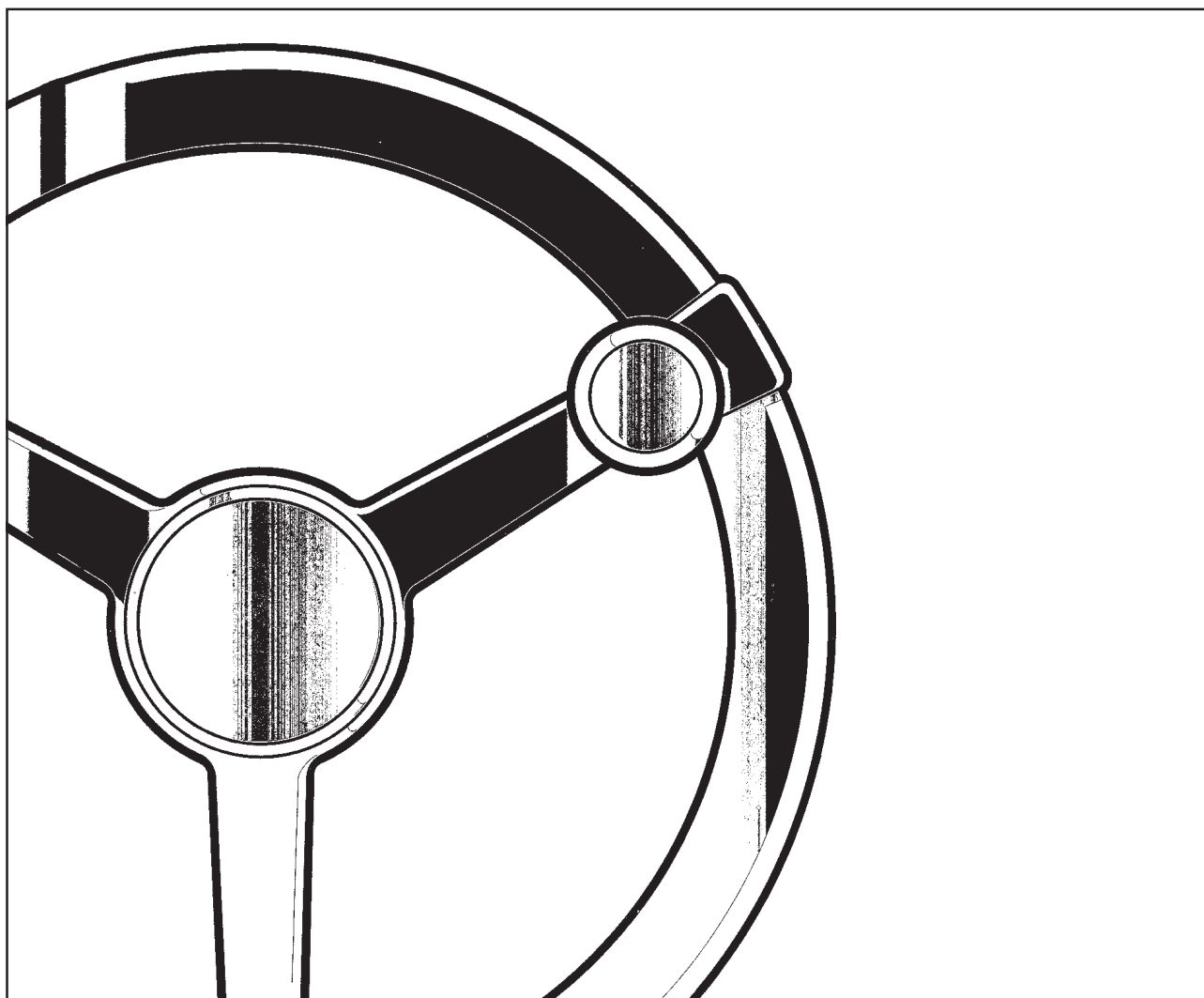


DYNAPAC

CA 252/302/402

OPERATION

O252EN5



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DYNAPAC

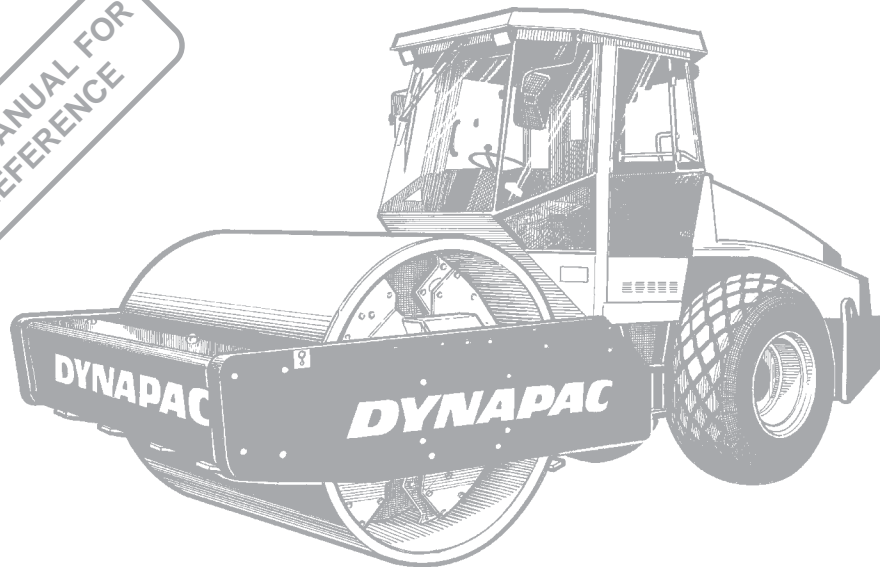
Vibratory Roller CA 252/302/402

Operation O252EN5, January 2003

**Diesel engine:
CA 252/302/402: Deutz BF4M 2012C**

These instructions apply from:
CA 252STD PIN (S/N) *66510252*
CA 252D PIN (S/N) *66610253*
CA 252PD PIN (S/N) *66710253*
CA 302D PIN (S/N) *68410303*
CA 302PD PIN (S/N) *68510303*
CA 402D PIN (S/N) *69410402*

**KEEP THIS MANUAL FOR
FUTURE REFERENCE**



Dynapac's medium-range vibratory soil compactors are the CA 252/302 and 402. They are available in D (smooth drum) and PD (padfoot) versions, of which the CA 302D and CA 402D are designed for the compaction of rock fill. The PD versions have their major range of application on cohesive material and disintegrated rock.

All types of base courses and subbase courses can be compacted deeper and the interchangeable drums, D to PD, and vice versa, facilitate even greater variety in the range of application.

The cab is an optional feature of the machines, but is included in this manual. Other accessories, such as the compaction meter, compaction computer and speed recorder, are described in separate instructions.

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WARNING SYMBOLS

WARNING



Safety instructions – Personal safety

CAUTION



Special caution – Machine or component damage

SAFETY MANUAL

WARNING



The safety manual, which accompanies each machine, must be studied by each operator of the roller. Always follow the safety rules and do not remove the manual from the roller.

GENERAL

This manual contains instructions concerning operation and use of the roller. For information regarding care and maintenance, see the manual, "MAINTENANCE, CA 252/302/402".

WARNING



When starting up and driving a cold machine, which implies cold hydraulic fluid, the braking distance will be longer than normal until the machine reaches normal working temperature.

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.

SAFETY INSTRUCTIONS (Read the Safety Manual also)



1. The operator must be familiar with the contents of the OPERATION MANUAL before starting the roller.
2. Make sure that all instructions in the MAINTENANCE MANUAL are followed.
3. Only trained and/or experienced operators may drive the roller. Passengers are not allowed on the roller. Remain seated during all operation.
4. Never use the roller if it is in need of adjustment or repairs.
5. Board and leave the roller only when it is stationary. Use the grips and railings that are provided. Always use a "three-point grip" - both feet and one hand or one foot and both hands - when boarding or exiting the machine.
6. The ROPS (Roll Over Protective Structure) should always be used when the machine is operated on risky ground.
7. Drive slowly in sharp bends.
8. Avoid driving at an angle on slopes; drive straight up or down.
9. When driving close to unsafe edges or holes, make sure that at least two thirds of the drum width is firmly on material that has already been compacted.
10. Make sure that there are no obstacles in the direction of travel, on the ground or overhead.
11. Drive extra 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 dirt and grease from the operator's platform without delay. Keep all signs and decals clean and clearly legible.
14. Safety measures before refueling:
 - Stop the engine.
 - Do not smoke.
 - No naked flame in the vicinity.
 - Ground the nozzle of the filling device against the tank to prevent sparks.
15. Before repairs or service:
 - Place chocks against the drums/wheels and against the strike-off blade.
 - Lock the articulation if required.
16. Hearing protectors are recommended if the noise level exceeds 85 dB(A). The noise level may vary depending on what material the machine is operating on.
17. Make no changes or modifications on the roller that could affect safety. Changes may only be made following written consent by Dynapac.
18. Do not use the roller until the hydraulic fluid has reached its normal working temperature. Braking distance can be longer than usual if the fluid is cold. See starting instructions in the OPERATION MANUAL.

SAFETY WHEN DRIVING

Driving near an edge

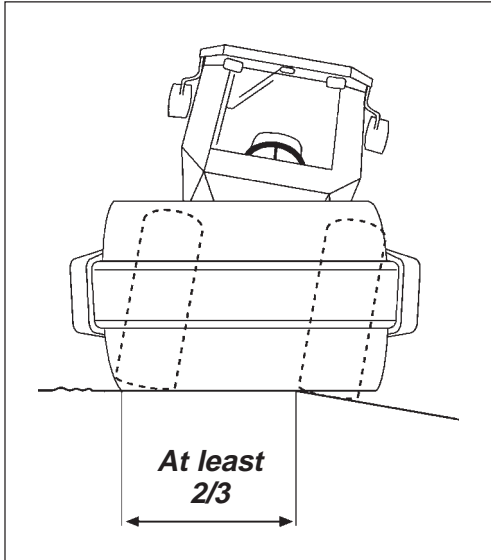


Fig. 1 Position of drum when driving near an edge

When you drive near an edge, at least two thirds of the drum width must be on solid ground.

WARNING



Remember that the machine's center of gravity is displaced outward when you steer to one side. For example, it shifts to the right when you steer to the left.

Slopes

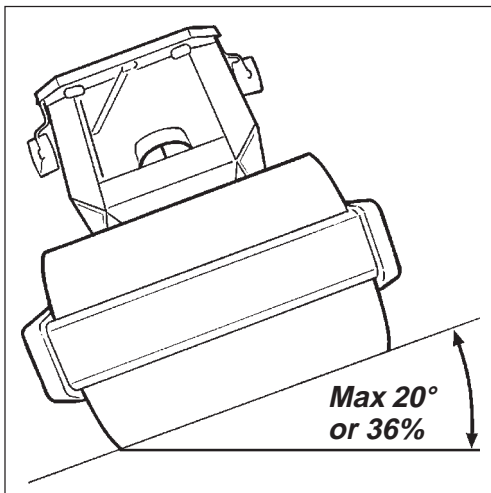


Fig. 2 Tipping angle on side slopes

WARNING



The ROPS (Roll Over Protective Structure) is always recommended when driving on slopes or insecure ground.

