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Vibratory plate

DPU 30..H..

Operator´s Manual

Important information

This machine has been provided with an EPA-certified engine.

Additional information can be found in the engine manufacturer‘s notes.

WARNING

Engine exhaust, some of its constitvents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Caution

This engine is an EPA engine.

Adjusting the engine speed will interfere with EPA certification and the emissions.

Only authorized personnel can make adjustments to this engine.

Please contact you nearest engine dealer or your Wacker Dealer for more information.

1. Foreword

For your own safety and protection from bodily injuries, carefully read, understand and follow the safety instructions in this manual.

Please operate and maintain your Wacker machine in accordance with the instructions in this manual. Your Wacker machine will reward your attention by giving trouble-free operation and a high degree of availability.

Replace faulty or defective components Immediately.

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2. Safety instruction

for the use of vibratory plates with combustion engines

2.1 General instructions

2.1.1 Vibratory plates may only be operated by persons who

- are at least 18 years of age
- are physically and mentally fit for this job
- have been instructed in guiding vibratory plates and proved their ability for the job to the employer
- may be expected to carry out the job they are charged with carefully.

The persons must be assigned the job of guiding vibratory plates by the employer.

2.1.2 Vibratory plates may only be used for compaction jobs. Both the manufacturer's operating instructions and these safety instructions have to be observed.

2.1.3 The persons charged with the operation of vibratory plates have to be made familiar with the necessary safety measures relating to the machine. In case of extraordinary uses the employer shall give the necessary additional instructions.

2.1.4 This machine generates noise that exceeds the country-specific permissible noise levels (individual rating level). It may therefore be necessary to wear ear protection

2.2 Operation

2.2.1 Only use original spare parts. Modifications to this machine, including the adjustment of the maximum engine speed set by the manufacturer, are subject to the express approval of Wacker. In case of nonobservance all liabilities shall be refused.

2.2.2 The function of operation levers or elements is not to be influenced or rendered ineffective.

2.2.3 During operation the operator may not leave the control elements.

2.2.4 The operator has to stop the engine of the vibratory plate before going on breaks. The machine has to be placed such that it cannot turn over.

2.2.5 Stop engine before filling fuel tank. When refilling fuel tank, do not allow fuel to come into contact with the hot part of the engine or spill onto the ground.

2.2.6 Do not smoke or handle open fire near this machine.

2.2.7 The tank lid must fit tightly. Shut fuel cock if available when stopping the engine. For long distance transports of machines operated by fuel or fuel - mixtures, the fuel tank has to be drained completely.

Leaky fuel tanks may cause explosions and must therefore be replaced immediatelly.

2.2.8 Do not operate this machine in areas where explosions may occur.

2.2.9 Make sure that sufficient fresh air is available when operating vibratory plates equipped with combustion engines in enclosed areas, tunnels, galleries and deep trenches.

2.2.10 During operation keep your hands, feet and clothes away from the moving parts of the vibraton plate. Wear safety shoes, and eye protection glasses in case of trench operation where falling sand stones maybe ejected.

2.2.11 When working near the edges of breaks, pits, slopes, trenches and platforms, vibratory plates are to be operated such that there is no danger of their turning over or dropping in.

2.2.12 Make sure the soil or subsoil to be compacted has a high enough load carrying capacity.

2.2.13 Use appropriate protective clothing while working or while carrying out maintenance work.

2.2.14 When traveling backwards the operator has to guide the vibration plate laterally by its guide handle so that he will not be squeezed between the handle and a possible obstacle. Special care is required when work ing on uneven ground or when compacting coarse material. Make sure of a firm stand when operating the machine under such conditons.

2.2.15 Vibratory plates are to be guided such that hand injuries caused by solid objects are avoided.

2.2.16 Vibratory plates have to be guided such that their stability is guaranteed.

2.2.17 Machines with integrated transport trolley may not be parked or stored on the trolley. This device has only been designed to transport the machine.

2.3 Safety checks

2.3.1 Vibratory plates may only be operated with all safety devices installed.

2.3.2 Before starting operation, the operator has to check that all control and safety devices function properly.

2.3.3 If defects in the safety equipment or other defects are detected which impair the safe operation of the internal vibrator, the supervisor is to be notified without delay.

2.3.4 The machine must to be switched off immediately in case of defects jeopardizing the operational safety of the equipment.

