DYNAPAC
Part of the Atlas Copco Group

Instruction manual

ICP142-BR2EN3.pdf
Operation & Maintenance

Pneumatic tire roller
CP142

Engine
Cummins QSB3.3

Serial number
***2163BR3001* -**
10000500x0B000001 -

Translation of original instructions.

Subject to changes
Printed in Sweden

Table of Contents

Introduction 1
The machine 1
Intended use 1
Warning symbols 1
Safety information 1
CE marking and Declaration of conformity 2
General 2
Safety - General instructions 5
Safety - when operating 7
Driving near edges 7
Slopes 8
Special instructions 9
Standard lubricants and other recommended oils and fluids 9
Higher ambient temperatures, above +40°C (104°F) 9
Lower ambient temperature - Freeze risk 9
Temperatures 9
High pressure cleaning 9
Fire fighting 10
Roll Over Protective Structure (ROPS), ROPS approved cab 10
Battery handling 10
Jump starting 11
Technical specifications 13
Vibrations - Operator station 13
Noise level 13
Technical specifications - Dimensions 15
Dimensions, side view 15
Dimensions, top view 16
Dimensions, front view 17
Weights and volumes 18
Working capacity 18

General 19
Tightening torque 20
ROPS - bolts 21
Hydraulic system 21
Machine description 23
Identification 23
Product identification number on the frame 23
Machine plate 23
Explanation of 17PIN serial number 24
Engine plates 24
Machine description- Decals 25
Location - decals 25
Safety decals 26
Info decals 27
Locations - Instruments and controls 28
Function descriptions 29
Electrical system 32
Fuses 32
Fuses and relays 33
Relays 33
Maxi-fuses 33
Operation 35
Before starting 35
Engine compartment cover 35
Master switch - Switching ON 35
Interlock 36
Operator’s seat - Adjusting 36
Seat belt 37
Installation/removal - ballast boxes 38
View 39

Instruments and lamps - Checking 39
Operator position 40
Start of diesel engine 41
Driving 42
Freewheel 43
Operating the roller 44
Driving (Ground Pressure) 47
Ground pressure 47
Low tire pressure - 240 kPa (34.8 psi). 47
Normal tire pressure - 480 kPa (69.6 psi) 47
High tire pressure - 830 kPa (120.4 psi). 48
Ground pressure 48
Interlock/Emergency stop/Parking brake - Check 49
Braking 50
Normal braking 50
Emergency braking 51
Switching off 52
Chocking the wheels 52
Master switch 53
Long-term parking 55
Engine 55
Battery 55
Air cleaner, exhaust pipe 55
Sprinkler system 55
Fuel tank 55
Hydraulic reservoir 56
Steering cylinder, hinges, etc. 56
Tires 56
Hoods, tarpaulin 56
Watering system 56

Miscellaneous 57
Lifting 57
Lifting the roller 57
Towing/Recovering 57
Towing the roller 58
Trailer eye 59
Roller prepared for transport 59
Operating instructions - Summary 61
Preventive maintenance 63
Acceptance and delivery inspection 63
Warranty 63
Maintenance - Lubricants and symbols 65
Maintenance symbols 66
Maintenance - Maintenance schedule 67
Service and maintenance points 67
General 67
Every 10 hours of operation (Daily) 68
After the FIRST 50 hours of operation 68
Every 50 hours of hourly operation (Weekly) 69
Every 250 hours of operation (Monthly) 69
Every 500 hours of operation (Every three months) 69
Every 1000 hours of operation (Every six months) 70
Every 2000 hours of operation (Yearly) 70
Maintenance - 10h 71
Hydraulic reservoir, Level check - Filling 71
Air circulation - Check 71
Fuel tank - Filling 72
Coolant level - Check 72
Diesel engine Check oil level 73
Scapers Checking - Setting 73

Sprinkler system - Check/Cleaning 74
Nozzle - Dismantling/Cleaning 74
Water tank - Filling 75
Brakes - Check 76
Maintenance - 50h 79
Air intake system - Check 79
Air cleaner - Cleaning 79
Backup filter - Change 80
Tire pressure - Check 80
Tightening torque for wheel-nuts - check 81
Ballast bolts - Check 82
Steering cylinder suspension - Lubrication 82
Front oscillation axle - Lubrication 83
Steering cylinder - Lubrication 83
Maintenance - 250h 85
Radiator - Check/Cleaning 85
Diesel engine - Oil and filter replacement 86
Battery (maintenance-free) 87
Maintenance - 500h 89
Diesel engine - Oil and filter replacement 90
Hinges, controls - Lubrication 91
Diesel engine pre-filter - replacement/cleaning 91
Maintenance - 1000h 93
Hydraulic reservoir, Level check - Filling 94
Hydraulic fluid reservoir - Draining condensate 95
Maintenance - 2000h 97
Hydraulic reservoir - Fluid change 97
Fuel tank - Cleaning 98
Water tank - Filling 98

Introduction

The machine

Dynapac CP142 is a rubber wheel roller in the 12 tonnes class, with a working width of 1760 mm.

It has five guide wheels at the front and four drive wheels at the back. An exclusive modular ballast system comprising ballast boxes, allowing a precise control of wheel load.

Intended use

CP142 is mainly used for compaction of asphalt for surface sealing. It is also used for base courses, subbase courses and stabilized soil.

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

It is recommended to at least train operators in handling and daily maintenance of the machine in accordance with the instruction manual. Passengers are not allowed on the machine, and you must sit in the seat when operating the machine.

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.

Replace immediately the instruction manuals if lost, damaged or unreadable.

Ensure good ventilation (extraction of air by fan) where the engine is run indoors.

Prevent persons from entering or remaining in the danger area, i.e. a distance of at least 7 m (23 ft) in all directions from operating machines. The operator may allow a person to remain in the danger area, but should then observe caution and operate the machine only when the person is visible or has given clear indications of where he or she is.

CE marking and Declaration of conformity

(Applies 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.

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 manufactuer's engine manual.

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 - 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 or holes, make sure that at least 2/3 of the wheels are on previously compacted material.**
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 wheels.
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. Refer to the operating instruction 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

Prevent persons from entering or remaining in the danger area, i.e. a distance of at least 7 m (23 ft) in all directions from operating machines. The operator may allow a person to remain in the danger area, but should then observe caution and operate the machine only when the person is visible or has given clear indications of where he or she is.

Driving near edges

When driving close to edges or holes, make sure that at least 1/4 of the outer tires is on the previously compacted materials.

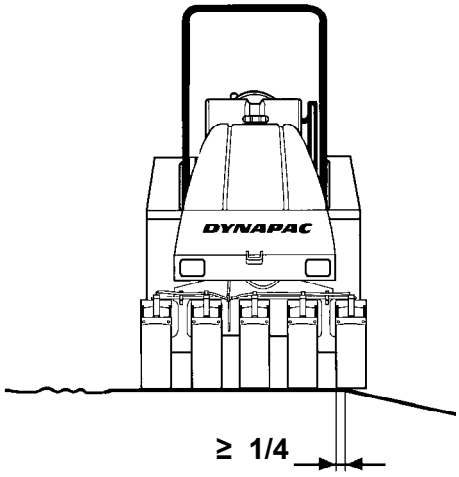


Fig. Position of wheels driving near and edge

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.

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

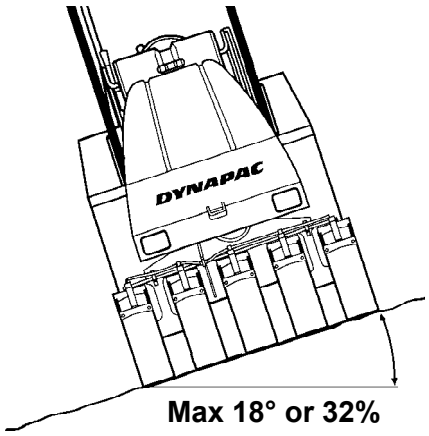


Fig. Operating on slopes

Slopes

The angle of dumping has been measured on a flat, hard surface with a stationary machine without ballast.

The steering angle is zero and all tanks are full.

Remember that loose ground, steering of the machine, driving speed and raising the center of gravity may cause the machine to topple even on a slope smaller than that stated here.

It is recommended that ROPS (Roll Over Protective Structure) is always used when driving on slopes or unsafe 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).

The maximum temperature for biological hydraulic fluid is +35°C (95°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.

Lower ambient temperature - Freeze risk

Make sure that the watering system is empty/drained of water (sprinkler, hoses, tank/s) or that anti-freeze has been added, to prevent the system freezing.

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 ABC-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.

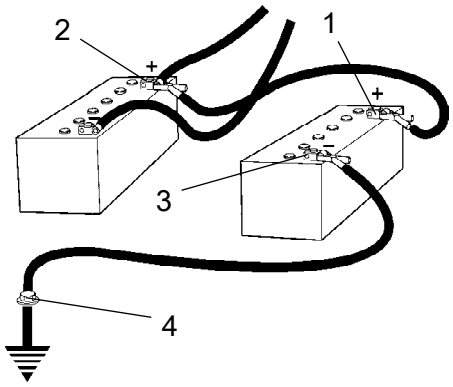


Fig. Jump starting

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

Vibrations - Operator station

(ISO 2631)

Vibration levels have been measured according to the operational cycle described in the EU directive 2000/14/EC on machines equipped for the EU market with operator seat in 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)

Noise level

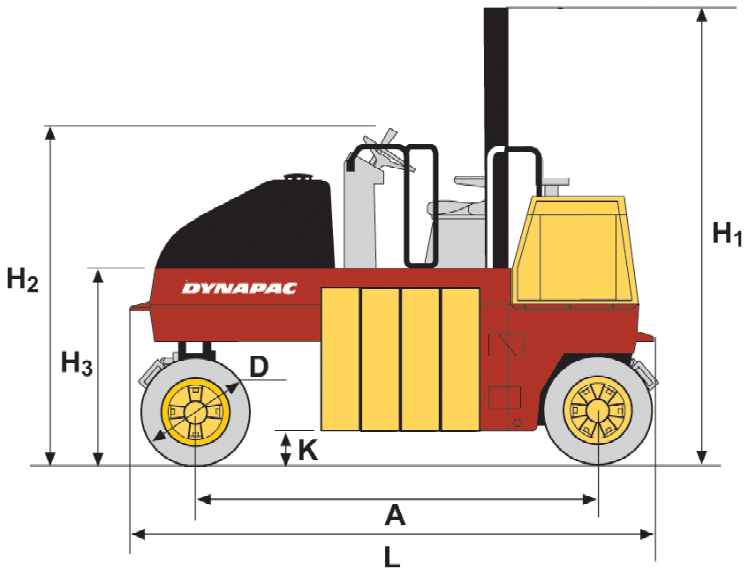
Sound levels have been measured according to the operational cycle described in the EU directive 2000/14/EC on machines equipped for the EU market with operator seat in transport position.

Guaranteed noise power level, L_{wA}	103	dB (A)
Sound pressure level at the operator's ear (platform), L_{pA}	82 ±3	dB (A)

During operation the above values may differ because of the actual operational conditions.

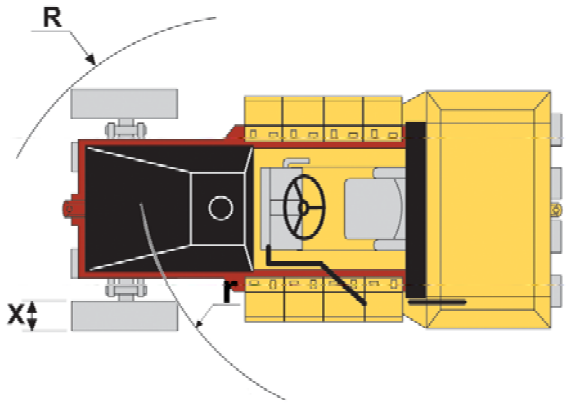
Technical specifications - Dimensions

Dimensions, side view



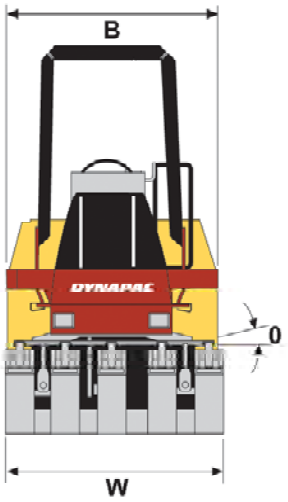
Dimensions	mm	in
A	2760	108,7
D	772	30,4
H_1	2990	117,7
H_2	2275	89,6
H_3	1335	52,6
K	230	9,1
L	3580	140,9

Dimensions, top view



Dimensions	mm	in
r	3500	137,8
R	5900	232,3
X	216	8,5

Dimensions, front view



Dimensions	mm	in
B	1752	69
O	+/- 3°	+/- 3°
W	1760	69,3

Weights and volumes

Weights	kg	lbs
Service weight, standard equipped roller incl. ROPS, EN500	12000	26,455
Service weight without ballast	6000	13,230
Service weight with max ballast (8 boxes)	14000	30,865
Service weight with max ballast (6 boxes) (EN500)	12000	26,455

