

# Operating and Maintenance Manual



**DVH 600**

0140202



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## **Introduction**

This operating and maintenance manual is designed to facilitate familiarization with your roller, and to enable you to maintain the compactor and use it for its intended purpose.

When complying with the instructions in the operating and maintenance manual you help avoid hazards, reduce repair and downtime costs, and increase the reliability and service life of your roller. This operating and maintenance manual must always be available at the implementation site of the roller.

If necessary you can obtain additional information from your authorized WEBER dealer, or you can obtain information from one of the contact addresses on the last page.

The valid conformity declaration is enclosed with every machine delivery.

You can obtain information on the assembled Kohler diesel engine at **[www.kohlerpowerit.com](http://www.kohlerpowerit.com)**.

## Safety guidelines

### General

All safety instructions must be read and complied with, non-compliance results in

- Danger to life and limb of the user
- Impairments to the machine or other property.

In addition to the operating manual, the accident-prevention regulations in the country where the appliance is used must be complied with.

### Intended use

The roller should only be used in technically faultless condition, as intended, in a safety-conscious and hazard-conscious manner, in compliance with the instructions in the operating manual.

Malfunctions that impair safety must be eliminated without delay.

The DVH 600 roller is designed exclusively for compacting

- bituminous material (road surfaces); and
- light compaction tasks for earth works.

Any other use of the roller is considered to be non-intended use, for which the customer is exclusively responsible. All liability is rejected if damage occurs due to non-compliance with this provision. This risk is borne solely by the user.

### Easily foreseeable misuse

Any use for which the machine is not intended.

### Operation

Rollers are only permitted to be operated by suitable persons of at least 18 years of age. Operators must be instructed in how to guide the roller by the owner or by owner's assigned personnel.

The machine operator must comply with traffic regulations. If instructions that affect safety are given by third parties, then the operator must be authorized to reject these instructions.



Unauthorized persons are forbidden from being in the area of the roller during the compacting process.

### Protective equipment

This machine is capable of exceeding the permissible sound level of 80 dB(A). The owner might also face additional dangers when using the machine. Precautionary action must, therefore, be taken.

Protective equipment includes:



Hearing protection



Hard hat



Safety shoes



Protective gloves

## Operation

Prior to starting work the owner of the roller must be familiar with the working environment. The work environment includes obstacles in the work and traffic area, the bearing capacity of the ground, as well as the necessary safeguarding of the construction site in the area adjacent to public traffic; and it includes compliance with traffic regulations.

The roller should only be operated when the protective fixtures are mounted. The protective fixtures must all be in functional condition.

At least once per shift the roller must be checked for apparent defects. If there are apparent defects then operation of the roller must be stopped immediately, and the responsible person must be informed. Prior to restarting, roller malfunctions that have occurred must be corrected.

Always maintain adequate clearance to the edges of pits and embankments.

Do not drive on slopes in the transverse direction in order to prevent the roller from tipping over.

After work has been concluded secure the roller in accordance with statutory regulations, particularly in the area of public traffic surfaces.

## Operation under difficult conditions



Never inhale the exhaust gas; it contains carbon monoxide, a colorless and odorless gas that is extremely hazardous, which, if inhaled even briefly, can cause unconsciousness and death.

Therefore, never operate the engines in enclosed areas or in areas that are poorly ventilated (tunnels, caves, etc.). Exercise particular caution when operating the engine in the vicinity of people and livestock.

## Maintenance and repair work

Only use **original Weber spare parts** to ensure reliable and safe operation for maintenance or repair work.

Hydraulic hose lines must be checked at regular intervals in accordance with standard engineering practice, or they must be replaced at appropriate intervals, even if no signs of safety-relevant defects are present.

Adjusting tasks, maintenance tasks, and inspection tasks must be carried out on schedule as specified in this operating and maintenance manual. These activities should only be executed by instructed personnel.

For repair, maintenance, or inspection work the engine of the roller must be safeguarded against unintentional starting.

All pressurized lines, particularly hydraulic lines and lines of the injection system of the drive motor must be depressurized before performing maintenance or repair tasks.

For maintenance and repair tasks the roller must be placed on a level and stable substrate and must be secured from rolling off or tipping over.

Heavy components and assemblies must be secured to and lifted by hoisting machines that can bear their weight when they are replaced. Ensure that no hazard is caused by raising components or assemblies.

Do not position yourself or work under suspended loads.



If lubricating oils and fuel come into contact with skin, they can cause skin cancer. Upon contact with the skin, clean affected skin with suitable cleaning agent without delay.

### **Inspection**

Rollers must be inspected in accordance with the corresponding implementation conditions and operating conditions, as needed; however an inspection to ensure operationally safe status must be performed by an expert at least once a year. The results of the inspection must be recorded in writing and must be stored at least until the next inspection.

### **Cleaning work**

Prior to cleaning the roller with a high-pressure cleaner, protect all accessible energized switches, cable connections, etc. against water penetration by masking them off.

Cleaning tasks should only be executed in areas that are suitable and have been approved for this purpose (oil separator amongst others).

### **Disposal**

All operating fluids and auxiliary materials must be disposed of in an environmentally-compatible manner in accordance with country-specific regulations.

