MAINTENANCE

Deutz F3L 912 diesel engine
Deutz F2L 912 diesel engine
Valid for rollers from serial No. 574 183

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READ THESE INSTRUCTIONS THOROUGHLY BEFORE STARTING ANY SERVICE WORK.

Correct maintenance is essential to ensure that the roller will give many years of satisfactory service and the instructions given here should therefore be carefully followed.

The Deutz engine instruction manual must be used in conjunction with these instructions.

LUBRICANTS

A B C and D refer to the maintenance schedule.

Always use good-quality lubricants in the stated amounts. Excessive grease or oil will cause parts to run hot, thus causing rapid wear.

A GREASE

with lithium base and EP additive (lead oleate), NLGI No. 2, Shell Alvania EP Grease 2.

B ENGINE OIL

for API Service CD/SE, SAE

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C HYDRAULIC OIL

with anti-wear additive - Shell Tellus T 68 oil

D LUBRICANTS OIL

SAE 90 HD (API, GL-5)

Note

If the roller is to be used in exceptionally hot or cold conditions, contact DYNAPAC for additional lubrication recommendations.
MAINTENANCE SCHEDULE

CC 14  Deutz F3L  912
CC 14G Deutz F2L  912

Fig. 1 Service points

1 Water tank - strainer
2 Air cleaner
3a Engine V-belt monitor
3b Engine V-belts
4 Engine cooling fins
5 Fuel feed pump
6 Engine valves
7 Engine dipstick
8 Engine fuel filter
9 Engine lubricating oil filter
10 Tool box
11 Scrapers and sprinklers
12 Drum - oil level check point
13 Drum gearbox
14 Brakes
15 Drum bearing (only CC 14G front drum)
16 Hydraulic oil filter
17 Steering articulated joint - steering cylinder
18 Sight glass - hydraulic oil tank (right-hand side)
19 Engine fuel injection pump
20 Hydraulic oil filler cap (right-hand side)
21 Fuel tank (left-hand side)
22 Shock absorbers and securing screws
23 Battery/battery master switch
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* Only on new or reconditioned engines
** One drum on the CC 14G
*** See the engine instruction manual
Fig. 1  Service points

1  Water tank - strainer
2  Air cleaner
3a  Engine V-belt monitor
3b  Engine V-belts
4  Engine cooling fins
5  Fuel feed pump
6  Engine valves
7  Engine dipstick
8  Engine fuel filter
9  Engine lubricating oil filter
10 Tool box
11 Scapers and sprinklers
12 Drum - oil level check point
13 Drum gearbox
14 Brakes
15 Drum bearing (only CC 14G front drum)
16 Hydraulic oil filter
17 Steering articulated joint - steering cylinder
18 Sight glass - hydraulic oil tank (right-hand side)
19 Engine fuel injection pump
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** One drum on the CC 14G
DAILY
(every 10 hours of operation)
Replenishing with fuel

(Note that the filler cap is located on the left-hand side of the roller.)
Replenish the fuel tank daily to the lower edge of the filler pipe. Use diesel fuel.

Fig. 2
1 Filler cap

Engine — oil level check

1 Drive the roller onto a level surface and switch off the engine - wait a couple of minutes.
2 Remove the dipstick (1) and check the oil level.
3 If the oil level is close to the lower mark, replenish with type B oil as recommended on page 1 in "Lubricants".

Fig. 3
1 Dipstick
2 Oil filler cap
3 Upper level mark
4 Lower level mark
Hydraulic oil tank — oil change
(on the right-hand side of the roller)

1. Drive the roller onto a level surface and check the level of the oil in the sight glass (1).
2. If the oil level is about 3 cm from the full sight glass level, replenish with type C oil as recommended on page 1 in "Lubricants".

Fig. 4
1. Sight glass

Scrapers — sprinklers
Adjusting, checking

1. Ensure that the scrapers are in contact with the drums.
2. Ensure that the sprinkler nozzles are not clogged. Clean if necessary.

Air cleaner — cleaning the dust collector

When the engine is running:

Check the dust indicator on the air cleaner. If the indicator shows red, clean the filter (see under the relevant heading, "Every week: clean the air cleaner").

On some rollers the dust indicator (1) may be placed on the left-hand side of the roller.

