Series Denison	Description	Size				Mounting		Configuration		Page
	DIN / ISO	¾	1	1¼	1½	SAE61	SAE62	2-port	3-port	
	Pressure valves, manual operation									
R5V	Pressure relief function	•	•	•	•	•	•	•	•	9-3
R5U	Pressure unloading function	•	•	•	•	•			•	9-9
R5S	Pressure sequence function	•	•	•		•			•	9-15
R5R	Pressure reducing function	•	•	•		•		•		9-19
	Pressure valves, proportional operation									
R5V*P2	Pressure relief function	•	•	•	•	•	•	•	•	9-25
R5R*P2	Pressure reducing function	•	•	•		•		•		9-31
	Directional seat valves									
D5S		•	•	•	•	•		•	•	9-35
	Flow valves									
F5C	Throttle valves, proportional	•	•	•		•		•		9-49
R5A	2-way pressure compensator	•	•	•		•		•		9-53
R5P	3-way pressure compensator	•	•	•	•	•			•	9-57
	Check valves									
C5V	Direct operated	•	•	•	•	•	•	•		9-65
C5P	Pilot and direct operated	•	•	•		•		•		9-69
	Accessories									
	Bolt kits, flanges, plugs									9-73

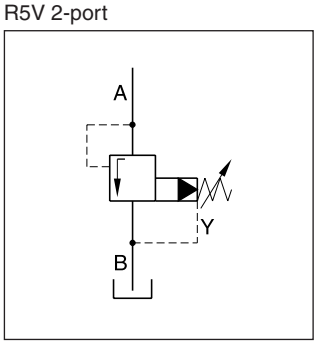
9

Notes

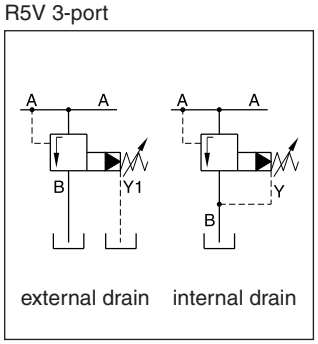
Pilot operated pressure relief valves series R5V have a similar design to the subplate mounted R4V series. The SAE flanges allow to mount the valves directly on the outlet flanges of pumps or inlet flanges of actuators to achieve a very compact design.
Valves with SAE flanges can also be bolted together to combine functions without the need of a manifold block.

R5V 2-port

R5V 3-port



R5V 2-port

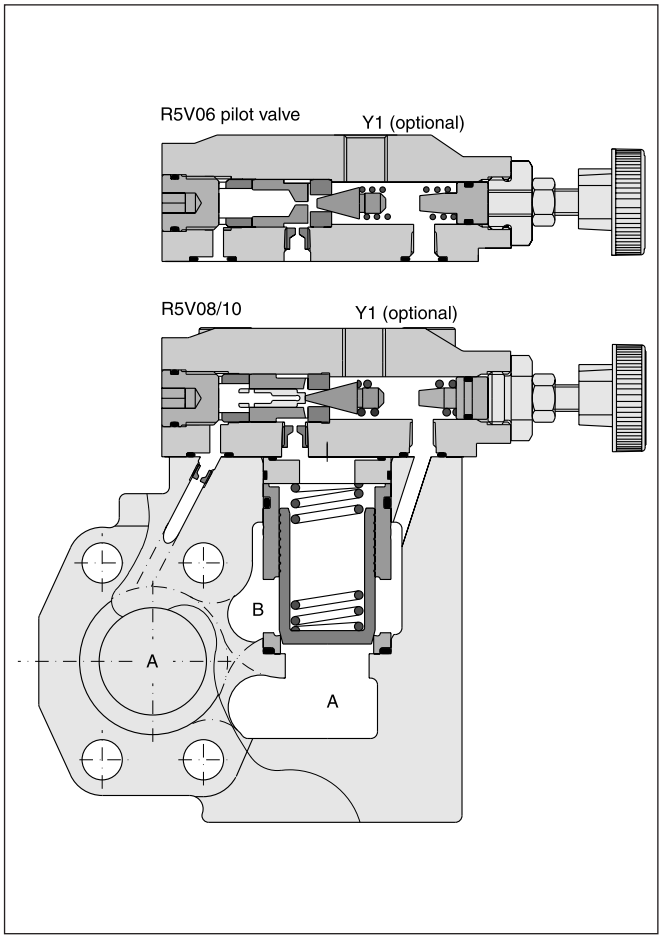


R5V 3-port

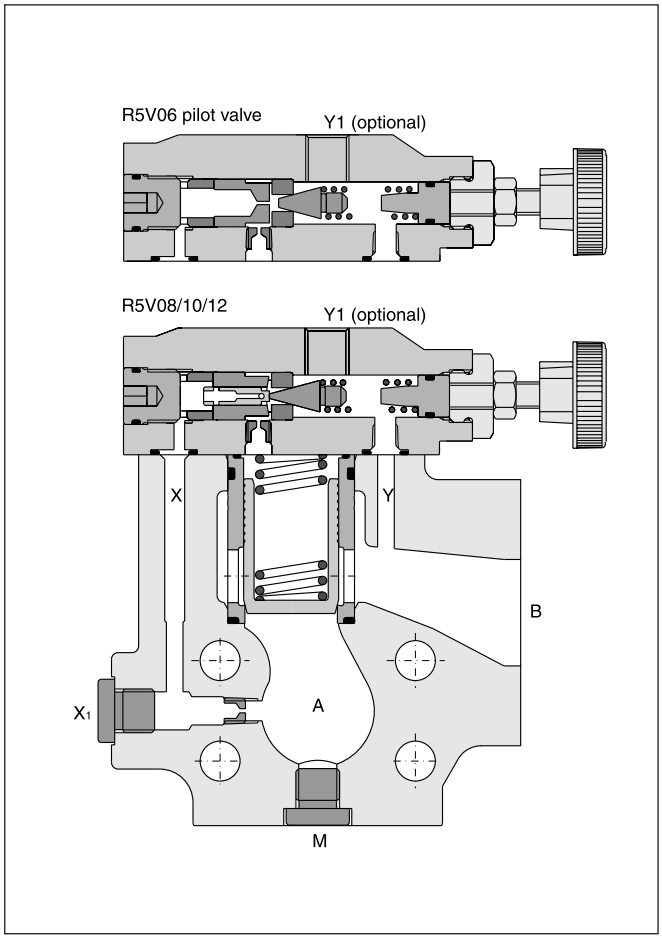
Features

- Pilot operated with manual adjustment
- R5V with 2-port body
  - 3 sizes (SAE ¾", 1", 1¼")
  - SAE61 flange
- R5V with 3-port body
  - 4 sizes (SAE ¾", 1", 1¼", 1½")
  - SAE61 and SAE62 flange
- 3 pressure stages
- 3 adjustment modes
  - Hand knob
  - Acorn nut with lead seal
  - Key lock
- With optional vent function

R5V 2-port



R5V 3-port



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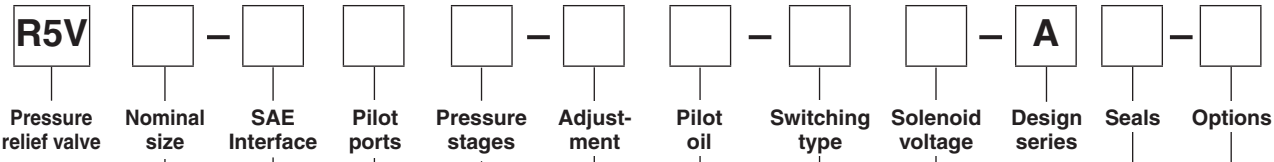
Ordering code



Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"
12[1]	SAE 1½"

[1] only R5V 3-port

SAE 61		
Code	Size	Max. press. [bar]
3	12	210
4	10	280
5	06/08	350
SAE 62		
Code	Size	Max. press. [bar]
6 [1]	06/08/10/12	350

[1] only R5V 3-port

2-port body	
Code	pilot ports
7	Y1 = G¼" [2]
3-port body	
Code	pilot ports
9	Y1[2], X1, M = G¼"

[2] Y1 only available at external drain (pilot oil code 6)

Code	Pressure stages
1	up to 105bar
3	up to 210bar
5	up to 350bar

Code	Adjustment
1	Hand knob
3	Acorn nut with lead seal
4	Key lock

Code	Options
008	Vent function with slow un-loading
070 [3]	Through-hole dia. 15mm (for M14), and tank port flange thread M12
152	3-port body with metric threads

[3] only R5V10 SAE62

Code	Seals
1	NBR
5	FPM

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

Code	Switching type
omit	Standard w/o vent function
09	Solenoid not activ. unpress. circulation
11	Solenoid activated unpress. circulation

Pilot oil	
Code	Drain line
2	internal
6	external from Y1-port

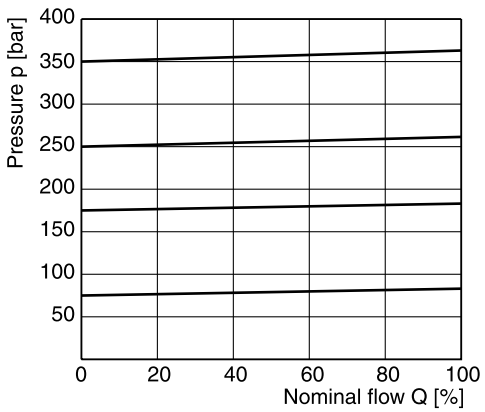
Further options on request

9

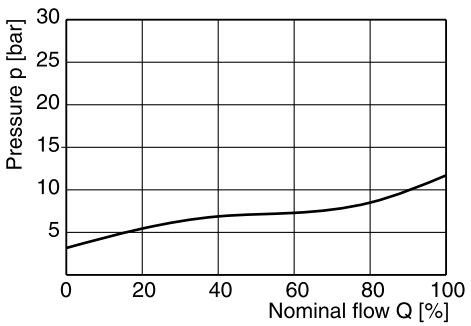
Technical data

General							
Size				**06 (¾")**	**08 (1")**	**10 (1¼")**	**12 (1½")**
Mounting				Flanged according to SAE 61 and SAE 62			
Mounting position				unrestricted			
Ambient temperature			[°C]	-20...+50			
Weight	R5V 2port		[kg]	4.0	4.6	5.9	—
	R5V 3port		[kg]	3.6	4.6	5.2	8.0
Hydraulic							
Max. operating pressure			[bar]				
		SAE61	Ports A, B	350	350	280	210
			Port Y1	30	30	30	30
		SAE62	Ports A, B	350	350	350	350
			Port Y1	30	30	30	30
Pressure stages			[bar]	105, 210, 350			
Nominal flow			[l/min]	90	300	600	600
Fluid				Hydraulic oil as per DIN 51524...525			
Fluid temperature			[°C]	-20...+80			
Viscosity permitted			[cSt] [mm²/s]	10...650			
Viscosity recommended			[cSt] [mm²/s]	30			
Filtration				ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)			
Electrical (solenoid)							
Duty ratio			[%]	100			
Solenoid connection				Connector as per EN175301-803			
Protection class				IP65 in accordance with EN 60529 (plugged and mounted)			
			Code	G0R	G0Q	GAR	GAG	W30	W31
Supply voltage			[V]	12V =	24V =	98V =	205V =	110 at 50Hz 120 at 60Hz	230 at 50Hz 240 at 60Hz
Tolerance supply voltage			[%]	+5...-10	+5...-10	+5...-10	+5...-10	+5...-10	+5...-10
Power consumption	hold		[W]	31	31	31	31	78	78
	in rush		[W]	31	31	31	31	264	264
Response time			[ms]	Energized / De-energized AC: 20/18 , DC: 46/27					
Max. switching frequency				AC: up to 7200, DC: up to 16000 switchings/hour					
Coil insulation class				H (180 °C)					

p/Q performance curve

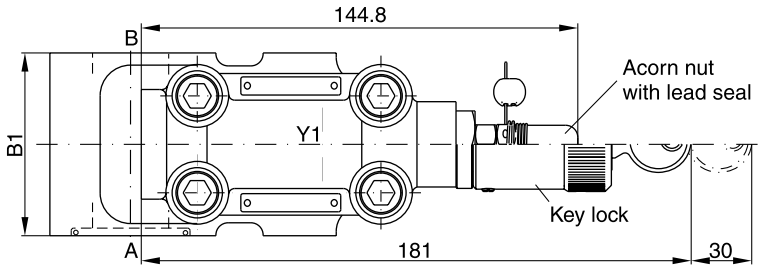


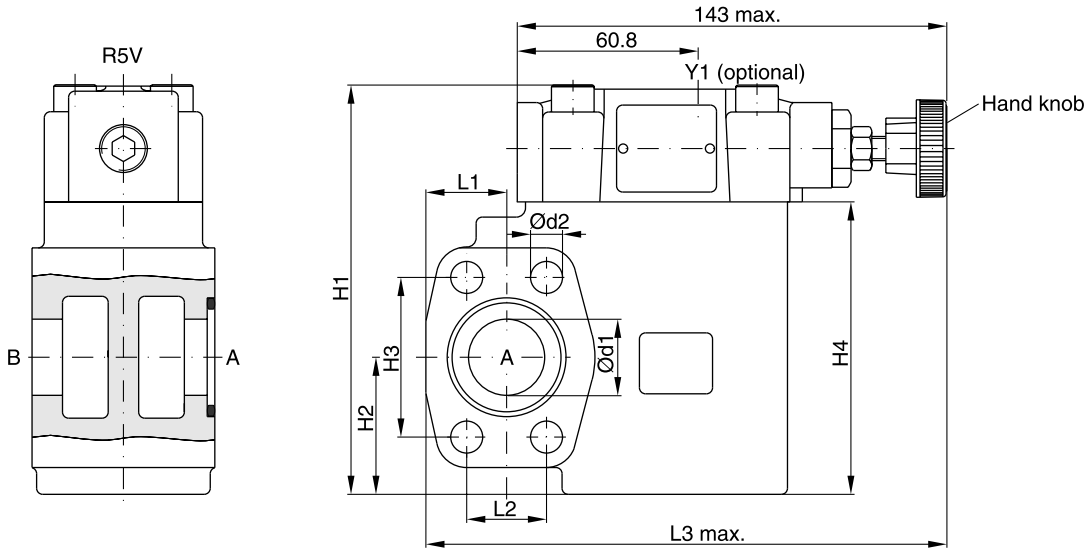
Minimum pressure curve



The performance curves are measured with external drain.
For internal drain the tank pressure has to be added to curve.

Dimensions R5V 2-port





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SAE61

NG	B1	H1	H2	H3	H4	L1	L2	L3	d1	d2
06	60	131.6	37	47.6	90	24.6	22.2	152	19	10.5
08	60	137.6	45	52.4	96	26.5	26.2	171	25	10.5
10	75	150.6	48	58.7	109	34.0	30.2	179	32	12.5

Port	Function	Port size		
		R5V06	R5V08	R5V10
A	Pressure	¾" SAE61	1" SAE61	1¼" SAE61
B	Tank	¾" SAE61	1" SAE61	1¼" SAE61
Y1	External drain	G¼"		

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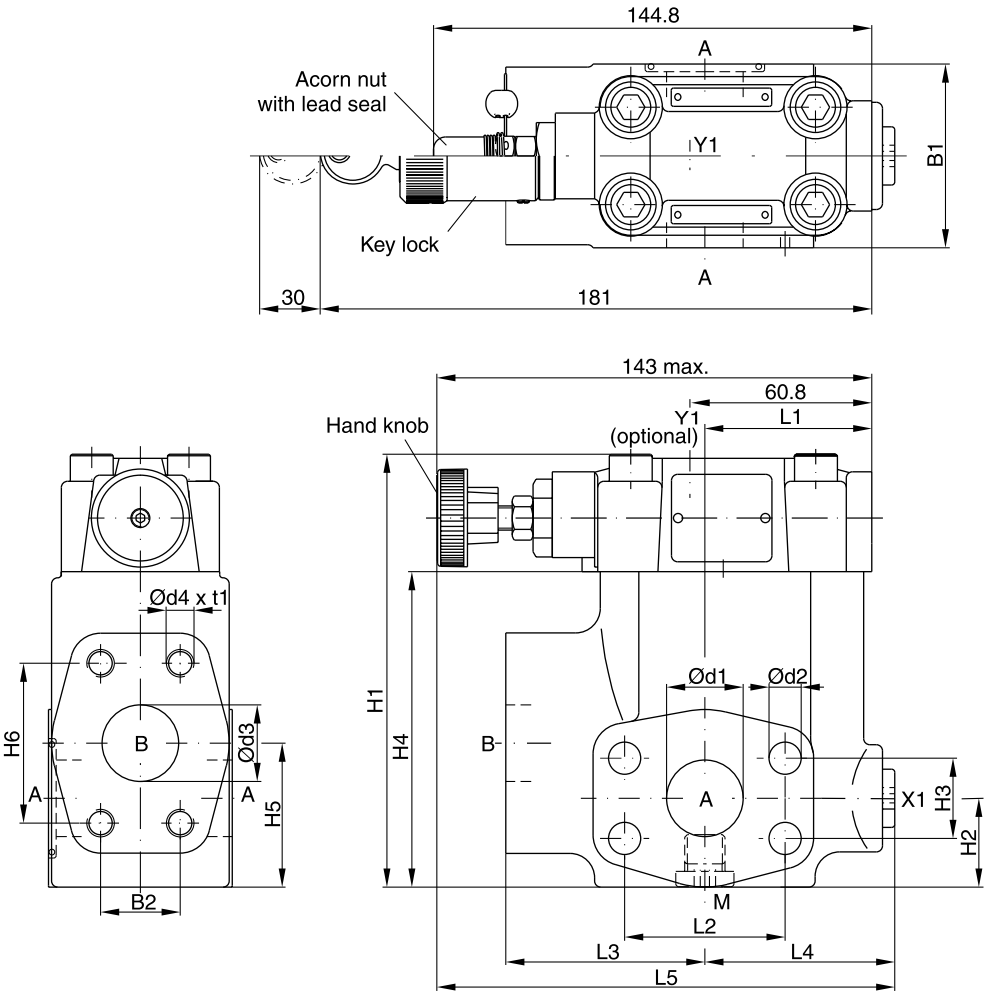
Hydraulic Controls Division
Kaarst, Germany

Dimensions R5V 3-port



SAE61

NG	B1	B2	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	d1	d2	d3	d4 (option 152)	t1
06	60	22.2	119	28	22.2	81	41.6	47.6	50.3	47.6	63	56	152	19	10.5	19	3/8”-16 UNC (M10)	20
08	60	26.2	141	29	26.2	103	47	52.4	55.8	52.4	65	58	149	25	10.5	25	3/8”-16 UNC (M10)	23
10	75	30.2	151	34.5	30.2	113	64	58.7	57.8	58.7	61	62	150.5	32	12.5	32	7/16”-14 UNC (M12)	22
12	80	35.7	178	34	35.7	140	73	69.8	37.3	69.8	92.5	55.2	171.2	38	13.5	38	1/2”-13 UNC (M12)	27

SAE62

NG	B1	B2	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	d1	d2	d3	d4 (option 152)	t1
06	60	23.8	119	28	23.8	81	41.6	50.8	50.3	50.8	63	56	152	19	10.5	19	3/8”-16 UNF (M10)	20
08	60	27.8	141	29	27.8	103	47	57.2	55.8	57.2	65	58	149	25	12.5	25	7/16”-14 UNC (M12)	22
10	75	31.8	151	34.5	31.8	113	64	66.7	57.8	66.7	61	62	150.5	32	13.5	32	1/2”-13 UNC (M12)	24
12	80	36.5	178	34	36.5	140	73	79.4	37.3	79.4	92.5	55.2	171.2	38	17	38	5/8”-11 UNC (M16)	33

Port	Function	Port size			
		R5V06	R5V08	R5V10	R5V12
A (2)	Pressure	¾" SAE61/62	1" SAE61/62	1¼" SAE61/62	1½" SAE61/62
B	Tank	¾" SAE61/62	1" SAE61/62	1¼" SAE61/62	1½" SAE61/62
X1	External pilot port [1]	G¼"			
Y1	External drain	G¼"			
M	Pressure gauge	G¼"			

[1] closed when supplied

R5V_UK.INDD RH_06.03.08

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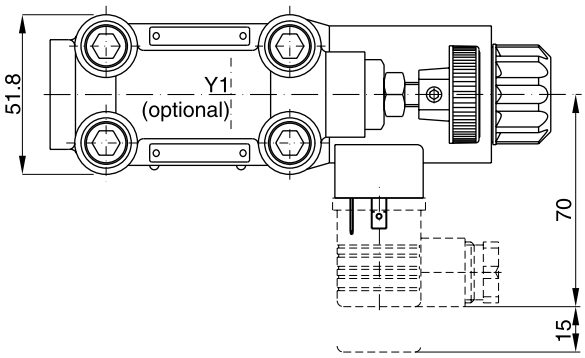
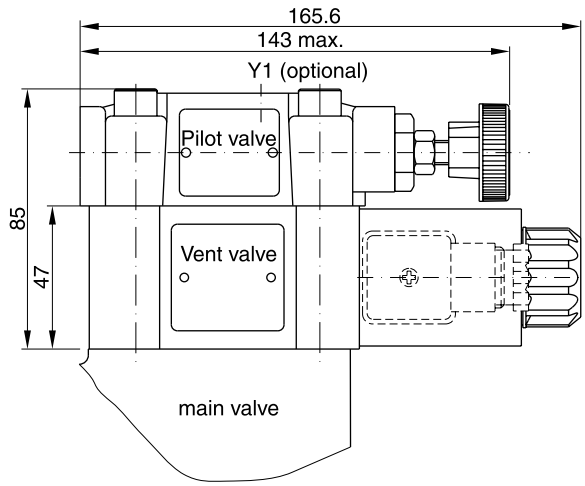
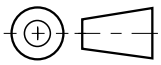
Hydraulic Controls Division
Kaarst, Germany

Dimensions R5V with vent function







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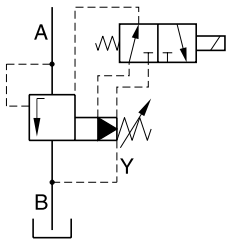
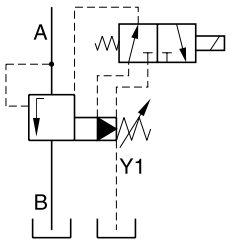
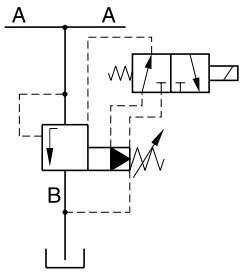
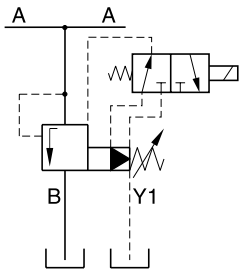
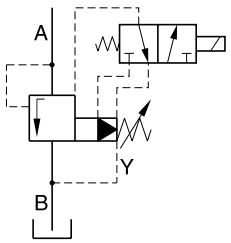
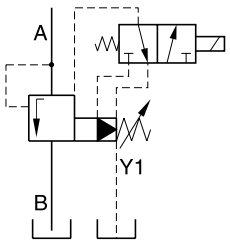
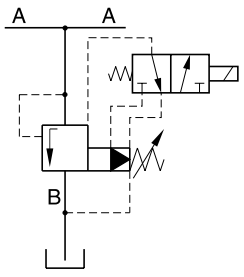
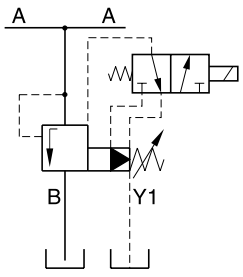
	R5V 2-port		R5V 3-port	
Code	**Internal drain**	**External drain**	**Internal drain**	**External drain**
11				
09				

R5V_UK.INDD RH_06.03.08

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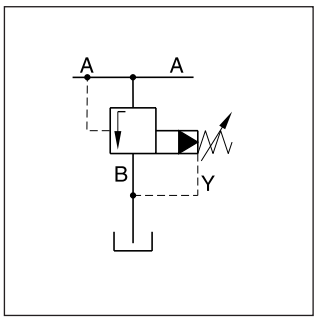
Hydraulic Controls Division
Kaarst, Germany

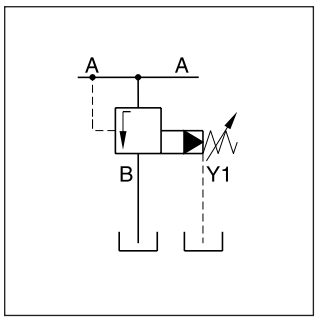
Pilot operated pressure unloading valves series R5U have a similar design to the subplate mounted R4U series. The SAE flanges allow to mount the valve directly on the outlet flanges of pumps.
A typical application is the unloading of a pump in an accumulator circuit. The combination of an R5U, C5V and R5V on a double pump generates a high pressure / low pressure pump system without the need of a manifold block or piping between the valves.

