

Rückschlagventil entsperrbar (230397) Clapet anti-retour piloté

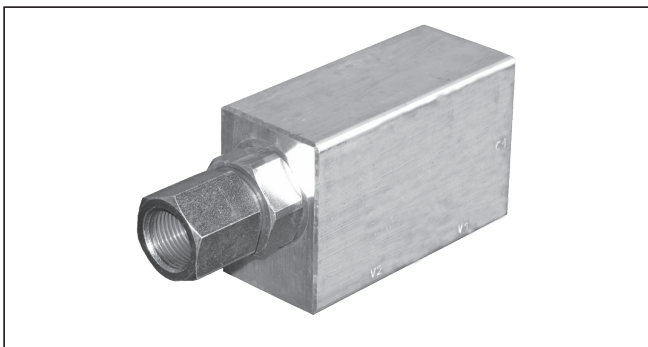
VSO-SE-DL

05.52.11 - X - 02 - Z

RE 18307-07

Edition: 09.2019

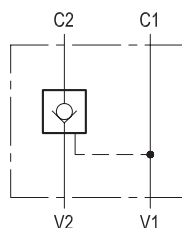
Replaces: 03.2016



Description

Flow is allowed to pass from V2 to C2 when pressure at V2 rises above the spring bias pressure and the poppet is pushed from its seat. The valve is normally closed (checked) from C2 to V2; when sufficient pilot pressure is present at V1-C1 the pilot piston acts to push the poppet from its seat and flow is allowed from C2 to V2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

In case of valve application in redundancy systems it is especially recommended to use version with sealed pilot piston.



Technical data

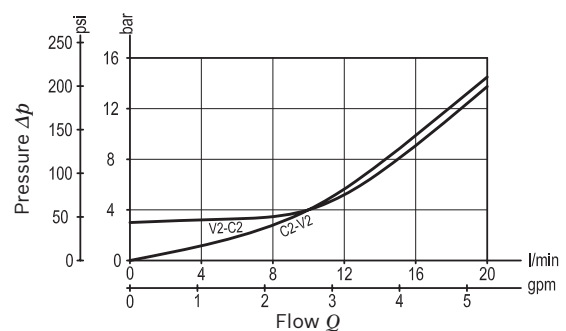
Operating pressure	up to 210 bar (3000 psi)
Max. flow	20 l/min. (5 gpm)
Pilot ratio	4 : 1
Weight	0.47 kg (1.04 lbs)
Manifold material	Aluminium

Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.

Fluid	Mineral oil (HL, HLP) according DIN 51524
Fluid temperature range	-30 °C to 100 (-22 to 212 °F)
Viscosity range	10 to 500 mm ² /s (cSt)
Recommended degree of fluid contamination	Class 19/17/14 according to ISO 4406
Other technical data	see data sheet 18350-50
The version with O-Ring and heavier spring is generally recommended.	

Note: for applications outside these parameters, please consult us.

Characteristic curve



Rückschlagventil entsperrbar (230397) Clapet anti-retour piloté

Ordering code

05.52.11	X	02	Z
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Pilot operated check, single

O-Ring on pilot piston

00 No O-Ring

10 With O-Ring

SPRINGS

Cracking pressure
bar (psi)

00	only for X=00	2 (29)
01	only for X=10	8 (116)

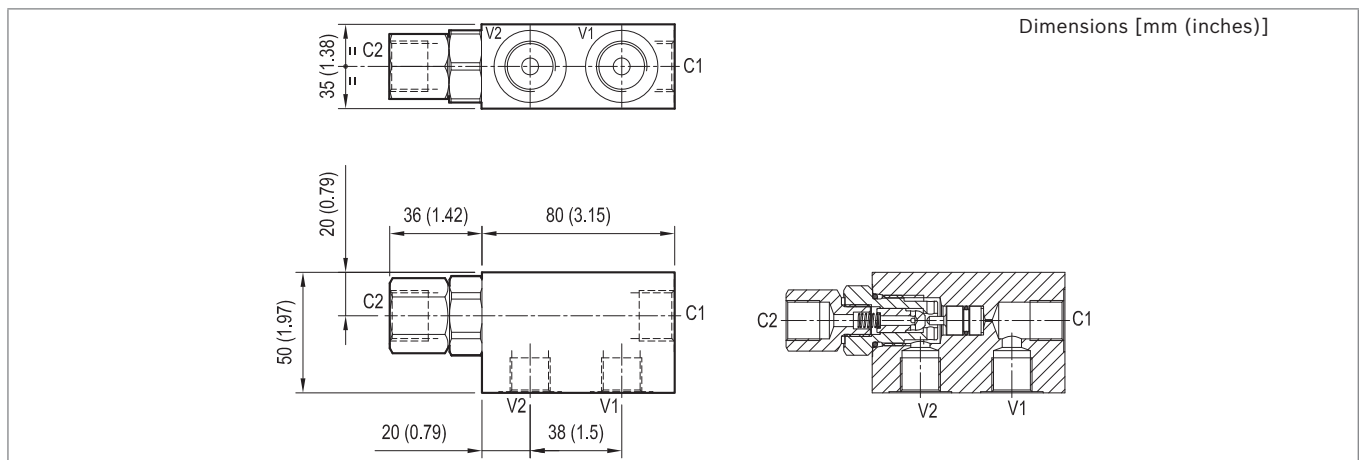
Port sizes	V1 - V2	C1 - C2	
02	G 3/8	G 3/8	

Preferred types

Type	Material number
055211000200000	R930002315
055211100201000	R930002320

Type	Material number

Dimensions



Rückschlagventil entsperrbar (230399) Clapet anti-retour piloté

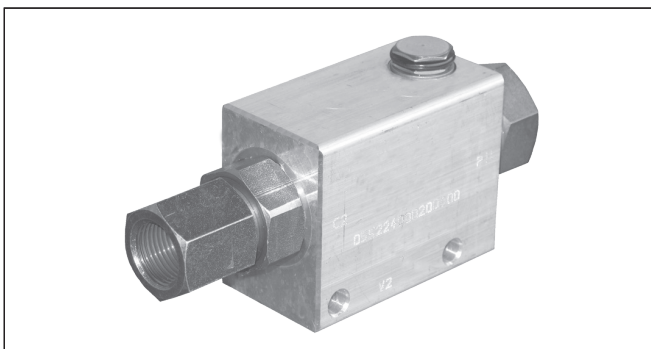
VSO-SE-PS

05.52.24 - X - Y - Z

RE 18307-11

Edition: 09.2019

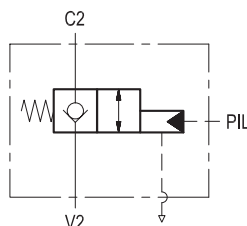
Replaces: 03.2016



Description

Flow is allowed to pass from V2 to C2 when pressure at V2 rises above the spring bias pressure and the poppet is pushed from its seat. The valve is normally closed (checked) from C2 to V2; when sufficient pilot pressure is present at Pil the pilot piston acts to push the poppet from its seat and flow is allowed from C2 to V2. The pilot piston is vented and the pilot pressure required to push the poppet from its seat is independent from any back-pressure at V2 port.

In case of valve application in redundancy systems it is especially recommended to use version with sealed pilot piston.



Technical data

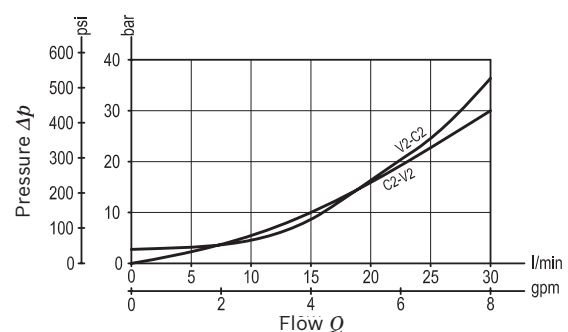
Operating pressure	up to 210 bar (3000 psi)
Max. flow	30 l/min. (8 gpm)
Pilot ratio	10 : 1
Weight	0.5 kg (1.1 lbs)
Manifold material	Aluminium
Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.	
Fluid	Mineral oil (HL, HLP) according DIN 51524
Fluid temperature range	-30 °C to 100 (-22 to 212 °F)
Viscosity range	10 to 500 mm ² /s (cSt)
Recommended degree of fluid contamination	Class 19/17/14 according to ISO 4406
Other technical data	see data sheet 18350-50

Whenever possible, it is recommended to remove the air bleed plug and to connect the port (G 1/8) to tank.

The version with heavier spring is generally recommended.

Note: for applications outside these parameters, please consult us.

Characteristic curve



Rückschlagventil entsperrbar (230399) Clapet anti-retour piloté

Ordering code

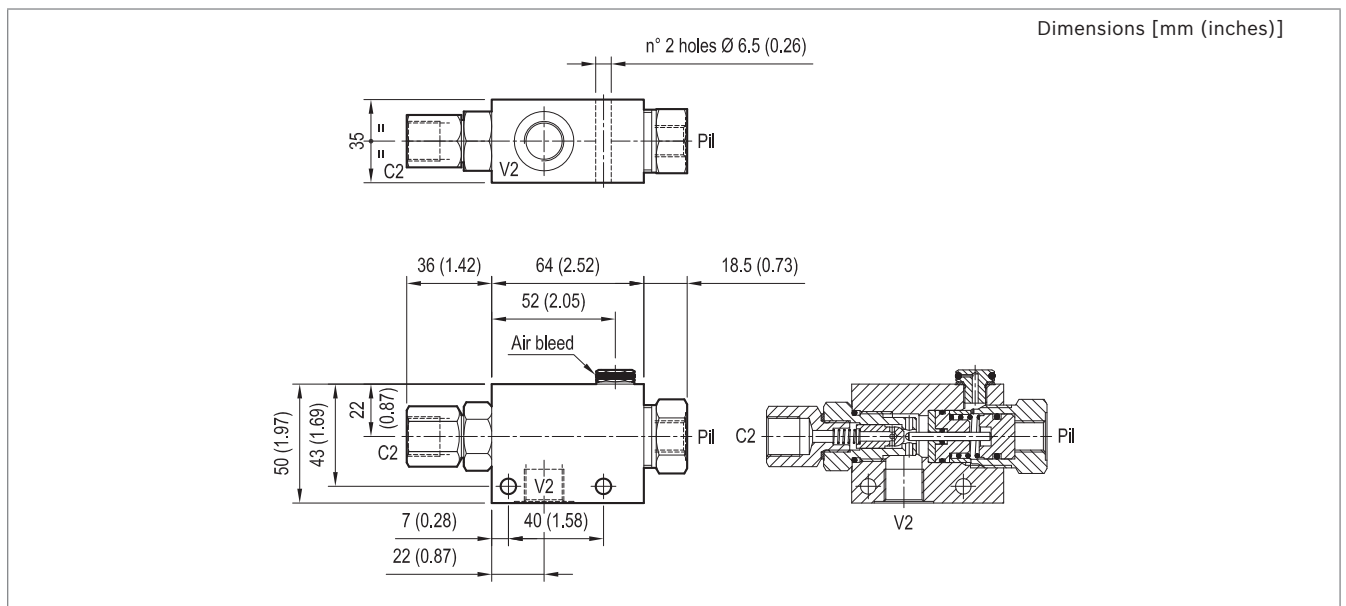
		05.52.24	X	Y	Z		
Pilot operated check, single vented pilot piston						SPRINGS	
O-Ring on pilot piston						Cracking pressure bar (psi)	
00 No O-Ring						00	2 (29)
						01	8 (116)
Port sizes	V2	C2	Pil				
02	G 3/8	G 3/8	G 1/4				

