



Franklin Pump Systems

CENTRIFUGAL PUMPS DDD/DDS SERIES OWNER'S MANUAL

READ AND FOLLOW SAFETY INSTRUCTIONS

! This is the safety alert symbol. When you see this symbol on your pump or in this manual, look for one of the following signal words and be alert to the potential for personal injury:

! DANGER warns about hazards that will cause serious personal injury, death or major property damage if ignored.

! WARNING warns about hazards that **can** cause serious personal injury, death or major property damage if ignored.

! CAUTION warns about hazards that **will** or **can** cause minor personal injury or major property damage if ignored.

The label **NOTICE** indicates special instructions, which are important but not related to hazards.

! WARNING



Hazardous voltage. Can shock, burn, or cause death.

Ground pump before connecting to power supply. Disconnect power before working on pump, motor or tank.

Carefully read and follow all safety instructions in this manual and on pump.

Keep safety labels in good condition.

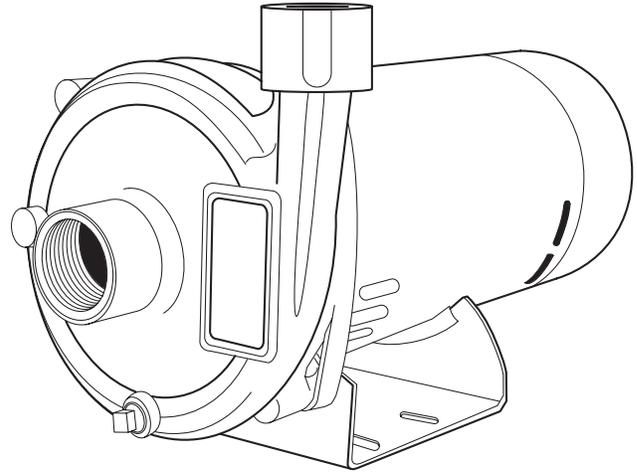
Replace missing or damaged safety labels.

! Wire motor for correct voltage. See "Electrical" section of this manual and motor nameplate.

! Ground motor before connecting to power supply.

! Meet National Electrical Code, Canadian Electrical Code, and local codes for all wiring.

! Follow wiring instructions in this manual when connecting motor to power lines.



BEFORE INSTALLING PUMP, BE SURE TO READ THIS OWNER'S MANUAL CAREFULLY.

! CAUTION Mechanical shaft seals do not run dry. Fill pump with water before starting or pump will be damaged. The motor on this pump is guaranteed by the manufacturer and in event of failure it must be returned to an authorized service station for repairs. Motor warranty is void if repairs aren't made by an authorized repair station.

INSTALLATION

Suction Piping

The pump should be installed as close as possible to the source of water in order to minimize the length of suction piping. The suction pipe should never be smaller in diameter than the suction opening of the pump. It must be free of all leaks, and should slope continuously upward from the water source to the pump, with no high spots, which can trap air. A foot valve must be used to maintain the prime.

General Piping Instructions

In order to avoid strain on the pump, both the suction and discharge piping should be properly supported, and a pipe wrench should be put on the suction and discharge bosses when installing pipes in them.

Electrical Connections

Remove the end cover (canopy) from the motor, and using the diagram on top of the motor, make sure it is connected for the correct voltage.

The motors on “DD” Series pumps are designed to be used with either 115 or 230 volt supply by changing connections as shown on the diagram.

CAUTION Connecting the motor to the wrong voltage can cause serious damage.

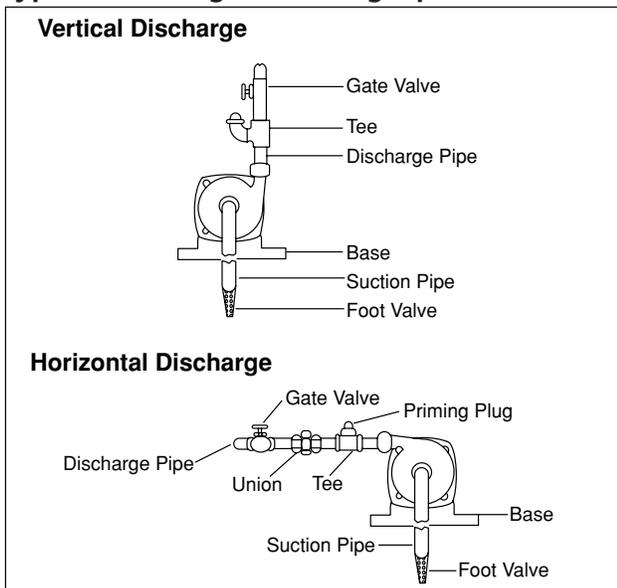
“Table 2” lists branch fuse size ratings and recommended supply wire for each pump.

