

Instruction manual

Operating & Maintenance

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**Vibratory roller
CC900G**

**Engine
Honda GX630R**

**Serial number
10000303x0C003469 - 0C005137
10000303x0C005138 (Improved Frame) -**



Translation of original instruction

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Introduction

The machine

Dynapac CC900G is a vibratory tandem roller in the 1,3 metric tonnes class featuring 900 mm wide drums. The machine is equipped with drive and brakes on both drums, and vibration on front drum.

Intended use

CC900G is primarily used for smaller compaction works, such as minor roads, sidewalks, cycle ways and minor parking places.

Signal symbols and meaning



WARNING !

Indicates potential hazardous situation/procedure which, if not avoided, could result in death or serious injury.



CAUTION !

Indicates potential hazardous situation/procedure which, if not avoided, could result in minor or moderate injury, damage to the machine or property.

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.

CALIFORNIA

Proposition 65

Decal and location of decal shown in section Machine description.

⚠ WARNING: Operating, servicing and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle. For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

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.

Do not spray with high-pressure cleaner directly onto gaskets and bearing spacings in steering hitch and drum, and electronics.

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, where maintenance after every 10 and 50 hours of operation can be performed by the machine operator.

Other maintenance intervals must be carried out by accredited (Dynapac) service personnel.



Additional instructions for the engine can be found in the manufacturer's engine manual.

Specific maintenance and checks on combustion engines must be carried out by the engine supplier's certified personnel.

Signal symbols and meaning



WARNING !

Indicates potential hazardous situation/procedure which, if not avoided, could result in death or serious injury.



CAUTION !

Indicates potential hazardous situation/procedure which, if not avoided, could result in minor or moderate injury, damage to the machine or property.

Safety - General instructions

(Also read the safety manual)



- The operator must be familiar with the contents of the OPERATION section before starting the roller.
- Ensure that all instructions in the MAINTENANCE section are followed.
- Only the operator is allowed to be on the roller. Remain seated at all times when operating the roller.
- Never use the roller if it is in need of adjustment or repair.
- Only ascend and descend the roller when it is stationary.
Use the intended footsteps, grips and rails.
Always use the three-point grip (both feet and one hand, or one foot and both hands) when ascending or descending the machine.
Never jump down from the machine.
- Dynapac always recommends mounted ROPS (Roll Over Protective Structure), or a ROPS-approved cab and seat belt usage.
- Drive slowly in sharp bends.
- Avoid driving across slopes. Drive straight up or straight down the slope.
- Never operate with the drum outside the edge, the substrate might not have full bearing strength or the edge is close to a slope. Avoid operating close to edges and ditches and the like as well as on poor ground conditions that jeopardizes the bearing strength and capacity to support the roller.
- Make sure that there are no obstacles in the direction of travel, on the ground, in front of or behind the roller, or overhead.
- Drive particularly carefully on uneven ground.
- Keep the roller clean. Clean any dirt or grease that accumulates on the footsteps or operator platform to avoid slipping risk. Keep all signs and decals clean and legible.
- Safety measures before refueling:
 - Stop the engine
 - Do not smoke.
 - No naked flames in the vicinity of the roller.
 - Earth the filling equipment nozzle by keeping it in contact to the tank opening to avoid sparks.
- Before repairs or service:
 - Chock the drums/wheels.
 - Lock the articulation if necessary.
 - Place blocks under overhanging equipment, such as strike-off blade, edge cutter/presser and chip spreader.

- **Hearing protection is recommended if the noise level exceeds 80 dB(A). The noise level can vary depending on the equipment on the machine and the surface the machine is being used on.**
- **Modifications to the roller, including the use of any attachment/equipment, not approved by Dynapac that might compromise safety (including visibility) are not allowed. Any modifications are only to be made after written approval has been given by Dynapac.**
- **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.**
- **For your own protection always wear:**
 - working boots with steel toecaps
 - ear protectors
 - reflecting clothing/high visibility jacket**Also wear:**
 - helmet if no cab or FOPS, or if required by worksite management
 - working gloves if no cab and for work outside operator's platform.
- **If the machine seems to be responding abnormally during travel, stop and check it.**

Safety - when operating



Prevent persons from entering or remaining in the risk zone, 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 risk zone, however he/she must be attentive and operate the machine only when the person is fully visible or has given a clear indication of where he or she is.



Avoid driving across a slope. Drive straight up and down sloping ground.

Seated position

Remain seated at all times when operating the roller.

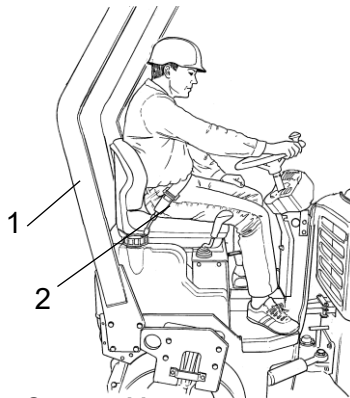


Fig. Seat position
1. ROPS
2. Seat belt



Always use the seat belt where fitted. Where the seat belt is not used, there is a great risk that the operator will be thrown off and land under the machine if the machine topples over.

The seat belt is standard equipment on rollers fitted with Roll Over Protective Structure (ROPS) (1).

ROPS should always be in the raised position when machines with foldable ROPS are

Work driving operated



Dynapac always recommends mounted ROPS (Roll Over Protective Structure) and seat belt usage.

On machines with foldable ROPS, make sure that the ROPS is correctly mounted in the upright position during all operation.

Avoid operating close to edges and ditches and the like as well as on poor ground conditions that jeopardizes the bearing strength and capacity to support the roller. Pay attention to potential obstacles above the machine, such as overhead cables and the branches of trees etc.

Pay particular attention to the stability of the substrate

when compacting close to edges and holes. Do not compact with a large overlap from the previous track in order to maintain roller stability. Consider other compaction methods such as remote-control or a walk-behind roller close to steep slopes or where the bearing strength of the substrate is unknown.

Driving near edges



Never operate with the drum outside the edge, the substrate might not have full bearing strength or the edge is close to a slope.



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.

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.



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



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



Prevent persons from entering or remaining in the risk zone, 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 risk zone, however he/she must be attentive and operate the machine only when the person is fully visible or has given a clear indication of where he or she is.

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 - 105°F).



The maximum ambient temperature for biodegradable hydraulic oil is +35°C (95°F).

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

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

The gasoline 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 equivalent.

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.

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.



When working with compressed air, use the following protective equipment:



Protective goggles



Protective gloves

Ear protectors

Do not spray with high-pressure cleaner directly onto gaskets and bearing spacings in steering hitch and drum, and electronics.



Never aim the water jet directly at the fuel tank cap, or into exhaust pipe. 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)



Never carry out any welding or drilling in the Roll Over Protective Structure (ROPS).



Never repair a damaged ROPS structure, it must be replaced with a new one.

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.

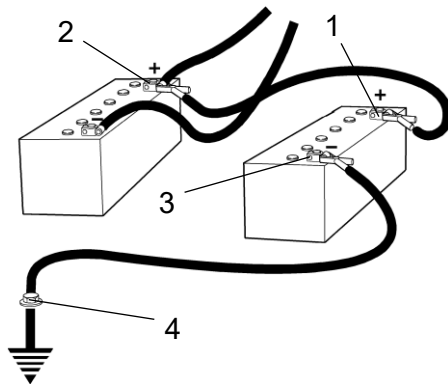


Fig. Jump starting

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)

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

Measured whole-body vibrations are below the action value of 0.5 m/s^2 as specified in Directive 2002/44/EC. (Limit is 1.15 m/s^2)

Measured hand/arm vibrations also were below the action level of 2.5 m/s^2 specified in the same directive. (Limit is 5 m/s^2)

Noise level

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

Guaranteed sound power level, L_{WA} 102 dB (A)

Sound pressure level at the operator's ear (platform), L_{pA} $84 \pm 3 \text{ dB (A)}$

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



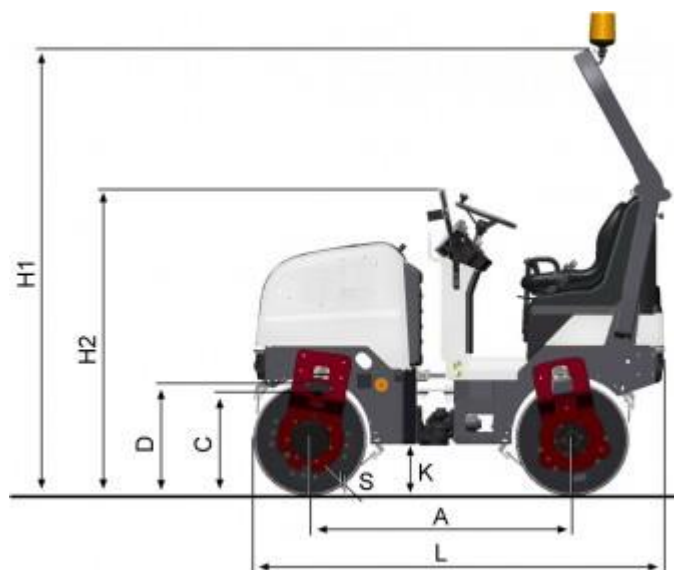
Max 20° or 36%

Slopes

The recommended max slope angle is for a machine that runs straight on hard, flat surface.

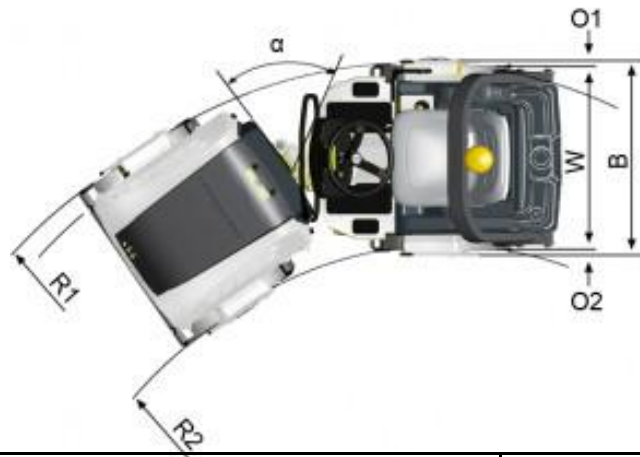
Unstable ground, vibration on, speed and steering the machine can all cause the machine to topple at smaller angles than specified here.

Dimensions, side view



	Dimensions	mm	in
A	Wheelbase	1350	53,1
D	Drum diameter	584	23,0
H ₁	Height, with ROPS	2300	90,5
H ₂	Height, w/o ROPS	1585	62,4
K	Ground clearance	261	10,3
L	Length	2107	83,0
S	Drum shell thickness	9	0,35

Dimensions, top view



	Dimensions	mm	in
B	Width	970	38,2
O	Overhang	35	1,38
R_1	Turning radius, outside	2700	106,3
R_2	Turning radius, inside	2660	104,7
W	Drum shell thickness	900	35,4
α	Steering angle	$\pm 34^\circ$	$\pm 34^\circ$

Weights and volumes

Weights

Operating mass (ISO6016)	1250 kg	2767 lbs
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Fluid volumes

Fuel tank	23 liters	6,0 gal
Water tank	175 liters/tank	46,2 gal

* In climates where there is a risk of freezing, see Coolant under the section Lubricants and Symbols.

Working capacity

Compaction data

Static linear load, front

- Front	6 kg/cm	33,6 pli
- Rear	7,8 kg/cm	43.7 pli
Amplitude	0,4 mm	0.016 in
Vibration frequency	70 Hz	4200 rpm
Centrifugal force	16,7 kN	3752 lb

Note: The frequency is measured at high revs. The amplitude is measured as the real value and not the nominal.

Propulsion

Speed range	0-8	kph	0-5	mph
Climbing capacity (theoretical)	35	%		

General

Engine

Manufacturer/Model	Honda GX630RH QYD
Output at 3000 rpm (SAE J1349)	14.2kW(19 hp)

Electrical system

Battery	12V 60Ah
Charging coil	12V 20A
Fuses	See the Electrical system section - fuses

Tightening torque

Tightening torque in Nm for oiled or dry bolts tightened with a torque wrench.

Metric coarse screw thread, bright galvanized (fzb):

PROPERTY 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):

PROPERTY 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

Bolt dimensions :	M12 (PN 4700508063)
Strength class :	8.8
Tightening torque :	70 Nm



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

Hydraulic system

Opening pressure (Absolute pressure)	MPa	Psi
Drive system	27,0	3915
Supply system	2,0	290
Vibration system	22,0	3190
Control system	7,0	1015
Brake release	2,0	290
Type of fluid	Mineral oil-based or biodegradable liquid based on saturated synthetic ester. Specification according to chapter "Maintenance – Lubricants and symbols"	
Working flow-rate range	l/min	
- Propulsion	30	
- Steering	24	

Machine description

Gasoline engine

The machine is equipped with an air-cooled, four-stroke, gasoline engine with V-twin design and horizontal axle.

Electrical system

The electrical system on the machine is controlled by relay logic. It's operated by buttons and switches.

Propulsion system/Transmission

The propulsion system is a hydrostatic system with a hydraulic pump supplying two motors connected in parallel.

The motors drive the front and rear drums.

The speed of the machine is proportional to the deflection/angle of the control lever from neutral.

Brake system

The brake system consists of a service brake, secondary brake and parking brake.

The service brake is hydrostatic and is activated by moving the control lever to neutral.

Secondary/Parking brake

The secondary and parking brake system consists of sprung multiple disc brakes in the motors. The brakes are released with hydraulic pressure and are operated with a switch on the instrument panel.

Steering system

The steering system is a hydrostatic system.

The control valve on the steering column distributes the flow to the control cylinder, which actuates the articulation.

The steering angle is proportional to the deflection of the steering wheel.

Seat

Different kind of seats are available. The seat always comply with at least the applicable requirements on the market where the machine is originally placed.

Seat is tested and comply with seat dimension ISO 11112, SIP ISO 5353, suspension ISO7096, seat belt ISO 6683.

ROPS

ROPS is the abbreviation for "Roll Over Protective

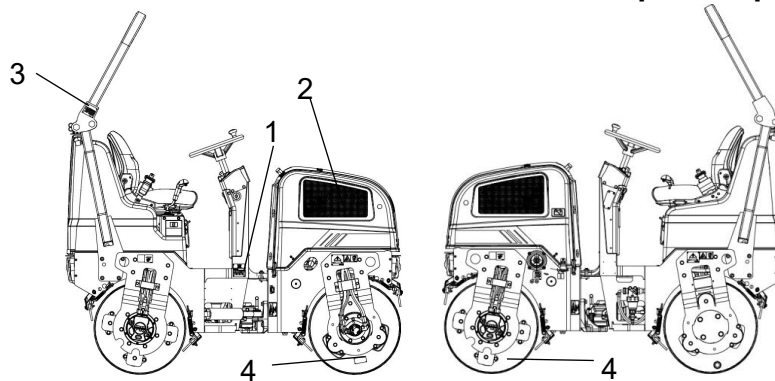
Structure" (ISO 3471).

If any part of the cab's or the ROPS structure's protective construction displays plastic deformation or cracks, the cab or the ROPS structure must be replaced immediately.

Never perform unauthorized modifications on the ROPS structure without first having discussed the modification with Dynapac's production unit. Dynapac determines whether the modification could result in the approval according to the ROPS standards becoming invalid.

Identification

Product and component plates



1. Product plate - Product Identification Number (PIN), model/type designation
2. Engine plate - Type description, product and serial numbers
3. ROPS plate - Certification, product and serial numbers
4. Component plate, drum - Product and serial numbers



Fig. Operator's platform, right side
1. Machine plate

Machine plate

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

The plate specifies the manufacturers name and address, the type of machine, the PIN, Product Identification Number (serial number), operating weight, engine power and year of manufacture. CE markings and the year of manufacture may be omitted on machines supplied to markets outside the EU.

  			
Dynapac Compaction Equipment AB Box 504, SE-371 23 Karlskrona Sweden			
Product Identification Number		XXXXXXXXXXXXXXXXXX	
Designation	Type	Rated Power	Max axle load front / rear
XXXXXX	XXXXXX	XXX kW	XXXX/XXXX kg
Gross machinery mass	Operating mass	Max ballast	[Date of Mfg]
XXXX kg	XXXX kg	XXXX kg	XXXX
Made in Sweden			
4811 0201 33			

Fig. Machine plate on roller, made in Sweden.

 			
Dynapac (China) Compaction & Paving Equipment Co., Ltd. 38, Qianwang Rd, Wuging High Tech Ind. Park, Tianjin, China 301700			
Product Identification Number		>XXXXXXXXXXXXXXXXXX<	
Designation	Type	Rated Power	Max axle load front / rear
XXXXXX	XXXXXX	XXX kW	XXXX/XXXX kg
Gross machinery mass	Operating mass	Max ballast	Date of Mfg
XXXX kg	XXXX kg	XXXX kg	XX/XXXX
Designed by Dynapac in Germany, assembled in China			
4812126993			

Fig. Machine plate on roller, made in China.

Please state the machine's PIN when ordering spares.

Product identification number on the frame

The machine PIN (Product Identification Number) (1) is punched on the right edge of the front frame.

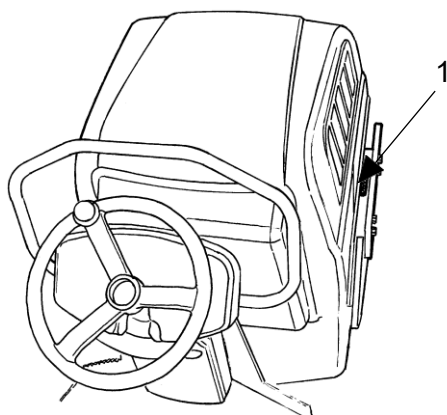


Fig. PIN right side

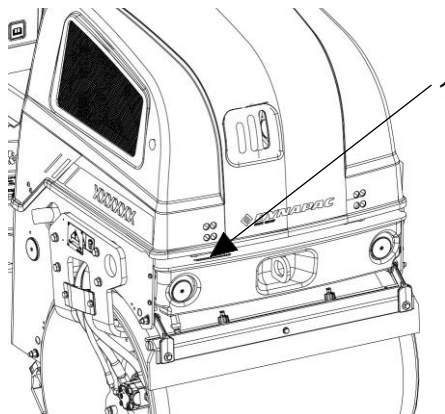


Fig. PIN front right

Engine plates

The engine serial number (1) is punched below the starter.

