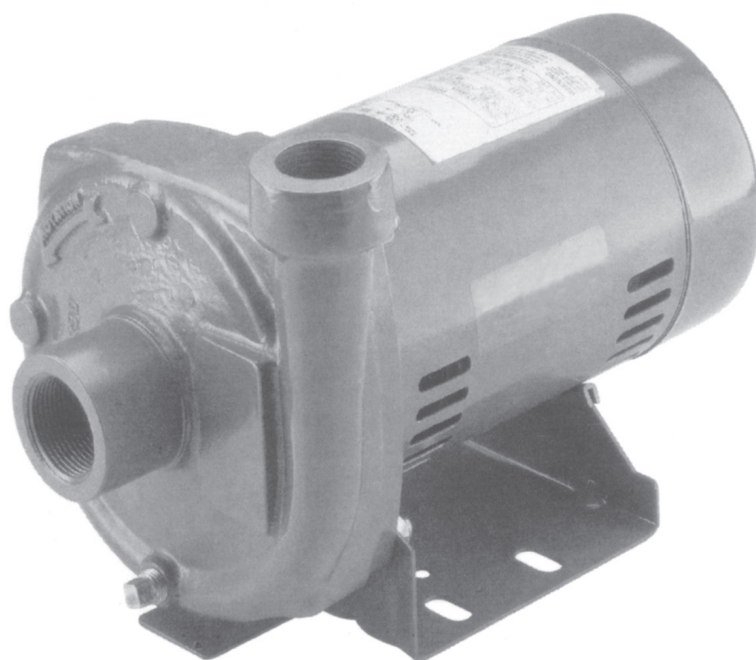




MYERS®



CT SERIES

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.

**WARNING! IMPORTANT SAFETY INSTRUCTIONS!
READ CAREFULLY BEFORE INSTALLATION**

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.

SAFE DRINKING WATER ACT:

⚠ WARNING This product is to be used **EXCLUSIVELY** for non-potable water services. This product is not anticipated to be used for human consumption so is not designed for the low lead levels stated in the Safe Drinking Water Act. It is illegal to use this product for potable water applications for human consumption, such as drinking water, oral hygiene, hand washing, food preparation and dishwashing.



FAILURE TO FOLLOW THESE INSTRUCTIONS AND COMPLY WITH ALL CODES MAY CAUSE SERIOUS BODILY INJURY AND/OR PROPERTY DAMAGE.

⚠ 1) Before installing or servicing your pump, **BE CERTAIN THE PUMP POWER SOURCE IS TURNED OFF AND DISCONNECTED.**

⚠ 2) All installation and electrical wiring must adhere to state and local codes. Check with appropriate community agencies, or contact your local electrical and pump professionals for help.

⚠ 3) **CALL AN ELECTRICIAN WHEN IN DOUBT.** Pump must be connected to a separate electrical circuit directly from the entrance box. There must be an appropriately sized fuse or circuit breaker in this line. Tying into existing circuits may cause circuit overloading, blown fuses, tripped circuit breakers or a burned-up motor.

⚠ 4) Do not connect pump to a power supply until the pump is grounded. For maximum safety, a ground fault interrupter should be used. **CAUTION: FAILURE TO GROUND THIS UNIT PROPERLY MAY RESULT IN SEVERE ELECTRICAL SHOCK.**

⚠ 5) **WARNING:** Reduced risk of electric shock during operation of this pump requires the provision of acceptable grounding if the means of connection to the supply-connection box is other than grounded metal conduit. Ground the motor back to the service by connecting a copper conductor, at least the size of the circuit conductors supplying the motor, to the ground screw provided within the wiring compartment of the motor.

⚠ 6) The voltage and phase of the power supply must match the voltage and phase of the pump motor.

⚠ 7) Do not use an extension cord.

⚠ 8) Do not work on this pump or switch while the power is on.

⚠ 9) Never operate a pump with a frayed or brittle power cord, and always protect it from sharp objects, hot surfaces, oil and chemicals. Avoid kinking the cord.

⚠ 10) Never service a motor or power cord with wet hands or while standing in or near water or damp ground.

⚠ 11) The three phase units must be wired by a qualified electrician, using an approved starter box and switching device.

⚠ 12) Do not use this pump in, or in close proximity to, any body of water such as to allow physical contact with both the pump and with water.