**Important information for operating and maintenance personnel is marked by pictograms.**



Warning against irritants or materials hazardous to health



Warning against a hazardous place



Warning against a suspended load



Wear ear protection



General regulation



Environmental protection



Hard hat

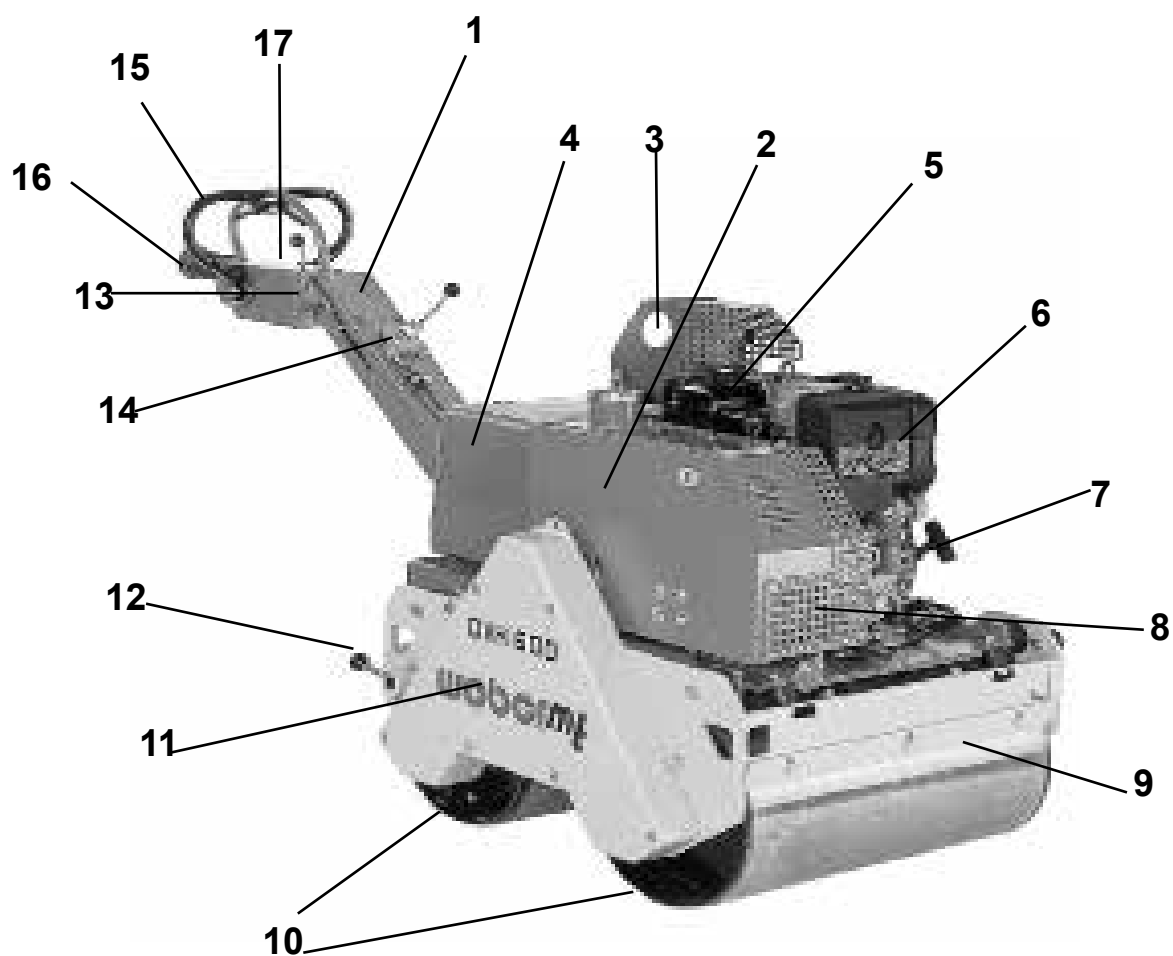


Safety shoes



Protective gloves

## Graphic presentation



### Overall view DVH 600

1 Manual guidance rod  
2 Hydraulic tank  
3 Lifting ring  
4 Water tank  
5 Fuel tank  
6 Engine  
7 Reversing starter  
8 Hydraulic oil filter  
(without illustration)

9 Scraper  
10 Drums  
11 Chain guard  
12 Parking brake  
13 Gas lever  
14 Vibration lever  
15 Safety bar and drive lever  
16 Crush guard  
17 Hearing protection (sticker)





## **Device description**

The DVH 600 roller is used for compaction work in road building applications.

### **Drive**

The compactor is powered by an air-cooled Kohler diesel engine.

### **Function**

Start the Kohler diesel engine with the attached reversing starter.

The two drums are hydrostatically powered via chains. The chain drive is executed individually on each bandage. The chain drive also serves as a safety braking system for operating on slopes. The vibrator that is positioned outside between the two drums is powered via a V-belt. The hydraulic system consists of a closed circuit with hydraulic pump and hydraulic motor as well as a hydraulic tank.

The drums are freed of adhering material by the adjustable scrapers.

### **Operation**


Use the gas lever to vary the engine speed between idle and full throttle.

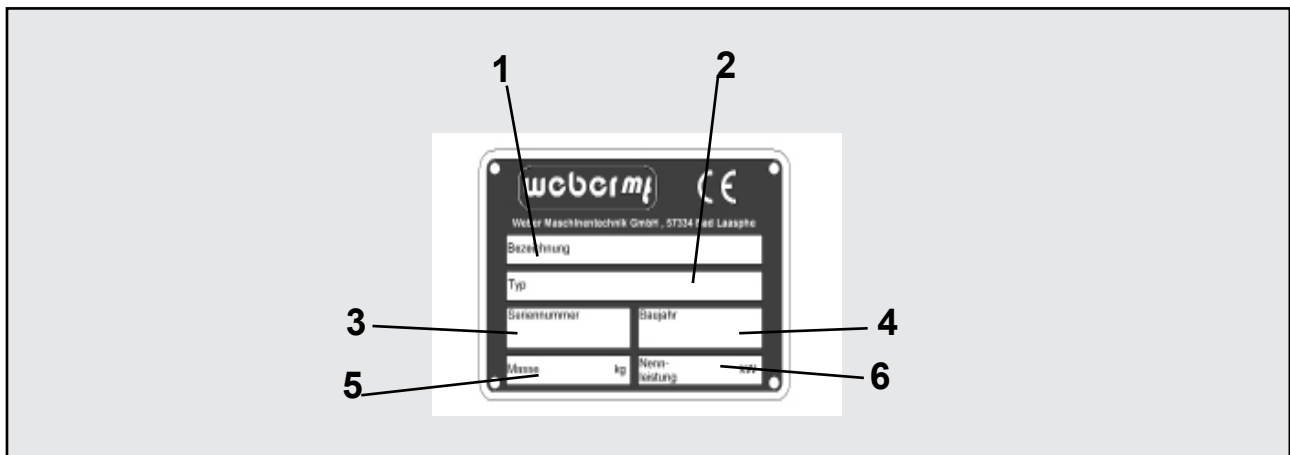
The manual guidance rod is used to steer the roller. All control levers are located on the manual guidance rod. Direction of travel and speed are controlled with the safety bar (drive bar). The vibration adjustment lever switches vibration on or off. The arrest lever activates the parking brake that stops the rear drum.