WARNING



Where possible, avoid all driving *across* a slope. Instead, drive up and down on sloping ground.

The tilting angle is measured on a hard, level surface with the machine stationary, steering angle zero, vibration switched OFF and all tanks full. Remember that loose ground, steering of the machine, vibration switched ON, driving speed and raising the center of gravity (for example, with accessories) may cause the machine to topple even on a smaller slope than that stated here.

WARNING



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

SAFETY (OPTIONAL)

Strike-off blade – PD

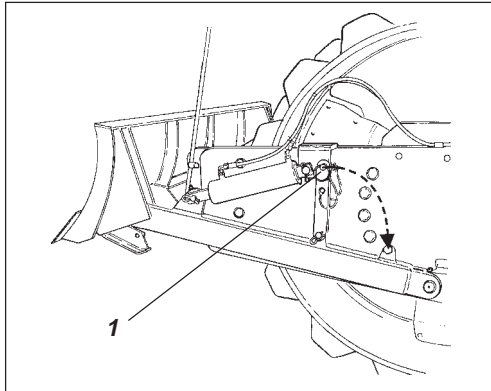


Fig. 3 Strike-off blade
1. Locking pin

WARNING



The operator must make sure that nobody is in the working area while the machine is in operation.

CAUTION



The strike-off blade must be retracted to its transportation mode (1) at the end of each working period.

WARNING



Ensure always that the strike-off blade is secured by the locking pin (1) when driving with the blade in its raised position. Always lower the blade to the ground before leaving or parking the roller.

Air conditioning

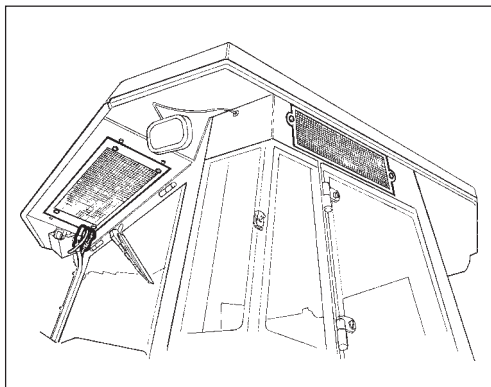


Fig. 4 Cab

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

WARNING



The system contains pressurized refrigerant. Releasing refrigerants into the air is prohibited. The refrigerant circuit may only be repaired by an authorized company.

WARNING



The cooling system is pressurized. Incorrect handling can result in serious personal injury. Do not disconnect the hose coupling.

CAUTION



Recharge the system with approved refrigerant when required.

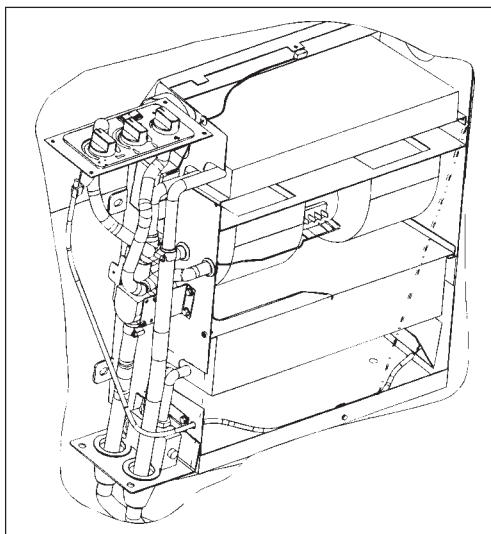
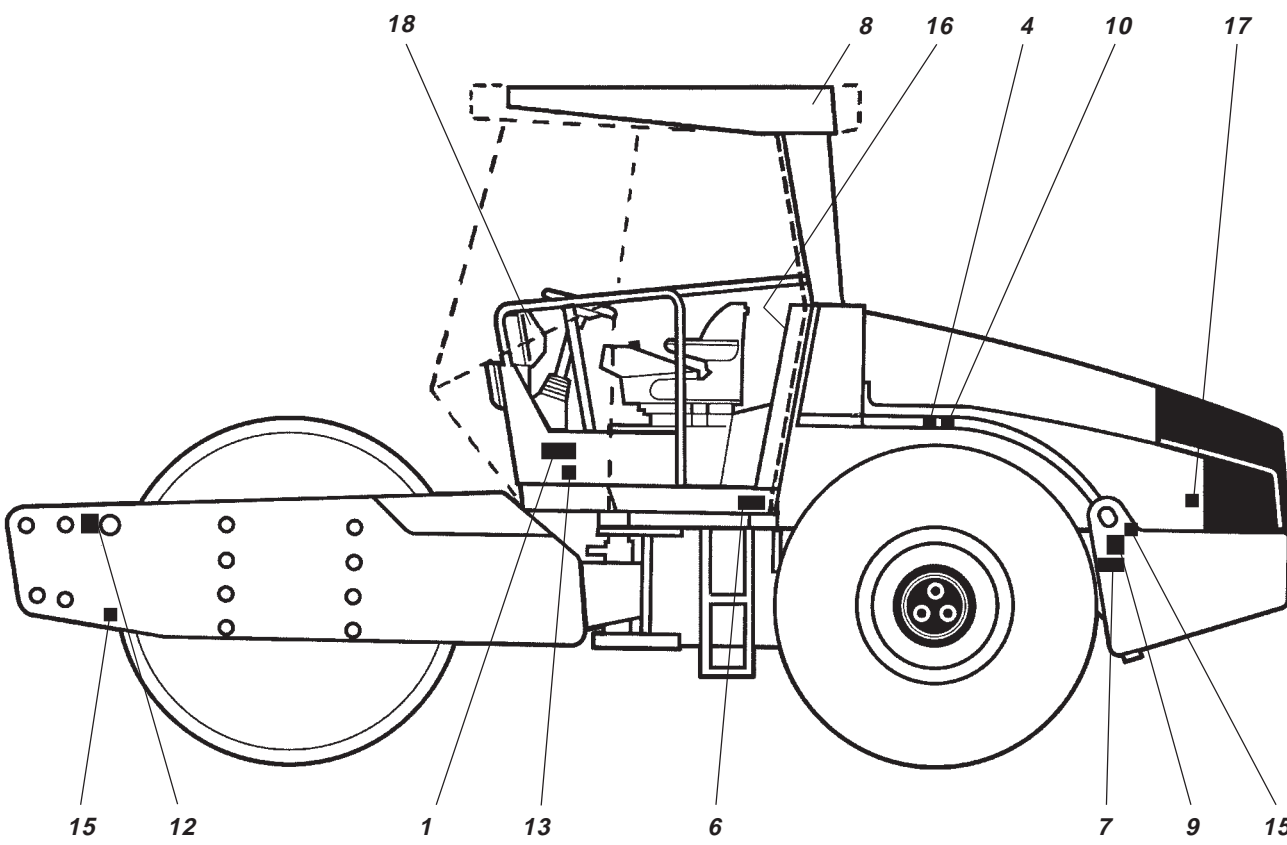
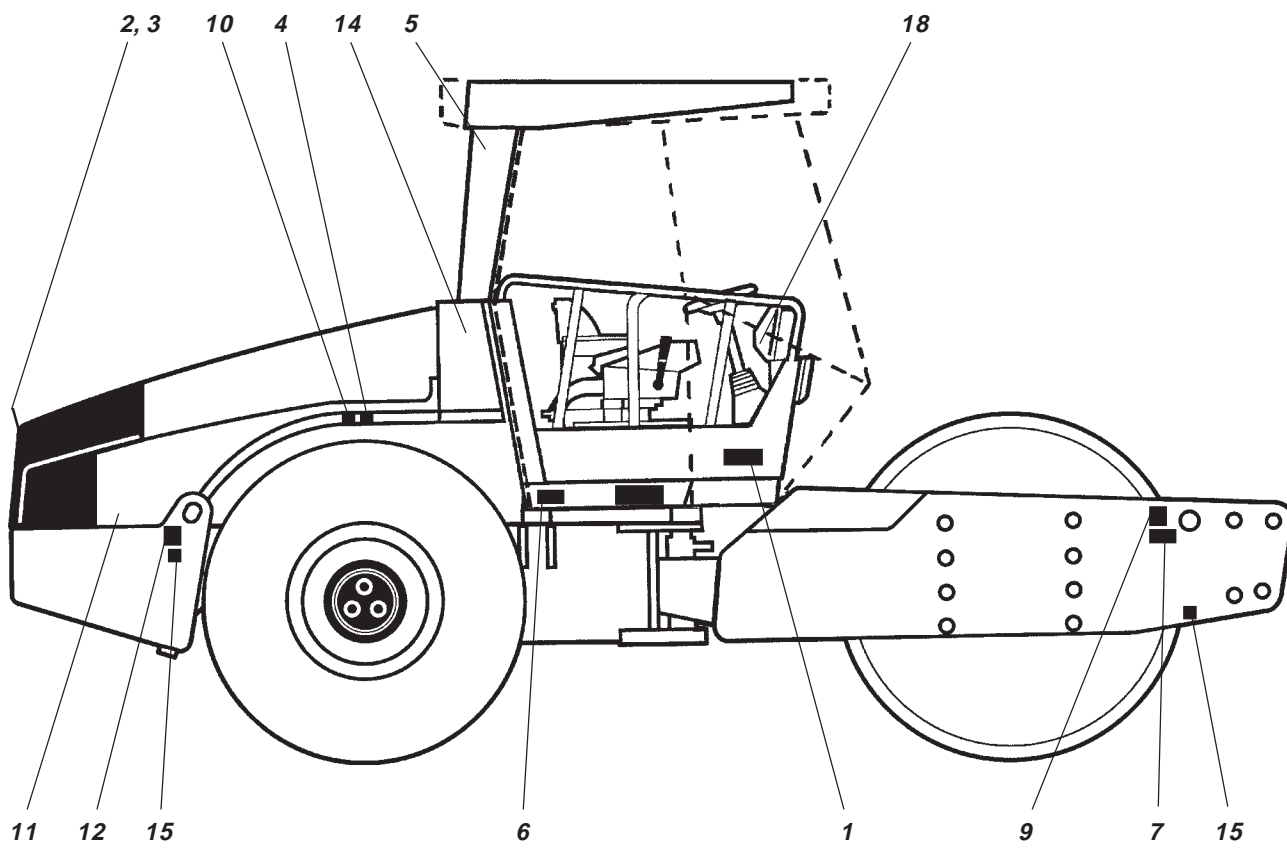


Fig. 5 Air conditioning

SAFETY DECALS, LOCATION/DESCRIPTION



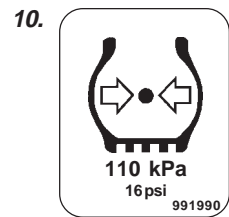
SAFETY DECALS, LOCATION/DESCRIPTION



Crush zone, articulation/
Drum. Maintain a safe distance from the crush zone.



