

## Close Coupled End Suction



### 1. RADIAL SPLIT CASING DESIGN

Casing is close grain iron of 30,000 p.s.i. minimum tensile strength. Back pull-out design eliminates the need to disturb piping should the pump ever require service - the casing stays in the line. Centerline discharge. Stud mounted casing assures positive alignment and allows rotation of discharge to eight different positions. Openings are provided for test gauges, for venting and for draining the pump.

### 2. ENCLOSED BRONZE IMPELLER

Enclosed bronze impeller is of latest hydraulic design for maximum efficiency. It is balanced for vibration free operation. Precision fit to shaft and double-locked with key and cap screw.

### 3. REPLACEABLE CASING WEAR RING

Prevents wear on casing and is easy to replace.

### 4. MECHANICAL SHAFT SEAL

Mechanical Shaft Seal is self-adjusting for temperatures up to 225°F (107°C) and pressures to 150 psi (1034kpa). Has ceramic seat and carbon seal faces for long trouble-free service. Special seals are available for higher temperatures and fluids other than water. Tapped opening is provided in the seal chamber for flushing seal faces.

#### MAXIMUM OPERATING CONDITIONS

Maximum Pumping Temperature*	225°F (107°C)
Maximum inlet Pressure	100 PSI (690kpa)
Maximum Case Working Pressure	200 PSI (1379kpa)

\* FOR STANDARD BUNA-N SEAL

#### MATERIALS OF CONSTRUCTION

Part	Bronze Fitted	All Bronze	All Iron
Adapter	Cast Iron	Bronze	Cast Iron
Casing	Cast Iron	Bronze	Cast Iron
Casing Wear Ring	Bronze	Bronze	Steel
Shaft	Steel	Steel	Steel
Shaft Sleeve	Bronze	Bronze	#316 Stainless
Impeller	Bronze	Bronze	Cast Iron
Shaft Seal	Carbon-Ceramic SS - Buna-N	Carbon-Ceramic SS - Buna-N	Carbon-Ceramic SS - Buna-N

### 5. BRONZE SHAFT SLEEVE

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

### 6. MOTORS

The standard Type JM motors supplied with these pumps offer the advantages of quiet operation, controlled shaft deflection for longer mechanical seal life and bearings sized to provide good service life. All motors are **supplied by** manufacturers providing field service facilities.

### 7. INTERCHANGEABILITY

The complete liquid end of any size pump is interchangeable between motors on close-coupled pumps and the BURKS power frames of comparable size providing inventory flexibility, plus an option for handling emergency service.

### 8. FACTORY TESTED

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

### FOR TEMPERATURES TO 500°F (260°C).

All models, with the exception of the G7-2-1/2 and all G9 series pumps are available in a Jacketed Seal Cavity design for pumping hot oil, hot water and heat transfer fluids in common use in high temperature heating or cooling applications. This feature greatly extends seal life in high temperature applications. To order, add suffix "MJ" to pump catalog number for temperatures below 400°F (204°C) and add suffix "MJK" to pump catalog number for temperatures over 400°F (204°C). Example: G6-1-1/2MJ. See Section on High Temperature Pumps for more information.

#### SUCTION & DISCHARGE SIZES

* SERIES	SUCTION (in)	DISCHARGE (in)
G6-1-1/2	2	1-1/2
G-2 & 2F	2-1/2	2
G6-2-1/2 & 2-1/2F	3	2-1/2
G7-2 & 2F	2-1/2	2
G7A-2 & 2F	2-1/2	2
G7-2-1/2 & 2-1/2F	3	2-1/2
G9-1-1/2	2	1-1/2
G9-2 & 2F	2-1/2	2
G9-2-1/2 & 2-1/2F	3	2-1/2
G9-3F & G9A-3F	4	3
G9-4F	5	4

\*F Suffix Denotes ANSI 125# Flat Face Flanges



#### WARNING:

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Series: 406-1½, 406-2, 406-2½  
G6-1½, G6-2, G6-2½

