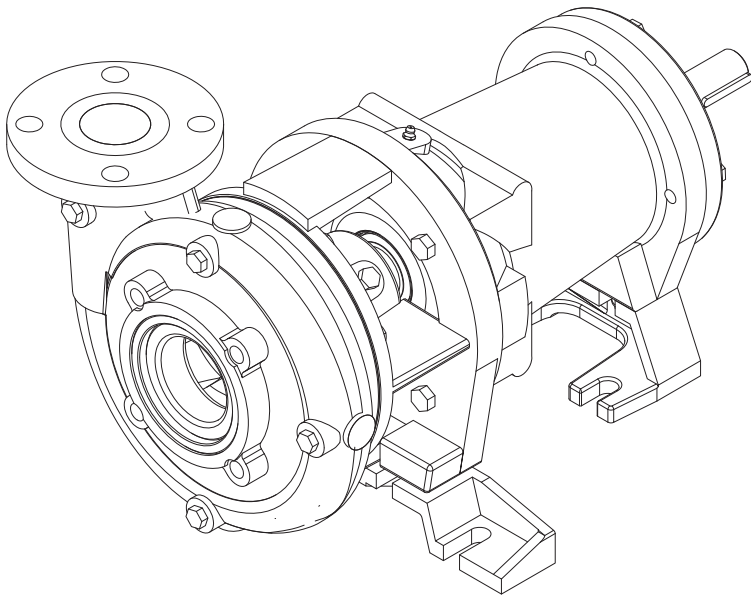


# POWER-FLO

*Pumps & Systems*



**Series: PF2025CU7  
PF2025CU9  
PF3040CU9  
PF4050CU9**

**Frame Mounted End  
Suction Pumps**

**General Safety Information**

Before installation, read the following instructions carefully. Failure to follow instruction and Safety information could cause serious bodily injury, death and/or property damage. Each Power-Flo pump is individually factory tested to insure proper performance. Closely following these instructions will eliminate potential operating problems, assuring years of trouble-free service.

**⚠ DANGER** "Danger" indicates an imminent hazardous situation which, if not avoided, WILL result in death or serious injury.

**⚠ WARNING** "Warning" indicates an imminent hazardous situation which, if not avoided, MAY result in death or serious injury.

**⚠ CAUTION** "Caution" indicates an potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.

**IMPORTANT - Power-Flo Pumps and Systems is not responsible for losses, injury or death resulting from failure to observe these safety precautions, misuse, abuse or misapplication of pumps or equipment.**



**⚠ ALL RETURNED PRODUCTS MUST BE CLEANED, SANITIZED, OR DECONTAMINATED PRIOR TO SHIPMENT, TO INSURE EMPLOYEES WILL NOT BE EXPOSED TO HEALTH HAZARDS IN HANDLING SAID MATERIAL. ALL APPLICABLE LAWS AND REGULATIONS SHALL APPLY.**

**⚠ WARNING** Installation, wiring, and junction connections must be in accordance with the National Electric Code and all applicable state and local codes. Requirements may vary depending on usage and location.

**⚠ WARNING** Installation and servicing is to be conducted by qualified personnel only.

**⚠ DANGER** Keep clear of suction and discharge openings. **Do not** insert fingers in pump with power connected.

**⚠ WARNING** Always wear eye protection when working on pumps. Do not wear loose clothing that may become entangled in moving parts

**⚠ DANGER** Pumps build up heat and pressure during operation. Allow time for pumps to cool before handling or servicing.

**⚠ DANGER** This pump is *not* intended for use in swimming pools or water installations where human contact with pumped fluid.

**⚠ DANGER** Risk of electric shock. To reduce risk of electric shock, always disconnect pump from power source before handling. **Lock out power & tag.**

**⚠ WARNING** **Do not** use these pumps in water over 225°F. **Do not** exceed manufactures recommended maximum performance, as this could cause the motor to overheat.

**⚠ DANGER** Operation against a closed discharge valve will cause premature bearing and seal failure.

Heat build up on self-priming and end suction pumps may cause dangerous pressures. A high temperature switch or pressure relief valve is recommended to be installed in pump case.

**⚠ WARNING** Carefully read instruction manuals supplied with motor or engine before operating or servicing.

**⚠ DANGER** **DO NOT** pump hazardous material. These pumps are NOT to be installed in locations classified as hazardous in accordance with the National Electric Code, ANSI/NFPA 70.

**⚠ WARNING** Pumps constructed with or fitted with bronze/brass may contain lead levels higher than considered safe for potable water systems. Lead is known to cause cancer and birth defects or other reproductive harm. Various government agencies have determined that leaded copper alloys should not be used in potable water applications.



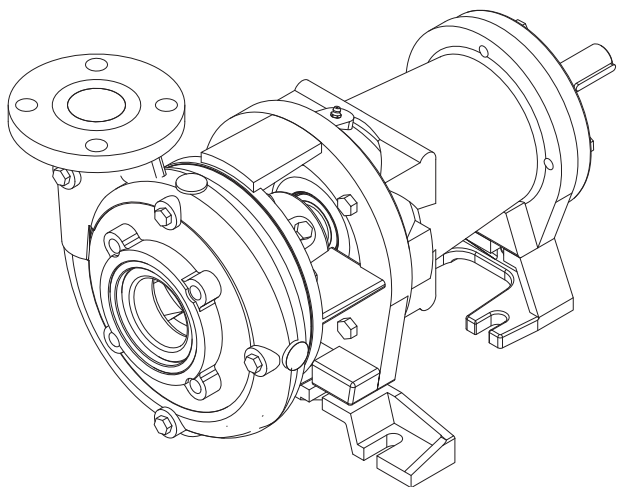
**IMPORTANT!** Prior to installation, record Model Number, MFG Date, and/or serial number, from pump name plate for future reference.

Model:
Serial:
MFG Date:



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**Specifications**



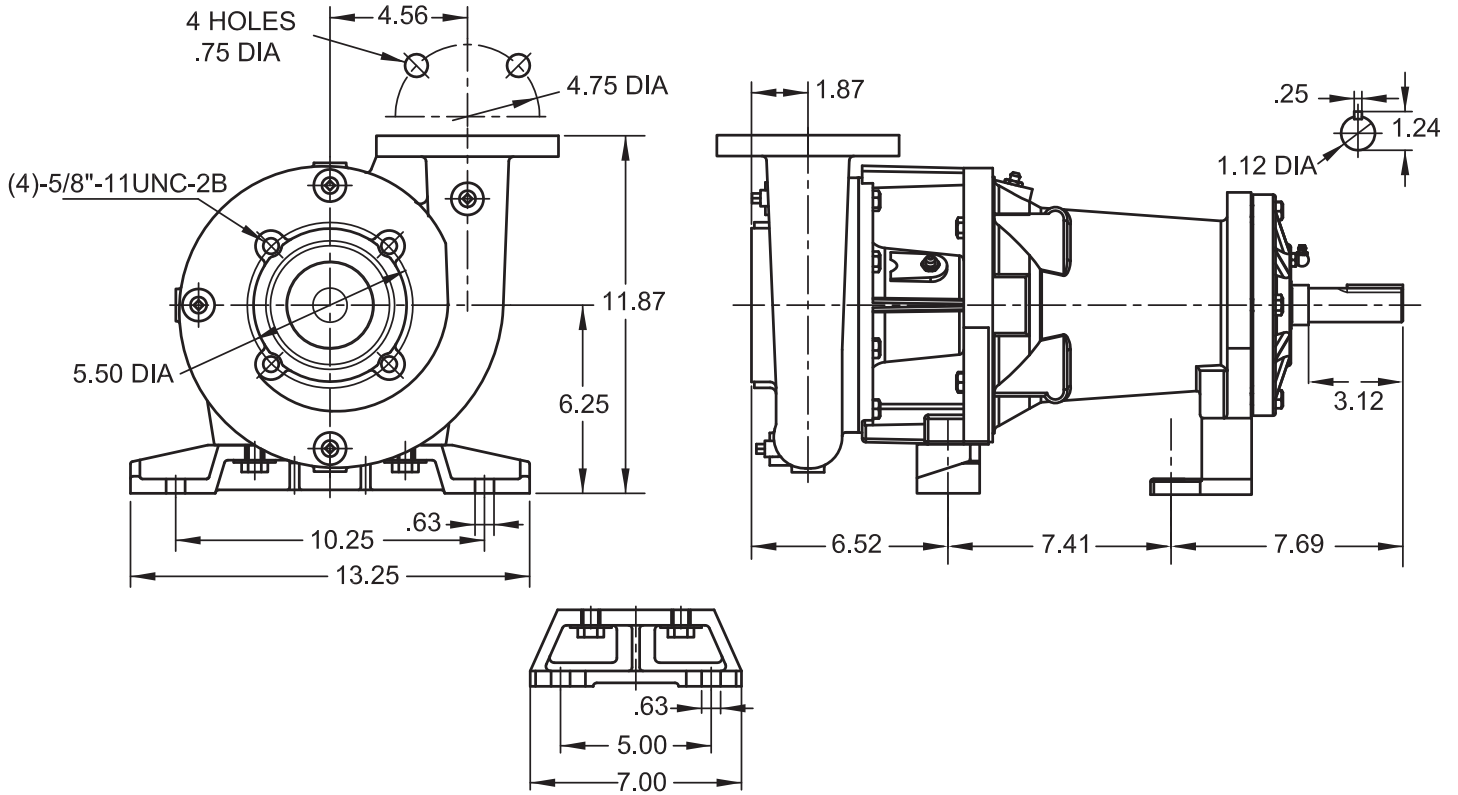
**Series: PF2025CU7**

**2" x 2-1/2"**

**Universal Drive, End Suction Centrifugal Pumps**

<b>SUCTION/ DISCHARGE</b>	2-1/2" 125 lb ANSI Flange Suction, 2" 125 lb ANSI Flange Discharge. Discharge can be placed in 4 different locations depending on piping requirements.
<b>LIQUID TEMPERATURE</b>	225°F Continuous
<b>CASING</b>	Cast Iron ASTM A48 Back Pull-Out design, with removing Suction & Discharge Piping.
<b>CASE WEAR RING</b>	Bronze C95200
<b>CASE WORKING PRESSURE</b>	175 PSI
<b>MOTOR BRACKET</b>	Cast Iron ASTM A48
<b>POWER FRAME</b>	Cast Iron ASTM A48
<b>PAINT</b>	Air dry enamel
<b>SHAFT</b>	Stainless Steel AISI420
<b>IMPELLER</b>	Enclosed Type, Dynamically Balanced, ISO G6.3, Maximum spheres .375". Material: Bronze C95200 or 304 Stainless
<b>SHAFT SLEEVE</b>	Bronze C95200
<b>SEAL</b>	Mechanical <i>Material: Carbon/Ni-Resist/Buna-N</i> Hardware - Stainless Steel AISI304
<b>BEARING-PUMP END</b>	Single Row, Ball, Grease Lubricated
<b>BEARING-DRIVE END</b>	Single Row, Ball, Grease Lubricated
<b>HARDWARE</b>	Steel
<b>WEIGHT</b>	150 lbs.