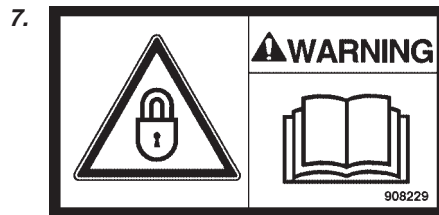
The operator is urgently requested to read the safety manual, and the operation and maintenance instructions before using the machine.



Tire pressure



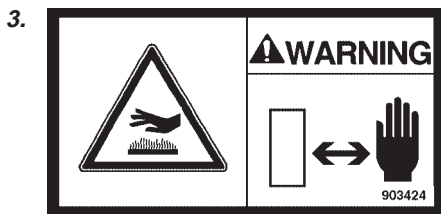
Warning - rotating engine components. Keep your hands at a safe distance from the danger zone.



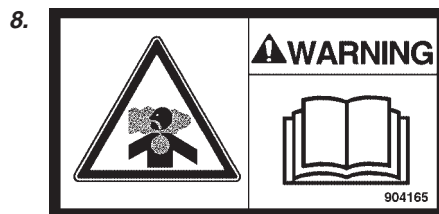
The articulation must be interlocked when lifting. Read the instruction manual.



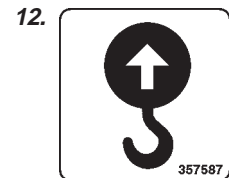
Diesel fuel



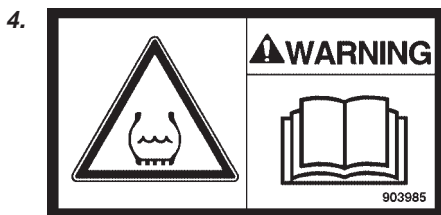
Warning - hot surfaces in the engine compartment. Do not touch.



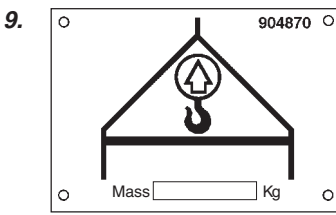
Toxic gas. Read the instruction manual.



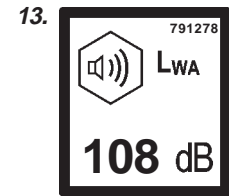
Lifting point



Tires filled with ballast. Read the instruction manual.



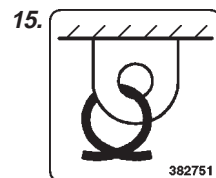
Lifting plate



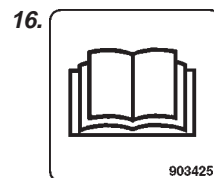
Sound Power level



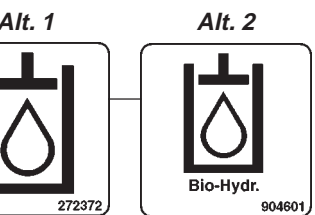
Emergency exit



Securing point



Handbook compartment



Hydraulic fluid

Biological hydraulic fluid



Battery disconnecter



MACHINE AND ENGINE PLATES

Machine plate

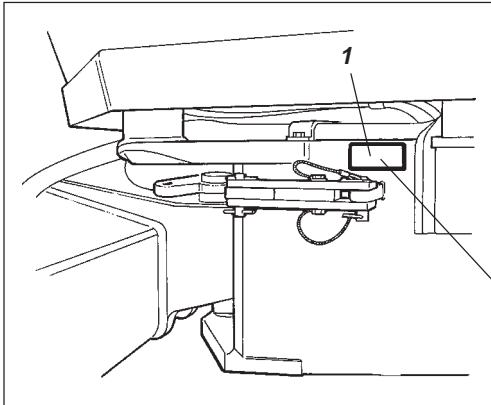
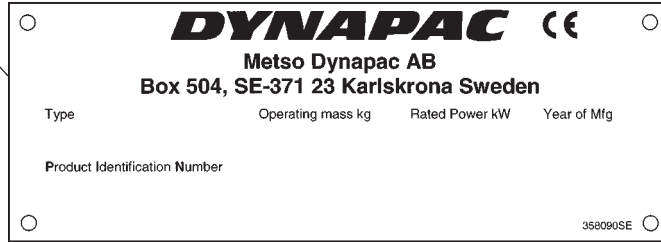


Fig. 6 Operator's platform
1. Machine plate

The machine plate (1) is affixed on the front left side of the frame, by the steering joint. The plate shows the manufacturer's name and address, type of machine, product identification number (PIN), weight in working order, engine power and year of manufacture. (Only the manufacturer's name and address, PIN and type of machine will be noted if the machine is delivered outside the EU.)

Please state the roller PIN when ordering spares.



PIN on frame

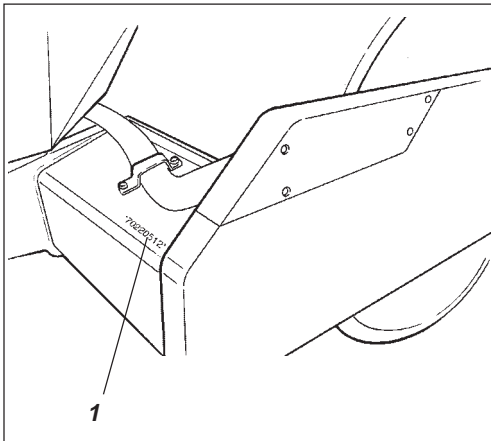


Fig. 7 Front frame
1. PIN

The PIN (1) of the machine is punched on the front right edge of the forward frame beam.

Engine plate

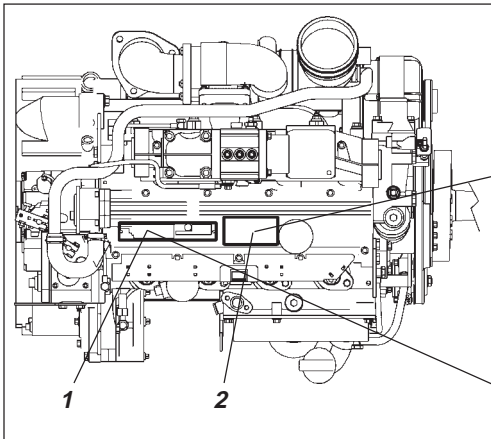
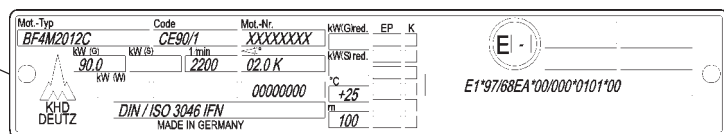
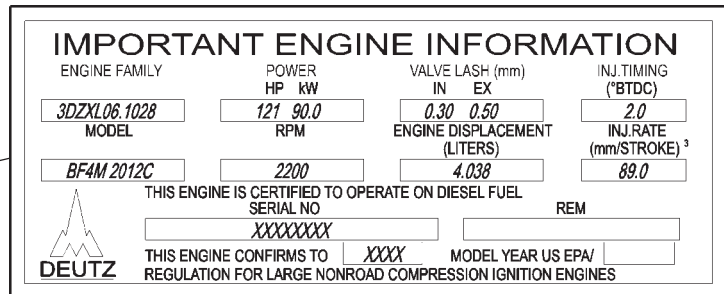


Fig. 8 Engine
1. Engine plate
2. CE-sign

The engine data plates are on the engine cylinder head cover, see fig. The plates indicate the type of engine, serial number and engine data. Please state the engine serial number when ordering spares. See also the Engine Manual.



