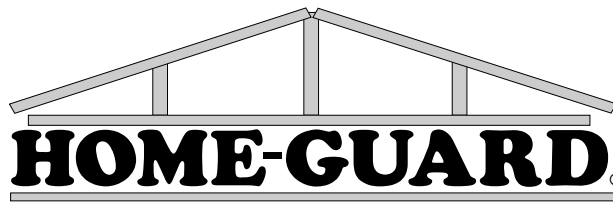


The pump that pumps water . . . with water



SECTION: 6.10.084

FM1282

0405

Supersedes

0503



Manufactured by Zoeller Pump Company

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"QUALITY PUMPS SINCE 1939"

INSTALLATION INSTRUCTIONS FOR MODEL 502



WARNING For your protection, always disconnect electrical pump from power source before handling.

Thank you for choosing the automatic sump pump that works even during power failures. Please take the time to read these installation instructions in order to get the protection you are looking for from your HOME-GUARD®.

Attention

HOME-GUARD® is **designed for use with municipal water systems** and is intended to be used as an emergency backup to your existing sump pump. It may be installed in conjunction with either a submersible (Fig. 4) or a column type (Fig. 5) sump pump by connecting it side by side to the existing sump pump as shown in the sketches.

The tee connection must be above the check valve in the primary pump discharge pipe. If your primary discharge pipe does not have a check valve, install a Zoeller Unicheck 30-0181 as shown in (Fig. 4 or 5).

The check valve is required for proper operation of your HOME-GUARD® pump.

Use Teflon® tape on all threaded connections of plastic parts. **Do not** use a wrench or heat on any plastic parts; **tighten by hand only**.

The water pressure must be limited to 80 psi with the valve open and 95 psi with the valve closed.

The capacity of the pump will decrease with the discharge lift (15' max.) just as it will increase with the effective water supply pressure (40 psi minimum, 80 psi maximum with the valve open).

In all cases, **the poppet check valve (Fig. 6, No. 14) supplied must be used as shown** to validate the HOME-GUARD® warranty.

If you have replaced or intend to replace the sump cover, it will be necessary to make additional openings to allow the connecting hose, float rod, and HOME-GUARD® discharge pipe to pass through the cover.

Do not put your HOME-GUARD® in service before you have thoroughly checked it for proper operation by manually feeding water to the pump. Refer to FM1309, included in the box, for warranty information.

Important Notes

- With water flowing, the water supply pressure should always be above 40 psi.
- Check the ejector to make sure it is in the locked position (Fig. 2).
- Make sure that the calibrated float operates freely and without any restrictions.
- Remember to reconnect the electric pump.
- Make sure that the flow through the discharge pipe is unrestricted and cannot freeze up in winter.
- HOME-GUARD® is not intended for pumping waste water, sewage, effluent, or ground surface water containing solids or debris.
- Your HOME-GUARD® pump should be checked regularly for proper operation and cleanliness, especially around the suction screen and the ejector port. Clean as required.
- **EFFICIENCY:** At an eight-foot static head and a supply pressure of 40 PSI at (A) with water flowing, it takes one (1) gallon of supply water to remove (1) gallon from the sump. As the supply pressure increases with the static head constant, less supply water is required.
- **NOTE:** Some districts may require a reduced pressure principle backflow preventer per ASSE Standards 1013. Check Local Codes.

