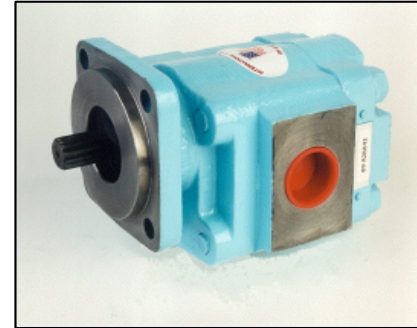


IFP IP3100/IP5100/IP7600 GEAR PUMPS AND MOTORS



Characteristics :

- High efficiency single / multiple units
- Wide range of displacements
- Optional shafts / mountings
- Rugged cast iron construction
- Motor assemblies available
- Complete parts program
- Flow dividers available



ROLLER BEARING GEAR PUMPS PERFORMANCE DATA

| IFP MODEL SERIES | Gear width (inches) | Theoretical displacement | | Mineral oil maximum pressure | | | | Recommended speed range | | Approximate weight | | | |
|------------------------|---------------------------|-----------------------------|----------------------|---------------------------------|-----|--------------|-----|----------------------------|-----|-----------------------|------|-------------|------|
| | | | | Continuous | | Intermittent | | MAX | MIN | Single unit | | Add section | |
| | | in ³ /rev | cm ³ /rev | PSI | BAR | PSI | BAR | rpm | rpm | lbs | kg | lbs | kg |
| IP3100 | 1/2 | 1.00 | 16.39 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 31 | 14 | 25 | 11 |
| | 3/4 | 1.48 | 24.58 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 32 | 14.5 | 26 | 11.5 |
| | 1 | 1.97 | 32.77 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 33 | 15 | 27 | 12 |
| | 1 1/4 | 2.46 | 40.97 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 34 | 15.5 | 28 | 12.5 |
| | 1 1/2 | 2.96 | 49.16 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 35 | 16 | 29 | 13 |
| | 1 3/4 | 3.45 | 57.35 | 2250 | 155 | 2500 | 172 | 2400 | 600 | 36 | 16.5 | 31 | 14 |
| | 2 | 3.94 | 65.55 | 2250 | 155 | 2500 | 172 | 2400 | 600 | 37 | 17 | 32 | 14.5 |
| IP5100 | 3/4 | 1.91 | 31.66 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 35.5 | 16.5 | 29.5 | 13 |
| | 1 | 2.55 | 42.11 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 37 | 17 | 31 | 14 |
| | 1 1/4 | 3.19 | 52.77 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 38.5 | 17.5 | 32.5 | 15 |
| | 1 1/2 | 3.83 | 63.25 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 40 | 18 | 34 | 15.5 |
| | 1 3/4 | 4.46 | 73.74 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 41.5 | 19 | 35.5 | 16 |
| | 2 | 5.10 | 84.23 | 2250 | 155 | 2500 | 172 | 2400 | 600 | 43 | 19.5 | 37 | 17 |
| | 2 1/4 | 5.74 | 94.88 | 2250 | 155 | 2500 | 172 | 2400 | 600 | 48.5 | 22 | 42.5 | 19 |
| | 2 1/2 | 6.38 | 105.37 | 2250 | 155 | 2500 | 172 | 2400 | 600 | 50 | 22.5 | 44 | 20 |
| IP7600 | 3/4 | 3.07 | 50.40 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 69 | 32 | 57 | 26 |
| | 1 | 4.10 | 67.20 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 72 | 33 | 59 | 27 |
| | 1 1/4 | 5.12 | 84.00 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 75 | 34 | 62 | 28 |
| | 1 1/2 | 6.15 | 100.80 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 77 | 35 | 64 | 29 |
| | 1 3/4 | 7.17 | 117.60 | 2750 | 190 | 3000 | 207 | 2400 | 600 | 80 | 36 | 67 | 31 |
| | 2 | 8.20 | 134.40 | 2250 | 155 | 2500 | 172 | 2400 | 600 | 82 | 37 | 69 | 32 |
| | 2 1/4 | 9.22 | 151.20 | 2250 | 155 | 2500 | 172 | 2400 | 600 | 85 | 39 | 72 | 33 |
| | 2 1/2 | 10.25 | 168.00 | 2250 | 155 | 2500 | 172 | 2400 | 600 | 87 | 40 | 74 | 34 |
| | 2 3/4 | 11.27 | 184.80 | 1750 | 120 | 2000 | 138 | 2400 | 600 | 90 | 41 | 77 | 35 |
| | 3 | 12.30 | 201.60 | 1750 | 120 | 2000 | 138 | 2400 | 600 | 92 | 42 | 79 | 36 |

International manufactures bearing gear pumps and motors to the highest quality and durability for the most demanding applications. Our gears are produced to precise tolerances with a true involute profile along the tooth thus maximising volumetric efficiency. The result is more efficient longer lasting pumps & motors with lower noise emissions.

International casts all its shaft end covers, gear housings, bearing carriers, and port covers out of grade 17 cast iron, which is metallurgically controlled to provide only the highest quality castings. In all assemblies, high density bronze alloy thrust plates with superior wear characteristics ensures longer pump or motor life under the harshest conditions.

The high operating pressure and speed combined with the large number of displacements, mounting options and port configurations make these units ideal for single and multiple pump and motor applications.

IFP IP3100/IP5100/IP7600 PUMP PERFORMANCE DATA



Average Data at 2000psi / 138 bar
Oil Viscosity - 150 SUS (32 CST)

IP3100

| | | GEAR WIDTH (Inches) | | | | | | | | | | | | | |
|-----------|------|---------------------|--------|-------|------|-------|------|---------|------|---------|------|---------|------|-------|------|
| | | 1/2 " | | 3/4 " | | 1" | | 1 1/4 " | | 1 1/2 " | | 1 3/4 " | | 2" | |
| | | cu in/rev | cc/rev | 1.48 | | 1.97 | | 2.46 | | 2.96 | | 3.45 | | 3.94 | |
| | | 16.39 | | 24.58 | | 32.77 | | 40.97 | | 49.16 | | 57.35 | | 65.55 | |
| Speed rpm | | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm |
| | | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp |
| 600 | 600 | 5.7 | 1.5 | 8.6 | 2.3 | 11.4 | 3 | 15.2 | 4 | 22.8 | 6 | 26.7 | 7 | 32.3 | 8.5 |
| | 900 | 2.6 | 3.5 | 3.9 | 5.3 | 5.2 | 7 | 6.7 | 9 | 8.2 | 11 | 9.7 | 13 | 11.2 | 15 |
| 900 | 900 | 11.4 | 3 | 17.1 | 4.5 | 22.8 | 6 | 28.5 | 7.5 | 38 | 10 | 43.7 | 11.5 | 51.3 | 13.5 |
| | 1200 | 3.9 | 5.3 | 5.9 | 7.9 | 7.8 | 10.5 | 10.1 | 13.5 | 12.3 | 16.5 | 14.2 | 19 | 16.4 | 22 |
| 1200 | 1200 | 16.2 | 4.3 | 24.2 | 6.4 | 32.3 | 8.5 | 41.8 | 11 | 53.2 | 14 | 60.8 | 16 | 72.2 | 19 |
| | 1500 | 5 | 6.8 | 7.6 | 10.1 | 10.1 | 13.5 | 13.1 | 17.5 | 16 | 21.5 | 18.6 | 25 | 21.6 | 29 |
| 1500 | 1500 | 20.9 | 5.5 | 31.4 | 8.3 | 41.8 | 11 | 53.2 | 14 | 66.5 | 17.5 | 78 | 20.5 | 91.2 | 24 |
| | 1800 | 6.3 | 8.5 | 9.5 | 12.8 | 12.7 | 17 | 16.4 | 22 | 19.7 | 26.5 | 23.1 | 31 | 26.9 | 36 |
| 1800 | 1800 | 25.7 | 6.8 | 38.5 | 10.1 | 51.3 | 13.5 | 66.5 | 17.5 | 81.8 | 21.5 | 95 | 25 | 110.2 | 29 |
| | 2100 | 7.5 | 10 | 11.2 | 15 | 14.9 | 20 | 19.4 | 26 | 23.5 | 31.5 | 27.6 | 37 | 30.5 | 43 |
| 2100 | 2100 | 30.4 | 8 | 45.6 | 12 | 60.8 | 16 | 79.8 | 21 | 96.7 | 25.5 | 112.1 | 29.5 | 131.1 | 34.5 |
| | 2400 | 8.8 | 11.8 | 13.1 | 17.6 | 17.5 | 23.5 | 22.3 | 30 | 27.2 | 36.5 | 32.1 | 43 | 37.3 | 50 |
| 2400 | 2400 | 35.2 | 9.3 | 52.7 | 13.9 | 70.3 | 18.5 | 91.2 | 24 | 112.1 | 29.5 | 129.2 | 34 | 150.1 | 39.5 |
| | | 10.1 | 13.5 | 15.1 | 20.3 | 20.1 | 27 | 25.4 | 34 | 31.3 | 42 | 36.6 | 49 | 42.5 | 57 |

IP5100

| | | GEAR WIDTH (Inches) | | | | | | | | | | | | | | | |
|-----------|------|---------------------|--------|-------|------|---------|------|---------|------|---------|------|-------|------|---------|------|---------|------|
| | | 3/4 " | | 1" | | 1 1/4 " | | 1 1/2 " | | 1 3/4 " | | 2" | | 2 1/4 " | | 2 1/2 " | |
| | | cu in/rev | cc/rev | 1.91 | | 2.55 | | 3.19 | | 3.83 | | 4.46 | | 5.10 | | 5.74 | |
| | | 31.66 | | 42.11 | | 52.77 | | 63.25 | | 73.74 | | 84.23 | | 94.88 | | 105.37 | |
| Speed rpm | | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm |
| | | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp |
| 600 | 600 | 15.7 | 4.1 | 20.9 | 5.4 | 26.6 | 7 | 32.3 | 8.5 | 38 | 10 | 41.8 | 11 | 45.6 | 12 | 49.4 | 13 |
| | 900 | 5.6 | 7.5 | 7.46 | 9.5 | 9.32 | 12.5 | 10.4 | 14 | 11.9 | 16 | 14.1 | 19 | 15.3 | 20.5 | 17.1 | 23 |
| 900 | 900 | 24.2 | 6.4 | 32.3 | 8.5 | 41.8 | 11 | 49.4 | 13 | 60.8 | 16 | 66.5 | 17.5 | 72.2 | 19 | 79.8 | 21 |
| | 1200 | 8.4 | 11.3 | 11.1 | 14.0 | 13.4 | 18 | 15.6 | 21 | 17.9 | 24 | 20.5 | 27.5 | 23.1 | 31 | 25.4 | 34 |
| 1200 | 1200 | 32.8 | 8.6 | 43.7 | 12.0 | 57 | 15 | 68.4 | 18 | 81.7 | 21.5 | 91.2 | 24 | 100.7 | 26.5 | 110.2 | 29 |
| | 1500 | 10.9 | 14.6 | 14.5 | 19.5 | 17.9 | 24 | 20.5 | 27.5 | 23.8 | 32 | 27.2 | 36.5 | 30.5 | 41 | 34.3 | 46 |
| 1500 | 1500 | 42.8 | 11.3 | 57 | 15.0 | 72.2 | 19 | 87.4 | 23 | 102.6 | 27 | 115.9 | 30.5 | 127.3 | 33.5 | 142.5 | 37.5 |
| | 1800 | 13.4 | 18 | 17.9 | 22.5 | 22 | 29.5 | 25.7 | 34.5 | 29.8 | 40 | 33.9 | 45.5 | 38 | 51 | 42.5 | 57 |
| 1800 | 1800 | 51.3 | 13.5 | 68.4 | 18.0 | 87.4 | 23 | 106.4 | 28 | 125.4 | 33 | 140.6 | 37 | 155.8 | 41 | 174.8 | 46 |
| | 2100 | 16.2 | 21.8 | 21.6 | 26.5 | 26.1 | 35 | 30.58 | 41 | 35.4 | 47.5 | 40.2 | 54 | 45.5 | 61 | 51.1 | 68.5 |
| 2100 | 2100 | 59.9 | 15.8 | 79.8 | 21.5 | 102.6 | 27 | 123.5 | 32.5 | 146.3 | 38.5 | 165.3 | 43.5 | 182.4 | 48 | 205.2 | 54 |
| | 2400 | 16.2 | 21.8 | 24.9 | 31.5 | 30.5 | 41 | 35.4 | 47.5 | 41 | 55 | 46.9 | 63 | 52.9 | 71 | 59.7 | 80 |
| 2400 | 2400 | 68.4 | 18 | 91.2 | 25.0 | 117.8 | 31 | 142.5 | 37.5 | 167.2 | 44 | 190 | 50 | 210.9 | 55.5 | 235.6 | 62 |
| | | 21.3 | 28.5 | 28.3 | 34.0 | 34.3 | 46 | 40.6 | 54.5 | 46.9 | 63 | 73.3 | 71.5 | 60.4 | 81 | 68.3 | 91.5 |

IP7600

| | | GEAR WIDTH (Inches) | | | | | | | | | | | | | | | | | | | |
|-----------|------|---------------------|--------|-------|------|---------|------|---------|------|---------|------|--------|------|---------|------|---------|-------|---------|-----|--------|-------|
| | | 3/4 " | | 1" | | 1 1/4 " | | 1 1/2 " | | 1 3/4 " | | 2" | | 2 1/4 " | | 2 1/2 " | | 2 3/4 " | | 3" | |
| | | cu in/rev | cc/rev | 3.03 | | 4.04 | | 5.06 | | 6.07 | | 7.08 | | 8.09 | | 9.10 | | 10.11 | | 11.12 | |
| | | 49.70 | | 66.27 | | 82.84 | | 99.40 | | 115.97 | | 132.54 | | 149.11 | | 165.67 | | 182.22 | | 198.78 | |
| Speed rpm | | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm | lpm | gpm |
| | | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp | kw | Hp |
| 600 | 600 | 21.4 | 5.6 | 28.5 | 7.5 | 38 | 10 | 45.6 | 12.5 | 55.1 | 14.5 | 66.5 | 17.5 | 76 | 20 | 89.3 | 23.5 | 102.6 | 27 | 110.2 | 29 |
| | 1200 | 10.1 | 13.5 | 13.4 | 18 | 15.6 | 21 | 17.5 | 23.5 | 19.4 | 26 | 21.6 | 29 | 25 | 33.5 | 27 | 36.5 | 29 | 39 | 31.3 | 42 |
| 1200 | 1200 | 49.9 | 13.1 | 66.5 | 17.5 | 85.5 | 22.5 | 104.5 | 27.5 | 123.5 | 32.5 | 142.5 | 37.5 | 161.5 | 42.5 | 178.6 | 47 | 201.4 | 53 | 224.2 | 59 |
| | 1500 | 17.6 | 23.6 | 23.5 | 31.5 | 28.3 | 38 | 33.6 | 45 | 38.4 | 51.5 | 43.3 | 58 | 48.5 | 65 | 53.7 | 72 | 59.7 | 80 | 65.6 | 88 |
| 1500 | 1500 | 64.1 | 16.9 | 85.5 | 22.5 | 108.3 | 28.5 | 131.1 | 34.5 | 155.8 | 41 | 180.5 | 47.5 | 201.4 | 53 | 224.2 | 59 | 250.8 | 66 | 277.4 | 73 |
| | 1800 | 21.3 | 28.5 | 28.3 | 38 | 35 | 47 | 41.4 | 55.5 | 48.1 | 64.5 | 54.5 | 73 | 60.8 | 81.5 | 67.1 | 90 | 74.6 | 100 | 83.2 | 111.5 |
| 1800 | 1800 | 78.4 | 20.6 | 104.5 | 27.5 | 133 | 35 | 159.6 | 42 | 190 | 50 | 216.6 | 57 | 243.2 | 64 | 269.8 | 71 | 300.2 | 79 | 332.5 | 87.5 |
| | 2100 | 25.2 | 33.8 | 33.6 | 45 | 41.8 | 56 | 49.6 | 66.5 | 57.4 | 77 | 65.6 | 88 | 73.1 | 98 | 80.9 | 108.5 | 91 | 122 | 99.9 | 134 |
| 2100 | 2100 | 92.6 | 24.4 | 123.5 | 32.5 | 155.8 | 41 | 186.2 | 49 | 224.2 | 59 | 254.6 | 67 | 283.1 | 74.5 | 313.5 | 82.5 | 349.6 | 92 | 385.7 | 101.5 |
| | 2400 | 29.1 | 39 | 38.8 | 52 | 48.1 | 64.5 | 57.4 | 77 | 67.1 | 90 | 76.8 | 103 | 85 | 114 | 94.4 | 126.5 | 105.8 | 142 | 117.1 | 157 |
| 2400 | 2400 | 106.9 | 28.1 | 142.5 | 37.5 | 178.6 | 47 | 214.7 | 56.5 | 256.5 | 67.5 | 290.7 | 76.5 | 324.9 | 85.5 | 359.1 | 94.5 | 399 | 105 | 440.8 | 116 |
| | | 32.7 | 43.9 | 43.6 | 58.5 | 54.4 | 73 | 65.2 | 87.5 | 76.8 | 103 | 88 | 118 | 96.9 | 130 | 108.1 | 145 | 121.6 | 163 | 134.3 | 180 |

NOTE - PERFORMANCE DATA SHOWN ARE AN AVERAGE AND ARE NOT REPRESENTATIVE OF ONE PARTICULAR UNIT

IFP IM3100/IM5100/IM7600 MOTOR PERFORMANCE DATA



Average Data at 2000psi / 138 bar
Oil Viscosity - 150 SUS (32 CST)

IM3100

| Speed rpm | 1" Gear | | | 1 1/4" Gear | | | 1 1/2" Gear | | | 1 3/4" Gear | | | 2" Gear | | |
|-----------|------------|---------------|-----------|-------------|---------------|-----------|-------------|---------------|-----------|-------------|---------------|-----------|------------|---------------|-----------|
| | Displ. | 1.97 | in3/rev | Displ. | 2.46 | in3/rev | Displ. | 2.96 | in3/rev | Displ. | 3.45 | in3/rev | Displ. | 3.94 | in3/rev |
| | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp |
| | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp |
| | l/m | Nm | kw | | l/m | Nm | kw | | l/m | Nm | kw | | l/m | Nm | kw |
| 800 | 10 | 575 | 7.5 | 12 | 737.5 | 9.5 | 14 | 900 | 11.5 | 16 | 1040 | 13.3 | 18 | 1180 | 15 |
| | 38 | 64.8 | 5.6 | 45.6 | 83.1 | 7.1 | 53.2 | 101.4 | 8.6 | 60.8 | 117.1 | 9.9 | 68.4 | 132.9 | 11.2 |
| 1200 | 14 | 570 | 11 | 16.5 | 730 | 14 | 19 | 890 | 17 | 21.5 | 1030 | 19.8 | 24 | 1170 | 22.5 |
| | 53.2 | 64.2 | 8.2 | 62.7 | 82.2 | 10.4 | 72.2 | 100.2 | 12.7 | 81.7 | 116.0 | 14.7 | 91.2 | 131.8 | 16.8 |
| 1600 | 17 | 565 | 14.5 | 20.5 | 722.5 | 18.5 | 24 | 880 | 22.5 | 23.3 | 1020 | 25.8 | 22.5 | 1160 | 29 |
| | 64.6 | 63.6 | 10.8 | 77.9 | 81.4 | 13.8 | 91.2 | 99.1 | 16.8 | 88.4 | 114.9 | 19.2 | 85.5 | 130.6 | 21.6 |
| 2000 | 20 | 555 | 17.5 | 24.5 | 707.5 | 22.5 | 29 | 860 | 27.5 | 34 | 995 | 31.8 | 39 | 1130 | 36 |
| | 76 | 62.5 | 13 | 93.1 | 79.7 | 16.8 | 110.2 | 96.8 | 20.5 | 129.2 | 112 | 23.7 | 148.2 | 127.3 | 26.9 |

IM5100

| Speed rpm | 1" Gear | | | 1 1/4" Gear | | | 1 1/2" Gear | | | 1 3/4" Gear | | | 2" Gear | | | 2 1/4" Gear | | | 2 1/2" Gear | | | | |
|-----------|------------|---------------|-----------|-------------|---------------|-----------|-------------|---------------|-----------|-------------|---------------|-----------|------------|---------------|-----------|-------------|---------------|-----------|-------------|---------------|-----------|----|----|
| | Displ. | 2.55 | in3/rev | Displ. | 3.19 | in3/rev | Displ. | 3.83 | in3/rev | Displ. | 4.46 | in3/rev | Displ. | 5.10 | in3/rev | Displ. | 5.74 | in3/rev | Displ. | 6.38 | in3/rev | | |
| | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | | |
| | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp | | |
| | l/m | Nm | kw | | l/m | Nm | kw | | l/m | Nm | kw | | l/m | Nm | kw | | l/m | Nm | kw | | l/m | Nm | kw |
| 800 | 11 | 730 | 9 | 13.5 | 935 | 11.5 | 16 | 1140 | 14 | 18.8 | 1335 | 16.3 | 21.5 | 1530 | 18.5 | 24 | 1715 | 21.3 | 26.5 | 1900 | 24 | | |
| | 41.8 | 82.2 | 6.7 | 51.3 | 105.3 | 8.6 | 60.8 | 128.4 | 10.4 | 13.9 | 105.3 | 12.1 | 81.7 | 172.3 | 13.8 | 91.2 | 193.1 | 15.9 | 100.7 | 214 | 17.9 | | |
| 1200 | 16 | 720 | 13.5 | 19.5 | 920 | 17.3 | 23 | 1120 | 21 | 27 | 1307.5 | 24.5 | 31 | 1495 | 28 | 34.3 | 1682.5 | 31.8 | 37.5 | 1870 | 35.5 | | |
| | 60.8 | 81.1 | 10.1 | 74.1 | 103.6 | 12.9 | 87.4 | 126.1 | 15.7 | 102.6 | 147.2 | 18.3 | 117.8 | 168.4 | 20.8 | 130.2 | 189.5 | 23.7 | 142.5 | 210.6 | 26.5 | | |
| 1600 | 20.5 | 710 | 17.5 | 25.5 | 905 | 2.3 | 30.5 | 1100 | 27 | 35.5 | 1285 | 32 | 40.5 | 1470 | 37 | 45.3 | 1645 | 41 | 50 | 1820 | 45 | | |
| | 77.9 | 81.0 | 13.1 | 96.9 | 101.9 | 16.6 | 115.9 | 123.9 | 20.1 | 134.9 | 144.7 | 23.9 | 153.9 | 165.5 | 27.6 | 172.0 | 185.2 | 30.6 | 190 | 205.0 | 33.6 | | |
| 2000 | 25.5 | 670 | 21 | 31.8 | 855 | 26.8 | 38 | 1040 | 32.5 | 44 | 1225 | 38.5 | 50 | 1410 | 44.5 | 56 | 1575 | 49.8 | 62 | 1740 | 55 | | |
| | 96.9 | 75.5 | 15.7 | 120.7 | 96.3 | 20.0 | 144.4 | 117.1 | 24.2 | 167.2 | 138.0 | 28.7 | 190.0 | 158.8 | 33.2 | 212.8 | 177.4 | 37.1 | 235.6 | 195.9 | 41 | | |

IM7600

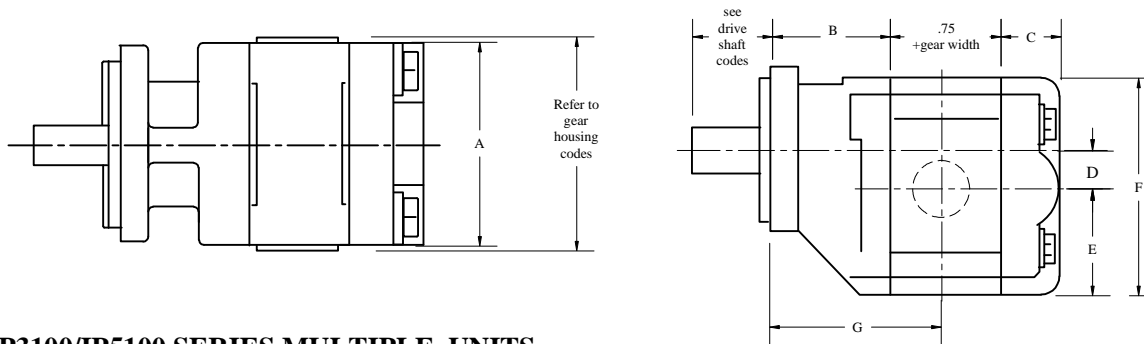
| Speed rpm | 1" Gear | | | 1 1/4" Gear | | | 1 1/2" Gear | | | 1 3/4" Gear | | | 2" Gear | | |
|-----------|-------------|---------------|-----------|-------------|---------------|-----------|-------------|---------------|-----------|-------------|---------------|-----------|------------|---------------|-----------|
| | Displ. | 4.10 | in3/rev | Displ. | 5.12 | in3/rev | Displ. | 6.15 | in3/rev | Displ. | 7.17 | in3/rev | Displ. | 8.20 | in3/rev |
| | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp |
| | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp |
| | l/m | Nm | kw | | l/m | Nm | kw | | l/m | Nm | kw | | l/m | Nm | kw |
| 800 | 19.5 | 1100 | 14.5 | 23.8 | 1400 | 18.3 | 28 | 1700 | 22 | 31.3 | 1985 | 25.5 | 34.5 | 2270 | 29 |
| | 74.1 | 123.9 | 10.8 | 90.3 | 157.7 | 13.6 | 106.4 | 191.4 | 16.4 | 118.8 | 223.5 | 19 | 131.1 | 255.6 | 21.6 |
| 1200 | 26.5 | 1090 | 20 | 32.3 | 1385 | 25.5 | 38 | 1680 | 31 | 43.5 | 1970 | 36.8 | 49 | 2260 | 42.5 |
| | 100.7 | 122.7 | 14.9 | 122.6 | 156.0 | 19 | 144.4 | 189.2 | 23.1 | 165.3 | 221.9 | 27.4 | 186.2 | 254.5 | 31.7 |
| 1600 | 34 | 1040 | 26 | 41.8 | 1345 | 33.5 | 49.5 | 1650 | 41 | 56.8 | 1935 | 48.3 | 64 | 2220 | 55.5 |
| | 129.2 | 117.1 | 19.4 | 158.7 | 151.5 | 25.0 | 188.1 | 185.8 | 30.6 | 215.7 | 217.9 | 35.9 | 243.2 | 250 | 41.4 |
| 2000 | 41 | 970 | 30.5 | 50.3 | 1285 | 40.3 | 59.5 | 1600 | 50 | 69 | 1890 | 59 | 78.5 | 2180 | 68 |
| | 155.8 | 109.2 | 22.8 | 191.0 | 144.7 | 30 | 226.1 | 180.2 | 37.3 | 262.2 | 212.8 | 44 | 298.3 | 245.5 | 50.7 |
| Speed rpm | 2 1/4" Gear | | | 2 1/2" Gear | | | 2 3/4" Gear | | | 3" Gear | | | | | |
| | Displ. | 9.22 | in3/rev | Displ. | 10.25 | in3/rev | Displ. | 11.27 | in3/rev | Displ. | 12.30 | in3/rev | | | |
| | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | Input Flow | Output Torque | Output Hp | | | |
| | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp | gpm | in/lbs | Hp | | | |
| | l/m | Nm | kw | | l/m | Nm | kw | | l/m | Nm | kw | | | | |
| 800 | 38.3 | 2600 | 33.3 | 42 | 2930 | 37.5 | 45.8 | 3315 | 42.3 | 49.5 | 3700 | 47 | | | |
| | 145.4 | 292.8 | 24.8 | 159.6 | 330.0 | 28.0 | 173.9 | 373.3 | 31.5 | 188.1 | 416.7 | 35.1 | | | |
| 1200 | 54.5 | 2580 | 48.5 | 60 | 2900 | 54.5 | 66.25 | 3380 | 60.8 | 72.5 | 3860 | 67 | | | |
| | 207.1 | 290.5 | 36.2 | 228 | 326.6 | 40.7 | 251.8 | 380.6 | 45.3 | 275.5 | 434.7 | 50.0 | | | |
| 1600 | 71 | 2530 | 63.5 | 78 | 2840 | 71.5 | 86 | 3205 | 80.5 | 94 | 3570 | 89.5 | | | |
| | 269.8 | 284.9 | 47.4 | 296.4 | 319.8 | 53.3 | 326.8 | 360.9 | 60 | 357.2 | 402 | 66.8 | | | |
| 2000 | 87.5 | 2470 | 77.5 | 96.5 | 2760 | 87 | 105.8 | 3095 | 98 | 115 | 3430 | 109 | | | |
| | 332.5 | 278.2 | 57.8 | 366.7 | 310.8 | 64.9 | 401.9 | 348.5 | 73.1 | 437 | 386.3 | 81.3 | | | |

IFP IP3100/IP5100 GEAR UNITS INSTALLATION DIMENSION & WEIGHT

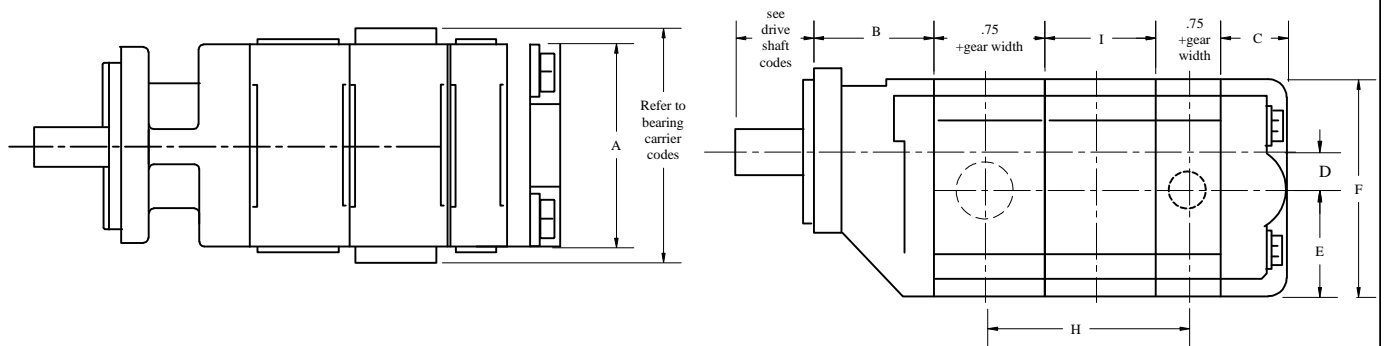


DIMENSION (inches)

IP3100/IP5100 SERIES SINGLE UNITS



IP3100/IP5100 SERIES MULTIPLE UNITS



| MODEL | A | B | C | D | E | F | G | H | I |
|---------------|------|------|------|------|------|------|---------------------------------|---------------------------------------|------|
| IP3100 series | 4.81 | 2.94 | 1.75 | .88 | 2.78 | 5.50 | $3.31 + \frac{1}{2}$ gear width | $3.25 + \frac{1}{2}$ total gear width | 2.50 |
| IP5100 series | 5.06 | 3.38 | 1.75 | 1.00 | 3.12 | 6.25 | $3.75 + \frac{1}{2}$ gear width | $3.65 + \frac{1}{2}$ total gear width | 2.88 |

APPROXIMATE WEIGHT

SINGLE UNITS

| MODEL | gear width | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 | 2 1/4 | 2 1/2 |
|---------------|------------|----|-------|-------|-------|------|-------|-------|
| IP3100 series | pounds | 33 | 34 | 35 | 36 | 37 | - | - |
| | KG | 15 | 15.5 | 16 | 16.5 | 17 | - | - |
| IP5100 series | pounds | 37 | 38.5 | 40 | 41.5 | 43 | 48.5 | 50 |
| | KG | 17 | 17.5 | 18 | 18.75 | 19.5 | 22 | 22.5 |

MULTIPLE UNITS

| MODEL | add per gear section | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 | 2 1/4 | 2 1/2 |
|---------------|----------------------|----|-------|-------|-------|------|-------|-------|
| IP3100 series | pounds | 27 | 28 | 29 | 31 | 32 | - | - |
| | KG | 12 | 12.5 | 13 | 14 | 14.2 | - | - |
| IP5100 series | pounds | 31 | 32.5 | 34 | 35.5 | 37 | 42.5 | 44 |
| | KG | 14 | 15 | 15.5 | 16 | 17 | 19.25 | 20 |

NOTE: MULTIPLE UNITS WEIGHT ADD SINGLE UNIT WEIGHT WITH EACH ADDITIONAL SECTION FROM ABOVE CHART

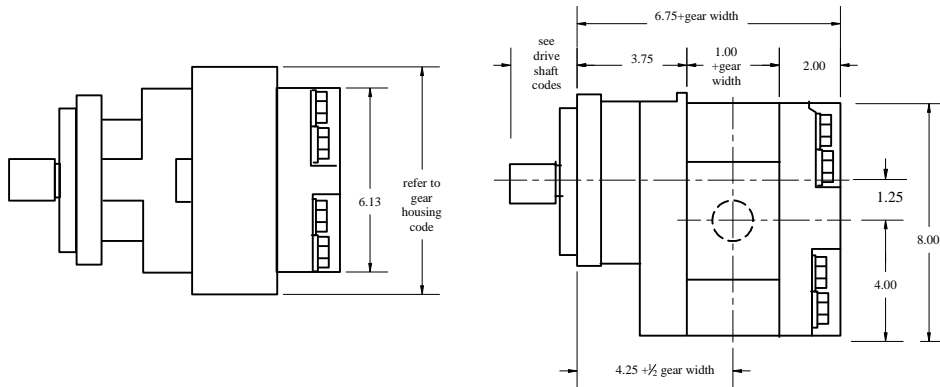
IFP IP7600 GEAR UNITS

INSTALLATION DIMENSION & WEIGHT

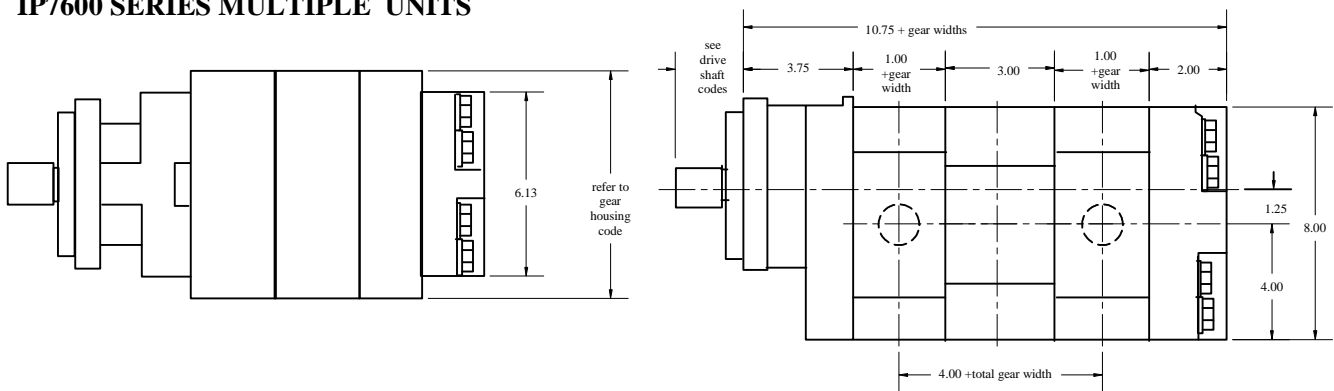


DIMENSION (inches)

IP7600 SERIES SINGLE UNITS



IP7600 SERIES MULTIPLE UNITS



APPROXIMATE WEIGHT

SINGLE UNITS

| MODEL | gear width | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 | 2 1/4 | 2 1/2 | 2 3/4 | 3 |
|---------------|------------|----|-------|-------|-------|----|-------|-------|-------|----|
| IP7600 series | pounds | 72 | 75 | 77 | 80 | 82 | 85 | 87 | 90 | 92 |
| | KG | 33 | 34 | 35 | 36 | 37 | 39 | 40 | 41 | 42 |

MULTIPLE UNITS

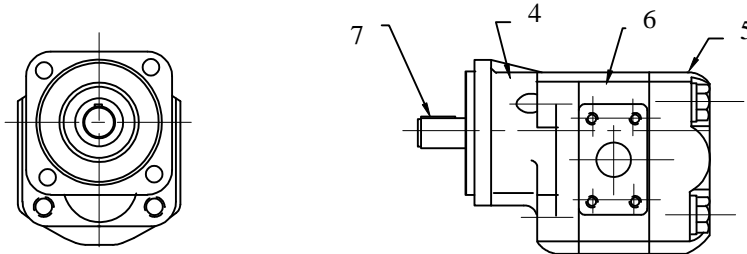
| MODEL | add per gear section | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 | 2 1/4 | 2 1/2 | 2 3/4 | 3 |
|---------------|----------------------|----|-------|-------|-------|----|-------|-------|-------|----|
| IP7600 series | pounds | 59 | 62 | 64 | 67 | 69 | 72 | 74 | 77 | 79 |
| | KG | 27 | 28 | 29 | 31 | 32 | 33 | 34 | 35 | 36 |

NOTE: MULTIPLE UNITS WEIGHT ADD SINGLE UNIT WEIGHT WITH EACH ADDITIONAL SECTION FROM ABOVE CHART

IFP IP3100/IP5100/IP7600 MODEL CODING & NOMENCLATURE

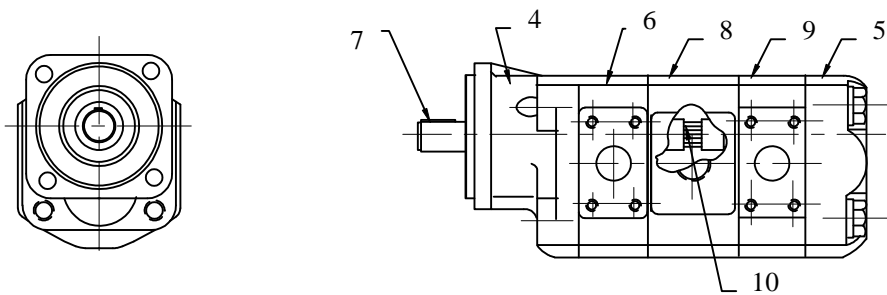


* HOW TO SPECIFY MODEL CODE



SAMPLE SINGLE PUMP MODEL CODE

| | | | | | | |
|------------------------|------------------------------|-------------|---------------------------------------|---------------------------------|----------------------------------------|-------------------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| IP | 3100 | A | 642 | BE | YL 20 | 25 |
| IP PUMP / IMM MOTOR | SERIES ... 3100/5100/7600 | SINGLE UNIT | SHAFT END COVER SEE Page E1.7-E1.8 | PORT END COVER SEE Page E1.9 | GEAR HOUSING SEE Page E1.10 - E1.11 | DRIVE SHAFT SEE Page E1.11-E1.14 |



SAMPLE TANDEM PUMP MODEL CODE

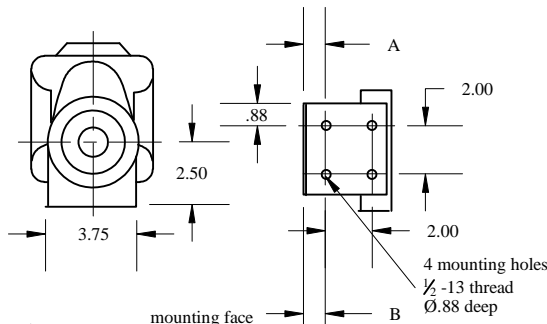
| FIRST SECTION | | | | | | ADDITIONAL SECTIONS | | | |
|------------------------|------------------------------|----------------|---------------------------------------|---------------------------------|--------------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------------|------------------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| IP | 5100 | B | 578 | BY | OL20 | 11 | C | OL17 | 1 |
| IP PUMP / IMM MOTOR | SERIES ... 3100/5100/7600 | TANDEM UNIT | SHAFT END COVER SEE Page E1.7-E1.8 | PORT END COVER SEE Page E1.9 | FRONT GEAR HOUSING SEE E1.10 - E1.11 | DRIVE SHAFT SEE Page E1.10 - E1.11 | BEARING CARRIER SEE Page E1.15 | BACK GEAR HOUSING SEE Page E1.10 - E1.14 | CONNECTING SHAFT SEE Page E1.14 |

