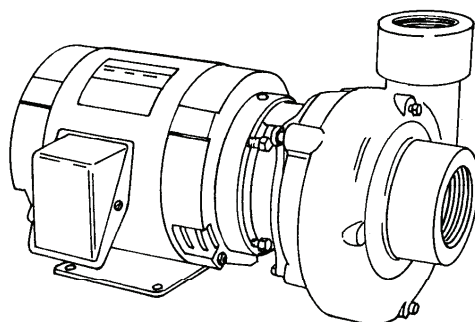


**Close Coupled End Suction**



**1750 RPM - 60Hz.**  
CAPACITIES TO 320 GPM (20.2 LPS)  
HEADS TO 39 FEET (12 M)



**1450 RPM - 50Hz.**  
CAPACITIES TO 280 GPM (17.7 LPS)  
HEADS TO 27 FEET (8.3 M)



Individual performance curves should be checked for final selection.

## Close Coupled End Suction

### FOUR POSITION CASING

Discharge can be located in any of four positions. Back pull-out design eliminates the need to disturb piping should the pump ever require service - the casing stays in the line.

### ENCLOSED IMPELLER

Of the latest hydraulic design for maximum efficiency, impeller is balanced for vibration-free operation. It is precision fit to shaft with key drive and cap screw lock.

### MECHANICAL SHAFT SEAL

Standard self-adjusting shaft seal for temperatures to 225°F (107°C) and pressures to 150 psi (1034kpa). Ceramic seat and carbon seal face for long trouble-free service. Special seals are available for higher temperatures and fluids other than water.

### SHAFT SLEEVE

Gasketed and keyed hook-type sleeve protects shaft from wear and corrosion in seal area.

### FACTORY TESTED

After careful assembly and inspection, EVERY pump is factory tested and will meet Hydraulic Institute standards.

### MOTORS

JM Type motors have NEMA standard mounting flange, extended steel shaft and dual bearings. These motors offer the advantages of quiet operation, controlled shaft deflection for longer seal life, and bearings sized to provide good service life. All motors are supplied by manufacturers with national field service facilities.

### MOTOR INFORMATION

60 Hz - 1750 RPM - ODP  
50 Hz - 1450 RPM - ODP  
Single Phase: 115/230 V  
Three Phase: 208-230/460 V

Voltages may differ from some suppliers. Consult factory.

### OVERLOAD PROTECTION

All single phase ODP and Totally Enclosed motors have built-in overload protection. All three phase motors and all explosion proof motors must be installed with a magnetic starter which provides full 3-leg protection. Failure to use correct starter and overloads will void motor warranty.

### MATERIALS OF CONSTRUCTION

| PART         | ALL IRON                      | BRONZE FITTED                 | ALL BRONZE                    |
|--------------|-------------------------------|-------------------------------|-------------------------------|
| Adapter      | Cast Iron                     | Cast Iron                     | Bronze                        |
| Casing       | Cast Iron                     | Cast Iron                     | Bronze                        |
| Impeller     | Cast Iron                     | Bronze                        | Bronze                        |
| Shaft        | Steel                         | Steel                         | Steel                         |
| Shaft Sleeve | #316 Stainless                | Bronze                        | Bronze                        |
| Shaft Seal   | Carbon-Ceramic<br>SS - Buna-N | Carbon-Ceramic<br>SS - Buna-N | Carbon-Ceramic<br>SS - Buna-N |