Preferred types

Type	Material number
055224000200000	R930002335
055224000201000	R930002336

Type	Material number

Dimensions



Rückschlagventil entsperrbar (230400) Clapet anti-retour piloté

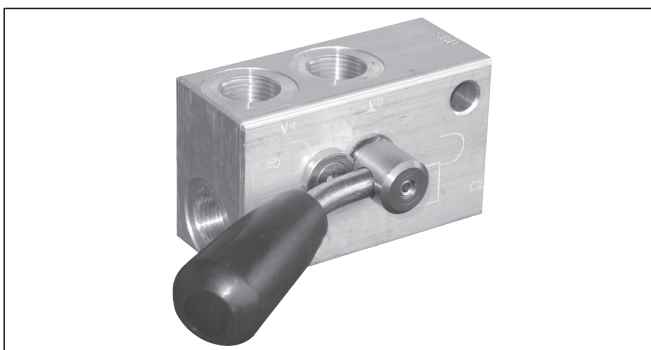
VSO-SE-DL-SX

05.52.26 - X - Y - Z

RE 18307-12

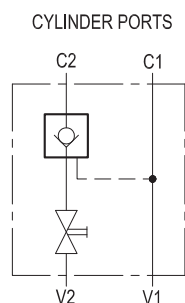
Edition: 09.2019

Replaces: 03.2016



Description

A tap, manually controlled by the operator, allows inlet flow from V2 to pass through the check valve to C2: as a result, the motion of the actuator (typically the extension and positioning of an outrigger) happens under the operator's direct sight. The valve is normally closed (checked) and virtually leak-free from C2 to V2 in order to prevent reverse motion. Flow outlet from C2 to V2 and reverse motion (i.e. outrigger retraction or lifting up) is possible with manual tap open and if sufficient pilot pressure is present at V1-C1 so that the pilot piston may push the poppet from its seat. In case of valve application in redundancy systems it is especially recommended to use version with sealed pilot piston.

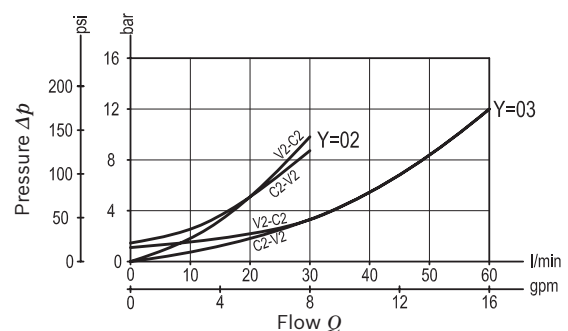


Technical data

Operating pressure	up to 210 bar (3000 psi)
Max. flow	see performance graph
Weight	see "Dimensions"
Manifold material	Aluminium
Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.	
Fluid	Mineral oil (HL, HLP) according DIN 51524
Fluid temperature range	-30 °C to 100 (-22 to 212 °F)
Viscosity range	5 to 800 mm ² /s (cSt)
Recommended degree of fluid contamination	Class 19/17/14 according to ISO 4406
Other technical data	see data sheet 18350-50

Note: for applications outside these parameters, please consult us.

Characteristic curve



Rückschlagventil entsperrbar (230400) Clapet anti-retour piloté

Ordering code

05.52.26	X	Y	Z
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Pilot operated check, single manual shut-off

O-Ring on pilot piston

10 With O-Ring

SPRINGS

Cracking pressure
bar (psi)

00	only for Y=02	1.6 (23)
	only for Y=03	0.6 (9)

Port sizes	V1 - V2	C1 - C2	
02	G 3/8	G 3/8	
03	G 1/2	G 1/2	

Preferred types

Type	Material number	Type	Material number
05522610020000C	R930002338		
05522610030000B	R930002342		

Dimensions

n° 1 hole Ø F
only for Y=02 version

Open

Closed

Dimensions [mm (inches)]

[mm (inches)]

35	40,5	-	35	40,5	90,5	85	-	30	50	65	-	82	G 1/2	3,6 : 1	1
(1,38)	(1,6)		(1,38)	(1,6)	(3,56)	(3,35)		(1,18)	(1,97)	(2,56)		(3,23)			(2,2)
35	40,5	10	28	41,5	82,5	85	10	22	37	50	9	82	G 3/8	5,4 : 1	0,6
(1,38)	(1,6)	(0,39)	(1,1)	(1,63)	(3,25)	(3,35)	(0,39)	(0,87)	(1,46)	(1,97)	(0,35)	(3,23)			(1,32)
S	L4	L3	L2	L1	L	I	H3	H2	H1	H	F	R	Y	Pilot ratio	Weight
															kg (lbs)

Rückschlagventil entsperrbar (230401) Clapet anti-retour piloté

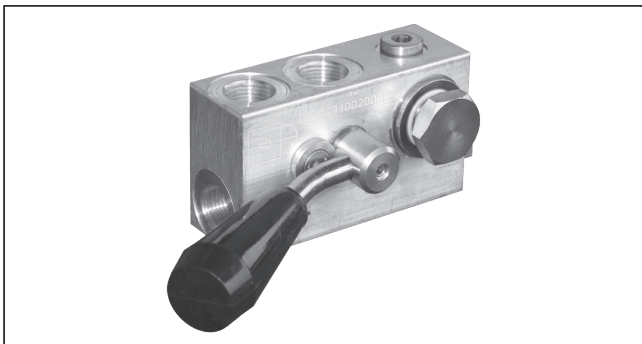
VSO-SE-DL-FCV-SX

05.52 - K - X - Y - Z

RE 18307-14

Edition: 09.2019

Replaces: 03.2016



Description

A tap, manually controlled by the operator, allows inlet flow from V2 to pass through the check valve to C2: as a result, the motion of the actuator (typically the extension and positioning of an outrigger) happens under the operator's direct sight. The valve is normally closed (checked) and virtually leak-free from C2 to V2 in order to prevent reverse motion. Flow outlet from C2 to V2 and reverse motion (i.e. outrigger retraction or lifting up) is possible with manual tap open and if sufficient pilot pressure is present at V1-C1 so that the pilot piston may push the poppet from its seat. For compact assembly, the C2 port is banjo bolted directly onto the actuator port.

In case of valve application in redundancy systems it is especially recommended to use version with sealed pilot piston.

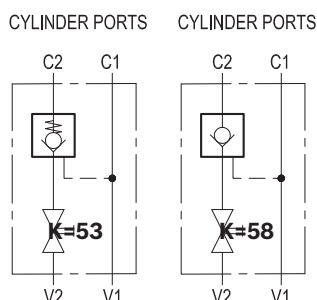
Technical data

Operating pressure	up to 210 bar (3000 psi)
Max. flow	30 l/min. (8 gpm)
Pilot ratio	5.4 : 1
Installation torque	50 - 55 Nm (37 - 41 ft-lbs)
Weight	0.6 kg (1.32 lbs)
Manifold material	Aluminium

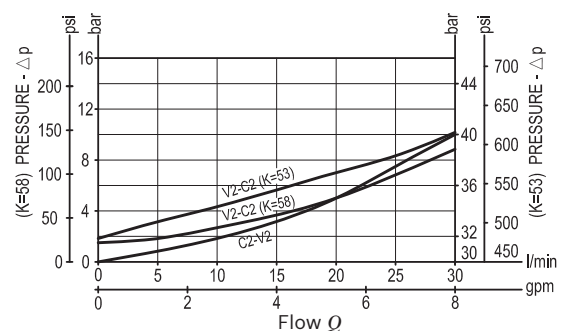
Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.

Fluid	Mineral oil (HL, HLP) according DIN 51524
Fluid temperature range	-30 °C to 100 (-22 to 212 °F)
Viscosity range	5 to 800 mm ² /s (cSt)
Recommended degree of fluid contamination	Class 19/17/14 according to ISO 4406
Other technical data	see data sheet 18350-50

Note: for applications outside these parameters, please consult us.



Characteristic curve



Rückschlagventil entsperrbar (230403) Clapet anti-retour piloté

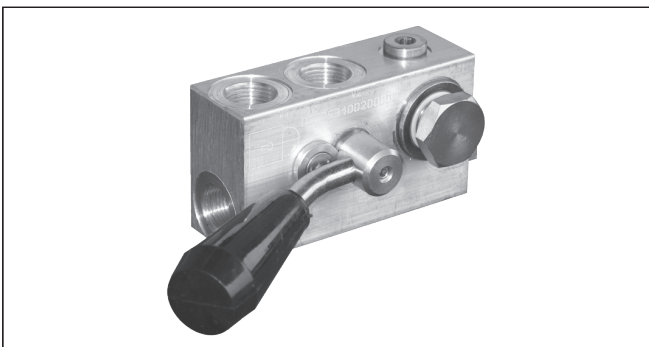
VSO-SE-DLFCV-SX

05.52 - K - X - Y - Z

RE 18307-14

Edition: 09.2019

Replaces: 03.2016



Description

A tap, manually controlled by the operator, allows inlet flow from V2 to pass through the check valve to C2: as a result, the motion of the actuator (typically the extension and positioning of an outrigger) happens under the operator's direct sight. The valve is normally closed (checked) and virtually leak-free from C2 to V2 in order to prevent reverse motion. Flow outlet from C2 to V2 and reverse motion (i.e. outrigger retraction or lifting up) is possible with manual tap open and if sufficient pilot pressure is present at V1-C1 so that the pilot piston may push the poppet from its seat. For compact assembly, the C2 port is banjo bolted directly onto the actuator port.

In case of valve application in redundancy systems it is especially recommended to use version with sealed pilot piston.

