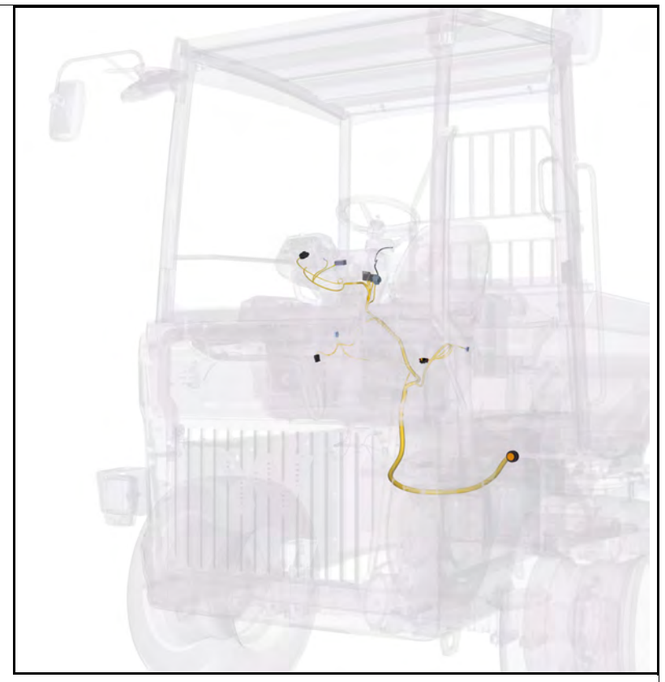


Fig. 168: Position of main wiring harness turning bracket

Item	Connector	Function
1	R040	Resistance 47 Ohm D+ connector
2	XJ001	Joystick connector
3	S012	Steering column holder left connector
4	XA02	Indicating instrument connector
5	GND	Ground
6	XA01	Indicating instrument connector
7	S132	Display button
8	B018	Buzzer connector

Item	Connector	Function
9	K160	Changeover direction indicator relay
10	K160.1	Changeover direction indicator relay
11	B054	Accelerator pedal connector
12	XR01	Turning bracket connector
13	S123	Seat belt contact switch connector
14	S104	Operator presence switch connector
15	S104.2	Operator presence switch connector

6.31 Wiring harness turning bracket (STW1)

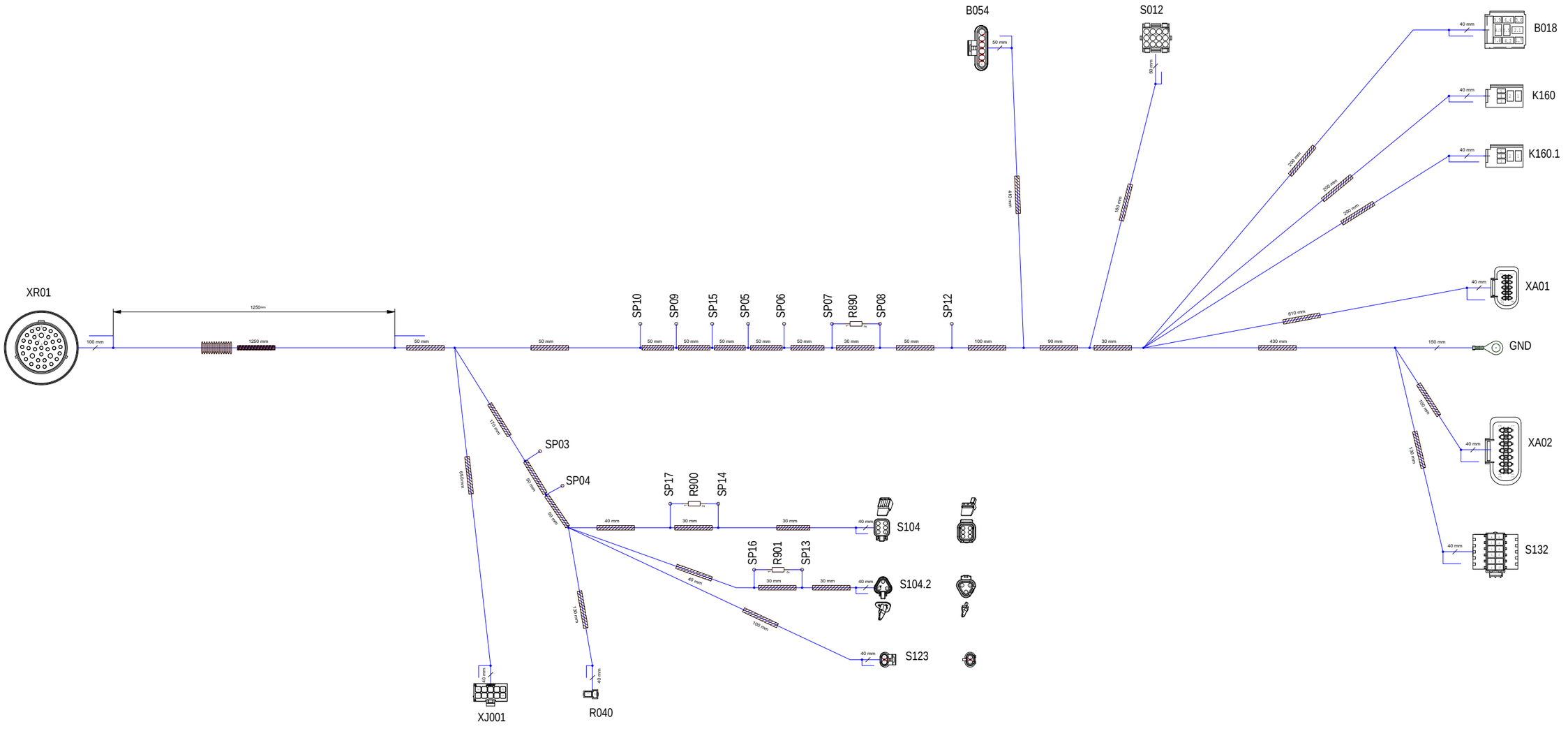
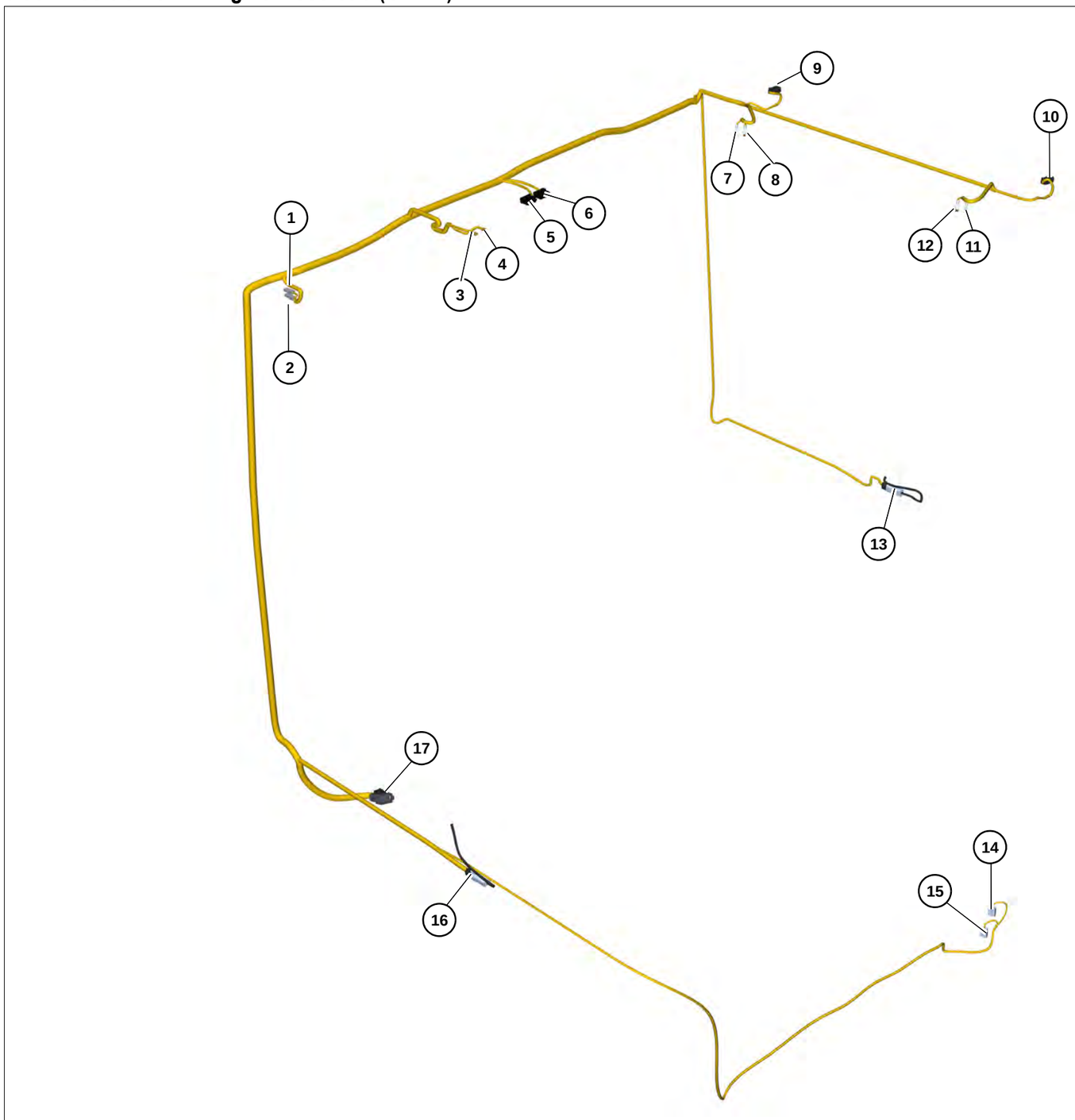


Fig. 169: Wiring harness turning bracket

6.32 Strand list wiring harness turning bracket (STW1)

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-B018	4.2	-SP12	1	BK / 1.00 mm²	GND
2	-B054	A	-SP15	1	YE-BN / 0.75 mm²	GND_S1
3	-B054	B	-XR01	2	YE / 0.75 mm²	Throttle signal
4	-B054	C	-SP10	1	YE-WH / 0.75 mm²	VSS_1
5	-B054	D	-SP15	1	YE-BN / 0.75 mm²	GND_S1
6	-B054	F	-SP10	1	YE-WH / 0.75 mm²	VSS_1
7	-K160	1	-S012	6	GY / 0.75 mm²	Side markers, left
8	-K160	2	-K160.1	4	GY / 0.75 mm²	Turn indicator (right)
9	-K160	4	-XR01	28	GY / 0.75 mm²	Turn indicator (left)
10	-K160	5	-SP12	1	BK / 0.75 mm²	GND
11	-K160.1	1	-S012	3	GY / 0.75 mm²	Side markers, right
12	-K160.1	2	-K160	4	GY / 0.75 mm²	Turn indicator (left)
13	-K160.1	4	-XR01	29	GY / 0.75 mm²	Turn indicator (right)
14	-K160.1	5	-SP12	1	BK / 0.75 mm²	GND
15	-R040	1	-SP09	1	RD-WH / 1.00 mm²	F012
16	-S012	1	-XR01	26	GY / 1.00 mm²	Low beam
17	-S012	2	-SP12	1	BK / 0.75 mm²	GND
18	-S012	7	-S012	8	RD / 0.75 mm²	F015
19	-S012	8	-XR01	9	RD / 1.00 mm²	F015
20	-S012	9	-XA02	3	GY / 0.75 mm²	Side markers
21	-S104	1	-SP10	1	YE-WH / 0.75 mm²	VSS_1
22	-S104	2	-SP03	1	YE / 0.75 mm²	Operator seat sensor NO
23	-S104	4	-SP04	1	YE / 0.75 mm²	Operator seat sensor NC
24	-S104.2	A	-SP03	1	YE / 0.75 mm²	Operator seat sensor NO
25	-S104.2	B	-SP04	1	YE / 0.75 mm²	Operator seat sensor NC
26	-S104.2	C	-SP09	1	RD-WH / 0.75 mm²	F012
27	-S123	1	-SP09	1	RD-WH / 0.75 mm²	F012
28	-S132	1	-XA02	11	WH / 0.75 mm²	Display button
29	-S132	3	-SP09	1	RD-WH / 0.75 mm²	F012
30	-S132	7	-XA02	10	WH / 0.75 mm²	Display button
31	-S132	9	-SP12	1	BK / 0.75 mm²	GND
32	-S132	10	-SP09	1	RD-WH / 0.75 mm²	F012
33	-S132	B	-SP09	1	RD-WH / 0.75 mm²	F012
34	-SP03	1	-SP16	1	YE / 0.75 mm²	Operator seat sensor NO
35	-SP03	1	-XR01	6	YE / 0.75 mm²	Operator seat sensor NO
36	-SP04	1	-XR01	17	YE / 0.75 mm²	Operator seat sensor NC
37	-SP05	1	-S012	10	BK-BN / 0.75 mm²	Horn
38	-SP05	1	-XJ001	8	BK-BN / 0.75 mm²	Horn
39	-SP05	1	-XR01	24	BK-BN / 0.75 mm²	Horn
40	-SP06	1	-SP07	1	GY / 1.00 mm²	Turn signal
41	-SP06	1	-XA02	9	GY / 1.00 mm²	Turn signal
42	-SP06	1	-XR01	31	GY / 1.00 mm²	Turn signal
43	-SP08	1	-SP12	1	BK / 1.00 mm²	GND
44	-SP09	1	-XR01	11	RD-WH / 1.50 mm²	F012
45	-SP10	1	-XR01	3	YE-WH / 0.75 mm²	VSS_1
46	-SP12	1	-XR01	7	BK / 1.50 mm²	GND
47	-SP13	1	-SP15	1	YE-BN / 0.75 mm²	GND_S1
48	-SP14	1	-SP15	1	YE-BN / 0.75 mm²	GND_S1
49	-SP15	1	-XR01	4	BK / 0.75 mm²	GND_S1
50	-SP17	1	-SP04	1	YE / 0.75 mm²	Operator seat sensor NC
51	-XA01	1	-SP09	1	RD-WH / 0.75 mm²	F012
52	-XA01	2	-SP12	1	BK / 0.75 mm²	GND
53	-XA01	3	-XR01	16	GN / 0.75 mm²	CAN0 Low
54	-XA01	4	-XR01	15	YE / 0.75 mm²	CAN0 High
55	-XA02	1	-R040	2	PK / 1.00 mm²	Charge control
56	-XA02	4	-XR01	33	GY / 1.00 mm²	Low beam
57	-XA02	12	-K160	3	GY / 0.75 mm²	Changeover direction indicator
58	-XA02	13	-K160.1	3	GY / 0.75 mm²	Changeover direction indicator
59	-XA02	14	-B018	6.4	GY / 1.00 mm²	Buzzer
60	-XJ001	1	-SP10	1	YE-WH / 0.75 mm²	VSS_1
61	-XJ001	2	-SP15	1	YE-BN / 0.75 mm²	GND_S1
62	-XJ001	5	-XR01	19	BU / 0.75 mm²	Switch 2nd gear
63	-XJ001	7	-SP09	1	RD-WH / 0.75 mm²	F012
64	-XJ001	9	-SP12	1	BK / 0.75 mm²	GND
65	-XR01	1	-B054	E	YE / 0.75 mm²	Throttle signal red.
66	-XR01	5	-S123	2	VT / 0.75 mm²	Switch Seatbelt
67	-XR01	8	-GND	1	BK / 1.00 mm²	GND
68	-XR01	12	-XA02	2	OG / 0.75 mm²	Error lamp
69	-XR01	13	-R040	2	PK / 1.00 mm²	Charge control
70	-XR01	14	-S012	5	GY / 1.00 mm²	Indicator
71	-XR01	20	-XJ001	6	BU / 0.75 mm²	Switch ECO mode
72	-XR01	22	-XJ001	3	BU / 0.75 mm²	Rocker driving
73	-XR01	23	-XJ001	4	BU / 0.75 mm²	Rocker driving red.
74	-XR01	25	-S012	4	GY / 1.00 mm²	High beam
75	-XR01	27	-S012	9	GY / 1.00 mm²	Side markers
76	-XR01	30	-XA02	5	YE / 0.75 mm²	Fuel level
77	-XR01	32	-XA02	8	GY / 1.00 mm²	High beam

6.33 Position of wiring harness cab (CBW1)



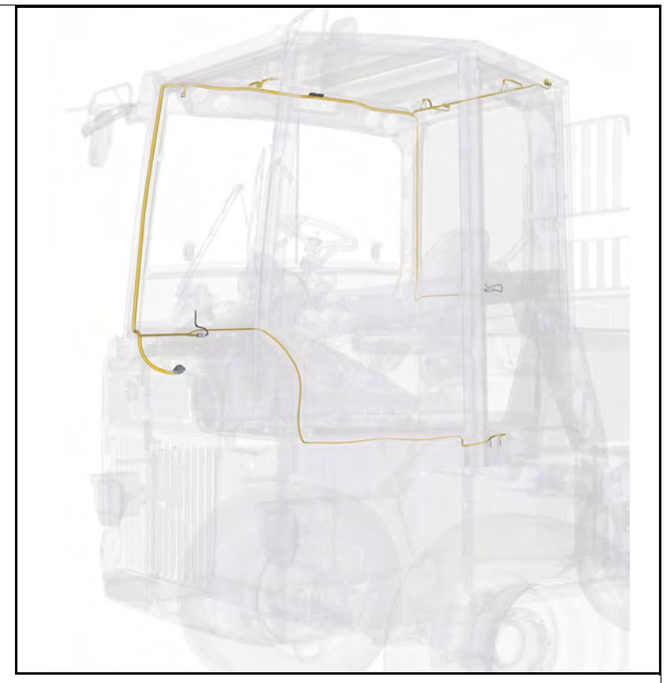


Fig. 170: Position of wiring harness cab

Item	Connector	Function
1	H028.1	Rotating beacon connector
2	H028.2	Rotating beacon connector
3	E014.1	Interior light connector
4	E014.2	Interior light connector
5	A001.1	Radio connector
6	A001.2	Radio connector
7	B011.1	Loudspeaker connector
8	B011.2	Loudspeaker connector
9	E007	Working light rear connector
10	E008	Working light rear connector
11	B012.1	Loudspeaker connector
12	B012.2	Loudspeaker connector
13	M003	Rear wiper motor connector
14	M005	Front wipe-wash pump connector
15	M006	Rear wipe-wash pump connector
16	M002	Front wiper motor connector
17	XR10	Wiring harness cab/Canopy/ROPS connector

6.34 Wiring harness cab (CBW1)

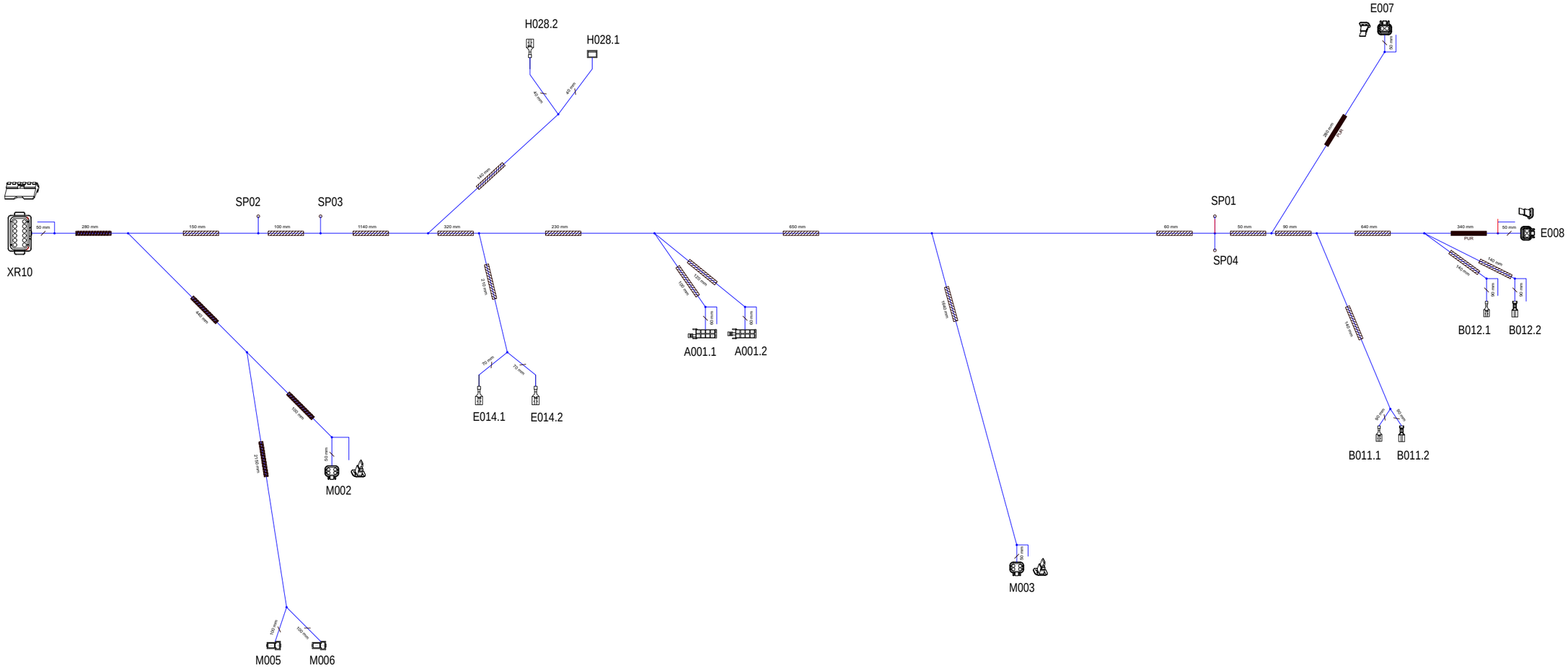
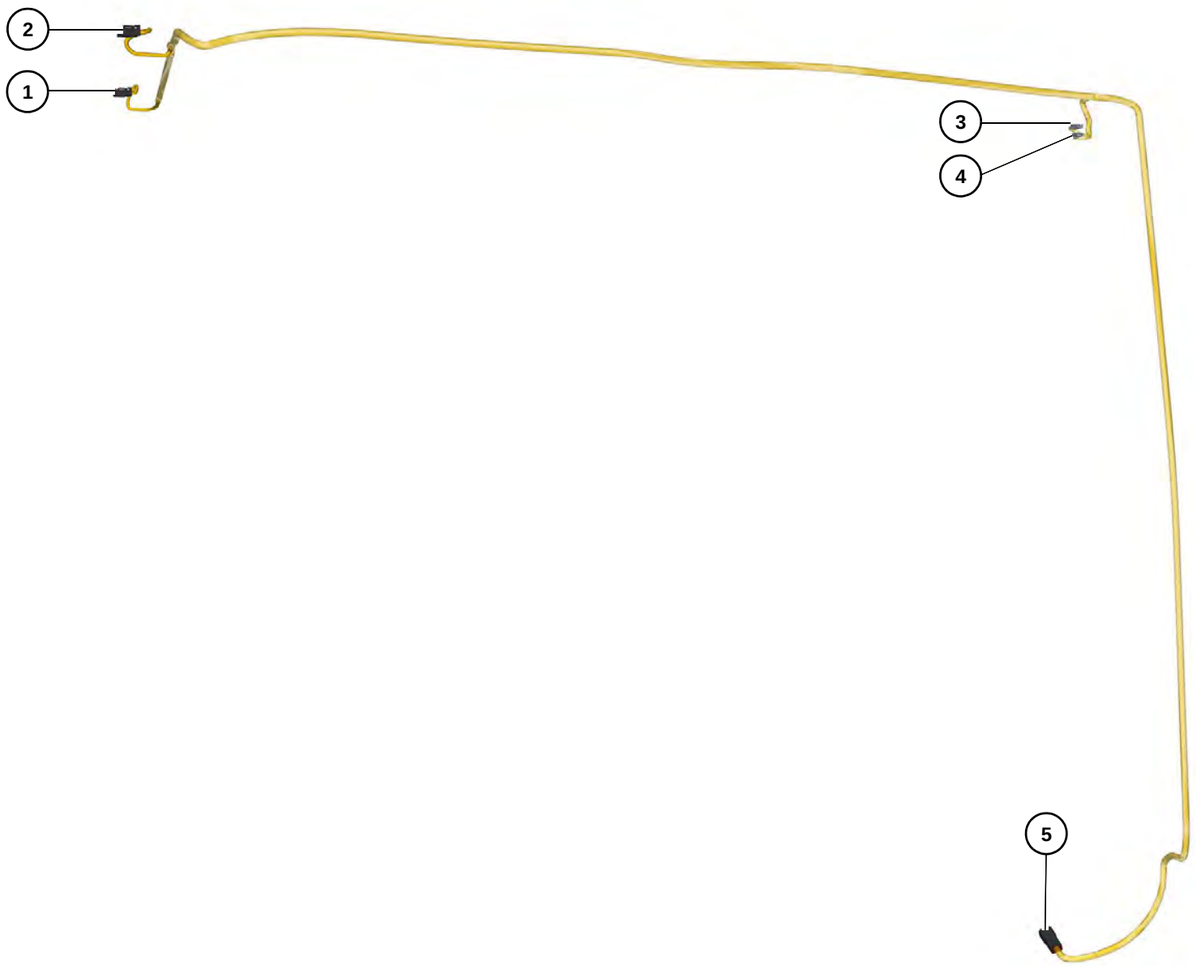


Fig. 171: Cabin wiring harness

6.35 Strand list wiring harness cab (CBW1)

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-A001.1	7	-SP03	1	RD-WH / 0.75 mm²	F017
2	-A001.1	8	-SP02	1	BK / 1.00 mm²	GND
3	-A001.2	3	-B011.1	1	WH / 0.75 mm²	Speaker right -
4	-A001.2	5	-B012.1	1	BK / 0.75 mm²	Speaker left -
5	-A001.2	6	-B012.2	1	BK-BN / 0.75 mm²	Speaker left +
6	-B011.2	1	-A001.2	4	RD-WH / 0.75 mm²	Speaker right +
7	-E007	1	-SP01	1	BU / 1.50 mm²	Work lights
8	-E007	2	-SP04	1	BN / 1.50 mm²	GND
9	-E014.1	1	-A001.1	4	RD / 1.00 mm²	F016
10	-E014.1	1	-XR10	5	RD / 1.00 mm²	F016
11	-E014.2	1	-SP02	1	BK / 0.75 mm²	GND
12	-H028.1	1	-XR10	2	VT / 0.75 mm²	Rotating Beacon
13	-H028.2	1	-SP02	1	BK / 0.75 mm²	GND
14	-M002	2	-XR10	7	OG / 1.00 mm²	Wiper motor front
15	-M002	3	-XR10	8	OG / 1.00 mm²	Wiper motor front
16	-M002	4	-SP02	1	BK / 1.00 mm²	GND
17	-M003	2	-XR10	10	OG / 1.00 mm²	Wiper motor rear
18	-M003	3	-XR10	11	OG / 1.00 mm²	Wiper motor rear
19	-M003	4	-SP02	1	BK / 1.00 mm²	GND
20	-M005	2	-SP02	1	BK / 1.00 mm²	GND
21	-M006	2	-SP02	1	BK / 1.00 mm²	GND
22	-SP01	1	-E008	1	BU / 1.50 mm²	Work lights
23	-SP01	1	-XR10	1	VT / 1.50 mm²	Work lights
24	-SP03	1	-M002	1	RD-WH / 1.50 mm²	F017
25	-SP03	1	-M003	1	RD-WH / 1.50 mm²	F017
26	-SP03	1	-XR10	6	RD-WH / 1.50 mm²	F017
27	-SP04	1	-E008	2	BN / 1.50 mm²	GND
28	-SP04	1	-SP02	1	BK / 1.50 mm²	GND
29	-XR10	3	-SP02	1	BK / 1.50 mm²	GND
30	-XR10	4	-SP02	1	BK / 1.50 mm²	GND
31	-XR10	9	-M005	1	OG / 1.00 mm²	Windscreen washer pump Front
32	-XR10	12	-M006	1	OG / 1.00 mm²	Windscreen washer pump Rear

6.36 Position of wiring harness lighting Canopy (BAW2)



Item	Connector	Function
1	E008	Working light rear connector
2	E007	Working light rear connector
3	H028.1	Rotating beacon connector
4	H028.2	Rotating beacon connector
5	XR10	Wiring harness cab/Canopy/ROPS connector

Fig. 172: Position of wiring harness lighting Canopy

6.37 Wiring harness lighting Canopy (BAW2)

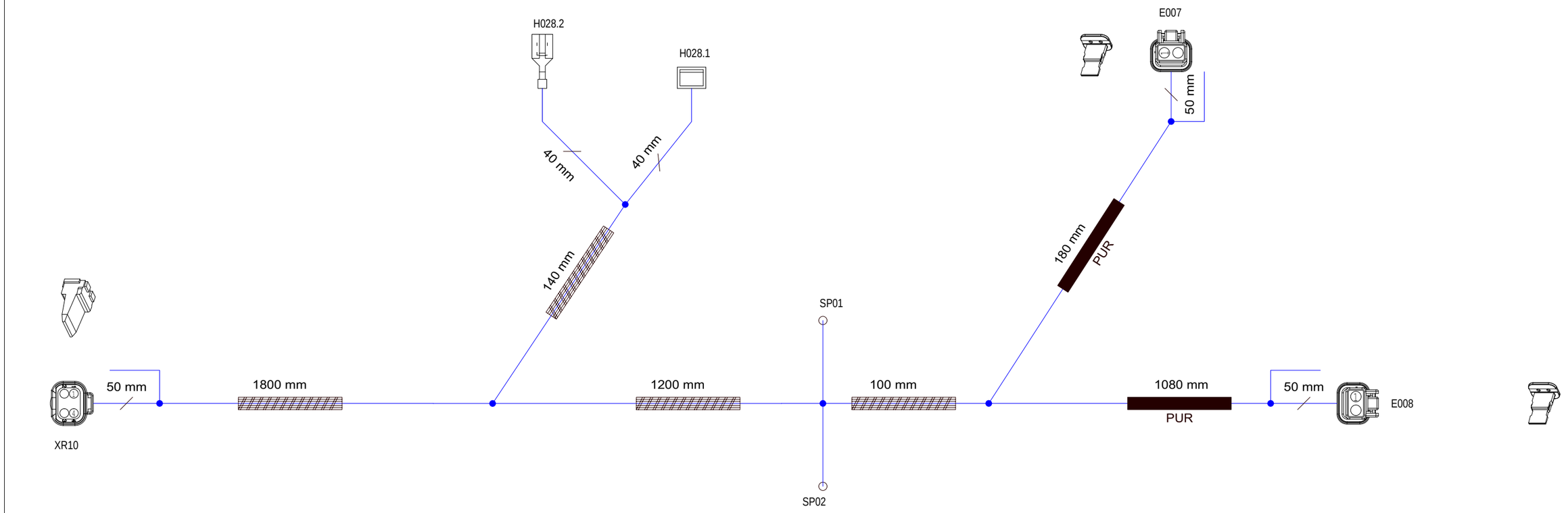
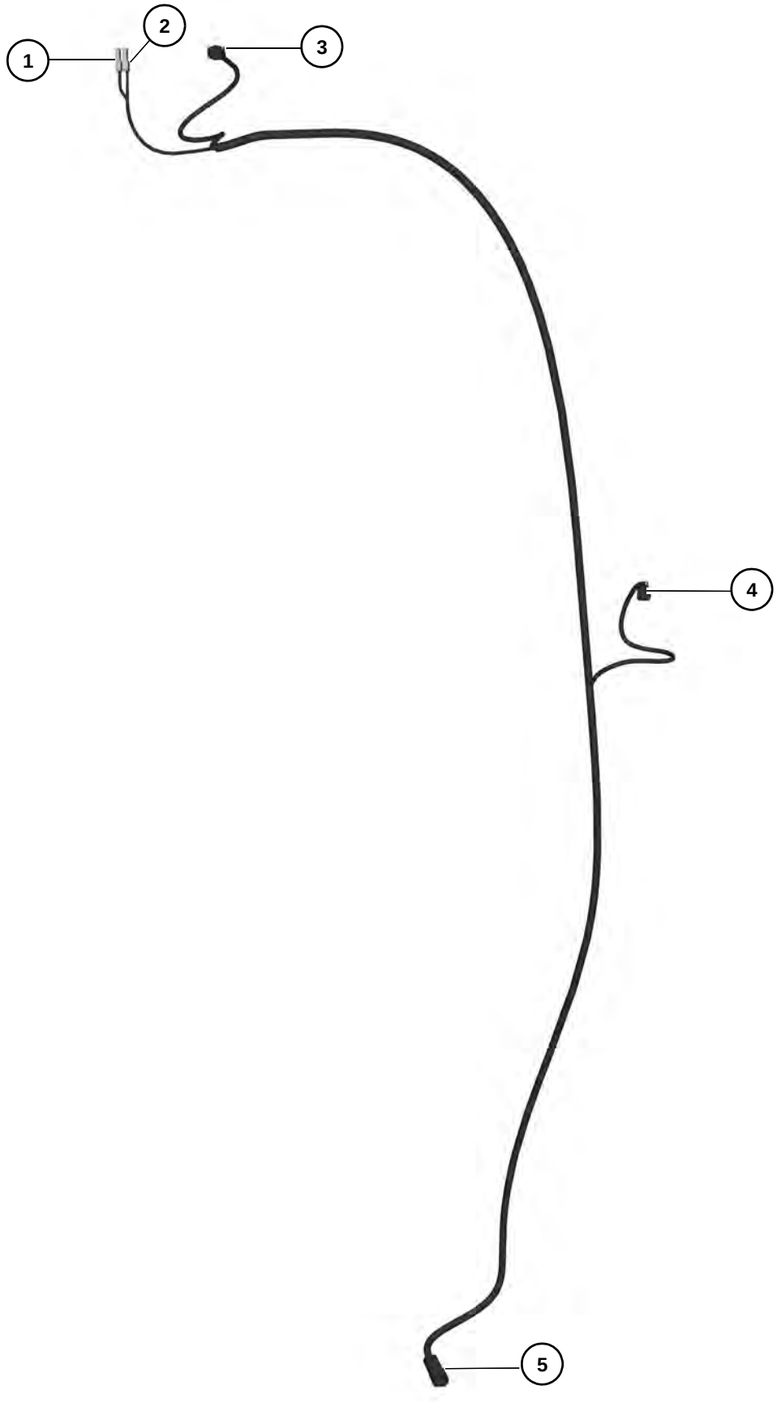


Fig. 173: Wiring harness lighting Canopy

6.38 Strand list wiring harness lighting Canopy (BAW2)

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-E007	1	-SP02	1	BU / 1.50 mm²	Work lights
2	-E007	2	-SP01	1	BN / 1.50 mm²	GND
3	-E008	1	-SP02	1	BU / 1.50 mm²	Work lights
4	-E008	2	-SP01	1	BN / 1.50 mm²	GND
5	-H028.2	1	-SP01	1	BK / 0.75 mm²	GND
6	-SP02	1	-XR10	1	VT / 1.50 mm²	Work lights
7	-XR10	2	-H028.1	1	VT / 0.75 mm²	Rotating Beacon
8	-XR10	3	-SP01	1	BK / 1.50 mm²	GND
9	-XR10	4	-SP01	1	BK / 1.50 mm²	GND

6.39 Position of wiring harness lighting ROPS (BAW1)



Item	Connector	Function
1	H028.1	Rotating beacon connector
2	H028.2	Rotating beacon connector
3	E007	Working light rear connector
4	E008	Working light rear connector
5	XR10	Wiring harness cab/Canopy/ROPS connector

Fig. 174: Position of wiring harness lighting ROPS

6.40 Wiring harness lighting ROPS (BAW1)

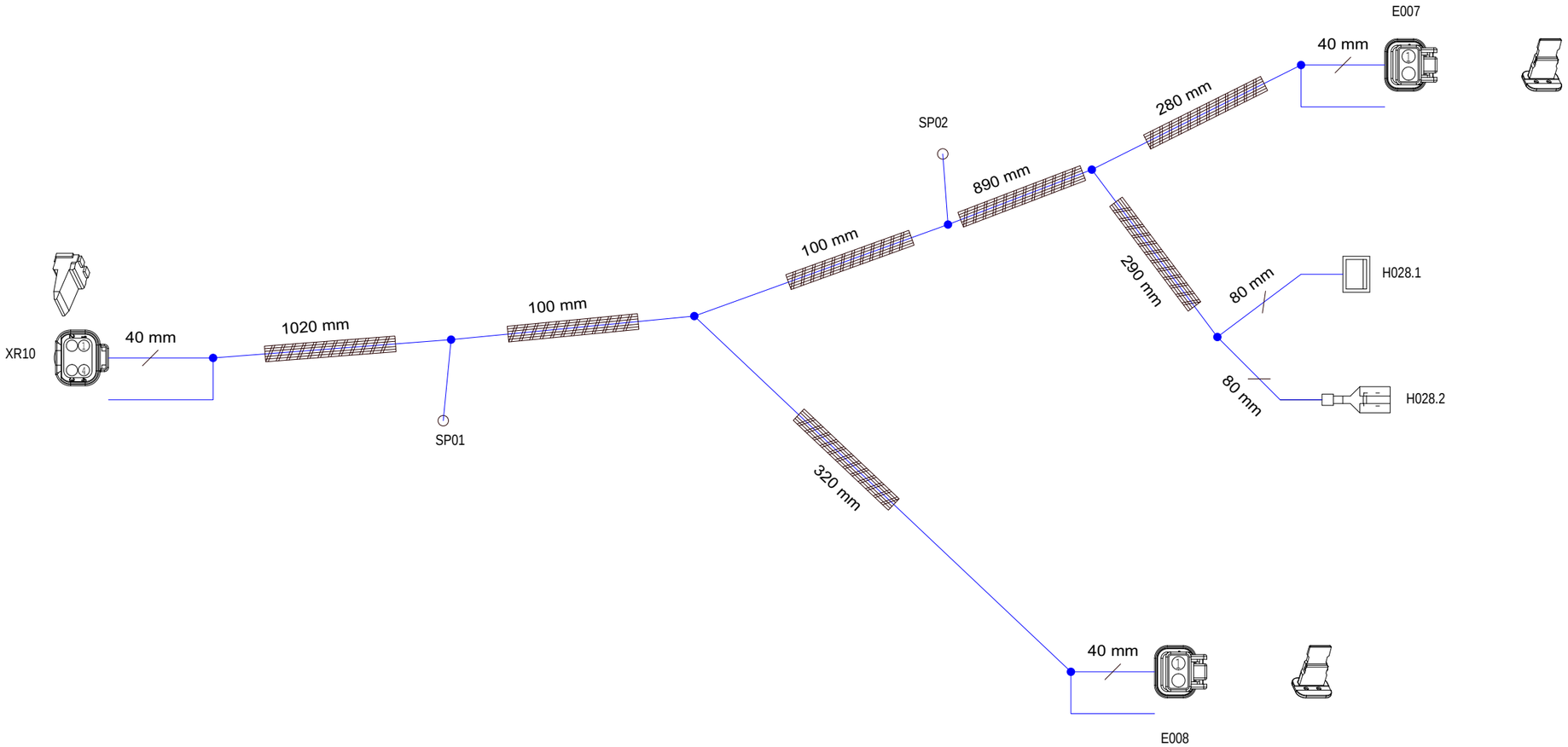
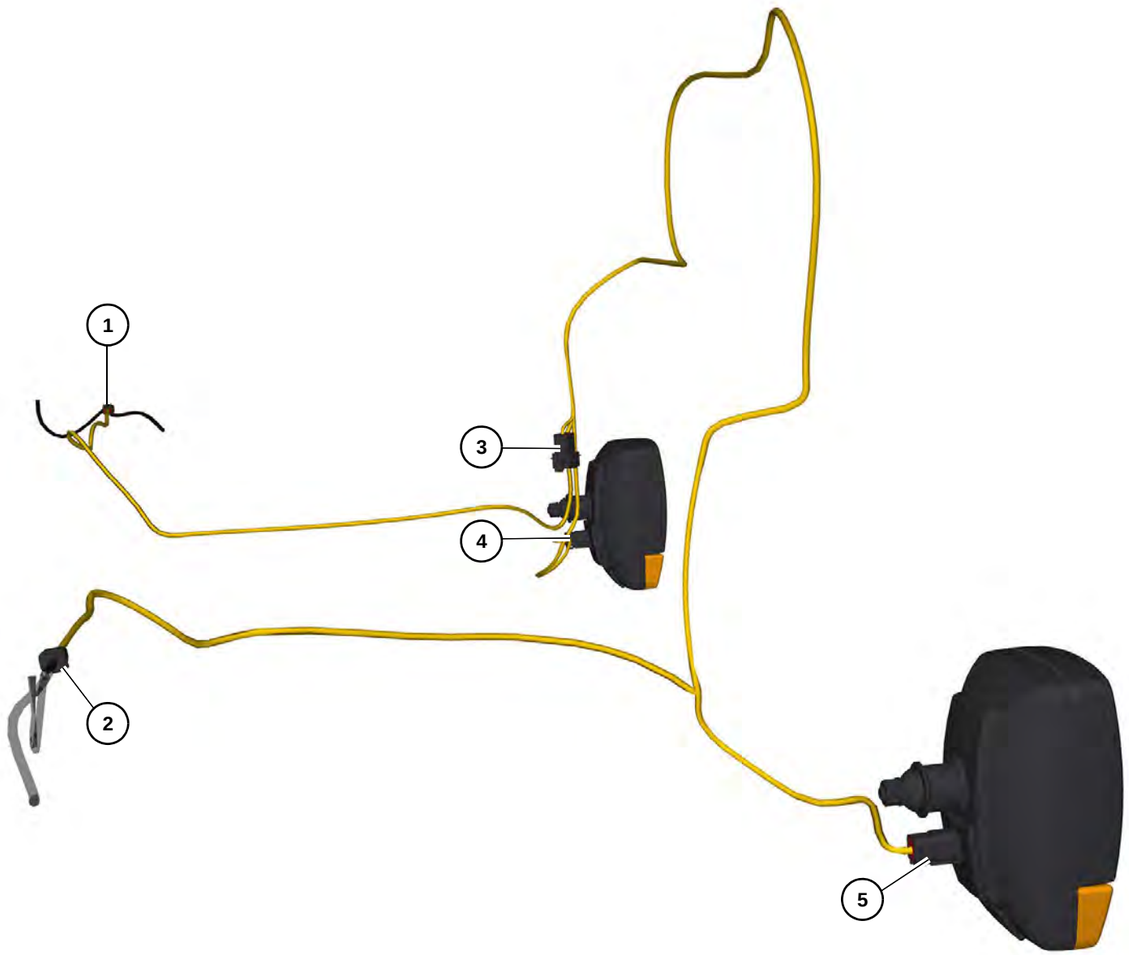


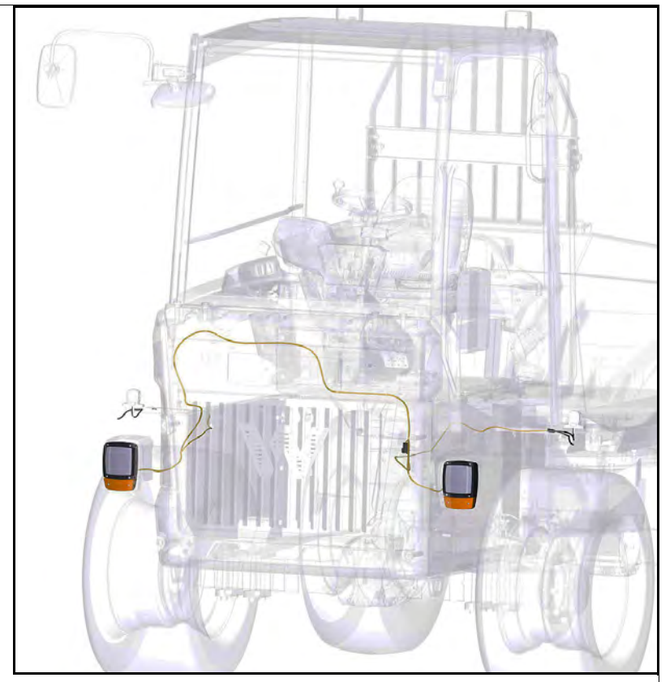
Fig. 175: Wiring harness lighting ROPS

6.41 Strand list wiring harness lighting ROPS (BAW1)

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-E007	1	-SP02	1	VT / 1.50 mm²	Work lights
2	-E007	2	-SP01	1	BK / 1.50 mm²	GND
3	-E008	1	-SP02	1	VT / 1.50 mm²	Work lights
4	-E008	2	-SP01	1	BK / 1.50 mm²	GND
5	-H028.2	1	-SP01	1	BK / 0.75 mm²	GND
6	-SP02	1	-XR10	1	VT / 1.50 mm²	Work lights
7	-XR10	2	-H028.1	1	VT / 0.75 mm²	Rotating Beacon
8	-XR10	3	-SP01	1	BK / 1.50 mm²	GND
9	-XR10	4	-SP01	1	BK / 1.50 mm²	GND

6.42 Position of wiring harness StVO Bumper (FBW1)





Item	Connector	Function
1	E017	Position light connector
2	E018	Position light connector
3	XS01	Wiring harness lighting front connector
4	H088	Combined front left light connector
5	H089	Combined front right light connector

Fig. 176: Position of wiring harness StVO Bumper

6.43 Wiring harness StVO Bumper (FBW1)

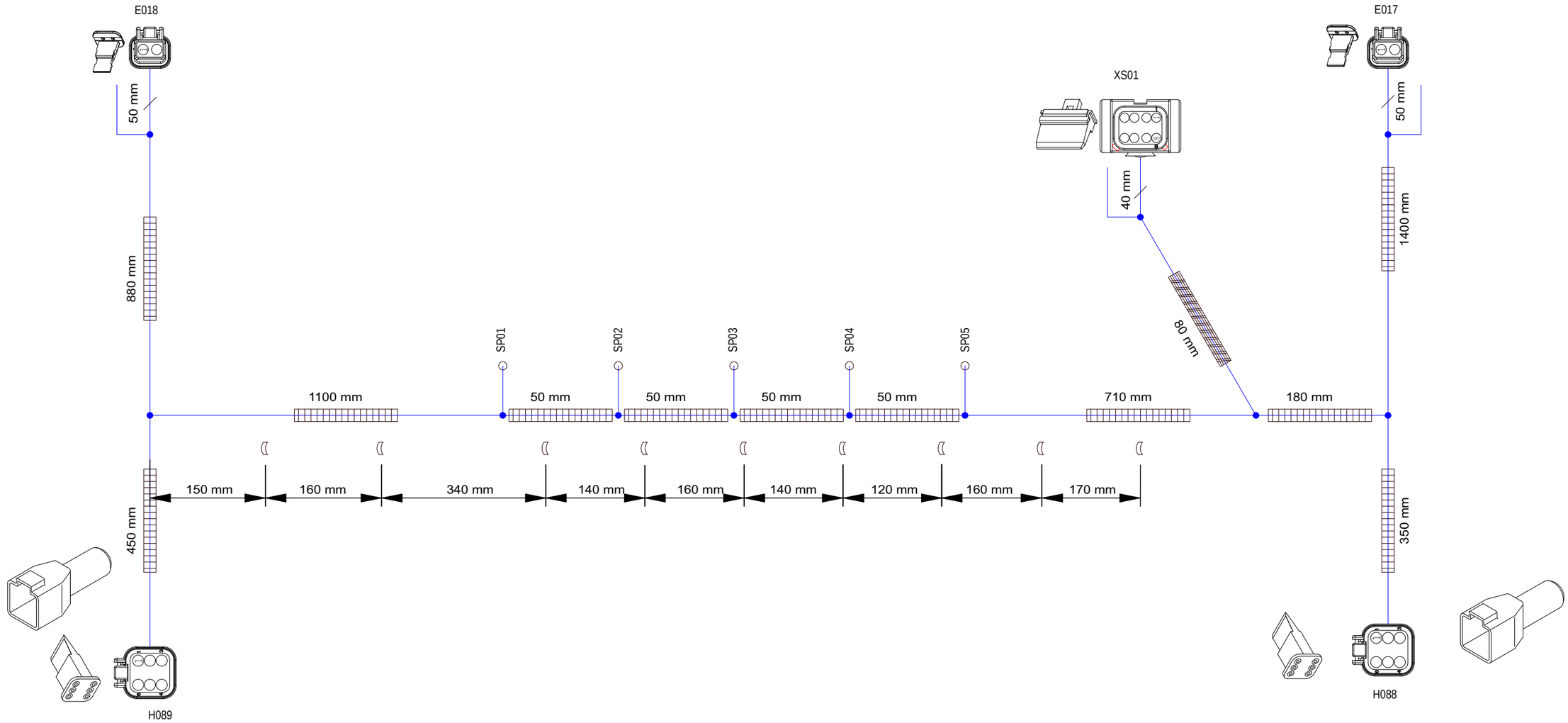


Fig. 177: Wiring harness StVO Bumper

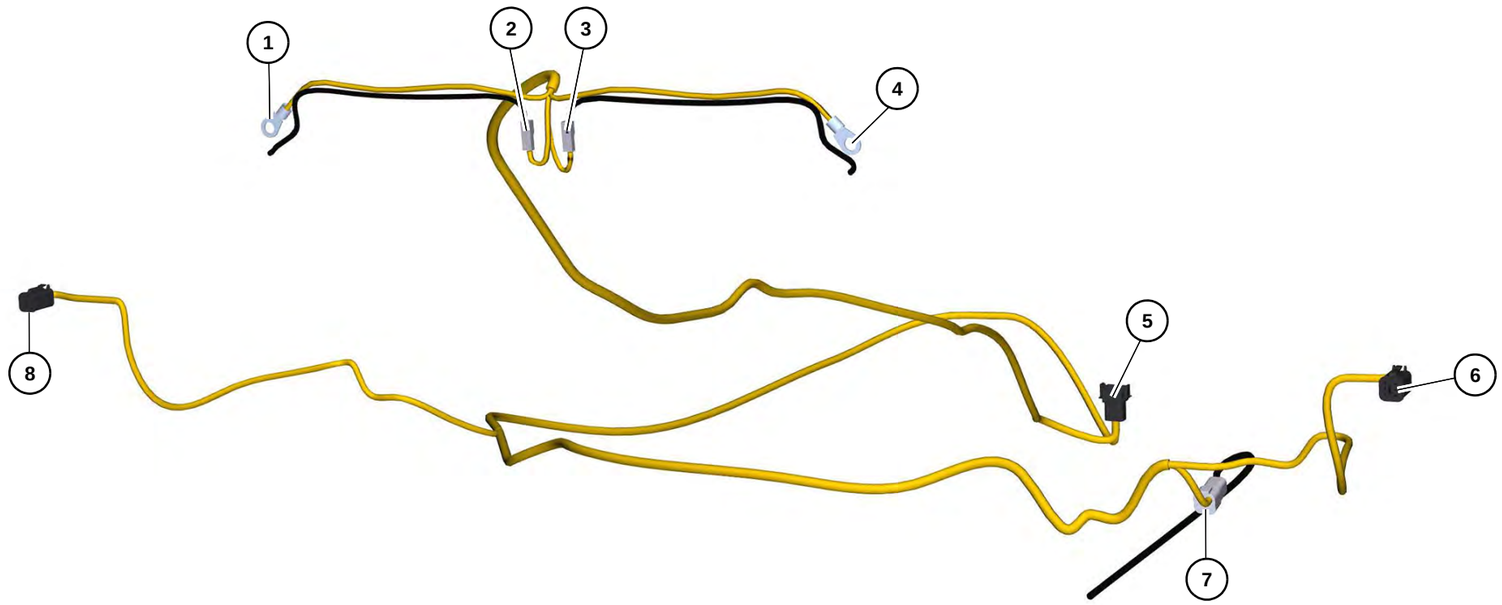
6.44 Strand list wiring harness StVO Bumper (FBW1)

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-E017	1	-SP04	1	GY / 0.75 mm²	Side markers, left
2	-E017	2	-SP01	1	BK / 0.75 mm²	GND
3	-E018	1	-SP05	1	GY / 0.75 mm²	Side markers, right
4	-H088	2	-SP02	1	GY / 0.75 mm²	Low beam
5	-H088	3	-SP03	1	GY / 0.75 mm²	High beam
6	-H088	5	-XS01	5	GY / 0.75 mm²	Turn indicator (left)
7	-H088	6	-SP01	1	BK / 1.50 mm²	GND
8	-H089	2	-SP02	1	GY / 0.75 mm²	Low beam
9	-H089	3	-SP03	1	GY / 0.75 mm²	High beam
10	-H089	6	-SP01	1	BK / 1.50 mm²	GND
11	-SP01	1	-E018	2	BK / 0.75 mm²	GND
12	-SP01	1	-XS01	7	BK / 1.50 mm²	GND
13	-SP02	1	-XS01	1	GY / 1.50 mm²	Low beam
14	-SP03	1	-XS01	6	GY / 1.50 mm²	High beam
15	-SP04	1	-H088	4	GY / 0.75 mm²	Side markers, left
16	-SP04	1	-XS01	2	GY / 0.75 mm²	Side markers, left
17	-SP05	1	-H089	4	GY / 0.75 mm²	Side markers, right
18	-SP05	1	-XS01	3	GY / 0.75 mm²	Side markers, right
19	-XS01	4	-H089	5	GY / 0.75 mm²	Turn indicator (right)

6.45 Strand list wiring harness StVO bumper (FBW1) from serial number WNCD2401PPAL00288 (DV60), WNCD2402KPAL00284 (DV90), WNCD2403CPAL00208 (DV100)

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-E017	1	-SP04	1	GY / 0.75 mm²	Side markers, left
2	-E017	2	-SP01	1	BK / 0.75 mm²	GND
3	-E018	1	-SP05	1	GY / 0.75 mm²	Side markers, right
4	-H088	1	-SP01	1	GY / 0.75 mm²	GND
5	-H088	2	-SP02	1	GY / 0.75 mm²	Low beam
6	-H088	3	-SP03	1	GY / 0.75 mm²	High beam
7	-H088	5	-XS01	5	BK / 1.50 mm²	Turn indicator (left)
8	-H089	1	-SP01	1	GY / 0.75 mm²	GND
9	-H089	2	-SP02	1	GY / 0.75 mm²	Low beam
10	-H089	3	-SP03	1	BK / 1.50 mm²	High beam
11	-SP01	1	-E018	2	BK / 0.75 mm²	GND
12	-SP01	1	-XS01	7	BK / 1.50 mm²	GND
13	-SP02	1	-XS01	1	GY / 1.50 mm²	Low beam
14	-SP03	1	-XS01	6	GY / 1.50 mm²	High beam
15	-SP04	1	-H088	4	GY / 0.75 mm²	Side markers, left
16	-SP04	1	-XS01	2	GY / 0.75 mm²	Side markers, left
17	-SP05	1	-H089	4	GY / 0.75 mm²	Side markers, right
18	-SP05	1	-XS01	3	GY / 0.75 mm²	Side markers, right
19	-XS01	4	-H089	5	GY / 0.75 mm²	Turn indicator (right)

6.46 Position of wiring harness StVO skip (RBW1)



Item	Connector	Function
1	E16.3	Cable lug number-plate lights
2	E16	Number-plate lights connector
3	E16.1	Number-plate lights connector
4	E16.4	Cable lug number-plate lights
5	XS02	Wiring harness lighting rear connector
6	H079	Combined rear right light connector
7	XX00	Trailer plug receptacle
8	H078	Combined rear left light connector

Fig. 178: Position of wiring harness StVO skip

6.47 Wiring harness StVO skip (RBW1)

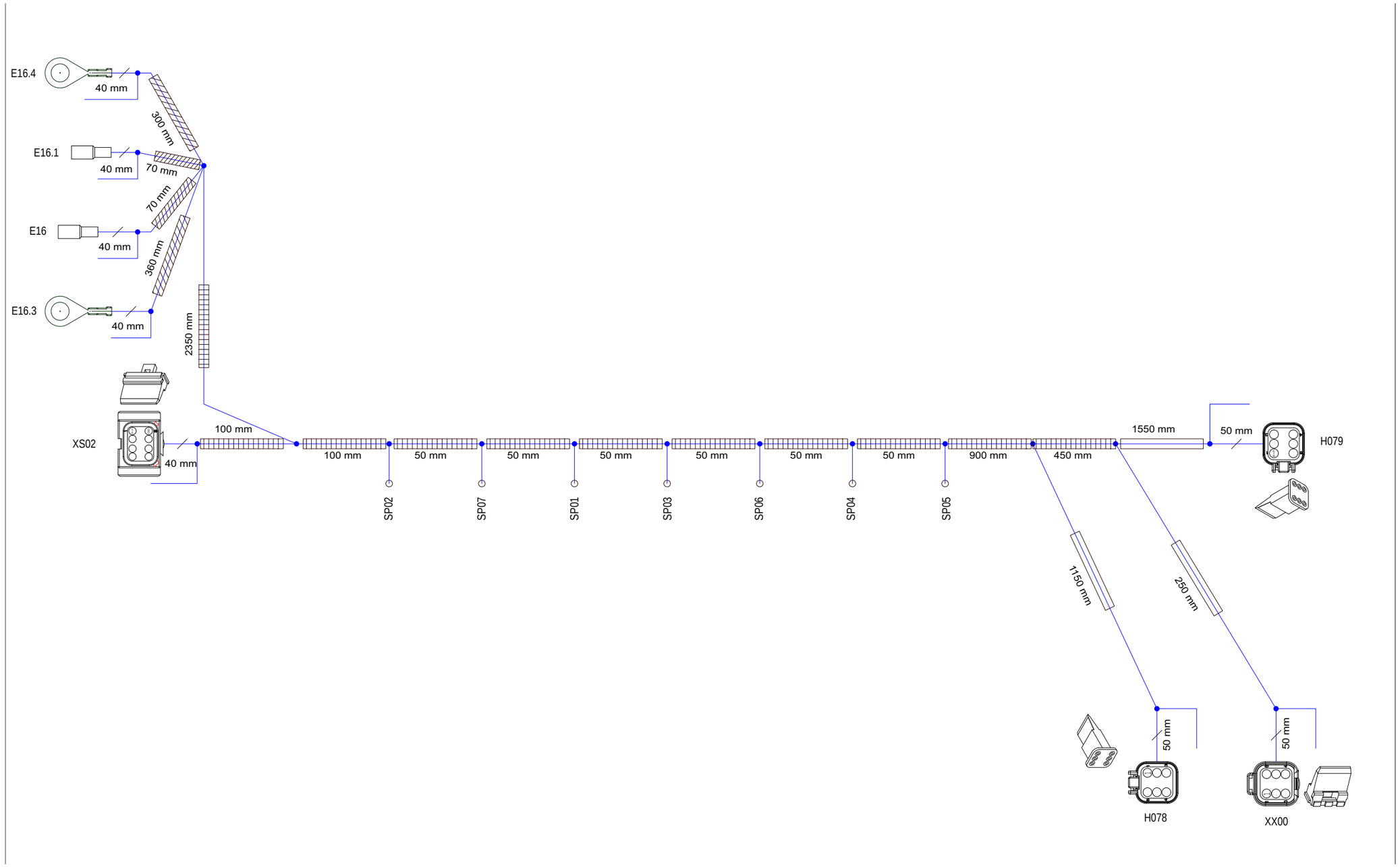
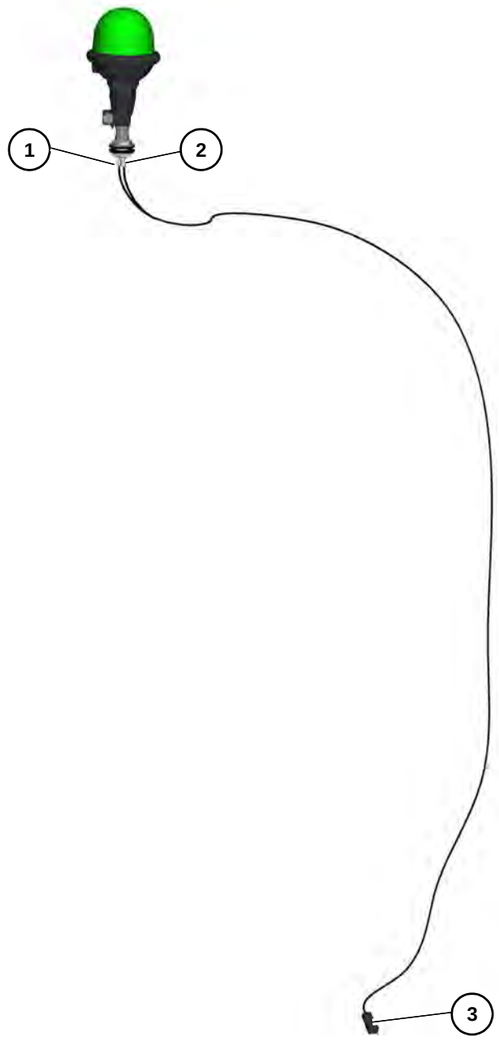


Fig. 179: Wiring harness StVO skip

6.48 Strand list wiring harness StVO skip (RBW1)

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-H078	1	-SP06	1	GY / 1.00 mm²	Brake light
2	-H078	5	-SP05	1	GY / 1.00 mm²	Backward lightning/alarm
3	-H078	6	-SP03	1	GY / 1.00 mm²	Turn indicator (left)
4	-H079	4	-SP07	1	BK / 1.50 mm²	GND
5	-H079	6	-SP04	1	GY / 1.00 mm²	Turn indicator (right)
6	-SP01	1	-H079	3	GY / 1.00 mm²	Side markers, right
7	-SP01	1	-XS02	3	GY / 1.00 mm²	Side markers, right
8	-SP02	1	-E16	1	GY / 1.00 mm²	Side markers, left
9	-SP02	1	-E16.1	1	GY / 1.00 mm²	Side markers, left
10	-SP02	1	-H078	3	GY / 1.00 mm²	Side markers, left
11	-SP02	1	-XS02	2	GY / 1.00 mm²	Side markers, left
12	-SP03	1	-XX00	5	GY / 1.00 mm²	Turn indicator (left)
13	-SP04	1	-XX00	4	GY / 1.00 mm²	Turn indicator (right)
14	-SP05	1	-H079	1	GY / 1.00 mm²	Backward lightning/alarm
15	-SP06	1	-H079	5	GY / 1.00 mm²	Brake light
16	-SP06	1	-XX00	1	GY / 1.00 mm²	Brake light
17	-SP07	1	-E16.3	1	BK / 0.75 mm²	GND
18	-SP07	1	-E16.4	1	BK / 0.75 mm²	GND
19	-SP07	1	-H078	4	BK / 1.50 mm²	GND
20	-SP07	1	-XS02	7	BK / 1.50 mm²	GND
21	-XS02	1	-SP06	1	GY / 1.00 mm²	Brake light
22	-XS02	4	-SP04	1	GY / 1.00 mm²	Turn indicator (right)
23	-XS02	5	-SP03	1	GY / 1.00 mm²	Turn indicator (left)
24	-XS02	6	-SP05	1	GY / 1.00 mm²	Backward lightning/alarm
25	-XX00	2	-SP02	1	GY / 1.00 mm²	Side markers, left
26	-XX00	3	-SP01	1	GY / 1.00 mm²	Side markers, right
27	-XX00	6	-XS02	8	BK / 1.50 mm²	GND

6.49 Position of wiring harness rotating beacon green (BAW3)



Item	Connector	Function
1	H028.1	Rotating beacon connector
2	H028.2	Rotating beacon connector
3	XR10	Wiring harness cab/Canopy/ROPS connector

Fig. 180: Position of wiring harness rotating beacon green

6.50 Wiring harness rotating beacon green (BAW3)

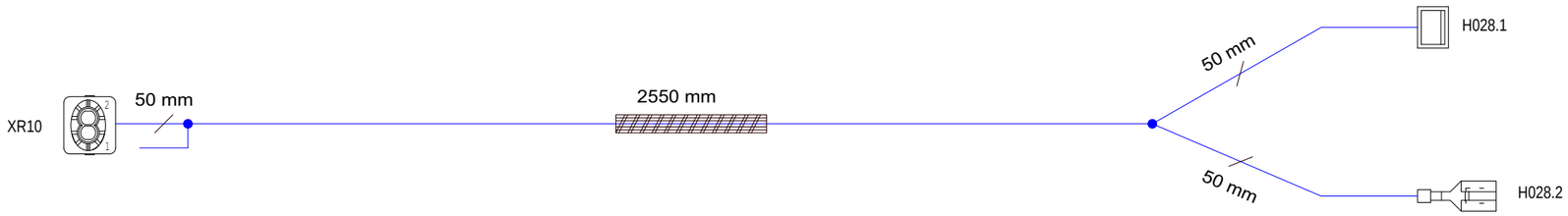
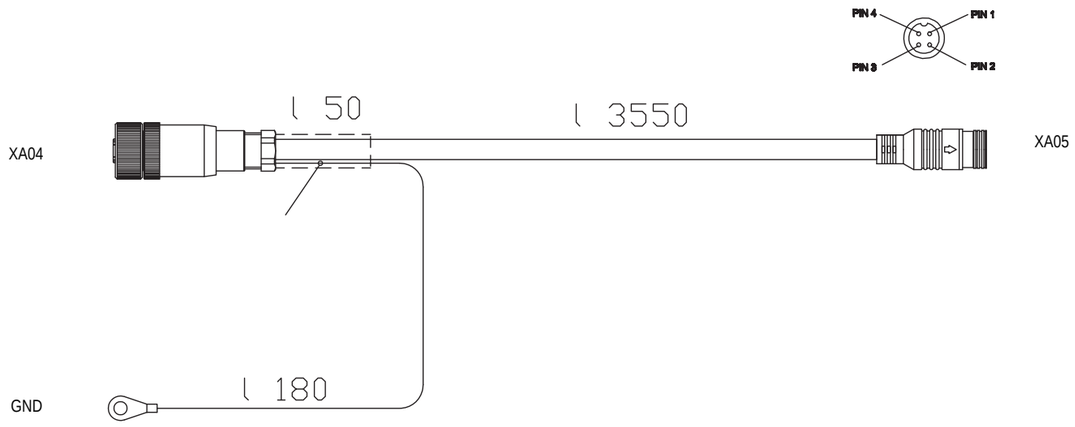


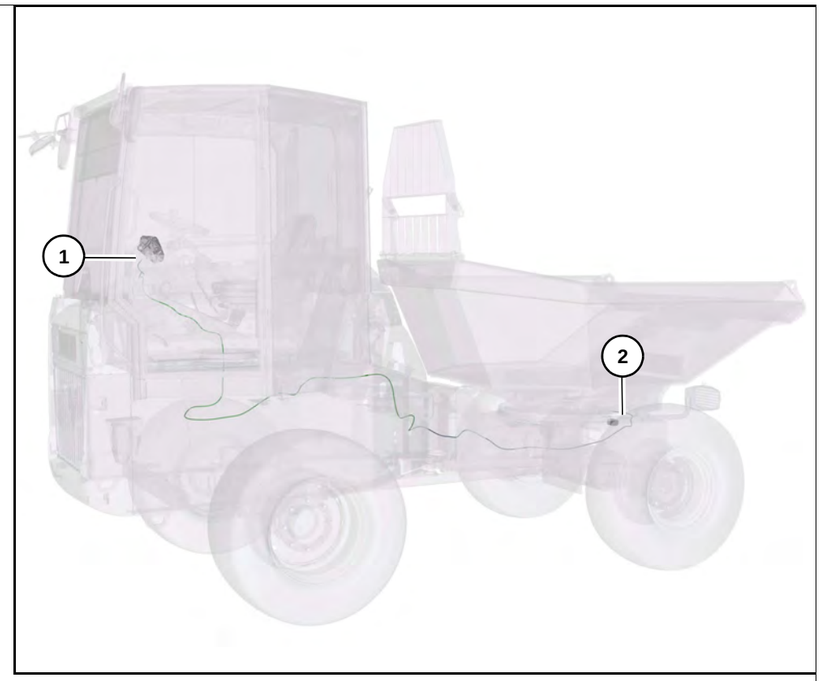
Fig. 181: Wiring harness rotating beacon green

6.51 Strand list wiring harness rotating beacon green (BAW3)

nr.	From	Pin	To	Pin	Color/mm²	Function
1	-XR10	1	-H028.1	1	VT / 0.75 mm²	Rotating Beacon
2	-XR10	2	-H028.2	1	BK / 0.75 mm²	GND

6.52 Cable camera 1-time





Shrink tubing

Corrugated pipe

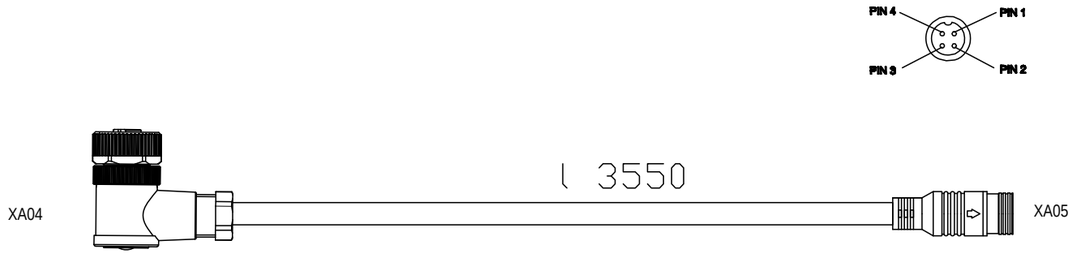
Fig. 182: Cable camera 1-time

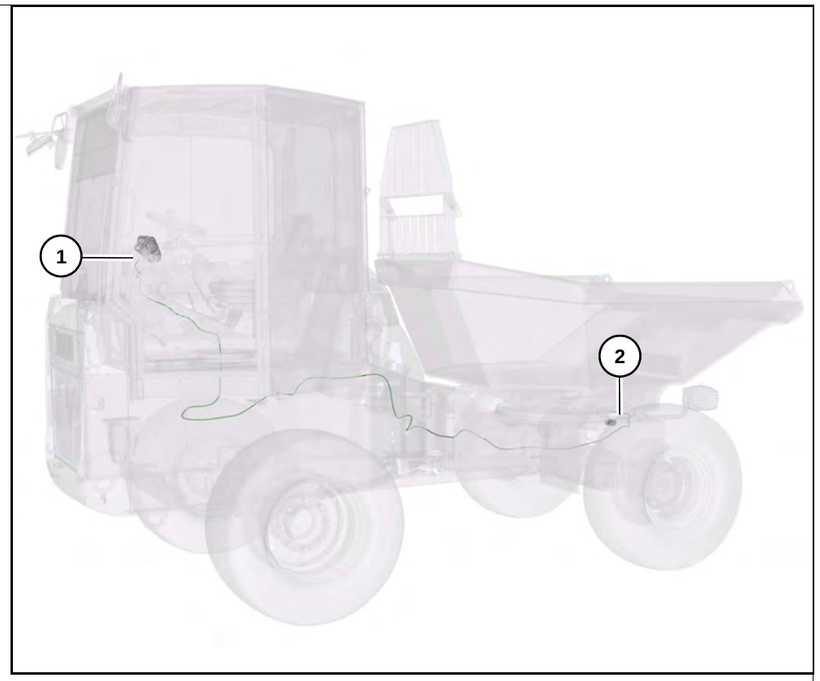
Item	Connector	Function
1	XA04	Cameral cable - Display connector
2	XA05	Camera skip connector

6.53 Strand list cable camera 1-time

nr.	From	Pin	To	Pin	Color/mm²	Function
10	XA04	1	XA05	4	YE	Video
11	XA04	4	XA05	1	RD	12V15
12	XA04	5	XA05	2	BK	Ground
13	GND	--	SP1	--	BK/1	Shielding
14	SP1	13,14	Shield XA05	--		Shielding

6.54 Cable camera 1-time (from 3rd quarter 2019)





Item	Connector	Function
1	XA04	Cameral cable - Display connector
2	XA05	Camera skip connector

Fig. 183: Cable camera 1-time

6.55 Strand list cable camera 1-time

nr.	From	Pin	To	Pin	Color/mm²	Function
10	XA04	1	XA05	4	YE	Video
11	XA04	4	XA05	1	RD	12V15
12	XA04	5	XA05	2	BK	Ground
13	XA04	5	Shield XA05	--	BK	Shielding

6.56 Cable camera 2-time

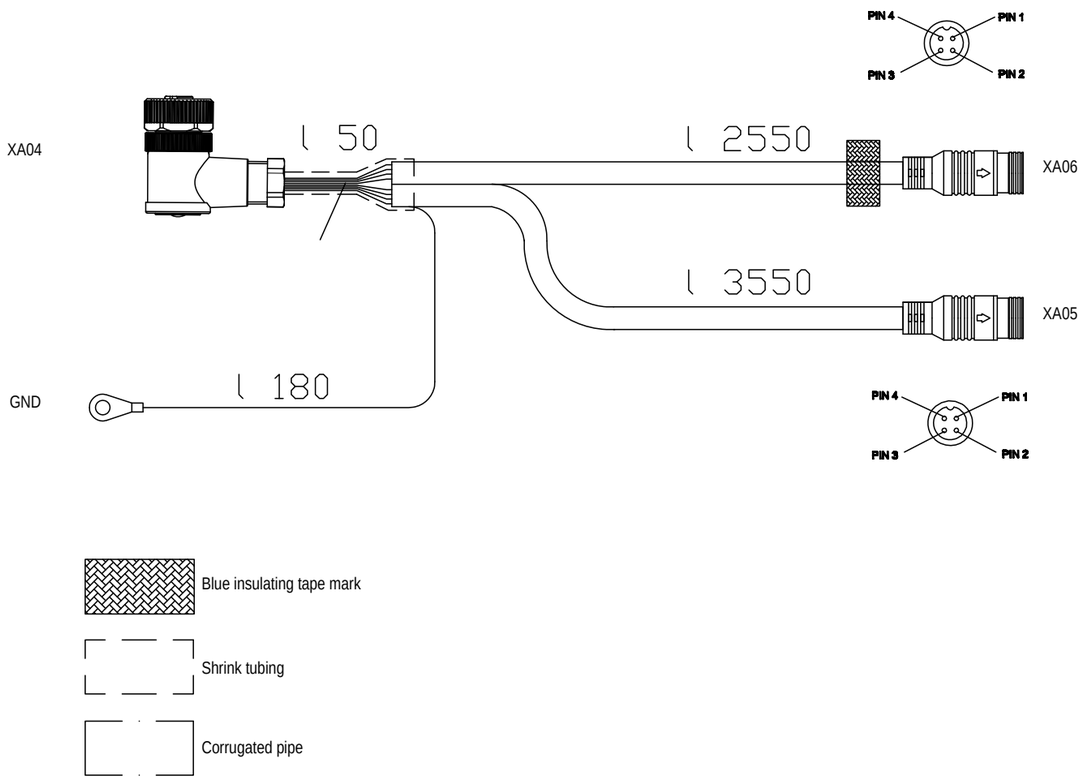
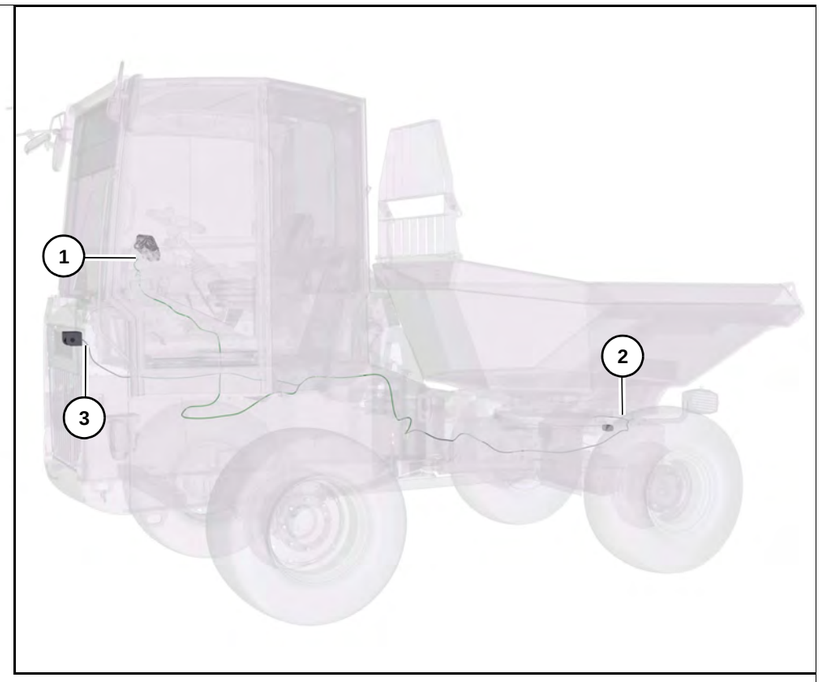


Fig. 184: Cable camera 2-time

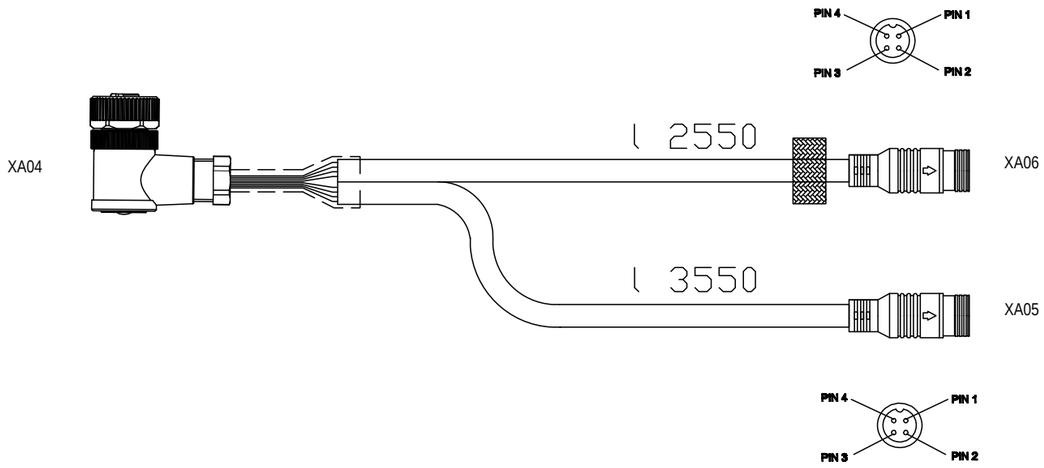


Item	Connector	Function
1	XA04	Cameral cable - Display connector
2	XA05	Camera skip connector
3	XA06	Camera bumper connector

6.57 Strand list cable camera 2-time

nr.	From	Pin	To	Pin	Color/mm²	Function
10	XA04	1	XA05	4	YE	Video
11	XA04	2	XA06	4	YE	Video
12	XA04	4	XA06	1	RD	12V15
13	XA04	4	XA05	1	RD	12V15
14	XA04	5	XA06	2	BK	Ground
15	XA04	5	XA05	2	BK	Ground
16	GND	--	SP1	--	BK/1	Shielding
17	SP1	16,17,18	Shield XA05	--	--	Shielding
18	SP1	16,17,18	Shield XA06	--	--	Shielding

6.58 Cable camera 2-time (from 3rd quarter 2019)

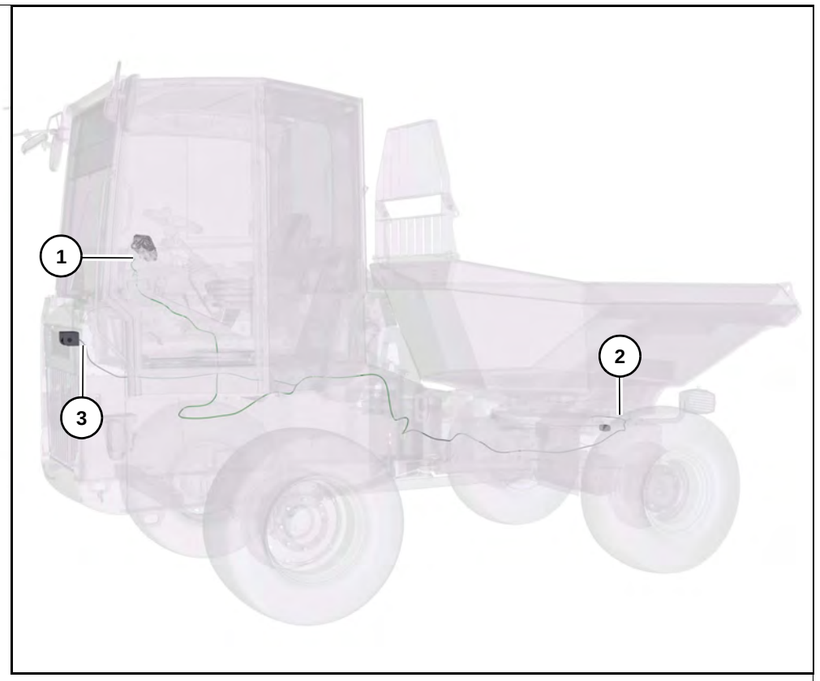


Blue insulating tape mark

Shrink tubing

Corrugated pipe

Fig. 185: Cable camera 2-time



Item	Connector	Function
1	XA04	Cameral cable - Display connector
2	XA05	Camera skip connector
3	XA06	Camera bumper connector

6.59 Strand list cable camera 2-time

nr.	From	Pin	To	Pin	Color/mm²	Function
10	XA04	1	XA05	4	YE	Video
11	XA04	2	XA06	4	YE	Video
12	XA04	4	XA06	1	RD	12V15
13	XA04	4	XA05	1	RD	12V15
14	XA04	5	XA06	2	BK	Ground
15	XA04	5	XA05	2	BK	Ground
16	XA04	5	Shield XA05	--	--	Shielding
17	XA04	5	Shield XA06	--	--	Shielding

Diagrams

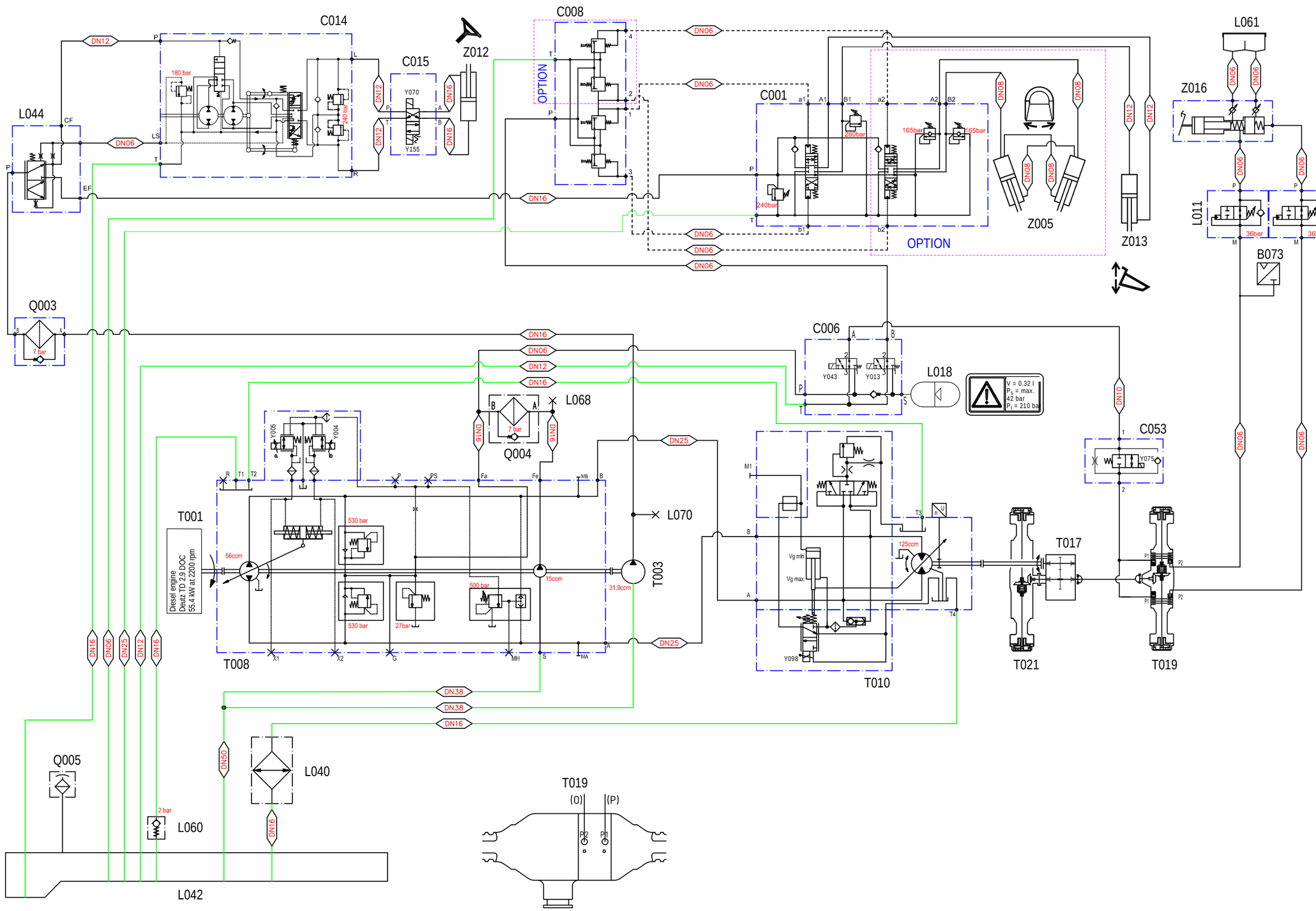
7 Diagrams

7.1 Hydraulics diagrams legend

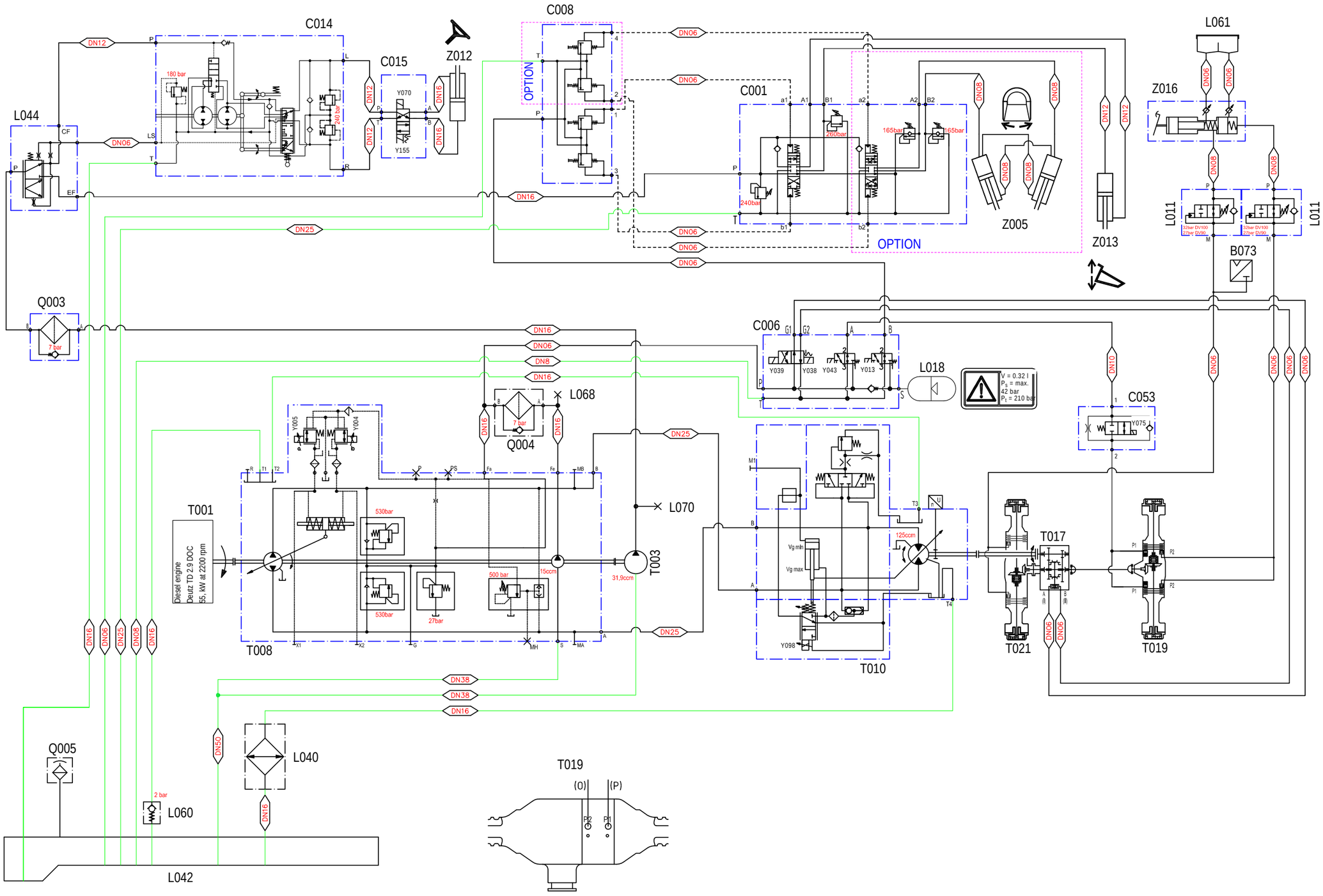
Pos. (BMK)	Description
B073	Pressure sensor, brake
C001	Main control block
C006	Pilot oil supply unit
C008	Joystick valve
C014	Steering valve
C015	Steering direction changeover valve
C048	Thermal management valve (only EU Stage V with cab)
C053	Shiftable screen
L011	Brake pressure relief valve
L018	Pilot control pressure accumulator
L040	Oil cooler
L042	Oil reservoir
L044	Priority valve
L060	Non-return valve
L061	Brake-fluid reservoir
L068	Measuring/test connection
L070	Measuring/test connection
Q003	Pressure filter 1
Q004	Pressure filter 2
Q005	Breather filter
T001	Diesel engine
T003	Hydraulic pump
T008	Hydraulic pump
T010	Hydraulic motor
T017	Transfer gearbox
T019	Rigid front axle
T021	Rigid rear axle
Y004	Reverse machine travel solenoid valve
Y005	Forward travel solenoid valve
Y013	Joystick Off pilot control safety valve
Y038	Speed range 1 (not DV60)
Y039	Speed range 2 (not DV60)
Y043	Parking brake solenoid
Y070	Steering Dir.
Y075	Solenoid valve shiftable screen
Y098	Solenoid valve (hydraulic motor setting)

Pos. (BMK)	Description
Y128	Solenoid valve Thermal management valve (only EU Stage V with cab)
Y155	Steering Dir.
Z005	Swiveling cylinder
Z012	Steering cylinder
Z013	Tilt cylinder
Z016	Brake cylinder

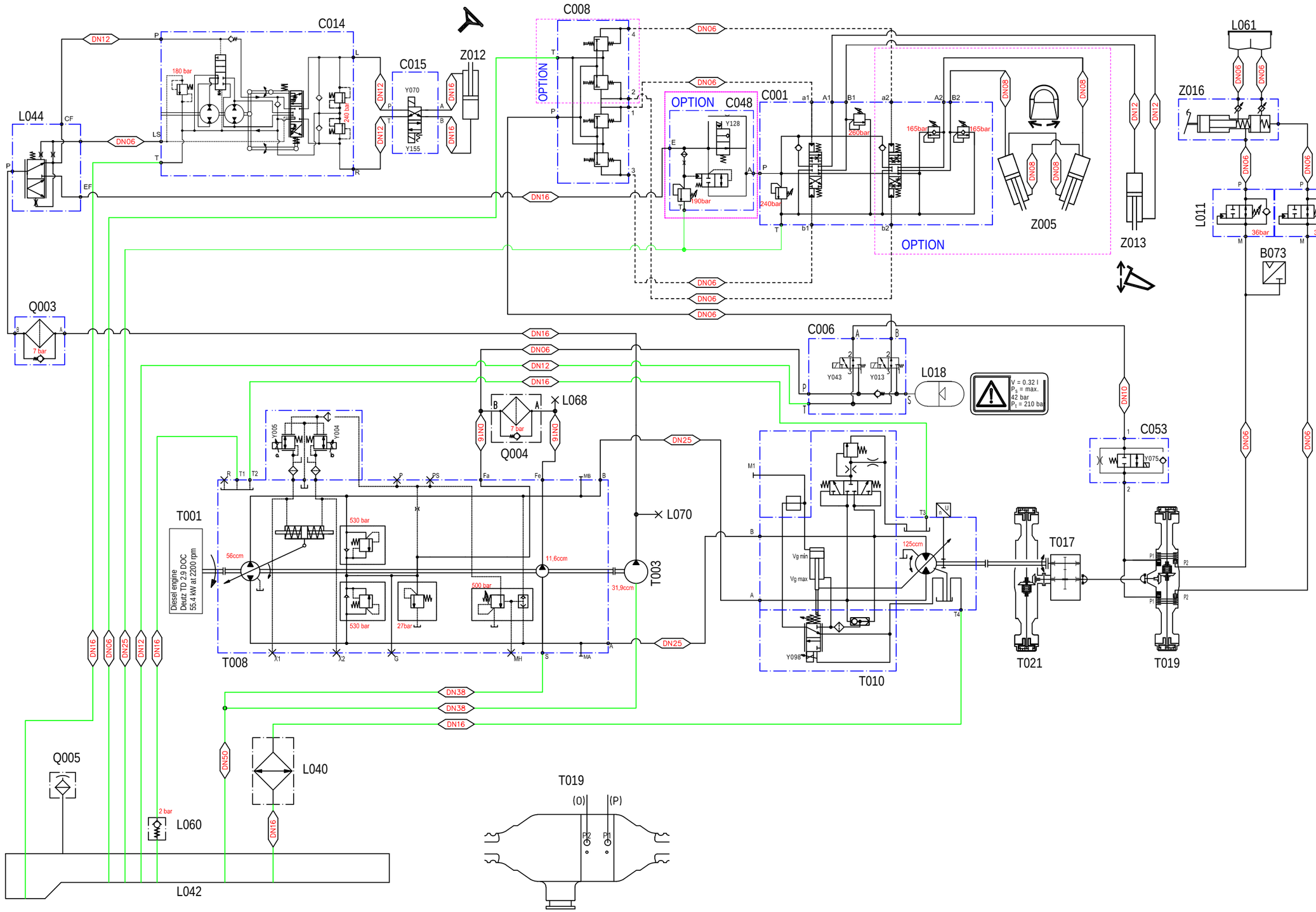
7.2 Hydraulics diagram DV60



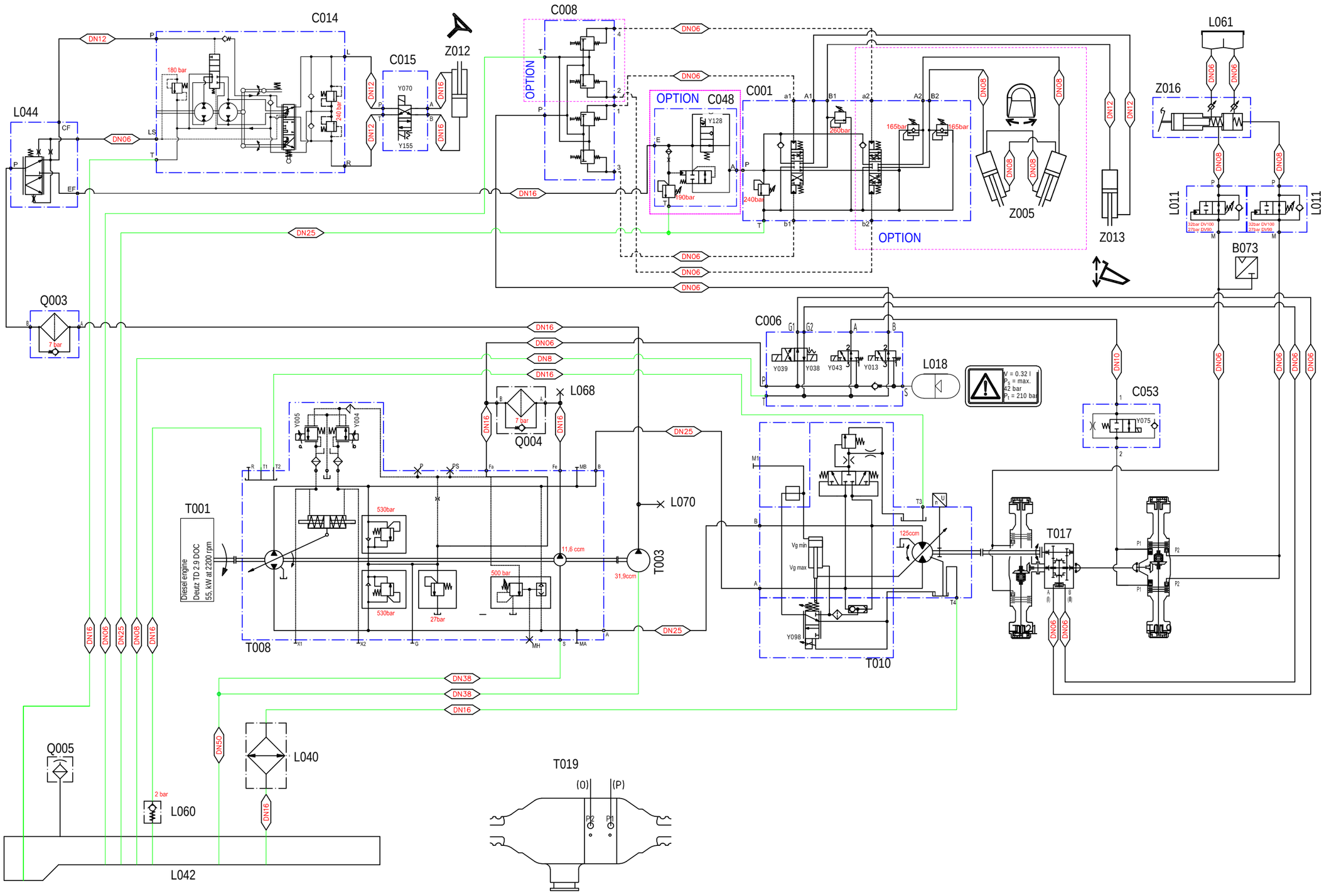
7.3 Hydraulics diagram DV90/DV100



7.4 Hydraulics diagram DV60 (EU Stage V)



7.5 Hydraulics diagram DV90 / DV100 (EU Stage V)



7.6 Wiring diagram DV60, DV90 and DV100 with cab

Stromlaufplan D24

Kabine

Deutz DOC

ab Seriennummer WNCD2401CPAL00353 (DV60),
WNCD2402APAL00517 (DV90) und
WNCD2403VPAL00217 (DV100)

Ortskennzeichen

FRW1 Hauptkabelbaum Deutz DOC
FRW2 Hauptkabelbaum ROPS
FRW3 Hauptkabelbaum Kabine

STW1 Kabelbaum Wendekonsole

BAW1 Kabelbaum Beleuchtung ROPS
BAW2 Kabelbaum Beleuchtung Canopy
BAW3 Kabelbaum Rundumkennleuchte grün

RBW1 Kabelbaum StVzO Heckseite (Mulde)
FBW1 Kabelbaum StVzO Frontstoßstange

CBW1 Kabelbaum Kabine

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Freigabe	25.03.2019	LNZhartp

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Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

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Ersatz für	01
Gewicht [kg]	

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-	Inhaltsverzeichnis	-
2	Sicherungskasten	
3	Steuergeräte	
4	Steuergeräte	
5	Haupt-Versorgung	
6	Versorgung Steuergeräte	
7	Starten, Glühen	
8	Dieselmotorelektronik	
9	Dieselmotorelektronik	
10	Dieselmotorelektronik	
11	Auto Stop	
12	IO Display, Tankgeber, Lade-Kontrolle	
13	IO Display	
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21	StVzO Beleuchtung	Blinkanlage
22	StVzO Beleuchtung	Frontstoßstange
23	StVzO Beleuchtung	Mulde
24	Arbeitsscheinwerfer, Rundumkennleuchte	
25	Stecker Zusatzoption	
26	Wischer, Radio, Steckdose	
27	Heizung, Klimaanlage	
28	Masse-Verteilung	
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-

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Gewicht in [kg]

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SheetName	SheetName 1	SheetName 2
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-
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Ersetzt Version	
Gewicht in [kg]	

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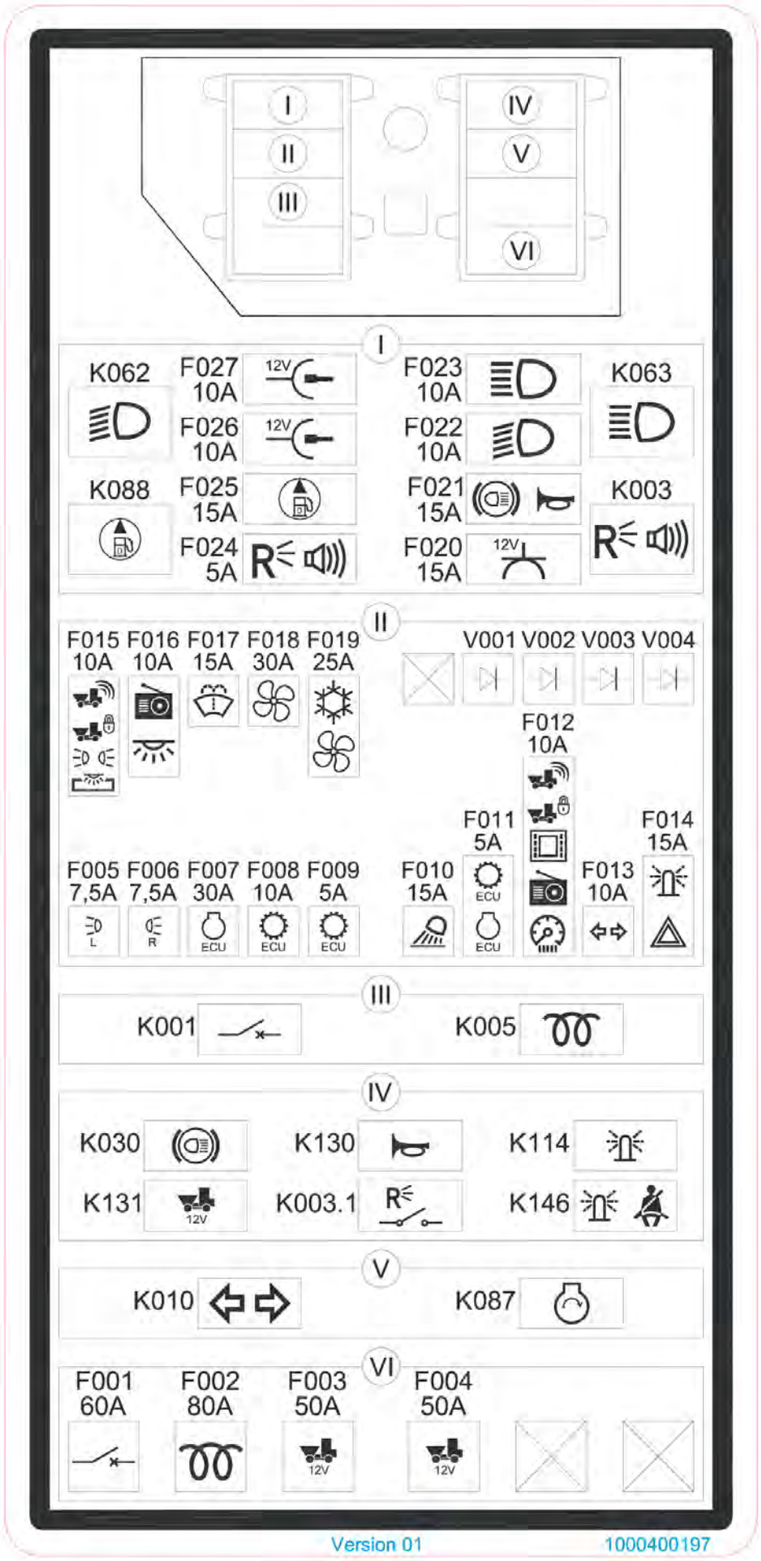

WACKER NEUSON
Wacker Neuson Linz GmbH
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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Sicherungskasten

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

2

A3

EDC17 CV54 Connector K			+EN1 -T001 N005.K
11			
12			
13	Collant Level		/10.A6
14			
15	Clutch Switch		/9.F7
18			
19			
21			
22			
25			
26	Relay Fuelpump -		/9.F4
27			
28	Relay Starter +		/7.A3
29	Supply		/10.A6
31			
32			
34			
35	Start Switch		/7.F2
37			
39			
40			
41			
42			
44	DPF/EGR Sensor 5V		/9.A2
45			
48			
49			
57	Water in Fuel Switch		/10.A1
61	Fuel Low Pressure		/10.A3
64	Sensor Supply		/10.A2
65			
67			
68	Supply		/9.A7
69			
70			
71			
73	Relay Starter -		/7.A4
74			
79			
80			
82	EGR Sensor GND		/9.A2
83			
85	EGR Sensor		/9.A1
86	Air Filter		/10.A7
87	Sensor GND		/10.F7
88	Ign Switch		/6.F6
90	Relay Fuelpump +		/9.A4
91			
92			
93			
46			
63			
62			
16			
10			
66			
76	CAN 0	Low	/15.A4
54		High	
53	CAN 1	Low	/15.A8
75		High	
1			
3	Battery +		/6.F1
5			
2			
4	Battery -		/28.A5
6			

+ST1 -P014		Display 7"		
PIN	CONNECTOR	DESCRIPTION	COMMENTS	Ref-PAGE
1	**XA01**	VBAT	9...36V	/12.D6
2		GND	Ground	
3	XA01	CAN1_L	CAN 1	/15.A6
4		CAN1_H		
5	XA01	CAN2_L	CAN 2	
6		CAN2_H		
7		V_USB_BUS	Power USB	
10		USB_GND	Ground	
8		USB_D-	Datawire USB	
9		USB_D+		
1	**XA02**	Ladekontrolle	0...5V	/12.A4
2	XA02	Fehlerlampe	0...5V	/13.A2
3	XA02	Standlicht	0...5V	/13.A3
4	XA02	Abblendlicht	0...5V	/13.A6
5	XA02	Tankgeber	0...5V	/12.A1
6	XA02	A_Input_6	0...5V	
7	XA02	GND	Ground	
8	XA02	Fernlicht	-1V - 1V LOW	/13.A4
9	XA02	Blinker	3,5V - VBAT HIGH	/12.A6
10	XA02	Taster 1	5V: 0,02...10kHz	/12.F7
11	XA02	Taster 2	5V: 0,02...10kHz	/12.F8
12	XA02	Umschaltung Blinker 1	12V 0,5A	/14.A1
13	XA02	Umschaltung Blinker 2	12V 0,5A	/14.A2
14	XA02	Summer	12V 0,5A	/13.A7
1	**X102**	Video Signal_1	composite CCITT video input PAL 50Hz colour coding / NTSC. input Level 1Vpp. 75Ohms	
2	X102	Video Signal_2		
3	X102	Video Signal_3		
4	X102	Video Signal_4		
5	X102	Video Bezug_GND	Video Ground	
1	**X103**	Eth_TX+	Datawire Ethernet	
2	X103			
3	X103			
4	X103			

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Steuergeräte

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

3

A3

+FR1
-N001

N001.1
Connector 1

1	---		
2	OUT_36		
3	Freigabe Arbeitsfunktion 1 HS	/20.A3	OUT_20
4	OUT_34		
5	OUT_33		
6	OUT_22		
7	OUT_21		
8	IN_68		
9	IN_75		
10	Schalter Auto Stop red.	/11.F6	IN_73
11	IN_74		
12	Drehzahl Hydromotor	/16.A2	IN_71
13	Schalter Auto Stop	/11.F5	IN_72
14	IN_42		
15	Trockenlaufschutz	/12.A2	IN_43
16	Öltemperatur	/16.A1	IN_63
17	IN_64		
18	IN_65		
19	IN_40		
20	Kabinenheizung aktiv	/11.F2	IN_41
21	IN_62		
22			
23	GND	/28.A2	
24			
25	---		
26	---		
27	OUT_35		
28	Parkbremse HS	/19.A8	OUT_19
29	---		
30	---		
31	---		
32	IN_70		
33	IN_69		
34	IN_18		
35	IN_17		
36	IN_15		
37	IN_16		
38	Sensor Inchventil	/18.F7	IN_52
39	Sitzkontaktschalter 1	/18.F2	IN_38
40	Getriebe Gang 2 eingelegt	/16.F5	IN_44
41	Sitzkontaktschalter 2	/18.F3	IN_39
42	IN_23		
43	IN_22		
44	IN_20		
45	GND_S2	/16.F1	
46	GND_S1	/28.E8	
47	Dieselmotor Startsignal	/7.F3	IN_4
48	IN_6		
49	---		
50	---		
51	Getriebe Stufe 2	/16.A8	OUT_5
52	---		
53	Pumpe vorwärts HS	/16.A3	OUT_1
54	Hydraulikmotor HS	/16.A5	OUT_3
55	Getriebe Gang 1 eingelegt	/16.F6	IN_45
56	IN_46		
57	Lenkrichtung 1 red.	/14.F4	IN_10
58	Gaspedal red.	/18.F5	IN_8
59	Gaspedal	/18.F5	IN_7
60	CAN 4 L		
61	CAN 4 H		
62	CAN 3 L		
63	CAN 3 H		
64	IN_33		
65	Strassenfahrt red.	/20.F5	IN_61
66	IN_34		
67	Schalter Feststellbremse	/19.F5	IN_58
68	IN_53		
69	Schalter Feststellbremse red.	/19.F4	IN_59
70	Strassenfahrt	/20.F4	IN_60
71	IN_56		
72	IN_47		
73	---		
74	---		
75	Lastaufschaltventil	/20.A2	OUT_6
76	---		
77	Pumpe rückwärts HS	/16.A4	OUT_2
78	Getriebe Stufe 1	/16.A7	OUT_4
79	Lenkrichtung 1+2 LS	/14.F7	OUT_41
80	Freigabe Arbeitsfunktion 1 LS	/20.F3	OUT_42
81	---		
82	---		
83	Parkbremse LS	/19.F8	OUT_37
84	Pumpe vorwärts LS	/16.F3	OUT_38
85	Pumpe rückwärts LS	/16.F4	OUT_39
86	Hydraulikmotor LS	/16.F5	OUT_40
87	---		
88	---		
89	Freigabe Leistungsverbraucher	/11.A1	OUT_24
90	Abschaltung Rückfahrlicht	/14.A2	OUT_23
91	IN_48		
92	IN_49		
93	Bremslicht	/23.A1	OUT_26
94	Rückwärts	/23.A1	OUT_25
95	---		
96	IN_50		

N001.2
Connector 2

1			
3			
4	UB	/6.F3	
5			
6			
2			
7			
20	GND	/28.A3	
33			
46			
8	IN_67		
9	IN_3		
10	IN_14		
11	IN_19		
12	IN_28		
13	IN_66		
14	Lenkrichtung 1	/14.F3	IN_9
15	CAN 1 H	/15.A4	
16	CAN 1 L		
17	Schalter Drosselventil Feedback red.	/19.F1	IN_36
18	IN_54		
19	VSS_1	/17.A6	
21	Fehlerlampe	/13.F2	OUT_47
22	IN_13		
23	IN_5		
24	IN_21		
25	IN_27		
26	Leistungsverbraucher ein	/11.F3	IN_37
27	Parkbremstest	/19.F6	IN_57
28	Zündung	/6.F8	HW-INH
29	IN_55		
30	WAKE		
31	Schalter Drosselventil Feedback	/19.F1	IN_35
32	VSS_2	/14.A4	
34	Wippe Fahren red.	/17.F7	IN_26
35	IN_24		
36	IN_2		
37	Pumpenleistung (ECO)	/17.F2	IN_30
38	Lenkrichtung 2 red.	/14.F5	IN_12
39	IN_31		
40	IGN	/6.F7	
41	Lenkrichtung 2	/14.A7	OUT_28
42	---		
43	Lenkrichtung 1	/14.A6	OUT_27
44	---		
45	UB_CPU	/6.F4	
58			
47	Wippe Fahren	/17.F6	IN_25
48	IN_29		
49	IN_51		
50	Schalter 2. Gang	/17.F1	IN_1
51	IN_32		
52	Lenkrichtung 2	/14.F5	IN_11
53	CAN 2 H	/15.D1	
54	CAN 2 L		
55	VSS_3	/18.A7	
56	---		
57	---		

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Steuergeräte

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

4

A3

+FRW1
-BAT1
1/1
1
+FRW1
-N025.1
max.50A
-F001#1
max.50A
-F002#1
max.50A
-F003#1
max.50A
-F004#1
max.50A
max.50A
F
E
D
C
B
A
799
101
801
802
+FRW1
-SP73
+FRW1
-SP74
97
87
+FRW1
-N025.2
1.1/8
+FRW1
-K001
/11.F1
87
30
-N025.2
+FRW1
1.3/8
96
+FRW1
-SP71
569,260,259,811,812,731
733,582,299,255,773,783,784,534
789
797
798
+FRW1
-XP02
58/62
57/62
-XP02
+FRW3
58/62
57/62
795
796
+FRW3
-S001.1
1/4
2/4
30
+FR1
-S001
15/54
-S001.2
+FRW3
5/6
6/6
794
793
+FRW3
-XP02
59/62
60/62
-XP02
+FRW1
59/62
60/62
792
791
+FRW1
-SP75
772,787,788
+FRW1
-N025.5
4.1/30
+FRW1
-K131
-N025.5
+FRW1
4.2/30
108,732
+FRW1
-SP72
254,686,318
/5.F5
12V15
788
+FRW1
-N025.5
4.3/30
86
+FRW1
-K131#1
85
-N025.5
+FRW1
4.5/30
736
/5.F5
12V15
787
+FRW1
-N025.3
8.1/40
+FRW1
-F012#1
-N025.3
+FRW1
8.2/40
786
+FRW1
-SP22
785
+FRW1
-XP02
1/62
-XP02
+FRW3
1/62
73,103
103
+FRW1
-XR01
11/35
-XR01
+STW1
11/35
105
+STW1
-SP09
147,152,153,154,155,
243,298,250
+FRW3
-SP02
588,599,611,612,
615,626,627,640,
685,705
73
571
182,183,244,889
1000370730
1000370734
1000370731
1000370732
1000404324
+EBW2
-S008
1/1
+EBW1
-S008.1
1/1
+FR1
-S008
1 0
2
1
1/1
-S008
+EBW1
1/1
+EBW1
-G002
1/1
+FR1
-G002
30
31
+EBW2
-BAT_GND
1/1
+EBW1
-XX16
1/1
Starthilfeklemme
+EBW2
-M001
1/1
30
+EN1
-T001
M
-G001
+FRW1
1/1
B
+EN1
-T001
G
/12.F4
+EBW2
-GND
1/1
+FR1
-GND
GND
+EBW1
-BAT_GND
1/1
+EBW1
-GND
1/1
Dieselmotor
/22.A6
/22.A6
/24.A5
/26.A3
/27.A1
/27.A1
12V15_1
/7.A5
12V30
/6.A2
/6.A3
/6.A5
/21.A3
/22.A3
/23.A2
/25.A1
/26.A8
12V30
/5.A7
/5.A8
/6.A6
12V15
/9.A5
/26.A5
12V30
/21.A3
/23.A4
/25.A6
12V15_1
/28.C4
GND
/12.A3
/12.A7
/17.A1
/18.A3
/24.A2
F012
/6.A8
F012
/11.A7
/19.A3
/20.A6
/24.A4
/25.A5
/26.A1
/27.A3
F012
/15.C1
/17.A5
F012

