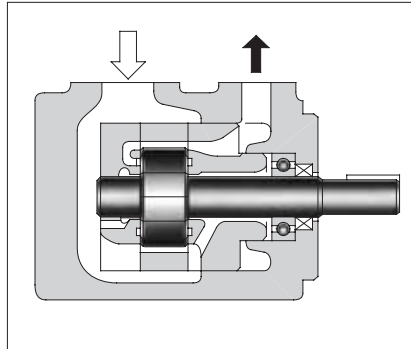


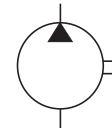
"PV2R" Series Single Vane Pumps

These pumps are of high pressure and high performance, which have been developed especially for low noise operation. To comply with a variety of applications including injection moulding machines, PV2R series single pumps provide the output flow of such a wide range as from 5.8 to 237 cm³/rev (.354 to 14.46 cu.in./rev).

The intergral driving parts of the pumps are combined into a kit form and available for supply as a cartridge kit. Therefore, the replacement of the driving parts can be done easily.



Graphic Symbol



B



"PV2R" Series
Single Vane Pumps

Model Number Designation

| F- | PV2R1 | -6 | -L | -R | A | A | -42 | -* |
|---|---------------|---|------------------------------|--|----------------------------------|----------------------------------|---------------|-------------------------|
| Special Seals | Series Number | Nominal Displacement cm ³ /rev | Type of Mounting | Shaft Rotation | Discharge Port Position | Suction Port Position | Design Number | Design Standards |
| F: For phosphate ester type fluids (Omit if not required) | PV2R1 | 6, 8, 10, 12, 14, 17, 19, 23, 25, 31 | L: Foot Mounting | R: Clockwise* ¹ (Normal) | A: Upwards (Normal) | A: Upwards (Normal) | 42 | Refer to ★ ² |
| | PV2R2 | 41, 47, 53, 59, 65 | | | | | 41 | |
| | PV2R3 | 76, 94, 116 | F: Flange Mounting | | | | 31 | |
| | PV2R4 | 136, 153, 184, 200, 237 | | | | | 30 | |

★1. Available to supply pump with anti-clockwise rotation. Consult Yuken for details.

★2. Design Standards: None.....Japanese Standard "JIS"
80.....European Design Standard
90.....N. American Design Standard

Pipe Flange Kits

Pipe flange kits are available. When ordering, specify the kit number from the table below.

| Pump Model Numbers | Name of Port | Pipe Flange Kit Numbers | | | | | | |
|--------------------|--------------|-------------------------|--------------------------|---|---|---|---|---|
| | | Threaded Connection | | | Socket Welding* ¹ | | Butt Welding | |
| | | Japanese Standard "JIS" | European Design Standard | N. American Design Standard* ² | Japanese Standard "JIS" European Design Standard | N. American Design Standard* ² | Japanese Standard "JIS" European Design Standard | N. American Design Standard* ² |
| PV2R1 | Suction | F5-08-A-10 | F5-08-A-1080 | — | F5-08-B-10 | F5-08-B-1090 | F5-08-C-10 | F5-08-C-1090 |
| | Discharge | F5-04-A-10 | F5-04-A-1080 | — | F5-04-B-10 | F5-04-B-1090 | F5-04-C-10 | F5-04-C-1090 |
| PV2R2 | Suction | F5-10-A-10 | F5-10-A-1080 | — | F5-10-B-10 | F5-10-B-1090 | F5-10-C-10 | F5-10-C-1090 |
| | Discharge | F5-06-A-10 | F5-06-A-1080 | — | F5-06-B-10 | F5-06-B-1090 | F5-06-C-10 | F5-06-C-1090 |
| PV2R3 | Suction | F5-16-A-10 | F5-16-A-1080 | — | F5-16-B-10 | F5-16-B-1090 | F5-16-C-10 | F5-16-C-1090 |
| | Discharge | F5-10-A-10 | F5-10-A-1080 | — | F5-10-B-10 | F5-10-B-1090 | F5-10-C-10 | F5-10-C-1090 |
| PV2R4 | Suction | F5-24-A-10 | — | — | F5-24-B-10 | F5-24-B-1090 | F5-24-C-10 | F5-24-C-1090 |
| | Discharge | F5-12-A-10 | F5-12-A-1080 | — | F5-12-B-10 | F5-12-B-1090 | F5-12-C-10 | F5-12-C-1090 |

★1. In case of using socket welding flanges, there is a case where the operating pressure should be set lower than the normal because of strength of the flanges. Therefore, please pay cautious attention to the operating pressure when the socket welding flanges are used.

★2. As dimensions of the pipe flange mounting surface are conformed to SAE 4 Bolt Split Flange (Standard Pressure Series), pipe flanges conforming to the SAE Standards can be used.

Notes: Special seals (Viton seals) are required when phosphate ester type fluids are used. (Prefix "F-" to the pipe flange kit number when ordering.)

● Details of the pipe flange kits are shown on page 824.

Specifications

| Model Numbers | Geometric Displacement cm ³ /rev (cu.in./rev) | Max. Operating Pressure MPa (PSI) | | | | | | Output Flow & Input Power | Shaft Speed Range r/min | |
|---------------|--|-----------------------------------|--------------|---|---------------|------------------------|------------------|---------------------------|--|-------------------|
| | | Petroleum Base Oils | | Water Containing Fluids | | | Synthetic Fluids | | Max. | Min. |
| | | Anti-Wear Type | R & O Type | Anti-Wear Type Water Glycols ^{★1} | Water Glycols | Water in Oil Emulsions | Phosphate Esters | | | |
| PV2R1-6 | 5.8 (.354) | 21 ^{★6} (3050) | 16 (2320) | 16 (2320) | 7 (1020) | 7 (1020) | 16 (2320) | Refer to Pages 170 - 172 | 1800 (1200) ^{★4} | 750 ^{★5} |
| PV2R1-8 | 8.0 (.488) | | | | | | | | | |
| PV2R1-10 | 9.4 (.574) | | | | | | | | | |
| PV2R1-12 | 12.2 (.744) | | | | | | | | | |
| PV2R1-14 | 13.7 (.836) | | | | | | | | | |
| PV2R1-17 | 16.6 (1.013) | | | | | | | | | |
| PV2R1-19 | 18.6 (1.135) | | | | | | | | | |
| PV2R1-23 | 22.7 (1.385) | | | | | | | | | |
| PV2R1-25 | 25.3 (1.544) | | | | | | | | | |
| PV2R1-31 | 31.0 (1.892) | 16 (2320) | | | | | | | | |
| PV2R2-41 | 41.3 (2.52) | 21 (3050) | 14 (2030) | 16 (2320) | 7 (1020) | 7 (1020) | 14 (2030) | Refer to Pages 172 & 173 | 1800 (1200) ^{★4} | 600 ^{★5} |
| PV2R2-47 | 47.2 (2.88) | | | | | | | | | |
| PV2R2-53 | 52.5 (3.20) | | | | | | | | | |
| PV2R2-59 | 58.2 (3.55) | | | | | | | | | |
| PV2R2-65 | 64.7 (3.95) | | | | | | | | | |
| PV2R3-76 | 76.4 (4.66) | 21 (3050) | 14 (2030) | 16 (2320) | 7 (1020) | 7 (1020) | 14 (2030) | Refer to Page 174 | 1800 (1200) ^{★4} | 600 |
| PV2R3-94 | 93.6 (5.71) | | | | | | | | | |
| PV2R3-116 | 115.6 (7.05) | 16 (2320) | | | | | | | 1800 (1200) ^{★2} ^{★4} | |
| PV2R4-136 | 136 (8.30) | 17.5 (2540) | 14 (2030) | 16 (2320) | 7 (1020) | 7 (1020) | 14 (2030) | Refer to Pages 174 & 175 | 1800 (1200) ^{★4} | 600 |
| PV2R4-153 | 153 (9.34) | | | | | | | | | |
| PV2R4-184 | 184 (11.23) | | | | | | | | | |
| PV2R4-200 | 201 (12.27) | | | | | | | | | |
| PV2R4-237 | 237 (14.46) | | | | | | | | | |
| | | | | | | | | | 1800 (1200) ^{★3} ^{★4} | |

