Myers®

CENTRIFUGAL PUMPS

INSTALLATION

PACKAGE CONTENTS
1. Each pump is carefully tested and packaged at the factory.
2. The catalog lists all parts included with package. A packing list packed with pump, also lists contents.
3. Be sure all parts have been furnished and that nothing has been damaged in shipment.
4. OPEN PACKAGES AND MAKE THIS CHECK BEFORE GOING ON JOB.

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. 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 at 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 to serve as a shut-off for throttling if capacity is not correct. To protect the pump and foot valve from water hammer and to prevent backflow, 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. Three phase motors require overload protection. Single phase motors equipped with built-in overload protection. **Never install a pump without proper overload protection.** A 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.

If pump does not start immediately, stop and re-prime.

STARTING - It is good practice to 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 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 line 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 - Centrifugal pumps are fitted only with rotary seal. This seal is recommended for water free from abrasives. If liquid contains abrasives, the Centrifugal pump should not be used.

BEARINGS - Lubricate motor bearings in accordance with motor manufacturer's instructions.

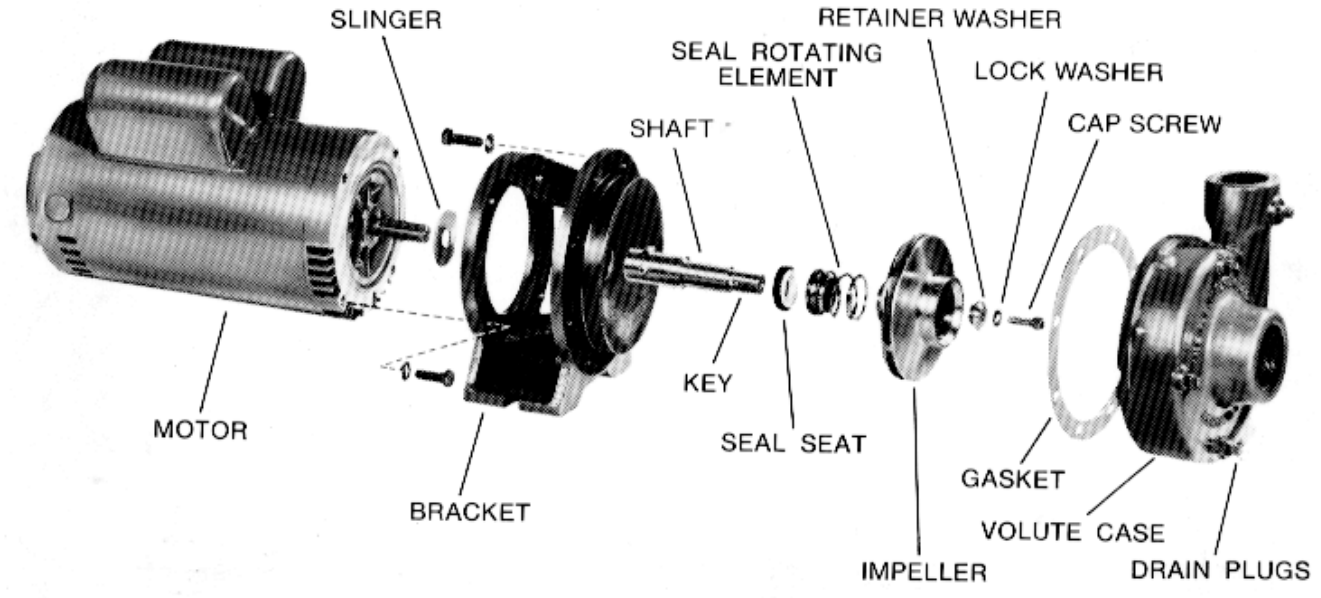
Single seal ball bearings are used on 125B, 150B, 200B bearing bracket units. Proper amount of grease has been provided in the bracket cavity between the bearings. This should be sufficient grease for 4000 hour operation. After this usage the old grease should be cleaned out and new grease added. Use only best grade ball bearing greases.

BELT DRIVES - On V-belt drives, if possible, the tight side of the belt should be at the bottom. Adjust belt tension just tight enough to prevent slippage; excess tension unnecessarily loads the bearings. Normally the belt speed should not exceed 5000 feet per minute and the pulley ratio should not exceed 5 to 1. The distance between the shaft centers should be at least twice the diameter of the larger pulley.

