

Please read and save this Repair Parts Manual. Read this manual and the General Operating Instructions carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. The Safety Instructions are contained in the General Operating Instructions. Failure to comply with the safety instructions accompanying this product could result in personal injury and/or property damage! Retain instructions for future reference.

# SHURflo High Head Pedestal-Mount Centrifugal Pumps

## 316 Stainless Steel, Bronze and Cast Iron Models

Refer to form L-4077 for General Operating and Safety Instructions and Applicable Warranty.

### Description

SHURflo pedestal cast iron, bronze or 316 stainless steel units pump continuously, producing high head conditions. Designed for continuous high-pressure circulation and transfer of non-flammable liquids, utility, boiler feed, general transfer, filtration, cooling towers, condensate return, marine applications, fountains, boosters, water circulation, irrigation, spraying systems, jockey pump service, chemical processing, aggressive liquid applications and other general-purpose pumping compatible with pump component materials where no suction lift or no self-priming is required.

- Capacities to 118 GPM, heads to 148 ft.
- 1/2 to 3 HP AC, NEMA 56J frame and base, ODP and TEFC, single and three-phase motors. Single-phase motors are equipped with thermal overload protection. Overload protection not supplied on three-phase units and must be provided in starter units. Pump control box must be ordered separately.
- Pumps feature maintenance-free ball bearings and an easily accessible front drain plug for draining liquid.
- High head pedestal-mount bronze and 316 stainless steel pumps use 316 stainless steel impellers which provide increased corrosion resistance. Cast iron pumps use cast iron impellers.
- Maximum casing working pressure is 200 PSI.
- 1" to 1½" female NPT inlet and outlet ports.
- Discharge port can be rotated at 90-degree intervals.
- Maximum temperatures to 200° F.
- Standard pump models (at 3450 RPM) will handle specific gravities to 1.1 (at 100 SSU or less). For specific gravities to 1.4 (at 100 SSU or less), increase motor HP by one size but not to exceed standard 3 HP motor at 3450 RPM or 65 in.-lbs. of torque maximum. Higher specific gravity fluids are not recommended.
- Standard pump models (at 3450 RPM) will handle viscosity to 100 SSU (at 1.1 specific gravity or less) and up to 200 SSU (specific gravity of 1.0 or less). For viscosity up to 400 SSU (specific gravity of 1.0 or less), increase motor HP by one size but not to exceed standard 3 HP motor at 3450 RPM or 65 in.-lbs. of torque. For fluids with a viscosity greater than 400 SSU, pump speed must be reduced below 3450 RPM.
- Seals: Pumps are equipped with a carbon ceramic mechanical seal having 316 stainless steel components. These seals protect the 300 series stainless steel motor shaft from chemical exposure. Viton seal and o-ring standard in cast iron, bronze and 316 stainless steel models. Aftermarket options listed below.

**CLOSE-COUPLED** – Complete pump heads and motor combinations are available.

**REPAIR SEALS AND OPTIONS** – Standard (Viton) and an upgraded (Silicon Carbide) seal are available. If abrasive or small, particulated fluids are being pumped, an upgrade to the silicon carbide mechanical seal with Viton elastomers is recommended. Standard and upgraded seals are called out in the repair parts list pages in this manual.

**PUMP HEADS AND PEDESTAL MOUNT BASE** – Complete pump heads and pedestal base can be ordered. Pump head and pedestal model numbers are called out in the repair parts list pages in this manual.



*Do not use to pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Do not use in flammable and/or explosive atmospheres. When pumping hazardous or dangerous materials, use only in room or area designated for that purpose.*

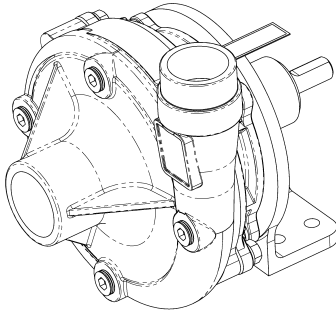
*For your protection, always wear proper clothing, eye protection, etc. in case of any malfunction. For proper handling techniques and cautions, contact your chemical supplier, insurance company and local agencies (fire dept., etc.). Failure to comply with this warning could result in personal injury and/or property damage.*

### **CAUTION**

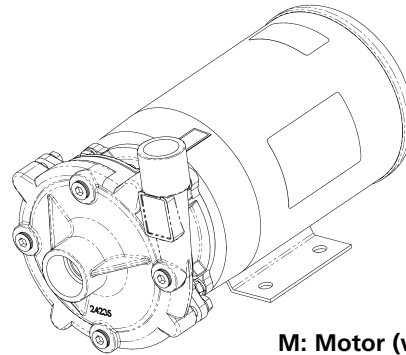
*Pumps are not self-priming and cannot suction lift, flooded inlet is required. If inlet is not flooded when the pump is running, seal failure will result and is not covered under the manufacturer's warranty.*

# SHURflo High Head Pedestal-Mount Centrifugal Pumps 316 Stainless Steel, Bronze and Cast Iron Models

## Model Ordering Codes and Options



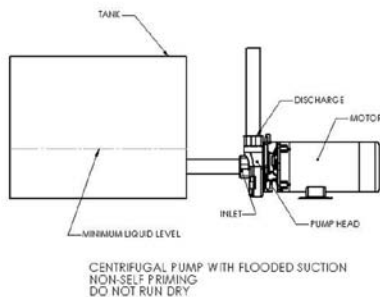
P: Pedestal



M: Motor (with base)

**Example Model: CHPSV4** (will require 1½ HP ODP motor with >1.15 Service Factor\*)  
(motor not supplied with pedestal pump)

1st	2nd	3rd	4th	5th	6th	7th
Series	Mounting	Material	Seal** (Mech)	Impeller Sz. (NPT Ports)	Motor-Mounted Only	
					HP	AC Type
CH: Centrifugal High Head Closed Impeller	M: Motor (with Base) P: Pedestal	S: 316 SS Body and Impeller B: Bronze Body and 316 SS Impeller C: Cast Iron Body and Impeller	B: Buna-N (Stainless Steel Case) V: Viton (Stainless Steel Case) C: Viton (Stainless Steel Case) (Silicon Carbide Seal and Seat Faces)	1 (1" - 1¼") 2 (1" - 1¼") 3 (1" - 1¼") 4 (1½" - 1¼") 5 (1½" - 1¼") 6 (1½" - 1¼")  <i>To identify your impeller size, see chart in owner's manual.</i>	1: 1/3 2: 1/2 3: 3/4 4: 1 5: 1½ 6: 2 7: 3 X: 56J Frame Motor "wet-end kit" Example: CHMSV1X	Blank: no code single phase ODP motor 3: 3 phase ODP motor T: 1 phase TEFC 3T: 3 phase TEFC



**NOTE:** Not all order code combinations (configurations) are standard models available from the manufacturer. Custom model configurations may require ordering standard components and/or optional parts that will need to be assembled by the customer.

