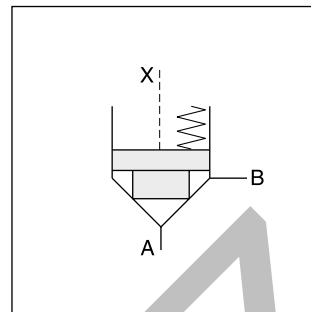


Seat valves series D4S are designed for directional control functions. A large variety of poppets, springs and covers – including shuttle valves, stroke limiters, solenoid valves (VV01) and position control – allows to design individual hydraulic solutions for nominal flow up to 600 l/min.

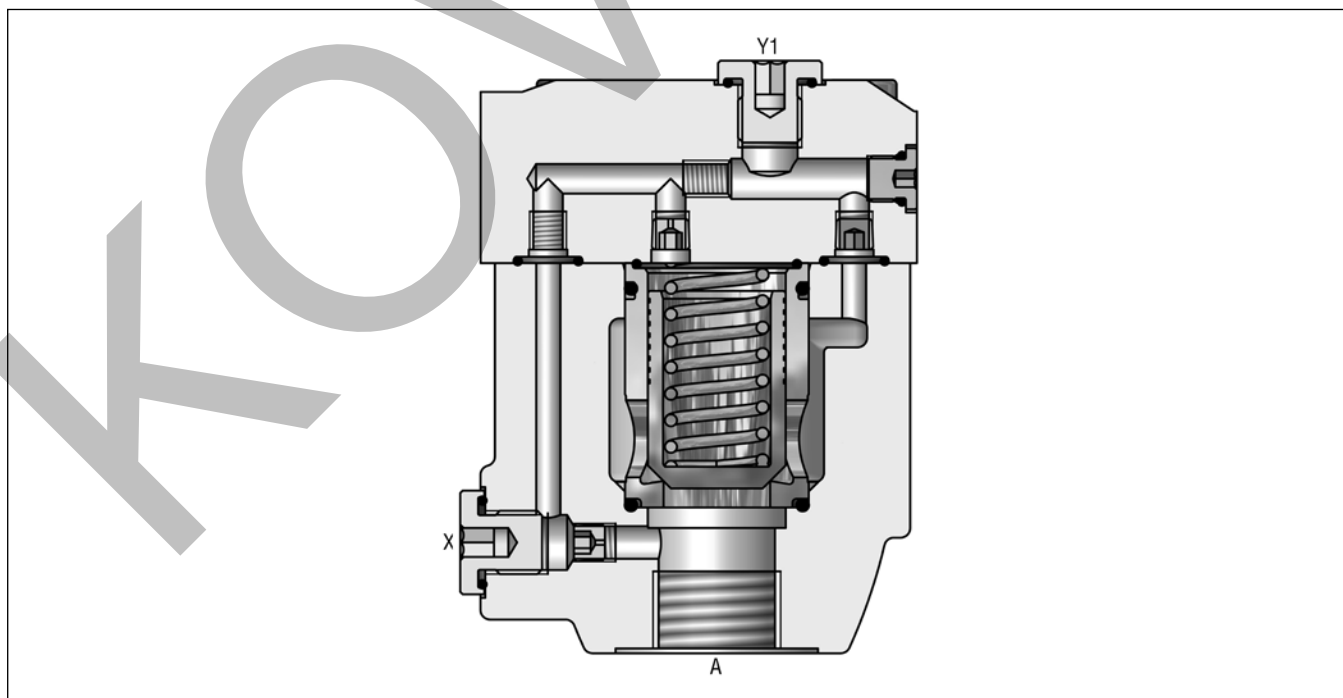
A complete program is offered under the Parker brand: subplate mounted valves (D4S - chapter 6), SAE flange valves (D5S - chapter 9), pipe mounted valves (D4S - chapter 10), slip-in cartridges (CAR - on request).



