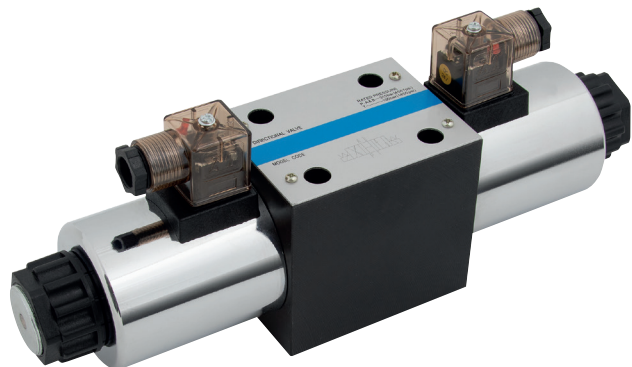


Electrical operated directional control valve



Specification		3		5	
Working pressure (bar)	Oil ports P,A,B	350		315	
	Oil ports T	100		100	
Max. Flow (L/min)		80		120	
Working fluid		Mineral oil;phosphate-ester			
Fluid temp. (℃)		-20~70			
Viscosity (mm²/s)		2.8~100			
Working voltage (V)	DC	12		24	
	AC	110/50Hz		220/50Hz	
Max.Switch frequency (T/h)		15000 (DC)		7200 (AC)	
Insulation grade		IP65			
Weight (kg)	Single solenoid	1.45(DC)	1.4(AC)	5.1(DC)	4.3(AC)
	Double solenoids	1.95(DC)	1.9(AC)	6.7(DC)	5.1(AC)
Cleanliness	The maximum allowable cleanliness of the oil should be according to 9th degree of Standard NAS1638.It is suggested that the minimum filter rating should be $\beta_{10} \geq 75$.				

**Electrical Operated
Directional Control Valve**

Specification
ISO 4401 Size 3/5

Number of Positions

Function Type
See Table on page 14

Spring Return
Y = With
D = Detent

Design
RX14

ADC * * * * /Design/ * * * * *

Seal Type
Blank = NBR
V = Viton

Electrical Connection
K = Connector With LED
K1 = Connector Without LED
K2 = No Connectors

Manual Override
N9 = With
N8 = Without
N7 = Water Proof

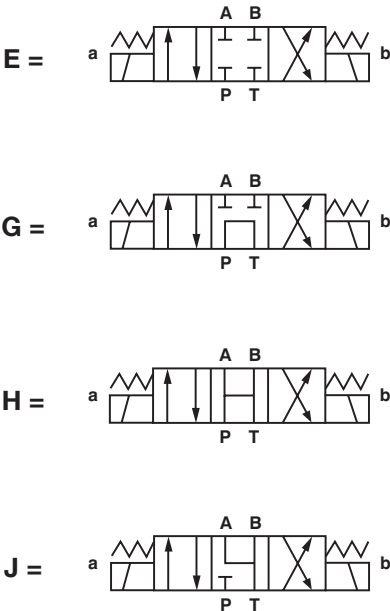
Voltage
24V
48V
110V
240V

Current
AC/DC

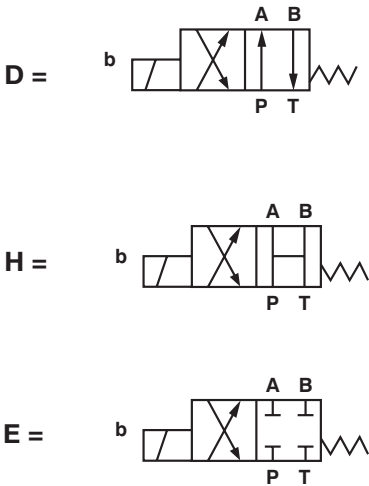
Electrical operated directional control valve



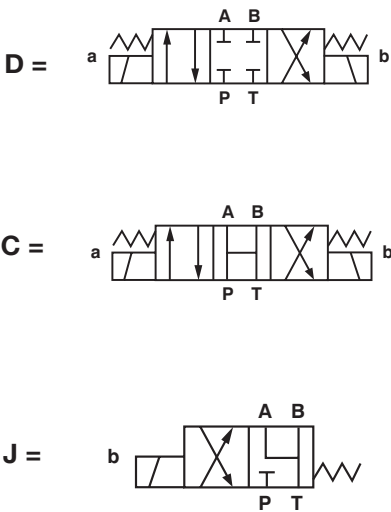
Spring Return 3 Position



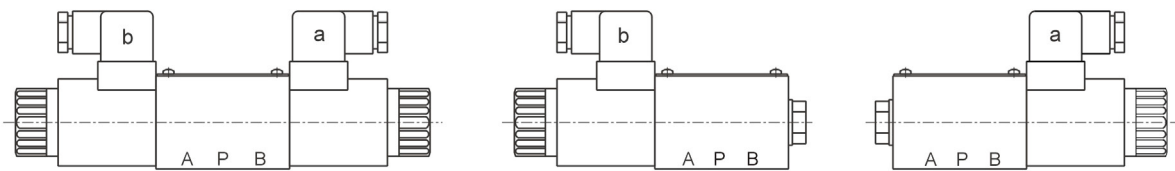
Spring Return 2 Position



Detent

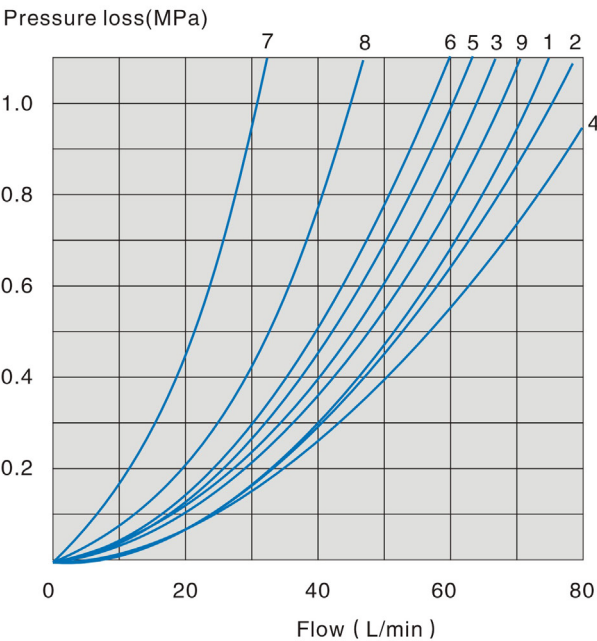


Name of solenoid



1. a When movement a, P→A B→T
2. b When movement b, P→B A→T
3. Oil flow in the opposite direction with the above-mentioned movement for 3GY symbol Valve.

Size 3 Specification Performance curve (Measured at $\nu=41\text{mm}^2/\text{s}$ and $t=50^\circ\text{C}$)



Function code	Direction			
	P→A	P→B	A→T	B→T
2H	1	1	3	1
2D	5	5	3	3
2E	5	5	3	3
2C	1	1	3	1
3E	3	3	1	1
3G	6	6	9	9
3H	2	4	2	2
3J	1	1	2	1

Electrical operated directional control valve

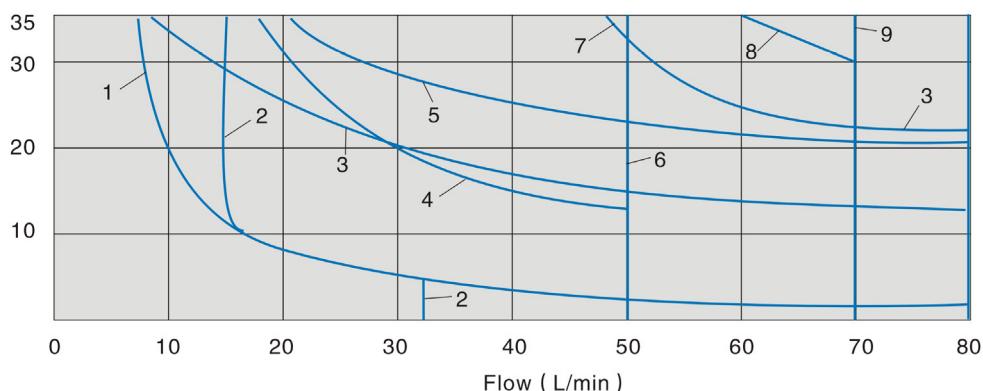


Size 3 Specification Working Limits (The working limits for directional valves have determined by using solenoids at their operating temperature, 10% under voltage and with no pre-loading of the tank)

With regard to the four-way valve, the normal flow data as shown is get from the regular use of two directions of the flow (e.g. P to A, and simultaneous return flow from B to T). See tables. If only one flow direction is needed, for example: When a four port valve which is closed up port A or port B, used as a three-way valve, the Maximum flow may be very small in the serious condition.

