

Seat valves series D5S are designed for directional control functions. They enable individual hydraulic solutions for nominal flow up to 800 l/min due to a large variety of poppets, springs and covers, including shuttle valves, stroke limiters, solenoid valves (VV01) and position control.

A complete program is offered under the Parker brand:

subplate mounted valves (Series D4S - chapter 6)

SAE flange valves (Series D5S - chapter 9)

pipe mounted valves (Series D4S - chapter 10)

slip-in cartridges (Series CAR - on request)

Features

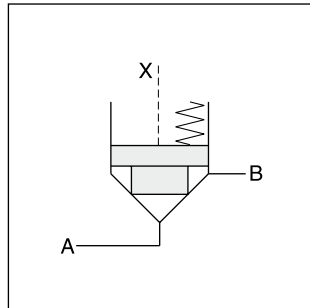
- Leak-free seat valve design
- 2- and 3-port bodies
- SAE61 flange
- Numerous pilot options
- 4 sizes, SAE $\frac{3}{4}$ ", 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ "
- 6 poppet types



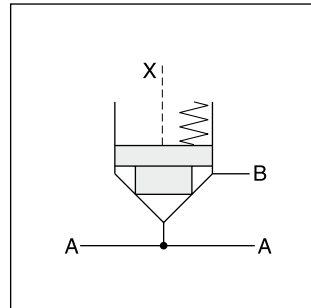
D5S 2-port



D5S 3-port

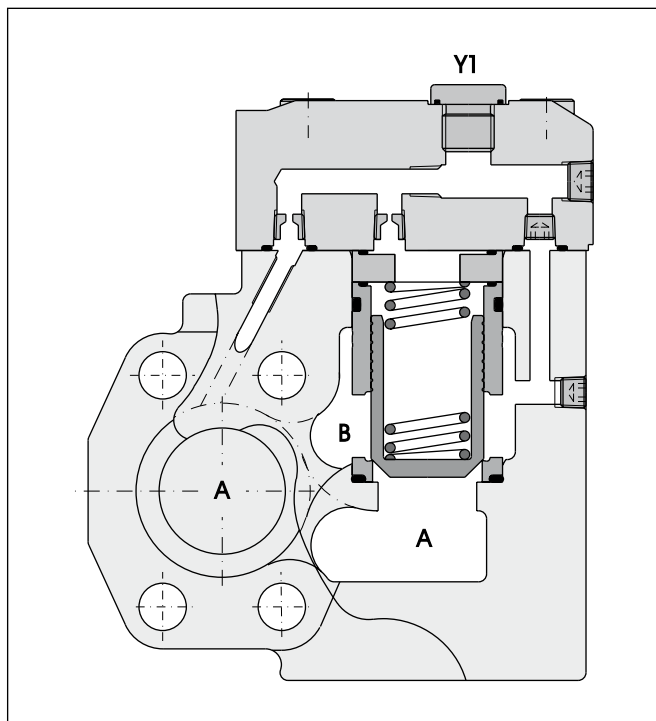


D5S 2-port

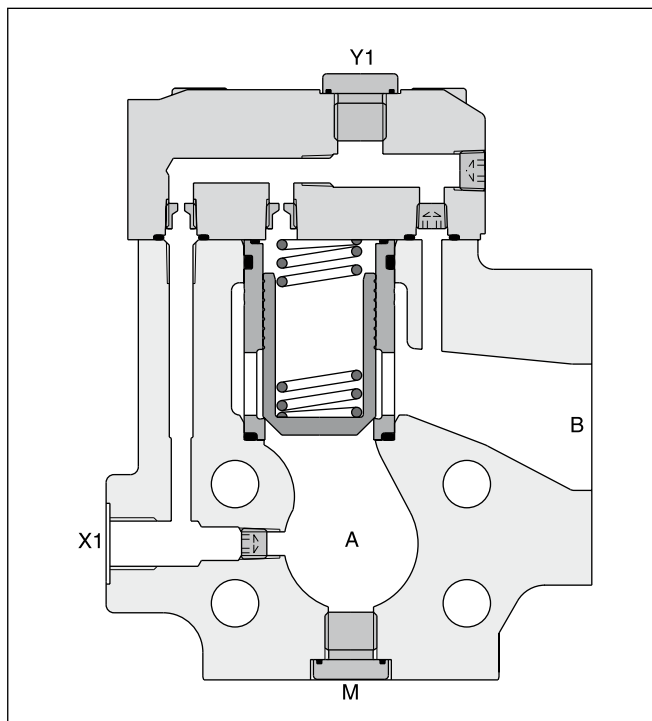


D5S 3-port

D5S 2-port



D5S 3-port



D5S		–								B		
Seat valve	Nominal size		Body	Pilot body configuration	Pilot cap	Sleeve	Spool type	Spring	Switching type	Solenoid voltage	Design series	Options

Code	Port size
06	SAE 3/4"
08	SAE 1"
10	SAE 1 1/4"
12 1)	SAE 1 1/2"

Code	Body	Ports
5	3-port	Seat entry, A; X1, Y1, M = G¼"
7	2-port	Seat entry, A; X1, Y1 = G¼"
8	2-port	Annular entry, B; X1 Y1 = G¼"

Code	Pilot oil line in body
1	internal from A
2	internal from B
3	internal from A and B
4	external from X1
5	internal from B, external from X1

Code	Body	Ports	X	Y	Z	X-Y	X1	Y1	WV01
Standard									
1	2-/3-port	Pilot oil = pilot drain	●	●	●	○	—	●	—
2	2-/3-port	Pilot oil = pilot drain	●	●	●	○	—	●	—
3	2-port	Pilot oil = pilot drain	●	●	●	○	○	●	—
With solenoid valve (VV01)									
4	2-/3-port	Internal to B	●	○	●	●	—	●	○
5	2-port	Internal to B	●	○	●	●	○	●	○
6	2-/3-port	Ext. out of cap	●	○	●	●	—	○	●
7	2-port	Ext. out of cap	●	○	●	●	○	○	●
With stroke limiter (not for D5S06)									
A	2-/3-port	Pilot oil = pilot drain	●	●	●	—	●	—	—
B	2-/3-port	Pilot oil = pilot drain	●	●	—	—	●	—	—
C	2-port	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	06, 08,10,12	With closed bottom and 15° chamfer (pz max. = pA +20 bar)	1
2	06	With 0.8 dia. orifice at the bottom and 15°chamfer	1
	08, 10	With 1.2 dia. orifice at the bottom and 15°chamfer	1
4	06, 08,10,12	With closed bottom and 45° chamfer	1, 3
A ²⁾	08, 10, 12	Safety spool (for end position control only)	3
B ²⁾	08, 10, 12	Throttle spool, 10° chamfer	3
C ²⁾	08, 10, 12	Throttle spool, 3° chamfer	3

Code	Options
omit	Standard
013	Position control with protection

Code	Seals
1	NBR
5	FPM

Code	Solenoid voltage
omit	Standard w/o vent function
G0R	12 V=
G0Q	24 V=
GAR ⁴⁾	98 V=
GAG ⁴⁾	205 V=
W30	110 V / 50 Hz ; 120 V / 60 Hz
W31	230 V / 50 Hz ; 240 V / 60 Hz

Code	Switching type
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
BH	VV01 code 10 and shuttle valve code CA and position control ³⁾ with amplifier
BK	VV01 code 12 and shuttle valve code CA and position control ³⁾ with amplifier
BN	VV01 code 10 and shuttle valve code DA and position control ³⁾ with amplifier
BQ	VV01 code 12 and shuttle valve code DA and position control ³⁾ with amplifier
BC	VV01 code 10 and position control ³⁾ with amplifier
BE	VV01 code 12 and position control ³⁾ with amplifier
BA	Position control ³⁾ with amplifier
BF	Position control ³⁾ with amplifier and shuttle valve code CA
BL	Position control ³⁾ 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	
	D5S06	D5S08/12	D5S06	D5S08/12	D5S06	D5S08/12
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	—

1) D5S 3-port only

2) Springs 2, 3 and 6 only

³⁾ Position control for D5S08/10 only. Spring 2 or 4. Spool A and sleeve 3.

