PENTAIR

MYERS®

MODEL WHV-5
WASTE HANDLING SUMP PUMPS
INSTALLATION AND SERVICE MANUAL

NOTE! To the installer: Please make sure you provide this manual to the owner of the equipment or to the responsible party who maintains the system.

Part # 23833A156 | © 2012 Pentair Pump Group, Inc. | 11/14/12

CALIFORNIA PROPOSITION 65 WARNING:

⚠WARNING This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The WHV-5 series waste handling pumps are single phase 1/2 HP. Pumps have plug-in cords to operate as a manual pump by plugging directly into a grounded receptacle or into series plug of switch cord for automatic operation. Cords are furnished in 20' lengths. Plug is cut off when pump is used for duplex operation so as to connect directly to terminal block in control box. Also available are pumps with attached control floats for automatic operation.

LEVEL SWITCHES

WHV-5 manual pumps must be used with separate level controls for automatic operation. Switches are sold and packaged separately and come with complete installation instructions.

WHV-5 automatic pumps have their own attached control float switches.

APPLICATIONS

The WHV-5 series waste handling pumps are designed for residential and commercial applications and will handle all wastewater, paper and other material normally found in sewage. Pump will handle 2" diameter solids. Not intended to pump large rags or mop heads.

PIPING

Pump case is fitted with 2" NPT female thread for 2" standard pipe.

Pipe can be galvanized steel or schedule 80' plastic pipe. Schedule 40 plastic pipe can be used with proper cement adapters.

CHECK VALVE

A 2" check valve must be used at pump discharge. This should be a free-flow valve that will easily pass solids. The Myers CV-200 valve is designed especially for this service.

INSTALLATION

The WHV-5 waste handling pump is always installed in a gas tight sump basin. Myers offers complete packaged basin systems for simplex and duplex operation. Packaged basin systems include all parts except pump, level control, check valve, pipe and duplex control box. The WHV-5 pumps should be used in 24" dia. or larger basins. Do not use WHV-5 in an 18" diameter basin.

SIMPLEX BASIN

The B20-3036 basin package is for 1/2 HP pumps and has a 30" x 36" fiberglass basin with a steel basin cover and two cast iron pump covers. One cover is blank, for installation of second pump at later date if required, other cover has flange for 2" or 3" discharge pipe and has flange for mounting switch. Basin has 3" vent flange and inlet flange for 4-1/2" O.D. plastic pipe. This basin gives extra storage capacity needed for the larger pumps.

DUPLEX BASIN

The B20-3036D and B30-3036D basin systems are for duplex operation. This system has a 30" x 36" fiberglass basin with steel basin cover that supports two separate cast iron covers. Covers have sealing flange for discharge pipe either 2" or 3" as ordered. Covers also have mounting flanges for switches. Basin has 3" vent flange and inlet flange for 4-1/2" O.D. plastic pipe. An inlet flange for 6-5/8" O.D. plastic pipe, catalog number 1F-600 is also available. Inlet flanges are shipped loose for mounting in the field at inlet height required.

SUMP COVERS

Myers offers separate pump covers for simplex and duplex systems to be used with existing basin as a replacement, or with customer basin.

Cover BC20-30D is for duplex system in 30" diameter basin with flange for 2" discharge pipe.

Cover BC30-30D is for duplex system in 30" diameter basin with flange for 3" discharge pipe.

With separate cover, the steel basin cover must be sealed to basin top with caulking compound. All covers include switch mounting flange and 3" vent flange.

INSTALLING BASIN SYSTEMS

The sump basin is usually installed at time of pouring cement floor so that it can be cemented in place, level with the floor.

Pumps are installed after construction is completed. Covers should be left on basin until after construction, so trash will not accumulate in basin.

Check basin before installing pump and remove any rocks, cement chunks or other trash that could damage pump.

Inlet flange is installed in the field and hole cut in basin at height required. More than one inlet flange can be used if required to bring extra lines into basin.

CAUTION – Before installing pump in basin, turn pump on side and turn impeller with screwdriver in slotted shaft. Impeller must turn free on this test. Pump cord is sealed through cover with split rubber bushing.

