

|                                       |                               |   |                          |
|---------------------------------------|-------------------------------|---|--------------------------|
| Document Title:<br><b>Description</b> | Function Group:<br><b>000</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:                              |                               |   |                          |

## Description

Both L150D and L180D are articulated, four-wheel drive loaders.

The engine in the L150D is a six cylinder, four-stroke, direct-injected and turbocharged diesel engine of the type TD103KCE, and the engine in the L180D is also a six cylinder, four-stroke, direct-injected and turbocharged diesel engine but of the type TD122KHE.

The transmission is hydro-mechanical, with all the gears in constant mesh, with the designation HT210 for the L150D and the designation HT220 for the L180D.

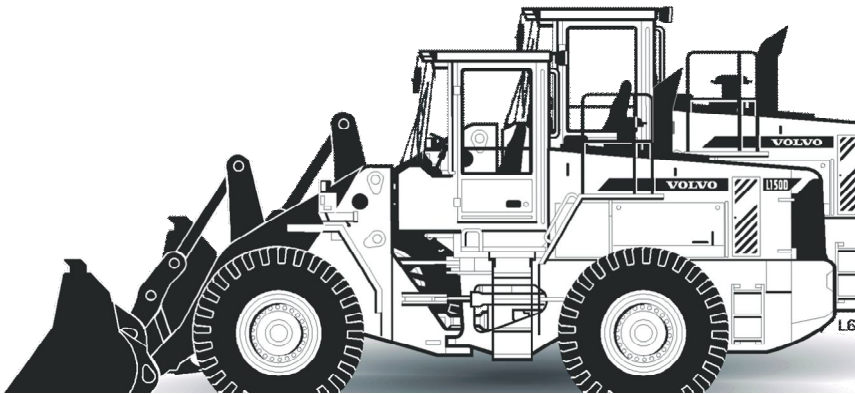
Between the engine and transmission, there is a single-stage hydraulic torque converter.

Front and rear axles have fully floating axle shafts with planetary gears in the hubs. The front axle is equipped with a differential lock.

The parking and service brakes of the machine are wet multi-disc brakes. The parking brake is positioned on the output shaft in the hydraulic transmission and the service brakes are built into each wheel hub.

The steering system is hydrostatic with a variable load-sensing axial piston pump and two hydraulic cylinders (steering cylinders).

Hydraulic system, see Section 9.



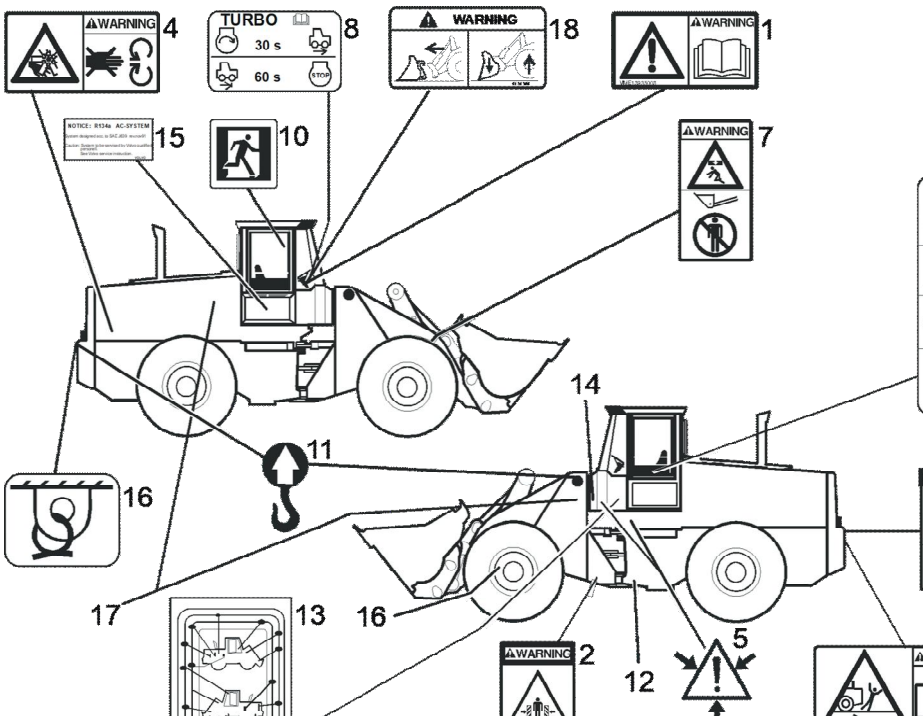
**Figure 1**  
Wheel loader L150D/L180D

|  |                               |   |                          |
|--|-------------------------------|---|--------------------------|
| Document Title:<br><b>Information and warning plates</b> | Function Group:<br><b>000</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:   |                               |   |                          |

## Information and warning plates

The illustration and text below indicates which language-free warning plates/decals and information texts are found on the machine. The machine operator should recognise and follow the warnings or information specified on the decals and plates.

Decals/plates that are missing, damaged, painted over or in any other way cannot be read must be replaced immediately. The part number (order number) is indicated on each plate/decals and in the parts catalogue.



**Figure 1**  
Information and warning plates

| N | Description  | Position   |
|---|--|--|
| 1 | Warning! Read the Operator's Manual first.   | Cab (windscreen, right-hand side)  |
| 2 | Warning for crushing risk in frame joint when machine swings                                       | Frame joint (right and left-hand sides)                                  |
| 3 | Warning! Reversing machine   | Rear (counterweights)  |
| 4 | Warning! Rotating fan  | Rear engine cover (inside)   |
| 5 | Warning! Pressurised system  | Cab (front left-hand side and front left-hand portion of the rear frame) |
| 6 | Warning! Read the Operator's Manual before connecting jumper leads.                                | Battery boxes (inside)   |
| 7 | Warning! Do not walk under raised attachment   | Lifting arms (right and left-hand sides)                                 |
| 8 | Let the engine go to idle (turbo)  | Cab (windscreen)   |
| 9 | Warning! When operating on roads, Comfort Drive Control, CDC, must not be active. Use the steering | Cab (CDC armrest)  |

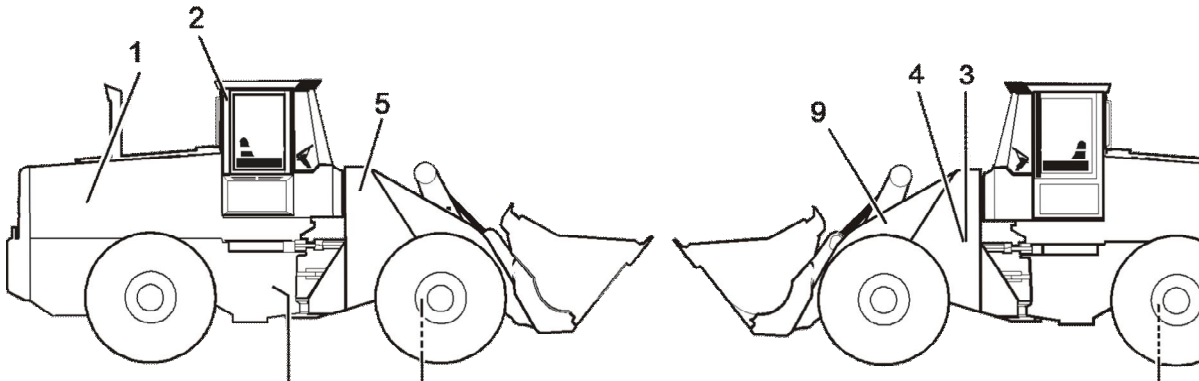
wheel.

