



Concrete Vibrator

High-Cycle



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WARNING: This product can expose you to chemicals including lead, which are known to the State of California to cause cancer, and Chromium, which are known to the State of California to cause birth defects and/or other reproductive harm. For more information go to www.P65Warnings.ca.gov

SCOPE OF THIS MANUAL

This manual describes the operation and service of the High-Cycle vibrator. The electronic version of this manual is available on our website at www.wycotool.com.

IMPORTANT

Read this manual carefully before attempting any installation or operation. Keep the manual in an accessible location for future reference.




Unpacking and Inspection

Upon opening the shipping container, visually inspect the product and applicable accessories for any physical damage such as scratches, loose or broken parts, or any other sign of damage that may have occurred during shipment.

NOTE: If damage is found, request an inspection by the carrier's agent within 48 hours of delivery and file a claim with the carrier. A claim for equipment damage in transit is the sole responsibility of the purchaser.

SAFETY CONSIDERATIONS

Terminology and Symbols

-  **DANGER** Indicates a hazardous situation, which, if not avoided, is estimated to be capable of causing death or serious personal injury.
-  **WARNING** Indicates a hazardous situation, which, if not avoided, could result in severe personal injury or death.
-  **CAUTION** Indicates a hazardous situation, which, if not avoided, is estimated to be capable of causing minor or moderate personal injury or damage to property.

Power Equipment

Make sure that the power supply equipment complies with the relevant safety requirements of the local and international standards.

Electric Machine

Make sure that the machine is connected to the correct voltage and frequency specified on the nameplate. The power supply cable has to be properly sized. Check that the cable and the plug of the machine are not damaged.

WARNING

NEVER SWITCH OFF THE MACHINE BY PULLING THE PLUG FROM ITS SOCKET. USE THE MACHINE SWITCH.

Machine Powered By Gas or Diesel Engine

Gas has an extremely low flash point and can be explosive in certain situations.

WARNING

KEEP AWAY FROM ALL HOT OR SPARK GENERATING OBJECTS, DO NOT SMOKE WHEN HANDLING FUEL.

Wait until the machine has cooled before filling the tank. Avoid spilling gas or diesel fuel on the ground.

General Safety Information and Equipment

Long time exposure to loud noise without ear protection can cause permanent damage to hearing. Long time exposure to vibration can cause damage to the hands, fingers and wrists. Do not use the machine if you are experiencing discomfort, cramps or pain. Consult a doctor before working with the machine again.

Always use approved safety equipment. The following safety equipment applies to operators and other personnel in the immediate vicinity of the working zone:

- Safety Helmet
- Protective Gloves
- Ear Protection
- Protective Shoes
- Dust Mask (dusty environments)
- Eye Protection

Avoid wearing loose-fitting clothes to avoid the risk of the machine catching clothing. If you have long hair, cover it with a hair net.

Machine Knowledge

Familiarize yourself with the machine and make sure that the machine does not show any obvious faults or wear before starting the equipment. Start the machine according to the instructions and spare parts catalog.

Operation

Use the machine only for the purpose for which it is intended. Make sure you know how to stop the machine quickly in the event of an emergency situation. Never touch rotating parts during operation.

Maintenance

Maintenance work must only be carried out by a skilled operator. Keep unauthorized people away from the machine. Never carry out maintenance work while the machine is moving or while the engine is running. Never use a machine that is damaged.

Be Alert

Always concentrate on what you are doing. Use common sense and never operate the machine if you are tired or under the influence of drugs, alcohol or other substances which can affect your vision, reaction time, ability or judgement.

SERVICE INSTRUCTIONS

Numbers in parentheses refer to the *Drawing and Parts List on page 9*.

Disassembly Instructions

Vibrator Head (Square Head Only)

1. Hold square head (1) in a vise, leaving the stator housing (10) tilted up so any oil will remain in the head and not leak out when separated.
2. Unscrew the stator housing (10) from the square head (1) using a girth grip wrench.
3. Slowly remove the stator housing (10), making sure that the motor rotor (6) stays connected to the head.
4. Remove the rotor assembly from head housing by pulling on the motor rotor (6).
5. Replace the following parts each time the vibrator head is disassembled:
 - ◇ 2 Bearings (4)
 - ◇ Motor Rotor Bearing (7)
 - ◇ Head Oil (See *Technical Data on page 11*)
6. Hold rotor in place using a vise on the fin of the rotor to remove bearings (4) (7) from rotor (5).
7. Loosen hex jam nuts (2)(8) and the motor rotor (6).
8. Pull bearings off.