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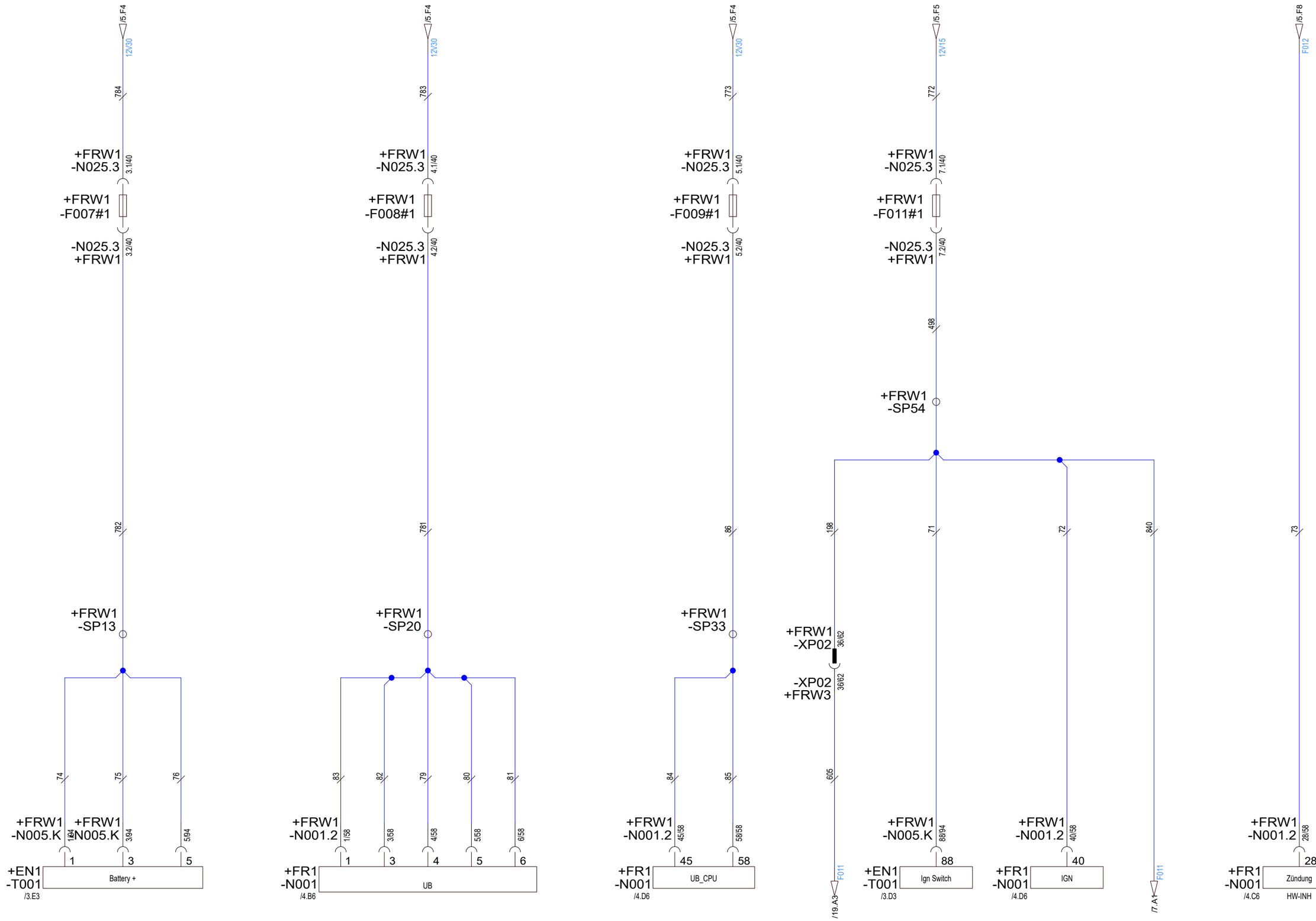
Haupt-Versorgung

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

5

A3



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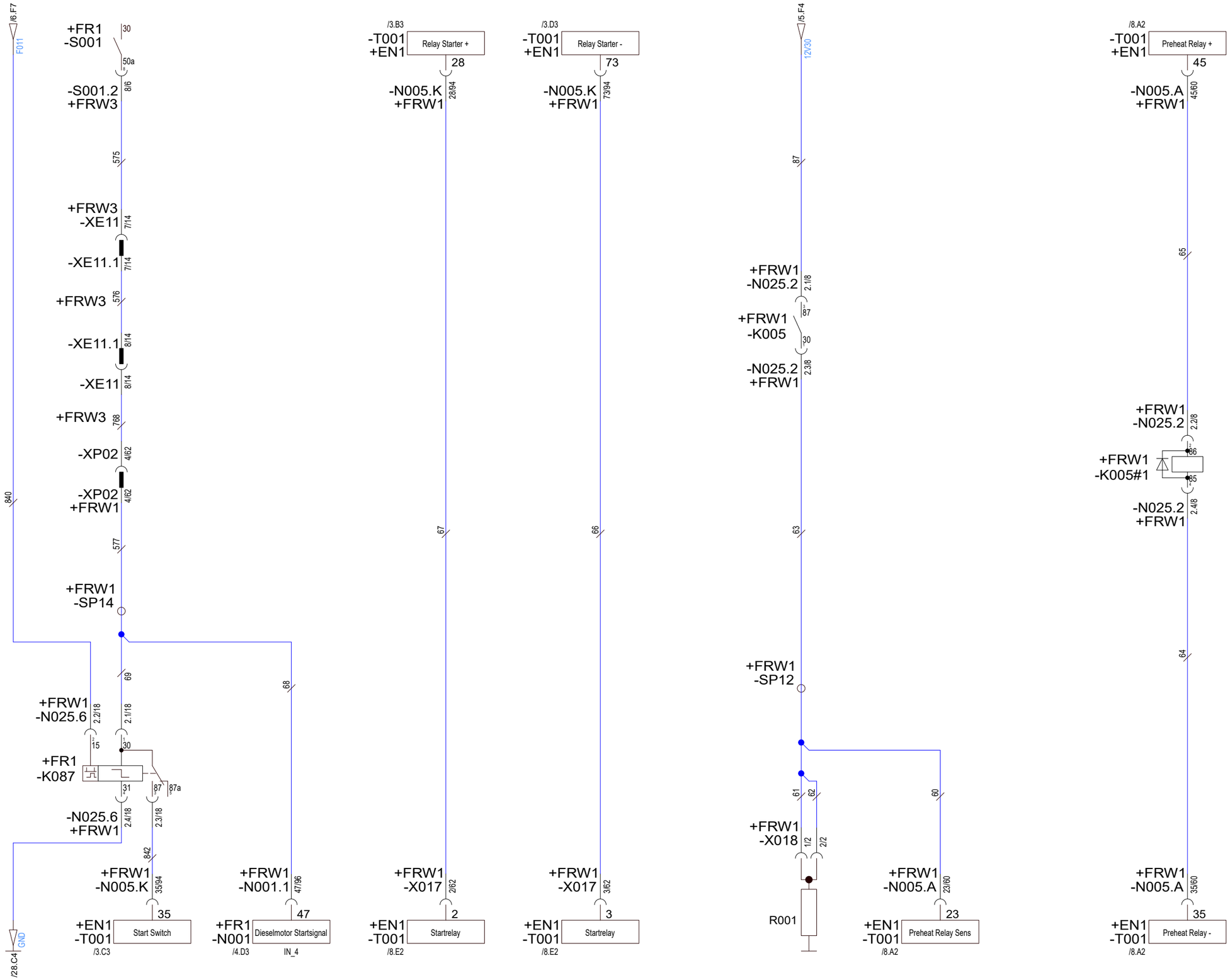
Versorgung Steuergeräte

Mat.-Nr. 1000388197 | Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

6

A3



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Starten, Glühen

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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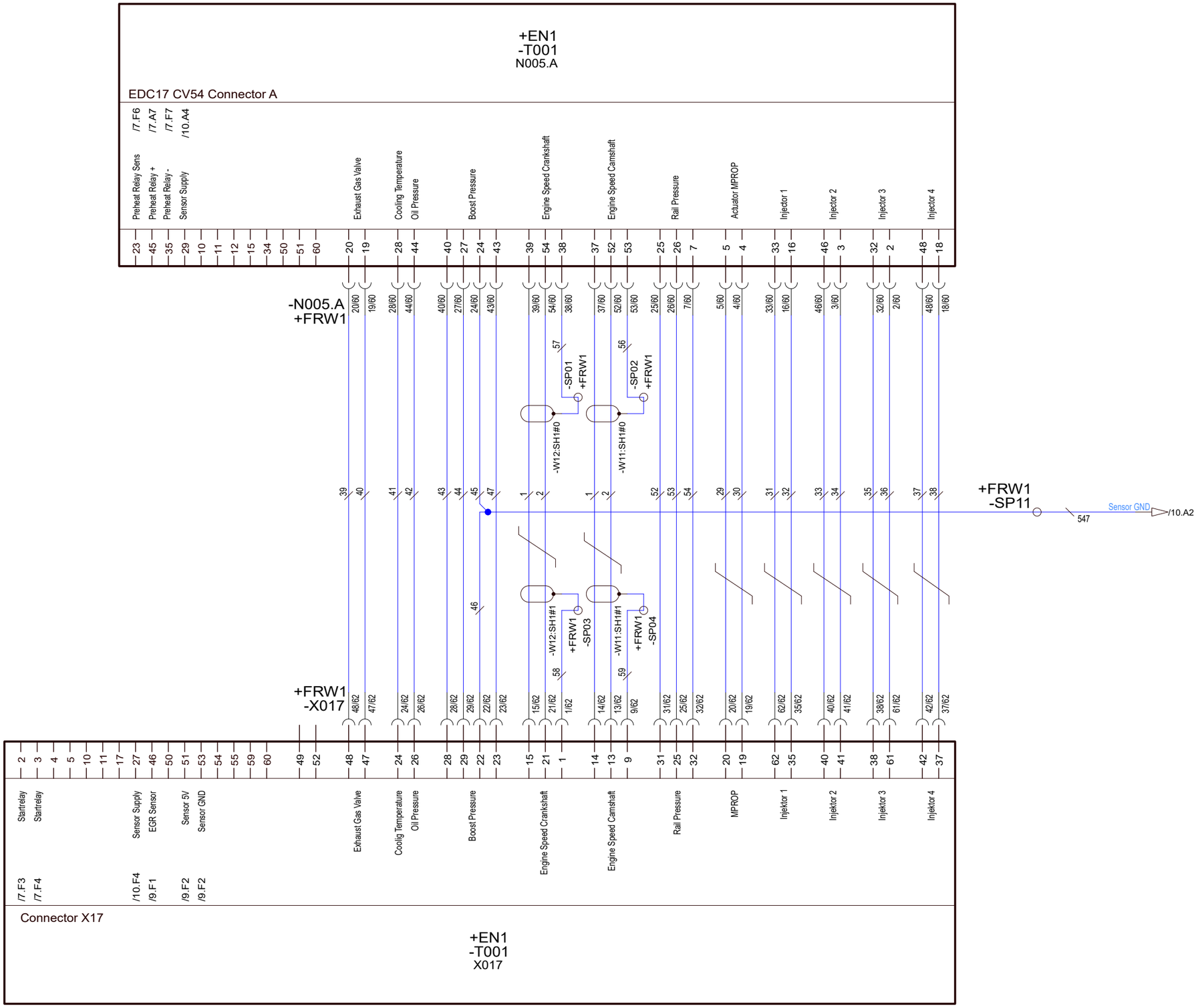
A3



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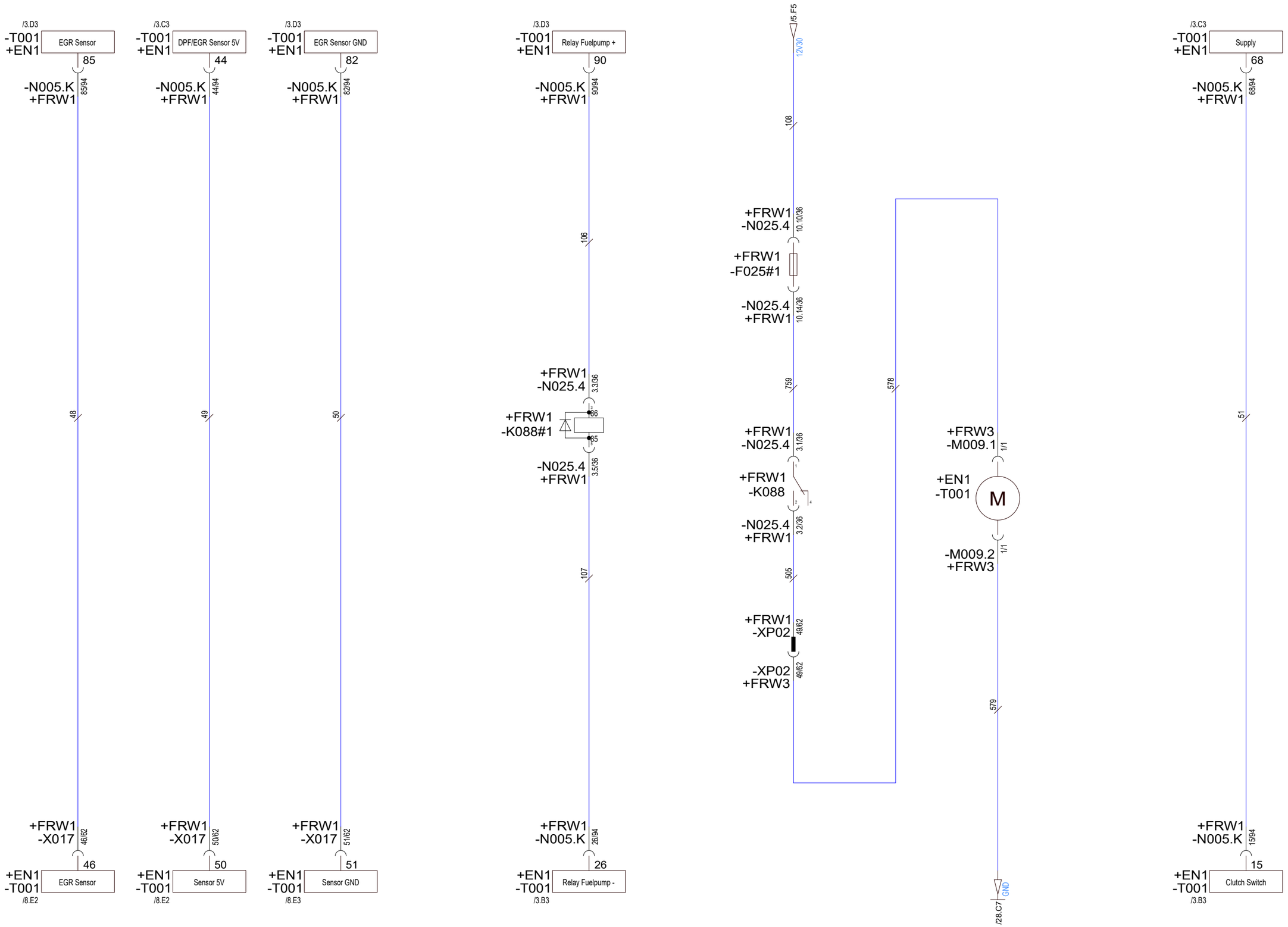
Dieselmotorelektronik

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

8

A3



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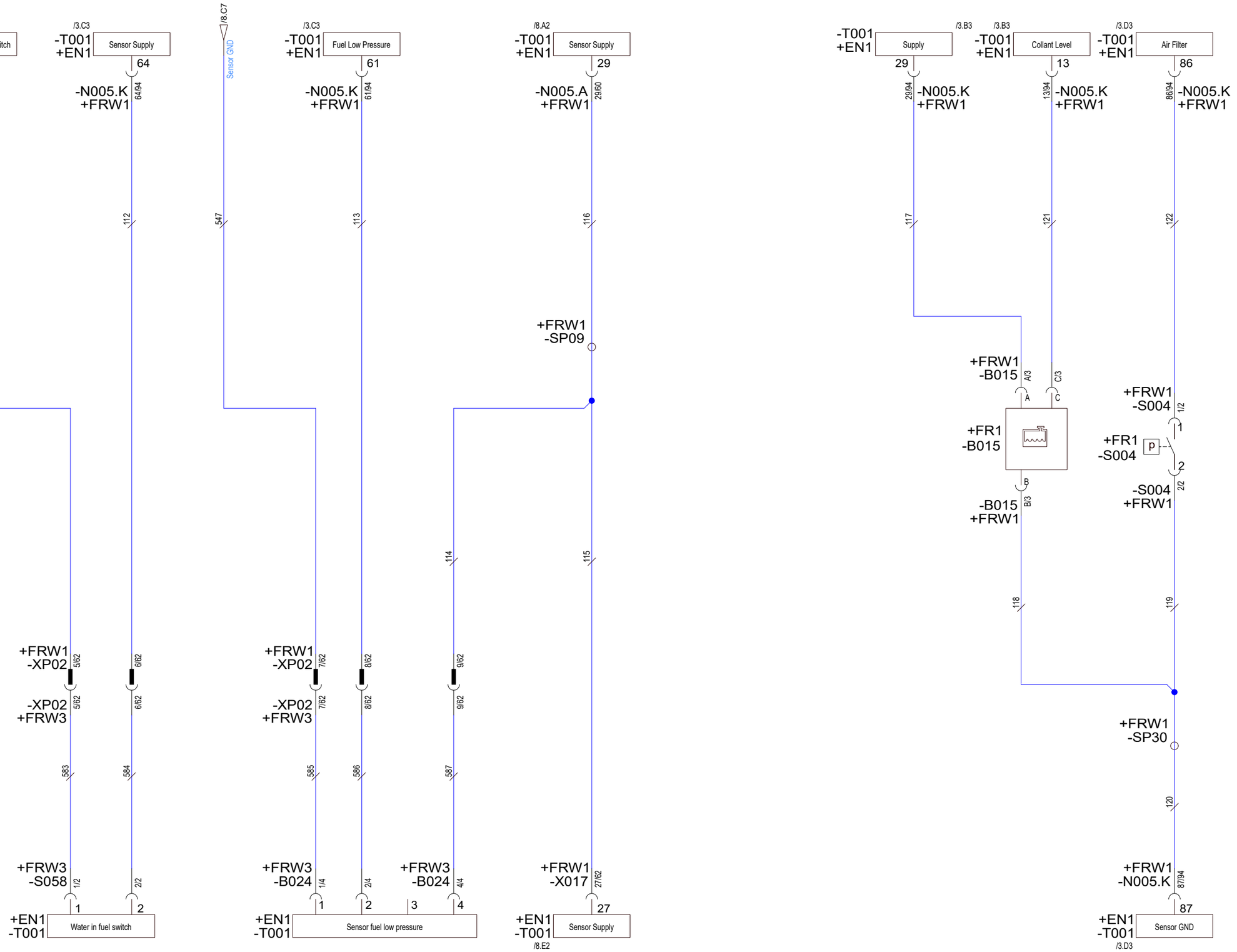
		Bearb.	19.03.2019	LNZhartp		Ersatz für	01	
		Gepr.	25.03.2019	LNZhartp		Gewicht [kg]		A3
		Freigabe	25.03.2019	LNZhartp	Mat.-Nr. 1000388197	Doc.-Nr. 2060099416		



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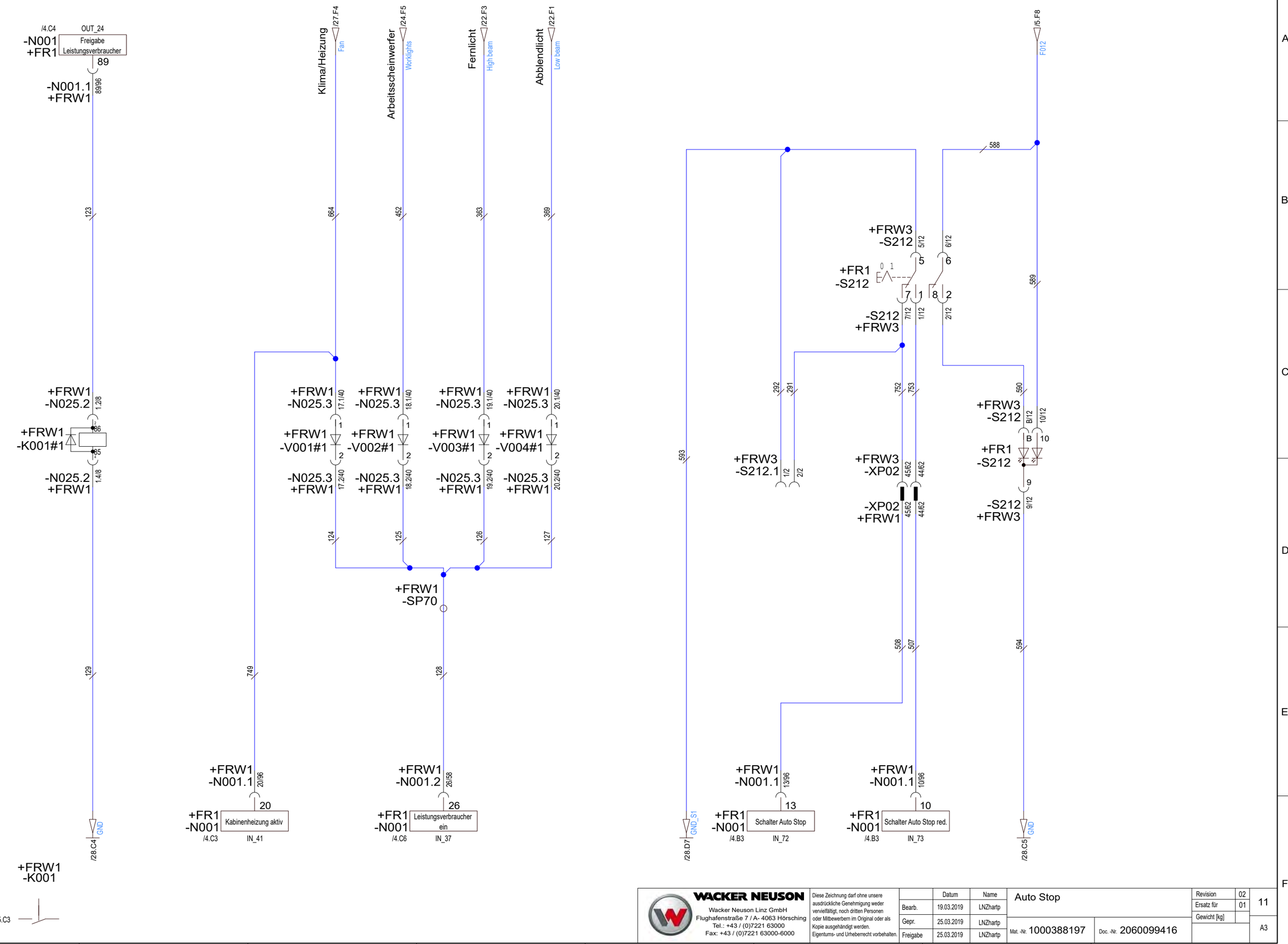
Dieselmotorelektronik

Revision	02
Ersatz für	01
Gewicht [kg]	

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

10

A3



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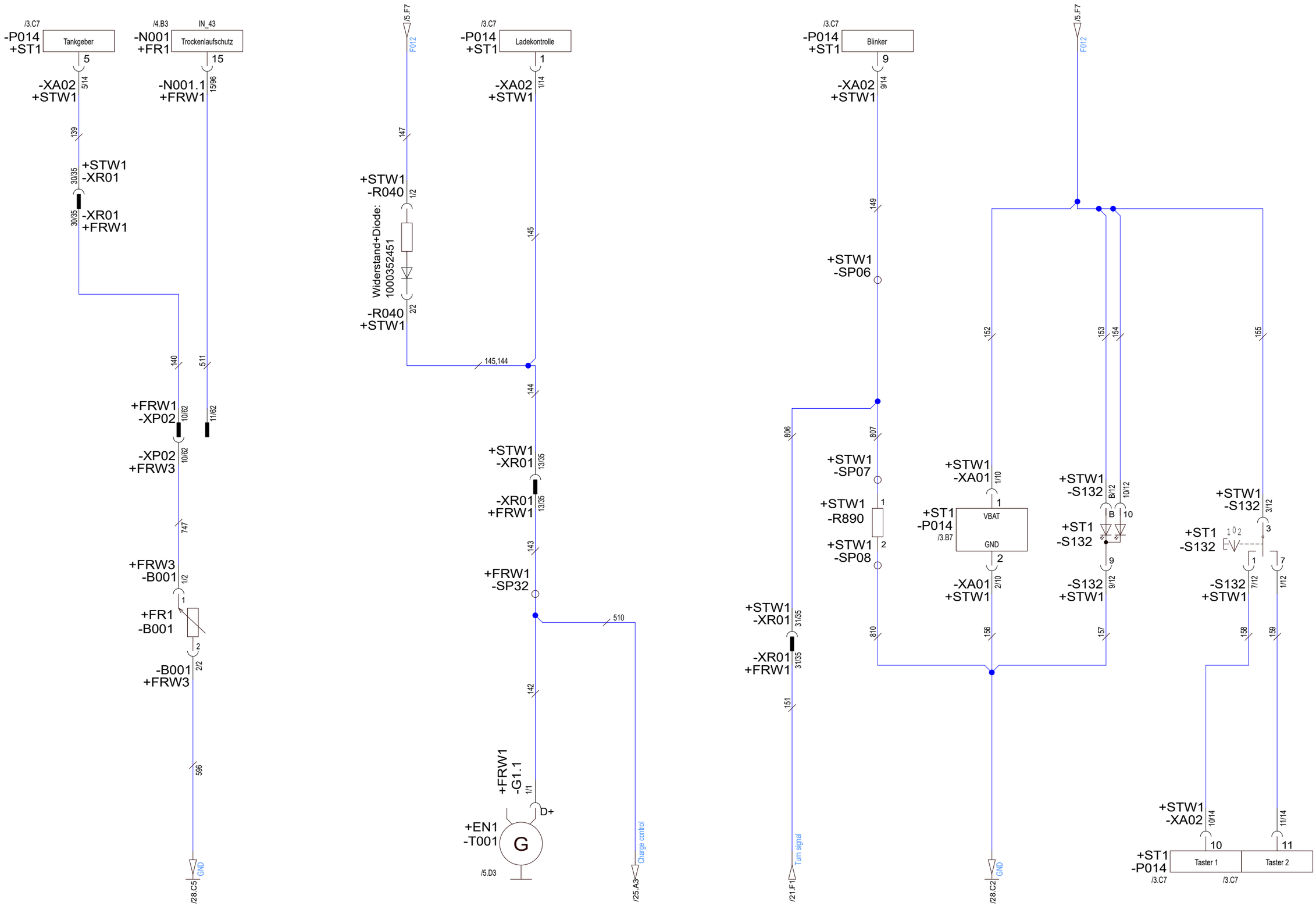
Auto Stop

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

11

A3



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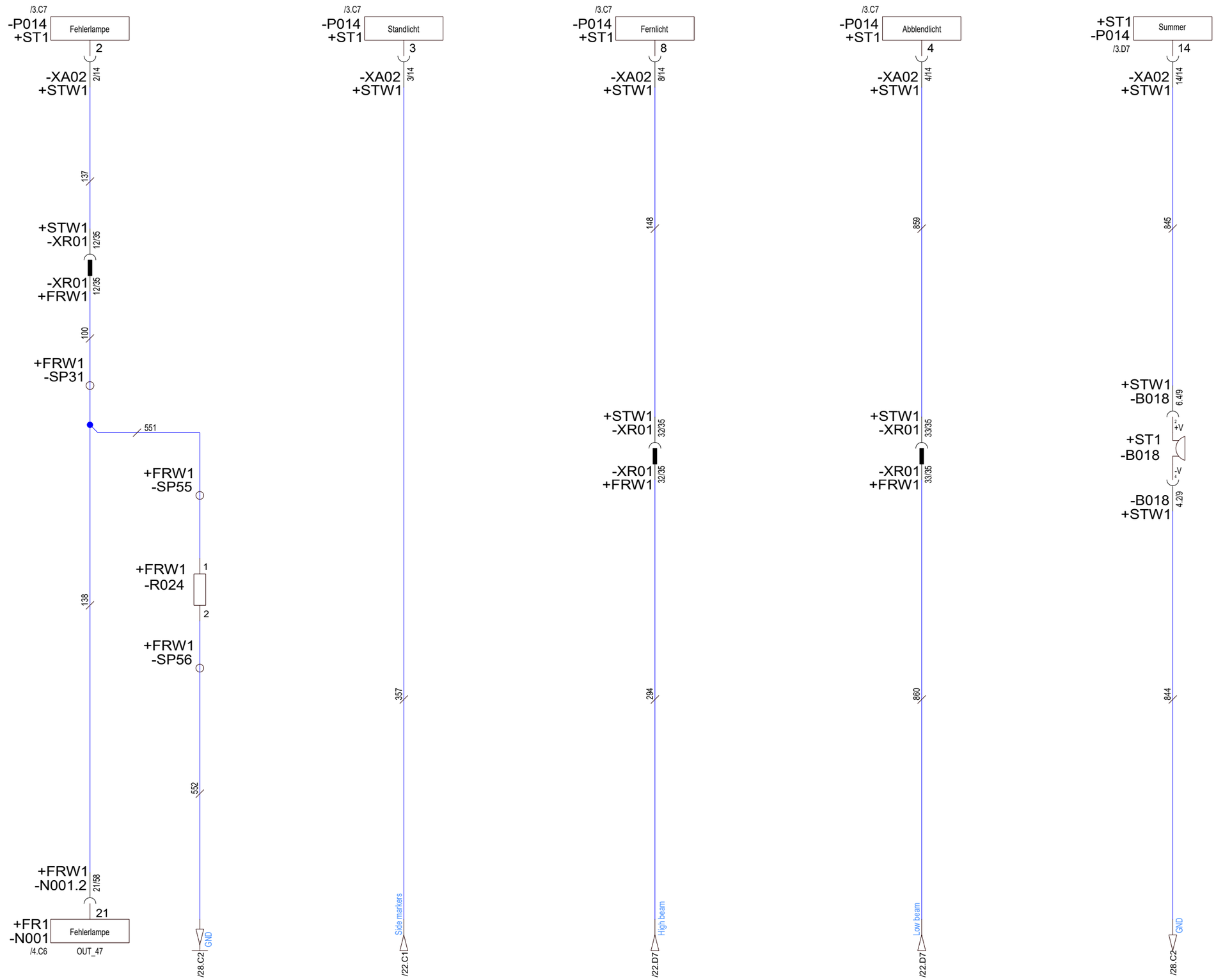
	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

IO Display, Tankgeber, Lade-Kontrolle

Revision	02
Ersatz für	01
Gewicht [kg]	
Mat.-Nr.	1000388197
Doc.-Nr.	2060099416

12

A3



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		Bearb.	19.03.2019	LNZhartp			Ersatz für	01	
		Gepr.	25.03.2019	LNZhartp			Gewicht [kg]		A3
		Freigabe	25.03.2019	LNZhartp	Mat.-Nr. 1000388197	Doc.-Nr. 2060099416			

+ST1
-P014 Umschaltung Blinker 1
/3.D7 12
-XA02 12/14
+STW1
162
+STW1
-K160 3/5
+STW1
-K160
/14.F1
-K160 5/5
+STW1
160
/28.C2 GND

+ST1
-P014 Umschaltung Blinker 2
/3.D7 13
-XA02 13/14
+STW1
163
+STW1
-K160.1 3/5
+STW1
-K160.1
/14.F2
-K160.1 5/5
+STW1
161

/4.C4 OUT_23
-N001
+FR1 Abschaltung Rückfahricht
90
-N001.1 90/96
+FRW1
164
+FRW1
-N025.5 5.3/30
+FRW1
-K003.1#1
-N025.5 5.5/30
+FRW1
735
/28.C4 GND

/4.D6
-N001
+FR1 VSS_2
32
-N001.2 32/58
+FRW1
166
+FRW1
-SP37
304
167
+FRW1
-S102 3/4
+FR1
-S102
/14.F3
-S102 4/4
+FRW1
171
+FR1
-N001 Lenkrichtung 1
/4.C6 IN_9
14
+FRW1
-N001.2 14/58

168
+FRW1
-S102 1/4
+FR1
-S102
/14.F3
-S102 2/4
+FRW1
172
+FR1
-N001 Lenkrichtung 1 red.
/4.E3 IN_10
57
+FRW1
-N001.1 57/96

169
+FRW1
-S103 3/4
+FR1
-S103
/14.F4
-S103 4/4
+FRW1
173
+FR1
-N001 Lenkrichtung 2
/4.E6 IN_11
52
+FRW1
-N001.2 52/58

170
+FRW1
-S103 1/4
+FR1
-S103
/14.F4
-S103 2/4
+FRW1
174
+FR1
-N001 Lenkrichtung 2 red.
/4.D6 IN_12
38
+FRW1
-N001.2 38/58

+FRW1
-XP02 13/62
-XP02 13/62
+FRW3
271
/19.A5 VSS_2

/4.D6 OUT_27
-N001
+FR1 Lenkrichtung 1
43
-N001.2 43/58
+FRW1
175
+FRW1
-Y155 1/2
1
2
-Y155 2/2
+FRW1
177

/4.D6 OUT_28
-N001
+FR1 Lenkrichtung 2
41
-N001.2 41/58
+FRW1
176
+FRW1
-Y070 1/2
1
2
-Y070 2/2
+FRW1
178
+FRW1
-SP36
179
+FRW1
-N001.1 79/96
79
+FR1
-N001 Lenkrichtung 1+2 LS
/4.B4 OUT_41

Y155: Lenkung für Fahrtrichtung Frontstoßstange
Y070: Lenkung für Fahrtrichtung Mulde

+STW1
-K160
/14.D1
/21.C6

+STW1
-K160.1
/14.D2
/21.C7

+FR1
-S102
/14.C3
/14.C4

+FR1
-S103
/14.C5
/14.C5

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

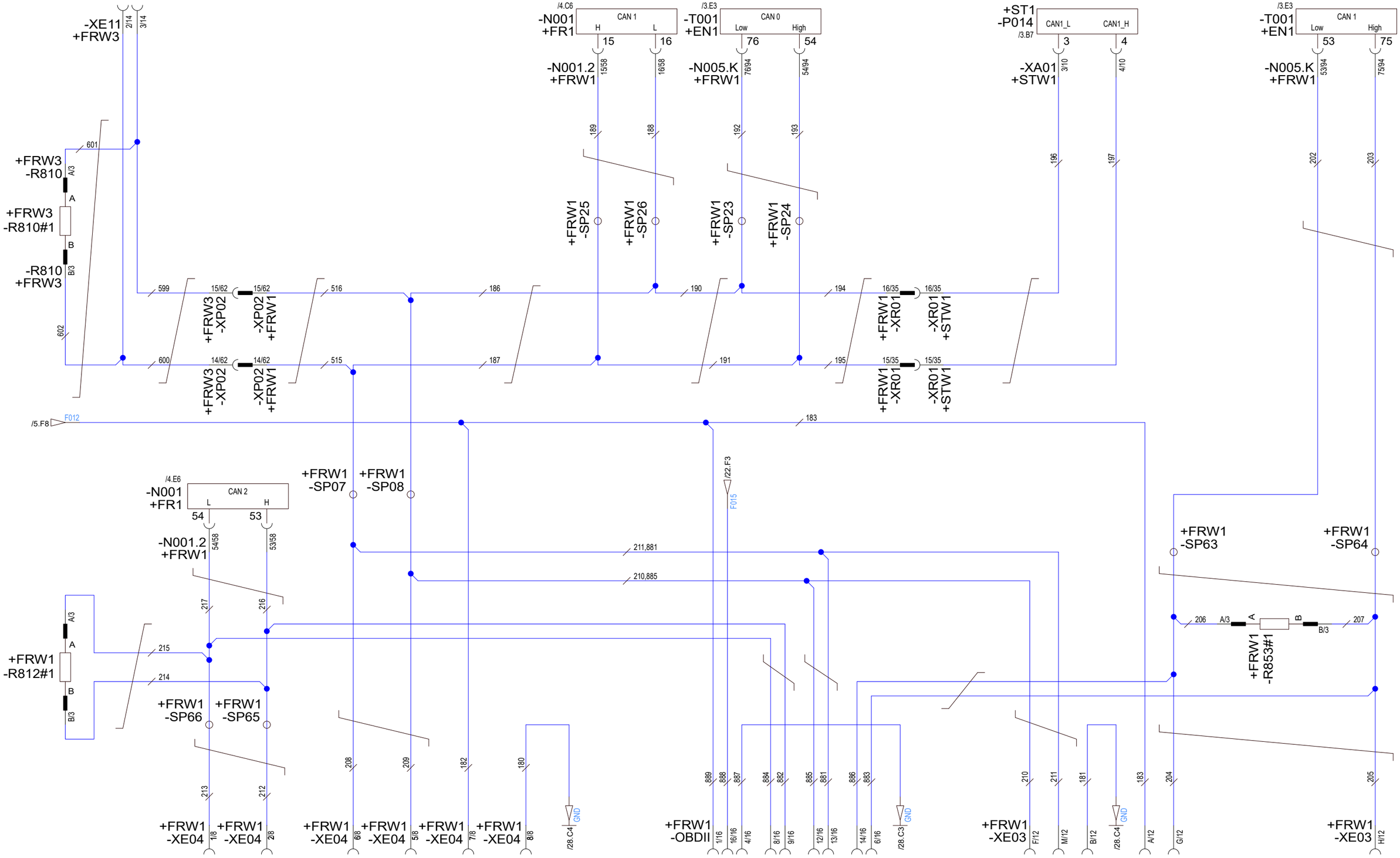
Drehsitzfunktionen

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

14

A3



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Freigabe	25.03.2019	LNZhartp

CAN

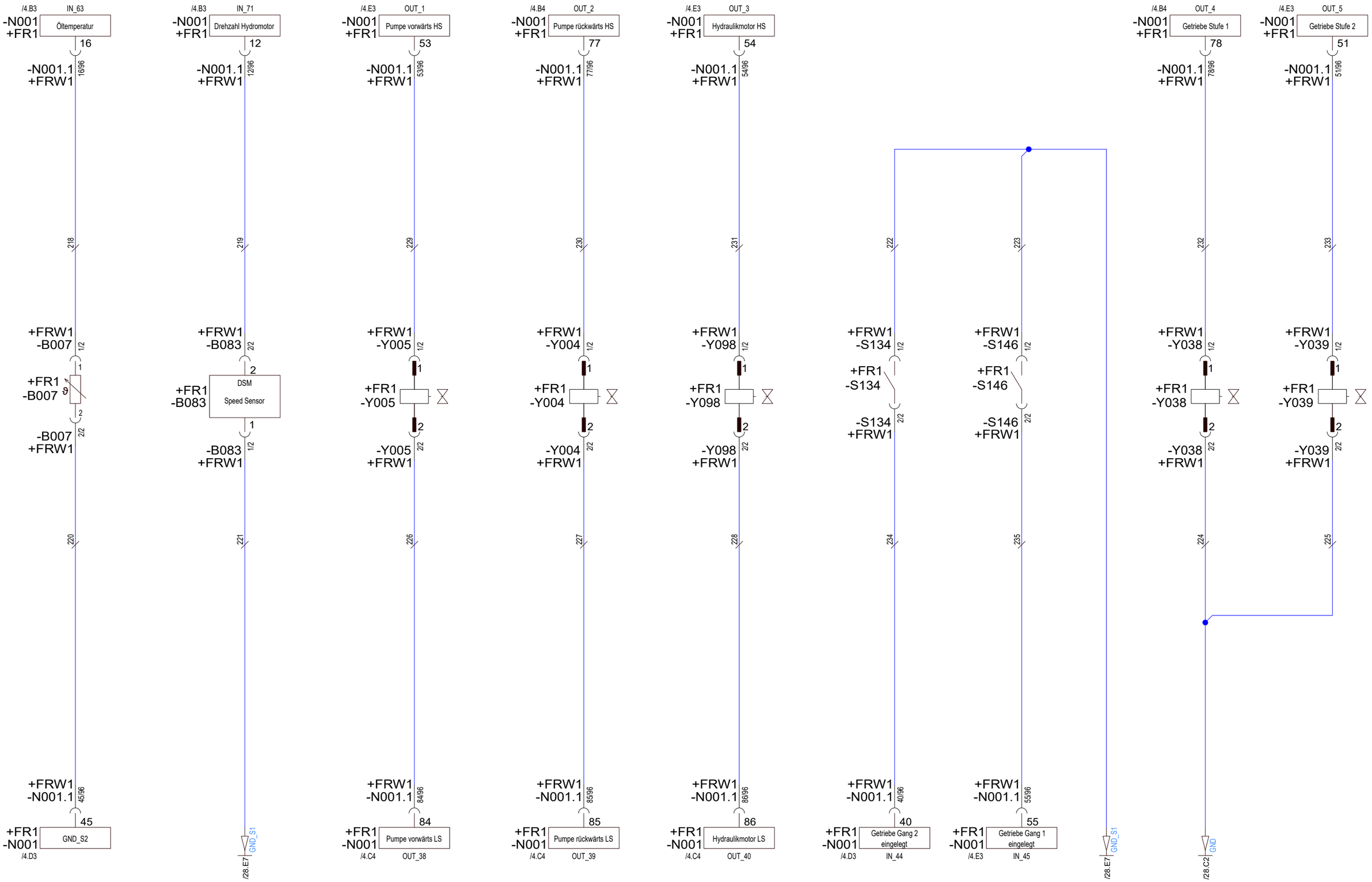
Mat.-Nr. 1000388197

Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

15

A3



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Freigabe	25.03.2019	LNZhartp

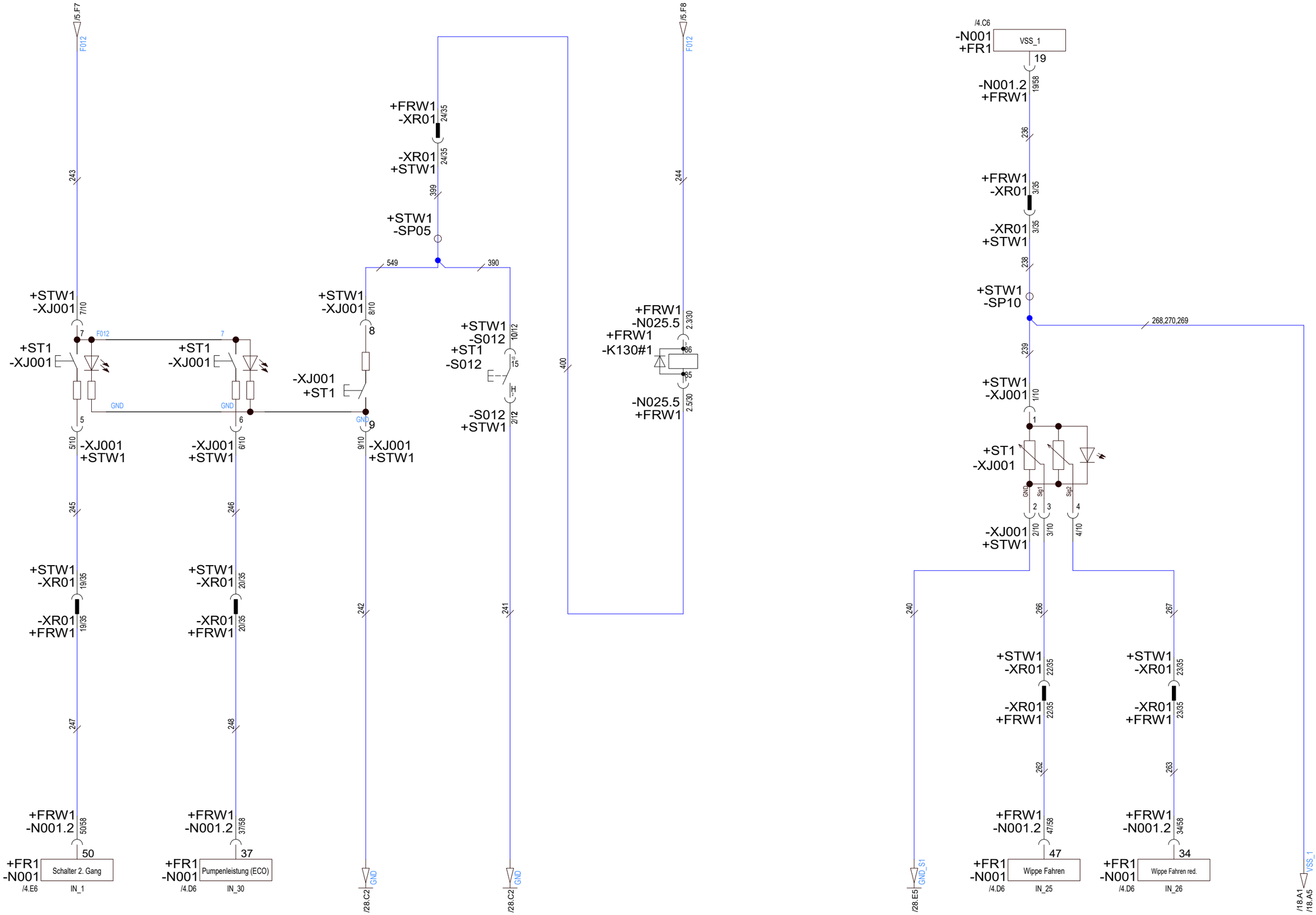
Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

16

A3



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Freigabe	25.03.2019	LNZhartp

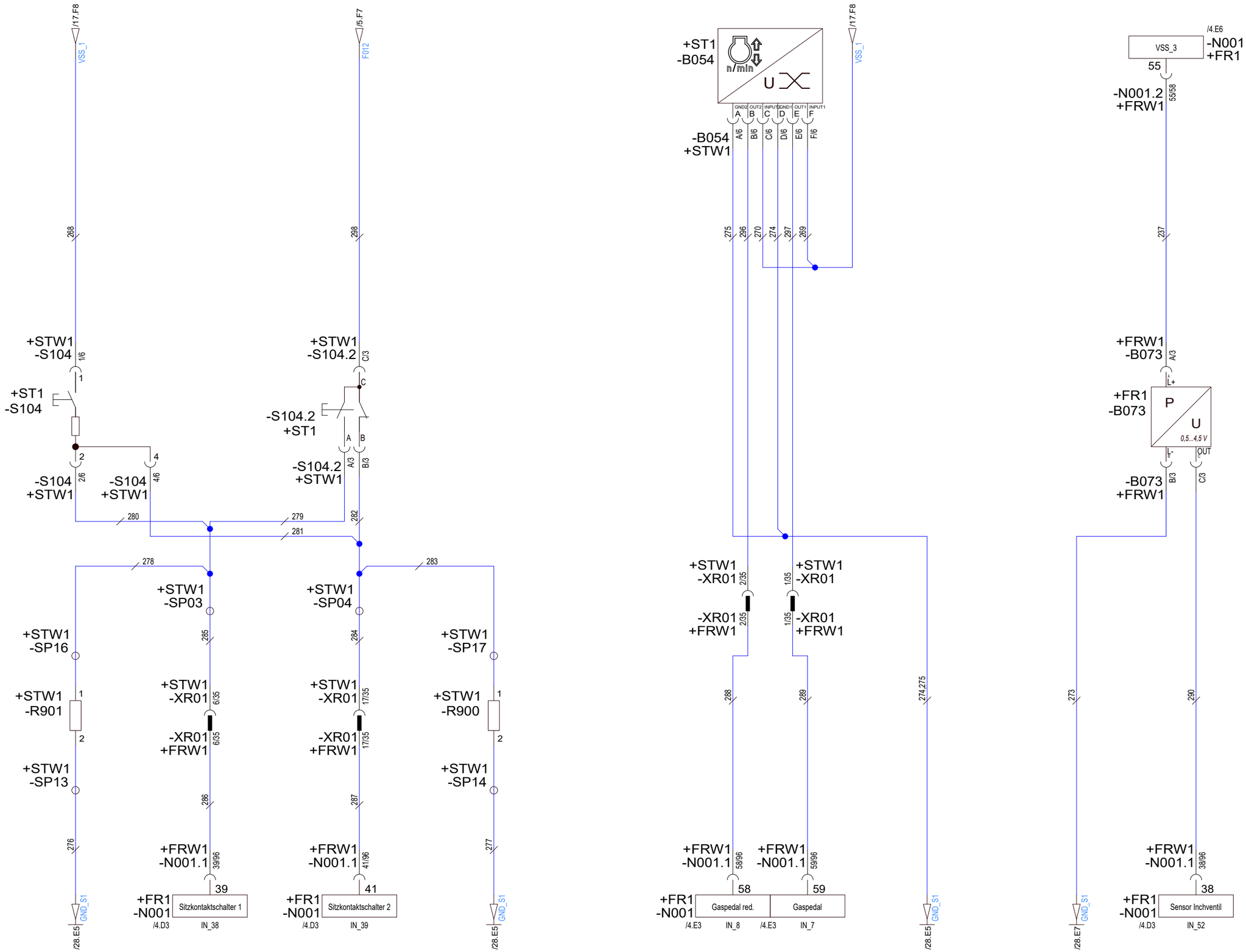
Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

17

A3



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Freigabe	25.03.2019	LNZhartp

Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

18

A3

/6.F5
F011
/5.F8
F012
605
611,612
+FRW3
-S065
6/12
+FR1
-S065
6
8
2
8/12
2/12
-S065
+FRW3
529
550
553
+FRW3
-SP11
+FRW3
-XP02
2/62
3/62
-XP02
+FRW1
2/62
3/62
520
+FRW1
-SP10
521
+FRW1
-Y075
1/2
1
+FR1
-Y075
2
2/2
-Y075
+FRW1
499
379
295
+FRW1
-N001.2
17/58
31/58
17
31
+FR1
-N001
Schalter Drosselventil Feedback red.
Schalter Drosselventil Feedback
/4.C6
IN_36
/4.D6
IN_35
GND
/28.C2
598
6/12
611
+FRW3
-R902
1
2
+FRW3
-SP12
+FRW3
-S065
B/12
10/12
B
10
+FR1
-S065
9
-S065
+FRW3
9/12
614,554
554
+FRW3
-S210
10/12
10
+FR1
-S210
9
-S210
+FRW3
9/12
613
GND
/28.C6
/14.F6
VSS_2
271
+FRW3
-R025
1/2
Widerstand 22 Ohm
SAP: 1000398308
2/2
-R025
+FRW3
603
+FRW3
-SP01
604
606
607
+FRW3
-S065
5/12
+FR1
-S065
0
1
5
7
1
7/12
1/12
-S065
+FRW3
608
609
+FRW3
-XP02
17/62
16/62
-XP02
+FRW1
17/62
16/62
93
92
+FRW1
-N001.1
69/96
67/96
69
67
+FR1
-N001
Schalter Feststellbremse red.
Schalter Feststellbremse
/4.B4
IN_59
IN_58
+FRW3
-S210
5/12
5
-S210
+FR1
1
1/12
-S210
+FRW3
610
+FRW3
-XP02
18/62
-XP02
+FRW1
18/62
99
+FRW1
-N001.2
27/58
27
+FR1
-N001
Parkbremstest
/4.C6
IN_57
VSS_2
/20.A5
/4.C3
OUT_19
-N001
+FR1
Parkbremse HS
28
-N001.1
+FRW1
28/96
321
+FRW1
-Y043
1/2
1
+FR1
-Y043
2
2/2
-Y043
+FRW1
320
+FRW1
-N001.1
83/96
83
+FR1
-N001
Parkbremse LS
/4.B4
OUT_37

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

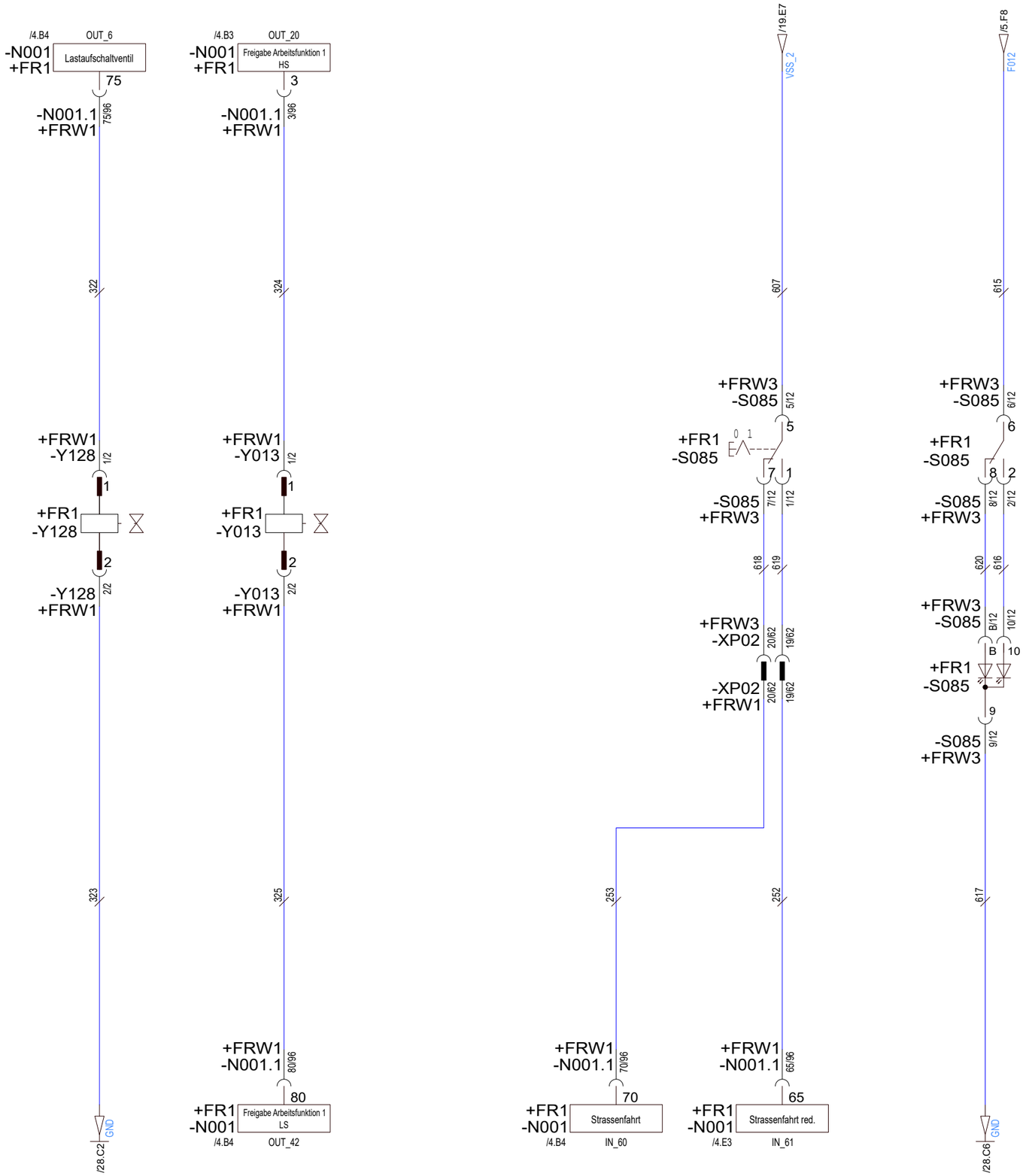
Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

19

A3



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
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Freigabe	25.03.2019	LNZhartp

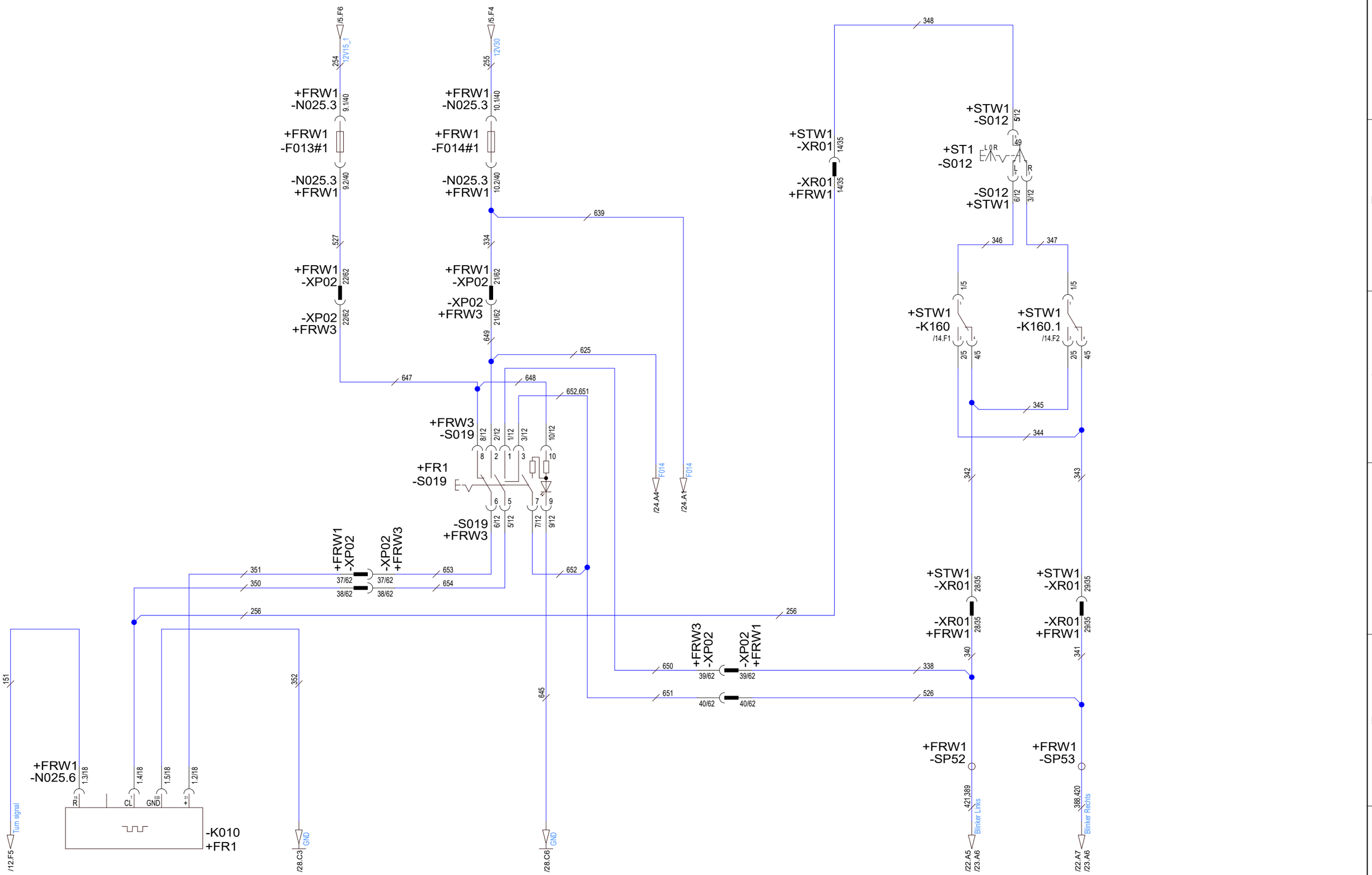
Arbeitsfunktionen

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

20

A3



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

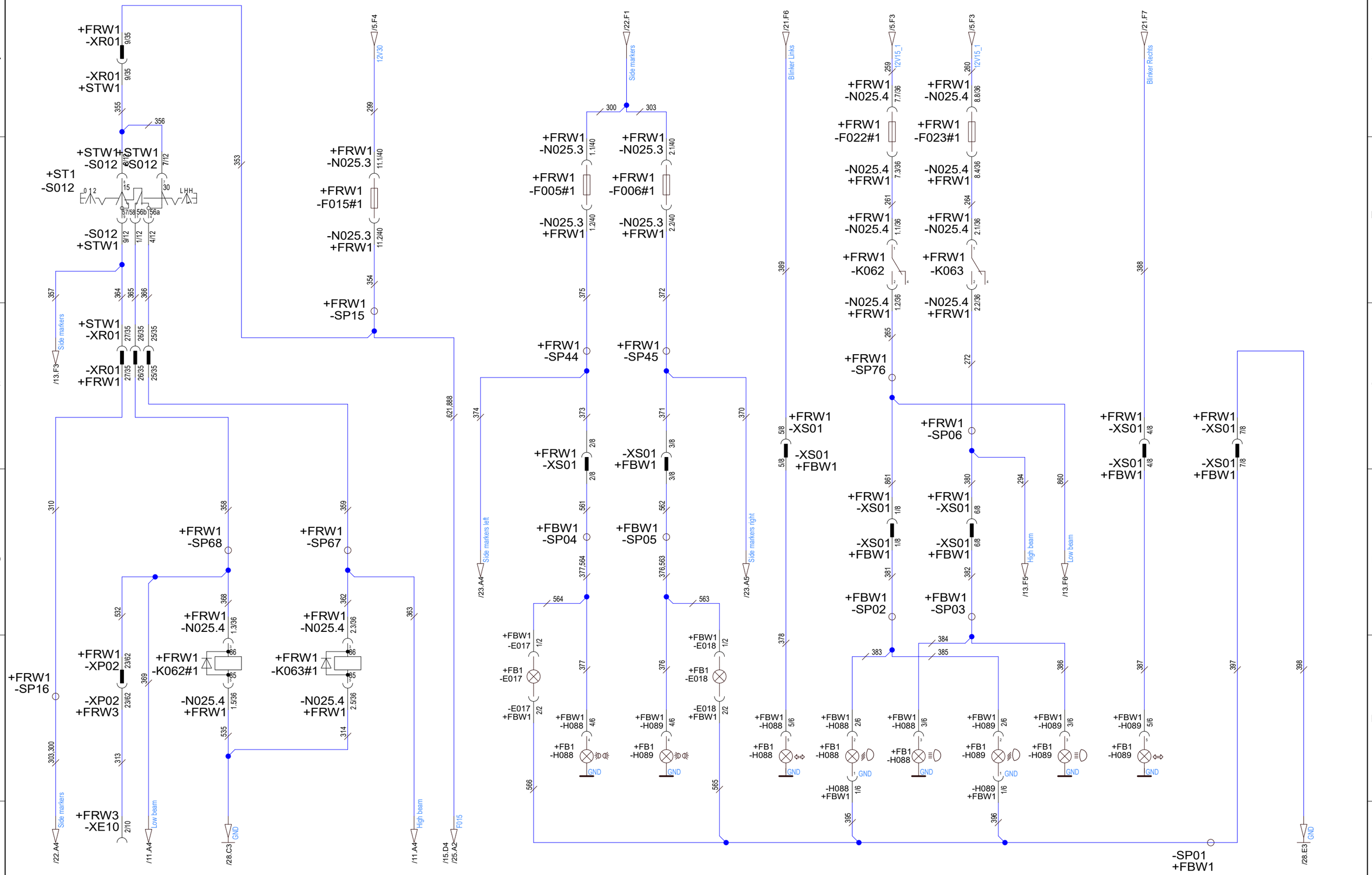
StVzO Beleuchtung
Blinkanlage

Mat.-Nr. 1000388197
Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

21

A3



1	2	3	4	5	6	7	8	

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Freigabe	25.03.2019	LNZhartp

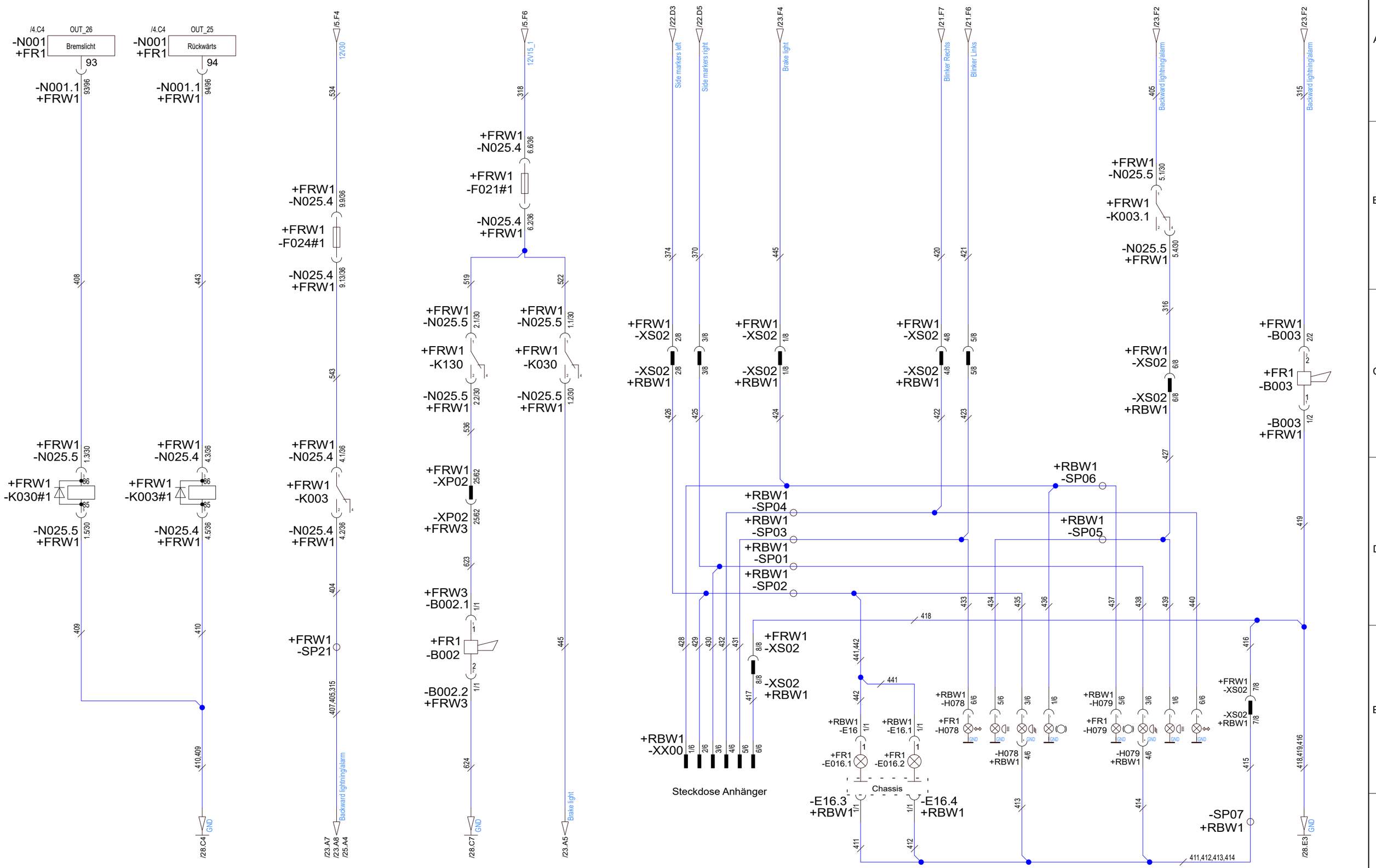
StVzO Beleuchtung
Frontstoßstange

Mat.-Nr. 1000388197
Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

22

A3



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

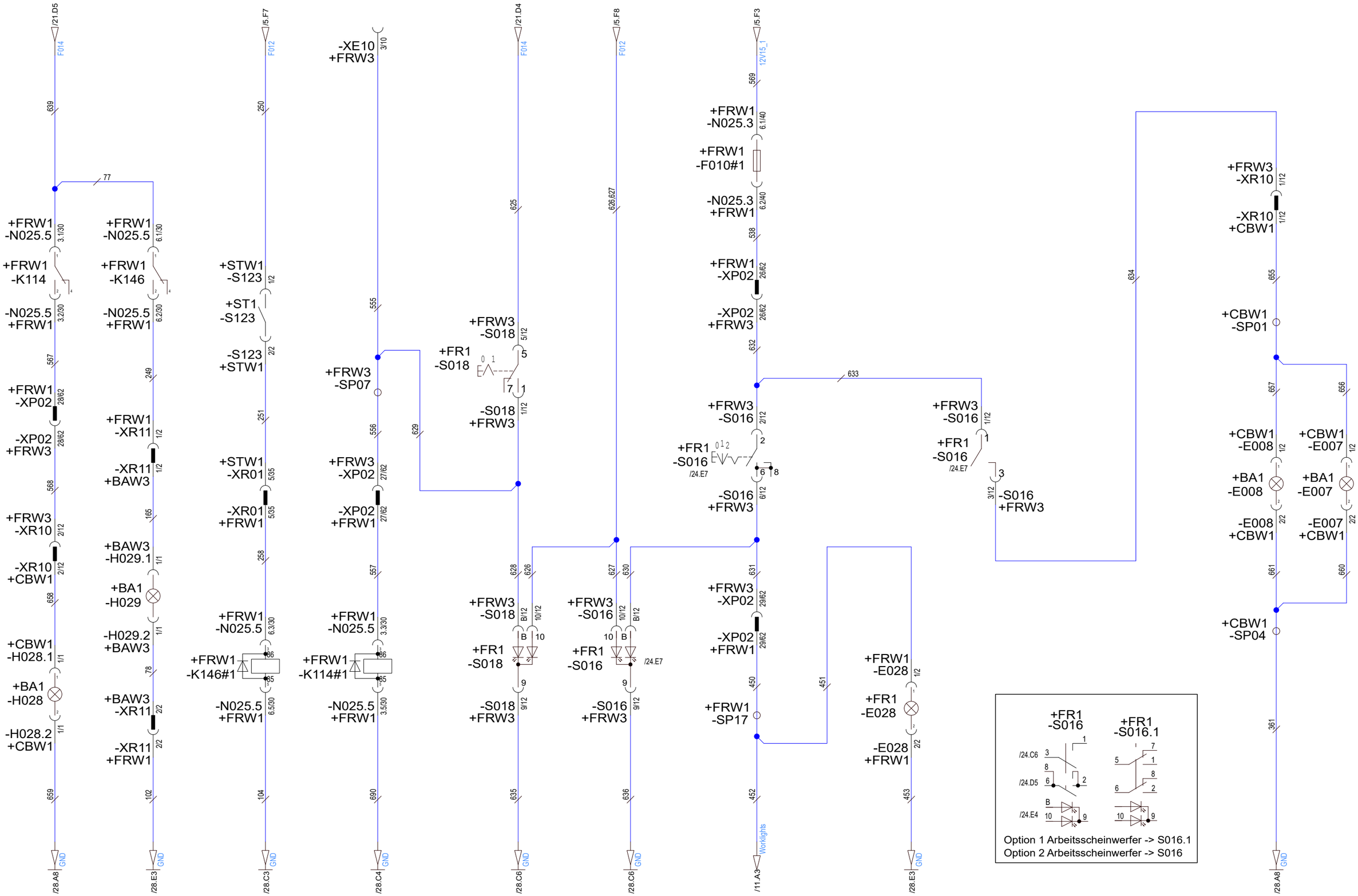
StVzO Beleuchtung
Mulde

Mat. -Nr. 1000388197
Doc. -Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

23

A3



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	Datum	Name
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Freigabe	25.03.2019	LNZhartp

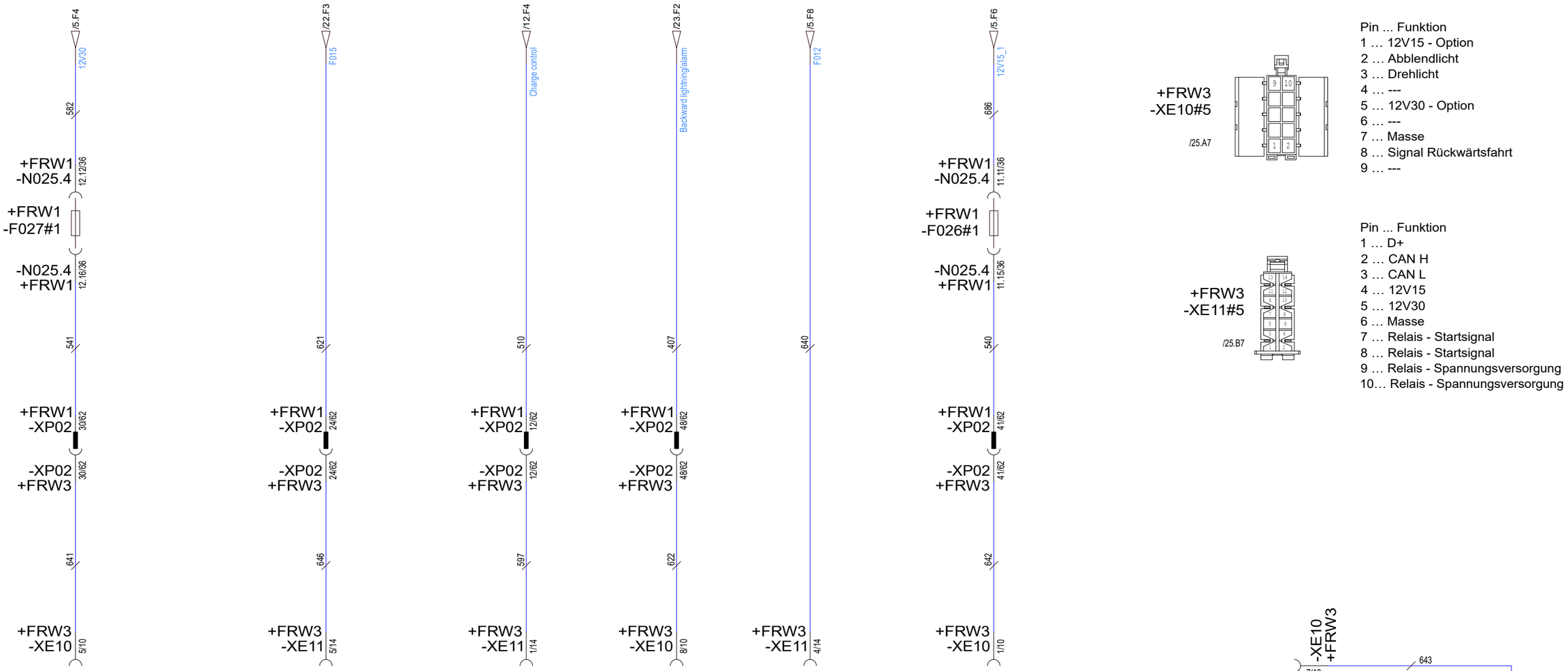
Arbeitsscheinwerfer, Rundumkennleuchte

Mat.-Nr. 1000388197 | Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

24

A3



+FRW3
-XE10#6

/25.D6	1	F026	+FRW3-XP02:41	1.50 mm² RD-WH	642
/22.F1	2	Low beam	+FRW3-XP02:23	0.75 mm² GY	313
/24.A3	3	Rotating Beacon	+FRW3-SP07:1	0.75 mm² VT	555
	4				
/25.D1	5	F026	+FRW3-XP02:30	1.50 mm² RD	641
	6				
/25.D7	7	GND	+FRW3-SP05:1	1.50 mm² BK	643
/25.D4	8	Backward lightning/alarm	+FRW3-XP02:48	1.00 mm² GY	622
	9				
	10				

+FRW3
-XE11#6

/25.D3	1	Charge control	+FRW3-XP02:12	1.00 mm² PK	597
/15.A1	2	CAN0 High	+FRW3-XP02:14, +FRW3-R810:B	0.75 mm² 0.75 mm² YE,YE	600, 602
/15.A1	3	CAN0 Low	+FRW3-R810:A, +FRW3-XP02:15	0.75 mm² 0.75 mm² GN,GN	601, 599
/25.D5	4	F012	+FRW3-SP02:1	0.75 mm² RD-WH	640
/25.D2	5	F015	+FRW3-XP02:24	0.75 mm² RD	646
/25.E7	6	GND	+FRW3-SP05:1	0.75 mm² BK	644
/7.B2	7	Start signal	+FRW3-S001.2:8	0.75 mm² PK	575
/7.C2	8	Start signal	+FRW3-XP02:4	0.75 mm² PK	768
	9				
	10				
	11				
	12				
	13				
	14				

+FRW3
-XE10#5

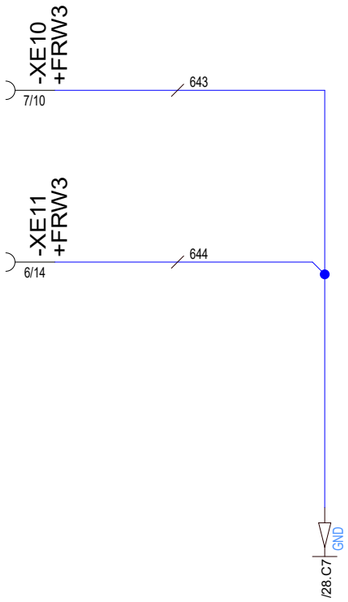
/25.A7

Pin ... Funktion
1 … 12V15 - Option
2 … Abblendlicht
3 … Drehlicht
4 … ---
5 … 12V30 - Option
6 … ---
7 … Masse
8 … Signal Rückwärtsfahrt
9 … ---

+FRW3
-XE11#5

/25.B7

Pin ... Funktion
1 … D+
2 … CAN H
3 … CAN L
4 … 12V15
5 … 12V30
6 … Masse
7 … Relais - Startsignal
8 … Relais - Startsignal
9 … Relais - Spannungsversorgung
10… Relais - Spannungsversorgung



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Freigabe	25.03.2019	LNZhartp

Stecker Zusatzoption

Mat. -Nr. 1000388197 Doc. -Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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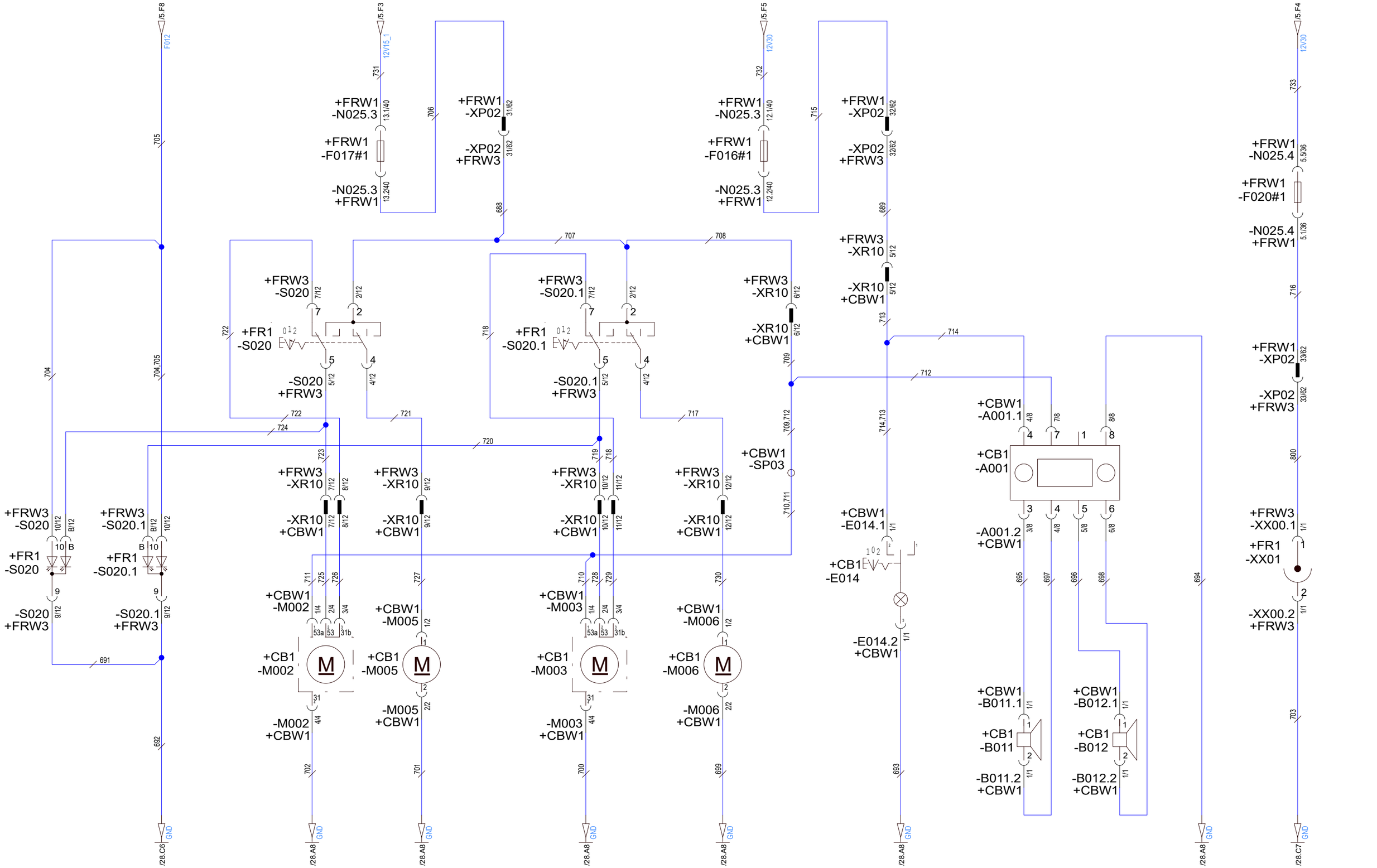
A3



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Wischer, Radio, Steckdose

Mat.-Nr. 1000388197

Doc.-Nr. 2060099416

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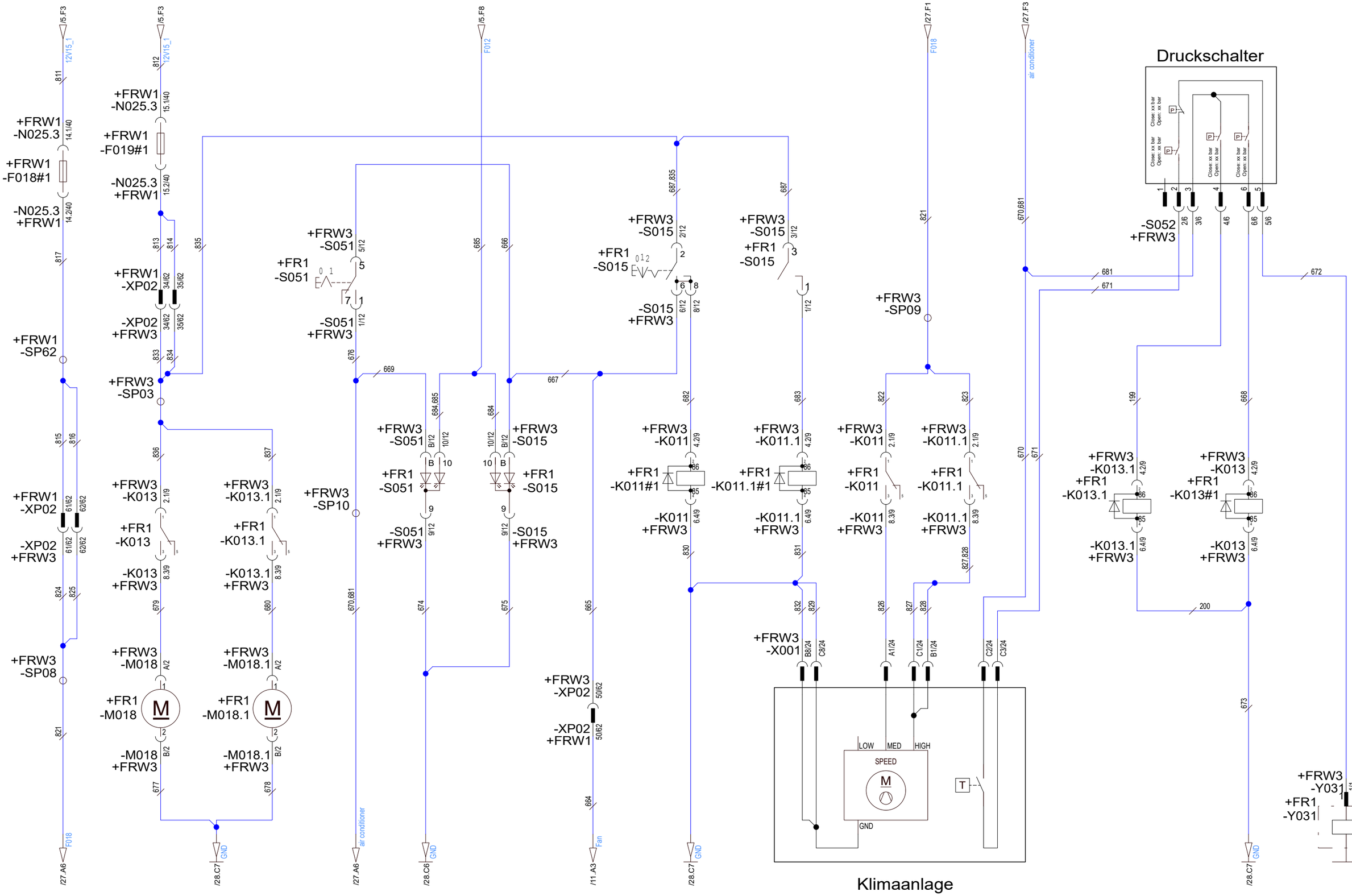

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Freigabe	25.03.2019	LNZhartp

Heizung, Klimaanlage

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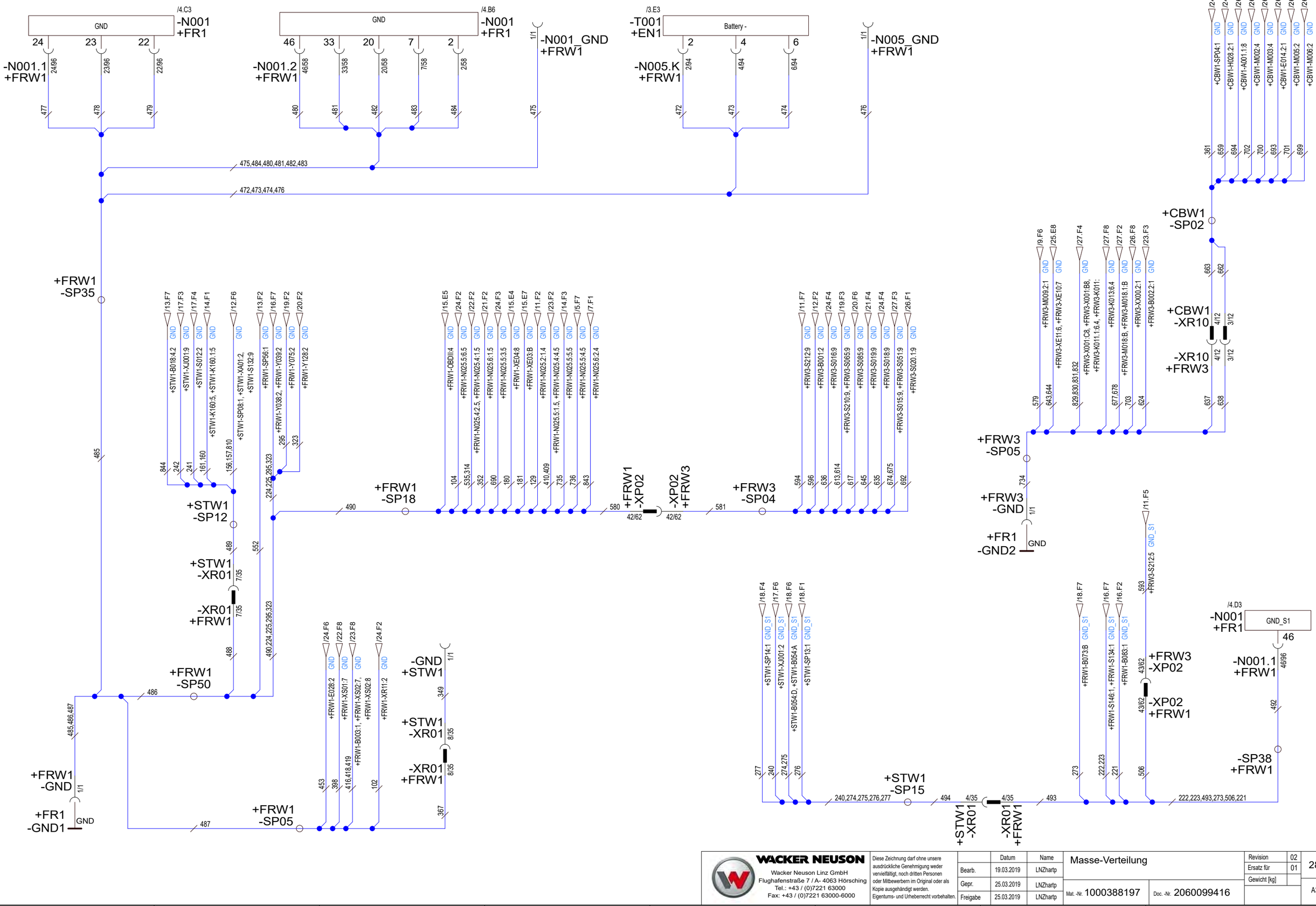

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Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Masse-Verteilung

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-A001	+CB1	/26.C6	Radio	1000258408
-A001.1	+CBW1		Stecker Radio	1000104902
-A001.2	+CBW1		Stecker Radio	1000104903
-B001	+FR1	/12.D2	Kraftstoffniveaugeber	1000307804
-B001	+FRW3	/12.D2	Stecker Kraftstoffniveaugeber	1000027438
-B002	+FR1	/23.D3	Hupe	1000269368
-B002.1	+FRW3	/23.D3	Stecker Hupe	1000383151
-B002.2	+FRW3	/23.E3	Stecker Hupe	1000383151
-B003	+FR1	/23.C8	Rückfahrwarneinrichtung	1000170892
-B003	+FRW1	/23.C8	Stecker Rückfahrwarneinrichtung	1000027438
-B007	+FR1	/16.C1	Temperaturgeber Hydrauliköl	
-B007	+FRW1	/16.C1	Stecker Temperaturgeber Hydrauliköl	1000027410
-B011	+CB1	/26.E6	Lautsprecher	1000068958
-B011.1	+CBW1	/26.E6	Stecker Lautsprecher	1000417323
-B011.2	+CBW1	/26.E6	Stecker Lautsprecher	1000106792
-B012	+CB1	/26.E7	Lautsprecher	1000068958
-B012.1	+CBW1	/26.E7	Stecker Lautsprecher	1000417323
-B012.2	+CBW1	/26.E7	Stecker Lautsprecher	1000106792
-B015	+FR1	/10.C7	Kühlmittelniveaugeber	1000189283
-B015	+FRW1	/10.C7	Stecker Kühlmittelniveaugeber	1000027429
-B018	+ST1	/13.C7	Summer	
-B018	+STW1		Stecker Summer	1000101071
-B024	+FRW3	/10.E3	Stecker Drucksensor Niederdruck Kraftstoff	1000322614
-B054	+ST1	/18.A5	Gaspedal	1000304814
-B054	+STW1	/18.B5	Stecker Gaspedal	1000308534
-B073	+FR1		Drucksensor Inchpedal	1000303206
-B073	+FRW1	/18.C7	Stecker Drucksensor Inchpedal	1000027429
-B083	+FR1	/16.C2	Drehzahlsensor Motor Fahren	
-B083	+FRW1	/16.D2	Stecker Drehzahlsensor Motor Fahren	1000379245
-BAT1	+FRW1	/5.A5	Kabelschuh Hauptsicherung	1000127092
-BAT_GND	+EBW1	/5.F2	Kabelschuh Masse	1000050031

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
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Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-BAT_GND	+EBW2	/5.D1	Batterieklemme Minus	1000089785
-E007	+BA1	/24.C8	Arbeitsscheinwerfer hinten	1000270919
-E007	+CBW1	/24.C8	Stecker Arbeitsscheinwerfer hinten	1000270365
-E008	+BA1	/24.C8	Arbeitsscheinwerfer hinten	1000270919
-E008	+CBW1	/24.C8	Stecker Arbeitsscheinwerfer hinten	1000270365
-E014	+CB1	/26.D6	Innenraumbeleuchtung	1000003334
-E014.1	+CBW1	/26.D6	Stecker Innenraumbeleuchtung	1000092494
-E014.2	+CBW1	/26.E6	Stecker Innenraumbeleuchtung	1000095370
-E16	+RBW1	/23.E6	Stecker Kennzeichenbeleuchtung	1000027384
-E16.1	+RBW1	/23.E6	Stecker Kennzeichenbeleuchtung	1000027384
-E016.1	+FR1	/23.E6	Kennzeichenbeleuchtung	1000117390
-E016.2	+FR1	/23.E6	Kennzeichenbeleuchtung	1000117390
-E16.3	+RBW1	/23.F6	Kabelschuh Kennzeichenbeleuchtung	1000096859
-E16.4	+RBW1	/23.F6	Kabelschuh Kennzeichenbeleuchtung	1000096859
-E017	+FB1	/22.E4	Begrenzungsleuchten	
-E017	+FBW1	/22.D4	Stecker Begrenzungsleuchten	1000027438
-E018	+FB1	/22.E5	Begrenzungsleuchten	
-E018	+FBW1	/22.D5	Stecker Begrenzungsleuchten	1000027438
-E028	+FR1	/24.E6	Arbeitsscheinwerfer	1000270919
-E028	+FRW1	/24.E6	Stecker Arbeitsscheinwerfer	1000270365
-F001	+FRW1		Hauptsicherung 60A	1000098668
-F002	+FRW1		Hauptsicherung 80A	1000027321
-F003	+FRW1		Hauptsicherung 50A	1000015298
-F004	+FRW1		Hauptsicherung 50A	1000015298
-F005	+FRW1		Sicherung 7,5A	1000186027
-F006	+FRW1		Sicherung 7,5A	1000186027
-F007	+FRW1		Sicherung 30A	1000247967
-F008	+FRW1		Sicherung 10A	1000114140
-F009	+FRW1		Sicherung 5A	1000186026
-F010	+FRW1		Sicherung 15A	1000186028
-F011	+FRW1		Sicherung 5A	1000186026

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Lesestation		

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Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-F012	+FRW1		Sicherung 10A	1000114140
-F013	+FRW1		Sicherung 10A	1000114140
-F014	+FRW1		Sicherung 15A	1000186028
-F015	+FRW1		Sicherung 10A	1000114140
-F016	+FRW1		Sicherung 10A	1000114140
-F017	+FRW1		Sicherung 15A	1000186028
-F018	+FRW1		Sicherung 30A	1000247967
-F019	+FRW1		Sicherung 25A	1000168904
-F020	+FRW1		Sicherung 15A	1000186028
-F021	+FRW1		Sicherung 15A	1000186028
-F022	+FRW1		Sicherung 10A	1000114140
-F023	+FRW1		Sicherung 10A	1000114140
-F024	+FRW1		Sicherung 5A	1000186026
-F025	+FRW1		Sicherung 15A	1000186028
-F026	+FRW1		Sicherung 10A	1000114140
-F027	+FRW1		Sicherung 10A	1000114140
-G001	+FRW1	/5.D3	Kabelschuh Lichtmaschine	1000126891
-G1.1	+FRW1	/12.E4	Kabelschuh Lichtmaschine	1000110764
-G002	+EBW1	/5.D1	Kabelschuh Batterie	1000089783
-G002	+FR1	/5.D1	Batterie	1000250323
-GND	+EBW1	/5.F3	Masse	1000050030
-GND	+EBW2	/5.F1	Masse	1000050031
-GND	+FR1	/5.F2	Masse	
-GND	+FRW1	/28.F1	Masse	1000346811
-GND	+FRW3	/28.D7	Masse	1000365194
-GND	+STW1	/28.E3	Masse	1000405714
-GND1	+FR1	/28.F1	Masse	
-GND2	+FR1	/28.D7	Masse	
-H028	+BA1	/24.E1	Rundumkennleuchte	1000314938
-H028.1	+CBW1	/24.D1	Stecker Rundumkennleuchte	1000027435
-H028.2	+CBW1	/24.E1	Stecker Rundumkennleuchte	1000095370

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Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision
Ersetzt Version
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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-H029	+BA1	/24.D2	Rundumkennleuchte grün	
-H029.1	+BAW3	/24.D2	Stecker Rundumkennleuchte grün	1000027435
-H029.2	+BAW3	/24.D2	Stecker Rundumkennleuchte grün	1000095370
-H078	+FR1	/23.E7	Kombinierte Rückleuchte links	1000148542
-H078	+RBW1	/23.E7	Kombinierte Rückleuchte links	1000027431
-H079	+FR1	/23.E7	Kombinierte Rückleuchte rechts	1000148543
-H079	+RBW1	/23.E7	Stecker Kombinierte Rückleuchte rechts	1000027431
-H088	+FB1	/22.E5	Kombinierter Frontscheinwerfer links	HEADLIGHTS
-H088	+FBW1	/22.F5	Stecker Kombinierter Frontscheinwerfer links	1000027431
-H089	+FB1	/22.E6	Kombinierter Frontscheinwerfer rechts	HEADLIGHTS
-H089	+FBW1	/22.F6	Stecker Kombinierter Frontscheinwerfer links	1000027431
-K001	+FRW1	/11.F1	Hochstromrelais	1000154042
-K003	+FRW1		Schaltrelais Fahren rückwärts	1000333390
-K003.1	+FRW1		Schaltrelais Fahren rückwärts	1000333390
-K005	+FRW1		Hochstromrelais Vorglühanlage	1000154042
-K010	+FR1	/21.E2	Blinkrelais	1000235517
-K011	+FR1		Schaltrelais Klimaanlage	1000027074
-K011	+FRW3		Relais- Sockel Schaltrelais Klimaanlage	1000101071
-K011.1	+FR1		Schaltrelais Klimaanlage	1000027074
-K011.1	+FRW3		Relais- Sockel Schaltrelais Klimaanlage	1000101071
-K013	+FR1		Schaltrelais Klimaanlage	1000027074
-K013	+FRW3		Relais- Sockel Schaltrelais Klimaanlage	1000101071
-K013.1	+FR1	/27.D7	Schaltrelais Klimaanlage	1000027074
-K013.1	+FRW3		Relais- Sockel Schaltrelais Klimaanlage	1000101071
-K030	+FRW1		Schaltrelais Bremslicht	1000333390
-K062	+FRW1		Schaltrelais Abblendlicht	1000333390
-K063	+FRW1		Schaltrelais Fernlicht	1000333390
-K087	+FR1	/7.E2	Zeit-Relais 0,75s	1000099374
-K088	+FRW1		Schaltrelais Kraftstoffförderpumpe	1000333390
-K114	+FRW1		Schaltrelais Rundumkennleuchte	1000333390
-K130	+FRW1		Schaltrelais Hupe	1000333390

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Betriebsmittelverzeichnis
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Ersetzt Version
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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-K131	+FRW1		Schaltrelais 12V15	1000333390
-K146	+FRW1		Schaltrelais Gurtkontaktschalter	1000333390
-K160	+STW1	/14.F1	Relais Umschaltung Fahrtrichtungsanzeiger	1000125244
-K160	+STW1	/21.B6	Relais Umschaltung Fahrtrichtungsanzeiger	1000100593
-K160.1	+STW1	/14.F2	Relais Umschaltung Fahrtrichtungsanzeiger	1000125244
-K160.1	+STW1	/21.B7	Relais Umschaltung Fahrtrichtungsanzeiger	1000100593
-M001	+EBW2	/5.D2	Kabelschuh Anlassermotor	1000050031
-M002	+CB1	/26.D2	Wischermotor Front	1000284961
-M002	+CBW1	/26.D2	Stecker Wischermotor Front	1000104286
-M003	+CB1	/26.D4	Wischermotor Heck	1000284961
-M003	+CBW1	/26.D4	Stecker Wischermotor Heck	1000104286
-M005	+CB1	/26.E3	Wisch-Wasch-Pumpe Front	1000110420
-M005	+CBW1	/26.D3	Stecker Wisch-Wasch-Pumpe Front	1000095323
-M006	+CB1	/26.E5	Wisch-Wasch-Pumpe Heck	1000110420
-M006	+CBW1	/26.D5	Stecker Wisch-Wasch-Pumpe Heck	1000095323
-M009.1	+FRW3	/9.C6	Stecker Kraftstoffförderpumpe	1000383151
-M009.2	+FRW3	/9.D6	Stecker Kraftstoffförderpumpe	1000383151
-M018	+FR1	/27.E1	Lüfter Klimaanlage	1000110420
-M018	+FRW3	/27.E1	Lüfter Klimaanlage	1000263990
-M018.1	+FR1	/27.E2	Lüfter Klimaanlage	1000110420
-M018.1	+FRW3	/27.E2	Lüfter Klimaanlage	1000263990
-N001	+FR1	/4.A2	Fahrelektronik	
-N001.1	+FRW1		Stecker Fahrelektronik	1000359522
-N001.2	+FRW1	/6.E3	Stecker Fahrelektronik	1000359480
-N001_GND	+FRW1	/28.A4	Kabelschuh Fahrelektronik	1000096859
-N005.A	+FRW1		Stecker Dieselmotorelektronik	1000288543
-N005.K	+FRW1	/6.E1	Stecker Dieselmotorelektronik	1000161936
-N005_GND	+FRW1	/28.A6	Kabelschuh Fahrelektronik	1000096859
-N025.1	+FRW1	/5.A5	Halter Relais / Sicherung	1000385676
-N025.2	+FRW1	/5.B3	Halter Relais / Sicherung	1000385684
-N025.3	+FRW1	/22.B4	Halter Relais / Sicherung	1000390875

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-N025.4	+FRW1	/22.B6	Halter Relais / Sicherung	1000385308
-N025.5	+FRW1	/23.C4	Halter Relais / Sicherung	1000329495
-N025.6	+FRW1		Halter Relais / Sicherung	1000390874
-OBDII	+FRW1	/15.F4	Stecker Fahrzeugdiagnose OBD II	1000325528
-P014	+ST1	/3.B5	Anzeigeinstrument	
-R024	+FRW1	/13.D2	Widerstand 220 Ohm	
-R025	+FRW3	/19.A5	Stecker Widerstand 22 Ohm	1000110449
-R040	+STW1	/12.B3	Stecker Widerstand 47 Ohm D+	1000095323
-R810	+FRW3	/15.B1	Bus-Abschlusswiderstand	1000027394
-R810	+FRW3		Bus-Abschlusswiderstand	1000289850
-R812	+FRW1	/15.D1	Bus-Abschlusswiderstand	1000027394
-R812	+FRW1		Bus-Abschlusswiderstand	1000289850
-R853	+FRW1		Bus-Abschlusswiderstand	1000289850
-R853	+FRW1	/15.D7	Bus-Abschlusswiderstand	1000027394
-R890	+STW1	/12.D6	Widerstand 1 kOhm	1000312303
-R900	+STW1	/18.D4	Widerstand 1 kOhm	1000312303
-R901	+STW1	/18.D1	Widerstand 1 kOhm	1000312303
-R902	+FRW3	/19.D3	Widerstand 1 kOhm	1000312303
-S001	+FR1	/5.D5	Glühstartschalter	1000333424
-S001.1	+FRW3	/5.D5	Stecker Glühstartschalter	1000027368
-S001.2	+FRW3	/5.D5	Stecker Glühstartschalter	1000027386
-S004	+FR1	/10.C7	Druckschalter Luftfilter	1000270266
-S004	+FRW1	/10.C7	Stecker Druckschalter Luftfilter	1000027359
-S008	+EBW1	/5.C1	Kabelschuh Batterietrennschalter	1000050031
-S008	+EBW2	/5.C1	Kabelschuh Batterietrennschalter	1000050031
-S008	+FR1	/5.C1	Batterietrennschalter	1000081674
-S008	+FRW1	/5.C1	Kabelschuh Batterietrennschalter	1000355751
-S008.1	+EBW1	/5.C1	Kabelschuh Batterietrennschalter	1000050031
-S012	+ST1	/21.B7	Lenkstockschalter links	1000309164
-S012	+STW1	/22.B1	Stecker Lenkstockschalter links	1000334439
-S015	+FR1	/27.B5	Schalter Heizungsgebläse	1000353588

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-S015	+FRW3	/27.C5	Schalter Heizungsgebläse	1000103949
-S016	+FR1	/24.E7	Schalter Arbeitsscheinwerfer	1000051958
-S016	+FRW3	/24.C6	Stecker Schalter Arbeitsscheinwerfer	1000103949
-S016.1	+FR1	/24.E7	Schalter Arbeitsscheinwerfer	SCHALTER
-S018	+FR1	/24.C4	Schalter Rundumkennleuchte	SCHALTER
-S018	+FRW3	/24.C4	Stecker Schalter Rundumkennleuchte	1000103949
-S019	+FR1	/21.D3	Warnblinkschalter	
-S019	+FRW3	/21.C4	Stecker Warnblinkschalter	1000103949
-S020	+FR1	/26.C2	Schalter Wischer / -wascher vorne	SCHALTER
-S020	+FRW3		Stecker Schalter Wischer / -wascher vorne	1000303783
-S020.1	+FR1	/26.C4	Schalter Wischer / -wascher hinten	SCHALTER
-S020.1	+FRW3		Stecker Schalter Wischer / -wascher hinten	1000303783
-S051	+FR1	/27.B3	Schalter Klimaanlage	1000353495
-S051	+FRW3	/27.C3	Stecker Schalter Klimaanlage	1000103949
-S052	+FRW3		Druckschalter Klimaanlage	1000398396
-S058	+FRW3	/10.E2	Stecker Schalter Wasserabscheider	1000027332
-S065	+FR1	/19.C5	Schalter Feststellbremse	SCHALTER
-S065	+FRW3	/19.D5	Stecker Schalter Feststellbremse	1000103949
-S085	+FR1	/20.C5	Schalter Hydraulikfunktionsabschaltung	SCHALTER
-S085	+FRW3	/20.C5	Stecker Schalter Hydraulikfunktionsabschaltung	1000103949
-S102	+FR1	/14.F3	Stößelschalter	1000247989
-S102	+FRW1	/14.C4	Stecker Stößelschalter	1000258052
-S103	+FR1	/14.F4	Stößelschalter	1000247989
-S103	+FRW1	/14.C5	Stecker Stößelschalter	1000258052
-S104	+ST1	/18.C1	Sitzschalter	1000325174
-S104	+STW1	/18.C1	Stecker Sitzschalter	1000183226
-S104.2	+ST1	/18.C3	Sitzschalter	
-S104.2	+STW1	/18.C3	Stecker Sitzschalter	1000027429
-S123	+ST1	/24.B2	Gurtkontaktschalter	
-S123	+STW1	/24.B2	Stecker Gurtkontaktschalter	1000110449
-S132	+ST1	/12.D8	Gurtkontaktschalter	1000181773

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-S132	+STW1	/12.D8	Taster Display	1000103949
-S134	+FR1	/16.C6	Endschalter Schaltstellung Getriebe	
-S134	+FRW1	/16.C6	Stecker Endschalter Schaltstellung Getriebe	1000027438
-S146	+FR1	/16.C6	Endschalter Schaltstellung Getriebe	
-S146	+FRW1	/16.C6	Stecker Endschalter Schaltstellung Getriebe	1000270365
-S210	+FR1	/19.D6	Taster Test Feststellbremse	1000051965
-S210	+FRW3	/19.D6	Stecker Taster Test Feststellbremse	1000103949
-S212	+FR1	/11.B6	Schalter Auto-Stop	SCHALTER
-S212	+FRW3	/11.C6	Stecker Schalter Auto-Stop	1000103949
-S212.1	+FRW3	/11.D6	Zusatz-Stecker Auto-Stop	1000095336
-SP01	+CBW1	/24.C8	Splice	
-SP01	+FBW1	/22.F8	Splice	
-SP01	+FRW1	/8.C4	Splice	
-SP01	+FRW3	/19.B5	Splice	
-SP01	+RBW1	/23.D5	Splice	
-SP02	+CBW1	/28.B8	Splice	
-SP02	+FBW1	/22.D6	Splice	
-SP02	+FRW1	/8.C5	Splice	
-SP02	+FRW3	/5.E8	Splice	
-SP02	+RBW1	/23.D5	Splice	
-SP03	+CBW1	/26.D5	Splice	
-SP03	+FBW1	/22.D6	Splice	
-SP03	+FRW1	/8.D4	Splice	
-SP03	+FRW3	/27.C1	Splice	
-SP03	+RBW1	/23.D5	Splice	
-SP03	+STW1	/18.D2	Splice	
-SP04	+CBW1	/24.D8	Splice	
-SP04	+FBW1	/22.D4	Splice	
-SP04	+FRW1	/8.D5	Splice	
-SP04	+FRW3	/28.D5	Splice	
-SP04	+RBW1	/23.D5	Splice	

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Bearb.		LNZhartp
Gepr.		
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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-SP04	+STW1	/18.D3	Splice	
-SP05	+FBW1	/22.D4	Splice	
-SP05	+FRW1	/28.F2	Splice	
-SP05	+FRW3	/28.D7	Splice	
-SP05	+RBW1	/23.D7	Splice	
-SP05	+STW1	/17.B3	Splice	
-SP06	+FRW1	/22.C6	Splice	
-SP06	+RBW1	/23.D7	Splice	
-SP06	+STW1	/12.B6	Splice	
-SP07	+FRW1	/15.D2	Splice	
-SP07	+FRW3	/24.C3	Splice	
-SP07	+RBW1	/23.F8	Splice	
-SP07	+STW1	/12.D6	Splice	
-SP08	+FRW1	/15.D3	Splice	
-SP08	+FRW3	/27.E1	Splice	
-SP08	+STW1	/12.D6	Splice	
-SP09	+FRW1	/10.C4	Splice	
-SP09	+FRW3	/27.C6	Splice	
-SP09	+STW1	/5.E7	Splice	
-SP10	+FRW1	/19.D2	Splice	
-SP10	+FRW3	/27.D3	Splice	
-SP10	+STW1	/17.B7	Splice	
-SP11	+FRW1	/8.C7	Splice	
-SP11	+FRW3	/19.C3	Splice	
-SP12	+FRW1	/7.D5	Splice	
-SP12	+FRW3	/19.D3	Splice	
-SP12	+STW1	/28.D2	Splice	
-SP13	+FRW1	/6.D2	Splice	
-SP13	+STW1	/18.E1	Splice	
-SP14	+FRW1	/7.D2	Splice	
-SP14	+STW1	/18.E4	Splice	

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-SP15	+FRW1	/22.C3	Splice	
-SP15	+STW1	/28.F6	Splice	
-SP16	+FRW1	/22.E1	Splice	
-SP16	+STW1	/18.D1	Splice	
-SP17	+FRW1	/24.E5	Splice	
-SP17	+STW1	/18.D4	Splice	
-SP18	+FRW1	/28.D3	Splice	
-SP20	+FRW1	/6.D3	Splice	
-SP21	+FRW1	/23.E2	Splice	
-SP22	+FRW1	/5.B8	Splice	
-SP23	+FRW1	/15.B5	Splice	
-SP24	+FRW1	/15.B5	Splice	
-SP25	+FRW1	/15.B4	Splice	
-SP26	+FRW1	/15.B4	Splice	
-SP30	+FRW1	/10.E7	Splice	
-SP31	+FRW1	/13.C2	Splice	
-SP32	+FRW1	/12.D4	Splice	
-SP33	+FRW1	/6.D5	Splice	
-SP35	+FRW1	/28.C1	Splice	
-SP36	+FRW1	/14.E8	Splice	
-SP37	+FRW1	/14.B4	Splice	
-SP38	+FRW1	/28.E8	Splice	
-SP44	+FRW1	/22.C4	Splice	
-SP45	+FRW1	/22.C4	Splice	
-SP50	+FRW1	/28.E2	Splice	
-SP52	+FRW1	/21.E6	Splice	
-SP53	+FRW1	/21.E7	Splice	
-SP54	+FRW1	/6.C6	Splice	
-SP55	+FRW1	/13.C2	Splice	
-SP56	+FRW1	/13.D2	Splice	
-SP62	+FRW1	/27.C1	Splice	

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-SP63	+FRW1	/15.D7	Splice	
-SP64	+FRW1	/15.D8	Splice	
-SP65	+FRW1	/15.E2	Splice	
-SP66	+FRW1	/15.E2	Splice	
-SP67	+FRW1	/22.D2	Splice	
-SP68	+FRW1	/22.D2	Splice	
-SP70	+FRW1	/11.D4	Splice	
-SP71	+FRW1	/5.D3	Splice	
-SP72	+FRW1	/5.D6	Splice	
-SP73	+FRW1	/5.B4	Splice	
-SP74	+FRW1	/5.B4	Splice	
-SP75	+FRW1	/5.E5	Splice	
-SP76	+FRW1	/22.C6	Splice	
-T001	+EN1	/3.A2	Dieselmotor	
-T001	+EN1	/10.F3	Dieselmotor	
-T001	+EN1	/10.F2	Dieselmotor	
-V001	+FRW1		Diode	1000398209
-V002	+FRW1		Diode	1000398209
-V003	+FRW1		Diode	1000398209
-V004	+FRW1		Diode	1000398209
-W11	+FRW1			
-W12	+FRW1			
-X001	+FRW3	/27.D6	Stecker Klimaanlage	1000125826
-X017	+FRW1	/8.D4	Stecker Dieselmotor	1000260163
-X018	+FRW1	/7.E5	Stecker Vorglühanlage	1000308732
-XA01	+STW1	/12.C6	Stecker Anzeigeinstrument	1000347631
-XA02	+STW1	/12.A4	Stecker Anzeigeinstrument	1000347542
-XE03	+FRW1	/15.F7	Stecker Diagnose Dieselmotor	1000163185
-XE04	+FRW1	/15.F2	Stecker Fahrzeugdiagnose	1000312071
-XE10	+FRW3	/25.D6	Stecker Option	1000104431
-XE11	+FRW3	/25.D3	Stecker Option	1000100971

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-XE11.1	+FRW3		Zusatz-Stecker	1000271156
-XJ001	+ST1	/17.C7	Joystick	1000290667
-XJ001	+STW1	/17.C7	Stecker Joystick	1000334152
-XP02	+FRW1	/5.C8	Stecker Sicherungskasten	1000303405
-XP02	+FRW3	/5.C8	Stecker Sicherungskasten	1000260163
-XR01	+FRW1	/18.D5	Stecker Wendekonsole	1000333982
-XR01	+STW1	/18.D5	Stecker Wendekonsole	1000333984
-XR10	+CBW1	/24.B8	Stecker Kabelbaum Kabine	1000105124
-XR10	+FRW3	/24.B8	Stecker Kabelbaum Kabine	1000105122
-XR11	+BAW3	/24.D2	Stecker Kabelbaum Rundumkennleuchte grün	1000051981
-XR11	+FRW1	/24.C2	Stecker Kabelbaum Rundumkennleuchte grün	1000027410
-XS01	+FBW1	/22.D6	Stecker Kabelbaum Beleuchtung vorne	1000105117
-XS01	+FRW1	/22.D6	Stecker Kabelbaum Beleuchtung vorne	1000105113
-XS02	+FRW1	/23.C5	Stecker Kabelbaum Beleuchtung hinten	1000105113
-XS02	+RBW1	/23.C5	Stecker Kabelbaum Beleuchtung hinten	1000105117
-XX00	+RBW1	/23.E5	Steckdose Anhänger	1000085023
-XX00.1	+FRW3	/26.D8	Stecker Zigarettenanzünder	1000027435
-XX00.2	+FRW3	/26.D8	Stecker Zigarettenanzünder	1000027435
-XX01	+FR1	/26.D8	Zigarettenanzünder	1000002902
-XX16	+EBW1	/5.D2	Kabelschuh Starthilfeklemme	1000050031
-Y004	+FR1	/16.C4	Magnetventil rückwärts	
-Y004	+FRW1	/16.C4	Stecker Magnetventil rückwärts	1000027438
-Y005	+FR1	/16.C3	Magnetventil vorwärts	
-Y005	+FRW1	/16.C3	Stecker Magnetventil vorwärts	1000270365
-Y013	+FR1	/20.C3	Magnetventil Hydraulikfunktionsabschaltung	
-Y013	+FRW1	/20.C3	Stecker Magnetventil Hydraulikfunktionsabschaltung	1000027332
-Y031	+FR1	/27.E8	Kupplung Klimakompressor	
-Y031	+FRW3	/27.E8	Stecker Kupplung Klimakompressor	1000085014
-Y038	+FR1	/16.C7	Magnetventil Getriebestufe 1	
-Y038	+FRW1	/16.C7	Stecker Magnetventil Getriebestufe 1	1000270365
-Y039	+FR1	/16.C8	Magnetventil Getriebestufe 2	