Please specify the engine serial number when ordering spares. Refer also to the engine manual.

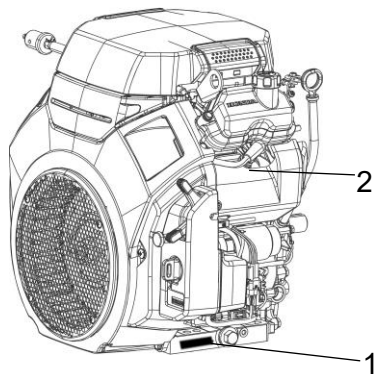
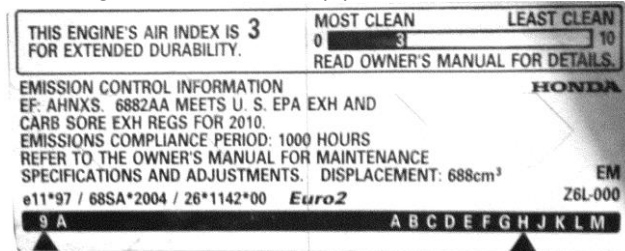


Fig. Engine
1. Serial number
2. EPA plate (USA)

The engine's EPA plate (2).



Decals

Location - decals

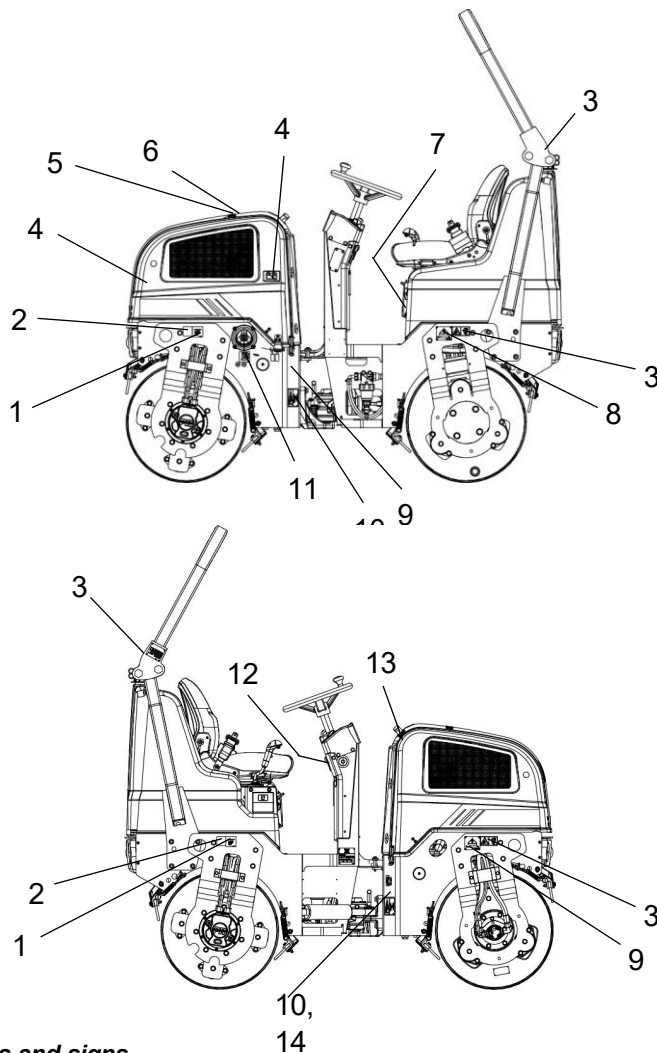


Fig. Location, decals and signs

1.	Securing point	4700382751	8.	Hoisting plate	4700904870
2.	Lifting point	4700357587	9.	Warning, Låsning	4812125363
3.	Warning, Locking	4700908229	10.	Warning, Crush zone	4700903422
4.	Battery disconnecter	4700904835	11.	Gasoline fuel	4700381371
5.	Warning, Hot surfaces	4700903424	12.	Warning, Instruction manual	4700903459
6.	Warning, Rotating engine components	4700903423	13.	Warning, Tip-over risk	4811000351
7.	Handbook compartment	4700903425	14.	Hydraulic fluid level	4700272373

Location - decals, CALIFORNIA

Proposition 65

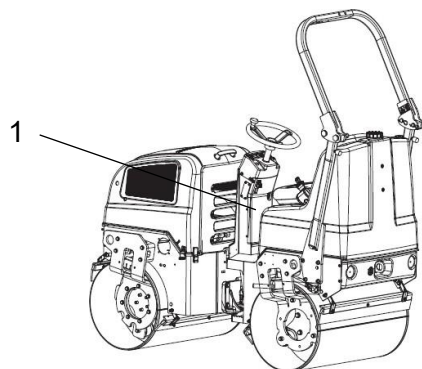


Fig. Location

- | | | |
|----|---------------------------------------|------------|
| 1. | Warning, CALIFORNIA
Proposition 65 | 4812130471 |
|----|---------------------------------------|------------|

Safety decals

Always make sure that all safety decals are completely legible, and remove dirt or order new decals if they have become illegible.

Use the part number specified on each decal.

If a part is replaced and this part have a decal, make sure to also order the decal.

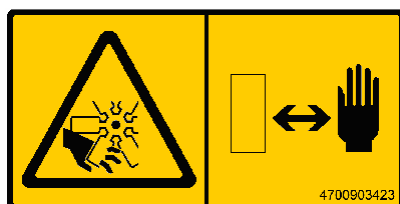


4700903422

Warning - Crush zone, articulation/drum.

Maintain a safe distance from the crush zone.

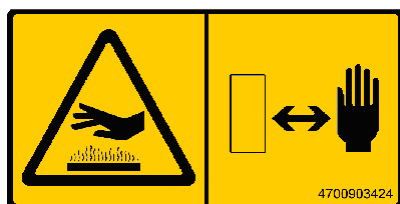
(Two crush zones on machines fitted with pivotal steering)



4700903423

Warning - Rotating engine components.

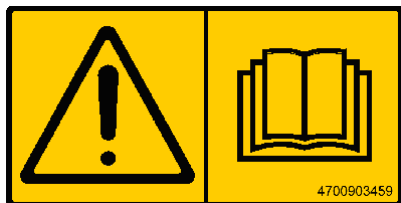
Keep your hands at a safe distance.



4700903424

Warning - Hot surfaces in the engine compartment.

Keep your hands at a safe distance.



4700903459

Warning - Read instruction manual

The operator must read the safety, operation and maintenance instructions before operating the machine.

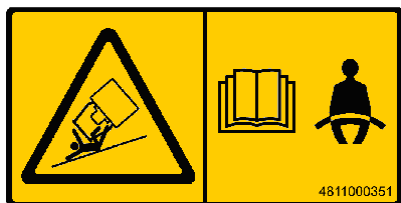


4700908229

Warning - Risk of crushing, apply locking device

The articulation must be locked when lifting.

Read the instruction manual.

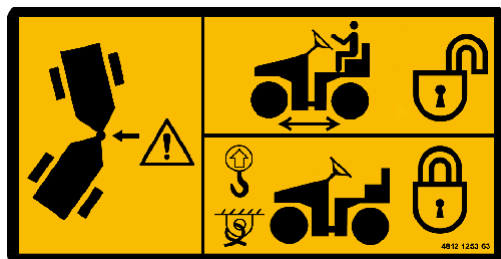


4811000351

Warning - Risk of tip over

If ROPS (Roll Over Protective Structure) is fitted to the roller, always wear the seat belt.

Read the instruction manual.



4812125363

Warning - Locking during transport

The articulation must be locked during transport and lifting, but be open during operation.

Read the instruction manual.

4812130471
Warning

CALIFORNIA - Proposition 65



WARNING

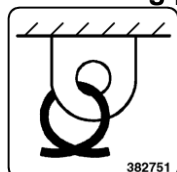
Operating, servicing and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle.

For more information go to
www.P65warnings.ca.gov/passenger-vehicle

4812130471

Info decals

1. Securing point



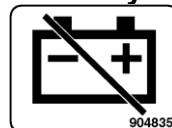
4700382751

2. Lifting point



4700357587

4. Battery disconnecter



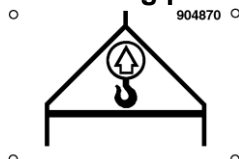
4700904835

7. Handbook compartment



4700903425

8. Hoisting plate



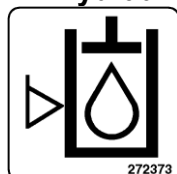
4700904870

11. Gasoline



4700381371

14. Hydraulic fluid level



4700272373

Locations - Control panel and controls

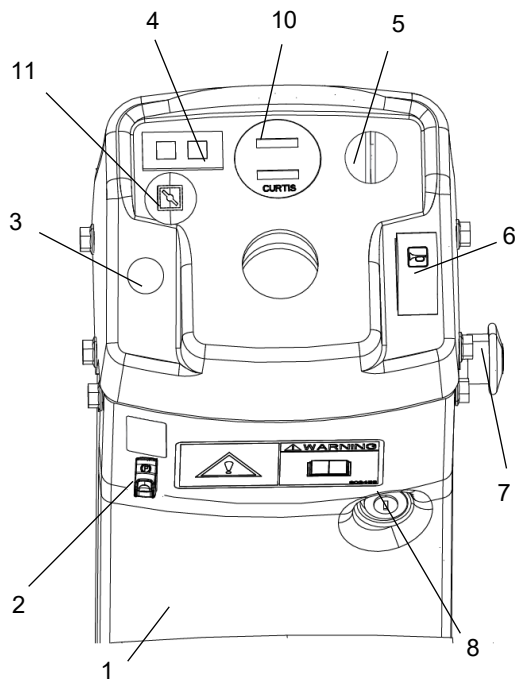


Fig. Control panel on machine with non-pressurized sprinkler system

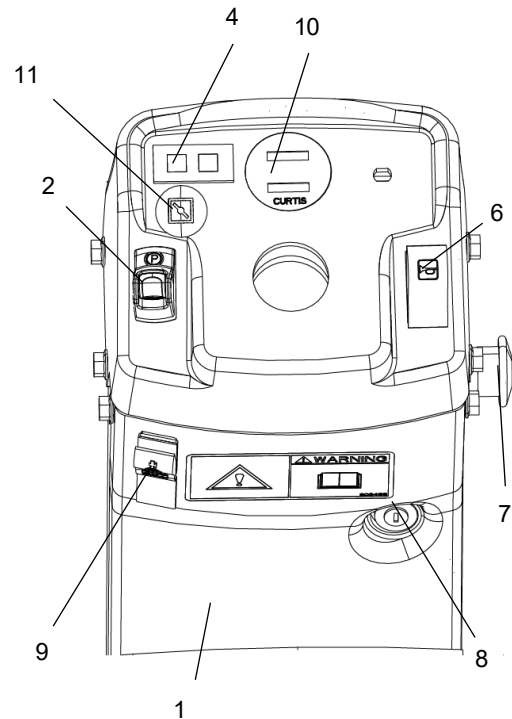


Fig. Control panel on machine with pressurized sprinkler system

- | | | | |
|----|---|-----|--|
| 1. | Fuse box | 6. | Horn |
| 2. | Parking brake | 7. | Emergency stop |
| 3. | (Not in use) | 8. | Starter switch |
| 4. | Warning lamp - Parking brake,
Hydraulic oil temperature (not in use) | 9. | Switch, Sprinkler (Manual / Automatic) |
| 5. | Flow switch, Sprinkler | 10. | Fuel level, Hourmeter |
| | | 11. | Choke |

Locations - Control panel and controls

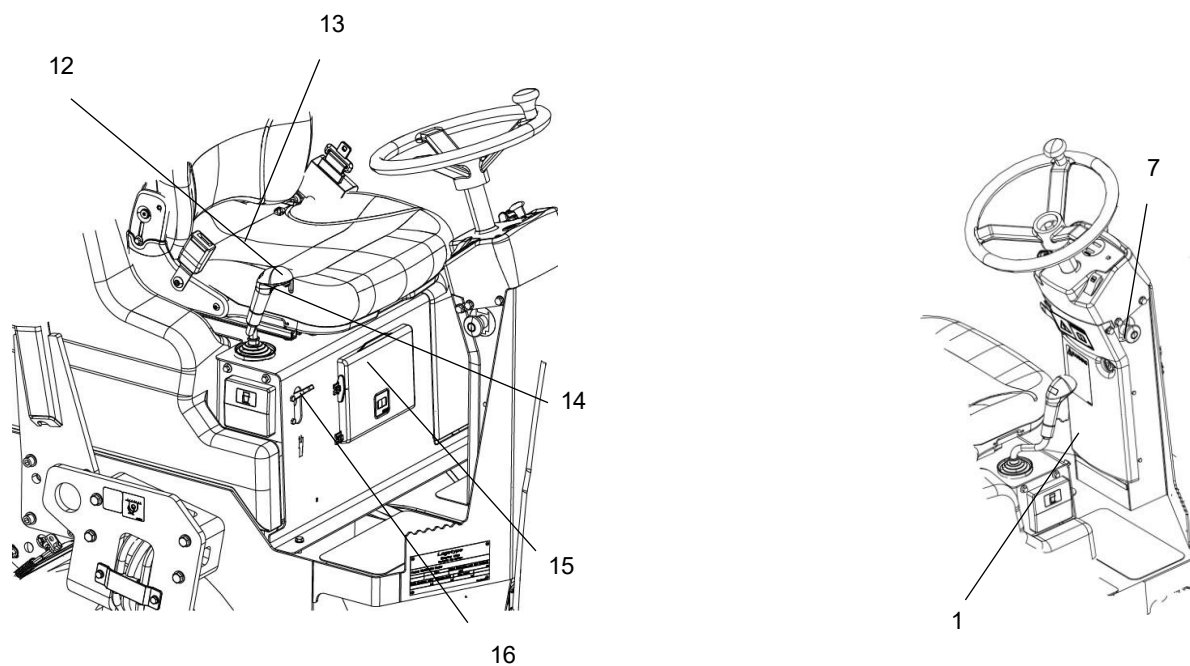
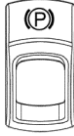
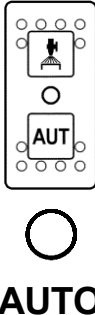


Fig. Operator's station

- | | | | |
|-----|-----------------------|-----|----------------------|
| 1. | Fuse box | 14. | Vibration On/Off |
| 7. | Emergency stop | 15. | Handbook compartment |
| 12. | Forward/reverse lever | 16. | Engine speed control |
| 13. | Seat switch | | |

Function description

No	Designation	Symbol	Function
1.	Fuse box (on control column)		Contains fuses for the electrical system. See under the heading 'Electrical system' for a description of fuse functions.
2.	Parking brake		To activate the brakes, press the top of the switch to change the position of the switch. To release the brakes, press down the red part at the same time as the switch and change the position of the switch.
4.	Parking brake warning lamp, Hydraulic oil temperature (not in use)		The light comes on when the Parking brake is activated. Hydraulic oil temperature lamp is not valid while not in use.
5.	Sprinkler, control		Turn the knob clockwise to switch on the water flow to the drum.
6.	Horn, switch		Press to sound the horn.
7.	Emergency stop		Brakes the roller and switches off the engine. The power supply goes off. NOTE: The emergency stop must be deactivated when starting the machine.
8.	Starter switch		The electric circuit is broken. All instruments and electrical controls are supplied with power Starter motor activation.
9.	Sprinkler, switch		Upper position = switching on of flow of water to drum. Intermediate position = Sprinkling switched off Lower position = switching on of water to drum via forward/reverse lever. The flow of water can be controlled by means of the sprinkler timer (17). Watering off Water supply to drum via forward/reverse lever in AUTO mode. The flow of water can be controlled by means of the sprinkler timer (17).
10.	Fuel level, Hourmeter		Shows the fuel level and the number of hours the engine has run.
11.	Choke		Used in the pulled out position if necessary when the engine is started.

No	Designation	Symbol	Function
12.	Forward/Reverse lever		The lever must be in neutral to start the gasoline 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. When the lever is moved forward, the roller moves forward etc. The roller's speed is proportional to the distance the lever is from the neutral position. The further the lever is from the neutral position, the higher the speed.
13.	Seat switch		Remain seated at all times when operating the roller. If the operator stands up during operation, a buzzer sounds. After 4 seconds the brakes are activated and the engine stops.
14.	Vibration On/Off. Switch		When the switch for vibrations in the forward/reverse lever is pressed and released, the vibrations are engaged. Press the switch again to disengage the vibrations.
16.	Control, engine speed		Pull the lever up to obtain idling speed. Move the lever down to obtain working speed.
17.	Sprinkler timer (Optional)		Stepless regulation of the water flow from 0-100%. Only functions where AUTO (9) is depressed.

Electrical system

Relays and fuses on the machine (Alternative 1)

The figure shows the positions of the various fuses and relays. The table below gives their amperage and function. All fuses are flat pin fuses.