2.3.5 Process materials and operating fuels must be stowed away in receptacles or containers marked according to the respective manufacturers specifications.

2.4 Maintenance

2.4.1 Only use original spare parts. Modifications to this machine including the adjustment of the maximum speed set by the manufacturer are subject to the express approval of WACKER. In case of nonobservance all liabilities shall be refused.

2.4.2 All drive units have to be switched off before carrying out maintenance jobs. Deviations from this are only allowed if the maintenance or jobs require a running engine.

2.4.3 When working on vibratory plates equipped with electric starter, disconnect battery before carrying out maintenance or repair jobs on the electric parts of the machine.

2.4.4 Remove pressure from hydraulic lines before working on them. Caution: take care when removing hydraulic lines, for the oil may be very hot (up. over 80^{o} C). Precautions are to be taken to prevent oil from splashing into the operator’s eyes.

2.4.5 All safety devices must be reinstalled properly immediately after maintenance and repair jobs have been completed.

2.4.6 Do not hose down the machine with water after each use to avoid possible malfunctions. Do not use high pressure washers nor chemical products.

2.5 Transport

2.5.1 During transport, loading and unloading of vibration plates by means of lifting devices, appropriate slinging means or hooks have to be used on the lifting points provided for this purpose on the vibratory plate.

2.5.2 The load-carrying capacity of the loading ramps has to be sufficient and the ramps have to be secure such that they cannot turn over. Make sure that no one be endangered by machines turning over by slipping or by moving machine parts.

2.5.3 When being transported on vehicles, precautions have to be taken that vibration plates do not slip or turn over.

2.6 Maintenance checks

2.6.1 According to the conditions and frequency of use, vibratory plates have to be checked for safe operation at least once a year by skilled technicians, such as those found at WACKER-service depots and have to be repaired if necessary.

Please also observe the corresponding rules and regulations valid in your country.

3. Technical Data

	DPU 3050H	DPU 3060H	DPU3060H-TS	DPU 3070H
Item no.	0610039	0610040	0610042	0610041
Operating weight kg:	181	190		195
Advance and reverse travel m/min:	22	20	23	18
Compacted area m^2/h:	660	720	828	756
Kraftübertragung	From drive engine directly to exciter unit via centrifugal clutch and V-belt			
Exciter				
Vibrations min^{-1} (Hz):	ca. 5400 (90)			
Centrifugal force kN:	30			
Oil	Fuchs Titan Unic 10W40 MC (SAE 10W40)			
Oil quantity l:	0,6			
Drive motor	Air-cooled single-cylinder 4-cycle diesel engine with recoil starter			
Piston displacement cm^3:	347			
Engine speed (rpm) min^{-1}:	2800			
Rated power (*) kW (PS):	4,2 (5,6)			
Fuel	Diesel			
Fuel consumption l/h:	0,6			
Tank capacity l:	5,0			
Oil	Fuchs Titan Unic 10W40 MC (SAE 10W40)			
Oil quantity l:	1,1			
Hydraulic control				
Hydraulic oil	Fuchs Renolin MR 520			
Oil quantity	0,4			

		DPU 3050H	DPU 3060H	DPU3060H-TS	DPU 3070H
Special lubricating grase	L_{PA}:	95 dB(A)			
The weighted effective acceleration value, determined according to EN ISO 5349	m/s^2:	is 10			

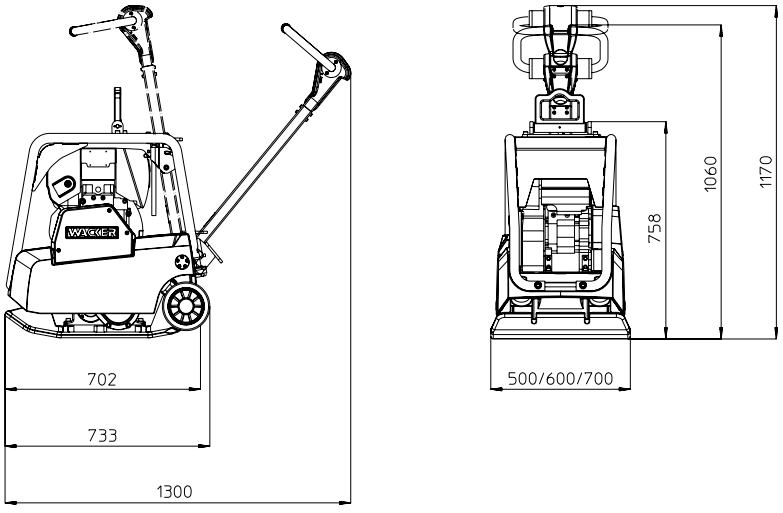
(*) In accordance with the installed useful outlet power according to Directive 2000/14/EG