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-Y039	+FRW1	/16.C8	Stecker Magnetventil Getriebestufe 2	1000027410
-Y043	+FR1	/19.C8	Magnetventil Feststellbremse	
-Y043	+FRW1	/19.C8	Stecker Magnetventil Feststellbremse	1000027438
-Y070	+FRW1	/14.C8	Stecker Magnetventil Umschaltung Lenkung	1000027410
-Y075	+FR1	/19.E2	Magnetventil Blende	
-Y075	+FRW1	/19.D2	Stecker Magnetventil Blende	1000027410
-Y098	+FR1	/16.C5	Magnetventil Hydromotorverstellung	
-Y098	+FRW1	/16.C5	Stecker Magnetventil Hydromotorverstellung	1000270365
-Y128	+FR1	/20.C2		
-Y128	+FRW1	/20.C2	Stecker Lastaufschaltventil	1000027410
-Y155	+FRW1	/14.C7	Stecker Magnetventil Umschaltung Lenkung	1000027332

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7.7 Wiring diagram DV60, DV90 and DV100 with Canopy

Stromlaufplan D24

Canopy
Deutz DOC

ab Seriennummer WNCD2401CPAL00353 (DV60),
WNCD2402APAL00517 (DV90) und
WNCD2403VPAL00217 (DV100)

Ortskennzeichen

FRW1 Hauptkabelbaum Deutz DOC
FRW2 Hauptkabelbaum ROPS
FRW3 Hauptkabelbaum Kabine

STW1 Kabelbaum Wendekonsole

BAW1 Kabelbaum Beleuchtung ROPS
BAW2 Kabelbaum Beleuchtung Canopy
BAW3 Kabelbaum Rundumkennleuchte grün

RBW1 Kabelbaum StVzO Heckseite (Mulde)
FBW1 Kabelbaum StVzO Frontstoßstange

CBW1 Kabelbaum Kabine

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Deckblatt

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3	Steuergeräte	
4	Steuergeräte	
5	Haupt-Versorgung	
6	Versorgung Steuergeräte	
7	Starten, Glühen	
8	Dieselmotorelektronik	
9	Dieselmotorelektronik	
10	Dieselmotorelektronik	
11	Auto Stop	
12	IO Display, Tankgeber, Lade-Kontrolle	
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14	Drehsitzfunktionen	
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21	StVzO Beleuchtung	Blinkanlage
22	StVzO Beleuchtung	Frontstoßstange
23	StVzO Beleuchtung	Mulde
24	Arbeitsscheinwerfer, Rundumkennleuchte	
25	Stecker Zusatzoption	
26	Wischer, Radio, Steckdose	
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Bearb.		LNZhartp
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-	Betriebsmittelverzeichnis	-

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Inhaltsverzeichnis
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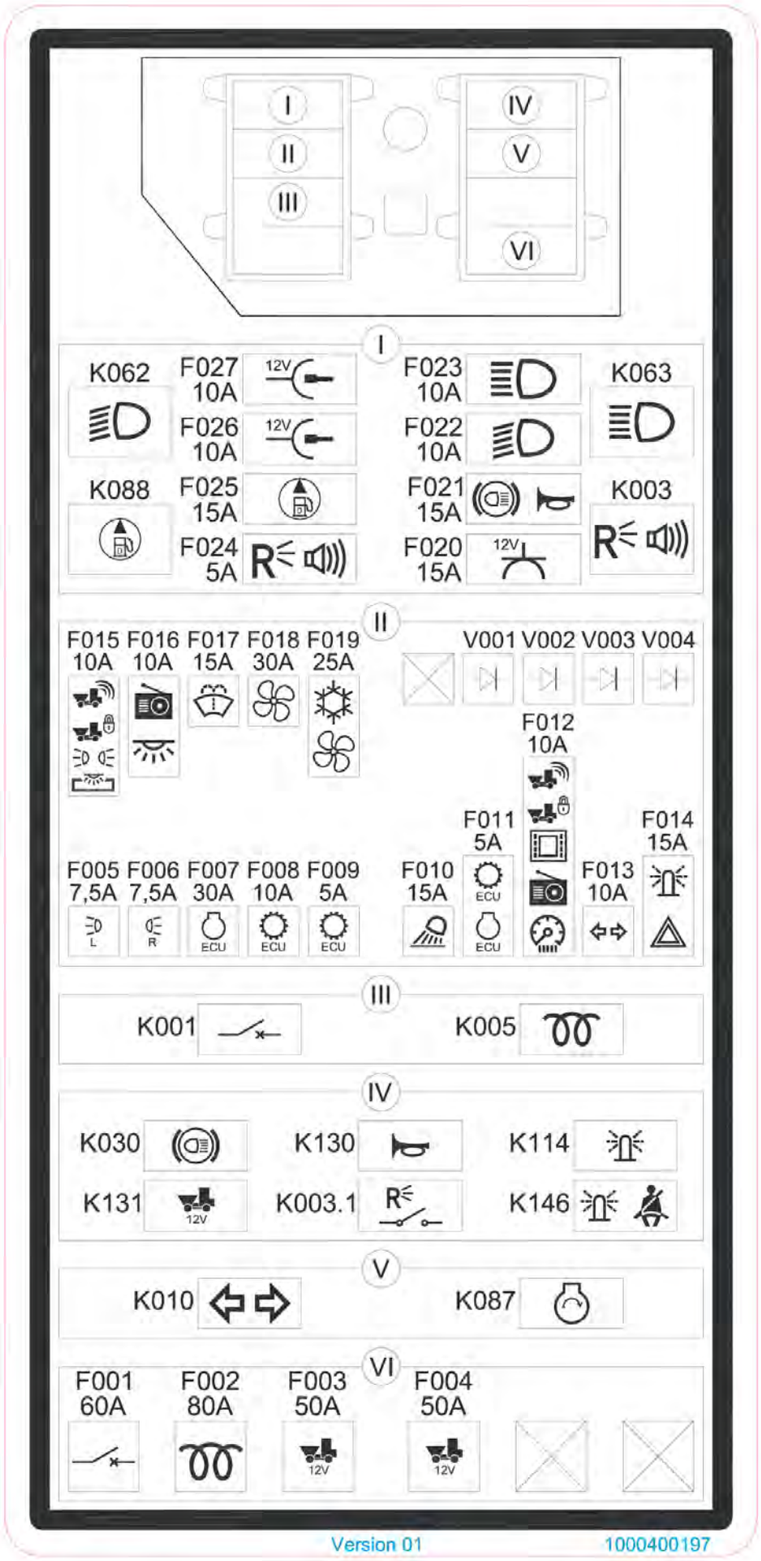

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Sicherungskasten

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11			
12			
13	Collant Level		/10.A6
14			
15	Clutch Switch		/9.F7
18			
19			
21			
22			
25			
26	Relay Fuelpump -		/9.F4
27			
28	Relay Starter +		/7.A3
29	Supply		/10.A6
31			
32			
34			
35	Start Switch		/7.F2
37			
39			
40			
41			
42			
44	DPF/EGR Sensor 5V		/9.A2
45			
48			
49			
57	Water in Fuel Switch		/10.A1
61	Fuel Low Pressure		/10.A3
64	Sensor Supply		/10.A2
65			
67			
68	Supply		/9.A7
69			
70			
71			
73	Relay Starter -		/7.A4
74			
79			
80			
82	EGR Sensor GND		/9.A2
83			
85	EGR Sensor		/9.A1
86	Air Filter		/10.A7
87	Sensor GND		/10.F7
88	Ign Switch		/6.F6
90	Relay Fuelpump +		/9.A4
91			
92			
93			
46			
63			
62			
16			
10			
66			
76	CAN 0	Low	/15.A4
54		High	
53	CAN 1	Low	/15.A8
75		High	
1			
3	Battery +		/6.F1
5			
2			
4	Battery -		/28.A5
6			

+ST1 -P014		Display 7"		
PIN	CONNECTOR	DESCRIPTION	COMMENTS	Ref-PAGE
1	**XA01**	VBAT	9...36V	/12.D6
2		GND	Ground	
3	XA01	CAN1_L	CAN 1	/15.A6
4		CAN1_H		
5	XA01	CAN2_L	CAN 2	
6		CAN2_H		
7		V_USB_BUS	Power USB	
10		USB_GND	Ground	
8		USB_D-	Datawire USB	
9		USB_D+		
1	**XA02**	Ladekontrolle	0...5V	/12.A4
2	XA02	Fehlerlampe	0...5V	/13.A2
3	XA02	Standlicht	0...5V	/13.A3
4	XA02	Abblendlicht	0...5V	/13.A6
5	XA02	Tankgeber	0...5V	/12.A1
6	XA02	A_Input_6	0...5V	
7	XA02	GND	Ground	
8	XA02	Fernlicht	-1V - 1V LOW	/13.A4
9	XA02	Blinker	3,5V - VBAT HIGH	/12.A6
10	XA02	Taster 1	5V: 0,02...10kHz	/12.F7
11	XA02	Taster 2	5V: 0,02...10kHz	/12.F8
12	XA02	Umschaltung Blinker 1	12V 0,5A	/14.A1
13	XA02	Umschaltung Blinker 2	12V 0,5A	/14.A2
14	XA02	Summer	12V 0,5A	/13.A7
1	**X102**	Video Signal_1	composite CCITT video input PAL 50Hz colour coding / NTSC. input Level 1Vpp. 75Ohms	
2	X102	Video Signal_2		
3	X102	Video Signal_3		
4	X102	Video Signal_4		
5	X102	Video Bezug_GND	Video Ground	
1	**X103**	Eth_TX+	Datawire Ethernet	
2	X103			
3	X103			
4	X103			

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Steuergeräte

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

3

A3

+FR1
-N001

N001.1
Connector 1

1	---		
2	OUT_36		
3	Freigabe Arbeitsfunktion 1 HS	/20.A3	OUT_20
4	OUT_34		
5	OUT_33		
6	OUT_22		
7	OUT_21		
8	IN_68		
9	IN_75		
10	Schalter Auto Stop red.	/11.F6	IN_73
11	IN_74		
12	Drehzahl Hydromotor	/16.A2	IN_71
13	Schalter Auto Stop	/11.F5	IN_72
14	IN_42		
15	Trockenlaufschutz	/12.A2	IN_43
16	Öltemperatur	/16.A1	IN_63
17	IN_64		
18	IN_65		
19	IN_40		
20	Kabinenheizung aktiv	/11.F2	IN_41
21	IN_62		
22			
23	GND	/28.A2	
24			
25	---		
26	---		
27	OUT_35		
28	Parkbremse HS	/19.A8	OUT_19
29	---		
30	---		
31	---		
32	IN_70		
33	IN_69		
34	IN_18		
35	IN_17		
36	IN_15		
37	IN_16		
38	Sensor Inchventil	/18.F7	IN_52
39	Sitzkontaktschalter 1	/18.F2	IN_38
40	Getriebe Gang 2 eingelegt	/16.F5	IN_44
41	Sitzkontaktschalter 2	/18.F3	IN_39
42	IN_23		
43	IN_22		
44	IN_20		
45	GND_S2	/16.F1	
46	GND_S1	/28.E8	
47	Dieselmotor Startsignal	/7.F3	IN_4
48	IN_6		
49	---		
50	---		
51	Getriebe Stufe 2	/16.A8	OUT_5
52	---		
53	Pumpe vorwärts HS	/16.A3	OUT_1
54	Hydraulikmotor HS	/16.A5	OUT_3
55	Getriebe Gang 1 eingelegt	/16.F6	IN_45
56	IN_46		
57	Lenkrichtung 1 red.	/14.F4	IN_10
58	Gaspedal red.	/18.F5	IN_8
59	Gaspedal	/18.F5	IN_7
60	CAN 4 L		
61	CAN 4 H		
62	CAN 3 L		
63	CAN 3 H		
64	IN_33		
65	Strassenfahrt red.	/20.F5	IN_61
66	IN_34		
67	Schalter Feststellbremse	/19.F5	IN_58
68	IN_53		
69	Schalter Feststellbremse red.	/19.F4	IN_59
70	Strassenfahrt	/20.F4	IN_60
71	IN_56		
72	IN_47		
73	---		
74	---		
75	Lastaufschaltventil	/20.A2	OUT_6
76	---		
77	Pumpe rückwärts HS	/16.A4	OUT_2
78	Getriebe Stufe 1	/16.A7	OUT_4
79	Lenkrichtung 1+2 LS	/14.F7	OUT_41
80	Freigabe Arbeitsfunktion 1 LS	/20.F3	OUT_42
81	---		
82	---		
83	Parkbremse LS	/19.F8	OUT_37
84	Pumpe vorwärts LS	/16.F3	OUT_38
85	Pumpe rückwärts LS	/16.F4	OUT_39
86	Hydraulikmotor LS	/16.F5	OUT_40
87	---		
88	---		
89	Freigabe Leistungsverbraucher	/11.A1	OUT_24
90	Abschaltung Rückfahrlicht	/14.A2	OUT_23
91	IN_48		
92	IN_49		
93	Bremslicht	/23.A1	OUT_26
94	Rückwärts	/23.A1	OUT_25
95	---		
96	IN_50		

N001.2
Connector 2

1			
3			
4	UB	/6.F3	
5			
6			
2			
7			
20	GND	/28.A3	
33			
46			
8	IN_67		
9	IN_3		
10	IN_14		
11	IN_19		
12	IN_28		
13	IN_66		
14	Lenkrichtung 1	/14.F3	IN_9
15	CAN 1 H	/15.A4	
16	CAN 1 L		
17	Schalter Drosselventil Feedback red.	/19.F1	IN_36
18	IN_54		
19	VSS_1	/17.A6	
21	Fehlerlampe	/13.F2	OUT_47
22	IN_13		
23	IN_5		
24	IN_21		
25	IN_27		
26	Leistungsverbraucher ein	/11.F3	IN_37
27	Parkbremstest	/19.F6	IN_57
28	Zündung	/6.F8	HW-INH
29	IN_55		
30	WAKE		
31	Schalter Drosselventil Feedback	/19.F1	IN_35
32	VSS_2	/14.A4	
34	Wippe Fahren red.	/17.F7	IN_26
35	IN_24		
36	IN_2		
37	Pumpenleistung (ECO)	/17.F2	IN_30
38	Lenkrichtung 2 red.	/14.F5	IN_12
39	IN_31		
40	IGN	/6.F7	
41	Lenkrichtung 2	/14.A7	OUT_28
42	---		
43	Lenkrichtung 1	/14.A6	OUT_27
44	---		
45	UB_CPU	/6.F4	
58			
47	Wippe Fahren	/17.F6	IN_25
48	IN_29		
49	IN_51		
50	Schalter 2. Gang	/17.F1	IN_1
51	IN_32		
52	Lenkrichtung 2	/14.F5	IN_11
53	CAN 2 H	/15.D1	
54	CAN 2 L		
55	VSS_3	/18.A7	
56	---		
57	---		

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Steuergeräte

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

4

A3

+FRW1
-BAT1
1/1
1
+FRW1
-N025.1
max.50A
-F001#1
-F002#1
-F003#1
-F004#1
F
E
D
C
B
A
799
101
801
802
+FRW1
-SP73
+FRW1
-SP74
97
87
789
+FRW1
-S008
1/1
+FR1
-S008
1 0
2
1
-S008
+EBW1
1/1
+EBW2
-S008
1/1
1000370730
+EBW1
-S008.1
1/1
1000370734
1000370731
+EBW2
-M001
1/1
30
+EN1
-T001
M
-G001
+FRW1
1/1
B
+EN1
-T001
G
/12.F4
+EBW1
-XX16
1/1
Starthilfeklemme
+EBW1
-G002
1/1
+FR1
-G002
30
31
+EBW2
-BAT_GND
1/1
1000370732
+EBW2
-GND
1/1
+FR1
-GND
GND
+EBW1
-BAT_GND
1/1
1000404324
+EBW1
-GND
1/1
Dieselmotor
+FRW1
-N025.2
1.1/8
+FRW1
-K001
/11.F1
87
30
-N025.2
+FRW1
1.3/8
96
+FRW1
-SP71
569,260,259,811,812,731
12V/15_1
/22.A6
/22.A6
/24.A5
/26.A3
/27.A1
/27.A1
87
30
85
86
+FRW1
-K131#1
+FRW1
-N025.5
4.3/30
-N025.5
+FRW1
4.5/30
12V/15
/5.F5
788
+FRW1
-N025.3
8.1/40
+FRW1
-F012#1
-N025.3
+FRW1
8.2/40
786
+FRW1
-SP22
787
12V/15
/5.F5
73,103
785
+FRW1
-XP02
1/62
-XP02
+FRW2
1/62
103
+FRW1
-XR01
11/35
-XR01
+STW1
11/35
105
+STW1
-SP09
147,152,153,154,155,
243,298,250
F012
/12.A3
/12.A7
/17.A1
/18.A3
/24.A2
73
F012
/6.A8
+FRW2
-SP02
496
F012
/11.A7
/19.A3
/20.A6
/24.A4
/25.A5
131,132,301,302,329,
447,448,558
182,183,244,889
F012
/15.C1
/17.A5
+FRW1
-XP02
58/62
57/62
-XP02
+FRW2
58/62
57/62
91
90
+FRW2
-S001.1
1/4
2/4
30
+FR1
-S001
15/54
-S001.2
+FRW2
5/6
6/6
94
95
+FRW2
-XP02
59/62
60/62
-XP02
+FRW1
59/62
60/62
792
791
+FRW1
-SP75
772,787,788
12V/15
/5.A7
/5.A8
/6.A6
733,582,299,255,773,783,784,534
12V/30
/7.A5
/6.A2
/6.A3
/6.A5
/6.A5
/21.A3
/22.A3
/23.A2
/25.A1
/26.A8
+FRW1
-N025.5
4.1/30
+FRW1
-K131
-N025.5
+FRW1
4.2/30
108,732
12V/30
/9.A5
/26.A5
+FRW1
-SP72
790
254,686,318
12V/15_1
/21.A3
/23.A4
/25.A6
736
GND
/28.C4
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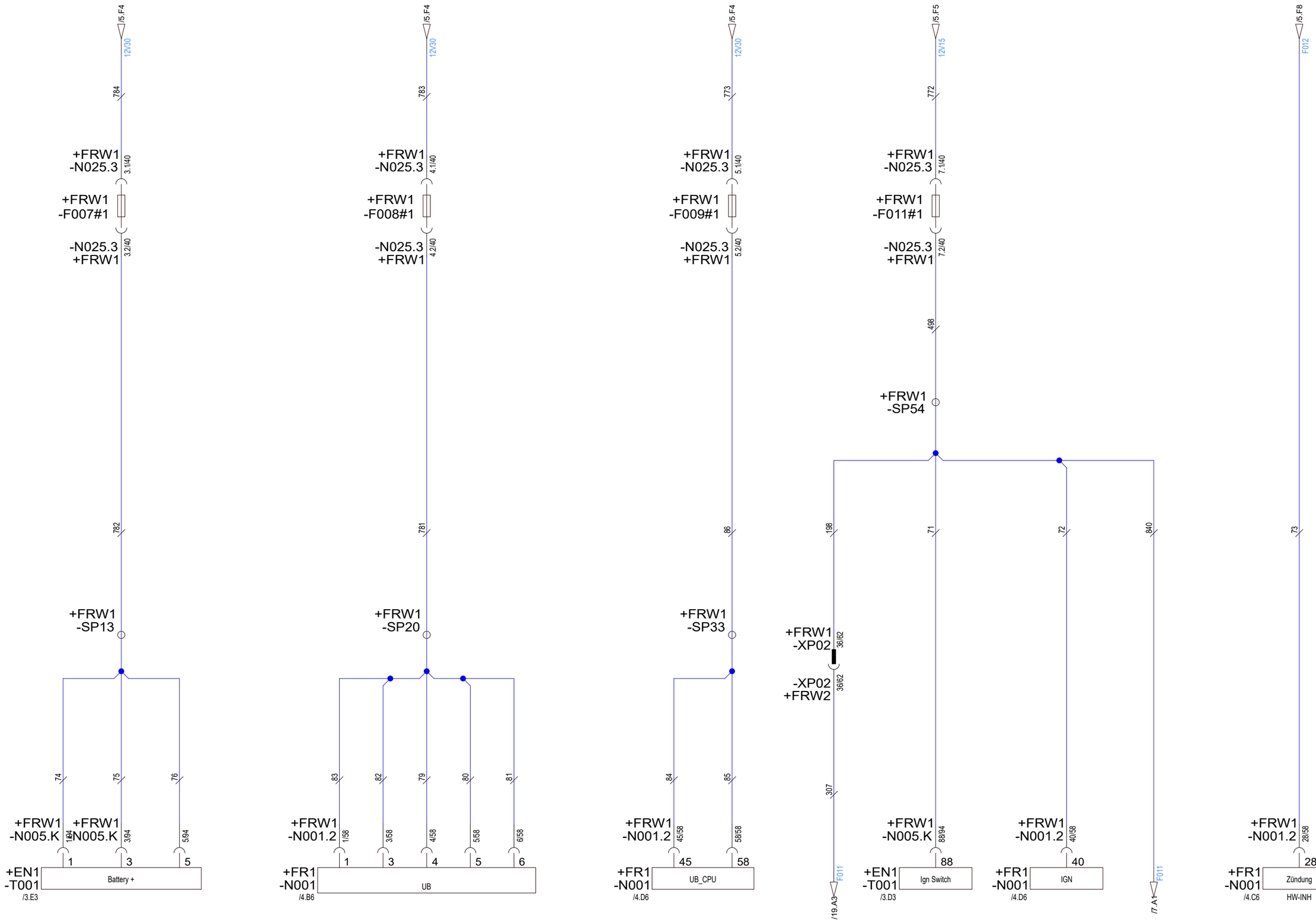
Haupt-Versorgung
Mat.-Nr. 1000388197
Doc.-Nr. 2060099416
Revision 02
Ersatz für 01
Gewicht [kg]
5
A3



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Versorgung Steuergeräte

Mat.-Nr. 1000388197

Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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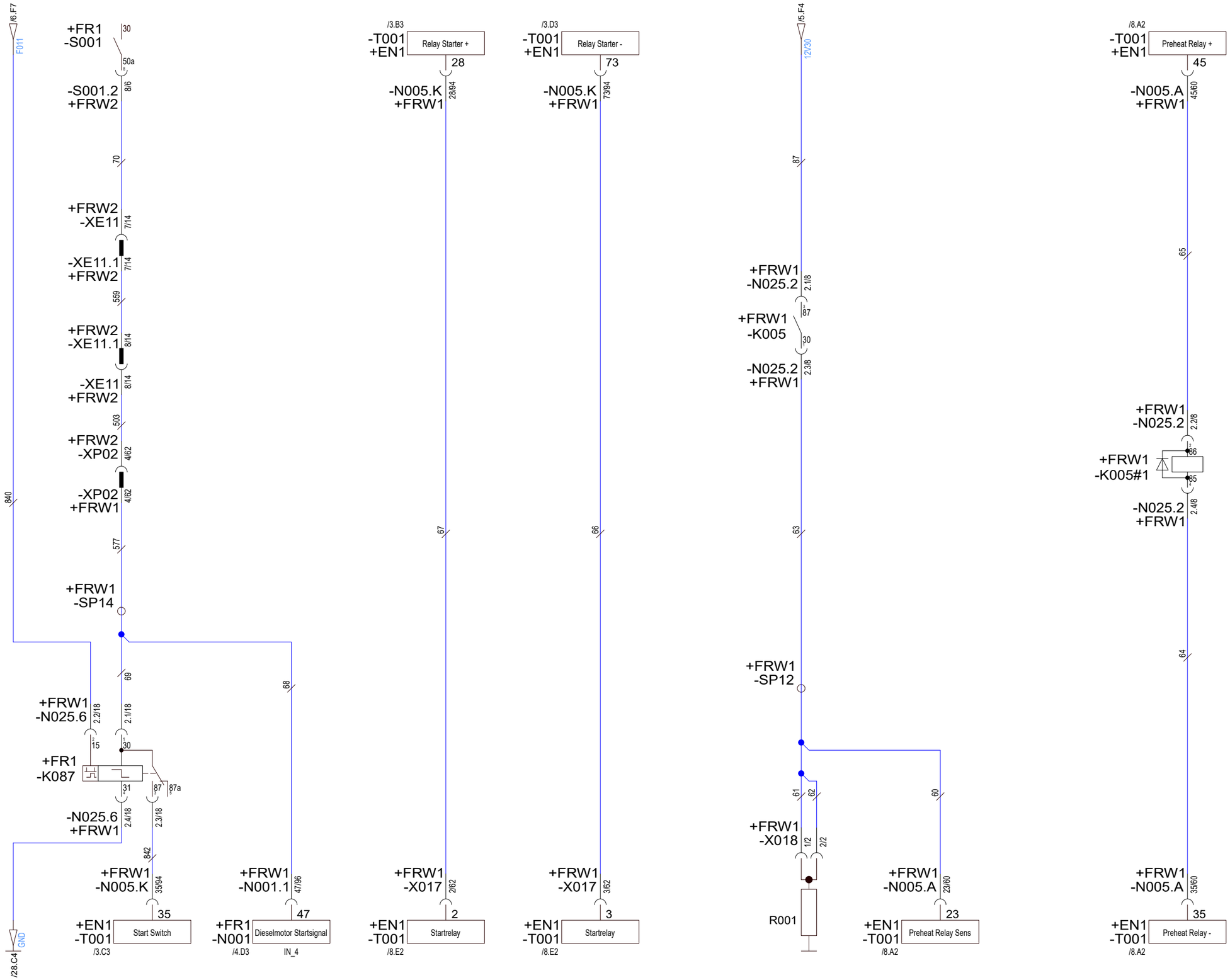
A3



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Starten, Glühen

Mat.-Nr. 1000388197 | Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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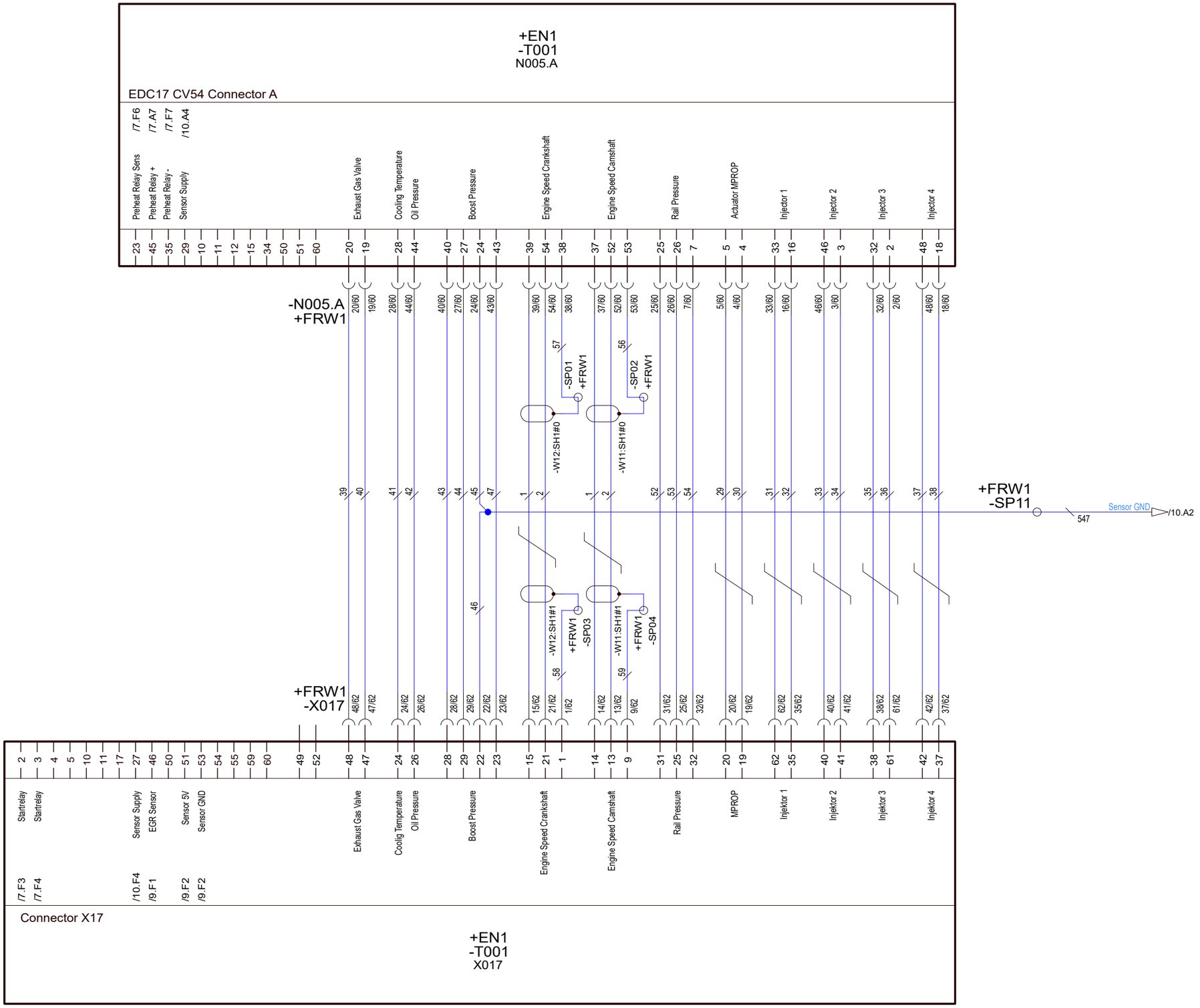
A3



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Dieselmotorelektronik

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Revision	02
Ersatz für	01
Gewicht [kg]	

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A3

/3.D3
-T001 +EN1 EGR Sensor
85
-N005.K +FRW1 85/94
48
+FRW1 -X017 46/62
46
+EN1 -T001 EGR Sensor
/8.E2

/3.C3
-T001 +EN1 DPF/EGR Sensor 5V
44
-N005.K +FRW1 44/94
49
+FRW1 -X017 50/62
50
+EN1 -T001 Sensor 5V
/8.E2

/3.D3
-T001 +EN1 EGR Sensor GND
82
-N005.K +FRW1 82/94
50
+FRW1 -X017 51/62
51
+EN1 -T001 Sensor GND
/8.E3

/3.D3
-T001 +EN1 Relay Fuelpump +
90
-N005.K +FRW1 90/94
106
+FRW1 -N025.4 3.3/36
86
+FRW1 -K088#1
85
-N025.4 +FRW1 3.5/36
107
+FRW1 -N005.K 26/94
26
+EN1 -T001 Relay Fuelpump -
/3.B3

/5.F5
12/30
108
+FRW1 -N025.4 10.10/36
+FRW1 -F025#1
-N025.4 +FRW1 10.14/36
759
+FRW1 -N025.4 3.1/36
+FRW1 -K088
2 4
-N025.4 +FRW1 3.2/36
505
+FRW1 -XP02 49/62
-XP02 +FRW2 49/62

109
+FRW2 -M009.1 1/1
+EN1 -T001 M
1/1
-M009.2 +FRW2
110
/28.C7 GND

/3.C3
-T001 +EN1 Supply
68
-N005.K +FRW1 68/94
51
+FRW1 -N005.K 15/94
15
+EN1 -T001 Clutch Switch
/3.B3

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Dieselmotorelektronik

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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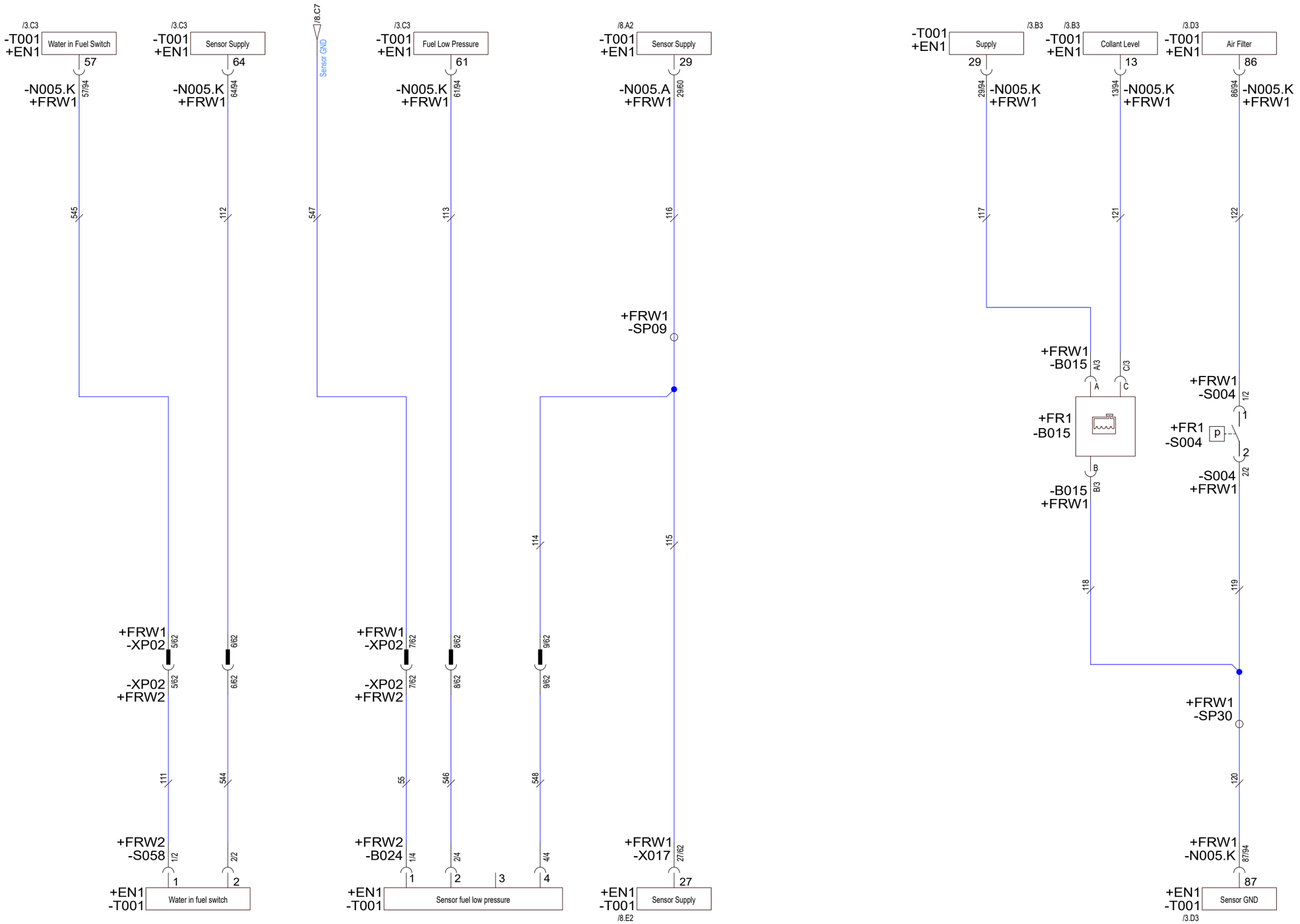
A3



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Dieselmotorelektronik

Mat.-Nr. 1000388197

Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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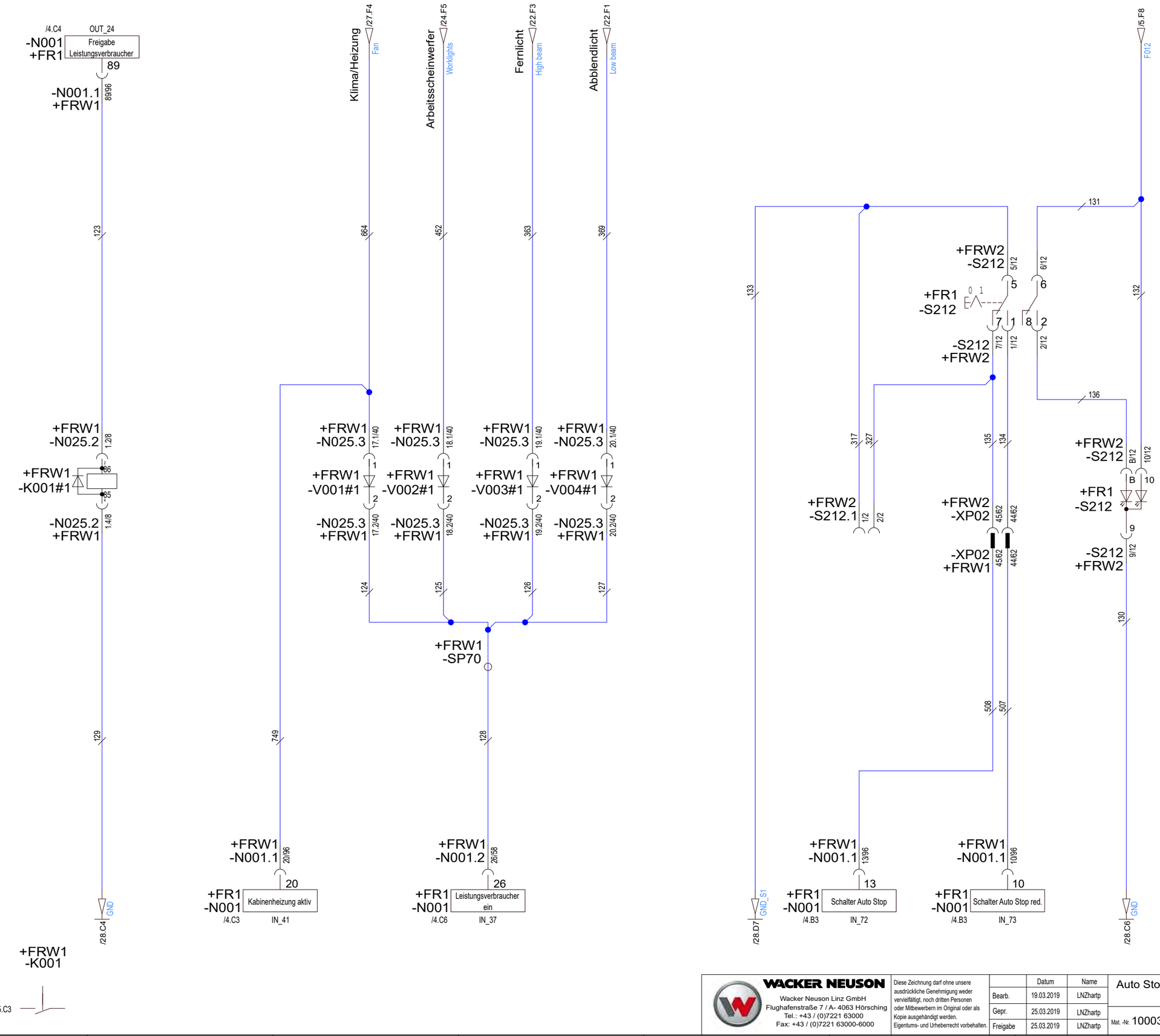
A3



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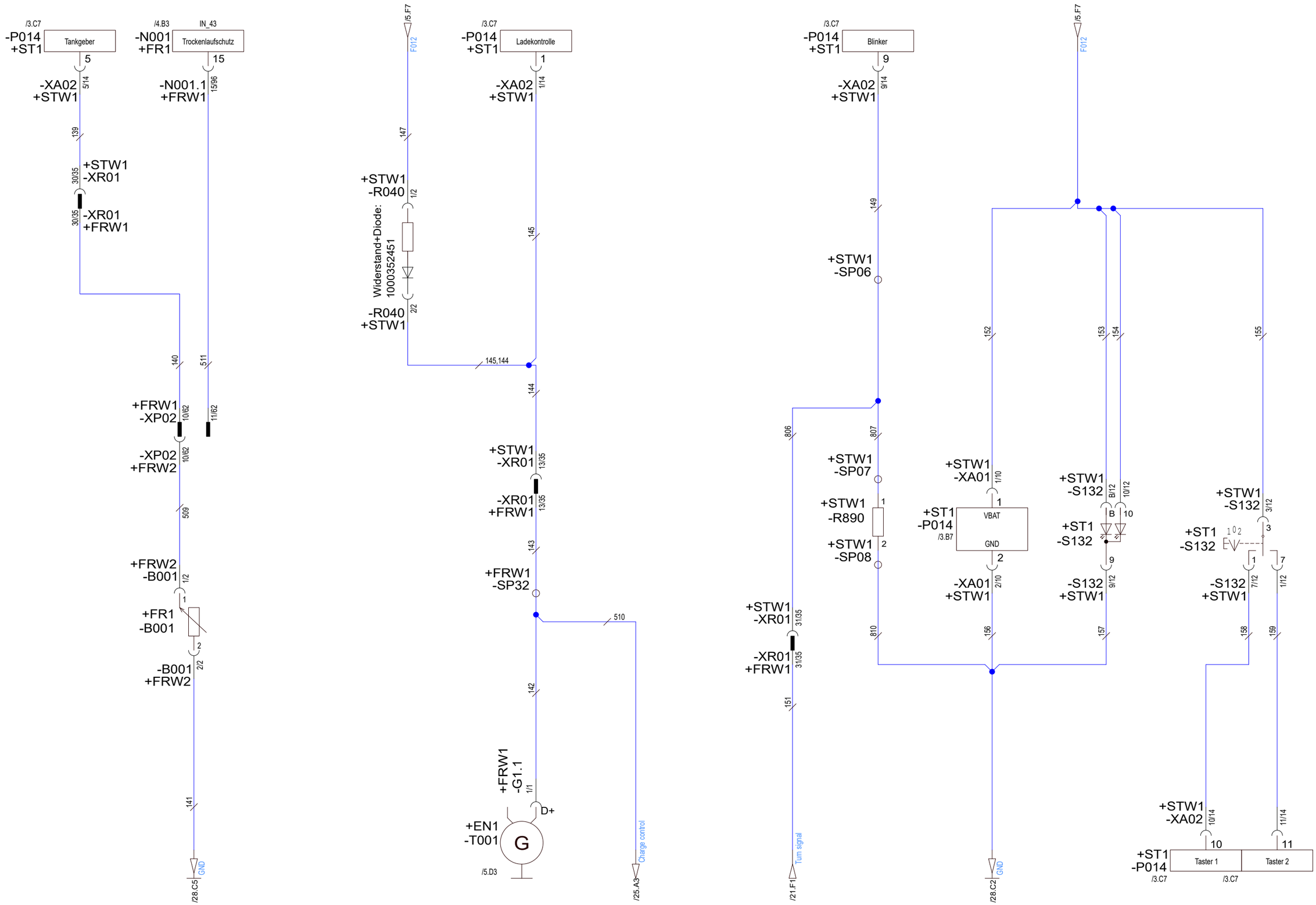
Auto Stop

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

11

A3



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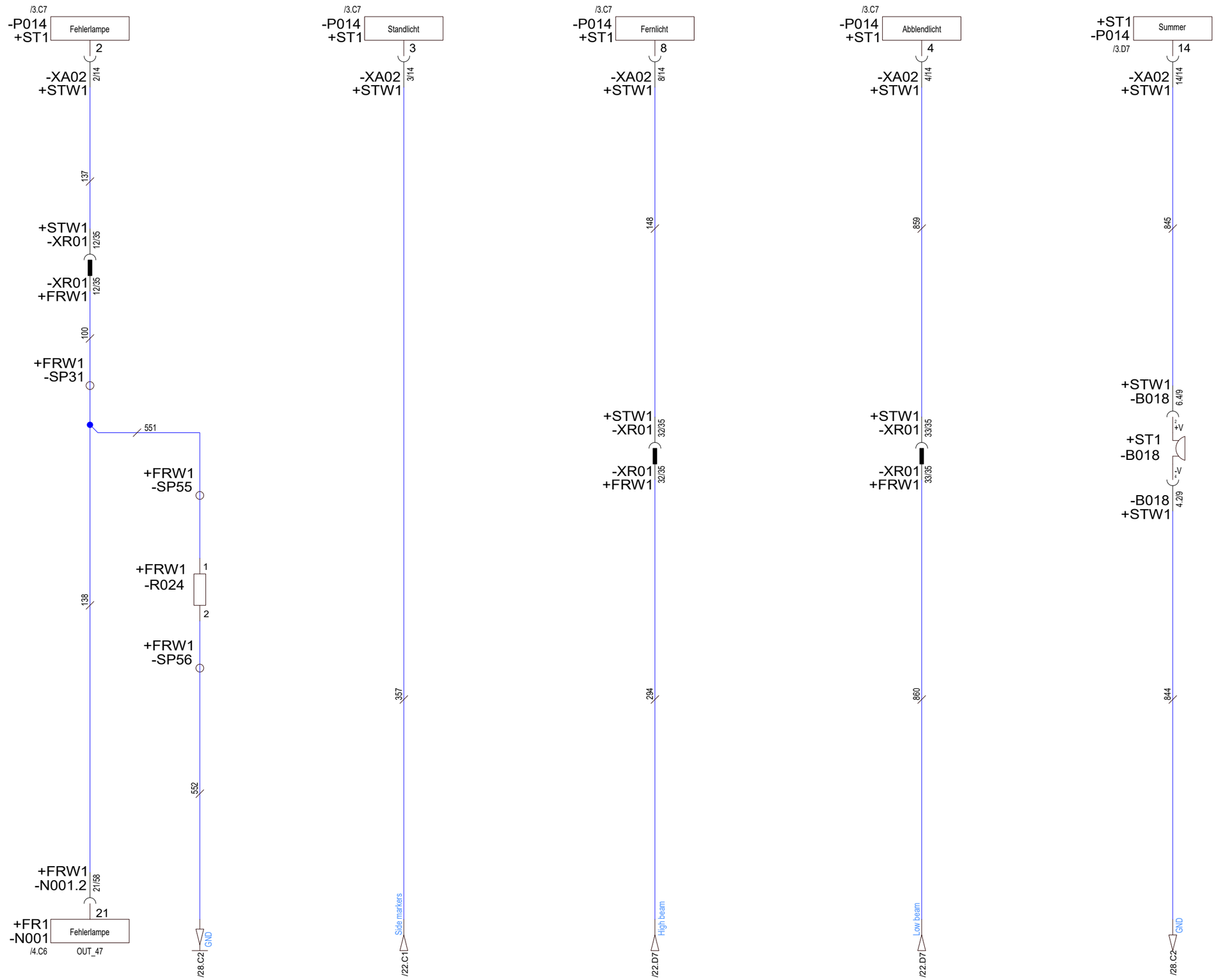
	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

IO Display, Tankgeber, Lade-Kontrolle

Revision	02
Ersatz für	01
Gewicht [kg]	
Mat.-Nr.	1000388197
Doc.-Nr.	2060099416

12

A3



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		Bearb.	19.03.2019	LNZhartp			Ersatz für	01	
		Gepr.	25.03.2019	LNZhartp			Gewicht [kg]		A3
		Freigabe	25.03.2019	LNZhartp	Mat.-Nr. 1000388197	Doc.-Nr. 2060099416			

+ST1
-P014 Umschaltung Blinker 1
/3.D7 12
-XA02 12/14
+STW1
162
+STW1
-K160 3/5
+STW1
-K160
/14.F1
-K160 5/5
+STW1
160
/28.C2 GND

+ST1
-P014 Umschaltung Blinker 2
/3.D7 13
-XA02 13/14
+STW1
163
+STW1
-K160.1 3/5
+STW1
-K160.1
/14.F2
-K160.1 5/5
+STW1
161

/4.C4 OUT_23
-N001
+FR1 Abschaltung Rückfahricht
90
-N001.1 90/96
+FRW1
164
+FRW1
-N025.5 5.3/30
+FRW1
-K003.1#1
-N025.5 5.5/30
+FRW1
735
/28.C4 GND

/4.D6
-N001
+FR1 VSS_2
32
-N001.2 32/58
+FRW1
166
304
+FRW1
-SP37

167
+FRW1
-S102 3/4
+FR1
-S102
/14.F3
-S102 4/4
+FRW1
171
+FRW1
-N001.2 14/58
14
+FR1
-N001 Lenkrichtung 1
/4.C6 IN_9

168
+FRW1
-S102 1/4
+FR1
-S102
/14.F3
-S102 2/4
+FRW1
172
+FRW1
-N001.1 57/96
57
+FR1
-N001 Lenkrichtung 1 red.
/4.E3 IN_10

169
+FRW1
-S103 3/4
+FR1
-S103
/14.F4
-S103 4/4
+FRW1
173
+FRW1
-N001.2 52/58
52
+FR1
-N001 Lenkrichtung 2
/4.E6 IN_11

170
+FRW1
-S103 1/4
+FR1
-S103
/14.F4
-S103 2/4
+FRW1
174
+FRW1
-N001.2 38/58
38
+FR1
-N001 Lenkrichtung 2 red.
/4.D6 IN_12

+FRW1
-XP02 13/62
-XP02 13/62
+FRW1
512
/19.A5 VSS_2

/4.D6 OUT_27
-N001
+FR1 Lenkrichtung 1
43
-N001.2 43/58
+FRW1
175
+FRW1
-Y155 1/2
1
2
-Y155 2/2
+FRW1
177

/4.D6 OUT_28
-N001
+FR1 Lenkrichtung 2
41
-N001.2 41/58
+FRW1
176
+FRW1
-Y070 1/2
1
2
-Y070 2/2
+FRW1
178
+FRW1
-SP36
179
+FRW1
-N001.1 79/96
79
+FR1
-N001 Lenkrichtung 1+2 LS
/4.B4 OUT_41

Y155: Lenkung für Fahrtrichtung Frontstoßstange
Y070: Lenkung für Fahrtrichtung Mulde

+STW1
-K160
/14.D1
/21.C6

+STW1
-K160.1
/14.D2
/21.C7

+FR1
-S102
/14.C3
/14.C4

+FR1
-S103
/14.C5
/14.C5

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

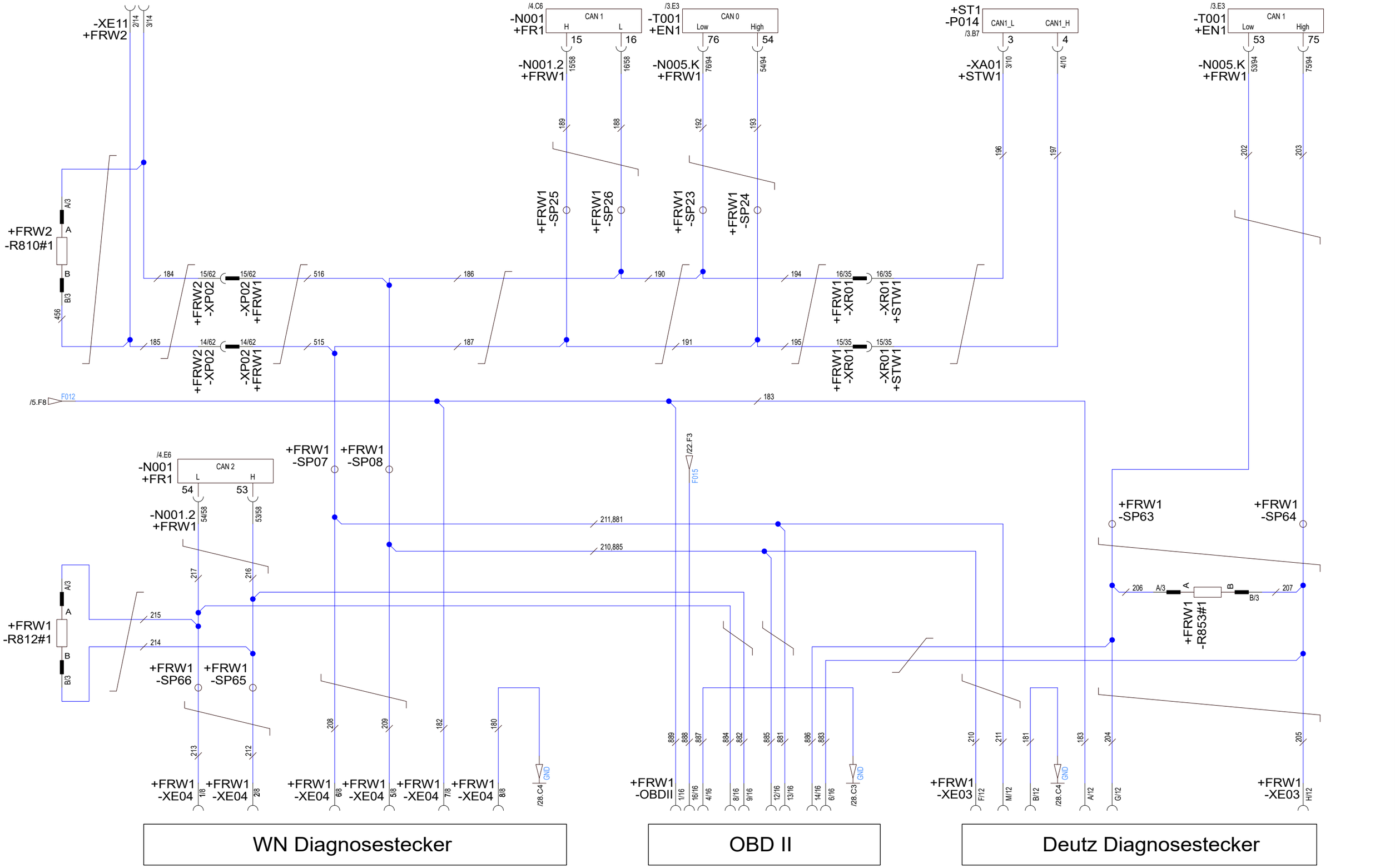
Drehsitzfunktionen

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

14

A3



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Freigabe	25.03.2019	LNZhartp

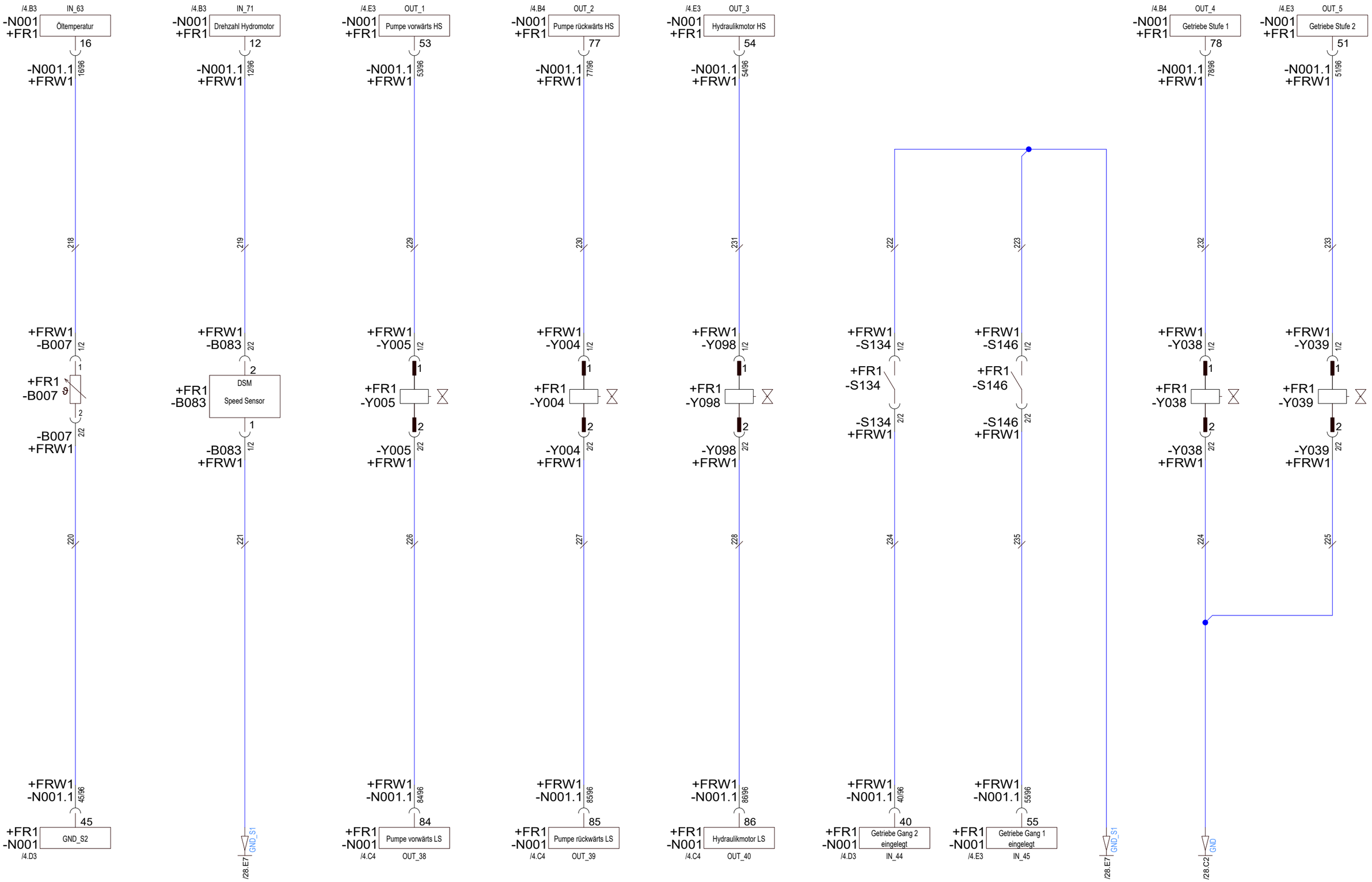
CAN

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

15

A3



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Freigabe	25.03.2019	LNZhartp

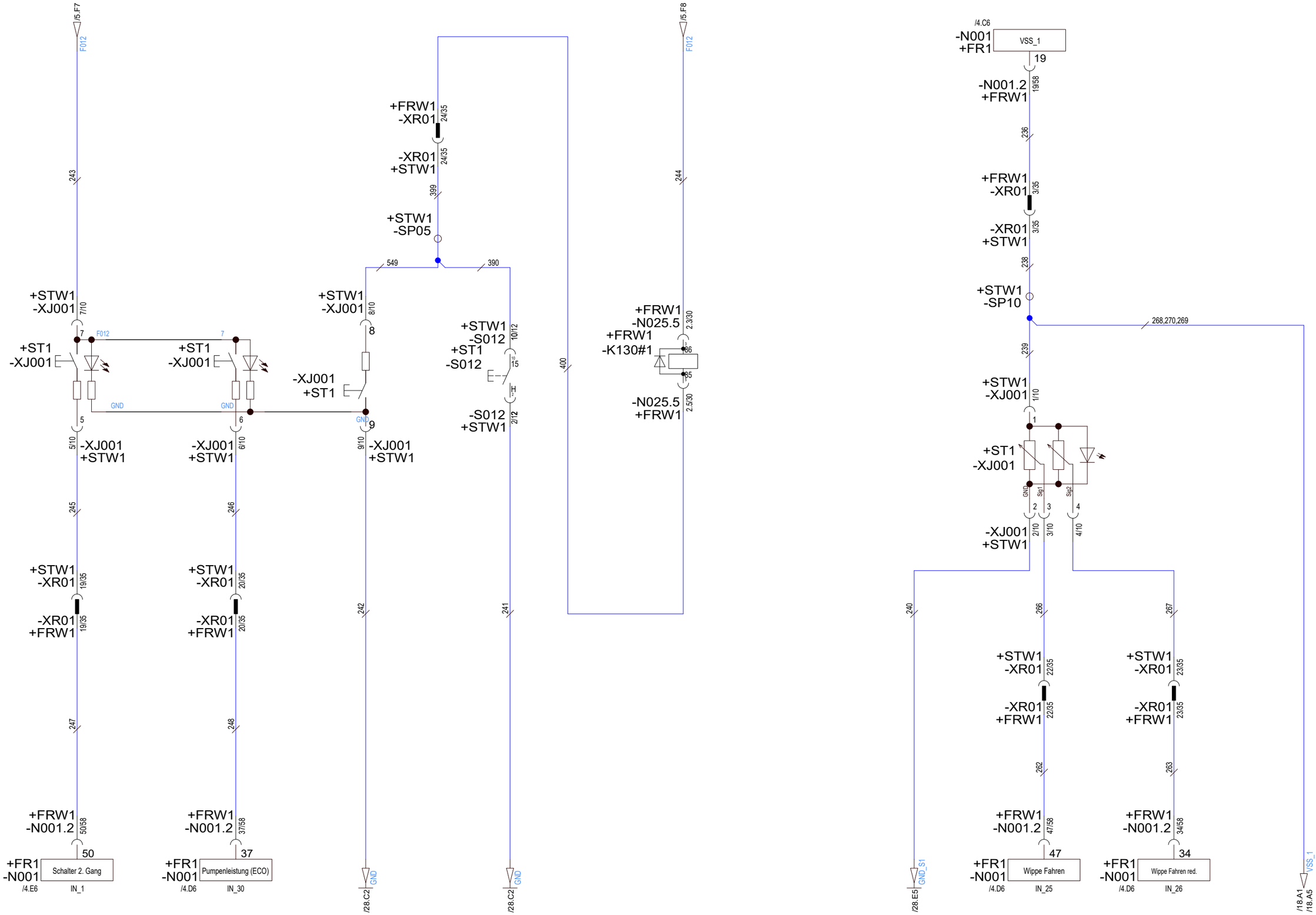
Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

16

A3



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Freigabe	25.03.2019	LNZhartp

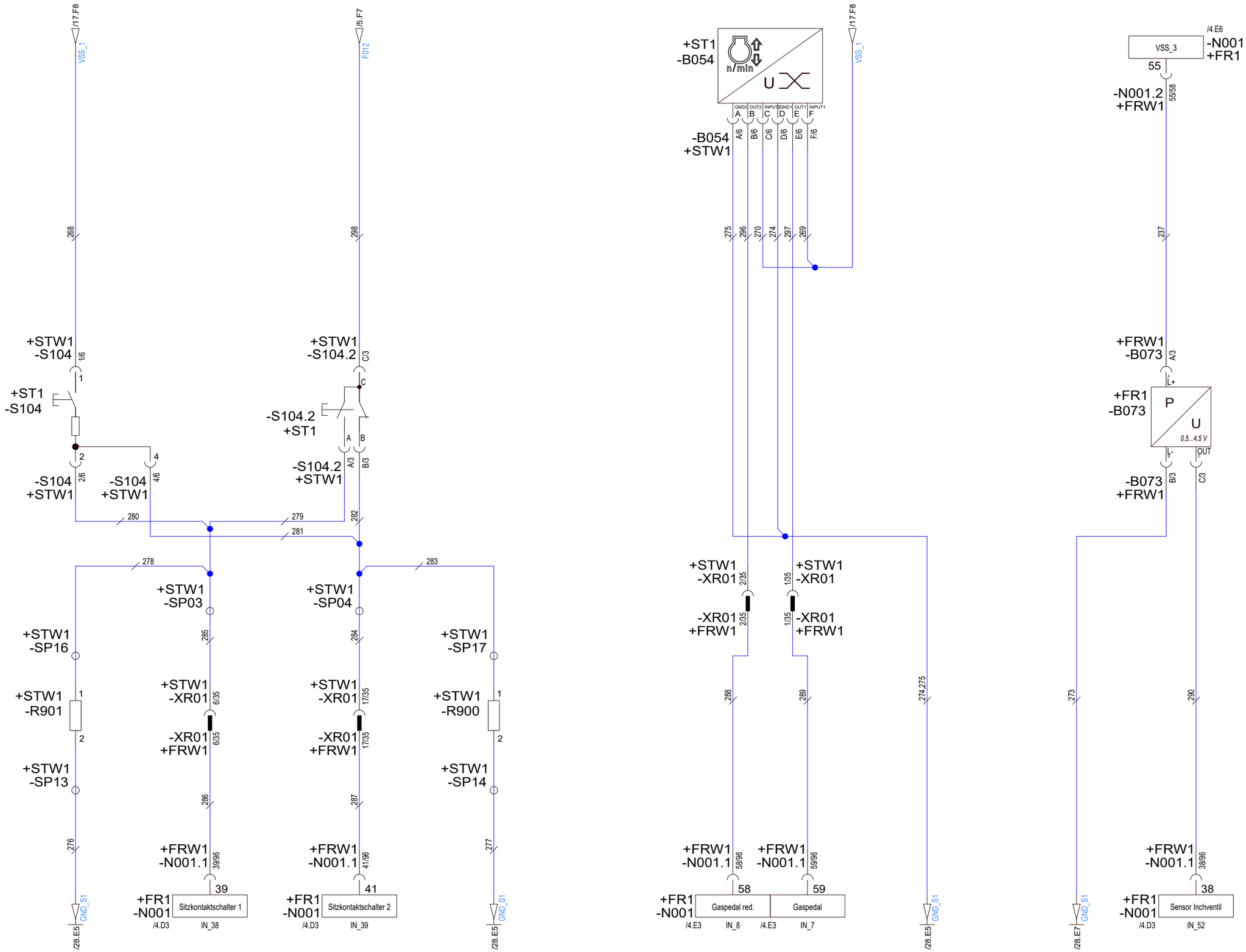
Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

17

A3



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Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

18

A3

/6.F5
FD11
/5.F8
FD12
307
301,302
+FRW2
-S065
6/12
+FR1
-S065
6
8
2
-S065
+FRW2
8/12
2/12
491
497
560
+FRW2
-SP06
+FRW2
-XP02
2/62
-XP02
+FRW1
2/62
3/62
3/62
520
+FRW1
-SP10
521
+FRW1
-Y075
1/2
1
+FR1
-Y075
2
-Y075
+FRW1
2/2
499
379
295
+FRW1
-N001.2
17/58
31/58
17
31
+FR1
-N001
Schalter Drosselventil Feedback red.
/4.C6
IN_36
Schalter Drosselventil Feedback
/4.D6
IN_35
GND
/28.C2
+FRW2
-R902
1
2
+FRW2
-SP07
326
301
302
+FRW2
-S065
B/12
B
10
+FR1
-S065
9
-S065
+FRW2
9/12
+FRW2
-S210
10/12
10
+FR1
-S210
9
-S210
+FRW2
9/12
570
311,570
312
GND
/28.C6
/14.F6
VSS_2
512
+FRW2
-R025
1/2
Widerstand 22 Ohm
SAP: 1000398308
-R025
+FRW2
2/2
305
+FRW2
-SP01
306
308
309
+FRW2
-S065
5/12
+FR1
-S065
0 1
5
7
1
-S065
+FRW2
7/12
1/12
+FRW2
-S210
5/12
5
-S210
+FR1
1
-S210
+FRW2
1/12
518
517
319
+FRW2
-XP02
17/62
16/62
+FRW2
-XP02
18/62
-XP02
+FRW1
17/62
16/62
-XP02
+FRW1
18/62
93
92
99
+FRW1
-N001.1
69/96
+FRW1
-N001.1
67/96
+FRW1
-N001.2
27/58
69
67
27
+FR1
-N001
Schalter Feststellbremse red.
/4.B4
IN_59
+FR1
-N001
Schalter Feststellbremse
/4.B4
IN_58
+FR1
-N001
Parkbremstest
/4.C6
IN_57
VSS_2
/20.A5
/4.C3
OUT_19
-N001
+FR1
Parkbremse HS
28
-N001.1
+FRW1
28/96
321
+FRW1
-Y043
1/2
1
+FR1
-Y043
2
-Y043
+FRW1
2/2
320
+FRW1
-N001.1
83/96
83
+FR1
-N001
Parkbremse LS
/4.B4
OUT_37

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

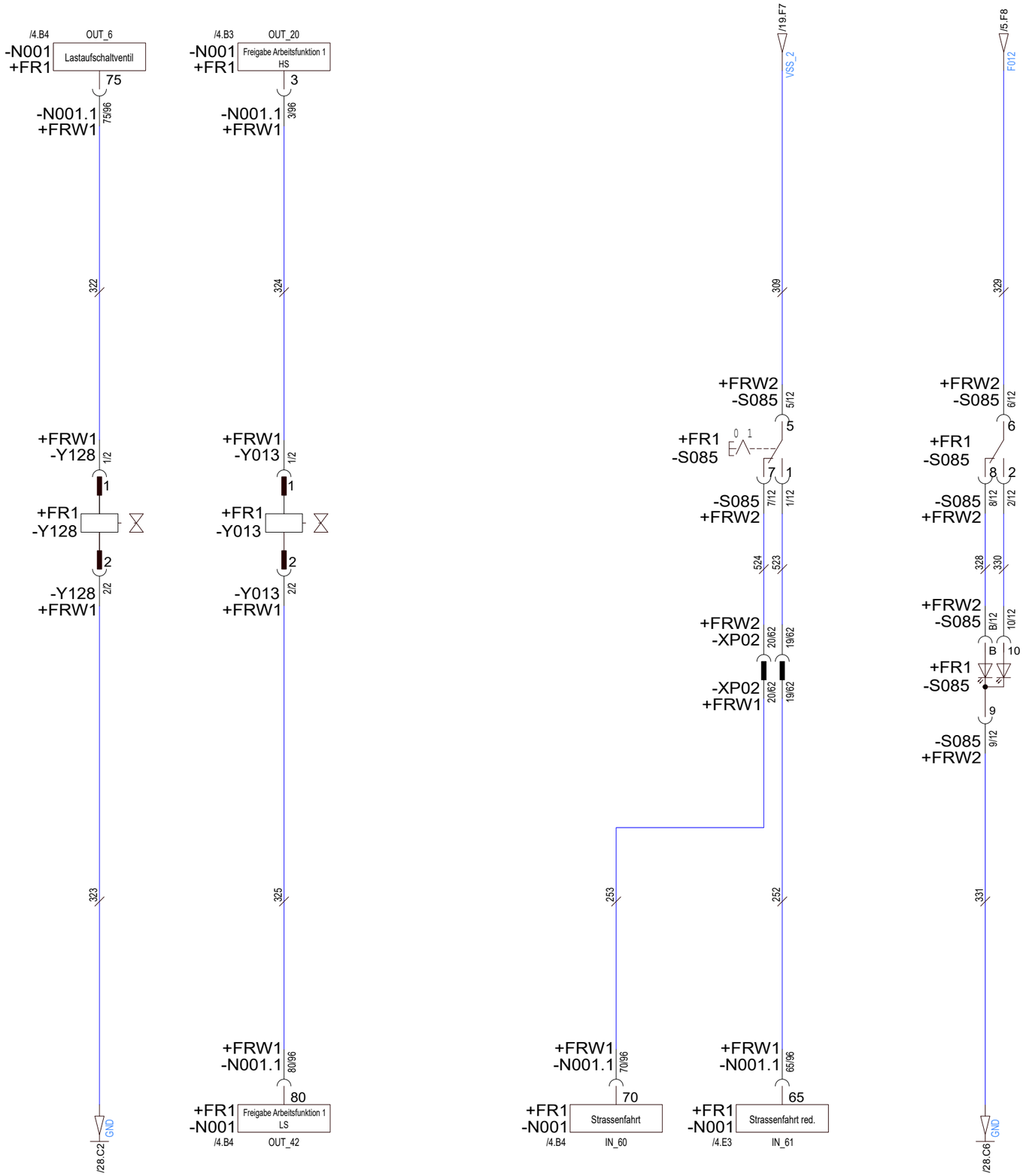
Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

19

A3



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

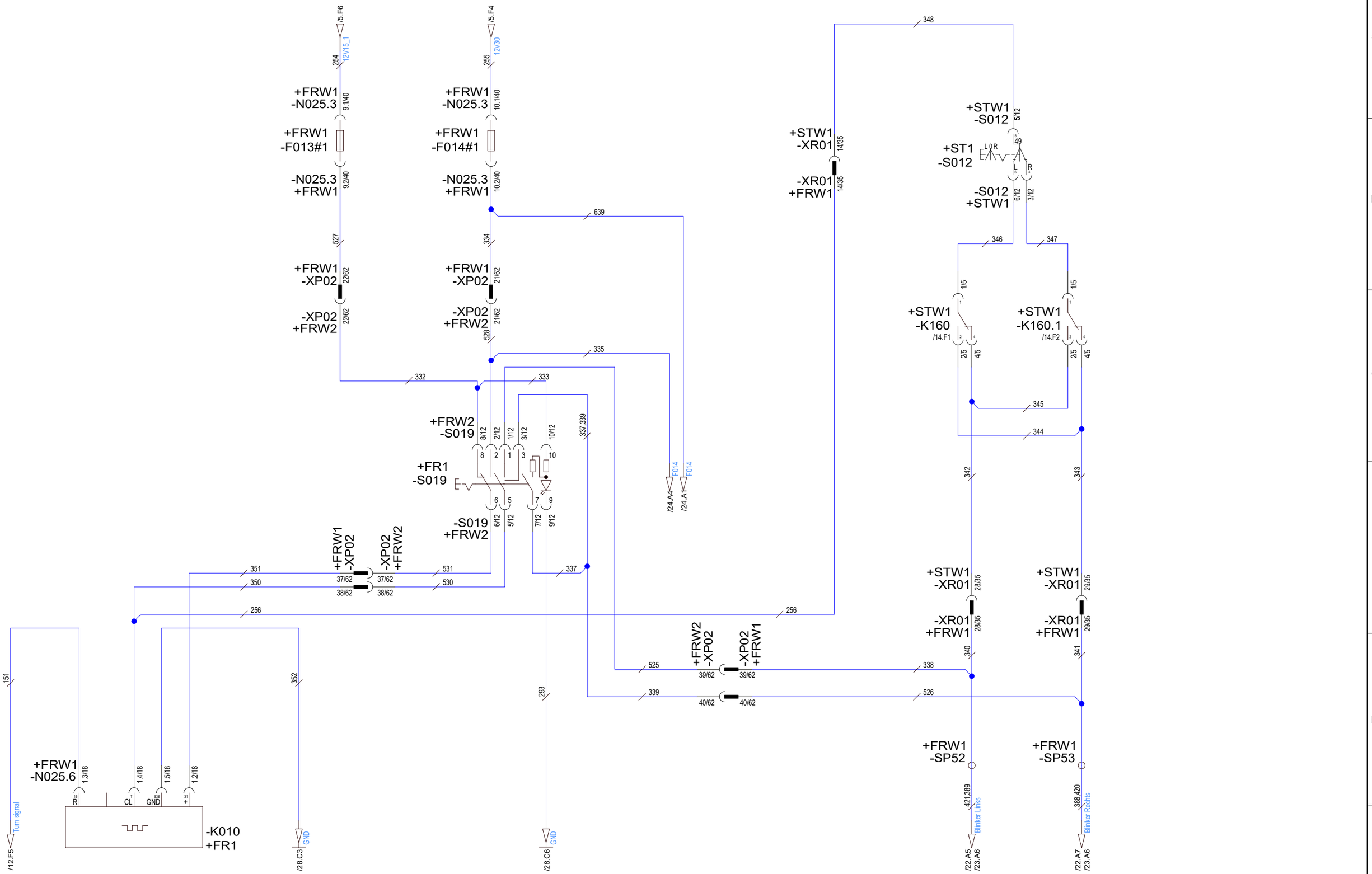
Arbeitsfunktionen

Revision	02
Ersatz für	01
Gewicht [kg]	

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

20

A3



1	2	3	4	5	6	7	8				

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

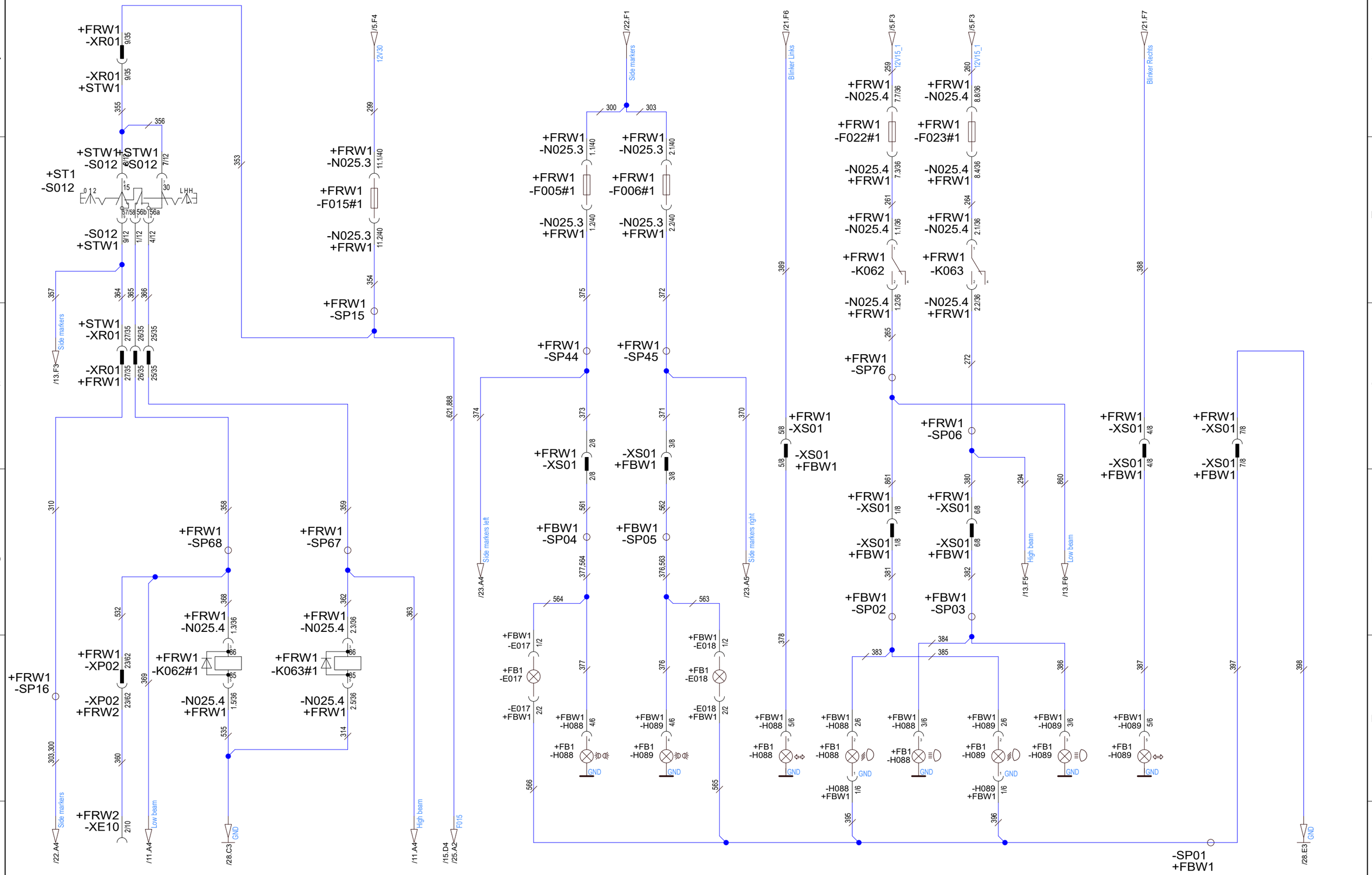
StVzO Beleuchtung
Blinkanlage

Mat.-Nr. 1000388197
Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

21

A3



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Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

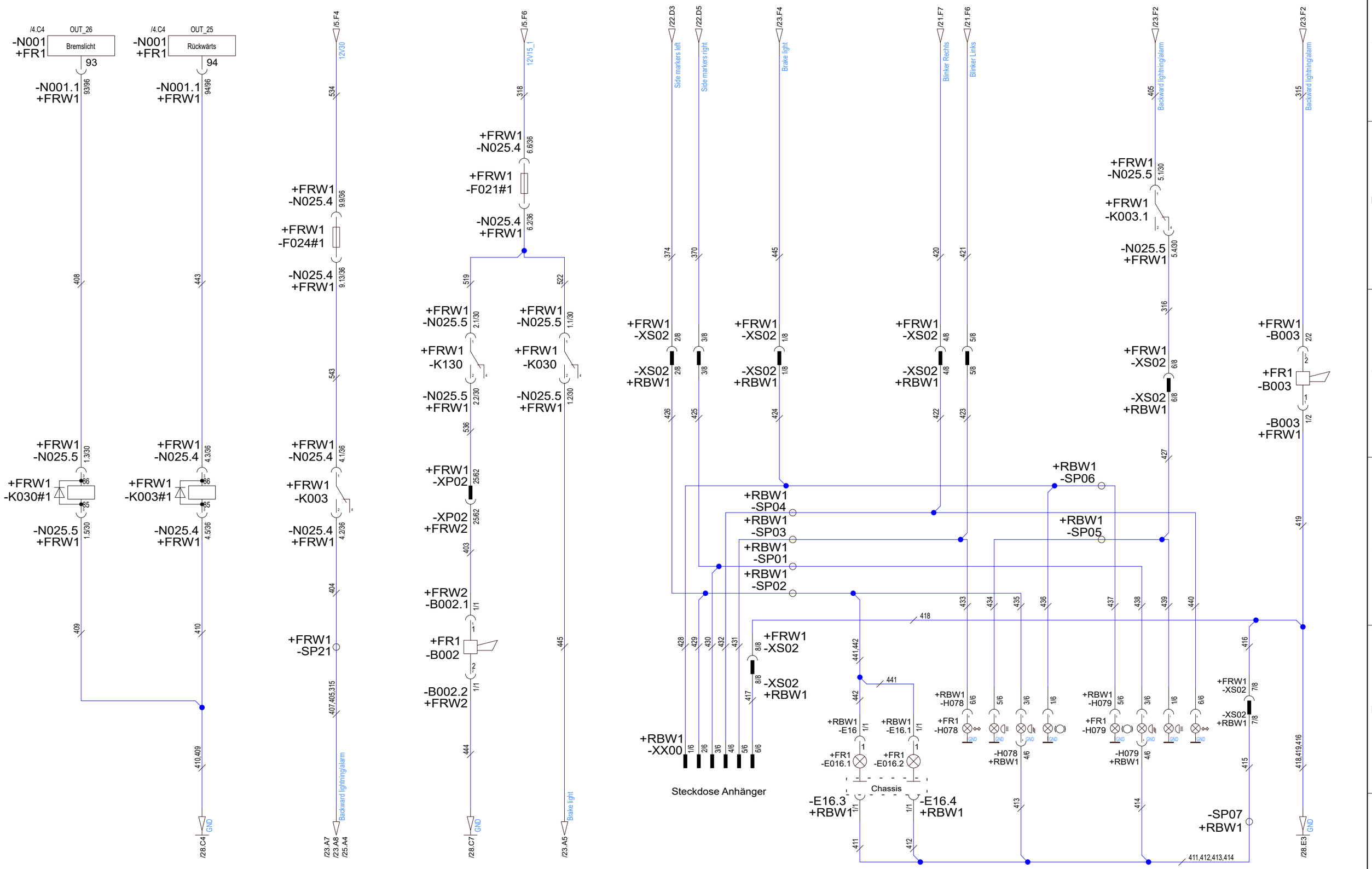
StVzO Beleuchtung
Frontstoßstange

Mat.-Nr. 1000388197
Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

22

A3



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

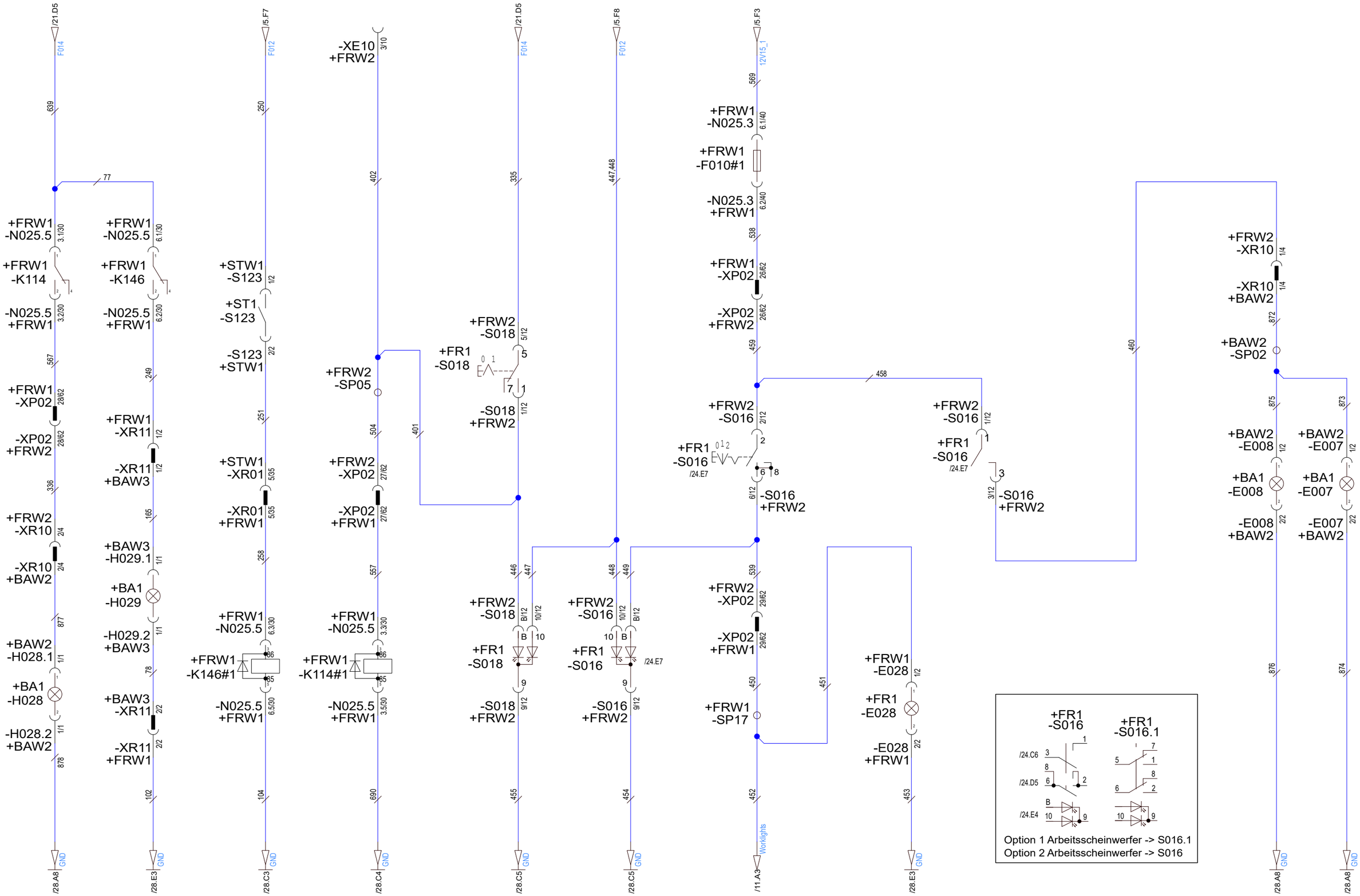
StVzO Beleuchtung
Mulde

Mat.-Nr. 1000388197
Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

23

A3



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

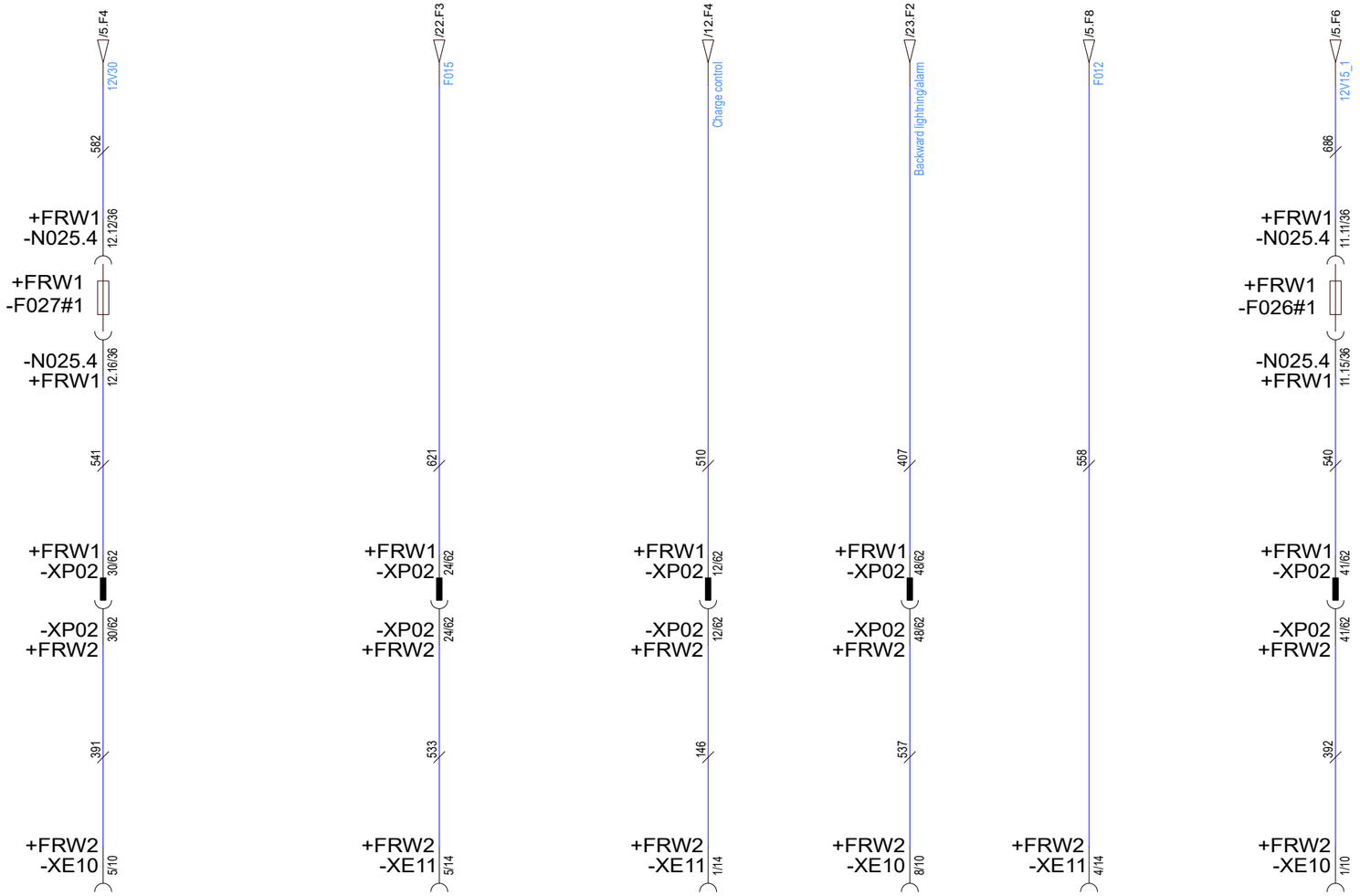
Arbeitsscheinwerfer, Rundumkennleuchte

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

24

A3



+FRW2
-XE10#4

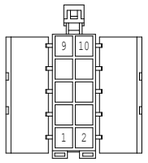
/25.D6	1	F026	+FRW2-XP02:41	1.50 mm² RD-WH	392
/22.F1	2	Low beam	+FRW2-XP02:23	0.75 mm² GY	360
/24.A3	3	Rotating Beacon	+FRW2-SP05:1	0.75 mm² VT	402
	4				
/25.D1	5	F027	+FRW2-XP02:30	1.50 mm² RD	391
	6				
/25.D7	7	GND	+FRW2-SP03:1	1.50 mm² BK	394
/25.D4	8	Backward lightning/alarm	+FRW2-XP02:48	1.00 mm² GY	537
	9				
	10				

+FRW2
-XE11#5

/25.D3	1	Charge control	+FRW2-XP02:12	1.00 mm² PK	146
/15.A1	2	CAN0 High	+FRW2-R810:B, +FRW2-XP02:14	0.75 mm²,0.75 mm² WH,WH	456, 185
/15.A1	3	CAN0 Low	+FRW2-R810:A, +FRW2-XP02:15	0.75 mm²,0.75 mm² WH,WH	457, 184
/25.D5	4	F012	+FRW2-SP02:1	0.75 mm² RD-WH	558
/25.D2	5	F014	+FRW2-XP02:24	0.75 mm² RD	533
/25.E7	6	GND	+FRW2-SP03:1	0.75 mm² BK	393
/7.B2	7	Start signal	+FRW2-S001.2:8	0.75 mm² PK	70
/7.C2	8	Start signal	+FRW2-XP02:4	0.75 mm² PK	503
	9				
	10				
	11				
	12				
	13				
	14				

+FRW2
-XE10#10

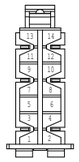
/25.A7



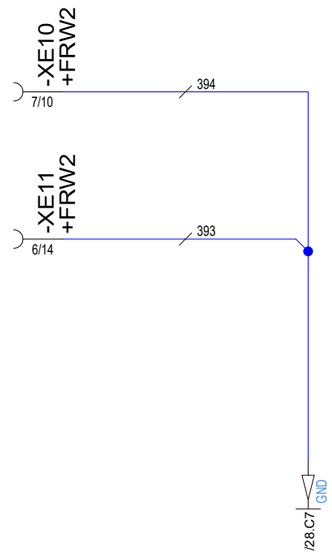
Pin ... Funktion
1 … 12V15 - Option
2 … Abblendlicht
3 … Drehlicht
4 … ---
5 … 12V30 - Option
6 … ---
7 … Masse
8 … Signal Rückwärtsfahrt
9 … ---

+FRW2
-XE11#4

/25.B7



Pin ... Funktion
1 … D+
2 … CAN H
3 … CAN L
4 … 12V15
5 … 12V30
6 … Masse
7 … Relais - Startsignal
8 … Relais - Startsignal
9 … Relais - Spannungsversorgung
10… Relais - Spannungsversorgung



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Stecker Zusatzoption

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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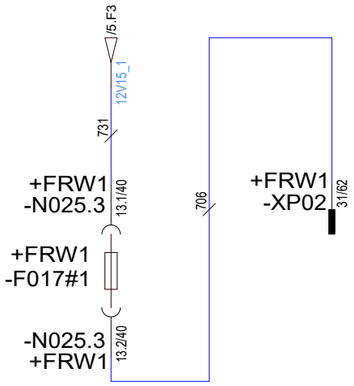
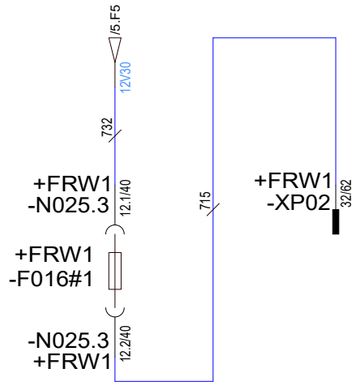
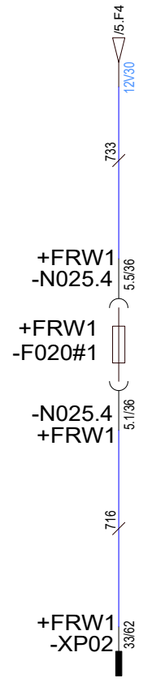
A3







Option Überrollbügel -> keine Steckdose, Radio, Wischer!

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Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Wischer, Radio, Steckdose

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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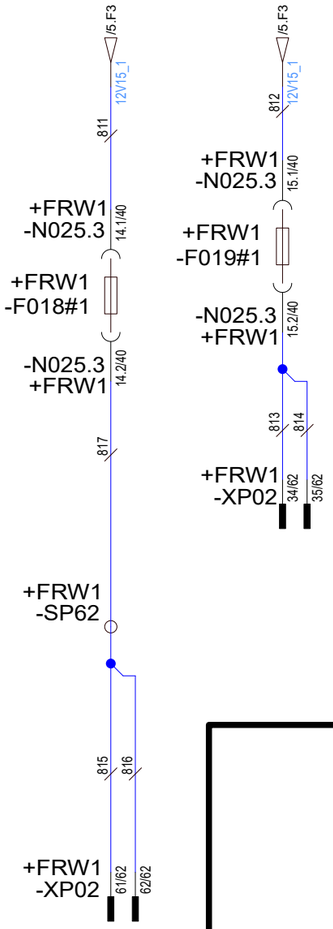
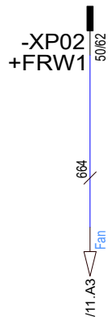


Option Überrollbügel -> keine Heizung / Klimaanlage!



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Freigabe	25.03.2019	LNZhartp

Heizung, Klimaanlage

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
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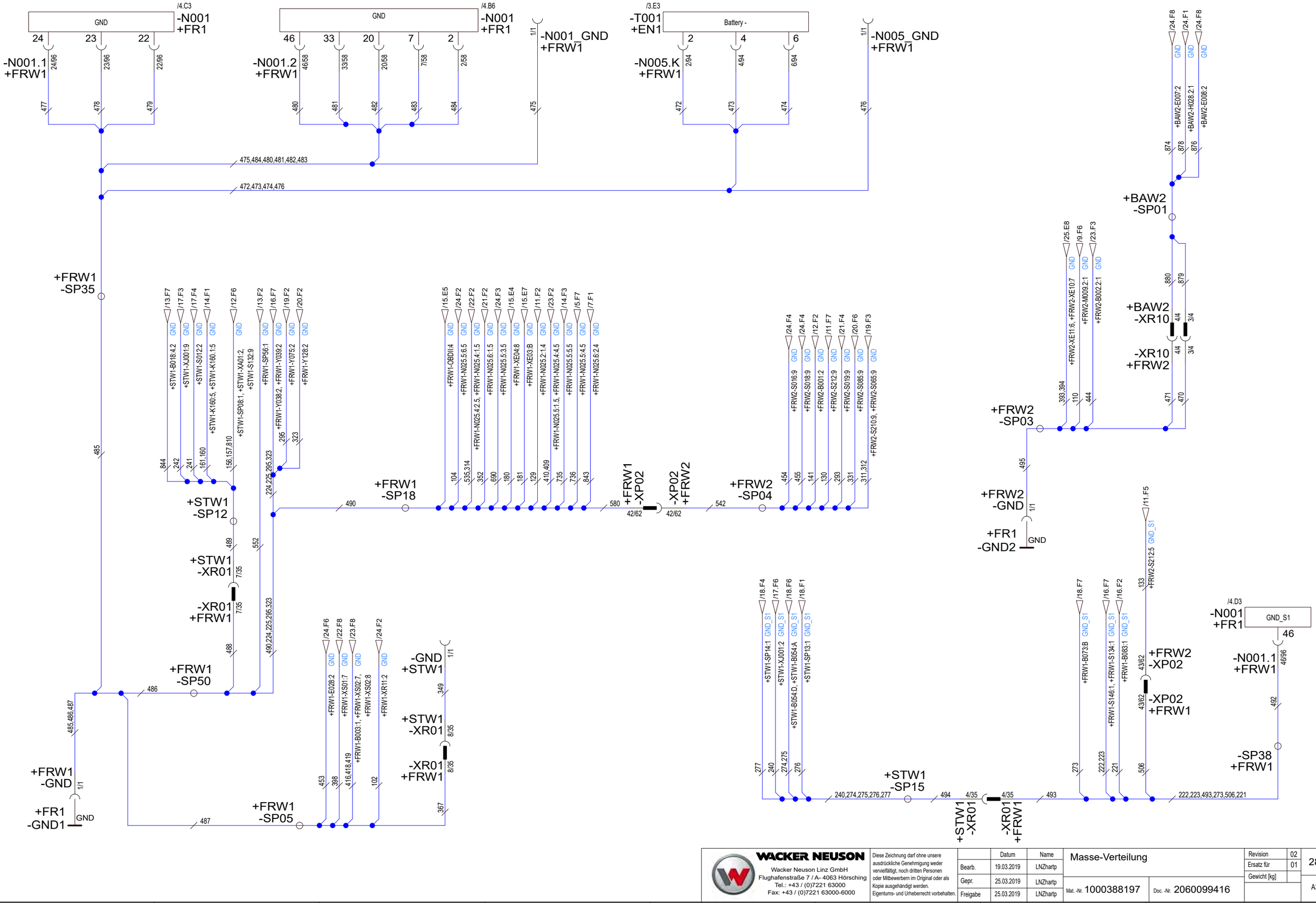

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Bearb.	19.03.2019	LNZhartp
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Freigabe	25.03.2019	LNZhartp

Masse-Verteilung

Mat.-Nr. 1000388197

Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-B001	+FR1	/12.D2	Kraftstoffniveaugeber	1000307804
-B001	+FRW2	/12.D2	Stecker Kraftstoffniveaugeber	1000027438
-B002	+FR1	/23.D3	Hupe	1000269368
-B002.1	+FRW2	/23.D3	Stecker Hupe	1000383151
-B002.2	+FRW2	/23.E3	Stecker Hupe	1000383151
-B003	+FR1	/23.C8	Rückfahrwarneinrichtung	1000170892
-B003	+FRW1	/23.C8	Stecker Rückfahrwarneinrichtung	1000027438
-B007	+FR1	/16.C1	Temperaturgeber Hydrauliköl	
-B007	+FRW1	/16.C1	Stecker Temperaturgeber Hydrauliköl	1000027410
-B015	+FR1	/10.C7	Kühlmittelniveaugeber	1000189283
-B015	+FRW1	/10.C7	Stecker Kühlmittelniveaugeber	1000027429
-B018	+ST1	/13.C7	Summer	
-B018	+STW1		Stecker Summer	1000101071
-B024	+FRW2	/10.E3	Stecker Drucksensor Niederdruck Kraftstoff	1000322614
-B054	+ST1	/18.A5	Gaspedal	1000304814
-B054	+STW1	/18.B5	Stecker Gaspedal	1000308534
-B073	+FR1		Drucksensor Inchpedal	1000303206
-B073	+FRW1	/18.C7	Stecker Drucksensor Inchpedal	1000027429
-B083	+FR1	/16.C2	Drehzahlsensor Motor Fahren	
-B083	+FRW1	/16.D2	Stecker Drehzahlsensor Motor Fahren	1000379245
-BAT1	+FRW1	/5.A5	Kabelschuh Hauptsicherung	1000127092
-BAT_GND	+EBW1	/5.F2	Kabelschuh Masse	1000050031
-BAT_GND	+EBW2	/5.D1	Batterieklemme Minus	1000089785
-E007	+BA1	/24.C8	Arbeitsscheinwerfer hinten	1000270919
-E007	+BAW2	/24.C8	Stecker Arbeitsscheinwerfer hinten	1000270365
-E008	+BA1	/24.C8	Arbeitsscheinwerfer hinten	1000270919
-E008	+BAW2	/24.C8	Stecker Arbeitsscheinwerfer hinten	1000270365
-E16	+RBW1	/23.E6	Stecker Kennzeichenbeleuchtung	1000027384
-E16.1	+RBW1	/23.E6	Stecker Kennzeichenbeleuchtung	1000027384
-E016.1	+FR1	/23.E6	Kennzeichenbeleuchtung	1000117390
-E016.2	+FR1	/23.E6	Kennzeichenbeleuchtung	1000117390

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision | Ersetzt Version | Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-E16.3	+RBW1	/23.F6	Kabelschuh Kennzeichenbeleuchtung	1000096859
-E16.4	+RBW1	/23.F6	Kabelschuh Kennzeichenbeleuchtung	1000096859
-E017	+FB1	/22.E4	Begrenzungsleuchten	
-E017	+FBW1	/22.D4	Stecker Begrenzungsleuchten	1000027438
-E018	+FB1	/22.E5	Begrenzungsleuchten	
-E018	+FBW1	/22.D5	Stecker Begrenzungsleuchten	1000027438
-E028	+FR1	/24.E6	Arbeitsscheinwerfer	1000270919
-E028	+FRW1	/24.E6	Stecker Arbeitsscheinwerfer	1000270365
-F001	+FRW1		Hauptsicherung 60A	1000098668
-F002	+FRW1		Hauptsicherung 80A	1000027321
-F003	+FRW1		Hauptsicherung 50A	1000015298
-F004	+FRW1		Hauptsicherung 50A	1000015298
-F005	+FRW1		Sicherung 7,5A	1000186027
-F006	+FRW1		Sicherung 7,5A	1000186027
-F007	+FRW1		Sicherung 30A	1000247967
-F008	+FRW1		Sicherung 10A	1000114140
-F009	+FRW1		Sicherung 5A	1000186026
-F010	+FRW1		Sicherung 15A	1000186028
-F011	+FRW1		Sicherung 5A	1000186026
-F012	+FRW1		Sicherung 10A	1000114140
-F013	+FRW1		Sicherung 10A	1000114140
-F014	+FRW1		Sicherung 15A	1000186028
-F015	+FRW1		Sicherung 10A	1000114140
-F016	+FRW1		Sicherung 10A	1000114140
-F017	+FRW1		Sicherung 15A	1000186028
-F018	+FRW1		Sicherung 30A	1000247967
-F019	+FRW1		Sicherung 25A	1000168904
-F020	+FRW1		Sicherung 15A	1000186028
-F021	+FRW1		Sicherung 15A	1000186028
-F022	+FRW1		Sicherung 10A	1000114140
-F023	+FRW1		Sicherung 10A	1000114140

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	
Ersetzt Version	
Gewicht in [kg]	

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-F024	+FRW1		Sicherung 5A	1000186026
-F025	+FRW1		Sicherung 15A	1000186028
-F026	+FRW1		Sicherung 10A	1000114140
-F027	+FRW1		Sicherung 10A	1000114140
-G1.1	+FRW1	/12.E4	Kabelschuh Lichtmaschine	1000110764
-G001	+FRW1	/5.D3	Kabelschuh Lichtmaschine	1000126891
-G002	+EBW1	/5.D1	Kabelschuh Batterie	1000089783
-G002	+FR1	/5.D1	Batterie	1000250323
-GND	+EBW1	/5.F3	Masse	1000050030
-GND	+EBW2	/5.F1	Masse	1000050031
-GND	+FR1	/5.F2	Masse	
-GND	+FRW1	/28.F1	Masse	1000346811
-GND	+FRW2	/28.D7	Masse	1000365194
-GND	+STW1	/28.E3	Masse	1000405714
-GND1	+FR1	/28.F1	Masse	
-GND2	+FR1	/28.D7	Masse	
-H028	+BA1	/24.E1	Rundumkennleuchte	1000314938
-H028.1	+BAW2	/24.D1	Stecker Rundumkennleuchte	1000027435
-H028.2	+BAW2	/24.E1	Stecker Rundumkennleuchte	1000095370
-H029	+BA1	/24.D2	Rundumkennleuchte grün	
-H029.1	+BAW3	/24.D2	Stecker Rundumkennleuchte grün	1000027435
-H029.2	+BAW3	/24.D2	Stecker Rundumkennleuchte grün	1000095370
-H078	+FR1	/23.E7	Kombinierte Rückleuchte links	1000148542
-H078	+RBW1	/23.E7	Kombinierte Rückleuchte links	1000027431
-H079	+FR1	/23.E7	Kombinierte Rückleuchte rechts	1000148543
-H079	+RBW1	/23.E7	Stecker Kombinierte Rückleuchte rechts	1000027431
-H088	+FB1	/22.E5	Kombinierter Frontscheinwerfer links	HEADLIGHTS
-H088	+FBW1	/22.F5	Stecker Kombinierter Frontscheinwerfer links	1000027431
-H089	+FB1	/22.E6	Kombinierter Frontscheinwerfer rechts	HEADLIGHTS
-H089	+FBW1	/22.F6	Stecker Kombinierter Frontscheinwerfer links	1000027431
-K001	+FRW1	/11.F1	Hochstromrelais	1000154042

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision | Ersetzt Version | Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-K003	+FRW1		Schaltrelais Fahren rückwärts	1000333390
-K003.1	+FRW1		Schaltrelais Fahren rückwärts	1000333390
-K005	+FRW1		Hochstromrelais Vorglühanlage	1000154042
-K010	+FR1	/21.E2	Blinkrelais	1000235517
-K030	+FRW1		Schaltrelais Bremslicht	1000333390
-K062	+FRW1		Schaltrelais Abblendlicht	1000333390
-K063	+FRW1		Schaltrelais Fernlicht	1000333390
-K087	+FR1	/7.E2	Zeit-Relais 0,75s	1000099374
-K088	+FRW1		Schaltrelais Kraftstoffförderpumpe	1000333390
-K114	+FRW1		Schaltrelais Rundumkennleuchte	1000333390
-K130	+FRW1		Schaltrelais Hupe	1000333390
-K131	+FRW1		Schaltrelais 12V15	1000333390
-K146	+FRW1		Schaltrelais Gurtkontaktschalter	1000333390
-K160	+STW1	/14.F1	Relais Umschaltung Fahrtrichtungsanzeiger	1000125244
-K160	+STW1	/21.B6	Relais Umschaltung Fahrtrichtungsanzeiger	1000100593
-K160.1	+STW1	/21.B7	Relais Umschaltung Fahrtrichtungsanzeiger	1000100593
-K160.1	+STW1	/14.F2	Relais Umschaltung Fahrtrichtungsanzeiger	1000125244
-M001	+EBW2	/5.D2	Kabelschuh Anlassermotor	1000050031
-M009.1	+FRW2	/9.C6	Stecker Kraftstoffförderpumpe	1000383151
-M009.2	+FRW2	/9.D6	Stecker Kraftstoffförderpumpe	1000383151
-N001	+FR1	/4.A2	Fahrelektronik	
-N001.1	+FRW1		Stecker Fahrelektronik	1000359522
-N001.2	+FRW1	/6.E3	Stecker Fahrelektronik	1000359480
-N001_GND	+FRW1	/28.A4	Kabelschuh Fahrelektronik	1000096859
-N005.A	+FRW1		Stecker Dieselmotorelektronik	1000288543
-N005.K	+FRW1	/6.E1	Stecker Dieselmotorelektronik	1000161936
-N005_GND	+FRW1	/28.A6	Kabelschuh Fahrelektronik	1000096859
-N025.1	+FRW1	/5.A5	Halter Relais / Sicherung	1000385676
-N025.2	+FRW1	/5.B3	Halter Relais / Sicherung	1000385684
-N025.3	+FRW1	/22.B4	Halter Relais / Sicherung	1000390875
-N025.4	+FRW1	/22.B6	Halter Relais / Sicherung	1000385308

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	Datum	Name
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Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 | Doc.-Nr. 2060099416

Revision | Ersetzt Version | Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-N025.5	+FRW1	/23.C4	Halter Relais / Sicherung	1000329495
-N025.6	+FRW1		Halter Relais / Sicherung	1000390874
-OBDII	+FRW1	/15.F4	Stecker Fahrzeugdiagnose OBD II	1000325528
-P014	+ST1	/3.B5	Anzeigeinstrument	
-R024	+FRW1	/13.D2	Widerstand 220 Ohm	
-R025	+FRW2	/19.A5	Stecker Widerstand 22 Ohm	1000110449
-R040	+STW1	/12.B3	Stecker Widerstand 47 Ohm D+	1000095323
-R810	+FRW2	/15.B1	Bus-Abschlusswiderstand	1000027394
-R810	+FRW2		Bus-Abschlusswiderstand	1000289850
-R812	+FRW1	/15.D1	Bus-Abschlusswiderstand	1000027394
-R812	+FRW1		Bus-Abschlusswiderstand	1000289850
-R853	+FRW1	/15.D7	Bus-Abschlusswiderstand	1000027394
-R853	+FRW1		Bus-Abschlusswiderstand	1000289850
-R890	+STW1	/12.D6	Widerstand 1 kOhm	1000312303
-R900	+STW1	/18.D4	Widerstand 1 kOhm	1000312303
-R901	+STW1	/18.D1	Widerstand 1 kOhm	1000312303
-R902	+FRW2	/19.D3	Widerstand 1 kOhm	1000312303
-S001	+FR1	/5.D5	Glühstartschalter	1000333424
-S001.1	+FRW2	/5.D5	Stecker Glühstartschalter	1000027368
-S001.2	+FRW2	/5.D5	Stecker Glühstartschalter	1000027386
-S004	+FR1	/10.C7	Druckschalter Luftfilter	1000270266
-S004	+FRW1	/10.C7	Stecker Druckschalter Luftfilter	1000027359
-S008	+EBW1	/5.C1	Kabelschuh Batterietrennschalter	1000050031
-S008	+EBW2	/5.C1	Kabelschuh Batterietrennschalter	1000050031
-S008	+FR1	/5.C1	Batterietrennschalter	1000081674
-S008	+FRW1	/5.C1	Kabelschuh Batterietrennschalter	1000355751
-S008.1	+EBW1	/5.C1	Kabelschuh Batterietrennschalter	1000050031
-S012	+ST1	/21.B7	Lenkstockschalter links	1000309164
-S012	+STW1	/22.B1	Stecker Lenkstockschalter links	1000334439
-S016	+FR1	/24.E7	Schalter Arbeitsscheinwerfer	1000051958
-S016	+FRW2	/24.C6	Stecker Schalter Arbeitsscheinwerfer	1000103949

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Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 | Doc.-Nr. 2060099416

Revision | Ersetzt Version | Gewicht in [kg]

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-S016.1	+FR1	/24.E7	Schalter Arbeitsscheinwerfer	SCHALTER
-S018	+FR1	/24.C4	Schalter Rundumkennleuchte	SCHALTER
-S018	+FRW2	/24.C4	Stecker Schalter Rundumkennleuchte	1000103949
-S019	+FR1	/21.D3	Warnblinkschalter	
-S019	+FRW2	/21.C4	Stecker Warnblinkschalter	1000103949
-S058	+FRW2	/10.E2	Stecker Schalter Wasserabscheider	1000027332
-S065	+FR1	/19.C5	Schalter Feststellbremse	SCHALTER
-S065	+FRW2	/19.D5	Stecker Schalter Feststellbremse	1000103949
-S085	+FR1	/20.C5	Schalter Hydraulikfunktionsabschaltung	SCHALTER
-S085	+FRW2	/20.C5	Stecker Schalter Hydraulikfunktionsabschaltung	1000103949
-S102	+FR1	/14.F3	Stößelschalter	1000247989
-S102	+FRW1	/14.C4	Stecker Stößelschalter	1000258052
-S103	+FR1	/14.F4	Stößelschalter	1000247989
-S103	+FRW1	/14.C5	Stecker Stößelschalter	1000258052
-S104	+ST1	/18.C1	Sitzschalter	1000325174
-S104	+STW1	/18.C1	Stecker Sitzschalter	1000183226
-S104.2	+ST1	/18.C3	Sitzschalter	
-S104.2	+STW1	/18.C3	Stecker Sitzschalter	1000027429
-S123	+ST1	/24.B2	Gurtkontaktschalter	
-S123	+STW1	/24.B2	Stecker Gurtkontaktschalter	1000110449
-S132	+ST1	/12.D8	Gurtkontaktschalter	1000181773
-S132	+STW1	/12.D8	Taster Display	1000103949
-S134	+FR1	/16.C6	Endschalter Schaltstellung Getriebe	
-S134	+FRW1	/16.C6	Stecker Endschalter Schaltstellung Getriebe	1000027438
-S146	+FR1	/16.C6	Endschalter Schaltstellung Getriebe	
-S146	+FRW1	/16.C6	Stecker Endschalter Schaltstellung Getriebe	1000270365
-S210	+FR1	/19.D6	Taster Test Feststellbremse	1000051965
-S210	+FRW2	/19.D6	Stecker Taster Test Feststellbremse	1000103949
-S212	+FR1	/11.B6	Schalter Auto-Stop	SCHALTER
-S212	+FRW2	/11.C6	Stecker Schalter Auto-Stop	1000103949
-S212.1	+FRW2	/11.D6	Zusatz-Stecker Auto-Stop	1000095336

