

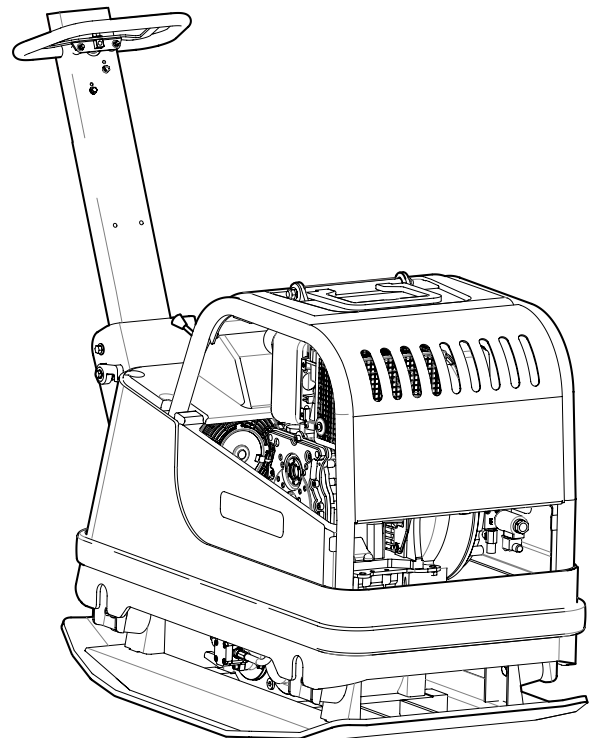
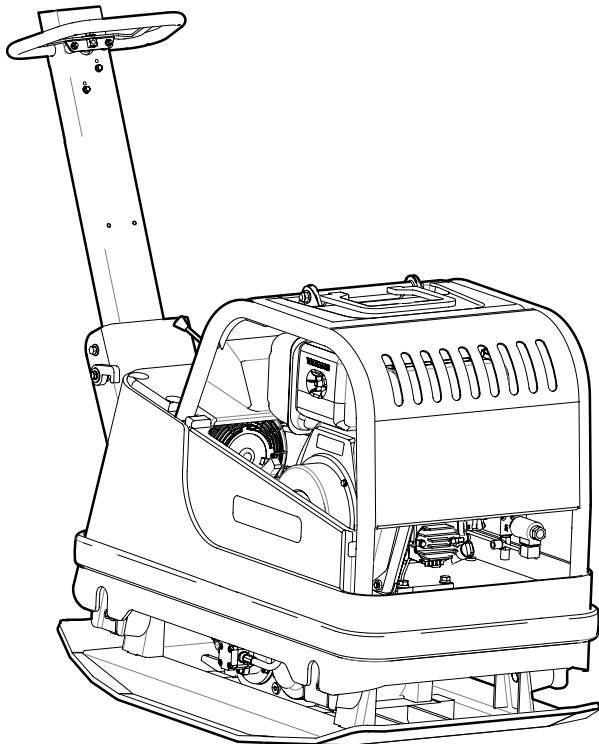
# SWEPAC

FB 450

FB 510

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## USER MANUAL IN ORIGINAL





## USE

### SWEPAC FB 450 / FB 510

are used to pack ballast under foundations, in connection with road building, in trenches, etc. On account of the forward/reverse function, the machine is very suitable for packing in tight spaces and as a complement to larger packing equipment. The infinitely variable speed control makes it possible to move with great precision and to pack without moving.

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## CONTENTS

USE .....	3
SAFETY INSTRUCTIONS .....	4
STANDARDS .....	4
SIGNS .....	5
TECNICAL DATA.....	6
METHOD OF OPERATION .....	6
TECHNICAL DESCRIPTION .....	7
DAILY CHECKS.....	8; 9
BEFORE STARTING .....	10
STARTING, <b>Yanmar</b> .....	10
STOPPING .....	10
BEFORE STARTING.....	11
STARTING, <b>Hatz</b> .....	11
STOPPING.....	11
OPERATING INSTRUCTIONS .....	12
TRANSPORTATION .....	12
EC-DECLARATION OF CONFORMITY.....	13

## 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. When the vibrator is connected, the operator must be able to control the movement of the machine using the control handle and the start/stop controls. The machine may be operated only 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 may 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 in with potential fire or explosion danger.
- Never use the machine if you are tired or have consumed alcohol or are under medication that could affect your vision, your discretion or your coordination ability.
- Never use a machine in any way changed from the original design.