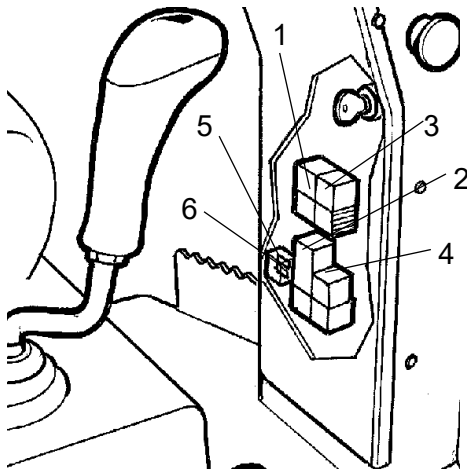


Fig. Control column

(Alternative 1)

Relays

1.	K1	Starting	12V 30A
2.	K2	Start, vibration, brake	12V 15A
3.	K22	Cooling fan, hydraulic system (Option)	12V 30A
4.	K20	Drive restriction relay	12V 10A

Fuses

5.	7.5A	Start/stop valve, Fuel pump, Restriction relay, VBS relay, Vibration
6.	15A	Horn, Backup alarm, Fan (Option)

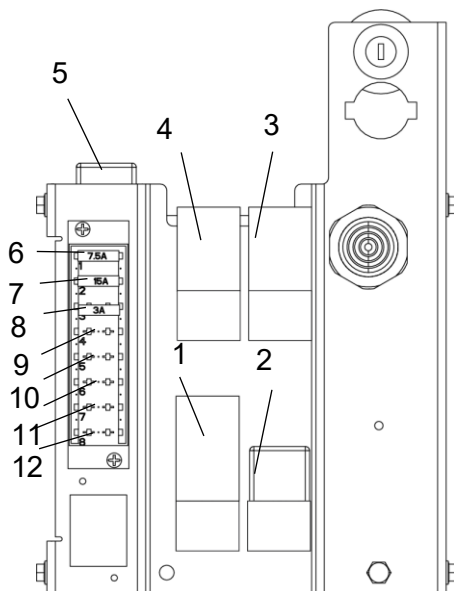


Fig. Manöverpelare (Alternativ 2)

(Alternative 2)

Relays

1.	K2	Start, Vibration, Brake	15A
2.	K20	Drive restriction relay	10A
3.	K22	Cooling fan, hydraulic system (Option)	30A
4.	K1	Starting	30A

Fuses

5.	F1.1	Start	7.5A
6.	F1.2	Horn, Backup alarm, Electric fan, Electric cooling of hydraulic oil	15A
7.	F1.3	Start relay, Time relay, Elektric fuel pump, Stop valve, Brake valve, Vibration valve (front drum)	3A
8.	F1.4	Reserve	
9.	F1.5	Reserve	
10.	F1.6	Reserve	
11.	F1.7	Reserve	
12.	F1.8	Reserve	

Operation

Before starting

Master switch - Switch on

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



The engine cover must be unlocked when operating, so that the battery can be quickly disconnected if necessary.

On machine equipped with battery disconnecter

The battery disconnecter is located on the left side of the engine compartment.

Turn the key (1) to the On position.

The roller is now supplied with power.

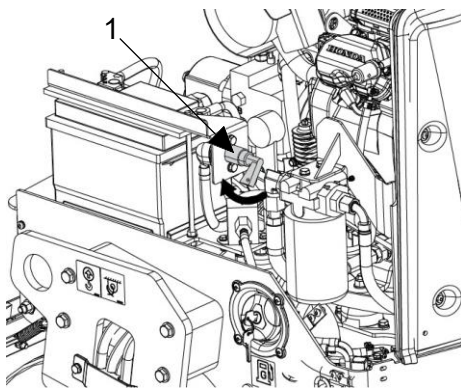


Fig. Batteriutrymme
1. Batterifrånskiljare
(placerad på höger sida av batteriet)

On machine without battery disconnecter

Attach the red cable lug (2) to the positive terminal of the battery.

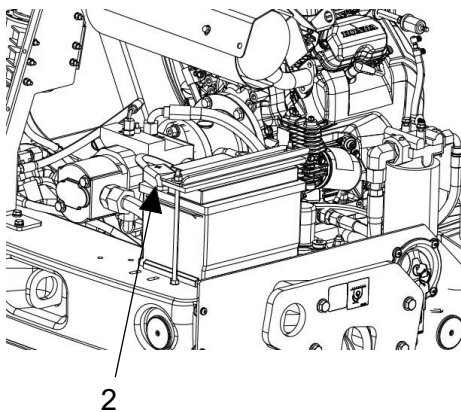


Fig. Battery compartment
2. Cable lug

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 lengthways (1).

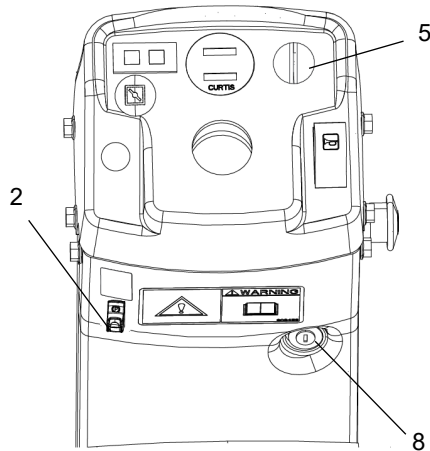


Fig. Operator's seat
1. Length adjustment

Sprinkler - Check



Make sure that the parking brake (2) is activated.



Set the knob (5) for the sprinkler in the open position and check that the drums are watered.

Fig. Control panel
- Non-pressurized sprinkler system
2. Parking brake
5. Flow switch, sprinkler
8. Ignition switch

On machine with pressurized sprinkler system:

Turn the starter switch (8) and start the sprinkler pump with the switch (9).

Check that the drums are watered.

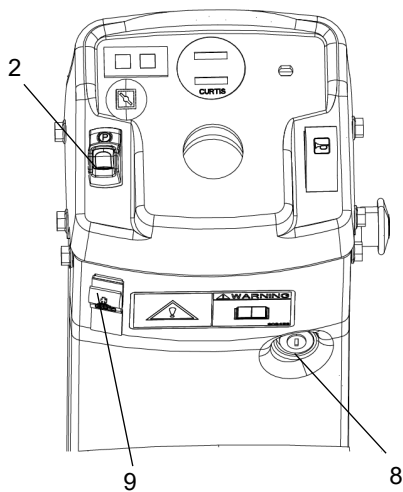


Fig. Control panel
- Pressurized sprinkler system
2. Parking brake
8. Ignition switch
9. Flow switch, sprinkler

Parking brake



**Activate the parking brake (2)
before leaving the machine.**

The machine can be started with the parking brake deactivated.

Emergency stop

The machine can only be started if the emergency stop (7) is deactivated.

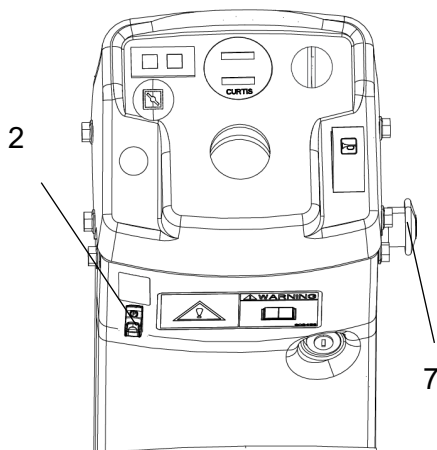


Fig. Control panel
- Non-pressurized sprinkler system
2. Parking brake
7. Emergency stop

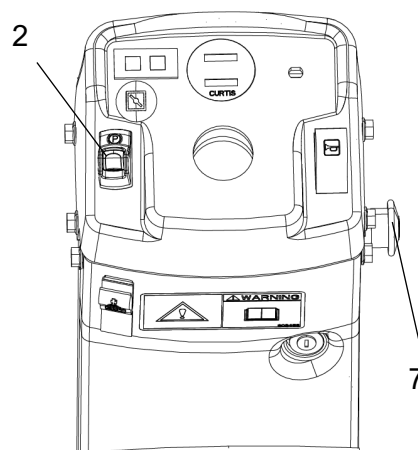


Fig. Control panel
- Pressurized sprinkler system
2. Parking brake
7. Emergency stop

Interlock

The roller is equipped with Interlock.

The diesel engine will switch off if the operator gets off the seat when going forwards/backwards.

If the control is in neutral when the operator stands up a buzzer will go on until the parking brake button is activated.

If the parking brake remains inactive, the diesel engine turns off.

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

The diesel engine will switch off immediately if for any reason the forward/reverse lever is moved out of neutral when the operator is not sitting down and the parking brake button has not been activated.



Sit down for all operations!

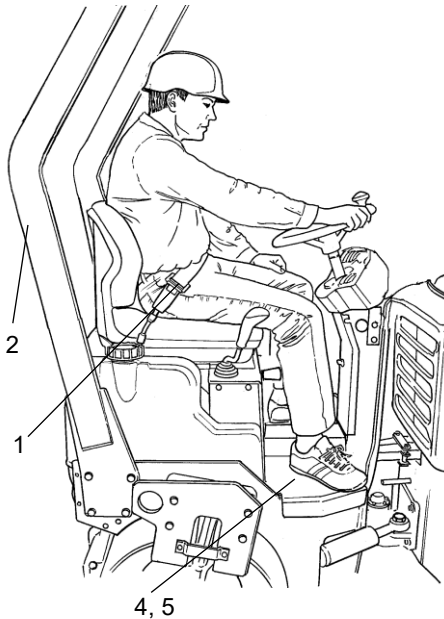
Operator position

Fig. Operator's seat

- 1. Seat belt
- 2. ROPS
- 4. Rubber element
- 5. Anti-slip



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.



Machines with folding ROPS must always be operated with the ROPS raised and locked in position.



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.



Inspect the ROPS for damages. Contact your supervisor for further actions if damages are detected.

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

View

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

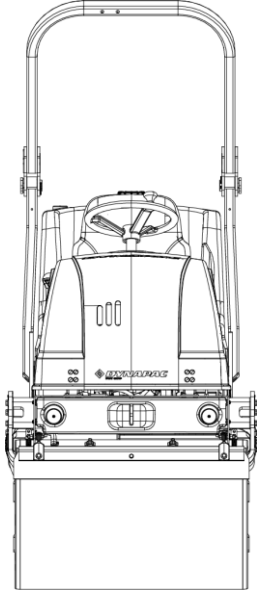


Fig. View

Starting

Starting the engine

Make sure that the parking brake (2) is activated.

Sit down in the operator's seat and set the forward/reverse lever (12) in neutral. You cannot start the gasoline engine with the lever in any other position.

Set the RPM control (16) to idle.

For cold start: Pull out the choke (11) and turn the ignition key to position II. Check that the warning lamps on the control panel are working. Turn the ignition key (8) to the right. As soon as the engine has started, release the ignition key.



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

Warm up the engine at idling speed for a few minutes, although longer if ambient temperature is below +10 C (50 F). Push in the choke as soon as possible.

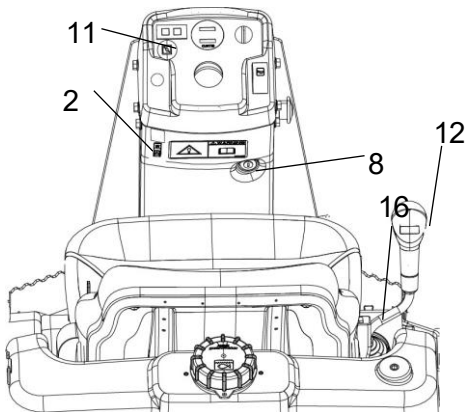


Fig. Control panel
- Non-pressurized sprinkler system
 2. Parking brake
 8. Starter switch
 11. Choke
 12. Forward/Reverse lever
 16. Speed control

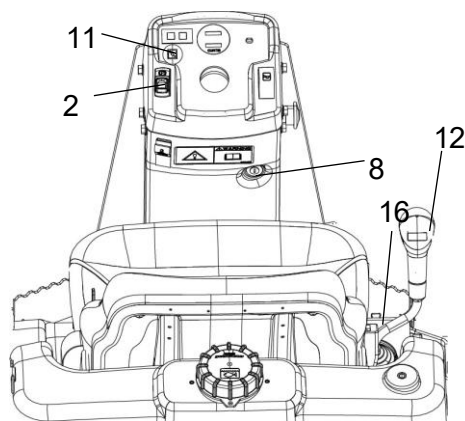


Fig. Control panel
- Pressurized sprinkler system
 2. Parking brake
 8. Starter switch
 11. Choke
 12. Forward/Reverse lever
 16. Speed control

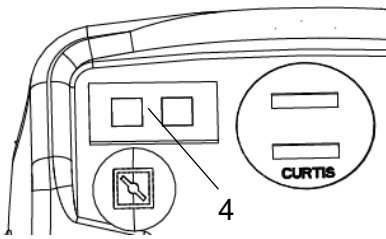


Fig. Control panel
4. Parking brake, warning lamp

When the engine is warm, check that the parking brake warning lamp (4) is still lit.



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.

Driving

Operating the roller

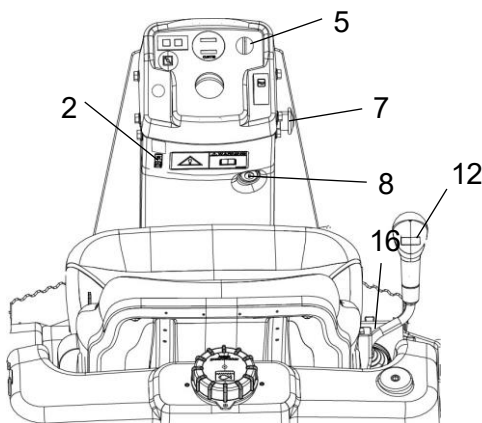


Fig. Control panel
- Non-pressurized sprinkler system
2. Parking brake
5. Flow switch, sprinkler
7. Emergency stop
8. Starter switch
12. Forward/Reverse lever
16. Speed control



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

- Move the speed control (16) down to its working position.
- Deactivate the parking brake (2). Be prepared that the roller can move.
- 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 (5).



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

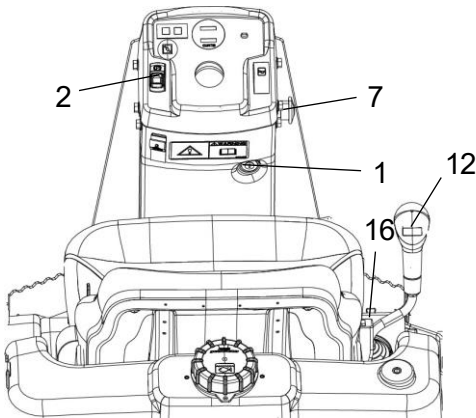


Fig. Control panel
 2. Parking brake
 5. Sprinkler knob
 7. Emergency stop
 8. Starter switch
 12. Forward/Reverse lever
 16. Speed control

- Carefully move the forward/reverse lever (12) 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.



Test the function of the reserve brake by activating the parking brake (2) while the roller is moving slowly forwards and backwards.

- Check when operating that the warning lamps do not come on.

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 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.

If a function error is detected when testing the emergency stop, this should be replaced immediately.



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.

Vibration

Manual vibration - Switching on



Vibration should not be active when the roller is stationary. This can damage both the surface and the machine.

Engage and disengage vibration using the switch (14) on the underside of the forward/reverse lever.

Always switch off vibration before the roller comes to a standstill.

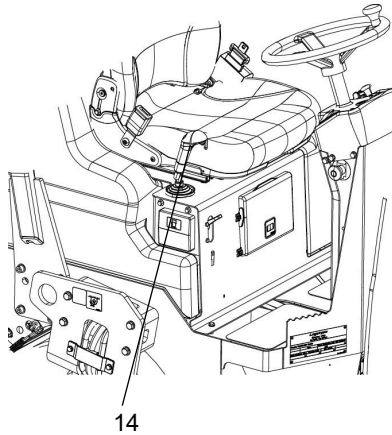


Fig. Forward/Reverse lever
14. Switch, vibration On/Off

Braking

Service brake



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.

- Press the switch (14) to switch off the vibration.
- Move the forward/reverse lever (12) to the neutral position to stop the roller.



Never leave the operator platform without activating the parking brake (2).

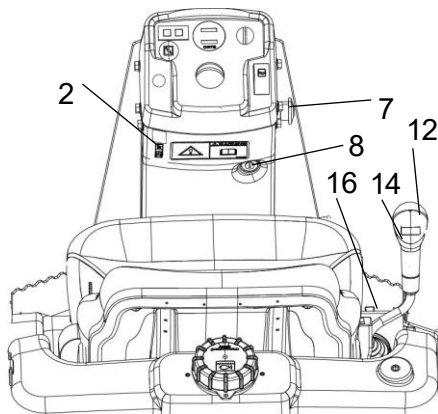


Fig. Control panel
 - Non-pressurized sprinkler system
2. Parking brake
7. Emergency stop
8. Starter switch
12. Forward/Reverse lever
14. Vibration On/Off
16. Engine speed control

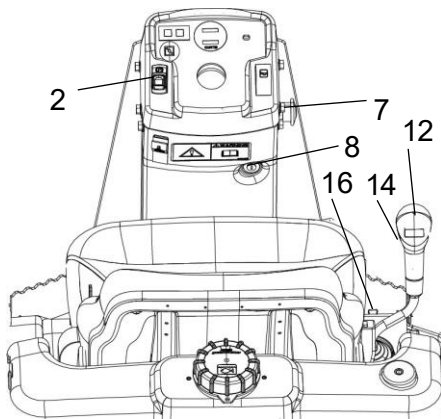


Fig. Control panel
 - Pressurized sprinkler system
 2. Parking brake
 7. Emergency stop
 8. Starter switch
 12. Forward/Reverse lever
 14. Vibration On/Off
 16. Engine speed control

Reserve brake

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

A disc brake in each drum motor acts as reserve brake when in motion and as a parking brake when stationary.



To brake in an emergency situation, press in the emergency stop (7), hold the steering wheel firmly and be prepared for a sudden stop.

- After braking, return the forward/reverse lever to the neutral position and pull out the emergency stop (7).



Activate the parking brake (2) before leaving the machine.

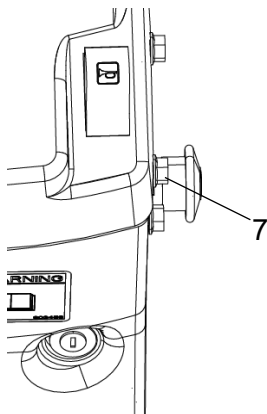


Fig. Emergency stop

Emergency stop

- The emergency stop is activated by pressing the button (7).
- Hold the steering wheel firmly and brace yourself for a sudden stop.
- The brake is applied and the engine stops.

After an emergency stop, return the forward/reverse lever to neutral and deactivate the emergency stop by pulling out the button (7).

- Återför fram-/backreglaget till neutralläge
- Avaktivera nödstoppet genom att dra ut knappen (7).

Switching off

- Turn the engine speed control (16) back to idling. Allow the engine to idle for few minutes to cool.
- Låt motorn gå på tomgång några minuter för nedkylning.
- Activate the parking brake (2).
- Turn the starter switch (8) to the left to shut off position.

