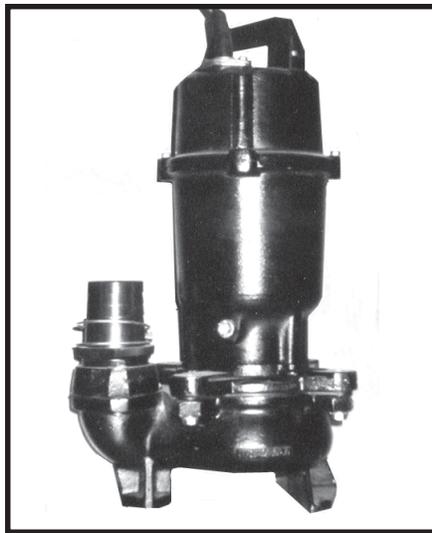


CHICAGO
Electric Power Tools
INDUSTRIAL

1/2 HP SUBMERSIBLE PUMP (TRASH WATER TYPE)

Model 92481

ASSEMBLY AND OPERATING INSTRUCTIONS



3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our Web site at: <http://www.harborfreight.com>

**TO PREVENT SERIOUS INJURY,
READ AND UNDERSTAND ALL WARNINGS
AND INSTRUCTIONS BEFORE USE.**

Copyright© 2005 by Harbor Freight Tools®. All rights reserved. No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools.

For technical questions, please call 1-800-444-3353.

PRODUCT SPECIFICATIONS

Item	Description
Electrical Requirements	120 Volt / 60 Hz / 1/2 HP / Single Phase Continuous Run Thermal Overload Protection 3 Prong, Grounded Power Plug
Pump Type	Trash Water / Centrifugal / Pit Type / Self-Priming / Air Cooled Maximum Lift: 36 Feet
Minimum Water Pick-up Height	4-3/4"
Discharge Outlet Size	2" O.D.
Maximum Discharge Capability	71 Gallons Per Minute At Pump Outlet
Maximum Size Particle Uptake	1-3/8"
Pump Basin Required Size	Minimum 18" Diameter
Temperature Operating Range	32° To 104° Fahrenheit
Overall Dimensions	9-1/2" Diameter x 17" High
Weight	42.2 Pounds

SAVE THIS MANUAL

You will need this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures, parts list and assembly diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep this manual and invoice in a safe and dry place for future reference.

UNPACKING

When unpacking, check to make sure all the parts shown on the **Parts Lists on page 13** are included. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this manual as soon as possible.

GENERAL SAFETY RULES

IMPORTANT SAFETY INSTRUCTIONS



READ AND UNDERSTAND ALL INSTRUCTIONS
Failure to follow all instructions listed below may result in
electric shock, fire, and/or serious injury.

SAVE THESE INSTRUCTIONS

WORK AREA

1. **Keep your work area clean and well lit.** Cluttered and dark work areas invite accidents.
2. **Do not operate the Sump Pump in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Electrical equipment creates sparks which may ignite the dust or fumes.
3. **Keep bystanders, children, and visitors away while operating the Sump Pump.** Distractions can cause you to lose control.

ELECTRICAL SAFETY

1. **Grounded tools must be plugged into a GFCI (Ground Fault Circuit Interrupter) 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. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
2. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators.** There is an increased risk of electric shock if your body is grounded.
3. **Do not abuse the Power Cord. Never use the Power Cord to pull the Plug from an outlet. Keep the Power Cord away from heat, oil, sharp edges, or moving parts. Replace damaged Power Cords immediately.** Damaged Power Cords increase the risk of electric shock.

PERSONAL SAFETY

1. **Stay alert. Watch what you are doing, and use common sense when operating a power tool. Do not use a power tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.
2. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.

3. **Avoid accidental starting. Be sure the circuit supplying electrical power is off before plugging in.** Plugging in a Sump Pump with the electrical circuit on invites accidents.
4. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the Sump Pump in unexpected situations.
5.  **Always wear eye protection.** Wear ANSI approved safety impact goggles and nonskid rubber boots. A hard hat must be used for appropriate conditions.