Features

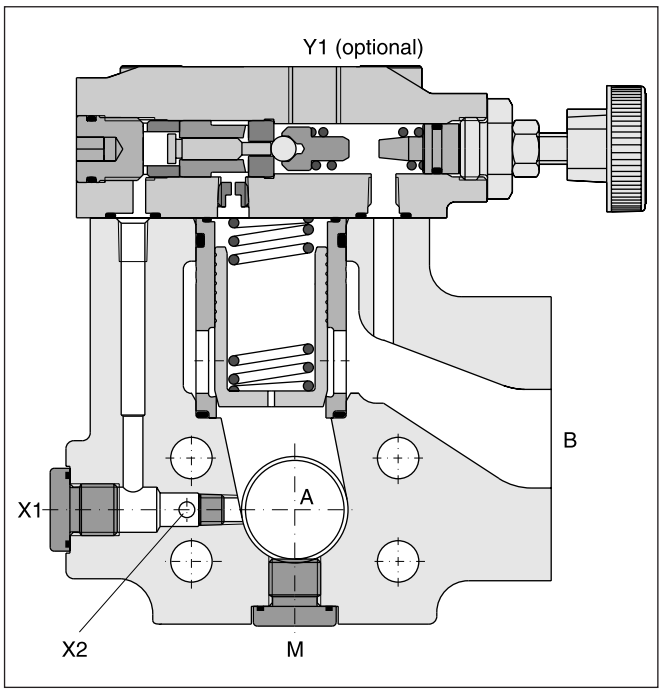
- Pilot operated unloading valve
- 3-port body with SAE61 flange
- 4 sizes (SAE ¾", 1", 1¼", 1½")
- 3 pressure stages
- 3 adjustment modes
  - Hand knob
  - Acorn nut with lead seal
  - Key lock
- With optional vent function



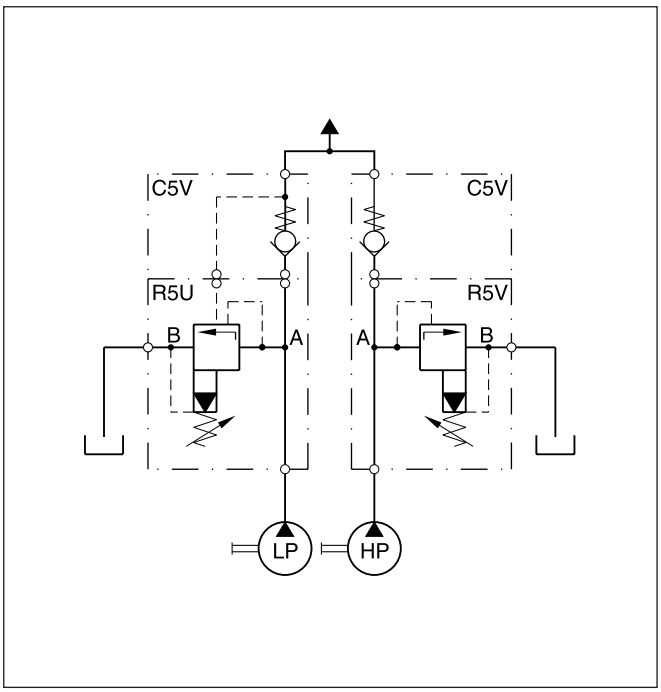
R5U 3-port internal drain



R5U 3-port external drain



High pressure / low pressure system



9

Ordering code

R5U □ – □ **9** □ – □ □ – □ □ – **A** □ – □

Pressure unloading valve | **Nominal size** | **SAE61 interface** | **3-port body M, Y1, X = G¼"** | **Pressure stages** | **Adjustment** | **Pilot oil** | **Switching type** | **Solenoid voltage** | **Design series** | **Seals** | **Options**

Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"
12[1)]	SAE 1½"

SAE 61		
Code	Size	Max. press. [bar]
3	12	210
4	10	280
5	06/08	350

Code	Pressure stages [bar]	Pressure differential
1	up to 105	28%
3	up to 210	28%
5	up to 350	15%

Code	Adjustment
1	Hand knob
3	Acorn nut with lead seal
4	Key lock

Code	Seals
1	NBR
5	FPM

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

Code	Switching type
omit	Standard w/o vent function
09	Solenoid not activ. unpress. circulation
11	Solenoid activated unpress. circulation

Pilot oil		
Code	Pilot	Drain
4	External via port X1 or X2	External
5	External via port X1 or X2	Internal

Further options on request

Technical data

General							
Size			**06 (¾")**	**08 (1")**	**10 (1¼")**	**12 (1½")**	
Mounting			Flanged according to SAE 61				
Mounting position			unrestricted				
Ambient temperature		[°C]	-20...+50				
Weight		[kg]	3.6	4.6	5.2	8.0	
Hydraulic							
Max. operating pressure		[bar]					
		Ports A, B, X	350	350	280	210	
		Ports Y, Y1	30	30	30	30	
Pressure stages		[bar]	105, 210, 350				
Nominal flow		[l/min]	90	300	600	600	
Fluid			Hydraulic oil as per DIN 51524...525				
Fluid temperature		[°C]	-20...+80				
Viscosity permitted		[cSt] [mm²/s]	10...650				
Viscosity recommended		[cSt] [mm²/s]	30				
Filtration			ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)				
Electrical							
Duty ratio		[%]	100				
Solenoid connection			Connector as per EN175301-803				
Protection class			IP65 in accordance with EN 60529 (plugged and mounted)				
		Code	G0R	G0Q	GAR	GAG	W30 / W31
Supply voltage		[V]	12V =	24V =	98V =	205V =	110 at 50Hz / 120 at 60Hz / 230 at 50Hz / 240 at 60Hz
Tolerance supply voltage		[%]	+5...-10	+5...-10	+5...-10	+5...-10	+5...-10
Power consumption	hold	[W]	31	31	31	31	78 / 78
	in rush	[W]	31	31	31	31	264 / 264
Response time		[ms]	Energized / De-energized AC: 20/18 , DC: 46/27				
Max. switching frequency			AC: up to 7200, DC: up to 16000 switchings/hour				
Coil insulation class			H (180 °C)				

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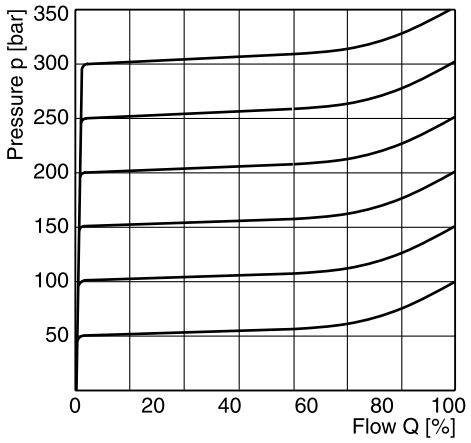
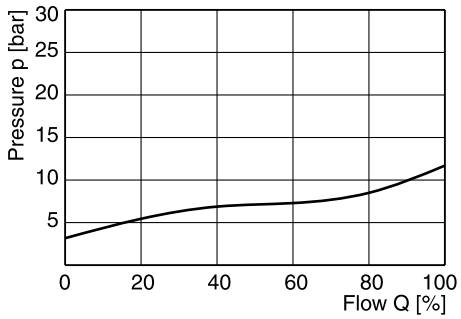
p/Q performance curve

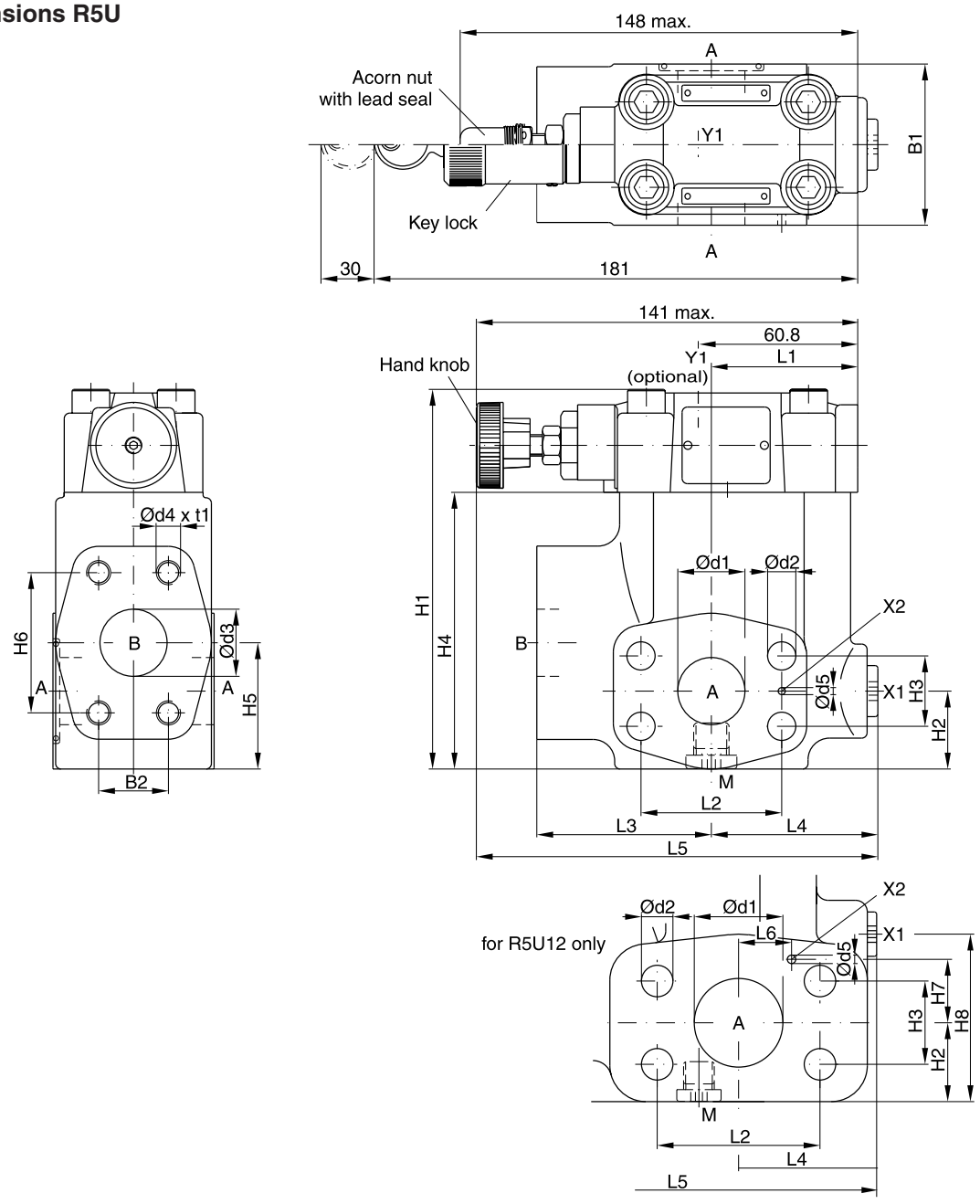


The performance curves are measured with external drain.
For internal drain the tank pressure has to be added to curve.

Minimum pressure curve



Dimensions R5U



NG	B1	B2	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	d1	d2	d3	d4	t1	d5	L6	H7	H8
06	60	22.2	119	28	22.2	81	41.6	47.6	50.3	47.6	63	56	152	19	10.5	19	3/8"-16 UNC	20	3.0	-	-	-
08	60	26.2	141	29	26.2	103	47	52.4	55.8	52.4	65	58	149	25	10.5	25	3/8"-16 UNC	23	3.0	-	-	-
10	75	30.2	151	34.5	30.2	113	64	58.7	57.8	58.7	61	62	150.5	32	12.5	32	7/16"-14 UNC	22	3.0	-	-	-
12	80	35.7	178	34	35.7	140	73	69.8	37.3	69.8	92.5	55.2	171.2	38	13.5	38	1/2"-13 UNC	27	3.0	34.9	27.2	73

Port	Function	Port size			
		R5U06	R5U08	R5U10	R5U12
A (2)	Pressure	¾" SAE61	1" SAE61	1¼" SAE61	1½" SAE61
B	Tank	¾" SAE61	1" SAE61	1¼" SAE61	1½" SAE61
X1	External pilot port [1]	G¼"			
Y1	External drain	G¼"			
M	Pressure gauge	G¼"			

[1] closed when supplied

R5U_UK.INDD RH_19.12.07

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Hydraulic Controls Division
Kaarst, Germany

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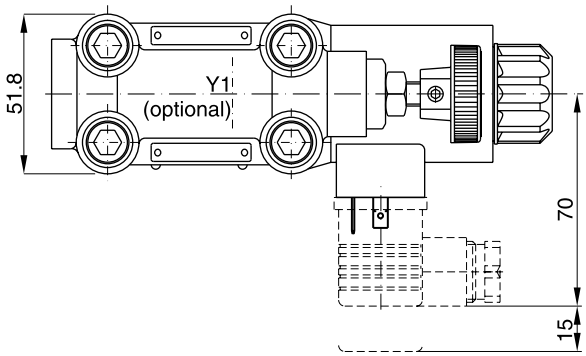
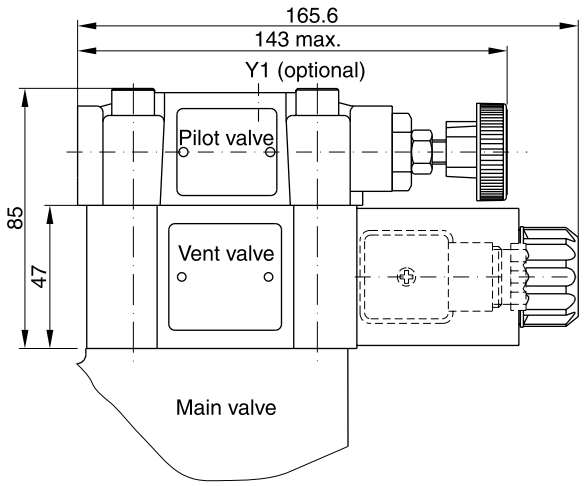
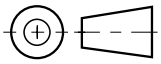
Dimensions R5U with vent function







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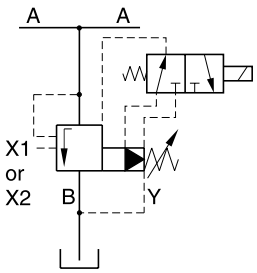
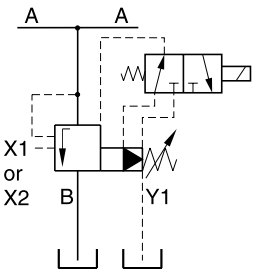
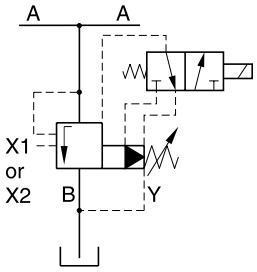
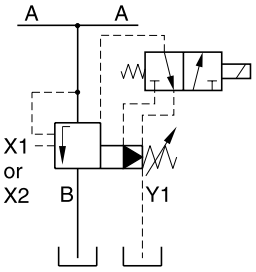
Code	Internal drain	External drain
11		
09		

Notes

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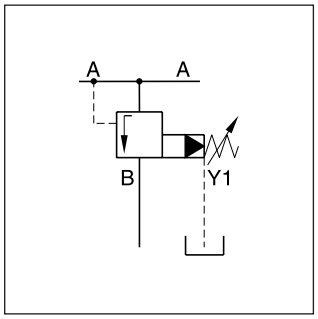
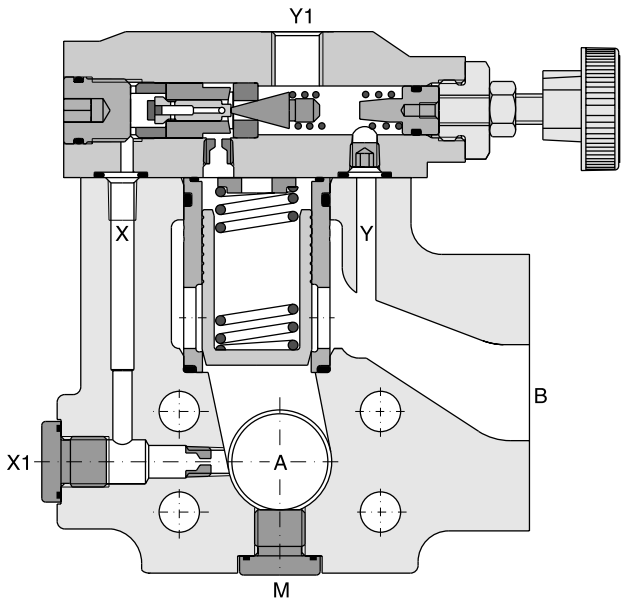
Hydraulic Controls Division
Kaarst, Germany

Pilot operated sequence valves series R5S have a similar design to the subplate mounted R4S series. The SAE flanges allow to mount the valve directly on the inlet flanges of actuators or outlet flanges of pumps to achieve a very compact design.

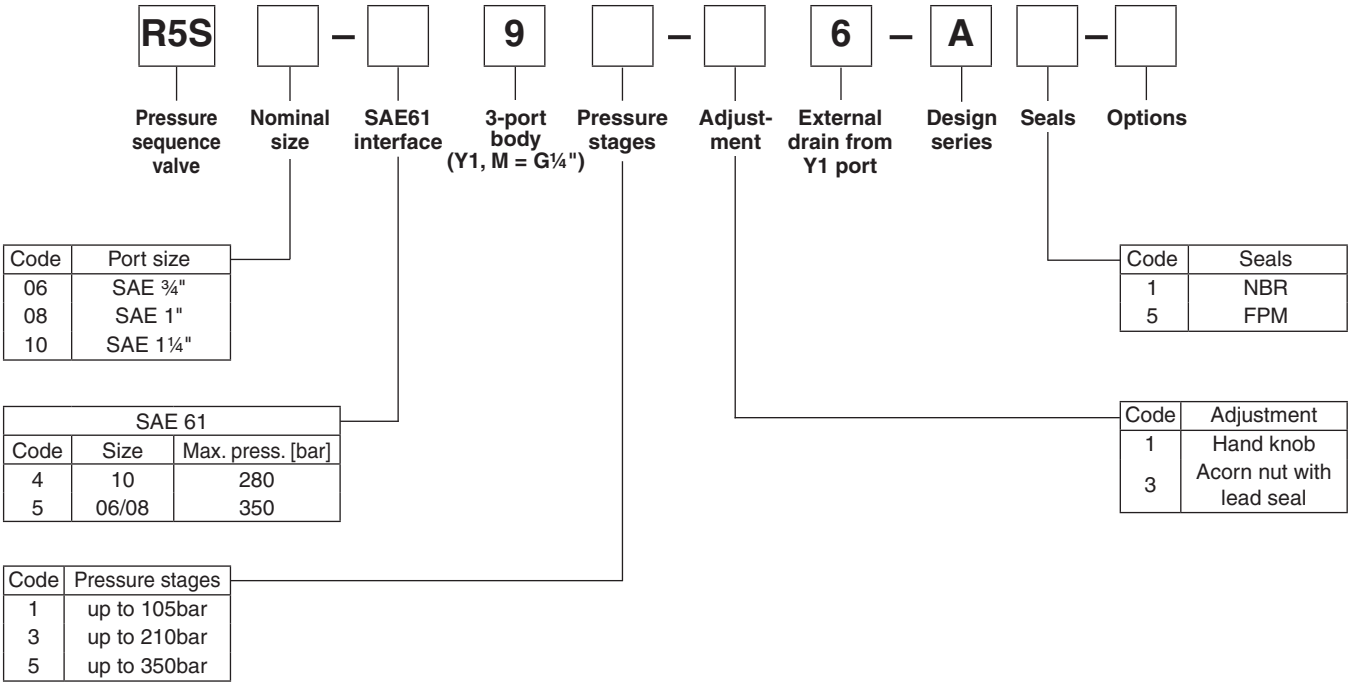


Features

- Pilot operated with manual adjustment
- 3-port body with SAE61 flange
- 3 sizes (SAE ¾", 1", 1¼")
- 3 pressure stages
- 2 adjustment modes
  - Hand knob
  - Acorn nut with lead seal



Ordering code



Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"

Code	Seals
1	NBR
5	FPM

SAE 61		
Code	Size	Max. press. [bar]
4	10	280
5	06/08	350

Code	Adjustment
1	Hand knob
3	Acorn nut with lead seal

Code	Pressure stages
1	up to 105bar
3	up to 210bar
5	up to 350bar

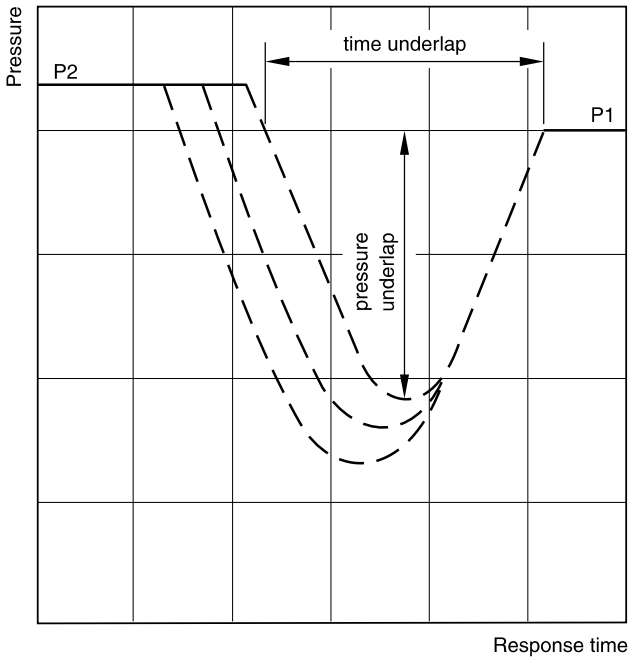
Further options on request

9

Technical Data

General				
Size		**06 (¾")**	**08 (1")**	**10 (1¼")**
Mounting		Flanged according to SAE 61		
Mounting position		unrestricted		
Ambient temperature	[°C]	-20...+50		
Weight	[kg]	3.6	4.6	5.2
Hydraulic				
Max. operating pressure	[bar]			
	Ports A, B	350	350	280
	Ports Y, Y1	30	30	30
Pressure stages	[bar]	105, 210, 350		
Nominal flow	[l/min]	90	300	600
Fluid		Hydraulic oil as per DIN 51524...525		
Fluid temperature	[°C]	-20...+80		
Viscosity permitted	[cSt] [mm²/s]	10...650		
Viscosity recommended	[cSt] [mm²/s]	30		
Filtration		ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)		

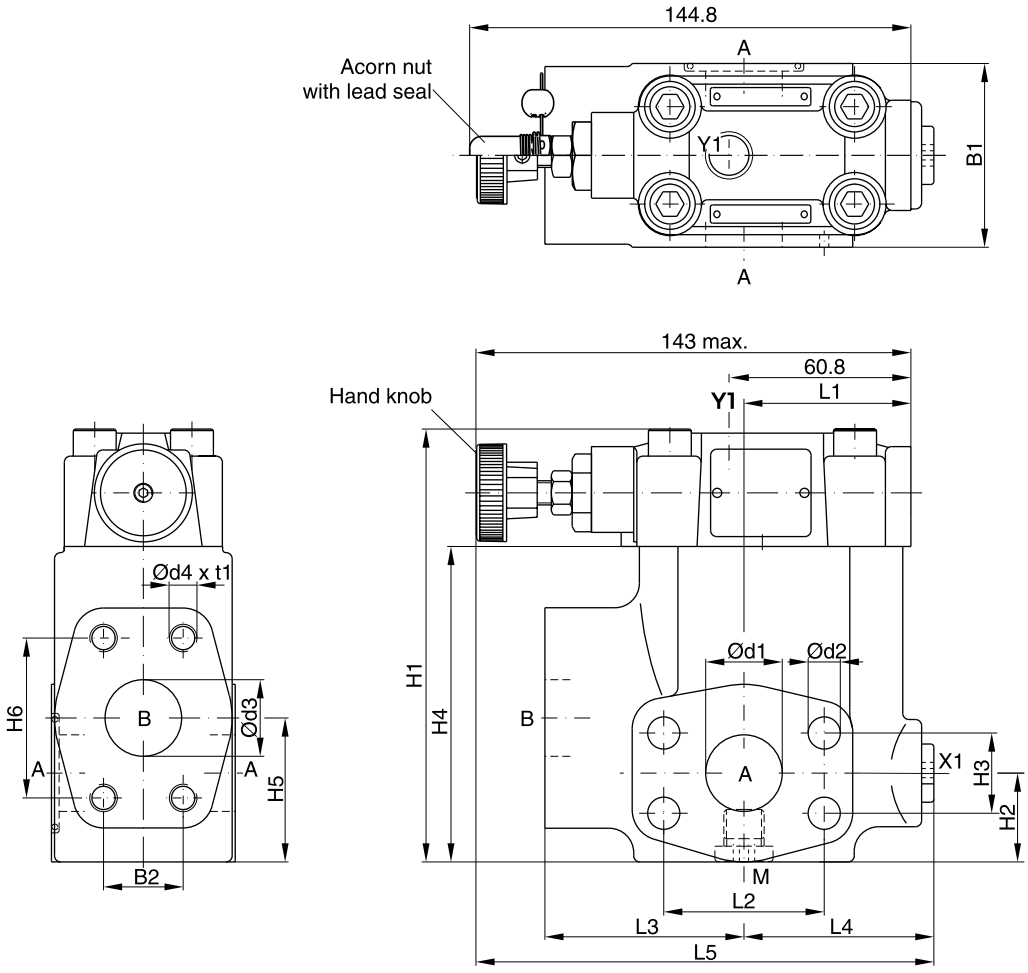
Typical pressure characteristics at closing point



P1 = setting pressure
P2 = operating pressure

Time and pressure underlap depend on the characteristics of the specific system.

9



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SAE61

NG	B1	B2	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	d1	d2	d3	d4 (option 152)	t1
06	60	22.2	119	28	22.2	81	41.6	47.6	50.3	47.6	63	56	152	19	10.5	19	3/8”-16 UNC (M10)	20
08	60	26.2	141	29	26.2	103	47	52.4	55.8	52.4	65	58	149	25	10.5	25	3/8”-16 UNC (M10)	23
10	75	30.2	151	34.5	30.2	113	64	58.7	57.8	58.7	61	62	150.5	32	12.5	32	7/16”-14 UNC (M12)	22

Port	Function	Port size		
		R5S06	R5S08	R5S10
A (2)	Pressure	¾" SAE61	1" SAE61	1¼" SAE61
B	Secondary port	¾" SAE61	1" SAE61	1¼" SAE61
X1	External pilot port [1]	G¼"		
Y1	External drain	G¼"		
M	Pressure gauge	G¼"		

[1] closed when supplied

R5S_UK.INDD RH_27.11.07

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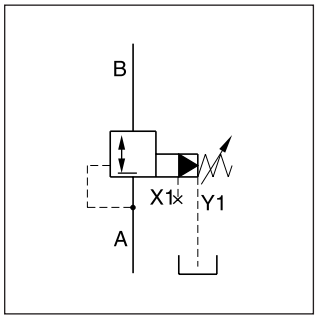
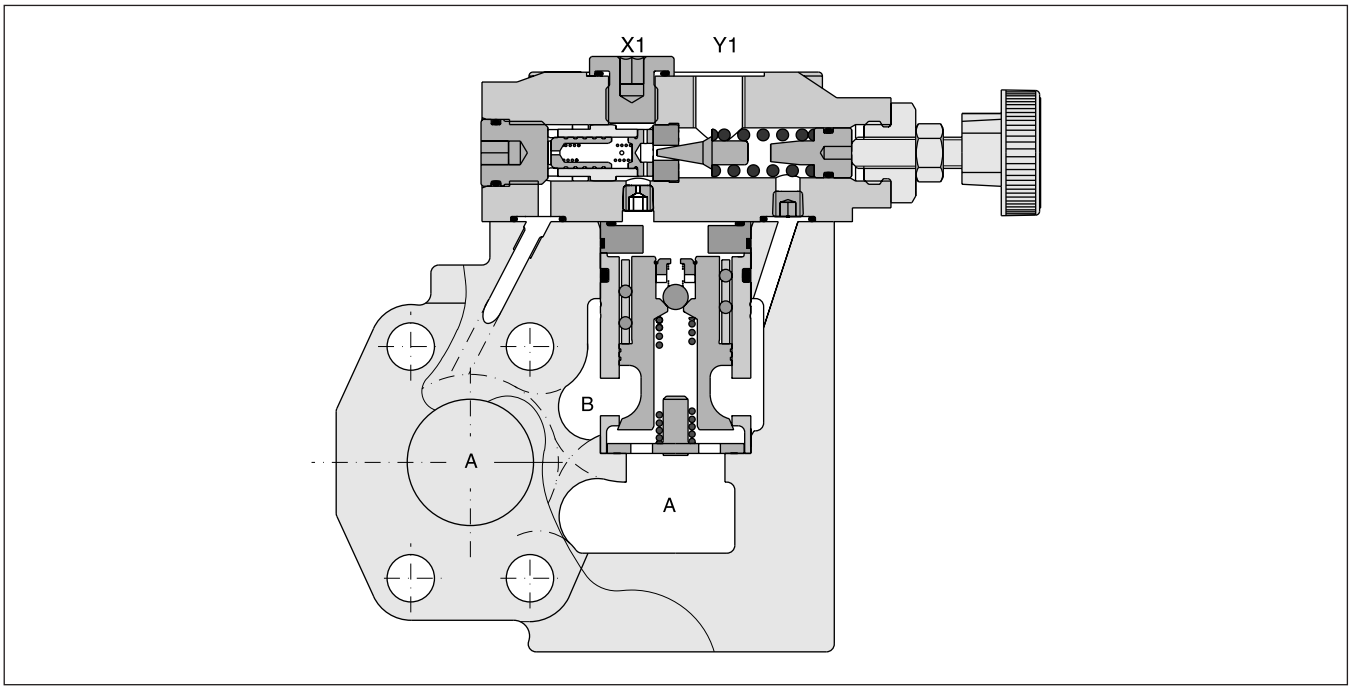
Kaarst, Germany

Pilot operated pressure reducing valves series R5R have a similar design as the subplate mounted R4R series. The SAE flanges allow to mount the valves directly on the inlet flanges of actuators to achieve a very compact design.

