

## BERKELEY®

### Installation

Size the suction and discharge pipes as shown in Chart 1.

1. Make sure the suction line always slopes up to the pump inlet and that there are no sags (which can form air pockets and prevent priming) in the pipe.
2. Install a foot valve the same size as the suction pipe on the pipe's inlet. Fill the foot valve with water to make sure that it closes and does not leak. Make sure that the valve will open.
3. Screw the foot valve onto the end of the suction pipe and lower it into the water. The foot valve should be at a least one foot deep in the water to avoid cavitation (sucking air). Maximum vertical distance to water from the center of the pump's inlet port is 25 feet.
4. Add pipe to reach the pump. Include a union close to the pump for ease of service.

**NOTE:** Be sure all joints in the suction pipe are air-tight. The pump cannot prime or operate if there are air leaks in the suction pipe.

5. Install discharge pipe as required, using Chart 1 for sizing. Install a tee (tail up, with a plug in the tail) close to the pump discharge port to allow for priming.

### Sheave (Pulley) Considerations

**WARNING! V-Belts can cut off fingers or hands when operating.** Keep hands away from drive pulleys while pump is operating. Install guards to fit your installation.

The pump comes from the factory with the correct diameter pulley installed. **DO NOT CHANGE THE PULLEY.** See Bulletin 4163 for more information.

### Motor Mounting

1. Bolt the motor and pump to a steel or heavy wood base plate.
2. Connect the incoming power to the motor and check the motor rotation. Do this **BEFORE** installing the V-belt. Match motor rotation to the direction of the rotation arrow on the pump case.

**NOTE:** Rotating the pump in the direction opposite to the rotation arrow will cause severe damage to the impeller and shaft.

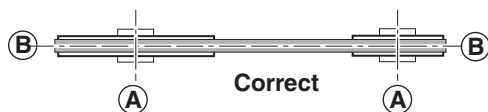
3. Align the V-belt. The belt should be just tight enough to prevent slippage; overtightening the belt will overload the motor.
4. All pump bearings are sealed and do not require lubrication for the life of the bearing.

### Priming

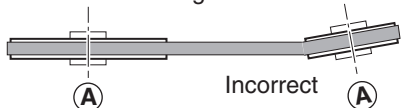
1. Through the tee in the discharge line, fill the pump and the suction pipe full of water. If the pump body is rotated so that the discharge isn't on top of the pump, be sure to open a vent in the body to allow it to fill as completely as possible.
  - It's a good idea to vent the pump body when priming even with the discharge up. Trapped air can prevent the pump from priming or from lifting water into the pump suction for operation.
  - Pour the water in slowly to allow the air to come out of the pump body.
  - Rotating the pump shaft by hand will help to expel trapped air.
2. Replace the plug in the tee and start the pump.
3. If the pump fails to prime, repeat the priming process.
  - Make sure that the suction pipe and pump body are full of water and that the suction pipe does not have any air leaks in it.
  - Be sure that you are not trying to make the pump lift water farther than it was designed to do.

**Chart 1: Pipe Sizing**

Pipe Size	1"	1-1/4"	1-1/2"	2"
Max. G.P.M.	12	25	40	70



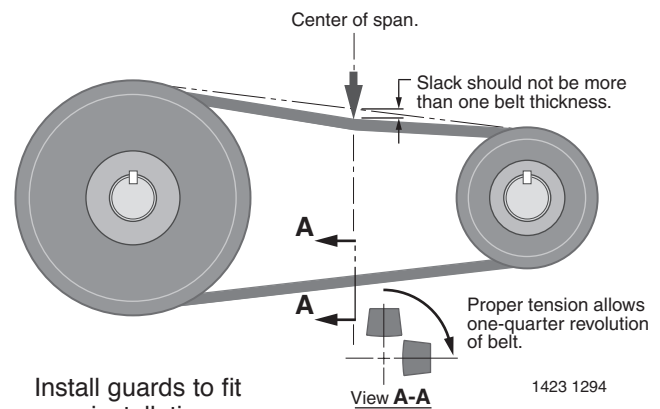
Centerlines A and A are parallel, Centerline B is straight.