4. Description

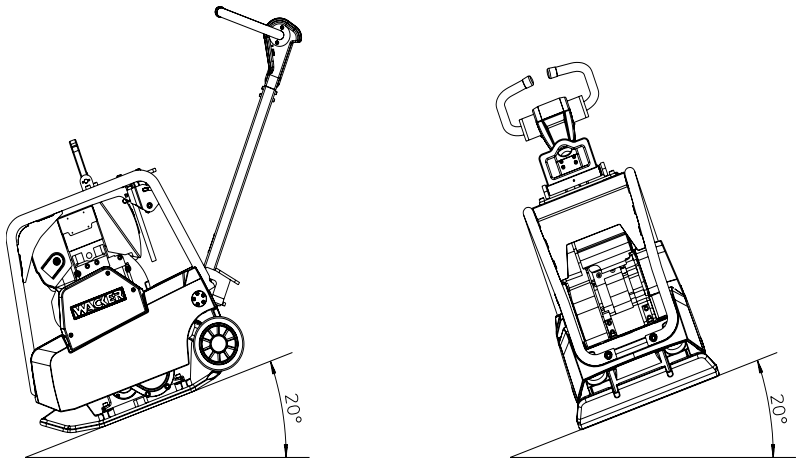
4.1 Applications

The machine is suited for the compaction of all types of soil, including semi-cohesive soils, in trench and surface applications as well as for the compaction of asphalt (black-top) layers and the vibration of interlocking paving stones. The machine is the most universally suitable machine of this series thanks to the fine balancing between the centrifugal force and the contact surface to the soil.