SERVICE

TROUBLE SHOOTING GUIDE

A	No water delivered				
B	Not enough water delivered				
C	Not enough pressure				
D	Pump runs for short while; then loses prime				
	POSSIBLE CAUSE OF PROBLEM	**D**	**C**	**B**	**A**
1.	Pump not properly primed; repeat priming operation				X
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.)			X	X
3.	Excessive volume being discharged. Throttle discharge valve.		X		
4.	Speed too low. Check pump drive belts for slippage. If hot, tighten belts. Check motor voltage and speed.		X	X	
5.	Rotation wrong. Change shaft rotation.		X	X	X
6.	Suction lift too high. Check with vacuum gauge. This should not exceed 15 feet.	X		X	X
7.	Air leak in suction line. Check line under pressure to find leak.	X	X	X	X
8.	Air pocket in suction line. Check line for proper slope.	X			X
9.	Insufficient submergence of suction pipe. Foot valve should be three feet below lowest water level.	X		X	
10.	Sediment chamber clogged. Remove and clean thoroughly. Make sure gsket is in good condition and sealing surfaces clean before reassembly of sediment chamber cap.		X		
11.	Impeller or suction line plugged.		X	X	X
12.	Impeller and volute case badly worn. Disassemble pump; if clearance on diameter is over .030", replace worn impeller and worn volute case.		X	X	
13.	Suction strainer plugged. Clean strainer.	X			
14.	Impeller diameter too small for condition required.		X	X	
15.	Seal leaking - seal is worn or seal face cocked. Replace with new seal and carefully follow directions.				



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

(a) Drain pump case by removing drain plugs.
(b) Remove the bolts securing volute case to pump bracket.
(c) To pry components apart, use two screwdrivers - opposite each other - in openings provided between the bracket and case. (Fig. 1)

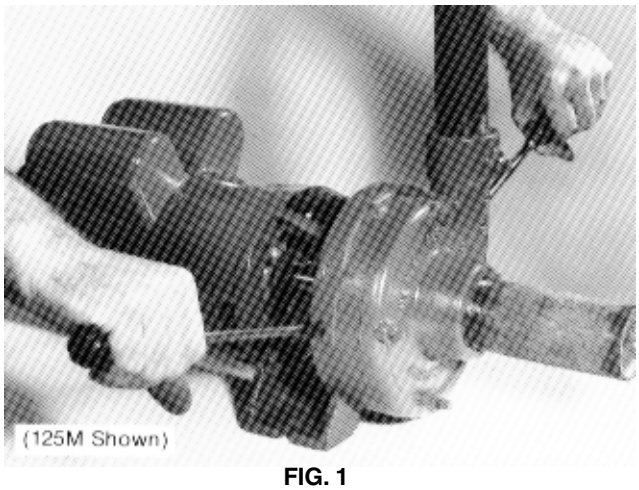


FIG. 1

IMPELLER

(a) Remove impeller by holding stub shaft with water pump pliers and unscrewing capscrew. (Fig. 2)

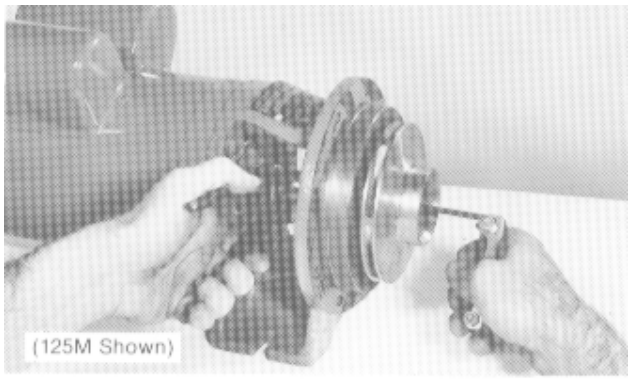


FIG. 2

SEAL

(a) The seal used on 125M, 125B, 150M, 200M, is $^{7}/_{8}$".
(b) Always replace both rotating assembly and stationary ceramic seat. DO NOT USE OLD STATIONARY SEAT WITH NEW ROTATING SEAL ASSEMBLY.
(c) Using two screwdrivers, pry out rotating assembly of shaft seal. (Fig. 3)
(d) Old ceramic ring can be removed from housing by cracking with a chisel or screwdriver without removing the pump shaft.
(e) A new shaft seal should always be used when rebuilding a pump. All pump parts should be cleaned thoroughly before being reassembled.

