
USER MANUAL IN ORIGINAL



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SAFETY INSTRUCTIONS

To reduce the risk of serious injury or death to yourself or others read and understand the Safety and operating instruction before installing, operating, repairing, maintaining, or changing accessories on the machine.

Post this Safety and operating instruction at work locations, provide copies to employees, and make sure that everyone reads the Safety and operating instruction before operating or servicing the machine.

In addition, the operator or the operator's employer must assess the specific risks that maybe present as a result of each use of the machine.

Additional instructions for the engine can be found in the manufacturer's engine manual.

Personal precautions and qualifications

Only qualified and trained persons may operate or maintain the machine. They must be physically able to handle the bulk, weight, and power of the machine. Always use your common sense and good judgement.

Personal protective equipment

Always use approved protective equipment. Operators and all other persons in the working area must wear protective equipment, including at a minimum:

- Protective helmet
- Hearing protection
- Impact resistant eye protection with side protection
- Respiratory protection when appropriate
- Protective gloves
- Proper protective boots
- Appropriate work overall or similar clothing (not loose-fitting) that covers your arms and legs.

Drugs, alcohol or medication

Drugs, alcohol or medication may impair your judgment and powers of concentration. Poor reactions and incorrect assessments can lead to severe accidents or death.

Never use the machine when you are tired or under the influence of drugs, alcohol or medication.

No person who is under the influence of drugs, alcohol or medication may operate the machine.

OPERATION, PRECAUTIONS

DANGER Explosion hazard

If a warm machine or exhaust pipe comes into contact with explosives, an explosion could occur. During operating with certain materials, sparks and ignition can occur. Explosions will lead to severe injuries or death.

Never operate the machine in any explosive environment.

Never use the machine near flammable materials, fumes or dust.

Make sure that there are no undetected sources of gas or explosives.

Avoid contact with the warm exhaust pipe or the bottom of the machine.

DANGER Fire hazard

If a fire starts in the machine, it can cause injury.

If possible use an ABE-class powder extinguisher, other wise use a BE-type carbon dioxide fire extinguisher.

DANGER Fuel hazard

The fuel is flammable and fuel fumes can explode when ignited, causing serious injury or death.

Protect your skin from contact with the fuel. If fuel has penetrated the skin, consult a qualified health professional.

Never remove the filler cap, or fill the fuel tank when the machine is hot.

Fill the fuel tank outdoors or in a clean and well ventilated place, free from sparks and open flames. Fill the fuel tank at least ten meters (30 feet) from the place where the machine is to be used.

Release the filler cap slowly to let pressure escape.

Never over fill the fuel tank.

Make sure the filler cap is screwed on when the machine is used.

Avoid spilling fuel on the machine, wipe off any spilled fuel.

Check regularly for fuel leaks. Never use the machine if it is leaking fuel.

Never use the machine in the proximity of material that can generate sparks. Remove all hot or spark-generating devices before starting the machine.

Never smoke when filling the fuel tank or when working with the machine or servicing it.

Only store fuel in a container that is specially constructed and approved for the purpose.

Consumed fuel and oil containers must be taken care of and returned to the retailer.

Never use your fingers to check for fluid leaks.

WARNING Unexpected movements

The machine is exposed to heavy strains during operation. If the machine breaks or gets stuck, there may be sudden and unexpected movements that can cause injuries.

Always inspect the machine prior to use. Never use the machine if you suspect that it is damaged.

Make sure that the handle is clean and free of grease and oil.

Keep your feet away from the machine.

Never sit on the machine.

Never strike or abuse the machine.

Pay attention and look at what you are doing.

WARNING Dust and fume hazard

Dusts and /or fumes generated or dispersed when using the machine may cause serious and permanent respiratory disease, illness, or other bodily injury (for example, silicosis or other irreversible lung disease that can be fatal, cancer, birth defects, and /or skin inflammation). Some dusts and fumes created by compaction work contain substances known to cause respiratory disease, cancer, birth defects, or other reproductive harm.

Dust and fumes in the air can be invisible to the naked eye, so do not rely on eye sight to determine if there is dust or fumes in the air. To reduce the risk of exposure to dust and fumes, do all of the following:

Perform site-specific risk assessment. The risk assessment should include dust and fumes created by the use of the machine and the potential for disturbing existing dust.