Dimensions with Screwed NPT Casing



Close Coupled End Suction



DIMENSIONS IN INCHES

MODEL		HP	MOTOR FRAME SIZE	DISC NPT (in)	SUCT NPT (in)	A	AB	B	CP	D	DD	E	F	G	H	L	X	Y		
1 Phase	3 Phase																			
<b>1750 &amp; 1450 RPM</b>																				
104G6-1½	3104G6-1½	1	143JM	1½	2	7	8 <sup>15</sup> / <sub>16</sub>	5	15 <sup>7</sup> / <sub>8</sub>	3½	4 <sup>1</sup> / <sub>8</sub>	2¾	4	¾	1 <sup>1</sup> / <sub>32</sub>	9 <sup>7</sup> / <sub>16</sub>	7¼	2¾		
104G6-2	3104G6-2	1	143JM	2	2½	7	8 <sup>15</sup> / <sub>16</sub>	5	16	3½	4½	2¾	4	¾	1 <sup>1</sup> / <sub>32</sub>	9 <sup>7</sup> / <sub>16</sub>	7½	2 <sup>13</sup> / <sub>16</sub>		
154G6-2	3154G6-2	1½	145JM			7	8 <sup>15</sup> / <sub>16</sub>	6	17	3½	4½	2¾	5	¾	1 <sup>1</sup> / <sub>32</sub>	9 <sup>7</sup> / <sub>16</sub>	7½	2 <sup>13</sup> / <sub>16</sub>		
104G6-2½	3104G6-2½	1	143JM	2½	3	7	8 <sup>15</sup> / <sub>16</sub>	5	16 <sup>11</sup> / <sub>16</sub>	3½	5	2¾	4	¾	1 <sup>1</sup> / <sub>32</sub>	10¼	8¼	3 <sup>5</sup> / <sub>16</sub>		
154G6-2½	3154G6-2½	1½	145JM			7	8 <sup>15</sup> / <sub>16</sub>	6	17 <sup>11</sup> / <sub>16</sub>	3½	5	2¾	5	¾	1 <sup>1</sup> / <sub>32</sub>	10¼	8¼	3 <sup>5</sup> / <sub>16</sub>		
204G6-2½	-----	2	182JM			8¾	9 <sup>7</sup> / <sub>8</sub>	5¾	8½	4½	5	3¾	4½	½	1 <sup>3</sup> / <sub>32</sub>	11	8¼	3 <sup>5</sup> / <sub>16</sub>		
-----	3204G6-2½	2	145JM	7	8 <sup>15</sup> / <sub>16</sub>	6	17 <sup>11</sup> / <sub>16</sub>	3½	5	2¾	5	¾	1 <sup>1</sup> / <sub>32</sub>	10¼	8¼	3 <sup>5</sup> / <sub>16</sub>				
<b>3500 &amp; 2900 RPM</b>																				
15G6-1½	-----	1½	143JM	1½	2	7	8 <sup>15</sup> / <sub>16</sub>	5	15 <sup>7</sup> / <sub>8</sub>	3½	4 <sup>1</sup> / <sub>8</sub>	2¾	4	¾	1 <sup>1</sup> / <sub>32</sub>	9 <sup>7</sup> / <sub>16</sub>	7¼	2¾		
-----	315G6-1½	1½	143JM			7	8 <sup>15</sup> / <sub>16</sub>	5	15 <sup>7</sup> / <sub>8</sub>	3½	4 <sup>1</sup> / <sub>8</sub>	2¾	4	¾	1 <sup>1</sup> / <sub>32</sub>	9 <sup>7</sup> / <sub>16</sub>	7¼	2¾		
20G6-1½	-----	2	145JM			7	8 <sup>15</sup> / <sub>16</sub>	6	16 <sup>7</sup> / <sub>8</sub>	3½	4 <sup>1</sup> / <sub>8</sub>	2¾	5	¾	1 <sup>1</sup> / <sub>32</sub>	9 <sup>7</sup> / <sub>16</sub>	7¼	2¾		
-----	320G6-1½	2	145JM			7	8 <sup>15</sup> / <sub>16</sub>	6	16 <sup>7</sup> / <sub>8</sub>	3½	4 <sup>1</sup> / <sub>8</sub>	2¾	5	¾	1 <sup>1</sup> / <sub>32</sub>	9 <sup>7</sup> / <sub>16</sub>	7¼	2¾		
30G6-1½	-----	3	182JM			8¾	9 <sup>7</sup> / <sub>8</sub>	5¾	17 <sup>11</sup> / <sub>16</sub>	4½	4 <sup>1</sup> / <sub>8</sub>	3¾	4½	½	1 <sup>3</sup> / <sub>32</sub>	10 <sup>3</sup> / <sub>16</sub>	7¼	2¾		
-----	330G6-1½	3	145JM			7	8 <sup>15</sup> / <sub>16</sub>	6	16 <sup>7</sup> / <sub>8</sub>	3½	4 <sup>1</sup> / <sub>8</sub>	2¾	5	¾	1 <sup>1</sup> / <sub>32</sub>	9 <sup>7</sup> / <sub>16</sub>	7¼	2¾		
50G6-1½	-----	5	184JM			8¾	9 <sup>7</sup> / <sub>8</sub>	6¾	18 <sup>11</sup> / <sub>16</sub>	4½	4 <sup>1</sup> / <sub>8</sub>	3¾	5½	½	1 <sup>3</sup> / <sub>32</sub>	10 <sup>3</sup> / <sub>16</sub>	7¼	2¾		
-----	350G6-1½	5	182JM			8¾	9 <sup>7</sup> / <sub>8</sub>	5¾	17 <sup>11</sup> / <sub>16</sub>	4½	4 <sup>1</sup> / <sub>8</sub>	3¾	4½	½	1 <sup>3</sup> / <sub>32</sub>	10 <sup>3</sup> / <sub>16</sub>	7¼	2¾		