INSTALLING CHECK VALVE

The check valve is always installed in horizontal position to prevent solids from settling on top of clapper, causing clogging. A union and gate valve are recommended for use in discharge pipe to provide easy removal of pump.

STARTING PUMP – SIMPLEX SYSTEM, AUTOMATIC PUMP

1. Plug pump cord into 115 or 230 volt grounded receptacle. The 230 volt receptacle has in-line blade openings so that 115 volt plug cannot be plugged in.

   CAUTION – Never cut off grounding pins or use an adapter to plug into an ungrounded receptacle.
2. Run water into sump until control turns on pump. Allow pump to operate until level drops, turning pump off.
3. Run pump through several cycles to check switch operation.
4. If pump runs but does not deliver water, stop and start pump several times by unplugging and plugging in cord to clear air.

   Also, make sure the check valve is installed properly, with flow arrow in the correct direction.

   Check elevations of discharge piping that the height of the discharge is not greater than the total head capability of the WHV-5.
5. If pump does not start at all, the trouble could be in the wiring, float switch, or the pump itself.

STARTING PUMP WHV-5P (AUTOMATIC) USING MECHANICAL SWITCH WITH SERIES PLUG – SIMPLEX SYSTEM

1. These pumps have a mechanical (mercury-free) float switch with a 10 ft. or 20 ft. cord with a 115 volt or 230 volt series piggyback plug with switch mounted to the pump.
2. Plug the switch cord plug into a proper voltage, properly grounded outlet.
3. Plug the pump power cord into the back of the switch cord.
4. Tape the cords to the discharge pipe every 12".
5. Run water into sump until pump starts. Be sure discharge line valve is open.
6. Allow pump to operate through several on/off cycles.

SETTING LEVEL CONTROLS – SIMPLEX SYSTEM WITH CONTROL PANEL

Three FLC mercury floats are used for simplex operation. Cords from these controls must be marked so they can be connected to proper terminals in the control box.

The turn ON float should be set so that the water level raises at least to the top of the WHV-5 pump's motor housing before the pump turns on. With the WHV-5 setting on the basin bottom, this height would be 14" minimum above the bottom of the basin. The setting of the ON float may be set as high as 6" below the bottom of the inlet pipe coming into the basin.

Set the OFF float such that there is 6 to 7" of water remaining in the basin. The water level should not drop below the junction point of the WHV-5 volute case and motor housing.

The HIGH WATER (alarm) float should be set so that the water level is 4" above the level at which the pump turns on.

STARTING PUMP – SIMPLEX SYSTEM WITH CONTROL PANEL

1. Turn HAND-OFF-AUTO switch to OFF position and close circuit breaker. Turn HAND-OFF-AUTO switch to the AUTO position and run water into the sump or basin.
2. When water level reaches the ON float switch, the pump should start and run. Yellow indicator light on the panel will be illuminated. Pump will lower water level to the OFF float switch and the pump will stop.
3. If the float switches are not set at the correct heights to result in the water levels as described above, turn the HAND-OFF-AUTO switch to OFF and adjust the float switches heights. Repeat Steps 1 and 2.
4. If for any reason the water level reaches the HIGH WATER float, the alarm light or buzzer will be activated. Alarm will stop as soon as level drops below the HIGH WATER float.
5. If pump operates as described, set HAND-OFF-AUTO switch to AUTO position and pumps are ready for service.
6. If pumps do not operate properly, make checks, as given in Steps 4 and 5, of STARTING PUMP, SIMPLEX SYSTEM, AUTOMATIC PUMP. Set HAND-OFF-AUTO switch to HAND position to check operation of the pump.

7. Check for electrical trouble – explained in the control box instructions. A competent electrician should make checks in the control box to locate trouble.

   CAUTION – NEVER WORK ON PUMPS OR CONTROL BOX UNTIL CIRCUIT BREAKER IS TURNED OFF.

SETTING LEVEL CONTROLS – DUPLEX SYSTEM WITH CONTROL PANEL

Four FLC mercury floats are used for duplex operation. Cords from these controls must be marked so they can be connected to proper terminals in the control box.

