



DR...type Pilot Operated Reducing Valve

DR...5XJ...type

Sizes 10, 16, 20, 25, 32
Max. Working Pressure: 315 bar
Max. Flow: 400 L/min



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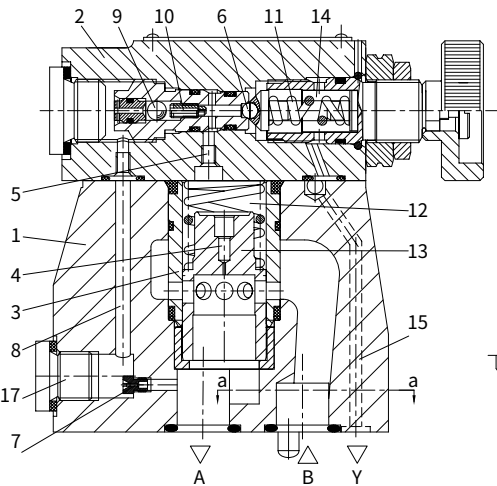
Features

- Sub-plate mounting
- Porting pattern conforms to DIN 24 340, form D and ISO 5781
- Threaded connections
- Installation in manifolds
- 5 pressure ratings
- 4 adjustment elements
 - Rotary knob
 - Adjustable bolt with protective cap
 - Lockable rotary knob with scale
 - Rotary knob with scale
- Check valve ,optional
(only for sub-plate mounting)

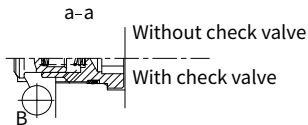
Function and configurations

DR type valve is a pilot operated pressure reducing valves. It is used to control secondary circuit in a system. It consists of the main valve (1) with main spool assembly(3) and pilot valve(2) with pressure adjustment element.

In rest position, the valves are open, fluid flows free from port B to port A via the main spool (3). Pressure at port A acts on the underside of main spool(3) and its spring-loaded side via throttle orifice(4). Fluid also acts on the ball valve(6) of the pilot valve(2) via the channel (5). At the same time, pressure fluid flows via throttle orifice (7), control line (8),check valve (9) and throttle orifice (10) to the ball valve(6). Based on the setting value of the spring (11), control piston(13) keeps open, then fluid can flow free from port B to port A, until pressure at port A exceed the setting value of spring(11), and then ball valve (6) is opened. Control piston (13) moves to close position. When pressure at port A is balanced with setting value at spring, pressure reducing is achieved as expected. Control oil returns from spring chamber(14) to tank via channel (15). A check valve(16) can be fitted optionally to give free return flow from line A to B. Pressure gauge connection(17) used for monitoring the reduced pressure at port A.

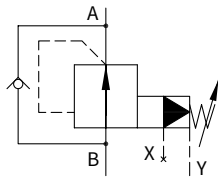


Type DR...-4-5XJ/...Y

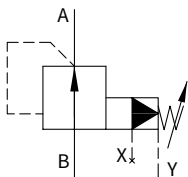


Symbols

DR...5XJ/...Y



DR...5XJ/...YM



Specifications

DR

5XJ

/

Y

/

*

Pressure reducing valve, pilot operated =No code

Pilot operated valve Without main spool assembly (No mark for size) =C

Pilot operated valve With main spool assembly (Marked with size 30) =C

Size	Connection	
	sub-plate mounting	threaded connection
10	=10	=10
16		=15
20	=20	=20
25		=25
32	=30	=30

Sub-plate mounting = -

Threaded connection =G

Regulating element: Rotary knob =4

Adjustable bolt with protective cap =5

Lockable rotary knob with scale =6

Rotary knob with scale =7

Further details in clear text

No code = NBR seals

V = FKM seals

Only for Port X1 and Y1 of threaded connection valves and sub-plate mounting valves

No code = Inch thread

2 = Metric thread

No code = With check valve (only for sub-plate mounting)

M = Without check valve

Y = Pilot oil drain external

50 = Max. secondary pressure 50bar

100 = Max. secondary pressure 100bar

200 = Max. secondary pressure 200bar

315 = Max. secondary pressure 315bar

5XJ= Series 50J to 59J

(50J to 59J series: unchanged installation andconnection dimensions)