Manufacturer reserves the right to change model order codes, standard models, specifications, and performance without notification.

(\*) ODP motors have > 1.15 service factors. Due to service factor, it is recommended TEFC motors are oversized by one HP increment. Pedestal Pumps are not supplied with a motor.

(\*\*) Unless otherwise noted, seal faces are carbon on ceramic.

# 316 Stainless Steel, Bronze and Cast Iron Models

## Performance at 3450 RPM – Standard Models (Water at 70°)

Impeller Size	316 Stainless Steel Models	Bronze Models	Cast Iron Models	HP** Required	GPM of Water at Total Head in Feet*									Max. Head
					10	20	30	40	50	70	90	110	130	
3	CHPSV3	CHPBV3	CHPCV3	1.5	58	56	52	48	44	34	23	3	–	112
6	CHPSV6	CHPBV6	CHPCV6	3	118	114	109	104	98	84	69	50	26	148

## Performance at 2850 RPM – Standard Models (Water at 70°)

Impeller Size	316 Stainless Steel Models	Bronze Models	Cast Iron Models	HP** Required	GPM of Water at Total Head in Feet*									Max. Head
					6.9	13.9	20.8	27.8	34.7	48.6	62.5	76.3	90.2	
3	CHPSV3	CHPBV3	CHPCV3	1	48.3	46.6	43.3	40.0	36.7	28.3	19.2	2.5	–	77.7
6	CHPSV6	CHPBV6	CHPCV6	2	98.3	95.0	90.8	86.6	81.6	70.0	57.5	41.7	21.7	85.0

## Performance at 1725 RPM – Standard Models (Water at 70°)

Impeller Size	316 Stainless Steel Models	Bronze Models	Cast Iron Models	HP** Required	GPM of Water at Total Head in Feet*									Max. Head
					2.5	5.0	7.5	10.0	12.5	17.5	22.5	27.5	32.5	
3	CHPSV3	CHPBV3	CHPCV3	1/2	29.0	28.0	26.0	24.0	22.0	17.0	11.5	1.5	–	28.0
6	CHPSV6	CHPBV6	CHPCV6	1/3	59.0	57.0	54.5	52.0	49.0	42.0	34.5	25.0	13.0	37.0

(\* Test data taken with water at 70°F (to convert data to PSI, divide feet of head by 2.31).

Pump performance when pump is new. As pump wears, the performance will decrease.

(\*\*) AC HP required at specified RPM is HP rated to handle up to 100 SSU at full flow, with a maximum specific gravity of 1.1, or up to 200 SSU at 1.0 specific gravity or less.

**NOTES:** Max. Viscosity = For viscosity up to 400 SSU (at 1.0 specific gravity or less), increase motor HP by one size but not to exceed standard 3 HP motor at 3450 RPM or 65 in.-lbs. of torque. For fluids with a viscosity greater than 400 SSU, pump speed must be reduced below 3450 RPM.

Max. Casing PSI = 200 Max. RPM = 3450

Max. Specific Gravity = up to 1.1 for standard models (at 100 SSU or less); HP must be increased by one size for specific gravities up to 1.4.

Driver data is subject to change without notice; see label on driver for actual specifications.

Manufacturer reserves the right to change performance without notification.

## Specifications – Standard Models

Model	DRIVE			Port Size FNPT	PUMP CONSTRUCTION (Wet End)				Ship Wt. (lbs.)
	Shaft Dia.	Pedestal Base	Shaft Material		Housing	Impeller	Motor Adapter	Seals*	
<b>316 Stainless Steel Models</b>									
CHPSV3	5/8"	CI	316 SS	1¼" x 1"	316 SS	316 SS	316 SS	Viton	16
CHPSV6	5/8"	CI	316 SS	1½" x 1¼"	316 SS	316 SS	316 SS	Viton	19
<b>Bronze Models</b>									
CHPBV3	5/8"	CI	316 SS	1¼" x 1"	BR	316 SS	BR	Viton	17
CHPBV6	5/8"	CI	316 SS	1½" x 1¼"	BR	316 SS	BR	Viton	20
<b>Cast Iron Models</b>									
CHPCV3	5/8"	CI	316 SS	1¼" x 1"	CI	CI	CI	Viton	16
CHPCV6	5/8"	CI	316 SS	1½" x 1¼"	CI	CI	CI	Viton	19

SS = Stainless Steel BR = Bronze CI = Cast Iron

(\*) Shaft Seal also contains 316SS stainless steel, ceramic, and carbon components.

**NOTES:** Standard model codes, less motor, are shown as examples.

Manufacturer reserves the right to change specifications without notification.