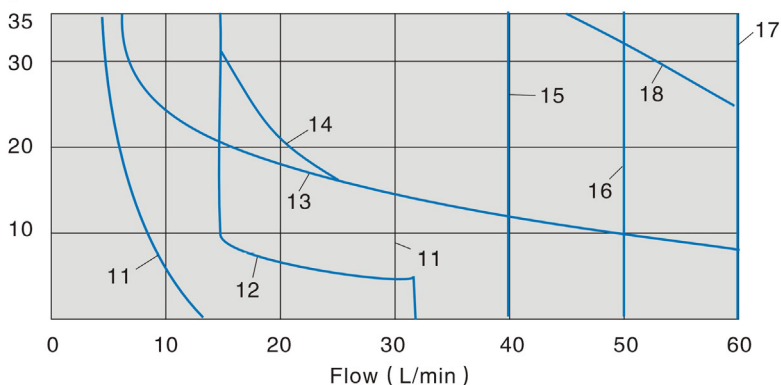
DC solenoid operation DC D24, D1 2, B220, B110		AC solenoid operation AC A110, A220, 50HZ	
Curve	Symbol	Curve	Symbol
5	3J	15	3G
6	3G 3H	16	3H
8	2H 2D	17	3J 3E
10	3E 2D	18	2D 2C 2E

Working pressure(MPa)



- 1) No manual emergency operation
- 2) Oil return from actuator to oil tank

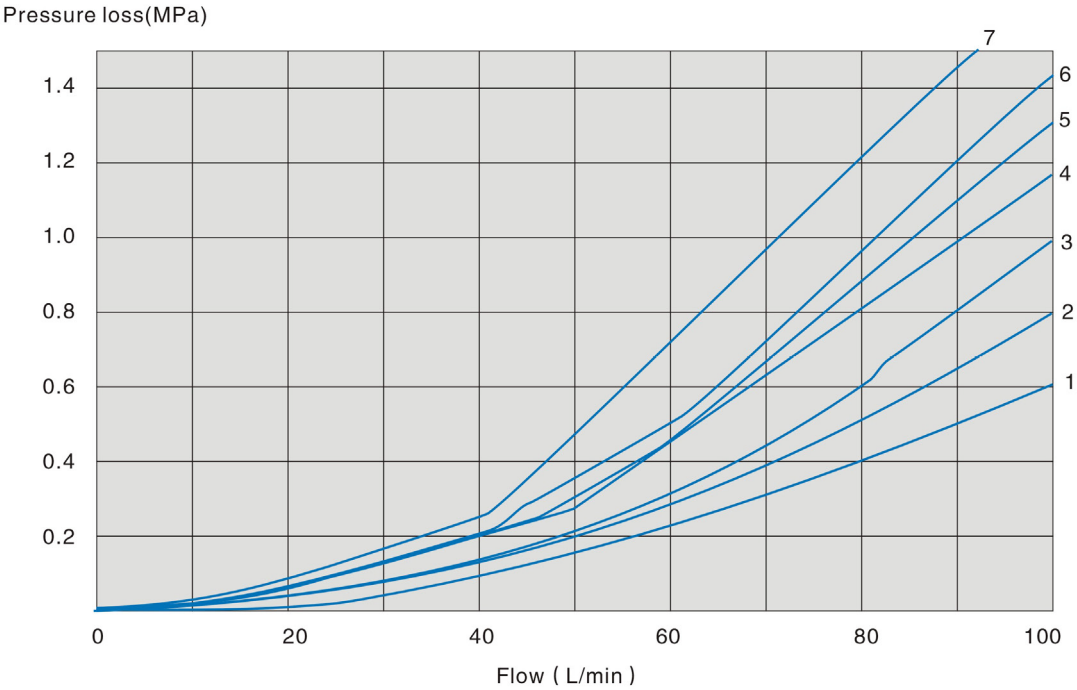
Working pressure(MPa)



Electrical operated directional control valve



Size 5 Specification Performance curve (Measured at $v=41\text{mm}^2/\text{s}$ and $t=50^{\circ}\text{C}$)



Function code	Direction			
	P→A	P→B	A→T	B→T
2H 2D	2	2	3	3
3E	2	2	4	4
3G	3	3	4	6
3H	1	1	4	5

Electrical operated directional control valve

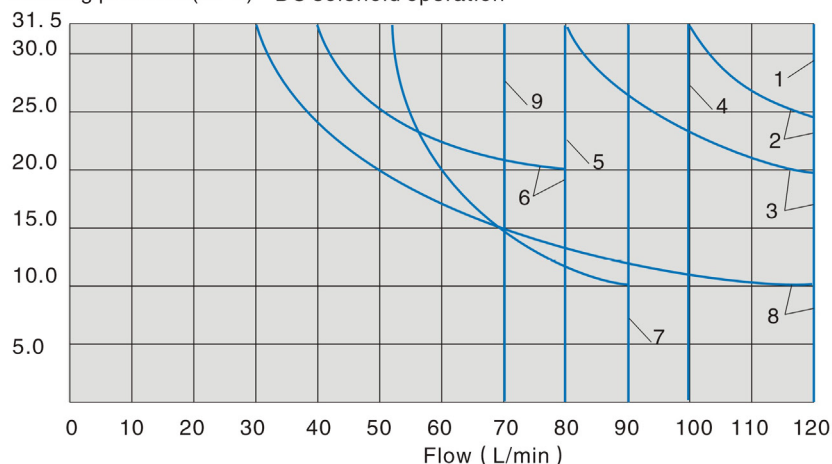


Size 5 Specification Working Limits

(The working limits for directional valves have determined by using solenoids at their operating temperature, 10% under voltage and with no pre-loading of the tank)

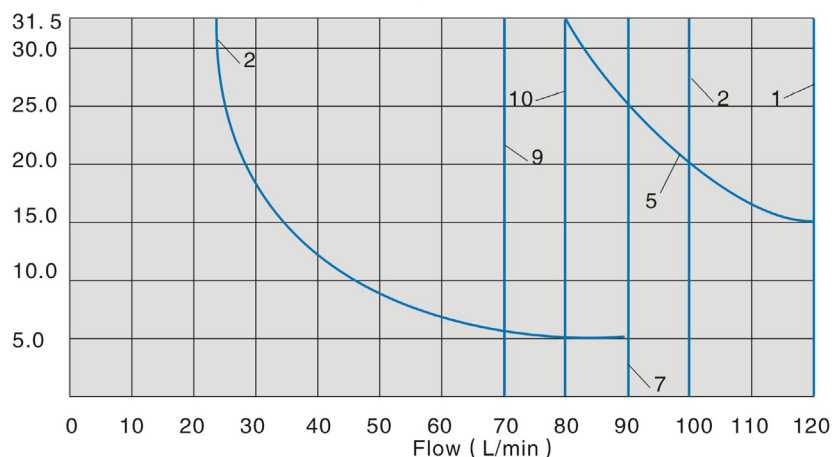
With regard to the four-way valve, the normal flow data as shown is get from the regular use of two directions of the flow (e.g. P to A, and simultaneous return flow from B to T). See tables. If only one flow direction is needed, for example: When a four port valve which is closed up port A or port B, used as a three-way valve, the Maximum flow may be very small in the serious condition.