For safety of the operator a crush guard is attached to the manual guidance rod. If the operator bumps against the crush guard when moving in reverse, the machine comes to a stop.

## Technical data

|   | <b>DVH 600</b>  |
|---|---|
| <b>Weight</b>   |   |
| Dead weight (in kg)   | 400   |
| Operating weight CECE in kg                                       | 420   |
| Average stat. line load (in N/cm)                                 | 31.7  |
| <b>Dimensions</b>   |   |
| Overall length (in mm)  | 1885  |
| Overall width (in mm)   | 755   |
| Height (in mm)  | 1046  |
| Drum width (in mm)  | 650   |
| Drum diameter (in mm)   | 325   |
| Axle base (in mm)   | 450   |
| Lateral Overhang L/R (in mm)                                      | 15/90   |
| <b>Drive</b>  |   |
| Engine manufacturer   | Kohler  |
| Type  | KD 15-350   |
| Performance at operating speed in accordance with ISO 3046-1 (kW) | 4,6   |
| Combustion process  | 4-stroke diesel   |
| Operating speed (m/min)   | 3000  |
| Traversing mechanism hydrostatic                                  | Both drums  |
| Movement speed (in km/hours)*                                     |   |
| – Working motion forward/reverse                                  | 0–3.5/0–1.5   |
| – Drive motion forward/reverse                                    | 0–3.5/0–1.5   |
| Climbing capacity (in %)*   | 40/30   |
| Operating brake   | Hydrostatic   |
| Parking brake   | Mechanical<br>Brake effective at friction<br>$\mu = 0.25$ (steel drum on firm<br>rocky ground) to 20 % $\wedge = 11.3^\circ$<br>slope (longitudinal gradient) |
| <b>Vibration</b>  |   |
| System  | Central exciter outside<br>of the drums   |
| Drive concept   | Mechanical, connectable   |
| Frequency (in Hz)   | 60  |
| Amplitude (in mm)   | 0.34  |
| Centrifugal force (in kN)   | 10  |


|   |                |
|---|----------------|
|   | <b>DVH 600</b> |
| <b>Noise emissions in accordance with 2000/14/EC</b><br>Sound pressure level $L_{PA}$ ascertained in accordance with EN 500, in dB (A)  | 92             |
| Sound power level $L_{WA}$ ascertained in accordance with EN ISO 3744 and EN 500, in dB (A)   | 108            |
| <b>Vibration values</b><br>Root-mean-square acceleration value for hand-arm vibration ascertained in accordance with EN 500 in $m/s^2$  | 3.7/6.1        |
|  In accordance with directive 2006/42/EC, complying with the vibration values is the owner's responsibility. |                |



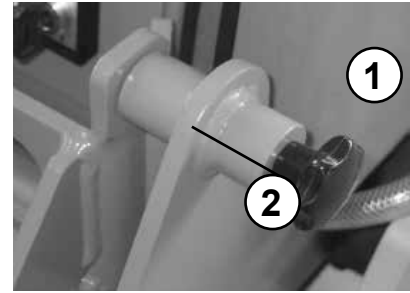
|                                 |  |
|---------------------------------|--|
| <b>1 Description</b><br>.....   | <b>2 TYPE</b><br>.....                 |
| <b>3 Serial number</b><br>..... | <b>4 Year of construction</b><br>..... |
| <b>5 Mass</b><br>.....          | <b>6 Rated power kW</b><br>.....       |

## Activities prior to starting work



### Transport

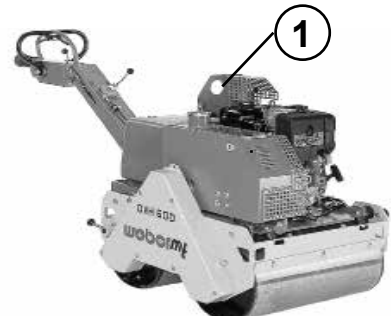
-  When transporting the soil compactor on a vehicle, secure it with suitable restraints.

Arrest the manual guidance rod (1) with the spring bolt (2).



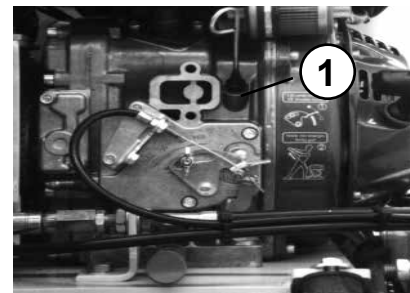
Fit the crane hook into the lifting ring (1) and lift the machine onto the desired means of transport.

-  Only use lifting machines with a minimum bearing capacity of 500 kg.
-  Do not step under suspended loads.

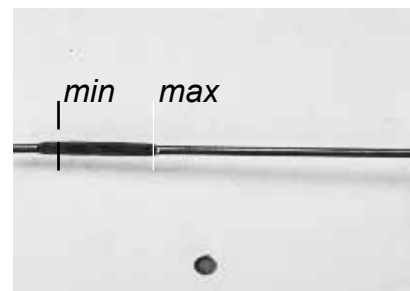


### Checking the engine oil level

Pull the oil dip stick (1) out of the crankcase.