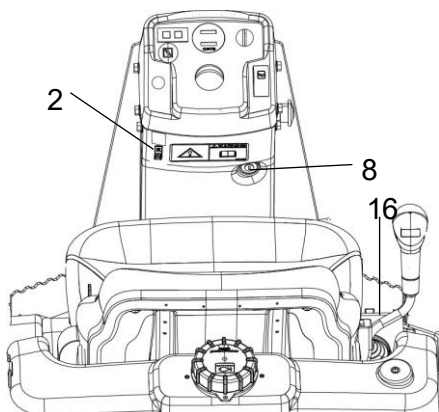


Fig. Control panel
- Non-pressurized sprinkler system
2. Parking brake
8. Starter switch
16. Engine speed control

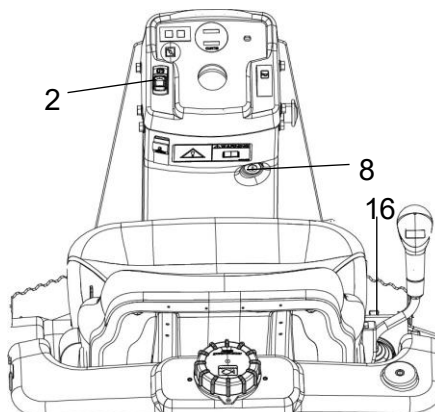


Fig. Control panel
- Pressurized sprinkler system
2. Parking brake
8. Starter switch
16. Engine speed control

Parking

Chocking the drums

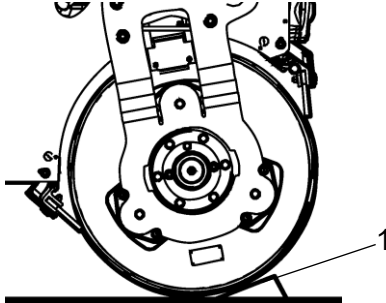


Fig. Set-up
1. Chocks



Never leave the operator platform without activating the parking brake.



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



Keep in mind that there is a risk of freezing during the winter. Drain the water tanks and water lines. Fill antifreeze in the engine cooling system. Also see maintenance instructions.



Before using the roller again, make sure that the engine is switched off and the parking brake is activated. The brake chocks can then be removed.

Master switch - Shut-off

The power to the roller should be disconnected at the end of the working shift.

This will prevent battery discharging and will also make it difficult for unauthorized persons to start and operate the machine. Lock also the engine cover.

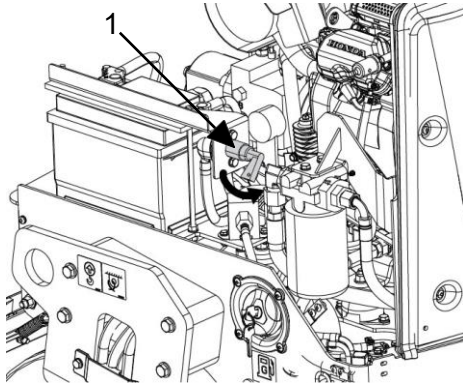


Fig. Batteriutrymme
1. Batterifrånskiljare
(placerad till höger om batteriet)

On machines equipped with battery disconnecter

- Put the battery disconnecter (1) in the Off position and remove the key.

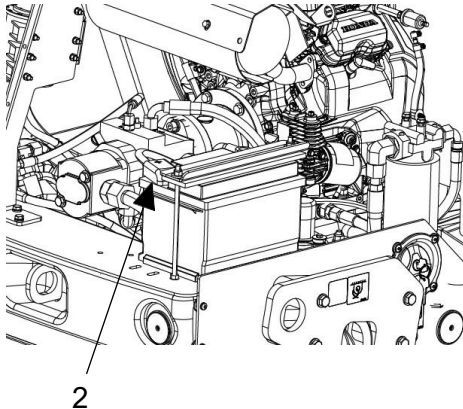


Fig. Battery compartment
2. Cable lug

On machines without battery disconnecter

- Remove the red cable lug (2) from the plus terminal on the battery.

Parking

Chocking the drums

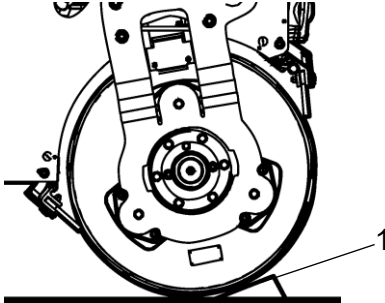


Fig. Set-up
1. Chocks



Never leave the operator platform without activating the parking brake.



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



Keep in mind that there is a risk of freezing during the winter. Drain the water tanks and water lines. Fill antifreeze in the engine cooling system. Also see maintenance instructions.



Before using the roller again, make sure that the engine is switched off and the parking brake is activated. The brake chocks can then be removed.

Long-term parking



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

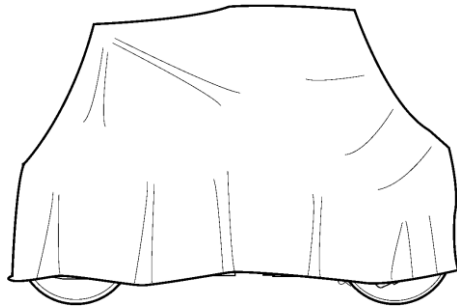


Fig. Roller weather protection

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, grease the cable connectors (terminals) and trickle charge the battery once a month. The battery is otherwise maintenance free.

Air cleaner, exhaust pipe

* Cover the air cleaner (see under the heading 'Every 50 hours of operation' or 'Every 500 hours of operation') or its inlet 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.

Grease the steering cylinder piston with conservation grease.

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

Engine coolant

Check that the coolant mix are within recommended levels and have a freezing temperature lower than expected lowest temperature during the storage period.

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.

Miscellaneous

Locking the articulation



Before lifting the roller the steering joint must be locked to prevent it turning.

Turn the steering wheel to the straight ahead position.

Switch off the machine. Apply the parking brake.

Raise the locking arm (1) and turn 180 degrees downward. Ensure that the cotter pin (2) is guided into its lower position correctly for locking the articulation.

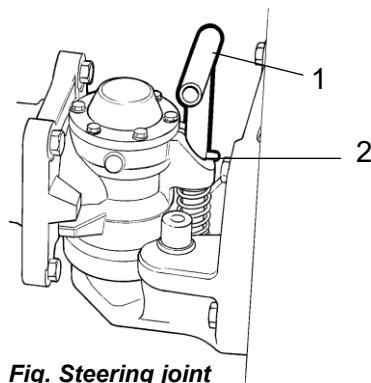


Fig. Steering joint
1. Locking arm
2. Cotter pin in locked position

Lifting the roller



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 be dimensioned and used in accordance with the applicable safety regulations for lifting devices.



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

Weight: refer to the hoisting plate on the roller

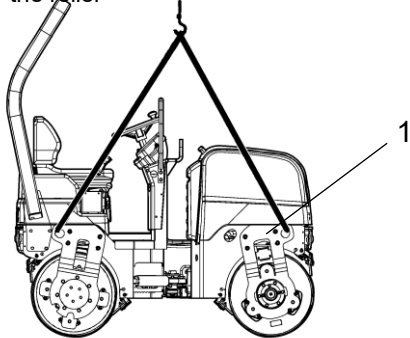


Fig. Roller prepared for lifting
1. Hoisting plate

Unlocking the articulation



Remember to unlock the articulation before operating.

Raise the locking arm (1) and turn it 180 degrees upward. Check that the cotter pin (2) is guided correctly into position for unlocking the articulation.

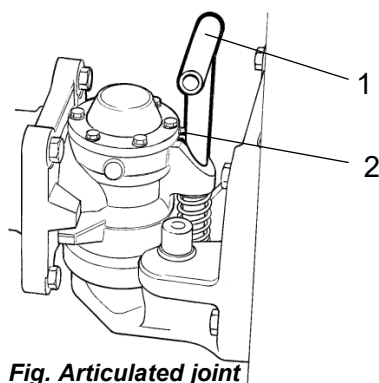


Fig. Articulated joint
1. Locking arm
2. Cotter pin in open position

Transport

Tie-down and secure the machine according to the Cargo Securing Certificate for the specific machine if this is available and applicable.

If not, tie down and secure the machine according to the cargo securing rules that are valid for the country where the transport takes place.



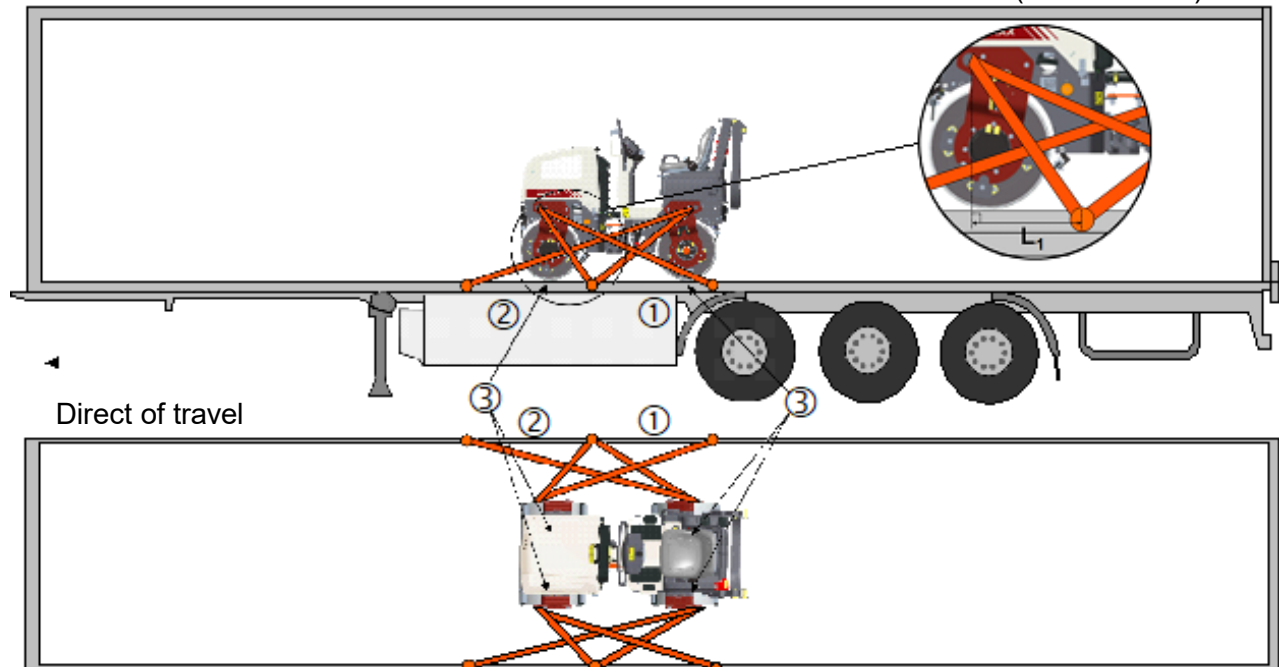
Never lash over the machine's articulated joint, nor over the machine's operator platform.

Before securing the machine ensure that :

- the parking brake is applied and in good working condition
- the articulated joint is in closed position
- the machine is centered laterally on the platform
- the lashings are in good condition and fulfills the corresponding rules for transport securing.

Securing CC900 G for loading

Securing of a double vibratory roller of model CC900 G from Dynapac loaded on a trailer for transport on road and in the Baltic / North sea (sea area A/B).



- 1 - 2 = double lashings, i.e. one lashing with two parts secured to two different lashing mounts on the trailer, symmetrically located on the right and left sides.
 3 = rubber friction pads

The lashings' permitted distance interval in meters		
(1 - 2: Double lashings, LC at least 1.6 tonnes (1600 daN)		
Double L_1	Double L_2	
0.3 - 2.5	0.1 - 2.5	

L_1 - L_2 are the longitudinal distances between the lashing points on the roller and lashing points on the platform.

Load carrier

Ensure that:

- When loaded, the vibratory roller is centered laterally on the platform (± 5 cm).
- The parking brake is applied and in good working condition, and the articulated joint lock is closed.

- The drum is placed on a rubber liner, so that the static friction between the surfaces is at least 0.6.
- The contact surfaces must be clean, wet or dry, and free from frost, ice and snow. If there is a risk of frost, ice and/or snow the platform has to be salted.
- The lashing mounts on the load carrier have LC/MSL at least 2 tonnes.

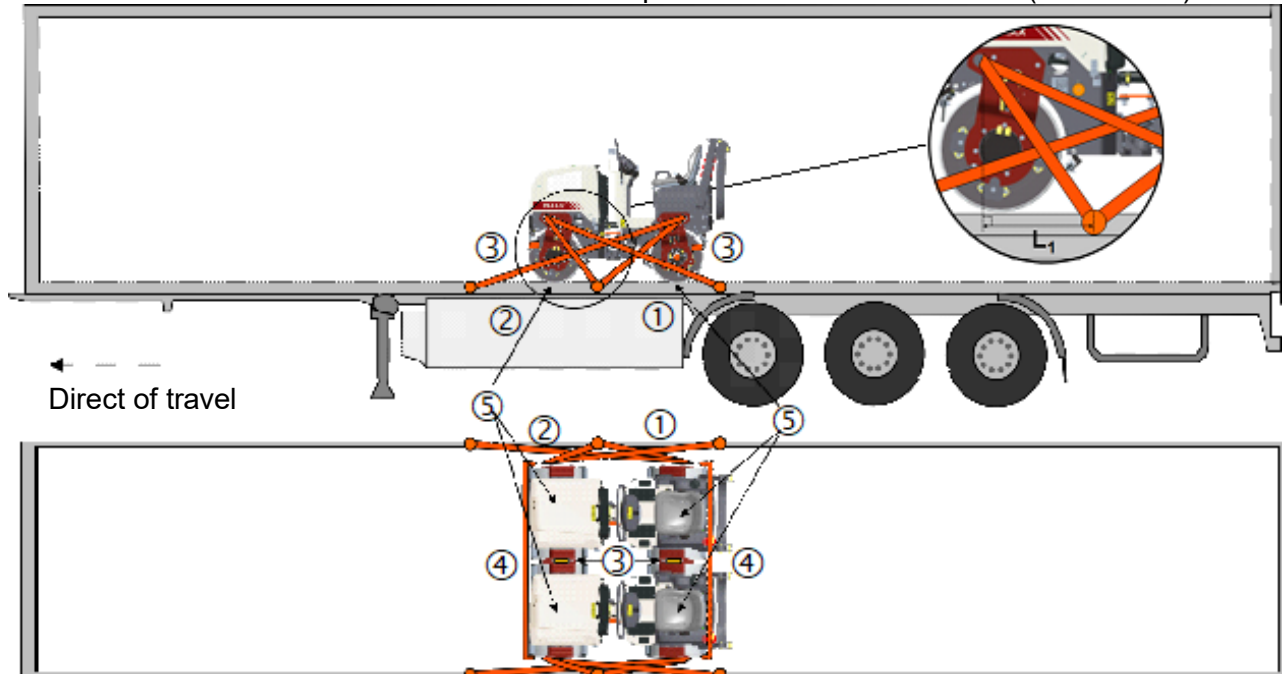
Lashings

Ensure that:

- The lashings comprise a lashing strap or chain with a permitted load (LC/MSL) of at least 1.6 tonnes (1,600 daN) and the lashings are well pre-tensioned during the entire transport.
- Each of lashings 1-2 is either a double or two single lashings. A double lashing runs in a sling through a lashing point or around a machine part and down into two different mounts on the platform.
- Lashings in the same direction are placed in different lashing mounts on the trailer. Lashings that are pulled in opposite directions may be placed in the same lashing mount, however.
- The lashings are as short as possible.
- The lashing hooks must not lose grip if the lashings become slack.
- The lashings are protected against sharp edges and corners.
- The lashings are located symmetrically in pairs on the right and left sides.

Securing CC900 G for loading (Side along the trailer)

Securing of two CC900 G vibratory rollers from Dynapac loaded side by side along a trailer for transport on road and in Baltic sea (Sea area A).



- 1 - 2 = double lashings, i.e. one lashing with two parts secured to two different lashing mounts on the trailer. Symmetrically located on the right and left sides.
- 3 = wooden battens used as spacers between the rollers, kept in place by sufficient means
- 4 = the two rollers are tied together to one unit.
- 5 = rubber friction pads

The lashings' permitted distance interval in meters		
(1 - 2: Double lashings, LC at least 1.6 tonnes (1600 daN))		
Double L_1	Double L_2	
0,1 - 2,5	1,0 - 2,5	

L_1 and L_2 are the longitudinal distances between the lashing points on the roller and lashing points on the platform.

Load carrier

Ensure that:

- When loaded, the vibratory roller is centered laterally on the platform (± 5 cm).
- The parking brake is applied and in good working condition, and the articulated joint lock is closed.
- The drum is placed on a rubber liner, so that the static friction between the surfaces is at least 0.6.
- The contact surfaces must be clean, wet or dry, and free from frost, ice and snow. If there is a risk of frost, ice and/or snow the platform has to be salted.
- The lashing mounts on the load carrier have LC/MSL at least 2 tonnes.

Lashings

Ensure that:

- The lashings comprise a lashing strap or chain with a permitted load (LC/MSL) of at least 1.6 tonnes (1,600 daN) and the lashings are well pre-tensioned during the entire transport.
- Each of lashings 1-3 is either a double or two single lashings. A double lashing runs in a sling through a lashing point or around a machine part and down into two different mounts on the platform.
- Lashings in the same direction are placed in different lashing mounts on the trailer. Lashings that are pulled in opposite directions may be placed in the same lashing mount, however.
- Lashing 4 ties the two rollers together to one unit. The lashing is drawn from drum to drum or from lashing eye to lashing eye on the front part as well as the rear part of the rollers.
- The lashings are as short as possible.
- The lashing hooks must not lose grip if the lashings become slack.
- The lashings are protected against sharp edges and corners.
- The lashings are located symmetrically in pairs on the right and left sides.

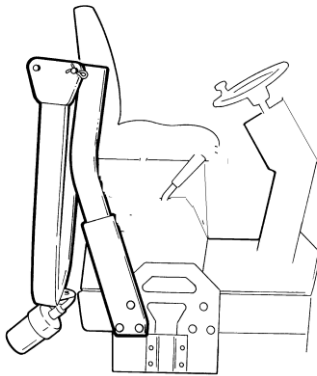


Fig. Retractable ROPS

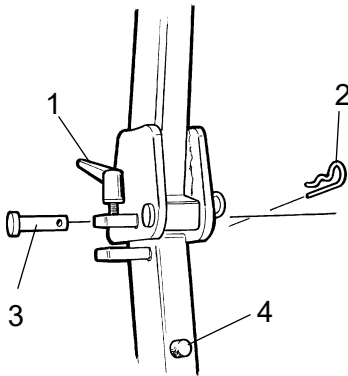


Fig. ROPS locking device
 1. Tensioning screw
 2. Pin
 3. Stud
 4. Rubber buffer

Retractable ROPS (Optional)

The machine can be equipped with retractable ROPS.