⚠ 13) Single phase motors are equipped with automatic resetting thermal protectors. The motor may restart unexpectedly, causing the leads to energize or pump to turn. Three phase motors should be protected by proper, thermal and amperage protection. (Check local codes.)

⚠ 14) Do not pump gasoline, chemicals, corrosives or flammable liquids; they could ignite, explode or damage the pump, causing injury and voiding the warranty.



⚠ 15) Do not run this pump with the discharge completely closed. This will create superheated water, which could damage the seal and shorten the life of the motor. This superheated water could also cause severe burns.

⚠ 16) The following may cause severe damage to the pump and void warranty. It could also result in personal injury:

- Running the pump dry.
- Failure to protect the pump from below freezing temperatures.
- Running the pump with the discharge completely closed.
- Pumping chemicals or corrosive liquids.

⚠ 17) Never work on the pump or system without relieving the internal pressure.

⚠ 18) Do not pump water above 120° Fahrenheit.

⚠ 19) Never exceed the pressure rating of any system component.

PIPING

Pipes must line up and not be forced into position by unions. **Piping should be independently supported near the pump so that no strain will be placed on the pump casing.** Where any noise is objectionable, pump should be insulated from the piping with rubber connections. Always keep pipe size as large as possible and use a minimum of fittings to reduce friction losses.

SUCTION PIPING

Suction pipe should be direct and as short as possible. It should be at least one size larger than suction inlet tapping and should have a minimum of elbows and fittings. The piping should be laid out so that it slopes upward to pump without dips or high points so that air pockets are eliminated. The highest point in the suction piping should be the pump inlet except where liquid flows to the pump inlet under pressure. If a foot valve must be used to keep pump primed, where liquid flows to the pump, it may be desirable to use a check valve in the suction line or discharge line to keep pump primed.

To prevent air from being drawn into suction pipe due to a suction whirlpool, the foot valve should be submerged as least three feet below the low water level. The suction pipe must be tight and free of air leaks or pump will not operate properly.

DISCHARGE PIPING

Discharge piping should never be smaller than pump tapping and should preferably be one size larger. A gate valve should always be installed in discharge line for throttling if capacity is not correct. To protect the pump from water hammer and to prevent back flow, a check valve should be installed in the discharge line between the pump and gate valve.

ELECTRICAL CONNECTIONS

Be sure motor wiring is connected for voltage being used. Unit should be connected to a separate circuit, direct from main switch. A fused disconnect switch or circuit breaker must be used in this circuit. Wire of sufficient size should be used to keep voltage drop to a maximum of 5%. All motors, unless provided with built-in overload protection, must be protected with an overload switch, either manual or magnetic. Single phase 1/2 hp – 2-1/2 hp motors have built-in overload protection. **Never install a pump without proper overload protection.** When motor is mounted on a base plate or on slide rails for adjustment, flexible metallic conduit should be used to protect the motor leads.

PRIMING

The pump must be primed before starting. The pump casing and suction piping must be filled with water before starting motor. Remove vent plug in top of casing while pouring in priming water. A hand pump or ejector can be used for priming when desired. When water is poured into pump to prime, use care to remove all air before starting motor.

STARTING

Close the discharge valve when starting the pump as it puts less starting load on the motor. When the pump is up to operating speed, open the discharge valve to obtain desired capacity or pressure. Do not allow the pump to run for long periods with the discharge valve tightly closed. If the pump runs for an extended period of time without liquid being discharged, the liquid in the pump case can get extremely hot.

ROTATION

The pump must run in direction of the arrow on pump case. All single phase motors are single rotation and leave factory with proper rotation. Three phase motors may run either direction. If rotation is wrong when first starting motor, interchange any two leads to change rotation.

STOPPING

Before stopping pump, close the discharge valve. This will prevent water hammer and is especially important on high head pumps.

FREEZING

Care should be taken to prevent the pump from freezing during cold weather. It may be necessary, when there is any possibility of this, to drain the pump casing when not in operation. Drain by removing the pipe plug in the bottom of the casing.

ROTARY SEAL

Centri-Thrift pumps are fitted only with a rotary seal. This seal is recommended for water free from abrasives. If liquid contains abrasives, the Centri-Thrift pump should not be used.

DISASSEMBLY INSTRUCTIONS

All pumping parts can be removed from case without disturbing the piping.

POWER SUPPLY

Open the power supply switch contacts and remove fuses. Disconnect the electrical wiring from the motor.

VOLUTE CASE

Drain pump case by removing drain plug.

