

MP PUMPS HTO SERIES

HTO 180 INSTALLATION AND SERVICE INSTRUCTIONS

This bulletin must be read completely before installing, operating, or servicing the pump.



WARNING:

If any of the items listed below are violated, serious injury or death from burns caused by hot oil may occur.

DO NOT perform service or maintenance when the pumping system is pressurized or hot - serious injury or death from burns caused by hot oil may occur.

DO NOT operate the pump in a manner that it was not intended to be used.

DO NOT install for use in an open environment where people are present.

DO NOT install in a rigid piping system that does not allow the pipe to expand and cause the pump to be strained.

DO NOT continue to operate the pumping system when a know leak exists or the system continues to smoke.

DO NOT continue to operate the pump when unusual noise or vibration occurs.

DO NOT install or use near water where the pumping system may come into contact with water or is splashed by water.

DO NOT operate beyond the pressure or temperature limits stated in the product literature. (See Form 9001)

DO NOT allow severe temperature changes to occur in a short time period within the pumping system.

DO NOT mix different types or grades of oil within the oil system.

DO NOT use an oil that is not a recommended heat transfer oil by the manufacturer.

DO NOT exceed the maximum oil temperature rated by the oil manufacturer at the hottest point in the pumping system.

DO NOT mount the pump such that high piping loads exist on the pump flanges.



MP PUMPS, INC.

34800 BENNETT • FRASER, MI 48026-1686
(586) 293-8240 • FAX (586) 293-8469
(800) 563-8006 • www.mppumps.com

FORM 3073 (9-04)

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OPERATION AND MAINTENANCE

Thermal oil vapors leaking from a system can be highly flammable.

Any system leak should be repaired immediately.

Do not insulate the pump or system piping with porous flammable insulation. Fluid may wick, decompose, and spontaneously ignite.

Ideal mechanical seal life is 20,000 hours. Reduced seal life may be experienced from extreme conditions.

Recommended spare parts and service parts to rebuild the HTO-180 are:

PART NO.	DESCRIPTION	QTY.
29822	DRIVE SLEEVE (215TC MOTOR)	1
33510	DRIVE SLEEVE (184TC MOTOR)	1
31519	GASKET-HOUSING	1
30842	ISOLATOR	2
30219	SEAL ASSEMBLY(215TC MOTOR)	1
33507	SEAL ASSEMBLY(184TC MOTOR)	1
29825	GASKET-ISOLATOR	3
30841	O-RING	1

At disassembly, check the impeller and other wear items for unusual wear. Replace if necessary.

When servicing the pump, care should be taken that the pump has cooled to a sufficient temperature to permit disassembly. The product should be drained from the pump housing and disposed in accordance with the fluid manufacturer's recommendations. Operation personnel should be warned to exercise care and utilize eye and skin protection when servicing the pump.

HTO 180 ASSEMBLY INSTRUCTIONS

1. Press the seal seat (part #16) into the seal housing #12.
2. Set the drive sleeve #17 standing up on the workbench with the threaded end up. Place the seal housing #12 on the sleeve with the seal seat facing up.
3. Lubricate the seal head's o-ring (part of #16) and slide it over the sleeve.
4. Install the snap ring #15 into the groove on the sleeve.
5. Set the seal head working height to .25 inches by measuring the distance from the snap ring to the back of the seal.
6. Tighten the four - 1/8 inch set screws on the seal head through the hole on the side of the seal housing if applicable.
7. Install the pipe plug (part #13) into the seal housing. Use sealant on the threads.
8. Install the three gaskets #9, two graphite isolators #10, and o-ring #11 over the drive sleeve onto the seal housing.
9. Place the seal housing assembly from step 8 into the adaptor #6 and install three capscrews #14 through the seal housing and into the adaptor. Torque the capscrews to 2- ft-lbs. in 5 ft-lbs. increments.
10. Apply Loctite onto the drive sleeve threads and install the impeller #5 by threading it onto the sleeve. Make sure that the impeller shoulders against the sleeve.
11. Position the gasket #3 onto the adaptor and install the housing #16 to the adaptor using eight capscrews #7 and lockwashers #8.
12. Slide the fan clamp #18 onto the sleeve with fan blades closest to the seal housing. The pump end assembly (Pumpak) is complete.
13. Pumpak assembly to the motor as follows:
 1. Place 5/16x5/16x.5 key into the key slot of the motor shaft.
 2. Slide the Pumpak onto the motor with the shaft/key indexed to lineup with a slot in the pump sleeve.
 3. Install and tighten (4) 1/2"-13 capscrews onto the motor flange with 40 ft-lbs. torque.
 4. Reaching through the inlet of the pump push the impeller back towards the motor until it stops up against the carbon isolators.
 5. While holding the impeller in this position, tighten the fasteners of the fan clamp with 15 ft-lbs. torque.
 6. Rotate impeller to check for contact with stationary parts.
 7. Install piping.
 8. After wiring the motor, check rotation by momentarily applying power and viewing the rotation of the fan clamp. Viewed from the motor end, the clamp should rotate in a clockwise direction.

