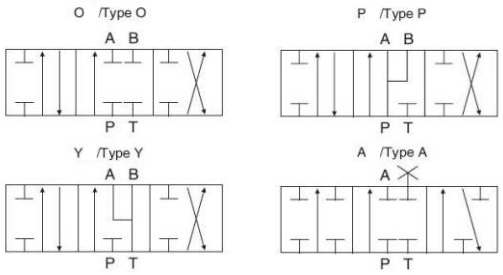
HPC
HYDRAULIC EQUIPMENTS

Monoblock Directional Control Valves

Monoblock directional valve has many outstanding features including hihg performance, high efficiency, small volume, mass flow, and leak proof. We mainly have these series of monblock valve : ZD-L10; ZD-L102; ZD-L15; ZT-12; ZT-L20; ZDa-L15; BDL-L40; BDL-L100; CDB & ZCDB series.

SPOOLFUNCTION SYMBOLS



ZD-L10 series

- Monoblock types with 2 working sections
- Flow 40 l/min with pressure 160bar, 200bar, max 250bar
- Spool returning type with T (spring return) and W (ball locking)
- Joining port: L (screw connection)
- Parallel circuit
- Spool function: O, P. Y, A
- Nominal diameter : G3/8; M18*1.5; M16*1.5; SAE6
- Model examples : ZD-L10E-2OT; ZD-L10F-OT.AT; ZD-L10F-20W etc.

ZD-L15 Series

- Monoblock types with 2 to 3 working sections
- Flow 63 l/min with pressure 160bar, 200bar, 315bar
- Spool returning type with T (spring return) and W (ball locking)
- Joining port: L (screw connection)
- Parallel circuit
- Spool function: O, P. Y, A
- Nominal diameter: G1/2; G3/8; M18*1.5; M22*1.5
- Model examples: ZD-L15E-2OT; ZD-L15F-2OT.QT etc.

ZD-L102 Series

- Monoblock types with 1 to 3 working sections
- Flow 40 l/min with pressure 160bar, 200bar, 315bar
- Spool returning type with T (spring return) and W (ball locking)
- Joining port: L (screw connection)
- Parallel circuit
- Spool function: O, P. Y, A
- Nominal Diameter : G1/2; G3/8; M18*1.5; M18*1.5
- Model examples : ZD-L102E-OT; ZD-L102F-OT.AT; ZD-L102F-OW; ZD-L102E-3OT; ZD-L102-YT.OW.YT etc.

ZT-L20 series

- Monoblock types with 1 to 4 working sections
- Nominal pressure 80 l/min, max 100 l/minute with pressure 200bar, max pressure up to 315bar
- Spool returning type with T (spring return) and W (ball locking)
- Joining port: L (screw connection)
- Parallel circuit
- Spool function: O, P. Y, A
- Nominal diameter: G1/2; G3/4; G1; M22*1.5; M27*2

Model examples: ZT-L20F-OT; ZT-L20H-OT.AT.OT; ZT-L20F-4OT; ZT-L20F-OT-J etc.

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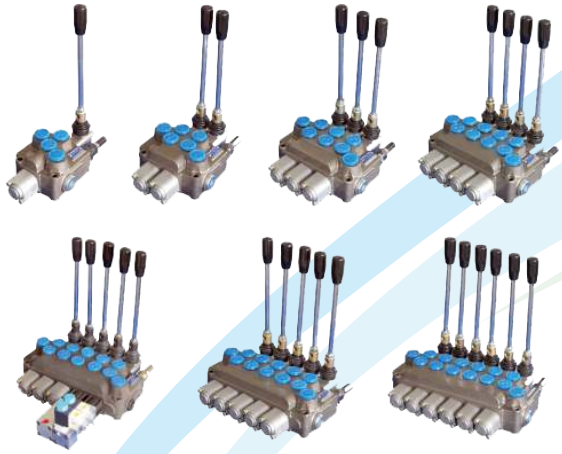
HYDRAULIC EQUIPMENTS