-----	375G6-1½	7½	184JM			8¾	9 <sup>7</sup> / <sub>8</sub>	6¾	18 <sup>11</sup> / <sub>16</sub>	4½	4 <sup>1</sup> / <sub>8</sub>	3¾	5½	½	1 <sup>3</sup> / <sub>32</sub>	10 <sup>3</sup> / <sub>16</sub>	7¼	2¾		
-----	375G6-1½	7½	213JM			9½	9 <sup>7</sup> / <sub>8</sub>	8	20¼	5¼	4 <sup>1</sup> / <sub>8</sub>	4¼	5½	½	1 <sup>3</sup> / <sub>32</sub>	11¼	7¼	2¾		
-----	375G6-1½	7½	215JM			9½	9 <sup>7</sup> / <sub>8</sub>	8	20¼	5¼	4 <sup>1</sup> / <sub>8</sub>	4¼	6½	½	1 <sup>3</sup> / <sub>32</sub>	11¼	7¼	2¾		
20G6-2	-----	2	145JM			2	2½	7	8 <sup>15</sup> / <sub>16</sub>	6	17	3½	4½	2¾	5	¾	1 <sup>1</sup> / <sub>32</sub>	9 <sup>7</sup> / <sub>16</sub>	7½	2 <sup>13</sup> / <sub>16</sub>
-----	320G6-2	2	145JM					7	8 <sup>15</sup> / <sub>16</sub>	6	17	3½	4½	2¾	5	¾	1 <sup>1</sup> / <sub>32</sub>	9 <sup>7</sup> / <sub>16</sub>	7½	2 <sup>13</sup> / <sub>16</sub>
30G6-2	-----	3	182JM					8¾	9 <sup>7</sup> / <sub>8</sub>	5¾	17 <sup>13</sup> / <sub>16</sub>	4½	4½	3¾	4½	½	1 <sup>3</sup> / <sub>32</sub>	10 <sup>5</sup> / <sub>16</sub>	7½	2 <sup>13</sup> / <sub>16</sub>
-----	330G6-2	3	145JM	7	8 <sup>15</sup> / <sub>16</sub>			6	17	3½	4½	2¾	5	¾	1 <sup>1</sup> / <sub>32</sub>	9 <sup>7</sup> / <sub>16</sub>	7½	2 <sup>13</sup> / <sub>16</sub>		
50G6-2	-----	5	184JM	8¾	9 <sup>7</sup> / <sub>8</sub>			6¾	18 <sup>11</sup> / <sub>16</sub>	4½	4½	3¾	5½	½	1 <sup>3</sup> / <sub>32</sub>	10 <sup>5</sup> / <sub>16</sub>	7½	2 <sup>13</sup> / <sub>16</sub>		
-----	350G6-2	5	182JM	8¾	9 <sup>7</sup> / <sub>8</sub>			5¾	17 <sup>13</sup> / <sub>16</sub>	4½	4½	3¾	4½	½	1 <sup>3</sup> / <sub>32</sub>	10 <sup>5</sup> / <sub>16</sub>	7½	2 <sup>13</sup> / <sub>16</sub>		
-----	375G6-2	7½	184JM	8¾	9 <sup>7</sup> / <sub>8</sub>			6¾	18 <sup>11</sup> / <sub>16</sub>	4½	4½	3¾	5½	½	1 <sup>3</sup> / <sub>32</sub>	10 <sup>5</sup> / <sub>16</sub>	7½	2 <sup>13</sup> / <sub>16</sub>		
-----	3100G6-2	10	213JM	10 <sup>3</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>16</sub>			7¼	20¼	5¼	4½	4¼	5½	5 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>32</sub>	11 <sup>7</sup> / <sub>16</sub>	7½	2 <sup>13</sup> / <sub>16</sub>		
-----	375G6-2½	7½	184JM	8¾	9 <sup>7</sup> / <sub>8</sub>			6¾	19½	4½	5	3¾	5½	½	1 <sup>3</sup> / <sub>32</sub>	11	8¼	3 <sup>5</sup> / <sub>16</sub>		
-----	3100G6-2½	10	213JM	10 <sup>3</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>16</sub>			7¼	21 <sup>1</sup> / <sub>16</sub>	5¼	5	4¼	5½	5 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>32</sub>	12 <sup>7</sup> / <sub>8</sub>	8¼	3 <sup>5</sup> / <sub>16</sub>		
-----	3150G6-2½	15	215JM	10 <sup>3</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>16</sub>	8¾	22 <sup>1</sup> / <sub>16</sub>	5¼	5	4¼	7	5 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>32</sub>	12 <sup>7</sup> / <sub>8</sub>	8¼	3 <sup>5</sup> / <sub>16</sub>				
-----	3200G6-2½	20	254JM	12	11 <sup>1</sup> / <sub>16</sub>	10¼	25 <sup>1</sup> / <sub>16</sub>	6¼	5	5	8¼	7 <sup>1</sup> / <sub>8</sub>	1 <sup>7</sup> / <sub>32</sub>	13 <sup>5</sup> / <sub>8</sub>	8¼	3 <sup>5</sup> / <sub>16</sub>				

