



TECHNICAL INTRODUCTION:

PILOT OPERATED CHECK VALVES SECT. 14

Pilot operated check valves allow free flow in one direction and block it in the opposite direction, until they are opened by pilot pressure sent on the other branch of the circuit, which acts on the pilot piston and creates an opposite reaction to that one of the load. They are normally used to ensure the static block of a load, not for dynamic or lowering control. They normally consist of a non-return valve and a pilot piston. The pilot ratio, generally greater than one, is the ratio between the area of the pilot piston and the sealing area of the unidirectional valve. In case they are used in combination with throttle valves.

These latter ones should be preferably positioned between the actuator and the valve, not between the valve and the distributor. In fact, the back pressure created by the downstream throttling of the valve acts in the opposite direction to the pilot pressure. In the case of mounting on the rod side of a cylinder which supports a load, as stabilizer cylinders, the pilot ratio must be

substantially greater than the ratio between bottom area and annular area of the cylinder. The version with seal on the piston is recommended for use in circuits with open center spools in neutral position. The valves are available for single or double effect.

The minimum pressure required for driving the valve is:

$$P_{pil} = P_{cil} / (R - \Omega)$$

Ω = Actuator area submitted to P_{pli} /
Actuator area holding the load

Example : $P_{cil} = 250$ bar $R = 4,5:1$
 $\Omega = 0,5$ $P_{pil} = 250 / (4,5 - 0,5) = 60$ bar

P_{pil} = pilot pressure

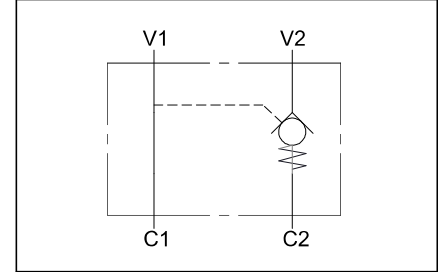
P_{cil} = pressure induced by the load

SINGLE PILOT OPERATED CHECK VALVE | POC-1 | SECT 14 - REF .005

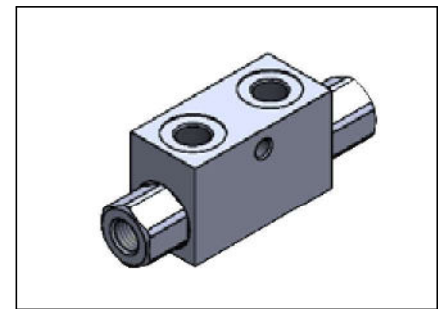
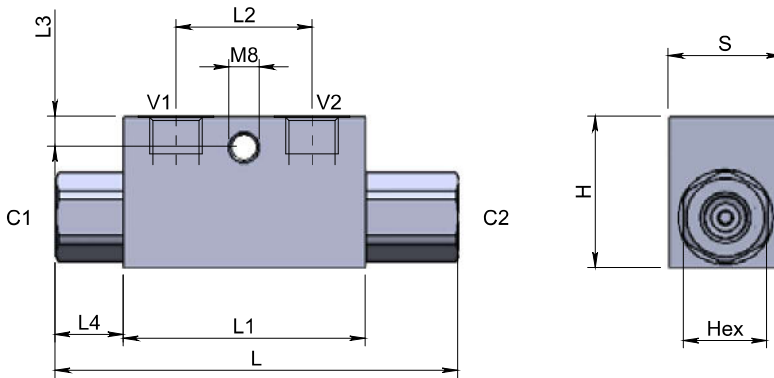
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	350 Bar
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A

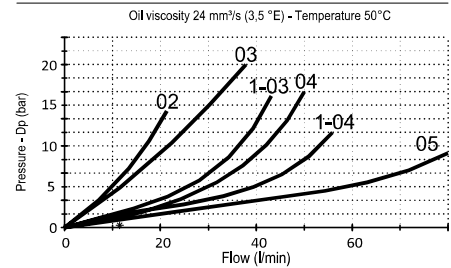
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-M-01-A*3-3-*-*-*-*

0= See tab. Flow characteristic
1= See tab.

M=With OR Std. OR on pilot piston
N=Without OR

Cracking pressure Y= See tab. Std.
X = 1 bar

P-T Port size
02 = 1/4 BSPP
03 = 3/8 BSPP
04 = 1/2 BSPP
05 = 3/4 BSPP

Standard code	Thread		L	L1	L2	L3	L4	H	S	Hex	Weight (kg)	Max. Flow Q max (l/min)	Cracking. P. (l/min)	Pilot ratio
	V1-V2	C1-C2												
14M01A033M02Y	1/4	1/4	106.5	64	36	8	18	40	30	22	0.61	20	4	5.5 : 1
14M01A033M03Y	3/8	3/8	120	68	38	8	22	40	30	22	0.70	35	3	5.5 : 1
14M01A133M03Y	3/8	3/8	148	90	45	12.5	25	45	35	27	0.95	45	8	5 : 1
14M01A033M04Y	1/2	1/2	133	90	45	12.5	17	45	35	27	1.00	50	6	5 : 1
14M01A133M04Y	1/2	1/2	134	80	40	18	22	60	35	30	1.10	70	3.5	4 : 1
14M01A033M05Y	3/4	3/4	182	100	46	12	36	60	40	36	1.70	100	2	4 : 1

* On request version - Please contact our customer service.

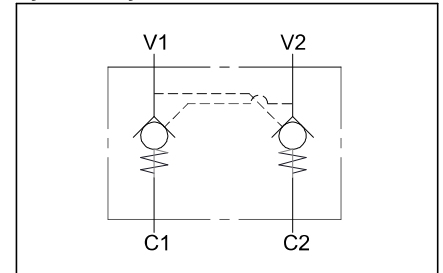


POC-2 | SECT 14 - REF .010 | DUAL PILOT OPERATED CHECK VALVE

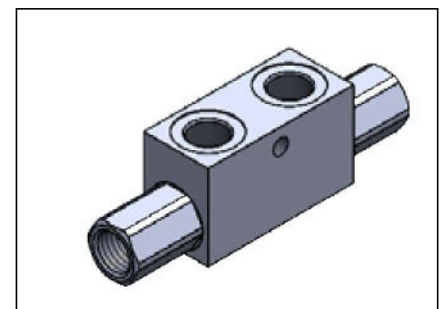
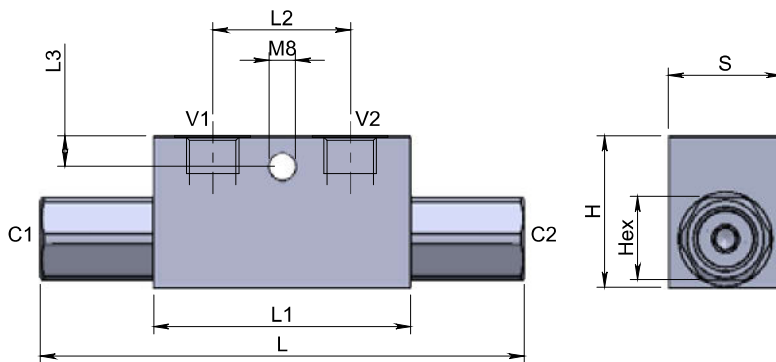
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	350 Bar
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A

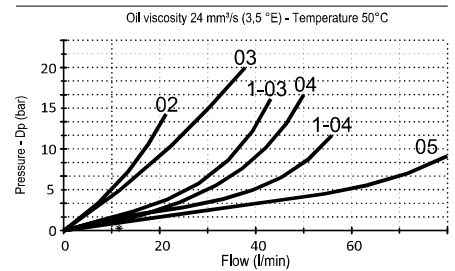
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-M-02-A*3-3-*-*-*-*

0= See tab. Flow characteristic
1= See tab.