D4S10 L-body

**Features**

- Leak-free seat valve design
- 2 body designs
 - L-body (2-port)
 - T-body (3-port)
- Numerous pilot options
- 4 port sizes
 - G 1/2", G 1" for T-body
 - G 3/4", G 1 1/4" for L-body
- 6 poppet types

D4S06 L-body

Ordering Code

Directional Seat Valve
Series D4S

D4S		—									B	
Seat valve	Nominal size	Body	Pilot connection	Cap version	Sleeve	Spool type	Spring	Switching type	Solenoid voltage	Design series	Seals	

Code	Port size
03	NG10 (CAR4 build-in)
06	NG25 (CAR2 build-in)
10	NG32 (CAR2 build-in)

Code	Body	Ports
6	D4S03 T-body D4S06 T-body	A, B = G $\frac{1}{2}$ "; X, Y1 = G $\frac{1}{4}$ " A, B = G1"; X, Y1 = G $\frac{1}{4}$ "
D	D4S06 L-body D4S10 L-body	A, B = G $\frac{3}{4}$ "; X, Y1 = G $\frac{1}{4}$ " A, B = G1 $\frac{1}{4}$ "; X, Y1 = G $\frac{1}{4}$ "

Code	Pilot oil line in body	A-X	B-Y
1	internal from A	●	○
2	external from X	●	○

Code	Ports	X	Y	Z	X-Y	Y1	VV01
1	Pilot oil = pilot drain	○	●	●	○	●	—
C	Pilot oil = pilot drain	●	○	●	○	●	—
With solenoid valve (VV01)							
2	Ext. PD from cap	○	○	●	●	○	●
6	Internal pilot drain	○	○	●	●	○	○
With stroke limiter (not for D4S03)							
3	Pilot oil = pilot drain	●	●	—	—	—	—
4	Pilot oil = pilot drain	●	●	—	—	—	—

○ open bore ● closed bore ● orifice Ø 1.2

Code	Sleeve
1	AA = 95 %, AB = 5 %
3	AA = 60 %, AB = 40 %

Code	Size	Poppet type	Sleeve
1	03, 06, 10	With closed bottom and 15° chamfer (pZ max. = pA +20 bar)	1
2	03	With 0.8 dia. orifice at the bottom and 15° chamfer	1
	06, 10	With 1.2 dia. orifice at the bottom and 15° chamfer	1
4	03, 06, 10	With closed bottom and 45° chamfer	1, 3
A ¹⁾	06, 10	Safety spool (for position control only)	3
B ¹⁾	06, 10	Throttle spool, 10° chamfer	3
C ¹⁾	06, 10	Throttle spool, 3° chamfer	3

Code	Switching type	de-energized: open	de-energized: closed
omit	Standard w/o vent function		
09	VV01 with manual override		
10	VV01 without manual override		
11	VV01 with manual override		
12	VV01 without manual override		
CA	Shuttle valve		
DA	Shuttle valve		
CB	VV01 code 09 and shuttle valve code CA		
CD	VV01 code 11 and shuttle valve code CA		
DB	VV01 code 09 and shuttle valve code DA		
DD	VV01 code 11 and shuttle valve code DA		
EH	VV01 code 10 and shuttle valve code CA and position control ²⁾ with amplifier		
EK	VV01 code 12 and shuttle valve code CA and position control ²⁾ with amplifier		
EN	VV01 code 10 and shuttle valve code DA and position control ²⁾ with amplifier		
EQ	VV01 code 12 and shuttle valve code DA and position control ²⁾ with amplifier		
EC	VV01 code 10 and position control ²⁾ with amplifier		
EE	VV01 code 12 and position control ²⁾ with amplifier		
EA	Position control ²⁾ with amplifier		
EF	Position control ²⁾ with amplifier and shuttle valve code CA		
EL	Position control ²⁾ with amplifier and shuttle valve code DA		

Code	Spring (approx. cracking pressure [bar])					
	Sleeve Code 1		Sleeve Code 3			
	A -> B		A -> B		B -> A	
	D4S03	D4S06/10	D4S03	D4S06/10	D4S03	D4S06/10
1	2.8	3.5	6.5	6.5	9.5	11.0
2	0.5	0.5	1.0	1.0	1.5	1.7
3	0.3	0.3	0.6	0.6	0.9	1.0
4	2.2	2.2	4.0	3.5	5.5	6.0
5	—	9.0	—	16.0	—	28.0
6	1.2	1.2	2.0	2.2	3.0	3.8
7	3.0	—	8.0	—	12.0	—

Examples see end of chapter

¹⁾ Springs 2, 3 and 6 only.²⁾ Position control for D4S06/10 only. Spring 2 or 4.