Working pressure(MPa) DC solenoid operation



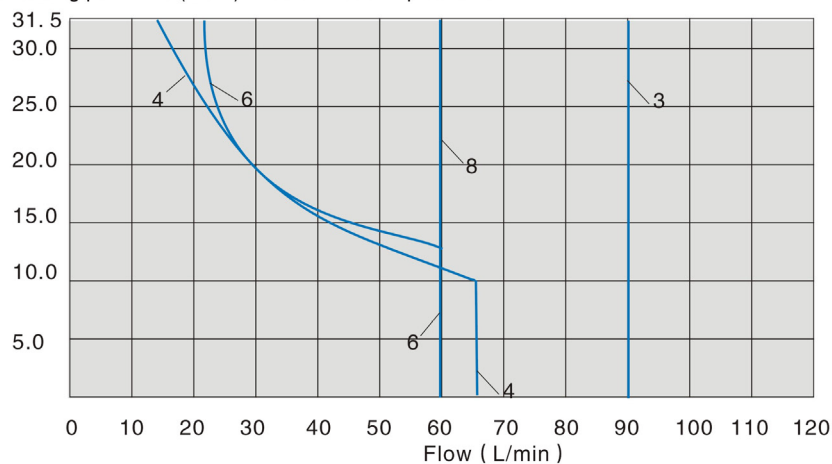
Curve	Symbol
1	2DY 2HY 2DD
2	3EY
3	3JY
4	3HY
6	3GY

Working pressure(MPa) AC solenoid operation



110V,50Hz; 120V,60Hz; 220V,50Hz; 240V,60Hz;	
Curve	Symbol
1	2DY 2HY 2DD
2	3EY
5	3JY
6	3GY
9	3HY

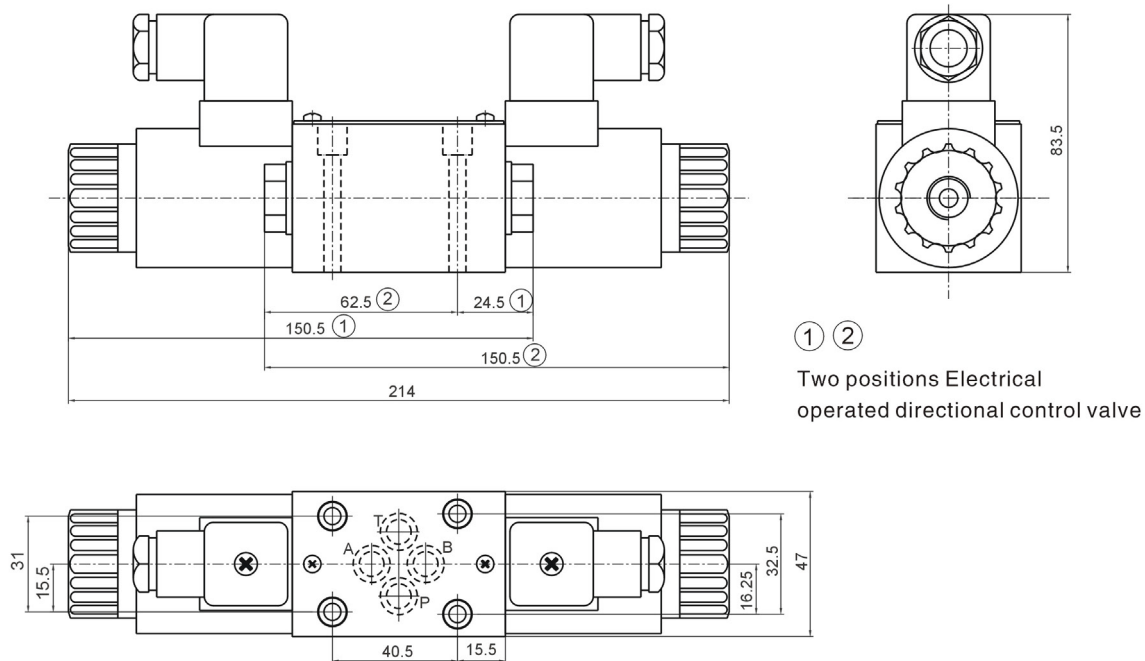
Working pressure(MPa) AC solenoid operation



Electrical operated directional control valve



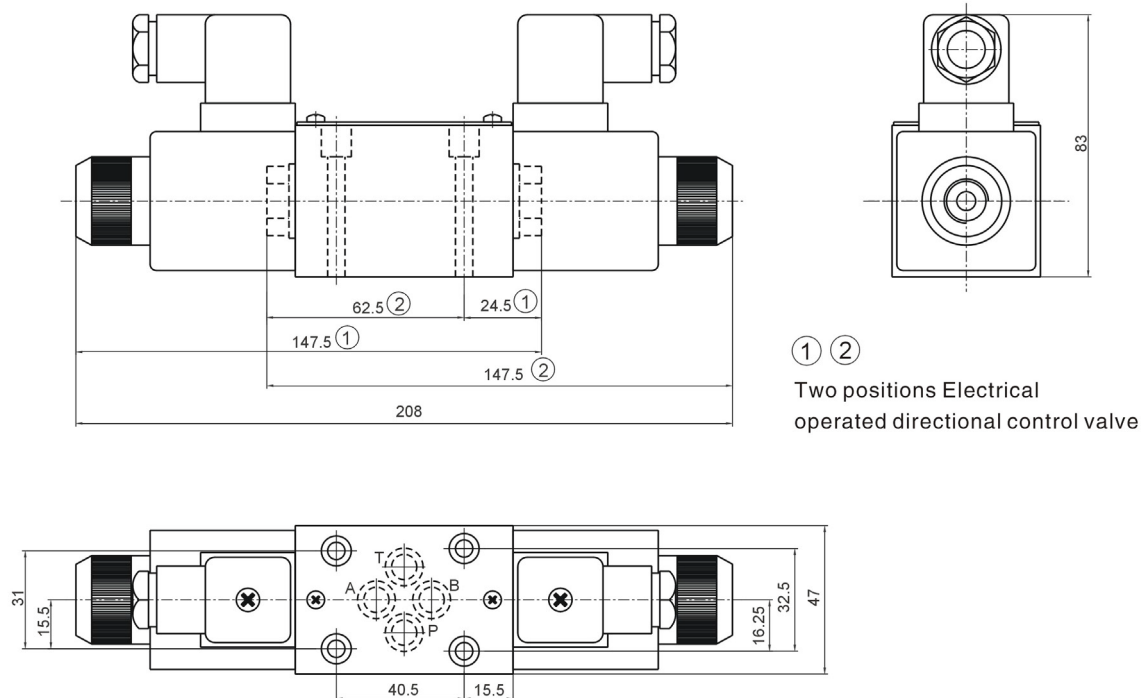
External dimensions (Size 3 Direct current plug type)



Electrical operated directional control valve



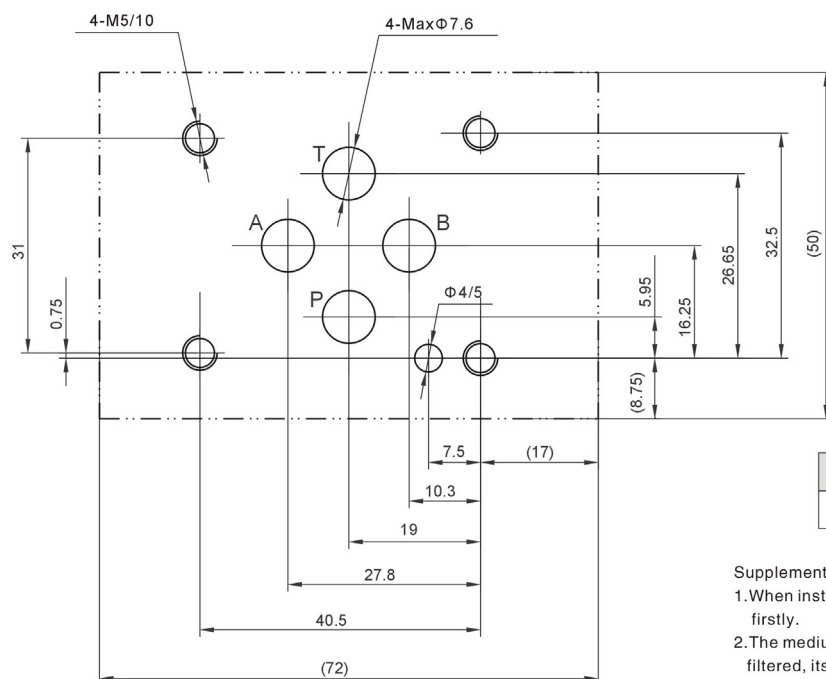
External dimensions (Size 3 Alternating current plug type)



