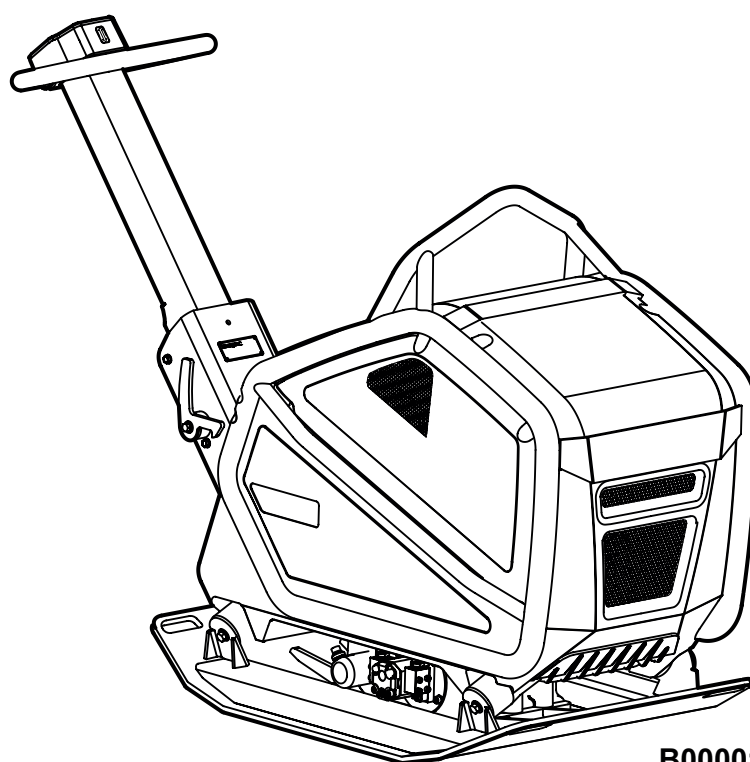

USER MANUAL IN ORIGINAL



B00001

USE

SWEPAC FB515

This machine may only be used as intended, i.e., to pack ballast under foundations, roadwork construction, in pipe and cable trenches, etc. All other applications are forbidden. Due to the forward / reverse function, the machine is highly suited for packing ballast in places with poor access and as a complement to larger packing equipment in hard-to-reach places. The stepless speed control makes it possible to operate it with great precision and also “pack on the spot”.

The machine may not be reconstructed or modified with permission from Swepac.

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SAFETY INSTRUCTIONS

- Before using the machine, the operator must be informed of the manufacturer's safety instructions and instructions for use.
- The machine may only be used outdoors.
- The machine may not be used if protection and safety devices are not present or not working.
- The operator may not leave the machine unattended when the engine is on. The machine is equipped with a Dead Man's Switch to prevent this. When the vibrator is connected, the operator must be able to control the movement of the machine using the operating lever and the start/stop controls. The machine may only be operated by a trained operator.
- During maintenance work or other interventions in the machine, the engine must always be off.
- Switch the engine off before adding fuel. Avoid fuel spillage and immediately wipe off any spilled fuel. Add fuel only in well ventilated areas.
- Avoid touching hot engine parts, for example the silencer.
- Before lifting the machine, check that the lifting device and its mounting are not damaged and that the rubber dampers on the base plate are undamaged and tightened.
- During transportation and storage, the fuel tank should be empty and the fuel cock switched off.
- When the machine is parked, ensure that it cannot tip over. The machine must not incline more than 20°.
- The operator must use ear protectors when working with the machine.
- The operator must ensure that no unauthorised persons are in the immediate vicinity of the machine.
- Always wear personal protective equipment as heavy, non-slip shoes, ear protectors and approved eye protection.
- The machine may not be used in environments with potential fire or explosion danger.
- Never use the machine if you are tired or have consumed alcohol or are using medication that could affect your vision, your discretion or your coordination ability.
- Never use a machine that, in any way, has been changed from its original design.

STANDARDS

Noise

Measurement according to the standard EN 500-4 Rev.1: 1998, Annex C:

Measurement uncertainty $\pm 0,5\text{dB (A)}$ i 95% of measurements.

In accordance with the conditions in Directive 2000/14/EC, Annex VI, the following values are reported:

	FB 515
Sound pressure level at the operator's ears, L_{pA}	93 dB (A)
Permitted sound power level, L_{WA}	108 dB (A)
Guaranteed sound power level, L_{WA}	108 dB (A)

Since the sound pressure level in the operator's ears exceeds

80 dB (A), ear protectors must be used during operation!

Hand/arm vibration

Vibration acceleration has been measured according to the ISO 5349 standard when driving on macadam substrates. The measured values have been converted to maximum daily exposure during regular use. Further information is available in the work environment regulations AFS 2005:15 on vibration, valid from 1 July 2005.

Measurement uncertainty $\pm 0,3 \text{ m/s}^2$ i 95 % of measurements.

	FB 515
Hand/arm vibration, m/s^2	2.6
Maximum daily exposure	7,4h

Exhaust Emissions

FB515 meets the requirements for exhaust emissions in accordance with Euro V.

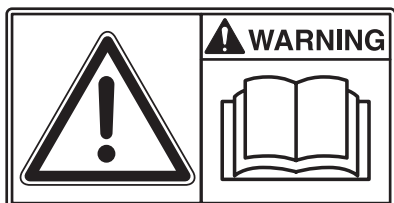
Additional information

Environmentally approved for use in large cities.