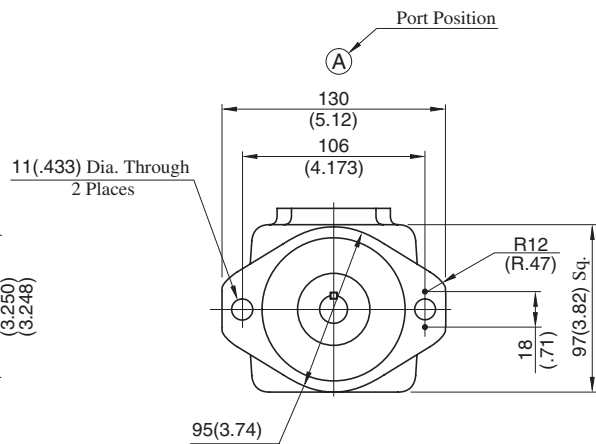
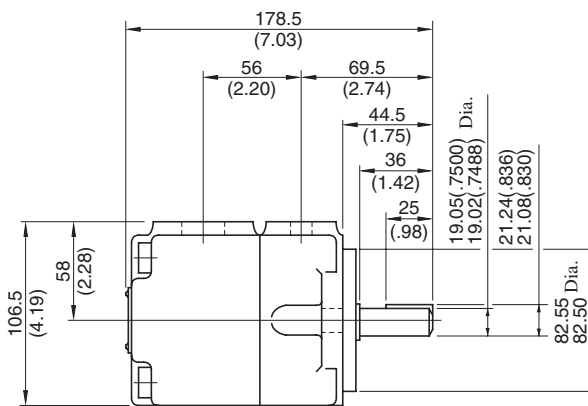
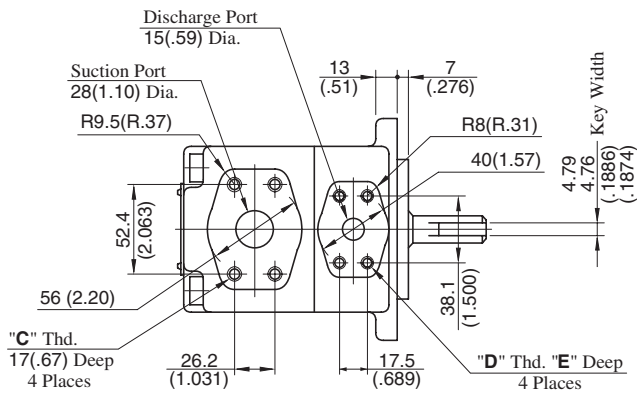
- ★1. For the brands of anti-wear type water-glycols , see the item of "Hydraulic Fluids" on page 160.
- ★2. If PV2R3-116 is used at speed above 1700 r/min, the suction pressure is limited to 0 kPa (0 in. Hg.).
- ★3. If PV2R4-237 is used at speed above 1700 r/min, the suction pressure is limited to -13 kPa (3.94 in. Hg. vacuum).
- ★4. If phosphate ester or water containing fluids are used, the maximum speed is limited to 1200 r/min.
- ★5. For starting at low speed, the maximum viscosity is limited. For details, see the item of "Hydraulic Fluids" on page 160.
- ★6. For pressure above 16 MPa (2320 PSI), raise the speed over 1450 r/min.

● Mass

| Model Numbers | Approx. Mass kg (lbs.) | |
|---------------|------------------------|--------------|
| | Flange Mtg. | Foot Mtg. |
| PVR2R1 | 9.0 (19.8) | 11.2 (24.7) |
| PVR2R2 | 15.5 (34.2) | 19.8 (43.7) |
| PVR2R3 | 30.9 (68.1) | 40.9 (90.2) |
| PVR2R4 | 68.5 (151) | 93.5 (206) |



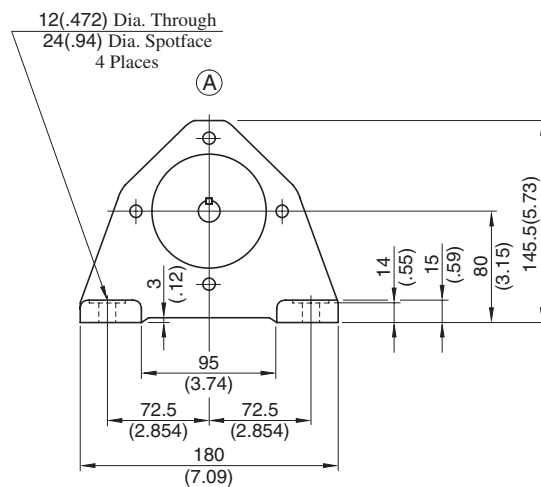
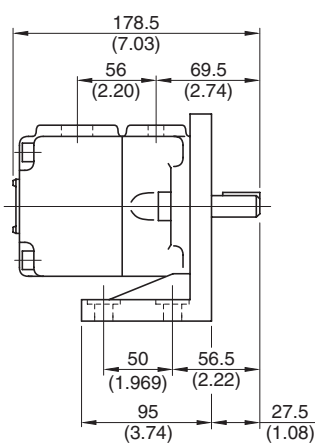
Flange Mtg.: PV2R1-*-F-RAA-42/4290



| Model Numbers | "C" Thd. | "D" Thd. | E mm (Inches) |
|--------------------|------------|-------------|---------------|
| PV2R1-*-F-RAA-42 | M10 | M8 | 14 (.55) |
| PV2R1-*-F-RAA-4290 | 3/8-16 UNC | 5/16-18 UNC | 16 (.63) |

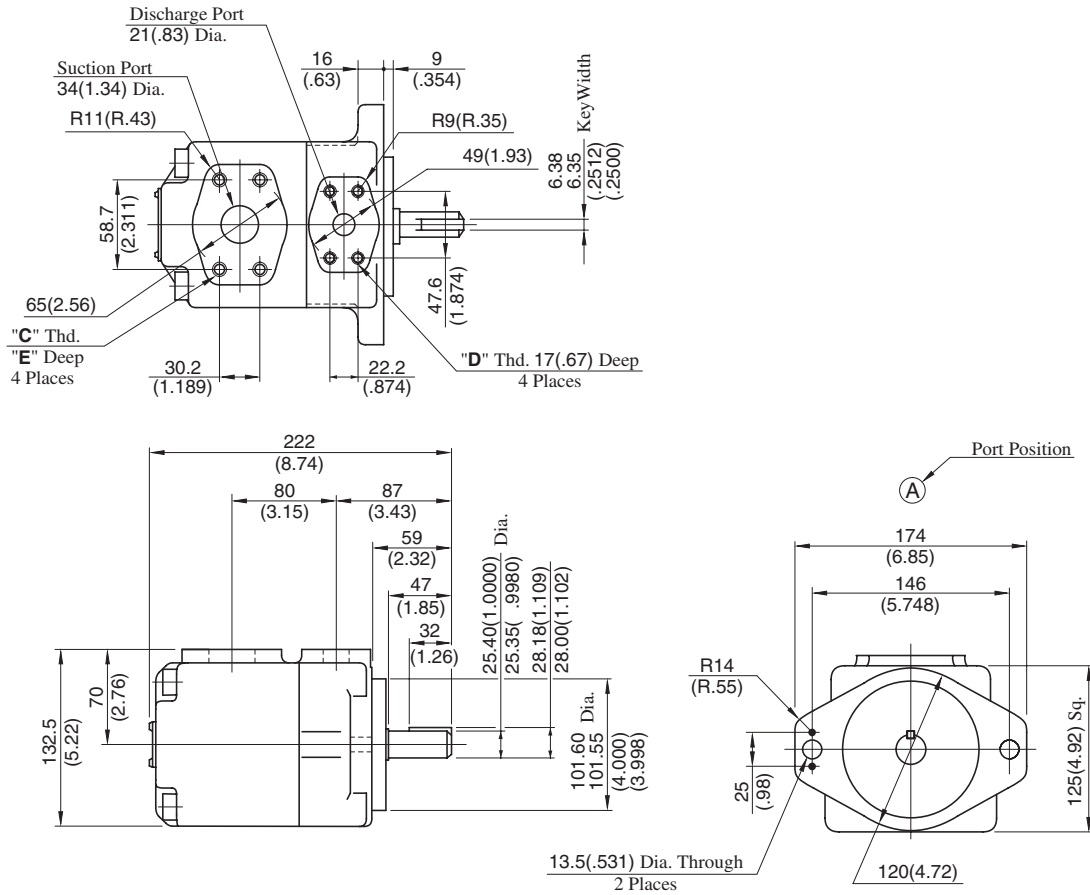
DIMENSIONS IN
MILLIMETRES (INCHES)

Foot Mtg.: PV2R1-*-L-RAA-42/4290



• For other dimensions, refer to "Flange Mtg.".