Fig. 5
1. Dust indicator
Brakes – check

1 Start the engine. Set the engine speed at about 1000 r/min. Ensure the brake warning lamp (1) is off.

2 Pull the stop lever (4) out slowly but not so far that the engine stops, until the brake warning lamp (1) lights up again.

3 Holding the stop lever (4) in this position move the forward-reverse lever (2) slowly forwards or backwards.

- A grating sound should be heard from the by-pass valve in the drive circuit.
- The roller should not move (forwards or backwards).
- The brakes function satisfactorily if the above conditions are satisfied. (The braking torque is then greater than or equal to the driving torque.)

Fig. 6
1 Brake warning lamp
2 Forward/reverse control lever
3 Throttle
4 Stop control

WEEKLY
(every 50 hours of operation)
Breather holes in the hydraulic tank filler cap

Remove the filler cap and ensure that the breather holes (1) are not blocked. If necessary, wash the filler cap in hydraulic oil or diesel oil and blow it clean with compressed air.

Fig. 7 Hydraulic tank filler cap
1 Breather holes
Air cleaner — cleaning the filter element

1 Lift up the engine cover.
2 Remove the hose clamps (1).
3 Remove the front plate (2).
4 Release the overcenter catches (3) and remove the outer cover.
5 Remove the main filter element (4) and blow it clean with compressed air. Do not point the nozzle directly at the element.

Ensure that dust has not penetrated the element during operation.

Dust adhering to the inside of the engine induction pipe indicates dust penetration.

If dust has penetrated the element, this will indicate the connections, hoses or elements leak and must therefore be replaced.

6 A Marker strip (6) is fitted to the back-up filter (5). Enter a "X" in a square each time you clean the main filter. When all five squares have been filled, replace the back-up filter.

7 Replace the main filter when necessary, but at least every 1½ - 2 years.

8 The air cleaner is fitted with a dust indicator (7). Clean the main filter when the indicator shows red.

Fig. 8
1 Hose clamps
2 Front plate
3 Overcenter catches
4 Main filter element
5 Back-up filter
6 Marker strip
7 Dust indicator
Cleaning with compressed air

Use compressed air at a maximum pressure of 0.5 MPa (5 kgf/cm²).

Play the compressed air up and down along the outside of the folds of the paper, at 45° to the outside of the filter element. Hold the nozzle at least 2-3 cm away from the element and at an angle of 45° to avoid damaging the paper.

Fig. 9 Blowing the element clean

Cleaning by washing

If the element is sooty or oily, it should be washed in a solution of water and non-foaming detergent. Rinse the element in clean water and dry it completely at room temperature. Never use petrol or hot liquid.

NOTE Do not fit a filter element that has been washed in detergent, until it is completely dry.

Filter element — check

1 See fig. 10.

Ensure the the element is intact before refitting it. If it has any holes or if the seals are defective, fit a new element.

2 Slide the element into the housing and fit the outer cover using the overcenter catches. Connect the rubber ring, hose clamps and front plate (see Fig. 8).

Fig. 10 Filter element — checking the tightness
Battery — checking the liquid level

1 Lift the cover of the rear water tank. The battery will then be accessible.

2 Clean the battery terminals and coat them with acid-free petroleum jelly, if necessary.

3 Ensure that the level of the electrolyte is approx. 10 mm above the plates. Top up with distilled water, as necessary.

Never use a naked flame when checking the electrolyte level, since explosive gas is formed in the battery when it is being charged.

Articulated joint and steering cylinders mountings — lubricating

Ensure that nobody is near the articulated joint whilst the engine is running; injury could occur if the steering is operated.

1 Turn the front drum to the left so that the articulated joint grease nipples (5) are accessible. Lubricate the steering cylinder front mounting from the left-hand side of the roller.

2 Clean any dirt and grease off the 6 nipples.

3 Grease each nipple with five strokes of the grease gun. Ensure that grease enters the bearings.

Use type A grease as recommended on page 1 in "Lubricants".

Leave a little grease on the nipples after greasing, to prevent dirt from entering them.
Drum — lubricating
Applies only to CC 14G

Fig. 13

1 Grease nipple

Shock absorbers and securing bolts — check

Ensure that the shock absorbers are undamaged and that the securing bolts are firmly tightened. Replace shock absorbers when 20-25 mm deep cracks are observed in them. (The depth of cracks can be checked with a blunt knife or similar tool.)