SIGNS

Warning Signs

Before use, carefully read through the manual and safety regulations in order to be able to handle the machine in a proper manner. Make sure that the manual is always available



Engine, silencer: In order to prevent burns or discomfort, make sure not to touch hot motor parts when the motor is running or when the machine has recently been used.



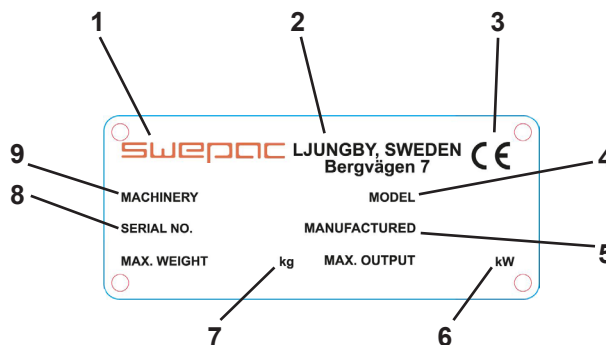
Belt drive: Keep hands, tools or other objects away from the belt drive when the machine is in operation in order to avoid injury. See the safety instructions in the manual.



Since the sound pressure level in the operator's ears exceeds 80 dB (A), ear protectors must be used during operation.



Machine plate



1. Manufacturer.
2. Country of manufacture.
3. CE label.
4. Model name.
5. Year of manufacture.
6. Maximum motor power.
7. Maximum weight.
8. Serial number.
9. Machine type.

TECHNICAL DATA**FB 515**

Net weight 495 kg
 Base plate, w x l 700 x 1080 mm Operational speed
 approximately 25 m/min
 Permitted inclination 20°
 Centrifugal force 66000 N
 Vibration frequency 72 Hz
 Driving engine Hatz 1D50Z
 Engine power 7.5 kW
 Engine RPM 3000 RPM
 Fuel tank volume 12 litre
 Fuel type Diesel
 Hydraulic oil volume 13 litre
 Battery capacity 40 Ah
 Generator power 180 W (15 A)

OIL and FUEL RECOMMENDATIONS

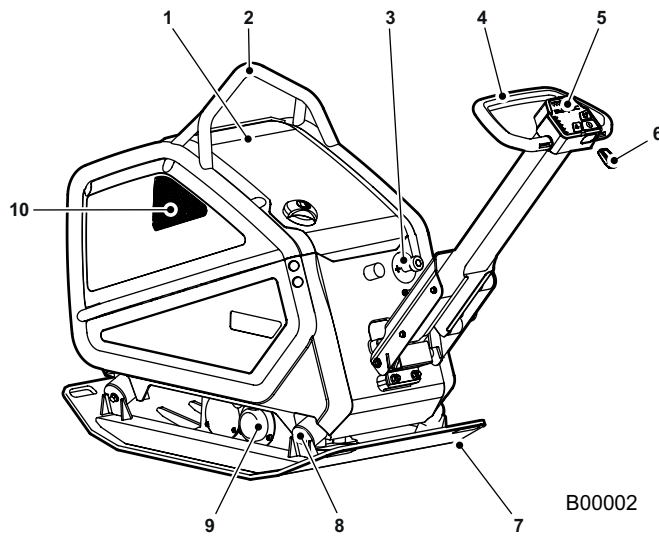
Fuel	Diesel Mk1
Engine oil	SAE10W-30
Oil quantity, crankcase	1,5 litre
Engine oil change	First oil change after 50 hours then every 200 hours of operation. Change filter each time.
Type of hydraulic oil amount	Statoil Hydraway Bio SE 32-68 13 litre
Hydraulic oil filter, change	After 3 years
vibrating element, oil/amount	SAE10W-30 0,4 litre

METHOD OF OPERATION FB 515
(hydraulically powered only)

The machine consists of a base plate with vibrating elements and a top-mounted suspended plate. The cushioning between the base plate and the upper part consists of rubber dampers. The operating lever is situated on the top plate and cushioned with rubber dampers. The vibration element and changing travel direction is powered by hydraulics. The hydraulic pump, mounted on the internal combustion engine, supplies the oil flow to a hydraulic motor on the vibrating element. The vibrating element consists of two roller-bearing shafts with balance weights which are connected to cogwheels which rotate against each other. One cogwheel can be rotated on its axis by means of a hydraulic cylinder, this changes the mutual phase position of the eccentric weights and the driving direction and speed of the machine change steplessly. The engine is well protected against damage in connection with use and transportation by a sturdy protective frame with a protective panel.