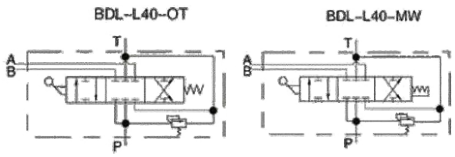
Monoblock Directional Control Valves



ZT-L12 Series

- Monoblock types with 1 to 6 working sections
- Nominal pressure 45 l/min, max 50 l/minute with pressure 160bar, 200bar, max pressure up to 315bar
- Selective spool returning ways: T (spring return); W (ball locking); Q; DQ
- Joining port: L (screw connection)
- Parallel circuit
- Spool function: O, P. Y, A
- Nominal diameter: G1/2; G3/8; M18*1.5
- Model examples: ZT-L12E-OT; ZT-L12F-OT.AT; ZT-L12H-4OT; ZT-L12F-6OT; ZT-L12F-ODQ.OQ.2OT.OW etc

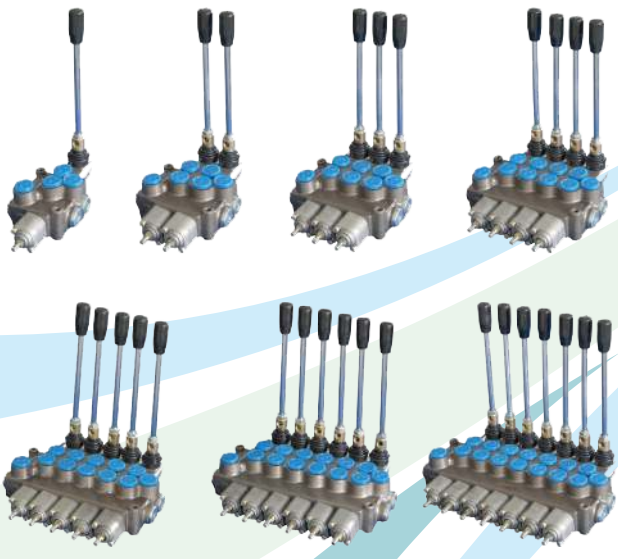
BDL-L40 Series



- Single spool monoblock valve
- Flow 40 l/min with nominal pressure 160bar, max 315bar
- Spool returning type with T (spring return) and W (ball locking)
- Joining port: L (screw connection)
- Parallel circuit
- Spool function: O, P. Y, M
- Nominal diameter: G3/8; M18*1.5
- Model examples: BDL-L40E-OT; BDL-L40F-MT; BDL-L40F-MW etc

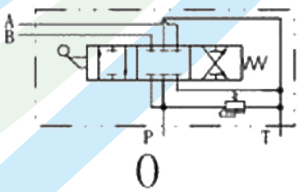
ZDa-L15 series

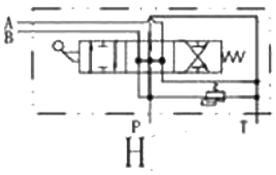
- Monoblock types with 1 to 7 working sections
- Flow 63 l/min with nominal pressure 200bar
- Spool returning type with T (spring return) and W (ball locking)
- Joining port: L (screw connection)
- Parallel circuit
- Spool function: O, P. Y, A
- Nominal diameter: G1/2; G3/8; M18*1.5
- Model examples: ZDa-L15F-OT; ZDa-L15F-3OT; ZDa-L15F-6OT

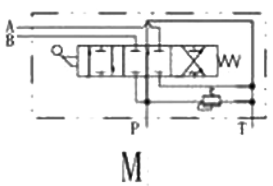


BDL-L100 series

- Single spool monoblock valve
- Flow 100 l/min with nominal pressure 160bar, max pressure up to 200bar
- Spool returning type with T (spring return) and W (ball locking)
- Joining port: L (screw connection)
- Parallel circuit
- Spool function: O, P. Y, M
- Nominal diameter: G3/4; G1; M27*2
- Model examples: BDL-L40E-OT; BDL-L40F-MT; BDL-L40F-MW







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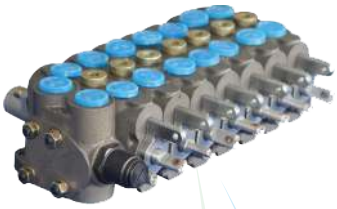
HYDRAULIC EQUIPMENTS

Sectional Directional Control Valves

Sectional directional control valve offers multi-function control valve method to solve hydraulic circuit system requirement. The compact construction design is one of strong feature for sectional directonal control valve which includes other features, such as low pressure drop, high efficiency. The sectional directional control valve provides selective operation methods including manual control, hydraulic control, electro-hydraulic and pneumatic control. We provide good quality and high accuracy sectional directional control valve for all customers requirements.

