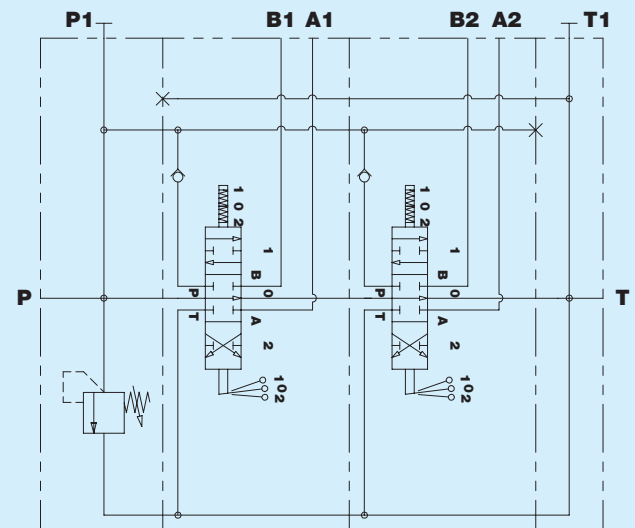


DNC160 - Modular directional control valves



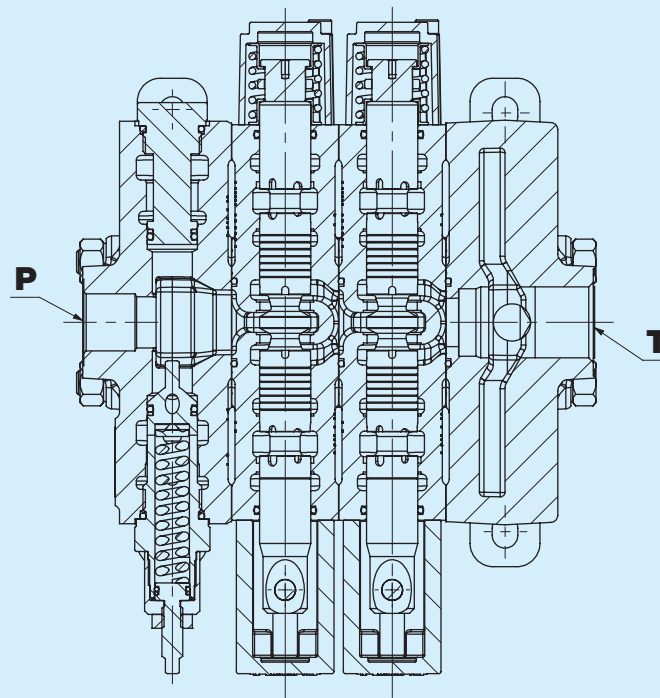
Before use, carefully read the GENERAL INSTRUCTIONS FOR USE OF DIRECTIONAL CONTROL VALVES