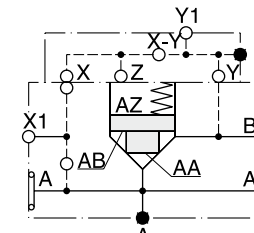
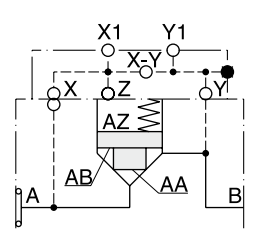
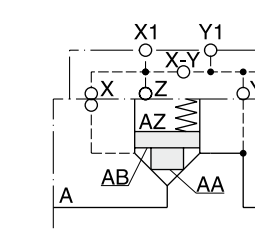
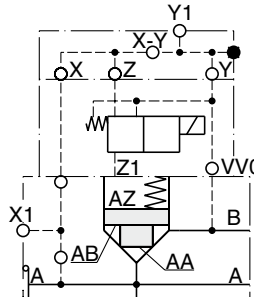
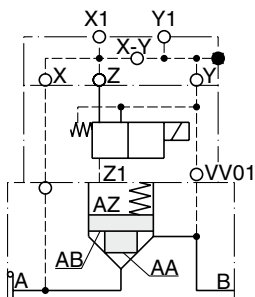
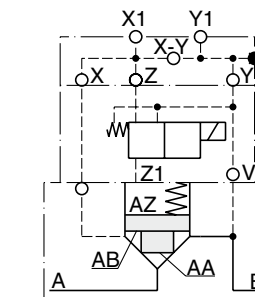
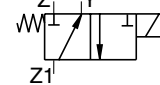
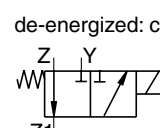
⁴⁾ To be used in combination with rectifier plugs at 120 VAC / 230 VAC power supply.

Examples see end of chapter.

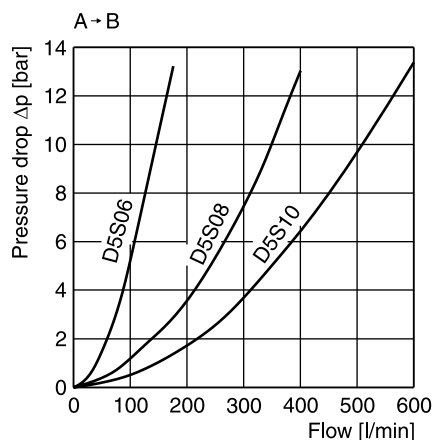
Technical data

General								
Size			06 (¾")	08 (1")	10 (1¼")	12 (1½")		
Mounting			Flanged according to SAE61					
Mounting position			unrestricted					
Ambient temperature		[°C]	-20...+60					
MTTF _D value		[years]	150					
Weight	D5S 2port	[kg]	3.6	4.1	5.4	—		
	D5S 3port	[kg]	3.4	4.4	5.0	7.8		
Hydraulic								
Max. operating pressure		[bar]						
SAE61 Ports A, B			350	350	280	210		
Port Y1			30	30	30	30		
Nominal flow		[l/min]	180	360	600	800		
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					
Solenoid connection			Connector as per EN175301-803, solenoid identification as per ISO 9461					
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
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
Response time		[ms]	Energized / De-energized AC: 20/18 , DC: 46/27					
Wiring min.		[mm²]	3 x 1.5 recommended					
Wiring length max.		[m]	50 recommended					

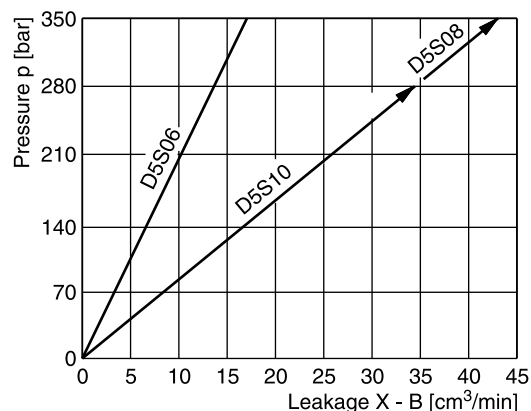
D5S pilot configuration

3-port	2-port: seat entry standard	2-port: annular entry	
			
with vent valve VV01			VV01
			de-energized: open  de-energized: closed 

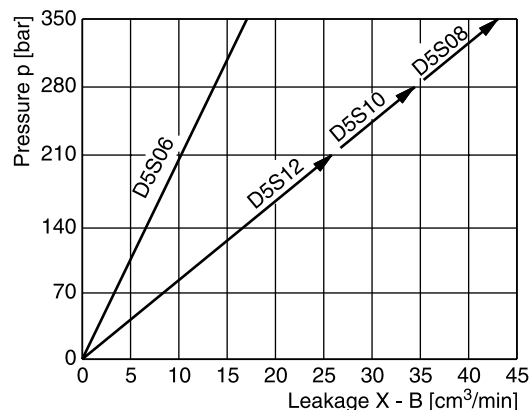
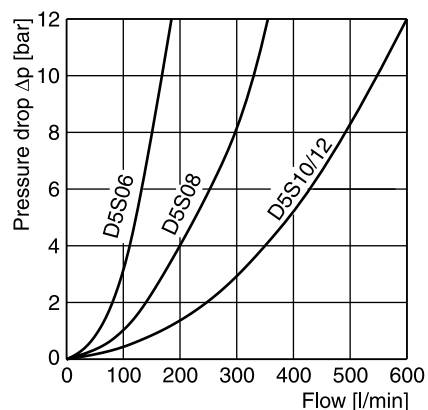
D5S 2-port



Leakage



D5S 3-port

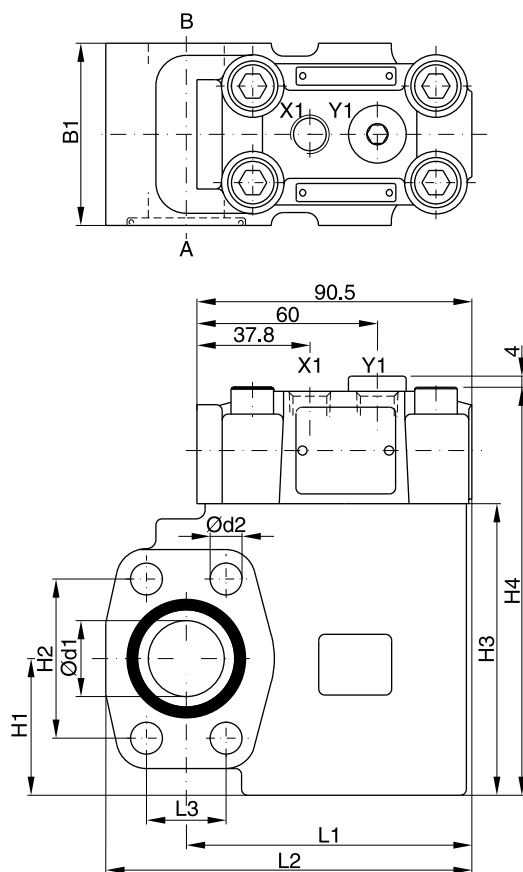


All characteristic curves measured with HLP46 at 50 °C.

