

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 Close-Coupled 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 close-coupled cast iron, bronze or 316 stainless steel units pump continuously, producing high-head conditions. Designed for continuous high-pressure circulation and transfer of nonflammable 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 close-coupled 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 & o-ring standard in cast iron, bronze and 316 stainless steel models. Aftermarket options listed below.

PEDESTAL MODELS – Shurflo pedestals are available and can be long coupled or pulley driven.

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.

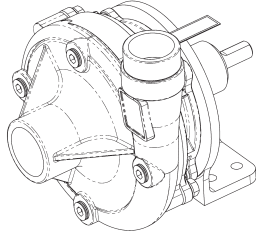
CAUTION

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.

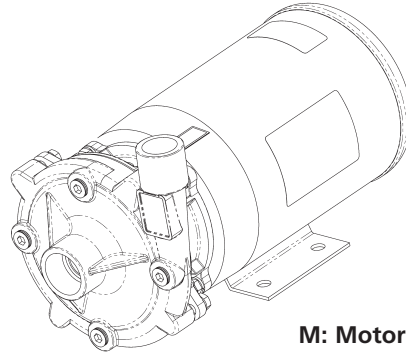
SHURflo High Head Close-Coupled Centrifugal Pumps

316 Stainless Steel, Bronze and Cast Iron Models

Model Ordering Codes and Options



P: Pedestal



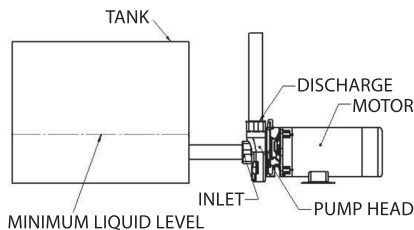
M: Motor (with base)

Example Model:

CHMSV45 (1½ HP ODP motor with >1.15 Service Factor*)
 or **CHMSV46T** (2 HP TEFC motor with 1.0 Service Factor*)

(1) CH (2) M (3) S (4) V (5) 4 (6) 6 (7) T

1st	2nd	3rd	4th	5th	6th	
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



CENTRIFUGAL PUMP WITH FLOODED SUCTION
 NON-SELF PRIMING
 DO NOT RUN DRY

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 – Standard Models (Water at 70°)

Impeller Size	316 Stainless Steel Models	Bronze Models	Cast Iron Models	HP**	10	GPM of Water at Total Head in Feet*								Max. Head
						10	20	30	40	50	70	90	110	
1	CHMSV1X	CHMBV1X	CHMCV1X	1/2	42	39	36	32	28	14	–	–	–	81
2	CHMSV2X	CHMBV2X	CHMCV2X	3/4	52	49	46	42	38	27	12	–	–	98
3	CHMSV3X	CHMBV3X	CHMCV3X	1	58	56	52	48	44	34	23	3	–	112
4	CHMSV4X	CHMBV4X	CHMCV4X	1½	94	90	85	78	71	54	31	–	–	110
5	CHMSV5X	CHMBV5X	CHMCV5X	2	--	--	--	92	87	73	55	32	3	131
5	CHMSV5X	CHMBV5X	CHMCV5X	3	107	103	98	92	87	73	55	32	3	131
6	CHMSV6X	CHMBV6X	CHMCV6X	3	118	114	109	104	98	84	69	50	26	148

(*) Test data taken with water at 70°F for pumps on 60 Hz motors at 3450 RPM motors (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.

Specifications (Pump heads only)