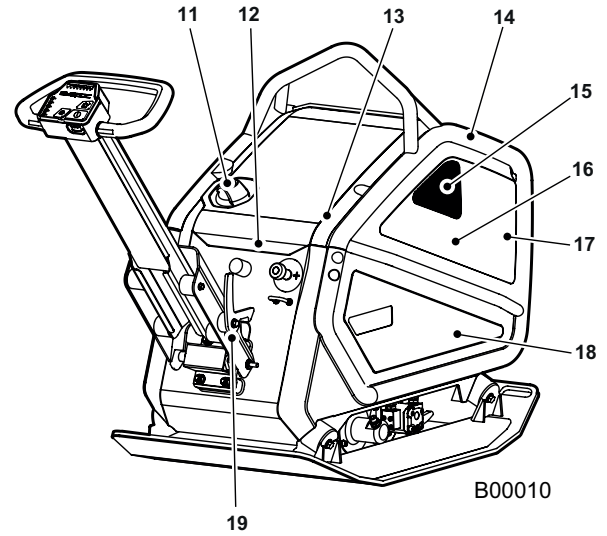
The machine's steering system is constantly connected online and can be updated, tracked and positioned over the internet. Via this system, it can also be geopositioned, i.e. Its operations can be limited to a certain geographical work area and connected to several machines in the same workplace to allow one key to work for several machines.

COMPONENT PLACEMENT



Left side view

1. Cap
2. Yoke
3. Connection point, battery charge + (Some machines)
4. Operating lever (forward/reverse lever)
5. Control panel
6. Starter key “dead man’s switch” (some machines)
7. Bottom plate
8. Rubber dampers
9. Vibrating element
10. Engine



Right side view

11. Refueling
12. Battery
13. Hydraulic oil filter
14. Protective frame
15. Air filter
16. Hydraulic pump (during hydraulic operation)
Centrifugal coupling (when belt-driven)
17. Hydraulic oil cooler
18. Side protection
19. Transport security

DAILY SUPERVISION

Fuel Check

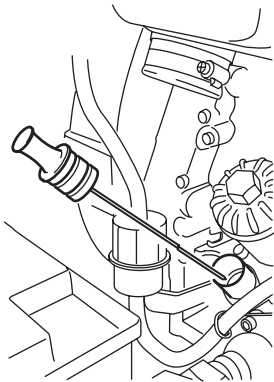
Check that there is fuel in the tank. Top up if necessary.

Engine Oil Level Check

Check the oil level in the crankcase every day.

Note! The engine must be turned off and the engine should be on a level surface.

The oil should reach the maximum marking.



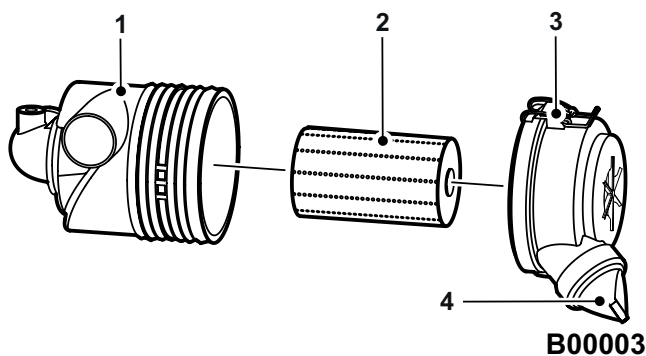
FB 515

Oil/Fuel Leakage

Check every day that the engine is not leaking oil or fuel. If a leak is discovered, the machine may not be operated until the fault has been remedied.

Air Filter Check

The air filter must be checked at least once every working week. When working in dusty conditions, check daily.



B00003

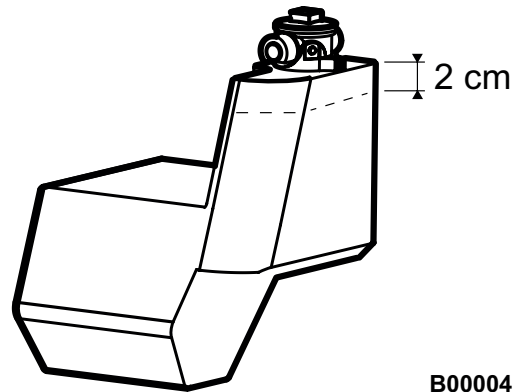
1. Air filter housing
2. Filter element
3. Filter cap
4. Dust collector/Emptying valva

Check hydraulic oil level

Check daily that the hydraulic connections are not leaking or wear out from driving. The oil level in the hydraulic oil tank must be as shown, at maximum 2 cm below the tank top.

When filling with hydraulic oil, do as follows:

Remove the fuel cap. Remove the insert filter. Fill up with hydraulic oil and replace the filter and cap. Make sure that the cover is properly tightened when reassembling.



B00004

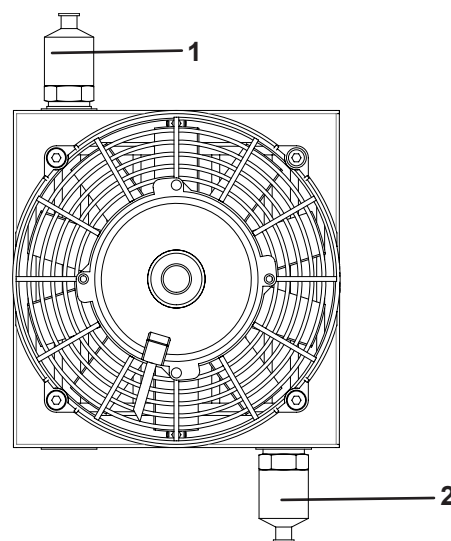
Hydraulic oil cooler

The machine is equipped with a hydraulic oil cooler. The cooler starts when the hydraulic oil temperature reaches +50 °C. After that, the cooler switches on and off as required.

After switching off the machine, the cooler fan may run for a short time, which is completely normal.