INSTRUMENTS AND CONTROLS

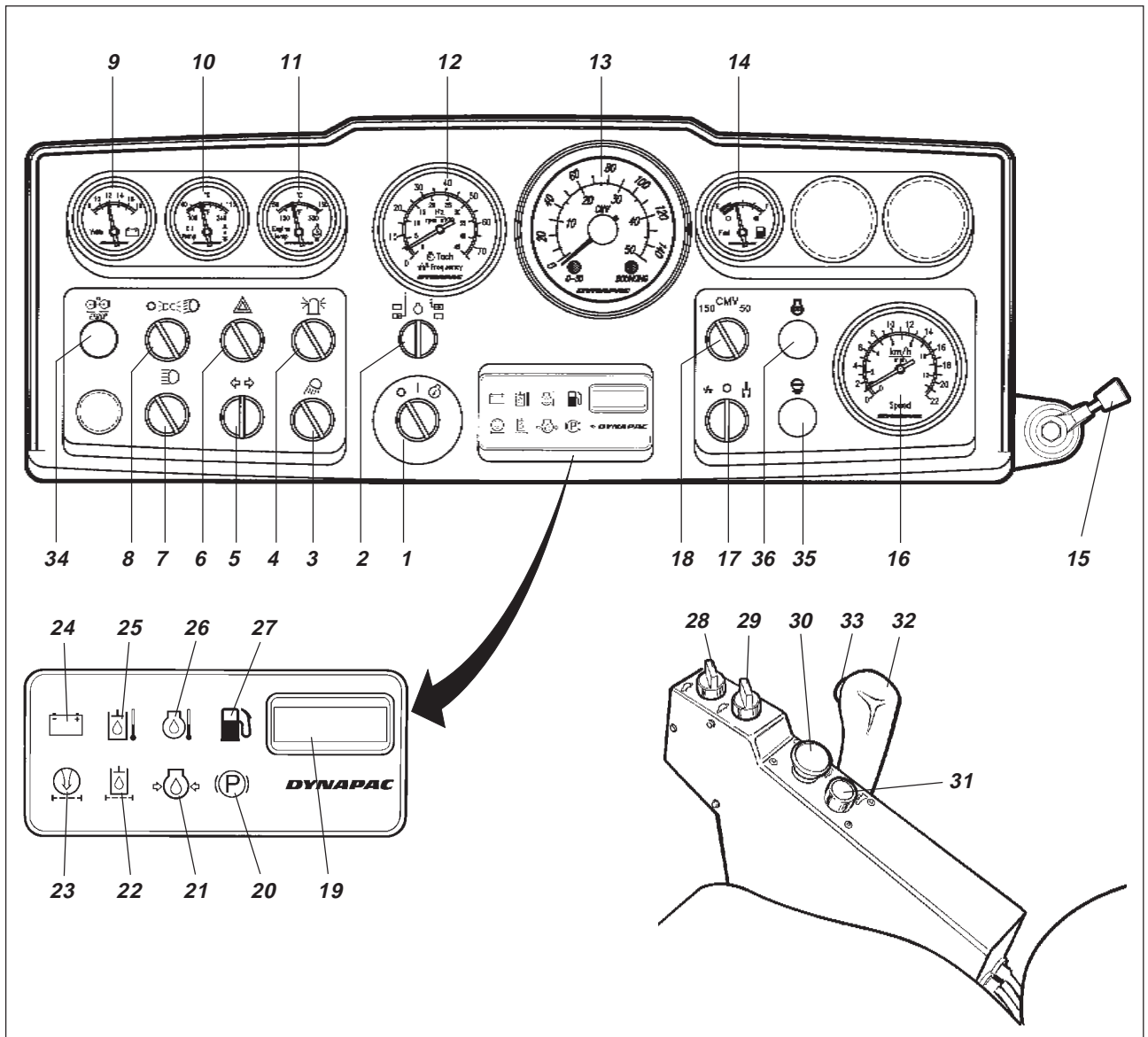







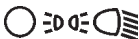






Fig. 9 Instruments and control panel












- | | | |
|---|---|--|
| 1. Starter switch | 14. Fuel gauge | 26. Warning lamp, engine temperature |
| 2. Revs/Frequency selector <input type="checkbox"/> | 15. Engine revs control | 27. Warning lamp, fuel level |
| 3. Working lights <input type="checkbox"/> | 16. Speedometer (If compaction meter is included in item 13) <input type="checkbox"/> | 28. Speed selector, drum <input type="checkbox"/> |
| 4. Hazard beacon <input type="checkbox"/> | 17. Amplitude selector Low/0/High | 29. Speed selector, rear axle |
| 5. Direction indicator switch <input type="checkbox"/> | 18. CMV selector <input type="checkbox"/> | 30. Reserve/Parking brake knob |
| 6. Hazard flashers <input type="checkbox"/> | 19. Hourmeter | 31. Horn |
| 7. Main beam switch <input type="checkbox"/> | 20. Brake warning lamp | 32. Forward/Reverse lever |
| 8. Parking/dipped beam switch <input type="checkbox"/> | 21. Warning lamp, engine oil pressure | 33. Vibration ON/OFF |
| 9. Voltmeter <input type="checkbox"/> | 22. Warning lamp, hydraulic filter | 34. Anti-spin, Fault Indication <input type="checkbox"/> |
| 10. Hydraulic temperature <input type="checkbox"/> | 23. Warning lamp, air filter | 35. Warning lamp, low coolant level |
| 11. Engine temperature <input type="checkbox"/> | 24. Warning lamp, charging | 35. Preheating lamp |
| 12. Engine revs/Vibration frequency <input type="checkbox"/> | 25. Warning lamp, hydraulic temperature | |
| 13. Compaction meter/Speedometer (see item 16) <input type="checkbox"/> | | |

= Optional












INSTRUMENTS AND CONTROLS, FUNCTIONAL DESCRIPTION

Item in fig. 9	Designation	Symbol	Function
1	Starter switch		<p>In mode ○ the electric circuit is broken.</p> <p>In mode all instruments and electric controls are powered.</p> <p>In mode ⤵ the starter motor is energized.</p>
2	Engine revs/Frequency selector (Optional)		<p>In mode ○ the engine revs are shown on instrument 12.</p> <p>In the right mode the vibration frequency is shown on instrument 12. (The left mode has no function.)</p>
3	Working lights rear, switch (Optional)		Turn to the right to switch on the working lights.
4	Hazard beacon, switch (Optional)		Turn to the right to switch on the hazard beacon.
5	Direction indicator, switch (Optional)		Turn to the left to make the left direction indicator flash, etc. The flashing function is switched off in the middle mode.
6	Hazard flashers, switch (Optional)		Turn to the right to switch on the hazard flashers.
7	Main/Dipped beam, switch with control lamp (Optional)		<p>Turn to the right to switch on the main beam and to illuminate the switch.</p> <p>Turn to the left to switch on the dipped beam.</p>
8	Driving lighting, switch (Optional)		When turned right, the first setting switches on the parking light, the second setting activates low beam.
9	Voltmeter, (Optional)		Indicates voltage of the electrical system. Normally 12–15 volt.
10	Temperature gauge, hydraulic fluid, (Optional)		<p>Indicates temperature of hydraulic fluid. Normal temperature range 65°C to 80°C (149°F to 176°F). Stop the engine if the meter reading exceeds 85°C (185°F). Locate and remedy the fault.</p>
11	Temperature gauge, engine, (Optional)		<p>Indicates engine temperature. Normal temperature is about 90°C (194°F). Stop the engine if the gauge indicates a temperature higher than 103°C (217°F). Locate and remedy the fault.</p>
12	Engine revs/Frequency meter, (Optional)		The inner scale shows the actual engine speed. The outer scale shows the vibration frequency.

INSTRUMENTS AND CONTROLS, FUNCTIONAL DESCRIPTION

Item in fig. 9	Designation	Symbol	Function
13	Compaction meter (Optional)	—	See separate instructions.
14	Fuel gauge		Indicates fuel level.
15	Revs control (diesel engine)	—	Upper mode, engine working revs. Lower mode, idling revs.
16	Speedometer (Optional)		The outer scale shows roller speed in km/h. The inner scale shows roller speed in mph.
17	Amplitude selector		Left mode gives low amplitude. Right mode gives high amplitude. Vibration switched OFF in O mode.
18	CMV selector (Optional)	—	Mode 150 gives reading on outer scale. Mode 50 gives reading on inner scale.
19	Hourmeter	—	Engine running time is indicated in hours.
20	Brake warning lamp		This lamp will light when the parking or reserve brake knob is pressed and the brakes are applied.
21	Warning lamp, oil pressure		This lamp lights if lubricating pressure in the engine is too low. Stop the engine immediately and locate the fault.
22	Warning lamp, hydraulic filter		If the lamp lights up when the diesel engine is running at full speed, the hydraulic fluid filters must be replaced.
23	Warning lamp, air filter		The air filter should be cleaned or replaced if this lamp lights when the engine is running at full speed.
24	Warning lamp, battery charging		The alternator is not charging if this lamp lights when the engine is running. Stop the engine and locate the fault.
25	Warning lamp, hydraulic temperature		This lamp lights if the hydraulic fuel is too hot. Stop the roller, and allow the fluid to cool down by idling the engine. Locate and remedy the fault.
26	Warning lamp, engine temperature		This lamp lights if the engine is too hot. Stop the engine immediately and locate and remedy the fault. See also the engine manual.
27	Warning lamp, low fuel level		This lamp lights when there is only sufficient fuel left for a short period. Refuel without delay.

INSTRUMENTS AND CONTROLS, FUNCTIONAL DESCRIPTION

Item in fig. 9	Designation	Symbol	Function
28	Speed selector, drum (Optional)	 	Transport speed (High) Working speed (Low)
29	Speed selector, rear axle	 	Transport speed (High) Working speed (Low)
30	Reserve brake/Parking brake		Push in to activate the reserve brake. Parking brake is applied if pushed in when machine is stationary. Both brakes are released when knob is pulled out.
31	Horn, switch		Press to sound the horn.
32	Forward/Reverse control		The lever must be in neutral to start the engine, it cannot be started with the forward/reverse lever in any other position. Direction of travel and speed of the roller is regulated with the forward/reverse lever. The roller moves forward when the lever is moved forward, etc. Speed of the roller is regulated in proportion to how far the lever is moved from neutral. The further from neutral, the higher the speed.
33	Vibration ON/OFF, switch		Push and release the switch to engage vibration, push once more to disengage vibration. The above applies only when the amplitude selector (17) is in position High or Low.
34	Warning lamp, malfunctioning anti-spin function (Optional)		The hydraulic propulsion system is not working satisfactorily if the lamp flashes. Locate and remedy the fault.
35	Warning lamp, low coolant level		The warning lamp lights if engine coolant level is too low.
35	Preheating lamp		Lights while preheating of the diesel engine is in progress and the starter switch is in mode I.

CONTROLS IN THE CAB

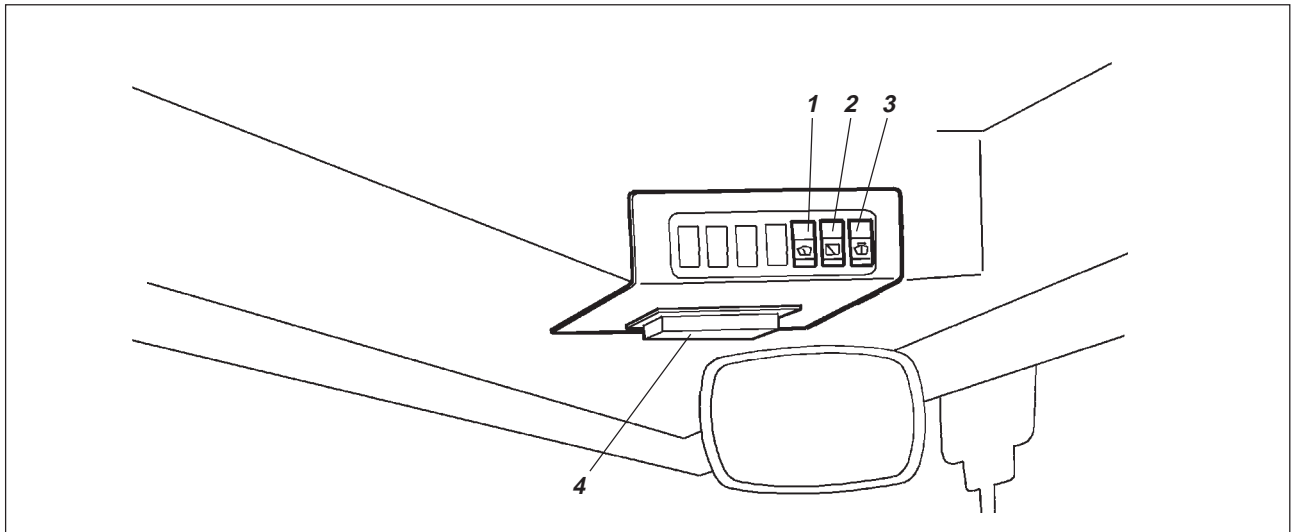


Fig. 10a Cab roof, front

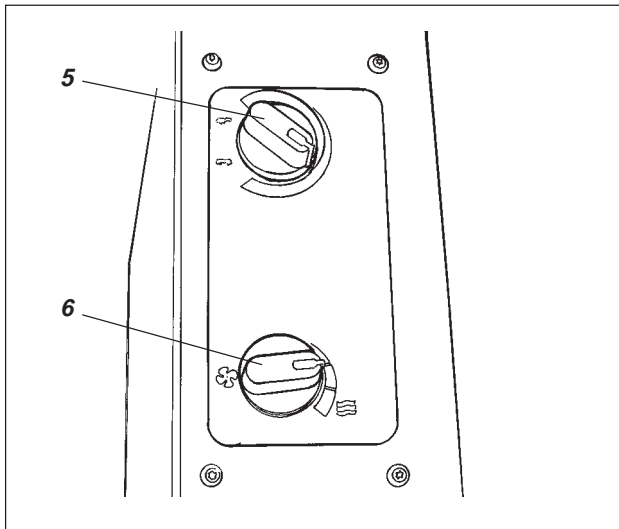


Fig. 10b Cab, right side

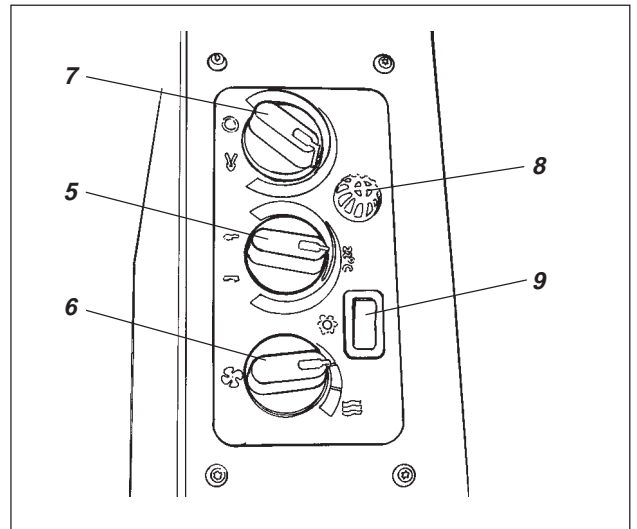


Fig. 10c Cab, right side (with AC option)