Grounding the motor

Make sure that the green lead wire is securely connected to the green ground terminal screw on the motor terminal board, “Fig. 1”. This wire must be connected to the electrical system ground (provided by the power company) or to another adequate ground.

CAUTION Failure to ground the pump properly can result in serious or fatal injury.

Typical Discharge Plumbing Options



Priming the Pump

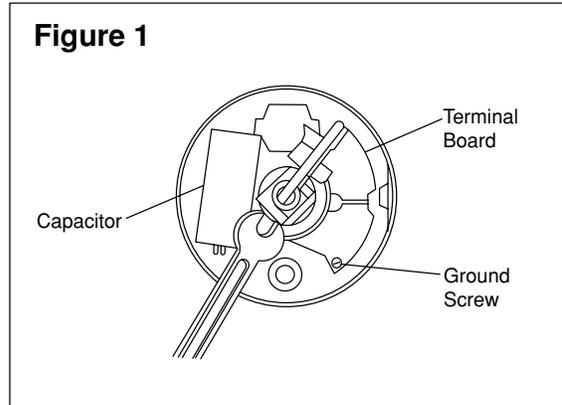
Fill the pump and suction piping completely with water before starting. **Never** operate the pump without water in it. The mechanical shaft seal and impeller can be damaged if run dry. If the pump does not deliver water in 20 - 30 seconds, some air may be trapped. Stop the pump, refill with water, and start again.

SERVICE THE PUMP

1. Remove the motor from the pump case.
2. Take off the motor end cover (canopy).
3. Remove the impeller from the motor. To keep the motor shaft from turning while unscrewing the impeller, hold shaft by inserting a 7/16” (11.1 mm) open-end wrench at the 7 o'clock position of the switch end of the motor, as shown in Figure 1. The motor shaft has flat surfaces at that point.

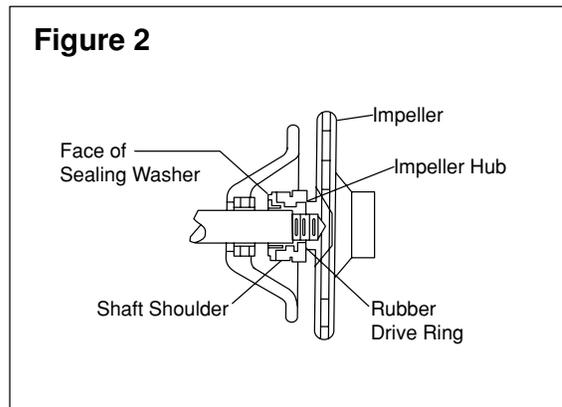
If any type of wrench must be used on the impeller, be sure to protect the impeller surfaces by putting a shop cloth or other protection between the wrench and the impeller.

Figure 1



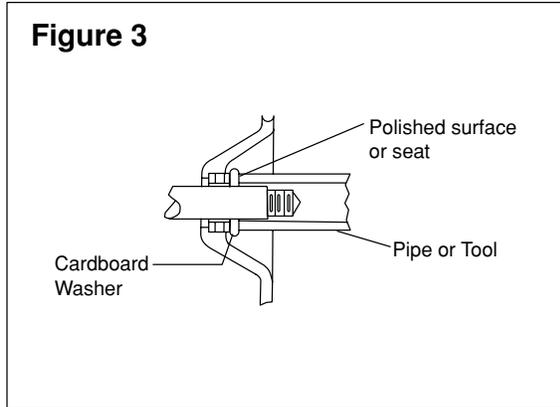
4. Remove the rotating part of the seal by first removing the square rubber drive ring (Figure 2) with a small screwdriver or knife blade. The remainder of the rotating portion is then loose and may be removed easily.

Figure 2



5. Remove the seal plate, which is now free. Push the seal seat out of the seal plate from the back side. Clean the cavity, from which the seal seat was removed. Also clean the motor shaft.
6. Replace the seal plate on the motor.
7. Dip the seal seat in a soap solution or clear water for lubrication and install in the seal cavity. Press firmly in place with fingers. If it cannot be positioned with the fingers, put the cardboard washer (furnished with the seal) on the seal face and press the seat in place with a piece of pipe or other tool, as shown in (Figure 3). Remove the cardboard washer and clean the polished seal surface with a soft cloth. Be very careful not to damage or scratch the surface.