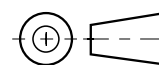
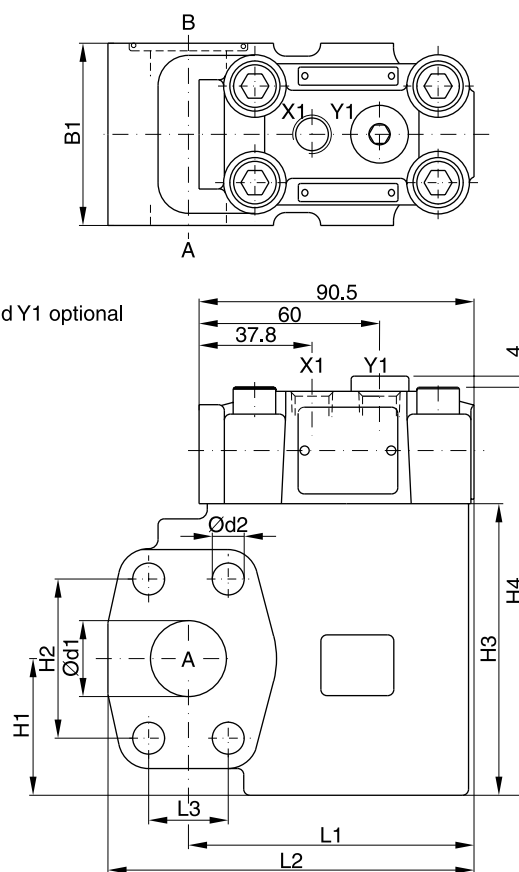
Selection of cartridges

Sleeve 1, poppet 1 Z	Sleeve 1, poppet 2 Z	Sleeve 1, poppet 4 Z	Sleeve 3, poppet 4 Z	Sleeve 3, poppet A Z	Sleeve 3, poppet B/C Z
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

D5S UK.INDD CM 18.11.14

D5S 2-port**Seat entry****Annular entry**

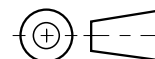
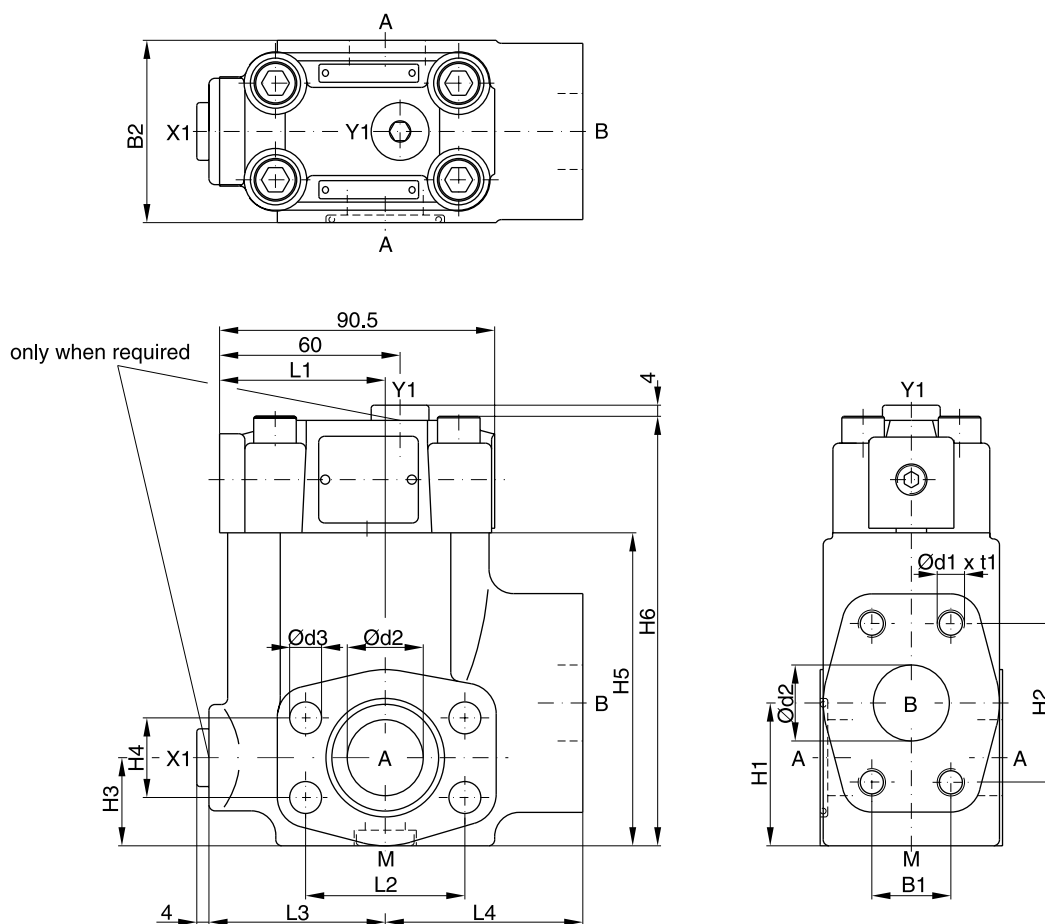
Ports X1 and Y1 optional

**9**

Seal kits		
NG	NBR	FPM
06	S16-91850-0	S16-91850-5
08	S16-91851-0	S16-91851-5
10	S16-91852-0	S16-91852-5

NG	I1	I2	I3	b1	h1	h2	h3	h4	d1	d2
06	77	101.0	22.2	60	37	47.6	90	127.6	19	10.5
08	94	120.5	26.2	60	45	52.4	96	133.6	25	10.5
10	94	128.0	30.2	75	48	58.7	109	146.6	32	12.5

Ports	Function	Port size		
		D5S06	D5S08	D5S10
A	Inlet or outlet	¾" SAE61	1" SAE61	1¼" SAE61
B	Outlet or inlet	¾" SAE61	1" SAE61	1¼" SAE61
X1	External pilot port	G¼"	G¼"	G¼"
Y1	External pilot drain	G¼"	G¼"	G¼"

