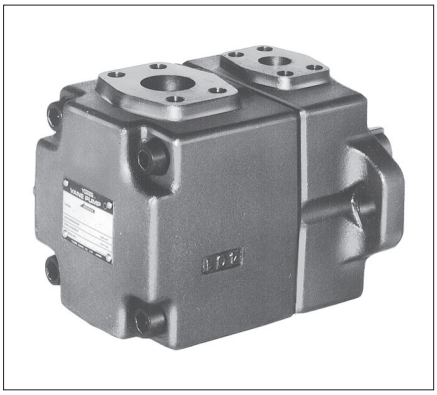
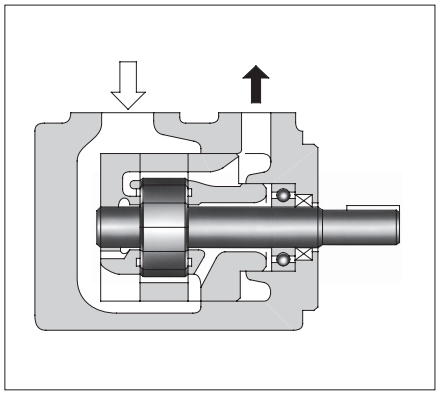
"PV2R" Series Single Vane Pumps

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.
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

Model Number Designation

PV2R1	–6	–L	–R	A	A	–43
Series Number	Nominal Displacement cm³/rev	Type of Mounting	Shaft Rotation	Discharge Port Position	Suction Port Position	Design Number
PV2R1 ★2	6, 8, 10, 12, 14, 17, 19, 23, 25, 31	L : Foot Mounting	(Viewed from Shaft End)	(Viewed from Shaft End)	(Viewed from Shaft End)	43
PV2R2 ★2	41, 47, 53, 59, 65					41
PV2R3 ★2	76, 94, 116	F : Flange Mounting	R : Clockwise ★1 (Normal)	A : Upwards (Normal)	A : Upwards (Normal)	31
PV2R4 ★2	136, 153, 184, 200, 237					30

★1. Available to supply pump with anti-clockwise rotation. Consult Yuken for details.
★2. When phosphate esters are used, prefix "F-" to the model number because the special seals (fluororubber) are required to be used.

Pipe Flange Kits

Pipe flange kits are not included with the pumps, so please refer to the table below to order them for your use.

Pump Model Numbers	Name of Port	Pipe Flange Kit Numbers		
		Threaded Connection	Socket Welding ★	Butt Welding
PV2R1	Suction	F5–08–A–10	F5–08–B–10	F5–08–C–10
	Discharge	F5–04–A–10	F5–04–B–10	F5–04–C–10
PV2R2	Suction	F5–10–A–10	F5–10–B–10	F5–10–C–10
	Discharge	F5–06–A–10	F5–06–B–10	F5–06–C–10
PV2R3	Suction	F5–16–A–10	F5–16–B–10	F5–16–C–10
	Discharge	F5–10–A–10	F5–10–B–10	F5–10–C–10
PV2R4	Suction	F5–24–A–10	F5–24–B–10	—
	Discharge	F5–12–A–10	F5–12–B–10	F5–12–C–10

★ 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 max. operating pressure when the socket welding flanges are used.

Notes: When phosphate esters are used, prefix "F-" to the model number.

Specifications

Model Numbers	Geometric Displacement cm³/rev	Max. Operating Pressure MPa						Output Flow & Input Power	Shaft Speed Range r/min	
		Petroleum Base Oils		Water Containing Fluids			Synthetic Fluids			
		Anti-Wear Type	R & O Type	Anti-Wear Type Water Glycols ★1	Water Glycols	Water in Oil Emulsions	Phosphate Esters		Max.★3	Min.
PV2R1– 6	5.8	21 ★5	16	16	7	7	16	Refer to Pages B-11 - B-13	1800 (1200)	750★4
PV2R1– 8	8.0									
PV2R1–10	9.4	21								
PV2R1–12	12.2									
PV2R1–14	13.7									
PV2R1–17	16.6									
PV2R1–19	18.6									
PV2R1–23	22.7									
PV2R1–25	25.3									
PV2R1–31	31.0	16								
PV2R2–41	41.3	21	14	16	7	7	14	Refer to Pages B-13 - B-14	1800 (1200)	600★4
PV2R2–47	47.2									
PV2R2–53	52.5									
PV2R2–59	58.2									
PV2R2–65	64.7									
PV2R3–76	76.4	21	14	16	7	7	14	Refer to Pages B-14 - B-15	1800 (1200)	600
PV2R3–94	93.6									
PV2R3–116	115.6	16							1800★2 (1200)	
PV2R4–136	136	17.5	14	16	7	7	14	Refer to Pages B-15 - B-16	1800 (1200)	600
PV2R4–153	153									
PV2R4–184	184									
PV2R4–200	201									
PV2R4–237	237								1800★2 (1200)	

Mass

Model Numbers	Approx. Mass kg	
	Flange Mtg.	Foot Mtg.
PV2R1	9.0	11.2
PV2R2	15.5	19.8
PV2R3	30.9	40.9
PV2R4	68.5	93.5

★1. For the brands of anti-wear type water-glycols , see the item of "Hydraulic Fluids" on page B-2.

★2. For PV2R3-116 and PV2R4-237, the minimum suction pressure is limited by the shaft speed range as shown in the table below.

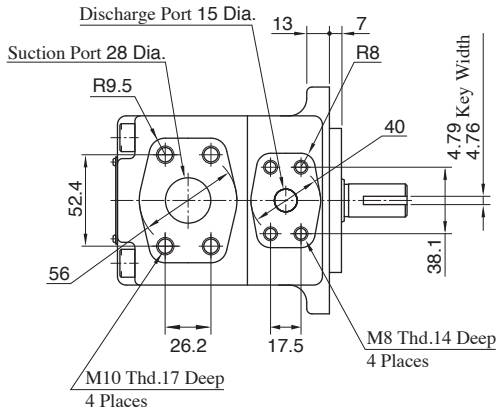
Model Numbers	Min. Suction Pressure MPa	
	Below 1700 r/min	1700 -1800 r/min
PV2R3–116	–20 kPa	0 kPa
PV2R4–237	–20 kPa	–13 kPa

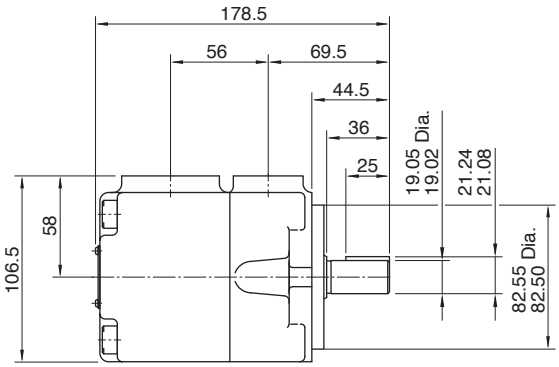
★3. Values in parentheses are for phosphate esters or water containing fluids.

★4. For starting at low speed, the maximum viscosity is limited. For details, see the item of "Hydraulic Fluids" on page B-2.

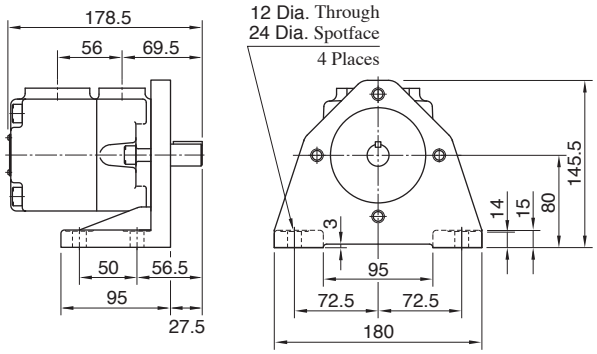
★5. For pressure above 16 MPa, raise the speed over 1450 r/min.