Remove the cap screws securing volute case to pump bracket.

Pry volute case from seal plate.

IMPELLER

Remove motor end cover.

Loosen clamp holding start capacitor and swing capacitor off to one side; do not disconnect wires.

Wrench flats are on the shaft just behind the centrifugal switch that is screwed into the end of the shaft. Do not remove this switch. A 7/16" open end wrench can then be used to hold the shaft from turning.

Grasp the impeller and turn counterclockwise (as viewed from the pump end).

SEAL

Remove the rotating part of the seal by pulling it off the shaft.

The stationary seat can be pressed from the seal plate.

ASSEMBLY INSTRUCTIONS

All pump parts should be cleaned thoroughly before being reassembled.

MOTOR

Assure that the rubber slinger is in place on the motor shaft.

SEAL

A new pump seal should always be used when rebuilding a pump.

Apply some light oil to the rubber that surrounds the ceramic stationary seat. Insert the seal into the seal plate using finger pressure to press firmly and squarely until it bottoms. Care must be taken to keep grease and dirt off face areas of the seal. Be sure the seal faces are not damaged during assembly (cracked, scratched or chipped) or the seal will leak.

Position the seal plate into the motor flange. Use care not to chip the stationary seal seat by hitting the motor shaft.

Carefully press the rotating seal assembly onto the motor shaft. The smooth face of the carbon ring must contact the ceramic seat. The rubber ring must seal against the shaft.

IMPELLER

Hold the motor shaft and check that the rubber ring of the seal is positioned on the shaft.

Turn the impeller clockwise onto the shaft.

Replace the capacitor taking care not to pinch any wires and tighten capacitor clamp and replace motor end cover taking care not to pinch any wires.

VOLUTE

Assure that a new or good condition gasket is in place on the seal plate.

Carefully position the volute in alignment over the impeller and seal plate.

Assemble the components. The bottom two cap screws must also pass through the bracket.

RESTARTING OPERATION

The pump must be primed before starting. The pump volute and suction piping must be filled with water before starting motor. A hand pump or ejector can be used for priming when desired.

Reconnect electrical power.

After a few minutes of operation, check that there is no leakage from the pump or piping.

TROUBLESHOOTING

No water delivered.

1. Pump not properly primed; repeat priming operation.
2. Discharge head too high. Check total head with gauge at pump inlet and discharge. (With no water, the gauge at discharge would show shut-off pressure.)
3. Suction lift too high. Check with vacuum gauge. This should not exceed 15 feet.
4. Air leak in suction line. Check line under pressure to find leak.
5. Air pocket in suction line. Check line for proper slope.
6. Impeller or suction line plugged.
7. Impeller and volute case badly worn. Disassemble pump if clearance on diameter is over .030". Replace worn impeller and worn volute case.

Not enough water delivered.

1. Discharge head too high. Check total head with gauge at pump inlet and discharge. (With no water, the gauge at discharge would show shut-off pressure.)
2. Suction lift too high. Check with vacuum gauge. This should not exceed 15 feet.
3. Air leak in suction line. Check line under pressure to find leak.
4. Impeller or suction line plugged.
5. Impeller and volute case badly worn. Disassemble pump if clearance on diameter is over .030". Replace worn impeller and worn volute case.
6. Impeller diameter too small for condition required.

Not enough pressure.