IFP IP3100/IP5100/IP7600 SHAFT END COVER



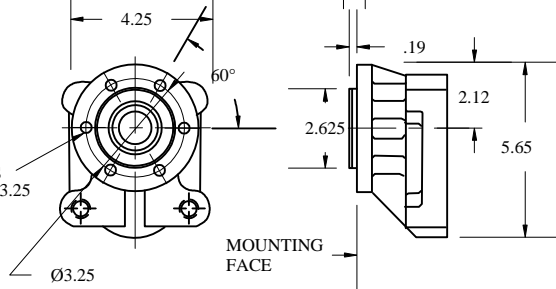
CODE *00 IP3100 /IP5100 PAD MOUNTING

| | A | B |
|--------|-----|-----|
| IP3100 | .62 | .25 |
| IP5100 | .88 | .62 |



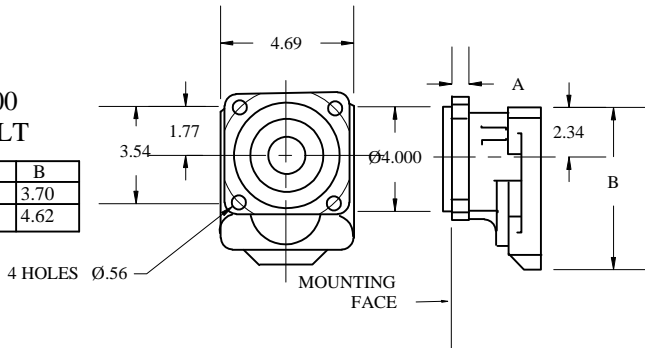
CODE *05 IP3100 Series 6-BOLT ROUND FLANGE

6 HOLES
Ø.44 on Ø3.25

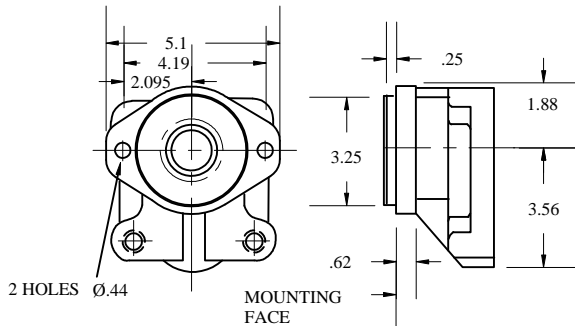


CODE *42 IP3100/IP5100 SAE B 4-BOLT

| MODEL | A | B |
|--------|-----|------|
| IP3100 | .38 | 3.70 |
| IP5100 | .25 | 4.62 |

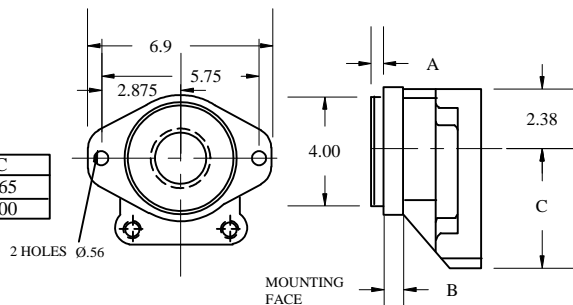


CODE *94 IP3100 SAE A 2-BOLT



CODE *97 IP3100 / IP5100 SAE B 2-BOLT

| MODEL | A | B | C |
|--------|-----|-----|------|
| IP3100 | .38 | .75 | 3.65 |
| IP5100 | .25 | .75 | 4.00 |



| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 100 | CW | WITHOUT | NONE(PUMP) |
| 200 | CCW | WITHOUT | NONE(PUMP) |
| 300 | DOUBLE | WITHOUT | NONE(PUMP) |
| 400 | CW | WITH | NONE(PUMP) |
| 500 | CCW | WITH | NONE(PUMP) |
| 600 | DOUBLE | WITH | NONE(PUMP) |
| 800 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 900 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|---------------|
| IP 3100 SHAFT END COVER PART NUMBER | 312 5017 201N |
| IP 5100 SHAFT END COVER PART NUMBER | 313 5017 201N |

| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 105 | CW | WITHOUT | NONE(PUMP) |
| 205 | CCW | WITHOUT | NONE(PUMP) |
| 305 | DOUBLE | WITHOUT | NONE(PUMP) |
| 405 | CW | WITH | NONE(PUMP) |
| 505 | CCW | WITH | NONE(PUMP) |
| 605 | DOUBLE | WITH | NONE(PUMP) |
| 805 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 905 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|---------------|
| IP 3100 SHAFT END COVER PART NUMBER | 312 5047 201N |
|-------------------------------------|---------------|

| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 142 | CW | WITHOUT | NONE(PUMP) |
| 242 | CCW | WITHOUT | NONE(PUMP) |
| 342 | DOUBLE | WITHOUT | NONE(PUMP) |
| 442 | CW | WITH | NONE(PUMP) |
| 542 | CCW | WITH | NONE(PUMP) |
| 642 | DOUBLE | WITH | NONE(PUMP) |
| 842 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 942 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|---------------|
| IP 3100 SHAFT END COVER PART NUMBER | 312 5037 201N |
| IP 5100 SHAFT END COVER PART NUMBER | 313 5037 201N |

| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 194 | CW | WITHOUT | NONE(PUMP) |
| 294 | CCW | WITHOUT | NONE(PUMP) |
| 394 | DOUBLE | WITHOUT | NONE(PUMP) |
| 494 | CW | WITH | NONE(PUMP) |
| 594 | CCW | WITH | NONE(PUMP) |
| 694 | DOUBLE | WITH | NONE(PUMP) |
| 894 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 994 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|---------------|
| IP 3100 SHAFT END COVER PART NUMBER | 312 5027 204N |
|-------------------------------------|---------------|

| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 197 | CW | WITHOUT | NONE(PUMP) |
| 297 | CCW | WITHOUT | NONE(PUMP) |
| 397 | DOUBLE | WITHOUT | NONE(PUMP) |
| 497 | CW | WITH | NONE(PUMP) |
| 597 | CCW | WITH | NONE(PUMP) |
| 697 | DOUBLE | WITH | NONE(PUMP) |
| 897 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 997 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

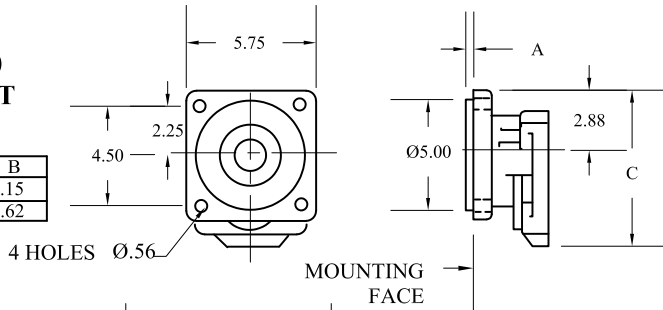
| | |
|-------------------------------------|---------------|
| IP 3100 SHAFT END COVER PART NUMBER | 312 5027 201N |
| IP 5100 SHAFT END COVER PART NUMBER | 313 5027 201N |

IFP IP3100/IP5100/IP7600 SHAFT END COVER



CODE *78 IP3100/IP5100 SAE C 4-BOLT

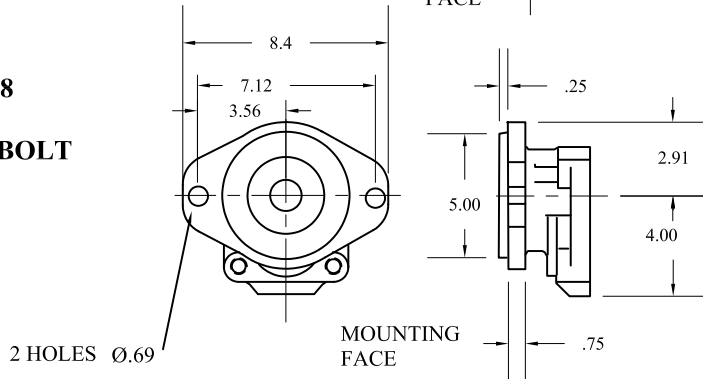
| MODEL | A | B |
|--------|-----|------|
| IP3100 | .50 | 4.15 |
| IP5100 | .25 | 4.62 |



| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 178 | CW | WITHOUT | NONE(PUMP) |
| 278 | CCW | WITHOUT | NONE(PUMP) |
| 378 | DOUBLE | WITHOUT | NONE(PUMP) |
| 478 | CW | WITH | NONE(PUMP) |
| 578 | CCW | WITH | NONE(PUMP) |
| 678 | DOUBLE | WITH | NONE(PUMP) |
| 878 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 978 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|---------------|
| IP 3100 SHAFT END COVER PART NUMBER | 312 5037 202N |
| IP 5100 SHAFT END COVER PART NUMBER | 313 5037 202N |

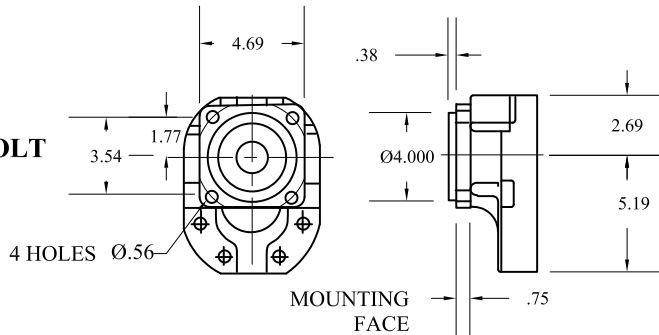
CODE *98 IP5100 SAE C 2-BOLT



| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 198 | CW | WITHOUT | NONE(PUMP) |
| 298 | CCW | WITHOUT | NONE(PUMP) |
| 398 | DOUBLE | WITHOUT | NONE(PUMP) |
| 498 | CW | WITH | NONE(PUMP) |
| 598 | CCW | WITH | NONE(PUMP) |
| 698 | DOUBLE | WITH | NONE(PUMP) |
| 898 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 998 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|---------------|
| IP 5100 SHAFT END COVER PART NUMBER | 313 5027 202N |
|-------------------------------------|---------------|

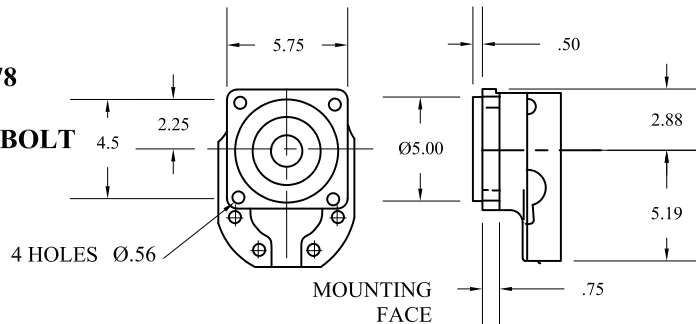
CODE *42 IP7600 SAE B 4-BOLT



| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 142 | CW | WITHOUT | NONE(PUMP) |
| 242 | CCW | WITHOUT | NONE(PUMP) |
| 342 | DOUBLE | WITHOUT | NONE(PUMP) |
| 442 | CW | WITH | NONE(PUMP) |
| 542 | CCW | WITH | NONE(PUMP) |
| 642 | DOUBLE | WITH | NONE(PUMP) |
| 842 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 942 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|---------------|
| IP 7600 SHAFT END COVER PART NUMBER | 316 5037 201N |
|-------------------------------------|---------------|

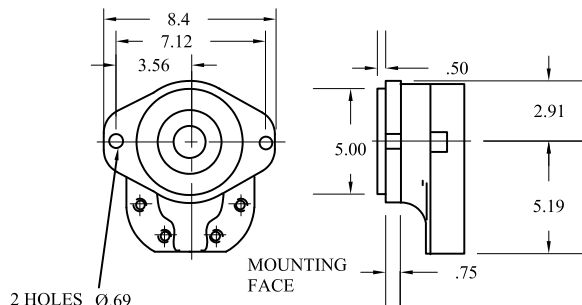
CODE *78 IP7600 SAE C 4-BOLT



| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 178 | CW | WITHOUT | NONE(PUMP) |
| 278 | CCW | WITHOUT | NONE(PUMP) |
| 378 | DOUBLE | WITHOUT | NONE(PUMP) |
| 478 | CW | WITH | NONE(PUMP) |
| 578 | CCW | WITH | NONE(PUMP) |
| 678 | DOUBLE | WITH | NONE(PUMP) |
| 878 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 978 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|--------------|
| IP 7600 SHAFT END COVER PART NUMBER | 316 5037 202 |
|-------------------------------------|--------------|

CODE *98 IP7600 SAE C 2-BOLT



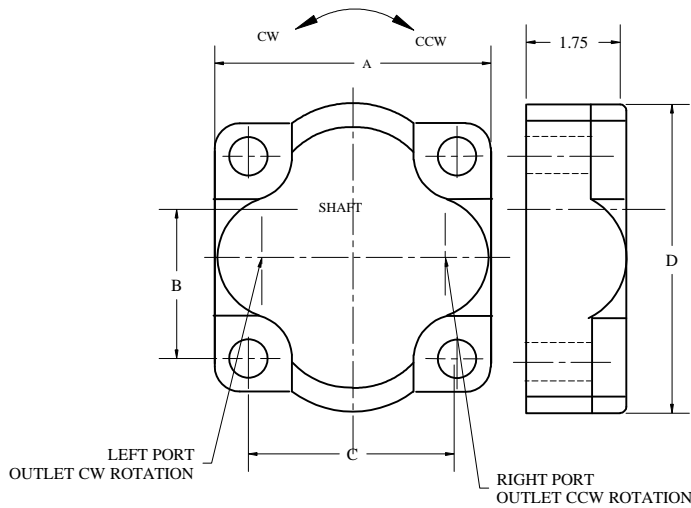
| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 198 | CW | WITHOUT | NONE(PUMP) |
| 298 | CCW | WITHOUT | NONE(PUMP) |
| 398 | DOUBLE | WITHOUT | NONE(PUMP) |
| 498 | CW | WITH | NONE(PUMP) |
| 598 | CCW | WITH | NONE(PUMP) |
| 698 | DOUBLE | WITH | NONE(PUMP) |
| 898 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 998 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|--------------|
| IP 7600 SHAFT END COVER PART NUMBER | 316 5027 202 |
|-------------------------------------|--------------|

IFP IP3100/IP5100/IP7600 PORT END COVERS



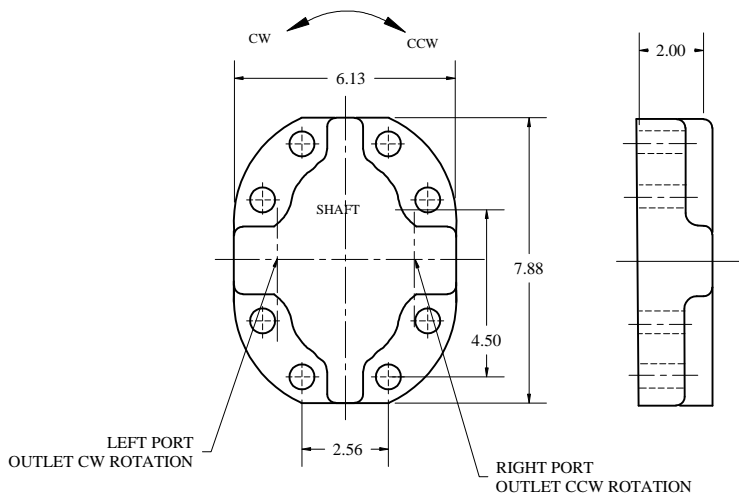
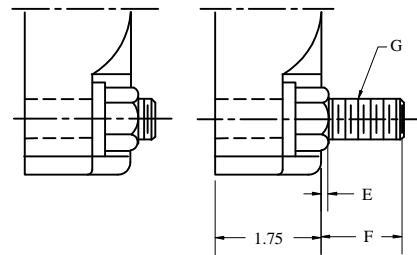
PORT END COVER IP3100 PART NUMBER 312-3120-100N IP5100 PART NUMBER 313-3120-100N



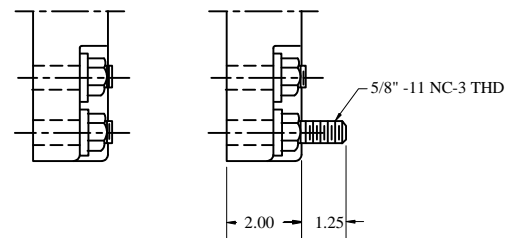
| MODEL | A | B | C | D | E | F | G |
|--------|------|------|------|------|-----|------|----------------|
| IP3100 | 4.81 | 2.66 | 3.56 | 5.38 | .12 | 1.38 | 5/8"-11NC-3THD |
| IP5100 | 4.94 | 2.78 | 3.56 | 6.00 | .12 | 1.50 | 5/8"-11NC-3THD |

WITHOUT EXTENDED STUDS

WITH EXTENDED STUDS



PORT END COVER IP7600 PART NUMBER 316-3120-100N



PORT END COVER PORTING CODES

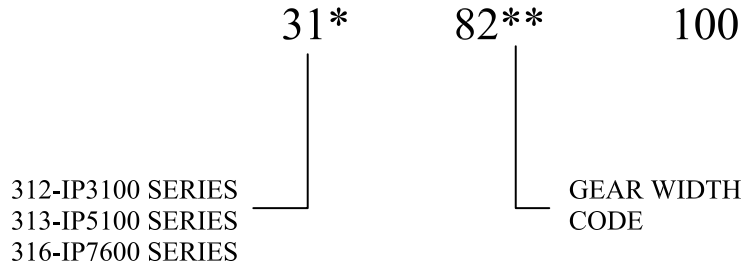
(REAR PORTED UNITS)

| LEFT COVER ROTATION | RIGHT COVER PORTING | SINGLE UNIT CODE | TANDEM UNIT CODE | TANDEM UNIT CODE C/W EXT. STUDS |
|-----------------------------|---------------------|------------------|------------------|---------------------------------|
| BLANK | BLANK | BE | BI | BY |
| NPT THREADED PORTING | | | | |
| 3/4" NPT | BLANK | KE | KI | KY |
| BLANK | 3/4" NPT | LE | LI | LY |
| 3/4" NPT | 3/4" NPT | ME | MI | MY |
| 1 NPT | 1 NPT | | | |
| SAE O.D.T. THREADED PORTING | | | | |
| 3/4" ODT | BLANK | CE | CI | CY |
| BLANK | 3/4" ODT | DE | DI | DY |
| 3/4" ODT | 3/4" ODT | FE | FI | FY |
| 1" ODT | 1" ODT | JE | JI | JY |

IFP IP3100/IP5100/IP7600 GEAR HOUSINGS

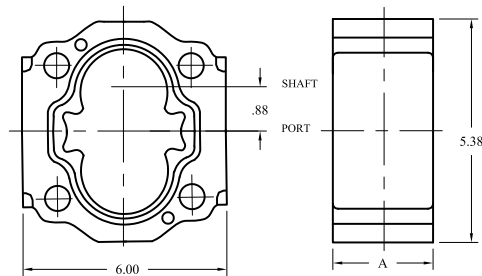


GEAR HOUSING PART NUMBER NOMENCLATURE



| GEAR WIDTH CODE | GEAR WIDTH INCHES |
|-----------------|-------------------|
| 05 | 1/2" |
| 07 | 3/4" |
| 10 | 1" |
| 12 | 1 1/4" |
| 15 | 1 1/2" |
| 17 | 1 3/4" |
| 20 | 2" |
| 22 | 2 1/4" |
| 25 | 2 1/2" |
| 27 | 2 3/4" |
| 30 | 3" |

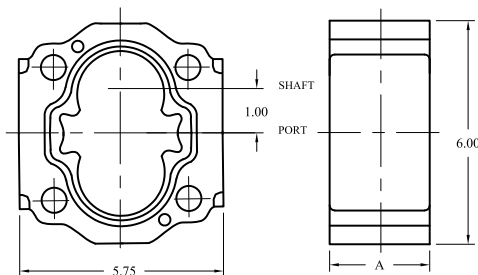
GEAR HOUSING IP3100



IP3100 GEAR HOUSING

| HOUSING CODE | IN3/REV DISPLACEMENT | MAXIMUM PRESSURE | HOUSING PART NUMBER | DIMENSION "A" |
|--------------|----------------------|------------------|---------------------|---------------|
| 05 | 0.99 | 3000 PSI | 312-8205-100N | 1.25 |
| 07 | 1.48 | 3000 PSI | 312-8207-100N | 1.50 |
| 10 | 1.97 | 3000 PSI | 312-8210-100N | 1.75 |
| 12 | 2.46 | 3000PSI | 312-8212-100N | 2.00 |
| 15 | 2.96 | 3000PSI | 312-8215-100N | 2.25 |
| 17 | 3.45 | 2500PSI | 312-8217-100N | 2.50 |
| 20 | 3.94 | 2500 PSI | 312-8220-100N | 2.75 |

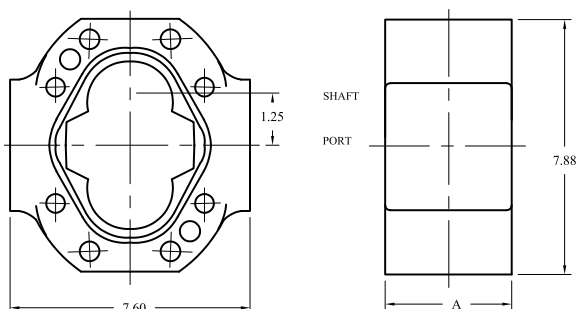
GEAR HOUSING IP5100



IP5100 GEAR HOUSING

| HOUSING CODE | IN3/REV DISPLACEMENT | MAXIMUM PRESSURE | HOUSING PART NUMBER | DIMENSION "A" |
|--------------|----------------------|------------------|---------------------|---------------|
| 07 | 1.91 | 3000 PSI | 313-8207-100N | 1.25 |
| 10 | 2.55 | 3000 PSI | 313-8210-100N | 1.50 |
| 12 | 3.19 | 3000 PSI | 313-8212-100N | 1.75 |
| 15 | 3.83 | 3000 PSI | 313-8215-100N | 2.00 |
| 17 | 4.46 | 3000 PSI | 313-8217-100N | 2.25 |
| 20 | 5.10 | 2500 PSI | 313-8220-100N | 2.50 |
| 22 | 5.74 | 2500 PSI | 313-8222-100N | 2.75 |
| 25 | 6.38 | 2500 PSI | 313-8225-100N | 3.00 |

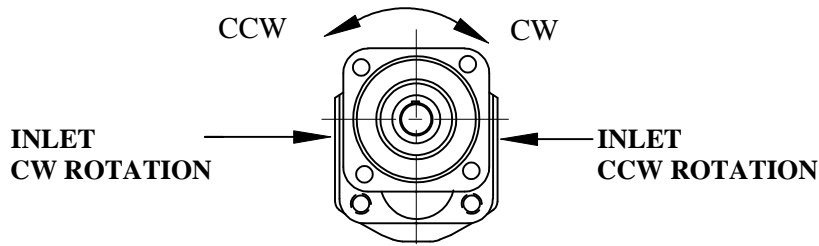
GEAR HOUSING IP7600



IP7600 GEAR HOUSING

| HOUSING CODE | IN3/REV DISPLACEMENT | MAXIMUM PRESSURE | HOUSING PART NUMBER | DIMENSION "A" |
|--------------|----------------------|------------------|---------------------|---------------|
| 07 | 3.07 | 3000 PSI | 316-8207-100N | 1.75 |
| 10 | 4.10 | 3000 PSI | 316-8210-100N | 2.00 |
| 12 | 5.12 | 3000 PSI | 316-8212-100N | 2.25 |
| 15 | 6.15 | 3000PSI | 316-8215-100N | 2.50 |
| 17 | 7.17 | 3000 PSI | 316-8217-100N | 2.75 |
| 20 | 8.20 | 3000 PSI | 316-8220-100N | 3.00 |
| 22 | 9.22 | 2500 PSI | 316-8222-100N | 3.25 |
| 25 | 10.25 | 2500 PSI | 316-8225-100N | 3.50 |
| 27 | 11.27 | 2500 PSI | 316-8227-100N | 3.75 |
| 30 | 12.30 | 2500 PSI | 316-8230-100N | 4.00 |

IFP IP3100/IP5100/IP7600 GEAR HOUSING PORT CODING



GEAR HOUSING PORT CODE (SIDE PORTED UNITS NPT THREAD)

| INLET PORT | OUTLET PORT | CODE C.W. ROT. | CODE C.C.W. ROT. |
|------------|-------------|----------------|------------------|
| BLANK | BLANK | AB | AB |
| 1/2" | BLANK | IL | IM |
| 1/2" | 1/2" | IR | IR |
| 3/4" | BLANK | IC | ID |
| 3/4" | 3/4" | IF | IF |
| 1" | 3/4" | IJ | IG |
| 1 1/4" | 3/4" | IK | IH |
| 1" | BLANK | YC | YD |
| 1" | 1" | YF | YF |
| 1 1/4" | 1" | YJ | YG |
| 1 1/4" | BLANK | IA | IB |
| 1 1/4" | 1 1/4" | YL | YL |
| 1 1/2" | BLANK | YA | YB |
| 1 1/2" | 1 1/4" | YP | YM |
| 1 1/2" | 1 1/2" | YR | YR |

(SIDE PORTED UNITS OD TUBE THREAD)

| INLET PORT | OUTLET PORT | CODE C.W. ROT. | CODE C.C.W. ROT. |
|------------|-------------|----------------|------------------|
| 3/4" | BLANK | EC | ED |
| 3/4" | 3/4" | EF | EF |
| 1" | 3/4" | EJ | EG |
| 1 1/4" | 3/4" | EK | EH |
| 1 1/2" | 3/4" | IP | IN |
| 7/8" | BLANK | EZ | EZ |
| 1" | 7/8" | EM | EL |
| 1" | BLANK | AC | AD |
| 1" | 1" | AF | AF |
| 1 1/4" | 1" | AJ | AG |
| 1 1/2" | 1" | AK | AH |
| 1 1/4" | BLANK | AA | AO |
| 1 1/4" | 1 1/4" | AL | AL |
| 1 1/2" | 1 1/4" | AP | AM |
| 1 1/2" | BLANK | AE | AU |
| 1 1/2" | 1 1/2" | AR | AR |

(SIDE PORTED UNITS SPLIT FLANGE)

| INLET PORT | OUTLET PORT | CODE C.W. ROT. | CODE C.C.W. ROT. |
|------------|-------------|----------------|------------------|
| 3/4" | BLANK | UC | UD |
| 3/4" | 3/4" | UF | UF |
| 1" | 3/4" | UJ | UG |
| 1 1/4" | 3/4" | UK | UH |
| 1" | BLANK | OC | OD |
| 1" | 1" | OF | OF |
| 1 1/4" | 1" | OJ | OG |
| 1 1/2" | 1" | OK | OH |
| 1 1/4" | BLANK | OA | OB |
| 1 1/4" | 1 1/4" | OL | OL |
| 1 1/2" | 1 1/4" | OP | OM |
| 1 1/2" | BLANK | OE | OU |
| 1 1/2" | 1 1/2" | OR | OR |
| 2" | 1" | UQ | BALNK |
| 2" | 1 1/4" | OQ | ON |
| 2" | 1 1/2" | OV | OS |
| 2" | 2" | OX | OX |
| 2 1/2" | 1 1/4" | US | UN |
| 2 1/2" | 1 1/2" | OW | OT |
| 2 1/2" | 2" | OZ | OY |

NPTF THREAD

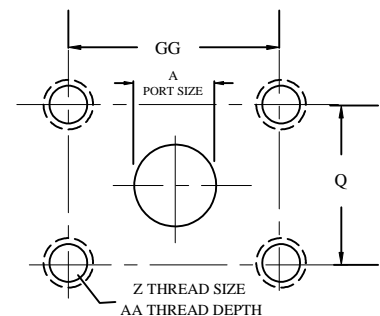
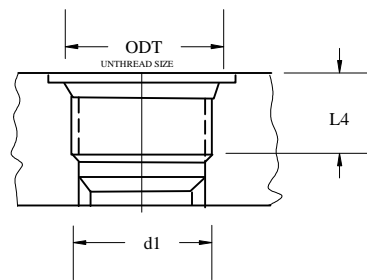
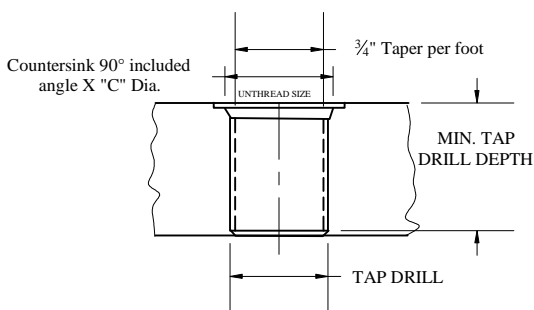
| NPTF PIPE SIZE | Tap drill for taper reaming | | Min. tap drill depth (STD. tap) |
|----------------|-----------------------------|---------|---------------------------------|
| | DIA | Size | |
| 1/16-27 | .2188 | 7/32 | .560 |
| 1/8-27 | .3125 | 5/16 | .560 |
| 1/4-18 | .4062 | 13/32 | .810 |
| 3/8-18 | .5469 | 35/64 | .810 |
| 1/2-14 | .6562 | 21/32 | 1.060 |
| 3/4-14 | .8750 | 7/8 | 1.060 |
| 1-11 1/2 | 1.1094 | 1 7/64 | 1.250 |
| 1 1/4-11 1/2 | 1.4531 | 1 29/64 | 1.310 |
| 1 1/2-11 1/2 | 1.6875 | 1 11/16 | 1.310 |

SAE STRAIGHT THREAD

| Dash Size | ODT in. | d1 Thd. Size in. | L4 Min Full Thd |
|-----------|---------|------------------|-----------------|
| -4 | 1/4 | 7/16-20 UNF-2B | .394 |
| -6 | 3/8 | 9/16-18 UNF-2B | .500 |
| -8 | 1/2 | 3/4-16 UNF-2B | .563 |
| -10 | 5/8 | 7/8-14 UNF-2B | .658 |
| -12 | 3/4 | 1 1/16-12 UN-2B | .748 |
| -16 | 1 | 1 5/16-12 UN-2B | .748 |
| -20 | 1 1/4 | 1 5/8-12 UN-2B | .748 |
| -24 | 1 1/2 | 1 7/8-12 UN-2B | .748 |

FLANGE CONNECTION

| Nominal Flange Size, in. | Flange Dash Size | A +0.00 in | Q +0.010 in | GG +0.010 in | AA Min in. |
|--------------------------|------------------|------------|-------------|--------------|------------|
| 1/2 | -8 | 0.50 | 1.500 | 0.688 | 0.94 |
| 3/4 | -12 | 0.75 | 1.875 | 0.875 | 0.88 |
| 1 | -16 | 1.00 | 2.062 | 1.031 | 0.88 |
| 1 1/4 | -20 | 1.25 | 2.312 | 1.188 | 1.12 |
| 1 1/2 | -24 | 1.50 | 2.750 | 1.406 | 1.06 |
| 2 | -32 | 2.00 | 3.062 | 1.688 | 1.06 |
| 2 1/2 | -40 | 2.50 | 3.500 | 2.000 | 1.19 |

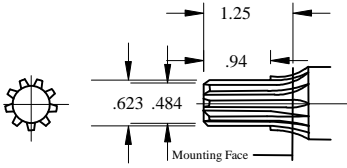


IFP IP3100/IP5100/IP7600 SPLINE - SHAFT/SHAFT&GEAR ASSEMBLIES



CODE 95

SAE "A" SPLINE 5/8 - 9 TOOTH -ANSI 16-4

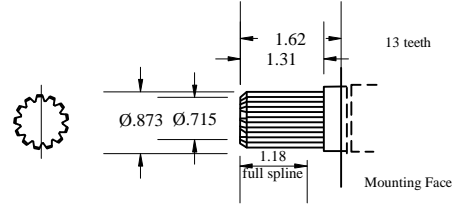


| GEAR CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| 05 | 1/2" | // | | |
| 07 | 3/4" | 312-2907-122N | | |
| 10 | 1" | 312-2907-122N | | |
| 12 | 1 1/4" | 312-2907-122N | | |
| 15 | 1 1/2" | | NOT AVAILABLE | NOT AVAILABLE |
| 17 | 1 3/4" | | | |
| 20 | 2" | | | |

| | |
|-------------------------|---------------|
| IP 3100 ONE PIECE SHAFT | 312-1000-200N |
| IP 5100 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 7600 ONE PIECE SHAFT | NOT AVAILABLE |

CODE 25

SAE "B" SPLINE 7/8 - 13 TOOTH -ANSI 122-4

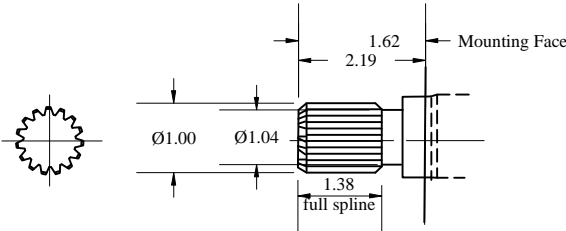


| GEAR CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| 05 | 1/2" | // | | |
| 07 | 3/4" | 312-2907-230N | | |
| 10 | 1" | 312-2910-230N | 313-2910-230N | |
| 12 | 1 1/4" | 312-2912-230N | 313-2912-230N | |
| 15 | 1 1/2" | 312-2915-230N | 313-2915-230N | |
| 17 | 1 3/4" | 312-2917-230N | 313-2917-230N | |
| 20 | 2" | 312-2920-230N | 313-2920-230N | |
| 22 | 2 1/4" | // | 313-2922-230N | |
| 25 | 2 1/2" | // | 313-2925-230N | |

| | |
|-------------------------|---------------|
| IP 3100 ONE PIECE SHAFT | 312-1135-138N |
| IP 5100 ONE PIECE SHAFT | 313-1000-300N |
| IP 7600 ONE PIECE SHAFT | NOT AVAILABLE |

CODE 98

SAE "BB" SPLINE 1 - 15 TOOTH -ANSI 25-4

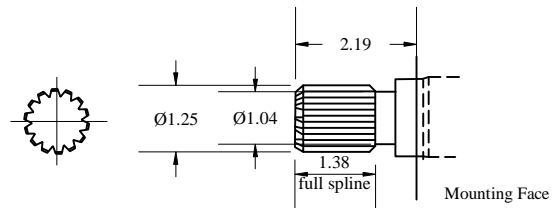


| GEAR CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| 05 | 1/2" | // | | |
| 07 | 3/4" | 312-2907-240N | | |
| 10 | 1" | 312-2910-240N | 313-2910-240N | |
| 12 | 1 1/4" | 312-2912-240N | 313-2912-240N | |
| 15 | 1 1/2" | 312-2915-240N | 313-2915-240N | |
| 17 | 1 3/4" | 312-2917-240N | 313-2917-240N | |
| 20 | 2" | 312-2920-240N | 313-2920-240N | |
| 22 | 2 1/4" | // | 313-2922-240N | |
| 25 | 2 1/2" | // | 313-2925-240N | |

| | |
|-------------------------|---------------|
| IP 3100 ONE PIECE SHAFT | 312-1000-240N |
| IP 5100 ONE PIECE SHAFT | 313-1000-240N |
| IP 7600 ONE PIECE SHAFT | NOT AVAILABLE |

CODE 07

SAE "C" SPLINE 1 1/4 - 14 TOOTH -ANSI 32-4

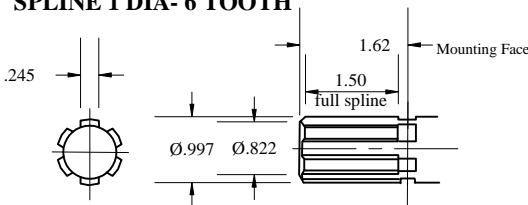


| GEAR CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| 05 | 1/2" | | // | // |
| 07 | 3/4" | | // | // |
| 10 | 1" | | 313-2910-250N | // |
| 12 | 1 1/4" | | 313-2912-250N | 316-2912-250N |
| 15 | 1 1/2" | | 313-2915-250N | 316-2915-250N |
| 17 | 1 3/4" | | 313-2917-250N | 316-2917-250N |
| 20 | 2" | | 313-2920-250N | 316-2920-250N |
| 22 | 2 1/4" | | 313-2922-250N | 316-2922-250N |
| 25 | 2 1/2" | | 313-2925-250N | 316-2925-250N |
| 27 | 2 3/4" | | // | 316-2927-250N |
| 30 | 3" | | // | 316-2930-250N |

| | |
|-------------------------|---------------|
| IP 3100 ONE PIECE SHAFT | 312-1135-133N |
| IP 5100 ONE PIECE SHAFT | 313-1135-300N |
| IP 7600 ONE PIECE SHAFT | 316-1135-148N |

CODE 68

SPLINE 1 DIA- 6 TOOTH



| GEAR CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| | | NOT AVAILABLE | NOT AVAILABLE | |

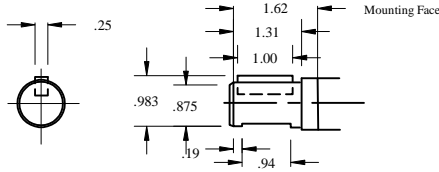
| | |
|-------------------------|---------------|
| IP 3100 ONE PIECE SHAFT | 312-1000-003N |
| IP 5100 ONE PIECE SHAFT | 313-1000-002N |
| IP 7600 ONE PIECE SHAFT | NOT AVAILABLE |

IFP IP3100/IP5100/IP7600 KEYED- SHAFT&GEAR ASSEMBLIES



CODE 30

SAE "B" KEYED $\frac{7}{8}$ □ - $\frac{1}{4}$ KEY - ANSI 22-4

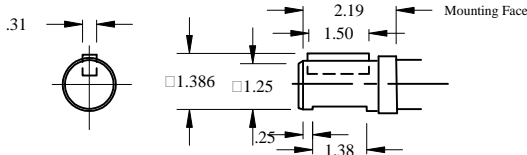


| GEAR WIDTH CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| 05 | $\frac{1}{2}$ " | | // | // |
| 07 | $\frac{3}{4}$ " | 312-2907-730N | // | // |
| 10 | 1" | 312-2910-730N | // | // |
| 12 | 1 $\frac{1}{4}$ " | 312-2912-730N | NOT AVAILABLE | NOT AVAILABLE |
| 15 | 1 $\frac{1}{2}$ " | 312-2915-730N | // | // |
| 17 | 1 $\frac{3}{4}$ " | 312-2917-730N | // | // |
| 20 | 2" | 312-2920-730N | // | // |

| | |
|-------------------------|---------------|
| IP 3100 ONE PIECE SHAFT | 312-1500-300N |
| IP 5100 ONE PIECE SHAFT | NO AVAILABLE |
| IP 7600 ONE PIECE SHAFT | NO AVAILABLE |

CODE 11

SAE "C" KEYED 1 $\frac{1}{4}$ □ - $\frac{5}{16}$ KEY - ANSI 32-1

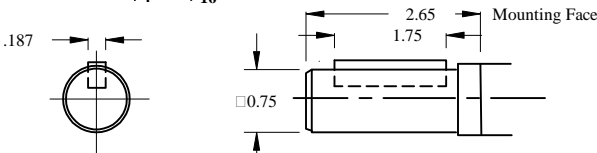


| GEAR WIDTH CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| 05 | $\frac{1}{2}$ " | | // | // |
| 07 | $\frac{3}{4}$ " | | // | // |
| 10 | 1" | | 313-2910-750N | // |
| 12 | 1 $\frac{1}{4}$ " | NOT AVAILABLE | 313-2912-750N | 316-2912-750N |
| 15 | 1 $\frac{1}{2}$ " | | 313-2915-750N | 316-2915-750N |
| 17 | 1 $\frac{3}{4}$ " | | 313-2917-750N | 316-2917-750N |
| 20 | 2" | | 313-2920-750N | 316-2920-750N |
| 22 | 2 $\frac{1}{4}$ " | | 313-2922-750N | 316-2922-750N |
| 25 | 2 $\frac{1}{2}$ " | | 313-2925-750N | 316-2925-750N |
| 27 | 2 $\frac{3}{4}$ " | | // | 316-2927-750N |
| 30 | 3" | | // | 316-2930-750N |

| | |
|-------------------------|---------------|
| IP 3100 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 5100 ONE PIECE SHAFT | 313-1500-004N |
| IP 7600 ONE PIECE SHAFT | 316-1135-147N |

CODE 12

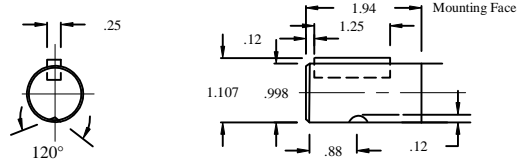
KEYED $\frac{3}{4}$ □ - $\frac{3}{16}$ KEY



| GEAR WIDTH CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| NOT AVAILABLE | | | | |

| | |
|-------------------------|-------------------|
| IP 3100 ONE PIECE SHAFT | 312 - 1135 - 152N |
| IP 5100 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 7600 ONE PIECE SHAFT | NOT AVAILABLE |