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APPLICATION AND INSTALLATION INSTRUCTIONS

Application assistance and technical information can be obtained by calling MP PUMPS at 586-293-8240.

The HTO pump is designed for pumping high temperature fluids that are non-corrosive, non-volatile, and have good lubricating qualities.

The primary application for use is with heat transfer oils.

It is the users' responsibility to determine the pump and product compatibility with the materials of construction.

INSTALLATION AND START UP

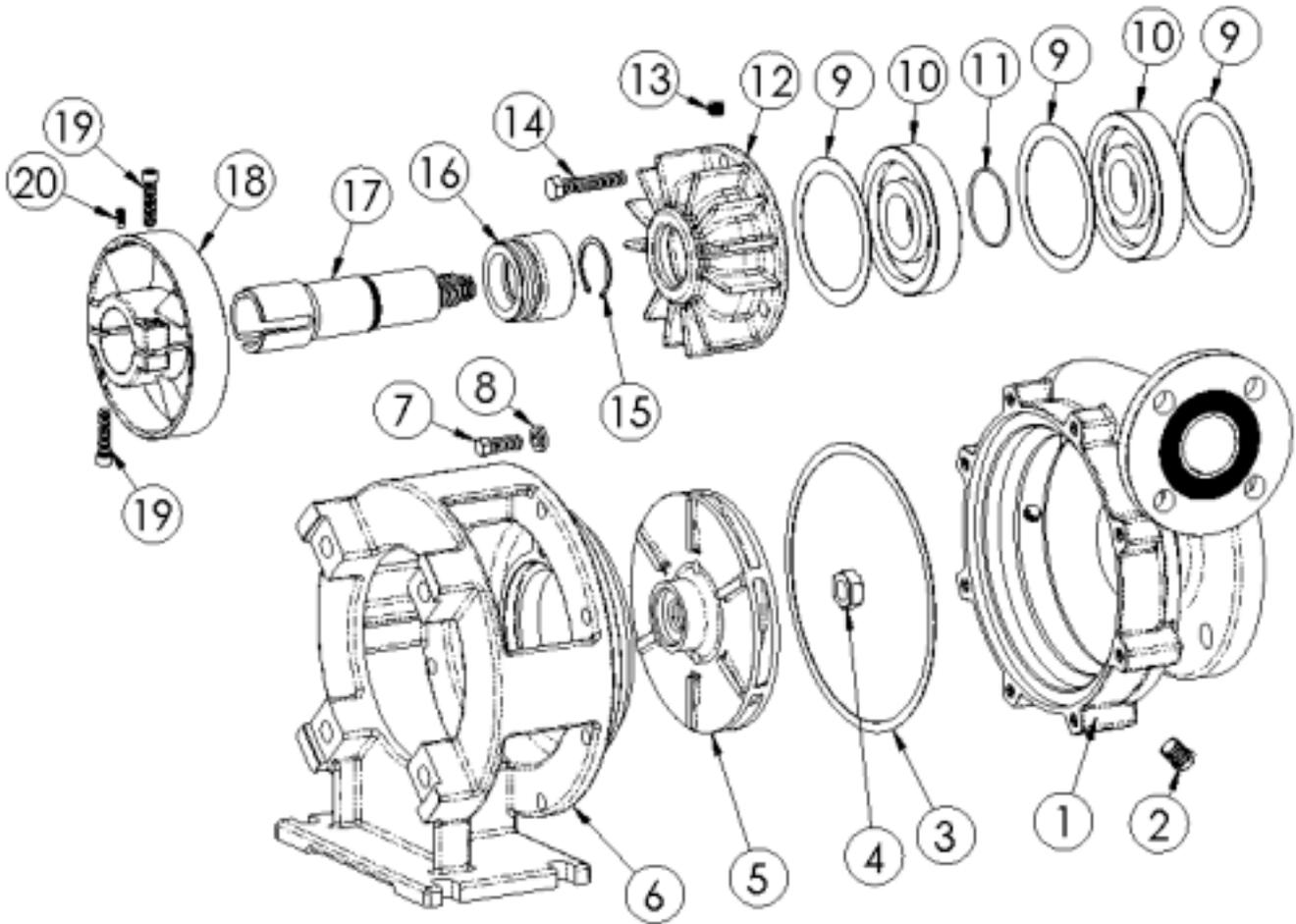
INSTALLATION

1. The pump must be installed in a horizontal shaft position.
2. The housing may be rotated to a horizontal or vertical discharge to fit the particular piping installation.
3. Rigid and supported piping must be used that will not strain the pump housing when temperature changes are made during the use of the pump.
4. The piping system must be free of foreign material and moisture before start up.
5. Pipe thread sealing compound must be used on the NPT flanges that is compatible with the fluid being pumped and is rated for the temperature requirements.
6. The installation should permit adequate circulation of air to provide proper cooling of the motor and pump seal housing.
7. Do not install in a sealed enclosure or insulate the pump adaptor and motor. The motor and/or pump seal may fail from excessive heat.
8. A good installation will have an enclosure that provides adequate air flow of ambient air to the motor of the pump.

START UP

1. Follow all requirements and recommendations from the heat transfer fluid manufacturer, for fill, start up, and use.