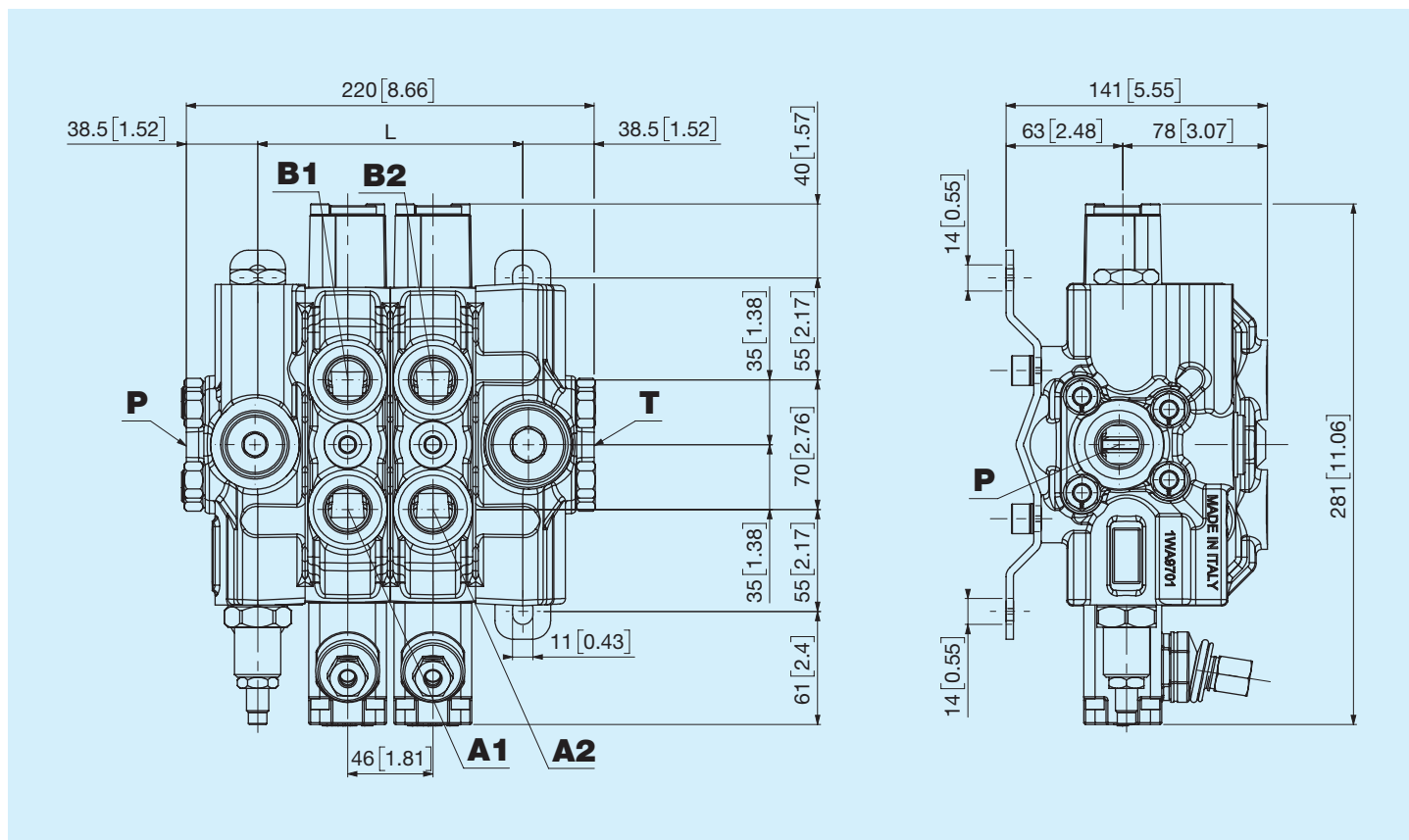
Nominal flow	160 l/min 42.27 US gpm
Nominal pressure	300 bar 4350 psi
Maximum tank pressure	50 bar 725 psi
Internal leakage (A o B -> P and T) p=100 bar (1450 psi)	15 cm³/min 0.91 in³/min
Temperature range	-20°C +85°C NBR seals (max peak +100°C) -20°C + 130°C HNBR seals
Oil viscosity	from 15 mm²/s to 90 mm²/s (15 cSt to 90 cSt)
Fluid	Hydraulic fluids as defined in ISO 6743-4 standard



STANDARD version

Sectional

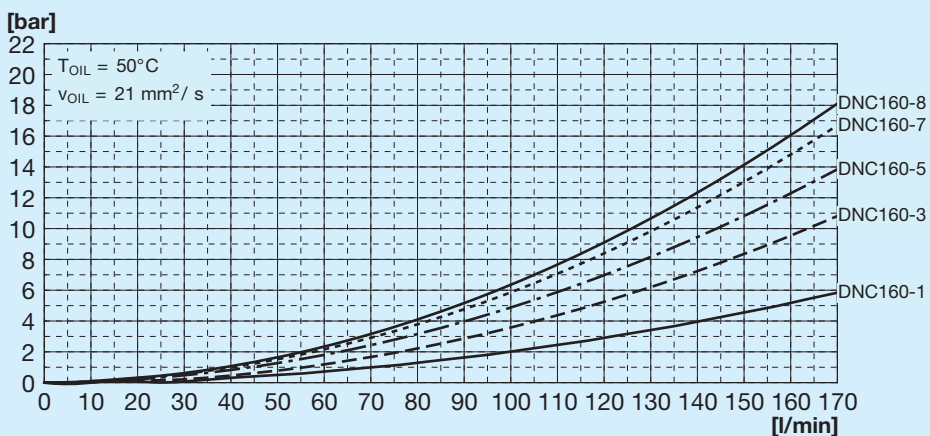
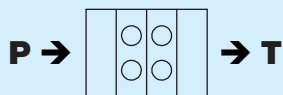