NOTE: These threads are all left hand.

WARNING

NEVER HOLD THE MOTOR ROTOR ON THE FIELD (THE RAISED MIDDLE SECTION) BECAUSE THAT WILL PERMANENTLY DAMAGE THE MOTOR ROTOR.

SWITCH

1. Hold switch housing (22) in a vise with the four screws facing up.

NOTE: Do not over-tighten housing in the vise because that might damage the housing or internal parts.

2. Loosen the four screws.
3. Lift the back plate off to allow access to the switch and wires.
4. Loosen the screws that hold the wires to the switch.
5. Remove the wires from the switch.

NOTE: Green wires are spliced with connector and remain in place.

6. Loosen the two screws that hold the switch to the housing.
7. Remove the switch.

PLUG

1. Slide the rubber boot off the back of the plug housing.
2. Loosen the two screws holding the cord to the plug housing.
3. Loosen the two screws holding the plug end in the housing.
4. Slide the wire and plug end out to allow access to the individual wire connections.
5. Loosen the four screws.
6. Slide the wires out of their proper termination points.

Assembly Instructions

Vibrator Head (Square Head Only)

1. Clean the inside and outer threads of the head housing (1) and rotor (5) to remove dirt, oil and any impurities that may be present before re-assembly. Clean the inside threads of the stator housing (10) as well.
2. Check the condition of the stator (9) and inside the stator housing (10), looking for chips in the epoxy coating and excessive wear on the inside of the stator.

NOTE: Do not remove the stator from the housing. It has a tight press fit. Purchase parts separately or as a kit.
See [Drawing and Parts List on page 9](#) for more details.

3. Refill with non-foaming vibrator oil (Wyco #655140):

◇ #1600 - 80mL

4. Reverse the disassembly procedures.

NOTE: When reassembling the parts, use loctite 242 on all threads that retain bearings. Use loctite 545 on threads holding the head (1) to the stator housing (10).

5. Check clamps, protective hose, wire, switch assembly and plug for any defects or damage before running repaired unit.
See [Safety Checklist on page 10](#).
6. After the unit has been successfully repaired and tested according to checklist, flip the switch to the ON position.
7. Make sure that the unit is running properly by checking speed with tachometer and listening for a constant, high and even pitch.

Switch

1. Inspect the housing for damage and clean inside the housing to remove dirt, oil and any other object that may cause a short before re-assembly.

NOTE: Purchase the nipple (23), cord (24), rocker switch (21) and switch housing (22) separately for repairs or buy the switch assembly kit complete.

2. Reverse the disassembly procedures.

NOTE: Use the following wiring table when reattaching wires to switch:

From Plug	From Head	To
White	Black #1	Terminal 1
Red	Black #2	Terminal 2
Black	Black #3	Terminal 3
Green Wires are spliced together inside the switch		

See [Drawing and Parts List on page 9](#) - Switch Detail

Plug

1. Inspect the wires for cuts in the insulation, loose wire strands or other conditions that may cause a short before re-assembly of the plug.