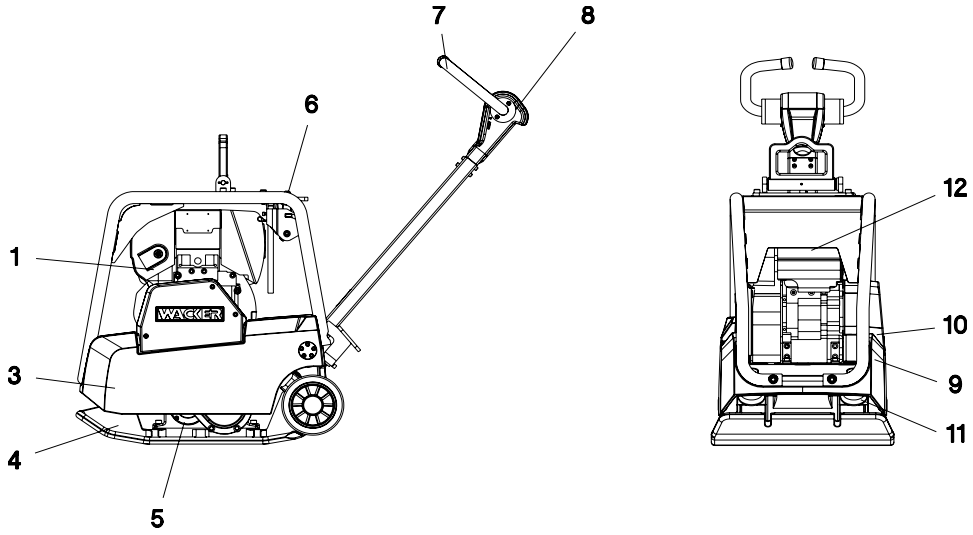
4.2 Dimensions



4.3 Max. admissible inclination

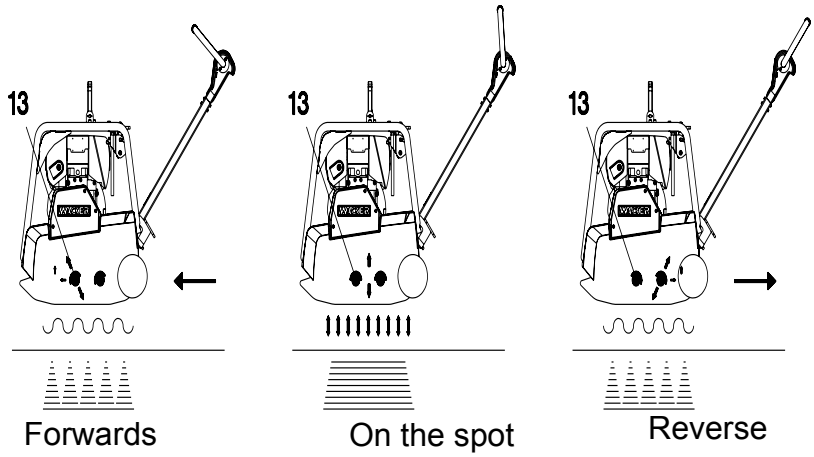


4.4 Description of function



4.4.1 The vibration required for compaction is produced by the exciter (5) which is firmly joinded to the lower mass (4). This exciter (5) is designed as a central vibrator with aligned vibrations. Such a principle permits the direction of vibration to be changed by turning the eccentric weights (13). In this way an infinitely variable transition between vibration in forward motion, at standstill and in reverse motion is possible.

This process is hydraulically controlled with the operating control handle (7) on the centre pole head (8).



4.4.2 The drive engine (1) is anchored to the upper mass (3) and drives the exciter (5). The torque is transmitted by means of a friction connection through the centrifugal clutch (9) and the exciter V-belt (10).

4.4.3 The centrifugal clutch (9) interrupts flow of power to the exciter (5) at low engine speeds and thus permits perfect idling of the drive engine (1). The speed of the drive engine (1) can be infinitely varied by way of the throttle lever (6).

4.4.4 The upper (3) and lower (4) masses are connected to each other by 4 vibration-damping shock mounts (11). This damping system prevents the very high frequencies from being transmitted to the upper mass (3). As a result the functionability of the drive engine (1) is retained in spite of the high compaction performance.

4.4.5 The drive engine (1) works according to the diesel principle, is equipped with a recoil starter, draws in combustion air through a dry type air cleaner (12) and is air-cooled.

5. Transport to work site /Recommendations on compaction

5.1 Transport to work site

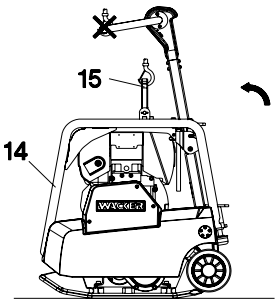
Conditions:

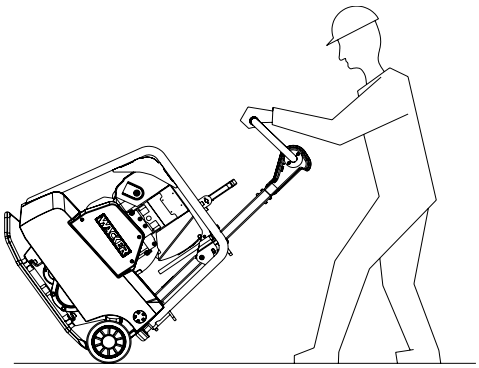
* To transport the vibration plate, use only suitable lifting equipment with a minimum load-bearing capacity of 200 kg.
* Only attach suitable tackle at the central lifting point (15) provided.
* Always tie down the vibratory plate by the protective frame (14) and latch the center pole in place during transport of the vibratory plate on the loading area of a transport vehicle.

The engine must be stopped when using the integrated transport device. Lubrication of the engine is not guaranteed if the engine is running when the plate is in transport position.This could lead to serious engine damages.

Furthermore the danger exists that oil will spill out of the crankcase breather.

Note: Also observe the regulations in the chapter “Safety instructions“.





5.2 Recommendations on compaction

5.2.1 Ground conditions

The max. compaction depth depends on several factors relating to the ground condition, such as moisture, grain distribution etc,

it is therefore not possible to specify exact values.

Recommendation: In each case determine the max. compaction depth with compaction tests and soil samples.

5.2.1 Compaction on slopes

The following points are to be observed when compacting on sloped surfaces (slopes, embankments):

* Only approach gradients from the bottom (a gradient which can be easily overcome upwards, can also be compacted downwards without any risk).
* The operator must never stand in the direction of descent (see chapter “safety instructions“).
* The max. gradient of 20^{o} must not be exceeded.