Wear, maintain and correctly use respiratory protection as instructed by your employer and as required by occupational health and safety regulations. The respiratory protection must be effective for the type of substance at issue (and if applicable, approved by relevant governmental authority).

Work in a well ventilated area.

If the machine has an exhaust, direct the exhaust so as to reduce disturbance of dust in a dust filled environment.

Operate and maintain the machine as recommended in the operating and safety instructions.

Wear washable or disposable protective clothes at the worksite, and shower and change into clean clothes before leaving the work site to reduce exposure of dust and fumes to your self, other persons, cars, homes, and other areas.

Avoid eating, drinking, and using tobacco products in areas where there is dust or fumes.

Wash your hands and face thoroughly as soon as possible upon leaving the exposure area, and always before eating, drinking, using tobacco products, or making contact with other persons.

Comply with all applicable laws and regulations, including occupational health and safety regulations.

Participate in air monitoring, medical examination programs, and health and safety training programs provided by your employer or trade organizations and in accordance with occupational health and safety regulations and recommendations. Consult with physicians experienced in relevant occupational medicine.

Work with your employer and trade organization to reduce dust and fume exposure at the work site and to reduce the risks. Effective health and safety programs, policies and procedures for protecting workers and others against harmful exposure to dust and fumes should be established and implemented based on advice from health and safety experts. Consult with experts.

DANGER Exhaust gas hazard

The exhaust gas from the machine's combustion engine contains carbon monoxide which is poisonous, and chemicals which cause cancer, birth defects, or other reproductive harm. Inhalation of exhaust fumes can cause serious injury, illness, or death.

Never inhale exhaust fumes.

Ensure good ventilation (extraction of air by fan if necessary).

WARNING Projectiles

Failure of the work piece, of accessories, or even of the machine itself may generate high velocity projectiles. During operating, splinters or other particles from the compacted material may become projectiles and cause personal injury by striking the operator or other persons. To reduce these risk:

Use approved personal protective equipment and safety helmet, including impact resistant eye protection with side protection.

Make sure that no unauthorised persons trespass into the working zone.

Keep the work place free from foreign objects.

WARNING Rotating blades hazards

There is a risk of hands and feet getting caught by the rotating blades when the machine is running. This can cause personal injury.

Never place your hands or feet inside the protection ring when the machine is running

WARNING Motions hazards

When using the machine to perform work-related activities, you may experience discomfort in the hands, arms, shoulders, neck, or other parts of the body.

Adopt a comfortable posture whilst maintaining secure footing and avoiding awkward off-balanced postures.

Changing posture during extended tasks may help avoid discomfort and fatigue.

In case of persistent or recurring symptoms, consult a qualified health professional.

WARNING Vibrations hazards

Normal and proper use of the machine exposes the operator to vibration. Regular and frequent exposure to vibration may cause, contribute to, or aggravate injury or disorders to the operator's fingers, hands, wrists, arms, shoulders and/or nerves and blood supply or other bodyparts, including debilitating and/or permanent injuries or disorders that may develop gradually over periods of weeks, months, or years. Such injuries or disorders may include damage to the blood circulatory system, damage to the nervous system, damage to joints, and possibly damage to other body structures.

If numbness, persistent recurring discomfort, burning sensation, stiffness, throbbing, tingling, pain, clumsiness, weakened grip, whitening of the skin, or other symptoms occur at any time, when operating the machine or when not operating the machine, stop operating the machine, tell your employer and seek medical attention. Continued use of the machine after the occurrence of any such symptom may increase the risk of symptoms becoming more severe and /or permanent.

Operate and maintain the machine as recommended in these instructions, to prevent an unnecessary increase in vibration.

The following may help to reduce exposure to vibration for the operator:

If the machine has vibration absorbing handles, keep them in a central position, avoid pressing the handles into the end stops.

When the percussion mechanism is activated, the only body contact with the machine you should have are your hands on the handle or handles. Avoid any other contact, for example supporting any part of the body against the machine or leaning onto the machine trying to increase the feed force.