Dimensions**Series D5S****D5S 3-port****Seal kits**

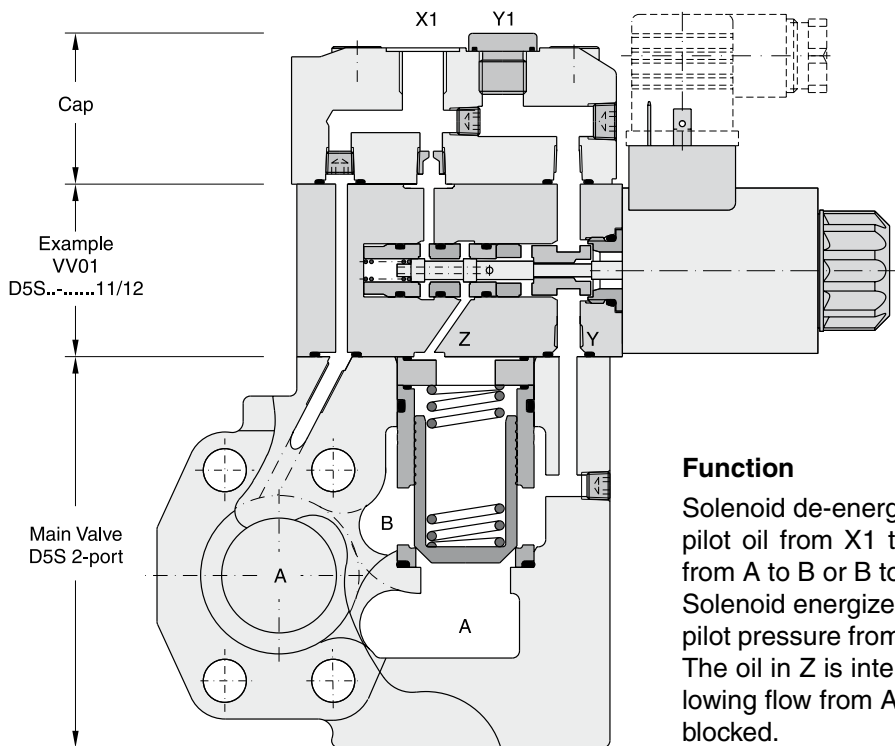
NG	NBR	FPM
06	S16-91850-0	S16-91850-5
08	S16-91851-0	S16-91851-5
10	S16-91852-0	S16-91852-5
12	S26-27421-0	S26-27421-5

NG	I1	I2	I3	I4	b1	b2	h1	h2	h3	h4	h5	h6	d1	t1	d2	d3
06	49	47.6	56	63	22.2	60	41	47.6	29.5	22.2	82	119	3/8" UNC	20	19	10.5
08	55	52.4	58	65	26.2	60	47	52.4	30.5	26.2	103	141	3/8" UNC	23	25	10.5
10	57	58.7	64	61	30.2	75	65	58.7	37.5	30.2	113	150	7/16" UNC	22	30	12.5
12	37	69.8	55	93	35.7	80	73	69.8	72	35.7	140	178	1/2" UNC	27	38	13.5

Ports	Function	Port size			
		D5S06	D5S08	D5S10	D5S12
A (2x)	Inlet or outlet	3/4" SAE61	1" SAE61	1 1/4" SAE61	1 1/2" SAE61
B	Outlet or inlet	3/4" SAE61	1" SAE61	1 1/4" SAE61	1 1/2" SAE61
X1 ¹⁾	External pilot port	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Y1	External pilot drain	G 1/4"	G 1/4"	G 1/4"	G 1/4"
M	Pressure gauge	G 1/4"	G 1/4"	G 1/4"	G 1/4"

¹⁾ Closed when supplied

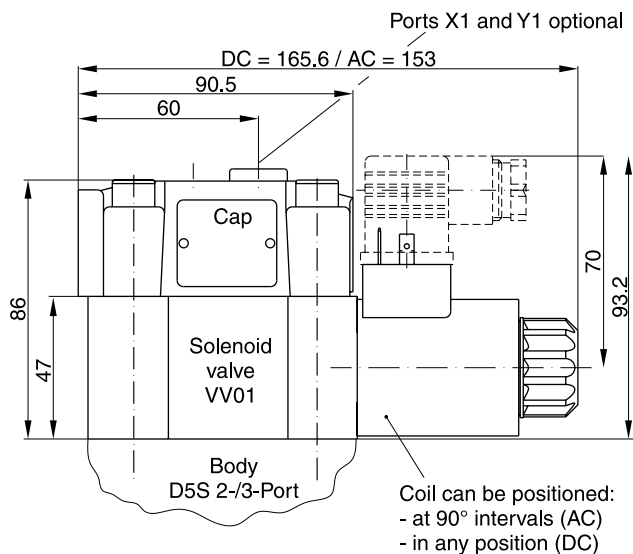
Example: pilot oil external from X1, pilot drain internal out of B



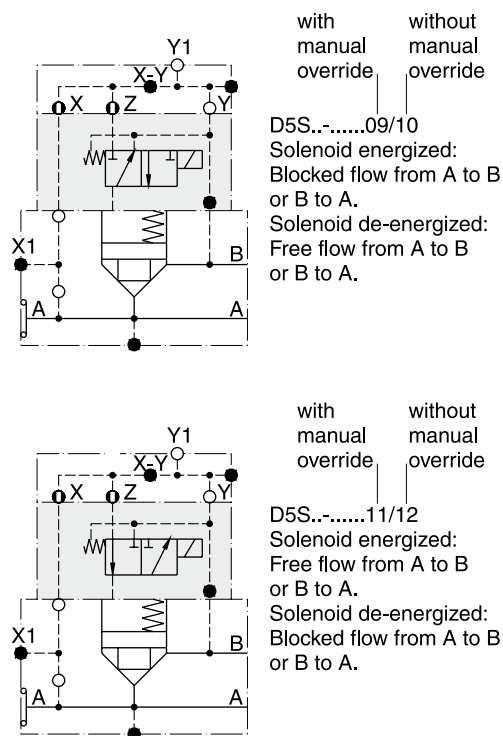
Function

Solenoid de-energized:
 pilot oil from X1 to Z blocks the connection from A to B or B to A.
Solenoid energized:
 pilot pressure from X1 is blocked in the VV01. The oil in Z is internally drained to port B. Allowing flow from A to B, while B to A remains blocked.

D5S with VV01 dimensions



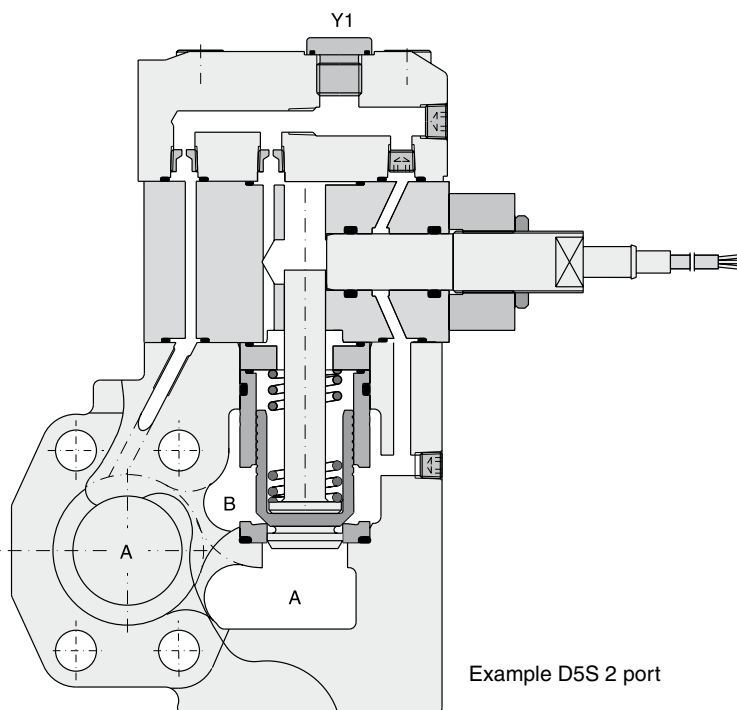
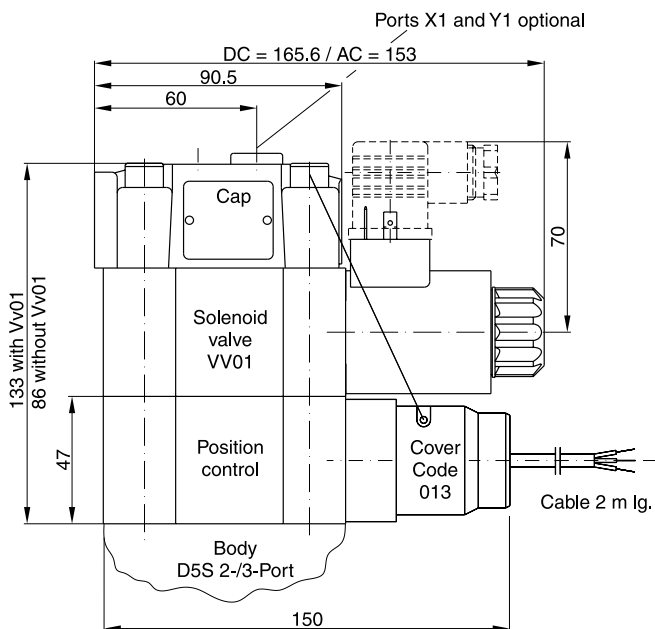
Seal kits	
NBR	FPM
DC solenoid	
S56-40609-0	S56-40609-5
AC solenoid	
S26-35237-0	S26-35237-5