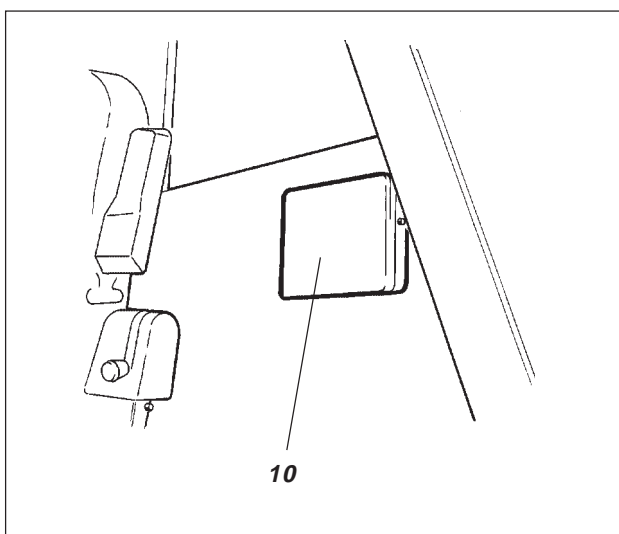


Fig. 10d Cab, rear

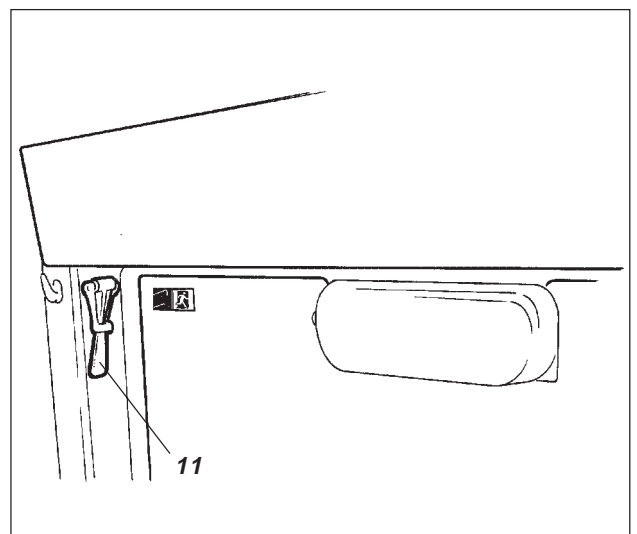













Fig. 10e Cab roof, rear

CONTROLS IN THE CAB, FUNCTIONAL DESCRIPTION

Item in fig. 10	Designation	Symbol	Function
1	Wiper front, switch		Press to turn on the front wiper.
2	Wiper rear, switch		Press to turn on the rear wiper.
3	Screenwash front and rear panes, switch		Press at the top to spray the windscreen. Press at the bottom to spray the rear screen.
4	Fuse box (cab)		Contains fuses for the electrical system. See the "Electrical system" section in the Maintenance Manual for functional descriptions of the fuses.
5	Heater		Right mode, maximum heating. Left mode, heating turned off.
6	Air fan, switch		Left mode, fan turned off. Right mode, cab ventilation increases in three steps.
7	Recirculation of cab air, slide control		Left mode, maximum recirculation of air. Right mode, minimum.
8	Temperature sensor		Senses the interior temperature. Must not be covered.
9	Air conditioning switch		Starts and stops the air conditioner.
10	Handbook compartment		Stowage space for safety manual and operator's manuals.
11	Hammer for emergency evacuation		To evacuate the cab in an emergency, re- lease the hammer and break the REAR window.

BEFORE STARTING

Battery disconnecter – Switching ON

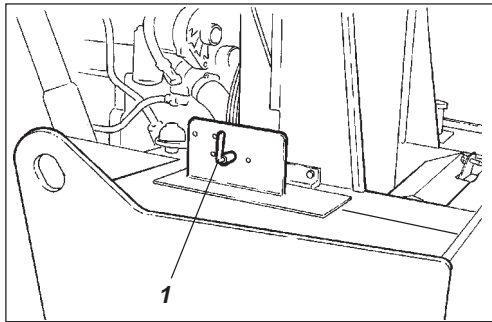


Fig. 11 Engine compartment
1. Battery disconnecter

Remember to carry out daily service. See maintenance manual.

The battery disconnecter is located in the engine compartment. Open the engine cover and set the key (1) to the ON position. The entire roller will be powered.



The engine hood must be unlocked during operation, so that battery power can be disconnected quickly if necessary.

Operator's seat – Setting

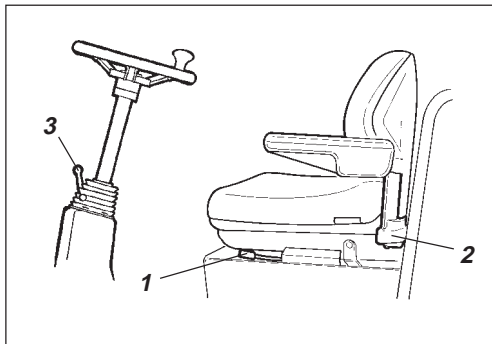


Fig. 12 Operator's seat
1. Locking lever - length adjustment
2. Lever - weight adjustment
3. Locking lever - slope of steering wheel

Adjust the operator's seat to ensure a comfortable posture and so that all controls are within easy reach.

The seat can be adjusted as follows:

- Length adjustment (1)
- Cushioning to suit weight of operator (2)

Release the locking lever (3) to adjust the steering column to the desired slope and then lock the steering column in its new position.



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

Control unit – Setting (Optional)

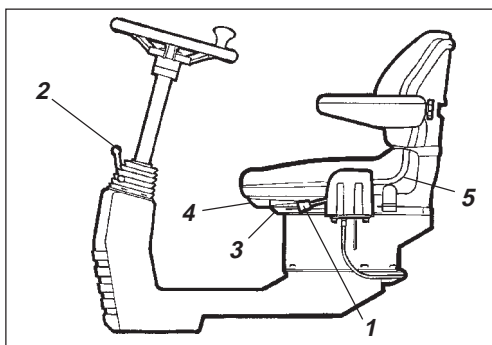


Fig. 13 Operator's station
1. Locking lever - rotation (Optional)
2. Locking lever - slope of steering wheel
3. Locking lever - length adjustment
4. Lever - seat back slope
5. Lever - weight adjustment

The control unit has two modes of adjustment, ie, rotation and slope of steering wheel.

Pull the lever (1) upwards to allow rotation.

Release the locking lever (2) to adjust the steering column to the desired slope and then lock the steering column in its new position.

The seat can be adjusted as follows:

- Length adjustment (3).
- Seat back slope (4).
- Cushioning to suit weight of operator (5).



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

BEFORE STARTING

Operator's seat in cab – Setting

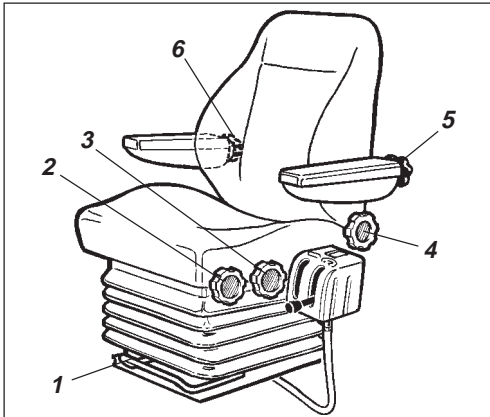


Fig. 14 Operator's seat

1. Lever - length adjustment
2. Knob - height adjustment
3. Knob - seat cushion slope
4. Knob - seat back slope
5. Knob - armrest slope
6. Knob - lumbar adjustment

Instruments and lamps – Checking

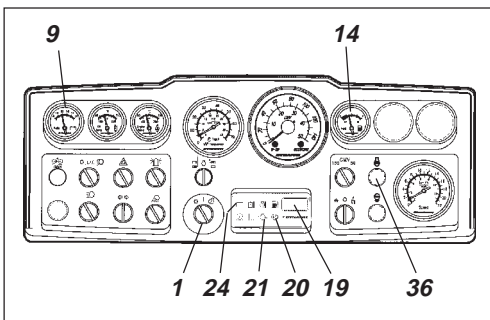


Fig. 15 Instrument panel

1. Starter switch
9. Voltmeter (Optional)
14. Fuel gauge
19. Hourmeter
20. Brake lamp
21. Oil pressure lamp
24. Charging lamp
36. Preheating lamp

Parking brake – Check

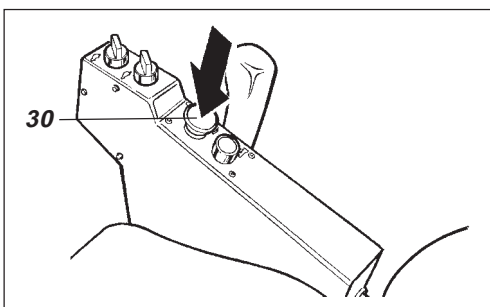


Fig. 16 Controls panel

30. Reserve/parking brake knob

Adjust the operator's seat to ensure a comfortable posture and so that all controls are within easy reach.

The seat can be adjusted as follows:

- Length adjustment (1).
- Height adjustment (2).
- Slope of seat cushion (3).
- Seat back slope (4).
- Slope of armrests (5).
- Lumbar support (6).

WARNING



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

Turn the starter switch (1) to position I. All warning lamps should light for about 5 seconds and the buzzer should sound. Make sure that the warning lamps light.

Check that the voltmeter (9) goes up to at least 12 volts, and also check that the level gauges (14) give a reading.

Check that the warning lamps for charging (24), oil pressure (21) and parking brake (20) light.

The hourmeter (19) records the number of hours so long as the engine is running.

The preheating lamp (36) should light.

WARNING



Ensure that the reserve/parking brake knob (30) is pressed down.

The roller can start to move if the engine is started on sloping ground if the parking brake is not applied.

Interlock (optional)

The engine switches off 7 seconds after the operator rises from the seat. This will occur regardless of whether the forward/reverse lever is in neutral or the drive mode. The engine will not stop if the parking brake is activated.

