

SWEPAC

FB 160

FB 170

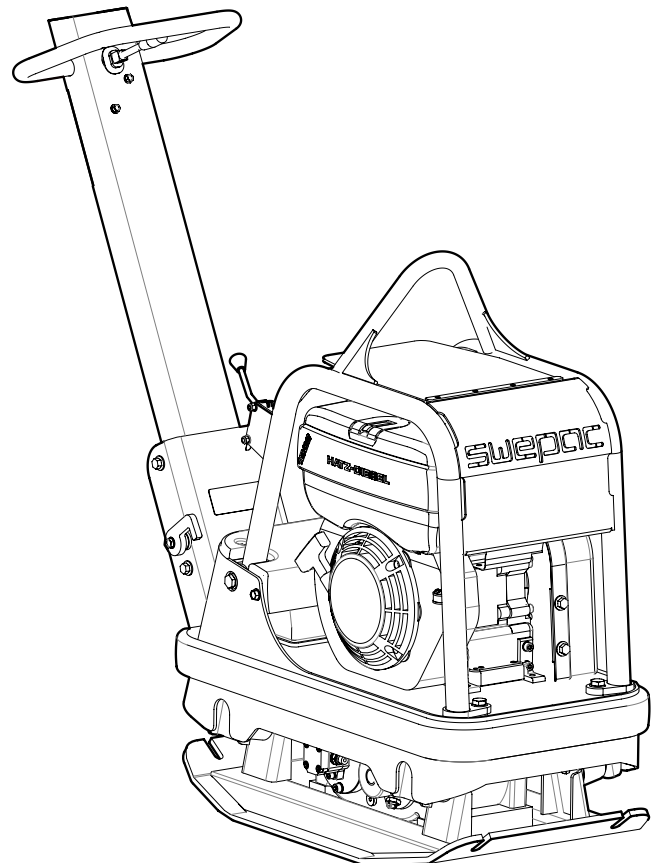
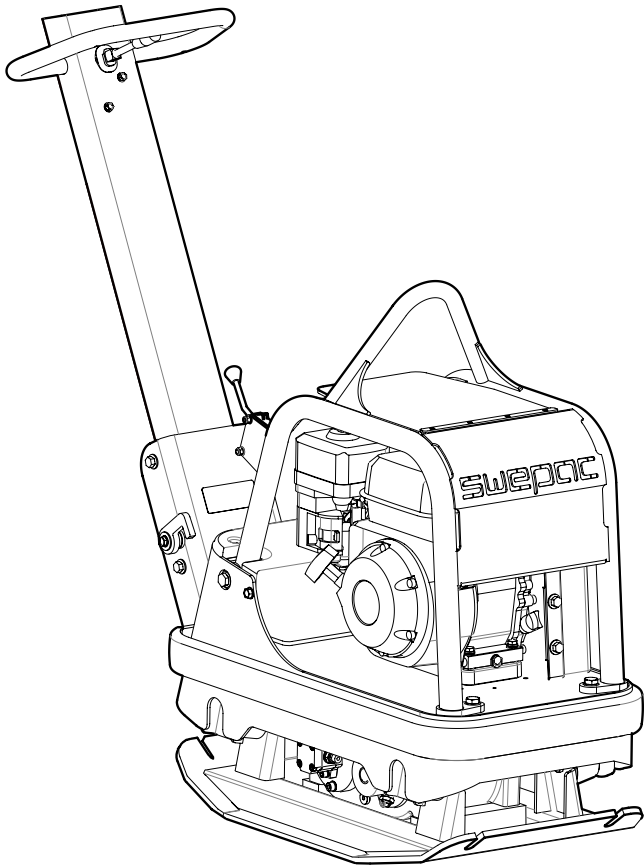
FB 175

FB 235

FB 255

FB 265

USER MANUAL IN ORIGINAL



USE

SWEPAC FB160 / FB170 / FB 175 / FB 235 / FB 255 / FB 265

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 in places with poor access

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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. 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 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 ± 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:

	FB160	FB 170	FB 175	FB 235	FB 255	FB 265
Sound pressure level at the operator's ears, L _{pA}	91 dB (A)	95 dB (A)	95 dB (A)	95 dB (A)	95 dB (A)	95 dB (A)
Permitted sound power level, L _{WA}	108 dB (A)	108 dB (A)	108 dB (A)	108 dB (A)	108 dB (A)	108 dB (A)
Guaranteed sound power level, L _{WA}	105 dB (A)	108 dB (A)	108 dB (A)	108 dB (A)	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 ± 0.3 m/s² in 95% of the measurements

	FB 160	FB 170	FB 175	FB 235	FB 255	FB 265
Hand/arm vibrations, m/s ²	2,5	2,7	2,7	2,7	2,7	2,7
The maximum daily exposure time	8 h	6,9 h	6,9 h	6,9 h	6,9 h	6,9 h

Exhaust Emissions

The FB160 and FB 235 with petrol engine meet the requirements for exhaust emissions in accordance with EU Directive 2002/88EC stage 2.