Drums oil level — check
Both drums on CC 14
Rear drum on CC 14G

Fig. 14

1 Drive the roller onto a level surface, so that level plugs are uppermost. Loosen the plugs about 5 turns. Then move the roller until the filler plug is at top dead centre, as in Fig. 14.

2 If the level is correct, oil will seep out of the level plugs. If no oil leaks out, remove the filler plugs (1) and replenish with type D oil as recommended on page 1 in "Lubricants".

3 Refit the filler plug. Tighten the level plugs.

4 Ensure that the plugs are tight after the drums have been rotated a few turns and after vibration has been engaged a few times.

1 Filler plug
2 Level plug
EVERY 14 DAYS
(every 100 hours of operation)

Engine cooling fins — cleaning

1. Remove the air ducting panel and baffles in front of the cooling fins (both on left and right-hand sides).

2. Clean the cooling fins (1) carefully, using compressed air.

3. Clean the lubricating oil cooler (3) and the exterior of the hydraulic oil cooler (2) at the same time (see the Deutz instruction manual for relevant engines).

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Fig. 15
1. Cooling fins
2. Hydraulic oil cooler
3. Lubricating oil cooler

EVERY MONTH
(every 200 hours of operation)

V-belt monitor — check
Applies only to CC 14 (F3L 912)

Press in the switch (1), this should cause the horn to sound. If the V-belt monitor is defective, it must be repaired immediately.

CC 14 and CC 14G machines are equipped with an engine temperature gauge connected to the horn, which sounds when the temperature exceeds the preset value.

The charging lamp on the CC 14G will also light up when the V-belt has broken. So in the event of a "charging fault", check the V-belt as well.

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Fig. 16 V-belt monitor
V-belt failure or replacement

1. Park the roller immediately in a safe place.
2. Stop the engine.
3. To stop the horn, turn off the battery master switch.
4. Fit a new V-belt (see the Deutz instruction manual for the relevant engine).
5. Switch on the battery master switch again.

Engine - oil change

Change the oil when the engine is hot:

1. Remove the filler cap (2).
2. Remove the drain plug (1) and allow the oil to drain out into a suitable receptacle. At the same time, replace the oil filter on CC 14 machines, clean the oil filter on CC 14G machines.
3. Clean and refit the drain plug.
4. Fill up with new type B oil as recommended on page 1 in "Lubricants". (Refer to the Deutz instruction of the relevant engine.)
5. On completion of the oil change, run the engine to check for leaks.

Fig. 17
1. Drain plug
2. Filler cap
3. Oil filter/strainer
Engine — oil filter replacement  
CC 14 (F3L 912)

1. Loosen the filter.
2. Clean the sealing surface of the filter head.
3. Apply oil to the rubber seal (2) on the new filter.
4. Tighten the filter by hand until the rubber seal seats against the filter head. Then tighten it an additional half turn.
5. Run the engine and check for leaks.

Fig. 18 Oil filter
1. Filter
2. Rubber seal

Engine oil filter — cleaning  
CC 14G (F2L 912)

1. Remove the cover (1).
2. Slide out the filter and clean the strainer in clean diesel fuel.
3. Refit the filter. Ensure that the seal seats correctly and that the engine does not leak when it is run.

Fig. 19
1. Cover
2. Oil filter

Alternator — V-belt tensioning

Check the V-belt tension by pressing the belt midway between the alternator pulley and the crankshaft pulley. It should not be possible to depress the belt by more than 10-15 mm. If the deflection is greater, tension the belt.

Fig. 20 Checking the V-belt tension
Alternator — V-belts tensioning

If the V-belt monitor is defective, it must be repaired immediately (this only applies to the CC 14).

(There is only one V-belt on the CC 14G and this drives the fan and the alternator. The battery charging lamp will light up if the V-belt should break.)

1. Loosen the alternator securing bolts B and C and nut D.

2. Use a bar to move out the alternator until the belt is again correctly tensioned (see Fig. 21).

3. Tighten bolts B and C and nut D.
   Tension new belts after 30 minutes of operation.
   Re-tension a new alternator V-belt again after 40 hours of operation.