Note! Hydraulic Oil Temperature Warning Light, shines red when the hydraulic oil temperature is too high. Continued use will lead to the poorer packing capacity. Stop and check the hydraulic oil cooler.



Thermostats

1. Thermostat for the hydraulic oil cooler fan.
2. Thermostat for high oil temperature warning lamp.

Charging the battery



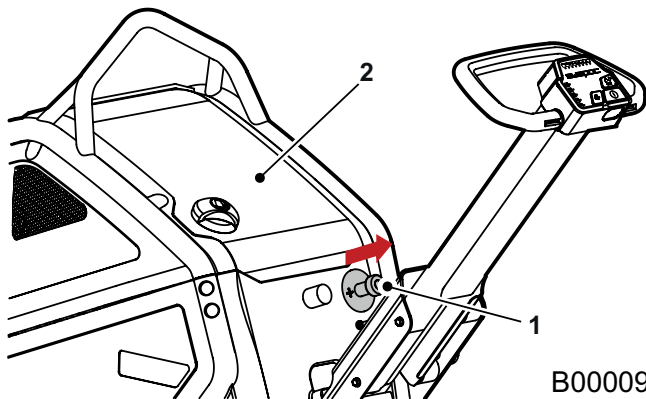
If the “Charging” warning light on the control panel shines red or if the machine is left unused for a long period, the battery needs to be charged.

Machine with external charging point

This is done by pulling out the lever (1) that provides connection to the positive terminal of the battery (connect the charger’s positive cable here) and connect the charger’s negative cable to the machine chassis.

Machine with no external charging point

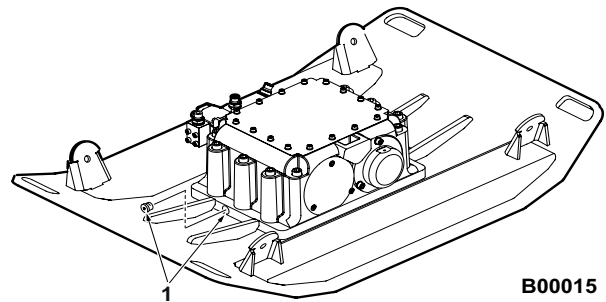
This is done by removing the rear cover (2) to allow access to the battery. Connect the charger cables to the battery terminals.



Vibrating element

Check for oil leaks regularly. Seal any leaks. NOTE! the machine must under no circumstances be operated if there are any indications of leakage.

Note! Oil amount in the vibration element is **0,4 L.**



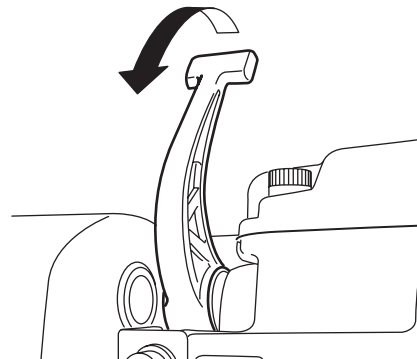
1. Draining / refilling openings

Rubber dampers

Check the condition of the rubber dampers regularly. Replace damaged dampers.

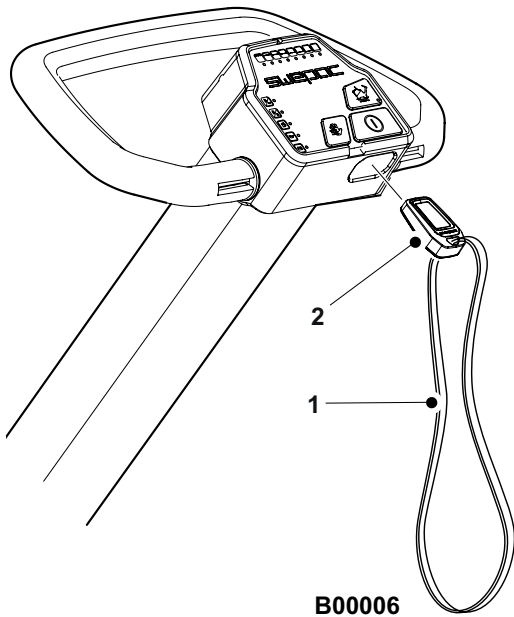
Hatz decompression lever

In cold weather or if the machine has trouble starting, try opening the decompression valve, then try again. Remove the front cover to access the decompression valve, the decompression lever will return to its original position when the engine starts.



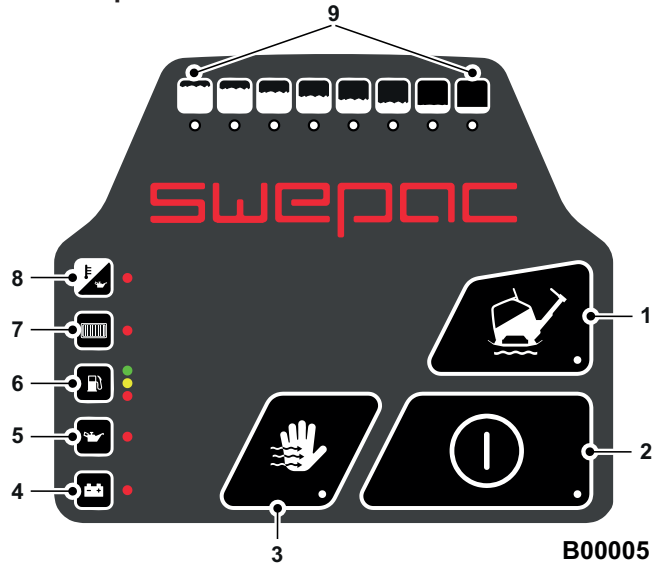
BEFORE STARTING

See “DAILY SUPERVISION”, page 8.



