



**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.

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

Before installing or servicing your pump, be certain the pump power source is turned off and disconnected.

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.

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.

Do not connect pump to a power supply until the pump is grounded. For maximum safety, a ground fault interrupter should be used. Failure to ground this unit properly may result in severe electrical shock. 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.

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

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. Do not use an extension cord.

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

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

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.

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

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.

The following may cause severe damage to the pump and void warranty.

- 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.

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

Do not pump water above 120° Fahrenheit.

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. Always keep pipe size as large as possible and use a minimum of fittings to reduce friction losses.

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 the pump without dips or high points so 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 should never be smaller than pump tapping and should preferably be one size larger. A gate valve should always be installed in the 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**

Motor wiring must be connected for the 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 either a manual or magnetic overload switch. 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 AND STARTING**

The pump must be primed before starting. The pump casing and suction piping must be filled with water prior to 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 the pump to prime, make sure all air is removed before starting the motor.

Close the discharge valve to put less start load on the motor. When the pump is up to operating speed, open the discharge valve to obtain desired capacity or pressure.

**ROTATION**

The pump must run in direction of the arrow on the pump case. All single-phase motors are single rotation and leave the factory with proper rotation. Three-phase motors may run either direction. If rotation is wrong when first starting the 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.

**DISASSEMBLY INSTRUCTIONS**

All pumping parts can be removed from the case without disturbing the piping. Open the power supply switch contacts and remove the fuses. Disconnect the electrical wiring from the motor. Drain the pump case by removing the drain plug. Remove the cap screws securing the volute case to the pump bracket and pry from seal plate.

Remove motor end cover to remove impeller. Loosen the clamp holding the start capacitor and swing off to one side. Do not disconnect wires. Grasp the impeller and turn counterclockwise from the pump end.

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. Assure that the rubber slinger is in place on the motor shaft. 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. Be sure the seal faces are not damaged or contaminated during assembly or the seal will leak.

Position the seal plate into the motor flange and 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.

Hold the motor shaft and check that the rubber ring of the seal is positioned on the shaft and then turn the impeller clockwise onto the shaft. Replace the capacitor and motor end cover taking care not to pinch any wires.

Assure that a new or good condition gasket is in place on the seal plate. Position the volute over the impeller and seal plate, and assemble the components. The bottom two cap screws must also pass through the bracket.

To restart, prime the pump and reconnect electrical power. Check for leaks after a few minutes of running.

**TROUBLESHOOTING**

**No water or not enough water delivered.**

Pump not properly primed; repeat priming operation.

Discharge head is too high. Check total head with gauge at pump inlet and discharge.

Suction lift is too high. Check with vacuum gauge as this should not exceed 15 feet.

Air leak or air pocket in suction line. Check line under pressure.

Impeller or suction line plugged or impeller is too small for application.

Impeller and volute case badly worn.

Excessive volume being discharged. Throttle discharge valve.

**Pump runs for short while, then loses prime.**

Suction lift is too high. Check with vacuum gauge as this should not exceed 15 feet.

Air leak or air pocket in suction line. Check line under pressure.

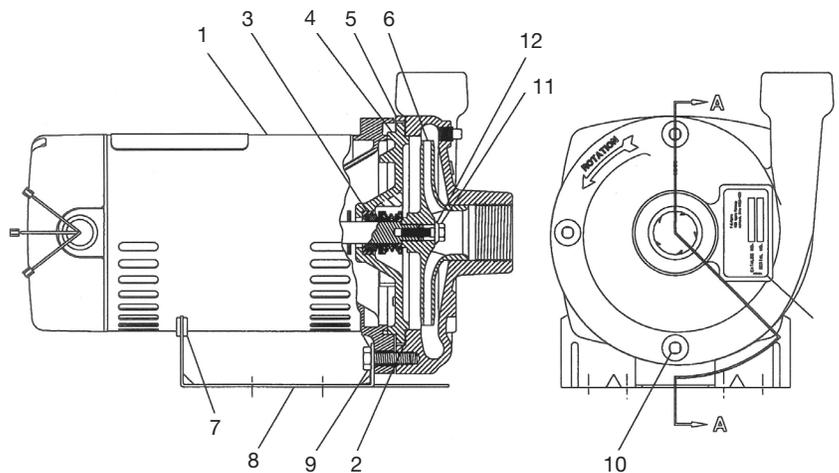
Suction strainer plugged. Clean strainer.

**1/2 – 1-1/2 HP PARTS LIST**

Item	Eng. 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
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**

Item	Eng. No.	Description	Qty.
1	26489A000	2 hp, 115/230V, 1 PHASE	1
	26489A001	2 hp, 208-230/460V, 3 PHASE	1
	J218-628A-48	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
	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
6	26487C000	BRONZE, 2-1/2 hp, 1 PHASE – IMPELLER	1
	26487C006	BRONZE, 2-1/2 hp, 3 PHASE – IMPELLER	1
7	26238A000	TUBE	1
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.



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