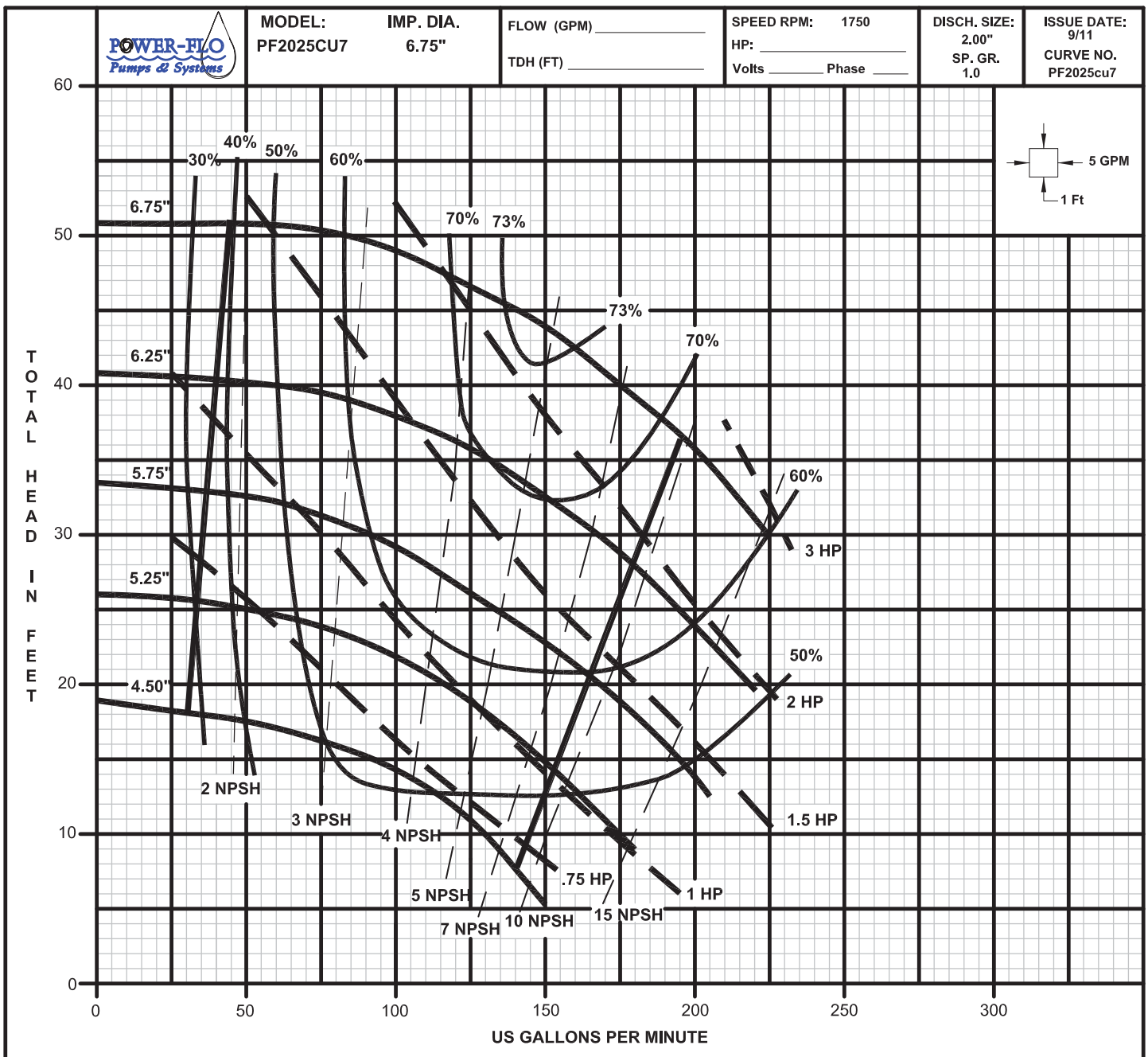
**Dimensions**



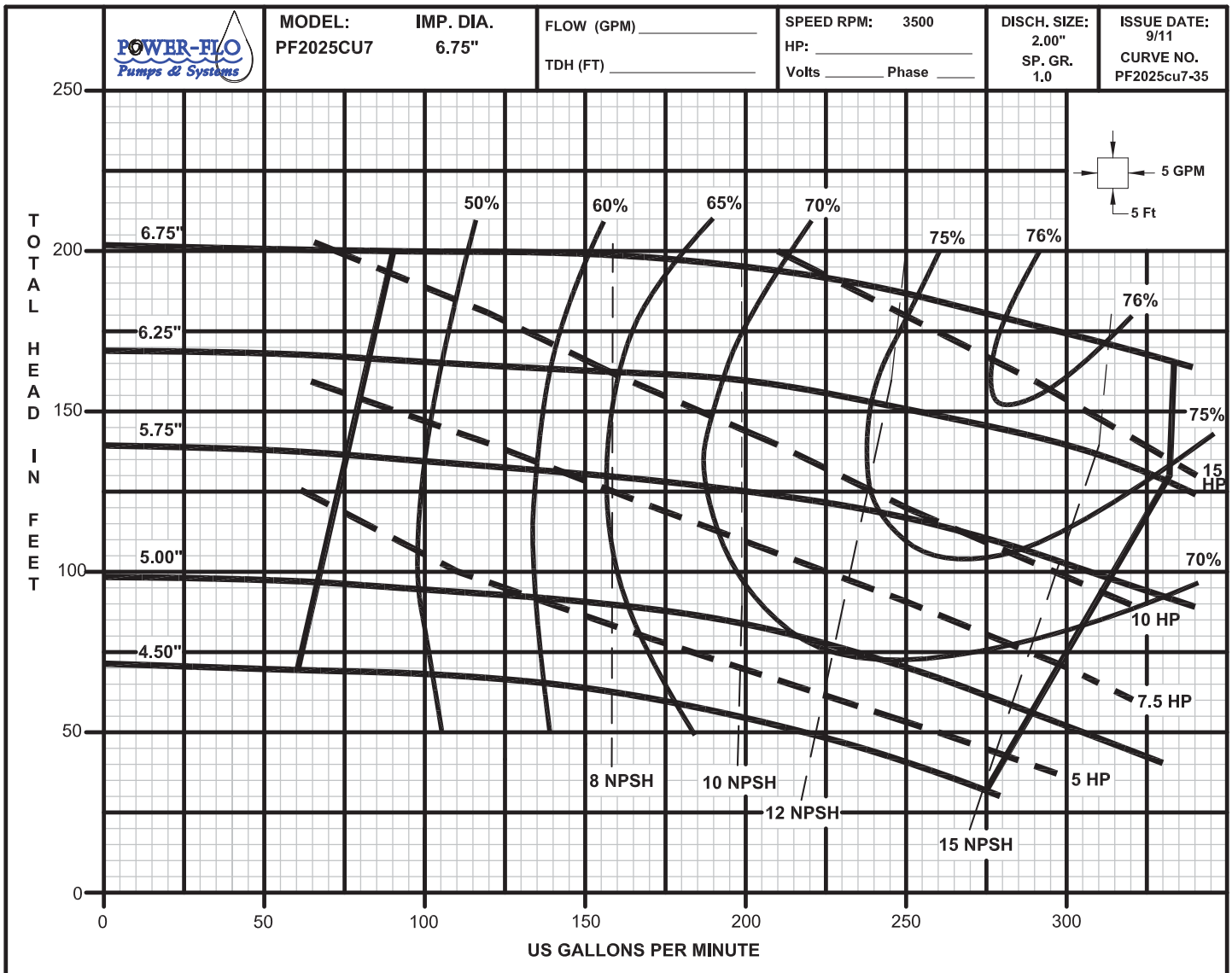
**WARNING ! - DO NOT** use in explosive atmosphere or for pumping volatile flammable liquids.