8. Make sure the shaft is clean.
9. Clean the face of the rotating part of the seal with a soft cloth. Dip the assembly in a soap solution or clear water and push onto the shaft, with the sealing face first, until the square rubber drive ring is completely on the shaft shoulder.
10. Screw the impeller on the shaft until its hub is against the shaft shoulder. This automatically positions all seal parts properly.
11. Replace the motor on the case and base.



TROUBLESHOOTING

1. PUMP WON'T DELIVER ANY WATER

Review priming instructions. Make sure the pump and suction line are full of water.

2. LOSS OF PRIME

- a) Check the suction line and foot valve for leaks. The entire suction side of the system must be totally air tight.
- b) Make sure the water level hasn't dropped enough to uncover the suction inlet. Sufficient pipe would be used to prevent this from happening.

3. LOW FLOW OR PRESSURE

- a) Check suction piping for leaks.
- b) Check the impeller for clogging. Remove all foreign material if it is clogged.

4. NOISE

- a) Make sure pump and piping are supported.
- b) Make sure suction lift does not exceed 20 ft.(6mm)
- c) Check disch. piping for excessive bends or elbows.
- d) Check motor bearing for damage.

Table 2 - Electrical Information

HP	Voltage	Branch Max. Loads Amperes	Fuse Rating Amperes	Maximum Length of Cable Size Shown					
				50'	100'	200'	300'	400'	500'
1/2	115	8.6	15	14	14	10	8	8	8
	230	4.3	15	14	14	14	14	14	12
3/4	115	13.2	20	12	12	8	6	6	4
	230	6.6	15	14	14	14	12	12	10
1	115	16.2	25	12	10	8	6	4	2
	230	8.1	15	14	14	14	12	10	10
1-1/2	115	20.8	30	10	10	8	6	4	2
	230	10.4	15	14	14	12	12	10	8
2	115	21	30	10	10	6	6	4	2
	230	10.5	15	14	14	12	12	10	8
2-1/2	115	23	35	10	8	6	4	2	2
	230	11.2	15	14	14	12	12	10	8

