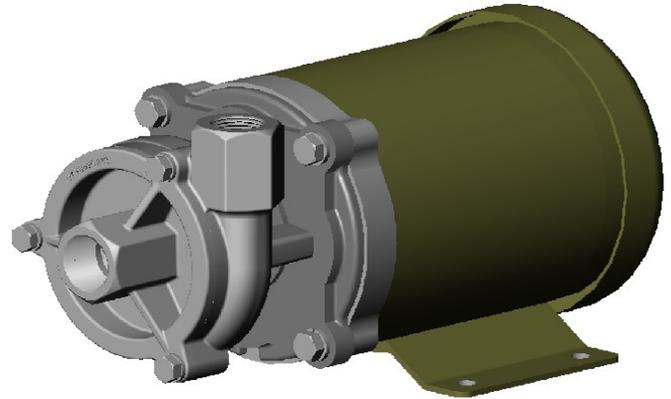




FRX 100 is a high performance 316 stainless steel centrifugal pump. Its uses are marine, commercial, and industrial transfer of chemicals or potable water. All pump parts are 316 stainless for superior corrosion resistance when pumping chemical compounds. A carbon, ceramic, viton, bellows shaft seal is standard. The FRX 100 is designed with 1 inch NPT porting and the pump rotation can be achieved in 90 degree increments.



GENERAL SAFETY INFORMATION:

THE FOLLOWING WARNINGS ARE USED TO NOTIFY AND ADVISE THE USER OF THIS PRODUCT OF PROCEDURES THAT MAY BE DANGEROUS TO THE USER OR RESULT IN DAMAGE TO THE PRODUCT.

THIS BULLETIN MUST BE READ COMPLETELY BEFORE INSTALLING, OPERATING, OR SERVICING, THE PUMP.

- **DO NOT** perform service or maintenance when the pumping system is pressurized. Injury or death may occur.
- **DO NOT** operate the pump in a manner that it was not intended to be used.
- **DO NOT** mount the pump such that high piping loads exist on the pump flanges, or 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 known leak exists.
- **DO NOT** continue to operate the pump when unusual noise or vibration occurs.
- **DO NOT** operate beyond the pressure or temperature limits stated in the product literature. See Form 8110.
- **DO NOT** allow severe temperature changes to occur in a short time period within the pumping system.

INSTALLATION:

Install the pump where the inlet is below the liquid level. A valve may be used to isolate the pump for service. The pump is not self-priming and needs the inlet to be flooded at start-up. The motor is splash resistant, not submersible, and should be located in a dry environment.



PIPING/MOUNTING:

The pump inlet and outlet has 1" pipe connections. Use pipe sealant on the threads and other connections. The base does not require direct mounting if one of the pipe flanges is rigid mounted. Do not rigid mount both the flanges and the base to avoid mounting tolerances that may distort the motor base. Install the pump with the shaft in a horizontal direction. Never install the pump vertical with the motor below the pump.

ELECTRICAL:

The motor must be protected from over current by using a fuse or circuit breaker (see chart below for correct protection). The proper minimum wire size is stated for each voltage application. Make sure that the pump has the proper voltage rating to match the installation power. Do not use or install if the voltage on the label is different than the installation. All wire connections must be secure and sealed to protect arcing. Follow all local installation codes.

OPERATION:

The pump should be operated with liquid in the pump otherwise seal damage may occur. If an inlet valve is present, the valve should always be completely open during operation to avoid cavitation. An outlet valve may be used to throttle the flow rate. Avoid repeated starts and stops; the pump can operate for a long period of time without any flow.

REPAIR AND MAINTENANCE:

The pump has a carbon/ceramic seal that may last several thousand hours based upon the application. If the motor is replaced, the mechanical shaft seal should also be replaced. A seal that leaks will show leakage through the slot between the pump housing and the motor. Extreme leakage may damage the motor bearings and contaminate the inside of the motor.

DISASSEMBLY:

1. Remove the three cover screws and remove the cover discarding the o-ring.
2. Secure the motor shaft at the back of the motor and remove the impeller by rotating it counter clockwise.
3. Remove the spring keeper, spring and rotating portion of the seal by pulling them off by hand. A screw driver may be used to pry the seal up if it is sticking.
4. Remove the four capscrews that hold the housing /adaptor assembly onto the motor. Remove the housing /adaptor assembly and push the seal seat out from the back side using a screwdriver.

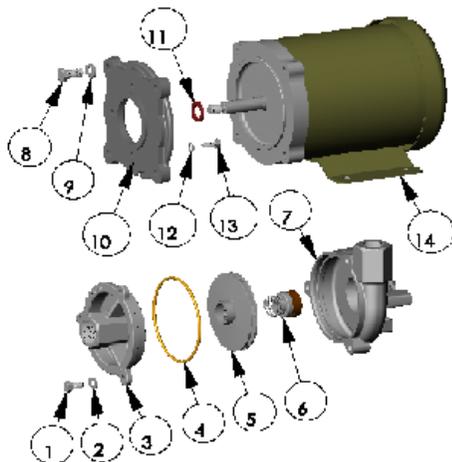
INSPECT PUMP PARTS:

Always replace the mechanical seal. Check the seal for dry run wear or damage. Check the motor shaft for wear at the secondary sealing surface from the mechanical seal. If worn, replace the motor. Check the motor bearings by rotating the motor by hand. If the shaft rotation is not smooth or has radial / axial endplay, replace the motor. Check the impeller running surface between the impeller and cover. If the surfaces are worn or irregular, replace each item.

Clean the parts that are to be reused using a solvent or mild cleaner. Remove abrasive material.

REASSEMBLY:

1. Press the new seal seat into the pump housing. A light lubricant may be used to aid in the assembly. Install the pump housing/adaptor assembly onto the motor and fasten with the four capscrews.
2. Install the rotating portion of the mechanical seal by sliding the seal (carbon side down) over the motor shaft. Place the spring and spring keeper over the back of the rotating portion of the seal.
3. Place the impeller onto the motor shaft, taking care to pilot the spring keeper onto the shoulder at the back of the impeller. Thread the impeller onto the motor shaft until it bottoms out on the shaft. Thread locking grade Loctite should be used to secure the nut.
4. Stretch the o-ring over the cover pilot. Install the cover onto the housing and fasten the capscrews and lockwashers.



ITEM NO.	PART NO.	DESCRIPTION	QTY.	
1	34930	CAPSCREW - S.S. - 5/16-18 X 5/8	3	
2	21238	LOCKWASHER - S.S. - 5/16	3	
*	3	34926	COVER - 316 S.S.	1
*	4	35001	O-RING - VITON	1
*	5	34927	IMPELLER - 316 S.S. - 3.75 DIA.	1
*	6	35052	SEAL - VITON	1
*	7	34924	HOUSING - 316 S.S.	1
8	21251	HEXHEAD CAPSCREW -- S.S. - 3/8-16 X 7/8	4	
9	21266	LOCKWASHER - S.S. - 3/8	4	
*	10	34928	ADAPTER RING - 56C	1
11	21435	SLINGER - NEO. - 1 X .6	1	
12	33564	LOCKWASHER - S.S. - 1/4	4	
13	21504	HEXHEAD CAPSCREW - S.S. - 1/4-20 X 5/8	4	
14	35035	EL. MTR. - 56J TEFC	1	

*- RECOMMENDED REPLACEMENT PARTS



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FORM 3808A (03-07)