The turn ON float should be set so that the water level raises at least to the top of the WHV-5 pump's motor housing before the lead pump turns ON. With the WHV-5 setting on the basin bottom, this height would be 14" minimum above the bottom of the basin. The setting of the ON float may be set as high as 12" below the bottom of the inlet pipe coming into the basin.

Position the lag pump ON (override) float switch about 6" above the lead pump ON float.

Set the OFF float such that there is 6 to 7" of water remaining in the basin. The water level should not drop below the junction point of the WHV-5 volute case and motor housing.

The HIGH WATER (alarm) float should be set so that the water level is 4" above the level at which the lag pump turns on.

STARTING PUMP – DUPLEX SYSTEM WITH CONTROL PANEL

1. Turn both HAND-OFF-AUTO switches to OFF position and close circuit breaker.
2. Turn both HAND-OFF-AUTO switches to the AUTO position and run water into the sump or basin.
3. When water level reaches the first ON float switch, one pump should start and run. Yellow indicator light on the panel will be illuminated for the operating pump.

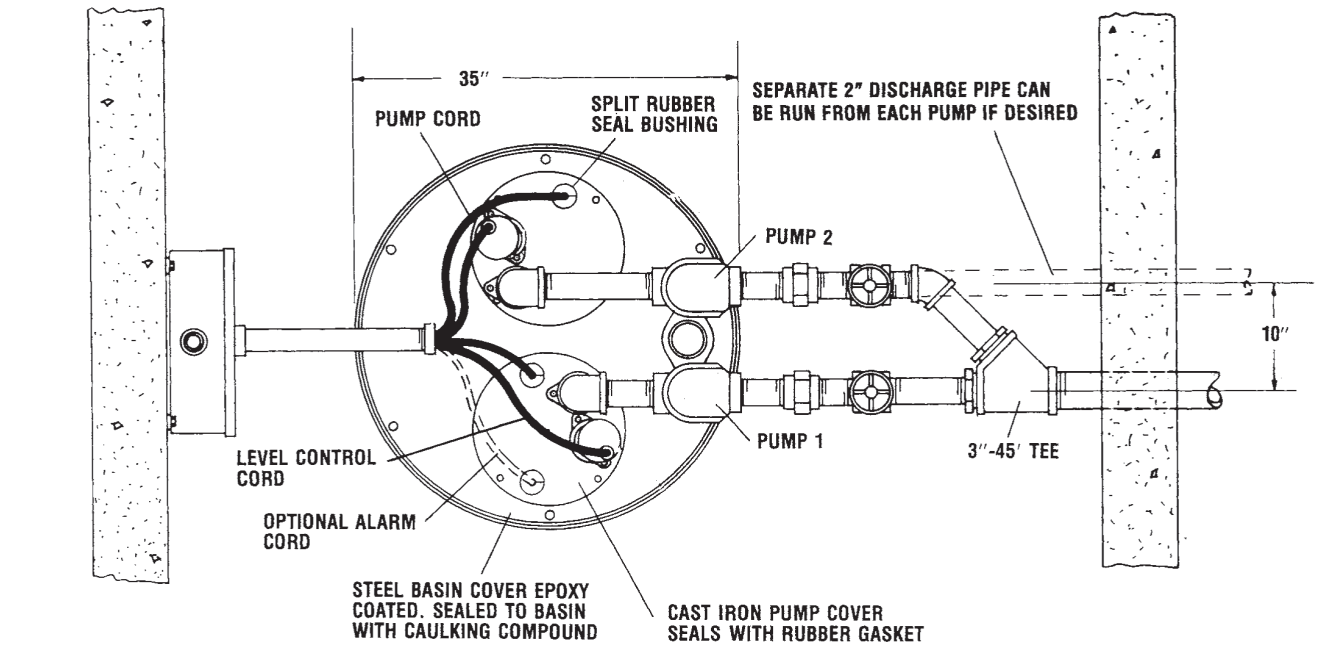
   Pump will lower water level to the OFF float switch and the pump will stop.
4. Run water into the sump again. When water level reaches the first ON float, the opposite pump will start. The yellow light will show which pump is operating.
5. This cycle will continue and pumps will alternate on successive cycles.
6. If excessive flow enters the basin that is more than one pump can handle, the sump level will rise and activate the override float, which will start both pumps and activate the alarm.
7. The same condition can occur if one pump fails for any reason. Then level will rise to the override float, and the good pump will start and operate until failed pump is replaced or repaired. If for any reason level reaches fourth float, alarm light or buzzer will be activated. Alarm will stop as soon as level drops below the alarm float.
8. To check override operation, turn both HAND-OFF-AUTO switches to OFF position and fill basin until level is above override float (3rd float).
9. Turn both HAND-OFF-AUTO switches to AUTO position and both pumps should start.
10. Repeat this operation with one pump off, which will duplicate a failed pump condition. In this case, when level reaches override float, the pump that is in the ON position should start. Operation will continue on this one pump.
11. If pumps operate as described, set both HAND-OFF-AUTO switches to AUTO position and pumps are ready for service.
12. If pumps don't operate properly, make checks as given for simplex system. Use HAND-OFF-AUTO switch in HAND position to check operation of each pump.
13. Check for electrical trouble given in the control box instructions.