M=With OR Std. OR on pilot piston
N= Without OR

Y = See tab.
X = 1 bar

P-T Port size
02 = 1/4 BSPP
03 = 3/8 BSPP
04 = 1/2 BSPP
05 = 3/4 BSPP

Standard code	Thread		L	L1	L2	L3	H	S	Hex	Weight (kg)	Max. Flow Q max (l/min)	Cracking. P. (l/min)	Pilot ratio
	V1-V2	C1-C2											
14M02A033M02Y	1/4	1/4	113	64	36	8	40	30	22	0.65	20	4	5.5 : 1
14M02A033M03Y	3/8	3/8	128	68	38	8	40	30	22	0.75	35	3	5.5 : 1
14M02A133M03Y	3/8	3/8	156	90	45	12.5	45	35	27	1.15	45	8	5 : 1
14M02A033M04Y	1/2	1/2	142	90	45	12.5	45	35	27	1.05	50	6	5 : 1
14M02A133M04Y	1/2	1/2	144	80	40	18	60	35	30	1.30	70	3.5	4 : 1
14M02A033M05Y	3/4	3/4	192	100	46	12	60	40	36	1.95	100	3	4 : 1

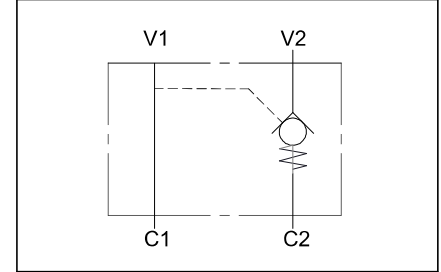
* On request version - Please contact our customer service.

SINGLE PILOT OPERATED CHECK VALVE | POC-1-DIN | SECT 14 - REF .015

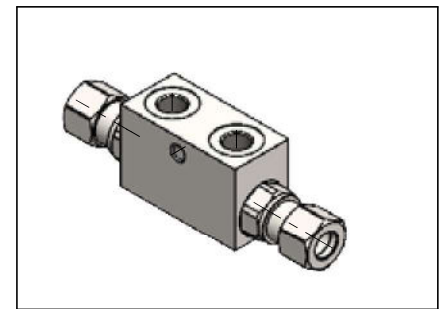
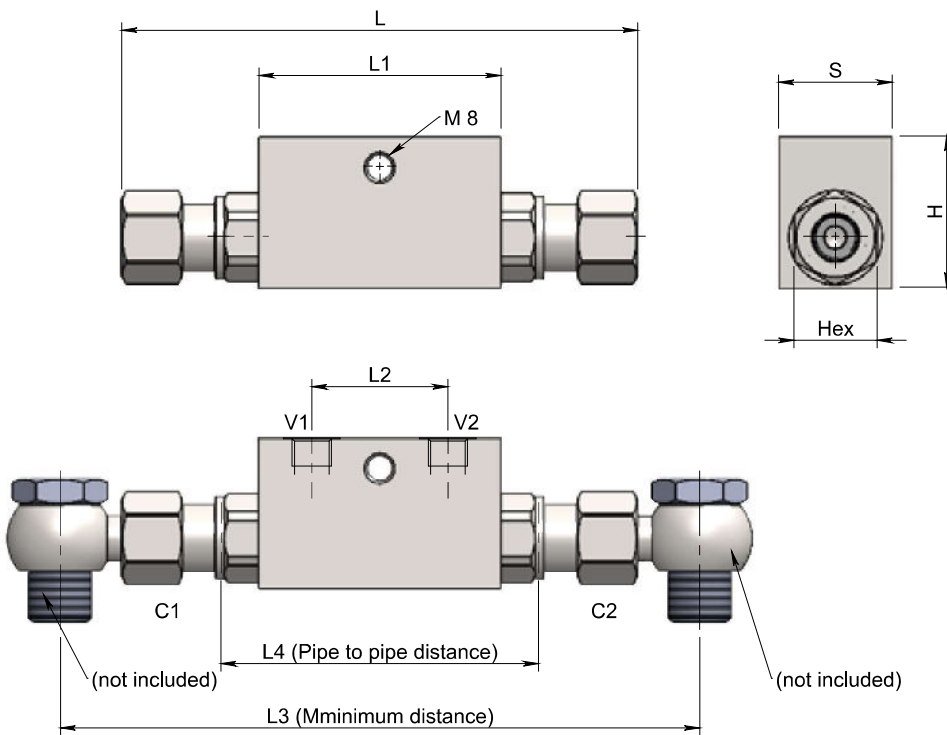
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	350 Bar
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A

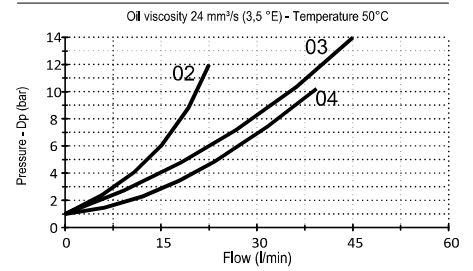
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-N-01-A04-3-*-*-*

M=With OR Std. OR on pilot piston
N=Without OR

Cracking pressure
Y = 3 bar (std)
X = 1 bar
Z = 8 bar

P-T Port size
02 = 1/4 BSPP
03 = 3/8 BSPP
04 = 1/2 BSPP

Standard code	Thread		L	L1	L2	L3	L4	H	S	Hex	Weight (kg)	Max. Flow (l/min)	Pilot ratio
	V1-V2	C1-C2									Steel / Acciaio		
14N01A043M02Y	1/4	Ø12	136	64	36	160	80	40	30	22	0.69	20	5.5 : 1
14N01A043M03Y	3/8	Ø12	136	64	36	166	80	40	30	22	0.67	30	5.5 : 1
14N01A043M04Y	1/2	Ø15	164	90	45	196	104	45	35	27	1.09	50	5 : 1

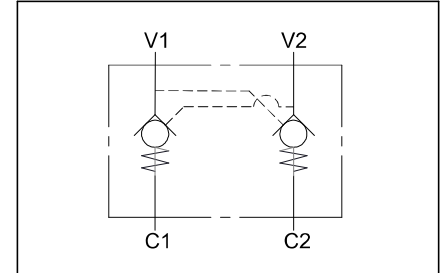
* On request version - Please contact our customer service.

POC-2-DIN | SECT 14 - REF .020 | DUAL PILOT OPERATED CHECK VALVE

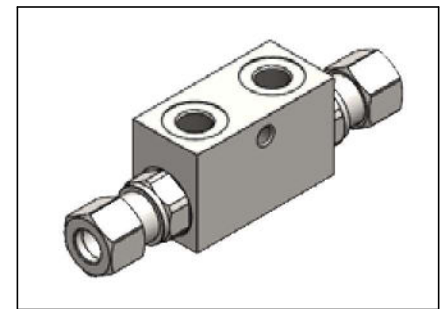
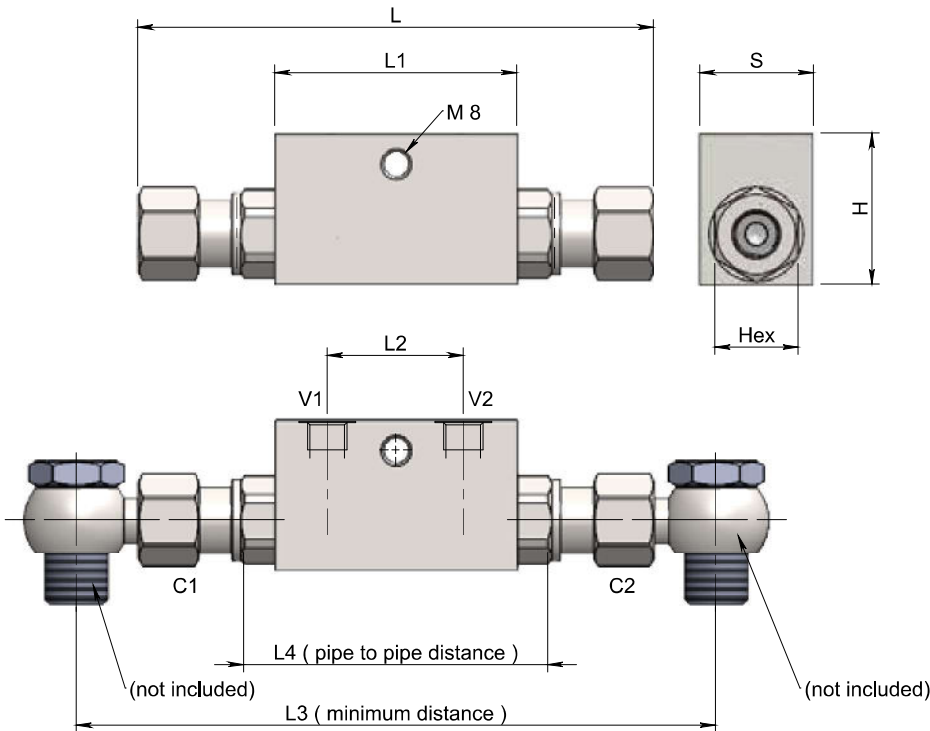
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	350 Bar
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A

