

Hydraulically operated directional control valves are available in 5 sizes:

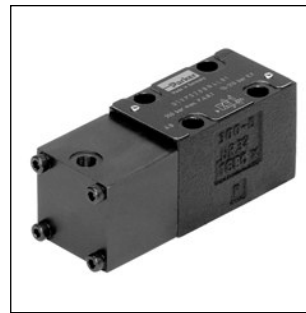
- D1VP*4L NG06 – operated via end caps
- D1VP*90 NG06 – operated via end caps and mounting interface (X, Y)
- D3DP NG10 – operated via mounting interface (X, Y)
- D4P NG16 – operated via mounting interface (X, Y)
- D9P NG25 – operated via mounting interface (X, Y)
- D11P NG32 – operated via mounting interface (X, Y)

Size NG06 (D1VP) is available in two different designs:

- D1VP*4L for operating pressure >10 bar (over tank pressure) with control ports in the end caps.
- D1VP*90 for operating pressure >15 bar with control ports in the end caps and mounting interface (X, Y).

All other series are operated only via mounting interface (X, Y).

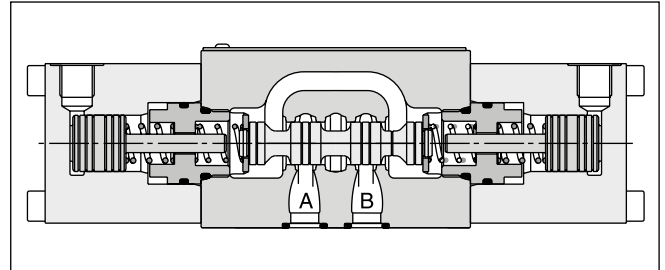
The shifting time is depending on the pilot pressure. For safe operation the minimum pilot pressure has to be ensured in all operating conditions. The maximum pilot pressure varies from the maximum operating pressure in some sizes.



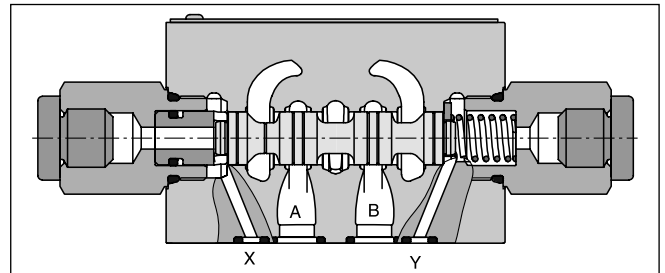
D1VP*B*4L



D1VP*90



D1VP*C*4L



D1VP*90

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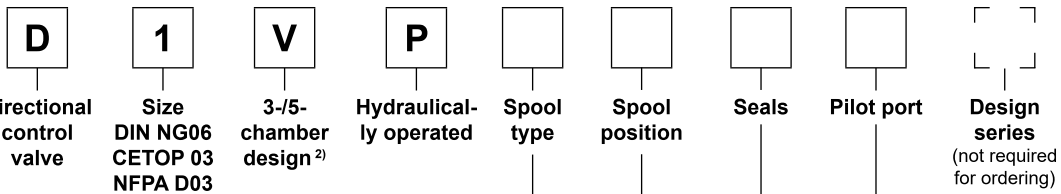
Technical data

General						
Design	Directional spool valve					
Actuation	Hydraulic					
Series	D1VP*4L	D1VP*90	D3DP	D4P	D9P	D11P
Size	NG06	NG06	NG10	NG16	NG25	NG32
Weight [kg]	1.3	1.3	3.7	9.0	17.0	66.0
Mounting interface	DIN 24340 A06 ISO 4401 NFFPA D03	DIN 24340 A06 ISO 4401 NFFPA D03	DIN 24340 A10 ISO 4401 NFFPA D05	DIN 24340 A16 ISO 4401 NFFPA D07	DIN 24340 A25 ISO 4401 NFFPA D08	DIN 24340 A32 ISO 4401 NFFPA D10
CETOP RP 121-H						
Mounting position	unrestricted, preferably horizontal					
Ambient temperature [°C]	-25...+60					
MTTF _p value [years]	150					
Hydraulic						
Max. operating pressure [bar]	P, A B: 350; T: 140	P, A B; T: 350; X, Y: 210	P, A B, T: 350; X, Y: 210	P, A B, T: 350; X, Y: 350	P, A B, T: 350; X, Y: 350	P, A B, T: 350; X, Y: 350
Fluid	Hydraulic oil according to DIN 51524					
Fluid temperature [°C]	-20 ... +70 (NBR: -25...+70)					
Viscosity permitted [cSt] / [mm ² /s]	2.8...400					
Viscosity recommended [cSt] / [mm ² /s]	30...80					
Filtration	ISO 4406 (1999); 18/16/13					
Flow max. [l/min]	60 ¹⁾	60 ¹⁾	130	300	700	2000
Leakage at 350 bar (per flow path) [ml/min]	up to 60 ²⁾	up to 60 ²⁾	up to 100 ²⁾	up to 200 ²⁾	up to 800 ²⁾	up to 5000 ²⁾
Operating pressure (min/max) [bar]	10 ³⁾ / 210	15 / 210	15 / 210	5 / 350	5 / 350	5 / 350
Pilot volume (start position to end position) [cm ³]	0.59	0.34	1.1	4.2	12.3	59.7
Static / Dynamic						
Step response	The response times depend on the pilot oil pressure and on the speed of the increase / decrease of the pilot pressure.					

¹⁾ Depending on spool, see shift limits.

²⁾ Depending on spool.

³⁾ > tank pressure.



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3 position spools	
Code	Spool type
	a 0 b
001	
002	
004	
006	
008 1)	
009 1)	

Code	Pilot port
4L	High tank pressure, indirect operated via pilot spool, 3-chamber
90	Direct operated via X, Y port or pipe thread G1/4, 5-chamber

Code	Seals
N	NBR
V	FPM

2 position spools	
Code	Spool type
020	a b
026	
030	

3 position spools 3)		
Code	Spool position	
C		3 positions. Spring offset in position "0". Operated in position "a" or "b".
	Standard	Spool type 008 and 009
E		2 positions. Spring offset in position "0". Operated in position "a".
F		2 positions. Spring offset in position "0". Operated in position "b".
K		2 positions. Spring offset in position "0". Operated in position "a".
M		2 positions. Spring offset in position "0". Operated in position "b".

2 position spools 3)		
Code	Spool position	
B		Spring offset in position "b". Operated in position "a".
D		Detent, operated in position "a" or "b". No centre or offset position.
H		Spring offset in position "a". Operated in position "b".

1) Consider specific spool position.
 2) Depending on pilot port.
 3) Code 4L without ports X and Y.

Further spool types and styles on request.