Instructions manual

ICA260-US4EN1.pdf
Driving & Maintenance

Vibratory Roller
CA260

Engine
Cummins QSB 6.7C

Serial number
10000111xD007659 - 10000111xD007669
# Table of Contents

Introduction .............................................................................................................................. 1  
  The machine .......................................................................................................................... 1  
  Intended use ........................................................................................................................... 1  
  Warning symbols ................................................................................................................... 1  
  Safety information ................................................................................................................. 1  
  General .................................................................................................................................. 2  
  CE marking and Declaration of conformity ........................................................................... 3  

Safety - General instructions .................................................................................................. 5  

Safety - when operating ......................................................................................................... 7  
  Driving near edges ................................................................................................................. 7  
  Slopes .................................................................................................................................. 7  

Special instructions .................................................................................................................. 9  
  Standard lubricants and other recommended oils and fluids ................................................. 9  
  Higher ambient temperatures, above +40°C (104°F) .......................................................... 9  
  Temperatures ......................................................................................................................... 9  
  High pressure cleaning ......................................................................................................... 9  
  Fire fighting ............................................................................................................................ 9  
  Roll Over Protective Structure (ROPS), ROPS approved cab ............................................. 10  
  Battery handling ................................................................................................................... 10  
  Jump starting ......................................................................................................................... 11  

Technical specifications - Noise/Vibrations/Electrical ............................................................. 13  
  Vibrations - Operator station ............................................................................................... 13  
  Electrical system ................................................................................................................... 13  
  Noise level ............................................................................................................................. 13  

Technical specifications - Dimensions ................................................................................... 15  
  Dimensions, side view .......................................................................................................... 15  
  Dimensions, top view ............................................................................................................ 16  

Technical specifications - Weights and volumes .................................................................... 17  

Technical specifications - Working capacity .......................................................................... 19  

Technical specifications - General .......................................................................................... 21
Hydraulic system ................................................................. 21
ROPS - bolts ................................................................. 22
Tightening torque .......................................................... 23

Machine plate - Identification .................................................... 25
  Product identification number on the frame ...................... 25
  Machine plate ............................................................. 25
  Explanation of 17PIN serial number ............................... 26
  Engine plates .............................................................. 26

Machine description - Decals .................................................. 27
  Location - decals ......................................................... 27
  Safety decals .............................................................. 28
  Info decals ................................................................. 30

Machine description - Instruments/Controls ................................ 31
  Locations - Instruments and controls ............................ 31
  Locations - Control panel and controls ......................... 32
  Function description ................................................... 32
  Controls in the cab ..................................................... 36
  Function description of instruments and controls in the cab ................................................... 37

Machine description - Electrical system .................................. 39
  Fuses and relay in cab heater box (Optional) .................... 39
  Fuses in heater box ................................................... 39
  Relay in heater box .................................................... 39
  Fuses, battery disconnector/fuse box .............................. 40
  Relays ................................................................. 41
  Main fuses .............................................................. 41
  Fuses ................................................................. 42

Operation - Starting ............................................................ 43
  Before starting .......................................................... 43
  Master switch - Switching on ....................................... 43
  Driver seat (Std.) - Adjustment ................................. 43
Driver seat (Option)- Adjustment............................................................... 44
Instruments and lamps - Checking............................................................ 45
Check of diagnostics lamps. ..................................................................... 45
Operator position....................................................................................... 46
View .......................................................................................................... 46
Interlock..................................................................................................... 47
Starting ....................................................................................................... 47
Start of diesel motor ............................................................................... 47
Operation - Driving................................................................................ 49
Operating the roller ............................................................................... 49
Operation - Vibration............................................................................. 51
Vibration On/Off .................................................................................. 51
Vibration - Activation .......................................................................... 51
Operating - Stopping............................................................................. 53
Braking ..................................................................................................... 53
Emergency braking ............................................................................. 53
Normal braking ................................................................................... 53
Switching off ........................................................................................ 54
Parking ..................................................................................................... 54
Master switch ....................................................................................... 54
Chocking the drums ........................................................................... 55
Long-term parking.................................................................................. 57
Engine .................................................................................................... 57
Battery .................................................................................................. 57
Air cleaner, exhaust pipe ................................................................. 57
Fuel tank ............................................................................................... 57
Hydraulic reservoir ............................................................................. 57
Steering cylinder, hinges, etc ............................................................. 58
Hoods, tarpaulin ................................................................................... 58
Tires (All-weather) ................................................................................ 58
Miscellaneous ........................................................................................................................ 59
Lifting ...................................................................................................................................... 59
  Locking the articulation ........................................................................................................ 59
  Lifting the roller .................................................................................................................... 59
  Unlocking the articulation .................................................................................................... 60
Towing ...................................................................................................................................... 60
  Alternative 1 ....................................................................................................................... 60
  Short distance towing with the engine running ................................................................. 60
  Alternative 2 ....................................................................................................................... 61
  Towing short distances where the engine is inoperative .................................................. 61
  Rear axle brake .................................................................................................................. 61
  Drum gearbox brake .......................................................................................................... 61
  Towing the roller ................................................................................................................ 62
  Roller prepared for transport .............................................................................................. 62
Operating instructions - Summary .......................................................................................... 63
Preventive maintenance .......................................................................................................... 65
  Acceptance and delivery inspection ................................................................................... 65
  Warranty ............................................................................................................................... 65
Maintenance - Lubricants and symbols .................................................................................. 67
  Maintenance symbols .......................................................................................................... 68
Maintenance - Maintenance schedule .................................................................................... 69
  Service and maintenance points .......................................................................................... 69
  General .................................................................................................................................. 69
  Every 10 hours of operation (Daily) .................................................................................. 70
  After the FIRST 50 hours of operation .......................................................................... 70
  Every 50 hours of operation (Weekly) .............................................................................. 71
  Every 250 hours of operation (Monthly) .......................................................................... 71
  Every 500 hours of operation (Every three months) ...................................................... 72
  Every 1000 hours of operation (Every six months) ........................................................ 72
  Every 2000 hours of operation (Yearly) .......................................................................... 72
Maintenance - 10h

Scrapers - Check, adjustment
Steel scrapers (Optional)
Scrapers, Pad-drum
Soften scrapers (Optional)
Air circulation - Check
Coolant level - Check
Diesel engine - Check oil level
Fuel tank - Filling
Hydraulic reservoir - Check fluid level
Brakes - Check

Maintenance - 50h

Air cleaner
- Checking - Change the main air filter
- Backup filter - Change
Air cleaner - Cleaning
Articulation - Lubrication
Steering joint - Lubrication
Tires - Air pressure - Wheel nuts - Tightening
Automatic Climate Control (Optional) - Inspection

Maintenance - 250h

Rear axle differential - Check oil level
Rear axle planetary gears - Check oil level
Drum gearbox (D/PD) - Checking the oil level
Drum cartridge - Checking the oil level
Drum cartridge - Cleaning the ventilation screw
Bolted joints - Checking tightening torque
Radiator - Check/Cleaning
Rubber elements and fastening screws - Check
Battery - Check electrolyte level................................................................. 91
Battery cell ................................................................................................. 92
Air conditioning (Optional)
- Inspection.................................................................................................. 92
Maintenance - 500h ..................................................................................... 93
- Bleeder filter - Inspection/Cleaning ............................................................ 93
- Diesel engine - Oil and Filter change ......................................................... 94
- Fuel pre-filter - Cleaning ........................................................................... 94
Maintenance - 1000h ................................................................................. 95
- Hydraulic fluid filter - Replacement ........................................................... 95
- Hydraulic fluid reservoir - Draining ............................................................ 96
- Fuel tank - Drainage .................................................................................. 97
- Air conditioning (Optional)
  - Fresh air filter - Change .......................................................................... 97
- Rear axle differential - Oil change ............................................................... 98
- Rear axle's planetary gears - Draining the oil ............................................ 99
- Rear axle's planetary gears - Oil change - Oil filling ................................. 100
Maintenance - 2000h ................................................................................. 101
- Hydraulic reservoir - Changing the fluid ................................................... 101
- Drum cartridge - Oil change ..................................................................... 102
- Drum gearbox - Oil change ....................................................................... 103
- Steering hitch - Check ............................................................................. 103
- Controls - Lubrication .............................................................................. 104
- Automatic Climate Control (Optional)
  - Overhaul ................................................................................................ 104
- Drying filter - Check ................................................................................ 105
- Compressor - Check (Optional) ................................................................. 106
Introduction

The machine

Dynapac CA260 is a surface compactor/roller in the 11 ton category. The CA260 is available in the D (wheel-roller) and the PD (pads) versions respectively.

Intended use

The PD version have their domain of general usage on cohesive material and disintegrated rock material/mineral aggregates. All types of base courses and subbase courses can be compacted to a greater depth and the interchangeable drums D for PD, and vice versa, facilitate even greater versatility during the choice of application.

The cab and safety-related accessories are described in this manual. Other accessories, such as compaction meter, tachograph and field computer, are described in separate instructions.

Warning symbols

⚠️ WARNING ! Marks a danger or a hazardous procedure that can result in life threatening or serious injury if the warning is ignored.

⚠️ CAUTION ! Marks a danger or hazardous procedure that can result in damage to the machine or property if the warning is ignored.

Safety information

⚠️ The safety manual supplied with the machine must be read by all roller operators. Always follow the safety instructions. Do not remove the manual from the machine.

⚠️ We recommend that the operator reads the safety instructions in this manual carefully. Always follow the safety instructions. Ensure that this manual is always easily accessible.

⚠️ Read the entire manual before starting the machine and before carrying out any maintenance.
Ensure good ventilation (extraction of air by fan) where the engine is run indoors.

CALIFORNIA

Proposition 65 Warning
Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

General
This manual contains instructions for machine operation and maintenance.

The machine must be correctly maintained for maximal performance.

The machine should be kept clean so that any leakages, loose bolts and loose connections are discovered at as early a point in time as possible.

Inspect the machine every day, before starting. Inspect the entire machine so that any leakages or other faults are detected.

Check the ground under the machine. Leakages are more easily detected on the ground than on the machine itself.

THINK ENVIRONMENT ! Do not release oil, fuel and other environmentally hazardous substances into the environment. Always send used filters, drain oil and fuel remnants to environmentally correct disposal.

This manual contains instructions for periodic maintenance normally carried out by the operator.

Additional instructions for the engine can be found in the manufacturer's engine manual.
CE marking and Declaration of conformity

(Appplies to machines marketed in EU/EEC)

This machine is CE marked. This shows that on delivery it complies with the basic health and safety directives applicable for the machine in accordance with machinery directive 2006/42/EC and that it also complies with other directives applicable for this machine.

A "Declaration of conformity" is supplied with this machine, which specifies the applicable directives and supplements, as well as the harmonized standards and other regulations that are applied.
Safety - General instructions

(Also read the safety manual)

1. The operator must be familiar with the contents of the OPERATION section before starting the roller.

2. Ensure that all instructions in the MAINTENANCE section are followed.

3. Only trained and/or experienced operators are to operate the roller. Passengers are not permitted on the roller. Remain seated at all times when operating the roller.

4. Never use the roller if it is in need of adjustment or repair.

5. Only mount and dismount the roller when it is stationary. Use the intended grips and rails. Always use the three-point grip (both feet and one hand, or one foot and both hands) when mounting or dismounting the machine. Never jump down from the machine.