Fluid volumes	liters	gallon (U.S.)
Fuel tank	150	40
Water tank	480	127

Working capacity

Compaction data	kg	lbs
Tire pressure:		
- Without ballast	670	1477,1
- With two ballast boxes	890	1962,1
- With 4 ballast boxes	1110	2447,1
- With 6 ballast boxes	1330	2932,2
- With 8 ballast boxes* (option)	1560	3439,2
(* not EN500)		

Propulsion	km/h	mph
Speed range:		
Low	0 - 7,5	0 - 4.7
Low (EN500)	0 - 8	0 - 5
High	0 - 15	0 - 9.3
High (EN500)	0 - 15	0 - 9.3
Climbing capacity (theoretical)	31 %	

General

Engine

Manufacturer/Model	Cummins QSB3.3	
Power (SAE J1995)	74 kW	99 hp
Engine speed	2,200 rpm	

Electrical system

Battery	12 V, 95 Ah
Alternator	12 V, 60 A
Fuses	See the Electrical system section - fuses

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:

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

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

STRENGTH CLASS:

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

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

ROPS - bolts

Bolt dimensions :	M20 (PN 904487)
Strength class :	10.9
Tightening torque :	498 Nm

Hydraulic system

Opening pressure	**MPa**
Drive system	45,0
Supply system	2,0
Control systems	14,0
Brake release	1.5

Machine description

Identification

Product identification number on the frame

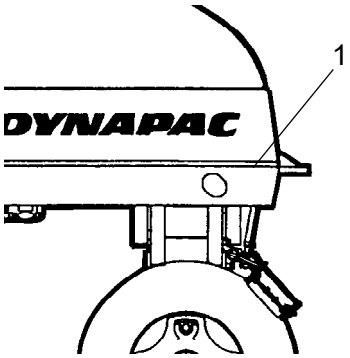


Fig. Front frame
1. PIN Front frame

The machine PIN (product identification number) (1) is punched on the right edge of the front frame member This number is the same number as the machine plate's PIN (serial number).

Machine plate

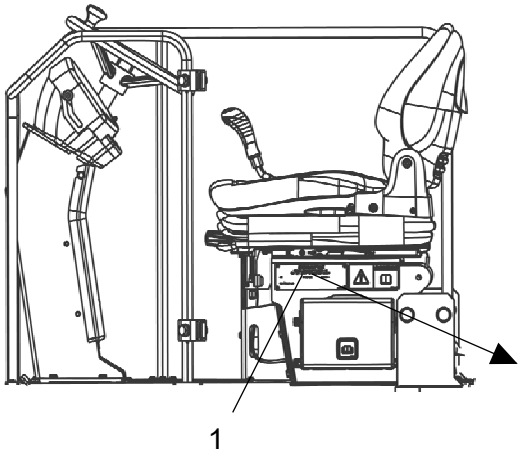


Fig. Operator platform
1. Machine plate

The machine type plate (1) is affixed on the left side of the operator´s seat.

The plate specifies among other things the manufacturers name and address, the type of machine, the PIN, Product Identification Number (serial number), operating weight, engine power and year of manufacture. (In some cases there are no CE marking.)

DYNAPAC CE

Dynapac Brasil Indústria e Comércio Ltda.
Rua Georg Schaeffler , 430 - Iporanga - Sorocaba SP - Brasil

Product Identification Number

Designation	Type	Rated Power	Max axle load front / rear
		kW	kg

Gross machinery mass	Operating mass	Max ballast	Year of Mfg
kg	kg	kg	

4811 0001 36

Please state the machine's PIN (serial number) when ordering parts.

100	00123	V	0	A	123456
A	B	C	D	E	F

Explanation of 17PIN serial number

A= Manufacturer

B= Family/Model

C= Check letter

D= No coding

E= Production unit

F= Serial number

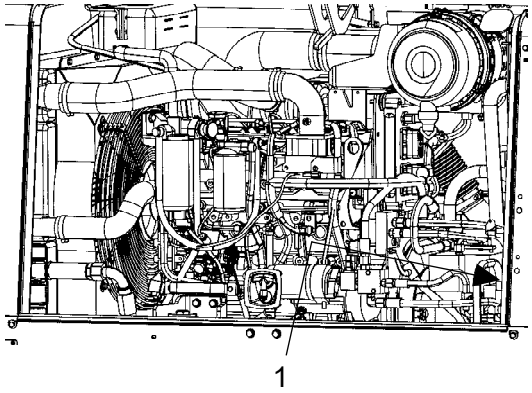
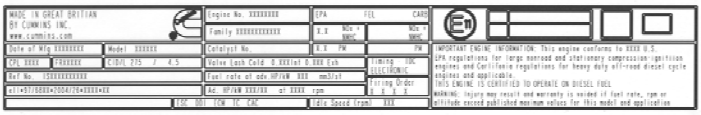


Fig. Engine
1. Type plate / EPA plate (USA)

Engine plates

On Cummins engines, the engine plate (1) is affixed the left side of the belt housing. The plate specifies the type of engine, its serial number and the engine specification. Please specify the engine serial number when ordering spares. Refer also to the engine manual.



Machine description- Decals

Location - decals

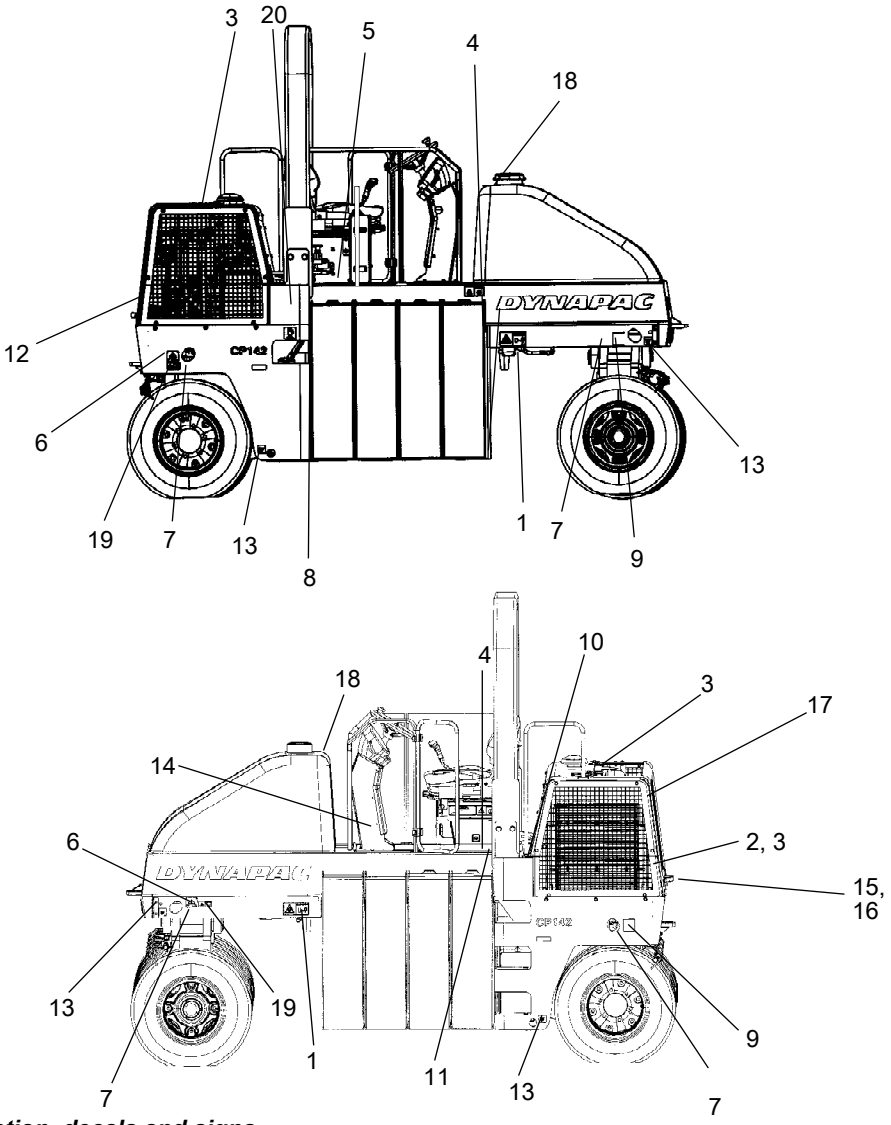
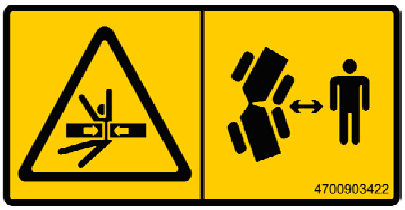


Fig. Location, decals and signs

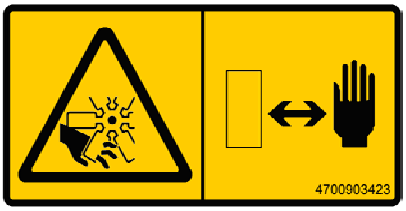
1.	Warning, Crush zone	4700903422	11.	Handbook compartment	4700903425
2.	Warning, Rotating engine components	4700903423	12.	Master switch	4700904835
3.	Warning, Hot surfaces	4700903424	13.	Fixing point	4700382751
4.	Warning, Instruction manual	4700903459	14.	Noise power level	4700791273
5.	Warning, Brake release	4700904895	15.	Engine oil filter	4700192985
6.	Hoisting plate	4700904870	16.	Engine oil level	4700193882
7.	Tire pressure	4700378529	17.	Coolant	4700388449
8.	Diesel fuel	4700991658	18.	Water tank	4700991657
9.	Lifting point	4700588176	19.	Warning, locking	4700908229
10.	Hydraulic fluid	4700272372	20.	Biological hydraulic fluid	4700792772

Safety decals



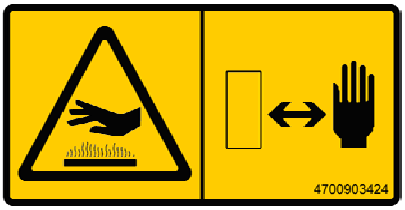
4700903422
Warning - Crush zone, articulation/drum.

Maintain a safe distance from the crush zone.
(Two crush zones on machines fitted with pivotal steering)



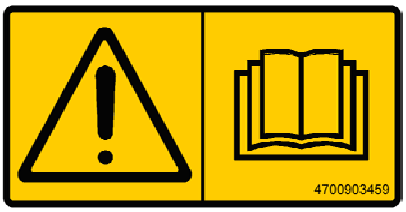
4700903423
Warning - Rotating engine components.

Keep your hands at a safe distance from the danger zone.



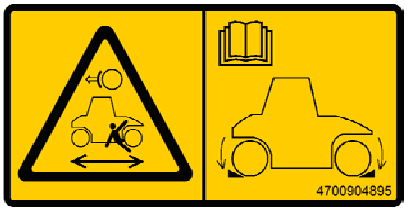
4700903424
Warning - Hot surfaces in the engine compartment.

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.



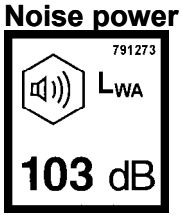
4700904895
Warning - Brake disengagement

Study the towing chapter before disengaging the brakes.

Danger of being crushed.