Electrical operated directional control valve



Size 3 of subplate oil port

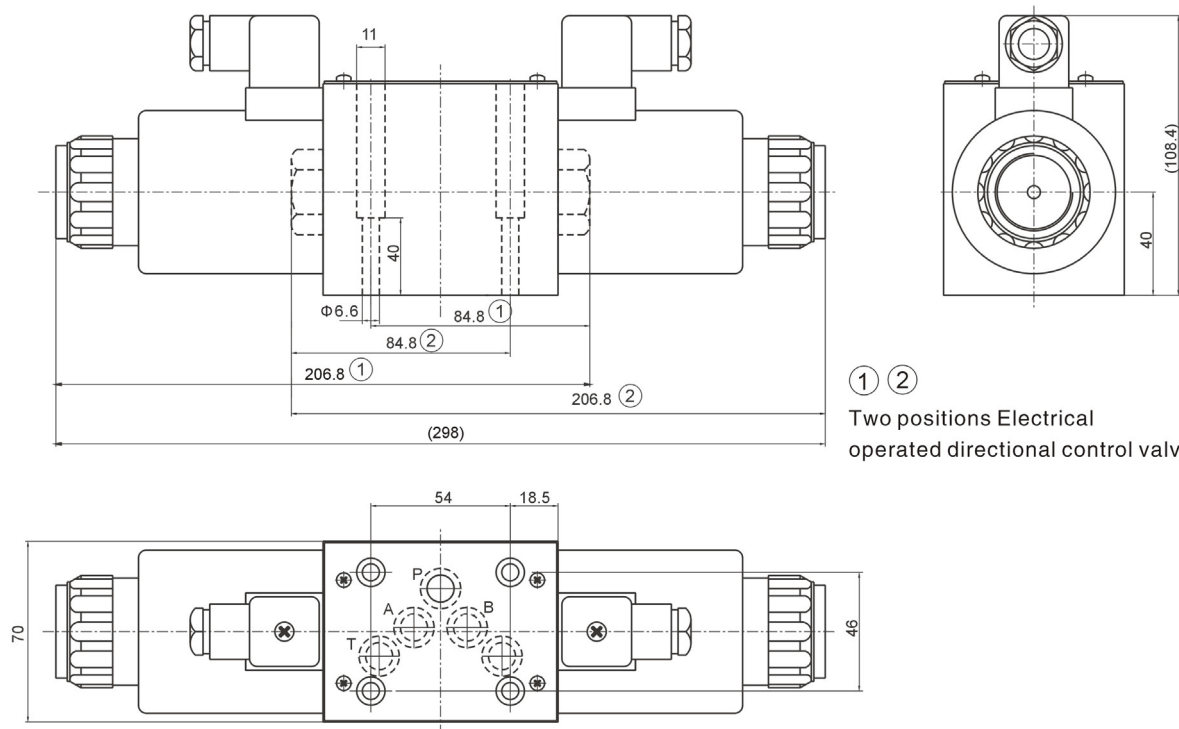


Mounting screw	Amount	Tighten torque
M5x45-10.9	4	9Nm

Supplementary explanation

1. When installing the product, considering horizontal position firstly.
2. The medium used in the hydraulic system must be filtered, its accuracy at least $20\mu\text{m}$.
3. Screw should be according to the parameters in catalogue.
4. The surface, connecting with the valve, should be Ra0.8 roughness, and 0.01/100mm flatness.

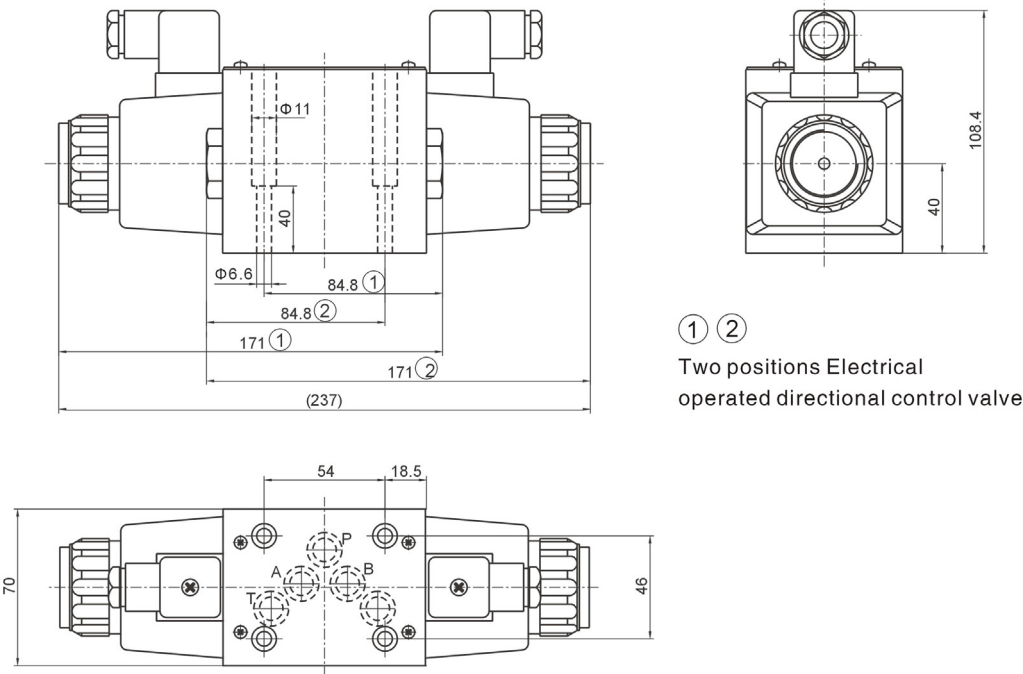
External dimensions (Size 3 Direct current plug type)



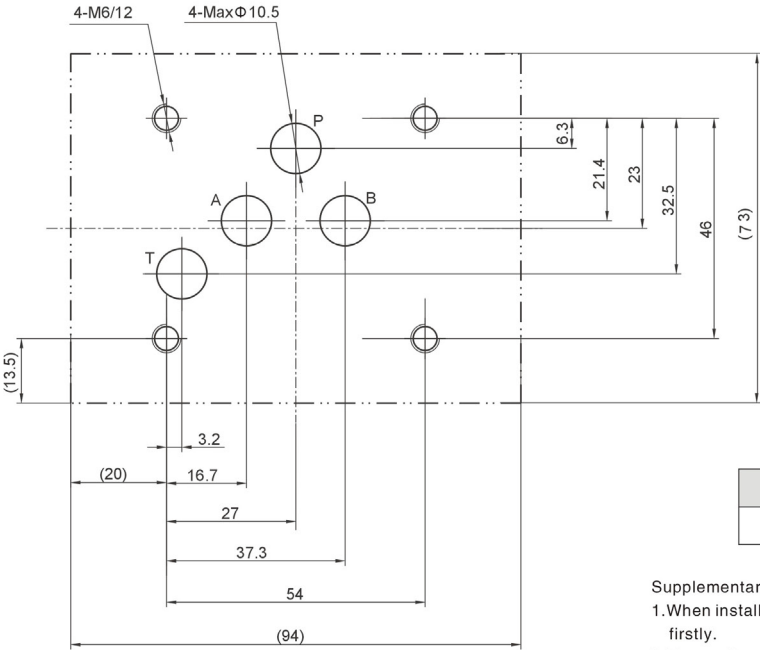
① ②

Two positions Electrical operated directional control valve

External dimensions (Size 5 Alternating current plug type)



Size 5 of subplate oil port



Mounting screw	Amount	Tighten torque
M6x50-10.9	4	15Nm

- Supplementary explanation
- When installing the product, considering horizontal position firstly.
 - The medium used in the hydraulic system must be filtered, its accuracy is at least 20 μ m.
 - Screw should be according to the parameters in catalogue.
 - The surface, connecting with the valve, should be Ra0.8 roughness, and 0.01/100mm flatness.

Modular flow control valve



Technical specification



Specification	3	5
Max.pressure (bar)	315	
Max.flow (L/min)	30	50
Hydraulic fluid	Mineral oil;phosphate-ester	
Fluid temp (°C)	-20~70	
Viscosity (mm²/s)	2.8~380	
Opening pressure (MPa)	a: 0.05	
Cleanliness	The maximum allowable cleanliness of the oil should be according to 9th degree of Standard NAS1638.It is suggested that the minimum filter rating should be $\beta_{10} \geq 75$.	