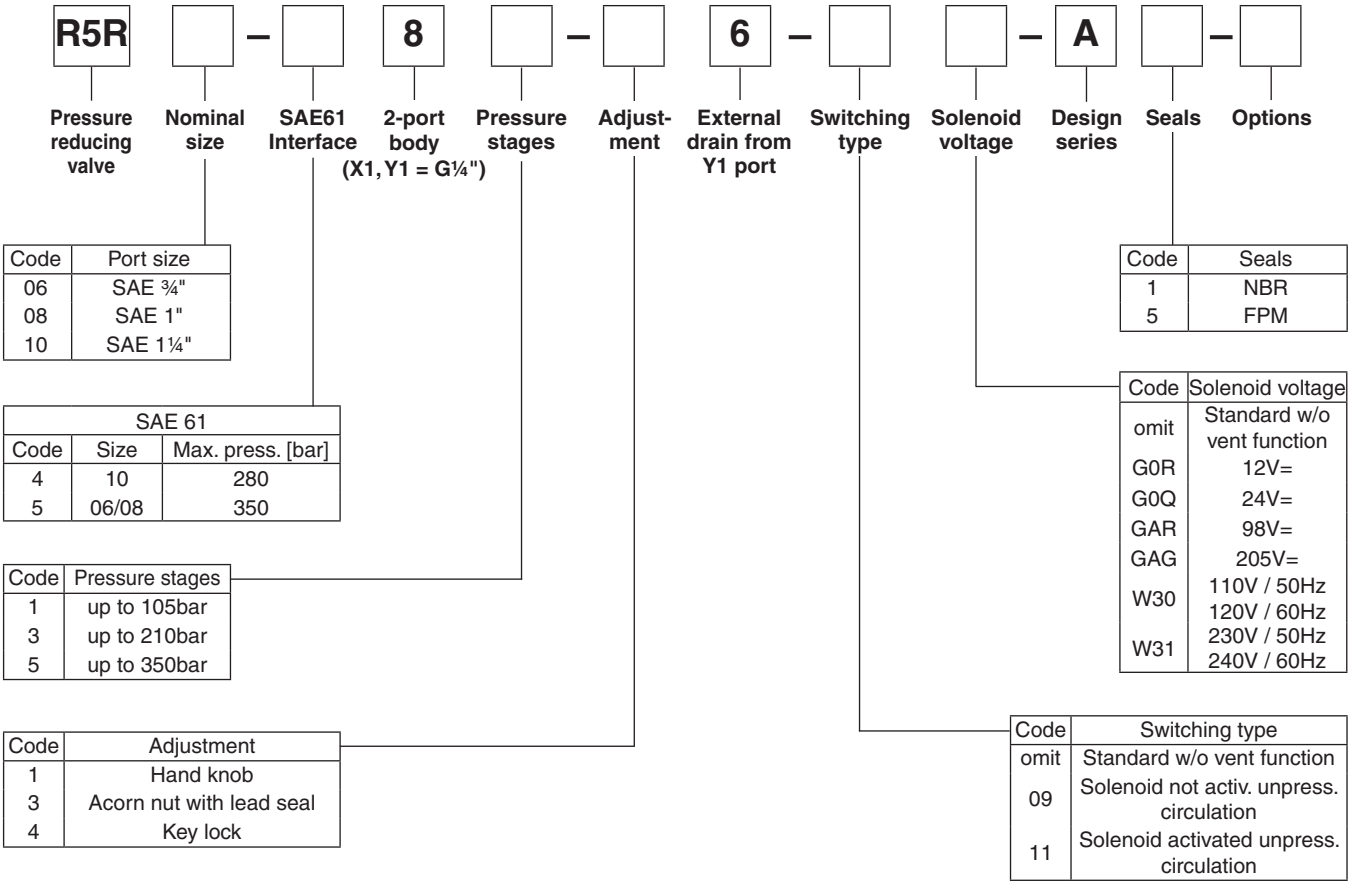


Features

- Pilot operated with manual adjustment
- Normally closed to avoid unintended motion
- 2-port body with SAE61 flange
- 3 sizes (SAE ¾", 1", 1¼")
- 3 pressure stages
- 3 adjustment modes
  - Hand knob
  - Acorn nut with lead seal
  - Key lock
- With optional vent function



Ordering code



Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"

SAE 61		
Code	Size	Max. press. [bar]
4	10	280
5	06/08	350

Code	Pressure stages
1	up to 105bar
3	up to 210bar
5	up to 350bar

Code	Adjustment
1	Hand knob
3	Acorn nut with lead seal
4	Key lock

Code	Seals
1	NBR
5	FPM

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

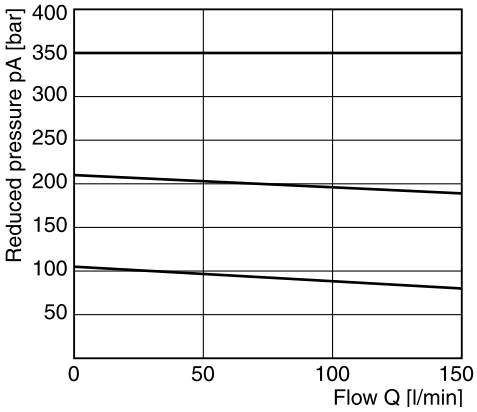
Code	Switching type
omit	Standard w/o vent function
09	Solenoid not activ. unpress. circulation
11	Solenoid activated unpress. circulation

Further options on request

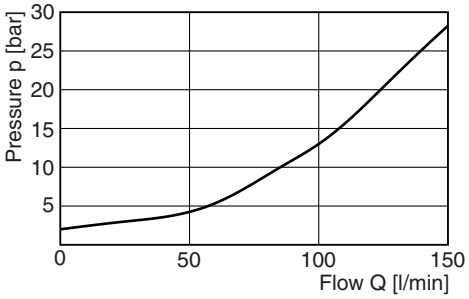
9

General							
Size			**06**	**08**		**10**	
Mounting			Flanged according to SAE 61				
Mounting position			unrestricted				
Ambient temperature		[°C]	-20...+50				
Weight		[kg]	4.0	4.6		5.9	
Hydraulic							
Max. operating pressure		[bar]					
		Ports A, B, X1	350	350		280	
		Port Y1	30	30		30	
Pressure stages		[bar]	105, 210, 350				
Nominal flow		[l/min]	90	300		500	
Fluid			Hydraulic oil as per DIN 51524...525				
Fluid temperature		[°C]	-20...+80				
Viscosity permitted		[cSt] [mm²/s]	10...650				
Viscosity recommended		[cSt] [mm²/s]	30				
Filtration			ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)				
Electrical (solenoid)							
Duty ratio		[%]	100				
Solenoid connection			Connector as per EN175301-803				
Protection class			IP65 in accordance with EN 60529 (plugged and mounted)				
		Code	G0R	G0Q	GAR	GAG	W30	W31
Supply voltage		[V]	12V =	24V =	98V =	205V =	110 at 50Hz 120 at 60Hz	230 at 50Hz 240 at 60Hz
Tolerance supply voltage		[%]	+5...-10	+5...-10	+5...-10	+5...-10	+5...-10	+5...-10
Power consumption	hold	[W]	31	31	31	31	78	78
	in rush	[W]	31	31	31	31	264	264
Response time		[ms]	Energized / De-energized AC: 20/18 , DC: 46/27					
Max. switching frequency			AC: up to 7200, DC: up to 16000 switchings/hour					
Coil insulation class			H (180 °C)					

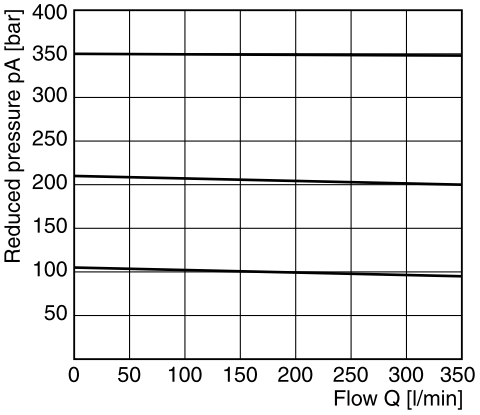
Reduced pressure pA versus flow Q
Series R5R06 [1)]



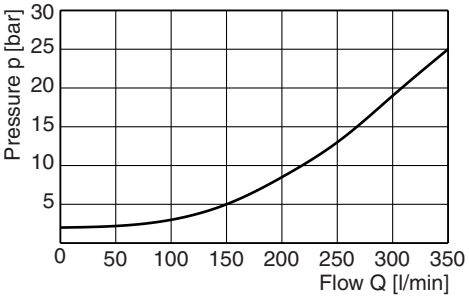
Minimum pressure curve



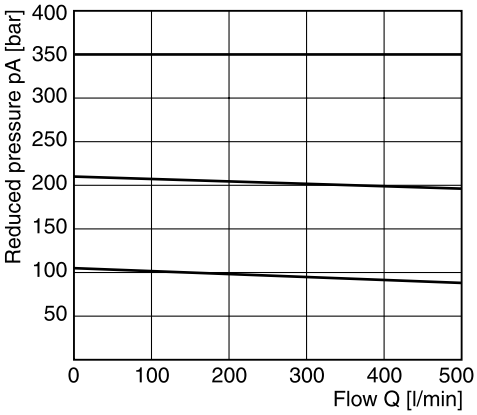
Reduced pressure pA versus flow Q
Series R5R08 [1)]



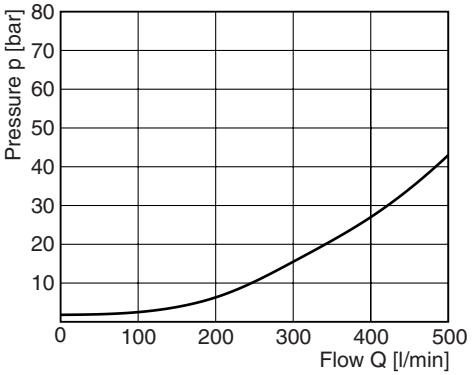
Minimum pressure curve



Reduced pressure pA versus flow Q
Series R5R10 [1)]

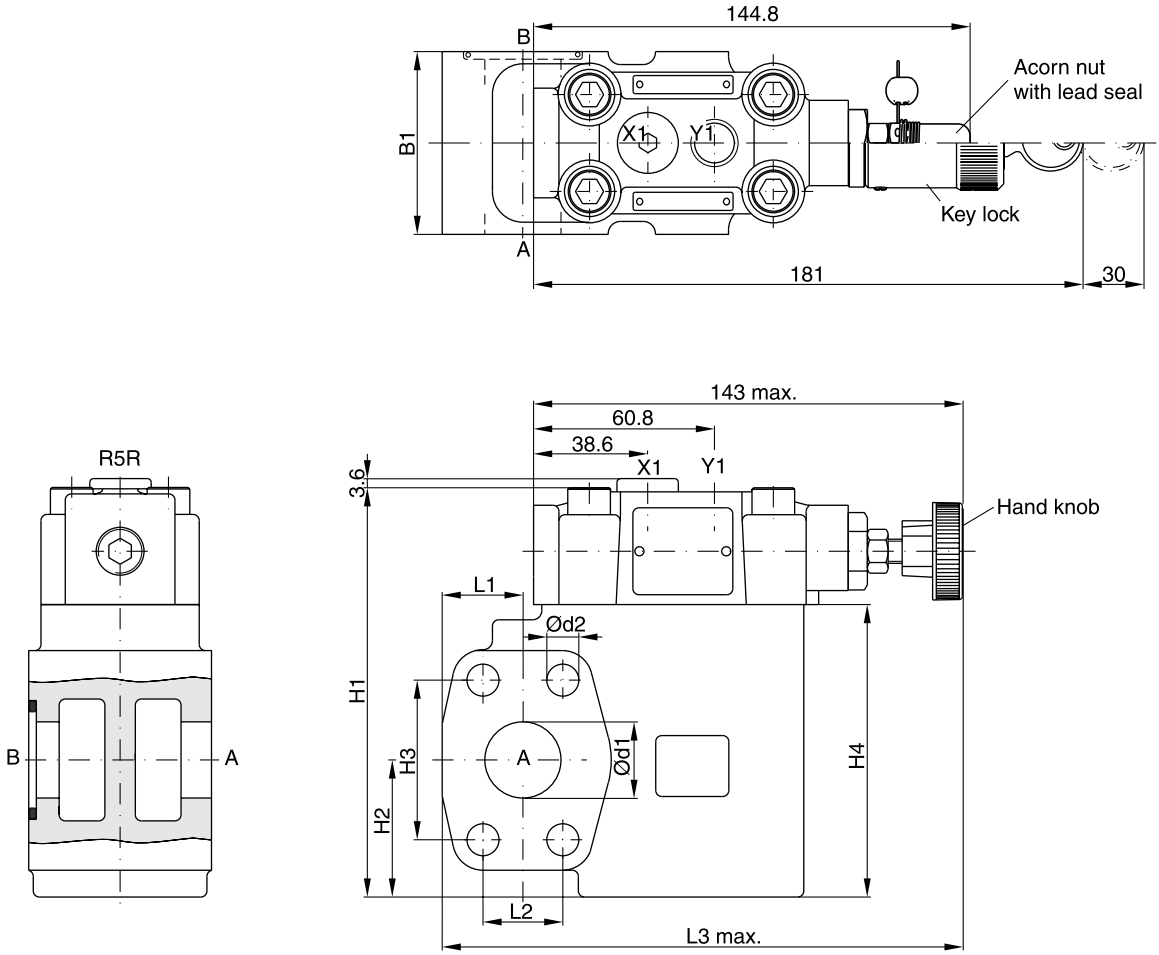


Minimum pressure curve



[1)] Measured at 350 bar primary pressure pB.

9



9

NG	B1	H1	H2	H3	H4	L1	L2	L3	d1	d2
06	60	131.6	37	47.6	90	24.6	22.2	152	19	10.5
08	60	137.6	45	52.4	96	26.5	26.2	171	25	10.5
10	75	150.6	48	58.7	109	34.0	30.2	179	32	12.5

Port	Function	Port size		
		R5R06	R5R08	R5R10
B	Inlet pressure	¾" SAE61	1" SAE61	1¼" SAE61
A	Reduced outlet pressure	¾" SAE61	1" SAE61	1¼" SAE61
Y1	External drain	G¼"		
X1	Pressure gauge	G¼"		

R5R_UK.INDD RH_13.03.08

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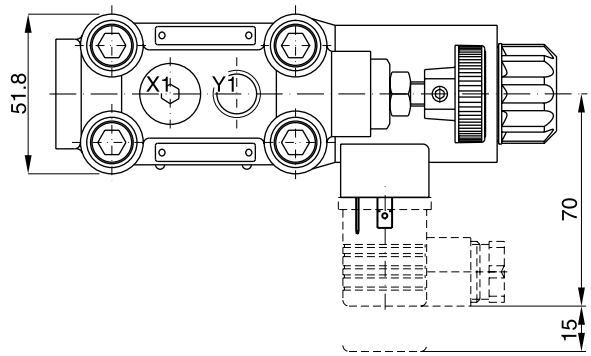
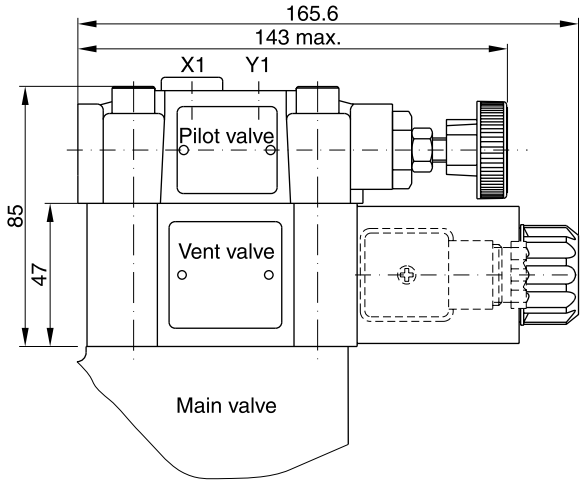
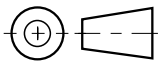
Hydraulic Controls Division
Kaarst, Germany

Dimensions R5R with vent function







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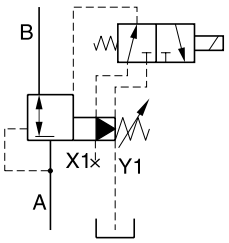
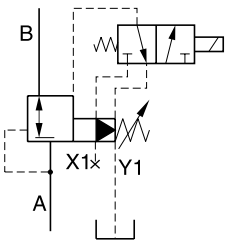
Code	External drain
11	
09	

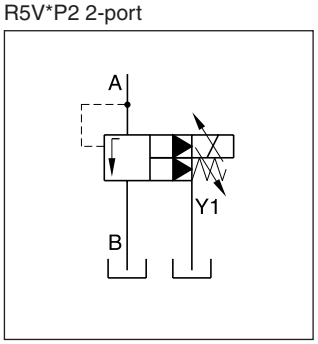
Proportional pressure relief valves series R5V*P2 are based on the mechanical adjusted series R5V. The additional proportional unit between the mechanical pilot valve and the main stage allows continuous pressure adjustment.
The optimum performance can be achieved in combination with the digital amplifier module PCD00A-400.

Features

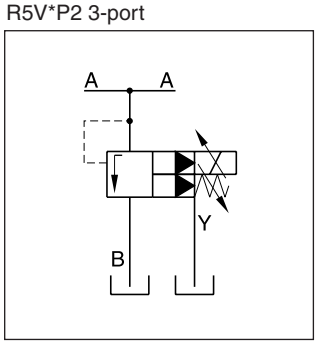
- Pilot operated with proportional solenoid
- Continuous adjustment by proportional solenoid
- R5V with 2-port body
  - 3 sizes (SAE ¾", 1", 1¼")
  - SAE61 flange
- R5V with 3-port body
  - 4 sizes (SAE ¾", 1", 1¼", 1½")
  - SAE61 and SAE62 flange
- 3 pressure stages
- With mechanical maximum pressure adjustment

R5V*P2 2-port

R5V*P2 3-port

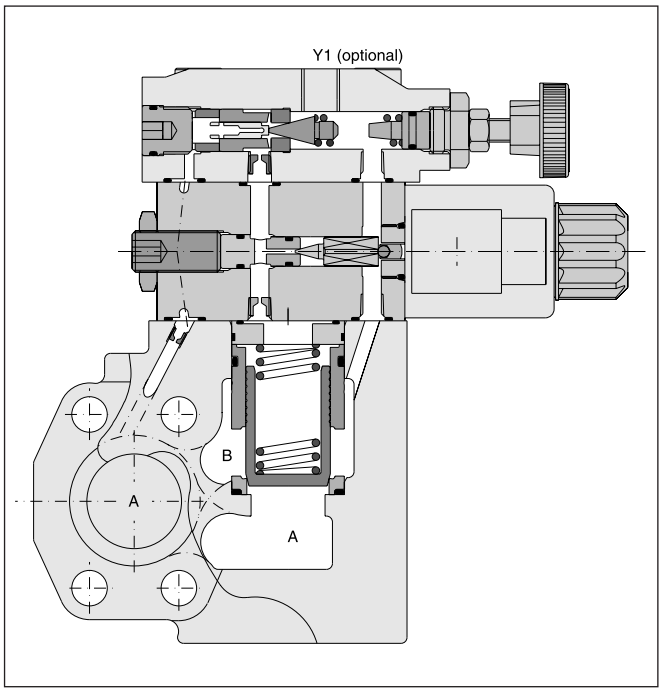


R5V*P2 2-port

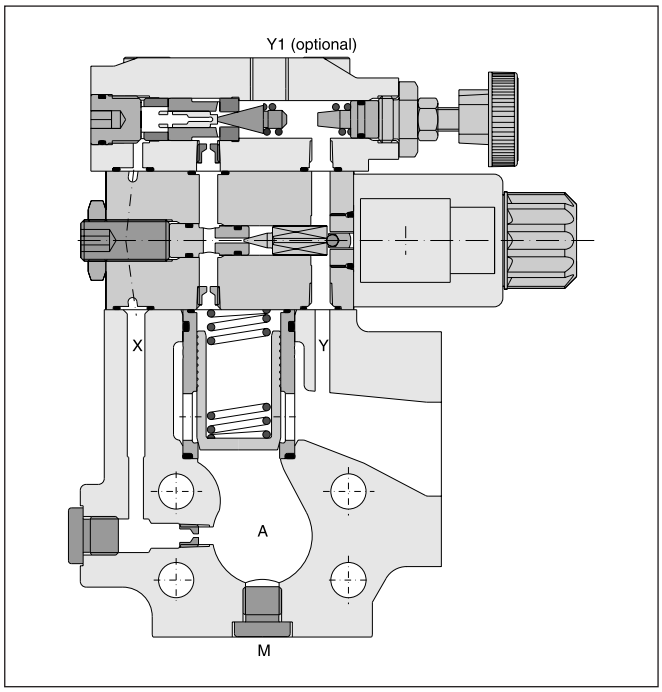


R5V*P2 3-port

R5V*P2 2-port



R5V*P2 3-port



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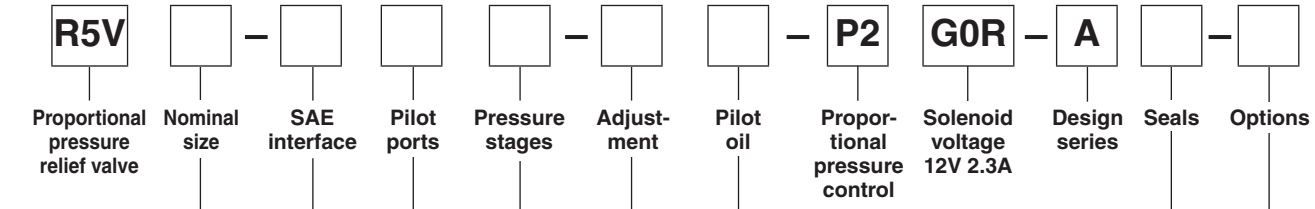


Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"
12[1)]	SAE 1½"

[1)] only R5V 3port

SAE 61		
Code	Size	Max. press. [bar]
3	12	210
4	10	280
5	06/08	350
SAE 62		
Code	Size	Max. pressure
6[1)]	06/08/10/12	350

[1)] only R5V 3port

2-port body	
Code	pilot ports
7	Y1 = G¼" [2)]
3-port body	
Code	pilot ports
9	Y1[2)], X1, M = G¼"

[2)] Y1 only available at external drain (pilot oil code 6)

Code	Options
152	3-port body with metric threads

Code	Seals
1	NBR
5	FPM

Pilot oil	
Code	Drain line
2	internal
6	external from Y1-port

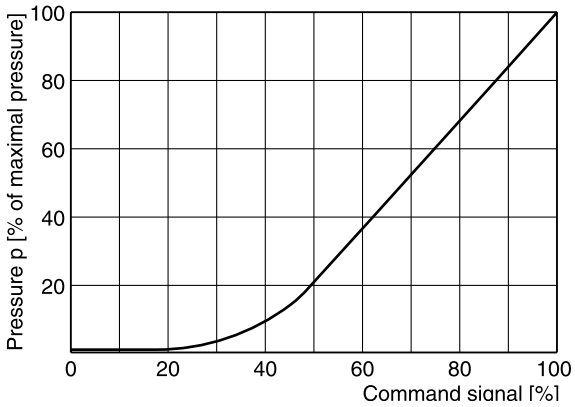
Code	Adjustment
1	Hand knob
3	Acorn nut with lead seal

Code	Pressure stages
1	up to 105bar
3	up to 210bar
5	up to 350bar

9

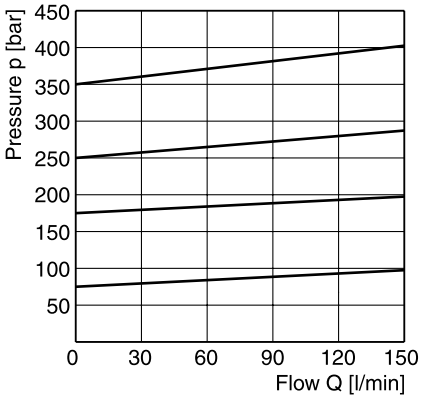
General						
Size				**06 (¾")**	**08 (1")**	**10 (1¼")**	**12 (1½")**
Mounting				Flanged according to SAE 61 (size 12 = SAE 62)			
Mounting position				unrestricted			
Ambient temperature			[°C]	-20...+50			
Weight	R5V 2port		[kg]	5.8	6.4	7.7	—
	R5V 3port		[kg]	5.4	6.4	7.0	9.8
Hydraulic							
Max. operating pressure			[bar]				
		SAE61	Ports A, B	350	350	280	210
			Port Y1	30	30	30	30
		SAE62	Ports A, B	350	350	350	350
			Port Y1	30	30	30	30
Pressure stages			[bar]	105, 210, 350			
Nominal flow			[l/min]	90	300	600	600
Fluid				Hydraulic oil as per DIN 51524...525			
Fluid temperature			[°C]	-20...+80			
Viscosity permitted			[cSt] [mm²/s]	10...650			
Viscosity recommended			[cSt] [mm²/s]	30			
Filtration				ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)			
Electrical (proportional solenoid)							
Duty ratio			[%]	100			
Nominal voltage			[V]	12			
Max. current			[A]	2.3			
Coil resistance			[Ohm]	4 at 20°C			
Solenoid connection				Connector as per EN175301-803			
Protection class				IP65 in accordance with EN 60529 (plugged and mounted)			
Power amplifier				PCD00A-400			

Signal/pressure curve R5V*P2

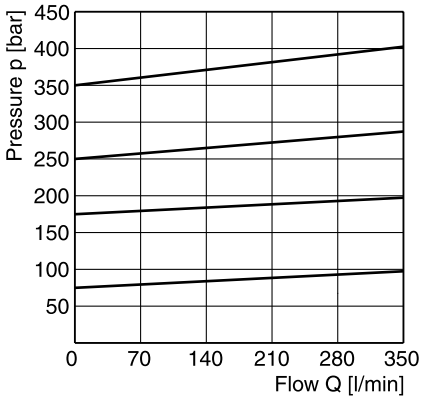


p/Q performance curve [1)]

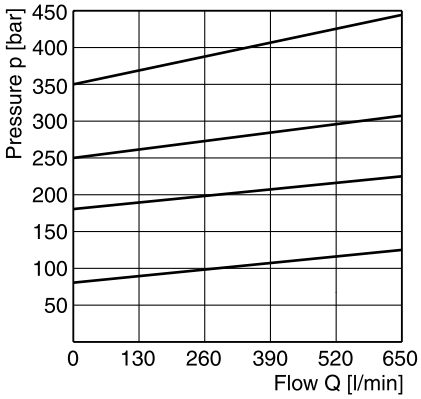
R5V06*P2



R5V08*P2



R5V10*P2



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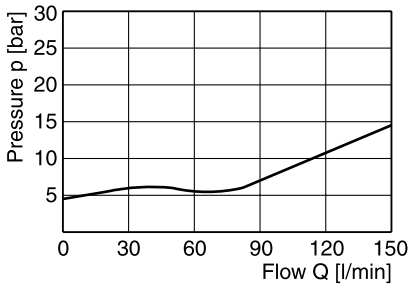
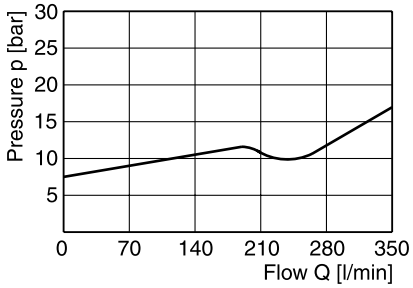
Minimum pressure curve [1)]

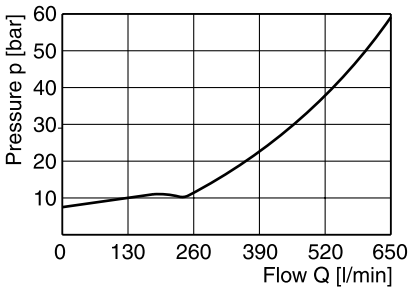
R5V06*P2



R5V08*P2

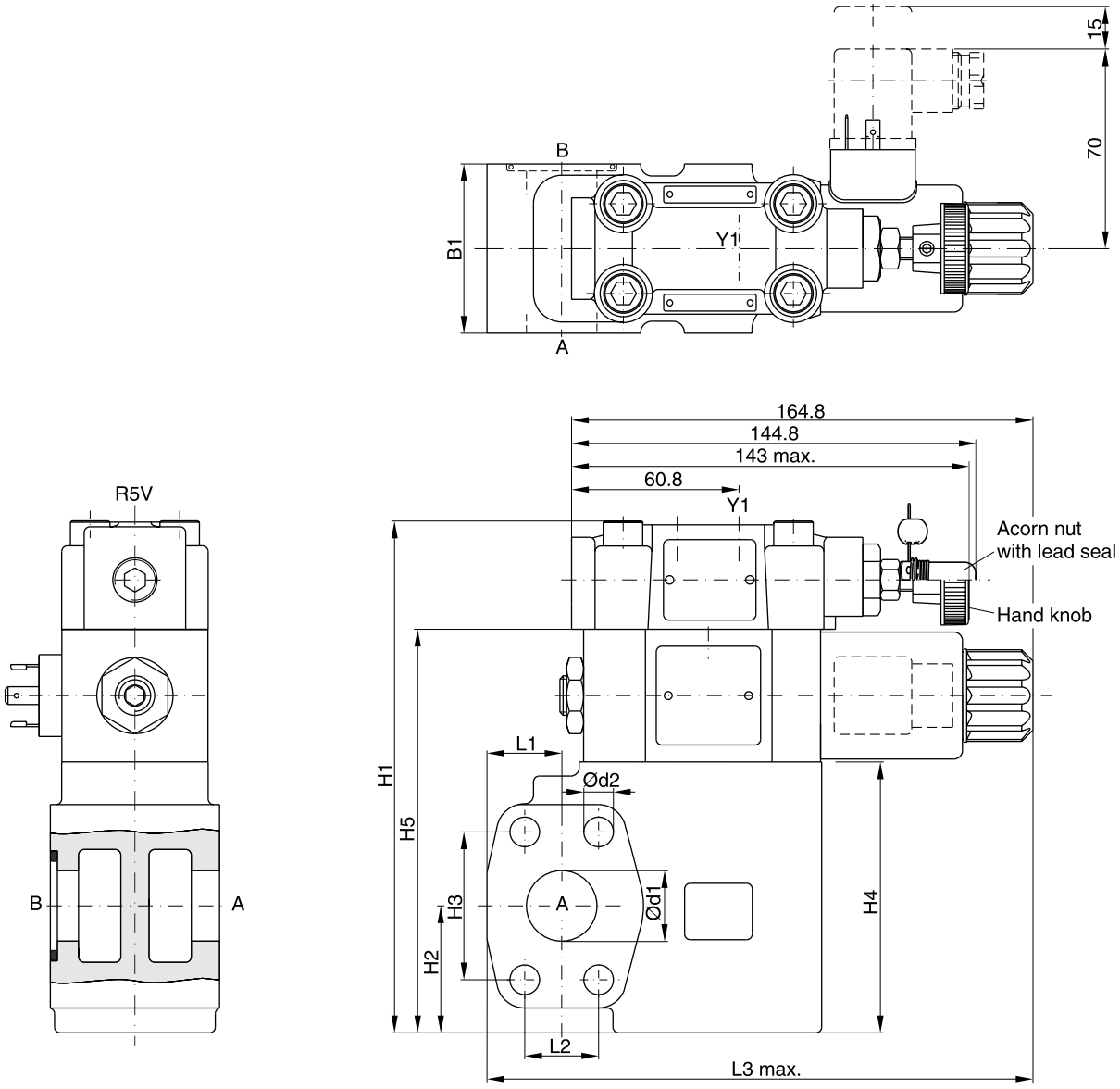


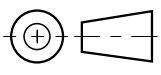
R5V10*P2



[1)] The performance curves are measured with external drain.
For internal drain the tank pressure has to be added to curve.