The FB 170 / FB 175 FB 255 and FB 265 with diesel engine meet the requirements for exhaust emissions in accordance with 97/68/EC.

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 and 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.

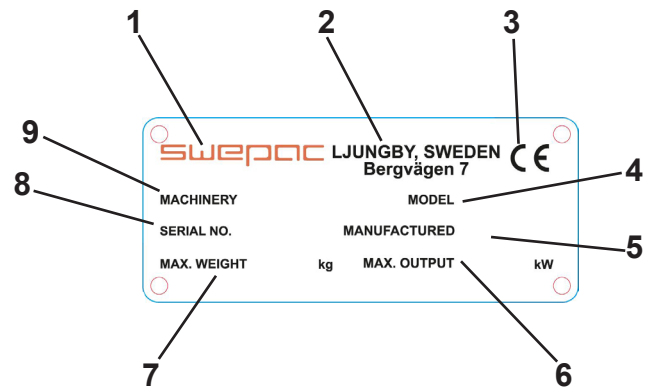


Belt drive: Keep hands, tools and other objects away from the belt drive when the machine is on to avoid injury and damage. See the safety instructions in the manual.



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 160**

Net weight.....	160 kg
Base plate, w x l.....	450 / 550 x 720 mm
Speed	approximately 25 m/min
Permitted inclination	20°
Centrifugal force	32.000 N
Vibration frequency	82 Hz
Drive engine.....	Honda GX 200
Engine power	4,9 kW
Engine RPM	3250 RPM
Fuel tank volume.....	3.6 liter
Fuel type.....	Unleaded petrol, 95-98 octane

FB 170

Net weight.....	163 kg
Base plate, w x l.....	550 / 450 x 720 mm
Speed	approximately 25 m/min
Permitted inclination	20°
Centrifugal force	32.000 N
Vibration frequency	82 Hz
Drive engine.....	Hatz 1B20
Engine power	3,1 kW
Engine RPM	3250 RPM
Fuel tank volume.....	3 liter
Fuel type.....	Diesel MK1

FB 175

Net weight.....	163 kg
Base plate, w x l.....	550 / 450 x 720 mm
Speed	approximately 25 m/min
Permitted inclination	20°
Centrifugal force	32.000 N
Vibration frequency	82 Hz
Drive engine.....	Yanmar L48
Engine power	3,1 kW
Engine RPM	3250 RPM
Fuel tank volume.....	3 liter
Fuel type.....	Diesel MK1

FB 235

Net weight.....	240 kg
Base plate, w x l.....	550 x 790 mm
Speed	approximately 25 m/min
Permitted inclination	20°
Centrifugal force	40.000 N
Vibration frequency	79 Hz
Drive engine.....	Honda GX 270
Engine power	6.0 kW
Engine RPM	3200 RPM
Fuel tank volume.....	6 liter
Fuel type.....	Unleaded petrol, 95-98 octane

FB 255

Net weight.....	265 kg
Base plate, w x l.....	550 x 790 mm
Speed	approximately 25 m/min
Permitted inclination	20°
Centrifugal force	40.000 N
Vibration frequency	79 Hz
Drive engine.....	Yanmar L70N
Engine power	4.5 kW
Engine RPM	3200 RPM
Fuel tank volume.....	3.5 liter
Fuel type.....	Diesel MK1
Battery.....	12V 40Ah

FB 265

Net weight.....	265 kg
Base plate, w x l.....	550 x 790 mm
Speed	approximately 25 m/min
Permitted inclination	20°
Centrifugal force	40.000 N
Vibration frequency	79 Hz
Drive engine.....	HATZ 1B30
Engine power	4.8 kW
Engine RPM.....	3200 RPM
Fuel tank volume.....	3.5 liter
Fuel type.....	Diesel MK1
Battery.....	12V 40Ah