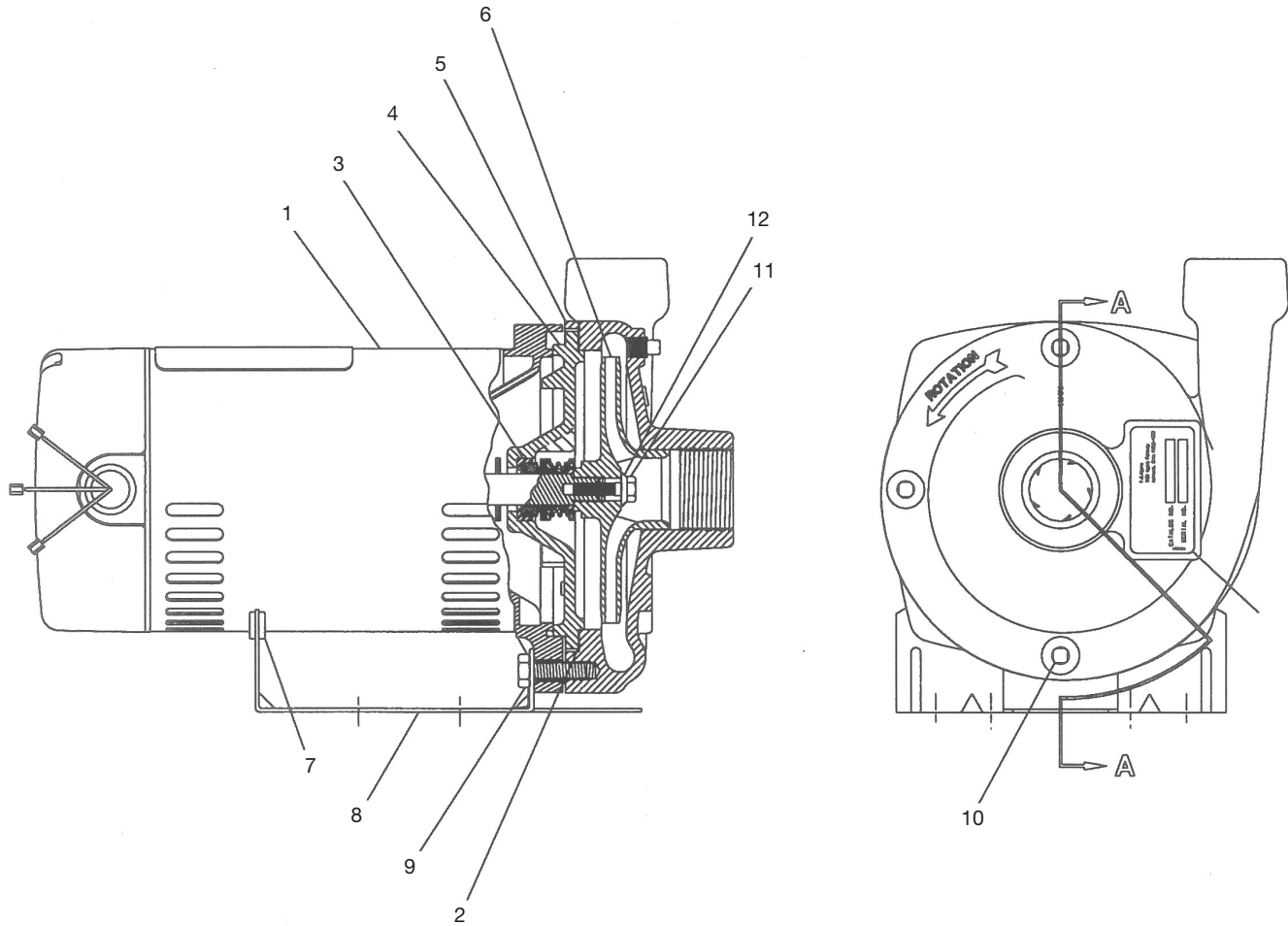
1. Excessive volume being discharged. Throttle discharge valve.
2. Air leak in suction line. Check line under pressure to find leak.
3. Impeller or suction line plugged.
4. Impeller and volute case badly worn. Disassemble pump if clearance on diameter is over .030". Replace worn impeller and worn volute case.
5. Impeller diameter too small for condition required.

Pump runs for short while, then loses prime.

1. Suction lift too high. Check with vacuum gauge. This should not exceed 15 feet.
2. Air leak in suction line. Check line under pressure to find leak.
3. Air pocket in suction line. Check line for proper slope.
4. Suction strainer plugged. Clean strainer.

Seal leaking.

Seal is worn or seal face cocked. Replace with new seal and carefully follow directions.



1/2, 3/4, 1 and 1-1/2 hp PARTS LIST

| Reference | Part No. | Description | Qty. |
|-----------|-----------|-------------------------------------------|------|
| 1 | J218582B | 1/2 hp, 127/220V, 1 PHASE | 1 |
| | J218590B | 3/4 hp, 127/220V, 1 PHASE | 1 |
| | J218596B | 1 hp, 127/220V, 1 PHASE | 1 |
| | J218601B | 1-1/2 hp, 127/220V, 1 PHASE | 1 |
| 2 | 05059A446 | GASKET, 6-3/8 x 5-19/32 x 1/32 VELLUMOID | 1 |
| 3 | 14525A010 | STANDARD SEAL WITH POLYCARBONATE IMPELLER | 1 |
| 4 | 26442C020 | PLATE, SEAL – CAST IRON | 1 |
| 5 | 26443D000 | CASE, VOLUTE – CAST IRON | 1 |