### MAXIMUM OPERATING CONDITIONS

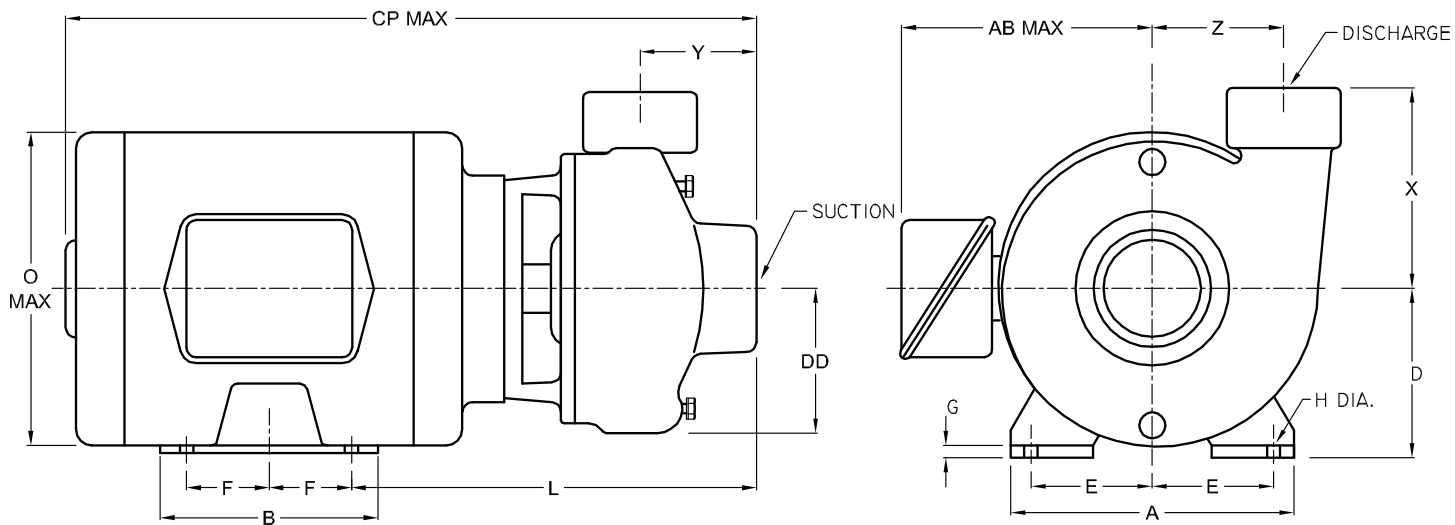
|   |                    |
|---|--------------------|
| TEMPERATURE<br>(For Standard Buna-N Seal) | 225°F (107°C)      |
| INLET PRESSURE                            | 100 PSI (433 kpa)  |
| CASING WORKING PRESSURE                   | 200 PSI (1379 kpa) |