FUEL and OIL RECOMMENDATIONS

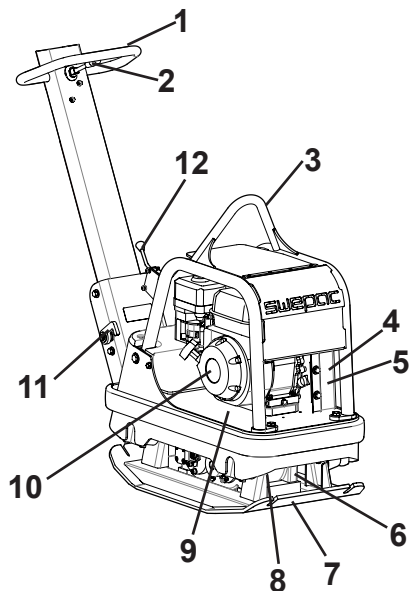
Fuel	FB160 / FB235.....	Unleaded petrol 95-98 octane
Fuel	FB 170/ FB175 / FB 255 / FB265.....	Diesel
Engine oil	SAE 10W-30	
Engine oil change petrol engine: first oil change after 20 hours then every 100 hours of operation.		
Oil quantity, crankcase	FB160.....	0,5 liter
	FB235.....	1 liter
Engine oil change diesel engine: first oil change after 50 hours then every 200 hours of operation.		
Oil quantity, crankcase	FB170.....	1 liter
	FB175.....	1 liter
	FB255.....	1 liter
	FB265.....	1 liter
Hydraulic oil	HydraWayBIO PA 22	
Quantity	FB170 / FB160 / FB175.....	1,65 liter
	FB235.....	1,65 liter
	FB255 / FB265.....	1,65 liter
Oil type/quantity, vibration unit.....	SAE10W-30	
	FB170 / FB160 / FB175.....	0,30 liter
	FB235 / FB255 / FB265.....	0,35 liter

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 rubber dampers. The power is transmitted from the engine to the vibration element via a V-belt which can be adjusted with a belt tensioner. The engine V-belt pulley is fitted with an integrated centrifugal clutch, which allows the engine to be started and run idle without the vibrator being connected. The engine is well protected against damage in connection with use and transportation by a sturdy protective frame with a protective panel.

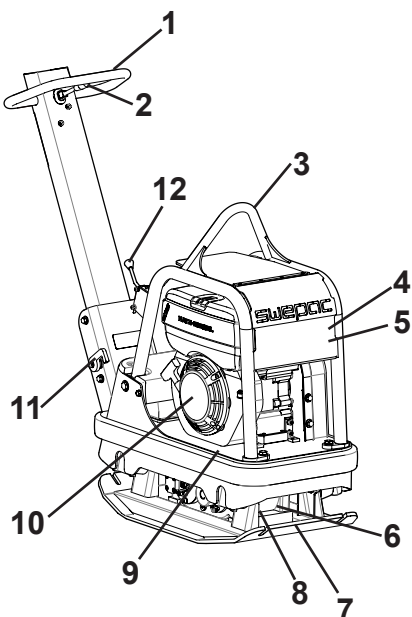
TECHNICAL DESCRIPTION

FB 160 / FB 235



1. Control handle
2. Forward/reverse control
3. Lifting eye
4. Centrifugal clutch
5. V-belt
6. Vibration element
7. Base plate
8. Rubber damper
9. Engine plate
10. Petrol engine
11. Transport locking device
12. Throttle lever

FB170 / FB 175 / FB 255 / FB 265



1. Control handle
2. Forward/reverse control
3. Lifting eye
4. Centrifugal clutch
5. V-belt
6. Vibration element
7. Base plate
8. Rubber damper
9. Engine plate
10. Diesel engine
11. Transport locking device
12. Throttle lever

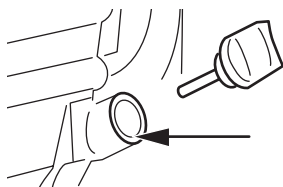
DAILY CHECKS

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. The oil must reach the edge of the filling hole when the machine is on a level surface.



Oil/Fuel Leakage

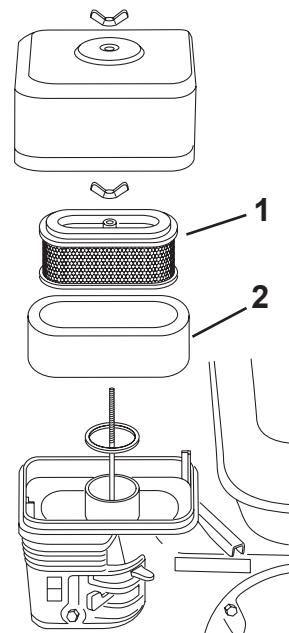
Check every day that the engine is not leaking oil or fuel. If a leak is discovered, the machine may not be operated until the fault has been remedied.

Air Filter Check

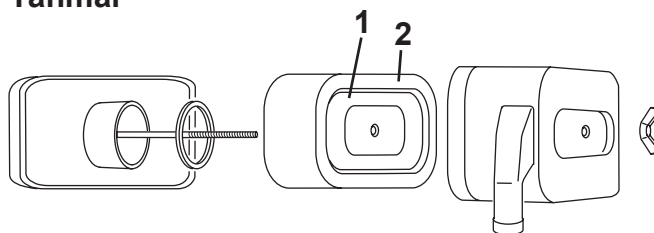
The air filter must be checked at least once every working week. When working in dusty conditions, check daily.

