



VR*-I

CHECK VALVES

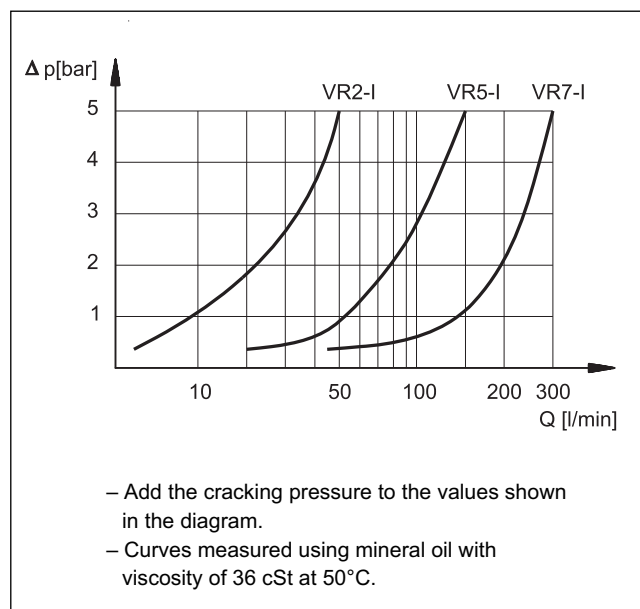
SERIES 32

CARTRIDGE TYPE

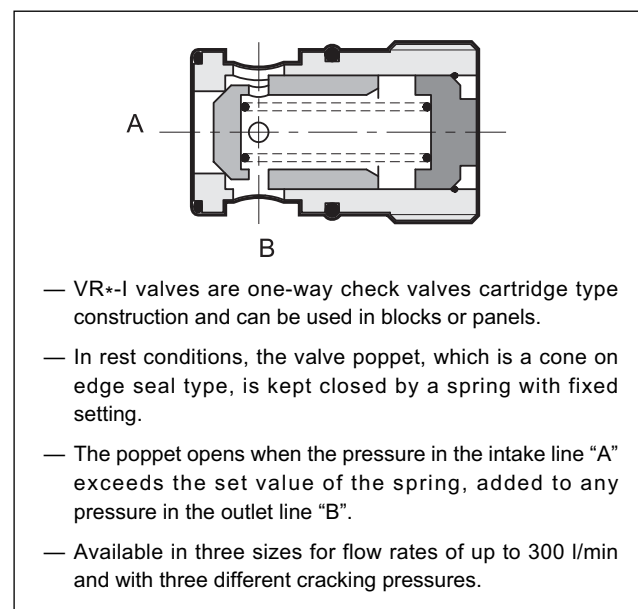
p max (see table of performances)

Q max (see table of performances)

PRESSURE DROP ΔP -Q



OPERATING PRINCIPLE

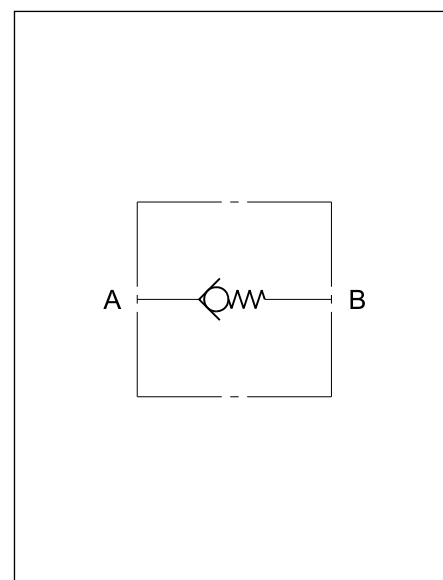


PERFORMANCES

valve code	nominal dimension	maximum flow rate [l/min]	mass [kg]	max operating pressure [bar]	
				continuous	peak
VR 2- I	1/4"	50	0,1	320	320
VR 5- I	3/4"	150	0,2	250	320
VR 7- I	1 1/4"	300	0,8		

Ambient temperature range	°C	-20 / +50
Fluid temperature range	°C	-20 / +80
Fluid viscosity range	cSt	10 ÷ 400
Fluid contamination degree	according to ISO 4406:1999 class 20/18/15	
Viscosità raccomandata	cSt	25

HYDRAULIC SYMBOL



1 - IDENTIFICATION CODE

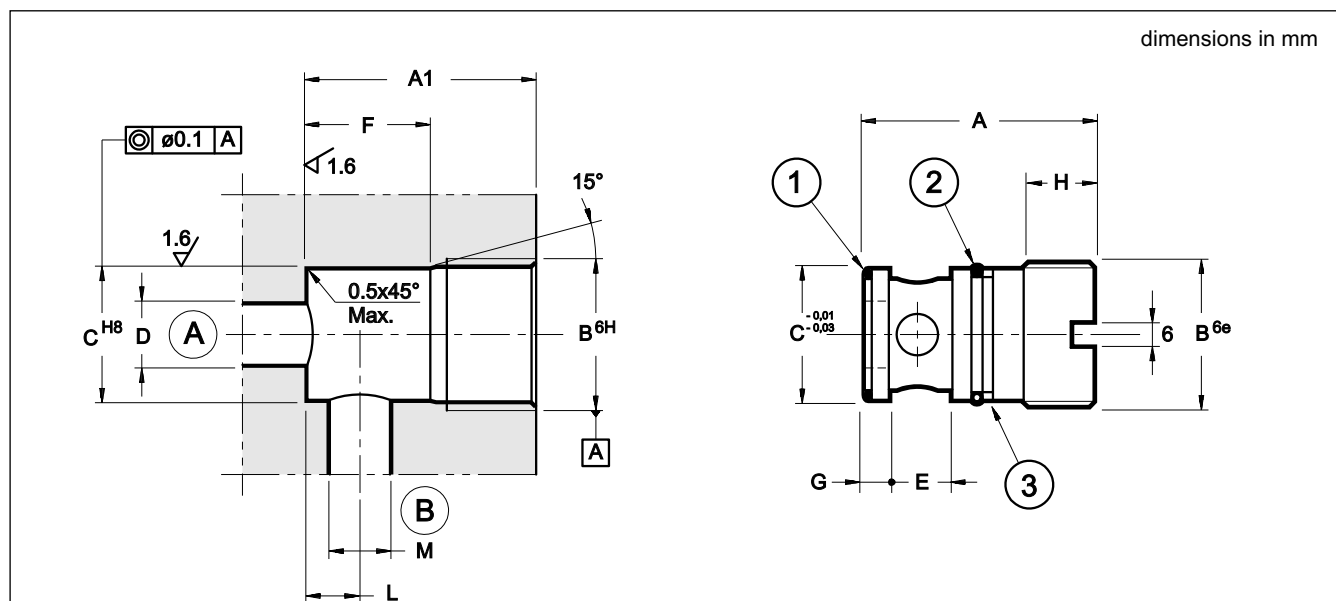
	V	R		-	I		/	32	/	
Check valve										
Nominal dimension: 2 = 1/4" 5 = 3/4" 7 = 1 1/4"										
Cartridge type										
										Seals: omit for mineral oils V = viton for special fluids
										Series No.: (the overall and mounting dimensions remain unchanged from 30 to 39)
										Cracking pressure: 1 = 0,5 bar 3 = 5 bar 4 = 10 bar

2 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals. For fluids HFDR type (phosphate esters) use FPM seals (code V). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department. Using fluids at temperatures higher than 80 °C causes a faster degradation of the fluid and of the seals characteristics.

The fluid must be preserved in its physical and chemical characteristics.

3 - OVERALL AND MOUNTING DIMENSIONS



NOTE: the dimension **A1** must be at least 1 mm higher than the dimension **A** indicated in the table herebelow.

	A	B	ØC	ØD max	E	F	G	H	L	ØM max	1	2	3	tightening torque
VR 2 - I	41	M24x1,5	22	9	10	22	4	14	9	9	OR 119 (15.08x2.62)	OR 3068 (17.13x2.62)	Parbak 8-115	25 Nm
VR 5 - I	43	M30x1,5	27	15	13,5	26	4,5	12	11	12	OR 3081 (20.24x2.62) 90 Shore	OR 2093 (23.52x1.78)	Parbak 8-021	50 Nm
VR 7 - I	72	M45x2	41	21	20	40	7,5	22	16,5	16	OR 3137 (34.60x2.62)	OR 4137 (34.52x3.53) 90 Shore	Parbak 8-220	80 Nm



VSK*

SHUTTLE VALVE

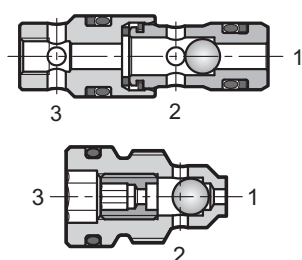
SERIES 10

CARTRIDGE TYPE

p max **350 bar**

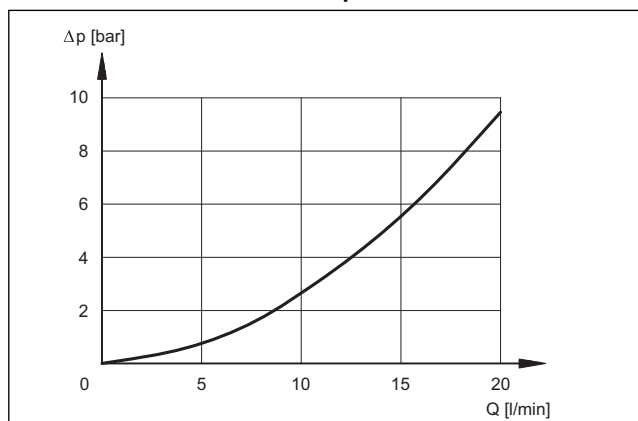
Q max (see table of performances)

OPERATING PRINCIPLE

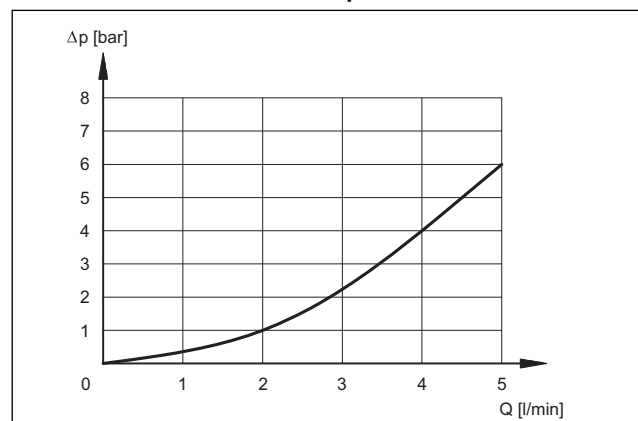


- The VSK* valves are shuttle type, cartridge version and it can be used in panels and blocks.
- The valve select the higher pressure signal between “1” and “3” through the output port “2”
- The VSK1 reaches flows up to 20 l/min.
- The VSK2 is a shuttle valve for pilot signals up to a 3 l/min flows.

VSK1 PRESSURE DROPS Δp -Q



VSK2 PRESSURE DROPS Δp -Q

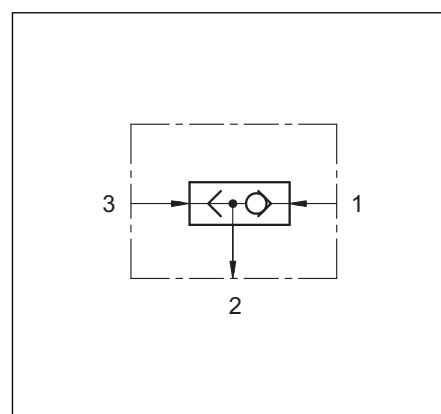


PERFORMANCES

valve	max flow [l/min]	mass [kg]
VSK1	20	0,013
VSK2	3	0,013

Ambient temperature range	°C	-20 / +50
Fluid temperature range	°C	-20 / +80
Fluid viscosity range	cSt	10 ÷ 400
Fluid contamination degree	According to ISO 4406:1999 class 20/18/15	
Recommended viscosity	cSt	25

HDRAULIC SYMBOL



1 - IDENTIFICATION CODE

V	S	K	/	10
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Shuttle valve _____

Cartridge type _____

Nominal size: _____

1 = shuttle for flows up to 20 l/min
2 = shuttle for piloting signals up to 3 l/min

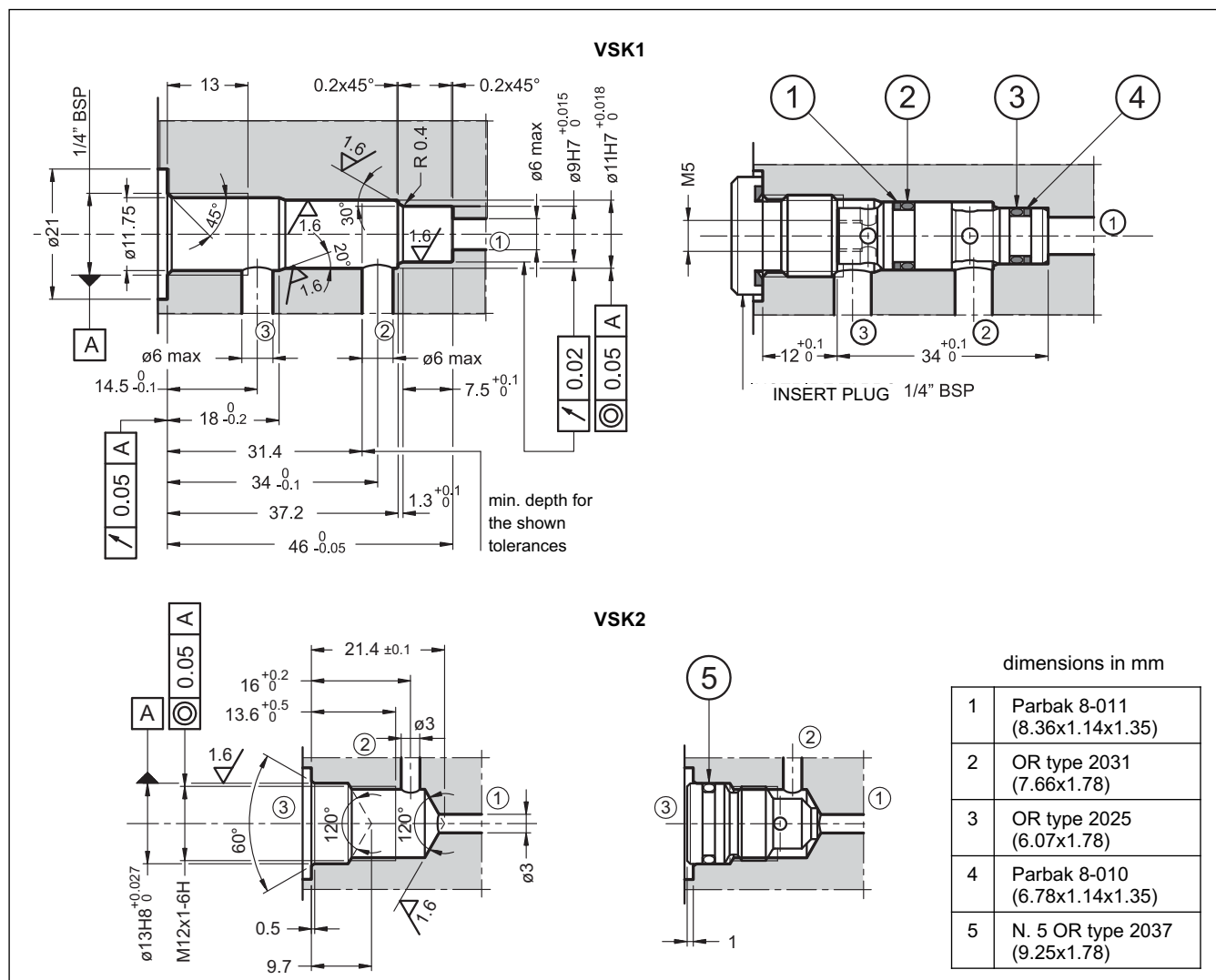
Seals:
N = for mineral oils (**standard**)
V = viton for special fluids

Series No.: (the overall and mounting dimensions remain unchanged from 10 to 19)

2 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals (code N). For fluids HFDR type (phosphate esters) use FPM seals (code V). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department. Using fluids at temperatures higher than 80 °C causes a faster degradation of the fluid and of the seals characteristics. The fluid must be preserved in its physical and chemical characteristics.