Model instruction

Flow Restrictor

Specification

ISO Size 3

ISO Size 5

Meter

Meter In = X

Meter Out = Y

Throttle

A & B = Blank

B Port = B

A Port = A

P Port = P

AFR * * * * /Design/ * *

Seals

Blank = NBR

V = FKM

Control

Fine = 1Q

Standard = 2Q

Design

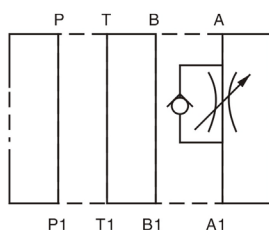
RX14

Adjustment Type

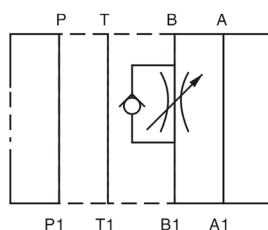
2 - Hand Knob (STD)

Code symbol

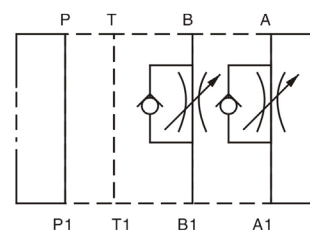
AFR A Y



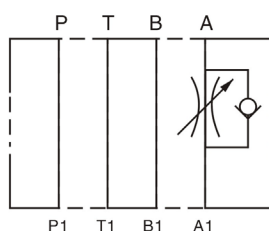
AFR B Y



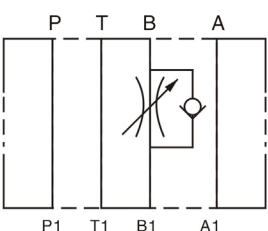
AFR Y (STD)



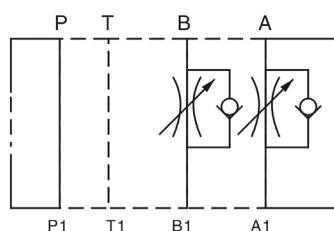
AFR A X



AFR B X



AFR X (STD)

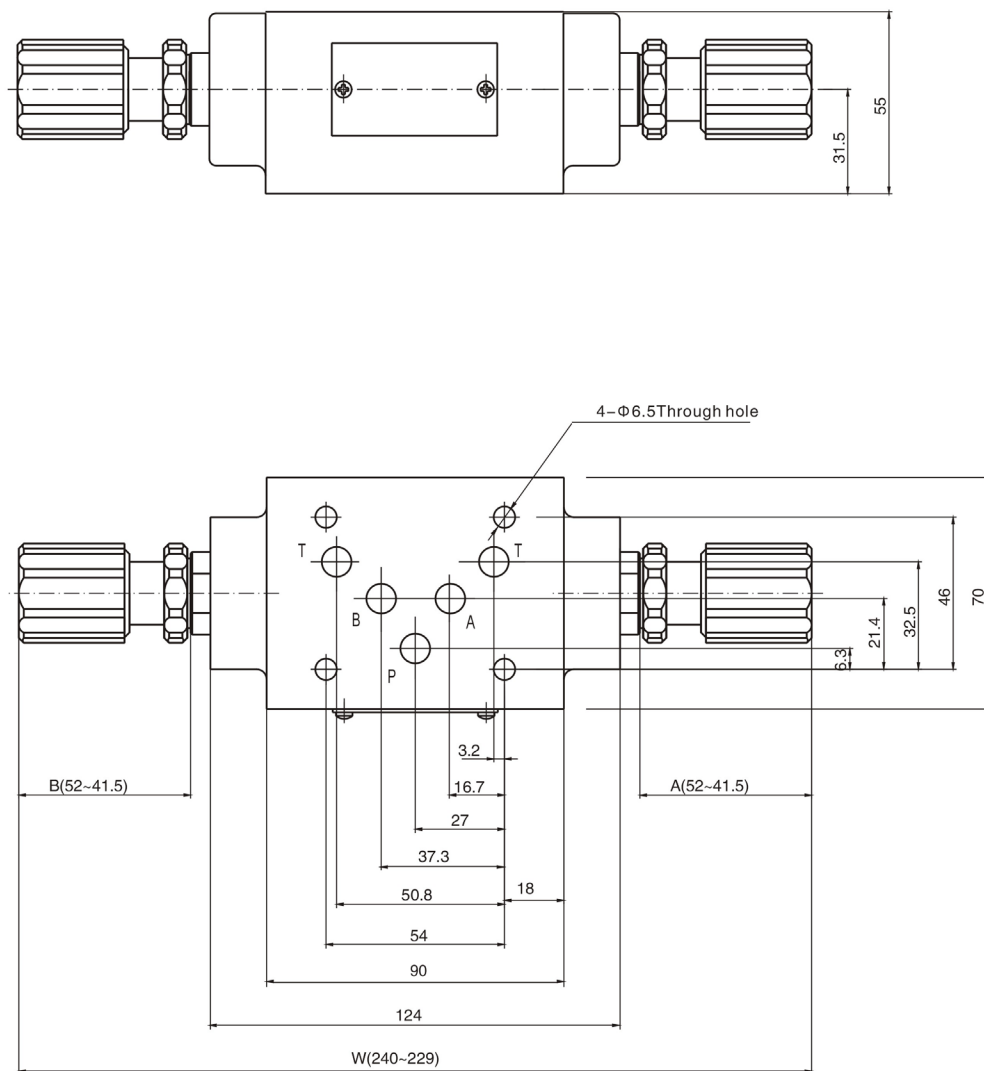


AFR 3 Y



Modular flow control valve

External dimensions

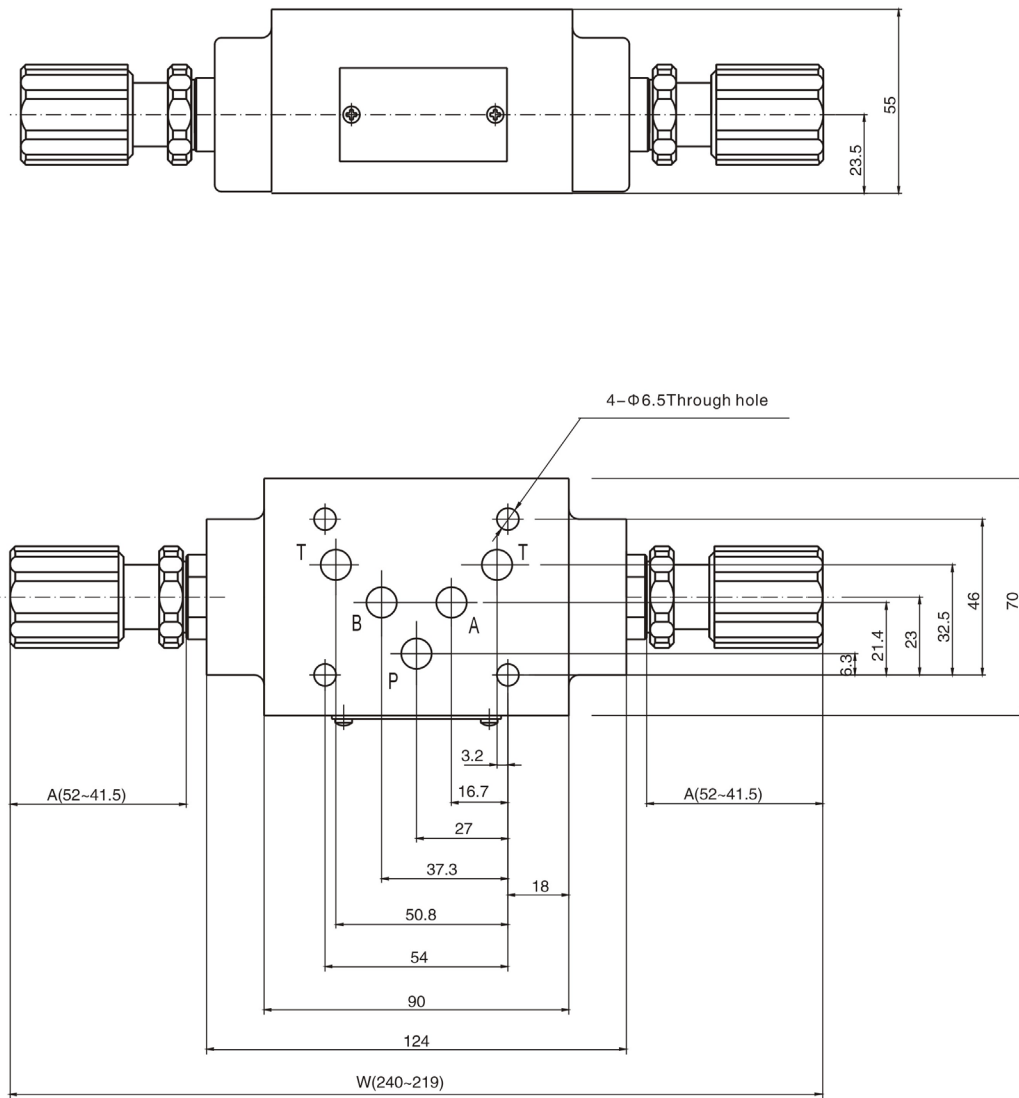
AFR 5 Y

Notice: The surface, connecting with the valve, should be Ra0.8 roughness, and 0.01/100mm flatness.

