OPERATION AND PARTS MANUAL

MULTIQUIP®

MODELS
ST2037
ST2047
ST2047B
ST2038P
ST2040T
SUBMERSIBLE PUMPS

Revision #8 (12/12/25)

To find the latest revision of this publication, visit our website at:
www.multiquip.com

THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.


WARNING
CANCER &
REPRODUCTIVE HARM
www.P65Warnings.ca.gov
P/N 38707

ST2037, ST2047, ST2047B, ST2038P and ST2040T Submersible Pumps

Component Drawings

NOTICE

Specifications and part numbers are subject to change without notice.

Do not operate or service the equipment before reading the entire manual. Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the safety messages and operating instructions could result in injury to yourself and others.

SAFETY MESSAGES

The four safety messages shown below will inform you about potential hazards that could injure you or others. The safety messages specifically address the level of exposure to the operator and are preceded by one of four words: **DANGER, WARNING, CAUTION** or **NOTICE.**

SAFETY SYMBOLS

DANGER

Indicates a hazardous situation which, if not avoided, **WILL** result in **DEATH** or **SERIOUS INJURY.**

WARNING

Indicates a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY.**

CAUTION

Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE INJURY.**

NOTICE

Addresses practices not related to personal injury.

Potential hazards associated with the operation of this equipment will be referenced with hazard symbols which may appear throughout this manual in conjunction with safety messages.

Symbol	Safety Hazard
	Burn hazards
	Electric shock hazards
	Rotating parts hazards
	Pressurized fluid hazards

GENERAL SAFETY

⚠ CAUTION

- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, respiratory protection, hearing protection, steel-toed boots and other protective devices required by the job or city and state regulations.

- Avoid wearing jewelry or loose fitting clothes that may snag on the controls or moving parts as this can cause serious injury.
- **NEVER** operate this equipment when not feeling well due to fatigue, illness or when under medication.

- **NEVER** operate this equipment under the influence of drugs or alcohol.

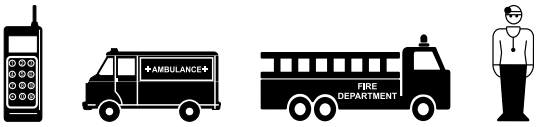
- **ALWAYS** clear the work area of any debris, tools, etc. that would constitute a hazard while the equipment is in operation.
- No one other than the operator is to be in the working area when the equipment is in operation.
- **DO NOT** use the equipment for any purpose other than its intended purposes or applications.

NOTICE

- This equipment should only be operated by trained and qualified personnel 18 years of age and older.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.
- Manufacturer does not assume responsibility for any accident due to equipment modifications. Unauthorized equipment modification will void all warranties.
- **NEVER** use accessories or attachments that are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.
- **ALWAYS** know the location of the nearest **fire extinguisher.**

- **ALWAYS** know the location of the nearest **first aid kit.**

- **ALWAYS** know the location of the nearest phone or **keep a phone on the job site.** Also, know the phone numbers of the nearest **ambulance, doctor** and **fire department.** This information will be invaluable in the case of an emergency.



PUMP SAFETY

⚠ DANGER

- **NEVER** operate the equipment in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe **bodily harm or even death.**

⚠ WARNING

- Accidental starting can cause severe injury or death. **ALWAYS** place the ON/OFF switch in the OFF position.
- **DO NOT** place hands or fingers inside pump when pump is running.

- **NEVER** disconnect any **emergency or safety devices.** These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death. Disconnection of any of these devices will void all warranties.
- **Risk of Electric Shock** - Do not enter the pool or spa if the pump is operating.

⚠ CAUTION

- Be careful of discharge hose whipping under pressure.
- **ALWAYS** check pump oil level only when pump is cool. Expansion due to heat may cause hot oil to spray from the oil plug when the oil plug is removed. The possibility of severe scalding may exist.

NOTICE

- **ALWAYS** place the pump in an upright position on a platform before using. The platform will prevent the pump from burrowing itself on soft sand or mud.
- **NEVER** operate pump on its side.
- **DO NOT** allow the pump to freeze in water.
- **NEVER** leave an open pump chamber unattended.
- **ALWAYS** keep the machine in proper running condition.
- **DO NOT** attempt to thaw out a frozen pump by using a torch or other source of flame. Application of heat in this manner may heat the oil in the seal cavity above the critical point, causing pump damage.
- **DO NOT** pump water with a temperature greater than 140°F (60°C).
- **DO NOT** pump liquids containing acid or alkali.
- **ALWAYS** check strainer before pumping. Make sure strainer is not clogged. Remove any large objects, dirt or debris from the strainer to prevent clogging.
- **ALWAYS** use a large basket strainer when pumping water that contains large debris.
- **ALWAYS** flush pump (clean) after use when pumping water concentrated with heavy debris. It is very important to always flush the pump before turning it off to prevent clogging.
- Fix damage to machine and replace any broken parts immediately.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children and unauthorized personnel.
- **NEVER** lubricate components or attempt service on a running machine.
- **NEVER** run pump ***dry***.
- **ALWAYS** allow the machine a proper amount of time to cool before servicing.
- Keep machine in proper running condition.

ELECTRICAL SAFETY

⚠ DANGER

- The electrical voltage required to operate pump can cause severe injury or even death through physical contact with live circuits. **ALWAYS** disconnect electrical power from pump before performing maintenance on pump.

⚠ WARNING

- To reduce the risk of electric shock, connect to a circuit protected by a Ground-Fault Circuit-Interrupter (GFCI).
- **Risk of Electric Shock** - This pump is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding-type receptacle.

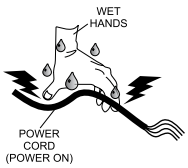
NOTICE

- **ALWAYS** make certain that the voltage supplied to the pump is correct. Always read the pump's nameplate to determine what the power requirements are.

Power Cord/Cable Safety

DANGER

- **NEVER** stand in water while AC power cord is connected to a live power source.
- **NEVER** use **damaged** or **worn** cables or cords. Inspect for cuts in the insulation.
- **NEVER** grab or touch a live power cord or cable with wet hands. The possibility exists of **electrical shock, electrocution or death.**



- Make sure power cables are securely connected to the motor's output receptacles. Incorrect connections may cause electrical shock and damage to the motor.

WARNING

- **NEVER** attempt to use the power cord as a lifting or lowering device for the pump.

NOTICE

- **ALWAYS** make certain that proper power or extension cord has been selected for the job. See Cable Selection Chart in this manual.

Grounding Safety

DANGER

- **ALWAYS** make sure pump is grounded.
- **NEVER** use gas piping as an electrical ground.
- **ALWAYS** make sure that electrical circuits are properly grounded to a suitable earth ground (ground rod) per the National Electrical Code (NEC) and local codes before operating generator. **Severe injury or death by electrocution** can result from operating an ungrounded motor.

Control Box Safety

DANGER

- **ALWAYS** have a qualified electrician perform the control box installation. The possibility exists of electrical shock or electrocution.

NOTICE

- **ALWAYS** mount control box in a vertical position protected from harsh environmental elements.

LIFTING SAFETY

CAUTION

- When raising or lowering of the pump is required, always attach an adequate rope or lifting device to the correct lifting point (handle) on the pump.

NOTICE

- **NEVER** lift the equipment while the electric motor is running.

TRANSPORTING SAFETY

NOTICE

- **ALWAYS** shut down pump before transporting.
- **ALWAYS** tie down equipment during transport.

ENVIRONMENTAL SAFETY/DECOMMISSIONING

- **DO NOT** pour waste or oil directly onto the ground, down a drain or into any water source.

- Contact your country's Department of Public Works or recycling agency in your area and arrange for proper disposal of any electrical components, waste or oil associated with this equipment.
- When the life cycle of this equipment is over it is recommended that the pump casing and all other metal parts be sent to a recycling center

  Metal recycling involves the collection of metal from discarded products and its transformation into raw materials to use in manufacturing a new product.

  Recyclers and manufacturers alike promote the process of recycling metal. Using a metal recycling center promotes energy cost savings.

Table 1. Specifications (Pump)				
Model	ST2037	ST2047 / ST2047B	ST2038P	ST2040T
Type	Centrifugal Submersible Pump	Centrifugal Submersible Pump	Centrifugal Submersible Pump	Submersible Trash Pump
Impeller	Nitorile Rubber over Steel	Nitorile Rubber over Steel	Nitorile Rubber over Steel	Nitorile Rubber over Steel
Suction & Discharge Size	2.00 in. (50 mm)	2.00 in. (50 mm)	2.00 in. (50 mm)	2.00 in. (50 mm)
Maximum Pumping Capacity	73 gallons/minute (272 liters/minute)	87 gallons/minute (322 liters/minute)	60 gallons/minute (227 liters/minute)	79 gallons/minute (299 liters/minute)
Max Head	37 ft. (10.6 m)	47 ft. (13.9 m)	38 ft. (11 m)	40 ft. (11.4 m)
Power	1 HP (0.75 kW)	1 HP (0.75 kW)	1 HP (0.75 kW)	1 HP (0.75 kW)
Voltage Phase	1Ø 115V	1Ø 115V / 1Ø 230V	1Ø 115V	1Ø 115V
Starting Amps	25	25/12.5	25	25
Running Amps	6.9	9.8/4.9	6.8	6.8
Thermal Overload Protection	YES	YES	YES	YES
Control Box Required	See Note 3	See Note 3	See Note 3	See Note 3
Rotation	CCW (Note 1)	CCW (Note 1)	CCW (Note 1)	CCW (Note 1)
Mechanical Seal Oil Capacity	120 ml (Note 2)	120 ml (Note 2)	120 ml (Note 2)	133 ml (Note 2)
Check Frequency	Monthly (300 hrs.)	Monthly (300 hrs.)	Monthly (300 hrs.)	Monthly (300 hrs.)
RPM (Speed)	3390 ± 30	3250 ± 30	3400 ± 30	3390 ± 30
Power Cable Length	26.25 ft. (8 m)	49.21 ft. (15 m)	26.25 ft. (8 m)	26.25 ft. (8 m)
Dry Net weight	31 lb (14 kg)	33 lb (15 kg)	31 lb (14 kg)	34 lb (15.4 kg)

1. **Motor Rotation** — Upon start-up, the pump "kicks" in the opposite direction of motor rotation. The correct rotation is counterclockwise (CCW) as viewed from the impeller end of the pump.
2. **Mechanical Seal Oil** — Use a good grade 10 weight non-detergent hydraulic oil (i.e. Shell Turbo 32 or equivalent). Fill oil cavity 75% to 85% full (allow air space for expansion).
3. **Control Box** — Control Box (Table 2) may be required for certain pumping applications.