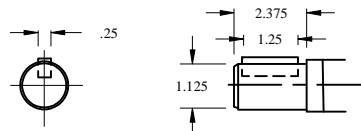
CODE 43 - KEYED 1 □ - $\frac{1}{4}$ KEY - ANSI 25-1



| GEAR WIDTH CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| 05 | $\frac{1}{2}$ " | // | // | // |
| 07 | $\frac{3}{4}$ " | 312-2907-740N | // | // |
| 10 | 1" | 312-2910-740N | 313-2910-740N | // |
| 12 | 1 $\frac{1}{4}$ " | 312-2912-740N | 313-2912-740N | // |
| 15 | 1 $\frac{1}{2}$ " | 312-2915-740N | 313-2915-740N | // |
| 17 | 1 $\frac{3}{4}$ " | 312-2917-740N | 313-2917-740N | // |
| 20 | 2" | 312-2920-740N | 313-2920-740N | // |
| 22 | 2 $\frac{1}{4}$ " | | 313-2922-740N | // |
| 25 | 2 $\frac{1}{2}$ " | | 313-2925-740N | // |

| | |
|-------------------------|---------------|
| IP 3100 ONE PIECE SHAFT | 312-1500-400N |
| IP 5100 ONE PIECE SHAFT | 313-1500-400N |
| IP 7600 ONE PIECE SHAFT | NOT AVAILABLE |

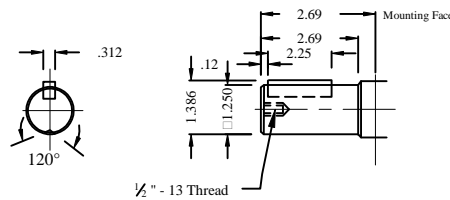
CODE 02 - KEYED 1 $\frac{1}{8}$ □ - $\frac{1}{4}$ KEY



| GEAR WIDTH CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| NOT AVAILABLE | | | | |

| | |
|-------------------------|---------------|
| IP 3100 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 5100 ONE PIECE SHAFT | 391-1500-502N |
| IP 7600 ONE PIECE SHAFT | NOT AVAILABLE |

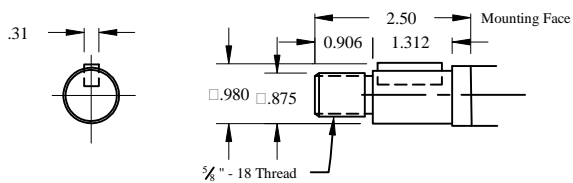
CODE 73 - KEYED 1 $\frac{1}{4}$ □ - $\frac{5}{16}$ KEY C/W $\frac{1}{2}$ - 13 THREAD



| GEAR WIDTH CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| NOT AVAILABLE | | | | |

| | |
|-------------------------|---------------|
| IP 3100 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 5100 ONE PIECE SHAFT | 313-1500-502N |
| IP 7600 ONE PIECE SHAFT | NOT AVAILABLE |

CODE 90 - KEYED $\frac{7}{8}$ □ - $\frac{1}{4}$ KEY C/W $\frac{5}{8}$ " - 13 THREAD



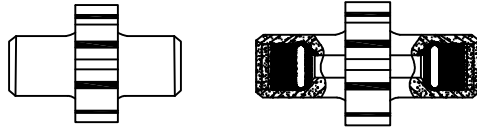
| GEAR WIDTH CODE | GEAR WIDTH INCHES | IP3100 SHAFT & GEAR PART NUMBER | IP5100 SHAFT & GEAR PART NUMBER | IP7600 SHAFT & GEAR PART NUMBER |
|-----------------|-------------------|---------------------------------|---------------------------------|---------------------------------|
| NOT AVAILABLE | | | | |

| | |
|-------------------------|---------------|
| IP 3100 ONE PIECE SHAFT | 312-1135-171N |
| IP 5100 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 7600 ONE PIECE SHAFT | NOT AVAILABLE |

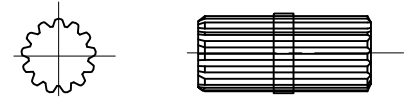
IFP IP3100/IP5100/IP7600 MATCHED GEAR SETS&SHAFTS



MATCHED GEAR SET



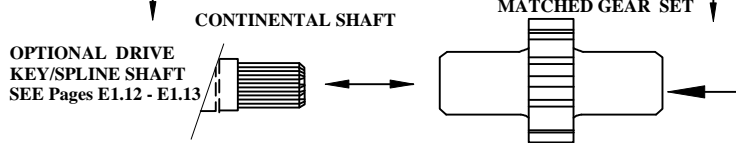
CODE 1 CONNECTING SHAFT



| GEAR WIDTH CODE | GEAR WIDTH INCHES | IP3100 | IP5100 | IP7600 |
|-----------------|-------------------|--------------------------|--------------------------|------------------------------|
| | | SHAFT & GEAR PART NUMBER | SHAFT & GEAR PART NUMBER | MATCHED GEAR SET PART NUMBER |
| 05 | 1/2" | 312-2805-000N | // | // |
| 07 | 3/4" | 312-2807-000N | 313-2807-000N | 316-2807-000N |
| 10 | 1" | 312-2810-000N | 313-2810-000N | 316-2810-000N |
| 12 | 1 1/4" | 312-2812-000N | 313-2812-000N | 316-2812-000N |
| 15 | 1 1/2" | 312-2815-000N | 313-2815-000N | 316-2815-000N |
| 17 | 1 3/4" | 312-2817-000N | 313-2817-000N | 316-2817-000N |
| 20 | 2" | 312-2820-000N | 313-2820-000N | 316-2820-000N |
| 22 | 2 1/4" | | 313-2822-000N | 316-2822-000N |
| 25 | 2 1/2" | | 313-2825-000N | 316-2825-000N |
| 27 | 2 3/4" | | | 316-2827-000N |
| 30 | 3" | | | 316-2830-000N |

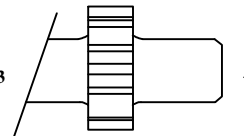
| | |
|--------------------------|-------------------|
| IP 3100 CONNECTING SHAFT | 312 - 1133 - 001N |
| IP 5100 CONNECTING SHAFT | 313 - 1133 - 001N |
| IP 7600 CONNECTING SHAFT | 316 - 1133 - 001N |

TWO PIECE SHAFT & GEAR ASSEMBLY

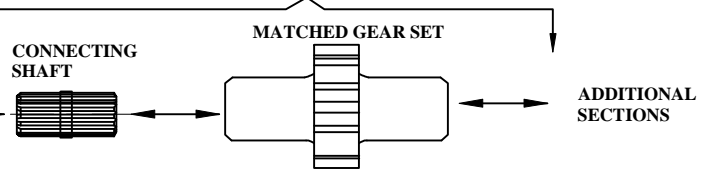


ONE PIECE SHAFT & GEAR ASSEMBLY

OPTIONAL DRIVE KEY/SPLINE SHAFT
SEE Pages E1.12 - E1.13



ADDER FOR MULTIPLE SECTION PUMPS



SHAFT & GEAR PART NUMBER NOMENCLATURE

31* - 29** - xxx N

312-IP3100 SERIES
313-IP5100 SERIES
316-IP7600 SERIES

| GEAR WIDTH CODE | GEAR WIDTH INCHES | GEAR WIDTH CODE | GEAR WIDTH INCHES |
|-----------------|-------------------|-----------------|-------------------|
| 05 | 1/2" | 20 | 2" |
| 07 | 3/4" | 22 | 2 1/4" |
| 10 | 1" | 25 | 2 1/2" |
| 12 | 1 1/4" | 27 | 2 3/4" |
| 15 | 1 1/2" | 30 | 3" |
| 17 | 1 3/4" | | |

| DRIVE SHAFT CODE | |
|------------------|------------------------|
| 122 | 5/8" Ø - 9TH SPLINE |
| 230 | 7/8" Ø - 13TH SPLINE |
| 250 | 1 1/4" Ø - 14TH SPLINE |
| 730 | 7/8" Ø - 1/4" KEYED |
| 740 | 1" Ø - 1/4" KEYED |
| 750 | 1 1/4" Ø - 5/16" KEYED |

MATCHED GEAR PART NUMBER NOMENCLATURE

31* - 28** - 000 N

312-IP3100 SERIES
313-IP5100 SERIES
316-IP7600 SERIES

| GEAR WIDTH CODE | GEAR WIDTH INCHES | GEAR WIDTH CODE | GEAR WIDTH INCHES |
|-----------------|-------------------|-----------------|-------------------|
| 05 | 1/2" | 20 | 2" |
| 07 | 3/4" | 22 | 2 1/4" |
| 10 | 1" | 25 | 2 1/2" |
| 12 | 1 1/4" | 27 | 2 3/4" |
| 15 | 1 1/2" | 30 | 3" |
| 17 | 1 3/4" | | |

PL CHART

| SHAFT STYLE | INTEGRAL SHAFT&GEAR | TWO PIECE STYLE |
|------------------|---------------------|-----------------|
| IP30 / 31 | | |
| SAE "A" SPLINE | 2,600 | 2,600 |
| SAE "B" SPLINE | 7,900 | 5,850 |
| SAE "B" KEY | 4,800 | 4,850 |
| SAE "BB" SPLINE | 12,150 | |
| SAE "BB" KEY | 5,850 | 5,850 |
| SAE "C" SPLINE | -- | 8,850 |
| CONNECTING SHAFT | -- | 5,850 |
| IP50 / 51 | | |
| SAE "B" SPLINE | 6,100 | 6,100 |
| SAE "B-B" SPLINE | 9,400 | -- |
| SAE "B-B" KEY | 5,600 | 5,600 |
| SAE "C" SPLINE | 12,900 | 8,500 |
| SAE "C" KEY | 10,900 | 8,500 |
| CONNECTING SHAFT | -- | 8,500 |
| IP75 / 76 | | |
| SAE "C" SINGLE | 8,000 | 8,000 |
| SAE "C" TANDEM | 12,500 | -- |
| SAE "C" KEY | 7,500 | 7,500 |
| CONNECTING SHAFT | -- | 10,000 |

PL FACTOR

Each section of a multiple pump or motor should be regarded as a single unit with corresponding delivery and power input requirements. Since the entire input horsepower is fed through a common drive shaft, the power delivered to or from the unit is limited by the physical strength of the shaft. This limit is defined as a "PL" factor; "P" being the operating pressure and "L" the summation of gear widths.

In multiple units the "PL" must be calculated for the first connecting shaft as well as the drive shaft. Each style or type of shaft has a unique "PL" factor as noted in the table below.

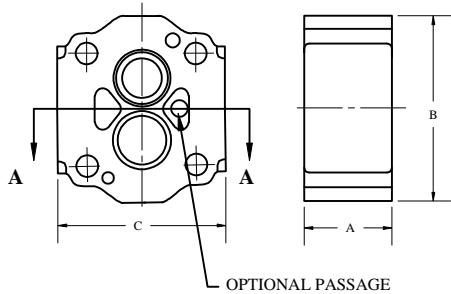
Pressure X total gear width = PL

PL must not exceed number shown in Chart for appropriate shaft

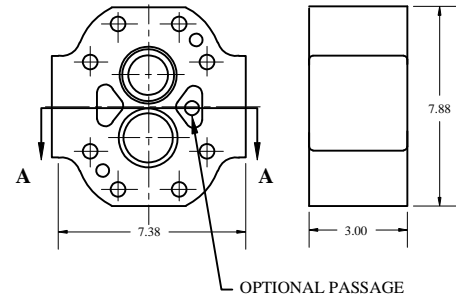
IFP IP3100/IP5100/IP7600 BEARING CARRIERS



IP3100/IP5100



IP7600



| IP3100 BEARING CARRIER | | | | IP5100 BEARING CARRIER | | | | |
|------------------------|-----|------|------|------------------------|------|------|------|--------------------------------------------|
| PART NUMBER | "A" | "B" | "C" | PART NUMBER | "A" | "B" | "C" | DESCRIPTION |
| 312-7700-100N | 2.5 | 5.38 | 5.00 | 313-7700-100N | 2.88 | 6.00 | 5.00 | STANDARD WIDTH-"C" WITHOUT PASSAGE HOLE |
| 312-7740-100N | 2.5 | 5.38 | 5.79 | 313-7740-100N | 2.88 | 6.00 | 5.79 | WIDER WIDTH-"C" WITHOUT PASSAGE HOLE |
| 312-7723-100N | 2.5 | 5.38 | 5.00 | 313-7723-100N | 2.88 | 6.00 | 5.00 | STANDARD WIDTH-"C" WITHOUT PASSAGE HOLE |
| 312-7743-100N | 2.5 | 5.38 | 5.79 | 313-7743-100N | 2.88 | 6.00 | 5.79 | WIDER WIDTH-"C" WITHOUT PASSAGE HOLE |

| IP7600 BEARING CARRIER | |
|------------------------|----------------------|
| PART NUMBER | DESCRIPTION |
| 316-7740-100N | WITHOUT PASSAGE HOLE |
| 316-7740-100N | WITH PASSAGE HOLE |

BEARING CARRIER PART CODE

| SECTION VIEW A-A C.W. ROT. | SECTION VIEW A-A C.W. ROT. | PORT SIZE | | NPT THREAD BEARING CARRIER CODE | | O.D.T. THREAD BEARING CARRIER CODE | | SPLIT FLANGE BEARING CARRIER CODE | |
|-------------------------------|-------------------------------|-----------|-----|---------------------------------|-------------|------------------------------------|-------------|-----------------------------------|-------------|
| | | IN | OUT | C.W. ROT. | C.C.W. ROT. | C.W. ROT. | C.C.W. ROT. | C.W. ROT. | C.C.W. ROT. |
| | | // | // | B | B | B | B | B | B |
| | | // | // | C | D | C | D | C | D |
| | | 1 | // | TB | BT | CB | BC | LB | BL |
| | | 1 1/4 | // | VB | BV | DB | BD | MB | BM |
| | | 1 1/2 | // | WB | BW | FB | BF | NB | BN |
| | | // | 3/4 | // | // | PJ | JP | BR | RB |
| | | 1 | 3/4 | TX | XT | CJ | JC | LR | RL |
| | | 1 1/4 | 3/4 | VX | XV | DJ | JD | MR | RM |
| | | 1 1/2 | 3/4 | WX | XW | FJ | JF | NR | RN |
| | | 1 1/4 | 1 | VZ | ZV | DK | KD | MS | SM |
| | | 1 1/2 | 1 | WZ | ZW | FK | KF | NS | SN |
| | | 1 | 3/4 | TJ | JT | CR | RC | LX | XL |
| | | 1 1/4 | 3/4 | VJ | JV | DR | RD | MX | XM |
| | | 1 1/2 | 3/4 | // | // | FR | RF | // | // |
| | | 1 1/4 | 1 | VK | KV | DS | SD | MZ | ZM |
| | | 1 1/2 | 1 | WK | KW | FS | SF | NZ | ZN |
| | | // | 1 | // | // | HZ | ZH | // | // |
| | | 1 | 3/4 | ZX | XZ | KJ | JK | SR | RS |

SECTION A-A
ORIENTATION

BACK OF PUMP



FRONT OF PUMP

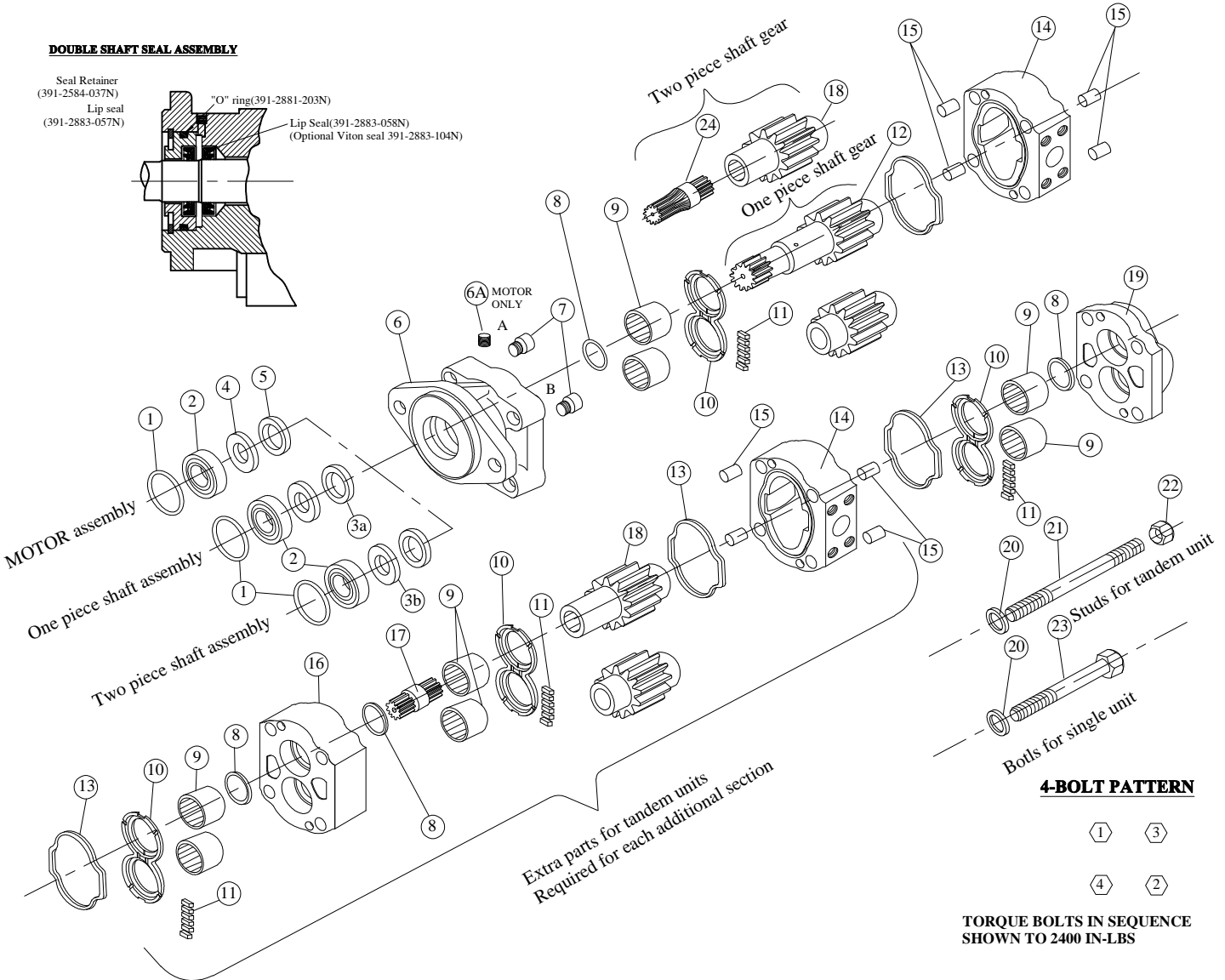
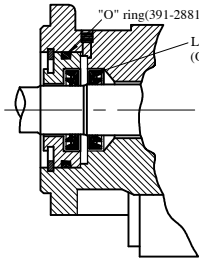
OPTIONAL PASSAGES

IFP IP3100 PUMPS and MOTORS SERVICE PARTS INFORMATION



DOUBLE SHAFT SEAL ASSEMBLY

Seal Retainer (391-2584-037N)
Lip seal (391-2883-057N)
"O" ring(391-2881-203N)
Lip Seal(391-2883-058N)
(Optional Viton seal 391-2883-104N)



PLUG 7 IN POSITION **B** FOR CLOCKWISE ROTATION.
PLUG 7 IN POSITION **A** FOR COUNTER CLOCKWISE ROTATION.
CHECK VALVE IN BOTH POSITIONS FOR BI-DIRECTIONAL UNITS.

DESCRIPTION & CODES

| ITEM | DESCRIPTION | REQ'S | PART NO. | ITEM | DESCRIPTION | REQ'S | PART NO. |
|------|-------------------------------------------------------|-------|---------------|------|--------------------------------|---------------|---------------|
| 1 | SNAP RING | 1 | 391-2686-063N | 11 | POCKET SEALS(PER GEAR SECTION) | 1 STRIP | 391-2882-051N |
| 2 | OUTBOARD BEARING | 1 | 391-0381-040N | 12 | DRIVE SHAFT AND GEAR SET | 1 SET | 312-29xx-xxxN |
| 3a | DOUBLE LIP SEAL (PUMPS)(one piece gear) | 1 | 391-2883-107N | 13 | GASKET SEALS(PER GEAR SET) | 2 | 319-2884-050N |
| 3b | DOUBLE LIP SEAL (PUMPS)(two piece gear) | 1 | 391-2883-058N | 14 | GEAR HOUSING | 1 or more | 312-8xxx-xxxN |
| 4 | SEAL RETAINER | 1 | 391-3381-040N | 15 | DOWEL PINS | 4 | 391-2082-032N |
| 5 | HI-PRESSURE SEAL (MOTORS) | 1 | 391-2883-119N | 16 | BEARING CARRIER | 1 or more | 312-7xxx-xxxN |
| 6 | SHAFT END COVER | 1 | 312-50xx-xxxN | 17 | CONNECTING SHAFT | 1 or more | 312-1133-001N |
| 6A | DRAIN PLUG (MOTORS ONLY) | 1 | 391-2282-056N | 18 | MATCHED GEARS | 1 set or more | 312-28xx-xxxN |
| 7 | CHECK ASSEMBLIES FOR MOTORS & BI-DIRECTIONAL PUMPS | 2 | 391-3681-001N | 19 | PORT END COVER | 1 | 312-3120-100N |
| | PLUG (PUMPS ONLY) | 1 | 391-2286-004N | 20 | WASHERS | 4 | 391-3784-028N |
| 8 | RING SEALS(PER GEAR SECTION) | 2 | 391-2585-006N | 21 | BOLTS(SINGLE UNITS) | 4 | 391-1401-xxxN |
| 9 | ROLLER BEARINGS(PER GEAR SECTYION) | 4 | 391-0381-906N | 22 | STUDS(MULTIPLE UNITES) | 4 | 391-1425-xxxN |
| 10 | THRUST PLATES(PER GEAR SECTION) | 2 | 391-2185-913N | 23 | NUT(MULTIPLE UNITS) | 4 | 391-1451-076N |
| | | | | 24 | CONTINENTAL DRIVE SHAFT | 1 | 312-xxxx-xxxN |

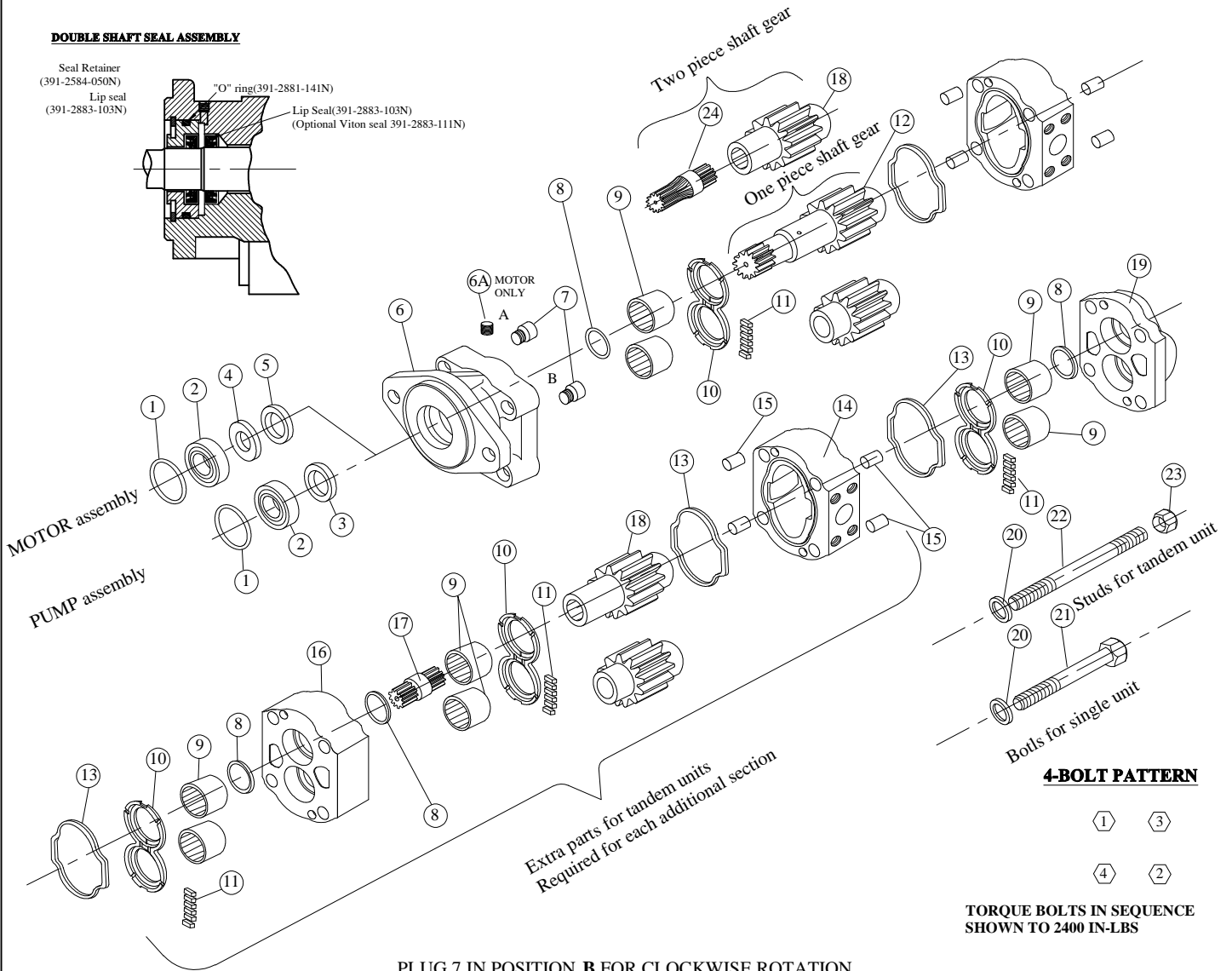
TORQUE BOLTS IN SEQUENCE
SHOWN TO 2400 IN-LBS

IFP IP5100 PUMPS and MOTORS SERVICE PARTS INFORMATION



DOUBLE SHAFT SEAL ASSEMBLY

Seal Retainer (391-2584-050N)
Lip seal (391-2883-103N)
"O" ring(391-2881-141N)
Lip Seal(391-2883-103N)
(Optional Viton seal 391-2883-111N)



PLUG 7 IN POSITION **B** FOR CLOCKWISE ROTATION.
PLUG 7 IN POSITION **A** FOR COUNTER CLOCKWISE ROTATION.
CHECK VALVE IN BOTH POSITIONS FOR BI-DIRECTIONAL UNITS.

DESCRIPTION & CODES

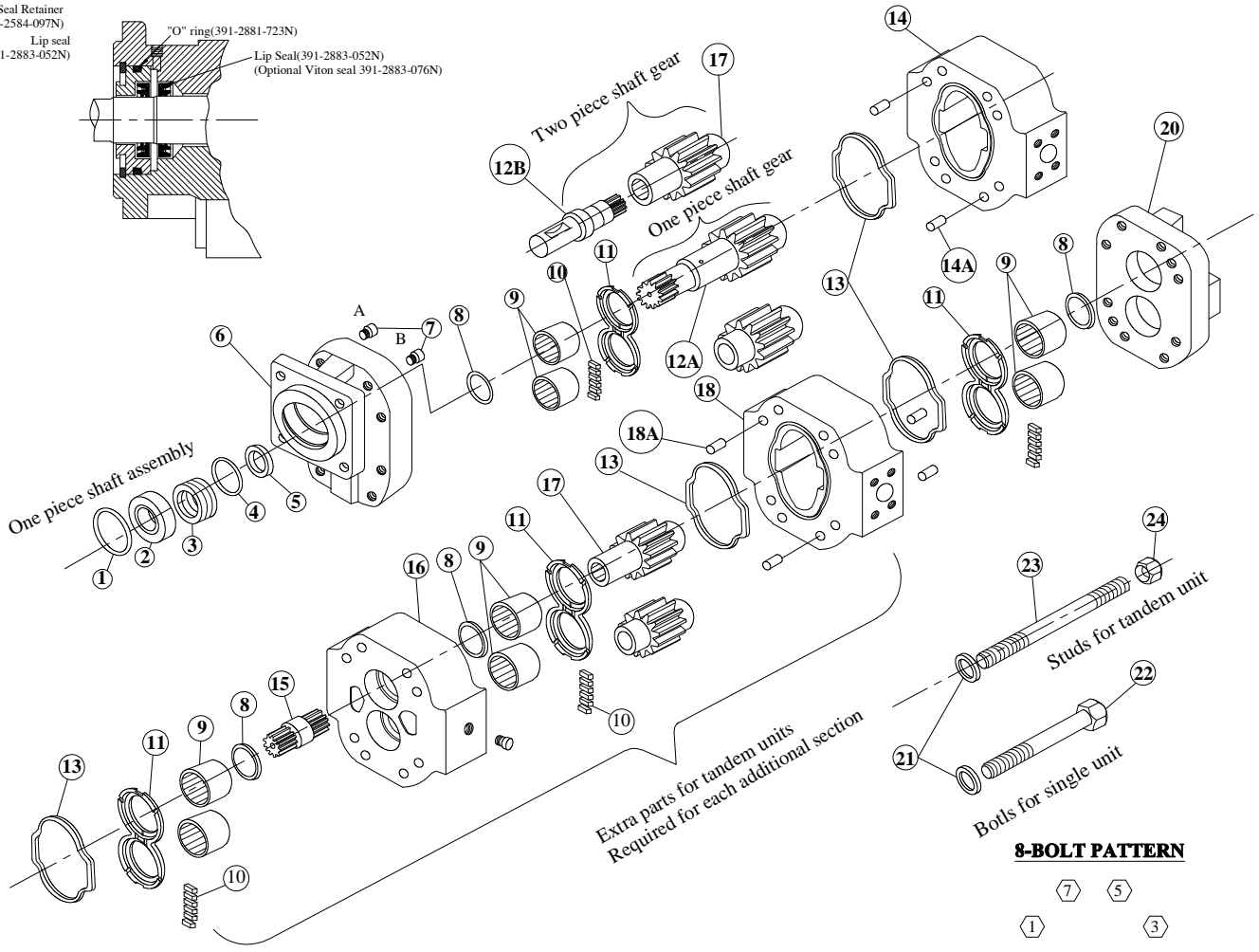
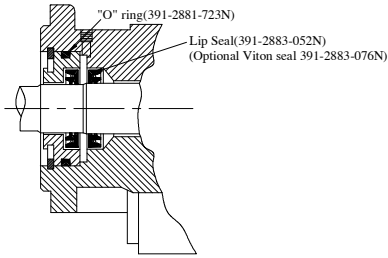
| ITEM | DESCRIPTION | REQ'S | PART NO. | ITEM | DESCRIPTION | REQ'S | PART NO. |
|------|-------------------------------------------------------|-------|---------------|------|--------------------------------|---------------|---------------|
| 1 | SNAP RING | 1 | 391-2686-065N | 11 | POCKET SEALS(PER GEAR SECTION) | 1 STRIP | 391-2882-051N |
| 2 | OUTBOARD BEARING | 1 | 391-0381-077N | 12 | DRIVE SHAFT AND GEAR SET | 1 SET | 313-2xxx-xxxN |
| 3 | DOUBLE LIP SEAL (PUMPS) | 1 | 391-2883-103N | 13 | GASKET SEALS(PER GEAR SET) | 2 | 391-2884-021N |
| 4 | SEAL RETAINER | 1 | 391-3383-082N | 14 | GEAR HOUSING SERIES 51 | 1 or more | 313-82xx-xxxN |
| 5 | HI-PRESSURE SEAL (MOTORS) | 1 | 391-2883-115N | 15 | DOWEL PINS | 4 | 391-2082-032N |
| 6 | SHAFT END COVER | 1 | 313-5xxx-xxxN | 16 | BEARING CARRIER | 1 or more | 313-7xxx-xxxN |
| 6A | DRAIN PLUG (MOTORS ONLY) | 1 | 391-2282-056N | 17 | CONNECTING SHAFT | 1 or more | 313-1133-001N |
| 7 | CHECK ASSEMBLIES FOR MOTORS & BI-DIRECTIONAL PUMPS | 2 | 391-3681-001N | 18 | MATCHED GEARS | 1 set or more | 313-2xxx-xxxN |
| | PLUG (PUMPS ONLY) | 1 | 391-2286-004N | 19 | PORT END COVER | 1 | 313-3xxx-xxxN |
| 8 | RING SEALS(PER GEAR SECTION) | 2 | 391-2585-009N | 20 | WASHERS | 4 | 391-3784-028N |
| 9 | ROLLER BEARINGS(PER GEAR SECTYION) | 4 | 391-0381-905N | 21 | CAP SCREWS(SINGLE UNITS) | 4 | 391-1401-xxxN |
| 10 | THRUST PLATES(PER GEAR SECTION) | 2 | 391-2185-912N | 22 | STUDS(MULTIPLE UNITES) | 4 | 391-1425-xxxN |
| | | | | 23 | NUT(MULTIPLE UNITS) | 4 | 391-1451-076N |
| | | | | 24 | CONTINENTAL SHAFT | 1 | 312-xxx-xxxxN |

IFP IP7600 PUMPS and MOTORS SERVICE PARTS INFORMATION

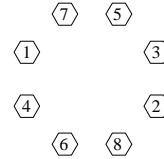


DOUBLE SHAFT SEAL ASSEMBLY

Seal Retainer
(391-2584-097N)
Lip seal
(391-2883-052N)



8-BOLT PATTERN



PLUG 7 IN POSITION **B** FOR CLOCKWISE ROTATION.
PLUG 7 IN POSITION **A** FOR COUNTER CLOCKWISE ROTATION.
CHECK VALVE IN BOTH POSITIONS FOR BI-DIRECTIONAL UNITS.

TORQUE BOLTS IN SEQUENCE
SHOWN TO 2400 IN-LBS

DESCRIPTION & CODES

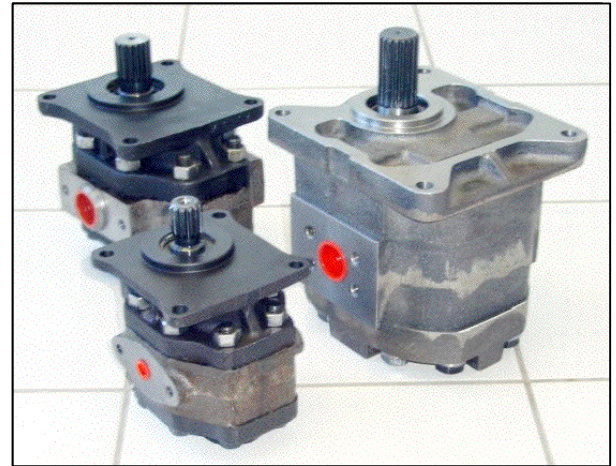
| ITEM | DESCRIPTION | REQ'S | PART NO. | ITEM | DESCRIPTION | REQ'S | PART NO. |
|------|---------------------------------------|-------|---------------|------|---------------------------|-----------|---------------|
| 1 | SNAP RING | 1 | 391-2686-025N | 13 | GASKET SEALS(PER HOUSING) | 1 STRIP | 391-2884-024N |
| 2 | OUTBOARD BEARING | 1 | 391-0381-078N | 14 | GEAR HOUSING | 1 | 316-82xx-100N |
| 3 | SEAL RETAINER | 1 | 391-2584-082N | 14A | DOWEL PINS(SERIES IP7600) | 4 | 319-2884-050N |
| 4 | "O" RING | 1 | 391-2881-457N | 15 | CONNECTING SHAFT | 1 or more | 316-1133-001N |
| 5 | SEAL | 1 | 391-2883-052N | 16 | BEARING CARRIER | 1 | 316-7xxx-100N |
| 6 | SHAFT END COVER | 1 | 316-5xxx-xxxN | 17 | MATCHED GEARS SET | 1 | 316-28xx-000N |
| 7 | Plug for Motors/ bi-directional pumps | 1 | 391-3681-001N | 18 | GEAR HOUSING | 1 | 316-82xx-100N |
| | Plug (pumps only) | 1 | 391-2286-004N | 18A | DOWEL PINS(SERIES IP7600) | 4 | 391-2082-033N |
| 8 | RING SEAL (per gear section) | 2 | 391-2585-011N | 19 | PLUG | 1 | 391-2286-004N |
| 9 | ROLLER BEARINGS(per gear section) | 2 | 391-0381-904N | 20 | PORT END COVER | 1 | 316-3120-100N |
| 10 | POCKER SEAL | 1 | 391-2282-052N | 21 | WASHERS | 4 | 391-3784-028N |
| 11 | THRUST PLATES(PER GEAR SECTION) | 2 | 391-2185-920N | 22 | CAP SCREWS(SINGLE UNITS) | 4 | 391-1401-xxxN |
| 12A | INTEGRAL DRIVE SHAFT | 1 | 316-29xx-xxxN | 23 | STUDS(MULTIPLE UNITES) | 4 | 391-1425-xxxN |
| | AND GEAR SET | | | 24 | NUT(MULTIPLE UNITS) | 4 | 391-1451-076N |
| 12B | CONTINENTAL SHAFT | 1 | 316-xxxx-xxxN | | | | |

IFP REPLACEMENTS FOR KOMATSU MAIN PUMPS



International fpa has retrofitted standard P75 units with a special cast flanges that are a direct equivalent to Komatsu transmission and steering pumps.

All units are completely interchangeable with Komatsu machines and meet or exceed all O.E.M. performance specifications. Serviceable with standard International fpa or Commercial Intertech parts.

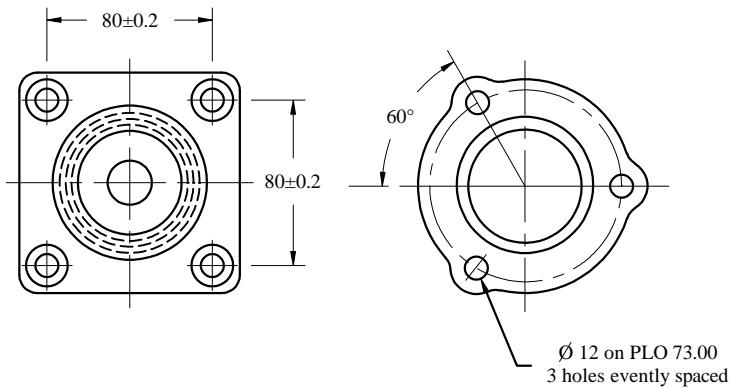


KOMATSU MAIN PUMPS

| Machine Model | Transmission Pump | Steering Pump | Main Clutch | Main Hydraulic |
|------------------------|------------------------------|---------------|--------------|-----------------------------------|
| D60A-6 | | *FAR 036 (3) | *FAR 032 (3) | *PAR 140 (4) |
| D60A-7 | | *FAR 036 (3) | *FAR 032 (3) | *PAR 112 (4) |
| D60E-6 | | *FAR 036 (3) | *FAR 032 (3) | *PAR 140 (4) |
| D60E-7 | | *FAR 036 (3) | *FAR 032 (3) | *PAR 112 (4) |
| D60P-6 | | *FAR 036 (3) | *FAR 032 (3) | *PAR 140 (4) |
| D60P-7 | | *FAR 036 (3) | *FAR 032 (3) | *PAR 112 (4) |
| D60S-6 | | *FAR 036 (3) | *FAR 032 (3) | *PAR 160 (4) |
| D60S-7 | | *FAR 036 (3) | *FAR 032 (3) | *PAR 160 (4) |
| D65A-6 | *FAL 040 (3) | *FAL 032 (3) | | *PAL 112 (4) |
| D65A-7 | *FAL 040 (3) | *FAL 032 (3) | | *PAR 112 (4) |
| D65E-6 | *FAL 040 (3) | *FAL 032 (3) | | *PAL 112 (4) |
| D65E-7 | *FAL 040 (3) | *FAL 032 (3) | | *PAR 112 (4) |
| D65P-6 | *FAL 040 (3) | *FAL 032 (3) | | *PAL 112 (4) |
| D65P-7 | *FAL 040 (3) | *FAL 032 (3) | | *PAR 112 (4) |
| D65S-6 | *FAL 040 (3) | *FAL 032 (3) | | *PAL 140 (4) |
| D65S-7 | *FAL 040 (3) | *FAL 032 (3) | | *PAR 140 (4) |
| D75S-2 | *FAL 040 (3) | FAR 025 | | *PAR 140 (4) |
| D75S-3 | *FAL 040 (3) | *FAL 032 | | *PAR 160 (4) SAR 160 |
| D80A-12 | | *FAL 040 (3) | GAL 036 | *PAL 160 (4) |
| D80A-18 | | FAR 063 | FAL 040 | *PAL 160 (4) |
| D80E--18 | | FAR 063 | FAL 040 | *PAL 160 (4) |
| D80P-18 | | FAR 063 | FAL 040 | *PAL 160 (4) |
| D85A-12 | *FAL 045 (3) | *FAL 040 (3) | | *PAL 160 (4) |
| D85A-18 | *FAL 040 (3) | FAR 063 | | *PAL 160 (4) |
| D85E-18 | *FAL 040 (3) | FAR 063 | | *PAL 160 (4) |
| D85P-18 | *FAL 040 (3) | FAR 063 | | *PAL 160 (4) |
| D95S-1 | *FAL 040 (3) | FAR 063 | | PAL 250 |
| D95S-2 | *FAL 040 (3) | FAR 063 | | PAL 250 |
| D150A-1 | *FAL 045 (3) | *FAR 100 (5) | | *PAL 200 (187) |
| D155A-1 | *FAL 045 (3) | *FAR 100 (5) | | *PAL 200 (187) |
| D155S-1 | *FAL 045 (3) | *FAR 100 (5) | | * 2 x PAL 180 (187) |
| D355A-3 | *FAR 080 (5) | *FAL 125 (5) | | *PAL 200 (187) |
| D455A-1 (1013-1300) | GAL 200 or *PAL 200 (187) | *FAR 080 (5) | | * 2 x PAR 140A (4) |
| D455A-1 (1301-) | *PAL 200 (187) | *FAR 125 (5) | | * 2 x PAR 140A (4) 2 x SAL 140 |

* International fpa Genuine replacement parts manufactured by IFP

IFP REPLACEMENT PARTS FOR COMMERCIAL INTERTECH



International fpa Genuine replacement parts manufactured or sold by IFP are recommended, internal parts interchange with Commercial Intertech.

