Concrete Vibrator Pendulum Type VP28

Document no.	Work description: Concrete Vibrator Pendulum type. VP28
SMS-06-SW-1376	**Scope: Applies to concrete vibrator pendulum type used for vibrating concrete.**
Review date 19/07/12	References**: Concrete Vibrator Pendulum Type Operating Manual.**

Responsible supervisor *Insert name in BLOCK letters*	PPE and precautions	Competencies or qualifications	Licences or permits required
	• Hearing protection • Eye Protection • Safety Helmet • Protective foot wear • Industrial clothing	Trades Person Competent Operator Skilled Labourer	N/A

Tools and equipment required: Petrol Drive Unit.

IF CONTROL MEASURES ARE NOT SUITABLE AND MAJOR CHANGES ARE NEEDED, CONDUCT A RISK ASSESSMENT AND DEVELOP NEW CONTROLS ACCORDING TO SMS-06-PR-0104 WORKPLACE RISK MANAGEMENT.

WARNING

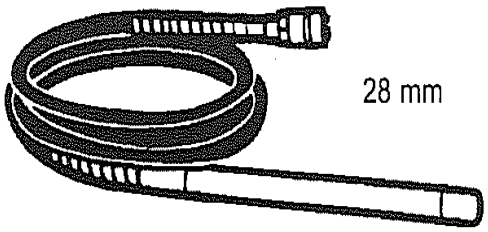
To reduce the risk of injury, all operators and maintenance personnel must read and understand these instructions before operating, changing accessories, or performing maintenance on Flextool power equipment. All possible situations cannot be covered in these instructions. Care must be exercised by everyone using, maintaining or working near this equipment.

Introduction:

General Safety Instructions for the Operation of Power Equipment:

The most important safety device for the tool is the operator. Care and good judgement are the best protection against injury. All possible hazards cannot be covered here, however some of the important items that individuals should look for and obey are Caution, Warning and Danger signs placed on equipment, and displayed in the workplace. Operators should read and follow safety instruction in the operating manual supplied with the equipment.

Learn how the machine works. Even if you have used similar machines before, carefully check out the machine before use. Get the feel of it and know its capabilities, limitations, potential hazards, how it operates, and how it stops.



FUNCTIONS AND CONTROLS

The Vibrator is used for compaction of concrete by immersion of the vibrator head. Compaction improves the strength and finish of concrete by driving out entrapped air. High frequency vibration allows the efficient compaction of low slump concrete mixes.

The vibrator head is driven by rotating flexible drive shaft that transmits the drive from a coupling, engaged with a separate portable drive unit.

Each time the rotor rotates once on its own axis it rolls almost five times around the axis of the vibrator head. As a result, the low flexible shaft speed of 3000 rpm produces a high frequency vibration of 15000 rpm. The greatest vibration produced is at the nose of the vibrator head.

For effective vibration select the largest diameter vibrator head that the job will accommodate. The flexible shaft should be selected with the shortest length that best suits the most common application.

The Vibrator is fitted with a quick action 60mm (2.36in) diameter flexible shaft coupling for operation from a drive unit fitted with a 45mm (1.75 in) diameter 3-tooth dog drive.

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HAZARDS AND RISKS

- NEVER allow any person to operate a machine without adequate instruction.
- ENSURE all operators read, understand and follow the operating instructions
- SERIOUS INJURY may result from improper or careless use of this machine

MECHANICAL HAZARDS

- DO NOT operate the machine unless all protective guards are in place
- DO NOT leave the equipment in operation while it is unattended.
- ENSURE that the equipment will remain stable and will not move or fall while in operation
- EXERCISE CARE when handling vibrators. Exposure to vibration or repetitive work actions may be harmful to hands and arms.
- DO NOT hold the vibrator head while it is running. Hold the vibrator by the flexible shaft to isolate your hands from the vibration.
- NEVER stand on the vibrating head while it is operating.
- DO NOT place your foot on the vibrator head while it is running unless it is done momentarily and the vibrator is resting on a resilient support such as a car tyre.
- ENSURE that repairs to the motor and machine are carried out by COMPETENT personnel

FIRE AND EXPLOSION HAZARDS

- PETROL is extremely flammable and explosive under certain conditions

CHEMICAL HAZARDS

- CARBIN MONOXIDE exhaust gases from internal combustion motor driven units can cause death in confined spaces

NOISE HAZARDS

- EXCESSIVE NOISE can lead to temporary or permanent loss of hearing.
- WEAR an approved hearing protection device to limit noise exposure as required by OH&S regulations. Noise levels in excess of 85dB (A) may be produced by engines and vibrators.