Risk of crush injury when raising and lowering ROPS.



If the roller is equipped with a retractable ROPS, the machine must only be operated when it is lifted up and locked.

To retract the ROPS, release the tensioning screw (1), and pull out the pin (2) and stud (3). Do the same on both sides. Lower the ROPS backwards if there is space.



Remember to dismantle the rotating warning light before lowering the ROPS.



After lowering the ROPS, replace the pin and stud.

To lift the ROPS proceed in the reverse order.



Always make sure the ROPS is locked in raised position before operation.

Grease the tensioning screw (1) and stud (3) periodically.

Towing/Recovering

The roller can be moved up to 300 meters (330 yards) using the instructions below.

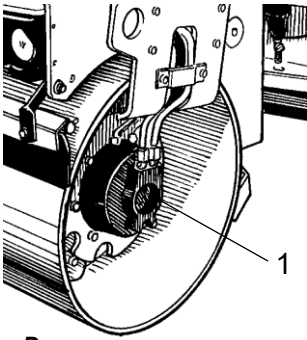


Fig. Drum
1. Propulsion motor,
 located left front and right rear.



Switch off the gasoline engine and activate the parking brake.

Chock the drum to prevent the roller from moving.

The roller can start moving when the brakes are disengaged.

Before towing of the roller, the brakes in each drive motor must be mechanically released, as described below.

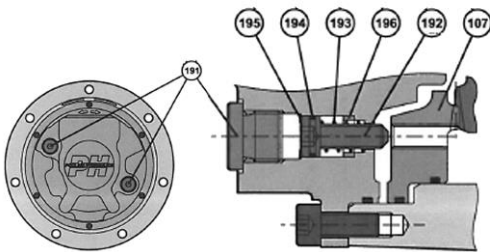
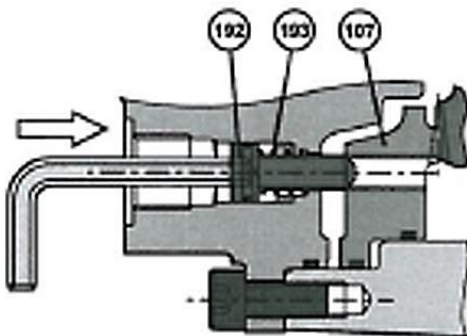


Fig. Releasing the brake

Releasing the brake

- Remove the 2 plugs (191).
- Press the screws (192) inwards to compress the springs (193) so that the screw reaches the brake (107) inner thread.
- Tighten the two screws (192) alternately a little at a time so that the brake piston (107) loose (screw approximately 2 turns).



Tightening the screws (192) too hard can damage the inner mechanism



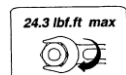
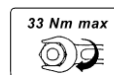
The machine should be started with reactivated brake.

Restored brake

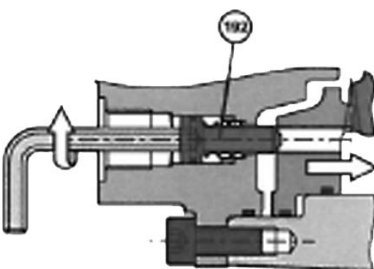
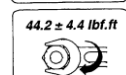
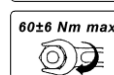
Undo the two screws (192) alternately, and then insert the plugs (191).

Tightening torque

Screws (192)



Plugs (191)



Towing the roller

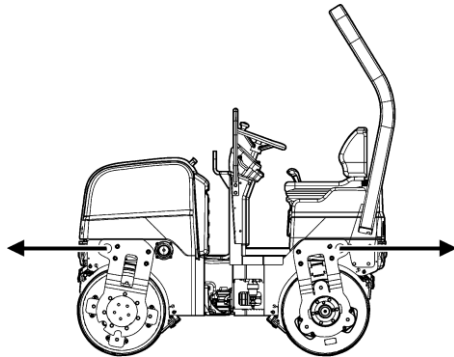


Fig. Towing the roller



A towing bar must be used when towing, as the roller has no brakes and can only be slowed and stopped by the vehicle towing the roller.



The roller must be towed slowly, max. 3 km/h (2 mph) and for short distances only, max. 300 m (1000 ft).

When towing/recovering a machine, the towing device must be connected to both lifting holes. Pulling forces shall act longitudinally on the machine as illustrated. Max total towing force 50.8 kN (11,430 lbf), 25.4 kN (5,715 lbf) per fork.



Reset the steps taken for towing as described in the towing instructions on the previous section.

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. Set the Emergency stop to its pulled-out 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 and make sure that the parking brake is deactivated.



8. **Drive the roller. Operate the forward/reverse lever with care.**



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

10. Use vibration only when the roller is in motion.
11. Check that the drums 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. Parking: - Switch off the machine and chock the drums.
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 reported immediately to the transport company, as this is not covered by the product warranty.

Warranty

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

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

CALIFORNIA**Proposition 65**

Decal and location of decal shown in section
Machine description.

 **WARNING:** Operating, servicing and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle. For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

Maintenance - Lubricants and symbols

Fluid volumes

Drum	3,5 liters	3,7 qts
Hydraulic reservoir	12 liters	3,2 qts
Gasoline engine		
- exclusive replacement of filter	1,5 liters	1,6 qts
- inclusive replacement of filter	1,8 liters	1,9 qts



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



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
	Drum, oil level		Recycling
	Lubricating oil		Fuel filter

	ENGINE OIL	Air temperature -15°C - +50°C (5°F-122°F)	Dynapac Engine 200	P/N 4812161855 (5 liters) P/N 4812161856 (20 liters) P/N DYNAPAC800 (4 liters) *
	HYDRAULIC FLUID	Air temperature -15°C - +40°C (5°F-104°F)	Dynapac Hydraulic 300	P/N 4812161868 (20 liters) P/N 4812161869 (209 liters) P/N DYNAPAC900 (18 liters) *
		Air temperature over +40°C (104°F)	Shell Tellus S2 V100	
	BIOLOGICAL HYDRAULIC FLUID, Bio-Hydr. PANOLIN	When it leaves the factory, the machine may be filled with biologically degradable fluid. The same type of fluid must be used when changing or topping up.	PANOLIN HLP Synth 46 (www.panolin.com)	
	BIOLOGICAL HYDRAULIC FLUID	When it leaves the factory, the machine may be filled with biologically degradable fluid. The same type of fluid must be used when changing or topping up.	BP Biohyd SE-S46	
	DRUM OIL	Air temp. -15°C - +40°C (5°F-104°F)	Dynapac Gear oil 300	P/N 4812161883 (5 liters), P/N 4812161884 (20 liters) P/N DYNAPAC100 (4 liters) *
		Air temp. 0°C (32°F) - above +40°C (104°F)	Shell Spirax AX 85W/140, API GL-5	
	FUEL	See engine manual. To comply with emission requirements for Honda GX630 you must use fuel with a low or extremely low sulphur content.	-	
	COOLANT	Anti-freeze protection down to about -37°C (-34.6°F)	Dynapac coolant 100 (mixed 50/50 with water)	P/N 4812161854 (20 liters)
	GREASE			SKF LGHB 2

*) For China market only.

Maintenance - Maintenance schedule

Service and maintenance points

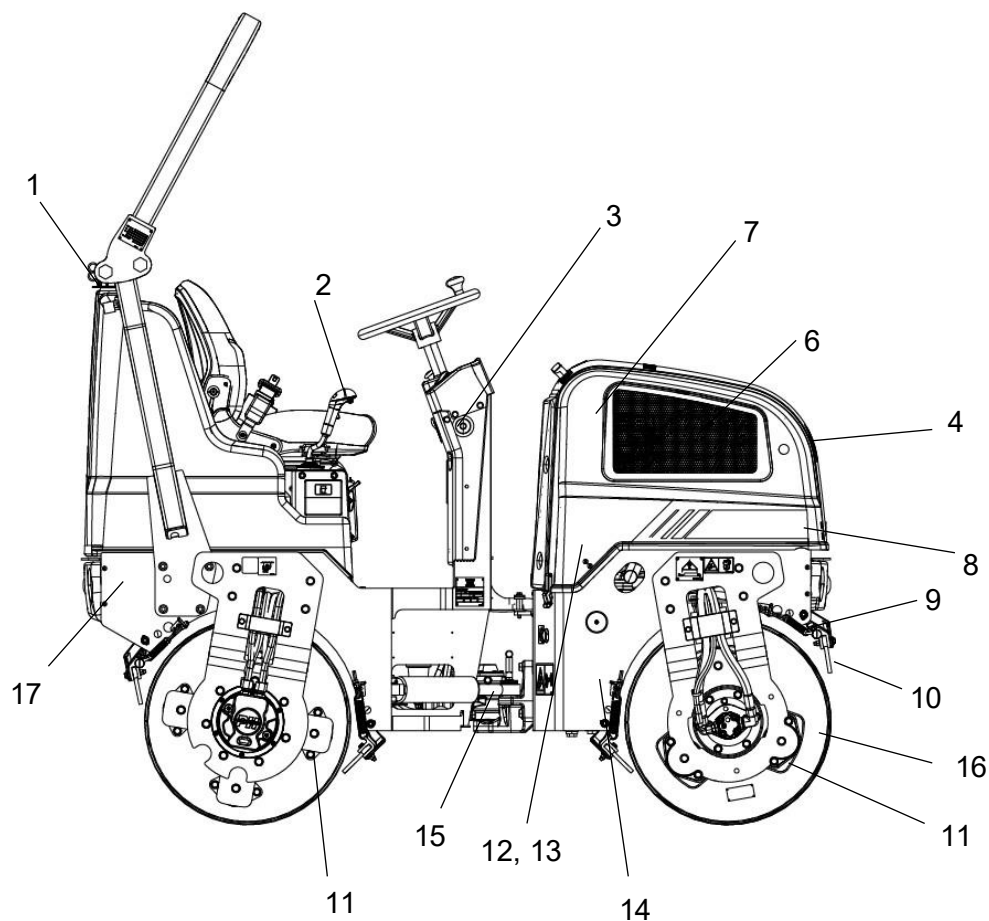


Fig. Service and maintenance points

- | | | |
|-------------------------------------|-------------------------------|----------------------------------|
| 1. Water tank, filling | 7. Air cleaner | 13. Hydraulic fluid, filling |
| 2. Forward/Reverse lever | 8. Battery (maintenance free) | 14. Fuel tank, filling |
| 3. Reserve/parking brake | 9. Sprinkler | 15. Steering joint |
| 4. Hydraulic fluid cooler, (option) | 10. Scrapers | 16. Front drum, filling with oil |
| 6. Gasoline engine | 11. Rubber element | 17. ROPS, (option) |
| | 12. Hydraulic fluid filter | |

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.

Specific maintenance and checks on gasoline engines must be carried out by the engine supplier's certified personnel.



Where both operational hours and time intervals are specified, maintenance should be carried out at the point in time that occurs first.

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	
6	Check the oil level in the engine	Refer to the engine manual
13	Check the hydraulic reservoir level	
14	Refuel	
1	Fill the water tank	
9	Check the sprinkler system	
4	Check for free circulation of cooling air	
10	Check the scraper setting	
	Check the warning lamps	
7	Check the engine's air cleaner	Refer to the engine manual
	Test the brakes	

After the first 20 hours of operation

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

Pos. in fig	Action	Comment
6	Change the engine oil	Refer to the engine manual
6	Change the engine's oil 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 !

	Action	Comment
12	Change the hydraulic fluid filter	

Every 100 hours of operation

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

Pos. in fig	Action	Comment
6	Check and adjust the spark plug	Refer to the engine manual

Every 50 hours of operation

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

Pos. in fig	Action	Comment
3	Test the brakes	
7	Clean the air cleaner	Refer to the engine manual
11	Check the rubber elements and bolted joints	
18	Check and lubricate drum bearing seat	

Maintenance - Maintenance schedule

Every 200 / 400 / 600 / 800 hours of operation

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

Pos. in fig	Action	Comment
6	Replace the spark plugs	Refer to the engine manual.
6	Check idling revs	Refer to the engine manual.
6	Check valve play	Refer to the engine manual.
6	Replace the fuel filter	Refer to the engine manual.
4	Clean the hydraulic fluid cooler	Accessory (n/a for China market)
6	Change the engine oil	Refer to the engine manual.
6	Change the oil filter	Refer to the engine manual.
	Check lubrication of controls and pivots	Lubricate as necessary
	Replace valve cover gasket	Refer to the engine manual.

Every 500 hours of operation

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

Pos. in fig	Action	Comment
6	Clean the combustion chamber	Refer to the engine manual
16	Check the oil level in the front drum	
13	Check the hydraulic reservoir cover/breather	
15	Check the condition of the articulation	
7	Replace the air cleaner insert	Refer to the engine manual

Every 1000 hours of operation

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

Pos. in fig	Action	Comment
6	Replace the spark plugs	Refer to the engine manual.
6	Replace the fuel filter	Refer to the engine manual.
4	Clean the hydraulic fluid cooler	Accessory
	Check lubrication of controls and pivots	Lubricate as necessary
16	Check the oil level in the front drum	
15	Check the condition of the articulation	
7	Replace the air cleaner insert	Refer to the engine manual.
12	Change the hydraulic fluid filter	
6	Change the engine oil	Refer to the engine manual.
6	Change the oil filter	Refer to the engine manual.
	Check engine fuel filter	
13	Check the hydraulic reservoir cover/breather	
6	Check idling revs	Refer to the engine manual.
6	Check valve play	Refer to the engine manual.
	Replace valve cover gasket	Refer to the engine manual.
6	Clean the combustion chamber	Refer to the engine manual.

Maintenance - Maintenance schedule

Every 2000 hours of operation

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

Pos. in fig	Action	Comment
6	Replace the spark plugs	Refer to the engine manual
6	Replace the fuel filter	Refer to the engine manual
4	Clean the hydraulic fluid cooler	Accessory
	Check lubrication of controls and pivots	Lubricate as necessary
15	Check the condition of the articulation	
6	Change the engine oil	Refer to the engine manual
6	Change the oil filter	Refer to the engine manual
	Check engine fuel filter	
13	Check the hydraulic reservoir cover/breather	
16	Change the oil in the front drum	
1	Drain and clean the water tank	
12	Change the hydraulic fluid filter	
6	Check idling revs	Refer to the engine manual
6	Check valve play	Refer to the engine manual
	Replace valve cover gasket	Refer to the engine manual
6	Clean the combustion chamber	Refer to the engine manual
7	Replace the air cleaner insert	Refer to the engine manual
13	Change the hydraulic fluid	
6	Drain and clean the fuel tank	Refer to the engine manual
6	Check the fuel line	Refer to the engine manual

Service - Checklist

Pos	Action	After the first 50 hours of operation (Daily)	Every 100 hours of operation (Weekly)	Every 200 hours of operation	Every 400 hours of operation	Every 600 hours of operation	Every 800 hours of operation	Every 1000 hours of operation	Every 1200 hours of operation	Every 1400 hours of operation	Every 1600 hours of operation	Every 1800 hours of operation	Every 2000 hours of operation	NOTE
6	Check the engine oil level	○												Refer to the engine manual
13	Check/Change fluid level in hydraulic reservoir	○												
	Check the warning lamps	○												
1	Fill the water tank	●												
9	Check the sprinkler system	○												
4	Check for free circulation of cooling air	○												
7	Check the air cleaner indicator	○												
4	Check/Change coolant level	○												
10	Check the scraper setting	○												Change the coolant every other year
14	Refuel	●												
3	Test the brakes	○												
6	Change the engine oil and oil filter	●												Refer to the engine manual
12	Change the hydraulic fluid filter	●												Refer to the engine manual
6	Change the fuel filter	●												Refer to the engine manual
	Check the belt tension on the hydraulic pump drive belt	○												Refer to the engine manual
6	Cleaning the fuel filter	○												
7	Clean the air cleaner	○												
11	Check the rubber elements and bolted joints	○												
6	Check fan belt tightness	○												
	Drain water separator	○												
	Check and lubricant drum bearing seat	○												
2	Check lubrication of controls and pivots	○												Lubricate as necessary
4	Clean the outside / inside of radiator core	○												In duty environments, as necessary
4	Check of radiator hoses and clamp hands	○												
6	Check of intake air line	○												
	Clean of water separator in fuel tank	○												
6	Check the tension and condition of the fan belt	○												Refer to the engine manual
7	Replace the filter element in the air cleaner	○												Refer to the engine manual
15	Check the condition of the articulation	○												
16	Check the oil level in the front drum	○												
	Replace valve cover gasket	○												
1	Drain and clean the water tank	○												
6	Change fan belt	○												
6	Change the engine breather valve	○												Refer to the engine manual
6	Change the engine valve clearance	○												
13	Change hydraulic fluid	○												
14	Drain and clean the fuel tank	○												
16	Change the oil in the front drum	○												
18	Change water in the rear drum	○												
	Replace the hydraulic pump drive belt	○												
6	Check coolant freezing point	○												
13	Check the hydraulic reservoir cover/breather	○												
6	Check the engine valve clearance	○												

○ Check ● Change

Maintenance - Every 10h

Every 10 hours of operation (Daily)



**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.**

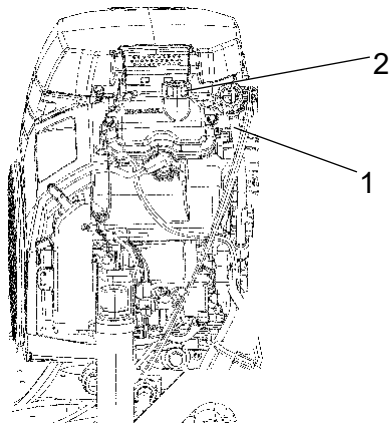


Fig. Engine
1. Dipstick
2. Filler plug

Gasoline Engine - Checking the oil level

Ensure that the engine cover is fully open when work is carried out under the cover.

- Open the engine cover lock and lower the engine cover forwards.
- Check the oil level using the dipstick (1). The level should be between the marks.
- If the level is near the lower mark, top off with fresh engine oil via the filler cap (2). See under the heading lubricants for the correct oil grade.



