



HIGH CYCLE ECCENTRIC VIBRATORS

MODEL: PVM-E30 / PVM-E30F (Motor)

PVH11 / PVH14 / PVH18 / PVH22 (Vibrating Head)

PVH11S / PVH14S / PVH18S / PVH22S (Vibrating Head with Sleeve)

Operator's Manual



BARTELL MORRISON INC.

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ORIGINAL LANGUAGE

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ORIGINAL LANGUAGE OPERATING INSTRUCTIONS FOR
MORRISON HIGH CYCLE VIBRATORS © 2008 BY
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Important Information:

Date of Purchase:

Dealer:

Model Number: PVM-30

Serial Number:



1.0 INTRODUCTION

TO THE OPERATOR:

DO NOT OPERATE THE MORRISON HIGH CYCLE ECCENTRIC VIBRATOR UNLESS YOU HAVE READ AND STUDIED THIS MANUAL CAREFULLY.

REMEMBER THAT YOU ARE THE KEY TO SAFETY. GOOD SAFETY PRACTICES NOT ONLY PROTECT YOU, BUT ALSO THOSE WORKING AROUND YOU. MAKE THIS MANUAL A WORKING PART OF YOUR SAFETY PROGRAM.

For safe operation of the high cycle eccentric vibrator, you must be a qualified and authorized operator. To be qualified, you must understand these written instructions, have training, including actual operation of the vibrator and know the safety rules and regulations for your particular job site.

An operator should never use drugs, alcohol or any other substance which can change his/ her alertness or coordination.

This manual is compiled from information available and current at time of approval for printing. Bartell Morrison Inc. reserves the right to improve its products without giving prior notice or incurring any obligation

1.1 INTENDED USE

The Bartell Morrison series of high cycle eccentric vibrators can be used over a wide range of applications for the consolidation of concrete.

This product is typically used for on-site vibration of concrete for foundations, walls, columns, slab work, etc. Additional in-plant applications include vibration of concrete during the production of pipes, slabs, beams, double T columns, walls, etc.

1.2 FEATURES

1. Powerful 2.1 Hp heavy duty electric motor designed for a long working life.
2. Faster consolidation by high frequency vibration and powerful centrifugal force.
3. Lightweight motor and shoulder strap make for easy handling on the job site.
4. Optional flex shaft lengths in six sizes from 3.1ft (1m) to 19.7ft (6).
5. Interchangeable vibrating heads in four sizes; 1.1in (28mm), 1.4 (35mm), 1.8in (45mm) and 2.3in (55mm).
6. Interchangeable vibrating heads with thermoplastic sleeve offers protection for coated rebar.

1.3 OPTIONS

Vibrator heads with or without sleeves and flexible shaft combinations of 3.3ft (1.0m), 6.6ft (2.0m), 9.9ft (3m), 13.1ft (4m), 16.4ft (5m), and 19.7ft (6m).



SAVE THESE INSTRUCTIONS

2.0 SAFETY



2.1 READ OPERATING INSTRUCTIONS

Read and understand this entire manual before attempting to operate or service the equipment described herein. Failure to follow these operating instructions could result in serious injury or death. Store this manual with the machine and ensure it is apparent and available to any users.

CALIFORNIA PROPOSITION 65 WARNING

Engine exhaust, some of its constituents, and certain vehicle components, contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.



2.2 PRODUCT SAFETY AND HAZARD ALERT SYSTEM:

This Operating Manual presents Product Safety and Hazard Alert Information in accordance with *American National Standards Institute* and *International Organization for Standardization* recommendations as laid out in ANSI Z535 and ISO 3864. The callouts of DANGER, WARNING, CAUTION, and NOTE must be followed to reduce or avoid the potential for personal injury, equipment damage, or service-related equipment failures.



Safety Hazard Alert:

Alerts the reader to personal injury hazards and other important, potentially life-saving information.