Model Number	SUGGESTED DRIVER (Motor Not Included)				PUMP CONSTRUCTION (Wet End)					Ship Wt. (lbs.)
	HP	NEMA Frame	RPM	Shaft Material	Port Size FNPT	Body	Impeller	Motor Adapter	Seals*	
316 SS Models										
CHMSV1X	1/2	56J	3450	NA	1¼" x 1"	316 SS	316 SS	316 SS	Viton	27
CHMSV2X	3/4	56J	3450	NA	1¼" x 1"	316 SS	316 SS	316 SS	Viton	27
CHMSV3X	1	56J	3450	NA	1¼" x 1"	316 SS	316 SS	316 SS	Viton	28
CHMSV4X	1½	56J	3450	NA	1½" x 1¼"	316 SS	316 SS	316 SS	Viton	38
CHMSV5X	2	56J	3450	NA	1½" x 1¼"	316 SS	316 SS	316 SS	Viton	40
CHMSV6X	3	56J	3450	NA	1½" x 1¼"	316 SS	316 SS	316 SS	Viton	41
Bronze Models										
CHMBV1X	1/2	56J	3450	NA	1¼" x 1"	BR	316 SS	BR	Viton	27
CHMBV2X	3/4	56J	3450	NA	1¼" x 1"	BR	316 SS	BR	Viton	29
CHMBV3X	2	56J	3450	NA	1¼" x 1"	BR	316 SS	BR	Viton	31
CHMBV4X	1½	56J	3450	NA	1½" x 1¼"	BR	316 SS	BR	Viton	39
CHMBV5X	2	56J	3450	NA	1½" x 1¼"	BR	316 SS	BR	Viton	41
CHMBV6X	3	56J	3450	NA	1½" x 1¼"	BR	316 SS	BR	Viton	43
Cast Iron Models										
CHMCV1X	1/2	56J	3450	NA	1¼" x 1"	CI	CI	CI	Viton	26
CHMCV2X	3/4	56J	3450	NA	1¼" x 1"	CI	CI	CI	Viton	27
CHMCV3X	2	56J	3450	NA	1¼" x 1"	CI	CI	CI	Viton	28
CHMCV4X	1½	56J	3450	NA	1½" x 1¼"	CI	CI	CI	Viton	35
CHMCV5X	2	56J	3450	NA	1½" x 1¼"	CI	CI	CI	Viton	37
CHMCV6X	3	56J	3450	NA	1½" x 1¼"	CI	CI	CI	Viton	39

SS = Stainless Steel BR = Bronze CI = Cast Iron

(*) Standard shaft seals have carbon on ceramic faces and 316 SS components.

NOTE: Manufacturer reserves the right to change specifications without notification.