EUROPEAN ...PTO ...MOUNTINGS EUROPEAN ...PTO ...MOUNTINGS

International fpa introduces the P 50/51 Range of interchangeable Commercial Intertech Pumps with 3 and 4 Bolts P.T.O. Flange Mounting.

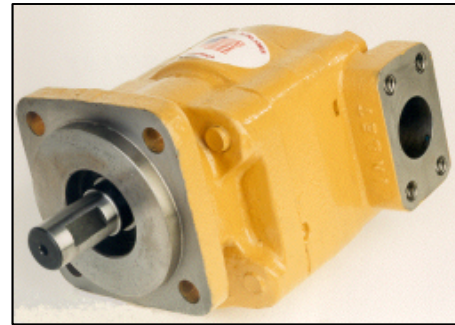
This type of mounting is very common on most European vehicles (DIN 5462) for direct close coupling to the Gear box.

IFP IP3150/IP3300/IP3500/IP3650 GEAR PUMPS AND MOTORS



Characteristics :

- High efficiency single / multiple units
- Wide range of displacements
- Optional shafts / mountings
- Rugged cast iron construction
- Motor assemblies available
- Complete parts program
- Flow dividers available



BUSHING GEAR PUMPS PERFORMANCE DATA

| IFP MODEL SERIES | GEAR WIDTH (inches) | Theoretical displacement | | Mineral oil maximum pressure | | | | Recommended speed range | | Approximate weight | | | |
|------------------|---------------------|--------------------------|----------------------|------------------------------|-----|--------------|-----|-------------------------|-----|--------------------|------|-------------|-------|
| | | in ³ /rev | cm ³ /rev | Continuous | | Intermittent | | MAX | MIN | Single unit | | Add section | |
| | | | | PSI | BAR | PSI | BAR | rpm | rpm | lbs | kg | lbs | kg |
| IP3150 | 1/2 | .62 | 10.20 | 3000 | 207 | 3500 | 241 | 3000 | 600 | 14 | 6 | 13.5 | 5 |
| | 3/4 | .93 | 15.20 | 3000 | 207 | 3500 | 241 | 3000 | 600 | 15 | 7 | 14.25 | 6.65 |
| | 1 | 1.24 | 20.30 | 3000 | 207 | 3500 | 241 | 3000 | 600 | 18 | 8 | 17 | 7.6 |
| | 1 1/4 | 1.55 | 25.40 | 3000 | 207 | 3500 | 241 | 3000 | 600 | 19 | 8.5 | 18 | 8 |
| | 1 1/2 | 1.86 | 30.50 | 2750 | 190 | 3300 | 228 | 3000 | 600 | 20 | 9 | 19 | 8.5 |
| | 2 | 2.48 | 40.60 | 2250 | 155 | 2500 | 172 | 3000 | 600 | 22 | 10 | 21 | 9.5 |
| IP3300 | 1/2 | .99 | 16.10 | 3000 | 207 | 3500 | 241 | 3000 | 600 | 33.5 | 15 | 30 | 13.5 |
| | 3/4 | 1.48 | 24.20 | 3000 | 207 | 3500 | 241 | 3000 | 600 | 34.75 | 15.5 | 31 | 14 |
| | 1 | 1.97 | 32.30 | 3000 | 207 | 3500 | 241 | 3000 | 600 | 36 | 16 | 32.5 | 14.5 |
| | 1 1/4 | 2.46 | 40.40 | 3000 | 207 | 3500 | 241 | 3000 | 600 | 37.25 | 16.5 | 33.5 | 14.85 |
| | 1 1/2 | 2.96 | 48.40 | 3000 | 207 | 3500 | 241 | 3000 | 600 | 38.5 | 17 | 34.5 | 15.3 |
| | 2 | 3.94 | 64.60 | 2500 | 172 | 3000 | 207 | 3000 | 600 | 40 | 18 | 36 | 16.2 |
| IP3500 | 3/4 | 1.91 | 31.30 | 3000 | 207 | 3500 | 241 | 3000 | 600 | 49.5 | 22 | 47 | 21 |
| | 1 | 2.55 | 41.80 | 3000 | 207 | 3500 | 241 | 2400 | 600 | 51 | 23 | 48.5 | 21.75 |
| | 1 1/4 | 3.19 | 52.20 | 3000 | 207 | 3500 | 241 | 2400 | 600 | 52.5 | 23.5 | 49.75 | 22.3 |
| | 1 1/2 | 3.83 | 62.70 | 3000 | 207 | 3500 | 241 | 2400 | 600 | 54 | 24 | 51 | 22.8 |
| | 2 | 5.10 | 83.60 | 2500 | 172 | 3000 | 207 | 2400 | 600 | 57 | 25.5 | 54 | 23.75 |
| | 2 1/4 | 5.74 | 94.00 | 2500 | 172 | 2750 | 190 | 2400 | 600 | 58.5 | 26 | 55.5 | 24.7 |
| IP3650 | 3/4 | 2.70 | 44.30 | 3000 | 207 | 3500 | 241 | 2400 | 600 | 53.5 | 24 | 50.8 | 22.8 |
| | 1 | 3.60 | 59.00 | 3000 | 207 | 3500 | 241 | 2400 | 600 | 56 | 25 | 53 | 23.75 |
| | 1 1/4 | 4.50 | 73.80 | 3000 | 207 | 3500 | 241 | 2400 | 600 | 58.5 | 26 | 55.5 | 24.75 |
| | 1 1/2 | 5.40 | 88.50 | 3000 | 207 | 3500 | 241 | 2400 | 600 | 61 | 27.5 | 58 | 26 |
| | 2 | 6.30 | 103.30 | 3000 | 207 | 3500 | 241 | 2400 | 600 | 63.5 | 28.5 | 60 | 27 |
| | 2 1/4 | 7.20 | 118.00 | 3000 | 207 | 3500 | 241 | 2400 | 600 | 66 | 29.5 | 62.5 | 28 |
| | 2 1/2 | 8.10 | 132.80 | 2750 | 190 | 3250 | 224 | 2400 | 600 | 68.5 | 31 | 65 | 29.5 |
| | 2 1/2 | 9.00 | 147.50 | 2500 | 172 | 3000 | 207 | 2400 | 600 | 71 | 32 | 67.5 | 30 |

International manufactures bushing gear pumps and motors to the highest quality and durability for the most demanding applications. Our gears are produced to precise tolerances with a true involute profile along the tooth thus maximising volumetric efficiency. The result is more efficient longer lasting pumps & motors with lower noise emissions.

International casts all its shaft end covers, gear housings, bearing carriers, and port covers out of grade 17 cast iron, which is metallurgically controlled to provide only the highest quality castings. In all assemblies, high density bronze alloy thrust plates with superior wear characteristics ensures longer pump or motor life under the harshest conditions.

The high operating pressure and speed combined with the large number of displacements, mounting options and port configurations make these units ideal for single and multiple pump and motor applications.

IFP IP3150/IP3300/IP3500/IP3650 PUMP PERFORMANCE DATA



Average Data at 2000psi / 138 bar
Oil Viscosity - 150 SUS (32 CST)

IP3150

| | | GEAR WIDTH (Inches) | | | | | | |
|-----------|--------|---------------------|-------|-------|--------|--------|--------|-------|
| | | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 1 3/4" | 2" |
| cu in/rev | | .62 | .93 | 1.24 | 1.55 | 1.86 | 2.17 | 2.48 |
| | cc/rev | 10.20 | 15.20 | 20.30 | 25.40 | 30.50 | 35.60 | 40.60 |
| gpm | | gpm | gpm | gpm | gpm | gpm | gpm | gpm |
| | lpm | lpm | lpm | lpm | lpm | lpm | lpm | lpm |
| 900 | | 1.6 | 2.8 | 4.0 | 5.2 | 6.2 | 7.2 | 8.4 |
| | 6 | 11.5 | 15 | 19.5 | 23.5 | 27.7 | 32 | |
| 1200 | | 2.4 | 3.9 | 5.4 | 6.9 | 8.6 | 10.1 | 11.7 |
| | 9 | 14.8 | 20.5 | 26.2 | 32.5 | 38.2 | 44 | |
| 1500 | | 3.2 | 5.2 | 7.2 | 9.2 | 11.1 | 13 | 14.8 |
| | 12 | 19.2 | 27 | 34.8 | 42 | 48 | 56 | |
| 1800 | | 4.0 | 6.4 | 8.7 | 11 | 13.4 | 16.7 | 18 |
| | 15 | 24 | 33 | 42 | 51 | 59.5 | 68 | |
| 2100 | | 4.8 | 7.6 | 10.4 | 13.2 | 15.9 | 18.5 | 21.2 |
| | 18 | 29 | 39 | 50 | 60 | 70 | 80 | |
| 2400 | | 5.6 | 8 | 12.0 | 15.2 | 18.2 | 21.2 | 24.2 |
| | 21 | 33.3 | 45.5 | 57.76 | 69 | 80.2 | 91.5 | |
| 3000 | | 7.2 | 11.2 | 15.2 | 19.2 | 23.2 | 26.9 | 30.7 |
| | 27 | 42.3 | 57.5 | 72.7 | 88 | 102 | 116 | |

IP3300

| | | GEAR WIDTH (Inches) | | | | | | |
|-----------|--------|---------------------|-------|-------|--------|--------|--------|-------|
| | | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 1 3/4" | 2" |
| cu in/rev | | .99 | 1.48 | 1.97 | 2.46 | 2.96 | 3.45 | 3.94 |
| | cc/rev | 16.10 | 24.20 | 32.30 | 40.40 | 48.40 | 56.50 | 64.60 |
| gpm | | gpm | gpm | gpm | gpm | gpm | gpm | gpm |
| | lpm | lpm | lpm | lpm | lpm | lpm | lpm | lpm |
| 900 | | 2 | 4 | 6 | 8 | 10 | 12 | 13.5 |
| | 9 | 16 | 23 | 30 | 38 | 45 | 51 | |
| 1200 | | 3.5 | 6 | 8.5 | 11.5 | 14 | 16 | 18.5 |
| | 12 | 22 | 32 | 42 | 53 | 61 | 70 | |
| 1500 | | 3.5 | 7.5 | 11 | 14.5 | 17.5 | 20.5 | 23.5 |
| | 20 | 31 | 42 | 55 | 66 | 78 | 89 | |
| 1800 | | 6 | 10 | 14 | 18 | 21.5 | 25 | 29 |
| | 27 | 40 | 53 | 81 | 81 | 95 | 110 | |
| 2100 | | 7.5 | 12 | 16.5 | 25 | 25 | 29.5 | 34 |
| | 28 | 45 | 62 | 79 | 95 | 112 | 129 | |
| 2400 | | 9 | 14 | 19 | 24 | 29 | 34 | 39 |
| | 34 | 53 | 72 | 91 | 110 | 129 | 148 | |
| 2400 | | 12.2 | 18.5 | 24.9 | 31.2 | 37.5 | 43.8 | 50.1 |
| | 46 | 70 | 94 | 118 | 142 | 166 | 190 | |

IP3500

| | | GEAR WIDTH (Inches) | | | | | | | |
|-----------|--------|---------------------|-------|--------|--------|--------|-------|--------|--------|
| | | 3/4" | 1" | 1 1/4" | 1 1/2" | 1 3/4" | 2" | 2 1/4" | 2 1/2" |
| cu in/rev | | 1.91 | 2.55 | 3.19 | 3.83 | 4.46 | 5.10 | 5.74 | 5.74 |
| | cc/rev | 31.30 | 41.80 | 52.20 | 62.70 | 73.10 | 83.60 | 94.00 | 94.00 |
| gpm | | gpm | gpm | gpm | gpm | gpm | gpm | gpm | gpm |
| | lpm | lpm | lpm | lpm | lpm | lpm | lpm | lpm | lpm |
| 900 | | 6 | 8 | 10.5 | 13 | 15 | 17.5 | 20 | 22 |
| | 20 | 30 | 40 | 49 | 57 | 66 | 75 | 83 | |
| 1200 | | 8.5 | 11.5 | 15 | 18 | 21 | 24 | 27 | 30 |
| | 31 | 44 | 57 | 68 | 79 | 91 | 102 | 114 | |
| 1500 | | 10 | 14.5 | 19 | 23 | 27 | 31 | 35 | 39 |
| | 38 | 55 | 72 | 87 | 102 | 117 | 132 | 148 | |
| 1800 | | 12 | 17.5 | 23 | 27.5 | 32.5 | 37.5 | 42 | 47 |
| | 45 | 66 | 87 | 104 | 123 | 142 | 159 | 178 | |
| 2100 | | 15 | 21 | 27 | 32.5 | 38.5 | 44 | 49.5 | 55 |
| | 56 | 79 | 102 | 123 | 146 | 167 | 187 | 208 | |
| 2400 | | 18 | 24.5 | 31 | 37 | 44 | 51 | 57 | 63.5 |
| | 69 | 93 | 117 | 140 | 167 | 193 | 216 | 240 | |

IP3650

| | | GEAR WIDTH (Inches) | | | | | | | |
|-----------|--------|---------------------|-------|--------|--------|--------|--------|--------|--------|
| | | 3/4" | 1" | 1 1/4" | 1 1/2" | 1 3/4" | 2" | 2 1/4" | 2 1/2" |
| cu in/rev | | 2.70 | 3.60 | 4.50 | 5.40 | 6.30 | 7.20 | 8.10 | 9.00 |
| | cc/rev | 44.30 | 59.00 | 73.80 | 88.50 | 103.30 | 118.00 | 132.80 | 147.50 |
| gpm | | gpm | gpm | gpm | gpm | gpm | gpm | gpm | gpm |
| | lpm | lpm | lpm | lpm | lpm | lpm | lpm | lpm | lpm |
| 900 | | 7.5 | 10.5 | 13.5 | 17 | 20.5 | 24 | 27.5 | 31 |
| | 30 | 40 | 51 | 64 | 78 | 91 | 104 | 117 | |
| 1200 | | 11 | 15.5 | 20 | 24.5 | 29 | 33.5 | 38 | 43 |
| | 43 | 59 | 75 | 93 | 110 | 127 | 144 | 163 | |
| 1500 | | 15 | 20 | 25.5 | 31 | 37.5 | 43 | 49 | 55 |
| | 55 | 76 | 97 | 117 | 142 | 163 | 185 | 208 | |
| 1800 | | 17.5 | 24.5 | 31.5 | 38 | 45.5 | 52 | 59 | 66 |
| | 67 | 93 | 119 | 144 | 172 | 197 | 223 | 250 | |
| 2100 | | 20.5 | 29 | 37.5 | 45.5 | 54 | 62 | 70 | 78 |
| | 78 | 110 | 142 | 172 | 204 | 235 | 265 | 295 | |
| 2400 | | 25 | 34 | 43 | 52.5 | 62 | 71 | 80.5 | 90 |
| | 95 | 129 | 163 | 199 | 235 | 269 | 305 | 341 | |

NOTE - PERFORMANCE DATA SHOWN ARE AN AVERAGE AND ARE NOT REPRESENTATIVE OF ONE PARTICULAR UNIT

IFP IM3150/IM3300/IM3500/IM3650 MOTOR PERFORMANCE DATA



Average Data at 2000psi / 138 bar
Oil Viscosity - 150 SUS (32 CST)

IM3150

| Speed rpm | ½" Gear | | ¾" Gear | | 1" Gear | | 1¼" Gear | | 1½" Gear | | 1¾" Gear | | 2" Gear | |
|-----------|---------|--------|---------|--------|---------|--------|----------|--------|----------|--------|----------|--------|---------|--------|
| | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output |
| | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque |
| | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs |
| | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm |
| 900 | 4.4 | 265 | 5.6 | 450 | 6.8 | 635 | 8.0 | 820 | 9.2 | 880 | 10.6 | 915 | 11.9 | 910 |
| 16 | 30 | 21 | 51 | 26 | 72 | 30 | 93 | 35 | 99 | 40 | 103 | 45 | 103 | |
| 1200 | 5.3 | 280 | 6.9 | 460 | 8.5 | 640 | 10.1 | 820 | 11.7 | 875 | 13.4 | 915 | 15.2 | 910 |
| 4 | 30 | 26 | 51 | 32 | 72 | 38 | 93 | 44 | 99 | 51 | 103 | 58 | 103 | |
| 1500 | 6.2 | 290 | 8.2 | 465 | 10.2 | 640 | 12.2 | 815 | 14.2 | 870 | 16.4 | 910 | 18.6 | 905 |
| 25 | 32 | 32 | 52 | 39 | 72 | 46 | 92 | 54 | 98 | 62 | 103 | 72 | 102 | |
| 1800 | 7.3 | 300 | 9.6 | 470 | 11.9 | 640 | 14.2 | 810 | 16.6 | 860 | 18.2 | 900 | 21.9 | 895 |
| 27 | 32 | 36 | 52 | 45 | 72 | 54 | 92 | 63 | 97 | 69 | 102 | 83 | 101 | |
| 2000 | 7.8 | 285 | 10.7 | 460 | 13.6 | 635 | 16.3 | 810 | 19.0 | 850 | 22.2 | 895 | 25.3 | 890 |
| 33 | 32 | 42 | 52 | 51 | 72 | 62 | 92 | 72 | 96 | 84 | 101 | 96 | 100 | |
| 2400 | 9.1 | 290 | 12.2 | 460 | 15.3 | 630 | 18.4 | 800 | 21.5 | 835 | 25.1 | 875 | 28.7 | 870 |
| 36 | 33 | 47 | 52 | 58 | 71 | 70 | 90 | 81 | 94 | 95 | 99 | 109 | 98 | |

IM3300

| Speed rpm | ½" Gear | | ¾" Gear | | 1" Gear | | 1¼" Gear | | 1½" Gear | | 1¾" Gear | | 2" Gear | |
|-----------|---------|--------|---------|--------|---------|--------|----------|--------|----------|--------|----------|--------|---------|--------|
| | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output |
| | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque |
| | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs |
| | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm |
| 900 | 5.5 | 745 | 7.5 | 895 | 9.5 | 995 | 11.5 | 1245 | 13.5 | 1495 | 15.5 | 1650 | 17.5 | 1720 |
| 20 | 83 | 29 | 83 | 36 | 112 | 44 | 141 | 51 | 169 | 59 | 186 | 66 | 194 | |
| 1200 | 7.5 | 740 | 10 | 740 | 12.5 | 995 | 15.0 | 1250 | 17.5 | 1500 | 20.2 | 1660 | 22.5 | 1725 |
| 27 | 54 | 37 | 83 | 47 | 112 | 57 | 141 | 66 | 169 | 76 | 188 | 85 | 195 | |
| 1500 | 9 | 455 | 12 | 720 | 15 | 985 | 18 | 1250 | 21.5 | 1495 | 24.5 | 1630 | 28 | 1725 |
| 35 | 51 | 46 | 81 | 57 | 111 | 68 | 141 | 81 | 169 | 93 | 184 | 106 | 195 | |
| 1800 | 9.5 | 450 | 13.5 | 700 | 17.5 | 950 | 21.5 | 1200 | 25.5 | 1475 | 29 | 1600 | 33 | 1700 |
| 34 | 49 | 50 | 78 | 66 | 107 | 81 | 136 | 97 | 167 | 110 | 181 | 125 | 1921 | |
| 2000 | 11 | 415 | 15.5 | 670 | 20 | 925 | 24.5 | 1180 | 29.5 | 1440 | 34 | 15640 | 38.5 | 1670 |
| 38 | 44 | 57 | 75 | 76 | 105 | 93 | 133 | 112 | 163 | 129 | 174 | 146 | 189 | |
| 2400 | 12 | 315 | 17.5 | 600 | 22.5 | 885 | 28 | 1170 | 33 | 1400 | 38.5 | 1475 | 43.5 | 1640 |
| 45 | 48 | 65 | 74 | 85 | 100 | 106 | 132 | 125 | 158 | 146 | 167 | 165 | 185 | |

IM3500

| Speed rpm | ¾" Gear | | 1" Gear | | 1¼" Gear | | 1½" Gear | | 1¾" Gear | | 2" Gear | | 1¼" Gear | | 1½" Gear | |
|-----------|---------|--------|---------|--------|----------|--------|----------|--------|----------|--------|---------|--------|----------|--------|----------|--------|
| | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output |
| | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque |
| | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs |
| | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm |
| 900 | 11 | 880 | 13.5 | 1240 | 16 | 1600 | 18.5 | 1950 | 21 | 2140 | 23.5 | 2260 | 26 | 2340 | 28.5 | 2360 |
| 41 | 99 | 51 | 140 | 61 | 181 | 70 | 220 | 79 | 242 | 89 | 255 | 98 | 264 | 108 | 267 | |
| 1200 | 14 | 890 | 17 | 1250 | 20 | 1610 | 23.5 | 1960 | 27 | 2150 | 30 | 2260 | 33.5 | 2340 | 37 | 2360 |
| 52 | 100 | 64 | 141 | 76 | 182 | 89 | 221 | 102 | 243 | 114 | 255 | 127 | 264 | 140 | 267 | |
| 1500 | 16.5 | 880 | 20 | 1240 | 24.5 | 1600 | 28.5 | 1960 | 32.5 | 2130 | 36.5 | 2230 | 41 | 2310 | 45 | 2330 |
| 59 | 99 | 76 | 140 | 93 | 181 | 108 | 221 | 123 | 241 | 138 | 252 | 155 | 261 | 170 | 263 | |
| 1800 | 18.5 | 860 | 23.5 | 1210 | 28.5 | 1560 | 33.5 | 1900 | 38.5 | 2060 | 43.5 | 2160 | 48.5 | 2240 | 53.5 | 2260 |
| 70 | 98 | 89 | 137 | 108 | 176 | 127 | 215 | 146 | 2331 | 165 | 244 | 184 | 253 | 202 | 255 | |
| 2000 | 20.5 | 830 | 26.5 | 1175 | 32.5 | 1520 | 38.5 | 1840 | 44 | 2000 | 50 | 2100 | 56 | 2160 | 62 | 2180 |
| 77 | 94 | 100 | 133 | 123 | 172 | 146 | 208 | 167 | 226 | 189 | 237 | 212 | 244 | 235 | 246 | |
| 2400 | 23 | 810 | 30 | 1140 | 37 | 1470 | 43.5 | 1790 | 50 | 1950 | 57 | 2050 | 63.5 | 2110 | 70 | 2130 |
| 88 | 92 | 114 | 129 | 140 | 166 | 165 | 202 | 189 | 220 | 216 | 232 | 240 | 238 | 265 | 241 | |

IM3650

| Speed rpm | ¾" Gear | | 1" Gear | | 1¼" Gear | | 1½" Gear | | 1¾" Gear | | 2" Gear | | 2¼" Gear | | 2½" Gear | |
|-----------|---------|--------|---------|--------|----------|--------|----------|--------|----------|--------|---------|--------|----------|--------|----------|--------|
| | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output | Displ. | Output |
| | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque | Flow | Torque |
| | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs | gpm | in/lbs |
| | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm | l/m | Nm |
| 900 | 15.5 | 1350 | 19 | 1790 | 22.5 | 2230 | 26 | 2730 | 29.5 | 3200 | 33 | 3610 | 37 | 3880 | 40 | 3960 |
| 59 | 152 | 72 | 202 | 85 | 252 | 98 | 308 | 112 | 361 | 125 | 408 | 140 | 438 | 151 | 447 | |
| 1200 | 19 | 1350 | 23.5 | 1800 | 28 | 2250 | 33 | 2740 | 37.5 | 3230 | 42.5 | 3620 | 47.5 | 3900 | 52 | 3975 |
| 72 | 152 | 89 | 203 | 106 | 254 | 125 | 309 | 142 | 365 | 161 | 409 | 180 | 441 | 197 | 449 | |
| 1500 | 22 | 1340 | 28 | 1790 | 34 | 2240 | 40 | 2720 | 46 | 3200 | 52 | 3600 | 58 | 3810 | 63.5 | 3950 |
| 83 | 151 | 106 | 202 | 129 | 253 | 151 | 307 | 174 | 361 | 197 | 407 | 220 | 430 | 240 | 446 | |
| 1800 | 26 | 1340 | 33 | 1770 | 40 | 2200 | 47 | 2650 | 54 | 3150 | 61 | 3540 | 68 | 3720 | 75 | 3875 |
| 99 | 152 | 125 | 200 | 151 | 248 | 178 | 300 | 204 | 356 | 231 | 400 | 257 | 420 | 284 | 438 | |
| 2000 | 29 | 1270 | 37.5 | 1700 | 46 | 2130 | 54 | 2600 | 62.5 | 3075 | 70.5 | 3440 | 79 | 3600 | 87 | 3790 |
| 110 | 143 | 142 | 192 | 174 | 241 | 204 | 294 | 237 | 347 | 267 | 389 | 299 | 407 | 329 | 428 | |
| 2400 | 33 | 1190 | 42.5 | 1620 | 52 | 2050 | 61 | 2500 | 70.5 | 2975 | 80 | 3360 | 90 | 3500 | 98.5 | 3650 |
| 125 | 134 | 161 | 183 | 197 | 232 | 231 | 2800 | 267 | 336 | 303 | 380 | 341 | 395 | 373 | 412 | |

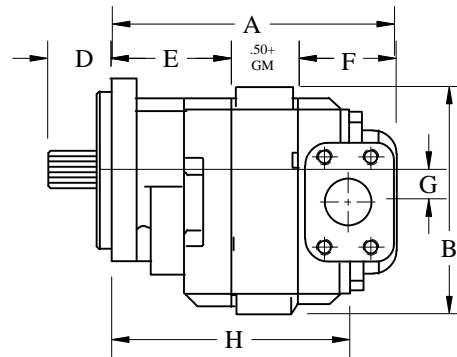
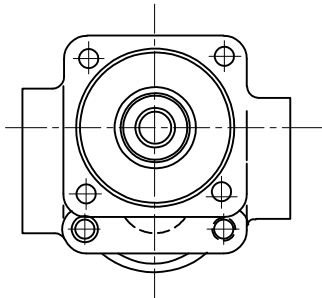
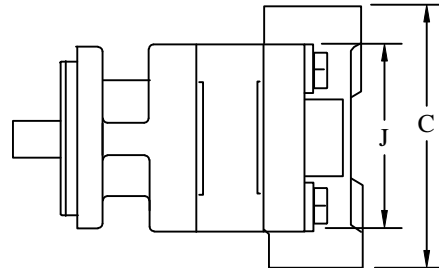
I/P P3150/3300/3650 GEAR PUMP & MOTOR INSTALLATION DIMENSIONS



DIMENSION (inches/mm)

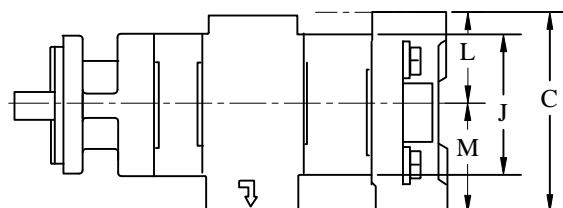
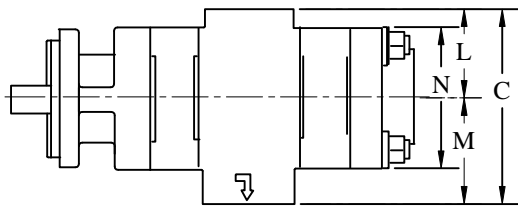
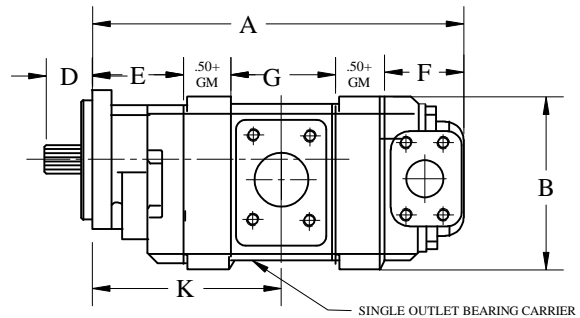
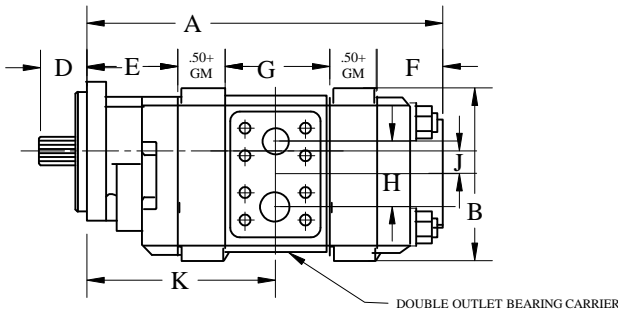
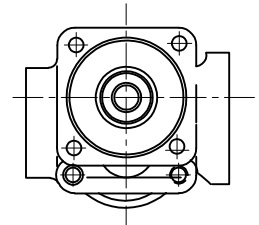
SINGLE PUMPS & MOTORS

| Model | A | B | C** | D* | E | F | G | H | J(P) | J(M) |
|-------|----------|-------|-------|------|------|------|------|----------|-------|-------|
| 315 | 4.27+GW | 4.75 | 4.25 | 1.62 | 1.88 | 2.0 | 0.75 | 3.27+GW | 4.0 | 4.19 |
| | 108.5+GW | 120.7 | 108.0 | 41.1 | 47.8 | 50.8 | 19.1 | 83.1+GW | 101.6 | 106.4 |
| 330 | 6.19+GW | 5.88 | 6.88 | 1.62 | 3.12 | 2.5 | 6.88 | 4.94+GW | 4.81 | 5.00 |
| | 157.2+GW | 149.4 | 174.8 | 41.1 | 79.2 | 65.0 | 22.2 | 125.5+GW | 122.2 | 127.0 |
| 350 | 7.06+GW | 6.00 | 7.12 | 2.19 | 3.50 | 3.06 | 1.00 | 5.56+GW | 5.75 | 5.75 |
| | 179.3+GW | 152.4 | 108.8 | 55.6 | 88.9 | 77.7 | 25.4 | 141.2+GW | 146.1 | 146.1 |
| 365 | 7.31+GW | 7.25 | 7.38 | 2.19 | 3.75 | 3.06 | 1.12 | 5.81+GW | 6.25 | 6.25 |
| | 185.7+GW | 184.2 | 187.5 | 55.6 | 95.3 | 77.7 | 28.6 | 147.6+GW | 158.8 | 158.8 |



TANDEM PUMPS & MOTORS

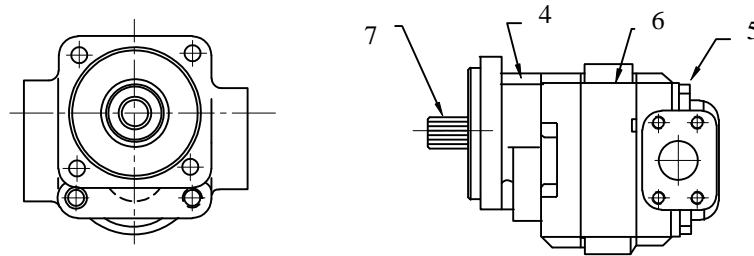
| Model | A | B | C** | D* | E | F | G | H | I | J | K | L** | M** | N(P) | N(M) |
|-------|------------|-------|-------|------|------|------|-------|------|------|------|----------|------|-------|-------|-------|
| 315 | 7.05+T.GW | 4.75 | 4.25 | 1.62 | 1.88 | 1.75 | 2.62 | 1.84 | .34 | .75 | 3.59+GW | 2.25 | 2.75 | 4.0 | 4.19 |
| | 179.1+T.GW | 120.7 | 108.0 | 41.1 | 47.8 | 44.5 | 66.5 | 46.7 | 8.6 | 19.1 | 91.2+GW | 57.2 | 69.9 | 101.6 | 106.4 |
| 330 | 9.88+T.GW | 5.88 | 6.88 | 1.62 | 3.12 | 2.25 | 3.50 | 2.38 | .62 | .88 | 5.38+GW | 3.09 | 3.69 | 4.81 | 5.00 |
| | 250.9+T.GW | 149.4 | 174.8 | 41.1 | 79.2 | 57.2 | 88.9 | 60.5 | 15.7 | 22.2 | 136.7+GW | 78.5 | 93.7 | 122.2 | 127.0 |
| 350 | 10.25+T.GW | 6.00 | 7.12 | 2.19 | 3.50 | 2.25 | 3.50 | 2.50 | .50 | 1.00 | 5.75+GW | 3.56 | 4.12 | 5.75 | 5.75 |
| | 260.4+T.GW | 152.4 | 108.8 | 55.6 | 88.9 | 57.2 | 88.9 | 63.5 | 12.7 | 25.4 | 146.1+GW | 90.4 | 104.6 | 146.1 | 146.1 |
| 365 | 11.38+T.GW | 7.25 | 7.38 | 2.19 | 3.75 | 2.62 | 4.00 | 2.88 | .62 | 1.12 | 6.25+GW | 3.69 | 4.69 | 6.25 | 6.25 |
| | 289.1+T.GW | 184.2 | 187.5 | 55.6 | 95.3 | 66.5 | 101.6 | 73.3 | 15.7 | 28.6 | 158.8+GW | 93.7 | 119.1 | 158.8 | 158.8 |



IFP IP3150/IP3300/IP3500/IP3650 MODEL CODING & NOMENCLATURE

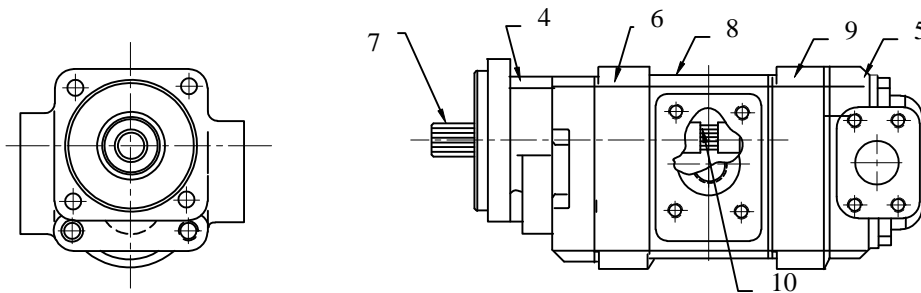


* HOW TO SPECIFY MODEL CODE



SAMPLE SINGLE PUMP MODEL CODE

| | | | | | | |
|---------------------------|-------------------------------|-------------|----------------------------------|---------------------------------|-------------------------------|------------------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| IP | 3150 | A | 293 | FW | AB 20 | 65 |
| (IP) PUMP / (IM) MOTOR | SERIES 3150/3300/3500/3650 | SINGLE UNIT | SHAFT END COVER SEE Page E2.6 | PORT END COVER SEE Page E2.7 | GEAR HOUSING SEE Page E2.8 | DRIVE SHAFT SEE Page E2.9-E2.10 |



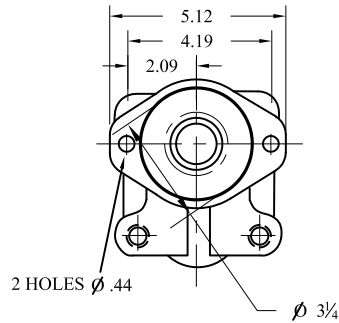
SAMPLE TANDEM PUMP MODEL CODE

| FIRST SECTION | | | | | | ADDITIONAL SECTIONS | | | |
|---------------------------|-----------------------------------|-------------|----------------------------------|---------------------------------|----------------------------------------|---------------------------------------|-----------------------------------------|---------------------------------------|---------------------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| IP | 3500 | B | 498 | EM | AB20 | 7 | HP | AB17 | 1 |
| (IP) PUMP / (IM) MOTOR | SERIES ... 3150/3300/3500/3650 | TANDEM UNIT | SHAFT END COVER SEE Page E2.6 | PORT END COVER SEE Page E2.7 | FRONT GEAR HOUSING SEE Page E2.8 | DRIVE SHAFT SEE Page E2.9-E2.10 | BEARING CARRIER SEE Page E2.12-E2.13 | BACK GEAR HOUSING SEE Page E2.8 | CONNECTING SHAFT SEE Page E2.11 |

IFP IP3150/IP3300/IP3500/IP3650 SHAFT END COVER



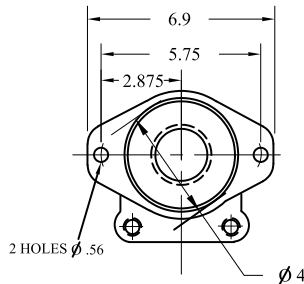
CODE *93/*94
IP3150/ IP3300
SAE A 2-BOLT



| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN | |
|---------------|----------------|------------------------|--------------------|----------------|
| IP3150 | IP3300 | | | |
| 193 | 194 | CW | WITHOUT | NONE(PUMP) |
| 293 | 294 | CCW | WITHOUT | NONE(PUMP) |
| 393 | 394 | DOUBLE | WITHOUT | NONE(PUMP) |
| not available | 494 | CW | WITH | NONE(PUMP) |
| | 594 | CCW | WITH | NONE(PUMP) |
| | 694 | DOUBLE | WITH | NONE(PUMP) |
| | 894 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 993 | 994 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|--------------|
| IP 3150 SHAFT END COVER PART NUMBER | 326-5129-201 |
| IP 3300 SHAFT END COVER PART NUMBER | 324-5123-204 |

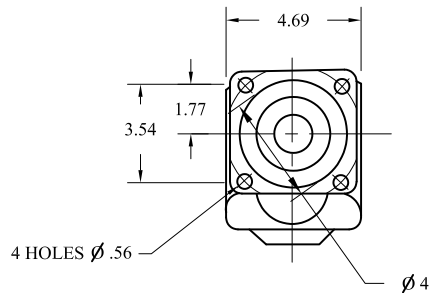
CODE *96/*97
IP3150 / IP3300 /IP3500
SAE B 2-BOLT



| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN | |
|---------------|----------------|------------------------|--------------------|----------------|
| IP3150 | IP33(5)00 | | | |
| 196 | 197 | CW | WITHOUT | NONE(PUMP) |
| 296 | 297 | CCW | WITHOUT | NONE(PUMP) |
| 396 | 397 | DOUBLE | WITHOUT | NONE(PUMP) |
| not available | 497 | CW | WITH | NONE(PUMP) |
| | 597 | CCW | WITH | NONE(PUMP) |
| | 697 | DOUBLE | WITH | NONE(PUMP) |
| | 897 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 996 | 997 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|--------------|
| IP 3150 SHAFT END COVER PART NUMBER | 326-5129-203 |
| IP 3300 SHAFT END COVER PART NUMBER | 324-5123-201 |
| IP 3500 SHAFT END COVER PART NUMBER | 323-5123-201 |

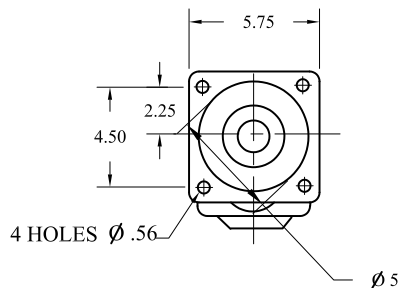
CODE *42
IP3300/IP3500
SAE B 4-BOLT



| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 142 | CW | WITHOUT | NONE(PUMP) |
| 242 | CCW | WITHOUT | NONE(PUMP) |
| 342 | DOUBLE | WITHOUT | NONE(PUMP) |
| 442 | CW | WITH | NONE(PUMP) |
| 542 | CCW | WITH | NONE(PUMP) |
| 642 | DOUBLE | WITH | NONE(PUMP) |
| 842 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 942 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|--------------|
| IP 3300 SHAFT END COVER PART NUMBER | 324-5133-201 |
| IP 3500 SHAFT END COVER PART NUMBER | 323-5133-201 |