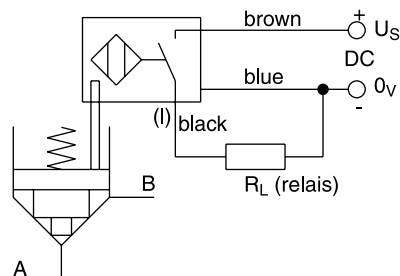
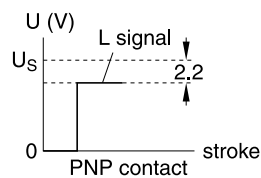
D5S with position control

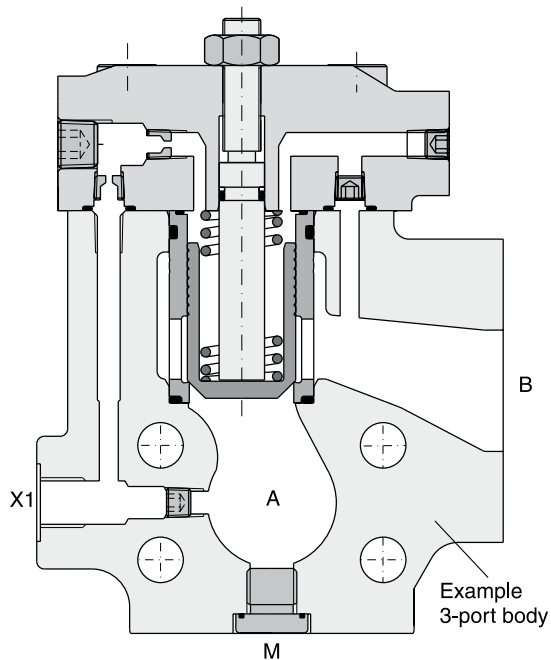
Position control by proximity switch (incl. amplifier). Valve open: proximity switch activated. This proximity switch is pressure proof and has no wearing parts.

Note: Position control for D5S08 and D5S10 only.

**D5S with position control dimensions****Technical data (proximity switch)**

Function	PNP, contact
Supply voltage (Us)	[VDC] 10...30
Supply voltage ripple	[%] ≤ 10
Current consumption	[mA] max. 8
Residual voltage L-signal	[V] Us - 2.2 at I _{max}
Output current (I)	[mA] ≤ 200
Protection class	IP67
Ambient temperature	[C°] -25...+70
Wire cross section	[mm²] 3 x 0.5

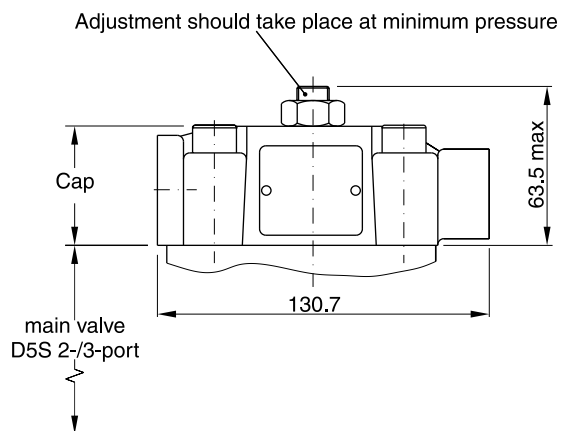
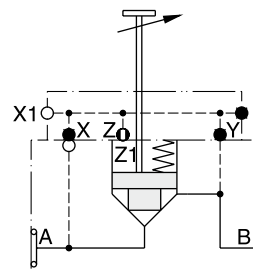
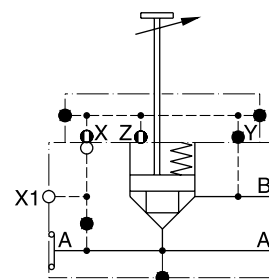
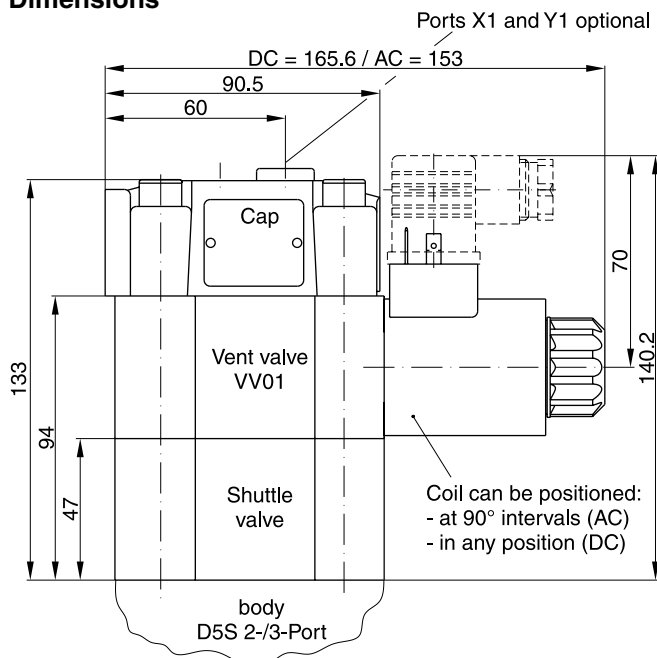


D5S stroke limiter**Example: D5S 3-port**

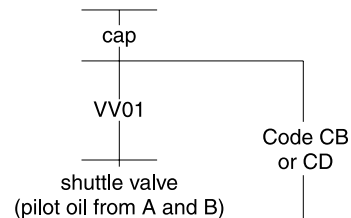
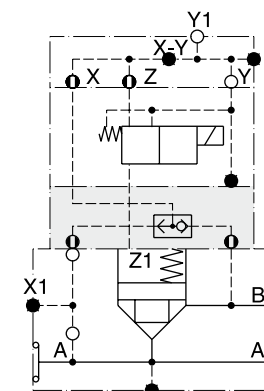
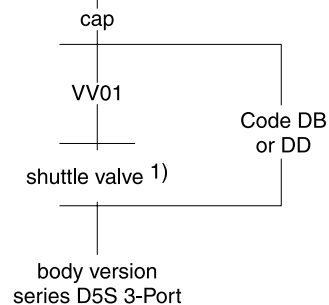
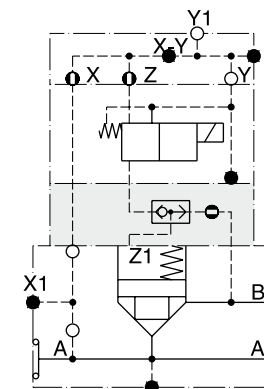
X1 = external pilot-oil (optional)

Note:

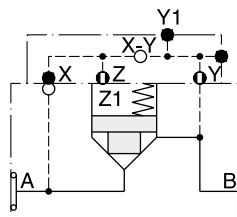
Stroke limiter not for use with D5S06, solenoid valve VV01, shuttle valve and position control.