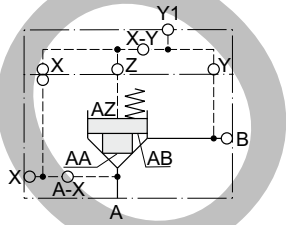
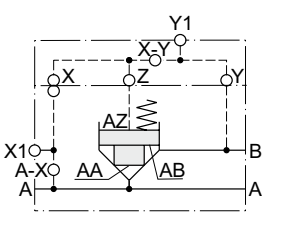
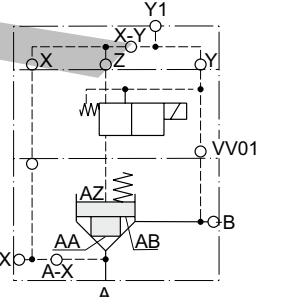
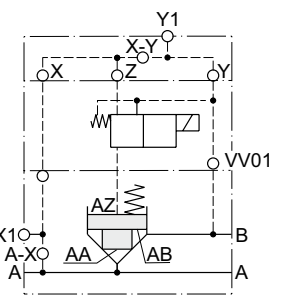
Spool A and sleeve 3. Valve open: proximity switch damped.

³⁾ To be used in combination with rectifier plugs at 120 VAC / 230 VAC power supply.

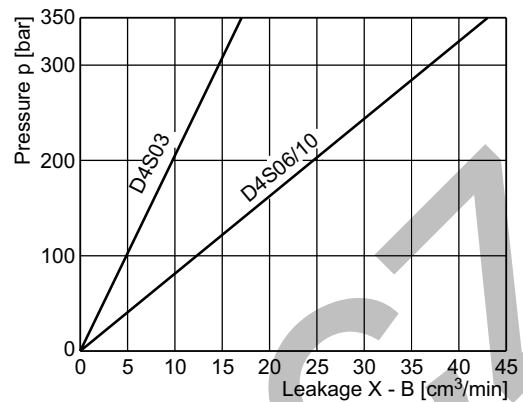
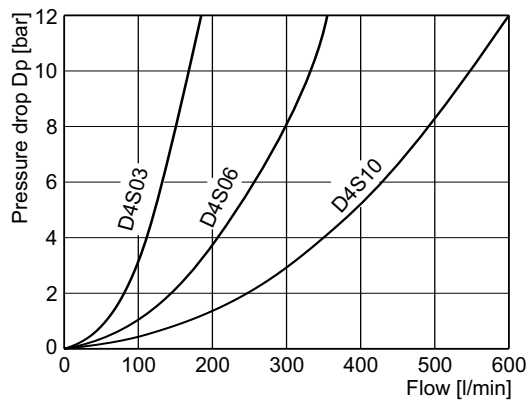
Technical data

General						
Design			T-body		L-body	
Size			03 (½")	06 (1")	06 (¾")	10 (1¼")
Mounting			Threaded body			
Mounting position			unrestricted			
Ambient temperature [°C]			-20...+60			
MTTF _D value [years]			150			
Weight	D4S T-body	[kg]	3.2	6.6	—	—
	D4S L-body	[kg]	—	—	3.3	5.6
Hydraulic						
Max. operating pressure [bar]			Ports A, B up to 350; Port Y 140 (with VV01)			
Nominal flow [l/min]			180	360	360	600
Fluid			Hydraulic oil according to DIN 51524			
Fluid temperature [°C]			-20...+70 (NBR: -25...+70)			
Viscosity,	permitted	[cSt]/[mm²/s]	20...400			
	recommended	[cSt]/[mm²/s]	30...80			
Filtration			ISO 4406 (1999); 18/16/13			
Electrical (solenoid)						
Duty ratio			100 % ED; CAUTION: coil temperature up to 150 °C possible			
Protection class			IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)			
		Code	G0R	G0Q	GAR	GAG W30 W31
Supply voltage		[V] [V]	12 V =	24 V =	98 V =	205 V = 110 at 50 Hz 120 at 60 Hz 230 at 50 Hz 240 at 60 Hz
Tolerance supply voltage		[%]	±10	±10	±10	±10 ±5 ±5
Current consumption	hold	[A]	2.72	1.29	0.33	0.13 0.6 / 0.55 0.3 / 0.27
	in rush	[A]	2.72	1.29	0.33	0.13 2.5 / 2.4 1.25 / 1.2
Power consumption	hold	[W]	32.7	31	31.9	28.2 70/70 VA 70/70 VA
	in rush	[W]	32.7	31	31.9	28.2 280/290 VA 280/290 VA
Solenoid connection			Connector as per EN175301-803, solenoid identification as per ISO 9461			
Wiring min.			[mm²] 3 x 1.5 recommended			
Wiring length max.			[m] 50 recommended			