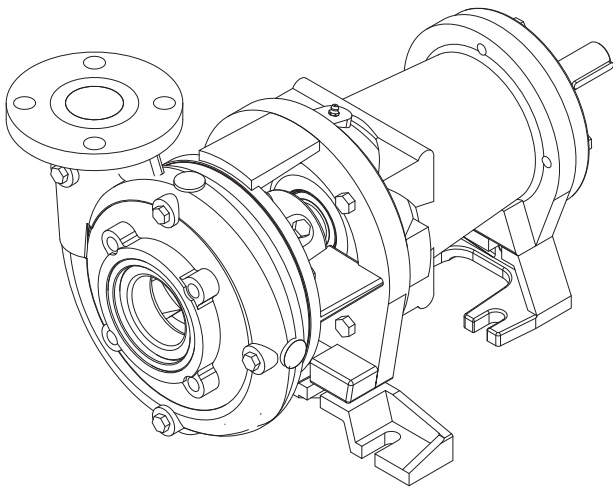
Performance



Performance



**Specifications**



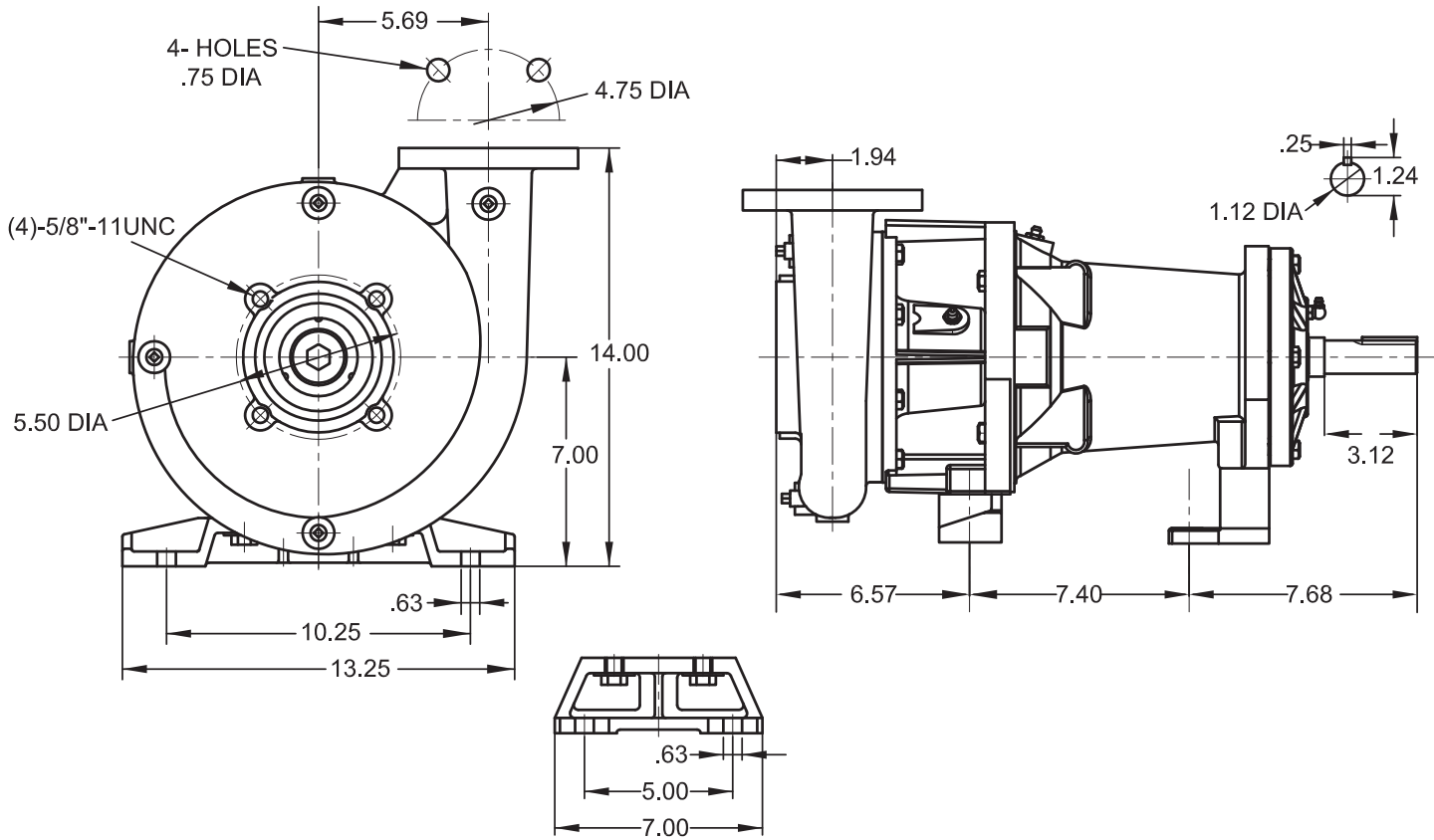
**Series: PF2025CU9**

**2" x 2-1/2"**

**Universal Drive, End Suction Centrifugal Pumps**

<b>SUCTION/ DISCHARGE</b>	2-1/2" 125 lb ANSI Flange Suction, 2" 125 lb ANSI Flange Discharge. Discharge can be placed in 4 different locations depending on piping requirements.
<b>LIQUID TEMPERATURE</b>	225°F Continuous
<b>CASING</b>	Cast Iron ASTM A48 Back Pull-Out design, with removing Suction & Discharge Piping.
<b>CASE WEAR RING</b>	Bronze C95200
<b>STUFFING BOX WEAR RING</b>	Cast iron ASTM A48
<b>CASE WORKING PRESSURE</b>	175 PSI
<b>MOTOR BRACKET</b>	Cast Iron ASTM A48
<b>POWER FRAME</b>	Cast Iron ASTM A48
<b>PAINT</b>	Air dry enamel
<b>SHAFT</b>	Stainless Steel AISI420
<b>IMPELLER</b>	Enclosed Type, Dynamically Balanced, ISO G6.3, Maximum spheres .625" Material: Bronze C95200 or 304 Stainless
<b>SHAFT SLEEVE</b>	Bronze C95200
<b>SEAL</b>	Mechanical Material: Carbon/Ni-Resist/Buna-N Hardware -Stainless Steel AISI304
<b>BEARING-PUMP END</b>	Single Row, Ball, Grease Lubricated
<b>BEARING-DRIVE END</b>	Single Row, Ball, Grease Lubricated
<b>HARDWARE</b>	Steel
<b>WEIGHT</b>	167 lbs.