6. The ROPS (Roll Over Protective Structure) should always be used when the machine is operated on unsafe ground.

7. Drive slowly in sharp bends.

8. Avoid driving across slopes. Drive straight up or straight down the slope.

9. When driving close to edges, ditches or holes, make sure that at least 2/3 of the drum width is on previously compacted material (solid surface).

10. Make sure that there are no obstacles in the direction of travel, on the ground, in front of or behind the roller, or overhead.

11. Drive particularly carefully on uneven ground.

12. Use the safety equipment provided. The seat belt must be worn on machines fitted with ROPS.

13. Keep the roller clean. Clean any dirt or grease that accumulates on the operator platform immediately. Keep all signs and decals clean and legible.

14. Safety measures before refueling:
   - Shut off the engine
   - Do not smoke
   - No naked flame in the vicinity of the machine
   - Ground the filling device nozzle to the tank to avoid sparks

15. Before repairs or service:
   - Chock the drums/wheels and under the strike-off blade.
   - Lock the articulation if necessary
16. Hearing protection is recommended if the noise level exceeds 85 dB(A). The noise level can vary depending on the equipment on the machine and the surface the machine is being used on.

17. Do not make any changes or modifications to the roller that could affect safety. Changes are only to be made after written approval has been given by Dynapac.

18. Avoid using the roller before the hydraulic fluid has reached its normal working temperature. Braking distances can be longer than normal when the fluid is cold. See instructions in the STOP section.

19. For your own protection always wear:
   - helmet
   - working boots with steel toecaps
   - ear protectors
   - reflecting clothing/high visibility jacket
   - working gloves
Safety - when operating

Driving near edges

When driving near an edge, minimum 2/3 of the drum width must be on solid ground.

Keep in mind that the machine’s center of gravity moves outwards when steering. For example, the center of gravity moves to the right when you steer to the left.

![Fig. Position of drum when driving near an edge](image)

Minimum 2/3

Slopes

This angle has been measured on a hard, flat surface with the machine stationary.

The steering angle was zero, the vibration was switched OFF and all tanks were full.

Always take into consideration that loose ground, steering the machine, vibration on, machine speed across the ground and raising the center of gravity can all cause the machine to topple at smaller slope angles than those specified here.

To exit the cab in an emergency, release the hammer on the rear right post and break the rear window.

It is recommended that ROPS (Roll Over Protective Structure) or a ROPS-approved cab is always used when driving on slopes or unsafe ground. Always wear a safety belt.

![Fig. Operating on slopes](image)

Max 20° or 36%

Where possible, avoid driving across slopes. Drive instead straight up and down sloping ground.
Special instructions

Standard lubricants and other recommended oils and fluids

Before leaving the factory, the systems and components are filled with the oils and fluids specified in the lubricant specification. These are suitable for ambient temperatures in the range -15°C to +40°C (5°F - 104°F).

Higher ambient temperatures, above +40°C (104°F)

For operation of the machine at higher ambient temperatures, however maximum +50°C (122°F), the following recommendations apply:

The diesel engine can be run at this temperature using normal oil. However, the following fluids must be used for other components:

Hydraulic system - mineral oil Shell Tellus T100 or similar.

Temperatures

The temperature limits apply to standard versions of rollers.

Rollers equipped with additional equipment, such as noise suppression, may need to be more carefully monitored in the higher temperature ranges.

High pressure cleaning

Do not spray water directly onto electrical components or the instrument panels.

Place a plastic bag over the fuel filler cap and secure with a rubber band. This is to avoid high pressure water entering the vent hole in the filler cap. This could cause malfunctions, such as the blocking of filters.

Never aim the water jet directly at the fuel tank cap. This is particularly important when using a high-pressure cleaner.

Fire fighting

If the machine catches fire, use an ABE-class powder fire extinguisher.

A BE-class carbon dioxide fire extinguisher can also be used.
Roll Over Protective Structure (ROPS), ROPS approved cab

If the machine is fitted with a Roll Over Protective Structure (ROPS, or ROPS approved cab) never carry out any welding or drilling in the structure or cab.

Never attempt to repair a damaged ROPS structure or cab. These must be replaced with new ROPS structure or cabs.

Battery handling

When removing batteries, always disconnect the negative cable first.

When fitting batteries, always connect the positive cable first.

Dispose of old batteries in an environmentally friendly way. Batteries contain toxic lead.

Do not use a quick-charger for charging the battery. This may shorten battery life.
Jump starting

Do not connect the negative cable to the negative terminal on the dead battery. A spark can ignite the oxy-hydrogen gas formed around the battery.

Check that the battery used for jump starting has the same voltage as the dead battery.

Turn the ignition and all power consuming equipment off. Switch off the engine on the machine which is providing jump start power.

First connect the jump start battery's positive terminal (1) to the flat battery's positive terminal (2). Then connect the jump start battery's negative terminal (3) to, for example, a bolt (4) or the lifting eye on the machine with the flat battery.

Start the engine on the power providing machine. Let it run for a while. Now try to start the other machine. Disconnect the cables in the reverse order.
Technical specifications - Noise/Vibrations/Electrical

Vibrations - Operator station
(ISO 2631)

The vibration levels are measured in accordance with the operational cycle described in EU directive 2000/14/EC on machines equipped for the EU market, with vibration switched on, on soft polymer material and with the operator's seat in the transport position.

- Measured whole-body vibrations are below the action value of 0.5 m/s² as specified in Directive 2002/44/EC. (Limit is 1.15 m/s²)
- Measured hand/arm vibrations also were below the action level of 2.5 m/s² specified in the same directive. (Limit is 5 m/s²)

Electrical system
Machines are EMC tested in accordance with EN 13309:2000 'Construction machinery'

Noise level

The noise level is measured in accordance with the operational cycle described in EU directive 2000/14/EC on machines equipped for the EU market, on soft polymer material with vibration switched on and the operator's seat in the transport position.

- Guaranteed sound power level, $L_{WA}$: 108 dB (A)
- Sound pressure level at the operator's ear (platform), $L_{PA}$: XX dB (A)
- Sound pressure level at the operator's ear (cab), $L_{PA}$: XX dB (A)

During operation the above values may differ because of the actual operational conditions.
### Technical specifications - Dimensions

**Dimensions, side view**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>mm</th>
<th>in</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Wheelbase, drum and wheel</td>
<td>2879</td>
<td>113,3</td>
</tr>
<tr>
<td>L Length, standard equipped roller</td>
<td>5758</td>
<td>226,7</td>
</tr>
<tr>
<td>H1 Height, with ROPS (STD/D)</td>
<td>2916</td>
<td>114,8</td>
</tr>
<tr>
<td>H1 Height, with ROPS (P/PD)</td>
<td>2990</td>
<td>117,7</td>
</tr>
<tr>
<td>H1 Height, with cab (STD/D)</td>
<td>2958</td>
<td>116,5</td>
</tr>
<tr>
<td>H1 Height, with cab (P/PD)</td>
<td>3008</td>
<td>118,4</td>
</tr>
<tr>
<td>H2 Height, without ROPS (STD/D)</td>
<td>2181</td>
<td>85,8</td>
</tr>
<tr>
<td>H2 Height, without ROPS (P/PD)</td>
<td>2238</td>
<td>88,1</td>
</tr>
<tr>
<td>D Diameter, drum</td>
<td>1523</td>
<td>59,96</td>
</tr>
<tr>
<td>S Thickness, drum amplitude, Nominal</td>
<td>25</td>
<td>0,984</td>
</tr>
<tr>
<td>P Height, pads (P/PD)</td>
<td>102</td>
<td>4</td>
</tr>
<tr>
<td>K1 Clearance, tractor frame</td>
<td>453</td>
<td>17,83</td>
</tr>
<tr>
<td>K2 Clearance, drum frame (STD/D)</td>
<td>400</td>
<td>15,74</td>
</tr>
<tr>
<td>K2 Clearance, drum frame (P/PD)</td>
<td>495</td>
<td>19,48</td>
</tr>
</tbody>
</table>
Dimensions, top view

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>mm</th>
<th>in</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Width, standard equipped roller</td>
<td>2384</td>
<td>93,85</td>
</tr>
<tr>
<td>O1 Overhang, left frame side</td>
<td>127</td>
<td>5</td>
</tr>
<tr>
<td>O2 Overhang, right frame side</td>
<td>127</td>
<td>5</td>
</tr>
<tr>
<td>R1 Turn radius, external</td>
<td>5400</td>
<td>212,6</td>
</tr>
<tr>
<td>R2 Turn radius, internal</td>
<td>3100</td>
<td>122</td>
</tr>
<tr>
<td>W1 Width, tractor module</td>
<td>2130</td>
<td>83,86</td>
</tr>
<tr>
<td>W2 Width, drum</td>
<td>2130</td>
<td>83,86</td>
</tr>
</tbody>
</table>
## Weights

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Service weight with ROPS (EN500) (STD)</th>
<th>Service weight with ROPS (EN500) (D)</th>
<th>Service weight with ROPS (EN500) (P)</th>
<th>Service weight with ROPS (EN500) (PD)</th>
<th>Service weight without ROPS (STD)</th>
<th>Service weight without ROPS (D)</th>
<th>Service weight without ROPS (P)</th>
<th>Service weight without ROPS (PD)</th>
<th>Service weight with cab (STD)</th>
<th>Service weight with cab (D)</th>
<th>Service weight with cab (P)</th>
<th>Service weight with cab (PD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (kg)</td>
<td>11075</td>
<td>11300</td>
<td>12500</td>
<td>12700</td>
<td>10575</td>
<td>10800</td>
<td>12000</td>
<td>12200</td>
<td>11125</td>
<td>11350</td>
<td>12550</td>
<td>12750</td>
</tr>
<tr>
<td>Weight (lbs)</td>
<td>24416</td>
<td>24912</td>
<td>27557</td>
<td>27998</td>
<td>23314</td>
<td>23810</td>
<td>26455</td>
<td>26896</td>
<td>24526</td>
<td>25022</td>
<td>27668</td>
<td>28108</td>
</tr>
</tbody>
</table>

## Fluid volumes

<table>
<thead>
<tr>
<th>Component</th>
<th>Volume (liters)</th>
<th>Volume (gal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel tank</td>
<td>320</td>
<td>84.54</td>
</tr>
</tbody>
</table>


### Technical specifications - Working capacity

#### Compaction data

<table>
<thead>
<tr>
<th>Description</th>
<th>Value 1</th>
<th>Unit 1</th>
<th>Value 2</th>
<th>Unit 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static linear load (STD)</td>
<td>27.4 kg/cm</td>
<td>155 pli</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static linear load (D)</td>
<td>28.5 kg/cm</td>
<td>160 pli</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static linear load (P/PD)</td>
<td>- kg/cm</td>
<td>- pli</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static linear load, with ROPS (STD)</td>
<td>28.0 kg/cm</td>
<td>157 pli</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static linear load, with ROPS (D)</td>
<td>29.1 kg/cm</td>
<td>163 pli</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static linear load, with ROPS (P/PD)</td>
<td>- kg/cm</td>
<td>- pli</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static linear load, with cab (STD)</td>
<td>28.1 kg/cm</td>
<td>157 pli</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static linear load, with cab (D)</td>
<td>29.2 kg/cm</td>
<td>164 pli</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static linear load, with cab (P/PD)</td>
<td>- kg/cm</td>
<td>- pli</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amplitude, high (STD/D)</td>
<td>1.7 mm</td>
<td>0.066 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amplitude, high (P/PD)</td>
<td>1.6 mm</td>
<td>0.062 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amplitude, low (STD/D)</td>
<td>0.8 mm</td>
<td>0.031 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amplitude, low (P/PD)</td>
<td>0.8 mm</td>
<td>0.031 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibration frequency, high amplitude</td>
<td>33 Hz</td>
<td>1980 vpm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibration frequency, low amplitude</td>
<td>33 Hz</td>
<td>1980 vpm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centrifugal force, high amplitude (STD/D)</td>
<td>246 kN</td>
<td>55303 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centrifugal force, high amplitude (P/PD)</td>
<td>300 kN</td>
<td>67442 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centrifugal force, high amplitude (STD/D)</td>
<td>119 kN</td>
<td>26752 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centrifugal force, low amplitude (P/PD)</td>
<td>146 kN</td>
<td>32822 lb</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Technical specifications - General