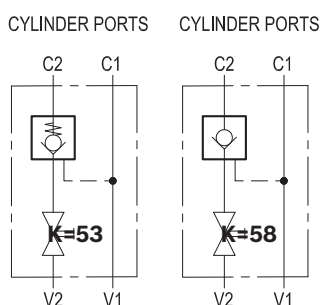
Technical data

Operating pressure	up to 210 bar (3000 psi)
Max. flow	30 l/min. (8 gpm)
Pilot ratio	5.4 : 1
Installation torque	50 - 55 Nm (37 - 41 ft-lbs)
Weight	0.6 kg (1.32 lbs)
Manifold material	Aluminium

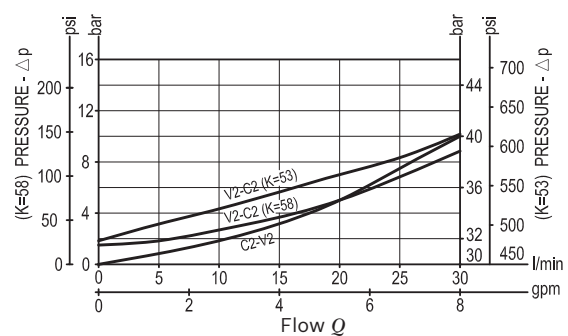
Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.

Fluid	Mineral oil (HL, HLP) according DIN 51524
Fluid temperature range	-30 °C to 100 (-22 to 212 °F)
Viscosity range	5 to 800 mm ² /s (cSt)
Recommended degree of fluid contamination	Class 19/17/14 according to ISO 4406
Other technical data	see data sheet 18350-50

Note: for applications outside these parameters, please consult us.



Characteristic curve



Rückschlagventil entsperrbar (230403) Clapet anti-retour piloté

Ordering code

05.52	K	X	Y	Z
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Pilot operated check, single manual shut-off

53 see hydraulic schemes

58

O-Ring on pilot piston

10 With O-Ring

SPRINGS

Cracking pressure
bar (psi)

00	for K=58	1.6 (23)
	for K=53	32 (464)

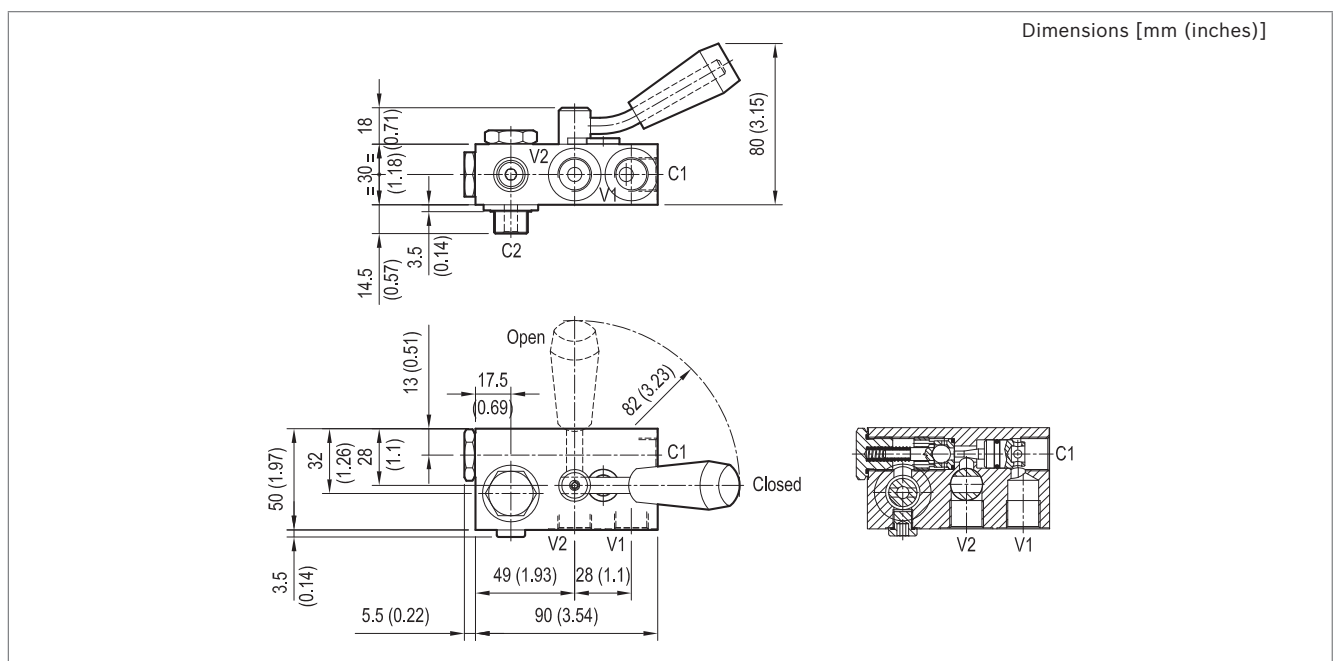
Port sizes	V1 - V2	C1 - C2
02	G 3/8	G 3/8

Preferred types

Type	Material number
055253100200000	R930002363
055258100200000	R930002367

Type	Material number

Dimensions



Rückschlagventil entsperrbar (230405) Clapet anti-retour piloté

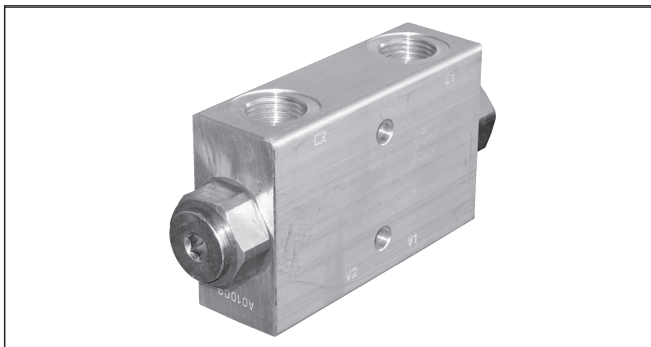
VSO-DE

05.53.01 - X - 03 - Z

RE 18307-17

Edition: 09.2019

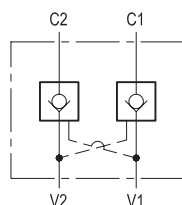
Replaces: 03.2016



Description

Flow is allowed to pass in one direction (V1 to C1 or V2 to C2), then the valve remains closed (checked) in both reverse directions (C1 to V1 or C2 to V2) in order to hold and lock in position the cylinder or other actuators; reverse flow is possible only when sufficient pilot pressure is applied at V2 or V1, which act as cross connected pilot ports, and the pilot piston lifts the poppet from its seat overcoming cylinder port pressure.

In case of valve application in redundancy systems it is especially recommended to use version with sealed pilot piston.

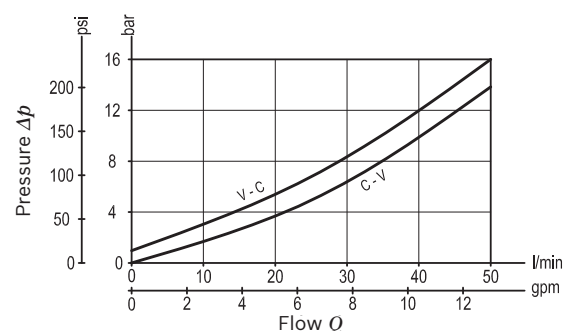


Technical data

Operating pressure	up to 210 bar (3000 psi)
Max. flow	50 l/min. (13 gpm)
Weight	1.06 kg (2.34 lbs)
Manifold material	Aluminium
Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.	
Fluid	Mineral oil (HL, HLP) according DIN 51524
Fluid temperature range	-30 °C to 100 (-22 to 212 °F)
Viscosity range	10 to 500 mm ² /s (cSt)
Recommended degree of fluid contamination	Class 19/17/14 according to ISO 4406
Other technical data	see data sheet 18350-50
The version with O-Ring and heavier spring is generally recommended.	

Note: for applications outside these parameters, please consult us.

Characteristic curve



Rückschlagventil entsperrbar (230405) Clapet anti-retour piloté

Ordering code

05.53.01	X	03	Z
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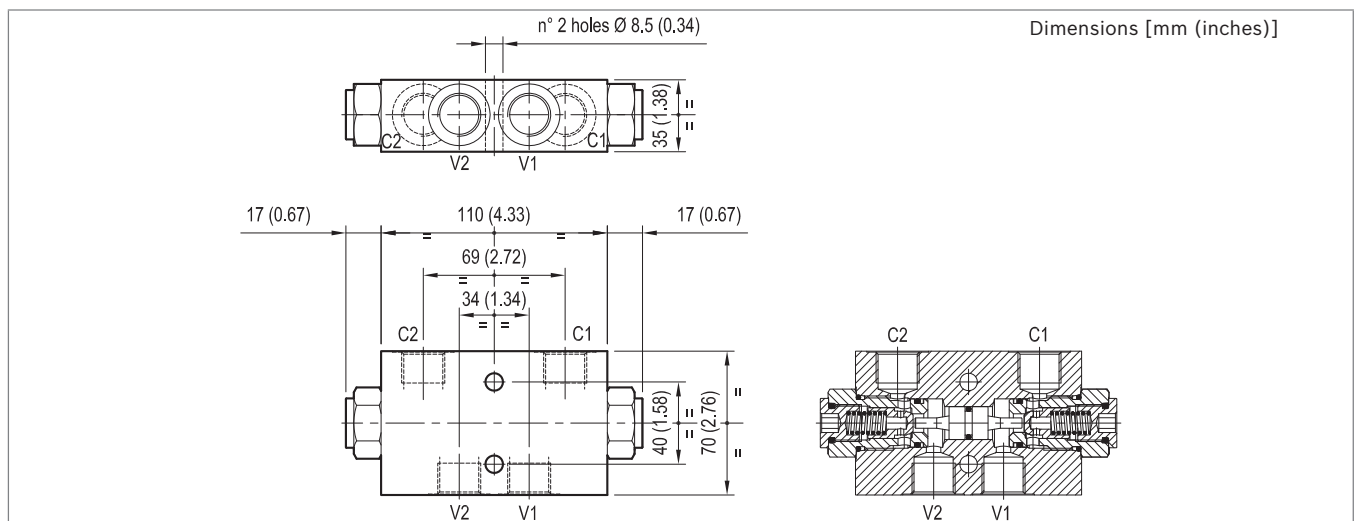
Pilot operated check, dual				SPRINGS	
O-Ring on pilot piston	Pilot ratio			Cracking pressure bar (psi)	
00 No O-Ring	3.2 : 1	00	only for X=00	1 (15)	
10 With O-Ring	3.2 : 1	01	only for X=00, X=10 and X=25	8 (116)	
25 With O-Ring	6 : 1				
Port sizes	V1 - V2	C1 - C2			
03	G 1/2	G 1/2			