Honda

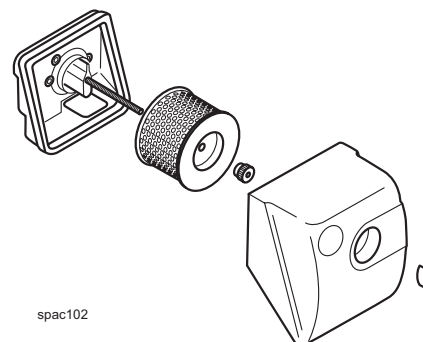
1. Paper element
2. Foam plastic element



Yanmar



HATZ



spac102

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.

V-belt Drive

Check the tension and condition of the V-belt regularly. Replace a damaged V-belt with the new type according to the table below

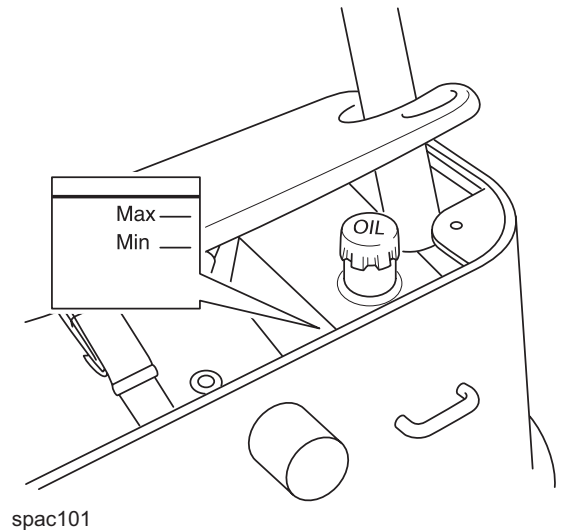
Machine type	V-belt type
FB160	XPA 982
FB175	XPA 957
FB175	XPA 957
FB235	XPA 1030
FB255	XPA 1000
FB265	XPA 982

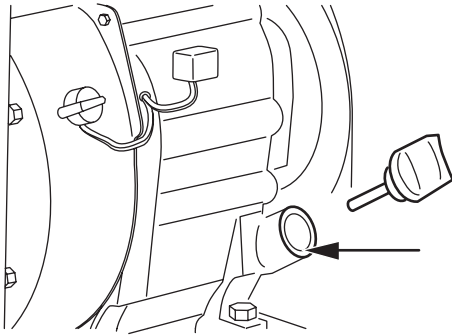
Rubber Dampers

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

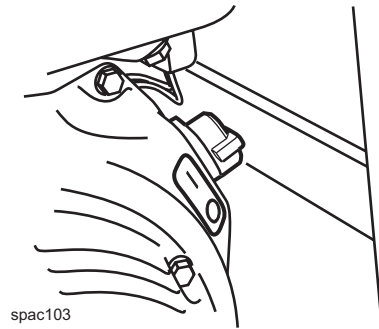
Hydraulic Oil Level Check

Check every day that the hydraulic connections do not leak or wear during operation. Check the oil level with the dipstick on the top of the tank. The level must be between “MIN” and “MAX”. Fill up when required.

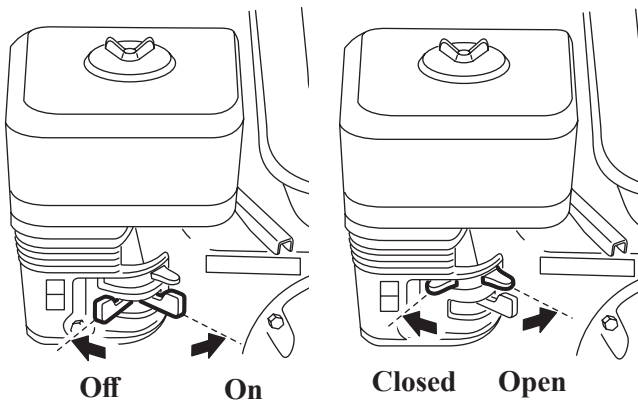




Oil level

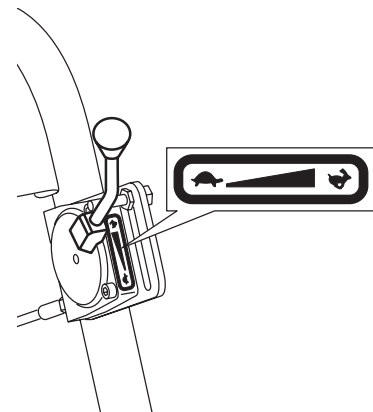


Engine power switch



Fuel cock

Choke



Throttle lever

BEFORE STARTING

See Daily Checks on page 8.