**Dimensions**

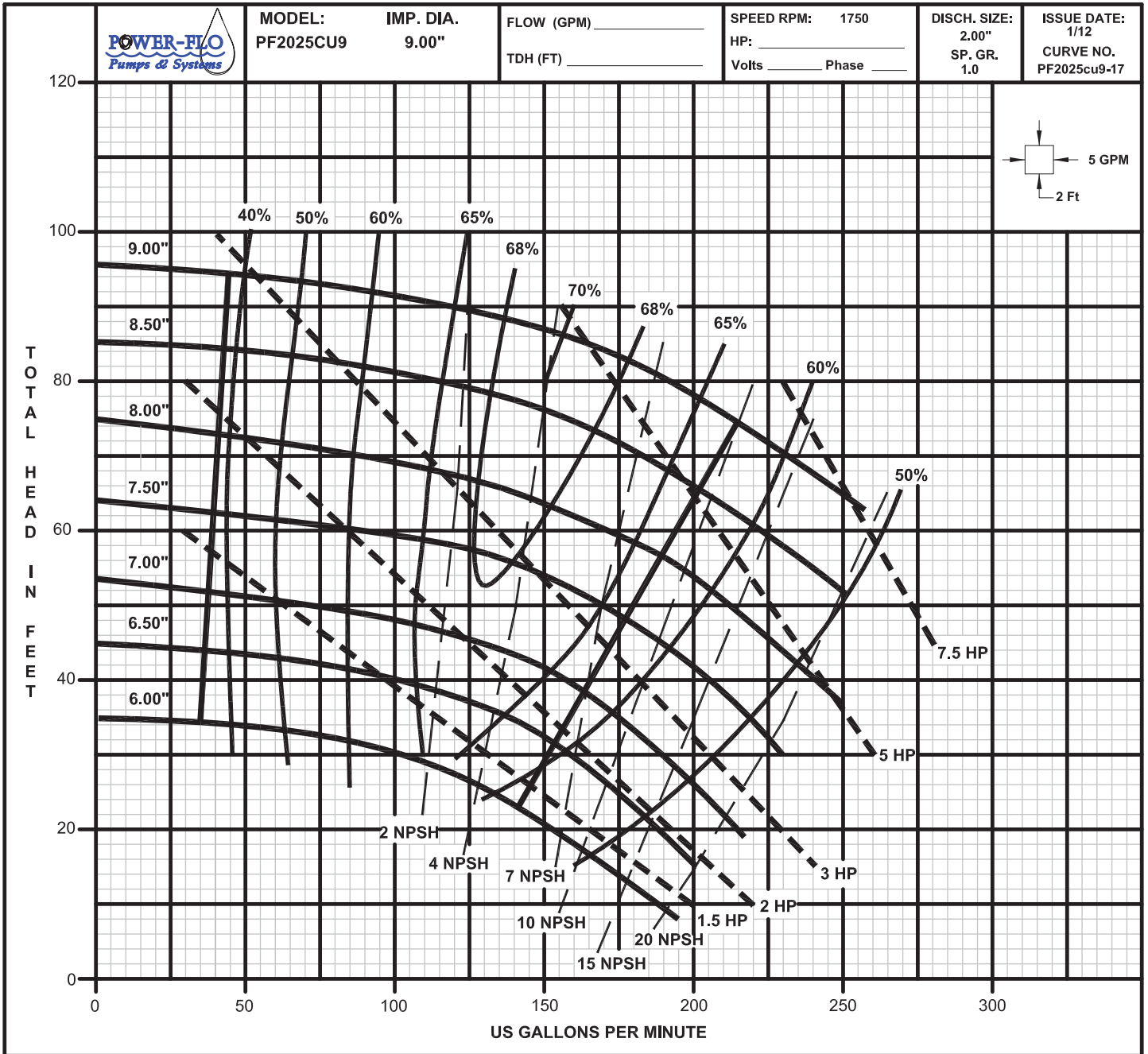


**WARNING ! - DO NOT** use in explosive atmosphere or for pumping volatile flammable liquids.

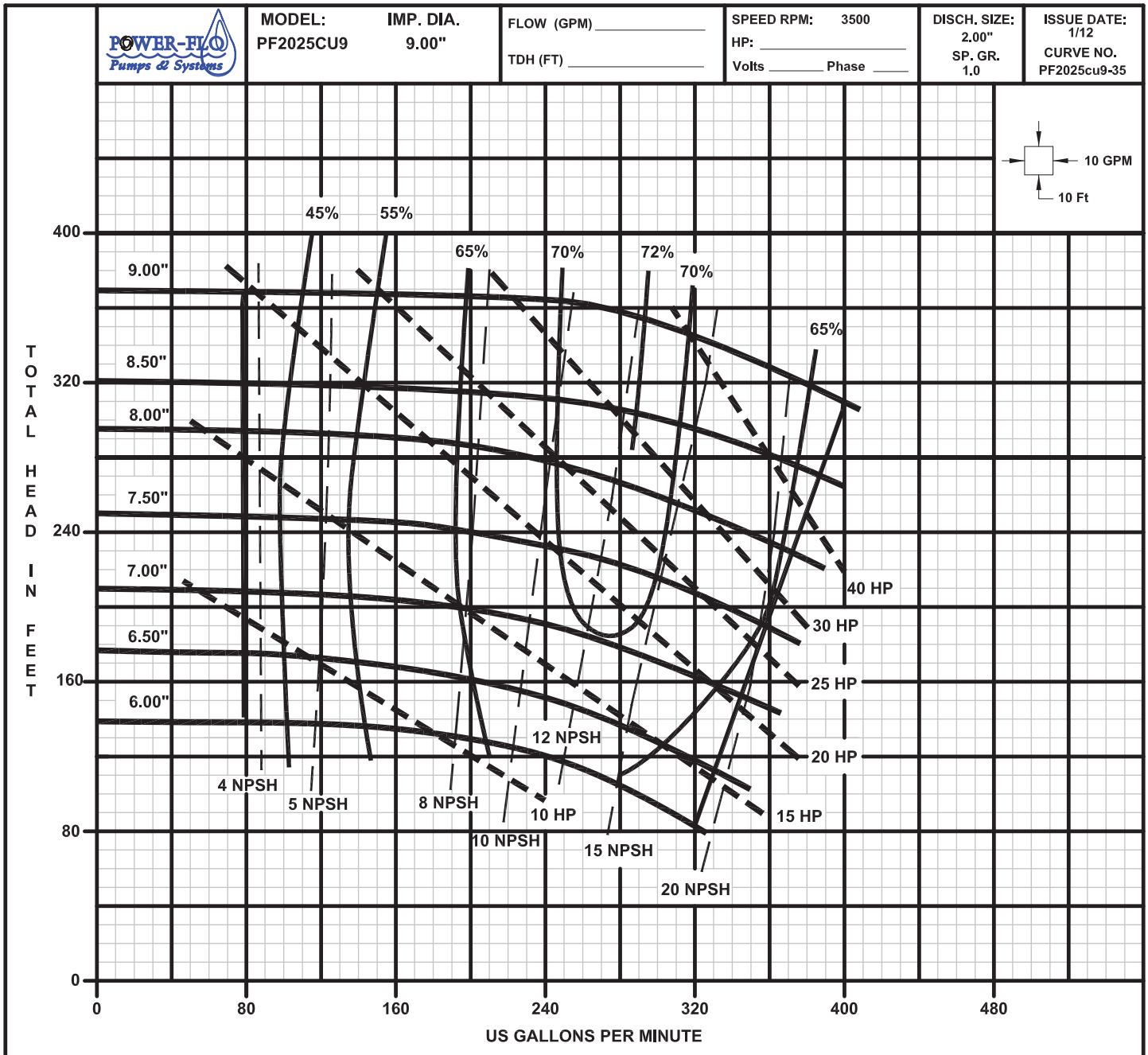




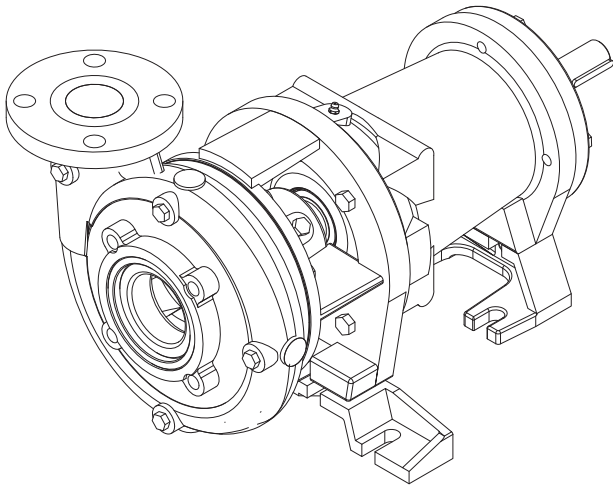
**Performance**



Performance



**Specifications**



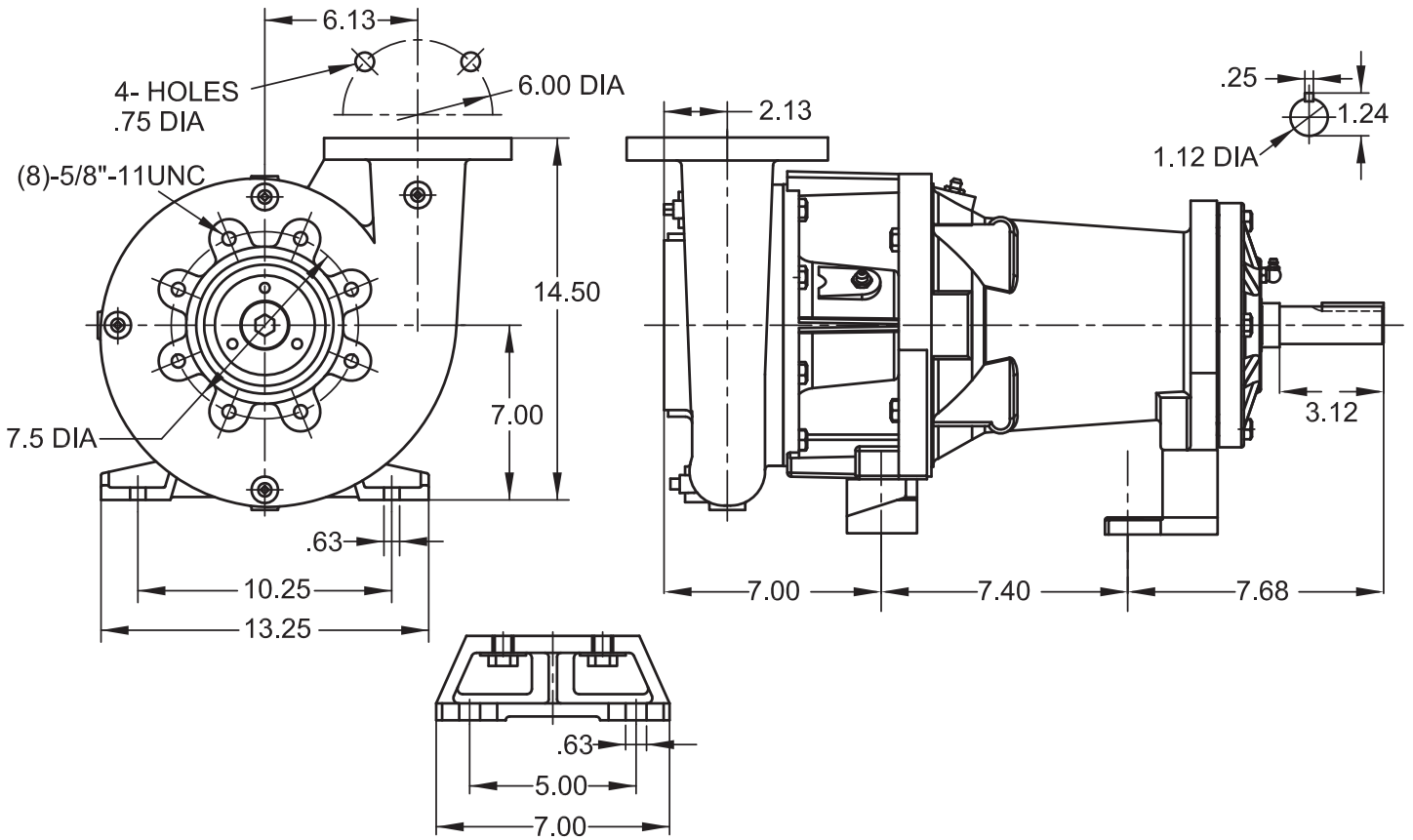
**Series: PF3040CU9**

**3" x 4"**

**Universal Drive, End Suction Centrifugal Pumps**

<b>SUCTION/ DISCHARGE</b>	4" 125 lb ANSI Flange Suction, 3" 125 lb ANSI Flange Discharge. Discharge can be placed in 4 different locations depending on piping requirements.
<b>LIQUID TEMPERATURE</b>	225°F Continuous
<b>CASING</b>	Cast Iron ASTM A48 Back Pull-Out design, with removing Suction & Discharge Piping.
<b>CASE WEAR RING</b>	Bronze C95200
<b>CASE WORKING PRESSURE</b>	175 PSI
<b>MOTOR BRACKET</b>	Cast Iron ASTM A48
<b>POWER FRAME</b>	Cast Iron ASTM A48
<b>PAINT</b>	Air dry enamel
<b>SHAFT</b>	Stainless Steel AISI420
<b>IMPELLER</b>	Enclosed Type, Dynamically Balanced, ISO G6.3. Maximum spheres .75" Material: Bronze C95200 or 304 Stainless
<b>SHAFT SLEEVE</b>	Bronze C95200
<b>SEAL</b>	Mechanical <i>Material:</i> Carbon/Ni-Resist/Buna-N Hardware - Stainless Steel AISI304
<b>BEARING-PUMP END</b>	Single Row, Ball, Grease Lubricated
<b>BEARING-DRIVE END</b>	Single Row, Ball, Grease Lubricated
<b>HARDWARE</b>	Steel
<b>WEIGHT</b>	254 lbs.