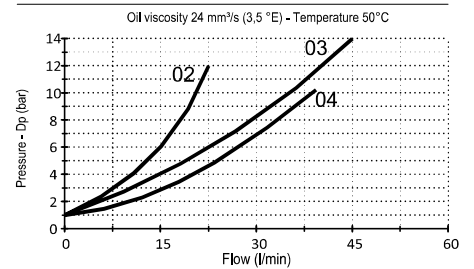
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-N-02-A04-3-*-*-*-*

M=With OR Std.] OR on pilot piston
N=Without OR

Cracking pressure Y = 3 bar (std)
X = 1 bar
Z = 8 bar

P-T Port size 02 = 1/4 BSPP
03 = 3/8 BSPP
04 = 1/2 BSPP

Standard code	Thread		L	L1	L2	L3	L4	H	S	Hex	Weight (kg) Steel	Max. Flow (l/min)	Pilot ratio
	V1-V2	C1-C2											
14N02A043M02Y	1/4	Ø12	130	64	36	160	80	40	30	22	0.69	20	5.5 : 1
14N02A043M03Y	3/8	Ø12	130	64	36	160	80	40	30	22	0.67	30	5.5 : 1
14N02A043M04Y	1/2	Ø15	164	90	45	196	104	45	35	27	1.10	50	5 : 1

* On request version - Please contact our customer service.

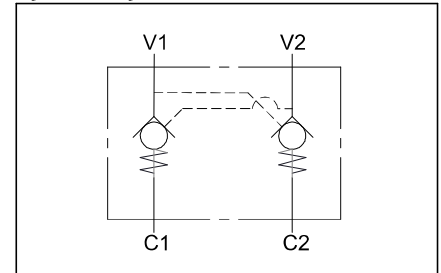
DUAL PILOT OPERATED CHECK VALVE WITH ADJUSTABLE BANJO UNION

POC-2-DIN-OC | SECT 14 - REF .025

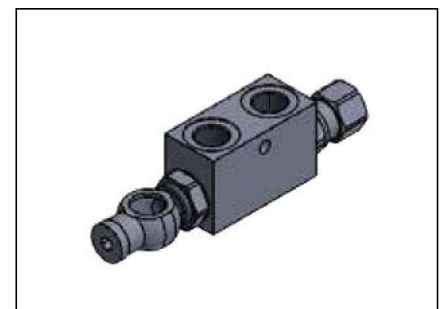
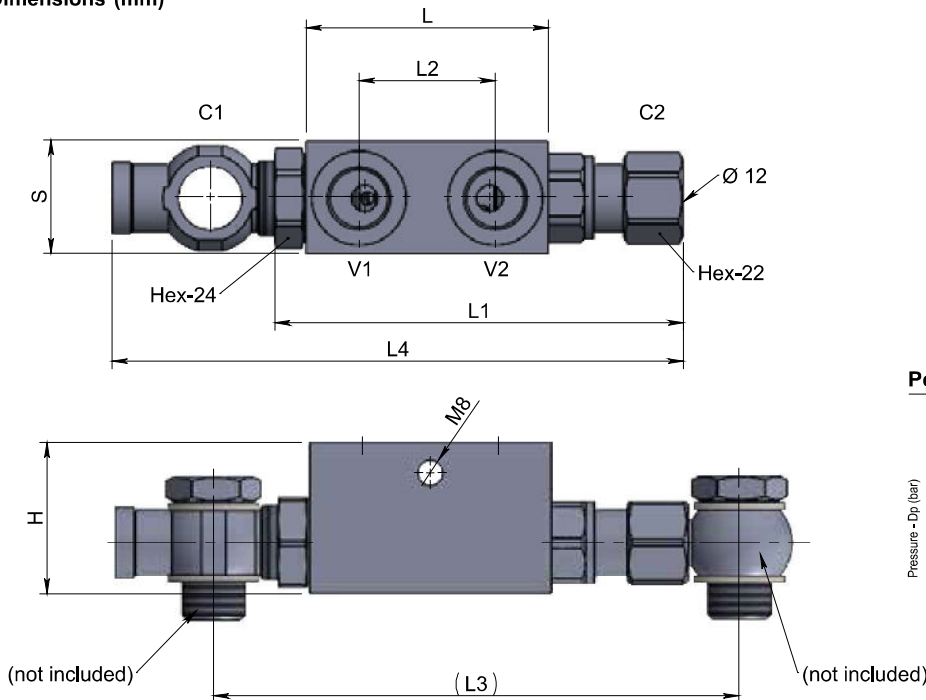
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	350 Bar
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A

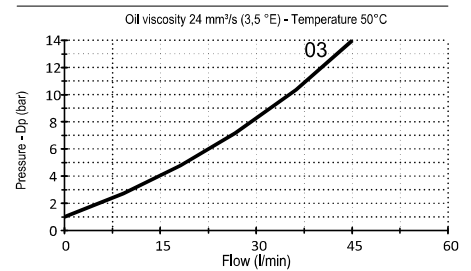
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-D-03-A00-3-* -03-*

M=With OR Std. OR on pilot piston
N=Without OR

Cracking pressure Y = 3 bar (std)
X = 1 bar
Z = 8 bar

Standard code	Thread		L	L1	L2	L3	L4	H	S	Weight (kg)	Max. Flow (l/min)	Pilot ratio
	V1-V2	C1-C2								Steel		
14D03A003M03Y	3/8	Ø12-3/8	64	106	36	(136)	(151)	40	30	0.9	30	5.5 : 1

* On request version - Please contact our customer service.