Attach the strap (1) that is located together with the ignition key (2) in a suitable place in the operator's clothing. This is an important safety feature, since the key acts as a dead man's switch and will be pulled out of position and stop the machine if the operator loses control. The key is unique and only works for your machine if it is not programmed to work for other machines, e.g. within a work area.

Control panel



1. Vibration switch, push the switch to increase the engine speed and begin compaction.
 2. Start/Reset switch, press and hold the switch there for 1 second, the machine will begin to idle.
 3. Switch for handle heating, push in the switch to heat the handle when the engine is running (Some machines).
 4. Indicator lamp “Charging”, red when battery is low.
 5. Oil pressure Warning Light, red when oil pressure is low (after having displayed red, the control system must be reset by holding down the Start/Reset switch for 7 seconds).
 6. Fuel Level Warning light, green when full, yellow when half-full and red when the tank is empty. When the light is red, refill fuel. Tap the machine's operating lever lightly and the last measured value will be displayed even when the engine is switched off (Some models).
- (NOTE! The engine is switched off before the fuel tank is completely empty, which means that the fuel system does not need to be vented after stopping due to lack of fuel).
7. Air Filter Warning Light, shines red when the air filter is clogged (some models).
 8. Hydraulic Oil Temperature Warning Light, shines red when the hydraulic oil temperature is too high (the warning light is present on all models, but is only used on certain models).
 9. Swepac Compaction Indicator (SCI). The lights are turned on from left to right as compaction progresses (some models).

STARTING THE MACHINE

Put the key in its slot on the control panel. Press the Start/Reset switch, press and hold the switch there for 1 second, the machine will then start. Let the machine idle for at least 30 seconds before pressing the vibration switch to activate it and begin working.

If the machine has difficulty starting, e.g., in cold weather, keep the Start/Reset switch down for a period of time and the starter motor will start up in 15 seconds

If the machine still won't start, check the following:

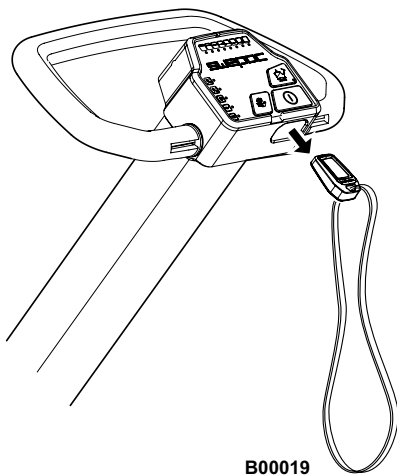
- is there fuel in the tank?
- is the battery charged?
- if the machine is programmed to be used within a specific area, make sure you are not outside the area.
- if the machine still will not start, try resetting the machine's control system by holding down the Start/Reset switch (2) for 7 seconds.
- contact service repairman

STOPPING THE MACHINE

Press the vibration switch (1) once to stop vibrations and then press the Start/Reset switch (2) once to stop the machine. Retract the starter key.

EMERGENCY STOP/ DEAD MAN'S SWITCH (Some machines)

Retract the starter key to stop the machine immediately.

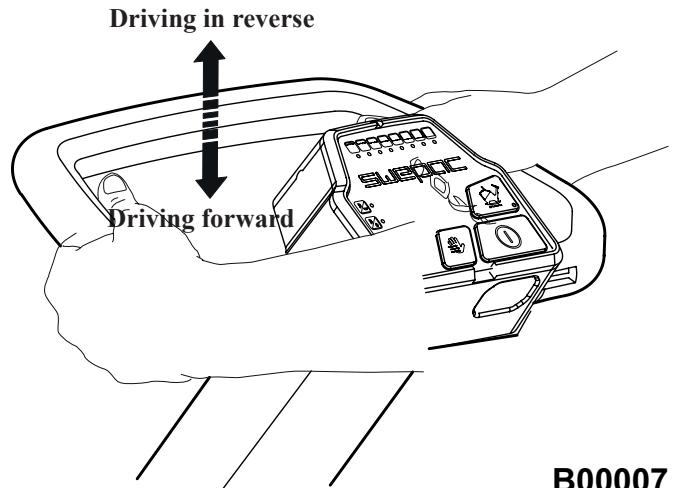


DRIVING INSTRUCTIONS

Start and stop the machine's vibration element with the vibration switch on the control panel.

When the control bar on the handle is pulled backwards, the machine reverses and when the bar is pressed forward, the machine moves forward.