Hydraulic system filters — replacement
(the filters are located under the driver’s platform)

1. Remove the hydraulic oil filters (1) and (2) (only one filter on the CC 14G (2)).
   Discard the filters. These are of the disposable type and cannot be cleaned.

   Ensure that the old seals are not left in position since leakage will then occur between the new and the old gaskets.

2. Clean the sealing surfaces of the filter heads thoroughly.

3. Apply a thin film of hydraulic oil to the new filter seals.

4. First tighten the filters on by hand until the seals seat against the filter head. Then tighten them an additional half-turn.

5. Run the engine and check that there are no hydraulic oil leaks around the filters.
Water tank strainers — cleaning

1. Remove the bolts (1 - Fig. 23).
2. Withdraw the strainer (2) and wash in water, then blow clean with compressed air.
3. When refitting the strainer, note the seal (3). This should be placed under the strainer flange.
4. Fill the tank with water and ensure that the bolted joint (1) does not leak.

Fig. 23
1. Bolt
2. Strainer
3. Seal (two)

Brake — draining (applies to both drums)

1. Remove the drain plug (1) and drain the brake (2).
2. Replenish the drum gearbox with D type oil as recommended on page 1 in "Lubricants" - use the same amount as that drained from the brake (see the section entitled "Drum gearbox - checking the oil level", page 18).

Fig. 24
1. Drain plug
2. Brake
Drum gearbox oil level — check
(applies to both drums)

1. Drive the roller onto a flat surface so that the filler plug (2) is at its uppermost position, as shown in Fig. 25. The level plug (1) should then be at the "three o'clock" position.

2. Clean the area round the plugs.

3. Remove the level plug (1) and check the oil level. If the level is correct, oil will flow from the level plug hole.

4. If necessary, replenish with type D oil as recommended on page 1 in "Lubricants".

5. Refit the plugs. Check that they do not leak after the drum has been moved a few revolutions.

Fig. 25
1 Level plug
2 Filler plug

Controls and joints — lubrication

Lubricate all joints and controls with type B oil as recommended on page 1 in "Lubricants".
EVERY SIX MONTHS
(every 1000 hours of operation)
Fuel feed pump strainer — cleaning

1. Loosen the screw (1).
2. Remove the cover (2).
3. Remove the strainer (4) and wash it in diesel fuel.
4. Apply clean diesel fuel to the gasket (3).
5. Assemble the strainer in the reverse order.
6. Bleed the fuel system (see the section entitled "Bleeding" on pages 20 and 21). Start the Fig. engine and check that there are no leaks.

26 Feed pump
1. Retaining screw
2. Cover
3. Gasket
4. Strainer

Fuel filter — replacement

1. Unscrew the filter (1) with care, since fuel will flow from the joint between the filter and the engine.
2. Clean the sealing surface on the engine.
3. Apply clean diesel fuel to the rubber gasket on the new filter.
4. Tighten the new filter into place by hand until the rubber gasket seats correctly, then tighten it an additional half-turn.
5. Bleed the fuel system (see page 20).
6. Check that the filter connection does not leak.

Fig. 27 F3L 912 diesel engine
1. Fuel filter

Fig. 28 F2L 912 diesel engine
1. Fuel filter
1 Loosen the screw (1).

2 Operate the pump lever (2) on the feed pump manually until the fuel flowing out at the screw (1) is free from air bubbles.

3 Retighten the screw (1).

If no fuel flows out past the screw when the hand pump is operated, turn the engine over using a 36 mm non-adjutable spanner fitted to the crankshaft nut.

If the pressure lines have been disconnected, they must also be bled.

4 Loosen the pressure line connection (1) a couple of turns and run the starter motor until bubble-free fuel flows out past the nut. The throttle should be in the fully open position.

5 Tighten the pressure line connection.

6 If necessary, the other pressure lines should be bled in a similar manner.

7 Ensure that all connections are tight.

---

1 Loosen the screw (1) in the banjo screw connection.

2 Operate the pump lever (2) on the lift pump manually until the fuel flowing out the screw (1) is free from air bubbles.

3 Retighten the screw (1).

4 Loosen the screw (3) (on the by-pass valve).

5 Operate the pump lever (2) on the feed pump manually until the fuel flowing out at the screw (3) is free from air bubbles.