- |    |  |   |
|----|--|---|
| 10 | Emergency exit (right-hand side window)  | Cab (front right-hand window pillar)                          |
| 11 | Lifting eyes   | Front frame (upper portion) and at rear counterweight (4 pcs) |
| 12 | Frame joint lock (USA only)  | Frame joint (right and left-hand sides)                       |
| 13 | Lubrication and service charts   | Cab (front left-hand side)                                    |
| 14 | Permissible noise levels (noise pressure level in cab LpA and noise output level around the machine LwA) | Front frame (left-hand side)                                  |
| 15 | Refrigerant (AC)   | Breather filter cover (inside)                                |
| 16 | Tie-down points (for machine transport)  | Front frame and rear frame (4 pcs)                            |

|   |                               |   |                          |
|---|-------------------------------|---|--------------------------|
| Document Title:<br><b>Product identification plates</b> | Function Group:<br><b>000</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:  |                               |   |                          |

## Product identification plates

The illustrations below indicate where the different plates are located. The model designation and Product Identification Number, PIN, must always be indicated when ordering spare parts or making telephone or written inquiries.



**Figure 1**  
Machine plates

### 1 Engine

The engine's type designation, part number and serial number are stamped into the cylinder block under the turbocharger (right-hand side of the machine).

### 2 Cab

Serial number, machine type, manufacturer's name and address, ROPS/FOPS number and max. operating weight are located on the right-hand rear roof pillar in the cab.

### 3 Product identification plate

Includes machine type, manufacturer's name and address. The Product Identification Number, PIN, for the complete machine is located on the front left-hand side of the frame (PIN includes model designation, engine code and serial number).

### 4 Additional plate

An additional plate to a product identification plate that shows machine weight, engine output, manufacturing year and a spot for a CE-mark (only EU/EEA countries) is located under the product identification plate.

### 5 Primary marking

PIN, model designation, engine code and serial number are stamped on the front right-hand side of the frame (Shows same PIN as on the product identification plate).

### 6 Rear axle

The rear drive shaft's component plate Component Identification Number, CIN, with product number, serial number and manufacturer is located on the axle casing.

### 7 Transmission

The transmission's product number, serial number and manufacturer are located on the right-hand side of the transmission.

### 8 Front axle

The front drive shaft's component plate, CIN, with product number, serial number and manufacturer is located on the axle casing.

### 8 Differential carrier

The differential carrier's product number, serial number, CIN and manufacturer are located on the differential housing.

### 9 Lifting frame

The lifting frame's product number, serial number and manufacturer are located on its left-hand side.

|                                      |                               |   |                          |
|--------------------------------------|-------------------------------|---|--------------------------|
| Document Title:<br><b>Capacities</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:                             |                               |   |                          |

## Capacities

|  |  |
|--|--|
| Engine, incl. filters, total                           | 29 dm <sup>3</sup> (7.7 US gal)        |
| Engine incl. filters, when changing oil                | 27 dm <sup>3</sup> (7.1 US gal)        |
| Fuel tank total/actual use                             | 350/318 dm <sup>3</sup> (92/84 US gal) |
| Cooling system, total                                  | 70 dm <sup>3</sup> (18.5 US gal)       |
| Hydraulic transmission, total                          | 45 dm <sup>3</sup> (11.9 US gal)       |
| Hydraulic transmission incl. filter, when changing oil | 39 dm <sup>3</sup> (10.3 US gal)       |
| Front axle, total when changing oil                    | 50 dm <sup>3</sup> (13.2 US gal)       |
| Rear axle, total when changing oil                     | 59 dm <sup>3</sup> (15.6 US gal)       |
| Amount of refrigerant R134a                            | 2.2 +0.1 kg (4.85 +0.22 lbs)           |
| Hydraulic system, total                                | 245 dm <sup>3</sup> (64.7 US gal)      |
| Hydraulic system, when changing                        | 165 dm <sup>3</sup> (43.6 US gal)      |
| Hydraulic oil tank                                     | 165 dm <sup>3</sup> (43.6 US gal)      |

|                                      |                               |   |                          |
|--------------------------------------|-------------------------------|---|--------------------------|
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| Profile:                             |                               |   |                          |

### Capacities

|  |  |
|--|--|
| Engine, incl. filters, total                           | 35 dm <sup>3</sup> (9.2 US gal)            |
| Engine incl. filters, when changing oil                | 34 dm <sup>3</sup> (9.0 US gal)            |
| Fuel tank total/actual use                             | 350/318 dm <sup>3</sup> (92.4/84.0 US gal) |
| Cooling system, total                                  | 81 dm <sup>3</sup> (21.4 US gal)           |
| Hydraulic transmission, total                          | 45 dm <sup>3</sup> (11.9 US gal)           |
| Hydraulic transmission incl. filter, when changing oil | 39 dm <sup>3</sup> (10.3 US gal)           |
| Front axle, total when changing oil                    | 50 dm <sup>3</sup> (13.2 US gal)           |
| Rear axle, total when changing oil                     | 59 dm <sup>3</sup> (15.6 US gal)           |
| Amount of refrigerant R134a                            | 2.2 +0.1 kg (4.9 +0.22 lbs)                |
| Hydraulic system, total                                | 260 dm <sup>3</sup> (68.6 US gal)          |
| Hydraulic system, when changing                        | 165 dm <sup>3</sup> (43.6 US gal)          |
| Hydraulic oil tank                                     | 165 dm <sup>3</sup> (43.6 US gal)          |

|   |                               |   |                          |
|---|-------------------------------|---|--------------------------|
| Document Title:<br><b>Conversion tables</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:                                    |                               |   |                          |

## Conversion tables

### Length

| Unit | cm     | m      | km       | in      | ft      | yd      | mile     |
|------|--------|--------|----------|---------|---------|---------|----------|
| cm   | 1      | 0.01   | 0.00001  | 0.3937  | 0.03281 | 0.01094 | 0.000006 |
| m    | 100    | 1      | 0.001    | 39.37   | 3.2808  | 1.0936  | 0.00062  |
| km   | 100000 | 1000   | 1        | 39370.7 | 3280.8  | 1093.6  | 0.62137  |
| in   | 2.54   | 0.0254 | 0.000025 | 1       | 0.08333 | 0.02777 | 0.000015 |
| ft   | 30.48  | 0.3048 | 0.000304 | 12      | 1       | 0.3333  | 0.000189 |
| yd   | 91.44  | 0.9144 | 0.000914 | 36      | 3       | 1       | 0.000568 |
| mile | 160930 | 1609.3 | 1.6093   | 63360   | 5280    | 1760    | 1        |