DANGER:

Beware of a hazardous situation that **WILL** result in serious personal injury or untimely death.

DANGER



WARNING:

Beware of a hazardous situation that **COULD** result in serious personal injury or even death.



CAUTION:

Beware of a hazardous situation that could result in minor personal injury or equipment damage.

WARNING

CAUTION



2.3 WORK AREA

- **Keep work area clean**, free of clutter and well lit. Cluttered and dark work areas can cause accidents.
- **Do not use your tool where there is a risk of causing a fire or an explosion**; e.g. in the presence of flammable liquids, gases, or dust. Power tools create sparks, which may ignite the dust or fumes.
- **Keep children and bystanders** away while operating a power tool. Distractions can cause you to lose control, so visitors should remain at a safe distance from the work area.
- **Be aware of all power lines, electrical circuits**, water pipes and other mechanical hazards in your work area, particularly those hazards below the work surface hidden from the operator's view that may be unintentionally contacted and may cause personal harm or property damage.
- **Be alert of your surroundings**. Using power tools in confined work areas may put you dangerously close to cutting tools and rotating parts.



2.4 ELECTRICAL SAFETY

WARNING: Always check to ensure the power supply corresponds to the voltage on the rating plate.

- **Do not abuse the cord**. Never carry a portable tool by its power cord, or pull tool or extension cords from the receptacle. Keep power and extension cords away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords may cause a fire and increase the risk of electric shock.
- **Grounded tools** must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.
- **Double insulated tools** are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still doesn't fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way.
- **Avoid body contact** with grounded surfaces such as pipes, radiators, ranges, and refrigerators. There is an increase risk of electric shock if your body is grounded.
- **When operating a power tool outside**, use an outdoor extension cord marked "W-A" or "W." These cords are rated for outdoor use and reduce the risk of electric shock.

Extension Cord Use:

- A. Use only 'Listed' extension cords. If used outdoors, they must be marked "For Outdoor Use." Those cords having 3-prong grounding type plugs and mating receptacles are to be used with grounded tools.
- B. Replace damaged or worn cords immediately.
- C. Check the name plate rating of your tool. Use of improper size or gauge of extension cord may cause unsafe or inefficient operation of your tool. Be sure your extension cord is rated to allow sufficient current flow to the motor. For the proper wire gauge for your tool, see chart.

CHART FOR MINIMUM WIRE SIZE OF EXTENSION CORD:

Nameplate AMPS	CORD LENGTH			
	25'	50'	100'	150'
0-6	18 AWG	16 AWG	16 AWG	14 AWG
6-10	18 AWG	16 AWG	14 AWG	12 AWG
10-12	16 AWG	16 AWG	14 AWG	12 AWG
12-16	14 AWG	12 AWG	(NOT RECOMMENDED)	

If in doubt, use larger cord.

Be sure to check voltage requirements of the tool to your incoming power source.

- **Do not expose** power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- **Do not let your fingers** touch the terminals of plug when installing to or removing from the outlet.
- **Ground fault circuit interrupters.** If work area is not equipped with a permanently installed Ground Fault Circuit Interrupter outlet (GFCI), use a plug-in GFCI between power tool or extension cord and power receptacle.

2.5 PERSONAL SAFETY

- **Stay alert,** watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- **Dress properly.** Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts. Air vents often cover moving parts and should be avoided.
- **Use all required personal protective equipment (PPE).** Use safety goggles or safety glasses with side shields which comply with current national standards, or when needed, a face shield. Use a dust mask in dusty work conditions. This applies to all persons in the work area. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate.
- **Avoid accidental starting.** Do not carry the power tool with your finger on the switch. Ensure the switch is in the off position before plugging tool into power outlet. In the event of a power failure, while a tool is being used, turn the switch off to prevent surprise starting when power is restored.
- **Do not overreach.** Keep proper footing and balance at all times.