#### WARNING:

CANCER AND REPRODUCTIVE HARM -  
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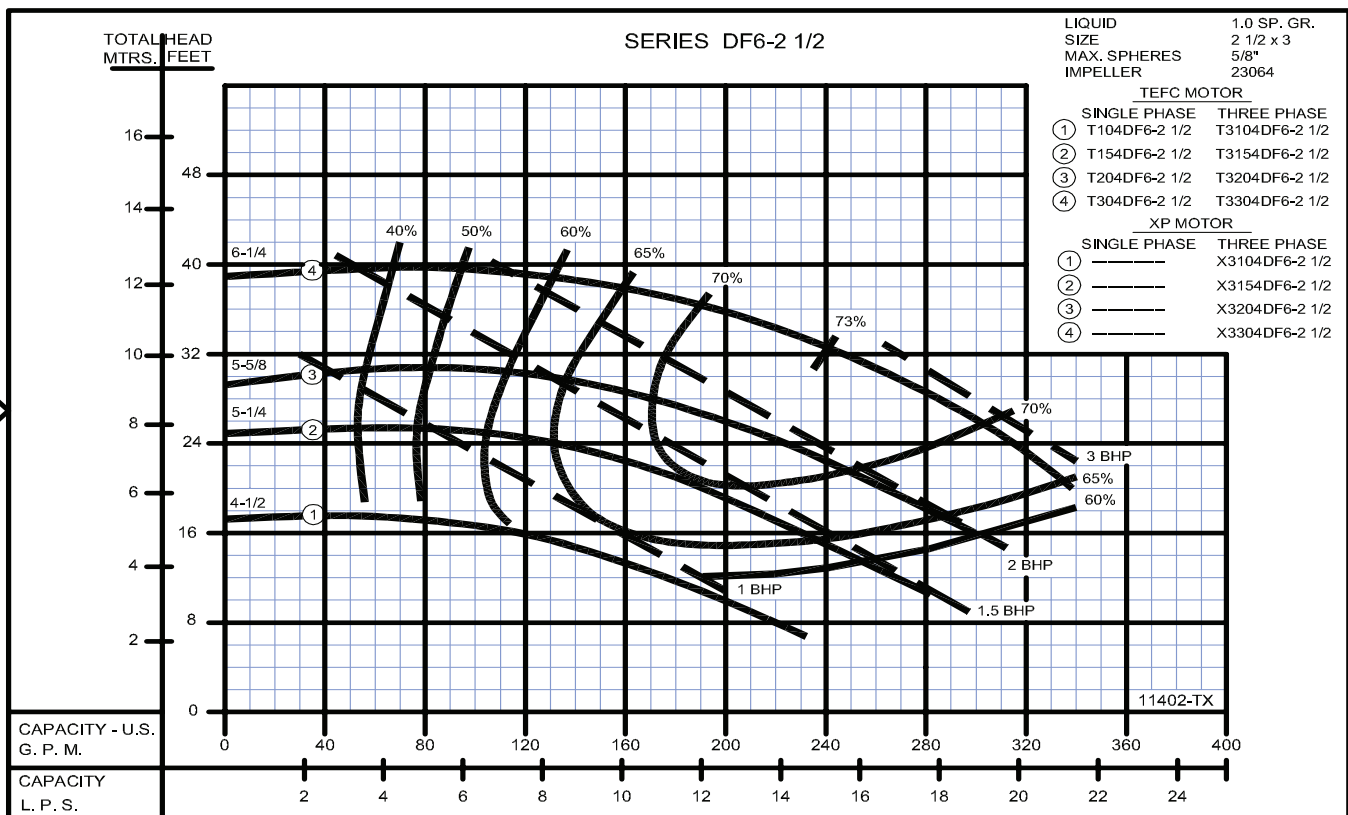
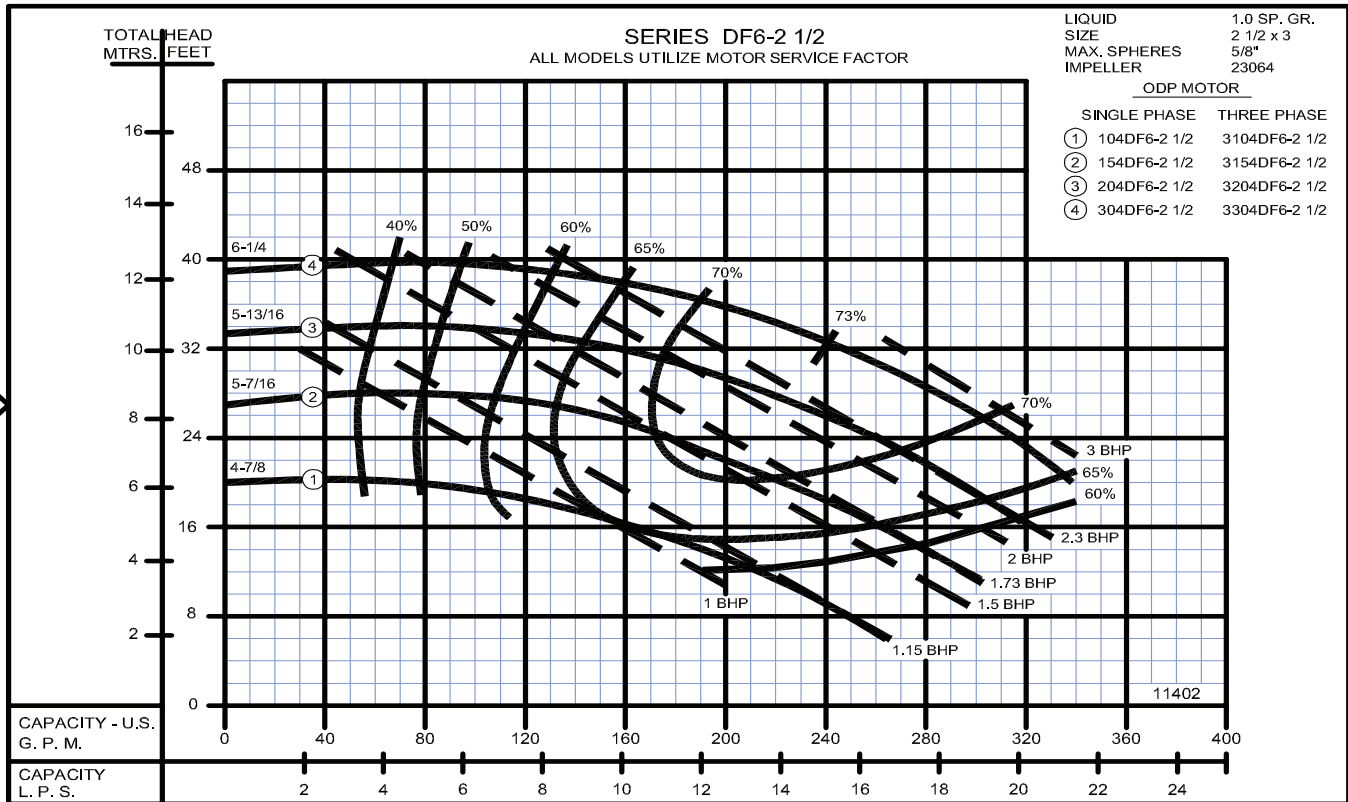
**Close Coupled End Suction**