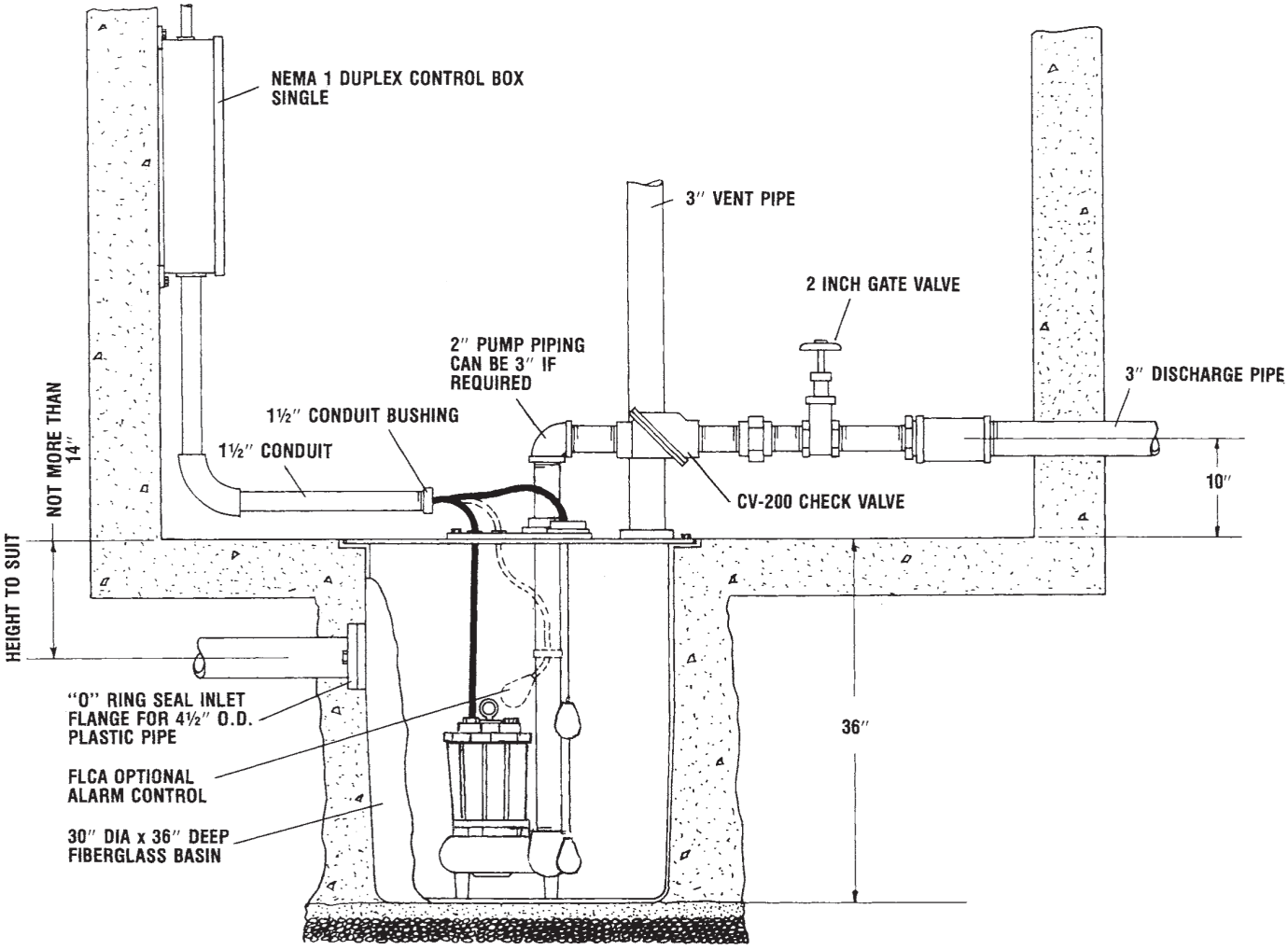
    A competent electrician should make checks in the control box to locate trouble.