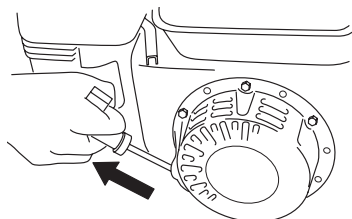
STARTING – Petrol Engine, FB 160 / FB 230

Switch the engine power switch to “1”.

Open the fuel cock.

Switch the throttle lever to “MIN”.

Adjust the choke. If the engine is cold, close the choke completely. Do not use the choke if the engine is warm or if the air temperature is high.



Start by pulling the starting handle. Pull it first until the mechanism engages. Then pull it hard and fast.

AFTER STARTING

Switch the throttle lever to idle.

Open the choke gradually.

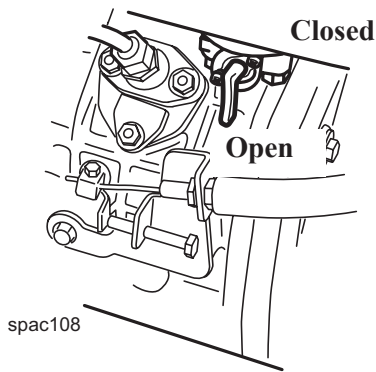
Run the engine warm for around 5 minutes.

STOPPING

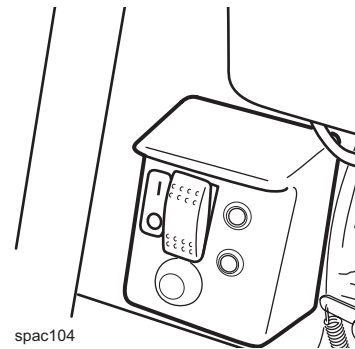
Switch the engine to idle and let it run for a few minutes.

Switch the engine power switch to “0”.

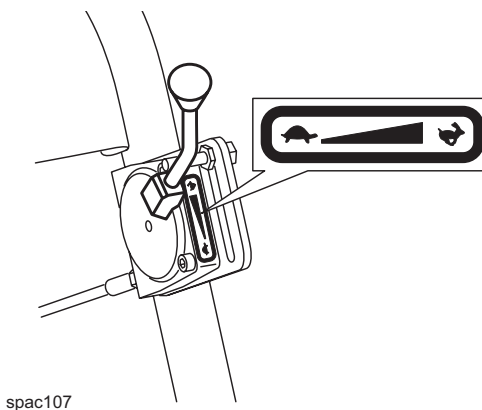
Close the fuel cock.



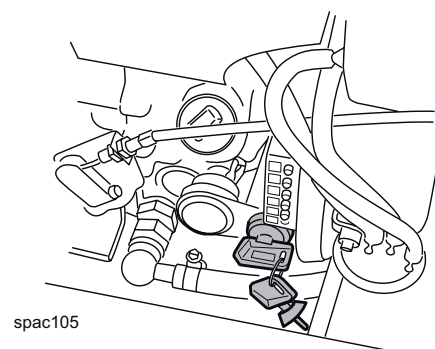
Fuel cock



Charging lamp and engine start switch



Throttle lever



Hatz 1B30 charging lamp and engine start switch(key)

BEFORE STARTING

See Daily Checks on page 8.

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.

STARTING – FB 265 HATZ (Electrical Starter)

Switch the throttle lever to “MIN”.

A whistle signal is heard when the key is turned to the ignition position.

Indicator light for battery charging lights up.

Push in the key and turn it. The key springs back after starting.

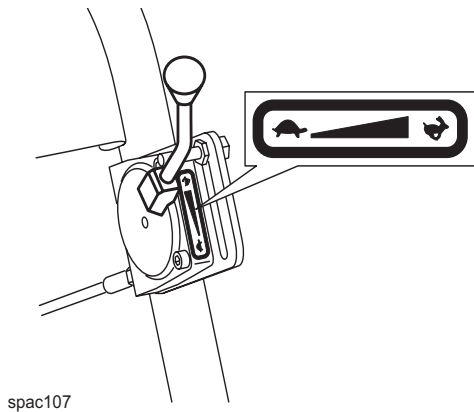
FB 255 Yanmar

Open the fuel cock.

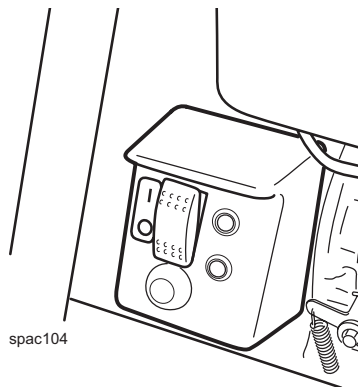
Switch the engine power switch to “1”.