6 Retighten the screw (3).
If no fuel flows out past the screw when the hand pump is operated, turn the engine over using a non-adjustable spanner fitted to the crankshaft nut.

If the pressure lines (3) have been disconnected, they must also be bled.

7 Back off the pressure line connection (1) a couple of turns and run the starter motor until bubble-free fuel flows out past the nut.

The throttle (2) should be in the fully open position.

8 Tighten the pressure line connection.

9 If necessary, bleed the other pressure lines in a similar manner.

10 Ensure that all connections are tight.

Drum gearbox — oil change (applies to both drums)

Before the oil is drained the drum gearboxes should be at operating temperature.

1 Drive the roller onto a level surface so that the drain/level plug (1) is at lowest position.

2 Clean the area around the plugs.

3 Place a receptacle with a capacity of about 1 liter and drain the oil. Remove plug (2) as well.

4 Move the roller backwards so that filler plug (2) is in the position shown in Fig. 25. The level plug should be in the "three o'clock" position.

5 Replenish with oil through the filler plug hole (2) until the oil level reaches the level plug (1).

Use type D oil as recommended on page 1 in "Lubricants".

6 Refit the plugs. Check the tightness after the drum has been driven a few turns.

Fig. 32
1 Pressure line connection
2 Throttle
3 Pressure lines

Fig. 33 Filling with oil
1 Level/drain plug
2 Filler plug

Fuel tank — draining
See Fig. 34 for the location of the drain plug

Loosen the plug slightly. Allow any water to drain. Retighten the plug.
EVERY YEAR
(every 2000 hours of operation)
Fuel tank — cleaning

1 Place a receptacle with a capacity of about 120 liters under the fuel tank and remove the drain plug (1). Let all the fuel drain out.

2 Remove the tank inspection plate. Clean the fuel tank and remove any contamination.

3 Refit the tank inspection plate.

4 Refit the drain plug.

5 Fill up the tank with diesel fuel and check that the inspection plate and drain plug are tight and do not leak.

5 Bleed the fuel system (see the section entitled "Fuel system - bleeding", pages 20 and 21).

Fig. 34
1 Drain plug
(left-hand side)

Hydraulic oil tank — cleaning

After the tank has been drained, the pumps will also have been drained of oil. Before starting the engine, therefore, refer to the special instructions for "Starting the hydraulic system...".

1 Place a receptacle with a capacity of about 120 litres under the hydraulic tank and remove the drain plug (1). Allow all the oil drain out.

2 Remove the tank inspection plate. Clean the hydraulic tank and remove any contamination. Touch up the paintwork if necessary. (Let the paint dry before refitting the inspection plate.)

3 Refit the inspection plate and the drain plug. Replenish the tank with new, type C hydraulic oil as recommended on page 1 in "Lubricants". Ensure that the inspection plate and drain plug are tight.
Water tank — cleaning

1 Remove the strainer (1). Refer to the section entitled "Water tank strainers" on page 17. (These instructions apply to both water tanks.)

2 Remove the tank inspection plate (2) and the drain plug (3). Clean the tank and remove any contamination. Touch up the paintwork if necessary. (Allow the paint dry before refitting the inspection plate.)

3 Refit the strainer, inspection plate and plug. Ensure that the seal around the inspection plate is compressed when the bolts are tightened. Check the tightness.

Drum — oil change
Both drums on CC 14
Rear drum on CC 14G

The drum should be at operating temperature before the oil is drained.

DRAINING

1 Drive the roller onto a slightly sloping surface so that the plug (1) is at the lowest position.

2 Remove the plug and drain the oil into a receptacle with a capacity of about 15 litres.

FILLING

1 Drive the roller onto a slightly sloping surface so that the drain/filler plug is uppermost as shown in the Figure.

2 Loosen the level plugs about 5 turns and fill with type D oil as recommended on page 1 in "Lubricants", until the oil flows out of the level plug hole.

3 Tighten the level plugs. Refit the filler plug. Check the tightness of the plugs.
SPECIAL INSTRUCTIONS

When it is delivered from the factory, the roller is filled with the standard oils specified in the table below.

STANDARD OILS SUPPLIED AND OTHER RECOMMENDED OILS

If the roller is to be used in areas where the ambient temperature may be above the "upper temperature, "°C", "special oil" as specified in the table below must be used.

