

HPVR-15 AXIAL PISTON PUMPS



The HPVR series of inline axial piston variable displacement pumps, are available in five displacements and three compact frame sizes.

These pumps feature medium-high working pressure capabilities that will meet most applications.

The output flow and pressure is controlled by a variety of control options, and can easily work in conjunction with external control components making them the perfect choice for almost any application.

The HPVR series pumps are available in both SAE and ISO mounting 2 bolt patterns. Porting is available in rear and side locations as well as thru-drive configurations.

| TYPICAL PERFORMANCE SPECIFICATIONS | | | |
|--|---------------|------------------------|-------------------|
| VOLUMETRIC DISPLACEMENT | | cu. In./rev. | 2.09 |
| | | ml/rev. | 34.2 |
| PUMP DELIVERY @ 1750 RPM | Theoretical | GPM | 16.6 |
| | | LPM | 62.8 |
| OPERATING PRESSURES | Intermittent* | PSI | 4500 |
| | | BAR | 310 |
| | Continuous | PSI | 4000 |
| | | BAR | 276 |
| Minimum** | PSI | 200 | |
| | BAR | 14 | |
| OPERATING SPEEDS | | Maximum RPM | 3000 |
| | | Rated RPM | 1750 |
| | | Minimum RPM | 500 |
| INPUT POWER @ 1750 RPM (Rated Flow and Pressure) | | HP | 42 |
| | | Kw | 31.3 |
| CASE DRAIN FLOW @ Deadhead & Rated Pressure | | GPM | 0.95 |
| | | LPM | 3.6 |
| MOUNTING FLANGE | | SAE Type | B 2 Bolt |
| DRIVE SHAFT | | Keyed Shaft SAE J744 B | 0.75 |
| | | Spline Shaft SAE B | .8125 13 TOOTH |
| SHIPPING WEIGHTS | REAR PORTS | lbs | 51 |
| | | kg | 23.2 |
| | SIDE PORTS | lbs | 63 |
| | | kg | 28.6 |
| SIDE PORTS | lbs | 69 | |
| | TANDEM | kg | 31.3 |

* This pressure should not exceed 10% of the duty cycle and not exceed 6 consecutive seconds.