PROTECTIVE CLOTHING

- ALWAYS wear protective clothing and foot wear to prevent the skin coming in contact with wet concrete
- POTECTIVE FOOTWEAR should be worn to reduce injuries from penetration through the sole, contact with cutting objects, slipping, contact with wet concrete.
- Goggles for eye protection may also be necessary
- USE waterproof protection for hands and knees (if kneeling) when concreting. If your clothing becomes wet from concrete contact make sure you change the clothing. Do not walk about waiting for it to dry.
- USE GLOVES when handling and inspecting the flexible shaft outer casing. Excessive wear of the rubber cover can expose the wire braided reinforcement, allowing it project and cause injury.

ADDITIONAL HAZARDS

- Slip/Trips/Falls is a major cause of serious injury or death. Beware of excess hose. Flexible shaft and water left on the walking or work surface.
- Exercise caution and ensure that the perimeter of elevated formwork or platforms is protected.
- Exercise care when working in the vicinity of unprotected holes or excavations

OPERATION

- Check that the drive unit is running at 3000 rpm. If not and the speed is low, compaction will not be as quick or as efficient. If the speed is excessive, wear of the flexshaft and vibrator will be greater. Continued operation at higher speed may result in failure of the vibrator and flexshaft components.
- Do not engage the dive coupling in a motor that is already running.
- Before engaging the flexshaft with the petrol drive unit start the motor. Increase the speed to full throttle and allow to warm up for a few minutes.
- Stop the motor.
- Turn the bell housing trigger 180 degrees. Insert the flexshaft coupling fully into the housing of the drive unit and release the trigger. Push the coupling into the housing and twist the flexshaft until the drive dogs are fully engaged and the trigger returns to the horizontal position.
- The motor may now be started.
- Unlike non-geared pendulum-type vibrator head that may fail to vibrate initially when the motor is switch on or started, this vibrating head will commence vibrating immediately.
- Do not operate the flexshaft in a coiled position. Avoid sharp bends in flexshaft, particularly in operation.
- Do not use vibrator externally outside of formwork.
- Do not operate outside of concrete for extended periods as the concrete cools the vibrator head as design.
- Drive units should be operated on a level surface. If the surface is not level the drive unit should be restrained to ensure that it does not move due to vibration or the weight of a pump and hose or vibrator.

CARE AND PREVENTIVE MAINTENANCE

- Check the condition of the drive dog regularly and that the three tooth drive dogs are fully meshed. The position of the drive dog on the crank shaft is critical and should also be checked. The correct distance from the face of the teeth to the surface of the bell housing 73mm (2.875 inches)
- Check regularly for signs of wear and rectify any faults immediately.
- Check flexshafts for kinks and external damage by laying it out straight on a workbench or the floor. Although it still operates a badly kinked flexshaft may result in a broken inner core.
- Check the out casing rubber cover for damage where it enter the ferrule at the vibrator head.

NOTE
It is advisable to wash the vibrator head and flexshaft with clean water after use each day and before storage.

SERVICE

- Vibrating heads are fitted with left hand screw threads on the nose cap, barrel and flexshaft casing. Dismantle the vibrating head every 500 working hrs. Inspect for wear before re-assembling. Apply a thin coating of grease to the core assembly inserting it into the casing assembly from the drive coupling end.
- Unlike non-greased pendulum-type vibrators that operate "dry" the mating surfaces of the rotor, nose cap and the bearing of this vibrator head are oil lubricated.
- Most critical part of the vibrator is the seal which retains lubricating oil in the vibrator head and prevents the ingress of grease from the flexible shaft.

NOTE
The loss of oil from the vibration head will impair its operation. Replace the seal and all o-rings at each overhaul.

WARNING

These instructions are only for the use of Vibration Heads with Petrol Drive Unit.

MUST NOT use these Instructions for Vibration Heads with Electric powered Drive Units as there are no Electrical Hazard Information.