Info decals

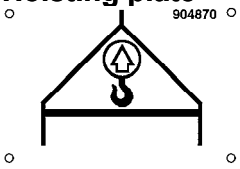
Noise power level



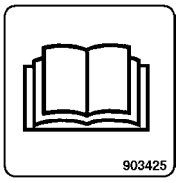
Diesel fuel

Lifting point

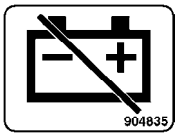
Hoisting plate



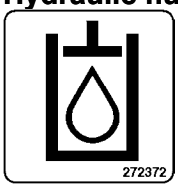
Handbook compartment



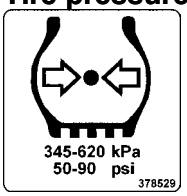
Master switch



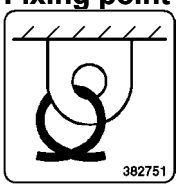
Hydraulic fluid



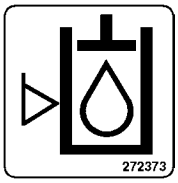
Tire pressure



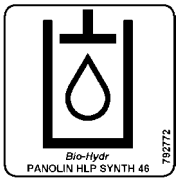
Fixing point



Hydraulic fluid level



Biological hydraulic fluid, PANOLIN



Locations - Instruments and controls

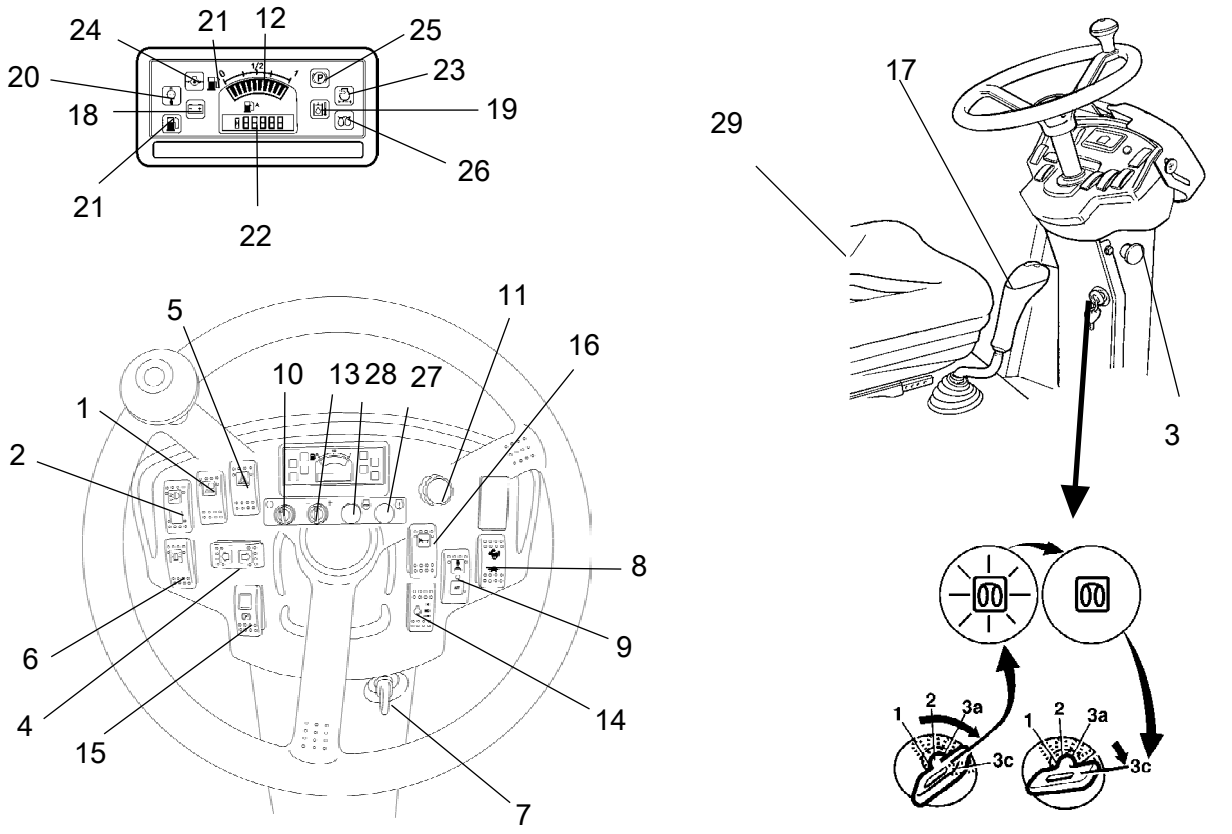
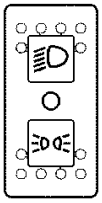
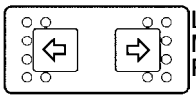
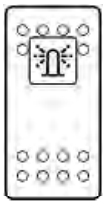
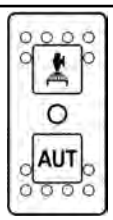
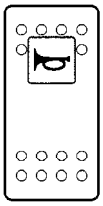


Fig. Instruments and control panel

1.	*	Switch, Working lights
2.	*	Parking/Dipped beam switch
3.		Emergency stop
4.	*	Direction indicator switch
5.	*	Hazard lights
6.	*	Hazard beacon
7.		Starter switch
8.		Speed selector, low/high
9.		Sprinkler switch, Man/Off/Auto
10.		Engine diagnostic selector, On/Off
11.	*	Sprinkler timer
12.		Fuel gauge
13		Engine diagnostic selector, - / +
	*	= Optional equipment
14.		Engine RPM control, Low/Mid/Hi
15.		Parking brake switch
16.		Horn
17.		Forward/reverse lever
18.		Warning lamp, charging
19.		Warning lamp, hydraulic fluid temperature
20.		Warning lamp, Engine temperature
21.		Warning lamp, fuel level
22.		Hourmeter
23.		Warning lamp, Air filter
24.		Warning lamp, Engine oil pressure
25.		Warning lamp, Brakes
26.		Warning lamp, engine glow plug
27.		Engine diagnostic, malfunction warning lamp
28.		Engine diagnostic, malfunction warning lamp (serious)
29.		Seat switch

Function descriptions

No	Designation	Symbol	Function
1	Working lights switch (optional)		When pressed, the working lights are ON.
2	Parking/Dipper beam switch (Optional)		Upper position = Working lights, front ON Middle position = Lights off Lower position = Parking lights ON.
3	Emergency stop		When pressed, the emergency stop is activated. The brake is applied and the engine stops. Brace yourself for a sudden stop.
4	Direction indicator, switch (Optional)		Left position = the left direction indicators are ON Middle position = the function is shut off Right position = the right direction indicators are ON
5	Hazard lights, switch (Optional)		When pressed, the hazard lights are ON.
6	Hazard beacon, switch (Optional)		When pressed, the hazard beacon is ON.
7	Starter switch		Positions 1-2: Shut off position, key can be removed.
			Position 3a: All instruments and electric controls are supplied with power. The machine is equiped with automatic glowing which occurs in this position.
			Position 3c: Starter motor activation.
8	Speed selector switch		Upper position = High transport speed Lower position = Low transport speed

No	Designation	Symbol	Function
9	Sprinkler, switch		Upper position = Supply of water to the wheels is activated Middle position = Watering off Lower position = Supply of water to the wheels is activated by the forward/reverse lever.
10	Engine diagnostic selector (on/off)		Turn to the ON position to activate engine diagnosis, and to the OFF position to desactivate.
11	Sprinkler timer, switch (Optional)		When rotate the knob, adjust the time of water flow to the tires. To increase time, turn the knob to the left, and to reduce time turn the knob to the right.
12	Fuel gauge		Indicates level in the fuel tank.
13	Engine diagnostic selector (-/+)		Turn to "+" position to select engine diagnosis code to high and to "-" position to select engine diagnosis code to low.
14	Engine RPM control		Regulate the number of revs of the diesel engine, Low / Medium / High
15	Parking brake On/Off, switch		Push in to activate the parking brake, the machine stops with the engine running. **Always use the parking brake when the machine is stationary on a sloping surface.**
16	Horn		Press to sound the horn.
17	Forward/reverse lever		The lever must be in neutral to start the diesel engine. The engine cannot be started if the forward/reverse lever is in any other position. The forward/reverse lever controls both the roller's driving direction and speed. 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 the lever is from the neutral position, the higher the speed.
18	Warning lamp, charging		If the lamp lights while the engine is running, the alternator is not charging. Stop the diesel engine and locate the fault.
19	Warning lamp, hydraulic fluid temperature		If the lamp lights, the hydraulic fluid is too hot. Do not drive the roller; cool the fluid by allowing the diesel engine to idle and locate the fault.
20	Warning lamp, engine temperature		This lamp lights if the engine is too hot. Stop the engine immediately and locate the fault. Refer asl to the engine handbook.
21	Warning lamp, low fuel level		When the lamp comes on, there is only a small amount of fuel left. Refuel as soon as possible.
22	Hourmeter		Displays engine's operating time in hours.

No	Designation	Symbol	Function
23	Warning lamp, air filter		If the lamp comes on while the engine is running at full speed, the air filter must be cleaned or replaced.
24	Warning lamp, oil presssure		The lamp comes on if the engine oil pressure is too low. Stop the engine immediately and locate the fault.
25	Warning lamp, brakes		The lamp lights when the parking brake knob is pressed.
26	Warning lamp, engine glow plug		The lamp comes on if the glow plug are in functionally. The lamp turn off when the engine is ready to run.
27	Warning lamp, engine diagnostic malfunction		Control lamp yellow. Less serious fault, attend to as soon as possible.
28	Warning lamp, engine diagnostic malfunction (serious)		Control lamp red. Serious fault, turn the motor off at once! Attend to before restarting.
29	Seat switch		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 activated and the engine stops.

Electrical system

Fuses

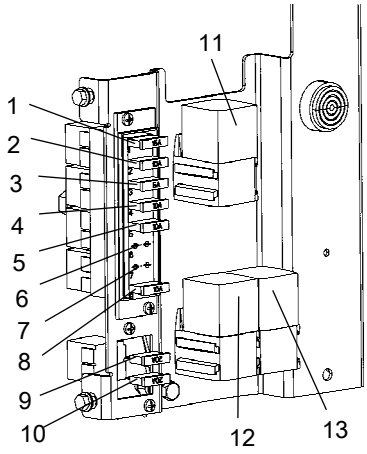


Fig. Fuse box

The figure shows the position of the fuses.

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

Fuses

1.	Starter switch, Emergency / Parking brake switch	15A	6.	Reserved	-
2.	Horn, Interlock, Display	10A	7.	Reserved	-
3.	Engine diagnostic (lights, switches)	5A	8.	Hazard lights, Direction lamps	10A
4.	Beacon light	10A	9.	Working lights	20A
5.	Sprinklers	10A	10.	Traffic lights	20A

Relays

11.	K9	Flash
12.	K11	Working lights
13.	K10	Brake lights

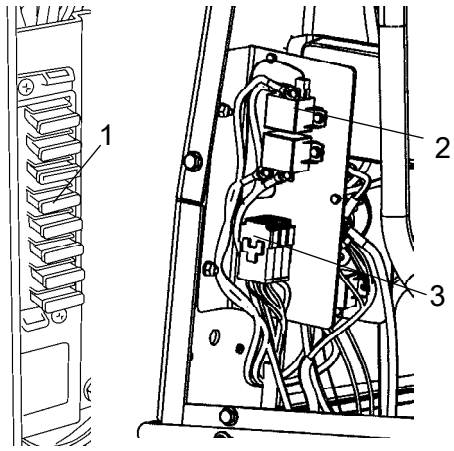


Fig. Instrument panel
1. Fuse boxes (x8)
2. Relay boxes (x2)
3. Maxi-fuses box (x3)

Fuses and relays

The electrical regulating and control system is protected with flat pin fuses and maxi-fuses.

The fuse boxes (1) are located in steering wheel column, below of the instrument panel.

The maxi-fuse box (3) are located in the engine compartment at right side.

The relay box (2) are located also in the engine compartment, near the maxi-fuse box.

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

Connect the battery to the correct polarity (- to the chassis). The cable between battery and alternator must not be disconnected when the engine is running.

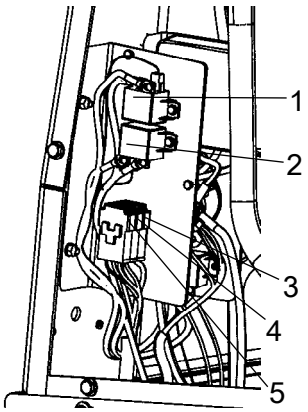


Fig. Relay boxes and Maxi-fuses box

Relays

1	Pre-heater	100A
2	Pre-heater	100A

Maxi-fuses

3	Working lamp, beam and brake light	40A
4	Main fuse	40A
5	Engine ECU	30A

Operation

Before starting

Engine compartment cover

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

Make sure that the cover support is properly affixed in the engine compartment.

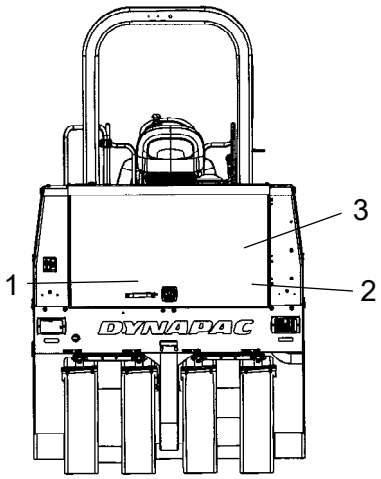


Fig. Engine compartment
1. Dipstick, engine oil
2. Battery isolation switch
3. Engine compartment

Master switch - Switching ON

The master switch is located in the engine compartment. Turn 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.

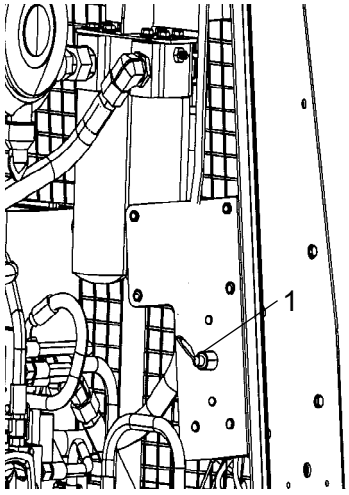


Fig. Engine compartment
1. Master switch

Interlock

The roller is equipped with Interlock.

The engine switches off 4 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!

Operator's seat - Adjusting

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 :
- Backrest inclination (1)
- Length adjustment (2)
- Weight adjustment (3)

To adjust weight. Weight is increased by pushing the lever down until the required weight is achieved. To lower weight, push the lever down to its lowest position and release. The seat is now set for the minimum weight.