# SHURflo High Head Pedestal-Mount Centrifugal Pumps 316 Stainless Steel, Bronze and Cast Iron Models

## Dimensions for Small (Impellers 1-3) High Head Pedestal (Inches)

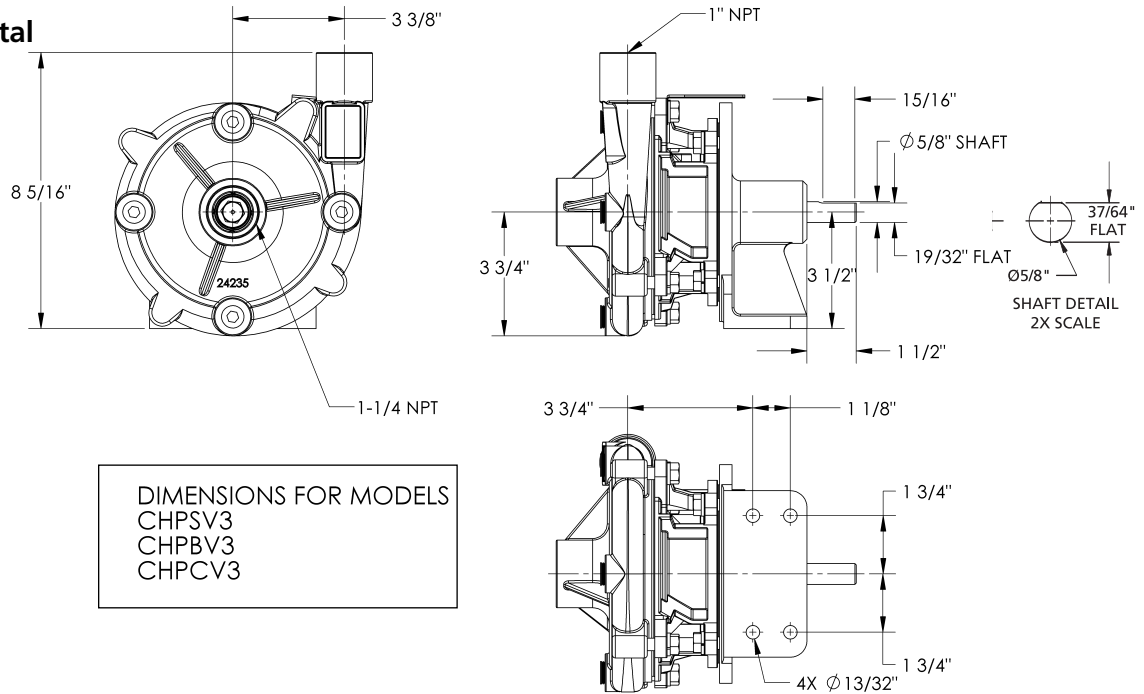
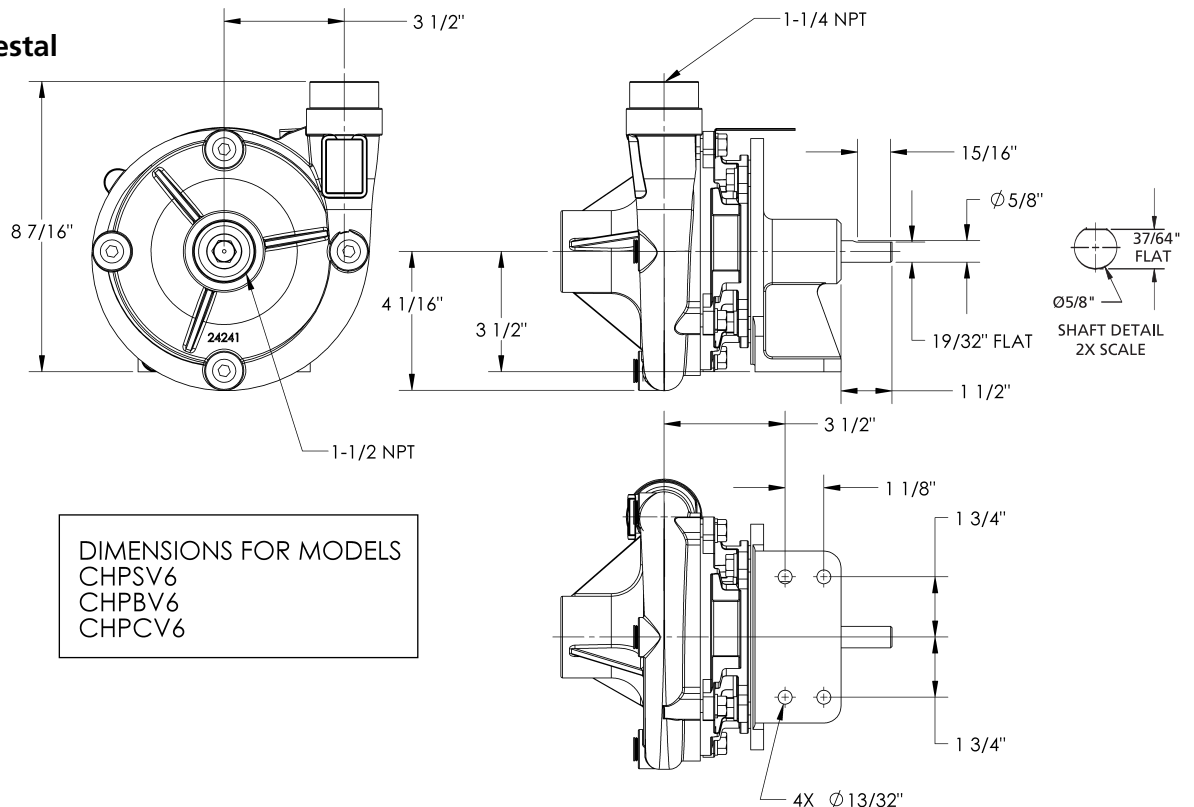


Figure 1 - Dimensions

## Dimensions for Large (Impellers 4-6) High Head Pedestal (Inches)



**To order parts, contact a SHURflo Distributor or Order Direct.**  
Distributors can be found at [www.shurfloindustrial.com](http://www.shurfloindustrial.com).