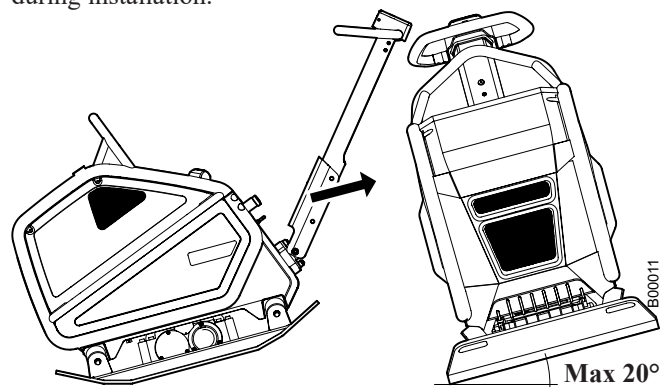
Note! When packing, always run the engine at full throttle.



The machine is only intended for outdoor use. Operate the machine in daylight or other adequate lighting. Ballast must be wetted or naturally damp. All other uses are advised against.

Note! When driving uphill, the machine should be driven in reverse.

The machine may not incline more than 20° sideways or during installation.



Lever heating

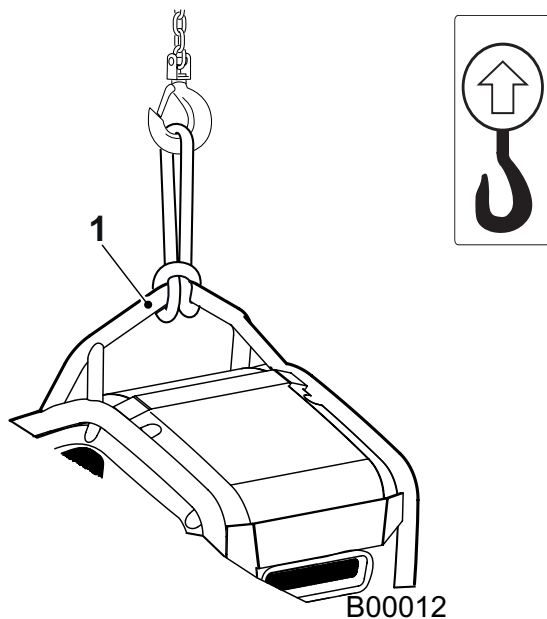


Some machines are equipped with lever heating. The lever heating is activated by the lever heating switch on the control panel: The lever heating can only be used when the engine is running in order to prevent the heating coil from wasting the battery when the machine is not in use.

TRANSPORTATION

The machine has a lifting yoke.

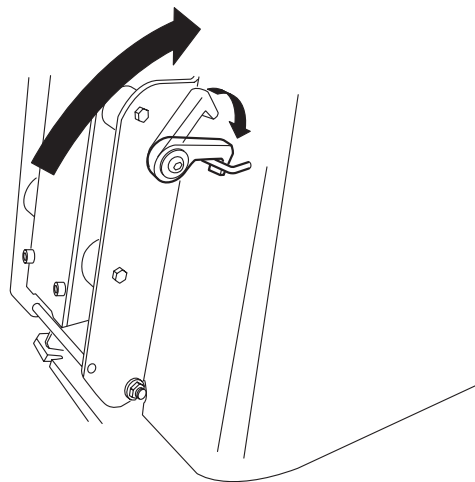
Note! Only use the lifting point (1) of the protective frame when lifting the machine.



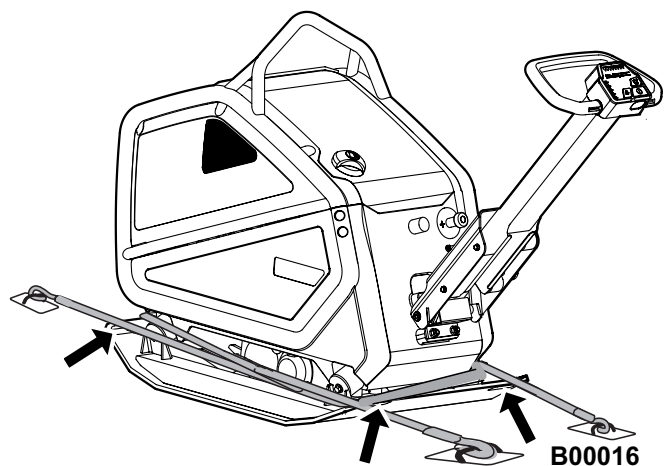
Check before lifting that the lifting yoke and its mounting on the machine are undamaged. Check also that the base plate's rubber dampers are undamaged and firmly attached.

Transport security

For transportation by vehicle, the lever must be in the forward position and secured with, for example, approved straps. Note! Secure it to the lifting yoke on the base plate and not the rubber-cushioned upper part.



Always secure the machine with a strap as shown in the illustration or the lifting yoke on the base plate during transport.



HYDRAULIC OIL PRESSURE MEASURING AND SETTINGS

It is possible to obtain a clear understanding of the condition of the hydraulic system or indication of cause of interference by simultaneously measuring the system pressure, driving engine speed and vibration frequency. The plate compactor must be in operation and maintain a normal working temperature. Normal hydraulic oil temperature during operation is 50–70°C.

The maximum pressure of the hydraulic system is preset upon delivery. The set pressure is 200 bar and can be measured when starting up the machine if the oil in the hydraulic system is cold.

When the plate compactor has reached normal operating temperature, the pressure should be 30-50 bar lower than the system's maximum pressure.

The pressure increases proportionally with increased load, eg if the plate compactor is kept at a low speed or is kept still during operation. When at maximum pressure, the vibrator speed is decreased.