The correct oil level is between the min. and max. marks.

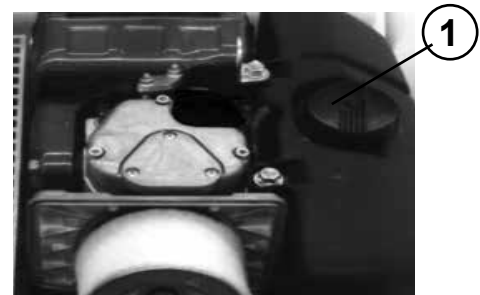


### Check the fuel level

Unscrew and remove the gas cap (1), check the fill level, if necessary top off with clean diesel fuel to the lower edge of the filler neck.


-  For work at the fuel system, have a suitable fire-extinguishing agent at the ready.

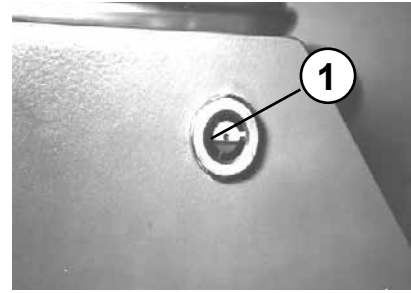
-  Fire, naked light, and smoking is forbidden!




## Check the hydraulic oil level

Check the hydraulic oil level when the machine is at operating temperature. The correct oil level is reached when the oil is in the middle of the view glass.

 No hydraulic oil is consumed during operation. If the oil level drops, you must check the hydraulic system for leaks



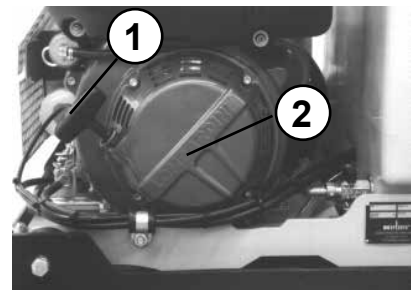
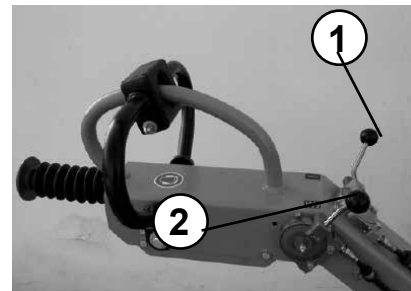
## Starting


 To start, push the vibration lever (1) to the left into the off position (III).

Bring the gas lever (2) into full-throttle position.

Slowly tighten the handle (1) of the reversing starter (2) until resistance is noticeable.

Allow the handle (1) to glide back into the initial position, and then forcefully and completely pull it through with both hands. Allow the engine to warm up for a few minutes.



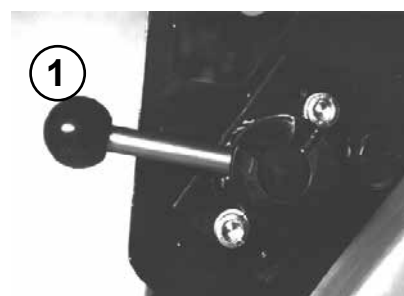
 **If ambient temperatures are below minus 5 degrees Celsius comply with the instructions in the operating manual provided by the engine manufacturer.**

## Driving and compacting

Bring the gas lever (1) into full-throttle position.




Push the parking brake lever (1) into vertical position (disengage).

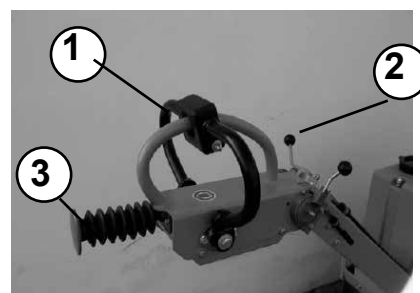


Open the water shut-off valve (1).



Push the drive bar (1) into the desired direction of travel.

Move the vibration adjustment lever (2) as far as it will go to position (  ).



### Forward

= Press the drive bar forward



### Reverse

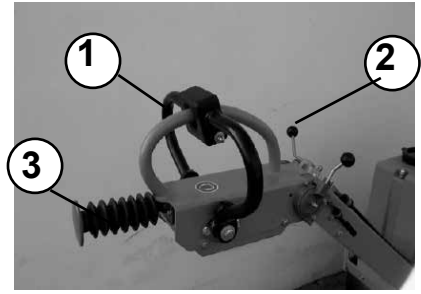
= Pull the drive bar back/down



### Standstill

= Allow the drive bar to slide into 0 position

- ⚠ The roller will come to an immediate stop as soon as the drive lever (1) is released.
- ⚠ If the operator bumps against the crush guard (3) when moving in reverse, the machine comes to a stop.
- ⚠ Through swinging out the drive lever (1) forward in the direction of travel, the crush guard is again lifted up.
- ⚠ Always move the vibration adjustment lever (2) to the stop, otherwise increased abrasion occurs on the V-belt.



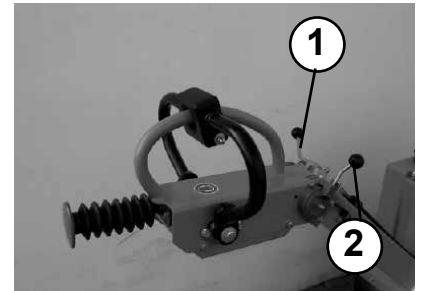
⚠ At obstructions (walls, pits, etc.), ensure that no one can be caught between the machine and the obstruction; or ensure that the machine does not slip into the pit.

⚠ Only run machine within reach of the manual guidance rod.