TOOL USE AND CARE

1. **Do not force the Sump Pump. Use the correct Pump for your application.** The correct Pump will do the job better and safer at the rate for which it is designed.
2. **Do not use the Sump Pump if the electrical circuit system does not turn it on or off.** Any electrical circuit system that cannot be controlled is dangerous and must be repaired or replaced.
3. **Turn off the electric power to the outlet supplying power to the Sump Pump and disconnect the Pump's Power Plug from the outlet before making any adjustments, changing accessories, or storing the Sump Pump.** Such preventive safety measures reduce the risk of starting the tool accidentally.
4. **Store idle tools and equipment out of reach of children and other untrained persons.** Tools and equipment are dangerous in the hands of untrained users.
5. **Maintain the Sump Pump with care. Keep the Pump clean.** Properly maintained Sump Pump equipment is easier to control. Do not use damaged equipment. Tag damaged equipment "Do not use" until repaired.
6. **Check for misalignment or binding of moving parts, broken parts, and any other condition that may affect the Sump Pump's operation. If damaged, have the Pump serviced before using.** Many accidents are caused by poorly maintained tools and equipment.
7. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool may become hazardous when used on another Sump Pump.

SERVICE

1. **Sump Pump service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
2. **When servicing the Sump Pump, use only identical replacement parts. Follow instructions in the “*Inspection, Maintenance, And Cleaning*” section of this manual.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.

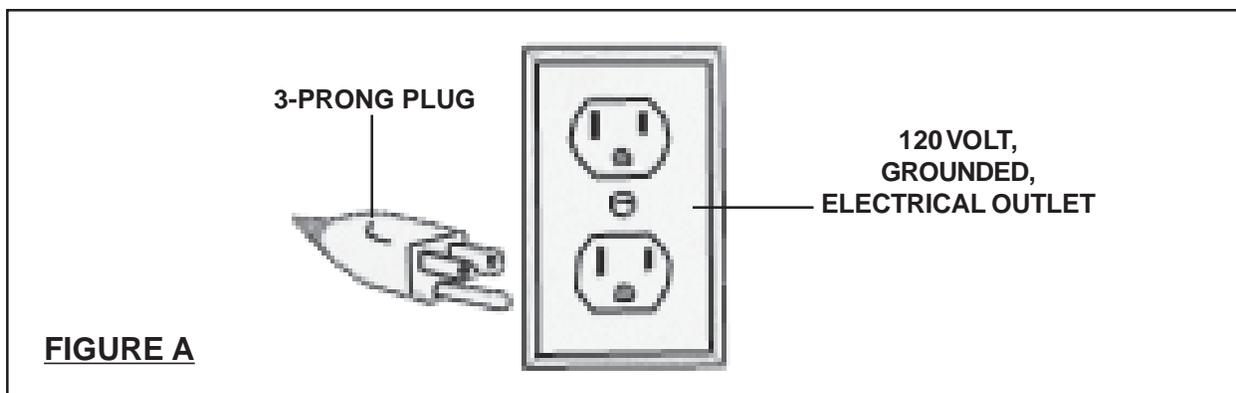
GROUNDING



Improperly connecting the grounding wire can result in the risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

GROUNDED TOOLS: TOOLS WITH THREE PRONG PLUGS

1. Tools marked with “Grounding Required” have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. **(See Figure A, next page.)**
2. The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool’s grounding system and must never be attached to an electrically “live” terminal. **(See Figure A.)**
3. Your tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should resemble those in **Figure A.**



SYMBOLOLOGY

	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
V ~	Volts Alternating Current
A	Amperes
no xxxx/min.	No Load Revolutions per Minute (RPM)