- **Remove adjusting keys or wrenches** before connecting to the power supply or turning on the tool. A wrench or key that is left attached to a rotating part of the tool may result in personal injury.
- **When changing brushes electric power plug should be pulled out.**



WARNING

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically-treated lumber.

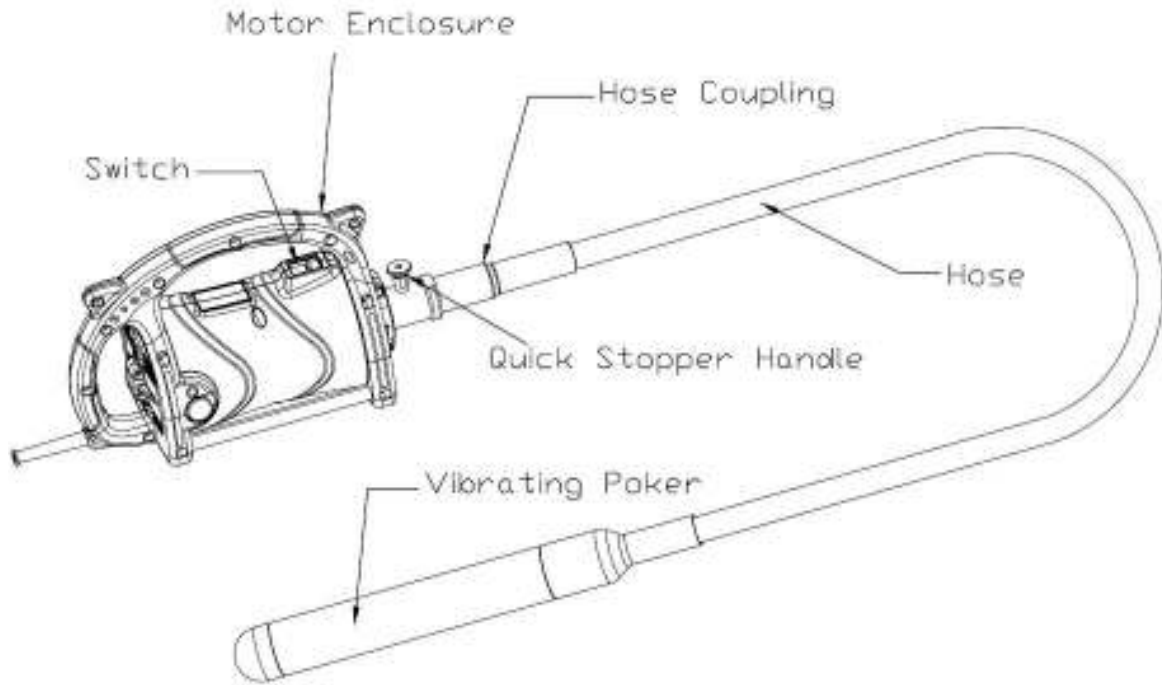
Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved PPE, such as those dust masks that are specially designed to filter out microscopic particles.

2.6 TOOL USE AND CARE

- **Do not force the tool.** Tools do a better and safer job when used in the manner for which they are designed. Plan your work, and use the correct tool for the job.
- **Never use a tool** with a malfunctioning switch. Any power tool that cannot be controlled with the switch is dangerous and must be repaired by an authorized service representative before using.
- **Disconnect power** from tool and place the switch in the locked or off position before servicing, adjusting, installing accessories or attachments, or storing. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- **Secure work** with clamps or a vise instead of your hand to hold work when practical. This safety precaution allows for proper tool operation using both hands.
- **Store idle tools.** When tools are not in use, store them in a dry, secure place out of the reach of children. Inspect tools for good working condition prior to storage and before re-use.
- **Use only accessories that are recommended** by the manufacturer for your model. Accessories that may be suitable for one tool may create a risk of injury when used on another tool.
- **Keep guards in place** and in working order.
- **Never leave tool** running unattended.
- **Do not operate with wet hands** to avoid electric shock. Electrically safe gloves are recommended.
- **Do not obstruct** motor ventilation openings to prevent overheating.