Make sure that the machine is well-maintained and not worn out.

Immediately stop working if the machine suddenly starts to vibrate strongly. Before resuming the work, find and remove the cause of the increased vibrations.

Participate in health surveillance or monitoring, medical exams and training programs offered by your employer and when required by law.

When working in cold conditions wear warm clothing and keep hands warm and dry.

See the "Noise and vibration declaration statement" for the machine, including the declared vibration values. This information can be found at the end of these Safety and operating instructions.

WARNING Trapping hazards

There is a risk of neck ware, hair, gloves, and clothes getting dragged into or caught by rotating machine parts. This may cause choking, scalping, lacerations, or death. To reduce the risk:

Never grab or touch a rotating machine part.

Avoid wearing clothing, neck ware or gloves that may get caught.

Cover long hair with a hair net.

DANGER Electrical hazard

The machine is not electrically insulated. If the machine comes in to contact with electricity, serious injuries or death may result.

Never operate the machine near any electric wire or other source of electricity.

Make sure that there are no concealed wires or other sources of electricity in the working area.

DANGER Concealed object hazard

During operating, concealed wires and pipes constitute a danger that can result in serious injury.

Check the composition of the material before operating.

Watch out for concealed cables and pipes for example electricity, telephone, water, gas, and sewage lines.

If the machine seems to have hit a concealed object, switch off the machine immediately.

Make sure that there is no danger before continuing.

WARNING Involuntary start

Involuntary start of the machine may cause injury.

Keep your hands away from the start and stop device until you are ready to start the machine.

Learn how the machine is switched off in the event of an emergency.

WARNING Noise hazard

High noise levels can cause permanent and disabling hearing loss and other problems such as tinnitus (ringing, buzzing, whistling, or humming in the ears). To reduce risks and prevent an unnecessary increase in noise levels:

Risk assessment of these hazards and implementation of appropriate controls is essential.

Operate and maintain the machine as recommended in these instructions.

If the machine has a silencer, check that it is in place and in good working condition.

Always use hearing protection.

TRANSPORT, PRECAUTIONS**WARNING Loading and unloading hazard**

When the machine is lifted by a crane and similar appliance, this can lead to injury.

Use marked lifting points.

Make sure that all lifting devices are dimensioned for the weight of the machine.

Never remain under or in the immediate vicinity of the machine.

MAINTENANCE, PRECAUTIONS**WARNING Unexpected start hazard**

During maintenance or when changing blades on the machine, there is a risk that the engine backfires or that the machine unexpectedly starts. This applies especially when the engine is hot and if the switch is in position ON. This can result in serious personal injury.

Always let the engine cool down.

Always turn the switch to position OFF.

Always take the cap off the spark plug.

WARNING Unexpected start hazard

Any machine modification may result in bodily injuries to yourself or others.

Never modify the machine. Modified machines are not covered by warranty or product liability.

Always use original parts, insertion tools, and accessories.

Change damaged parts immediately.

Replace worn components in good time.

CAUTION High temperature

The machine's engine exhaust pipe, and bottom become hot during operation. Touching them can lead to burns.

Never touch a hot machine.

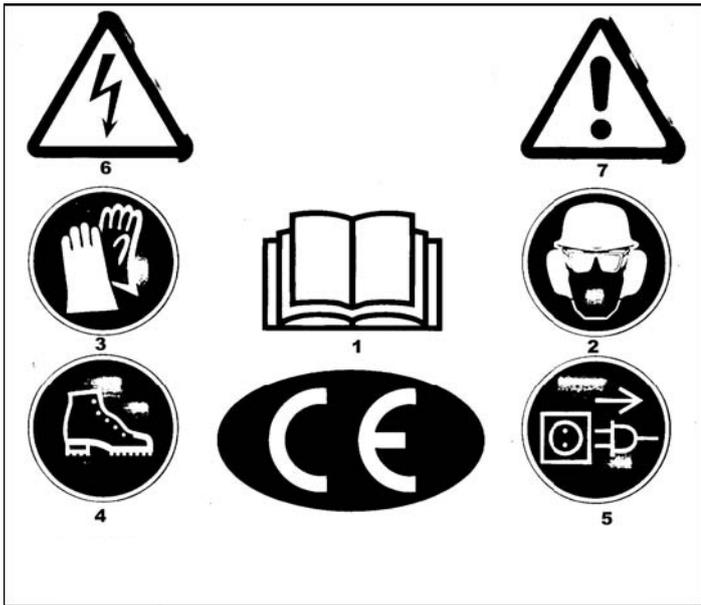
Never touch the bottom of the machine when its hot.