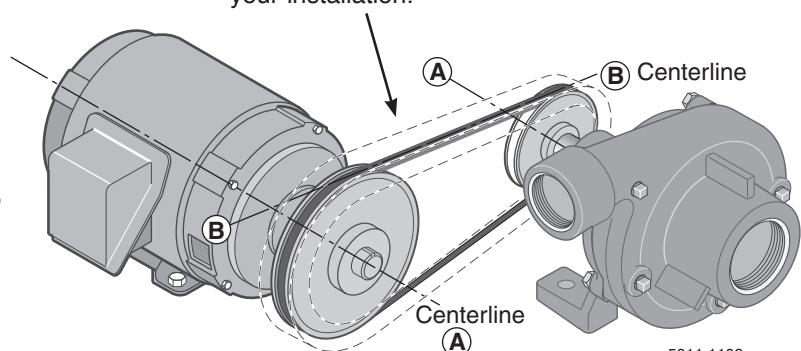
Centerline - A of each shaft and pulley must be parallel for proper alignment.



Centerline - B represents center of belt and pulley. This centerline must be straight for proper alignment.



Install guards to fit your installation.



**Figure 1: Belt Alignment and Tension**

# TYPE "B" SINGLE STAGE CENTRIFUGAL PUMP Belt/Coupling Drive

**CAST IRON IMPELLER**

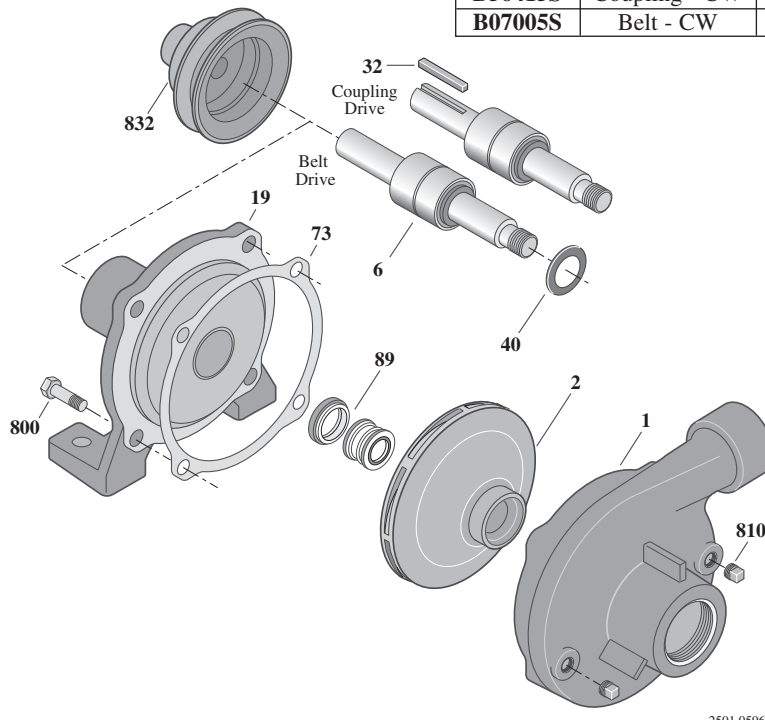
**B1XRS, B1XRMS, B1MRS**

**Threaded Case (NPT)**

**Mechanical Seal Construction**

**TABLE I**

B/M No.	Drive Type	Shaft No.	Impeller	Impeller Diameter	Case, Volute
<b>B56414</b>	Coupling - CCW	S30819	M01868	5.31"	M01842
<b>B01784</b>	Belt - CCW	S08164	M01868	5.31"	M01842
<b>B76019</b>	Coupling - CCW	S08164	M11261	4.50"	B59896
<b>B56413</b>	Coupling - CCW	S08164	S05266	4.50"	B59896
<b>B56415S</b>	Coupling - CW	S16578	H05539	5.00"	B59898
<b>B07005S</b>	Belt - CW	S06397	H05539	5.00"	B59898