If this gradient were exceeded, this would result in a failure of the engine lubrication system and thus inevitably lead to a breakdown of important engine components.

6. Operating instructions

6.1 Diesel fuel

Only use pure diesel fuel.Close fuel tank immediately. It is important to maintain absolute cleanliness to avoid otherwise inevitable trouble with the fuel injection system, and to avert a premature clogging up of the fuel filter. Do not open the fuel line nor the fuel pump or any other point of the fuel system to avoid danger of dirt contamination, not even for bleeding of air. The fuel pump will bleed automatically. This applies even should the fuel tank have run dry by mistake. In such a case simply refill fuel tank.

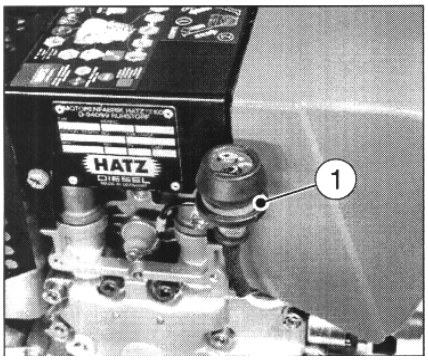
6.2 Dry-type air filter

A loss of engine power with a simultaneous belching of smoke indicates a plugged-up air filter. Remove filter cartridge and clean by light tapping to dislodge dust from the paper element.

Clean filter housing! Use a clean rag, do not clean with compressed air. While cleaning avoid by all means introducing dirt into the engine intake port.

6.3 Air cleaner – inspecting the service indicator

Set the engine to full rpms for a short period of time. If the bellows is drawn together during this time and the green field „1“ is covered, then the air cleaner system is due for maintenance. Check the rubber bellows repeatedly per day when working in dusty environments.



6.4 Starting the engine

* Only start with the engine starting procedure once a sufficiently stable position is assured.
* Move throttle lever to start position.
* Slowly pull out starter rope until the engine’s compression resistance can be felt.
* At this point let starter rope slowly return into starter housing.
* Now start the engine. Pull out the rope (evenly, not by jerks as is usual with gasoline engines) and turn the engine with ever increasing speed. Use complete length of starter rope.

6.5 Switching off the engine

* Pull throttle lever back to STOP position.
* Press down stop button.

6.6 Short-term operation interruption

Set throttle control lever to idling position.

6.7 End of compaction operation

Stop engine.

7. Maintenance

7.1 Maintenance schedule

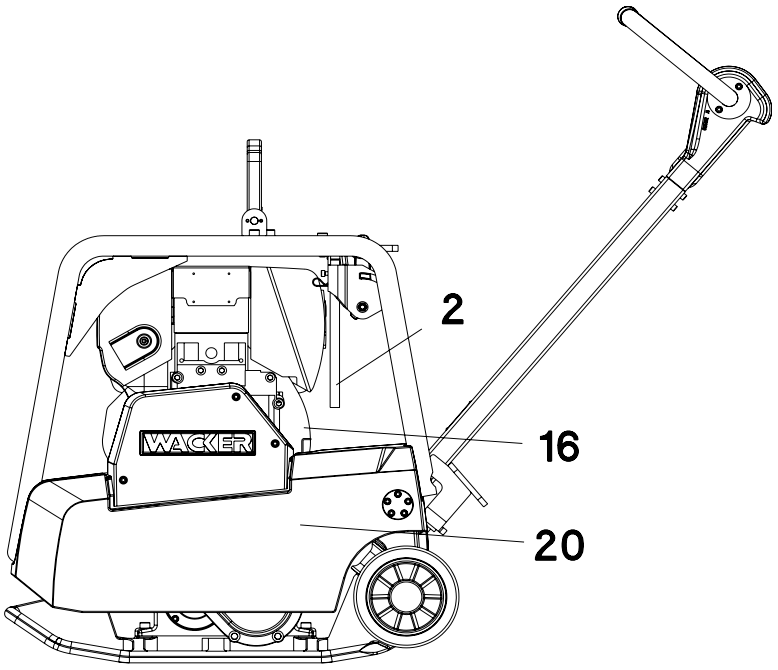
Parts	Maintenance jobs	Maintenance interval
Engine oil	Check oil level. Check combustion and cooling air area for dirt.	daily
Air filter	Inspect the air cleaner service indicator while the engine is running. Clean or replace the air cleaner insert if necessary.	
Exciter	Check for tightness.	
Bowden cable	Check to see smooth running.	
Exciter	Check attachment screws for tight fit.	monthly
Hydraulic control	Check oil level, top up if necessary.	
V-belt	Check V-belt tension-retension, if need be.	
Protective frame	Check fastening screws of protective frame and central suspension for tight fit.	
Engine oil	First oil change; check valve air gap, set to 0,10 mm with cold engine.	after 25 hours
Exciter	Check oil level-fill up, if need be.	after 150 hours
Engine oil	Replace.	after 250 hours
Valve clearance	Check, set to 0,10 mm with cold engine. Control screwed connections.	
Exciter	Oil change.	
Drive engine	Tighten all accessible screw connections. Fuel filter change. Maintenance of dry air filter.	after 500 hours
Oil filter	Clean.	after 1000 hours
Drive engine	Siphon off water from fuel tank.	once a year