Dimensions per number of sections

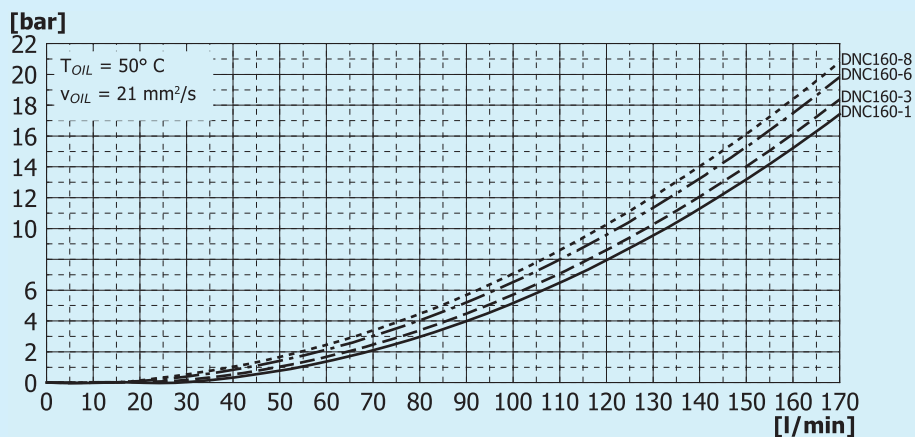
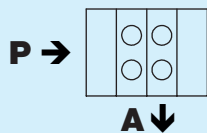
Code	N° of sections	L		Weight	
		mm	in	kg	lb
1	1	97	3.82	14.7	32.4
2	2	143	5.63	21	46.3
3	3	189	7.44	27.3	60.2
4	4	235	9.25	33.6	74.1
5	5	281	11.06	40	88.2
6	6	327	12.87	46.2	101.8
7	7	373	14.7	52.7	115.9
8	8	419	16.5	59.1	130

Pressure drops P-T



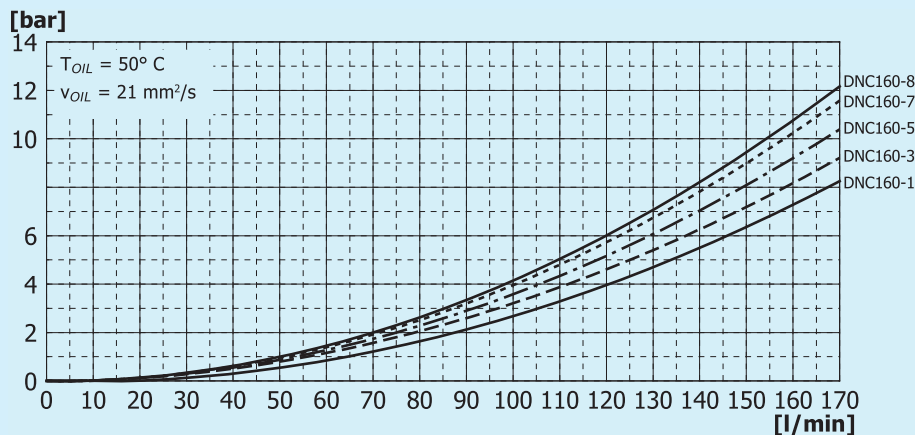
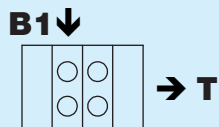
Testing parameters: Spool type **01**