Flange Mtg.: PV2R1-＊-F

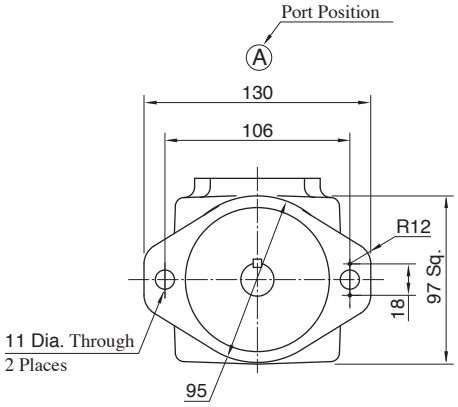




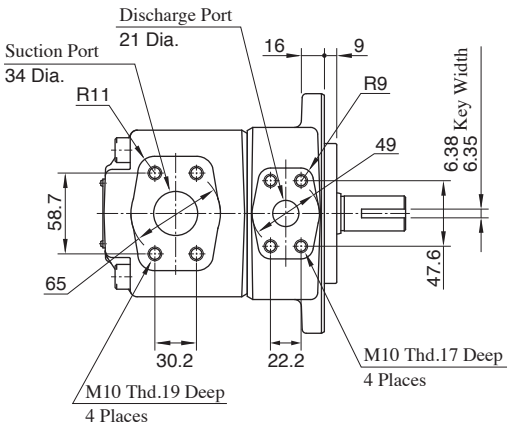
Foot Mtg.: PV2R1-＊-L

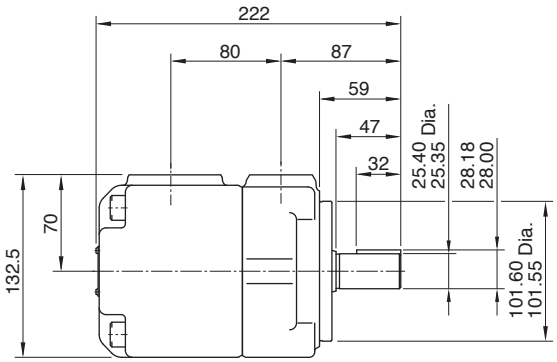


For other dimensions, refer to "Flange Mtg."

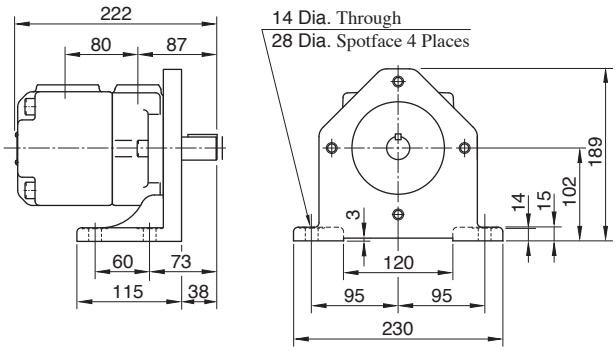


Flange Mtg.: PV2R2-＊-F

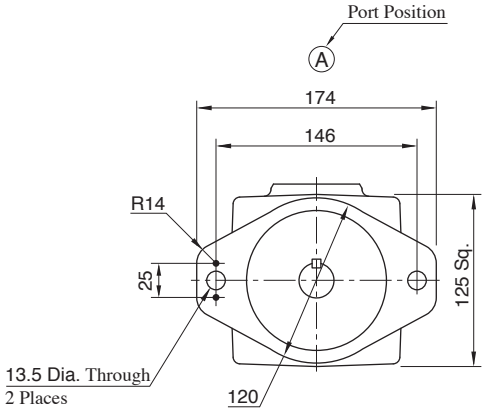




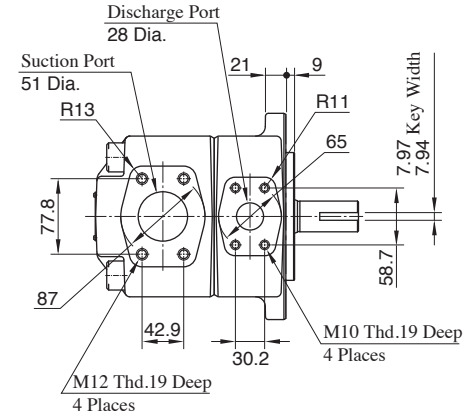
Foot Mtg.: PV2R2-＊-L

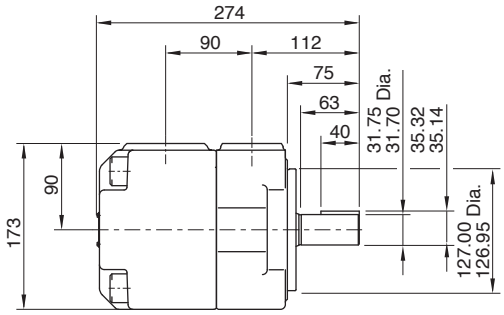


For other dimensions, refer to "Flange Mtg."

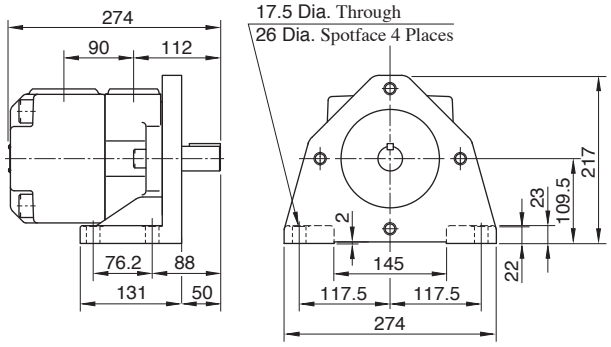


Flange Mtg.: PV2R3-＊-F

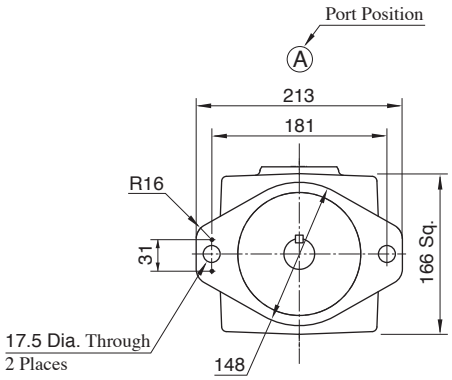




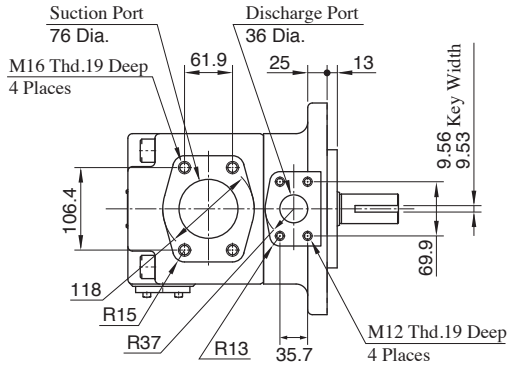
Foot Mtg.: PV2R3-＊-L

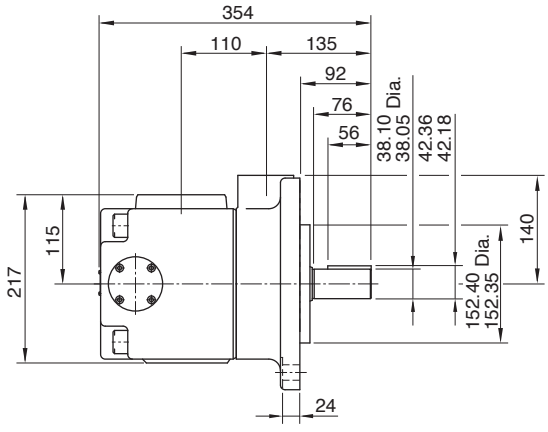


For other dimensions, refer to "Flange Mtg."

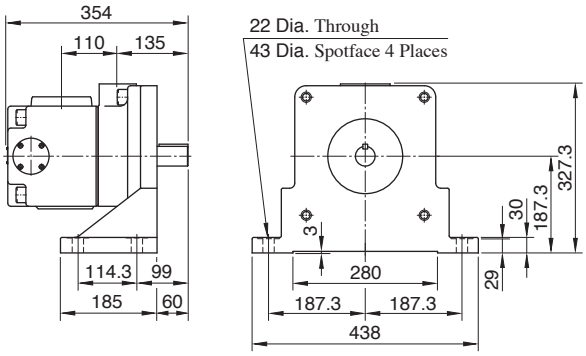


Flange Mtg.: PV2R4-＊-F

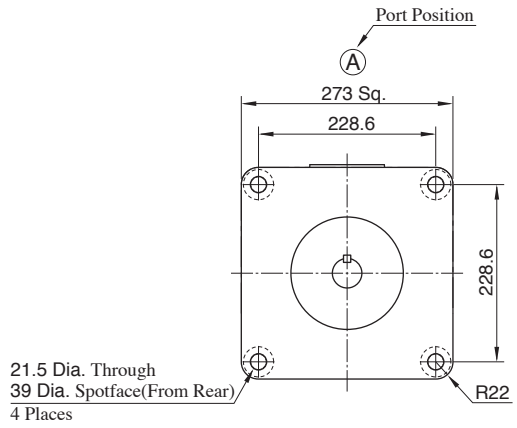




Foot Mtg.: PV2R4-＊-L



For other dimensions, refer to "Flange Mtg."