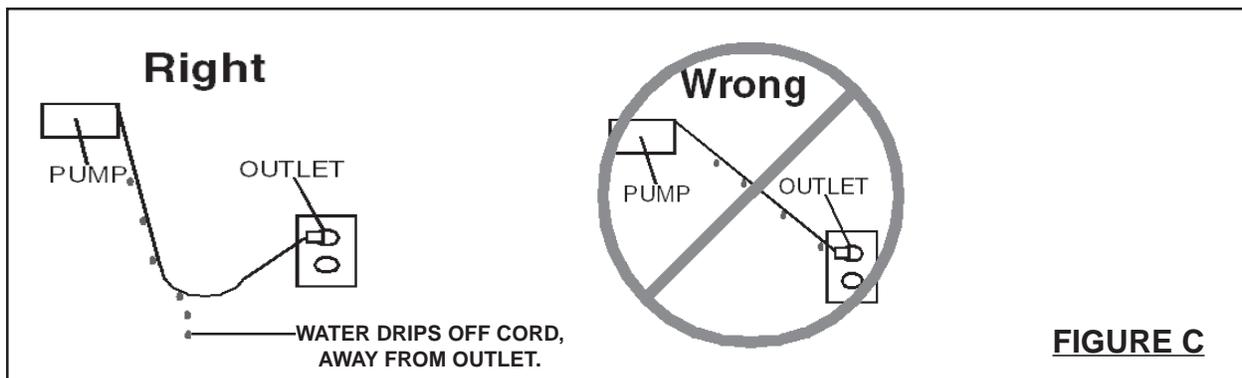
FIGURE B

SPECIFIC SAFETY RULES

- Maintain labels and nameplates on the Sump Pump.** These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
- Use the right product for the right job.** There are certain applications for which this product was designed. Do not use small equipment, tools, or attachments to do the work of larger industrial equipment, tools, or attachments. Do not use this product for a purpose for which it was not intended.
-  **WARNING!** **Risk of electrical shock.** Always disconnect the Sump Pump from its power source before handling or making any adjustments. Always

wear nonskid rubber boots when water is on the floor and you must unplug the Sump Pump. Never allow the Motor to get wet. Make sure the electrical power source is a separately fused, grounded, 3-wire type GFCI outlet of 15 AMP capacity. **DO NOT REMOVE THE GROUND PRONG OR PLUG. DO NOT USE AN EXTENSION CORD.**

4.  **WARNING!** Always arrange a “drip loop” in the Power Cord (1) connecting the Sump Pump to a 120 volt, GFCI electrical outlet. A drip loop is that part of the Power Cord below the level of the outlet to prevent water from traveling along the Power Cord and coming in contact with the outlet. If the Power Plug or electrical outlet *does* get wet, do not unplug the Power Cord. Disconnect the fuse or circuit breaker that supplies power to the Sump Pump. Then, unplug the Power Cord and examine for presence of water in the outlet. (See Figure C.)



5. **Do not pump hazardous materials.** Do not pump explosive or flammable materials such as fuel oil, kerosene, gasoline, etc. Do not pump in close proximity to flammable or explosive materials. Do not pump fats, oils, salt or waste water. **The Sump Pump is designed to move clean or dirty water only.** Do not pump water over 104 degrees Fahrenheit.
6. **Make sure the discharge hose (not included) is secured to a solid surface to ensure the stability of the Sump Pump.**
7. **Make sure to position the Base of the Sump Pump on a flat, level surface.**
8. **If necessary, have a certified electrician install a 120 volt, grounded, GFCI electrical outlet that is dedicated only to the Pump. Any outlet should be above the water line.**
9. **NEVER raise or lower the Sump Pump by its electrical Power Cord.** Firmly attach the accessory polypropylene Rope to the Handle of the Sump Pump. Use the Rope only to raise or lower the Sump Pump.

10. **In cold weather, when the Sump Pump is not in use, protect the interior of the Pump from freezing by draining the liquid and pumping a permanent type automobile antifreeze containing a rust inhibitor through the system.** A 50% mixture with water is recommended. Be sure to flush the system with a neutralizing liquid prior to reuse of the unit.
11. **Prior to use, and periodically thereafter, check to make sure all connections are tight and secure.**
12. **Industrial applications must follow OSHA requirements.**
13. **Performance of this machine (if powered by line voltage) may vary depending on variations in local line voltage.**
14.  **WARNING!** People with pacemakers should consult their physician(s) before using this product. Operation of electrical equipment in close proximity to a heart pacemaker could cause interference or failure of the pacemaker.
15.  **WARNING!** The warnings and cautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied the operator.