** Pumps operating at less than 150 PSI (10 Bar) may overheat and shorten pump life.

CASE AND INLET PORT SPECIFICATIONS

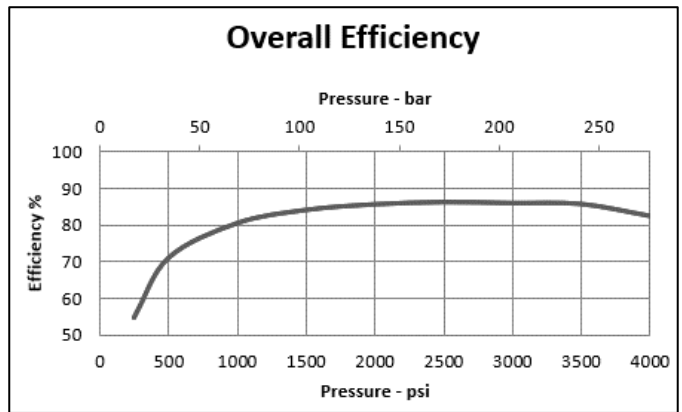
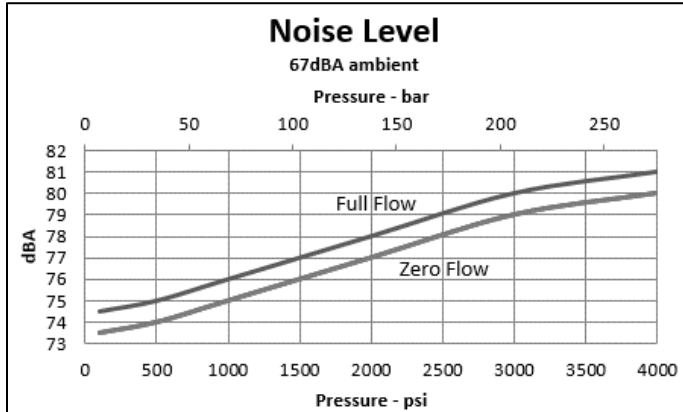
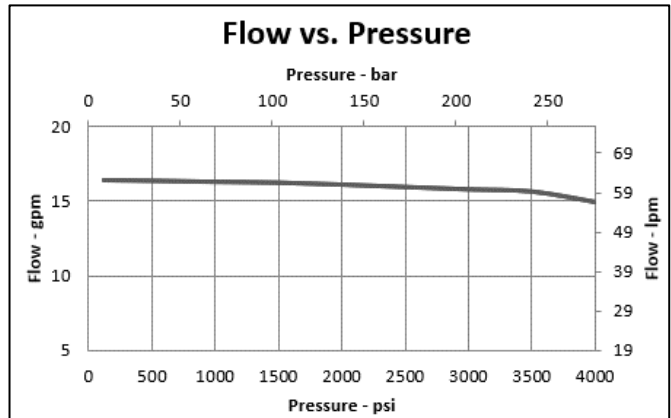
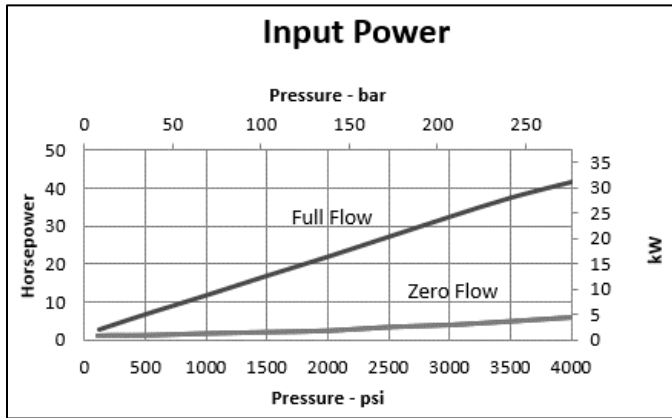
| SPEED rpm | Minimum Inlet Pressure | | | | | Maximum Case Pressure | | |
|--------------|------------------------|-------|--------|-------------------|-------|-----------------------|-----|------|
| | Pressure Gauge | | | Absolute Pressure | | psi | | bar |
| | psi | bar | in.-Hg | mm-Hg | psi | bar | psi | bar |
| 1800 | -3 | -0.21 | -6.12 | -155.46 | 11.7 | 0.81 | 10 | 0.69 |
| 2100 | -3 | -0.21 | -6.12 | -155.46 | 11.7 | 0.81 | 7 | 0.48 |
| 2230 | -3 | -0.21 | -6.12 | -155.46 | 11.7 | 0.81 | 5 | 0.34 |
| 2275 | -2.53 | -0.17 | -5.16 | -130.95 | 12.17 | 0.84 | 5 | 0.34 |
| 2350 | -1.71 | -0.12 | -3.49 | -88.67 | 12.99 | 0.9 | 5 | 0.34 |
| 2500 | 0.00 | 0.00 | 0.00 | 0.00 | 14.7 | 1.01 | 5 | 0.34 |

PRESSURE AND VOLUME ADJUSTMENT SENSITIVITY

| | | | |
|---------------------|------------------------|------------|----------|
| Pressure Adjustment | Pressure Change / Turn | 650 PSI | 44.8 Bar |
| Volume Adjustment | Flow Change / Turn | 1.8 GPM | 6.8 LPM |
| | Maximum Torque | 41 in.-lbs | 4.6 Nm |