1 mm = 0.1 cm - 1 mm = 0.001 m

### Area

| Unit            | cm <sup>2</sup> | m <sup>2</sup> | km <sup>2</sup> | a        | ft <sup>2</sup> | yd <sup>2</sup> | in <sup>2</sup> |
|-----------------|-----------------|----------------|-----------------|----------|-----------------|-----------------|-----------------|
| cm <sup>2</sup> | 1               | 0.0001         | -               | 0.000001 | 0.001076        | 0.000012        | 0.155000        |
| m <sup>2</sup>  | 10000           | 1              | 0.000001        | 0.01     | 10.764          | 1.1958          | 1550            |
| km <sup>2</sup> | -               | 1000000        | 1               | 10000    | 1076400         | 1195800         | -               |
| a               | 0.01            | 100            | 0.0001          | 1        | 1076.4          | 119.58          | -               |
| ft <sup>2</sup> | -               | 0.092903       | -               | 0.000929 | 1               | 0.1111          | 144             |
| yd <sup>2</sup> | -               | 0.83613        | -               | 0.008361 | 9               | 1               | 1296            |
| in <sup>2</sup> | 6.4516          | 0.000645       | -               | -        | 0.006943        | 0.000771        | 1               |

1 ha = 100 a - 1 mile<sup>2</sup> = 259 ha = 2.59 km<sup>2</sup>

### Volume

| Unit                 | cm <sup>3</sup> = cc | m <sup>3</sup> | l       | in <sup>3</sup> | ft <sup>3</sup> | yd <sup>3</sup> |
|----------------------|----------------------|----------------|---------|-----------------|-----------------|-----------------|
| cm <sup>3</sup> = ml | 1                    | 0.000001       | 0.001   | 0.061024        | 0.000035        | 0.000001        |
| m <sup>3</sup>       | 1000000              | 1              | 1000    | 61024           | 35.315          | 1.30796         |
| dm <sup>3</sup> (l)  | 1000                 | 0.001          | 1       | 61.024          | 0.035315        | 0.001308        |
| in <sup>3</sup>      | 16.387               | 0.000016       | 0.01638 | 1               | 0.000578        | 0.000021        |
| ft <sup>3</sup>      | 28316.8              | 0.028317       | 28.317  | 1728            | 1               | 0.03704         |
| yd <sup>3</sup>      | 764529.8             | 0.76453        | 764.53  | 46656           | 27              | 1               |

1 gal (US) = 3785.41 cm<sup>3</sup> = 231 in<sup>3</sup> = 0.83267 gal (UK)

### Weight

| Unit | g       | kg      | t        | oz      | lb      |
|------|---------|---------|----------|---------|---------|
| g    | 1       | 0.001   | 0.000001 | 0.03527 | 0.0022  |
| kg   | 1000    | 1       | 0.001    | 35.273  | 2.20459 |
| t    | 1000000 | 1000    | 1        | 35273   | 2204.59 |
| oz   | 28.3495 | 0.02835 | 0.000028 | 1       | 0.0625  |

|  |         |         |          |    |   |
|--|---------|---------|----------|----|---|
| lb   | 453.592 | 0.45359 | 0.000454 | 16 | 1 |
| 1 ton (metric) = 1.1023 ton (US) = 0.9842 ton (UK) |         |         |          |    |   |

### Pressure

| Unit  | kp/cm <sup>2</sup> | bar     | Pa=N/m <sup>2</sup> | kPa     | lbf/in <sup>2</sup> | lbf/ft <sup>2</sup> |
|---|--------------------|---------|---------------------|---------|---------------------|---------------------|
| kp/cm <sup>2</sup>                                    | 1                  | 0.98067 | 98066.5             | 98.0665 | 14.2233             | 2048.16             |
| bar   | 1.01972            | 1       | 100000              | 100     | 14.5037             | 2088.6              |
| Pa=N/m <sup>2</sup>                                   | 0.00001            | 0.001   | 1                   | 0.001   | 0.00015             | 0.02086             |
| kPa   | 0.01020            | 0.01    | 1000                | 1       | 0.14504             | 20.886              |
| lbf/in <sup>2</sup>                                   | 0.07032            | 0.0689  | 6894.76             | 6.89476 | 1                   | 144                 |
| lbf/ft <sup>2</sup>                                   | 0.00047            | 0.00047 | 47.88028            | 0.04788 | 0.00694             | 1                   |
| kg/cm <sup>2</sup> = 735.56 Torr (mmHg) = 0.96784 atm |                    |         |                     |         |                     |                     |

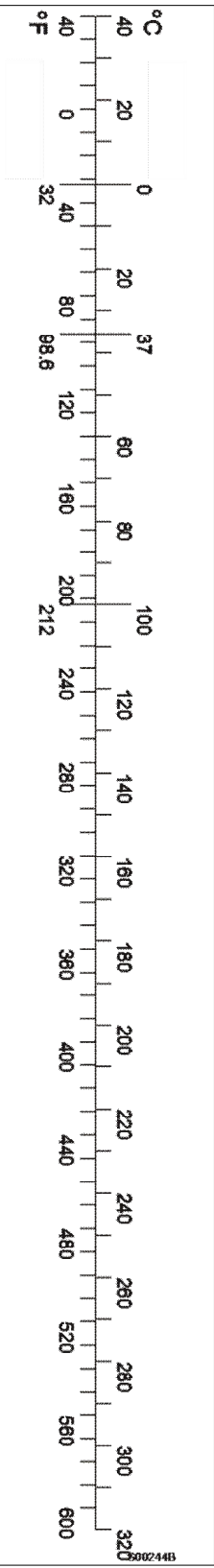
### Unit explanations

| Unit                 | Abbreviation |
|----------------------|--------------|
| Newton metre         | Nm           |
| Kilopoundmeter       | kgf m        |
| Kilopascal           | kPa          |
| Mega pascal          | MPa          |
| Kilowatt             | kW           |
| kilojoule            | kJ           |
| British thermal unit | Btu          |
| Calorie              | ca           |

### Approximate conversions

| SI unit                                  | Conversion factor | Non-SI                | Conversion factor | SI                   |
|--|-------------------|-----------------------|-------------------|----------------------|
| <b>Torque</b>                            |                   |                       |                   |                      |
| N·m                                      | x 10.2            | = kg·cm               | x 0.8664          | = lb·in              |
| N·m                                      | x 0.74            | = lbf·ft              | x 1.36            | = N·m                |
| N·m                                      | x 0.102           | = kg·m                | x 7.22            | = lb·ft              |
| <b>Pressure (Pa = N / m<sup>2</sup>)</b> |                   |                       |                   |                      |
| kPa                                      | x 4.0             | = in.H <sub>2</sub> O | x 0.249           | = kPa                |
| kPa                                      | x 0.30            | = in.Hg               | x 3.38            | = kPa                |
| kPa                                      | x 0.145           | = psi                 | x 6.89            | = kPa                |
| bar                                      | x 14.5            | = psi                 | x 0.069           | = bar                |
| kp/cm <sup>2</sup>                       | x 14.22           | = psi                 | x 0.070           | = kp/cm <sup>2</sup> |
| N/mm <sup>2</sup>                        | x 145.04          | = psi                 | x 0.069           | = bar                |
| MPa                                      | x 145             | = psi                 | x 0.00689         | = MPa                |
| <b>Power (W = J / s)</b>                 |                   |                       |                   |                      |
| kW                                       | x 1.36            | = hp (cv)             | x 0.736           | = kW                 |
| kW                                       | x 1.34            | = bhp                 | x 0.746           | = kW                 |
| kW                                       | x 0.948           | = Btu/s               | x 1.055           | = kW                 |
| W  | x 0.74            | = ft·lb/s             | x 1.36            | = W                  |
| <b>Energy (J = Nm)</b>                   |                   |                       |                   |                      |
| kJ                                       | x 0.948           | = Btu                 | x 1.055           | = kJ                 |