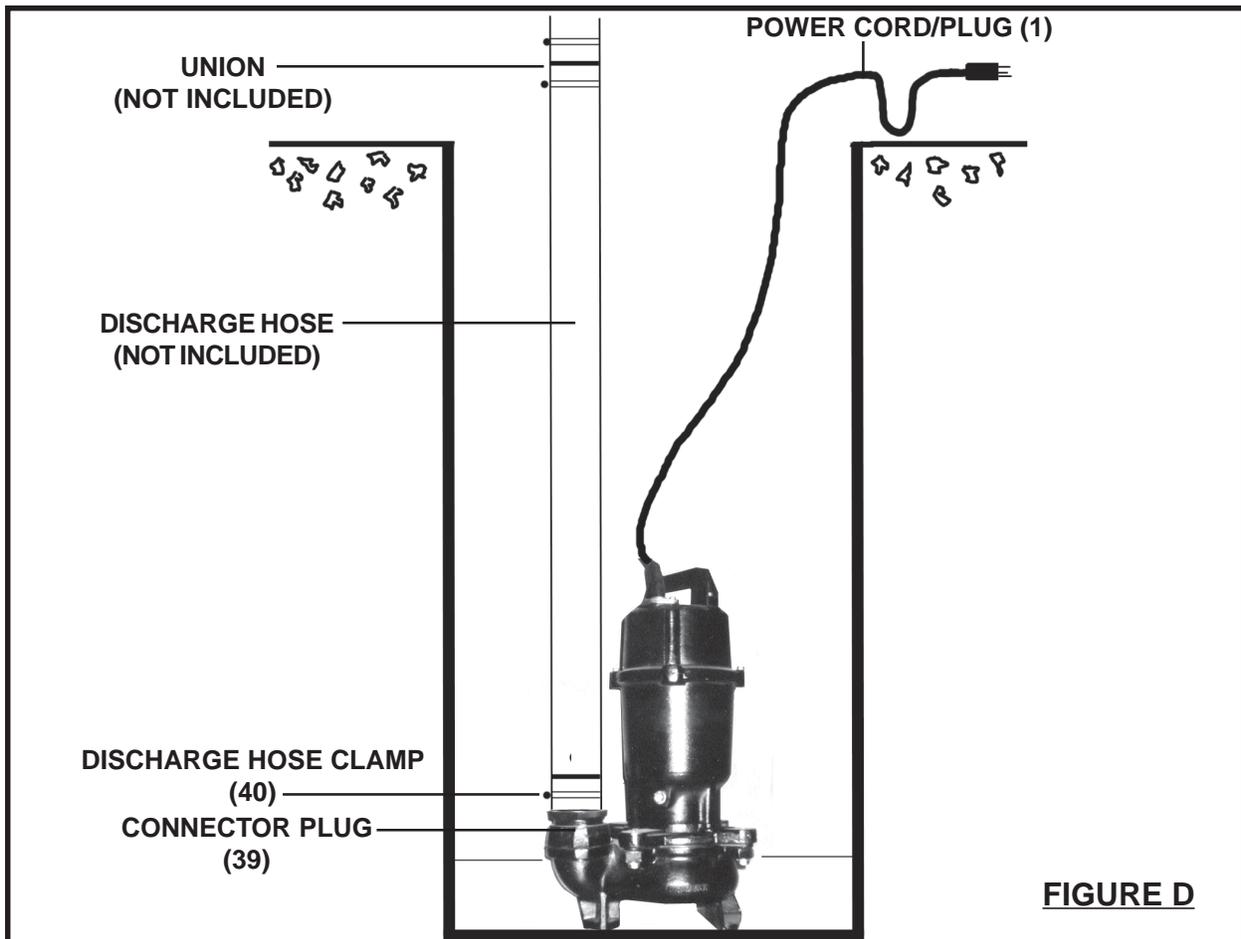
SAVE THESE INSTRUCTIONS

ASSEMBLY AND OPERATING INSTRUCTIONS

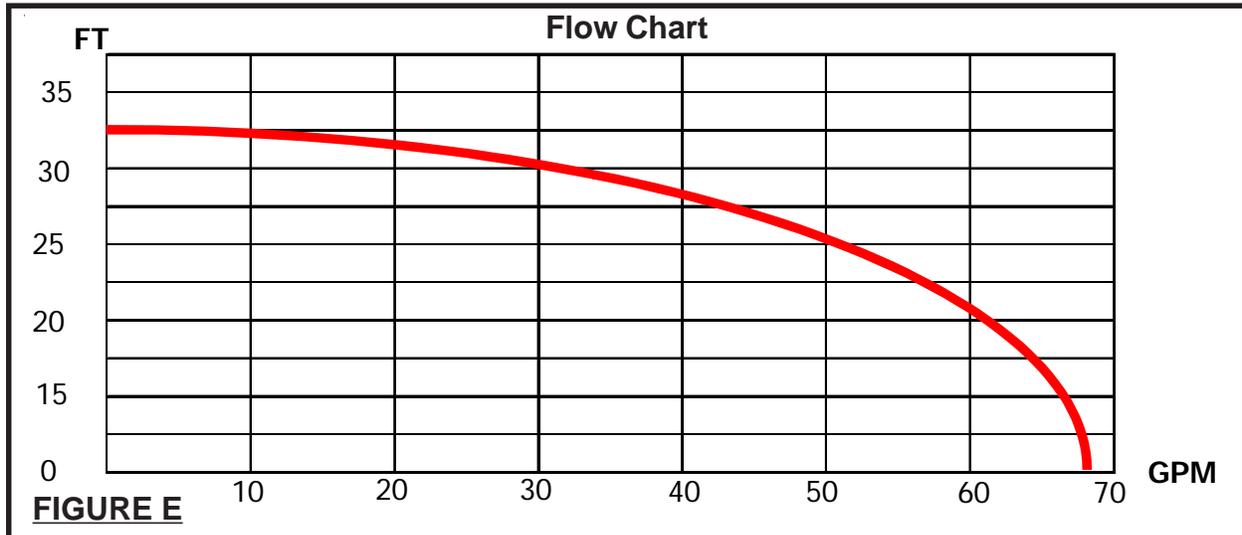
NOTE: For additional information regarding the parts listed in the following pages, refer to the **Assembly Diagram on page 14.**

1. *If necessary*, have a certified electrician install (within **14 feet** of where the Sump Pump will be located) a 120 volt, GFCI electrical outlet that is dedicated only to the Pump. **Any outlet should be above the water line.**
2.  **WARNING!** Always make sure to turn off the electricity powering the Sump Pump's electrical outlet and that the Sump Pump is unplugged from its outlet *prior* to assembling the unit, unclogging the unit, or making any adjustments to the unit.
3. **NOTE:** The size of the discharge outlet on the Connector Plug (39) is 2" diameter. Only use a hose (not included) that will fit the Connector Plug. Note: Using a hose that is too small will affect Pump flow and performance. **(See Figure D, next page.)**

4. Connect the Discharge Hose to the Connector Plug (39) of the Sump Pump, using the Discharge Hose Clamp (40) to secure the Discharge Hose in place. **(See Figure D.)**
5. Install a Union (not included) or other means of separating the Discharge Hose just above the floor to facilitate removal of the Sump Pump if necessary. **(See Figure D.)**
6. Set the Sump Pump in place, using the accessory Rope (41). **Do not raise or lower the Sump Pump by its Power Cord or by its Discharge Hose.** **(See Figure D.)**
7. Connect additional Discharge Pipe as needed to direct the discharge to the desired location. The discharge should be kept as short as possible with a minimum number of turns. **NOTE: The maximum lift of the Pump is 36 feet. See the Flow Chart (Figure E, next page), indicating gallons pumped per minute at various lift heights.**
8. Plug the Power Cord into its 120 volt, GFCI electrical outlet while making sure to form a “drip loop” in the Power Cord. Then, turn on the electrical power to the GFCI electrical outlet. **(See Figure B.)**