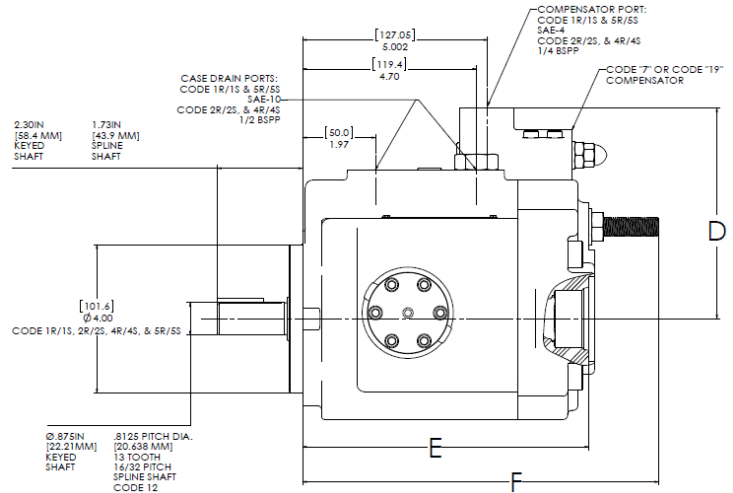
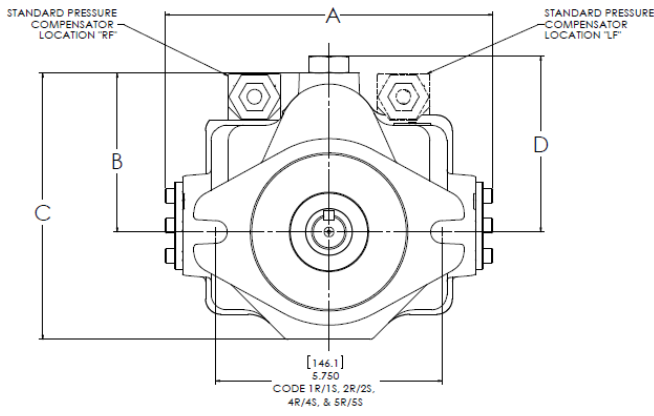
HPVR-15 AXIAL PISTON PUMPS



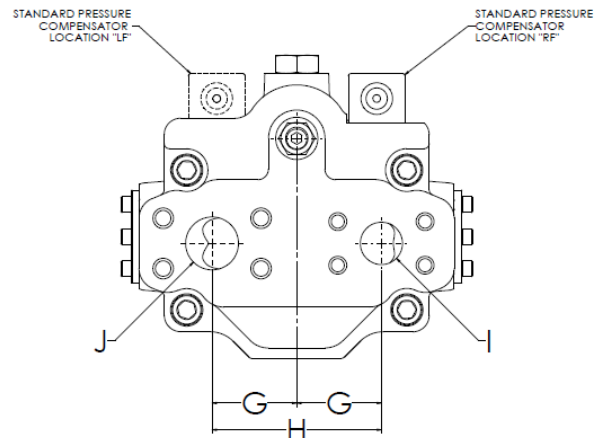
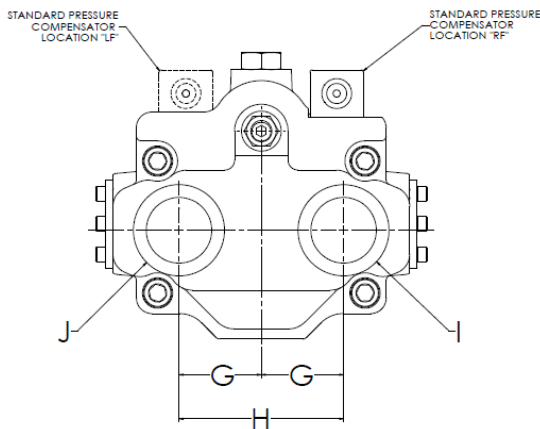
Data taken at 1750 RPM

HPVR-15 AXIAL PISTON PUMPS

Rear Port Dimension Data



| Dimensional Reference Data | Inch (mm) |
|---|--------------|
| A | 8.31 (211.1) |
| B | 4.02 (102.1) |
| C | 6.74 (171.2) |
| D (STD Pressure Compensator) | 4.45 (113) |
| D (Code 7 Remote & Code 19 Load Sense) | 5.73 (145.5) |
| E | 7.73 (196.3) |
| F | 9.62 (244.3) |