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 | Doc.-Nr. 2060099416

Revision | Ersetzt Version | Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-SP01	+BAW2	/28.B8	Splice	
-SP01	+FBW1	/22.F8	Splice	
-SP01	+FRW1	/8.C4	Splice	
-SP01	+FRW2	/19.B5	Splice	
-SP01	+RBW1	/23.D5	Splice	
-SP02	+BAW2	/24.C8	Splice	
-SP02	+FBW1	/22.D6	Splice	
-SP02	+FRW1	/8.C5	Splice	
-SP02	+FRW2	/5.E8	Splice	
-SP02	+RBW1	/23.D5	Splice	
-SP03	+FBW1	/22.D6	Splice	
-SP03	+FRW1	/8.D4	Splice	
-SP03	+FRW2	/28.D7	Splice	
-SP03	+RBW1	/23.D5	Splice	
-SP03	+STW1	/18.D2	Splice	
-SP04	+FBW1	/22.D4	Splice	
-SP04	+FRW1	/8.D5	Splice	
-SP04	+FRW2	/28.D5	Splice	
-SP04	+RBW1	/23.D5	Splice	
-SP04	+STW1	/18.D3	Splice	
-SP05	+FBW1	/22.D4	Splice	
-SP05	+FRW1	/28.F2	Splice	
-SP05	+FRW2	/24.C3	Splice	
-SP05	+RBW1	/23.D7	Splice	
-SP05	+STW1	/17.B3	Splice	
-SP06	+FRW1	/22.C6	Splice	
-SP06	+FRW2	/19.C3	Splice	
-SP06	+RBW1	/23.D7	Splice	
-SP06	+STW1	/12.B6	Splice	
-SP07	+FRW1	/15.D2	Splice	
-SP07	+FRW2	/19.D3	Splice	

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	
Ersetzt Version	
Gewicht in [kg]	

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-SP07	+RBW1	/23.F8	Splice	
-SP07	+STW1	/12.D6	Splice	
-SP08	+FRW1	/15.D3	Splice	
-SP08	+STW1	/12.D6	Splice	
-SP09	+FRW1	/10.C4	Splice	
-SP09	+STW1	/5.E7	Splice	
-SP10	+FRW1	/19.D2	Splice	
-SP10	+STW1	/17.B7	Splice	
-SP11	+FRW1	/8.C7	Splice	
-SP12	+FRW1	/7.D5	Splice	
-SP12	+STW1	/28.D2	Splice	
-SP13	+FRW1	/6.D2	Splice	
-SP13	+STW1	/18.E1	Splice	
-SP14	+FRW1	/7.D2	Splice	
-SP14	+STW1	/18.E4	Splice	
-SP15	+FRW1	/22.C3	Splice	
-SP15	+STW1	/28.F6	Splice	
-SP16	+FRW1	/22.E1	Splice	
-SP16	+STW1	/18.D1	Splice	
-SP17	+FRW1	/24.E5	Splice	
-SP17	+STW1	/18.D4	Splice	
-SP18	+FRW1	/28.D3	Splice	
-SP20	+FRW1	/6.D3	Splice	
-SP21	+FRW1	/23.E2	Splice	
-SP22	+FRW1	/5.B8	Splice	
-SP23	+FRW1	/15.B5	Splice	
-SP24	+FRW1	/15.B5	Splice	
-SP25	+FRW1	/15.B4	Splice	
-SP26	+FRW1	/15.B4	Splice	
-SP30	+FRW1	/10.E7	Splice	
-SP31	+FRW1	/13.C2	Splice	

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Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision
Ersetzt Version
Gewicht in [kg]

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-SP32	+FRW1	/12.D4	Splice	
-SP33	+FRW1	/6.D5	Splice	
-SP35	+FRW1	/28.C1	Splice	
-SP36	+FRW1	/14.E8	Splice	
-SP37	+FRW1	/14.B4	Splice	
-SP38	+FRW1	/28.E8	Splice	
-SP44	+FRW1	/22.C4	Splice	
-SP45	+FRW1	/22.C4	Splice	
-SP50	+FRW1	/28.E2	Splice	
-SP52	+FRW1	/21.E6	Splice	
-SP53	+FRW1	/21.E7	Splice	
-SP54	+FRW1	/6.C6	Splice	
-SP55	+FRW1	/13.C2	Splice	
-SP56	+FRW1	/13.D2	Splice	
-SP62	+FRW1	/27.C1	Splice	
-SP63	+FRW1	/15.D7	Splice	
-SP64	+FRW1	/15.D8	Splice	
-SP65	+FRW1	/15.E2	Splice	
-SP66	+FRW1	/15.E2	Splice	
-SP67	+FRW1	/22.D2	Splice	
-SP68	+FRW1	/22.D2	Splice	
-SP70	+FRW1	/11.D4	Splice	
-SP71	+FRW1	/5.D3	Splice	
-SP72	+FRW1	/5.D6	Splice	
-SP73	+FRW1	/5.B4	Splice	
-SP74	+FRW1	/5.B4	Splice	
-SP75	+FRW1	/5.E5	Splice	
-SP76	+FRW1	/22.C6	Splice	
-T001	+EN1	/3.A2	Dieselmotor	
-T001	+EN1	/10.F2	Dieselmotor	
-T001	+EN1	/10.F3	Dieselmotor	

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
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Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision
Ersetzt Version
Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-V001	+FRW1		Diode	1000398209
-V002	+FRW1		Diode	1000398209
-V003	+FRW1		Diode	1000398209
-V004	+FRW1		Diode	1000398209
-W11	+FRW1			
-W12	+FRW1			
-X017	+FRW1	/8.D4	Stecker Dieselmotor	1000260163
-X018	+FRW1	/7.E5	Stecker Vorglühanlage	1000308732
-XA01	+STW1	/12.C6	Stecker Anzeigeinstrument	1000347631
-XA02	+STW1	/12.A4	Stecker Anzeigeinstrument	1000347542
-XE03	+FRW1	/15.F7	Stecker Diagnose Dieselmotor	1000163185
-XE04	+FRW1	/15.F2	Stecker Fahrzeugdiagnose	1000312071
-XE10	+FRW2	/25.D6	Stecker Option	1000104431
-XE11	+FRW2	/25.D3	Stecker Option	1000100971
-XE11.1	+FRW2		Zusatz-Stecker	1000271156
-XJ001	+ST1	/17.C7	Joystick	1000290667
-XJ001	+STW1	/17.C7	Stecker Joystick	1000334152
-XP02	+FRW1	/5.C8	Stecker Sicherungskasten	1000303405
-XP02	+FRW2	/5.C8	Stecker Sicherungskasten	1000260163
-XR01	+FRW1	/18.D5	Stecker Wendekonsole	1000333982
-XR01	+STW1	/18.D5	Stecker Wendekonsole	1000333984
-XR10	+BAW2	/24.B8	Stecker Kabelbaum Canopy	1000104284
-XR10	+FRW2	/24.B8	Stecker Kabelbaum Überrollbügel / Canopy	1000104286
-XR11	+BAW3	/24.D2	Stecker Kabelbaum Rundumkennleuchte grün	1000051981
-XR11	+FRW1	/24.C2	Stecker Kabelbaum Rundumkennleuchte grün	1000027410
-XS01	+FBW1	/22.D6	Stecker Kabelbaum Beleuchtung vorne	1000105117
-XS01	+FRW1	/22.D6	Stecker Kabelbaum Beleuchtung vorne	1000105113
-XS02	+FRW1	/23.C5	Stecker Kabelbaum Beleuchtung hinten	1000105113
-XS02	+RBW1	/23.C5	Stecker Kabelbaum Beleuchtung hinten	1000105117
-XX00	+RBW1	/23.E5	Steckdose Anhänger	1000085023
-XX16	+EBW1	/5.D2	Kabelschuh Starthilfeklemme	1000050031

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 | Doc.-Nr. 2060099416

Revision | Ersetzt Version | Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-Y004	+FR1	/16.C4	Magnetventil rückwärts	
-Y004	+FRW1	/16.C4	Stecker Magnetventil rückwärts	1000027438
-Y005	+FR1	/16.C3	Magnetventil vorwärts	
-Y005	+FRW1	/16.C3	Stecker Magnetventil vorwärts	1000270365
-Y013	+FR1	/20.C3	Magnetventil Hydraulikfunktionsabschaltung	
-Y013	+FRW1	/20.C3	Stecker Magnetventil Hydraulikfunktionsabschaltung	1000027332
-Y038	+FR1	/16.C7	Magnetventil Getriebestufe 1	
-Y038	+FRW1	/16.C7	Stecker Magnetventil Getriebestufe 1	1000270365
-Y039	+FR1	/16.C8	Magnetventil Getriebestufe 2	
-Y039	+FRW1	/16.C8	Stecker Magnetventil Getriebestufe 2	1000027410
-Y043	+FR1	/19.C8	Magnetventil Feststellbremse	
-Y043	+FRW1	/19.C8	Stecker Magnetventil Feststellbremse	1000027438
-Y070	+FRW1	/14.C8	Stecker Magnetventil Umschaltung Lenkung	1000027410
-Y075	+FR1	/19.E2	Magnetventil Blende	
-Y075	+FRW1	/19.D2	Stecker Magnetventil Blende	1000027410
-Y098	+FR1	/16.C5	Magnetventil Hydromotorverstellung	
-Y098	+FRW1	/16.C5	Stecker Magnetventil Hydromotorverstellung	1000270365
-Y128	+FR1	/20.C2		
-Y128	+FRW1	/20.C2	Stecker Lastaufschaltventil	1000027410
-Y155	+FRW1	/14.C7	Stecker Magnetventil Umschaltung Lenkung	1000027332

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	
Ersetzt Version	
Gewicht in [kg]	

7.8 Wiring diagram DV60, DV90 and DV100 with ROPS

Stromlaufplan D24

ROPS Bügel
Deutz DOC

ab Seriennummer WNCD2401CPAL00353 (DV60),
WNCD2402APAL00517 (DV90) und
WNCD2403VPAL00217 (DV100)

Ortskennzeichen

FRW1 Hauptkabelbaum Deutz DOC
FRW2 Hauptkabelbaum ROPS
FRW3 Hauptkabelbaum Kabine

STW1 Kabelbaum Wendekonsole

BAW1 Kabelbaum Beleuchtung ROPS
BAW2 Kabelbaum Beleuchtung Canopy
BAW3 Kabelbaum Rundumkennleuchte grün

RBW1 Kabelbaum StVzO Heckseite (Mulde)
FBW1 Kabelbaum StVzO Frontstoßstange

CBW1 Kabelbaum Kabine

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Deckblatt

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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SheetName	SheetName 1	SheetName 2
-	Inhaltsverzeichnis	-
-	Inhaltsverzeichnis	-
2	Sicherungskasten	
3	Steuergeräte	
4	Steuergeräte	
5	Haupt-Versorgung	
6	Versorgung Steuergeräte	
7	Starten, Glühen	
8	Dieselmotorelektronik	
9	Dieselmotorelektronik	
10	Dieselmotorelektronik	
11	Auto Stop	
12	IO Display, Tankgeber, Lade-Kontrolle	
13	IO Display	
14	Drehsitzfunktionen	
15	CAN	
16	Fahren	
17	Fahren	
18	Fahren	
19	Fahren	
20	Arbeitsfunktionen	
21	StVzO Beleuchtung	Blinkanlage
22	StVzO Beleuchtung	Frontstoßstange
23	StVzO Beleuchtung	Mulde
24	Arbeitsscheinwerfer, Rundumkennleuchte	
25	Stecker Zusatzoption	
26	Wischer, Radio, Steckdose	
27	Heizung, Klimaanlage	
28	Masse-Verteilung	
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Inhaltsverzeichnis
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Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

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Ersetzt Version
Gewicht in [kg]

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SheetName	SheetName 1	SheetName 2
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-
-	Betriebsmittelverzeichnis	-

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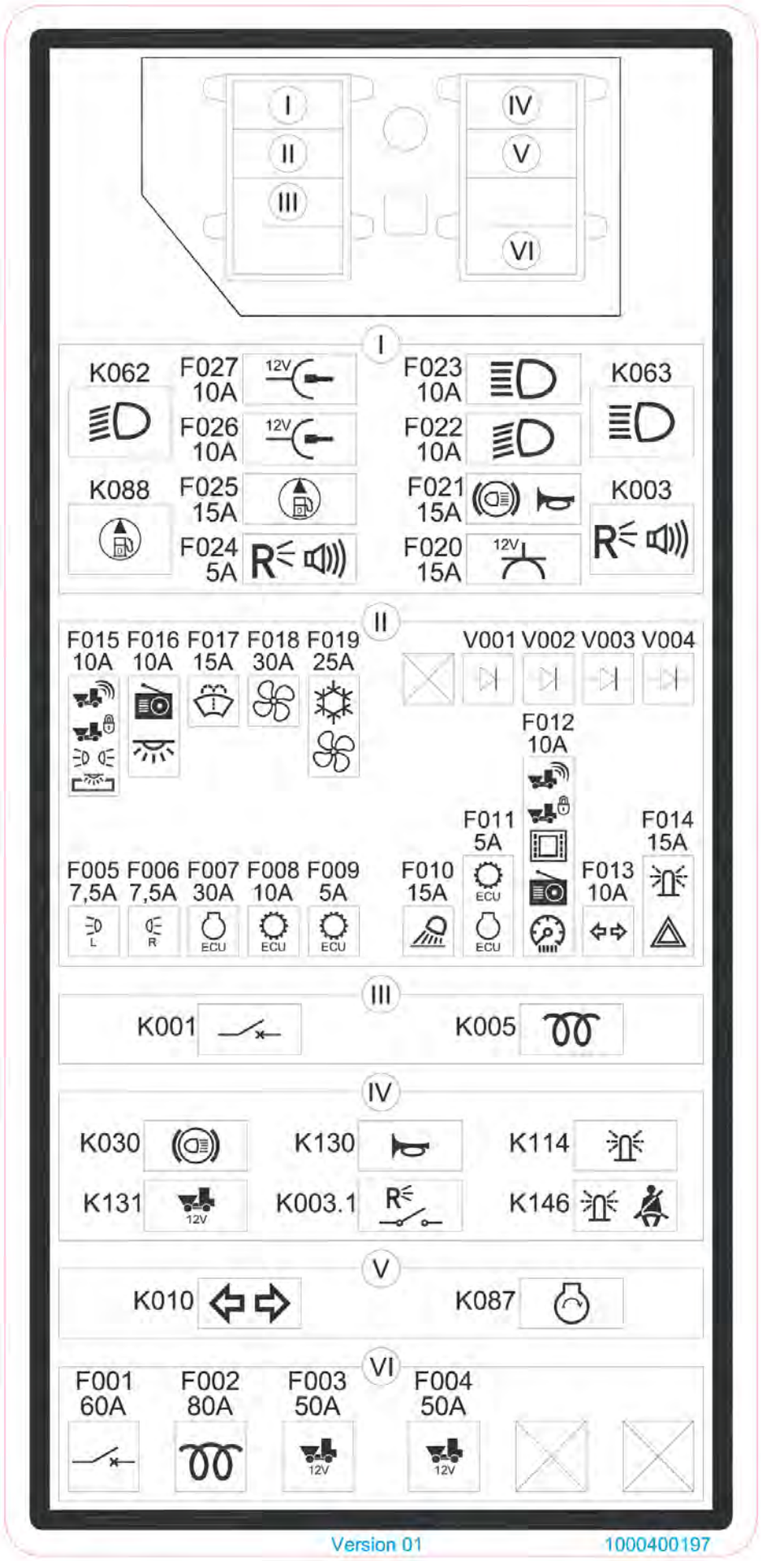
	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Inhaltsverzeichnis
-

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	
Ersetzt Version	
Gewicht in [kg]	



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Sicherungskasten

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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EDC17 CV54 Connector K			+EN1 -T001 N005.K
11			
12			
13	Collant Level		/10.A6
14			
15	Clutch Switch		/9.F7
18			
19			
21			
22			
25			
26	Relay Fuelpump -		/9.F4
27			
28	Relay Starter +		/7.A3
29	Supply		/10.A6
31			
32			
34			
35	Start Switch		/7.F2
37			
39			
40			
41			
42			
44	DPF/EGR Sensor 5V		/9.A2
45			
48			
49			
57	Water in Fuel Switch		/10.A1
61	Fuel Low Pressure		/10.A3
64	Sensor Supply		/10.A2
65			
67			
68	Supply		/9.A7
69			
70			
71			
73	Relay Starter -		/7.A4
74			
79			
80			
82	EGR Sensor GND		/9.A2
83			
85	EGR Sensor		/9.A1
86	Air Filter		/10.A7
87	Sensor GND		/10.F7
88	Ign Switch		/6.F6
90	Relay Fuelpump +		/9.A4
91			
92			
93			
46			
63			
62			
16			
10			
66			
76	CAN 0	Low	/15.A4
54		High	
53	CAN 1	Low	/15.A8
75		High	
1			
3	Battery +		/6.F1
5			
2			
4	Battery -		/28.A5
6			

+ST1 -P014		Display 7"		
PIN	CONNECTOR	DESCRIPTION	COMMENTS	Ref-PAGE
1	**XA01**	VBAT	9...36V	/12.D6
2		GND	Ground	
3	XA01	CAN1_L	CAN 1	/15.A6
4		CAN1_H		
5	XA01	CAN2_L	CAN 2	
6		CAN2_H		
7		V_USB_BUS	Power USB	
10		USB_GND	Ground	
8		USB_D-	Datawire USB	
9		USB_D+		
1	**XA02**	Ladekontrolle	0...5V	/12.A4
2	XA02	Fehlerlampe	0...5V	/13.A2
3	XA02	Standlicht	0...5V	/13.A3
4	XA02	Abblendlicht	0...5V	/13.A6
5	XA02	Tankgeber	0...5V	/12.A1
6	XA02	A_Input_6	0...5V	
7	XA02	GND	Ground	
8	XA02	Fernlicht	-1V - 1V LOW	/13.A4
9	XA02	Blinker	3,5V - VBAT HIGH	/12.A6
10	XA02	Taster 1	5V: 0,02...10kHz	/12.F7
11	XA02	Taster 2	5V: 0,02...10kHz	/12.F8
12	XA02	Umschaltung Blinker 1	12V 0,5A	/14.A1
13	XA02	Umschaltung Blinker 2	12V 0,5A	/14.A2
14	XA02	Summer	12V 0,5A	/13.A7
1	**X102**	Video Signal_1	composite CCITT video input PAL 50Hz colour coding / NTSC. input Level 1Vpp. 75Ohms	
2	X102	Video Signal_2		
3	X102	Video Signal_3		
4	X102	Video Signal_4		
5	X102	Video Bezug_GND	Video Ground	
1	**X103**	Eth_TX+	Datawire Ethernet	
2	X103			
3	X103			
4	X103			

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Steuergeräte

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

3

A3

+FR1
-N001

N001.1
Connector 1

1	---		
2	OUT_36		
3	Freigabe Arbeitsfunktion 1 HS	/20.A3	OUT_20
4	OUT_34		
5	OUT_33		
6	OUT_22		
7	OUT_21		
8	IN_68		
9	IN_75		
10	Schalter Auto Stop red.	/11.F6	IN_73
11	IN_74		
12	Drehzahl Hydromotor	/16.A2	IN_71
13	Schalter Auto Stop	/11.F5	IN_72
14	IN_42		
15	Trockenlaufschutz	/12.A2	IN_43
16	Öltemperatur	/16.A1	IN_63
17	IN_64		
18	IN_65		
19	IN_40		
20	Kabinenheizung aktiv	/11.F2	IN_41
21	IN_62		
22			
23	GND	/28.A2	
24			
25	---		
26	---		
27	OUT_35		
28	Parkbremse HS	/19.A8	OUT_19
29	---		
30	---		
31	---		
32	IN_70		
33	IN_69		
34	IN_18		
35	IN_17		
36	IN_15		
37	IN_16		
38	Sensor Inchventil	/18.F7	IN_52
39	Sitzkontaktschalter 1	/18.F2	IN_38
40	Getriebe Gang 2 eingelegt	/16.F5	IN_44
41	Sitzkontaktschalter 2	/18.F3	IN_39
42	IN_23		
43	IN_22		
44	IN_20		
45	GND_S2	/16.F1	
46	GND_S1	/28.E8	
47	Dieselmotor Startsignal	/7.F3	IN_4
48	IN_6		
49	---		
50	---		
51	Getriebe Stufe 2	/16.A8	OUT_5
52	---		
53	Pumpe vorwärts HS	/16.A3	OUT_1
54	Hydraulikmotor HS	/16.A5	OUT_3
55	Getriebe Gang 1 eingelegt	/16.F6	IN_45
56	IN_46		
57	Lenkrichtung 1 red.	/14.F4	IN_10
58	Gaspedal red.	/18.F5	IN_8
59	Gaspedal	/18.F5	IN_7
60	CAN 4 L		
61	CAN 4 H		
62	CAN 3 L		
63	CAN 3 H		
64	IN_33		
65	Strassenfahrt red.	/20.F5	IN_61
66	IN_34		
67	Schalter Feststellbremse	/19.F5	IN_58
68	IN_53		
69	Schalter Feststellbremse red.	/19.F4	IN_59
70	Strassenfahrt	/20.F4	IN_60
71	IN_56		
72	IN_47		
73	---		
74	---		
75	Lastaufschaltventil	/20.A2	OUT_6
76	---		
77	Pumpe rückwärts HS	/16.A4	OUT_2
78	Getriebe Stufe 1	/16.A7	OUT_4
79	Lenkrichtung 1+2 LS	/14.F7	OUT_41
80	Freigabe Arbeitsfunktion 1 LS	/20.F3	OUT_42
81	---		
82	---		
83	Parkbremse LS	/19.F8	OUT_37
84	Pumpe vorwärts LS	/16.F3	OUT_38
85	Pumpe rückwärts LS	/16.F4	OUT_39
86	Hydraulikmotor LS	/16.F5	OUT_40
87	---		
88	---		
89	Freigabe Leistungsverbraucher	/11.A1	OUT_24
90	Abschaltung Rückfahrlicht	/14.A2	OUT_23
91	IN_48		
92	IN_49		
93	Bremslicht	/23.A1	OUT_26
94	Rückwärts	/23.A1	OUT_25
95	---		
96	IN_50		

N001.2
Connector 2

1			
3			
4	UB	/6.F3	
5			
6			
2			
7			
20	GND	/28.A3	
33			
46			
8	IN_67		
9	IN_3		
10	IN_14		
11	IN_19		
12	IN_28		
13	IN_66		
14	Lenkrichtung 1	/14.F3	IN_9
15	CAN 1 H	/15.A4	
16	CAN 1 L		
17	Schalter Drosselventil Feedback red.	/19.F1	IN_36
18	IN_54		
19	VSS_1	/17.A6	
21	Fehlerlampe	/13.F2	OUT_47
22	IN_13		
23	IN_5		
24	IN_21		
25	IN_27		
26	Leistungsverbraucher ein	/11.F3	IN_37
27	Parkbremstest	/19.F6	IN_57
28	Zündung	/6.F8	HW-INH
29	IN_55		
30	WAKE		
31	Schalter Drosselventil Feedback	/19.F1	IN_35
32	VSS_2	/14.A4	
34	Wippe Fahren red.	/17.F7	IN_26
35	IN_24		
36	IN_2		
37	Pumpenleistung (ECO)	/17.F2	IN_30
38	Lenkrichtung 2 red.	/14.F5	IN_12
39	IN_31		
40	IGN	/6.F7	
41	Lenkrichtung 2	/14.A7	OUT_28
42	---		
43	Lenkrichtung 1	/14.A6	OUT_27
44	---		
45	UB_CPU	/6.F4	
58			
47	Wippe Fahren	/17.F6	IN_25
48	IN_29		
49	IN_51		
50	Schalter 2. Gang	/17.F1	IN_1
51	IN_32		
52	Lenkrichtung 2	/14.F5	IN_11
53	CAN 2 H	/15.D1	
54	CAN 2 L		
55	VSS_3	/18.A7	
56	---		
57	---		

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Steuergeräte

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

4

A3

+FRW1
-BAT1
1/1
1
+FRW1
-N025.1
max.50A
-F001#1
-F002#1
-F003#1
-F004#1
F
E
D
C
B
A
799
101
801
802
+FRW1
-SP73
+FRW1
-SP74
97
87
789
+FRW1
-S008
1/1
+FR1
-S008
1 0
2
1
-S008
+EBW1
1/1
+EBW2
-S008
1/1
1000370730
+EBW1
-S008.1
1/1
1000370734
1000370731
+EBW2
-M001
1/1
30
+EN1
-T001
M
-G001
+FRW1
1/1
B
+EN1
-T001
G
/12.F4
+EBW1
-XX16
1/1
Starthilfeklemme
+EBW1
-G002
1/1
+FR1
-G002
30
31
+EBW2
-BAT_GND
1/1
1000370732
+EBW2
-GND
1/1
+FR1
-GND
GND
+EBW1
-BAT_GND
1/1
1000404324
+EBW1
-GND
1/1
Dieselmotor
+FRW1
-N025.2
1.1/8
+FRW1
-K001
/11.F1
87
30
-N025.2
+FRW1
1.3/8
96
+FRW1
-SP71
569,260,259,811,812,731
12V/15_1
/22.A6
/22.A6
/24.A5
/26.A3
/27.A1
/27.A1
87
30
85
86
+FRW1
-K131#1
+FRW1
-N025.5
4.3/30
-N025.5
+FRW1
4.5/30
12V/15
/5.F5
788
+FRW1
-N025.3
8.1/40
+FRW1
-F012#1
-N025.3
+FRW1
8.2/40
786
+FRW1
-SP22
787
12V/15
/5.F5
73,103
785
+FRW1
-XP02
1/62
-XP02
+FRW2
1/62
103
+FRW1
-XR01
11/35
-XR01
+STW1
11/35
105
+STW1
-SP09
147,152,153,154,155,
243,298,250
F012
/12.A3
/12.A7
/17.A1
/18.A3
/24.A2
73
F012
/6.A8
+FRW2
-SP02
496
F012
/11.A7
/19.A3
/20.A6
/24.A4
/25.A5
131,132,301,302,329,
447,448,558
182,183,244,889
F012
/15.C1
/17.A5
+FRW1
-XP02
58/62
57/62
-XP02
+FRW2
58/62
57/62
91
90
+FRW2
-S001.1
1/4
2/4
30
+FR1
-S001
15/54
-S001.2
+FRW2
5/6
6/6
94
95
+FRW2
-XP02
59/62
60/62
-XP02
+FRW1
59/62
60/62
792
791
+FRW1
-SP75
772,787,788
12V/15
/5.A7
/5.A8
/6.A6
733,582,299,255,773,783,784,534
12V/30
/7.A5
/6.A2
/6.A3
/6.A5
/6.A5
/21.A3
/22.A3
/23.A2
/25.A1
/26.A8
+FRW1
-N025.5
4.1/30
+FRW1
-K131
-N025.5
+FRW1
4.2/30
108,732
12V/30
/9.A5
/26.A5
+FRW1
-SP72
790
254,686,318
12V/15_1
/21.A3
/23.A4
/25.A6
736
GND
/28.C4
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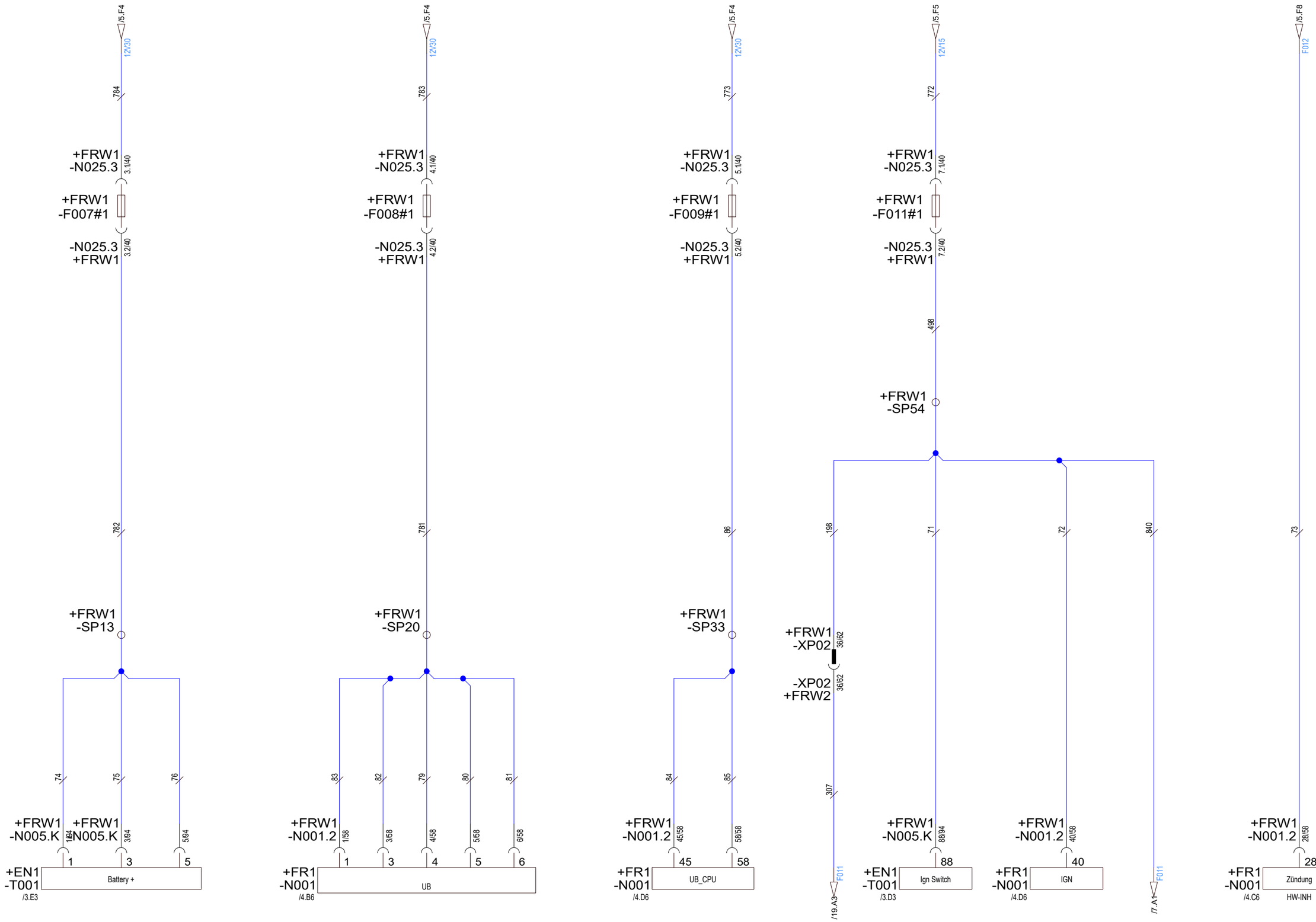
	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Haupt-Versorgung
Mat.-Nr. 1000388197
Doc.-Nr. 2060099416
Revision 02
Ersatz für 01
Gewicht [kg]
5
A3



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Freigabe	25.03.2019	LNZhartp

Versorgung Steuergeräte

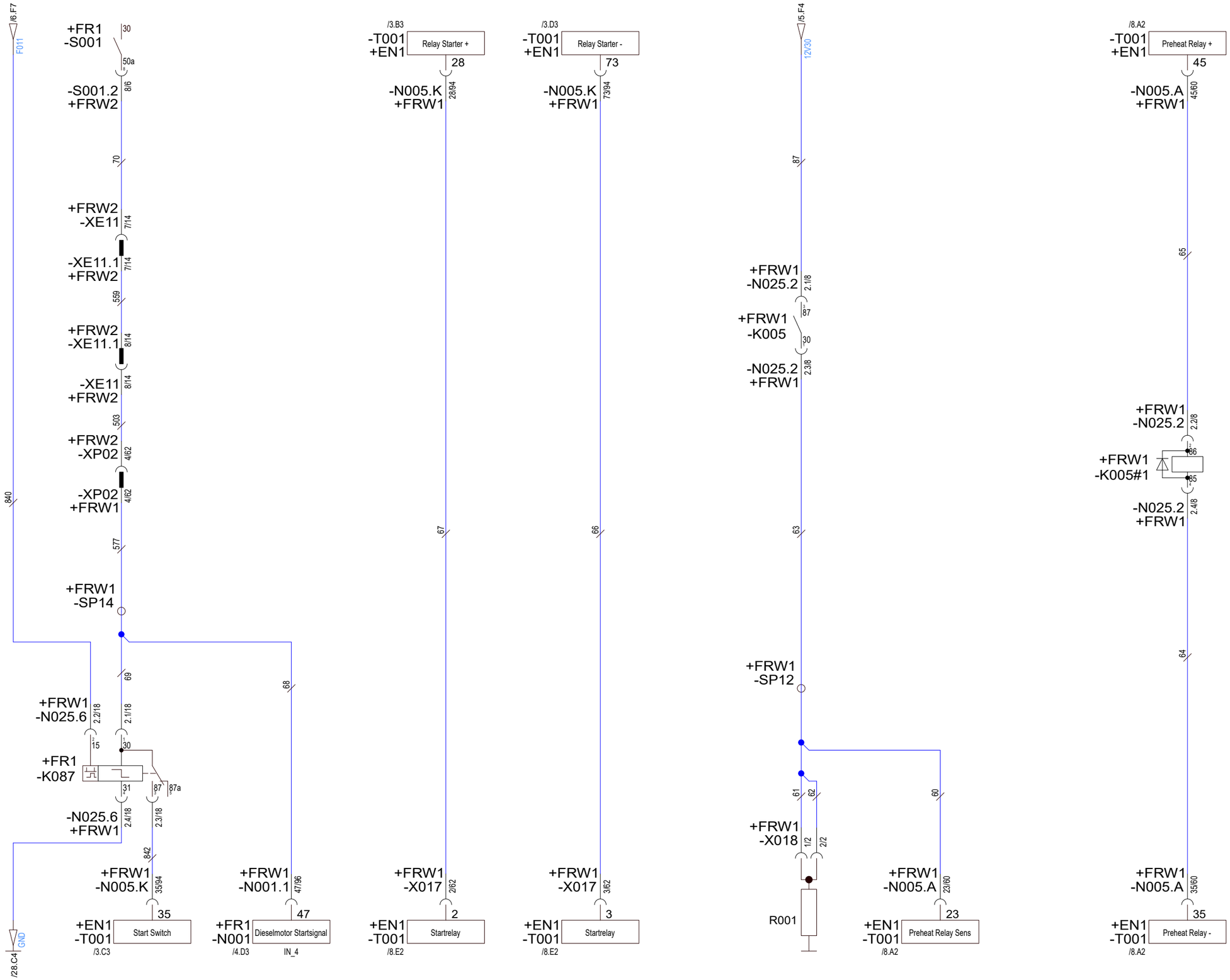
Mat.-Nr. 1000388197

Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

6

A3



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

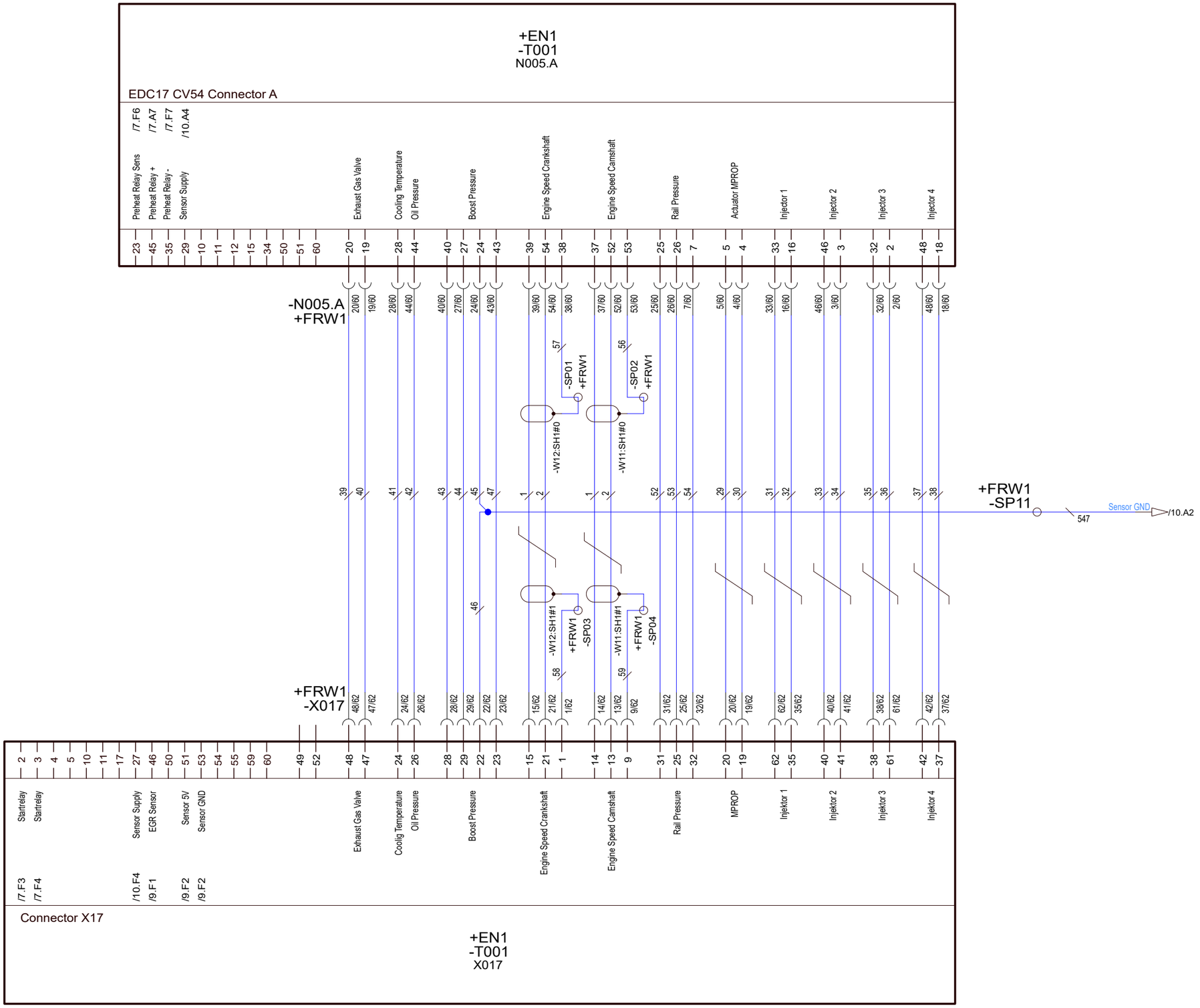
Starten, Glühen

Mat.-Nr. 1000388197 | Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

7

A3



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Freigabe	25.03.2019	LNZhartp

Dieselmotorelektronik

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

8

A3

/3.D3
-T001 +EN1 EGR Sensor
85
-N005.K +FRW1 85/94
48
+FRW1 -X017 46/62
46
+EN1 -T001 EGR Sensor
/8.E2

/3.C3
-T001 +EN1 DPF/EGR Sensor 5V
44
-N005.K +FRW1 44/94
49
+FRW1 -X017 50/62
50
+EN1 -T001 Sensor 5V
/8.E2

/3.D3
-T001 +EN1 EGR Sensor GND
82
-N005.K +FRW1 82/94
50
+FRW1 -X017 51/62
51
+EN1 -T001 Sensor GND
/8.E3

/3.D3
-T001 +EN1 Relay Fuelpump +
90
-N005.K +FRW1 90/94
106
+FRW1 -N025.4 3.3/36
86
+FRW1 -K088#1
85
-N025.4 +FRW1 3.5/36
107
+FRW1 -N005.K 26/94
26
+EN1 -T001 Relay Fuelpump -
/3.B3

/5.F5
12/30
108
+FRW1 -N025.4 10.10/36
+FRW1 -F025#1
-N025.4 +FRW1 10.14/36
759
+FRW1 -N025.4 3.1/36
+FRW1 -K088
2 4
-N025.4 +FRW1 3.2/36
505
+FRW1 -XP02 49/62
-XP02 +FRW2 49/62

109
+FRW2 -M009.1 1/1
+EN1 -T001 M
1/1
-M009.2 +FRW2
110
/28.C7 GND

/3.C3
-T001 +EN1 Supply
68
-N005.K +FRW1 68/94
51
+FRW1 -N005.K 15/94
15
+EN1 -T001 Clutch Switch
/3.B3

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Freigabe	25.03.2019	LNZhartp

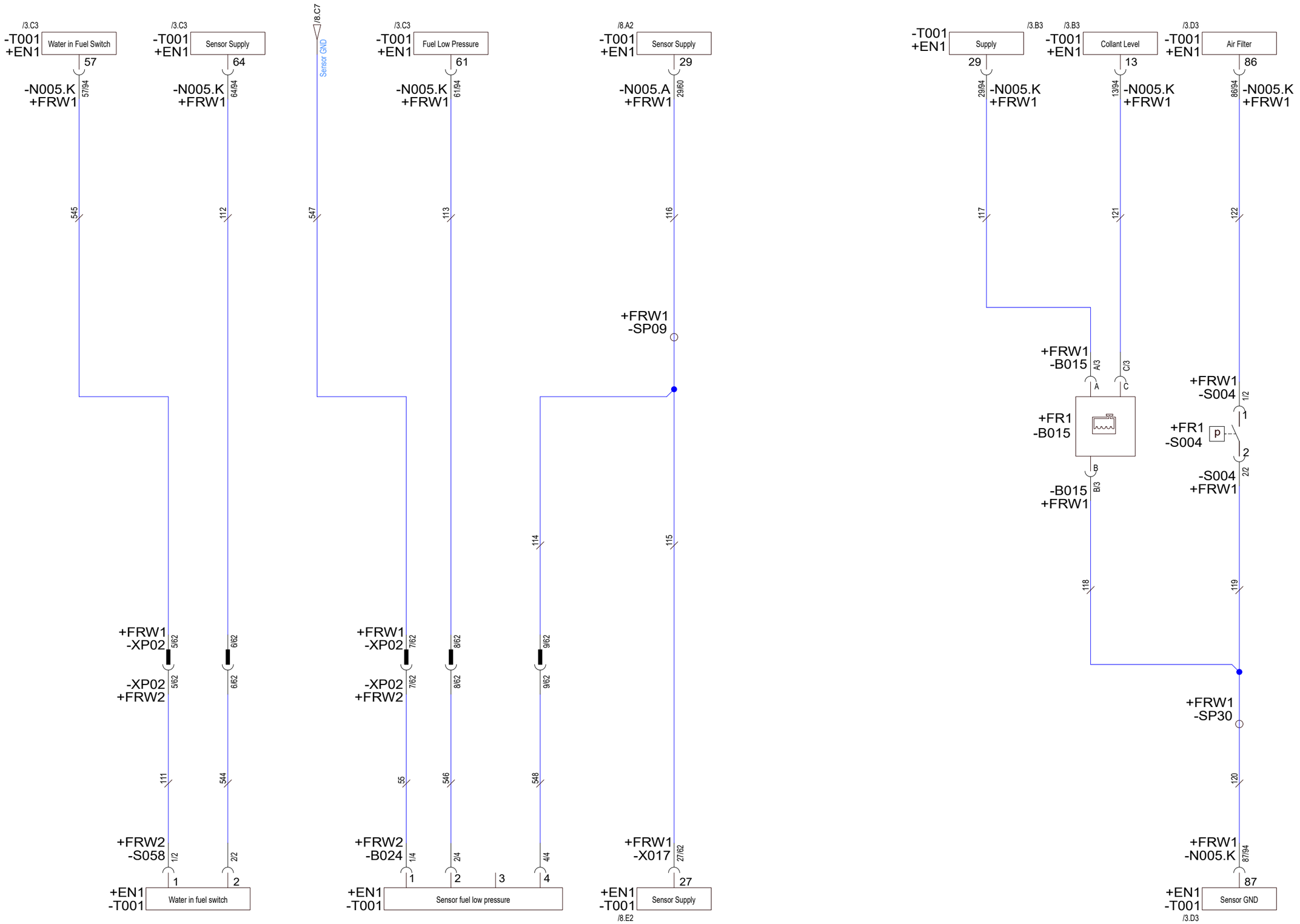
Dieselmotorelektronik

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

9

A3



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Freigabe	25.03.2019	LNZhartp

Dieselmotorelektronik

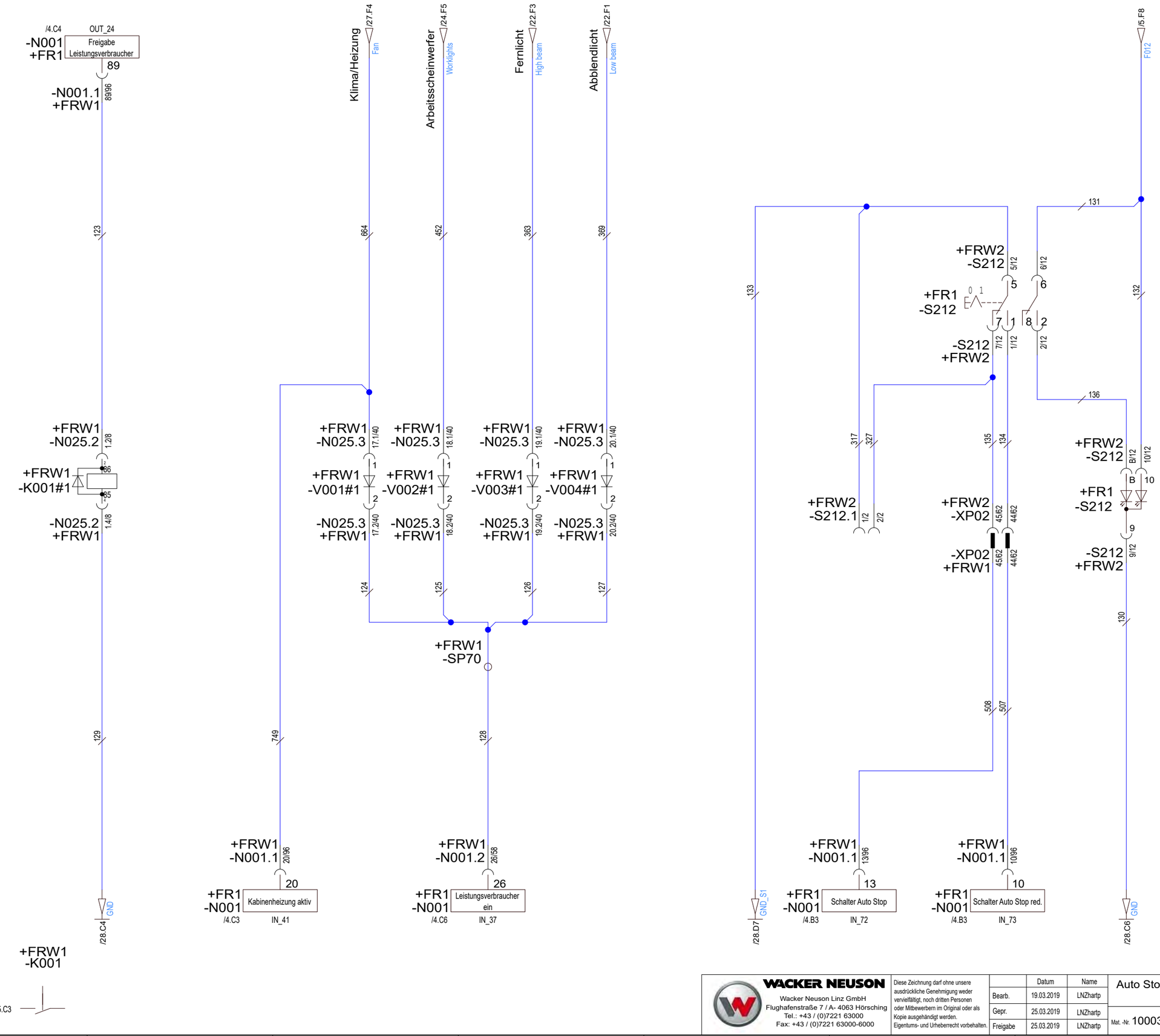
Mat.-Nr. 1000388197

Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

10

A3



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Bearb.	19.03.2019	LNZhartp
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Freigabe	25.03.2019	LNZhartp

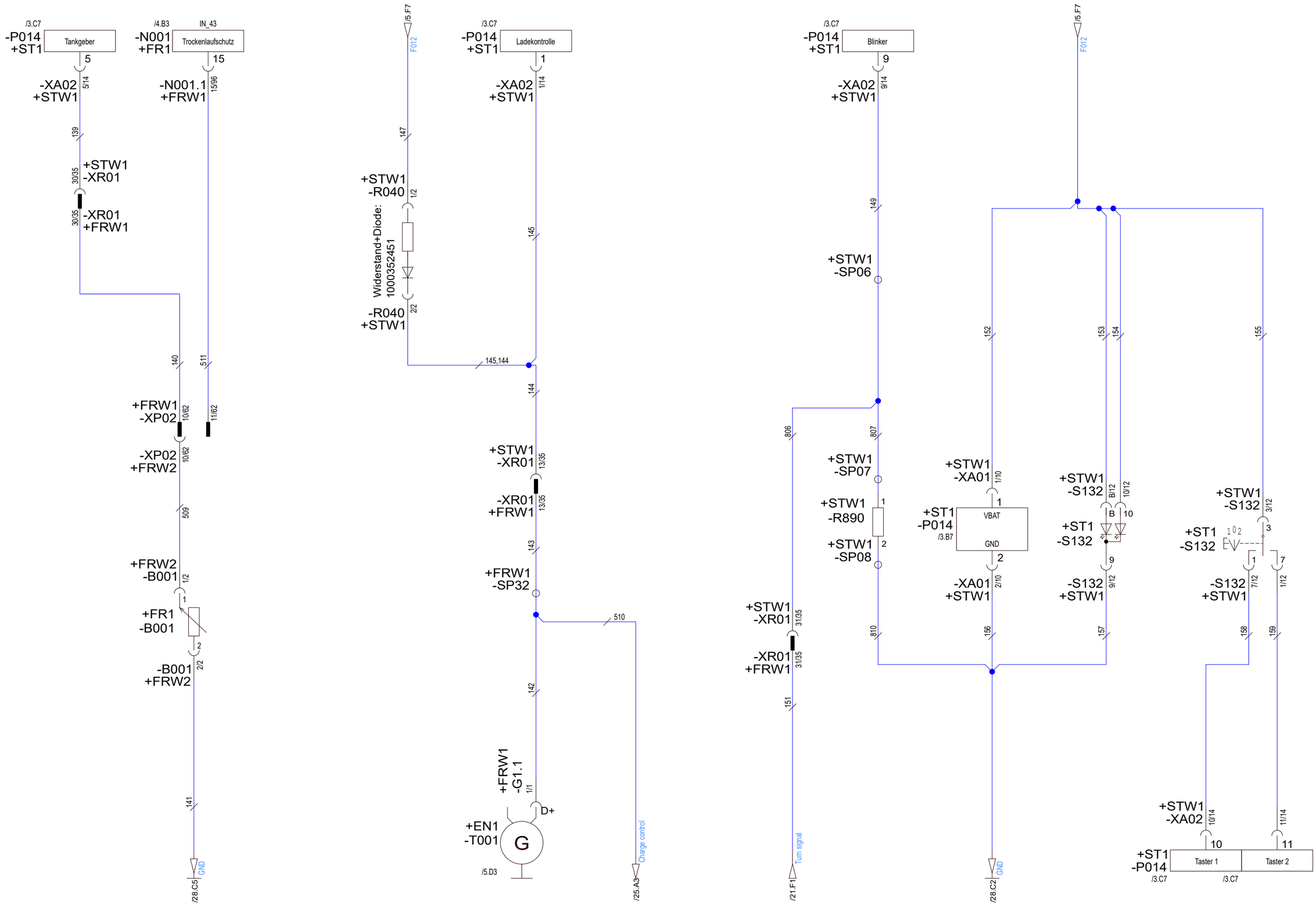
Auto Stop

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

11

A3



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
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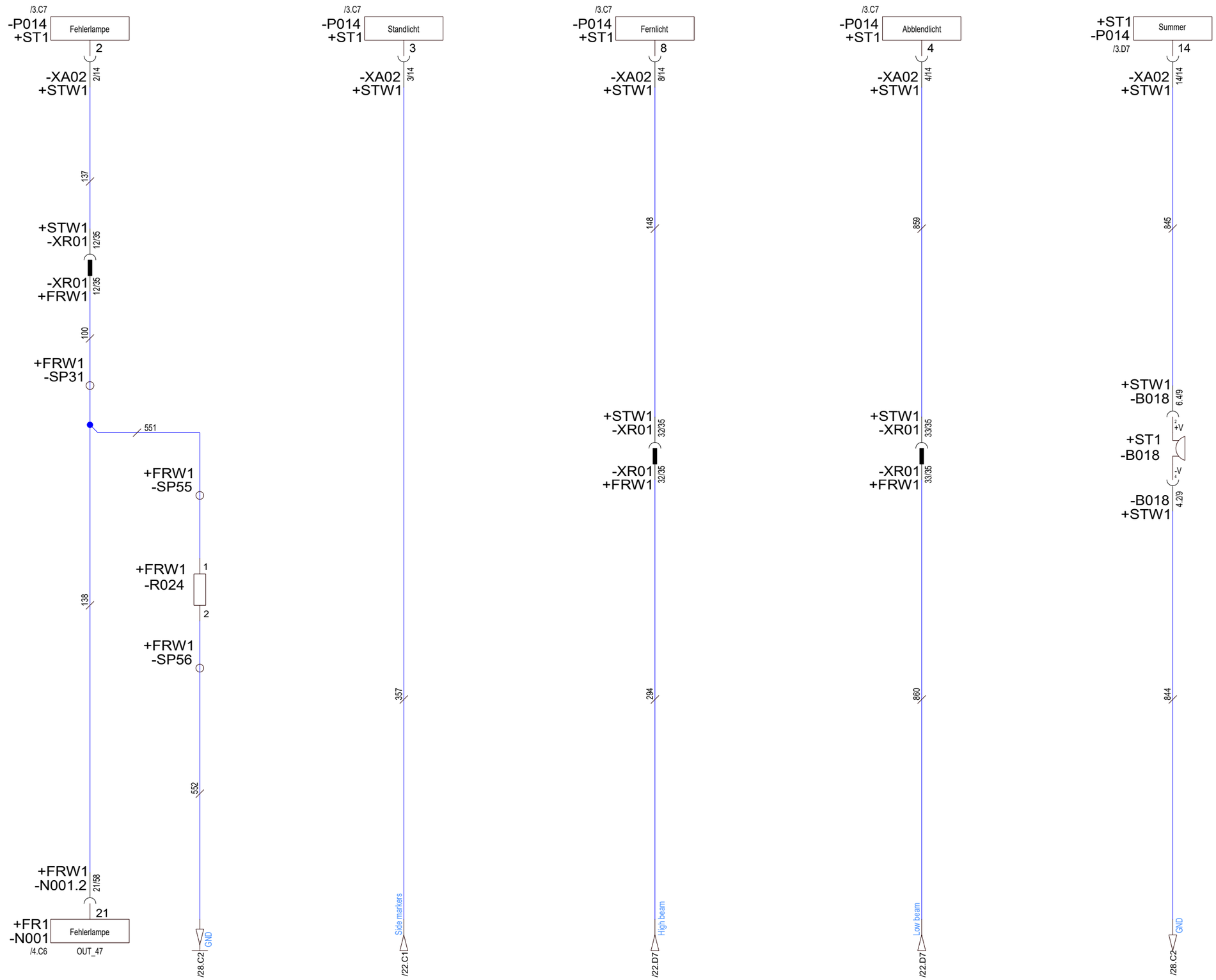
Freigabe	25.03.2019	LNZhartp

IO Display, Tankgeber, Lade-Kontrolle

Revision	02
Ersatz für	01
Gewicht [kg]	
Mat.-Nr.	1000388197
Doc.-Nr.	2060099416

12

A3



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		Bearb.	19.03.2019	LNZhartp			Ersatz für	01	
		Gepr.	25.03.2019	LNZhartp			Gewicht [kg]		A3
		Freigabe	25.03.2019	LNZhartp	Mat.-Nr. 1000388197	Doc.-Nr. 2060099416			

+ST1
-P014 Umschaltung Blinker 1
/3.D7 12
-XA02 12/14
+STW1
162
+STW1
-K160 3/5
+STW1
-K160
/14.F1
-K160 5/5
+STW1
160
/28.C2 GND

+ST1
-P014 Umschaltung Blinker 2
/3.D7 13
-XA02 13/14
+STW1
163
+STW1
-K160.1 3/5
+STW1
-K160.1
/14.F2
-K160.1 5/5
+STW1
161

/4.C4 OUT_23
-N001
+FR1 Abschaltung Rückfahricht
90
-N001.1 90/96
+FRW1
164
+FRW1
-N025.5 5.3/30
+FRW1
-K003.1#1
-N025.5 5.5/30
+FRW1
735
/28.C4 GND

/4.D6
-N001
+FR1 VSS_2
32
-N001.2 32/58
+FRW1
166
304
+FRW1
-SP37

167
+FRW1
-S102 3/4
+FR1
-S102
/14.F3
-S102 4/4
+FRW1
171
+FRW1
-N001.2 14/58
14
+FR1
-N001 Lenkrichtung 1
/4.C6 IN_9

168
+FRW1
-S102 1/4
+FR1
-S102
/14.F3
-S102 2/4
+FRW1
172
+FRW1
-N001.1 57/96
57
+FR1
-N001 Lenkrichtung 1 red.
/4.E3 IN_10

169
+FRW1
-S103 3/4
+FR1
-S103
/14.F4
-S103 4/4
+FRW1
173
+FRW1
-N001.2 52/58
52
+FR1
-N001 Lenkrichtung 2
/4.E6 IN_11

170
+FRW1
-S103 1/4
+FR1
-S103
/14.F4
-S103 2/4
+FRW1
174
+FRW1
-N001.2 38/58
38
+FR1
-N001 Lenkrichtung 2 red.
/4.D6 IN_12

+FRW1
-XP02 13/62
-XP02 13/62
+FRW1
512
/19.A5 VSS_2

/4.D6 OUT_27
-N001
+FR1 Lenkrichtung 1
43
-N001.2 43/58
+FRW1
175
+FRW1
-Y155 1/2
1
2
-Y155 2/2
+FRW1
177

/4.D6 OUT_28
-N001
+FR1 Lenkrichtung 2
41
-N001.2 41/58
+FRW1
176
+FRW1
-Y070 1/2
1
2
-Y070 2/2
+FRW1
178
+FRW1
-SP36
179
+FRW1
-N001.1 79/96
79
+FR1
-N001 Lenkrichtung 1+2 LS
/4.B4 OUT_41

Y155: Lenkung für Fahrtrichtung Frontstoßstange
Y070: Lenkung für Fahrtrichtung Mulde

+STW1
-K160
/14.D1
/21.C6

+STW1
-K160.1
/14.D2
/21.C7

+FR1
-S102
/14.C3
/14.C4

+FR1
-S103
/14.C5
/14.C5

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

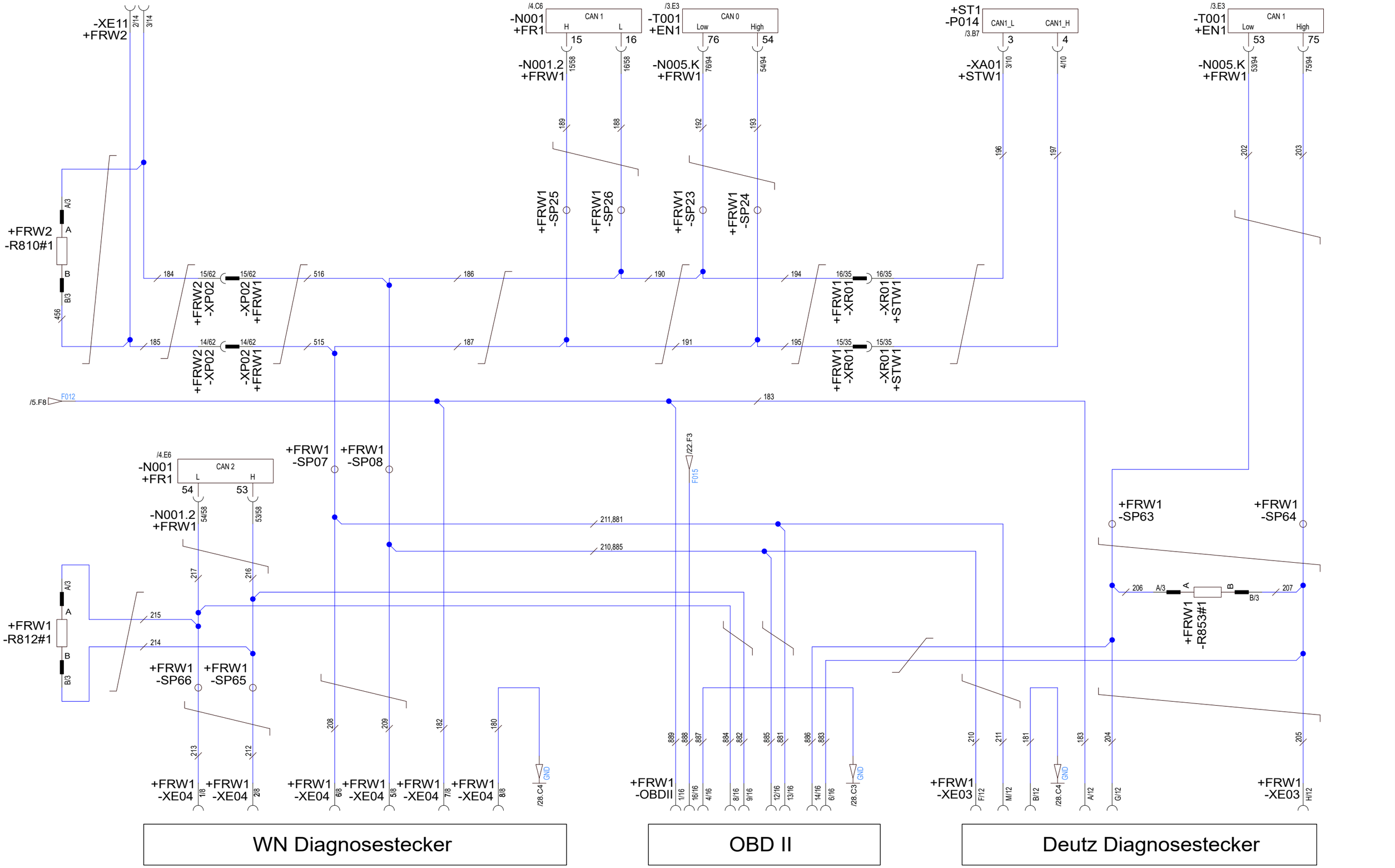
Drehsitzfunktionen

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

14

A3



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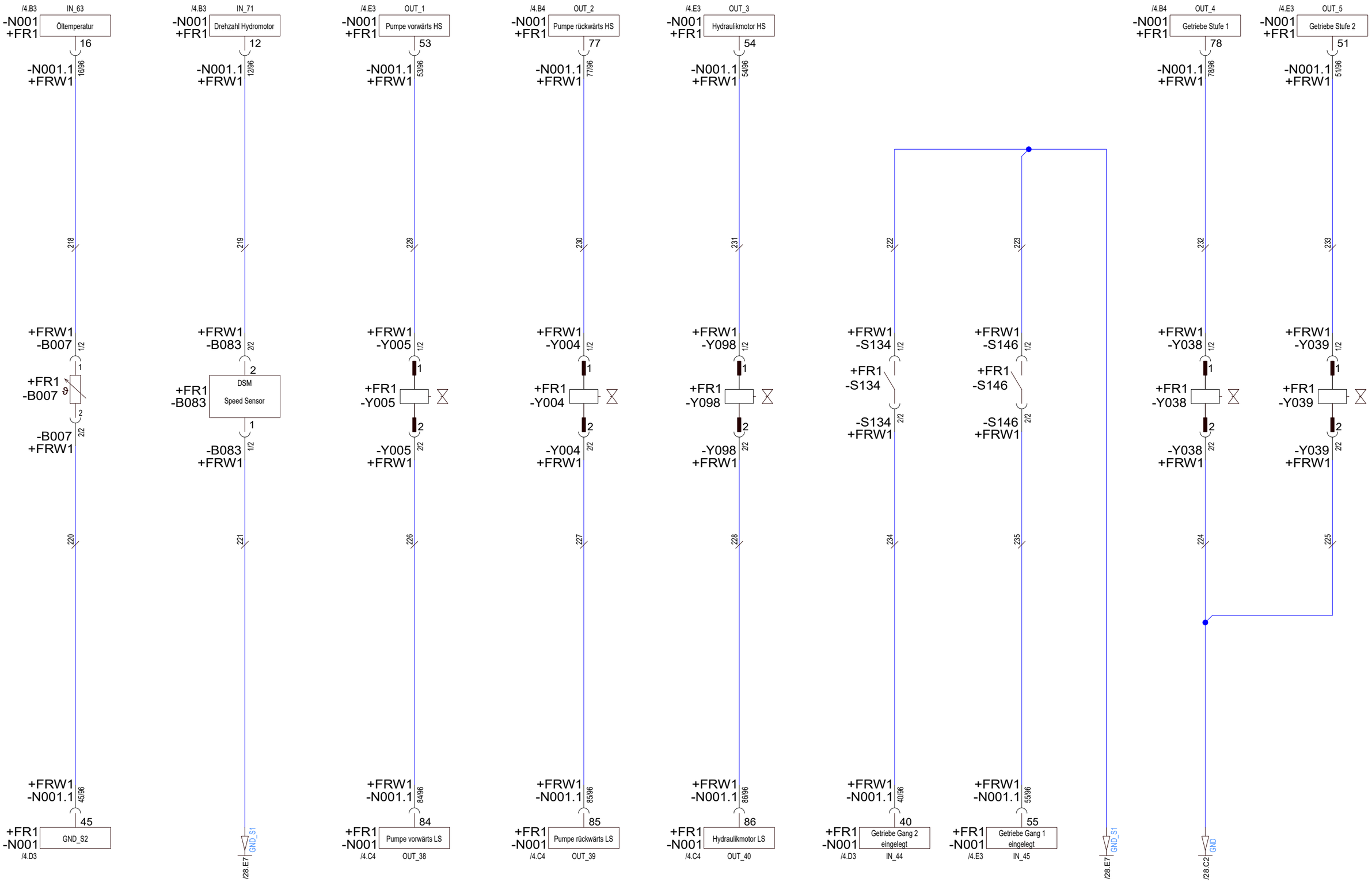
CAN

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

15

A3



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Freigabe	25.03.2019	LNZhartp

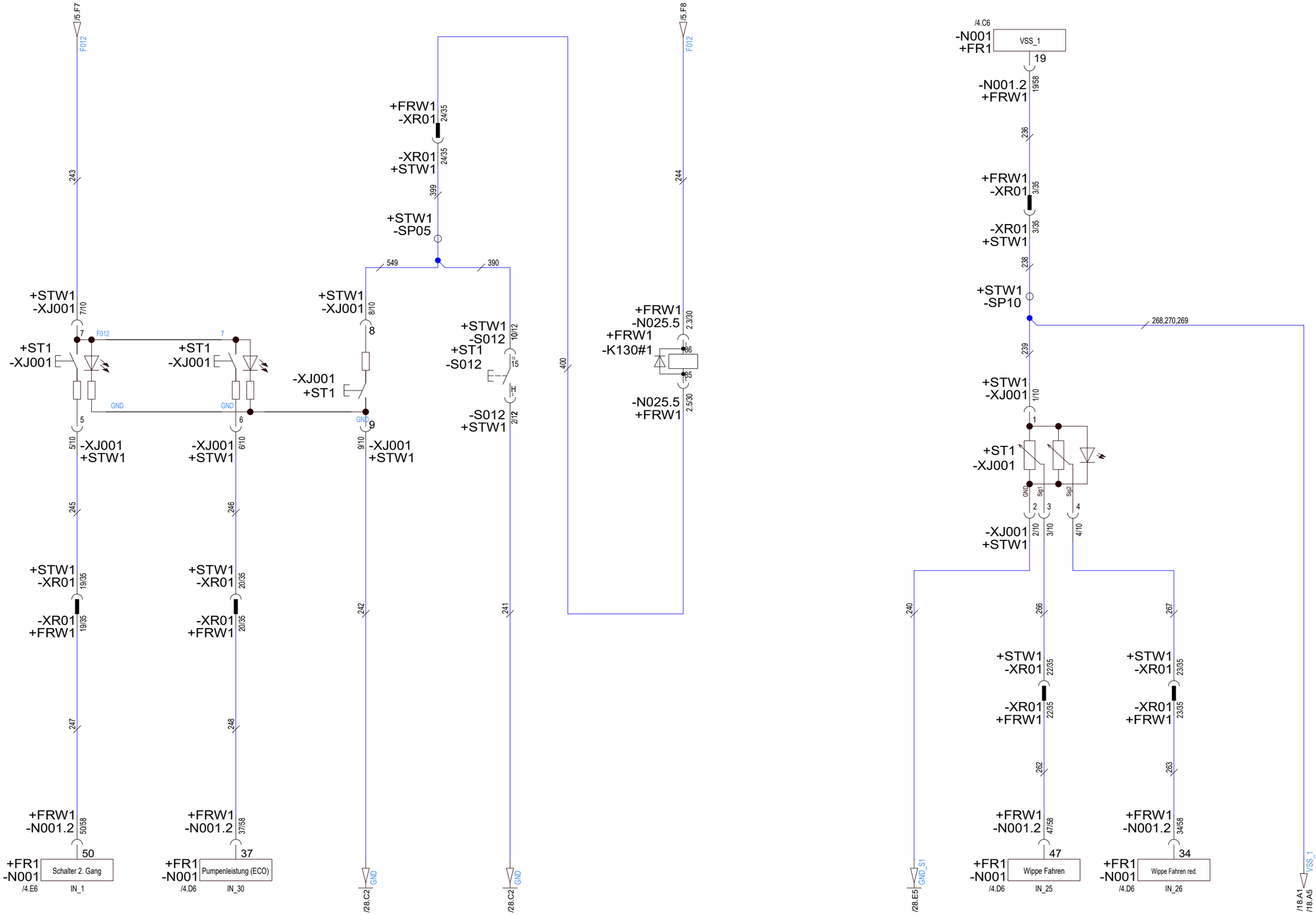
Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

16

A3



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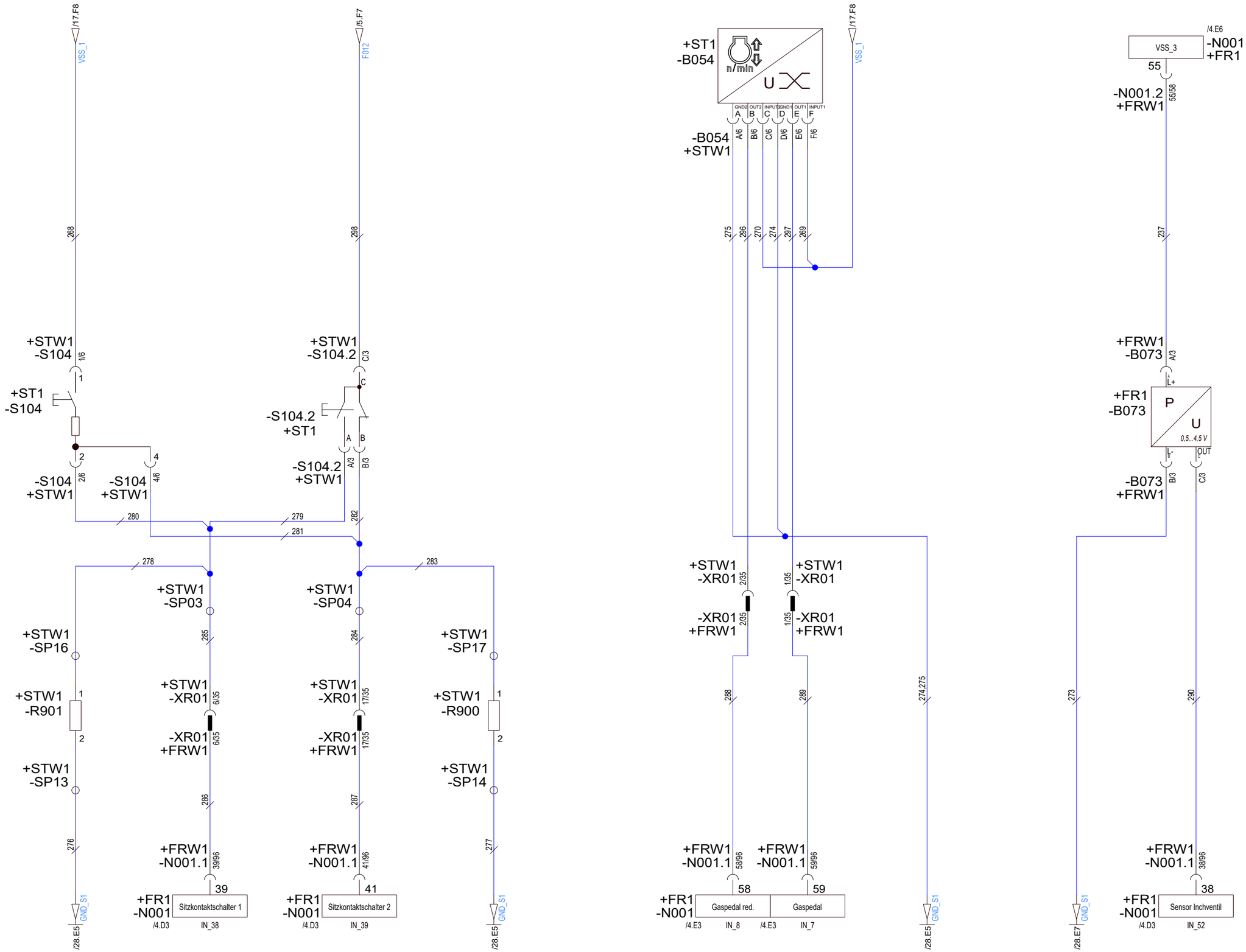
Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

17

A3



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Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

18

A3

/6.F5
FD11
/5.F8
FD12
307
301,302
+FRW2
-S065
6/12
+FR1
-S065
6
8
2
-S065
+FRW2
8/12
2/12
491
497
560
+FRW2
-SP06
+FRW2
-XP02
2/62
-XP02
+FRW1
2/62
3/62
3/62
520
+FRW1
-SP10
521
+FRW1
-Y075
1/2
1
+FR1
-Y075
2
-Y075
+FRW1
2/2
499
379
295
+FRW1
-N001.2
17/58
31/58
17
31
+FR1
-N001
Schalter Drosselventil Feedback red.
/4.C6
IN_36
Schalter Drosselventil Feedback
/4.D6
IN_35
GND
/28.C2
+FRW2
-R902
1
2
+FRW2
-SP07
326
301
302
+FRW2
-S065
B/12
B
10
+FR1
-S065
9
-S065
+FRW2
9/12
+FRW2
-S210
10/12
10
+FR1
-S210
9
-S210
+FRW2
9/12
570
311,570
312
GND
/28.C6
/14.F6
VSS_2
512
+FRW2
-R025
1/2
Widerstand 22 Ohm
SAP: 1000398308
-R025
+FRW2
2/2
305
+FRW2
-SP01
306
308
309
+FRW2
-S065
5/12
+FR1
-S065
0 1
5
7
1
-S065
+FRW2
7/12
1/12
+FRW2
-S210
5/12
5
-S210
+FR1
1
-S210
+FRW2
1/12
518
517
319
+FRW2
-XP02
17/62
16/62
+FRW2
-XP02
18/62
-XP02
+FRW1
17/62
16/62
-XP02
+FRW1
18/62
93
92
99
+FRW1
-N001.1
69/96
+FRW1
-N001.1
67/96
+FRW1
-N001.2
27/58
69
67
27
+FR1
-N001
Schalter Feststellbremse red.
/4.B4
IN_59
+FR1
-N001
Schalter Feststellbremse
/4.B4
IN_58
+FR1
-N001
Parkbremstest
/4.C6
IN_57
VSS_2
/20.A5
/4.C3
OUT_19
-N001
+FR1
Parkbremse HS
28
-N001.1
+FRW1
28/96
321
+FRW1
-Y043
1/2
1
+FR1
-Y043
2
-Y043
+FRW1
2/2
320
+FRW1
-N001.1
83/96
83
+FR1
-N001
Parkbremse LS
/4.B4
OUT_37

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Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

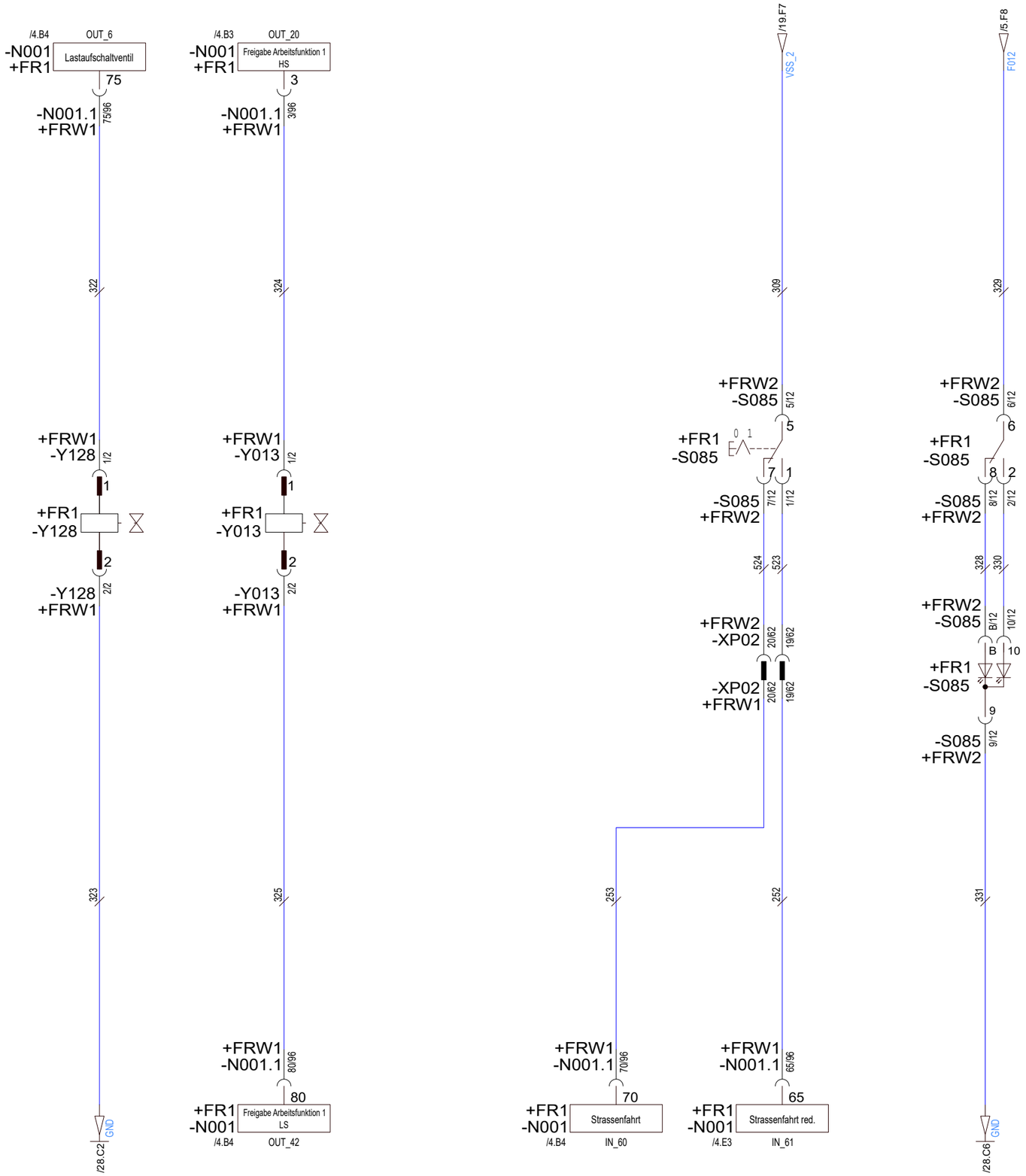
Fahren

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

19

A3



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	Datum	Name
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Freigabe	25.03.2019	LNZhartp

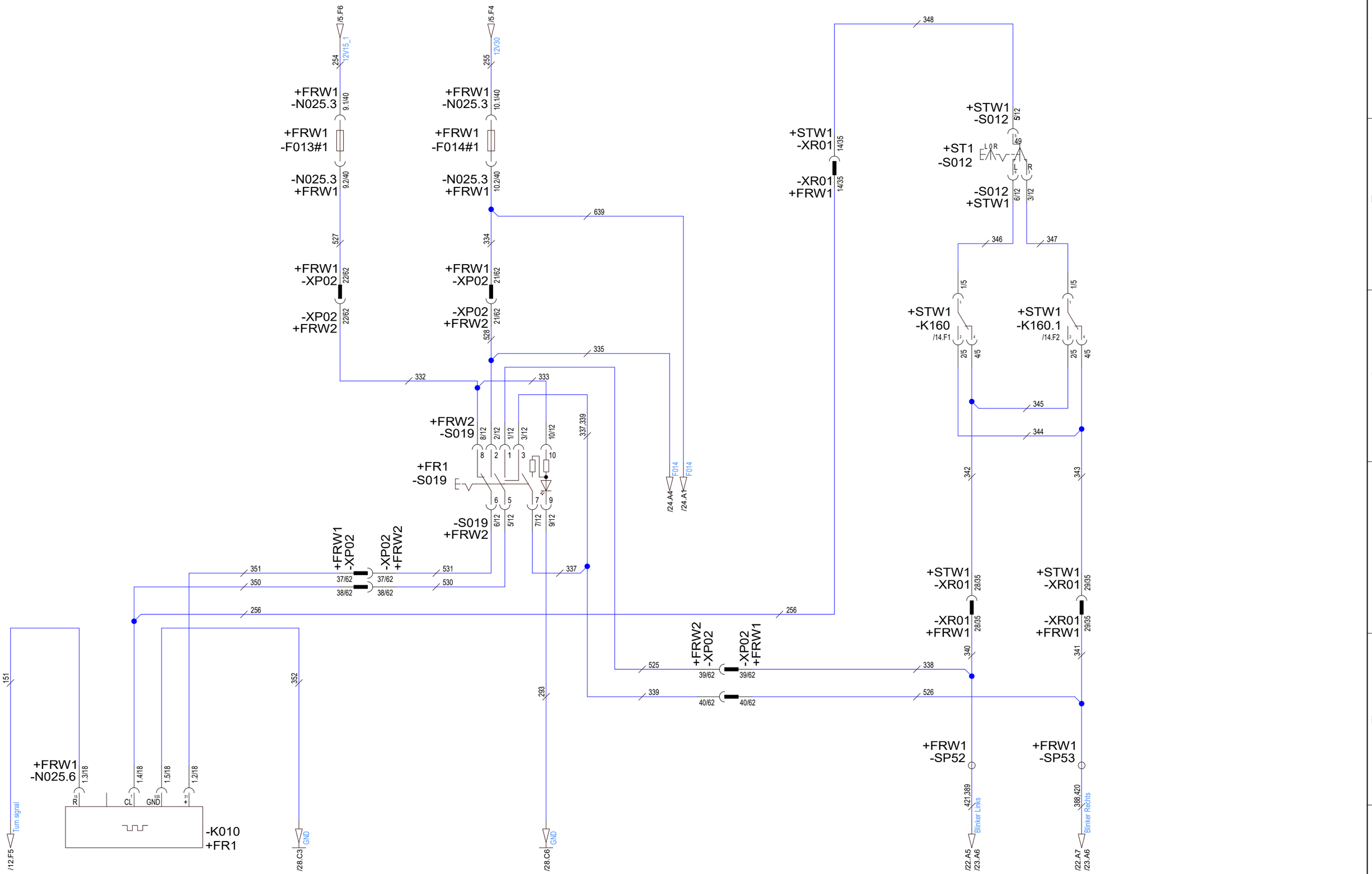
Arbeitsfunktionen

Revision	02
Ersatz für	01
Gewicht [kg]	

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

20

A3



1	2	3	4	5	6	7	8				

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Freigabe	25.03.2019	LNZhartp

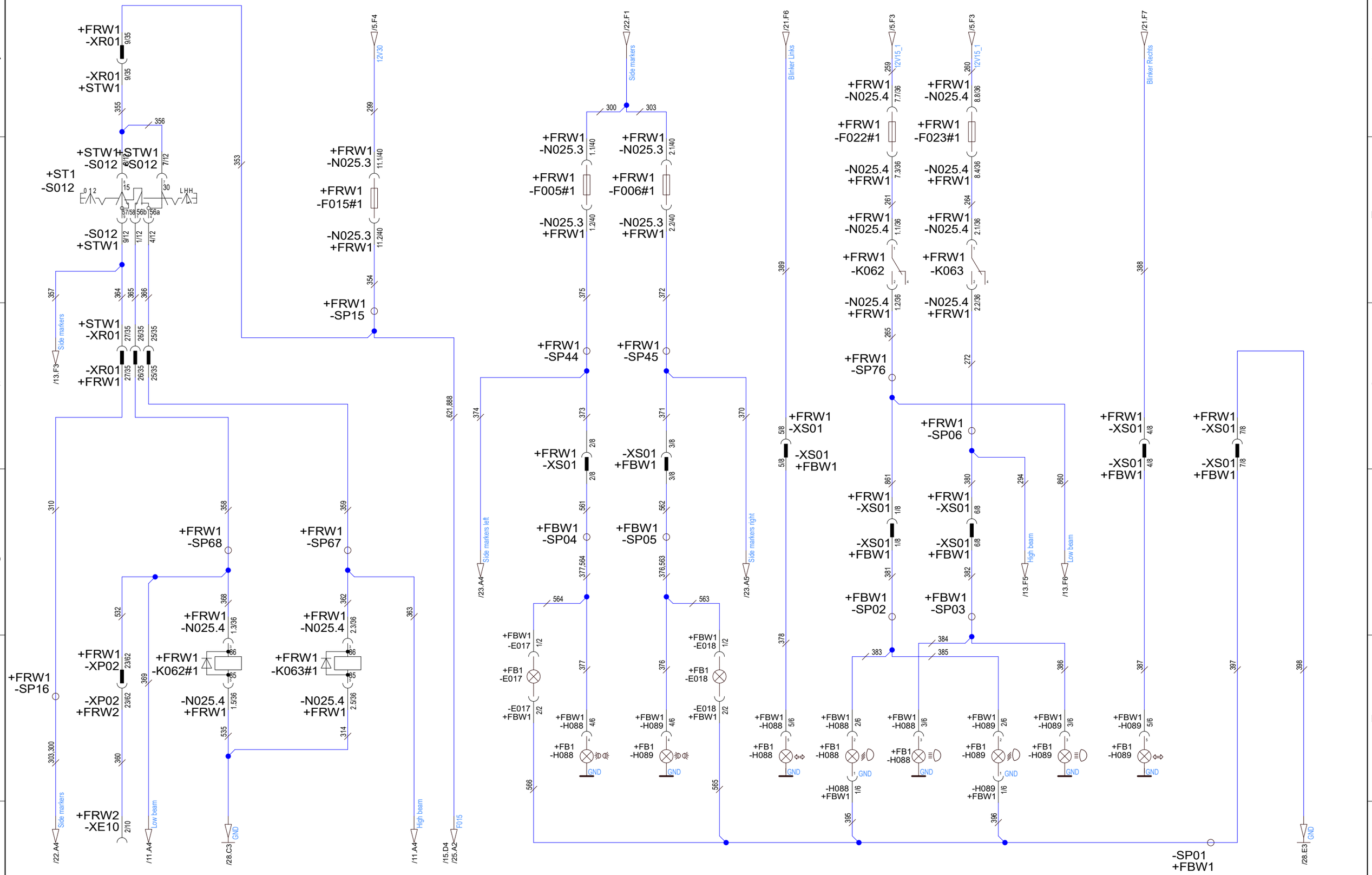
StVzO Beleuchtung
Blinkanlage

Mat.-Nr. 1000388197
Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

21

A3



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Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

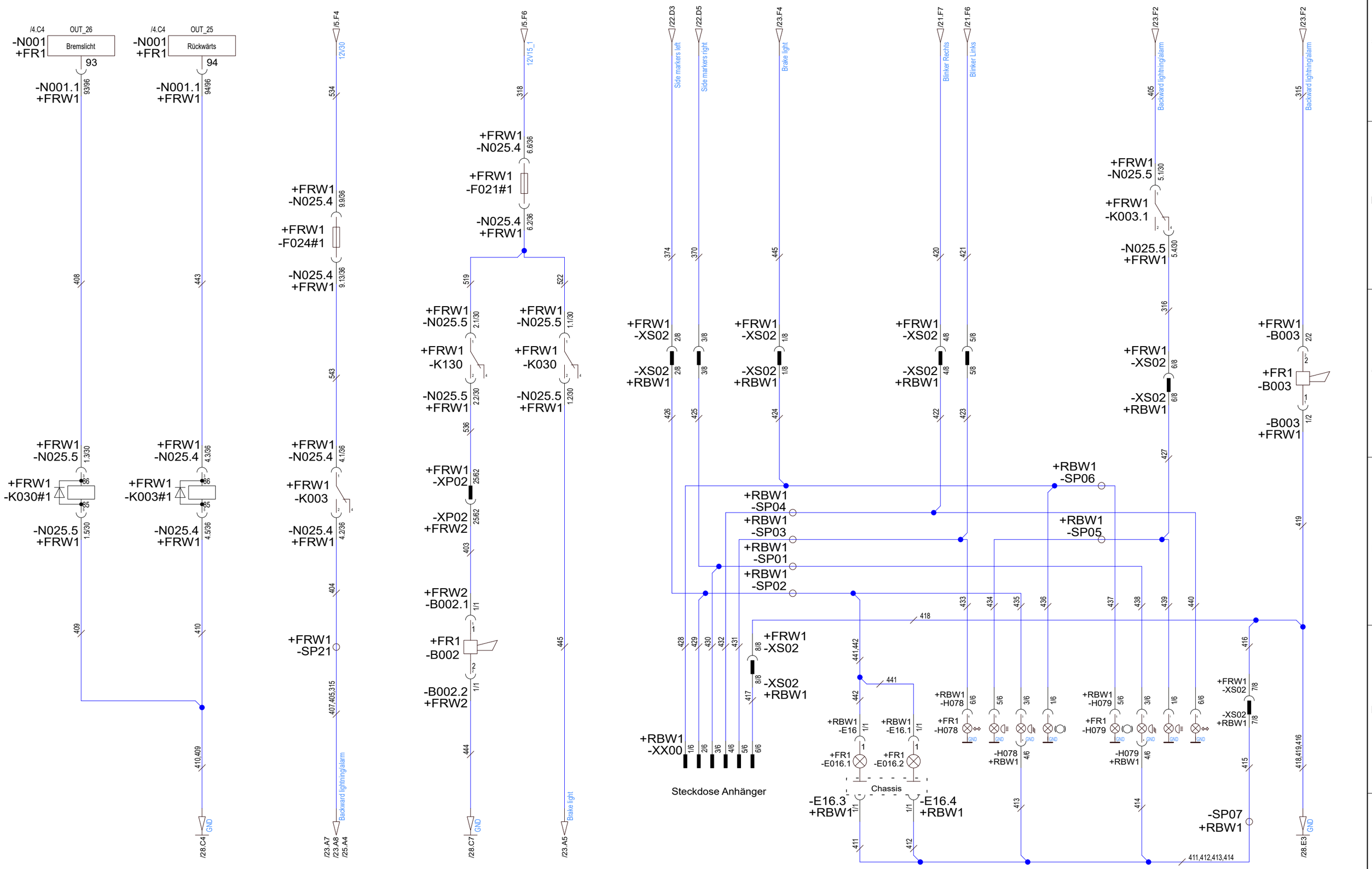
StVzO Beleuchtung
Frontstoßstange

Mat.-Nr. 1000388197
Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

22

A3



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Bearb.	19.03.2019	LNZhartp
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Freigabe	25.03.2019	LNZhartp

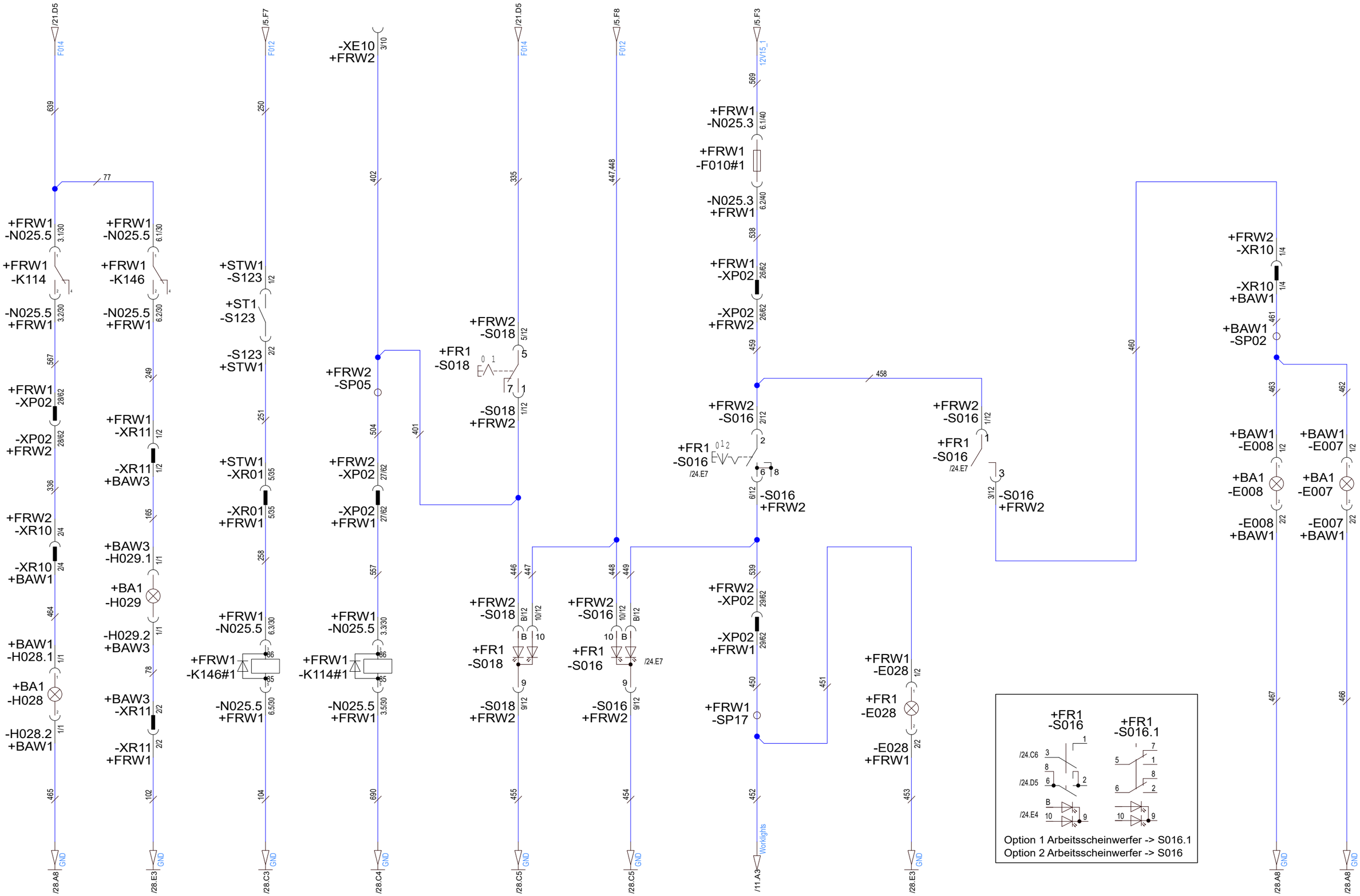
StVzO Beleuchtung
Mulde

Mat.-Nr. 1000388197
Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

23

A3



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Freigabe	25.03.2019	LNZhartp

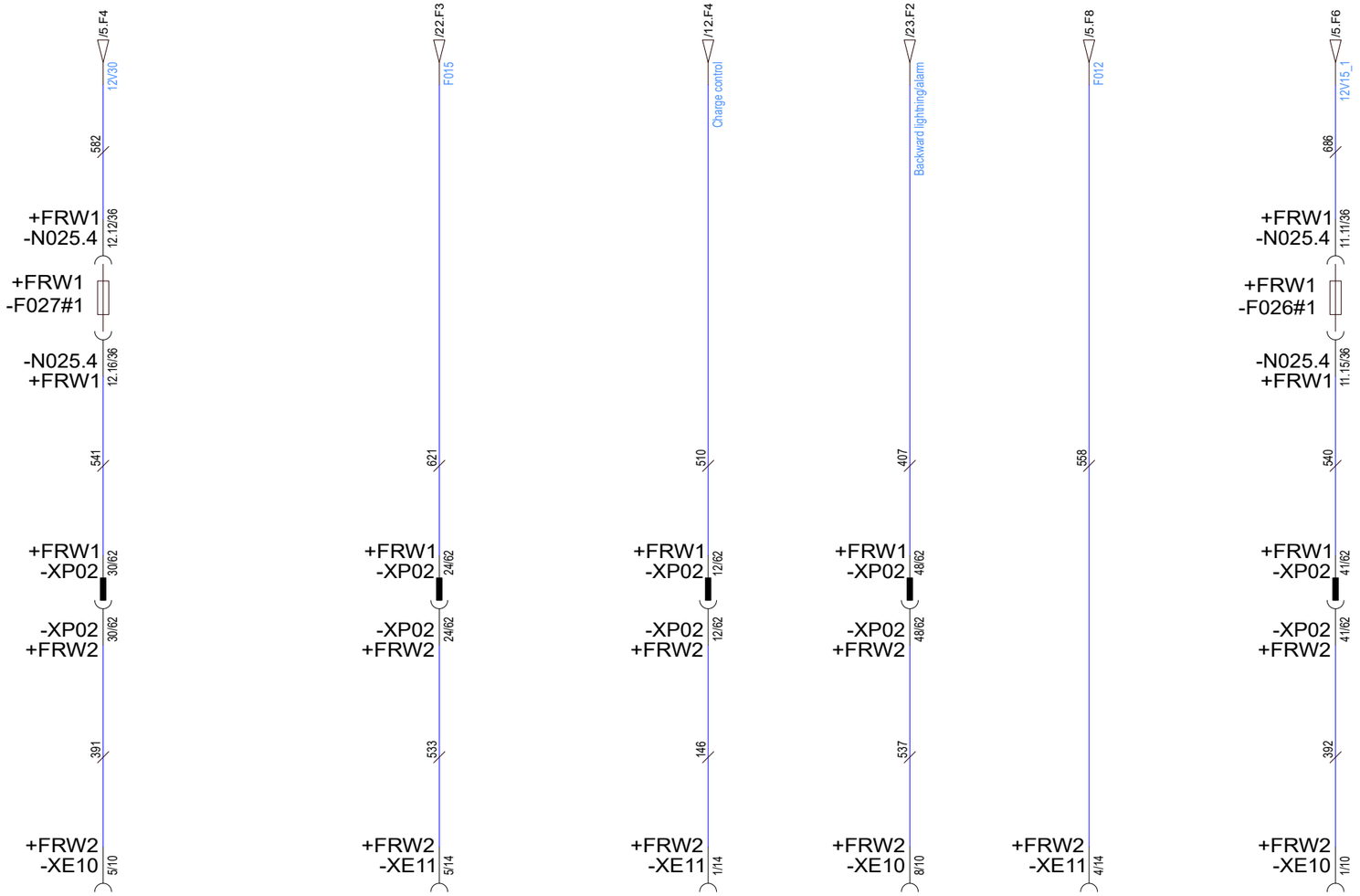
Arbeitsscheinwerfer, Rundumkennleuchte

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

24

A3



+FRW2
-XE10#4

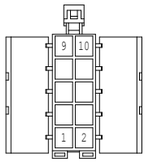
/25.D6	1	F026	+FRW2-XP02:41	1.50 mm² RD-WH	392
/22.F1	2	Low beam	+FRW2-XP02:23	0.75 mm² GY	360
/24.A3	3	Rotating Beacon	+FRW2-SP05:1	0.75 mm² VT	402
	4				
/25.D1	5	F027	+FRW2-XP02:30	1.50 mm² RD	391
	6				
/25.D7	7	GND	+FRW2-SP03:1	1.50 mm² BK	394
/25.D4	8	Backward lightning/alarm	+FRW2-XP02:48	1.00 mm² GY	537
	9				
	10				

+FRW2
-XE11#5

/25.D3	1	Charge control	+FRW2-XP02:12	1.00 mm² PK	146
/15.A1	2	CAN0 High	+FRW2-R810:B, +FRW2-XP02:14	0.75 mm²,0.75 mm² WH,WH	456, 185
/15.A1	3	CAN0 Low	+FRW2-R810:A, +FRW2-XP02:15	0.75 mm²,0.75 mm² WH,WH	457, 184
/25.D5	4	F012	+FRW2-SP02:1	0.75 mm² RD-WH	558
/25.D2	5	F014	+FRW2-XP02:24	0.75 mm² RD	533
/25.E7	6	GND	+FRW2-SP03:1	0.75 mm² BK	393
/7.B2	7	Start signal	+FRW2-S001.2:8	0.75 mm² PK	70
/7.C2	8	Start signal	+FRW2-XP02:4	0.75 mm² PK	503
	9				
	10				
	11				
	12				
	13				
	14				

+FRW2
-XE10#10

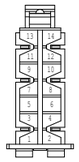
/25.A7



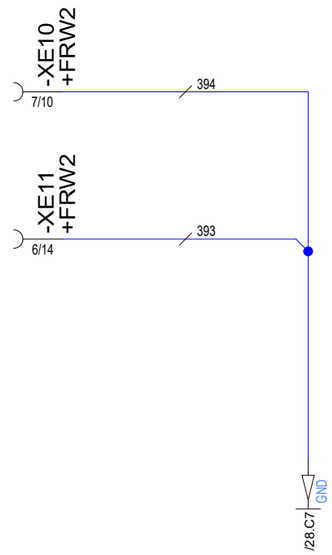
Pin ... Funktion
1 … 12V15 - Option
2 … Abblendlicht
3 … Drehlicht
4 … ---
5 … 12V30 - Option
6 … ---
7 … Masse
8 … Signal Rückwärtsfahrt
9 … ---

+FRW2
-XE11#4

/25.B7



Pin ... Funktion
1 … D+
2 … CAN H
3 … CAN L
4 … 12V15
5 … 12V30
6 … Masse
7 … Relais - Startsignal
8 … Relais - Startsignal
9 … Relais - Spannungsversorgung
10… Relais - Spannungsversorgung



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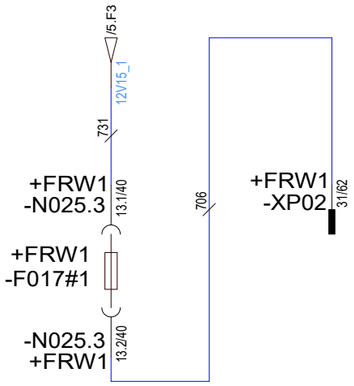
Stecker Zusatzoption

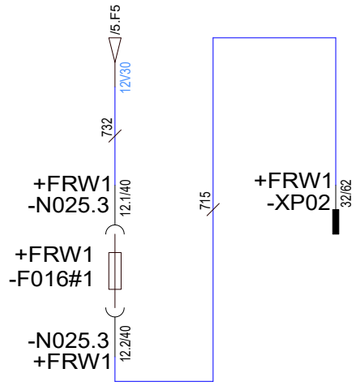
Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

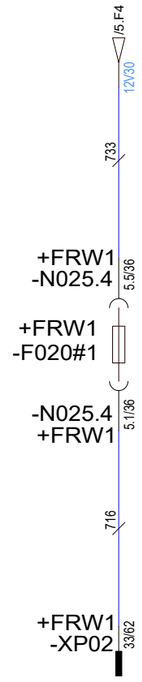
Revision	02
Ersatz für	01
Gewicht [kg]	

25

A3







Option Überrollbügel -> keine Steckdose, Radio, Wischer!

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Freigabe	25.03.2019	LNZhartp

Wischer, Radio, Steckdose

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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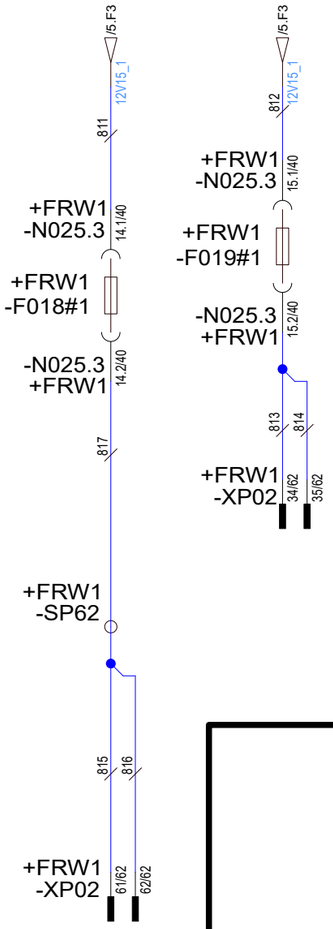
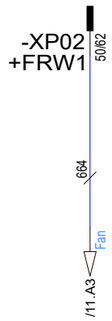
A3



Option Überrollbügel -> keine Heizung / Klimaanlage!