Table 2. Specifications (Control Box)				
Model No.	**Voltage Type**	**UL/CSA Listed**	**Thermal Overload Protection**	**Float Switch Capacity**
CB3	115 VAC, 60 Hz SinglePhase	YES	YES	YES

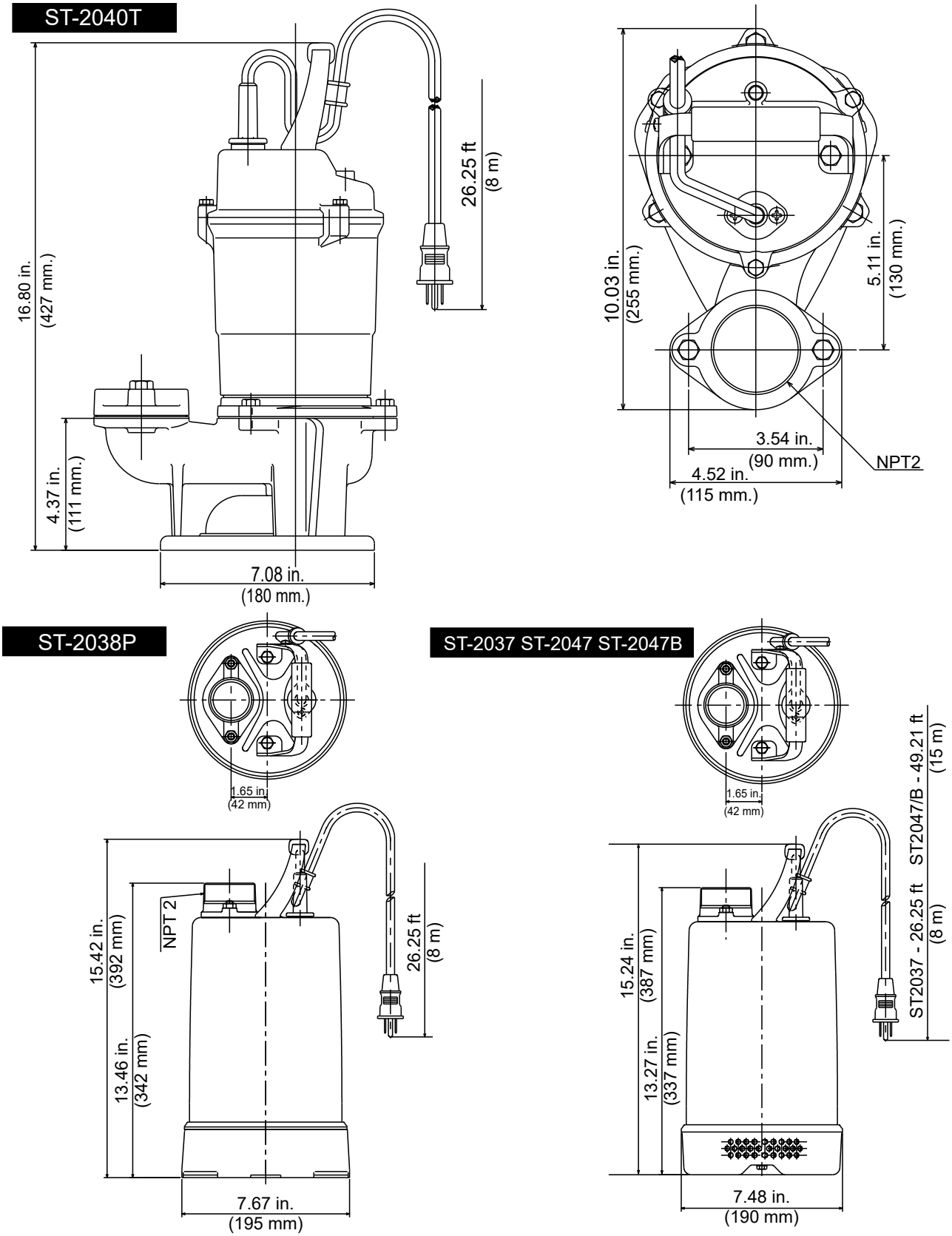


Figure 1. Dimensions

The Multiquip Model ST2037, ST2047, ST2047B, ST2038P, and ST2040T submersible pumps are designed to pump water and is used for the draining (dewatering) of swimming pools, well casings construction sites, cofferdams, manholes, transformer vaults and excavations.

A Nitorile rubber over steel impeller is attached to the output shaft of a 1HP electric motor which provides adequate power for general purpose pumping. This submersible pump is supplied complete with an electric power cable, and a discharge port located at the top of the pump which accepts a 2-inch hose.

This pump is ideal for portability because of its light weight and carrying handle. For reliability and long life, a mechanical seal provides shaft sealing, with an oil chamber separating the pump section from the motor.

The pump when in use, should be installed as free standing (upright position) on its strainer base.

A 2-inch discharge hose (not supplied) should be connected to the discharge port located on top of the pump. The discharge hose should be adequately supported to avoid stress on the pump.

For maximum water flow, the discharge hose should be kept as short as possible, and with minimum elevation above the pump. Remember as the length and/or height of the discharge hose is increased, the flow of water will be reduced. Also any reduction in the hose size, and any fittings such as valves or outlet nozzles, will restrict the water flow.

To avoid back-siphonage when the pump is switched off, ensure that the end of the discharge hose is installed above the water level at the final discharge point.

When the pump is switched off, the water remaining in the hose will run back through the pump. This can be avoided by placing a non-return valve in the hose nearest the pump.

NEVER use this submersible pump to pump flammable liquids or operate in a explosive or flammable environment.

Avoid using this pump in conditions where mud, grit, silt or other debris are present. These conditions could cause blockage and cause excessive pump wear.

DO NOT install the pump directly into an area where there is a heavy buildup of mud, grit, silt or debris. If this condition is present, install the pump on a platform before operating.

This pump must always be positioned on a platform in an upright position. **NEVER** operate the pump by a suspended rope. To prevent large solids from entering the pump, install a wire mesh screen or similar barrier around the pump.

If the pump was used to pump water containing mud, silt, use clean water to flush out the pump after each use.

DO NOT allow the pump to run dry, as this will damage the pump. During maintenance, dry running is permissible but only for a few seconds.

NEVER lift the pump by its electrical power cord. ALWAYS lift the pump by its carrying handle or attach a rope to the carrying handle.

A pump fully submerged pump in liquid will not freeze, unless the liquid freezes. **DO NOT** allow a partially submerged pump to freeze. The expansion of water freezing in the volute may crack the pump, causing expensive repairs. If there is any danger of the pump being subjected to freezing temperatures, Lift the pump from water and allow it to drain thoroughly.

If the pump jams or the pump rotor locks for any reason, disconnect the pump from the power source immediately.

Allowing the pump motor to cycle **ON** and **OFF** under an overload condition can burn out the motor.

When replacement of nuts and bolts is required, use only recommended parts as referenced in the parts section of this manual. This pump uses metric threads. **DO NOT** use English measurement threads.

DANGER

When installing the CB3 control box, the possibility exists of electrical shock, electrocution and possibly death! **NEVER** have untrained personnel perform the installation.

WARNING

Explosion or Fire Hazard exists if this pump is used with flammable liquids. DO NOT use this pump with flammable liquids. DO NOT install this pump in hazardous locations as defined by the National Electrical Code, ANSI/NFPA 70.

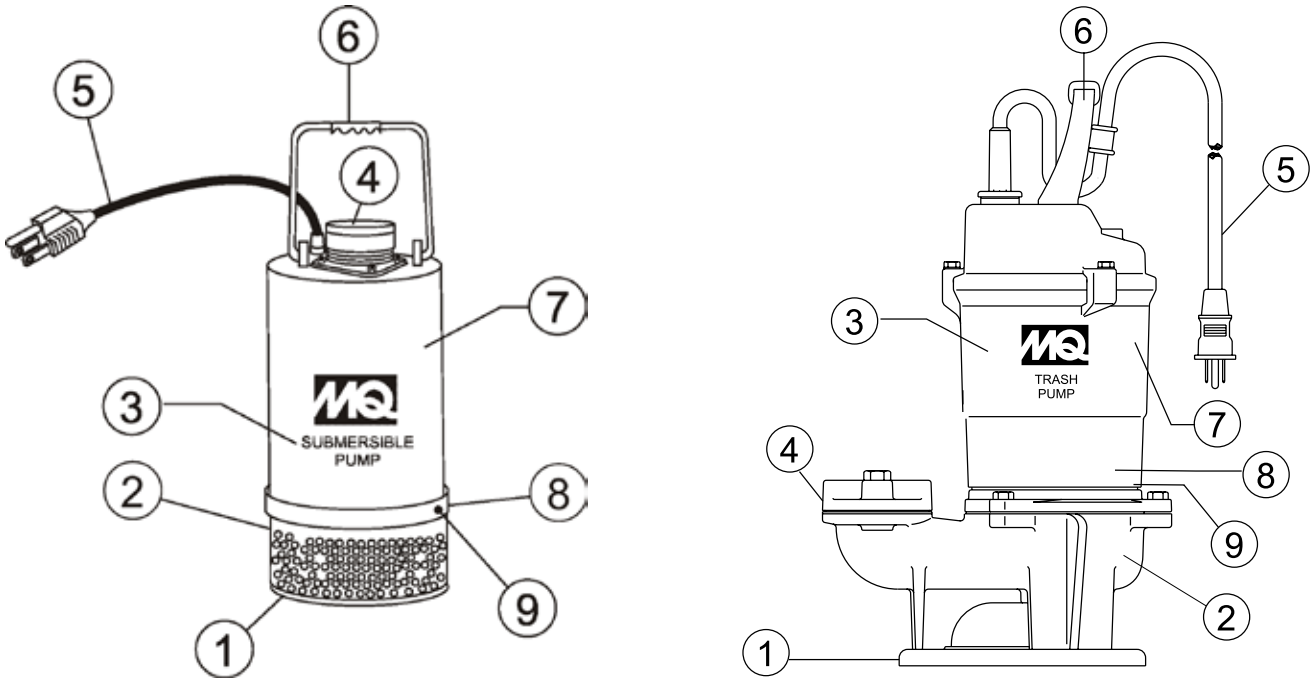


Figure 2. Submersible Pump Components

Figure 2 the location of the basic components, for the ST2037, ST2047, ST2047B, ST2038P, and ST2040T submersible pumps. Listed below is a brief explanation of each component.

