# Service Manual

Skid steer loader

501s




| | |
|---|---|
| Machine model | 501s |
| Edition | 1.0 |
| Language | Englisch |
| Article number | 1000155663 |

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**Electric system**


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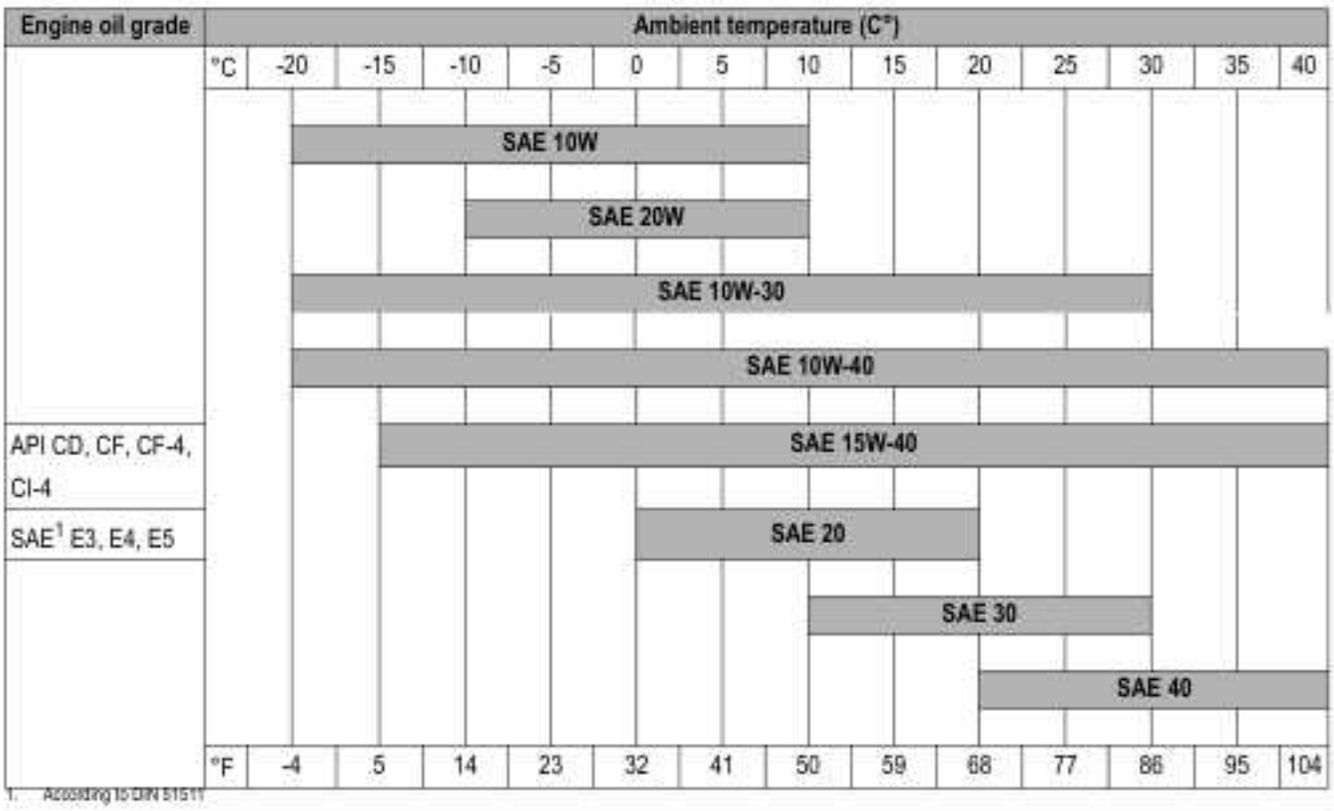