**Never overfill with oil.
It can damage the engine.**

**Hydraulic reservoir, Level check - Filling**

- Wipe the sight glass (1) clean.
- Make sure that the oil level is in the middle of the sight glass.
- If necessary, top up with fresh hydraulic fluid through the filler hose (2).

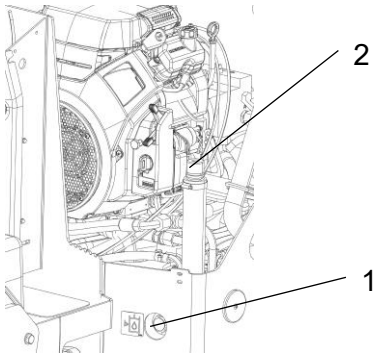


Fig. Hydraulic reservoir
 1. Sight glass
 2. Filler hose

- See under the heading 'Lubricants' for the correct fluid grade.



Refueling

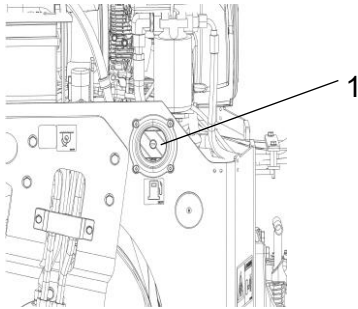


Fig. Left side
 1. Filler pipe / cap

- Refuel the tank every day before starting work. Open the tank cap and fill through the filler pipe (1).
- Öppna tanklocket och fyll på genom påfyllningsröret (1).



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



Stop the engine. Short-circuit (press) the filler gun against the filler pipe (1) while refuelling.

The tank holds 23 liters (31.7 gal) of fuel.



Water tank - Filling



Unscrew the tank cap (1), and fill with clean water.

- Fill the water tank; it holds 175 liters.



Only additive: A small amount of environmentally friendly antifreeze.

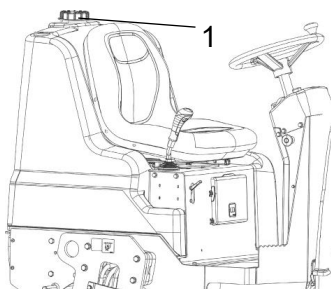


Fig. Water tank
 1. Tank cap

Sprinkler system - Check, cleaning

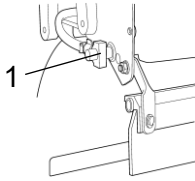


Fig. Sprinkler system

1. Sprinkler pipes with holes for water.

- Check that the holes in the sprinkler pipe (1) are not clogged, clean if necessary.
- Rengör vid behov.

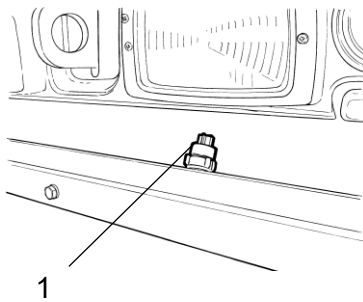


Fig. Sprinkler system - Pressurized

1. Sprinkler nozzles

On machine with pressurized sprinkler system:

- Check that the holes in the sprinkler nozzles (1) are not blocked. Clean where necessary.
- Rengör vid behov.
- Check that the water filter (2) is not blocked. Clean where necessary.
- Rengör vid behov.
- Clean the water filter by unscrewing the filter's lower section, and clean the strainer and filter housing.
- Rengör sil och filterhus.
- Reassemble in the reverse order.

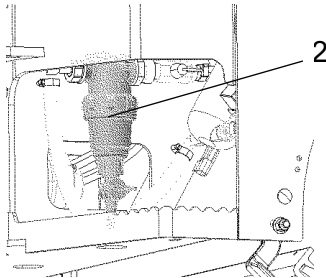


Fig. Sprinkler system - Pressurized

2. Water filter

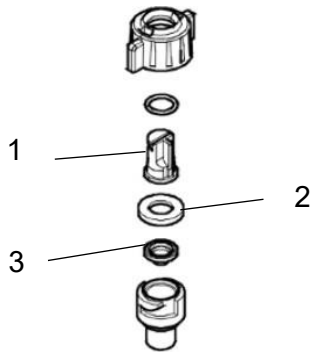


Fig. Nozzle
 1. Nozzle
 2. Gasket
 3. Filter

Sprinkler system/Drum Cleaning of sprinkler nozzle

Dismantle the blocked nozzle by hand.

Blow the nozzle (1) and fine filter (3) clean using compressed air. Alternatively, fit replacement parts and clean the blocked parts later on.

Nozzle	Colour	l/min (at 2.0 bar)	gal/min (at 40 psi)
Standard	yellow	0.63	0.20
Option	blue	0.98	0.30
Option	red	1.31	0.40
Option	brown	1.63	0.50

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

- Start the system and check the function.



**When working with compressed air.
 Use the following protective equipment:**



Protective gloves



Eye protection



Ear protectors

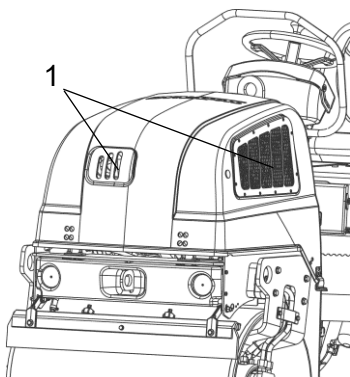


Fig. Engine cover
 1. Cooling air grille/engine

Air circulation - Check

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

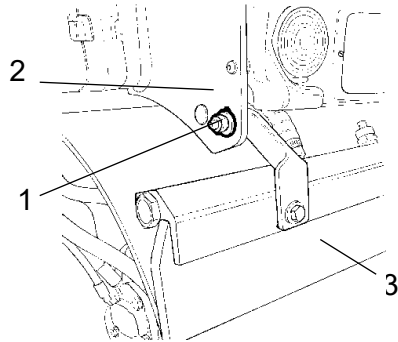


Fig. Drum
1. Scraper blade
2. Adjusting screws
3. Frame side

Scrapers, fixed Checking - Setting

- Make sure that the scrapers are undamaged.
- Adjust the scrapers so that they are 1-2 mm from the drum.
- For special asphalt compounds, it may be better if the scraper blades (1) lie lightly against the drums.
- Asphalt remnants can accumulate on the scraper and affect the contact force.
Clean as required.
- Loosen the screws (2) to adjust the contact pressure of the scraper blade (1) against the drum.
- Lock this setting by tightening the lock nut (2) against the frame side (3).
- Adjust the contact surface on both scraper attachments.
- Remember to tighten all the screws after any adjustment.

Scrapers, spring-action (Optional) Checking - Adjustment



The scrapers must be lifted from the drum during transport.

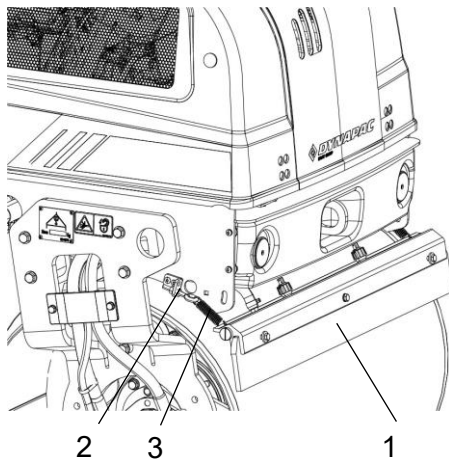


Fig. Spring-action scrapers
1. Scraper blade
2. Adjusting screws
3. Springs

Warning lamps - Check

- Check that the warning lamp (4) on the control panel is functional.

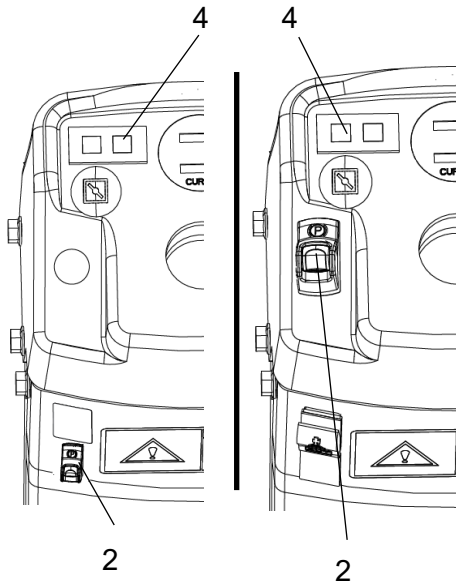


Fig. Control panel
2. Parking brake
4. Parking brake warning lamp

Brakes - Check



Check operation of the brakes as follows:



Checking the parking brake

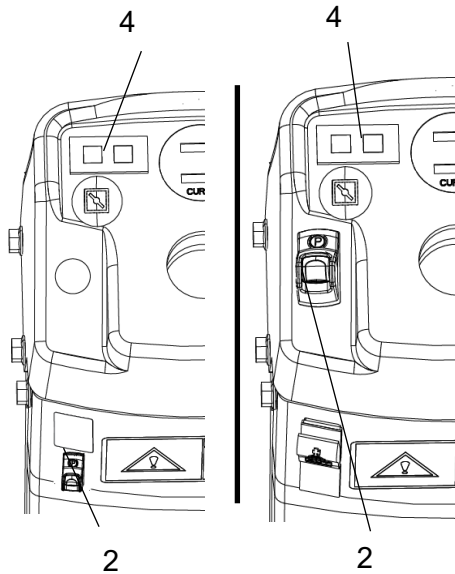


Fig. Control panel
2. Parking brake
4. Parking brake lamp

- Drive the roller slowly forward. Hold the steering wheel firmly and brace yourself for a sudden stop.
- Enable the parking brake (2). The brake warning lamp (4) should light and the roller should stop.
- After testing the brakes, set the forward/reverse lever in neutral.
- Reset the parking brake (2).
- The roller is now ready for operation.

Refer also to the section in the manual on operation.



Checking the emergency stop

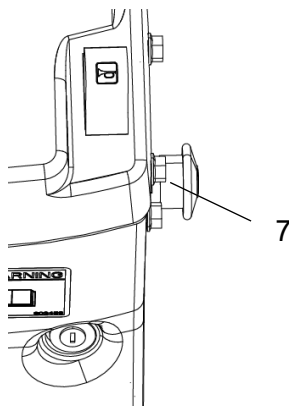


Fig. Emergency stop

- Drive the roller slowly forward. Hold the steering wheel firmly and brace yourself for a sudden stop.
- Press the emergency stop (7). The roller will stop abruptly and the engine will be switched off.
- After testing the brakes, set the forward/reverse lever in neutral.
- Pull out the emergency stop (7) and start the engine.
- The roller is now ready for operation.

Refer also to the section in the manual on operation.

Air cleaner - check

- Check that hoses and couplings are not leaking and that the air cleaner cover is on properly.
- Kontrollera att luftrenarlocket sitter ordentligt på.
- Clean the air cleaner when operated in extremely dusty environments.

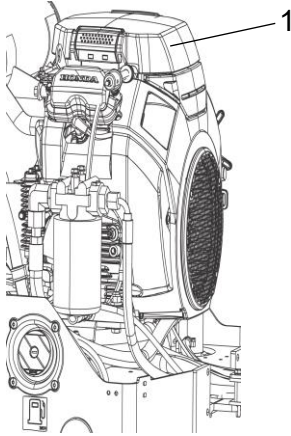


Fig. Engine
1. Air filter

Maintenance - 20h

*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.*



*Check that the engine cover is fully open before
carrying out work underneath it.*



Engine oil and oil filter - Change

Run the engine until it is warm before draining the oil.



Switch off the engine, disconnect the power and activate the parking brake.



Take great care when draining fluids and oils. Use the following protective equipment:



Protective gloves



Safety glasses

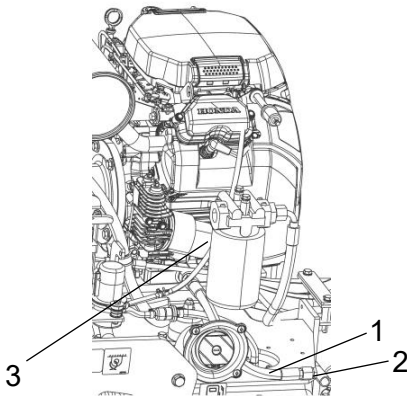


Fig. Engine compartment, left side

- 1. Drain hose**
- 2. Plug**
- 3. Oil filter**

- Place a receptacle that holds at least 4 liters (1 gal.) under the drain plug (2).
- Undo the oil filler cap (4) and remove the plug (2) from the end of the drain hose (1).
Allow all the engine oil to run out.

Lossa plugg (2) i änden av dräneringsslangen (1).

Låt all motorolja rinna ut.



Deliver the drained oil to special waste handling.



Refer to the engine manual for detailed instructions when changing oil and filters.

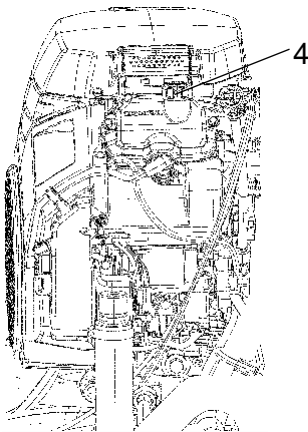


Fig. Engine compartment, right side
4. Filler cap

- Remove the oil filter (3) and insert a new one.
- Collect any spillage.
- Fit the drain plug (2) to the end of the hose.
- Fill with fresh engine oil (see under Lubricants heading for the correct oil grade).
Refit the filler cap (4) and check the level on the dipstick.
- Sätt tillbaka påfyllningslocket (4) och kontrollera rätt nivå på oljestickan.
- Start the engine and check the tightness around the oil filter.

Maintenance - Every 50h

Every 50 hours of operation (Every week)



***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.***



***Check that the engine cover is fully open before
carrying out work underneath it.***

Brakes - Check



Check operation of the brakes as follows:



Checking the parking brake

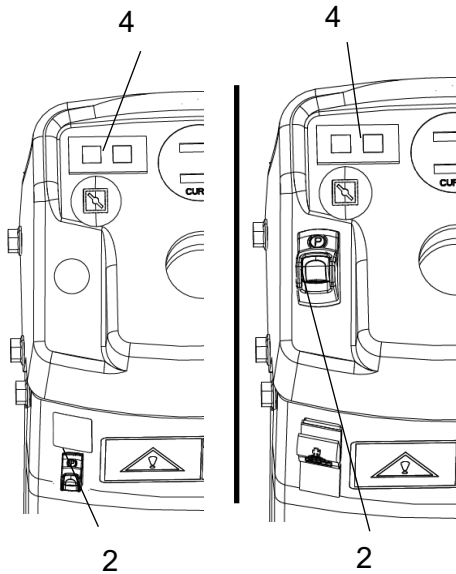


Fig. Control panel
2. Parking brake
4. Parking brake lamp

- Drive the roller slowly forward. Hold the steering wheel firmly and brace yourself for a sudden stop.
- Enable the parking brake (2). The brake warning lamp (4) should light and the roller should stop.
- After testing the brakes, set the forward/reverse lever in neutral.
- Reset the parking brake (2).
- The roller is now ready for operation.

Refer also to the section in the manual on operation.



Checking the emergency stop

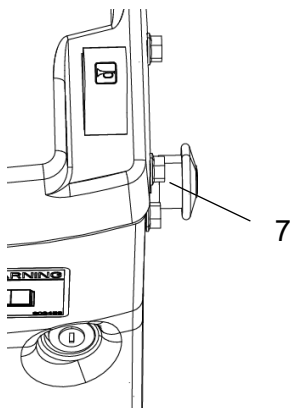


Fig. Emergency stop

- Drive the roller slowly forward. Hold the steering wheel firmly and brace yourself for a sudden stop.
- Press the emergency stop (7). The roller will stop abruptly and the engine will be switched off.
- After testing the brakes, set the forward/reverse lever in neutral.
- Pull out the emergency stop (7) and start the engine.
- The roller is now ready for operation.

Refer also to the section in the manual on operation.



Air cleaner - cleaning

- Unclip the four lock catches (1) and lift the air cleaner's cover (2). Lift out the plastic foam and clean it in warm soapy water, rinse and dry.
- Lyft upp locket (2).
- Lyft ur skumplasten och rengör denna i varm såpvatten, skölj och torka den.
- Clean the air filter by tapping it with the palm of the hand or blow compressed air (not exceeding 207 kPa (2,1 kgf/cm², 30 psi)) through the filter element from the air cleaner case side. Brushing the filter may cause dust to penetrate the fibres. Replace the filter if it is very dirty.
- Borsta inte av filtret, då kan damm tränga in i fibreerna.
- Byt luftfiltret om det är mycket smutsigt.
- Dry the inside of the filter container and its cover with a damp rag. Make sure that dirt does not enter the suction pipe.
- Clean the air cleaner when operated in extremely dusty environments.
- Refit the filter element and the cover and secure the cover with put the latch (1) to locked position.

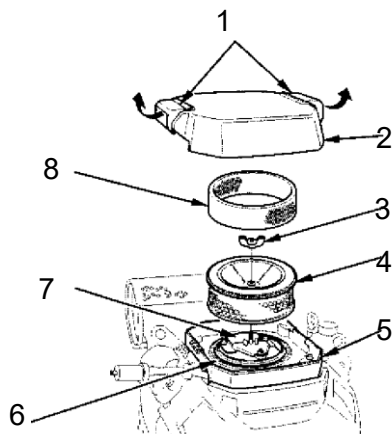


Fig. Air cleaner
 1. Cover latch
 2. Cover
 3. Wing nut
 4. Filter element
 5. Case
 6. Seal
 7. Air chamber
 8. Foam filter element

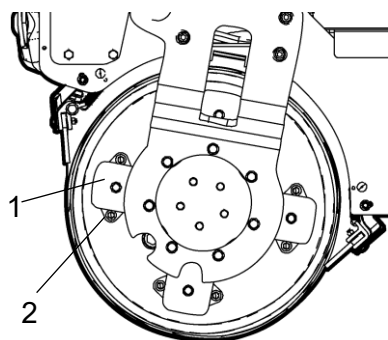


Fig. Drum suspension
 1. Rubber element
 2. Fastening screws

Rubber elements and fastening screws - Check

- Check all the rubber elements (1), and replace all the elements if more than 20% of them on one side of the drum are cracked deeper than 10-15 mm (0.39-0.59 in)
- Byt alla element om mer än 20% av antalet på en sida av valse har sprickor djupare än 10-15 mm.
- Use a the blade of a knife or pointed object to check.
- Check also that the screw fasteners (2) are tightened.