PARTS FOR MODELS DDD/DDS SERIES- END SUCTION CENTRIFUGAL PUMPS

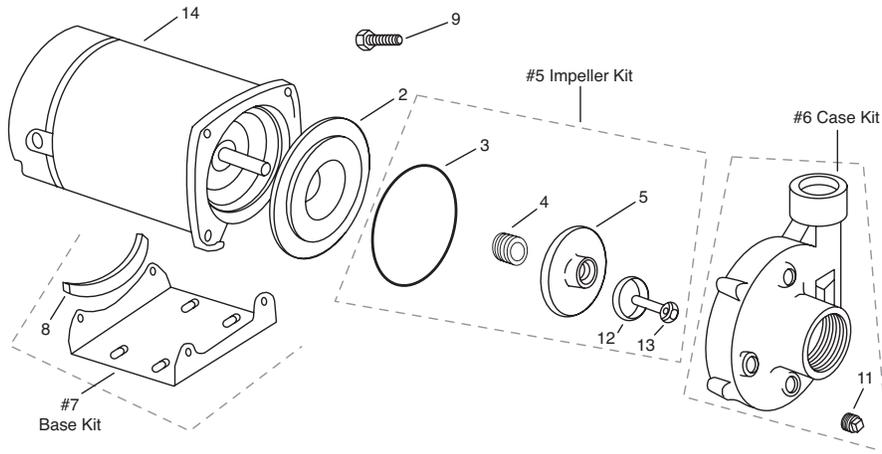


Figure No.	Part No. Cast Iron	Part No. Stainless Steel	Description
2	11-1498-04-R		Seal Plate Cast Iron #11293 for DDD, RCFC
		11-0063-01-R	Seal Plate Stainless Steel for DDS
3	47-0258-53-02PK	47-0258-53-02PK	Square-Ring Kit 6 x 1/8 x 1/8 (2 per kit)
4	10-0002-06		Mechanical Seal 5/8 for DDD, RCFC Models
		10-1436-18	Mechanical Seal 5/8 Viton for DDS Models
All Impeller Kits include: impeller, sq.-ring, mech. seal, wear-ring, & fasteners.-Fig. #'s. 3,4,5,12,13			
5	05-3886-08-K	05-3886-16-K	1/2HP Impeller Kit 4.605 dia. #11375
	05-3887-07-K	05-3887-15-K	3/4HP Impeller Kit 5.0 dia. #11376
	05-3888-06-K	05-3888-14-K	1HP Impeller Kit 5.25 dia. #11377
	05-3889-05-K	05-3889-13-K	1.5HP Impeller Kit 5.315 dia. #11378
	05-3890-02-K		2HP Impeller Kit 5.65 dia. #11338
	05-3891-01-K		2.5HP Impeller Kit 5.95 dia. #11379
Impellers for Units with Three-Phase Motors			
5	05-9646-05-R	05-9646-05-R	1/2HP Impeller 4.605 dia. #11375
	05-9650-00-R	05-9650-00-R	3/4HP Impeller 5.0 dia. #11376
	05-9652-50-R	05-9652-50-R	1HP Impeller 5.25 dia. #11377
	05-9653-15-R	05-9653-15-R	1.5HP Impeller 5.315 dia. #11378
	05-9656-50-R	05-9656-50-R	2HP Impeller 5.65 dia. #11338
6	03-0850-08-R	03-0850-17-R	Case Assembly Kit #11337 w/ plugs #11 for 1/2HP thru 1.5HP
	03-0851-07-R		Case Assembly Kit #11338 w/ plugs #11 for 2HP
	03-0852-06-R		Case Assembly Kit #11338 w/ plugs #11 for 2.5HP
7	12-1057-06-R	12-1057-06-R	Base Assembly Kit w/ motor pad #8 for 48 frame mtr.
	12-1060-03-K	12-1060-03-K	Base Assembly Kit w/ motor pad #8 for 56 frame mtr.
9 & 13	14-4434-02-K	14-4434-02-K	*Fastener Kit
11	31-0059-11-06PK	31-0059-11-06PK	Plug Kit 1/4" Galv. (6 per kit)
12	08-0845-19-06PK	08-0845-19-06PK	Wear-Ring Kit (6 per kit)
13	14-4353-09	14-4353-09	Capscrew 1/4-20 x 1-3/16 LG LH Hx. / Wash. for 2HP 3 Ph.
	14-4354-08	14-4354-08	Capscrew 1/4-20 x 7/8 LG LH Hx. / Wash. for 1/2 thru 1.5HP 3 Ph.
14	Motor	Motor	See Motor Selection Page

*Fastener Kit #14443402-K includes the following:

- 4 each 3/8-16 x 1-1/8 PL Hex Capscrews #9
- 1 each 1/4-20 x 1-3/16 Hex Wash-Capscrews for 1/2HP thru 1.5HP 3Ph. #13
- 1 each 1/4-20 x 1-3/6 Hex Wash-Capscrews for 2HP 3Ph. #13

U.S. LIMITED WARRANTY*

Franklin Pump Systems, Inc.

Franklin Pump Systems, Inc. warrants its new products to be free of defects in material and workmanship for a period of 1 year from date of installation or 2 years from date of manufacture, whichever comes first, WHEN installed in a domestic water systems application and pumping potable water only. Warranty does not cover applications pumping saltwater or other corrosive liquids. Consult and adhere to local codes for all applications. Franklin Pump Systems, Inc. also provides additional warranty coverage on specific products as specified herein.

Franklin Pump Systems' warranty obligation with regard to equipment not of its own manufacture is limited to the warranty actually extended to Franklin Pump Systems by its suppliers.

This warranty extends only to the original retail purchaser and only during the time in which the original retail purchaser occupies the site where the product was originally installed.

Requests for service under this warranty shall be made by contacting the installing Franklin Pump Systems dealer (point of purchase) as soon as possible after the discovery of any alleged defect. Franklin Pump Systems will subsequently take corrective action as promptly as reasonably possible.

Franklin Pump Systems at its discretion may replace or repair any product that fails under this warranty after inspection by an authorized company representative or after Franklin Pump Systems has received the product at our factory. Replacement or repair cannot be made until after the product is inspected. All charges or expenses for freight to and from the factory, removal and reinstallation of the product, or installation of a replacement product are the responsibility of the purchaser.

THIS WARRANTY SUPERSEDES ANY WARRANTY NOT DATED OR BEARING AN EARLIER DATE. ANY IMPLIED WARRANTIES WHICH THE PURCHASER MAY HAVE, INCLUDING MERCHANT ABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE APPLICABLE WARRANTY PERIOD. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. IN NO EVENT SHALL FRANKLIN PUMP SYSTEMS BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above may not apply to you.

This warranty does not apply to any product which has been subjected to negligence, alteration, accident, abuse, misuse, improper installation, vandalism, civil disturbances, or acts of God. The only warranties authorized by Franklin Pump Systems are those set forth herein. Franklin Pump Systems does not authorize other persons to extend any warranties with respect to its products, nor will Franklin Pump Systems assume liability for any unauthorized warranties made in connection with the sale of its products.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

* Contact Franklin Pump Systems, Inc. Export Division for International Warranty.



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