Pressure drops P-A



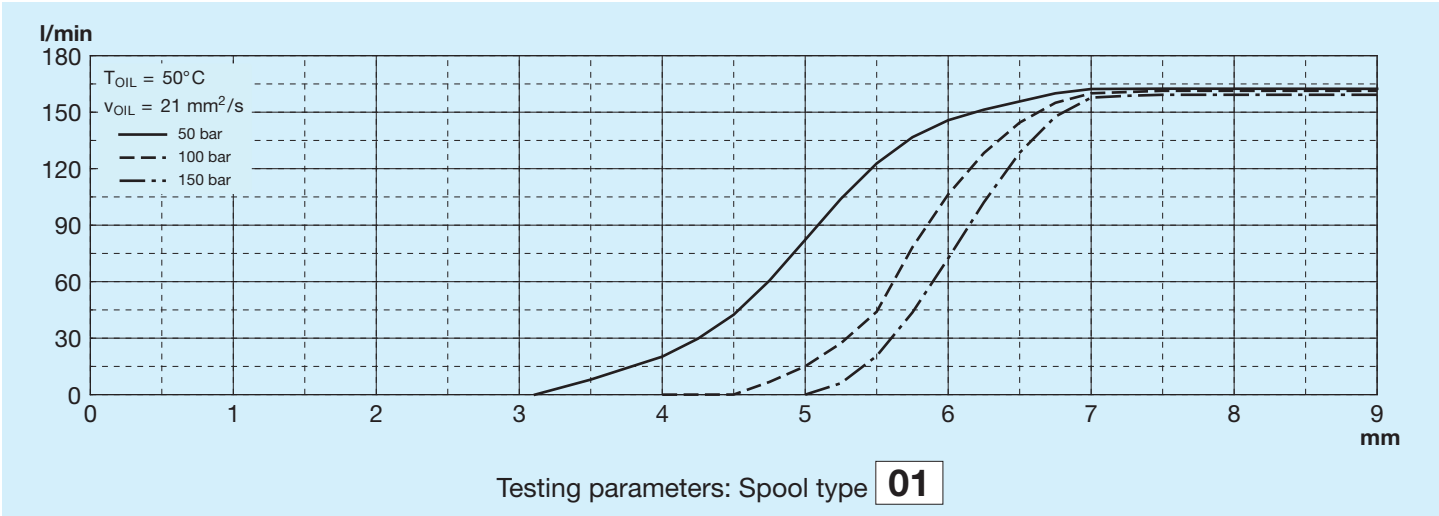
Testing parameters: Spool type **01**

Pressure drops B1-T