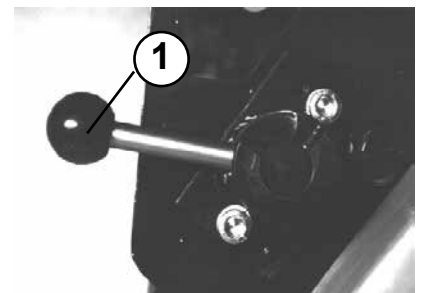
## Shutting down

Bring the gas lever (2) into idle position.

Move vibration lever (1) to position (III).



Pull the arrest lever all the way back (horizontal) until it locks in place on slopes the roller must additionally be secured against rolling off via wedges!



Close the water cock (1).



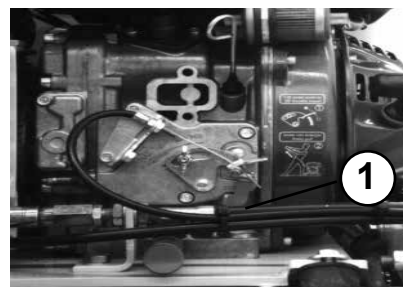
Move stop lever (1) to the left until the engine comes to a standstill.



During breaks – even if they are short – the machine must be shut down.











Parked devices that represent an obstacle must be safeguarded against through conspicuous measures.





## Maintenance overview

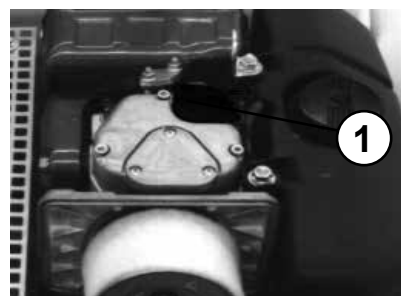
| Maintenance interval                              | Maintenance point  | Maintenance activity   |
|---|--|--|
| <b>After the first 50 operating hours</b>         | Hydraulic system<br>Engine   | – Change hydraulic oil filter<br>– Change the engine oil   |
| <b>Every 8 operating hours / daily</b>            | Air filter<br><br>Hydraulic system<br><br>Engine   | – Clean air filter insert, check for damage, replace if necessary<br><br>– Check threaded unions, hoses for leaks, tighten threaded unions or change hoses as needed<br><br>– <b>Only perform work if the hydraulic system is depressurized!!</b><br><br>– Checking the engine oil level |
| <b>Every 150 operating hours / every 6 months</b> | Vibration shaft<br>Engine<br><br>Drive chains<br>Scraper                                   | – Check V-belt for damage<br>– Change oil filter and engine oil<br>– Change the fuel filter<br>– Lubricate, retighten if necessary<br>– Visually inspect or readjust   |
| <b>Every 300 operating hours / every year</b>     | Complete roller<br><br>Hydraulic system<br><br>Water tank + sprinkling system<br><br>Drive | – Check all modules for visible damage and wear<br><br>– Remove fouling, old grease and rust<br><br>– Change hydraulic oil filter<br>– Change hydraulic oil<br><br>– Clean, remove lime scale<br><br>– Check drive chains and drive pinion for wear; retighten as needed                 |

-  The regulations of the engine manufacturer must be complied with in addition to the above maintenance overview!
-  Work must be carried out using regulation tools, and the operating and maintenance manual must be complied with for all work.
-  Repairs exceeding the scope of regular maintenance may only be performed by trained personnel acting in accordance with our repair manual.
-  All maintenance work: Select a collection vessel that is large enough to prevent oil from spilling onto the ground. Dispose of waste oil in an environmentally friendly manner (regulation on waste oils).
-  Dispose of oils, greases, cloths soaked in oil, and replaced parts with oil on them in an environmentally friendly manner.
-  If lubricating oils and fuel come into contact with skin, they can cause skin cancer. Upon contact with the skin, clean affected skin with suitable cleaning agent without delay.
-  Damaged hydraulic lines, V-belts, drive pinion and drive chains of the drive system must be repaired by trained personnel following the repair manual before the roller is put back into operation.
-  If accessible during maintenance, check the condition and stability of all screws.


## Maintenance work

### Change the engine oil

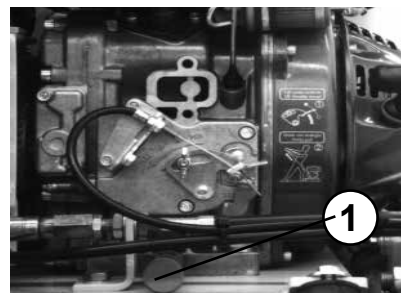
Open the screw cap (1) of the oil filler neck.



Screw the oil drain pipe onto the engine drain valve (1) and drain off the oil.

 Only drain engine oil when at operating temperature.


After emptying completely, unscrew the oil drain pipe from the drain valve and fill with oil in accordance with the specification.




### Change the oil filter

Drain engine oil.

Remove the cover cap (1).

 Danger of scalding due to hot oil.

 Only drain engine oil when at operating temperature.

Replace oil filter (1) with a new element.

After replacing the filter element, seal the filter enclosure with the cover cap.

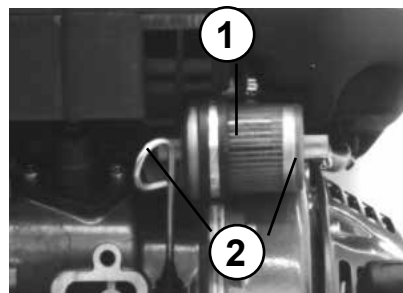


## Change the fuel filter

Pull the fuel line (2) off the fuel filter (1) on both sides.  
Replace the filter with a new filter element.



If lubricating oils and fuel come into contact with skin, they can cause skin cancer. Upon contact with the skin, clean affected skin with suitable cleaning agent without delay.