## STANDARDS

### Noise

Measurement in accordance with the standard EN 500-4 Rev. 1:1998, Annex C:

Measurement uncertainty  $\pm 0.5$  dB (A) in 95% of the measurements.

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

	FB 450	FB 510
Sound pressure level at the operator’s ears, L <sub>pA</sub>	93 dB (A)	93 dB (A)
Permitted sound power level, L <sub>WA</sub>	108 dB (A)	108 dB (A)
Guaranteed sound power level, L <sub>WA</sub>	108 dB (A)	108 dB (A)

As the sound pressure level at the operator’s ears exceeds 80 dB (A), ear protectors must be used during operation!

### Hand/arm vibrations

The vibration acceleration was measured in accordance with the ISO 5349 standard during operation on a surface of macadam. The measurement values were translated into the maximum daily exposure time for regular usage. For additional information about vibrations, please confer the regulation AFS 2005:15 from the Swedish Work Environment Authority, effective July 1st 2005. Measurement uncertainty  $\pm 0.3$  m/s<sup>2</sup> in 95% of the measurements

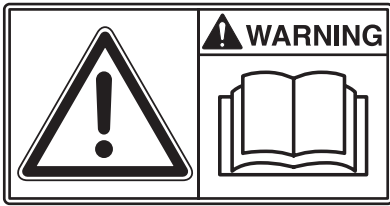
	FB 450	FB 510
Hand/arm vibrations m/s <sup>2</sup>	2,6	2,6
The maximum daily exposure time	7,4 h	7,4 h

### Exhaust Emissions

The FB 450 / FB510 meets the requirements for exhaust emissions in accordance with US-EPA stage 2.

## SIGNS

### Warning Signs



Before use, carefully read the manual and its safety instructions so that you can handle the machine safely. Ensure that the manual is always accessible.

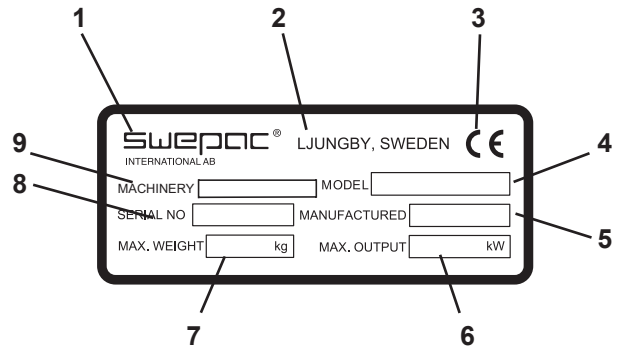


Engine, silencer: to avoid burns or discomfort, do not touch hot engine parts when the engine is on or when the machine has recently been used.



As the sound pressure level at the operator's ears exceeds 80 dB (A), ear protectors must be used when working with the machine to prevent hearing damage.

### Machine Signs



1. Manufacturer
2. Place, country of manufacture.
3. CE mark.
4. Model name.
5. Year of manufacture.
6. Max. engine power.
7. Max. weight.
8. Serial number.
9. Machine type

**TECHNICAL DATA**

**FB 450**

Net weight.....	445 kg
Base plate, w x l.....	700 x 1080 mm
Speed.....	approximately 25 m/min
Permitted inclination .....	20°
Centrifugal force .....	60,000 N
Vibration frequency .....	72 Hz
Drive engine.....	Yanmar L 100N
Engine power .....	7 kW
Engine RPM.....	3000 RPM
Fuel tank volume.....	5.5 liter
Fuel type.....	Diesel
Battery capacity .....	40 Ah
Generator power.....	180 W (15 A)