    CAUTION – NEVER WORK ON PUMPS OR CONTROL BOX UNTIL CIRCUIT BREAKER IS TURNED OFF.

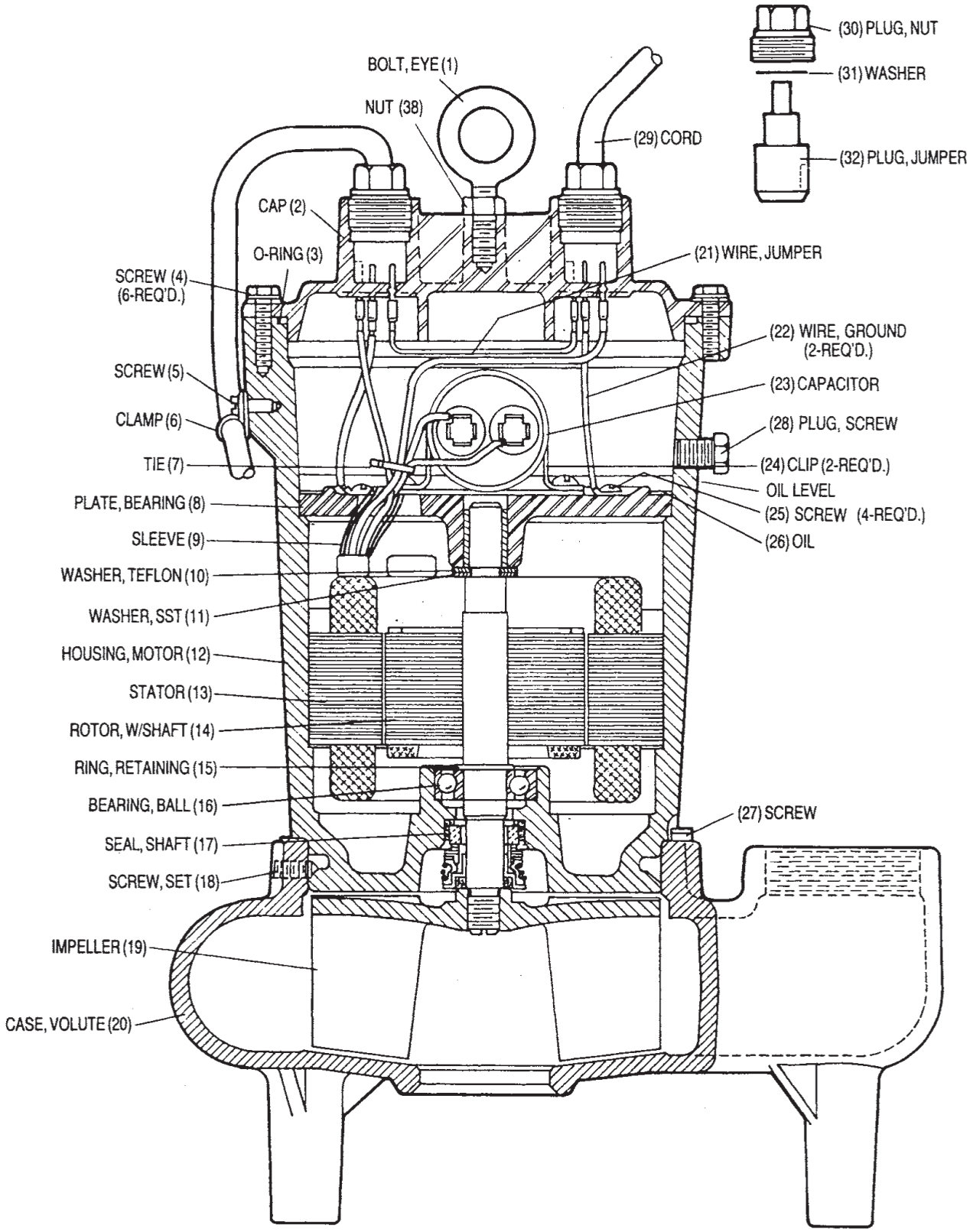
CHECK POINTS IF PUMP DOES NOT RUN AND OPERATE PROPERLY