Item No.	Part Description	B/M Number			
		B56414	B01784 B07005S	B56413 B76019	B56415S
1	Case, Volute	See Table I	See Table I	See Table I	See Table I
2	Impeller	See Table I	See Table I	See Table I	See Table I
6	Shaft Assembly	See Table I	See Table I	See Table I	See Table I
19	Frame	M01856	M01856	M01856	M01856
32	Key, 3/16 x 1"	S24151	—	S24151	S24151
40	Slinger, Water	S05222	S05222	S05222	S05222
67•	Spacer, Impeller	—	S17323	—	S17323
73	Gasket, Case	S05141	S04728	S05141	S05141
89	Seal, Mechanical Shaft	S05645	S05645	S05645	S05645
800	Capscrew, 3/8-16x3/4" (4 Req.)	S26824	S26824	S26824	S26824
810	Pipe Plug, 1/8" NPT (2 Req.)	U78-56ZPS	U78-56ZPS	U78-56ZPS	U78-56ZPS
832	Sheave	—	S05375	—	—

- Not illustrated. Not used in Model B01784.

# TYPE "B" SINGLE STAGE CENTRIFUGAL PUMP Belt/Coupling Drive

**CAST IRON IMPELLER**

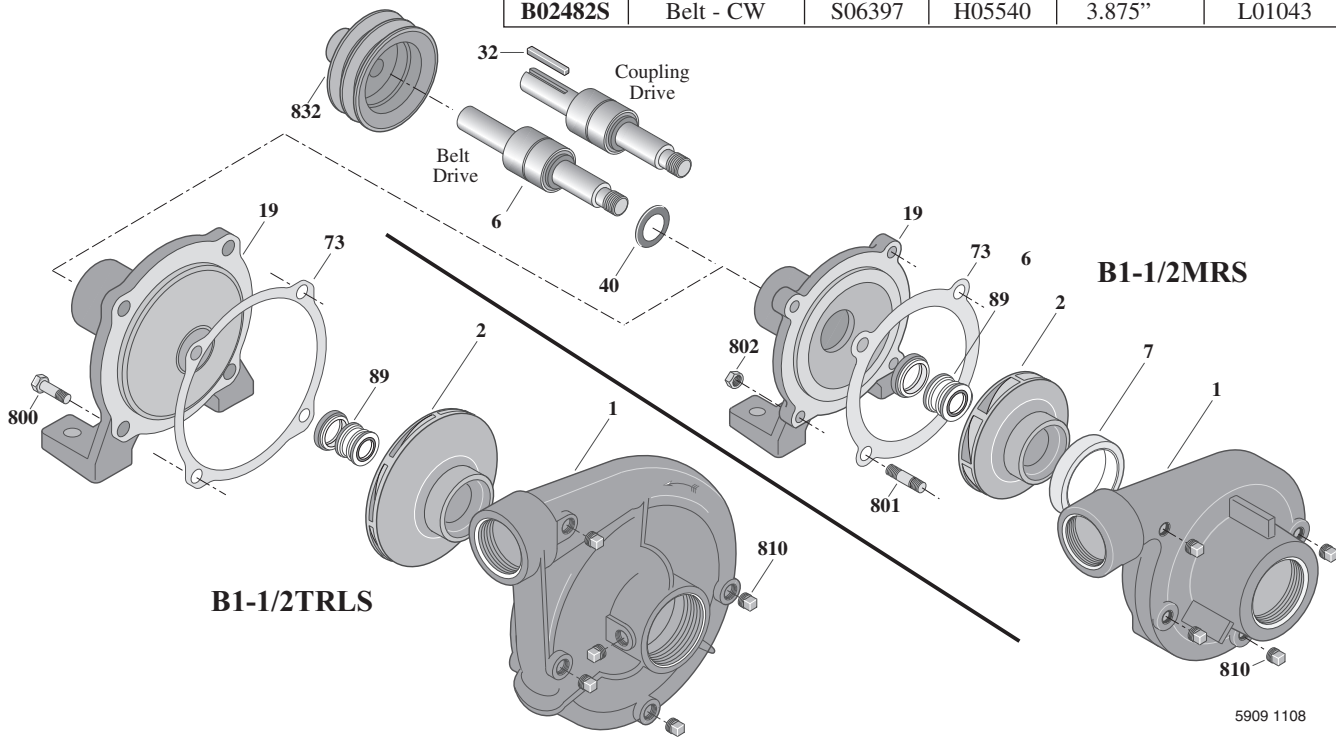
**B1-1/2MRS, B1-1/2TRLS**

**Threaded Case (NPT)**

**Mechanical Seal Construction**

**TABLE II**

B/M No.	Drive Type	Shaft No.	Impeller	Impeller Diameter	Case, Volute
<b>B56417</b>	Coupling - CW	S17858	S07368	6.50"	L01018
<b>B03539</b>	Belt - CW	S06402	S07368	6.50"	L01018
<b>B74361</b>	Coupling - CW	S17858	L08149	6.50"	L01018
<b>B56416</b>	Coupling - CW	S16578	M01039	3.875"	L01043
<b>B56416S</b>	Coupling - CW	S16578	H05540	3.875"	L01043