1. **Strainer Base** — This strainer base is made of electrocating steel which is resistant to hardware corrosion. **DO NOT** pump large objects or debris with this pump. This pump is for pumping water only. For dewatering purposes, always place the strainer base on a platform.
2. **Volute/Impeller** — Impellers are constructed of Nitorile Rubber to minimizes wear and prolong service life.
3. **Electric Motor** — These submersible pumps utilize a 60 Hz, single-phase, 115 VAC, 1 HP electric motor. Consult with a licensed electrician before connecting motor to a power source. Observe all city and local safety codes.
4. **Discharge Port** — Connect a 2-inch hose to this port. Remember to adequately support the discharge hose to avoid stress on the pump.
5. **AC Power Cable** — This unit is supplied with a 26.25 ft. (8 meters) or 49.21 ft. (15 meters) AC power cable. Always check the cable for signs of wear. **NEVER** use a defective power cable. Replace the cable immediately if the cable is worn or defective.
6. **Carrying Handle** — Always carry the submersible pump by its handle. **NEVER** carry the pump by its power cord. Carrying or lifting the pump by the power cord, will cause undue stress on the cord, and ultimately the cord will become dislodged from the pump.
7. **Thermal Overload Protection** — This pump is equipped with a thermal overload protection device that will shut down the motor in the event of high operating temperatures. The motor will automatically restart once the temperature returns to an acceptable operating temperature.
8. **Mechanical Seal Oil** — This oil filled seal provides lubrication when running the pump dry. **NEVER** run the pump dry. Running the pump dry will cause severe damage to the pump.
9. **Mechanical Seal Oil Plug** — Remove this plug to check and add hydraulic oil (Shell 32 or equivalent) to the oil cavity. This oil protects the mechanical seal. Oil cavity should be full enough to cover seal spring.

FLOAT SWITCH THEORY

Mercury monitoring is a mercury-switch actuated, liquid level control that has proven to be more economical and longer lasting than other types of liquid-level control systems, easily replacing and improving upon diaphragm switches, air bubble systems and electromechanical switches most often relied upon in the past.

HOW IT WORKS

There is a tilt-sensitive mercury switch hermetically sealed within each float. As the liquid level (water) rises or falls, the float changes its angle until the mercury switch makes (close, Figure 4) or breaks (open, Figure 5) the circuit. Maximum pumping range is 120 degrees. Se.See Figure 3 below.

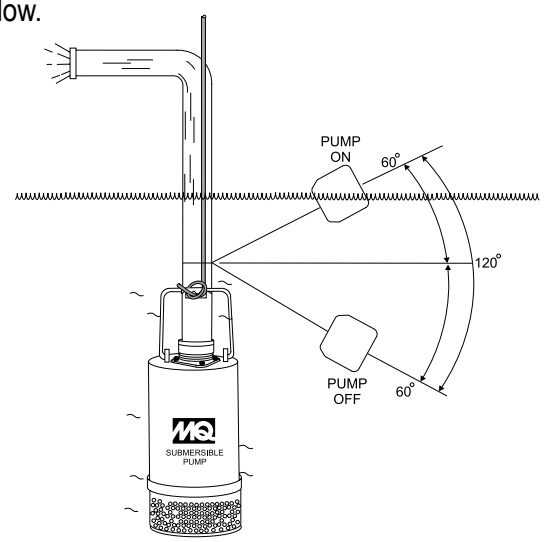


Figure 3. Pumping Range (Float Switch)

PUMPING RANGE

The pumping range of the pump is determined by the float switch tether cord. Use Table 3 as guide line to determine your required pumping range. Pumping ranges are based on non-turbulent conditions. Range may vary due to water temperature and cord shape. Please note as the tether length increases, so does the variance of the pumping range.Pumping ranges are based on non-turbulent conditions. Range may vary due to water temperature and cord shape.

DESIGN FEATURES

Constructed of rigid, durable ABS polymer ultrasonically welded. The all-steel mercury switch is held by positioning pins. Interior is filled with cell foam.

- Suitable for most liquid environments.
- Hermetically sealed.
- Thick-walled non-corrosive PVC plastic enclosure.
- Pressure tested to 60 ft. (18.2 meters).
- Mercury switch reliability, proven to 500,000 cycles.
- Standard SJO, 16-gauge, 2 conductor cord (20 ft./6.09 m).

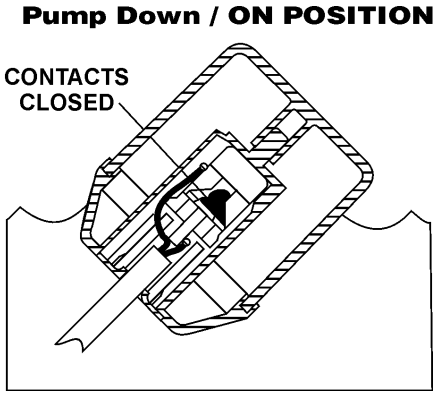


Figure 4. Float Switch (Closed)

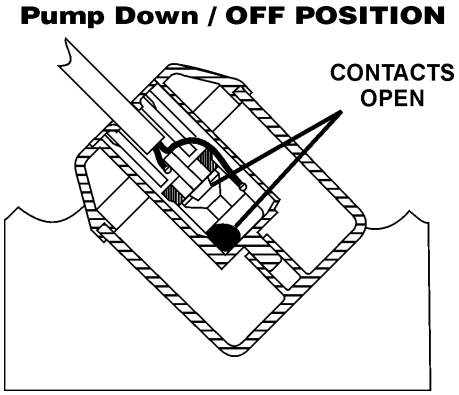


Figure 5. Float Switch (Open)

Table 3. Pumping Range

Tether Length	2 in. 5.08 cm.	4 in. 10.16 cm.	6 in. 15.24 cm	8 in. 20.32 cm.	10 in. 25.4 cm.	12 in. 30.48 cm.	14 in. 35.56 cm.	16 in. 40.64 cm.
Pumping Range	6 in. 15.24 cm.	10 in. 25.4 cm.	14 in. 35.56 cm.	18 in. 45.72 cm.	22 in. 55.88 cm.	27 in. 68.58 cm.	31 in. 78.74 cm.	35 in. 88.9 cm.

FLOAT SWITCH

Single or dual control float switches (Figure 6) can be used for the unattended operation of the submersible pump. When using the piggy-back power configuration (plug), the pumps do not require the use of a control box. In this configuration (piggy-back), the SW-1 (single float switch) or SW-2 (dual float switch) are required. The illustration below is an example of a single float switch application.

MOUNTING THE FLOAT SWITCH

1. Determine the required cord tether length as shown in Figure 6 and Table 3.
2. Place the cord into the clamp as shown in Figure 6.
3. Secure the clamp to the discharge hose as shown in Figure 6. **DO NOT** install cord under hose clamp.
4. Using a screwdriver, tighten the hose clamp. **DO NOT** overtighten. Make sure the float cord is not allowed to touch the excess hose clamp band during operation.

NOTICE

Figure 6 shows a single float switch application. For dual float switch capability, use a Model SW-2A mercury type float switch.