#### Engine

<table>
<thead>
<tr>
<th>Manufacturer/Model</th>
<th>Cummins QSB 6.7C</th>
<th>Water cooled turbo diesel with after cooler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (SAE J1995)</td>
<td>112 kW</td>
<td>150 hp</td>
</tr>
<tr>
<td>Engine speed, idling</td>
<td>900 rpm</td>
<td></td>
</tr>
<tr>
<td>Engine speed, loading/unloading</td>
<td>1,500 rpm</td>
<td></td>
</tr>
<tr>
<td>Engine speed, working/transport</td>
<td>2,200 rpm</td>
<td></td>
</tr>
</tbody>
</table>

#### Electrical system

<table>
<thead>
<tr>
<th>Battery</th>
<th>12V 170Ah</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternator</td>
<td>12V 95A</td>
</tr>
<tr>
<td>Fuses</td>
<td>See the Electrical system section - fuses</td>
</tr>
</tbody>
</table>

#### Tire

<table>
<thead>
<tr>
<th>Tire</th>
<th>Tire dimensions</th>
<th>Tire pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Std-type</td>
<td>23.1 x 26.0 8 ply</td>
<td>110 kPa (1.1 kp/cm) (16 psi)</td>
</tr>
<tr>
<td>Tractor type</td>
<td>23.1 x 26.0 12 ply</td>
<td>110 kPa (1.1 kp/cm) (16 psi)</td>
</tr>
</tbody>
</table>

The tires can be optionally filled with fluid, (extra weight up to 500 kg/tire) (1102 lbs/tire). When servicing, bear this extra weight in mind.

#### Hydraulic system

<table>
<thead>
<tr>
<th>Opening pressure</th>
<th>MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive system</td>
<td>38,0</td>
</tr>
<tr>
<td>Supply system</td>
<td>2,0</td>
</tr>
<tr>
<td>Vibration system</td>
<td>42,5</td>
</tr>
<tr>
<td>Control systems</td>
<td>17,5</td>
</tr>
<tr>
<td>Brake release</td>
<td>1,4</td>
</tr>
</tbody>
</table>
**Technical specifications - General**

<table>
<thead>
<tr>
<th>ROPS - bolts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolt dimensions :</td>
<td>M24 (PN 904562)</td>
</tr>
<tr>
<td>Strength class :</td>
<td>10.9</td>
</tr>
<tr>
<td>Tightening torque :</td>
<td>800 Nm (Dacromet treated)</td>
</tr>
</tbody>
</table>

⚠️ ROPS-bolts which are to be torque tightened must be dry.
Tightening torque

Tightening torque in Nm (lbf.ft) for oiled or dry bolts tightened with a torque wrench.

Metric coarse screw thread, bright galvanized (fzb):

**STRENGTH CLASS:**

<table>
<thead>
<tr>
<th>M-thread</th>
<th>8.8, Oiled</th>
<th>8.8, Dry</th>
<th>10.9, Oiled</th>
<th>10.9, Dry</th>
<th>12.9, Oiled</th>
<th>12.9, Dry</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6</td>
<td>8,4</td>
<td>9,4</td>
<td>12</td>
<td>13,4</td>
<td>14,6</td>
<td>16,3</td>
</tr>
<tr>
<td>M8</td>
<td>21</td>
<td>23</td>
<td>28</td>
<td>32</td>
<td>34</td>
<td>38</td>
</tr>
<tr>
<td>M10</td>
<td>40</td>
<td>45</td>
<td>56</td>
<td>62</td>
<td>68</td>
<td>76</td>
</tr>
<tr>
<td>M12</td>
<td>70</td>
<td>78</td>
<td>98</td>
<td>110</td>
<td>117</td>
<td>131</td>
</tr>
<tr>
<td>M14</td>
<td>110</td>
<td>123</td>
<td>156</td>
<td>174</td>
<td>187</td>
<td>208</td>
</tr>
<tr>
<td>M16</td>
<td>169</td>
<td>190</td>
<td>240</td>
<td>270</td>
<td>290</td>
<td>320</td>
</tr>
<tr>
<td>M20</td>
<td>330</td>
<td>370</td>
<td>470</td>
<td>520</td>
<td>560</td>
<td>620</td>
</tr>
<tr>
<td>M22</td>
<td>446</td>
<td>497</td>
<td>626</td>
<td>699</td>
<td>752</td>
<td>839</td>
</tr>
<tr>
<td>M24</td>
<td>570</td>
<td>640</td>
<td>800</td>
<td>900</td>
<td>960</td>
<td>1080</td>
</tr>
<tr>
<td>M30</td>
<td>1130</td>
<td>1260</td>
<td>1580</td>
<td>1770</td>
<td>1900</td>
<td>2100</td>
</tr>
</tbody>
</table>

Metric coarse thread, zinc-treated (Dacromet/GEOMET):

**STRENGTH CLASS:**

<table>
<thead>
<tr>
<th>M-thread</th>
<th>10.9, Oiled</th>
<th>10.9, Dry</th>
<th>12.9, Oiled</th>
<th>12.9, Dry</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6</td>
<td>12,0</td>
<td>15,0</td>
<td>14,6</td>
<td>18,3</td>
</tr>
<tr>
<td>M8</td>
<td>28</td>
<td>36</td>
<td>34</td>
<td>43</td>
</tr>
<tr>
<td>M10</td>
<td>56</td>
<td>70</td>
<td>68</td>
<td>86</td>
</tr>
<tr>
<td>M12</td>
<td>98</td>
<td>124</td>
<td>117</td>
<td>147</td>
</tr>
<tr>
<td>M14</td>
<td>156</td>
<td>196</td>
<td>187</td>
<td>234</td>
</tr>
<tr>
<td>M16</td>
<td>240</td>
<td>304</td>
<td>290</td>
<td>360</td>
</tr>
<tr>
<td>M20</td>
<td>470</td>
<td>585</td>
<td>560</td>
<td>698</td>
</tr>
<tr>
<td>M22</td>
<td>626</td>
<td>786</td>
<td>752</td>
<td>944</td>
</tr>
<tr>
<td>M24</td>
<td>800</td>
<td>1010</td>
<td>960</td>
<td>1215</td>
</tr>
<tr>
<td>M30</td>
<td>1580</td>
<td>1990</td>
<td>1900</td>
<td>2360</td>
</tr>
</tbody>
</table>
Machine plate - Identification

Product identification number on the frame

The machine PIN (product identification number) (1) is punched on the right edge of the front frame or the upper edge of the right frameside.

Machine plate

The machine type plate (1) is attached to the front left side of the frame, beside the steering joint.

The plate specifies the manufacturers name and address, the type of machine, the PIN product identification number (serial number), operating weight, engine power and year of manufacture. (If the machine is supplied to outside the EU, there are no CE markings and in some cases no year of manufacture.)

Please state the machine's PIN when ordering spares.
Explanation of 17PIN serial number

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>00123</td>
<td>V</td>
<td>0</td>
<td>A</td>
<td>123456</td>
</tr>
</tbody>
</table>

A = Manufacturer  
B = Family/Model  
C = Check letter  
D = No coding  
E = Production unit  
F = Serial number

Engine plates

The engine type plates (1) are affixed to the top and on the right side of the engine.

The plates specify the type of engine, serial number and the engine specification.

Please specify the engine serial number when ordering spares. Refer also to the engine manual.
1. Warning, Crush zone
2. Warning, Rotating engine components
3. Warning, Hot surfaces
4. Warning, Ballasted tire
5. Warning, Read instructions manual
6. Warning, locking
7. Product sign
8. Diesel fuel
9. Hydraulic fluid/Biohydraulic fluid
10. Lifting point
11. Fixing point
12. Master switch
13. Handbook compartment
14. Tire pressure
15. Hoisting plate
16. Warning sign
17. Hydraulic fluid/Biohydraulic
Safety decals

4700903422
Warning - Crush zone, articulation/drum.
Maintain a safe distance from the crush zone.
(Two crush zones on machines fitted with pivotal steering)

4700903423
Warning - Rotating engine components.
Keep your hands at a safe distance from the danger zone.

4700903424
Warning - Hot surfaces in the engine compartment.
Keep your hands at a safe distance from the danger zone.

4700903459
Warning - Instruction manual
The operator must read the safety, operation and maintenance instructions before operating the machine.

4700908229
Warning - Locking
The articulation must be locked when lifting.
Read the instruction manual.

4700904165
Warning - Toxic gas (accessory, ACC)
Read the instruction manual.
4700903590
-Emergency exit

4700903985
Warning - Ballasted tire.
Read the instruction manual.
Info decals

- **Coolant**
- **Diesel fuel**
- **Lifting point**
- **Hoisting plate**
- **Handbook compartment**
- **Master switch**
- **Hydraulic fluid**
- **Tire pressure**
- **Securing point**
- **Hydraulic fluid level**
- **Noise power level**

**Warning:**
ACTIVATE THE PARKING BRAKE BEFORE LEAVING THE OPERATOR'S PLATFORM
Machine description - Instruments/Controls

Locations - Instruments and controls

14. Driving lights
15. Working lights
16. Hazard flashers
17. Hazard beacon
18. Direction indicators
19. Horn
20. Vibration On/Off, Amplitude High/Low
21. Anti spin forward/back
22. Control panel
23. Parking brake On/Off
24. Transport mode/Traction control (Optional)
25. Electronic speed control regulator
26. Motor diagnostics ON/OFF
27. Motor diagnostics Selector +/-
28. Motor diagnostics control light serious fault
29. Motor diagnostics less serious fault

Fig. Instruments and control panel
Machine description - Instruments/Controls

Locations - Control panel and controls

1. Starter switch 23 Low fuel level
2. Emergency stop 24 Oil pressure, diesel engine
3. Vibration ON/OFF 25 Parking brake
4. Handbook compartment 26 Fuel level
5. Forward/Back control 27 Water temperature, diesel engine
6. Seat switch 28 Battery/charging
7. Fuse box 29 Glow plug
8. Instrument guard 30 Hourmeter
9. Air filter

Function description

<table>
<thead>
<tr>
<th>No</th>
<th>Designation</th>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Starter switch</td>
<td>![Starter switch symbol]</td>
<td>Positions 1-2: Shut off position, key can be removed. Position 3a: All instruments and electric controls are supplied with power. The machine is equipped with automatic glowing which occurs in this position.</td>
</tr>
</tbody>
</table>
When pressed, the emergency stop is activated. The brake is applied and the engine stops. Brace yourself for a sudden stop.