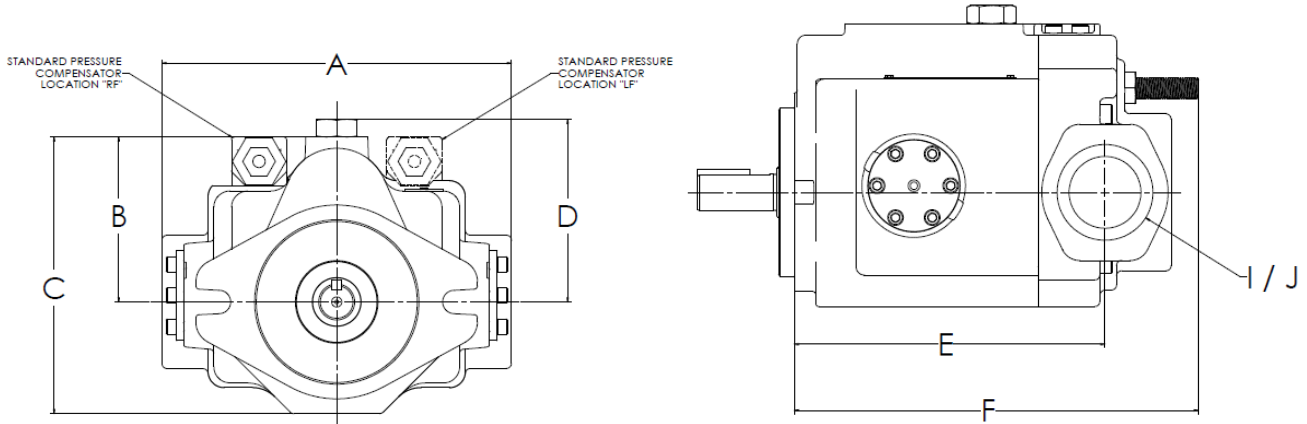
| Dimensional Reference Data | Inch (mm) |
|--|---------------|
| G | 2.06 (52.4) |
| H | 4.125 (104.8) |
| I / J Code 1R - Rear SAE Porting | SAE-20 |
| I / J Code 2R- Rear BSPP Porting | 1-1/4 BSPP |
| I Code 4R - Rear 4 Bolt Flange (Metric Threads) | 1 in. |
| I Code 5R - Rear 4 Bolt Flange (UNC Threads) | 1 in. |
| J Code 4R - Rear 4 Bolt Flange (Metric Threads) | 1-1/4 in. |
| J Code 5R - Rear 4 Bolt Flange (UNC Threads) | 1-1/4 in. |

Note: All Rear Port Flange Code 61.