Wait until the engine, exhaust pipe, and bottom of the machine have cooled down before carrying out maintenance work.

STORAGE, PRECAUTIONS

Keep the machine in a safe place, out of the reach of children and locked up.

SIGNS



1. Read the operating manual before using the machine.
2. Safety glasses, safety helmet and ear protection compulsory.
3. Gloves compulsory
4. Safety shoes with extra protection compulsory.
5. Before opening the motor housing remove the plug.
6. Dangerous electrical voltage.
7. Look out and be careful.

ENSURE THAT ALL SYMBOLS – ON THE POKER VIBRATOR – CAN ALWAYS BE CLEARLY READ .

Safety aspects

The following safety aspects apply to the machine:

Safety symbols are present on the handheld poker vibrator PVD600 / PVM.

The drive unit has a thermal relais protecting against overload.

TECHNICAL DATA

POWER UNIT, Portable design

PVD600

Electric motor:

Capacity600 watt

RPM, electric motor.....Appr. 12000 r/min motor

RPM, out.....4400 r/min (Gear reduction after the electric motor)

12000 r/min vibrating element (poker head)

Voltage.....230V / 1-phase / 50 Hz

Current consumption.....3 Amp.

Test of electric motorAccording to NEN 3140, each electric motor undergoes electrical safety test with a specially developed measuring instrument for the test isolation resistance, leakage current and power consumed

Drive unit:

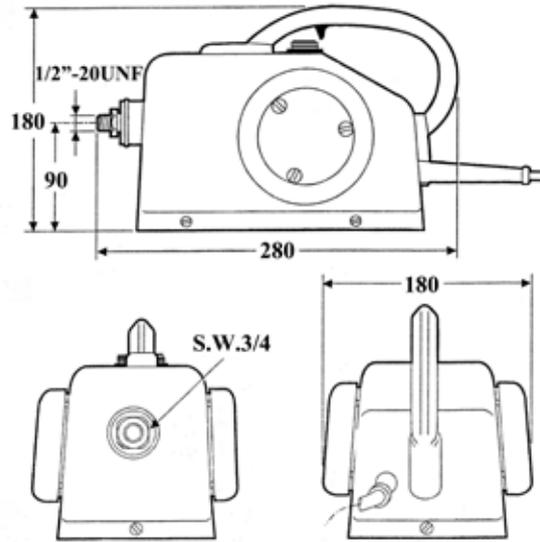
Weight (only the drive unit)3 kg

Isolation class.....IP54, splash proof insulation

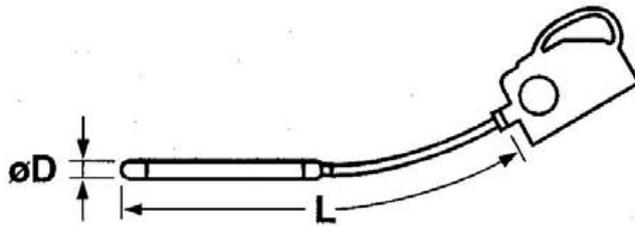
Unit protectionImpact and shockproof plastic motor housing

Overload protectionThe drive unit has a thermic relays protection against overload