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

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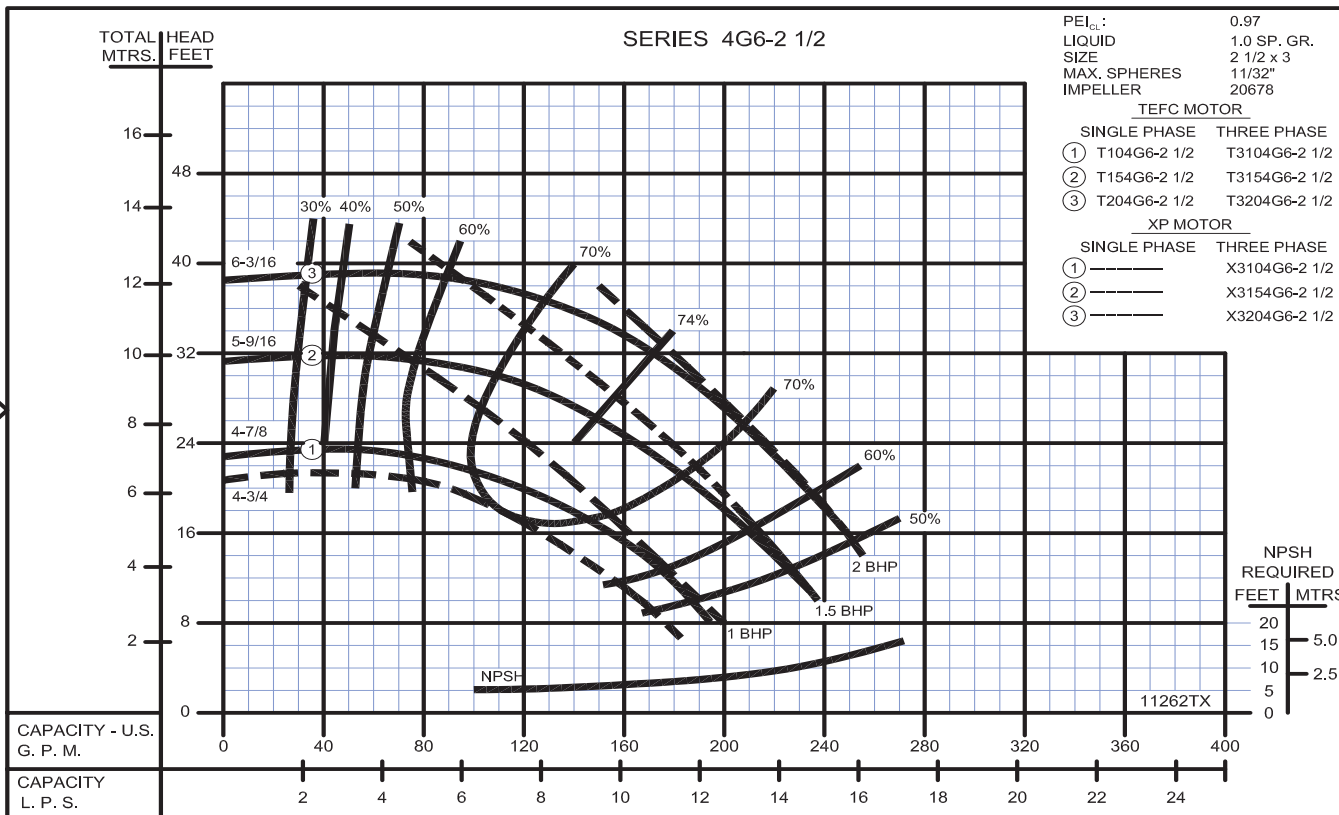
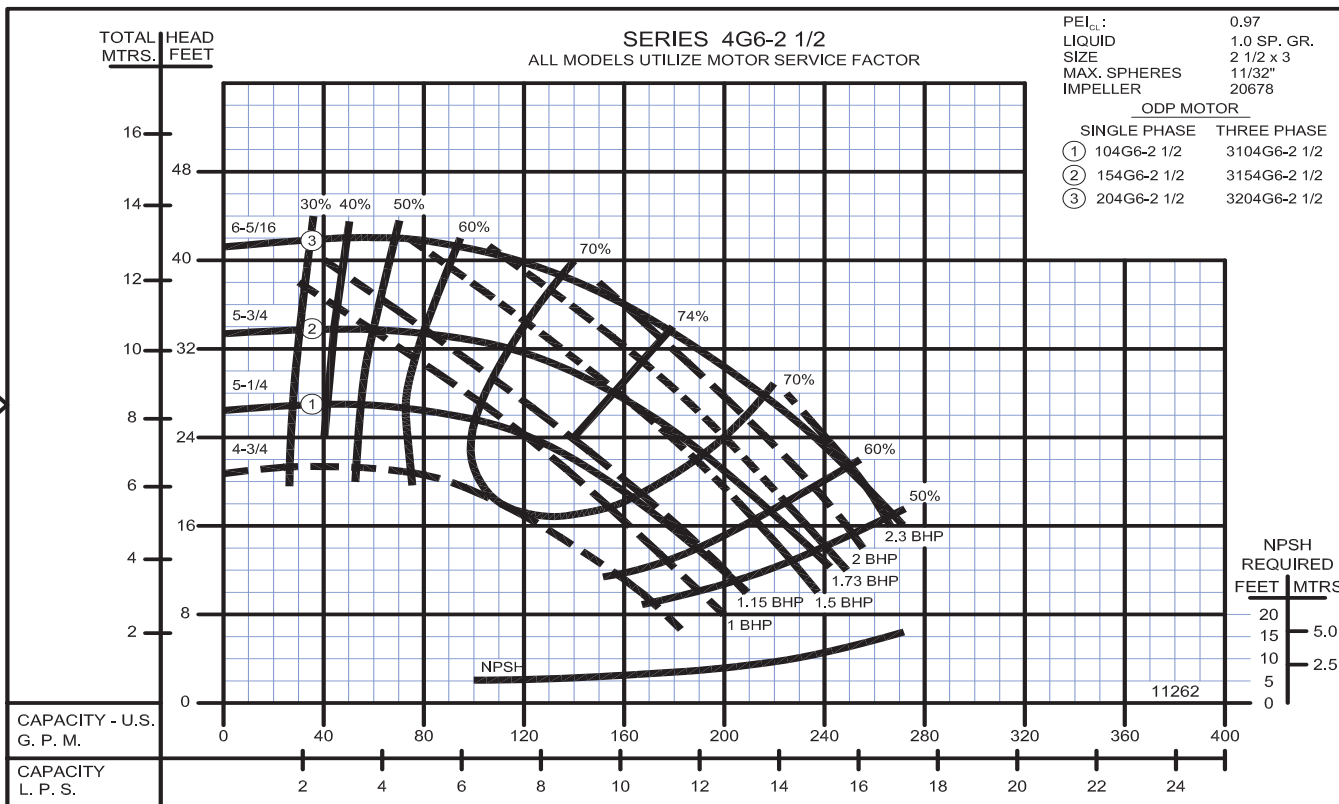
PUMPS & SYSTEMS