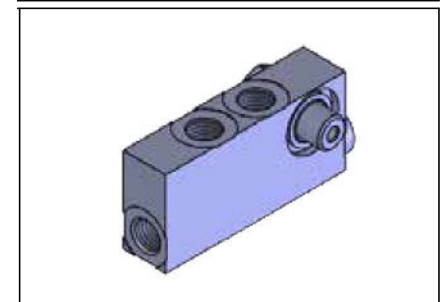
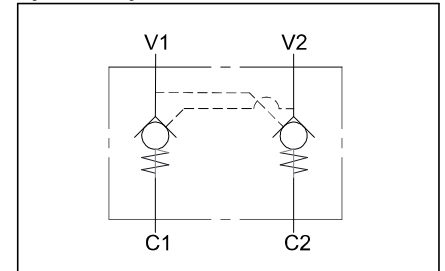
DUAL PILOT OPERATED CHECK VALVE

POC-2-BR | SECT 14 - REF .030 | CYLINDER STUD FIT IN

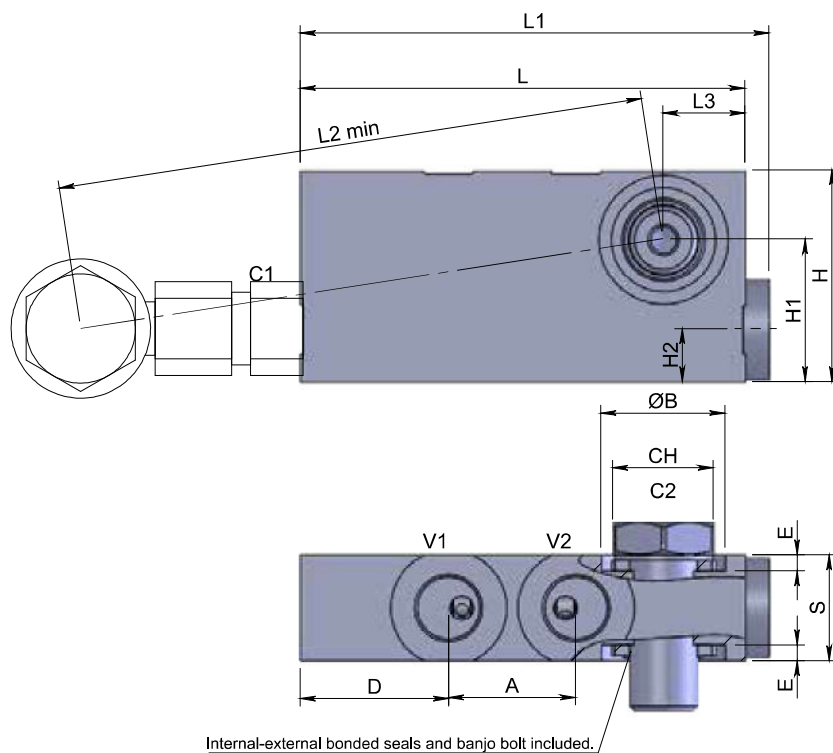
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	300 Bar
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A

Hydraulic symbol

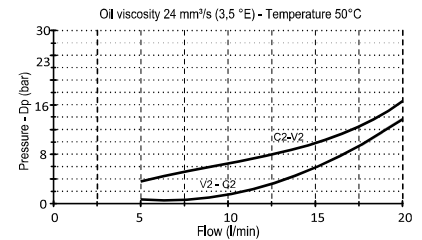


Dimensions (mm)



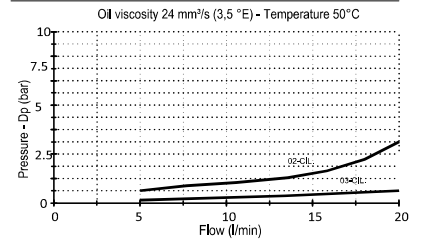
Performance

pressure drop vs. flow V2 → C2 / C2 → V2 02-03



Performance

pressure drop vs. flow V1 → C1 02-03



CALL 1300 767 705 - HOW TO ORDER:

14-M-02-F01-3-*--X**

M=With OR Std. OR on pilot piston
N=Without OR

P-T Port size 02 = 1/4 BSPP
03 = 3/8 BSPP

Standard code	Thread		L	L1	L2 min	L3	A	ØB	D	E	H	H1	H2	S	CH	Cr. Press.	Weight (kg)	Max. Flow (l/min)	Pilot ratio
	V1-V2	C1-C2																	
14M02F013M02X	1/4	1/4	84	88.5	123	15.5	24	24.5	28	3	40	27	10	20	19	1	0.48	20	4.9 : 1
14M02F013M03X	3/8	3/8	86	90.5	127	14	29	27	23	4	45	30.5	12.5	25	22	1	0.68	20	4.9 : 1
14M02F013M04X	1/2	1/2	100	104.5	140	17	35.5	32	25	4	55	37	16	32	27	1	0.85	20	4.9 : 1

* On request version - Please contact our customer service.

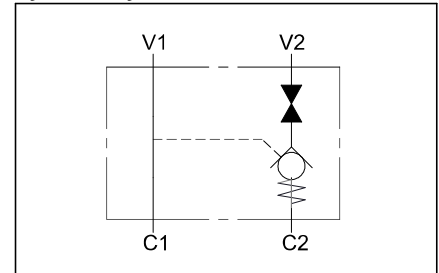
SINGLE PILOT OPERATED CHECK VALVE WITH RIGHT MANUAL SHUT OFF

POC-1-RDX | SECT 14 - REF .035

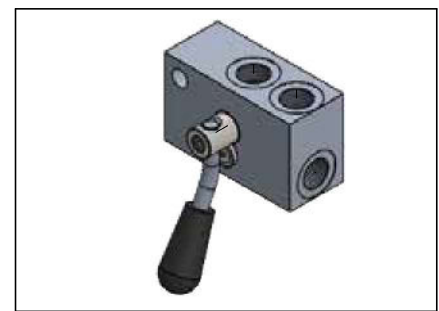
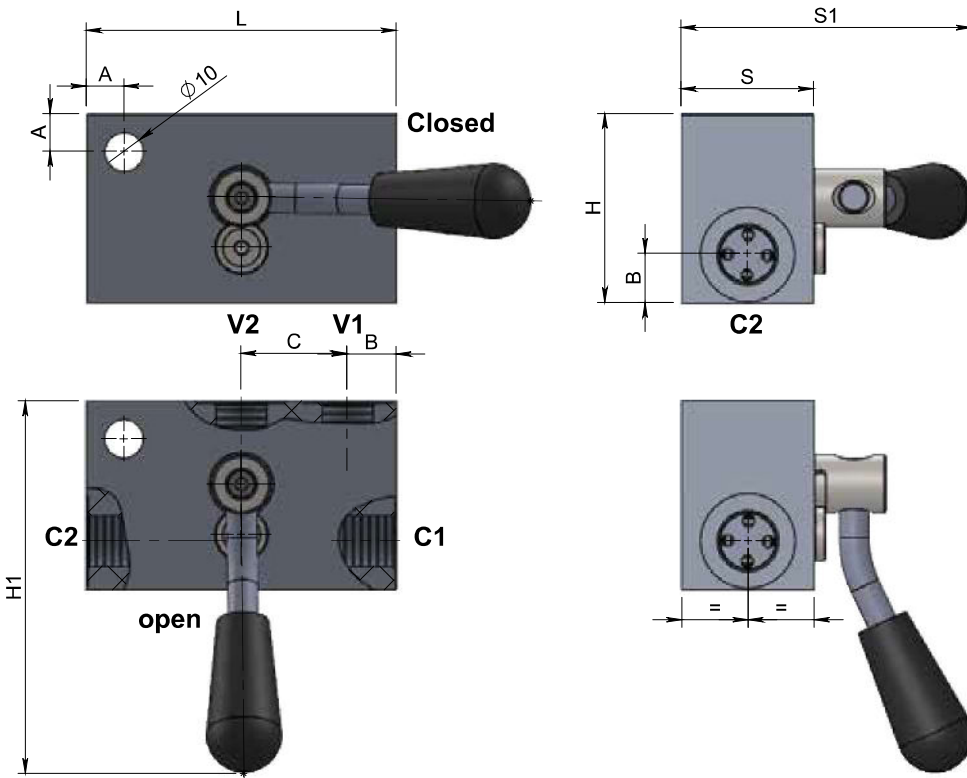
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	300 Bar
Standard seals:	NBR 70 Shore A

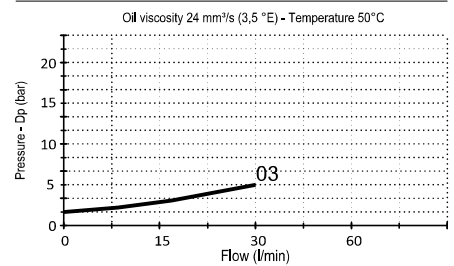
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-R-03-A10-*-03-X-00

1=Raw aluminium Std. Manifold material
2=Anodized aluminium

Standard code	Thread		L	L1	S	S1	H	H1	H2	A	B	C	Weight (kg)	Max. Flow (l/min)	Cracking. P.	Pilot ratio
	V1-V2	C1-C2														
14R03A10103X00	3/8	3/8	82	118	35	77	50	101	24	10	13	28	0.7	35	1	5,1 : 1

* On request version - Please contact our customer service.