<b>B02482</b>	Belt - CW	S06397	M01039	3.875"	L01043
<b>B02482S</b>	Belt - CW	S06397	H05540	3.875"	L01043



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Item No.	Part Description	B/M No. – B1-1/2TRLS		B/M No. – B1-1/2MRS			
		B03539	B56417 B74361	B02482S	B56416S	B56416	B02482
1	Case, Volute	See Table II	See Table II	See Table II	See Table II	See Table II	See Table II
2	Impeller	See Table II	See Table II	See Table II	See Table II	See Table II	See Table II
6	Shaft Assembly	See Table II	See Table II	See Table II	See Table II	See Table II	See Table II
7	Wear Ring	–	–	M10913	M10913	S03074	S03074
19	Frame	L01530	L01530	M02638	M02638	M02638	M02638
32	Key, 3/16 x 1"	–	S24151	–	S24151	S24151	–
40	Slinger, Water	S21906	S21906	S05222	S05222	S05222	S05222
67•	Spacer, Impeller	–	–	S17323	S17323	–	–
73	Gasket, Case	S04757	S04757	S04728	S04728	S04728	S04728
89	Seal, Mechanical Shaft	S06405	S06405	S05645	S05645	S05645	S05645
800	Capscrew, 1/2-13x1" (4 Req.)	S26912	S26912	–	–	–	–
801	Stud, 3/8-16x1-3/4" (4 Req.)	–	–	S23996	S23996	S23996	S23996
802	Nut, Hex 3/8-16 (4 Req.)	–	–	S23103	S23103	S23103	S23103
810	Pipe Plug, 1/4" NPT (5 Req.)	S23715	S23715	U78-56ZPS	U78-56ZPS	U78-56ZPS	U78-56ZPS
832	Sheave	S06407	–	S05375	–	–	S05375

• Not illustrated.