| Reference | Part No. | Description | Qty. |
|-----------|-----------|------------------------------------|------|
| 6 | 26441B003 | POLYCARBONATE, 1/2 hp – IMPELLER | 1 |
| | 26440B003 | POLYCARBONATE, 3/4 hp – IMPELLER | 1 |
| | 26439B007 | POLYCARBONATE, 1 hp – IMPELLER | 1 |
| | 26439B004 | POLYCARBONATE, 1-1/2 hp – IMPELLER | 1 |
| 7 | 26238A000 | TUBE | 1 |
| 8 | 25383B001 | BRACKET | 1 |
| 9 | 19101A064 | CAP SCREW, 3/8-16 UNC x 1-1/8 LG. | 4 |
| 10 | 05022A094 | PLUG, 1/8 NPT | 1 |

2 and 2-1/2 hp PARTS LIST

| Reference | Part No. | Description | Qty. |
|-----------|-----------|---------------------------------------------|------|
| 1 | 26489A000 | 2 hp, 115/230V, 1 PHASE | 1 |
| | 26489A001 | 2 hp, 208-230/460V, 3 PHASE | 1 |
| | 26490A000 | 2-1/2 hp, 115/230V, 1 PHASE | 1 |
| | 26490A001 | 2-1/2 hp, 208-230/460V, 3 PHASE | 1 |
| 2 | 05059A447 | GASKET, 6.58 x 6.13, VELLUMOID | 1 |
| 3 | 14525A010 | STANDARD SEAL WITH POLYCARBONATE IMPELLER | 1 |
| | 21181A021 | HI-TEMP SEAL WITH BRASS IMPELLER | 1 |
| 4 | 26485D000 | PLATE, SEAL – CAST IRON | 1 |
| 5 | 26484D001 | 2 hp – BSPP THREADS – VOLUTE | 1 |
| | 26484D003 | 2 hp – NPT THREADS – VOLUTE | 1 |
| | 26484D000 | 2-1/2 hp – BSPP THREADS – VOLUTE | 1 |
| | 26484D002 | 2-1/2 hp – NPT THREADS – VOLUTE | 1 |
| 6 | 26487C005 | POLYCARBONATE, 2 hp, 1 PHASE – IMPELLER | 1 |
| | 26487C009 | POLYCARBONATE, 2 hp, 3 PHASE – IMPELLER | 1 |
| | 26487C004 | POLYCARBONATE, 2-1/2 hp, 1 PHASE – IMPELLER | 1 |

| Reference | Part No. | Description | Qty. |
|-----------|-----------|---------------------------------------------|------|
| 6 | 26487C008 | POLYCARBONATE, 2-1/2 hp, 3 PHASE – IMPELLER | 1 |
| | 26487C001 | BRONZE, 2 hp, 1 PHASE – IMPELLER | 1 |
| | 26487C007 | BRONZE, 2 hp, 3 PHASE – IMPELLER | 1 |
| | 26487C000 | BRONZE, 2-1/2 hp, 1 PHASE – IMPELLER | 1 |
| | 26487C006 | BRONZE, 2-1/2 hp, 3 PHASE – IMPELLER | 1 |
| | 7 | 26238A000 | TUBE |
| 8 | 26488C000 | BRACKET | 1 |
| 9 | 19101A016 | CAP SCREW, 3/8-16 UNC x 1-1/8 LG. | 4 |
| 10 | 05022A021 | PLUG, 1/8 NPT – GALVANIZED | 3 |
| 11 | 19099A031 | CAP SCREW, 1/4-28 UNF x 1-1/8 LG. (3 PHASE) | 1 |
| 12 | 10186A000 | WASHER, 11/16 O.D. BRONZE (3 PHASE) | 1 |

STANDARD LIMITED WARRANTY CENTRIFUGAL & RECIPROCATING PUMPS

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.

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.

Seals, piston cups, packing, plungers, liners and valves used for handling clear, fresh, nonaerated water at a temperature not exceeding 120°F are warranted for ninety days from date of shipment. All other applications are subject to a thirty day warranty. Accessories such as motors, engines and auxiliary equipment are warranted by the respective manufacturer and are excluded in this standard warranty. 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.



MYERS®

1101 MYERS PARKWAY
ASHLAND, OHIO, USA 44805
419-289-1144

WWW.FEMYERS.COM

Warranty Rev. 12/13