Before using the roller at extremely low ambient temperatures, read the explanatory notes below.

The tabulated temperature limits apply to the individual "systems" or to the individual components and and refer to the limits for the lubricating properties of each oil.

The "MAXIMUM OPERATING TEMPERATURE" of the roller may be different from the ambient temperature. Contact DYNAPAC for additional recommendations before operating the roller under extremely hot or cold conditions.

The temperature limits tabulated below apply to standard models.

It may be necessary to be specially observant in the upper temperature ranges when using roller fitted with accessories, such as noise-damping equipment.

### Standard Oil Table

<table>
<thead>
<tr>
<th></th>
<th>&quot;Standard oil&quot;</th>
<th>&quot;Special oil&quot;</th>
<th>&quot;Standard oil&quot; (Min. API GL-5)</th>
<th>&quot;Special oil&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SHELL TELLUS 011 T 68</td>
<td>SHELL TELLUS 011 T 100</td>
<td>SHELL SPIRAX SAE 90 HD</td>
<td>SHELL SPIRAX SAE 140 HD</td>
</tr>
<tr>
<td>CA 14 Hydr. tank</td>
<td>-10  +40</td>
<td>±50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drum</td>
<td>-15  +40</td>
<td>+5  +50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drum gearbox</td>
<td>-15  +40</td>
<td>+5  +50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Engine oils**

Use engine lubricating in accordance with "For API Service CD/SE, SAE 10 W/30" during normal operation. Shell Rimula X 011 10 W/30.

The engine manufacturer's instructions should be followed principally, in addition to what is stated here.
CALLING FOR A SERVICE MECHANIC

Call any of our service depots if the services of a mechanic are needed. Provide as detailed information as possible to the contact man at the depot. If the mechanic has a clear idea of the work entailed before leaving the service depot, he will be better prepared for the job and will also have the correct spare parts when he arrives at the work site.

ORDERING SPARE PARTS

Spare parts should be ordered by using the spare parts catalogue. Be sure to follow the instructions provided in the catalogue for ordering spare parts. Correct details will ensure prompt delivery.
# OPERATING

Diesel engines Deutz F2L 912
Deutz F3L 912
Valid for rollers from serial no 574 183

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**Fig. 1**

1. Starter switch
2. Working lights, rear
3. Horn button
4. Working lights, front
5. Dipped/full beam switch
6. Full beam warning lamp
7. Sprinkler switch
8. Amplitude selector, rear drum
9. Amplitude selector, front drum
11. Forward/Reverse control lever
12. Brake warning lamp
13. Tachometer
14. Battery charging lamp
15. Fuel gauge
16. Operating hours meter
17. Hydraulic oil temperature
18. Ammeter
19. Oil pressure warning lamp
20. Emergency stop
21. Direction indicator warning lamp (accessory)
22. Engine stop control
23. Throttle

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We reserve the right to change specifications without notice

0-10184-3 Eng

Replaces
0-10184-2 Eng
1. OPERATORS MUST FAMILIARIZE THEMSELVES WITH THE ROLLER OPERATING AND MAINTENANCE INSTRUCTIONS BEFORE STARTING OR DRIVING THE ROLLER.

2. NEVER LEAVE THE ROLLER UNATTENDED WITH THE ENGINE RUNNING.

3. ALWAYS CHOCK THE DRUM WHEN THE ROLLER IS PARKED ON AN INCLINE. THE ENGINE MUST BE SWITCHED OFF.

4. NEVER CARRY PASSENGERS ON THE ROLLER.

5. ALWAYS ENSURE THAT THE BRAKES ARE IN CORRECT WORKING ORDER (SEE "MAINTENANCE INSTRUCTIONS").

6. NEVER CARRY OUT REPAIRS OR ADJUSTMENTS TO THE ROLLER WITH THE ENGINE RUNNING.

7. ENSURE NOBODY COMES BETWEEN THE TRACTOR SECTION AND THE DRUM SECTION OF THE ROLLER WHEN THE ENGINE IS RUNNING, THEY RISK BEING CRUSHED IF THE STEERING IS OPERATED.