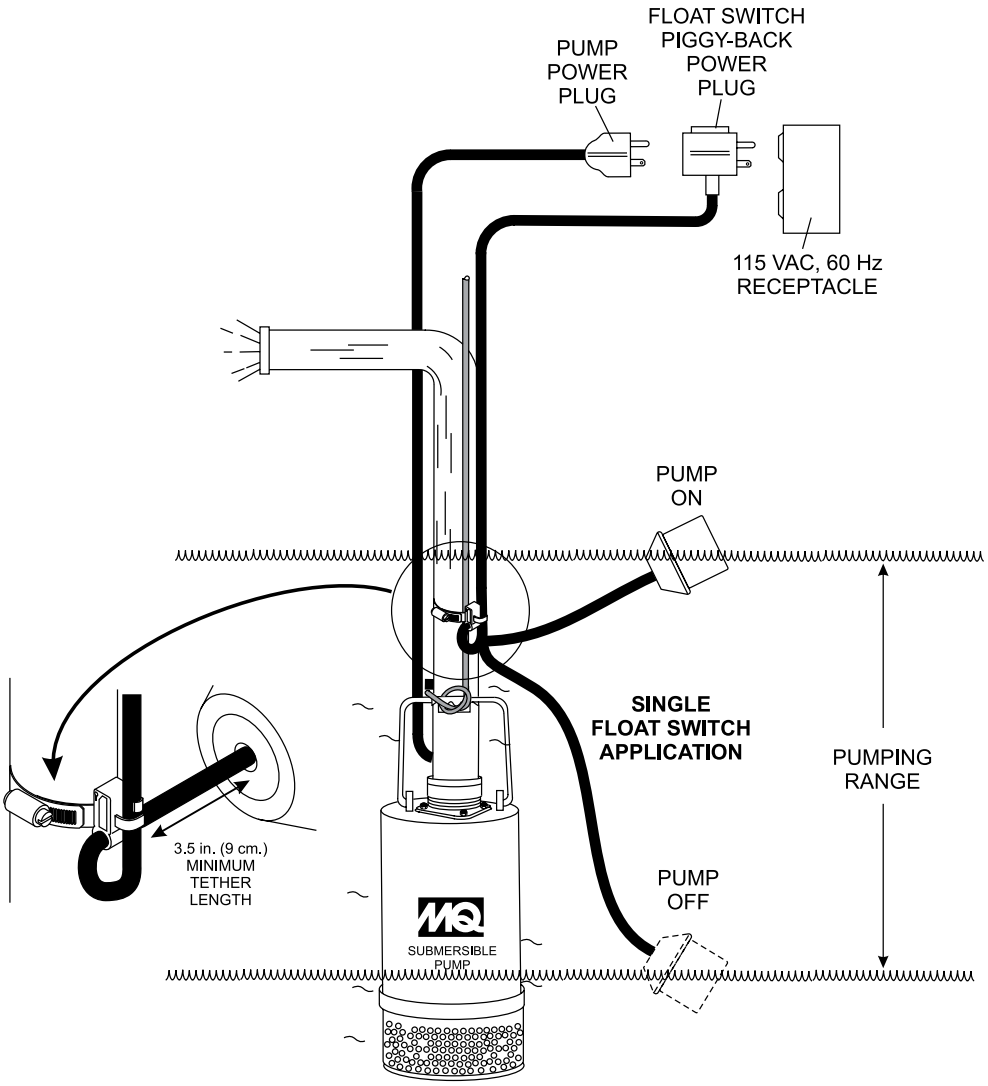


Figure 6. Single Float Switch Application Diagram

CONTROL BOX (CB3)

For special remote pumping applications of the submersible pump, a control box (Model CB3) may be required. This water resistant control box provides watertight housing and glands to prevent water from leaking into the box, and a float switch interface.

When using the CB3 control box, only the SW-1WOP float switch (2) can be used (no plug, bare wires). Shown below (Figure 7) is a wiring layout of the CB3 control box. Also refer to the wiring diagram of the control box.

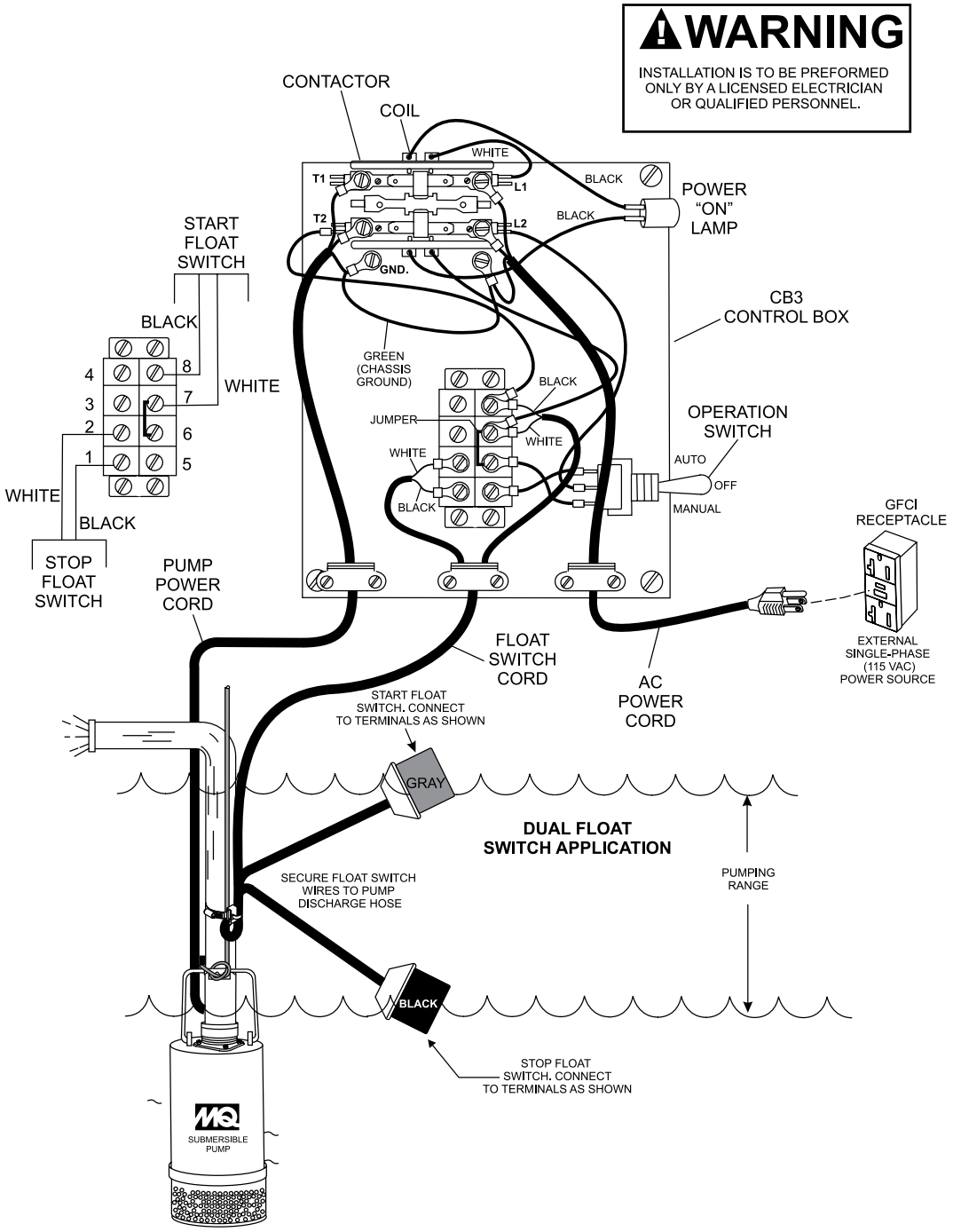


Figure 7. CB3 Control Box and Dual Float Switch Application Diagram

HOSE CONNECTIONS

1. Connect a 2-inch hose to the discharge port on the pump as shown in Figure 8. Make sure that the hose is attached correctly to the discharge port.

ATTACHING LIFTING ROPE

1. Attach a suitable lifting cable (rope) to the carrying handle (Figure 8) on the pump and lower the pump into place. For applications where there is an excessive amount of mud, grit or silt, the use of a support platform is desirable. When pumping water from applications where there is little or no debris, the support platform is not required.

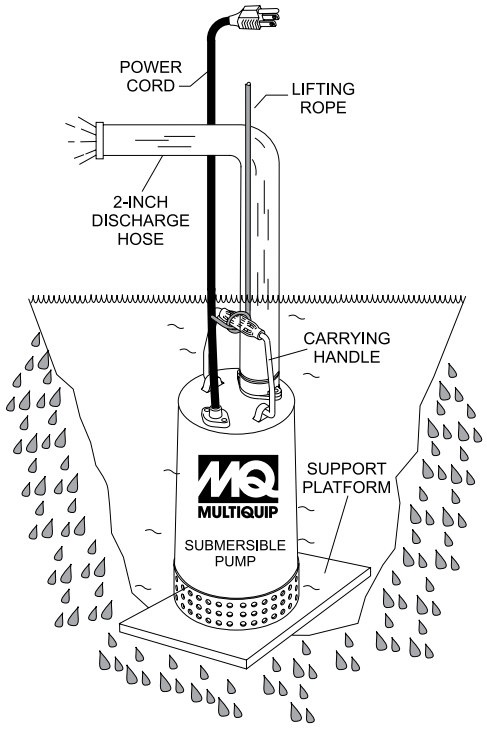


Figure 8. Submersible Pump Upright Position (Correct)

2. Make sure the pump is always placed in an upright position, not tilted (Figure 9). Never position the pump directly on a soft, loose bottom. Remember to attain maximum pumping capacity and prevent excessive wear, position the pump so it will not burrow itself into sand or clay.

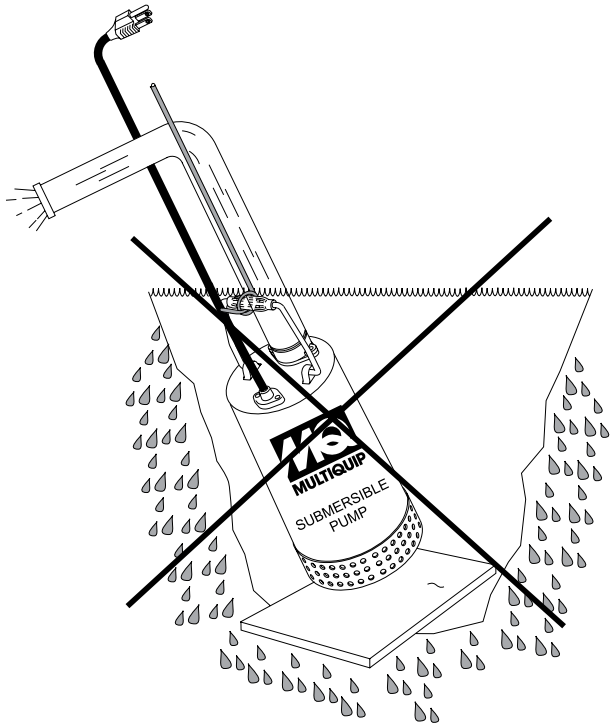
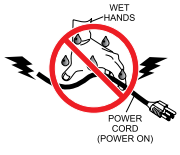


Figure 9. Submersible Pump Upright Position (Incorrect)

3. If all of the pump's electrical requirements have been met, place the circuit breaker or power ON/OFF switch in the ON position.
4. Wait a few seconds and water should begin to flow from the discharge hose.
5. If water is not flowing from the discharge hose or not flowing freely after a few minutes, remove the power from the pump and check the system for leaks.
6. To stop the pump from pumping, place the circuit breaker or ON/OFF switch in the OFF position.