BEFORE STARTING

Operator's station

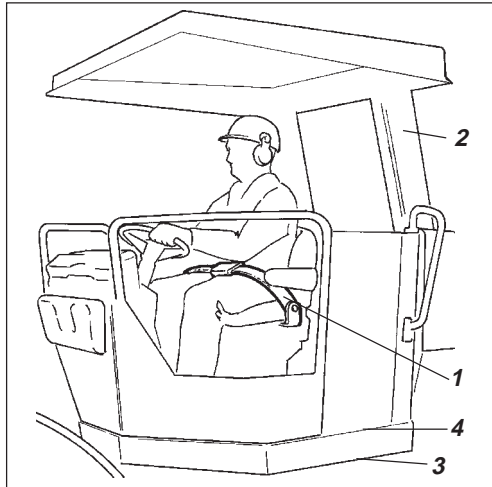


Fig. 17 Operator's station
1. Seat belt 3. Rubber element
2. ROPS 4. Anti-slip

If the roller is equipped with a ROPS (Roll Over Protective Structure) or a cab, always use the seat belt (1) and wear a hard hat.



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



Check that the 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 with new anti-slip if friction is poor.



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

Field of view

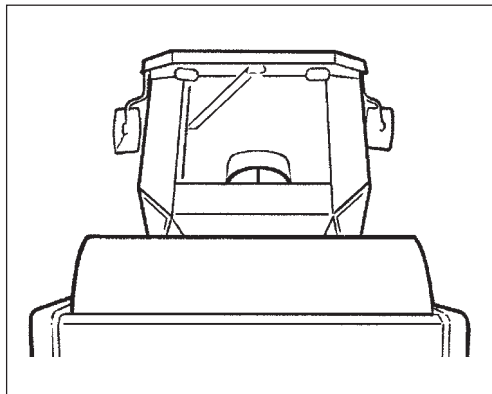


Fig. 18 Field of view

Before starting, make sure that the field of view is unobstructed, both in front and behind. All cab windows must be clean and rearview mirrors properly adjusted.

Strike-off blade (Optional PD)

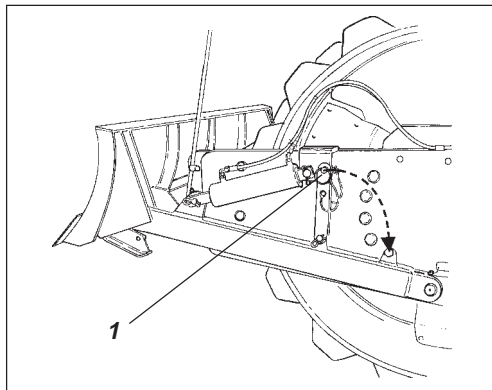


Fig. 19 Strike-off blade
1. Locking pin



Always ensure that the strike-off blade is secured by the locking pin (1) when driving with the blade in its raised position. Always lower the blade to the ground before leaving/parking the roller.

STARTING

Starting the engine

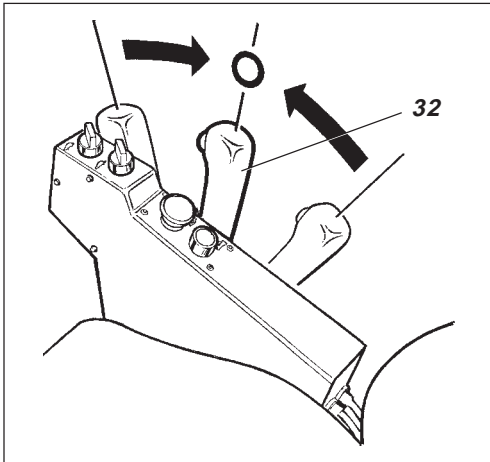


Fig. 20 Control panel
32. Forward/reverse lever

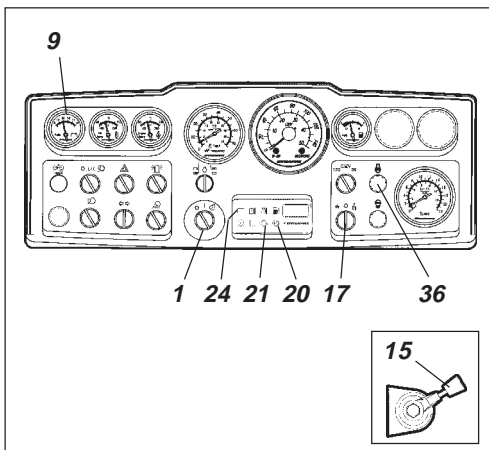


Fig. 21 Instrument panel
1. Starter switch
9. Voltmeter (Optional)
15. Revs control
17. Amplitude selector
20. Brake lamp
21. Oil pressure lamp
24. Charging lamp
36. Preheating lamp

Set the forward/reverse lever (32) in neutral. The engine can only be started with the lever in neutral.

Set the amplitude selector (17) for Low/High vibration to mode **O**.

Set the revs control (15) to the idling mode.



Do not start the engine before the preheating lamp (36) goes out. The time for engine preheating varies with the ambient temperature. Longer preheating in cold weather. Maximum heating time can be up to one minute.

Turn the starter switch (1) right to the starting mode, release the knob as soon as the engine fires.



Do not run the starter motor too long. If the engine does not start immediately, wait a minute or so before making a new attempt.

Warm up the diesel engine with the engine speed control at the idling setting for a few minutes, or for a longer period if the ambient air temperature is below +10°C (+50°F).

Check while warming up that the warning lamps for oil pressure (21) and charging (24) are out, and that the voltmeter (9) shows 13–14 volt. The warning lamp (20) for the parking brake shall still light.



When starting up and driving a cold machine, ie, cold hydraulic fluid, the braking distance will be longer than normal until the fluid reaches normal working temperature.



Ensure that ventilation (evacuation) is adequate if the engine is run indoors. ie, danger of carbon monoxide poisoning.

DRIVING

Driving the roller

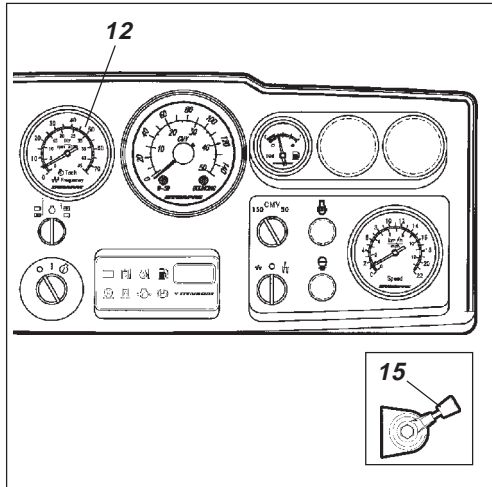


Fig. 22 Instrument panel
12. Tachometer (Optional)
15. Revs control

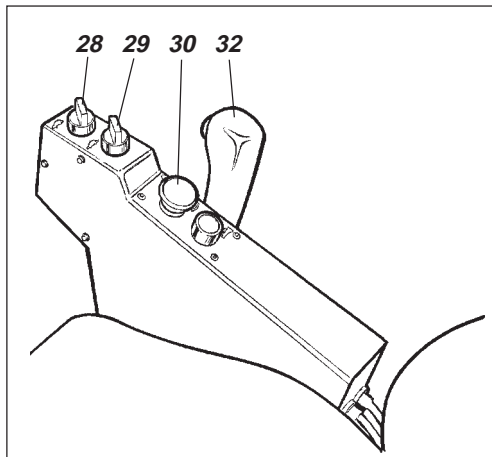


Fig. 23 Control panel
28. Speed selector, drum (Optional)
29. Speed selector, rear axle
30. Reserve/parking brake knob
32. Forward/Reverse lever

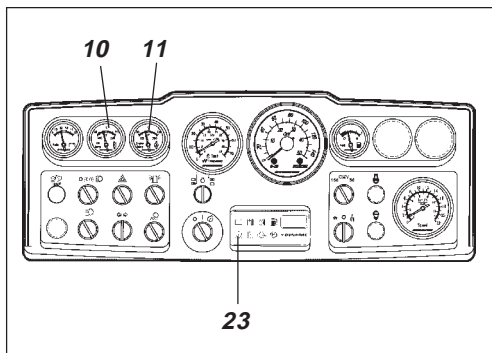


Fig. 24 Instrument panel
10. Temperature, hydraulic fluid (Optional)
11. Temperature, engine oil (Optional)
23. Warning lamp, air filter



Under no circumstances may the machine be operated from the outside. The operator must remain seated inside the machine during all operation.

Move the revs control lever (15) upwards and latch it at its limit, engine speed should now be about 2300 rpm.

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



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



Pull up the reserve/parking brake knob (30) and check that the warning lamp for the parking brake is out. When starting the roller on a slope, be prepared that it may begin to roll.

Set the High/Low speed selectors (28) and (29) to the desired mode, see decal on the control panel.

Max. speeds CA252/302/402

Low drum/Low rear axle = 5 km/h (3 mph)
High drum/Low rear axle = 6,5 km/h (4 mph)
Low drum/High rear axle = 9 km/h (5.5 mph)
High drum/High rear axle = 16 km/h (10 mph)



The High/High mode may only be used for transport runs on an even surface.

Carefully move the forward/reverse lever (32) in the desired direction of travel. Speed increases as the lever is moved farther from the neutral position.



Speed must always be regulated with the forward/reverse lever and **never** by changing speed of the engine.



Test the reserve brake by pressing the reserve/parking brake knob (30) while the roller is running slowly forward. Stop the roller and identify the fault if the brake does not work.

Check now and then while driving that the gauges show normal readings. In the event of abnormal values or if the buzzer sounds, stop the roller and the engine immediately. Check and remedy any fault, see also the maintenance manual and the engine manual.



If the air filter warning lamp (23) should light while driving (at full engine revs), the main filter must then be cleaned or replaced, see Maintenance Manual.

DRIVING/VIBRATING

Low/High amplitude – Setting

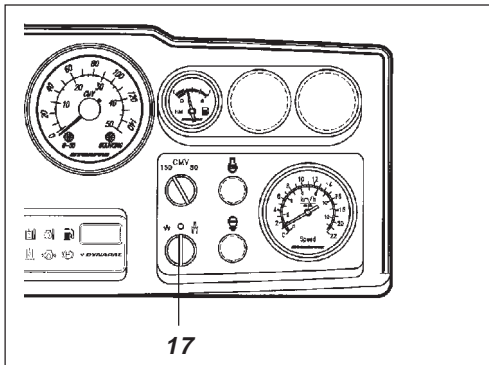


Fig. 25 Instrument panel
17. Amplitude selector Low/0/High

Vibration on the drum can be set in two different modes with the changeover switch (17). Turn the knob to the left for low amplitude/high frequency and to the right for high amplitude/low frequency.



Amplitude setting may never be altered while vibration is in action. Switch off vibration and wait until it has ceased before altering the amplitude.