| DIMENSIONS IN INCHES (mm) |       |                  |               |                |                |                 |                |                   |                |                 |               |               |               |                  |                   |                  |                 |                |                 |
|---------------------------|-------|------------------|---------------|----------------|----------------|-----------------|----------------|-------------------|----------------|-----------------|---------------|---------------|---------------|------------------|-------------------|------------------|-----------------|----------------|-----------------|
| MODEL                     | HP    | MOTOR FRAME SIZE | DISC NPT (in) | SUCT. NPT (in) | A              | AB              | B              | CP                | D              | DD              | E             | F             | G             | H                | L                 | O                | X               | Y              | Z               |
| DF6-2 1/2                 | 1     | 143JM            | 2 1/2         | 3              | 7<br>(178)     | 6 3/16<br>(157) | 6 1/2<br>(165) | 17 15/16<br>(456) | 3 1/2<br>(89)  | 5 3/16<br>(132) | 2 3/4<br>(70) | 2<br>(51)     | 1/8<br>(3)    | 1 1/32<br>(8.7)  | 10 15/16<br>(278) | 7 7/8<br>(187)   | 6 1/16<br>(154) | 3 7/16<br>(87) | 4 5/16<br>(110) |
|                           | 1 1/2 | 145JM            | 2 1/2         | 3              | 7<br>(178)     | 6 3/16<br>(157) | 6 1/2<br>(165) | 18 7/16<br>(468)  | 3 1/2<br>(89)  | 5 3/16<br>(132) | 2 3/4<br>(70) | 2 1/2<br>(64) | 1/8<br>(3)    | 1 1/32<br>(8.7)  | 10 15/16<br>(278) | 7 7/8<br>(187)   | 6 1/16<br>(154) | 3 7/16<br>(87) | 4 5/16<br>(110) |
|                           | 2     | 182JM            | 2 1/2         | 3              | 8 3/4<br>(222) | 8 9/16<br>(217) | 5 3/4<br>(146) | 20 3/8<br>(518)   | 4 1/2<br>(114) | 5 3/16<br>(132) | 3 3/4<br>(95) | 2 1/4<br>(57) | 3/16<br>(4.7) | 1 3/32<br>(10.3) | 11 11/16<br>(297) | 9 11/16<br>(246) | 6 1/16<br>(154) | 3 7/16<br>(87) | 4 5/16<br>(110) |
|                           | 3     | 184JM            | 2 1/2         | 3              | 8 3/4<br>(222) | 8 9/16<br>(217) | 6 3/4<br>(171) | 21 7/8<br>(556)   | 4 1/2<br>(114) | 5 3/16<br>(132) | 3 3/4<br>(95) | 2 3/4<br>(70) | 3/16<br>(4.7) | 1 3/32<br>(10.3) | 11 11/16<br>(297) | 9 11/16<br>(246) | 6 1/16<br>(154) | 3 7/16<br>(87) | 4 5/16<br>(110) |

DIMENSIONS SHOWN ABOVE ARE APPROXIMATE MAXIMUM DIMENSIONS FOR STANDARD PUMPS EQUIPPED WITH ODP MOTORS.