9. The Sump Pump will now start and run continuously until electrical power to the Pump is shut off.
10. **When shutting off power to the Sump Pump, always shut off the electrical power to the GFCI outlet first. Then, disconnect the Sump Pump's Power Plug from the GFCI outlet.**



TROUBLESHOOTING

1.  **WARNING!** Always make sure the electrical power to the Sump Pump's GFCI electrical outlet is shut off first and then the Pump is unplugged from its outlet *prior* to performing any maintenance to the unit. This Section is designed to help identify reasons for operating problems. It is *not* a service guide. Dismantling the Sump Pump voids warranty. Servicing of the Sump Pump (other than simple cleaning or unplugging) should be done only by a qualified service technician.
2. **Pump Motor does not run.**
 - A. Line circuit breaker may be off. Have a certified electrician check the fuse or breaker.
 - B. Water level in pit may be too low. Add more water to pit.
 - C. Power Cord may not be making contact in electrical outlet. Check connection.
3. **Pump Motor Runs, but does not discharge water.**
 - A. Discharge Hose may be frozen or blocked. Check to see if Discharge Hose passes through cold areas or is blocked.
 - B. Vertical lift is beyond Sump Pump's capability. Maximum lift capability is 36 feet.

- C. Inlet screen of Sump Pump is blocked, or Impeller is jammed. Remove Pump and clean the Impeller.
4. **Pump Motor runs, but delivers small amount of water.**
 - A. Vertical lift is approaching Sump Pump's maximum lift capability. Maximum lift capability is 36 feet. Reduce height of vertical lift.
 - B. Inlet is partially blocked. Check to make sure inlet is clear of debris.
 - C. Discharge Hose is partially blocked. Check Hose for blockage.
 5. **Circuit breaker trips or fuse blows when Sump Pump starts.**
 - A. Breaker or fuse size is too small. A minimum 15 AMP breaker or fuse should be used.
 - B. Other major appliances are on the same circuit. Sump Pump should be on its own separate circuit.
 - C. Sump Pump is connected to an extension cord, or wiring is inadequate. **DO NOT USE EXTENSION CORDS.** Have a qualified service technician check for proper wiring.
 - D. Defective Switch or Motor. Have a qualified service technician check Switch and Motor for proper operation.