Stroke limiter dimensionsExample D5S 2-port:
D5S08-74C...
D5S10-74C...Example D5S 3-port:
D5S08-54A...
D5S10-54A...
D5S12-54A...**D5S with shuttle valve****Dimensions**

Shuttle valve only in connection with vent valve VV01.

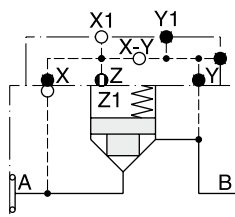
body version
series D5S 3-Portbody version
series D5S 3-Port

1) pilot oil from A and B, from B to A check valve function

D5S 2-port**Seat entry**

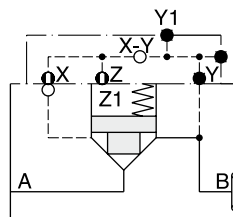
D5S...-722

Pilot oil: internal from B



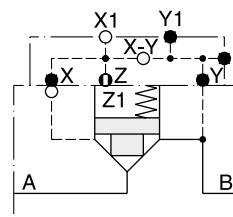
D5S...-743

Pilot oil: external from X1

Annular entry

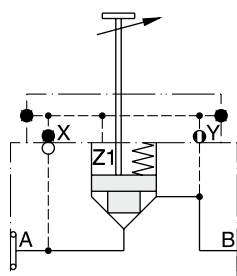
D5S...-821

Pilot oil: internal from B



D5S...-843

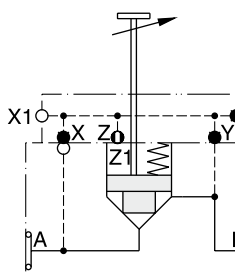
Pilot oil: external from X1

Stroke limiter D5S 2-port**Seat entry**

D5S08-72B

10

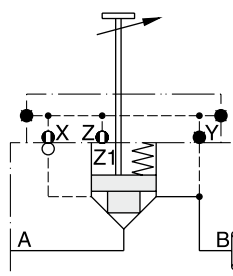
Pilot oil: internal from B



D5S08-74C

10

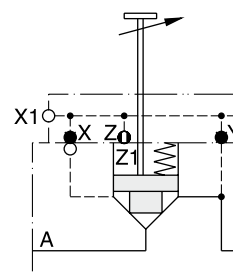
Pilot oil: external from X1

Annular entry

D5S08-82A

10

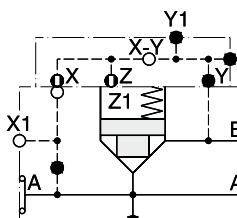
Pilot oil: internal from B



D5S08-84C

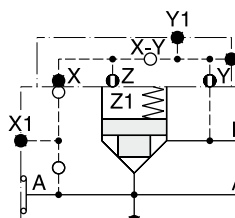
10

Pilot oil: external from X1

D5S 3-port

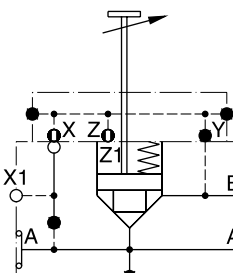
D5S...-541

Pilot oil: external from X1



D5S...-522

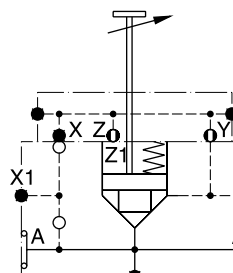
Pilot oil: internal from B

Stroke limiter D5S 3-port

D5S08-54A

10

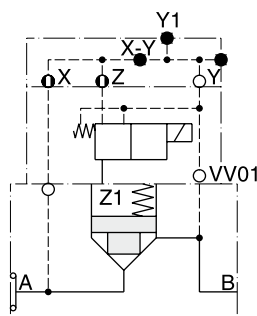
Pilot oil: external from X1



D5S08-52B

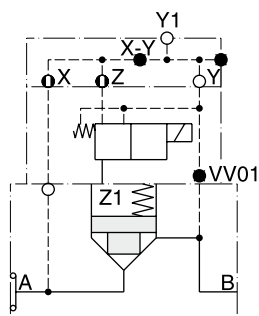
10

Pilot oil: internal from B

D5S 2-port with solenoid valve VV01**Seat entry**

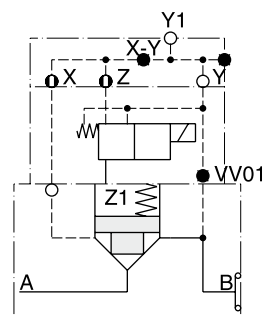
D5S...-714...09
10
11
12

Pilot oil: internal from A
Pilot drain: internal to B



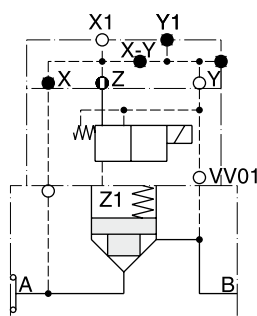
D5S...-716...09
10
11
12

Pilot oil: internal from A
Pilot drain: external out of Y1



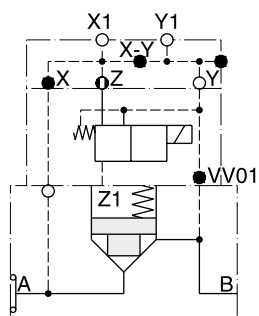
D5S...-826...09
10
11
12

Pilot oil: internal from B
Pilot drain: external out of Y1



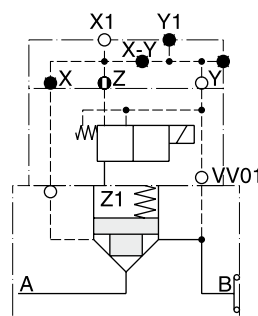
D5S...-745...09
10
11
12

Pilot oil: external from X1