D4S pilot configuration

L-body (2-port)	T-body (3-port)
Standard	
	
with vent valve VV01	
	

$\Delta p/Q$ performance curves

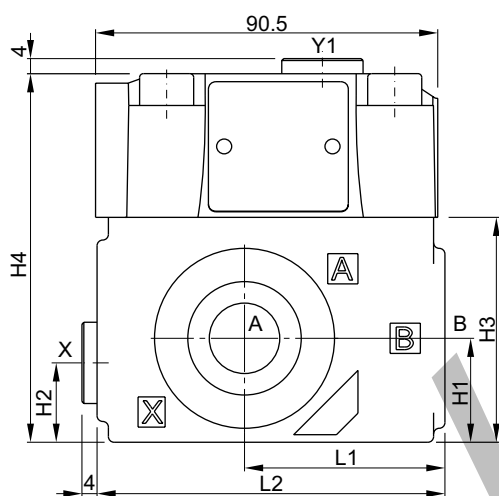
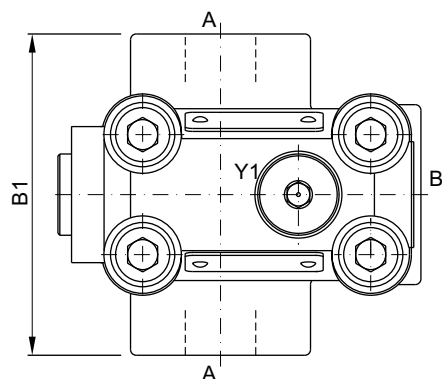


All characteristic curves measured with HLP46 at 50 °C.

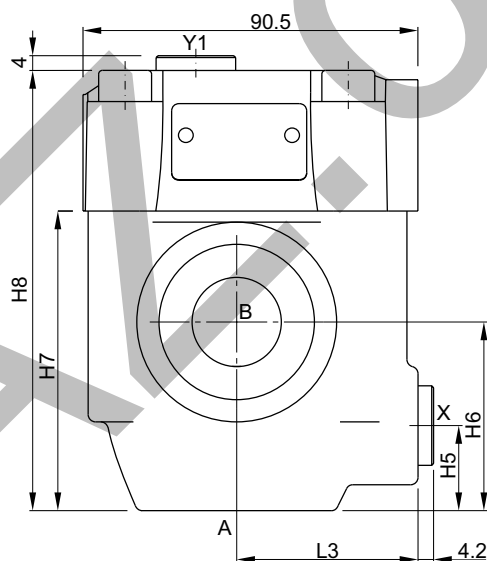
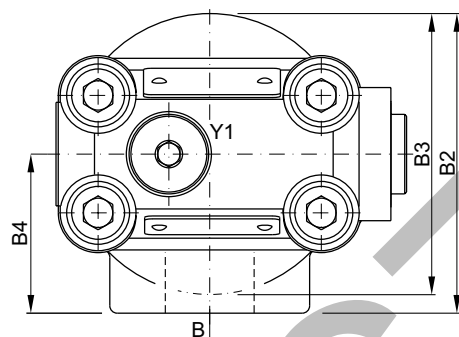
Selection of cartridges

Sleeve 1, poppet 1	Sleeve 1, poppet 2	Sleeve 1, poppet 4	Sleeve 3, poppet 4	Sleeve 3, poppet A	Sleeve 3, poppet B/C
1 : 1.05 $A_A = 0.95 A_C$ $A_B = 0.05 A_C$ 15° chamfer	1 : 1.05 $A_A = 0.95 A_C$ $A_B = 0.05 A_C$ 15° chamfer orifice	1 : 1.05 $A_A = 0.95 A_C$ $A_B = 0.05 A_C$ 45° chamfer	1 : 1.67 $A_A = 0.6 A_C$ $A_B = 0.4 A_C$ 45° chamfer	1 : 1.67 $A_A = 0.6 A_C$ $A_B = 0.4 A_C$ 45° chamfer safety spool	1 : 1.67 $A_A = 0.6 A_C$ $A_B = 0.4 A_C$ 45° chamfer throttle spool