Contains fuses for the electrical system. See under the heading 'Electrical system' for a description of fuse functions.

Pull up and open the top of the compartment for access to handbooks.

The lever must be in neutral to start the diesel engine. The engine cannot be started if the lever is in any other position.

The forward/reverse lever controls both the roller’s driving direction and speed. When the lever is moved forward, the roller moves forward etc. The roller’s speed is proportional to the distance the lever is from the neutral position. The further the lever is from the neutral position, the higher the speed.

Remain seated at all times when operating the roller. If the operator stands up during operation, a buzzer sounds. After 3 seconds the brakes are applied and the engine stops.

Contains fuses for the electrical system. See under the heading 'Electrical system' for a description of fuse functions.

Lowered over the instrument plate to protect the instruments from the weather and sabotage. Lockable.

Shows hydraulic fluid temperature. Normal temperature range is 65°-80°C (149°-176°F).

If the lamp comes on while the engine is running at full speed, the air filter must be cleaned or replaced.

Where the upper position is depressed, the road lights are on. Where the lower position is, depressed the parking lights are on.

When depressed, the working lights are on.

Where depressed, the hazard warning lights are on.

Where depressed, the hazard beacon is on.

When depressed to the left, the left direction indicators are on etc. In the middle position the function is shut off.
# Machine description - Instruments/Controls

<table>
<thead>
<tr>
<th>No.</th>
<th>Designation</th>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Horn, switch</td>
<td>![Symbol]</td>
<td>Press to sound the horn.</td>
</tr>
<tr>
<td>20</td>
<td>Amplitude High/Low, Vibration On</td>
<td>![Symbol]</td>
<td>Low Amplitude Activate the vibration together with the circuit breaker on forward/back control. Vibration switched off.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Anti spin Forward/Equal share/Back</td>
<td>![Symbol]</td>
<td>Roller spinning symbol = less distribution of power to the roller. Mid position = Equal distribution of power forward/back. Wheel spinning symbol = less distribution of power to the roller.</td>
</tr>
<tr>
<td></td>
<td>(Optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Control panel</td>
<td>![Symbol]</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Warning lamp, low fuel level</td>
<td>![Symbol]</td>
<td>This lamp lights when the fuel level in the diesel tank is too low.</td>
</tr>
<tr>
<td>24</td>
<td>Warning lamp, oil pressure</td>
<td>![Symbol]</td>
<td>This lamp lights if the lubricating pressure in the engine is too low. Stop the engine immediately and locate the fault.</td>
</tr>
<tr>
<td>25</td>
<td>Warning lamp, parking brake</td>
<td>![Symbol]</td>
<td>The lamp lights when the parking brake is activated.</td>
</tr>
<tr>
<td>26</td>
<td>Fuel level</td>
<td>![Symbol]</td>
<td>Shows the fuel level in the diesel tank.</td>
</tr>
<tr>
<td>27</td>
<td>Warning lamp, water temperature</td>
<td>![Symbol]</td>
<td>The light comes on if the water temperature is too high.</td>
</tr>
<tr>
<td>28</td>
<td>Warning lamp, battery charging</td>
<td>![Symbol]</td>
<td>If the lamp lights while the engine is running the alternator is not charging. Stop the engine and locate the fault.</td>
</tr>
<tr>
<td>29</td>
<td>Warning lamp, glow plug</td>
<td>![Symbol]</td>
<td>The lamp must go out before the starter switch is moved to position 3c for activation of the starter motor.</td>
</tr>
<tr>
<td>30</td>
<td>Hourmeter</td>
<td>![Symbol]</td>
<td>Shows the number of hours the engine has run.</td>
</tr>
<tr>
<td>31</td>
<td>Parking brake On/Off, switch</td>
<td>![Symbol]</td>
<td>Push in to activate the parking brake, the machine stops with the engine running. <em>Always use the parking brake when the machine is stationary on a sloping surface.</em></td>
</tr>
<tr>
<td>32</td>
<td>Transport mode/Traction control</td>
<td>![Symbol]</td>
<td>Transport mode. Traction control mode (TC): Activate this function together with the power distribution selector switch.</td>
</tr>
<tr>
<td></td>
<td>(Optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Electronic speed control regulator</td>
<td>![Symbol]</td>
<td>Regulate the number of revs of the diesel motor. Low (900 rpm), Medium (1500 rpm), High (rpm)</td>
</tr>
<tr>
<td>34</td>
<td>Motor diagnostics</td>
<td>![Symbol]</td>
<td>On/Off</td>
</tr>
</tbody>
</table>
### Machine description - Instruments/Controls

<table>
<thead>
<tr>
<th>No</th>
<th>Designation</th>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>Motor diagnostics</td>
<td></td>
<td>Selector +/-</td>
</tr>
<tr>
<td>36</td>
<td>Motor diagnostics</td>
<td>![STOP]</td>
<td>Control lamp red. Serious fault: Turn the motor off at once! Attend to before restarting.</td>
</tr>
<tr>
<td>37</td>
<td>Motor diagnostics</td>
<td>![Exclamation]</td>
<td>Control lamp yellow. Less serious fault: Attend to as soon as possible.</td>
</tr>
</tbody>
</table>
Controls in the cab

Fig. Cab roof, front
1. Front wiper
2. Rear wiper (Optional)
3. Front and rear windshield washers

Fig. Cab roof, rear
4. Hammer for emergency escape

Fig. Cab, right side. Heater (Optional)
5. Control, temperature
6. Control, circulation,
7. Control, fan
8. Switch, AC (Optional)

Fig. Cab, rear
9. Switch, cab lighting (Optional)

Fig. Cab, left side
10. Windscreen washer fluid container
   (Optional)

Fig. Cabin driving compartment
11. Manual compartment
<table>
<thead>
<tr>
<th>No</th>
<th>Designation</th>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front wiper, switch</td>
<td>![Wiper]</td>
<td>Press to operate the front screen wiper.</td>
</tr>
<tr>
<td>2</td>
<td>Rear wiper, switch (Optional)</td>
<td>![Wiper]</td>
<td>Press to operate the rear screen wiper.</td>
</tr>
<tr>
<td>3</td>
<td>Front and rear window screen washers, switch</td>
<td>![Wiper]</td>
<td>Press at the top to spray the windshield.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>![Wiper]</td>
<td>Press at the bottom to spray the rear windshield.</td>
</tr>
<tr>
<td>4</td>
<td>Hammer for emergency exit</td>
<td>![Hammer]</td>
<td>To escape from the cab in an emergency, release the hammer and break the REAR window.</td>
</tr>
<tr>
<td>5</td>
<td>Control, temperature (Optional)</td>
<td>![Temperature]</td>
<td>In the left position, the heating is OFF. In the right position, maximum heating.</td>
</tr>
<tr>
<td>6</td>
<td>Control, circulation (Optional)</td>
<td>![Circulation]</td>
<td>In the left position, the circulation is OFF. In the right position, maximum circulation</td>
</tr>
<tr>
<td>7</td>
<td>Control, fan (Optional)</td>
<td>![Fan]</td>
<td>In the left position, the fan is OFF. In the right position, maximum fan.</td>
</tr>
<tr>
<td>8</td>
<td>AC, switch (Optional)</td>
<td>![AC]</td>
<td>Push in to turn on cab lighting</td>
</tr>
<tr>
<td>9</td>
<td>Cab lighting, switch (Optional)</td>
<td>![Lighting]</td>
<td>Push in to turn on cab lighting</td>
</tr>
<tr>
<td>10</td>
<td>Windscreen wiper fluid container (Optional)</td>
<td>![Wiper Fluid]</td>
<td>Fill with screenwash as required.</td>
</tr>
</tbody>
</table>
Machine description - Electrical system

Fuses and relay in cab heater box (Optional)

To access the fuses (x2) in the heater box, release the plug (1).

The relay in the heater box is accessed by releasing the screws (2) and (3) on the top of the cover, and the screws (3) on the front of the cover, after which the cover (4) can be lifted off the heater box.

Fuses in heater box

To access the fuses (x2) in the heater box, release the plug (1). Unscrew the cover (7) on the fuse box.
5. 20 A Fan
6. 20 A AC (Optional)

Relay in heater box

To access the relay (8) (x1) in the heater box: Unscrew the screws (2) and (3) on the top of the cover, and the screws (3) on the front of the cover. The cover (4) can now be lifted off the heater box.
Fuses, battery disconnector/fuse box

To access the fuse (9), remove the front of the battery disconnector/fuse box by unscrewing the screws. Pull off the top of the fuse holder to see the fuse.

9 50 A Main fuse for cab

Control unit (ECU:n) 1 is places behind the front hatch under the driver seat.

This control unit runs the electrical driving system, vibration, start-stop, among other things.
Relays

1. k7  Direction indicators
2. K6  Stop lights
3.  Working lights

Main fuses

There are two main fuses (2). These are behind the battery disconnecting switch. The two screws need to be unscrewed to remove the metal cover.

The fuse if of the flat pin type.

Start relay (1), preheater relay (3) and fuses (5) for the preheating relay are even fixed here.

- Feeding standard 40A (Orange, High)
- Feeding ECU diesel motor 30A (Green, High)
- Supply lighting * 20A (Yellow)
- Power supply, preheater 125A (Orange, SF30)

* Optional equipment
Machine description - Electrical system

Fuses

The figure shows the position of the fuses.

The table below gives fuse amperage and function. All fuses are flat pin fuses.

The machine is equipped with a 12V electrical system and an AC alternator.

---

**Fuses in boxes F1**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Emergency stop, ECU, reversing alarm, neutral position, seat switch, vibration</td>
<td>15A</td>
</tr>
<tr>
<td>2</td>
<td>Horn, buzzer, control panel</td>
<td>10A</td>
</tr>
<tr>
<td>3</td>
<td>Diagnostics ECU diesel motor</td>
<td>5A</td>
</tr>
<tr>
<td>4</td>
<td>Rotating hazard beacon</td>
<td>10A</td>
</tr>
<tr>
<td>5</td>
<td>High/Low speed</td>
<td>10A</td>
</tr>
<tr>
<td>6</td>
<td>Windshield wipers cabin</td>
<td>10A</td>
</tr>
<tr>
<td>7</td>
<td>Compaction meter</td>
<td>10A</td>
</tr>
<tr>
<td>8</td>
<td>Indicators, warning indicators, cab interior lightning</td>
<td>10A</td>
</tr>
</tbody>
</table>

**Fuses in boxes F2**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Working lights</td>
<td>20A</td>
</tr>
<tr>
<td>2</td>
<td>Traffic lights: headlight, navigation light, braking lights, number plate illumination</td>
<td>20A</td>
</tr>
</tbody>
</table>
Operation - Starting

Before starting

Master switch - Switching on

Remember to carry out daily maintenance. Refer to the maintenance instructions.

The master switch is located in the engine compartment. Open the engine cover and set the key (1) to the ON position. The entire roller is now supplied with power.

![The engine hood must be unlocked when operating, so that the battery can be quickly disconnected if necessary.]

Driver seat (Std.) - Adjustment

Adjust the operator’s seat so that the position is comfortable and so that the controls are within easy reach.

The seat can be adjusted lengthways (1).
Driver seat (Option)- Adjustment

Adjust the operator’s seat so that the position is comfortable and so that the controls are within easy reach.