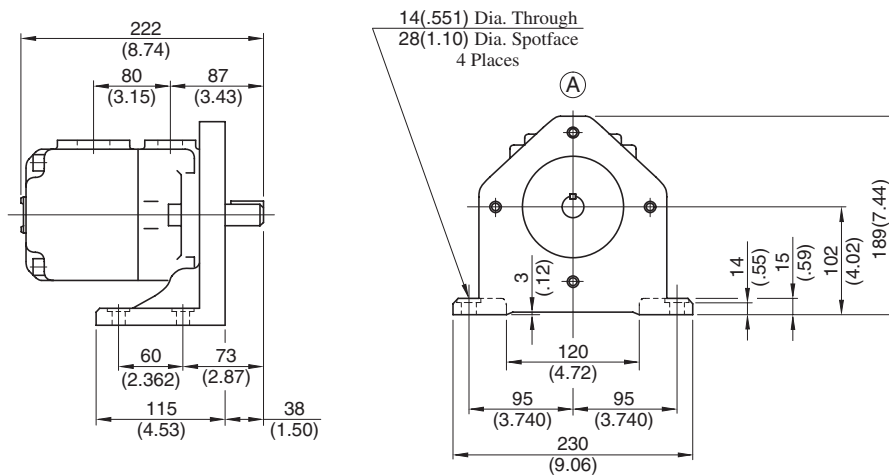
Flange Mtg.: PV2R2-*-F-RAA-41/4190



| Model Numbers | "C" Thd. | "D" Thd. | E mm (Inches) |
|--------------------|-------------|-------------|---------------|
| PV2R2-*-F-RAA-41 | M10 | M10 | 19 (.75) |
| PV2R2-*-F-RAA-4190 | 7/16-14 UNC | 7/16-14 UNC | 20 (.79) |

DIMENSIONS IN MILLIMETRES (INCHES)

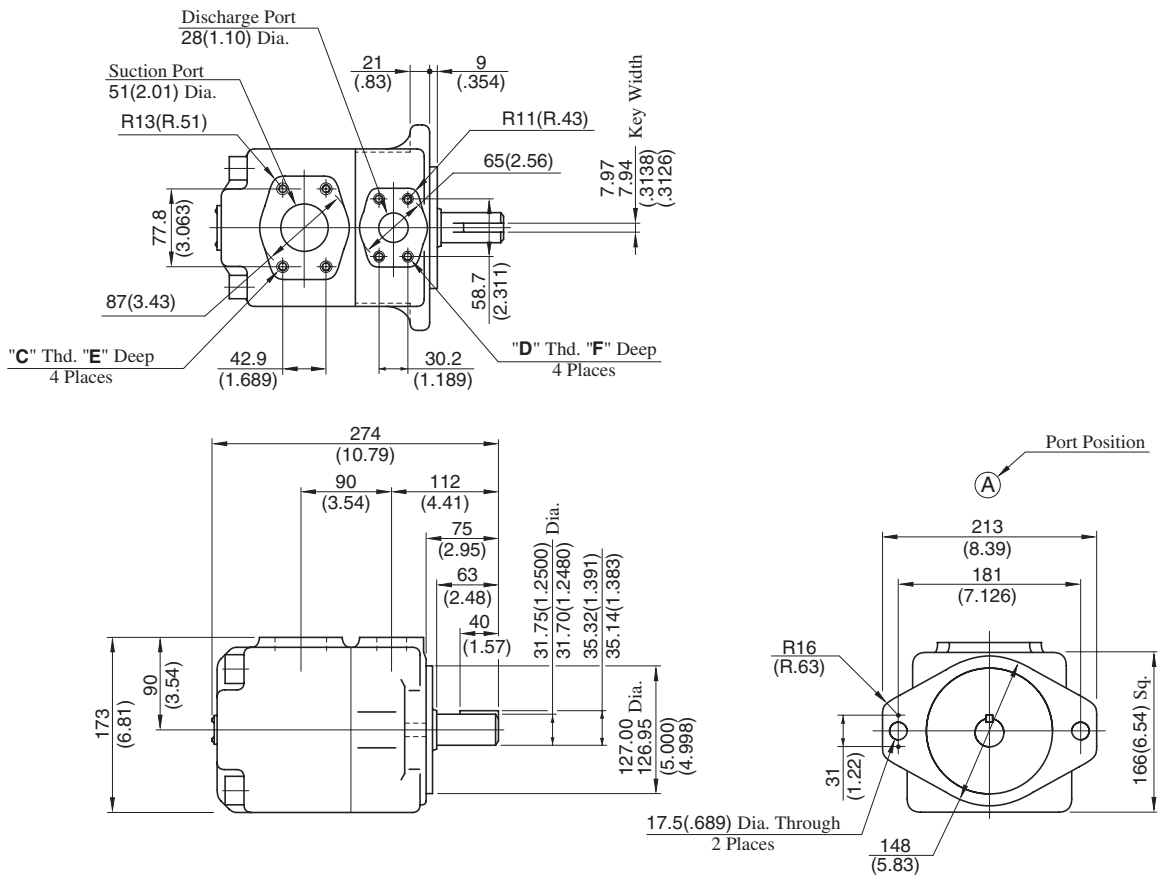
Foot Mtg.: PV2R2-*-L-RAA-41/4190



• For other dimensions, refer to "Flange Mtg.".



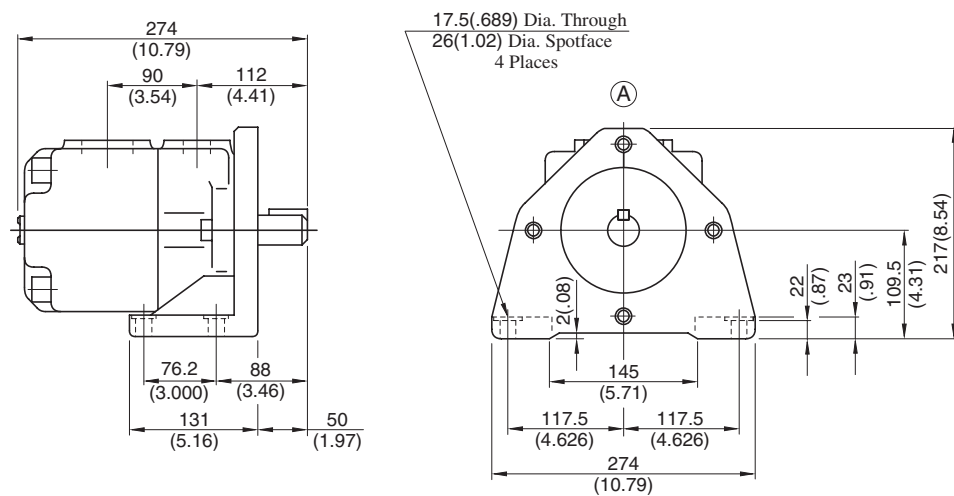
Flange Mtg.: PV2R3-*-F-RAA-31/3190



| Model Numbers | "C" Thd. | "D" Thd. | Dimensions mm (Inches) | |
|--------------------|------------|-------------|---------------------------|----------|
| | | | E | F |
| PV2R3-*-F-RAA-31 | M12 | M10 | 19 (.75) | 19 (.75) |
| PV2R3-*-F-RAA-3190 | 1/2-13 UNC | 7/16-14 UNC | 21 (.83) | 20 (.79) |