R5V*P2 2-port





SAE61

NG	B1	H1	H2	H3	H4	H5	L1	L2	L3	d1	d2
06	60	175	37	47.6	90	137	24.6	22.2	174	19	10.5
08	60	181	45	52.4	96	143	26.5	26.2	193.6	25	10.5
10	75	194	48	58.7	109	156	34.0	30.2	201	32	12.5

Port	Function	Port size		
		R5V06	R5V08	R5V10
A	Pressure	¾" SAE61	1" SAE61	1¼" SAE61
B	Tank	¾" SAE61	1" SAE61	1¼" SAE61
Y1	External drain	G¼"		

R5VP2_UK.INDD RH_06.03.08

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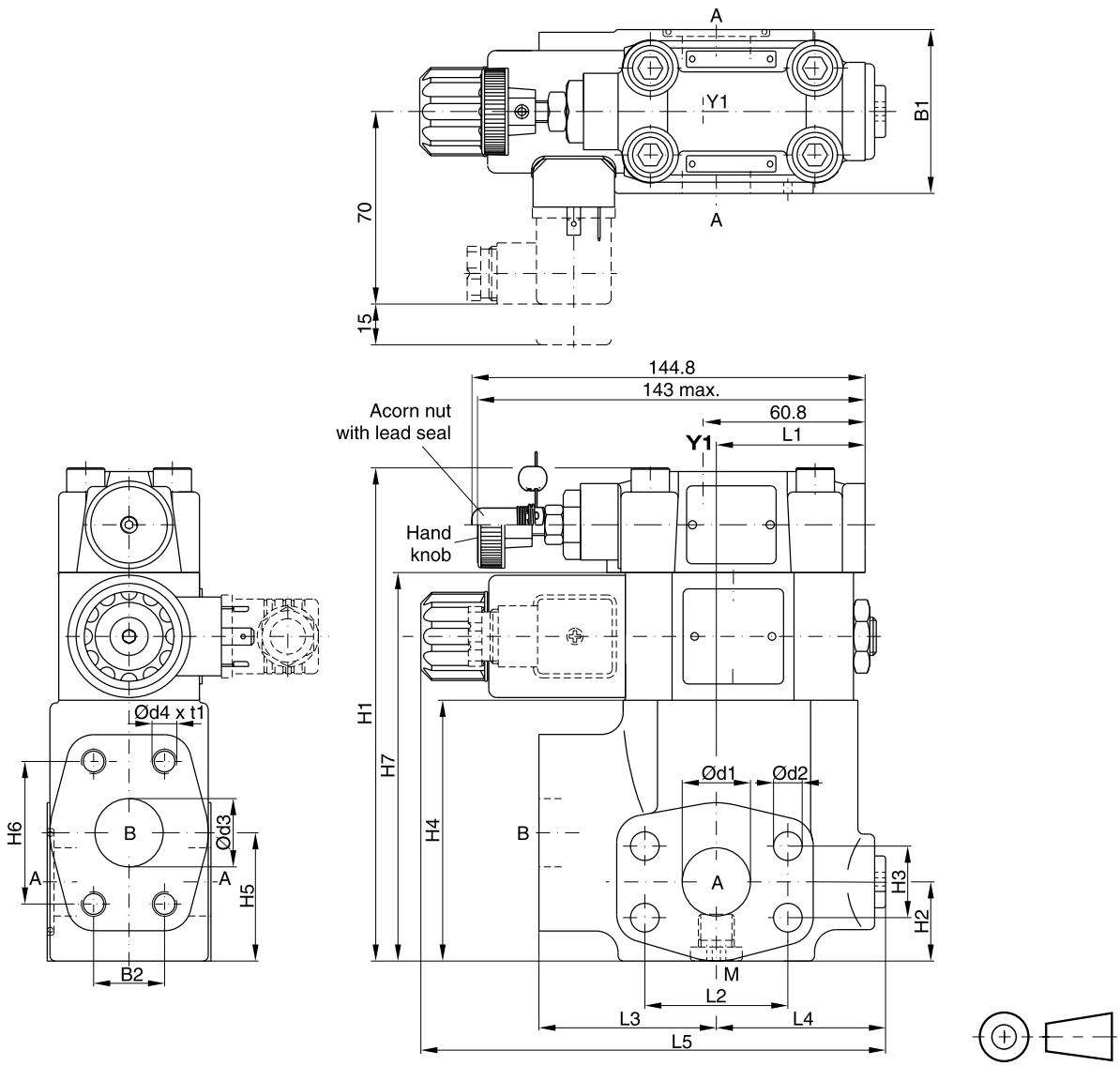
Hydraulic Controls Division
Kaarst, Germany

R5V*P2 3-port



SAE61

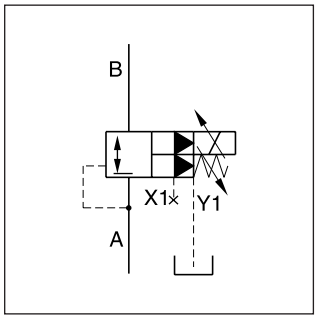
NG	B1	B2	H1	H2	H3	H4	H5	H6	H7	L1	L2	L3	L4	L5	d1	d2	d3	d4 (option 152)	t1
06	60	22.2	166	28	22.2	81	41.6	47.6	128	50.3	47.6	63	56	174.6	19	10.5	19	3/8”-16 UNC (M10)	20
08	60	26.2	188	29	26.2	103	47	52.4	150	55.8	52.4	65	58	177	25	10.5	25	3/8”-16 UNC (M10)	23
10	75	30.2	198	34.5	30.2	113	64	58.7	160	57.8	58.7	61	62	179.1	32	12.5	32	7/16”-14 UNC (M12)	22
12	80	35.7	225	34	35.7	140	73	69.8	187	37.3	69.8	92.5	55.2	186.8	38	13.5	38	1/2”-13 UNC (M12)	27

SAE62

NG	B1	B2	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	d1	d2	d3	d4 (option 152)	t1
06	60	23.8	119	28	23.8	81	41.6	50.8	50.3	50.8	63	56	152	19	10.5	19	3/8”-16 UNF (M10)	20
08	60	27.8	141	29	27.8	103	47	57.2	55.8	57.2	65	58	149	25	12.5	25	7/16”-14 UNC (M12)	22
10	75	31.8	151	34.5	31.8	113	64	66.7	57.8	66.7	61	62	150.5	32	13.5	32	1/2”-13 UNC (M12)	24
12	80	36.5	178	34	36.5	140	73	79.4	37.3	79.4	92.5	55.2	171.2	38	17	38	5/8”-11 UNC (M16)	33

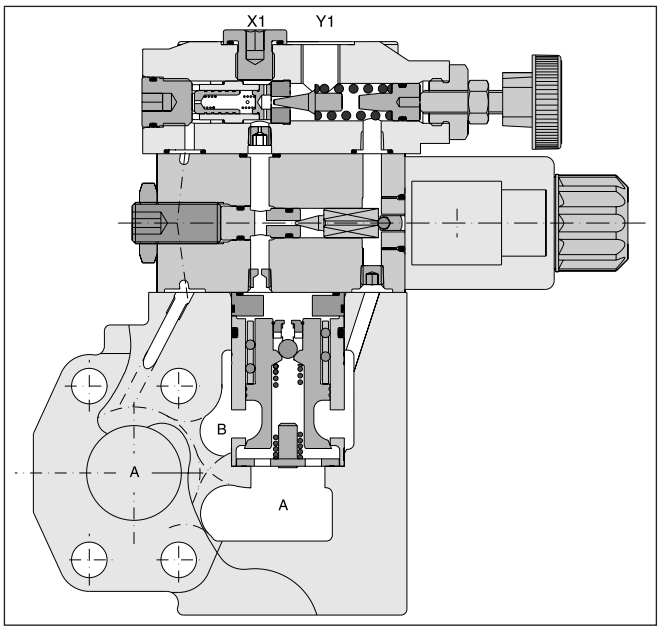
Port	Function	Port size			
		R5V06	R5V08	R5V10	R5V12
A (2)	Pressure	¾" SAE61	1" SAE61	1¼" SAE61	1½" SAE61
B	Tank	¾" SAE61	1" SAE61	1¼" SAE61	1½" SAE61
Y1	External drain	G¼"			
M	Pressure gauge	G¼"			

Proportional pressure reducing valves series R5R*P2 are based on the mechanical adjusted series R5R. The additional proportional unit between the mechanical pilot valve and the main stage allows continuous pressure adjustment. The optimum performance can be achieved in combination with the digital amplifier module PCD00A-400.



Features

- Pilot operated with proportional solenoid
- Continuous adjustment by proportional solenoid
- 2-port body with SAE61 flange
- 3 sizes (SAE ¾", 1", 1¼")
- 3 pressure stages
- With mechanical maximum pressure adjustment



Ordering code

R5R		–		8		–		6	–	P2	G0R	–	A		–	
Pressure reducing valve	Nominal size		SAE61 interface	Body 2-port (X1, Y1 = G¼")	Pressure stages		Adjustment	External drain from Y1-port		Proportional pressure control	Solenoid voltage 12V 2.3A		Design series	Seals		Options

Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"

SAE 61		
Code	Size	Max. press. [bar]
4	10	280
5	06/08	350

Code	Pressure stages
1	up to 105bar
3	up to 210bar
5	up to 350bar

Code	Seals
1	NBR
5	FPM

Code	Adjustment
1	Hand knob
3	Acorn nut with lead seal

Further options on request

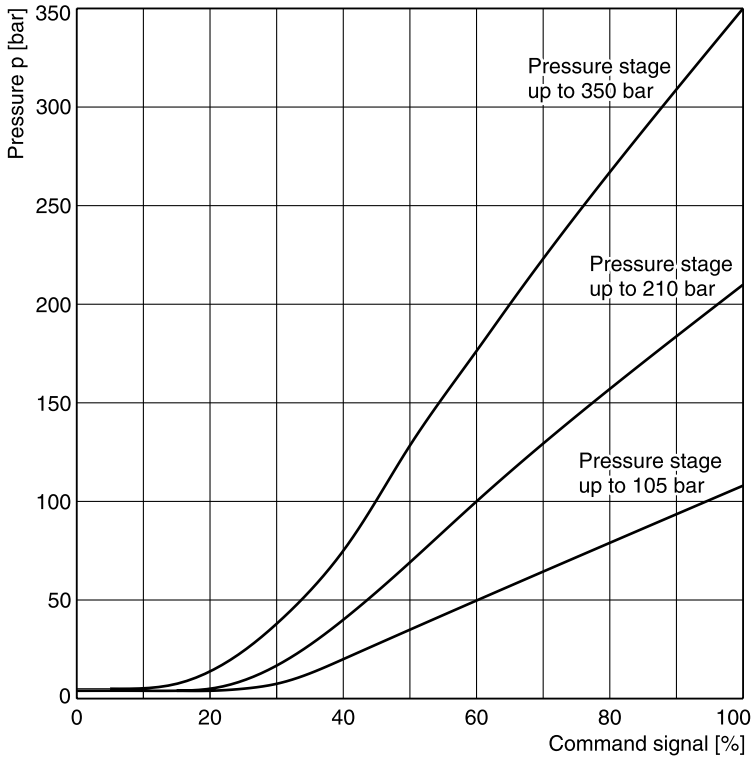
R5RP2_UK.INDD RH_27.11.07

Parker Hannifin GmbH & Co. KG
Hydraulic Controls Division
Kaarst, Germany

Technical data

General				
Size		**06**	**08**	**10**
Mounting		Flanged according to SAE 61		
Mounting position		unrestricted		
Ambient temperature	[°C]	-20...+50		
Weight	[kg]	5.8	6.4	7.7
Hydraulic				
Max. operating pressure	[bar]			
	Ports A, B, X1	350	350	280
	Port Y1	30	30	30
Pressure stages	[bar]	105, 210, 350		
Nominal flow	[l/min]	90	300	500
Fluid		Hydraulic oil as per DIN 51524...525		
Fluid temperature	[°C]	-20...+80		
Viscosity permitted	[cSt] [mm²/s]	10...650		
Viscosity recommended	[cSt] [mm²/s]	30		
Filtration		ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)		
Electrical (proportional solenoid)				
Duty ratio	[%]	100		
Nominal voltage	[V]	12		
Max. current	[A]	2.3		
Coil resistance	[Ohm]	4 at 20°C		
Solenoid connection		Connector as per EN175301-803		
Protection class		IP65 in accordance with EN 60529 (plugged and mounted)		
Power amplifier		PCD00A-400		

Command / pressure curve



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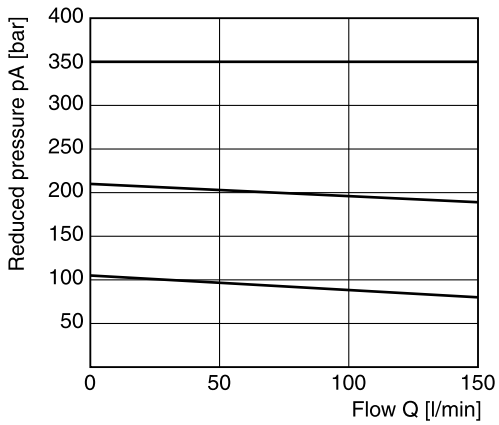
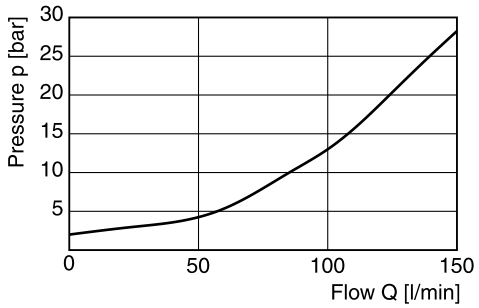
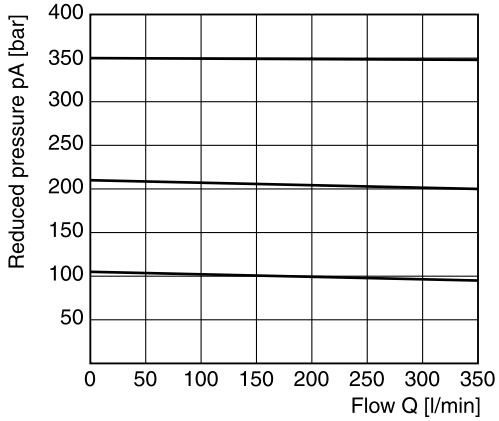
Reduced pressure pA vs. flow Q
Series R5R06*P2 [1)]



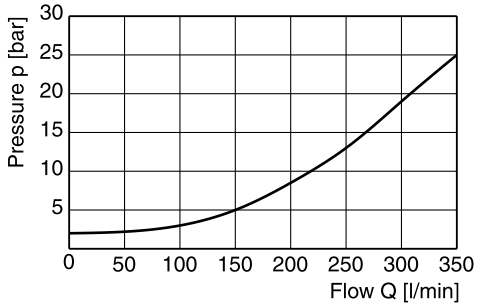
Minimum pressure curve



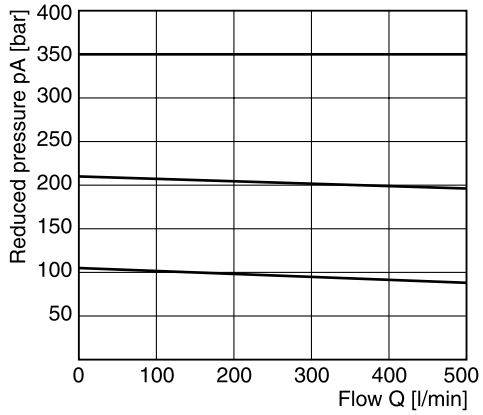
Reduced pressure pA vs. flow Q
Series R5R08*P2 [1)]



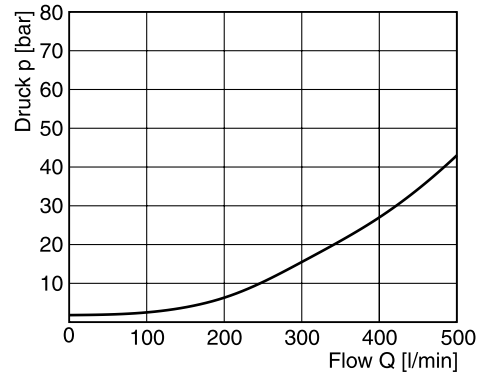
Minimum pressure curve



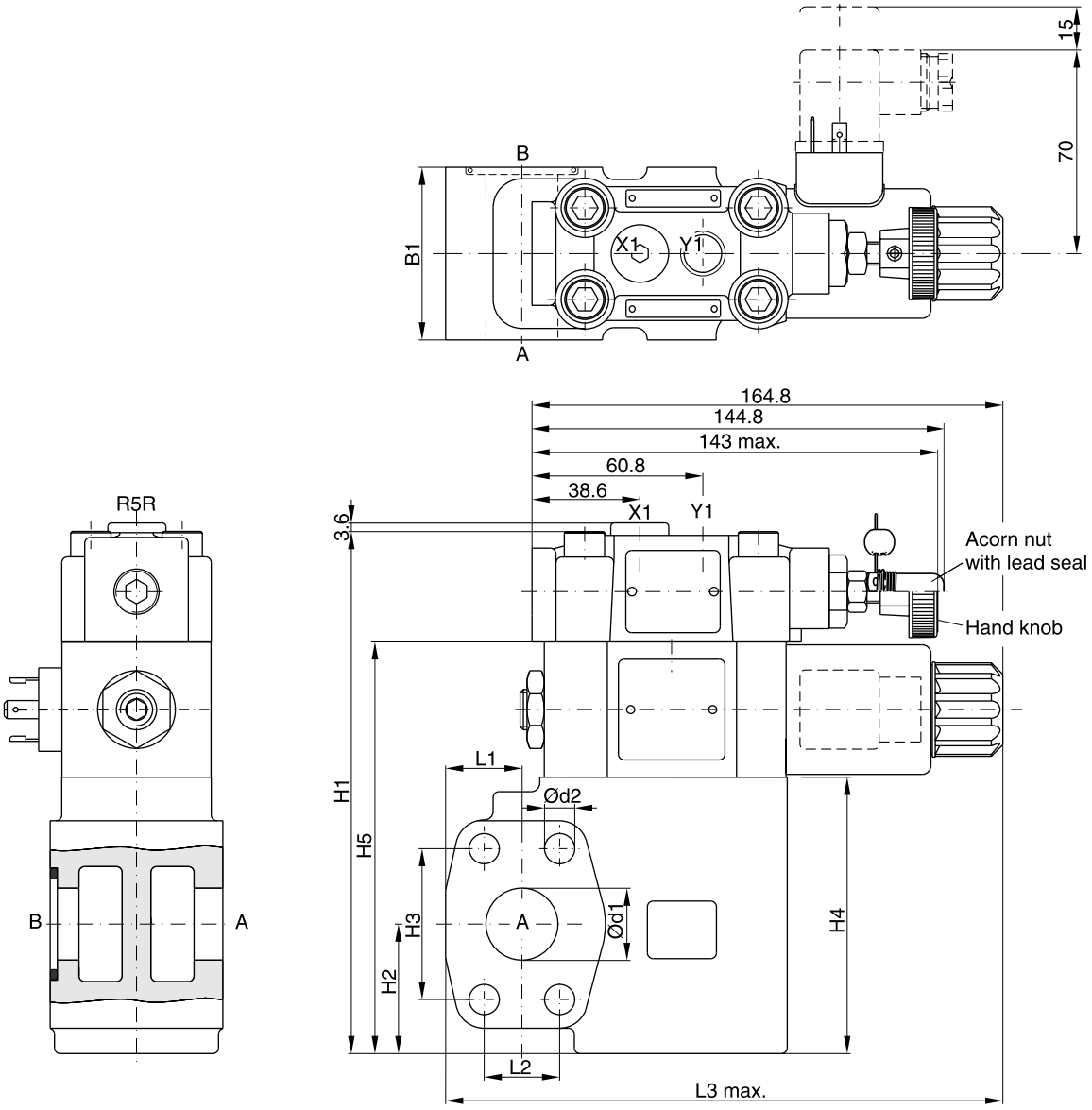
Reduced pressure pA vs. flow Q
Series R5R10*P2 [1)]



Minimum pressure curve



[1)] Measured at 350 bar primary pressure pB.



NG	B1	H1	H2	H3	H4	H5	L1	L2	L3	d1	d2
06	60	175	37	47.6	90	137	24.6	22.2	174	19	10.5
08	60	181	45	52.4	96	143	26.5	26.2	193.6	25	10.5
10	75	194	48	58.7	109	156	34.0	30.2	201	32	12.5

Port	Function	Port size		
		R5R06	R5R08	R5R10
B	Inlet pressure	¾" SAE61	1" SAE61	1¼" SAE61
A	Reduced outlet pressure	¾" SAE61	1" SAE61	1¼" SAE61
Y1	External drain	G¼"		
X1	Pressure gauge	G¼"		

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.

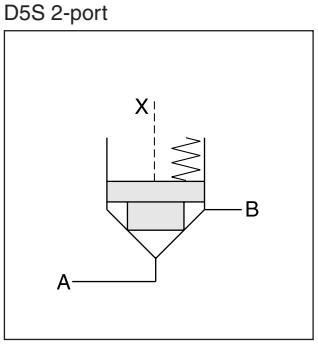
A complete program is offered under the Denison brand:
subplate mounted valves (D4S - chapter 6),
SAE flange valves (D5S - chapter 9),
pipe mounted valves (D4S - chapter 10),
slip-in cartridges (CAR - on request).

Features

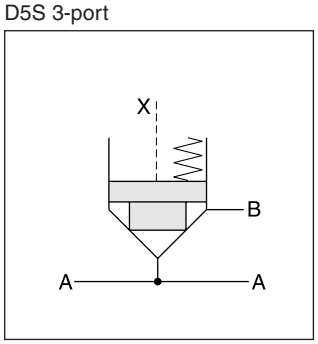
- Leak-free seat valve design
- 2- and 3-port bodies
- SAE61 flange
- Numerous pilot options
- 6 poppet types
- 4 sizes, SAE 3/4“, 1“, 1 1/4“, 1 1/2“

D5S 2-port

D5S 3-port

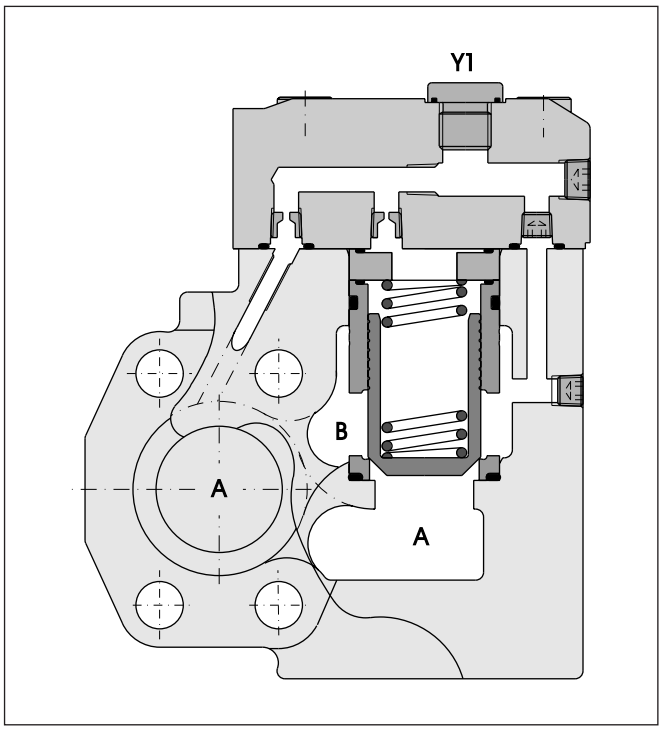


D5S 2-port

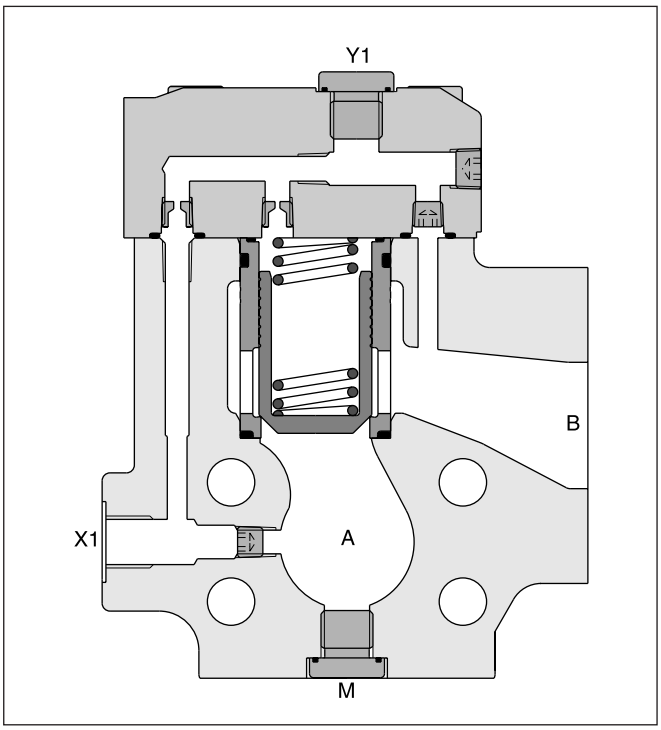


D5S 3-port

D5S 2-port



D5S 3-port



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D5S □ – □ □ □ – □ □ □ – □ □ – **B** □ – □

Seat valve | **Nominal size** | **Body** | **Pilot body configuration** | **Pilot cap** | **Sleeve** | **Spool type** | **Spring** | **Switching type** | **Solenoid voltage** | **Design series** | **Seals** | **Options**

Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"
12[1)]	SAE 1½"

[1)] D5S 3-port only

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	int. from B, ext. from X1

Code	Body	Ports	X	Y	Z	X-Y	X1	Y1	VV01
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

Note: Combination examples at the end of chapter

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

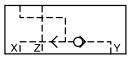
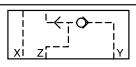
Code	Size	Poppet type	Sleeve
1	06, 08,10,12	With closed bottom and 15° chamfer (p_Z max. = p_A +20bar	1
2	06	With 0.8 dia. orifice at the bottom and 15° chamfer	1
	08, 10	With 1.2 dia. orifice at the bottom and 15° chamfer	1
4	06, 08,10,12	With closed bottom and 45° chamfer	1, 3
A[2)]	08, 10, 12	Safety 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

[2)] Springs 2, 3, 4 and 6 only

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	12V=
G0Q	24V=
GAR	98V=
GAG	205V=
W30	110V / 50Hz ; 120V / 60Hz
W31	230V / 50Hz ; 240V / 60Hz

Code	Switching type	
omit	Standard w/o vent function	
09	VV01 with manual override	de-energized: power comp. open
10	VV01 without manual override	
11	VV01 with manual override	de-energized: power comp. closed
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	