Noise Level

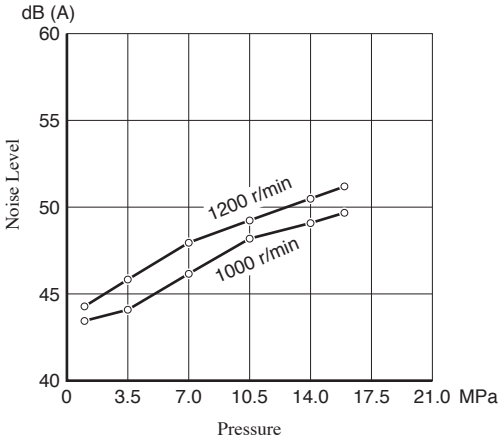
Measuring Conditions

Fluid Viscosity : 20 mm² /s

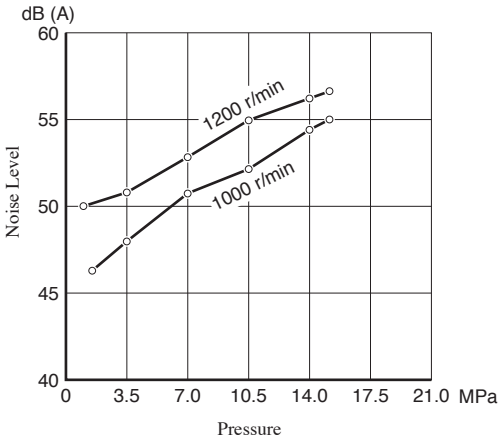
Measurement Point : One meter horizontally away from pump

Back Ground Noise : 40 dB (A)

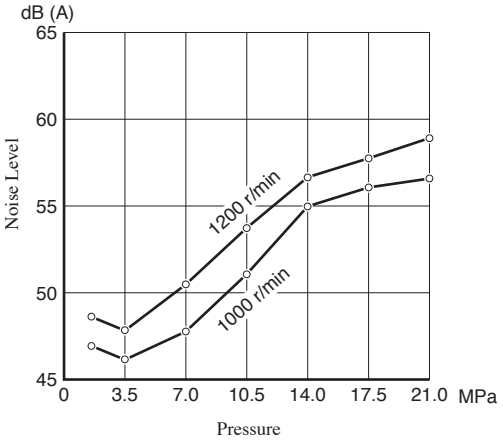
PV2R1-6



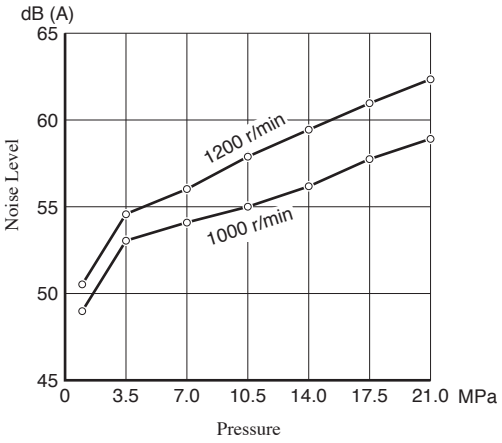
PV2R1-31



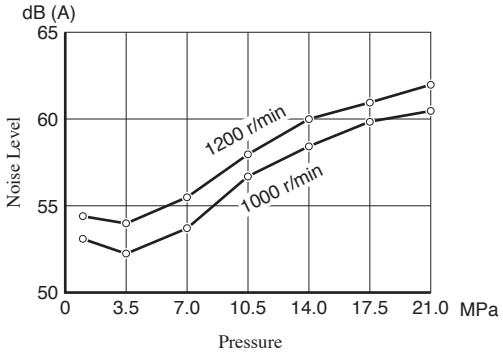
PV2R2-41



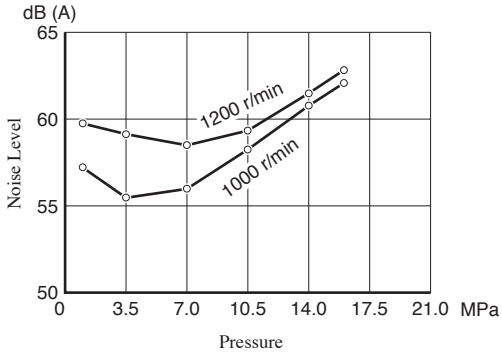
PV2R2-65



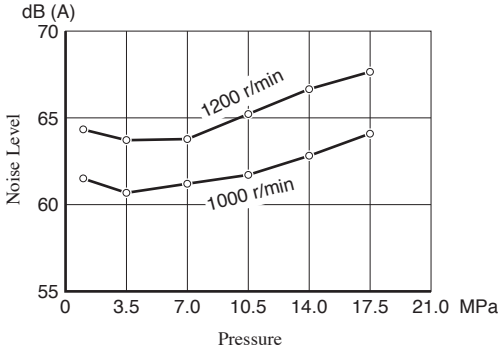
PV2R3-76



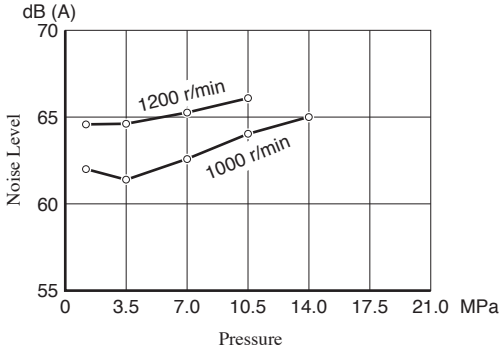
PV2R3-116



PV2R4-136



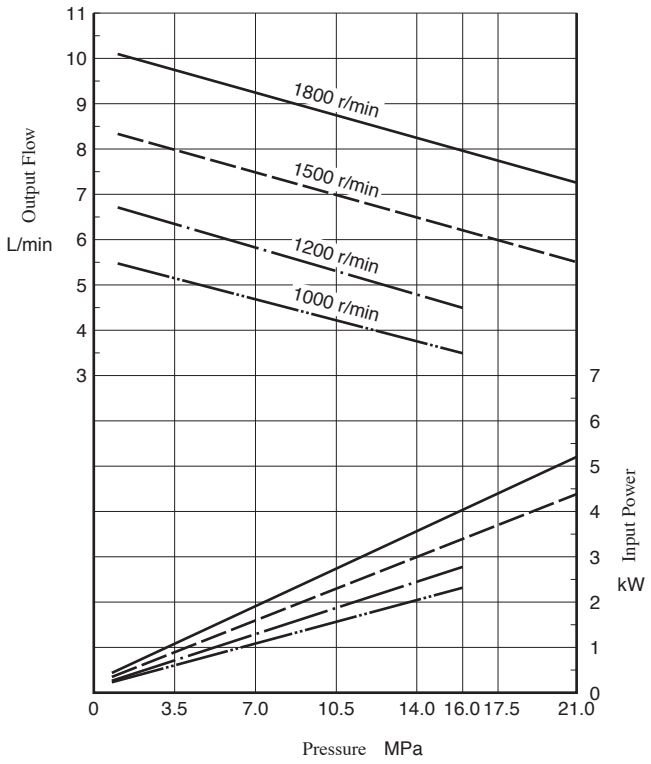
PV2R4-237



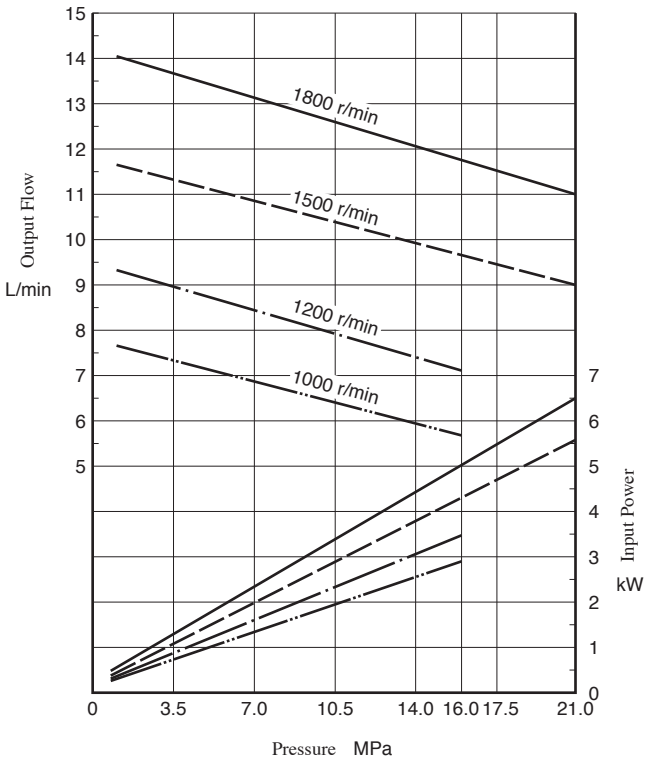
Pressure, Output Flow, and Input Power

Typical Pump Characteristics at Viscosity 20 mm²/s [ISO VG32 Oils, 50°C]