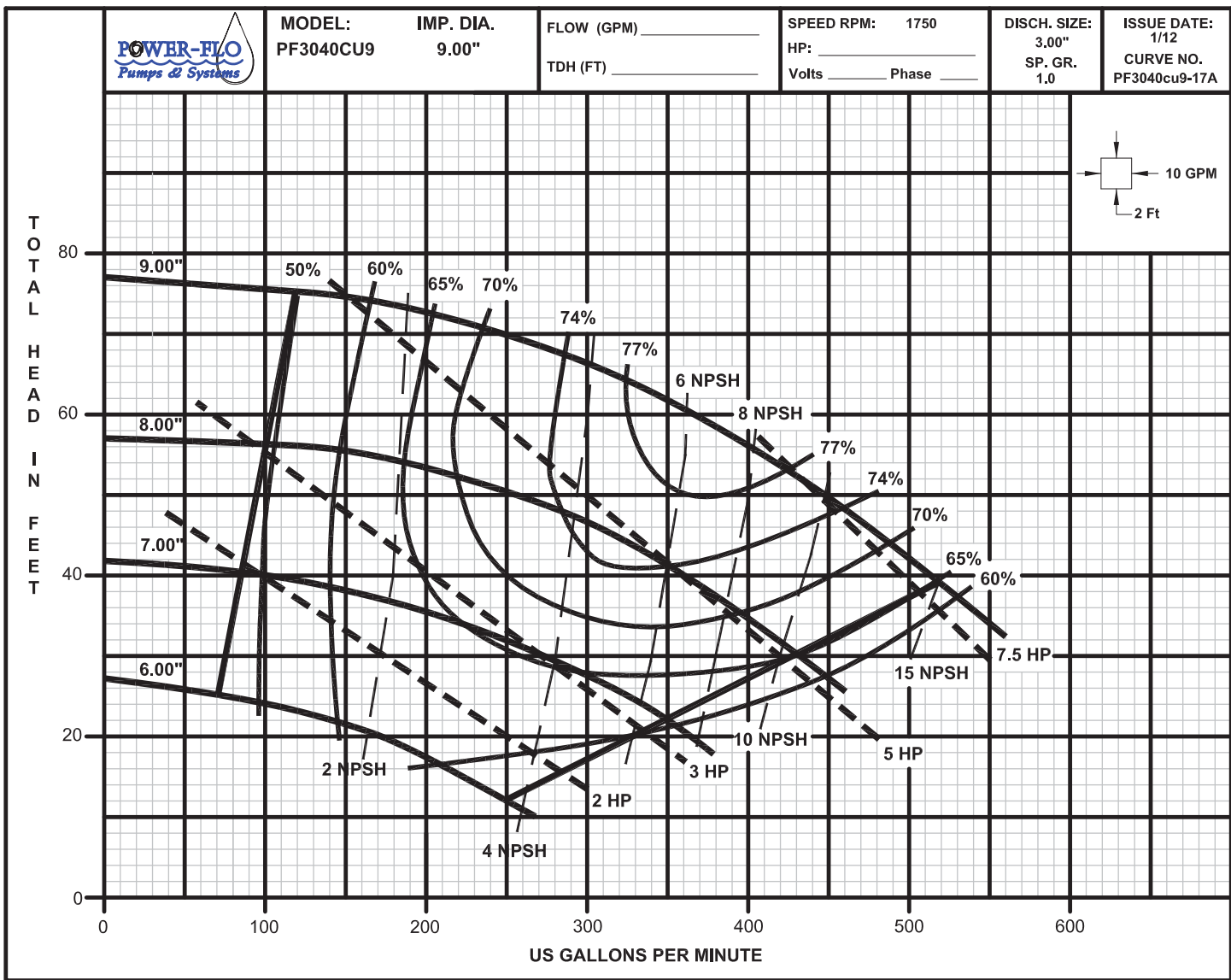
**Dimensions**



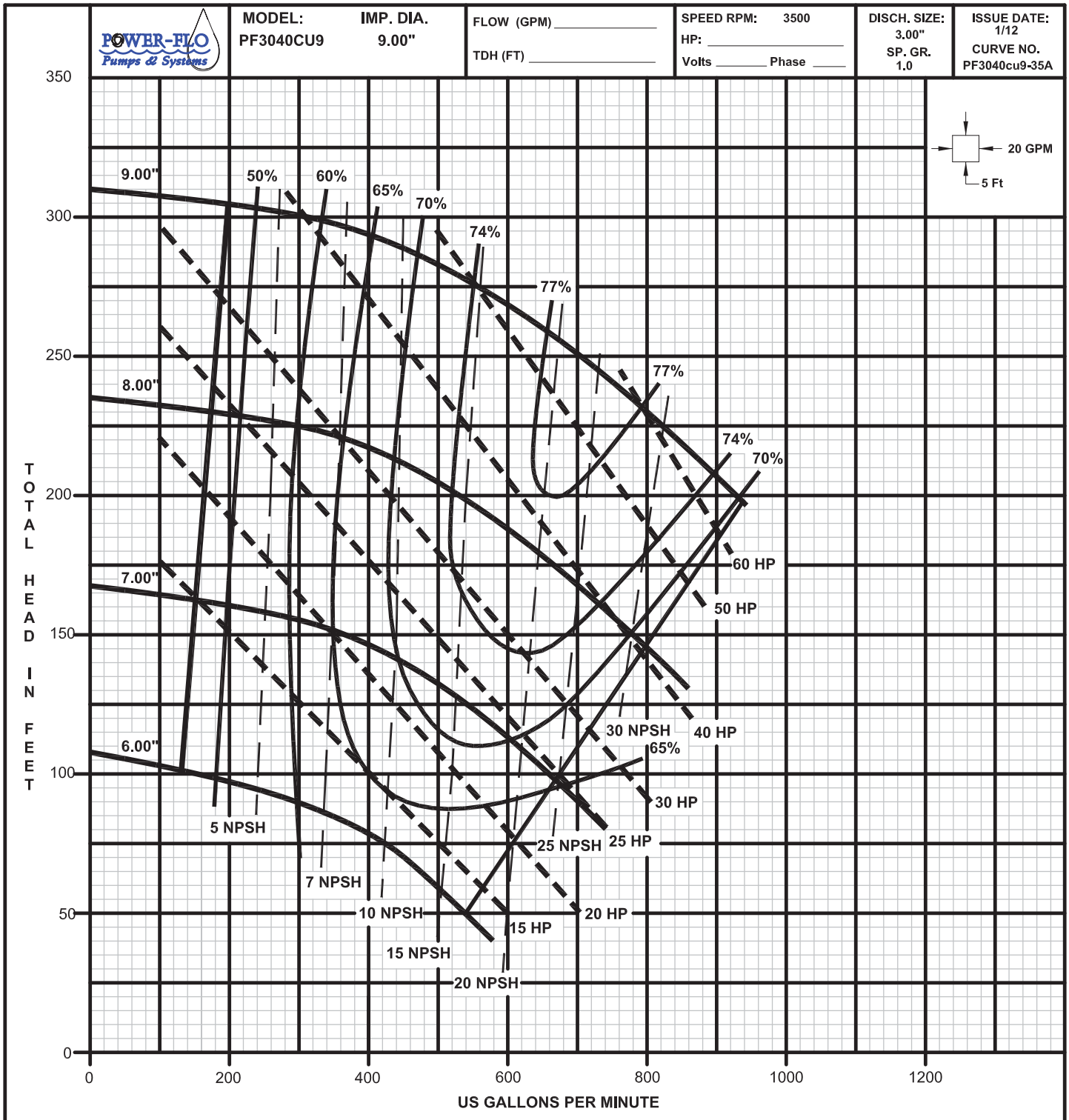
**WARNING ! - DO NOT** use in explosive atmosphere or for pumping volatile flammable liquids.



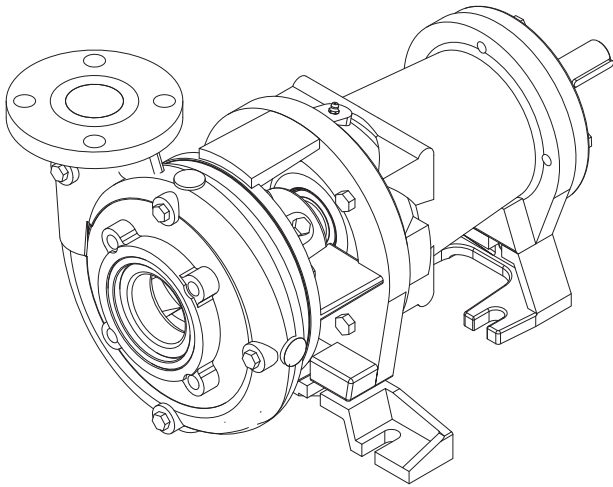
**Performance**



Performance



**Specifications**



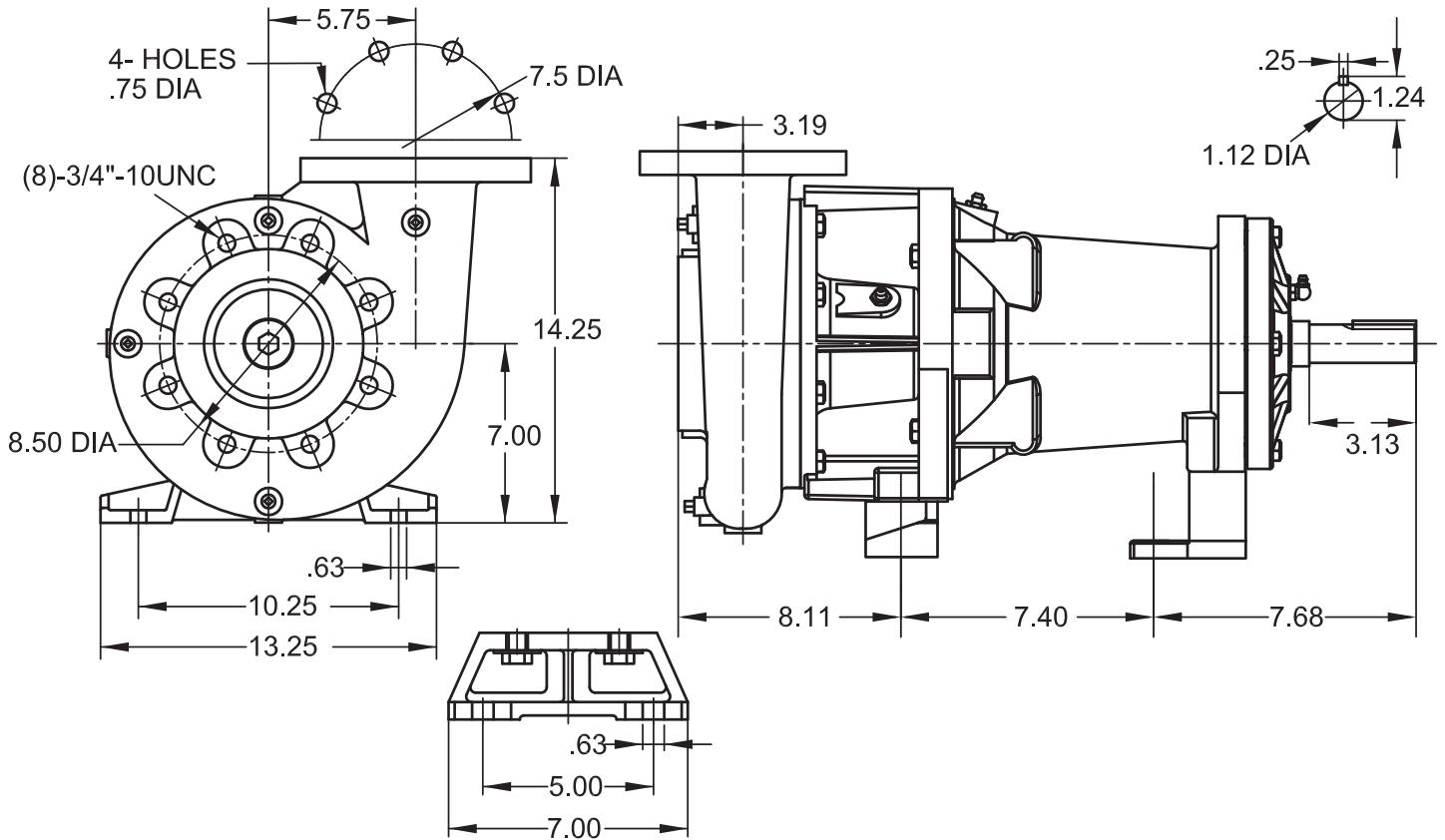
**Series: PF4050CU9**

**4" x 5"**

**Universal Drive, End Suction Centrifugal Pumps**

<b>SUCTION/ DISCHARGE</b>	5" 125 lb ANSI Flange Suction, 4" 125 lb ANSI Flange Discharge. Discharge can be placed in 4 different locations depending on piping requirements.
<b>LIQUID TEMPERATURE</b>	225°F Continuous
<b>CASING</b>	Cast Iron ASTM A48 Back Pull-Out design, with removing Suction & Discharge Piping.
<b>CASE WEAR RING</b>	Bronze C95200
<b>CASE WORKING PRESSURE</b>	175 PSI
<b>MOTOR BRACKET</b>	Cast Iron ASTM A48
<b>POWER FRAME</b>	Cast Iron ASTM A48
<b>PAINT</b>	Air dry enamel
<b>SHAFT</b>	Stainless Steel AISI420
<b>IMPELLER</b>	Enclosed Type, Dynamically Balanced, ISO G6.3. Maximum spheres .69" Material: Bronze C95200 or 304 Stainless
<b>SHAFT SLEEVE</b>	Bronze C95200
<b>SEAL</b>	Mechanical <i>Material:</i> Carbon/Ni-Resist/Buna-N Hardware -Stainless Steel AISI304
<b>BEARING-PUMP END</b>	Single Row, Ball, Grease Lubricated
<b>BEARING-DRIVE END</b>	Single Row, Ball, Grease Lubricated
<b>HARDWARE</b>	Steel
<b>WEIGHT</b>	270 lbs.