Preferred types

Type	Material number
055301000300000	R930002391
055301000301000	R930002392

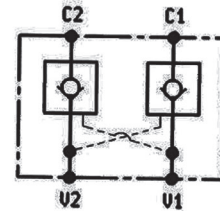
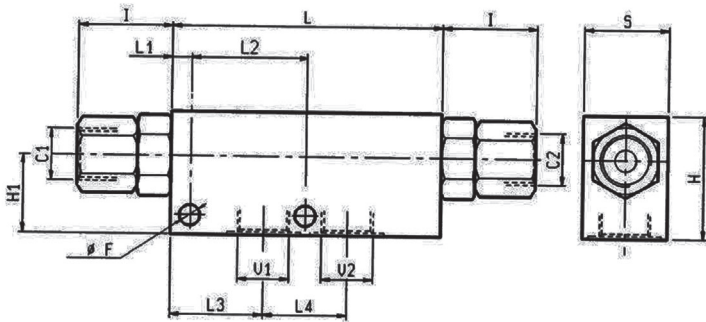
Type	Material number
055301100301000	R930002401
055301250301000	R930002404

Dimensions



Rückschlagventil entsperrbar (230406) Clapet anti-retour piloté

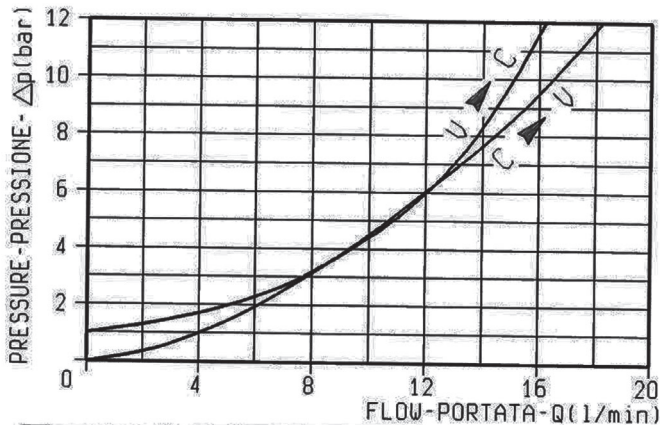
VSD-DE-L-38-MP-05



Pressione di lavoro max 350 bar / Portata max vedi diagramma

Max working pressure 350 bar / Flow see performance graph

35	38	21	34	6	80	36	6	24	40	6,5					4:1	0,70
S	L4	L3	L2	L1	L	I	H2	H1	H	F					rapp.di pilot. pilot ratio	peso kg weight kg



GUARNIZIONE SUL PISTONE DI PILOTAGGIO O-RING ON PILOT PISTON
senza guarnizione no o-ring

MOLLE - SPRINGS	
Inizio apertura (bar) Cracking pressure (bar)	Codice ordinazione Ordering code
8	03.51.01.051

ATTACCHI / PORT SIZE	
U1 - U2 - C1 - C2	
3/8" BSPP	

Rückschlagventil entsperrbar (230407) Clapet anti-retour piloté

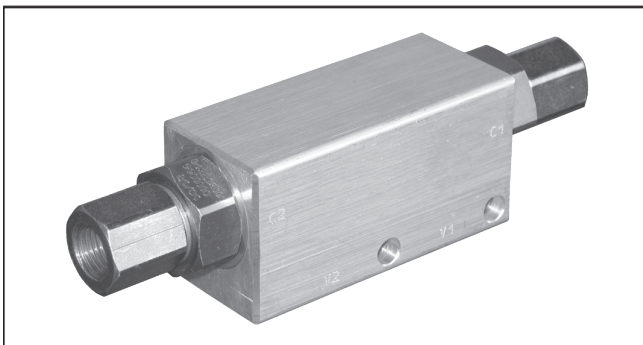
VSO-DE-DL

05.53.03 - X - 09 - Z

RE 18307-21

Edition: 09.2019

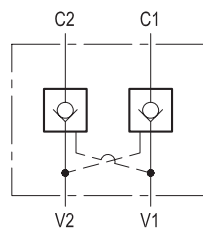
Replaces: 03.2016



Description

Flow is allowed to pass in one direction (V1 to C1 or V2 to C2), then the valve remains closed (checked) in both reverse directions (C1 to V1 or C2 to V2) in order to hold and lock in position the cylinder or other actuators; reverse flow is possible only when sufficient pilot pressure is applied at V2 or V1, which act as cross connected pilot ports, and the pilot piston lifts the poppet from its seat overcoming cylinder port pressure.

In case of valve application in redundancy systems it is especially recommended to use version with sealed pilot piston.

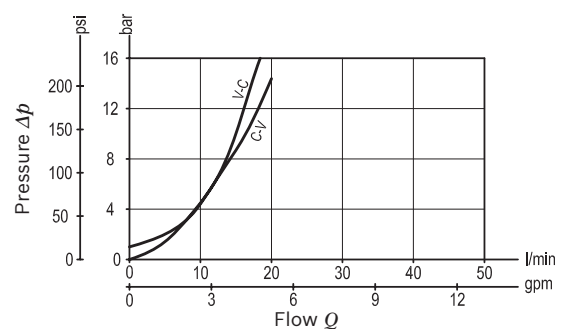


Technical data

Max operating pressure port C2-C1	350 bar (5000 psi)
Max operating pressure port V2-V1	210 bar (3000 psi)
Max. flow	20 l/min. (5 gpm)
Weight	0.7 kg (1.5 lbs)
Manifold material	Aluminium
Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.	
Fluid	Mineral oil (HL, HLP) according DIN 51524
Fluid temperature range	-30 °C to 100 (-22 to 212 °F)
Viscosity range	10 to 500 mm ² /s (cSt)
Recommended degree of fluid contamination	Class 19/17/14 according to ISO 4406
Other technical data	see data sheet 18350-50
The version with O-Ring and heavier spring is generally recommended.	

Note: for applications outside these parameters, please consult us.

Characteristic curve



Rückschlagventil entsperrbar (230407) Clapet anti-retour piloté

Ordering code

05.53.03	X	09	Z
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Pilot operated check, dual

O-Ring on pilot piston	Pilot ratio
00 No O-Ring	4 : 1
10 With O-Ring	4 : 1
37 No O-Ring	9 : 1

Port sizes	V1 - V2	C1 - C2
09	G 1/4	G 1/4

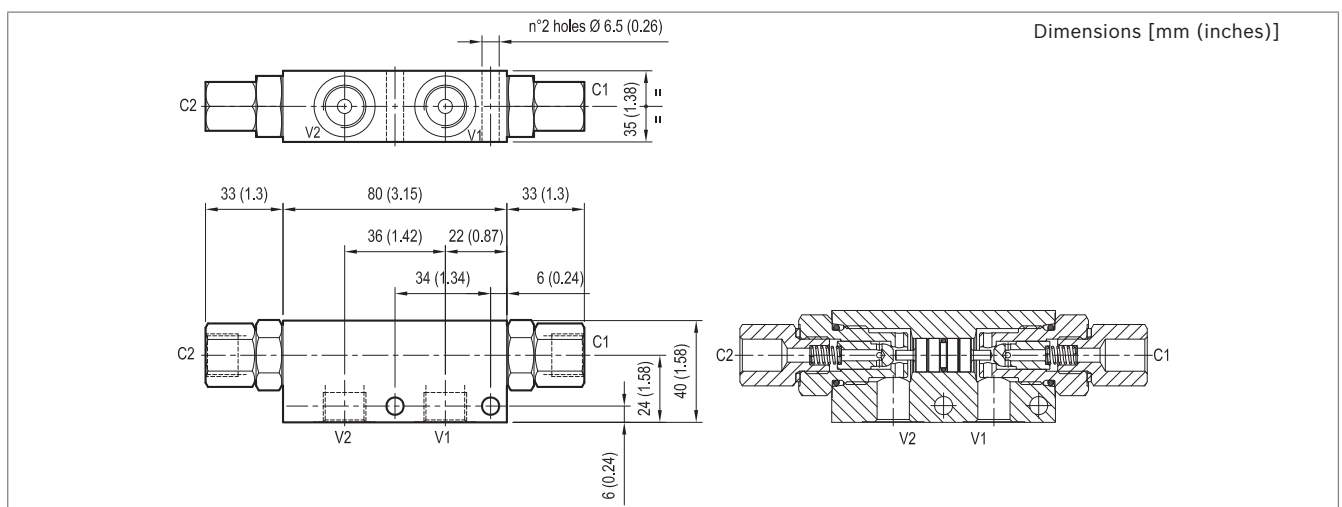
		SPRINGS
		Cracking pressure bar (psi)
00	only for X=00 and X=37	3 (44)
01	only for X=00, X=10 and X=37	8 (116)

Preferred types

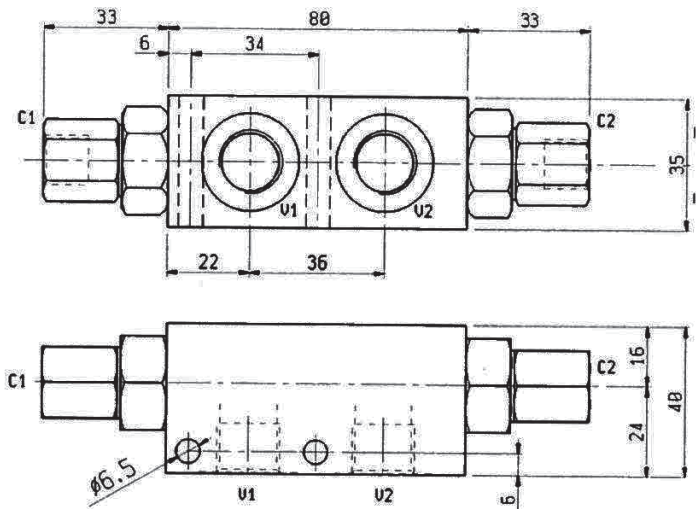
Type	Material number
055303000900000	R930002424
055303370900000	R930002437
055303100901000	R930002433