316 Stainless Steel, Bronze and Cast Iron Models

Specifications

Model	DRIVER									PUMP CONSTRUCTION (Wet End)				Ship Wt.			
	Motor	NEMA	Motor	Full Load	Service Factor	Overload			Port Size	Motor							
Cast Iron Models																	
CHMCV12	1/2	ODP	56J	115/208-230	11.10/6.50-5.55	12.4/6.8-6.2	60	1	Yes	3450	303 SS	1 1/4" x 1"	CI	CI	CI	Viton	43
CHMCV123	1/2	ODP	56J	208-230/460	1.85-1.85/0.92	2.53/1.27	60	3	No	3450	303 SS	1 1/4" x 1"	CI	CI	CI	Viton	43
				190/380	2.04/1.02	**	50	3	No	2830							
CHMCV23	3/4	ODP	56J	115/208-230	13.00/7.20-6.50	15.30/8.45-7.65	60	1	Yes	3450	303 SS	1 1/4" x 1"	CI	CI	CI	Viton	44
CHMCV13T	3/4	TEFC	56J	115/208-230	9.80/5.40-4.90	10.6/5.30	60	1	Yes	3450	303 SS	1 1/4" x 1"	CI	CI	CI	Viton	46
CHMCV233	3/4	ODP	56J	208-230/460	2.45-2.39/1.20	3.59/1.80	60	3	No	3450	303 SS	1 1/4" x 1"	CI	CI	CI	Viton	44
				190/380	2.88/1.44	1.0***	50	3	No	2830							
CHMCV133T	3/4	TEFC	56J	208-230/460	2.50-2.30/1.15	2.60/1.30	60	3	No	3450	303 SS	1 1/4" x 1"	CI	CI	CI	Viton	46
				190/380	2.70/1.35	**	50	3	No	2830							
CHMCV24T	1	TEFC	56J	115/208-230	12.20/6.75-6.10	17.0/8.5	60	1	Yes	3450	303 SS	1 1/4" x 1"	CI	CI	CI	Viton	46
CHMCV243T	1	TEFC	56J	208-230/460	3.19-2.88/1.44	3.31/1.65	60	3	No	3510	304 SS	1 1/4" x 1"	CI	CI	CI	Viton	44
				190-220/380-415	3.26-2.98/1.63-1.58	**	50	3	No	2885							
CHMCV34	1	ODP	56J	115/208-230	12.40/6.85-6.20	15.70/8.70-7.85	60	1	Yes	3450	303 SS	1 1/4" x 1"	CI	CI	CI	Viton	47
CHMCV343	1	ODP	56J	208-230/460	3.17-3.11/1.55	4.07/2.03	60	3	No	3450	303 SS	1 1/4" x 1"	CI	CI	CI	Viton	45
				190/380	3.70/1.83	**	50	3	No	2830							
CHMCV35T	1 1/2	TEFC	56J	115/208-230	16.60/9.00-8.30	18.94/9.47	60	1	Yes	3450	303 SS	1 1/4" x 1"	CI	CI	CI	Viton	51
CHMCV353T	1 1/2	TEFC	56J	208-230/460	4.14-3.74/1.87	4.30/2.15	60	3	No	3520	304 SS	1 1/4" x 1"	CI	CI	CI	Viton	49
				190-220/380-415	4.44-3.90/2.22-2.07	**	50	3	No	2895							
CHMCV45	1 1/2	ODP	56J	115/208-230	17.00/9.35-8.50	21.00/10.40-10.50	60	1	Yes	3450	303 SS	1 1/2" x 1 1/4"	CI	CI	CI	Viton	57
CHMCV453	1 1/2	ODP	56J	208-230/460	4.50-4.26/2.13	5.52/2.77	60	3	No	3450	303 SS	1 1/2" x 1 1/4"	CI	CI	CI	Viton	54
				190/380	5.18/2.59	**	50	3	No	2830							
CHMCV46T	2	TEFC	56J	115/208-230	19.4/10.7-9.7	22.16/11.08	60	1	Yes	3450	303 SS	1 1/2" x 1 1/4"	CI	CI	CI	Viton	64
CHMCV463T	2	TEFC	56J	208-230/460	5.46-4.94/2.47	5.68/2.84	60	3	No	3520	304 SS	1 1/2" x 1 1/4"	CI	CI	CI	Viton	60
				190-220/380-415	5.94-5.23/2.97-2.77	**	50	3	No	2875							
CHMCV56	2	ODP	56J	115/208-230	23.0/12.6-11.5	24.5/13.5-12.25	60	1	Yes	3450	303 SS	1 1/2" x 1 1/4"	CI	CI	CI	Viton	63
CHMCV563	2	ODP	56J	208-230/460	5.80-5.20/2.60	6.20/3.10	60	3	No	3450	303 SS	1 1/2" x 1 1/4"	CI	CI	CI	Viton	58
				190/380	6.40/3.20	**	50	3	No	2830							
CHMCV67	3	ODP	56J	208-230	15.3-13.5	**	60	1	Yes	3450	303 SS	1 1/2" x 1 1/4"	CI	CI	CI	Viton	69
CHMCV57T	3	TEFC	56J	208-230	13.3-12.2	**	60	1	Yes	3450	303 SS	1 1/2" x 1 1/4"	CI	CI	CI	Viton	73
CHMCV673	3	ODP	56J	208-230/460	8.42-7.65/3.83	9.00/4.50	60	3	No	3450	303 SS	1 1/2" x 1 1/4"	CI	CI	CI	Viton	64
				190/380	6.32/3.16	**	50	3	No	2830							
CHMCV573T	3	TEFC	56J	208-230/460	7.76-7.02/3.51	8.07/4.03	60	3	No	3500	304 SS	1 1/2" x 1 1/4"	CI	CI	CI	Viton	68
				190-220/380-415	8.50-7.38/4.25-3.91	**	50	3	No	2870							

BR = Bronze SS = Stainless Steel CI = Cast Iron ODP = Open Drip-Proof TEFC = Totally Enclosed Fan Cooled
(* Standard Shaft Seals have carbon on ceramic faces and 316 SS components.

(**) At 208 volts or 50 hertz, the Service Factor Amps are the same as the Full Load Amps.

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

All motors include a base (the base may be removable, movable or welded). Motors are not supplied with power cords.

Manufacturer reserves the right to change specifications without notification.

Standard motors listed above are not wash-down or explosion-proof (manufacturer does not stock wash-down or explosion-proof motors).