Fig. Operator position
1. ***Backrest inclination***
2. ***Length adjustment***
3. ***Weight adjustment***

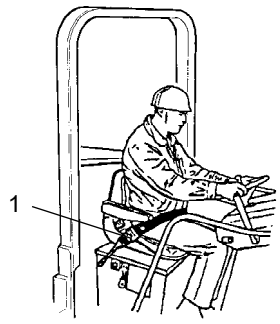


Fig. Operator's station.
1. Seat belt

Seat belt

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

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

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

Installation/removal - ballast boxes

A ballast box weighs 1.02 tons. Use safe handling equipment to move the boxes.

The boxes should always be installed/removed in pairs. The weight on the roller must be evenly distributed.

If fewer than 8 ballast boxes are used, these must be located as far forward as possible.

During removal, both the front boxes must be removed before the next row is accessible.

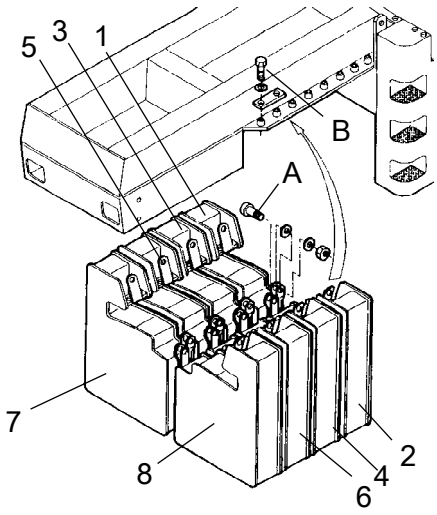


Fig. Maximum ballast, 8 boxes

The ballast boxes can be lifted in and out as required. Inserting ballas boxes:

With 8 boxes (option) 1. Begin by inserting a ballast box (1) to the far right and then (2) to the far left. Then continue in chronological order as per figure. 2. Tighten the screws properly.

With 6 boxes (STD) 1. Disregard ballast box (1) and (2), where the extra footsteps are to be installed. Begin by inserting a ballast box (3) and then (4) each in its respective place. Continue in chronological order as per figure. Tighten the screws properly.

A conical screw (A) holds the two ballast boxes together. Two mounting screws (B) ber box.

Loosening of ballast boxes:

1. Hook the lifting device onto the lifting eye bolt on the box.

2. Press the bottom edge of the ballast box to reduce tthe tension in screw "A".

3. Undo screw "A".

4. Undo screws "B".

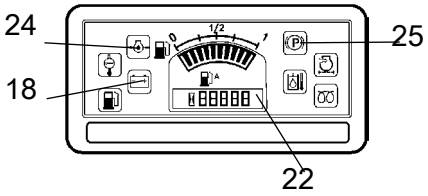
5. Lift off the box (8).

6. Do the same with box (7), i.e. in reverse chronoligical order.

View

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

Instruments and lamps - Checking



Turn the starter switch (7) to position I. All warning lamps should light for about 5 seconds and the beeper should sound. During this time, make sure that the warning lamps light.

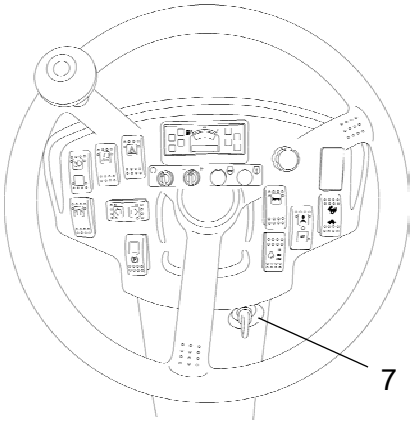


Fig. Instrument panel
7. Starter switch
18. Warning lamp, charging
22. Hourmeter
24. Warning lamp, engine oil pressure
25. Warning lamp, brakes

Check that the warning lamps for charging (18), oil pressure (24) and parking brake (25) light.

The hourmeter (22) records the number of hours as long as the engine is running.

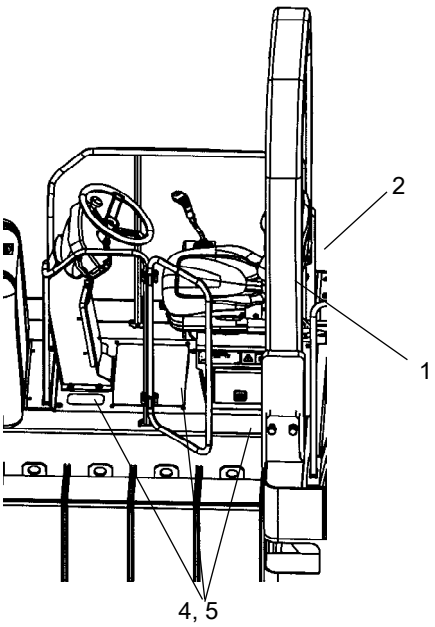


Fig. Operator's seat
1. Seatbelt
2. ROPS
4. Rubber element
5. Anti-slip

Operator position

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

Never use the forward/reverse levers as a handle when mounting or disembarking from the roller.

Check that the rubber elements (4) on the platform are intact. Worn elements will reduce comfort.

Ensure that the anti-slip (5) on the platform is in good condition. Replace where anti-slip friction is poor.

The interlock must always be checked before operating. To do this the operator stands up from the seat as shown in the instructions in the section Operation.

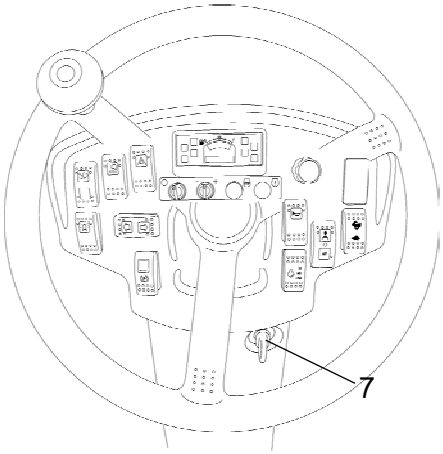
If ROPS (Roll Over Protective Structure) is fitted to the roller, always wear the seat belt (1) provided and wear a protective helmet.

Start of diesel engine

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

Make sure that the parking brake switch (15) is activated.

Set the forward/reverse lever (17) in neutral. The engine can only be started when the lever is in neutral.



Set RPM control (14) at the position for idle running, Low.

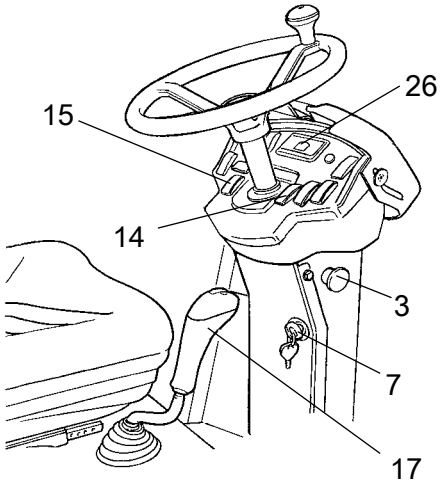


Fig. Control panel
3. Emergency stop
7. Ignition starter switch
14. Engine RPM control
15. Parking brake
17. Forward/reverse lever
26. Incandescent lamp

Preheating: Turn key to position II. When the glow lamp (26) has gone out, turn direct switching starter (7) 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.

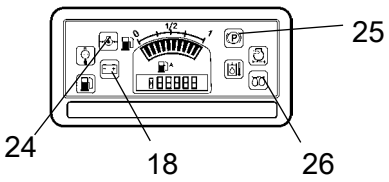


Fig. Control panel
18. Charging lamp
24. Oil pressure lamp
25. Brake lamp
26. Glow plug lamp

Check while warming the engine that the warning lamps for the oil pressure (24) and charging (18) go out.

The warning lamp (25) should remain on.

Warm up the diesel engine at idling speed for a few minutes, longer if the ambinent temperature is less than +10°C.

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.

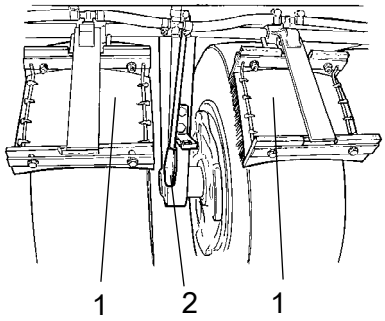


Fig. Operating position
1. Coconut mats
2. Lever

Driving

Place the scrapers and the coconut mats in the operating position by releasing the lever (2) so that the coconut mats are resting on the tires.

The rear wheels have individual controls for each scraper/mat.

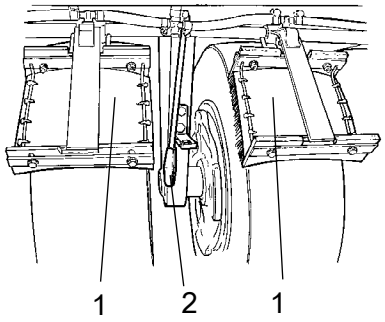


Fig. Freewheel position
1. Coconut mats
2. Lever

Freewheel

Release the coconut mats on the front wheels by pulling the lever (2) and locking it in the off position.

The rear wheels have individual controls - lock each scraper/mat in the off position.

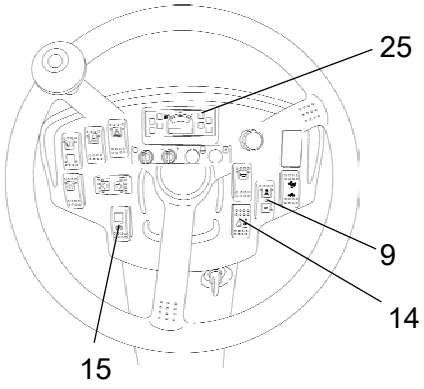
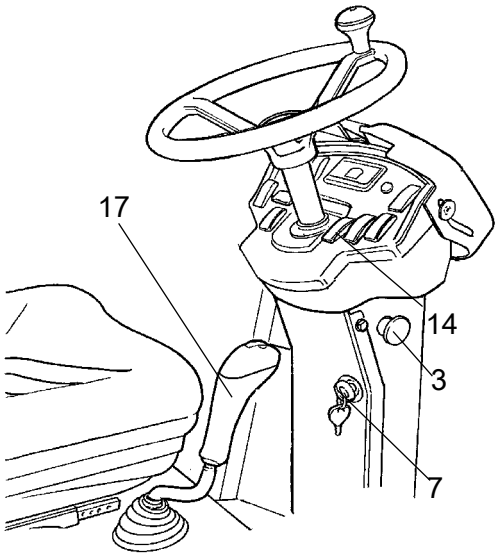


Fig. Instrument panel
9. Sprinkler switch
14. RPM control
15. Parking brake switch
25. Warning lamp, brakes



Figur. Instrument panel
3. Emergency stop
7. Start switch
14. RPM control
17. Forward/reverse lever

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.

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

Activate working rev = **HI** (14).

Release the parking brake (15) and check that the parking brake lamp (25) goes off.

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.

When compacting asphalt, remember to turn on the sprinkler system (9).

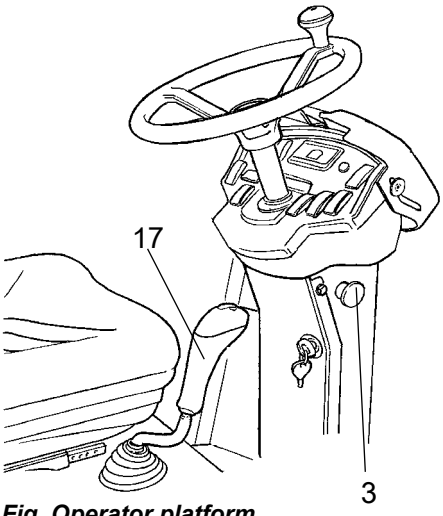


Fig. Operator platform
3. Emergency stop
17. Forward/reverse lever

Pull up the parking brake switch (15) and check that the parking brake warning lamp is off. When starting the roller on a slope, be prepared that it may begin to roll.

Test the emegency brake function by depressing the emergency stop (3) while the roller is moving forwards slowly. Hold the steering wheel firmly and brace yourself for a sudden stop. The engine will switches off and the brakes are activated.

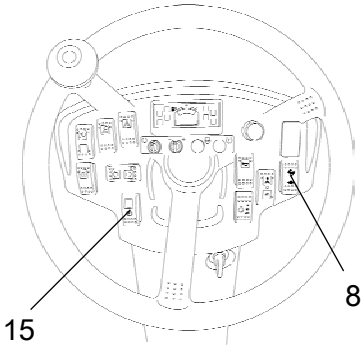


Fig. Instrument panel
8. Speed selector
15. Parking brake switch

Turn the speed selector (8) to the required setting.

Low setting (working speed) - 7,5 km/h (4.7 mph).
High setting (transport speed) - 15 kmh (9.3 mph).

The High setting may only be used for transport on an even surface.

Carefully move the forward/reverse lever (17) forwards or backwards, depending on which direction of travel is required. Speed increases as the lever is moved away from the neutral position.