**FB 510**

Net weight.....	500 kg
Base plate, w x l.....	700 x 1080 mm
Speed.....	approximately 25 m/min
Permitted inclination .....	20°
Centrifugal force .....	66,000 N
Vibration frequency .....	72 Hz
Drive engine.....	Hatz 1D50Z
Engine power .....	7.5 kW
Engine RPM.....	3000 RPM
Fuel tank volume.....	5.5 liter
Fuel type.....	Diesel
Battery capacity .....	40 Ah
Generator power.....	180 W (15 A)

**METHOD OF OPERATION**

The machine consists of a base plate with a vibration element and an upper part cushioned from the base plate. The cushioning between the base plate and the upper part consists of four rubber dampers. The upper part, on which the drive engine is mounted, is also designed as a hydraulic oil tank. The control handle is placed on the upper part and cushioned with rubber dampers. The vibration element is driven and the direction of travel is changed by means of hydraulics. The hydraulic pump, mounted on the diesel engine, supplies a hydraulic motor on the vibration element with an oil flow. The vibration element consist of two shafts on roller bearings with bias weights that are connected to gear wheels that rotate in opposite directions. One gear wheel can rotate on its shaft by means of a hydraulic cylinder. This changes the mutual phase positions of the eccentric weights and the direction of travel of the machine, and the speed is changed infinitely variably. All parts are well protected against damage in connection with use and transportation by a sturdy protective frame with a hood of impact-resistant ABS.

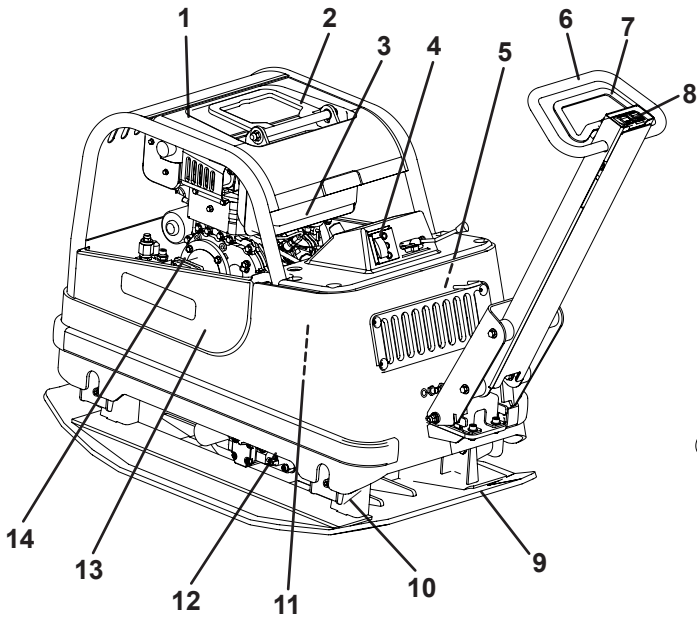
**FUEL and OIL RECOMMENDATIONS**

Fuel .....	Diesel
Engine oil.....	SAE10W-30
Oil quantity, crankcase.....	1,5 liter
Engine oil change diesel engine: first oil change after 50 hours then every 200 hours of operation. Replace the filter when you change oil.	
Hydraulic oil type / quantity .....	HydraWay BIO SE 32-68.....35 liter
Replace hydraulic oil filter.....	after 3 years
Oil type/quantity, vibration unit.....	SAE10W-30.....0,5 liter