|                                 |         |                        |                       |                      |
|---------------------------------|---------|------------------------|-----------------------|----------------------|
| J                               | x 0.239 | = calorie              | x 4.19                | = J                  |
| Speed and acceleration          |         |                        |                       |                      |
| m / s <sup>2</sup>              | x 3.28  | = ft / s <sup>2</sup>  | x 0.305               | = m / s <sup>2</sup> |
| m / s                           | x 3.28  | = ft / s               | x 0.305               | = m / s              |
| km / h                          | x 0.62  | = mph                  | x 1.61                | = km / h             |
| Horsepower/ torque              |         |                        |                       |                      |
| Bhp x 5252 r/min= TQ (lb·ft)    |         |                        | TQ x r/min 5252 = bhp |                      |
| Temperature                     |         |                        |                       |                      |
| °C = (°F - 32)/1.8              |         | °F = (°C x 1.8) + 32   |                       |                      |
| Flow factor                     |         |                        |                       |                      |
| l / min (dm <sup>3</sup> / min) | x 0.264 | = US gal / min x 3.785 |                       | = litre/min          |



|  |                               |   |                          |
|--|-------------------------------|---|--------------------------|
| Document Title:<br><b>Measurements</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:                               |                               |   |                          |

## Measurements

| <b>Machine with standard tyres without attachment</b> |                  |
|---|------------------|
| Width   | 2950 mm (116 in) |
| Height  | 3560 mm (140 in) |
| Length, standard boom                                 | 7020 mm (276 in) |
| Length, long boom                                     | 7500 mm (295 in) |

|  |                               |   |                          |
|--|-------------------------------|---|--------------------------|
| Document Title:<br><b>Measurements</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:                               |                               |   |                          |

## Measurements

|   |                  |
|---|------------------|
| <b>Machine with standard tyres</b> without attachment |                  |
| Width   | 2950 mm (116 in) |
| Height  | 3560 mm (140 in) |
| Length, standard boom                                 | 6680 mm (263 in) |
| Length, long boom                                     | 7380 mm (291 in) |

|  |                               |   |                          |
|--|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 2 Engine</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:                                   |                               |   |                          |

## Section 2 Engine

| <b>Engine</b>  |  |
|--|--|
| Type designation   | TD 122 KHE, part no. 8188162   |
| Flywheel output at 35 r/s (2100 rpm)   | 203 kW SAE J 1349 Net<br>203 kW DIN 70020                                  |
| Gross output at 35 r/s (2100 rpm)  | 209 kW SAE J 1349 Gross  |
| Max. torque at 15 r/s (900 rpm)  | 1570 Nm SAE J 1349 Net<br>1580 Nm SAE J1349 Gross<br>1570 Nm DIN 70020 Net |
| Number of cylinders  | 6  |
| Cylinder bore  | 130.17 mm (5.12 in)  |
| Stroke   | 150 mm (5.91 in)   |
| Cylinder capacity, total   | 12 dm <sup>3</sup> (3.2 US gal)  |
| Compression ratio  | 16:1   |
| Compression at starter motor revolutions   | 2.6 MPa (377 psi)  |
| Injection sequence   | 1-5-3-6-2-4  |
| Idle speed, low<br>(frequency, SE 201)   | 10.8 ±0.5 r/s (650 ±50 rpm)<br>(823 ±63 Hz)                                |
| Idle speed, high<br>(frequency, SE 201)  | 39.2 ±1.2 r/s (2350 ±70 rpm)<br>(2975 ±89 Hz)                              |
| Stall speed with torque converter<br>(frequency, SE 201)   | 34.2 ±1.2 r/s (2050 ±75 rpm)<br>(2595 ±95 Hz)                              |
| Stall speed with torque converter + lift against end position (overflow lift)<br>(frequency, SE 201) | 25 ±1.7 r/s (1500 ±100 rpm)<br>(1899 ±127 Hz)                              |
| Stall speed with torque converter + tilt against end position (overflow tilt)<br>(frequency, SE 201) | 27.7 ±1.7 r/s (1660 ±100 rpm)<br>(2101 ±127 Hz)                            |

| <b>Valve system</b>          |                   |
|------------------------------|-------------------|
| Valve clearance, cold engine |                   |
| inlet valve                  | 0.40 mm (0.02 in) |
| exhaust valve                | 0.70 mm (0.03 in) |

| <b>Lubrication system</b> |                             |
|---------------------------|-----------------------------|
| Oil pressure, operating   | 300 – 600 kPa (44 – 87 psi) |
| Oil pressure, idle min.   | 50 kPa (7.25 psi)           |

| <b>Axial clearance</b> |                    |
|------------------------|--------------------|
| Pump gear, max         | 0.15 mm (0.006 in) |
| Idler gear, max.       | 0.15 mm (0.006 in) |

| <b>Oil filter</b>              |                            |
|--------------------------------|----------------------------|
| Full-flow                      | 2 pcs.                     |
| Partial flow                   | 1 pc.                      |
| <b>Overflow (relief) valve</b> |                            |
| spring, length unloaded        | 68.8 mm (2.71 in)          |
| loaded with 17 – 19 N          | 40 mm (1.57 in)            |
| Reduction valve colour marking | Yellow                     |
| Piston cooling valve           | 80 – 140 kPa (12 – 20 psi) |

| <b>Oil cooler, by-pass valve</b> |                 |
|----------------------------------|-----------------|
| spring, length unloaded          | 46 mm (1.81 in) |
| loaded with 53 – 55 N            | 39 mm (1.54 in) |

| <b>Fuel feed pump</b> |                             |
|-----------------------|-----------------------------|
| Type                  | Piston pump                 |
| Feed pressure         | 130 – 180 kPa (19 – 26 psi) |

| <b>Injection pump</b>                                  |                                   |
|--|-----------------------------------|
| Type   | In-line pump                      |
| Timing setting   | 9.5 0.5 degrees BTDC              |
| Pump element lift from basic circle at injection start | 3.95 – 4.05 mm (0.156 – 0.159 in) |
| Injection pump element starting groove                 | Yes                               |

| <b>Injectors</b>                 |                                   |
|----------------------------------|-----------------------------------|
| Type                             | Multi-hole nozzle (6 holes)       |
| Opening pressure                 | 25.0 MPa (3625 psi)               |
| Setting pressure, for new spring | 26.0 – 26.8 MPa (3770 – 3886 psi) |

| <b>Air cleaner</b>         |  |
|----------------------------|--|
| Triple-stage air cleaning: | Cyclone cleaner - primary filter - safety filter |

| <b>Intercooler</b> |           |
|--------------------|-----------|
| Type               | Water/air |

| <b>Cooling system</b>       |                   |
|-----------------------------|-------------------|
| Type                        | Closed system     |
| Radiator cap valve opens at | 50 kPa (7.25 psi) |

| <b>Thermostat</b>     |                   |
|-----------------------|-------------------|
| Type                  | Piston thermostat |
| Number of thermostats | 2                 |
| Begins to open at     | 82 °C (180 °F)    |
| Fully open at         | 92 °C (198 °F)    |

| <b>Hydraulically driven cooling fan</b> |                               |
|---|-------------------------------|
| Max. speed, fan motor                   | 1250 rpm (with fan program A) |
|   | 1350 rpm (with fan program B) |
|   | 1450 rpm (with fan program C) |
| Basic engine speed                      | 400 rpm                       |
| Max. pressure                           | 23.0 MPa (3335 psi)           |