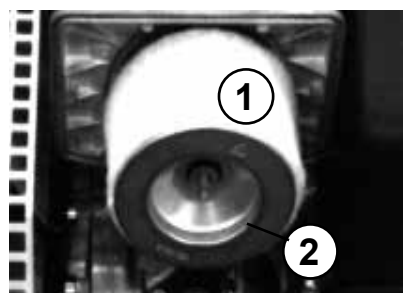


## Clean/change air filter cartridge

Unscrew the air filter cover (1).




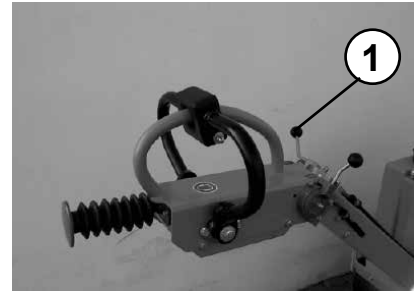
Remove the air filter insert (1) from the air filter enclosure.  
Clean air filter insert as specified by the engine manufacturer if there is damage or if it is extremely dirty.



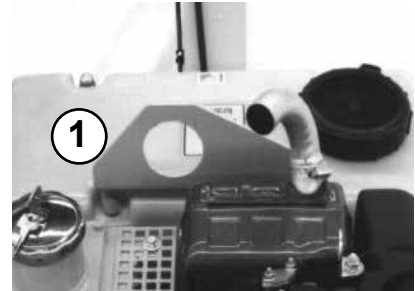
Dispose of oils, greases, cloths soaked in oil, and replaced parts with oil on them in an environmentally friendly manner.

## Check V-belt

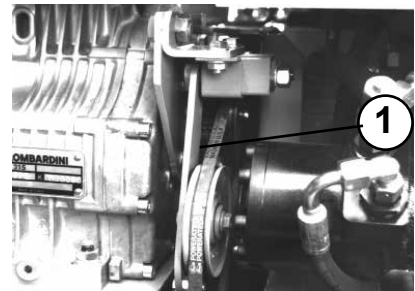
Move vibration adjustment lever (1) to position (  ).



Remove the water tank (1).



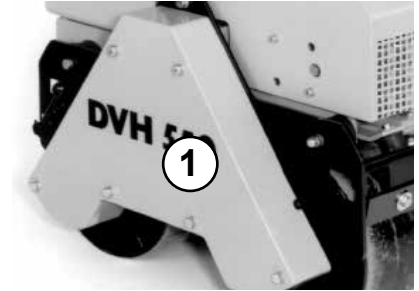
Check the V-belt (1) for cracks, damaged flanks, and wear. If there is excessive wear – replace the V-belt as specified in the repair manual.




After inspecting the V-belt – fit the water tank and connect the water hose.

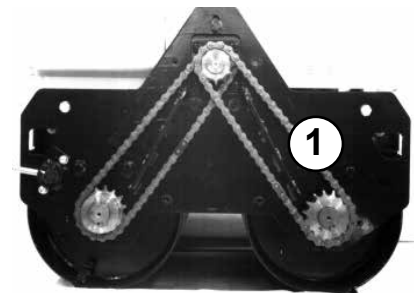
## Lubricate the drive chain

Remove the chain guard (1).



Lubricate the chains (1) as needed and in accordance with the specification.

 Refit the chain guard when finished lubricating the chains.

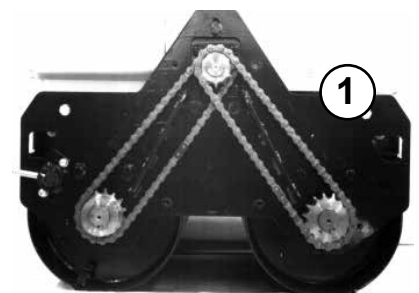


## Check/tighten drive chains

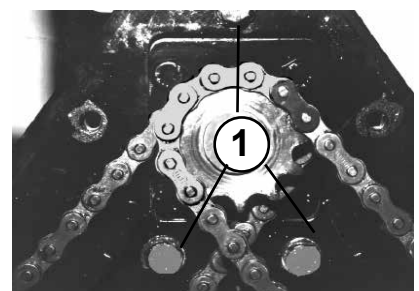
Remove the chain guard (1).



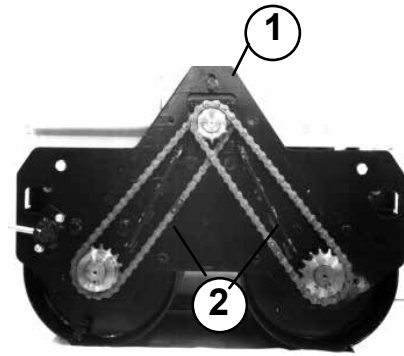
Check the tension of the chains (1).



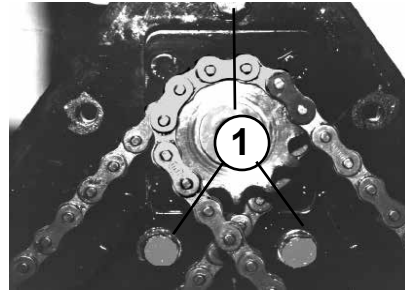
To tighten – loosen the fastening screws (1) of the hydraulic motor.



Lift hydraulic motor through the opening (1) until the chains (2) have reached the desired tension.




Securely tighten the screws (1).




Fasten the chain guard (1).



 Work must be carried out using regulation tools, and the operating and maintenance manual must be complied with for all work.

## Change hydraulic oil


 Always drain the hydraulic oil when the roller is at a standstill.


Open the tank cap (1).



Remove the protective cap (1).