Modular flow control valve

External dimensions

AFR 5 X

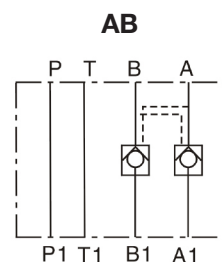


Notice: The surface, connecting with the valve, should be Ra0.8 roughness, and 0.01/100mm flatness.



Model description

Code symbol



Technical drawing of a 100mm x 100mm x 40mm aluminum plate with a 4x4 hole pattern. The drawing includes a top view, a side view, and a detail view of the hole pattern.

Top View: Shows a 100mm x 100mm plate with a 4x4 hole pattern. The holes are arranged in a 4x4 grid with a pitch of 27.8mm. The hole diameter is 4mm and the depth is 4.2mm. The plate thickness is 40mm.

Side View: Shows the plate with a 40mm thickness.

Detail View: Shows the hole pattern with dimensions: 40.5mm, 64mm, 80mm, 27.8mm, 19mm, 10.3mm, 7.5mm, 26.55mm, 16.25mm, 5.95mm, 32.5mm, 44mm, 47.5mm, 0.75mm, and 31mm.

Technical drawing of a 4/3-way solenoid valve. The drawing includes three views: a side view (top), a front view (bottom), and a top view (right). The side view shows a rectangular body with a central square port and two side ports. The front view shows a square body with four ports labeled P, A, B, and T. The top view shows a square body with a central circular port and four corner ports.

Dimensions (mm):

- Side view: 50 (total height), 27.5 (port height).
- Front view: 70 (total height), 46 (port height), 32.5 (port width), 21.4 (port width), 6.3 (port width), 54 (total width), 50.8 (port width), 37.3 (port width), 27 (port width), 16.7 (port width), 3.2 (port width), 95 (total width), 123 (total width), 20.5 (port width).
- Top view: 50 (total width), 27.5 (port width).

Port labels: P (Pressure), A (Actuator), B (Actuator), T (Tank).

Modular reducing valve



Technical specification



Specification	3	5
Max. working pressure (bar)	210	
Max. Flow (L/min)	35	70
Working fluid	Mineral oil;phosphate-ester	
Fluid temp. (°C)	-20~70	
Viscosity (mm²/s)	12~380	
Cleanliness	The maximum allowable cleanliness of the oil should be according to 9th degree of Standard NAS1638. It is suggested that the minimum filter rating should be $\beta 10 \geq 75$.	

Model description

Modular Pressure Reducing Valve

Specification

ISO Size 3
ISO Size 5

Function

P line pilot from P = PP
P line pilot from A = PA
P line pilot from B = PB

Adjustment Type

Hand Knob = 2

ARD * * * /Design/ * *

Seals

Blank = NBR
V = FKM

Adjustment Range

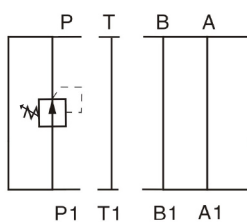
3.5 - 75 bar = 75
10 - 150 bar = 150
20 - 210 bar = 210
(Size 5 Only) 8.5 - 200 bar = 200
(Size 5 Only) 8.5 - 315 bar = 315