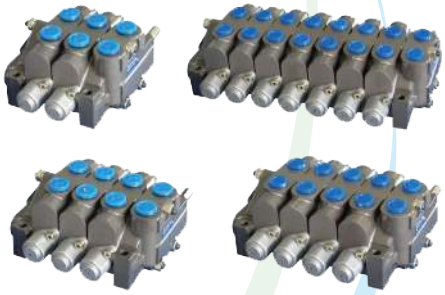
DL Series

- Sectional types with 1 to 12 working sections
- Flow 30l/min, 63l/min, 100l/min, 160l/min, with pressure 160bar, 200bar, 250bar max 315bar
- Selective operation methods: manual control; handle+pneumatic control; hydraulic control
- Joining port: L (screw connection)
- Selective spool functions: O, Y, A, Q, D, P, M, k
- Oil circuit modes : parallel; serial; parallel & serial combine
- Nominal diameter: G3/8, G1/2; G3/4; G1; M16*1.5; M18*1.5; M22*1.5; M27*2; M33*2
- Model examples. DL-L8F-2OT; DL-E15-M4T.O5T.QW; DL-F20-O4T.M6T-J, DL-F25-Y4W.O5T.Q1W etc.



DF Series

- Sectional types with 1 to 10 working sections
- Valve capable of handling up to 50l/min with pressure 160bar, 200bar, 250bar max 315bar
- Selective operation methods: manual control; handle+pneumatic control; hydraulic control
- Joining port: L (screw connection)
- Selective spool functions: O, Q etc
- Oil circuit modes : parallel
- Nominal diameter: G3/8, G1/2; M16*1.5; M18*1.5; M22*1.5
- Model examples. DF-250-2OT-G1/2; DF-350-3OT-G3/8; DF-750-7OT-G3/8 ect.



DCV Series (DCV60 series & DCV100 series)

- Sectional types with 1 to 12 working sections
- DCV60 series flow: 50l/min, max 60l/min with pressure up to 315bar
- DCV100 series flow: 80l/min, max 100l/min with pressure up to 315bar
- DCV140 series flow: 100l/min, max 140l/min with pressure up to 315bar
- DCV60 series operation methods: pneumatic control; electrical + pneumatic
- DCV100 series operation methods: pneumatic control; electrical + pneumatic
- Joining port: L (screw connection)
- Selective spool functions: O, W etc
- Nominal diameter: G1/2; G3/4
- Model examples: DCV100-4OQ; DCV60-20W.2OT; DCV100-OT-S; DCV60-4OQ; DCV100-2ODQ etc.

CDB & ZCDB Series

- They are split-flow valves &non split-flow valve two series with 1 to 6 working sections,
- Valve capable of handling up to 80l/min with pressure 160bar, 200bar, 250bar
- Selective operation methods: manual control
- Joining port: L (screw connection)
- Selective spool functions: O, A, Y
- Oil circuit modes : parallel
- Nominal diameter: G3/8, G1/2; M22*1.5
- Model examples: CDB-L15F-OT; CBD-L15F-5OT; ZCDB-L15F-2OT-G1/2; ZCDB-L15-7OT-G1/2 etc.