3 - OVERALL AND MOUNTING DIMENSIONS





VD*-W*

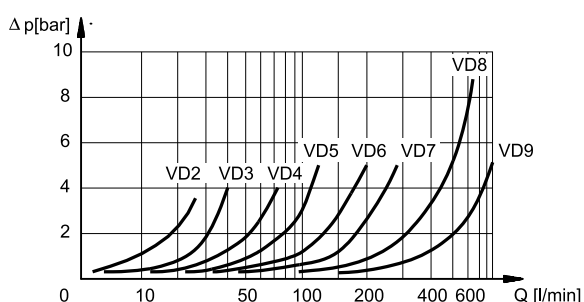
CHECK VALVES

SERIES 30

p max **400** bar

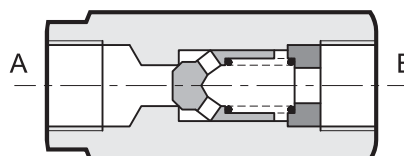
Q max (see table of performances)

PRESSURE DROPS Δp -Q



- Add the cracking pressure to the values shown in the diagram.
- Curves measured using mineral oil with viscosity of 36 cSt at 50°C.

OPERATING PRINCIPLE



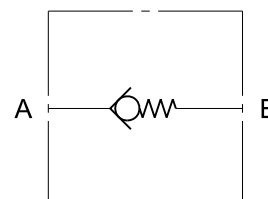
- VD*-W* valves are check valves with threaded “BSP” ports for mounting in-line on hydraulic lines.
- They allow the flow to pass freely in one direction, blocking it in the opposite direction.
- In rest conditions, the valve poppet is kept closed by a spring. The poppet opens when the pressure in the intake line “A” exceeds the set value of the spring, added to any pressure in the outlet line “B”.
- Available in eight sizes for flow rates of up to 850 l/min and with five different cracking pressures.

PERFORMANCES

Valve	BSP port dimension	Maximum flow rate [l/min]	Mass [kg]	Max operating pressure [bar]
VD2-W*	1/4"	25	0,17	400
VD3-W*	3/8"	40	0,26	
VD4-W*	1/2"	75	0,41	
VD5-W*	3/4"	125	0,6	
VD6-W*	1"	200	1,2	320
VD7-W*	1 1/4"	280	1,8	
VD8-W*	1 1/2"	650	3,2	
VD9-W*	2"	850	4,8	

Ambient temperature range	°C	-20 / +50
Fluid temperature range	°C	-20 / +80
Fluid viscosity range	cSt	10 ÷ 400
Fluid contamination degree	cSt	25
Recommended viscosity	acc. to ISO 4406:1999 class 20/18/15	

HYDRAULIC SYMBOL

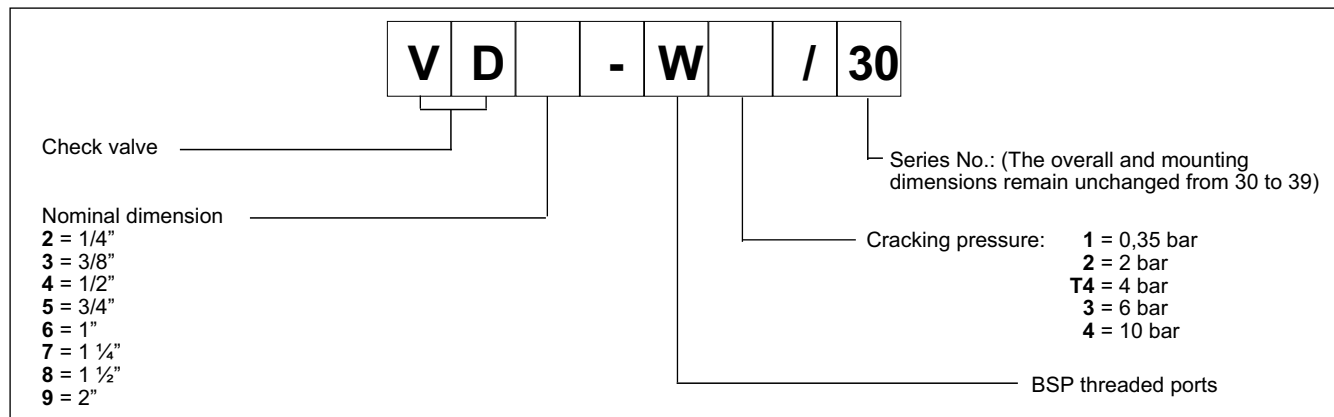




VD*-W*

SERIES 30

1 - IDENTIFICATION CODE



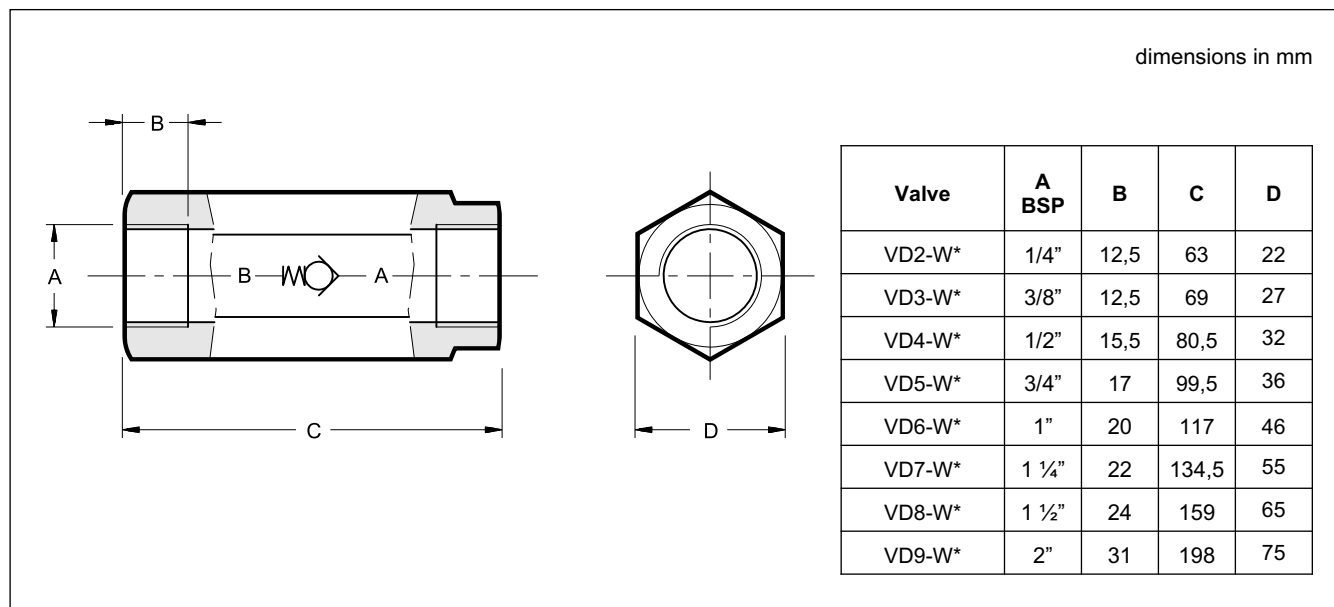
2 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4.

Using fluids at temperatures higher than 80 °C causes a faster degradation of the fluid and of the seals characteristics.

The fluid must be preserved in its physical and chemical characteristics.

3 - OVERALL AND MOUNTING DIMENSIONS



DIPLOMATIC OLEODINAMICA S.p.A.

20015 PARABIAGO (MI) • Via M. Re Depaolini 24

Tel. +39 0331.895.111

Fax +39 0331.895.339

www.diplomatic.com • e-mail: sales.exp@diplomatic.com

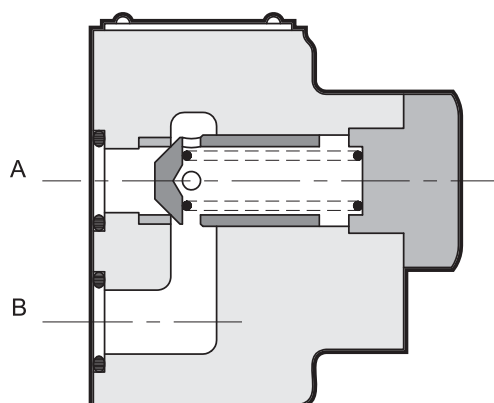


VR*-P CHECK VALVES

SUBPLATE MOUNTING

p max (see table of performances)
Q max (see table of performances)

OPERATING PRINCIPLE



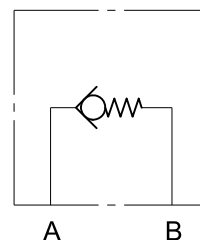
- VR*-P valves are one-way check valves constructed in the subplate mounting version.
- In rest conditions, the valve poppet, which is a cone on edge seal type, is kept closed by a spring with fixed setting.
- The shutter opens when the pressure in the intake line "A" exceeds the set value of the spring, added to any pressure in the outlet line "B".
- Available in three sizes for flow rates up to 400 l/min and with three different cracking pressures.

TECHNICAL SPECIFICATIONS

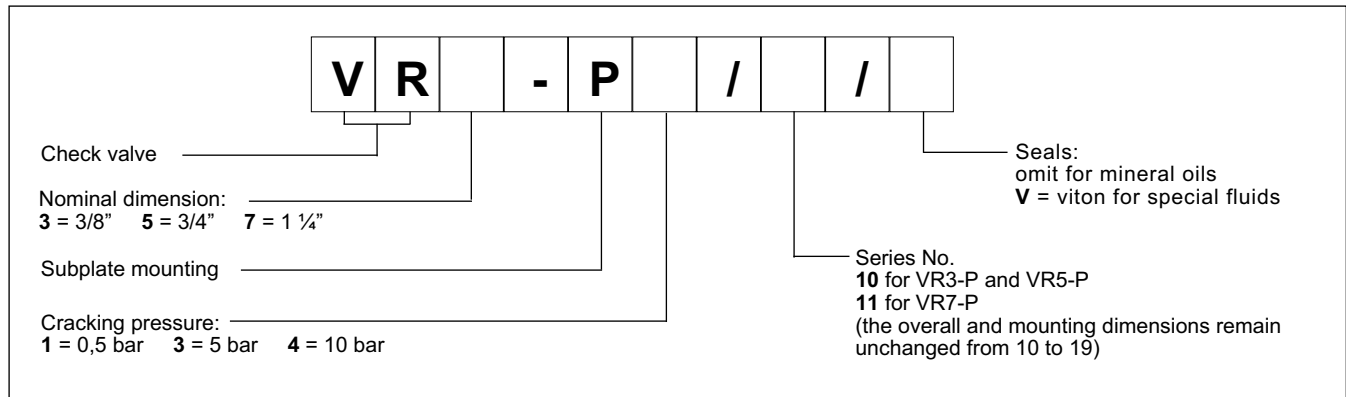
Valve code	Nominal dimension	Maximum flow rate [l/min]	Mass [kg]	Max. operating pressure [bar]
VR3 - P	3/8"	100	2,3	350
VR5 - P	3/4"	200	4,8	350
VR7 - P	1 1/4"	400	9	250

Ambient temperature range	°C	-20 / +50
Fluid temperature range	°C	-20 / +80
Fluid viscosity range	cSt	10 ÷ 400
Fluid contamination degree	According to ISO 4406:1999 class 20/18/15	
Recommended viscosity	cSt	25

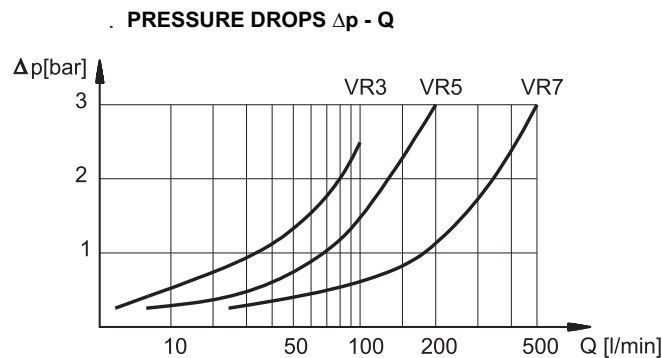
HYDRAULIC SYMBOL



1 - IDENTIFICATION CODE



2 - CHARACTERISTIC CURVES (values obtained with viscosità 36 cSt at 50°C)

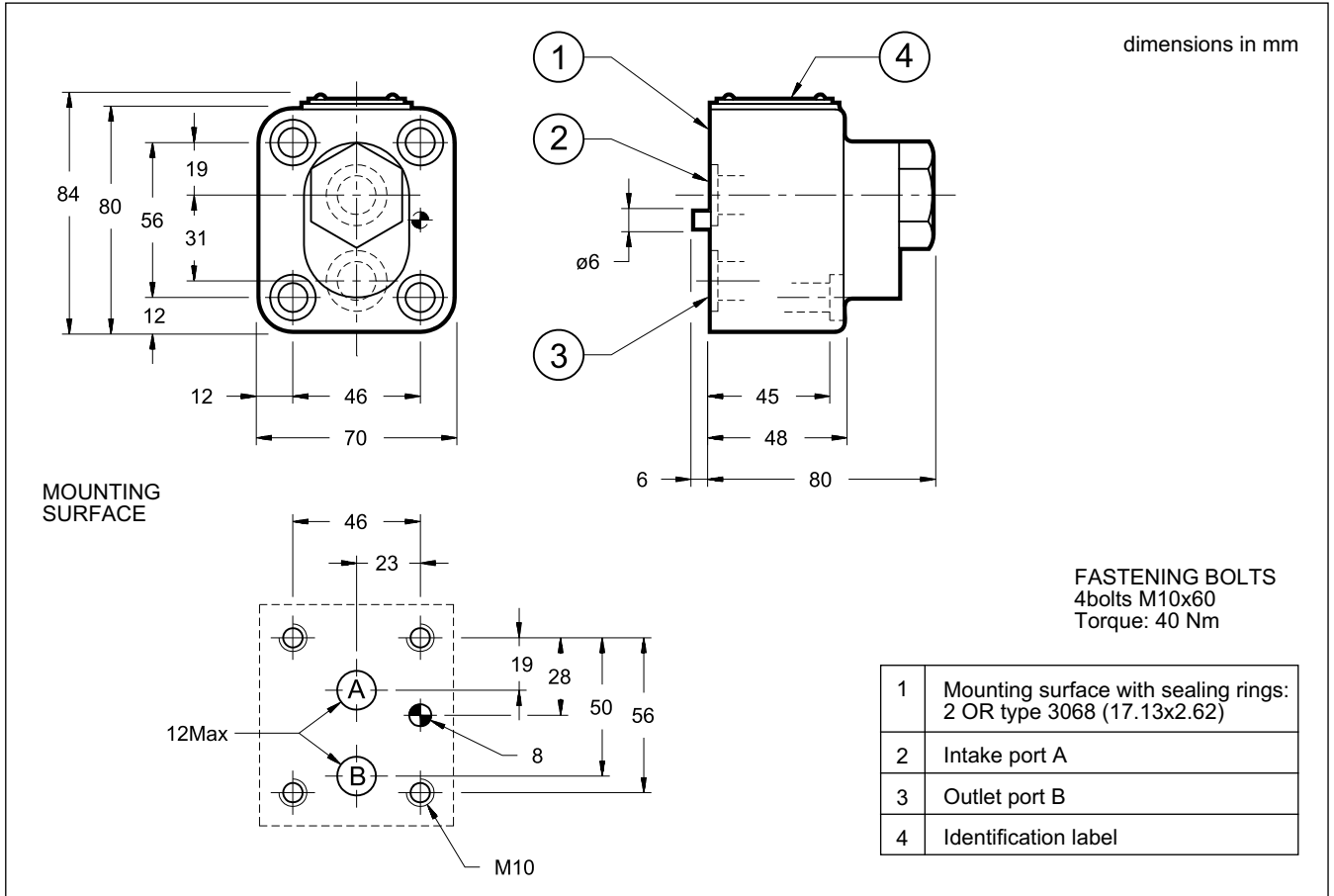


NOTE: Add the cracking pressure to the values shown in the diagram.