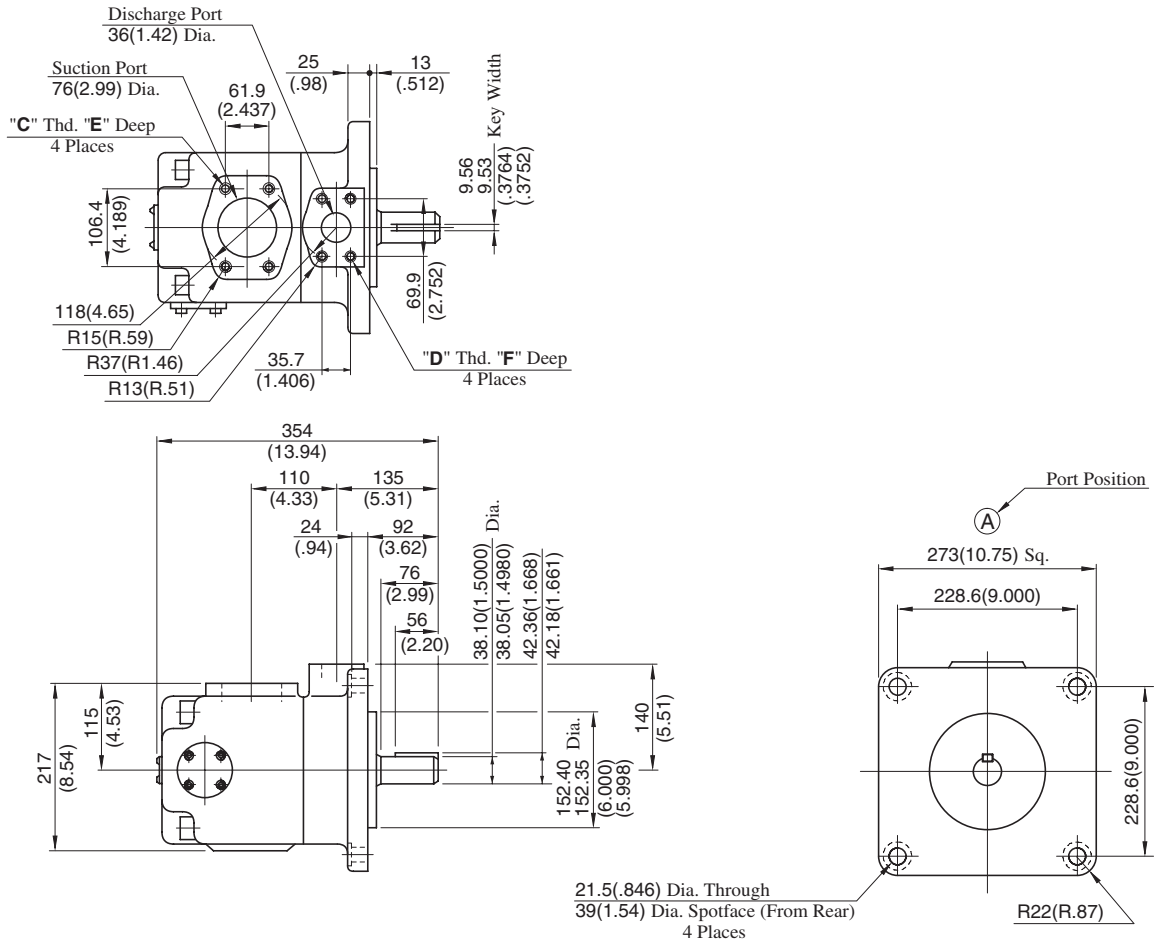
DIMENSIONS IN
MILLIMETRES (INCHES)

Foot Mtg.: PV2R3-*-L-RAA-31/3190



• For other dimensions, refer to "Flange Mtg.".

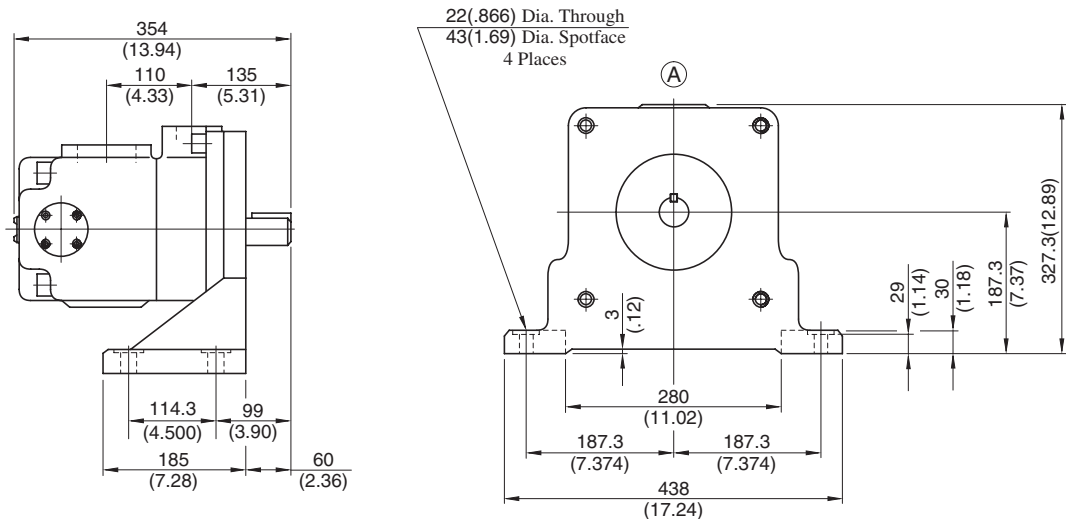
Flange Mtg.: PV2R4-*-F-RAA-30/3090



| Model Numbers | "C" Thd. | "D" Thd. | Dimensions mm (Inches) | |
|--------------------|------------|------------|---------------------------|----------|
| | | | E | F |
| PV2R4-*-F-RAA-30 | M16 | M12 | 19 (.75) | 19 (.75) |
| PV2R4-*-F-RAA-3090 | 5/8-11 UNC | 1/2-13 UNC | 21 (.83) | 21 (.83) |

DIMENSIONS IN MILLIMETRES (INCHES)

Foot Mtg.: PV2R4-*-L-RAA-30/3090



• For other dimensions, refer to "Flange Mtg.".

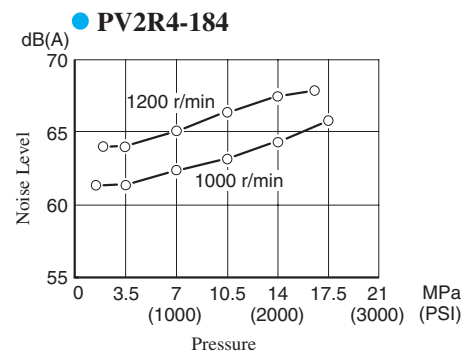
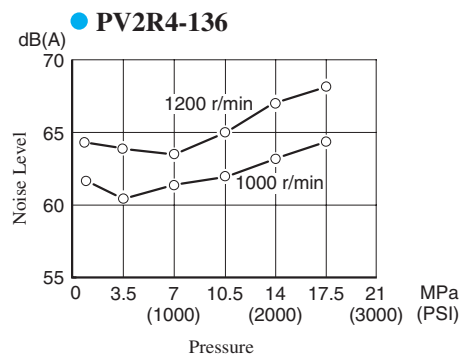
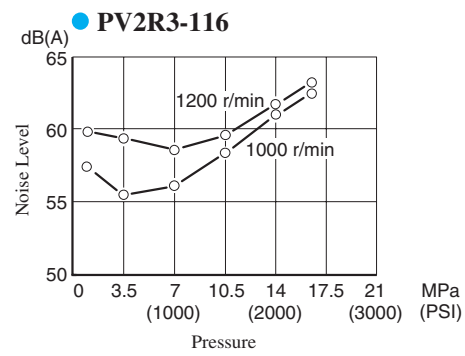
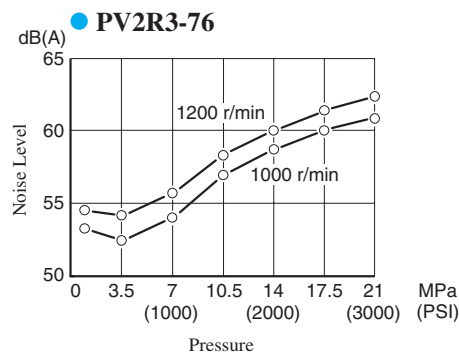
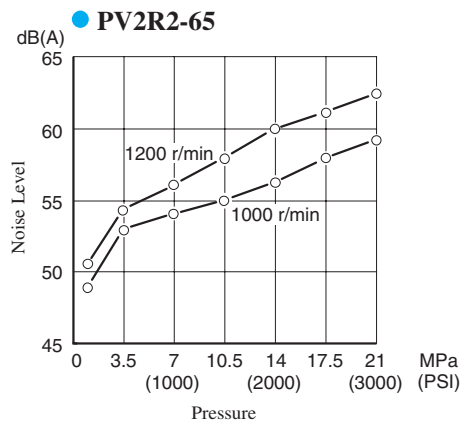
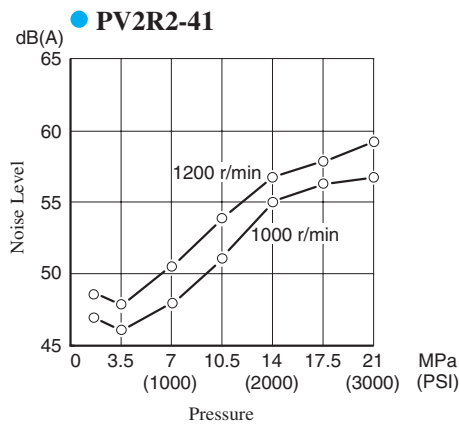
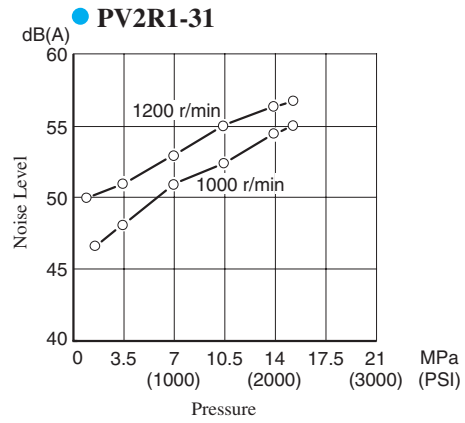
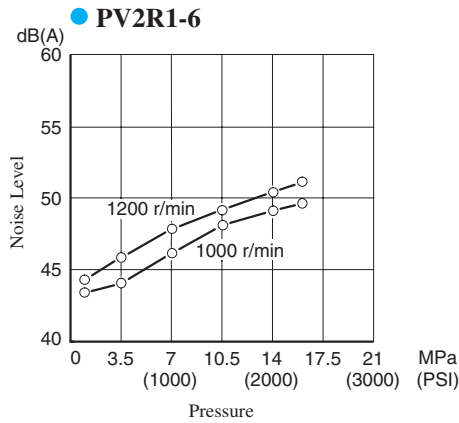
Noise Level