8. ENSURE THAT GUARDS ARE ALWAYS FITTED OVER V-BELTS AND ROTATING SHAFTS.

9. BE OBSERVANT ON SITE, DO NOT ALLOW ANYBODY TO COME INTO THE PATH OF THE ROLLER.

10. USE THE HORN TO ATTRACT ATTENTION.

11. THE SOUND OF THE HORN ON CC 14 MACHINES MAY INDICATE THAT THE FAN V-BELT HAS BROKEN. AS SOON AS THE ROLLER IS IN A SAFE PLACE STOP THE ENGINE.

   • THE HORN WILL OPERATE ON CC 14 IF THE FAN V-BELT BREAKS.

   • THE BATTERY CHARGING LAMP WILL LIGHT UP ON CC 14G MACHINES IF THE FAN V-BELT BREAKS.

   • THE HORN WILL SOUND ON CC 14 AND CC 14G MACHINES IF THE ENGINE HAS BECOME OVERHEATED.
BEFORE STARTING

1 Ensure that the daily maintenance has been carried out (see the "Maintenance instructions").

2 Select the battery master switch (1) to the "ON" position.

STARTING

1 Move the forward/reverse control lever (11) to the "NEUTRAL" position. The engine cannot be started with the lever in any other position.

2 Set vibration switch (10) to the "NEUTRAL" position.

3 Ensure that the engine stop control (22) has been pressed fully home.

4 Depress the button on the throttle (23) and set the throttle to about 1/4 full throttle.

5 Turn the starter switch (1) to the "I" position.

6 Ensure that the gauge (15) indicates reading and that the warning lamps (12) (14) and (19) illuminate.

Fig. 2
1 Battery master switch

Fig. 3
1 Starter switch
10 Vibration switch:
   Manual - Automatic
11 Forward/Reverse control lever
12 Brake warning lamp
14 Battery charging lamp
15 Fuel gauge
19 Oil pressure warning lamp
22 Engine stop control
23 Throttle
NOTE! If the engine does not start, pause briefly before attempting to start it again.

7 Turn the starter switch to the "START" position. As soon as the engine has fired, release the starter switch, which will then return to the "I" position.

8 Adjust the throttle until the engine is running at idling speed (600-700 rpm) for 5-10 min depending on the air temperature.

9 Check that the warning lamps (12) (14) and (19) have gone out and that the ammeter (18) pointer points to +.

10 If the horn sounds during operation, this could be due to:
   - On CC 14 machines
     the fan V-belt having broken
     the engine has become overheated
   - On CC 14G machines
     that the engine has become overheated.

   Disconnect the battery lead. Carry out a check and remedy the fault.

In addition, on CC 14G machines, if the battery charging lamp illuminates, the generator drive belt may have broken. Identify and remedy the fault.

Fig. 4

1 Starter switch
12 Brake warning lamp
14 Battery charging lamp
18 Ammeter
19 Oil pressure warning lamp
23 Throttle
1 Open the throttle (23) until the engine runs at 2400 rpm.

The engine speed can be adjusted by turning the control:
- Anticlockwise to increase the speed
- Clockwise to decrease it.

2 Ensure that the steering system is in working order by turning the steering wheel one revolution to the right and one to the left whilst the roller is stationary.

3 When operating on asphalt, switch on the sprinkler system (7). The toggle switch may be set to two positions.
- Upper position
  = Manual sprinkling
- Lower position
  = Automatic sprinkling.

4 Carefully move the forward/reverse lever (11) to the desired position (forward or reverse).

**NOTE** The speed must always be controlled using the forward/reverse lever and not by changing the engine speed.

5 Check the operating condition of the brakes in accordance with the "Maintenance instructions". The brakes must be checked often enough to ensure that they are working at maximum efficiency.

6 During operation check that the gauge readings are normal and that the warning lamps do not illuminate. The hydraulic oil temperature (17) should not exceed 85°C (approx. 185°F).
BRAKING

Normal braking should be carried out by means of the forward/reverse control lever (11 in Fig. 6). The hydrostatic transmission will slow down the roller as the lever is moved to the "NEUTRAL" position.

The roller is fitted with a multi-disc brake in the drum gear and is engaged when the stop control (22 in Fig. 6) is pulled out.

Emergency brake

In an emergency depress the emergency stop (20), see Fig. 6.