Thermal overload protection is standard on all single-phase motors (overload protector may have automatic or manual reset); three-phase motors are not provided with thermal overload protection.

Manufacturer does not specify regulatory compliance for UL, UR, CSA or CE; however most models do comply to UL, UR, CSA and CE.

SHURflo High Head Close-Coupled Centrifugal Pumps

316 Stainless Steel, Bronze and Cast Iron Models

Dimensions (Inches)

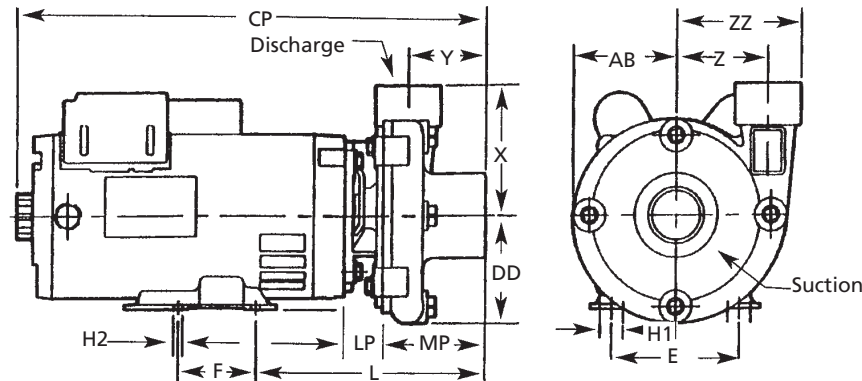


Figure 1 - Dimensions

316 SS	Bronze	Cast Iron	Suc.*	Dis.*	AB†	CP†	DD	E	F	H1	H2	L	LP	MP	X	Y	Z	ZZ
CHMSV12	CHMBV12	CHMCV12	1/4	1	3.55	13.00	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV123	CHMBV123	CHMCV123	1/4	1	3.55	13.50	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV23	CHMBV23	CHMCV23	1/4	1	3.55	13.50	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV233	CHMBV233	CHMCV233	1/4	1	3.55	13.75	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV24T	CHMBV24T	CHMCV24T	1/4	1	3.55	15.15	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV243T	CHMBB243T	CHMCV243T	1/4	1	3.55	15.98	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV34	CHMBV34	CHMCV34	1/4	1	3.55	14.00	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV343	CHMBV343	CHMCV343	1/4	1	3.55	14.13	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV13T	CHMBV13T	CHMCV13T	1/4	1	3.55	14.92	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV133T	CHMBV133T	CHMCV133T	1/4	1	3.55	14.30	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV35T	CHMBV35T	CHMCV35T	1/4	1	3.55	16.17	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV353T	CHMBV353T	CHMCV353T	1/4	1	3.55	16.52	3.72	4.88	3.00	0.88	0.34	8.22	2.03	2.83	4.79	2.15	3.35	4.42
CHMSV45	CHMBV45	CHMCV45	1/2	1/4	3.93	15.00	4.04	4.88	3.00	0.88	0.34	8.84	1.47	4.01	4.94	3.00	3.49	4.76
CHMSV453	CHMBV453	CHMCV453	1/2	1/4	3.93	15.25	4.04	4.88	3.00	0.88	0.34	8.84	1.47	4.01	4.94	3.00	3.49	4.76
CHMSV56	CHMBV56	CHMCV56	1/2	1/4	3.93	15.62	4.04	4.88	3.00	0.88	0.34	8.84	1.47	4.01	4.94	3.00	3.49	4.76
CHMSV563	CHMBV563	CHMCV563	1/2	1/4	3.93	15.75	4.04	4.88	3.00	0.88	0.34	8.84	1.47	4.01	4.94	3.00	3.49	4.76
CHMSV67	CHMBV67	CHMCV67	1/2	1/4	3.93	16.87	4.04	4.88	3.00	0.88	0.34	8.84	1.47	4.01	4.94	3.00	3.49	4.76
CHMSV673	CHMBV673	CHMCV673	1/2	1/4	3.93	16.62	4.04	4.88	3.00	0.88	0.34	8.84	1.47	4.01	4.94	3.00	3.49	4.76
CHMSV46T	CHMBV46T	CHMCV46T	1/2	1/4	3.93	17.17	4.04	4.88	3.00	0.88	0.34	8.84	1.47	4.01	4.94	3.00	3.49	4.76
CHMSV463T	CHMBV463T	CHMCV463T	1/2	1/4	3.93	17.65	4.04	4.88	3.00	0.88	0.34	8.84	1.47	4.01	4.94	3.00	3.49	4.76
CHMSV57T	CHMBV57T	CHMCV57T	1/2	1/4	3.93	18.04	4.04	4.88	3.00	0.88	0.34	8.84	1.47	4.01	4.94	3.00	3.49	4.76
CHMSV573T	CHMBV573T	CHMCV573T	1/2	1/4	3.93	14.16	4.04	4.88	3.00	0.88	0.34	8.84	1.47	4.01	4.94	3.00	3.49	4.76