Measuring conditions

Fluid viscosity : 20 mm²/s (100 SSU)

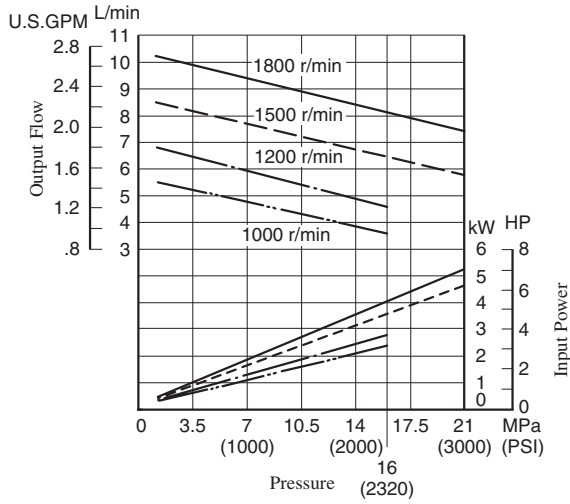
Measurement point : One metre (3.3 ft.) horizontally away from pump head cover

Back ground noise : 40 dB (A)

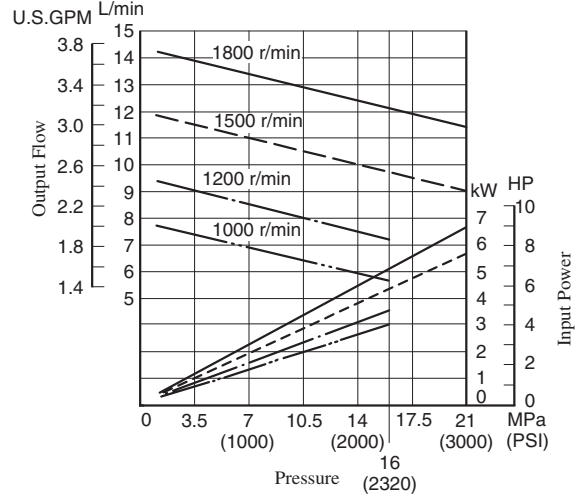


Typical Pump Characteristics at Viscosity 20 mm²/s (100 SSU) [ISO VG32 Oils, 50°C (122°F)]

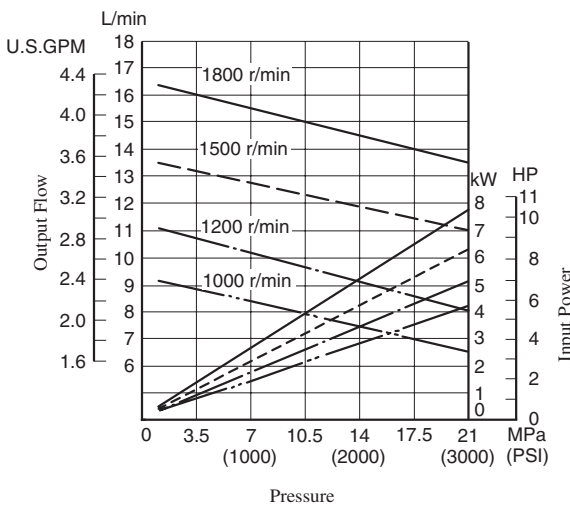
● **PV2R1-6**



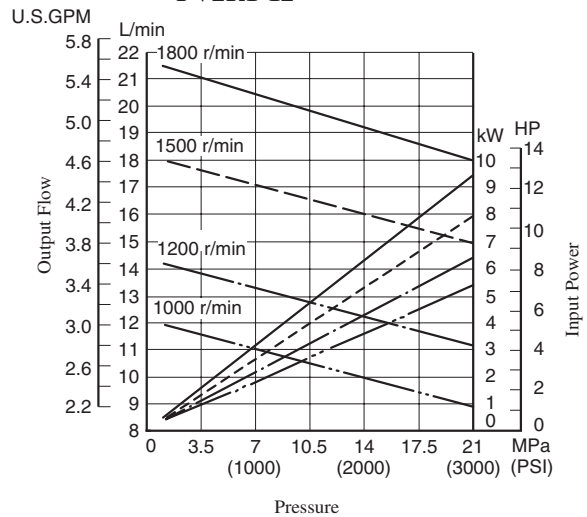
● **PV2R1-8**



● **PV2R1-10**



● **PV2R1-12**



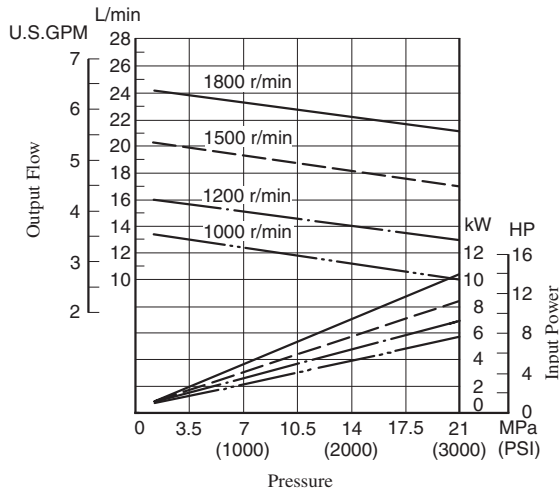
Typical Pump Characteristics at Viscosity 20 mm²/s (100 SSU) [ISO VG32 Oils, 50°C (122°F)]