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

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	—

9

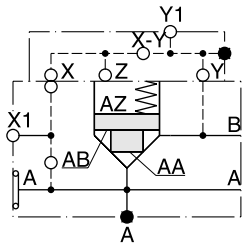
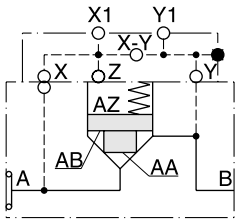
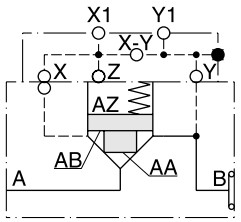
Technical data

General						
Size			**06**	**08**	**10**	**12**
Mounting			Flanged according to SAE 61			
Mounting position			unrestricted			
Ambient temperature		[°C]	-20...+50			
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 as per DIN 51524...525			
Fluid temperature		[°C]	-20...+80			
Viscosity permitted		[cSt]/[mm²/s]	10...650			
Viscosity recommended		[cSt]/[mm²/s]	30			
Filtration			ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)			

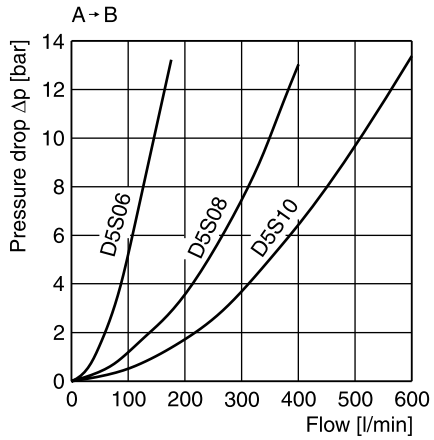
Electrical (solenoid)							
Duty ratio		[%]	100				
Response time		[ms]	Energized / De-energized AC: 20/18 , DC: 46/27				
		Code	G0R	G0Q	GAR	GAG	W30	W31
Supply voltage		[V]	12V =	24V =	98V =	205V =	110 at 50Hz 120 at 60Hz	230 at 50Hz 240 at 60Hz
Tolerance supply voltage		[%]	+5...-10	+5...-10	+5...-10	+5...-10	+5...-10	+5...-10
Power consumption	hold	[W]	31	31	31	31	78	78
	in rush	[W]	31	31	31	31	264	264
Max. switching frequency			AC: up to 7200, DC: up to 16000 switchings/hour					
Solenoid connection			Connector as per EN175301-803					
Protection class			IP65 in accordance with EN 60529 (plugged and mounted)					
Coil insulation class			H (180 °C)					

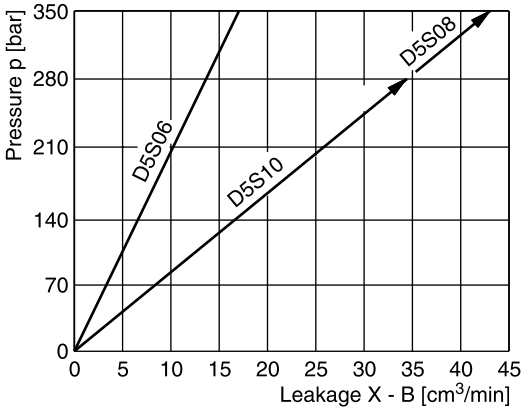
9

D5S pilot configuration

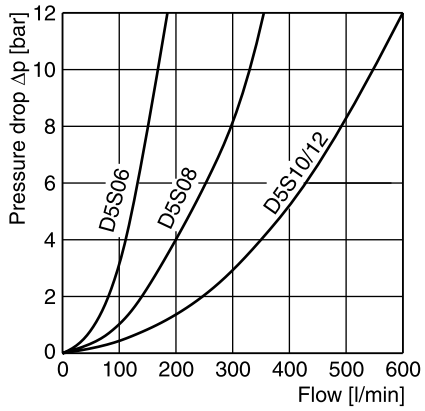
3-port	**2-port: Seat Entry**	**2-port: Annular Entry**
		

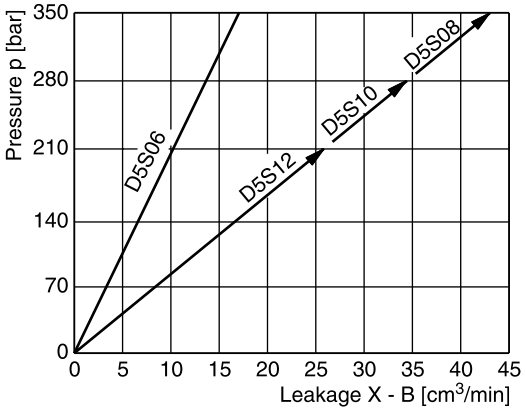
D5S 2-port





D5S 3-port

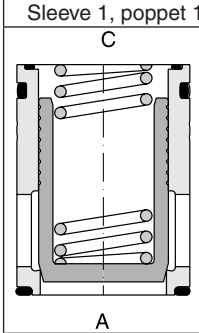
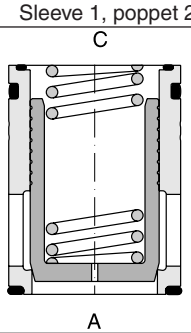
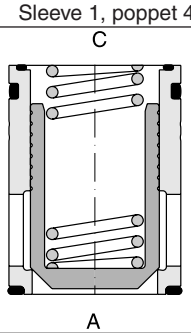
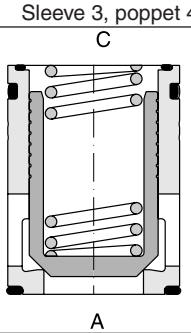
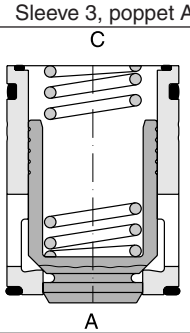
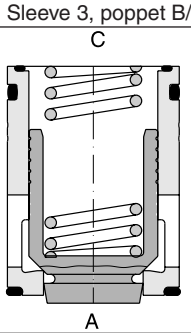




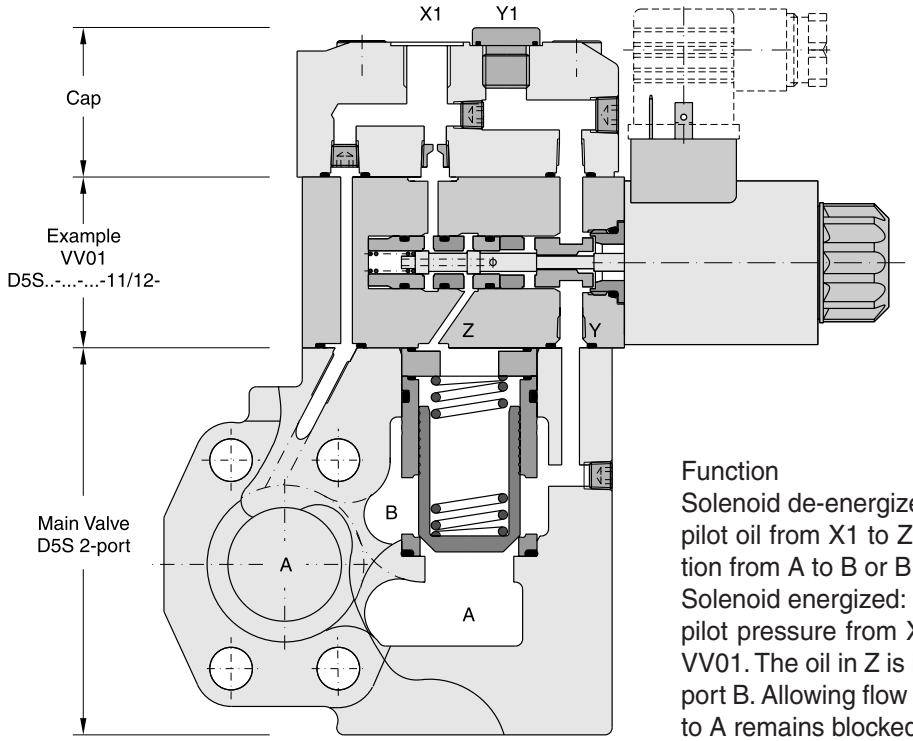
Fluid viscosity 38cSt at 50 °C

9

Selection of Cartridges

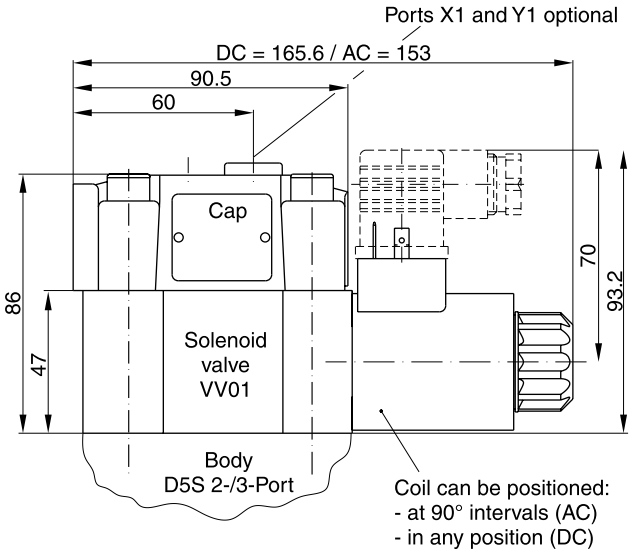
Sleeve 1, poppet 1	Sleeve 1, poppet 2	Sleeve 1, poppet 4	Sleeve 3, poppet 4	Sleeve 3, poppet A	Sleeve 3, poppet B/C
					
1 : 1.05 $A_A = 0.95\ A_C$ $A_B = 0.05\ A_C$ 15° chamfer	1 : 1.05 $A_A = 0.95\ A_C$ $A_B = 0.05\ A_C$ 15° chamfer orifice	1 : 1.05 $A_A = 0.95\ A_C$ $A_B = 0.05\ A_C$ 45° chamfer	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

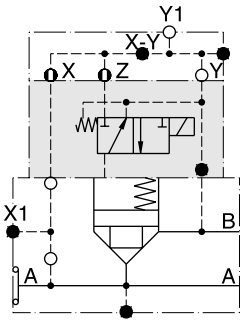
Example pilot oil external from X1, pilot drain internal out of B



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.

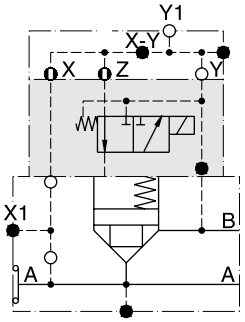
D5S with VV01 dimensions





with manual override | without manual override

D5S..-...-...-09/10-
Solenoid energized:
Blocked flow from A to B or B to A.
Solenoid de-energized:
Free flow from A to B or B to A.



with manual override | without manual override

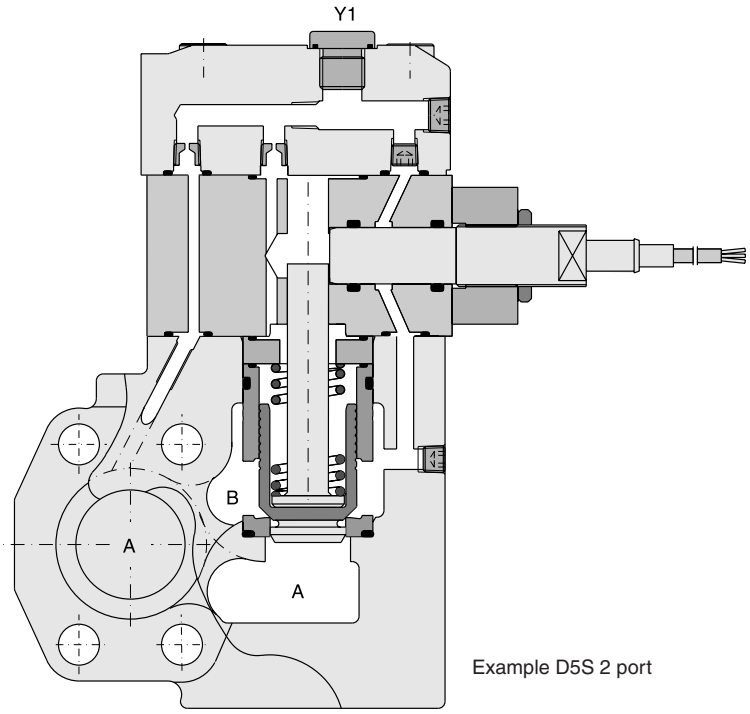
D5S..-...-...-11/12-
Solenoid energized:
Free flow from A to B or B to A.
Solenoid de-energized:
Blocked flow from A to B or B to A.

9

D5S with position control

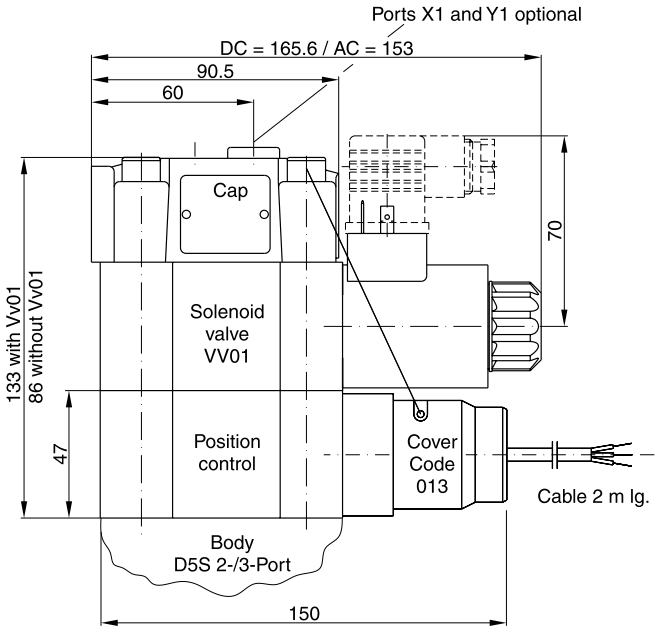
Position control by proximity switch (incl. amplifier). Valve open: proximity switch activated. This proximity switch is pressure proof and has no wearing parts.

Note: Position control for D5S08 and D5S10 only.



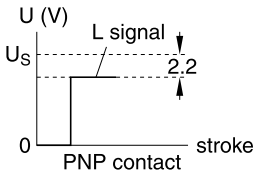
Example D5S 2 port

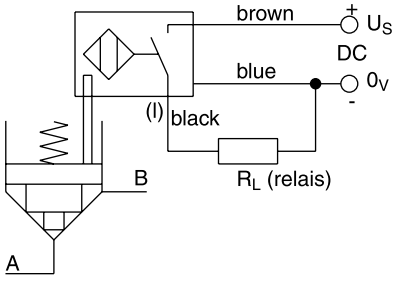
D5S with position control dimensions



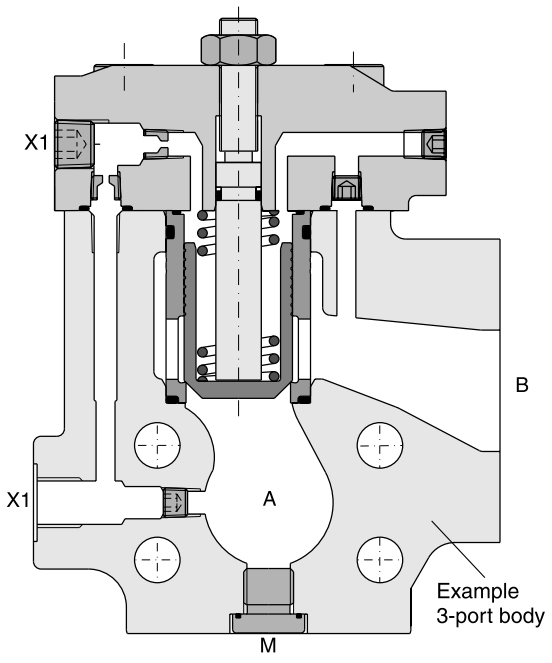
Technical data (proximity switch)

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



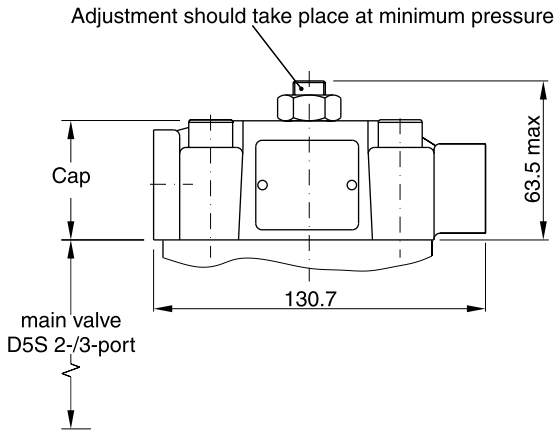


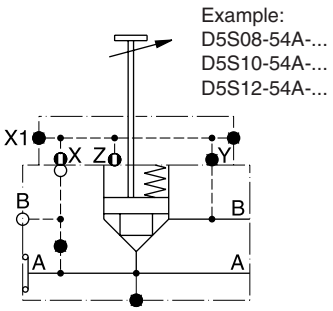
D5S stroke limiter



X1 = external pilot-oil (optional)
Note: Stroke limiter not for use with D5S06, solenoid valve VV01, shuttle valve and position control.

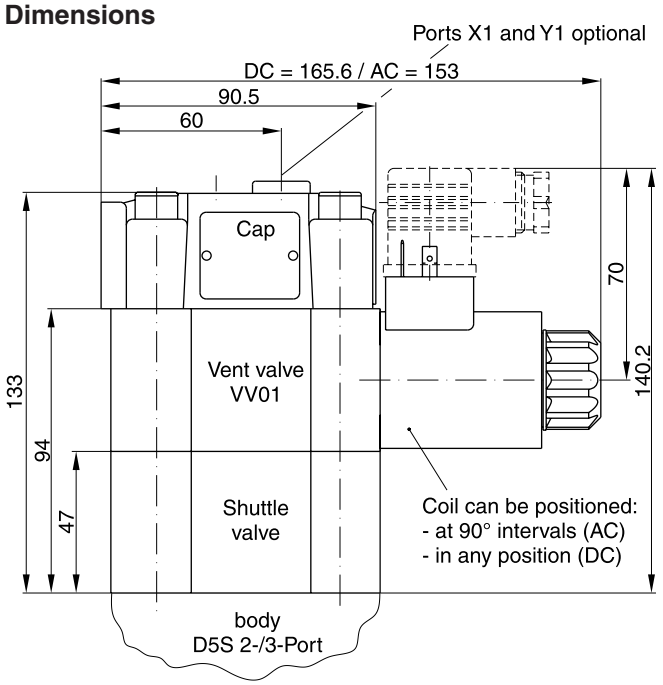
Stroke limiter dimensions



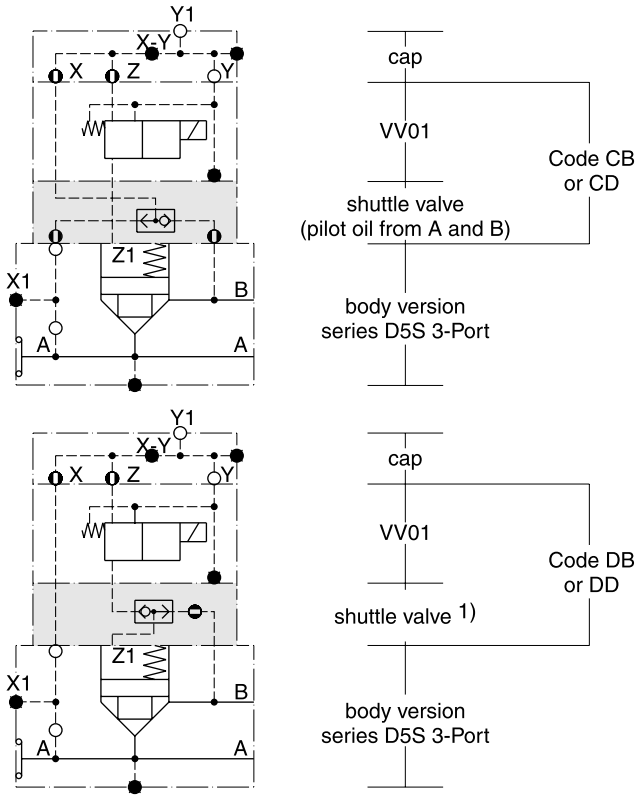


D5S with shuttle valve

Dimensions



Shuttle valve only in connection with vent valve VV01.

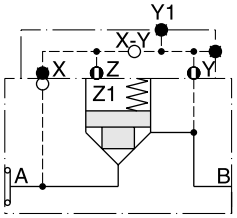


1) pilot oil from A and B, from B to A check valve function

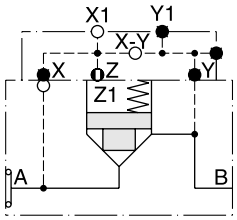
9

D5S 2-port

Seat entry

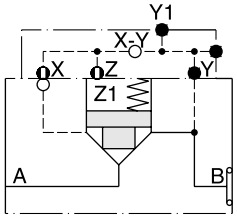


D5S..-122-
7
Pilot oil: internal from B

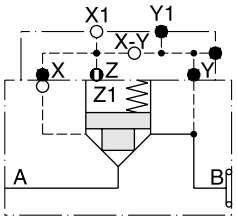


D5S..-143-
7
Pilot oil: external from X1

Annular entry



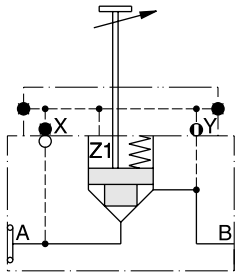
D5S..-221-
8
Pilot oil: internal from B



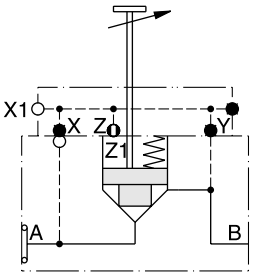
D5S..-243-
8
Pilot oil: external from X1

Stroke limiter D5S 2-port

Seat entry

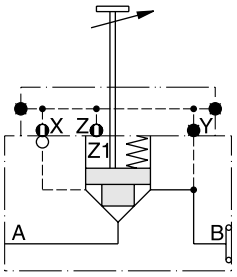


D5S08-12B-
10 7
Pilot oil: internal from B

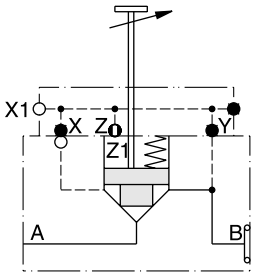


D5S08-14C-
107
Pilot oil: external from X1

Annular entry

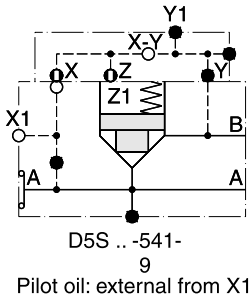


D5S08-22A-
10 8
Pilot oil: internal from B

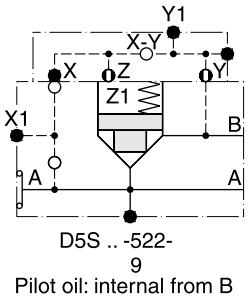


D5S08-24C-
108
Pilot oil: external from X1

D5S 3-port

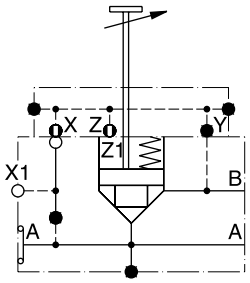


D5S .. -541-
9
Pilot oil: external from X1

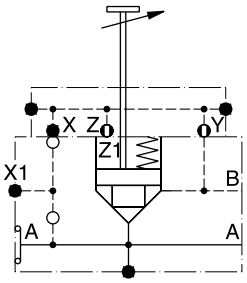


D5S .. -522-
9
Pilot oil: internal from B

Stroke limiter D5S 3-port



D5S 08 -54A-
10 9
12
Pilot oil: external from X1

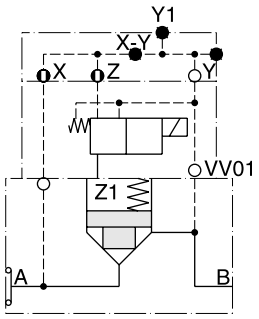


D5S 08 -52B-
10 9
12
Pilot oil: internal from B

9

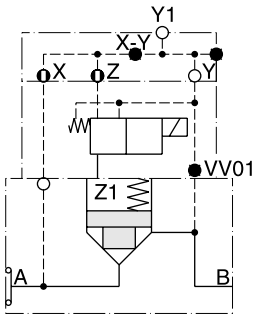
D5S 2-port with solenoid valve VV01

Seat entry



D5S .. -114-09-
7 10
11
12

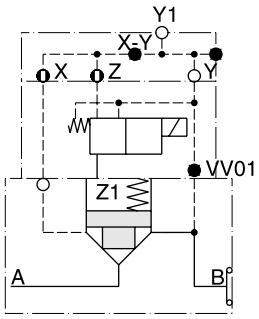
Pilot oil: internal from A
Pilot drain: internal to B



D5S .. -116-09-
7 10
11
12

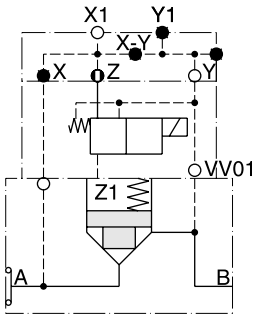
Pilot oil: internal from A
Pilot drain: external out of Y1

Annular entry



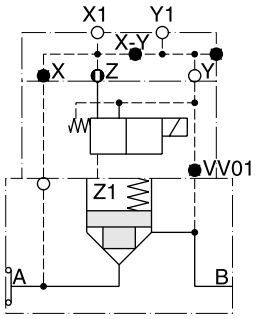
D5S .. -226-09-
8 10
11
12

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



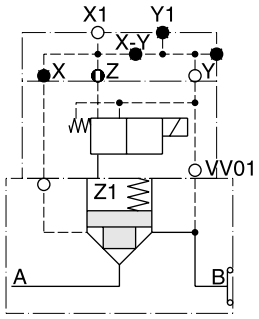
D5S .. -145-09-
7 10
11
12

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



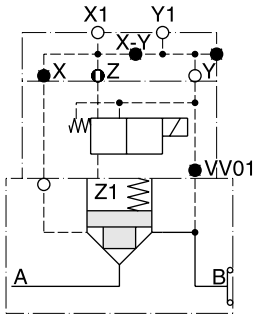
D5S .. -147-09-
7 10
11
12

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



D5S .. -245-09-
8 10
11
12

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

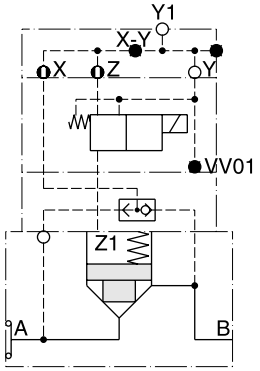


D5S .. -247-09-
8 10
11
12

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

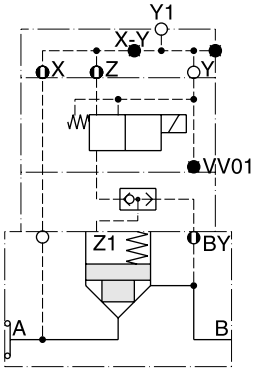
D5S 2-port with with solenoid valve VV01 and shuttle valve

Seat entry



D5S .. -136-...-CB-
7 CD

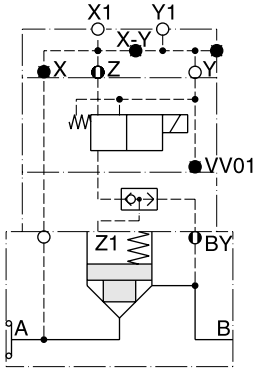
Pilot oil: internal from A +
internal from B
Pilot drain: external out of Y1



D5S .. -136-...-DB-
7 DD

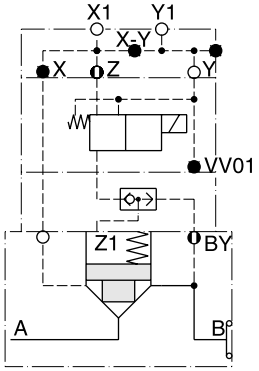
Pilot oil: internal from A +
internal from B
Pilot drain: external out of Y1