(in pressure test with service display panel)

|  |                               |   |                          |
|--|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 2 Engine</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:                                   |                               |   |                          |

## Section 2 Engine

### Specifications, general

| <b>Engine</b>   |   |
|---|---|
| Type designation  | TD 103 KCE, part no. 8188144  |
| Flywheel output at 35 r/s (2100 rpm)  | 183 kW SAE J 1349 Net<br>183 kW DIN 70020                               |
| Gross output at 35 r/s (2100 rpm)   | 189 kW SAE J 1349 Gross   |
| Max. torque at 18.3 r/s (1100 rpm)  | 1390 Nm SAE J 1349 Net<br>1390 Nm SAE J 1349 Gross<br>1390 Nm DIN 70020 |
| Number of cylinders   | 6   |
| Cylinder bore   | 120.65 mm (4.75 in)   |
| Stroke  | 140 mm (5.51 in)  |
| Cylinder capacity, total  | 9.6 dm <sup>3</sup> (2.6 US gal)  |
| Compression ratio   | 18:1  |
| Compression at starter motor revolutions                                      | 2.6 MPa (377 psi)   |
| Injection sequence  | 1-5-3-6-2-4   |
| Idle speed, low<br>(frequency, SE 201)  | 10.8 ±0.5 r/s (650 ±50 rpm)<br>(823 ±63 Hz)                             |
| Idle speed, high<br>(frequency, SE 201)                                       | 39.2 ±1.2 r/s (2350 ±70 rpm)<br>(2975 ±89 Hz)                           |
| Stall speed with torque converter<br>(frequency, SE 201)                      | 34.2 ±1.2 r/s (2050 ±75 rpm)<br>(2595 ±95 Hz)                           |
| Stall speed with torque converter + working hydraulics<br>(frequency, SE 201) | 27.7 ±1.7 r/s (1660 ±100 rpm)<br>(2101 ±127 Hz)                         |

| <b>Valve system</b>          |                    |
|------------------------------|--------------------|
| Valve clearance, cold engine |                    |
| inlet valve                  | 0.40 mm (0.016 in) |
| exhaust valve                | 0.70 mm (0.028 in) |

| <b>Axial clearance</b> |                                   |
|------------------------|-----------------------------------|
| Pump gear              | 0.07 – 0.15 mm (0.003 – 0.006 in) |
| Idler gear             | 0.07 – 0.15 mm (0.003 – 0.006 in) |

| <b>Lubrication system</b> |                            |
|---------------------------|----------------------------|
| Oil pressure, operating   | 300 – 600 kPa (44 – 87psi) |
| Oil pressure, idle min.   | 50 kPa (7.25 psi)          |

| <b>Oil filter</b> |        |
|-------------------|--------|
| Full-flow         | 2 pcs. |
| Partial flow      | 1 pc.  |

|                                |                   |
|--------------------------------|-------------------|
| <b>Overflow (relief) valve</b> |                   |
| spring, length unloaded        | 68.8 mm (2.71 in) |
| loaded with 17 - 19 N          | 32 mm (1.26 in)   |
| Reduction valve colour marking | Yellow            |

|                                  |                 |
|----------------------------------|-----------------|
| <b>Oil cooler, by-pass valve</b> |                 |
| spring, length unloaded          | 46 mm (1.81 in) |
| loaded with 53 - 55 N            | 30 mm (1.18 in) |

|                       |                             |
|-----------------------|-----------------------------|
| <b>Fuel feed pump</b> |                             |
| Type                  | Piston pump                 |
| Feed pressure         | 100 – 150 kPa (15 – 22 psi) |

|  |                                 |
|--|---------------------------------|
| <b>Injection pump</b>                                  |                                 |
| Type   | In-line pump                    |
| Timing setting   | 12 0.5 degrees BTDC             |
| Pump element lift from basic circle at injection start | 3.0 – 3.1 mm (0.118 – 0.122 in) |
| Injection pump element starting groove                 | No                              |

|                                  |                                   |
|----------------------------------|-----------------------------------|
| <b>Injectors</b>                 |                                   |
| Type                             | Multi-hole nozzle (6 holes)       |
| Opening pressure                 | 25.5 MPa (3698 psi)               |
| Setting pressure, for new spring | 26.0 – 26.8 MPa (3770 – 3886 psi) |

|                            |  |
|----------------------------|--|
| <b>Air cleaner</b>         |  |
| Triple-stage air cleaning: | Cyclone cleaner - primary filter - safety filter |

|                    |           |
|--------------------|-----------|
| <b>Intercooler</b> |           |
| Type               | Water/air |

|                             |                   |
|-----------------------------|-------------------|
| <b>Cooling system</b>       |                   |
| Type                        | Closed system     |
| Radiator cap valve opens at | 50 kPa (7.25 psi) |

|                       |                   |
|-----------------------|-------------------|
| <b>Thermostat</b>     |                   |
| Type                  | Piston thermostat |
| Number of thermostats | 1                 |
| Begins to open at     | 82 °C (179.6 °F)  |
| Fully open at         | 92 °C (197.6 °F)  |

|  |                               |
|--|-------------------------------|
| <b>Hydraulically driven cooling fan</b>                        |                               |
| Max. speed, fan motor  | 1250 rpm (with fan program A) |
|  | 1350 rpm (with fan program B) |
|  | 1450 rpm (with fan program C) |
| Basic engine speed   | 400 rpm                       |
| Max. pressure<br>(in pressure test with service display panel) | 23.0 MPa (3335 psi)           |

|   |                               |   |                          |
|---|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 3 Electrical system</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:  |                               |   |                          |

### Section 3 Electrical system

|                |      |
|----------------|------|
| System voltage | 24 V |
|----------------|------|

| <b>Battery</b>                                 |                                |
|--|--------------------------------|
| Number of thermostats                          | 2 (connected in series)        |
| Battery disconnect switch (Chassis connection) | Connected to negative terminal |
| Voltage  | 12 V                           |
| Battery capacity                               | 2 x 140 Ah                     |

| <b>Battery electrolyte density</b> |               |
|------------------------------------|---------------|
| Fully charged battery              | 1.275 – 1.285 |
| The battery must be recharged at   | 1.250         |

| <b>Alternator with regulator</b> |                     |
|----------------------------------|---------------------|
| Type                             | Alternating current |
| Output (rated output)            | 1680 W              |
| Voltage, at + 20 °C              | 28.5 ±0.15 V        |
| Current, max.                    | 60 A                |
| Resistance across rotor winding  | 13.5 Ω              |
| Resistance in stator winding     | 0.12 Ω              |

| <b>Starter motor</b> |        |
|----------------------|--------|
| Output               | 5.4 kW |