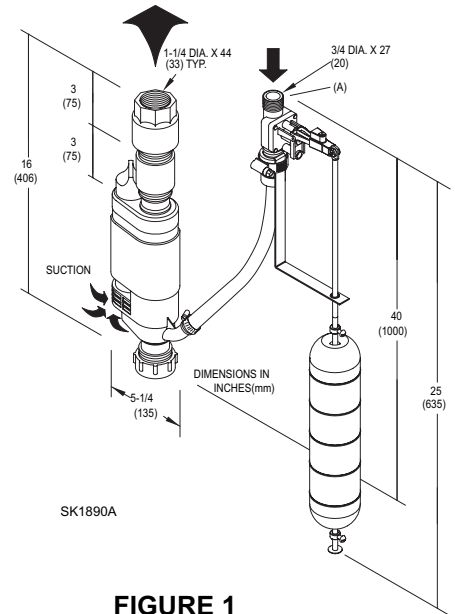


FIGURE 1

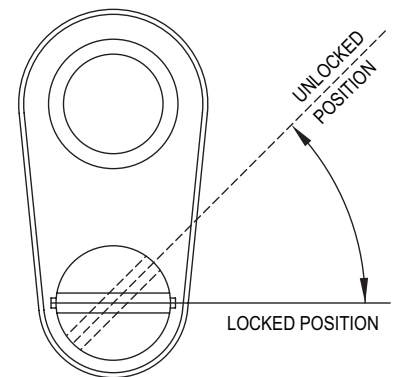


FIGURE 2

SK1891

| TOTAL PUMP OUTPUT* | | | | | | | | | | | | | |
|---|-----|------------------------------------|--------|-------|--------|-------|--------|--------|--------|---|-----|-------------------------------------|------|
| WATER PRESSURE AT (A) WITH VALVE OPEN AND WATER FLOWING | | WATER PUMPED/HOUR AT VARIOUS HEADS | | | | | | | | WATER PRESSURE AT (A) WITH VALVE OPEN AND WATER FLOWING | | NO WATER REMOVED / NO FLOW AT | |
| | | STATIC HEAD IN 1/4 IPS OR LARGER | | | | | | | | | | | |
| | | 4 FT. | 1.21 m | 6 FT. | 1.82 m | 8 FT. | 2.43 m | 10 FT. | 3.04 m | | | | |
| PSI | kPa | GAL | m³ | GAL | m³ | GAL | m³ | GAL | m³ | PSI | kPa | FT. | m |
| 40 | 275 | 331 | 1.25 | 299 | 1.13 | 262 | 0.99 | 239 | 0.90 | 40 | 275 | 16.4 | 5.0 |
| 60 | 354 | 469 | 1.77 | 442 | 1.67 | 414 | 1.57 | 381 | 1.44 | 60 | 354 | 26.6 | 8.1 |
| 80 | 415 | 552 | 2.09 | 532 | 2.01 | 507 | 1.92 | 479 | 1.81 | 80 | 415 | 36.4 | 11.1 |

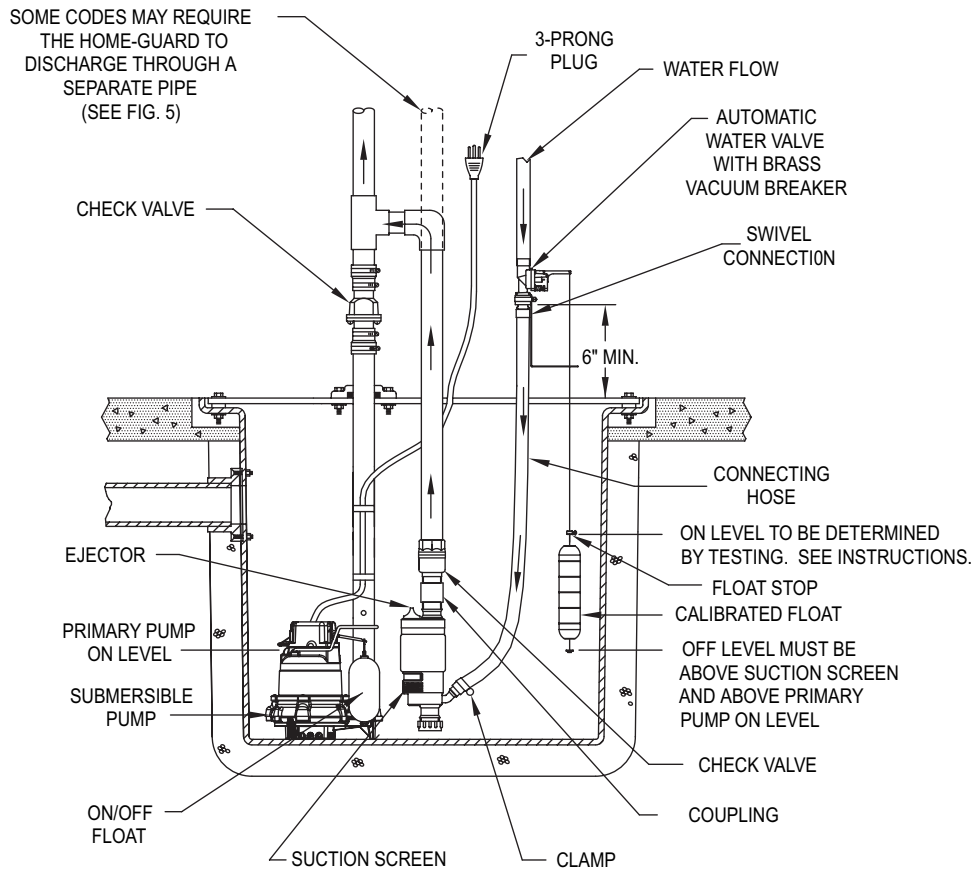
FIGURE 3

* Pump capacity varies due to: Inlet Water Pressure, Working Water Pressure, Discharge Elevation, Number of Pipe Fittings, Inlet and Outlet Hose Size, Fluid Viscosity, Degree of Water Clarity, Water Temperature and Cleanliness of Intake Screen. The flow rates in the chart are approximate values.