Type	Material number
055303370901000	R930002438
055303000901000	R930002425

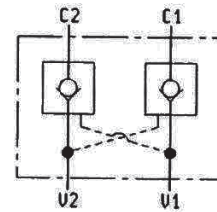
Dimensions



Rückschlagventil entsperrbar (230408) Clapet anti-retour piloté



VSD-DE-L-38-MP-9:1

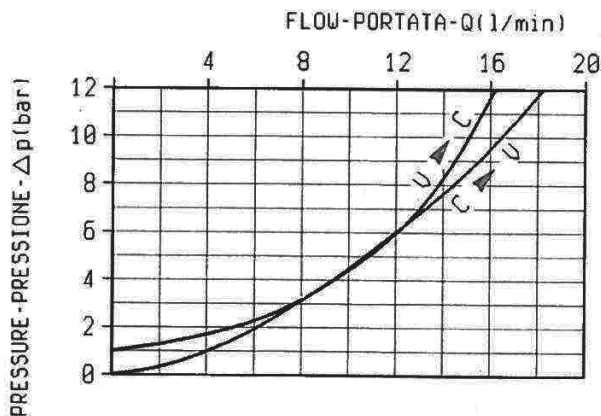


Rapporto di pilotaggio 9 : 1

Pilot ratio 9 : 1

Pressione di lavoro max 350 bar / Portata max vedi diagramma

Max working pressure 350 bar / Flow see performance graph

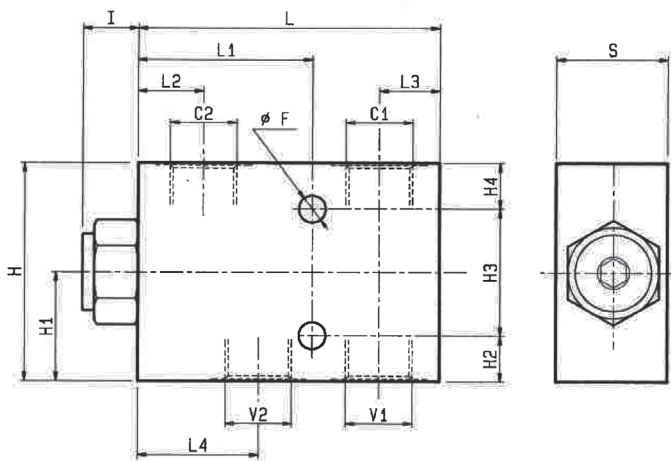


GUARNIZIONE SUL PISTONE DI PILOTAGGIO O-RING ON PILOT PISTON	
senza guarnizione without ring	

MOLLE - SPRINGS			
Inizio apertura (bar) Cracking pressure (bar)		Codice ordinazione Ordering code	
8		03.51.01.293	

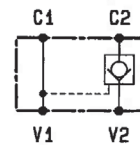
ATTACCHI / PORT SIZE	
U1 - U2 - C1 - C2	
G 3/8	

Rückschlagventil entsperrbar (230438) Clapet anti-retour piloté



Aluminium body with cartridge, poppet type, check valves.
They have been designed with internal pilot line for easy and proper installation.
Dirt tolerant.
Leak proof seat design.
The version with Z = 01 in part no. (heavier spring) is generally recommended.
WARNING: For correct operation the pilot ratio must be chosen as function of back pressure in the return line and of cylinder ratio.

VSO-SE-L



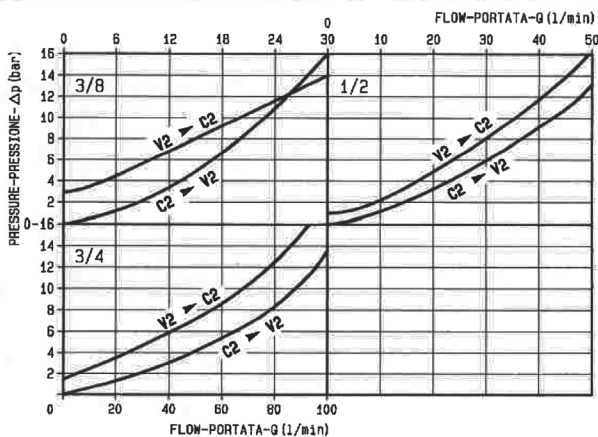
NOTA: Per la dimensione 1/2" e' disponibile anche il rapporto di pilotaggio 6,0:1 X=25.

Pressione di lavoro max 350 bar / Portata max vedi diagramma

WARNING: Pilot ratio 6,0:1 is also available for 1/2" size code X=25.

Max working pressure 350 bar / Flow see performance graph

50	57,5	22	30	80	135	24,5	19,5	50	19,5	44,5	89	10,5	3/4"	4:1	1,85
35	38	19	20,5	55	95	17,5	14,5	40	14,5	34,5	69	8,5	1/2"	3,2:1	0,72
35	32	17	17	48	81	8,5	9,5	40	9,5	29,5	59	6,5	3/8"	7:1	0,64
S	L4	L3	L2	L1	L	I	H4	H3	H2	H1	H	F	Y	papp.d3.pilot. pilot ratio	peso kg weight kg



X	GUARNIZIONE SUL PISTONE DI PILOTTAGGIO O-RING ON PILOT PISTON
00	senza guarnizione no o-ring
10	con guarnizione with o-ring

Z		MOLLE - SPRINGS	
		Inizio apertura (bar) Cracking pressure (bar)	Codice ordinazione Ordering code
3/8"	00	3	03.51.01.024
	01	8	03.51.01.051
1/2"	00	1	03.51.01.029
	01	8	03.51.01.058
3/4"	00	1,5	03.51.01.008
	01	8	03.51.01.154

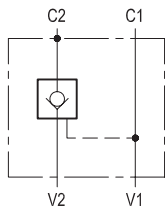
Y		ATTACCHI / PORT SIZE
		V1 - V2 - C1 - C2
97	3/8" BSPP	
03	1/2" BSPP	
04	3/4" BSPP	

Rückschlagventil entsperrbar (230439) Clapet anti-retour piloté

RE 18307-05/04.10 1/2
Replaces: RE 00171/02.07

VSO-SE-FC1

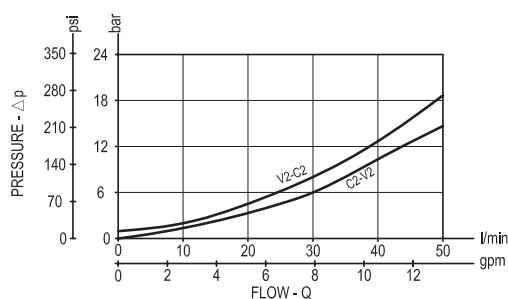
05.52.02 - X - Y - Z



Description

Flow is allowed to pass from V2 to C2 when pressure at V2 rises above the spring bias pressure and the poppet is pushed from its seat. The valve is normally closed (checked) from C2 to V2; when sufficient pilot pressure is present at V1-C1 the pilot piston acts to push the poppet from its seat and flow is allowed from C2 to V2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition. For better safety and compact assembly, the C2 port is flanged (gasket mounted) directly on the actuator.

Performance



Technical data

Hydraulic

Operating pressure	bar (psi)	up to 210 (3000)
Max. flow	l/min (gpm)	50 (13)

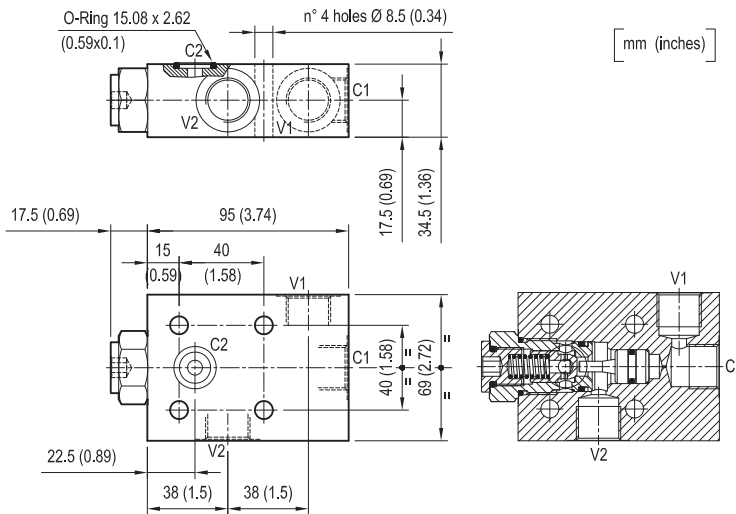
The version with O-Ring and heavier spring is generally recommended.

General

Manifold material	Aluminium	
Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.		
Weight	kg (lbs)	0.72 (1.59)
Fluid temperature range	°C (°F)	between -30 (-22) and +100 (212)
Other technical data	see data sheet RE 18350-50	

Rückschlagventil entsperrbar (230439) Clapet anti-retour piloté

Dimensions



Ordering code

05.52.02 X Y Z

Pilot operated check, single

O-Ring on pilot piston	Pilot ratio
= 00	No O-Ring 3.2 : 1
= 10	With O-Ring 3.2 : 1
= 25	With O-Ring 6 : 1

Port sizes	V1 - V2	C1	C2
= 03	G 1/2	G 1/2	Ø 7 (0.28)

SPRINGS

		Cracking pressure bar (psi)
= 00	only for X=00	1 (15)
= 01	only for X=10 and X=25	8 (116)

Type	Material number
05520200030000A	R930002310
055202100301000	R930002313
055202250301000	R930002314

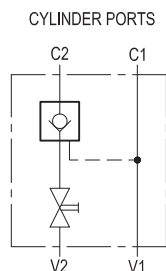
Type	Material number

Rückschlagventil entsperrbar (230441) Clapet anti-retour piloté

RE 18307-13/04.10
Replaces: RE 00171/02.07

VSO-SE-DL-DX

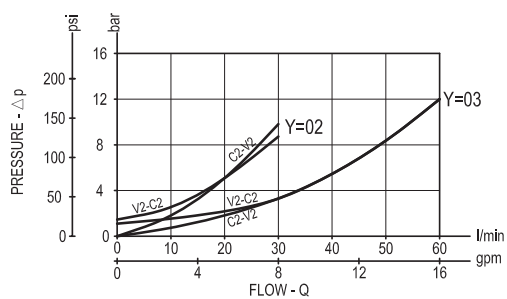
05.52.27 - X - Y - Z



Description

A tap, manually controlled by the operator, allows inlet flow from V2 to pass through the check valve to C2: as a result, the motion of the actuator (typically the extension and positioning of an outrigger) happens under the operator's direct sight. The valve is normally closed (checked) and virtually leak-free from C2 to V2 in order to prevent reverse motion. Flow outlet from C2 to V2 and reverse motion (i.e. outrigger retraction or lifting up) is possible with manual tap open and if sufficient pilot pressure is present at V1-C1 so that the pilot piston may push the poppet from its seat.