The seat can be adjusted as follows.

- Length adjustment (1)
- Weight adjustment (2)
- Back support angle (3)

Always make sure that the seat is secure before beginning operation.

Do not forget to use the seat belt (4).
Instruments and lamps - Checking

![Fig. Instrument panel](image)

1. Starter switch
2. Emergency stop
22. Warning panel

---

**Make sure that the emergency stop (2) is pulled out. When the roller is in neutral or there is no load on the operator seat, the automatic brake function is engaged.**

Pull out the emergency stop (2).

Turn the switch (1) to position 3a.

Check that the warning lamps in the warning panel (22) come on.

---

**Check of diagnostics lamps.**

Turn the switch (1) to position 3a as above.

Turn the knob for Motor diagnostics On/Off (34) to right position.

Then check that the control lamps (36) and (37) is lit.
Operator position

If a ROPS (2) (Roll Over Protective Structure) or a cab is fitted to the roller, always wear the seat belt (1) provided and wear a protective helmet.

Replace the seat belt (1) if it shows signs of wear or has been subjected to high levels of force.

Check that rubber elements (3) on the platform are intact. Worn elements will impair comfort.

Ensure that the anti-slip (4) on the platform is in good condition. Replace where anti-slip friction is poor.

If the machine is fitted with a cab, make sure that the door is closed when in motion.

View

Before starting, make sure that the view forwards and backwards is unobstructed.

All cab windows should be clean and the rear view mirrors should be correctly adjusted.
Interlock

The roller is equipped with Interlock.

The engine switches off 3 seconds after the operator rises from the seat.

The engine stops whether the forward/reverse lever is in the neutral or the drive position.

The engine does not stop if the parking brake is activated.

⚠️ Sit down for all operations!

Starting

Start of diesel motor

Make sure that the emergency stop (3) is pulled out.

Make sure that the parking brake switch (31) is activated.

Set the forward/reverse lever (6) in neutral. The engine can only be started when the lever is in neutral.

Turn the vibration switch (20) to the Off position (position O).

Set revolution regulator (33) at the position for idle running, Low.

Preheating: Turn key to position II. When the incandescent lamp (29) has gone out, turn direct switching starter(1) to position 3c. As soon as the motor has started, let the starting switch go.

⚠️ Do not run the starter motor for too long. If the engine does not start, wait a minute or so before trying again.

Idle the engine for a few minutes until it is warm, longer if the ambient temperature is below +10 °C (50 °F)

At temperatures below 0°C (32°F) the diesel engine and hydraulic system should be warmed up for at least 15 minutes.
Check while warming the engine that the warning lamps for the oil pressure (24) and charging (28) go out.

The warning lamp (25) should remain on.

⚠️ **When starting and driving a machine that is cold, remember that the hydraulic fluid is also cold and that braking distances can be longer than normal until the machine reaches the working temperature.**

Ensure that there is good ventilation (air extraction) if the engine is run indoors. Risk of carbon monoxide poisoning.

---

**Fig. Instrument panel**
20. Vibration switch

**Fig. Control panel**
28. Charging lamp
24. Oil pressure lamp
25. Brake lamp
29. Glow plug lamp
Operation - Driving

Operating the roller

Under no circumstances is the machine to be operated from the ground. The operator must be seated inside the machine during all operation.

Set Rotation starter switch (33) in operational position: high.

Deactivate the parking brake switch (31).

Check that the steering is working correctly by turning the steering wheel once to the right and once to the left while the roller is stationary.

Make sure that the area in front of and behind the roller is clear.

Carefully move the forward/reverse lever (6) forwards or backwards, depending on which direction of travel is required.

The speed increases as the lever is moved away from the neutral position.

The speed should always be controlled by using the forward/reverse lever, and never by changing the engine speed.

Test the emergency stop by pressing the emergency stop button (3) while the roller is moving slowly forward. Brace yourself for a sudden stop. The engine will be switched off and the brakes activated.

Check while driving that the warning lamps have not gone on.
Operation - Vibration

Vibration On/Off

Activation/deactivation of the vibration is selected with the switch (20).

The operator must activate the vibration via the switch (4) on the underside of the forward/reverse handle. See illustration below.

---

Vibration - Activation

![Warning]

Never activate vibration when the roller is stationary. This can damage both the surface and the machine.

Engage and disengage vibration using the switch (4) on the underside of the forward/reverse lever.

Vibration can only be engaged at low and high speed. Always switch off vibration before the roller comes to a standstill.
Operating - Stopping

Braking

Emergency braking

Braking is normally activated using the forward/reverse lever. The hydrostatic transmission brakes the roller when the lever is moved towards the neutral position.

There is also a brake in the drum motor and rear axle that acts as an emergency brake during operation.

For emergency braking, press the emergency stop (3), hold the steering wheel firmly and be prepared for a sudden stop. The brakes are applied and the engine stops.

After emergency braking, return the forward/reverse lever to neutral position and pull out the emergency stop (3). When the roller is fitted with an Interlock it is necessary to sit down in the driver seat to restart the engine.

Normal braking

Press the switch (4) to switch off the vibration.

Move the forward/reverse lever (6) to the neutral position to stop the roller.

Set speed control regulator (33) to idle running position: low.

Set the parking brake switch (31) in the On position.

Always use the parking brake (31) when the machine is stationary on a sloping surface.

When starting and driving a machine that is cold, remember that the hydraulic fluid is also cold and that braking distances can be longer than normal until the machine reaches the working temperature.
Switching off

Check instruments and warning lamps to see if any faults are indicated. Switch off all lights and other electrical functions.

Set speed control regulator (33) in position Low and let the engine run for about 1 minute.

Activate the parking brake switch (31).

Turn the starter switch (1) to the left to switched off position 1. At the end of the shift, lower the instrument cover (22) and lock it.

Parking

Master switch

Before leaving the roller for the day, switch the master switch (1) to the disconnected position and remove the key.

This will prevent battery discharging and will also make it difficult for unauthorized persons to start and operate the machine. Also lock the engine hood.
Chocking the drums

Never disembark from the machine when the engine is running, unless the reserve/parking brake knob is depressed.

Make sure that the roller is parked in a safe place with respect to other road users. Chock the drums if the roller is parked on sloping ground.

Keep in mind that there is a risk of freezing during the winter. Fill the engine cooling system and the screenwash bottle in the cab with suitable anti-freeze mixtures. See also the maintenance instructions.
Long-term parking

The following instructions should be followed when long term parking (more than one month).

These measures apply when parking for a period of up to 6 months.

Before re-commissioning the roller, the points marked with an asterisk * must be returned to the pre-storage state.

Wash the machine and touch up the paint finish to avoid rusting.

Treat exposed parts with anti-rust agent, lubricate the machine thoroughly and apply grease to unpainted surfaces.

Engine

* Refer to the manufacturer’s instructions in the engine manual that is supplied with the roller.

Battery

* Remove the battery from the machine. Clean the battery, check that the electrolyte level is correct (see under the heading ‘Every 50 hours of operation’) and trickle-charge the battery once a month.

Air cleaner, exhaust pipe

* Cover the air cleaner (see under the heading ‘Every 50 hours of operation’ or ‘Every 1000 hours of operation’) or its opening with plastic or tape. Also cover the exhaust pipe opening. This is to avoid moisture entering the engine.

Fuel tank

Fill the fuel tank completely full to prevent condensation.

Hydraulic reservoir

Fill the hydraulic reservoir to the uppermost level mark (see under the heading ‘Every 10 hours of operation’).
Long-term parking

Steering cylinder, hinges, etc.

Lubricate the articulation bearing with grease (see under the heading "Every 50 hours of operation").

Grease the steering cylinder piston with conservation grease.

Grease the hinges on the doors to the engine compartment and the cab. Grease both ends of the forward/reverse control (bright parts) (see under the heading 'Every 500 hours of operation').

Hoods, tarpaulin

* Lower the instrument cover over the instrument panel.

* Cover the entire roller with a tarpaulin. A gap must be left between the tarpaulin and the ground.

* If possible, store the roller indoors and ideally in a building where the temperature is constant.

Tires (All-weather)

Check that tire pressure is 110 kPa (1.1 kp/cm²), (16 psi).
**Miscellaneous**

**Lifting**

**Locking the articulation**

*Articulation must be locked to prevent inadvertent turning before lifting the roller.*

Turn the steering wheel to the straight ahead position. Push in the emergency/parking brake knob.

Pull out the lowermost locking pin (2), which has a wire attached. Pull up the locking dowel (3) which also has a wire attached.

Fold out the locking arm (1) and secure it to the upper locking lug (4) on steering joint.

Fit the locking stub (3) in the holes through the locking arm (1) and locking lug (4) and secure the stud in position with the locking pin (2).

**Lifting the roller**

*The machine’s gross weight is specified on the hoisting plate (1). Refer also to the Technical specifications.*

Lifting equipment such as chains, steel wires, straps and lifting hooks must be dimensioned in accordance with the relevant safety regulations for the lifting equipment.

*Stand well clear of the hoisted machine! Make sure that the lifting hooks are properly secured.*
Unlocking the articulation

![Unlocking diagram]

1. Locking arm
2. Locking pin
3. Locking stud
4. Locking lug

Remember to unlock the articulation before operating.

Fold the locking arm (1) back and secure it in the locking lug (4) with the locking stud (3). Insert the lowermost locking pin (2) fitted with a wire, to secure the locking stud (3). The locking lug (4) is located on the tractor frame.

Towing

The roller can be moved up to 300 meters (1,000 ft) using the instructions below.

Alternative 1

**Short distance towing with the engine running**

![Towing diagram]

Depress the emergency/parking brake knob and temporarily shut off the engine. Chock the drums to prevent the roller from moving.

Turn both towing valves (1) (middle hexagonal nut) three turns counter clockwise, while holding the multifunction valve (2) (lowermost hexagonal nut) in place. The valves are placed on the forward drive pump.

Start the engine and allow it to idle.

The roller can now be towed and can also be steered if the steering system is otherwise functioning.
Alternative 2

Towing short distances where the engine is inoperative

*Chock the drums to prevent the roller from moving when the brakes are mechanically disengaged.*

First release both towing valves as per alternative 1.

**Rear axle brake**

Undo the lock nut (3) and screw the adjustment screws (4) by hand until resistance increases, and then one additional turn. The adjustment screws are located on the rear axle, two screws on each side of the differential housing.

**Drum gearbox brake**

The drum brake is disengaged by screwing out the 4 hexagonal socket screws (5) approx. 5 mm, and then pulling out the engine adapter towards the screw heads.

The brakes are now disengaged and the roller can be towed.

*After towing, remember to reset the towing valves (1). Unscrew the adjusting screw (4) to its original position 34 mm from the contact surface and tighten the lock nuts (3). Tighten the four hexagonal socket screws (5). See section "short distance towing" alternative 1 and 2.*
Towing the roller

⚠️ When towing/recovering, the roller must be braked by the towing vehicle. A towing bar must be used as the roller has no brakes.

⚠️ The roller must be towed slowly, max. 3 km/h (2 mph) and only towed short distances, max. 300 m (330 yards).

When towing/retrieving a machine, the towing device must be connected to both lifting holes. The pulling force must act longitudinally on the machine as shown in the figure. Maximum gross pulling force 200 kN (44961 lbf).

⚠️ Restore the items for towing according to alternative 1 or 2 on the preceding pages.