Pilot drain: internal to B



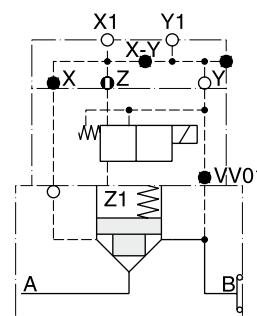
D5S...-747...09
10
11
12

Pilot oil: external from X1
Pilot drain: external out of Y1



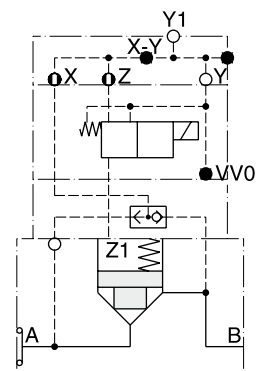
D5S...-845...09
10
11
12

Pilot oil: external from X1
Pilot drain: internal to B



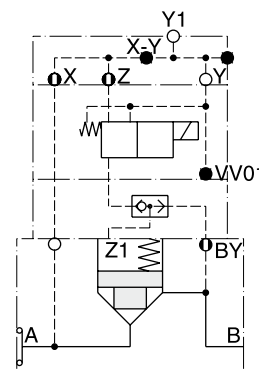
D5S...-847...09
10
11
12

Pilot oil: external from X1
Pilot drain: external out of Y1

D5S 2-port with with solenoid valve VV01 and shuttle valve**Seat entry**

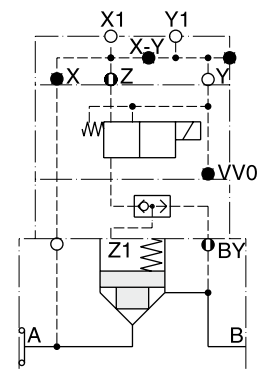
D5S...-736...CB
CD

Pilot oil: internal from A +
internal from B
Pilot drain: external out of Y1



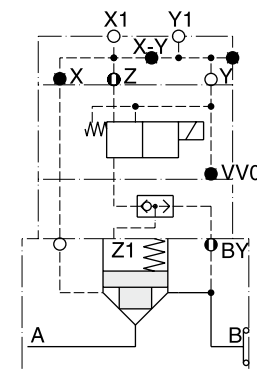
D5S...-736...DB
DD

Pilot oil: internal from A +
internal from B
Pilot drain: external out of Y1



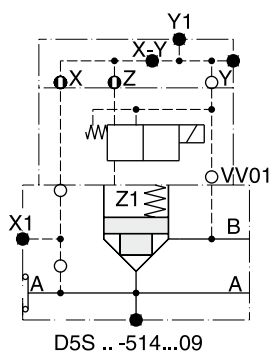
D5S...-757...DB
DD

Pilot oil: external from X1 +
internal from B
Pilot drain: external out of Y1

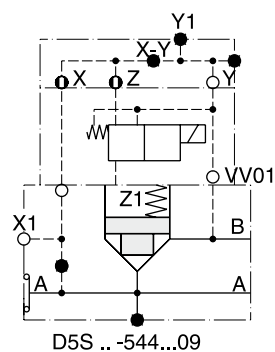


D5S...-857...DB
DD

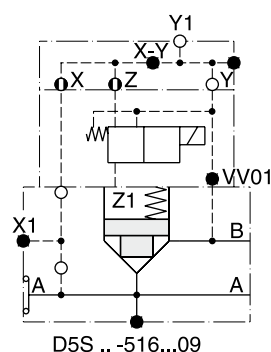
Pilot oil: external from X1 +
internal from B
Pilot drain: external out of Y1

D5S 3-port with solenoid valve VV01

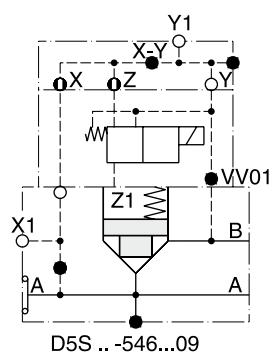
Pilot oil: internal from A
Pilot drain: internal to B



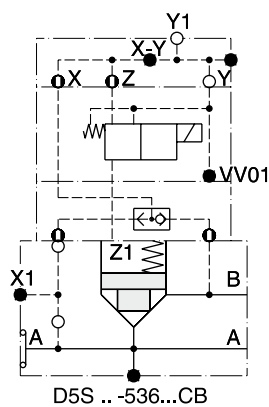
Pilot oil: external from X1
Pilot drain: internal to B



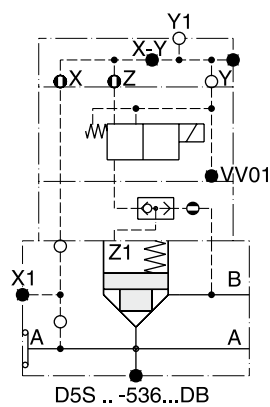
Pilot oil: internal from A
Pilot drain: external out of Y1



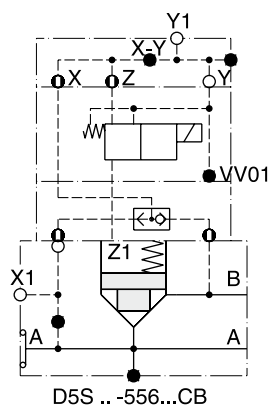
Pilot oil: external from X1
Pilot drain: external out of Y1

D5S 3-port with with solenoid valve VV01 and shuttle valve

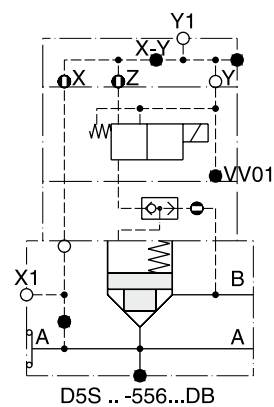
Pilot oil: internal from A +
internal from B
Pilot drain: external out of Y1



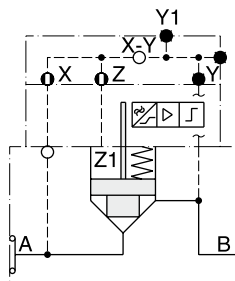
Pilot oil: internal from A +
internal from B
Pilot drain: external out of Y1



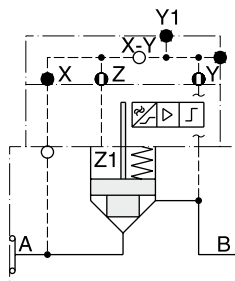
Pilot oil: internal from X1 +
internal from B
Pilot drain: external out of Y1



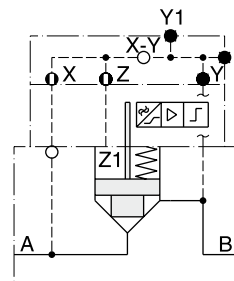
Pilot oil: external from X1 +
internal from B
Pilot drain: external out of Y1