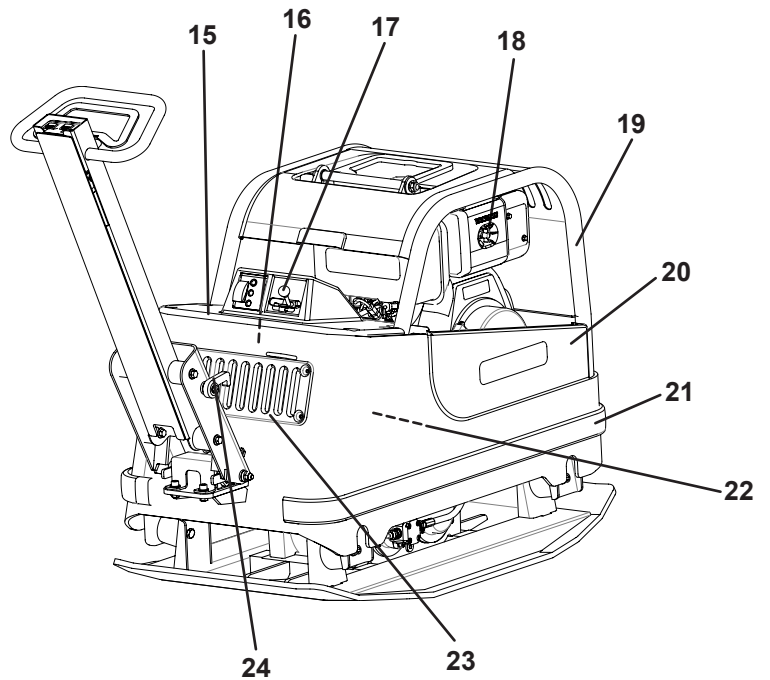
**TECHNICAL DESCRIPTION**

**FB 450 / 510**

**Left side view**



**Right side view**



**Left side view**

- 1. Protective hood
- 2. Lifting eye
- 3. Diesel engine
- 4. Control panel
- 5. Hydraulic tank
- 6. Control handle
- 7. Forward/reverse control
- 8. Vibrator and handle heating switch
- 9. Base plate
- 10. Rubber damper
- 11. Battery
- 12. Vibration element
- 13. Protective lock, left side
- 14. Hydraulic pump

**Right side view**

- 15. Battery cover
- 16. Hydraulic oil filter
- 17. Throttle lever
- 18. Air filter
- 19. Protective frame
- 20. Protective lock, left side
- 21. Protective list
- 22. Hydraulic oil cooler
- 23. Air inlet. lock
- 24. Transport locking device

## DAILY CHECKS

### Fuel Check

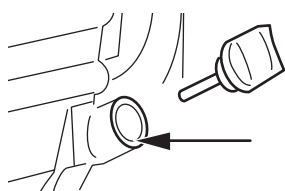
Check that there is fuel in the tank. Top up if necessary.

### Engine Oil Level Check

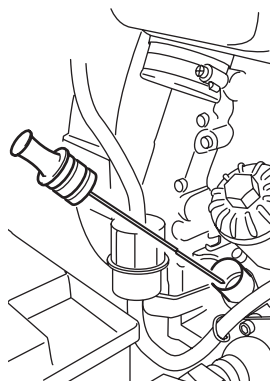
Check the oil level in the crankcase every day. Turn off the engine. The machine is on a level surface.