Hand/arm vibrations HAV according to ISO 5349.....6 m/s²



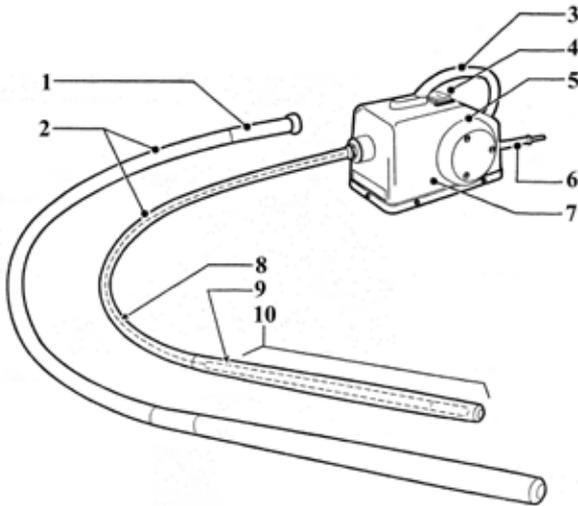
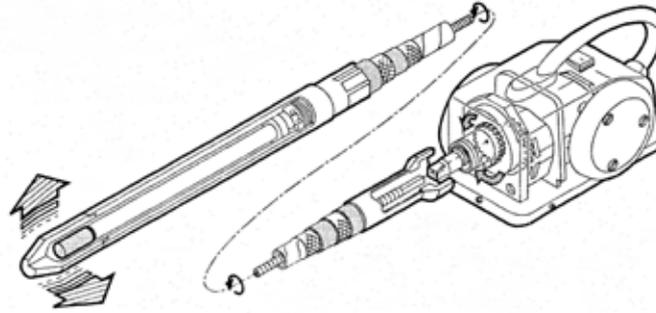
FLEXIBLE SHAFT AND POKER VIBRATOR
PVM



Diameter pokerhead $\varnothing D$ (mm)	Mass vibr.poker (kg)	Vibration frequency (p.min)	Centrif. force (N)	Amplitude (mm)	Lenght flex. poker-vibrator L (m)
28	2,0	12000	2500	0,8	1-1.5-2-2.5-3-3,5-4
38	3,4	12000	3900	1,0	1-1.5-2-2.5-3-3,5-4
45	3,6	12000	4500	1,5	1-1.5-2-2.5-3-3,5-4

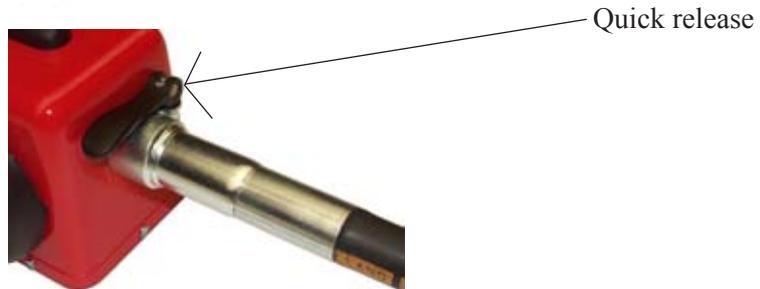
The flexible poker vibrator with a pokerhead of 38 and 45 mm, are available with rubber caps.

DESCRIPTION



Overview important components

- 1. hose coupling
- 2. vibrating hose
- 3. handle
- 4. switch
- 5. ventilation slot
- 6. electric cable
- 7. motor housing + electrical motor
- 8. flexible spindle
- 9. pendulum
- 10. vibrator housing



HOW IT WORKS

Operation

The electrical drive-unit is started by pressing the switch to the 'ON' position. The toothed motor shaft drives the gear wheel on the spindle. The spindle ensures that the flexible drive shaft rotates. The flexible shaft connected to the drive unit PVD600, transmit the movement to a shaft inside the vibrating tube. The shaft has a offset of the center of gravity which create a pendulum movement inside the tube. The pendulum start a 4-times hit in one roar, and the hit start the vibration 4-times 4400 rpm which makes 1200 rpm and frequency in total for the vibrating element.

Intended use

A hand held poker vibrator is a machine with a vibrating, steel bottle, for compacting concrete. The poker vibrator PVD600/PVM consists of an electrical motor in an impact and shock proof plastic motor housing and a flexible poker vibrator. The flexible poker vibrator is attached to the part of the spindle which sticks out of the motor housing. On the motor housing is a switch for turning the electrical motor on and off

FIELD OF APPLICATION

A prerequisite for the finished floor to meet the quality requirements is to properly treat the fresh concrete. During poker vibration, concrete is submitted to vibration which will force trapped air to the surface making concrete homogeneous.