DANGER



NEVER grab or touch a live power cord. **DO NOT** stand in water when connecting the pump's power cord into a voltage source. The possibility exists of electrical shock, electrocution and possibly death!

DANGER

The ST2037, ST2047, ST2047B, ST2038P, and ST2040T submersible pumps are also designed to work with a control box (Model CB3). This contro box contains the necessary electronics (float switch connections) to operate the pump. Remember, this control box contains hazardous voltages. Disconnect all source of power before installing or servicing. There exists the possibility of electrocution, electric shock or burn, which can cause severe bodily harm or even death!

CAUTION

This control box should only be installed or serviced by a licensed electrician or qualified personnel.

CONTROL BOX MOUNTING

Mount the control box in an upright vertical position. Make sure the control box is securely fastened to a flat surface, that is free of dust, dirt, moisture or any elements that may contaminate or erode the electronic components of the control box.

SINGLE-PHASE POWER INSTALLATION (INPUT)

All submersible pumps referred to in this manual require 115 V, 60 Hz., single-phase power for normal operation. If you cannot determine what your pump's power requirements are, look at the vendor supplied identification name tag attached to the pump or contact Multiquip's Service/Technical Assistance department.

CAUTION

Applying incorrect power (voltage phasing) to the submersible pump can cause severe damage to the pump.Make sure that the correct voltage and phase are transferred to the pump at all times.

POWER CORD REQUIREMENTS

When routing the 115 VAC, 60 Hz., single phase power via a power cord to the control box, ALWAYS use the correct wire size. See Table 4 below (Cord Length/Wire Size) to determine the correct wire size. Incorrect wire size can adversely affect the performance of the pump.

Table 4. Cord Length and Wire Size

AMPS	50 FT	100 FT	150 FT
6	16 AWG	16 AWG	14 AWG
8	16 AWG	14 AWG	12 AWG
10	16 AWG	14 AWG	12 AWG
12	14 AWG	14 AWG	12 AWG
14	14 AWG	12 AWG	10 AWG
16	12 AWG	12 AWG	10 AWG

CONNECTING DUAL FLOAT SWITCH (SW-2A) TO CONTROL BOX

1. Remove the float switch input connector housing, then route the float switch wires through the cable gland on the control box. Attach the wires of the float switch to the terminal block as indicated by Table 5. and Figure 7.

Table 5. Float Switch Connections

FLOAT SWITCH	TERMINAL BLOCK NUMBER
START	TERMINAL 1 (BLACK) TERMINAL 2 (WHITE)
STOP	TERMINAL 7 (BLACK) TERMINAL 8 (WHITE)

2. Tighten the connector housing to ensure a tight fit between the cord and the connector body. This will prevent the cable from pulling out of the terminal block and also prevent moisture from entering the control box.
3. Determine the length of the float switch wires, then secure float switch wires to pump discharge hose. See Figure 3, Figure 7, and Table 3 to determine the pumping range.

CONNECTING AC POWER TO THE CONTROL BOX

1. The AC power cord (input) should have three wires. Each wire is color coded. The colors are WHITE, BLACK and GREEN.
2. Remove the AC input connector housing from the control box, then route the power cord through the cable gland on the control box.
3. Connect the AC power cord to the contactor as shown in Figure 7 and Table 6.

Table 6. AC Input Power Connections to Contactor

CABLE WIRE COLOR	CONTACTOR
BLACK	L1
WHITE	L2
GREEN	GROUND

4. Tighten the connector housing to ensure a tight fit between the power cord and the connector body. This will prevent the cable from pulling out of the terminal block and also prevent moisture from entering the control box.

NOTICE

It is recommended that the power being supplied to the control box **ALWAYS** be connected to a circuit breaker or a quick disconnect switch. This safety feature allows for quick removal of power from the control box in the event of an emergency.

5. Connect the other end of the AC power cord to the voltage source. Remember to provide a means of disconnecting the power from the control box (circuit breaker or quick disconnect switch). Also make sure to provide a good earth ground to the control box.

CONNECTING AC POWER TO THE PUMP

1. AC power is transferred to the pump via a contactor. The coil of the contactor is energized or de-energized by the opening and closing of the float switch contacts. The power cord should have three wires. Each wire is color coded. The colors are WHITE, BLACK and GREEN.
2. Remove the pump AC input connector housing from the control box, then route the power cord through the cable gland on the control box.
3. Connect the pump power cord to the contactor as shown in Figure 7 and Table 7.

Table 7. AC Output Power Connections to Pump

CABLE WIRE COLOR	CONTACTOR
BLACK	T1
WHITE	T2
GREEN	GROUND

⚠ CAUTION

Electrical connections to the power source should only be performed by a licensed electrician or qualified personnel.

TURNING ON THE PUMP

1. If all of the pump's electrical requirements have been met, place the circuit breaker or power ON/OFF switch in the ON position.
2. The CB3 control box has an operation switch located on the front cover. This switch has 3 positions, AUTO, MANUAL and OFF. The AUTO position allows the pump to run in an unattended mode. The MANUAL position will let the pump run without the float switches controlling the pump. When in the manual mode be careful not to let the pump run dry.Severe damage to the pump may occur if it is allowed to run dry.
3. Place the operation switch in the AUTO position. The AC power indicator lamp should be lit (ON).
4. Wait a few seconds and water should begin to flow from the discharge hose.
5. If water is not flowing from the discharge hose or not flowing freely after a few minutes, remove the power from the pump and check the system for leaks.
6. To stop the pump from pumping, place the operation switch in the OFF position.

PUMP SHUT-DOWN/CLEAN-UP

1. Remove the power from the pump by turning off the circuit breaker or switch that provides power to the pump. Remember to make sure that hands are dry (not wet), and feet are not standing in water when removing disconnecting power from the pump.
2. Using the lifting rope, lift the pump up from its current position. Remove the discharge hose from the discharge port on the pump.
3. Remove all power cables. Place cables and float switches in a suitable container where they will not get damaged.
4. If the pump was used to pump mud, grit or silt, flush vigorously with clean water.
5. Remove the pump from the water. Wipe off any mud or debris that might have attached itself to the pump.
6. Store pump in a clean dry place away from dirt and debris.

DISASSEMBLY

To check the oil level of the mechanical seal, perform the following disassembly procedure then perform oil check. Refer to Figure 10 for location of parts to be removed.

For Model ST2040T:

1. Position pump upside down.
2. Remove casing.
3. Remove the pump impeller.
4. Remove the oil plug and packing.

For Models ST2037F, ST2047, ST2047B, and ST2038P:

1. Position pump upside down.
2. Remove strainer.
3. Remove casing.
4. Remove the pump impeller.
5. Remove the liner.
6. Remove the oil plug and packing.

OIL CHECK

1. Check pump oil at oil cavity plug (Figure 10). Check every 300 hours and change hydraulic oil every 6 months (1,000 hours) or as needed.
2. While checking the hydraulic oil level, also check the condition of the hydraulic oil in the seal cavity. Discolored milky oil indicates a failure of the water seal. If this occurs, replace water seal.
3. If oil level is low fill with SAE 10 weight non-detergent hydraulic oil (i.e. Shell Turbo 32 or equivalent). Fill oil cavity 75% to 85% full (allow air space for expansion). See Table 1 for mechanical seal oil capacity.

IMPELLER

1. If impeller is defective or badly worn, replace impeller immediately.

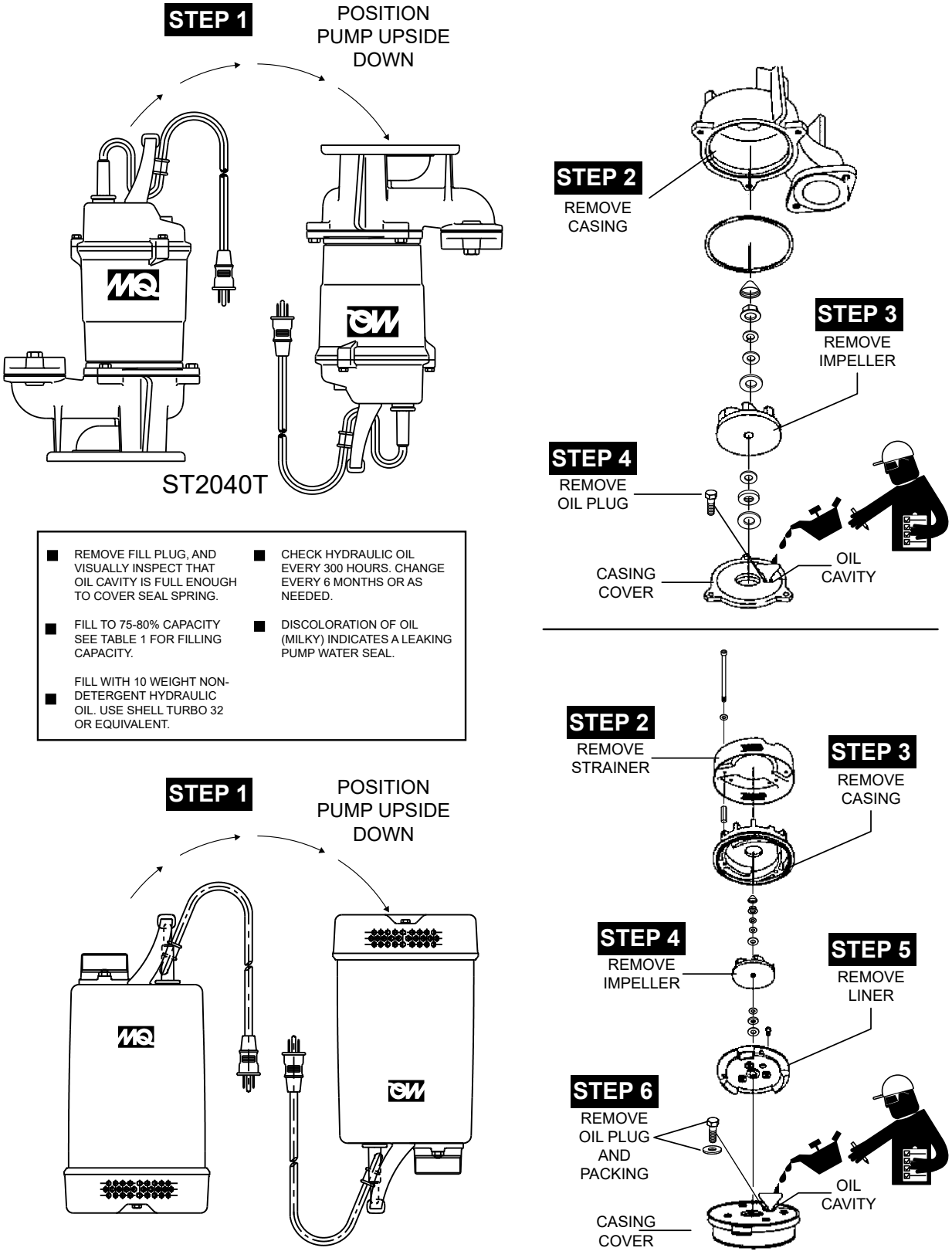
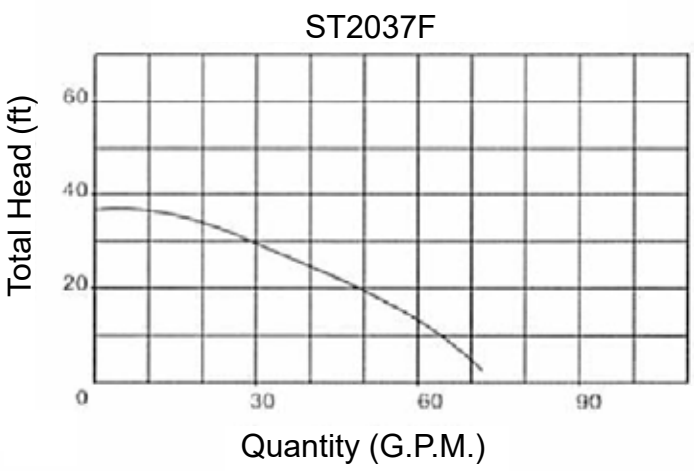