# TYPE "B" SINGLE STAGE CENTRIFUGAL PUMP Belt/Coupling Drive

**CAST IRON IMPELLER**

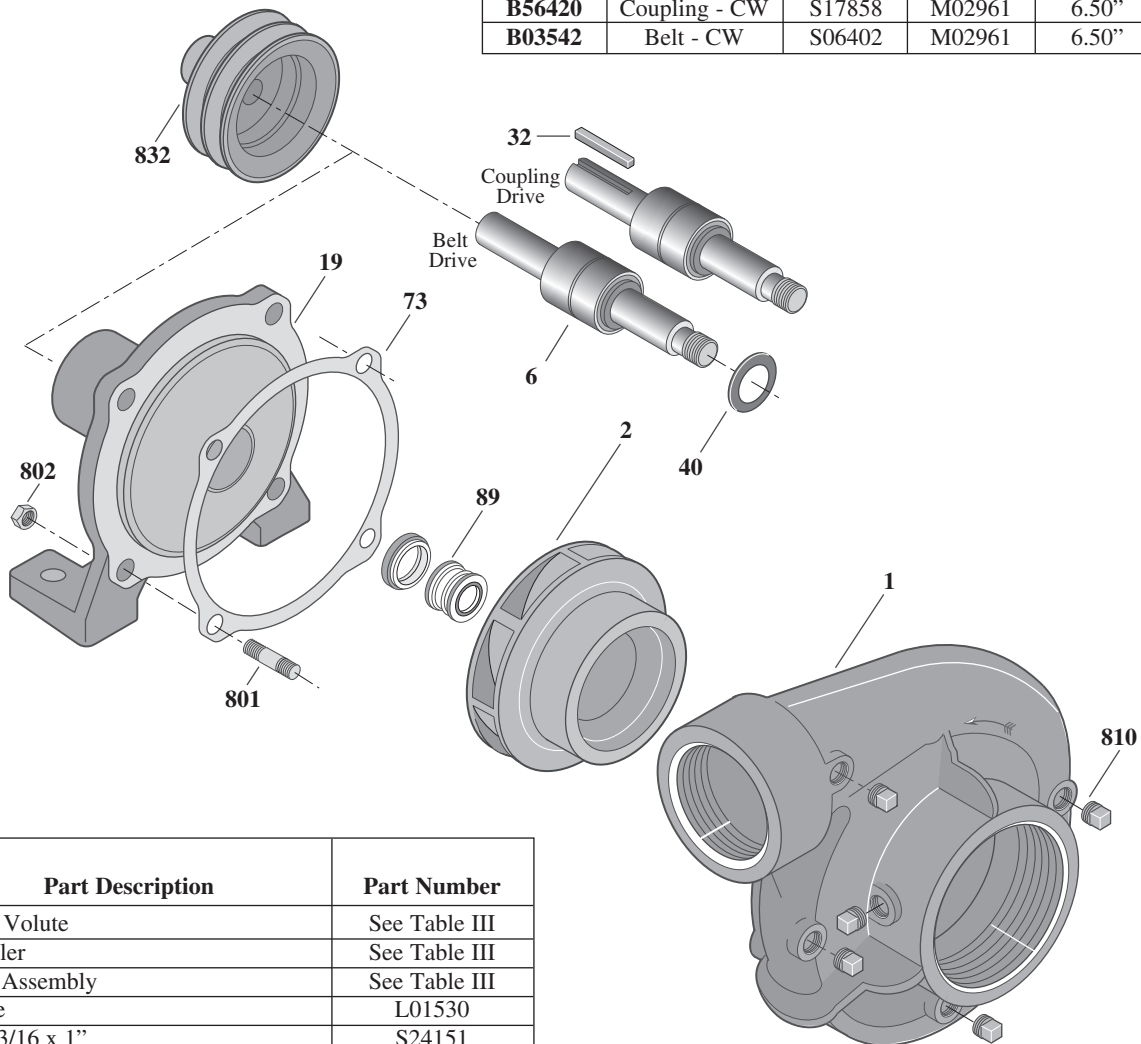
**B2TRMS, B2-1/2TRMS, B3TRMS**

**Threaded Case (NPT)**

**Mechanical Seal Construction**

**TABLE III**

B/M No.	Drive Type	Shaft No.	Impeller	Impeller Diameter	Case Volute
B56418	Coupling - CW	S17858	S07370	6.50"	L01022
B03540	Belt - CW	S06402	S07370	6.50"	L01022
B56419	Coupling - CW	S17858	M02958	6.50"	L01023
B03541	Belt - CW	S06402	M02958	6.50"	L01023
B56420	Coupling - CW	S17858	M02961	6.50"	L01104
B03542	Belt - CW	S06402	M02961	6.50"	L01104



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Item No.	Part Description	Part Number
1	Case, Volute	See Table III
2	Impeller	See Table III
6	Shaft Assembly	See Table III
19	Frame	L01530
32	Key, 3/16 x 1"	S24151
40	Slinger, Water	S21906
73	Gasket, Case	S04757
89	Seal, Mechanical Shaft	S06405
801	Stud, 1/2-13 (4 Req.)	S24043
802	Nut, Hex 1/2-13 (4 Req.)	S23107
810	Pipe Plug, 1/4" NPT (5 Req.)	S23715
832	Sheave	S06407