**Close Coupled End Suction**



**Centrifugals - Close Coupled**



| 1 - MOTORS                         |             |    |            |
|------------------------------------|-------------|----|------------|
| RPM & PHASE                        | PART NUMBER | HP | FRAME SIZE |
| <b>OPEN DRIP PROOF</b>             |             |    |            |
| 1750 RPM<br>Single Phase<br>(ODP)  | 21393       | 1  | 143JM      |
|                                    | 21394       | 1½ | 145JM      |
|                                    | 21395       | 2  | 182JM      |
|                                    | 21396       | 3  | 184JM      |
| 1750 RPM<br>Three Phase<br>(ODP)   | 21419       | 1  | 143JM      |
|                                    | 21420       | 1½ | 145JM      |
|                                    | 21421       | 2  | 182JM      |
|                                    | 21422       | 3  | 184JM      |
| <b>TOTALLY ENCLOSED</b>            |             |    |            |
| 1750 RPM<br>Single Phase<br>(TEFC) | 21399       | 1  | 143JM      |
|                                    | 21400       | 1½ | 145JM      |
|                                    | 21401       | 2  | 182JM      |
|                                    | 21402       | 3  | 184JM      |
| 1750 RPM<br>Three Phase<br>(TEFC)  | 21426       | 1  | 143JM      |
|                                    | 21427       | 1½ | 145JM      |
|                                    | 21428       | 2  | 145JM      |
|                                    | 21429       | 3  | 182JM      |
| <b>EXPLOSION PROOF</b>             |             |    |            |
| 1750 RPM<br>Three Phase<br>(XP)    | 21433       | 1  | 143JM      |
|                                    | 21434       | 1½ | 145JM      |
|                                    | 21435       | 2  | 145JM      |
|                                    | 21436       | 3  | 182JM      |



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Centrifugals - Close Coupled

| SYMBOL NUMBER                            | PART NUMBER | QTY | DESCRIPTION           |
|--|-------------|-----|-----------------------|
| <b>DIFFERING PARTS FOR BRONZE FITTED</b> |             |     |                       |
| 7  | 03289       | 1   | Cap Screw             |
| 9  | 22105-C     | 1   | Washer - Alum. Bronze |
| 11                                       | 23064-A     | 1   | Impeller              |
| 16                                       | 22063-C     | 1   | Shaft Sleeve          |
| <b>DIFFERING PARTS FOR ALL BRONZE</b>    |             |     |                       |
| 2  | 22002-A     | 1   | Adapter               |
| 4  | 01691-A     | 3   | Plug                  |
| 6  | 23909-A     | 1   | Casing                |
| 7  | 03289       | 1   | Cap Screw             |
| 9  | 22105-C     | 1   | Washer, Alum. Bronze  |
| 11                                       | 23064-A     | 1   | Impeller              |
| 16                                       | 22063-C     | 1   | Shaft Sleeve          |

(\*\*) For hot water or Caustic service.

| SYMBOL NUMBER | PART NUMBER | QTY | DESCRIPTION                                 |
|---------------|-------------|-----|---|
| 2             | 22002       | 1   | Adapter                                     |
| 3             | 09918       | 1   | Slinger Washer                              |
| 4             | 23014       | 1   | Key   |
| 5             | 00158       | 3   | Pipe Plug - 1/8"                            |
| 6             | 23909       | 1   | Casing                                      |
| 7             | 1-529-1     | 1   | Cap Screw - SS                              |
| 8             | 22080       | 1   | O-Ring Gasket - Buna-N (Std)                |
|               | 2-31005-012 | 1   | O-Ring Gasket - Viton                       |
|               | 22093       | 1   | O-Ring Gasket - EPDM**                      |
| 9             | 22105-A     | 1   | Washer - Steel                              |
| 10            | 22083       | 2   | O-Ring Gasket - Buna-N (Std)                |
|               | 22084       | 2   | O-Ring Gasket - Viton                       |
|               | 22094       | 2   | O-Ring Gasket - EPT**                       |
| 11            | 23064-4.88  | 1   | Impeller - 104DF6-2-1/2AI & 3104DF6-2-1/2AI |
|               | 23064-5.44  | 1   | Impeller - 154DF6-2-1/2AI & 3154DF6-2-1/2AI |
|               | 23064-5.81  | 1   | Impeller - 204DF6-2-1/2AI & 3204DF6-2-1/2AI |
|               | 23064-6.25  | 1   | Impeller - 304DF6-2-1/2AI & 3304DF6-2-1/2AI |
| 12            | 2-31003-166 | 1   | O-Ring Gasket - Buna-N (Std)                |
|               | 2-31005-166 | 1   | O-Ring Gasket - Viton                       |
|               | 22098       | 1   | O-Ring Gasket - EPT**                       |
| 13            | 23905       | 4   | Stud  |
|               | 23906       | 4   | Hex Nut                                     |
| 14            | 21236       | 4   | Cap Screw                                   |
| 15            | 09917       | 1   | Mechanical Seal - Buna-N (Std)              |
|               | 09926       | 1   | Mechanical Seal - Viton                     |
|               | 21271       | 1   | Mechanical Seal - EPT**                     |
| 16            | 22063-A     | 1   | Shaft Sleeve - SS                           |

**WARNING:**  
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