Please provide following information:  
-Model number  
-Serial number (if any)  
-Part description and number as shown in parts list

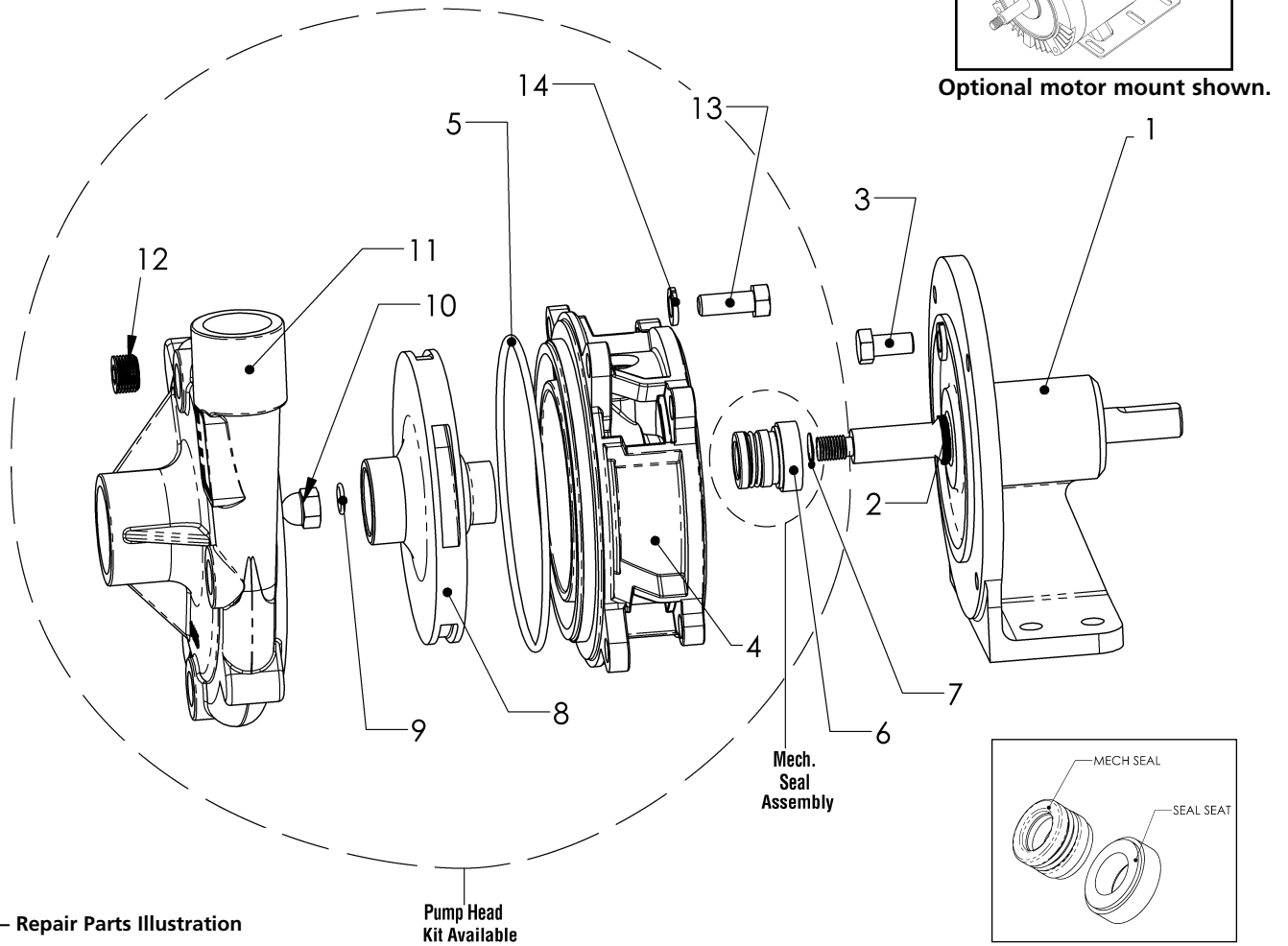


Figure 2 – Repair Parts Illustration

Pump Head  
Kit Available

### Optional Electric Motors Selection

HP	1 Phase ODP P/N	Motor Suffix	3 Phase ODP P/N	Motor Suffix	1 Phase TEFC P/N	Motor Suffix	3 Phase TEFC P/N	Motor Suffix
1/3	14010H	1	NA	13	NA	1T	NA	13T
1/2	14011H	2	24361H	23	24499H	2T	13431H	23T
3/4	14012H	3	14015H	33	13409H	3T	14017H	33T
1	14013H	4	12991H	43	24500H	4T	18741H	43T
1-1/2	14014H	5	14016H	53	13410H	5T	14018H	53T
2	12985H	6	13341H	63	13411H	6T	19495H	63T
3	24364H	7	24365H	73	24366H	7T	23424H	73T

NA = Not Available

**NOTE:** The standard pump and motor combinations are offered with ODP motors which have larger service factors than the same TEFC motor. When mating a TEFC motor to a pump head or replacing an ODP motor with a TEFC motor, use one HP rating higher for 1/3, 1/2, 3/4, 1 and 1-1/2 HP motors.

# SHURflo High Head Pedestal-Mount Centrifugal Pumps 316 Stainless Steel, Bronze and Cast Iron Models

## Repair Parts List for Small High Head Pumps (1")

Ref. No.	Description	316 SS Units	Bronze Units	Cast Iron Units	Qty.
1	Pedestal Assembly**	24479	24479	24479	1
2	5/8" Slinger o-ring	22552	22552	22552	1
3	3/8"-16 x 1" SS hex head cap screw *	2210-0100	2210-0100	2210-0100	4
4	Motor adapter	24237	24339B	24339C	1
5	O-ring, Viton Standard	24348	24348	24348	1
	O-ring, Buna-N Optional	24373	24373	24373	
6	Seal Assembly, Viton/Carbon/Ceramic Standard †	24276S	24276S	24276S	1
	Seal Assembly, Buna-N/ Carbon/Ceramic Optional †	24275S	24275S	24275S	
	Seal Assembly, Viton /Silicon Carbide/Silicon Carbide Optional †	2120-0039S	2120-0039S	2120-0039S	
7	Impeller Shim Package	11933	11933	11933	1
8	Impeller CHPSV3, CHPBV3, CHPCV3	24238S	24238S	24238C	1
9	O-ring Viton Standard	24314	24314	24314	1
	O-ring, Buna-N Optional	22937	22937	22937	
10	7/16-20 acorn nut (24299 - 316 SS, 2250-0084 - 18-8 SS)	24299	2250-0084	2250-0084	1
11	Pump Housing	24235S	24235B	24235C	1
12	3/8" Pipe plug (24236 - 316 SS, 24352 - Brass, 24382 - Zinc Plated Steel)	24236	24352	24382	4
13	3/8"-16 x 3/4" SS hex head cap screw *	13309	13309	13309	4
14	Lockwasher *	2260-0012	2260-0012	2260-0012	8
Complete Pump Heads, small volute, with standard seal (no motor)					
	1/2 HP	CHMSV1X	CHMBV1X	CHCV1X	
	1 HP	CHMSV2X	CHMBV2X	CHCV2X	
	1-1/2 HP	CHMSV3X	CHMBV3X	CHCV3X	

SS = Stainless Steel

(\*) Standard hardware item, available locally.