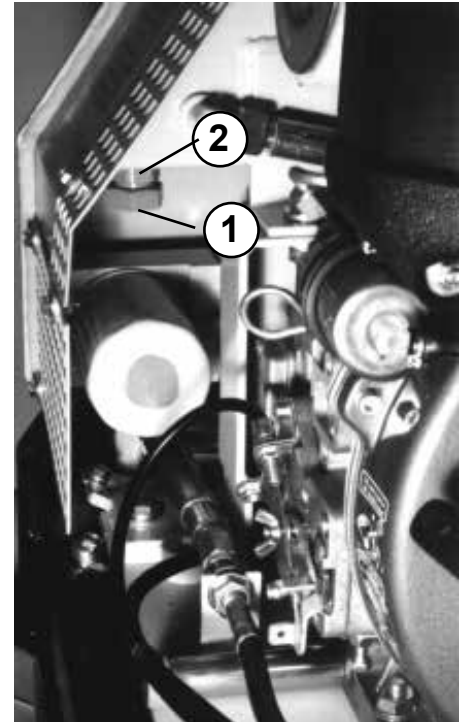
Screw the drain hose onto the drain connection (2).

 As soon as the drain hose is screwed on, the drain valve will open.

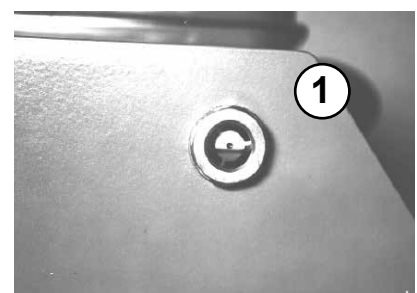
 Danger of scalding due to hot hydraulic oil.

Allow the old oil to drain out completely.

Replace the protective cap (1).  
Use the oil filler neck to fill in hydraulic oil in accordance with the specification.




Check the hydraulic oil level in the view glass (1).






## Change hydraulic oil filter

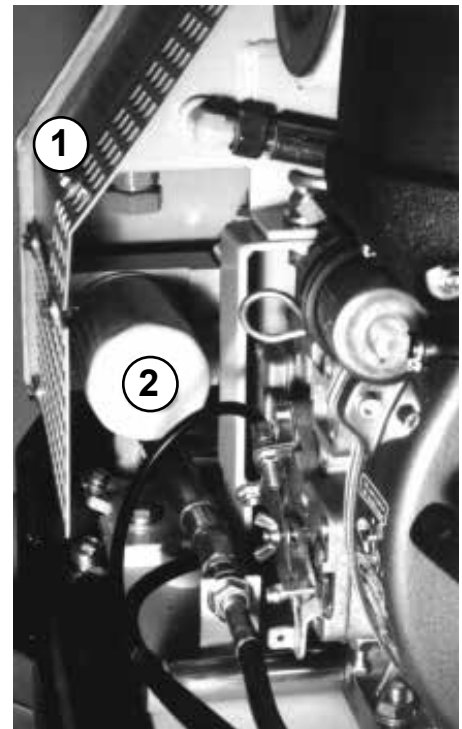
Remove the protective grating (1).  
Drain hydraulic oil.  
Unscrew the hydraulic oil filter (2).


 Danger of scalding due to hot hydraulic oil.


Lightly oil the rubber seal of the hydraulic oil filter.  
Screw on new hydraulic oil filter.


 Only hand tighten the hydraulic oil filter.


Top off hydraulic liquid.  
Check the hydraulic oil level in the view glass (1).



 Check the hydraulic oil level when the machine is at operating temperature. The correct oil level is reached when the oil is in the middle of the view glass.

 If lubricating oils and fuel come into contact with skin, they can cause skin cancer. Upon contact with the skin, clean affected skin with suitable cleaning agent without delay.

 All maintenance work: Select a collection vessel that is large enough to prevent oil from spilling onto the ground. Dispose of waste oil in an environmentally friendly manner (regulation on waste oils).

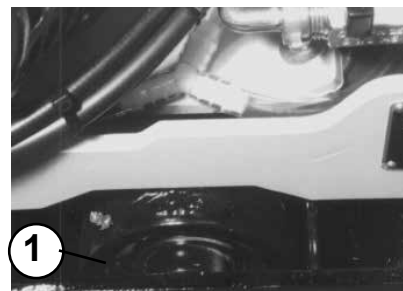
 Wipe up/off oil slick and oil residue and dispose of fuel-soaked cleaning cloths in an environmentally responsible manner.



## Lubricate the vibration shaft

Clean the lubricating nipple (1) on both sides of the vibration shaft. Place the grease gun on the lubricating nipple of the vibration shaft.

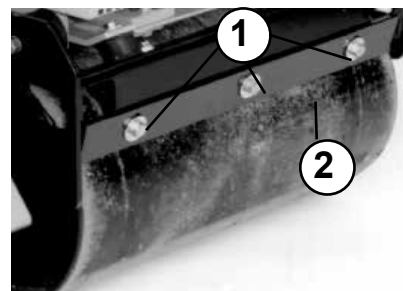
Press grease that complies with the specification into the bearing housing.



## Adjust, clean the scraper

Loosen the screws (1) at the front/rear of the roller. Slide the scraper (2) closer to the respective drum.

- ⚠ The scrapers should not touch the drums!
- ⚠ Firmly tighten the screws (1) when finished adjusting the scrapers.



- ⚠ Work must be carried out using regulation tools, and the operating and maintenance manual must be complied with for all work.