B

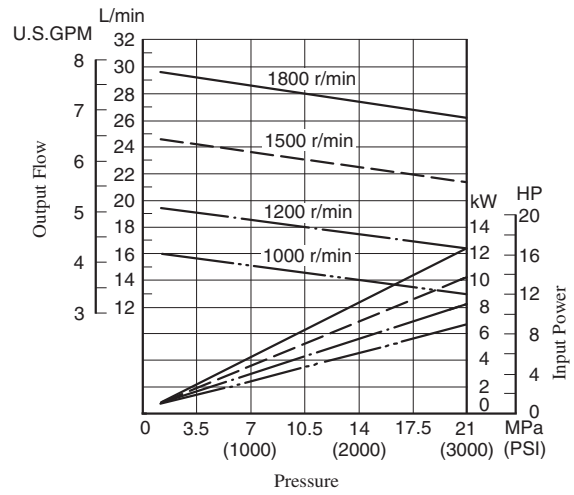


"PV2R" Series
Single Vane Pumps

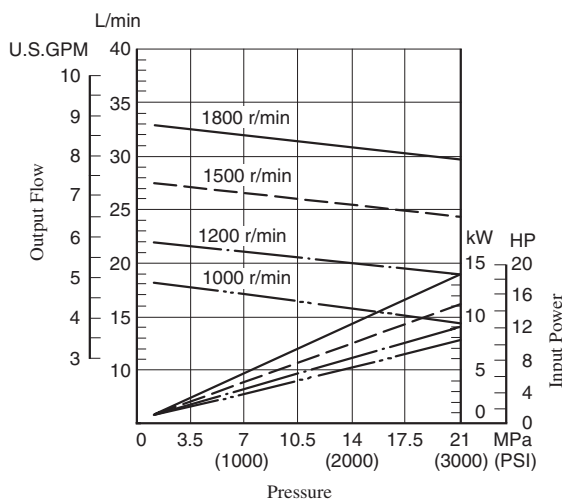
● PV2R1-14



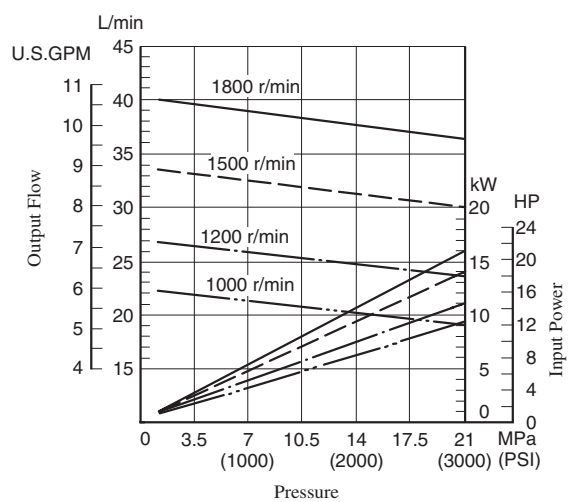
● PV2R1-17



● PV2R1-19

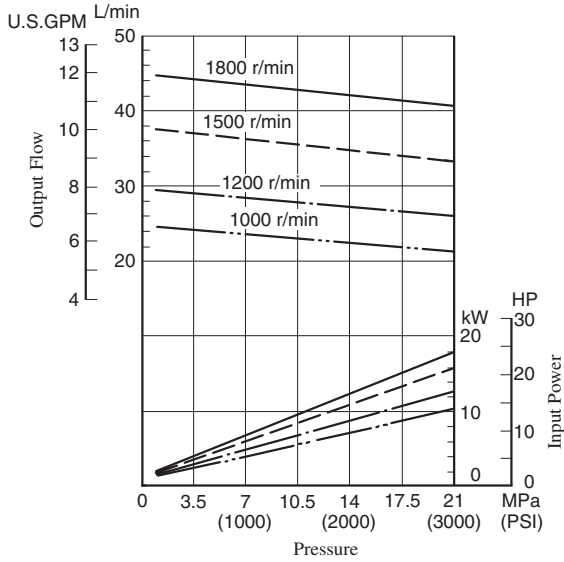


● PV2R1-23

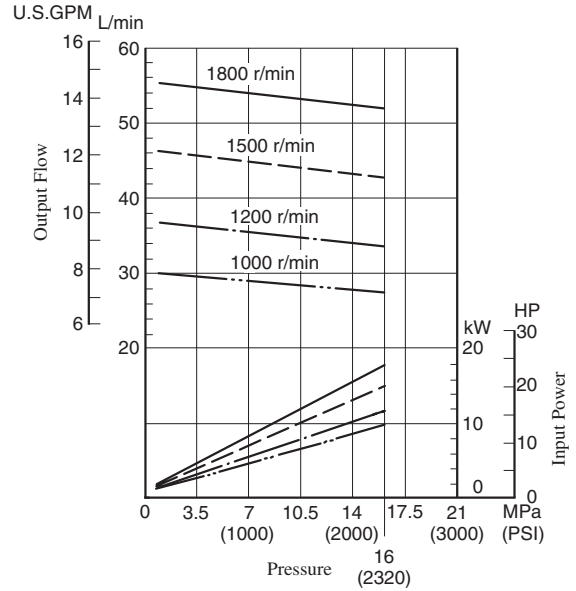


Typical Pump Characteristics at Viscosity 20 mm²/s (100 SSU) [ISO VG32 Oils, 50°C (122°F)]

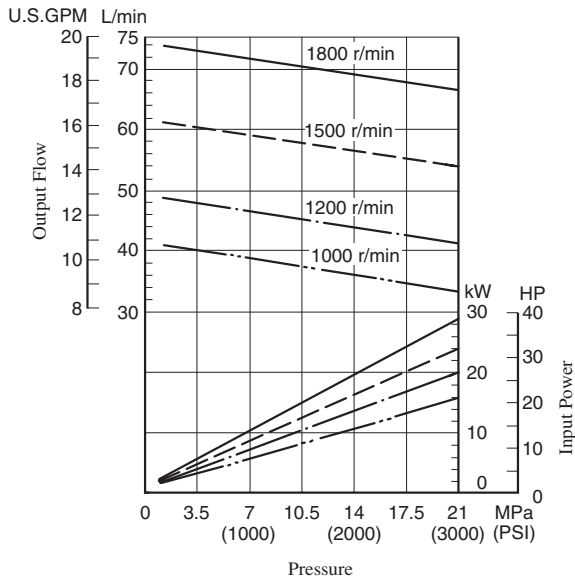
● **PV2R1-25**



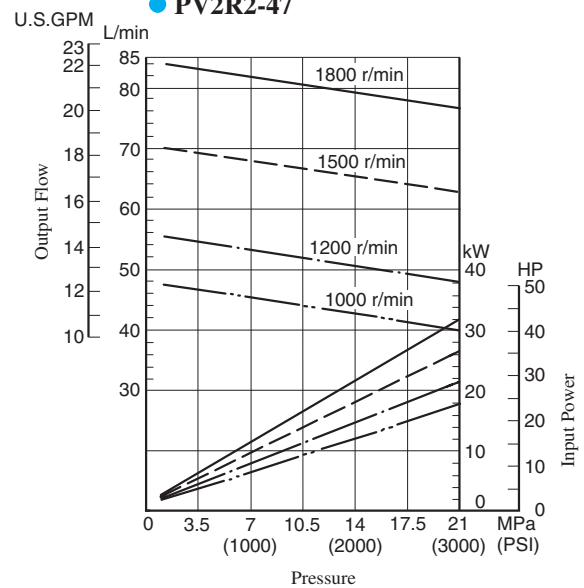
● **PV2R1-31**



● **PV2R2-41**



● **PV2R2-47**

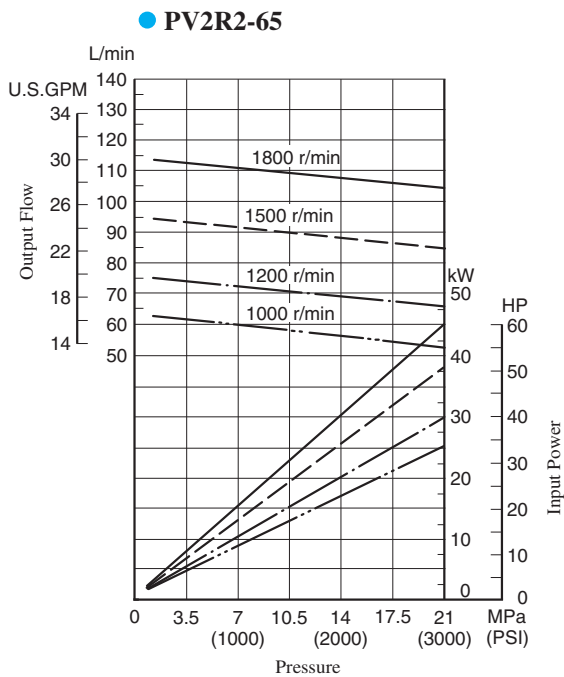
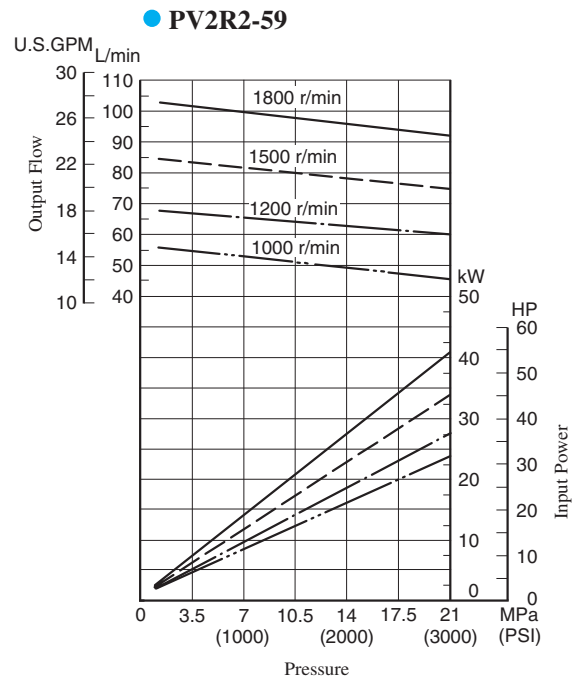
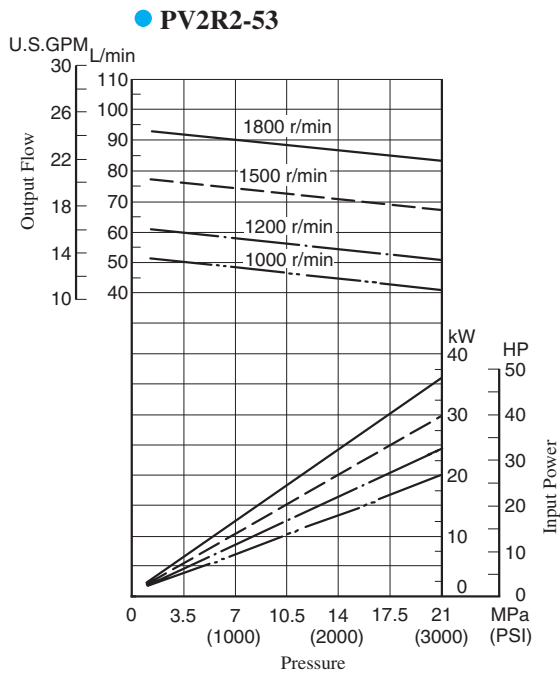