1. Be sure fuse is not blown or circuit breaker is not tripped. Pump should have separate circuit with its own fuse or breaker. If on circuit with other equipment, nuisance tripping may occur.
2. **CAUTION – Always unplug pump cord before removing pump from sump basin. Remove pump and check for plugged inlet or trash stuck in pump. Be sure pump impellers turn freely after removing any trash.**
3. If pump does not operate after cleaning, stator may be damaged or burned out. Occasionally, lightning may damage a motor.


35″
PUMP CORD
SPLIT RUBBER SEAL BUSHING
SEPARATE 2″ DISCHARGE PIPE CAN BE RUN FROM EACH PUMP IF DESIRED
PUMP 2
10″
PUMP 1
3″-45° TEE
LEVEL CONTROL CORD
OPTIONAL ALARM CORD
STEEL BASIN COVER EPOXY COATED. SEALED TO BASIN WITH CAULKING COMPOUND
CAST IRON PUMP COVER SEALS WITH RUBBER GASKET


NEMA 1 DUPLEX CONTROL BOX SINGLE
3″ VENT PIPE
2 INCH GATE VALVE
2″ PUMP PIPING CAN BE 3″ IF REQUIRED
3″ DISCHARGE PIPE
1½″ CONDUIT BUSHING
1½″ CONDUIT
NOT MORE THAN 14″
10″
CV-200 CHECK VALVE
HEIGHT TO SUIT
"O" RING SEAL INLET FLANGE FOR 4½″ O.D. PLASTIC PIPE
36″
FLCA OPTIONAL ALARM CONTROL
30″ DIA x 36″ DEEP FIBERGLASS BASIN

WHV-5


(30) PLUG, NUT
(31) WASHER
(32) PLUG, JUMPER
BOLT, EYE (1)
NUT (38)
(29) CORD
CAP (2)
O-RING (3)
SCREW (4) (6-REQ'D.)
(21) WIRE, JUMPER
(22) WIRE, GROUND (2-REQ'D.)
SCREW (5)
(23) CAPACITOR
CLAMP (6)
(28) PLUG, SCREW
TIE (7)
(24) CLIP (2-REQ'D.)
OIL LEVEL
PLATE, BEARING (8)
(25) SCREW (4-REQ'D.)
SLEEVE (9)
(26) OIL
WASHER, TEFLON (10)
WASHER, SST (11)
HOUSING, MOTOR (12)
STATOR (13)
ROTOR, W/SHAFT (14)
RING, RETAINING (15)
BEARING, BALL (16)
(27) SCREW
SEAL, SHAFT (17)
SCREW, SET (18)
IMPELLER (19)
CASE, VOLUTE (20)

PARTS LIST

Reference	Part Number	Description	Qty.
1	21929A002	Bolt, Eye 3/8"-16	1
2	24472D001	Cap	1
3	05876A125	O-Ring, 6-1/8" x 5-7/8" x 1/8"	1
4	19099A023	Screw, Machine 1/4"-20 x 7/8"	6
5	09822A006	Screw, #10-24 x 1/2" (Auto Pump Only)	1
6	17190A008	Clamp, Cable (Auto Pump Only)	1
7	17190A004	Tie, Cable	1
8	24948C000	Plate with Bearing	1
9	20892A133	Sleeve 3/4" I.D. x 3 Lg.	1
10	05030A163	Washer, Teflon® 1/2" x 1" x 1/6"	1
11	05030A173	Washer, SST 1/2" x 1" x 1/32"	1
–	See Chart	Housing with Stator	1
12	24946D000	Housing Only	1
13	See Chart	Stator Only	1
14	See Chart	Rotor with Shaft	1
15	12558A030	Ring, Retaining	1
16	08565A013	Bearing, Ball	1
17	14525A010	Seal, Shaft, Type 6 (Shown)	1
–	22447A000	Seal, Shaft, Type 21 (Not Shown)	1