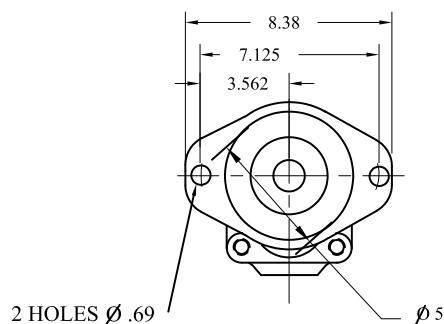
CODE *78
IP3300/IP3500/IP3650
SAE C 4-BOLT



| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 178 | CW | WITHOUT | NONE(PUMP) |
| 278 | CCW | WITHOUT | NONE(PUMP) |
| 378 | DOUBLE | WITHOUT | NONE(PUMP) |
| 478 | CW | WITH | NONE(PUMP) |
| 578 | CCW | WITH | NONE(PUMP) |
| 678 | DOUBLE | WITH | NONE(PUMP) |
| 878 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 978 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|---------------|
| IP 3300 SHAFT END COVER PART NUMBER | 324 5133 202N |
| IP 3500 SHAFT END COVER PART NUMBER | 323 5133 202N |
| IP 3650 SHAFT END COVER PART NUMBER | 322 5133 202N |

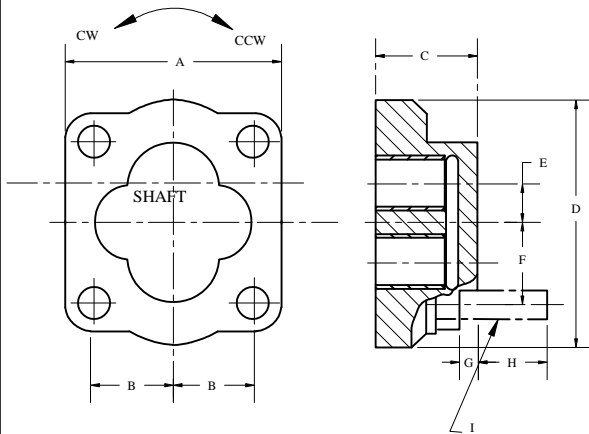
CODE *98
IP3500/IP3650
SAE C 2-BOLT



| Front Flange | Shaft Rotation | OUTBOARD SHAFT BEARING | OPTIONAL 1/4 DRAIN |
|--------------|----------------|------------------------|--------------------|
| 198 | CW | WITHOUT | NONE(PUMP) |
| 298 | CCW | WITHOUT | NONE(PUMP) |
| 398 | DOUBLE | WITHOUT | NONE(PUMP) |
| 498 | CW | WITH | NONE(PUMP) |
| 598 | CCW | WITH | NONE(PUMP) |
| 698 | DOUBLE | WITH | NONE(PUMP) |
| 898 | DOUBLE | WITH | 1/4 NPT(MOTOR) |
| 998 | DOUBLE | WITHOUT | 1/4 NPT(MOTOR) |

| | |
|-------------------------------------|---------------|
| IP 3500 SHAFT END COVER PART NUMBER | 323 5123 202N |
| IP 3650 SHAFT END COVER PART NUMBER | 322 5123 202N |

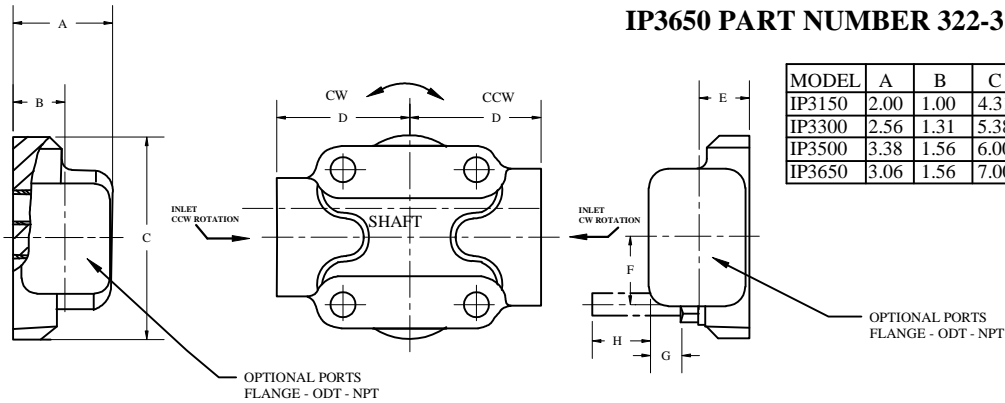
IFP IP3150/IP3300/IP3500/IP3650 PORT END COVERS



PORT END COVER
IP3150 PART NUMBER 326-3100-100
IP3300 PART NUMBER 324-3100-100
IP3500 PART NUMBER 323-3100-100
IP3650 PART NUMBER 322-3100-100

| MODEL | A | B | C | D | E | F | G | H | I |
|--------|------|------|------|------|------|------|-----|-----------|------------------|
| IP3150 | 4.00 | 1.19 | 1.75 | 4.31 | .75 | | .38 | 1.00-1.12 | 1/2 -13UNC THD |
| IP3300 | 4.81 | 1.78 | 2.25 | 5.38 | .88 | 1.78 | .39 | 1.38-1.62 | 5/8 -11NC-3 THD. |
| IP3500 | 5.75 | 1.78 | 2.25 | 6.00 | 1.00 | 1.78 | .39 | 1.38-1.62 | 5/8-11NC-3 THD. |
| IP3650 | 6.25 | 2.12 | 2.62 | 7.00 | 1.12 | 2.12 | .39 | 1.25-1.50 | 5/8 -11NC-3 THD. |

PORT END COVER
IP3150 PART NUMBER 326-3110-100
IP3300 PART NUMBER 324-3110-100
IP3500 PART NUMBER 323-3110-100
IP3650 PART NUMBER 322-3110-100



| MODEL | A | B | C | D | E | F | G | H |
|--------|------|------|------|------|------|------|-----|-----------|
| IP3150 | 2.00 | 1.00 | 4.31 | 2.12 | 1.00 | | | |
| IP3300 | 2.56 | 1.31 | 5.38 | 3.44 | 1.31 | 1.78 | .70 | 1.25-1.56 |
| IP3500 | 3.38 | 1.56 | 6.00 | 3.56 | 1.56 | 1.78 | .11 | 1.25-1.56 |
| IP3650 | 3.06 | 1.56 | 7.00 | 3.69 | 1.56 | 2.12 | .83 | 1.31-1.44 |

PORT END COVER PORTING CODES (SIDE PORTED UNITS)

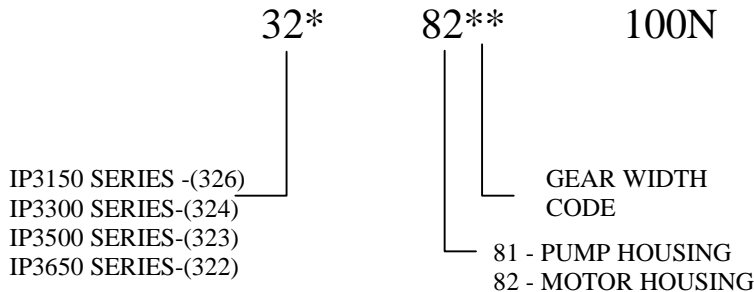
| PORT SIZE | | SPLIT FLANGE IP3150 | | OD TUBE PORTING IP3150 | |
|-----------|-----|---------------------|----------|------------------------|----------|
| IN | OUT | C W PORT | CCW PORT | C W PORT | CCW PORT |
| 1 1/4 | 1 | - | - | FB | BF |
| 1 1/4 | 7/8 | - | - | FC | CF |
| 1 1/4 | 3/4 | - | - | FG | GF |
| 1 1/4 | 5/8 | - | - | FJ | JF |
| 1 | 1 | - | - | FL | LF |
| 1 | 7/8 | - | - | FV | VF |
| 1 | 3/4 | EJ | JE | FW | WF |
| 1 | 5/8 | - | - | FX | XF |
| 1 | 1/2 | EK | KE | FY | YF |
| 7/8 | 7/8 | - | - | FZ | ZF |
| 7/8 | 3/4 | - | - | BC | CB |
| 7/8 | 5/8 | - | - | BG | GB |
| 7/8 | 1/2 | - | - | BJ | JB |
| 3/4 | 3/4 | EL | LE | BL | LB |
| 3/4 | 5/8 | - | - | BN | NB |
| 3/4 | 1/2 | EM | ME | BV | VB |
| 1 1/4 | - | - | - | BW | WB |
| 1 | - | OE | EO | BX | XB |
| 7/8 | - | - | - | BY | YB |
| 3/4 | - | OF | FO | BZ | ZB |
| - | 1 | - | - | PD | DP |
| - | 7/8 | - | - | PE | EP |
| - | 3/4 | OJ | JO | PM | MP |
| - | 5/8 | - | - | PN | NP |
| - | 1/2 | OL | LO | | |

| PORT SIZE | | SPLIT FLANGE | | | | OD TUBE PORTING | | | |
|-----------|-------|--------------|----------|-------------|----------|-----------------|-----------|-------------|-----------|
| IN | OUT | IP3300 | | IF3500/3650 | | IP3300 | | IF3500/3650 | |
| | | C W PORT | CCW PORT | C W PORT | CCW PORT | C W PORT | CC W PORT | C W PORT | CC W PORT |
| 2 | 1 1/2 | - | - | EC | CE | - | - | - | - |
| 2 | 1 1/4 | - | - | EF | FE | - | - | - | - |
| 2 | 1 | - | - | EG | GE | - | - | - | - |
| 1 1/2 | 1 1/2 | - | - | EH | HE | - | - | - | - |
| 1 1/2 | 1 1/4 | EJ | JE | EJ | JE | - | - | FB | BF |
| 1 1/2 | 1 | EK | KE | EK | KE | - | - | FC | CF |
| 1 1/4 | 1 1/4 | EL | LE | EL | LE | - | - | - | - |
| 1 1/4 | 1 | EM | ME | EM | ME | - | - | FG | GF |
| 1 | 1 | EN | NE | EN | NE | FJ | JF | FJ | JF |
| 2 | - | - | - | OE | EO | FL | LF | FL | LF |
| 1 1/2 | - | OF | FO | OF | FO | - | - | BC | CB |
| 1 1/4 | - | OG | GO | OG | GO | BG | GB | BG | GB |
| 1 | - | OJ | JO | OJ | JO | BJ | JB | BJ | JB |
| - | 1 1/2 | OL | LO | OL | LO | - | - | BL | LB |
| - | 1 1/4 | OM | MO | OM | MO | - | - | - | - |
| - | 1 | ON | NO | ON | NO | BN | NB | BN | NB |

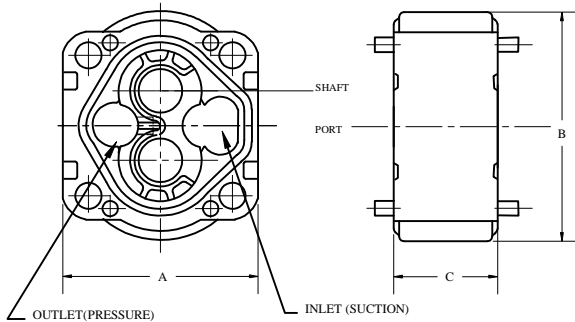
IFP IP3150/IP3300/IP3500/IP3650 GEAR HOUSINGS



GEAR HOUSING PART NUMBER NOMENCLATURE



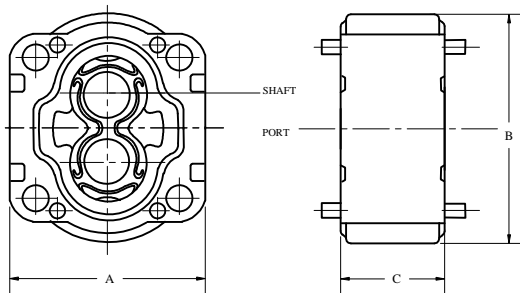
PUMP GEAR HOUSING



PUMP GEAR HOUSING PART NUMBER

| Housing | PART NUMBER | | | |
|---------|---------------|---------------|---------------|---------------|
| | IP3150 | IP3300 | IP3500 | IP3650 |
| 05 | 326-8105-100N | 324-8105-100N | 323-8105-100N | 322-8105-100N |
| 07 | 326-8107-100N | 324-8107-100N | 323-8107-100N | 322-8107-100N |
| 10 | 326-8110-100N | 324-8110-100N | 323-8110-100N | 322-8110-100N |
| 12 | 326-8112-100N | 324-8112-100N | 323-8112-100N | 322-8112-100N |
| 15 | 326-8115-100N | 324-8115-100N | 323-8115-100N | 322-8115-100N |
| 17 | 326-8117-100N | 324-8117-100N | 323-8117-100N | 322-8117-100N |
| 20 | 326-8120-100N | 324-8120-100N | 323-8120-100N | 322-8120-100N |
| 22 | | | 323-8122-100N | 322-8122-100N |
| 25 | | | 323-8125-100N | 322-8125-100N |

MOTOR GEAR HOUSING



MOTOR GEAR HOUSING PART NUMBER

| Housing | PART NUMBER | | | |
|---------|---------------|---------------|---------------|---------------|
| | IM3150 | IM3300 | IP3500 | IP3650 |
| 05 | 326-8205-100N | 324-8205-100N | 323-8205-100N | 322-8205-100N |
| 07 | 326-8207-100N | 324-8207-100N | 323-8207-100N | 322-8207-100N |
| 10 | 326-8210-100N | 324-8210-100N | 323-8210-100N | 322-8210-100N |
| 12 | 326-8212-100N | 324-8212-100N | 323-8212-100N | 322-8212-100N |
| 15 | 326-8215-100N | 324-8215-100N | 323-8215-100N | 322-8215-100N |
| 17 | 326-8217-100N | 324-8217-100N | 323-8217-100N | 322-8217-100N |
| 20 | 326-8220-100N | 324-8220-100N | 323-8220-100N | 322-8220-100N |
| 22 | | | 323-8222-100N | 322-8222-100N |
| 25 | | | 323-8225-100N | 322-8225-100N |

GEAR HOUSING DIMENSIONS

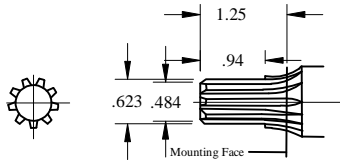
| HOUSING | IP3150 | IP3300 | IP3500 | IP3650 |
|----------------------------|--------|--------|--------|--------|
| A= | 4.19 | 4.81 | 5.75 | 6.25 |
| B= | 4.75 | 5.88 | 6.00 | 7.25 |
| Thrust Plate | 0.40 | 0.50 | 0.50 | 0.50 |
| C=gear width +Thrust Plate | | | | |
| DISPLACEMENT in3/rev | | | | |
| 05 | .92 | 1.00 | 1.00 | // |
| 07 | 1.14 | 1.25 | 1.25 | 1.25 |
| 10 | 1.40 | 1.50 | 1.50 | 1.50 |
| 12 | 1.64 | 1.75 | 1.75 | 1.75 |
| 15 | 1.90 | 2.00 | 2.00 | 2.00 |
| 17 | 2.14 | 2.25 | 2.25 | 2.25 |
| 20 | 2.40 | 2.50 | 2.50 | 2.50 |
| 22 | // | // | 2.75 | 2.75 |
| 25 | // | // | 3.00 | 3.00 |

IFP IP3150/IP3300/IP3500/IP3650 SPLINE - SHAFT/SHAFT&GEAR ASSEMBLIES



CODE 95

SAE "A" SPLINE 5/8 - 9 TOOTH -ANSI 16-4

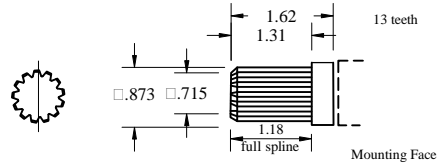


| DEAR WIDTH CODE | DEAR WIDTH CODE | IP3150 SHAFT & GEAR PART NUMBER | IP3300 SHAFT & GEAR PART NUMBER | IP3500 SHAFT & GEAR PART NUMBER | IP3650 SHAFT & GEAR PART NUMBER |
|-----------------|-----------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| 05 | 1/2" | 326-2905-320N | | | |
| 07 | 3/4" | 326-2907-320N | | | |
| 10 | 1" | 326-2910-320N | | | |
| 12 | 1 1/4" | 326-2912-320N | NOT AVAILABLE | NOT AVAILABLE | NOT AVAILABLE |
| 15 | 1 1/2" | 326-2915-320N | NOT AVAILABLE | NOT AVAILABLE | NOT AVAILABLE |
| 17 | 1 3/4" | | | | |
| 20 | 2" | | | | |

| | |
|-------------------------|---------------|
| IP 3150 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3300 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3500 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3650 ONE PIECE SHAFT | NOT AVAILABLE |

CODE 25

SAE "B" SPLINE 7/8 - 13 TOOTH -ANSI 122-4

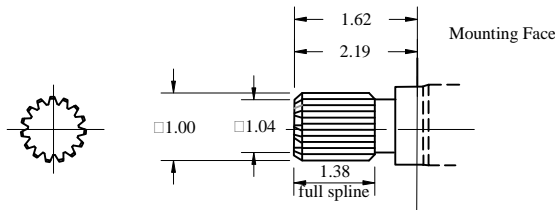


| DEAR WIDTH CODE | DEAR WIDTH CODE | IP3150 SHAFT & GEAR PART NUMBER | IP3300 SHAFT & GEAR PART NUMBER | IP3500 SHAFT & GEAR PART NUMBER | IP3650 SHAFT & GEAR PART NUMBER |
|-----------------|-----------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| 05 | 1/2" | 326-2905-330N | // | | |
| 07 | 3/4" | 326-2907-330N | 324-2907-230N | // | |
| 10 | 1" | 326-2910-330N | 324-2910-230N | // | |
| 12 | 1 1/4" | 326-2912-330N | 324-2912-230N | 323-2912-230N | |
| 15 | 1 1/2" | 326-2915-330N | 324-2915-230N | 323-2915-230N | |
| 17 | 1 3/4" | 326-2917-330N | 324-2917-230N | 323-2917-230N | |
| 20 | 2" | 326-2920-330N | 324-2920-230N | 323-2920-230N | |
| 22 | 2 1/4" | // | | 323-2922-230N | |
| 25 | 2 1/2" | // | | 323-2925-230N | |

| | |
|-------------------------|---------------|
| IP 3150 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3300 ONE PIECE SHAFT | 324-1000-300N |
| IP 3500 ONE PIECE SHAFT | 323-1000-300N |
| IP 3650 ONE PIECE SHAFT | 322-1000-300N |

CODE 98

SAE "BB" SPLINE 1 - 15 TOOTH -ANSI 25-4

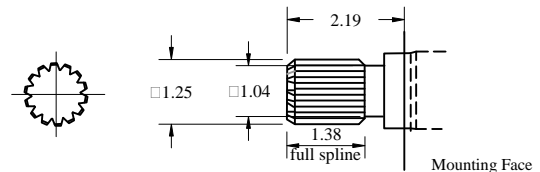


| DEAR WIDTH CODE | DEAR WIDTH CODE | IP3150 SHAFT & GEAR PART NUMBER | IP3300 SHAFT & GEAR PART NUMBER | IP3500 SHAFT & GEAR PART NUMBER | IP3650 SHAFT & GEAR PART NUMBER |
|-----------------|-----------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| 05 | 1/2" | | // | | |
| 07 | 3/4" | | // | | |
| 10 | 1" | | 324-2910-240N | // | |
| 12 | 1 1/4" | | 324-2912-240N | 323-2912-240N | |
| 15 | 1 1/2" | | 324-2915-240N | 323-2915-240N | |
| 17 | 1 3/4" | | 324-2917-240N | 323-2917-240N | |
| 20 | 2" | | 324-2920-240N | 323-2920-240N | |
| 22 | 2 1/4" | | // | 323-2922-240N | |
| 25 | 2 1/2" | | // | 323-2925-240N | |

| | |
|-------------------------|---------------|
| IP 3150 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3300 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3500 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3650 ONE PIECE SHAFT | NOT AVAILABLE |

CODE 07

SAE "C" SPLINE 1 1/4 - 14 TOOTH -ANSI 32-4



| DEAR WIDTH CODE | DEAR WIDTH CODE | IP3150 SHAFT & GEAR PART NUMBER | IP3300 SHAFT & GEAR PART NUMBER | IP3500 SHAFT & GEAR PART NUMBER | IP3650 SHAFT & GEAR PART NUMBER |
|-----------------|-----------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| 05 | 1/2" | | | // | // |
| 07 | 3/4" | | | // | // |
| 10 | 1" | | | // | // |
| 12 | 1 1/4" | | | 323-2912-250N | 322-2912-250N |
| 15 | 1 1/2" | | | 323-2915-250N | 322-2915-250N |
| 17 | 1 3/4" | | | 323-2917-250N | 322-2917-250N |
| 20 | 2" | | | 323-2920-250N | 322-2920-250N |
| 22 | 2 1/4" | | | 323-2922-250N | 322-2922-250N |
| 25 | 2 1/2" | | | 323-2925-250N | 322-2925-250N |
| 27 | 2 3/4" | | | // | 322-2927-250N |
| 30 | 3" | | | // | 322-2930-250N |

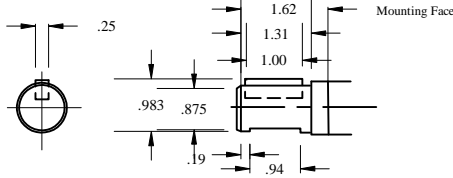
| | |
|-------------------------|---------------|
| IP 3150 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3300 ONE PIECE SHAFT | 324-1000-500N |
| IP 3500 ONE PIECE SHAFT | 323-1000-500N |
| IP 3650 ONE PIECE SHAFT | 322-1000-500N |

IFP IP3150/IP3300/IP3500/IP3560 KEYED- SHAFT / SHAFT GEAR ASSEMBLIES



CODE 30

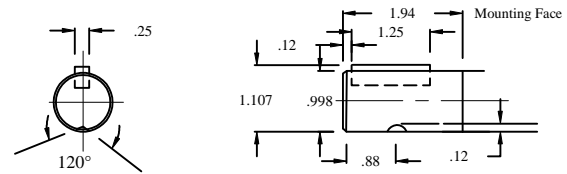
SAE "B" KEYED $\frac{7}{8} \text{Ø}$ $\frac{1}{4}$ KEY -ANSI 22-4



| DEAR WIDTH CODE | DEAR WIDTH INCHES | IP3150 SHAFT & GEAR PART NUMBER | IP3300 SHAFT & GEAR PART NUMBER | IP3500 SHAFT & GEAR PART NUMBER | IP3650 SHAFT & GEAR PART NUMBER |
|-----------------|-------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| 05 | $\frac{1}{2}$ " | 326-2905-930N | | | |
| 07 | $\frac{3}{4}$ " | 326-2907-930N | | | |
| 10 | 1" | 326-2910-930N | | | |
| 12 | $1\frac{1}{4}$ " | 326-2912-930N | NOT AVAILABLE | NOT AVAILABLE | |
| 15 | $1\frac{1}{2}$ " | 326-2915-930N | | | |
| 17 | $1\frac{3}{4}$ " | 326-2917-930N | NOT AVAILABLE | NOT AVAILABLE | NOT AVAILABLE |
| 20 | 2" | 326-2920-930N | | | |

| | |
|-------------------------|---------------|
| IP 3150 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3300 ONE PIECE SHAFT | 324-1000-300N |
| IP 3500 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3650 ONE PIECE SHAFT | NOT AVAILABLE |

CODE 43 - KEYED 1Ø $\frac{1}{4}$ KEY - ANSI 25-1

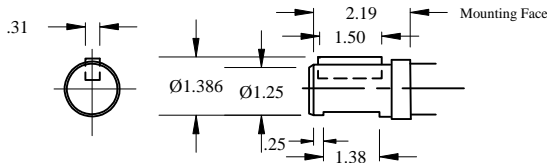


| DEAR WIDTH CODE | DEAR WIDTH INCHES | IP3150 SHAFT & GEAR PART NUMBER | IP3300 SHAFT & GEAR PART NUMBER | IP3500 SHAFT & GEAR PART NUMBER | IP3650 SHAFT & GEAR PART NUMBER |
|-----------------|-------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| 05 | $\frac{1}{2}$ " | | // | | |
| 07 | $\frac{3}{4}$ " | | // | | |
| 10 | 1" | | 324-2910-740N | | |
| 12 | $1\frac{1}{4}$ " | | 324-2912-740N | | |
| 15 | $1\frac{1}{2}$ " | | 324-2915-740N | | |
| 17 | $1\frac{3}{4}$ " | NOT AVAILABLE | 324-2917-740N | NOT AVAILABLE | NOT AVAILABLE |
| 20 | 2" | | 324-2920-740N | | |

| | |
|-------------------------|---------------|
| IP 3150 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3300 ONE PIECE SHAFT | 324-1500-300N |
| IP 3500 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3650 ONE PIECE SHAFT | NOT AVAILABLE |

CODE 11

SAE "C" KEYED $1\frac{1}{4} \text{Ø}$ $\frac{5}{16}$ KEY -ANSI 32-1



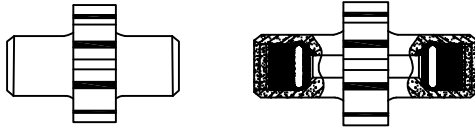
| DEAR WIDTH CODE | DEAR WIDTH INCHES | IP3150 SHAFT & GEAR PART NUMBER | IP3300 SHAFT & GEAR PART NUMBER | IP3500 SHAFT & GEAR PART NUMBER | IP3650 SHAFT & GEAR PART NUMBER |
|-----------------|-------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| 05 | $\frac{1}{2}$ " | | | // | |
| 07 | $\frac{3}{4}$ " | | | // | |
| 10 | 1" | | | // | |
| 12 | $1\frac{1}{4}$ " | | | 323-2912-750N | |
| 15 | $1\frac{1}{2}$ " | | | 323-2915-750N | |
| 17 | $1\frac{3}{4}$ " | NOT AVAILABLE | NOT AVAILABLE | 323-2917-750N | NOT AVAILABLE |
| 20 | 2" | | | 323-2920-750N | |
| 22 | $2\frac{1}{4}$ " | | | 323-2922-750N | |
| 25 | $2\frac{1}{2}$ " | | | 323-2925-750N | |

| | |
|-------------------------|---------------|
| IP 3150 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3300 ONE PIECE SHAFT | NOT AVAILABLE |
| IP 3500 ONE PIECE SHAFT | 323-1500-500N |
| IP 3650 ONE PIECE SHAFT | 322-1500-500N |

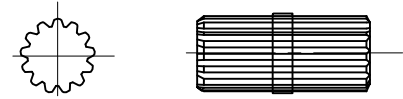
IFP IP3150/IP3300/IP3500/IP3650 MATCHED GEARS / CONNECTING SHAFTS



MATCHED GEAR SET

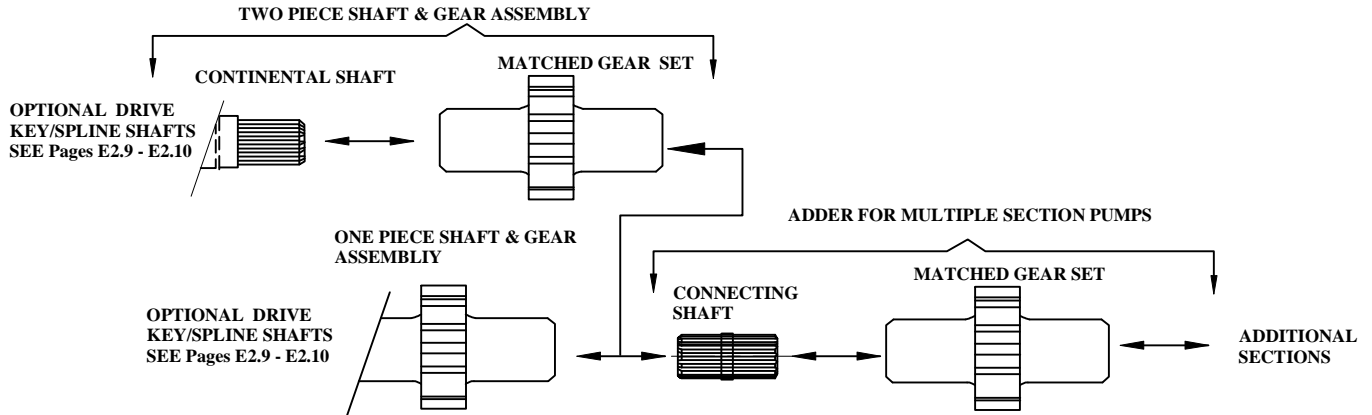


CODE 1 CONNECTING SHAFT



| GEAR WIDTH CODE | GEAR WIDTH INCHES | IP3150 | IP3300 | IP3500 | IP3650 |
|-----------------|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | SHAFT & GEAR PART NUMBER | SHAFT & GEAR PART NUMBER | SHAFT & GEAR PART NUMBER | SHAFT & GEAR PART NUMBER |
| 05 | 1/2" | 326-2805-000N | 324-2805-000N | // | // |
| 07 | 3/4" | 326-2807-000N | 324-2807-000N | 323-2807-000N | 322-2807-000N |
| 10 | 1" | 326-2810-000N | 324-2810-000N | 323-2810-000N | 322-2810-000N |
| 12 | 1 1/4" | 326-2812-000N | 324-2812-000N | 323-2812-000N | 322-2812-000N |
| 15 | 1 1/2" | 326-2815-000N | 324-2815-000N | 323-2815-000N | 322-2815-000N |
| 17 | 1 3/4" | 326-2817-000N | 324-2817-000N | 323-2817-000N | 322-2817-000N |
| 20 | 2" | 326-2820-000N | 324-2820-000N | 323-2820-000N | 322-2820-000N |
| 22 | 2 1/4" | | | 323-2822-000N | 322-2822-000N |
| 25 | 2 1/2" | | | 323-2825-000N | 322-2825-000N |

| | |
|--------------------------|-------------------|
| IP 3150 CONNECTING SHAFT | 326 - 1133 - 001N |
| IP 3300 CONNECTING SHAFT | 324 - 1133 - 001N |
| IP 3500 CONNECTING SHAFT | 323 - 1133 - 001N |
| IP 3650 CONNECTING SHAFT | 322 - 1133 - 001N |



SHAFT & GEAR PART NUMBER NOMENCLATURE

32* - 29** - xxx N

MATCHED GEAR PART NUMBER NOMENCLATURE

32* - 28** - 000 N

326-IP3150 SERIES
324-IP3300 SERIES
323-IP3500 SERIES
322-IP3650 SERIES

| GEAR WIDTH CODE | GEAR WIDTH INCHES | GEAR WIDTH CODE | GEAR WIDTH INCHES |
|-----------------|-------------------|-----------------|-------------------|
| 05 | 1/2" | 20 | 2" |
| 07 | 3/4" | 22 | 2 1/4" |
| 10 | 1" | 25 | 2 1/2" |
| 12 | 1 1/4" | | |
| 15 | 1 1/2" | | |
| 17 | 1 3/4" | | |

| DRIVE SHAFT CODE | |
|------------------------------|--|
| 122 - 3/8" Ø - 9TH SPLINE | |
| 230 - 7/8" Ø - 13TH SPLINE | |
| 250 - 1 1/4" Ø - 15TH SPLINE | |
| 730 - 7/8" Ø - 1/4" KEYED | |
| 740 - 1" Ø - 1/4" KEYED | |
| 750 - 1 1/4" Ø - 5/16" KEYED | |

326-IP3150 SERIES
324-IP3300 SERIES
323-IP3500 SERIES
322-IP3650 SERIES

| GEAR WIDTH CODE | GEAR WIDTH INCHES | GEAR WIDTH CODE | GEAR WIDTH INCHES |
|-----------------|-------------------|-----------------|-------------------|
| 05 | 1/2" | 20 | 2" |
| 07 | 3/4" | 22 | 2 1/4" |
| 10 | 1" | 25 | 2 1/2" |
| 12 | 1 1/4" | | |
| 15 | 1 1/2" | | |
| 17 | 1 3/4" | | |

| PL CHART | | |
|---------------------------------|-----------------------|-----------------|
| SHAFT STYLE | INTEGRAL SHAFT & GEAR | TWO PIECE STYLE |
| IP315 | | |
| SAE "A" SPLINE (up to 1.25" GW) | 4,450 | -- |
| SAE "A" KEY | 3,600 | -- |
| SAE "B" SPLINE | 13,400 | -- |
| SAE "B" KEY | 9,900 | -- |
| CONNECTING SHAFT | -- | 5,550 |
| IP330 | | |
| SAE "B" SPLINE | 8,450 | 6,250 |
| SAE "B" KEY | 6,250 | 6,250 |
| SAE "B-B" SPLINE | 13,000 | 6,250 |
| SAE "B-B" KEY | 9,300 | 6,250 |
| SAE "C" SPLINE | -- | 6,250 |
| SAE "C" KEY | -- | 6,250 |
| CONNECTING SHAFT | -- | 6,250 |

| PL CHART | | |
|------------------|-----------------------|-----------------|
| SHAFT STYLE | INTEGRAL SHAFT & GEAR | TWO PIECE STYLE |
| IP350 | | |
| SAE "B" SPLINE | 6,450 | 6,450 |
| SAE "B" KEY | 4,750 | 4,750 |
| SAE "B-B" SPLINE | 9,900 | 9,000 |
| SAE "B-B" KEY | 7,100 | 7,100 |
| SAE "C" SPLINE | 19,100 | 9,000 |
| SAE "C" KEY | 13,900 | 9,000 |
| CONNECTING SHAFT | -- | 9,000 |
| IP365 | | |
| SAE "B" SPLINE | 5,050 | 5,050 |
| SAE "B" KEY | 3,700 | 3,700 |
| SAE "B-B" SPLINE | 7,750 | 7,750 |
| SAE "B-B" KEY | 5,550 | 5,550 |
| SAE "C" SPLINE | 14,900 | 11,950 |
| SAE "C" KEY | 10,800 | 11,950 |
| CONNECTING SHAFT | -- | 11,950 |

PL FACTOR

Each section of a multiple pump or motor should be regarded as a single unit with corresponding delivery and power input requirements. Since the entire input horsepower is fed through a common drive shaft, the power delivered to or from the unit is limited by the physical strength of the shaft. This limit is defined as a "PL" factor; "P" being the operating pressure and "L" the summation of gear widths.

In multiple units the "PL" must be calculated for the first connecting shaft as well as the drive shaft. Each style or type of shaft has a unique "PL" factor as noted in the table below.