| <b>Light bulbs</b>                    | <b>Watt</b> | <b>Base</b>     |
|---------------------------------------|-------------|-----------------|
| Headlights, asymmetrical              | 75/70       | P 43t - 38 (H4) |
| Parking lights                        | 4           | BA 9 s          |
| Tail lights                           | 10          | BA 15 s         |
| Brake lights                          | 21          | BA 15 s         |
| Direction indicators, rear            | 21          | BA 15 s         |
| Direction indicators, side            | 21          | BA 15 s         |
| Side lights                           | 5           | SV 8.5          |
| Cab light                             | 10          | BA 15 s         |
| Centre instrument panel (24 pcs.)     | 1.2         | W 2 x 4.6 d     |
| Guide light in switches               | 1.2         | W 2 x 4.6 d     |
| Work lights, front halogen, cab       | 70          | PK 22 s (H3)    |
| Work lights, rear halogen             | 70          | PK 22 s (H3)    |
| Work lights, front halogen (optional) | 70          | PK 22 s (H3)    |
| Work lights, rear halogen (optional)  | 70          | PK 22 s (H3)    |

| <b>Fuses</b> |
|--------------|
|--------------|

|                |      |                     |
|----------------|------|---------------------|
| Current rating | 5 A  | 15 pcs, blade fuses |
| Current rating | 10 A | 14 pcs, blade fuses |
| Current rating | 15 A | 2 pcs, blade fuses  |
| Current rating | 20 A | 2 pcs, blade fuses  |
| Current rating | 55 A | 1 pc.               |

|   |                               |   |                          |
|---|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 3 Electrical system</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:  |                               |   |                          |

### Section 3 Electrical system

|                |      |
|----------------|------|
| System voltage | 24 V |
|----------------|------|

| <b>Battery</b>                                 |                                |
|--|--------------------------------|
| Number of thermostats                          | 2 (connected in series)        |
| Battery disconnect switch (Chassis connection) | Connected to negative terminal |
| Voltage  | 12 V                           |
| Battery capacity                               | 2 x 140 Ah                     |

| <b>Battery electrolyte density</b> |               |
|------------------------------------|---------------|
| Fully charged battery              | 1.275 - 1.285 |
| The battery must be recharged at   | 1.250         |

| <b>Alternator with regulator</b> |                     |
|----------------------------------|---------------------|
| Type                             | Alternating current |
| Output (rated output)            | 1680 W              |
| Voltage, at + 20 °C (68 °F)      | 28.5 ±0.15 V        |
| Current, max.                    | 60 A                |
| Resistance across rotor winding  | 13.5 Ω              |
| Resistance in stator winding     | 0.12 Ω              |

| <b>Starter motor</b> |        |
|----------------------|--------|
| Output               | 6.6 kW |

| <b>Light bulbs</b>                    | <b>Watt</b> | <b>Base</b>     |
|---------------------------------------|-------------|-----------------|
| Headlights, asymmetrical              | 75/70       | P 43t - 38 (H4) |
| Parking lights                        | 4           | BA 9 s          |
| Tail lights                           | 10          | BA 15 s         |
| Brake lights                          | 21          | BA 15 s         |
| Direction indicators, rear            | 21          | BA 15 s         |
| Direction indicators, side            | 21          | BA 15 s         |
| Side lights                           | 5           | SV 8.5          |
| Cab light                             | 10          | BA 15 s         |
| Centre instrument panel (24 pcs.)     | 1.2         | W 2 x 4.6 d     |
| Guide light in switches               | 1.2         | W 2 x 4.6 d     |
| Work lights, front halogen, cab       | 70          | PK 22 s (H3)    |
| Work lights, rear halogen             | 70          | PK 22 s (H3)    |
| Work lights, front halogen (optional) | 70          | PK 22 s (H3)    |
| Work lights, rear halogen (optional)  | 70          | PK 22 s (H3)    |

| <b>Fuses</b> |
|--------------|
|--------------|

|                |      |                     |
|----------------|------|---------------------|
| Current rating | 5 A  | 15 pcs, blade fuses |
| Current rating | 10 A | 14 pcs, blade fuses |
| Current rating | 15 A | 2 pcs, blade fuses  |
| Current rating | 20 A | 2 pcs, blade fuses  |
| Current rating | 55 A | 1 pc.               |

|  |                               |   |                          |
|--|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 4 Power transmission</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:   |                               |   |                          |

## Section 4 Power transmission

|   |                   |
|---|-------------------|
| <b>Disengagement function</b>   |                   |
| Pressure sensor (SE 501), closing pressure (located on footbrake valve) | 1.8 MPa (261 psi) |

|                                |                                  |
|--------------------------------|----------------------------------|
| <b>Torque converter</b>        |                                  |
| Type                           | Single-stage                     |
| Torque amplification, at stall | 2.27:1                           |
| Torque converter safety valve  | 0.84 ±0.18 MPa (121.8 ±26.1 psi) |

|                               |                               |
|-------------------------------|-------------------------------|
| <b>Hydraulic transmission</b> |                               |
| Type                          | Full Power-Shift transmission |
| Make                          | Volvo                         |
| Designation                   | HT 220                        |
| Product number                | 30894                         |
| Number of gears               | 4 forward, 4 reverse          |
| Gearshifting system           | Electro-hydraulic             |

|                                    |                              |
|------------------------------------|------------------------------|
| <b>Speed range (tyres 26.5-25)</b> |                              |
| 1st                                | 0 - 6.5 km/h (0 - 4.0 mph)   |
| 2nd                                | 0 - 12.0 km/h (0 - 7.4 mph)  |
| 3rd                                | 0 - 23.5 km/h (0 - 14.6 mph) |
| 4th                                | 0 - 34.0 km/h (0 - 21.1 mph) |

|  |                                     |
|--|-------------------------------------|
| <b>Oil pressure, at high idle speed and neutral gear</b> |                                     |
| Main pressure  | 1.37 – 1.58 MPa (198.7 – 229.1 psi) |
| Clutch pressure, gear 1 – 4, F – R                       | 1.37 – 1.58 MPa (198.7 – 229.1 psi) |
| Torque converter pressure, out                           | 0.20 – 0.50 MPa (29.0 – 72.5 psi)   |
| Lubricating oil pressure                                 | 0.16 – 0.22 MPa (23.2 – 31.9 psi)   |

|                     |   |
|---------------------|---|
| <b>Drive shafts</b> |   |
| Type                | Fully floating axle shafts with planetary gear hub reductions |
| Make                | Volvo   |
| Designation         |   |
| front               | AWB 40 (Serial no. 23852, 23854-55)                           |
| rear                | AWB 40 (Serial no. 23853, 23856)                              |
| Gear ratio          |   |
| Differential, front | 4.25:1  |
| Differential, rear  | 4.25:1  |
| Total front         | 22.67:1   |

|                               |                             |
|-------------------------------|-----------------------------|
| rear                          | 22.67:1                     |
| Differential lock, front axle | Dog clutch                  |
| Operation                     | hydraulic by servo pressure |

|  |                                 |
|--|---------------------------------|
| <b>Cooling pump, front and rear axles</b>            |                                 |
| Type   | Rotor pump                      |
| Operating pressure (full speed)                      | 0.2 – 0.3 MPa (29.0 – 43.5 psi) |
| Flow at 40 r/s (2400 r/min) and 0.25 Mpa (36.25 psi) | 29.0 l/min (7.66 US gal/min)    |

|  |                               |   |                          |
|--|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 4 Power transmission</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:   |                               |   |                          |