The screws on the rubber elements are sealed with Loctite. Check the rubber elements on both sides of the roller.



Drum bearing seat - Check and lubrication

Drum bearing seat, which located on the left side of the rear drum.

Check the condition of the bearing seat, and grease the bearing seat through the grease nipple (1).

Grease the bearing point with 20 to 25 strokes of hand operated grease gun.

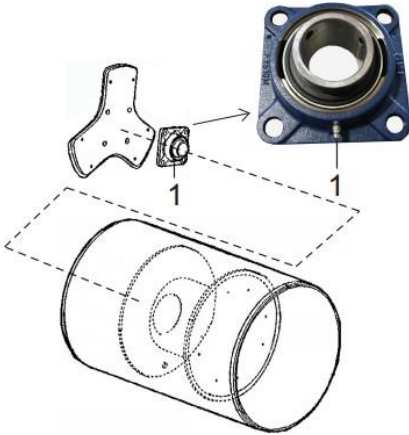


Fig. Drum bearing seat
1. Grease nipples

Maintenance - 100h

*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.*



*Check that the engine cover is fully open before
carrying out work underneath it.*

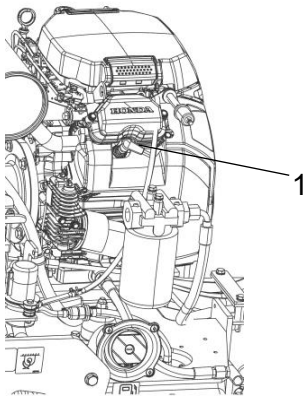
Spark plug - Check and adjustment

Fig. Engine compartment left side
1. Spark plug



*Switch off the engine, disconnect the power and
activate the parking brake.*



*Observe care with hot surfaces.
Use following protection equipment:*



Protective gloves



*Refer to the engine manual
for detailed instructions.*



Dispose of used spark plugs properly.

Maintenance - 200 / 400 / 600 / 800 h

*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.*



*Check that the engine cover is fully open before
carrying out work underneath it.*

**Engine's fuel filter - Change**

*Switch off the engine, disconnect the power and
activate the parking brake.*



*Use caution.
Use the following protective equipment:*



Protective gloves

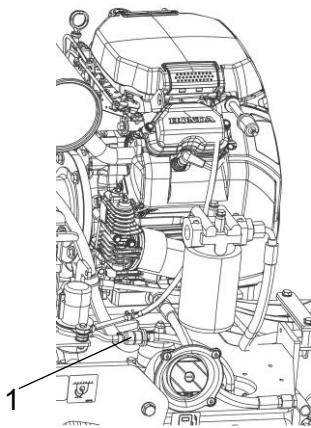


Fig. Engine compartment left side
1. Fuel filter

- Replace the fuel filter (1).



*Refer to the engine manual for detailed
instructions.*



Dispose of the old filter carefully.

**Hydraulic fluid cooler - Cleaning (Option)
(n/a for China market)**

- Clean the hydraulic fluid cooler's cooling flanges, ideally with compressed air.
- Blow the cooler clean by blowing air from the inside outwards.



***When working with compressed air,
use the following protective equipment:***



Safety glasses



Protective gloves



Ear protectors



Engine oil and oil filter - Change

Run the engine until it is warm before draining the oil.

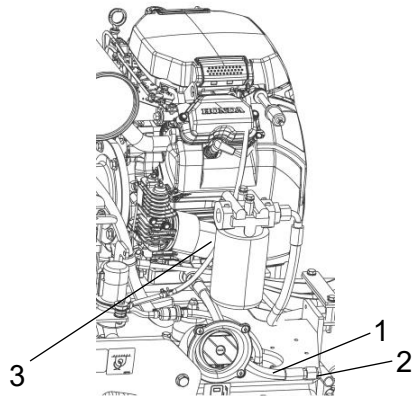


Fig. Engine compartment, left side

- 1. Drain hose
- 2. Plug
- 3. Oil filter



Switch off the engine, disconnect the power and activate the parking brake.



Take great care when draining fluids and oils. Use the following protective equipment:



Protective gloves



Safety glasses

- Place a receptacle that holds at least 4 liters (1 gal.) under the drain plug (2).
- Undo the oil filler cap (4) and remove the plug (2) from the end of the drain hose (1).
Allow all the engine oil to run out.

Lösa plugg (2) i änden av dräneringsslangen (1).

Låt all motorolja rinna ut.

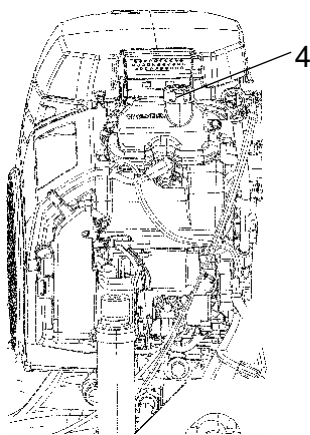


Fig. Engine compartment, right side
4. Filler cap



Deliver the drained oil to special waste handling.



Refer to the engine manual for detailed instructions when changing oil and filters.

- Remove the oil filter (3) and insert a new one.
- Collect any spillage.
- Fit the drain plug (2) to the end of the hose.
- Fill with fresh engine oil (see under Lubricants heading for the correct oil grade).
Refit the filler cap (4) and check the level on the dipstick.
- Sätt tillbaka påfyllningslocket (4) och kontrollera rätt nivå på oljestickan.
- Start the engine and check the tightness around the oil filter.



Forward / Reverse controls and joints

- Check and lubrication

- Unscrew the protective plate.
- Check the friction on the forward/reverse lever.
- The friction nut (1) should be applied with sufficient pressure to keep the forward/reverse lever in the set position during operation.

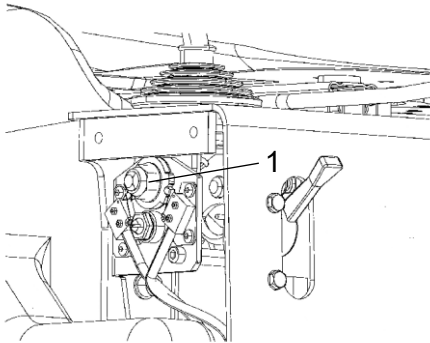


Fig. Forward/reverse lever
1. Friction nut

If the lever gets stiff after prolonged use:

- Lubricate the lever at the bearing bushings with a few drops of oil at each place.
- Lubricate the cable with a few drops of oil at each place.

If the forward/reverse lever still moves sluggishly after the above adjustment:

- Then also lubricate the other end of the lever cable with a few drops of oil. The cable is located on the top of the propulsion pump.

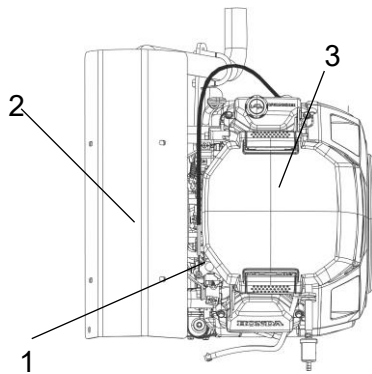


Fig. Engine compartment
1. F/R lever cable
2. Heat shield
3. Air filter

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.***



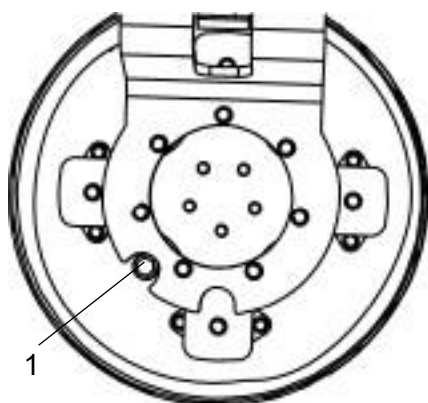
***Check that the engine cover is fully open before
carrying out work underneath it.***

**Front drum - Checking the oil level**

- Park the roller on a level surface, and drive the roller slowly until the oil plug (1) is in the middle of the semicircle shaped notch in the drum suspension.
- Kör välten sakta tills oljepluggen (1) kommer mitt för det halvcirkelformade urtaget i valsupphängningen.



***Switch off the engine, disconnect the
power and activate the parking brake.***



***Fig. Front drum, drive side
1. Oil plug***

- Unscrew the plug and check that the oil level reaches the hole's lower edge. If necessary, top off with fresh transmission fluid. See under the heading lubricants for correct fluid grade.
- Kontrollera att oljenivån når upp till hålets underkant.
- Om så erfordras fyll på ny transmissionsolja. Se under rubriken smörjmedel för erhållande av rätt oljekvalitet.
- Clean the magnetic oil plug (1) from any metallic residue, and refit the plug.



Hydraulic reservoir cap - Check

- Unscrew and make sure that the reservoir cap is not blocked.
- Air must have unobstructed passage through the cap in both directions.
- If blocked in either direction, clean with a little diesel oil and blow with compressed air until unblocked or replace the cap with a new one.



**When working with compressed air.
Use the following protective equipment:**



Safety glasses



Protective gloves



Ear protectors

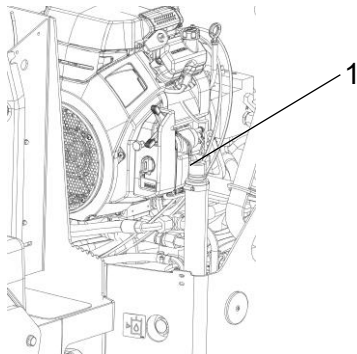


Fig. Engine compartment, right side
1. Hydraulic fluid tank cap

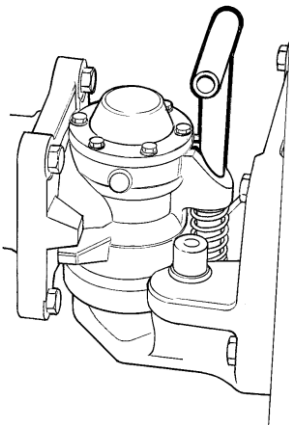


Fig. Steering joint

Steering joint - Check

- Inspect the steering joint to detect any damage or cracks.
- Check and tighten any loose bolts.
- Check also for any stiffness and play in the steering joint. Rectify if necessary.



Air cleaner - replace insert

- Pull the air cleaner cover latch (1) to the unlocked position.
- Remove the cover (2).
- Remove the wing nut (3) from the filter element (4).
- Lift out the foam filter element (8) and the filter element (4).
- Dry the inside of the filter container and its cover with a damp rag. Make sure that dirt does not enter the suction pipe.
- Reinstall with new filter element.
- Secure the cover with put the latch (1) to locked position.

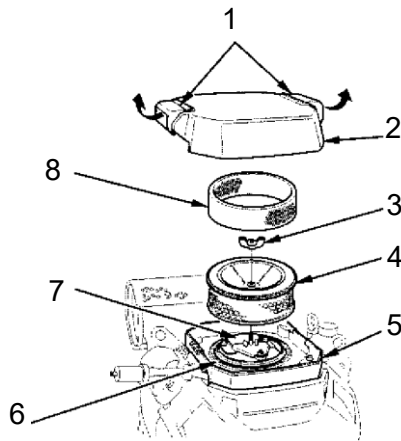


Fig. Air cleaner

- 1. Cover latch**
- 2. Cover**
- 3. Wing nut**
- 4. Filter element**
- 5. Case**
- 6. Seal**
- 7. Air chamber**
- 8. Foam filter element**

Maintenance - Every 1000h

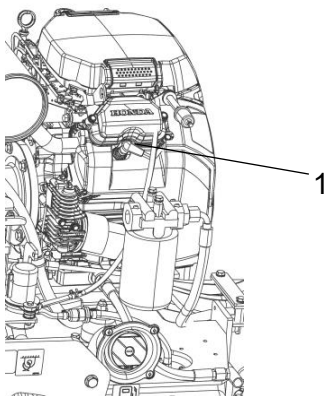
Every 1000/3000..... hours of operation
(yearly)



***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.***



***Check that the engine cover is fully open before
carrying out work underneath it.***



**Fig. Engine compartment left side
1. Spark plug**

Spark plug - Replace

***Switch off the engine, disconnect the power and
activate the parking brake.***



***Observe care with hot surfaces.
Use the following protective equipment:***



Protective gloves



***Refer to the engine manual for
detailed instructions.***



Dispose of used spark plugs properly.

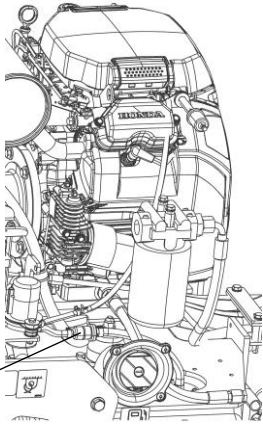


Fig. Engine compartment left side
1. Fuel filter

Engine's fuel filter - Change



Switch off the engine, disconnect the power and activate the parking brake.



Use caution.
Use the following protective equipment:



Protective gloves

- Replace the fuel filter (1).



Refer to the engine manual for detailed instructions.



Dispose of the old filter carefully.

Hydraulic fluid cooler - Cleaning (Option)

- Clean the hydraulic fluid cooler's cooling flanges, ideally with compressed air.
- Blow the cooler clean by blowing air from the inside outwards.



When working with compressed air, use the following protective equipment:



Safety glasses



Protective gloves



Ear protectors

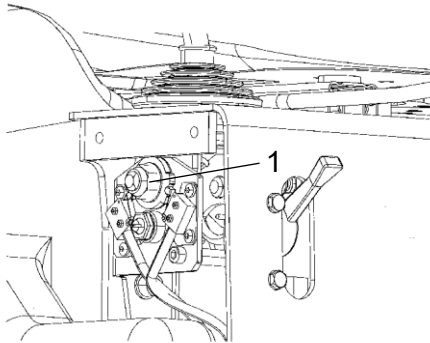


Fig. Forward/reverse lever
1. Friction nut

Forward / Reverse controls and joints - Check and lubrication

- Unscrew the protective plate.
- Check the friction on the forward/reverse lever.
- The friction nut (1) should be applied with sufficient pressure to keep the forward/reverse lever in the set position during operation.

If the lever gets stiff after prolonged use:

- Lubricate the lever at the bearing bushings with a few drops of oil at each place.
- Lubricate the cable with a few drops of oil at each place.

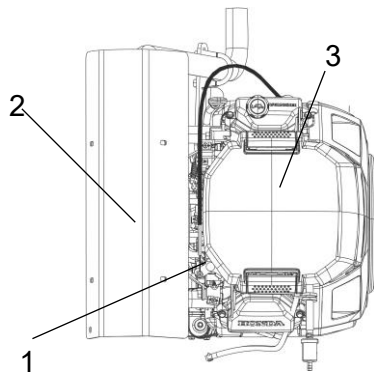


Fig. Engine compartment
1. F/R lever cable
2. Heat shield
3. Air filter

If the forward/reverse lever still moves sluggishly after the above adjustment:

- Then also lubricate the other end of the lever cable with a few drops of oil. The cable is located on the top of the propulsion pump.



Front drum - Checking the oil level

- Park the roller on a level surface, and drive the roller slowly until the oil plug (1) is in the middle of the semicircle shaped notch in the drum suspension.
- Kör välten sakta tills oljepluggen (1) kommer mitt för det halvcirkelformade urtaget i valsupphängningen.



Switch off the engine, disconnect the power and activate the parking brake.

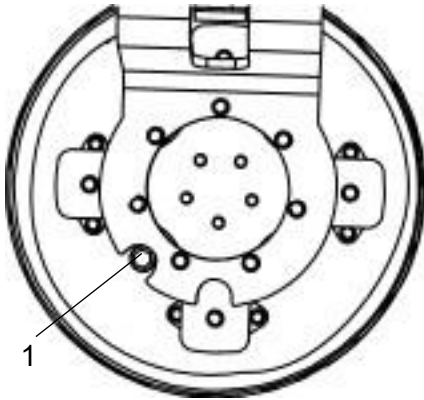


Fig. Front drum, drive side
1. Oil plug

- Unscrew the plug and check that the oil level reaches the hole's lower edge. If necessary, top off with fresh transmission fluid. See under the heading lubricants for correct fluid grade.
- Kontrollera att oljenivån når upp till hålets underkant.
- Om så erfordras fyll på ny transmissionsolja. Se under rubriken smörjmedel för erhållande av rätt oljekvalitet.
- Clean the magnetic oil plug (1) from any metallic residue, and refit the plug.

Steering joint - Check

- Inspect the steering joint to detect any damage or cracks.
- Check and tighten any loose bolts.
- Check also for any stiffness and play in the steering joint. Rectify if necessary.

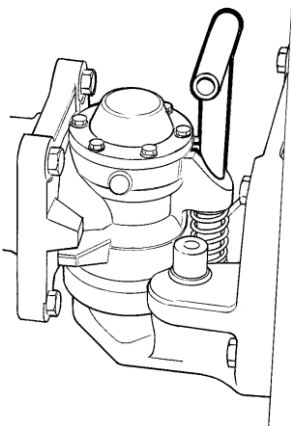


Fig. Steering joint

**Air cleaner - replace insert**

- Pull the air cleaner cover latch (1) to the unlocked position.
- Remove the cover (2).
- Remove the wing nut (3) from the filter element (4).
- Lift out the foam filter element (8) and the filter element (4).
- Dry the inside of the filter container and its cover with a damp rag. Make sure that dirt does not enter the suction pipe.
- Reinstall with new filter element.
- Secure the cover with put the latch (1) to locked position.

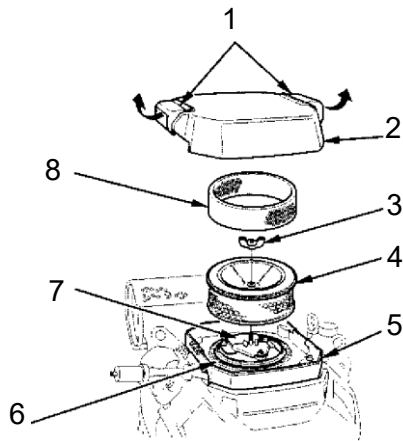


Fig. Air cleaner

- 1. Cover latch**
- 2. Cover**
- 3. Wing nut**
- 4. Filter element**
- 5. Case**
- 6. Seal**
- 7. Air chamber**
- 8. Foam filter element**



Engine oil and oil filter - Change

Run the engine until it is warm before draining the oil.