1. Determine the sump configuration, (*Fig. 4 or 5*), and refer to that figure throughout the installation. Some codes may require the HOME-GUARD® to discharge through a separate pipe. If installing through a separate discharge pipe, skip steps 3 and 4.
2. Disconnect the existing electric sump pump from its electrical power source.
3. Disconnect the existing discharge pipe from the discharge side of the check valve. If a check valve is not in the existing system, it will be necessary to add one before installing the HOME-GUARD® pump.
4. Cut the discharge pipe and add a tee fitting (*Fig. 4*).
5. Assemble the HOME-GUARD® pump. (*Fig. 6*). Install the cap and washer (13), connecting hose (2), ejector assembly (5) with seals (6), (7) and (8) to the pump housing (1). Install coupling (4) and poppet check valve (14), using Teflon® tape thread sealer, to the pump housing (1). Note: The flow direction arrow located on the poppet check valve body (14), must be in the "UP" position.
6. Apply Loctite® (B) to threaded rod (C) and install about half way into the lower float rod (D).
7. Determine the location of the HOME-GUARD® pump, approximately 2" from the bottom of the pit, and complete the piping from the tee in the primary pump discharge pipe to the outlet of the poppet check valve (14) (*Fig. 4*) or discharge through a separate pipe (*Fig. 5*).
8. Shut off the municipal water supply. Pipe in a rigid water supply line with a manual shut off valve to the sump area. A vertical drop should be made over the sump. Flush supply line of all debris **before** installing automatic valve.
9. Locate the automatic valve assembly with brass vacuum breaker (11) at least 6" above the basement floor or the top of the sump pit (*Fig. 4 or 5*). Install the connecting hose coupling and washer (2) to the brass vacuum breaker of the automatic valve assembly (11).
10. Pipe the inlet of the automatic valve assembly with brass vacuum breaker (11) to the vertical drop from the water supply line. This supply line will need to be supported over the pit. The inlet of the valve is a ¾" NPT male connector. This can be reduced to ½" pipe size, but not smaller. Any reduction smaller than ¾" will reduce the performance of the HOME-GUARD® pump.
11. Install the self-tapping screw (E) about half way into the valve lever adapter (F). Insert the tip of the valve lever into the larger hole of the lever adapter (F) and secure it by tightening the screw (E).
12. Install float rod guide bushing (G) into the float rod guide bracket (H).
13. Gently open the bracket clamp (I) and slide it over the connecting hose (2) and up onto the knurled area of the brass vacuum breaker (11). Position the float rod guide bracket (J) under the bracket clamp (I) and insure that the upper bend of the float rod guide bracket (J) rests on the shoulder of the brass vacuum breaker (11). Align the hole in the float rod guide bracket (J) with the valve lever adapter (F) so that the upper float rod (J) will be plumb. Loosely tighten the bracket clamp (I).
14. Install the internally threaded end of the upper float rod (J) through the float rod guide bracket (H) and bushing assembly (G). Secure the slotted end of the upper float rod (J) to the valve lever adapter (F) with cotter pin (K). Bend the tip of the cotter pin (K) to secure it. Plumb the upper float rod (J) and tighten the bracket clamp (I).
15. Slide one of the collars (L) onto the lower float rod (D) and secure it low on the float rod (D) by tightening the set screw. Install the calibrated float (18) and the second collar (L) onto the lower float rod (D) and secure the second collar above the float (18). NOTE: The upper and lower collars (L) will be adjusted later to set the "On" and "Off" levels for the HOME-GUARD®.
16. Apply Loctite® (B) to the exposed threads on threaded rod (C) in lower float rod assembly (D) and screw into the upper float rod (J).
17. Adjust the upper and lower collars (L) for proper operation levels of the HOME-GUARD®. NOTE: The "On" and "Off" levels must be above the "On" level of the primary pump and also above the suction screen on the HOME-GUARD®. The "On" level will need to be determined by testing because variables can affect valve actuation.
18. Turn on the water supply and check the installation for joint leaks. Check the automatic valve assembly with brass vacuum breaker (11) by holding the lever in the up position. Water will be supplied to the ejector (5) which will pull air through the pump inlet. Lower the lever and the system will shut off.
19. With the electric pump still disconnected, fill the pit with water until the calibrated float (18) rises. The HOME-GUARD® will lower the water level in the pit to the shut off point where the calibrated float (18) closes the automatic valve assembly with brass vacuum breaker (11).
20. Reconnect the primary electric pump to its power source. The level in the pit should drop to the "Off" point of the electric pump. Test the system several times to make certain the primary electric pump and your HOME-GUARD® are in perfect working condition.