Figure 10. Checking Hydraulic Oil

Troubleshooting (Pump)		
Symptom	**Possible Problem**	**Solution**
Pump Fails To Start	Incorrect voltage/amps?	Check that proper voltage (115VAC, 60 Hz, single-phase) is being supplied to the pump. Also check that there is an adequate amount of current (amps) to run the pump. Check power source circuit breaker.
	Malfunction in float switch?	Check that the movement of the float switch is not obstructed. Inspect float switch and power cord.
	Blown power fuse?	Replace fuse. Check cause of blown fuse.
	Impeller locked?	Disconnect power cord and check for clogging. Unclog pump. Check overload protection device.
	Wet motor windings?	Use multimeter to check motor insulation. Insulation resistance must be greater than 15 megaohms. If resistance is low, disassemble pump motor and bake windings to dry them.
	Defective motor and pump bearings?	Check for excessive bearing wear. If worn, replace bearings. Replace motor if defective.
Pump Fails to Deliver Full Output	Twisted or restricted discharge hose?	Lay hose flat unkinked. Remove clog from hose line.
	Clogged pump strainer?	Clean strainer.
	Low voltage?	Use a voltmeter to check voltage while pump is energized. Voltage must be within ±10%. Check power source (no load and load). If an extension cord is used, make sure it has adequate current-carrying capacity for the required length.
	Impeller worn?	Replace impeller.
Water in Seal Oil	Defective water seal?	Replace water seal.
	Loose Oil Fill Plug?	Tighten securely.
Pump Fails to Stop	Malfunction in Float Switch?	Check that the movement of the float switch is not obstructed.

PERFORMANCE CURVES

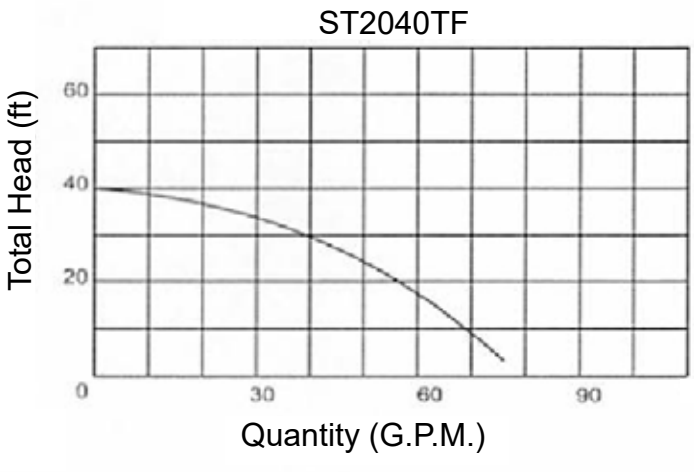
ST2037F



TOTAL HEAD
Max 37 ft

CAPACITY
Max 73 G.P.M.

ST2040TF

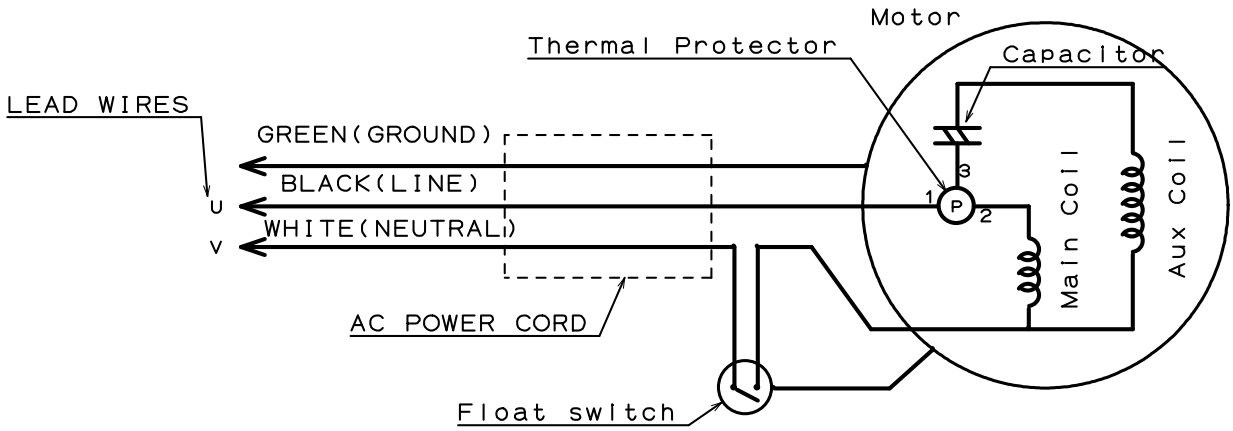


TOTAL HEAD
Max 40 ft

CAPACITY
Max 79 G.P.M.

WIRING DIAGRAM

115 VAC, 60Hz, ELECTRIC MOTOR



EXPLANATION OF CODE IN REMARKS COLUMN

The following section explains the different symbols and remarks used in the Parts section of this manual. Use the help numbers found on the back page of the manual if there are any questions.

NOTICE

The contents and part numbers listed in the parts section are subject to change without notice. Multiquip does not guarantee the availability of the parts listed.

SAMPLE PARTS LIST

NO.	PART NO.	PART NAME	QTY.	REMARKS
1	12345	BOLT	1	INCLUDES ITEMS W/%
2%		WASHER, 1/4 IN.		NOT SOLD SEPARATELY
2%	12347	WASHER, 3/8 IN.	1	MQ-45T ONLY
3	12348	HOSE	A/R	MAKE LOCALLY
4	12349	BEARING	1	S/N 2345B AND ABOVE

NO. Column

Unique Symbols — All items with same unique symbol (@, #, +, %, or >) in the number column belong to the same assembly or kit, which is indicated by a note in the "Remarks" column.

Duplicate Item Numbers — Duplicate numbers indicate multiple part numbers, which are in effect for the same general item, such as different size saw blade guards in use or a part that has been updated on newer versions of the same machine.

NOTICE

When ordering a part that has more than one item number listed, check the remarks column for help in determining the proper part to order.

PART NO. Column

Numbers Used — Part numbers can be indicated by a number, a blank entry, or TBD.

TBD (To Be Determined) is generally used to show a part that has not been assigned a formal part number at the time of publication.

A blank entry generally indicates that the item is not sold separately or is not sold by Multiquip. Other entries will be clarified in the "Remarks" Column.

QTY. Column

Numbers Used — Item quantity can be indicated by a number, a blank entry, or A/R.

A/R (As Required) is generally used for hoses or other parts that are sold in bulk and cut to length.

A blank entry generally indicates that the item is not sold separately. Other entries will be clarified in the "Remarks" Column.

REMARKS Column

Some of the most common notes found in the "Remarks" Column are listed below. Other additional notes needed to describe the item can also be shown.

Assembly/Kit — All items on the parts list with the same unique symbol will be included when this item is purchased.

Indicated by:

"INCLUDES ITEMS W/(unique symbol)"

Serial Number Break — Used to list an effective serial number range where a particular part is used.

Indicated by:

"S/N XXXXX AND BELOW"
"S/N XXXX AND ABOVE"
"S/N XXXX TO S/N XXX"

Specific Model Number Use — Indicates that the part is used only with the specific model number or model number variant listed. It can also be used to show a part is NOT used on a specific model or model number variant.

Indicated by:

"XXXXX ONLY"
"NOT USED ON XXXX"

"Make/Obtain Locally" — Indicates that the part can be purchased at any hardware shop or made out of available items. Examples include battery cables, shims, and certain washers and nuts.

"Not Sold Separately" — Indicates that an item cannot be purchased as a separate item and is either part of an assembly/kit that can be purchased, or is not available for sale through Multiquip.