It is recommended that the slab be always poker vibrated if the thickness exceeds 100 mm or if the slab is double reinforced. The next step is therefore to thoroughly compact concrete with a poker vibrator.

The poker size should be adapted to the density of reinforcement and concrete thickness. Care is required at rails, forms and stop ends. Introduce the vibrator vertically in the concrete mass without moving it horizontally. Do not transport concrete with a poker vibrator. This would increase the risk of over vibration.

Always start by leveling vibration. Make short pokes in order to level high spots. The concrete vibrator should be introduced into the mass at regular intervals. The interval should be from approximately 8 times the diameter of the poker. Duration of each insertion shall be inside 5-15 seconds. The time in vibrating the different layers should not be big to avoid cold joints. Do not push or force the vibrator into the mass, it could be stuck in the reinforcements.

Always remove the poker vertically with movements upwards and downwards so the concrete fills the empty space again. Do not switch off until you stop the vibration completely. Se speed of removing is approximately 8 cm per second.

The time is shorter for a fluid mass; a vibration in excess can produce segregation. It is considered the concrete to be well vibrated when the surface around the poker is shiny and compact and there is no more air bubbles, as well a change in the noise of the vibrator is produced. Keep a distance of 7 cm minimum from any walls or form works.

Choose the type of vibrator adequate to the dimensions of the structure to vibrate, the distance among the reinforcement and the slump cone. It is recommendable to have an additional concrete vibrator.

Before starting, check that the concrete vibrator is in good condition and it works correctly. Use the means of safety and protection.

Pour the concrete in the structure avoiding high heights. Try to pour leveled the concrete. The thickness of every layer should be less than 50 cm, The recommendation is between 30 and 50 cm.

In order to vibrate slabs, the poker has to be kept oblique so that the contact superficies with mass is bigger and the compacting effect is better.

Do not keep the concrete vibrator out of the concrete during longer periods. Stop it during residence in the concrete vibration. The concrete slab is working as a cooler for the vibrator tub and if this not is respected, a break down will appear inside a shorter period with operating lost and unnecessary cost for the owner.

Follow the maintenance instructions.

PREPARATIONS AND OPERATING CONDITION

For your own safety, as protection for others, and to avoid damage to the equipment, read carefully this manual and operating guidelines.

1. Before working, be sure that the hose joint sleeve nut is properly fastened to the drive unit. Note! The drive unit must be switched off during this handling and check the correct working of all handling and safety devices.

Always use two ways extension cables equipped with two connector plugs in the male and in the female plugs. Male plug is assembled in the motor.

Note! Do not use damaged or worn out cables.

2. Do not make sharp bends on the flexible shaft during operation

3. Do not over lubricate the inner flexible shaft.

4. Do not keep working the poker out of the concrete more than 5 minutes.

5. Do not restrict the movement of the poker during the work.

6. Do not stop the poker inside the concrete.

7. Change the wear parts to avoid damage to the internal parts. (Check wearing table for the poker)

8. Do the maintenance with the types and quantities of recommended lubricants.

9. Use ear protection according the safety instruction.

MAINTENANCE

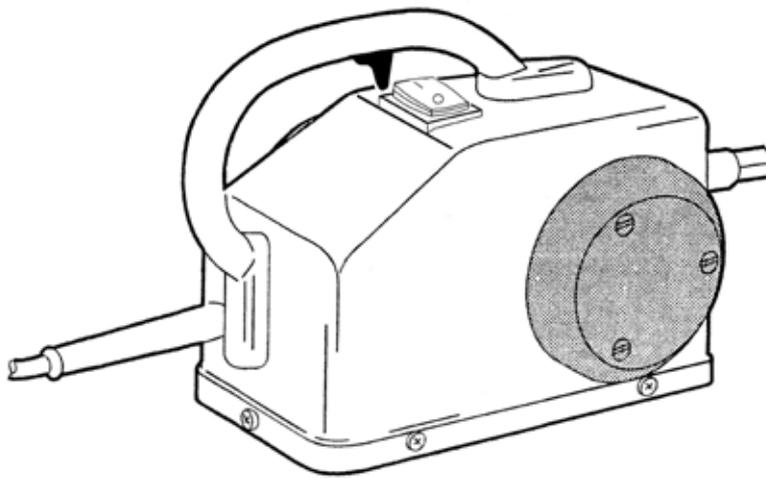
Although the poker vibrator has a few moving parts, regular maintenance promotes a long and trouble-free life.