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

Check while driving that the gauges show normal readings. Where abnormal values are shown or where the buzzer sounds, stop the roller immediately and switch off the engine. Check and remedy any fault, also consult the maintence manual and the engine manual.

Inspect the tread of the tires now and then to detect asphalt compound that has fastened. This is likely until the tires are sufficiently warm. Mixing 2-4% cutting fluid in the sprinkler water for the tires can prevent sticking.

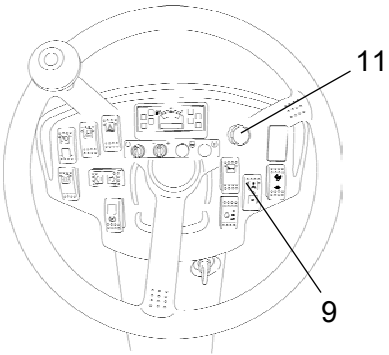


Fig. Instrument panel
9. Sprinkler switch
11. Spinkler timer

Drive up to the compaction area. Begin spraying water on the tires before the roll out onto the hot asphalt.

Start the sprinkler pump using the switch (9).

When the tires have reached normal working temperature, the sprinkler timer (optional) can be used to provide economic water consumption.

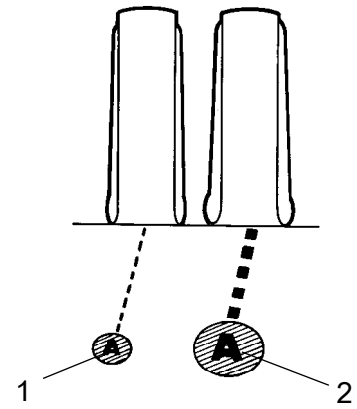


Fig. Ground contact surface
1. Contact surface at high tire pressure
2. Contact surface at low tire pressure

Driving (Ground Pressure)

Ground pressure

The contact surface of the tire can be changed by means of tire pressure.

High tire pressure gives a smaller contact surface (1).

Low tire pressure gives a larger contact surface (2).

The total service weight divided by the number of tires give the pressure per wheel. See Table.

The ground contact surface of the tire is relevant for the compaction result.

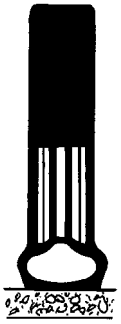


Fig. Low ground pressure, larger area

Low tire pressure - 240 kPa (34.8 psi).

The lower the tire pressure, the lower the pressure on the contact surface due to larger contact surface.

Is used on lots of loose material.

Fig. Normal ground pressure

Normal tire pressure - 480 kPa (69.6 psi)

Used for degradation session.

Fig. High ground pressure, smaller area

High tire pressure - 830 kPa (120.4 psi).

The higher the tire pressure, the greater the pressure on the contact surface due to smaller contact surface.

Used for thick layers and finishing sessions.

Ground pressure

Wheel pressure		Tire pressure, kPa	
kg	**350**	**480**	**620**
		Ground pressure, kPa	
1130	400	430	460
1360	430	460	480
1585	450	470	510

Wheel pressure		Tire pressure, psi	
lbs	**50**	**70**	**90**
		Ground pressure, psi	
2500	58	62	67
3000	62	67	70
3500	65	68	74

Interlock/Emergency stop/Parking brake - Check

The interlock, emergency stop and parking brake must be checked daily before operating. A function check of the interlock and emergency stop requires a restart.

The interlock function is checked by the operator standing up from the seat when the roller is moving very slowly forwards/backwards. (Check in both directions). Hold the steering wheel firmly and brace yourself for a sudden stop. A buzzer goes on and after 4 seconds the engine switches off and the brakes are activated.

Check the function of the emergency stop by pressing the emergency stop button when the roller is moving slowly forwards/backwards. (Check in both directions). Hold the steering wheel firmly and brace yourself for a sudden stop. The engine switches off and the brakes are activated.

Check the function of the parking brake by activating the parking brake when the roller is moving very slowly forwards/backwards. (Check in both directions). Hold the steering wheel and brace yourself for a sudden stop when the brakes are activated. The engine does not switch off.

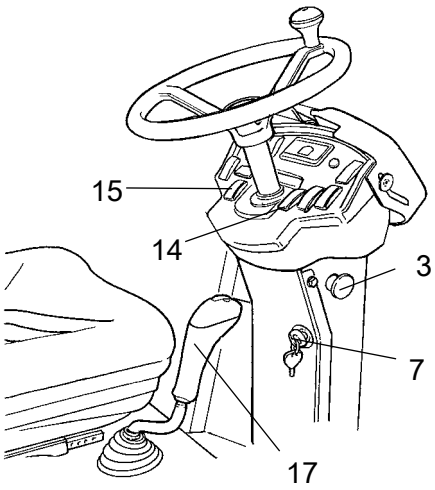


Fig. Control panel
7. Starter switch
3. Emergency stop
14. Speed control regulator
15. Parking brake switch
17. Forward/reverse lever

Braking

Normal braking

Move the forward/reverse lever (17) to the neutral position to stop the roller.

Set RPM-control (14) to idle running position: low.

Set the parkering brake switch (15) in the On position.

Always use the parking brake (15) 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.

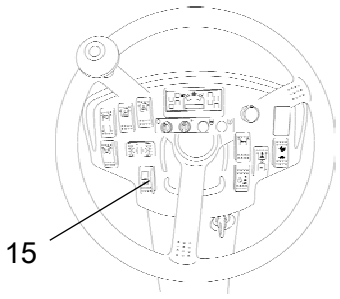


Fig. Instrument panel
15. Parking brake switch

Emergency braking

Braking is normally activated using the forward/reverse lever (17). The hydrostatic transmission brakes the roller when the lever is moved towards the neutral position.

In addition, the multi disc brakes on the wheel driving motors are activated and act as a emergency brake when the parking brake switch (15) is depressed.

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 (17) 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.

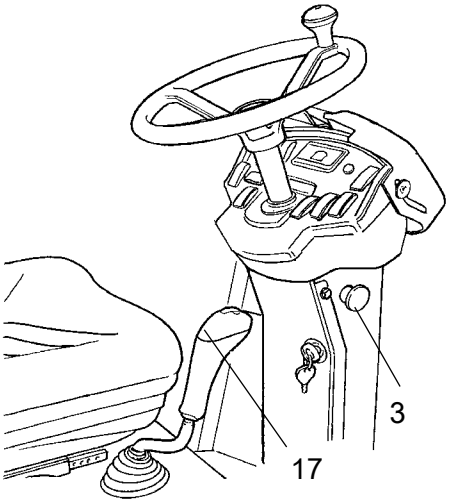


Fig. Instrument panel
3. Emergency stop
17. Forward/reverse lever

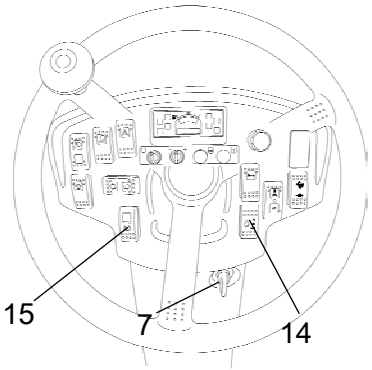


Fig. Instrument panel
7. Start/stop switch
14. RPM control
15. Parking brake switch

Switching off

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

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

Activate the parking brake switch (15).

Turn the starter switch (7) to mode 0. Lower the instrument cover and lock it.

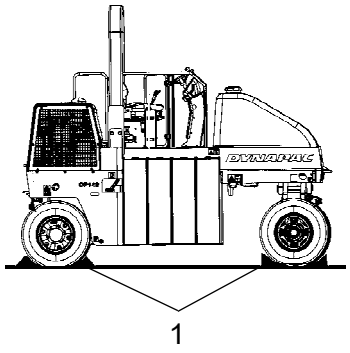


Fig. Chocking the wheels
1. Chocks

Chocking the wheels

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

Make sure that the roller is parked in a safe place with respect to other road users. Chock the wheels (1) if the roller is parked on sloping ground.

Remember that there is a risk of freezing during the winter. Drain the water tanks and water lines.

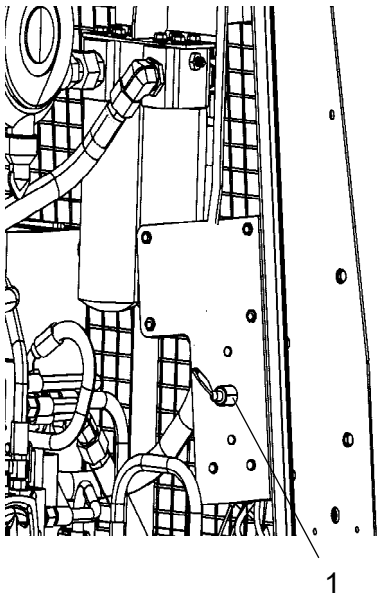


Fig. Engine compartment
1. Master switch

Master switch

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

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

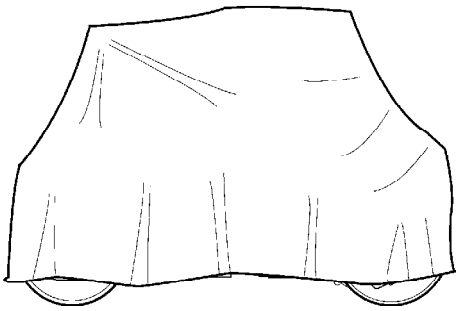


Fig. Roller weather protection

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 outside, check that the electrolyte level is correct (see under the heading "Every 250 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.

Sprinkler system

* Drain the water tank completely (see under the heading ‘Every 2000 hours of operation’). Drain all hoses, filter housings and the water pump. Remove all sprinkler nozzles (see under the heading ‘Every 10 hours of operation’).

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.’)

Steering cylinder, hinges, etc.

Lubricate the steering joint bearings and both bearings on the steering cylinder 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').

Tires

Chock up the frame so that the tires are not loaded.

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.

Watering system

* Empty the water tank and all hoses of water. Empty the filter housing and the water pump. Undo all sprinkler nozzles.

See maintenance sections for "Watering system - draining".

Miscellaneous

Lifting

Lifting the roller

Weight: Refer to the hoisting plate on the roller

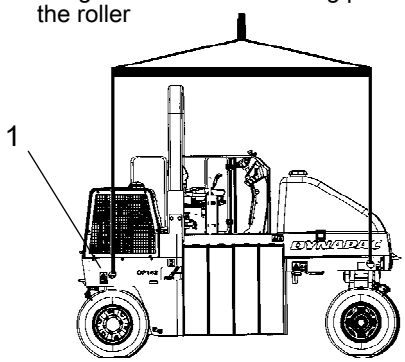


Fig. Roller prepared for lifting
1. Hoisting plate

Ensure that the front wheels are parallel with the frame before the roller is lifted.

Place the lifting chains in the lifting eye bolts and ensure that no parts are damaged by the chains during lifting.

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

Lifting gear such as chains, steel wires, straps, and lifting hooks must conform with current regulations.

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

Towing/Recovering

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

Towing the roller

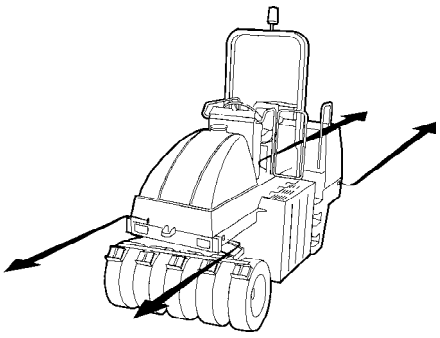


Fig. Towing

Block the tires with chocks. The machine can begin to roll when the brakes are released.

Always use a towbar. NO chains or ropes may be used.

When towing is started, the rear drive engine can give off a releasing sound; this is normal for the type of drive engine in the roller.

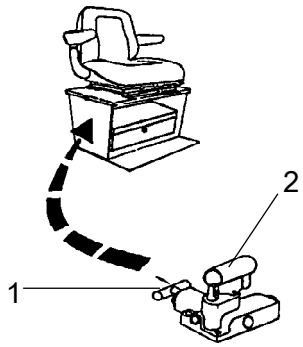


Fig. Pump for release of brake
1. Handle for activating the brake
2. Holder for pump lever

Since the engine is not working, the brakes must initially be released as follows:

Set a steel bar in the pump lever and pump by moving the bar up and down until the brakes release or until a certain amount of hydraulic resistance can be felt.

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

The roller must be towed slowly, max. 3 km/h (2 mph) and for a short distance only, max. 300 m (984 ft).

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 illustrated. Maximum gross pulling force 58 kN (29 kN/lifting hole).

After towing. Pull the lever (1) and the brake is activated.

Always lock the pump with a padlock when it is not in use.

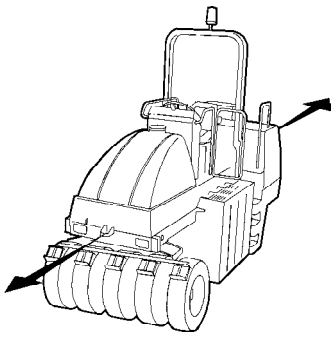


Fig. Trailer eyelet

Trailer eye

The roller can be fitted with a trailer eye.