## Section 4 Power transmission

|   |                   |
|---|-------------------|
| <b>Disengagement function</b>   |                   |
| Pressure sensor (SE 501), closing pressure (located on footbrake valve) | 1.8 MPa (261 psi) |

|                                |                              |
|--------------------------------|------------------------------|
| <b>Torque converter</b>        |                              |
| Type                           | Single-stage                 |
| Torque amplification, at stall | 2.40:1                       |
| Torque converter safety valve  | 0.84 ±0.18 MPa (122 ±26 psi) |

|                               |                               |
|-------------------------------|-------------------------------|
| <b>Hydraulic transmission</b> |                               |
| Type                          | Full Power-Shift transmission |
| Make                          | Volvo                         |
| Designation                   | HT 210                        |
| Product number                | 30893                         |
| Number of gears               | 4 forward, 4 reverse          |
| Gearshifting system           | Electro-hydraulic             |

| <b>Speed range</b> | <b>(tyres 23.5-25)</b>   | <b>(tyres 26.5-25)</b>   |
|--------------------|--------------------------|--------------------------|
| 1st                | 0 – 6.4 km/h (4.0 mph)   | 0 – 6.4 km/h (4.0 mph)   |
| 2nd                | 0 – 11.9 km/h (7.4 mph)  | 0 – 11.8 km/h (7.3 mph)  |
| 3rd                | 0 – 23.5 km/h (14.6 mph) | 0 – 23.3 km/h (14.6 mph) |
| 4th                | 0 – 34.3 km/h (21.3 mph) | 0 – 33.9 km/h (21.0 mph) |

|  |                                 |
|--|---------------------------------|
| <b>Oil pressure, at high idle speed and neutral gear</b> |                                 |
| Main pressure  | 1.37 – 1.58 MPa (199 – 229 psi) |
| Clutch pressure, gear 1 – 4, F – R                       | 1.37 – 1.58 MPa (199 – 229 psi) |
| Torque converter pressure, out                           | 0.20 – 0.50 MPa (29 – 73 psi)   |
| Lubricating oil pressure                                 | 0.16 – 0.22 MPa (23 – 32 psi)   |

|                               |   |
|-------------------------------|---|
| <b>Drive shafts</b>           |   |
| Type                          | Fully floating axle shafts with planetary gear hub reductions |
| Make                          | Volvo   |
| Designation                   |   |
| front                         | AWB 40 (Serial no. 23839, 23840)                              |
| rear                          | AWB 40 (Serial no. 23841)                                     |
| Gear ratio                    |   |
| Differential, front           | 4.25:1  |
| Differential, rear            | 4.25:1  |
| Total front                   | 22.67:1   |
| rear                          | 22.67:1   |
| Differential lock, front axle | Dog clutch  |

|           |                             |
|-----------|-----------------------------|
| Operation | hydraulic by servo pressure |
|-----------|-----------------------------|

| <b>Cooling pump, front and rear axles</b>         |                             |
|---|-----------------------------|
| Type  | Rotor pump                  |
| Operating pressure (full speed)                   | 0.2 – 0.3 MPa (29 – 44 psi) |
| Flow at 40 r/s (2400 r/min) and 0.25 Mpa (36 psi) | 29.0 l/min (7.7 US gal/min) |

|  |                               |   |                          |
|--|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 5 Brakes</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:                                   |                               |   |                          |

## Section 5 Brakes

|                                     |   |
|-------------------------------------|---|
| <b>Wheel brake</b>                  |   |
| Type                                | Dual circuit fully hydraulic wet disc brake |
| Brake disc, min. thickness          | 7.2 mm (0.28 in)                            |
| Brake discs, thickness, new disc    | 9.5 mm (0.37 in)                            |
| Accumulator capacity                | 4×0.75 dm <sup>3</sup> (0.2 US gal)         |
| Precharge pressure, new accumulator | 5 – 5.3 MPa (725 – 769 psi)                 |
| Min. allowed precharge pressure     | 3.5 MPa (508 psi)                           |
| Brake pedal angle (adjustable)      | std 50°                                     |

|   |                                   |
|---|-----------------------------------|
| <b>Foot brake valve / unloading valve</b> |                                   |
| System pressure, unloading pressure       | 15.0 – 15.5 MPa (2175 – 2248psi)  |
| System pressure, cut-in (charge) pressure | 12.0 – 13.0 MPa (1740 – 1885 psi) |
| Max. output pressure                      | 7.4 – 8.6 MPa (1073 – 1247 psi)   |
| Low pressure indication                   | 8.5 – 9.5 MPa (1233 – 1378 psi)   |

|  |   |
|--|---|
| <b>Hydraulic oil pump (incl. in working pump)</b>                    |   |
| Type   | Vane pump                                   |
| Displacement   | 15.9 cm <sup>3</sup> (1.0 in <sup>3</sup> ) |
| Flow at 35 r/s (2200 r/min) and pressure 10 MPa (1450 psi)           | 29.5 l/min (7.8 US gal/min)                 |
| Servo pressure (throughout entire engine speed range)                | 3.0 – 4.5 MPa (435 – 653 psi)               |
| Increased pressure, separate attachment locking (optional equipment) | 15.5 – 17 MPa (2248 – 2465 psi)             |
| Accumulator 0.5 l (0.13 US gal) in servo circuit, precharge pressure | 1.5 MPa (218 psi)                           |

|                                 |  |
|---------------------------------|--|
| <b>Parking brake</b>            |  |
| Type                            | Electrically controlled hydraulic disc brake |
| Min. thickness, brake pads      | 4.5 mm (0.18 in)                             |
| Parking brake, control pressure | 12 – 15.5 MPa (0.47 – 0.61 psi)              |

|  |                               |   |                          |
|--|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 5 Brakes</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:                                   |                               |   |                          |

## Section 5 Brakes

|                                     |   |
|-------------------------------------|---|
| <b>Wheel brake</b>                  |   |
| Type                                | Dual circuit fully hydraulic wet disc brake   |
| Brake disc, min. thickness          | 7.2 mm (0.28 in)                              |
| Brake discs, thickness, new disc    | 9.5 mm (0.37 in)                              |
| Accumulator capacity                | 2×1.0 dm <sup>3</sup> , 1×0.5 dm <sup>3</sup> |
| Precharge pressure, new accumulator | 5.0 – 5.3 MPa (725 – 769 psi)                 |
| Min. allowed precharge pressure     | 3.5 MPa (508 psi)                             |
| Brake pedal angle (adjustable)      | std 50°                                       |

|   |                                   |
|---|-----------------------------------|
| <b>Foot brake valve / unloading valve</b> |                                   |
| System pressure, unloading pressure       | 15.0 – 15.5 MPa (2175 – 2248 psi) |
| System pressure, cut-in (charge) pressure | 12.0 – 13.0 MPa (1740 – 1885 psi) |
| Max. output pressure                      | 7.4 – 8.6 MPa (1073 – 1247 psi)   |
| Low pressure indication                   | 8.5 – 9.5 MPa (1233 – 1378 psi)   |

|  |   |
|--|---|
| <b>Hydraulic oil pump (common with servo system)</b>                 |   |
| Type   | Vane pump                                 |
| Displacement   | 16.4 cm <sup>3</sup> (1 in <sup>3</sup> ) |
| Flow at 36.7 r/s (2200 r/min) and pressure 10 MPa                    | 31.0 l/min (8.2 US gal/min)               |
| Servo pressure (throughout entire engine speed range)                | 3.0 – 4.5 MPa (435 – 653 psi)             |
| Increased pressure, separate attachment locking (optional equipment) | 15.5 – 17 MPa (2248 – 2465 psi)           |
| Accumulator 0.5 l (0.13 US gal) in servo circuit, precharge pressure | 1.5 MPa (218 psi)                         |

|                                 |  |
|---------------------------------|--|
| <b>Parking brake</b>            |  |
| Type                            | Electrically controlled hydraulic disc brake |
| Min. thickness, brake pads      | 4.5 mm (1.18 in)                             |
| Parking brake, control pressure | 12 – 15.5 MPa (1740 – 2248 psi)              |

|   |                               |   |                          |
|---|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 6 Steering system</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:  |                               |   |                          |