Switch the engine to the idle position idle.

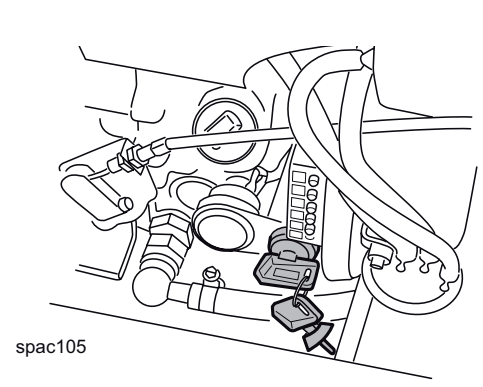
Push the start button.



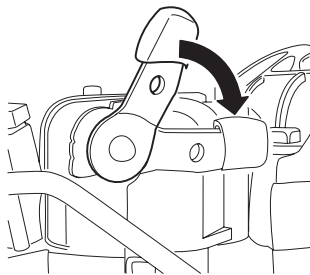
Throttle lever



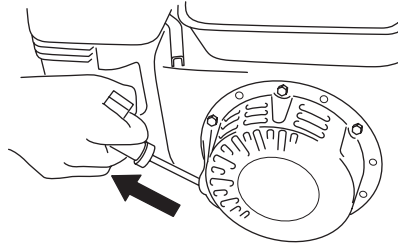
Charging lamp and engine start switch



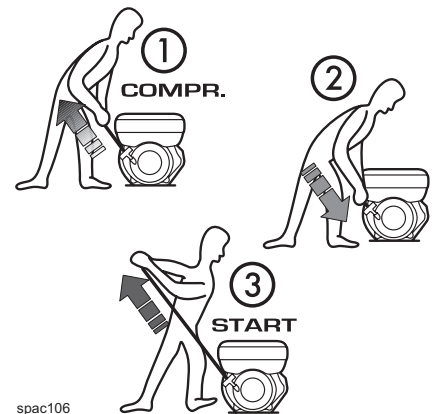
Charging lamp and engine start switch(key)



Decompression handle



Manual start



Handstart HATZ

Turn the key to the ignition position (apply to 1B30). Pull the starter cord as far as it will go. Let the cord go back in.

Handstart Yanmar

Press the decompression handle down. The handle must remain in the depressed position. Switch the engine power switch to "1".

Take hold of the starter cord with both hands and pull hard.

In very cold weather or if the battery capacity is low for a different reason, starting can be facilitated using the decompression device in connection with the valve housing. Press the lever down and hold it down until the flywheel has reached its maximum RPM. Then let it go.

STOPPING

Switch the engine to the idle position idle, let it run for a few minutes, then switch it to stop.

Yanmar

Never switch the engine off with the decompression handle.

Switch the engine power switch to "0".

Close the fuel cock.

HATZ

Turn the key. A whistlesignal is heard if the key is in the ignition position.

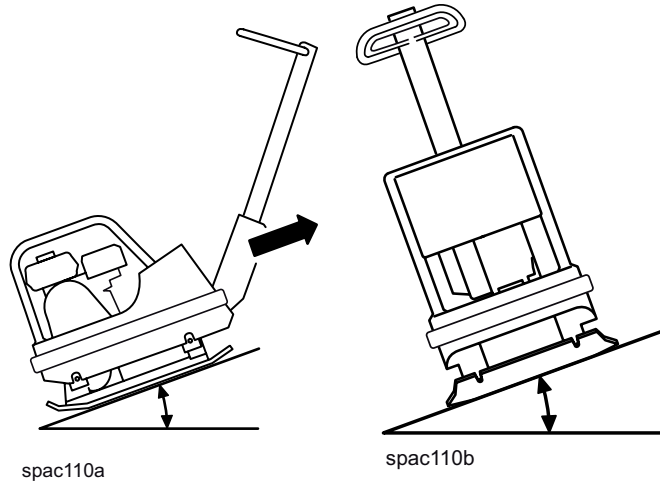
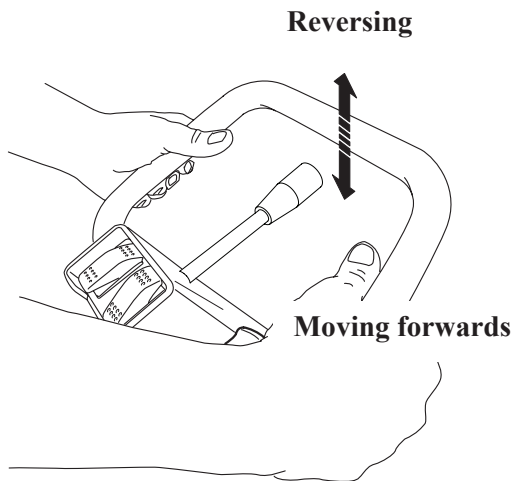
OPERATING INSTRUCTIONS

The machine's vibration elements start when the throttle is increased. The best packing is achieved at full engine RPM. Avoid running the engine at other RPM. The machine's vibration element stops when the throttle lever is switched to stop.