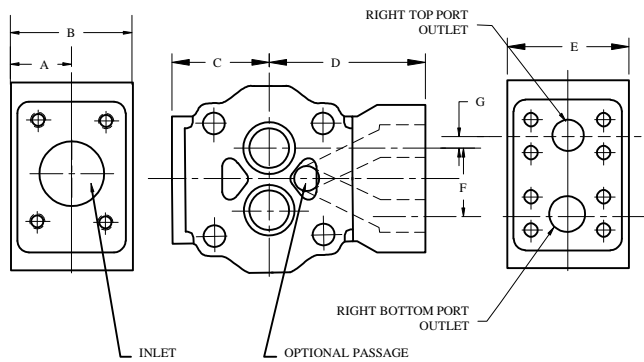
Pressure X total gear width = PL

PL must not exceed number shown in Chart for appropriate shaft

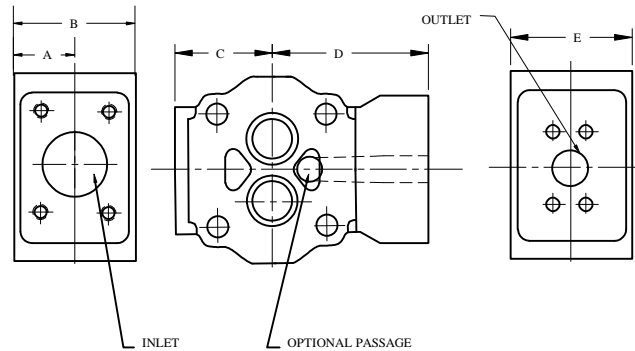
IFP IP3150/IP3300/IP3500/IP3650 BEARING CARRIERS



DOUBLE OUTLET BEARING CARRIER



SINGLE OUTLET BEARING CARRIER



| BEARING CARRIER | | | | | | | DOUBLE OUTLET BEARING CARRIER | SINGLE OUTLET BEARING CARRIER | |
|-----------------|------|------|------|------|------|------|-------------------------------|-------------------------------|---------------|
| PART NUMBER | "A" | "B" | "C" | "D" | "E" | "F" | "G" | | |
| IP3150 | 1.31 | 2.62 | 2.38 | 2.88 | 2.62 | 1.84 | .34 | 326-7800-100N | 326-7600-100N |
| IP3300 | 1.75 | 3.50 | 3.09 | 3.69 | 3.50 | 2.00 | .25 | 324-7800-100N | 324-7600-100N |
| IP3500 | 1.75 | 3.50 | 3.69 | 3.69 | 3.50 | 2.50 | .50 | 323-7800-100N | 323-7600-100N |
| IP3650 | 2.00 | 4.00 | 3.69 | 4.69 | 4.00 | 2.62 | .38 | 322-7800-100N | 322-7600-100N |

(IP3300/IP3500/IP3650 DOUBLE OUTLET) BEARING CARRIER PART CODE

Outlets: for clockwise porting the top port number comes first;
for counter-clockwise porting the bottom port number comes first.

| SECTION VIEW A-A C.W. ROT. | PORT SIZE | | | SPLIT FLANGE BEARING CARRIER CODE C.W. ROT. | BEARING CARRIER CODE C.C.W. ROT. | PORT SIZE | | | O.D.T. THREAD BEARING CARRIER CODE C.W. ROT. | |
|-------------------------------|-----------|-------|-------|------------------------------------------------|-------------------------------------|-----------|-------|-------|-------------------------------------------------|----|
| | IN | OUT | OUT | | | IN | OUT | OUT | | |
| Inlet Outlet #1 Outlet #2 | 2 1/2 | 1 1/2 | 1 1/2 | AC | CA | 2 | 1 1/2 | 1 1/2 | GJ | JG |
| | 2 1/2 | 1 1/2 | 1 1/4 | AD | DA | 2 | 1 1/2 | 1 1/4 | GK | KG |
| | 2 1/2 | 1 1/2 | 1 | AE | EA | 2 | 1 1/2 | 1 | GL | LG |
| | 2 1/2 | 1 1/4 | 1 1/4 | AF | FA | 2 | 1 1/4 | 1 1/4 | GM | MG |
| | 2 1/2 | 1 1/4 | 1 | AG | GA | 2 | 1 1/4 | 1 | GN | NG |
| | 2 1/2 | 1 | 1 | AH | HA | 2 | 1 | 1 | GP | PG |
| | 2 | 1 1/2 | 1 1/2 | AJ | JA | 1 1/2 | 1 1/2 | 1 1/2 | GQ | QG |
| | 2 | 1 1/2 | 1 1/4 | AK | KA | 1 1/2 | 1 1/2 | 1 1/4 | GR | RG |
| | 2 | 1 1/2 | 1 | AL | LA | 1 1/2 | 1 1/2 | 1 | GS | SG |
| | 2 | 1 1/4 | 1 1/4 | AM | MA | 1 1/2 | 1 1/4 | 1 1/4 | GT | TG |
| | 2 | 1 1/4 | 1 | AN | NA | 1 1/2 | 1 1/4 | 1 | GU | UG |
| | 2 | 1 | 1 | AP | PA | 1 1/2 | 1 | 1 | GV | VG |
| | 1 1/2 | 1 1/2 | 1 1/2 | AQ | QA | 1 1/4 | 1 1/4 | 1 1/4 | GW | WG |
| | 1 1/2 | 1 1/2 | 1 1/4 | AR | RA | 1 1/4 | 1 1/4 | 1 | GX | XG |
| | 1 1/2 | 1 1/2 | 1 | AS | SA | 1 1/4 | 1 | 1 | GY | YG |
| | 1 1/2 | 1 1/4 | 1 1/4 | AT | TA | 1 | 1 | 1 | GZ | ZG |
| | 1 1/2 | 1 1/4 | 1 | AU | UA | | | | | |
| | 1 1/2 | 1 | 1 | AV | VA | | | | | |
| | 1 1/4 | 1 1/4 | 1 1/4 | AW | WA | | | | | |
| | 1 1/4 | 1 1/4 | 1 | AX | XA | | | | | |
| 1 1/4 | 1 | 1 | AY | YA | | | | | | |
| 1 | 1 | 1 | AZ | ZA | | | | | | |

IFP IP3150/IP3300/IP3500/IP3650 BEARING CARRIERS



BEARING CARRIER PART CODE (IP3300/IP3500/IP3650 SINGLE OUTLET)

Outlet for front section.

| SECTION VIEW A-A C.W. ROT. | PORT SIZE | | SPLIT FLANGE | | PORT SIZE | | O.D.T THREAD | |
|-------------------------------|-----------|-------|--------------------------------|----------------------------------|-----------|-------|--------------------------------|----------------------------------|
| | IN | OUT | BEARING CARRIER CODE C.W. ROT. | BEARING CARRIER CODE C.C.W. ROT. | IN | OUT | BEARING CARRIER CODE C.W. ROT. | BEARING CARRIER CODE C.C.W. ROT. |
| | 2 | 1 1/2 | HB | BH | 2 | 1 1/2 | KB | BK |
| | 2 | 1 1/4 | HC | CH | 2 | 1 1/4 | KC | CK |
| | 2 | 1 | HF | FH | 2 | 1 | KF | FK |
| | 1 1/2 | 1 1/2 | HL | HL | 1 1/2 | 1 1/2 | KL | LK |
| | 1 1/2 | 1 1/4 | HM | MH | 1 1/2 | 1 1/4 | KM | MK |
| | 1 1/2 | 1 | HN | NH | 1 1/2 | 1 | KN | NK |
| | 1 1/4 | 1 1/4 | HO | OH | 1 1/4 | 1 1/4 | KO | OK |
| | 1 1/4 | 1 | HP | PH | 1 1/4 | 1 | KP | PK |
| | 1 | 1 | HQ | QH | 1 | 1 | KQ | QK |

BEARING CARRIER PART CODE (IP3150 SINGLE OUTLET)

Outlet for front section.

| SECTION VIEW A-A C.W. ROT. | PORT SIZE | | SPLIT FLANGE | | PORT SIZE | | O.D.T THREAD | |
|-------------------------------|-----------|-------|--------------------------------|----------------------------------|-----------|-------|--------------------------------|----------------------------------|
| | IN | OUT | BEARING CARRIER CODE C.W. ROT. | BEARING CARRIER CODE C.C.W. ROT. | IN | OUT | BEARING CARRIER CODE C.W. ROT. | BEARING CARRIER CODE C.C.W. ROT. |
| | 1 1/4 | 1 1/4 | CJ | JC | 1 1/2 | 1 1/2 | KB | BK |
| | 1 1/4 | 1 | CL | LC | 1 1/2 | 1 1/4 | KC | CK |
| | 1 1/4 | 3/4 | CM | MC | 1 1/2 | 1 | KF | FK |
| | 1 1/4 | 1/2 | HB | BH | 1 1/2 | 3/4 | KM | MK |
| | 1 | 1 | HC | CH | 1 1/4 | 1 1/4 | KN | NK |
| | 1 | 3/4 | HF | FH | 1 1/4 | 1 | KO | OK |
| | 1 | 1/2 | HL | LH | 1 1/4 | 3/4 | KQ | QK |
| | 3/4 | 3/4 | HM | MH | 1 1/4 | 1/2 | ML | LM |
| | 3/4 | 1/2 | HN | NH | 1 | 1 | MN | NM |
| | | | | | 1 | 3/4 | MR | RM |
| | | | | | 1 | 1/2 | MT | TM |
| | | | | | 3/4 | 3/4 | MU | UM |
| | | | | 3/4 | 1/2 | MW | WM | |

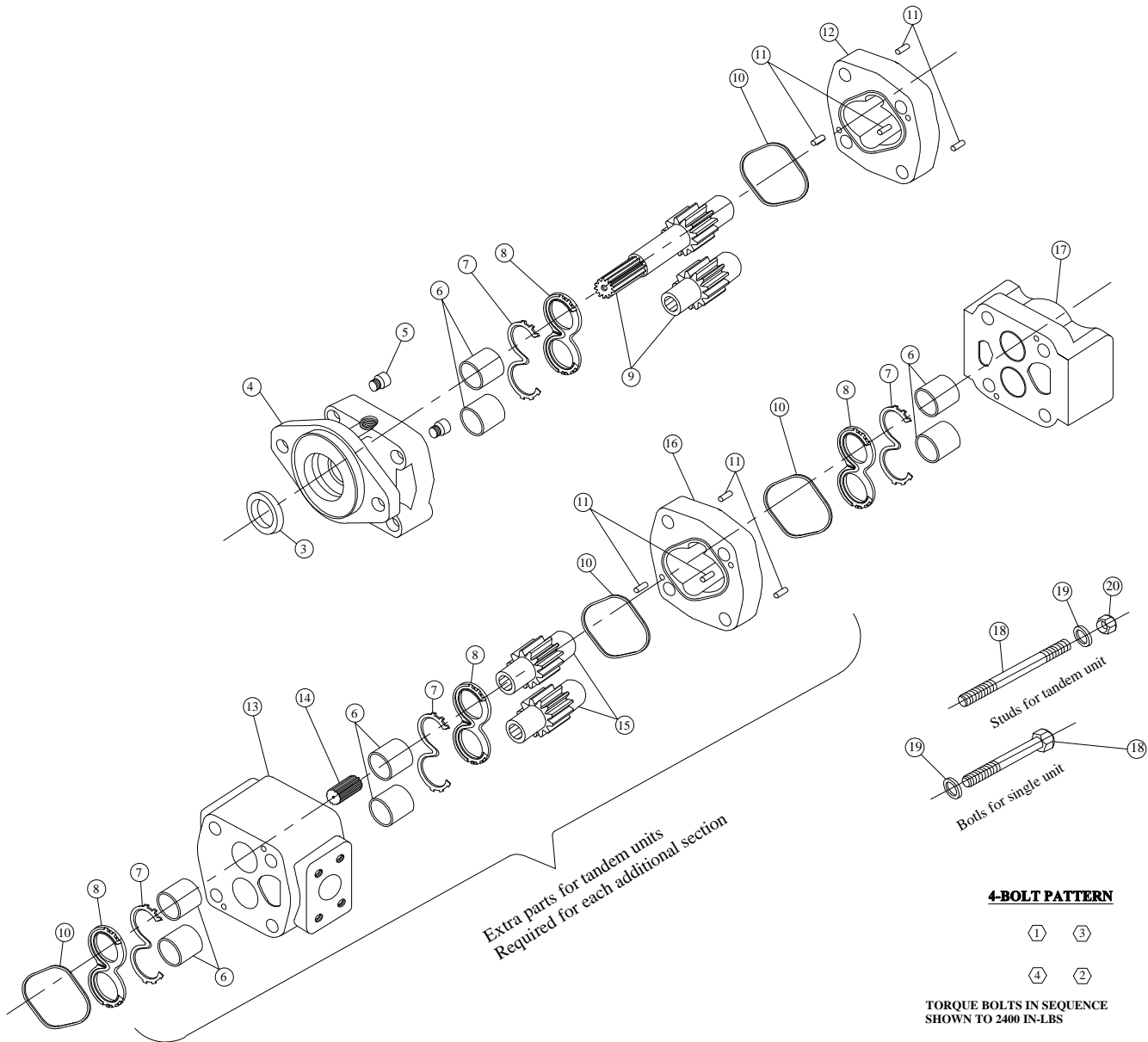
BEARING CARRIER PART CODE (IP3150 DOUBLE OUTLET)

Outlets: for clockwise porting the top port number comes first;

for counter-clockwise porting the bottom port number comes first.

| SECTION VIEW A-A C.W. ROT. | PORT SIZE | | | SPLIT FLANGE | | PORT SIZE | | | O.D.T THREAD | |
|-------------------------------|-----------|-----|-----|--------------------------------|----------------------------------|-----------|-----|-----|--------------------------------|----------------------------------|
| | IN | OUT | OUT | BEARING CARRIER CODE C.W. ROT. | BEARING CARRIER CODE C.C.W. ROT. | IN | OUT | OUT | BEARING CARRIER CODE C.W. ROT. | BEARING CARRIER CODE C.C.W. ROT. |
| | 1 1/4 | 3/4 | 3/4 | CA | AC | 1 1/2 | 1 | 1 | JG | GJ |
| | 1 1/4 | 3/4 | 1/2 | DA | AD | 1 1/2 | 1 | 3/4 | MG | GM |
| | 1 1/4 | 1/2 | 1/2 | EA | AE | 1 1/2 | 3/4 | 3/4 | NG | GN |
| | 1 | 3/4 | 3/4 | FA | AF | 1 1/4 | 1 | 1 | PG | GP |
| | 1 | 3/4 | 1/2 | GA | AG | 1 1/4 | 1 | 3/4 | SG | GS |
| | 1 1/4 | 1/2 | 1/2 | HA | AH | 1 1/4 | 3/4 | 3/4 | TG | GT |
| | | | | | | 1 1/4 | 3/4 | 1/2 | VG | GV |
| | | | | | | 1 1/4 | 1/2 | 1/2 | XG | GX |
| | | | | | | 1 | 1 | 1 | YG | GY |
| | | | | | | 1 | 1 | 3/4 | SC | CS |

IFP IP3150 PUMPS SERVICE PARTS INFORMATION



DESCRIPTION & CODES

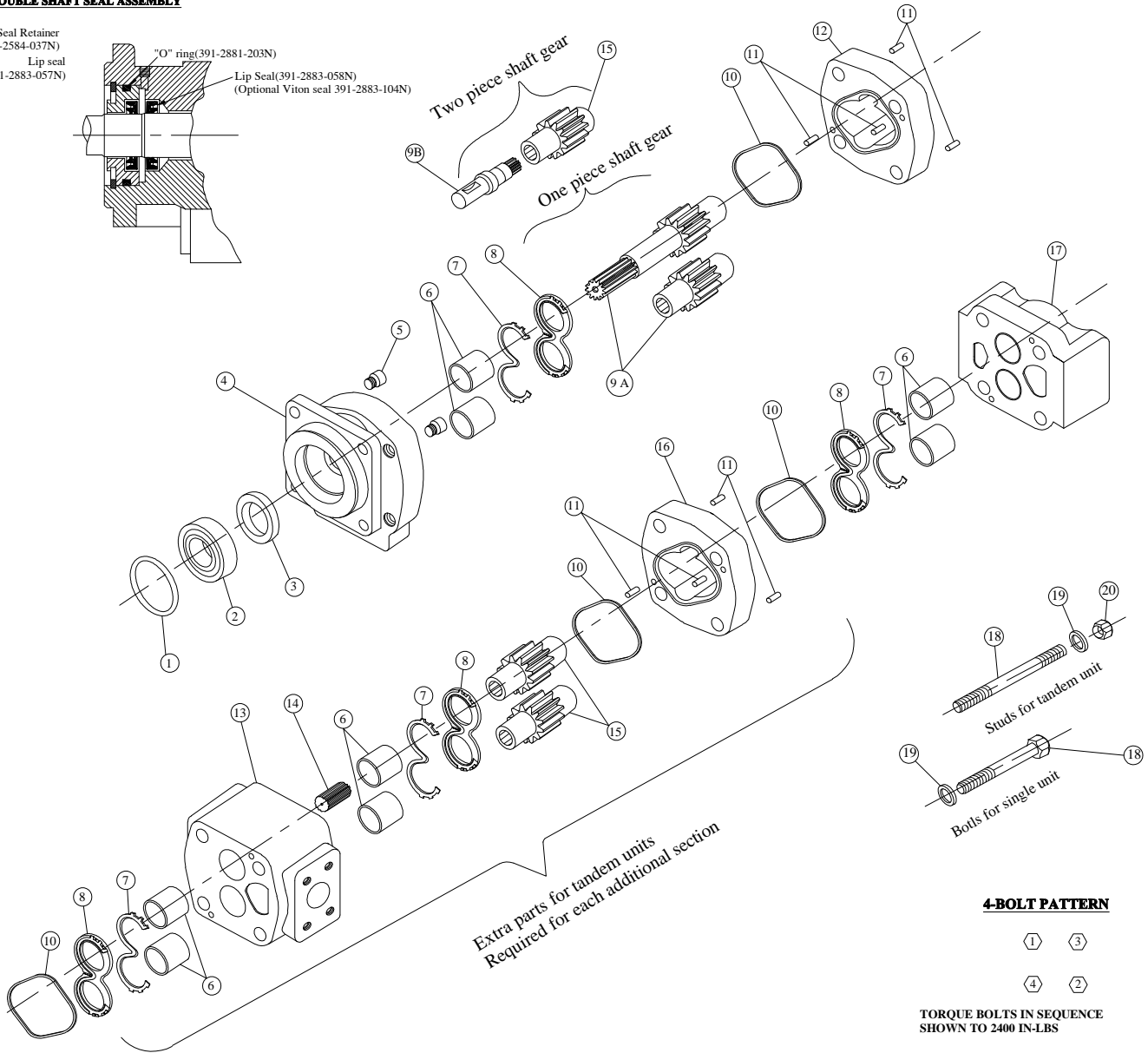
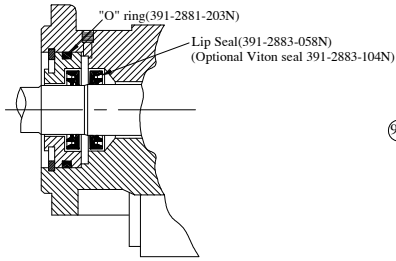
| ITEM | DESCRIPTION | REQ'S | PART NO. | ITEM | DESCRIPTION | REQ'S | PART NO. |
|------|------------------------------------|-----------|---------------|------|--------------------|-----------|----------------|
| 1 | | | | 11 | DOWEL PINS | 4 or more | 391-2682-071N |
| 2 | | | | 12 | GEAR HOUSING | 1 | 326-81xx-100N |
| 3 | SEAL | 1 | 391-2883-151N | 13 | BEARING CARRIER | 1 | 326-7xxx-100N |
| 4 | SHAFT END COVER | 1 | 326-5xxx-xxxN | 14 | CONNECTING SHAFT | 1 | 326-1133-100N |
| 5 | PLUG | 4 | 391-2886-004N | 15 | MATCHED GEAR SET | 1 | 326-28xx-000N |
| 6 | BUSHINGS | 4 or more | 391-0482-195N | 16 | GEAR HOUSING | 1 | 326-81xx-100N |
| 7 | CHANNEL SEAL | 4 or more | 391-2881-871N | 17 | PORT END COVER | 1 | 326-3xxx-100N |
| 8 | THRUST PLATES | 4 or more | 391-2185-963N | 18 | CAP SCREWS & STUDS | 4 | xx-BOLTS-xx IN |
| 9 | INTERGRAL DRIVE SHAFT AND GEAR SET | 1 | 326-29xx-xxxN | 19 | WASHERS | 4 | |
| | | 1 | 326-28xx-xxxN | 20 | NUT | 4 | |
| 10 | GASKET SEAL | 1 or more | 391-2884-968N | | | | |

IFP IP3300 PUMPS SERVICE PARTS INFORMATION



DOUBLE SHAFT SEAL ASSEMBLY

Seal Retainer
(391-2584-037N)
Lip seal
(391-2883-057N)



4-BOLT PATTERN



TORQUE BOLTS IN SEQUENCE SHOWN TO 2400 IN-LBS

DESCRIPTION & CODES

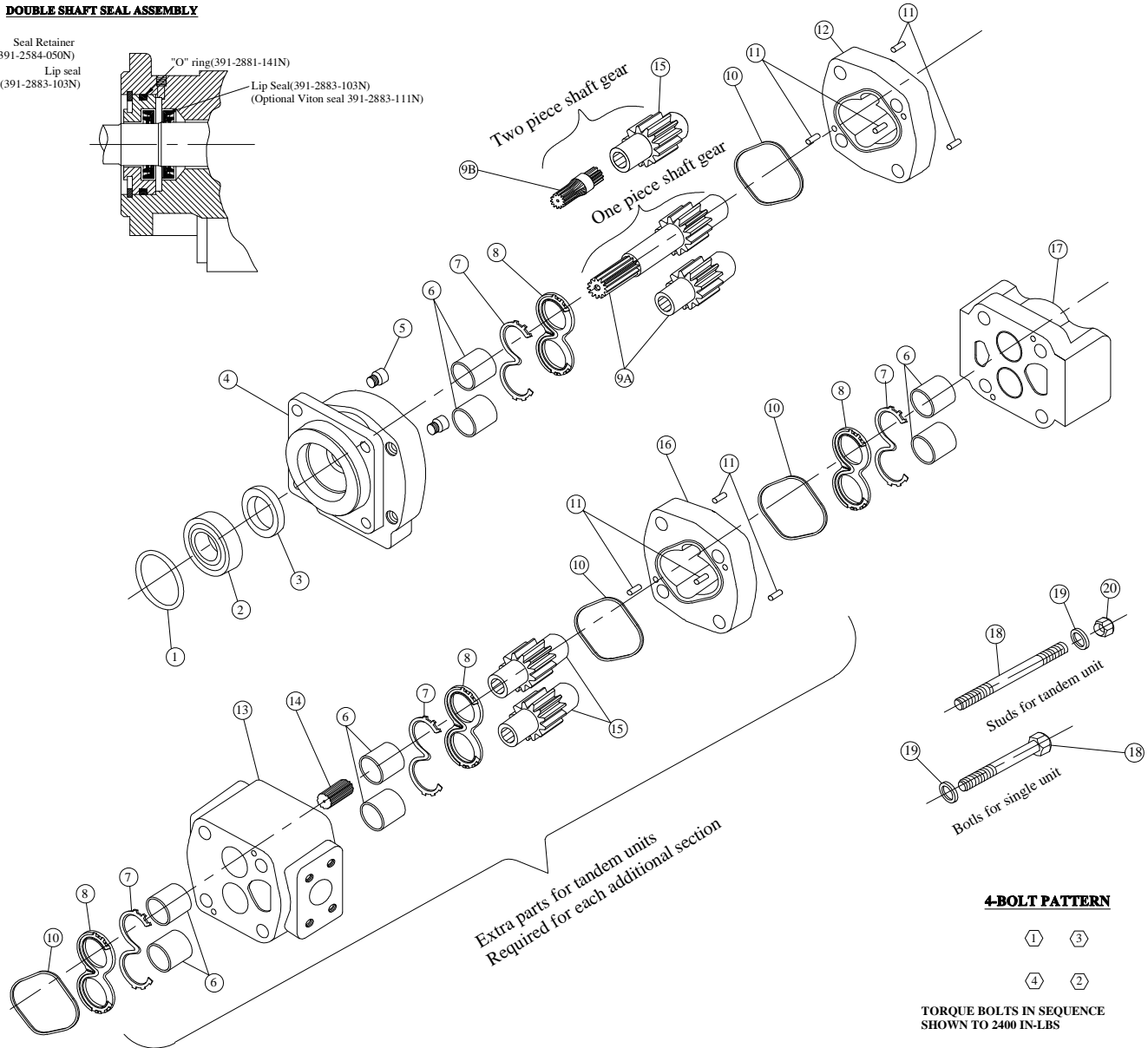
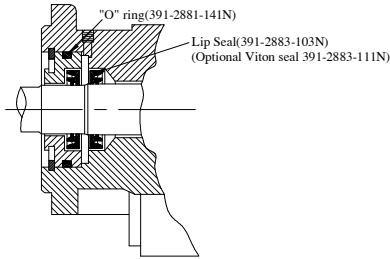
| ITEM | DESCRIPTION | REQ'S | PART NO. | ITEM | DESCRIPTION | REQ'S | PART NO. |
|------|-------------------------|-----------|----------------|------|--------------------|-----------|----------------|
| 1 | SNAP RING | 1 | 391-2686-063 N | 11 | DOWEL PINS | 4 or more | 391-2082-032N |
| 2 | OUTBOARD BEARING | 1 | 391-0381-040N | 12 | GEAR HOUSING | 1 | 324-81xx-100N |
| 3 | SEAL | 1 | 391-2883-058N | 13 | BEARING CARRIER | 1 | 324-7xxx-100N |
| 4 | SHAFT END COVER | 1 | 324-5xxx-xxxN | 14 | CONNECTING SHAFT | 1 | 324-1133-001N |
| 5 | PLUG | 2 | 391-2286-004N | 15 | MATCHED GEAR SET | 1 | 324-28xx-000N |
| 6 | BUSHINGS | 4 or more | 391-0482-306N | 16 | GEAR HOUSING | 1 | 324-81xx-100N |
| 7 | CHANNEL SEAL | 4 or more | 391-2885-065N | 17 | PORT END COVER | 1 | 324-3xxx-100N |
| 8 | THRUST PLATES | 4 or more | 391-2185-956N | 18 | CAP SCREWS & STUDS | 4 | xx-BOLTS-xx IN |
| 9A | INTERGRAL DRIVE SHAFT | 1 | 324-29xx-xxxN | 19 | WASHERS | 4 | 391-3784-028N |
| 9B | Continental Drive Shaft | 1 | 324-xxxx-xxxN | 20 | NUT | 4 | 391-1451-076N |
| 10 | GASKET SEAL | 1 or more | 391-2884-050N | | | | |

IFF IP3500 PUMPS SERVICE PARTS INFORMATION



DOUBLE SHAFT SEAL ASSEMBLY

Seal Retainer
(391-2584-050N)
Lip seal
(391-2883-103N)



4-BOLT PATTERN



TORQUE BOLTS IN SEQUENCE
SHOWN TO 2400 IN-LBS

DESCRIPTION & CODES

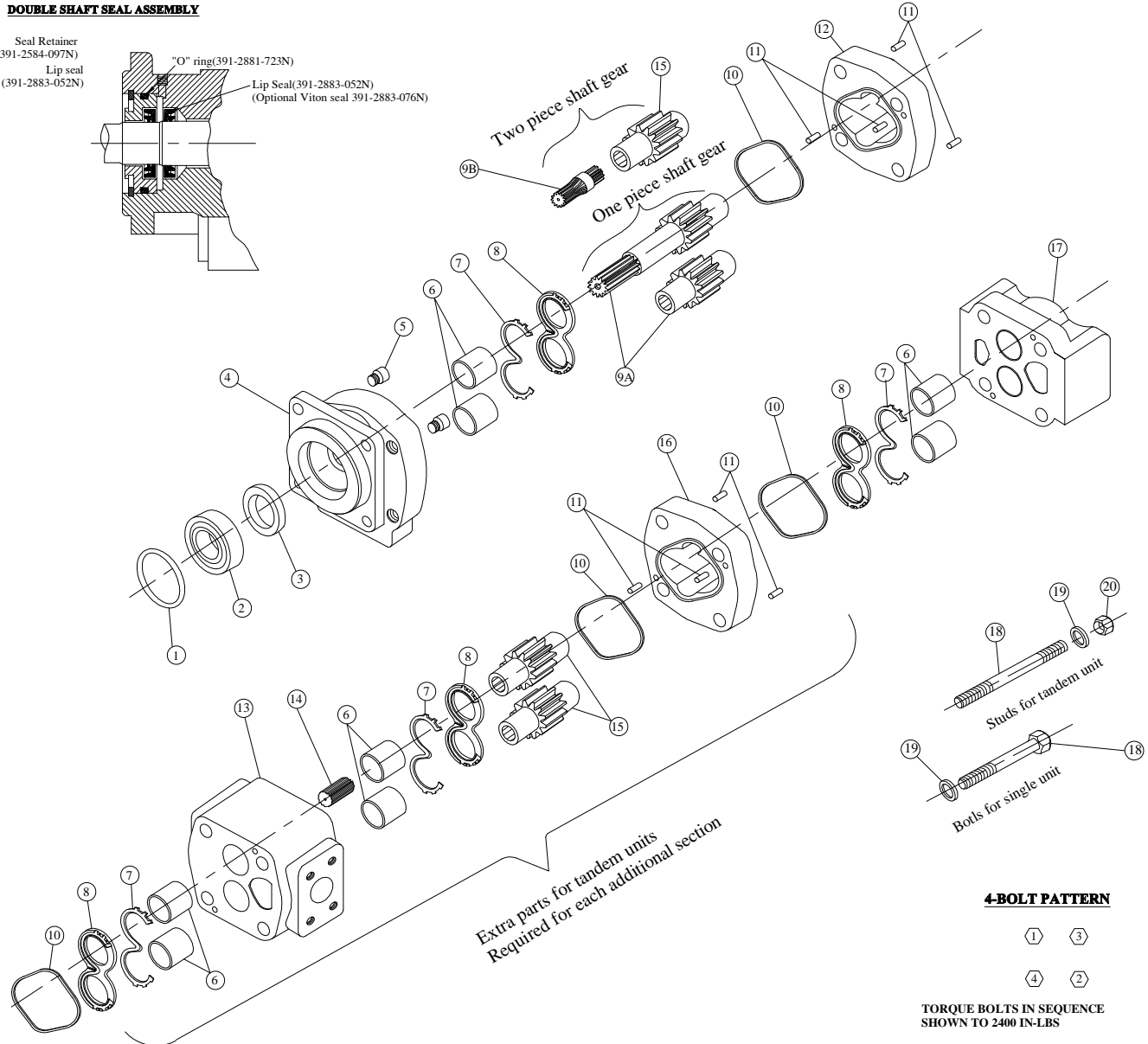
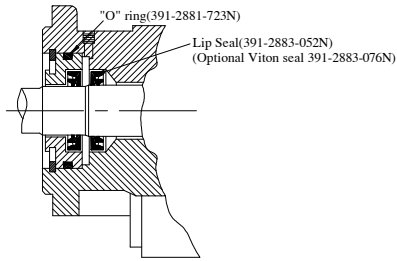
| ITEM | DESCRIPTION | REQ'S | PART NO. | ITEM | DESCRIPTION | REQ'S | PART NO. |
|------|-------------------------|-----------|---------------|------|--------------------|-----------|----------------|
| 1 | SNAP RING | 1 | 391-2686-065N | 11 | DOWEL PINS | 4 or more | 391-2082-032N |
| 2 | OUTBOARD BEARING | 1 | 391-0381-077N | 12 | GEAR HOUSING | 1 | 323-81xx-100N |
| 3 | SEAL | 1 | 391-2883-103N | 13 | BEARING CARRIER | 1 | 323-7xxx-100N |
| 4 | SHAFT END COVER | 1 | 323-5xxx-xxxN | 14 | CONNECTING SHAFT | 1 | 323-1133-100N |
| 5 | PLUG | 2 | 391-2886-004N | 15 | MATCHED GEAR SET | 1 | 323-28xx-000N |
| 6 | BUSHINGS | 4 or more | 391-0482-308N | 16 | GEAR HOUSING | 1 | 323-81xx-100N |
| 7 | CHANNEL SEAL | 4 or more | 391-2885-066N | 17 | PORT END COVER | 1 | 323-3xxx-100N |
| 8 | THRUST PLATES | 4 or more | 391-2185-957N | 18 | CAP SCREWS & STUDS | 4 | xx-BOLTS-xx IN |
| 9A | INTERGRAL DRIVE SHAFT | 1 | 323-29xx-xxxN | 19 | WASHERS | 4 | 391-3784-028N |
| 9B | Continental Drive Shaft | 1 | 323-xxxx-xxxN | 20 | NUT | 4 | 391-1451-076N |
| 10 | GASKET SEAL | 2 or more | 391-2884-074N | | | | |

IFP IP3650 PUMPS SERVICE PARTS INFORMATION



DOUBLE SHAFT SEAL ASSEMBLY

Seal Retainer
(391-2584-097N)
Lip seal
(391-2883-052N)



4-BOLT PATTERN



TORQUE BOLTS IN SEQUENCE
SHOWN TO 2400 IN-LBS

DESCRIPTION & CODES

| ITEM | DESCRIPTION | REQ'S | PART NO. | ITEM | DESCRIPTION | REQ'S | PART NO. |
|------|-------------------------|-----------|----------------|------|--------------------|-----------|----------------|
| 1 | SNAP RING | 1 | 391-2686-025 N | 11 | DOWEL PINS | 4 or more | 391-2082-062N |
| 2 | OUTBOARD BEARING | 1 | 391-0381-078N | 12 | GEAR HOUSING | 1 | 322-81xx-100N |
| 3 | SEAL | 1 | 391-2883-052N | 13 | BEARING CARRIER | 1 | 322-7xxx-100N |
| 4 | SHAFT END COVER | 1 | 322-5xxx-xxxN | 14 | CONNECTING SHAFT | 1 | 322-1133-001N |
| 5 | PLUG | 2 | 391-2286-004N | 15 | MATCHED GEAR SET | 1 | 322-28xx-000N |
| 6 | BUSHINGS | 4 or more | 391-0482-307N | 16 | GEAR HOUSING | 1 | 322-81xx-100N |
| 7 | CHANNEL SEAL | 4 or more | 391-2885-064N | 17 | PORT END COVER | 1 | 322-3xxx-100N |
| 8 | THRUST PLATES | 4 or more | 391-2185-955N | 18 | CAP SCREWS & STUDS | 4 | xx-BOLTS-xx IN |
| 9A | INTERGRAL DRIVE SHAFT | 1 | 322-29xx-xxxN | 19 | WASHERS | 4 | 391-3784-028N |
| 9B | Continental Drive Shaft | 1 | 322-xxxx-xxxN | 20 | NUT | 4 | 391-1451-076N |
| 10 | GASKET SEAL | 1 or more | 391-2884-052N | | | | |

IFP ALUMINUM HIGH PERFORMANCE GEAR PUMPS



FEATURES

- EXTRUDED ALUMINUM DIE CAST BODY
- ALUMINUM MOUNTING FLANGE / COVER
- FLOATING AXLE SLEEVE AND DU BEARINGS
- DOUBLE LIP SHAFT SEAL TO PREVENT CAVITATION AND LEAKAGE
- PRESSURES TO 3600 PSI
- SPEED 600 TO 3000 RPM
- HIGH TEMPERATURE SEALS AND GASKETS
- ALL UNITS 100% FACTORY TESTED



OPTIONS

- * MOUNTING - S.A.E. EUROPEAN, DIN
- * PORTS AVAILABLE - S.A.E. NPT, BSP, METRIC
- * ONE PIECE SHAFT & GEAR ASSEMBLY
- * INTEGRAL RELIEF / PRIORITY CONTROL
- * SINGLE / TANDEM UNITS
- * VITON SEALS
- * SIDE OR REAR PORTS

| | | | | | | | | | | | | | | |
|-----------------------|---|-----------------------------------------------|---|-----------------------------------|---|-----------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------|---|-------------------------------------|---|------------------------------------------------------------|
| AP | - | 20 | - | S | - | R | - | 1 | - | F | - | K | - | |
| Series | | Model Displacement cm ³ /rev | | Mounting | | Rotation | | Shaft | | Port Size | | Port Location | | Special Features |
| AP- PUMP AM- MOTOR | | See technical specifications | | S- SAE A E-EUROPEAN D - DIN | | R - Right L - Left | | 1- 5/8" Dia. Str. Keyed (Optional) 2- 3/4" Dia. Str. Keyed (Standard) 9- SAE- 9 Tooth Spline (Standard) 11- SAE 11 Tooth Spline (Optional) | | F- STD for 6,8,10 Inlet 7/8-14 Outlet 3/4-16 P- STD For 12,14,16,20,25 Inlet 1-5/16 -12 Outlet 1-1/16-12 | | K- Side (STD) Q- Rear (Optional) | | • Priority Cover • Flow Control Cover • Relief Cover |

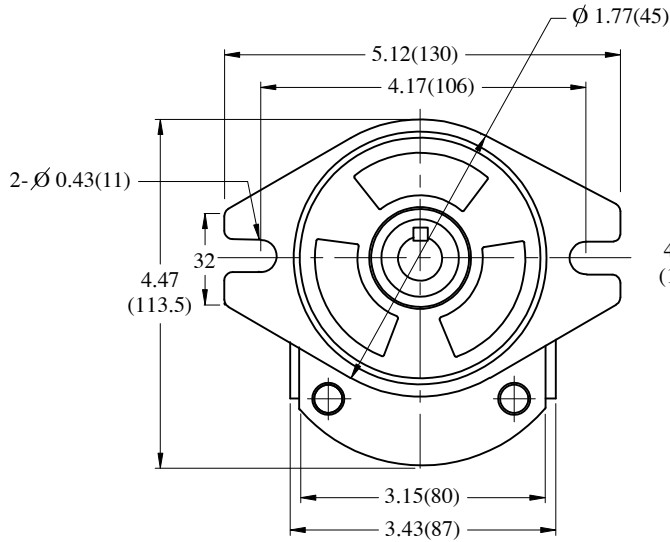
Technical Specifications

| IFP Code | Model | Theoretical Displacement | | Pump Flow GPM @ 1800 RPM/3000 PSI | Minimum RPM | Maximum RPM | Max. Continuous Pressure (PSI) | Approx. Weight lbs (kg) |
|-----------------------|-------|--------------------------|-----------------------|--------------------------------------|----------------|----------------|-----------------------------------|----------------------------|
| | | in ³ /rev. | cm ³ /rev. | | | | | |
| AP: Pump AM: Motor | 6 | 0.38 | 6 | 2.78 | 600 | 3000 | 3600 | 4.4 (2.0) |
| | 8 | 0.52 | 8 | 3.81 | | 3000 | 3600 | 4.6 (2.1) |
| | 10 | 0.62 | 10 | 4.38 | | 3000 | 3600 | 4.8 (2.2) |
| | 12 | 0.76 | 12 | 5.39 | | 3000 | 3600 | 5.0 (2.3) |
| | 14 | 0.85 | 14 | 6.32 | | 3000 | 3600 | 5.3 (2.4) |
| | 16 | 0.98 | 16 | 7.21 | | 3000 | 3000 | 5.5 (2.5) |
| | 20 | 1.22 | 20 | 9.18 | | 3000 | 3000 | 5.7 (2.6) |
| | 25 | 1.53 | 25 | 11.20 | | 3000 | 3000 | 5.9 (2.7) |

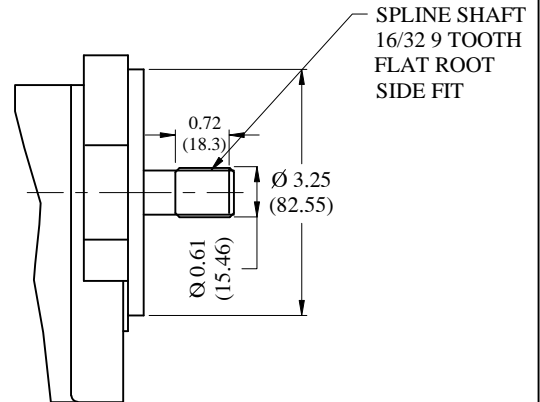
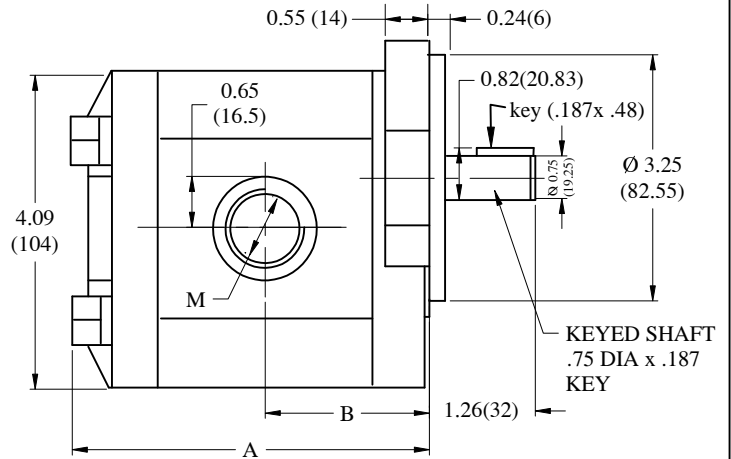
IFP ALUMINUM HIGH PERFORMANCE GEAR PUMPS



FRONT VIEW



SIDE VIEW



DIMENSIONAL INFORMATION

| MODEL | A in(mm) | B in(mm) | M Thread IN/OUT | |
|-------|--------------|-------------|---------------------|---------------------|
| | | | INLET | OUTLET |
| AP06 | 4.06 (103) | 1.77 (45) | 7/8-14 SAE-10 | 3/4-16 SAE-8 |
| AP08 | 4.19 (106.5) | 1.85 (47) | | |
| AP10 | 4.29 (109) | 1.89 (48) | | |
| AP12 | 4.45 (113) | 1.97 (50) | 1 5/16-12 SAE-16 | 1 1/16-12 SAE-12 |
| AP14 | 4.53 (115) | 2.01 (51) | | |
| AP16 | 4.69 (119) | 2.07 (52.5) | | |
| AP20 | 4.92 (125) | 2.20 (56) | | |
| AP25 | 5.24 (133) | 2.36 (60) | | |

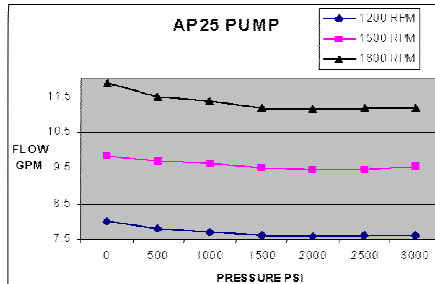
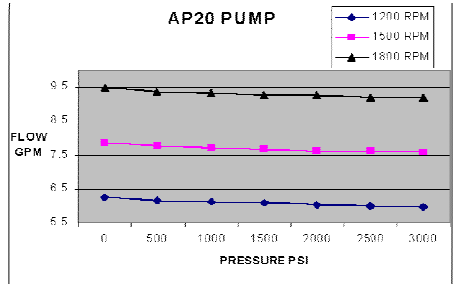
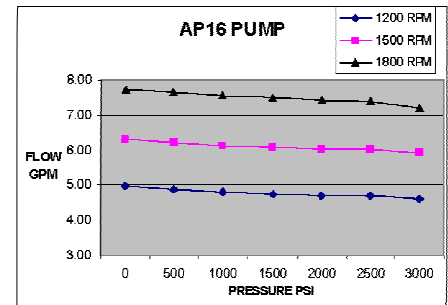
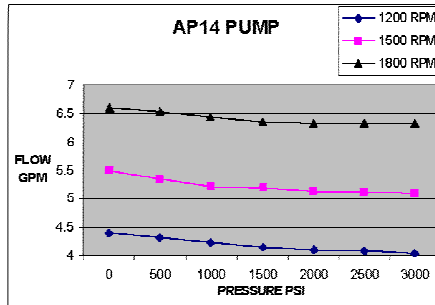
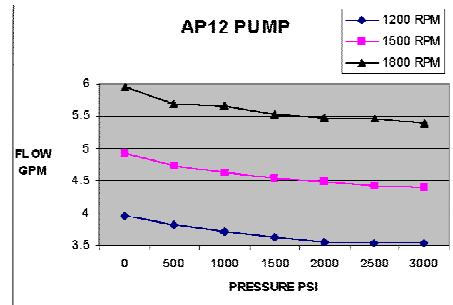
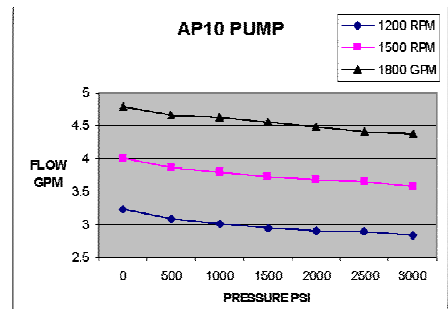
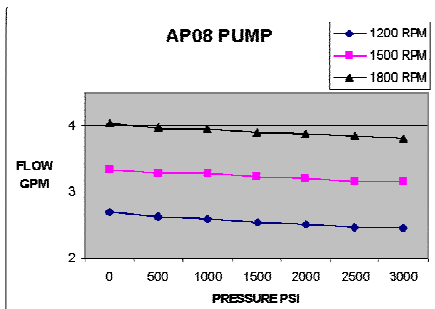
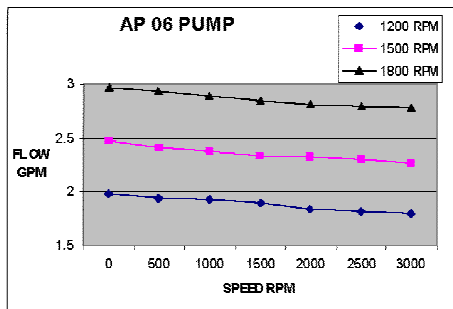
IFP ALUMINUM HIGH PERFORMANCE GEAR PUMPS