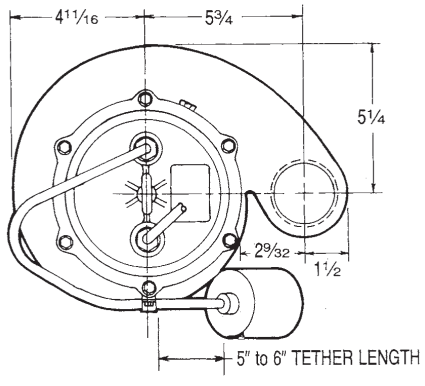
Reference	Part Number	Description	Qty.
18	13321A009	Screw, Set 5/16"-18 x 3/4"	4
19	24945C000	Impeller	1
20	24947D000	Case, Volute	1
21	09859A800	Wire, Jumper	1
22	09859A801	Wire, Ground	2
23	23838A000	Capacitor	1
24	20333A004	Clip, Capacitor	2
25	05434A054	Screw, 10-24 x 1/2"	4
26	11009A002	Oil Transformer (1 Qt. Can)	2
27	06106A037	Screw, 10-24 x 3/8"	1
28	05022A054	Plug, Pipe 1/4" NPT	1
29	See Chart	Cord, Electric	1
30	24448A000	Plug, Nut (Manual Pump & P Series)	1
31	05030A213	Washer (Manual Pump & P Series)	1
32	24449A000	Plug, Jumper (Manual Pump & P Series)	1
33	21813B120	Control, Float (Auto Pump for A Series)	1
34	14743A000	Emblem, Myers	1
35	18812A157	Instructions	1
38	19109A018	Nut, Hex 3/8"-16UNC	1

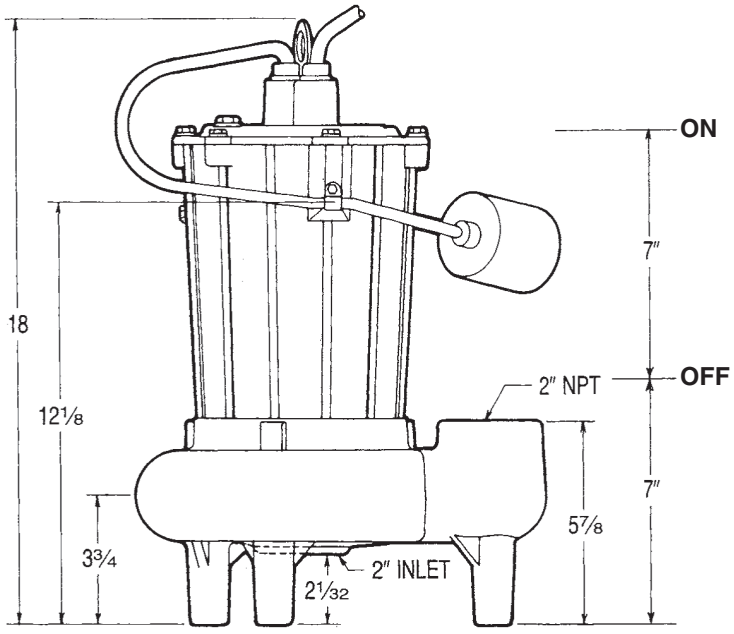
Pump Catalog No.	Pump Engr. No.	Housing with Stator	(13) Stator Only	(14) Rotor with Shaft	(19) Impeller	(29) Cord	(33) Control
WHV-5M-11	24949D000	24946D100K	24987B000	24989B000	24945C000	21628B018	–
WHV-5M-21	24949D001	24946D101K	24987B001	24989B000	24945C000	21628B019	–
WHV-5A-11	24949D002	24946D100K	24987B000	24989B000	24945C000	21628B018	21813B120
WHV-5A-21	24949D003	24946D101K	24987B001	24989B000	24945C000	21628B019	21813B120
WHV-5P-1	24949D900	24946D100K	24987B000	249898000	24945C000	21628B041	21813B130
WHV-5PC-I	24949D901	24946D100K	24987B000	249898000	24945C000	21628B018	21813B131
WHV-5P-2	24949D902	24946D101K	24987B001	24989B000	24945C000	21628B042	21813B132
WHV-5PC-2	24949D903	24946D101K	24987B001	24989B000	24945C000	21628B019	21813B133