2. Check for leaks before insulating the piping system.
3. Check for proper shaft rotation by jogging the power and observing the fan clamp. Rotation arrows are provided on pump housing.
4. The seal cavity inside the pump will internally vent during the fill and start up.
5. A small amount of oil may leak from the seal cavity at the shaft; this is normal for a new installation and will stop after approximately one hour.
6. Do not allow the pump to run dry, or continue to operate the pump when it is noisy, vibrating, or leaks are observed. These noticeable signs give a warning that something is wrong with the equipment and must be investigated to avoid possible damage or injury from burns caused by hot oil.

HTO 180 HOT OIL PUMP



ITEM	PART NO.	DESCRIPTION	QTY
1	33503	HOUSING - DUCTILE IRON	1
2	41475	PIPE PLUG - 1/4 NPT ZPS	2
3	31519	GASKET - HOUSING	1
4	25168	HEX JAM NUT	1
5	33505	IMPELLER 6.5 DIA - DUCTILE IRON	1
6	33506	ADAPTOR - DUCTILE IRON	1
7	41256	CAPSCREW STL - 3/8-16 X 1"	8
8	30626	LOCKWASHER STL - 3/8"	8
9	29825	GASKET - ISOLATOR	3
10	30842	ISOLATOR	2
11	30841	O-RING - VITON	1

ITEM	PART NO.	DESCRIPTION	QTY
12	29830	SEAL HOUSING - DUCTILE IRON	1
13	30824	PIPE PLUG - 1/8 NPT	1
14	21277	CAPSCREW SS - 3/8-16 X 2"	3
15	29826	SNAP RING STL	1
16	30219	SEAL ASSEMBLY (215TC MTR)	1
16	33507	SEAL ASSEMBLY (184TC MTR)	1
17	29822	DRIVE SLEEVE (215TC MTR)	1
17	33510	DRIVE SLEEVE (184TC MTR)	1
18	29833	FAN CLAMP - D.I. (215TC MTR)	1
18	33509	FAN CLAMP - D.I. (184TC MTR)	1
19	30264	CAPSCREW STL - 5/16-18 X 1.25"	2
20	33417	SET SCREW STL - 1/4-28	1



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