## Section 6 Steering system

|   |                          |
|---|--------------------------|
| <b>Steering</b>                             |                          |
| Type  | Load-sensing hydrostatic |
| Steering angle                              | ±37°                     |
| Number of steering wheel turns, total       | 4.1 revolutions          |
| Steering time, lock – lock, low idle speed  | approx. 5.0 sec          |
| Steering time, lock – lock, high idle speed | approx. 3.5 sec          |

|   |   |
|---|---|
| <b>Oil pump</b>   |   |
| Type  | Axial piston pump, variable displacement  |
| Displacement  | 60 cm <sup>3</sup> (3.7 in <sup>3</sup> ) |
| Max. operating pressure, high idle speed                    | 21 ±0.35 MPa (3045 ±51 psi)               |
| Flow at 35.0 r/s (2100 rpm) and 10 MPa pressure             | 122 l/min (32.2 US gal/min)               |
| Hold (stand-by) pressure (across entire engine speed range) | 3.0 ±0.3MPa (435 ±43.5 psi)               |

|                       |                 |
|-----------------------|-----------------|
| <b>Steering valve</b> |                 |
| Type                  | "Closed centre" |

|                     |                               |
|---------------------|-------------------------------|
| <b>Shock valves</b> |                               |
| Number of valves    | 2 pcs.                        |
| Opening pressure    | 27 – 29 MPa (3915 – 4205 psi) |

|   |                     |
|---|---------------------|
| <b>Shift valve</b>                        |                     |
| Activation (cut-in) pressure, P-pressure  | 17.5 MPa (2538 psi) |
| Activation (cut-in) pressure, LS-pressure | 16.0 MPa (2320 psi) |

|                          |                               |
|--------------------------|-------------------------------|
| <b>Steering cylinder</b> |                               |
| Type                     | Double-acting                 |
| Piston rod diameter      | 50 mm (2 in)                  |
| Inside diameter / stroke | 90 / 418 mm (3.54 / 16.46 in) |

|   |                               |   |                          |
|---|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 6 Steering system</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:  |                               |   |                          |

## Section 6 Steering system

|   |                          |
|---|--------------------------|
| <b>Steering</b>                             |                          |
| Type  | Load-sensing hydrostatic |
| Steering angle                              | ± 37°                    |
| Number of steering wheel turns, total       | 4.2 revolutions          |
| Steering time, lock – lock, low idle speed  | approx. 5.5 sec          |
| Steering time, lock – lock, high idle speed | approx. 3.5 sec          |

|   |   |
|---|---|
| <b>Oil pump</b>   |   |
| Type  | Axial piston pump, variable displacement  |
| Displacement  | 60 cm <sup>3</sup> (3.7 in <sup>3</sup> ) |
| Max. operating pressure, high idle speed                    | 21 ±0.35 MPa (3045 ±51 psi)               |
| Flow at 35.0 r/s (2100 rpm) and 10 MPa (1450 psi) pressure  | 122 l/min (32.2 US gal/min)               |
| Hold (stand-by) pressure (across entire engine speed range) | 3.0 ±0.3MPa (435 ±43.5 psi)               |

|                       |                 |
|-----------------------|-----------------|
| <b>Steering valve</b> |                 |
| Type                  | "Closed centre" |

|                     |                               |
|---------------------|-------------------------------|
| <b>Shock valves</b> |                               |
| Number of valves    | 2 pcs.                        |
| Opening pressure    | 27 – 29 MPa (3915 – 4205 psi) |

|  |                     |
|--|---------------------|
| <b>Shift valve</b>                           |                     |
| Activation (cut-in) pressure, P – pressure   | 17.5 MPa (2538 psi) |
| Activation (cut-in) pressure, LS – -pressure | 16.0 MPa (2320 psi) |

|                          |                            |
|--------------------------|----------------------------|
| <b>Steering cylinder</b> |                            |
| Type                     | Double-acting              |
| Piston rod diameter      | 50 mm (2 in)               |
| Inside diameter / stroke | 100 / 418 mm (4 / 16.5 in) |

|   |                               |   |                          |
|---|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 8 Cab</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:                                |                               |   |                          |

## Section 8 Cab

| Air conditioning temperature values during performance test (°C) |                                     |            |            |            |
|--|-------------------------------------|------------|------------|------------|
|  | Ambient temperature                 |            |            |            |
|  | Air conditioning temperature values |            |            |            |
| Relative humidity of the air                                     | <b>25°</b>                          | <b>30°</b> | <b>35°</b> | <b>40°</b> |
| 10%  | 7°                                  | 7°         | 7°         | 7°         |
| 20%  | 7°                                  | 7°         | 7°         | 7°         |
| 30%  | 7°                                  | 7°         | 7°         | 7°         |
| 40%  | 7°                                  | 7°         | 7°         | 8°         |
| 50%  | 7°                                  | 7°         | 8°         | 11°        |
| 60%  | 7°                                  | 8°         | 10°        | 14°        |
| 70%  | 7°                                  | 10°        | 13°        | 17°        |
| 80%  | 7°                                  | 11°        | 15°        | 20°        |
| 90%  | 7°                                  | 12°        | 18°        | 23°        |



|   |                               |   |                          |
|---|-------------------------------|---|--------------------------|
| Document Title:<br><b>Section 8 Cab</b> | Function Group:<br><b>030</b> | Information Type:<br><b>Service Information</b> | Date:<br><b>4/9/2026</b> |
| Profile:                                |                               |   |                          |

## Section 8 Cab

| Air conditioning temperature values during performance test (°C) |                                     |            |            |            |
|--|-------------------------------------|------------|------------|------------|
|  | Ambient temperature                 |            |            |            |
|  | Air conditioning temperature values |            |            |            |
| Relative humidity of the air                                     | <b>25°</b>                          | <b>30°</b> | <b>35°</b> | <b>40°</b> |
| 10%  | 7°                                  | 7°         | 7°         | 7°         |
| 20%  | 7°                                  | 7°         | 7°         | 7°         |
| 30%  | 7°                                  | 7°         | 7°         | 7°         |
| 40%  | 7°                                  | 7°         | 7°         | 8°         |
| 50%  | 7°                                  | 7°         | 8°         | 11°        |
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| 80%  | 7°                                  | 11°        | 15°        | 20°        |
| 90%  | 7°                                  | 12°        | 18°        | 23°        |