(\*\*) Slinger comes standard with pedestal bracket (24479).

(†) Sold as set only.

## Repair Parts List for Large High Head Pumps (1-1/2")

Ref. No.	Description	316 SS Units	Bronze Units	Cast Iron Units	Qty.
1	Pedestal Assembly	24479	24479	24479	1
2	5/8" Slinger o-ring	22552	22552	22552	1
3	3/8"-16 x 1" 18-8 hex head cap screw	2210-0100	2210-0100	2210-0100	4
4	Motor adapter	24242	24338B	24338C	1
5	O-ring, Viton Standard	24350	24350	24350	1
	O-ring, Buna-N Optional	24370	24370	24370	
6	Seal Assembly, Viton/Carbon/Ceramic Standard †	24276S	24276S	24276S	1
	Seal Assembly, Buna-N/ Carbon/Ceramic Optional †	24275S	24275S	24275S	
	Seal Assembly, Viton /Silicon Carbide/Silicon Carbide Optional †	2120-0039S	2120-0039S	2120-0039S	
7	Impeller Shim Package	11933	11933	11933	1
8	Impeller CHPSV6, CHPBV6, CHPCV6	24243S	24243S	24243C	1
9	O-ring, Viton Standard	24314	24314	24314	1
	O-ring, Buna-N Optional	22937	22937	22937	
10	7/16-20 acorn nut (24299 - 316 SS, 2250-0084 - 18-8 SS)	24299	2250-0084	2250-0084	1
11	Pump Housing	24241S	24241B	24241C	1
12	3/8" Pipe plug (24236 - 316 SS, 24352 - Brass, 24382 - Zinc Plated Steel)	24236	*24352	*24382	4
13	3/8"-16 X 3/4" 18-8 hex head cap screw	13309	13309	13309	4
14	Lockwasher 18-8	2260-0012	2260-0012	2260-0012	8
Complete Pump Heads, large volute, with standard seal (no motor)					
	2 HP	CHMSV4X	CHMBV4X	CHCV4X	
	2-1/2 HP	CHMSV5X	CHMBV5X	CHCV5X	
	3 HP	CHMSV6X	CHMBV6X	CHCV6X	

SS = Stainless Steel

(\*) Standard hardware item, available locally.

(†) Sold as set only.

# 316 Stainless Steel, Bronze and Cast Iron Models

## Installation Guidelines

**⚠ WARNING** *Make certain that the unit is disconnected from the power source before attempting to service or remove any components!*

1. Pumps should not be directly driven by engines.
2. Never use a rigid coupling between a pump and its driver (electric motor, gas engine, etc.). Some degree of flexibility must be allowed to avoid excessive side loading of the drive and pump bearings.
3. Flexible couplings should be rated for the horsepower load and speed.
4. The pump and drive shaft must be properly aligned. Misalignment will cause unnecessary loads on the pump and driver bearings. Shims may be used to assist in flexible coupling of the pump to the motor.
5. Check the impeller for proper rotation. When viewing the pump inlet, the impeller should rotate counterclockwise. Test the motor or drive for correct rotation as indicated on the pump housing prior to placing the pump in service.

**⚠ DANGER** *Safety shields are required and must be mounted and kept in place while power is supplied to pump drive.*

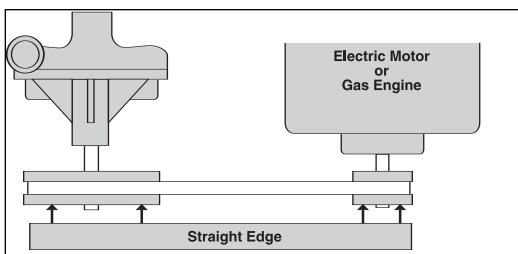
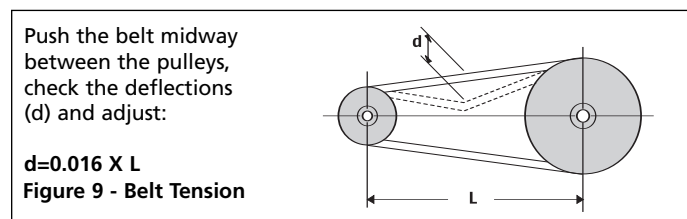


Figure 8 - Pulley Alignment



$d=0.016 \times L$   
Figure 9 - Belt Tension

## Belt/Pulley Drive Installation

1. For pulley-driven pumps, a single 1/2" [12.7 mm] (A or 4L section) "V" belt is satisfactory for drive sizes and speed up to 1 HP, 3450 RPM. For larger sizes, double "V" belts are recommended.
2. Mount pulleys as close to the pump and motor engine shaft bearings as possible. Check alignment with a straight edge as shown in Figure 9. Make sure the belt is properly adjusted. Too much tension will cause bearing failure and too little tension will result in belt slippage (See Figure 9). Check with the belt and pulley suppliers for specific information and recommendations.
3. To calculate the proper diameter of the pump pulley, multiply the motor/engine RPM by the diameter of the motor/engine pulley and divide that figure by the desired pump speed.

$$\text{Pump Pulley Size} = \frac{\text{Motor RPM} \times \text{Motor Pulley}}{\text{Desired Pump Speed}}$$