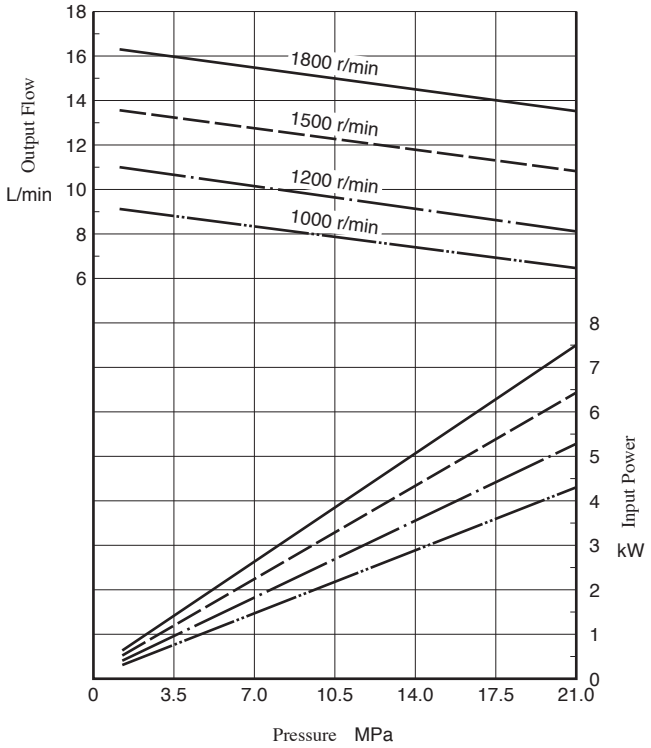
PV2R1-6



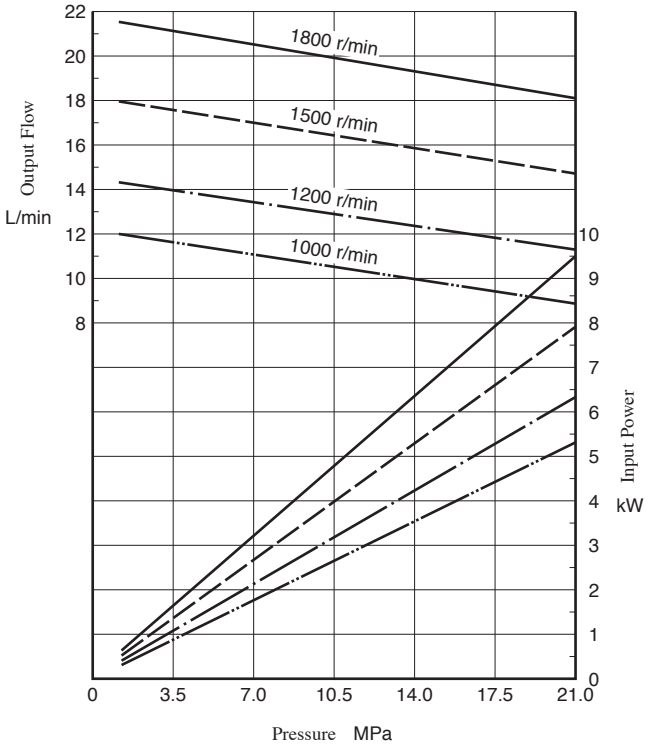
PV2R1-8



PV2R1-10



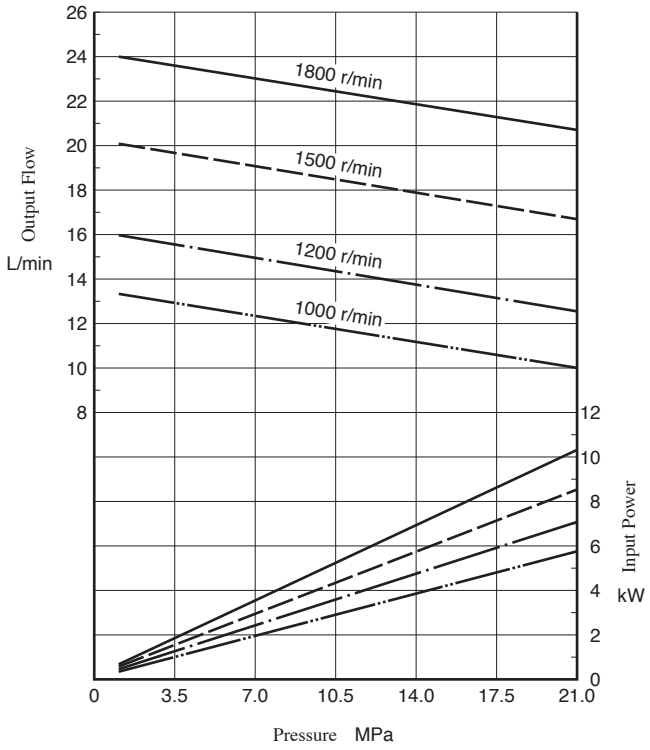
PV2R1-12



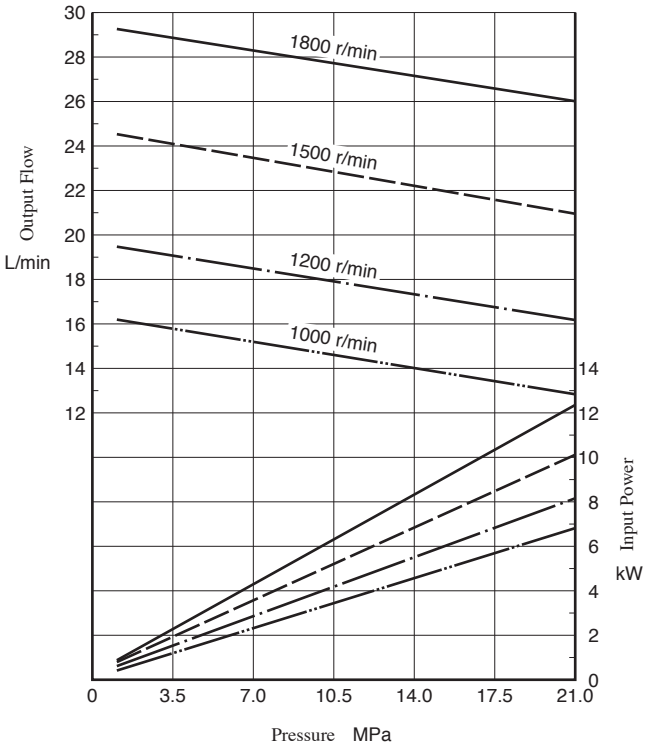
Pressure, Output Flow, and Input Power

Typical Pump Characteristics at Viscosity 20 mm²/s [ISO VG32 Oils, 50°C]