NOTE: Dimensions have a tolerance of $\pm 1/8"$.

(*) Standard NPT (female) pipe thread.

(†) This dimension may vary due to motor manufacturer's specifications.

(Optional) Pedestal Pump Mount
Part Number 24479
(Replaces 56J frame motor)
(When long coupling or pulley
drive is required)



NOTE: Dimensions have a tolerance of $\pm 1/8"$.

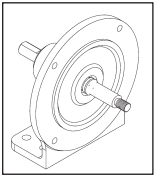
(Ø) Diameter.

316 Stainless Steel, Bronze and Cast Iron Models

To order parts, contact a SHURflo Distributor or Order Direct.
Distributors can be found at www.shurfloindustrial.com.

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list



Optional Pedestal Base

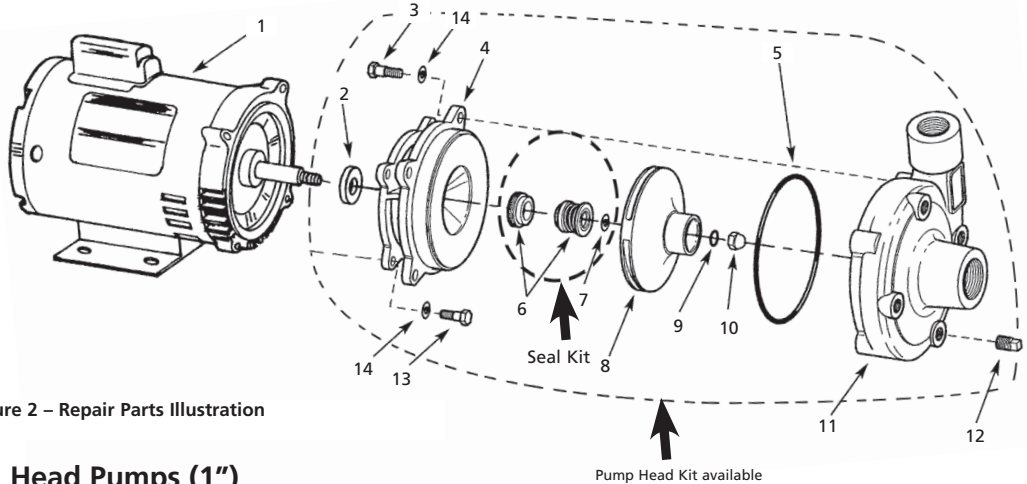


Figure 2 - Repair Parts Illustration

Pump Head Kit available

Repair Parts For Small High Head Pumps (1")