**FB 450:** The oil must reach the edge of the filling hole.

**FB 510:** The oil must reach up to the "MAX" marking.



FB 450



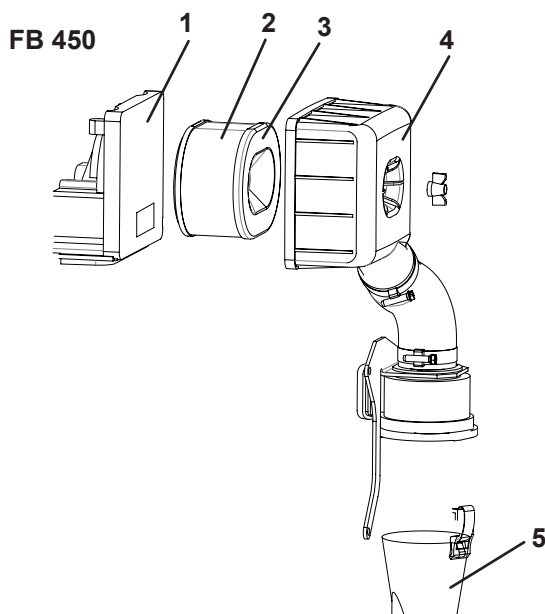
FB 510

### 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.



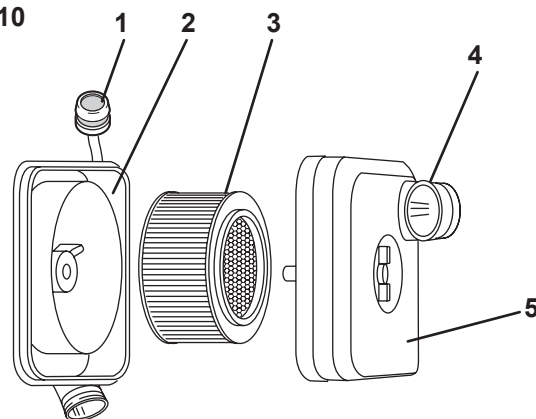
FB 450

1. Filter plate
2. Foam plastic element
3. Paper element
4. Filter cover
5. Cyclone filter collector

### Cleaning

1. Remove the foam plastic element and the paper element and check that they are undamaged. Replace damaged parts.
2. Wash the foam plastic element in liquid with a high flashpoint and let it dry properly. Dip in engine oil and squeeze dry.
3. Strike the paper element against a hard object a few times to loosen any dirt.
4. Check that the filter plate is clean. Clear the cyclone filter collector.

FB 510



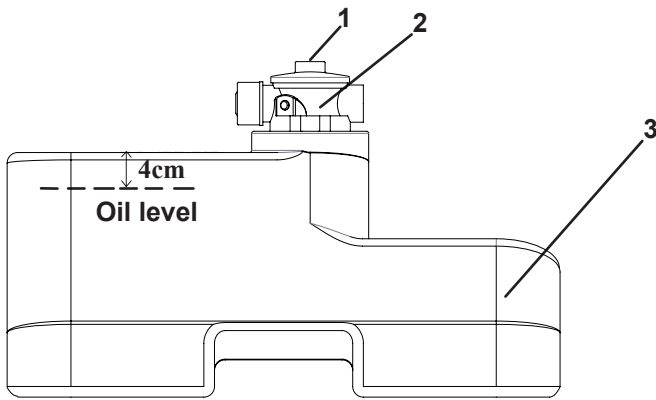
1. Indicator
2. Filter plate
3. Filter
4. Cap
5. Air intake with cyclone

### Cleaning

With the engine at full RPM, press in the indicator (1) for the air filter. If it remains depressed, clean the filter as described below. This may need to be done several times a day in dusty conditions.

1. Loosen the wing screw in the filter cap (5). Check that the dust outlet (4) is not clogged. Clean it if necessary.
2. Loosen the filter (3) and blow it clean with dry compressed air, max. 5 bar, from the inside until no more dust comes out. Replace a damaged filter.
3. Check that the filter plate (2) in the filter housing is clean.





**Vibration Element**

Check regularly that there is no oil leak. Seal any leaks.  
**Note!** Machines must never be operated if a leak is suspected.

**Note!** The oil level in the vibration element is 0,5 liter.

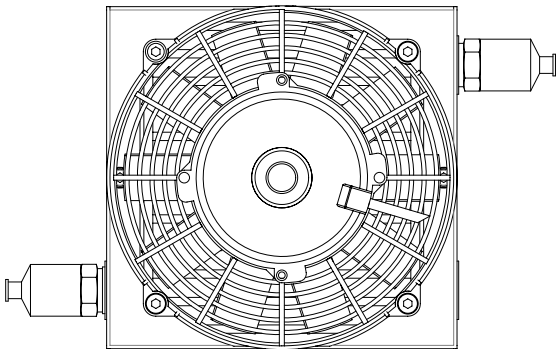
**Rubber Damper**

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

**Hydraulic Oil Level Check**

Check every day that the hydraulic connections do not leak or wear during operation. The oil level in the tank must be according the picture, approximately 4 cm below from the top of the tank. Fill up hydraulic oil as described below.

Remove the battery cover. Remove the tank cover (1). Remove the filter (2). Fill up hydraulic oil and reassemble filter and cover. The cover must be well tightened when reassembling.