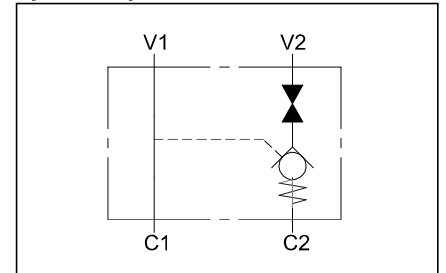
SINGLE PILOT OPERATED CHECK VALVE WITH LEFT MANUAL SHUT OFF

POC-1-RSX | SECT 14 - REF .040 | LEFT MANUAL SHUT OFF

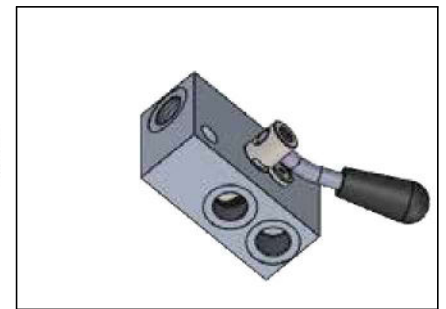
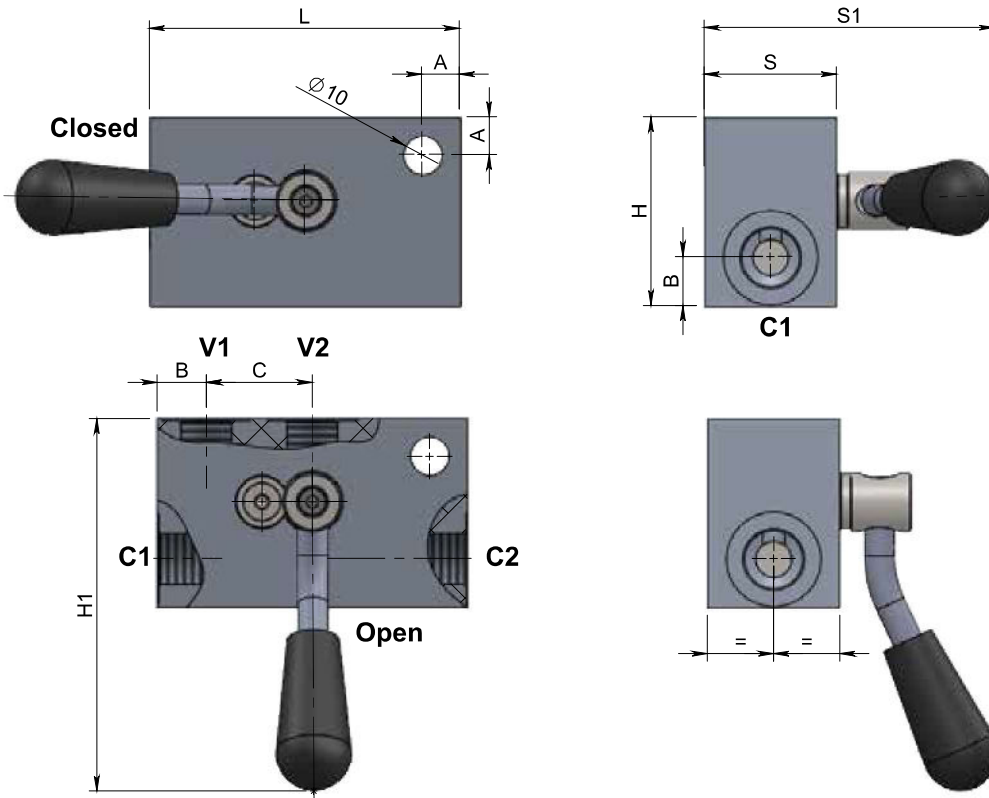
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	300 Bar
Standard seals:	NBR 70 Shore A

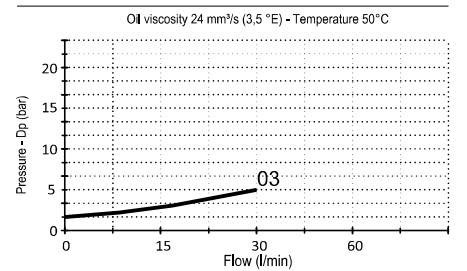
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-R-03-A10-*-03-X-01

1=Raw aluminium Std. Manifold material
2=Anodized aluminium

Standard code	Thread		L	L1	S	S1	H	H1	H2	A	B	C	Weight (kg)	Max. Flow (l/min)	Cracking. P.	Pilot ratio
	V1-V2	C1-C2														
14R03A10103X01	3/8	3/8	82	118	35	77	50	101	24	10	13	28	0.7	35	1	5.1 : 1

* On request version - Please contact our customer service.

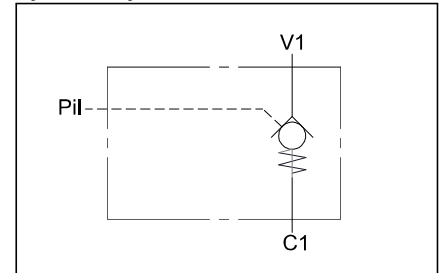
INLINE SINGLE PILOT OPERATED CHECK VALVE

POC-1-LS | SECT 14 - REF .045

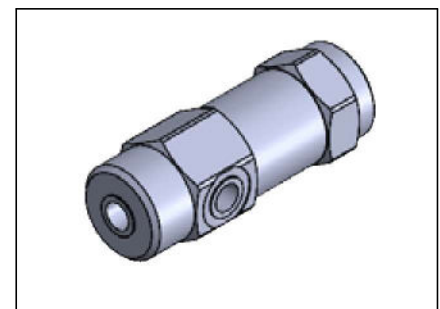
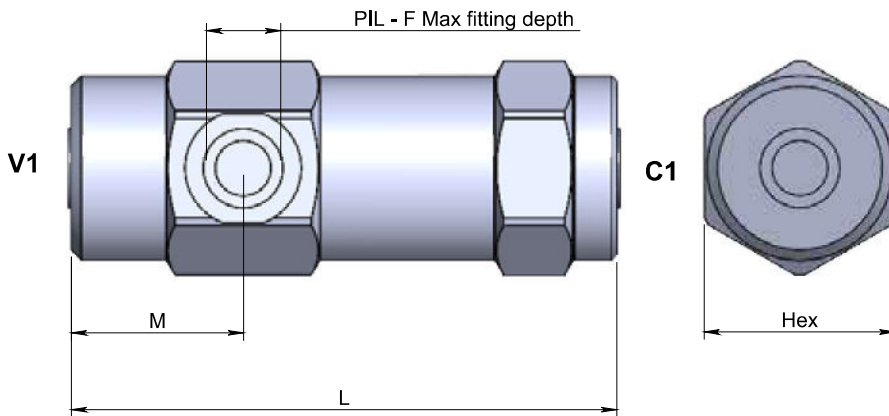
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A

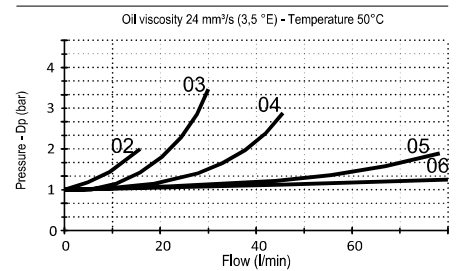
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-A-06-D01-3-N--***

02 = 1/4 BSPP
 03 = 3/8 BSPP
 04 = 1/2 BSPP
 05 = 3/4 BSPP
 06 = 1" BSPP

P-T Port size

Cracking pressure

X = 1 bar Std
 Y = 3
 Z = 8 bar

Standard code	Thread		L	M	F max	Hex	Weight/Peso (kg)	Max. Flow (l/min)	Max Pressure	Pilot ratio
	V1-V2	PIL								
14A06D013N02X	1/4	1/4	103		12	36	0.7	20	350	8.5 : 1
14A06D013N03X	3/8	1/4	109		12	40	0.9	30	300	6 : 1
14A06D013N04X	1/2	1/4	122		12	42	1.1	45	300	5.5 : 1
14A06D013N05X	3/4	1/4	131		14	55	2	80	250	4 : 1
14A06D013N06X	1"	1/4	165		14	55	2,3	120	220	3.5 : 1

* On request version - Please contact our customer service.