Roller prepared for transport

⚠️ Lock the articulation before lifting and transporting. Follow the instructions under the relevant heading.

Chock the drums (1) and secure the chocks to the transport vehicle.

Block up under the drum frame (2), to avoid overload on the rubber suspension of the drum when lashing.

Clamp down the roller with lashing strap at all four corners; decals (3) indicate the fixing points.

⚠️ Remember to return the articulation to its unlocked position before starting the roller.
Operating instructions - Summary

1. Follow the SAFETY INSTRUCTIONS specified in the Safety Manual.

2. Make sure that all instructions in the MAINTENANCE section are followed.

3. Turn the master switch to the ON position.

4. Move the forward/reverse lever to the NEUTRAL position.

5. Set the switch for Manual/Automatic vibration to the 0 position.

6. Set Rotation starter switch in the position for idle running (900 rpm).

7. Start the engine and allow it to warm up.

8. Set the engine speed control to the operating position (2200 rpm).

9. Set speed control lever to max. START position. (In position 0)

10. Drive the roller. Operate the forward/reverse lever with care.

11. Test the brakes. Remember that the braking distance will be longer if the roller is cold.

12. Use vibration only when the roller is in motion.

13. IN AN EMERGENCY:
   - Push in the EMERGENCY/PARKING BRAKE KNOB
   - Hold the steering wheel firmly.
   - Brace yourself for a sudden stop.

14. When parking:
    - Push in the reserve/parking brake knob.
    - Stop the engine and chock the drum and wheels.

15. When lifting: - Refer to the relevant section in the Instruction Manual.

16. When towing: - Refer to the relevant section in the Instruction Manual.

17. When transporting: - Refer to the relevant section in the Instruction Manual.

18. When recovering - Refer to the relevant section in the Instruction Manual.
Preventive maintenance

Complete maintenance is necessary for the machine to function satisfactorily and at the lowest possible cost.

The Maintenance section includes the periodic maintenance that must be carried out on the machine.

The recommended maintenance intervals assume that the machine is used in a normal environment and working conditions.

Acceptance and delivery inspection

The machine is tested and adjusted before it leaves the factory.

On arrival, before delivery to the customer, delivery inspection must be conducted as per the check list in the warranty document.

Any transport damage must be immediately reported to the transport company.

Warranty

The warranty is only valid if the stipulated delivery inspection and the separate service inspection have been completed as per the warranty document, and when the machine has been registered for starting under the warranty.

The warranty is not valid if damage has been caused by inadequate service, incorrect use of the machine, the use of lubricants and hydraulic fluids other than those specified in the manual, or if any other adjustments have been made without the requisite authorisation.
## Maintenance - Lubricants and symbols

### Fluid volumes

<table>
<thead>
<tr>
<th>Component</th>
<th>Volume (liters)</th>
<th>Volume (quarts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear axle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Differential</td>
<td>12</td>
<td>12.7</td>
</tr>
<tr>
<td>- Planetary gear (standard axle)</td>
<td>2.0</td>
<td>2.1</td>
</tr>
<tr>
<td>- Planetary gear (optional shaft)</td>
<td>1.85</td>
<td>1.9</td>
</tr>
<tr>
<td>Drum gearbox</td>
<td>3.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Drum cartridge</td>
<td>2.3</td>
<td>2.4</td>
</tr>
<tr>
<td>Hydraulic reservoir</td>
<td>52</td>
<td>13.7</td>
</tr>
<tr>
<td>Oil in hydraulic system</td>
<td>23</td>
<td>6</td>
</tr>
<tr>
<td>Lubrication oil, diesel engine</td>
<td>16.5</td>
<td>17.4</td>
</tr>
<tr>
<td>Coolant, diesel engine</td>
<td>28</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Always use high-quality lubricants and the amounts recommended. Too much grease or oil can cause overheating, resulting in rapid wear.

### Engine Oil

- **ENGINE OIL**
  - Air temperature -15°C - +50°C (5°F-122°F)
  - Shell Rimula R4 L 15W-40, API CH-4 or equivalent.

### Hydraulic Fluid

- **HYDRAULIC FLUID**
  - Air temperature -15°C - +40°C (5°F-104°F)
  - Shell Tellus T68 or equivalent.
  - Air temperature above +40°C (104°F)
  - Shell Tellus T100 or equivalent.

### Biological Hydraulic Fluid

- **BIOLOGICAL HYDRAULIC FLUID**
  - BP Biohyd SE-S46
  - When it leaves the factory, the machine may be filled with biodegradable fluid. The same type of fluid must be used when changing or topping up.

### Biological Hydraulic Fluid, Panolin

- **BIOLOGICAL HYDRAULIC FLUID, PANOLIN**
  - PANOLIN HLP Synth 46
  - When it leaves the factory, the machine may be filled with biologically degradable fluid. The same type of fluid must be used when changing or topping up. ([www.panolin.com](http://www.panolin.com))

### Transmission Oil

- **TRANSMISSION OIL**
  - Air temperature -15°C - +40°C (5°F-104°F)
  - Shell Spirax AX 80W-90, API GL-5 or equivalent.
  - Air temperature 0°C (32°F) - above +40°C (104°F)
  - Shell Spirax AX 85W-140, API GL-5 or equivalent.

### Drum Oil

- **DRUM OIL**
  - Mobil SHC 629
# Maintenance - Lubricants and symbols

<table>
<thead>
<tr>
<th>GREASE</th>
<th>SKF LGHB2 (NLGI-Klass 2) or equivalent for the articulated joint. Shell Retinax LX2 or equivalent for other grease points.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FUEL</td>
<td>See engine manual.</td>
</tr>
<tr>
<td>COOLANT</td>
<td>GlycoShell or equivalent, (mixed 50/50 with water). Anti-freeze protection down to about -37°C (-34.6°F).</td>
</tr>
</tbody>
</table>

- Other fuel and lubricants are required when operating in areas with extremely high or extremely low ambient temperatures. See the ‘Special instructions’ chapter, or consult Dynapac.

## Maintenance symbols

<table>
<thead>
<tr>
<th>Engine, oil level</th>
<th>Tyre pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine, oil filter</td>
<td>Air filter</td>
</tr>
<tr>
<td>Hydraulic reservoir, level</td>
<td>Battery</td>
</tr>
<tr>
<td>Hydraulic fluid, filter</td>
<td>Recycling</td>
</tr>
<tr>
<td>Transmission, oil level</td>
<td>Fuel filter</td>
</tr>
<tr>
<td>Drum, oil level</td>
<td>Coolant, level</td>
</tr>
<tr>
<td>Oil for lubrication</td>
<td></td>
</tr>
</tbody>
</table>
Maintenance - Maintenance schedule

Service and maintenance points

1. Cooler grille
2. Fuel filter, fuel prefilter
3. Oil level, diesel engine
4. Air filter
5. Hydraulic reservoir, sight glass
6. Bleeder filter
7. Hydraulic fluid filter, x1
8. Draining, hydraulic fluid reservoir
9. Hydraulic fluid, filling
10. Fuse box
11. Drum cassette oil, filling, x2
12. Drum gearbox
13. Scrapers
14. Drum cartridge oil, level plug, x2
15. Shock absorbers and attachment screws
16. Steering joint
17. Steering cylinders, x2
18. Flywheel casing, hydraulic pumps
19. Wheel-nuts
20. Tires, air pressure
21. Rear axle, differential
22. Rear axle, planetary gears, x2
23. Rear axle suspension, 2 sides
24. Oil filter, diesel engine
25. Draining, fuel tank
26. Diesel engine suspension, x4
27. Feed pump, fuel
28. Diesel engine, filling
29. Battery
30. Cooler
31. Hydraulic fluid cooler
32. Drive belts, cooling, alternator
33. Forward/Reverse lever
34. Engine hood, hinge
35. Cooling liquid level, diesel motor

General

Periodic maintenance should be carried out after the number of hours specified. Use the daily, weekly etc. periods where number of hours cannot be used.
Maintenance - Maintenance schedule

WARNING: Remove all dirt before filling, when checking oils and fuel and when lubricating using oil or grease.

WARNING: The manufacturer's instructions found in the engine manual also apply.

Every 10 hours of operation (Daily)
Refer to the contents to find the page number of the sections referred to!

<table>
<thead>
<tr>
<th>Pos. in fig</th>
<th>Action</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before starting up for the first time on that day</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Check the scraper setting</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Check for free circulation of cooling air</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Check coolant level</td>
<td>Refer to the engine manual</td>
</tr>
<tr>
<td>3</td>
<td>Check the engine oil level</td>
<td>Refer to the engine manual</td>
</tr>
<tr>
<td>28</td>
<td>Refuel</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Check the hydraulic reservoir level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test the brakes</td>
<td></td>
</tr>
</tbody>
</table>

After the FIRST 50 hours of operation
Refer to the contents to find the page number of the sections referred to!

<table>
<thead>
<tr>
<th>Pos. in fig</th>
<th>Action</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Change the engine oil and oil filter</td>
<td>Refer to the engine manual</td>
</tr>
<tr>
<td>3</td>
<td>Change the fuel filter</td>
<td>Refer to the engine manual</td>
</tr>
<tr>
<td>8</td>
<td>Change the hydraulic fluid filter</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Change the drum oil</td>
<td></td>
</tr>
</tbody>
</table>
## Every 50 hours of operation (Weekly)

Refer to the contents to find the page number of the sections referred to!

<table>
<thead>
<tr>
<th>Pos. in fig</th>
<th>Action</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Check that hoses and couplings are not leaking</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Inspect/clean the filter element in the air cleaner</td>
<td>Replace as required</td>
</tr>
<tr>
<td>16</td>
<td>Lubricate the articulation</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Check that the guiding cylinders are tight</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Check the wheel-nuts are tightened</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Check the tire pressure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Check the air conditioning</td>
<td>Optional</td>
</tr>
</tbody>
</table>

## Every 250 hours of operation (Monthly)

Refer to the contents to find the page number of the sections referred to!

<table>
<thead>
<tr>
<th>Pos. in fig</th>
<th>Action</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Check oil level in rear axle/planetary gearing</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Check oil level in drum gearbox</td>
<td>Accessories D/PD</td>
</tr>
<tr>
<td>14</td>
<td>Check oil level in the drum cartridge</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Clean the coolers</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Check the bolted joints</td>
<td>The above applies to new or reconditioned components only</td>
</tr>
<tr>
<td>23</td>
<td>Check the bolted joints</td>
<td>The above applies to new or reconditioned components only</td>
</tr>
<tr>
<td>15</td>
<td>Check rubber elements and bolted joints</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Check battery</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Check the AC</td>
<td>Optional</td>
</tr>
</tbody>
</table>
Maintenance - Maintenance schedule

Every 500 hours of operation (Every three months)
Refer to the contents to find the page number of the sections referred to!

<table>
<thead>
<tr>
<th>Pos. in fig</th>
<th>Action</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Change the engine oil and oil filter</td>
<td>Refer to the engine manual</td>
</tr>
<tr>
<td>2</td>
<td>Replace the fuel filter</td>
<td>Refer to the engine manual</td>
</tr>
<tr>
<td>2</td>
<td>Clean the fuel pre-filter.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Check bleeder filter on hydraulic reservoir</td>
<td></td>
</tr>
</tbody>
</table>

Every 1000 hours of operation (Every six months)
Refer to the contents to find the page number of the sections referred to!