Warning

Disconnect the electrical supply to the poker vibrator, before you can carry out any maintenance activities to the poker vibrator.

Cleaning the ventilation caps

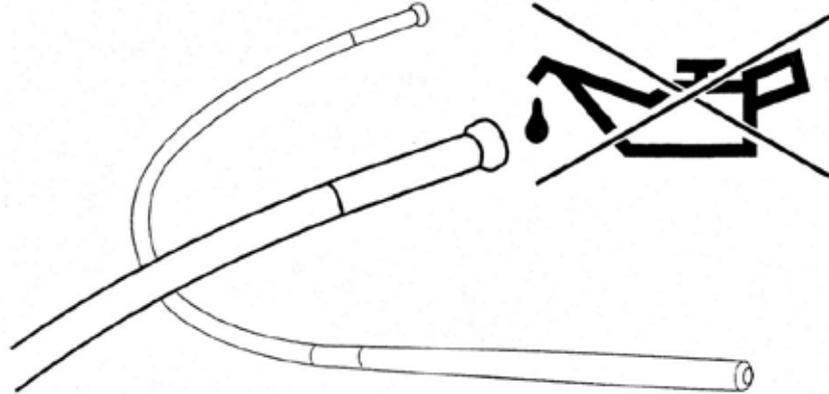
The ventilation slots on both sides of the motor housing should be kept open at all times, in order to achieve a maximum cooling effect. Check them at the end of each working day. If the ventilation caps are not open, then clean the ventilation caps as follows:

**Cleaning the ventilation caps**

- 1) Remove the three screws from one of the ventilation caps.
- 2) Remove the ventilation cap from the motor housing.
- 3) Clean the inside and outside of the ventilation cap with a brush and water.
- 4) Under the left side ventilation cap (air-intake side), an air filter is mounted. If the ventilation caps must be cleaned, also the air filter must be renewed.
- 5) **Careful:** Ensure that no water gets into the motor housing.
- 6) Clean the direct area of the ventilation opening in the motor housing, with a damp cloth.
- 7) Renew the air filter.
- 8) Place the ventilation cap over the ventilation opening in the motor housing. Ensure that the holes in the ventilation cap are in a direct line with the holes in the motor housing.
- 9) Attach the ventilation cap to the motor housing with three screws.
- 10) Carry out the same operation in this section for the other ventilation cap.

Cleaning the flexible poker vibrator

During compaction of the concrete, the flexible poker vibrator will become dirty. Periodical maintenance is vital to the safe and efficient operation of the flexible poker vibrators. It is, therefore, highly recommended to clean the flexible poker vibrator daily with water and a cleaning detergent that does not affect the poker vibrator material.



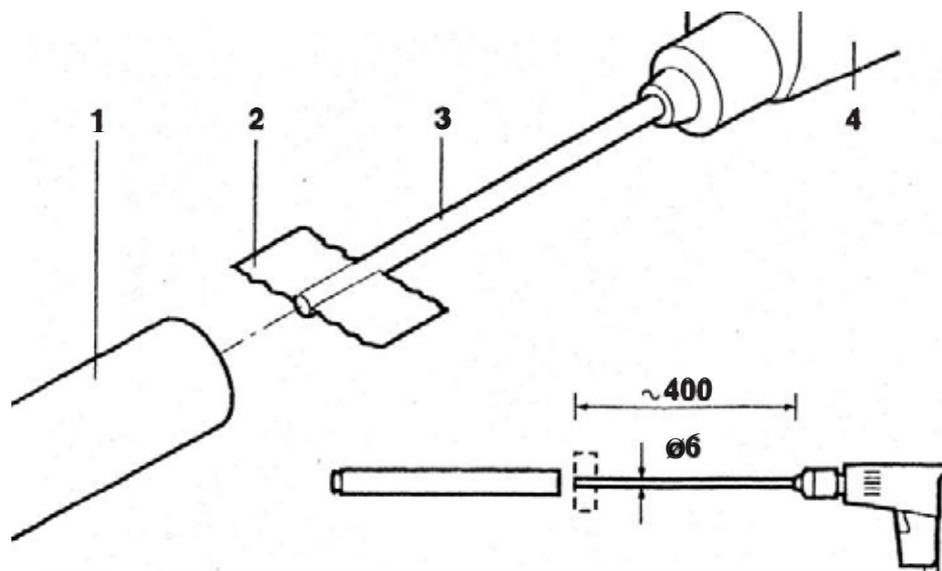
DO NOT LUBRICATE THE INSIDE OF THE FLEXIBLE SHAFT OR THE POKER VIBRATOR WITH OIL.