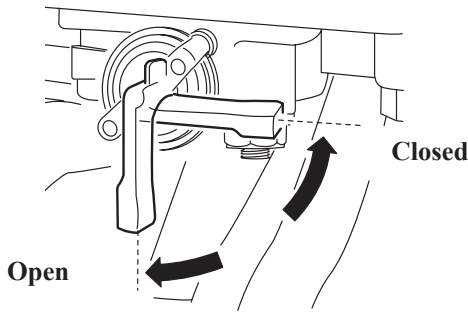


**Hydraulic Oil cooler**

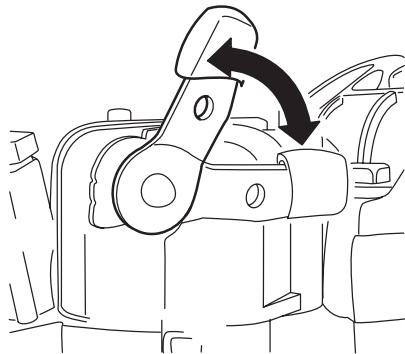
The machine is equipped with a hydraulic oil cooler. The cooler start working when the hydraulic oil reach a temperature +50 °C. Afterwards subsequently switch to and from the coolers as necessary. After shutting off the machine, the cooling fan run for a short time, which is normal.

**Note!** If the indicator light for hydraulic temperature (see the panel picture for each machine) lights red it indicates that the hydraulic oil temperature is to heat. Continue driving the machine means worse compaction capability. Stop and check the hydraulic oil cooler.

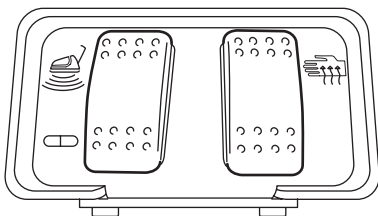
**FB 450**



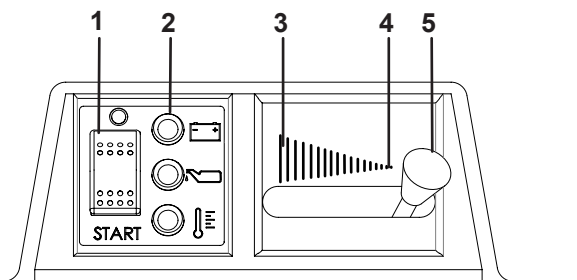
**Yanmar fuel cock**



**Yanmar decompression handle**



**Vibration power switch and handle heating**



**FB450 instrument panel with;**

- 1. Engine power switch**
- 2. Control lamps for charging, oil pressure and hydraulic oil temperature**
- 3. Full throttle position**
- 4. Stop mode**
- 5. Throttle**

**BEFORE STARTING**

See Daily Checks on page 8.

**STARTING**

**Note! The vibration power switch on the handle must be in the position “vibration off” (red/green marking). Otherwise the machine cannot be started.**

Open the fuel cock.

Switch the throttle lever (5) to the full RPM position (3).

Start the engine with the power switch (1). Place the knob in the central position and check that the charging and oil pressure lamps (2) light up. With the power switch in this position the buzzer starts to sound. Then press the power switch down (Start marking).

**Note! Never run the starter motor for longer than 10 seconds at a time. If the engine does not start, wait 15 seconds before trying to start it again.**

In very cold weather or if the battery capacity is low for a different reason, starting can be facilitated using the decompression handle in connection with the valve housing. Press the lever down and hold it down until the flywheel has reached its maximum RPM. Run the engine warm for around 5 minutes.

**STOPPING**

Turn off the vibration. Switch the throttle lever (5) to idle and let the engine run for a few minutes.

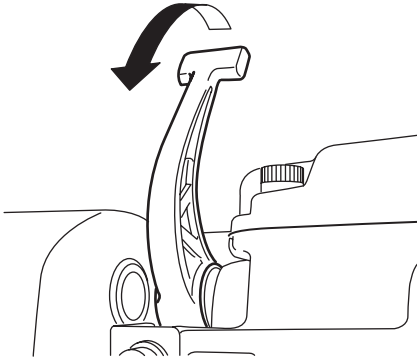
Press the engine power switch (1) upwards (O marking).

Stop the engine by moving the throttle lever to the stop position (4)

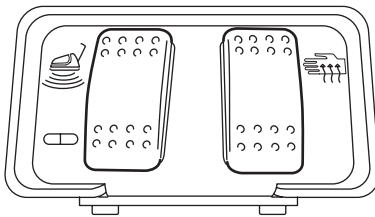
**At the End of the Day**

Close the fuel cock.