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60 Hz Performance

**Close Coupled End Suction**



**Close Coupled End Suction**



**Centrifugals - Close Coupled**



1 - MOTORS			
RPM & PHASE	PART NUMBER	HP	FRAME SIZE
<b>OPEN DRIP PROOF</b>			
1750 RPM Single Phase (ODP)	21393	1	143JM
	21394	1½	145JM
	21395	2	182JM
1750 RPM Three Phase (ODP)	21419	1	143JM
	21420	1½	145JM
	21421	2	145JM
3500 RPM Three Phase (ODP)	09907	7½	184JM
	09999	10	213JM
	20002	15	215JM
	21169	20	254JM
<b>TOTALLY ENCLOSED</b>			
1750 RPM Single Phase (TEFC)	21399	1	143JM
	21400	1½	145JM
	21401	2	182JM
	21402	3	184JM
1750 RPM Three Phase (TEFC)	21426	1	143JM
	21427	1½	145JM
	21428	2	145JM
	21429	3	182JM
3500 RPM Three Phase (TEFC)	09951	7½	213JM
	20000	10	215JM
	20003	15	254JM
	21195	20	256JM
<b>EXPLOSION PROOF</b>			
1750 RPM Three Phase (XP)	21433	1	143JM
	21434	1½	145JM
	21435	2	145JM
	21436	3	182JM
3500 RPM Three Phase (XP)	09955	7½	213JM
	20001	10	215JM
	20004	15	254JM
	21196	20	256JM

## Centrifugals - Close Coupled

SYMBOL NUMBER	PART NUMBER	QTY	DESCRIPTION
+16	<b>PUMPS with 143-215JM Motors</b>		
	09933	1	Flat Gasket +
	22083	1	O-Ring Gasket - Buna N (Std)
	22084	1	O-Ring Gasket - Viton
	22094	1	O-Ring Gasket - EPT**
+17	<b>PUMPS with 254-256JM Motors</b>		
	21090	1	Flat Gasket +
	22140	1	O-Ring Gasket - Buna N (Std)
	22141	1	O-Ring Gasket - Viton
	22143	1	O-Ring Gasket - EPT**
17	<b>PUMPS with 143-215JM Motors</b>		
	09917	1	Mechanical Seal - Buna-N (Std)
	09926	1	Mechanical Seal - Viton
	21271	1	Mechanical Seal - EPT**
	<b>PUMPS with 254-256JM Motors</b>		
18	<b>PUMPS with 143-215JM Motors</b>		
	21136	1	Mechanical Seal - Buna-N (Std)
	21189	1	Mechanical Seal - Viton
	21721	1	Mechanical Seal - EPT**
	22063-C	1	Shaft Sleeve - Bronze - 143-215JM Motors
+19	<b>PUMPS with 254-256JM Motors</b>		
	22066	1	Shaft Sleeve - Bronze - 254-256JM Motors
	09916	1	Flat Gasket +
	22099	1	O-Ring Gasket - Buna N (Std)
	23000	1	O-Ring Gasket - Viton
20	23001	1	O-Ring Gasket - EPT**
	23002	1	O-Ring Gasket - Teflon
+21	<b>PUMPS with 143-215JM Motors</b>		
	09918	1	Slinger Washer - 143-215JM Motors
	21093	1	Slinger Washer - 254-256JM Motors
	<b>PUMPS with 254-256JM Motors</b>		
	09911	1	Flat Gasket +
+21	<b>PUMPS with 143-215JM Motors</b>		
	22083	1	O-Ring Gasket - Buna N (Std)
	22084	1	O-Ring Gasket - Viton
	22094	1	O-Ring Gasket - EPT**
	22085	1	O-Ring Gasket - Teflon
+21	<b>PUMPS with 254-256JM Motors</b>		
	21092	1	Flat Gasket +
	22089	1	O-Ring Gasket - Buna N (Std)
	22090	1	O-Ring Gasket - Viton
	22096	1	O-Ring Gasket - EPT**
22091	1	O-Ring Gasket - Teflon	

"CONTINUED ON NEXT PAGE"