4. A safety shield (belt shield) must be installed over the pump and motor shaft, pulley and belt coupling.

**NOTE:** Refer to pump performance charts to determine the desired speed to obtain the desired maximum flow.

## Direct Drive – Flexible Coupling Installation

1. Slide the flexible coupling ends onto the motor/engine and pump shafts as far as possible (See Figure 10).
2. Secure but do not tighten the engine/motor and pump to the selected base or location.
3. Laser alignment of the pump shaft and the engine/motor shaft is recommended. If this is not possible, determine the parallel misalignment of the pump shaft and engine/motor shaft by placing a straight edge across the shaft and measure the maximum offset around the periphery of the shafts. Make the necessary corrections to keep the shafts within the parallel misalignment limits (0.015").
4. When aligned, slide the flexible coupling ends over the flexible coupling center; then, secure the flexible coupling ends to the motor/engine and pump shafts (See Figure 10).
5. Tighten the fasteners, securing the pump and engine/motor in the desired location.
6. A safety shield (coupling guard) must be installed over the pump and motor shafts and coupling.

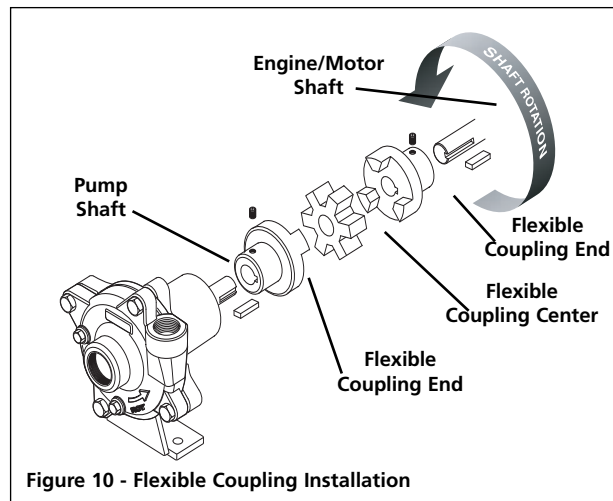


Figure 10 - Flexible Coupling Installation



# SHURflo High Head Pedestal-Mount Centrifugal Pumps

## 316 Stainless Steel, Bronze and Cast Iron Models

### Maintenance

**▲ WARNING** *Make certain that the unit is disconnected from the power source before attempting to service or remove any components!*

#### REMOVAL OF OLD SEAL ASSEMBLY

Should the mechanical seal (Ref. No. 6) require repair, proceed as follows and refer to Figures No. 2, 3, 4, 5 & 6.

**IMPORTANT:** Always replace both the seal seat and seal as an assembly to ensure proper mating of components! Also, the impeller O-ring (Ref. No. 9) should be replaced anytime the impeller lock nut (Ref. No. 10) has been removed.

1. Remove bolts (Ref. No. 3) connecting the housing (Ref. No. 11) to the adapter (Ref. No. 4).

2. Remove the housing.

**▲ CAUTION** *Care should be taken not to pinch or "shave" the O-ring gasket (Ref. No. 5) between the adapter and the housing.*

3. Use a box and/or socket wrench to remove the impeller nut (Ref. No. 10). Remove the impeller O-ring (Ref. No. 9) and the impeller (Ref. No. 8).

**NOTE:** Pedestal shaft must be held in place to remove impeller. Back of the motor either has slot in shaft (use large screwdriver to hold) or has 2 flats on motor shaft (use 7/16" open end wrench to hold). Impeller (Ref. No. 8) and lock nut (Ref. No. 10) unscrew CCW when looking at the front of the pump.

**IMPORTANT:** Care should be taken to ensure that the same number and thickness of shim washers (Ref. No. 7) are replaced behind the impeller as was removed. The shim washers are located directly behind the impeller and become loose as the impeller is removed.

4. The seal (part of Ref. No. 6) can now be pulled from the shaft. (See figure 3).

5. Remove the motor adapter (Ref. No. 4) from the pedestal assembly by removing the adapter bolts (Ref. No. 13).

6. Use a wooden dowel to push out the seal seat (part of Ref. No. 6) from the adapter (Ref. No. 4) (See figure 4).

#### INSTALLATION OF NEW SEAL

##### ASSEMBLY

**▲ CAUTION** *The precision carbon/ceramic faces on the mechanical seal are easily damaged. Handle your repair seal carefully. Do not touch the carbon/ceramic seal faces.*

**IMPORTANT:** Be sure that shaft shoulder does not damage carbon face.

1. Thoroughly clean all surfaces of the seal seat cavity in adapter (Ref. No. 4).
2. Using a clean cloth, wipe the shaft and shaft sleeve and make certain that they are perfectly clean.

**NOTE:** Inspect the motor shaft for scratches or spiral grooves. If they exist, replace motor.

3. Wet the rubber portion of the new seal seat (part of Ref. No. 6) with a light coating of soapy water. While wearing clean gloves or using a clean light rag, press seal seat squarely into adapter recess. Use the cardboard washer (usually supplied with new seal) to place over the polished ceramic surface and use a piece of pipe or dowel rod to press in firmly but gently (See figure 5). Avoid scratching the ceramic face, usually white.
4. Dispose of cardboard washer. Check again to see that ceramic surface is free of dirt and all other foreign particles and that it has not been scratched or damaged.
5. Install the motor adapter (Ref. No. 4) to the pedestal assembly using bolts (Ref. No. 13). Be careful not to damage the seal seat when

sliding over the motor shaft.

6. Wet the inside rubber portion of the new seal (part of Ref. No. 6) with a light coating of soapy water. Slide onto the motor shaft with the precision sealing surface (carbon) facing the seal seat ceramic face (See figure 6). This completes seal installation.

**NOTE:** A short "run-in" period may be necessary to provide completely leakproof seal operation.

7. Screw impeller (Ref. No. 8) onto shaft. Use screwdriver slot at rear of motor shaft (opposite the threaded end) to securely tighten impeller. A drop of removable thread lock should be applied to the impeller threads. Impeller should be torqued to 15 to 18 ft-lbs. (180 to 210 in-lbs.) (See figure 6).