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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Heizung, Klimaanlage

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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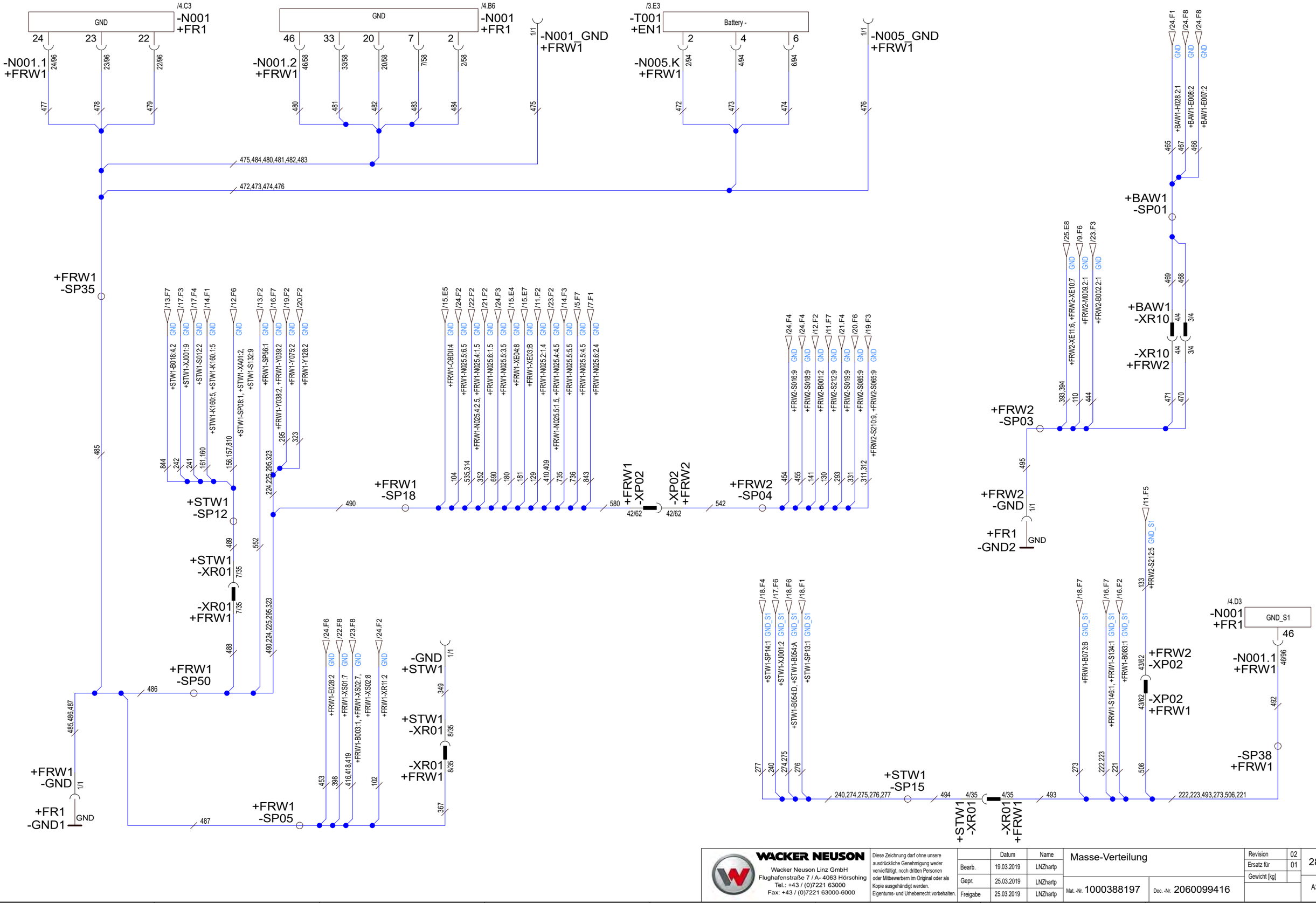

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	Datum	Name
Bearb.	19.03.2019	LNZhartp
Gepr.	25.03.2019	LNZhartp
Freigabe	25.03.2019	LNZhartp

Masse-Verteilung

Mat.-Nr. 1000388197

Doc.-Nr. 2060099416

Revision	02
Ersatz für	01
Gewicht [kg]	

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-B001	+FR1	/12.D2	Kraftstoffniveaugeber	1000307804
-B001	+FRW2	/12.D2	Stecker Kraftstoffniveaugeber	1000027438
-B002	+FR1	/23.D3	Hupe	1000269368
-B002.1	+FRW2	/23.D3	Stecker Hupe	1000383151
-B002.2	+FRW2	/23.E3	Stecker Hupe	1000383151
-B003	+FR1	/23.C8	Rückfahrwarneinrichtung	1000170892
-B003	+FRW1	/23.C8	Stecker Rückfahrwarneinrichtung	1000027438
-B007	+FR1	/16.C1	Temperaturgeber Hydrauliköl	
-B007	+FRW1	/16.C1	Stecker Temperaturgeber Hydrauliköl	1000027410
-B015	+FR1	/10.C7	Kühlmittelniveaugeber	1000189283
-B015	+FRW1	/10.C7	Stecker Kühlmittelniveaugeber	1000027429
-B018	+ST1	/13.C7	Summer	
-B018	+STW1		Stecker Summer	1000101071
-B024	+FRW2	/10.E3	Stecker Drucksensor Niederdruck Kraftstoff	1000322614
-B054	+ST1	/18.A5	Gaspedal	1000304814
-B054	+STW1	/18.B5	Stecker Gaspedal	1000308534
-B073	+FR1		Drucksensor Inchpedal	1000303206
-B073	+FRW1	/18.C7	Stecker Drucksensor Inchpedal	1000027429
-B083	+FR1	/16.C2	Drehzahlsensor Motor Fahren	
-B083	+FRW1	/16.D2	Stecker Drehzahlsensor Motor Fahren	1000379245
-BAT1	+FRW1	/5.A5	Kabelschuh Hauptsicherung	1000127092
-BAT_GND	+EBW1	/5.F2	Kabelschuh Masse	1000050031
-BAT_GND	+EBW2	/5.D1	Batterieklemme Minus	1000089785
-E007	+BA1	/24.C8	Arbeitsscheinwerfer hinten	1000270919
-E007	+BAW1	/24.C8	Stecker Arbeitsscheinwerfer hinten	1000270365
-E008	+BA1	/24.C8	Arbeitsscheinwerfer hinten	1000270919
-E008	+BAW1	/24.C8	Stecker Arbeitsscheinwerfer hinten	1000270365
-E16	+RBW1	/23.E6	Stecker Kennzeichenbeleuchtung	1000027384
-E16.1	+RBW1	/23.E6	Stecker Kennzeichenbeleuchtung	1000027384
-E016.1	+FR1	/23.E6	Kennzeichenbeleuchtung	1000117390
-E016.2	+FR1	/23.E6	Kennzeichenbeleuchtung	1000117390

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision | Ersetzt Version | Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-E16.3	+RBW1	/23.F6	Kabelschuh Kennzeichenbeleuchtung	1000096859
-E16.4	+RBW1	/23.F6	Kabelschuh Kennzeichenbeleuchtung	1000096859
-E017	+FB1	/22.E4	Begrenzungsleuchten	
-E017	+FBW1	/22.D4	Stecker Begrenzungsleuchten	1000027438
-E018	+FB1	/22.E5	Begrenzungsleuchten	
-E018	+FBW1	/22.D5	Stecker Begrenzungsleuchten	1000027438
-E028	+FR1	/24.E6	Arbeitsscheinwerfer	1000270919
-E028	+FRW1	/24.E6	Stecker Arbeitsscheinwerfer	1000270365
-F001	+FRW1		Hauptsicherung 60A	1000098668
-F002	+FRW1		Hauptsicherung 80A	1000027321
-F003	+FRW1		Hauptsicherung 50A	1000015298
-F004	+FRW1		Hauptsicherung 50A	1000015298
-F005	+FRW1		Sicherung 7,5A	1000186027
-F006	+FRW1		Sicherung 7,5A	1000186027
-F007	+FRW1		Sicherung 30A	1000247967
-F008	+FRW1		Sicherung 10A	1000114140
-F009	+FRW1		Sicherung 5A	1000186026
-F010	+FRW1		Sicherung 15A	1000186028
-F011	+FRW1		Sicherung 5A	1000186026
-F012	+FRW1		Sicherung 10A	1000114140
-F013	+FRW1		Sicherung 10A	1000114140
-F014	+FRW1		Sicherung 15A	1000186028
-F015	+FRW1		Sicherung 10A	1000114140
-F016	+FRW1		Sicherung 10A	1000114140
-F017	+FRW1		Sicherung 15A	1000186028
-F018	+FRW1		Sicherung 30A	1000247967
-F019	+FRW1		Sicherung 25A	1000168904
-F020	+FRW1		Sicherung 15A	1000186028
-F021	+FRW1		Sicherung 15A	1000186028
-F022	+FRW1		Sicherung 10A	1000114140
-F023	+FRW1		Sicherung 10A	1000114140

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision	
Ersetzt Version	
Gewicht in [kg]	

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-F024	+FRW1		Sicherung 5A	1000186026
-F025	+FRW1		Sicherung 15A	1000186028
-F026	+FRW1		Sicherung 10A	1000114140
-F027	+FRW1		Sicherung 10A	1000114140
-G1.1	+FRW1	/12.E4	Kabelschuh Lichtmaschine	1000110764
-G001	+FRW1	/5.D3	Kabelschuh Lichtmaschine	1000126891
-G002	+EBW1	/5.D1	Kabelschuh Batterie	1000089783
-G002	+FR1	/5.D1	Batterie	1000250323
-GND	+EBW1	/5.F3	Masse	1000050030
-GND	+EBW2	/5.F1	Masse	1000050031
-GND	+FR1	/5.F2	Masse	
-GND	+FRW1	/28.F1	Masse	1000346811
-GND	+FRW2	/28.D7	Masse	1000365194
-GND	+STW1	/28.E3	Masse	1000405714
-GND1	+FR1	/28.F1	Masse	
-GND2	+FR1	/28.D7	Masse	
-H028	+BA1	/24.E1	Rundumkennleuchte	1000314938
-H028.1	+BAW1	/24.D1	Stecker Rundumkennleuchte	1000027435
-H028.2	+BAW1	/24.E1	Stecker Rundumkennleuchte	1000095370
-H029	+BA1	/24.D2	Rundumkennleuchte grün	
-H029.1	+BAW3	/24.D2	Stecker Rundumkennleuchte grün	1000027435
-H029.2	+BAW3	/24.D2	Stecker Rundumkennleuchte grün	1000095370
-H078	+FR1	/23.E7	Kombinierte Rückleuchte links	1000148542
-H078	+RBW1	/23.E7	Kombinierte Rückleuchte links	1000027431
-H079	+FR1	/23.E7	Kombinierte Rückleuchte rechts	1000148543
-H079	+RBW1	/23.E7	Stecker Kombinierte Rückleuchte rechts	1000027431
-H088	+FB1	/22.E5	Kombinierter Frontscheinwerfer links	HEADLIGHTS
-H088	+FBW1	/22.F5	Stecker Kombinierter Frontscheinwerfer links	1000027431
-H089	+FB1	/22.E6	Kombinierter Frontscheinwerfer rechts	HEADLIGHTS
-H089	+FBW1	/22.F6	Stecker Kombinierter Frontscheinwerfer links	1000027431
-K001	+FRW1	/11.F1	Hochstromrelais	1000154042

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	Datum	Name
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Gepr.		
Lesestation		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision | Ersetzt Version | Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-K003	+FRW1		Schaltrelais Fahren rückwärts	1000333390
-K003.1	+FRW1		Schaltrelais Fahren rückwärts	1000333390
-K005	+FRW1		Hochstromrelais Vorglühanlage	1000154042
-K010	+FR1	/21.E2	Blinkrelais	1000235517
-K030	+FRW1		Schaltrelais Bremslicht	1000333390
-K062	+FRW1		Schaltrelais Abblendlicht	1000333390
-K063	+FRW1		Schaltrelais Fernlicht	1000333390
-K087	+FR1	/7.E2	Zeit-Relais 0,75s	1000099374
-K088	+FRW1		Schaltrelais Kraftstoffförderpumpe	1000333390
-K114	+FRW1		Schaltrelais Rundumkennleuchte	1000333390
-K130	+FRW1		Schaltrelais Hupe	1000333390
-K131	+FRW1		Schaltrelais 12V15	1000333390
-K146	+FRW1		Schaltrelais Gurtkontaktschalter	1000333390
-K160	+STW1	/14.F1	Relais Umschaltung Fahrtrichtungsanzeiger	1000125244
-K160	+STW1	/21.B6	Relais Umschaltung Fahrtrichtungsanzeiger	1000100593
-K160.1	+STW1	/21.B7	Relais Umschaltung Fahrtrichtungsanzeiger	1000100593
-K160.1	+STW1	/14.F2	Relais Umschaltung Fahrtrichtungsanzeiger	1000125244
-M001	+EBW2	/5.D2	Kabelschuh Anlassermotor	1000050031
-M009.1	+FRW2	/9.C6	Stecker Kraftstoffförderpumpe	1000383151
-M009.2	+FRW2	/9.D6	Stecker Kraftstoffförderpumpe	1000383151
-N001	+FR1	/4.A2	Fahrelektronik	
-N001.1	+FRW1		Stecker Fahrelektronik	1000359522
-N001.2	+FRW1	/6.E3	Stecker Fahrelektronik	1000359480
-N001_GND	+FRW1	/28.A4	Kabelschuh Fahrelektronik	1000096859
-N005.A	+FRW1		Stecker Dieselmotorelektronik	1000288543
-N005.K	+FRW1	/6.E1	Stecker Dieselmotorelektronik	1000161936
-N005_GND	+FRW1	/28.A6	Kabelschuh Fahrelektronik	1000096859
-N025.1	+FRW1	/5.A5	Halter Relais / Sicherung	1000385676
-N025.2	+FRW1	/5.B3	Halter Relais / Sicherung	1000385684
-N025.3	+FRW1	/22.B4	Halter Relais / Sicherung	1000390875
-N025.4	+FRW1	/22.B6	Halter Relais / Sicherung	1000385308

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Gepr.		
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Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 | Doc.-Nr. 2060099416

Revision | Ersetzt Version | Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-N025.5	+FRW1	/23.C4	Halter Relais / Sicherung	1000329495
-N025.6	+FRW1		Halter Relais / Sicherung	1000390874
-OBDII	+FRW1	/15.F4	Stecker Fahrzeugdiagnose OBD II	1000325528
-P014	+ST1	/3.B5	Anzeigeinstrument	
-R024	+FRW1	/13.D2	Widerstand 220 Ohm	
-R025	+FRW2	/19.A5	Stecker Widerstand 22 Ohm	1000110449
-R040	+STW1	/12.B3	Stecker Widerstand 47 Ohm D+	1000095323
-R810	+FRW2		Bus-Abschlusswiderstand	1000289850
-R810	+FRW2	/15.B1	Bus-Abschlusswiderstand	1000027394
-R812	+FRW1	/15.D1	Bus-Abschlusswiderstand	1000027394
-R812	+FRW1		Bus-Abschlusswiderstand	1000289850
-R853	+FRW1	/15.D7	Bus-Abschlusswiderstand	1000027394
-R853	+FRW1		Bus-Abschlusswiderstand	1000289850
-R890	+STW1	/12.D6	Widerstand 1 kOhm	1000312303
-R900	+STW1	/18.D4	Widerstand 1 kOhm	1000312303
-R901	+STW1	/18.D1	Widerstand 1 kOhm	1000312303
-R902	+FRW2	/19.D3	Widerstand 1 kOhm	1000312303
-S001	+FR1	/5.D5	Glühstartschalter	1000333424
-S001.1	+FRW2	/5.D5	Stecker Glühstartschalter	1000027368
-S001.2	+FRW2	/5.D5	Stecker Glühstartschalter	1000027386
-S004	+FR1	/10.C7	Druckschalter Luftfilter	1000270266
-S004	+FRW1	/10.C7	Stecker Druckschalter Luftfilter	1000027359
-S008	+EBW1	/5.C1	Kabelschuh Batterietrennschalter	1000050031
-S008	+EBW2	/5.C1	Kabelschuh Batterietrennschalter	1000050031
-S008	+FR1	/5.C1	Batterietrennschalter	1000081674
-S008	+FRW1	/5.C1	Kabelschuh Batterietrennschalter	1000355751
-S008.1	+EBW1	/5.C1	Kabelschuh Batterietrennschalter	1000050031
-S012	+ST1	/21.B7	Lenkstockschalter links	1000309164
-S012	+STW1	/22.B1	Stecker Lenkstockschalter links	1000334439
-S016	+FR1	/24.E7	Schalter Arbeitsscheinwerfer	1000051958
-S016	+FRW2	/24.C6	Stecker Schalter Arbeitsscheinwerfer	1000103949

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	Datum	Name
Bearb.		LNZhartp
Gepr.		
Lesestation		

Betriebsmittelverzeichnis
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Mat.-Nr. 1000388197 | Doc.-Nr. 2060099416

Revision | Ersetzt Version | Gewicht in [kg]

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BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-S016.1	+FR1	/24.E7	Schalter Arbeitsscheinwerfer	SCHALTER
-S018	+FR1	/24.C4	Schalter Rundumkennleuchte	SCHALTER
-S018	+FRW2	/24.C4	Stecker Schalter Rundumkennleuchte	1000103949
-S019	+FR1	/21.D3	Warnblinkschalter	
-S019	+FRW2	/21.C4	Stecker Warnblinkschalter	1000103949
-S058	+FRW2	/10.E2	Stecker Schalter Wasserabscheider	1000027332
-S065	+FR1	/19.C5	Schalter Feststellbremse	SCHALTER
-S065	+FRW2	/19.D5	Stecker Schalter Feststellbremse	1000103949
-S085	+FR1	/20.C5	Schalter Hydraulikfunktionsabschaltung	SCHALTER
-S085	+FRW2	/20.C5	Stecker Schalter Hydraulikfunktionsabschaltung	1000103949
-S102	+FR1	/14.F3	Stößelschalter	1000247989
-S102	+FRW1	/14.C4	Stecker Stößelschalter	1000258052
-S103	+FR1	/14.F4	Stößelschalter	1000247989
-S103	+FRW1	/14.C5	Stecker Stößelschalter	1000258052
-S104	+ST1	/18.C1	Sitzschalter	1000325174
-S104	+STW1	/18.C1	Stecker Sitzschalter	1000183226
-S104.2	+ST1	/18.C3	Sitzschalter	
-S104.2	+STW1	/18.C3	Stecker Sitzschalter	1000027429
-S123	+ST1	/24.B2	Gurtkontaktschalter	
-S123	+STW1	/24.B2	Stecker Gurtkontaktschalter	1000110449
-S132	+ST1	/12.D8	Gurtkontaktschalter	1000181773
-S132	+STW1	/12.D8	Taster Display	1000103949
-S134	+FR1	/16.C6	Endschalter Schaltstellung Getriebe	
-S134	+FRW1	/16.C6	Stecker Endschalter Schaltstellung Getriebe	1000027438
-S146	+FR1	/16.C6	Endschalter Schaltstellung Getriebe	
-S146	+FRW1	/16.C6	Stecker Endschalter Schaltstellung Getriebe	1000270365
-S210	+FR1	/19.D6	Taster Test Feststellbremse	1000051965
-S210	+FRW2	/19.D6	Stecker Taster Test Feststellbremse	1000103949
-S212	+FR1	/11.B6	Schalter Auto-Stop	SCHALTER
-S212	+FRW2	/11.C6	Stecker Schalter Auto-Stop	1000103949
-S212.1	+FRW2	/11.D6	Zusatz-Stecker Auto-Stop	1000095336

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Betriebsmittelverzeichnis
-

Mat.-Nr. 1000388197 | Doc.-Nr. 2060099416

Revision | Ersetzt Version | Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-SP01	+BAW1	/28.B8	Splice	
-SP01	+FBW1	/22.F8	Splice	
-SP01	+FRW1	/8.C4	Splice	
-SP01	+FRW2	/19.B5	Splice	
-SP01	+RBW1	/23.D5	Splice	
-SP02	+BAW1	/24.C8	Splice	
-SP02	+FBW1	/22.D6	Splice	
-SP02	+FRW1	/8.C5	Splice	
-SP02	+FRW2	/5.E8	Splice	
-SP02	+RBW1	/23.D5	Splice	
-SP03	+FBW1	/22.D6	Splice	
-SP03	+FRW1	/8.D4	Splice	
-SP03	+FRW2	/28.D7	Splice	
-SP03	+RBW1	/23.D5	Splice	
-SP03	+STW1	/18.D2	Splice	
-SP04	+FBW1	/22.D4	Splice	
-SP04	+FRW1	/8.D5	Splice	
-SP04	+FRW2	/28.D5	Splice	
-SP04	+RBW1	/23.D5	Splice	
-SP04	+STW1	/18.D3	Splice	
-SP05	+FBW1	/22.D4	Splice	
-SP05	+FRW1	/28.F2	Splice	
-SP05	+FRW2	/24.C3	Splice	
-SP05	+RBW1	/23.D7	Splice	
-SP05	+STW1	/17.B3	Splice	
-SP06	+FRW1	/22.C6	Splice	
-SP06	+FRW2	/19.C3	Splice	
-SP06	+RBW1	/23.D7	Splice	
-SP06	+STW1	/12.B6	Splice	
-SP07	+FRW1	/15.D2	Splice	
-SP07	+FRW2	/19.D3	Splice	

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Lesestation		

Betriebsmittelverzeichnis
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Mat.-Nr. 1000388197 Doc.-Nr. 2060099416

Revision
Ersetzt Version
Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-SP07	+RBW1	/23.F8	Splice	
-SP07	+STW1	/12.D6	Splice	
-SP08	+FRW1	/15.D3	Splice	
-SP08	+STW1	/12.D6	Splice	
-SP09	+FRW1	/10.C4	Splice	
-SP09	+STW1	/5.E7	Splice	
-SP10	+FRW1	/19.D2	Splice	
-SP10	+STW1	/17.B7	Splice	
-SP11	+FRW1	/8.C7	Splice	
-SP12	+FRW1	/7.D5	Splice	
-SP12	+STW1	/28.D2	Splice	
-SP13	+FRW1	/6.D2	Splice	
-SP13	+STW1	/18.E1	Splice	
-SP14	+FRW1	/7.D2	Splice	
-SP14	+STW1	/18.E4	Splice	
-SP15	+FRW1	/22.C3	Splice	
-SP15	+STW1	/28.F6	Splice	
-SP16	+FRW1	/22.E1	Splice	
-SP16	+STW1	/18.D1	Splice	
-SP17	+FRW1	/24.E5	Splice	
-SP17	+STW1	/18.D4	Splice	
-SP18	+FRW1	/28.D3	Splice	
-SP20	+FRW1	/6.D3	Splice	
-SP21	+FRW1	/23.E2	Splice	
-SP22	+FRW1	/5.B8	Splice	
-SP23	+FRW1	/15.B5	Splice	
-SP24	+FRW1	/15.B5	Splice	
-SP25	+FRW1	/15.B4	Splice	
-SP26	+FRW1	/15.B4	Splice	
-SP30	+FRW1	/10.E7	Splice	
-SP31	+FRW1	/13.C2	Splice	

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Ersetzt Version
Gewicht in [kg]

-/49
A3

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-SP32	+FRW1	/12.D4	Splice	
-SP33	+FRW1	/6.D5	Splice	
-SP35	+FRW1	/28.C1	Splice	
-SP36	+FRW1	/14.E8	Splice	
-SP37	+FRW1	/14.B4	Splice	
-SP38	+FRW1	/28.E8	Splice	
-SP44	+FRW1	/22.C4	Splice	
-SP45	+FRW1	/22.C4	Splice	
-SP50	+FRW1	/28.E2	Splice	
-SP52	+FRW1	/21.E6	Splice	
-SP53	+FRW1	/21.E7	Splice	
-SP54	+FRW1	/6.C6	Splice	
-SP55	+FRW1	/13.C2	Splice	
-SP56	+FRW1	/13.D2	Splice	
-SP62	+FRW1	/27.C1	Splice	
-SP63	+FRW1	/15.D7	Splice	
-SP64	+FRW1	/15.D8	Splice	
-SP65	+FRW1	/15.E2	Splice	
-SP66	+FRW1	/15.E2	Splice	
-SP67	+FRW1	/22.D2	Splice	
-SP68	+FRW1	/22.D2	Splice	
-SP70	+FRW1	/11.D4	Splice	
-SP71	+FRW1	/5.D3	Splice	
-SP72	+FRW1	/5.D6	Splice	
-SP73	+FRW1	/5.B4	Splice	
-SP74	+FRW1	/5.B4	Splice	
-SP75	+FRW1	/5.E5	Splice	
-SP76	+FRW1	/22.C6	Splice	
-T001	+EN1	/3.A2	Dieselmotor	
-T001	+EN1	/10.F3	Dieselmotor	
-T001	+EN1	/10.F2	Dieselmotor	

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Revision
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Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-V001	+FRW1		Diode	1000398209
-V002	+FRW1		Diode	1000398209
-V003	+FRW1		Diode	1000398209
-V004	+FRW1		Diode	1000398209
-W11	+FRW1			
-W12	+FRW1			
-X017	+FRW1	/8.D4	Stecker Dieselmotor	1000260163
-X018	+FRW1	/7.E5	Stecker Vorglühanlage	1000308732
-XA01	+STW1	/12.C6	Stecker Anzeigeinstrument	1000347631
-XA02	+STW1	/12.A4	Stecker Anzeigeinstrument	1000347542
-XE03	+FRW1	/15.F7	Stecker Diagnose Dieselmotor	1000163185
-XE04	+FRW1	/15.F2	Stecker Fahrzeugdiagnose	1000312071
-XE10	+FRW2	/25.D6	Stecker Option	1000104431
-XE11	+FRW2	/25.D3	Stecker Option	1000100971
-XE11.1	+FRW2		Zusatz-Stecker	1000271156
-XJ001	+ST1	/17.C7	Joystick	1000290667
-XJ001	+STW1	/17.C7	Stecker Joystick	1000334152
-XP02	+FRW1	/5.C8	Stecker Sicherungskasten	1000303405
-XP02	+FRW2	/5.C8	Stecker Sicherungskasten	1000260163
-XR01	+FRW1	/18.D5	Stecker Wendekonsole	1000333982
-XR01	+STW1	/18.D5	Stecker Wendekonsole	1000333984
-XR10	+BAW1	/24.B8	Stecker Kabelbaum Überrollbügel	1000104284
-XR10	+FRW2	/24.B8	Stecker Kabelbaum Überrollbügel / Canopy	1000104286
-XR11	+BAW3	/24.D2	Stecker Kabelbaum Rundumkennleuchte grün	1000051981
-XR11	+FRW1	/24.C2	Stecker Kabelbaum Rundumkennleuchte grün	1000027410
-XS01	+FBW1	/22.D6	Stecker Kabelbaum Beleuchtung vorne	1000105117
-XS01	+FRW1	/22.D6	Stecker Kabelbaum Beleuchtung vorne	1000105113
-XS02	+FRW1	/23.C5	Stecker Kabelbaum Beleuchtung hinten	1000105113
-XS02	+RBW1	/23.C5	Stecker Kabelbaum Beleuchtung hinten	1000105117
-XX00	+RBW1	/23.E5	Steckdose Anhänger	1000085023
-XX16	+EBW1	/5.D2	Kabelschuh Starthilfeklemme	1000050031

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Revision | Ersetzt Version | Gewicht in [kg]

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-Y004	+FR1	/16.C4	Magnetventil rückwärts	
-Y004	+FRW1	/16.C4	Stecker Magnetventil rückwärts	1000027438
-Y005	+FR1	/16.C3	Magnetventil vorwärts	
-Y005	+FRW1	/16.C3	Stecker Magnetventil vorwärts	1000270365
-Y013	+FR1	/20.C3	Magnetventil Hydraulikfunktionsabschaltung	
-Y013	+FRW1	/20.C3	Stecker Magnetventil Hydraulikfunktionsabschaltung	1000027332
-Y038	+FR1	/16.C7	Magnetventil Getriebestufe 1	
-Y038	+FRW1	/16.C7	Stecker Magnetventil Getriebestufe 1	1000270365
-Y039	+FR1	/16.C8	Magnetventil Getriebestufe 2	
-Y039	+FRW1	/16.C8	Stecker Magnetventil Getriebestufe 2	1000027410
-Y043	+FR1	/19.C8	Magnetventil Feststellbremse	
-Y043	+FRW1	/19.C8	Stecker Magnetventil Feststellbremse	1000027438
-Y070	+FRW1	/14.C8	Stecker Magnetventil Umschaltung Lenkung	1000027410
-Y075	+FR1	/19.E2	Magnetventil Blende	
-Y075	+FRW1	/19.D2	Stecker Magnetventil Blende	1000027410
-Y098	+FR1	/16.C5	Magnetventil Hydromotorverstellung	
-Y098	+FRW1	/16.C5	Stecker Magnetventil Hydromotorverstellung	1000270365
-Y128	+FR1	/20.C2		
-Y128	+FRW1	/20.C2	Stecker Lastaufschaltventil	1000027410
-Y155	+FRW1	/14.C7	Stecker Magnetventil Umschaltung Lenkung	1000027332

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Ersetzt Version	
Gewicht in [kg]	

7.9 Wiring diagram DV60, DV90 and DV100 with cab (EU Stage V)

Stromlaufplan D24

Kabine

Deutz DPF Stage V

Location designation

FRW1 main harness Deutz Stage 5
FRW2 main harness ROPS Stage 5
FRW3 main harness Cabin Stage 5

STW1 Wiring harness Wendekonsole

BAW1 Wiring harness illumination ROPS
BAW2 Wiring harness illumination CANOPY
BAW3 Wiring harness Rotating beacon green

RBW1 Wiring harness rtro rear side (Mulde)
FBW1 Wiring harness rtro Front bumper
CBW1 Wiring harness Cabin

EBW1 battery cable
EBW2 battery cable

BA1 Beleuchtung Komponenten
CB1 Kabine Komponenten
EN1 Motor Komponenten
FB1 STVO Komponenten
FR1 Rahmen Komponenten
ST1 Interieeur Komponenten

project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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cover sheet

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00

Message No 1

A3

1564650012

Sheet	SheetName 1	SheetName 2
Con_01	contents	-
Con_02	contents	-
2	Fuse box	
3	Controllers	
4	Controllers	
5	Controllers	
6	main-Supply	
7	Supply Controllers	
8	Starten, Glühen	
9	Diesel engine electronics	
10	Diesel engine electronics	
11	Diesel engine electronics	
12	Auto Stop	
13	IO Display, fill level indicator, charge control	
14	IO Display	
15	Drehsitzfunktionen	
16	CAN	
17	Machine travel	
18	Machine travel	
19	Machine travel	
20	Machine travel	
21	Arbeitsfunktionen	
22	rtro illumination	Turn indicator system
23	rtro illumination	Front bumper
24	rtro illumination	Mulde
25	Working lights, Rotating beacon	
26	connector option	
27	Wiper, Radio, Power outlet	
28	heating, Air conditioning	
29	Earth-Distribution	
Dev_01	itemregister	-

project:	ED D24 ST5 F4		
active Option:			
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Revision:
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Message No
Con_01
A3

Sheet	SheetName 1	SheetName 2
Dev_02	itemregister	-
Dev_03	itemregister	-
Dev_04	itemregister	-
Dev_05	itemregister	-
Dev_06	itemregister	-
Dev_07	itemregister	-
Dev_08	itemregister	-
Dev_09	itemregister	-
Dev_10	itemregister	-
Dev_11	itemregister	-
Dev_12	itemregister	-
Dev_13	itemregister	-
Dev_14	itemregister	-

project:	ED D24 ST5 F4		
active Option:			
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Revision:	
replace for Rev.	
Message No	Con_02
	A3

project:	ED D24 ST5 F4
active Option:	Kabine
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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Fuse box

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	2
	A3

1564650012

Engine Control Module

ECM MD1CC878

Connector K

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
43	5V			
58	SIG	fuel pressure	/9.A5	
21	GND			
23	5V			
82	GND	Delta P Venturi	/9.A6	
81	SIG			
7	GND			
33	SIG	EGR Temperature	/9.A6	
46	5V			
80	SIG			
64	GND	Throttle valve	/9.A6	
8	DC POS			
9	DC NEG			
39	SIG			
60	GND	Intake air Temperature	/10.A3	
54	HIGH			
76	LOW	CAN 1	/16.A5	
75	HIGH			
53	LOW	CAN 2	/16.A8	
1				
3		Battery	/7.F2	
5				
2				
4		GROUND	/29.A5	
6				
88	T15	ignition	/7.F6	
35	T50	Start	/8.F2	
13	INPUT	Coolant level		
17	INPUT	Air filter	/11.A8	
87	GND		/29.A7	
16	INPUT	REG-SW	/11.F4	
19	INPUT	Neutral	/11.F5	
68	UB	Versorungs Schalter	/8.A7	
91	INPUT	DPF Differential pressure	/9.A7	
55	GND		/9.A7	
56	SIG	DPF Temperature	/9.A7	
73	HIGH	relay fuel pump	/10.A4	
25	LOW	relay fuel pump	/10.F4	
72	LOW	relay Preheating system	/8.F7	
20	SIG	Preheating system	/8.F6	

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
70				
65				
29				
71				
90				
92				
69				
48				
38				
15	INPUT	Kupplungs Schalter	/11.F6	
66				
32				
12				
37				
18				
14				
41				
31				
86				
52				
22				
24				
78				
77				
34				
11				
45				
61				
62				
44				
83				
84				
63				
85				
79				
74				
57				
52				
49				

Connector ECM A

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
33	HIGH			
16	LOW	Injector 1	/9.A1	
48	HIGH			
18	LOW	Injector 3	/9.A1	
32	HIGH			
2	LOW	Injector 2	/9.A1	
46	HIGH			
3	LOW	Injector 4	/9.A2	
4	UB4			
5	PWM		/9.A2	
25	GND			
26	SIG	Rail pressure	/9.A2	
7	5V			
53	GND			
52	NEG	Camshaft speed	/9.A2	
37	POS			
38	GND			
54	NEG	Crankshaft speed	/9.A3	
39	POS			
43	SIG-P			
27	SIG-T	Charge air sensors	/9.A3	
9	5V			
42	GND			
29	GND	Temperature Coolant	/9.A3	
28	SIG			
22	SIG			
12	5V	EGR- valve	/9.A4	
19	DC POS			
20	DC NEG			
24	5V		/9.A4	
44	SIG	engine oil pressure	/9.A4	
57	GND		/9.A4	
11	SIG	Exhaust gas back pressure	/9.A4	
10				
51				
45				
35				
8				
14				
36				
23				
40	GND		/9.A8	
49	LOW	AFTERRUN	/11.F4	
50	UB2		/8.A3	
41	LOW	Start relay	/8.A4	
59	SIG	DPF Temperature	/9.A7	
21	5V		/9.A8	
58	SIG	water in fuel	/9.A8	
60				
34				
15				

project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Controllers

Mat. -Nr. 1000388197 Doc. -Nr. 2060135222

Revision:	00	3
replace for Rev.	00	Message No
		A3

1564650698

Engine Interface Connector

+EN1
-T1.T1

EIC MD1CC878

X17 connector Diesel engine

PIN	NOTE	DEVICE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
36	HIGH	Y060	Injector 1	/9.F1	
35	LOW				
42	HIGH	Y062	Injector 3	/9.F1	
37	LOW				
38	HIGH	Y061	Injector 2	/9.F1	
39	LOW				
40	HIGH	Y063	Injector 4	/9.F2	
41	LOW				
20	UB4		MPROP	/9.F2	
19	PWM				
31	GND				
25	SIG	B022	Rail pressure	/9.F2	
32	5V				
9	GND				
13	NEG	B020	Camshaft speed	/9.F2	
14	POS				
1	GND				
21	NEG	B025	Crankshaft speed	/9.F3	
15	POS				
23	SIG-P				
29	SIG-T	B021	Charge air sensors	/9.F3	
22	5V				
28	GND				
30	5V				
26	SIG	B023	engine oil pressure	/9.F4	
33	GND				
43	5V				
44	SIG		Exhaust gas back pressure	/9.F4	
45	GND				
18	5V				
17	SIG	B024	fuel pressure		
34	GND				
4	5V				
5	GND		Delta P Venturi	/9.F6	
6	SIG				
27	GND	B006	Temperature Coolant	/9.F3	
24	SIG				
8	GND	B078	EGR Temperature	/9.F6	
7	SIG				
50	5V				
46	SIG				
51	GND	Y078	EGR- valve	/9.F4	
47	DC POS				
48	DC NEG				
53	5V				
49	SIG				
52	GND		Throttle valve	/9.F6	
59	DC POS				
60	DC NEG				
3		K007	Start relay	/8.F4	
2					

X18 Preheating system

PIN	NOTE	DEVICE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
1			Glow plug	/8.F5	
2					
exhaust gas temperature 1					
1		B059	DPF Temperature	/9.F7	
2					
exhaust gas temperature 2					
1		B056	DPF Temperature	/9.F7	
2					
Differential pressure DPF					
1	SIG	B092	DPF Differential pressure	/9.F8	
2	GND				
3	5V				
water in fuel					
1		S058	water in fuel	/9.F8	
2					

Display

+ST1
-P014

Display 7"

PIN	CONNECTOR	DESCRIPTION	COMMENTS	Ref-PAGE
1	**XA01**	VBAT	9...36V	/13.D6
2		GND	Ground	
3	XA01	CAN1_L	CAN 1	/16.A6
4		CAN1_H		
5	XA01	CAN2_L	CAN 2	
6		CAN2_H		
7		V_USB_BUS	Power USB	
10		USB_GND	Ground	
8		USB_D-	Datawire USB	
9		USB_D+		
1	**XA02**	Ladekontrolle	0...5V	/13.A4
2	XA02	Fehlerlampe	0...5V	/14.A2
3	XA02	Standlicht	0...5V	/14.A3
4	XA02	Abblendlicht	0...5V	/14.A6
5	XA02	Tankgeber	0...5V	/13.A1
6	XA02	A_Input_6	0...5V	
7	XA02	GND	Ground	
8	XA02	Fernlicht	-1V - 1V LOW	/14.A4
9	XA02	Blinker	3,5V - VBAT HIGH	/13.A6
10	XA02	Taster 1	5V: 0,02...10kHz	/13.F7
11	XA02	Taster 2	5V: 0,02...10kHz	/13.F8
12	XA02	Umschaltung Blinker 1	12V 0,5A	/15.A1
13	XA02	Umschaltung Blinker 2	12V 0,5A	/15.A2
14	XA02	Summer	12V 0,5A	/14.A7
1	**X102**	Video Signal_1	composite CCITT video input PAL 50Hz colour coding / NTSC. input Level 1Vpp. 75Ohms	
2	X102	Video Signal_2		
3	X102	Video Signal_3		
4	X102	12V_Camera		
5	X102	Video Bezug_GND	Video Ground	
1	**X103**	Eth_TX+	Datawire Ethernet	
2	X103			
3	X103			
4	X103			

project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Controllers

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	4
	A3

1564650698

+FR1
-N001

N001.1
Connector 1

1	---		
2	OUT_36		
3	Freigabe Arbeitsfunktion 1 HS	/21.A4	OUT_20
4	OUT_34		
5	OUT_33		
6	OUT_22		
7	OUT_21		
8	IN_68		
9	IN_75		
10	Schalter Auto Stop red.	/12.F6	IN_73
11	IN_74		
12	Drehzahl Hydromotor	/17.A2	IN_71
13	Schalter Auto Stop	/12.F5	IN_72
14	IN_42		
15	Trockenlaufschutz	/13.A2	IN_43
16	Öltemperatur	/17.A1	IN_63
17	IN_64		
18	IN_65		
19	IN_40		
20	Kabinenheizung aktiv	/12.F2	IN_41
21	IN_62		
22			
23	GND	/29.A2	
24			
25	---		
26	---		
27	OUT_35		
28	Parkbremse HS	/20.A8	OUT_19
29	---		
30	---		
31	---		
32	IN_70		
33	IN_69		
34	switch Parking brake Feedback red.		IN_18
35	switch Parking brake Feedback		IN_17
36	IN_15		
37	IN_16		
38	Sensor Inchventil	/19.F7	IN_52
39	Sitzkontaktschalter 1	/19.F2	IN_38
40	Getriebe Gang 2 eingelegt	/17.F5	IN_44
41	Sitzkontaktschalter 2	/19.F3	IN_39
42	IN_23		
43	IN_22		
44	IN_20		
45	GND_S2	/17.F1	
46	GND_S1	/29.E8	
47	Dieselmotor Startsignal	/8.F3	IN_4
48	IN_6		
49	---		
50	---		
51	Getriebe Stufe 2	/17.A8	OUT_5
52	---		
53	Pumpe vorwärts HS	/17.A3	OUT_1
54	Hydraulikmotor HS	/17.A5	OUT_3
55	Getriebe Gang 1 eingelegt	/17.F6	IN_45
56	IN_46		
57	Lenkrichtung 1 red.	/15.F4	IN_10
58	Gaspedal red.	/19.F4	IN_8
59	Gaspedal	/19.F5	IN_7
60	CAN 4 L		
61	CAN 4 H		
62	CAN 3 L		
63	CAN 3 H		
64	IN_33		IN_33
65	Strassenfahrt red.	/21.F6	IN_61
66	IN_34		IN_34
67	switch Parking brake	/20.F5	IN_58
68	IN_53		
69	switch Parking brake red.	/20.F4	IN_59
70	Strassenfahrt	/21.F6	IN_60
71	IN_56		
72	IN_47		
73	---		
74	---		
75	Lastaufschaltventil	/21.A3	OUT_6
76	---		
77	Pumpe rückwärts HS	/17.A4	OUT_2
78	Getriebe Stufe 1	/17.A7	OUT_4
79	Lenkrichtung 1+2 LS	/15.F7	OUT_41
80	Freigabe Arbeitsfunktion 1 LS	/21.F4	OUT_42
81	---		
82	---		
83	Parkbremse LS	/20.F8	OUT_37
84	Pumpe vorwärts LS	/17.F3	OUT_38
85	Pumpe rückwärts LS	/17.F4	OUT_39
86	Hydraulikmotor LS	/17.F5	OUT_40
87	---		
88	---		
89	Freigabe Leistungsverbraucher	/12.A1	OUT_24
90	Abschaltung Rückfahrlicht	/15.A2	OUT_23
91	IN_48		
92	IN_49		
93	Bremslicht	/24.A1	OUT_26
94	Rückwärts	/24.A2	OUT_25
95	---		
96	IN_50		

N001.2
Connector 2

1			
3			
4	UB	/7.F3	
5			
6			
2			
7			
20	GND	/29.A3	
33			
46			
8	IN_67		
9	IN_3		
10	IN_14		
11	IN_19		
12	IN_28		
13	IN_66		
14	Lenkrichtung 1	/15.F3	IN_9
15	CAN 1 H	/16.A3	
16	CAN 1 L		
17	Parkingbrake Feedback red.	/20.F1	IN_36
18	IN_54		
19	VSS_1	/18.A6	
21	Fehlerlampe	/14.F2	OUT_47
22	IN_13		
23	IN_5		
24	IN_21		
25	IN_27		
26	Leistungsverbraucher ein	/12.F3	IN_37
27	Parkbremstest	/20.F6	IN_57
28	Zündung	/7.F8	HW-INH
29	IN_55		
30	WAKE		
31	Parkingbrake Feedback	/20.F1	IN_35
32	VSS_2	/15.A4	
34	Wippe Fahren red.	/18.F7	IN_26
35	IN_24		
36	IN_2		
37	Pumpenleistung (ECO)	/18.F2	IN_30
38	Lenkrichtung 2 red.	/15.F5	IN_12
39	IN_31		
40	IGN	/7.F7	
41	Lenkrichtung 2	/15.A7	OUT_28
42	---		
43	Lenkrichtung 1	/15.A6	OUT_27
44	---		
45	UB_CPU	/7.F5	
58			
47	Wippe Fahren	/18.F6	IN_25
48	IN_29		
49	IN_51		
50	Schalter 2. Gang	/18.F1	IN_1
51	IN_32		
52	Lenkrichtung 2	/15.F5	IN_11
53	CAN 2 H	/16.D1	
54	CAN 2 L		
55	VSS_3	/19.A7	
56	---		
57	---		

project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Controllers

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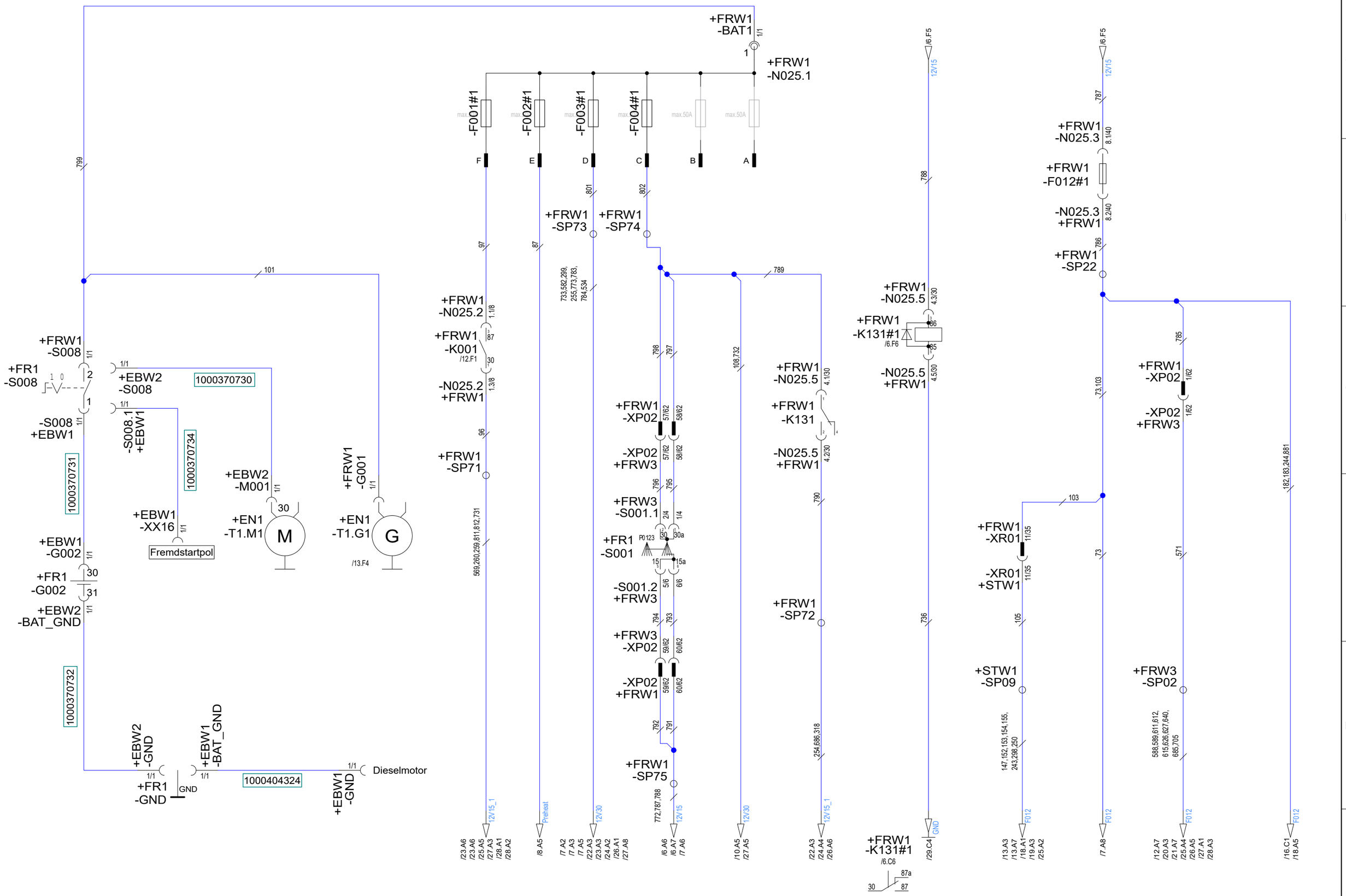
Revision:	00
replace for Rev.	00
Message No	5
	A3

1564660150



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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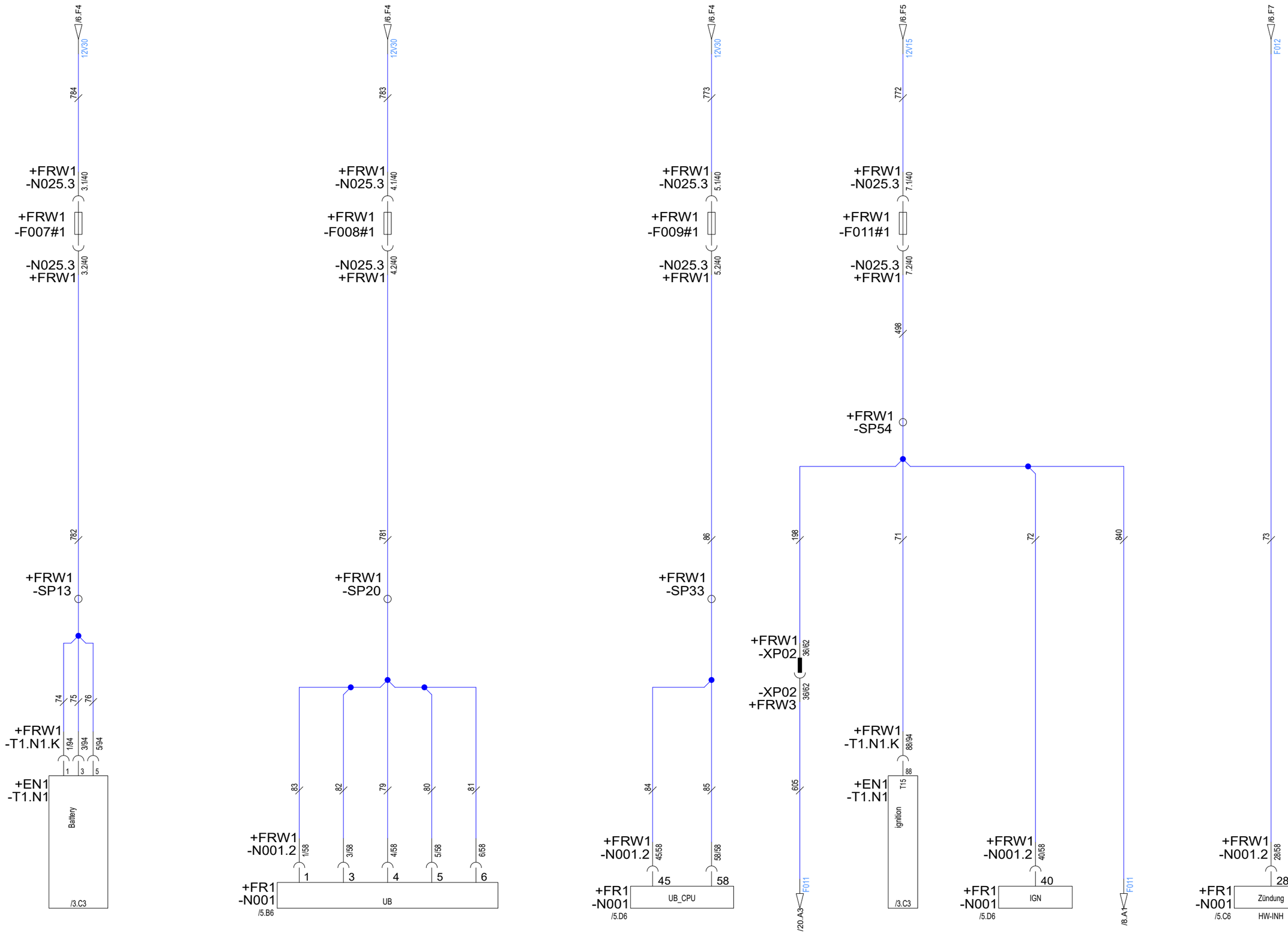
main-Supply

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision: 00
replace for Rev. 00
Message No 6
A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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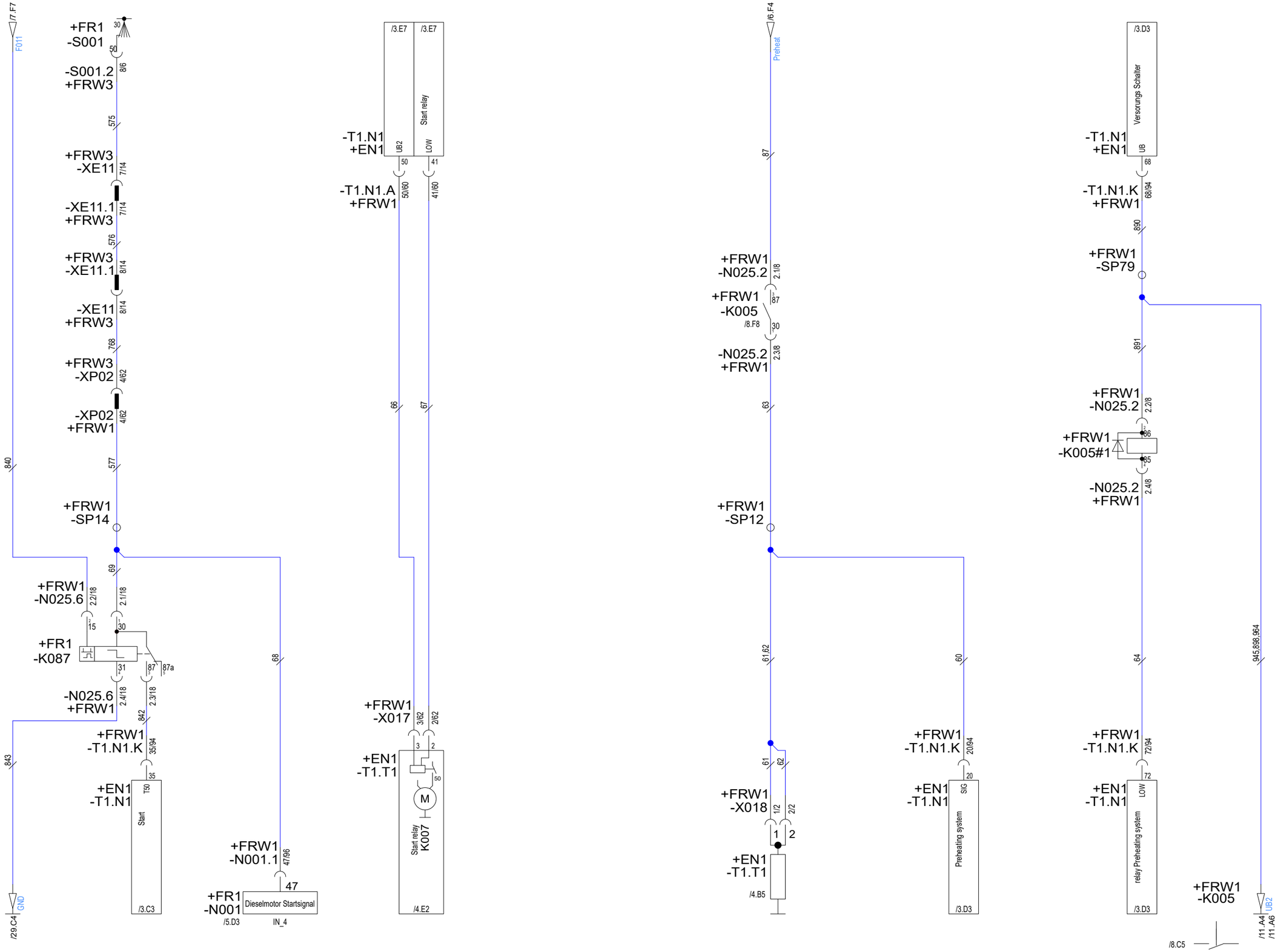
Supply Controllers

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	7
	A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Starten, Glühen

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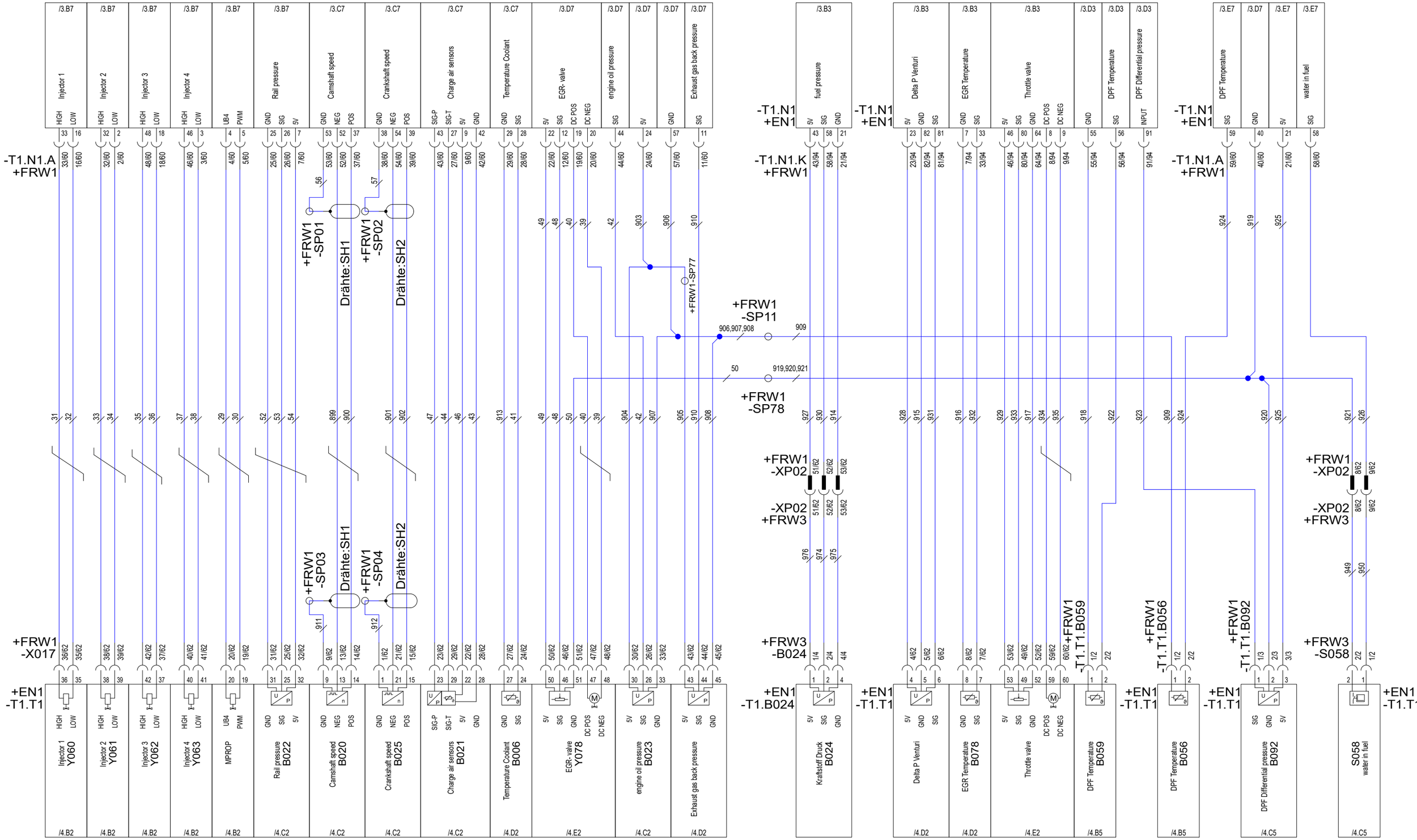
Revision:	00
replace for Rev.	00
Message No	8
	A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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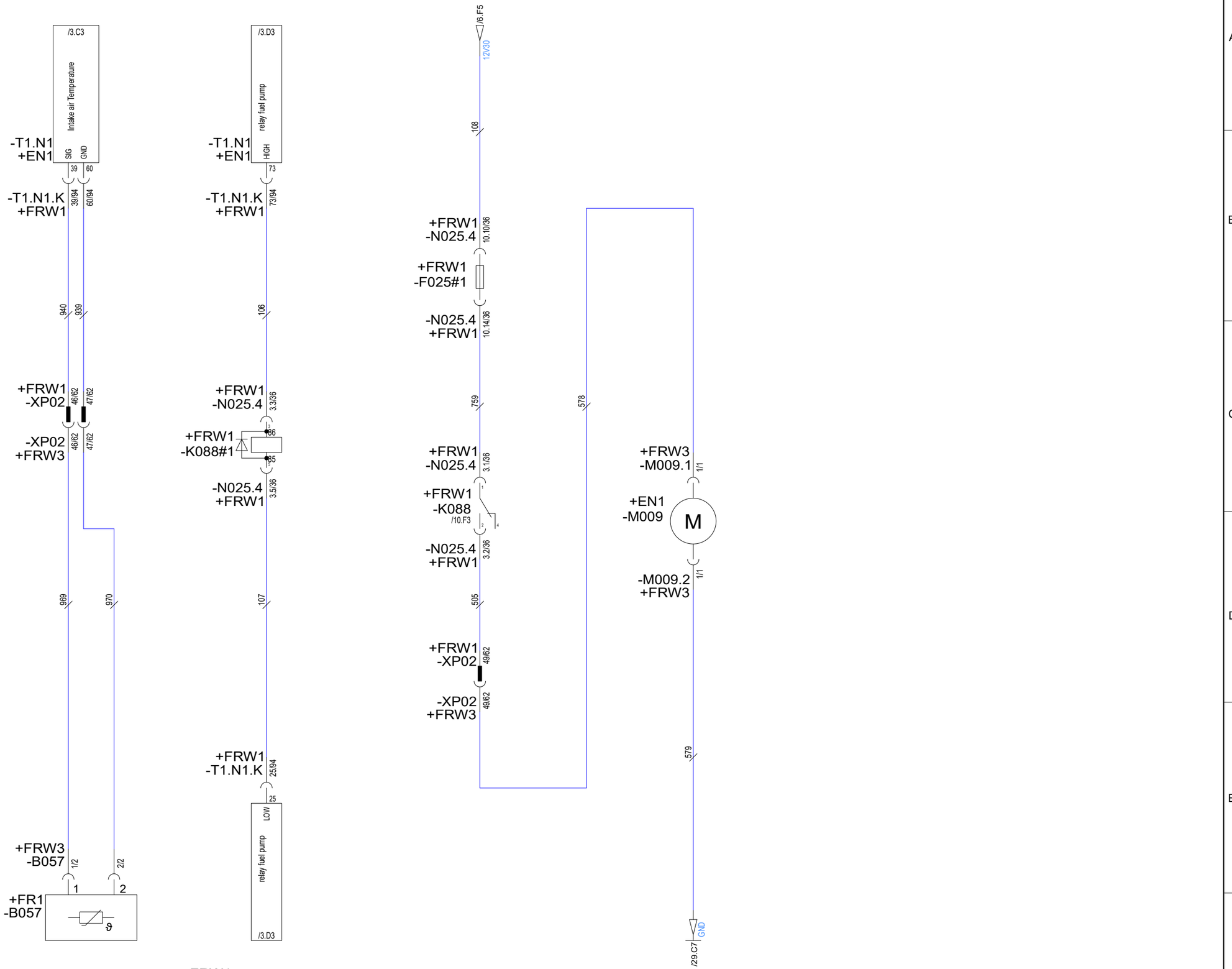
Diesel engine electronics

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	9
	A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Diesel engine electronics

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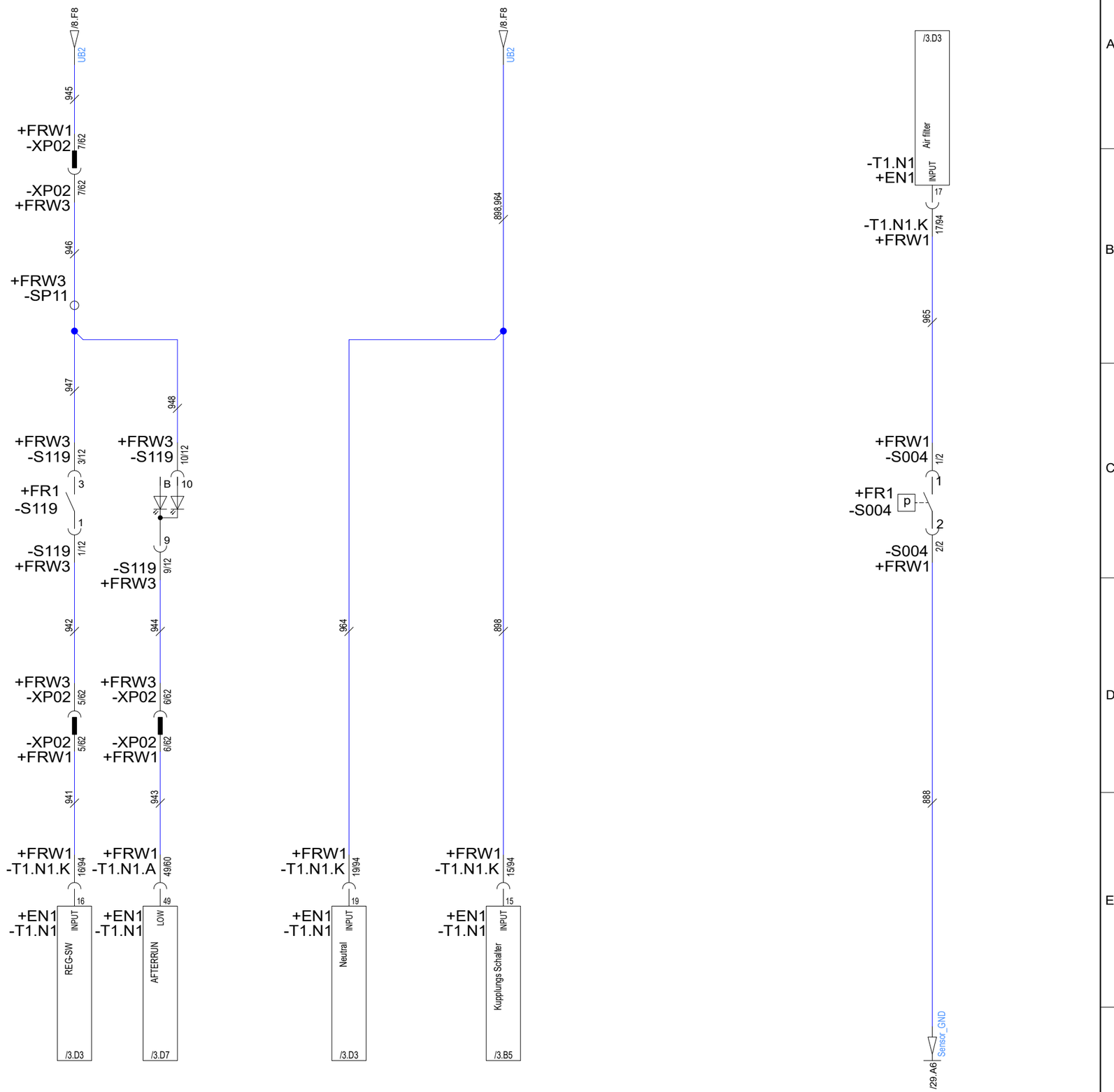
Revision:	00
replace for Rev.	00
Message No	10
	A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Diesel engine electronics

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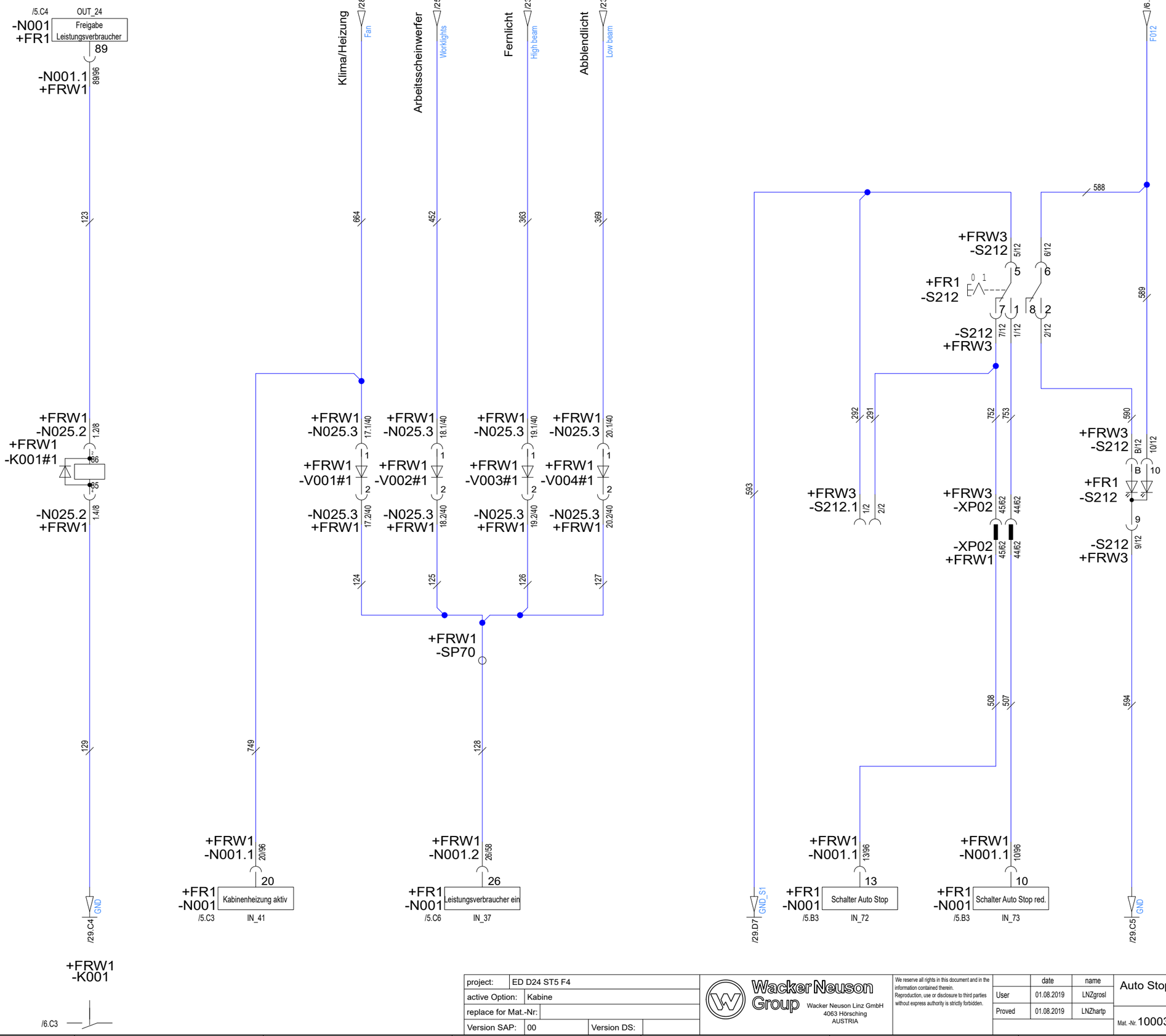
Revision:	00
replace for Rev.	00
Message No	11
	A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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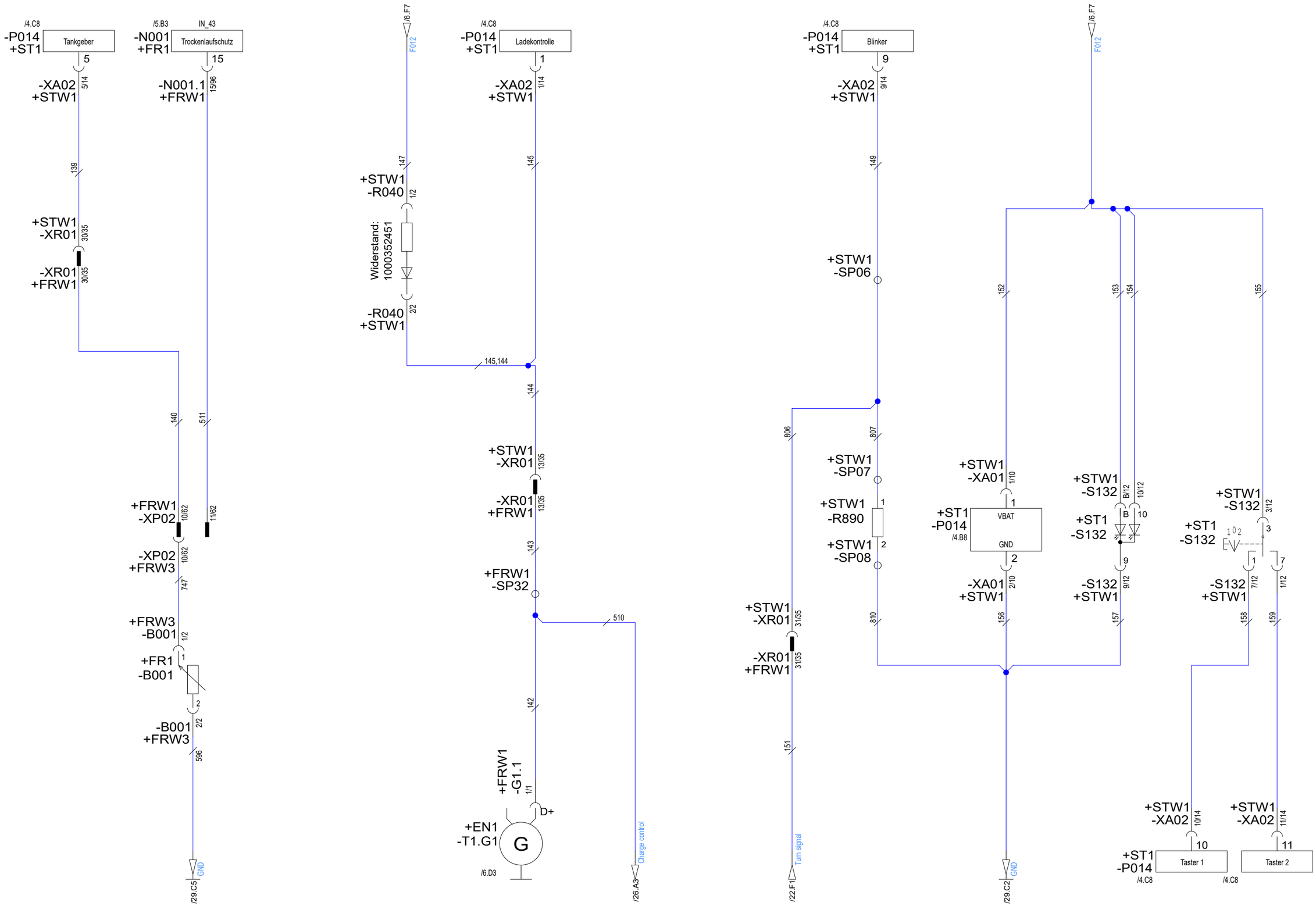
Auto Stop

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	12
	A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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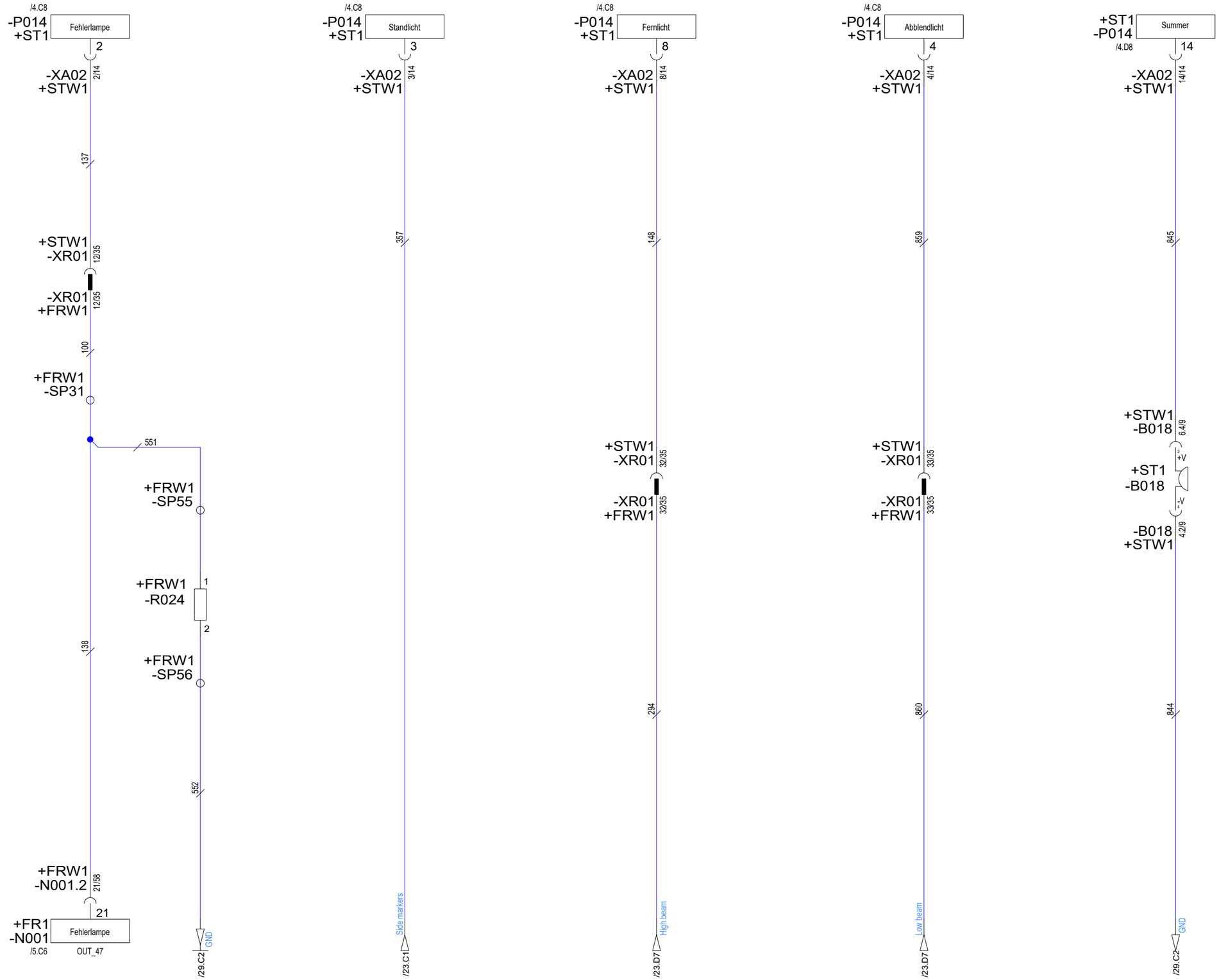
IO Display, fill level indicator, charge

Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	13
	A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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IO Display

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	14
	A3

1564650698

+ST1
-P014
/4.D8
Umschaltung Blinker 1
12
-XA02
+STW1
12/14
162
+STW1
-K160
3/5
+STW1
-K160
/15.F1
-K160
+STW1
5/5
160
GND
/29.C2

+ST1
-P014
/4.D8
Umschaltung Blinker 2
13
-XA02
+STW1
13/14
163
+STW1
-K160.1
3/5
+STW1
-K160.1
/15.F1
-K160.1
+STW1
5/5
161

/5.C4
OUT_23
-N001
+FR1
Abschaltung Rückfahrlicht
90
-N001.1
+FRW1
90/96
164
+FRW1
-N025.5
5.3/30
+FRW1
-K003.1#1
86
85
-N025.5
+FRW1
5.5/30
735
GND
/29.C4

/5.D6
-N001
+FR1
VSS_2
32
-N001.2
+FRW1
32/58
166
304
+FRW1
-SP37

167
+FRW1
-S102
3/4
+FR1
-S102
/15.F3
3
4
-S102
+FRW1
4/4
171
+FRW1
-N001.2
14/58
14
+FR1
-N001
/5.C6
Lenkrichtung 1
IN_9

168
+FRW1
-S102
1/4
+FR1
-S102
/15.F3
1
2
-S102
+FRW1
2/4
172
+FRW1
-N001.1
57/96
57
+FR1
-N001
/5.E3
Lenkrichtung 1 red.
IN_10

169
+FRW1
-S103
3/4
+FR1
-S103
/15.F3
3
4
-S103
+FRW1
4/4
173
+FRW1
-N001.2
52/58
52
+FR1
-N001
/5.E6
Lenkrichtung 2
IN_11

170
+FRW1
-S103
1/4
+FR1
-S103
/15.F3
1
2
-S103
+FRW1
2/4
174
+FRW1
-N001.2
38/58
38
+FR1
-N001
/5.D6
Lenkrichtung 2 red.
IN_12

+FRW1
-XP02
13/62
-XP02
+FRW3
13/62
271
VSS_2
/20.A5

/5.D6
OUT_27
-N001
+FR1
Lenkrichtung 1
43
-N001.2
+FRW1
43/58
175
+FRW1
-Y155
1/2
1
2
-Y155
+FRW1
2/2
177

/5.D6
OUT_28
-N001
+FR1
Lenkrichtung 2
41
-N001.2
+FRW1
41/58
176
+FRW1
-Y070
1/2
1
2
-Y070
+FRW1
2/2
178
+FRW1
-SP36
179
+FRW1
-N001.1
79/96
79
+FR1
-N001
/5.B4
Lenkrichtung 1+2 LS
OUT_41

Y155: steering direction for Travel direction Front bumper
Y070: steering direction for Travel direction Mulde

+STW1
-K160
/15.C1
/22.C6

+STW1
-K160.1
/15.C2
/22.C7

+FRW1
-K003.1
87a
30
87
/24.B7

+FR1
-S102
/15.C3
/15.C4

+FR1
-S103
/15.C5
/15.C5

project:	ED D24 ST5 F4
active Option:	Kabine
replace for Mat.-Nr:	
Version SAP:	00
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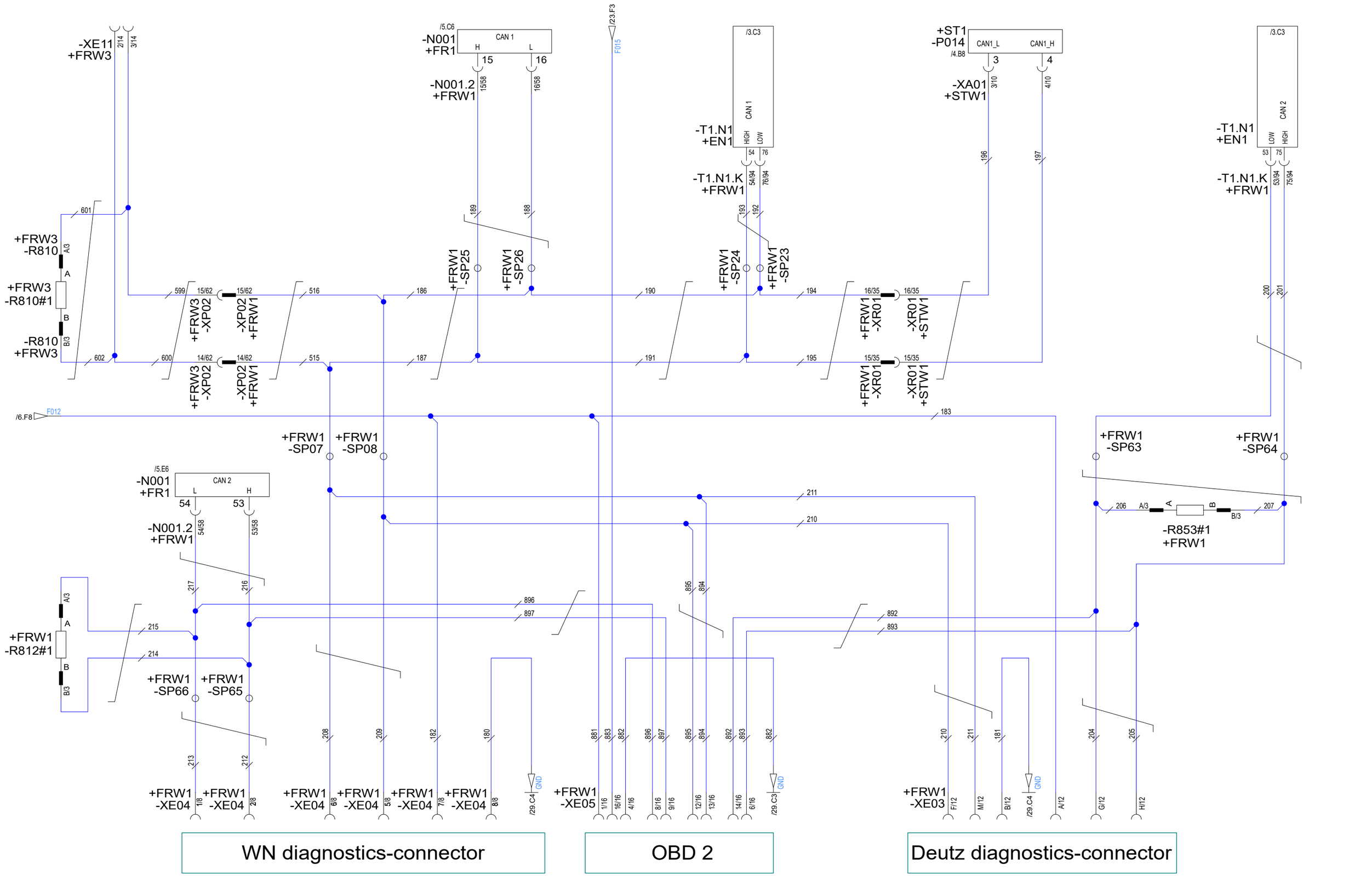
Drehsitzfunktionen

Mat.-Nr. 1000388197
Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	15
	A3

1564661510



project:	ED D24 ST5 F4
active Option:	Kabine
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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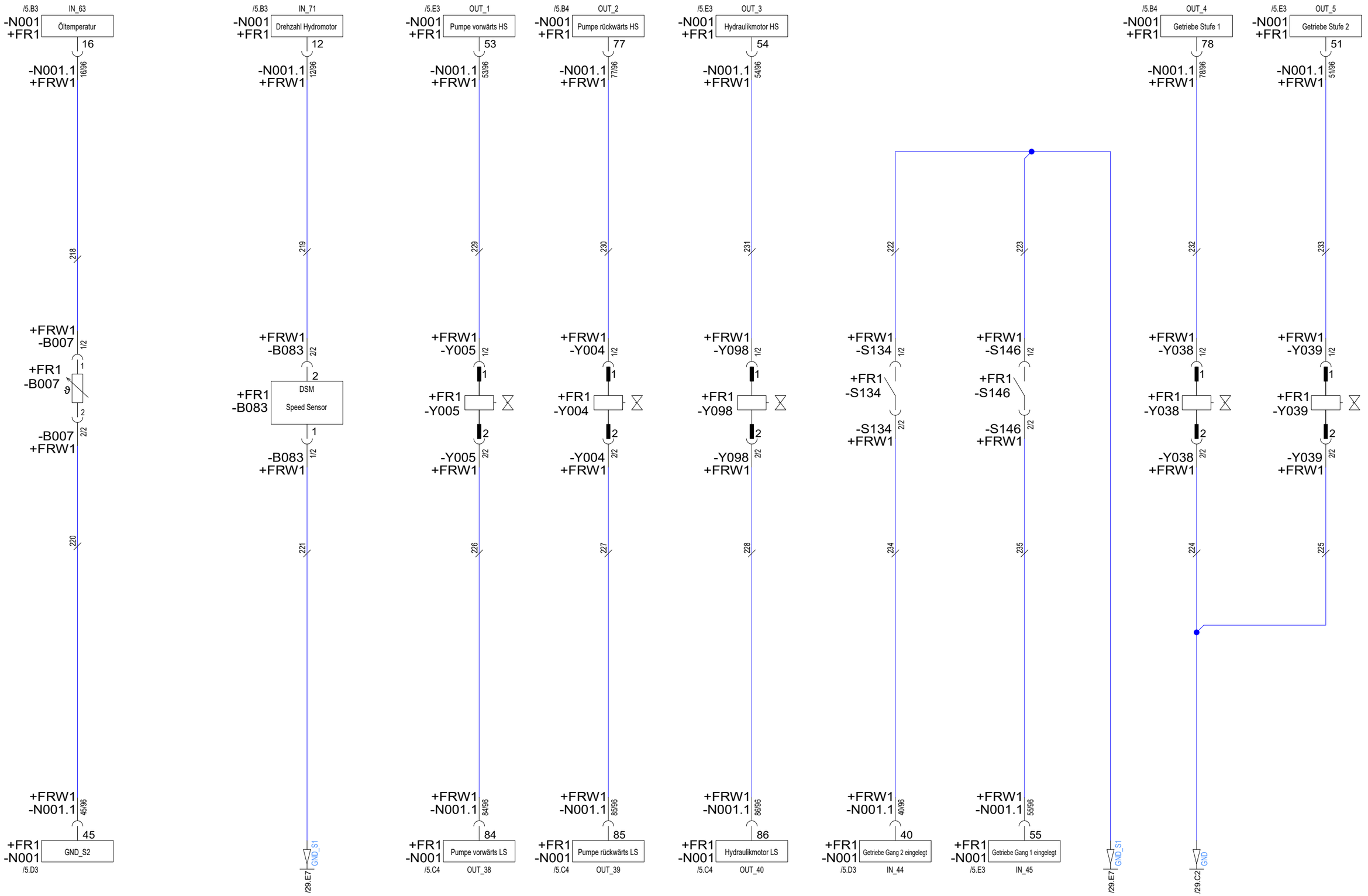
CAN

Mat.-Nr. 1000388197

Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	16
	A3

1564661510



project:	ED D24 ST5 F4
active Option:	Kabine
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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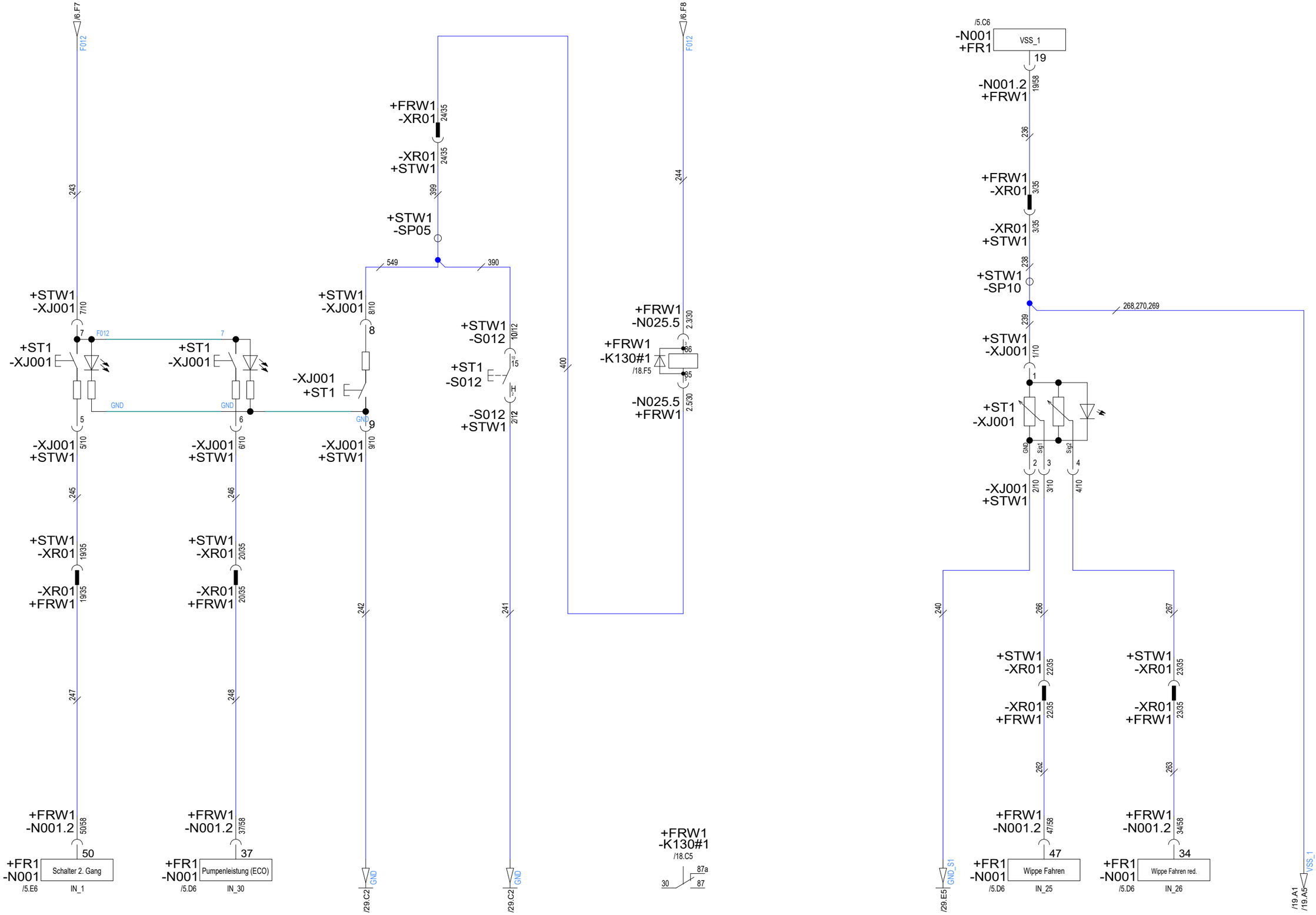
Machine travel

Mat.-Nr: 1000388197

Doc.-Nr: 2060135222

Revision:	00
replace for Rev.	00
Message No	17
	A3

1564660059



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Machine travel

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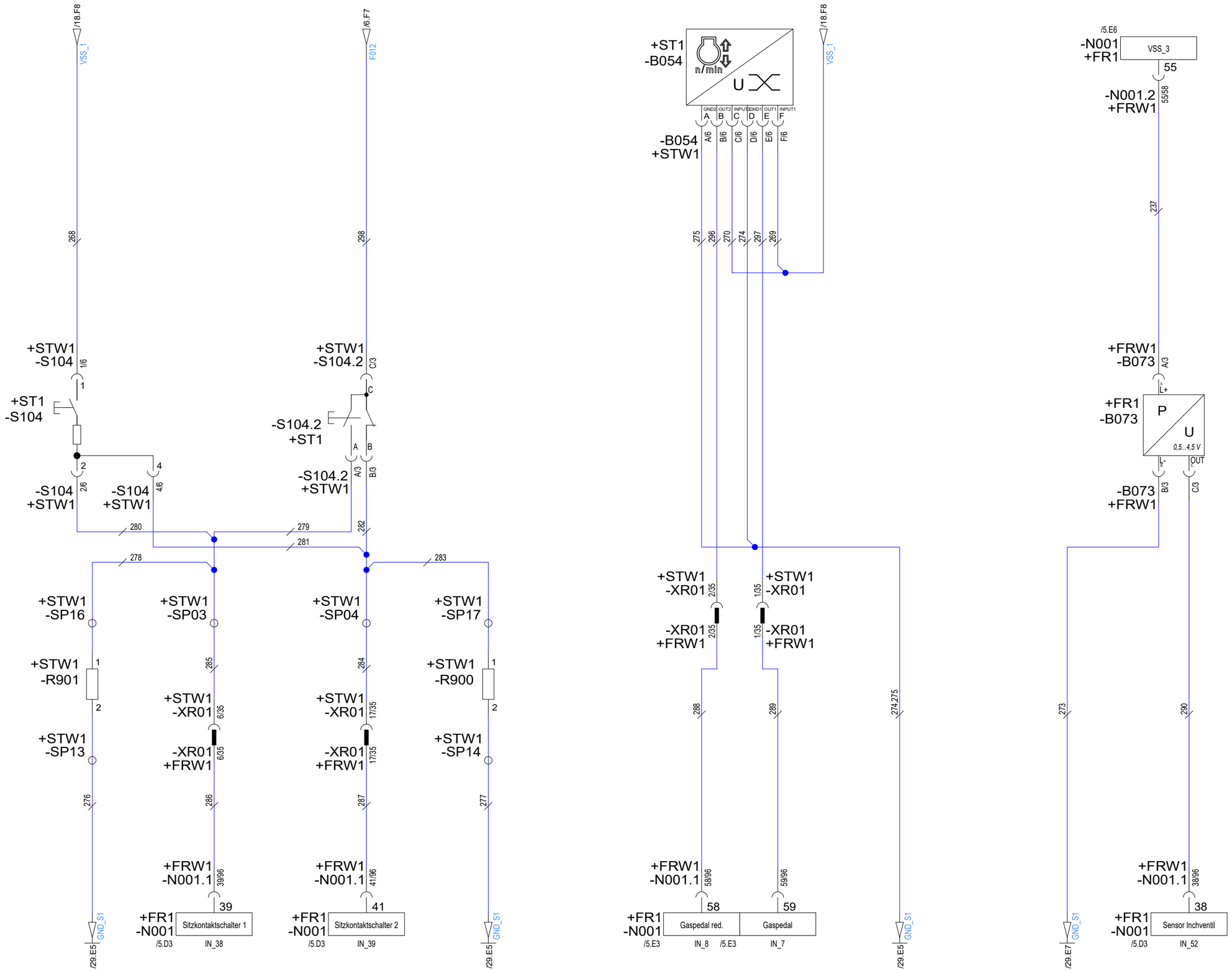
Revision:	00
replace for Rev.	00
Message No	18
	A3

1564658969



project:	ED D24 ST5 F4
active Option:	Kabine
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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	date	name
User	01.08.2019	LNZgrosl
Proved	01.08.2019	LNZhartp

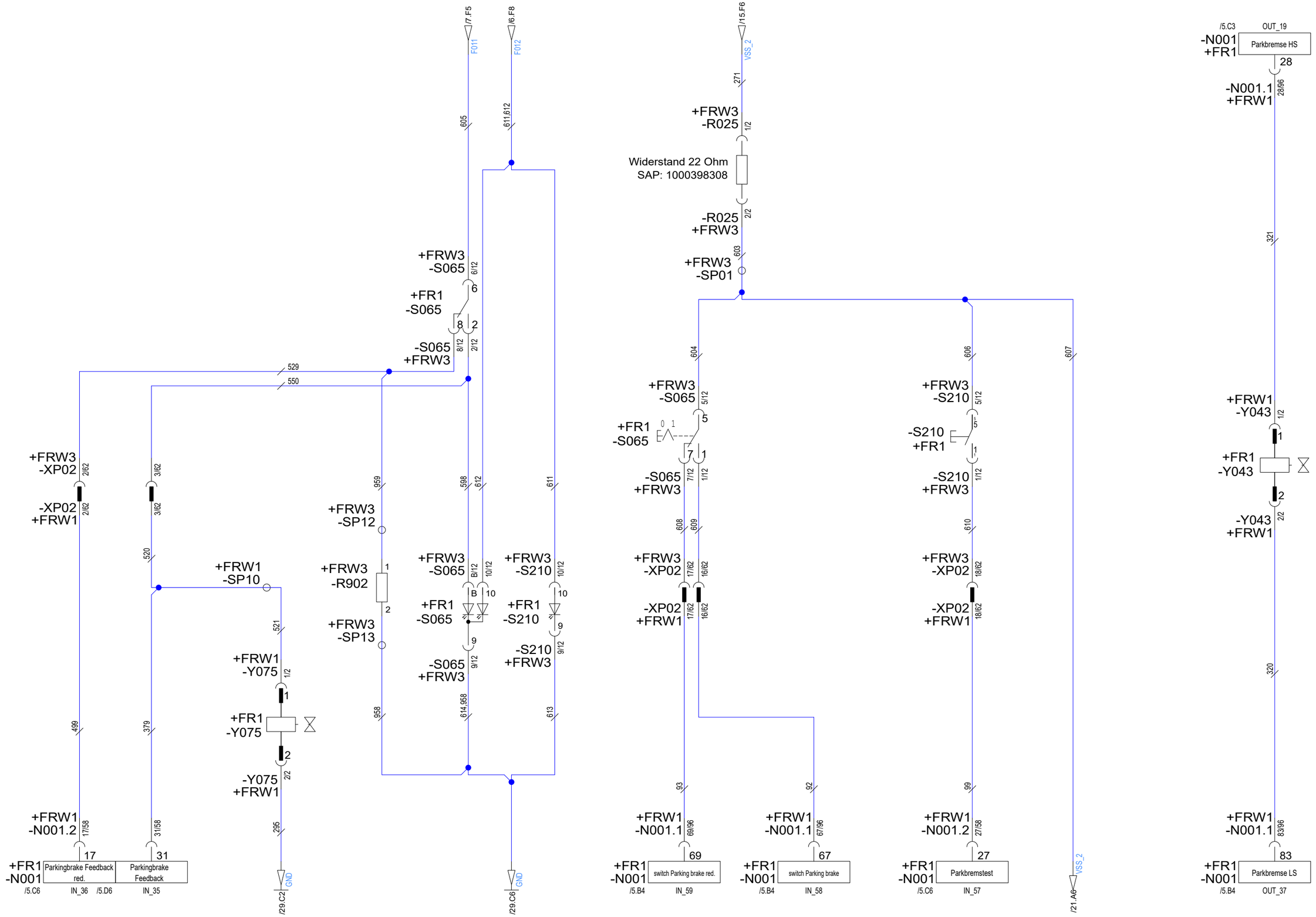
Machine travel

Mat. -Nr. 1000388197

Doc. -Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	19
	A3

1564650698



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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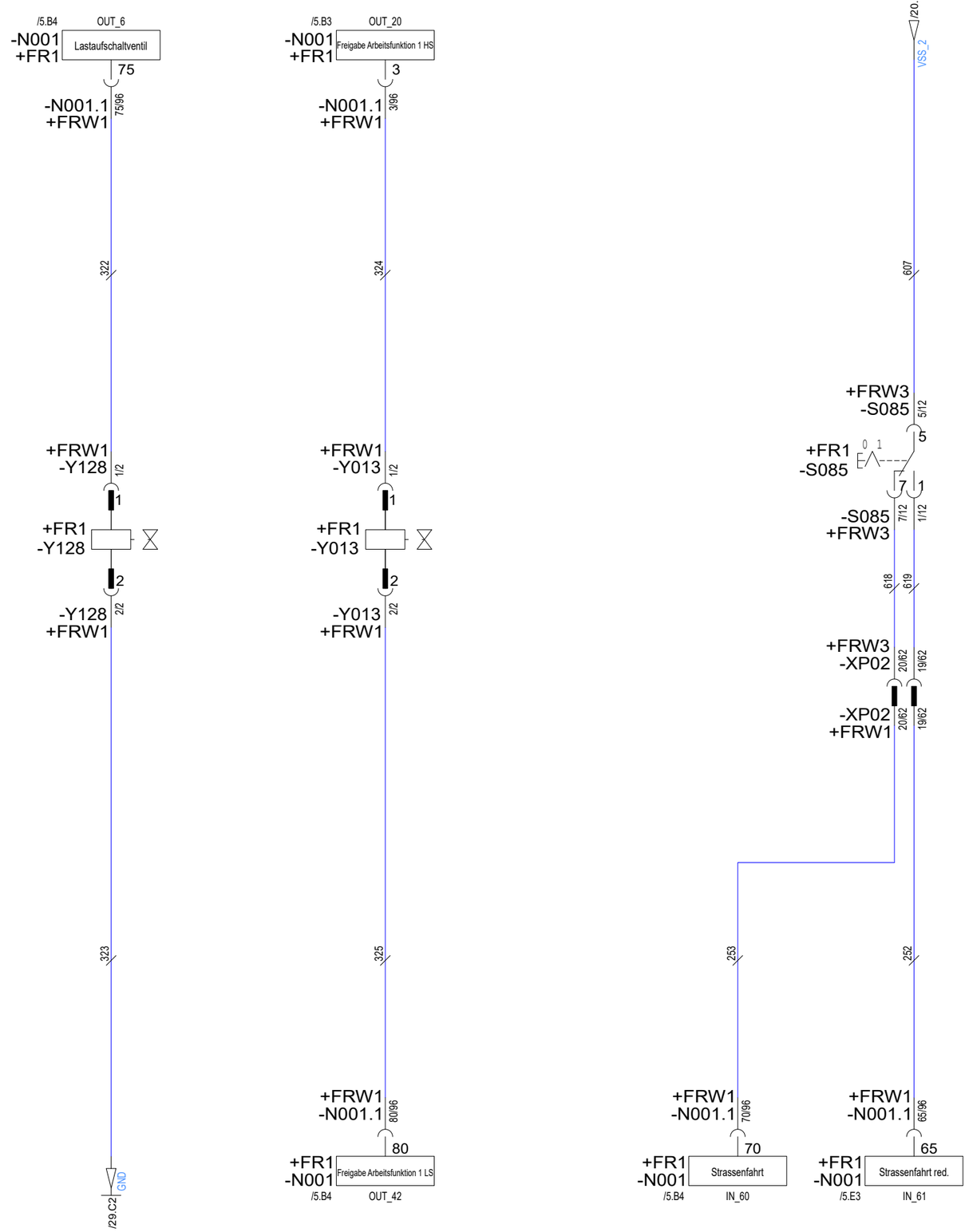
User	01.08.2019	LNZgrosl
Proved	01.08.2019	LNZhartp

Machine travel

Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision: 00
replace for Rev.: 00
Message No 20
A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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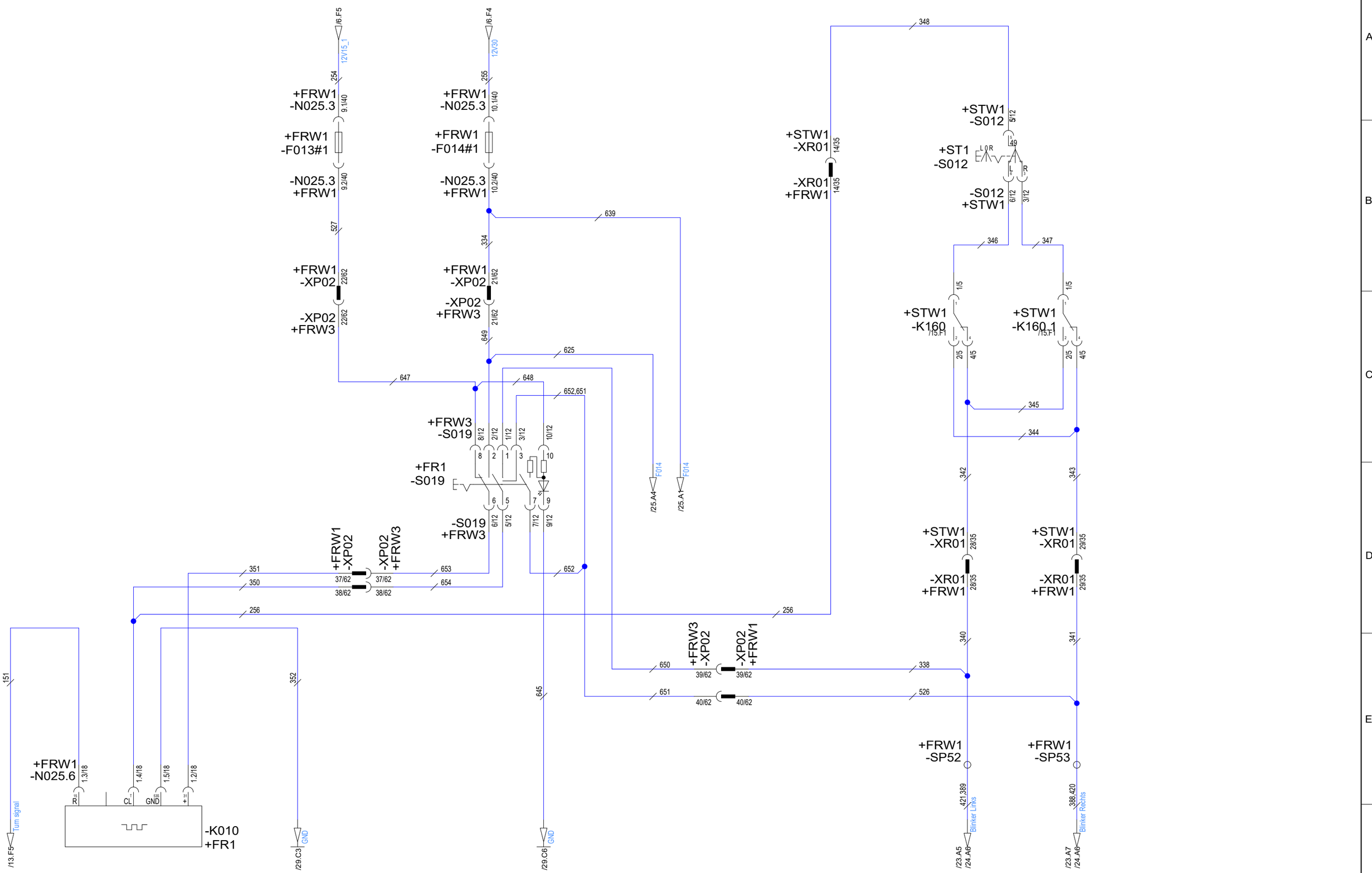
Arbeitsfunktionen

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	21
	A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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User	01.08.2019	LNZgrosl
Proved	01.08.2019	LNZhartp

rtro illumination
Turn indicator system

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	22
	A3

1564661510

+FRW1 -XR01 9/35
-XR01 9/35 +STW1
355
356
+STW1 -S012 8/12
7/12
+ST1 -S012
0 1 2
15
30
LHH
57/58
56b
56a
-S012 9/12 +STW1
1/12
4/12
353
357
364
365
366
Side markers
/14.F3
+STW1 -XR01 27/35 26/35 25/35
-XR01 +FRW1
310
358
359
621,883
+FRW1 -SP68
+FRW1 -SP67
532
368
362
363
+FRW1 -N025.4 1.3/36
+FRW1 -N025.4 2.3/36
+FRW1 -XP02 23/62
+FRW1 -K062#1
+FRW1 -K063#1
86
85
-XP02 +FRW3 23/62
-N025.4 +FRW1 1.5/36
-N025.4 +FRW1 2.5/36
369
535
314
+FRW1 -SP16
303,300
313
Side markers
Low beam
High beam
+FRW3 -XE10 2/10
/23.A4
/12.A4
/29.C3
GND
/12.A4
/16.A4
/26.A2
F015
+FRW1 -K062
+FRW1 -K063
87a
30
87
/23.B6
/23.B6
/6.F4
12/30
299
+FRW1 -N025.3 11.1/40
+FRW1 -F015#1
-N025.3 +FRW1 11.2/40
+FRW1 -SP15
354
/23.F1
303,300
Side markers
300
303
+FRW1 -N025.3 1.1/40
+FRW1 -N025.3 2.1/40
+FRW1 -F005#1
+FRW1 -F006#1
-N025.3 +FRW1 1.2/40
-N025.3 +FRW1 2.2/40
375
372
+FRW1 -SP44
+FRW1 -SP45
373
371
370
374
+FRW1 -XS01 2/8
-XS01 +FBW1 3/8
2/8
3/8
561
562
+FBW1 -SP04
+FBW1 -SP05
377,564
376,563
564
563
+FBW1 -E017 1/2
+FBW1 -E018 1/2
+FB1 -E017
+FB1 -E018
-E017 +FBW1 2/2
-E018 +FBW1 2/2
377
376
+FBW1 -H088 4/6
+FBW1 -H089 4/6
+FB1 -H088
+FB1 -H089
GND
GND
566
565
/24.A4
Side markers left
/22.F6
Blinker Links
389
+FRW1 -XS01 5/8
-XS01 +FBW1 5/8
Side markers right
/24.A5
/6.F3
12V15_1
259
260
+FRW1 -N025.4 7.7/36
+FRW1 -N025.4 8.8/36
+FRW1 -F022#1
+FRW1 -F023#1
-N025.4 +FRW1 7.3/36
-N025.4 +FRW1 8.4/36
261
264
+FRW1 -N025.4 1.1/36
+FRW1 -N025.4 2.1/36
+FRW1 -K062 /23.F2
+FRW1 -K063 /23.F2
-N025.4 +FRW1 1.2/36
-N025.4 +FRW1 2.2/36
265
272
+FRW1 -SP76
860
+FRW1 -SP06
294
861
380
+FRW1 -XS01 1/8
+FRW1 -XS01 6/8
-XS01 +FBW1 1/8
-XS01 +FBW1 6/8
381
382
+FBW1 -SP02
+FBW1 -SP03
384
383
385
386
378
High beam
/14.F5
Low beam
/14.F6
/22.F7
Blinker Rechts
388
+FRW1 -XS01 4/8
-XS01 +FBW1 4/8
387
397
398
+FRW1 -XS01 7/8
-XS01 +FBW1 7/8
+FBW1 -H088 5/6
+FBW1 -H088 2/6
+FBW1 -H088 3/6
+FBW1 -H089 2/6
+FBW1 -H089 3/6
+FBW1 -H089 5/6
+FB1 -H088
+FB1 -H088
+FB1 -H088
+FB1 -H089
+FB1 -H089
+FB1 -H089
GND
GND
GND
GND
GND
GND
-H088 +FBW1 6/6
-H089 +FBW1 6/6
395
396
-SP01 +FBW1
/29.E3
GND

project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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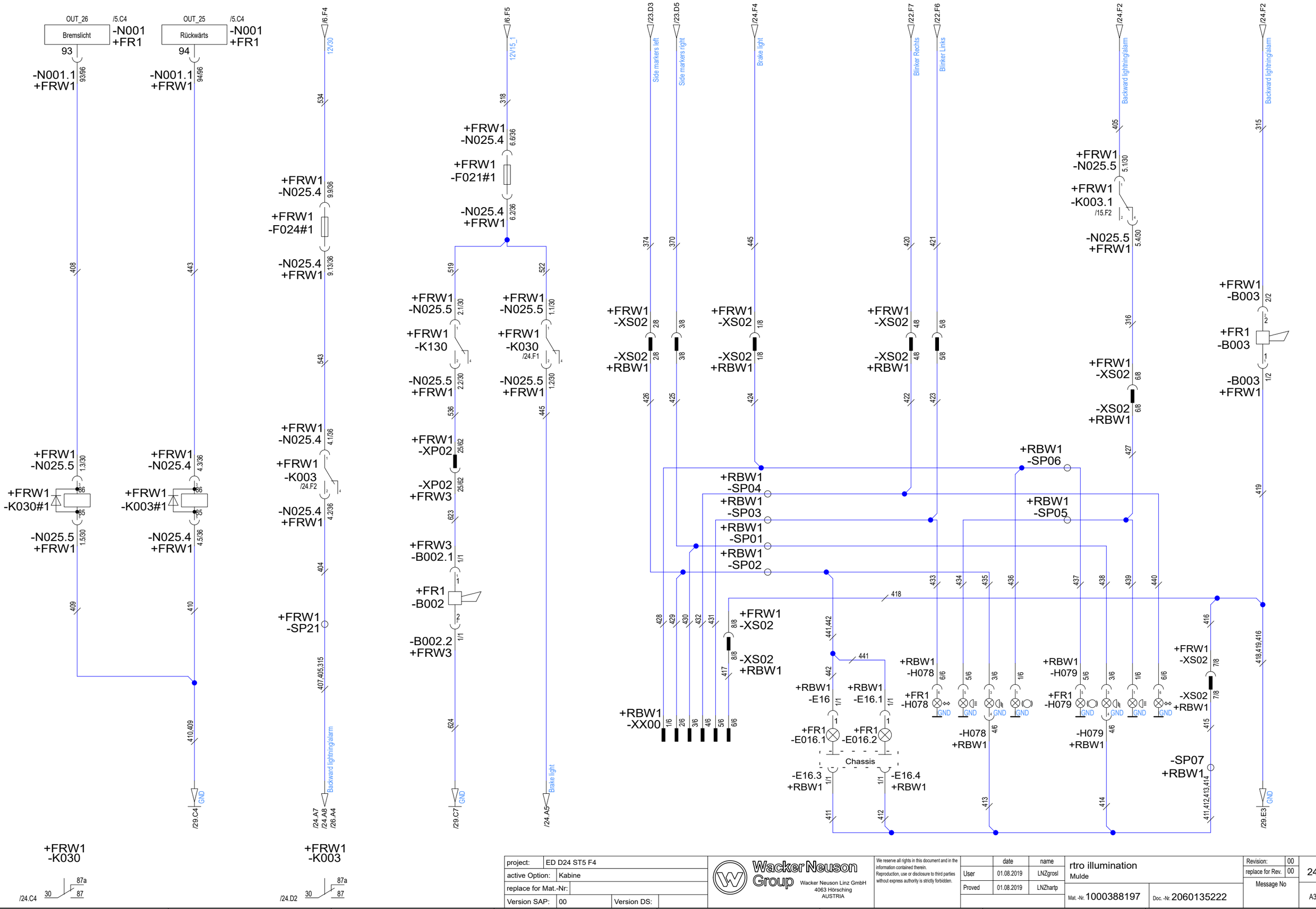
rtro illumination
Front bumper

Mat.-Nr. 1000388197
Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	23
	A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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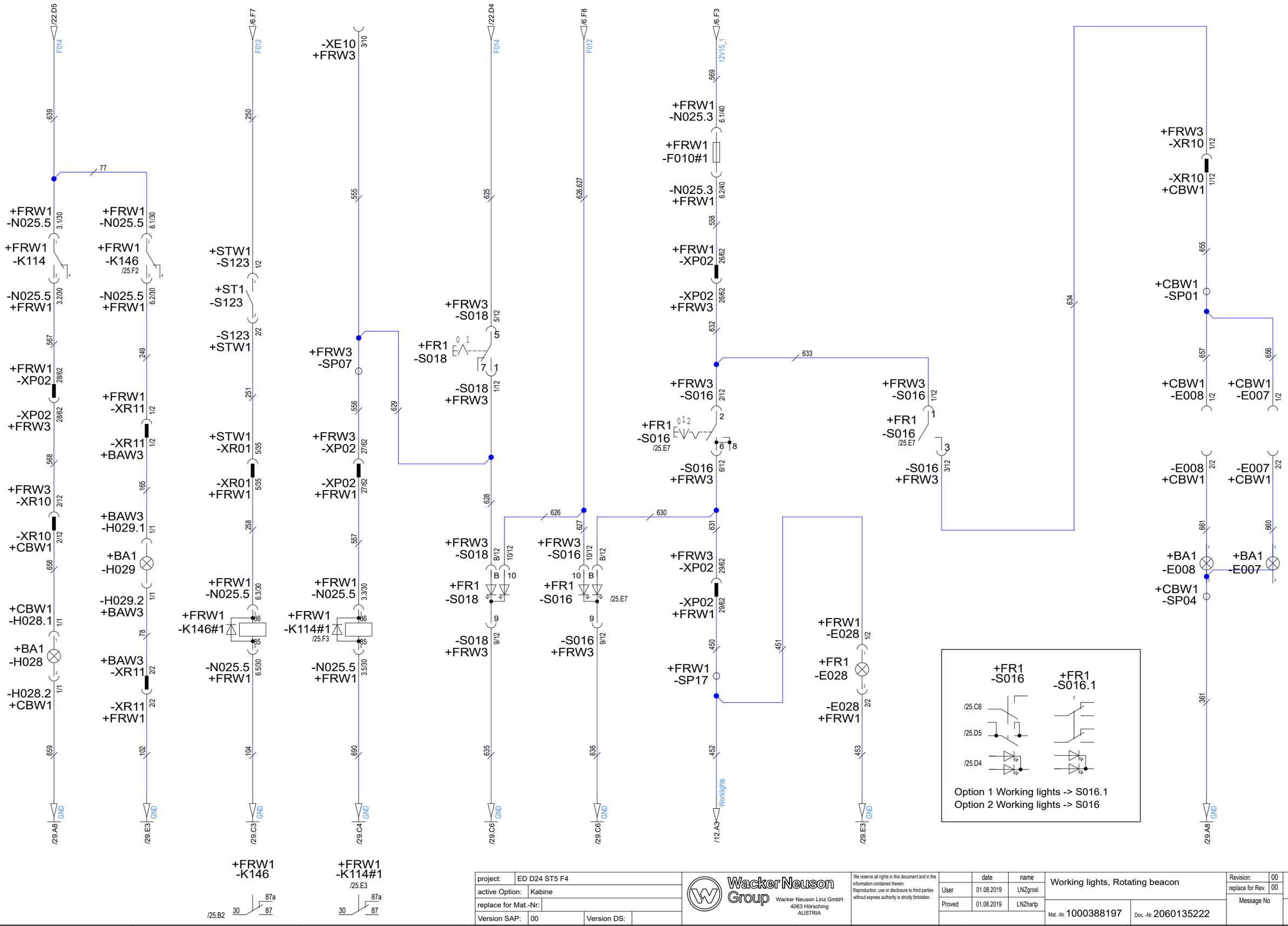
Proved	01.08.2019	LNZhartp

rtro illumination
Mulde

Mat.-Nr: 1000388197
Doc.-Nr: 2060135222

Revision:	00
replace for Rev.	00
Message No	24
	A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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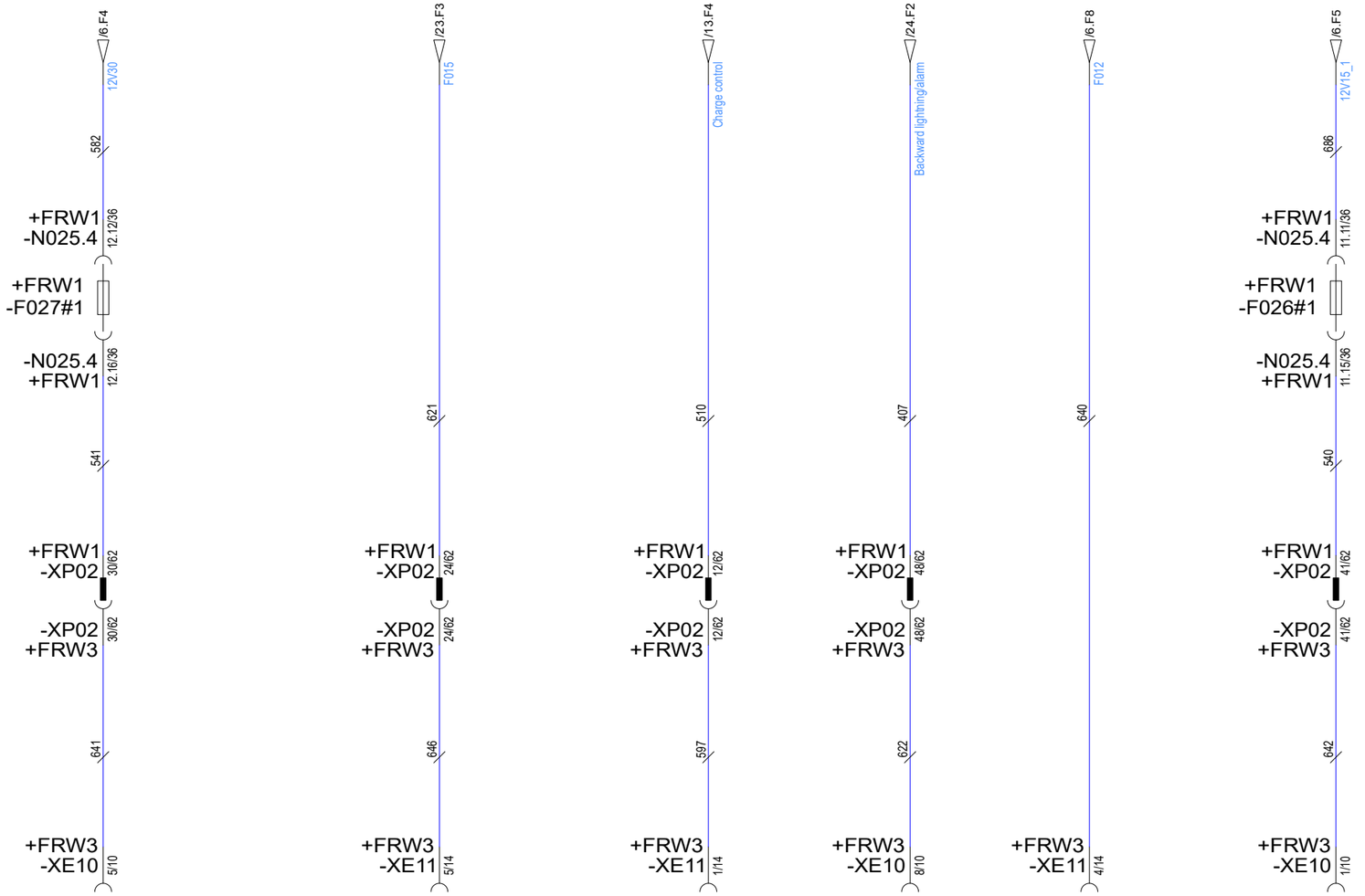
Working lights, Rotating beacon

Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	25
	A3

1564661510



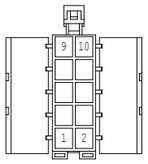
+FRW3
-XE10#6

/26.D6	1	F026	+FRW3-XP02:41	1.50 mm² RD-WH	642
/23.F1	2	Low beam	+FRW3-XP02:23	0.75 mm² GY	313
/25.A3	3	Rotating Beacon	+FRW3-SP07:1	0.75 mm² VT	555
	4				
/26.D1	5	F026	+FRW3-XP02:30	1.50 mm² RD	641
	6				
/26.D7	7	GND	+FRW3-SP05:1	1.50 mm² BK	643
/26.D4	8	Backward lightning/alarm	+FRW3-XP02:48	1.00 mm² GY	622
	9				
	10				

+FRW3
-XE11#6

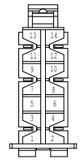
/26.D3	1	Charge control	+FRW3-XP02:12	1.00 mm² PK	597
/16.A1	2	CAN0 High	+FRW3-XP02:14, +FRW3-R810:B	0.75 mm² YE,YE 0.75 mm²	600, 602
/16.A1	3	CAN0 Low	+FRW3-XP02:15, +FRW3-R810:A	0.75 mm² GN,GN 0.75 mm²	599, 601
/26.D5	4	F012	+FRW3-SP02:1	0.75 mm² RD-WH	640
/26.D2	5	F015	+FRW3-XP02:24	0.75 mm² RD	646
/26.E7	6	GND	+FRW3-SP05:1	0.75 mm² BK	644
/8.B2	7	Start signal	+FRW3-S001.2:8	0.75 mm² PK	575
/8.C2	8	Start signal	+FRW3-XP02:4	0.75 mm² PK	768
	9	F011			
	10				
	11				
	12				
	13				
	14				