Design

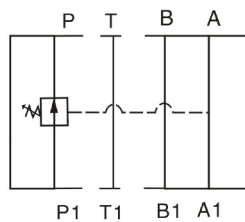
RX14

Code symbol

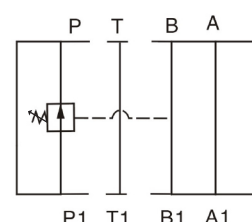
PP



PA



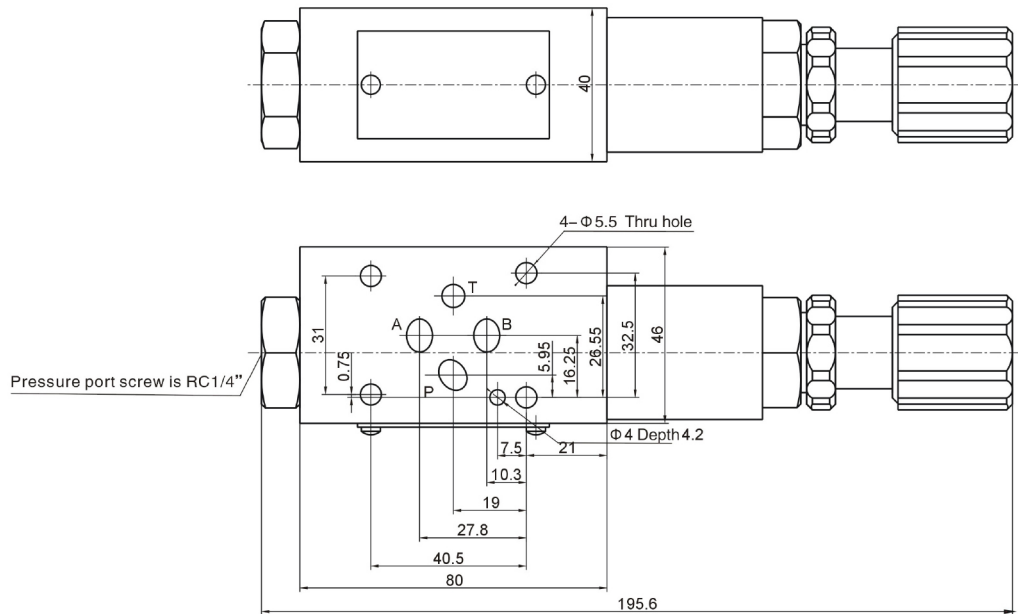
PB



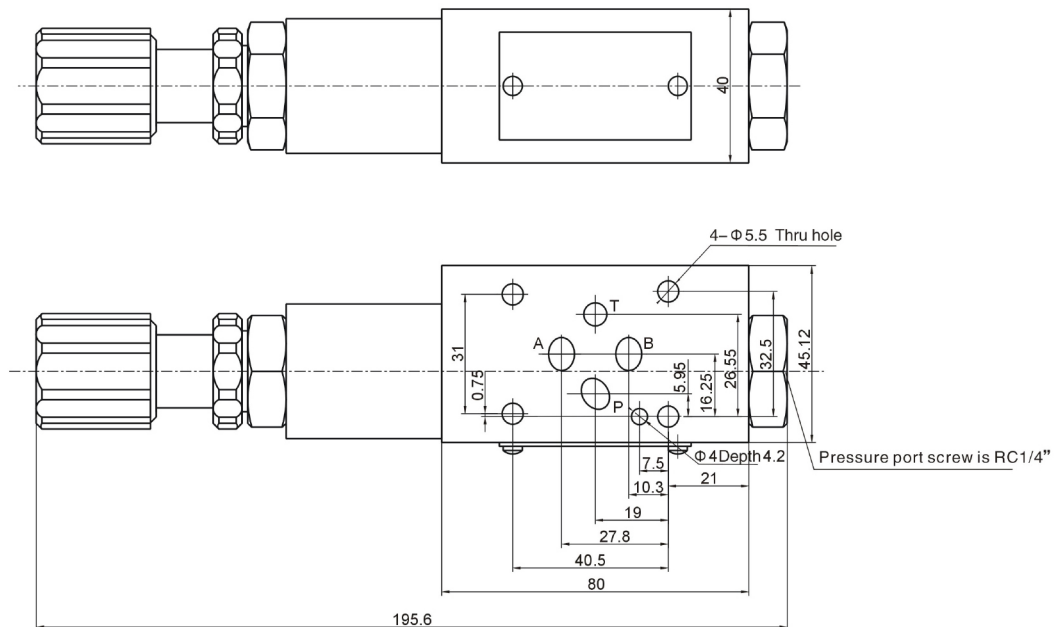
Modular reducing valve

Size 3 External dimensions

ARD 3 PA + PP



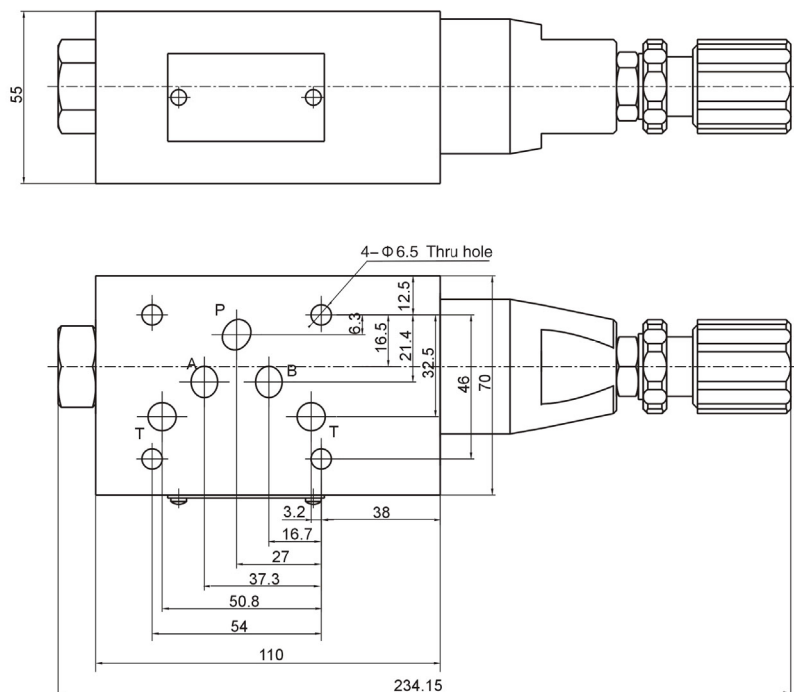
ARD 3 PB



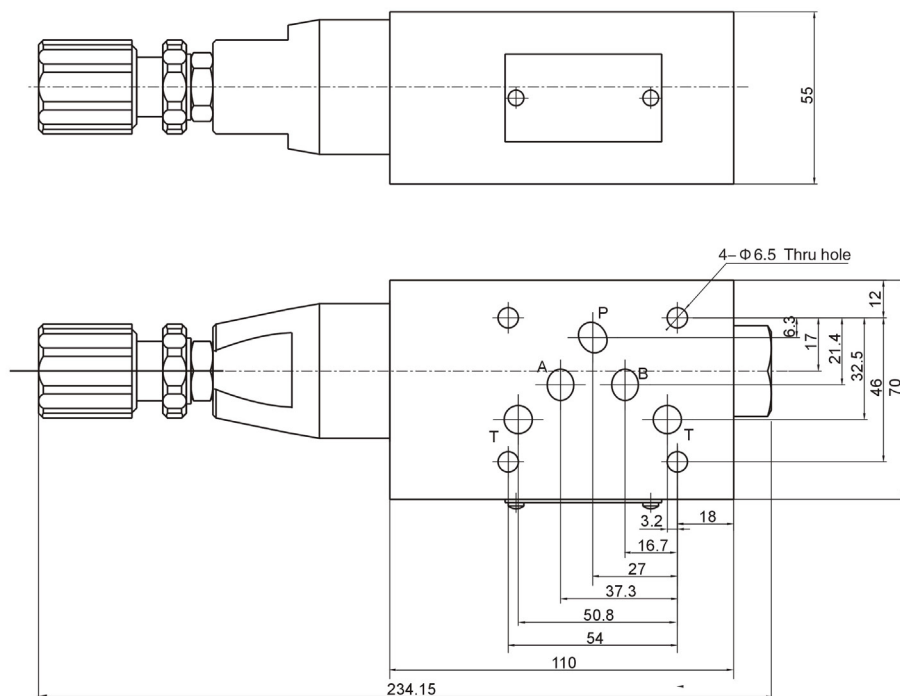
Modular reducing valve

Size 5 External dimensions

ARD 5 PA + PP



ARD 5 PB



Modular relief valve

Technical specification



Specification	3	5
Max. working pressure (bar)	315	
Max. Flow (L/min)	35	70
Working fluid	Mineral oil; phosphate-ester	
Fluid temp. (°C)	-20~70	
Viscosity (mm²/s)	12~380	
Cleanliness	The maximum allowable cleanliness of the oil should be according to 9th degree of Standard NAS1638. It is suggested that the minimum filter rating should be $\beta 10 \geq 75$.	

Model description

Modular Single Line Pressure Relief Valve

S = Single
D = Dual

Specification

ISO Size 3
ISO Size 5

Single Function

Relief from P-T = PT
Relief from A-T = AT
Relief from B-T = BT

Adjustment Type

Knob Adjustment = 1

Dual Function

Relief from P-T = PT
Relief from A-T = AT
Relief from B-T = BT

Adjustment Type

Knob Adjustment = 1

ASPR * * * * /Design/ * *

Seals

Blank = NBR
V = FKM

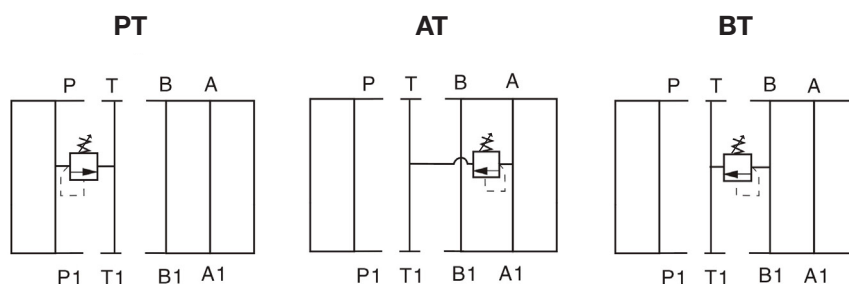
Pressure Setting

3 to 50 bar = 50
3 to 100 bar = 100
10 to 200 bar = 200
50 to 315 bar = 315

Design

RX14

Code symbol

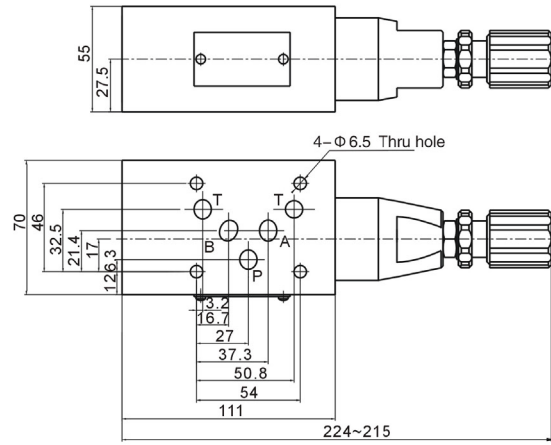


ASPR 3 AT

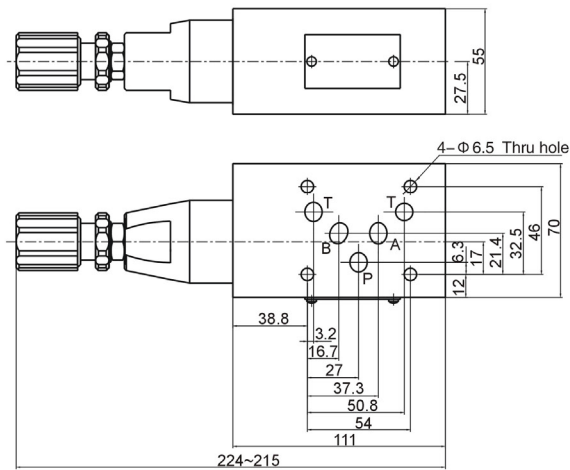
Modular relief valve

Size 5 External dimensions

ASPR 5 AT



ASPR 5 BT + PT



Modular check valve

Technical specification



Specification	3	5
Max. working pressure (bar)	315	
Max. Flow (L/min)	40	100
Working fluid	Mineral oil; phosphate-ester	
Fluid temp. (°C)	-20~70	
Viscosity (mm²/s)	2.8~380	
Cleanliness	The maximum allowable cleanliness of the oil should be according to 9th degree of Standard NAS1638. It is suggested that the minimum filter rating should be $\beta_{10} \geq 75$.	