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## 3.1 Fluids and lubricants

| Component/ application | Engine/machine fluid | Specification | Season/ temperature | Capacities[1] |
|---|---|---|---|---|
| Diesel engine | Engine oil | API CD, CF, CF-4, CI-4 | -15 °C +45 °C | 7.12 l (model 501) 7.82 l (model 701) |
| | | SAE[2] E3, E4, E5 | | |
| Travelling drive | Gearbox oil[3] | Q8 T 55, SAE85W-90 | Year-round | About 1.3 l each |
| | | FINA PONTONIC GLS, SAE85W-90 | | |
| Hydraulic oil tank | Hydraulic oil | HVLP46[4] | Year-round | 45 l (model 501) 55 l (model 701) |
| | Biodegradable oil[5] | PANOLIN HLP Synth 46 | | |
| | | FINA BIOHYDRAN SE 46 | | |
| | | BP BIOHYD SE-46 | | |
| Grease nipples | Multipurpose grease[6] | FINA Energrease L21 M | Year-round | As required |
| Battery terminals | Acid-proof grease[7] | FINA Marson L2 | Year-round | As required |
| Fuel tank | Diesel fuel | No. 2-D, DIN 51601 grade | Over 4 °C | 45 l (model 501) 52 l (model 701) |
| | | No. 1-D, DIN 51601 grade | Below 4 °C | |
| Diesel engine radiator | Coolant | Water + antifreeze; ASTM 4985, based on ethylene glycol, silicone-free | Year-round | 3.3 l (model 501) 4.6 l (model 701) |

1. The capacities indicated are approximative values; the oil level check alone is relevant for the correct oil level
1. Capacities indicated are no system fills
2. According to DIN 51511
3. Hypoid gearbox oil based on basic mineral oil (SAE85W-90 according to DIN 51502), (API GL-4, GL5)
4. According to DIN 51524 section 3
5. Hydraulic ester oils (HEES)
6. KF2K-25 according to DIN 51502 multipurpose lithium grease with $MoS^2$ additive
7. Standard acid-proof grease

Oil grades for the diesel engine, depending on temperature




1. According to DIN 51511



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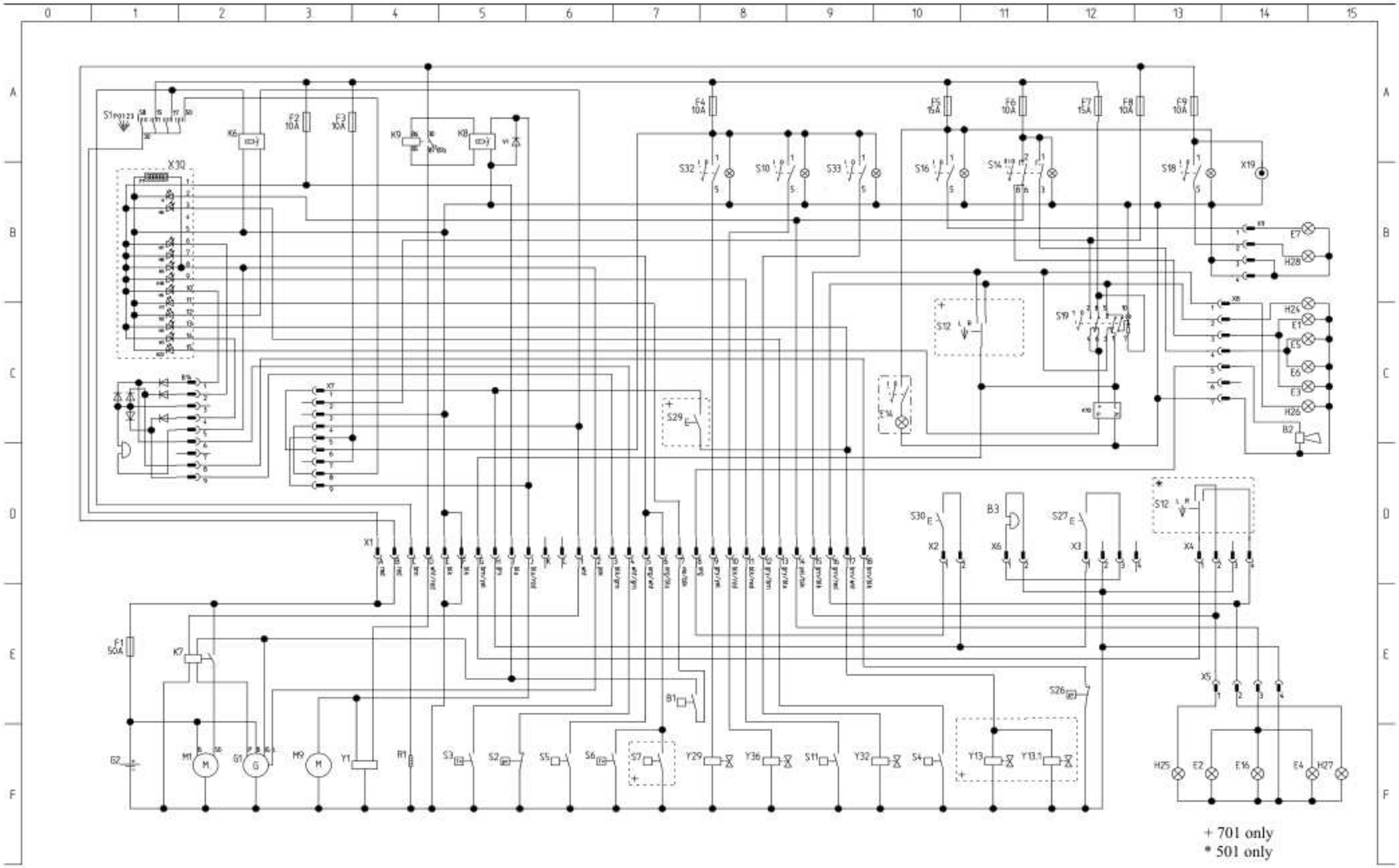
## 5.6 Troubleshooting in the hydraulic system