CARTRIDGE SINGLE PILOT OPERATED CHECK VALVE

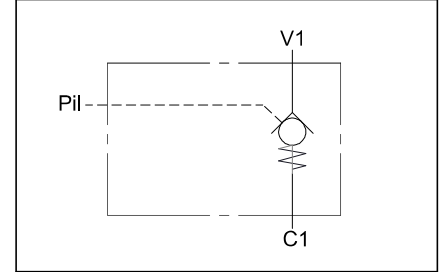
POC-1-SC | SECT 14 - REF .050

CHECK VALVE

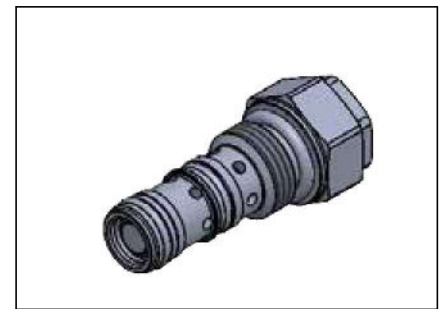
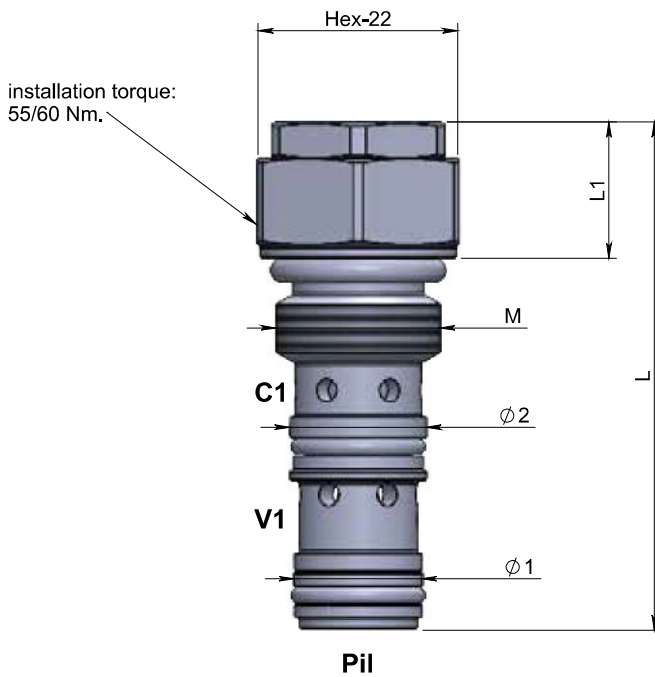
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A
Cavity code:	DO-590.005.23

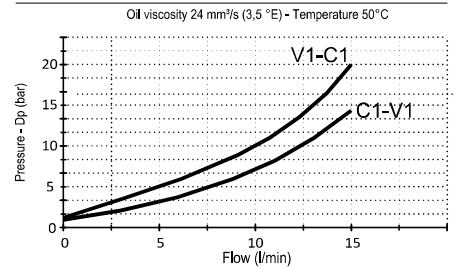
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-E-15-B01-3-*-23-T

M = With OR Std. OR on pilot piston
N = Without OR

Standard code	L	L1	Ø1	Ø2	M	Installation torque (Nm)	Cr. Pressure (bar)	Weight/Peso (kg)	Max. Flow (l/min)	Max Pressure	Pilot ratio
14E15B013M23T	56	15	14	15	M18x1.5	40/45	5	0.09	15	350	3.2 : 1

* On request version - Please contact our customer service.

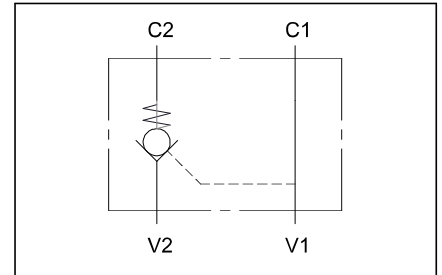
INLINE SINGLE PILOT OPERATED CHECK VALVE

POC-1-IL | SECT 14 - REF .055

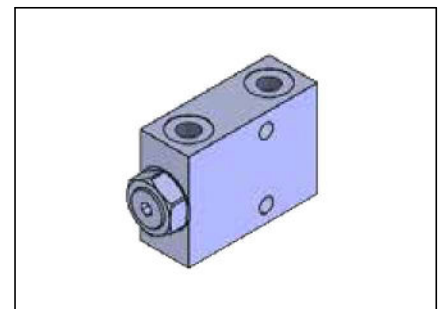
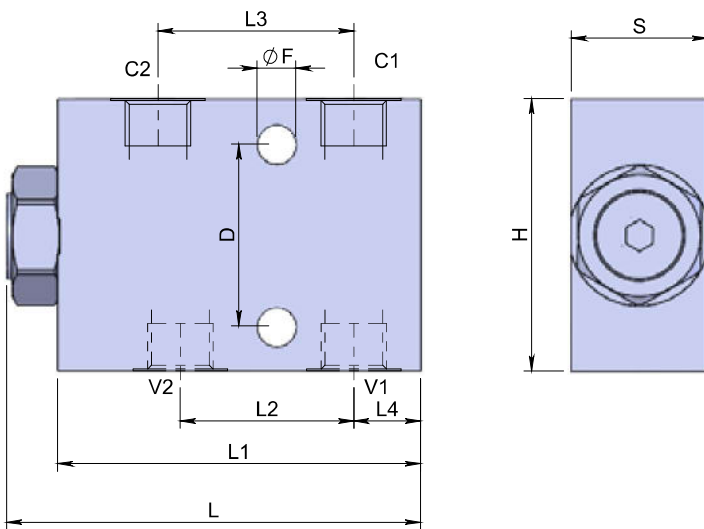
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	350 Bar
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A

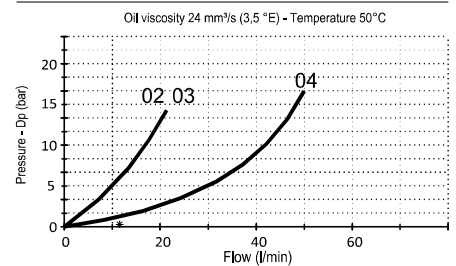
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-M-01-L00-3-*--***

3=Zinc plated steel Std. Material
For aluminium version contact our customer service.

M=With OR Std. OR on pilot piston
N= Without OR

Cracking pressure
X = 1 bar
Y = 3 bar Std
Z = 8 bar

P-T Port size
02 = 1/4 BSPP
03 = 3/8 BSPP
04 = 1/2 BSPP

Standard code	Thread		L	L1	L2	L3	L4	H	S	D	ØF	Weight (kg)	Max. Flow (l/min)	Pilot ratio
	V1-V2	C1-C2												
14M01L003M02Y	1/4	1/4	92	80	33.5	50	15	60	30	40	8.5	1.0	20	7 : 1
14M01L003M03Y	3/8	3/8	92	80	33.5	50	15	60	30	40	8.5	1.0	30	7 : 1
14M01L003M04Y	1/2	1/2	119	105	49	70	17.5	80	35	40	8.5	2.1	55	3,8 : 1

* On request version - Please contact our customer service.