Performance



Technical data

Hydraulic

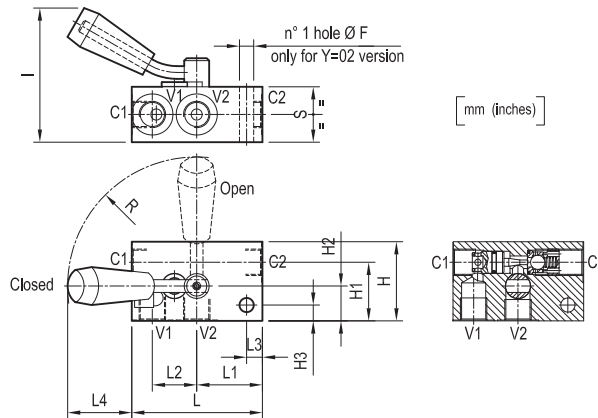
Operating pressure	bar (psi)	up to 210 (3000)
Max. flow		see performance graph

General

Manifold material	Aluminium
Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.	
Weight	see "Dimensions"
Fluid temperature range	°C (°F) between -30 (-22) and +100 (212)
Other technical data	see data sheet RE 18350-50

Rückschlagventil entsperrbar (230441) Clapet anti-retour piloté

Dimensions



35 (1,39)	40,5 (1,6)	-	35 (1,39)	40,5 (1,6)	80,5 (3,16)	85 (3,35)	-	30 (1,18)	50 (1,97)	65 (2,56)	-	82 (3,23)	G 1/2	3,6 : 1	1 (2,2)
35 (1,39)	40,5 (1,6)	10 (0,39)	28 (1,1)	41,5 (1,63)	82,5 (3,25)	85 (3,35)	10 (0,39)	22 (0,87)	37 (1,46)	50 (1,97)	9 (0,35)	82 (3,23)	G 3/8	5,4 : 1	0,6 (1,3)
S	L4	L3	L2	L1	L	I	H3	H2	H1	H	F	R	Y	Pilot ratio	Weight kg (lbs)

Ordering code

05.52.27	X	Y	Z
-----------------	----------	----------	----------

Pilot operated check, single,
manual shut-off

O-Ring on pilot piston

= 10 With O-Ring

SPRINGS

Cracking pressure
bar (psi)

= 00

only for
Y=02

1.6 (23)

only for
Y=03

0.6 (9)

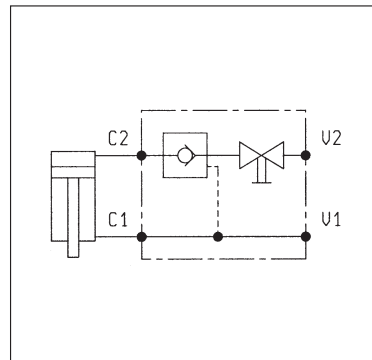
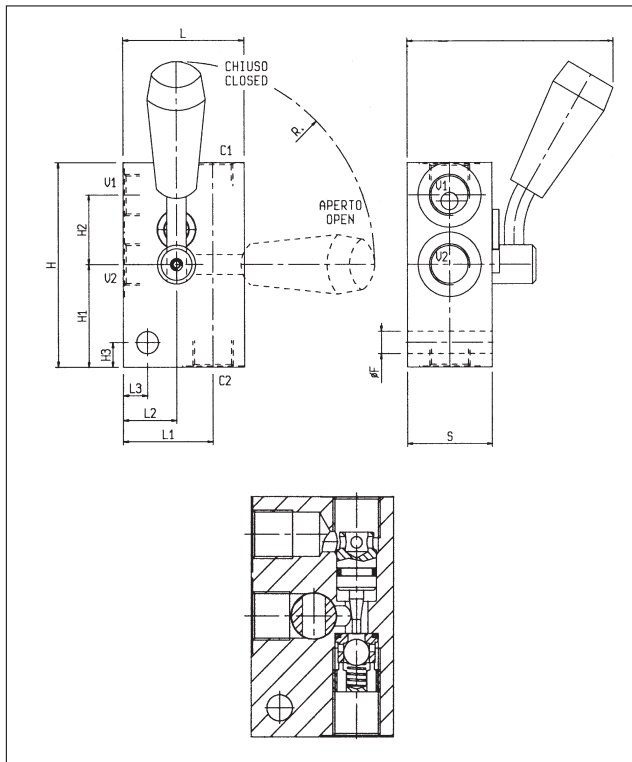
Port sizes	V1 - V2	C1 - C2	
= 02	G 3/8	G 3/8	
= 03	G 1/2	G 1/2	

Type	Material number
05522710020000C	R930002345
05522710030000B	R930002349

Type	Material number

Rückschlagventil entsperrbar (230442) Clapet anti-retour piloté

VSO-SE-DL-R-D

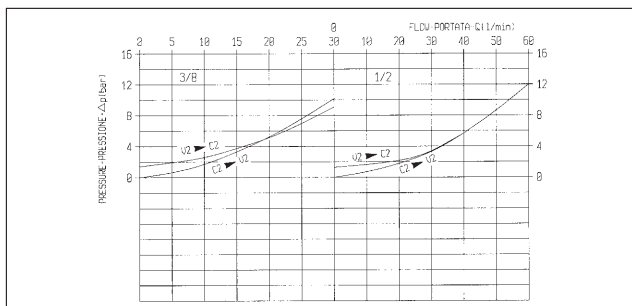


DATI TECNICI / TECHNICAL DATA

Pressione di lavoro max. 350 bar
Max. working pressure 350 bar

Portata max. vedi diagramma
Flow see performance graph

35	-	30	50	65	85	-	35	40.5	90.5	-	82				1/2	3.6:1	1.00
35	10	22	37	50	85	10	28	41.5	82.5	9	82				3/8	5.4:1	0,60
S	L3	L2	L1	L	I	H3	H2	H1	H	ØF	R				Y	Ratio of Pilot Pilot ratio	Peso Kg Weight kg



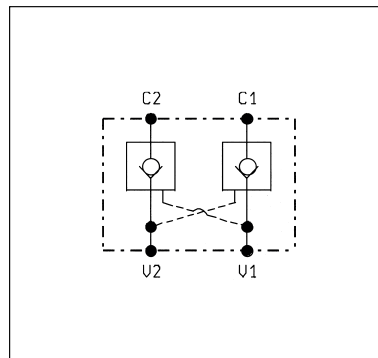
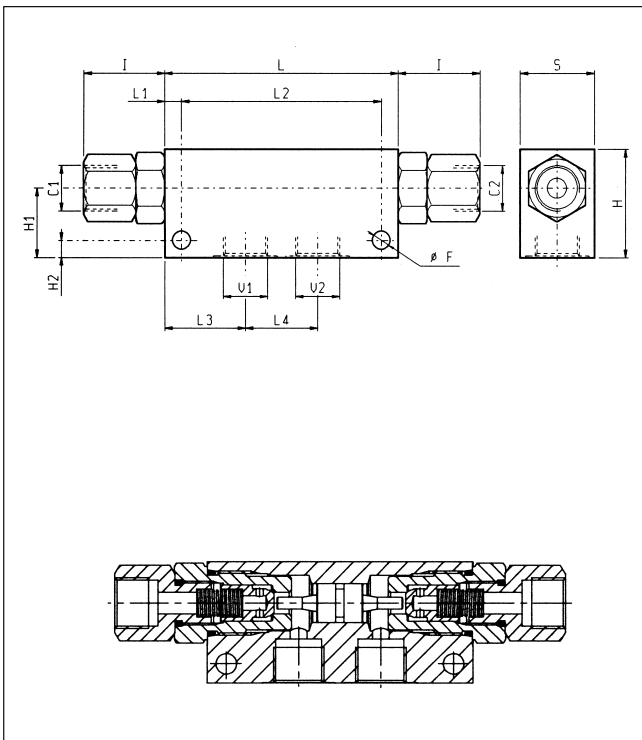
X	GUARNIZIONE SUL PISTONE DI PILOTAGGIO O-RING ON PILOT PISTON
10	con guarnizione with o-ring

Z	MOLLE / SPRINGS		
	Inizio apertura (bar) Cracking pressure (bar)		Cod. ordinazione Ordering code
00	3/8 = 1.6		03.51.01.107
00	1/2 = 0.6		03.51.01.107

Y	ATTACCHI / PORT SIZE	
	V1 - V2 - C1 - C2	
02	G 3/8	
03	G 1/2	

Rückschlagventil entsperrbar (230444) Clapet anti-retour piloté

VSO-DE-L



DATI TECNICI / TECHNICAL DATA

NOTA: per la dimensione 1/2 è disponibile anche il rapporto di pilotaggio 6:1 (X=25).
WARNING: pilot ratio 6:1 is also available for 1/2 size (X=25).

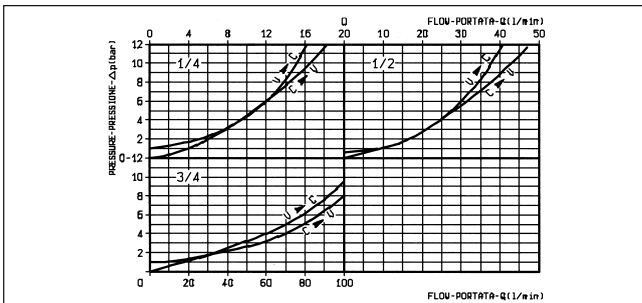
Per la dimensione 1/4 è disponibile anche il rapporto di pilotaggio 9:1 (X=37).
Pilot ratio 9:1 is available for 1/4 (X=37).

Pressione di lavoro max. 350 bar
Max. working pressure

Portata max. vedi diagramma
Flow max. see performance graph

È generalmente consigliato l'uso della versione con codice Z=01 (molla pesante).
Per un funzionamento corretto scegliere il rapporto di pilotaggio in funzione della contropressione sulla linea di ritorno e del rapporto delle aree del cilindro.
The version with Z=01 in part no. (heavier spring) is generally recommended.
For correct operation the pilot ratio must be chosen as function of back pressure in the return line and of cylinder ratio.