| Problem | Possible causes |
|---|---|
| Hydraulic system without function | Hydraulic oil level too low |
| | Defective pressure limiting valve on main valve block |
| | Spool is stuck |
| | Hose rupture (work hoses) |
| | Defective connection on solenoid valve |
| | |
| | |
| Driving without actuating the control levers – More propulsion on one side! | Misalignment of neutral position – slackened fastening nut |
| | |
| | |
| Brake is released | |
| | Defective brake valve |
| | |
| | |
| | |
| | |



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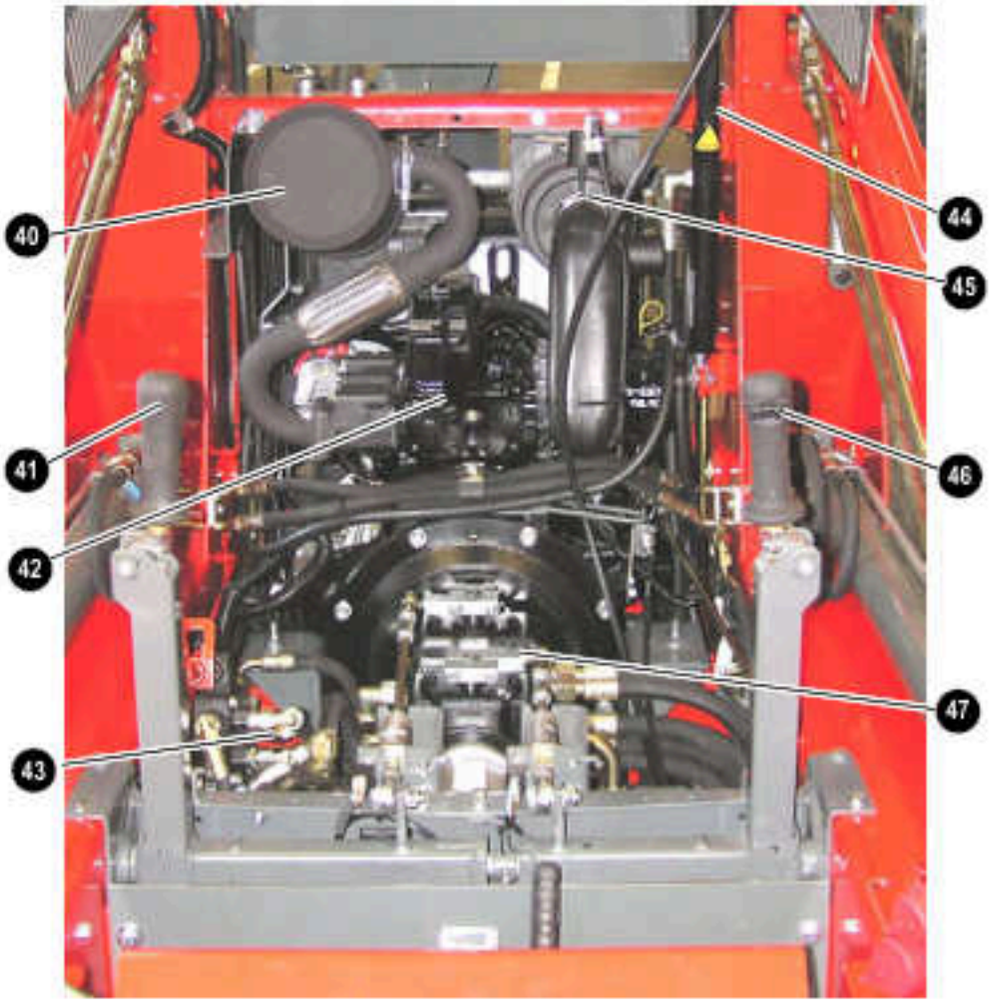
## 6.23 Wiring diagram A3