Annular entry



D5S .. -157-...-DB-
7 DD

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

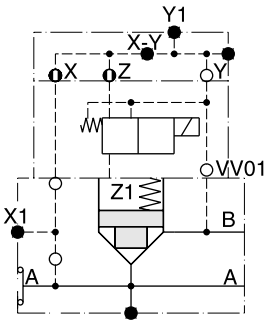


D5S .. -857-...-DB-
2 DD

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

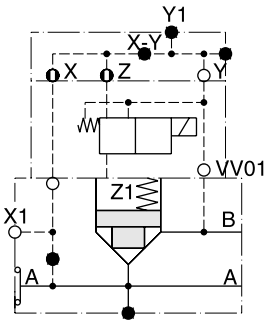
9

D5S 3-port with solenoid valve VV01



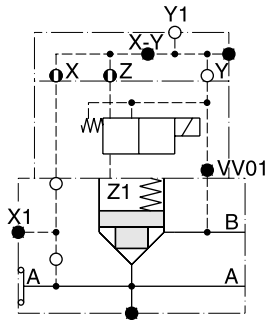
D5S .. -514-09-
9 10
11
12

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



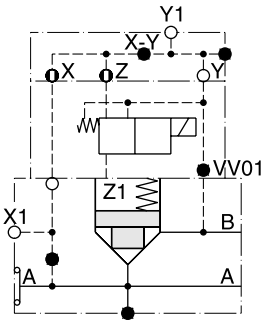
D5S .. -544-09-
9 10
11
12

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



D5S .. -516-09-
9 10
11
12

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

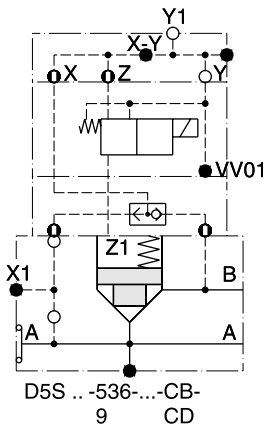


D5S .. -546-09-
9 10
11
12

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

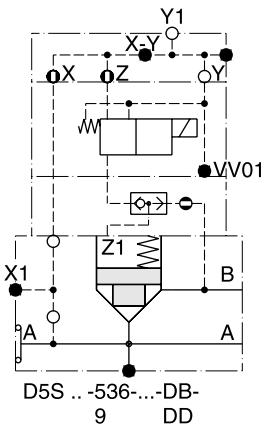
9

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



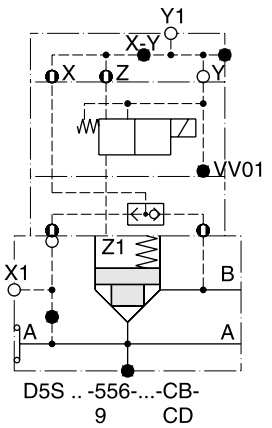
D5S .. -536-...-CB-
9 CD

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



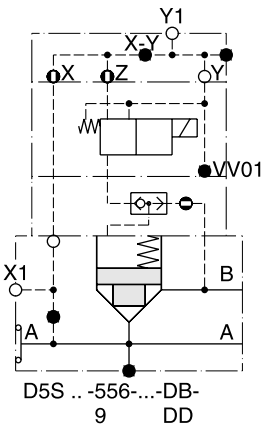
D5S .. -536-...-DB-
9 DD

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



D5S .. -556-...-CB-
9 CD

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

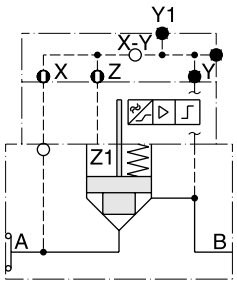


D5S .. -556-...-DB-
9 DD

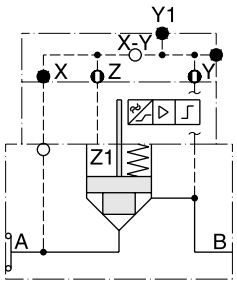
Pilot oil: external from X1 +
internal from B
Pilot drain: external out of Y1

D5S 2-port position control

Seat entry

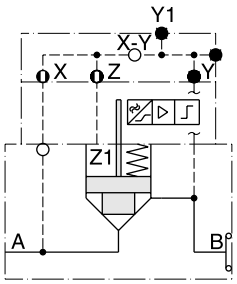


D5S 08 -111-3A.-BA-
D5S 10 7
Pilot oil: internal from A

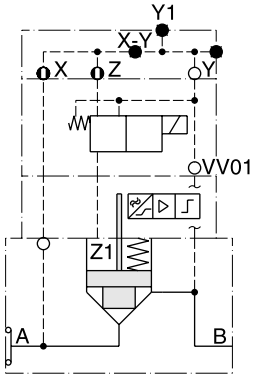


D5S 08 -122-3A.-BA-
D5S 10 7
Pilot oil: internal from B

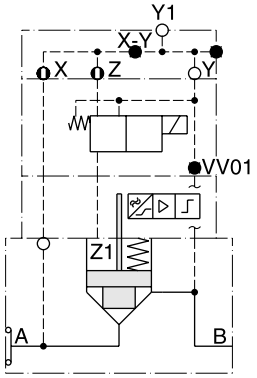
Annular entry



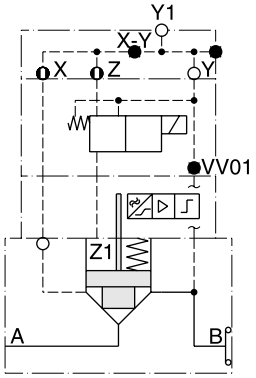
D5S 08 -221-3A.-BA-
D5S 10 8
Pilot oil: internal from B



D5S 08 -114-3A.-BC-
D5S 10 7 BE
Pilot oil: internal from A
Pilot drain: internal to B



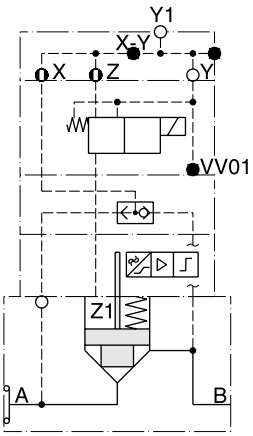
D5S 08 -116-3A.-BC-
D5S 10 7 BE
Pilot oil: internal from A
Pilot drain: external out of Y1



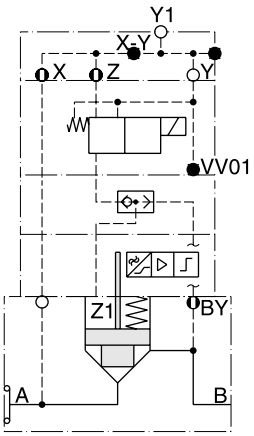
D5S 08 -226-3A.-BC-
D5S 10 8 BE
Pilot oil: internal from B
Pilot drain: external out of Y1

9

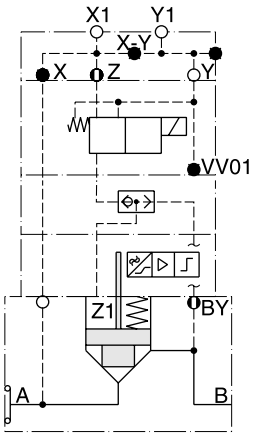
Seat entry



D5S .. -136-...-BH-
7 BK
Pilot oil: internal from A + internal from B
Pilot drain: external out of Y1

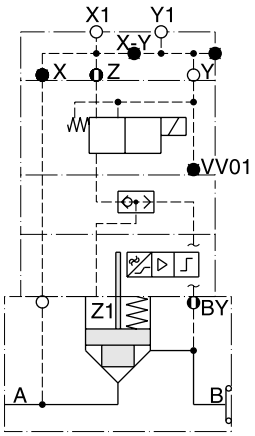


D5S .. -136-...-BN-
7 BQ
Pilot oil: internal from A + internal from B
Pilot drain: external out of Y1



D5S .. -157-...-BN-
7 BQ
Pilot oil: external from X1 + internal from B
Pilot drain: external out of Y1

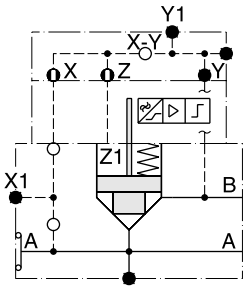
Annular entry



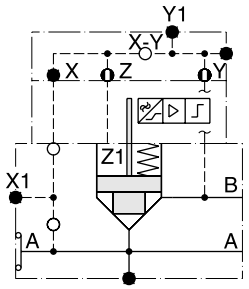
D5S .. -857-...-BN-
2 BQ
Pilot oil: external from X1 + internal from B
Pilot drain: external out of Y1

D5S 3-port position control

Seat entry

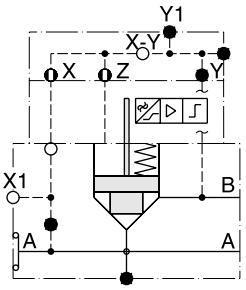


D5S 08 -511-3A.-BA-
10 9
12
Pilot oil: internal from A

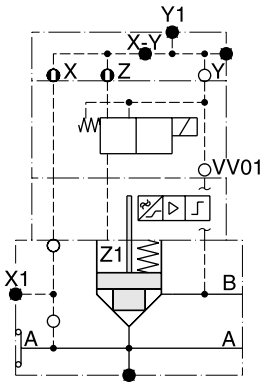


D5S 08 -522-3A.-BA-
10 9
12
Pilot oil: internal from B

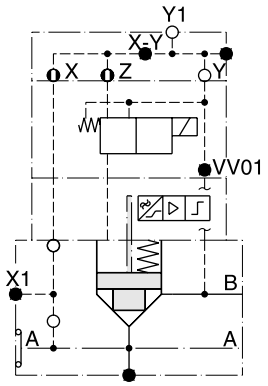
Annular entry



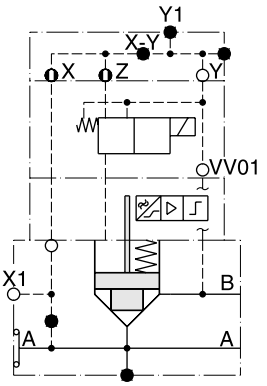
D5S 08 -521-3A.-BA-
10 9
12
Pilot oil: external from X1



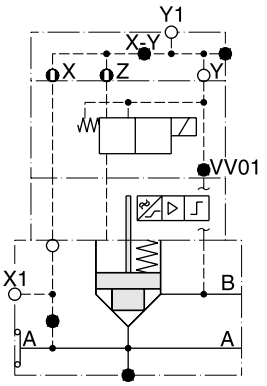
D5S 08 -514-3A.-BC-
10 9 BE
12
Pilot oil: internal from A
Pilot drain: internal to B



D5S 08 -516-3A.-BC
10 9 BE
12
Pilot oil: internal from A
Pilot drain: external out of Y1



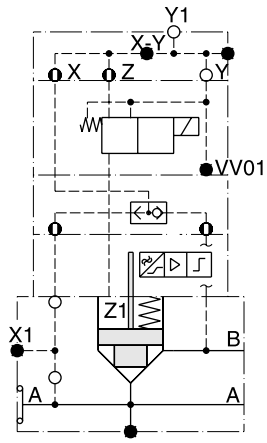
D5S 08 -544-3A.-BC-
10 9 BE
12
Pilot oil: external from X1
Pilot drain: internal to B



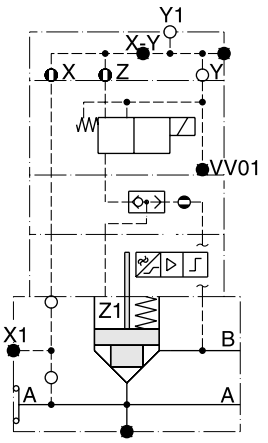
D5S 08 -546-3A.-BC-
10 9 BE
12
Pilot oil: external from X1
Pilot drain: external out of Y1

9

Seat entry

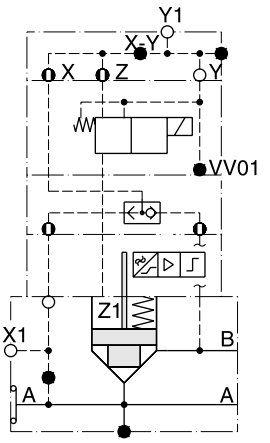


D5S 08 -536-3A.-BH-
10 9 BE
12
Pilot oil: internal from A +
internal from B
Pilot drain: external out of Y1

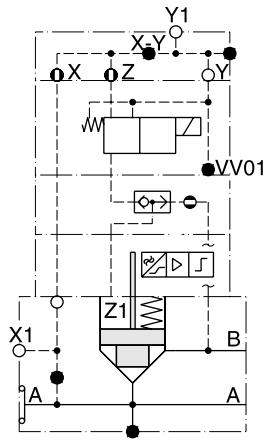


D5S 08 -536-3A.-BN-
10 9 BQ
12
Pilot oil: internal from A +
internal from B
Pilot drain: external out of Y1

Annular entry



D5S 08 -556-3A.-BH-
10 9 BK
12
Pilot oil: external from X1 +
internal from B
Pilot drain: external out of Y1

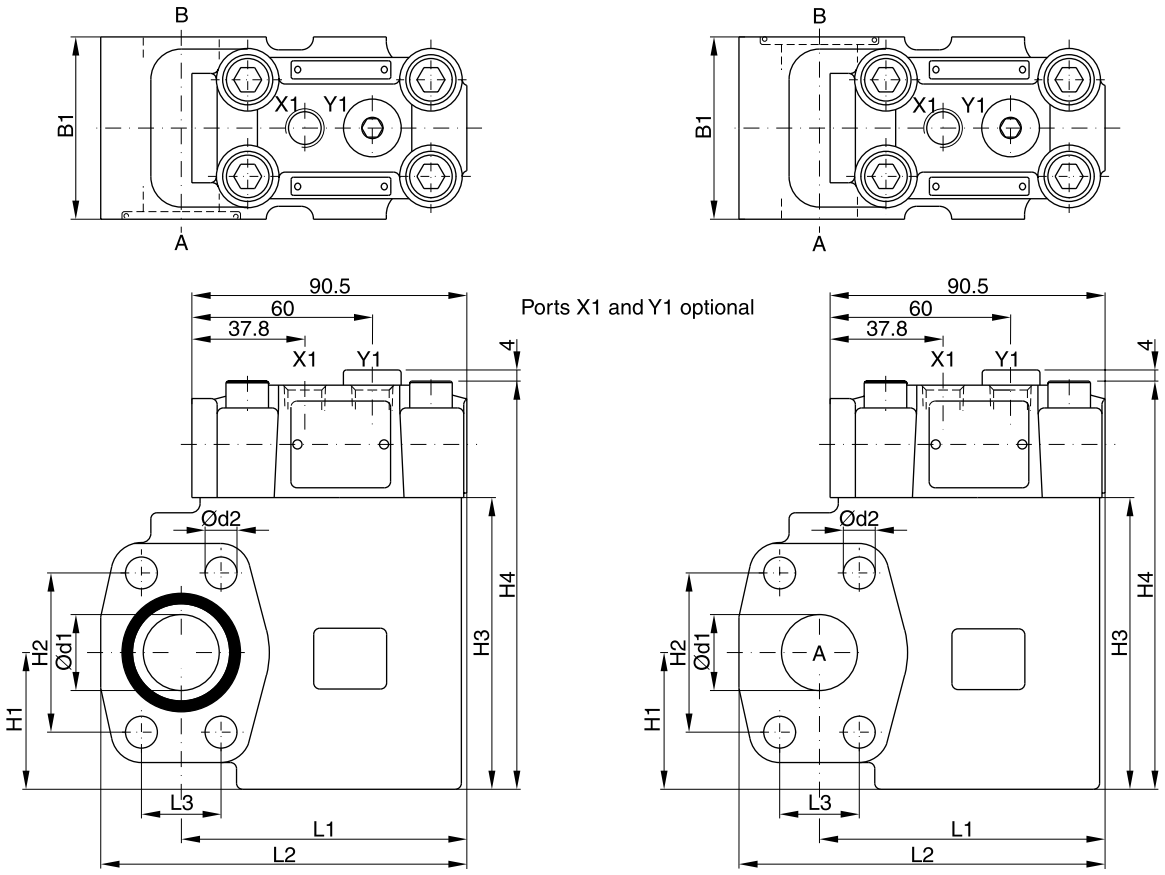


D5S 08 -556-3A.-BN-
10 9 BQ
12
Pilot oil: external from X1 +
internal from B
Pilot drain: external out of Y1

Dimensions D5S 2-port

Seat entry

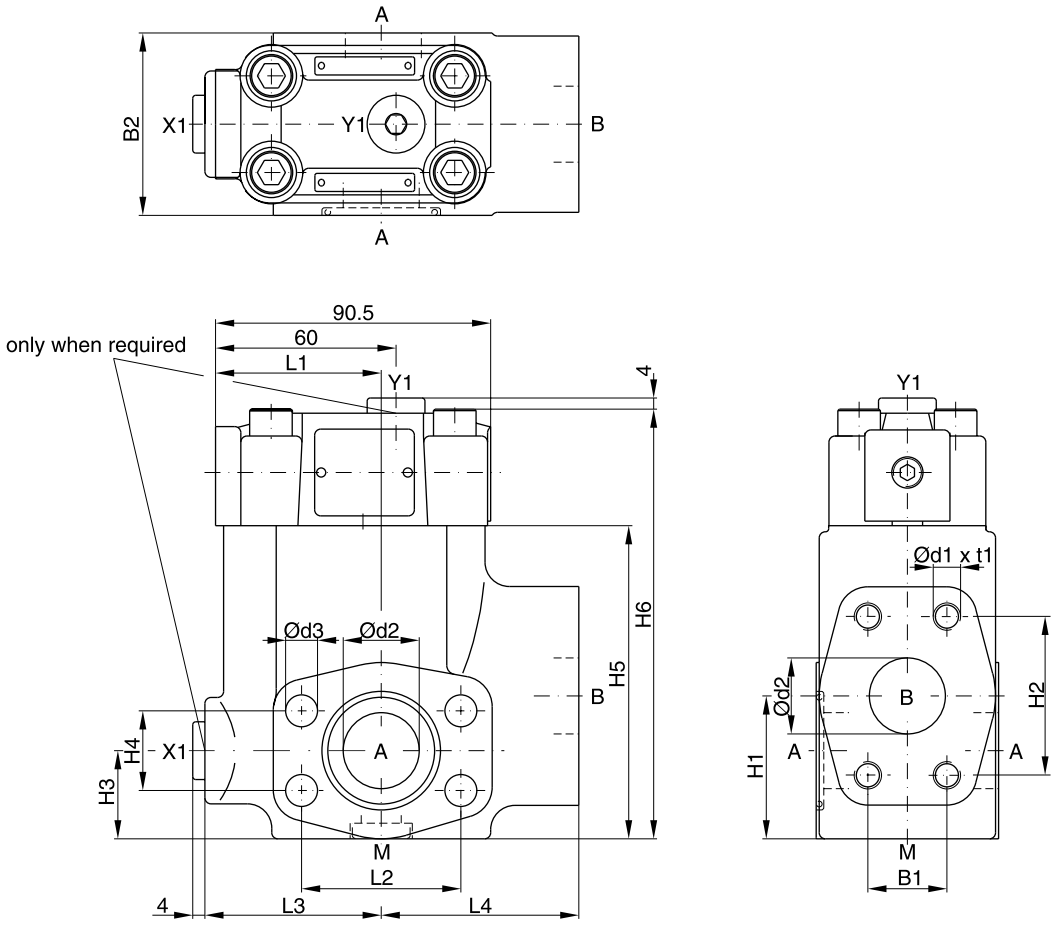
Annular entry



NG	l1	l2	l3	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" SAE-61	1" SAE-61	1¼" SAE-61
B	Outlet or inlet	¾" SAE-61	1" SAE-61	1¼" SAE-61
X1	External pilot port	G¼"		
Y1	External pilot drain			

Dimensions D5S 3-port



9

NG	l1	l2	l3	l4	b1	b2	h1	h2	h3	h4	h5	h6	d1	t1	d2	d3
06	49	47.6	56	63	22.2	60	41	47.6	28	22.2	82	119	3/8" UNC	20	19	10.5
08	55	52.4	58	65	26.2	60	47	52.4	29	26.2	103	141	3/8" UNC	23	25	10.5
10	57	58.7	64	61	30.2	75	65	58.7	36	30.2	113	150	7/16" UNC	22	32	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

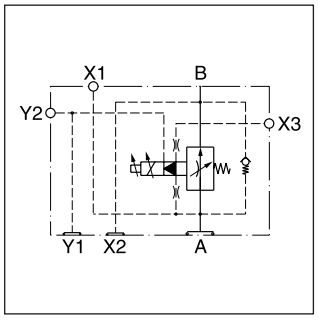
Ports	Function	Port size			
		D5S06	D5S08	D5S10	D5S12
A (2x)	Inlet or outlet	¾" SAE-61	1" SAE-61	1¼" SAE-61	1½" SAE-61
B	Outlet or inlet	¾" SAE-61	1" SAE-61	1¼" SAE-61	1½" SAE-61
X1 [1)]	External pilot port	G¼"			
Y1	External pilot drain				
M	Pressure gauge				

[1)] closed when supplied

D5S_UK.INDD RH_19.12.07

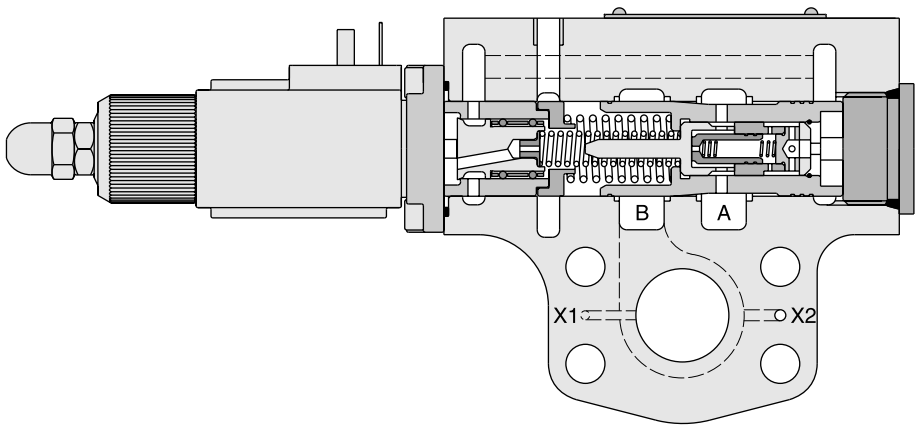
Parker Hannifin GmbH & Co. KG
Hydraulic Controls Division
Kaarst, Germany

Proportional throttle valves series F5C allow to adjust the flow in proportion to the input signal. The combination of the F5C with pressure compensators R5A or R5P serves as a flow control valve - providing load compensated flow.
The F5C is offered with two types of response time:
standard 350 ms at 1 l/min pilot flow
code A, faster 250 ms at 2 l/min pilot flow



Features

- Spool type proportional throttle valve
- SAE61 flange
- Maximum pressure 270 bar
- Maximum flow 380 l/min
- 3 sizes, SAE 3/4“, 1“, 1 1/4“
- Load compensated flow in combination with R5A and R5P



F5C	☐	☐	–	4	3	☐	–	☐	☐	0	–	A	☐	☐
Proportional throttle valve	Nominal size	Pilot flow and response		SAE61 interface	Pilot ports G¼"	Spool type		Proportional solenoid	Pilot connection	Accesso-ries		Design series	Seals	Options

Code	Nominal size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"

Code	Pilot flow	Max. response
omit	1 l/min	350 ms
A	2 l/min	250 ms

Spool type		
Code	Size	Max. flow [1]
A	06	23 l/min
B	06/08	45 l/min
1	06/08/10	95 l/min
2	08/10	190 l/min
3	10	380 l/min

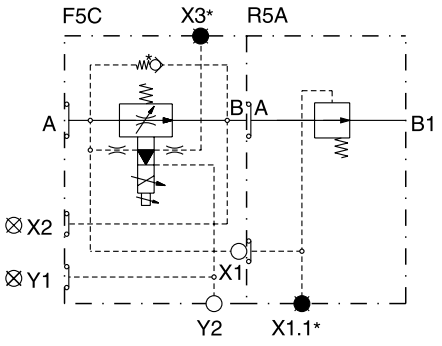
[1] At nominal pressure drop (Δp = 8.4bar)

Code	Prop. solenoid
1	12V / 220 mA
2	12V / 2500 mA

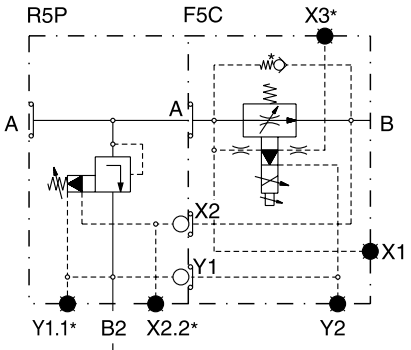
Code	Pilot connec-tions	F5C without compensators R5A, R5P	F5C for com-bination with R5A	F5C for com-bination with R5P
2	internal PD (Y) internal PP (X)			X1, X3, Y2 ● X2, Y1 ○ X2, Y1 ○
3	external PD (Y) external PP (X)		X1, X3, Y2 ○ X2, Y1 ⊗	
4	external PD (Y) external PP (X)	X3, Y2 ○ X1 ● X2, Y1 ⊗		X2, X3, Y1, Y2 ○ X1 ●
5	external PD (Y) internal PP (X)		X1, Y2 ○ X3 ● X2, Y1 ⊗	
6	external PD (Y) internal PP (X)	X1, X3 ● X2, Y1 ⊗ Y2 ○		X1, X3 ● X2, Y1, Y2 ○

9

F5C with R5A



F5C with R5P



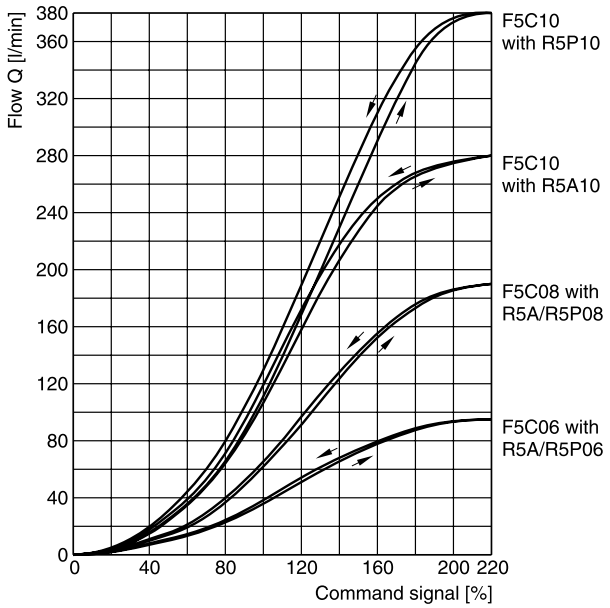
* optional

○ open ● closed ⊗ closed by counterpart

Technical data

General				
Size		**06 (¾")**	**08 (1")**	**10 (1¼")**
Mounting		Flanged according to SAE 61		
Mounting position		unrestricted		
Ambient temperature	[°C]	-20...+50		
Weight	[kg]	3.9	4.1	5.8
Hydraulic				
Max. operating pressure				
Ports A, B, X1, X2, X3	[bar]	270		
Ports Y1, Y2	[bar]	70		
Max. pressure drop (from A to B)	[bar]	21		
Nominal flow	[l/min]	95	190	380
Fluid		Hydraulic oil as per DIN 51524...525		
Fluid temperature	[°C]	-20...+80		
Viscosity permitted	[cSt] [mm²/s]	10...650		
Viscosity recommended	[cSt] [mm²/s]	30		
Filtration		ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)		
Electrical characteristics				
Duty ratio	[%]	100		
Solenoid connection		Connector as per EN175301-803		
Protection class		IP65 in accordance with EN 60529 (plugged and mounted)		
Supply voltage	[V]	12		
Current consumption	[mA]	220 (solenoid code 1); 2500 (solenoid code 2)		
Resistance	[Ohm]	60 (solenoid code 1); 0.3 (solenoid code 2)		
Response time	[ms]	see ordering code		
Coil insulation class		H (180 °C)		

Characteristic curves



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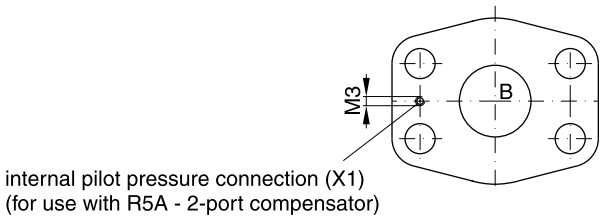
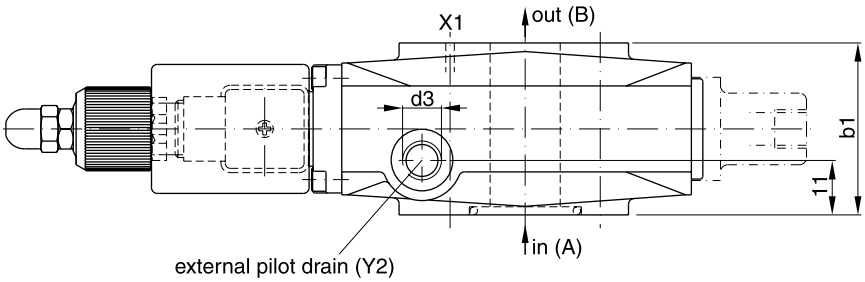
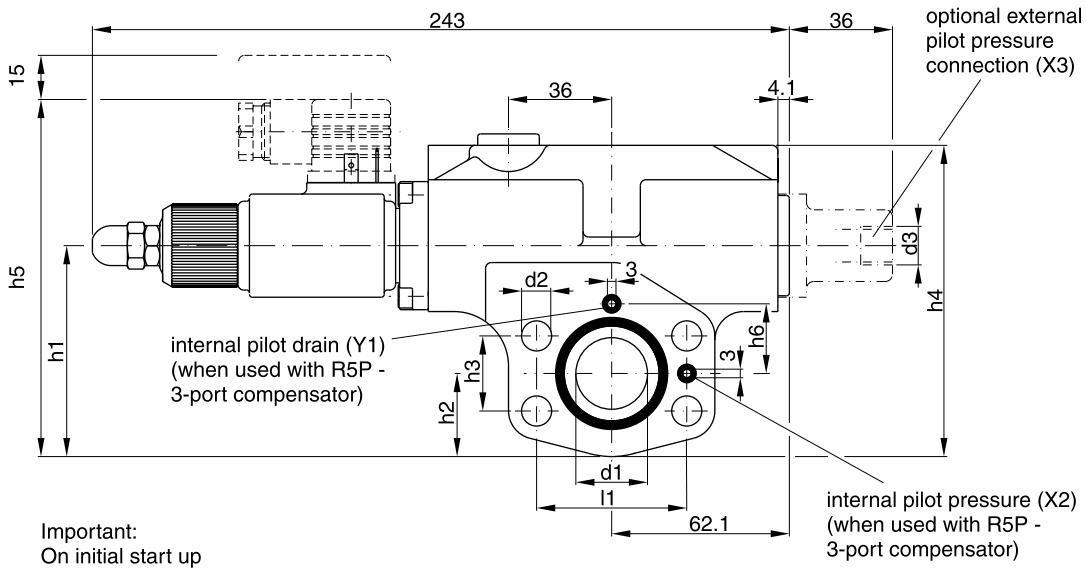
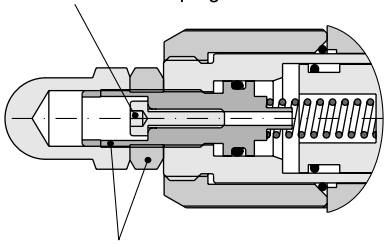


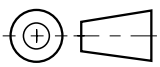




Important:
On initial start up
and after long shut down periods
bleed air from this plug.