Vibration – Engaging

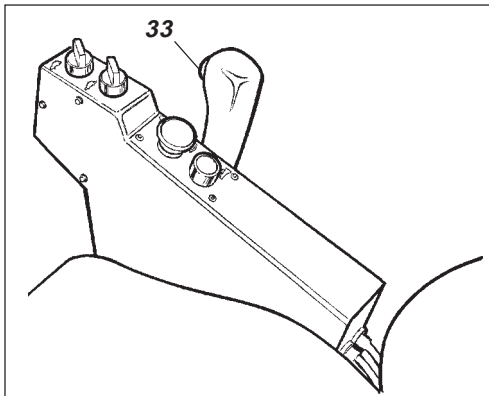


Fig. 26 Control panel
33. Switch, vibration ON/OFF

Engagement and disengagement of vibration is made with the changeover switch (33) on the front of the forward/reverse lever. Always switch off vibration before the roller comes to a complete standstill.



Vibrating may never be performed when the roller is stationary, the surface and the machine may otherwise be damaged.

DRIVING (OPTIONAL)

Operating the strike-off blade

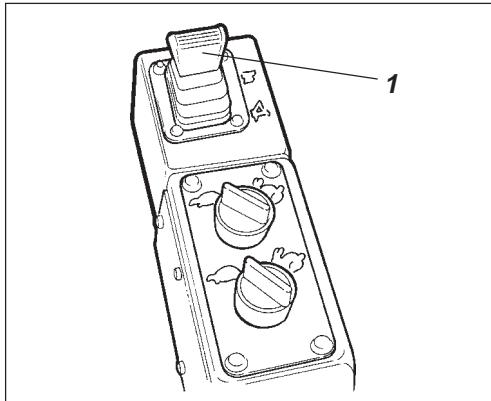


Fig. 27 Controls
1. Lever

Strike-off blade

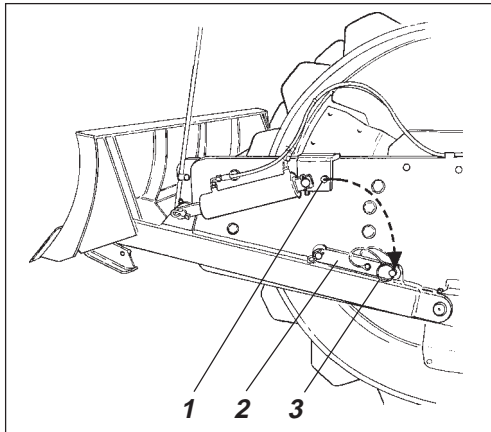


Fig. 28 Strike-off blade
1. Locking pin
2. Safety link
3. Parking catch

Optional on PD



Before driving, make certain that the blade is in its uppermost position (raised). Inspect the condition of the ground before using the blade.

The lever (1) has three positions.

Backward – Raising the blade.

Forward – Lowering the blade.

Forward locked – Float mode, only its own weight presses the blade down.

Lower the blade to the ground before leaving or parking the roller.

WARNING



Use the blade only when driving FORWARD.

When using the strike-off blade, the safety link (2) must be secured with its locking pin in the parking catch (3).

DRIVING ON DIFFICULT COURSES

Drum drive

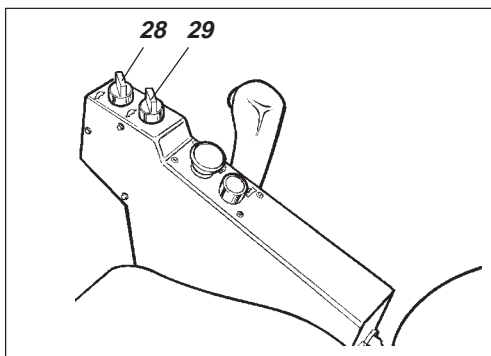


Fig. 29 Control panel
28. Speed selector, drum
29. Speed selector, rear axle

Optional on CA 252-402

If the machine should get stuck, and it is equipped with a 2-speed drum drive, turn the speed selectors as instructed below.

If the drum spins, turn the drum drive to high and the rear axle to low.

If the tires spins, turn the drum drive to low and the rear axle to high.

As soon as the machine regains its grip, turn the speed selectors to their initial positions.

BRAKING

Reserve brake

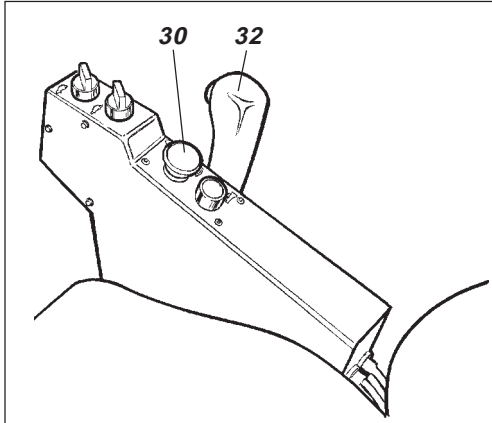


Fig. 30 Control panel
30. Reserve/parking brake knob.
32. Forward/Reverse control

Braking is normally made with the forward/reverse lever (32). The hydrostatic transmission brakes the roller when the lever is moved towards the neutral mode.

In addition, each drive motor has a multi-disc brake that acts as reserve brake when driving, and as a parking brake when stationary.



WARNING
In reservebraking, press the reserve/parking brake knob (30), hold the steering wheel firmly and be prepared for a sudden stop.

After braking, restore the forward/reverse lever to neutral and pull up the reserve/parking brake knob.

Normal braking

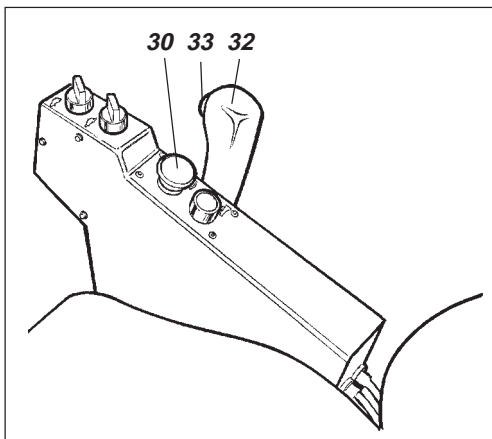


Fig. 31 Control panel
30. Parking/Reserve brake knob
32. Forward/Reverse lever
33. Switch, vibration ON/OFF

Press the switch (33) to disengage vibration.

Move the forward/reverse lever (32) to neutral to stop the roller.

Always press the parking brake knob (30), even for brief stops on sloping ground.

Turn the speed control back to idling, allow the engine to idle a few minutes to cool down.



WARNING
When starting up and driving a cold machine, which implies cold hydraulic fluid, the braking distance will be longer than normal until the machine reaches working temperature.

Switching OFF

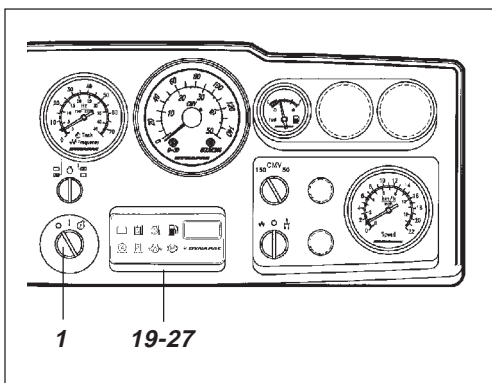


Fig. 32 Instrument panel
1. Starter switch
19-27. Warning lamp panel

Check instruments and warning lamps to see if any faults are indicated, switch off the lights and other electrical functions.

Turn the starter switch (1) to position **O**. Lower the instrument cover (on rollers without cab) and lock it.

PARKING

Chocking the drum

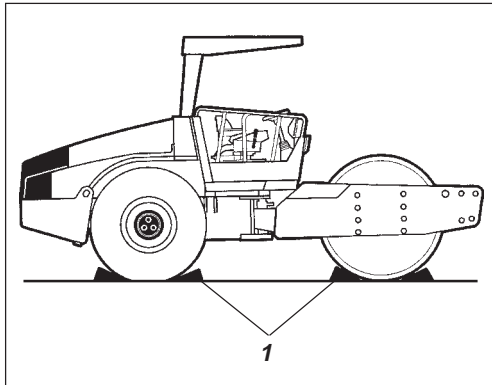


Fig. 33 Chocking the drum
1. Chock

WARNING



Never leave the machine with the engine running unless the reserve/parking brake knob is pressed in.

WARNING



Make sure the roller is parked safely and is not a traffic hazard. Chock the drums when parking on sloping ground.

CAUTION



Remember the 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 Manual.

Battery disconnecter

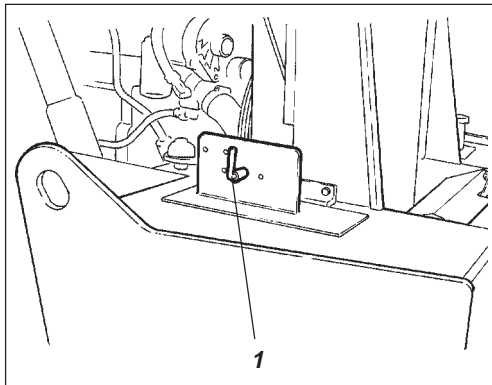


Fig. 34 Tractor frame, rear left
1. Battery disconnecter

Switch the battery disconnecter (1) into disconnected mode and remove the key before leaving the roller.

This will prevent discharging of the battery and will also make it difficult for any unauthorized person to start and drive the machine. Also lock the engine compartment cover.

INSTRUCTIONS FOR LIFTING

Locking the articulated joint

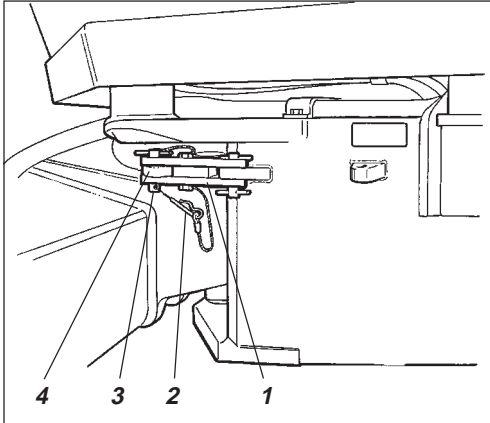


Fig. 35 Articulation in interlocked mode

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

WARNING



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

Turn the steering wheel so that the machine is set to drive straight forward. Push in the reserve/parking brake knob.

Pull out the lowermost locking cotter (2) fitted with a wire, pull up locking stud (3) fitted with a wire.

Fold out the locking arm (1) and secure it to the upper locking lug (4) on rear machine frame.

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

Lifting the roller

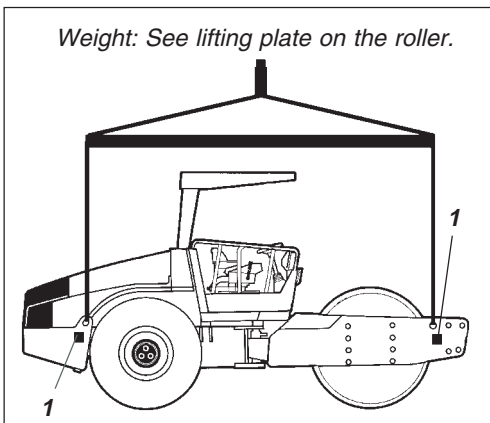


Fig. 36 Roller prepared for lifting

1. Lifting plate

WARNING



The gross weight of the machine is noted on the lifting plate (1). See also technical specifications in the maintenance instructions.