SYMBOL NUMBER	PART NUMBER	QTY	DESCRIPTION
2	01928	4	Cap Screw - for 09912 Adapter
	1-67-6	4	Cap Screw - for 09920 & 21345 Adapter
3	09912	1	Adapter - 143-184JM Motors
	09920	1	Adapter - 213-215JM Motors
	21345	1	Adapter - 254-256 JM Motors
	03075	8	Stud
4	15-23-6	8	Nut
	01609-A	8	Washer
*7	22152	1	Casing Assy
	22270	1	Casing Assy (Flanged)
8	04236	1	Pipe Plug - 1/4" Bronze
	01691-A	6	Pipe Plug, 1/8" - Bronze
9	23014	1	Key - 143-215JM Motors
	22107	1	Key - 254-256JM Motors
10	1-529-1	1	Cap Screw, SS - 143-215JM Motors
	1-68-1	1	Cap Screw, SS - 254-256JM Motors
11	22105-C	1	Washer, Bronze - 143-215JM Motors
	22106	1	Washer, Bronze - 254-256JM Motors
12	<b>PUMPS with 143-215JM Motors</b>		
	22080	1	O-Ring Gasket - Buna N (Std)
	2-31005-012	1	O-Ring Gasket - Viton
	22093	1	O-Ring Gasket - EPT**
	22082	1	O-Ring Gasket - Teflon
13	<b>PUMPS with 254-256JM Motors</b>		
	22086	1	O-Ring Gasket - Buna N (Std)
	22087	1	O-Ring Gasket - Viton
	22095	1	O-Ring Gasket - EPT**
	22088	1	O-Ring Gasket - Teflon
14	20680	1	Wear Ring - Bronze
	<b>1750 RPM</b>		
15	20678-5.25	1	Impeller - 104G6-2-1/2 & 3104G6-2-1/2
	20678-5.75	1	Impeller - 154G6-2-1/2 & 3154G6-2-1/2
	20678-6.31	1	Impeller - 204G6-2-1/2 & 3204G6-2-1/2
	<b>3450 RPM</b>		
	20678-5.13	1	Impeller - 375G6-2-1/2
15	20678-5.50	1	Impeller - 3100G6-2-1/2
	20678-6.31	1	Impeller - 3150G6-2-1/2
	20678-1-6.31	1	Impeller - 3200G6-2-1/2
	(*) Casing Assy. Includes Symbols 4, 9 & 14. (**) For hot water or Caustic service. (+) Series G6-2-1/2 pumps have been manufactured with either a flat or O-ring type gasket. Determine which type is required before ordering. When in doubt, order flat gasket.		

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Centrifugals - Close Coupled

SYMBOL NUMBER	PART NUMBER	QTY	DESCRIPTION
<b>DIFFERING PARTS FOR ALL BRONZE CONSTRUCTION</b>			
3	09912-B	1	Adapter - 143-184JM Motors
	09920-B	1	Adapter - 213-215JM Motors
	21345-A	1	Adapter - 254-256 JM Motors
*7	22152-A	1	Casing Assy
	22270-A	1	Casing Assy (Flanged)
11	03289	1	Cap Screw, Bronze - 143-215JM Motors
	01638-B	1	Cap Screw, Bronze - 254-256JM Motors
<b>DIFFERING PARTS FOR ALL IRON CONSTRUCTION</b>			
2	03289	4	Cap Screw - for 09912-B Adapter
	01638-B	4	Cap Screw - for 09920-B & 21345-A Adapter
5	05536	8	Nut
6	01609-B	8	Washer
*7	22152-B	1	Casing Assy
	22270-B	1	Casing Assy (Flanged)
8	04236-A	1	Pipe Plug 1/4" SS
9	00158	6	Pipe Plug 1/8" Steel
12	22105-A	1	Washer - Steel - 143-215JM Motors
	22106-A	1	Washer - Steel - 254-256JM Motors
14	20680-A	1	Wear Ring - G6-1-1/2
15	20678-A	1	Impeller - 143-215JM Motors
	20678-A-1	1	Impeller - 254-256JM Motors
	Impeller size suffixes same as standard bronze impellers.		
18	22063-A	1	Shaft Sleeve - SS - 143-215JM Motors
	22066-A	1	Shaft Sleeve - SS - 254-256JM Motors

(\*) Casing Assy. Includes Symbols 4, 9 & 14.

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

(+) Series G6-2-1/2 pumps have been manufactured with either a flat or O-ring type gasket. Determine which type is required before ordering. When in doubt, order flat gasket.



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