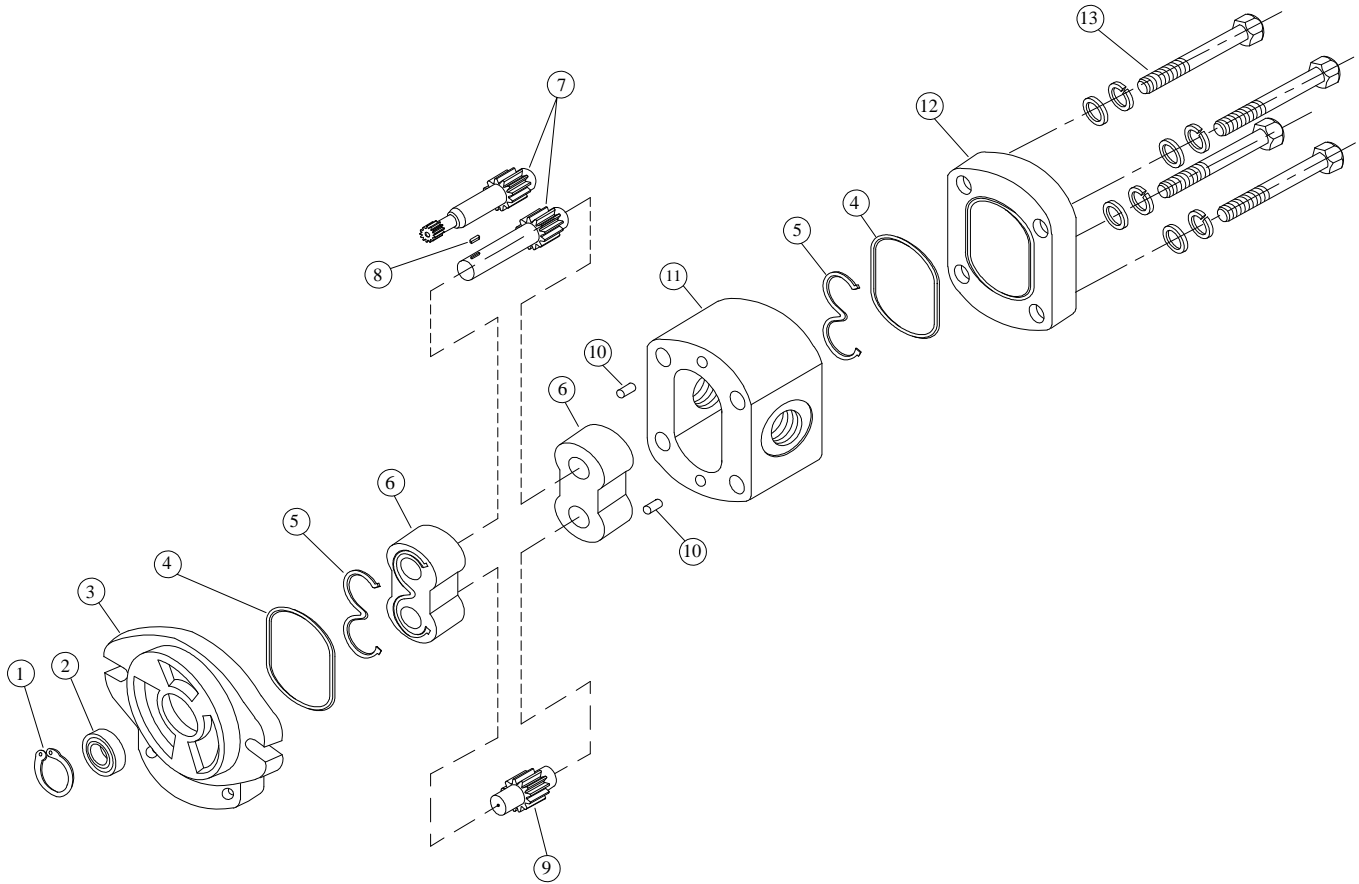
Performance Data - Typical Flows at 120° F, 10 W oil (128SUS), 0 PSI inlet

Flow in Gallons Per Minute (GPM).

| Model | Displacement in ³ /rev (cm ³ /rev) | RPM | 0 PSI | 500 PSI | 1000 PSI | 1500 PSI | 2000 PSI | 2500 PSI | 3000 PSI |
|-------|-------------------------------------------------------------|------|-------|---------|----------|----------|----------|----------|----------|
| AP6 | 0.38 (6) | 1200 | 1.98 | 1.94 | 1.93 | 1.89 | 1.84 | 1.82 | 1.80 |
| | | 1500 | 2.47 | 2.41 | 2.38 | 2.33 | 2.32 | 2.30 | 2.27 |
| | | 1800 | 2.97 | 2.93 | 2.89 | 2.85 | 2.81 | 2.79 | 2.78 |
| AP8 | 0.52 (8) | 1200 | 2.70 | 2.63 | 2.60 | 2.55 | 2.51 | 2.48 | 2.45 |
| | | 1500 | 3.34 | 3.29 | 3.28 | 3.24 | 3.22 | 3.17 | 3.16 |
| | | 1800 | 4.04 | 3.98 | 3.95 | 3.90 | 3.89 | 3.85 | 3.81 |
| AP10 | 0.62 (10) | 1200 | 3.23 | 3.09 | 3.02 | 2.94 | 2.90 | 2.89 | 2.84 |
| | | 1500 | 4.00 | 3.87 | 3.8 | 3.73 | 3.68 | 3.65 | 3.59 |
| | | 1800 | 4.79 | 4.66 | 4.62 | 4.55 | 4.48 | 4.41 | 4.38 |
| AP12 | 0.76 (12) | 1200 | 3.96 | 3.81 | 3.72 | 3.62 | 3.56 | 3.53 | 3.54 |
| | | 1500 | 4.93 | 4.73 | 4.62 | 4.54 | 4.49 | 4.42 | 4.40 |
| | | 1800 | 5.94 | 5.68 | 5.64 | 5.52 | 5.47 | 5.45 | 5.39 |
| AP14 | 0.85 (14) | 1200 | 4.39 | 4.32 | 4.23 | 4.14 | 4.10 | 4.09 | 4.04 |
| | | 1500 | 5.48 | 5.34 | 5.21 | 5.20 | 5.14 | 5.11 | 5.10 |
| | | 1800 | 6.60 | 6.54 | 6.43 | 6.36 | 6.33 | 6.33 | 6.32 |
| AP16 | 0.98 (16) | 1200 | 4.97 | 4.87 | 4.82 | 4.74 | 4.72 | 4.70 | 4.61 |
| | | 1500 | 6.32 | 6.21 | 6.13 | 6.08 | 6.02 | 6.02 | 5.91 |
| | | 1800 | 7.73 | 7.68 | 7.58 | 7.51 | 7.43 | 7.40 | 7.21 |
| AP20 | 1.22 (20) | 1200 | 6.23 | 6.15 | 6.11 | 6.08 | 6.04 | 6.00 | 5.98 |
| | | 1500 | 7.85 | 7.76 | 7.70 | 7.67 | 7.60 | 7.60 | 7.59 |
| | | 1800 | 9.47 | 9.36 | 9.31 | 9.24 | 9.24 | 9.18 | 9.18 |
| AP25 | 1.53 (25) | 1200 | 8.00 | 7.80 | 7.70 | 7.63 | 7.60 | 7.61 | 7.61 |
| | | 1500 | 9.83 | 9.70 | 9.64 | 9.51 | 9.44 | 9.46 | 9.53 |
| | | 1800 | 11.87 | 11.5 | 11.36 | 11.19 | 11.15 | 11.19 | 11.2 |



IFP ALUMINUM HIGH PERFORMANCE GEAR PUMPS



DESCRIPTION

| ITEM | DESCRIPTION | REQ'S |
|------|---------------------|-------|
| 1 | SNAP RING | 1 |
| 2 | SHAFT SEAL | 1 |
| 3 | SHAFT END COVER | 1 |
| 4 | GASKET SEAL | 2 |
| 5 | ANTI-EXTRUSION SEAL | 2 |
| 6 | BUSHING | 2 |
| 7 | DRIVE GEAR | 1 |
| 8 | KEY | 1 |
| 9 | DRIVEN GEAR | 1 |
| 10 | PIN | 2 |
| 11 | BODY | 1 |
| 12 | COVER | 1 |
| 13 | BOLTS | 4 |

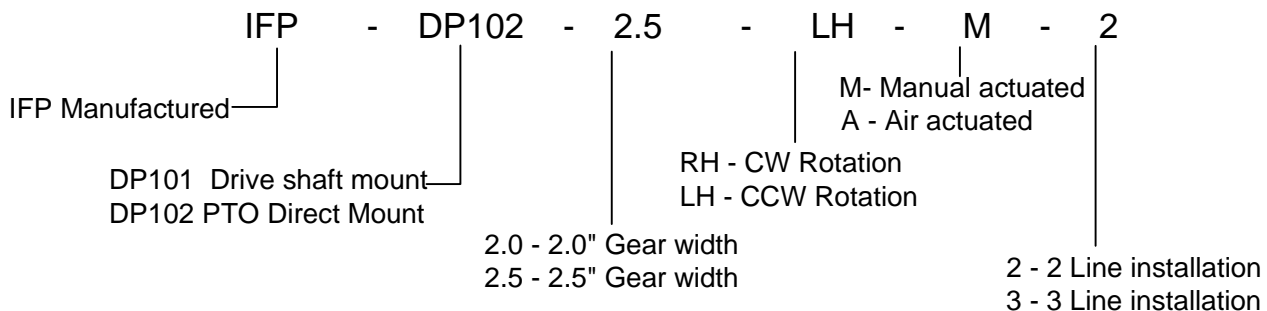
IFP DP101/DP102 CAST IRON PUMP/VALVE COMBINATION



- Rugged Cast Iron Construction
- Interchangeable Parts
- Optional Mountings / Actuators
- High Performance / Low Cost



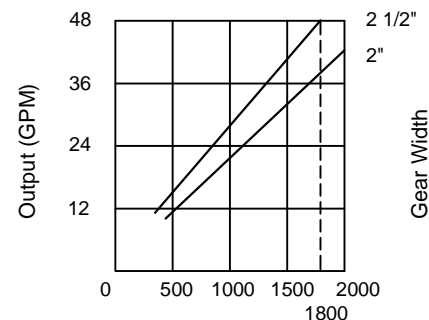
◆ Dump Pump/Valve Ordering Specification



TECHNICAL DATA

| Model series | Maximum psi | GPM @1800 RPM | | MAXIMUM SPEED |
|--------------|-------------|---------------|------|---------------|
| | | 2" | 2.5" | |
| DP101 | 2500 | 39 | 48 | 2400 |
| DP102 | 2500 | 39 | 48 | 2400 |

IFP DP101/102



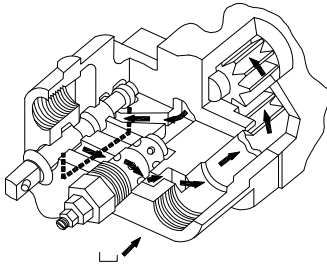
IFP offers a complete line of rugged cast iron pump / valve combination for the dump truck and trailer industry. Units are available for SAE-B PTO mounting (DP102) or remote drive shaft mounting (DP101). Units are supplied with full flow adjustable main relief valves to protect the pump and cylinder from overloading and shock loads. A three position valve assembly controls the raising, holding and lowering of a single acting cylinder, control valve can be cab operated using mechanical cable actuation or air shift control. Installation can be either 2 line or three line type using the sleeve supplied see page E4.2 .

IFP DP101/DP102 CAST IRON PUMP/VALVE COMBINATION



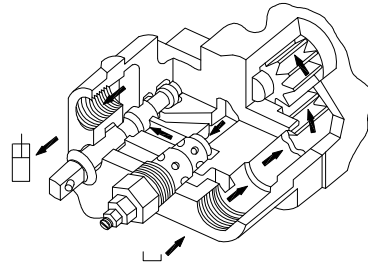
2-line installation

One line to cylinder, one line to the reservoir. For intermittent operation only.



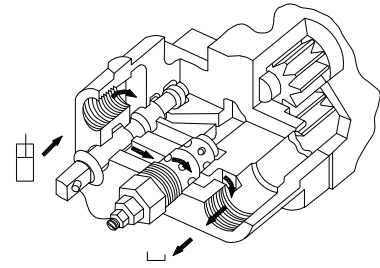
Spool in Neutrol Position:

Oil recirculates internally.



Spool in Raise Position:

Oil is routed through work port to raise the cylinder.

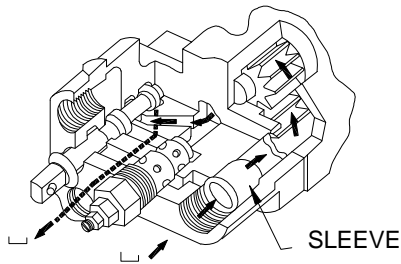


Spool in Lower Position:

Oil flows from the cylinder through the relief valve to return to tank.

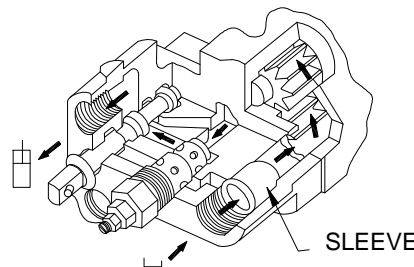
3-line installation

One line to cylinder, two lines to the reservoir. For continuous or intermittent operation.



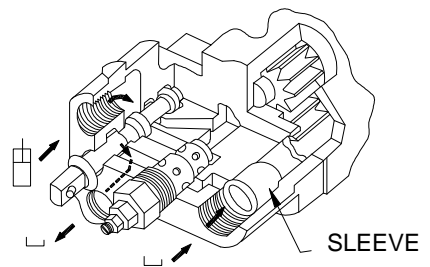
Spool in Neutrol Position:

Oil circulates through the pump and returns to tank



Spool in Raise Position:

Oil is routed through work port to raise the cylinder.

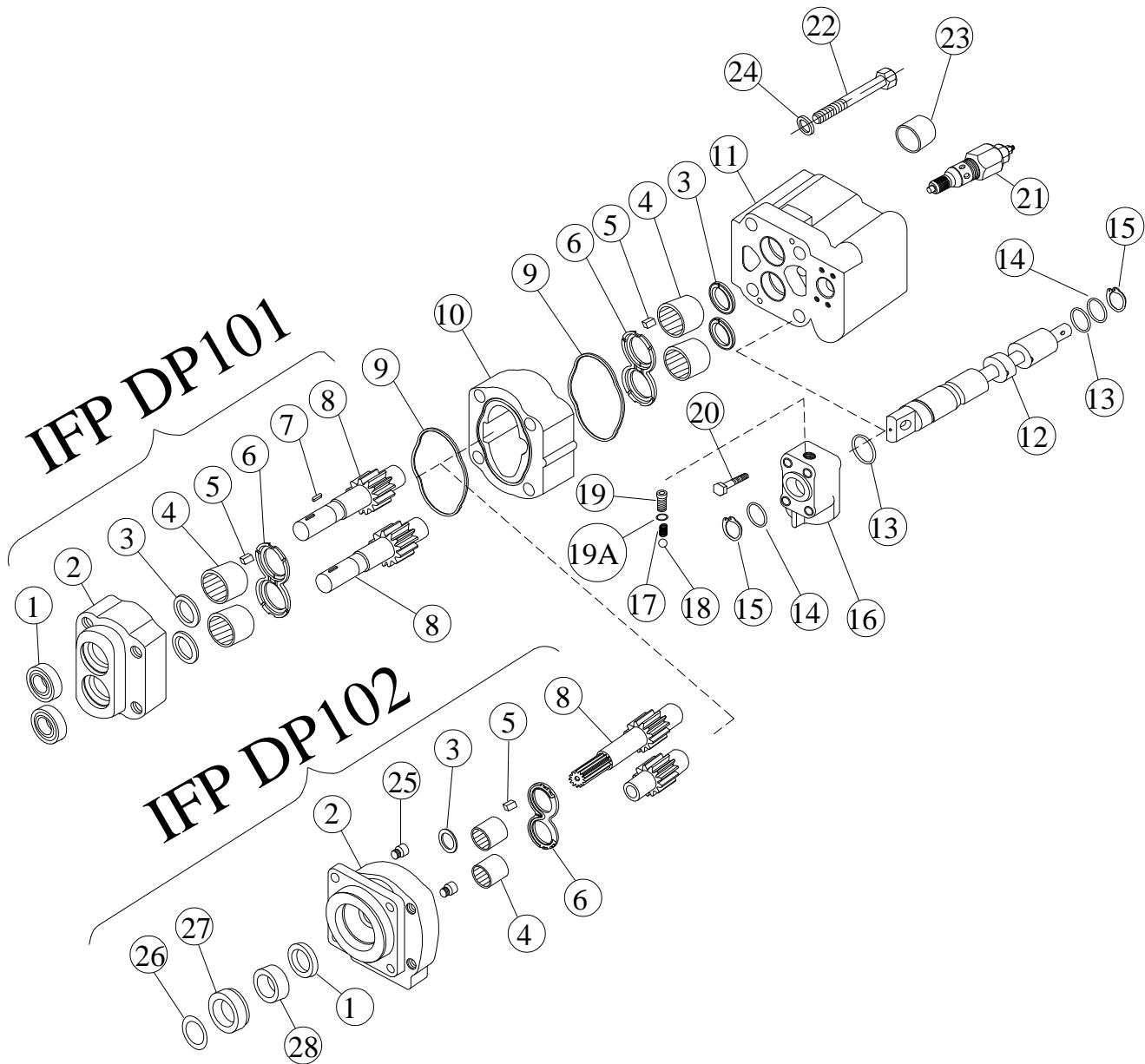


Spool in Lower Position:

Oil flows from the cylinder through the bottom port and returns to tank.

Note: Three line installation is recommended whenever possible by installing the sleeve supplied in the inlet port and connecting the optional return line to tank. This configuration maintains a lower operating temperature and a return line filter can be installed to filter return flow. Two line installations are for intermittent operation only.

IFP DP101/DP102 CAST IRON PUMP/VALVE COMBINATION



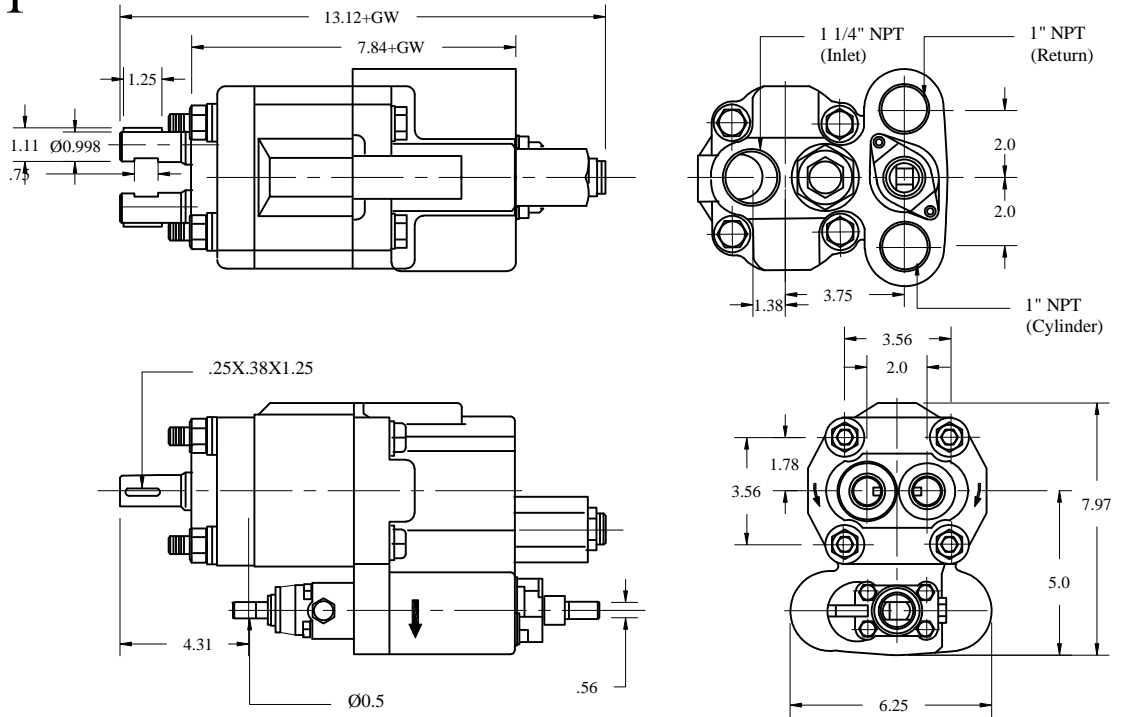
| ITEM | DESCRIPTION | ITEM | DESCRIPTION | ITEM | DESCRIPTION |
|------|------------------|------|-----------------|------|-----------------------|
| 1 | SHAFT SEAL | 11 | VAVLE HOUSING | 20 | CAP SCREWS |
| 2 | SHAFT END COVER | 12 | VALVE SPOOL | 21 | RELIEF VALVE ASSEMBLY |
| 3 | SHAFT RING SEALS | 13 | "O" RINGS | 22 | CAP CREWS |
| 4 | ROLLER BEARINGS | 14 | RETAINER RINGS | 23 | SLEEVE(OPTIONAL) |
| 5 | POCKET SEALS | 15 | SNAP RINGS | 24 | WASHERS |
| 6 | THRUST PLATES | 16 | VALVE CAP | 25 | CHECK ASSEMBLY |
| 7 | KEY | 17 | POPPET SPRING | 26 | SNAP RING |
| 8 | DRIVE HAFT&GEAR | 18 | STEEL BALL | 27 | SPACER |
| 9 | GASKET SEALS | 19 | DETENT RETAINER | 28 | RETAINER |
| 10 | GEAR HOUSING | 19A | LOCAL WASHER | | |

IFP DP101/DP102 CAST IRON PUMP/VALVE DIMENSIONS



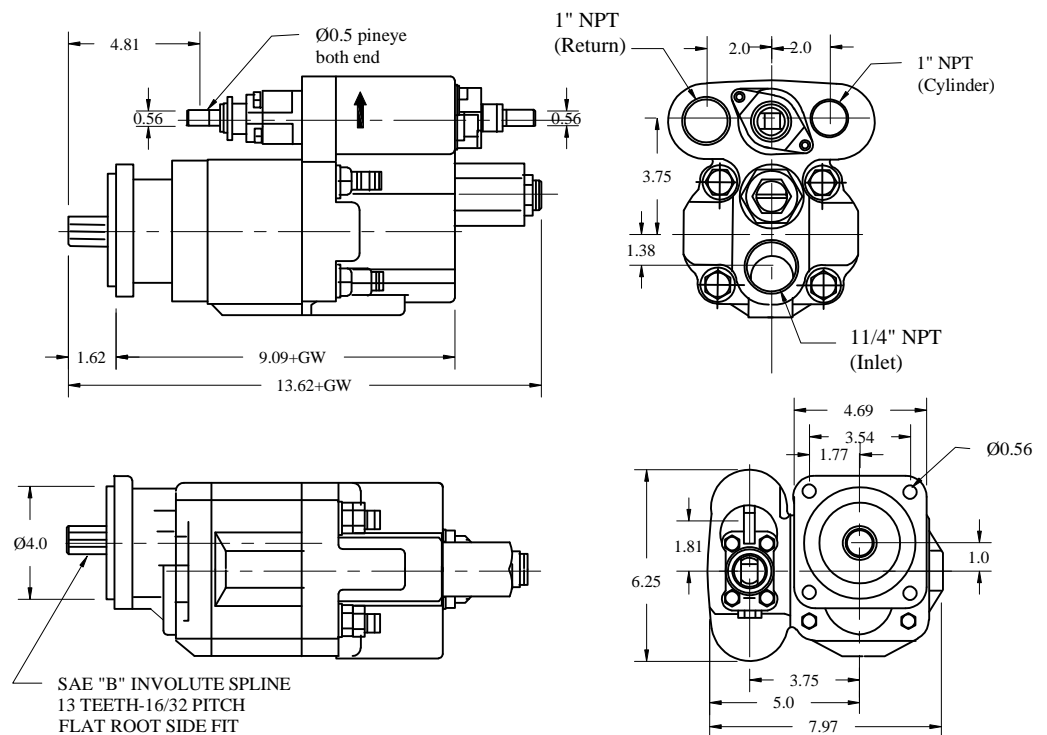
IFP DP101

GEAR WIDTH:
2.0" 2.5"
WEIGHT(lbs):
66 69

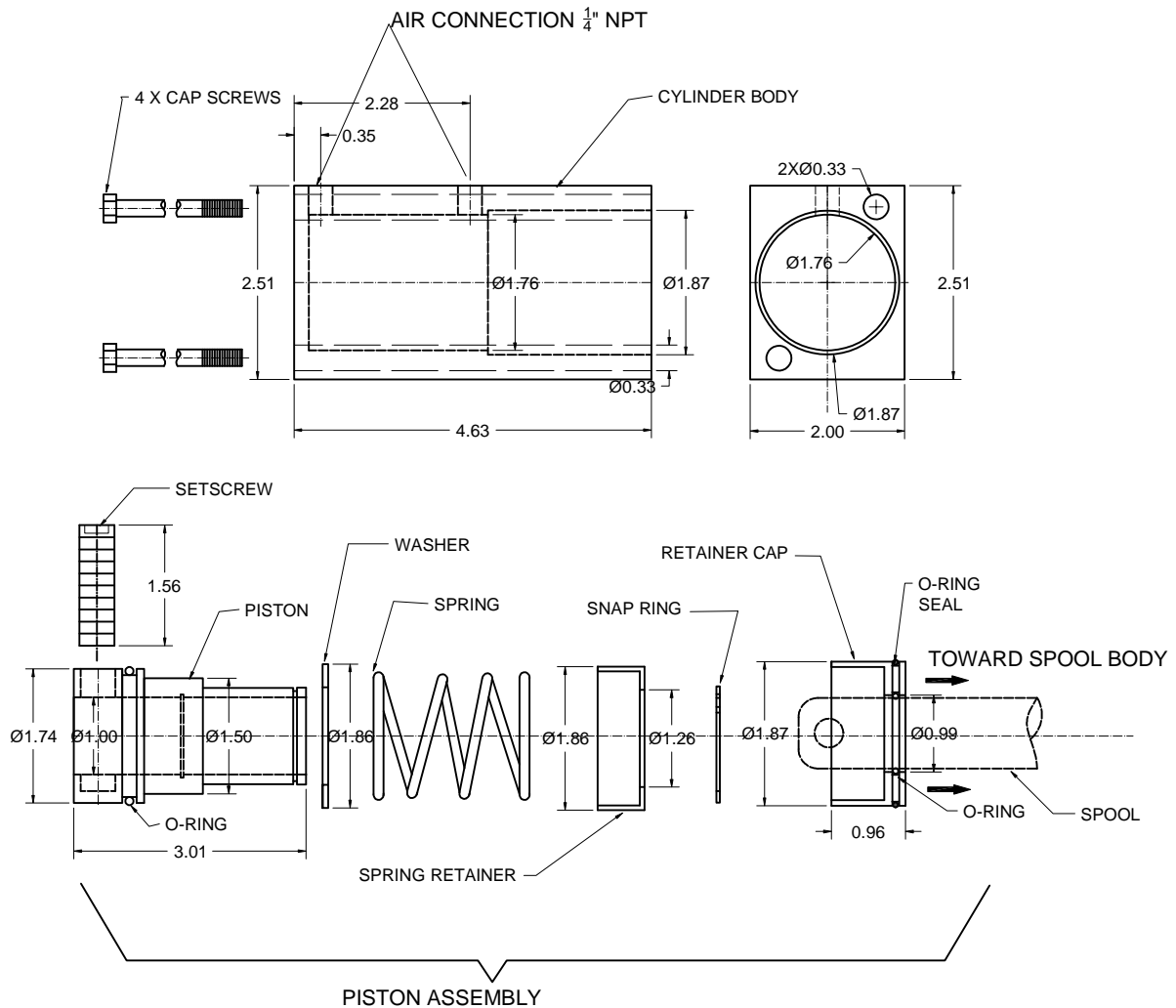


IFP DP102

GEAR WIDTH:
2.0" 2.5"
WEIGHT(lbs):
68 71



IFP C101/C102 AIR SHIFT



Air Shift Installation Instructions

- The Air shift mounts on IFP C101 / C102 Dump pumps in place of the detent end cap
- Prepare work area by assuring a clean work environment for assembly & disassembly of the Dump pump spool valve

Preparing Pump / Valve spool for air shift kit installation

- Remove snap ring and washer from valve spool
- Remove the detent cap, spring and ball from the valves end cap
- Remove four(4) cap screws and slide detent cap from the spool
- **DO NOT REMOVE "O" RING FROM VALVE HOUSING**

Installation of air shift kit

- Remove retainer cap
- Remove snap ring / spring retainer / spring / washer
- Slide piston assembly from the cylinder body
- Remove setscrew from piston assembly using 1/4" hex wrench
- Grease and slide Retainer Cap over valve spool with flat face of cap facing the spool body
- Assemble snap ring / spring retainer / spring / washer on piston
- Slide piston over valve spool and align and insert set screw attaching the piston to the spool
- Grease piston and O Rings
- Slide cylinder body over the piston assembly making sure not to damage the O Rings
- Secure the assembly using the 4 cap screws supplied

IFP G101 / G102 SERIES COMBINATION PUMP/VALVE

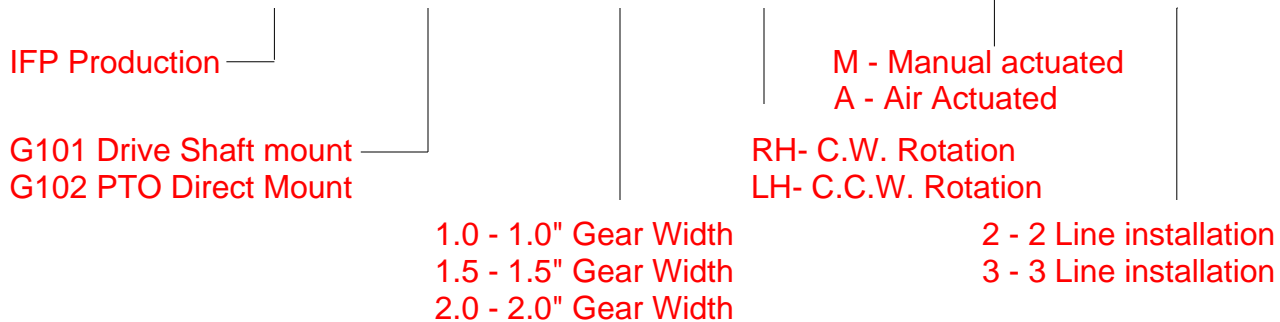


- * Rugged Cast Iron Construction
- * Interchangeable Parts
- "Parker / Commercial - Permco - Muncie"*
- * Optional Mountings / Actuators
- * High Performance / Low Cost



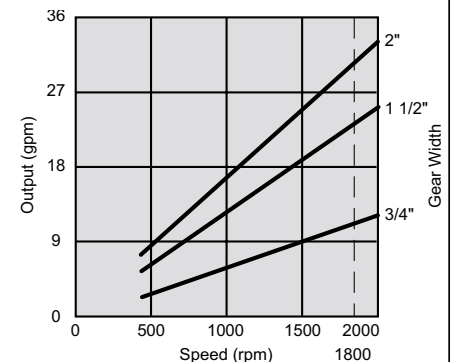
◆ Dump Pump/ Valve Ordering Code

IFP G102 - 2.0 - LH - M - 2



| Model Number | Displ. (in ³ /rev) | | | Maximum PSI | US gpm @ 1800 rpm | | | Maximum Speed |
|--------------|-------------------------------|------|------|-------------|-------------------|-----|-----|---------------|
| | 1.0 | 1.5 | 2.0 | | 1.0 | 1.5 | 2.0 | |
| G101 | 1.97 | 2.96 | 3.94 | 2500 | 9.5 | 21 | 29 | 2400 rpm |
| G102 | 1.97 | 2.96 | 3.94 | 2500 | 9.5 | 21 | 29 | 2400 rpm |

IFP G101 / G102
Performance curves



IFP offers G101 / G102 rugged cast iron combination gear pump / valve assemblies for the medium size dump and trailer applications. Units are available for SAE-B PTO mounting (G102) or remote drive shaft mounting (G101). Units are supplied with a full flow adjustable main relief valve to protect the pump and cylinder from over pressure and shock loads. A three position valve assembly controls the raising and lowering of a single acting cylinder, The pump / valve comes standard as manually operated & can be actuated by a cable control. The Pump/Valve can also be equipped with an air shift kit for actuation by air pressure. Installation can be either 2 line or 3 line configuration using the sleeve supplied .

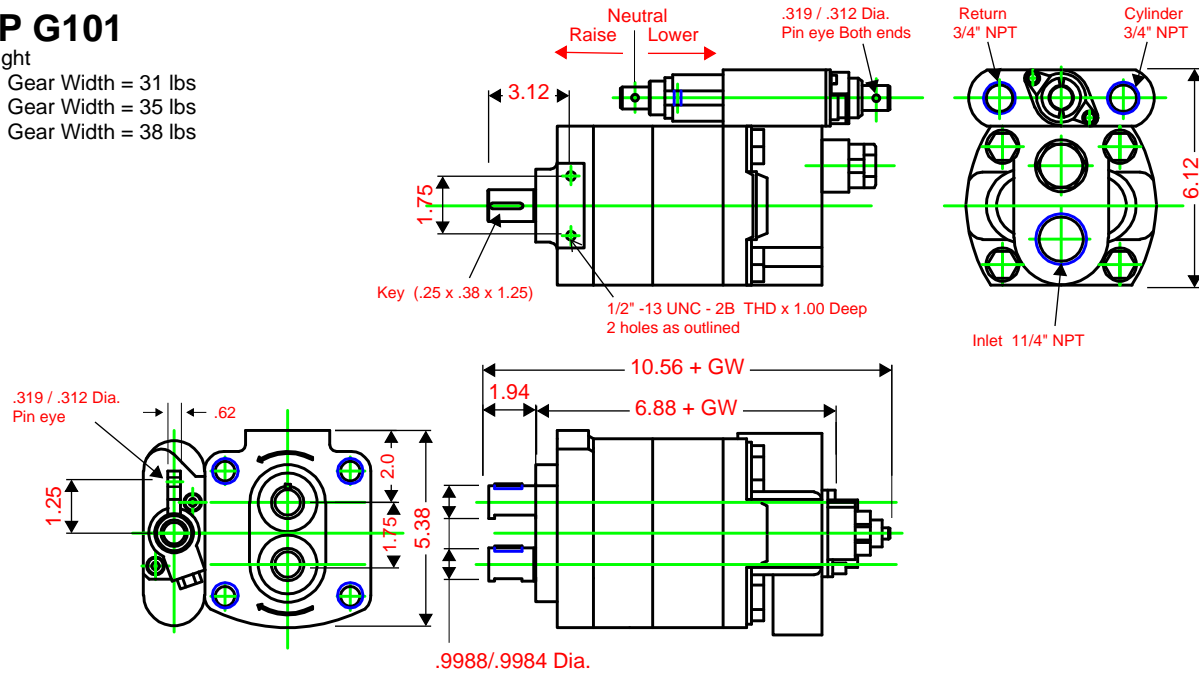
IFP G101 / G102 SERIES

DIMENSIONS



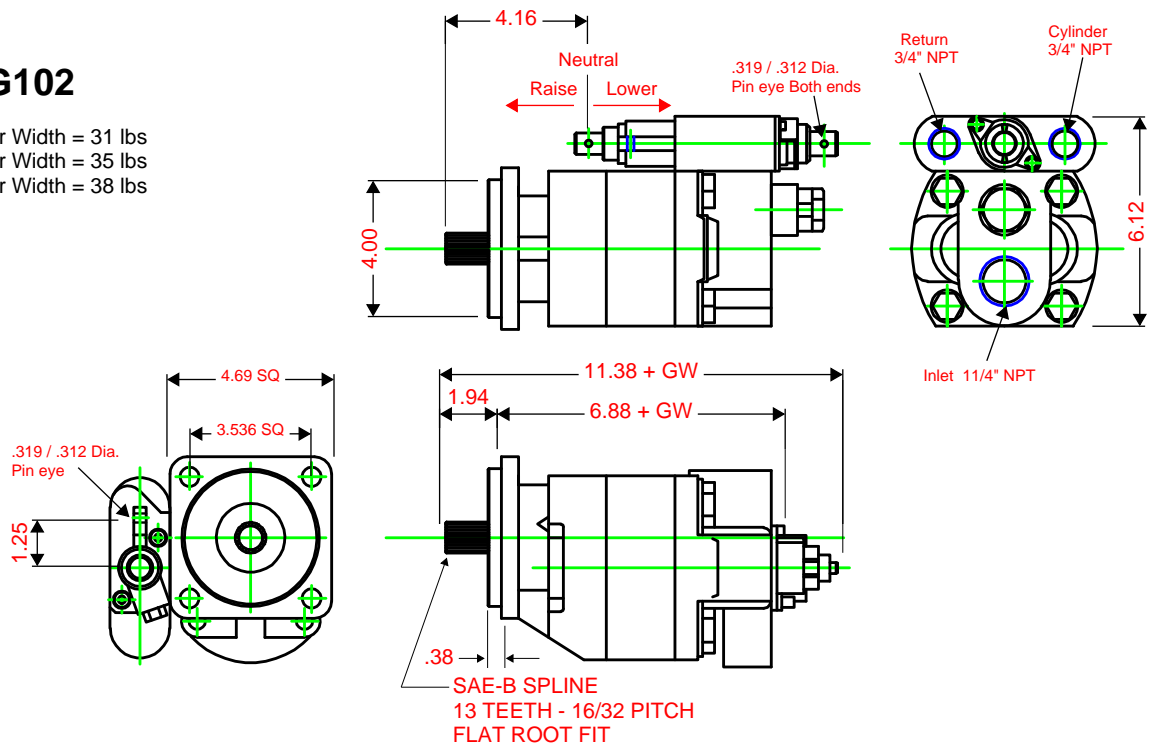
IFP G101

Weight
 1.0" Gear Width = 31 lbs
 1.5" Gear Width = 35 lbs
 2.0" Gear Width = 38 lbs



IFP G102

Weight
 1.0" Gear Width = 31 lbs
 1.5" Gear Width = 35 lbs
 2.0" Gear Width = 38 lbs



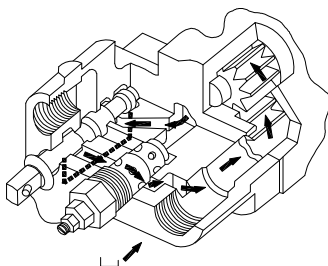
Dimensions - inch

IFP G101 / G102 SERIES INSTALLATION INSTRUCTIONS



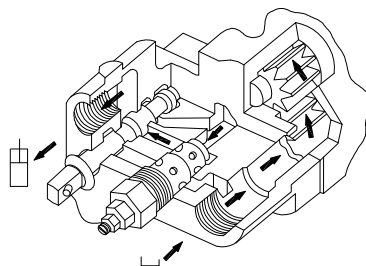
2-line installation

One line to cylinder, one line to the reservoir. For intermittent operation only.



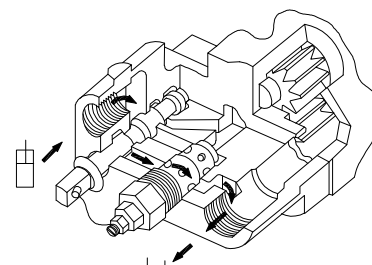
Spool in Neutral Position:

Oil recirculates internally.



Spool in Raise Position:

Oil is routed through work port to raise the cylinder.

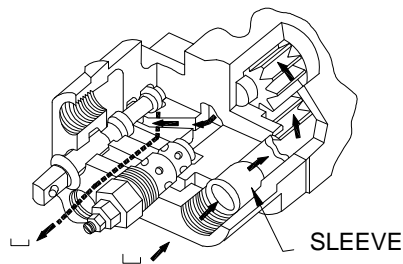


Spool in Lower Position:

Oil flows from the cylinder through the relief valve to return to tank.

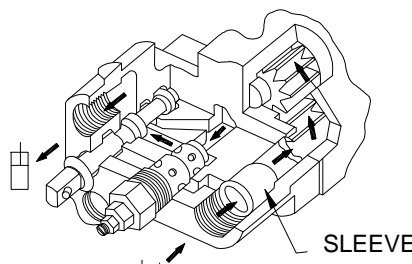
3-line installation

One line to cylinder, two lines to the reservoir. For continuous or intermittent operation.



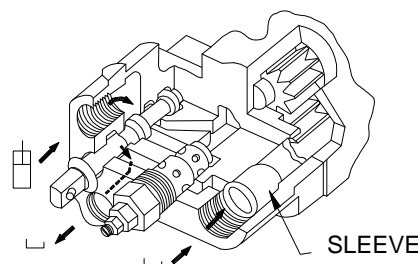
Spool in Neutral Position:

Oil circulates through the pump and returns to tank



Spool in Raise Position:

Oil is routed through work port to raise the cylinder.