Typical Pump Characteristics at Viscosity 20 mm²/s (100 SSU) [ISO VG32 Oils, 50°C (122°F)]

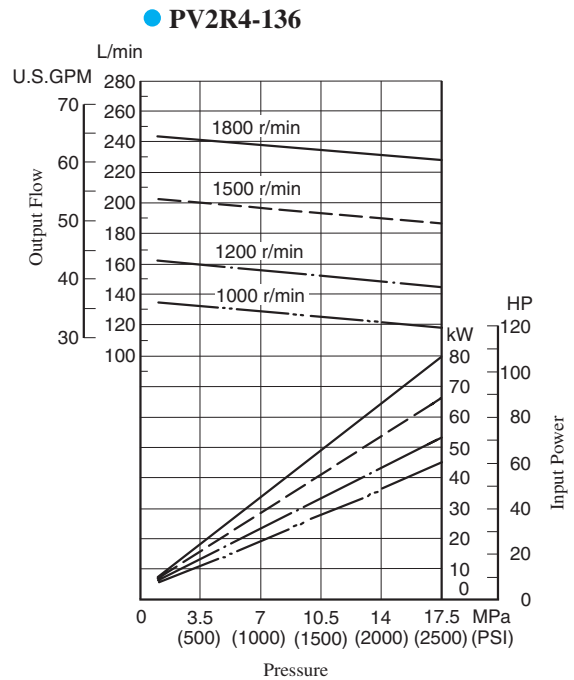
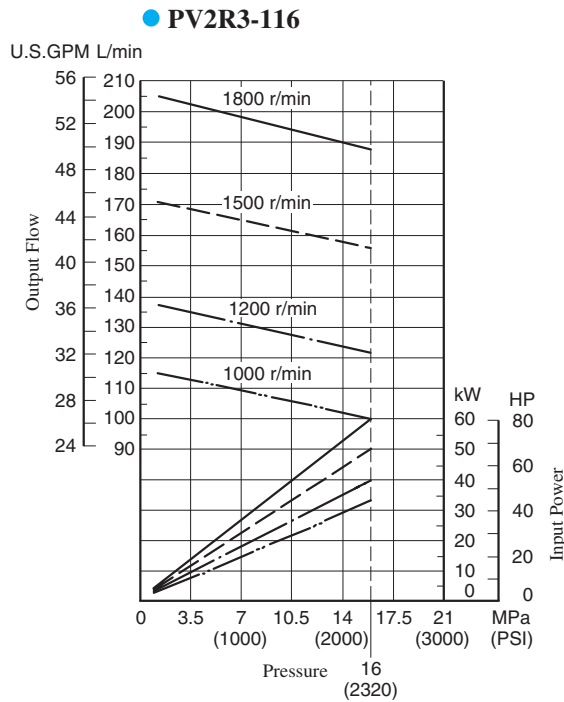
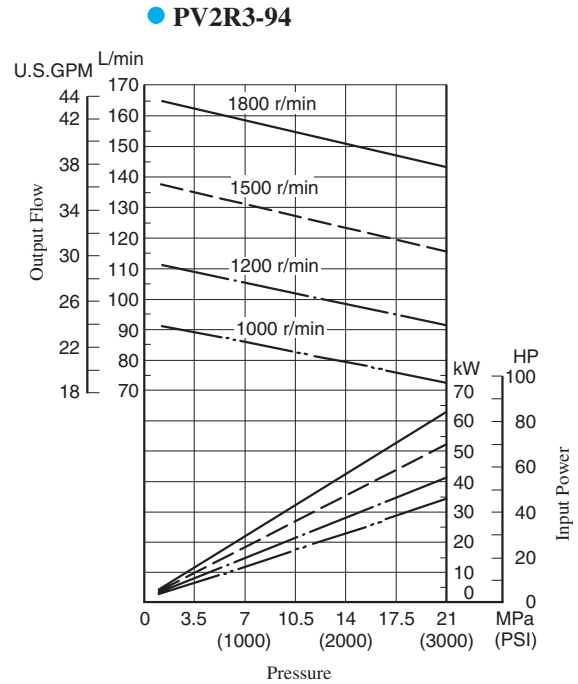
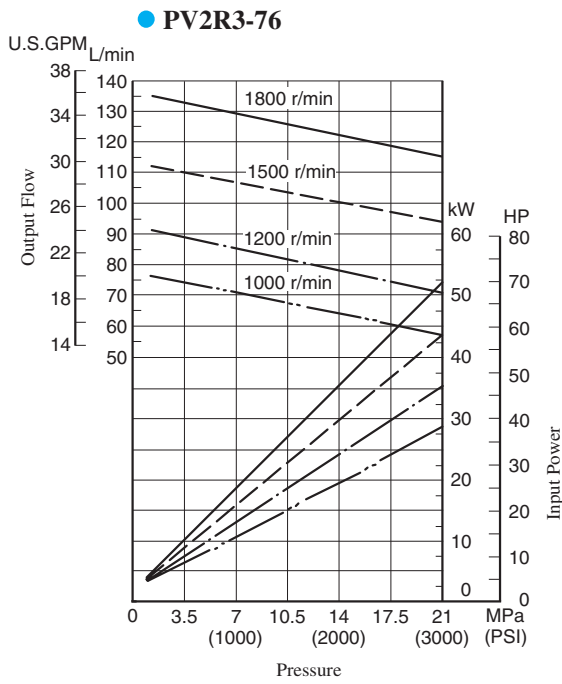
B



"PV2R" Series
Single Vane Pumps



Typical Pump Characteristics at Viscosity 20 mm²/s (100 SSU) [ISO VG32 Oils, 50°C (122°F)]



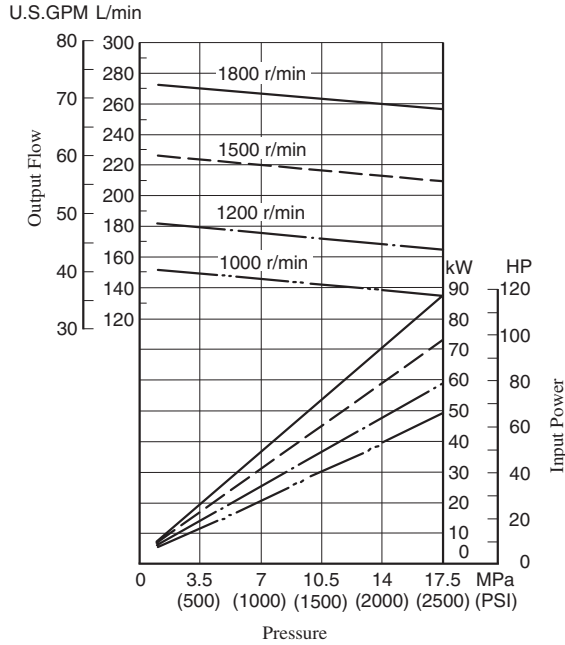
Typical Pump Characteristics at Viscosity 20 mm²/s (100 SSU) [ISO VG32 Oils, 50°C (122°F)]