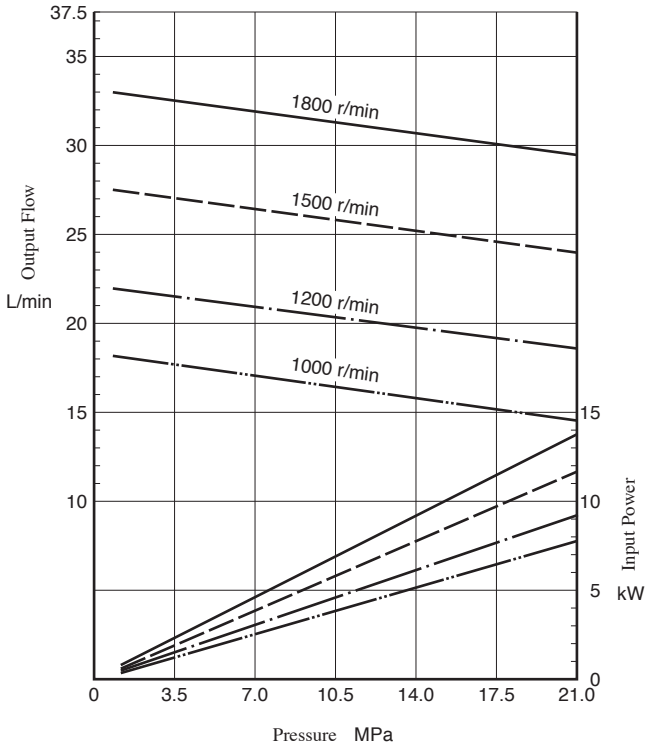
● PV2R1-14



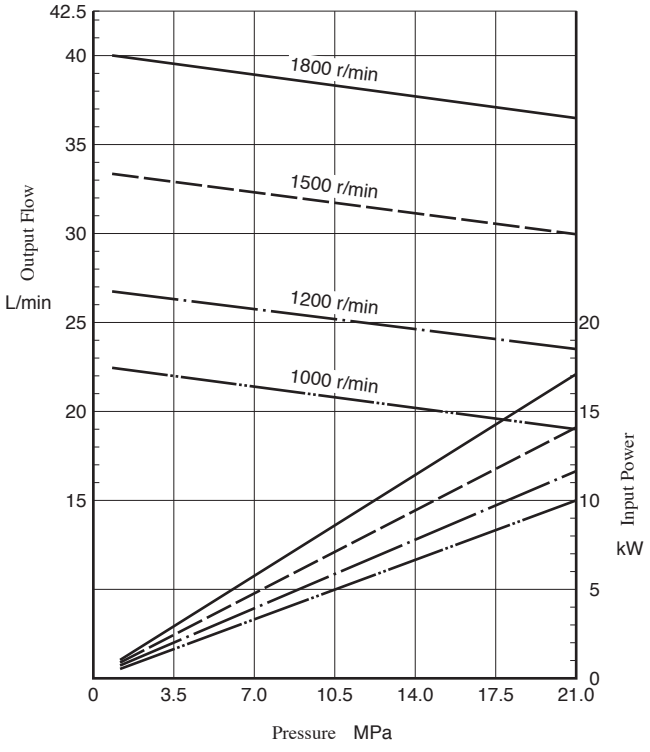
● PV2R1-17



● PV2R1-19



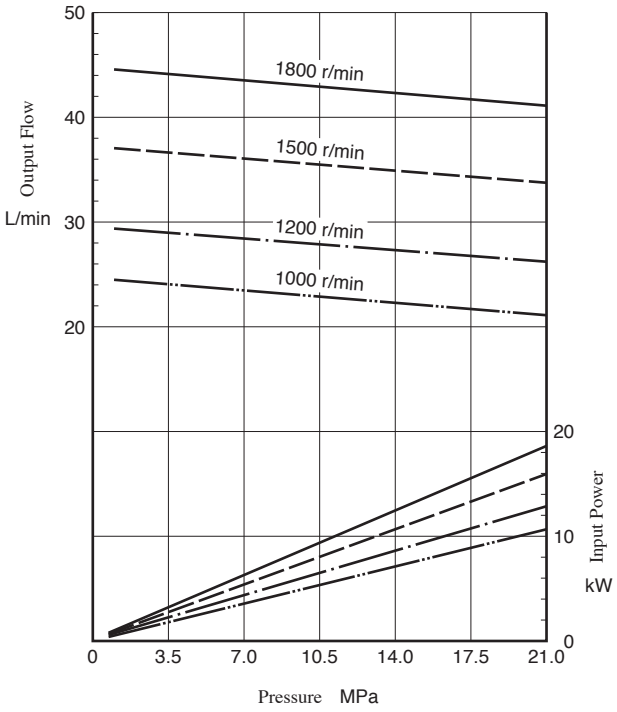
● PV2R1-23



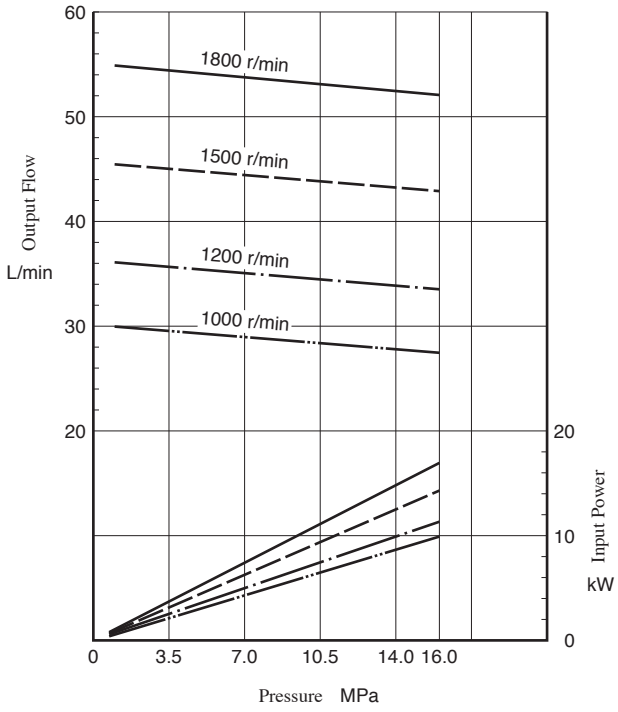
Pressure, Output Flow, and Input Power

Typical Pump Characteristics at Viscosity 20 mm²/s [ISO VG32 Oils, 50°C]