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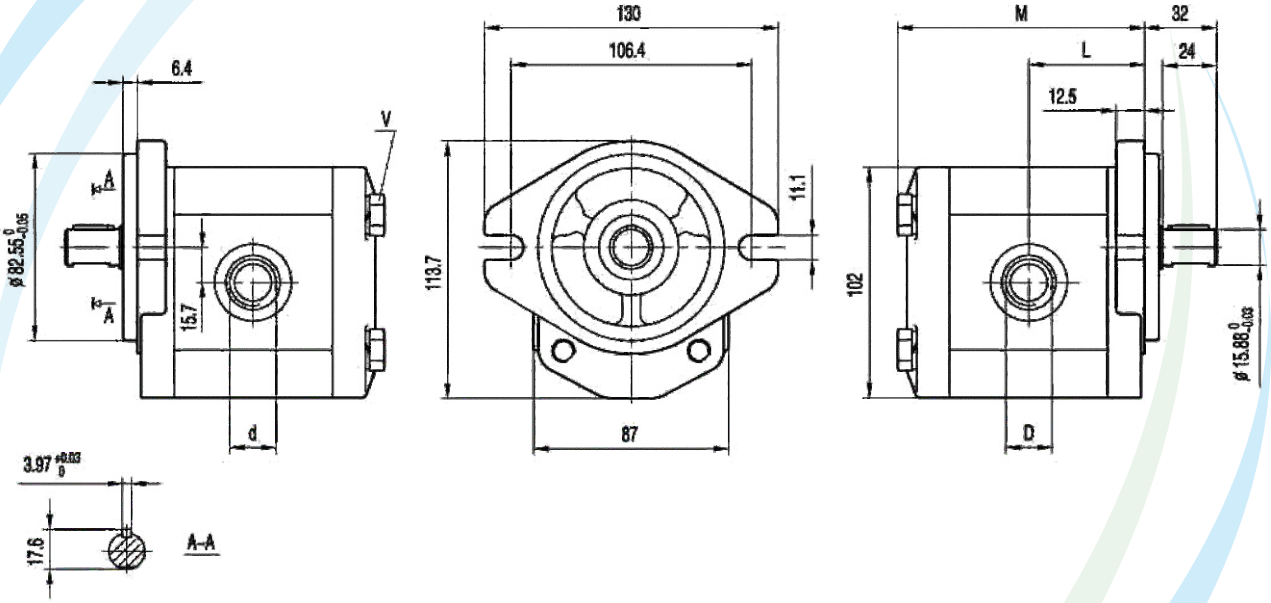
HYDRAULIC EQUIPMENTS

Gear Pump BHP2A0

"D" and "d" port are machined in compliance with theaded port with O-ring seal in truncated housing SAE J1926/1 (ISO J1926-1)

Mounting Flange Material	V
	Screws tightening torque Nm
Aluminum	40...45
Cast Iron	70...75



Type	Displacement	Max pressure			Max speed	Min. speed	Dimensions			
		P1	P2	P3			M	L	D	d
	(cm³/rev)	bar	bar	bar	(r/min)	(r/min)	mm	mm		
BHP2A0-D-3	3	270	285	300	4000	800	91.1	43.6	11/16-12UNF	7/8-14UNF
BHP2A0-D-4	4	270	285	300	4000	600		44.4	11/16-12UNF	7/8-14UNF
BHP2A0-D-6	6	270	285	300	4000	600	96	46	11/16-12UNF	7/8-14UNF
BHP2A0-D-8	8	270	285	300	3500	500		47.7	11/16-12UNF	7/8-14UNF
BHP2A0-D-10	10	270	285	300	3500	500	102.6	49.3	11/16-12UNF	7/8-14UNF
BHP2A0-D-12	12	270	285	300	3000	500		51	11/16-12UNF	7/8-14UNF
BHP2A0-D-14	14	250	265	280	4000	500	109.3	52.7	11/16-12UNF	7/8-14UNF
BHP2A0-D-16	16	250	265	280	4000	500		54.4	11/16-12UNF	7/8-14UNF
BHP2A0-D-18	18	250	265	280	3600	400	116	56	11/16-12UNF	7/8-14UNF
BHP2A0-D-20	20	220	235	250	3200	400		57.7	11/16-12UNF	7/8-14UNF
BHP2A0-D-22	22	220	235	250	3000	400	122.6	59.3	11/16-12UNF	7/8-14UNF
BHP2A0-D-25	25	200	215	230	3000	400		61.8	11/16-12UNF	7/8-14UNF
BHP2A0-D-28	28	180	190	200	2500	400	132.6	64.3	11/16-12UNF	7/8-14UNF
BHP2A0-D-30	30	160	170	180	2500	400		66	11/16-12UNF	7/8-14UNF