## Operating fluids and fill levels

| Assembly             | Operating material  |  | DVH<br>600      |
|----------------------|---|--|-----------------|
|                      | Summer  | Winter   |                 |
| Engine<br>Engine oil | <b>Quality</b><br>SAE 10 W 40<br>(–10 ~ +50 °C)<br>API – CD CE<br>or SHPD<br>or CCMC – D2 – D3 – PD1  |  | 1.0 l           |
| Fuel tank<br>Diesel  | Diesel  | Winter diesel fuel<br>(from approx. –12 °C)*<br><br>Diesel in accordance with<br>DIN 51601-DK<br>or BS2869-A1/A2<br>or ASTM D975-1D/2D | 4.3 l           |
| Hydraulic system     | Hydraulic oil (ISO) H-LP 68<br>Kinem. visco. 68 mm <sup>2</sup> /s (cSt) at +40 °C<br>First filling:<br>Fuchs Renolin MR 68MC<br>Multigrade oil   |  | 6.0 l           |
| Water tank           | Clean water   |  | 33.0 l          |
| Lubricating points   | High pressure grease<br>(lithium saponified),<br>in accordance with DIN 51502<br>and 51825<br>KP2N-30, to 150 °C<br><br>First filling:<br>DEA Paragon EP2, Fuchs Renolit<br>Duraplex EP2 KKP2P-30 |  | as<br>necessary |

## Troubleshooting

| Fault                        | Possible cause                              | Remedy  |
|------------------------------|---|---|
| <b>Roller does not start</b> | Operating error                             | Execute the start process as prescribed                       |
|                              | Lack of fuel                                | Check the fuel level  |
|                              | Fuel filter fouled                          | Change the fuel filter  |
|                              | Air filter fouled                           | Clean/change air filter cartridge                             |
| <b>Roller does not move</b>  | Operating error                             | Repeat movement attempt                                       |
|                              | Hydraulic pump is no longer working         | Check the V-belt for the hydraulic pump; replace if necessary |
| <b>No vibration</b>          | V-belt for the vibration shaft is defective | Change V-belt   |
| <b>Roller surface fouled</b> | Drums are fouled                            | Adjust the scraper  |

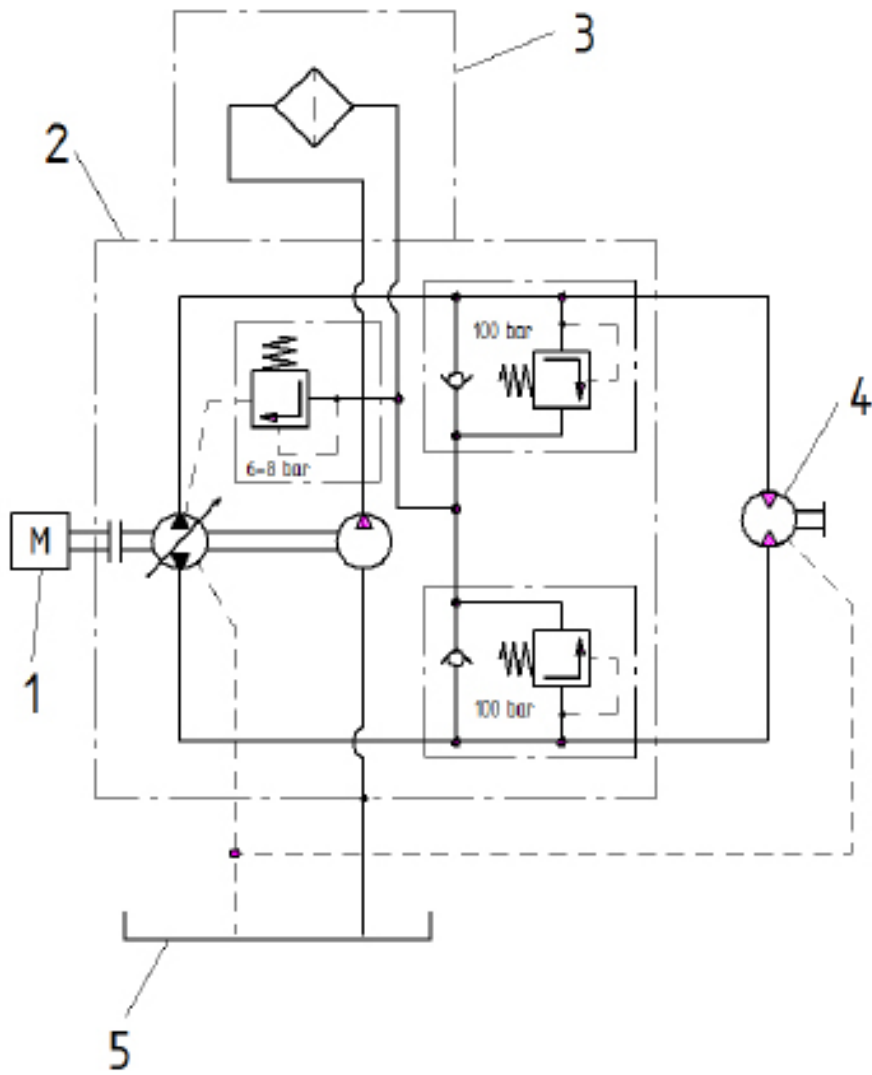
## Actions to be taken before long-term storage (longer than a month)

|   |   |
|---|---|
| <b>Complete roller</b>  | <ul style="list-style-type: none"><li>– Clean thoroughly</li><li>– Check watertight</li><li>– If there are leaks, correct defects</li></ul>   |
| <b>Fuel tank</b>  | <ul style="list-style-type: none"><li>– Empty fuel and fill with clean fuel up to the lower edge of filler neck</li></ul>   |
| <b>Engine</b>   | <ul style="list-style-type: none"><li>– Check oil level, if necessary fill to upper oil-level mark</li><li>– Check air filter, clean, replace if necessary</li><li>– Check fuel filter, change if necessary</li></ul> |
| <b>All bare parts / accelerator / accelerator control cable / fastening bolts</b> | <ul style="list-style-type: none"><li>– Oil / grease</li></ul>  |



If the machine is to be stored for longer than six months, then contact the Weber service organization to discuss additional measures.

# Hydraulic circuit diagram



- 5 Oil tank
- 4 Hydraulic motor
- 3 Filter change cartridge
- 2 Axial piston adjustment pump
- 1 Diesel/gasoline engine

DVH 600-2  
Ident no.: 085000015

22/01/2015 Wi







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