D4S 03/06 T-body



D4S 06/10 L-body



Seal kits		
NG	NBR	FPM
03	S26-58507-0	S26-58507-5
06	S26-58475-0	S26-58475-5
10	S26-58508-0	S26-58508-5

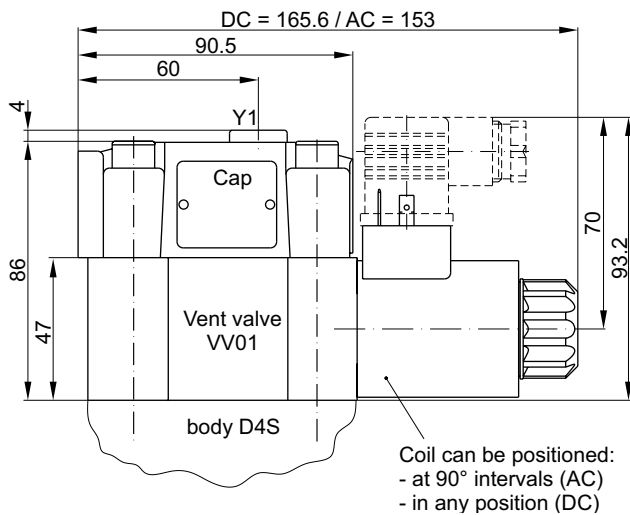
Size	L1	L2	B1	H1	H2	H3	H4
03 (T-body)	53	92	85	27.5	21	59.5	97.5
06 (T-body)	66.5	117.5	136	38	28	93	131

Size	L3	B2	B3	B4	H5	H6	H7	H8
06 (L-body)	49	81	76	43	23	51	81	119
10 (L-body)	49.8	120.7	85.6	77.8	38.1	50.8	96	134

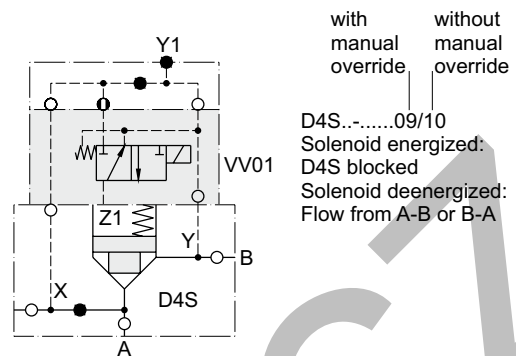
Ports	Function	Port size			
		D4S03 T-body	D4S06 L-body	D4S06 T-body	D4S10 L-body
A	inlet or outlet	G $\frac{1}{2}$ "	G $\frac{3}{4}$ "	G1"	G1 $\frac{1}{4}$ "
B	outlet or inlet	G $\frac{1}{2}$ "	G $\frac{3}{4}$ "	G1"	G1 $\frac{1}{4}$ "
X1	external pilot port			G $\frac{1}{4}$ "	
Y1	external drain ¹⁾			G $\frac{1}{4}$ "	

¹⁾ With VV01 only

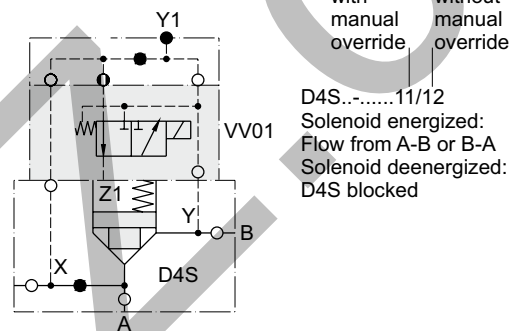
D4S with VV01



Seal kits	
NBR	FPM
DC solenoid	
S56-40609-0	S56-40609-5
AC solenoid	
S26-35237-0	S26-35237-5

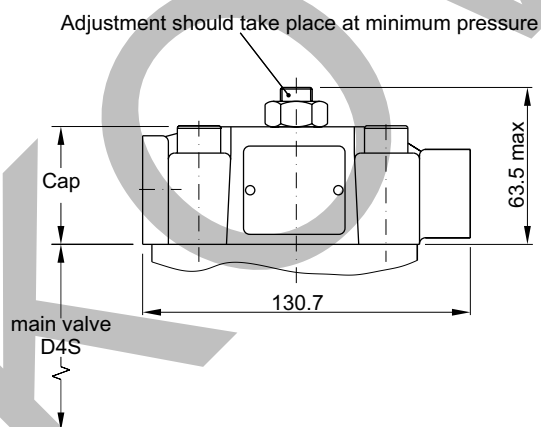


D4S...09/10
 Solenoid energized:
 D4S blocked
 Solenoid deenergized:
 Flow from A-B or B-A