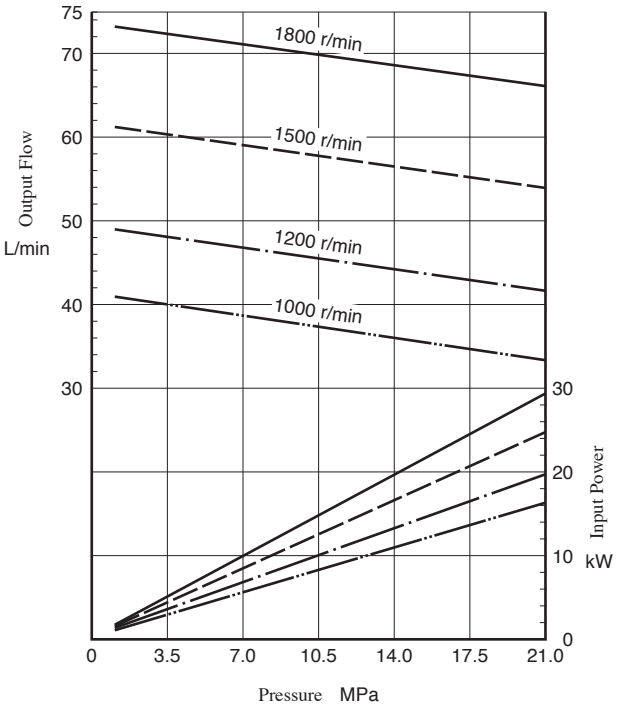
● PV2R1-25



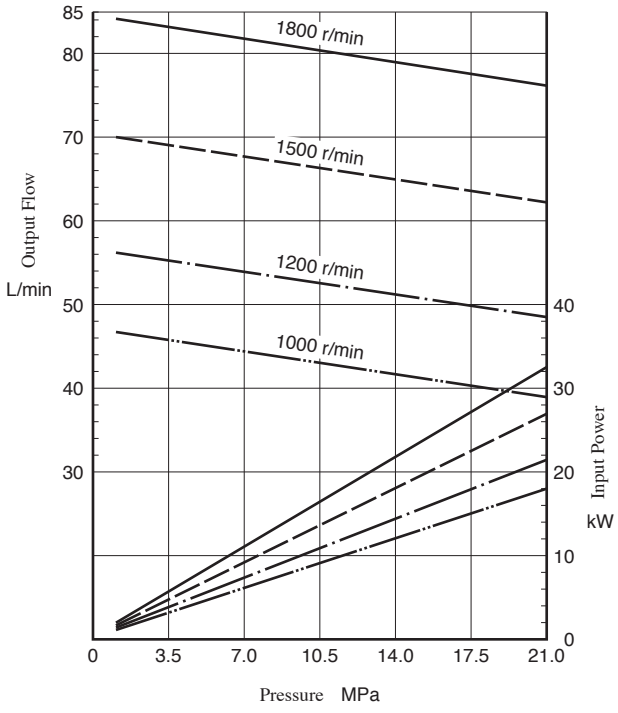
● PV2R1-31



● PV2R2-41



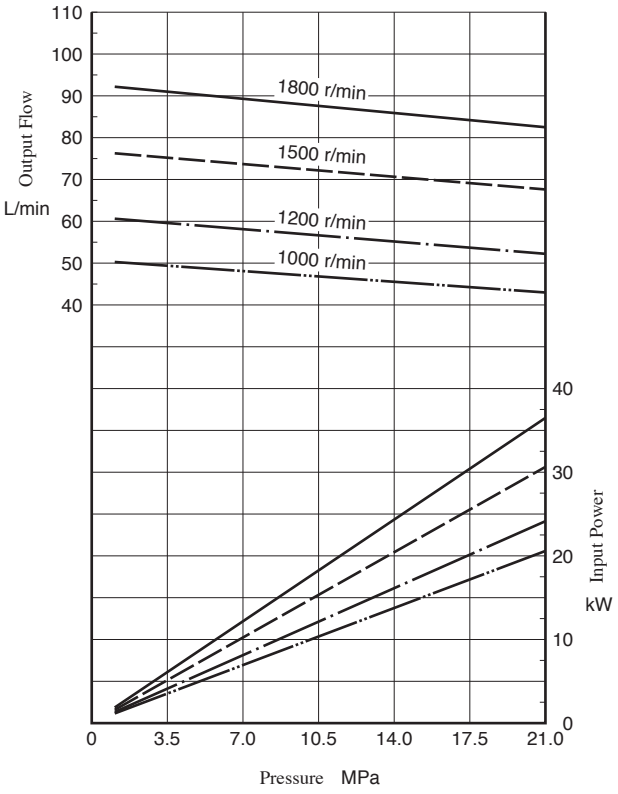
● PV2R2-47



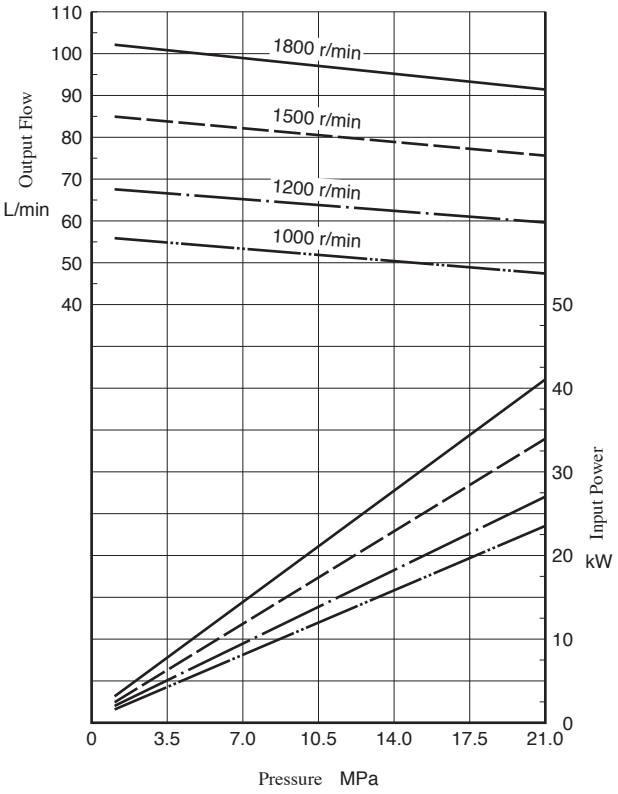
Pressure, Output Flow, and Input Power

Typical Pump Characteristics at Viscosity 20 mm²/s [ISO VG32 Oils, 50°C]