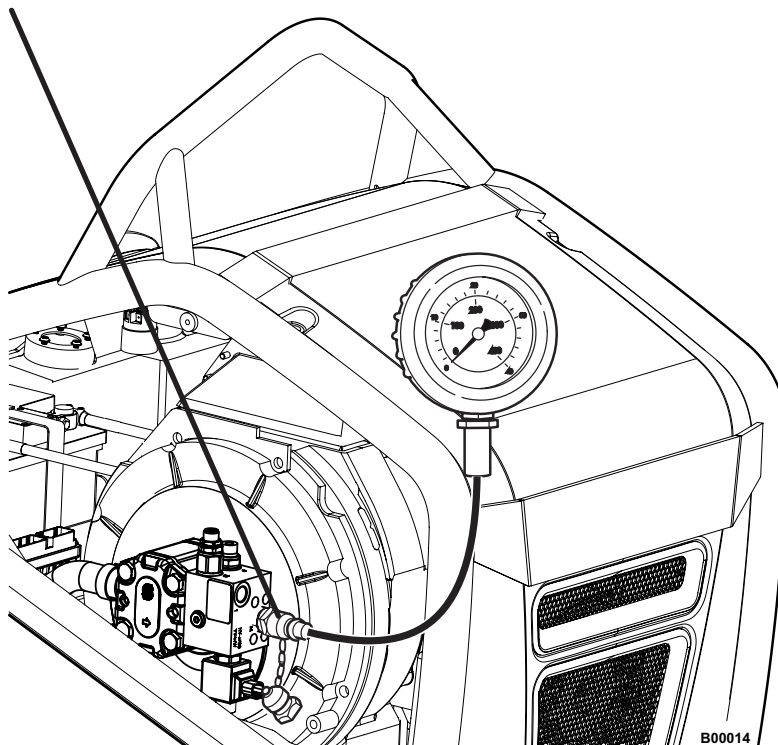
Measurement of driving engine speed and vibration frequency is carried out with a stroboscope lamp with a graduated scale. Hydraulic pressure is measured with a manometer with a manometer outlet on the valve block, see image. Strobe lamp and manometer can be ordered from SWEpac.

Engine speed 2900 r / min loaded **Hatz**

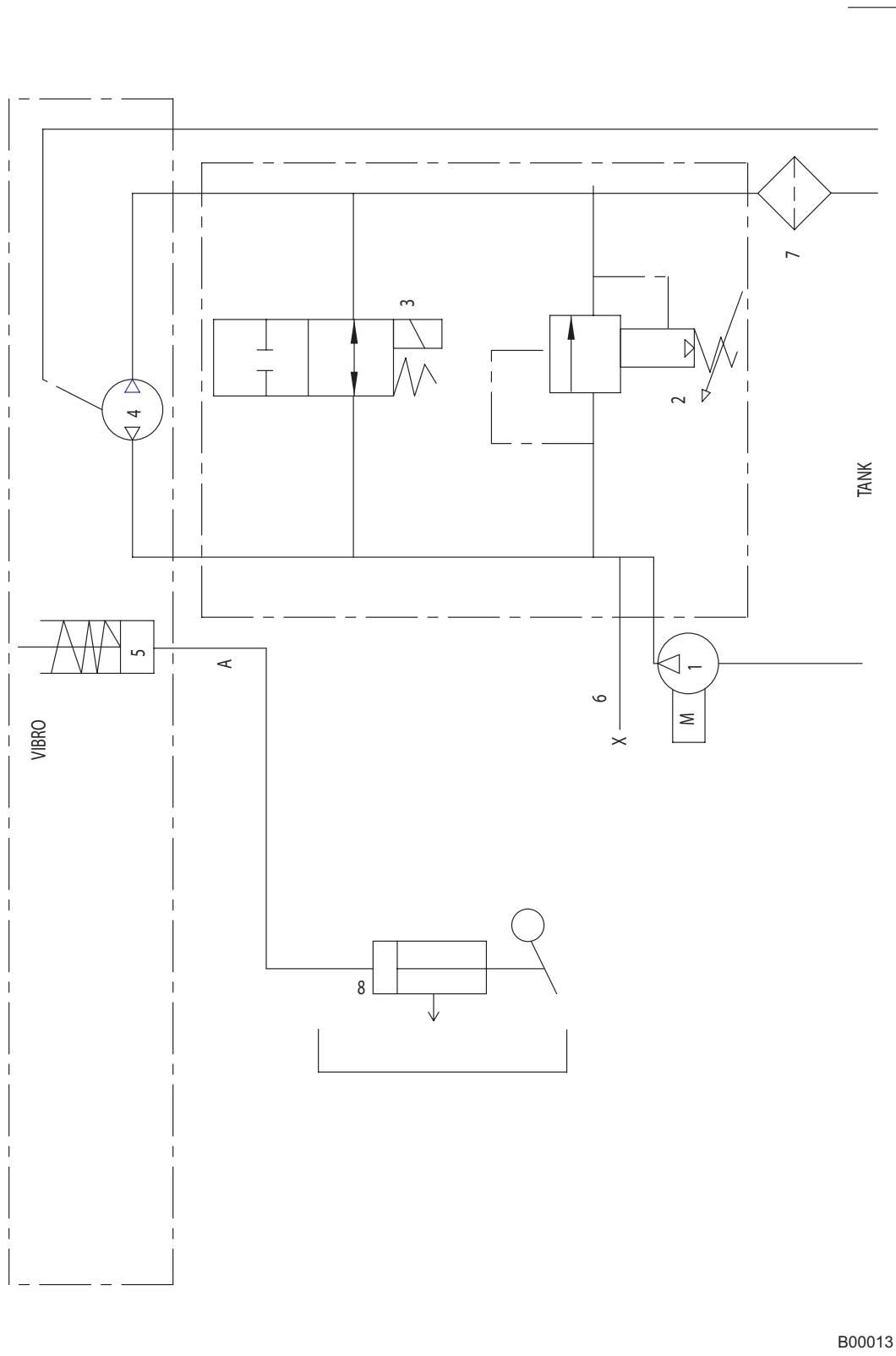
Vibration frequency at hydraulic oil temp. approx. 50°C 70–72 Hz; 4200–4320 RPM