**Dimensions**

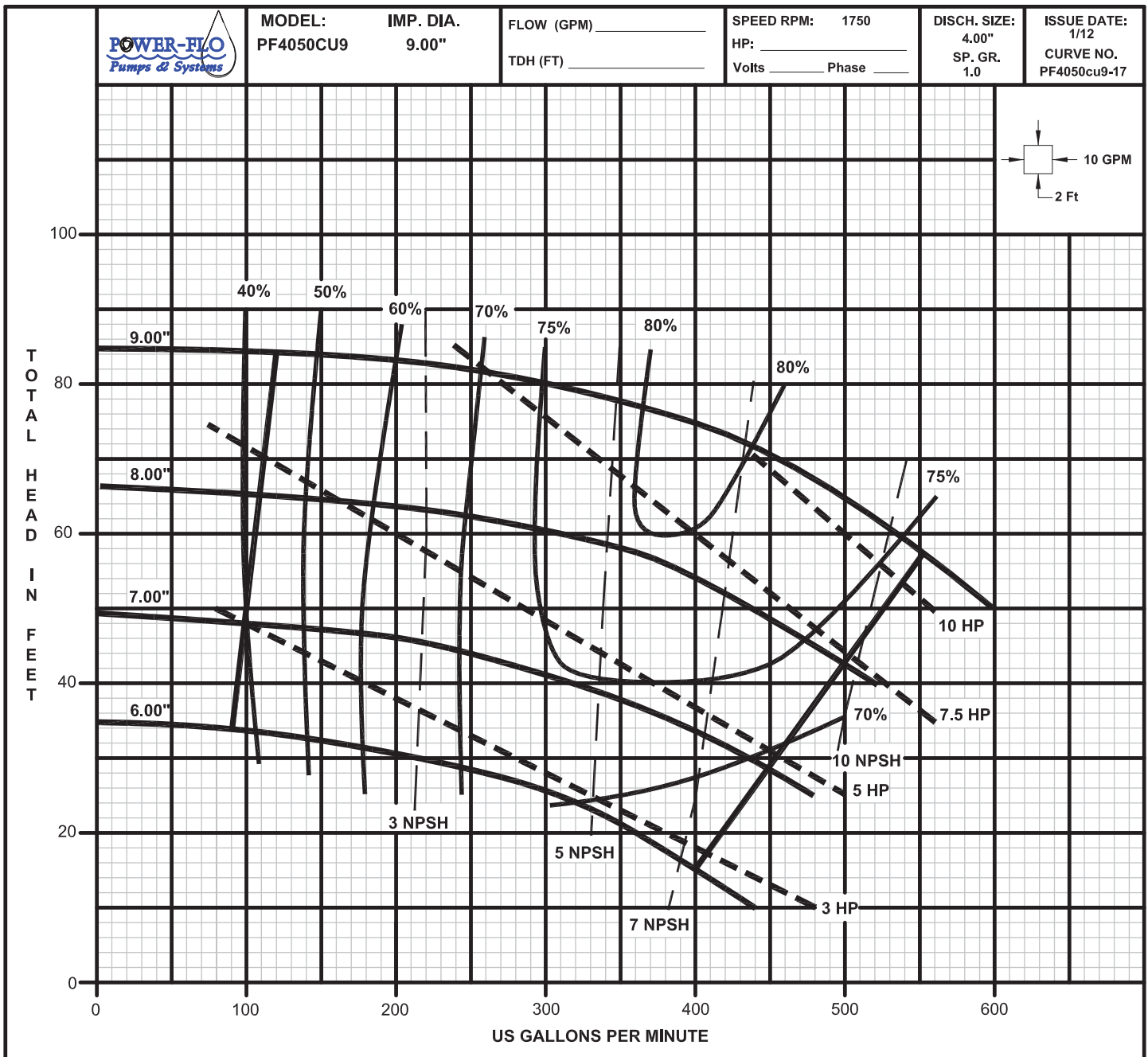


**WARNING! - DO NOT** use in explosive atmosphere or for pumping volatile flammable liquids.

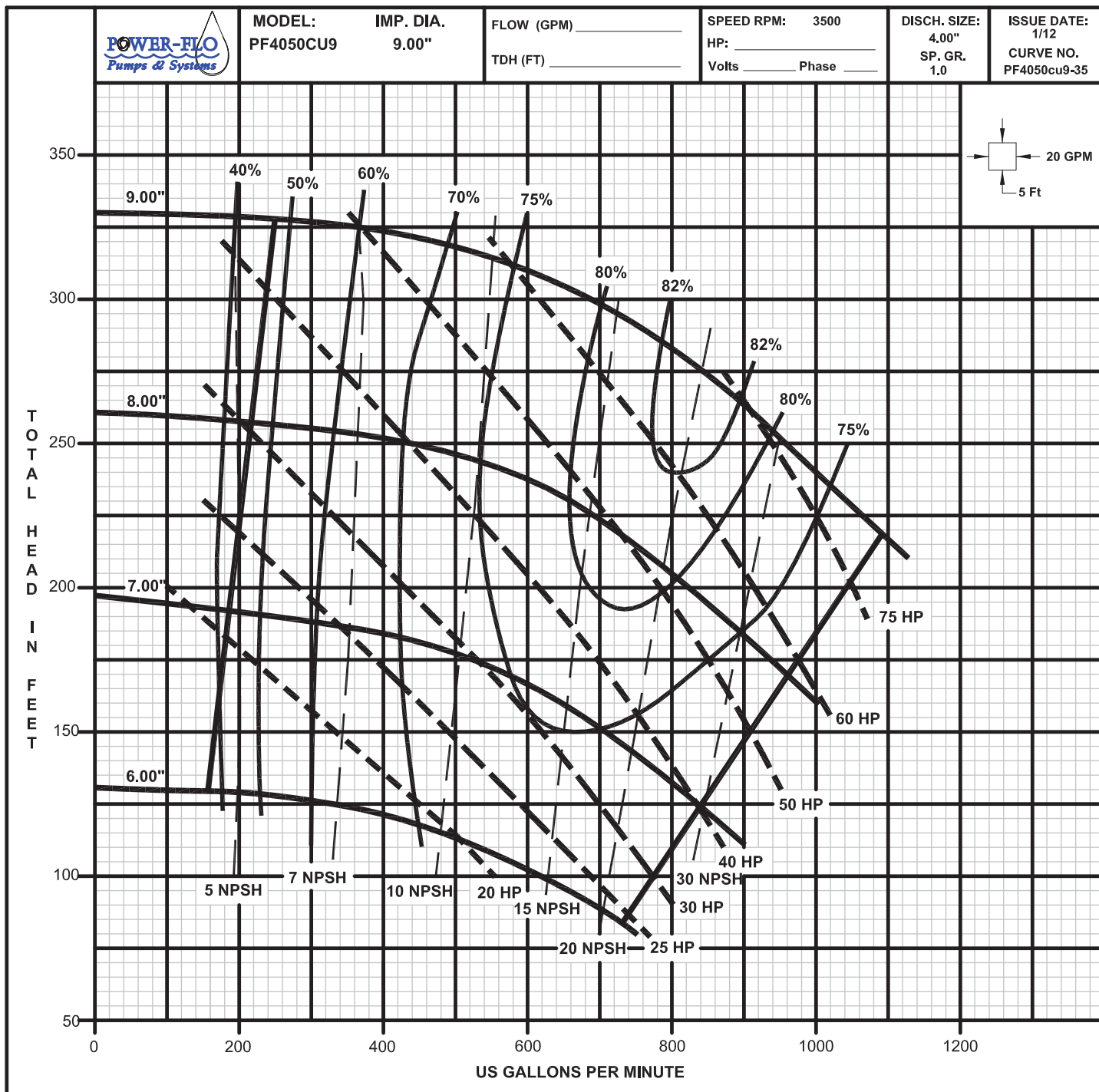




**Performance**



Performance



Receiving & Installation

**Receiving Inspection**

Upon receiving the pump, it should be inspected for damage or shortages. If damage has occurred, file a claim immediately with the company that delivered the pump. If the manual is removed from the packaging, do not lose or misplace.

**Storage**

Any product that is stored for a period longer than six (6) months from the date of purchase should be bench tested prior to installation. A bench test consists of, checking the impeller to assure it is free turning and a run test to assure the motor (and switch if provided) operate properly. Do not pump out of liquid.

**Installation**

**FOUNDATION** - The pump foundation should be sufficiently substantial to form a level, rigid support for the combined weight of the pump and driver and maintain alignment of the installed unit. Foundation bolts, of the proper size, should be imbedded in the concrete. A pipe sleeve, about 2½" diameters larger than the bolt, should be used to allow for final positioning of the bolts. See Figure 1.

**MOUNTING** - Mount pump and driver on a common base plate with coupling, must be aligned. Preliminary alignment is necessary after the complete unit has been leveled on the foundation, and again, after the unit is piped, and rechecked periodically as outlined in the following paragraphs. Position unit on foundation and level the base plate, using rectangular metal blocks and shims, or wedges having a small taper as shown in Figure 1.

A gap of 3/4" to 1½" should be allowed between the base plate and foundation for grouting. Adjust the metal supports or wedges until the shafts of the pump and driver are level.

Check the coupling faces, as well as the suction and discharge flanges of the pump for horizontal or vertical position by means of a level. Correct the positions, if necessary, by adjusting the supports or wedges under the base plate, as required.

NOTE: A flexible coupling should not be used to compensate for misalignment of the pump and driver shafts. The purpose of the flexible coupling is to compensate for temperature changes and to permit end movement of the shafts without interference with each other, while transmitting power from the driver to the pump.

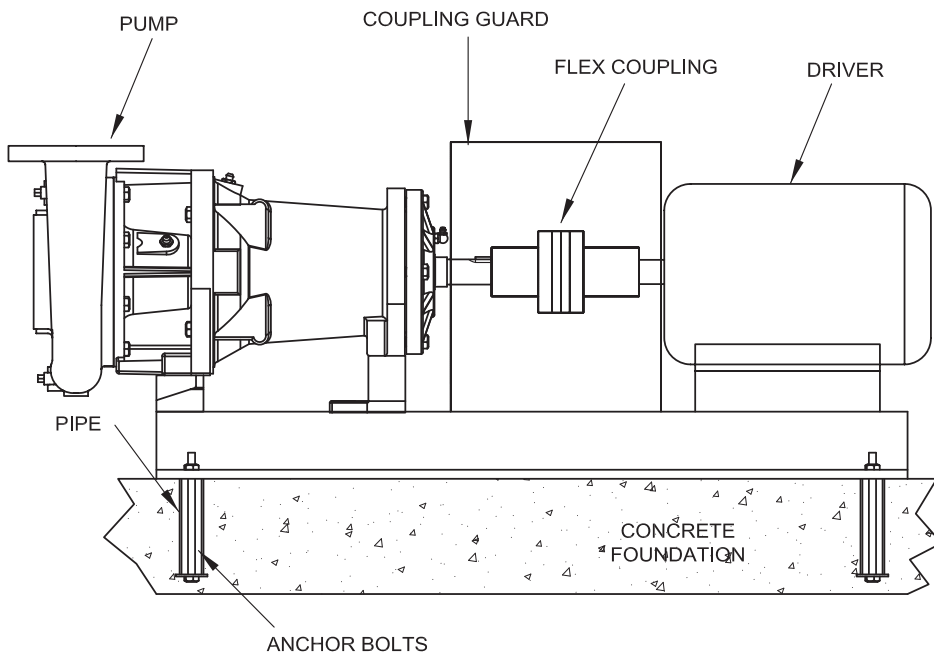
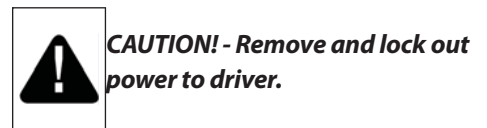


Figure 1

**FIELD ALIGNMENT**

The faces of the coupling halves should be spaced far enough apart so that they cannot strike each other when the driver rotor is moved toward the pump. The necessary tools for checking the alignment of a flexible coupling are a straight edge and a taper gauge or a set of feeler gauges.