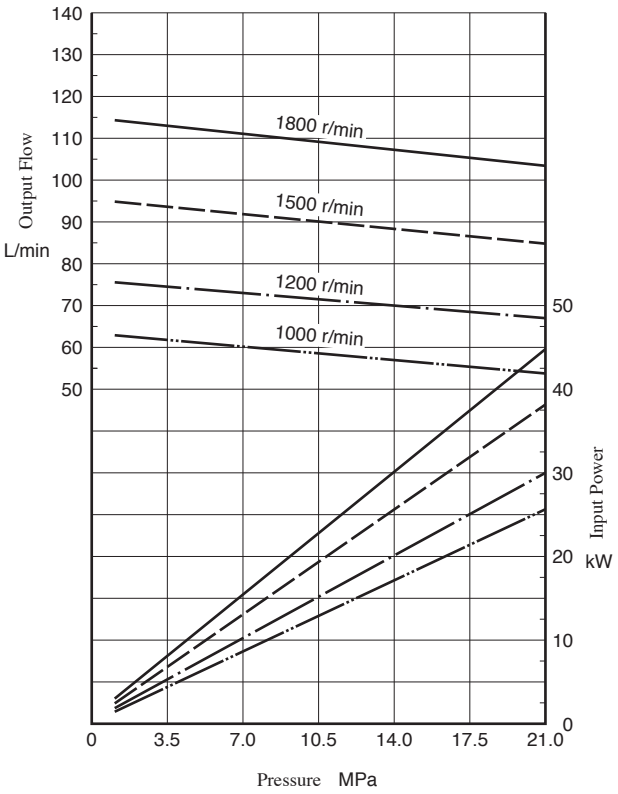
● PV2R2-53



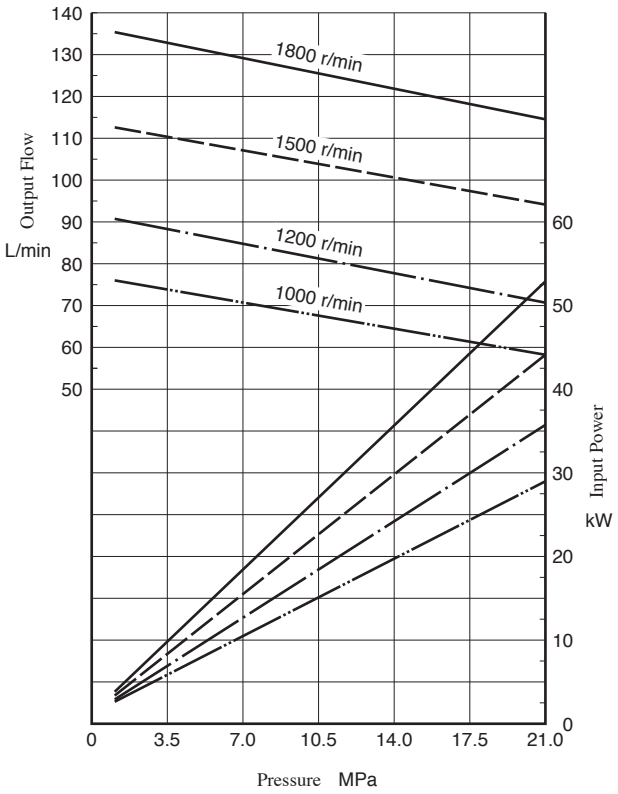
● PV2R2-59



● PV2R2-65



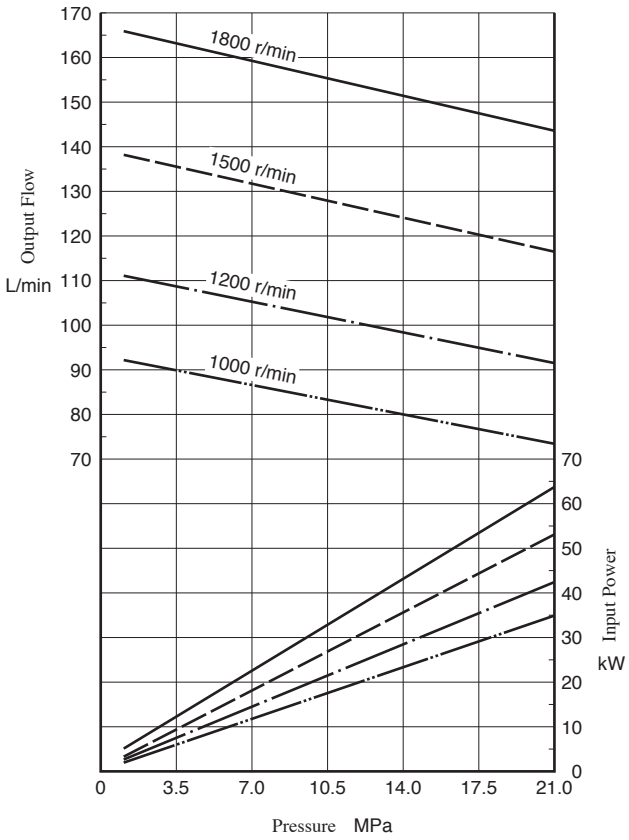
● PV2R3-76



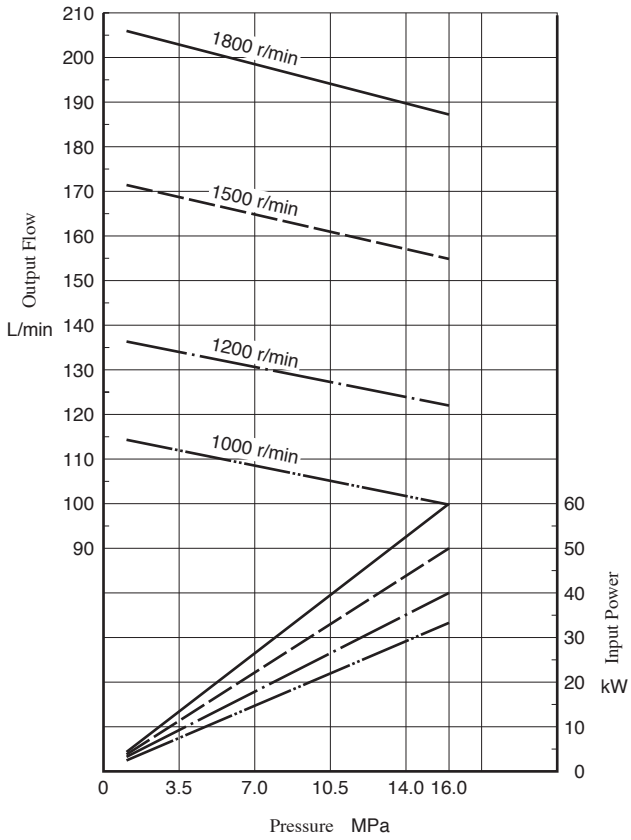
Pressure, Output Flow, and Input Power

Typical Pump Characteristics at Viscosity 20 mm²/s [ISO VG32 Oils, 50°C]

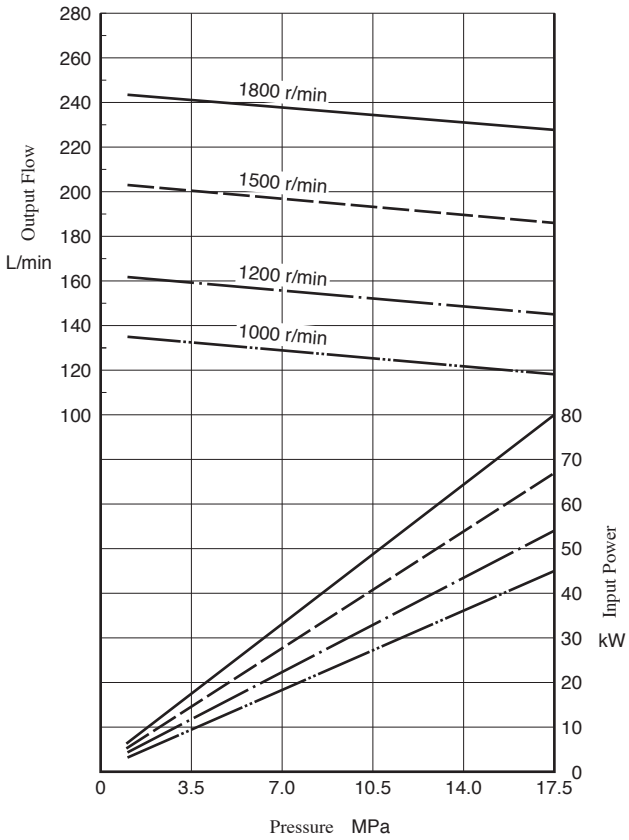
● PV2R3-94



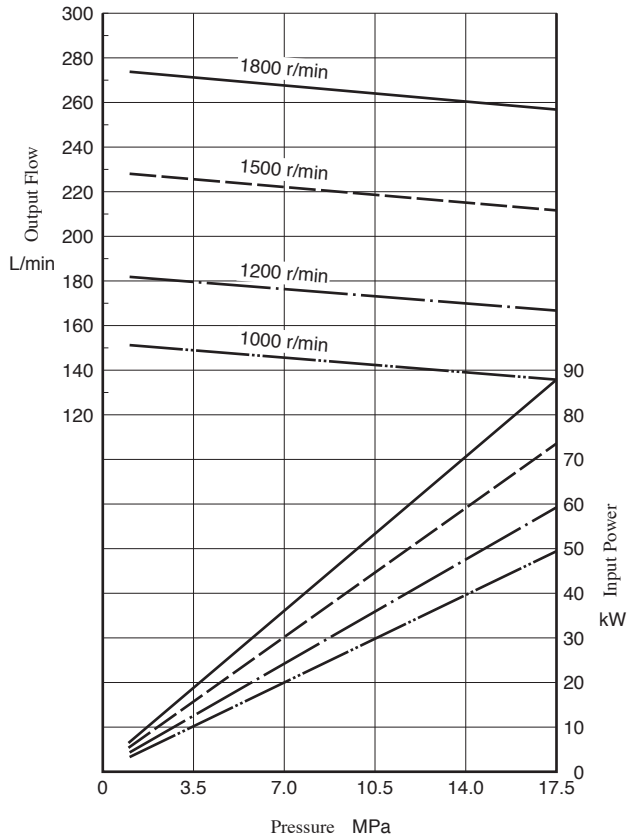
● PV2R3-116



● PV2R4-136



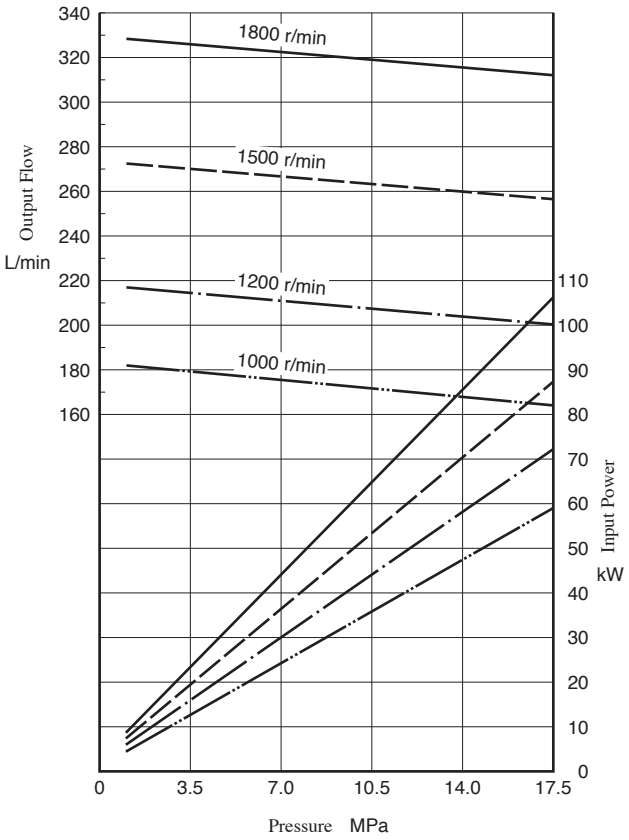
● PV2R4-153



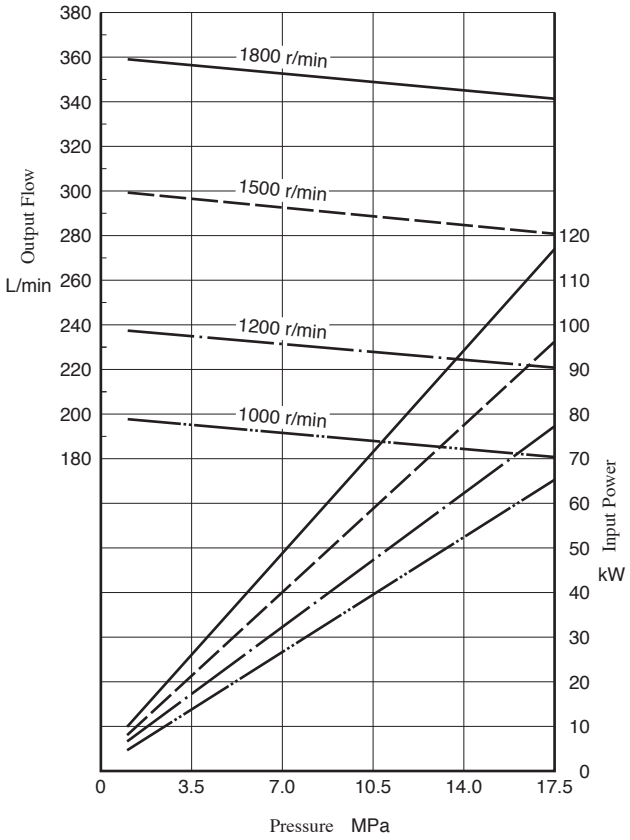
Pressure, Output Flow, and Input Power

Typical Pump Characteristics at Viscosity 20 mm²/s [ISO VG32 Oils, 50°C]