The trailer eyelet is not designed to be used for towing/recovering. It is only designed for towing objects weighing no more than 2,400kg (8.850 lbs).

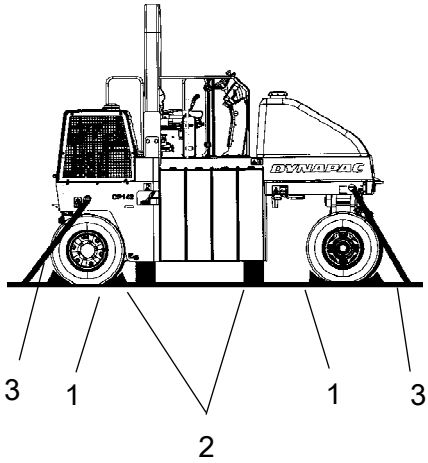


Fig. Transport
1. Chocks
2. Blocking up
3. Lashing straps

Roller prepared for transport

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

Block up (2) under the frame to avoid machine damage.

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

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 engine speed control to idle.

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

7. Set the engine speed control to the operating position.

8. Disengage the parking brake.

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

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

11. Check that the tires are thoroughly watered when watering is required.

12. **IN AN EMERGENCY:**
    - Press the emergency stop
    - Hold the steering wheel firmly.
    - Brace yourself for a sudden stop.

13. When parking:
    - Activate the parking brake switch.
    - Stop the engine and chock the wheels.

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

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

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

17. 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 stiplulated 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

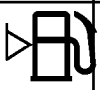
Fluid volumes	liters	gallon (U.S.)
Hydraulic reservoir	75	19,8
Hydraulic system	100	26,4
Lubrication oil, diesel engine	9,5	2,5
Coolant, diesel engine	20	5,3

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

	ENGINE OIL	Air temperature -10°C-+50°C (14°F-122°F) Shell Rimula R4 L 15-40 or equivalent. API CH-4 or equivalent.
	HYDRAULIC FLUID	Air temp. -10°C-+40°C (14°F-104°F) Shell Tellus T68 or equivalent. Air temp. above +40°C (104°F) Shell Tellus T100 or equivalent
Bio-Hydr.	**BIOLOGICAL HYDRAULIC FLUID**	BP Biohyd SE-S 46. On delivery from the factory the machine may have been filled with biodegradable fluid. The same type of fluid must be used when changing or topping off.
	GREASE	SKF LGHB2 (NLGI-Klass 2) or equivalent for the articulated joint. Shell Retinax LX2 or equivalent for other grease points.
D	**FUEL**	See engine manual.
50/50	**COOLANT**	Glycoshell or equivalent. (mix 50/50 with water) Anti-freeze down to about -37°C (-34.6°F)

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

	Engine, oil level		Air filter
	Engine, oil filter		Battery
	Hydraulic reservoir, level		Sprinkler
	Hydraulic fluid, filter		Sprinkler water
	Lubricating oil		Fuel filter
	Fuel gauge		Recycling
	Coolant level		Air pressure

Maintenance - Maintenance schedule

Service and maintenance points

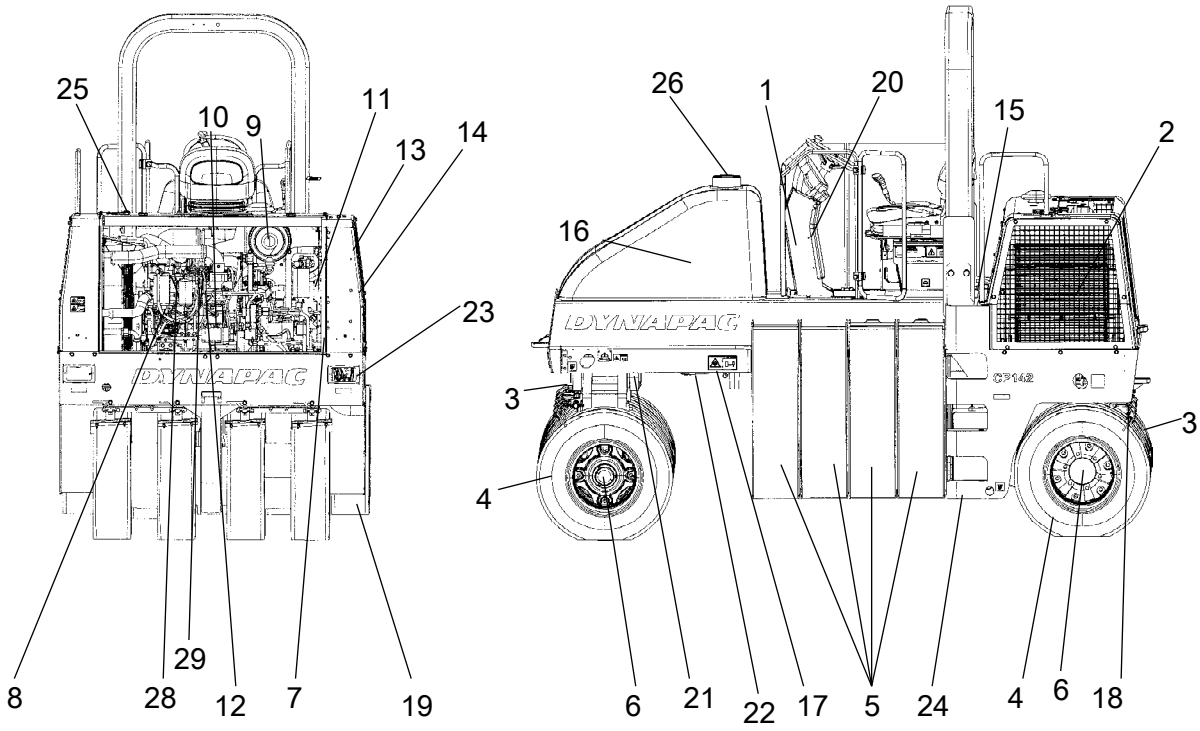


Fig. Service and maintenance points

1. Instrument panel and fuse box.
2. Radiator - (water/oil/charge air)
3. Scrapers
4. Tires
5. Ballast boxes
6. Wheel nuts
7. Battery
8. Fan belt
9. Air cleaner
10. Dipstick, engine oil
11. Engine oil filter
12. Fuel filter
13. Hydraulic filter
14. Sight glass, hydraulic fluid
15. Hydraulic fluid, filling
16. Water tank, sprinkler
17. Water pump
18. Sprinkler
19. Fuel tank
20. Fuse box
21. Steering joint - oscillation axles
22.. Steering cylinder
23. Refueling
24. Fuel drainage plug
25. Coolant, filling
26. Water tank, filling
27. Pre-filter, fuel
28. Engine valve clearance

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.

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

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 !

Pos. in fig	Action	Comment
	Before starting up for the first time on that day	
14	Check the hydraulic fluid reservoir level	
2, 27	Check for free circulation of cooling air	
19	Refuel	
25	Coolant level - Check	Refer to the engine manual
10	Check the diesel engine oil level	Refer to the engine manual
3	Check the scrapers.	
17, 18	Check the sprinkler system	
26	Fill the water tank	
	Check the brakes.	
8	Check the alternator and fan belts tension	Refer to the engine manual
28	Check / Drain water of the fuel pre-filter	Refer to the engine manual

After the FIRST 50 hours of operation

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

Pos. in fig	Action	Comment
13	Change the engine oil and oil filter	Refer to the engine manual
12	Change the fuel filter	Refer to the engine manual
15	Change the hydraulic fluid filter	

Every 50 hours of hourly operation (Weekly)

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

	Action	Comment
9	Check/clean the air filter's filter element and ensure that hoses and couplings are not leaking	
4	Check the tire pressure	
6	Check the wheel-nuts are tightened	
5	Check tightening of ballast nuts.	
21, 22	Lubricate the steering cylinder, steering joint and oscillation axles	Optional

Every 250 hours of operation (Monthly)

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

Pos. in fig	Action	Comment
2, 27	Clean the radiator	If necessary
7	Check the battery.	Refer to the engine manual
29	Adjust diesel engine valve clearance	Refer to the engine manual
10, 11	Change the diesel engine oil and oil filter	Refer to the engine manual

Every 500 hours of operation (Every three months)

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

Pos. in fig	Action	Comment
10, 11	Change the diesel engine oil and oil filter	Refer to the engine manual
12	Replace the fuel filter.	Refer to the engine manual
28	Clean the fuel pre-filter.	
	Lubricate lever	
16	Drain sediment from the water tank	

Every 1000 hours of operation (Every six months)

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

Pos. in fig	Action	Comment
8	Check fan, belt tension and alternator	Refer to the engine manual
13	Change the hydraulic fluid filter	
14	Drain condensate from hydraulic fluid reservoir	
9	Replace the main filter in the air cleaner	Optional
24	Drain condensate from fuel tank	
10, 11	Change the diesel engine oil and oil filter	Refer to the engine manual

Every 2000 hours of operation (Yearly)

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

Pos. in fig	Action	Comment
14	Change the hydraulic fluid	
16	Drain and clean the water tank	
19	Drain and clean the fuel tank	
10, 11	Change the diesel engine oil and oil filter	Refer to the engine manual
29	Adjust diesel engine valve clearance	Refer to the engine manual
2, 25	Drain, clean and refilling engine cooling system	Refer to the engine manual

Maintenance - 10h

Park the roller on a level surface.
The engine must be switched off and the parking brake activated when checking or adjusting the roller, unless otherwise specified.

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

Hydraulic reservoir, Level check - Filling

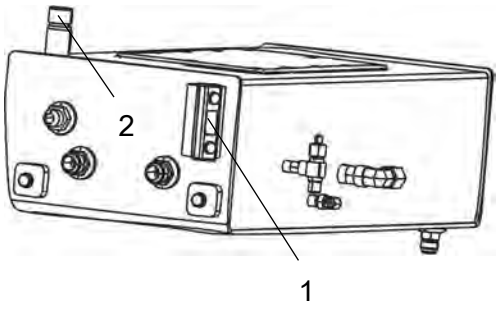


Fig. Hydraulic reservoir
1. Oil sight glass
2. Filler cap

Check the fluid level in the sight glass (1).

Top up with fresh hydraulic fluid if the level is 20 mm or less from the upper edge of the sight glass, or if no fluid is visible in the sight glass.

Clean around the filler cap (2) before the cap is removed.

Fill with fresh hydraulic fluid of the grade indicated in the Lubricant specification.

Air circulation - Check

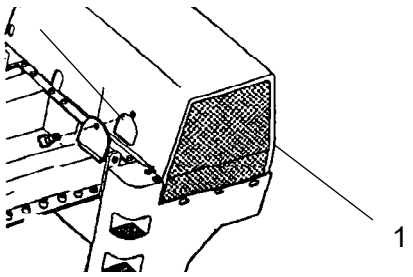


Fig. Cooling vents
1. Inlet guard

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

Fuel tank - Filling

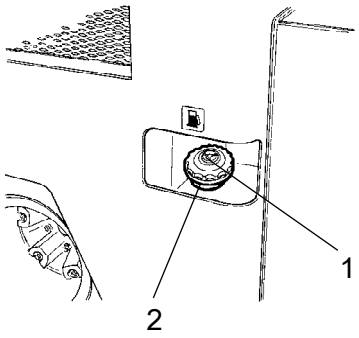


Fig. Fuel tank
1. Tank cap
2. Filler cap

Refuel daily with diesel fuel up to the lower edge of the filler pipe (2). 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 refuelling, and against the filler pipe (2) while refuelling.

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

The tank holds 140 liters (27 gal)) of fuel.

Coolant level - Check

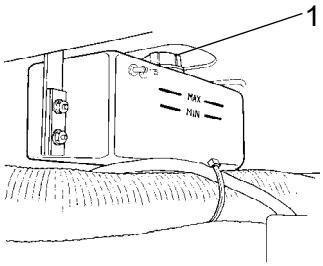


Fig. Radiator
1. Filler pipe

Check that level of the coolant is between the max. and min. marks.

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% anti freeze. See page 3 in these instructions and in the engine manual.

Flush the system every other year and change the coolant. Make sure also that the air flow through the cooler is unobstructed.

Diesel engine Check oil level

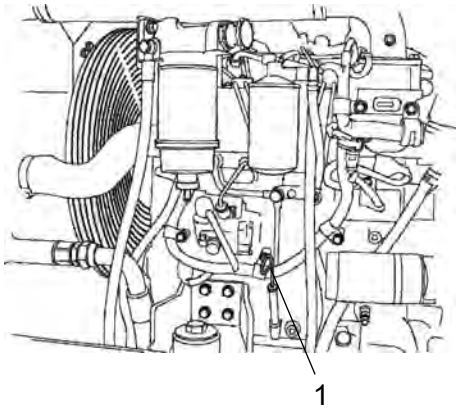


Fig. Check oil level
1. Oil dipstick

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.