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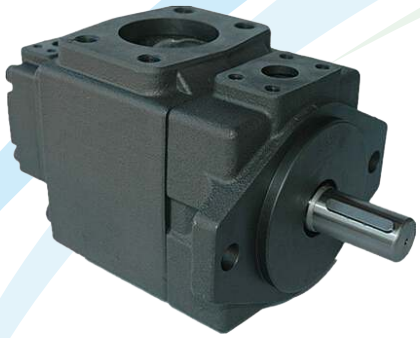
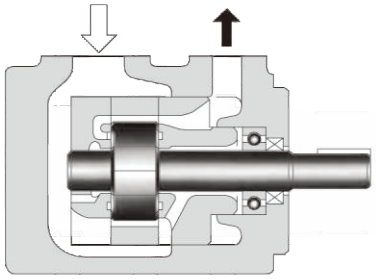
HYDRAULIC EQUIPMENTS

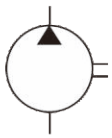
PV2R Series Single Vane Pump

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



Model Number Designation

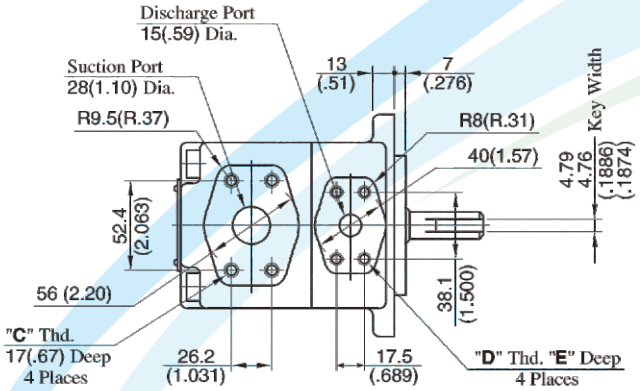
F-	PV2R1	-6	-L	-R	A	A	-42	-*
Special Seals	Series Number	Nominal Displacement cm³/rev	Type of Mounting	Shaft Rotation	Discharge Port Position	Suction Port Position	Design Number	Design Standards
F: For phosphatc ester type fluids (Omit if not required)	**PV2R1**	**6, 8, 10, 12 14, 17, 19 23, 25, 31**	**L:** Foot Mounting	(Viewed from Shaft End)			**42**	Refer to
	PV2R2	**41, 47, 53 59, 65**		**R :** Clockwise (normal)	**A:** Upwards (normal)	**A:** Upwards (normal)	**41**	
	PV2R3	**76, 94, 116**	**F:** Flange Mounting				**31**	
	PV2R4	**136, 153, 184 200, 237**					**30**	

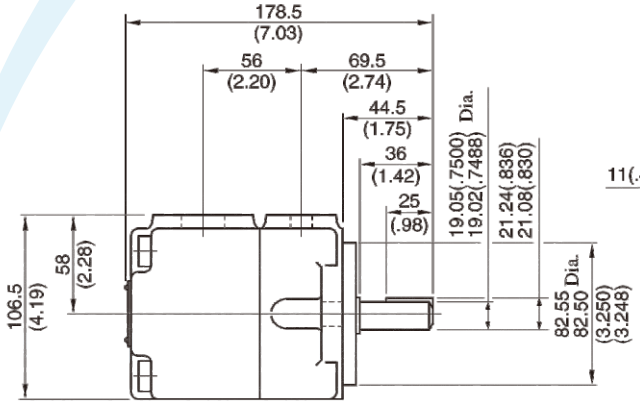
Pipe Flange Kits

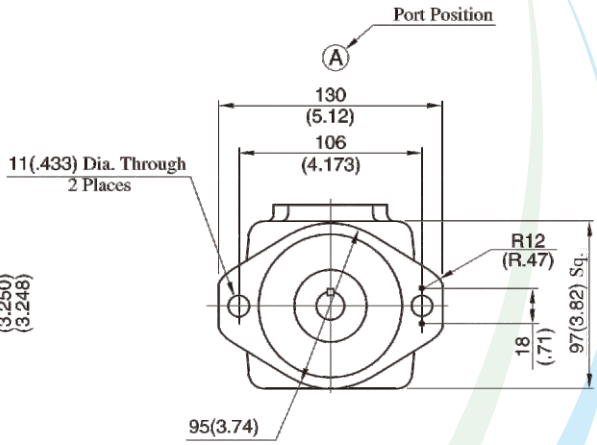
Pipe Flange Kits are available. When ordering, specify the kit number from the table below.