The flexible drive shaft of the poker vibrator has been durably lubricated by the manufacturer.

If the inside vibrator become wet from the bearing or grease from the shaft, it has to be cleaned carefully to restore the function of the pendulum technology. Use some cleaning liquid without any admixture of oily ingredients.

Cleaning process, se description below:

- 1. POKER HOUSING
- 2. CLEANING RAG
- 3. SPINDLE WITH GROOVE (LENGTH 40 CM. DIAM Ø 6 MM)
- 4. DRILL WITH ELECTRIC SPEED REGULATOR



Trouble shooting, repairs

The table below shows the most occurring problems, causes and solutions:

PROBLEM	CAUSE	SOLUTION
The connected and activated electrical drive-unit keeps tripping out.	The electrical motor has been overloaded, because the flexible poker vibrator is jammed between the reinforcement.	Prevent the flexible poker vibrator of getting jammed between the reinforcement. Stop operation if the poker vibrator gets jammed after all. Reset - if necessary - the thermic relay.
The connected and activated electrical drive-unit regularly trips out.	The electrical motor has been overloaded, due to a faulty electrical supply.	Electrical supply via a safety transformer: check the distributed power from the safety transformer. Electrical supply via electrical mains: check the plug connections for defects. Use an extension lead of a maximum length of 25 m with a cross section of 2.5 mm ² .
The poker vibrator does not vibrate in the "ON" position.	The pendulum, in the poker head, does not rotate properly	Tap against the tip of the poker head with a solid object.
The electrical drive-unit rotates irregularly.	Worn out carbon brushes.	Replace the worn out carbon brushes for new ones (replace every 6 - 12 months).
The poker head is not vibrating sufficiently.	The poker head and the pendulum are dirty, due to lubrication with oil or grease.	Dismantle the poker housing, the flexible drive shaft and the pendulum. Remove the grease from these parts from the inside of the poker housing thoroughly. After removing the grease, lubricate the flexible drive shaft with special grease, which is available from the manufacturer.
The poker vibrator does not work.	A break in the feeder cable.	Check the electrical cable and plug. Replace the faulty part(s).
The electrical motor does not get into the required number of revolutions.	Extensive voltage drop, due to the feeder cable being too long (longer than 100m)	Move the electrical source closer to the working area.
The tip of the poker head gradually vibrates less.	Dirt on the inside of the poker house due to extensive use.	Dismantle the poker housing and the pendulum. Use a rag to clean and remove the grease from both of the parts.

NOTES

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NOTES

EC-declaration of conformity

Manufacturer

**Swepac AB
Blockvägen 3
34132 Ljungby**

1. Category: PokerVibrator

2. Type: PVD600

The product complies with the following directives:

2006 / 42 / EG

2000 / 14 / EG

2004 / 108 / EG

EN 500-1

EN 500-4

EN 12649:2008+A1:2011

ISO 11201

ISO 5349-2:2001

Technical documentation held by:

Swepac AB, Blockvägen 3 SE-34132 Ljungby
Hans Holmlund / Product Manager

SWEPAC

SWEPAC AB

Address **Blockvägen 3, 341 32 Ljungby, Sweden**, tel. +46 (0)372-156 00, fax +46 (0)372-837 41, E-mail mail@swepac.se,
Internet www.swepac.se