+FRW3
-XE10#5
/26.A7

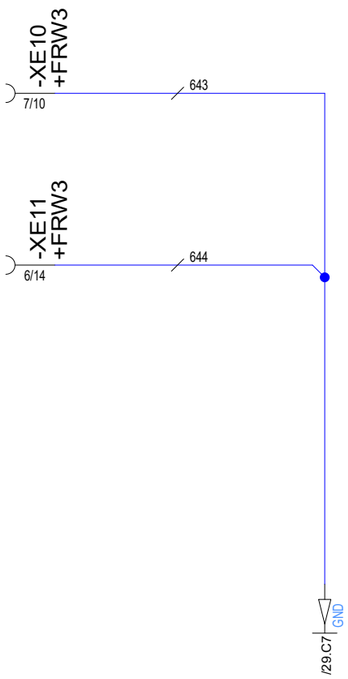


Pin ... Funktion
1 … 12V15 - Option
2 … Abblendlicht
3 … Drehlicht
4 … ---
5 … 12V30 - Option
6 … ---
7 … Masse
8 … Signal Rückwärtsfahrt
9 … ---

+FRW3
-XE11#5
/26.B7



Pin ... Funktion
1 … D+
2 … CAN H
3 … CAN L
4 … 12V15
5 … 12V30
6 … Masse
7 … Relais - Startsignal
8 … Relais - Startsignal
9 … Relais - Spannungsversorgung
10… Relais - Spannungsversorgung



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
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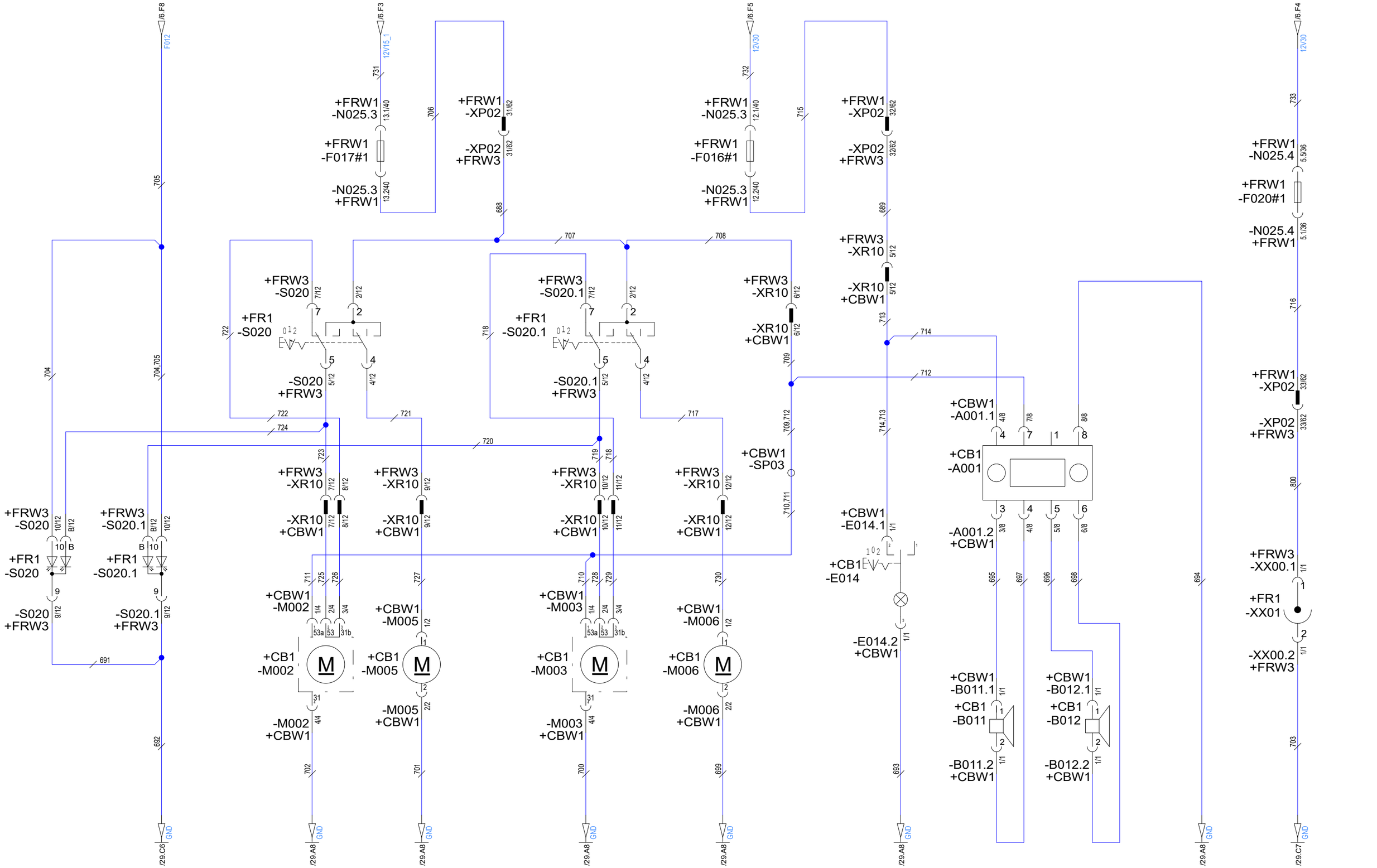
connector option

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	26
	A3

1564661510



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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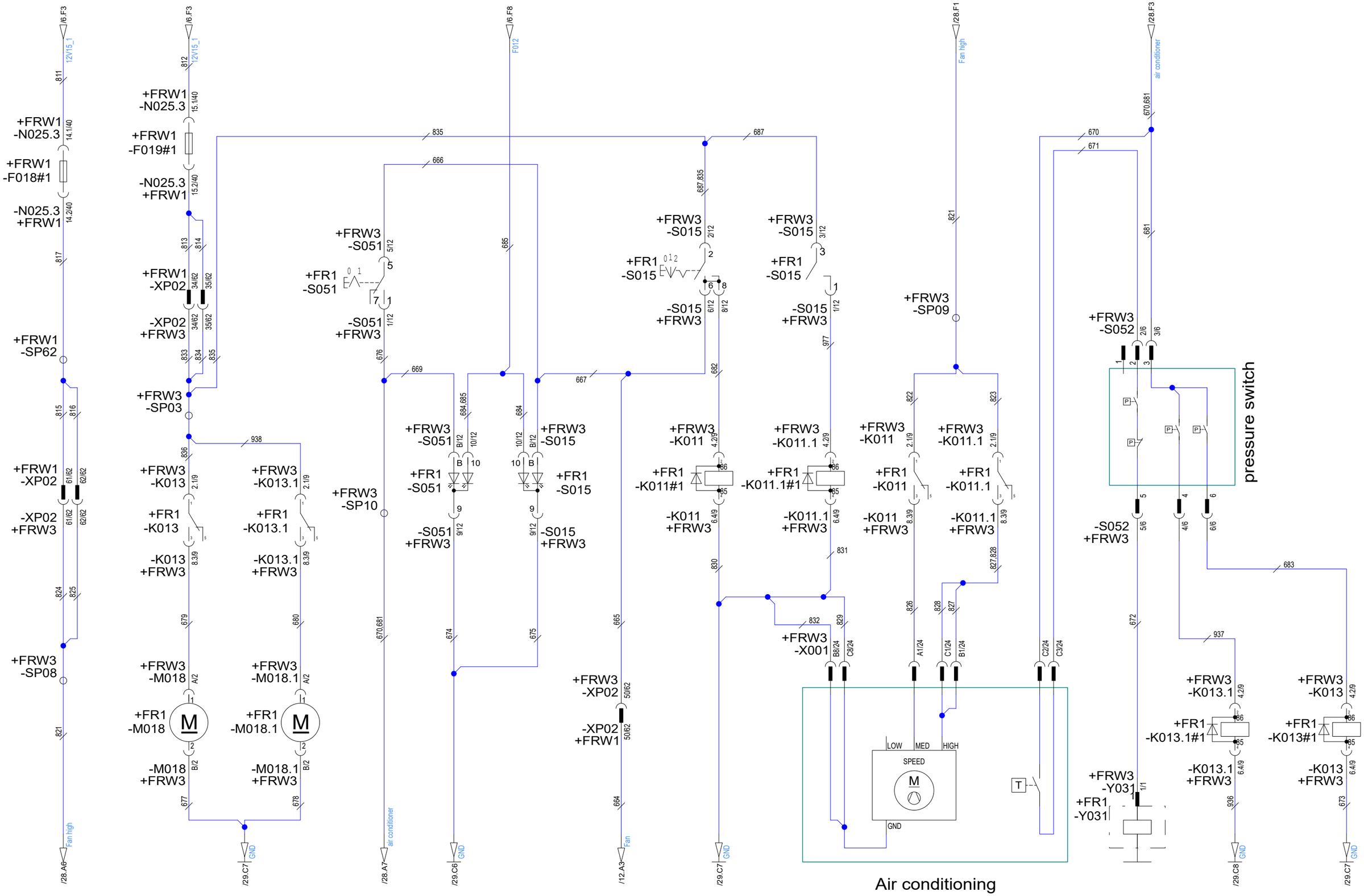
Wiper, Radio, Power outlet

Mat.-Nr: 1000388197
Doc.-Nr: 2060135222

Revision:	00
replace for Rev.	00
Message No	27
	A3

1564661044



Air conditioning

project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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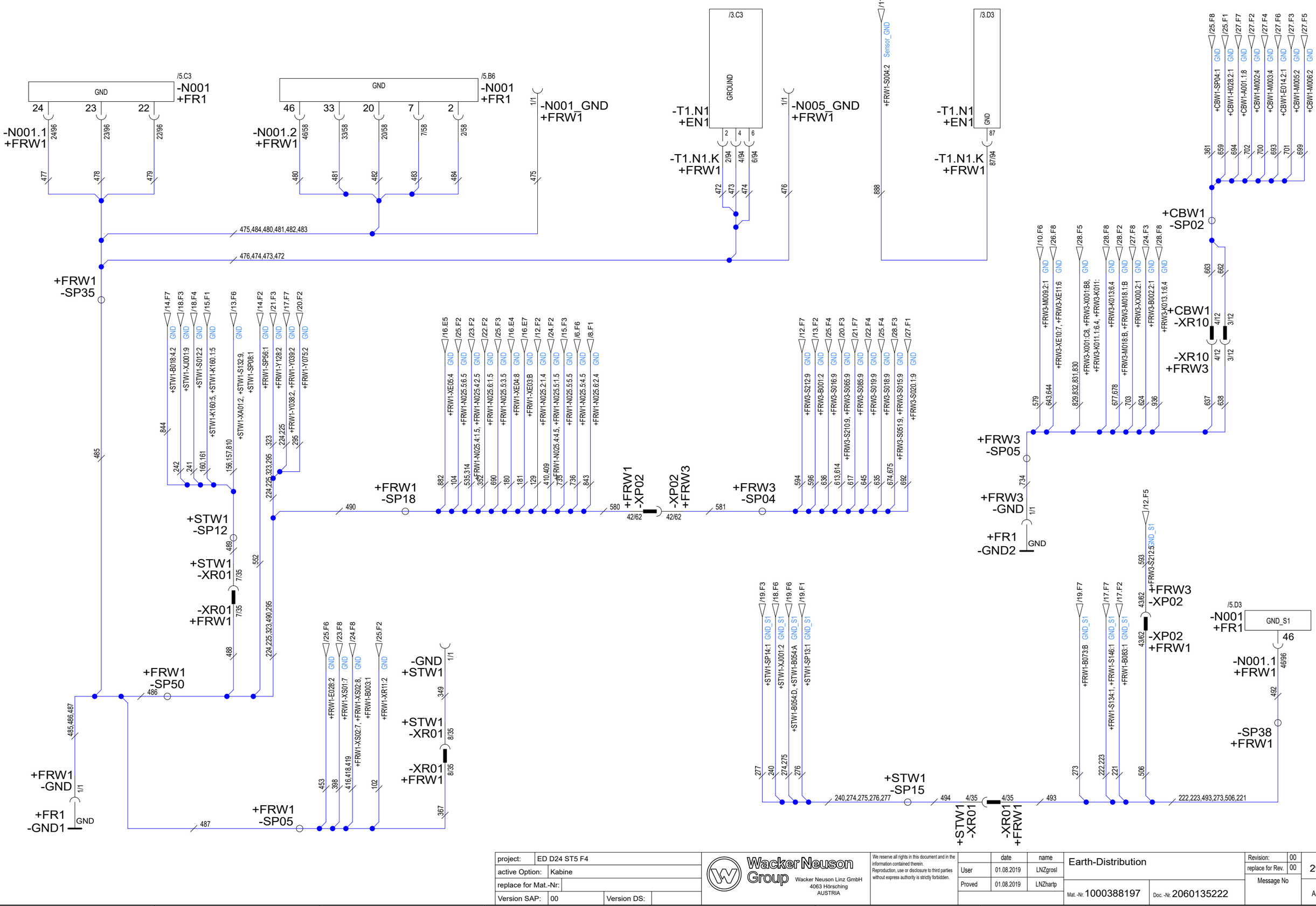
heating, Air conditioning

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	28
	A3

1564661044



project:	ED D24 ST5 F4		
active Option:	Kabine		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Earth-Distribution

Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	29
	A3

1564661510

DevDes	Location	Position	device designation	item number
-A001	+CB1	/27.C6	Radio	1000258408
-A001.1	+CBW1		connector Radio	1000104902
-A001.2	+CBW1		connector Radio	1000104903
B006	+EN1	/4.A1	Diesel engine	
B020	+EN1	/4.A1	Diesel engine	
B021	+EN1	/4.A1	Diesel engine	
B022	+EN1	/4.A1	Diesel engine	
B023	+EN1	/4.A1	Diesel engine	
B024	+EN1	/9.E5	Pressure sensor Low pressure Fuel	
B024	+EN1	/4.A1	Diesel engine	
B025	+EN1	/4.A1	Diesel engine	
B056	+EN1	/4.A1	Diesel engine	
B059	+EN1	/4.A1	Diesel engine	
B078	+EN1	/4.A1	Diesel engine	
B092	+EN1	/4.A1	Diesel engine	
-B001	+FR1	/13.E2	Fuel gauge	1000307804
-B001	+FRW3	/13.D2	connector Fuel gauge	1000027438
-B002	+FR1	/24.D3	Horn	1000269368
-B002.1	+FRW3	/24.D3	connector Horn	1000383151
-B002.2	+FRW3	/24.E3	connector Horn	1000383151
-B003	+FR1	/24.C8	Reversing warning system	1000170892
-B003	+FRW1	/24.C8	connector Reversing warning system	1000027438
-B007	+FR1	/17.C1	Temperature sensor Hydraulic oil	
-B007	+FRW1	/17.C1	connector Temperature sensor Hydraulic oil	1000027410
-B011	+CB1	/27.E6	speaker	1000068958
-B011.1	+CBW1	/27.E6	connector speaker	1000095369
-B011.2	+CBW1	/27.E6	connector speaker	1000106792
-B012	+CB1	/27.E7	speaker	1000068958
-B012.1	+CBW1	/27.E7	connector speaker	1000095369
-B012.2	+CBW1	/27.E7	connector speaker	1000106792
-B018	+ST1	/14.C7	Buzzer	

project:	ED D24 ST5 F4		Wacker Neuson Group Wacker Neuson Linz GmbH 4063 Hörsching AUSTRIA	We reserve all rights in this document and in the information contained therein. Reproduction, use or disclosure to third parties without express authority is strictly forbidden.		date	name
active Option:					User		
replace for Mat.-Nr:					Proved		
Version SAP:	00	Version DS:					

itemregister
-

Mat. -Nr. 1000388197 | Doc. -Nr. 2060135222

Revision: | replace for Rev. | Message No | Dev_01 | A3

DevDes	Location	Position	device designation	item number
-B018	+STW1		connector Buzzer	1000101071
-B024	+FRW3	/9.E5	connector Pressure sensor Low pressure Fuel	1000322614
-B054	+ST1	/19.A5	Accelerator pedal	1000304814
-B054	+STW1	/19.B5	connector Accelerator pedal	1000308534
-B057	+FR1	/10.E3	Intake air Temperature sensor	
-B057	+FRW3	/10.E3	connector Intake air Temperature sensor	1000126125
-B073	+FR1		Pressure sensor Inching pedal	1000303206
-B073	+FRW1	/19.C7	connector Pressure sensor Inching pedal	1000027429
-B083	+FR1	/17.C2	Engine speed sensor Motor Machine travel	
-B083	+FRW1	/17.D2	connector Engine speed sensor Motor Machine travel	1000379245
-BAT1	+FRW1	/6.A5	cable lug main fuse	1000127092
-BAT_GND	+EBW1	/6.E2	cable lug Earth	1000050031
-BAT_GND	+EBW2	/6.D1	Battery terminal Negative	1000089785
-E007	+BA1	/25.D8	Rear working light	1000270919
-E007	+CBW1	/25.C8	connector Rear working light	1000270365
-E008	+BA1	/25.D8	Rear working light	1000270919
-E008	+CBW1	/25.C8	connector Rear working light	1000270365
-E014	+CB1	/27.D6	Interior light	1000003334
-E014.1	+CBW1	/27.D6	connector Interior light	1000092494
-E014.2	+CBW1	/27.E6	connector Interior light	1000095370
-E16	+RBW1	/24.E6	connector Numberplate light	1000027384
-E16.1	+RBW1	/24.E6	connector Numberplate light	1000027384
-E016.1	+FR1	/24.E6	Numberplate light	1000117390
-E016.2	+FR1	/24.E6	Numberplate light	1000117390
-E16.3	+RBW1	/24.F6	cable lug Numberplate light	1000096859
-E16.4	+RBW1	/24.F6	cable lug Numberplate light	1000096859
-E017	+FB1	/23.E4	Side marker lights	
-E017	+FBW1	/23.D4	connector Side marker lights	1000027438
-E018	+FB1	/23.E5	Side marker lights	
-E018	+FBW1	/23.D5	connector Side marker lights	1000027438
-E028	+FR1	/25.E6	Working lights	1000270919

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DevDes	Location	Position	device designation	item number
-E028	+FRW1	/25.E6	connector Working lights	1000270365
-F001	+FRW1		main fuse 60A	1000098668
-F002	+FRW1		main fuse 80A	1000027321
-F003	+FRW1		main fuse 50A	1000015298
-F004	+FRW1		main fuse 50A	1000015298
-F005	+FRW1		Fuse 7,5A	1000186027
-F006	+FRW1		Fuse 7,5A	1000186027
-F007	+FRW1		Fuse 30A	1000247967
-F008	+FRW1		Fuse 10A	1000114140
-F009	+FRW1		Fuse 5A	1000186026
-F010	+FRW1		Fuse 15A	1000186028
-F011	+FRW1		Fuse 5A	1000186026
-F012	+FRW1		Fuse 10A	1000114140
-F013	+FRW1		Fuse 10A	1000114140
-F014	+FRW1		Fuse 15A	1000186028
-F015	+FRW1		Fuse 10A	1000114140
-F016	+FRW1		Fuse 10A	1000114140
-F017	+FRW1		Fuse 15A	1000186028
-F018	+FRW1		Fuse 30A	1000247967
-F019	+FRW1		Fuse 20A	1000186029
-F020	+FRW1		Fuse 15A	1000186028
-F021	+FRW1		Fuse 15A	1000186028
-F022	+FRW1		Fuse 10A	1000114140
-F023	+FRW1		Fuse 10A	1000114140
-F024	+FRW1		Fuse 5A	1000186026
-F025	+FRW1		Fuse 15A	1000186028
-F026	+FRW1		Fuse 10A	1000114140
-F027	+FRW1		Fuse 10A	1000114140
-G001	+FRW1	/6.D3	cable lug alternator	1000126891
-G1.1	+FRW1	/13.E4	cable lug alternator	1000110764
-G002	+EBW1	/6.D1	cable lug Battery	1000089783

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DevDes	Location	Position	device designation	item number
-G002	+FR1	/6.D1	Battery	1000250323
-GND	+EBW1	/6.E3	Earth	1000050030
-GND	+EBW2	/6.E1	Earth	1000050031
-GND	+FR1	/6.E2	Earth	
-GND	+FRW1	/29.F1	Earth	1000346811
-GND	+FRW3	/29.D7	Earth	1000365194
-GND	+STW1	/29.E3	Earth	
-GND1	+FR1	/29.F1	Earth	
-GND2	+FR1	/29.D7	Earth	
-H028	+BA1	/25.E1	Rotating beacon	1000314938
-H028.1	+CBW1	/25.D1	connector Rotating beacon	1000027435
-H028.2	+CBW1	/25.E1	connector Rotating beacon	1000095370
-H029	+BA1	/25.D2	Rotating beacon green	
-H029.1	+BAW3	/25.D2	connector Rotating beacon green	1000027435
-H029.2	+BAW3	/25.D2	connector Rotating beacon green	1000095370
-H078	+FR1	/24.E7	Combined rear left light	1000148542
-H078	+RBW1	/24.E7	Combined rear left light	1000027431
-H079	+FR1	/24.E7	Combined rear right light	1000148543
-H079	+RBW1	/24.E7	connector Combined rear right light	1000027431
-H088	+FB1	/23.E5	Combined front left light	HEADLIGHTS
-H088	+FBW1		connector Combined front left light	1000027431
-H089	+FB1	/23.E6	Combined front right light	HEADLIGHTS
-H089	+FBW1		connector Combined front left light	1000027431
K007	+EN1	/4.A1	Diesel engine	
-K001	+FRW1	/12.F2	High-current relay	1000154042
-K003	+FRW1	/24.F2	Switching Relay Machine travel Reverse	1000333390
-K003.1	+FRW1	/15.F2	Switching Relay Machine travel Reverse	1000333390
-K005	+FRW1	/8.F8	High-current relay Preheating system	1000154042
-K010	+FR1	/22.E2	Turn indicator relay	1000235517
-K011	+FR1		Switching Relay Air conditioning	1000027074
-K011	+FRW3		relay socket Switching Relay Air conditioning	1000101071

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DevDes	Location	Position	device designation	item number
-K011.1	+FR1		Switching Relay Air conditioning	1000027074
-K011.1	+FRW3		relay socket Switching Relay Air conditioning	1000101071
-K013	+FR1		Switching Relay Air conditioning	1000027074
-K013	+FRW3		relay socket Switching Relay Air conditioning	1000101071
-K013.1	+FR1		Switching Relay Air conditioning	1000027074
-K013.1	+FRW3		relay socket Switching Relay Air conditioning	1000101071
-K030	+FRW1	/24.F1	Switching Relay Brake lights	1000333390
-K062	+FRW1	/23.F2	Switching Relay Low beam	1000333390
-K063	+FRW1	/23.F2	Switching Relay high beam	1000333390
-K087	+FR1	/8.D2	time-relay 0,75s	1000099374
-K088	+FRW1	/10.F3	Switching Relay Fuel lift pump	1000333390
-K114	+FRW1		Switching Relay Rotating beacon	1000333390
-K130	+FRW1		Switching Relay Horn	1000333390
-K131	+FRW1		Switching Relay 12V15	1000333390
-K146	+FRW1	/25.F2	Switching Relay Seat belt contact switch	1000333390
-K160	+STW1	/15.F1	relay Switchover Turn indicators	1000125244
-K160	+STW1	/22.B6	relay Switchover Turn indicators	1000100593
-K160.1	+STW1	/15.F1	relay Switchover Turn indicators	1000125244
-K160.1	+STW1	/22.B7	relay Switchover Turn indicators	1000100593
-M001	+EBW2	/6.D2	cable lug Starter Motor	1000050031
-M002	+CB1	/27.D2	Front wiper motor	1000284961
-M002	+CBW1	/27.D2	connector Front wiper motor	1000104286
-M003	+CB1	/27.D4	Rear wiper motor	1000284961
-M003	+CBW1	/27.D4	connector Rear wiper motor	1000104286
-M005	+CB1	/27.E3	Front wipe/wash pump	1000110420
-M005	+CBW1	/27.D3	connector Front wipe/wash pump	1000095323
-M006	+CB1	/27.E5	Rear wipe/wash pump	1000110420
-M006	+CBW1	/27.D5	connector Rear wipe/wash pump	1000095323
-M009	+EN1	/10.D6	Fuel lift pump	
-M009.1	+FRW3	/10.C6	connector Fuel lift pump	1000383151
-M009.2	+FRW3	/10.D6	connector Fuel lift pump	1000383151

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DevDes	Location	Position	device designation	item number
-M018	+FR1	/28.E2	ventilator Air conditioning	1000110420
-M018	+FRW3	/28.E2	ventilator Air conditioning	1000263990
-M018.1	+FR1	/28.E2	ventilator Air conditioning	1000110420
-M018.1	+FRW3	/28.E2	ventilator Air conditioning	1000263990
-N001	+FR1	/5.A2	Traction electronics	
-N001.1	+FRW1		connector Traction electronics	1000359522
-N001.2	+FRW1	/7.E3	connector Traction electronics	1000359480
-N001_GND	+FRW1	/29.B4	cable lug Traction electronics	1000096859
-N005_GND	+FRW1	/29.B5	cable lug Traction electronics	1000096859
-N025.1	+FRW1	/6.A5	Bracket relay / Fuse	1000385676
-N025.2	+FRW1	/6.B3	Bracket relay / Fuse	1000385684
-N025.3	+FRW1	/23.B4	Bracket relay / Fuse	1000390875
-N025.4	+FRW1	/23.B6	Bracket relay / Fuse	1000385308
-N025.5	+FRW1	/24.C4	Bracket relay / Fuse	1000329495
-N025.6	+FRW1		Bracket relay / Fuse	1000390874
-P014	+ST1	/4.B6	Radio	1000354816
R001	+EN1	/4.A1	Diesel engine	
-R024	+FRW1	/14.D2	Resistor 220 Ohm	
-R025	+FRW3	/20.A5	connector Resistor 22 Ohm	1000110449
-R040	+STW1	/13.B3	connector Resistor 47 Ohm D+	1000095323
-R810	+FRW3		Bus terminating resistance	1000289850
-R810	+FRW3	/16.B1	Bus terminating resistance	1000027394
-R812	+FRW1		Bus terminating resistance	1000289850
-R812	+FRW1	/16.D1	Bus terminating resistance	1000027394
-R853	+FRW1		Bus terminating resistance	1000289850
-R853	+FRW1	/16.D7	Bus terminating resistance	1000027394
-R890	+STW1	/13.D6	Resistor 1 kOhm	1000312303
-R900	+STW1	/19.D3	Resistor 1 kOhm	1000312303
-R901	+STW1	/19.D1	Resistor 1 kOhm	1000312303
-R902	+FRW3	/20.D3	Resistor 1 kOhm	1000312303
S058	+EN1	/4.A1	Diesel engine	

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DevDes	Location	Position	device designation	item number
-S001	+FR1	/6.D5	Preheating start switch	1000184001
-S001.1	+FRW3	/6.D5	connector Preheating start switch	1000027368
-S001.2	+FRW3	/6.D5	connector Preheating start switch	1000027386
-S004	+FR1	/11.C8	pressure switch Air filter	1000270266
-S004	+FRW1	/11.C8	connector pressure switch Air filter	1000027359
-S008	+EBW1	/6.C1	cable lug Battery master switch	1000050031
-S008	+EBW2	/6.C1	cable lug Battery master switch	1000050031
-S008	+FR1	/6.C1	Battery master switch	1000081674
-S008	+FRW1	/6.C1	cable lug Battery master switch	1000355751
-S008.1	+EBW1	/6.C1	cable lug Battery master switch	1000050031
-S012	+ST1	/22.B7	Steering-column control lever left	1000309164
-S012	+STW1	/23.B1	connector Steering-column control lever left	1000334439
-S015	+FR1	/28.B5	switch Heating fan	1000353588
-S015	+FRW3	/28.C5	switch Heating fan	1000103949
-S016	+FR1	/25.E7	switch Working lights	1000051958
-S016	+FRW3	/25.C6	connector switch Working lights	1000103949
-S016.1	+FR1	/25.E7	switch Working lights	SCHALTER
-S018	+FR1	/25.C4	switch Rotating beacon	SCHALTER
-S018	+FRW3	/25.C4	connector switch Rotating beacon	1000103949
-S019	+FR1	/22.D3	Hazard lights switch	
-S019	+FRW3	/22.C4	connector Hazard lights switch	1000103949
-S020	+FR1	/27.C2	switch Wiper/washer Front	SCHALTER
-S020	+FRW3		connector switch Wiper/washer Front	1000303783
-S020.1	+FR1	/27.C4	switch Wiper/washer rear	SCHALTER
-S020.1	+FRW3		connector switch Wiper/washer rear	1000303783
-S051	+FR1	/28.B3	switch Air conditioning	1000353495
-S051	+FRW3	/28.C3	connector switch Air conditioning	1000103949
-S052	+FRW3		pressure switch Air conditioning	1000398396
-S058	+FRW3	/9.E8	connector switch water separator	1000027332
-S065	+FR1	/20.C5	switch Parking brake	SCHALTER
-S065	+FRW3	/20.D5	connector switch Parking brake	1000103949

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DevDes	Location	Position	device designation	item number
-S085	+FR1	/21.C6	switch Deactivate hydraulic function	SCHALTER
-S085	+FRW3	/21.C6	connector switch Deactivate hydraulic function	1000103949
-S102	+FR1	/15.F3	Plunger switch	1000247989
-S102	+FRW1	/15.C4	connector Plunger switch	1000258052
-S103	+FR1	/15.F3	Plunger switch	1000247989
-S103	+FRW1	/15.C5	connector Plunger switch	1000258052
-S104	+ST1	/19.C1	Operator presence switch	1000325174
-S104	+STW1	/19.C1	connector Operator presence switch	1000183226
-S104.2	+ST1	/19.C3	Operator presence switch	
-S104.2	+STW1	/19.C3	connector Operator presence switch	1000027429
-S119	+FR1		switch Diesel particulate filter Regeneration	1000353594
-S119	+FRW3	/11.C4	connector switch Diesel particulate filter Regeneration	1000103949
-S123	+ST1	/25.B2	Seat belt contact switch	
-S123	+STW1	/25.B2	connector Seat belt contact switch	1000110449
-S132	+ST1	/13.D8	Seat belt contact switch	1000181773
-S132	+STW1	/13.D8	button Display	1000103949
-S134	+FR1	/17.C6	limit switch Schaltstellung Getriebe	
-S134	+FRW1	/17.C6	connector limit switch Schaltstellung Getriebe	1000027438
-S146	+FR1	/17.C6	limit switch Schaltstellung Getriebe	
-S146	+FRW1	/17.C6	connector limit switch Schaltstellung Getriebe	1000270365
-S210	+FR1	/20.C6	button test Parking brake	1000051965
-S210	+FRW3	/20.D6	connector button test Parking brake	1000103949
-S212	+FR1	/12.B6	switch Auto-Stop	SCHALTER
-S212	+FRW3	/12.C6	connector switch Auto-Stop	1000103949
-S212.1	+FRW3	/12.D6	connector Auto-Stop	1000095336
-SP01	+CBW1	/25.C8	Splice	
-SP01	+FBW1	/23.F8	Splice	
-SP01	+FRW1	/9.B2	Splice	
-SP01	+FRW3	/20.B5	Splice	
-SP01	+RBW1	/24.D5	Splice	
-SP02	+CBW1	/29.B8	Splice	

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DevDes	Location	Position	device designation	item number
-SP02	+FBW1	/23.D6	Splice	
-SP02	+FRW1	/9.B3	Splice	
-SP02	+FRW3	/6.E8	Splice	
-SP02	+RBW1	/24.D5	Splice	
-SP03	+CBW1	/27.D5	Splice	
-SP03	+FBW1	/23.D6	Splice	
-SP03	+FRW1	/9.D2	Splice	
-SP03	+FRW3	/28.C2	Splice	
-SP03	+RBW1	/24.D5	Splice	
-SP03	+STW1	/19.D2	Splice	
-SP04	+CBW1	/25.D8	Splice	
-SP04	+FBW1	/23.D4	Splice	
-SP04	+FRW1	/9.D3	Splice	
-SP04	+FRW3	/29.D5	Splice	
-SP04	+RBW1	/24.D5	Splice	
-SP04	+STW1	/19.D3	Splice	
-SP05	+FBW1	/23.D4	Splice	
-SP05	+FRW1	/29.F2	Splice	
-SP05	+FRW3	/29.D7	Splice	
-SP05	+RBW1	/24.D7	Splice	
-SP05	+STW1	/18.B3	Splice	
-SP06	+FRW1	/23.C6	Splice	
-SP06	+RBW1	/24.D7	Splice	
-SP06	+STW1	/13.B6	Splice	
-SP07	+FRW1	/16.D2	Splice	
-SP07	+FRW3	/25.C3	Splice	
-SP07	+RBW1	/24.F8	Splice	
-SP07	+STW1	/13.D6	Splice	
-SP08	+FRW1	/16.D3	Splice	
-SP08	+FRW3	/28.E1	Splice	
-SP08	+STW1	/13.D6	Splice	

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DevDes	Location	Position	device designation	item number
-SP09	+FRW3	/28.C6	Splice	
-SP09	+STW1	/6.E7	Splice	
-SP10	+FRW1	/20.D2	Splice	
-SP10	+FRW3	/28.D3	Splice	
-SP10	+STW1	/18.B7	Splice	
-SP11	+FRW1	/9.C5	Splice	
-SP11	+FRW3	/11.B4	Splice	
-SP12	+FRW1	/8.D5	Splice	
-SP12	+FRW3	/20.D3	Splice	
-SP12	+STW1	/29.D2	Splice	
-SP13	+FRW1	/7.D2	Splice	
-SP13	+FRW3	/20.D3	Splice	
-SP13	+STW1	/19.E1	Splice	
-SP14	+FRW1	/8.D2	Splice	
-SP14	+STW1	/19.E3	Splice	
-SP15	+FRW1	/23.C3	Splice	
-SP15	+STW1	/29.F6	Splice	
-SP16	+FRW1	/23.E1	Splice	
-SP16	+STW1	/19.D1	Splice	
-SP17	+FRW1	/25.E5	Splice	
-SP17	+STW1	/19.D3	Splice	
-SP18	+FRW1	/29.D3	Splice	
-SP20	+FRW1	/7.D3	Splice	
-SP21	+FRW1	/24.E2	Splice	
-SP22	+FRW1	/6.B7	Splice	
-SP23	+FRW1	/16.B5	Splice	
-SP24	+FRW1	/16.B5	Splice	
-SP25	+FRW1	/16.B3	Splice	
-SP26	+FRW1	/16.B4	Splice	
-SP31	+FRW1	/14.C2	Splice	
-SP32	+FRW1	/13.D4	Splice	

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DevDes	Location	Position	device designation	item number
-SP33	+FRW1	/7.D5	Splice	
-SP35	+FRW1	/29.C1	Splice	
-SP36	+FRW1	/15.D8	Splice	
-SP37	+FRW1	/15.B4	Splice	
-SP38	+FRW1	/29.E8	Splice	
-SP44	+FRW1	/23.C4	Splice	
-SP45	+FRW1	/23.C4	Splice	
-SP50	+FRW1	/29.E2	Splice	
-SP52	+FRW1	/22.E6	Splice	
-SP53	+FRW1	/22.E7	Splice	
-SP54	+FRW1	/7.C6	Splice	
-SP55	+FRW1	/14.D2	Splice	
-SP56	+FRW1	/14.D2	Splice	
-SP62	+FRW1	/28.C1	Splice	
-SP63	+FRW1	/16.D7	Splice	
-SP64	+FRW1	/16.D8	Splice	
-SP65	+FRW1	/16.E2	Splice	
-SP66	+FRW1	/16.E2	Splice	
-SP67	+FRW1	/23.D2	Splice	
-SP68	+FRW1	/23.D2	Splice	
-SP70	+FRW1	/12.D4	Splice	
-SP71	+FRW1	/6.D3	Splice	
-SP72	+FRW1	/6.D5	Splice	
-SP73	+FRW1	/6.B4	Splice	
-SP74	+FRW1	/6.B4	Splice	
-SP75	+FRW1	/6.E5	Splice	
-SP76	+FRW1	/23.C6	Splice	
-SP77	+FRW1	/9.C4	Splice	
-SP78	+FRW1	/9.C5	Splice	
-SP79	+FRW1	/8.B7	Splice	
-T1.B024	+EN1	/9.E5	Pressure sensor Low pressure Fuel	

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DevDes	Location	Position	device designation	item number
-T1.G1	+EN1	/6.D3	alternator	
-T1.M1	+EN1	/6.D2	starter	
-T1.N1	+EN1	/3.A2	Diesel engine electronics	
-T1.N1.A	+FRW1		connector Control valve Diesel engine	1000288543
-T1.N1.K	+FRW1	/7.E1	connector Control valve Diesel engine	1000161936
-T1.T1	+EN1	/4.A1	Diesel engine	
-T1.T1.B056	+FRW1	/9.E7	connector Temperature sensor DPF inlet temperature	1000404126
-T1.T1.B059	+FRW1	/9.E7	connector Temperature sensor DPF outlet temperature	1000404137
-T1.T1.B092	+FRW1	/9.E8	Differential pressure diesel particulate filter	1000250920
-V001	+FRW1		Diode	1000398209
-V002	+FRW1		Diode	1000398209
-V003	+FRW1		Diode	1000398209
-V004	+FRW1		Diode	1000398209
-X001	+FRW3	/28.D6	connector Air conditioning	1000125826
-X017	+FRW1	/9.E3	connector Diesel engine	1000260163
-X018	+FRW1	/8.E5	connector Preheating system	1000308732
-XA01	+STW1	/13.C6	connector Radio	1000347631
-XA02	+STW1	/13.A4	connector Radio	1000347542
-XE03	+FRW1	/16.F7	connector diagnostics Diesel engine	1000163185
-XE04	+FRW1	/16.F2	connector Vehicle diagnostics	1000312071
-XE05	+FRW1	/16.F4	OBD II	1000325528
-XE10	+FRW3	/26.D6	connector Option	1000104431
-XE11	+FRW3	/26.D3	connector Option	1000100971
-XE11.1	+FRW3		Addition-connector	1000271156
-XJ001	+ST1	/18.C7	Joystick	1000290667
-XJ001	+STW1	/18.C7	connector Joystick	1000334152
-XP02	+FRW1	/6.C8	connector Fuse box	1000303405
-XP02	+FRW3	/6.C8	connector Fuse box	1000260163
-XR01	+FRW1	/19.D5	connector Wendekonsole	1000333982
-XR01	+STW1	/19.D5	connector Wendekonsole	1000333984
-XR10	+CBW1	/25.B8	connector Wiring harness Cabin	1000105124

project:	ED D24 ST5 F4		
active Option:			
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Version SAP:	00	Version DS:	

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itemregister
-

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Revision:
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Dev_12
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DevDes	Location	Position	device designation	item number
-XR10	+FRW3	/25.B8	connector Wiring harness Cabin	1000105122
-XR11	+BAW3	/25.D2	connector Wiring harness Rotating beacon green	1000051981
-XR11	+FRW1	/25.C2	connector Wiring harness Rotating beacon green	1000027410
-XS01	+FBW1	/23.D6	connector Wiring harness illumination Front	1000105117
-XS01	+FRW1	/23.D6	connector Wiring harness illumination Front	1000105113
-XS02	+FRW1	/24.C5	connector Wiring harness illumination rear	1000105113
-XS02	+RBW1	/24.C5	connector Wiring harness illumination rear	1000105117
-XX00	+RBW1	/24.E5	Power outlet Trailer	1000085023
-XX00.1	+FRW3	/27.D8	connector 12 V power outlet	1000027435
-XX00.2	+FRW3	/27.E8	connector 12 V power outlet	1000027435
-XX01	+FR1	/27.D8	12 V power outlet	1000002902
-XX16	+EBW1	/6.D2	cable lug jump start terminal	1000050031
Y060	+EN1	/4.A1	Diesel engine	
Y061	+EN1	/4.A1	Diesel engine	
Y062	+EN1	/4.A1	Diesel engine	
Y063	+EN1	/4.A1	Diesel engine	
Y078	+EN1	/4.A1	Diesel engine	
-Y004	+FR1	/17.C4	Solenoid valve Reverse	
-Y004	+FRW1	/17.C4	connector Solenoid valve Reverse	1000027438
-Y005	+FR1	/17.C3	Solenoid valve Forward	
-Y005	+FRW1	/17.C3	connector Solenoid valve Forward	1000270365
-Y013	+FR1	/21.C4	Solenoid valve Deactivate hydraulic function	
-Y013	+FRW1	/21.C4	connector Solenoid valve Deactivate hydraulic function	1000027332
-Y031	+FR1	/28.E7	clutch Air conditioning compressor	
-Y031	+FRW3	/28.E7	connector clutch Air conditioning compressor	1000085014
-Y038	+FR1	/17.C7	1st speed range solenoid valve	
-Y038	+FRW1	/17.C7	connector 1st speed range solenoid valve	1000270365
-Y039	+FR1	/17.C8	2nd speed range solenoid valve	
-Y039	+FRW1	/17.C8	connector 2nd speed range solenoid valve	1000027410
-Y043	+FR1	/20.C8	Solenoid valve Parking brake	
-Y043	+FRW1	/20.C8	connector Solenoid valve Parking brake	1000027438

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DevDes	Location	Position	device designation	item number
-Y070	+FRW1	/15.C8	connector Solenoid valve Switchover Steering system	1000027410
-Y075	+FR1	/20.E2	Solenoid valve orifice	
-Y075	+FRW1	/20.D2	connector Solenoid valve orifice	1000027410
-Y098	+FR1	/17.C5	Solenoid valve Hydraulic motor adjustment	
-Y098	+FRW1	/17.C5	connector Solenoid valve Hydraulic motor adjustment	1000270365
-Y128	+FR1	/21.C3	Load override valve	
-Y128	+FRW1	/21.C3	connector Load override valve	1000027410
-Y155	+FRW1	/15.C7	connector Solenoid valve Switchover Steering system	1000027332

project: ED D24 ST5 F4
active Option:
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Version SAP: 00 Version DS:

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A3

7.10 Wiring diagram DV60, DV90 and DV100 with Canopy (EU Stage V)

Stromlaufplan D24

Canopy

Deutz DPF Stage V

Location designation

FRW1 main harness Deutz Stage 5
FRW2 main harness ROPS Stage 5
FRW3 main harness Cabin Stage 5

STW1 Wiring harness Wendekonsole

BAW1 Wiring harness illumination ROPS
BAW2 Wiring harness illumination CANOPY
BAW3 Wiring harness Rotating beacon green

RBW1 Wiring harness rtro rear side (Mulde)
FBW1 Wiring harness rtro Front bumper
CBW1 Wiring harness Cabin

EBW1 battery cable
EBW2 battery cable

BA1 Beleuchtung Komponenten
CB1 Kabine Komponenten
EN1 Motor Komponenten
FB1 STVO Komponenten
FR1 Rahmen Komponenten
ST1 Interieeur Komponenten

project:	ED D24 ST5 F4		
active Option:	Canopy		
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cover sheet

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1564650012

Sheet	SheetName 1	SheetName 2
Con_01	contents	-
Con_02	contents	-
2	Fuse box	
3	Controllers	
4	Controllers	
5	Controllers	
6	main-Supply	
7	Supply Controllers	
8	Starten, Glühen	
9	Diesel engine electronics	
10	Diesel engine electronics	
11	Diesel engine electronics	
12	Auto Stop	
13	IO Display, fill level indicator, charge control	
14	IO Display	
15	Drehsitzfunktionen	
16	CAN	
17	Machine travel	
18	Machine travel	
19	Machine travel	
20	Machine travel	
21	Arbeitsfunktionen	
22	rtro illumination	Turn indicator system
23	rtro illumination	Front bumper
24	rtro illumination	Mulde
25	Working lights, Rotating beacon	
26	connector option	
27	Wiper, Radio, Power outlet	
28	heating, Air conditioning	
29	Earth-Distribution	
Dev_01	itemregister	-

project:	ED D24 ST5 F4		
active Option:			
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Revision:
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Message No
Con_01
A3

Sheet	SheetName 1	SheetName 2
Dev_02	itemregister	-
Dev_03	itemregister	-
Dev_04	itemregister	-
Dev_05	itemregister	-
Dev_06	itemregister	-
Dev_07	itemregister	-
Dev_08	itemregister	-
Dev_09	itemregister	-
Dev_10	itemregister	-
Dev_11	itemregister	-
Dev_12	itemregister	-

project:	ED D24 ST5 F4		
active Option:			
replace for Mat.-Nr:			
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Revision:	
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Message No	Con_02
	A3

project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
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Fuse box

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Revision:	00
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Message No	2
	A3

1564650012

Engine Control Module

ECM MD1CC878

Connector K

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
43	5V			
58	SIG	fuel pressure	/9.A5	
21	GND			
23	5V			
82	GND	Delta P Venturi	/9.A6	
81	SIG			
7	GND			
33	SIG	EGR Temperature	/9.A6	
46	5V			
80	SIG			
64	GND	Throttle valve	/9.A6	
8	DC POS			
9	DC NEG			
39	SIG			
60	GND	Intake air Temperature	/10.A3	
54	HIGH			
76	LOW	CAN 1	/16.A5	
75	HIGH			
53	LOW	CAN 2	/16.A8	
1				
3		Battery	/7.F2	
5				
2				
4		GROUND	/29.A5	
6				
88	T15	ignition	/7.F6	
35	T50	Start	/8.F2	
13	INPUT	Coolant level		
17	INPUT	Air filter	/11.A8	
87	GND		/29.A7	
16	INPUT	REG-SW	/11.F4	
19	INPUT	Neutral	/11.F5	
68	UB	Versorungs Schalter	/8.A7	
91	INPUT	DPF Differential pressure	/9.A7	
55	GND		/9.A7	
56	SIG	DPF Temperature	/9.A7	
73	HIGH	relay fuel pump	/10.A4	
25	LOW	relay fuel pump	/10.F4	
72	LOW	relay Preheating system	/8.F7	
20	SIG	Preheating system	/8.F6	

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
70				
65				
29				
71				
90				
92				
69				
48				
38				
15	INPUT	Kupplungs Schalter	/11.F6	
66				
32				
12				
37				
18				
14				
41				
31				
86				
52				
22				
24				
78				
77				
34				
11				
45				
61				
62				
44				
83				
84				
63				
85				
79				
74				
57				
52				
49				

Connector ECM A

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
33	HIGH			
16	LOW	Injector 1	/9.A1	
48	HIGH			
18	LOW	Injector 3	/9.A1	
32	HIGH			
2	LOW	Injector 2	/9.A1	
46	HIGH			
3	LOW	Injector 4	/9.A2	
4	UB4			
5	PWM		/9.A2	
25	GND			
26	SIG	Rail pressure	/9.A2	
7	5V			
53	GND			
52	NEG	Camshaft speed	/9.A2	
37	POS			
38	GND			
54	NEG	Crankshaft speed	/9.A3	
39	POS			
43	SIG-P			
27	SIG-T	Charge air sensors	/9.A3	
9	5V			
42	GND			
29	GND	Temperature Coolant	/9.A3	
28	SIG			
22	SIG			
12	5V	EGR- valve	/9.A4	
19	DC POS			
20	DC NEG			
24	5V		/9.A4	
44	SIG	engine oil pressure	/9.A4	
57	GND		/9.A4	
11	SIG	Exhaust gas back pressure	/9.A4	
10				
51				
45				
35				
8				
14				
36				
23				
40	GND		/9.A8	
49	LOW	AFTERRUN	/11.F4	
50	UB2		/8.A3	
41	LOW	Start relay	/8.A4	
59	SIG	DPF Temperature	/9.A7	
21	5V		/9.A8	
58	SIG	water in fuel	/9.A8	
60				
34				
15				

project:	ED D24 ST5 F4
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Controllers

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Revision:	00
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Message No 3

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1564650698

Engine Interface Connector

+EN1
-T1.T1

EIC MD1CC878

X17 connector Diesel engine

PIN	NOTE	DEVICE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
36	HIGH	Y060	Injector 1	/9.F1	
35	LOW				
42	HIGH	Y062	Injector 3	/9.F1	
37	LOW				
38	HIGH	Y061	Injector 2	/9.F1	
39	LOW				
40	HIGH	Y063	Injector 4	/9.F2	
41	LOW				
20	UB4		MPROP	/9.F2	
19	PWM				
31	GND				
25	SIG	B022	Rail pressure	/9.F2	
32	5V				
9	GND				
13	NEG	B020	Camshaft speed	/9.F2	
14	POS				
1	GND				
21	NEG	B025	Crankshaft speed	/9.F3	
15	POS				
23	SIG-P				
29	SIG-T	B021	Charge air sensors	/9.F3	
22	5V				
28	GND				
30	5V				
26	SIG	B023	engine oil pressure	/9.F4	
33	GND				
43	5V				
44	SIG		Exhaust gas back pressure	/9.F4	
45	GND				
18	5V				
17	SIG	B024	fuel pressure		
34	GND				
4	5V				
5	GND		Delta P Venturi	/9.F6	
6	SIG				
27	GND	B006	Temperature Coolant	/9.F3	
24	SIG				
8	GND	B078	EGR Temperature	/9.F6	
7	SIG				
50	5V				
46	SIG				
51	GND	Y078	EGR- valve	/9.F4	
47	DC POS				
48	DC NEG				
53	5V				
49	SIG				
52	GND		Throttle valve	/9.F6	
59	DC POS				
60	DC NEG				
3		K007	Start relay	/8.F4	
2					

X18 Preheating system

PIN	NOTE	DEVICE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
1			Glow plug	/8.F5	
2					
exhaust gas temperature 1					
1		B059	DPF Temperature	/9.F7	
2					
exhaust gas temperature 2					
1		B056	DPF Temperature	/9.F7	
2					
Differential pressure DPF					
1	SIG	B092	DPF Differential pressure	/9.F8	
2	GND				
3	5V				
water in fuel					
1		S058	water in fuel	/9.F8	
2					

Display

+ST1
-P014

Display 7"

PIN	CONNECTOR	DESCRIPTION	COMMENTS	Ref-PAGE
1	**XA01**	VBAT	9...36V	/13.D6
2		GND	Ground	
3	XA01	CAN1_L	CAN 1	/16.A6
4		CAN1_H		
5	XA01	CAN2_L	CAN 2	
6		CAN2_H		
7		V_USB_BUS	Power USB	
10		USB_GND	Ground	
8		USB_D-	Datawire USB	
9		USB_D+		
1	**XA02**	Ladekontrolle	0...5V	/13.A4
2	XA02	Fehlerlampe	0...5V	/14.A2
3	XA02	Standlicht	0...5V	/14.A3
4	XA02	Abblendlicht	0...5V	/14.A6
5	XA02	Tankgeber	0...5V	/13.A1
6	XA02	A_Input_6	0...5V	
7	XA02	GND	Ground	
8	XA02	Fernlicht	-1V - 1V LOW	/14.A4
9	XA02	Blinker	3,5V - VBAT HIGH	/13.A6
10	XA02	Taster 1	5V: 0,02...10kHz	/13.F7
11	XA02	Taster 2	5V: 0,02...10kHz	/13.F8
12	XA02	Umschaltung Blinker 1	12V 0,5A	/15.A1
13	XA02	Umschaltung Blinker 2	12V 0,5A	/15.A2
14	XA02	Summer	12V 0,5A	/14.A7
1	**X102**	Video Signal_1	composite CCITT video input PAL 50Hz colour coding / NTSC. input Level 1Vpp. 75Ohms	
2	X102	Video Signal_2		
3	X102	Video Signal_3		
4	X102	12V_Camera		
5	X102	Video Bezug_GND	Video Ground	
1	**X103**	Eth_TX+	Datawire Ethernet	
2	X103			
3	X103			
4	X103			

project:	ED D24 ST5 F4		
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Controllers

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Revision: 00
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Message No 4
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1564650698

+FR1
-N001

N001.1
Connector 1

1	---		
2	OUT_36		
3	Freigabe Arbeitsfunktion 1 HS	/21.A4	OUT_20
4	OUT_34		
5	OUT_33		
6	OUT_22		
7	OUT_21		
8	IN_68		
9	IN_75		
10	Schalter Auto Stop red.	/12.F6	IN_73
11	IN_74		
12	Drehzahl Hydromotor	/17.A2	IN_71
13	Schalter Auto Stop	/12.F5	IN_72
14	IN_42		
15	Trockenlaufschutz	/13.A2	IN_43
16	Öltemperatur	/17.A1	IN_63
17	IN_64		
18	IN_65		
19	IN_40		
20	Kabinenheizung aktiv	/12.F2	IN_41
21	IN_62		
22			
23	GND	/29.A2	
24			
25	---		
26	---		
27	OUT_35		
28	Parkbremse HS	/20.A8	OUT_19
29	---		
30	---		
31	---		
32	IN_70		
33	IN_69		
34	switch Parking brake Feedback red.		IN_18
35	switch Parking brake Feedback		IN_17
36	IN_15		
37	IN_16		
38	Sensor Inchventil	/19.F7	IN_52
39	Sitzkontaktschalter 1	/19.F2	IN_38
40	Getriebe Gang 2 eingelegt	/17.F5	IN_44
41	Sitzkontaktschalter 2	/19.F3	IN_39
42	IN_23		
43	IN_22		
44	IN_20		
45	GND_S2	/17.F1	
46	GND_S1	/29.E8	
47	Dieselmotor Startsignal	/8.F3	IN_4
48	IN_6		
49	---		
50	---		
51	Getriebe Stufe 2	/17.A8	OUT_5
52	---		
53	Pumpe vorwärts HS	/17.A3	OUT_1
54	Hydraulikmotor HS	/17.A5	OUT_3
55	Getriebe Gang 1 eingelegt	/17.F6	IN_45
56	IN_46		
57	Lenkrichtung 1 red.	/15.F4	IN_10
58	Gaspedal red.	/19.F4	IN_8
59	Gaspedal	/19.F5	IN_7
60	CAN 4 L		
61	CAN 4 H		
62	CAN 3 L		
63	CAN 3 H		
64	IN_33		IN_33
65	Strassenfahrt red.	/21.F6	IN_61
66	IN_34		IN_34
67	switch Parking brake	/20.F5	IN_58
68	IN_53		
69	switch Parking brake red.	/20.F4	IN_59
70	Strassenfahrt	/21.F6	IN_60
71	IN_56		
72	IN_47		
73	---		
74	---		
75	Lastaufschaltventil	/21.A3	OUT_6
76	---		
77	Pumpe rückwärts HS	/17.A4	OUT_2
78	Getriebe Stufe 1	/17.A7	OUT_4
79	Lenkrichtung 1+2 LS	/15.F7	OUT_41
80	Freigabe Arbeitsfunktion 1 LS	/21.F4	OUT_42
81	---		
82	---		
83	Parkbremse LS	/20.F8	OUT_37
84	Pumpe vorwärts LS	/17.F3	OUT_38
85	Pumpe rückwärts LS	/17.F4	OUT_39
86	Hydraulikmotor LS	/17.F5	OUT_40
87	---		
88	---		
89	Freigabe Leistungsverbraucher	/12.A1	OUT_24
90	Abschaltung Rückfahrlicht	/15.A2	OUT_23
91	IN_48		
92	IN_49		
93	Bremslicht	/24.A1	OUT_26
94	Rückwärts	/24.A2	OUT_25
95	---		
96	IN_50		

N001.2
Connector 2

1			
3			
4	UB	/7.F3	
5			
6			
2			
7			
20	GND	/29.A3	
33			
46			
8	IN_67		
9	IN_3		
10	IN_14		
11	IN_19		
12	IN_28		
13	IN_66		
14	Lenkrichtung 1	/15.F3	IN_9
15	CAN 1 H	/16.A3	
16	CAN 1 L		
17	Parkingbrake Feedback red.	/20.F1	IN_36
18	IN_54		
19	VSS_1	/18.A6	
21	Fehlerlampe	/14.F2	OUT_47
22	IN_13		
23	IN_5		
24	IN_21		
25	IN_27		
26	Leistungsverbraucher ein	/12.F3	IN_37
27	Parkbremstest	/20.F6	IN_57
28	Zündung	/7.F8	HW-INH
29	IN_55		
30	WAKE		
31	Parkingbrake Feedback	/20.F1	IN_35
32	VSS_2	/15.A4	
34	Wippe Fahren red.	/18.F7	IN_26
35	IN_24		
36	IN_2		
37	Pumpenleistung (ECO)	/18.F2	IN_30
38	Lenkrichtung 2 red.	/15.F5	IN_12
39	IN_31		
40	IGN	/7.F7	
41	Lenkrichtung 2	/15.A7	OUT_28
42	---		
43	Lenkrichtung 1	/15.A6	OUT_27
44	---		
45	UB_CPU	/7.F5	
58			
47	Wippe Fahren	/18.F6	IN_25
48	IN_29		
49	IN_51		
50	Schalter 2. Gang	/18.F1	IN_1
51	IN_32		
52	Lenkrichtung 2	/15.F5	IN_11
53	CAN 2 H	/16.D1	
54	CAN 2 L		
55	VSS_3	/19.A7	
56	---		
57	---		

project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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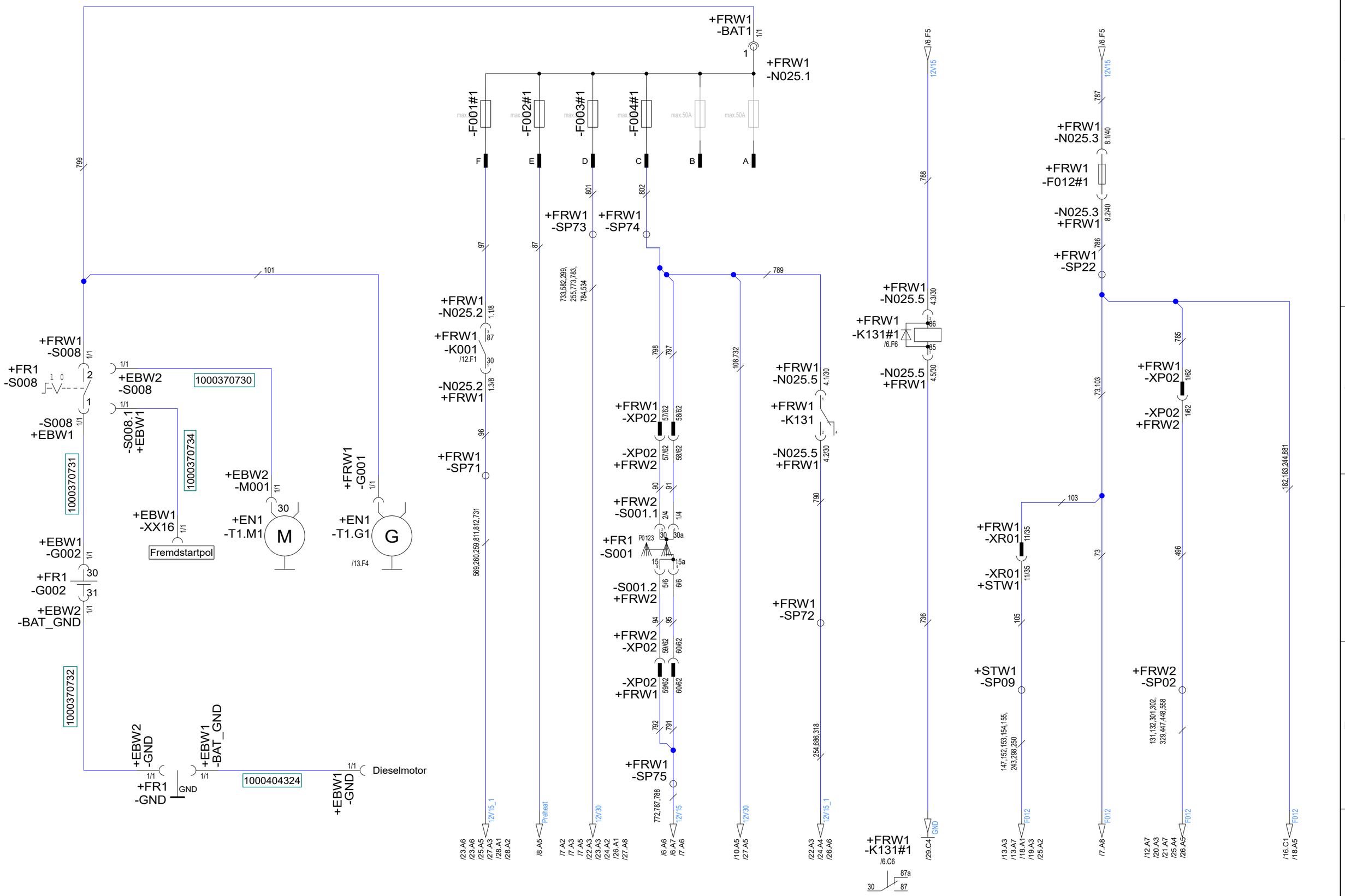
Controllers

Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	5
	A3

1564660150



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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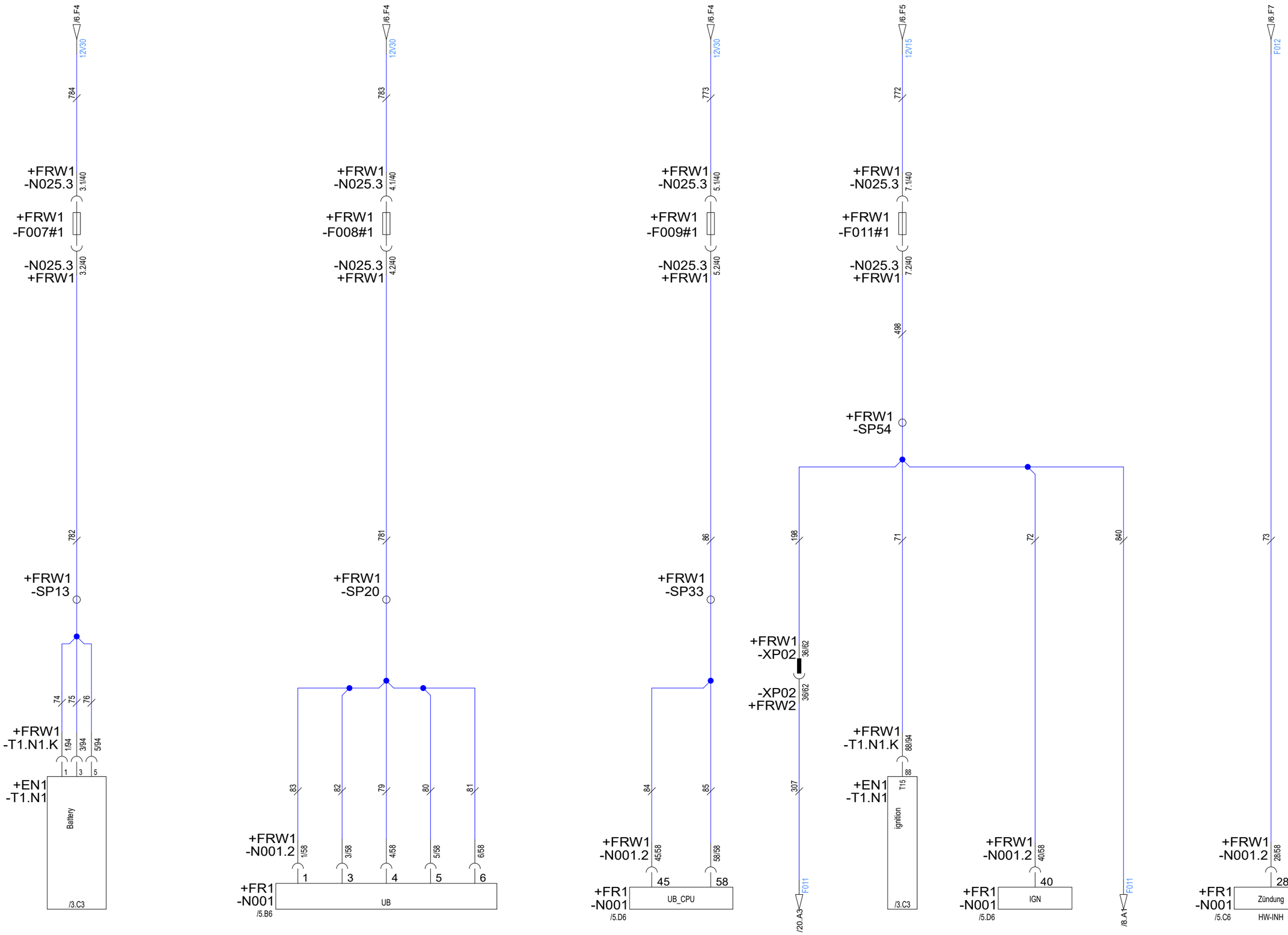
main-Supply

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision: 00
replace for Rev. 00
Message No 6
A3

1564662022



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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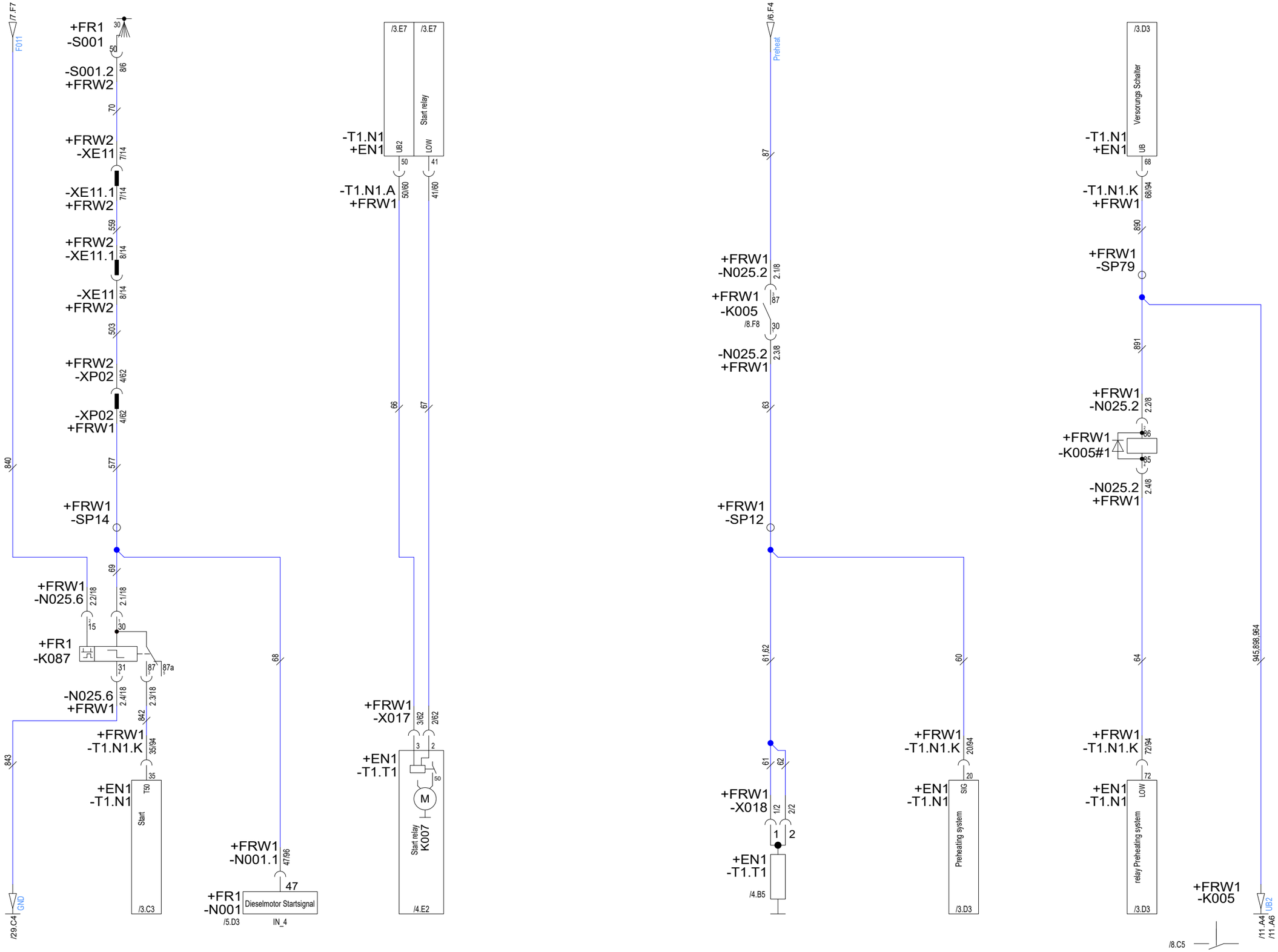
Supply Controllers

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	7
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Starten, Glühen

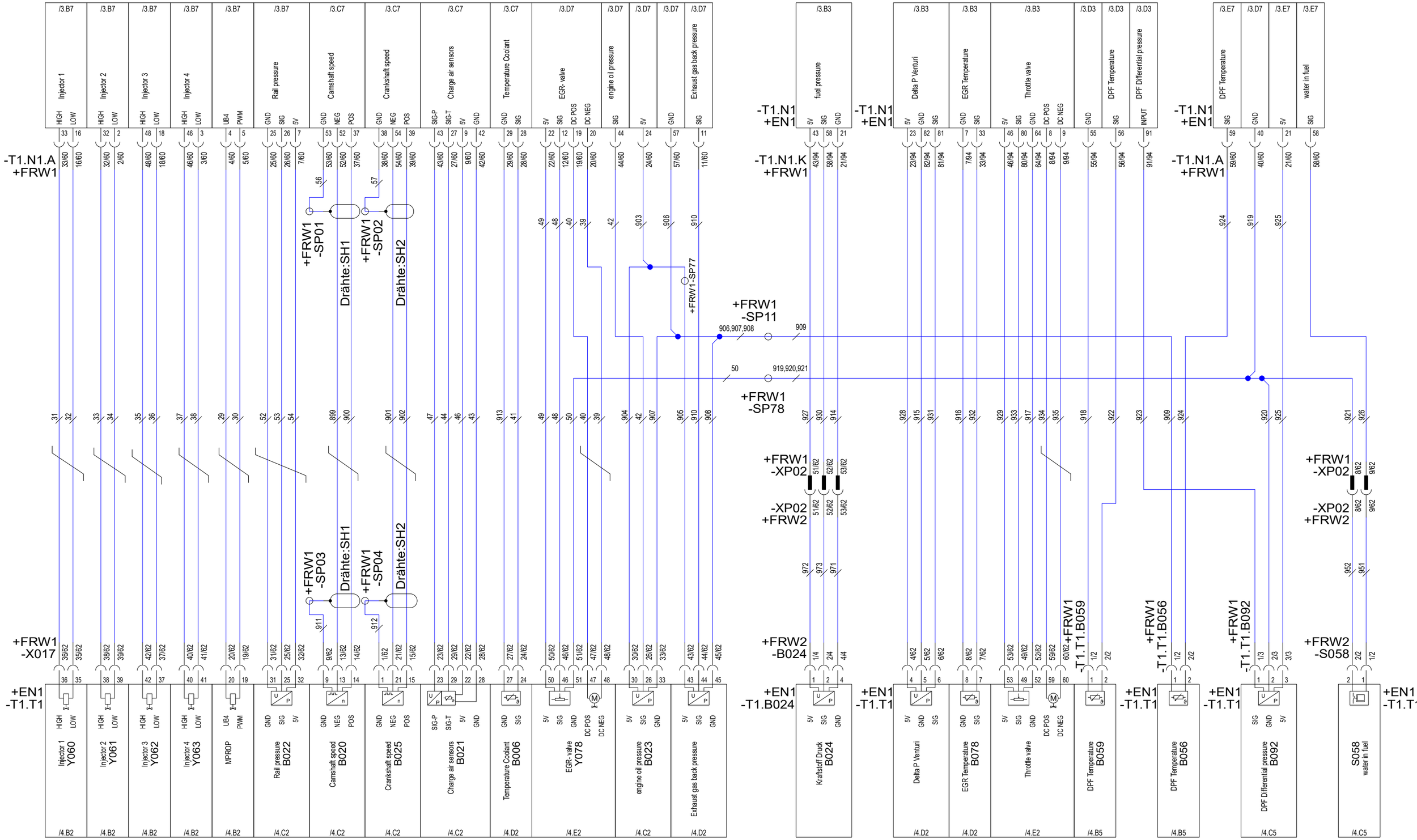
Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	

8

A3

1564662022



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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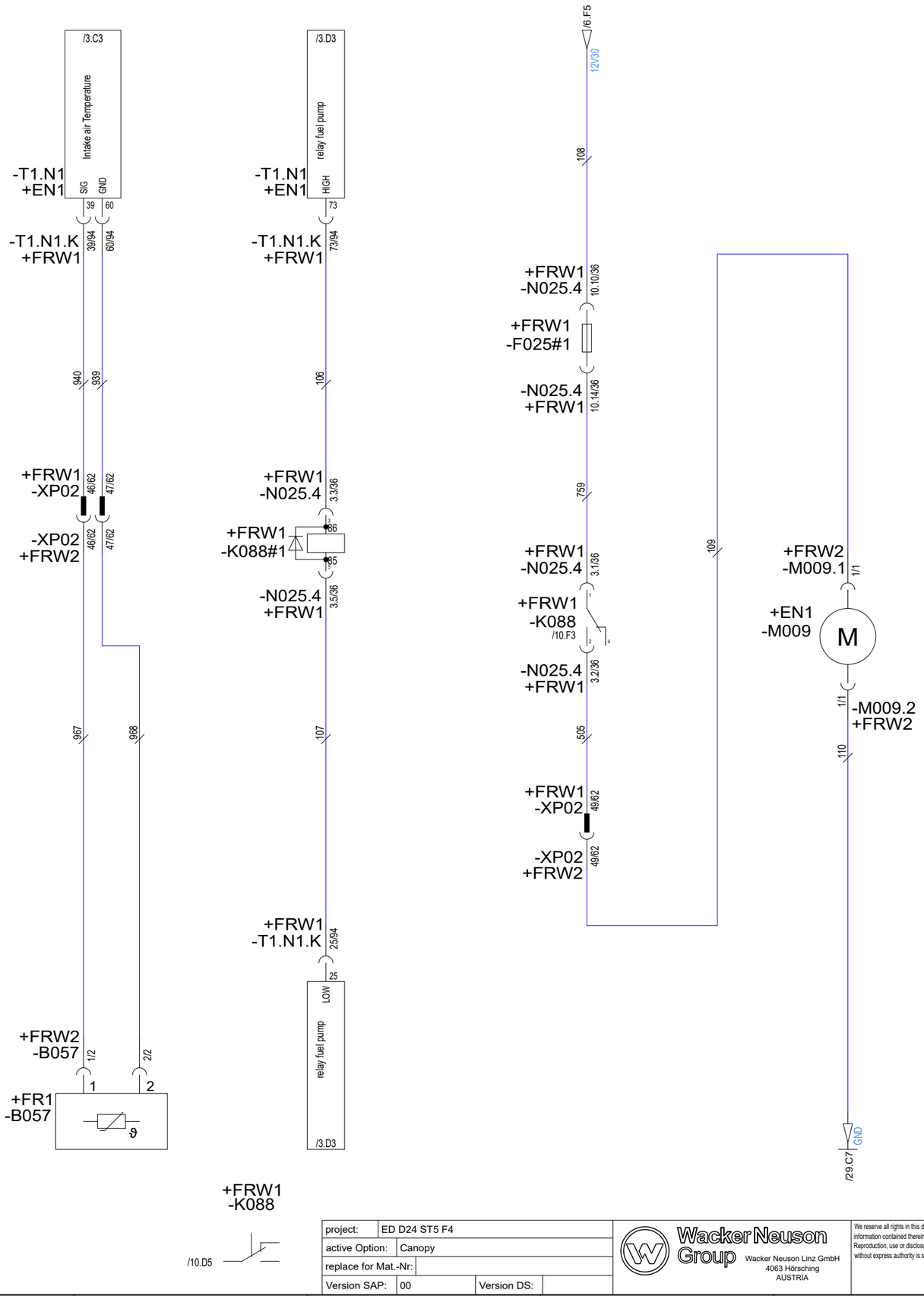
Diesel engine electronics

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	9
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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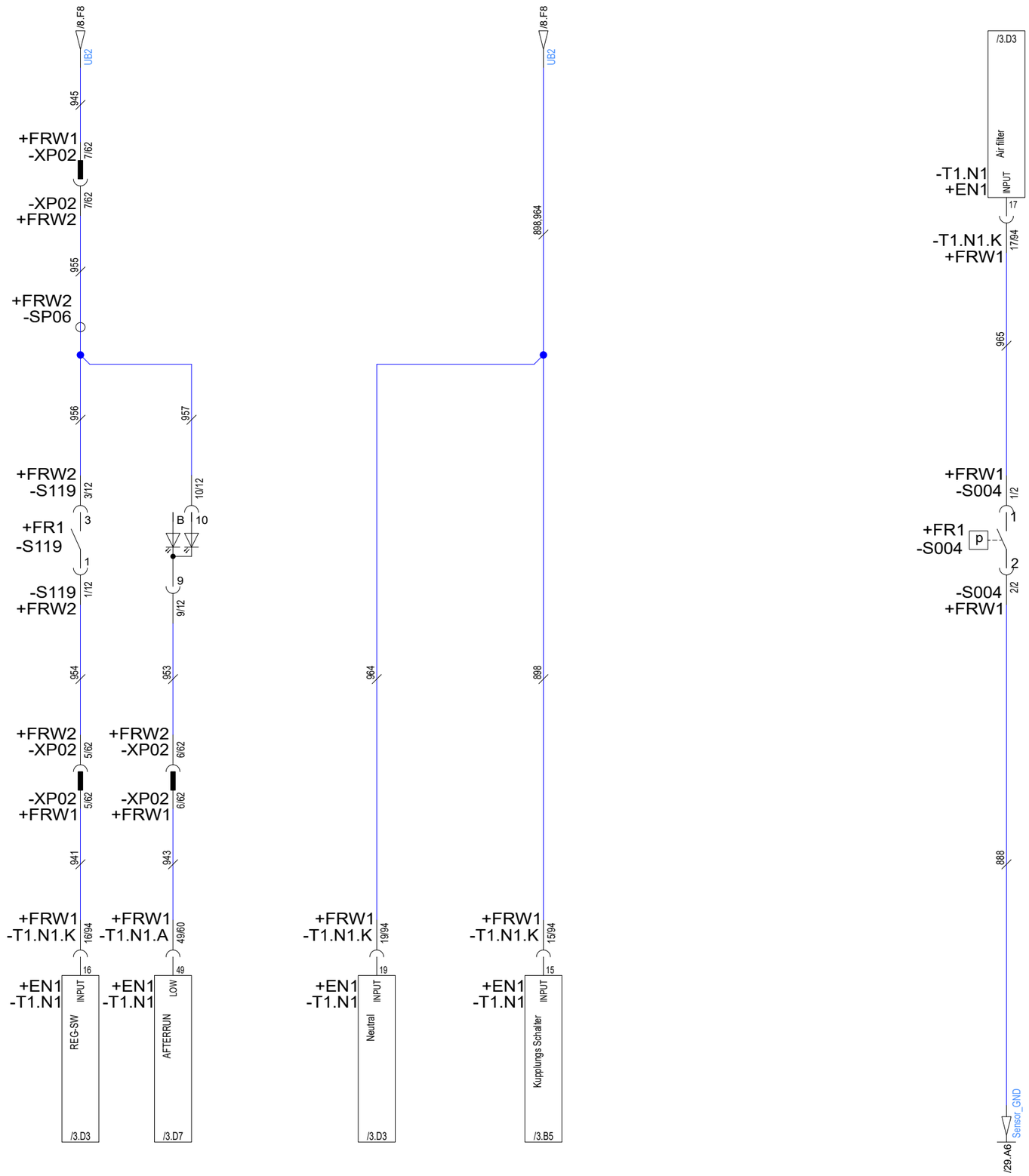
Diesel engine electronics

Revision:	00
replace for Rev.	00
Message No	10
Mat.-Nr.	1000388197
Doc.-Nr.	2060135222
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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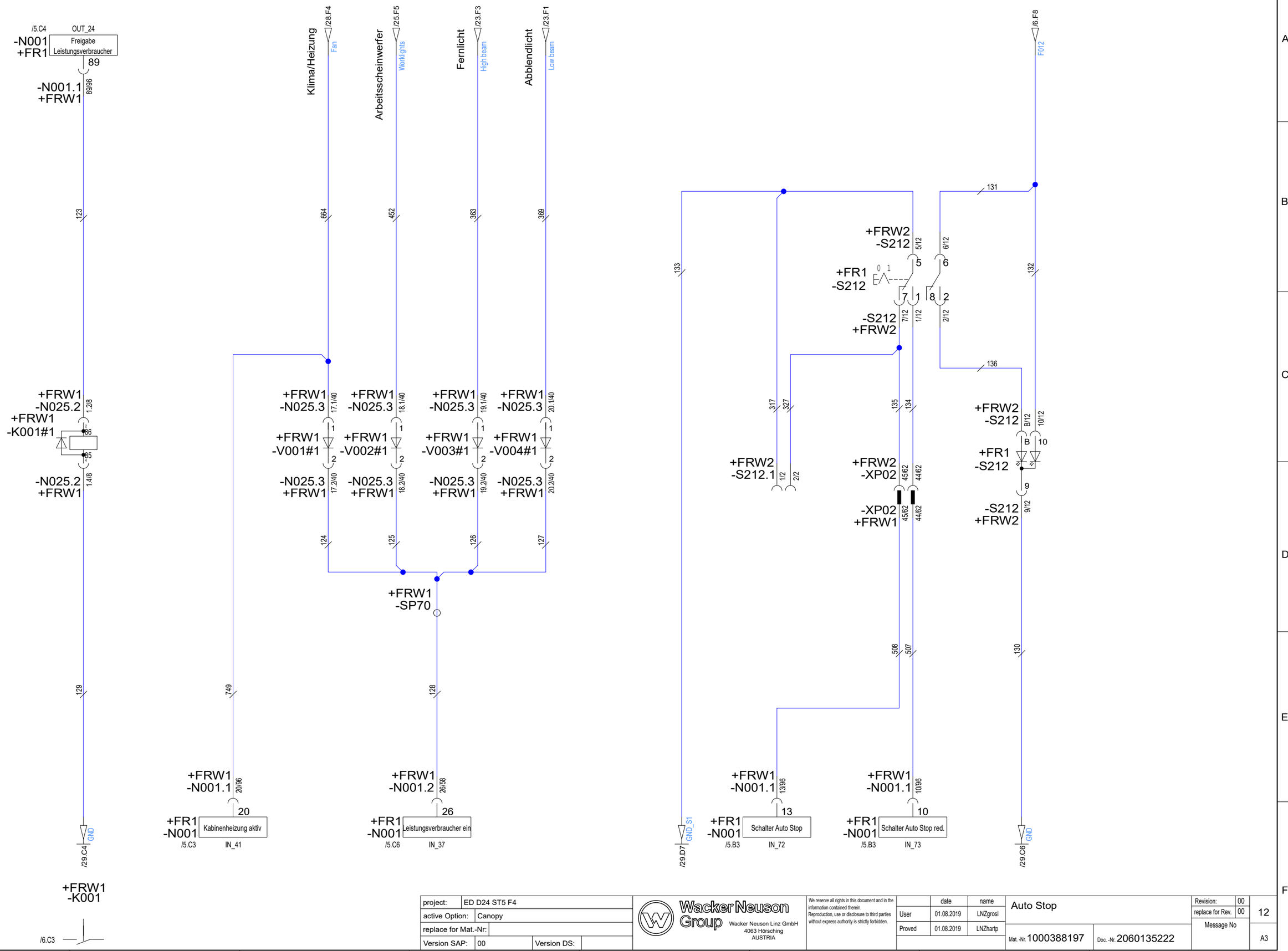
Diesel engine electronics

Mat. -Nr. 1000388197

Doc. -Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	11
	A3

1564662022



project:	ED D24 ST5 F4
active Option:	Canopy
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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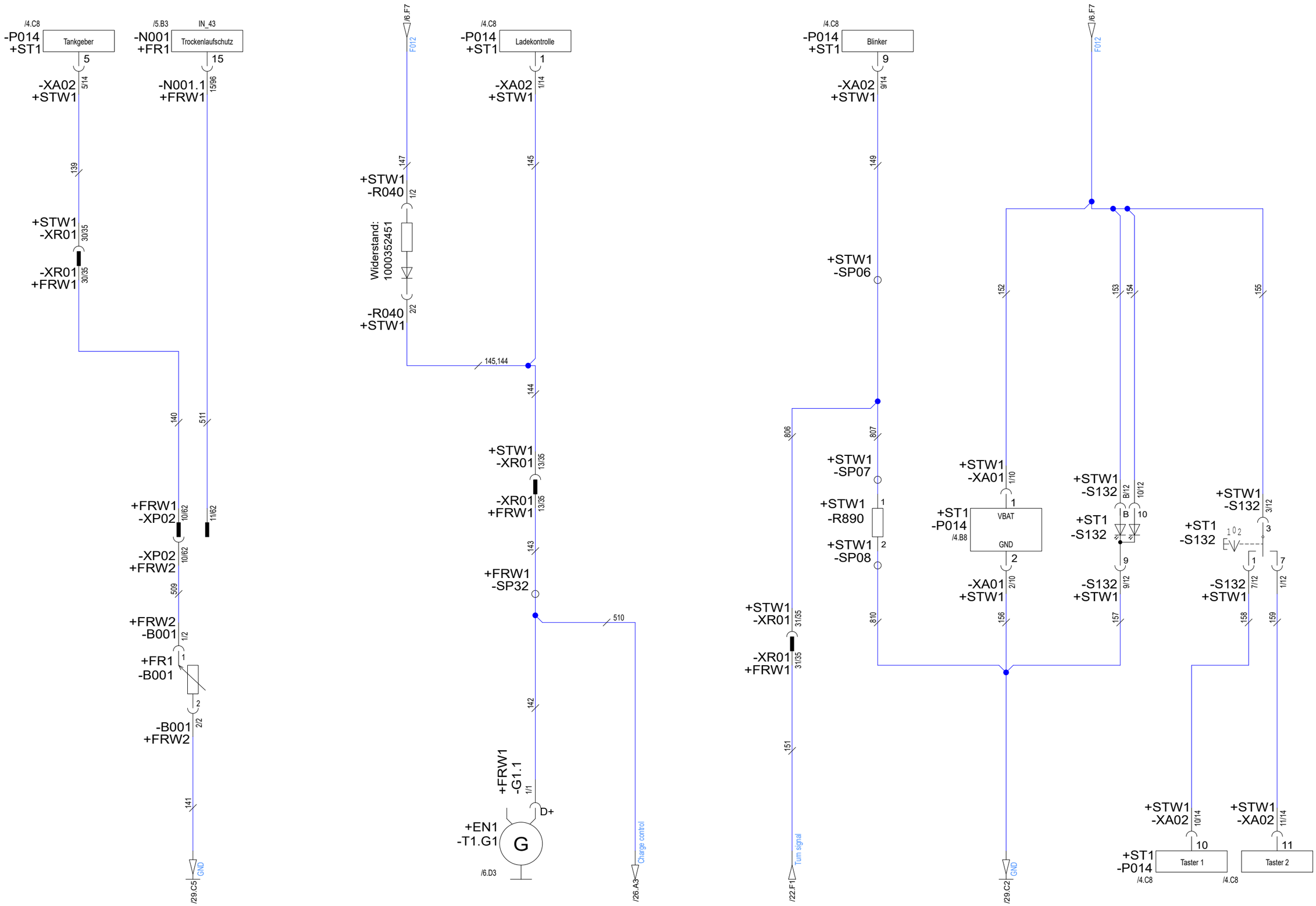
Auto Stop

Mat.-Nr. 1000388197

Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	12
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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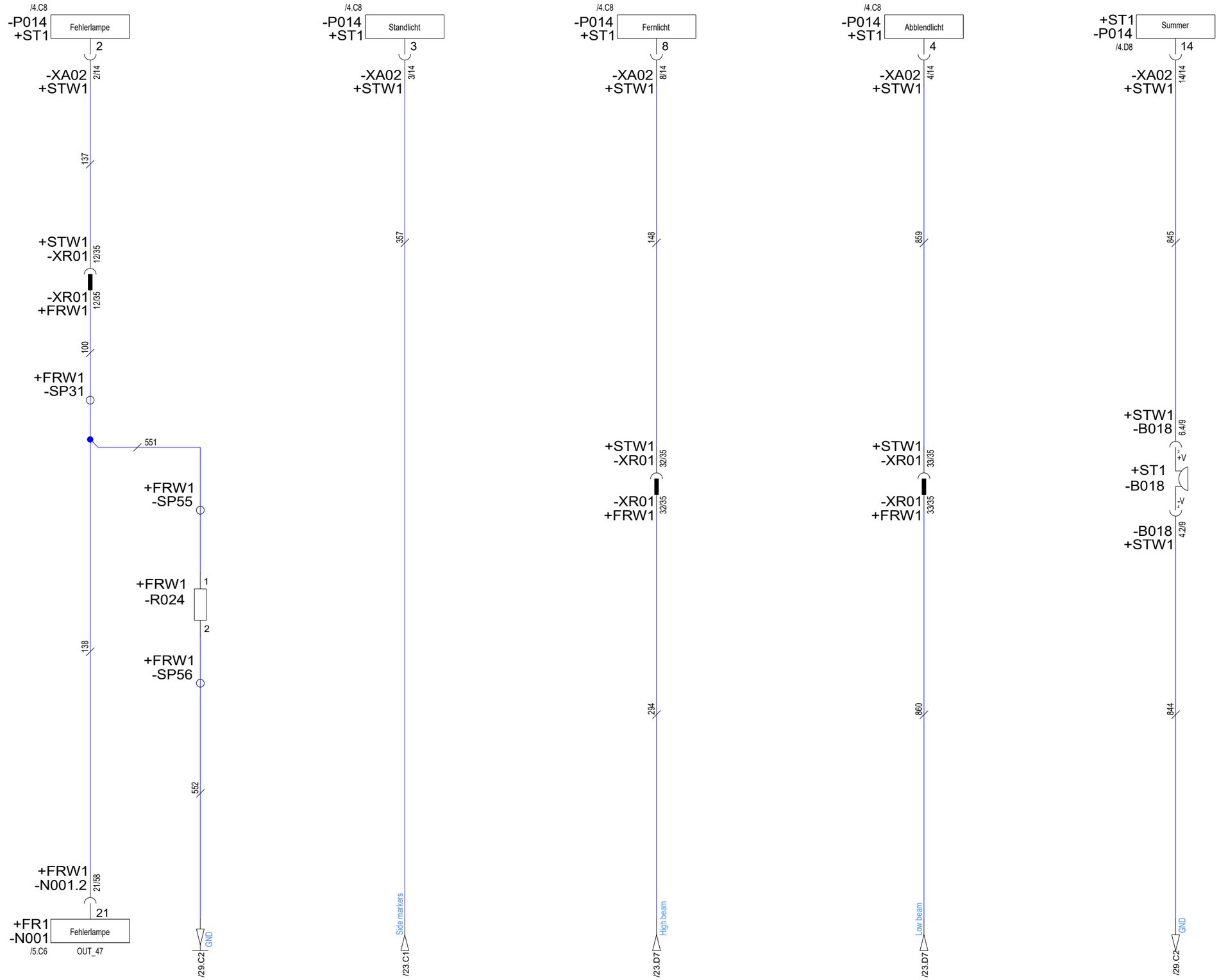
IO Display, fill level indicator, charge

Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	13
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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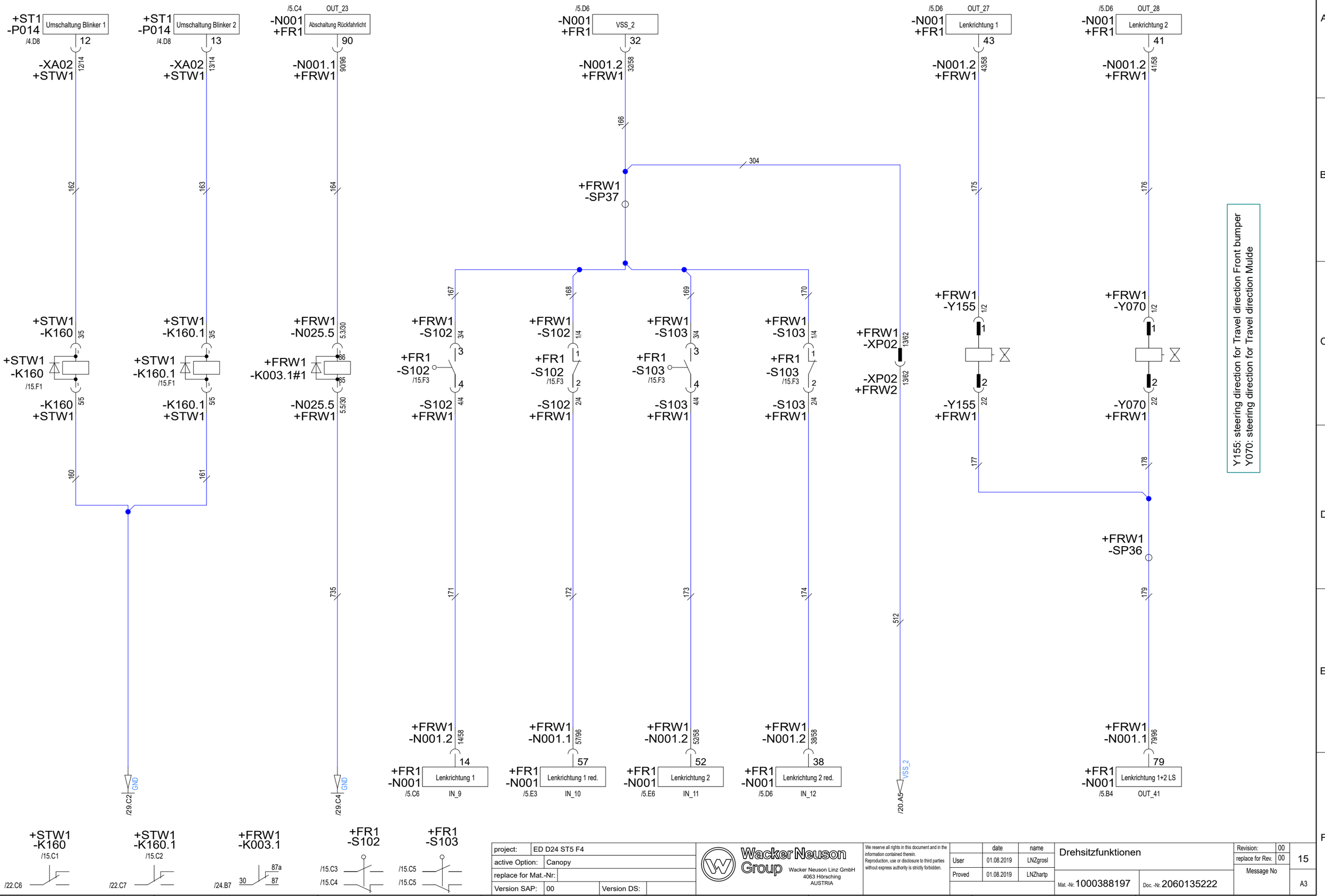
IO Display

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	14
	A3

1564650698



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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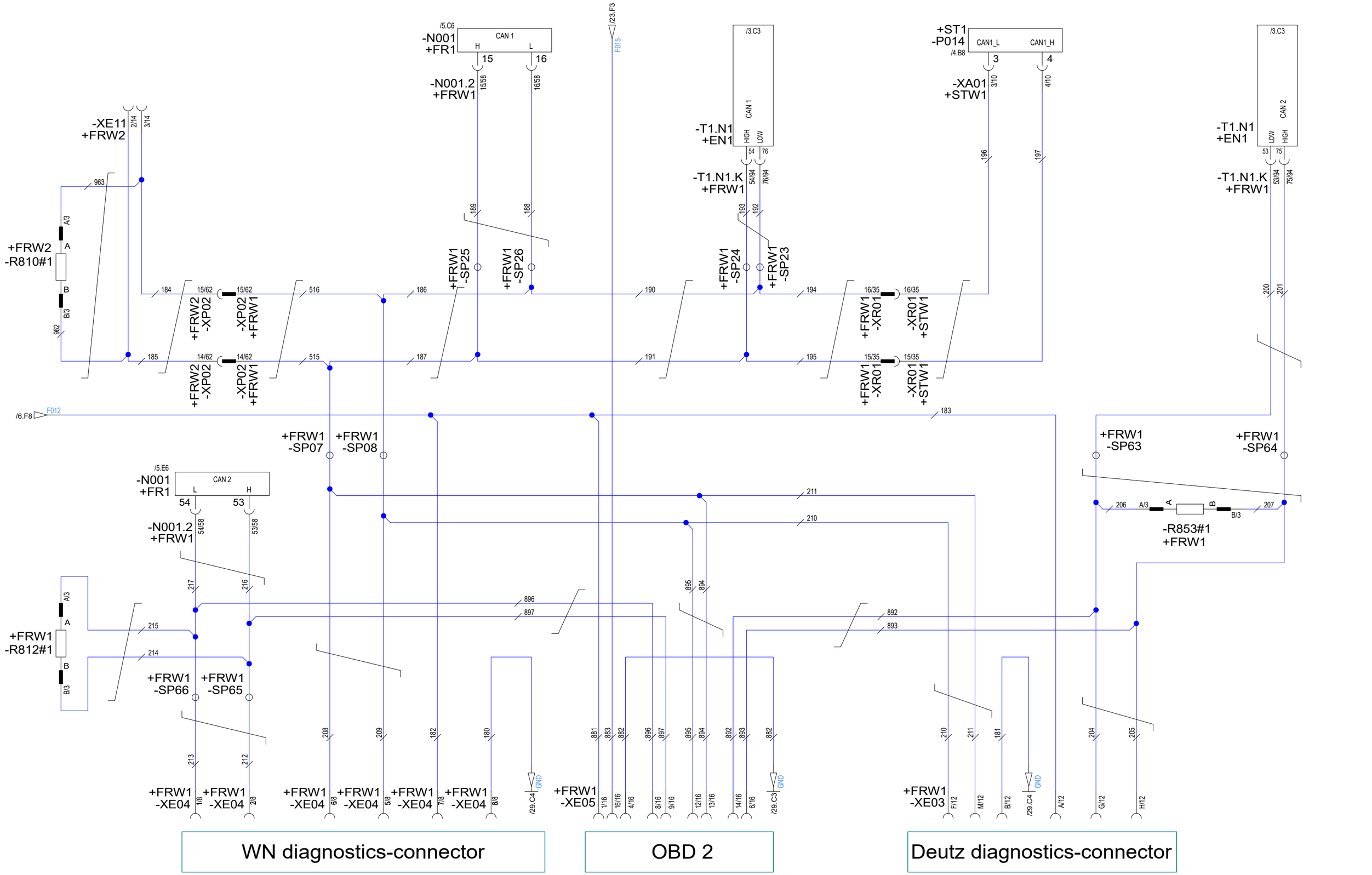
Drehsitzfunktionen

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	15
	A3

1564662022



project:	ED D24 ST5 F4
active Option:	Canopy
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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CAN

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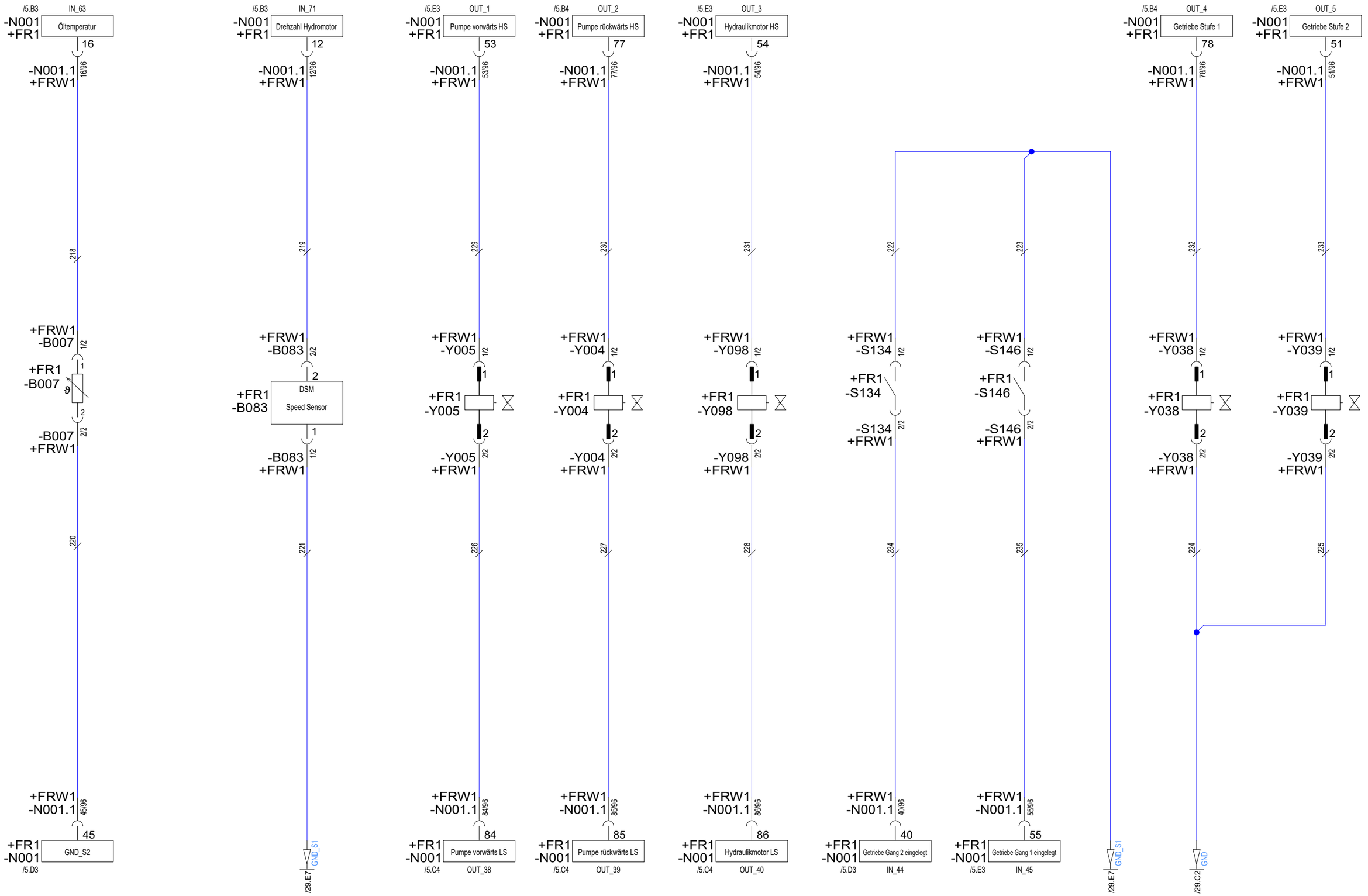
Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	16
	A3

1564662022



project:	ED D24 ST5 F4
active Option:	Canopy
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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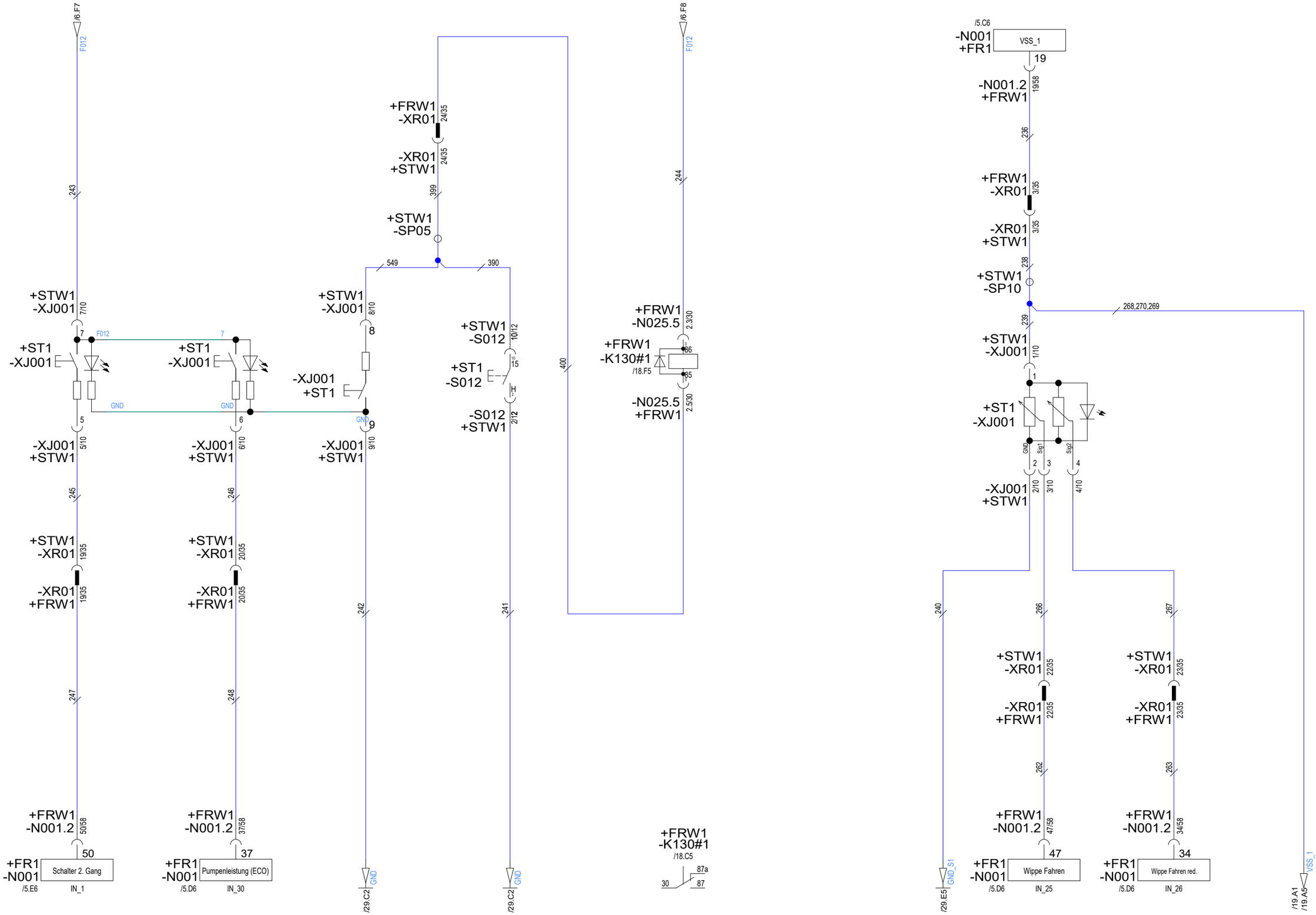
Machine travel

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	17
	A3

1564660059



project:	ED D24 ST5 F4
active Option:	Canopy
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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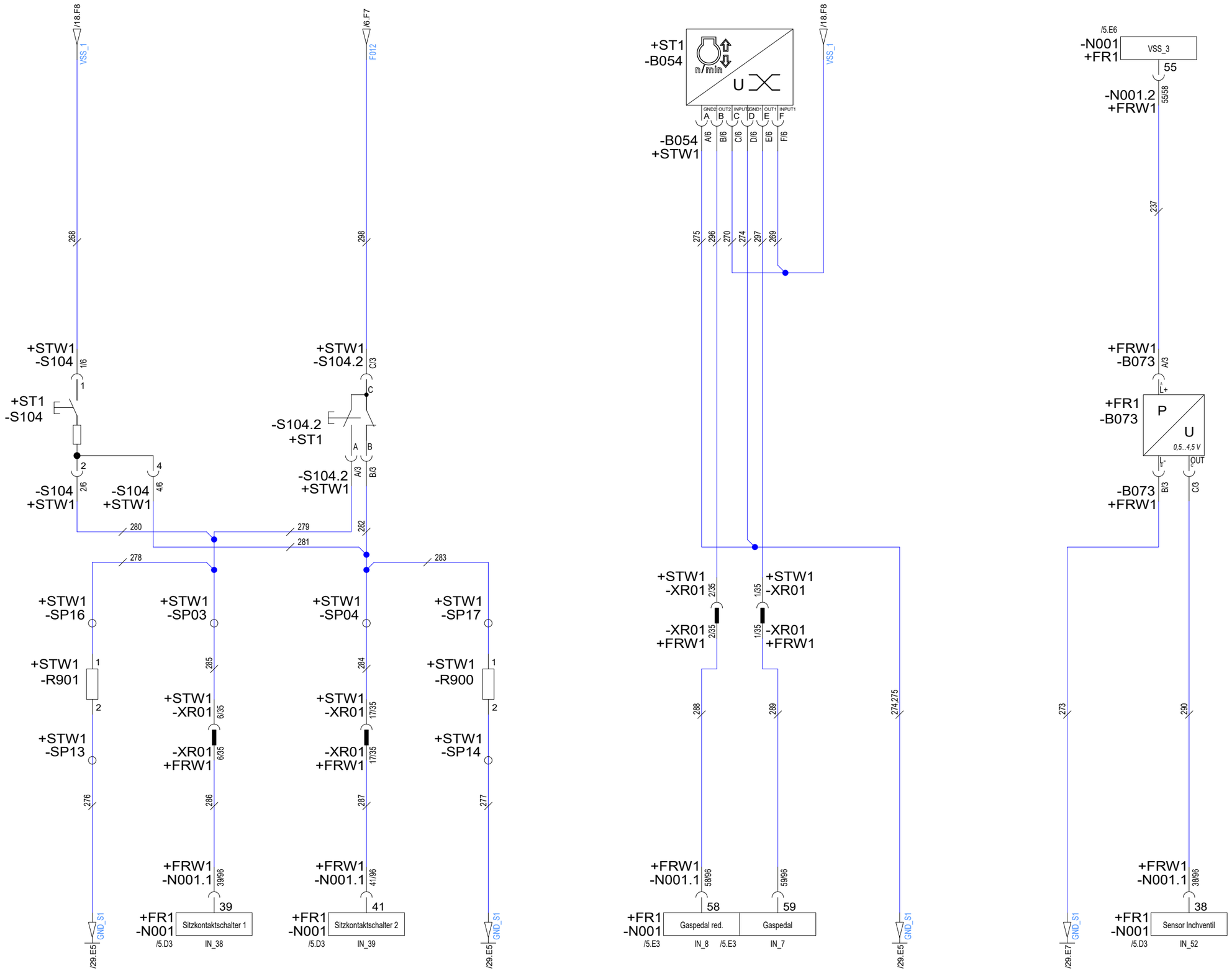
Machine travel

Mat.-Nr. 1000388197

Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	18
	A3

1564658969



project:	ED D24 ST5 F4
active Option:	Canopy
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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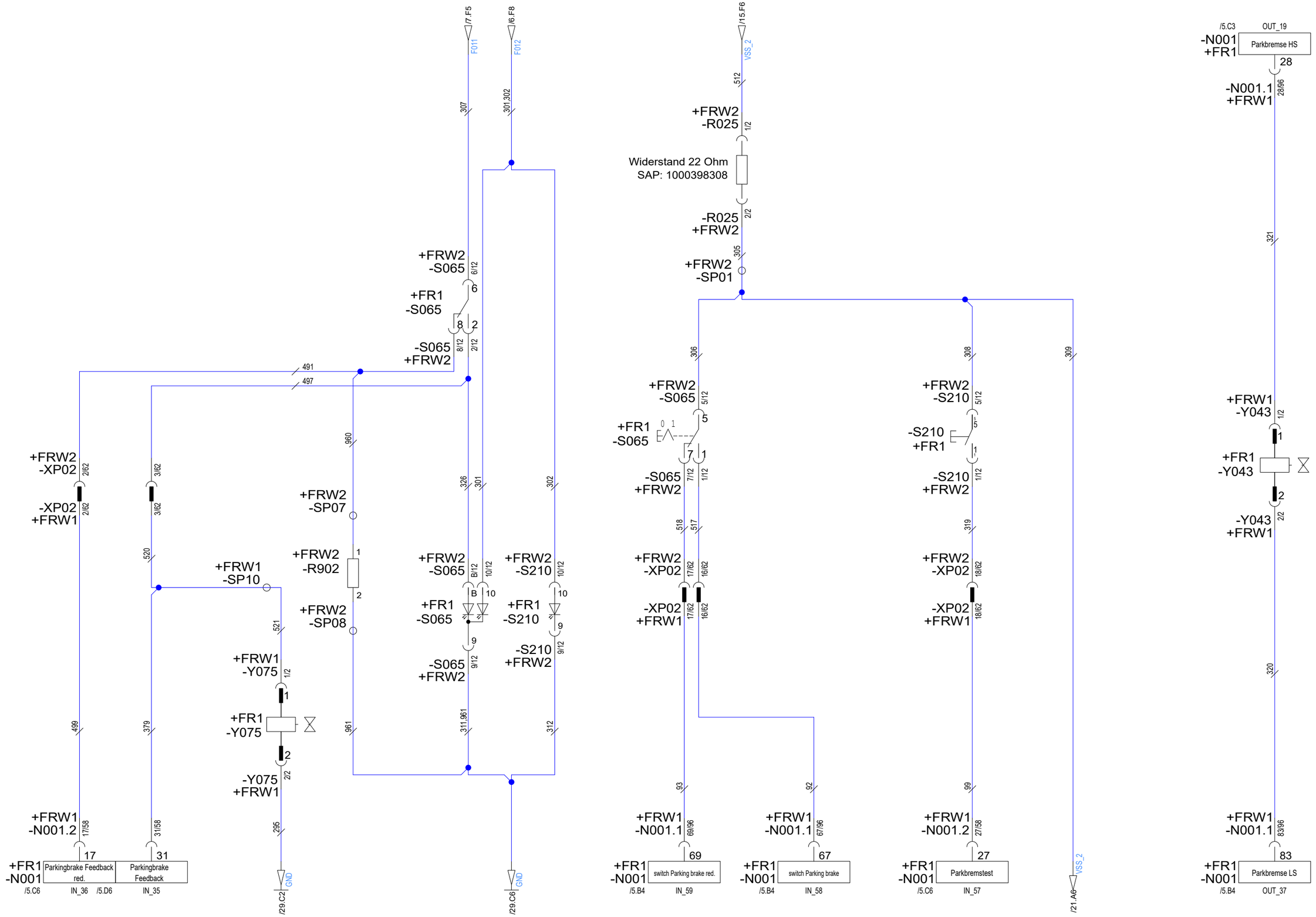
Machine travel