Model description

ADOC * * * * */Design/ * *

Modular Check Valve

Specification

ISO 4401
Size 3
Size 5

Check line

P=P
A=A
B=B
W=A+B

Remarks

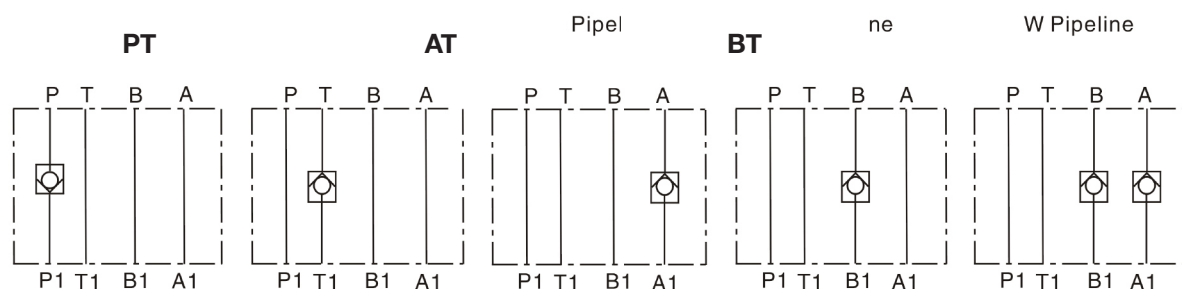
Seal Type

Blank = NBR
V = FKM
Rx14

Opening Pressure

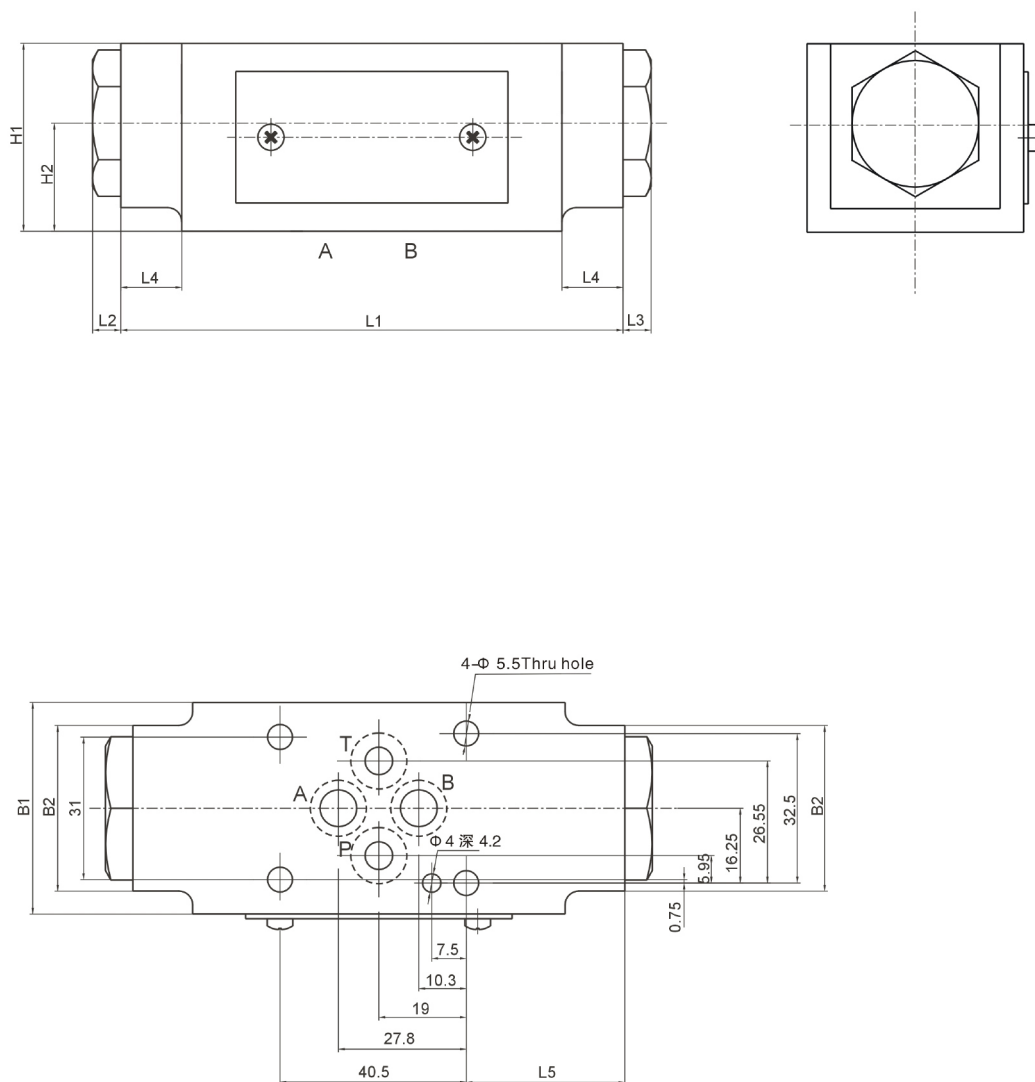
A = 0.5 bar

Code symbol



Modular check valve

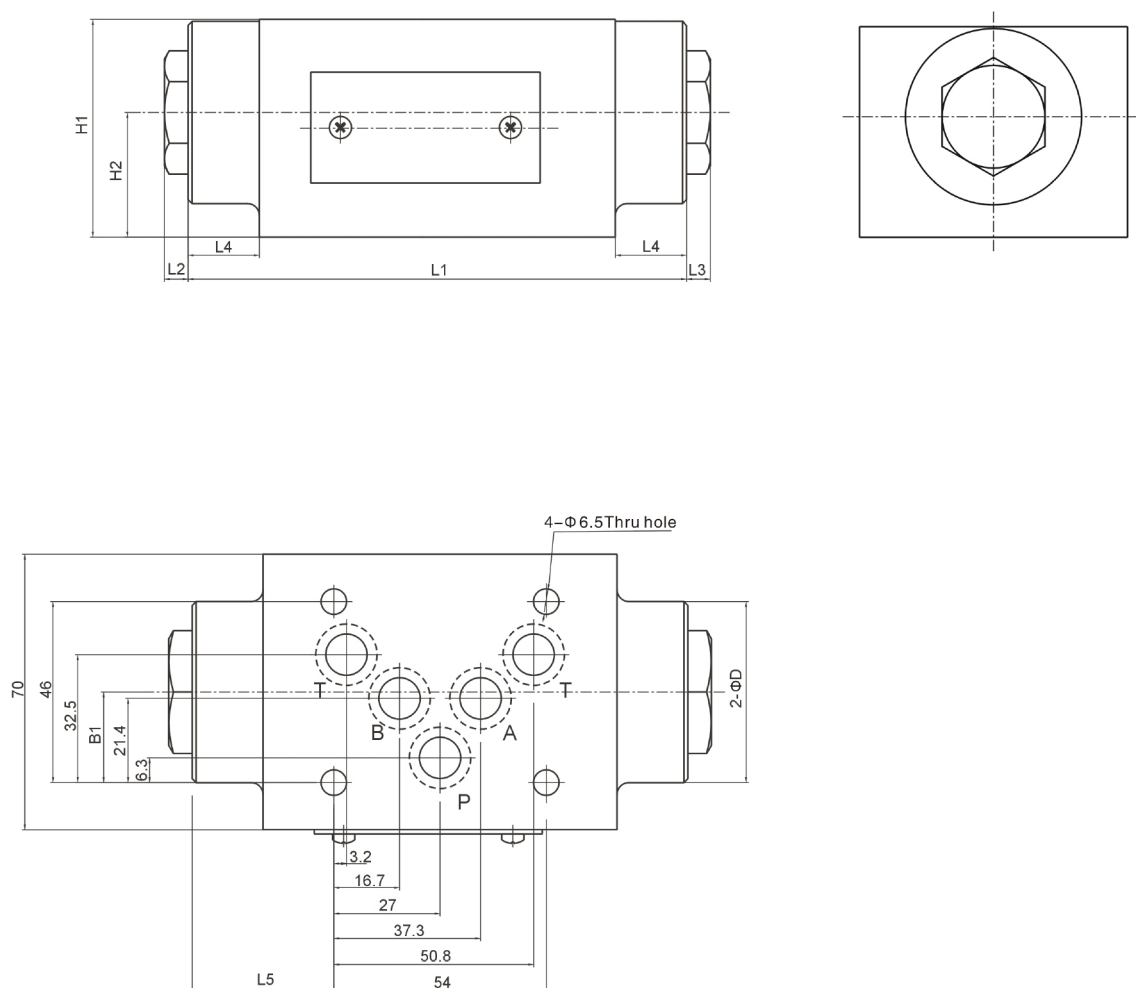
Size 3 External dimensions



Specification	B1	B2	H1	H2	L1	L2	L3	L4	L5
ADOC3-A	46	—	40	20	80	6	—	—	20
ADOC3-B	46	—	40	20	80	—	6	—	20
ADOC3-P	46	—	40	20	80	—	6	—	20
ADOC3-T	46	—	40	20	80	—	6	—	20
ADOC3-W	46	36	40	23	107	6	6	13	34.5

Modular check valve

Size 5 External dimensions



Specification	D	B1	H1	H2	L1	L2	L3	L4	L5
ADOC5-A	–	18.5	55	27.5	80	–	6	–	10
ADOC5-B	–	18.5	55	27.5	80	6	–	–	16
ADOC5-P	–	15.8	55	27.5	80	–	6	–	16
ADOC5-T	–	23	55	27.5	100	–	6	–	19.5
ADOC5-W	46	23	55	31.5	126	6	6	18	36