Normal pressure when driving, hydraulic oil temp. approx. 50°C 150–170 bar

Measuring point, hydraulic system



HYDRAULIC SCHEMATIC



- 1) Hydraulic pump 6, 45cc 2900 RPM (Hatz)
- 2) Pressure relief valve max 200 Bar
- 3) Solenoid valve vibrations On/Off
- 4) Hydraulic engine 4.09 4300 RPM

- 5) Hydraulic cylinder Front/Back
- 6) Measuring outlet
- 7) Return oil filter
- 8) Hand lever

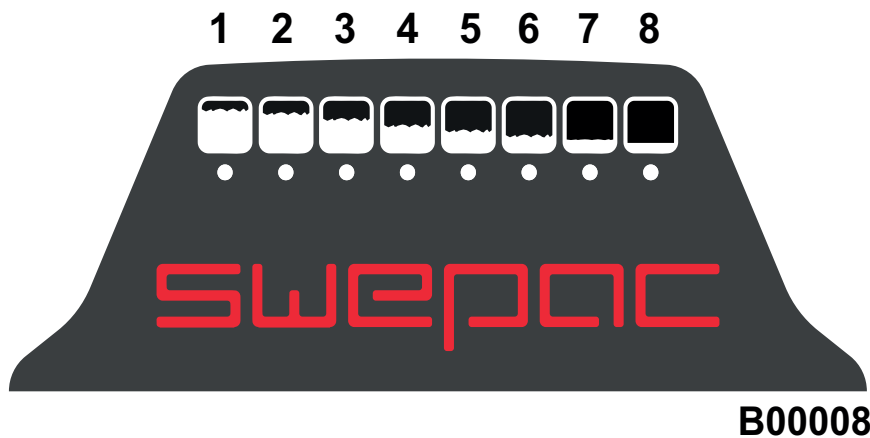
ACCESSORIES

Sweepac Compaction Indicator (SCI)

The SCI consists of an accelerometer sensor mounted on the right side of the vibration element and a display unit equipped with LED lights that light up as compaction progresses. The sensor and the display are connected via a cable.

Principle:

The base plate movements vary depending on increased or decreased soil compaction. The sensor in the sensor part continuously measures variations in the base plate's movement patterns. Movement values are analyzed by the processor which in turn sends signals to the display to indicate progress via the light signals.



When starting:

When starting up, diodes 1,3,5,7 will light up first, then diodes 2,4,6,8 will light up.

The diodes remain lit until communication with the sensor has started. This usually takes 1 second. Should the power supply be interrupted or communication breaks off for more than 20 seconds, the flashing LED pattern will begin again until communications have been resumed. Then all the diodes will turn off and the indicator will signal that the machine is ready for operation.

When starting the machine or turning on vibration mode, it takes 2-3 seconds before the indicator registers movements in the base plate. This is because the sensor does not start measuring until the vibrator generates the correct frequency at the base plate. Neither will the display indicate anything if the engine speed is decreased because the vibrator then runs at a slower pace and the base plate does not reach the required frequency.

No calibration of the indicator is required when starting the machine.

During operation:

The LED lights are turned on from left to right during operation. The number of lights that flash while driving depends on the quality and condition of the substrate. When the number of lit lamps does not increase, the substrate will not be further compacted at any more road crossings. This means that not all the lights will necessarily light up during compaction.

The lights indicate the compaction status of the substrate during operation. If no more lights flash, maximum compaction of the substrate has been reached. Sweepac Compaction Indicator does not replace conventional test methods for degree of packing and is intended to provide the operator with useful information, such as finding areas that are not compacted or to avoid overcompaction which risk causing damage to the machine.

NOTES

NOTES

NOTES



EC DECLARATION OF CONFORMITY

Manufacturer

**Swepac AB
Bergvägen 7
34132 Ljungby**

1. Category: Plate compactor

2. Type: FB515

3. Motor power: 7.5 kW

The product complies with the following directives:

2006/ 42 / EC

2000 / 14 /EC

2004/108/EC

EN 500-1

EN 500-4

Technical documentation available from:

Swepac AB, Bergvägen 7 34132 Ljungby SE
Tomas Johansson/Product Engineer

SWEPAC

SWEPAC AB

Address **Bergvägen 7, 341 32 Ljungby**, tel **0372-156 00**, fax **0372-837 41**, Email **mail@swepac.se**,
Internet **www.swepac.com**