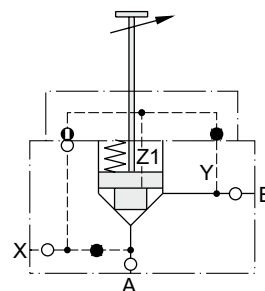


D4S...11/12
 Solenoid energized:
 Flow from A-B or B-A
 Solenoid deenergized:
 D4S blocked

D4S stroke limiter



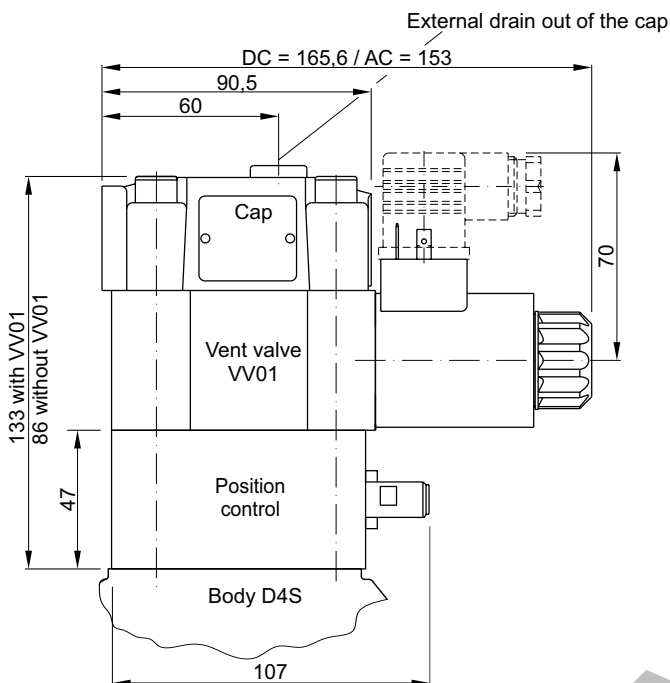
Example: D4S⁰⁶₁₀-233B.



Note:

Stroke limiter not for use with D4S03, VV01, shuttle valve and positon control.

D4S position control



Position control as per IEC 61076-2-101 (M12x1)

Protection class	IP65 in accordance with EN 60529
Ambient temperature	[°C] -20...+60
Supply voltage U_s / ripple	[V] 10...30 / ± 10 %
Current consumption without load	[mA] ≤ 10
Max. output current per channel, ohmic	[mA] 200
Min. output load per channel, ohmic	[kOhm] 100
Max. output drop at 0.2 A	[V] ≤ 2
EMC	EN61000-6-4 / EN61000-6-2
Min. distance to next AC solenoid	[m] > 0.1
Interface	M12x1 acc. to IEC 61076-2-101
Wiring min.	[mm ²] 3 x 0.14 braid shield recommended
Wiring length max.	[m] 50 recommended

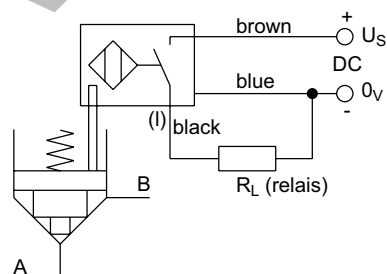
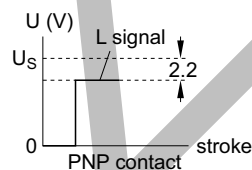
Position control by proximity switch (incl. amplifier)

Valve open: proximity switch activated.

This proximity switch is pressure proof and has no wearing parts.

Note

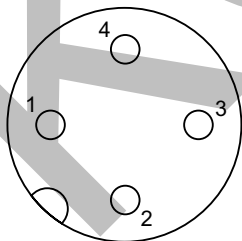
Position control for D4S06 and D4S10 only.