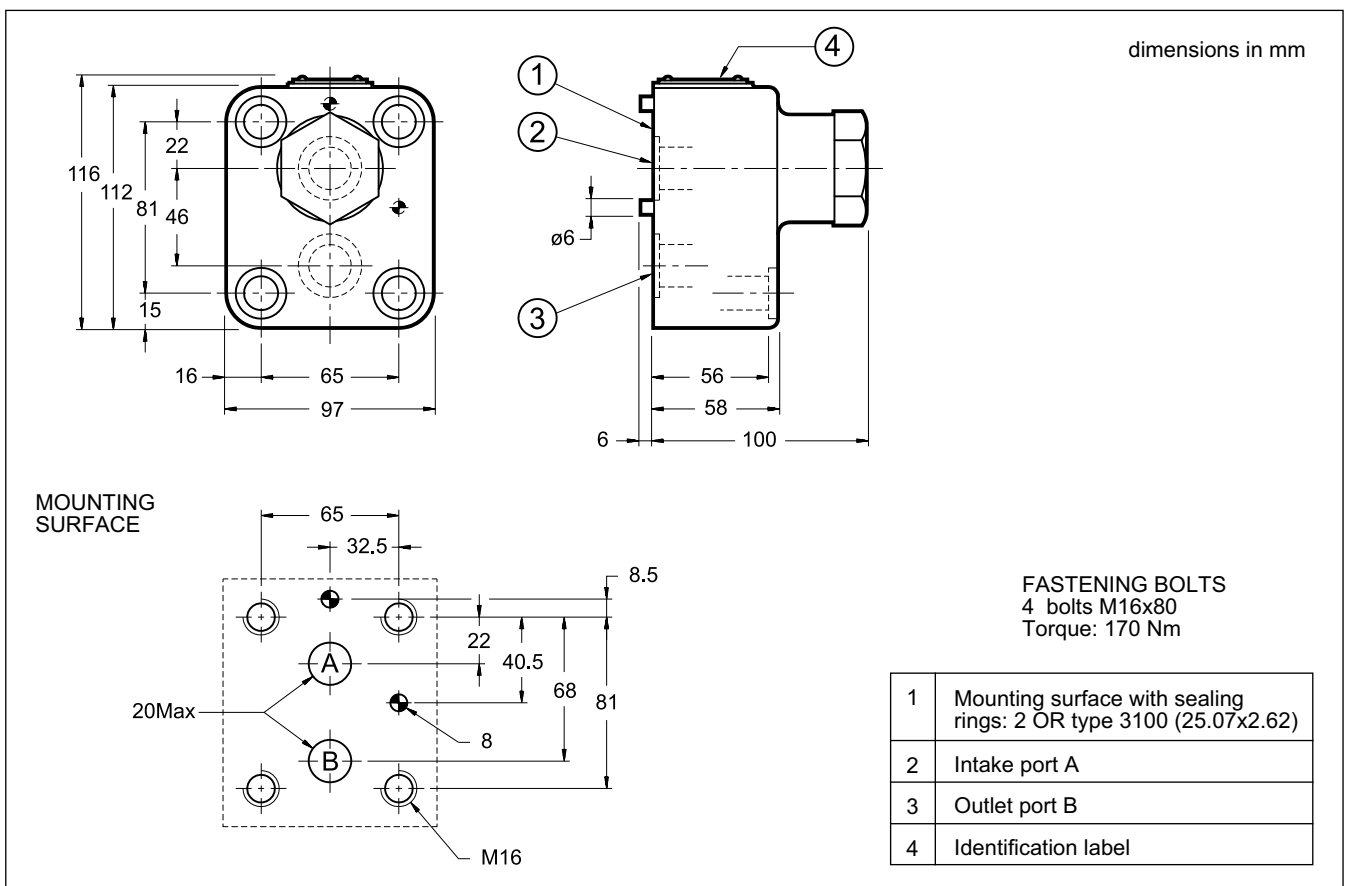
3 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals. For fluids HFDR type (phosphate esters) use FPM seals (code V). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department. Using fluids at temperatures higher than 80 °C causes a faster degradation of the fluid and of the seals characteristics. The fluid must be preserved in its physical and chemical characteristics.

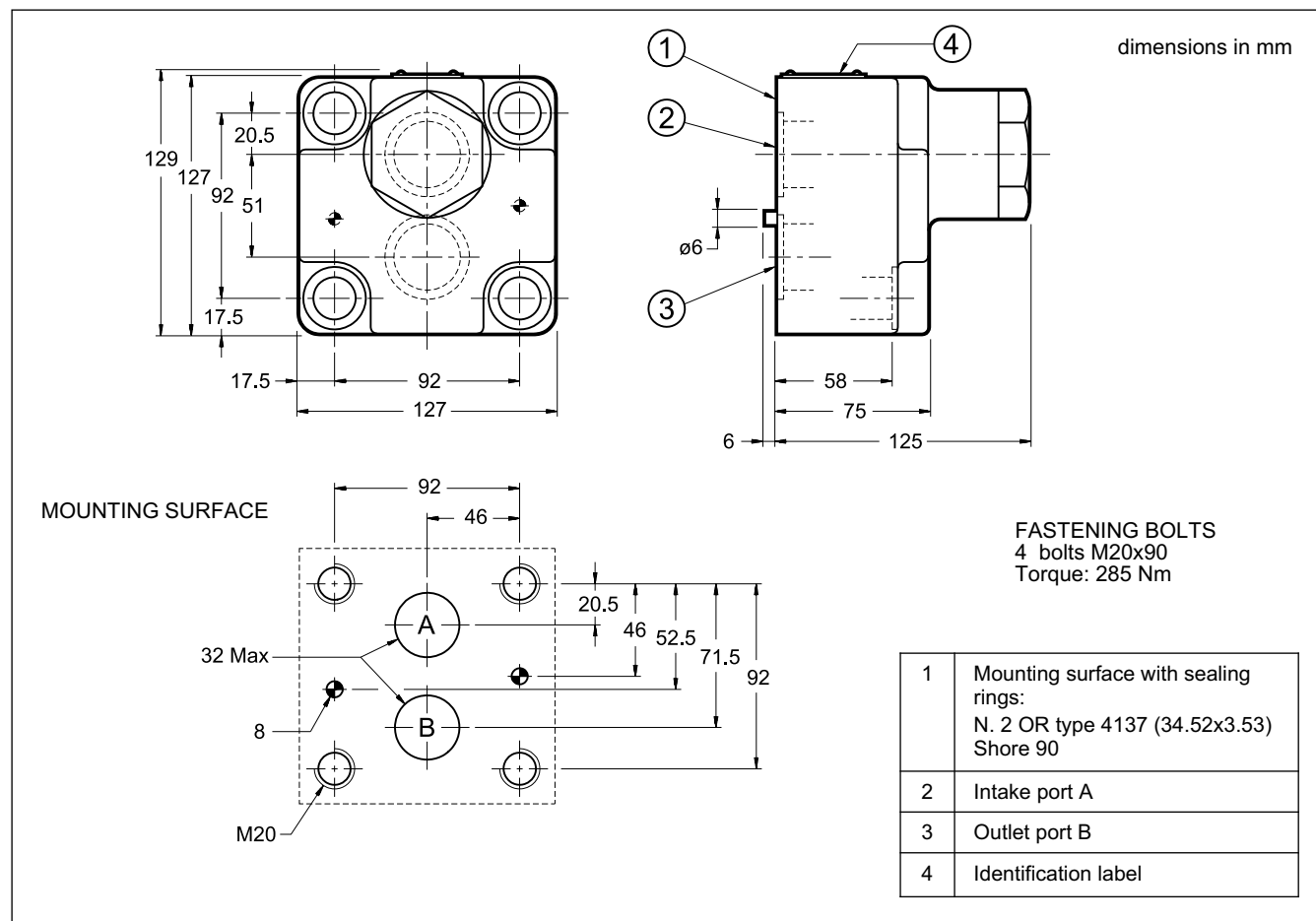
4 - VR3-P OVERALL AND MOUNTING DIMENSIONS



5 - VR5-P OVERALL AND MOUNTING DIMENSIONS



6 - VR7-P OVERALL AND MOUNTING DIMENSIONS





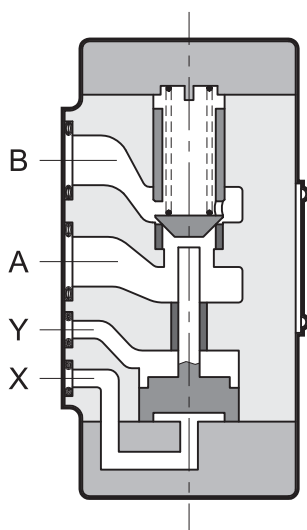
VP*-P*-MU

HYDRO-PILOT OPERATED CHECK VALVES SERIES 12

SUBPLATE MOUNTING
ISO 5781 (CETOP 06 07)

p max **320** bar
Q max (see table of performances)

OPERATING PRINCIPLE

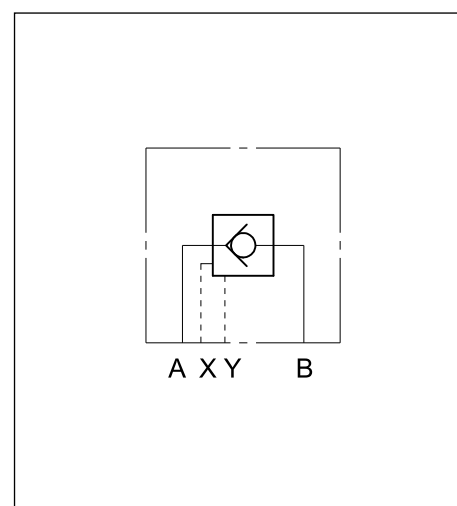


- VP*-P*-MU valves are check valves with hydraulic release, constructed in a version with subplate mounting in accordance with ISO 5781 (CETOP RP 121H) standards.
- They incorporate the functions of a normal one-way check valve with the facility, by means of external piloting, to release the poppet and allow the oil to pass also in the direction opposite to the free flow, from B to A.
- In rest conditions, the valve poppet, which is a cone on edge seal type, is kept closed by a spring with fixed setting. When piloting pressure is sent to port X, the release piston is operated, thus opening the main poppet and allowing the free flow from B to A.
- The drainage port Y isolates the front face of the control piston from chamber A.
- They are available in two sizes for flow rates up to 100 l/min and with different cracking pressures in the free flow direction.

PERFORMANCES (working with mineral oil of viscosity of 36 cSt at 50°C)

		VP3	VP5
Maximum operating pressure	bar	320	320
Nominal flow rate	l/mn	50	100
Piloting ratio between release piston and sealed chamber areas	VP*-P*-MU	3,4:1	2,7:1
Piloting ratio with decompression device	VP*-P*/P-MU	12:1	14:1
Ambient temperature range	°C	-20 / +50	
Fluid temperature range	°C	-20 / +80	
Fluid viscosity range	cSt	10 ÷ 400	
Fluid contamination degree	According to ISO 4406:1999 class 20/18/15		
Recommended viscosity	cSt	25	
Mass	kg	3,7	6

HYDRAULIC SYMBOL





VP*-P*-MU

SERIES 12

1 - IDENTIFICATION CODE

V	P		-	P	/		-	M	U	/	12	/	
---	---	--	---	---	---	--	---	---	---	---	----	---	--

Hydropilot operated check valve

Nominal size: _____
3 = ISO 5781-06 (CETOP 06)
5 = ISO 5781-08 (CETOP 08)

Subplate mounting _____

Cracking pressure with A→B free flow: _____
2 = 3,5 bar
3 = 5 bar

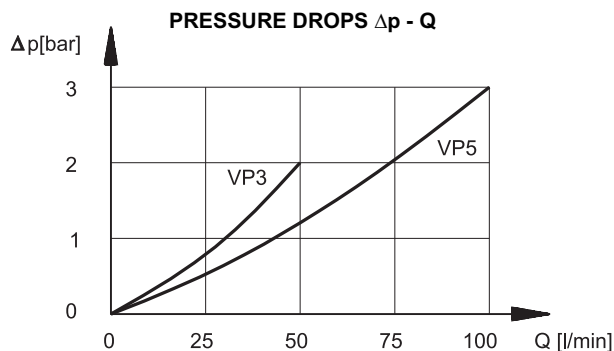
P = decompression device _____
(omit if not required)

Seals: omit for mineral oils
V = viton for special fluids

Series No. (the overall and mounting dimensions remain unchanged from 10 to 19)

Release piloting with external drainage

2 - CHARACTERISTIC CURVES (values obtained with viscosity 36 cSt at 50°C)



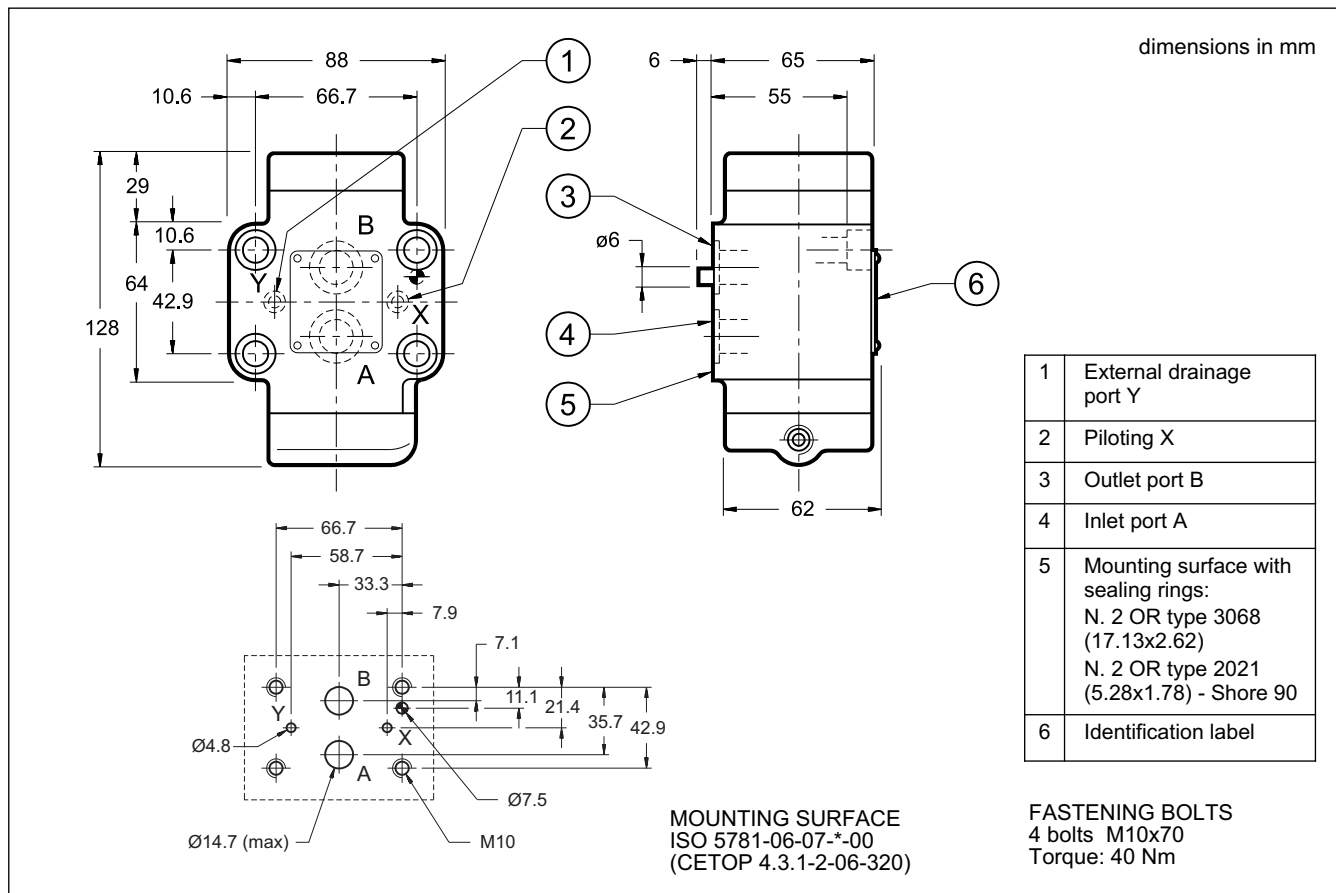
NOTE: The curves shown in the graph refer to B→A and A→B flow with the valve released hydraulically.
For A→B flow, with the valve not released hydraulically, add the cracking pressure to the values shown.