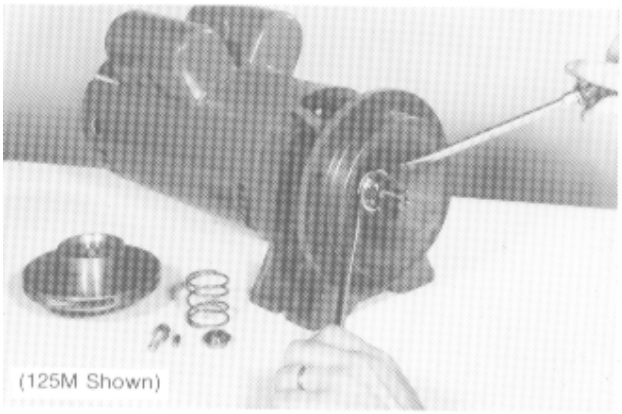


FIG. 3

MOTOR

(a) Remove four bolts holding bracket to motor and remove motor. (Fig. 4)
(b) Remove set screw in stub shaft coupling to disconnect motor pump shaft.

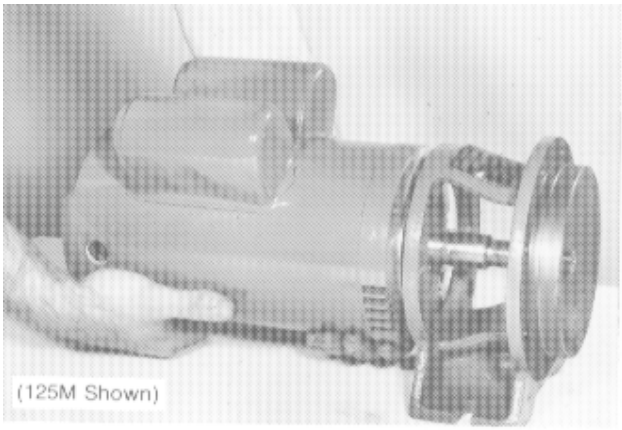


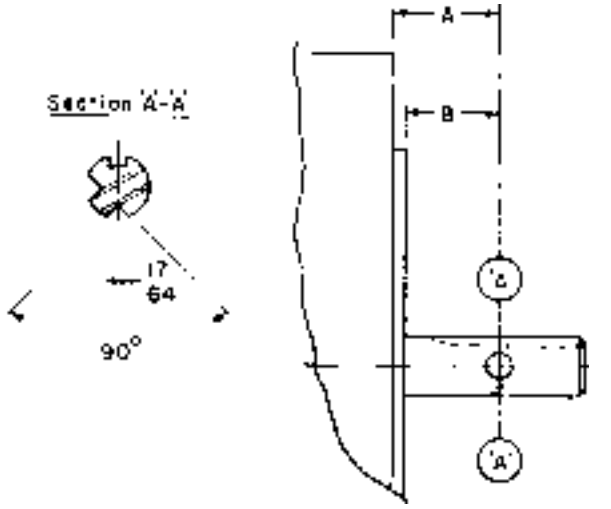
FIG. 4

		IMPELLER	
	H.P.	NUMBER	O.D.
125m	2	11725B2	$5^{3}/_{8}$
	3	11725B3	$5^{13}/_{15}$
150M	2	12935B2	$4^{5}/_{8}$
	3	12935B1	$5^{1}/_{8}$
	5	12935B3	$5^{15}/_{16}$
200M	3	12936B2	$4^{7}/_{16}$
	5	12936B1	$5^{1}/_{8}$
	$7^{1}/_{2}$	12936B3	$5^{3}/_{4}$
125B		11725B3	$5^{13}/_{16}$
150B		12935B3	$5^{15}/_{16}$
200B		12936B3	$5^{3}/_{4}$

FIG. 5

ASSEMBLY INSTRUCTIONS

SPOTTING MOTOR SHAFT - Locate "Spotting Position" from motor mounting face to center of spot. A drilling guide and locating fixture is recommended for uniform and accurate spotting. Make two spots with a drill point, at 90 degrees apart - must be on motor shaft keyway. (Fig. 6)



CATALOG NO.	A	B
125M	1.125 ± .005	---
150M2 & 3	1.125 ± .005	---
150M5	---	1.562 ± .005
200M3	1.125 ± .005	---
200M5 & 7½	---	1.562 ± .005

FIG. 6

MOTOR

(a) Place rubber deflector over motor shaft, slide shaft extension into positon and tighten set screws.