STOP

1. Switch off the vibrations.

2. Stop the roller by moving the forward/reverse control lever (11) to the "NEUTRAL" position.

3. Push in the throttle (23) until the engine is running at idling speed (600-700 rpm). Let the engine run for a few minutes.

4. Pull out the engine stop control (22).

5. When the engine stops, press in the engine stop control (22) and turn the starter switch (1) to the "0" position.

Fig. 6

1 Starter switch
11 Forward/Reverse control lever
20 Emergency stop
22 Engine stop control
23 Throttle
VIBRATION
Setting — High/Low amplitude

Vibration amplitudes can be independently set on both drums using separate switches (8) and (9). This enables the front and rear drums to vibrate at different amplitudes, i.e. "high" on the front drum and "low" on the rear drum or vice versa.

Fig. 7
8 Amplitude switch, rear drum
9 Amplitude switch, front drum

Manual vibration selection

Engagement and disengagement of vibration for both drums is achieved by means of switch (10).

NOTE Amplitude resetting must not be carried out when the vibration motor is in operation. Therefore wait a few seconds before resetting.

Fig. 8
10 Vibration switch
Manual - Automatic

Automatic vibration selection

The roller is also equipped with automatic vibration selector, which will automatically switch off the vibration when the roller is changing direction of travel (as the forward/reverse lever is moved through the "NEUTRAL" position).
PARKING

Never park the roller with the engine running - see the heading "SAFETY PRECAUTIONS".

The roller is equipped with a parking brake which is applied automatically when the engine is stopped.

When parking on an incline, the brake blocks must be used to chock the drums.

Fig. 9. A brake block (1) for each drum

TOWING

Alternative 1:

Short distances when the engine can be run

The roller may be moved up to 300 m in the following manner.

1 Let the engine run at idling speed. This automatically disengages the brakes.

2 Set the towing valve (1) as shown in fig 10 (2), with an adjustable spanner.

The valve is located under the operator’s platform, on the left-hand side.

NOTE Ensure the towing valve is reset to its original setting after towing.

Fig. 10

1 Towing valve
2 The valve setting during towing
Alternative 2:
Short distances when the engine is not running

1. Use the grease nipple (Fig. 11) from the toolkit.

Fig. 11
1 Protective nut
2 Grease nipple

2. Disconnect the brake lines (3) at the brake valve (1), Fig. 12, keep the lines high to prevent loss of brake fluid.

3. Fit the grease nipple (Fig. 11) as shown in Fig. 12, item 2.

4. Fit the grease gun to the grease nipple and pump with the gun until the brakes disengage. The grease gun must remain in the position on the nipple whilst towing.

5. Reset the towing valve as shown in Fig. 10 with an adjustable spanner. The valve is located under the operator's platform, on the left-hand side.

NOTE Ensure that the towing valve is reset to its original setting after towing.

NOTE If when being towed the roller must go down a slope its speed should be controlled, see Fig. 13.

NOTE If the roller is to be towed over long distances, the hydraulic motors must be disconnected from the drum gearbox. Otherwise damage will occur to the machine (see "Workshop instructions").
After towing

On completion of towing, both hoses should be cleaned as follows:

1. Disconnect the brake line connections (1) to the brake (2) (on each drum).

2. Remove the grease gun from the brake line.

3. Remove the grease from inside the brake lines by blowing compressed air through them, and over the brake housing hose connection.

4. Refit brake lines.

5. Start the engine.

6. Loosen the nut (1) and bleed the brake system until clear oil flows out.

7. Retighten the nut and check the system for oil leakage.

Fig. 14 Drum gearbox seen from above

1. Brake line connection
2. Brake
LIFTING INSTRUCTIONS

The steering articulated joint must be locked before the roller is lifted, to prevent any movement about this point.

Swing the bar across and lock it to the lug on the articulated joint, see Fig. 15.

Fig. 15 Steering articulated joint - locking bar

Fit the lifting slings to the lifting slots ensuring that none of the components of the roller can be crushed by the slings.

NOTE Lifting slings must comply to the current area safety regulations and be of the correct capacity for the weight to be lifted.

Weight: 4500 kg

Fig. 16

OPERATING AFTER LIFTING

Ensure that the locking bar is reset to its original position before starting the engine.

DO NOT WALK UNDER A SUSPENDED LOAD!