## FB 510



Hatz decompression handle



Vibration power switch and handle heating

## BEFORE STARTING

See Daily Checks on page 8.

## STARTING

**Note! The vibration power switch on the handle must be in the position “vibration off” (red/green marking). Otherwise the machine cannot be started.**

Switch the throttle lever (5) to the full RPM position (3).

Insert the starter key (2) in position 0 and turn to the position 1 and check that the charging and oil pressure lamps (1) light up. With the starter key in this position 1 the buzzer starts to sound. Turn the starter key to the position 2. Release the key as soon as the engine starts. It returns to position 1 and will remain in that position during operation. Charging and oil pressure light goes off immediately after the start. Engine light (1) lights green while the engine is running.

**Note! Never run the starter motor for longer than 10 seconds at a time. If the engine does not start, wait 15 seconds before trying to start it again.**

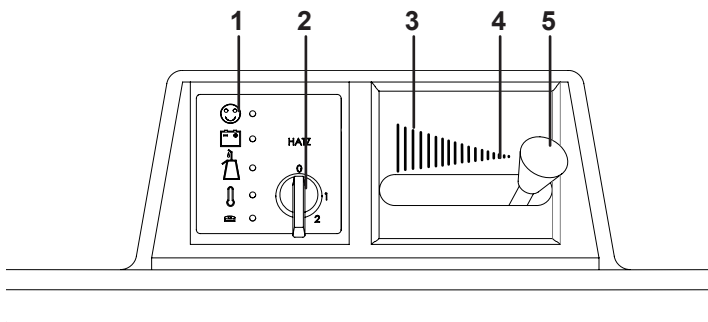
In very cold weather or if the battery capacity is low for a different reason, starting can be facilitated using the decompression handle in connection with the valve housing. Press the lever down and hold it down until the flywheel has reached its maximum RPM. Run the engine warm for around 5 minutes.

## STOPPING

Turn off the vibration. Switch the throttle lever (5) to idle and let the engine run for a few minutes.

Turn the starter key to the position 0.

Stop the engine by moving the throttle lever to the stop position (4)



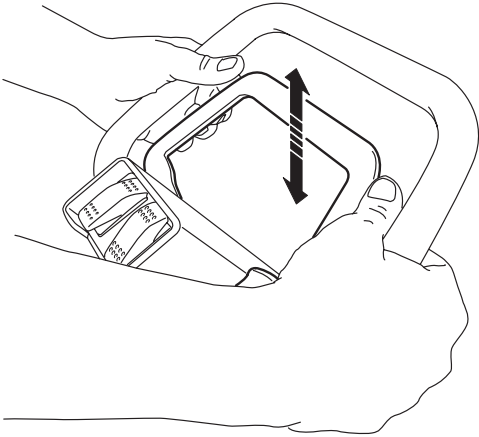
FB510 instrument panel with;

1. Control lamps for the engine, charging, oil pressure and hydraulic oil temperature
2. Starter key
3. Full throttle position
4. Stop mode
5. Throttle

## OPERATING INSTRUCTIONS

The vibrator is started and stopped with the power switch on the handle.

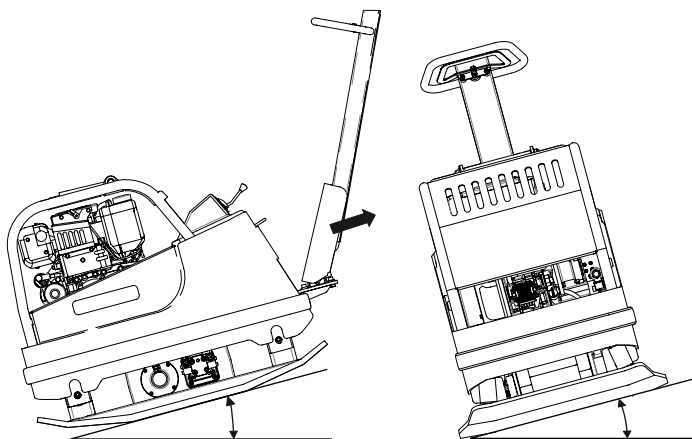
When the control hoop on the handle is moved backwards, the machine reverses and when the hoop is moved forwards, the machine moves forwards. The speed is controlled by how long the control hoop is activated.