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

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



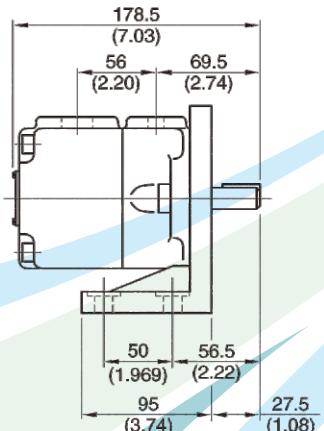


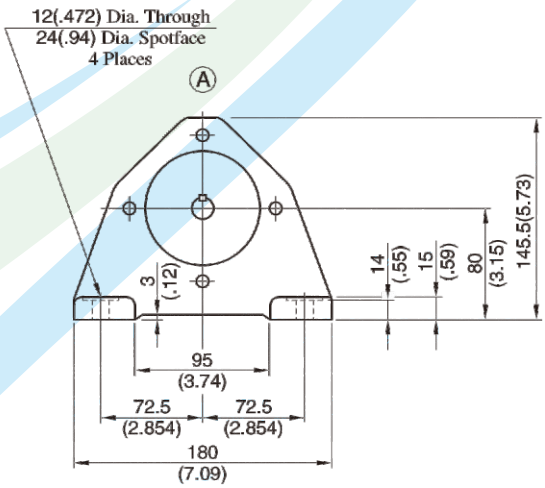


Model Numbers	"C" Thd.	"D" Thd.	E mm (Inches)
PV2R1-*-F-RAA-42	M10	M8	14 (.55)
PV2R1-*-F-RAA-4290	3/8-16 UNC	5/16-18 UNC	16 (.63)

DIMENSIONS IN MILLIMETRES (INCHES)

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





Specifications

Model Numbers	Geometric Displacement cm³/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			
		Anti-Wear Type	R & O Type	Anti-Wear Type Water Glycols ★1	Water Glycols	Water in Oil Emulsions	Phosphate Esters		Max.	Min.
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)	21 (3050)								
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)

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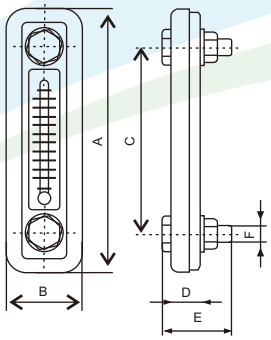
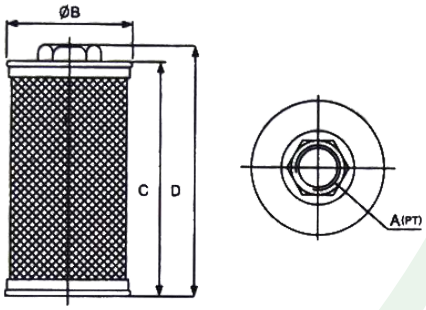
HYDRAULIC EQUIPMENTS

Fluid Level & Temperature Gauges



Model	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
L S-3”	118	41	80	16.5	39	M10	0.19
L S-5”	178	50	127	19	47	M12	0.35