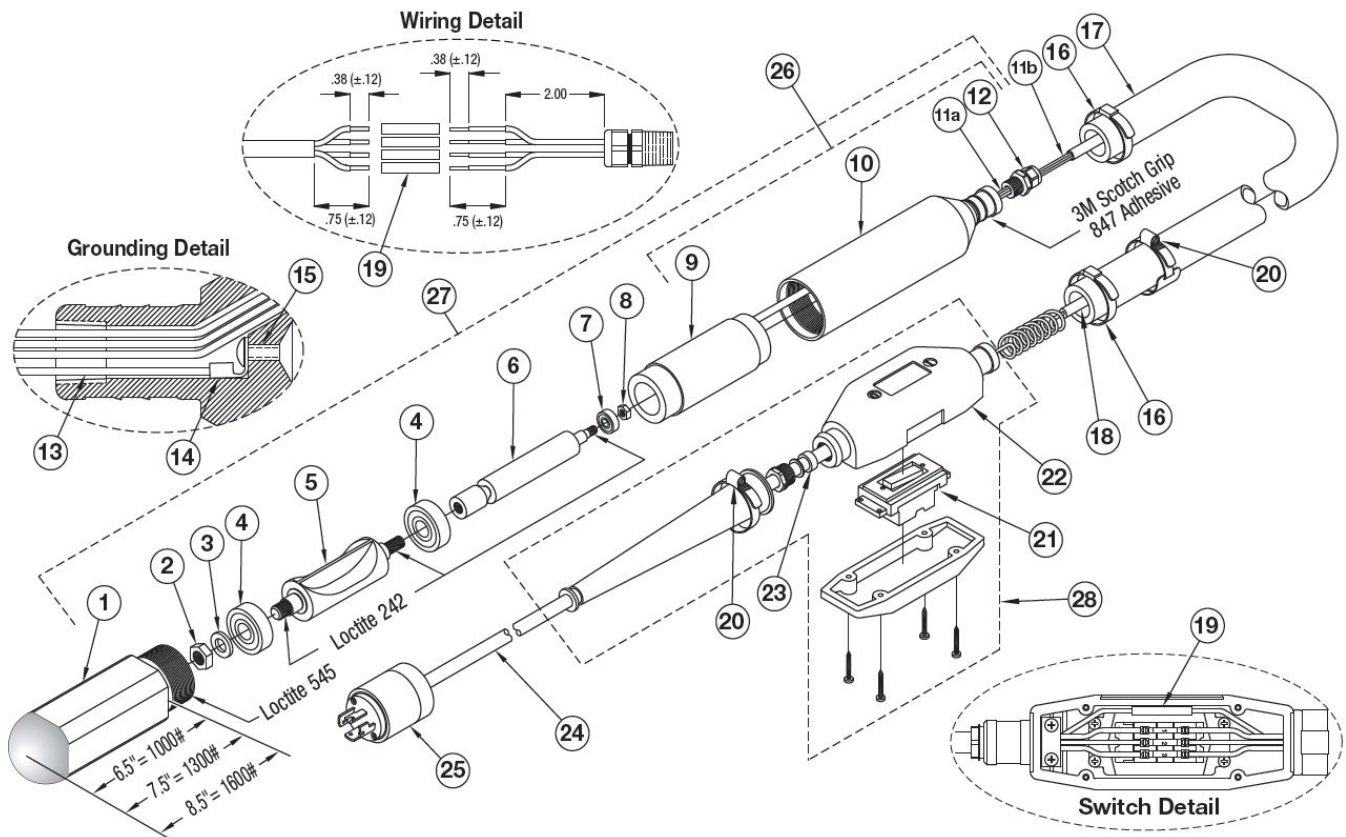
NOTE: Never over-tighten screws to wires or housing as this will strip threads or damage the plug, making it unusable.

2. Reverse the disassembly procedures.

NOTE: Use the following wiring table when reattaching wires to the plug:

Wire Color	Connect to
White	X
Black	Y
Red	Z
Green	W

DRAWING AND PARTS LIST



Item	Qty	#500 Head	#1600 Head	Description
1	1	416300	416032	Housing, 2-3/8 in. (60.33 mm) square head
2	1	—	432707	Nut, hex jam, 9/16 in. (14.22 mm), left hand
3	1	—	887011	Washer, flat
4	2	—	096020	Bearing, ball
5	1	—	416036	Rotor, hi-cycle
6	1	—	416013	Rotor, motor, high-cycle
7	1	—	416021	Bearing, ball
8	1	—	432710	Nut, hex jam, 5/16 in. (7.87 mm), left hand
9	1	—	416012	Stator, motor, high-cycle
10	1	—	416050	Stator housing, high-cycle
11a	12.5 in. (317.50 mm)	—	416048	Sleeving, fiberglass, PVC coated
11b	8.5 in. (215.90 mm)	—	416048	Sleeving, fiberglass, PVC coated
12	1	—	416023	Fitting, strain relief, 3/8 in. (9.65 mm) NPTF
13	6 in. (152.40 mm)	—	221709	Wire, #16 AWG, green
14	1	—	221706	Ring, terminal, #10, high-cycle
15	1	—	416046	Screw, button head, #10-32 × 3/8 in. (9.65 mm)
16	2	—	259601	Clamp, center punch, 2-3/4 in. (69.85 mm)
17	XX ft*	—	416011	Hose, protective, high-cycle

18	XX+2 ft*	—	390255	Cable, tray, 14 AWG, 4 cond
19	5	—	416047	Connector, butt splice
20	2	—	259606	Clamp, hose, #16
21	1	—	417001	Switch, rocker, without housing
22	1	—	417000	Assembly, switch housing, with switch
23	1	—	416045	Tubing, rubber, switch bushing
24	25 ft	—	399400	Cord, 4 conductor
25	1	—	399401	Plug, lock, 20 A/250V/Gnd, 7411SS
26	1	—	416-057	Assembly, stator housing, high-cycle
27	1	—	416-053	Assembly, head, high-cycle
28	1	—	417-068	Switch kit, high-cycle (for replacement)

* - XX is the length of the protective hose in feet.