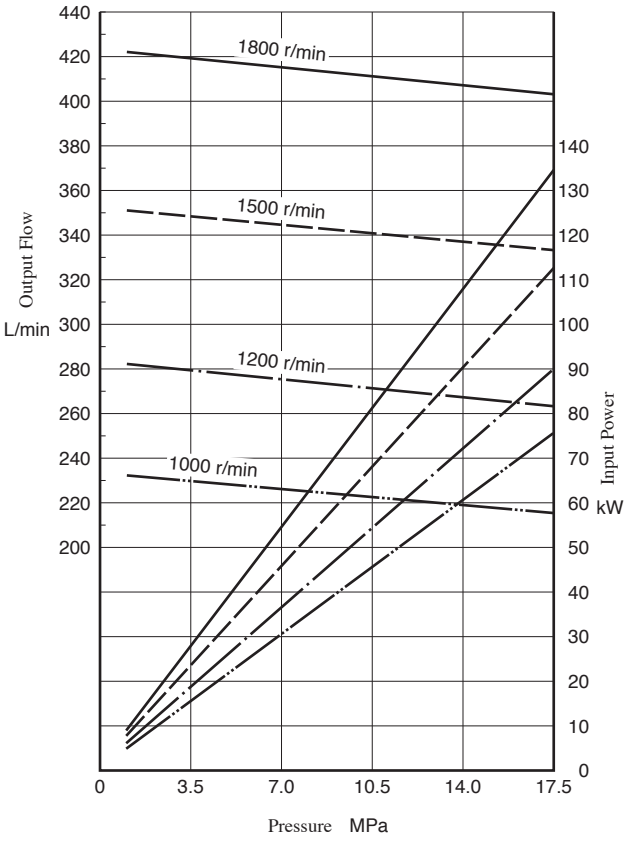
● PV2R4-184



● PV2R4-200

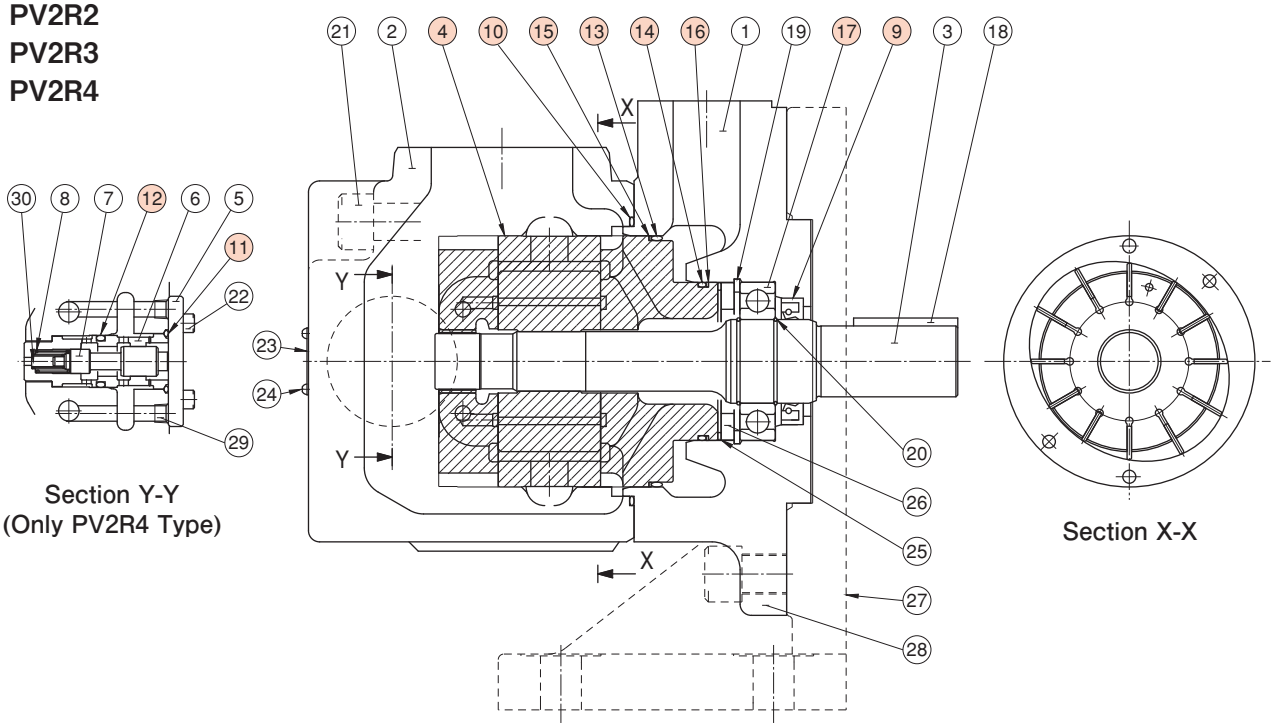


● PV2R4-237



Spare Parts List

PV2R1
PV2R2
PV2R3
PV2R4



Cartridge Kits

Model Numbers	④Cartridge Kit Numbers	Model Numbers	④Cartridge Kit Numbers
PV2R1– 6–＊–RAA–43	CPV2R1– 6–R–43	PV2R2– 41–＊–RAA–41	CPV2R2– 41–R–41
PV2R1– 8–＊–RAA–43	CPV2R1– 8–R–43	PV2R2– 47–＊–RAA–41	CPV2R2– 47–R–41
PV2R1–10–＊–RAA–43	CPV2R1–10–R–43	PV2R2– 53–＊–RAA–41	CPV2R2– 53–R–41
PV2R1–12–＊–RAA–43	CPV2R1–12–R–43	PV2R2– 59–＊–RAA–41	CPV2R2– 59–R–41
PV2R1–14–＊–RAA–43	CPV2R1–14–R–43	PV2R2– 65–＊–RAA–41	CPV2R2– 65–R–41
PV2R1–17–＊–RAA–43	CPV2R1–17–R–43	PV2R3– 76–＊–RAA–31	CPV2R3– 76–R–31
PV2R1–19–＊–RAA–43	CPV2R1–19–R–43	PV2R3– 94–＊–RAA–31	CPV2R3– 94–R–31
PV2R1–23–＊–RAA–43	CPV2R1–23–R–43	PV2R3–116–＊–RAA–31	CPV2R3–116–R–31
PV2R1–25–＊–RAA–43	CPV2R1–25–R–43	PV2R4–136–＊–RAA–30	CPV2R4–136–R–30
PV2R1–31–＊–RAA–43	CPV2R1–31–R–43	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	OR NBR–90 G80–N	OR NBR–90 G105–N	OR NBR–90 G135–N	OR NBR–90 G145–N	1
11	O-Ring	—	—	—	OR NBR–90 P28–N	1
12	O-Ring	—	—	—	OR NBR–90 P22A–N	1
13	O-Ring	OR NBR–90 G60–N	OR NBR–90 G85–N	OR NBR–90 G115–N	OR NBR–70–1 G130–N	1
14	O-Ring	OR NBR–90 G30–N	OR NBR–90 P46–N	AS 568–231 (NBR–90)	OR NBR–70–1 G80–N	1
15	Back-up Ring	—	—	—	BR JIS B 2401-4–T3–G130	1
16	Back-up Ring	—	—	—	BR JIS B 2401-4–T2–G80	1
17	Bearing	6004	6205	6207	6209	1

Note: Item No.⑬ and ⑭ (o-rings) and ⑮ and ⑯ (back-up rings) are included in cartridge kit.

● Cartridge kits and seals for pumps for phosphate esters (F-PV2R＊) differ from those in the table above. Consult Yuken for details.