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## 1.12 Chassis: overview




| Pos. | Description | For more information see page |
|---|---|---|
| 40 | Silencer | 4-1 |
| 41 | Control lever (right) | 5-7 |
| 42 | Diesel engine | 4-1 |
| 43 | Main valve block | 5-4 |
| 44 | Maintenance prop | |
| 45 | Air filter | |
| 46 | Control lever (left) | 5-7 |
| 47 | Hydraulic pump | 5-1 |



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### Emptying the fuel tank



Fig. 3: Fuel drain plug

**Danger!**

If the fuel, as it drains, comes into contact with hot engine parts or the exhaust system, there is an increased

**Danger of burns!**

☞ *Never bleed the fuel system if the engine is hot!*

Due to the formation of condensation water in the fuel tank, empty the fuel tank every 500 service hours as follows:

☞ *Place a container with sufficient capacity under the fuel tank to collect the fuel as it drains*

☞ *Open the drain plug to drain the fuel* ***A***

☞ *Check the fuel tank for contamination and clean if necessary*

☞ *Replace the filter according to the maintenance specifications*

☞ *Screw the drain plug back in correctly*

☞ *Fill the fuel tank*

☞ *Bleed the fuel system – see section Bleeding the fuel system on page 3-11*

### Fuel prefilter with water separator

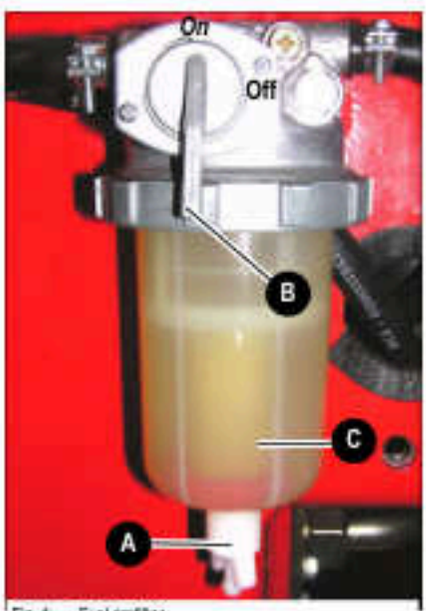


Fig. 4: Fuel prefilter

Check the fuel prefilter as follows:

☞ *If the red indicator ring rises to position* ***C***

☞ *Unscrew thread* ***A***

➥ The water drains

➥ Wait until the indicator ring returns to the bottom of the water separator

☞ *Screw thread* ***A*** *back on again*

Interrupt fuel supply as follows:

☞ *Turn ball-type cock* ***B*** *to the* ***OFF*** *mark*

➥ Fuel supply is interrupted

☞ *Turn ball-type cock* ***B*** *to the* ***ON*** *mark*

➥ Fuel supply is open again

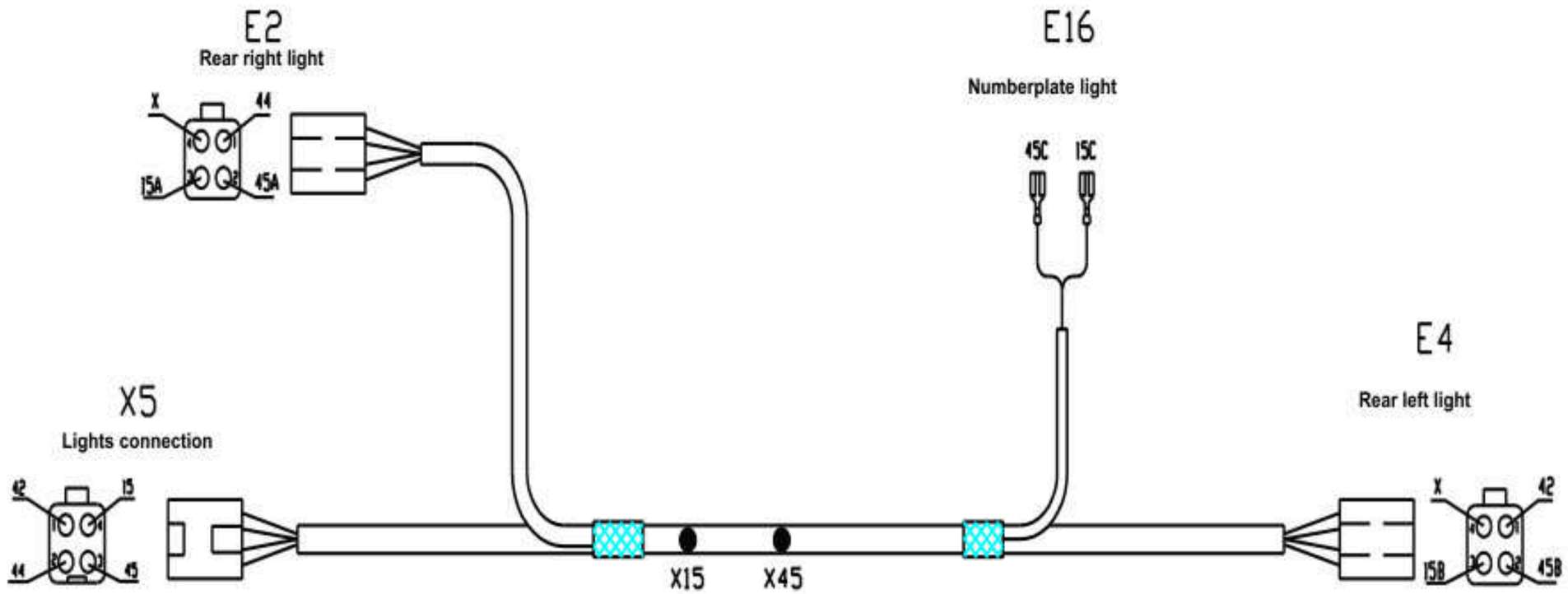
**Environment!**

Thread **A** is fitted with a hose. Collect the water as it drains with a suitable container and dispose of it in an environmentally friendly manner.



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## 6.28 Wiring harness 1000147262: rear lights (option) A3




| No. | Up to | To | Colour | mm² |
|---|---|---|---|---|
| 15 | X5/4 rear lights connection | X15 earth | blk | 1 |
| 15 A | E2/3 rear right light switch | X15 earth | blk | 1 |
| 15B | E4/3 rear left light switch | X15 earth | blk | 1 |
| 15C | E16 numberplate light | X15 earth | blk | 1 |
| 42 | X5/1 rear lights connection | E4/1 rear left turn indicator switch | grn/blk | 1 |
| 44 | X5/2 rear lights connection | E2/1 rear right turn indicator switch | grn/red | 1 |
| 45 | X5/4 rear lights connection | X45 position light | yel/blk | 1 |
| 45 A | E2/2 rear right light switch | X45 position light | yel/blk | 1 |
| 45b | E4/2 rear left light switch | X45 position light | yel/blk | 1 |
| 45C | E16 numberplate light switch | X45 position light | yel/blk | 1 |

**Rear lights wiring harness (option)**



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