ST2037F SUBMERSIBLE PUMP

1 to 3 units

Qty.	P/N	Description
1	0202037F120	AC CORD WITH GLAND
1	020S500UL060	MECHANICAL SEAL
1	0201503A103	PACKING

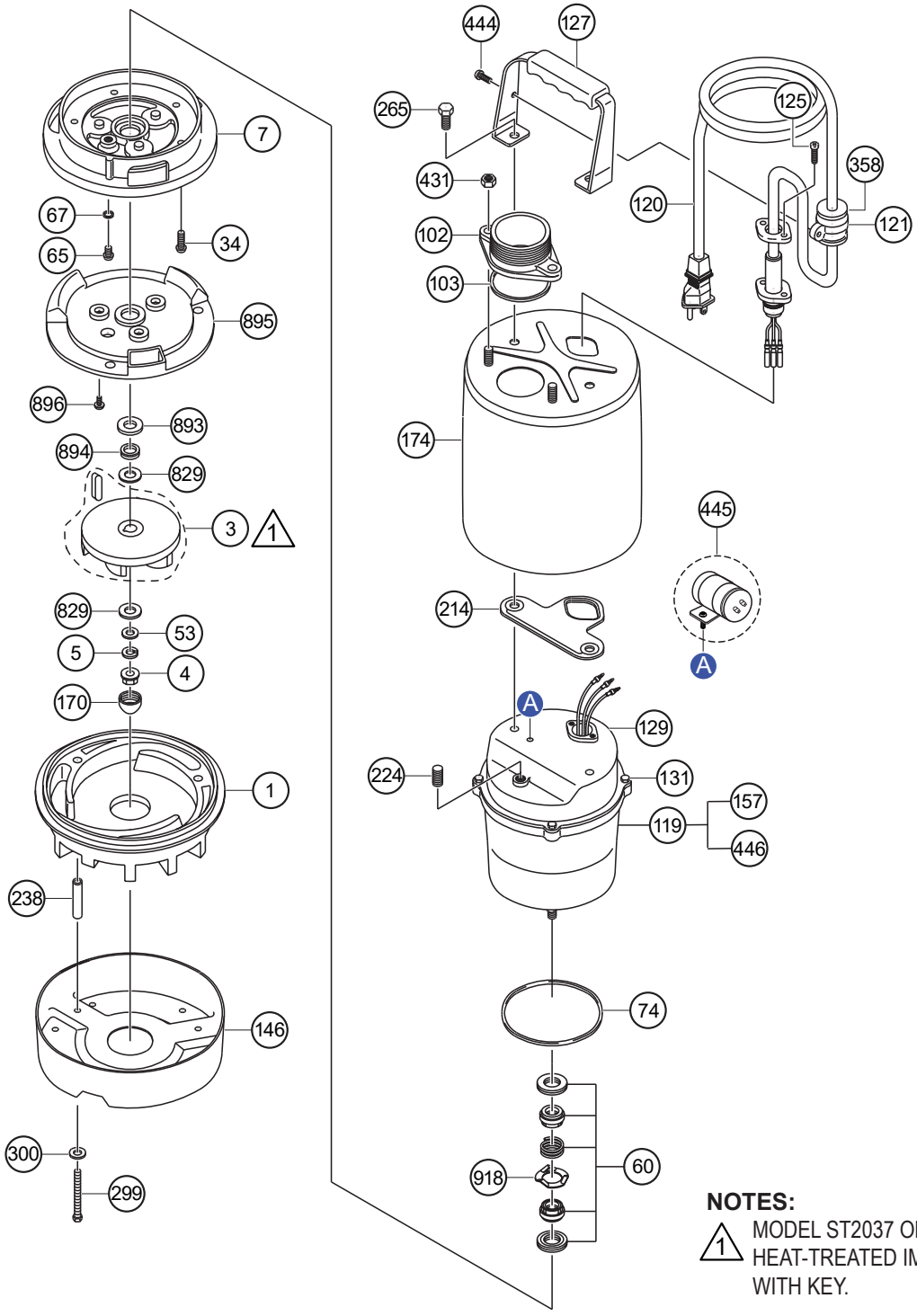
ST2040TF SUBMERSIBLE PUMP

1 to 3 units

Qty.	P/N	Description
1	0202037F120	AC CORD WITH GLAND
1	020S500UL060	MECHANICAL SEAL
1	0202005T024	PACKING

NOTICE

Part numbers on this Suggested Spare Parts list may supersede/replace the part numbers shown in the following parts lists.



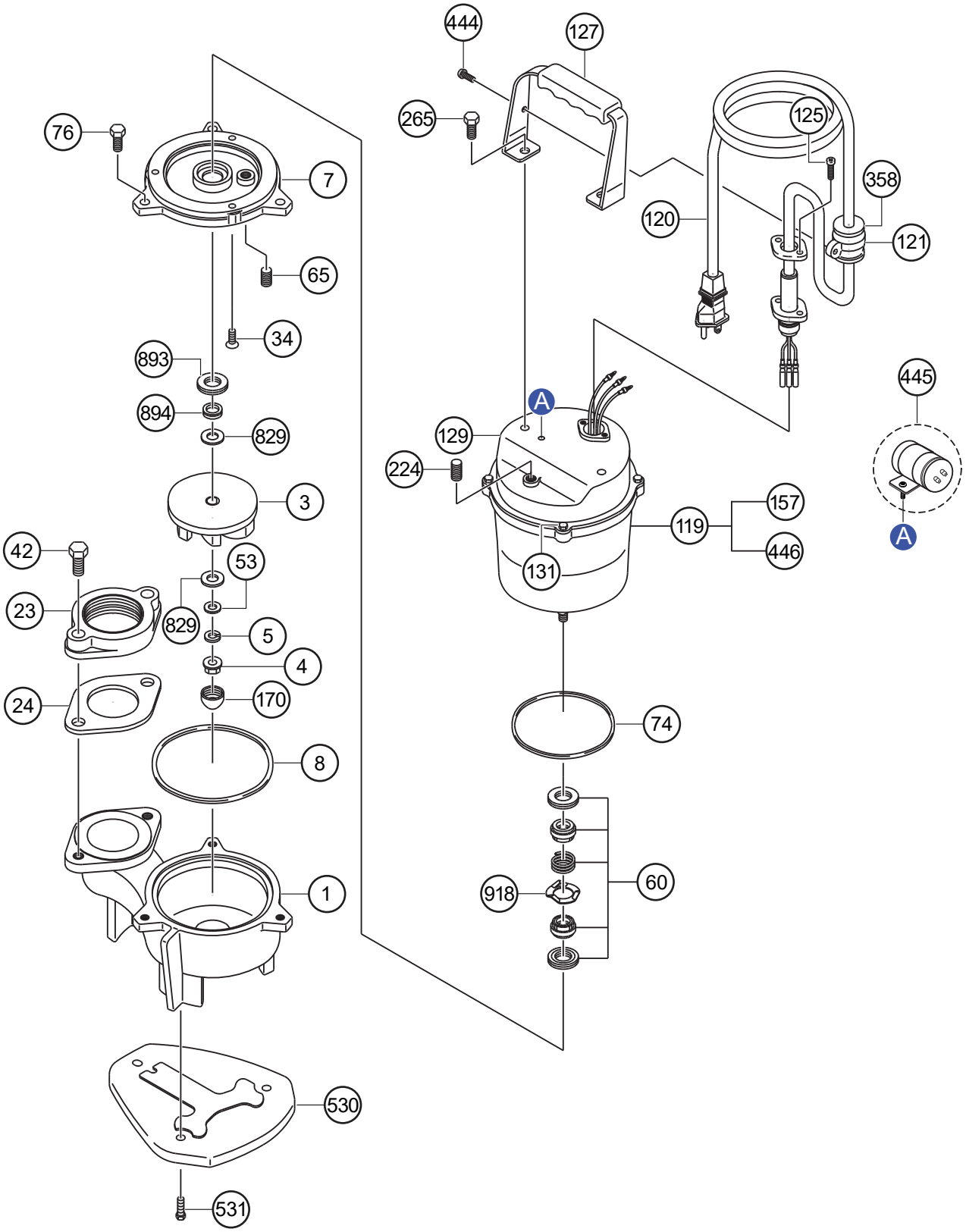
NOTES:

1 MODEL ST2037 ONLY HEAT-TREATED IMPELLER WITH KEY.

ST2037, ST2047, ST2047B PUMP ASSEMBLY

NO.	PART NO.	PART NAME	QTY.	REMARKS
1	020S500UL001	CASING	1	
3	020S500UL003	IMPELLER W/ KEY	1	ST2037 ONLY
3	020S2047003	IMPELLER	1	ST2047 AND ST2047B ONLY
4	020S500UL004	IMPELLER NUT	1	
5	020S500UL005	SPRING WASHER	1	
7	020S500UL007	CASING COVER	1	
34	020S2037034	SCREW	3	
53	020S500UL053	WASHER	1	
60	020S500UL060	MECHANICAL SEAL	1	
65	020S500UL065	PLUG	1	
67	020S500UL067	PACKING	1	
74	020S500UL074	PACKING	1	
102	0202005A102	DISCHARGE PORT	1	
103	0201503A103	PACKING	1	
119	020S2047119	MOTOR	1	ST2037 AND ST2047 ONLY
119	020S2047B119	MOTOR	1	ST2047B ONLY
120	0201503UL120	AC CORD W/CORD GLAND	1	ST2037 ONLY
120	0202010UL120	AC CORD W/CORD GLAND	1	ST2047 ONLY
120	0202010B120	AC CORD W/CORD GLAND	1	ST2047B ONLY
121	0201503121	CORD CLAMP	1	
125	0201503125	SCREW	2	
127	020S500UL127	CARRYING HANDLE	1	
129	020S2047129	FRAME COVER	1	
131	020S2047131	BOLT	3	
146	020S500UL146	STRAINER	1	
157	020S2047157	PACKING	1	
170	020S500UL170	IMPELLER NUT CAP	1	
174	020S2037174	OUTER PIPE	1	
214	020S500UL214	PACKING	1	
224	0201503224	PLUG	1	
238	020S500UL238	SPACER	3	
265	020S500UL265	BOLT	2	
299	020S500UL299	BOLT	3	
300	020S500UL300	WASHER	3	
358	020S500UL358	AC CORD BAND	1	
431	020S500UL431	NUT	2	
444	020S500UL444	SCREW	1	
445	020S2047445	CAPACITOR	1	ST2037 AND ST2047 ONLY
445	020S2047B445	CAPACITOR	1	ST2047B ONLY
446	020S2047446	THERMAL PROTECTOR	1	ST2037 AND ST2047 ONLY
446	020S2047B446	THERMAL PROTECTOR	1	ST2047B ONLY
829	020S500UL829	WASHER	2	
893	020S500UL893	SEAT	1	
894	020S500UL894	V-RING	1	
895	020S500UL895	LINER	1	
896	020S500UL896	SCREW	3	
918	020S500UL918	STIRRER	1	