Typical Installation with Submersible Pump

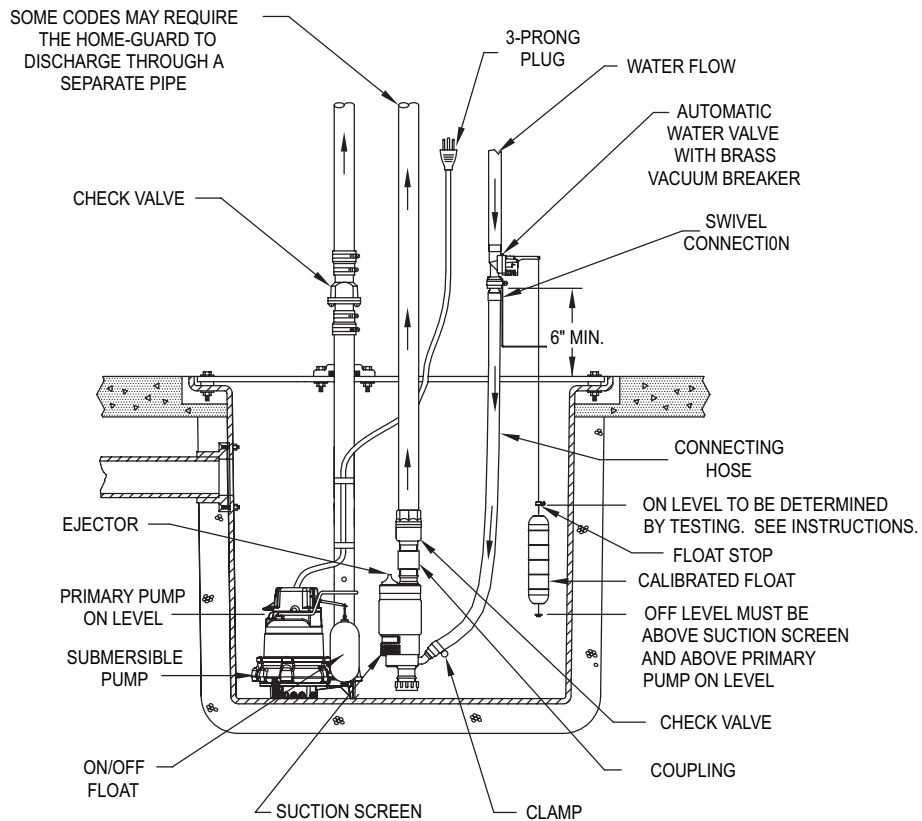
FIGURE 4



SK1372

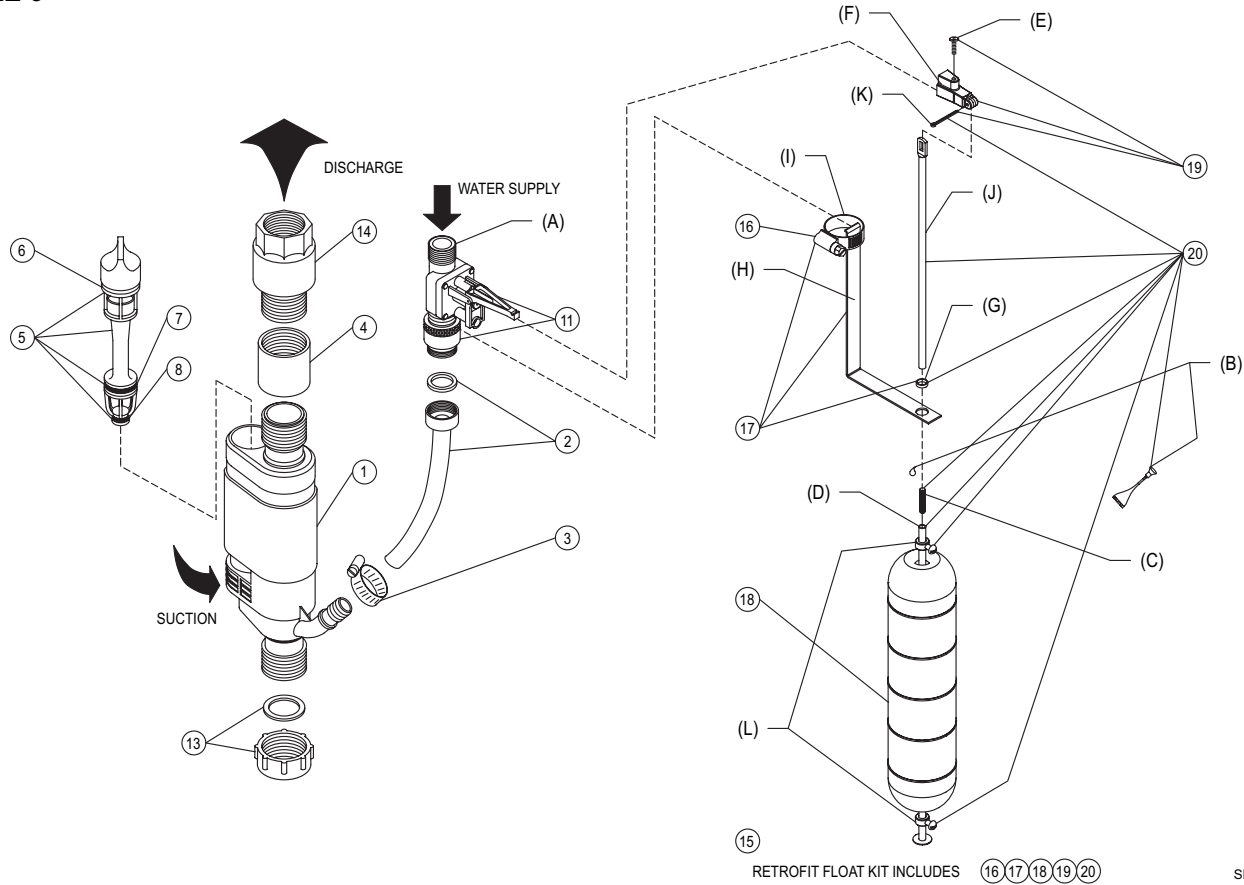
Typical Installation with Submersible Pump and Separate Discharge Pipe

FIGURE 5



SK2490

FIGURE 6



REPLACEMENT PARTS FOR HOME-GUARD®

| PART / MODEL NO. | | | | 10-0416 | 502-A |
|-------------------|--|------|-------|------------------------------|--------------------|
| MANUFACTURED DATE | | | | 03/94 THRU 07/01 | 08/01 THRU CURRENT |
| REF. NO. | DESCRIPTION | QTY. | NOTES | PART NO. | PART NO. |
| 1 | Pump Housing | 1 | | 008995 | 008995 |
| 2 | Connecting Hose and Washer | 1 | | 008996 | 008996 |
| 3 | Hose Clamp | 1 | | 008997 | 008997 |
| 4 | Coupling | 1 | | 008998 | 008998 |
| 5 | Ejector Assembly | 1 | | 008999 | 008999 |
| 6 | Ejector Seal | 1 | | 009000 | 009000 |
| 7 | O-ring (large) | 1 | | 009001 | 009001 |
| 8 | O-ring (small) | 1 | | 009002 | 009002 |
| 9 | Calibrated Weight | 1 | * | 009003 (no longer available) | N/A |
| 10 | Nylon Cord | 1 | * | 009004 (no longer available) | N/A |
| 11 | Automatic Valve Assembly | 1 | | (See Ref. No. 15) | 009704 |
| 12 | Stop | 1 | * | 009006 (no longer available) | N/A |
| 13 | Cap and Washer | 1 | | 009008 | 009008 |
| 14 | Poppet Check Valve | 1 | | 009009 | 009009 |
| 15 | Retrofit Float Kit or Automatic Valve Assembly | 1 | ** | 013755 or 009704 | N/A |
| 16 | Bracket Clamp | 1 | | N/A | 008772 |
| 17 | Float Rod Guide Assembly | 1 | | N/A | 014740 |
| 18 | Calibrated Float | 1 | | N/A | 014735 |
| 19 | Retroarm Assembly | 1 | | N/A | 014741 |
| 20 | Float Rod Assembly | 1 | | N/A | 014742 |

*Retrofit float kit assembly (Ref. No. 15) replace old style float system - these parts are no longer available.

**Retrofit float kit assembly (Ref. No. 15) replaces old style float system for float operation. May also need to order new valve in cases of leaking or failed valve.