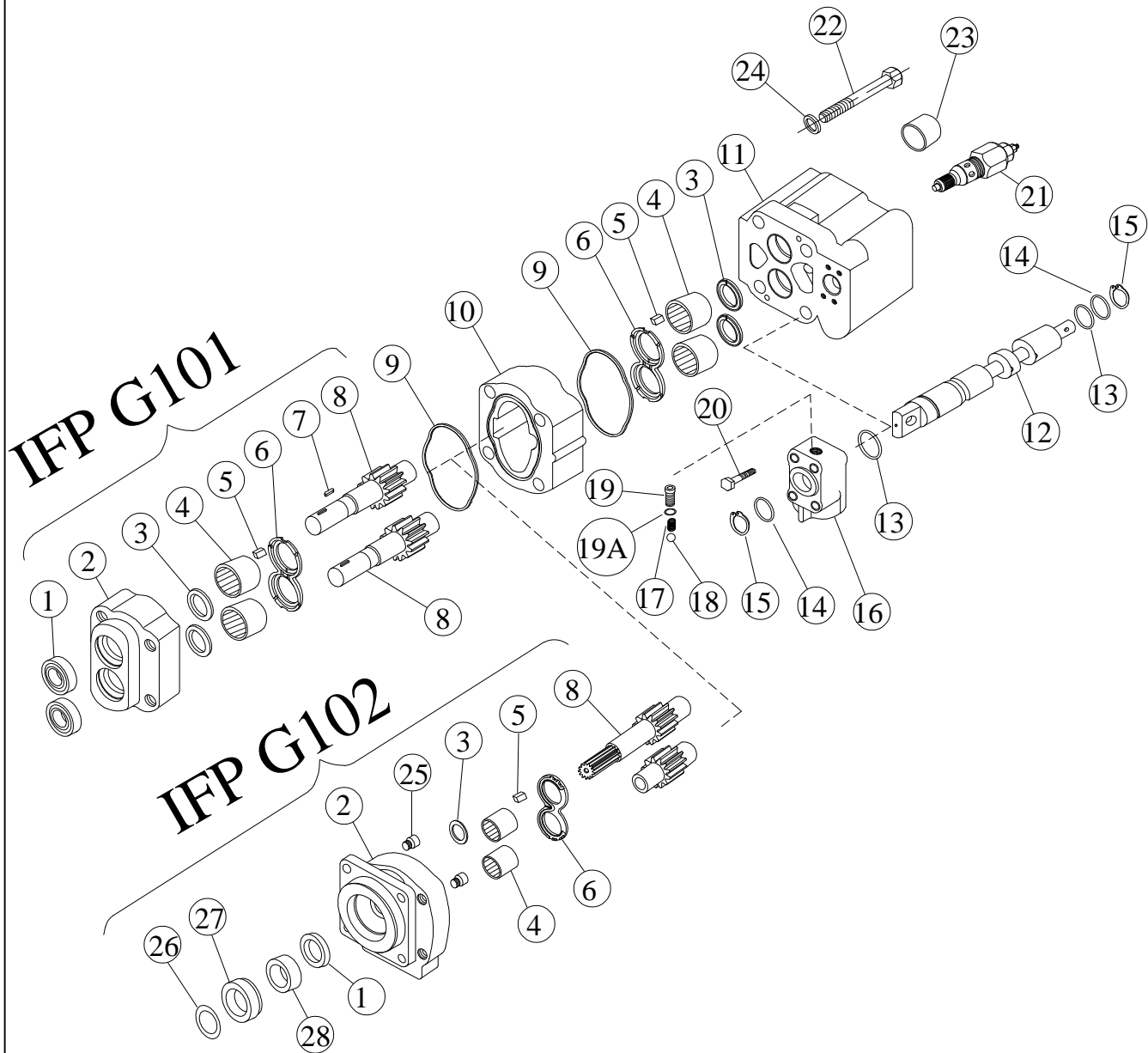


Spool in Lower Position:

Oil flows from the cylinder through the bottom port and returns to tank.

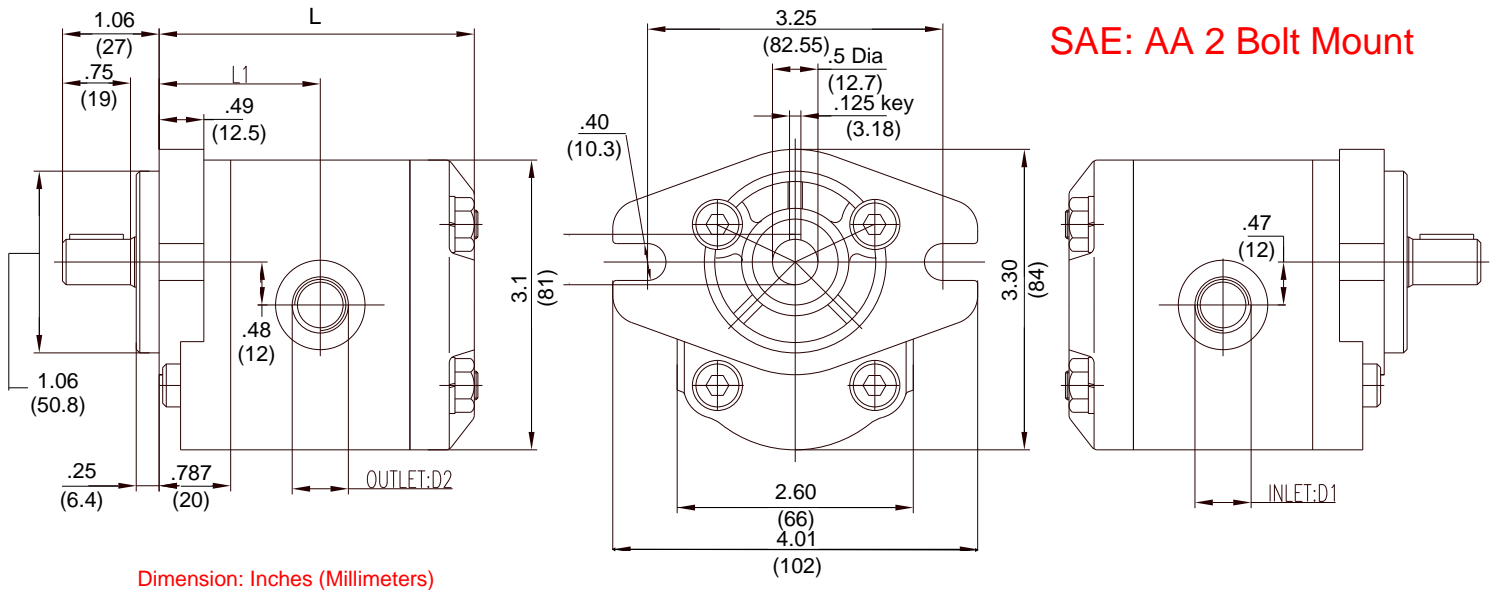
Note: Three line installation is recommended whenever possible by installing the sleeve supplied in the inlet port and connecting the optional return line to tank. This configuration maintains a lower operating temperature and a return line filter can be installed to filter return flow. Two line installations are for intermittent operation only.

IFP G101 / G102 SERIES PARTS BREAKDOWN



| ITEM | DESCRIPTION | ITEM | DESCRIPTION | ITEM | DESCRIPTION |
|------|------------------|------|-----------------|------|-----------------------|
| 1 | SHAFT SEAL | 11 | VAVLE HOUSING | 20 | CAP SCREWS |
| 2 | SHAFT END COVER | 12 | VALVE SPOOL | 21 | RELIEF VALVE ASSEMBLY |
| 3 | SHAFT RING SEALS | 13 | "O" RINGS | 22 | CAP CREWS |
| 4 | ROLLER BEARINGS | 14 | RETAINER RINGS | 23 | SLEEVE(OPTIONAL) |
| 5 | POCKET SEALS | 15 | SNAP RINGS | 24 | WASHERS |
| 6 | THRUST PLATES | 16 | VALVE CAP | 25 | CHECK ASSEMBLY |
| 7 | KEY | 17 | POPPET SPRING | 26 | SNAP RING |
| 8 | DRIVE HAFT&GEAR | 18 | STEEL BALL | 27 | SPACER |
| 9 | GASKET SEALS | 19 | DETENT RETAINER | 28 | RETAINER |
| 10 | GEAR HOUSING | 19A | LOCAL WASHER | | |

IFP AAP SERIES ALUMINUM GEAR PUMPS



| MODEL CODE | Displacement in ³ /rev (cm ³ /rev) | Pressure PSI (Mpa) | | Speed (RPM) | | | L inch(mm) | L1 inch (mm) | Inlet (D1) | Outlet (D2) |
|------------|-------------------------------------------------------------|-----------------------|-----------|-------------|------|------|---------------|-----------------|---------------|----------------|
| | | Rated | Max. | Rated | Max. | Min. | | | | |
| AAP-1-SR1F | (1) .06 (1.1) | 2900 (20) | 3625 (25) | 2000 | 4500 | 500 | 3.22 (82) | 1.65 (42) | SAE8 | SAE6 |
| AAP-2-SR1F | (2) .12 (2.0) | 2900 (20) | 3625 (25) | 2000 | 4500 | 500 | 3.30 (84) | 1.69 (43) | SAE8 | SAE6 |
| AAP-3-SR1F | (3) .21 (3.4) | 2900 (20) | 3625 (25) | 2000 | 4500 | 500 | 3.38 (86) | 1.73 (44) | SAE8 | SAE6 |
| AAP-4-SR1F | (4) .25 (4.1) | 2900 (20) | 3625 (25) | 2000 | 4500 | 500 | 3.46 (88) | 1.75 (45) | SAE8 | SAE6 |
| AAP-5-SR1F | (5) .31 (5.1) | 2900 (20) | 3625 (25) | 2000 | 4500 | 500 | 3.54 (90) | 1.81 (46) | SAE8 | SAE6 |
| AAP-6-SR1F | (6) .37 (6.1) | 2900 (20) | 3625 (25) | 2000 | 4500 | 500 | 3.66 (93) | 1.89 (48) | SAE8 | SAE6 |
| AAP-7-SR1F | (7) .43 (7.0) | 2900 (20) | 3625 (25) | 2000 | 4500 | 500 | 3.77 (96) | 1.92 (49) | SAE8 | SAE6 |
| AAP-8-SR1F | (8) .48 (7.8) | 2900 (20) | 3625 (25) | 2000 | 4500 | 500 | 4.01(102) | 2.00 (51) | SAE8 | SAE6 |

Model code

IFP AAP - 3 - S - R - 1 - F

AAP: Pump
AAM: Motor

Displacement
(See chart selection)

Mounting: SAE-AA 2 Bolt

Porting: F : SAE-8 (3/4-16UNF) x SAE-6 (9/16-18 UNF)

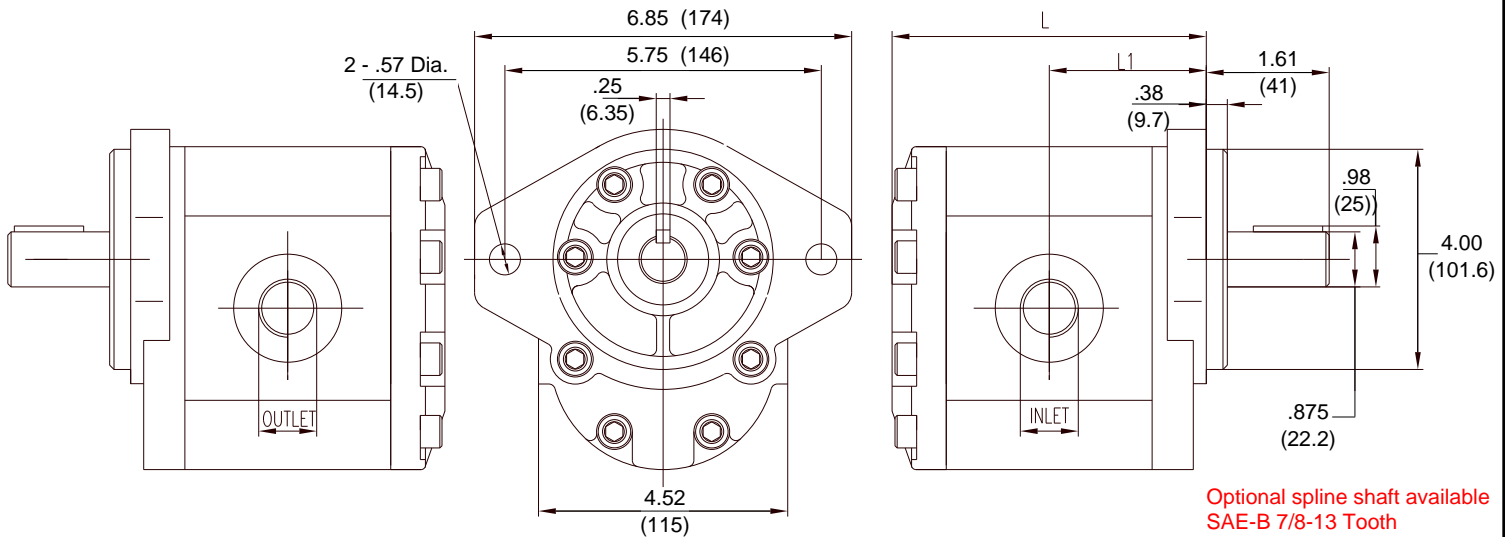
Shaft: Code 1 - 1/2" Dia. 1/8" Key

Rotation: R : C.W.
L : C.C.W.

IFP ABP SERIES ALUMINUM GEAR PUMPS



SAE-B 2 Bolt Mount



Dimension: Inches (millimeters)

| MODEL CODE | Displacement in ³ /rev (cm ³ /rev) | Pressure PSI (Mpa) | | Speed (RPM) | | | L inch(mm) | L1 inch (mm) | Inlet | Outlet |
|-------------|-------------------------------------------------------------|-----------------------|-----------|-------------|------|-----|---------------|-----------------|----------|----------|
| | | Rated | Max. | Rated | Max. | Min | | | | |
| ABP-22-SR1F | (22) 1.34 (22) | 2900 (20) | 3625 (25) | 2000 | 3000 | 400 | 5.15 (131) | 2.59 (66) | | |
| ABP-26-SR1F | (26) 1.58 (26) | 2900 (20) | 3625 (25) | 2000 | 3000 | 400 | 5.27 (134) | 2.63 (67) | | |
| ABP-34-SR1F | (34) 2.07 (34) | 2900 (20) | 3625 (25) | 2000 | 3000 | 400 | 5.47 (139) | 2.71 (69) | | |
| ABP-39-SR1F | (39) 2.38 (39) | 2900 (20) | 3625 (25) | 2000 | 3000 | 400 | 5.63 (143) | 2.79 (71) | SAE16 | SAE12 |
| ABP-43-SR1F | (43) 2.62 (43) | 2900 (20) | 3625 (25) | 2000 | 2800 | 400 | 5.78 (147) | 2.87 (73) | 15/16-12 | 11/16-12 |
| ABP-51-SR1F | (51) 3.11 (51) | 2900 (20) | 3625 (25) | 2000 | 2800 | 400 | 5.98 (152) | 2.99 (76) | | |
| ABP-61-SR1F | (60) 3.66 (60) | 2600 (18) | 3300 (23) | 1800 | 2800 | 400 | 6.22 (158) | 3.11 (79) | | |
| ABP-70-SR1F | (70) 4.27 (70) | 2500 (17) | 2900 (20) | 1800 | 2500 | 400 | 6.54 (166) | 3.22 (82) | | |
| ABP-78-SR1F | (78) 4.76 (78) | 2300 (16) | 2900 (20) | 1800 | 2300 | 400 | 6.73 (171) | 3.35 (85) | | |
| ABP-89-SR1F | (89) 5.43 (89) | 2000 (14) | 2600 (18) | 1800 | 2000 | 400 | 6.93 (176) | 3.46 (88) | | |

Model code

IFP ABP -22 - S - R - 1 - F

AAP: Pump
AAM: Motor

Displacement
(See chart selection)

Mounting: SAE-B 2 Bolt

Porting: F : SAE-16 (15/16-12UNF) x SAE-12 (1116-12 UNF)

Shaft: Code 1 - Keyed 7/8" Dia. 1/4" Key
Code 2 - Slined 7/8-13 Tooth

Rotation: R : C.W.
L : C.C.W.

NBC TWO STAGE HYDRAULIC PUMPS OPERATING SPECIFICATIONS



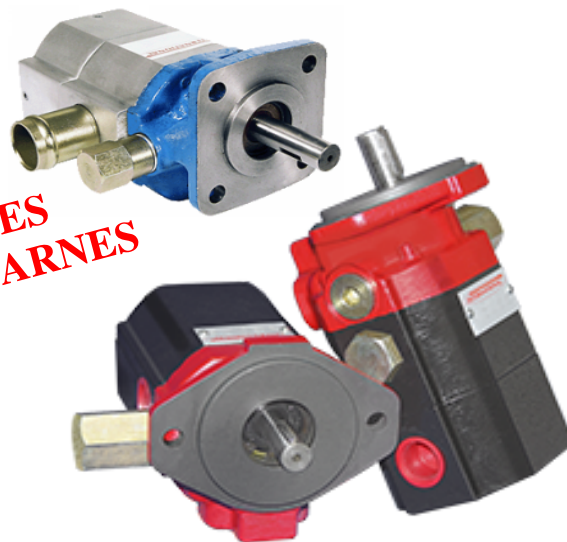
FEATURES:

- COMPACT / LIGHT WEIGHT 5.5 lbs / 2.6 kgs
- HEAVY DUTY ALUMINUM CONSTRUCTION
- CAST IRON FRONT COVER
- INTEGRATED: UNLOADING & CHECK VALVE
- WIDE SPEED RANGE: 400 - 3600 RPM
- HIGH WORKING PRESSURE: 3000 PSI
- INCREASE CYCLE TIME / LESS HORSE POWER

APPLICATIONS

- LOG SPLITTERS
- COMPACTORS
- HYDRAULIC PRESSES
- ANY APPLICATION REQUIRING
HIGH FLOW @ LOW PRESSURE
LOW FLOW @ HIGH PRESSURE

**REPLACES
HALDEX / BARNES**



NBC LOW FLOW MODELS (NBC-8 to NBC-16)

| MODEL CODE | NOMINAL FLOW (GPM) 3600 RPM | MAXIMUM SPEED | LOW PRESSURE GEAR DISPL. | HIGH PRESSURE GEAR DISPL. | MAXIMUM PRESSURE |
|------------|--------------------------------|---------------|--------------------------|---------------------------|------------------|
| NBC-8 | 8 GPM | 3600 RPM | .385 in3/rev | .13 in3/rev | 3000 PSI |
| NBC-8.5 | 8.5 GPM | 3600 RPM | .385 in3/rev | .183 in3/rev | 3000 PSI |
| NBC-9 | 9 GPM | 3600 RPM | .385 in3/rev | .22 in3/rev | 3000 PSI |
| NBC-10 | 10 GPM | 3600 RPM | .537 in3/rev | .13 in3/rev | 3000 PSI |
| NBC-10.5 | 10.5 GPM | 3600 RPM | .537 in3/rev | .183 in3/rev | 3000 PSI |
| NBC-11 | 11 GPM | 3600 RPM | .537 in3/rev | .22 in3/rev | 3000 PSI |
| NBC-11.5 | 11.5 GPM | 3600 RPM | .537 in3/rev | .256 in3/rev | 3000 PSI |
| NBC-12 | 12 GPM | 3600 RPM | .665 in3/rev | .13 in3/rev | 3000 PSI |
| NBC-12.5 | 12.5 GPM | 3600 RPM | .665 in3/rev | .183 in3/rev | 3000 PSI |
| NBC-13 | 13 GPM | 3600 RPM | .665 in3/rev | .22 in3/rev | 3000 PSI |
| NBC-13.5 | 13.5 GPM | 3600 RPM | .665 in3/rev | .256 in3/rev | 3000 PSI |
| NBC-16 | 16 GPM | 3600 RPM | .793 in3/rev | .265 in3/rev | 3000 PSI |

**** NOW AVAILABLE 22 / 28 SIZES ****



Indicates standard stocked displacements

NBC HIGH FLOW MODELS (NBC-22 & NBC-28)

| MODEL CODE | NOMINAL FLOW (GPM) 3600 RPM | MAXIMUM SPEED | LOW PRESSURE GEAR DISPL. | HIGH PRESSURE GEAR DISPL. | MAXIMUM PRESSURE |
|------------|--------------------------------|---------------|--------------------------|---------------------------|------------------|
| NBC-22 | 22 GPM | 3600 RPM | .93 in3/rev | .465 in3/rev | 3000 PSI |
| NBC-28 | 28 GPM | 3600 RPM | 1.395 in3/rev | .465 in3/rev | 3000 PSI |

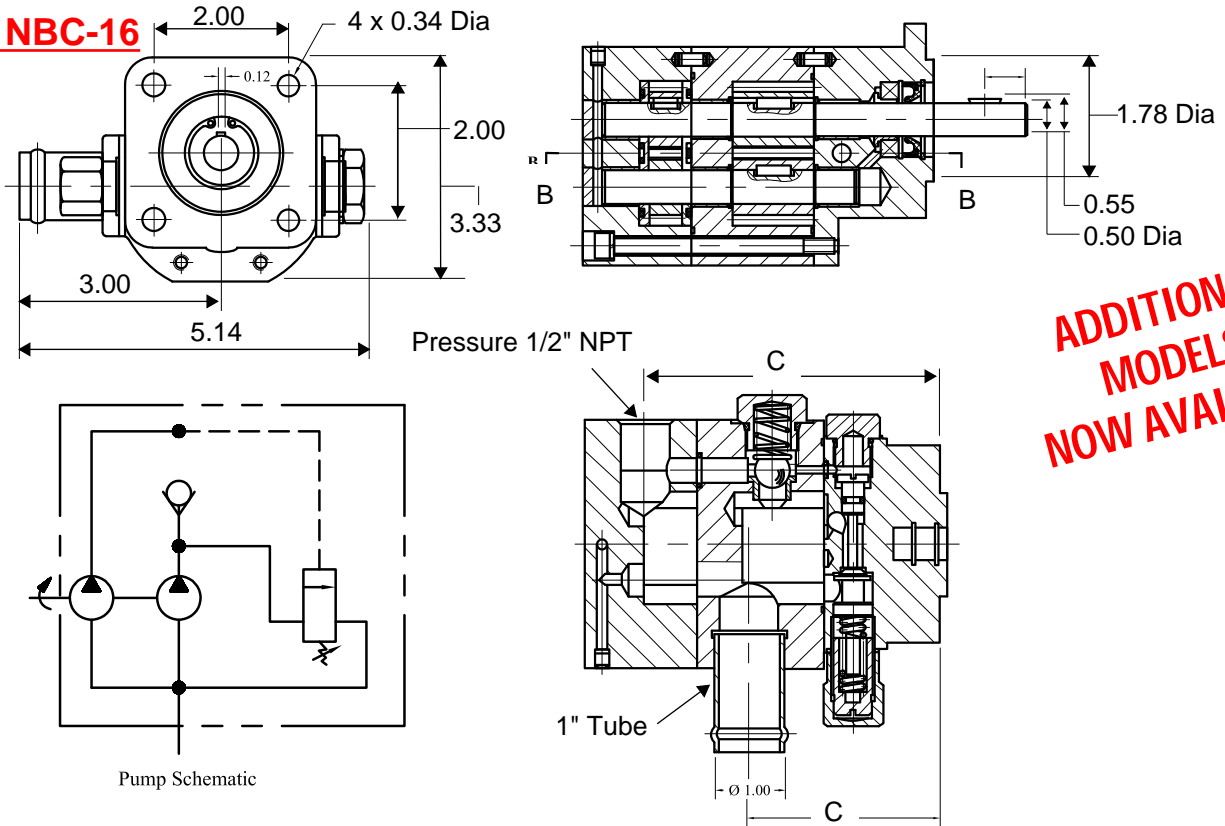
** Unloading relief adjustment range 400 - 900 PSI (Factory set 650 psi)

* Flows shown are at 3600 RPM

NBC TWO STAGE HYDRAULIC PUMPS DIMENSIONAL DATA



NBC-8 to NBC-16

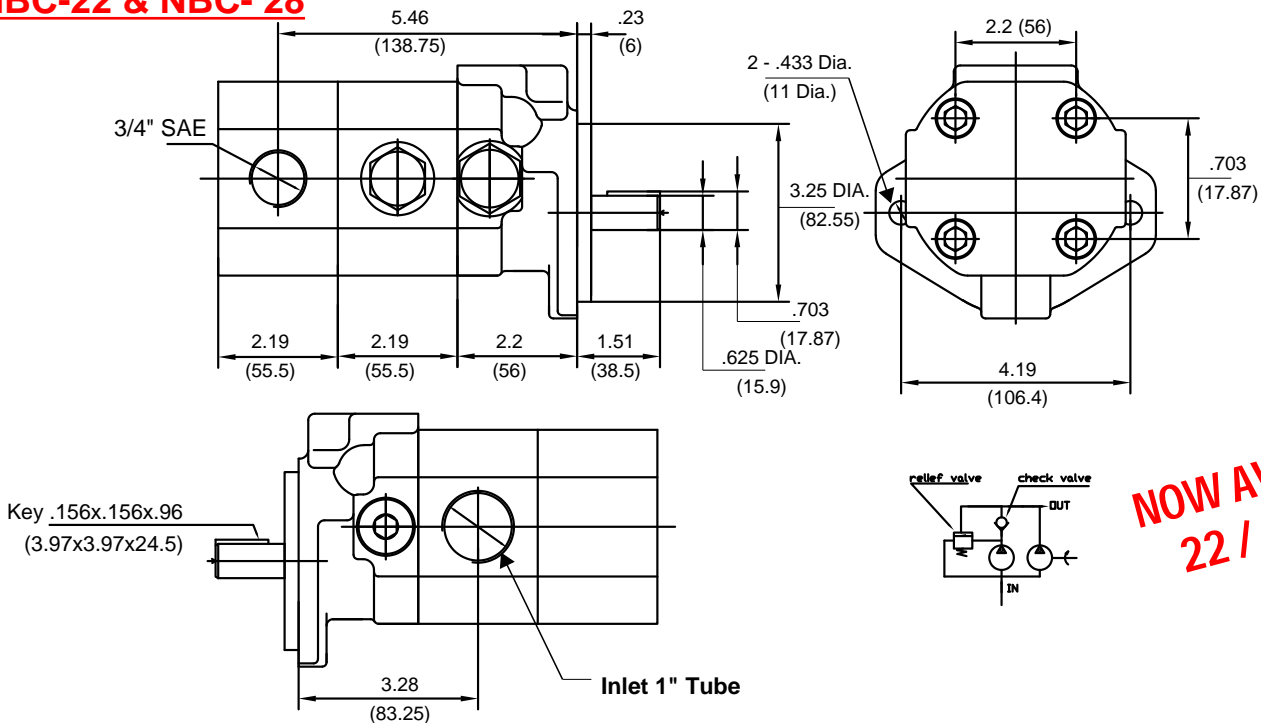


**ADDITIONAL
MODELS
NOW AVAILABLE**

| MODEL | DIMENSIONS | | | MODEL | DIMENSIONS | | | MODEL | DIMENSIONS | | |
|----------|------------|------|------|-----------|------------|------|------|-----------|------------|------|------|
| | A | B | C | | A | B | C | | A | B | C |
| NBC- 8 | 6.07 | 3.74 | 2.41 | NBC- 10.5 | 6.54 | 4.08 | 2.74 | NBC- 12.5 | 6.90 | 4.53 | 3.04 |
| NBC- 8.5 | 6.21 | 3.90 | 2.41 | NBC- 11 | 6.61 | 4.24 | 2.74 | NBC- 13 | 7.00 | 4.53 | 3.04 |
| NBC- 9 | 6.28 | 3.90 | 2.74 | NBC-11.5 | 6.70 | 4.24 | 2.74 | NBC- 13.5 | 7.09 | 4.53 | 3.04 |
| NBC- 10 | 6.41 | 4.08 | 2.74 | NBC- 12 | 6.70 | 4.37 | 3.04 | NBC- 16 | 6.70 | 4.37 | 3.04 |

**REPLACES
HALDEX
BARNES**

NBC-22 & NBC-28



**NOW AVAILABLE
22 / 28 GPM**

NBC TWO STAGE HYDRAULIC PUMPS

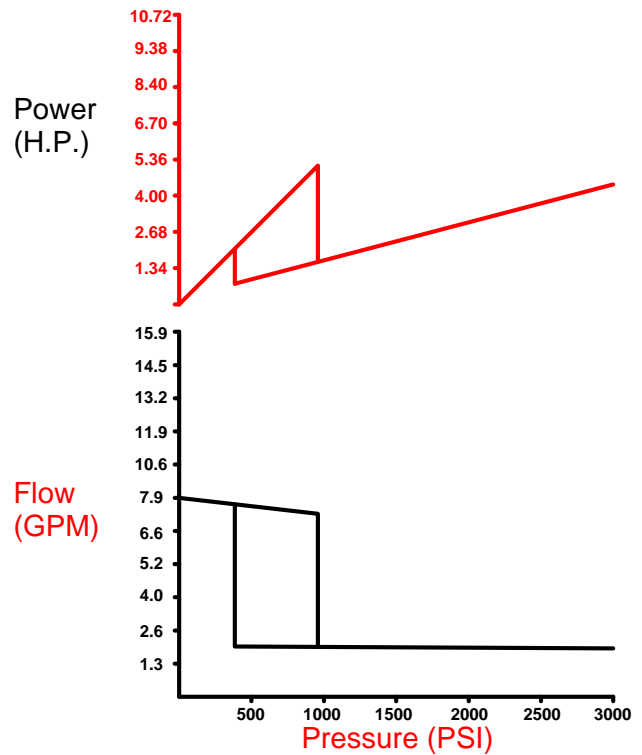


Performance Curves

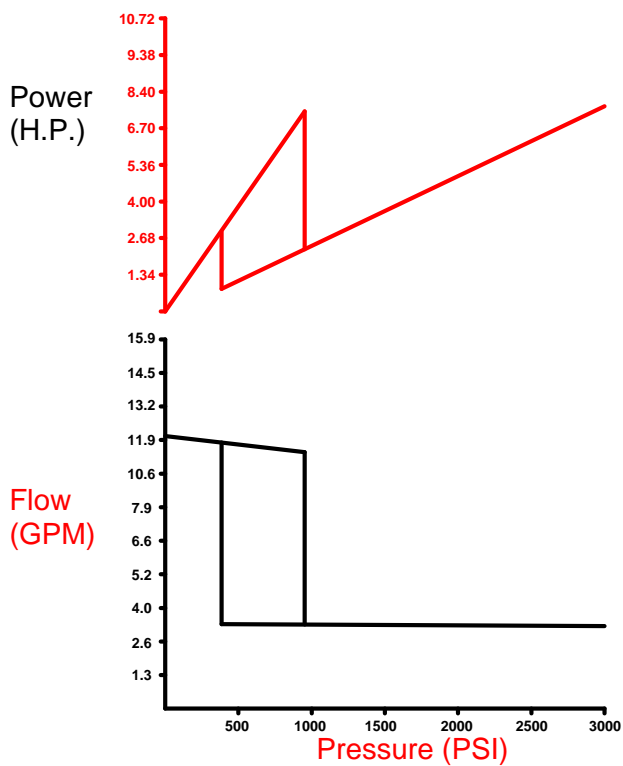
** Speed: 3600 RPM

** Oil: N46

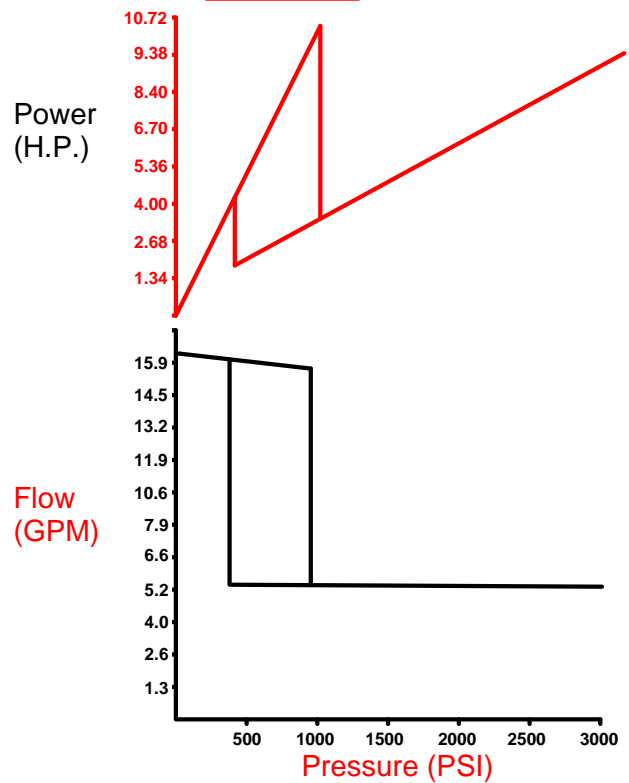
NBC-8



NBC-11



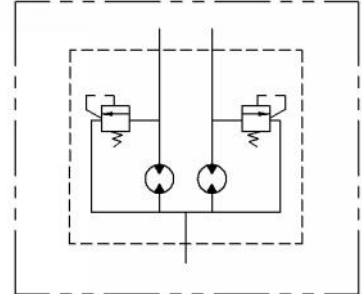
NBC-16



International fpa introduces A. F. D. Flow divider

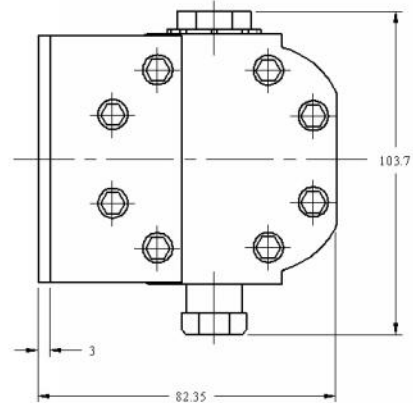
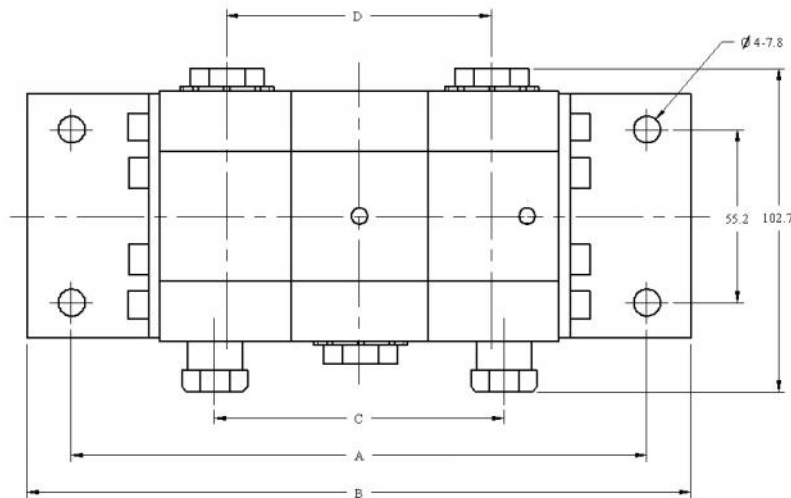


Rotary flow dividers
fixed displacement
Two Sections
Adjustable port reliefs
each section



| Order Code AFD- | Displacement Each / Section | | SAE Ports | | Minimum Flow/ Section | | Maximum Flow/ Section | | Cont. Diff. Pressure Between Inlet/Outlet | | Maximum Outlet Pressure Any Section | | Dimensions inches (millimeters) | | | |
|-----------------|-----------------------------|------------------|-----------|---------|-----------------------|------|-----------------------|------|-------------------------------------------|-----|-------------------------------------|------------|---------------------------------|------------|------------|------------|
| | In. ³ | Cm. ³ | Inlet | Outlet | GPM | L/M | GPM | L/M | PSI | BAR | PSI | BAR | A | B | C | D |
| 06 | .97 | 1.60 | 9/16-18 | 9/16-18 | 0.8 | 3.0 | 1.7 | 6.4 | 1800 | 124 | 3500 | 241 | 5.0(127.7) | 6.0(153.5) | 2.6(65.5) | 2.2(57.7) |
| 08 | .129 | 2.13 | 3/4-16 | 3/4-16 | 1.2 | 4.5 | 2.5 | 9.5 | | | | | 5.2(131.9) | 6.2(157.7) | 2.7(69.7) | 2.4(59.8) |
| 12 | .194 | 3.18 | 7/8-16 | 9/16-18 | 1.7 | 6.4 | 4.5 | 13.2 | | | | | 5.4(138.2) | 6.5(164.3) | 3.0(76.0) | 2.5(63.0) |
| 16 | .258 | 4.24 | 7/8-14 | 7/8-14 | 2.5 | 9.5 | 5.0 | 18.9 | | | | | 6.6(166.7) | 7.6(192.0) | 3.3(84.1) | 3.0(77.8) |
| 20 | .323 | 5.29 | 7/8-14 | 7/8-14 | 3.0 | 11.4 | 6.0 | 22.7 | | | | | 5.9(150.9) | 7.0(176.7) | 3.5(88.7) | 2.7(69.4) |
| 24 | .388 | 6.36 | 7/8-14 | 7/8-14 | 3.5 | 13.2 | 7.0 | 26.5 | | | | | 1600 | 110 | 6.2(157.3) | 7.2(183.1) |
| 28 | .453 | 7.42 | 7/8-14 | 7/8-14 | 4.0 | 15.1 | 8.0 | 30.3 | 1300 | 90 | 6.4(163.6) | 7.4(189.4) | 4.0(101.4) | 3.0(75.72) | | |
| 32 | .517 | 8.42 | 7/8-14 | 7/8-14 | 4.5 | 17.0 | 9.0 | 34.1 | 1200 | 83 | 6.5(166.0) | 7.6(191.8) | 4.0(103.8) | 3.0(76.9) | | |

NOW IN STOCK



MODEL CODE

IFP AFD - 16 / 16

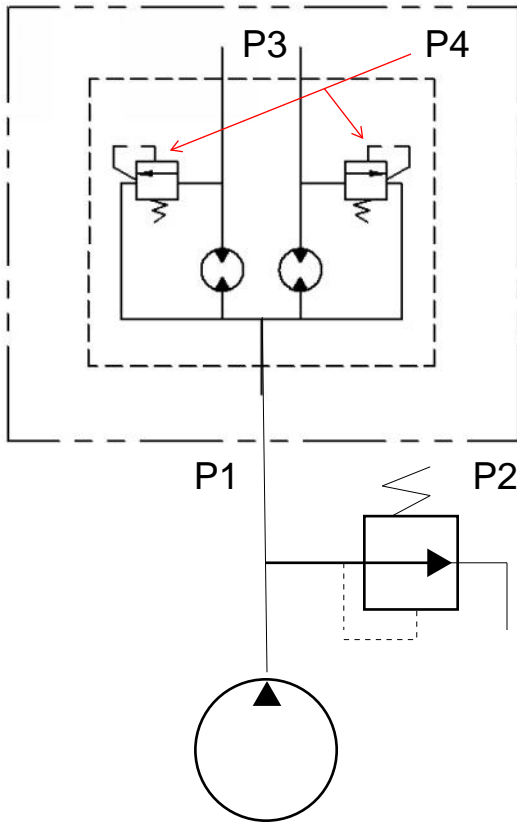
IFP ALUMINUM DISPLACEMENT
PRODUCTION FLOW DIVIDER PER / SECTION

E7.1

IFP AFD Flow divider Operating specifications



January 18-2010



P1 = Pressure at the inlet of the Flow divider

P2 = Pressure adjustment of the main relief

P3 = The outlet pressure of the flow divider

P4 = Differential relief pressure adjustment (450 PSI)

IFP AFD rotary gear flow dividers offer the most efficient system to divide flow into two equal circuits, As opposed to spool type flow dividers that generate heat in a hydraulic system IFP AFD flow dividers work at a 98% efficiency with almost no pressure differential between P1 inlet pressure & P2 flow divider outlet pressure

IFP AFD flow dividers offer integral differential reliefs at the outlet ports of the AFD flow divider. The differential reliefs are used to synchronize cylinders and protect the flow divider from excessive differential pressure. The synchronization is accomplished if one of the cylinders completes its stroke before the other cylinder P3 pressure will increase causing a pressure differential between P1 & P3 when pressure differential reaches the adjustment value of the relief valve (P4 = Adjustment 450 PSI) fluid is bled off over the flow divider's internal relief valves to feed the inlet of the flow divider feeding the cylinder that is late.

The differential relief valves also protect the circuit from pressure intensification not allowing the pressure in P3 outlets to rise higher than the main relief adjustment + the pressure adjustment of the differential reliefs P4

(Maximum pressure P3 = P2 Relief pressure + P4 port relief adjustment 450 PSI)