(b) Assemble motor and shaft onto bracket, using (4) $^{3}/_{8}$-16 UNC Hex Head Cap Screws, $1^{1}/_{8}$" long on all except the 150M5, 200M3, 200M5 & $7^{1}/_{2}$. On these units use (4) $^{1}/_{2}$-13UNC Hex Head Cap Screws, $1^{1}/_{4}$" long.

SEAL INSTALLATION

(a) Insert seal seat in position by using finger pressure to press firmly and squarely until it bottoms. The use of light oil (SAE10) on the rubber element will facilitate assembly. Care must be taken to keep oil, grease and dirt off face areas of seal. Be sure the seal faces are not damaged during assembly (cracked, scratched or chipped) or the seal will leak during operation.

(b) Check dimension from face of ceramic seat to shaft shoulder. This distance should be as noted in Figure 7 within a tolerance of ± 1/64.

(c) Install rotating element of seal on shaft (Fig. 8), be sure the lapped sealing surface is toward seal seat, and assemble impeller. Check diameter of impeller against motor horsepower rating to insure proper performance (Fig. 5).

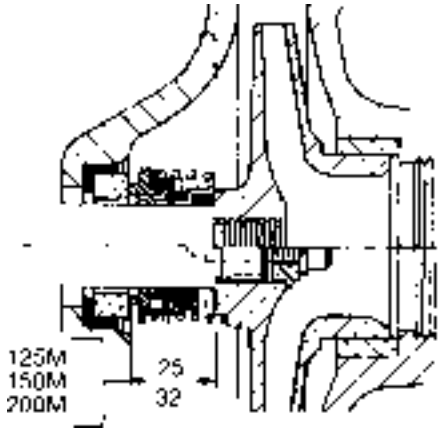


FIG. 7

IMPELLER

(a) Secure impeller using Key (3/16 square x 21/32" log), impeller retainer washer, 5/16 stainless steel helical spring lockwasher and 5/16-18UNC socket head cap screw, 1" long (stainless steel). It is also recommended that a locking type sealant be applied to both cap screw thread prior to assembly.

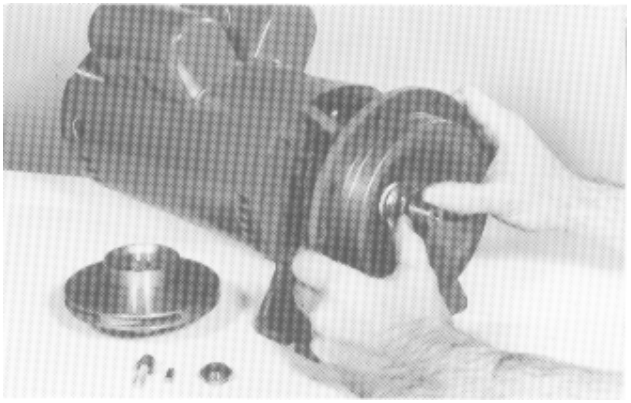


FIG. 8

VOLUTE CASE

(a) Worn volute case will cause excessive leakage with a new impeller, thereby reducing the amount of service obtained from a new impeller.

(b) Assemble gasket and volute case with $^{3}/_{8}$-16UNC Hex Head Cap Screws $1^{1}/_{8}$" long.

Rotate pump shaft with fingers, being sure that there is no tight spot or binding of assembly. A uniform drag of the seal faces will be present.

Myers®

F. E. Myers, 1101 Myers Parkway, Ashland, Ohio 44805-1969
419/289-1144, FAX: 419/289-6658, TLX: 98-7443

Myers (Canada), 269 Trillium Drive, Kitchener, Ontario N2G 4W5
519/748-5470, FAX: 519/748-2553

13800A085 2/97