7.2 Engine oil

7.2.1 Check oil level:

* The engine must be horizontally place when filling in oil or checking the oil level.
* Check oil level with dip stick (16).
* If oil level is to low, top up with oil Fuchs Titan Unic 10W40 MC through oil feed opening (16).

Engine oil capacity: 0,9 l.



7.2.2 Oil change:

Drain the oil while the engine is still warm to assure rapid and complete draining.

1. Remove the oil filler cap (16).
2. Screw waste oil drain hose (2) onto oil change valve (20). Collect the waste oil with an appropriate container and then dispose of oil.
3. Unscrew waste oil drain hose (2) and fasten to the corresponding support.

4. Pour the recommended oil through the oil filler tube (16) and then check the oil level.

Place machine in horizontal position before checking engine oil level.

5. Use cap to close off oil change valve (20).

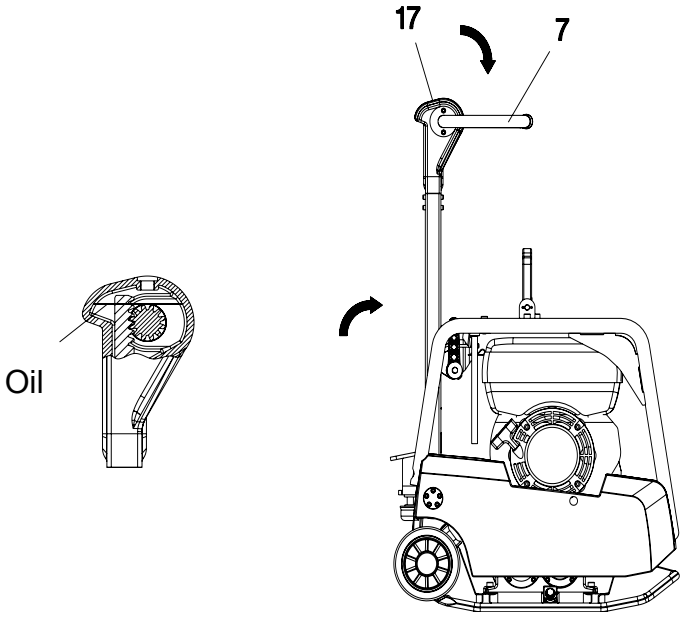
Take notice: Please pay attention to the corresponding environmental laws when disposing of used engine oil. We recommend you carry the oil in a container to a central collecting point for used oils. Do not pour used engine oil into the garbage nor into the sewer system, waste pipes or even on the ground.

7.3 Hydraulic control

7.3.1 Check oil level:

1. Move centre pole into vertical position.
2. Push operating control handle (7) to forward ravel position.
3. Open filler bore (17).
4. The oil level must reach the upper edge Oil of the gear; add Fuchs Renolin MR 520 hydraulic fluid if required.
5. Close filler bore (17).