50	50	57.5	145	10	165	57	10	45	70	10.5							3/4	3.6:1	1.15
35	34	38	94	8	110	38.5	8	32	50	8.5							1/2	3.2:1	1.15
35	36	22	34	6	80	33	6	24	40	6.5							1/4	4:1	0.70
S	L4	L3	L2	L1	L	I	H2	H1	H	F							Y	Ratio of Pil. Pilot ratio	Peso kg Weight kg

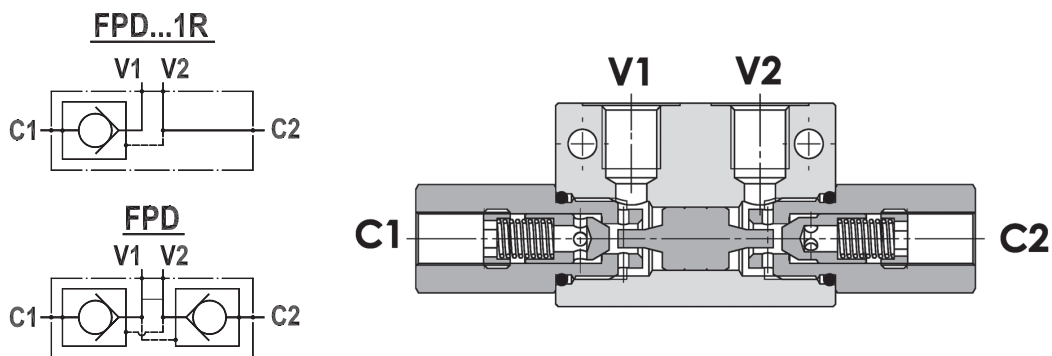


X	GUARNIZIONE SUL PISTONE DI PILOTAGGIO O-RING ON PILOT PISTON
00	senza guarnizione no o-ring
10	con guarnizione with o-ring

Z		MOLLE / SPRINGS		
		Inizio apertura (bar) Cracking pressure (bar)		Cod. ordinazione Ordering code
1/4	00	3		03.51.01.024
	01	8		03.51.01.051
1/2	00	1		03.51.01.029
	01	8		03.51.01.058
3/4	00	1.5		03.51.01.008
	01	8		03.51.01.154

Y		ATTACCHI / PORT SIZE
		V1-V2-C1-C2
09	G 1/4	
03	G 1/2	
04	G 3/4	

Rückschlagventil entsperrbar (230587) Clapet anti-retour piloté



SPECIFICHE TECNICHE

Materiali: corpo in acciaio, protetto mediante zincatura. I componenti interni sono in acciaio trattato termicamente e rettificati.

Portata max.: fino a 85 l/min

Pressione max.: 350 bar, vedasi tabella a parte

Pressione di apertura: standard 2 bar, a richiesta 5 -10 bar

TECHNICAL SPECIFICATIONS

Materials: steel body, zinc plated. Internal parts are in hardened and ground steel.

Rated flow: up to 85 l/min

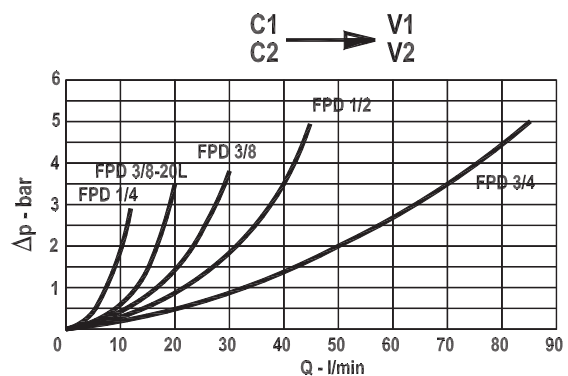
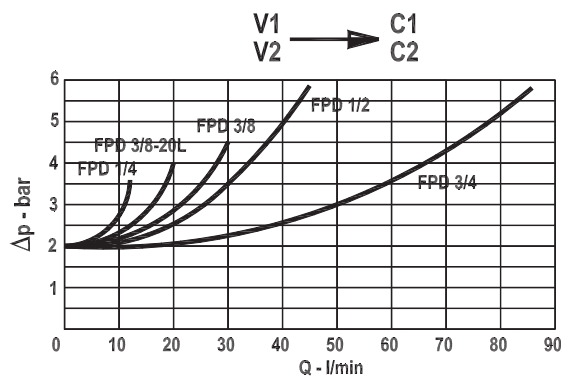
Max. pressure: 350 bar, see data sheet

Cracking pressure: 2 bar standard, 5 -10 bar on request

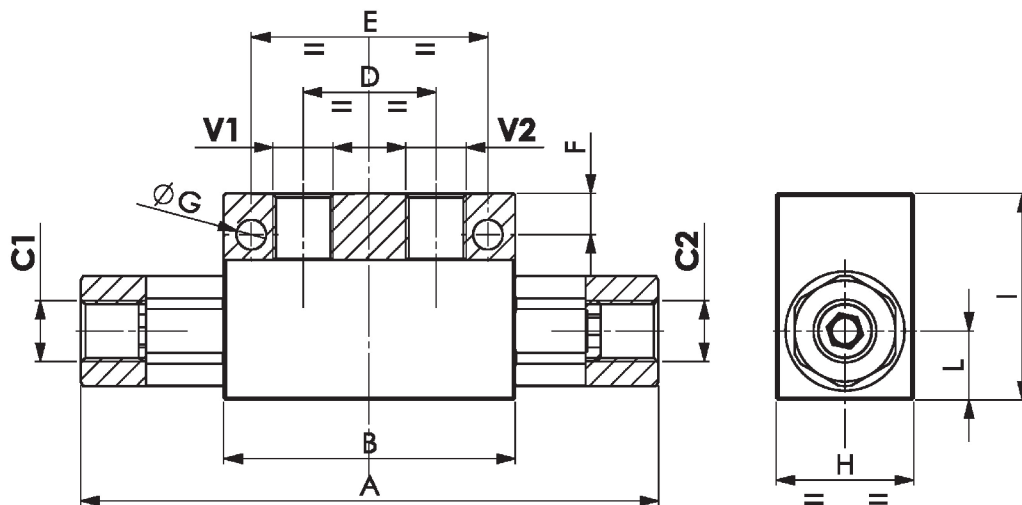
DIAGRAMMA PERDITE DI CARICO - PRESSURE DROP CURVES

Viscosità olio 24 mm²/sec. (3,5 °E)
Temperatura 50 °C

Oil viscosity 24 mm²/sec. (3,5 °E)
Temperature 50 °C



Rückschlagventil entsperrbar (230587) Clapet anti-retour piloté



Per ottenere una perfetta tenuta della valvola si consiglia di collegare a scarico le bocche del distributore per evitare contropressioni che non permetterebbero una perfetta tenuta dell'otturatore

In order to obtain zero leakage we recommend that directional control valve ports be connected to tank in order to avoid back-pressure that would make it impossible for the poppet to provide a perfect seal.

TIPO TYPE	PORTATA MAX. MAX FLOW	PRESSIONE MAX. MAX PRESSURE	V1-C1 V2-C2	A	B	D	E	F	G	H	I	L	RAPP. DI PILOTAGGIO PILOT RATIO	PESO WEIGHT
	L/MIN	BAR	BSPP	mm	mm	mm	mm	mm	mm	mm	mm	mm		Kg
FPD 1/4	12	350	1/4"	126	63.6	29	51.6	9	6.5	30	45	15	1 : 4	0.650
* FPD 3/8-20L	20	300	3/8"	126	63.6	29	-	-	-	30	45	15	1 : 4	0.620
FPD 3/8	30	300	3/8"	158	90	40	75	17	8	40	60	20	1 : 6	1.750
FPD 1/2	45	300	1/2"	174	90	40	75	17	8	40	60	20	1 : 4	1.780
FPD 3/4	85	280	3/4"	212	120	60	104	16	9	50	70	25	1 : 3.6	3.250

* La valvola FPD 3/8"-20L viene fornita senza fori di fissaggio - valve FPD 3/8"-20L is supplied without fixing holes

ESEMPIO DI ORDINAZIONE - ORDERING CODE EXAMPLE

FPD 3 / 8 5 1 R G *

1/4 - 1/4" BSPP
3/8-20L - 3/8" BSPP
* 3/8 - 3/8" BSPP
1/2 - 1/2" BSPP
3/4 - 3/4" BSPP
Conessioni - Port sizes

2 bar (std) - 5 bar - 10 bar
* Pressione apertura ritegno, omettere se std
Cracking pressure, omit if std

Guarnizioni - Seals:
V=Viton *
Omettere se BUNA-N - Omit if BUNA-N

Guarnizione sul pilota, omettere se non richiesta *
With o-ring on pilot valve, omit if not requested

1R - valvole con un solo ritegno, omettere se std *
1R - single check valve, omit if not requested

Rückschlagventil entsperrbar (230445) Clapet anti-retour piloté

VSO-DE

n° 2 holes Ø 6.5 (.26)

36 (1.38)

11.5 (.45) 100 (3.94) 11.5 (.45)

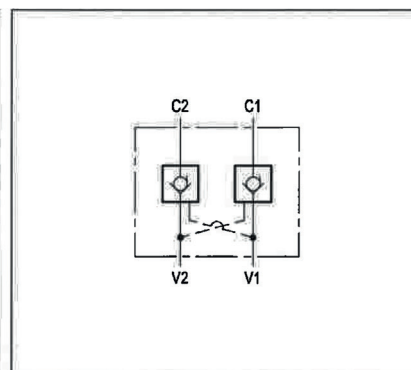
62 (2.44)

40 (1.58) 60 (2.36)

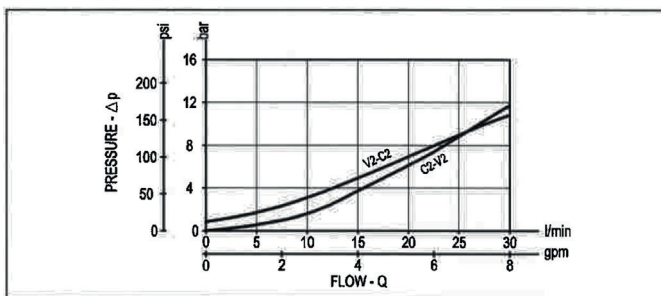
34 (1.34) 32 (1.26)

mm (inches)

Flow is allowed to pass in one direction (V1 to C1 or V2 to C2), then the valve remains closed (checked) in both reverse directions (C1 to V1 or C2 to V2) in order to hold and lock in position the cylinder or other actuators; reverse flow is possible only when sufficient pilot pressure is applied at V2 or V1, which act as cross connected pilot ports, and the pilot piston lifts the poppet from its seat overcoming cylinder port pressure.



TECHNICAL DATA	
Operating pressure:	up to 210 bar (3000 psi)
Max flow:	30 l/min (8 gpm)
Aluminium body	NOTE: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.
Weight:	0.9 kg (2 lbs)
Pilot ratio:	7 : 1
The version with O-Ring and heavier spring is generally recommended.	