Ref. No.	Description	316 SS Units			Bronze Units	Cast Iron Units	Qty.
		S			B	C	
1**	Motor	1/2 HP, 1 PH, ODP	"-----2"	14011H	14011H	14011H	1
		1/2 HP, 3PH, ODP	"-----23"	24361H	24361H	24361H	
		3/4 HP, 1PH, ODP	"-----3"	14012H	14012H	14012H	
		3/4 HP, 3PH, ODP	"-----33"	14015H	14015H	14015H	
		1 HP, 1PH, ODP	"-----4"	14013H	14013H	14013H	
		1 HP, 3PH, ODP	"-----43"	12991H	12991H	12991H	
		1-1/2 HP, 1PH, TEFC	"-----5T"	13410H	13410H	13410H	
		1-1/2 HP, 3PH, TEFC	"-----53T"	14018H	14018H	14018H	
		3/4 HP, 1PH, TEFC	"-----3T"	13409H	13409H	13409H	
		3/4 HP, 3PH, TEFC	"-----33T"	14017H	14017H	14017H	
(Note: The last digits shown refer to the model ordering code for electric motors.)**							
2	5/8 Slinger o-ring (comes standard with motor)			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
	Order Code "----V--" Example CHMSV67						
	Seal Assembly, Buna-N/ Carbon/Ceramic Optional †			24275S	24275S	24275S	
	Order Code "----B--" Example CHMCB34						
	Seal Assembly, Viton/Silicon Carbide/Silicon Carbide Optional †			2120-0039S	2120-0039S	2120-0039S	
	Order Code "----C--" Example CNMSC67						
7	Impeller Shim Package-316SS		11933	11933	11933	1	
8	Impeller					1	
	Order Code "-----1-" Example CHMSV13T			24239S	24239S	24239C	
	Order Code "-----2-" Example CHMCV233			24240S	24240S	24240C	
	Order Code "-----3-" Example CHMBV35T			24238S	24238S	24238C	
(Note: The first number is the impeller size and will determine the performance of the pump.)							
9	O-ring, Viton Standard			24314	24314	24314	1
	O-ring, Buna-N Optional			22937	22937	22937	
10	7/16-20 acorn nut (24299-316SS, 2250-0084, 18-8 SS)			24299	2250-0084	2250-0084	1
11	Pump Housing			24235S	24235B	24235C	1
12	3/8" Pipe plug (23236-316SS, 29352-Bronze, 24382-Zinc Plated Steel)			24236	24352	24382	4
13	3/8"-16 x 3/4" hex head cap screw *			13309	13309	13309	4
14	Lockwasher *			2260-0012	2260-0012	2260-0012	8
15	Optional Pedestal Bracket (Can be substituted for any motor when a pulley drive or long coupled pump is desired)			24479	24479	24479	
16	Complete Pump Heads, small volute, with standard seal (no motor)						
	1/2 HP			CHMSV1X	CHMBV1X	CHMCV1X	
	1 HP			CHMSV2X	CHMBV2X	CHMCV2X	
	1-1/2 HP			CHMSV3X	CHMBV3X	CHMCV3X	

NOTES: The recommended HP's for the pump heads are based on ODP motors. When using TEFC motors, increase HP by one size.

SS = Stainless Steel

(*) Standard hardware item, available locally.

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

(†) Sold as set only.

SHURflo High Head Close-Coupled Centrifugal Pumps 316 Stainless Steel, Bronze and Cast Iron Models

Repair Parts For Large High Head Pumps (1-1/2")

Ref. No.	Description	316 SS Units	Bronze Units	Cast Iron Units	Qty.
		S	B	C	
1**Motor	1-1/2 HP, 1PH, ODP "-----5"	14014H	14014H	14014H	1
	1-1/2 HP, 3PH, ODP "-----53"	14016H	14016H	14016H	
	2 HP, 1PH, ODP "-----6"	12985H	12985H	12985H	
	2 HP, 3PH, ODP "-----63"	13341H	13341H	13341H	
	2 HP, 1PH, TEFC "-----6T"	13411H	13411H	13411H	
	2 HP, 3PH, TEFC "-----63T"	19495H	19495H	19495H	
	3 HP, 1PH, ODP "-----7"	24364H	24364H	24364H	
	3 HP, 3PH, ODP "-----73"	24365H	24365H	24365H	
	3 HP, 1PH, TEFC "-----7T"	24366H	24366H	24366H	
	3 HP, 3PH, TEFC "-----73T"	23424H	23424H	23424H	
(Note: The last digits shown refer to the model ordering code for electric motors.)**					
2	5/8 Slinger o-ring (comes standard with motor)	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 † Order Code "----V--" Example CHMSV67	24276S	24276S	24276S	1
	Seal Assembly, Buna-N/ Carbon/Ceramic Optional † Order Code "----B--" Example CHMCB34	24275S	24275S	24275S	
	Seal Assembly, Viton/Silicon Carbide/Silicon Carbide Optional † Order Code "----C--" Example CNMSC67	2120-0039S	2120-0039S	2120-0039S	
7	Impeller Shim Package-316SS 11933	11933	11933	1	
8	Impeller			1	
	Order Code "-----4-" Example CHMSV45T	24245S	24245S	24245C	
	Order Code "-----5-" Example CHMCV56	24244S	24244S	24244C	
	Order Code "-----6-" Example CHMBV673	24243S	24243S	24243C	
(Note: The first number is the impeller size and will determine the performance of the pump.)					
9	O-ring, Viton Standard	24314	24314	24314	1
	O-ring, Buna-N Optional	22937	22937	22937	
10	7/16-20 acorn nut (24299-316SS, 2250-0084, 18-8 SS)	24299	2250-0084	2250-0084	1
11	Pump Housing	24241S	24241B	24241C	1
12	3/8" Pipe plug (23236-316SS, 29352-Bronze, 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
15	Optional Pedestal Bracket (Can be substituted for any motor when a pulley drive or long coupled pump is desired)	24479	24479	24479	
16	Complete Pump Heads, large volute, with standard seal (no motor)				
	2 HP	CHMSV4X	CHMBV4X	CHMCV4X	
	2-1/2 HP	CHMSV5X	CHMBV5X	CHMCV5X	
	3 HP	CHMSV6X	CHMBV6X	CHMCV6X	