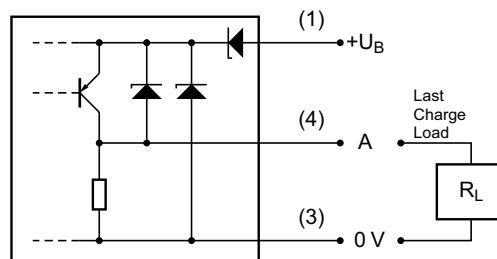
10

Please order plug M12 x 1 separately. Straight plug recommended – no defined position possible for angled plug.

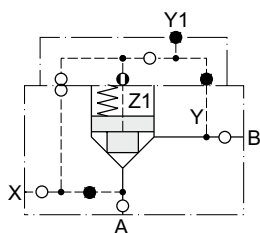
M12 pin assignment



- 1 U_s 10...30 V
- 2 not connected
- 3 0 V
- 4 Out A: normally open

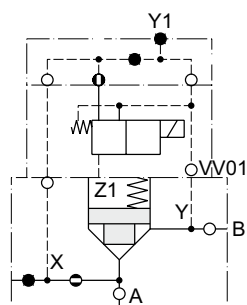


D4S direct operated

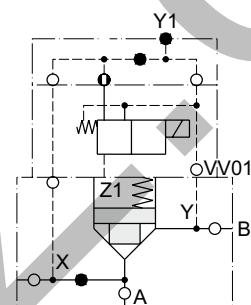


D4S...21
Pilot oil X = external

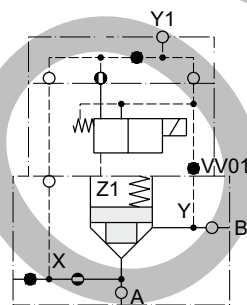
D4S with solenoid valve VV01



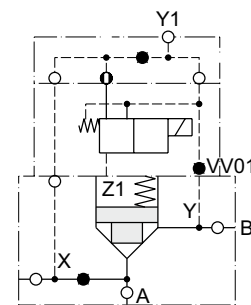
D4S...16...
09 } with VV01
10
11
12
Pilot oil X = internal from A
Drain Y = internal to B



D4S...26...
09 } with VV01
10
11
12
Pilot oil X = external
Drain Y = internal to B

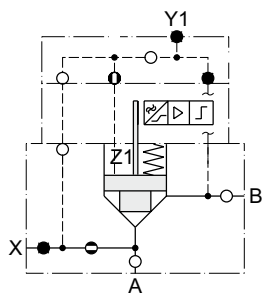


D4S...12...
09 } with VV01
10
11
12
Pilot oil X = internal from A
Drain Y1 = external out of cap



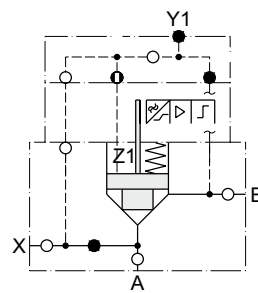
D4S...22...
09 } with VV01
10
11
12
Pilot oil X = external
Drain Y1 = external out of cap

D4S with position control



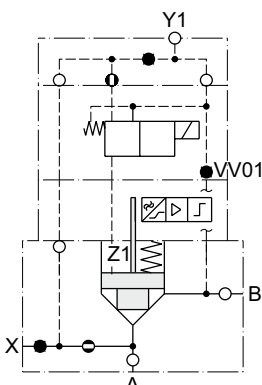
D4S...113A.EA
(with position control)

Pilot oil X = intern from A



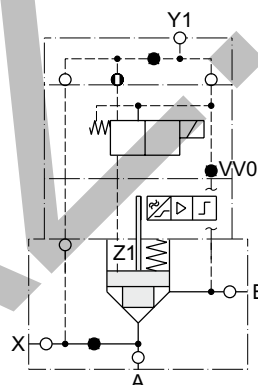
D4S...213A.EA
(with position control)

Pilot oil X = external



D4S...123A. EC } with position control
EE } and VV01

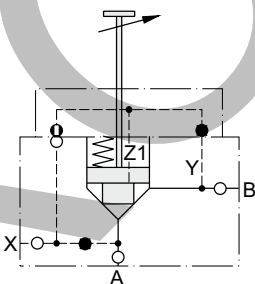
Pilot oil X = intern from A
Drain Y1 = external out of cap



D4S...223A. EC } with position control
EE } and VV01

Pilot oil X = external
Drain Y1 = external out of cap

10 D4S with stroke limiter



D4S...233B. with stroke limiter
Pilot oil X = external
(Note: for D4S06 and D4S10 only)