Mat. -Nr. 1000388197

Doc. -Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	19
	A3

1564650698



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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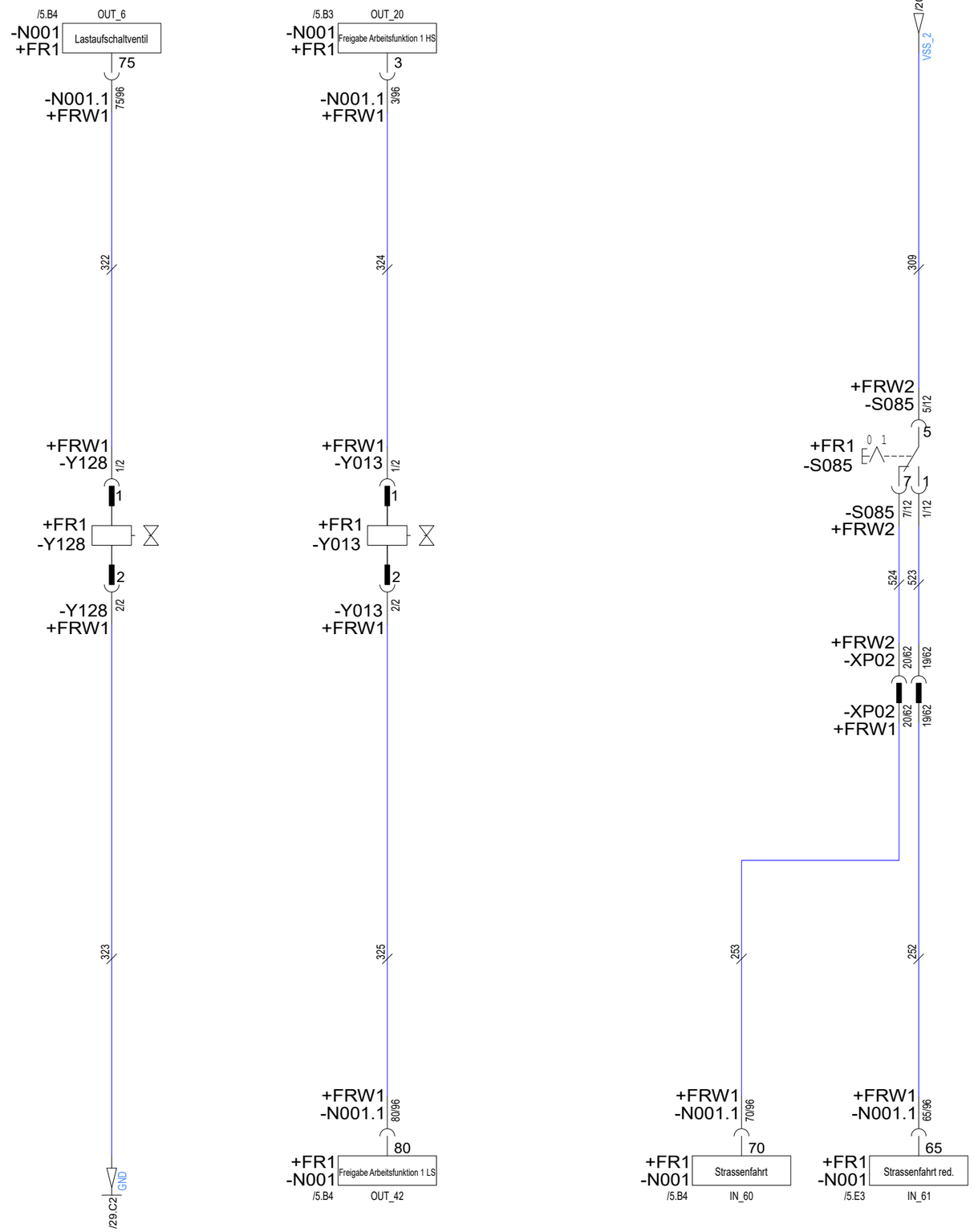
Machine travel

Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision: 00
replace for Rev. 00
Message No 20
A3

1564662022



project:	ED D24 ST5 F4
active Option:	Canopy
replace for Mat.-Nr:	
Version SAP:	00
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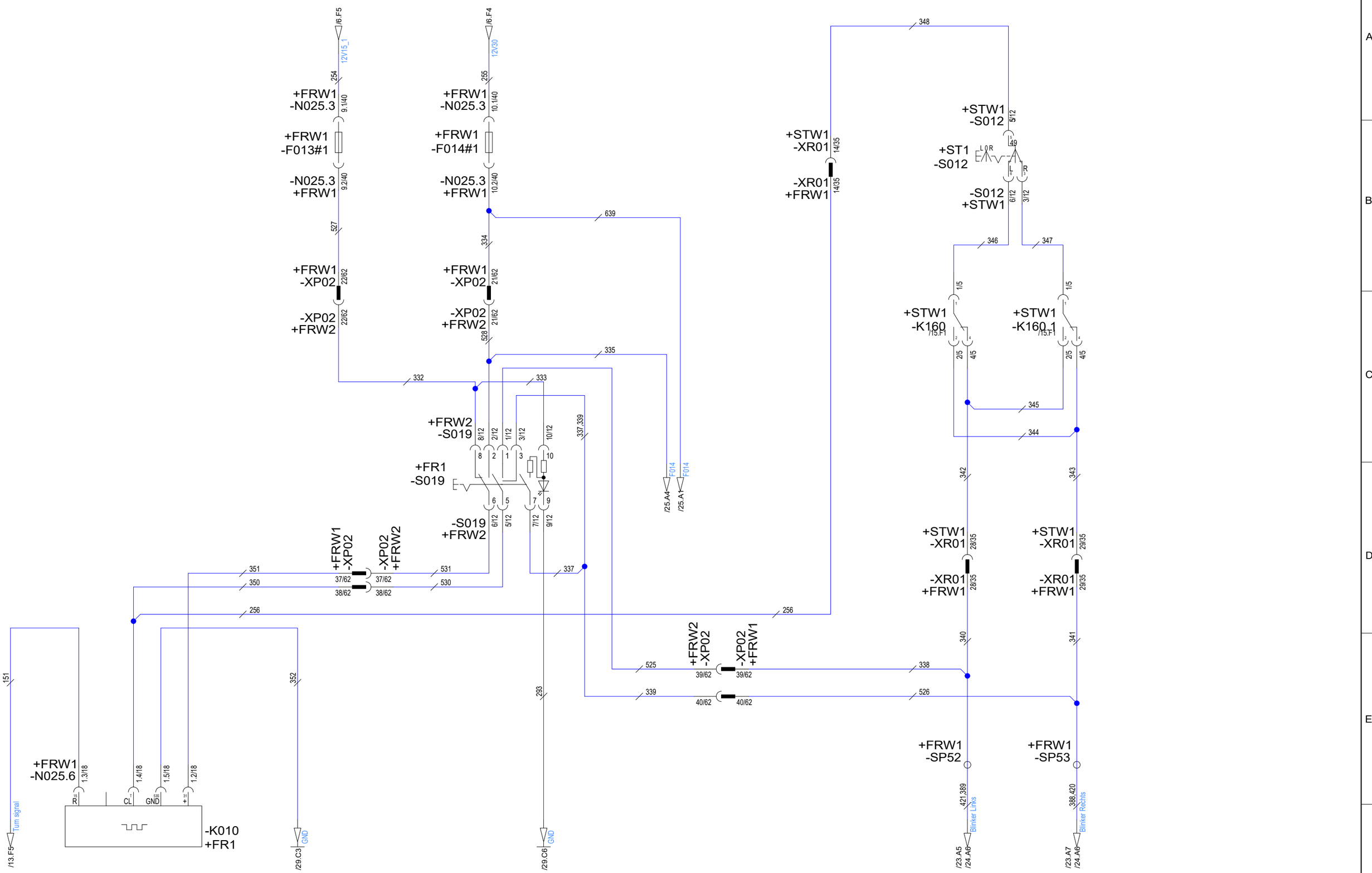
Arbeitsfunktionen

Mat.-Nr. 1000388197

Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	21
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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rtro illumination
Turn indicator system

Mat. -Nr. 1000388197 Doc. -Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	22
	A3

1564662253

+FRW1 -XR01 9/35
-XR01 9/35 +STW1
355
356
+STW1 -S012 8/12
7/12
+ST1 -S012
0 1 2
15
30
LHH
57/58
56b
56a
-S012 9/12 +STW1
1/12
4/12
353
357
364
365
366
Side markers
/14.F3
+STW1 -XR01 27/35 26/35 25/35
-XR01 +FRW1
310
358
359
621,883
+FRW1 -SP68
+FRW1 -SP67
532
368
362
363
+FRW1 -N025.4 1.3/36
+FRW1 -N025.4 2.3/36
+FRW1 -XP02 23/62
+FRW1 -K062#1
+FRW1 -K063#1
86
85
369
-XP02 +FRW2 23/62
-N025.4 +FRW1 1.5/36
-N025.4 +FRW1 2.5/36
535
314
+FRW1 -SP16
303,300
360
Side markers
/23.A4
+FRW2 -XE10 2/10
Low beam
/12.A4
GND
/29.C3
High beam
/12.A4
F015
/16.A4
/26.A2
+FRW1 -K062
87a
30
87
/23.B6
+FRW1 -K063
87a
30
87
/23.B6
/6.F4
12/30
299
+FRW1 -N025.3 11.1/40
+FRW1 -F015#1
-N025.3 +FRW1 11.2/40
354
+FRW1 -SP15
/23.F1
303,300
Side markers
300
303
+FRW1 -N025.3 1.1/40
+FRW1 -N025.3 2.1/40
+FRW1 -F005#1
+FRW1 -F006#1
-N025.3 +FRW1 1.2/40
-N025.3 +FRW1 2.2/40
375
372
+FRW1 -SP44
+FRW1 -SP45
373
371
370
+FRW1 -XS01 2/8
-XS01 +FBW1 3/8
374
561
562
+FBW1 -SP04
+FBW1 -SP05
377,564
376,563
Side markers left
/24.A4
564
563
+FBW1 -E017 1/2
+FBW1 -E018 1/2
+FB1 -E017
+FB1 -E018
377
376
-E017 +FBW1 2/2
-E018 +FBW1 2/2
+FBW1 -H088 4/6
+FBW1 -H089 4/6
+FB1 -H088
+FB1 -H089
GND
566
565
/22.F6
Blinker Links
389
+FRW1 -XS01 5/8
-XS01 +FBW1 5/8
Side markers right
/24.A5
378
+FBW1 -H088 5/6
+FB1 -H088
GND
/6.F3
/2V15_1
259
+FRW1 -N025.4 7.7/36
+FRW1 -F022#1
-N025.4 +FRW1 7.3/36
261
+FRW1 -N025.4 1.1/36
+FRW1 -K062 /23.F2
-N025.4 +FRW1 1.2/36
265
+FRW1 -SP76
861
+FRW1 -XS01 1/8
-XS01 +FBW1 1/8
381
+FBW1 -SP02
383
+FBW1 -H088 2/6
+FB1 -H088
GND
-H088 +FBW1 6/6
395
/6.F3
/2V15_1
260
+FRW1 -N025.4 8.8/36
+FRW1 -F023#1
-N025.4 +FRW1 8.4/36
264
+FRW1 -N025.4 2.1/36
+FRW1 -K063 /23.F2
-N025.4 +FRW1 2.2/36
272
860
+FRW1 -SP06
294
380
+FRW1 -XS01 6/8
-XS01 +FBW1 6/8
382
+FBW1 -SP03
384
385
+FBW1 -H089 2/6
+FB1 -H089
GND
-H089 +FBW1 6/6
396
High beam
/14.F5
/22.F7
Blinker Rechts
388
+FRW1 -XS01 4/8
-XS01 +FBW1 4/8
386
+FBW1 -H089 3/6
+FB1 -H089
GND
Low beam
/14.F6
387
+FBW1 -H089 5/6
+FB1 -H089
GND
397
-SP01 +FBW1
398
+FRW1 -XS01 7/8
-XS01 +FBW1 7/8
/29.E3
GND

project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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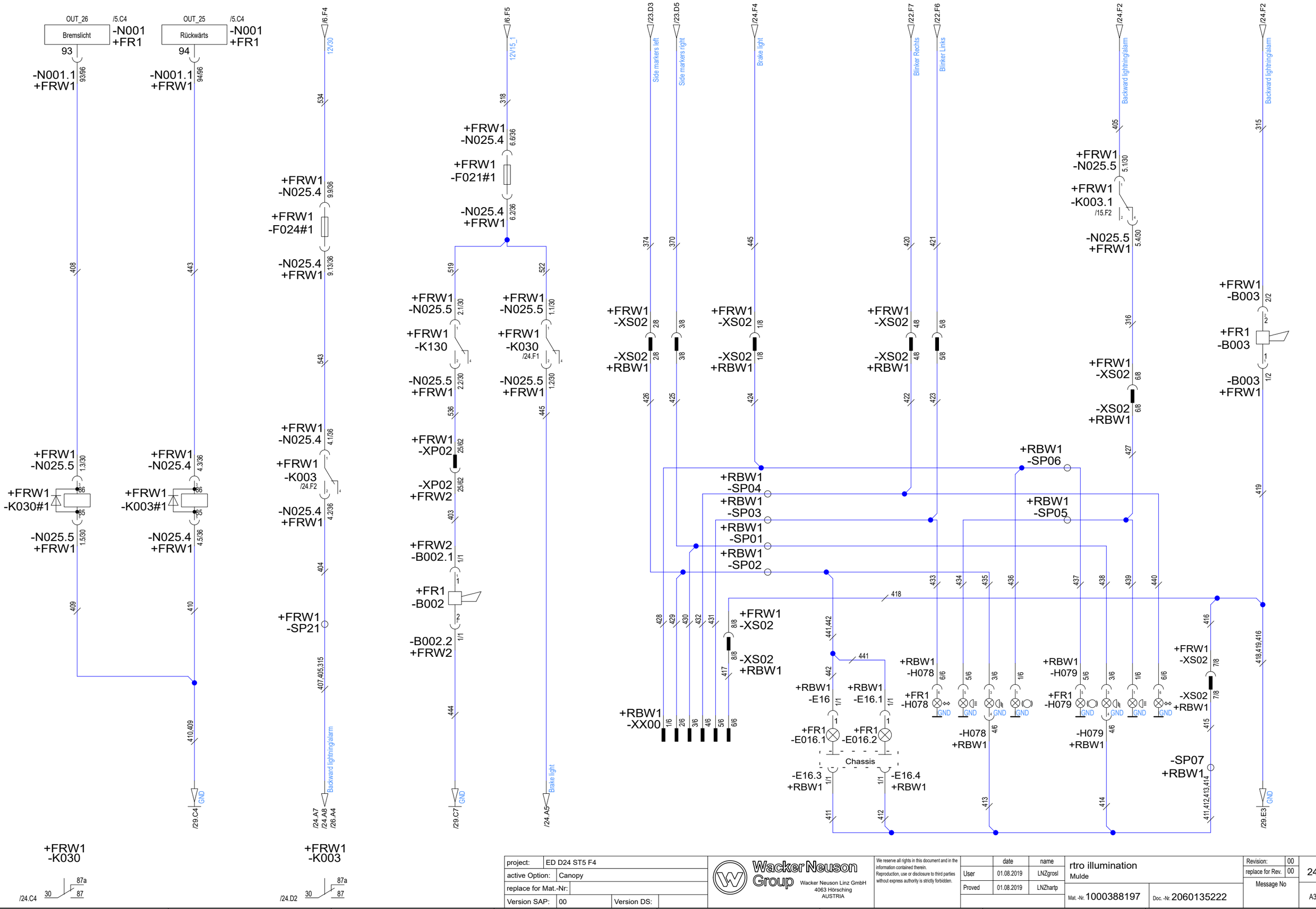
rtro illumination
Front bumper

Mat.-Nr. 1000388197
Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	23
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	Canopy		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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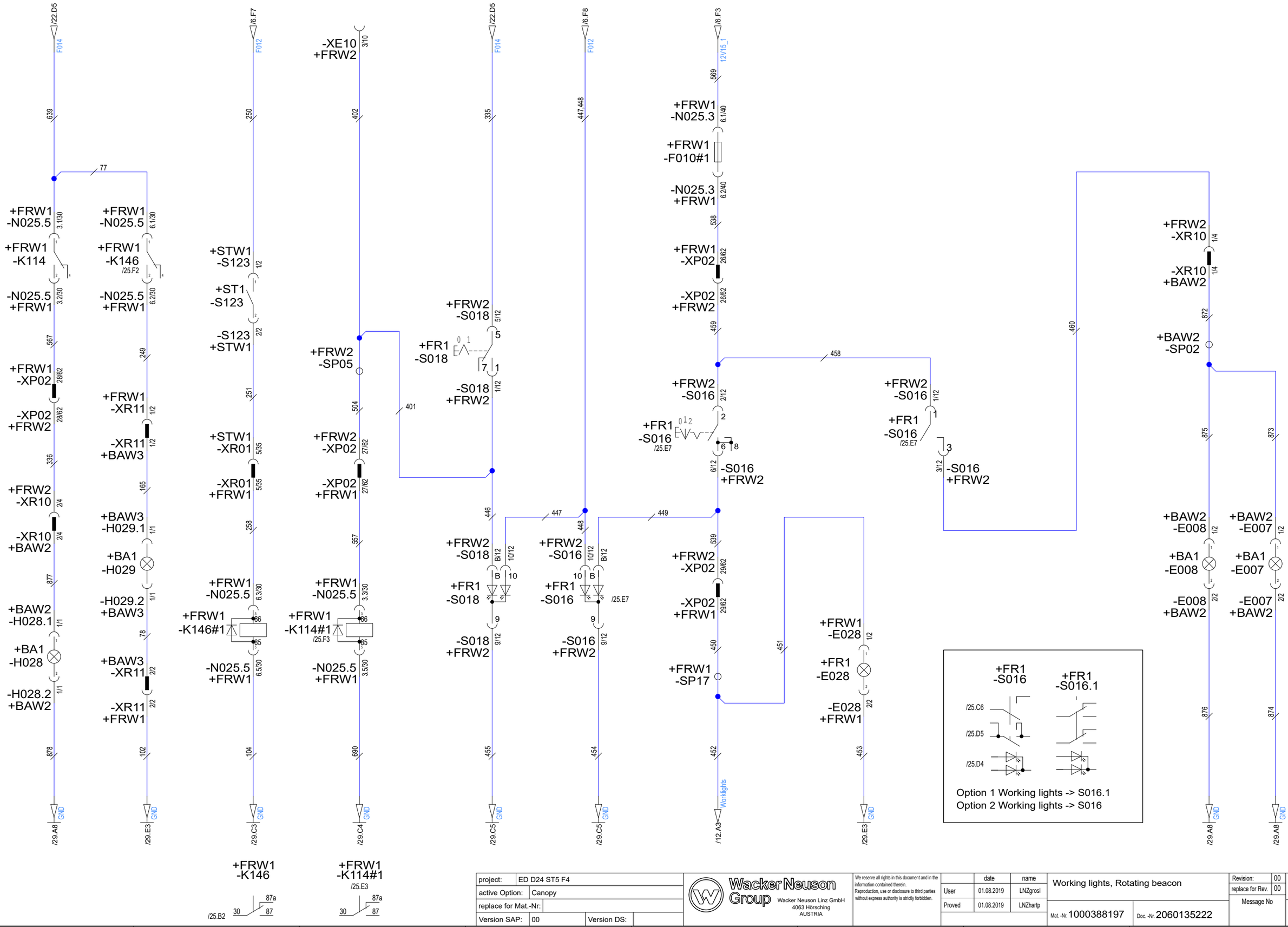
rtro illumination
Mulde

Mat.-Nr: 1000388197
Doc.-Nr: 2060135222

Revision:	00
replace for Rev.	00
Message No	24
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	Canopy		
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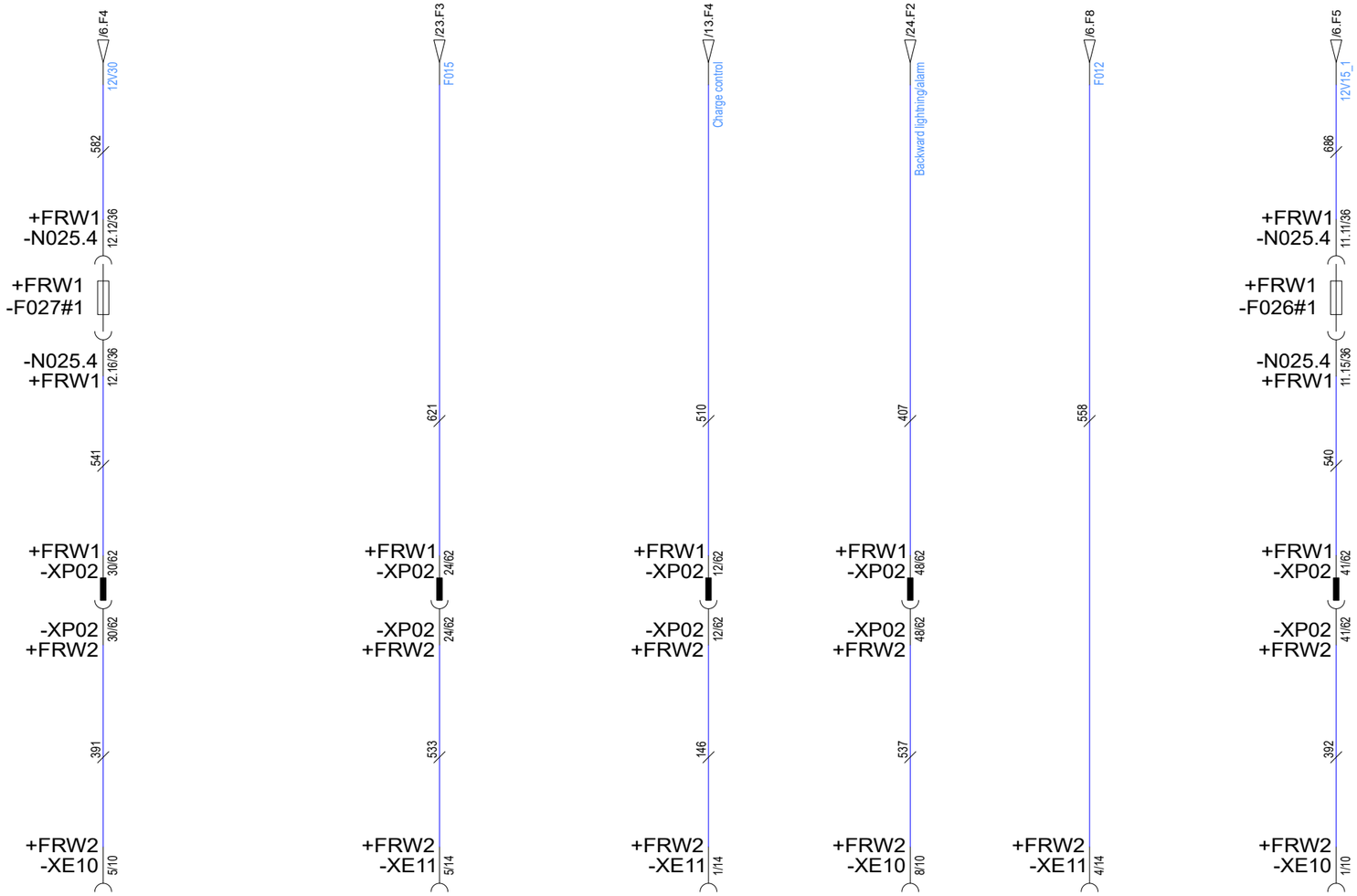
Proved	01.08.2019	LNZhartp

Working lights, Rotating beacon

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	25
	A3

1564663229



+FRW2
-XE10#4

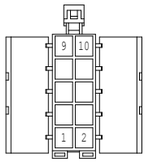
/26.D6	1	F026	+FRW2-XP02:41	1.50 mm² RD-WH	392
/23.F1	2	Low beam	+FRW2-XP02:23	0.75 mm² GY	360
/25.A3	3	Rotating Beacon	+FRW2-SP05:1	0.75 mm² VT	402
	4				
/26.D1	5	F027	+FRW2-XP02:30	1.50 mm² RD	391
	6				
/26.D7	7	GND	+FRW2-SP03:1	1.50 mm² BK	394
/26.D4	8	Backward lightning/alarm	+FRW2-XP02:48	1.00 mm² GY	537
	9				
	10				

+FRW2
-XE11#5

/26.D3	1	Charge control	+FRW2-XP02:12	1.00 mm² PK	146
/16.B1	2	CAN0 High	+FRW2-XP02:14, +FRW2-R810:B	0.75 mm²,0.75 mm² YE,YE	185, 962
/16.B1	3	CAN0 Low	+FRW2-XP02:15, +FRW2-R810:A	0.75 mm²,0.75 mm² GN,GN	184, 963
/26.D5	4	F012	+FRW2-SP02:1	0.75 mm² RD-WH	558
/26.D2	5	F014	+FRW2-XP02:24	0.75 mm² RD	533
/26.E7	6	GND	+FRW2-SP03:1	0.75 mm² BK	393
/8.B2	7	Start signal	+FRW2-S001.2:8	0.75 mm² PK	70
/8.B2	8	Start signal	+FRW2-XP02:4	0.75 mm² PK	503
	9				
	10				
	11				
	12				
	13				
	14				

+FRW2
-XE10#10

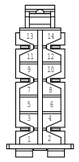
/26.A7



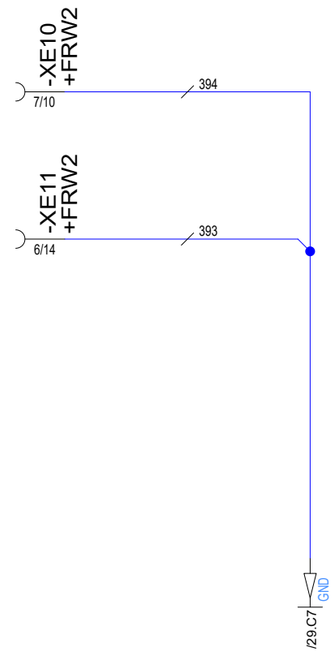
Pin ... Funktion
1 … 12V15 - Option
2 … Abblendlicht
3 … Drehlicht
4 … ---
5 … 12V30 - Option
6 … ---
7 … Masse
8 … Signal Rückwärtsfahrt
9 … ---

+FRW2
-XE11#4

/26.B7



Pin ... Funktion
1 … D+
2 … CAN H
3 … CAN L
4 … 12V15
5 … 12V30
6 … Masse
7 … Relais - Startsignal
8 … Relais - Startsignal
9 … Relais - Spannungsversorgung
10… Relais - Spannungsversorgung



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connector option

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
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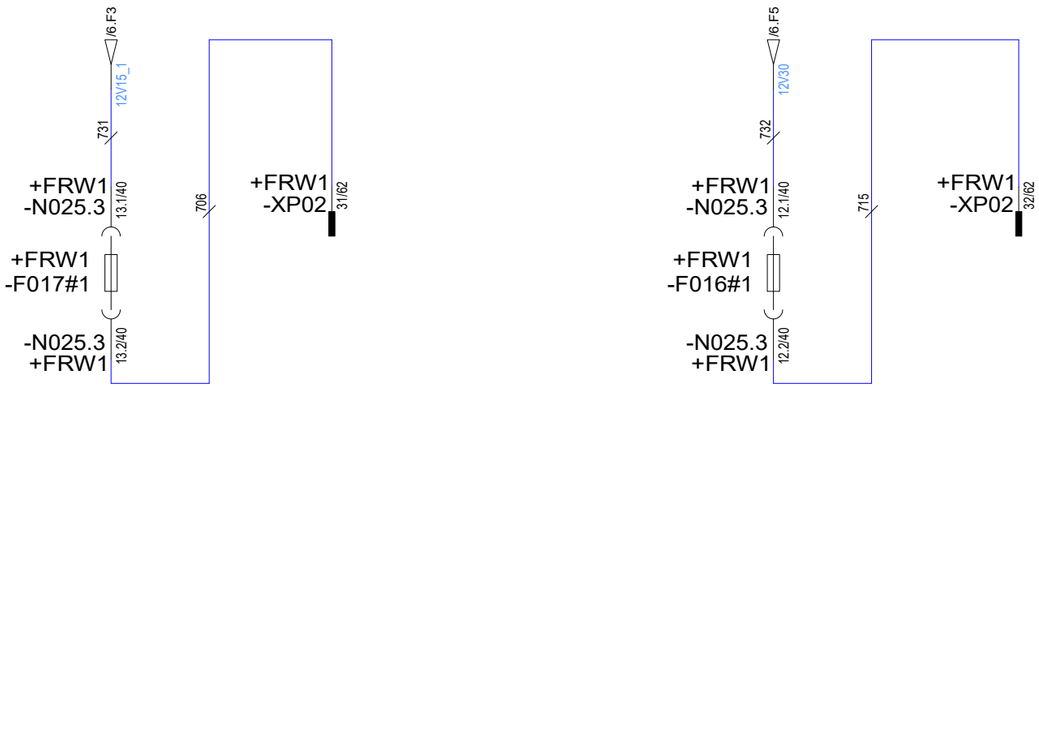
Message No	26
	A3

1564662270



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active Option:	Canopy		
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Wiper, Radio, Power outlet

Mat. -Nr. 1000388197

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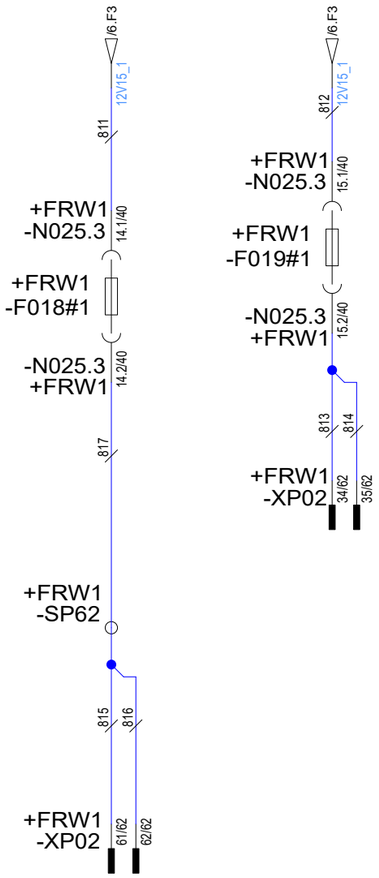
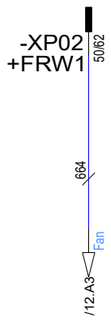
Revision:	00
replace for Rev.	00
Message No	27
	A3

1564662022





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heating, Air conditioning

Mat. -Nr. 1000388197 Doc. -Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	

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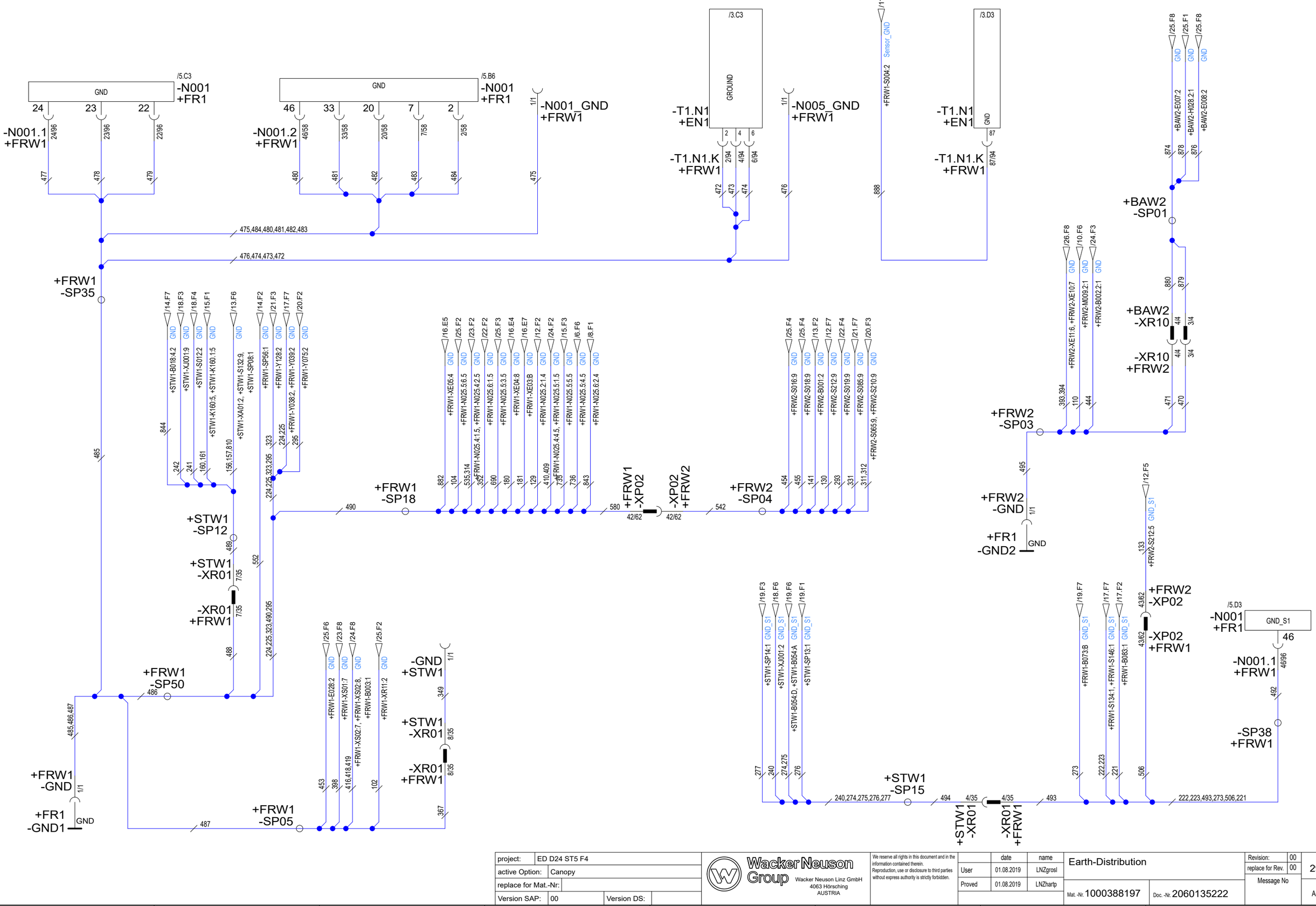
A3

1564662022



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Earth-Distribution

Mat. -Nr. 1000388197 | Doc. -Nr. 2060135222

Revision: 00
replace for Rev. 00
Message No 29
A3

1564663240

DevDes	Location	Position	device designation	item number
B006	+EN1	/4.A1	Diesel engine	
B020	+EN1	/4.A1	Diesel engine	
B021	+EN1	/4.A1	Diesel engine	
B022	+EN1	/4.A1	Diesel engine	
B023	+EN1	/4.A1	Diesel engine	
B024	+EN1	/4.A1	Diesel engine	
B024	+EN1	/9.E5	Pressure sensor Low pressure Fuel	
B025	+EN1	/4.A1	Diesel engine	
B056	+EN1	/4.A1	Diesel engine	
B059	+EN1	/4.A1	Diesel engine	
B078	+EN1	/4.A1	Diesel engine	
B092	+EN1	/4.A1	Diesel engine	
-B001	+FR1	/13.E2	Fuel gauge	1000307804
-B001	+FRW2	/13.D2	connector Fuel gauge	1000027438
-B002	+FR1	/24.D3	Horn	1000269368
-B002.1	+FRW2	/24.D3	connector Horn	1000383151
-B002.2	+FRW2	/24.E3	connector Horn	1000383151
-B003	+FR1	/24.C8	Reversing warning system	1000170892
-B003	+FRW1	/24.C8	connector Reversing warning system	1000027438
-B007	+FR1	/17.C1	Temperature sensor Hydraulic oil	
-B007	+FRW1	/17.C1	connector Temperature sensor Hydraulic oil	1000027410
-B018	+ST1	/14.C7	Buzzer	
-B018	+STW1		connector Buzzer	1000101071
-B024	+FRW2	/9.E5	connector Pressure sensor Low pressure Fuel	1000322614
-B054	+ST1	/19.A5	Accelerator pedal	1000304814
-B054	+STW1	/19.B5	connector Accelerator pedal	1000308534
-B057	+FR1	/10.E3	Intake air Temperature sensor	
-B057	+FRW2	/10.E3	connector Intake air Temperature sensor	1000126125
-B073	+FR1		Pressure sensor Inching pedal	1000303206
-B073	+FRW1	/19.C7	connector Pressure sensor Inching pedal	1000027429
-B083	+FR1	/17.C2	Engine speed sensor Motor Machine travel	

project:	ED D24 ST5 F4		
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Revision:
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Message No
Dev_01
A3

DevDes	Location	Position	device designation	item number
-B083	+FRW1	/17.D2	connector Engine speed sensor Motor Machine travel	1000379245
-BAT1	+FRW1	/6.A5	cable lug main fuse	1000127092
-BAT_GND	+EBW1	/6.E2	cable lug Earth	1000050031
-BAT_GND	+EBW2	/6.D1	Battery terminal Negative	1000089785
-E007	+BA1	/25.D8	Rear working light	1000270919
-E007	+BAW2	/25.D8	connector Rear working light	1000270365
-E008	+BA1	/25.D8	Rear working light	1000270919
-E008	+BAW2	/25.D8	connector Rear working light	1000270365
-E16	+RBW1	/24.E6	connector Numberplate light	1000027384
-E16.1	+RBW1	/24.E6	connector Numberplate light	1000027384
-E016.1	+FR1	/24.E6	Numberplate light	1000117390
-E016.2	+FR1	/24.E6	Numberplate light	1000117390
-E16.3	+RBW1	/24.F6	cable lug Numberplate light	1000096859
-E16.4	+RBW1	/24.F6	cable lug Numberplate light	1000096859
-E017	+FB1	/23.E4	Side marker lights	
-E017	+FBW1	/23.D4	connector Side marker lights	1000027438
-E018	+FB1	/23.E5	Side marker lights	
-E018	+FBW1	/23.D5	connector Side marker lights	1000027438
-E028	+FR1	/25.E6	Working lights	1000270919
-E028	+FRW1	/25.E6	connector Working lights	1000270365
-F001	+FRW1		main fuse 60A	1000098668
-F002	+FRW1		main fuse 80A	1000027321
-F003	+FRW1		main fuse 50A	1000015298
-F004	+FRW1		main fuse 50A	1000015298
-F005	+FRW1		Fuse 7,5A	1000186027
-F006	+FRW1		Fuse 7,5A	1000186027
-F007	+FRW1		Fuse 30A	1000247967
-F008	+FRW1		Fuse 10A	1000114140
-F009	+FRW1		Fuse 5A	1000186026
-F010	+FRW1		Fuse 15A	1000186028
-F011	+FRW1		Fuse 5A	1000186026

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DevDes	Location	Position	device designation	item number
-F012	+FRW1		Fuse 10A	1000114140
-F013	+FRW1		Fuse 10A	1000114140
-F014	+FRW1		Fuse 15A	1000186028
-F015	+FRW1		Fuse 10A	1000114140
-F016	+FRW1		Fuse 10A	1000114140
-F017	+FRW1		Fuse 15A	1000186028
-F018	+FRW1		Fuse 30A	1000247967
-F019	+FRW1		Fuse 20A	1000186029
-F020	+FRW1		Fuse 15A	1000186028
-F021	+FRW1		Fuse 15A	1000186028
-F022	+FRW1		Fuse 10A	1000114140
-F023	+FRW1		Fuse 10A	1000114140
-F024	+FRW1		Fuse 5A	1000186026
-F025	+FRW1		Fuse 15A	1000186028
-F026	+FRW1		Fuse 10A	1000114140
-F027	+FRW1		Fuse 10A	1000114140
-G001	+FRW1	/6.D3	cable lug alternator	1000126891
-G1.1	+FRW1	/13.E4	cable lug alternator	1000110764
-G002	+EBW1	/6.D1	cable lug Battery	1000089783
-G002	+FR1	/6.D1	Battery	1000250323
-GND	+EBW1	/6.E3	Earth	1000050030
-GND	+EBW2	/6.E1	Earth	1000050031
-GND	+FR1	/6.E2	Earth	
-GND	+FRW1	/29.F1	Earth	1000346811
-GND	+FRW2	/29.D7	Earth	1000365194
-GND	+STW1	/29.E3	Earth	
-GND1	+FR1	/29.F1	Earth	
-GND2	+FR1	/29.D7	Earth	
-H028	+BA1	/25.E1	Rotating beacon	1000314938
-H028.1	+BAW2	/25.D1	connector Rotating beacon	1000027435
-H028.2	+BAW2	/25.E1	connector Rotating beacon	1000095370

project:	ED D24 ST5 F4		
active Option:			
replace for Mat.-Nr:			
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Revision: | replace for Rev. | Message No | Dev_08 | A3

DevDes	Location	Position	device designation	item number
-H029	+BA1	/25.D2	Rotating beacon green	
-H029.1	+BAW3	/25.D2	connector Rotating beacon green	1000027435
-H029.2	+BAW3	/25.D2	connector Rotating beacon green	1000095370
-H078	+FR1	/24.E7	Combined rear left light	1000148542
-H078	+RBW1	/24.E7	Combined rear left light	1000027431
-H079	+FR1	/24.E7	Combined rear right light	1000148543
-H079	+RBW1	/24.E7	connector Combined rear right light	1000027431
-H088	+FB1	/23.E5	Combined front left light	HEADLIGHTS
-H088	+FBW1		connector Combined front left light	1000027431
-H089	+FB1	/23.E6	Combined front right light	HEADLIGHTS
-H089	+FBW1		connector Combined front left light	1000027431
K007	+EN1	/4.A1	Diesel engine	
-K001	+FRW1	/12.F2	High-current relay	1000154042
-K003	+FRW1	/24.F2	Switching Relay Machine travel Reverse	1000333390
-K003.1	+FRW1	/15.F2	Switching Relay Machine travel Reverse	1000333390
-K005	+FRW1	/8.F8	High-current relay Preheating system	1000154042
-K010	+FR1	/22.E2	Turn indicator relay	1000235517
-K030	+FRW1	/24.F1	Switching Relay Brake lights	1000333390
-K062	+FRW1	/23.F2	Switching Relay Low beam	1000333390
-K063	+FRW1	/23.F2	Switching Relay high beam	1000333390
-K087	+FR1	/8.D2	time-relay 0,75s	1000099374
-K088	+FRW1	/10.F3	Switching Relay Fuel lift pump	1000333390
-K114	+FRW1		Switching Relay Rotating beacon	1000333390
-K130	+FRW1		Switching Relay Horn	1000333390
-K131	+FRW1		Switching Relay 12V15	1000333390
-K146	+FRW1	/25.F2	Switching Relay Seat belt contact switch	1000333390
-K160	+STW1	/22.B6	relay Switchover Turn indicators	1000100593
-K160	+STW1	/15.F1	relay Switchover Turn indicators	1000125244
-K160.1	+STW1	/22.B7	relay Switchover Turn indicators	1000100593
-K160.1	+STW1	/15.F1	relay Switchover Turn indicators	1000125244
-M001	+EBW2	/6.D2	cable lug Starter Motor	1000050031

project: ED D24 ST5 F4
active Option:
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Version SAP: 00 Version DS:

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Mat. -Nr. 1000388197
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Revision:
replace for Rev.
Message No
Dev_04
A3

DevDes	Location	Position	device designation	item number
-M009	+EN1	/10.D6	Fuel lift pump	
-M009.1	+FRW2	/10.C6	connector Fuel lift pump	1000383151
-M009.2	+FRW2	/10.D6	connector Fuel lift pump	1000383151
-N001	+FR1	/5.A2	Traction electronics	
-N001.1	+FRW1		connector Traction electronics	1000359522
-N001.2	+FRW1	/7.E3	connector Traction electronics	1000359480
-N001_GND	+FRW1	/29.B4	cable lug Traction electronics	1000096859
-N005_GND	+FRW1	/29.B5	cable lug Traction electronics	1000096859
-N025.1	+FRW1	/6.A5	Bracket relay / Fuse	1000385676
-N025.2	+FRW1	/6.B3	Bracket relay / Fuse	1000385684
-N025.3	+FRW1	/23.B4	Bracket relay / Fuse	1000390875
-N025.4	+FRW1	/23.B6	Bracket relay / Fuse	1000385308
-N025.5	+FRW1	/24.C4	Bracket relay / Fuse	1000329495
-N025.6	+FRW1		Bracket relay / Fuse	1000390874
-P014	+ST1	/4.B6	Radio	1000354816
R001	+EN1	/4.A1	Diesel engine	
-R024	+FRW1	/14.D2	Resistor 220 Ohm	
-R025	+FRW2	/20.A5	connector Resistor 22 Ohm	1000110449
-R040	+STW1	/13.B3	connector Resistor 47 Ohm D+	1000095323
-R810	+FRW2	/16.B1	Bus terminating resistance	1000027394
-R810	+FRW2		Bus terminating resistance	1000289850
-R812	+FRW1		Bus terminating resistance	1000289850
-R812	+FRW1	/16.D1	Bus terminating resistance	1000027394
-R853	+FRW1		Bus terminating resistance	1000289850
-R853	+FRW1	/16.D7	Bus terminating resistance	1000027394
-R890	+STW1	/13.D6	Resistor 1 kOhm	1000312303
-R900	+STW1	/19.D3	Resistor 1 kOhm	1000312303
-R901	+STW1	/19.D1	Resistor 1 kOhm	1000312303
-R902	+FRW2	/20.D3	Resistor 1 kOhm	1000312303
S058	+EN1	/4.A1	Diesel engine	
-S001	+FR1	/6.D5	Preheating start switch	1000184001

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DevDes	Location	Position	device designation	item number
-S001.1	+FRW2	/6.D5	connector Preheating start switch	1000027368
-S001.2	+FRW2	/6.D5	connector Preheating start switch	1000027386
-S004	+FR1	/11.C8	pressure switch Air filter	1000270266
-S004	+FRW1	/11.C8	connector pressure switch Air filter	1000027359
-S008	+EBW1	/6.C1	cable lug Battery master switch	1000050031
-S008	+EBW2	/6.C1	cable lug Battery master switch	1000050031
-S008	+FR1	/6.C1	Battery master switch	1000081674
-S008	+FRW1	/6.C1	cable lug Battery master switch	1000355751
-S008.1	+EBW1	/6.C1	cable lug Battery master switch	1000050031
-S012	+ST1	/22.B7	Steering-column control lever left	1000309164
-S012	+STW1	/23.B1	connector Steering-column control lever left	1000334439
-S016	+FR1	/25.E7	switch Working lights	1000051958
-S016	+FRW2	/25.C6	connector switch Working lights	1000103949
-S016.1	+FR1	/25.E7	switch Working lights	SCHALTER
-S018	+FR1	/25.C4	switch Rotating beacon	SCHALTER
-S018	+FRW2	/25.C4	connector switch Rotating beacon	1000103949
-S019	+FR1	/22.D3	Hazard lights switch	
-S019	+FRW2	/22.C4	connector Hazard lights switch	1000103949
-S058	+FRW2	/9.E8	connector switch water separator	1000027332
-S065	+FR1	/20.C5	switch Parking brake	SCHALTER
-S065	+FRW2	/20.D5	connector switch Parking brake	1000103949
-S085	+FR1	/21.C6	switch Deactivate hydraulic function	SCHALTER
-S085	+FRW2	/21.C6	connector switch Deactivate hydraulic function	1000103949
-S102	+FR1	/15.F3	Plunger switch	1000247989
-S102	+FRW1	/15.C4	connector Plunger switch	1000258052
-S103	+FR1	/15.F3	Plunger switch	1000247989
-S103	+FRW1	/15.C5	connector Plunger switch	1000258052
-S104	+ST1	/19.C1	Operator presence switch	1000325174
-S104	+STW1	/19.C1	connector Operator presence switch	1000183226
-S104.2	+ST1	/19.C3	Operator presence switch	
-S104.2	+STW1	/19.C3	connector Operator presence switch	1000027429

project: ED D24 ST5 F4
active Option:
replace for Mat.-Nr:
Version SAP: 00 Version DS:

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DevDes	Location	Position	device designation	item number
-S119	+FR1		switch Diesel particulate filter Regeneration	1000353594
-S119	+FRW2	/11.C4	connector switch Diesel particulate filter Regeneration	1000303783
-S123	+ST1	/25.B2	Seat belt contact switch	
-S123	+STW1	/25.B2	connector Seat belt contact switch	1000110449
-S132	+ST1	/13.D8	Seat belt contact switch	1000181773
-S132	+STW1	/13.D8	button Display	1000103949
-S134	+FR1	/17.C6	limit switch Schaltstellung Getriebe	
-S134	+FRW1	/17.C6	connector limit switch Schaltstellung Getriebe	1000027438
-S146	+FR1	/17.C6	limit switch Schaltstellung Getriebe	
-S146	+FRW1	/17.C6	connector limit switch Schaltstellung Getriebe	1000270365
-S210	+FR1	/20.C6	button test Parking brake	1000051965
-S210	+FRW2	/20.D6	connector button test Parking brake	1000103949
-S212	+FR1	/12.B6	switch Auto-Stop	SCHALTER
-S212	+FRW2	/12.C6	connector switch Auto-Stop	1000103949
-S212.1	+FRW2	/12.D6	connector Auto-Stop	1000095336
-SP01	+BAW2	/29.B8	Splice	
-SP01	+FBW1	/23.F8	Splice	
-SP01	+FRW1	/9.B2	Splice	
-SP01	+FRW2	/20.B5	Splice	
-SP01	+RBW1	/24.D5	Splice	
-SP02	+BAW2	/25.C8	Splice	
-SP02	+FBW1	/23.D6	Splice	
-SP02	+FRW1	/9.B3	Splice	
-SP02	+FRW2	/6.E8	Splice	
-SP02	+RBW1	/24.D5	Splice	
-SP03	+FBW1	/23.D6	Splice	
-SP03	+FRW1	/9.D2	Splice	
-SP03	+FRW2	/29.D7	Splice	
-SP03	+RBW1	/24.D5	Splice	
-SP03	+STW1	/19.D2	Splice	
-SP04	+FBW1	/23.D4	Splice	

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DevDes	Location	Position	device designation	item number
-SP04	+FRW1	/9.D3	Splice	
-SP04	+FRW2	/29.D5	Splice	
-SP04	+RBW1	/24.D5	Splice	
-SP04	+STW1	/19.D3	Splice	
-SP05	+FBW1	/23.D4	Splice	
-SP05	+FRW1	/29.F2	Splice	
-SP05	+FRW2	/25.C3	Splice	
-SP05	+RBW1	/24.D7	Splice	
-SP05	+STW1	/18.B3	Splice	
-SP06	+FRW1	/23.C6	Splice	
-SP06	+FRW2	/11.B4	Splice	
-SP06	+RBW1	/24.D7	Splice	
-SP06	+STW1	/13.B6	Splice	
-SP07	+FRW1	/16.D2	Splice	
-SP07	+FRW2	/20.D3	Splice	
-SP07	+RBW1	/24.F8	Splice	
-SP07	+STW1	/13.D6	Splice	
-SP08	+FRW1	/16.D3	Splice	
-SP08	+FRW2	/20.D3	Splice	
-SP08	+STW1	/13.D6	Splice	
-SP09	+STW1	/6.E7	Splice	
-SP10	+FRW1	/20.D2	Splice	
-SP10	+STW1	/18.B7	Splice	
-SP11	+FRW1	/9.C5	Splice	
-SP12	+FRW1	/8.D5	Splice	
-SP12	+STW1	/29.D2	Splice	
-SP13	+FRW1	/7.D2	Splice	
-SP13	+STW1	/19.E1	Splice	
-SP14	+FRW1	/8.D2	Splice	
-SP14	+STW1	/19.E3	Splice	
-SP15	+FRW1	/23.C3	Splice	

project:	ED D24 ST5 F4		
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DevDes	Location	Position	device designation	item number
-SP15	+STW1	/29.F6	Splice	
-SP16	+FRW1	/23.E1	Splice	
-SP16	+STW1	/19.D1	Splice	
-SP17	+FRW1	/25.E5	Splice	
-SP17	+STW1	/19.D3	Splice	
-SP18	+FRW1	/29.D3	Splice	
-SP20	+FRW1	/7.D3	Splice	
-SP21	+FRW1	/24.E2	Splice	
-SP22	+FRW1	/6.B7	Splice	
-SP23	+FRW1	/16.B5	Splice	
-SP24	+FRW1	/16.B5	Splice	
-SP25	+FRW1	/16.B3	Splice	
-SP26	+FRW1	/16.B4	Splice	
-SP31	+FRW1	/14.C2	Splice	
-SP32	+FRW1	/13.D4	Splice	
-SP33	+FRW1	/7.D5	Splice	
-SP35	+FRW1	/29.C1	Splice	
-SP36	+FRW1	/15.D8	Splice	
-SP37	+FRW1	/15.B4	Splice	
-SP38	+FRW1	/29.E8	Splice	
-SP44	+FRW1	/23.C4	Splice	
-SP45	+FRW1	/23.C4	Splice	
-SP50	+FRW1	/29.E2	Splice	
-SP52	+FRW1	/22.E6	Splice	
-SP53	+FRW1	/22.E7	Splice	
-SP54	+FRW1	/7.C6	Splice	
-SP55	+FRW1	/14.D2	Splice	
-SP56	+FRW1	/14.D2	Splice	
-SP62	+FRW1	/28.C1	Splice	
-SP63	+FRW1	/16.D7	Splice	
-SP64	+FRW1	/16.D8	Splice	

project:	ED D24 ST5 F4
active Option:	
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Revision:
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Message No
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DevDes	Location	Position	device designation	item number
-SP65	+FRW1	/16.E2	Splice	
-SP66	+FRW1	/16.E2	Splice	
-SP67	+FRW1	/23.D2	Splice	
-SP68	+FRW1	/23.D2	Splice	
-SP70	+FRW1	/12.D4	Splice	
-SP71	+FRW1	/6.D3	Splice	
-SP72	+FRW1	/6.D5	Splice	
-SP73	+FRW1	/6.B4	Splice	
-SP74	+FRW1	/6.B4	Splice	
-SP75	+FRW1	/6.E5	Splice	
-SP76	+FRW1	/23.C6	Splice	
-SP77	+FRW1	/9.C4	Splice	
-SP78	+FRW1	/9.C5	Splice	
-SP79	+FRW1	/8.B7	Splice	
-T1.B024	+EN1	/9.E5	Pressure sensor Low pressure Fuel	
-T1.G1	+EN1	/6.D3	alternator	
-T1.M1	+EN1	/6.D2	starter	
-T1.N1	+EN1	/3.A2	Diesel engine electronics	
-T1.N1.A	+FRW1		connector Control valve Diesel engine	1000288543
-T1.N1.K	+FRW1	/7.E1	connector Control valve Diesel engine	1000161936
-T1.T1	+EN1	/4.A1	Diesel engine	
-T1.T1.B056	+FRW1	/9.E7	connector Temperature sensor DPF inlet temperature	1000404126
-T1.T1.B059	+FRW1	/9.E7	connector Temperature sensor DPF outlet temperature	1000404137
-T1.T1.B092	+FRW1	/9.E8	Differential pressure diesel particulate filter	1000250920
-V001	+FRW1		Diode	1000398209
-V002	+FRW1		Diode	1000398209
-V003	+FRW1		Diode	1000398209
-V004	+FRW1		Diode	1000398209
-X017	+FRW1	/9.E3	connector Diesel engine	1000260163
-X018	+FRW1	/8.E5	connector Preheating system	1000308732
-XA01	+STW1	/13.C6	connector Radio	1000347631

project:	ED D24 ST5 F4		
active Option:			
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DevDes	Location	Position	device designation	item number
-XA02	+STW1	/13.A4	connector Radio	1000347542
-XE03	+FRW1	/16.F7	connector diagnostics Diesel engine	1000163185
-XE04	+FRW1	/16.F2	connector Vehicle diagnostics	1000312071
-XE05	+FRW1	/16.F4	OBD II	1000325528
-XE10	+FRW2	/26.D6	connector Option	1000104431
-XE11	+FRW2	/26.D3	connector Option	1000100971
-XE11.1	+FRW2		Addition-connector	1000271156
-XJ001	+ST1	/18.C7	Joystick	1000290667
-XJ001	+STW1	/18.C7	connector Joystick	1000334152
-XP02	+FRW1	/6.C8	connector Fuse box	1000303405
-XP02	+FRW2	/6.C8	connector Fuse box	1000260163
-XR01	+FRW1	/19.D5	connector Wendekonsole	1000333982
-XR01	+STW1	/19.D5	connector Wendekonsole	1000333984
-XR10	+BAW2	/25.B8	connector Wiring harness Canopy	1000104284
-XR10	+FRW2	/25.B8	connector Wiring harness Rollbar / Canopy	1000104286
-XR11	+BAW3	/25.D2	connector Wiring harness Rotating beacon green	1000051981
-XR11	+FRW1	/25.C2	connector Wiring harness Rotating beacon green	1000027410
-XS01	+FBW1	/23.D6	connector Wiring harness illumination Front	1000105117
-XS01	+FRW1	/23.D6	connector Wiring harness illumination Front	1000105113
-XS02	+FRW1	/24.C5	connector Wiring harness illumination rear	1000105113
-XS02	+RBW1	/24.C5	connector Wiring harness illumination rear	1000105117
-XX00	+RBW1	/24.E5	Power outlet Trailer	1000085023
-XX16	+EBW1	/6.D2	cable lug jump start terminal	1000050031
Y060	+EN1	/4.A1	Diesel engine	
Y061	+EN1	/4.A1	Diesel engine	
Y062	+EN1	/4.A1	Diesel engine	
Y063	+EN1	/4.A1	Diesel engine	
Y078	+EN1	/4.A1	Diesel engine	
-Y004	+FR1	/17.C4	Solenoid valve Reverse	
-Y004	+FRW1	/17.C4	connector Solenoid valve Reverse	1000027438
-Y005	+FR1	/17.C3	Solenoid valve Forward	

project:	ED D24 ST5 F4		
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DevDes	Location	Position	device designation	item number
-Y005	+FRW1	/17.C3	connector Solenoid valve Forward	1000270365
-Y013	+FR1	/21.C4	Solenoid valve Deactivate hydraulic function	
-Y013	+FRW1	/21.C4	connector Solenoid valve Deactivate hydraulic function	1000027332
-Y038	+FR1	/17.C7	1st speed range solenoid valve	
-Y038	+FRW1	/17.C7	connector 1st speed range solenoid valve	1000270365
-Y039	+FR1	/17.C8	2nd speed range solenoid valve	
-Y039	+FRW1	/17.C8	connector 2nd speed range solenoid valve	1000027410
-Y043	+FR1	/20.C8	Solenoid valve Parking brake	
-Y043	+FRW1	/20.C8	connector Solenoid valve Parking brake	1000027438
-Y070	+FRW1	/15.C8	connector Solenoid valve Switchover Steering system	1000027410
-Y075	+FR1	/20.E2	Solenoid valve orifice	
-Y075	+FRW1	/20.D2	connector Solenoid valve orifice	1000027410
-Y098	+FR1	/17.C5	Solenoid valve Hydraulic motor adjustment	
-Y098	+FRW1	/17.C5	connector Solenoid valve Hydraulic motor adjustment	1000270365
-Y128	+FR1	/21.C3	Load override valve	
-Y128	+FRW1	/21.C3	connector Load override valve	1000027410
-Y155	+FRW1	/15.C7	connector Solenoid valve Switchover Steering system	1000027332

project:	ED D24 ST5 F4		
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Dev_12

A3

7.11 Wiring diagram DV60, DV90 and DV100 with ROPS (EU Stage V)

Stromlaufplan D24

ROPS Bügel

Deutz DPF Stage V

Location designation

FRW1 main harness Deutz Stage 5
FRW2 main harness ROPS Stage 5
FRW3 main harness Cabin Stage 5

STW1 Wiring harness Wendekonsole

BAW1 Wiring harness illumination ROPS
BAW2 Wiring harness illumination CANOPY
BAW3 Wiring harness Rotating beacon green

RBW1 Wiring harness rtro rear side (Mulde)
FBW1 Wiring harness rtro Front bumper
CBW1 Wiring harness Cabin

EBW1 battery cable
EBW2 battery cable

BA1 Beleuchtung Komponenten
CB1 Kabine Komponenten
EN1 Motor Komponenten
FB1 STVO Komponenten
FR1 Rahmen Komponenten
ST1 Interieeur Komponenten

project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
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cover sheet

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1564650012

Sheet	SheetName 1	SheetName 2
Con_01	contents	-
Con_02	contents	-
2	Fuse box	
3	Controllers	
4	Controllers	
5	Controllers	
6	main-Supply	
7	Supply Controllers	
8	Starten, Glühen	
9	Diesel engine electronics	
10	Diesel engine electronics	
11	Diesel engine electronics	
12	Auto Stop	
13	IO Display, fill level indicator, charge control	
14	IO Display	
15	Drehsitzfunktionen	
16	CAN	
17	Machine travel	
18	Machine travel	
19	Machine travel	
20	Machine travel	
21	Arbeitsfunktionen	
22	rtro illumination	Turn indicator system
23	rtro illumination	Front bumper
24	rtro illumination	Mulde
25	Working lights, Rotating beacon	
26	connector option	
27	Wiper, Radio, Power outlet	
28	heating, Air conditioning	
29	Earth-Distribution	
Dev_01	itemregister	-

project:	ED D24 ST5 F4		
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Sheet	SheetName 1	SheetName 2
Dev_02	itemregister	-
Dev_03	itemregister	-
Dev_04	itemregister	-
Dev_05	itemregister	-
Dev_06	itemregister	-
Dev_07	itemregister	-
Dev_08	itemregister	-
Dev_09	itemregister	-
Dev_10	itemregister	-
Dev_11	itemregister	-
Dev_12	itemregister	-

project:	ED D24 ST5 F4		
active Option:			
replace for Mat.-Nr:			
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Revision:	
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project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
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Fuse box

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Engine Control Module

ECM MD1CC878

Connector K

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
43	5V			
58	SIG	fuel pressure	/9.A5	
21	GND			
23	5V			
82	GND	Delta P Venturi	/9.A6	
81	SIG			
7	GND			
33	SIG	EGR Temperature	/9.A6	
46	5V			
80	SIG			
64	GND	Throttle valve	/9.A6	
8	DC POS			
9	DC NEG			
39	SIG			
60	GND	Intake air Temperature	/10.A3	
54	HIGH			
76	LOW	CAN 1	/16.A5	
75	HIGH			
53	LOW	CAN 2	/16.A8	
1				
3		Battery	/7.F2	
5				
2				
4		GROUND	/29.A5	
6				
88	T15	ignition	/7.F6	
35	T50	Start	/8.F2	
13	INPUT	Coolant level		
17	INPUT	Air filter	/11.A8	
87	GND		/29.A7	
16	INPUT	REG-SW	/11.F4	
19	INPUT	Neutral	/11.F5	
68	UB	Versorungs Schalter	/8.A7	
91	INPUT	DPF Differential pressure	/9.A7	
55	GND		/9.A7	
56	SIG	DPF Temperature	/9.A7	
73	HIGH	relay fuel pump	/10.A4	
25	LOW	relay fuel pump	/10.F4	
72	LOW	relay Preheating system	/8.F7	
20	SIG	Preheating system	/8.F6	

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
70				
65				
29				
71				
90				
92				
69				
48				
38				
15	INPUT	Kupplungs Schalter	/11.F6	
66				
32				
12				
37				
18				
14				
41				
31				
86				
52				
22				
24				
78				
77				
34				
11				
45				
61				
62				
44				
83				
84				
63				
85				
79				
74				
57				
52				
49				

Connector ECM A

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
33	HIGH			
16	LOW	Injector 1	/9.A1	
48	HIGH			
18	LOW	Injector 3	/9.A1	
32	HIGH			
2	LOW	Injector 2	/9.A1	
46	HIGH			
3	LOW	Injector 4	/9.A2	
4	UB4			
5	PWM		/9.A2	
25	GND			
26	SIG	Rail pressure	/9.A2	
7	5V			
53	GND			
52	NEG	Camshaft speed	/9.A2	
37	POS			
38	GND			
54	NEG	Crankshaft speed	/9.A3	
39	POS			
43	SIG-P			
27	SIG-T	Charge air sensors	/9.A3	
9	5V			
42	GND			
29	GND	Temperature Coolant	/9.A3	
28	SIG			
22	SIG			
12	5V	EGR- valve	/9.A4	
19	DC POS			
20	DC NEG			
24	5V		/9.A4	
44	SIG	engine oil pressure	/9.A4	
57	GND		/9.A4	
11	SIG	Exhaust gas back pressure	/9.A4	
10				
51				
45				
35				
8				
14				
36				
23				
40	GND		/9.A8	
49	LOW	AFTERRUN	/11.F4	
50	UB2		/8.A3	
41	LOW	Start relay	/8.A4	
59	SIG	DPF Temperature	/9.A7	
21	5V		/9.A8	
58	SIG	water in fuel	/9.A8	
60				
34				
15				

project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
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Controllers

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Message No 3

A3

1564650698

Engine Interface Connector

+EN1
-T1.T1

EIC MD1CC878

X17 connector Diesel engine

PIN	NOTE	DEVICE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
36	HIGH	Y060	Injector 1	/9.F1	
35	LOW				
42	HIGH	Y062	Injector 3	/9.F1	
37	LOW				
38	HIGH	Y061	Injector 2	/9.F1	
39	LOW				
40	HIGH	Y063	Injector 4	/9.F2	
41	LOW				
20	UB4		MPROP	/9.F2	
19	PWM				
31	GND				
25	SIG	B022	Rail pressure	/9.F2	
32	5V				
9	GND				
13	NEG	B020	Camshaft speed	/9.F2	
14	POS				
1	GND				
21	NEG	B025	Crankshaft speed	/9.F3	
15	POS				
23	SIG-P				
29	SIG-T	B021	Charge air sensors	/9.F3	
22	5V				
28	GND				
30	5V				
26	SIG	B023	engine oil pressure	/9.F4	
33	GND				
43	5V				
44	SIG		Exhaust gas back pressure	/9.F4	
45	GND				
18	5V				
17	SIG	B024	fuel pressure		
34	GND				
4	5V				
5	GND		Delta P Venturi	/9.F6	
6	SIG				
27	GND	B006	Temperature Coolant	/9.F3	
24	SIG				
8	GND	B078	EGR Temperature	/9.F6	
7	SIG				
50	5V				
46	SIG				
51	GND	Y078	EGR- valve	/9.F4	
47	DC POS				
48	DC NEG				
53	5V				
49	SIG				
52	GND		Throttle valve	/9.F6	
59	DC POS				
60	DC NEG				
3		K007	Start relay	/8.F4	
2					

X18 Preheating system

PIN	NOTE	DEVICE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
1			Glow plug	/8.F5	
2					
exhaust gas temperature 1					
1		B059	DPF Temperature	/9.F7	
2					
exhaust gas temperature 2					
1		B056	DPF Temperature	/9.F7	
2					
Differential pressure DPF					
1	SIG	B092	DPF Differential pressure	/9.F8	
2	GND				
3	5V				
water in fuel					
1		S058	water in fuel	/9.F8	
2					

Display

+ST1
-P014

Display 7"

PIN	CONNECTOR	DESCRIPTION	COMMENTS	Ref-PAGE
1	**XA01**	VBAT	9...36V	/13.D6
2		GND	Ground	
3	XA01	CAN1_L	CAN 1	/16.A6
4		CAN1_H		
5	XA01	CAN2_L	CAN 2	
6		CAN2_H		
7		V_USB_BUS	Power USB	
10		USB_GND	Ground	
8		USB_D-	Datawire USB	
9		USB_D+		
1	**XA02**	Ladekontrolle	0...5V	/13.A4
2	XA02	Fehlerlampe	0...5V	/14.A2
3	XA02	Standlicht	0...5V	/14.A3
4	XA02	Abblendlicht	0...5V	/14.A6
5	XA02	Tankgeber	0...5V	/13.A1
6	XA02	A_Input_6	0...5V	
7	XA02	GND	Ground	
8	XA02	Fernlicht	-1V - 1V LOW	/14.A4
9	XA02	Blinker	3,5V - VBAT HIGH	/13.A6
10	XA02	Taster 1	5V: 0,02...10kHz	/13.F7
11	XA02	Taster 2	5V: 0,02...10kHz	/13.F8
12	XA02	Umschaltung Blinker 1	12V 0,5A	/15.A1
13	XA02	Umschaltung Blinker 2	12V 0,5A	/15.A2
14	XA02	Summer	12V 0,5A	/14.A7
1	**X102**	Video Signal_1	composite CCITT video input PAL 50Hz colour coding / NTSC. input Level 1Vpp. 75Ohms	
2	X102	Video Signal_2		
3	X102	Video Signal_3		
4	X102	12V_Camera		
5	X102	Video Bezug_GND	Video Ground	
1	**X103**	Eth_TX+	Datawire Ethernet	
2	X103			
3	X103			
4	X103			

project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Controllers

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	4
	A3

1564650698

+FR1
-N001

N001.1
Connector 1

1	---		
2	OUT_36		
3	Freigabe Arbeitsfunktion 1 HS	/21.A4	OUT_20
4	OUT_34		
5	OUT_33		
6	OUT_22		
7	OUT_21		
8	IN_68		
9	IN_75		
10	Schalter Auto Stop red.	/12.F6	IN_73
11	IN_74		
12	Drehzahl Hydromotor	/17.A2	IN_71
13	Schalter Auto Stop	/12.F5	IN_72
14	IN_42		
15	Trockenlaufschutz	/13.A2	IN_43
16	Öltemperatur	/17.A1	IN_63
17	IN_64		
18	IN_65		
19	IN_40		
20	Kabinenheizung aktiv	/12.F2	IN_41
21	IN_62		
22			
23	GND	/29.A2	
24			
25	---		
26	---		
27	OUT_35		
28	Parkbremse HS	/20.A8	OUT_19
29	---		
30	---		
31	---		
32	IN_70		
33	IN_69		
34	switch Parking brake Feedback red.		IN_18
35	switch Parking brake Feedback		IN_17
36	IN_15		
37	IN_16		
38	Sensor Inchventil	/19.F7	IN_52
39	Sitzkontaktschalter 1	/19.F2	IN_38
40	Getriebe Gang 2 eingelegt	/17.F5	IN_44
41	Sitzkontaktschalter 2	/19.F3	IN_39
42	IN_23		
43	IN_22		
44	IN_20		
45	GND_S2	/17.F1	
46	GND_S1	/29.E8	
47	Dieselmotor Startsignal	/8.F3	IN_4
48	IN_6		
49	---		
50	---		
51	Getriebe Stufe 2	/17.A8	OUT_5
52	---		
53	Pumpe vorwärts HS	/17.A3	OUT_1
54	Hydraulikmotor HS	/17.A5	OUT_3
55	Getriebe Gang 1 eingelegt	/17.F6	IN_45
56	IN_46		
57	Lenkrichtung 1 red.	/15.F4	IN_10
58	Gaspedal red.	/19.F4	IN_8
59	Gaspedal	/19.F5	IN_7
60	CAN 4 L		
61	CAN 4 H		
62	CAN 3 L		
63	CAN 3 H		
64	IN_33		IN_33
65	Strassenfahrt red.	/21.F6	IN_61
66	IN_34		IN_34
67	switch Parking brake	/20.F5	IN_58
68	IN_53		
69	switch Parking brake red.	/20.F4	IN_59
70	Strassenfahrt	/21.F6	IN_60
71	IN_56		
72	IN_47		
73	---		
74	---		
75	Lastaufschaltventil	/21.A3	OUT_6
76	---		
77	Pumpe rückwärts HS	/17.A4	OUT_2
78	Getriebe Stufe 1	/17.A7	OUT_4
79	Lenkrichtung 1+2 LS	/15.F7	OUT_41
80	Freigabe Arbeitsfunktion 1 LS	/21.F4	OUT_42
81	---		
82	---		
83	Parkbremse LS	/20.F8	OUT_37
84	Pumpe vorwärts LS	/17.F3	OUT_38
85	Pumpe rückwärts LS	/17.F4	OUT_39
86	Hydraulikmotor LS	/17.F5	OUT_40
87	---		
88	---		
89	Freigabe Leistungsverbraucher	/12.A1	OUT_24
90	Abschaltung Rückfahrlicht	/15.A2	OUT_23
91	IN_48		
92	IN_49		
93	Bremslicht	/24.A1	OUT_26
94	Rückwärts	/24.A2	OUT_25
95	---		
96	IN_50		

N001.2
Connector 2

1			
3			
4	UB	/7.F3	
5			
6			
2			
7			
20	GND	/29.A3	
33			
46			
8	IN_67		
9	IN_3		
10	IN_14		
11	IN_19		
12	IN_28		
13	IN_66		
14	Lenkrichtung 1	/15.F3	IN_9
15	CAN 1 H	/16.A3	
16	CAN 1 L		
17	Parkingbrake Feedback red.	/20.F1	IN_36
18	IN_54		
19	VSS_1	/18.A6	
21	Fehlerlampe	/14.F2	OUT_47
22	IN_13		
23	IN_5		
24	IN_21		
25	IN_27		
26	Leistungsverbraucher ein	/12.F3	IN_37
27	Parkbremstest	/20.F6	IN_57
28	Zündung	/7.F8	HW-INH
29	IN_55		
30	WAKE		
31	Parkingbrake Feedback	/20.F1	IN_35
32	VSS_2	/15.A4	
34	Wippe Fahren red.	/18.F7	IN_26
35	IN_24		
36	IN_2		
37	Pumpenleistung (ECO)	/18.F2	IN_30
38	Lenkrichtung 2 red.	/15.F5	IN_12
39	IN_31		
40	IGN	/7.F7	
41	Lenkrichtung 2	/15.A7	OUT_28
42	---		
43	Lenkrichtung 1	/15.A6	OUT_27
44	---		
45	UB_CPU	/7.F5	
58			
47	Wippe Fahren	/18.F6	IN_25
48	IN_29		
49	IN_51		
50	Schalter 2. Gang	/18.F1	IN_1
51	IN_32		
52	Lenkrichtung 2	/15.F5	IN_11
53	CAN 2 H	/16.D1	
54	CAN 2 L		
55	VSS_3	/19.A7	
56	---		
57	---		

project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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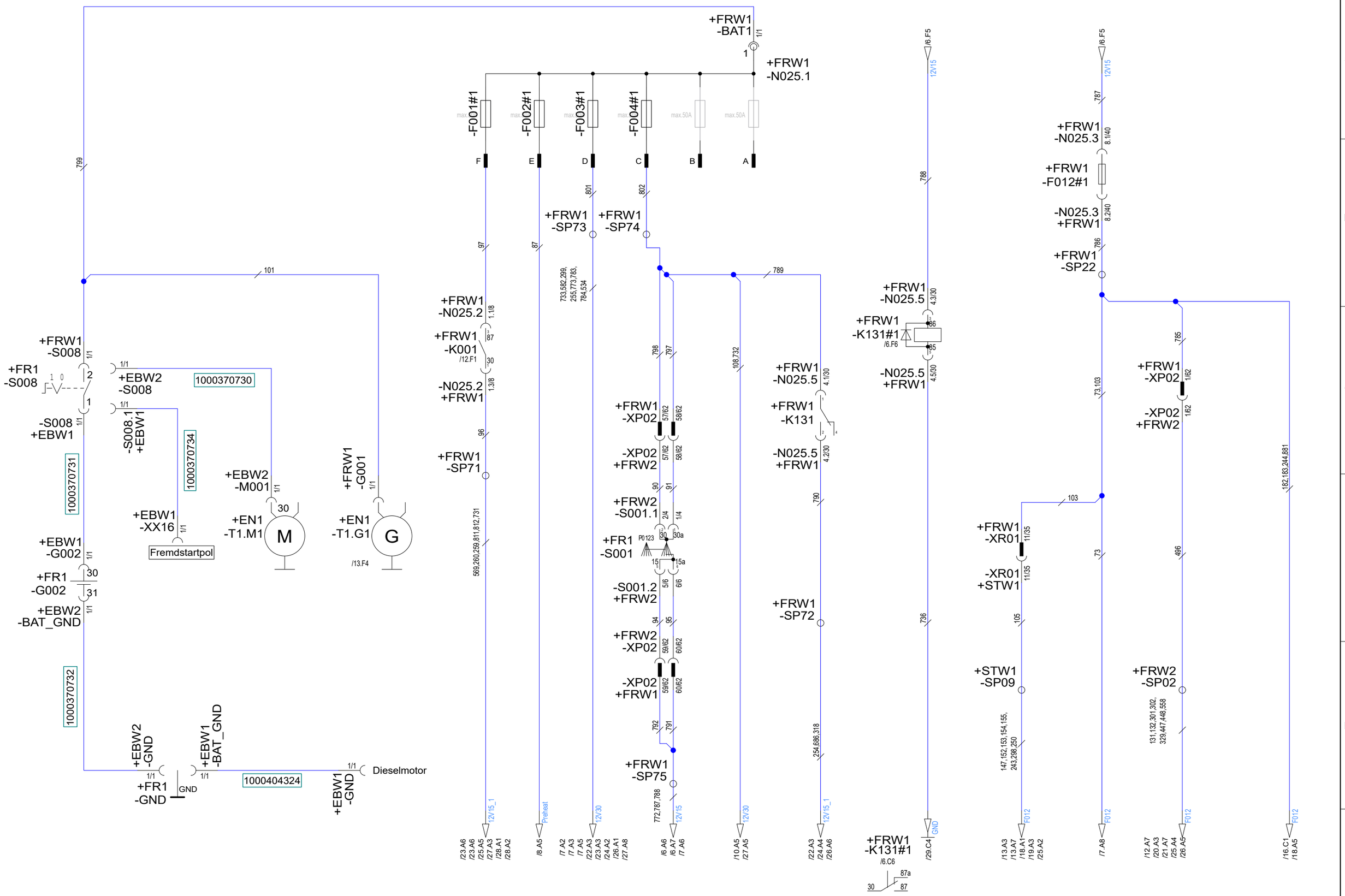
Controllers

Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	5
	A3

1564660150



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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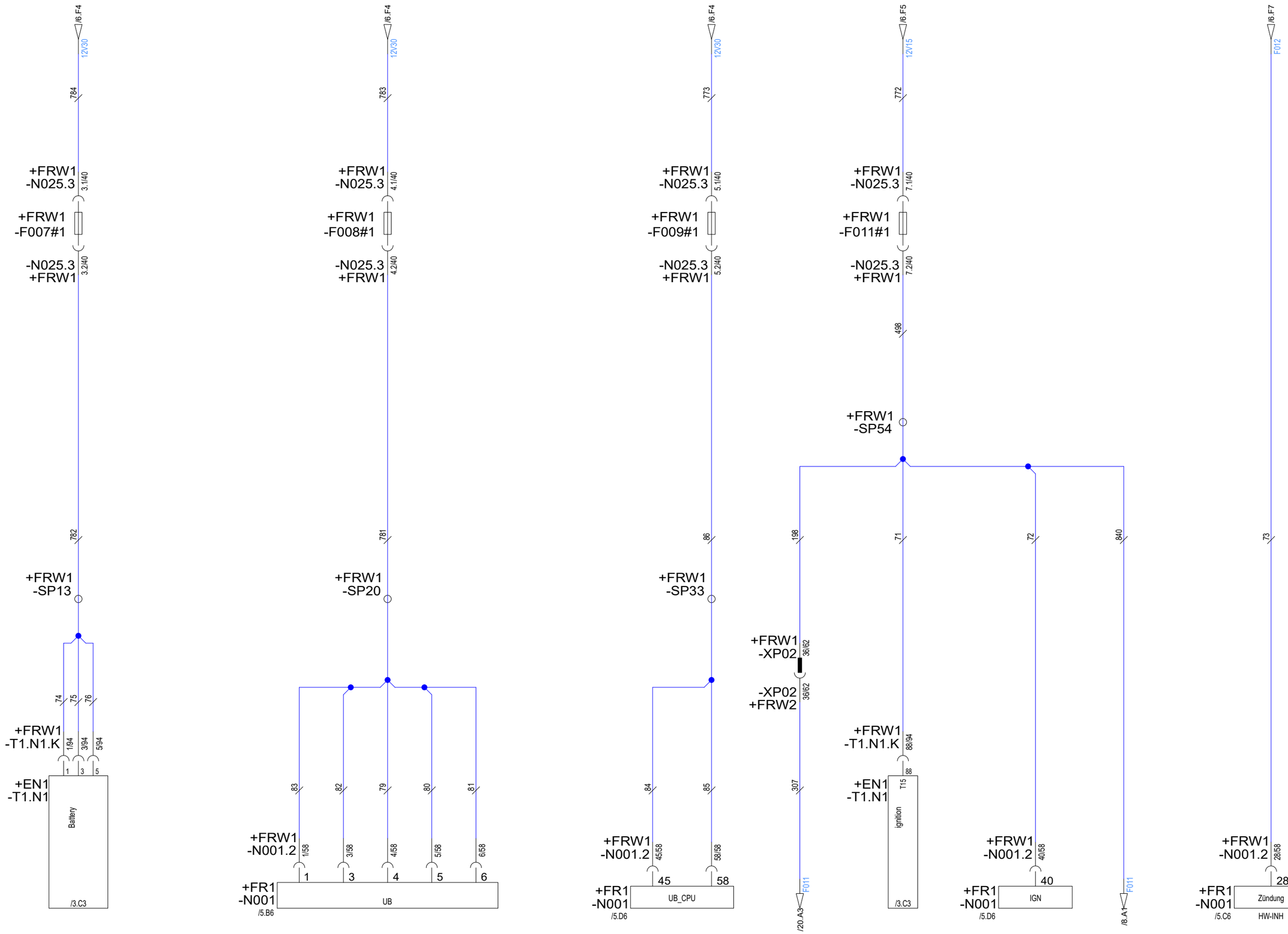
main-Supply

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision: 00
replace for Rev. 00
Message No 6
A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
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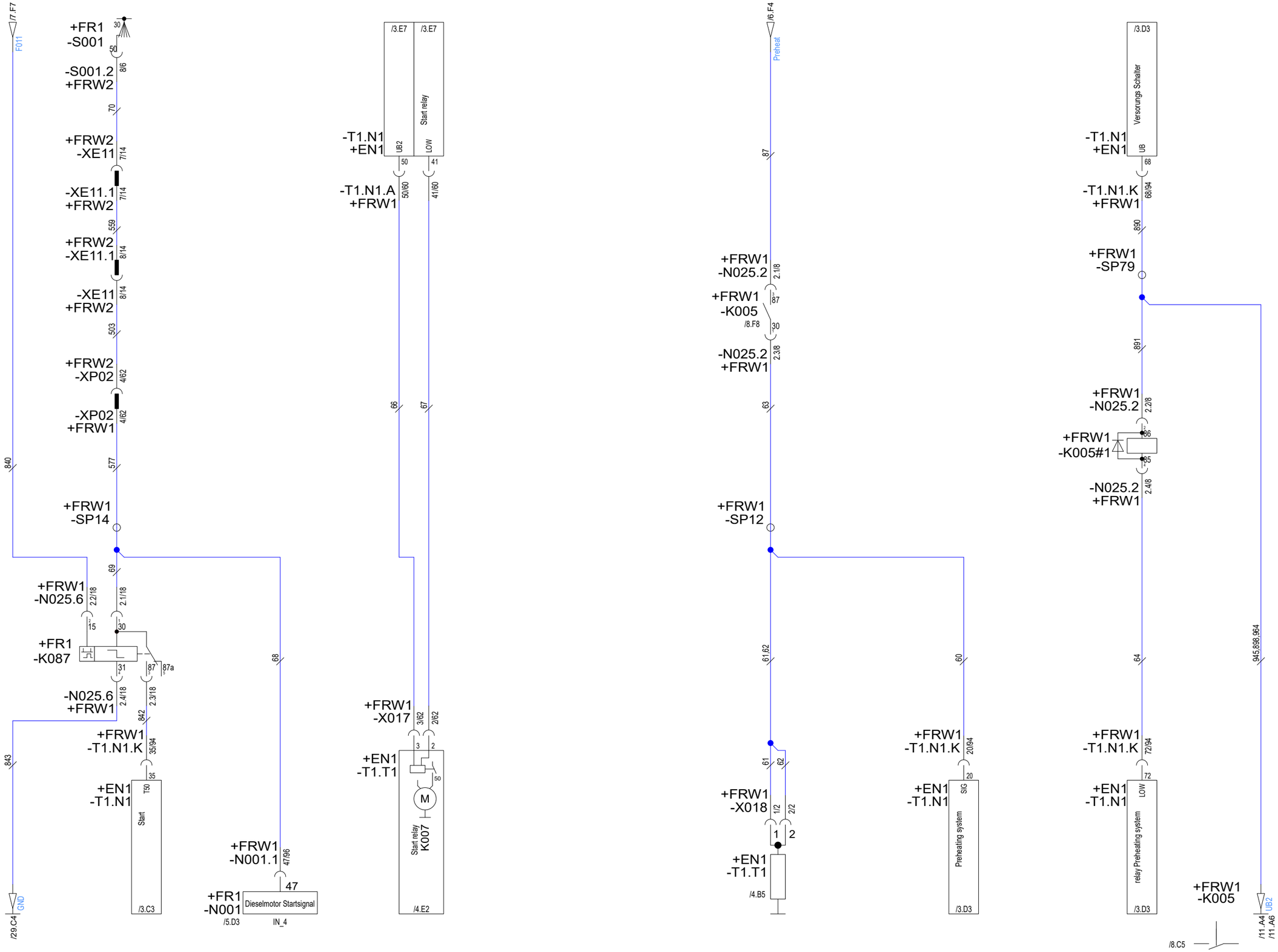
Supply Controllers

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	7
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Starten, Glühen

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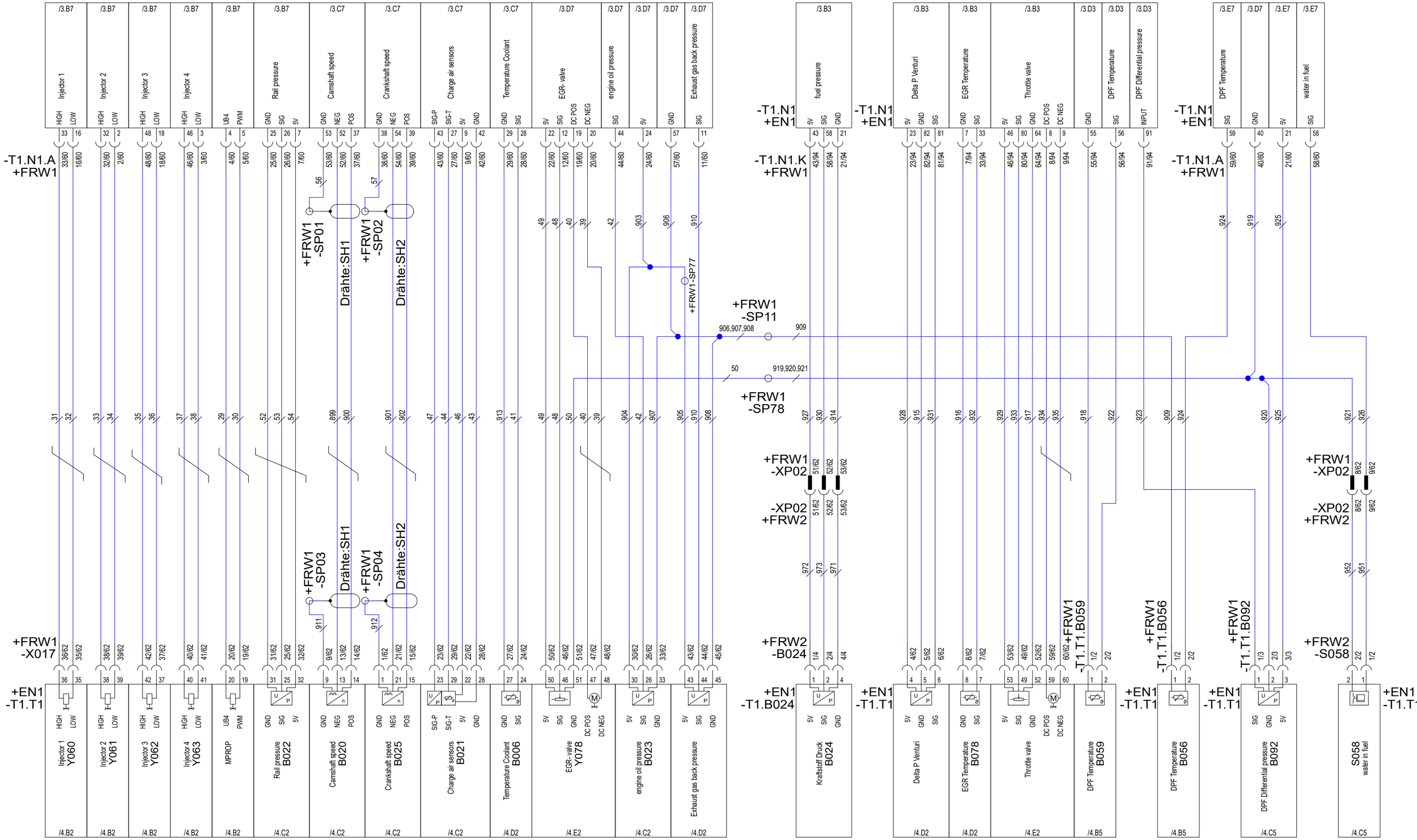
Revision:	00
replace for Rev.	00
Message No	8
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
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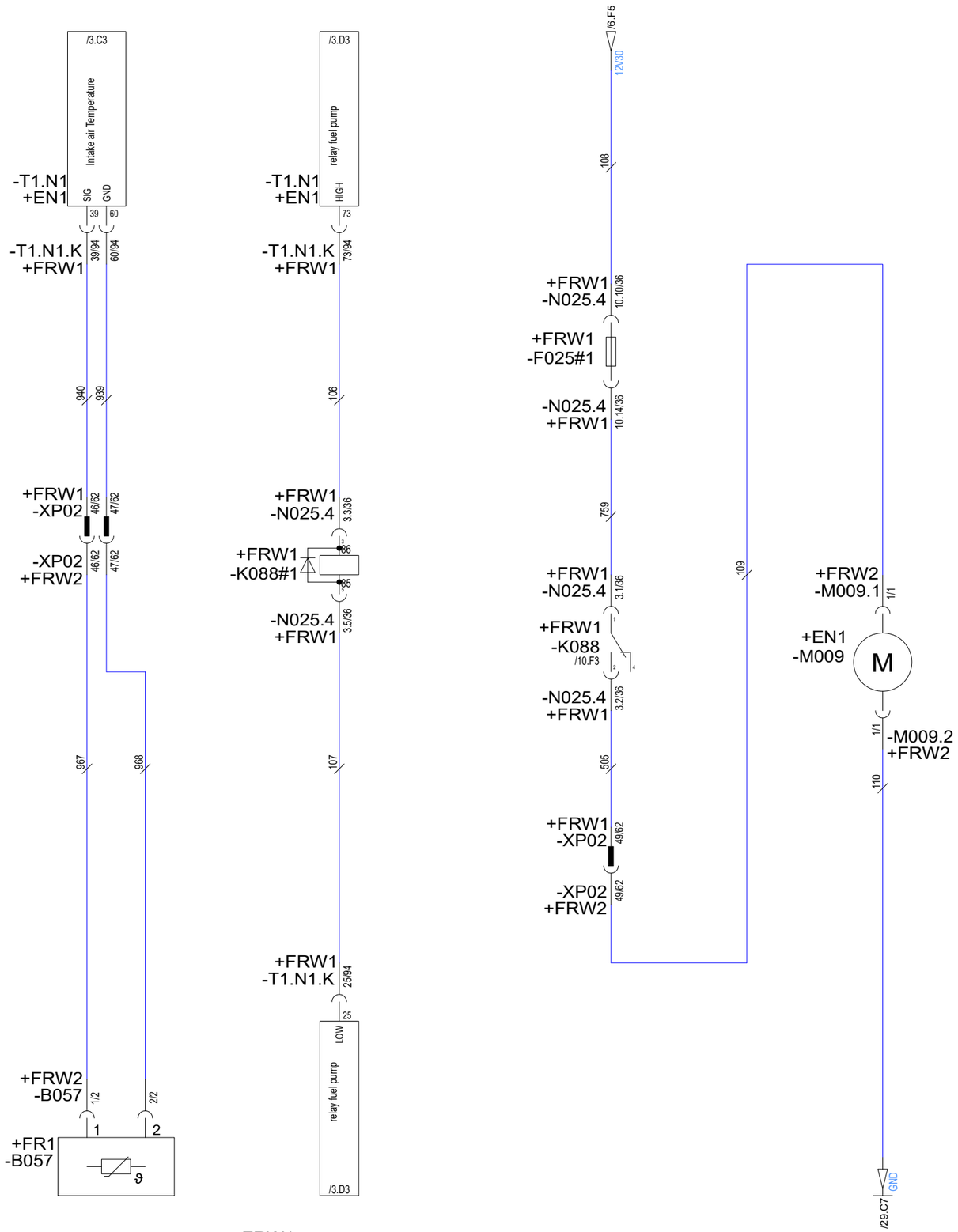
Diesel engine electronics

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	9
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Diesel engine electronics

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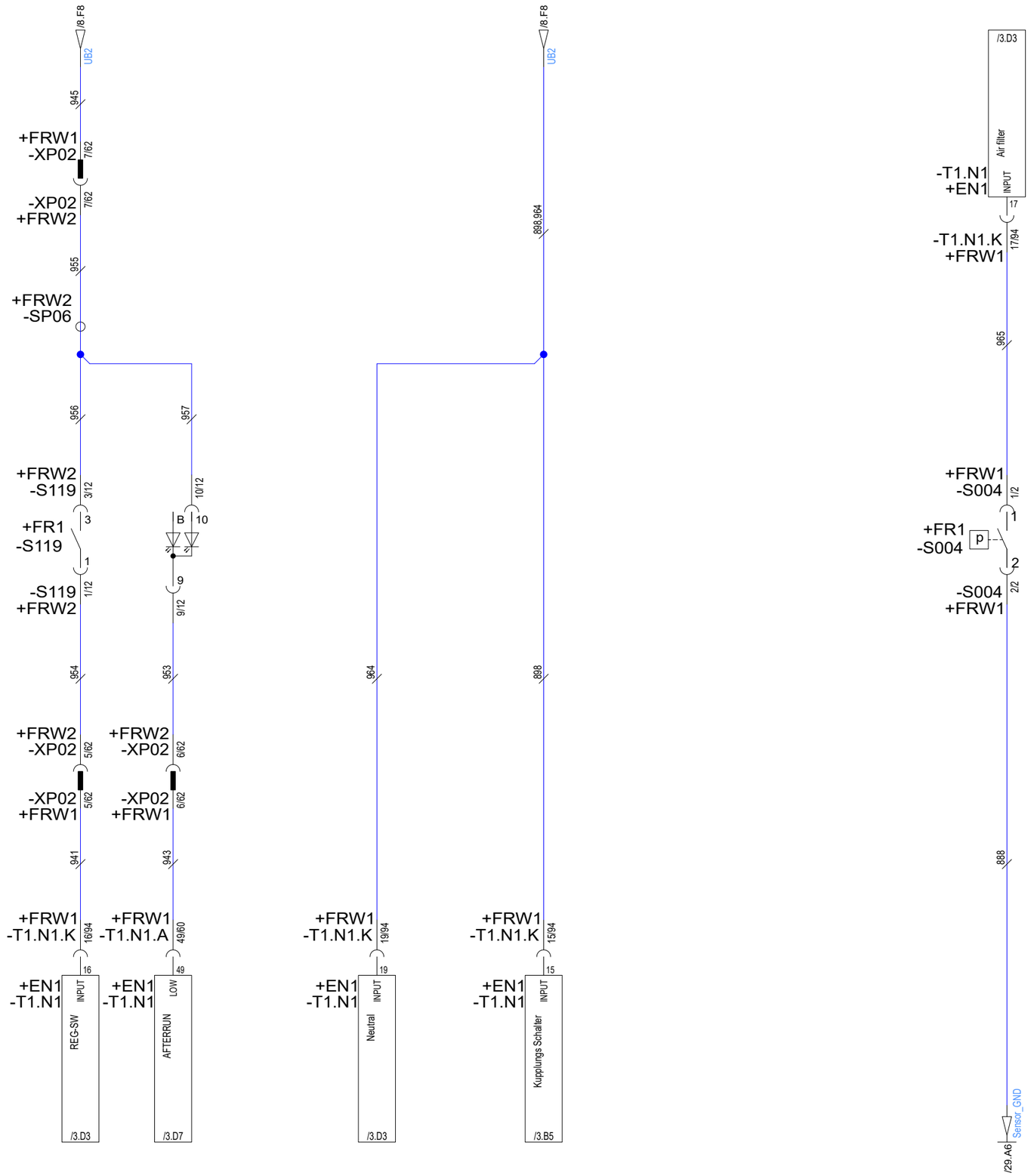
Revision:	00
replace for Rev.	00
Message No	

10

A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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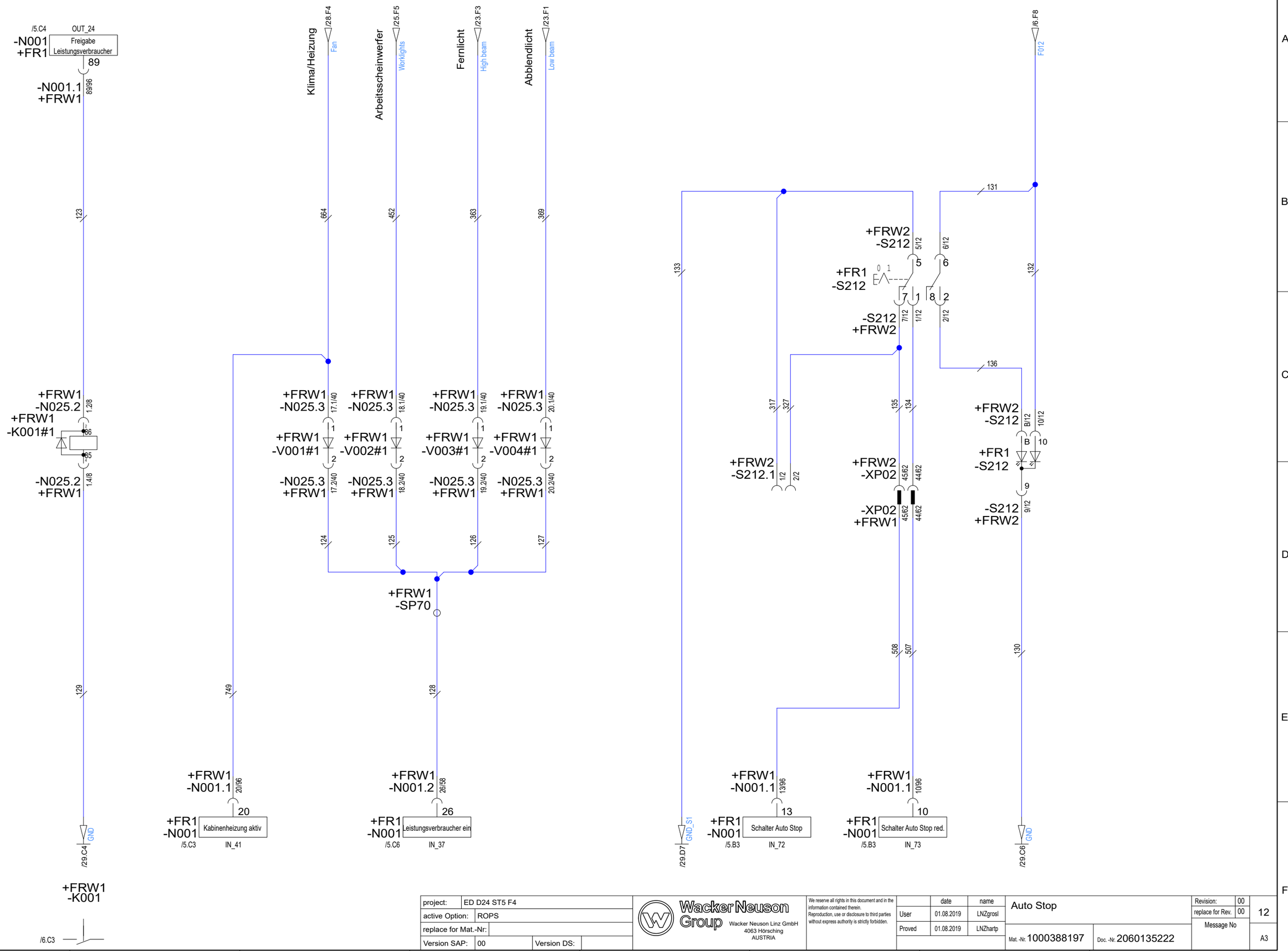
Diesel engine electronics

Mat. -Nr. 1000388197 | Doc. -Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	11
	A3

1564662022



project:	ED D24 ST5 F4
active Option:	ROPS
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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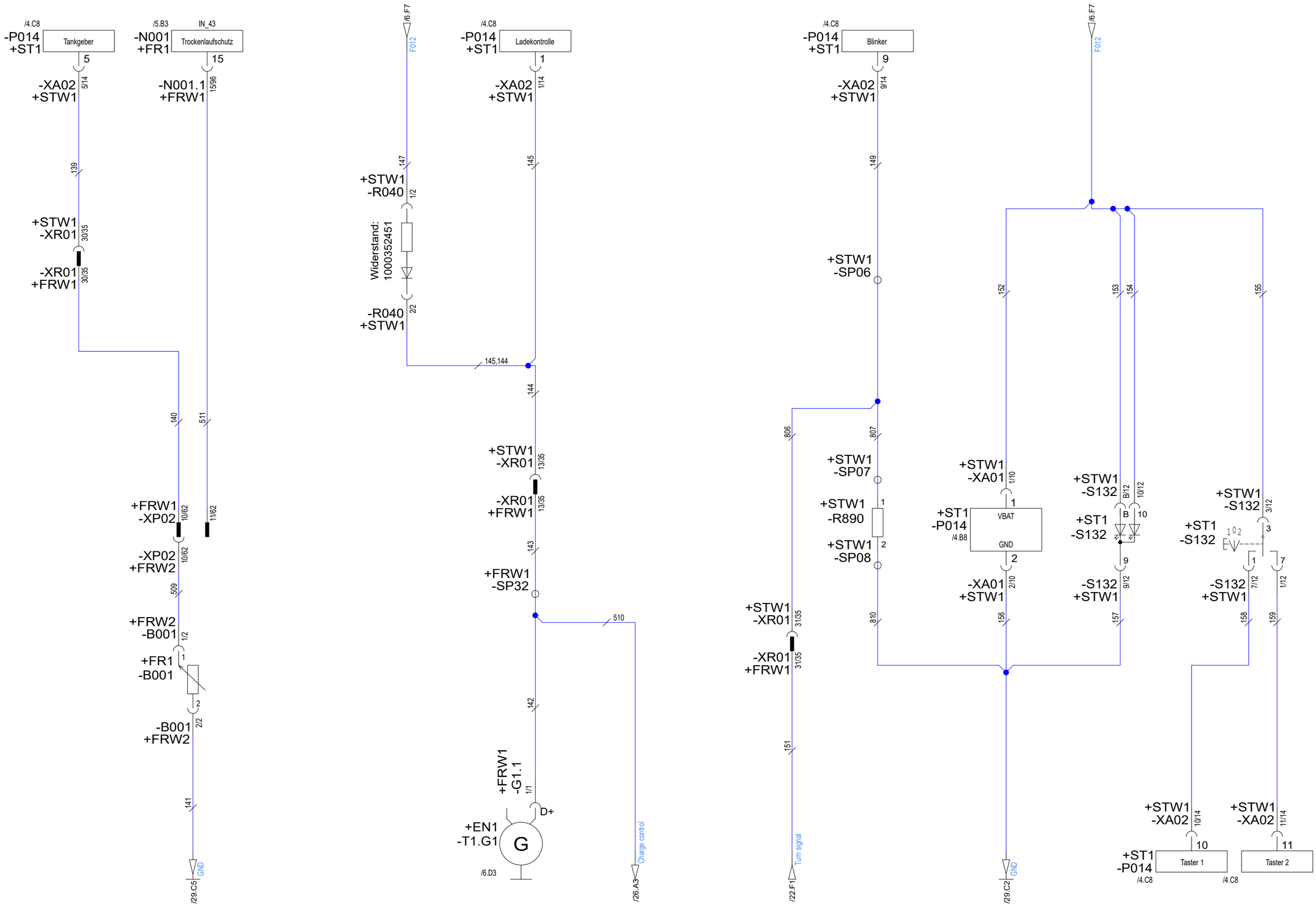
Auto Stop

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	12
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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IO Display, fill level indicator, charge

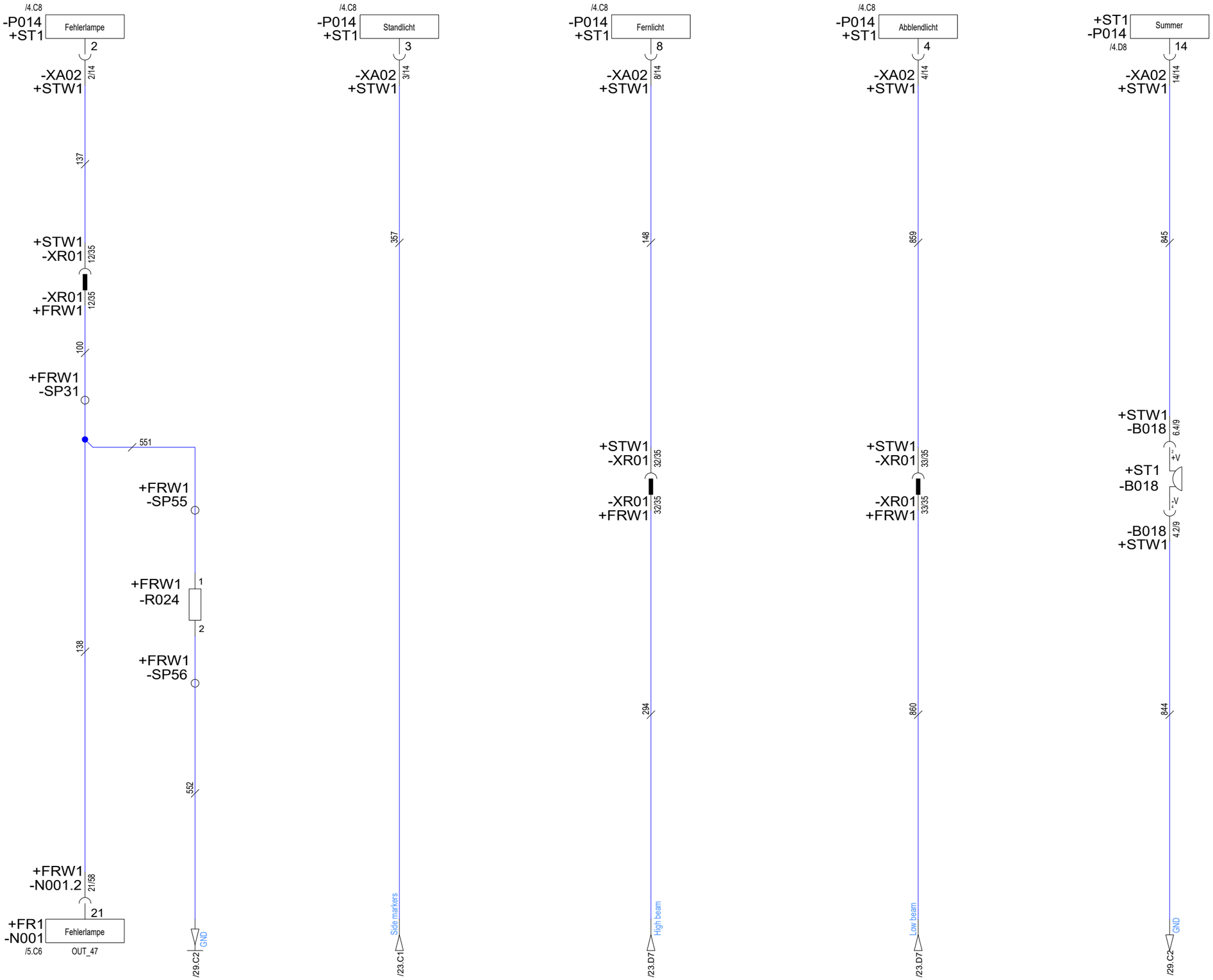
Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision: 00
replace for Rev. 00
Message No

13

A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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IO Display

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Revision:	00
replace for Rev.	00
Message No	14
	A3

1564650698

+ST1
-P014
/4.D8
Umschaltung Blinker 1
12
-XA02
+STW1
12/14
162
+STW1
-K160
3/5
+STW1
-K160
/15.F1
-K160
+STW1
5/5
160

+ST1
-P014
/4.D8
Umschaltung Blinker 2
13
-XA02
+STW1
13/14
163
+STW1
-K160.1
3/5
+STW1
-K160.1
/15.F1
-K160.1
+STW1
5/5
161

/29.C2
GND

/5.C4
OUT_23
-N001
+FR1
Abschaltung Rückfahrlicht
90
-N001.1
+FRW1
90/96
164
+FRW1
-N025.5
5.3/30
+FRW1
-K003.1#1
86
85
-N025.5
+FRW1
5.5/30
735

/29.C4
GND

/5.D6
VSS_2
-N001
+FR1
32
-N001.2
+FRW1
32/58
166

304

+FRW1
-SP37

167
+FRW1
-S102
3/4
+FR1
-S102
/15.F3
3
4
-S102
+FRW1
4/4
171

168
+FRW1
-S102
1/4
+FR1
-S102
/15.F3
1
2
-S102
+FRW1
2/4
172

169
+FRW1
-S103
3/4
+FR1
-S103
/15.F3
3
4
-S103
+FRW1
4/4
173

170
+FRW1
-S103
1/4
+FR1
-S103
/15.F3
1
2
-S103
+FRW1
2/4
174

+FRW1
-XP02
13/62
-XP02
+FRW2
13/62
512

/20.A5
VSS_2

/5.D6
OUT_27
-N001
+FR1
Lenkrichtung 1
43
-N001.2
+FRW1
43/58
175
+FRW1
-Y155
1/2
1
2
-Y155
+FRW1
2/2
177

/5.D6
OUT_28
-N001
+FR1
Lenkrichtung 2
41
-N001.2
+FRW1
41/58
176
+FRW1
-Y070
1/2
1
2
-Y070
+FRW1
2/2
178

+FRW1
-SP36
179

Y155: steering direction for Travel direction Front bumper
Y070: steering direction for Travel direction Mulde

+FRW1
-N001.2
14/58
14
+FR1
-N001
/5.C6
Lenkrichtung 1
IN_9

+FRW1
-N001.1
57/96
57
+FR1
-N001
/5.E3
Lenkrichtung 1 red.
IN_10

+FRW1
-N001.2
52/58
52
+FR1
-N001
/5.E6
Lenkrichtung 2
IN_11

+FRW1
-N001.2
38/58
38
+FR1
-N001
/5.D6
Lenkrichtung 2 red.
IN_12

+FRW1
-N001.1
79/96
79
+FR1
-N001
/5.B4
Lenkrichtung 1+2 LS
OUT_41

+STW1
-K160
/15.C1
/22.C6

+STW1
-K160.1
/15.C2
/22.C7

+FRW1
-K003.1
87a
30
87
/24.B7

+FR1
-S102
/15.C3
/15.C4

+FR1
-S103
/15.C5
/15.C5

project:	ED D24 ST5 F4
active Option:	ROPS
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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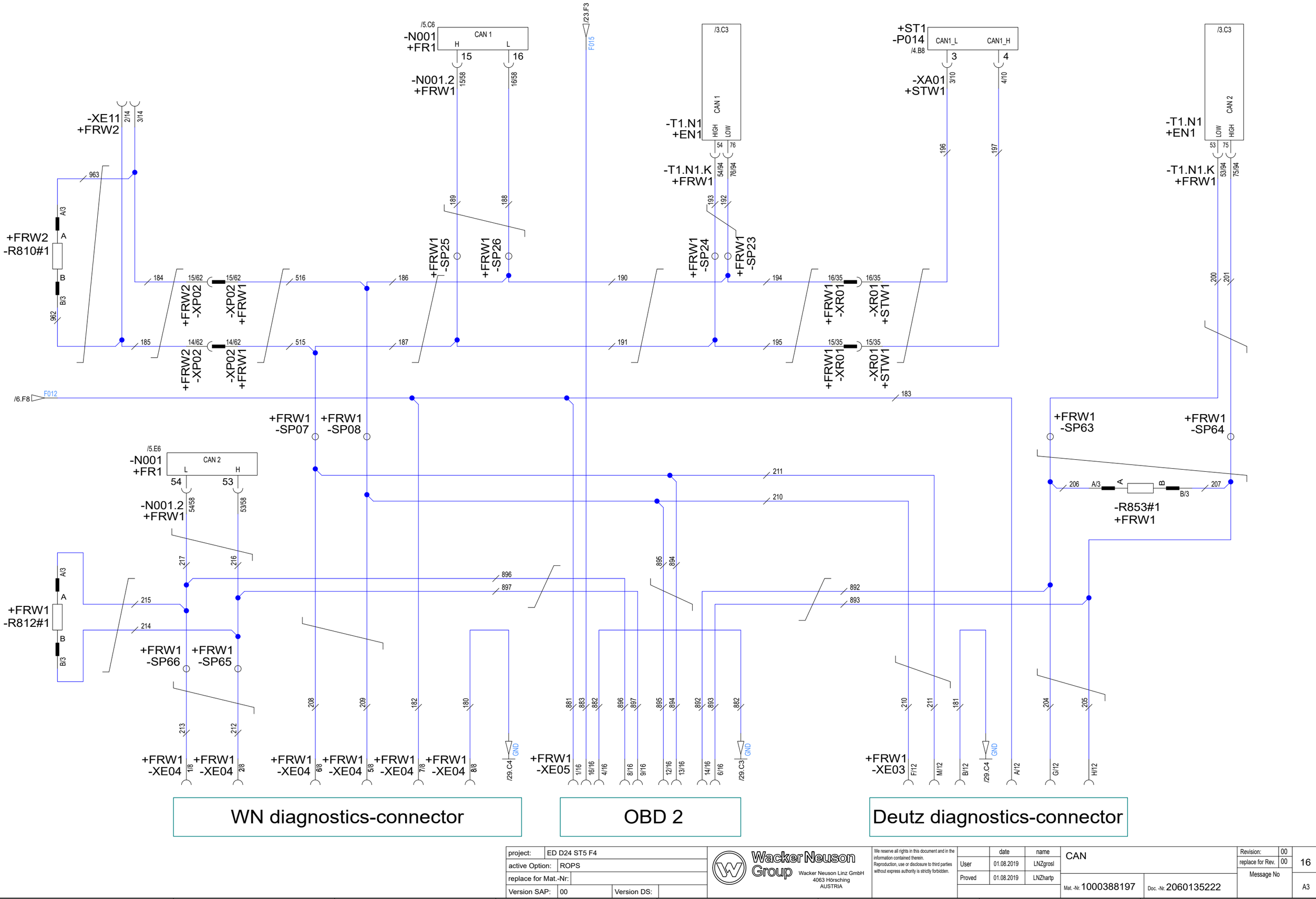
Proved	01.08.2019	LNZhartp

Drehsitzfunktionen

Mat. -Nr. 1000388197
Doc. -Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	15
	A3