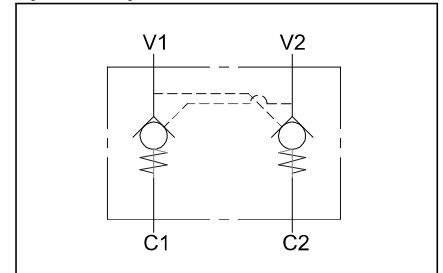
INLINE DUAL PILOT OPERATED CHECK VALVE

POC-2-IL | SECT 14 - REF .060

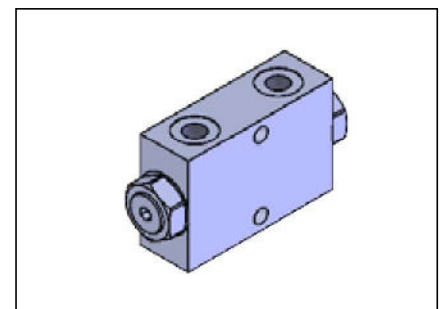
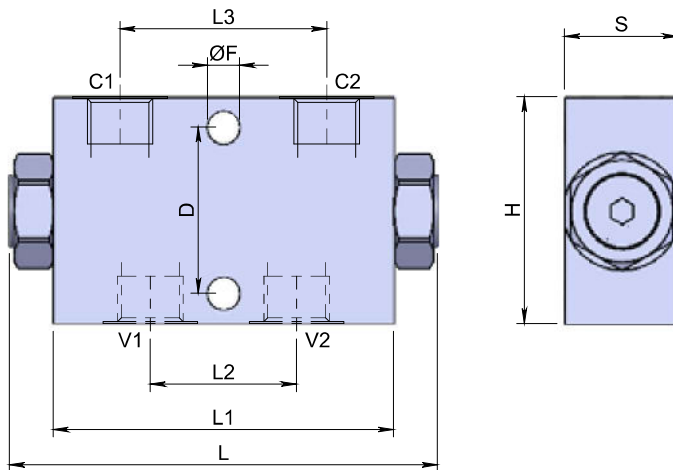
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	350 Bar
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A

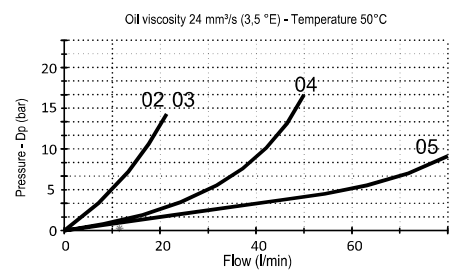
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-M-02-L00-3-*--***

3=Zinc plated steel Std. Material
For aluminium version contact our customer service.

M=With OR Std. OR on pilot piston
N= Without OR

Pressione di apertura
Y = 3 bar Std
Z = 8 bar
X = Only 1 bar for 3/4 size

P-T Port size
02 = 1/4 BSPP
03 = 3/8 BSPP
04 = 1/2 BSPP
05 = 3/4 BSPP

Standard code	Thread		L	L1	L2	L3	H	S	D	ØF	Weight (kg)	Max. Flow (l/min)	Pilot ratio
	V1-V2	C1-C2											
14M02L003M02Y	1/4	1/4	113	90	27	52	60	30	44	8,5	1,0	20	6.25 : 1
14M02L003M03Y	3/8	3/8	113	90	30	52	60	30	44	8,5	1,2	30	6.25 : 1
14M02L003M04Y	1/2	1/2	143	115	39	80	80	35	40	8,5	2,4	55	4 : 1
14M02L003M05X	3/4	3/4	177	158	50	105	80	50	58	10,5	4,6	100	3.8 : 1

* On request version - Please contact our customer service.

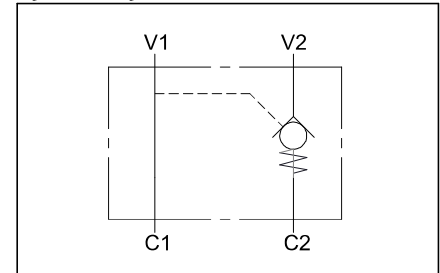
FLANGEABLE SINGLE PILOT OPERATED CHECK VALVE

POC-1-FL | SECT 14 - REF .065

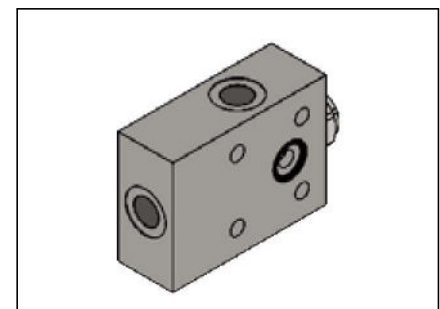
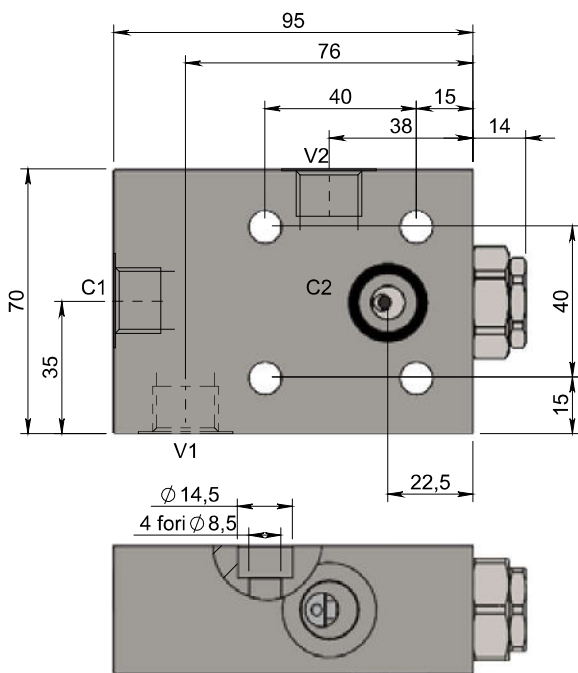
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	350 Bar
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A

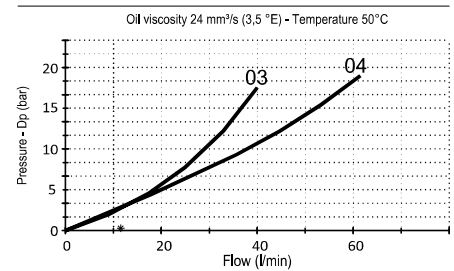
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-L-06-B01-3-*--Y**

3=Zinc plated steel Std.
For aluminium version contact
our customer service.

Material

P-T Port size 03 = 3/8 BSPP
04 = 1/2 BSPP

M=With OR Std.
N= Without OR

OR on pilot piston

Standard code	Thread		Weight (kg)	Max. Flow (l/min)	Pilot ratio
	V1-V2-C1	C2			
14L06B013M03Y	3/8	Ø9	1.8	40	4 : 1
14L06B013M04Y	1/2	Ø9	1.8	60	4 : 1

* On request version - Please contact our customer service.