3 - HYDRAULIC FLUIDS

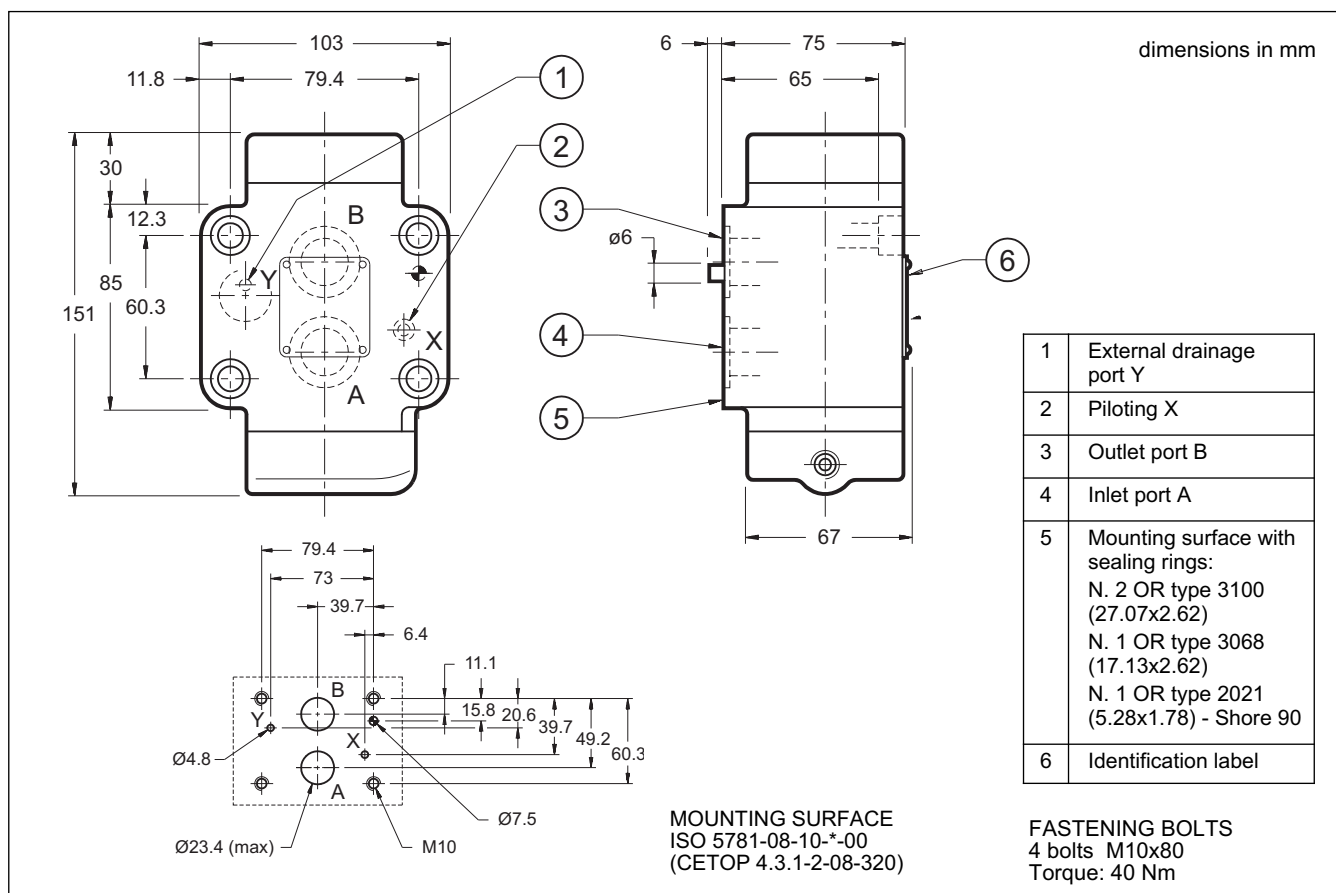
Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals. For fluids HFDR type (phosphate esters) use FPM seals (code V). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department. Using fluids at temperatures higher than 80 °C causes a faster degradation of the fluid and of the seals characteristics.

The fluid must be preserved in its physical and chemical characteristics.

4 - VP3-P*-MU OVERALL AND MOUNTING DIMENSIONS



5 - VP5-P*-MU OVERALL AND MOUNTING DIMENSIONS



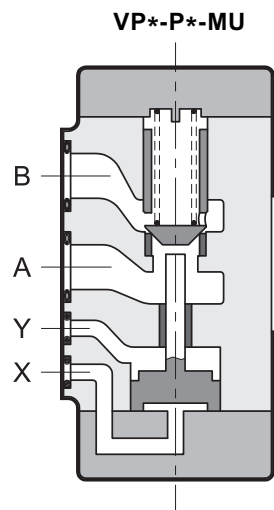
6 - USE

The VP*-P*-MU check valves with hydraulic release are used in circuits where the position of the actuators must be maintained even in the absence of hydraulic power.

They are available in two versions with the following characteristics:

VP*-P*-MU The VP*-P*-MU valves are check valves with hydraulic release that incorporate the functions of a normal one-way check valve with the possibility to release the poppet by means of external piloting, thus allowing flow of the oil also in the opposite direction of the free flow, from B to A. The valve poppet, a cone on edge seal type, is kept closed by a spring with fixed setting during rest conditions. When pilot pressure is sent to port X, the release piston is activated and opens the main poppet, thus allowing the reverse flow.

These valves have hydraulic isolation of the front face of the release piston from chamber A of the valve, by external drainage Y. This solution eliminates problems which can occur if, during the release phase of the valve, pressure builds up in chamber A near to or greater than the piloting pressure X, causing a backward movement of the piston and thus unwanted closure of the valve.



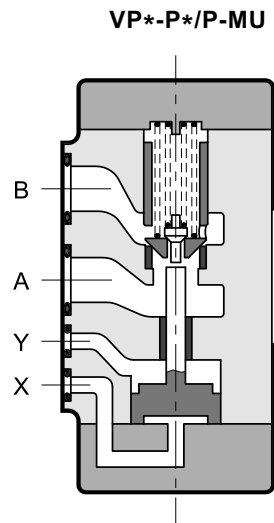
VP*-P*/P-MU The VP*-P*/P-MU valves are check valves with hydraulic release that, in addition to the characteristics of the preceding version, are equipped with a decompression device.

They are recommended when operating with high working pressures or with high loads that act as pressure multipliers.

The circuit (chamber B) is decompressed prior to complete opening of the valve during the release phase.

This prevents pressure shocks in the circuit and because of the high ratio existing between the areas of the control piston and the decompression device, release can occur even at a low piloting pressure.

Pilot pressure to port X operates the release piston which first opens the pre-opening poppet, causing decompression of the sealed chamber, it then opens the main poppet, allowing free flow from B to A.



7 - SUBPLATES (see catalogue 51 100)

	VP 3	VP 5
Type	PMSZ3 - Al 4G with rear ports	PMSZ5 - Al6G with rear ports
A - B port dimensions	1/2" BSP	1" BSP
X - Y port dimensions	1/4" BSP	1/4" BSP



CFP

FILLING VALVES

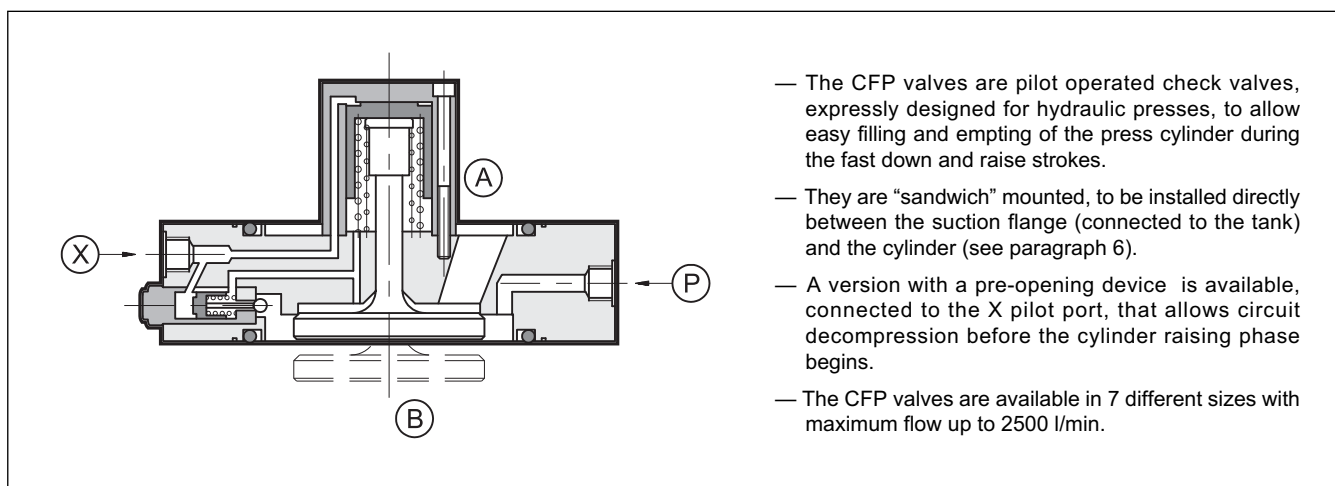
SERIES 10

SANDWICH MOUNTING

p max **350** bar

Q max (see table of performances)

OPERATING PRINCIPLE

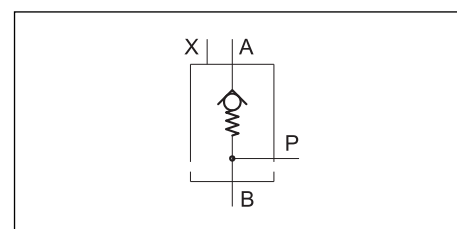


PERFORMANCES

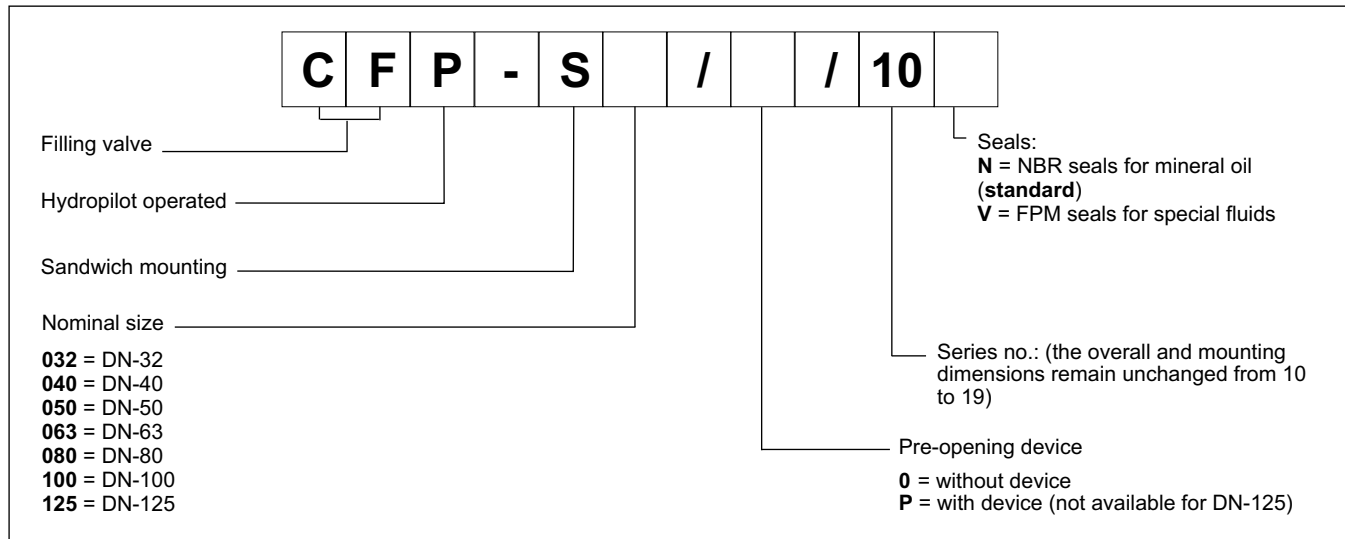
VALVE CODE			CFP-S032	CFP-S040	CFP-S050	CFP-S063	CFP-S080	CFP-S100	CFP-S125
Nominal size			DN-32	DN-40	DN-50	DN-63	DN-80	DN-100	DN-125
Maximum flow (with $\Delta p = 0,3$ bar and viscosity 36 cSt)		l/min	160	250	400	600	1000	1600	2500
Maximum pressure	Ports P and B	bar	350						
	Port X	bar	100						
	Port A	bar	16						
Cracking and pilot pressure			see paragraph 4						
Mass		kg	1,2	1,7	2,5	3,5	5,2	12	20

Ambient temperature range	°C	-20 / +50
Fluid temperature range	°C	-20 / +80
Fluid viscosity range	cSt	10 ÷ 400
Recommended viscosity	cSt	25
Fluid contamination degree	according to ISO 4406:1999 class 20/18/15	

HYDRAULIC SYMBOL



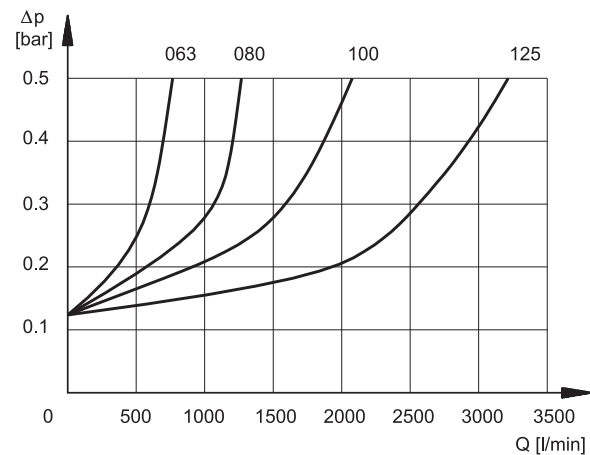
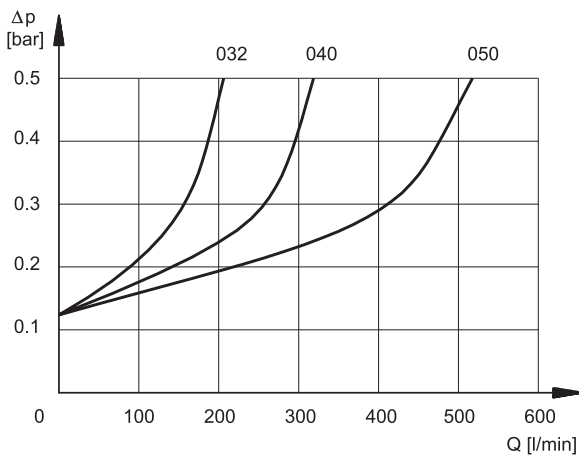
1 - IDENTIFICATION CODE



2 - CHARACTERISTIC CURVES

(values measured with viscosity of 36 cSt at 50°C)

Δp - Q characteristic with flow A → B.



3 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals. For fluids HFDR type (phosphate esters) use FPM seals (code V). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department. Using fluids at temperatures higher than 80 °C causes a faster degradation of the fluid and of the seals characteristics.

The fluid must be preserved in its physical and chemical characteristics.