**NOTE:** It may be necessary to remove plug in motor end cap to expose slot. If removed, be sure to reinstall plug AFTER pump is completely assembled.

8. Check if shaft turns freely by spinning impeller. If rubbing or binding is found, remove impeller and add a shim (Ref. No. 7) to shaft, then recheck. Repeat procedure until all rubbing is eliminated.
9. Slide O-ring (Ref. No. 9) onto exposed shaft. Screw acorn nut (Ref. No. 10) onto shaft and tighten to 200 to 225 in-lbs.
10. Place O-ring (Ref. No. 5) on adapter mounting flange. Attach housing using bolts (Ref. No. 3), being careful not to pinch or "shave" O-ring. As the housing is being tightened, periodically spin impeller to check for interference with housing.

**▲ CAUTION** *Seal assembly will produce minor drag when spinning motor shaft, but rubbing anywhere else must be eliminated! Otherwise, damage to pump and/or motor may occur.*



# 316 Stainless Steel, Bronze and Cast Iron Models

## Seal Assembly Removal and Installation (Figures 3 thru 6)

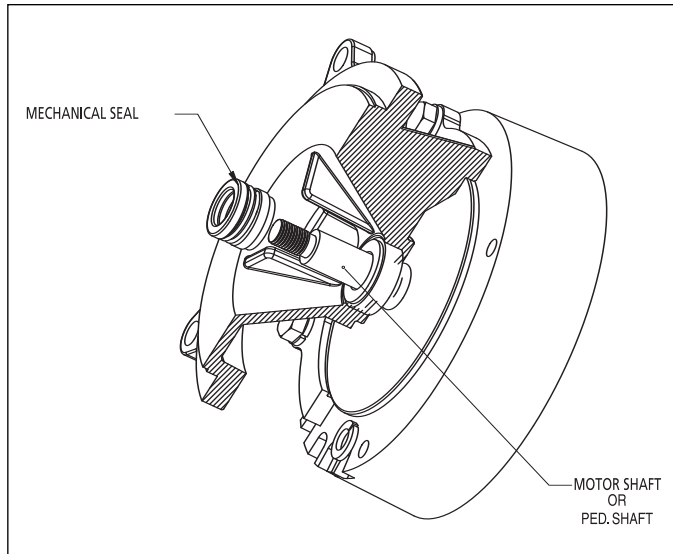


Figure 3 - Seal Removal

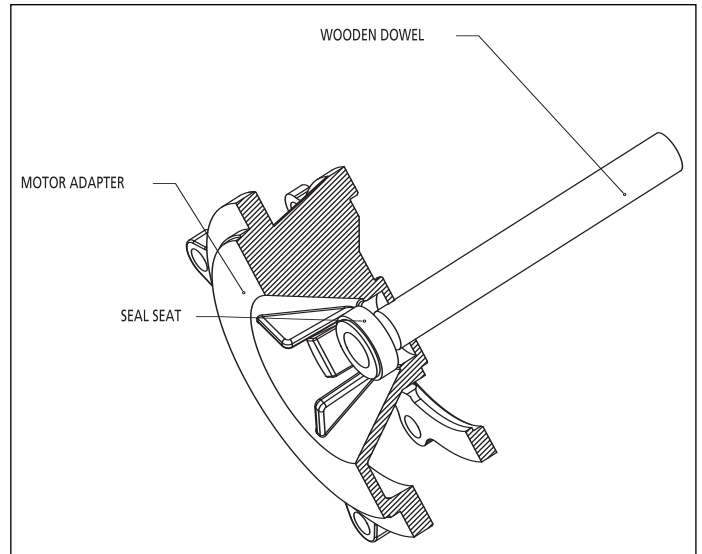


Figure 4 - Seal Seat Removal

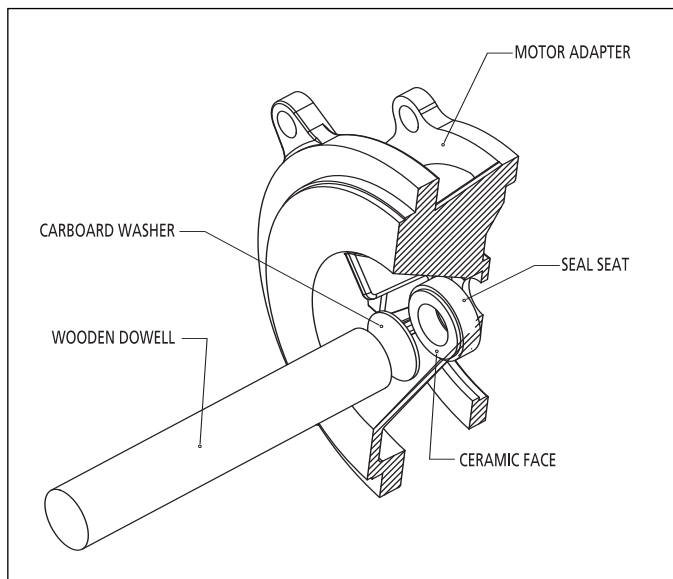


Figure 5 - Seal Seat Installation

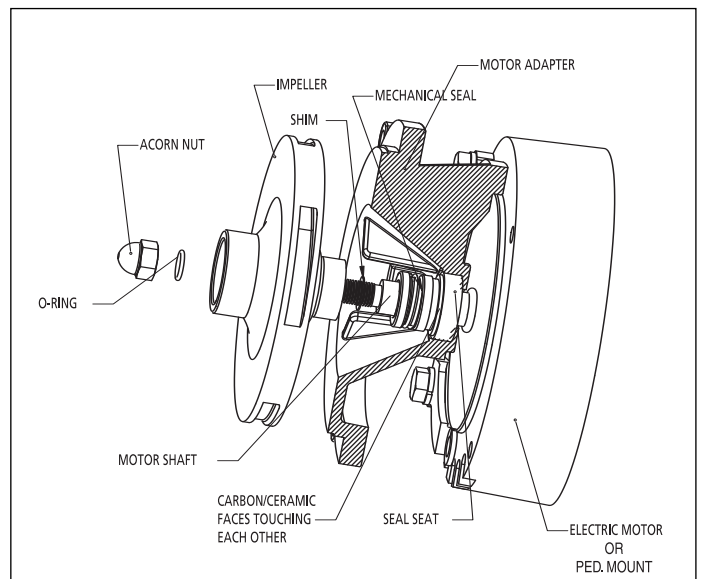


Figure 6 - Seal and Impeller Installation

# SHURflo High Head Pedestal-Mount Centrifugal Pumps 316 Stainless Steel, Bronze and Cast Iron Models

## Troubleshooting Chart

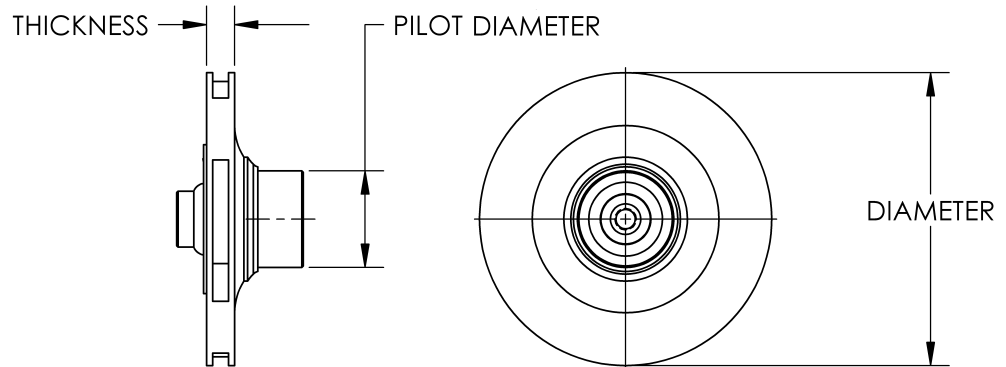
Symptom	Possible Cause(s)	Corrective Action
Pump runs but no fluid	<ol style="list-style-type: none"> <li>1. Faulty suction piping</li> <li>2. Pump located too far from fluid source</li> <li>3. Gate valve closed</li> <li>4. Clogged strainer</li> <li>5. Fouled foot valve</li> <li>6. Discharge height too great</li> <li>7. Suction lift too great</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace</li> <li>2. Relocate</li> <li>3. Open</li> <li>4. Clean or replace</li> <li>5. Clean or replace</li> <li>6. Lower the height</li> <li>7. Lower pump</li> </ol>
Pump will not prime or retain prime after operating	<ol style="list-style-type: none"> <li>1. Air leak in suction line</li> <li>2. Clogged foot valve or strainer</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair or replace</li> <li>2. Clean or replace</li> </ol>
Pump starts and stops pumping	<ol style="list-style-type: none"> <li>1. Fouled impeller</li> <li>2. Faulty mechanical seal</li> <li>3. Leak in suction line</li> <li>4. Leak in foot valve</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean</li> <li>2. Replace</li> <li>3. Repair</li> <li>4. Repair or replace</li> </ol>