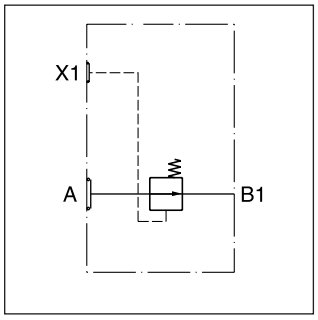


Zero point is factory set!
Lock nut must not be loosened!



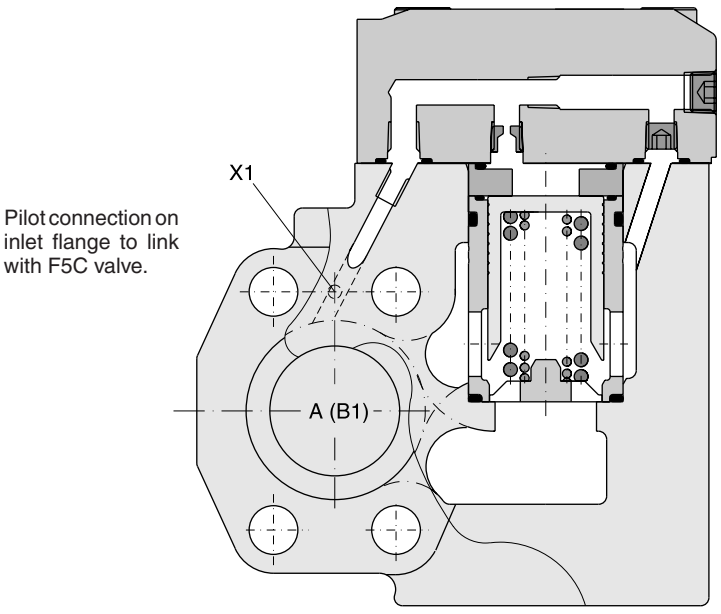
	l1	b1	h1	h2	h3	h4	h5	h6	d1	d2	d3
F5C06	47.6	60	68.2	26	22.2	103.2	119.2	20.8	19	10.5	G¼"
F5C08	52.4	60	73.6	29	26.2	108.6	124.6	24.3	25	10.5	G¼"
F5C10	58.7	75	83.5	36.5	30.2	118.5	134.5	29.3	32	12.5	G¼"

Direct operated 2 way pressure compensators series R5A can be combined with any type of fixed or adjustable flow resistor (throttle) to provide a load compensated flow. The combination with the proportional throttle valve F5C serves as a compact 2 way flow control unit in SAE flange design. The R5A is typically used as meter-out compensator behind the flow resistor.



Features

- Seated type 2 way pressure compensator
- SAE61 flange
- 8.4 bar control pressure
- 3 sizes, SAE 3/4“, 1“, 1 1/4“
- Load compensated flow in combination with F5C



Ordering code

R5A	☐	–	☐	4	1	–	01	B	☐	–	☐
2-port compensator	Nominal size		SAE61 interface	2-port body	Plain cap		Pilot connection thru port X1	Design series	Seals		Options

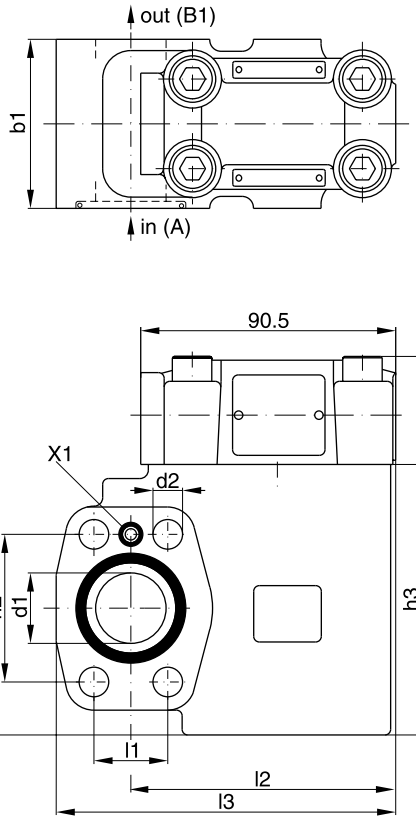
Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"

SAE 61		
Code	Size	Max. press. [bar]
4	10	280
5	06/08	350

Code	Seals
1	NBR
5	FPM

Technical data

General				
Size		**06 (¾")**	**08 (1")**	**10 (1¼")**
Mounting		Flanged according to SAE 61		
Mounting position		unrestricted		
Ambient temperature	[°C]	-20...+50		
Weight	[kg]	3.6	4.3	5.6
Hydraulic				
Max. operating pressure	[bar]			
	Ports A, B, X1	350	350	280
Control pressure	[bar]	8.4		
Nominal flow	[l/min]	90	300	600
Fluid		Hydraulic oil as per DIN 51524...525		
Fluid temperature	[°C]	-20...+80		
Viscosity permitted	[cSt] [mm²/s]	10...650		
Viscosity recommended	[cSt] [mm²/s]	30		
Filtration		ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)		



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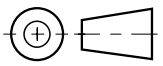
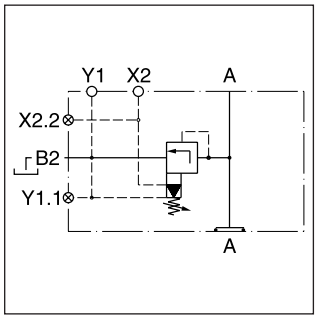


	l1	l2	l3	b1	h1	h2	h3	h4	d1	d2
R5A06	22.2	84	108	60	37	47.6	90	128	19	10.5
R5A08	26.2	101	128	60	45	52.4	96	134	25	10.5
R5A10	30.2	101	135	75	48	58.7	109	147	32	12.5

Notes

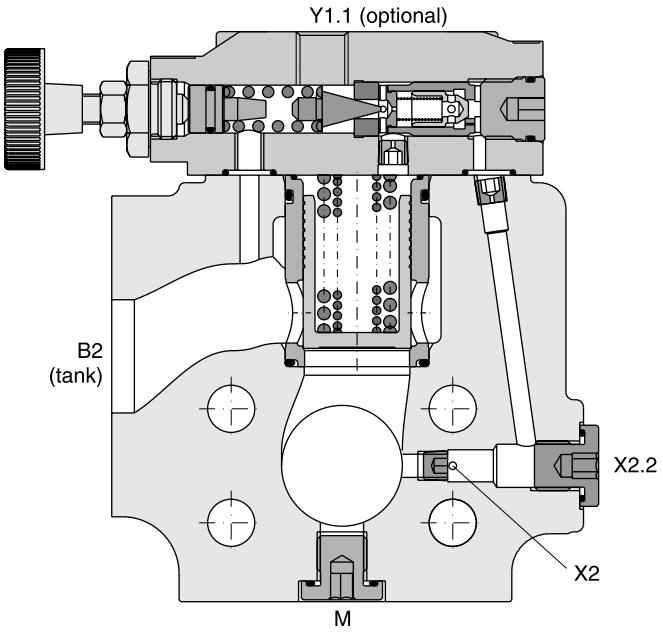
Direct operated 3 way pressure compensators series R5P can be combined with any type of fixed or adjustable flow resistor (throttle) to provide a load compensated flow. The combination with the proportional throttle valve F5C serves as a compact 3 way flow control unit in SAE flange design. The R5P is typically used as meter-in compensator in front of the flow resistor.

The R5P is additionally equipped with a pressure relief pilot, that controls the compensator cartridge and operates a system pressure relief valve. The R5P*P2 provides a proportional relief function.



Features

- Seated type 3 way pressure compensator
- SAE61 flange
- 8.4 bar control pressure
- Pressure relief function (optionally proportional)
- With optional vent function
- 3 sizes, SAE 3/4“, 1“, 1 1/4“
- Load compensated flow in combination with F5C



R5P □ – □ □ □ – □ □ – □ □ – **A** □ – □

3-port compensator	Nominal size	SAE interface	Pilot ports	Pressure stages	Adjust-ment	Pilot connection	Switching type	Solenoid voltage	Design series	Seals	Options

Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"

SAE 61		
Code	Size	Max. press. [bar]
4	10	280
5	06/08	350

Code	Pilot ports	Port Y1 [1]
9	G¼"	plugged
P		open

[1] Y1 port is used in combination with F5C, when the F5C should be drained through the R5P (internal or external drain)

Code	Pressure stages
1	7...105bar
3	7...210bar
5	7...350bar

Code	Adjustment
1	Hand knob
3	Acorn nut with lead seal

Code	Pilot connection
2	internal PD internal PP [3]
6	external PD [2] internal PP [3]

[2] Through port Y1.1

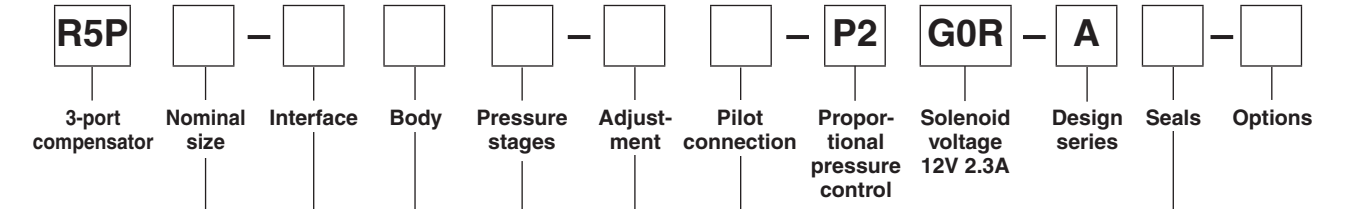
[3] PP through port X1 in outlet flange

Code	Switching type
omit	Standard w/o vent function
09	Solenoid not activ. unpress. circulation
11	Solenoid activated unpress. circulation

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

Code	Seals [6]
1	NBR
5	FPM

[6] Further seals on request



Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"

SAE 61		
Code	Size	Max. pressure
4	10	280
5	06/08	350

Code	Pilot ports	Port Y1 [1]
9	G¼"	plugged
P		open

[1] Y1 port is used in combination with F5C, when the F5C should be drained through the R5P (internal or external drain)

Code	Pressure stages
1	7...105bar
3	7...210bar
5	7...350bar

Code	Seals [4]
1	NBR
5	FPM

[4] Further seals on request

Code	Pilot connection
2	internal PD internal PP [3]
6	external PD [2] internal PP [3]

[2] Through port Y1.1

[3] PP through port X1 in outlet flange

Code	Adjustment
1	Hand knob
3	Acorn nut with lead seal

9

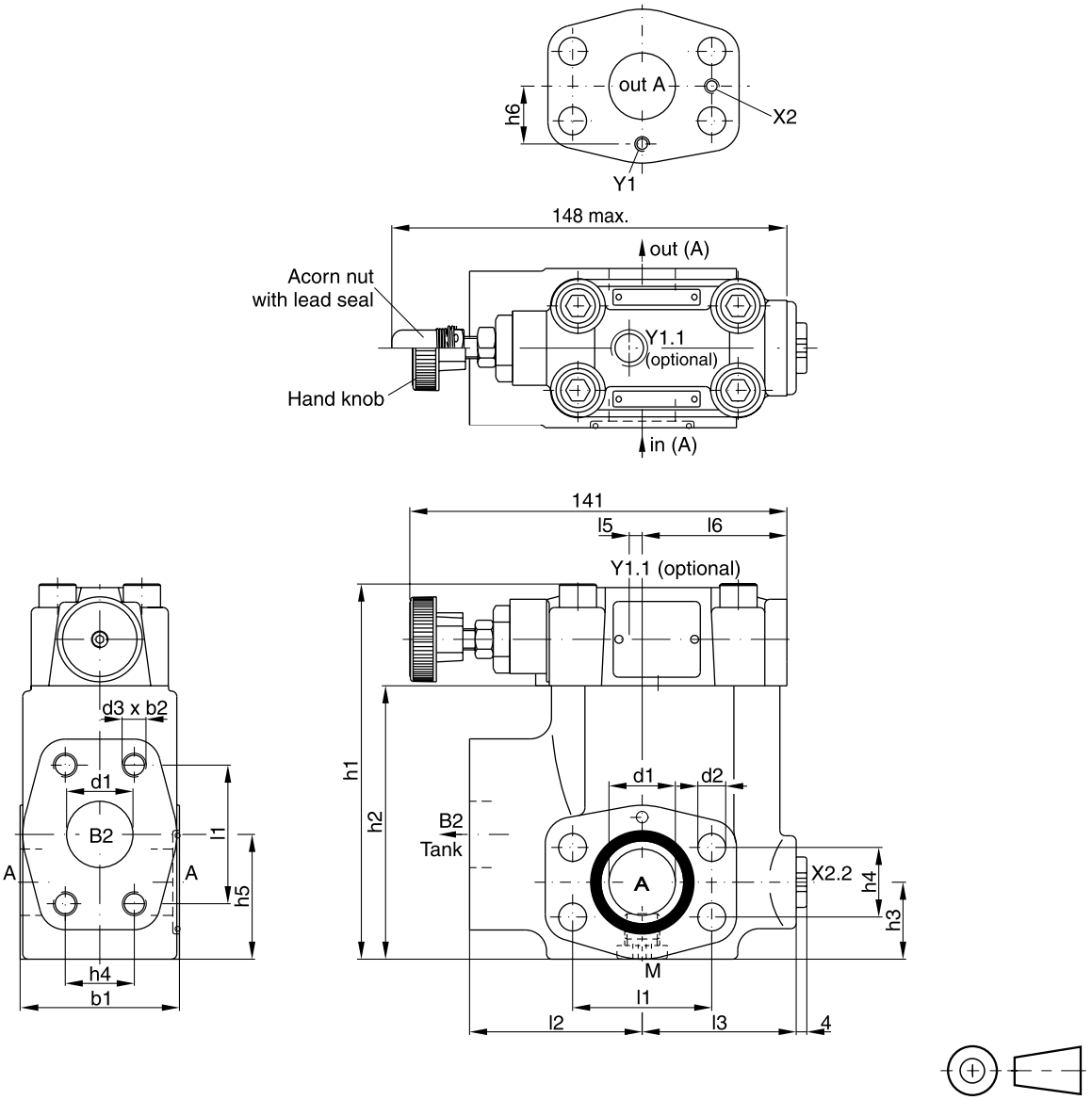
R5P

General								
Size			**06 (¾")**		**08 (1")**		**10 (1¼")**	
Mounting			Flanged according to SAE 61					
Mounting position			unrestricted					
Ambient temperature		[°C]	-20...+50					
Weight	R5P	[kg]	3.7		4.4		5.3	
	R5P with VV01	[kg]	5.4		6.1		7.0	
Hydraulic								
Max. operating pressure		[bar]						
	Ports A, B		350		350		280	
Pressure stages		[bar]	105, 210, 350					
Nominal flow		[l/min]	90		300		600	
Fluid			Hydraulic oil as per DIN 51524...525					
Fluid temperature		[°C]	-20...+80					
Viscosity permitted		[cSt] [mm²/s]	10...650					
Viscosity recommended		[cSt] [mm²/s]	30					
Filtration			ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)					
Electrical (solenoid) R5P with VV01								
Duty ratio		[%]	100					
Solenoid connection			Connector as per EN175301-803					
Protection class			IP65 in accordance with EN 60529 (plugged and mounted)					
		Code	G0R	G0Q	GAR	GAG	W30	W31
Supply voltage		[V]	12V =	24V =	98V =	205V =	110 at 50Hz 120 at 60Hz	230 at 50Hz 240 at 60Hz
Tolerance supply voltage		[%]	+5...-10	+5...-10	+5...-10	+5...-10	+5...-10	+5...-10
Power consumption	hold	[W]	31	31	31	31	78	78
	in rush	[W]	31	31	31	31	264	264
Response time		[ms]	Energized / De-energized AC: 20/18 , DC: 46/27					
Max. switching frequency			AC: up to 7200, DC: up to 16000 switchings/hour					
Coil insulation class			H (180 °C)					

R5P*P2

General					
Size		**06 (¾")**	**08 (1")**	**10 (1¼")**	
Mounting		Flanged according to SAE 61			
Mounting position		unrestricted			
Ambient temperature	[°C]	-20...+50			
	[kg]	5.5	6.2	7.1	
Hydraulic					
Max. operating pressure	Ports A, B [bar]	350	350	280	
Pressure stages	[bar]	105, 210, 350			
Nominal flow	[l/min]	90	300	600	
Fluid		Hydraulic oil as per DIN 51524...525			
Fluid temperature	[°C]	-20...+80			
Viscosity permitted	[cSt] [mm²/s]	10...650			
Viscosity recommended	[cSt] [mm²/s]	30			
Filtration		ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)			
Electrical (proportional solenoid)					
Duty ratio	[%]	100			
Nominal voltage	[V]	12			
Max. current	[A]	2.3			
Coil resistance	[Ohm]	4 at 20°C			
Solenoid connection		Connector as per EN175301-803			
Protection class		IP65 in accordance with EN 60529 (plugged and mounted)			
Power amplifier		PCD00A-400			

R5P

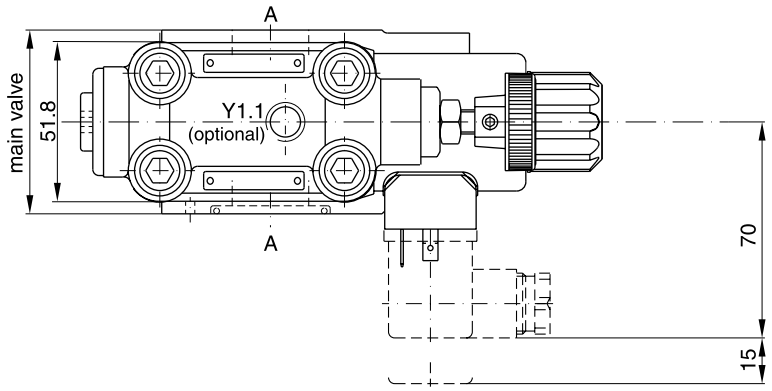


	l1	l2	l3	l4	l5	l6	b1	b2	h1	h2	h3	h4	h5	h6	d1	d2	d3
R5P06	47.6	63	56	148	1	49	60	20	119	81.6	28.6	22.2	41.6	20.8	19	10.5	3/8" UNC
R5P08	52.4	65	58	144.6	5	54.5	60	23	142	103	30.6	26.2	48.6	24.3	25	10.5	3/8" UNC
R5P10	58.7	61	62	146.6	3	56.5	75	22	149	111.5	34.6	30.2	64.1	29.3	32	12.5	7/16" UNC

Ports

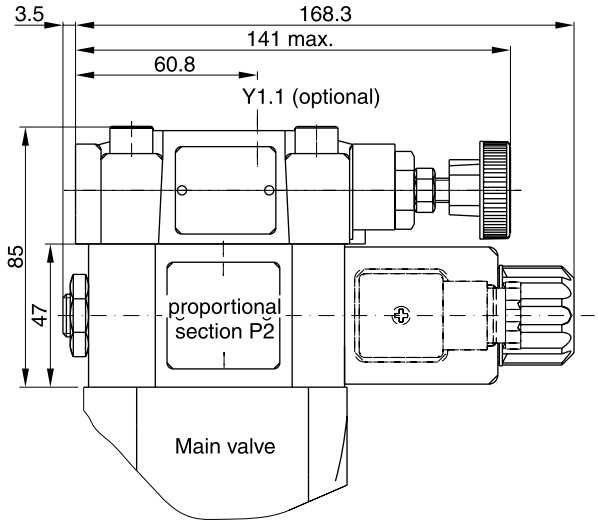
Port	Function	Port size		
		R5P06	R5P08	R5P10
A	Inlet/outlet	¾"	1"	1¼"
B2	Tank	¾"	1"	1¼"
X2	Internal pilot pressure	M3		
X2.2	External pilot pressure	G¼"		
Y1	Internal pilot drain	M3		
Y1.1	External pilot drain	G¼"		
M	Pressure gauge	G¼"		

R5P*P2

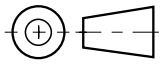


Drain line only external from the pilot head (Y1.1).
The pilot drain port must be connected to a stable low pressure tank line. Pressure variations in the drain port should be avoided.

Space for plug removal



Note
On initial start up and after long shut down periods bleed air from this plug.



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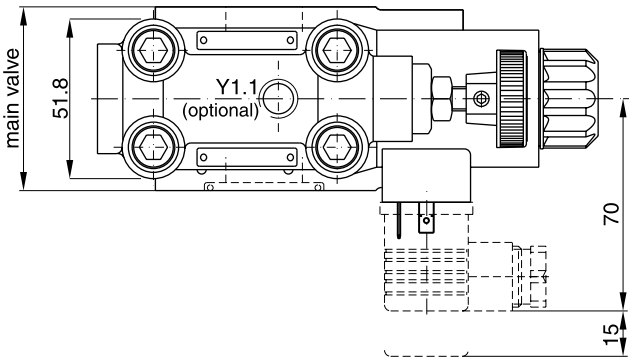
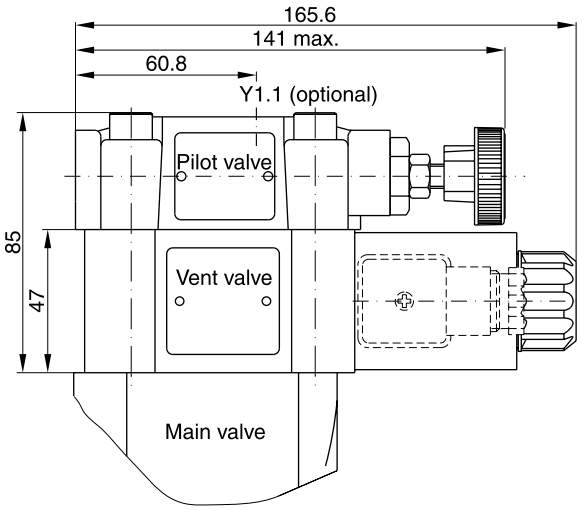
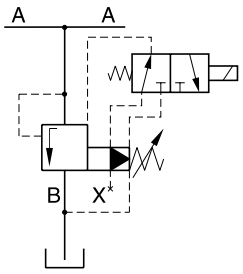
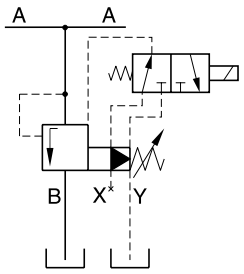
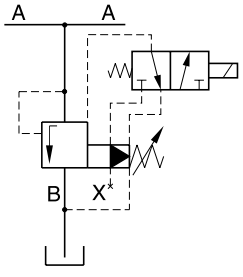
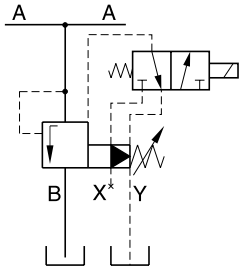
R5P with vent function

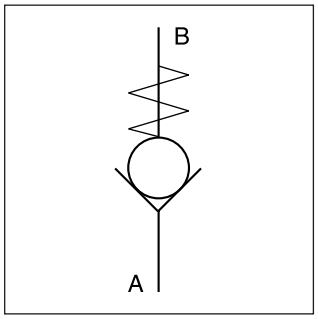


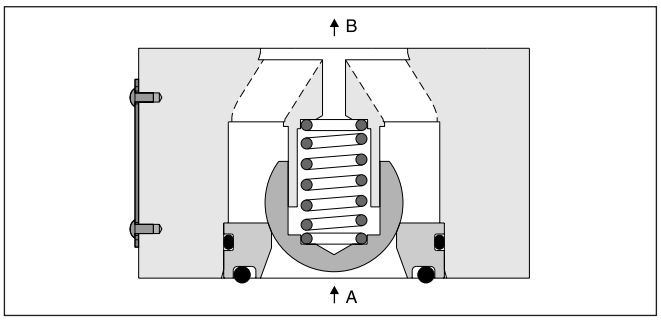


Code	Internal drain	External drain
11		
09		

Notes

Direct operated check valves series C5V provide free flow in one direction and block the flow in the counter direction.
The SAE flanges allow to mount the C5V directly on the pressure port of pumps for protection against pressure shocks from the system.