To move forwards, do not touch the forward/reverse control. To reverse, pull the hoop towards the control handle.

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

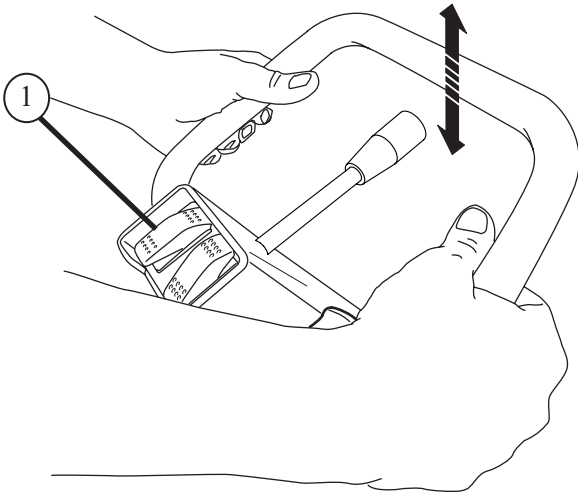
The machine may not incline more than 20° when in use or parked.



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.

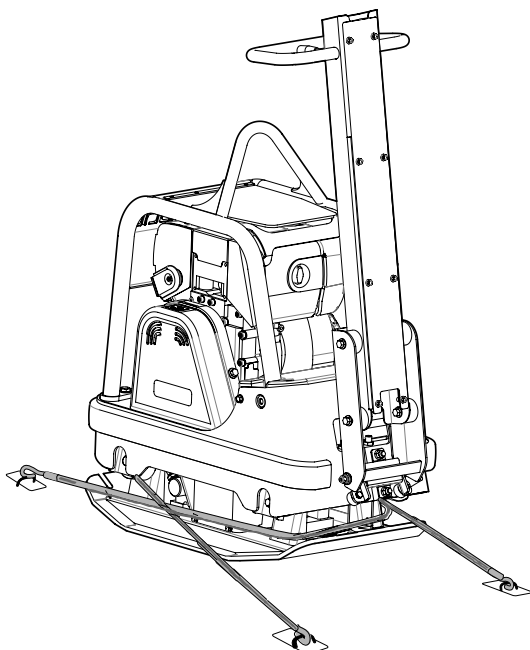
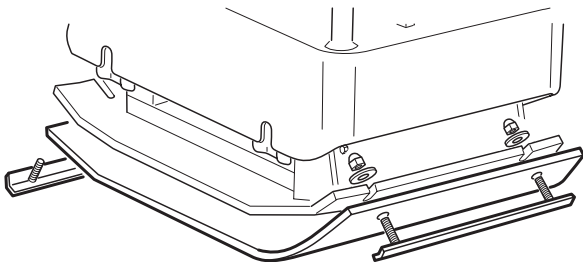
Handle heater

FB 250 has a heated handle for increased comfort. Push the button (1) to activate the heated handle.



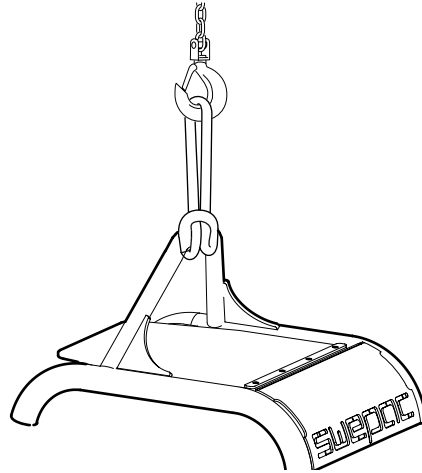
Polyuretan Pad

A polyuretan pad is used for stone paving work to protect against stones and ground clinker



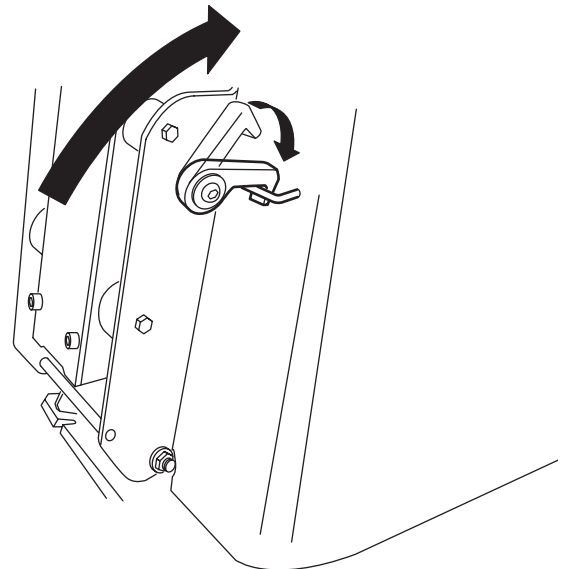
TRANSPORTATION

The machine has a lifting eye that can be used for a hook or hawser.