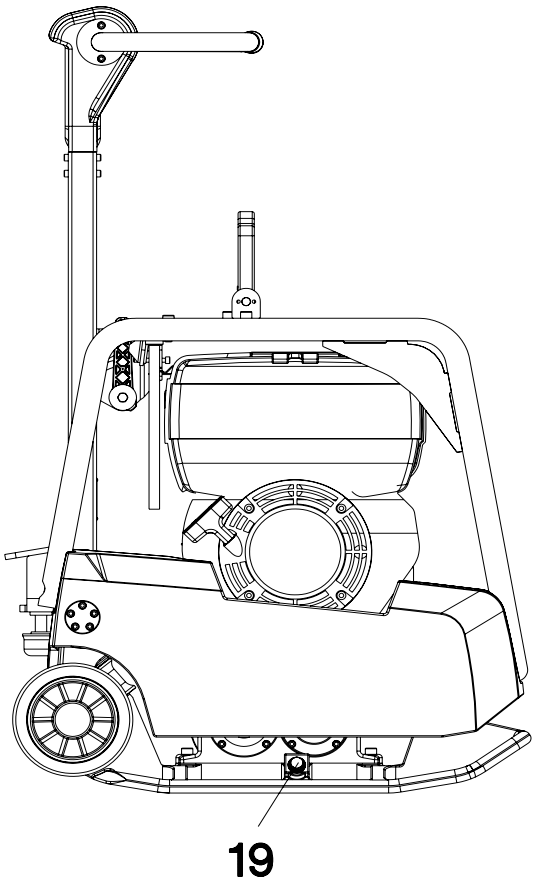
Hydraulic control system is self-bleeding.



7.4 Exciter

7.4.1 Check oil level:

1. Position vibration plate horizontally.
2. Open filler bore (19).
3. The oil level must reach the start of the thread (19) of the filler bore.
4. If necessary, pour in oil Fuchs Titan Unic 10W40 MC through filler bore (use funnel).
5. Close filler bore (19). (Tightening torque 100 Nm)



7.4.2 Changing the oil:

1. Open filler bore (19).
2. Tilt vibration plate and keep it tilted until the oil has run out.
3. Place vibration plate in horizontal position.
4. Pour in 0,6 l oil Fuchs Titan Unic 10W40 MC through the filler bore (19).
5. Close filler bore (19). (Tightening torque 100 Nm)

Do not pour in too much oil!

7.5 Exciter V-belt

Remove belt guard. Remove the screws from the engine's V-belt pulley and then pull off the V-belt pulley half. Take out the necessary number of discs (removal of one disc is usually enough). Place the discs just removed on the outside of the V-belt pulley half. Turn in the screws by hand and then alternately tighten while constantly turning the engine's V-belt pulley. Run the machine a few moments and then retighten the screws if necessary.

8. Malfunction

8.1 Reverse speed too low

Cause	Remedy
To little hydraulic oil in the centre pole head.	Top up hydraulic oil.

8.2 Forward speed too low

Cause	Remedy
Too much hydraulic oil in centre pole head.	Correct oil level in accordance with mark.

8.3 No advance

Cause	Remedy
Mechanical fault.	Contact Wacker service dept.

8.4 Loss of hydraulic oil

Cause	Remedy
Leaks, hydraulic hose defective.	Contact Wacker service dept.