NOTE: In most cases where extreme accuracy is necessary, a dial indicator may be used to align coupling. Angular alignment check is made by inserting a taper gauge or feelers between the coupling faces at 90-degree intervals around the coupling.

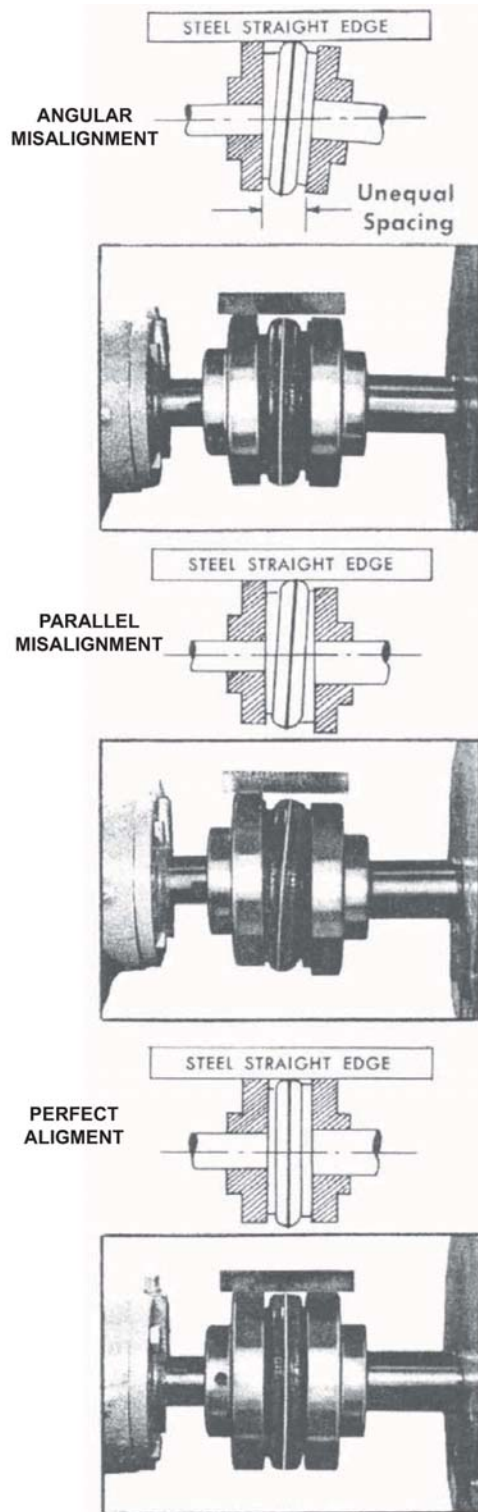
**Installation**

The unit will be in angular alignment when the coupling faces are exactly the same distance apart at all points. (See Figure 2).

Parallel alignment check is made by placing a straight edge across both coupling rims at the top, bottom and at both sides. The unit will be in parallel alignment when the straight edge rests evenly on the coupling rim at all positions. Allowance may be necessary for temperature changes and for coupling halves that are not of the same outside diameter. Care must be taken to have the straight edge parallel to the axis of the shafts. Correction for Angular and Parallel Misalignment is made by adjusting the shims under the driver. After each change, it is necessary to recheck the alignment of the coupling halves, as adjustment in one direction may disturb adjustments already made in another direction.

The permissible amount of coupling misalignment will vary with the type of pump and driver, but should be limited to approximately .002 inches per inch of shaft diameter when final adjustment is made. When the units are lined up cold, it is necessary to make allowance for the vertical rise of the driver caused by heating when in operation. When the preliminary alignment has been completed the foundation, bolts should be tightened evenly, but not too firmly.

 **WARNING - Coupling guards must be used to avoid serious injury to operating personnel.**



**Figure 2**

**GROUTING**

Grouting compensates for unevenness in the foundation and prevents vibration and shifting after mounting is complete. Build a form around the base plate to contain the grout, and sprinkle area with water to obtain a good bond. The base should be completely filled with a good quality, non-shrinking grout. The usual mixture for grouting is one part Portland cement and two parts sand with sufficient water to flow freely. It is also desirable to grout the leveling pieces, shims or wedges in place. Foundation bolts should be fully tightened when grout has hardened, usually about 48 hours after pouring.

**PIPING**

The pump suction and discharge connections are not intended to indicate the required suction and discharge pipe sizes. The pipe diameter must be selected according to the requirements of the pumping system and recommended friction losses for the liquid being pumped.

Usually, it is advisable to increase the size of both the suction and discharge pipes at the pump nozzles to have minimum acceptable friction loss, suction pipe should never be smaller in diameter than the pump suction nozzle. When suction pipe is of larger diameter than the pump suction nozzle, an eccentric reducer is required to eliminate possible air or vapor pockets at the pump suction inlet.

Both suction and discharge pipes must be supported independently near the pump, so that when piping is connected to the pump, no strain will be transmitted to the pump. Piping should be arranged with as few bends as possible, and, preferably, with long radius elbow whenever possible.



**Installation & Pre-Operation****SUCTION PIPING**

A horizontal suction line must have a gradual rise to the pump. Any high point in the suction pipe can become filled with air and prevent proper operation of the pump and may cause loss of prime. The pipe and fittings must be free of all air leaks.

Any valves or fittings should be located at a distance equal to 5 to 10 times the diameter of the suction pipe from the pump suction nozzle. If an elbow must be installed at the pump suction, it should be installed in a vertical position to reduce unequal flow into the pump, which may cause cavitation in the pump.

**NOTE:** A gate valve in the suction piping should not be used as a throttling device, as this may cause the liquid to overheat during operation.

**WIRING**

For electric motor drives, connect power supply to conform with national and local codes. Line voltage and wire capacity must match the ratings stamped on the motor nameplate.

**ROTATION**

Before starting the pump, check the required direction of rotation of the pump. The proper direction is indicated by a direction arrow on the pump casing. Separate the coupling halves, then start motor to see that it rotates in the direction required by the pump. If it does not, reverse any two main leads of the 3-phase wiring to the motor. The coupling halves can be reconnected and the pump primed for starting.

**Pre-Operation****PRIMING**

**CAUTION:** Before starting the pump, the casing and suction line must be filled with liquid, and air-vented through the vent pipe plugs. The pump must not be run until it is completely filled with liquid, because of danger of injuring some of the parts of the pump which depend upon liquid for lubrication. The discharge gate valve should be closed during priming. Be sure the mechanical seal and power frame are supplied with the proper lubrication.

**PRIMING BY SUCTION PRESSURE**

When operating with suction pressure (flooded suction), remove the pipe plug at the top of the casing and when pump is filled with liquid, replace plug.

**PRIMING WITH FOOT VALVE AND STRAINER**

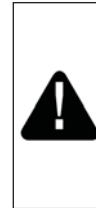
A foot valve and strainer may be installed on the lower end of the suction pipe to keep pump filled with liquid. Incorporate filler pipe in discharge pipe between pump and check valve. Remove pipe plug at top of casing, then fill suction pipe and pump with liquid. When pump is full of liquid, replace plug and close filler pipe.

**CAUTION:** When a foot valve and strainer are installed on the suction pipe, a spring loaded type check valve **MUST** be installed next to the pump in the discharge piping to prevent pump rupture from water hammer shock.

Priming by means of primer pump or ejector, attached to the pump, will also remove air from suction pipe and pump casing. When pump is filled with liquid, start motor and slowly open discharge gate valve.

**STARTING THE PUMP**

On initial start up, the gate valve in the discharge piping should be closed and slowly opened after pump is up to speed and pressure developed.



**DO NOT operate pump for any appreciable length of time against a closed discharge valve, as this may heat trapped liquid excessively and damage the pump or seal.**

The following important items should be checked as pump is started and placed in operation.

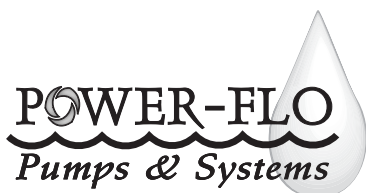
- a. Pump and driver securely bolted
- b. Coupling properly aligned
- c. Piping completed.
- d. Correct pump rotation.
- e. Pump shaft turns freely
- f. Discharge valve closed
- g. Suction valve open (if used)
- h. Coupling Guard installed
- i. Pump fully primed
- j. Pump and driver properly lubricated

Only after these items have been checked should the pump be started.