B

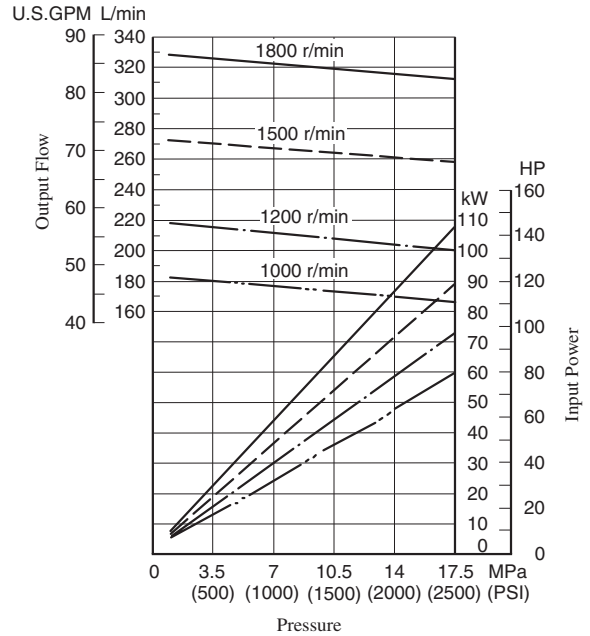


"PV2R" Series
Single Vane Pumps

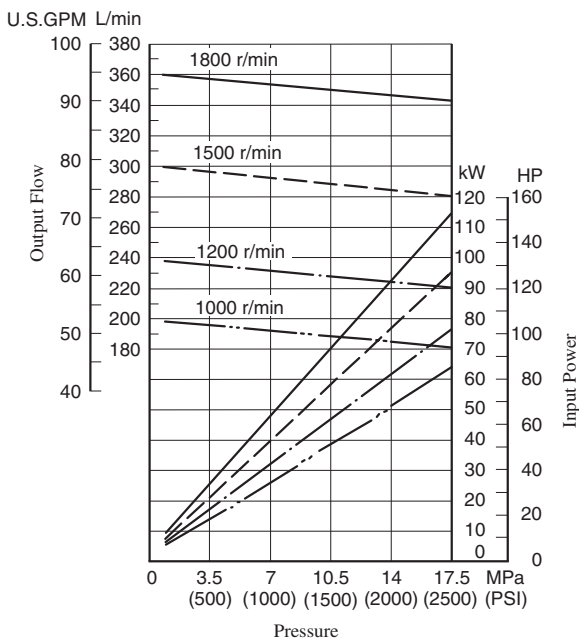
● PV2R4-153



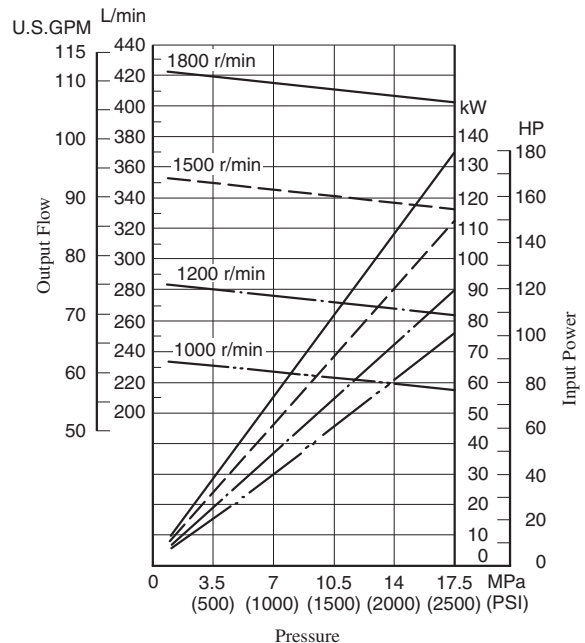
● PV2R4-184



● PV2R4-200

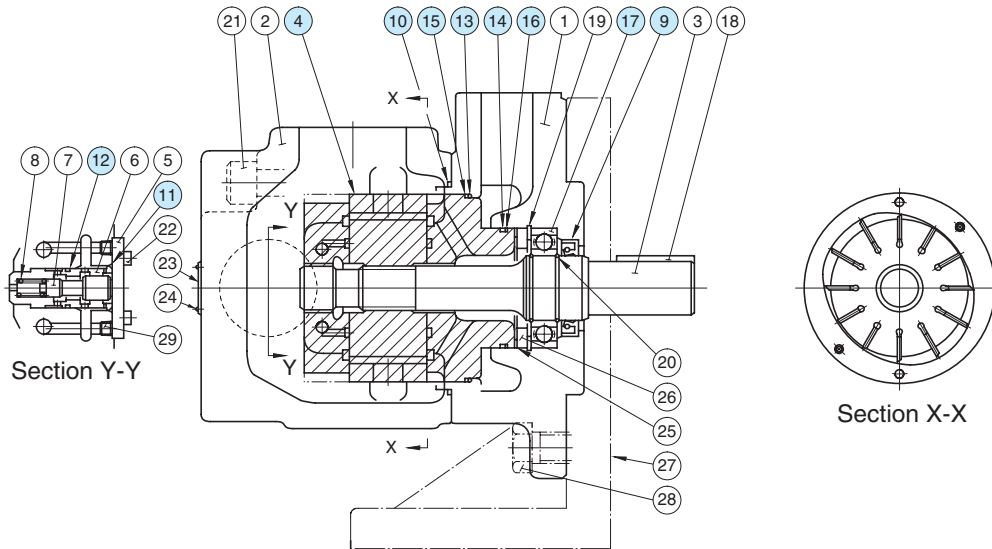


● PV2R4-237



Spare Parts List

PV2R1-*-*-RAA-42/4290
 PV2R2-*-*-RAA-41/4190
 PV2R3-*-*-RAA-31/3190
 PV2R4-*-*-RAA-30/3090



Cartridge Kits

| Model Numbers | ④ Cartridge Kit Numbers | Model Numbers | ④ Cartridge Kit Numbers |
|--------------------|-------------------------|---------------------|-------------------------|
| PV2R1-6-*-RAA-42* | CPV2R1-6-R-42 | PV2R2-41-*-RAA-41* | CPV2R2-41-R-41 |
| PV2R1-8-*-RAA-42* | CPV2R1-8-R-42 | PV2R2-47-*-RAA-41* | CPV2R2-47-R-41 |
| PV2R1-10-*-RAA-42* | CPV2R1-10-R-42 | PV2R2-53-*-RAA-41* | CPV2R2-53-R-41 |
| PV2R1-12-*-RAA-42* | CPV2R1-12-R-42 | PV2R2-59-*-RAA-41* | CPV2R2-59-R-41 |
| PV2R1-14-*-RAA-42* | CPV2R1-14-R-42 | PV2R2-65-*-RAA-41* | CPV2R2-65-R-41 |
| PV2R1-17-*-RAA-42* | CPV2R1-17-R-42 | PV2R3-76-*-RAA-31* | CPV2R3-76-R-31 |
| PV2R1-19-*-RAA-42* | CPV2R1-19-R-42 | PV2R3-94-*-RAA-31* | CPV2R3-94-R-31 |
| PV2R1-23-*-RAA-42* | CPV2R1-23-R-42 | PV2R3-116-*-RAA-31* | CPV2R3-116-R-31 |
| PV2R1-25-*-RAA-42* | CPV2R1-25-R-42 | PV2R4-136-*-RAA-30* | CPV2R4-136-R-30 |
| PV2R1-31-*-RAA-42* | CPV2R1-31-R-42 | PV2R4-153-*-RAA-30* | CPV2R4-153-R-30 |
| | | PV2R4-184-*-RAA-30* | CPV2R4-184-R-30 |
| | | PV2R4-200-*-RAA-30* | CPV2R4-200-R-30 |
| | | PV2R4-237-*-RAA-30* | CPV2R4-237-R-30 |

Seals & Bearings

| Item | Name of Parts | Part Numbers | | | | Qty. |
|------|---------------|--------------|-------------|--------------|--------------|------|
| | | PV2R1 | PV2R2 | PV2R3 | PV2R4 | |
| 9* | Oil Seal | ISD 26 42 8 | ISD 30 42 8 | ISD 35 55 11 | ISD 45 68 12 | 1 |
| 10* | O-Ring | SO-NB-G80 | SO-NB-G105 | SO-NB-G135 | SO-NB-G145 | 1 |
| 11* | O-Ring | — | — | — | SO-NB-P28 | 1 |
| 12* | O-Ring | — | — | — | SO-NB-P22A | 1 |
| 13* | O-Ring | SO-NB-G60 | SO-NB-G85 | SO-NB-G115 | SO-NA-G130 | 1 |
| 14* | O-Ring | SO-NB-G30 | SO-NB-P46 | SO-NB-A231 | SO-NA-G80 | 1 |
| 15* | Back Up Ring | — | — | — | SO-BE-G130 | 1 |
| 16* | Back Up Ring | — | — | — | SO-BB-G80 | 1 |
| 17 | Bearing | 6004 | 6205 | 6207 | 6209 | 1 |

- Note: 1) Item Nos. ⑬ and ⑭ (o-rings) and ⑮ and ⑯ (back up rings) are included in cartridge kit.
 2) For pumps for phosphate ester type hydraulic fluids different part Nos. are used. Please contact us.
 ★ When ordering seals, please specify the kit number from the table right.

List of Seal Kits

| Pump Model Numbers | Seal Kit Numbers |
|-----------------------|------------------|
| PV2R1-*-*-RAA-42/4290 | KS-PV2R1-40 |
| PV2R2-*-*-RAA-41/4190 | KS-PV2R2-40 |
| PV2R3-*-*-RAA-31/3190 | KS-PV2R3-30 |
| PV2R4-*-*-RAA-30/3090 | KS-PV2R4-30 |