The machine is only designed to be used outdoors. Work with the machine in daylight or other adequate lighting. Ballast must be wetted or naturally damp. All other use is discouraged.

Note! When moving up a slope, the machine should be reversed.

The machine may not incline more than 20° when in use or parked.



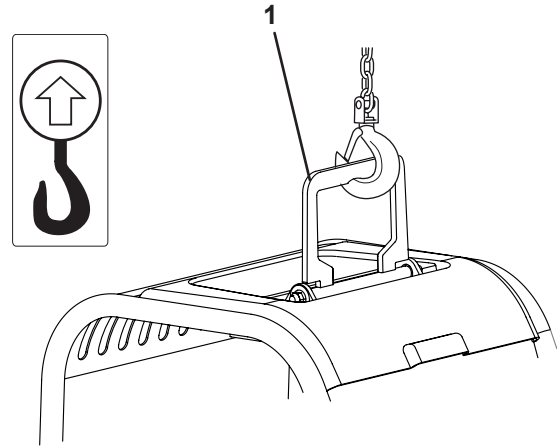
### Handle Heating

For increased comfort, the machine has an electrically heated handle. The handle heating is activated with the power switch on the handle and can only be used when the vibrator is connected, which prevents the heating coil from discharging the battery when the machine is not being used.

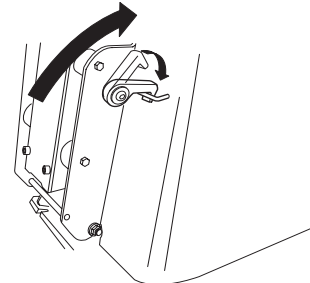
## TRANSPORTATION

The machine is fitted with a lift eye that can be placed on the hood when not in use.

NOTE! Use only safety frame lifting point (1) to lift the machine.

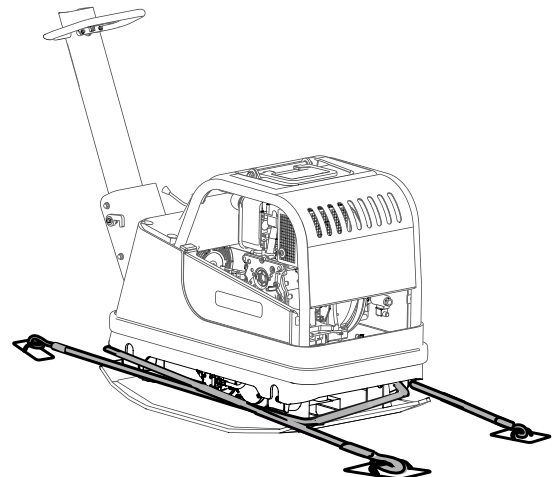


Check before lifting that the lifting eye and its mounting on the machine are undamaged. Check also that the base plate's rubber dampers are undamaged and firmly attached. For transportation by vehicle, the handle must be folded forwards and locked with the transport locking device. The machine must then be secured with, for example, approved straps. Note! Secure it by the base plate and not the rubber-cushioned upper part.



### Transport locking

Secure the machine with straps according to illustration during transportation





## EC-declaration of conformity

### Manufacturer

**Swepac AB  
Blockvägen 3  
34132 Ljungby**

1. Category: Vibratory plate

2. Type: FB450  
FB510

3. Engine power: FB450.....7kW  
FB510.....7,5kW

The product complies with the following directives:

2006 / 42 / EG

2000 / 14 / EG

2004 / 108 / EG

EN 500-1

EN 500-4

Technical documentation held by:

Swepac AB, Blockvägen 3 SE-34132 Ljungby  
Tomas Johansson / Product Engineer





**SWEPAC**

**SWEPAC AB**

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Internet [www.swepac.se](http://www.swepac.se)