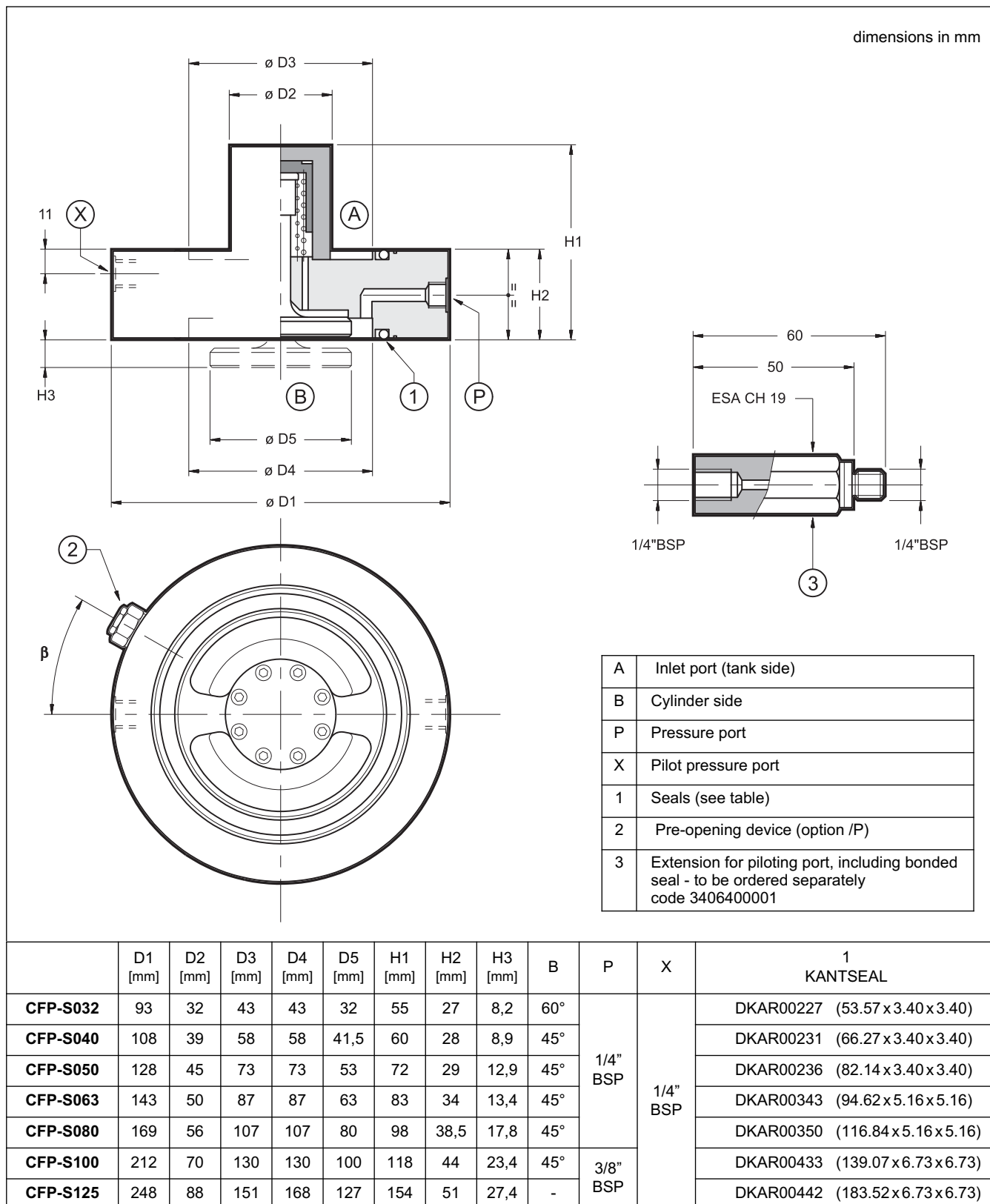
4 - OPENING AND PILOTING PRESSURES

Valve code	Cracking pressure A - B [bar]	Minimum pilot pressure [bar]	Pilot pressure ratio p (B) / p (X)	Pre-opening pressure (option /P) [bar]	Pilot volume for opening valve [cm³]
CFP-S032	0,12	8,0	3,6	p(X) = 0,18 x p(B) + 7	1,22
CFP-S040			3,9		2,36
CFP-S050			4,2		4,91
CFP-S063	4,2		8,13		
CFP-S080	4,5		12,72		
CFP-S100	4,3		28,63		
CFP-S125			4,3	-	67,86

5 - INSTALLATION

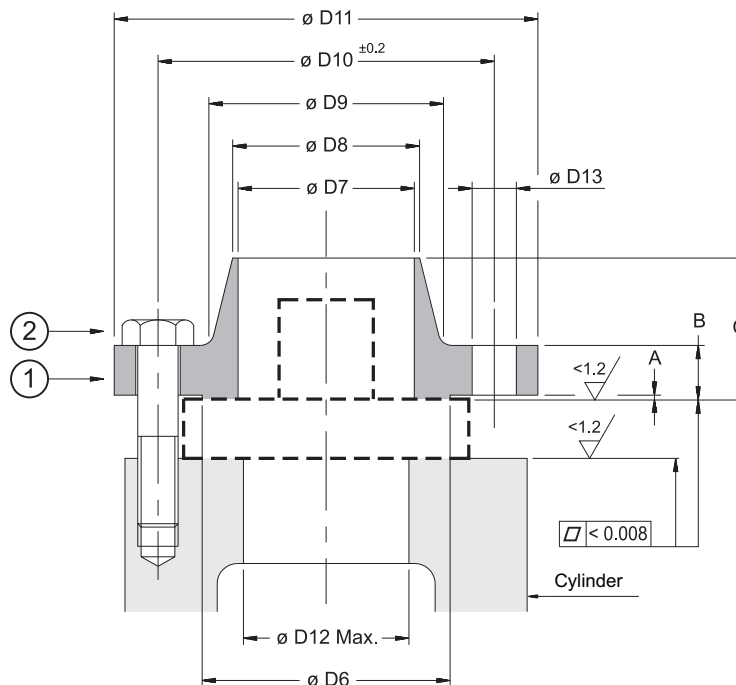
The valves up to size 63 can be mounted in any position. For the larger sizes (ND 80, ND 100 and ND 125) is required the vertical mounting.

6 - OVERALL DIMENSIONS



7 - CONNECTION FLANGE - INSTALLATION AND DIMENSIONS

dimensions in mm



Recommended building material: C22

	(1) Suggested dimensions for connection flange (see NOTE 2)											Max pressure on port B [bar]	(2)		
	D6 [mm]	D7 [mm]	D8 [mm] NOTE 1	D9 [mm]	D10 [mm]	D11 [mm]	D12 [mm]	D13 [mm]	A [mm]	B [mm]	C [mm]		Fastening bolts (type A10.9)	Q.ty	Tightening torque [Nm]
CFP-S032	88	42	48,3	88	110	150	46	18	3	22	45	350	M16	4	285
CFP-S040	102	53	60,3	102	125	165	58	18	3	29	62		M16	4	285
CFP-S050	122	69	76,1	122	145	185	71	18	3	34	68		M16	8	285
CFP-S063	138	82	88,9	138	160	200	86	18	3	43	72		M16	8	285
CFP-S080	162	107	114,3	162	190	235	108	22	3	51	78		M20	8	560
CFP-S100	188	131	139,7	188	240	295	132	29	3	62	105		M27	8	1400
CFP-S125	218	160	168,3	218	280	345	170	32	3	79	115		M30	8	1900

NOTE 1: Calculated diameters for PN 16 - DIN 2448 steel pipes

NOTE 2: For application with standard connection flange type UNI2284 - UNI2285 - UNI2286, special bushings to fit on fastening bolts must be provided in order to ensure a correct valve mounting.

For information about the installation with UNI connector flange, please consult our technical department.



LOGIC ELEMENTS

LC* CARTRIDGE VALVES
ISO 7368 - DIN 24342

LP* COVERS

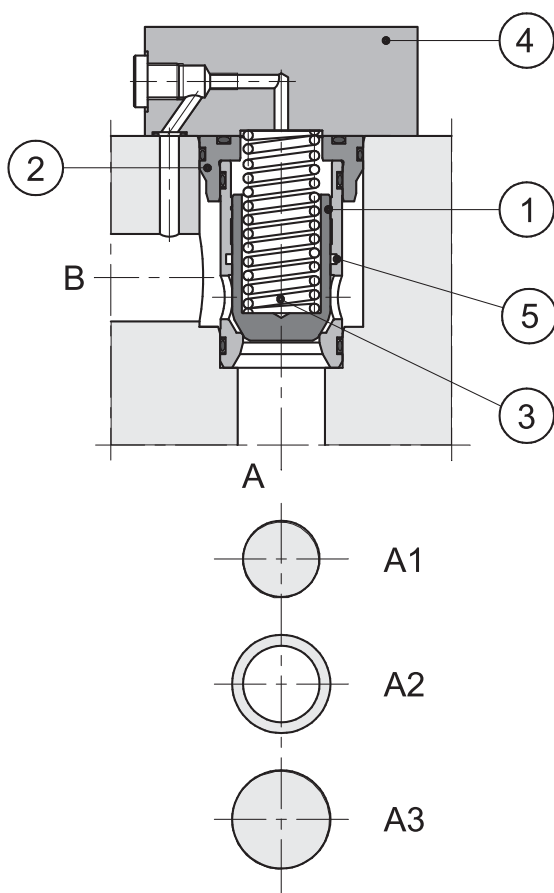
LCM* MONITORED LOGIC EL.

ND 16 - 25 - 32 - 40 - 50 - 63

p max **420** bar

Q max (see table of performances)

OPERATING PRINCIPLE



— Logic elements are cartridge valves suitable for installation in blocks or manifolds. They are available in five different sizes: ND 16 - 25 - 32 - 40 - 50 - 63.

— They are designed to perform complex hydraulic circuits, using functional compact blocks, with high flow rates and low pressure drops.

— They are made of a cartridge valve with ISO7368 / DIN 24342 cavity bore and a control cover (4). The cover includes the cartridge valves pilot lines; some versions are designed for the installation of ISO 4401-03 (CETOP 03) valves, to realise different control functions (see paragraph 8 for diagrams and function descriptions). A low leakage version, obtained inserting a seal into the seat no. 5, is also available.

— The cartridge valves are composed of a jacket (2), a poppet (1), and a closing spring (3). The poppet can either be standard (S) or with a damping nose (D), suitable for a smooth flow control during the valve opening and closing phases.

— Two types of cartridge valves are available:

- **Q** type: used for flow and directional control and as a check valve.

The areas involved are:

A1 - corresponding to the seat diameter area, considered as reference area = 1

A3 - corresponding to the jacket internal diameter area.

A2 - corresponding to the difference between A3 - A1

The area ratio A1/A3 is 1/1,66.

The valve opens when the pressure acting either on area A1 (flow from A to B) or on area A2 (flow from B to A) is higher than the pressure acting on area A3 (added to the spring load value).

- **P** type: used for pressure control.

In this case the areas A1 and A3 are equivalent (area ratio 1:1) and the valve enables the flow direction from A to B only.

— **LCM*** are monitored logic elements used for directional control, piloting and as a check valve. They are certified by TÜV. Available sizes are DN 16, 25, 32, 40 and 50.

1 - IDENTIFICATION CODE FOR CARTRIDGE VALVES

Cartridge valve

Shutter type:
(area ratio A1 / A3):
QS = flow rate control (1:1,66)
QD = flow rate control with damping nose (1:1,66)
PS = pressure control (1:1)

LL = Low leakage version, with seal between C and B.
Not available for QS0.5 and LC16-PS*
Omit if not required.

Seals:
NBR seals for mineral oil

20 - for ND 16, 25, 32, 40 and 50
21 - for ND 63
 (the overall and mounting dimensions remain unchanged from 20 to 29)

Nominal cracking pressure on section A1:
Verify the versions availability in the table below. Other cracking pressure values are available on request.
0.5 = 0,5 bar
1 = 1 bar
2 = 2 bar
4 = 4 bar

AVAILABLE NOMINAL SIZES						VERSIONS	SYMBOL
16 ND16	25 ND25	32 ND32	40 ND40	50 ND50	63 ND63		
x	x	x	x	x		QS0.5	
x	x	x	x	x	x	QS2	
x	x	x	x	x		QD4	
					x	PS1	
x	x	x	x	x		PS2	

2 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals. For fluids HFDR type (phosphate esters) use FPM seals (code V). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department. Using fluids at temperatures higher than 80 °C causes a faster degradation of the fluid and of the seals characteristics. The fluid must be preserved in its physical and chemical characteristics.

3 - TECHNICAL CHARACTERISTICS (cartridge valve with control cover)

Max operating pressure LC cartridge valve	bar	420
Max operating pressure limit of cover type DP*, DPE*, DF1, DF2, LCM	bar	350
Max operating pressure with distributor installed on cover	See technical characteristics of the distributor	
Ambient temperature range	°C	-20 / +50
Fluid temperature range	°C	-20 / +80
Fluid viscosity range	cSt	10 ÷ 400
Fluid contamination degree	According to ISO 4406:1999 class 20/18/15	
Recommended viscosity	cSt	25

3.1 - Cartridge valves type Q performances (flow control function)

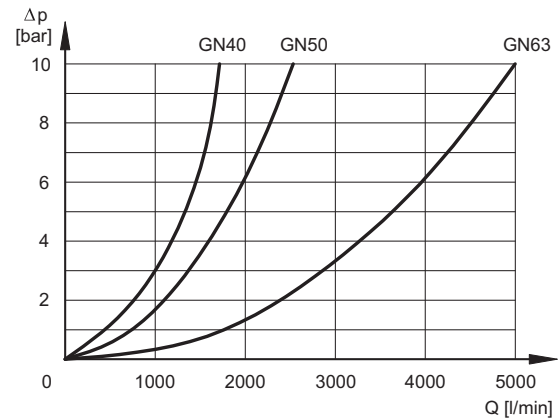
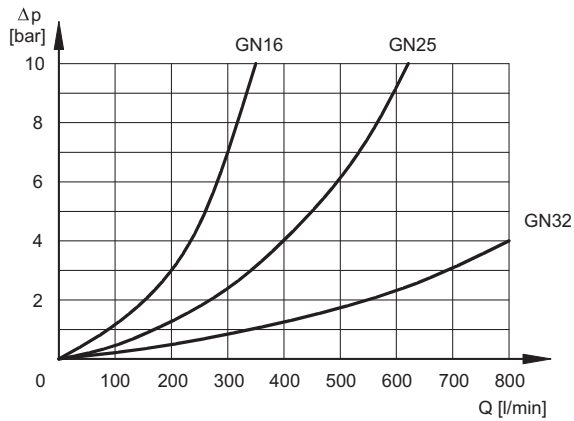
			NOMINAL SIZE					
			16	25	32	40	50	63
Area A1	cm ²		1,54	3	6	8,76	14,8	24,6
Area A2	cm ²		1	2	4	5,76	9,7	16,1
Area A3	cm ²		2,54	4,9	10	14,3	24,3	40,7
Version S:	opening stroke h	cm	0,8	1	1,25	1,6	1,8	2,3
	opening volume	cm ³	2,03	4,9	12,5	22,88	43,74	96,26
	max recommended flow	l/min	250	500	900	1300	2000	3000
Version D:	opening stroke h	cm	0,8	1,15	1,5	1,8	2,2	2,7
	opening volume	cm ³	2,03	5,63	15	25,74	53,46	110
	max recommended flow	l/min	200	450	800	1100	1700	2700
Cracking pressure	A→B	spring 0,5	bar	0,5	0,5	0,5	0,5	-
		spring 2		2	2	2	2	2
		spring 4		4	4	4	4	-
	B→A	spring 0,5		0,9	1,1	0,7	0,76	0,8
		spring 2		3,1	3	3,1	3	3,2
		spring 4		6,15	5,9	5,4	5,9	-
Mass	Kg		0,25	0,5	1,1	1,9	3,9	7,8

3.2 - Cartridge valves type P performances (pressure control function)