HPVR-15 AXIAL PISTON PUMPS

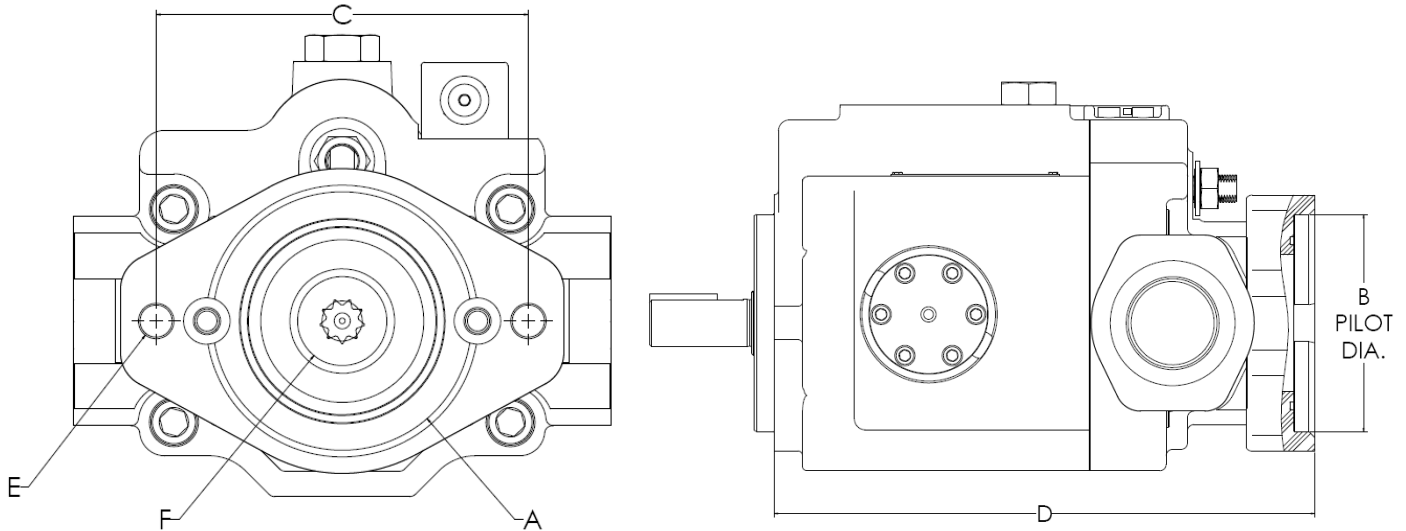
Side Port Dimension Data



| Dimensional Reference Data | Inch (mm) |
|--|---------------|
| A | 8.31 (211) |
| B | 4.02 (102.1) |
| C | 6.74 (171.2) |
| D (STD Pressure Compensator) | 4.43 (112.5) |
| D (Code 7 Remote & Code 19 Load Sense) | 5.69 (144.5) |
| E | 7.35 (186.7) |
| F | 9.627 (244.5) |
| I / J Code 1S - Rear SAE Porting | SAE-20 |
| I / J Code 2S - Rear BSPP Porting | 1 1/4 BSPP |
| I Code 4S - Rear 4 Bolt Flange (Metric Threads) | 1 in. |
| I Code 5S - Rear 4 Bolt Flange (UNC Threads) | 1 in. |
| J Code 4S - Rear 4 Bolt Flange (Metric Threads) | 1 1/4 BSPP |
| J Code 5S - Rear 4 Bolt Flange (UNC Threads) | 1 1/4 BSPP |

Note: Suction Flange code 61 and Pressure Flange code 62.

HPVR-15 AXIAL PISTON PUMPS



| CODE | MOUNTING PAD | DIMENSIONS Inches (mm) | | | | Thread | 30° Involute Internal Spline | Maximum H.P. Rating* (at 1750 RPM) | Maximum Torque Rating* (in-lbs) |
|------|--------------|---------------------------|-----------------|-----------------|---------------|--|---------------------------------|--|---------------------------------------|
| | | A | B | C | D | | | | |
| 21 | SAE "A" | 3.25 (82.6) | 4.18 (106.2) | 9.81 (249.1) | 3/8-16 UNC | 9 Tooth 16/32 Pitch 0.5625 Dia. | 8.5 | 306 | |
| 22 | SAE "B" | 4.00 (101.6) | 5.75 (146.1) | 9.97 (253.2) | 1/2-13 UNC | 13 Tooth 16/32 Pitch 0.8125 Dia. | 28.1 | 1012 | |
| 31 | SAE "A" | 3.25 (82.6) | 4.18 (106.2) | 9.81 (249.1) | 3/8-16 UNC | 13 Tooth 16/32 Pitch 0.8125 Dia. | 28.1 | 1012 | |
| 21D | SAE "A" | 3.25 (82.6) | 4.18 (106.2) | 9.81 (249.1) | M10 | 9 Tooth 16/32 Pitch 0.5625 Dia. | 8.5 | 306 | |
| 22D | SAE "B" | 4.00 (101.6) | 5.75 (146.1) | 9.97 (253.2) | M12 | 13 Tooth 16/32 Pitch 0.8125 Dia. | 28.1 | 1012 | |
| 31D | SAE "A" | 3.25 (82.6) | 4.18 (106.2) | 9.81 (249.1) | M10 | 13 Tooth 16/32 Pitch 0.8125 Dia. | 28.1 | 1012 | |

* This is the maximum horsepower or torque that can be transmitted through the shaft coupling to the rear pump