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

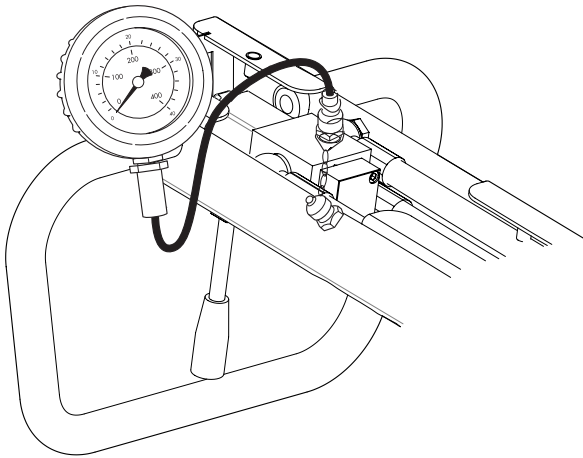
Secure the machine with straps according to illustration during transportation

Note! Secure it by the base plate and not the rubber-cushioned upper part.

Measurement of hydraulic pressure at direction change

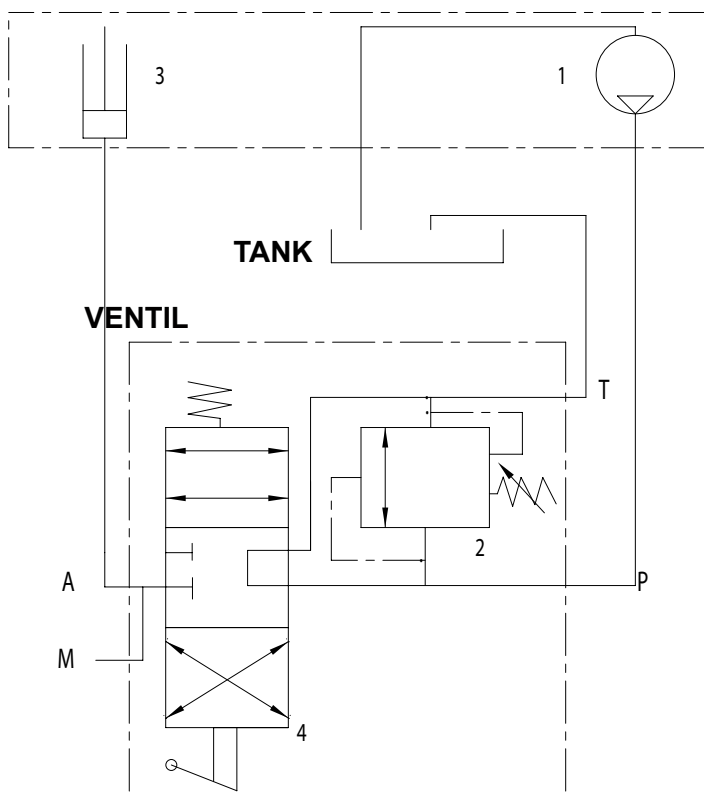
The hydraulic pressure at direction change to be measured is necessary to remove the cover plate at the rear of the handle.

The hydraulic pressure when direction changes must be between 20-22 bar and with a hydraulic meter that is to be connected to the valve assembly as shown below. The measuring point is factory-locked. To be able to measure this obstruction, it must be released and the connector corresponding to the measuring instrument must be bolted there. A measuring instrument and connector can be ordered from Swepac.



Hydraulic system

VIBRATIONSELEMENT



- 1) Hidraulic pump changeover
- 2) Pressure regualting valve 20 BAR
- 3) Hidraulic cylinder Forward/Backward
- 4) Hand control valve



EC-declaration of conformity

Manufacturer

Swepac AB
Bergvägen 7
34132 Ljungby

1. Category: Vibratory plate

2. Type: FB160
FB170
FB175
FB235
FB255
FB265

3. Engine power: FB160.....4,9kW
FB170.....3,1kW
FB175.....3,1kW
FB235.....6,0kW
FB255.....4,5kW
FB265.....4,8kW

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, Bergvägen 7 SE-34132 Ljungby
Tomas Johansson / Product Engineer

SWEPAC

SWEPAC AB

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