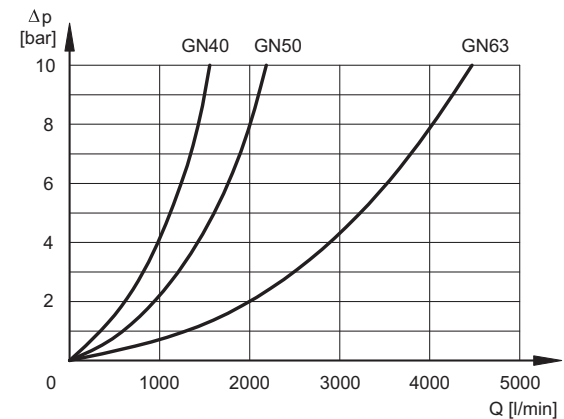
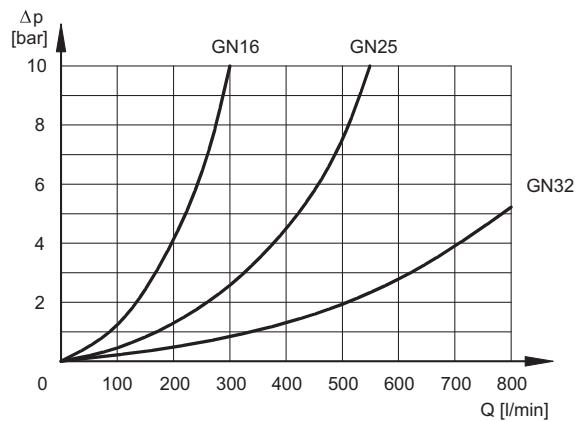
			NOMINAL SIZE					
			16	25	32	40	50	63
Area A1 = Area A3	cm ²		2,54	4,9	10	14,4	24,3	40,7
Version S: max recommended flow	l/min		200	400	900	1000	1500	2500
Cracking pressure	spring 1	bar	-	-	-	-	-	1
	spring 2		2	2	2	2	2	-
Mass	Kg		0,25	0,5	1,1	1,9	3,9	7,8

4 - CHARACTERISTIC CURVES (values obtained with viscosity 36 cSt at 50°C)

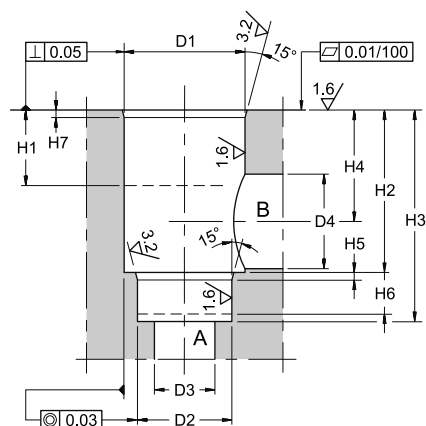
4.1 - LC*-QS flow control function and LC*-PS pressure control function



4.2 - Flow control function with damping nose LC*-QD

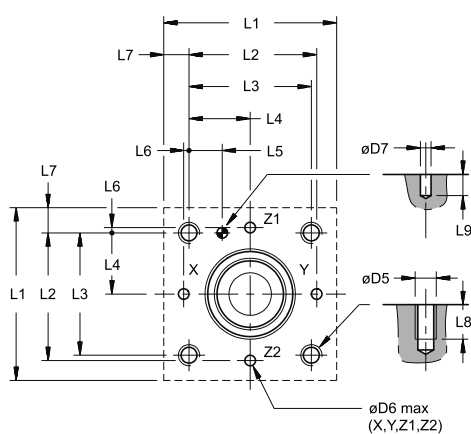


5 - LC CARTRIDGE VALVES SEAT DIMENSIONS ACCORDING TO ISO 7368 / DIN 24342



	LC CARTRIDGE VALVES NOMINAL SIZE					
	16	25	32	40	50	63
ØD1 ^{H7}	32	45	60	75	90	120
ØD2 ^{H7}	25	34	45	55	68	90
ØD3 max	16	25	32	40	50	63
ØD4	16	25	32	40	50	63
ØD4 max	25	32	40	50	63	80
H1 min	20	30	30	30	35	40
H2 ± 0,1	43	58	70	87	100	130
H3 ^{+0,1} ₀	56	72	85	105	122	155
H4 referred to diameter ØD4	34	44	52	64	72	95
H4 referred to diameter ØD4 max	29,5	40,5	48	59	65,5	86,5
H5	2	2,5	2,5	3	3	4
H6 min	11	12	13	15	17	20
H7	2	2,5	2,5	3	4	4

6 - LP CONTROL COVERS INTERFACE DIMENSIONS ACCORDING TO ISO 7368 / DIN 24342



	LP CONTROL COVERS NOMINAL SIZE					
	16	25	32	40	50	63
ØD5	M8	M12	M16	M20	M20	M30
ØD6 max	4	6	8	10	10	12
ØD7 ^{H13}	4	6	6	6	8	8
L1	*	85	102	125	140	180
L2 ± 0,1	48	62	76	92,5	108	137,5
L3 ± 0,1	46	58	70	85	100	125
L4 ± 0,1	23	29	35	42,5	50	62,5
L5 ± 0,1	12,5	13	18	19,5	20	24,5
L6 ± 0,1	2	4	6	7,5	8	12,5
L7	*	13,5	16	20	20	27,5
L8 min	15	20	28	35	35	52
L9 min	8	8	8	8	8	8

* = cover with special dimensions (see par. 9.2 + 9.7)

7 - COVERS IDENTIFICATION CODE

AVAILABLE NOMINAL SIZES						COVER NAME	SYMBOL	DIAGRAM PARAGRAPH	OVERALL DIMENSIONS PARAGRAPH
16 ND16	25 ND25	32 ND32	40 ND40	50 ND50	63 ND63				
x	x	x			x	R		8.1	9.1
x	x	x	x	x	x	D		8.2	9.2
x	x	x	x			DZ		8.3	9.3
x	x	x	x	x		DF1		8.4	9.4
x	x	x	x			DF2		8.5	9.5
x	x	x	x	x	x	Q		8.6	9.6
x	x	x	x	x	x	DP*		8.7	9.7
x	x	x	x	x		DPE*		8.8	9.7

Cartridge valve cover
two-way type LC

Seals: NBR seals for mineral oil

(the overall and mounting
dimensions remain unchanged
from 20 to 29)

8 - FUNCTIONAL DIAGRAMS

8.1 - R cover for directional control and check valve function with external pilot X

Functional diagrams	Description
	<p>Piloting of the cartridge valve through the X port, available on the mounting surface or with pipe connection 1/4" BSP.</p> <p>For ND 40 and ND 50 sizes, the external piloting function can be realised by using control cover type D, with blanking plate code 1950751 (to be ordered separately).</p>

8.2 - D cover for directional control and check valve function

Functional diagrams	Description
	<p>Piloting of the cartridge valve by means of solenoid valve type DS3-TA (to be ordered separately - see catalogue 41 150)</p> <ul style="list-style-type: none"> - solenoid valve OFF = A ↔ B intercepted flow - solenoid valve ON = A ↔ B free flow

8.3 - DZ cover for directional control with possibility to pilot other cartridges in line

Functional diagrams	Description
	<p>The DZ cover enables the piloting of its cartridge valves and also of other valves connected to Z1 and Z2 pilot lines.</p> <p>The solenoid valve type DS3-S10 must be ordered separately (see catalogue 41 150).</p>

8.4 - DF1 cover for directional control and check function with double pilot line

Functional diagrams	Description
	<p>The DF1 cover gives the possibility of a double pilot line through X and Z1 ports.</p> <p>The solenoid valve type DS3-TA must be ordered separately (see catalogue 41 150).</p> <ul style="list-style-type: none"> - solenoid valve OFF = A ↔ B intercepted flow - solenoid valve ON = A → B free flow, B → A intercepted (if pilot line X is connected with B and if Z1 is connected with A).

8.5 - DF2 cover for directional control and check function with priority piloting from two external lines

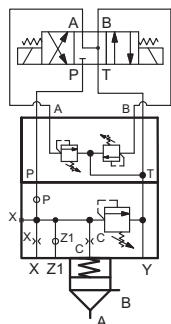
Functional diagrams	Description
	<p>The cartridge valve can be simultaneously piloted from X and Z1 lines.</p> <p>The shuttle valve, integrated in the cover, enables the automatic selection of the pilot line which has the higher pressure (priority line).</p> <p>The solenoid valve type DS3-TA must be ordered separately (see catalogue 41 150).</p> <ul style="list-style-type: none"> - solenoid valve OFF = A ↔ B intercepted flow - solenoid valve ON = A ↔ B free flow

8.6 - Q cover for flow control function

Functional diagrams	Description
	<p>Flow control function by means of cover with stroke limiter.</p> <p>For a better flow control and to avoid the wear of the valve seat, this cover is normally used with a QD4 cartridge type.</p>

8.7 - DP* cover for pressure control function

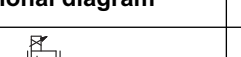
Functional diagrams	Description
	<p>Pressure control function with a built-in relief valve.</p> <ul style="list-style-type: none"> - max. adjustment pressure DP4 = 140 bar - DP6 = 350 bar <p>The top blanking plate code 1950591 must be ordered separately.</p>
	<p>Pressure control function with electrical unloading by means of DS3-SA2 solenoid valve (to be ordered separately - see catalogue 41 150).</p> <ul style="list-style-type: none"> - solenoid valve OFF = unloading at minimum pressure - solenoid valve ON = pressure controlled by the built-in relief valve.
	<p>Pressure control function with electrical unloading and two step pressure by means of the solenoid valves DS3-S2 (to be ordered separately - see catalogue 41 150), MCI*-SAT/10 (for 16, 25 and 32 sizes - to be ordered separately) and MCD*-SAT (for 40, 50 and 63 sizes to be ordered separately - see catalogue 61 200)</p> <ul style="list-style-type: none"> - solenoid valve OFF = unloading at minimum pressure - solenoid valve ON side a = pressure controlled by the relief valve integrated in the cover - solenoid valve ON side b = pressure controlled by the relief valve (MCI* or MCD*)



Pressure control function with electrical control and three steps pressure by means of the solenoid valves **DS3-S3** (to be ordered separately - see catalogue 41 150), **MCI*-DT/10** (for 16 - 25 and 32 sizes - to be ordered separately) and **MCD*-DT/51** (for 40 and 50 sizes - to be ordered separately - see catalogue 61 200)

- solenoid valve OFF = pressure controlled by the cover relief valve.
- solenoid valve ON side a = pressure controlled by the relief valve on side b.
- solenoid valve ON side b = pressure controlled by the relief valve on side a.

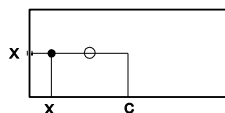
8.8 - DPE* cover for pressure control function

Functional diagram	Description
	<p>Pressure control function by means of PRED3 proportional valve (to be ordered separately see catalogue 81 210).</p> <ul style="list-style-type: none"> - max. adjustment pressure DPE4 = 140 bar - DPE6 = 350 bar - proportional valve OFF = unloading at minimum pressure - proportional valve ON = proportional control of pressure

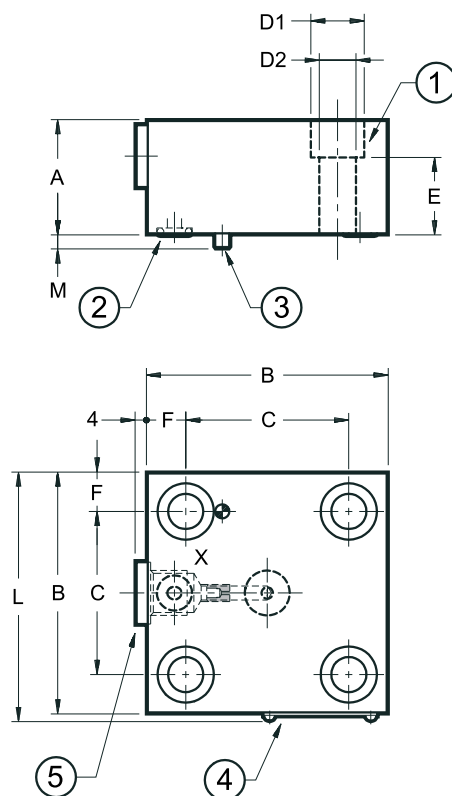
9 - OVERALL AND MOUNTING DIMENSIONS FOR CONTROL COVERS

9.1 - R type covers

dimensions in mm



LP16R
LP25R
LP32R
LP63R



	NOMINAL SIZE			
	16	25	32	63
A	30	30	40	70
B	65	85	102	180
C	46	58	70	125
D1	13,5	19	25	46
D2	8,5	13	17	31
E	19	17	22	35
F	9,5	13,5	16	27,5
L	67,5	87,5	104,5	182,5
M	4	5	5	5

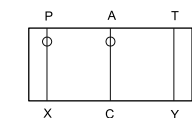
ports ready for restrictors	port X			
restrictors	M6x8			M10x10
Mass [Kg]	1,20	2,30	4,00	17,5

1	N. 4 fastening bolts (NOTE): 16 = M8x30 25 = M12x35 32 = M16x45 63 = M30x80			
2	N. 1 sealing ring 90 Shore: 16 = OR type 2025 (6.07x1.78) 25 = OR type 2037 (9.25x1.78) 32 = OR type 2043 (10.82x1.78) 63 = OR type 3062 (15.54x2.62)			
3	Locating pin: 16 = Ø3x10 25 = Ø5x14 32 = Ø5x14 63 = Ø6x14			
4	Identification label			
5	Plug X: 1/4" BSP			

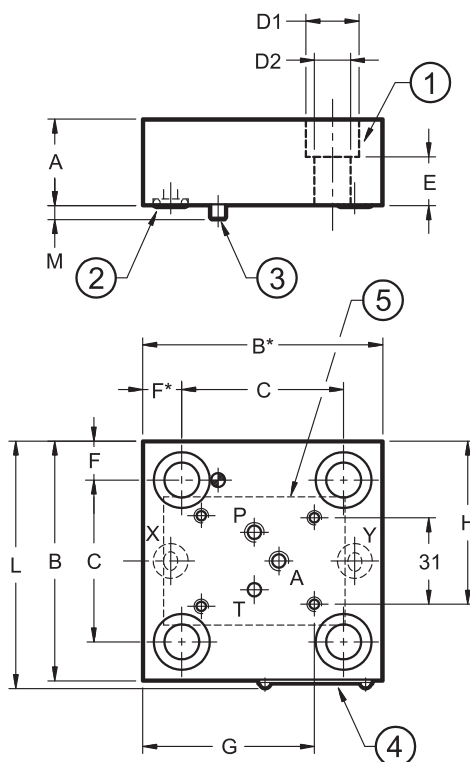
NOTE: Fastening bolts class 10.9 ISO 4762 are recommended for the installation of the cover (to be ordered separately)

9.2 - Covers type D

dimensions in mm



LP16D
LP25D
LP32D
LP40D
LP50D
LP63D



	NOMINAL SIZE					
	16	25	32	40	50	63
A	30	30	40	40	50	70
B	65	85	102	125	140	180
B*	75	85	102	125	140	180
C	46	58	70	85	100	125
D1	13,5	19	25	31	31	46
D2	8,9	13	17	21	21	31
E	19	17	22	30	30	35
F	9,5	13,5	16	20	20	27,5
F*	19,5	13,5	16	20	20	27,5
G	52	60,2	68,7	73,2	82,7	111,5
H	48	58	66,5	78	85,5	105,5
L	67,5	87,5	104,5	127,5	142,5	182,5
M	4	5	5	5	5	7

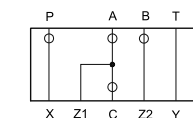
ports ready for restrictors	P, A					
restrictors	M6x8					M8x8
Mass [Kg]	1,20	2,30	4,00	4,80	7,6	17,5

1	N. 4 fastening bolts (NOTE): 16 = M8x30 25 = M12x35 32 = M16x45 40 = M20x50 50 = M20x60 63 = M30x80
2	n° 2 sealing rings 90 Shore : 16 = OR type 2025 (6.07x1.78) 25 = OR type 2037 (9.25x1.78) 32 = OR type 2043 (10.82x1.78) 40 = OR type 2050 (12.42x1.78) 50 = OR type 2050 (12.42x1.78) 63 = OR type 3062 (15.54x2.62)
3	Locating pin: 16 = Ø3x10 25 = Ø5x14 32 = Ø5x14 40 = Ø5x14 50 = Ø6x14 63 = Ø6x14
4	Identification label
5	Mounting surface ISO 4401-03 (CETOP 4.2-4-03-350)