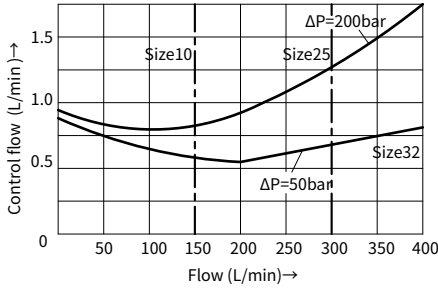
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Technical data

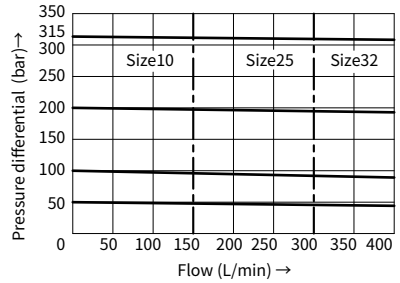
Fluid			Mineral oil suitable for NBR and FKM seal					
			Phosphate ester for FKM seal					
Fluid temperature range		°C	-30 to +80 (NBR seal)					
			-20 to +80 (FKM seal)					
Viscosity range		mm ² /s	10 to 800					
Degree of contamination			Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15 , ISO4406					
Max.operating pressure	Port B	bar	350					
Operating pressure range	Port A	bar	10 to 350					
Max.backing pressure	Port Y	bar	350(only for without check valve); 315(with check valve)					
Adjustable pressure	Max.	bar	50;100;200;315;350					
	Min.	bar	Related with flow-rate (refer to the curves)					
Size			DR10	DR15	DR20	DR25	DR30	
Max. flow-rate	Sub-plate mounting	L/min	150	-	300	-	400	
	Threaded connection	L/min	150	300	300	400	400	
Fixing position			Optional					
Size			DR10	DR15	DR20	DR25	DR30	
Weight	Sub-plate mounting	DR	kg	Approx.3.6	-	Approx.5.3	-	Approx.8.2
		DR...G	kg	Approx.5.3	Approx.5.5	Approx.5.1	Approx.5.0	Approx.5.0
	Threaded connection	DRC	kg	Approx.1.2				
		DRC30	kg	Approx.1.5				

Characteristic curves (Measured at $t=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$, using HLP46)

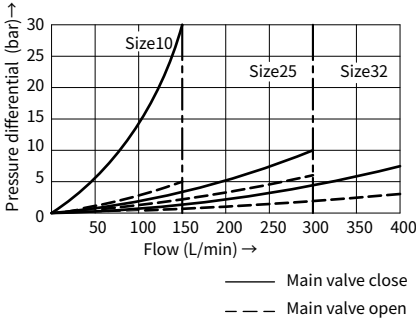
Control oil flow related with flow (B → A) and pressure differential



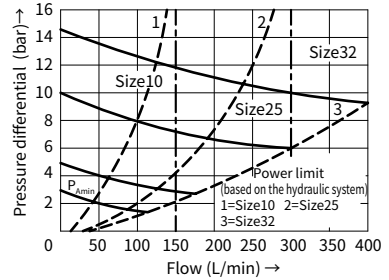
Outlet pressure PA and in relation to (B → A)



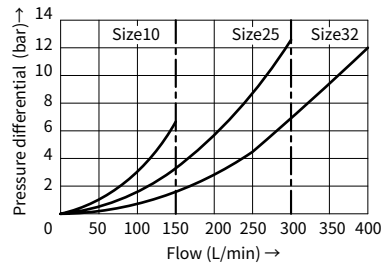
ΔP -Q curve, via check valve (A → B)



Min. setting pressure PA min in relation to flow (B → A)