## Trouble Shooting

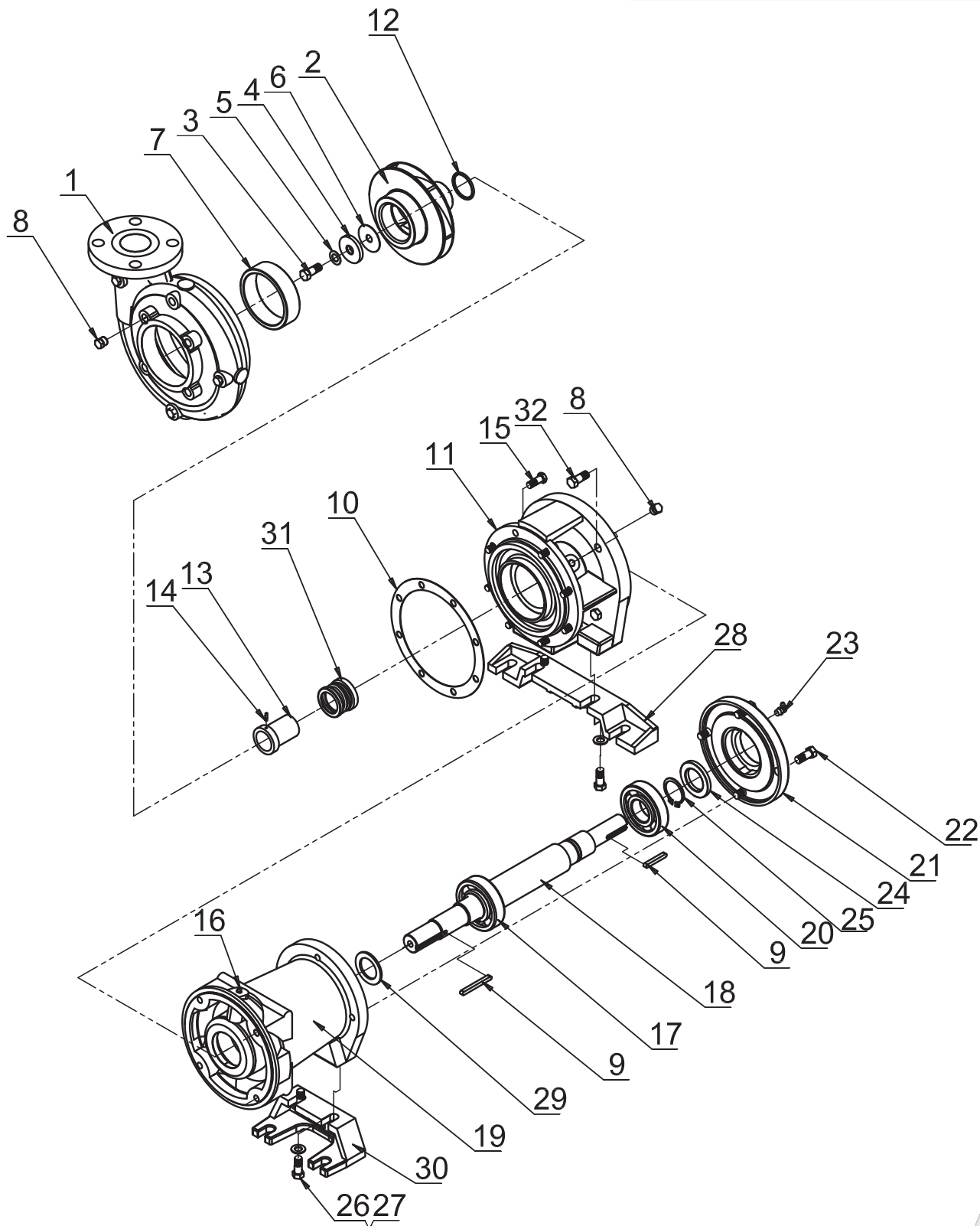
### Locating Trouble

1. No Liquid Delivered
  - a. Pump not primed - See Priming
  - b. Speed too low - Check motor speed and nameplate
  - c. Discharge head too high
  - d. Impeller completely plugged
  - e. Wrong direction of rotation - Check wiring
  - f. NPSHA may be too low, pump cavitates - Check total NPSHR
  - g. Suction or discharge valves closed
2. Not Enough Liquid Delivered
  - a. Air leaks in suction piping
  - b. Speed too low - Check motor speed
  - c. Discharge head higher than anticipated. Check discharge valve/ system requirements
  - d. Impeller partially plugged
  - e. Wrong direction of rotation
  - f. NPSHA may be too low, pump cavitates
  - g. Air entrainment
  - h. Flow meter improperly calibrated
3. Not Enough Pressure
  - a. Speed too low - Check motor speed
  - b. Air or gas in liquid
  - c. Incorrect impeller diameter - Check system requirements
  - d. Obstruction in pump or piping
  - e. Specific gravity lower than specified - May require larger pump impeller
  - f. Defective pressure gauge
4. Pump Works For A While Then Quits
  - a. Obstruction in pump or piping
  - b. Air or gas in liquid
  - c. Incomplete priming - See Priming
  - d. Air leak through seal when operating with high vacuum or high suction lift.
5. Pump Takes Too Much Power
  - a. Speed too high - Compare Pump and motor nameplates
  - b. Head lower than rating - pumps too much liquid. Check system requirements
  - c. Liquid specific gravity or viscosity greater than expected. Requires large motor.
  - d. Pump and driver misalignment - Check casing for pipe strain. Support piping and realign unit
  - e. Wrong direction of rotation
  - f. Electrical defects - Check power supply and motor
  - g. Impeller oversized for system requirements
6. Excessive Pump Vibration
  - a. Cavitation at pump suction due to insufficient NPSHA. Alter installation to reduce NPSHR
  - b. Impeller out of balance - Check mechanical (static) balance
  - c. Pump and motor misalignment
  - d. Obstruction in pump impeller
  - e. Pump shaft bent
  - f. Worn pump bearings
  - g. Impeller imbalance due to wear or corrosion
  - h. Motor imbalance
  - i. Base plate loose on foundation or insufficient strength to support the load
7. Pump and/or Motor Noise
  - a. Pump and motor misalignment
  - b. Pump cavitation
  - c. Base plate loose or not grouted
  - d. Pump bearings worn
  - e. Motor bearings worn or fan rubs housing



For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

**Repair Parts**



**Figure 3**

**Parts List**

For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

Ref. No.		Qty	Name	Part Numbers			
				PF2025CU7 Frame 2	PF2025CU9 Frame 3	PF3040CU9 Frame 3	PF4050CU9 Frame 3
1	☆	1	Casing, Cast Iron	PF180-2142-010	PF180-2152-010	PF180-2351-010	PF180-2156-010
2	☆	1	Impeller, Bronze	PF443-0413-225	PF443-0443-225	PF443-1768-225	PF443-1752-225
3		1	Capscrew, 1/2-13 x 1.25" Lg	PF168-0490-113	PF168-0490-113	PF168-0490-113	PF168-0490-113
4		1	Washer, 1/2	PF908-0604-087	PF908-0604-087	PF908-0604-087	PF908-0604-087
5		1	Capscrew Seal, 13.2mm x 1.8mm	PF908-1292-999	PF908-1292-999	PF908-1292-999	PF908-1292-999
6		1	Gasket	PF364-2035-603	PF364-2035-603	PF364-2035-603	PF364-2035-603
7		1	Case Ring	PF676-1152-208	PF676-1152-208	PF676-1154-208	PF676-1154-208
8		6	Pipe Plug, 1/4-18 NPT	◆	◆	◆	◆
9		2	Drive Key, 1/4 x 1.75	PF472-0247-087	PF472-0247-087	PF472-0247-087	PF472-0247-087
10		1	Gasket	PF364-1014-603	PF364-1015-603	PF364-1015-603	PF364-1015-603
11	☆	1	Bracket	PF116-0197-010	PF116-0198-010	PF116-0198-010	PF116-0198-010
12		1	O-ring, 41.2mm O.D. x 3.55	PF364-0414-457	PF364-0414-457	PF364-0414-457	PF364-0414-457
13		1	Sleeve	PF756-0078-208	PF756-0078-208	PF756-0078-208	PF756-0078-208
14		1	Pin, 1/8 x 3/8	Included with item #13			
15		8	Capscrew	◆- 3/8-24 x 1"	◆- 1/2-13 x 1.25"	◆- 1/2-13 x 1.25"	◆- 1/2-13 x 1.25"
16		1	Grease Fitting, M10x1	PF508-0001	PF508-0001	PF508-0001	PF508-0001
17		1	Inner Bearing, 6308, 6310	PF068-0159-647	PF068-0161-647	PF068-0161-647	PF068-0161-647
18	☆	1	Shaft, 1.125" Dia. at Cplg end	PF728-0122-063	PF728-0123-063	PF728-0123-063	PF728-0123-063
19		1	Frame	PF356-0202-010	PF356-0203-010	PF356-0203-010	PF356-0203-010
20		1	Outer Bearing, 6308NR, 6310NR	PF068-2308-647	PF068-2310-647	PF068-2310-647	PF068-2310-647
21		1	Bearing Cap	PF164-0471-010	PF164-0472-010	PF164-0472-010	PF164-0472-010
22		4	Capscrew, 1/2-13 x 1.50"	◆	◆	◆	◆
23		1	Grease Fitting, M10x1	◆	◆	◆	◆
24		1	Lip Seal	PF712-0234-653	PF712-0234-653	PF712-0234-653	PF712-0234-653
25		1	Ret Ring	PF676-0938-088	PF676-0944-088	PF676-0944-088	PF676-0944-088
26		4	Capscrew, 1/2-13 x 1.25"	◆	◆	◆	◆
27		4	Washer, 1.375 x .5625 x .09375	◆	◆	◆	◆
28		1	Support	PF820-0186-010	PF820-0186-010	PF820-0186-010	PF820-0186-010
29		1	Slinger, 2.5 x 1.5625 x .3125	PF764-1021-478	PF764-1026-478	PF764-1026-478	PF764-1026-478
30		1	Support	PF820-0188-010	PF820-0189-010	PF820-0189-010	PF820-0189-010
31		1	Shaft Seal, 1.50"	PF712-0910-749	PF712-0910-749	PF712-0910-749	PF712-0910-749
32		8	Capscrew	◆- 3/8-24 x 1"	◆- 1/2-20 x 1.25"	◆- 1/2-20 x 1.25"	◆- 1/2-20 x 1.25"

◆ = Acquire standard hardware locally.  
 ☆ = Replacement Parts











## LIMITED WARRANTY

Manufacturer warrants, to the immediate purchaser and subsequent initial owner during the warranty period, every new pump to be free from defects in material and workmanship under normal use and service, when properly used and maintained, for a period of eighteen (18) months from date of manufacture or twelve (12) months from date of installation (which ever comes first). Failure due to wear due to excessive abrasives is not covered. The initial owner is the purchaser who first uses the pump after its initial installation, or for non-permanent installation, the first owner who uses the pump. The date of installation shall be determined by a dated sales receipt noting the model and serial number of the pump. The dated sales receipt must accompany the returned pump. Product will be repaired, replaced or remanufactured at Manufacturer's option. No allowance will be made for shipping charges, damages, labor or other charges that may occur due to product failure, repair or replacement. This warranty does not apply to and there shall be no warranty for any material or product that has been disassembled without prior approval of Manufacturer, subjected to misuse, misapplication, neglect, alteration, accident or act of God; that has not been installed, operated or maintained in accordance with Manufacturer's installation instructions; that has been exposed to outside substances including but not limited to the following: sand, gravel, cement, mud, tar, hydrocarbons, hydrocarbon derivatives (oil, gasoline, solvents, etc.), or other abrasive or corrosive substances, wash towels or feminine sanitary products, etc. in all pumping applications. The warranty set out in the paragraph above is in lieu of all other warranties expressed or implied; and we do not authorize any representative or other person to assume for us any other liability in connection with our products. Contact Manufacturer at: 1-877-24PUMPS or [www.powerflopumps.com](http://www.powerflopumps.com), Attention: Customer Service Department, to obtain any needed repair or replacement of part(s) or additional information pertaining to our warranty.

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Some states do not allow limitations on the duration of an implied warranty, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