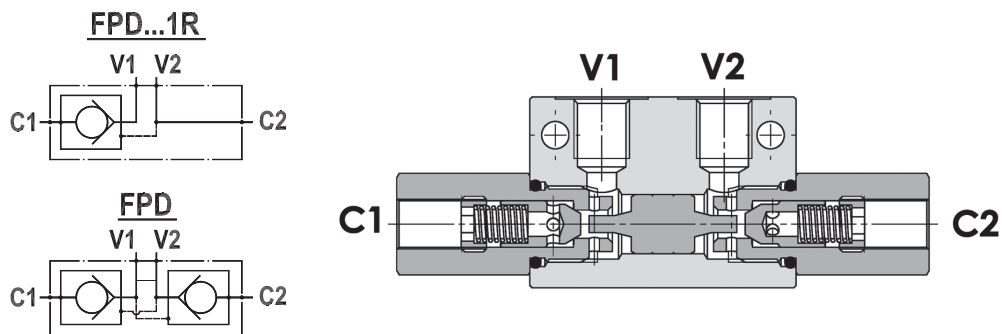


X	O-RING ON PILOT PISTON
00	No O-Ring
10	With O-Ring

Z	SPRINGS		
	Cracking pressure bar (psi)		Ordering code
X=00 00	1 (15)		03.51.01.317
X=10 01	4.5 (65)		03.51.01.318

Y	PORT SIZE	
	V1-V2-C1-C2	
07	G 3/8	

Rückschlagventil entsperrbar (230580) Clapet anti-retour piloté



SPECIFICHE TECNICHE

Materiali: corpo in acciaio, protetto mediante zincatura. I componenti interni sono in acciaio trattato termicamente e rettificati.

Portata max.: fino a 85 l/min

Pressione max.: 350 bar, vedasi tabella a parte

Pressione di apertura: standard 2 bar, a richiesta 5 - 10 bar

TECHNICAL SPECIFICATIONS

Materials: steel body, zinc plated. Internal parts are in hardened and ground steel.

Rated flow: up to 85 l/min

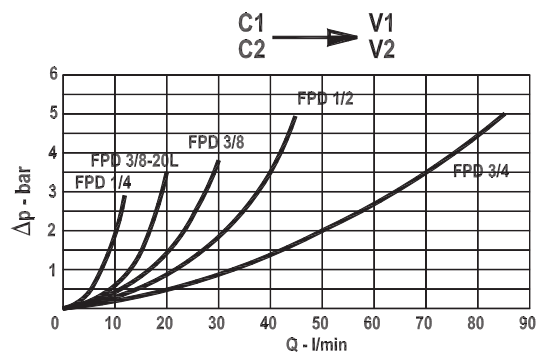
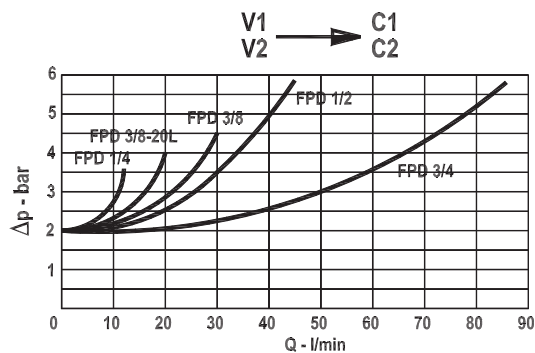
Max. pressure: 350 bar, see data sheet

Cracking pressure: 2 bar standard, 5 - 10 bar on request

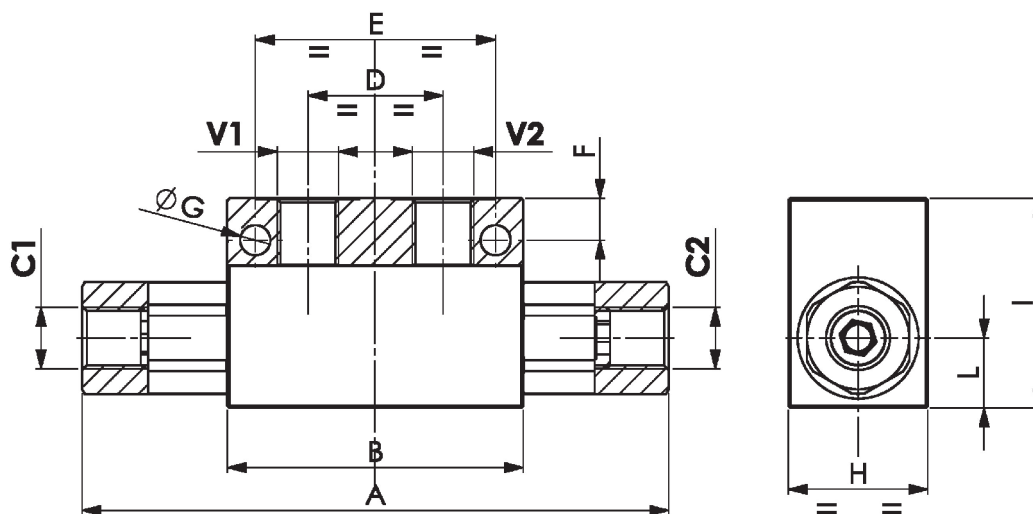
DIAGRAMMA PERDITE DI CARICO - PRESSURE DROP CURVES

Viscosità olio 24 mm²/sec. (3,5 °E)
Temperatura 50 °C

Oil viscosity 24 mm²/sec. (3,5 °E)
Temperature 50 °C



Rückschlagventil entsperrbar (230580) Clapet anti-retour piloté



Per ottenere una perfetta tenuta della valvola si consiglia di collegare a scarico le bocche del distributore per evitare contropressioni che non permetterebbero una perfetta tenuta dell'otturatore

In order to obtain zero leakage we recommend that directional control valve ports be connected to tank in order to avoid back-pressure that would make it impossible for the poppet to provide a perfect seal.

TIPO TYPE	PORTATA MAX. MAX FLOW	PRESSIONE MAX. MAX PRESSURE	V1 - C1 V2 - C2	A	B	D	E	F	G	H	I	L	RAPP. DI PILOTAGGIO PILOT RATIO	PESO WEIGHT
	L/MIN	BAR	BSPP	mm	mm	mm	mm	mm	mm	mm	mm	mm		Kg
FPD 1/4	12	350	1/4"	126	63.6	29	51.6	9	6.5	30	45	15	1 : 4	0.650
* FPD 3/8-20L	20	300	3/8"	126	63.6	29	-	-	30		45	15	1 : 4	0.620
FPD 3/8	30	300	3/8"	158	90	40	75	17	8	40	60	20	1 : 6	1.750
FPD 1/2	45	300	1/2"	174	90	40	75	17	8	40	60	20	1 : 4	1.780
FPD 3/4	85	280	3/4"	212	120	60	104	16	9	50	70	25	1 : 3.6	3.250

* La valvola FPD 3/8"-20L viene fornita senza fori di fissaggio - valve FPD 3/8"-20L is supplied without fixing holes

ESEMPIO DI ORDINAZIONE - ORDERING CODE EXAMPLE

F P D	3 / 8	5	1 R	G	*	
1/4 - 1/4" BSPP	3/8 - 3/8" BSPP					
* 3/8 - 3/8" BSPP	1/2 - 1/2" BSPP					Guarnizioni - Seals: V=Viton *
3/4 - 3/4" BSPP	Connessioni - Port sizes					Omettere se BUNA-N - Omit if BUNA-N
2 bar (std) - 5 bar - 10 bar						Guarnizione sul pilota, omettere se non richiesta *
* Pressione apertura ritegno, omettere se std						With o-ring on pilot valve, omit if not requested
Cracking pressure, omit if std						1R - valvole con un solo ritegno, omettere se std *
						1R - single check valve, omit if not requested

Rückschlagventil entsperrbar (230912) Clapet anti-retour piloté

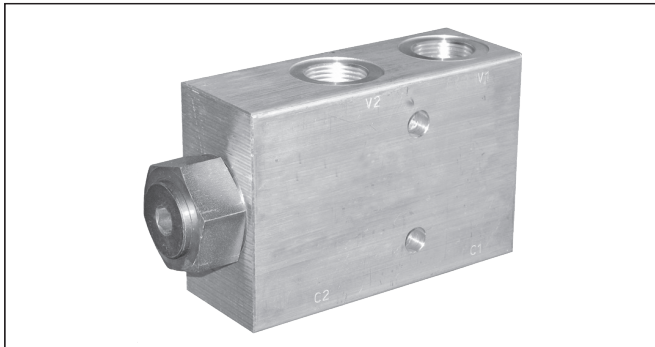
VSO-SE

05.52.01 - X - 04 - Z

RE 18307-03

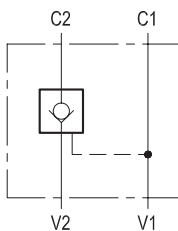
Edition: 03.2016

Replaces: 04.2010



Description

Flow is allowed to pass from V2 to C2 when pressure at V2 rises above the spring bias pressure and the poppet is pushed from its seat. The valve is normally closed (checked) from C2 to V2; when sufficient pilot pressure is present at V1-C1 the pilot piston acts to push the poppet from its seat and flow is allowed from C2 to V2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

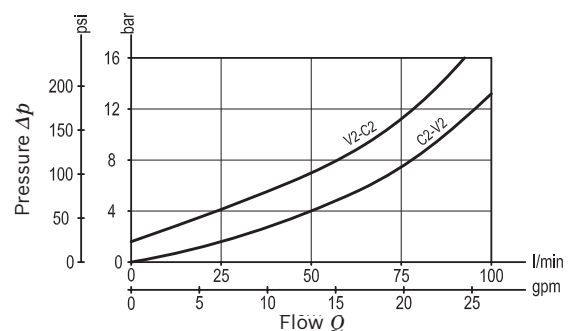


Technical data

Operating pressure	up to 210 bar (3000 psi)
Max. flow	100 l/min. (26 gpm)
Pilot ratio	4 : 1
Weight	1.85 kg (4.1 lbs)
Manifold material	Aluminium
Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.	
Fluid	Mineral oil (HL, HLP) according DIN 51524
Fluid temperature range	-30 °C to 100 (-22 to 212 °F)
Viscosity range	10 to 500 mm ² /s (cSt)
Recommended degree of fluid contamination	Class 19/17/14 according to ISO 4406
Other technical data	see data sheet 18350-50
The version with O-Ring and heavier spring is generally recommended.	

Note: for applications outside these parameters, please consult us.

Characteristic curve



Rückschlagventil entsperrbar (230912) Clapet anti-retour piloté

Ordering code

05.52.01	X	04	Z
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Pilot operated check, single

O-Ring on pilot piston

00 No O-Ring

10 With O-Ring

Port sizes	V1 - V2	C1 - C2	
04	G 3/4	G 3/4	

		SPRINGS
		Cracking pressure bar (psi)
00	only for X=00	1.5 (22)
01	only for X=10	8 (116)

Preferred types

Type	Material number
05520100040000A	R930002300
055201100401000	R930002304

Type	Material number

Dimensions