Scapers Checking - Setting

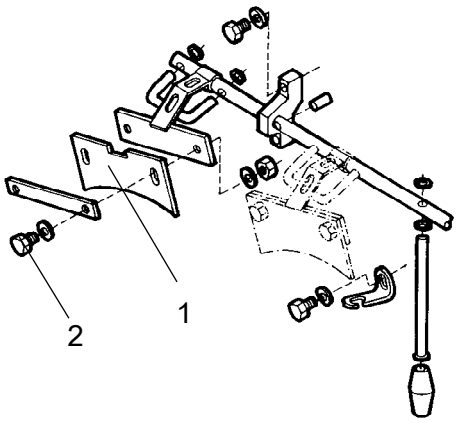


Fig. Tire scrapers
1. Scraper blades
2. Adjustment screw

Make sure that the scrapers are undamaged. Adjust the scrapers so that they are 1-2 mm (0.04-0.08 in) from the tires. For special asphalt compounds, it may be better if the scraper blades (1) lie lightly against the tires.

When necessary, the scraper blades' contact with the tires is adjusted as follows: Loosen the two screws (2) retaining the scraper blade. Place the scraper blade (1) in the correct position and then tighten the screws. Adjust all scraper blades in the same way.

Sprinkler system - Check/Cleaning

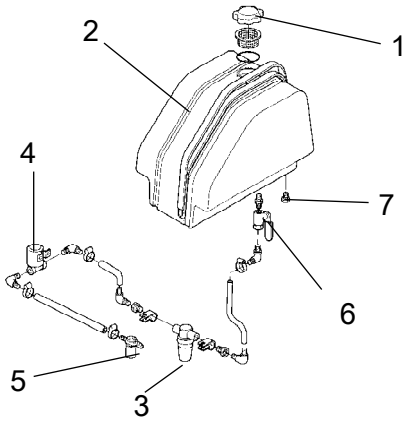


Fig. Sprinkler system
1. Filler cap/strainer
2. Tank
3. Filter
4. Water pump
5. Magnetic valve
6. Cut-off valves
7. Draing plug

Check that the sprinkler system is working without problems. The magnetic valve (5) must emit a sound showing that it is working.

Start the sprinkler system and make sure that none of the nozzles (1) are blocked. If necessary, clean any blocked nozzle.

The filter (3) is accessible for cleaning when the tank (2) is drained and the filter dish has been disconnected. Drain the dish and clean it with water. Check that the pump (4) is working by listening or by planing a hand on the pump.

If there is a cut-off valve (6), the tank will not have to be drained when the filter is to be cleaned. It is enough just to turn of the water.

Nozzle - Dismantling/Cleaning

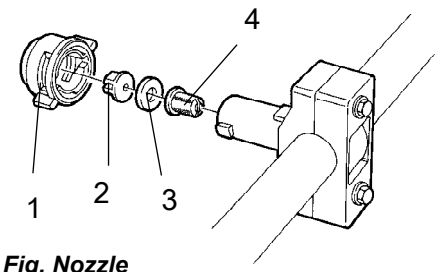


Fig. Nozzle
1. Sleeve
2. Nozzle
3. Seal
4. Fine filter

Dismantle the blocked nozzle by hand.

Blow the nozzle (2) and fine filter (4) clean using compressed air. Alternatively, fit replacement parts and clean the blocked parts at a later point in time.

After inspecting and carrying out any necessary cleaning, start the system and check that it works.

Wear protective goggles when working with compressed air.

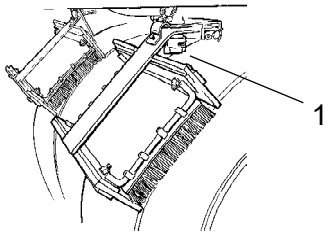


Fig. Nozzle
1. Nozzle

Check and replace or clean blocked or worn nozzles (1) and strainers. Untighten the cap by turing it a quarter of a revolution without any tool.

Water tank - Filling

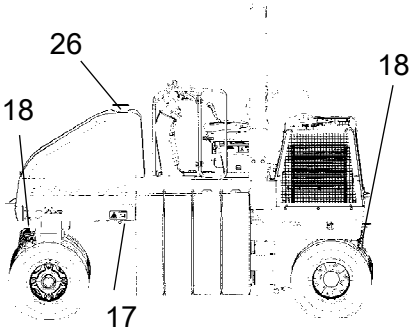


Fig. Water tank
17. Water pump and filter
18. Nozzle
26. Filler cap

Water is required for rolling asphalt until the tires are fully heated.

Only use clean water in the tanke to keep the nozzles (18) free from dirt.

Unscrew the tank cap (26) and fill with clean water. Do not remove the strainer.

Check the sprinkler system before operation.

Only additive: A small amount of environmentally friendly antifreeze.

Brakes - Check

Check operation of the brakes as follows:

Checking the emergency stop

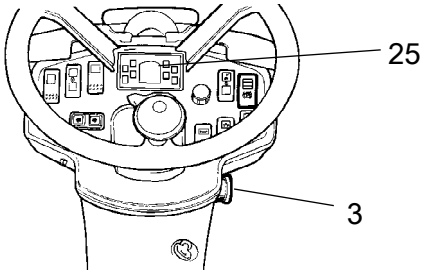


Fig. Instrument panel
3. Emergency stop
25. Parking brake lamp

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

Press the emergency stop (3). The roller will stop abruptly and the engine will be switched off.

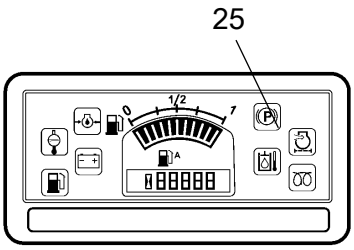
After testing the brakes, set the forward/reverse lever in neutral and activate the parking brake.

Pull out the emergency stop (3). Start the engine.

The roller is now ready for operation.

Refer also to the section in the manual on operation.

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 (15). The brake warning lamp (25) on the instrument panel should come on and 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 (15).

The roller is now ready for operation.

Refer also to the section on operation.

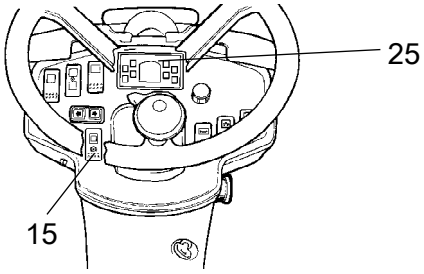


Fig. Instrument panel
15. Parkering brake switch
25. Parkering brake lamp

Maintenance - 50h

Park the roller on a level surface. The engine must be switched off and the parking brake activated when checking or adjusting the roller, unless otherwise specified.

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

Air intake system - Check

Inspect the intake pipes with regard to cracks, loose clamps or punctures that can damage the engine.

Tighten or replace parts as required so that the intake system does not leak.

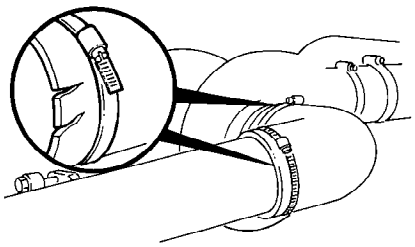


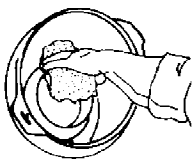
Fig. Hoses

Air cleaner - Cleaning

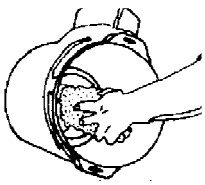
Wipe clean the inside of the cover (2) and the filter housing (5). See the previous illustration.

Wipe clean on both sides of the outlet pipe.

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



Inner edge of outlet pipe.



Outer edge of outlet pipe.

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.

Backup filter - Change

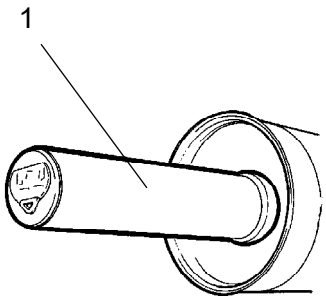


Fig. Air filter
1. Backup filter

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.

Tire pressure - Check

Wear protective goggles when working with compressed air.

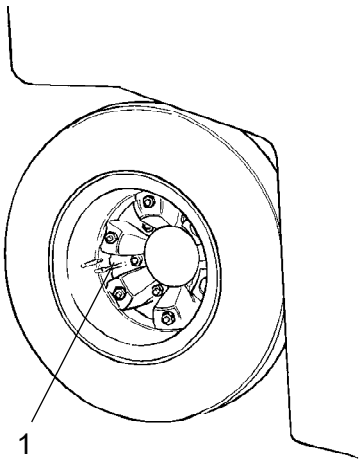


Fig. Wheel
1. Filler nipples

Check the tire pressure with a pressure gauge.

Check the tires and the number of bearings. See the table for "Contact pressure against ground" in the operating manual to get the right pressure when the actual ballast and roller weight are confirmed.

When changing a tire, all tires must have the same dimension and number of bearings.

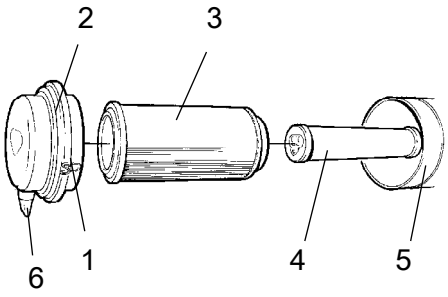


Fig. Air cleaner
1. Clips
2. Cover
3. Main filter
4. Backup filter
5. Filter housing
6. Dust valve

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.

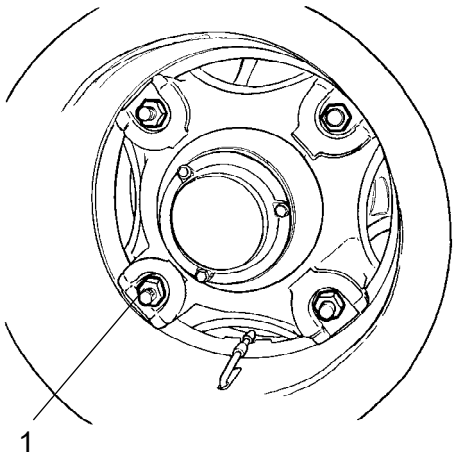


Fig. Wheel
1. Wheel-nuts

Tightening torque for wheel-nuts - check

Check the tightening torque of the wheel nuts (1) at 204 Nm (350 lbf.ft).

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

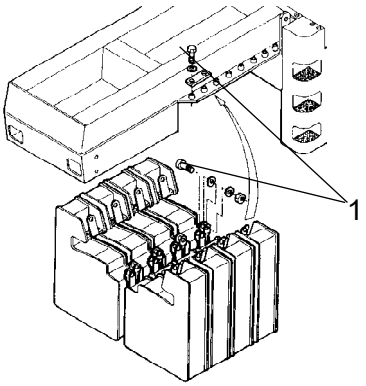


Fig. Ballast boxes
1. Bolts

Ballast bolts - Check

Check that the ballast bolts (1) are tightened (see tightening torque under heading "Technical Data").

Steering cylinder suspension - Lubrication

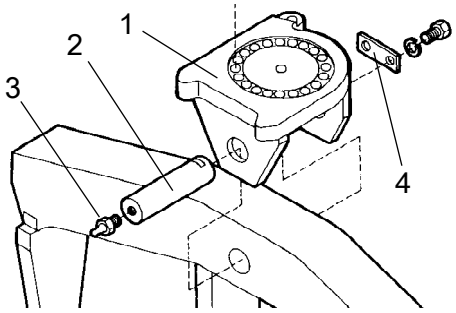


Fig. Steering joint, installation
1. Pilot bearing
2. Suspension journal
3. Lubricating nipple
4. Locking plate

Lubricating nipples to the pilot bearing can be found under the rotating suspension flange.

Lubricate the pilot bearing with two pump strokes from the lubicating gun.

The suspension journal (2) to the pilot bearing must not rotate. Check that the locking plate is in position and is undamaged.

Lubricate the steering joint's suspension journal (2) with three pump strokes from the lubicating gun.

Front oscillation axle - Lubrication

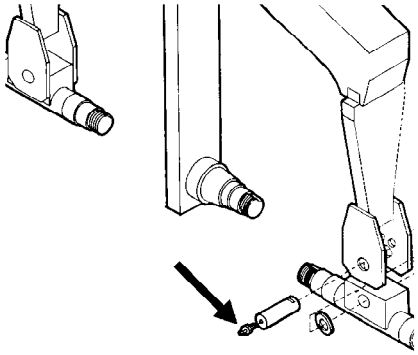


Fig. Oscillation axle

Wipe all linkages clean of dirt and grease.

Grease each linkage with two strokes of the hand-operated grease gun. Ensure that the grease is pressed into the journal.

If the grease is not pressed into the journal, it may be necessary to unload the link using a jack and by repeating the lubrication procedure.