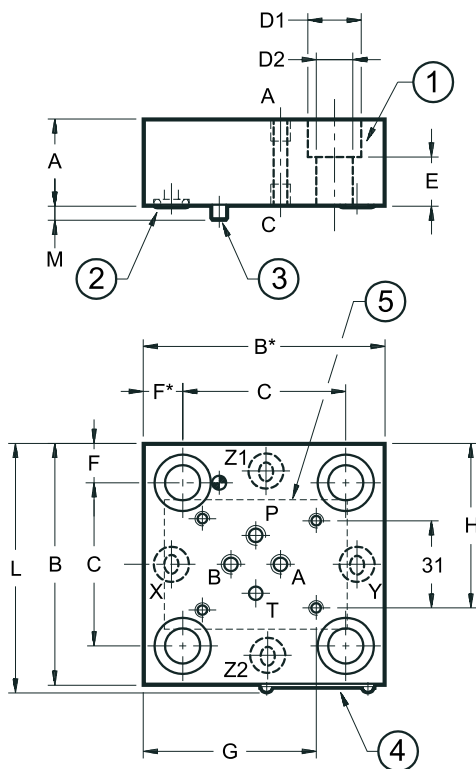
NOTE: Fastening bolts class 10.9 ISO 4762 are recommended for the installation of the cover (to be ordered separately)

9.3 - Covers type DZ

dimensions in mm



LP16DZ
LP25DZ
LP32DZ
LP40DZ



	NOMINAL SIZE			
	16	25	32	40
A	30	30	40	50
B	65	85	102	125
B*	75	85	102	125
C	46	58	70	85
D1	13,5	19	25	31
D2	8,9	13	17	21
E	19	17	22	30
F	9,5	13,5	16	20
F*	19,5	13,5	16	20
G	52	60,2	66,2	84
H	48	58	66,5	78
L	67,5	87,5	104,5	127,5
M	4	5	5	5

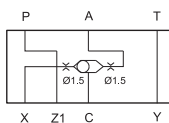
ports ready for restrictors M6x8	P, A, B, C			
Mass [Kg]	1,2	2,3	2,8	4,3

1	N. 4 fastening bolts (NOTE): 16 = M8x30 25 = M12x35 32 = M16x45 40 = M20x50
2	n° 4 sealing rings 90 Shore : 16 = OR type 2025 (6.07x1.78) 25 = OR type 2037 (9.25x1.78) 32 = OR type 2043 (10.82x1.78) 40 = OR type 2050 (12.42x1.78)
3	Locating pin: 16 = Ø3x10 25 = Ø5x14 32 = Ø5x14 40 = Ø5x14
4	Identification label
5	Mounting surface ISO 4401-03 (CETOP 4.2-4-03-350)

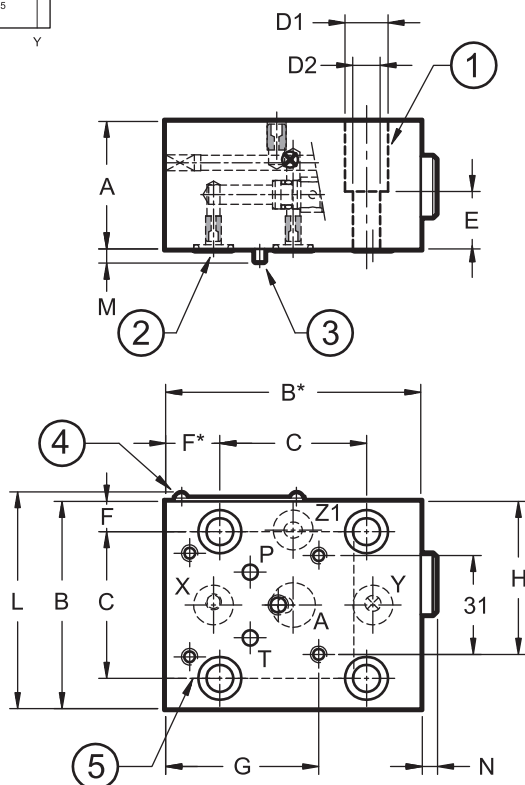
NOTE: Fastening bolts class 10.9 ISO 4762 are recommended for the installation of the cover (to be ordered separately)

9.4 - Covers type DF1

dimensions in mm



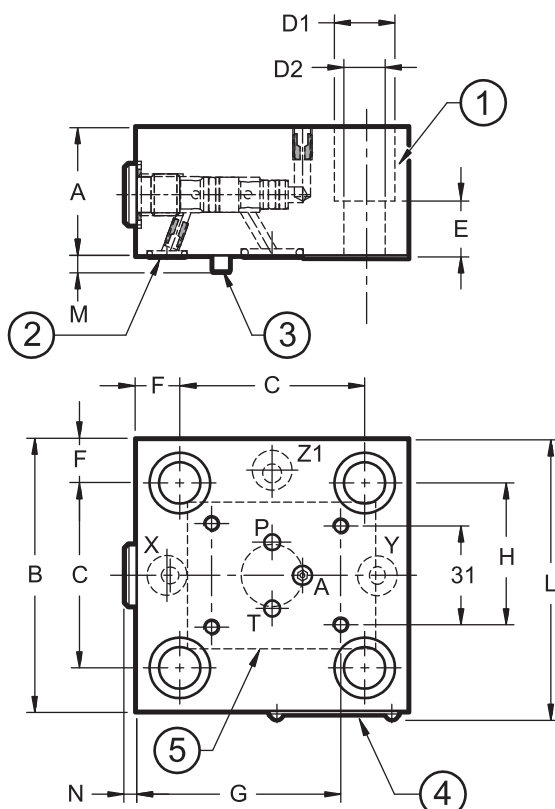
LP16DF1



	NOMINAL SIZE				
	16	25	32	40	50
A	40	40	40	50	50
B*	80	85	102	125	140
B	65	85	102	125	140
C	46	58	70	85	100
D1	13,5	19	25	31	31
D2	8,5	13	17	21	21
E	18	17	22	30	30
F*	17	13,5	16	20	20
F	9,5	13,5	16	20	20
G	47,5	64	72,5	84	91,5
H	48	58	66,5	78	85,5
L	67,5	87,5	104,5	127,5	142,5
M	4	5	5	5	5
N	4,5	3,5	3,5	-	-

Mass [Kg]	1,8	2,3	3	6,7	7,6
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LP25DF1
LP32DF1
LP40DF1
LP50DF1



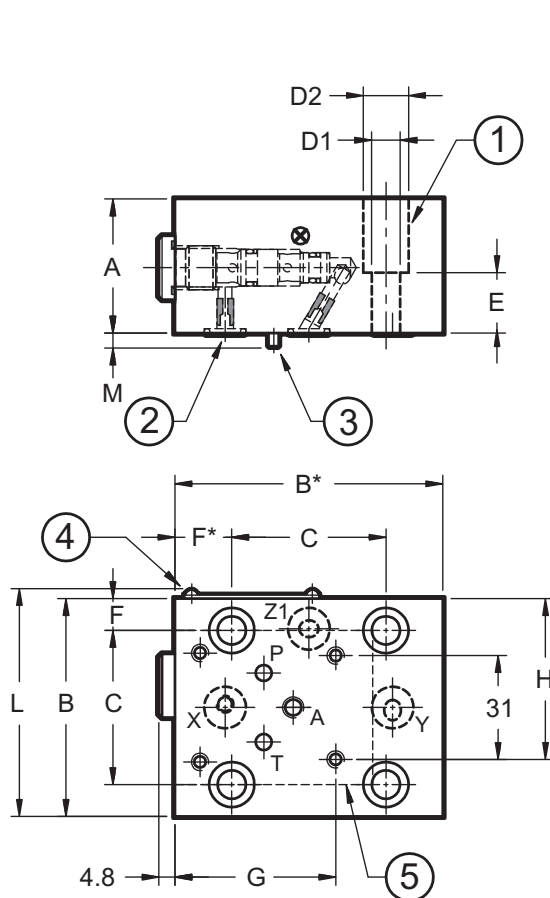
1	N. 4 fastening bolts (NOTE): 16 = M8x30 25 = M12x35 32 = M16x45 40 = M20x60 50 = M20x60
2	N° 3 sealing rings 90 Shore : 16 = OR type 2037 (9.25x1.78) 25 = OR type 2037 (9.25x1.78) 32 = OR type 2043 (10.82x1.78) 40 = OR type 2050 (12.42x1.78) 50 = OR type 2050 (12.42x1.78)
3	Locating pin 16 = Ø3x10 40 = Ø5x14 25 = Ø5x14 50 = Ø6x14 32 = Ø5x14
4	Identification label
5	Mounting surface ISO 4401-03 (CETOP 4.2-4-03-350)

NOTE: Fastening bolts class 10.9 ISO 4762 are recommended for the installation of the cover (to be ordered separately)

9.5 - Covers type DF2

dimensions in mm

LP16DF2
LP25DF2
LP32DF2
LP40DF2



	NOMINAL SIZE			
	16	25	32	40
A	40	40	40	50
B	65	85	102	125
B*	80	85	102	125
C	46	58	70	85
D1	13,5	19	25	31
D2	8,5	13	17	21
E	18	17	22	30
F	9,5	13,5	16	20
F*	17	13,5	16	20
G	48	61	68,7	81
H	48	58	71.2	73
L	67,5	87,5	104.5	127.5
M	4	5	5	5

ports ready for restrictors M6x8	A			
Mass [Kg]	1,8	2,3	3	6,7

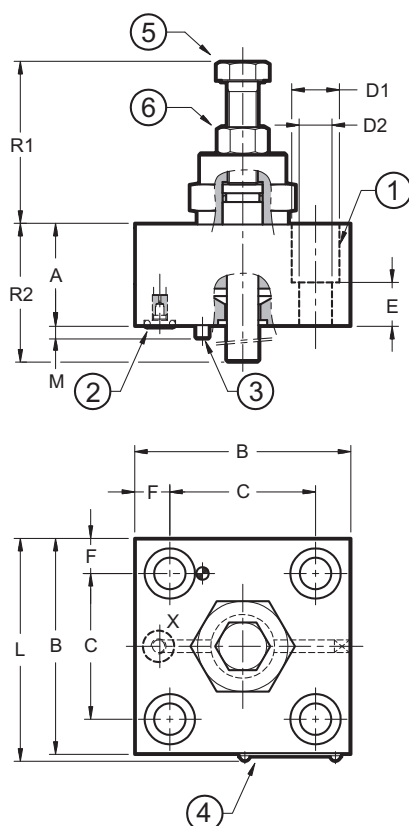
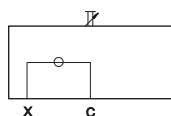
1	N. 4 fastening bolts (NOTE): 16 = M8x30 25 = M12x35 32 = M16x45 40 = M20x60	
2	N° 3 sealing rings 90 Shore: 16, 25 = OR type 2037 (9.25x1.78) 32 = OR type 2043 (10.82x1.78) 40 = OR type 2050 (12.42x1.78)	
3	Locating pin 16 = Ø3x10 32 = Ø5x14 25 = Ø5x14 40 = Ø5x14	
4	Identification label	
5	Mounting surface ISO 4401-03 (CETOP 4.2-4-03-350)	

NOTE: Fastening bolts class 10.9 ISO 4762 are recommended for the installation of the cover (to be ordered separately)

9.6 - Covers type Q

dimensions in mm

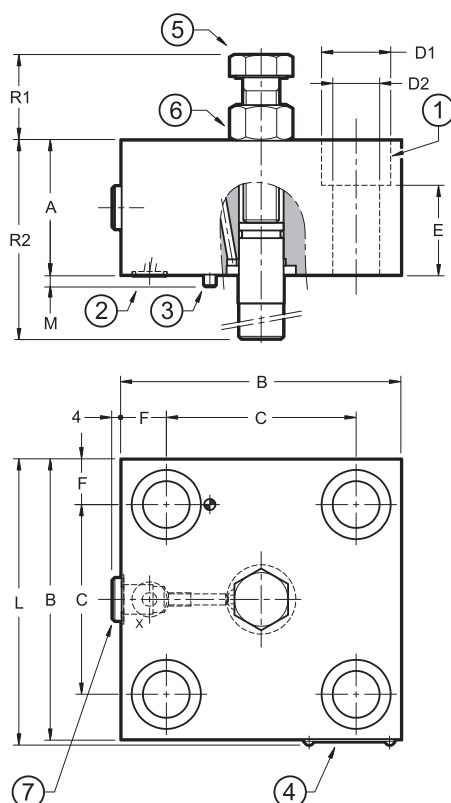
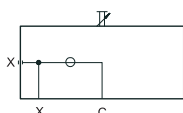
LP16Q
LP25Q
LP32Q



	NOMINAL SIZE					
	16	25	32	40	50	63
A	35	40	40	60	60	80
B	65	85	102	125	140	180
C	46	58	70	85	100	125
D1	13,5	19	25	31	31	46
D2	8,5	13	17	21	21	31
E	18	17	22	30	30	45
F	9,5	13,5	16	20	20	27,5
L	67,5	87,5	104,5	127,5	142,5	182,5
M	4	5	5	5	5	5
R1	55,5 ÷ 63,5	62,5 ÷ 74	58,5 ÷ 73,5	38,5 ÷ 57	44,5 ÷ 66,5	52 ÷ 81
R2	45 ÷ 51,5	45 ÷ 51,5	45 ÷ 51,5	44 ÷ 52	44 ÷ 52	165 ÷ 194

ports ready for restrictors	port X					
	M5x8	M6x8			M10x10	
Mass [Kg]	1,6	3	5	8,9	11,7	18

LP40Q
LP50Q
LP63Q

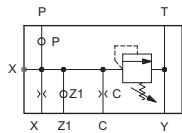


1	N. 4 fastening bolts (NOTE): 16 = M8x30 25 = M12x35 32 = M16x35 40 = M20x70 50 = M20x70 63 = M30x90
2	n° 1 sealing ring 90 Shore: 16 = OR type 2025 (6.07x1.78) 25 = OR type 2037 (9.25x1.78) 32 = OR type 2043 (10.82x1.78) 40 = OR type 2050 (12.42x1.78) 50 = OR type 2050 (12.42x1.78) 63 = OR type 3062 (15.54x2.62)
3	Locating pin: 16 = Ø3x10 25 = Ø5x14 32 = Ø5x14 40 = Ø5x14 50 = Ø6x14 63 = Ø6x14
4	Identification label
5	Stroke limiter clockwise rotation to reduce stroke 16 = 1 turn: 1,25 mm - spanner 18 25 = 1 turn: 1,25 mm - spanner 18 32 = 1 turn: 1,25 mm - spanner 18 40 = 1 turn: 2,00 mm - spanner 24 50 = 1 turn: 2,50 mm - spanner 30 63 = 1 turn: 2,00 mm - spanner 36
6	Locking nut: 16 = spanner 18 25 = spanner 18 32 = spanner 18 40 = spanner 24 50 = spanner 30 63 = spanner 36
7	Plug X: 40 = 1/4" BSP 50 = 1/4" BSP 63 = 1/4" BSP

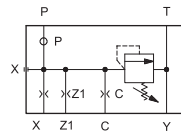
NOTE: Fastening bolts class 12.9 ISO 4762 are recommended for the installation of the cover (to be ordered separately)