<table>
<thead>
<tr>
<th>Pos. in fig</th>
<th>Action</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Change the hydraulic fluid filter</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Drain the condensate from hydraulic reservoir</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Drain condensate from fuel tank</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Change oil in rear axle differential</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Change oil in the rear axle planetary gearing</td>
<td>Refer to the engine manual</td>
</tr>
<tr>
<td>32</td>
<td>Check belt tension for drive system</td>
<td>Refer to the engine manual</td>
</tr>
</tbody>
</table>

Every 2000 hours of operation (Yearly)
Refer to the contents to find the page number of the sections referred to!

<table>
<thead>
<tr>
<th>Pos. in fig</th>
<th>Action</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>8, 9</td>
<td>Change the hydraulic fluid</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Change the oil in the drum cartridge</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Change the oil in the drum gearbox</td>
<td>Accessories D/PD</td>
</tr>
<tr>
<td>33</td>
<td>Lubricate the Forward/Reverse lever</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overhaul air conditioning</td>
<td>Optional</td>
</tr>
</tbody>
</table>
Maintenance - 10h

Park the roller on a level surface. When checking and making adjustments, the engine should be switched off and the emergency/parking brake should be applied, if not otherwise specified.

Ensue that there is good ventilation (air extraction) if the engine is run indoors. Risk of carbon monoxide poisoning.

Scrapers - Check, adjustment

It is important to consider movement of the drum when the machine turns, i.e., the scrapers can be damaged or wear of the drum may increase if adjustment is made closer than the values stated.

If necessary, adjust distance to the drum as follows:

Undo the screws (2) on the scraper attachment.

Then adjust the scraper blade (1) to 20 mm from the drum.

Tighten the screws (2).

Fig. Skrapers
1. Skraper blades
2. Screws (4)
Steel scrapers (Optional)

If necessary, adjust distance to the drum as follows:

Undo the screws (2) on the scraper attachment.

Then adjust the scraper blade (1) to 20 mm from the drum.

Tighten the screws (2).

Repeat the procedure for the other scraper blades (x4).

---

Scrapers, Pad-drum

Undo the screws (1), then adjust each scraper tooth (2) to 25 mm (1.0 in) between scraper tooth and drum.

Center each scraper tooth (2) between the pads.

Tighten the screws (1).
Soften scrapers (Optional)

Loosen the screws (2).

Then, adjust the scraper blade (1) so that it lightly touches the drum.

Tighten the screws (2).

Air circulation - Check

Ensure that the diesel engine has free circulation of cooling air through the vents in the hood.

*Observe extreme caution if the filler cap must be opened when the engine is hot. NOTE, the engine must be switched off. Wear protective gloves and goggles.*
Coolant level - Check

Cooling liquid holder is placed up beside the hydraulic oil tank and is seen easiest from the right side of the roller.

The filler cap (2) is accessible from the top of the engine hood.

Check the coolant level with the engine stopped and cold.

Check that the coolant level is between the max/min markings (1).

Make sure that cooling air flows freely through the protective grille to the engine.

*The coolant is hot and under pressure at working temperature and the escaping steam can cause serious scalding. Open the filler cap carefully to release the pressure. Wear protective goggles and protective gloves.*

Fill with a mixture of 50% water and 50% antifreeze. See instructions for lubricant and symbols.
Diesel engine  Check oil level

Take care not to touch any hot parts of the engine or the radiator when removing the dipstick. Risk for burns.

The dipstick is located on the engine's right side.

Pull up the dipstick (1) and check that the oil level is between the upper and lower marks. For further details, refer to the engine's instruction manual.

Fuel tank - Filling

Refuel daily with diesel fuel up to the lower edge of the filler pipe (1). Follow the engine manufacturer’s specification with regard to the quality of diesel fuel.

Stop the diesel engine. Short-circuit (press) the filler gun against a non-insulated part of the roller before filling, and against the filler pipe (1) while filling.

Never refuel while the engine is running. Do not smoke and avoid spilling fuel.

The tank holds 320 liters of fuel.
Hydraulic reservoir - Check fluid level

The sight glass is located on the right-hand side of the roller behind the operator's seat.

Place the roller on a flat surface and check the fluid level in the sight glass (1). If the level is too low, top up with the type of hydraulic fluid specified in the lubricant specification.

Brakes - Check

Check operation of the brakes as follows:

Checking the emergency stop

Drive the roller slowly forward. Hold the steering wheel firmly and brace yourself for a sudden stop.

Press the emergency stop (1). The roller will stop abruptly and the engine will be switched off.

After testing the brakes, set the forward/reverse lever in neutral.

Pull out the emergency stop (1). Start the engine.

The roller is now ready for operation.

Refer also to the section in the manual on operation.
Brakes - Check

Check operation of the brakes as follows:

Checking the parking brake

Drive the roller slowly forward. Hold the steering wheel firmly and brace yourself for a sudden stop.

Push in the parking brake switch (1). The roller should stop immediately with the engine running.

After testing the brakes, set the forward/reverse lever in neutral.

Reset the parkering brake switch (1).

The roller is now ready for operation.

Refer also to the section in the manual on operation.

Fig. Instrument panel
1. Parkering brake switch
2. Parkering brake lamp
Maintenance - 50h

Park the roller on a level surface. When checking and making adjustments, the engine should be switched off and the emergency/parking brake should be applied, if not otherwise specified.

Ensue that there is good ventilation (air extraction) if the engine is run indoors. Risk of carbon monoxide poisoning.

Air cleaner
Checking - Change the main air filter

Change the air cleaner main filter when the warning lamp on the control panel comes on when the engine is running at maximum speed.

Release the clips (1), pull off the cover (2), and pull out the main filter (3).

Do not remove the backup filter (4).

Clean the air cleaner if necessary, see section Air cleaner - Cleaning.

When replacing the main filter (3), insert a new filter and refit the air cleaner in the reverse order.

Check the condition of the dust valve (6); replace if necessary.

When refitting the cover, make sure that the dust valve is positioned downwards.
Backup filter - Change

Change the backup filter with a new filter after every third replacement of the main filter.

To change the backup filter (1), pull the old filter out of its holder, insert a new filter and reassemble the air cleaner in the reverse order.

Clean the air cleaner if necessary, see section Air cleaner - Cleaning.

Air cleaner - Cleaning

Wipe clean the inside of the cover (2) and the filter housing (5). See the previous illustration.

Wipe also both surfaces for the outlet pipe; see adjacent figure.

Check that the hose clamps between the filter housing and the suction hose are tight and that the hoses are intact. Inspect the entire hose system, all the way to the engine.
Articulation - Lubrication

Do not allow anyone to remain in the vicinity of the steering joint when the engine is running. Risk of being crushed when the steering is operated. Press the emergency/parking brake knob before lubricating.

Turn the steering wheel fully to the left to gain access to all the steering system's lubricating nipples (4) on the right-hand side of the machine.

![Fig. Steering hitch right side](image1)

Use grease as per the lubricant specification

Steering joint - Lubrication

Wipe off any dirt and grease from the nipples.

Grease each nipple (1) with five strokes of a hand-operated grease gun. Make sure that grease penetrates into the bearings.

If grease does not penetrate the bearings, it may be necessary to relieve the articulation joint with a jack while repeating the greasing process.

![Fig. Articulation, right side](image2)

1. Lubricating nipples, articulation (4 pcs)
Tires - Air pressure - Wheel nuts - Tightening

Check the tire pressures using a pressure gauge.

If the tires are filled with fluid, the air valve (1) must be in the "12 o'clock" position during pumping.

Recommended pressure: See Technical Specifications.

Check the tire pressure.

⚠️ When changing the tires it is important that both of them have the same rolling radius. This is necessary to ensure proper functioning of the anti-slip in the rear axle.

Check the tightening torque of the wheel nuts (2) at 630 Nm (465 lbf.ft).

Check both wheels and all nuts. (This only applies to a new machine or newly fitted wheels).

⚠️ Check the safety manual that accompanies the roller before filling the tires with air.

Automatic Climate Control (Optional) - Inspection

The system described in this manual is type ACC (Automatic Climate Control).

⚠️ Never work under the roller when the engine is running. Park the roller on a level surface, chock the wheels and depress the parking brake control.

The filter is located on the left side of the engine compartment’s front edge

With the unit in operation, open the engine hood and check using the sight glass (1) that bubbles are not visible on the drying filter.

The filter is located on the left side of the engine compartment’s front edge. If bubbles are visible through the sight glass, it is a sign that the refrigerant level is too low. If so, stop the unit. The unit may be damaged if it is run with insufficient refrigerant.
Where cooling capacity is markedly reduced, clean the condensor element (1) located on the rear edge of the cab. Also clean the cooling unit in the cab. See under the heading 2000 hours, automatic climate control - overhaul.
Maintenance - 250h

Park the roller on a level surface. When checking and making adjustments, the engine should be switched off and the emergency/parking brake should be applied, if not otherwise specified.

Ensue that there is good ventilation (air extraction) if the engine is run indoors. Risk of carbon monoxide poisoning.

Rear axle differential - Check oil level

Never work under the roller when the engine is running. Park on a level surface. Block the wheels securely.

Wipe clean and remove the level plug (1) and check that the oil level reaches the lower edge of the plug hole. Top up with oil to the right level if the level is low. Use transmission oil, see lubricant specification.

Clean and refit the plug.
Rear axle planetary gears - Check oil level

Position the roller with the plug in the planetary gear (1) in the "9 o'clock" position.

Wipe clean and remove the level plug (1) and check that the oil level reaches the lower edge of the plug hole. Top off with oil to the right level if the level is low. Use transmission oil. See lubrication specification.

Clean and refit the plug.

Check the fluid level in the same way on the rear axle's other planetary gear.

Drum gearbox (D/PD) - Checking the oil level

Position the drum so that the filler plug (2) is straight up.

Wipe clean the area around the level plug (1) and then undo the plug.

Ensure that the oil level reaches up to the lower edge of the plug hole.

Top off with oil to the right level if the level is low. Use transmission oil according to the lubricant specification.

Clean and refit the plugs.
Drum cartridge - Checking the oil level

Position the machine level so that the indicator pin (1) on the inside of the drum is aligned with the top of the drum frame.

Wipe clean the filler plug (1) and level plug (3).

Unscrew the filler plug (1). Then loosen the level plug (3) on the underside of the cartridge and unscrew it until the hole in the middle of the plug becomes visible.

Top off with oil through the filler plug (1), until oil begins to run out from the level plug's (3) hole. The level is correct when it stops running.

Ensure that only MOBIL SHC 629 is used in the cartridges.

Do not overfill with oil - risk for overheating.

Clean and refit the plugs. Now repeat the procedure on the opposite side.
Drum cartridge - Cleaning the ventilation screw

Clean the drum's ventilation hole and ventilation screw (1). The hole is required to eliminate excess pressure inside the drum.

Bolted joints - Checking tightening torque

Steering pump to diesel engine (1) 55 Nm, lightly oiled
Rear axle suspension (2) 330 Nm (243 lbf.ft), oiled.
Engine suspension (3). Check that all the M12 bolts (x20) are tightened, 70 Nm, and lightly oiled.
Wheel nuts (4). Check that all nuts are tightened, 630 Nm oiled.

(The above applies to new or replaced components only).