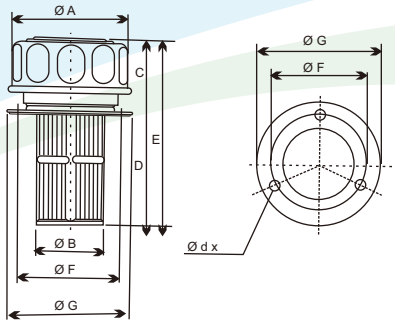
SUCTION FILTER



MODEL	A(PT)	B mm	C mm	D mm	Flow 1/min	Filtration mesh	Weight kg
JL-02	1/4”	55	82	90	25		0.08
JL-03	3/8”	55	82	90	25		0.08
JL-04	1/2”	66	82	90	35		0.09
JL-06	3/4”	66	122	132	60		0.14
JL-08	1”	66	142	152	110	100	0.17
JL-10	1 1/4”	66	162	176	210		0.19
JL-12	1 1/2”	82	182	196	260		0.25
JL-16	2”	103	182	197	390		0.36
JL-20	2 1/2”	115	232	235	600		1.14
JL-24	3”	135	232	235	700		1.20

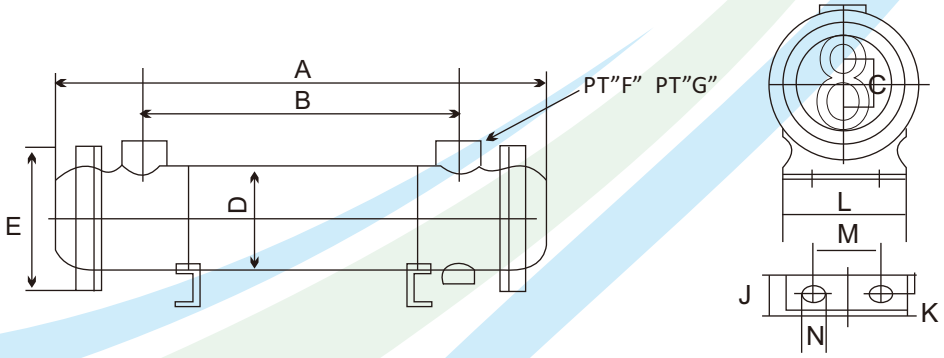
HPC
HYDRAULIC EQUIPMENTS

Filter Breather Filters



Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	DX Hole	Filtration mesh	Weight kg
AB-1162	54	31	31	68	99	44.5	57	30	50	0.08
AB-1163	81	48	47	90	132	71	99	87	50	0.21

OR-Multi Tube Series Oil Pressure Coller



Product features:

1. To determine the optimal cooling effect of heat transfer. The cooler adopts multi tube.
2. A cooling area. The cooler for all brass number, fin tube type and rolling type tube type three times above, cooling area in accordance with the brass surface calculation, so the cooling area full of.
3. The optimum cooling cooler material.Using pure copper tube, heat conduction rate of more than 0.95.

HPC
HYDRAULIC EQUIPMENTS

Filter Breather Filters

AH Series Aluminium Return Line Heat Exchangers Product Description

Industral hydraulic oi coolers are made of light aluminum. They are high efficient heat exchangers resistant to vibration. The products are wildly used in hydraulic system parts, hydraulic station, construction machinery, hydraulic industry, cars, etc.

AH Series Aluminium Return Line Heat Exchangers Features:

1. Industral hydraulic oi cooler
2. Highly resistant to vibration
3. Environmentally friendly technologies
4. OEM&ODM provided

AH Series Aluminium Return Line Heat Exchangers Specifications:

Type	Thread	Delivery	Max Working Press	Colling Cacibility	Dimension	Weight
	PT”	L/Min	Bar	Kcl/h	m/m	Kg
				t=30°C		
AH0607T-CA*	1/2”	60	20	1000	245x200x115	3.5
AH0608T-CA*	3/4”	60	20	1500	305x200x115	4.2
AH0608LT-CA*	3/4”	60	20	3000	405x200x115	6
AH1012-CA*	1”	100	20	6000	410x370x200	10
AH1417-A*	1”	100	20	10000	556x411x200	10.5
AH1470-A*	1 1/4”	200	20	14000	570x407x225	13
AH1470-CA*	1 1/4”	200	20	18000	520x475x320	25
AH1680-CA*	1 1/2”	300	20	28000	520x640x300	30

*AH Series Air Coolers, suitable in hydraulic return line circuit.
For security reason, we suggest to add a by-pass valve in your circuit always.