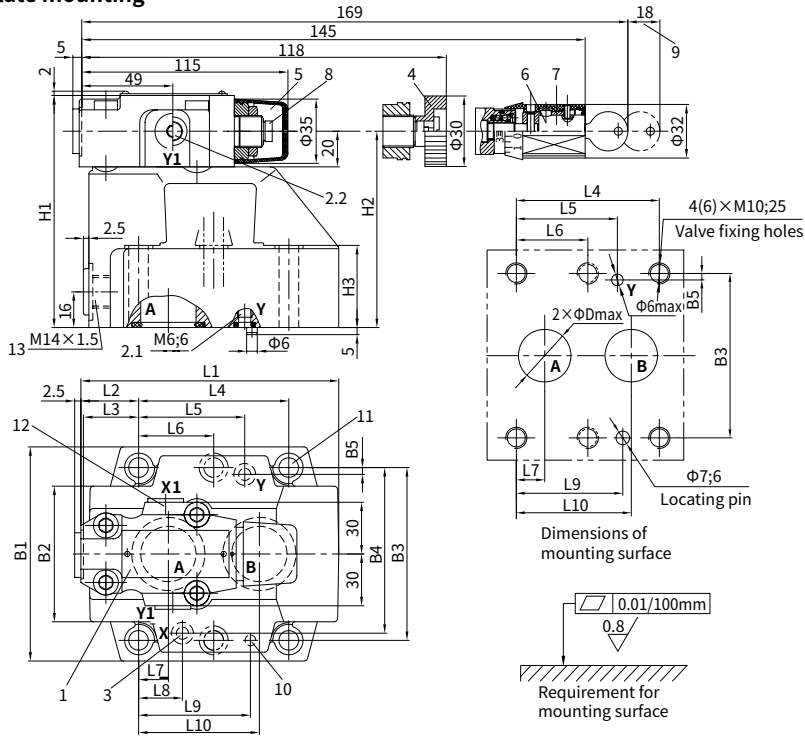
P-Q curve(B → A) (Min. setting pressure differential)



Unit dimensions

(Dimensions in mm)

Sub-plate mounting



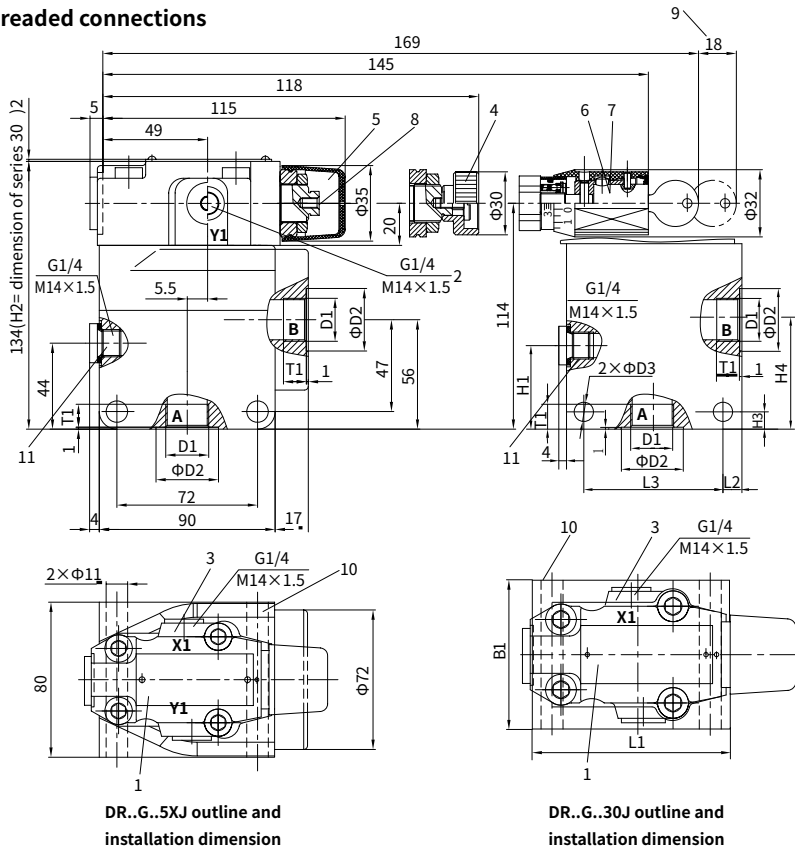
- 1 Nameplate
- 2.1 Port Y used for control oil external drain
- 2.2 Port Y1 optional for control oil external drain (G1/4 or M14×1.5)
- 3 Port X no function
- 4 Adjustment element "4"
- 5 Adjustment element "5"
- 6 Adjustment element "6"
- 7 Adjustment element "7"
- 8 Internal hexagon screw S=10
- 9 Space required to remove the key
- 10 Locating pin
- 11 Valve fixing holes 4pcs(DR10,DR20) , 6pcs(DR30)
- 12 Port X1 for control external(G1/4or M14×1.5)
- 13 Pressure gauge connection