M = Manual A = Automatic P = Piggyback

Model	Voltage	Electrical Current – Amperes				
		Flow – GPM				
		0	40	80	120	Locked Rotor
WHV-5M-11	115	7.0	7.3	8.4	9.5	21
WHV-5A-11	115	7.0	7.3	8.4	9.5	21
WHV-5M-21	230	3.5	3.7	4.2	4.8	10.5
WHV-5A-21	230	3.5	3.7	4.2	4.8	10.5

DIMENSIONS





STANDARD LIMITED WARRANTY

Pentair Myers® warrants its products against defects in material and workmanship for a period of 12 months from the date of shipment from Pentair Myers or 18 months from the manufacturing date, whichever occurs first – provided that such products are used in compliance with the requirements of the Pentair Myers catalog and technical manuals for use in pumping raw sewage, municipal wastewater or similar, abrasive-free, noncorrosive liquids.

During the warranty period and subject to the conditions set forth, Pentair Myers, at its discretion, will repair or replace to the original user, the parts that prove defective in materials and workmanship. Pentair Myers reserves the right to change or improve its products or any portions thereof without being obligated to provide such a change or improvement for prior sold and/or shipped units.

Start-up reports and electrical schematics may be required to support warranty claims. Submit at the time of start-up through the Pentair Myers website: http://forms.pentairliterature.com/startupform/startupform.asp?type=m. Warranty is effective only if Pentair Myers authorized control panels are used. All seal fail and heat sensing devices must be hooked up, functional and monitored or this warranty will be void. Pentair Myers will cover only the lower seal and labor thereof for all dual seal pumps. Under no circumstance will Pentair Myers be responsible for the cost of field labor, travel expenses, rented equipment, removal/reinstallation costs or freight expenses to and from the factory or an authorized Pentair Myers service facility.

This limited warranty will not apply: (a) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with the printed instructions provided; (b) to failures resulting from abuse, accident or negligence; (c) to normal maintenance services and parts used in connection with such service; (d) to units that are not installed in accordance with applicable local codes, ordinances and good trade practices; (e) if the unit is moved from its original installation location; (f) if unit is used for purposes other than for what it is designed and manufactured; (g) to any unit that has been repaired or altered by anyone other than Pentair Myers or an authorized Pentair Myers service provider; (h) to any unit that has been repaired using non factory specified/OEM parts.

Warranty Exclusions: PENTAIR MYERS MAKES NO EXPRESS OR IMPLIED WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. PENTAIR MYERS SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE.

Liability Limitation: IN NO EVENT SHALL PENTAIR MYERS BE LIABLE OR RESPONSIBLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES RESULTING FROM OR RELATED IN ANY MANNER TO ANY PENTAIR MYERS PRODUCT OR PARTS THEREOF. PERSONAL INJURY AND/OR PROPERTY DAMAGE MAY RESULT FROM IMPROPER INSTALLATION. PENTAIR MYERS DISCLAIMS ALL LIABILITY, INCLUDING LIABILITY UNDER THIS WARRANTY, FOR IMPROPER INSTALLATION. PENTAIR MYERS RECOMMENDS INSTALLATION BY PROFESSIONALS.

Some states do not permit some or all of the above warranty limitations or the exclusion or limitation of incidental or consequential damages and therefore such limitations may not apply to you. No warranties or representations at any time made by any representatives of Pentair Myers shall vary or expand the provision hereof.

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