3.0 ASSEMBLY

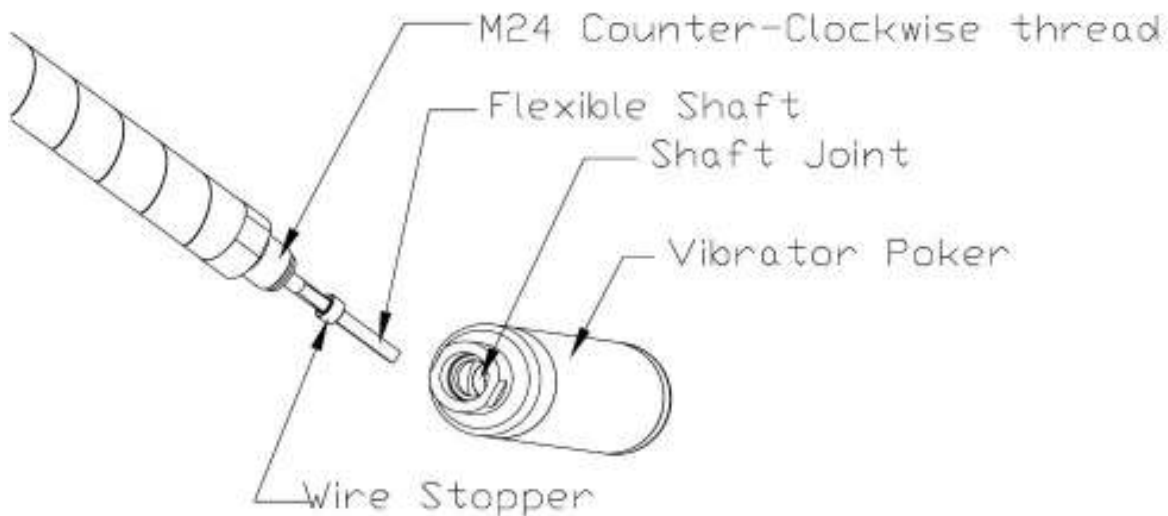


1. With switch in the "OFF" position, plug the power cord to the outlet of the main power supply.
2. Before connecting the hose to motor, check and clean, if necessary, the coupling of foreign materials such as soil, concrete and dust.
3. Pull out the flexible shaft a little from the hose coupling.
4. Insert the flexible shaft of the hose into the square shaft on the motor.
5. To attach the hose coupling to the motor, pull the quick stopper on motor up and slide coupler in place. Rotate hose coupling until pin falls into coupler socket.

4.0 OPERATION

WARNING: Do not run the motor with the head out of the mix for long periods of time. This can cause the bearings to overheat.

1. Hold head in air or place it on soft surface when starting motor. This will prevent it from bouncing on hard surfaces which could damage bearings.
2. During use, insert the head quickly into the mix and then pull it out slowly. Rapid removal is the main cause of poor concrete consolidation.
3. For best results submerge head completely and try to establish a symmetrical pattern for inserting and removing the head.
4. Avoid sharp bends in the shaft. This can create hot spots.
5. When moving around the jobsite do not drag head shaft on ground.
6. Avoid touching forms and re-bars when inserting head in mix.
7. Do not run the vibrator in the air for extended periods to prevent overheating.
8. If the vibrator stops suddenly, turn off the switch and disconnect power to the motor. Check the motor's brush condition.
9. If there is no work within 15 minutes
 1. Turn off the switch located on motor.
 2. Move the vibrator by completely stopping the machine.
 3. Remove the power cable from source.
 4. Wash the residual cement concrete from hose and head (vibrating poker).
10. When operations is complete, store the vibrator set including power cable in a safe place and disconnect the flexible hose and flexible shaft from the motor body.