Radiator - Check/Cleaning

Check that air can pass unobstructed through the radiators (1), (2) and (3).
Clean a dirty radiator using compressed air or a high-pressure water jet.
Blow air or direct water through the cooler in the opposite direction to that of the cooling air.

⚠️ Be careful when using a high-pressure washer - do not place the nozzle too close to the radiator.

⚠️ Wear protective goggles when working with compressed air or high-pressure water jets.
Rubber elements and fastening screws - Check

Check all rubber elements (1), replace all of the elements if more than 25% of them on one side of the drum are cracked deeper than 10-15 mm (0.4-0.6 in).
Check using a knife blade or pointed object.
Check also that the screw fasteners (2) are tightened.

Battery - Check electrolyte level

Never use a naked flame when checking the battery as the electrolyte emits explosive gas while the alternator is charging.

Open the engine cover and undo the quick-release screws (1).
Raise the battery cover (2).
Wipe the top of the battery.
Wear safety goggles. The battery contains corrosive acid. Rinse with water if electrolyte comes into contact with the body.
Battery cell

Take off the cell caps (1) and make sure that electrolyte (2) is about 10 mm (0.4 in) above the plates (3). Check the level of all cells. Top off with distilled water to the right level if the level is low.

If the ambient temperature is below freezing, run the engine for a while before topping off with distilled water. Otherwise the electrolyte might freeze.

Make sure that ventilation holes in the cell cover are not clogged, then put the cover back on.

The cable shoes should be clean and well tightened.
Clean corroded cable shoes and grease them with acid-free Vaseline.

Always disconnect the negative cable first when disconnecting the battery. When connecting the battery, always connect the positive cable first.

Discard used batteries wisely. Batteries contain lead, which is harmful to the environment.

Before doing any electric welding on the machine, disconnect the battery ground cable and then all electrical connections to the alternator.

Air conditioning (Optional)
- Inspection
Inspect refrigerant hoses and connections and make sure that there are no signs of an oil film that can indicate a refrigerant leakage.
Maintenance - 500h

Park the roller on a level surface. When checking and making adjustments, the engine should be switched off and the emergency/parking brake should be applied, if not otherwise specified.

Ensue that there is good ventilation (air extraction) if the engine is run indoors. Risk of carbon monoxide poisoning.

Bleeder filter - Inspection/Cleaning

If passage in either direction is blocked, clean the filter with a little diesel oil and blow through with compressed air until the block is removed, or replace the cap with a new one.

Always wear protective goggles when working with compressed air.

Check that the bleeder filter (2) is not clogged. Air should be able to pass through the cap unobstructed in both directions.

Start the engine and check that there is no leakage of hydraulic fluid from the filter. Check level of fluid in the sight glass (3) and top up as required.
Diesel engine - Oil and Filter change

Take great care when draining warm fluid and oil. Wear protective gloves and goggles.

The oil drain plug (1) is most easily accessible from the bottom of the engine and is located attached to a hose on the rear axle. Drain the oil when the engine is warm. Place a receptacle that holds at least 19 liters (5 gal) under the drain plug.

Replace the engine oil filter (2) at the same time. Refer to the engine manual.

Deliver the drained oil and filter to environmentally correct handling.

Fuel pre-filter - Cleaning

Ensure good ventilation (air extraction) if the diesel engine is run indoors. Risk of carbon monoxide poisoning.

See instruction manual for the engine when cleaning the filter, the chapter on the fuel system.
Park the roller on a level surface. 
When checking and making adjustments, the engine should be switched off and the emergency/parking brake should be applied, if not otherwise specified.

Ensue that there is good ventilation (air extraction) if the engine is run indoors. Risk of carbon monoxide poisoning.

Hydraulic fluid filter - Replacement

Undo the cover/bleeder filter (2) on top of the reservoir so that over-pressure inside the reservoir can be eliminated.

Check that the bleeder filter (2) is not clogged, air must flow through the cap in both directions.

If passage in either direction is blocked, clean the filter with a little diesel oil and blow through with compressed air until the block is removed, or replace the cap with a new one.

Wear protective goggles when working with compressed air.

Carefully clean round the hydraulic filter.

Remove the filter (1) and hand in to an environment-friendly waste disposal station. This is a disposable filter and cannot be cleaned.

Make sure that the old seal is not left on the filter head. Leakage will otherwise occur between the new and old seal.

Thoroughly clean the sealing surfaces on the filter head.
Apply a thin coat of fresh hydraulic fluid to the seal on the new filter. Screw tight the filter by hand.

⚠️ First tighten the filter until its seal is in contact with the filter attachment. Then turn an additional half revolution. Do not tighten the filter too hard as this could damage the seal.

Start the engine and check that there is no leakage of hydraulic fluid from the filter. Check level of fluid in the sight glass (3) and top up as required.

**Hydraulic fluid reservoir - Draining**

Condensate in the hydraulic reservoir is drained via the plug (2).

Drainage must be performed when the roller has been stationary for an extended period, e.g. after being stationary overnight.

Drain as follows:
- Remove the plug (2).
- Place a container under the tap. - Open the tap (1). Drain off any condensate.
- Close the drainage tap and refit the plug.

Save the condensate and hydraulic fluid and hand it in to an environment-friendly waste disposal station.
**Fuel tank - Drainage**

Water and sediment in the fuel tank are removed via the drainage plug (1) in the bottom of the fuel tank.

Danger: Be very careful during draining. Do not drop the plug or else all the fuel will flow out.

Drainage must be performed when the roller has been stationary for an extended period, e.g. after being stationary overnight. The fuel level should be as low as possible.

The roller should preferably have been standing with this side slightly lower, so that water and sediment have gathered near the drainage plug (1).

Recycle: Save the condensate and sediment and hand it in to an environment-friendly waste disposal station.

Drain as follows:

- Place a container under the plug (1).
- Remove the plug (1).
- Drain out the condensate and sediment until only pure fuel emerges at the plug.
- Screw in the plug again.

**Air conditioning (Optional)
Fresh air filter - Change**

*Use a step ladder to reach the filter (1). The filter can also be accessed via the right cab window.*

Loosen the two screws (2) on the cab's right side. Take down the whole holder and remove the filter insert.

Replace with a new filter.

It may be necessary to change the filter more often if the machine is working in a dusty environment.
Rear axle differential - Oil change

Never work under the roller when the engine is running. Park on a level surface. Block the wheels securely.

Wipe clean and remove the level/filler plug (1) and all three drain plugs (2) and drain the oil into a suitable receptacle. The volume is approximately 12.5 liters (13.2 qts).

Save the oil and hand in to an environment-friendly waste disposal station.

Refit the drainage plugs and top up with fresh oil until the correct level is reached. Note that it takes a while for the oil to be distributed in the axle. Do not fill the entire volume at once. Refit the level/filler plug. Use transmission oil, see Lubricant Specification.
Rear axle's planetary gears - Draining the oil

Position the roller with the plug (1) at its lowest position.

Wipe clean and remove the plug (1) and drain the oil into a receptacle. The volume is approx. 2 liters (2.1 qts).

Save the oil and hand in to an environment-friendly waste disposal station.
Rear axle's planetary gears - Oil change - Oil filling

Set the roller so that the plug (1) in the planetary gear is at "9 o’clock".

Wipe clean and remove the plug (1).

Fill with oil to the lower edge of the level hole. Use transmission oil. See lubrication specification.

Clean and refit the plug (1).

Fill with oil in the same way as for the rear axle's second planetary gear.
Maintenance - 2000h

Park the roller on a level surface. When checking and making adjustments, the engine should be switched off and the emergency/parking brake should be applied, if not otherwise specified.

Ensue that there is good ventilation (air extraction) if the engine is run indoors. Risk of carbon monoxide poisoning.

Hydraulic reservoir - Changing the fluid

Observe care when draining the hydraulic fluid. Wear protective gloves and goggles.

Place a receptacle that holds at least 60 liters (15.9 gal) beside the roller.

Unscrew the drain plug (2).

Open the stock cock and allow the oil to run through a hose to the drainage receptacle.

Refit the plug.

Deliver the drained fluid to environmentally correct handling.

Fill with fresh hydraulic fluid. Refer to the lubricants specification for grade information.

Change the hydraulic fluid filter as described under the heading 'Every 1000 hours of operation'.

Start the engine and operate the hydraulic functions. Check the level in the reservoir and top off as required.
Drum cartridge - Oil change

Position the machine level so that the indicator pin (1) on the inside of the drum is aligned with the top of the drum frame.

Place a receptacle for about 5 liters (1.32 gal) underneath the drain plug (2).

- Save the oil and hand in to an environment-friendly waste disposal station.

Clean and unscrew the filler plug (1) and the drain plug (2).

Allow all the oil to run out. Fit the drain plug and fill with new synthetic oil in accordance with the instructions under "Drum cartridge - checking the oil level".

Repeat the procedure on the opposite side.

- Ensure that only MOBIL SHC 629 is used in the cartridges.
Drum gearbox - Oil change

Place the roller on a level surface with the plugs (1) and (2) as illustrated.

Wipe clean, unscrew the plugs (1, 2 and 3) and drain the oil into a suitable receptacle, capacity about 3.5 liters (1 gal.).

Refit the plug (1) and fill with oil up to the level plug (3), according to "Drum gearbox - Checking the oil level".

Use transmission oil according to the lubricant specification.

Clean and refit the level plug (3) and filler plug (2).

Steering hitch - Check

Inspect the steering hitch to detect any damage or cracks.

Check and tighten any loose bolts.

Check also for any stiffness and play.
Controls - Lubrication

Grease Forward/Back- throttle mechanical mechanism. Take away the outer hatch down below the seat by loosening the screws (2). Grease the workings with oil.

Refit the hatch.

Automatic Climate Control (Optional) - Overhaul

Regular inspection and maintenance are necessary to ensure satisfactory long-term operation.

Clean all dust from the condenser element (1) using compressed air. Blow from above downwards.

⚠️ The air jet can damage the element flanges if it is too powerful.

Wear protective goggles when working with compressed air.

Inspect the condenser element attachment.
Clean all dust from the cooling unit and the cooling element (1) using compressed air.

Check the system hoses for chafing. Make sure that drainage from the cooling unit is unobstructed so that no condensation accumulates inside the unit.

Drain by pinching the valves (2)

**Drying filter - Check**

The drying filter is located on the left side of engine compartment’s front edge.

With the unit in operation, open the engine hood and check using the sight glass (1) that bubbles are not visible on the drying filter. If bubbles are visible through the sight glass, it is a sign that the refrigerant level is too low. If so, stop the unit. The unit may be damaged if it is run with insufficient refrigerant.

Check the moisture indicator (2). It should be blue. If it is beige, the dryer cartridge should be changed by an authorized service company.

- **The compressor will be damaged if the unit is run with too little refrigerant.**

- **Do not disconnect or undo the hose couplings.**

- **The cooling system is pressurized. Incorrect handling can result in serious personal injury.**

- **The system contains pressurized refrigerant. It is forbidden to release refrigerants into the atmosphere. Work on the refrigerant circuit is only to be carried out by authorized companies.**
Compressor - Check (Optional)

Inspect the attachment of the compressor (1).

The compressor is located over the alternator in the engine compartment.

The unit should, if possible, be run at least five minutes every week to ensure the lubrication of the gaskets and compressor in the system.

Check the drive belt (2) for any physical damage or cracks.

⚠️ The air conditioning unit should not be run when the outdoor temperature is below 0°C, other than for the above.