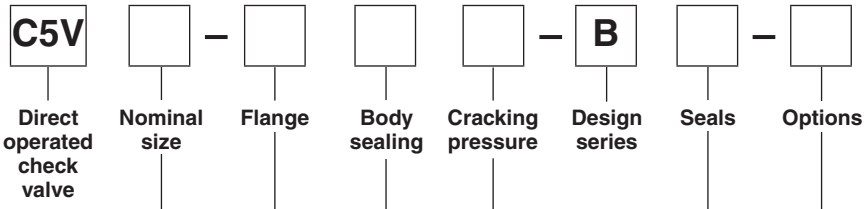
Features

- Direct operated check valve
- SAE61 and SAE62 flange
- 4 sizes (SAE ¾", 1", 1¼", 1½")
- 3 springs
- 5 different seal configurations

Technical data

General					
Size		**06 (¾")**	**08 (1")**	**10 (1¼")**	**12 (1½")**
Mounting		2-port inline flange (SAE61 and 62)			
Mounting position		unrestricted			
Ambient temperature	[°C]	-20...+50			
Weight	[kg]	0.6	0.9	1.3	1.8
Hydraulic					
Max. operating pressure	[bar]				
	SAE61	350	350	280	210
	SAE62	420	420	420	420
Pressure stages	[bar]				
Nominal flow	[l/min]	100	200	400	750
Fluid		Hydraulic oil as per DIN 51524...525			
Fluid temperature	[°C]	-20...+80			
Viscosity permitted	[cSt]/[mm²/s]	10...650			
Viscosity recommended	[cSt]/[mm²/s]	30			
Filtration		ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)			

9



Code	Port size
06	SAE ¾"
08	SAE 1"
10	SAE 1¼"
12[1)]	SAE 1½"

Code	Flange
3	SAE 61
6	SAE 62

Code	Body sealing
1	sealing for port A
2 [1)]	sealing for port A and X
3	without sealing
4	sealing for port B
5	sealing for port A and B

[1)] For combination with R5U unloading valve (SAE61 only)

Code	Option
omit	Standard
019[2)]	C5V10 for M14 mounting screws

[2)] For SAE62 only

Code	Seals
1	NBR
5	FPM

Code	Cracking press.
0	0.5 bar
1	1.0 bar
2	2.0 bar

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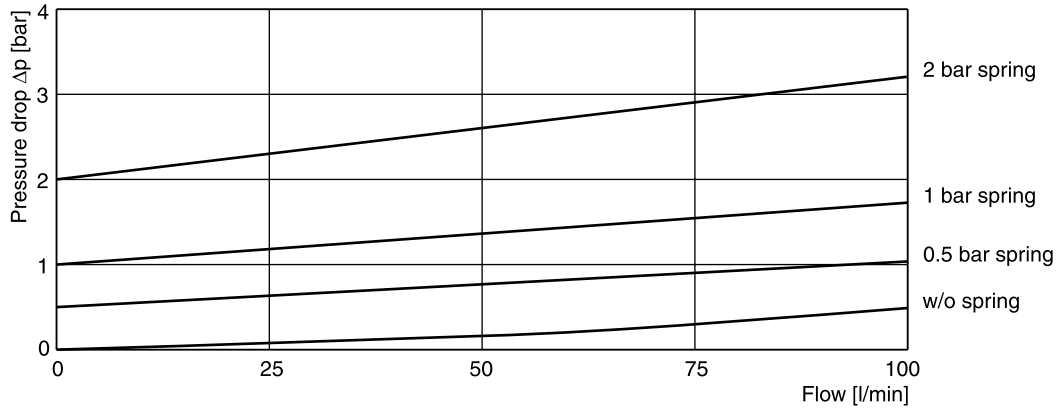
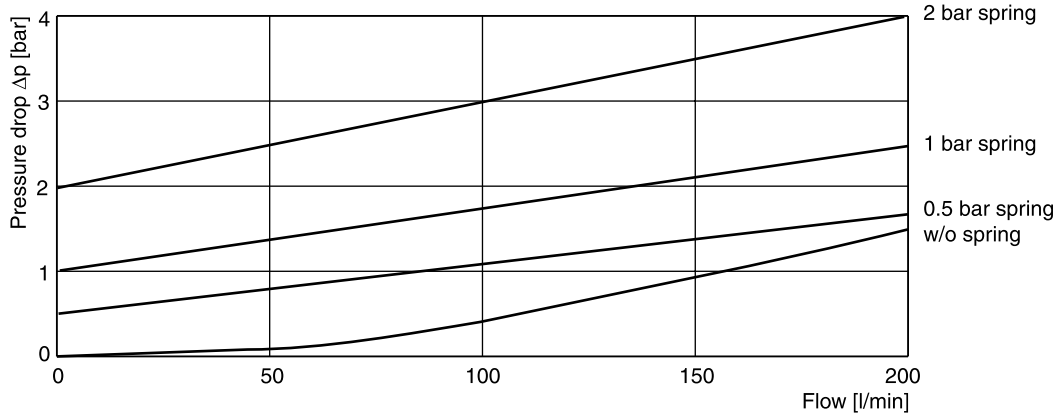
C5V06



C5V08

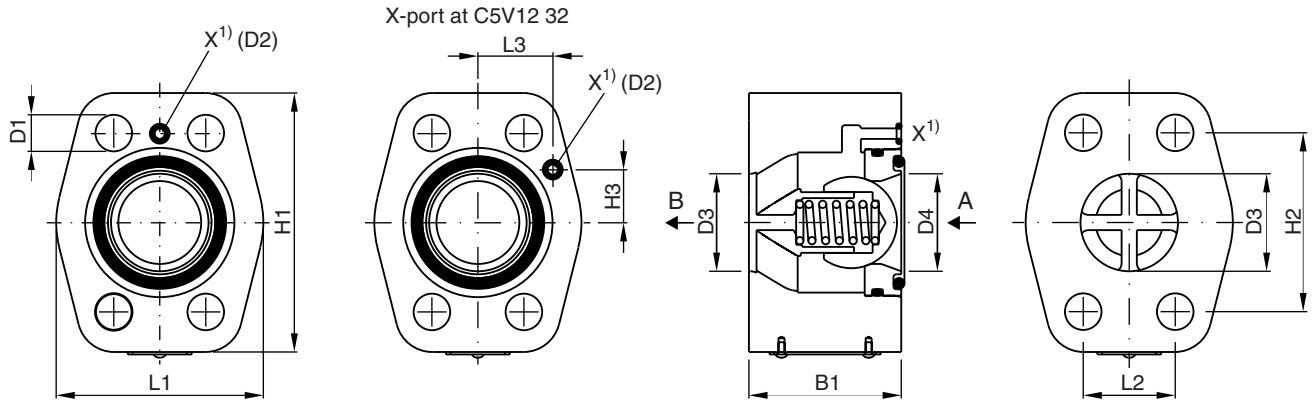


C5V10

C5V12

C5V_UK.INDD RH_19.12.07

Parker Hannifin GmbH & Co. KG
Hydraulic Controls Division
Kaarst, Germany



Position of O-ring seal according to ordering code.

1) X1 port for C5V*32* (for use with unloading valve R5U)

Series	Nominal Size		L1	L2	L3	H1	H2	H3	B1	D1	D2	D3 + 0.8	D4
C5V06	3/4“	SAE61	48	22.2	27.2	64	47.6	22.4	45	10.5	Ø3	19	19
		SAE62	48	23.8	27.2	64	50.8	22.4	45	10.5	-	19	19
C5V08	1“	SAE61	60	26.2	27.2	74	52.4	22.4	45	10.5	Ø3	25	25
		SAE62	60	27.8	27.2	74	57.2	22.4	45	12.5	-	25	25
C5V10	1 1/4“	SAE61	68	30.2	27.2	85	58.7	22.4	50	12.5	Ø3	32	32
		SAE62	68	31.8	27.2	85	66.7	22.4	50	13.5 2)	-	32	32
C5V12	1 1/2“	SAE61	80	35.7	27.2	104	69.8	22.4	50	13.5	Ø3	42	38
		SAE62	80	36.5	27.2	104	79.4	22.4	50	17	-	42	38

2) D1 = 15 at option code 019 for M14 mounting screws

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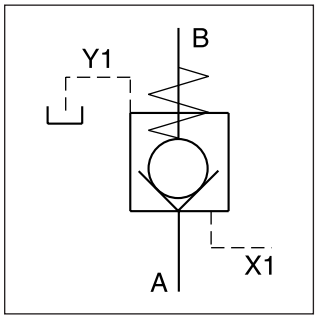
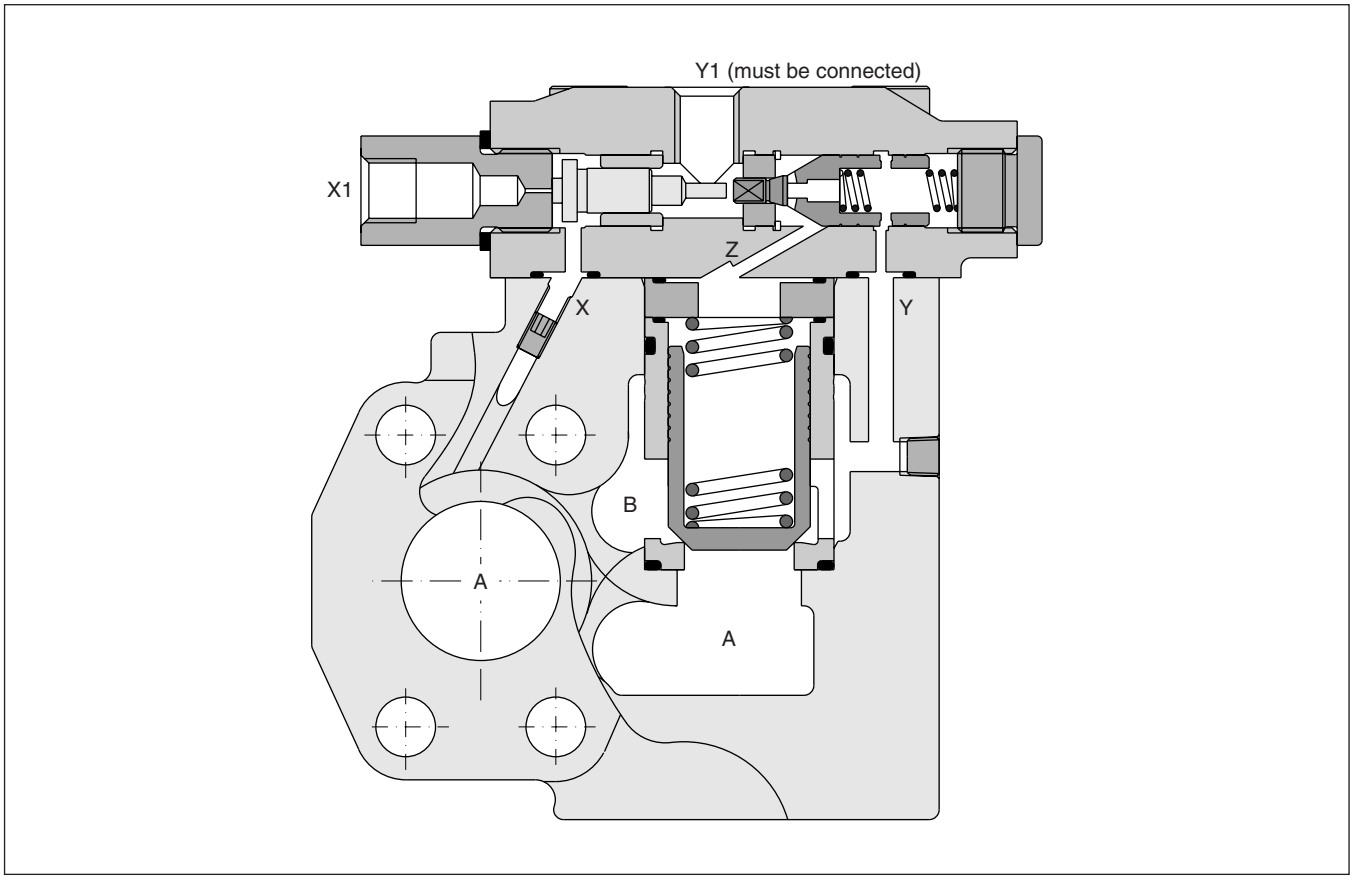
Pilot operated check valves series C5P have a similar design to the subplate mounted C4V series. The SAE flanges allow to mount directly on the flanges of actuators to achieve a very compact design.



Features

- Pilot operated check valve
- 2-port body with SAE61 flange
- 3 sizes (SAE ¾", 1", 1¼")
- 4 opening ratios



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Ordering code

C5P	□	–	□	8	□	□	–	A	□	–	□
Pilot operated check valve	Nominal size		SAE61 interface	Pilot ports X1 and Y1 = G¼"	Opening ratio	Cracking pressure		Design series	Seals		Options

Code	Nominal size
06	¾"
08	1"
10	1¼"

SAE61		
Code	Max. pressure	Size
4	280 bar	10 (SAE61)
5	350 bar	06/08 (SAE61)

Code	Opening ratio
1	1 : 1
3	3 : 1
8	8 : 1
9	10 : 1

Code	Seals
1	NBR
5	FPM

Code	Size	Flow A —> B	Flow B —> A
2	06	1.0 bar	1.5 bar
	08/10	1.0 bar	1.7 bar
4	06	4.0 bar	5.5 bar
	08/10	3.5 bar	6.0 bar
6	06	2.0 bar	3.0 bar
	08/10	2.2 bar	3.8 bar

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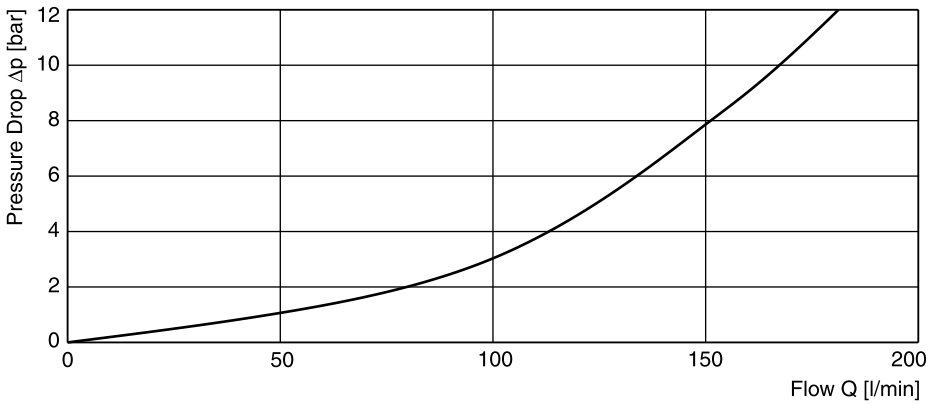
Technical data

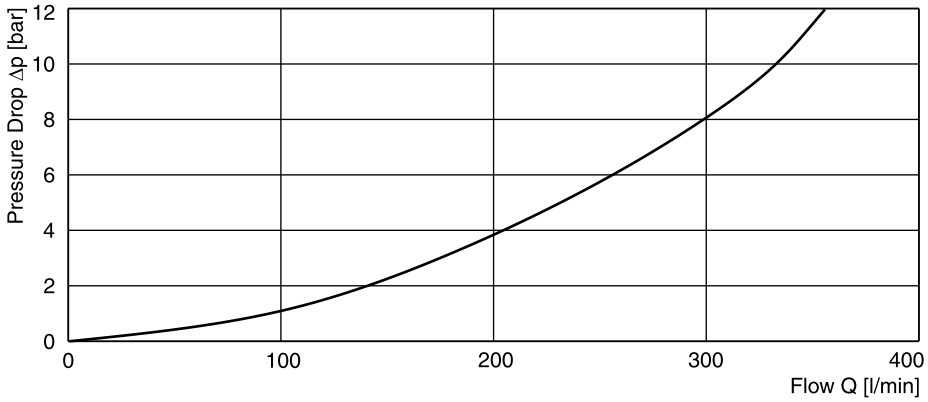
General				
Size		**06 (¾")**	**08 (1")**	**10 (1¼")**
Mounting		2-port inline flange (SAE61)		
Mounting position		unrestricted		
Ambient temperature	[°C]	-20...+50		
Weight	[kg]	3.9	4.4	5.7
Hydraulic				
Max. operating pressure	[bar]			
	Ports A, B	350	350	280
	Port Y1	30	30	30
Pressure stages	[bar]			
Nominal flow	[l/min]	180	360	600
Fluid		Hydraulic oil as per DIN 51524...525		
Fluid temperature	[°C]	-20...+80		
Viscosity permitted	[cSt]/[mm²/s]	10...650		
Viscosity recommended	[cSt]/[mm²/s]	30		
Filtration		ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)		

p/Q-performance curves

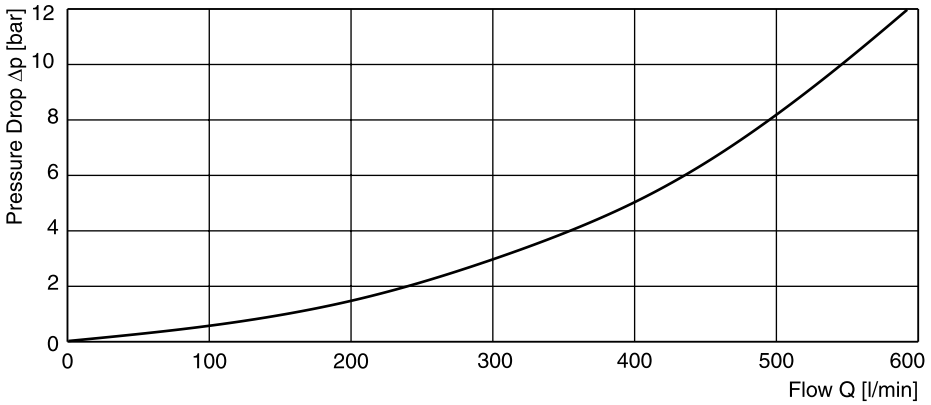
C5P06



C5P08



C5P10



Fluid viscosity 40cSt at 50°C

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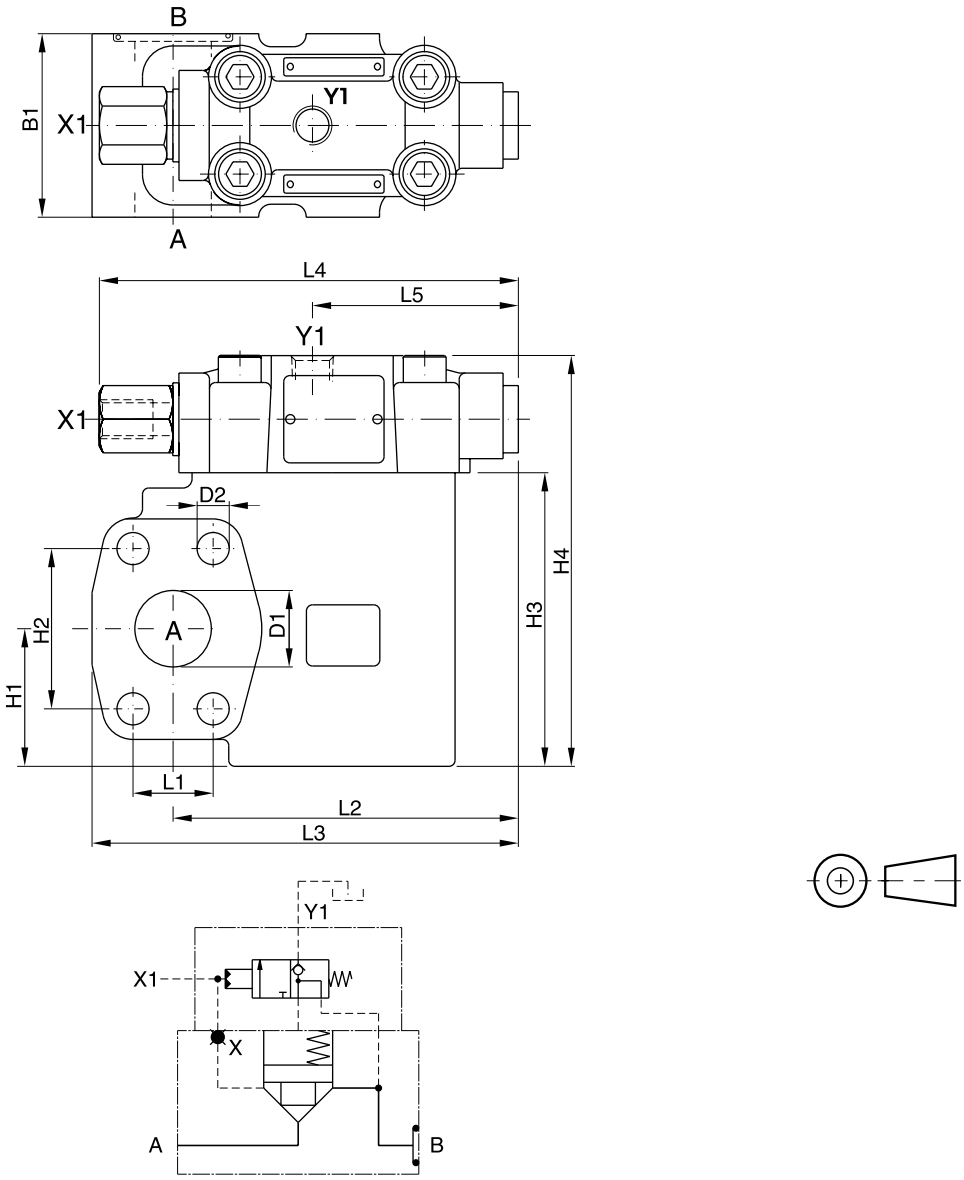


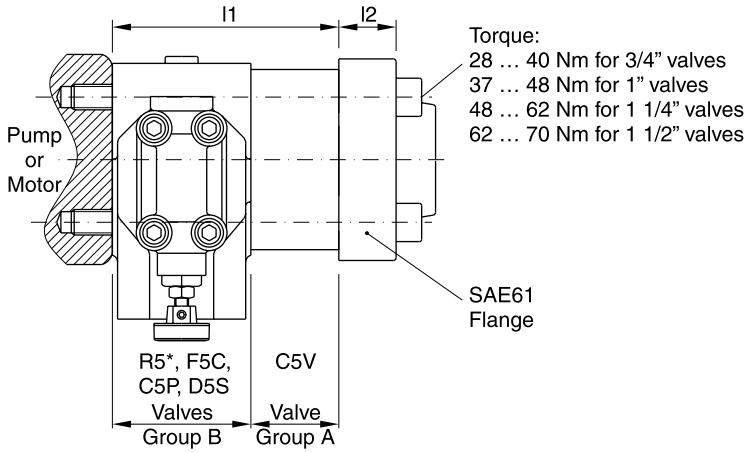
Dimensions

Type	L1	L2	L3	L4	L5	B1	H1	H2	H3	H4	D1	D2
C5P06	22.2	95.8	119.8	137	67.3	60	37	47.6	90	128	19	10.5
C5P08	26.2	112.9	139.4	137	67.3	60	45	52.4	96	134	25	10.5
C5P10	30.2	112.9	146.9	137	67.3	75	48	58.7	109	147	32	12.5

Ports

Port	Function	Port size		
		C5P06	C5P08	C5P10
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"		
Y1	External pilot drain	G¼"		

BK bolt kits for SAE61 valves



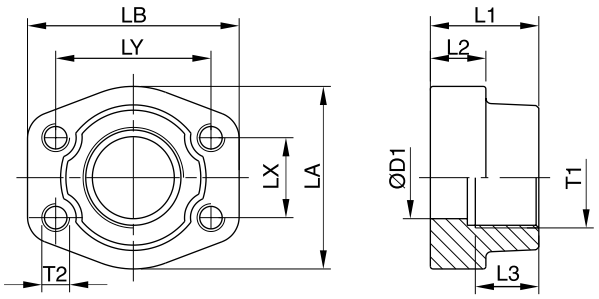
Port	Qty. of valves and group for each stack	l1	l2	UNC screws (12.9)	
				Dimension	Ordering code
¾" SAE61	1 x A	45	16...22	3/8"-16 x 3¼"	BK-358-16330-0
	1 x B	60		3/8"-16 x 3¾"	BK-358-16350-0
	(1 x A) + (1 x B)	105		3/8"-16 x 5½"	BK-358-16420-0
	2 x B	120		3/8"-16 x 6"	BK-358-16440-0
1" SAE61	1 x A	45	18...24	3/8"-16 x 3¼"	BK-358-16330-0
	1 x B	60		3/8"-16 x 3¾"	BK-358-16350-0
	(1 x A) + (1 x B)	105		3/8"-16 x 5¾"	BK-358-16430-0
	2 x B	120		3/8"-16 x 6¼"	BK-358-16450-0
1¼" SAE61	1 x A	50	21...25	7/16"-14 x 3½"	BK-358-18340-0
	1 x B	75		7/16"-14 x 4½"	BK-358-18380-0
	(1 x A) + (1 x B)	125		7/16"-14 x 6½"	BK-358-18460-0
	2 x B	150		7/16"-14 x 7½"	BK-358-18500-0
1½" SAE61	1 x A	50	25...27	1/2"-13 x 3¾"	BK-358-20350-0
	1 x B	80		1/2"-13 x 5"	BK-358-20400-0
	(1 x A) + (1 x B)	130		1/2"-13 x 6¾"	BK-358-20470-0
	2 x B	160		1/2"-13 x 8"	BK-358-20520-0

1 bolt kit contains 4 screws.

BK bolt kits for SAE62 valves

Series	Nominal size	l1	l2	Metric screws (12.9)	
				Dimension	Ordering code
C5V06	¾"	45	21	3/8"-16 x 3¼"	BK-358-16330-0
C5V08	1"	45	25	7/16"-14 x 3½"	BK-358-18340-0
C5V10	1¼"	50	27	1/2"-13 x 3¾"	BK-358-20350-0
R5V06-6	¾"	60	21	3/8"-16 x 3¾"	BK-358-16350-0
R5V08-6	1"	60	25	7/16"-14 x 3¾"	BK-358-18350-0
R5V10-6	1¼"	75	27	1/2"-13 x 4½"	BK-358-20380-0
R5V12-6	1½"	80	30	5/8"-11 x 5¼"	BK-358-24410-0

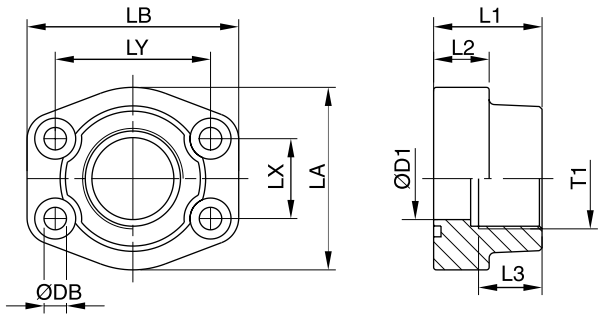
Inlet flange



Port size	Inlet flange									
	Order no. [1]	D1	L1	L2	L3	LA	LB	LX	LY	T2
SAE61										
G¾"	PCFF33GSU	19	36	18	19	49	66	22.3	47.6	3/8" UNC
G1"	PCFF34GSU	25	38	18	19	53	71	26.2	52.4	3/8" UNC
G1¼"	PCFF35GSU	31	41	21	22	69	80	30.2	58.7	7/16" UNC
G1½"	PCFF36GSU	38	44	25	24	77	94	35.7	69.9	1/2" UNC
SAE62										
G¾"	PCFF63GSU	19	36	19	22	53	71	23.8	50.8	3/8" UNC
G1"	PCFF64GSU	25	44	24	24	69	80	27.8	57.2	7/16" UNC
G1¼"	PCFF65GSU	31	44	27	25	77	94	31.8	66.6	1/2" UNC
G1½"	PCFF66GSU	38	51	30	28	89	106	36.5	79.3	5/8" UNC

[1] 4-bolt flange with UNC threads

Outlet and tank port flange

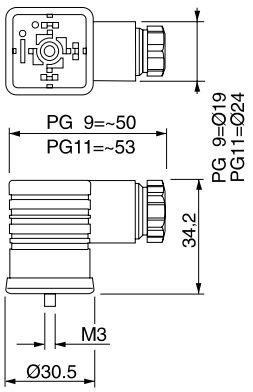


Port size	Outlet and tank port flange										
	Order no. [2]	D1	L1	L2	L3	LA	LB	LX	LY	DB	Srews
SAE61											
G¾"	PFF33GSU	19	36	18	18	49	66	22.3	47.6	10.5	3/8" x 1 1/2 UNC
G1"	PFF34GSU	25	38	18	20	53	71	26.2	52.4	10.5	3/8" x 1 1/2 UNC
G1¼"	PFF35GSU	31	41	21	22	69	80	30.2	58.7	11.5	7/16" x 1 1/2 UNC
G1½"	PFF36GSU	38	44	25	24	77	94	35.7	69.9	13.5	1/2" x 1 3/4 UNC
SAE62											
G¾"	PFF63GSU	19	36	19	18	53	71	23.8	50.8	10.5	3/8" x 1 1/2 UNC
G1"	PFF64GSU	25	44	24	20	69	80	27,8	57,2	11.5	7/16" x 1 1/2 UNC
G1¼"	PFF65GSU	31	44	27	22	77	94	31.8	66.6	15.0	1/2" x 1 3/4 UNC
G1½"	PFF66GSU	38	51	30	24	89	106	36.5	79.3	17.0	5/8" x 2 1/4 UNC

[2] 4-bolt flange including UNC screws and O-ring

Description	Threaded cable joint	Body colour coding	Figures switching	Order no.
Plug DIN 43650, design type AF, protection class IP 65 Voltages up to 250 V	PG 9	black, B grey, A	Fig. 1	**5001710** **5001711**
	PG11	black, B grey, A	Fig. 1	**5001716** **5001717**

Fig. 1



Other plugs on request

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Notes