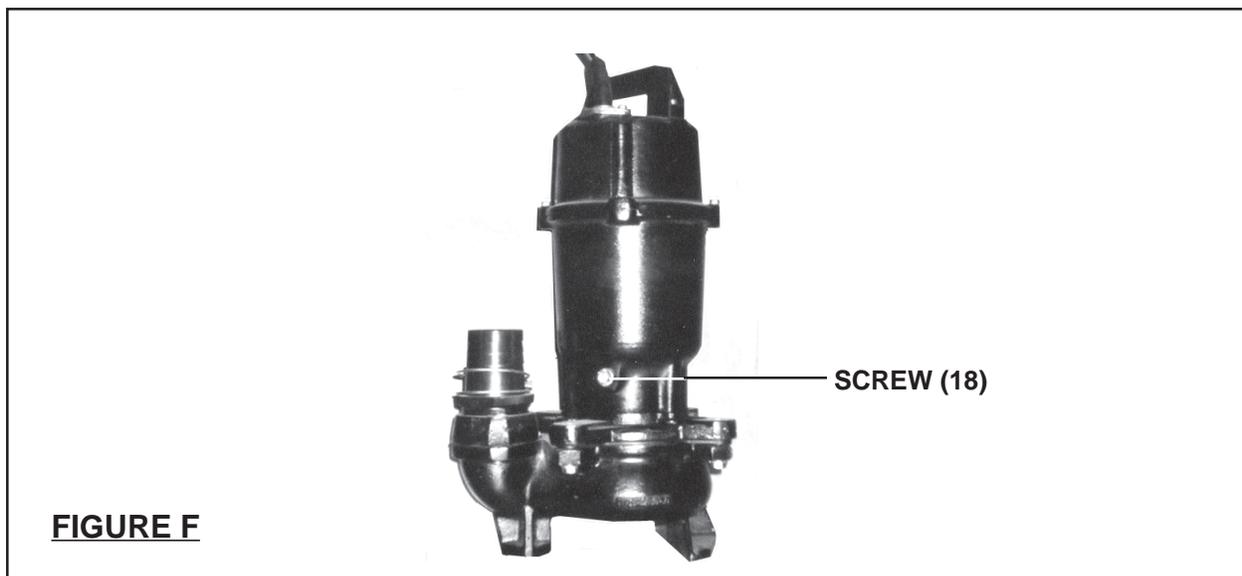
INSPECTION, MAINTENANCE, AND CLEANING

1.  **WARNING!** Always make sure the electrical power to the Sump Pump's GFCI electrical outlet is shut off first and then the Pump is unplugged from its outlet *prior* to performing any inspection, maintenance, or cleaning to the unit.
2. **Before each use**, inspect the general condition of the Sump Pump. Check for clogs throughout the system, misalignment or binding of moving parts, damaged electrical wiring, damaged or loose discharge hoses, and any other condition that may affect its safe operation. If abnormal noise or vibration occurs, have the problem corrected before further use. **Do not use damaged equipment.**
3. **If the Sump Pump is not in use due to dry conditions, etc.**, pour enough water into the pit to activate the Pump once every 3 months.
4. **Periodically**, check to make sure the pit is free from accumulated debris, rocks, and other objects that may damage the Sump Pump.
5. **When cleaning**, spray the exterior and Impeller of the Sump Pump with a garden hose. Do not introduce water or any other liquid into the Motor Housing.
6. **In cold weather**, when the Sump Pump is not in use, protect the interior of the Pump from freezing by draining the liquid and pumping a permanent type automobile antifreeze containing a rust inhibitor through the system. A 50% mixture

with water is recommended. Be sure to flush the system with a neutralizing liquid prior to reuse of the unit.

7. **Every two years:** Change the oil in the Sump Pump. The Pump holds approximately 4-3/4 ounces of oil. Always use a quality grade pump oil (i.e., Castrol® Magna GC32). To change the oil, unscrew and remove the Screw (18) located on the side of the Sump Pump. Turn the Pump on its side to drain the old oil into an oil waste can. Fill the Pump with the new oil. Replace the Screw. Then, lift the Pump to its upright position. **NOTE:** Always dispose of old oil properly, according to federal, state, and local guidelines. **(See Figure F.)**

8.  **CAUTION!** All maintenance, service, or repairs not listed in this manual are only to be attempted by a qualified service technician.



PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

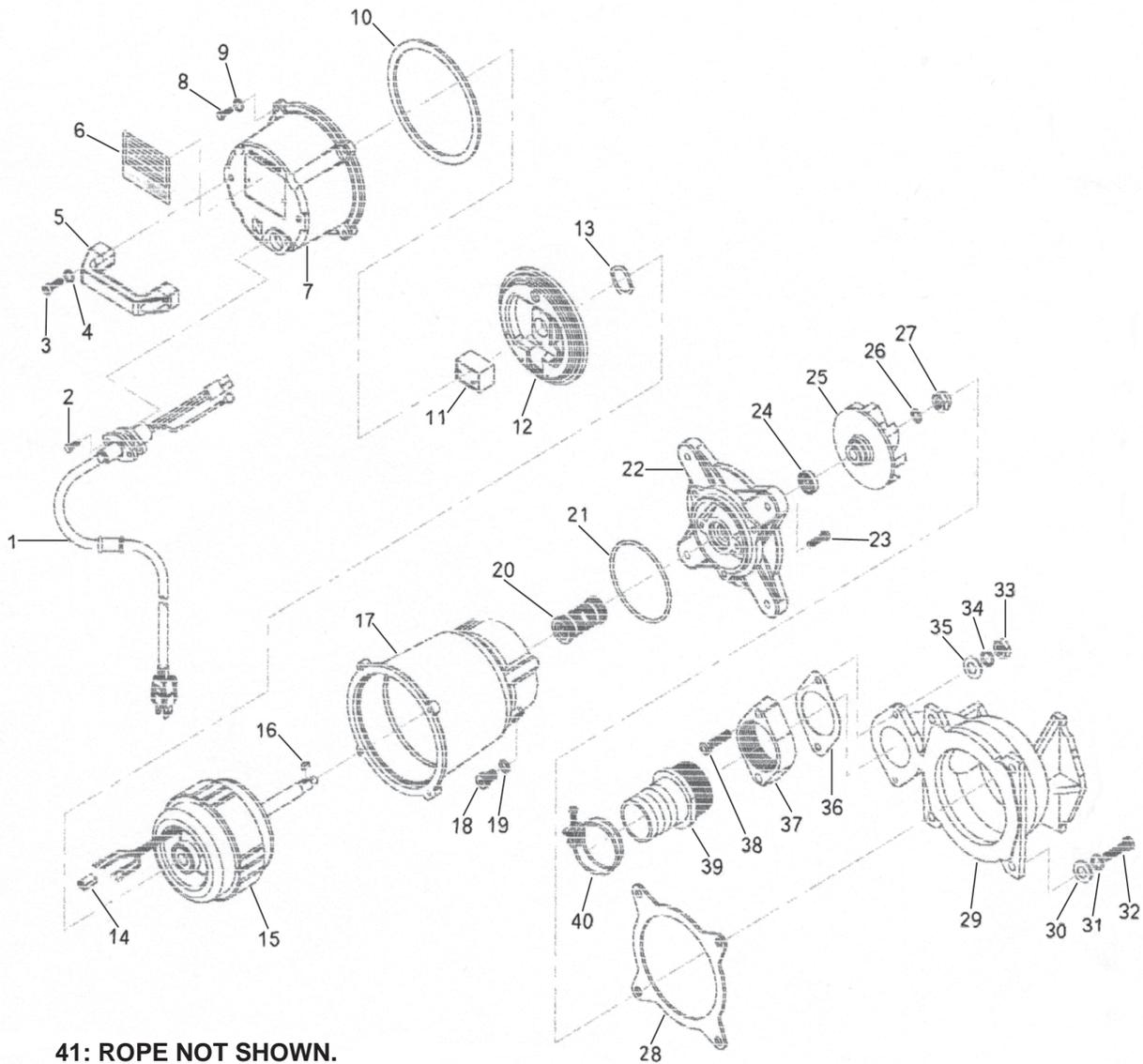
PARTS LIST

Part #	Description	Qty.	Part #	Description	Qty.
1	Power Cord/Plug	1	22	Flange	1
2	Screw	2	23	Screw	3
3	Screw	2	24	Oil Seal	1
4	Spring Washer	2	25	Impeller	1
5	Pump Handle	1	26	Lock Washer	1
6	Name Plate	1	27	Nut	1
7	Upper Pump Case	1	28	Rubber Seal	1
8	Screw	4	29	Lower Pump Case	1
9	Spring Washer	4	30	Plain Washer	4
10	Rubber Seal	1	31	Spring Washer	4
11	Capacitor	1	32	Screw	4
12	Middle Cover	1	33	Nut	2
13	Wave Washer	1	34	Spring Washer	2
14	Terminal Housing	1	35	Plain Washer	2
15	Motor (Stator & Rotor)	1	36	Rubber Seal	1
16	Key	1	37	Discharge Flange	1
17	Middle Pump Case	1	38	Screw	2
18	Screw	1	39	Connector Plug	1
19	O-Ring	1	40	Discharge Hose Clamp	1
20	Mechanical Seal	1	41	Rope	1
21		1			

NOTE:

Some parts are listed and shown for illustration purposes only,
and are not available individually as replacement parts.

ASSEMBLY DIAGRAM



41: ROPE NOT SHOWN.

NOTE:

Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.