HPVR-15 AXIAL PISTON PUMPS

HPVR - - - - - -

SELECT ONE SELECT ONE SELECT ONE SELECT ONE SELECT ONE SELECT ONE SELECT ONE DESIGN LETTER

| SIZE | | | |
|-------|------------------|------------------|---------------------------|
| CODE | FLOW AT 1750 RPM | MAXIMUM PRESSURE | DISPLACEMENT |
| 15B40 | 15.8 GPM | 4000 PSI | in ³ /rev 2.09 |
| | | | cm ³ /rev 34.2 |

| ROTATION | |
|----------|-------------------|
| CODE | DESCRIPTION |
| RF | CW ROTATION (STD) |
| LF | CCW ROTATION |

| SEALS | |
|-------|--------------|
| CODE | DESCRIPTION |
| O | BUNA-N (STD) |
| P | VITON |

| PORT OPTIONS | |
|--------------|--|
| CODE | DESCRIPTION |
| 1R | SAE B 2 BOLT MOUNTING FLANGE (STD) SAE O-RING THREAD CASE DRAIN REAR SAE O-RING THREAD PORTS |
| 2R | SAE B 2 BOLT MOUNTING FLANGE BRITISH STD PIPE (BSPP) THREAD CASE DRAIN REAR BRITISH STD PIPE (BSPP) THREAD PORTS |
| 4R | SAE B 2 BOLT MOUNTING FLANGE BRITISH STD PIPE (BSPP) THREAD CASE DRAIN REAR SAE 4 BOLT FLANGE (METRIC THREADS) |
| 5R | SAE B 2 BOLT MOUNTING FLANGE SAE O-RING THREAD CASE DRAIN REAR SAE 4 BOLT FLANGE (UNC THREADS) |
| 1S | SAE B 2 BOLT MOUNTING FLANGE SAE O-RING THREAD CASE DRAIN SIDE SAE O-RING THREAD SIDE PORTS |
| 2S | SAE B 2 BOLT MOUNTING FLANGE BRITISH STD PIPE (BSPP) THREAD CASE DRAIN SIDE BRITISH STD PIPE (BSPP) THREAD PORTS |
| 4S | SAE B 2 BOLT MOUNTING FLANGE BRITISH STD PIPE (BSPP) THREAD CASE DRAIN SIDE SAE 4 BOLT FLANGE (METRIC THREADS) |
| 5S | SAE B 2 BOLT MOUNTING FLANGE SAE O-RING THREAD CASE DRAIN SIDE SAE 4 BOLT FLANGE (UNC THREADS) |

See Dimensional pages for Port Sizes and Code Type

| CONTROL OPTIONS | |
|-----------------|----------------------------|
| CODE | DESCRIPTION |
| OMIT | PRESSURE COMPENSATOR (STD) |
| 7 | REMOTE COMPENSATOR |
| 19 | LOAD SENSING COMPENSATOR |

| TANDEM | |
|--------|---|
| CODE | DESCRIPTION |
| OMIT | NO TANDEM OPTION (STD) |
| 21 | SAE "A" FLANGE PUMP MOUNT (UNC THREADS) SAE A SPLINE SHAFT COUPLING |
| 22 | SAE "B" FLANGE PUMP MOUNT (UNC THREADS) SAE B SPLINE SHAFT COUPLING |
| 31 | SAE "A" FLANGE PUMP MOUNT (UNC THREADS) SAE B SPLINE SHAFT COUPLING |
| 21D | SAE "A" FLANGE PUMP MOUNT (METRIC THREADS) SAE A SPLINE SHAFT COUPLING |
| 22D | SAE "B" FLANGE PUMP MOUNT (METRIC THREADS) SAE B SPLINE SHAFT COUPLING |
| 31D | SAE "A" FLANGE PUMP MOUNT (METRIC THREADS) SAE B SPLINE SHAFT COUPLING |

| SHAFT | |
|-------|--|
| CODE | DESCRIPTION |
| OMIT | STRAIGHT KEY (STD) SAE J744 C 1.25inch SHAFT |
| 12 | FRONT MALE SPLINE SAE C: 13 TOOTH 16/32 Pitch |