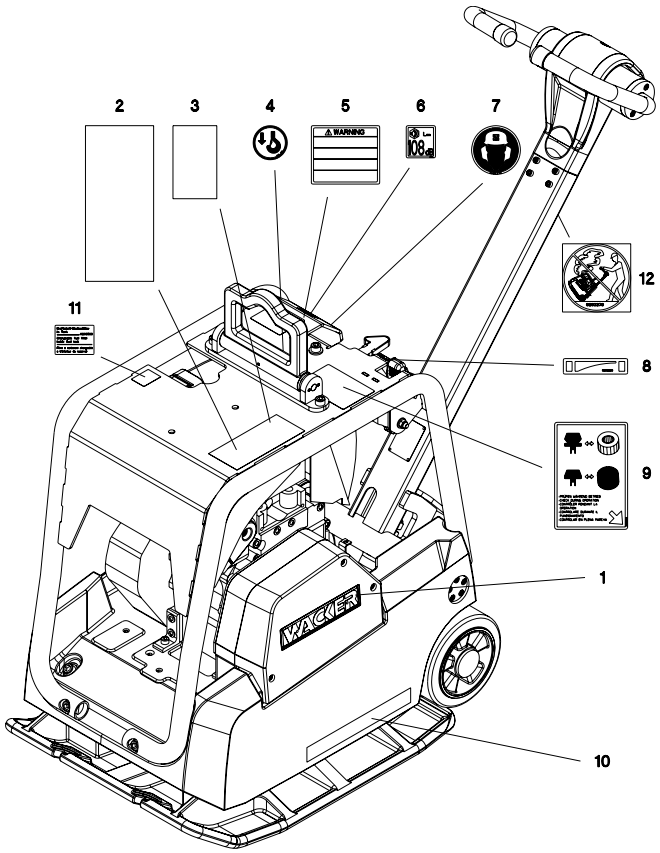
8.5 Engine does not start

Cause	Remedy
Throttle lever in stop or idle position.	Place throttle lever in start position.
No fuel at the injection pump.	Add fuel. Check complete fuel system.
	Check feeder line to engine and fuel filter.
Wrong valve tapped clearance.	Check valve clearance, set if necessary.
Worn out valves.	Call in Wacker Service.
Cylinder and / or piston ring wear.	
Injection nozzle not operating.	

8.6 No vibration, even though engine is running

Cause	Remedy
Worn-out V-belt	Replace V-belt
Worn-out clutch lining	Replace clutch linings

9. Lables



1	Wacker-Logo
2	Maintenance-Notice
3	Notice-Starting
4	Notice-Lifting point
5	Warning notice - Do not run without protective devices. - Read operator’s manual in detail.
6	Sound power level
7	Ear protection decal
8	Start-Stop
9	Notice-Air cleaner service indicator Inspect during engine operation
10	Type
11	Notice-Easy-change fuel filter inside tank
12	Flipping over warning notice

EG - Konformitätserklärung
EC - Conformity Certificate

Wacker Construction Equipment AG, Preußenstraße 41, 80809 München

bescheinigt, daß das Baugerät:
hereby certify that the construction equipment specified hereunder:
1. Art / Category:

Vibrationsplatte / Vibratory plate

2. Typ / Type:

DPU 3050H / DPU 3060H / DPU 3070H / DPU 3060H-TS

3. Gerätetypnummer / Equipment item number:

0610039, 0610040, 0610041, 0610042

4. absolute installierte Leistung / Absolute installed power:

4,2 kW

in Übereinstimmung mit Richtlinie 2000/14/EG bewertet worden ist:
has been evaluated in conformity with Directive 2000/14/EC:

Konformitätsbewertungsverfahren Conformity assessment procedure	Bei folgender einbezogener Prüfstelle At the following notified body	Gemessener Schallleistungspegel Measured sound power level	Garantierter Schallleistungspegel Guaranteed sound power level
Anhang VIII Annex VIII	**VDE Prüf- und Zertifizierungsinstitut Zertifizierungsstelle Merianstraße 28 63069 Offenbach/Main**	**107 dB(A)**	**108 dB(A)**

und in Übereinstimmung mit folgenden Richtlinien hergestellt worden ist:
and has been manufactured in accordance with the following directives:
*** 2000/14/EG**
*** 98/37/EG**
EN 500-1
EN 500-4

ppa Otto

Dr. Stenzel
Leitung Forschung und Entwicklung
Research and Development Management

Bescheinigung bitte sorgfältig aufbewahren / File certificate carefully

VDE Prüf- und Zertifizierungsinstitut

VDE VERBAND DER ELEKTROTECHNIK
ELEKTRONIK INFORMATIONSTECHNIK e.V.

C E R T I F I C A T E

Registration-Number: 6236/QM/06.97

This is to certify that the company

Wacker Construction Equipment AG
Wacker-Werke GmbH & Co. KG

at the following locations

Head Office Munich
Preußenstraße 41
80809 Munich

Production plant Reichertshofen
Karlsfeld logistics centre
Sales regions with all branches all over Germany

has implemented and maintains a
Qality **M**anagement **S**ystem for the following scope:

Machine manufacture
Construction machines

This Q System complies with the requirements of

DIN EN ISO 9001:2000

and the requirements of the German and international Road Traffic Act.

This Certificate is valid until 2009-06-05.

VDE Testing and Certification Institute
Certification

Date: 2003-05-30

63069 Offenbach, Merianstraße 28
Telefon: +49 (0) 69 83 06-0, Telefax: +49 (0) 69 83 06-555
E-Mail: vde-institut@vde.com, http://www.vde-institut.com

The VDE Testing and Certification Institute is accredited by DAR Accreditation Bodies according to DIN EN ISO 17020 and DIN EN ISO 45012 and notified in the EU under ID.No. 0366.

TGA-ZM-09-92-00
KBA-ZM-A 00021-97

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