NOTES: The recommended HP's for the pump heads are based on ODP motors. When using TEFC motors, increase HP by one size.

SS = Stainless Steel

(*) Standard hardware item, available locally.

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

(†) Sold as set only.

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: Motor 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 motor 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 motor 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.

SHURflo High Head Close-Coupled Centrifugal Pumps 316 Stainless Steel, Bronze and Cast Iron Models

Seal Assembly Removal and Installation (Figures 3 thru 6)

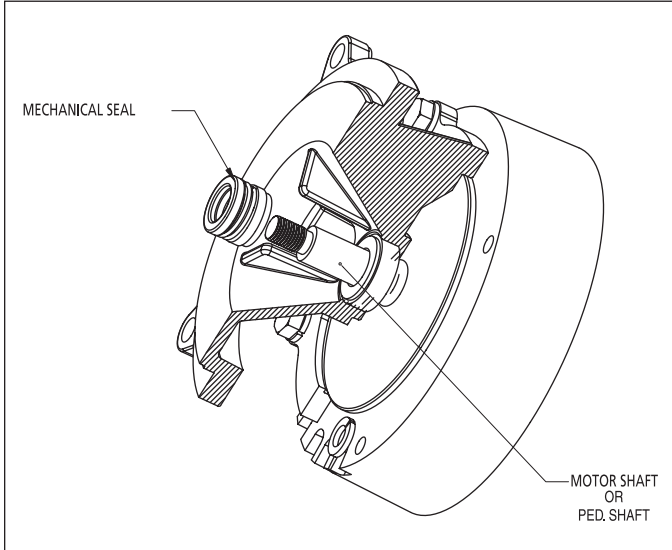


Figure 3 - Seal Removal

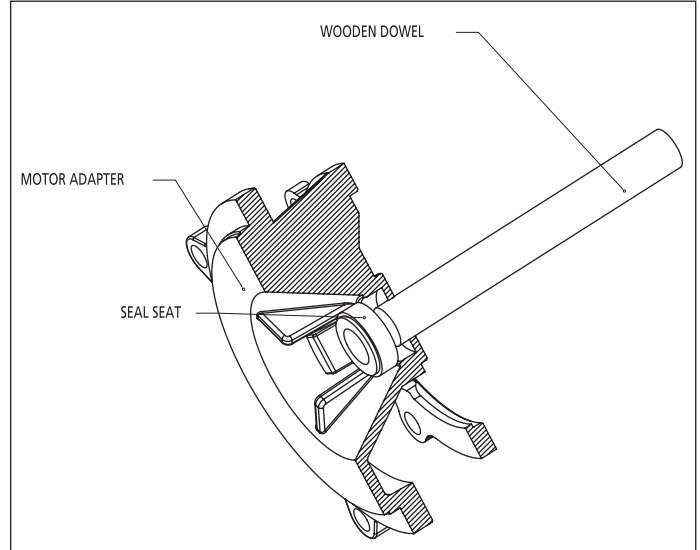


Figure 4 - Seal Seat Removal

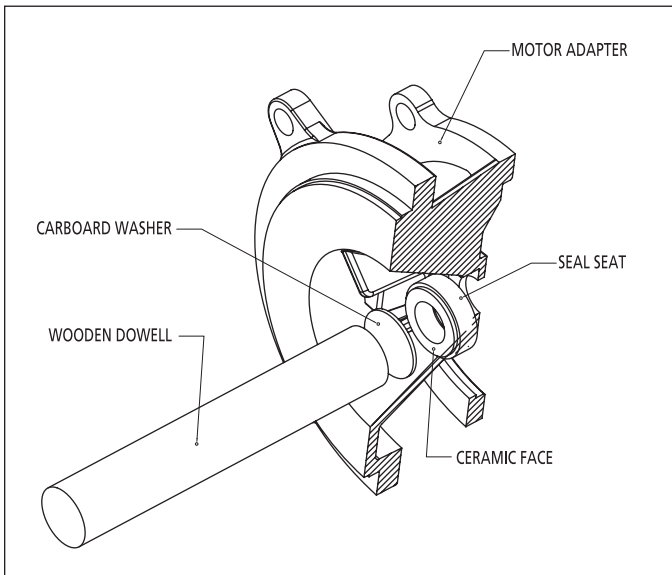


Figure 5 - Seal Seat Installation

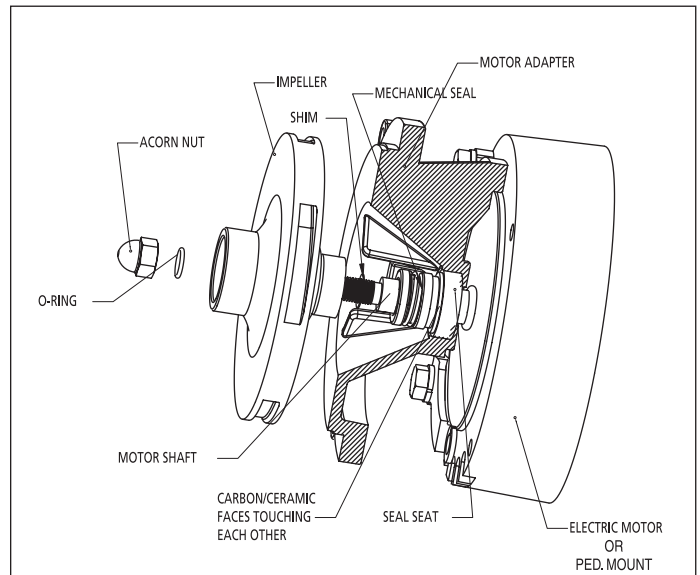


Figure 6 - Seal and Impeller Installation

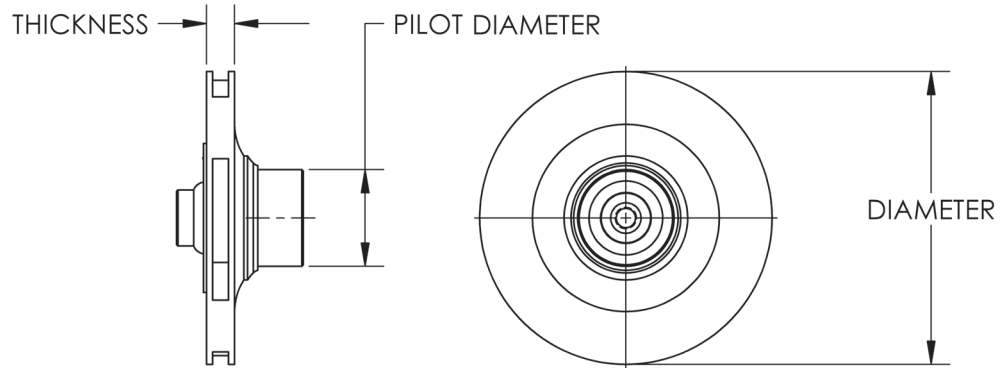
316 Stainless Steel, Bronze and Cast Iron Models

Troubleshooting Chart

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

SHURflo High Head Close-Coupled 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	Part No. 316 SS	Part No. Cast Iron	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.