Switch off the engine, disconnect the power and activate the parking brake.



Take great care when draining fluids and oils. Use the following protective equipment:



Protective gloves



Safety glasses

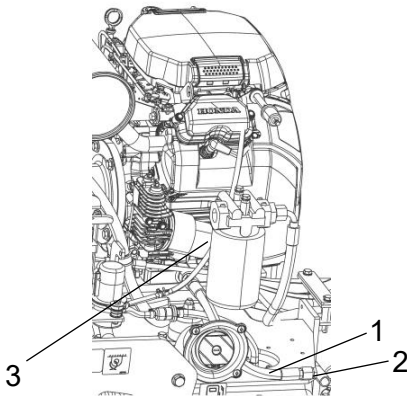


Fig. Engine compartment, left side

- 1. Drain hose**
- 2. Plug**
- 3. Oil filter**

- Place a receptacle that holds at least 4 liters (1 gal.) under the drain plug (2).
- Undo the oil filler cap (4).
- remove the plug (2) from the end of the drain hose (1).
- Allow all the engine oil to run out.



Deliver the drained oil to special waste handling.



Refer to the engine manual for detailed instructions when changing oil and filters.

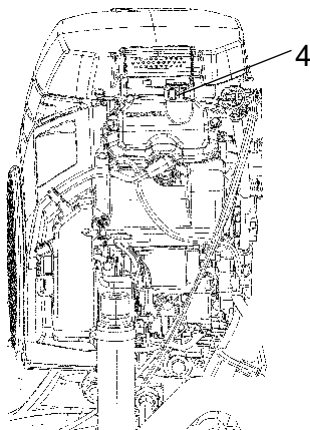


Fig. Engine compartment, right side
4. Filler cap

- Remove the oil filter (3) and insert a new one.
- Collect any spillage.
- Fit the drain plug (2) to the end of the hose.
- Fill with fresh engine oil (see under Lubricants heading for the correct oil grade).
- Refit the filler cap (4).
- Check the level on the dipstick.
- Start the engine.
- check the tightness around the oil filter.



Hydraulic fluid filter - Change



Remove the filter (1) and deliver to special waste handling.
This is a single-use filter and cannot be cleaned.

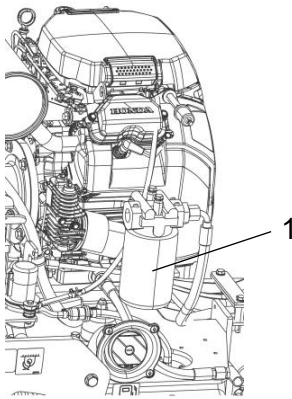


Fig. Engine compartment, left side
1. Hydraulic fluid filter

- Thoroughly clean the filter holder sealing surface.
- Apply a thin coat of fresh hydraulic fluid to the rubber gasket on the new filter.
- Screw the filter on by hand.
- Firstly, screw until the filter gasket makes contact with the filter base.
- Then rotate a further ½ turn.



Do not over-tighten. The seal can be damaged.

- Start the engine and check that the filter does not leak.



Engine's fuel filter - Check



Switch off the engine and activate the parking brake.



Use caution.
Use the following protective equipment.



Protective gloves

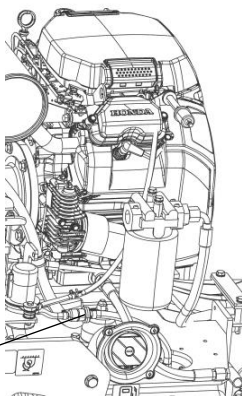


Fig. Engine compartment left side
1. Fuel filter

If the fuel filter is full of water or deposits:

- Replace the filter with a new one.



Refer to the engine manual for detailed instructions.



Dispose of the old filter carefully.

**Hydraulic reservoir cap - Check**

- Unscrew and make sure that the reservoir cap is not blocked.
- Air must have unobstructed passage through the cap in both directions.
- If blocked in either direction, clean with a little diesel oil and blow with compressed air until unblocked or replace the cap with a new one.



***When working with compressed air.
Use the following protective equipment:***



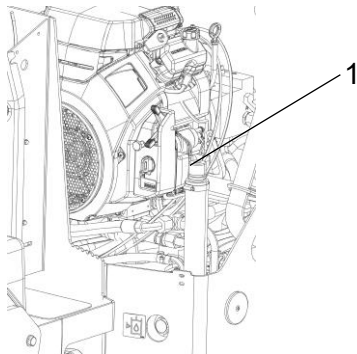
Safety glasses



Protective gloves



Ear protectors



**Fig. Engine compartment, right side
1. Hydraulic fluid tank cap**

Maintenance - Every 2000h

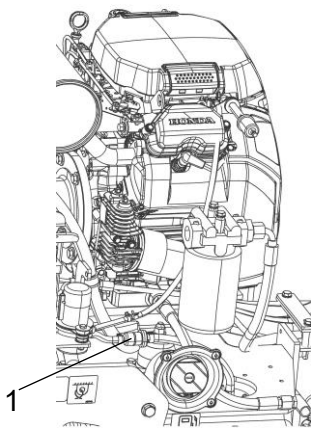
Every 2000/4000..... hours of operation
(every two years)



***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.***



***Check that the engine cover is fully open before
carrying out work underneath it.***



**Fig. Engine compartment left side
1. Fuel filter**

Engine's fuel filter - Change

***Switch off the engine, disconnect the power and
activate the parking brake.***



***Use caution.
Use the following protective equipment:***



Protective gloves

- Replace the fuel filter (1).



***Refer to the engine manual for detailed
instructions.***



Dispose of the old filter carefully.



Forward / Reverse controls and joints - Check and lubrication

- Unscrew the protective plate.
- Check the friction on the forward/reverse lever.
- The friction nut (1) should be applied with sufficient pressure to keep the forward/reverse lever in the set position during operation.

If the lever gets stiff after prolonged use:

- Lubricate the lever at the bearing bushings with a few drops of oil at each place.
- Lubricate the cable with a few drops of oil at each place.

If the forward/reverse lever still moves sluggishly after the above adjustment:

- Then also lubricate the other end of the lever cable with a few drops of oil. The cable is located on the top of the propulsion pump.

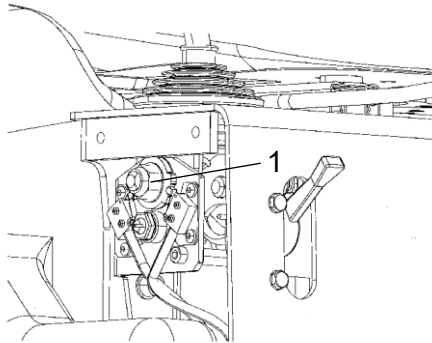


Fig. Forward/reverse lever
1. Friction nut

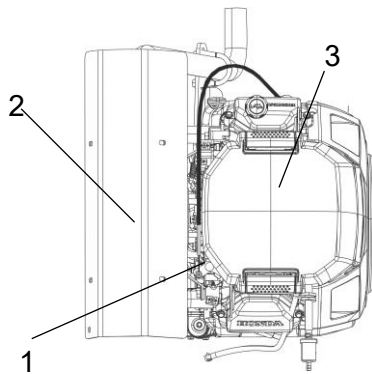


Fig. Engine compartment
1. F/R lever cable
2. Heat shield
3. Air filter

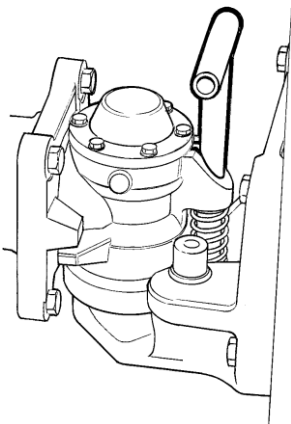


Fig. Steering joint

Steering joint - Check

- Inspect the steering joint to detect any damage or cracks.
- Check and tighten any loose bolts.
- Check also for any stiffness and play in the steering joint. Rectify if necessary.

**Air cleaner - replace insert**

- Pull the air cleaner cover latch (1) to the unlocked position.
- Remove the cover (2).
- Remove the wing nut (3) from the filter element (4).
- Lift out the foam filter element (8) and the filter element (4).
- Dry the inside of the filter container and its cover with a damp rag. Make sure that dirt does not enter the suction pipe.
- Reinstall with new filter element.
- Secure the cover with put the latch (1) to locked position.

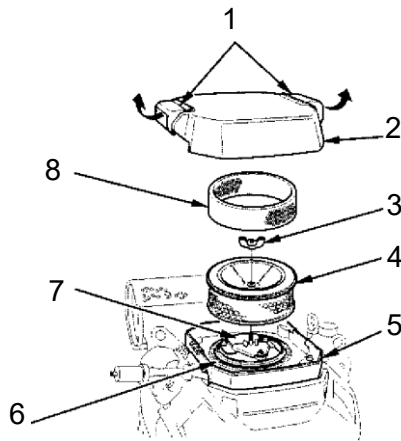


Fig. Air cleaner

- 1. Cover latch**
- 2. Cover**
- 3. Wing nut**
- 4. Filter element**
- 5. Case**
- 6. Seal**
- 7. Air chamber**
- 8. Foam filter element**



Engine oil and oil filter - Change

Run the engine until it is warm before draining the oil.

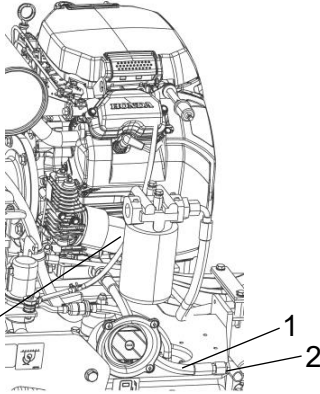


Fig. Engine compartment, left side

- 1. Drain hose**
- 2. Plug**
- 3. Oil filter**

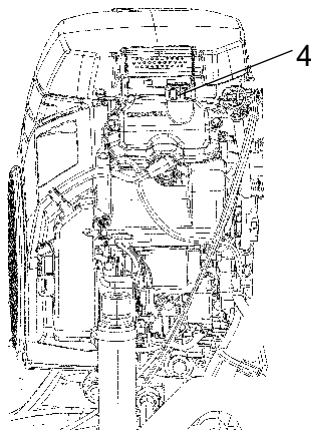


Fig. Engine compartment, right side
4. Filler cap



Switch off the engine, disconnect the power and activate the parking brake.



Take great care when draining fluids and oils. Use the following protective equipment:



Protective gloves



Safety glasses

- Place a receptacle that holds at least 4 liters (1 gal.) under the drain plug (2).
- Undo the oil filler cap (4).
- remove the plug (2) from the end of the drain hose (1).
- Allow all the engine oil to run out.



Deliver the drained oil to special waste handling.



Refer to the engine manual for detailed instructions when changing oil and filters.

- Remove the oil filter (3) and insert a new one.
- Collect any spillage.
- Fit the drain plug (2) to the end of the hose.
- Fill with fresh engine oil (see under Lubricants heading for the correct oil grade).
- Refit the filler cap (4).
- Check the level on the dipstick.
- Start the engine.
- check the tightness around the oil filter.

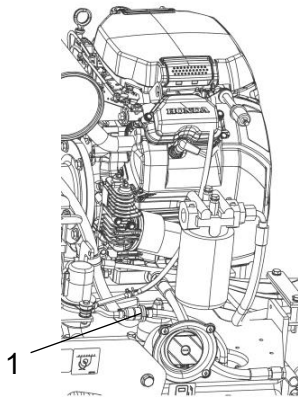
**Engine's fuel filter - Check**

Fig. Engine compartment left side
1. Fuel filter



Switch off the engine and activate the parking brake.



Use caution.
Use the following protective equipment.



Protective gloves

If the fuel filter is full of water or deposits:

- Replace the filter with a new one.



Refer to the engine manual for detailed instructions.



Dispose of the old filter carefully.



Hydraulic reservoir cap - Check

- Unscrew and make sure that the reservoir cap is not blocked. Air must have unobstructed passage through the cap in both directions.
- Kontrollera att tanklocket (1) inte är igensatt. Luften skall ha fri passage genom locket i bägge riktningarna.

If blocked in either direction, clean with a little diesel oil and blow with compressed air until unblocked or replace the cap with a new one.

- Rengör med lite dieselloja.
- Blås med tryckluft tills fri passage erhålles eller byt ut locket mot ett nytt.

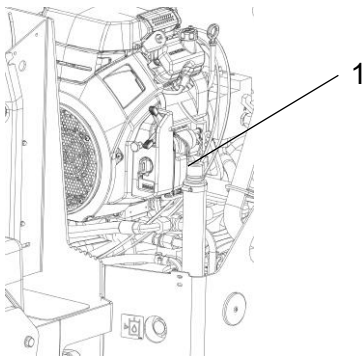


Fig. Engine compartment, right side
1. Hydraulic fluid tank cap



When working with compressed air.
Use the following protective equipment:



Safety glasses



Protective gloves



Ear protectors

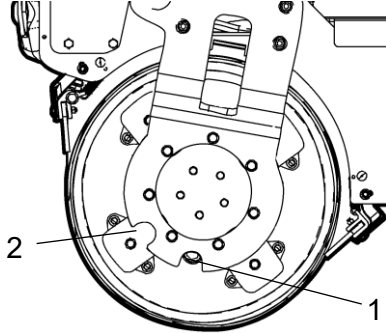


Fig. Drum, Drive side

- 1. Oil plug**
- 2. Position for level check**

Front drum - Changing the oil

- Loosen the oil plug (1) slightly, when it is in position for level check (2), so that it can subsequently be unscrewed by hand.
- Park the roller on a level surface.
- Drive the roller slowly until the plug (1) is in the bottom position.



Switch off the engine, disconnect the power and activate the parking brake.

- Place a receptacle that will hold at least 4 liters (1 gal) under the plug.
- Remove the plug (1) and let the oil run out.



Deliver the drained oil to special waste handling.

- See under the section 'Every 500 hours of operation' for filling oil.



Water tank - Cleaning



Keep in mind that there is a risk of freezing in winter. Drain the tank, pump and lines.

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

On machines equipped with a pressurized sprinkler system:

- Drain the tank through the drainage tap (2) alongside the filter.
- Clean the tank with water and a suitable detergent for plastic surfaces.
- Clean the water filter (3).
- Fill the tank with water.
- Check that the sprinkler works.



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

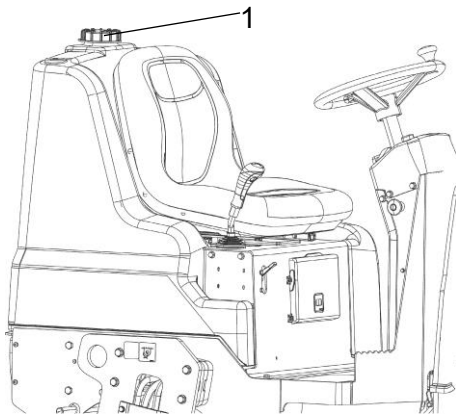


Fig. Water tank
1. Cap

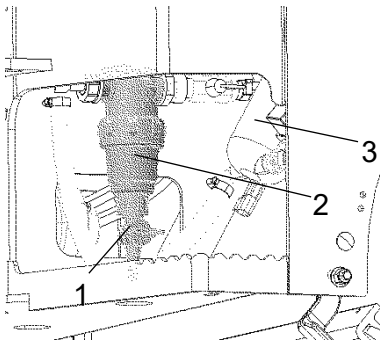


Fig. Filter on pressurized system
2. Drainage tap
3. Water filter
4. Water pump



Hydraulic reservoir - fluid change

Use an external drainage pump when draining/emptying the hydraulic reservoir.

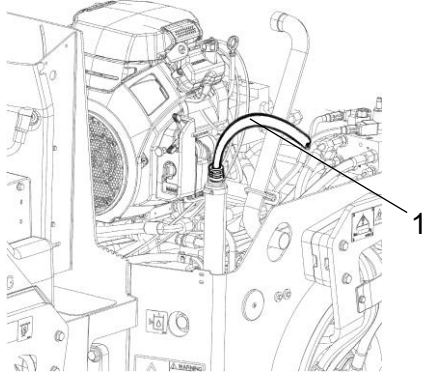


Fig. Hydraulic reservoir
1. Draining



Danger of being burned when draining hot oil.
Use the following protective equipment:



Protective gloves



Safety glasses

- Unscrew the reservoir cap.
- Use an external pump and check that the pump's hose reaches the bottom of the hydraulic reservoir in order to remove as much of the oil as possible.
- Drain the hydraulic oil into a drainage container.



Use a receptacle that holds at least 15 liters (4 gal).



Collect the oil and deliver to environmentally correct handling.

- Change the hydraulic fluid filter, see under heading 'Every 1000 hours of operation'.
- Fill with fresh hydraulic fluid (see under Lubricants heading for the correct grade).
- Refit the filler cap.
- Check the level in the tank.
- Wipe up any spillage.
- Start the engine and operate the various hydraulic functions.
- Check the level in the reservoir and top off as required.



Hydraulic fluid filter - Change



Remove the filter (1) and deliver to special waste handling.
This is a single-use filter and cannot be cleaned.

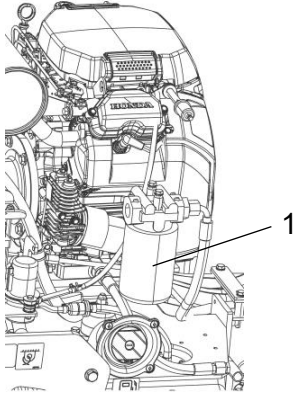


Fig. Engine compartment, left side
1. Hydraulic fluid filter

- Thoroughly clean the filter holder sealing surface.
- Apply a thin coat of fresh hydraulic fluid to the rubber gasket on the new filter.
- Screw the filter on by hand.
- Firstly, screw until the filter gasket makes contact with the filter base.
- Then rotate a further $\frac{1}{2}$ turn.



Do not over-tighten. The seal can be damaged.

- Start the engine and check that the filter does not leak.

Hydraulic fluid cooler - Cleaning (Option)

- Clean the hydraulic fluid cooler's cooling flanges, ideally with compressed air.
- Blow the cooler clean by blowing air from the inside outwards.



When working with compressed air, use the following protective equipment:



Safety glasses



Protective gloves



Ear protectors