1564662022



project:	ED D24 ST5 F4
active Option:	ROPS
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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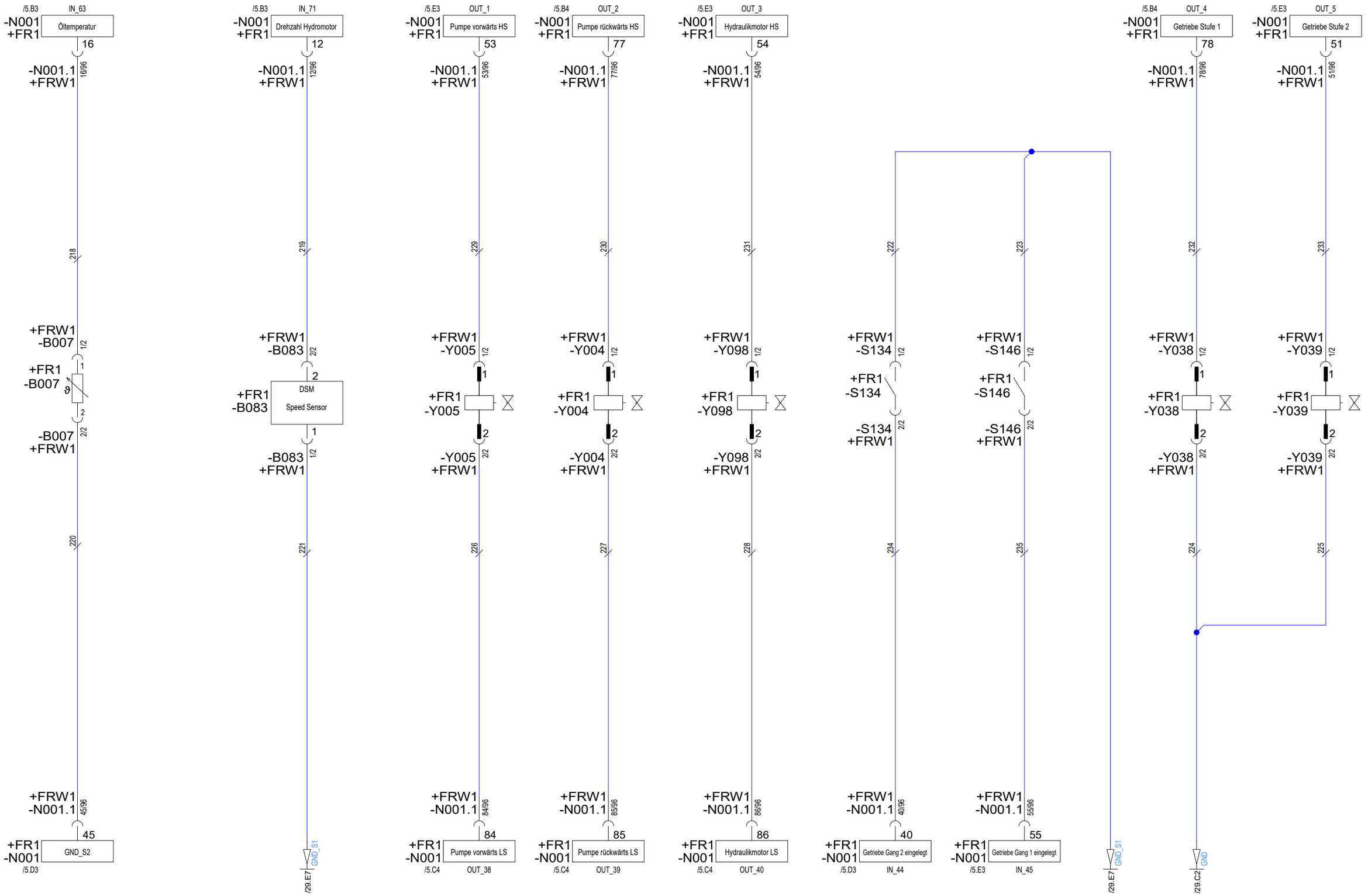
CAN

Mat.-Nr. 1000388197

Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	16
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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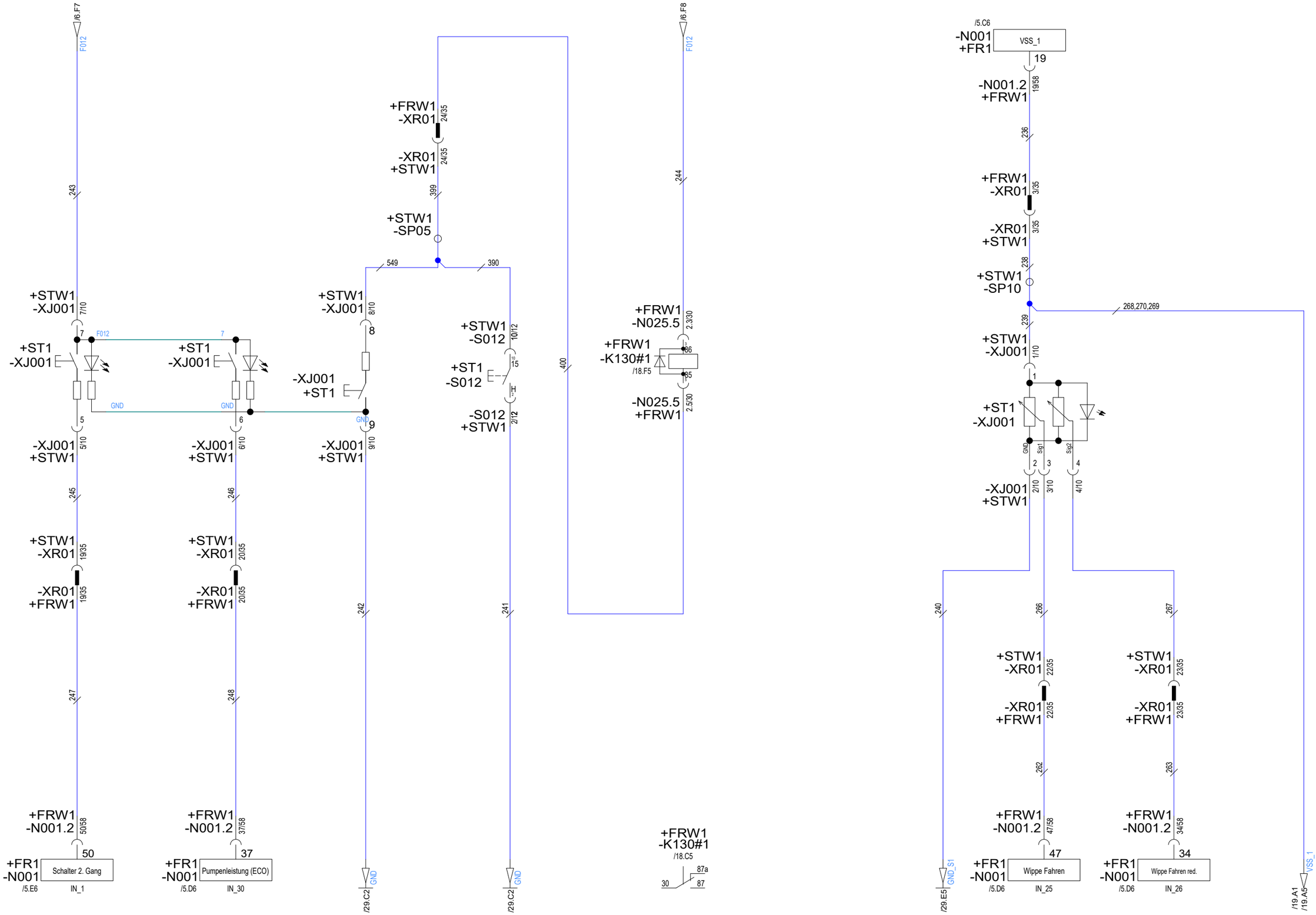
Machine travel

Mat.-Nr: 1000388197 | Doc.-Nr: 2060135222

Revision:	00
replace for Rev.	00
Message No	17
	A3

1564660059



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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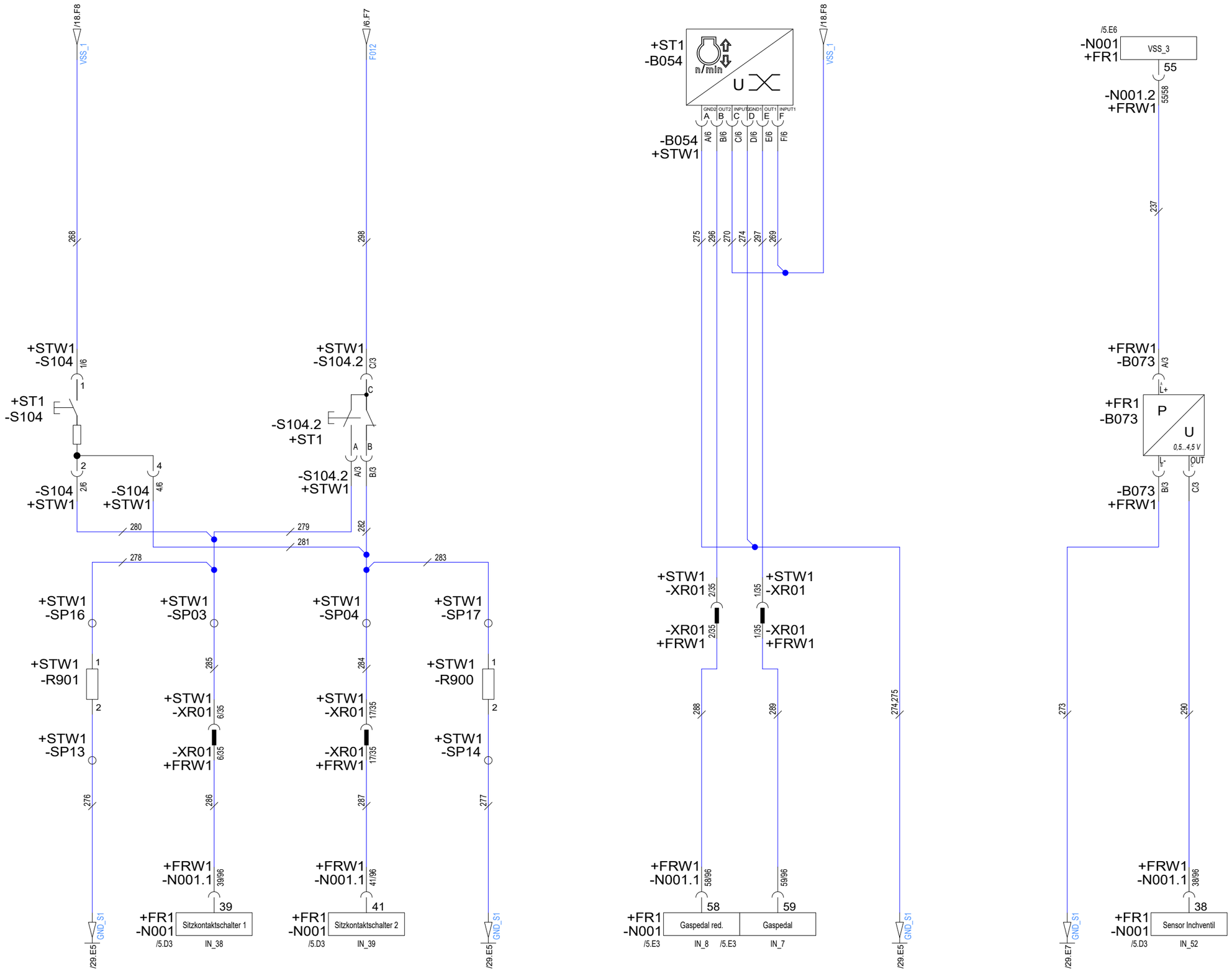
Machine travel

Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	18
	A3

1564658969



project:	ED D24 ST5 F4
active Option:	ROPS
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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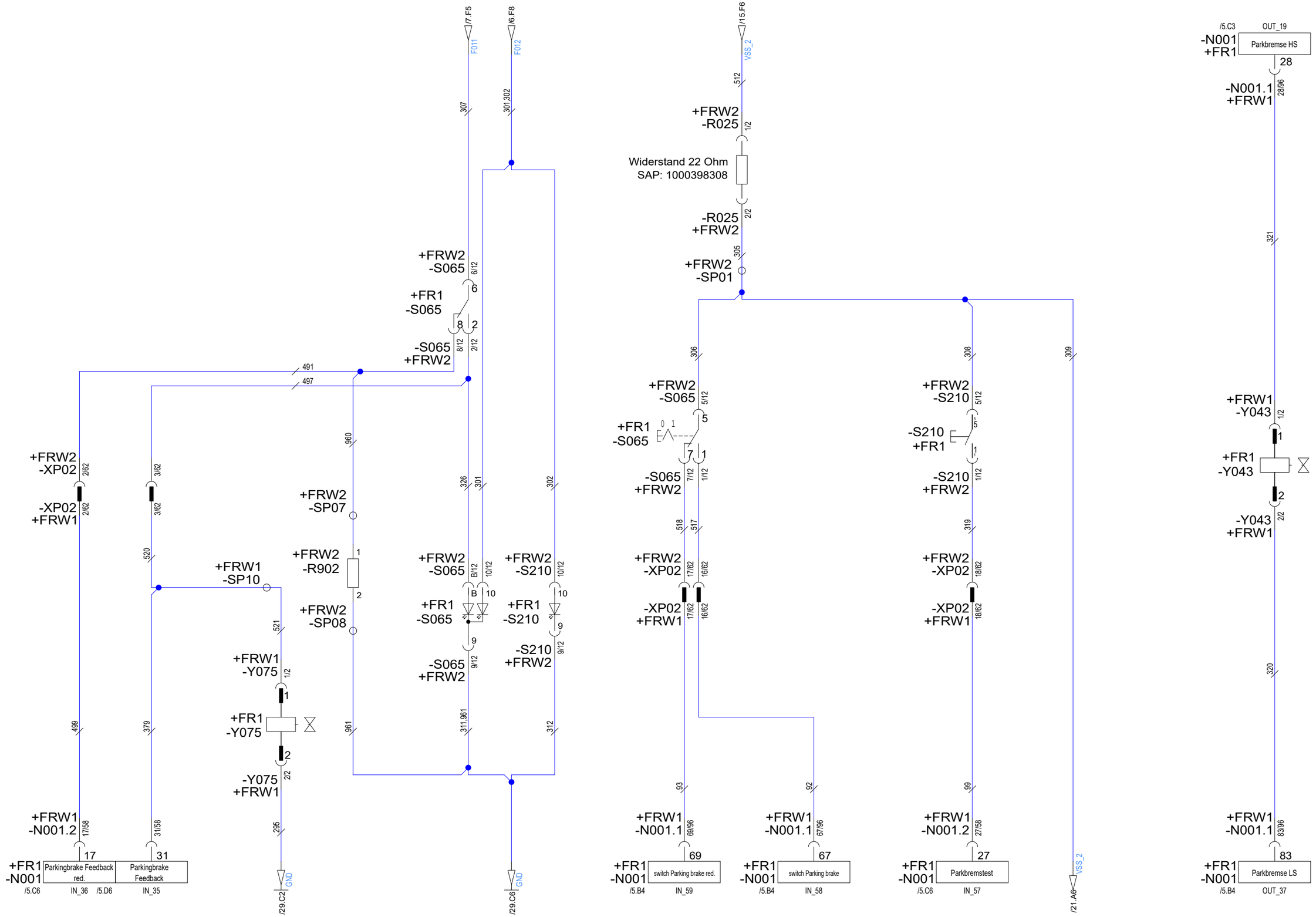
Machine travel

Mat. -Nr. 1000388197

Doc. -Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	19
	A3

1564650698



project:	ED D24 ST5 F4
active Option:	ROPS
replace for Mat.-Nr:	
Version SAP:	00
Version DS:	

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Machine travel

Mat.-Nr. 1000388197

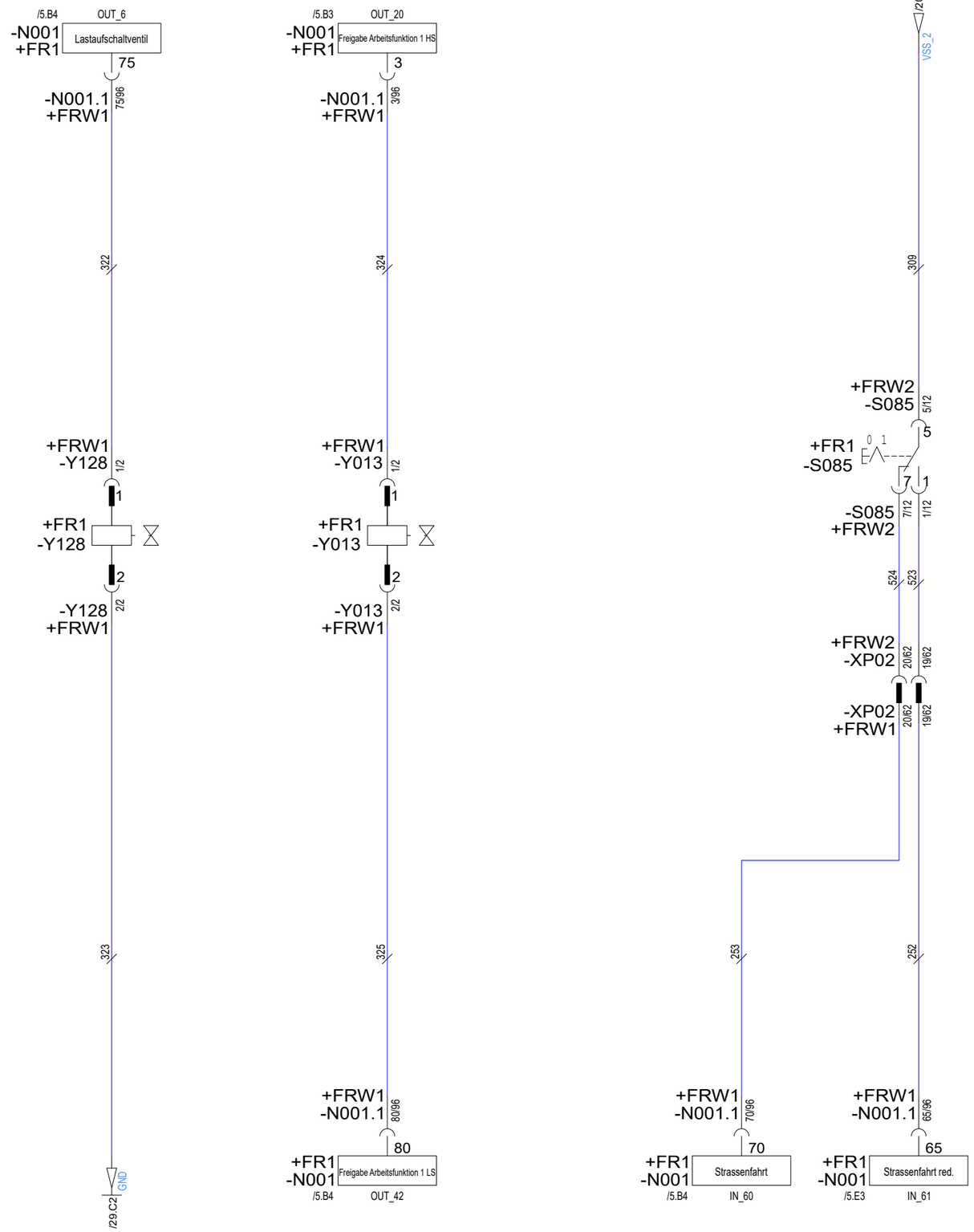
Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00

Message No 20

A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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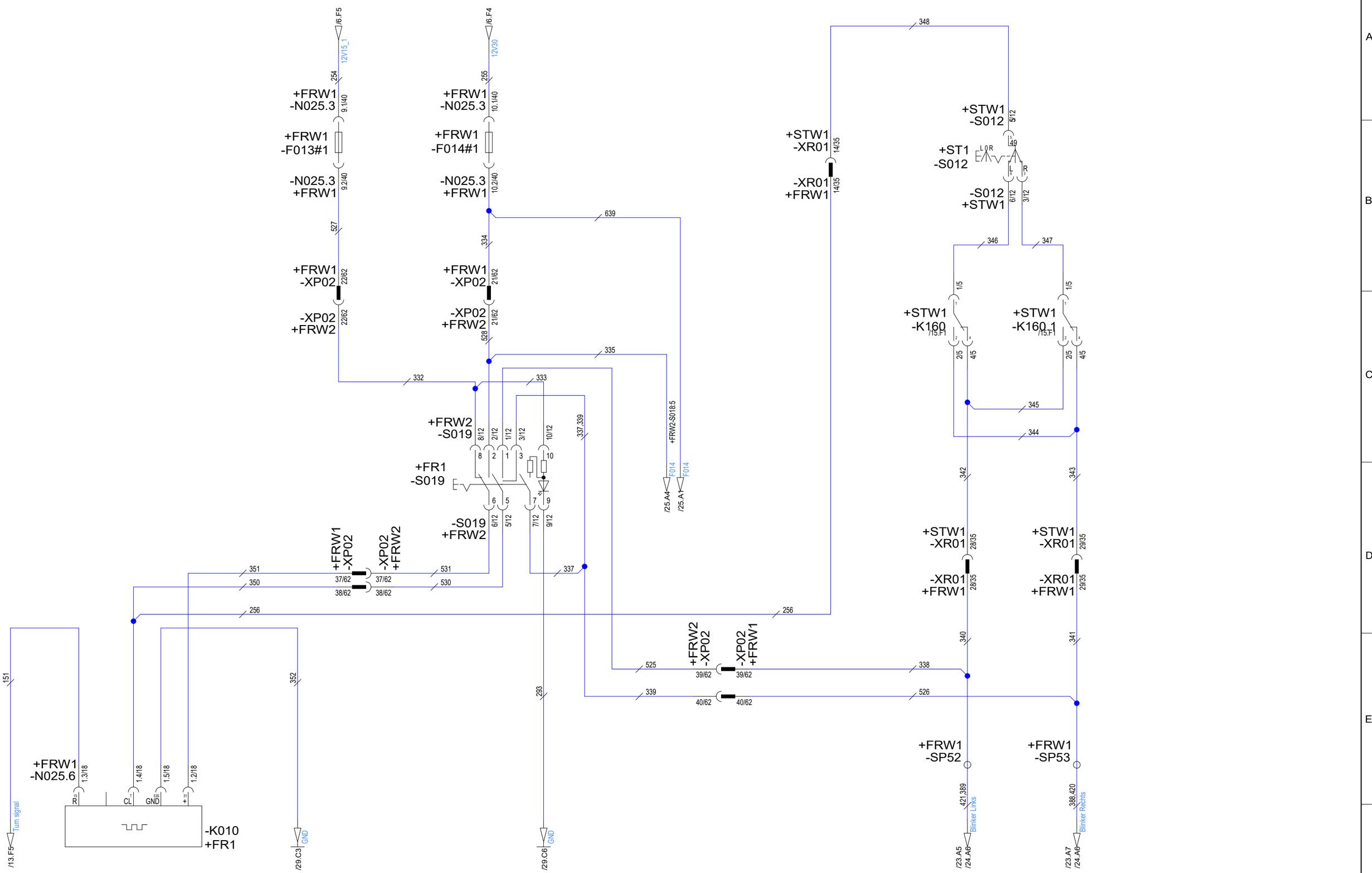
Arbeitsfunktionen

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	21
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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rtro illumination
Turn indicator system

Mat.-Nr. 1000388197 | Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	22
	A3

1564662022

+FRW1 -XR01 9/35
-XR01 9/35 +STW1
355
356
+STW1 -S012 8/12
7/12
+ST1 -S012
0 1 2
15
30
LHH
57/58
56b
56a
-S012 9/12 +STW1
1/12
4/12
353
357
364
365
366
Side markers
/14.F3
+STW1 -XR01 27/35 26/35 25/35
-XR01 +FRW1
310
358
359
621,883
+FRW1 -SP68
+FRW1 -SP67
532
368
362
363
+FRW1 -N025.4 1.3/36
+FRW1 -N025.4 2.3/36
+FRW1 -XP02 23/62
+FRW1 -K062#1
+FRW1 -K063#1
86
85
369
-XP02 +FRW2 23/62
-N025.4 +FRW1 1.5/36
-N025.4 +FRW1 2.5/36
535
314
+FRW1 -SP16
303,300
360
Side markers
/23.A4
+FRW2 -XE10 2/10
Low beam
/12.A4
GND
/29.C3
High beam
/12.A4
F015
/16.A4
/26.A2
+FRW1 -K062
87a
30
87
/23.B6
+FRW1 -K063
87a
30
87
/23.B6
/6.F4
12/30
299
+FRW1 -N025.3 11.1/40
+FRW1 -F015#1
-N025.3 +FRW1 11.2/40
+FRW1 -SP15
354
/23.F1
303,300
Side markers
300
303
+FRW1 -N025.3 1.1/40
+FRW1 -N025.3 2.1/40
+FRW1 -F005#1
+FRW1 -F006#1
-N025.3 +FRW1 1.2/40
-N025.3 +FRW1 2.2/40
375
372
+FRW1 -SP44
+FRW1 -SP45
373
371
370
+FRW1 -XS01 2/8
-XS01 +FBW1 3/8
374
561
562
+FBW1 -SP04
+FBW1 -SP05
377,564
376,563
564
563
Side markers left
/24.A4
+FBW1 -E017 1/2
+FB1 -E017
-E017 +FBW1 2/2
+FBW1 -E018 1/2
+FB1 -E018
-E018 +FBW1 2/2
377
376
+FBW1 -H088 4/6
+FB1 -H088
GND
+FBW1 -H089 4/6
+FB1 -H089
GND
566
565
/22.F6
Blinker Links
389
+FRW1 -XS01 5/8
-XS01 +FBW1 5/8
Side markers right
/24.A5
378
+FBW1 -H088 5/6
+FB1 -H088
GND
/6.F3
/2V15_1
259
+FRW1 -N025.4 7.7/36
+FRW1 -F022#1
-N025.4 +FRW1 7.3/36
261
+FRW1 -N025.4 1.1/36
+FRW1 -K062
/23.F2
-N025.4 +FRW1 1.2/36
265
+FRW1 -SP76
+FBW1 -H088 2/6
+FB1 -H088
GND
-H088 +FBW1 6/6
395
/6.F3
/2V15_1
260
+FRW1 -N025.4 8.8/36
+FRW1 -F023#1
-N025.4 +FRW1 8.4/36
264
+FRW1 -N025.4 2.1/36
+FRW1 -K063
/23.F2
-N025.4 +FRW1 2.2/36
272
860
+FRW1 -SP06
294
380
+FRW1 -XS01 6/8
-XS01 +FBW1 6/8
382
+FBW1 -SP02
+FBW1 -SP03
384
383
385
386
+FBW1 -H088 3/6
+FB1 -H088
GND
+FBW1 -H089 2/6
+FB1 -H089
GND
-H089 +FBW1 6/6
396
+FRW1 -XS01 1/8
-XS01 +FBW1 1/8
381
High beam
/14.F5
Low beam
/14.F6
/22.F7
Blinker Rechts
388
+FRW1 -XS01 4/8
-XS01 +FBW1 4/8
387
+FBW1 -H089 5/6
+FB1 -H089
GND
397
+FRW1 -XS01 7/8
-XS01 +FBW1 7/8
398
-SP01 +FBW1
/29.E3
GND

project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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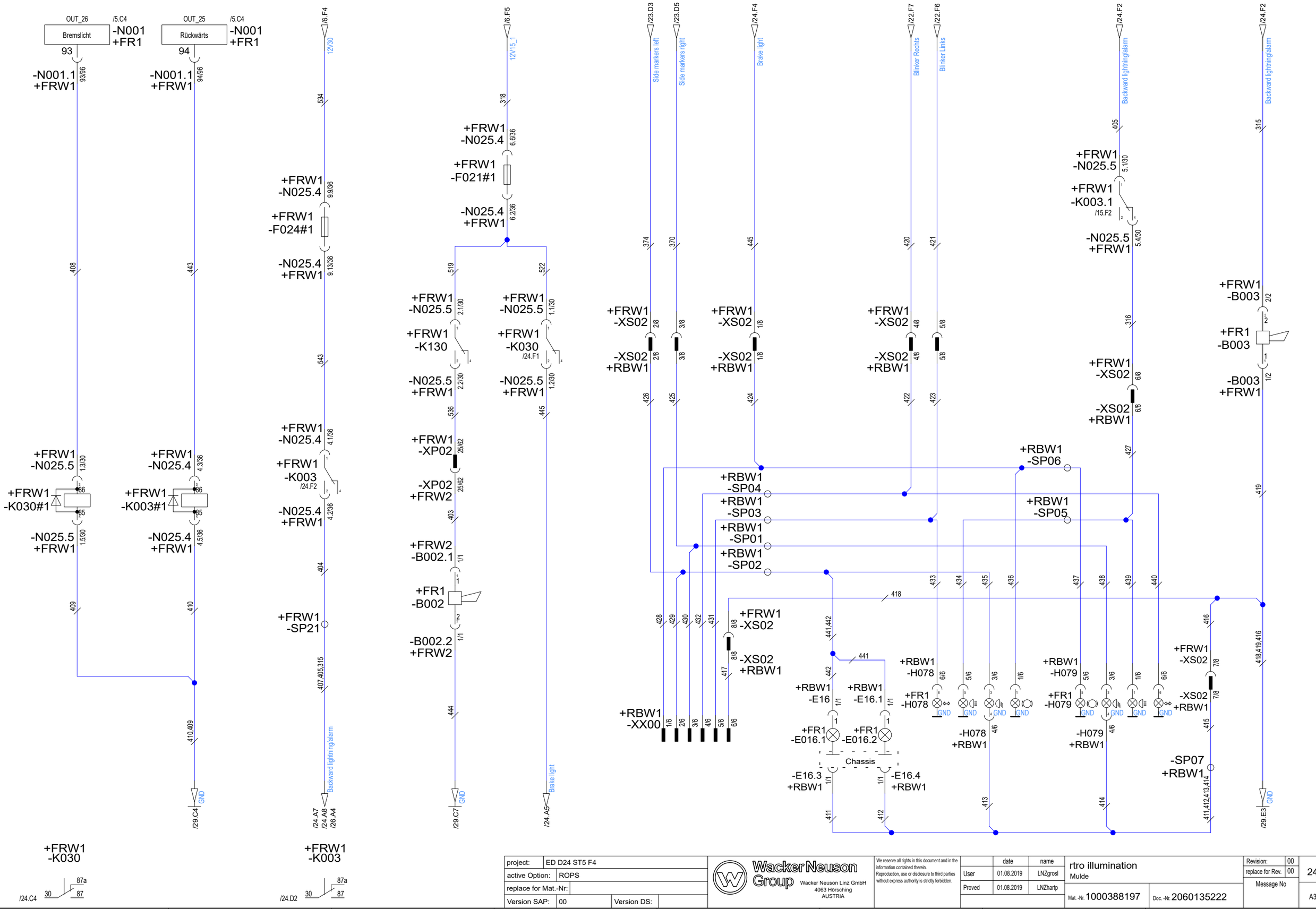
rtro illumination
Front bumper

Mat.-Nr. 1000388197
Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	23
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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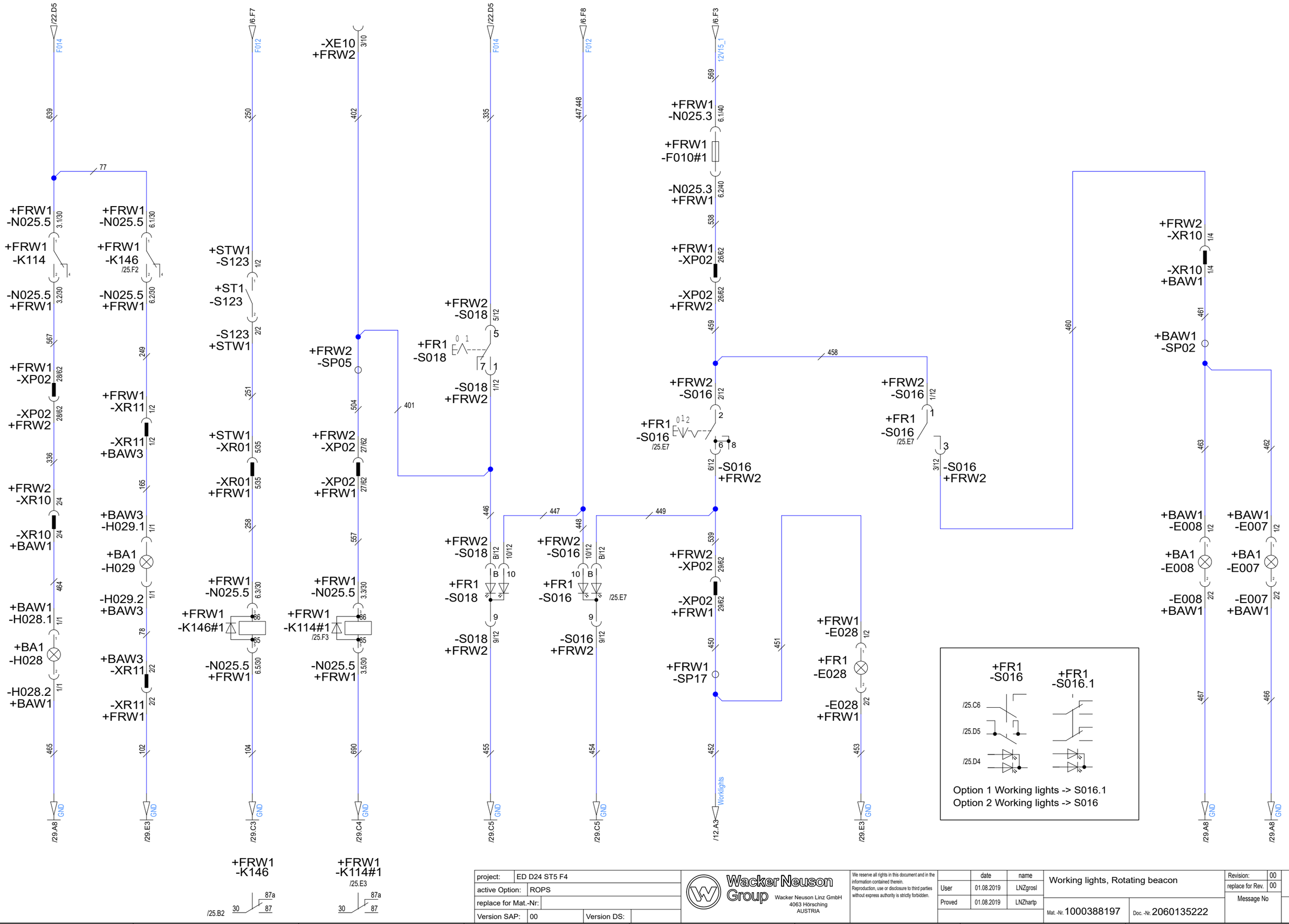
rtro illumination
Mulde

Mat.-Nr: 1000388197
Doc.-Nr: 2060135222

Revision:	00
replace for Rev.	00
Message No	24
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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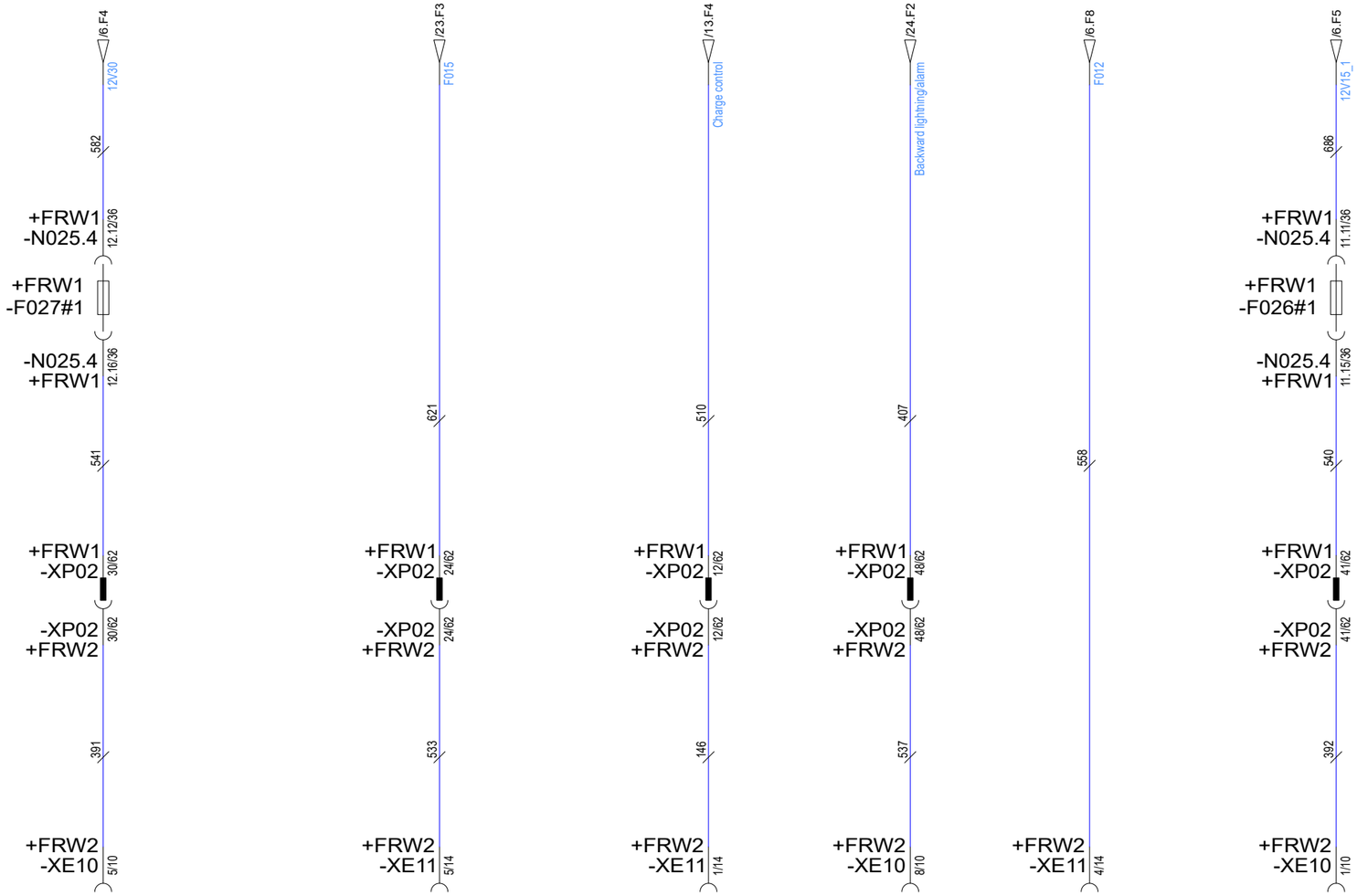
Working lights, Rotating beacon

Mat.-Nr. 1000388197 Doc.-Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	25
	A3

1564662022



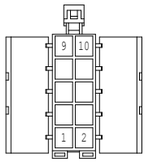
+FRW2
-XE10#4

/26.D6	1	F026	+FRW2-XP02:41	1.50 mm² RD-WH	392
/23.F1	2	Low beam	+FRW2-XP02:23	0.75 mm² GY	360
/25.A3	3	Rotating Beacon	+FRW2-SP05:1	0.75 mm² VT	402
	4				
/26.D1	5	F027	+FRW2-XP02:30	1.50 mm² RD	391
	6				
/26.D7	7	GND	+FRW2-SP03:1	1.50 mm² BK	394
/26.D4	8	Backward lightning/alarm	+FRW2-XP02:48	1.00 mm² GY	537
	9				
	10				

+FRW2
-XE11#5

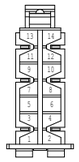
/26.D3	1	Charge control	+FRW2-XP02:12	1.00 mm² PK	146
/16.B1	2	CAN0 High	+FRW2-XP02:14, +FRW2-R810:B	0.75 mm²,0.75 mm² YE,YE	185, 962
/16.B1	3	CAN0 Low	+FRW2-XP02:15, +FRW2-R810:A	0.75 mm²,0.75 mm² GN,GN	184, 963
/26.D5	4	F012	+FRW2-SP02:1	0.75 mm² RD-WH	558
/26.D2	5	F014	+FRW2-XP02:24	0.75 mm² RD	533
/26.E7	6	GND	+FRW2-SP03:1	0.75 mm² BK	393
/8.B2	7	Start signal	+FRW2-S001.2:8	0.75 mm² PK	70
/8.B2	8	Start signal	+FRW2-XP02:4	0.75 mm² PK	503
	9				
	10				
	11				
	12				
	13				
	14				

+FRW2
-XE10#10
/26.A7

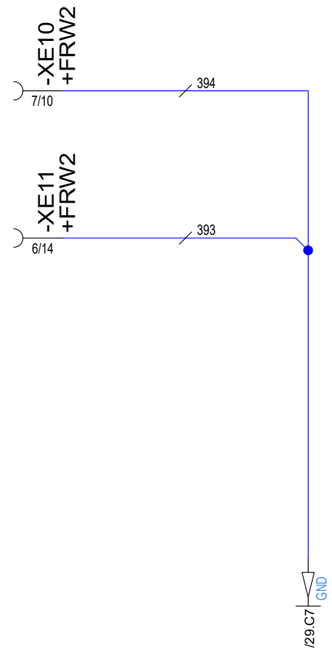


Pin ... Funktion
1 … 12V15 - Option
2 … Abblendlicht
3 … Drehlicht
4 … ---
5 … 12V30 - Option
6 … ---
7 … Masse
8 … Signal Rückwärtsfahrt
9 … ---

+FRW2
-XE11#4
/26.B7



Pin ... Funktion
1 … D+
2 … CAN H
3 … CAN L
4 … 12V15
5 … 12V30
6 … Masse
7 … Relais - Startsignal
8 … Relais - Startsignal
9 … Relais - Spannungsversorgung
10… Relais - Spannungsversorgung



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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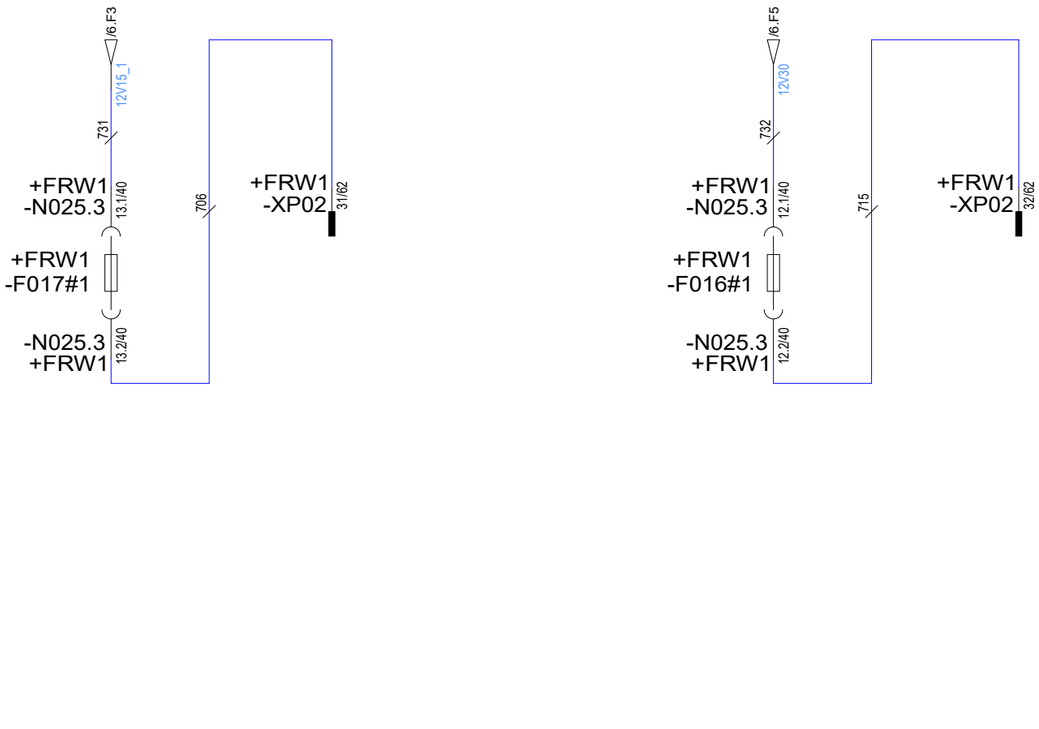
connector option

Mat. -Nr. 1000388197 | Doc. -Nr. 2060135222

Revision: 00
replace for Rev. 00
Message No 26
A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Wiper, Radio, Power outlet

Mat. -Nr. 1000388197

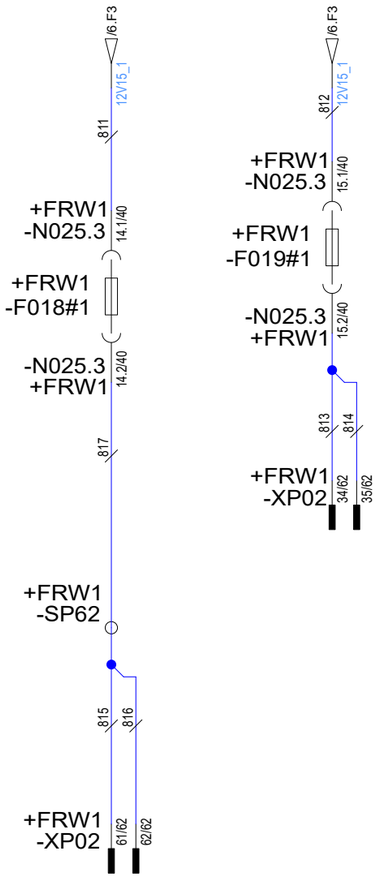
Doc. -Nr. 2060135222

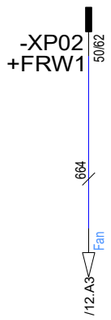
Revision:	00
replace for Rev.	00
Message No	

27

A3

1564662022





project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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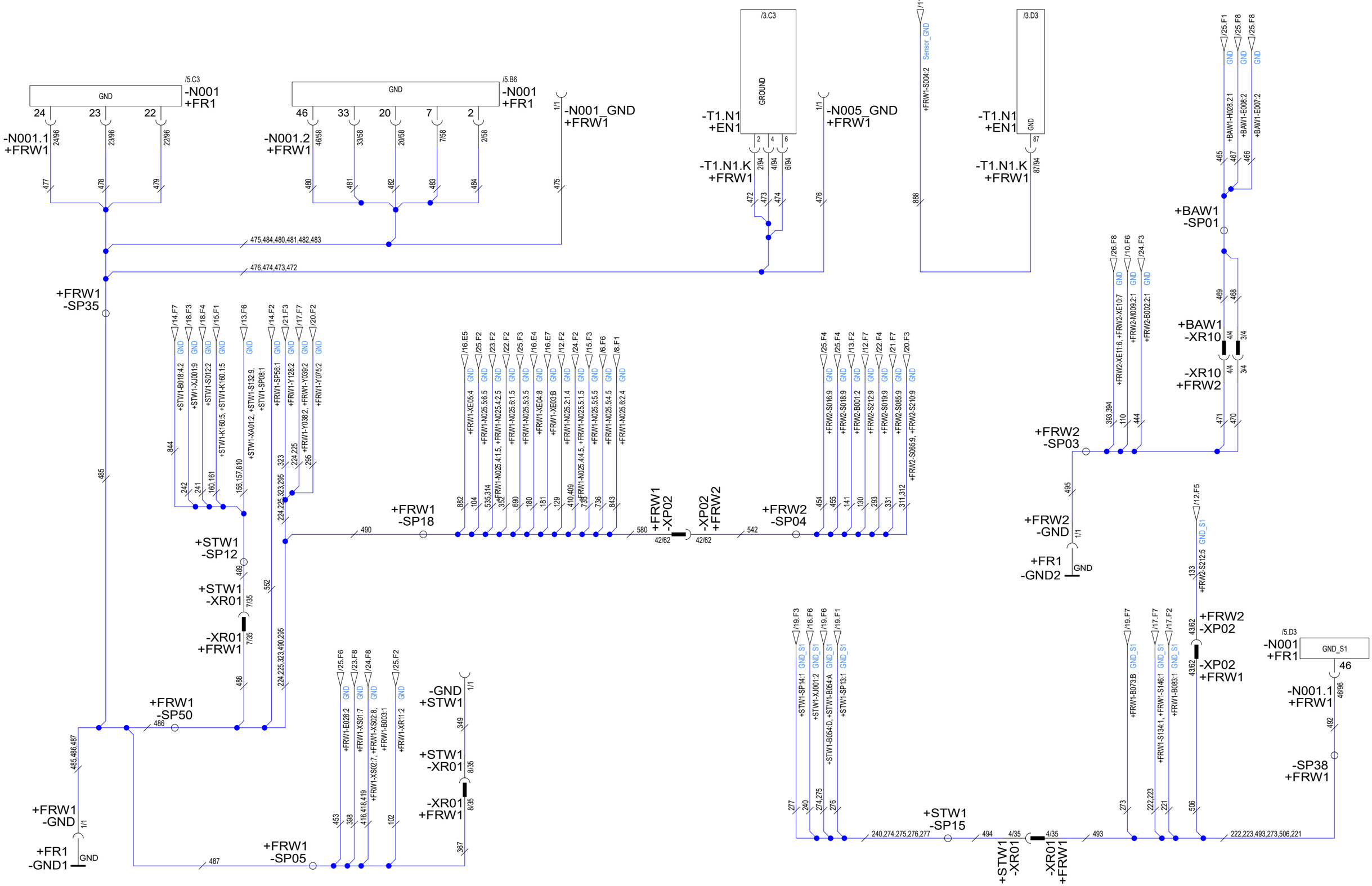
heating, Air conditioning

Mat. -Nr. 1000388197 Doc. -Nr. 2060135222

Revision:	00
replace for Rev.	00
Message No	28
	A3

1564662022



project:	ED D24 ST5 F4		
active Option:	ROPS		
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Earth-Distribution

Mat. -Nr. 1000388197 | Doc. -Nr. 2060135222

Revision: 00
replace for Rev. 00
Message No 29
A3

1564662022

DevDes	Location	Position	device designation	item number
B006	+EN1	/4.A1	Diesel engine	
B020	+EN1	/4.A1	Diesel engine	
B021	+EN1	/4.A1	Diesel engine	
B022	+EN1	/4.A1	Diesel engine	
B023	+EN1	/4.A1	Diesel engine	
B024	+EN1	/4.A1	Diesel engine	
B024	+EN1	/9.E5	Pressure sensor Low pressure Fuel	
B025	+EN1	/4.A1	Diesel engine	
B056	+EN1	/4.A1	Diesel engine	
B059	+EN1	/4.A1	Diesel engine	
B078	+EN1	/4.A1	Diesel engine	
B092	+EN1	/4.A1	Diesel engine	
-B001	+FR1	/13.E2	Fuel gauge	1000307804
-B001	+FRW2	/13.D2	connector Fuel gauge	1000027438
-B002	+FR1	/24.D3	Horn	1000269368
-B002.1	+FRW2	/24.D3	connector Horn	1000383151
-B002.2	+FRW2	/24.E3	connector Horn	1000383151
-B003	+FR1	/24.C8	Reversing warning system	1000170892
-B003	+FRW1	/24.C8	connector Reversing warning system	1000027438
-B007	+FR1	/17.C1	Temperature sensor Hydraulic oil	
-B007	+FRW1	/17.C1	connector Temperature sensor Hydraulic oil	1000027410
-B018	+ST1	/14.C7	Buzzer	
-B018	+STW1		connector Buzzer	1000101071
-B024	+FRW2	/9.E5	connector Pressure sensor Low pressure Fuel	1000322614
-B054	+ST1	/19.A5	Accelerator pedal	1000304814
-B054	+STW1	/19.B5	connector Accelerator pedal	1000308534
-B057	+FR1	/10.E3	Intake air Temperature sensor	
-B057	+FRW2	/10.E3	connector Intake air Temperature sensor	1000126125
-B073	+FR1		Pressure sensor Inching pedal	1000303206
-B073	+FRW1	/19.C7	connector Pressure sensor Inching pedal	1000027429
-B083	+FR1	/17.C2	Engine speed sensor Motor Machine travel	

project:	ED D24 ST5 F4		
active Option:			
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Revision:
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DevDes	Location	Position	device designation	item number
-B083	+FRW1	/17.D2	connector Engine speed sensor Motor Machine travel	1000379245
-BAT1	+FRW1	/6.A5	cable lug main fuse	1000127092
-BAT_GND	+EBW1	/6.E2	cable lug Earth	1000050031
-BAT_GND	+EBW2	/6.D1	Battery terminal Negative	1000089785
-E007	+BA1	/25.D8	Rear working light	1000270919
-E007	+BAW1	/25.D8	connector Rear working light	1000270365
-E008	+BA1	/25.D8	Rear working light	1000270919
-E008	+BAW1	/25.D8	connector Rear working light	1000270365
-E16	+RBW1	/24.E6	connector Numberplate light	1000027384
-E16.1	+RBW1	/24.E6	connector Numberplate light	1000027384
-E016.1	+FR1	/24.E6	Numberplate light	1000117390
-E016.2	+FR1	/24.E6	Numberplate light	1000117390
-E16.3	+RBW1	/24.F6	cable lug Numberplate light	1000096859
-E16.4	+RBW1	/24.F6	cable lug Numberplate light	1000096859
-E017	+FB1	/23.E4	Side marker lights	
-E017	+FBW1	/23.D4	connector Side marker lights	1000027438
-E018	+FB1	/23.E5	Side marker lights	
-E018	+FBW1	/23.D5	connector Side marker lights	1000027438
-E028	+FR1	/25.E6	Working lights	1000270919
-E028	+FRW1	/25.E6	connector Working lights	1000270365
-F001	+FRW1		main fuse 60A	1000098668
-F002	+FRW1		main fuse 80A	1000027321
-F003	+FRW1		main fuse 50A	1000015298
-F004	+FRW1		main fuse 50A	1000015298
-F005	+FRW1		Fuse 7,5A	1000186027
-F006	+FRW1		Fuse 7,5A	1000186027
-F007	+FRW1		Fuse 30A	1000247967
-F008	+FRW1		Fuse 10A	1000114140
-F009	+FRW1		Fuse 5A	1000186026
-F010	+FRW1		Fuse 15A	1000186028
-F011	+FRW1		Fuse 5A	1000186026

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DevDes	Location	Position	device designation	item number
-F012	+FRW1		Fuse 10A	1000114140
-F013	+FRW1		Fuse 10A	1000114140
-F014	+FRW1		Fuse 15A	1000186028
-F015	+FRW1		Fuse 10A	1000114140
-F016	+FRW1		Fuse 10A	1000114140
-F017	+FRW1		Fuse 15A	1000186028
-F018	+FRW1		Fuse 30A	1000247967
-F019	+FRW1		Fuse 20A	1000186029
-F020	+FRW1		Fuse 15A	1000186028
-F021	+FRW1		Fuse 15A	1000186028
-F022	+FRW1		Fuse 10A	1000114140
-F023	+FRW1		Fuse 10A	1000114140
-F024	+FRW1		Fuse 5A	1000186026
-F025	+FRW1		Fuse 15A	1000186028
-F026	+FRW1		Fuse 10A	1000114140
-F027	+FRW1		Fuse 10A	1000114140
-G001	+FRW1	/6.D3	cable lug alternator	1000126891
-G1.1	+FRW1	/13.E4	cable lug alternator	1000110764
-G002	+EBW1	/6.D1	cable lug Battery	1000089783
-G002	+FR1	/6.D1	Battery	1000250323
-GND	+EBW1	/6.E3	Earth	1000050030
-GND	+EBW2	/6.E1	Earth	1000050031
-GND	+FR1	/6.E2	Earth	
-GND	+FRW1	/29.F1	Earth	1000346811
-GND	+FRW2	/29.D7	Earth	1000365194
-GND	+STW1	/29.E3	Earth	
-GND1	+FR1	/29.F1	Earth	
-GND2	+FR1	/29.D7	Earth	
-H028	+BA1	/25.E1	Rotating beacon	1000314938
-H028.1	+BAW1	/25.D1	connector Rotating beacon	1000027435
-H028.2	+BAW1	/25.E1	connector Rotating beacon	1000095370

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DevDes	Location	Position	device designation	item number
-H029	+BA1	/25.D2	Rotating beacon green	
-H029.1	+BAW3	/25.D2	connector Rotating beacon green	1000027435
-H029.2	+BAW3	/25.D2	connector Rotating beacon green	1000095370
-H078	+FR1	/24.E7	Combined rear left light	1000148542
-H078	+RBW1	/24.E7	Combined rear left light	1000027431
-H079	+FR1	/24.E7	Combined rear right light	1000148543
-H079	+RBW1	/24.E7	connector Combined rear right light	1000027431
-H088	+FB1	/23.E5	Combined front left light	HEADLIGHTS
-H088	+FBW1		connector Combined front left light	1000027431
-H089	+FB1	/23.E6	Combined front right light	HEADLIGHTS
-H089	+FBW1		connector Combined front left light	1000027431
K007	+EN1	/4.A1	Diesel engine	
-K001	+FRW1	/12.F2	High-current relay	1000154042
-K003	+FRW1	/24.F2	Switching Relay Machine travel Reverse	1000333390
-K003.1	+FRW1	/15.F2	Switching Relay Machine travel Reverse	1000333390
-K005	+FRW1	/8.F8	High-current relay Preheating system	1000154042
-K010	+FR1	/22.E2	Turn indicator relay	1000235517
-K030	+FRW1	/24.F1	Switching Relay Brake lights	1000333390
-K062	+FRW1	/23.F2	Switching Relay Low beam	1000333390
-K063	+FRW1	/23.F2	Switching Relay high beam	1000333390
-K087	+FR1	/8.D2	time-relay 0,75s	1000099374
-K088	+FRW1	/10.F3	Switching Relay Fuel lift pump	1000333390
-K114	+FRW1		Switching Relay Rotating beacon	1000333390
-K130	+FRW1		Switching Relay Horn	1000333390
-K131	+FRW1		Switching Relay 12V15	1000333390
-K146	+FRW1	/25.F2	Switching Relay Seat belt contact switch	1000333390
-K160	+STW1	/15.F1	relay Switchover Turn indicators	1000125244
-K160	+STW1	/22.B6	relay Switchover Turn indicators	1000100593
-K160.1	+STW1	/15.F1	relay Switchover Turn indicators	1000125244
-K160.1	+STW1	/22.B7	relay Switchover Turn indicators	1000100593
-M001	+EBW2	/6.D2	cable lug Starter Motor	1000050031

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DevDes	Location	Position	device designation	item number
-M009	+EN1	/10.D6	Fuel lift pump	
-M009.1	+FRW2	/10.C6	connector Fuel lift pump	1000383151
-M009.2	+FRW2	/10.D6	connector Fuel lift pump	1000383151
-N001	+FR1	/5.A2	Traction electronics	
-N001.1	+FRW1		connector Traction electronics	1000359522
-N001.2	+FRW1	/7.E3	connector Traction electronics	1000359480
-N001_GND	+FRW1	/29.B4	cable lug Traction electronics	1000096859
-N005_GND	+FRW1	/29.B5	cable lug Traction electronics	1000096859
-N025.1	+FRW1	/6.A5	Bracket relay / Fuse	1000385676
-N025.2	+FRW1	/6.B3	Bracket relay / Fuse	1000385684
-N025.3	+FRW1	/23.B4	Bracket relay / Fuse	1000390875
-N025.4	+FRW1	/23.B6	Bracket relay / Fuse	1000385308
-N025.5	+FRW1	/24.C4	Bracket relay / Fuse	1000329495
-N025.6	+FRW1		Bracket relay / Fuse	1000390874
-P014	+ST1	/4.B6	Radio	1000354816
R001	+EN1	/4.A1	Diesel engine	
-R024	+FRW1	/14.D2	Resistor 220 Ohm	
-R025	+FRW2	/20.A5	connector Resistor 22 Ohm	1000110449
-R040	+STW1	/13.B3	connector Resistor 47 Ohm D+	1000095323
-R810	+FRW2		Bus terminating resistance	1000289850
-R810	+FRW2	/16.B1	Bus terminating resistance	1000027394
-R812	+FRW1		Bus terminating resistance	1000289850
-R812	+FRW1	/16.D1	Bus terminating resistance	1000027394
-R853	+FRW1	/16.D7	Bus terminating resistance	1000027394
-R853	+FRW1		Bus terminating resistance	1000289850
-R890	+STW1	/13.D6	Resistor 1 kOhm	1000312303
-R900	+STW1	/19.D3	Resistor 1 kOhm	1000312303
-R901	+STW1	/19.D1	Resistor 1 kOhm	1000312303
-R902	+FRW2	/20.D3	Resistor 1 kOhm	1000312303
S058	+EN1	/4.A1	Diesel engine	
-S001	+FR1	/6.D5	Preheating start switch	1000184001

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DevDes	Location	Position	device designation	item number
-S001.1	+FRW2	/6.D5	connector Preheating start switch	1000027368
-S001.2	+FRW2	/6.D5	connector Preheating start switch	1000027386
-S004	+FR1	/11.C8	pressure switch Air filter	1000270266
-S004	+FRW1	/11.C8	connector pressure switch Air filter	1000027359
-S008	+EBW1	/6.C1	cable lug Battery master switch	1000050031
-S008	+EBW2	/6.C1	cable lug Battery master switch	1000050031
-S008	+FR1	/6.C1	Battery master switch	1000081674
-S008	+FRW1	/6.C1	cable lug Battery master switch	1000355751
-S008.1	+EBW1	/6.C1	cable lug Battery master switch	1000050031
-S012	+ST1	/22.B7	Steering-column control lever left	1000309164
-S012	+STW1	/23.B1	connector Steering-column control lever left	1000334439
-S016	+FR1	/25.E7	switch Working lights	1000051958
-S016	+FRW2	/25.C6	connector switch Working lights	1000103949
-S016.1	+FR1	/25.E7	switch Working lights	SCHALTER
-S018	+FR1	/25.C4	switch Rotating beacon	SCHALTER
-S018	+FRW2	/25.C4	connector switch Rotating beacon	1000103949
-S019	+FR1	/22.D3	Hazard lights switch	
-S019	+FRW2	/22.C4	connector Hazard lights switch	1000103949
-S058	+FRW2	/9.E8	connector switch water separator	1000027332
-S065	+FR1	/20.C5	switch Parking brake	SCHALTER
-S065	+FRW2	/20.D5	connector switch Parking brake	1000103949
-S085	+FR1	/21.C6	switch Deactivate hydraulic function	SCHALTER
-S085	+FRW2	/21.C6	connector switch Deactivate hydraulic function	1000103949
-S102	+FR1	/15.F3	Plunger switch	1000247989
-S102	+FRW1	/15.C4	connector Plunger switch	1000258052
-S103	+FR1	/15.F3	Plunger switch	1000247989
-S103	+FRW1	/15.C5	connector Plunger switch	1000258052
-S104	+ST1	/19.C1	Operator presence switch	1000325174
-S104	+STW1	/19.C1	connector Operator presence switch	1000183226
-S104.2	+ST1	/19.C3	Operator presence switch	
-S104.2	+STW1	/19.C3	connector Operator presence switch	1000027429

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DevDes	Location	Position	device designation	item number
-S119	+FR1		switch Diesel particulate filter Regeneration	1000353594
-S119	+FRW2	/11.C4	connector switch Diesel particulate filter Regeneration	1000303783
-S123	+ST1	/25.B2	Seat belt contact switch	
-S123	+STW1	/25.B2	connector Seat belt contact switch	1000110449
-S132	+ST1	/13.D8	Seat belt contact switch	1000181773
-S132	+STW1	/13.D8	button Display	1000103949
-S134	+FR1	/17.C6	limit switch Schaltstellung Getriebe	
-S134	+FRW1	/17.C6	connector limit switch Schaltstellung Getriebe	1000027438
-S146	+FR1	/17.C6	limit switch Schaltstellung Getriebe	
-S146	+FRW1	/17.C6	connector limit switch Schaltstellung Getriebe	1000270365
-S210	+FR1	/20.C6	button test Parking brake	1000051965
-S210	+FRW2	/20.D6	connector button test Parking brake	1000103949
-S212	+FR1	/12.B6	switch Auto-Stop	SCHALTER
-S212	+FRW2	/12.C6	connector switch Auto-Stop	1000103949
-S212.1	+FRW2	/12.D6	connector Auto-Stop	1000095336
-SP01	+BAW1	/29.B8	Splice	
-SP01	+FBW1	/23.F8	Splice	
-SP01	+FRW1	/9.B2	Splice	
-SP01	+FRW2	/20.B5	Splice	
-SP01	+RBW1	/24.D5	Splice	
-SP02	+BAW1	/25.C8	Splice	
-SP02	+FBW1	/23.D6	Splice	
-SP02	+FRW1	/9.B3	Splice	
-SP02	+FRW2	/6.E8	Splice	
-SP02	+RBW1	/24.D5	Splice	
-SP03	+FBW1	/23.D6	Splice	
-SP03	+FRW1	/9.D2	Splice	
-SP03	+FRW2	/29.D7	Splice	
-SP03	+RBW1	/24.D5	Splice	
-SP03	+STW1	/19.D2	Splice	
-SP04	+FBW1	/23.D4	Splice	

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DevDes	Location	Position	device designation	item number
-SP04	+FRW1	/9.D3	Splice	
-SP04	+FRW2	/29.D5	Splice	
-SP04	+RBW1	/24.D5	Splice	
-SP04	+STW1	/19.D3	Splice	
-SP05	+FBW1	/23.D4	Splice	
-SP05	+FRW1	/29.F2	Splice	
-SP05	+FRW2	/25.C3	Splice	
-SP05	+RBW1	/24.D7	Splice	
-SP05	+STW1	/18.B3	Splice	
-SP06	+FRW1	/23.C6	Splice	
-SP06	+FRW2	/11.B4	Splice	
-SP06	+RBW1	/24.D7	Splice	
-SP06	+STW1	/13.B6	Splice	
-SP07	+FRW1	/16.D2	Splice	
-SP07	+FRW2	/20.D3	Splice	
-SP07	+RBW1	/24.F8	Splice	
-SP07	+STW1	/13.D6	Splice	
-SP08	+FRW1	/16.D3	Splice	
-SP08	+FRW2	/20.D3	Splice	
-SP08	+STW1	/13.D6	Splice	
-SP09	+STW1	/6.E7	Splice	
-SP10	+FRW1	/20.D2	Splice	
-SP10	+STW1	/18.B7	Splice	
-SP11	+FRW1	/9.C5	Splice	
-SP12	+FRW1	/8.D5	Splice	
-SP12	+STW1	/29.D2	Splice	
-SP13	+FRW1	/7.D2	Splice	
-SP13	+STW1	/19.E1	Splice	
-SP14	+FRW1	/8.D2	Splice	
-SP14	+STW1	/19.E3	Splice	
-SP15	+FRW1	/23.C3	Splice	

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DevDes	Location	Position	device designation	item number
-SP15	+STW1	/29.F6	Splice	
-SP16	+FRW1	/23.E1	Splice	
-SP16	+STW1	/19.D1	Splice	
-SP17	+FRW1	/25.E5	Splice	
-SP17	+STW1	/19.D3	Splice	
-SP18	+FRW1	/29.D3	Splice	
-SP20	+FRW1	/7.D3	Splice	
-SP21	+FRW1	/24.E2	Splice	
-SP22	+FRW1	/6.B7	Splice	
-SP23	+FRW1	/16.B5	Splice	
-SP24	+FRW1	/16.B5	Splice	
-SP25	+FRW1	/16.B3	Splice	
-SP26	+FRW1	/16.B4	Splice	
-SP31	+FRW1	/14.C2	Splice	
-SP32	+FRW1	/13.D4	Splice	
-SP33	+FRW1	/7.D5	Splice	
-SP35	+FRW1	/29.C1	Splice	
-SP36	+FRW1	/15.D8	Splice	
-SP37	+FRW1	/15.B4	Splice	
-SP38	+FRW1	/29.E8	Splice	
-SP44	+FRW1	/23.C4	Splice	
-SP45	+FRW1	/23.C4	Splice	
-SP50	+FRW1	/29.E2	Splice	
-SP52	+FRW1	/22.E6	Splice	
-SP53	+FRW1	/22.E7	Splice	
-SP54	+FRW1	/7.C6	Splice	
-SP55	+FRW1	/14.D2	Splice	
-SP56	+FRW1	/14.D2	Splice	
-SP62	+FRW1	/28.C1	Splice	
-SP63	+FRW1	/16.D7	Splice	
-SP64	+FRW1	/16.D8	Splice	

project:	ED D24 ST5 F4
active Option:	
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DevDes	Location	Position	device designation	item number
-SP65	+FRW1	/16.E2	Splice	
-SP66	+FRW1	/16.E2	Splice	
-SP67	+FRW1	/23.D2	Splice	
-SP68	+FRW1	/23.D2	Splice	
-SP70	+FRW1	/12.D4	Splice	
-SP71	+FRW1	/6.D3	Splice	
-SP72	+FRW1	/6.D5	Splice	
-SP73	+FRW1	/6.B4	Splice	
-SP74	+FRW1	/6.B4	Splice	
-SP75	+FRW1	/6.E5	Splice	
-SP76	+FRW1	/23.C6	Splice	
-SP77	+FRW1	/9.C4	Splice	
-SP78	+FRW1	/9.C5	Splice	
-SP79	+FRW1	/8.B7	Splice	
-T1.B024	+EN1	/9.E5	Pressure sensor Low pressure Fuel	
-T1.G1	+EN1	/6.D3	alternator	
-T1.M1	+EN1	/6.D2	starter	
-T1.N1	+EN1	/3.A2	Diesel engine electronics	
-T1.N1.A	+FRW1		connector Control valve Diesel engine	1000288543
-T1.N1.K	+FRW1	/7.E1	connector Control valve Diesel engine	1000161936
-T1.T1	+EN1	/4.A1	Diesel engine	
-T1.T1.B056	+FRW1	/9.E7	connector Temperature sensor DPF inlet temperature	1000404126
-T1.T1.B059	+FRW1	/9.E7	connector Temperature sensor DPF outlet temperature	1000404137
-T1.T1.B092	+FRW1	/9.E8	Differential pressure diesel particulate filter	1000250920
-V001	+FRW1		Diode	1000398209
-V002	+FRW1		Diode	1000398209
-V003	+FRW1		Diode	1000398209
-V004	+FRW1		Diode	1000398209
-X017	+FRW1	/9.E3	connector Diesel engine	1000260163
-X018	+FRW1	/8.E5	connector Preheating system	1000308732
-XA01	+STW1	/13.C6	connector Radio	1000347631

project:	ED D24 ST5 F4		
active Option:			
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Mat. -Nr. 1000388197 | Doc. -Nr. 2060135222

Revision: | replace for Rev. | Message No

Dev_10

A3

DevDes	Location	Position	device designation	item number
-XA02	+STW1	/13.A4	connector Radio	1000347542
-XE03	+FRW1	/16.F7	connector diagnostics Diesel engine	1000163185
-XE04	+FRW1	/16.F2	connector Vehicle diagnostics	1000312071
-XE05	+FRW1	/16.F4	OBD II	1000325528
-XE10	+FRW2	/26.D6	connector Option	1000104431
-XE11	+FRW2	/26.D3	connector Option	1000100971
-XE11.1	+FRW2		Addition-connector	1000271156
-XJ001	+ST1	/18.C7	Joystick	1000290667
-XJ001	+STW1	/18.C7	connector Joystick	1000334152
-XP02	+FRW1	/6.C8	connector Fuse box	1000303405
-XP02	+FRW2	/6.C8	connector Fuse box	1000260163
-XR01	+FRW1	/19.D5	connector Wendekonsole	1000333982
-XR01	+STW1	/19.D5	connector Wendekonsole	1000333984
-XR10	+BAW1	/25.B8	connector Wiring harness Rollbar	1000104284
-XR10	+FRW2	/25.B8	connector Wiring harness Rollbar / Canopy	1000104286
-XR11	+BAW3	/25.D2	connector Wiring harness Rotating beacon green	1000051981
-XR11	+FRW1	/25.C2	connector Wiring harness Rotating beacon green	1000027410
-XS01	+FBW1	/23.D6	connector Wiring harness illumination Front	1000105117
-XS01	+FRW1	/23.D6	connector Wiring harness illumination Front	1000105113
-XS02	+FRW1	/24.C5	connector Wiring harness illumination rear	1000105113
-XS02	+RBW1	/24.C5	connector Wiring harness illumination rear	1000105117
-XX00	+RBW1	/24.E5	Power outlet Trailer	1000085023
-XX16	+EBW1	/6.D2	cable lug jump start terminal	1000050031
Y060	+EN1	/4.A1	Diesel engine	
Y061	+EN1	/4.A1	Diesel engine	
Y062	+EN1	/4.A1	Diesel engine	
Y063	+EN1	/4.A1	Diesel engine	
Y078	+EN1	/4.A1	Diesel engine	
-Y004	+FR1	/17.C4	Solenoid valve Reverse	
-Y004	+FRW1	/17.C4	connector Solenoid valve Reverse	1000027438
-Y005	+FR1	/17.C3	Solenoid valve Forward	

project:	ED D24 ST5 F4		
active Option:			
replace for Mat.-Nr:			
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Revision:
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Message No
Dev_11
A3

DevDes	Location	Position	device designation	item number
-Y005	+FRW1	/17.C3	connector Solenoid valve Forward	1000270365
-Y013	+FR1	/21.C4	Solenoid valve Deactivate hydraulic function	
-Y013	+FRW1	/21.C4	connector Solenoid valve Deactivate hydraulic function	1000027332
-Y038	+FR1	/17.C7	1st speed range solenoid valve	
-Y038	+FRW1	/17.C7	connector 1st speed range solenoid valve	1000270365
-Y039	+FR1	/17.C8	2nd speed range solenoid valve	
-Y039	+FRW1	/17.C8	connector 2nd speed range solenoid valve	1000027410
-Y043	+FR1	/20.C8	Solenoid valve Parking brake	
-Y043	+FRW1	/20.C8	connector Solenoid valve Parking brake	1000027438
-Y070	+FRW1	/15.C8	connector Solenoid valve Switchover Steering system	1000027410
-Y075	+FR1	/20.E2	Solenoid valve orifice	
-Y075	+FRW1	/20.D2	connector Solenoid valve orifice	1000027410
-Y098	+FR1	/17.C5	Solenoid valve Hydraulic motor adjustment	
-Y098	+FRW1	/17.C5	connector Solenoid valve Hydraulic motor adjustment	1000270365
-Y128	+FR1	/21.C3	Load override valve	
-Y128	+FRW1	/21.C3	connector Load override valve	1000027410
-Y155	+FRW1	/15.C7	connector Solenoid valve Switchover Steering system	1000027332

project:	ED D24 ST5 F4		
active Option:			
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

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Revision:	
replace for Rev.	
Message No	

Dev_12

A3

Options

8 Options

8.1 Immobilizer (option)

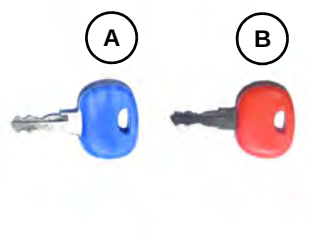

Fig. 186: Drive interlock

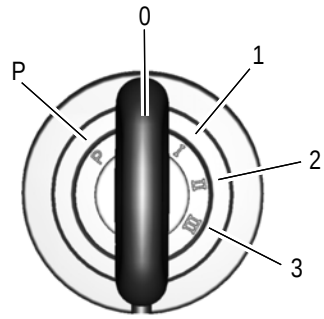

Fig. 187:

A = starting key (blue)

For starting the vehicle. Scope of delivery includes 2 keys.

B = master key (red)

Notice!

Store the master key in a safe place. It is only used for coding new keys.
All coded keys are deleted if the key remains in position 1 for more than 20 seconds.
A new immobilizer must be installed if the master key is lost.

The machine can be started without performing any further settings.

Coding a new key

☞ *Insert master key **B** in the starter.*

☞ *Turn the starting key to position **1** for a maximum 5 seconds.*

☞ *Turn the starting key to position **0**, remove master key **B** and put it at least 50 cm away from the starter.*

☞ *Now insert the new key or the key requiring coding in the starter and turn it to position **1** within 15 seconds.*

☞ *This action registers the key.*

The procedure is automatically canceled if no key requiring coding is detected by the system within 15 seconds. Several keys requiring coding can be inserted one after another in the starter. Each key must then remain at least 1 second in position **1**. Coding can be performed for a maximum 10 keys.

Deleting coded keys

Deleting coded keys is necessary whenever a coded key is lost.

The master key code is not deleted during deletion.

☞ *Insert master key **B** in the starter.*

☞ *Turn the starting key to position **1** for a minimum 20 seconds.*

☞ *All coded keys are deleted after 20 seconds, and all existing keys can be re-coded.*

8.2 Telematics without CAN

Variant 1

Fig. 188: Telematics without CAN

After installing the Telematic system, module **A** is enabled and sends data to the Telematic web portal.

Technical data

- This works in 90 countries with currently 160 roaming partners with a GPRS data network.
- The GPS receiver registers the movements and has a low power consumption.
- Backup battery for additional safety with an autonomy time of 48 – 96 hours.
- Supplies additional information via the web-based Wacker Neuson Telematic software.
- Module has 3 digital inputs and one digital output of which 2 digital inputs (engine and starter) are assigned at the factory. One input and output is freely assignable with other functions, such as for monitoring an additional heating system or particulate-soot filter or controlling these functions via SMS.
- Certified according to IP67.

Connections

Item	Connection	Color	Description
1	Ground	bl	-
5	Digital input 1	wh	Engine START/STOP signal
6	Digital input 2	bn	Ignition on / off signal
7	Digital input 4	pk	Not assigned at the factory. Can be used for determining an operating state.
9	Digital output 1	ye	The digital output of the module can be used for enabling/disabling additional functions via SMS, such as an auxiliary heater. Important: Selection is only possible for comfort functions. Remote-control of safety-relevant functions or functions affecting handling is prohibited under all circumstances.
12	Power supply	rd	12 V permanent plus via a series-connected 1 ampere high-speed fuse

Functional check/diode

LED mode	Operating state
Steady green light with short, red flashing interruptions	The unit is connected with the GSM network and the GPS module is navigating > all is OK
No light	The unit is not connected with a power source
Steady red light	The unit is supplied with power, but is not connected with a GSM network
Short red flashing	The unit is supplied with power and is connected with a GSM network
Constant red and green light	The unit is supplied with power, but is not connected with a GSM network. The GPS module has a valid satellite position.

8.3 Telematics with CAN

Variant 2

Fig. 189: Telematics with CAN

After installing the Telematic system, module **A** is enabled and sends data to the Telematic web portal.

Technical data

- This works in 90 countries with currently 160 roaming partners with a GPRS data network.
- The GPS receiver registers the movements and has a low power consumption.
- Backup battery for additional safety with an autonomy time of 48 – 96 hours.
- Supplies additional information via the web-based Wacker Neuson Telematic software.
- Module has 3 digital inputs and one digital output of which 2 digital inputs (engine and starter) are assigned at the factory. One input and output is freely assignable with other functions, such as for monitoring an additional heating system or particulate-soot filter or controlling these functions via SMS.
- Certified according to IP67.

Connections

Item	Connection	Color	Description
1	Ground	bl	-
2	CAN High	org	Connection for CAN high
4	CAN Low	light blue	Connection for CAN low
5	Digital input 1	wh	Engine START/STOP signal
6	Digital input 2	bn	Ignition on / off signal
7	Digital input 4	pk	Not assigned at the factory. Can be used for determining an operating state.
9	Digital output 1	ye	The digital output of the module can be used for enabling/disabling additional functions via SMS, such as an auxiliary heater. Important: Selection is only possible for comfort functions. Remote-control of safety-relevant functions or functions affecting handling is prohibited under all circumstances.
12	Power supply	rd	12 V permanent plus via a series-connected 1 ampere high-speed fuse

Functional check/diode

LED mode	Operating state
Steady green light with short, red flashing interruptions	The unit is connected with the GSM network and the GPS module is navigating > all is OK
No light	The unit is not connected with a power source
Steady red light	The unit is supplied with power, but is not connected with a GSM network
Short red flashing	The unit is supplied with power and is connected with a GSM network
Constant red and green light	The unit is supplied with power, but is not connected with a GSM network. The GPS module has a valid satellite position.

Diagnosis code list (SPN)

9 Diagnosis code list (SPN)

Notice!

Contact technical support if the display element displays error codes (SPNs) that are not in the following list!

Description	BMK
Sensors, signal transmitters (electrical system)	B
Supply contacts (electrical system)	BAT
Control valves (hydraulics)	C
Electronics (electrical system)	D
Lights (electrical diagram)	E
Fuse (electrical system)	F
Supply (electrical system)	G
Ground (electrical system)	GND
Indicator lights (electrical system)	H
Jumper link (electrical system)	Y
Relays (electrical system)	K
Auxiliary components (hydraulics)	L
Drives (electrical system)	M
Electronics (electrical system) (20 x per control unit)	N
Instruments (electrical system)	P
Filters (hydraulics)	Q
Resistors (electrical system)	R
Switches (electrical system)	S
Connection points	SP
Units (hydraulics)	T
Amplifier (electrical system)	U
Diodes (electrical system)	V
Antenna (electrical system)	W
Connectors (electrical system)	X
Socket (electrical system)	XX
Solenoids (electrical system)	Y
Cylinders (hydraulics)	Z

Description	BMK	SPN range	Controller	Source address [hex]
Start procedure				
Starter plus 2 not available	-	17		
Starter was actuated for longer than 15 seconds	-	18		
Module N16 does not respond (no power supply)	-	19		
Engine – Perkins/Deutz			**Also refer to Electronics N**	
Engine error (diesel engine electronics)	N005	27-6000		
Contact the technical support for detailed engine failure information (SPN)!				

Sensors, signal transmitters (electrical system)	B	517000-517399		
Fuel indicator	B001	517000		
Horn	B002	517001		
Reversing warning system	B003	517002		
Front axle steering sensor	B004	517003		
Rear axle steering sensor	B005	517004		
Engine temperature sensor	B006	517005		
Hydraulic oil temperature sensor	B007	517006		
Load sensor – strain gage	B008	517007		
Speed sensor	B009	517008		
Diesel engine speed	B010	517009		
Loudspeaker	B011	517010		
Loudspeaker	B012	517011		
Proximity switch	B013	517012		
Engine preheating system temperature sensor	B014	517013		
Coolant level sensor	B015	517014		
Fan control temperature sensor	B016	517015		
Gearbox input speed transmitter	B017	517016		
Buzzer	B018	517017		
Quickhitch buzzer	B019	517018		
Camshaft speed	B020	517019		
Charge air sensor (temperature/pressure)	B021	517020		
Rail/fuel pressure sensor	B022	517021		
Engine oil pressure sensor	B023	517022		
Fuel low pressure sensor	B024	517023		
Crankshaft speed	B025	517024		
Telescopic boom sensor (extended, rear)	B026	517025		
Telescopic boom sensor (extended, middle)	B027	517026		
Position pickup for bucket repositioning	B028	517027		
Particulate filter temperature sensor	B029	517028		
Particulate filter temperature sensor	B030	517029		
Outside temperature sensor	B031	517030		
Cabin temperature sensor	B032	517031		
Air duct temperature sensor	B033	517032		
Fan control temperature sensor	B034	517033		
Pressure sensor (exhaust gas back pressure after turbo-charger)	B035	517034		
Exhaust gas mass flow sensor	B036	517035		
Diesel particulate filter differential pressure	B037	517036		
DPF input temperature sensor	B038	517037		
Buzzer option	B039	517038		
Extend/retract boom scroll wheel (Hall sensor)	B040	517039		
3rd control circuit scroll wheel (Hall sensor)	B041	517040		
Forward/reverse travel scroll wheel (Hall sensor)	B042	517041		
Position sensor spool I	B043	517042		

Position sensor spool II	B044	517043		
Position sensor spool III	B045	517044		
Position sensor spool IV	B046	517045		
Position sensor spool V	B047	517046		
Position sensor spool VI	B048	517047		
Position sensor spool VII	B049	517048		
Travel direction identification position sensor	B050	517049		
Power brake sensor	B051	517050		
Compressed-air braking system sensor	B052	517051		
Atmospheric pressure sensor	B053	517052		
Accelerator pedal	B054	517053		
Charge-air pressure sensor	B055	517054		
Temperature sensor DOC intake temperature	B056	517055		
Intake air temperature sensor	B057	517056		
Exhaust chamber temperature sensor	B058	517057		
DPF outlet temperature sensor	B059	517058		
Control rod sensor	B060	517059		
Delta P sensor	B061	517060		
Weighing system proximity switch	B062	517061		
Weighing system proximity switch	B063	517062		
Piston base side pressure switch	B064	517063		
Piston rod side pressure switch	B065	517064		
Overload sensor	B066	517065		
Automatic engine speed setting sensor	B067	517066		
Fan speed sensor	B068	517067		
Swivel boom scroll wheel (Hall sensor)	B069	517068		
Length measuring sensor 1	B070	517069		
Length measuring sensor 2	B071	517070		
Loading rocker/boom angle sensor	B072	517071		
Inching pedal pressure sensor	B073	517072		
Auxiliary hydraulics scroll wheel (Hall sensor)	B074	517073		
Attachment control scroll wheel (Hall sensor)	B075	517074		
Lambda sensor	B076	517075		
EGR pressure sensor	B077	517076		
EGR GAS temperature sensor	B078	517077		
AIR temperature sensor	B079	517078		
Exhaust gas temperature sensor	B080	517079		
Fuel temperature	B081	517080		
Parking brake pressure sensor	B082	517081		
Engine driving speed sensor	B083	517082		
Engine driving temperature sensor	B084	517083		
Engine working speed sensor	B085	517084		
Engine working temperature sensor	B086	517085		
Front camera	B087	517086		
Reversing camera	B088	517087		

Valve actuator position sensor	B089	517088		
Exhaust gas temperature before SCR	B090	517089		
Urea pressure after pump	B091	517090		
DS DPF pressure	B092	517091		
NOx sensor after SCR cat	B093	517092		
NOx sensor before SCR cat	B094	517093		
Urea quality, level, temperature	B095	517094		
Delta P Venturi	B096	517095		
EGR temperature after Venturi	B097	517096		
SWS pressure sensor	B098	517097		
Stabiliser blade joystick	B099	517098		
Swivel stabiliser blade joystick	B100	517099		
Fuel pump level sensor	B101	517100		
Rear three-point linkage load pressure sensor	B102	517101		
Current sensor	B103	517102		
Speed sensor, PTO shaft (CAN)	B104	517103		0x52
Joystick, rear linkage three point	B105	517104		
Pressure sensor, air conditioning	B106	517105		
Pressure sensor, brake	B107	517106		
Urea level, temperature	B108	517107		
DEF catalytic converter inlet temperature sensor signal	B109	517108		
DEF catalytic converter outlet temperature sensor signal	B110	517109		
NH3 ammonia sensor	B111	517110		
Battery acid filling level	B112	517111		
Manual throttle	B113	517112		
Bucket repositioning angle of rotation (signal 2)	B028.2	517113		
Rear three-point linkage joystick (signal 2)	B105.2	517114		
Sensor steering movement	B114	517115		
Position sensor activity potentiometer	B115	517116		
Supply contacts (electrical system)	**BAT**	**517400-517449**		
Watchdog	BAT1	517400		
Reference voltage	BAT2	517401		
Injection channel	BAT3	517402		
Battery voltage	BAT4	517403		
Sensor voltage	BAT5	517404		
Forward-reverse control	BAT6	517405		
Inching pedal	BAT7	517406		
Creep gear potentiometer (accelerator pedal)	BAT8	517407		
Hydraulic pump speed sensor	BAT9	517408		
Electronics (electrical system)	**D**	**517450-517499**	**or see also Electronics N**	
Steering electronics	D001	516700 - 516799		0x1

Control lever electronics	D002	516500 - 516549	Joystick (right)	0xEB
			Joystick (right) (redundant)	0xED
		516550 - 516599	Joystick (left)	0x92
			Joystick (left) (redundant)	0x93
CAN keyboard 1	D003	519951 - 520000		0xC8
CAN keyboard 2	D004	520001 - 520050		0xC9
CAN keyboard 3	D005	520051 - 520100		0xCA
CAN keyboard 4	D006	520101 - 520150		0xCB
CAN keyboard 5	D007	520151 - 520200		0xCC
CAN keyboard 6	D008	520201 - 520250		0xCD
CAN keyboard track excavators	D009	520251 - 520300		0x50
CAN keyboard mobile excavators	D010	520301 - 520350		0x51
CAN keyboard 7 lights	D011	520351 - 520400		0x53
Lights (electrical diagram)	**E**	**517500-517549**		
Front right side marker light	E001	517500		
Rear right light	E002	517501		
Front left parking light	E003	517502		
Rear left light	E004	517503		
High, low beam (right)	E005	517504		
High, low beam (left)	E006	517505		
Rear working light	E007	517506		
Rear working light	E008	517507		
Front working lights	E009	517508		
Front working lights	E010	517509		
Boom working light	E011	517510		
Chassis/telescopic boom working light	E012	517511		
Chassis/telescopic boom working light	E013	517512		
Interior light	E014	517513		
12 V power outlet	E015	517514		
Numberplate light	E016	517515		
Clearance light	E017	517516		
Clearance light	E018	517517		
Side working light	E019	517518		
Side working light	E020	517519		
Side working light	E021	517520		
Supply (electrical system)	**G**	**517550-517599**		
Generator	G001	517550		
Battery	G002	517551		
Transformer	G003	517552		
Indicator lights (electrical system)	**H**	**517600-517799**		
High beam indicator light	H001	517600		
Preheating indicator light	H002	517601		
Engine temperature indicator light	H003	517602		
Engine oil pressure indicator light	H004	517603		

Alternator charge function indicator light	H005	517604		
Air filter indicator light	H006	517605		
Hydraulic oil filter indicator light	H007	517606		
Hydraulic oil temperature indicator light	H008	517607		
Safe load indicator light	H009	517608		
Hose burst valve indicator light	H010	517609		
3rd control circuit indicator light	H011	517610		
Differential lock indicator light	H012	517611		
Check four-wheel steering	H013	517612		
Front axle steering indicator light	H014	517613		
Synchronism indicator light	H015	517614		
Forward travel indicator light	H016	517615		
Reverse travel indicator light	H017	517616		
Check parking brake	H018	517617		
Pressure accumulator indicator light (brake)	H019	517618		
Brake lights	H020	517619		
Brake lights	H021	517620		
Machine turn indicator light	H022	517621		
Rear attachment turn indicator light	H023	517622		
Front right turn indicator	H024	517623		
Rear right turn indicator	H025	517624		
Front left turn indicator	H026	517625		
Rear left turn indicator	H027	517626		
Rotating beacon	H028	517627		
Rotating beacon	H029	517628		
Reversing light	H030	517629		
Reversing light	H031	517630		
Vario indicator light	H032	517631		
Water separator indicator light	H033	517632		
Coolant level indicator light	H034	517633		
Crab steering indicator light	H035	517634		
Hydraulic oil level indicator light	H036	517635		
Travel electronics indicator light	H037	517636		
Oscillating axle interlock indicator light	H038	517637		
Rear stabilizer leg indicator light	H039	517638		
Front stabilizer leg indicator light	H040	517639		
Right stabilizer leg indicator light	H041	517640		
Left stabilizer leg indicator light	H042	517641		
Indicator light hydraulic functions OFF (overload)	H043	517642		
Diesel engine electronics indicator light	H044	517643		
Front socket indicator light	H045	517644		
Diesel particulate filter indicator light	H046	517645		
Caution indicator light	H047	517646		
Front axle sensor indicator light	H048	517647		
Rear axle sensor indicator light	H049	517648		

Boost pressure indicator light	H050	517649		
Manual throttle indicator light	H051	517650		
High-speed Vgmax indicator light (hare)	H052	517651		
Creep-gear Vgmin indicator light (snail)	H053	517652		
Indicator light (4 wheel drive switched on)	H054	517653		
Indicator light (front axle drive switched on)	H055	517654		
Indicator light (SCR lamp ash accumulation)	H056	517655		
Charge-air temperature indicator light	H057	517656		
Engine operation indicator light	H058	517657		
Maintenance display	H059	517658		
Indicator light (3rd control circuit switched over)	H060	517659		
Confirmation indicator light	H061	517660		
Indicator light (tipping trailer/coupling volume setting)	H062	517661		
Indicator light (volume setting of front additional control circuit)	H063	517662		
Indicator light (volume setting of rear additional control circuit)	H064	517663		
Indicator light (volume setting of continuous operation of 3rd control circuit)	H065	517664		
Indicator light (volume setting of 3rd control circuit joystick)	H066	517665		
Fuel consumption indicator light	H067	517666		
Error indicator light	H068	517667		
Regeneration indicator light	H069	517668		
Inside cabin pressure indicator light	H070	517669		
Bucket mode indicator light	H071	517670		
Fork-lift mode indicator light	H072	517671		
Crane mode indicator light	H073	517672		
Tortoise indicator light	H074	517673		
Vertical lift indicator light	H075	517674		
Combined front left light	H076	517675		
Combined front right light	H077	517676		
Combined rear left light	H078	517677		
Combined rear right light	H079	517678		
Indicator light (red)	H080	517679		
Indicator light (yellow)	H081	517680		
Indicator light (green)	H082	517681		
Indicator light for bucket repositioning	H083	517682		
Automatic coupling indicator light	H084	517683		
Indicator light for electrical function I	H085	517684		
Indicator light for electrical function II	H086	517685		
Indicator light for compressed air brake on trailer	H087	517686		
Front left headlight	H088	517687		
Front right headlight	H089	517688		
Flashing position light, left	H090	517689		
Flashing position light, right	H091	517690		
ECO mode check	H092	517691		
Inverter temperature check	H093	517692		
AdBlue level red check	H094	517693		

AdBlue level yellow check	H095	517694		
Relays (electrical system)	**K**			
High-current relay	K001	519750		
High-current relay	K002	519751		
Reverse machine travel switching relay	K003	519752		
Forward machine travel switching relay	K004	519753		
High current relay, preheating	K005	519754		
Preheating time lag relay	K006	519755		
Start high-current relay	K007	519756		
Time lag relay 1s cut-off solenoid	K008	519757		
Cut-off solenoid switching relay	K009	519758		
Turn indicator relay	K010	519759		
Air conditioning switching relay	K011	519760		
Condenser switching relay	K012	519761		
Condenser switching relay (1st/2nd speed)	K013	519762		
Vario time-lag relay	K014	519763		
Vario switching relay	K015	519764		
Front power outlet switching relay	K016	519765		
Switching relay (unlock)	K017	519766		
Switching relay (lock)	K018	519767		
Switching relay (extend telescopic boom)	K019	519768		
Switching relay (retract telescopic boom)	K020	519769		
Switching relay, differential lock	K021	519770		
Switching relay, load stabiliser	K022	519771		
Switching relay – wiper (1st speed)	K023	519772		
Switching relay, wiper stage 2	K024	519773		
Intermittent-wipe relay	K025	519774		
Step-by-step relay	K026	519775		
Time lag relay 5 min	K027	519776		
Bucket repositioning switching relay	K028	519777		
Diesel engine valves switching relay	K029	519778		
Brake lights switching relay	K030	519779		
Fuel preheater switching relay	K031	519780		
Reversing fan switching relay	K032	519781		
Rear window heating high current relay	K033	519782		
Switching relay for overload cut-off	K034	519783		
Switching relay for overload cut-off	K035	519784		
Machine travel signals switching relay	K036	519785		
Machine travel signals switching relay	K037	519786		
Options switching relay	K038	519787		
Preheating indicator light switching relay	K039	519788		
Steering sensor relay	K040	519789		
Road travel relay	K041	519790		
Engine electronics switching relay	K042	519791		
Switching relay (joystick signal changeover)	K043	519792		

Switching relay (joystick signal changeover)	K044	519793		
Additional function switching relay	K045	519794		
Additional function switching relay	K046	519795		
Working light switching relay	K047	519796		
Working light switching relay	K048	519797		
Working light switching relay	K049	519798		
Working light switching relay	K050	519799		
Time-lag relay (automatic engine speed setting)	K051	519800		
Mini SPC switching relay	K052	519801		
Fan switching relay	K053	519802		
Hose burst valve switching relay	K054	519803		
Brake lights switching relay	K055	519804		
Switching relay, load stabiliser	K056	519805		
Compressed air braking system switching relay	K057	519806		
1st/2nd speed switching relay	K058	519807		
Manual throttle switching relay	K059	519808		
Manual throttle switching relay	K060	519809		
Start interlock switching relay	K061	519810		
Low beam switching relay	K062	519811		
High beam switching relay	K063	519812		
Time lag relay 5 min (immobilizer)	K064	519813		
Time lag relay 5 min (immobilizer)	K065	519814		
Immobilizer switching relay	K066	519815		
Immobilizer switching relay	K067	519816		
Switching relay for overload cut-off	K068	519817		
Switching relay for overload cut-off	K069	519818		
Switching relay (diesel engine runs) (D+)	K070	519819		
Coolant level switching relay	K071	519820		
Auxiliary heating switching relay (night heater)	K072	519821		
Switching relay for operator presence switch 5 s	K073	519822		
3rd control circuit release	K074	519823		
Continuous operation of 3rd control circuit	K075	519824		
High-current relay	K076	519825		
Manual throttle switching relay	K077	519826		
Switching relay, differential lock	K078	519827		
Tilt cylinder lock switching relay	K079	519828		
Switching relay for overload cut-off	K080	519829		
Switching relay for overload cut-off	K081	519830		
Switching relay for lowering throttle valve	K082	519831		
End position switching relay	K083	519832		
End position switching relay	K084	519833		
Angle detection switching relay	K085	519834		
PreSafe switching relay	K086	519835		
Time-lag relay (general)	K087	519836		
Fuel pump switching relay	K088	519837		

DPF pump switching relay	K089	519838		
DPF glow plug switching relay	K090	519839		
Parking brake switching relay	K091	519840		
Rear wiper switching relay	K092	519841		
Side wiper switching relay	K093	519842		
Switching relay for power supply of weighing system	K094	519843		
Switching relay chute FF (G)	K095	519844		
Switching relay chute FF (H)	K096	519845		
Switching relay chute RIGHT (C)	K097	519846		
Switching relay chute LEFT (D)	K098	519847		
Switching relay for switch position II	K099	519848		
Switching relay chute DOWN (F)	K100	519849		
Switching relay chute UP (E)	K101	519850		
Push button step-by-step relay (J)	K102	519851		
Air-conditioning compressor switching relay	K103	519852		
Switching relay for operator presence switch	K104	519853		
Parking brake switching relay	K105	519854		
Start repeat interlock switching relay	K106	519855		
Throttle orifice switching relay	K107	519856		
3rd control circuit release	K108	519857		
Roll-in stop relay	K109	519858		
Switching relay for reversing fan 2	K110	519859		
Switching relay for oscillating axle interlock	K111	519860		
Manual inching switching relay	K112	519861		
Start switching relay	K113	519862		
Rotating beacon	K114	519863		
Mirror heating	K115	519864		
Battery monitor	K116	519865		
Main contactor/pin power supply	K117	519866		
Main contactor/pin ground		519895		
Main contactor monitoring contact 1		519901		
Main contactor monitoring contact 2		519902		
Swivel boom relay	K118	519867		
Engine stop relay	K119	519868		
Relay I charging circuit	K120	519869		
Relay II charging circuit	K121	519870		
Rear wiper relay	K122	519871		
Relay (rear washer)	K123	519872		
Tilt sensor relay	K124	519873		
Feed module heating element relay	K125	519874		
Suction line heating element relay	K126	519875		
Choke line heating element relay	K127	519876		
Pressure line heating element relay	K128	519877		
SCR control relay	K129	519878		
Horn relay	K130	519879		

Auxiliary contactor	K131	519880		
Steering mode relay	K132	519881		
Steering mode relay	K133	519882		
Front socket switching relay 2	K134	519883		
Front socket switching relay 3	K135	519884		
Easy Protection System (eps Plus) relay	K136	519885		
Release DPF regeneration relay	K137	519886		
Pressure relief relay	K138	519887		
Central lubrication system switching relay	K139	519888		
AUX main relay	K140	519889		
Battery disconnect relay	K141	519890		
Relays electronic signal 1 rear	K142	519891		
Relays electronic signal 2 rear	K143	519892		
Relays potential switching	K144	519893		
Relays potential switching	K145	519894		
Relays seat belt contact switch	K146	519896		
Relays option controller I	K147	519897		
Relays option controller II	K148	519898		
Relays interval wiper front	K149	519899		
Relays washer pump	K150	519900		
Drives (electrical system)	**M**	**517800-517899**		
Starter	M001	517800		
Front wiper motor	M002	517801		
Rear wiper motor	M003	517802		
Fan	M004	517803		
Front wipe/wash pump	M005	517804		
Rear wipe/wash pump	M006	517805		
Fuel-filling pump	M007	517806		
Engine speed regulation	M008	517807		
Fuel pump	M009	517808		
Air-suspension seat	M010	517809		
Mirror adjustment motor	M011	517810		
Electric compressor (reversing fan)	M012	517811		
Fan	M013	517812		
Auxiliary heater	M014	517813		
Side wiper motor	M015	517814		
Central lubrication system	M016	517815		
DPF air compressor	M017	517816		
Air conditioning fan	M018	517817		
Fan 1 Inverter 1	M019	517818		
Fan 2 inverter 1	M020	517819		
Fan 3 inverter 1	M021	517820		
Fan 4 inverter 1	M022	517821		
Fan 1 inverter 2	M023	517822		
Fan 2 Inverter 2	M024	517823		

Fan 3 inverter 2	M025	517824		
Fan 4 inverter 2	M026	517825		
Fan motor (machine travel)	M027	517826		
Fan motor (work)	M028	517827		
Urea pump	M029	517828		
E-motor (machine travel)	M030	517829		
E-motor (hydraulic pump)	M031	517830		
Wiper motor roof	M032	517831		
Radiator hydraulic	M033	517832		
Electronics (electrical system)	**N**	**517900-518899**		
Traction electronics	N001	516400 - 516499	Primary	0x05
Swivel angle sensor, hydraulic pump (Danfoss)	-	516409		
Mode switch 2 (Danfoss)	-	516410		
Speed sensor (Danfoss)	-	516411		
Direction of rotation (Danfoss)	-	516412		
Solenoid coil, forward (Danfoss)	-	516413		
Solenoid coil, reverse (Danfoss)	-	516414		
Solenoid coil (motor proportional valve) (Danfoss)	-	516415		
Digital output, PSC PIN 3/4 (Danfoss)	-	516416		
Digital output, CC2 PIN 9/10 (Danfoss)	-	516417		
Travel direction identification (Danfoss)	-	516418		
Inching pedal not calibrated (Danfoss)	-	516419		
Operating hydraulics electronics/MVCU (main regulator)	N004	516100 - 516199	Primary	0xD
			Secondary	0xE
		517900 - 517919	Hydac	0x21
Diesel engine electronics	N005	520200 - 520224	Perkins	0x00
		523000 - 524124	Deutz	0x00
Automatic climate control/ACC	N008	518140 - 518159	Primary	0x90
Fan speed regulation	N009	518180 - 518199	Primary	0x91
Fan drive control unit/FDCU	N010	518000 - 518019	Primary	0x86
CAN – analog adapter/CCV CAN converter	N011	518160 - 518179	Primary	0x87
Overload management device/OMD	N013	516600 - 516699	Primary	0xE1
Chassis electronics/AVCU 2	N014	517940 - 517959	Primary	0x80
			Secondary	0x81
Cabin electronics/CCU	N015	516300 - 516399	Primary	0xB
			Secondary	0xC
		518020 - 518039	Hydac	0xB
Option electronics/AVCU	N016	516800 - 516899	Primary	0xF
			Secondary	0x10
		517920 - 517939	Hydac	0xF
Electronics 9 m option/LCU	N017	516900 - 516999	Primary	0x11
			Secondary	0x12
Telematic module/TCU	N018	518100 - 518199	Wacker	0x88
AVCU 3 regulator 3	N019	517960 - 517979	Primary	0x82
			Secondary	0x83

AVCU 4 regulator 4	N020	517980 - 517999	Primary	0x84
			Secondary	0x85
Vehicle security unit/VSU	N021	518080 - 518099	Primary	0x1D
Accelerator pedal/ACPU	N022	518120 - 518139	Primary	0x89
HMI interface	N023	518060 - 518079	Primary	0x91
14 pole Front power outlet	N032	518100 - 518119	Hydac	0x22
Seat contact switch	N037	518220 - 518239		0x23
Additional display	N038	518240 - 518259		0x24
Insulation monitors	N039	518360 - 518379		
Instruments (electrical system)	**P**	**518900-518949**		
Hour meter	P001	518900		
Fuel level indicator	P002	518901		
Temperature gauge for diesel engine coolant	P003	518902		
Hydraulic oil temperature gauge	P004	518903		
Speedometer	P005	518904		
Safe load indicator	P006	518905		
Tachometer	P007	518906		
Particulate filter indicating instrument	P008	518907		
Auxiliary heating indicating instrument	P009	518908		
Compressed-air gage (compressed-air braking system)	P010	518909		
Indicating instrument (display) for additional machine information	P011	518910		
Power brake pressure indicator	P012	518911		
Clock	P013	518912		
Combined indicating instrument	P014	518040 - 518059	Bauser	0x17
			ROAD MIM 1	0xE3
			ROAD MIM 2	0xE4
DPF interface	P015	518914		
Additional monitor for cameras	P016	518915	ctVideo	
Resistors (electrical system)	**R**			
Glow plug	R001	519901		
Inching pedal	R002	519902		
Creep gear potentiometer	R003	519903		
Pump control potentiometer	R004	519904		
Pull up resistor	R005	519905		
Window heating	R006	519906		
Accelerator pedal potentiometer	R007	519907		
2nd glow plug	R008	519908		
Fuel preheater	R009	519909		
Mirror heating	R010	519910		
Accelerator pedal	R011	519911		
Manual throttle	R012	519912		
Tilt in/out potentiometer	R013	519913		
Raise/lower potentiometer	R014	519914		
Potentiometer (raise/lower right stabilizer leg)	R015	519915		
Potentiometer (raise/lower left stabilizer leg)	R016	519916		

Bus terminating resistance	R017	519917		
Bus terminating resistance	R018	519918		
Potentiometer (oil quantity for additional control circuit)	R019	519919		
Resistor for hydraulic motor speed sensor	R020	519920		
Pull up resistor	R021	519921		
Mirror heating	R022	519922		
Potentiometer for boom monitoring	R023	519923		
Resistor	R024	519924		
Resistor	R025	519925		
Bus terminating resistance	R026	519926		
Bus terminating resistance	R027	519927		
Potentiometer for auxiliary hydraulics (joystick rocker switch)	R028	519928		
Potentiometer for 3rd control circuit (joystick rocker switch)	R029	519929		
Potentiometer (retract/extend potentiometer)	R030	519930		
DPF glow plug	R031	519931		
Heated seat	R032	519932		
Bus terminating resistance	R033	519933		
Bus terminating resistance	R034	519934		
120 Ohm resistance	R035	519935		
Levelling potentiometer	R036	519936		
Resistor module	R037	519937		
Resistor module	R038	519938		
Air intake panel heater	R041	519942		
Heating (conveying module)	R042	519943		
Heating line (pressure line)	R043	519944		
Heating line (suction line)	R044	519945		
Heating line (return line)	R045	519946		
Window heating	R046	519947		
Potentiometer lifting arm monitoring signal 2	R023.2	519948		
Heating engine ventilation	R047	519949		
Switches (electrical system)	**S**	**518950-519299**		
Preheating start switch	S001	518950		
Engine oil pressure switch	S002	518951		
Diesel engine temperature switch	S003	518952		
Pressure switch, air filter	S004	518953		
Pressure switch, hydraulic oil	S005	518954		
Temperature switch, hydraulic oil	S006	518955		
Hydraulic oil level switch	S007	518956		
Battery master switch	S008	518957		
Brake light switch	S009	518958		
Brake pressure accumulator switch	S010	518959		
Handbrake switch	S011	518960		
Steering-column control lever (left)	S012	518961		
Steering-column control lever (right)	S013	518962		
Light switch	S014	518963		

Heating switch	S015	518964		
Working light switch	S016	518965		
Working light switch	S017	518966		
Rotating beacon switch	S018	518967		
Hazard lights switch	S019	518968		
Wiper/washer switch	S020	518969		
1st/2nd gear switch	S021	518970		
Steering mode / high-speed switch	S022	518971		
Synchronism push button	S023	518972		
Oscillating axle interlock switch	S024	518973		
Differential lock push button	S025	518974		
Switch for increased pump capacity (High-Flow)	S026	518975		
Front socket/changeover switch	S027	518976		
Safety switch (left)	S028	518977		
Armrest safety switch	S029	518978		
"Unlock" push button	S030	518979		
"Lock" push button	S031	518980		
Function switch, 3rd control circuit	S032	518981		
Continuous function 3rd control circuit (AUX)	S033	518982		
Forward driving push button	S034	518983		
Reverse driving push button	S035	518984		
Boom/stabilizer blade changeover	S036	518985		
Bucket/upper carriage tilting changeover	S037	518986		
Extend telescopic boom/front socket	S038	518987		
Retract telescopic boom/bucket repositioning	S039	518988		
Quickhitch lock push button	S040	518989		
Safe load indicator pressure switch	S041	518990		
Safe load indicator switch	S042	518991		
Backup warning signal pressure switch	S043	518992		
Load stabilizer switch	S044	518993		
Load stabiliser pressure switch	S045	518994		
Bucket repositioning pressure switch	S046	518995		
Tilt cylinder lock key-operated switch	S047	518996		
Vario push button	S048	518997		
Vario push button	S049	518998		
Air-conditioning fan switch	S050	518999		
Switch, air conditioning	S051	519000		
Air conditioning pressure switch	S052	519001		
Air conditioning pressure switch	S053	519002		
Air conditioning temperature switch	S054	519003		
Horn push button	S055	519004		
Switch, additional control circuit	S056	519005		
Switch, additional control circuit	S057	519006		
Water separator switch	S058	519007		
Rear window heating push button	S059	519008		

Telescopic boom working light switch	S060	519009		
Fuel preheater switch	S061	519010		
Mirror adjustment switch	S062	519011		
Float position/hose burst valve switch	S063	519012		
Reversing fan	S064	519013		
Parking brake switch	S065	519014		
Neutral push button	S066	519015		
Bucket repositioning/front socket push button	S067	519016		
Automatic coupling/tipping trailer changeover switch	S068	519017		
Additional control circuit I-0-II switch	S069	519018		
Raise/lower tipping trailer I-0-II push button	S070	519019		
Automatic coupling unlock push button	S071	519020		
Frame leveling switch	S072	519021		
Crab steering switch	S073	519022		
Fuel preheater temperature switch	S074	519023		
Rear/front stabilizer leg switch	S075	519024		
Front stabilizer leg switch	S076	519025		
Rear stabilizer leg switch	S077	519026		
Travel pressure switch	S078	519027		
Changeover switch to 3rd boom segment	S079	519028		
Steering Dir.	S080	519029		
Pressure switch (right stabilizer leg)	S081	519030		
Pressure switch (left stabilizer leg)	S082	519031		
Creep gear potentiometer switch	S083	519032		
Switch for cut-off of hydraulic functions	S084	519033		
Switch for joystick cutoff during road travel (lock for long-haul travel)	S085	519034		
Error code call push button	S086	519035		
Door contact switch	S087	519036		
Mirror heating switch	S088	519037		
Pressure switch for automatic engine speed setting	S089	519038		
Automatic engine speed setting switch	S090	519039		
Central lubrication system push button	S091	519040		
Option switch/push button	S092	519041		
Push button (fuel-filling pump ON)	S093	519042		
Push button (fuel-filling pump OFF)	S094	519043		
Switch (full tank)	S095	519044		
Boost pressure switch	S096	519045		
Manual throttle switch	S097	519046		
Quickhitch pressure switch	S098	519047		
Changeover switch for rear hydraulic connection/3-point mount	S099	519048		
Pedal position switch	S100	519049		
Control lever push button for additional function	S101	519050		
Plunger switch	S102	519051		
Plunger switch	S103	519052		
Operator presence switch	S104	519053		

Clutch pedal switch	S105	519054		
Hydraulic oil temperature switch (radiator)	S106	519055		
Diesel engine temperature switch	S107	519056		
Charge air pressure switch	S108	519057		
Push button for electrical connection 1 on control lever	S109	519058		
Push button for electrical connection 2 on control lever	S110	519059		
Switch for loader unit lock	S111	519060		
Switch for loader unit stabilizer	S112	519061		
Switch for electrical connection	S113	519062		
Differential lock axle probe	S114	519063		
Differential lock axle probe	S115	519064		
Limit switch 1 (telescopic boom fully retracted)	S116	519065		
Control lever push button for additional function	S117	519066		
Changeover push button (tilt/skip flap)	S118	519067		
Activation of diesel particulate filter regeneration (DPF)	S119	519068		
Switch/push button Eco mode	S120	519069		
Telescopic boom switch (extended, middle)	S121	519070		
Pressure switch (extend/retract telescopic boom)	S122	519071		
Seat belt contact switch	S123	519072		
Switch/push button/limit switch for start repeat interlock (starting interlock)	S124	519073		
Switch for vertical lowering	S125	519074		
Rear wiper switch	S126	519075		
Pressure relief switch	S127	519076		
Switch for option	S128	519077		
Switch for option	S129	519078		
Switch/push button (4 wheel drive OFF/axle cut-off)	S130	519079		
Raise/lower automatic coupling I-0-II push button	S131	519080		
Display changeover push button	S132	519081		
Side working light switch	S133	519082		
Limit switch (gearbox shift position)	S134	519083		
Speed/mode reduction push button	S135	519084		
Speed/mode increase push button	S136	519085		
Push button raise automatic coupling	S137	519086		
Push button automatic coupling locked	S138	519087		
Switch for option	S139	519088		
Switch raise/lower 3-point mount	S140	519089		
VLS mode switch (changeover of vertical lift function)	S141	519090		
Limit switch 2 (boom fully retracted)	S142	519091		
PTO shaft ON/OFF switch	S143	519092		
Switch for stabilizer blade swiveling	S144	519093		
Push button for engine speed SET/RESET	S145	519094		
Gearbox shift position	S146	519095		
Travel speed control	S147	519096		
Pressure relief	S148	519097		
Working cage operation switch	S149	519098		

Attachment 2 push button	S150	519099		
Attachment 3 push button	S151	519100		
Attachment 4 push button	S152	519101		
Hammer button	S153	519102		
Switch for disabling working functions	S154	519103		
Bucket parallel guidance switch	S155	519104		
X-axis pressure switch	S156	519105		
Y-axis pressure switch	S157	519106		
Pressure switch to detect raising	S162	519107		
Pressure switch to detect lowering	S163	519107		
3rd control circuit/rear hydraulic connections changeover	S164	519112		
Raise/lower tipping trailer I-0-II switch	S165	519113		
3rd/4th control circuit changeover	S166	519114		
Emergency OFF switch	S167	519115		
High-Flow Plus push button	S168	519116		
High Flow with pressure relief	S169	519117		
4-wheel steering mode switch	S170	519118		
Seat heating switch	S171	519119		
Steering mode lever limit switch (crab steering)	S172	519120		
CSD (Constant Speed Drive) switch	S173	519121		
Fuel preheater temperature switch	S174	519122		
PTO shaft switch on/off (rear attachment)	S175	519123		
Easy Protection System (eps Plus) switch	S176	519124		
Easy Protection-System (eps Plus) limit switch	S177	519125		
Pressure switch (hydraulic trailer brake)	S178	519126		
Front socket signal 1 continuous	S179	519127		
Front socket signal 2 continuous	S180	519128		
Front socket signal 1 job mode	S181	519129		
Front socket signal 2 job mode	S182	519130		
Operator presence switch (signal 2)	S104.2	519131		
Rear linkage float position switch	S183	519132		
Rear linkage and PTO release switch	S184	519133		
Switch rear socket	S185	519134		
Switch pedal switching / driving principle	S186	519135		
Switch boost mode	S187	519136		
Switch service break	S188	519137		
Pressure switch recognize roll-up	S189	519138		
Pressure switch recognize roll-out	S190	519139		
Pressure switch recognize 3rd control circuit A	S191	519140		
Pressure switch recognize 3rd control circuit B	S192	519141		
Identify pressure switch steering hydraulic channel 1	S193	519142		
Identify pressure switch steering hydraulic channel 2	S194	519143		
Switch ALL - all working lights ON	S195	519144		
Continuous operation of 4th control circuit	S196	519145		
Switch wiper roof	S197	519146		

Switch counterbalance valve bypass	S198	519147		
Limit switch magnetic brake (spring-applied brake)	S199	519148		
Switch heater levels	S200	519149		
Socket (electrical system)	**XX**	**519300-519349**		
Sockets	XX00	519300		
Sockets/electrical function 1 & 2	XX01	519301		
Sockets	XX02	519302		
Sockets	XX03	519303		
Sockets	XX04	519304		
Sockets	XX05	519305		
Sockets	XX06	519306		
Sockets	XX07	519307		
Sockets	XX08	519308		
Sockets	XX09	519309		
Sockets	XX10	519310		
Sockets	XX11	519311		
Sockets	XX12	519312		
Sockets	XX13	519313		
Sockets	XX14	519314		
Sockets	XX15	519315		
Power outlets (external starting)	XX16	519316		
Solenoids (electrical system)	**Y**	**519350-519749**		
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