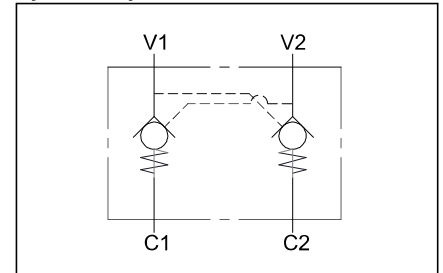
FLANGEABLE DUAL PILOT OPERATED CHECK VALVE

POC-2-FL | SECT 14 - REF .070 | CHECK VALVE

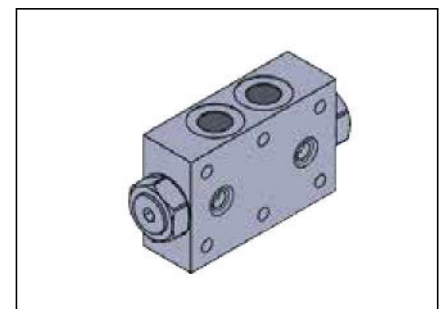
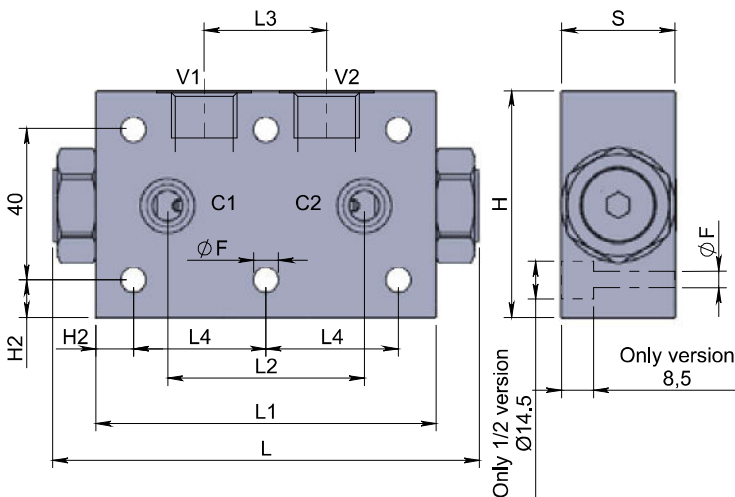
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	350 Bar
External surfaces:	Zinc plated/Zincate
Standard seals:	NBR 70 Shore A

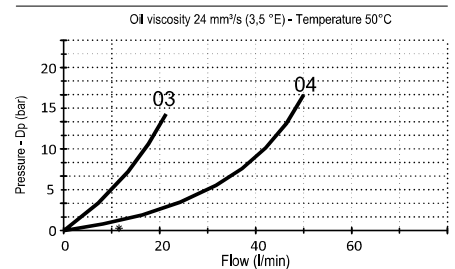
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-M-06-B01-3-*--***

3=Zinc plated steel Std. Material
For aluminium version contact our customer service.

Cracking pressure X = 1 bar
Y = 3 bar Std
Z = 8 bar

M=With OR Std. OR on pilot piston
N= Without OR

P-T Port size 03 = 3/8 BSPP
04 = 1/2 BSPP

Standard code	Thread		L	L1	L2	L3	L4	H	S	H2	ØF	Weight (kg)	Max. Flow (l/min)	Pilot ratio
	V1-V2	C1-C2												
14M06B013M03Y	3/8	Ø6	113	90	52	30	35	60	30	10	6.5	1.2	30	6.25 : 1
14M06B023M03Y	3/8	Ø6	113	90	62	32	35	60	35	10	6.5	1.4	30	6.25 : 1
14M06B013M04Y	1/2	Ø9	138	110	65	34	40	70	34	15	8.5	1.8	60	4 : 1

* On request version - Please contact our customer service.

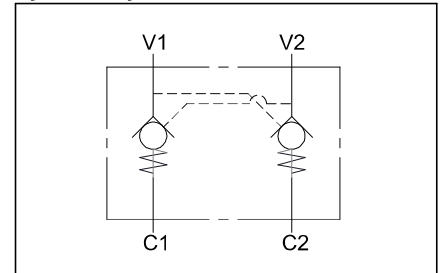
DUAL PILOT OPERATED CHECK VALVE TO WELD

POC-2-AS | SECT 14 - REF .075

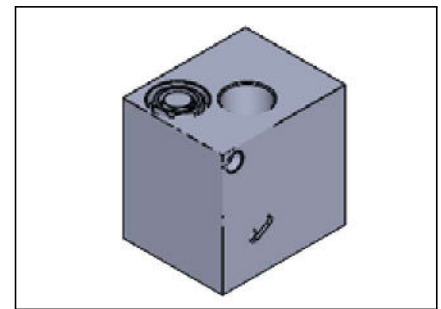
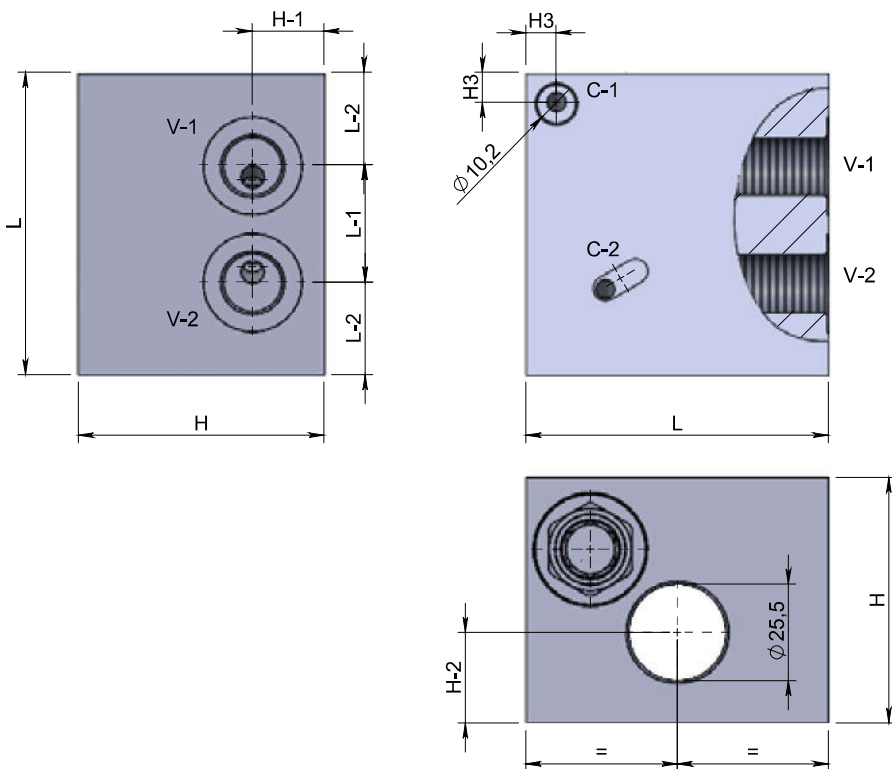
Specifications

Fluid viscosity:	ISO 3448
Filtration:	ISO 4406
Fluid temperature:	-20°C +90°C
Ambient temperature:	-20°C +50°C
Max. operating pressure:	350 Bar
Materials:	FE-360 to weld
Standard seals:	NBR 70 Shore A

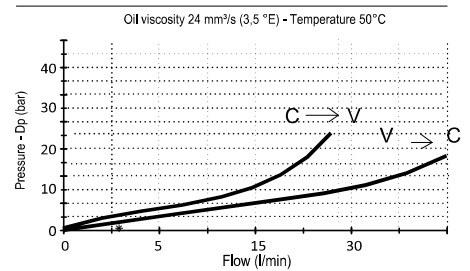
Hydraulic symbol



Dimensions (mm)



Performance



CALL 1300 767 705 - HOW TO ORDER:

14-AS-2-L-3-M-03-Y**

L = 80
L = 90

The check cartridge and the pilot piston have to be fitted after installation of the valve therefore they are supplied separately

Standard code	Thread		L	L1	L2	H	H1	H2	H3	Weight (kg)	Max. Flow (l/min)	Cracking. P.	Pilot ratio
	V-1	V-2											
14AS2L803M03Y	3/8-G	3/8-G	80	31	24,5	65	19	24	8	2,80	25	3	5,5 : 1
14AS2L903M03Y	3/8-G	3/8-G	90	28	31	65	19	24	10	3,50	25	3	5,5 : 1

* On request version - Please contact our customer service.