Flow rate is low	<ol style="list-style-type: none"> <li>1. Incorrect speed</li> <li>2. Piping is fouled or damaged</li> <li>3. Clogged impeller or worn impeller</li> <li>4. Discharge line restricted or undersized</li> <li>5. High discharge pressure</li> </ol>	<ol style="list-style-type: none"> <li>1. Check drive</li> <li>2. Clean or replace</li> <li>3. Clean or replace</li> <li>4. Flush out piping or replace</li> <li>5. Check and reduce</li> </ol>
Excessive noise while pump in operation	<ol style="list-style-type: none"> <li>1. Pump not secured to firm foundation</li> <li>2. Piping not supported to relieve strain on pump assembly</li> <li>3. Restricted suction line</li> <li>4. Cavitation (noise like marbles in pump)</li> </ol>	<ol style="list-style-type: none"> <li>1. Secure properly</li> <li>2. Make necessary adjustments</li> <li>3. Clean or correct</li> <li>4. <ol style="list-style-type: none"> <li>a. Reduce speed</li> <li>b. Increase inlet size</li> <li>c. Too viscous (thickness of material being pumped too large)</li> </ol> </li> </ol>
Liquid drips from point where shaft enters the pump casing, when pump is full of liquid	<ol style="list-style-type: none"> <li>1. Damaged mechanical seal</li> <li>2. Liquid being pumped is over 200°F or not compatible with seal</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace (See Mechanical Seal Replacement)</li> <li>2. Lower liquid temp. &lt;200°F</li> </ol>
Pump runs but poor performance	<ol style="list-style-type: none"> <li>1. Check pump rotation to see if it is CCW as viewed from motor face. On three-phase motors, rotation must be checked prior to running pump under load.</li> </ol>	<ol style="list-style-type: none"> <li>1. On three-phase motors, switch any two motor wire leads to reverse rotation.</li> </ol>

**⚠WARNING** *Failure to check rotation before pump is run can result in severe damage to the pump and motor unit.*



# SHURflo High Head Pedestal-Mount Centrifugal Pumps 316 Stainless Steel, Bronze and Cast Iron Models

## Impeller Identification Chart



### High Head Centrifugal Impeller Identification

Size	GPM at 10 ft Head	Max. Head	316 SS Part No.	Cast Iron Part No.	Diameter (inches)	Thickness (inches)	Pilot Dia. (inches)
1	42	81	24239S	24239C	4.33	0.56	1.55
2	52	98	24240S	-	4.81	0.56	1.55
2	52	98	-	24240C	4.71	0.56	1.55
3	58	112	24238S	24238C	5.32	0.56	1.55
4	94	110	24245S	24245C	5.10	0.57	1.95
5	107	131	24244S	24244C	5.56	0.57	1.95
6	118	148	24243S	24243C	5.91	0.57	1.95

**NOTE:** Stainless steel impellers are used in the bronze pumps.