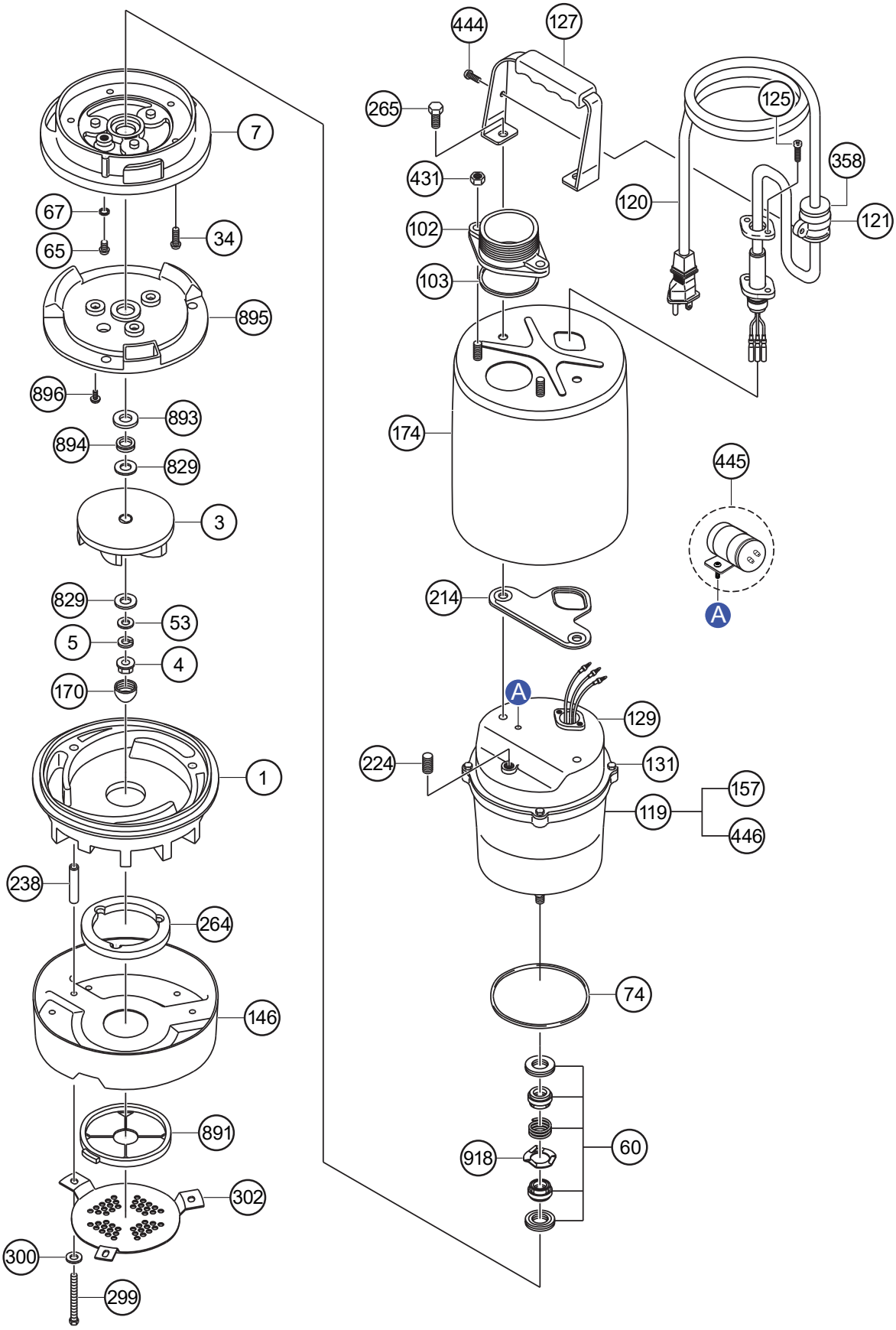
ST2040T PUMP ASSEMBLY



ST2040T PUMP ASSEMBLY

NO.	PART NO.	PART NAME	QTY.	REMARKS
1	020S2040T001	CASING	1	
3	020S500UL003	IMPELLER, NITRILE RUBBER	1	STANDARD
3	020S500UL003SP	IMPELLER, HEAT TREATED, ST2040T	1	OPTION
4	020S500UL004	IMPELLER NUT	1	
5	020S500UL005	SPRING WASHER	1	
7	020S2040T007	CASING COVER	1	
8	0202005T008	CASING PACKING	1	
23	020S2040T023	COMPANION FLANGE	1	
24	0202005T024	PACKING	1	
34	020S2037034	SCREW	3	
42	020S2040T042	BOLT	2	
53	020S500UL053	WASHER	1	
60	020S500UL060	MECHANICAL SEAL	1	
65	020S2040T065	PLUG	1	
74	020S500UL074	PACKING	1	
76	020S2040T076	BOLT	3	
119	020S2047119	MOTOR	1	
120	0201503UL120	AC CORD W/CORD GLAND	1	
121	0201503121	CORD CLAMP	1	
125	0201503125	SCREW	2	
127	020S500UL127	CARRYING HANDLE	1	
129	020S2047129	FRAME COVER	1	
131	020S2047131	BOLT	3	
157	020S2047157	PACKING	1	
170	020S500UL170	IMPELLER NUT CAP	1	
224	0201503224	PLUG	1	
238	020S500UL238	SPACER	3	
265	020S2040T265	BOLT	2	
358	020S500UL358	ACCORD BAND	1	
444	020S500UL444	SCREW	1	
445	020S2047445	CAPACITOR	1	
446	020S2047446	THERMAL PROTECTOR	1	
530	0202005T530	BOTTOM PLATE	1	
531	0202005T531	BOLT	3	
829	020S500UL829	WASHER	2	
893	020S2040T893	SEAT WITH PACKING	1	
894	020S500UL894	V-RING	1	
918	020S500UL918	STIRRER	1	

ST2038P PUMP ASSEMBLY



ST2038P PUMP ASSEMBLY

NO.	PART NO.	PART NAME	QTY.	REMARKS
1	020S500UL001	CASING	1	
3	020S500UL003	IMPELLER	1	
4	020S500UL004	IMPELLER NUT	1	
5	020S500UL005	SPRING WASHER	1	
7	020S500UL007	CASING COVER	1	
34	020S2037034	SCREW	3	
53	020S500UL053	WASHER	1	
60	020S500UL060	MECHANICAL SEAL	1	
65	020S500UL065	PLUG	1	
67	020S500UL067	PACKING	1	
74	020S500UL074	PACKING	1	
102	0202005A102	DISCHARGE PORT	1	
103	0201503A103	PACKING	1	
119	020S2047119	MOTOR	1	
120	0201503UL120	AC CORD W/CORD GLAND	1	
121	0201503121	CORD CLAMP	1	
125	0201503125	SCREW	2	
127	020S500UL127	CARRYING HANDLE	1	
129	020S2047129	FRAME COVER	1	
131	020S2047131	BOLT	3	
146	020S500P146	STRAINER	1	
157	020S2047157	PACKING	1	
170	020S500UL170	IMPELLER NUT CAP	1	
174	020S2037174	OUTER PIPE	1	
214	020S500UL214	PACKING	1	
224	0201503224	PLUG	1	
238	020S500UL238	SPACER	3	
264	020S500P264	SPACER	1	
265	020S500UL265	BOLT	2	
299	020S500UL299	BOLT	3	
300	020S500UL300	WASHER	3	
302	020S500P302	CHECK VALVE COVER	1	
358	020S500UL358	ACCORD BAND	1	
431	020S500UL431	NUT	2	
444	020S500UL444	SCREW	1	
445	020S2047445	CAPACITOR	1	
446	020S2047446	THERMAL PROTECTOR	1	
829	020S500UL829	WASHER	2	
891	020S500P891	CHECK VALVE	1	
893	020S500UL893	SEAT	1	
894	020S500UL894	V-RING	1	
895	020S500UL895	LINER	1	
896	020S500UL896	SCREW	3	
918	020S500UL918	STIRRER	1	

OPERATION AND PARTS MANUAL

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL NUMBER ON-HAND WHEN CALLING

UNITED STATES

Multiquip Inc.

(310) 537- 3700
6141 Katella Avenue Suite 200
Cypress, CA 90630
E-MAIL: mq@multiquip.com
WEBSITE: www.multiquip.com

CANADA

Multiquip

(450) 625-2244
4110 Industriel Boul.
Laval, Quebec, Canada H7L 6V3
E-MAIL: infocanada@multiquip.com

UNITED KINGDOM

Multiquip (UK) Limited Head Office

0161 339 2223
Unit 2, Northpoint Industrial Estate, Globe Lane,
Dukinfield, Cheshire SK16 4UJ
E-MAIL: sales@multiquip.co.uk

This manual MUST accompany the equipment at all times. This manual is considered a permanent part of the equipment and should remain with the unit if resold.

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