Steering cylinder - Lubrication

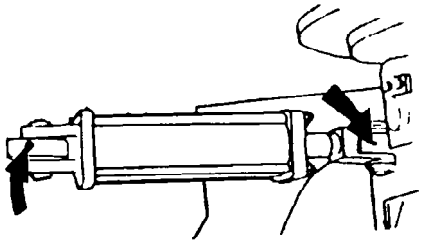


Fig. Steering cylinder

Wipe all linkages clean of dirt and grease.

Grease each linkage with two strokes of the hand-operated grease gun.

Allow some grease to reamin on the linkages after lubrication. This prevents dirt from penetrating into the linkages.

Maintenance - 250h

Park the roller on a level surface. The engine must be switched off and the parking brake activated when checking or adjusting the roller, unless otherwise specified.

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

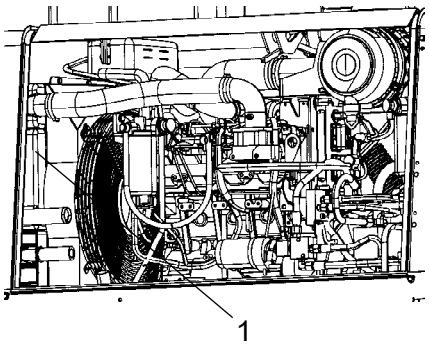


Fig. Engine compartment
1. Radiator

Radiator - Check/Cleaning

Check the radiator for leakage, damage or accumulation of dirt.

Dirty coolers are blown clean with compressed air or washed clean using a high-pressure water cleaner.

Blow air or direct water through the cooler in the opposite direction to that of the cooling air.

Take care when using a high-pressure water jet. Do not hold the nozzle too near the cooler.

Wear protective goggles when working with compressed air or high-pressure water jets.

Diesel engine - Oil and filter replacement

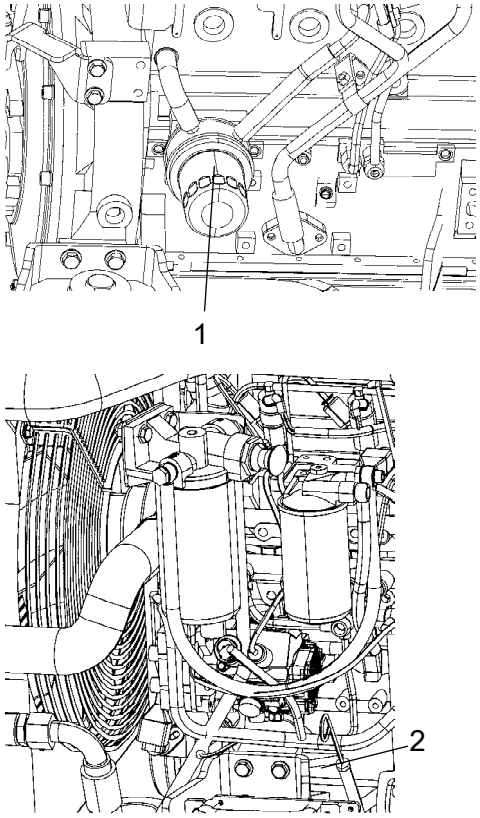


Fig. Engine
1. Oil filter
2. Oil level dipstick

Run the engine warm before draining the oil.

Danger of being burned when draining hot oil. Protect your hands.

Place a receptacle that is capable of holding at least 15 liters (4 gallons) under the drain plug.

Remove the oil drain plug that is accessible down in the machine, on engine crankcase. Allow all the oil to drain out and refit the plug.

Change the engine oil filter (1) at the same time. Refer to the engine manual. Fill with new engine oil, on oil filter (1) as per the lubration specification an check the oil level on the dipstick (2).

Deliver the drain oil and filter for correct handling.

Battery (maintenance-free)

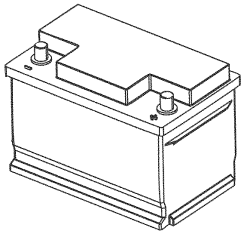


Fig. Battery

The battery is sealed and maintenance-free.

Make sure there is no open flame in the vicinity when checking the electrolyte level. Explosive gas is formed when the alternator charges the battery.

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

The cable shoes should be clean and well-tightened. Corroded cable shoes should be cleaned and greased with acid-free Vaseline.

Wipe the top of the battery.

Maintenance - 500h

Park the roller on a level surface.
The engine must be switched off and the parking brake activated when checking or adjusting the roller, unless otherwise specified.

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

Diesel engine - Oil and filter replacement

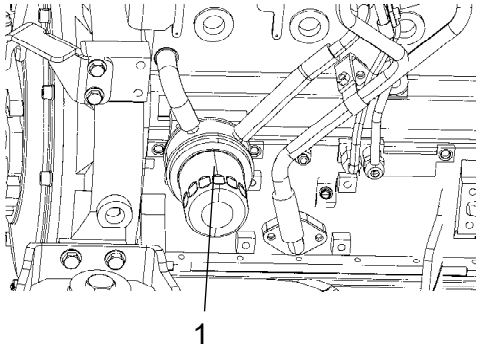


Fig. Engine
1. Oil filter
2. Oil level dipstick

Run the engine warm before draining the oil.

Danger of being burned when draining hot oil. Protect your hands.

Place a receptacle that is capable of holding at least 15 liters (4 gallons) under the drain plug.

Remove the oil drain plug that is accessible down in the machine, on engine crankcase. Allow all the oil to drain out and refit the plug.

Change the engine oil filter (1) at the same time. Refer to the engine manual. Fill with new engine oil, on oil filter (1) as per the lubration specification an check the oil level on the dipstick (2).

Deliver the drain oil and filter for correct handling.

Hinges, controls - Lubrication

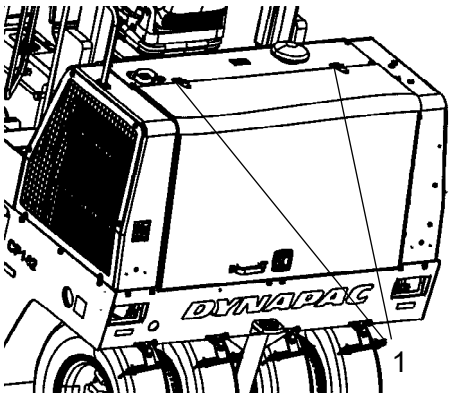


Fig. Hood
1. Hinge

Lubricate engine hood hinges (1) and the slide rails of the operator's seat with grease, other joints and controls with oil. See lubrication specification..

Diesel engine pre-filter - replacement/cleaning

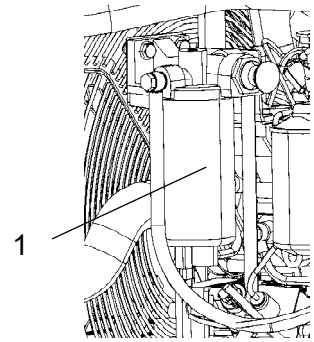


Fig. Engine compartment
1. Prefilter

The fuel filter is located on the left side in the engine compartment.

Unscrew the bottom and drain off any water, and then replace the filter unit.

Maintenance - 1000h

Park the roller on a level surface. The engine must be switched off and the parking brake activated when checking or adjusting the roller, unless otherwise specified.

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

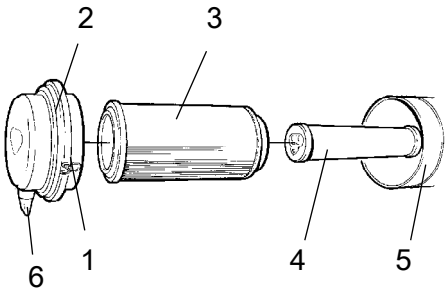


Fig. Air cleaner
1. Clips
2. Cover
3. Main filter
4. Backup filter
5. Filter housing
6. Dust valve

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.

Hydraulic reservoir, Level check - Filling

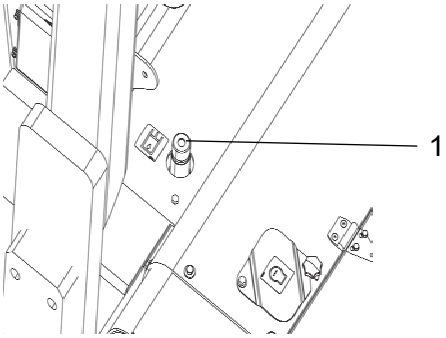


Fig. Hydraulic reservoir
1. Filler cap

Clean around the filler cap (1) before the cap is removed.

Undo the cover/bleeder filter (1) on top of the reservoir so that over-pressure inside the reservoir can be eliminated.

Check that the bleeder filter (1) is not clogged. Air should be able to pass through the cap unobstructed 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.

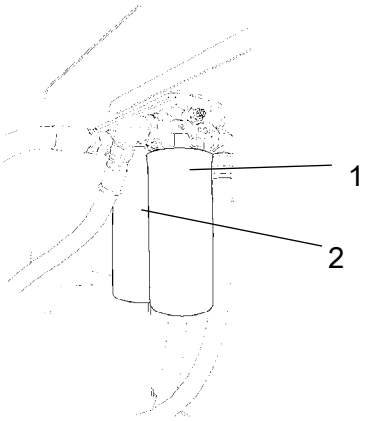


Fig. Hydraulic fluid filter
1. Pressure filter
2. Return filter

Clean thoroughly around the hydraulic fluid filter.

Remove the oil filters (1 and 2) and dispose of them in an approved manner. They are single-use filters and cannot be cleaned.

Make sure that the old sealing rings are not left on the filter holders, Otherwise, this could cause leakage between the new and old seals.

Thoroughly clean the sealing surfaces of the filter holders.

Apply a thin coat of fresh hydraulic fluid to the rubber seals on the new filters. Screw tight the filters 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 filters. Check level of fluid in the sight glass and top up as required.

Hydraulic fluid reservoir - Draining condensate

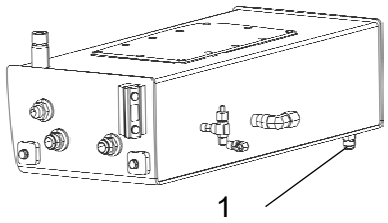


Fig. Hydraulic reservoir, bottom
1. Plug

Condensate in the hydraulic reservoir is drained via the plug (1).

Draining should be carried out prior to start. An additional draining should be carried out if the roller has been stationary for a long time. Drain as follows:

Remove the plug (1).

Place a container under the tap.

Drain off any condensate.

Then replace the plug.

Collect the condensate and accompanying hydraulic fluid and dispose of it in an approved manner.

Maintenance - 2000h

Park the roller on a level surface. The engine must be switched off and the parking brake activated when checking or adjusting the roller, unless otherwise specified.

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

Hydraulic reservoir - Fluid change

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

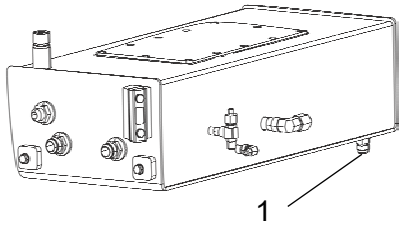


Fig. Hydraulic reservoir, bottom
1. Plug

Place a receptacle that will hold at least 75 liters (20 gallons) under. Unscrew the plug (1), drain the tank and replace the plug (1).

Fill up with fresh hydraulic fluid as per the instructions under the heading "Hydraulic reservoir - Check fluid level".

Replace the hydraulic fluid filters. See section "Maintenance - 1000 hours".

Start the diesel engine and operate the various hydraulic functions. Check the level in the reservoir and top off as required.

Deliver the drained fluid to environmentally correct handling.

Fuel tank - Cleaning

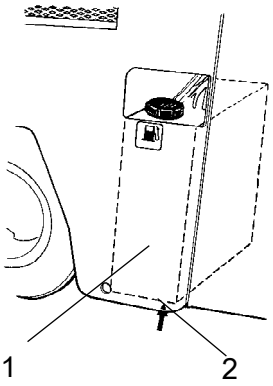


Fig. Fuel tank
1. Tank cap
2. Drain plug

Keep in mind fire risk when handling fuel.

Loosen the drain plug (2) under the fuel tanks and drain off the fuel into a receptacle.

Clean the tank, screw in the plug and check for leaks.

Do not leave the tank empty. Make sure is is always filled.

Collect the fuel and deposit it in an approved manner.

Water tank - Filling

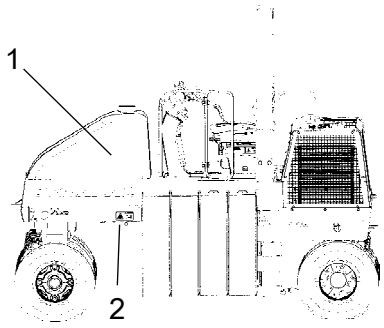


Fig. Water tank
1. Water tank
2. Drain plug

Beware of the risk for freezing during the winter. Drain the tank, pump and all pipes.

Loosen the drain plug (2) and drain the water.

Clean the tank internally with water and a suitable detergent for plastic surfaces.

Screw in the plug (2) and check for leaks.

The water tank is made of plastic (polyethylene) and is recyclable.

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