CAUTION



Lifting gear, such as chains, steel wires, straps, and lifting hooks must be dimensioned in conformance with current regulations.

WARNING



Keep well clear of the lifted machine! Make sure that lifting hooks are securely anchored.

Releasing the articulated joint

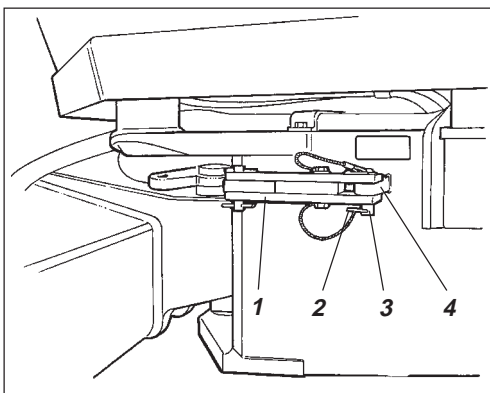


Fig. 37 Articulation in open mode

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

CAUTION



Remember to restore the articulation interlock to its open mode before driving again.

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

INSTRUCTIONS FOR TOWING

Alternative 1

Towing short distance with engine working

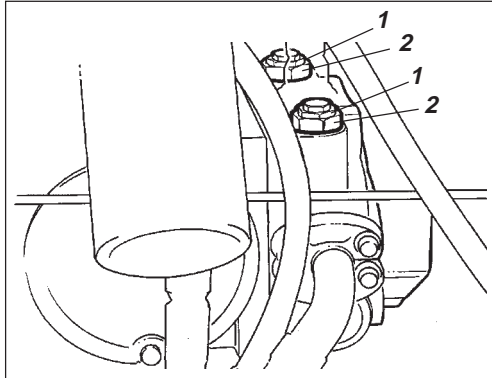


Fig. 38 Propulsion pump
1. Towing valve
2. Locknut

The roller may be moved a distance of up to 300 metres (330 yards) using either of the following alternatives.



WARNING

Press the reserve/parking brake knob, and stop the engine temporarily. Chock the drums to prevent the machine from rolling.

Open the engine hood. 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 located on the upper side of the propulsion 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 in action.

Alternative 2

Towing short distance with engine not working

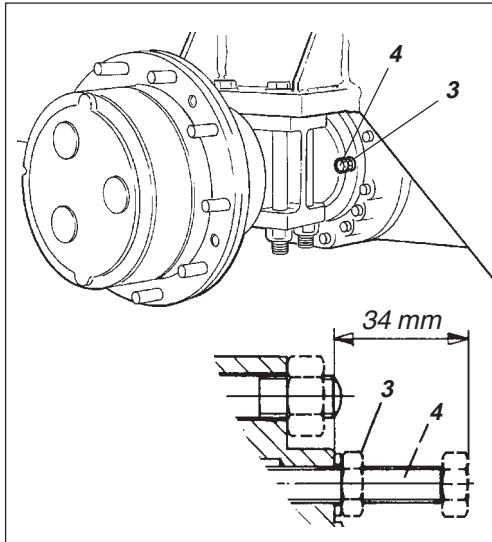


Fig. 39 Rear axle
3. Locknut
4. Adjusting screw



WARNING

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

First, open both of the towing valves according to alternative 1 above.

Rear axle brake

Undo the locknut (3) and adjust 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.

INSTRUCTIONS FOR TOWING

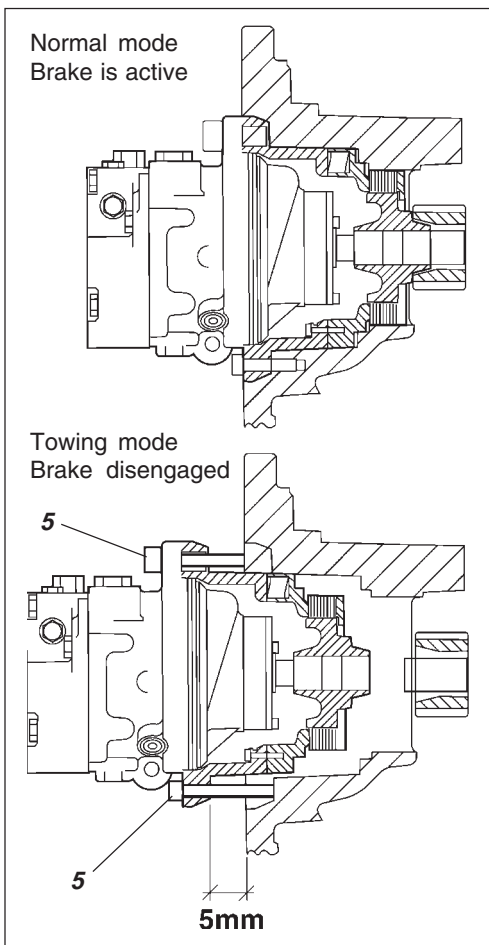


Fig. 40 Drum brake
5. Screw

Drum gearbox brake

• CA 252/302/402 D

Disengage the drum brake by unscrewing the four hexagonal socket screws (5) about 5 mm (3/16 in) and then by pulling out the motor adapter against the screw heads.

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

CAUTION



After towing, remember to tighten the towing valves (1). Screw out the adjusting screws (4) to their initial position 34 mm (1.34 in) from the contact surface, and tighten the locknuts (3). Tighten the four hexagonal socket screws (5).

INSTRUCTIONS FOR TOWING

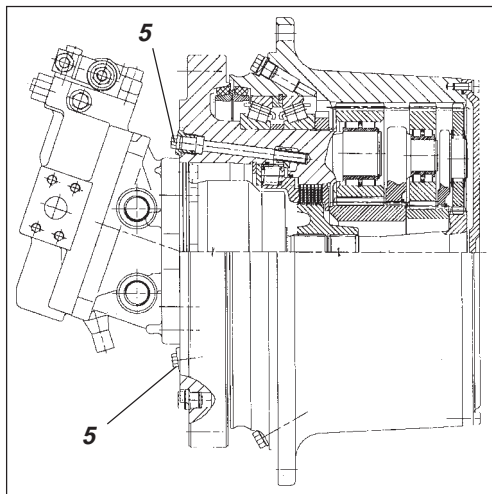


Fig. 41 Drum brake
5. Screw

Drum gearbox brake

- CA 252/302/402 D, PD with "Antispinn"
- CA 252/302 PD with "Dual Speed"

Disengage the drum brake by screwing in the two screws (5) until they stop.

Screw in each screw equally. This is necessary to prevent jamming the brake piston.

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

CAUTION



After towing, remember to tighten the towing valves (1). Screw out the adjusting screws (4) to their initial position 34 mm (1.34 in) from the contact surface, and tighten the locknuts (3). Loosen the drum brake screws (5).

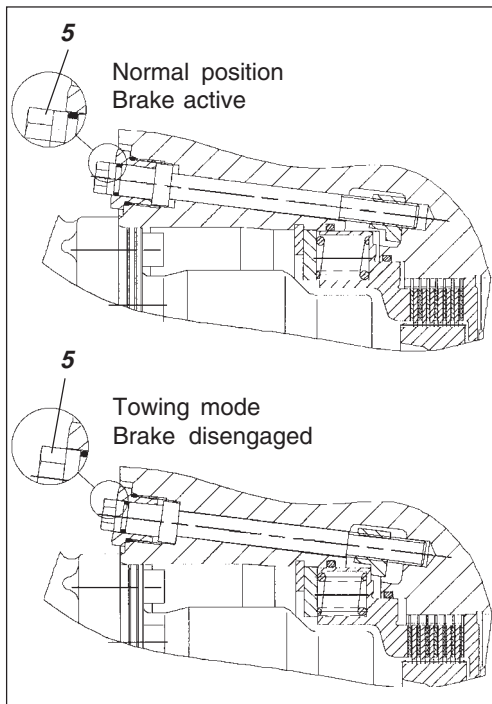


Fig. 42 Drum brake
5. Screw

TOWING/RETRIEVAL

Towing a roller

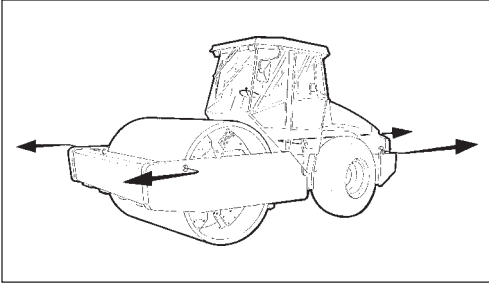


Fig. 43 Towing

WARNING



The roller must be counter-braked when towing. Use a towbar because the roller will have no ability to brake.

CAUTION



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

When a machine is towed/retrieved, the towing device must be connected to both lifting holes. Pulling forces shall act longitudinally on the machine as illustrated.

CAUTION



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

TRANSPORT

Roller prepared for transport

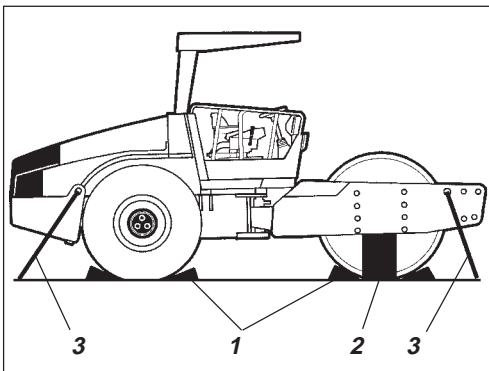


Fig. 44 Transportation

1. Chocks
2. Supporting blocks
3. Lashing wire

WARNING



Interlock the articulation before hoisting and transportation. Follow the instructions under the respective 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 (3) at all four corners; decals indicate the fixing points.

CAUTION



Remember to restore the articulation interlock to its open mode before starting the roller again.

OPERATING INSTRUCTIONS – SUMMARY



1. Follow the **SAFETY INSTRUCTIONS** in the **Safety Manual**.
2. Ensure that all instructions in the maintenance manual are followed.
3. Turn the battery disconnecter to ON.
4. Move the forward/reverse lever to neutral.
5. Set the vibration selector to the **O** mode.
6. Set the revs control to the idling mode.
7. Start the engine and allow it to warm up.
8. Set the revs control in the operating mode.
9. Put the reserve/parking brake knob in the pulled-out position.



10. **Drive the roller. Operate the forward/reverse controls with care.**



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

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



13. **IN AN EMERGENCY:**
 - **Push in the reserve/parking brake knob.**
 - **Hold the steering wheel firmly.**
 - **Brace yourself for a sudden stop.**

14. Parking: Push in the reserve/parking brake knob.
Stop the engine and chock the drums.

15. Lifting: – See the operation manual.

16. Towing: – See the operation manual.

17. Transport: – See the operation manual.

18. Retrieval: – See the operation manual.