Type	B1	B2	B3	B4	B5	O-ring (PortA,B)					O-ring (PortX,Y)			D
DR10	85	50	66.7	58.8	7.9	17.12×2.62					9.25×1.78			13
DR20	102	59.5	79.4	73	6.4	28.17×3.53					9.25×1.78			22
DR30	120	76	96.8	92.8	3.8	34.52×3.53					9.25×1.78			30
Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	H1	H2	H3	
DR10	96	35.5	33	42.9	21.5	-	7.2	21.5	31.8	35.8	112	92	28	
DR20	116	37.5	35.4	60.3	39.7	-	11.1	20.6	44.5	49.2	122	102	38	
DR30	145	33	29.8	84.2	59.5	42.1	16.7	24.6	62.7	67.5	130	110	46	

Unit dimensions

(Dimensions in mm)

Threaded connections



- 1 Nameplate
- 2 Port Y1 for control oil external drain
- 3 Port X1 for control oil external supply
- 4 Adjustment element "4"
- 5 Adjustment element "5"

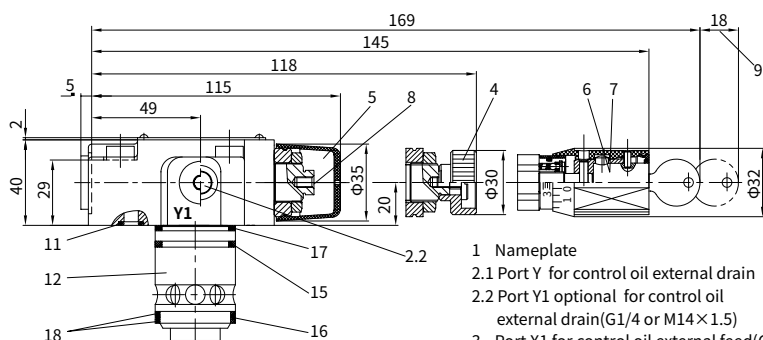
- 6 Adjustment element "6"
- 7 Adjustment element "7"
- 8 Internal hexagon screw S=10
- 9 Space required to remove the key
- 10 Valve mounting holes
- 11 Pressure gauge connection

Type	B1	D3	H1	H2	H3	H4	L1	L2	L3	D1	D2	T1
DR10G	63	9	27	125	10	62	85	11.5	62	G1/2;M22×1.5	34	14
DR15G						57				G3/4;M27×2	42	16
DR20G						57				G1 ;M33×2	47	18
DR25G	70	11	42	138	13	64	100	14	72	G1 1/4;M42×2	58	20
DR30G										G1 1/2;M48×2	65	22

Unit dimensions

(Dimensions in mm)

(DRC30) pilot valve with or (DRC30) without main spool assembly



- 1 Nameplate
- 2.1 Port Y for control oil external drain
- 2.2 Port Y1 optional for control oil external drain(G1/4 or M14×1.5)
- 3 Port X1 for control oil external feed(G1/4 or M14×1.5)
- 4 Adjustment element "4"
- 5 Adjustment element "5"
- 6 Adjustment element "6"
- 7 Adjustment element "7"
- 8 Internal hexagon screw S=10
- 9 Space required to remove the key
- 10 Valve fixing holes(Valve fixing screw GB/T70.1-M8×40-10.9 M_A=37Nm)
- 11 O-ring 8.75×1.8(X,Y)
- 12 Main spool
- 13 Ø32 and Ø45 holes can meet each other at any position, but it can't damage the port X and the fixing holes
- 14 It must fix the O-ring and back-up ring into this hole before assembling the main spool
- 15 O-ring 28×1.8
- 16 O-ring 27.3×2.4
- 17 O-ring 28×2.65
- 18 O-ring 28.4×32×0.6
- 19 Flow controller(must be ordered separately)