D5S 2-port position control**Seat entry**D5S08-7113A.BA
D5S10

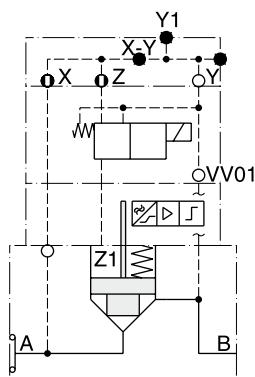
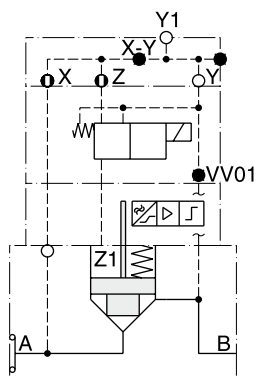
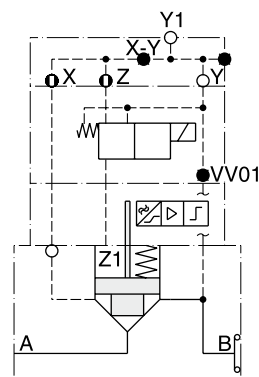
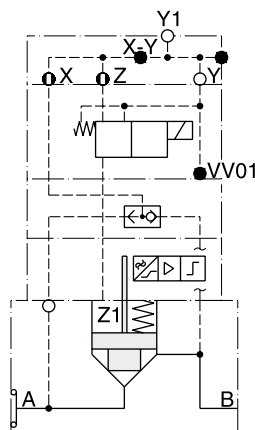
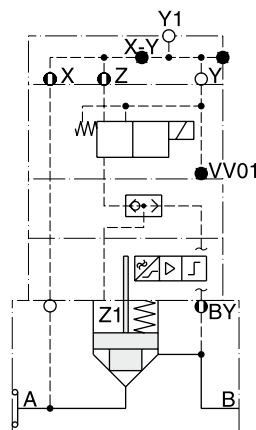
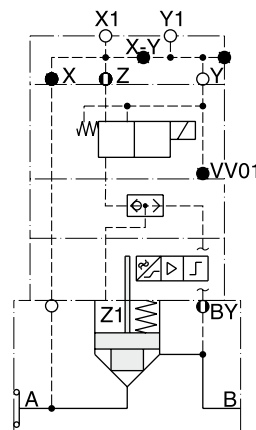
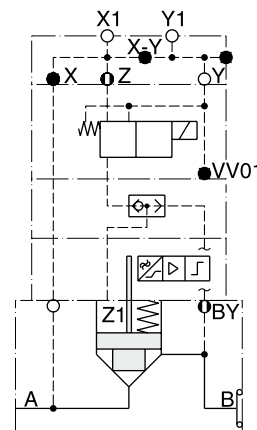
Pilot oil: internal from A

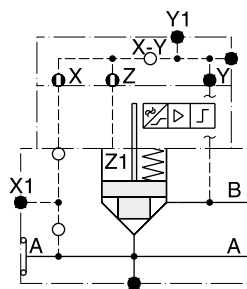
D5S08-7223A.BA
D5S10

Pilot oil: internal from B

D5S08-8213A.BA
D5S10

Pilot oil: internal from B

D5S08-7143A.BC
D5S10 BEPilot oil: internal from A
Pilot drain: internal to BD5S08-7163A.BC
D5S10 BEPilot oil: internal from A
Pilot drain: external out of Y1D5S08-8263A.BC
D5S10 BEPilot oil: internal from B
Pilot drain: external out of Y1**Seat entry**D5S...-736...BH
BKPilot oil: internal from A +
internal from B
Pilot drain: external out of Y1D5S...-736...BN
BQPilot oil: internal from A +
internal from B
Pilot drain: external out of Y1D5S...-757...BN
BQPilot oil: external from X1 +
internal from B
Pilot drain: external out of Y1D5S...-857...BN
BQPilot oil: external from X1 +
internal from B
Pilot drain: external out of Y1

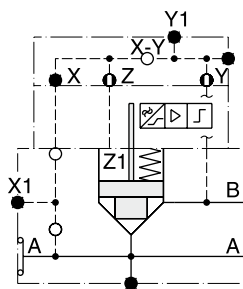
D5S 3-port position control**Seat entry**

D5S08-5113A.BA

10

12

Pilot oil: internal from A

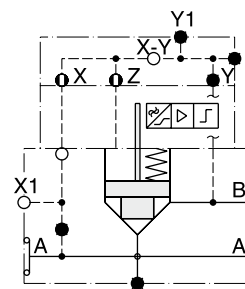


D5S08-5223A.BA

10

12

Pilot oil: internal from B

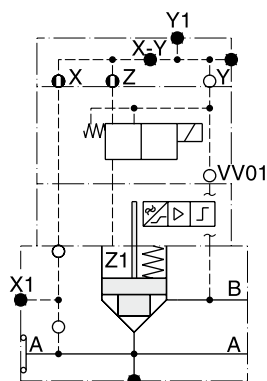


D5S08-5213A.BA

10

12

Pilot oil: external from X1

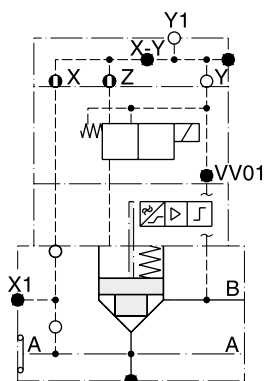


D5S08-5143A.BC

10

12

BE

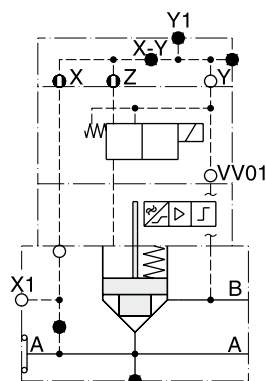
Pilot oil: internal from A
Pilot drain: internal to B

D5S08-5163A.BC

10

12

BE

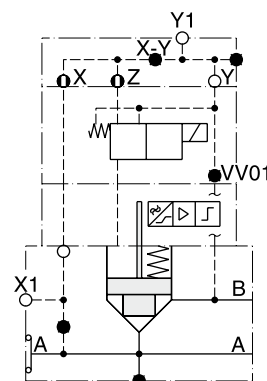
Pilot oil: internal from A
Pilot drain: external out of Y1

D5S08-5443A.BC

10

12

BE

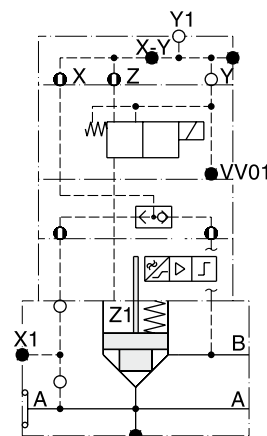
Pilot oil: external from X1
Pilot drain: internal to B

D5S08-5463A.BC

10

12

BE

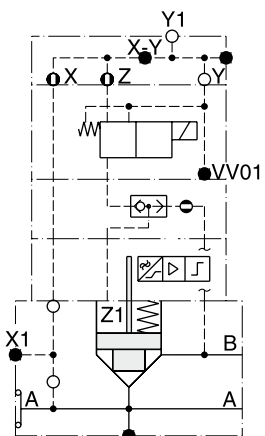
Pilot oil: external from X1
Pilot drain: external out of Y1

D5S08-5363A.BH

10

12

BK

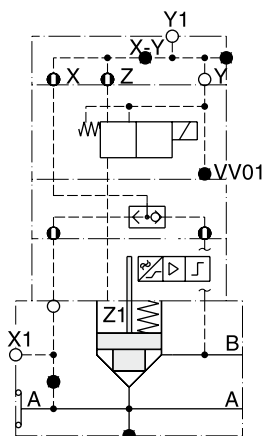
Pilot oil: internal from A +
internal from B
Pilot drain: external out of Y1

D5S08-5363A.BN

10

12

BQ

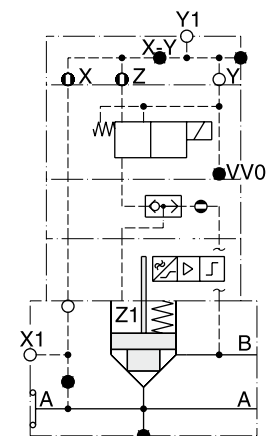
Pilot oil: internal from A +
internal from B
Pilot drain: external out of Y1

D5S08-5563A.BH

10

12

BK

Pilot oil: external from X1 +
internal from B
Pilot drain: external out of Y1

D5S08-5563A.BN

10

12

BQ

Pilot oil: external from X1 +
internal from B
Pilot drain: external out of Y1