5.0 Removing/Replacing the Vibrator Poker



WARNING: Before working on the vibrator poker, disconnect the hose from the motor.

Required: 32mm open end wrench; Loctite (e.g. #277)

1. Use the wrench in between hose joint and vibrator poker and unscrew the poker to the left.
2. When it is completely removed, a new vibrator poker may be re-installed.
3. Align the square flexible drive of the hose into the square coupling on the vibrator poker.
4. Screw on the vibrator poker to the right and when half way on, apply Loctite to the remaining threads.
5. Tighten completely with the wrench.
6. Allow the Loctite to set for 1 hour before use.

6.0 Removing/Replacing the Protective Sleeve



WARNING: Before working on the vibrator poker, disconnect the hose from the motor.

Required: 32mm open end wrench; Loctite (e.g. #277)

1. Use the wrench in between hose joint and vibrator poker and unscrew the poker to the left.
2. Use the hex key to remove the bolt securing the protective sleeve to the vibrator poker.
3. Pull out protective sleeve by turning it to the right and off the vibrator poker.
4. Wash the Poker.
5. Replace the protective sleeve by turning it to the left.
6. Apply Loctite to the socket head bolt before reinstalling the screw to secure the protective sleeve to the vibrator poker.

7.0 MAINTENANCE



WARNING: Make sure this tool is disconnected from its power source before attempting any maintenance, cleaning, or inspection.

- **Maintain your tools.** It is recommended that the general condition of any tool be examined before it is used. Keep your tools in good repair by adopting a program of conscientious repair and maintenance in accordance with the recommended procedures found in this manual. If any abnormal vibrations or noise occurs, turn the tool off immediately and have the problem corrected before further use. Have necessary repairs made by qualified service personnel.
- **Cleaning.** Use only soap and a damp cloth to clean your tools. Many household cleaners are harmful to plastics and other insulation. Never let liquid get inside a tool.
- **Motor Brushes**

To protect the motor, the brushes are designed to automatically shut off the motor if they become too short. If the motor stop during operation, the brushes may need to be replaced. To avoid having the brushes shut down the motor unexpectedly, inspect brushes every 50 hours and replace them when necessary. Always replace both brushes at the same time. In order to inspect or replace brushes

1. Remove brush caps from both sides of the motor.
2. Pull brushes out and measure length. Install new brushes if length (A) is less than 10mm (3/8in) long. If brushes are still long enough, place them back in motor. Make sure they are installed in the same positions they were removed.
3. Break in new brushes by running motor for about 5 minutes with no shaft attached.

8.0 Maintenance Schedule

	Daily before starting	Every week or 50 hours	Every month or 100 hours	Every year or 300 hours
Inspect electrical cords for wear or damage	O			
Inspect brushes in motor		O		
Inspect Coupling	O			
Inspect Flexible Hose	O			
Inspect Vibrating Poker		O	O	O
Inspect Leak of Lubricant	O			
Clean and lubricate flexible shaft in hose			O	
Change grease in head				O

9.0 TECHNICAL SPECIFICATIONS

9.1 Motor

Model	-	PVM-E30	PVM-E30F
Weight	Kg(Lb)	5(11)	
Power	Kw(HP)	1.6(2.1)	
Voltage (AC)	V	115	230
Current (max)	A	14.0	7.0
Frequency	Hz	50/60	
Phase	-	1	
Motor Type	-	Universal Electric Motor	
Unloaded Speed	RPM	17,000	
Connection to Flexible Shaft	-	Squared Socket	
Possible Service	-	<input type="checkbox"/> Portable(horizontal & Vertical) <input type="checkbox"/> Shoulder <input type="checkbox"/> Ground Type	