OPERATION, TECHNICAL INFORMATION AND ACCESSORIES

Operating Instructions

Safety Checklist

CAUTION

AFTER MAINTENANCE OR REPAIRS HAVE BEEN MADE, OBSERVE THE FOLLOWING CHECKLIST TO AVOID SERIOUS INJURY:

- Check the wires (X,Y and Z) to make sure there is no continuity between them and ground (W).
- Check the wires (X,Y and Z) to make sure there is no continuity between them and steel on head housing.
- Check the cord for cuts, exposed wires or other conditions which may cause an electrical hazard.
- Check the twist lock plug for damage to prongs or plug housing.
- Check the switch housing for damage or flaws that would allow dirt, water or foreign objects to enter the housing and produce a short or dangerous situation.
- Check the wires to make sure there is 5...7 Ω across all wires (X,Y and Z).
- Check the speed (vpm) with a tachometer (for example, Wyco vibrating reed #W419855 or slide rule #W001000 type).
- Check that the head moves from left to right when running with the tip touching floor. If it moves from right to left, swap the #2 & #3 black wires on the head end of the switch.

To Start

1. Make sure that the power source corresponds to the frequency and voltage marked on the nameplate on the switch housing.
2. Push and twist the plug to secure it into place on the power source.
3. Flip the switch to the ON position or "I" on the switch housing.
4. After switching the unit ON, check that the unit is running correctly. The unit should have a high, even pitch if running correctly.

To Stop

1. Flip the switch to the OFF position or "O" on the switch housing.

Operating Hints

- Avoid bending the hose as much as possible at all times.
- Never use the vibrator head to spread the concrete.
- The concrete has been thoroughly vibrated when the surface around the head is shiny and no large air bubbles rise to the surface (normally 10...20 seconds at each location).
- Withdraw the head slowly so that the concrete can flow back into the void left by the head.
- Clean all concrete off the vibrator when finished.

Wires

Wire Wrapping Off the Switch

The 4 wires running from the head to the switch must be coiled properly to avoid pulling wires from their termination points when the protective hose is bent sharply. Wrap all 4 wires (#19) around a half inch piece of pipe and push it into the switch end of hose. Feed wires through the hose before wire wrapping.

Grounding On Head

Proper grounding is essential for the safe operation of Wyco High-Cycle Vibrators. Wyco-supplied vibrator heads have a unique internal ground connection. See [Drawing and Parts List on page 9](#) Grounding Detail.

To make this connection follow these instructions:

1. Cut a 6 in. section of 16 AWG green wire.
2. Strip back the insulation.
3. Attach the terminal ring (14).
4. Bend the round end of the ring 90 degrees up to connect the inside head.
5. Guide the button-head cap screw (15) through the terminal ring.
6. Attach an allen wrench to the screw while holding the wire.
7. Use the allen wrench to guide the screw, wire and terminal ring into the threaded area inside the head.
8. Tighten the screw.
9. Slide a 2 in. piece of sleeving (11) over the ground wire.
10. Slide a 3.5 in. piece of sleeving (11) over the 3 other wires into head.
11. Guide these 4 wires through the 4 holes in the strain relief fitting.
12. Secure the wires tightly to the head using teflon tape.

Technical Data

Information Type	#500	#1600
Head length (in.)	14.17	19.30
Head weight (lb)	9	18
Head oil (mL)	—	80
Amplitude total at tip (in.)	0.062	0.100
Force at 133 Hz / 8,000 vpm (lb)	273	874
Force at 180 Hz / 10,800 vpm (lb)	500	1600
Force at 200 Hz / 12,000 vpm (lb)	617	1975

Accessories

Wyco supplies the following accessories for use with High-Cycle vibrators. Contact your local dealer or call a Wyco Customer Sales Representative for details at 1-800-233-9926.

Description	Part No.
50 Ft extension cord	399-415
100 Ft extension cord	399-420
Select-Cycle converter with 20 A Turnlok plug	416-055
Select-Cycle converter with 30 A Turnlok plug	416-056
8 H.P. Honda high-cycle generator	511807

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