9.7 - Covers type DP* and DPE*

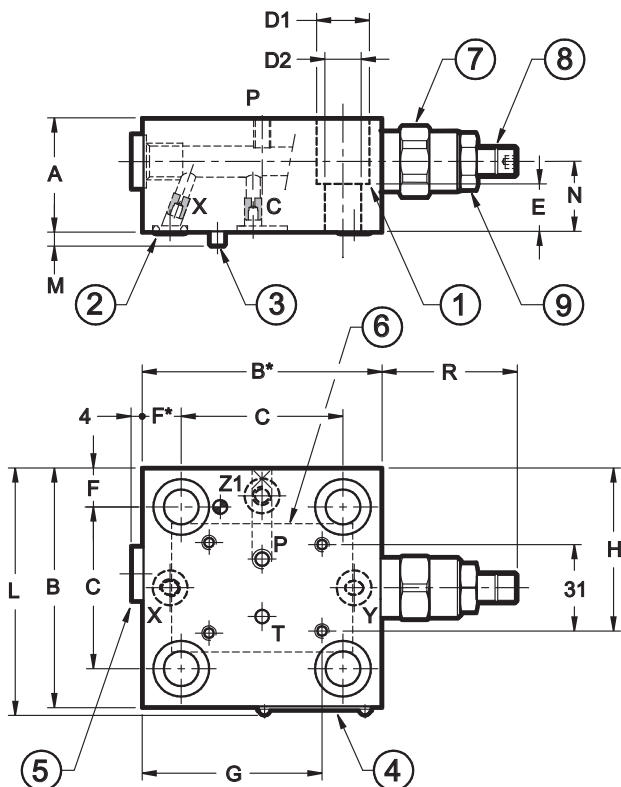
dimensions in mm



LP16DP*
LP25DP*
LP32DP*
LP40DP*
LP50DP*
LP63DP*



LP16DPE*
LP25DPE*
LP32DPE*
LP40DPE*
LP50DPE*



	NOMINAL SIZE					
	16	25	32	40	50	63
A	40	40	40	50	50	70
B	65	85	102	125	140	180
B*	75	85	102	125	140	180
C	46	58	70	85	100	125
D1	13,5	19	25	31	31	46
D2	8,5	13	17	21	21	31
E	18	17	22	30	30	35
F	9,5	13,5	16	20	20	27,5
F*	19,5	13,5	16	20	20	27,5
G	52	64	72,5	84	91,5	111,5
H	48	58	66,5	78	85,5	105,5
L	67,5	87,5	104,5	127,5	142,5	182,5
M	4	5	5	5	5	5
N	24	25	25	25	25	35
R	45÷ 51,5	45÷ 51,5	45÷ 51,5	44 ÷ 52	44 ÷ 52	44 ÷ 52

Mass [Kg]	1,36	2,46	4,16	7,40	10,50	17,5
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DP* restrictors

	M5x6	M6x8				M8x8
X	Ø1,2	Ø1,2	Ø1,2	Ø2,0	Ø2,0	Ø2,0
C	Ø0,7	Ø0,7	Ø1,5	Ø1,2	Ø1,5	Ø1,5

DPE* restrictors

	M5x6	M6x8	M6x8	M6x8	M6x8
X	Ø0,8	Ø0,7	Ø1	Ø1	Ø1
C	Ø0,6	Ø0,6	Ø0,8	Ø0,8	Ø0,8
Z1	Ø6	Ø6	Ø6	Ø6	Ø6

1	N. 4 fastening bolts (NOTE): 16 = M8x30 25 = M12x35 32 = M16x45 40 = M20x50 40 = M20x60 63 = M30x80
2	n° 3 90 Shore sealing rings : 16 = OR type 2025 (6.07x1.78) 25 = OR type 2037 (9.25x1.78) 32 = OR type 2043 (10.82x1.78) 40 and 50 = n° 3 OR type 2050 (12.42x1.78) 63 = OR type 3062 (15.54x2.62)
3	Locating pin: 16 = Ø3x10 25, 32 and 40 = Ø5x14 50 and 63 = Ø6x14

4	Identification label
5	Plug X: 1/4" BSP
6	Mounting surface ISO 4401-03 (CETOP 4.2-4-03-350)
7	Pressure control valve
8	Countersunk hex adjustment screw. Clockwise rotation to increase pressure 16, 25 and 32 = spanner 5 40, 50 and 63 = spanner 6
9	Locking nut: 16, 25 and 32 = spanner 17 40, 50 and 63 = spanner 19

NOTE: Fastening bolts class 10.9 ISO 4762 are recommended for the installation of the cover (to be ordered separately)



10 - MONITORED LOGIC ELEMENTS

Monitored logic elements are made of a directional function cartridge valve and a cover with built-in inductive proximity sensor. The PNP type sensor with closed contact states the condition of A↔B intercepted flow.

The LCM* monitored logic elements were tested on a voluntary basis by TÜV and found to comply with the applicable requirements of the following standards:

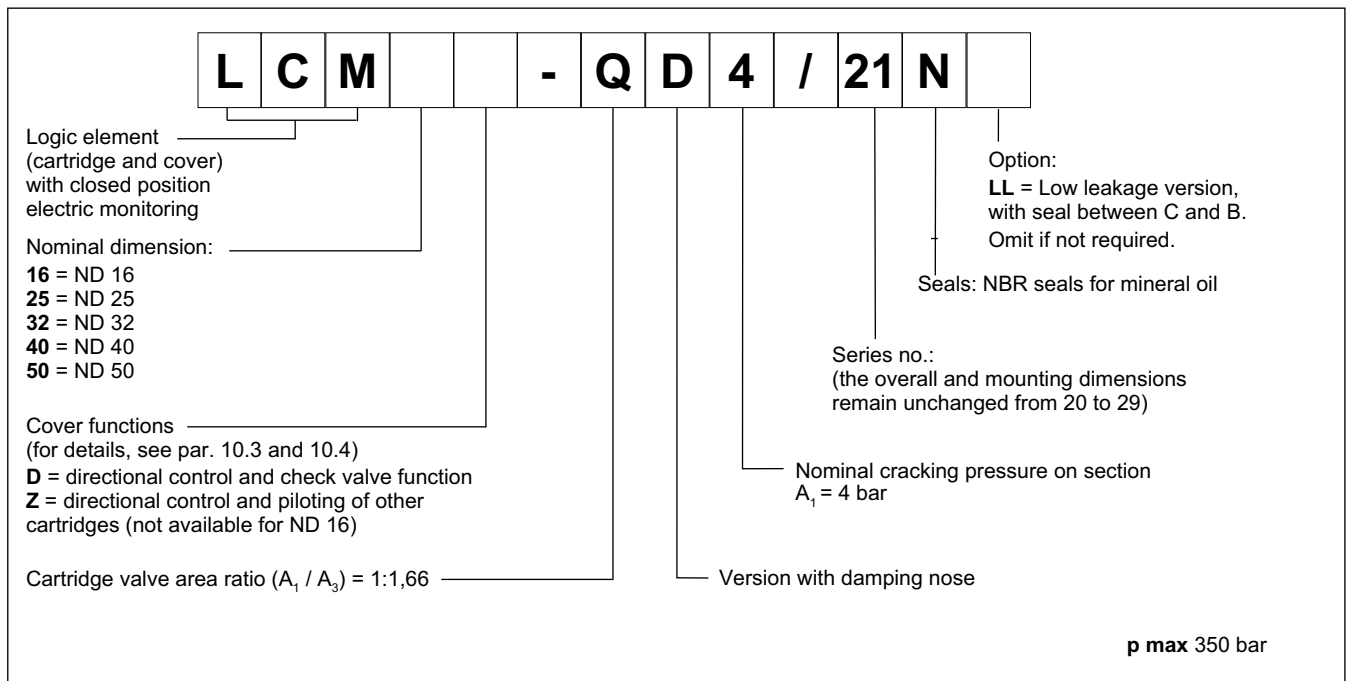
- UNI EN ISO 4413:2012 - Hydraulic fluid power – General rules and safety requirements for systems and their components
- UNI EN 12622:2014 - Safety of machine tools - Hydraulic press brakes
- UNI EN 693:2001+A2:2011 - Machine tools – Safety – Hydraulic presses
- UNI EN 201:2010 - Plastics and rubber machines - Injection moulding machines - Safety requirements
- UNI EN 422:2009 - Rubber and Plastic machines – Safety requirements

Certificate: TÜV IT 14 MAC 0042

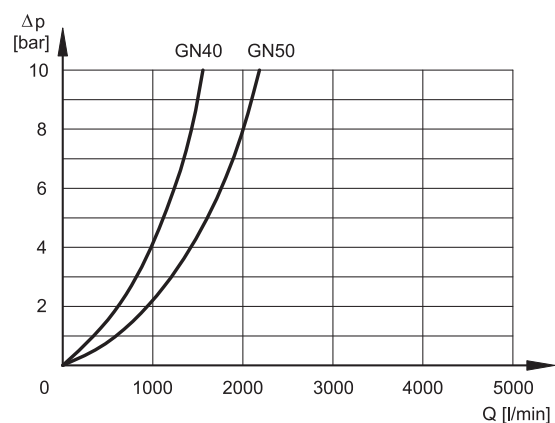
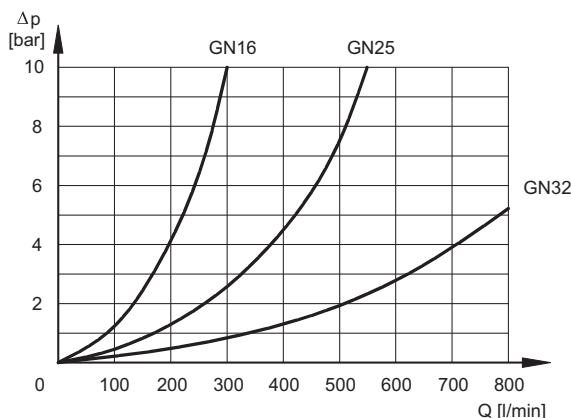


WARNING! These valves must be installed and commissioned by qualified personnel only. Before starting any installation, commissioning or maintenance is mandatory read the *manual of use and maintenance*, delivered together with the valve.

10.1 - Identification code of monitored logic elements



10.2 - Characteristic curves (values obtained with viscosity 36 cSt at 50°C)



10.3 - Functional diagram of cover D for directional control and check valve function

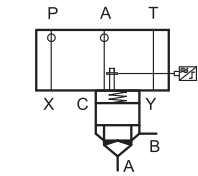
Functional diagram	Description
	<p>Piloting of cartridge valve by means of solenoid valve type DS3-TA (to be ordered separately - see catalogue 41 150)</p> <ul style="list-style-type: none"> - solenoid valve OFF = A → B intercepted flow - solenoid valve ON = A ↔ B free flow
	<p>Piloting of cartridge valve by means of connection plate code 1950751 to be ordered separately.</p>

10.4 - Functional diagrams for cover Z for directional control and piloting of other cartridges

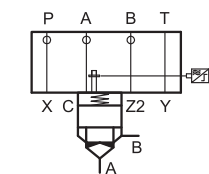
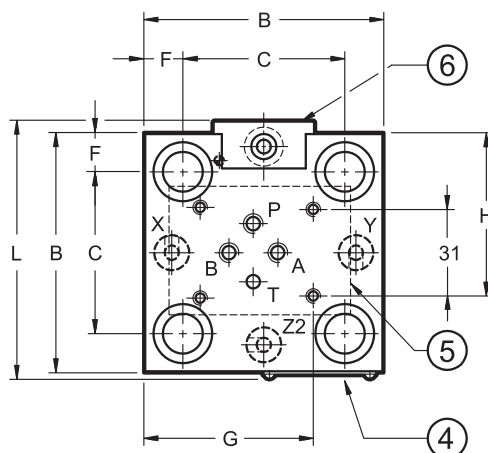
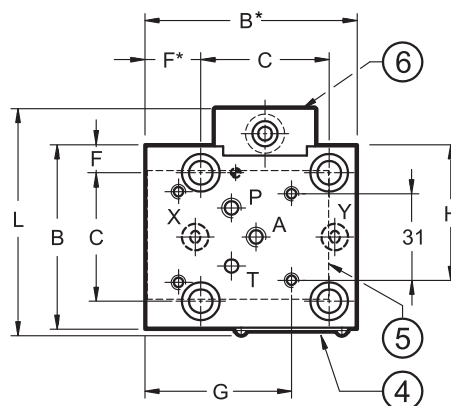
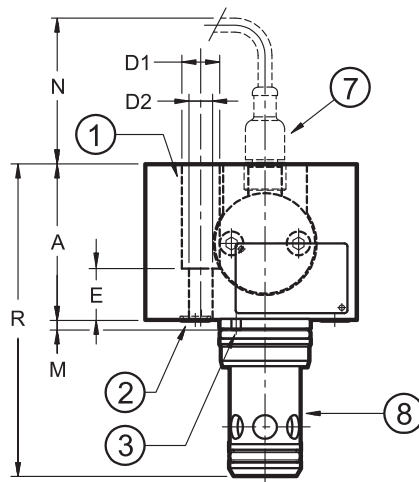
Functional diagram	Description
	<p>Piloting of cartridge valve by means of solenoid poppet valve type DT03-3A (to be ordered separately - see catalogue 42 200). ISO 4401-03 manifold type DN6 (cod.0294329 - to be ordered separately) that allows to intercept the flow from two lines, obtaining a tight or the free flow.</p> <ul style="list-style-type: none"> - solenoid valve OFF = sealing tight - A ↔ B locked flow - solenoid valve ON = flow A ↔ B free flow
	<p>Piloting of cartridge valve by means of connection plate code 1950751 to be ordered separately.</p>

10.5 - overall and mounting dimensions of monitored logic elements

dimensions in mm



LCM16D-QD4
LCM25D-QD4
LCM32D-QD4
LCM40D-QD4
LCM50D-QD4



LCM25Z-QD4
LCM32Z-QD4
LCM40Z-QD4
LCM50Z-QD4

	NOMINAL SIZE				
	16	25	32	40	50
A	55	60	70	75	90
B	65	85	102	125	140
B*	75	-	-	-	-
C	46	58	70	85	100
D1	13,5	19	25	31	31
D2	8,5	12,5	17	21	21
E	18	17	22	30	30
F*	19,5	-	-	-	-
F	9,5	13,5	16	20	20
G	52	60,2	68,7	80,2	87,7
H	48	58	66,5	105	85,5
L	81	92	104,5	127,5	142,5
M	4	5	5	5	5
N	70	70	65	60	55
R	111	132	155	180	212

ports ready for restrictors M6x8.5	P, A B (on cover Z only)				
Mass [Kg]	2,1	3,3	5,3	9,5	14,5

1	N. 4 fastening bolts (NOTE 1): 16 = M8x30 40 = M20x60 25 = M12x35 50 = M20x60 32 = M16x45
2	n° 3 sealing rings 90 Shore : 16 = OR type 2025 (6.07x1.78) (for ND 16 there are only 2 OR) 25 = OR type 2037 (9.25x1.78) 32 = OR type 2043 (10.82x1.78) 40 and 50 = OR type 2050 (12.42x1.78)
3	Locating pin: 16 = Ø3x10 40 = Ø5x14 25 = Ø5x14 50 = Ø6x14 32 = Ø5x14
4	Identification label
5	Mounting surface ISO 4401-03 (CETOP 4.2-4-03-350)
6	Proximity sensor
7	Connector for proximity sensor (to be ordered separately see par. 10.6)
8	Cartridge valve always supplied with the cover

NOTE 1: standard dimensions at par. 6.

NOTE 2: fastening bolts class 10.9 ISO 4762 are recommended for cover installation (to be ordered separately)

NOTE 3: for dimensions of the cartridge valve seat see par. 5

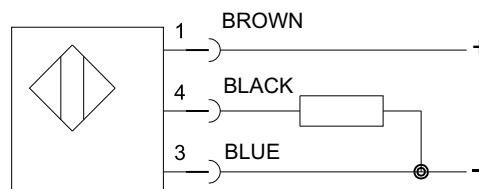
10.6 - Technical characteristics of proximity sensor and connector

PROXIMITY SENSOR

PNP TYPE

Rated voltage	V DC	24
Power supply voltage range	V DC	10 ÷ 30
Absorbed current	mA	200
Output	normally open contact	
Electric protection	polarity inversion short circuit overvoltage	
Electric connection	with connector	
Max operating pressure	bar	350
Operating temperature range	°C	-25 / +80
Class of protection according to IEC EN 60529 standards (atmospheric agents)		IP68
Spool position LED		NO

CONNECTION SCHEME



valve closed = closed contact (A↔B intercepted flow)
valve open = open contact (A↔B free flow)

SIGNAL STATUS

According to the safety standards rules, the position signal must change its status before the effective valve opening.

ELECTRIC CONNECTOR (to be ordered separately)

code: ECM3S / M12L / 10

Connector: pre-wired connector M12 - IP68

cable: with 3 conductors 0.34 mm² - length 5 mt

cable material: polyurethane resin (oil resistant)

GREEN LED: LED: indicates that there is power supply voltage to the connector. If the LED is off, the connector is not powered.

YELLOW LED: show the valve status:

- valve at initial position yellow led ON - green led ON
- switched valve yellow led OFF - green led ON