9.2 Vibrator Heads & Flexible Shaft

Vibrator heads and flexible shaft combinations

(S) – Vibrator head with sleeve

Item	Unit	PVH11(S)	PVH14(S)	PVH18(S)	PVH22(S)
Diameter	In(mm)	1.1(28)	1.4(35)	1.8(45)	2.2(55)
Length	In(mm)	15.4(390)	15.4(390)	15.7(400)	16.4(415)
Centrifugal Force	kN (lbf)	1.1 (247.3)	2.3 (517)	5.9 (1326.4)	10.6 (2383)
Vibration Frequency	VPM (Hz)	10,000 ~ 11,000 (180)			
Weight	lb (Kg)	2.8(1.3)	4.4(2.0)	7.5(3.4)	10.4(4.7)
Flexible Shaft Length	ft (m)	3.3 (1.0) 6.6 (2.0) 9.9 (3.0) 13.1 (4.0) 16.4 (5.0) 19.7 (6.0)			
Connection	Type	Interchangeable Square Flex Shaft			



10.0 PARTS LIST

Motor: PVM-E30, 115V, 50/60Hz, NEMA 5-15 Plug

Motor: PVM-E30F, 230V, 50/60Hz, Type E/F Plug

Motor Brush Set (Replacement): 80028

Vibrator Head:

Item	Unit	PVH11	PVH14	PVH18	PVH22
Diameter	In (mm)	1.1 (28)	1.4 (35)	1.8 (45)	2.2 (55)
Length	In (mm)	15 (380)	15 (380)	15.4 (390)	15.7 (400)

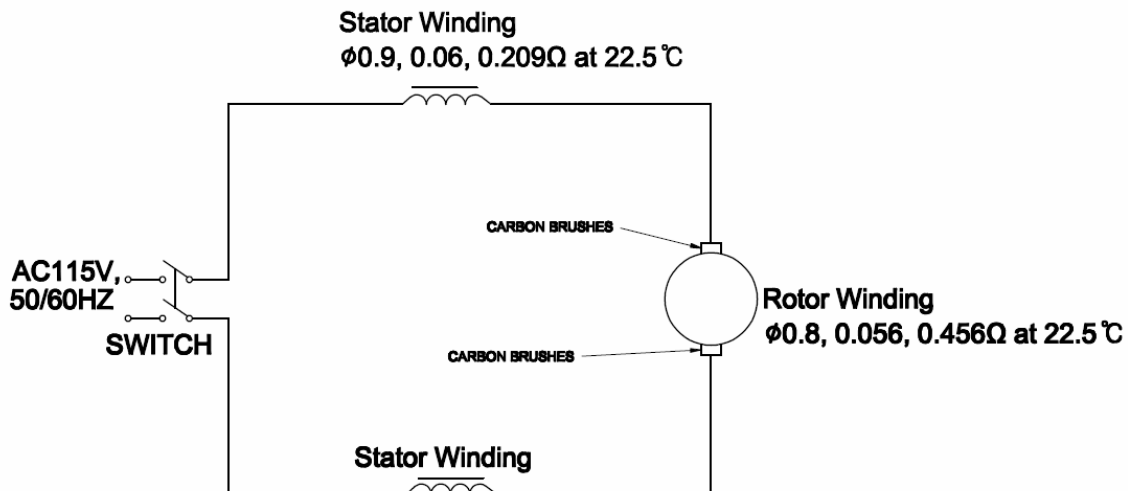
Vibrator Head with Sleeve:

Item	Unit	PVH11S	PVH14S	PVH18S	PVH22S
Diameter	In (mm)	1.1 (28)	1.4 (35)	1.8 (45)	2.2 (55)
Length	In (mm)	15 (380)	15 (380)	15.4 (390)	15.7 (400)

Hose (Flexible Shaft):

Part	PVS33	PVS66	PVS99	PVS131	PVS164	PVS197
ft (m)	3.3 (1.0)	6.6 (2.0)	9.9 (3.0)	13.1 (4.0)	16.4 (5.0)	19.7 (6.0)

11.0 Wiring Schematic





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