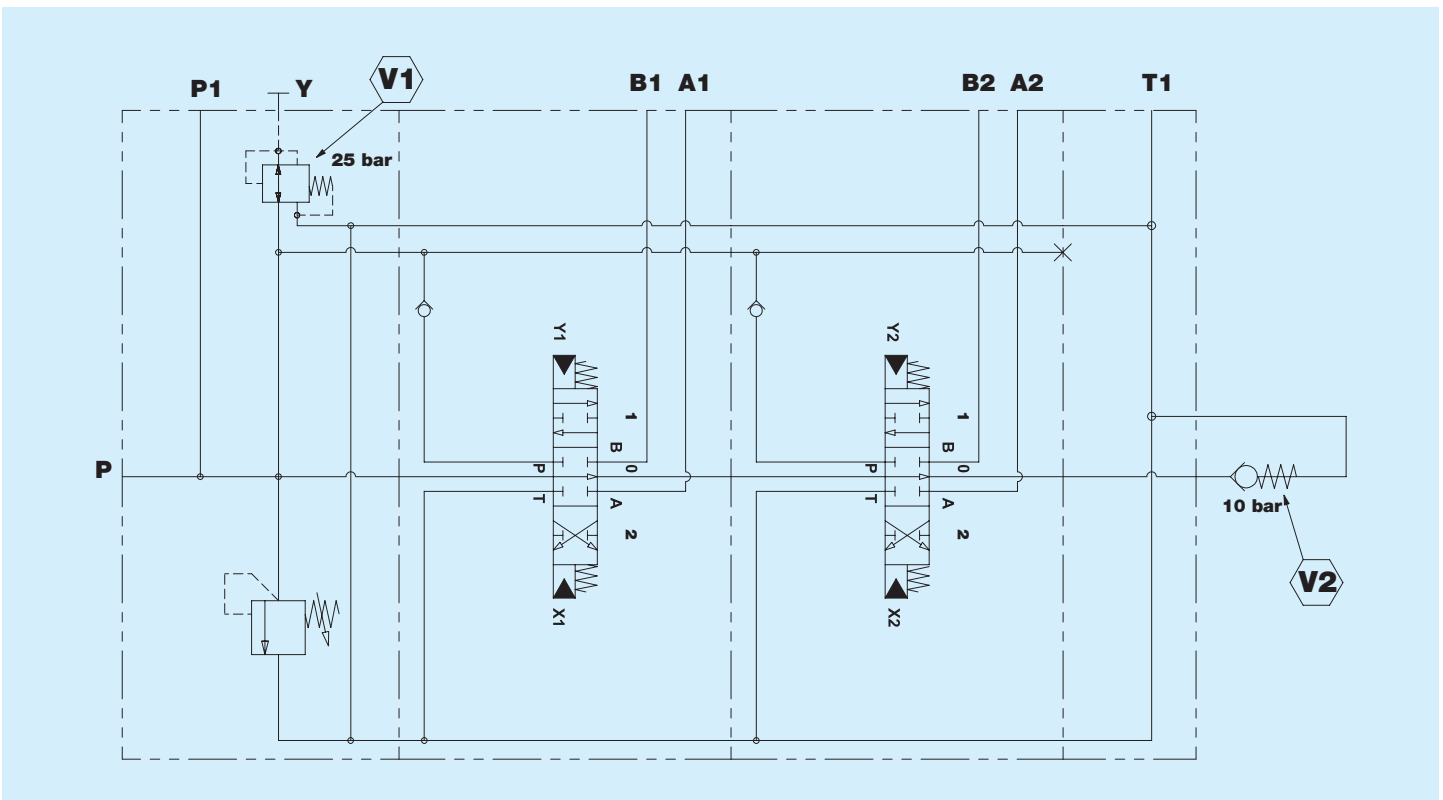
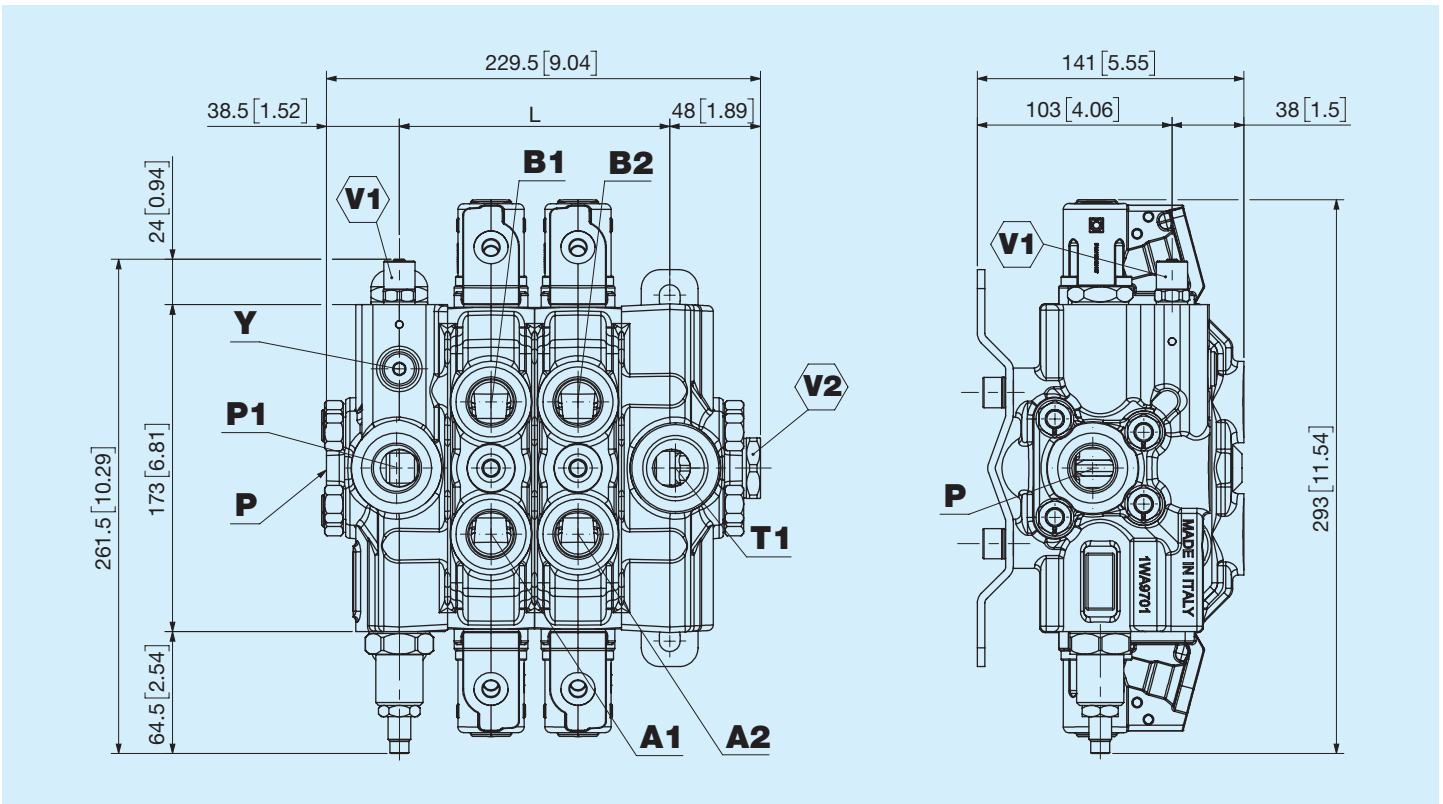


Testing parameters: Spool type **01**

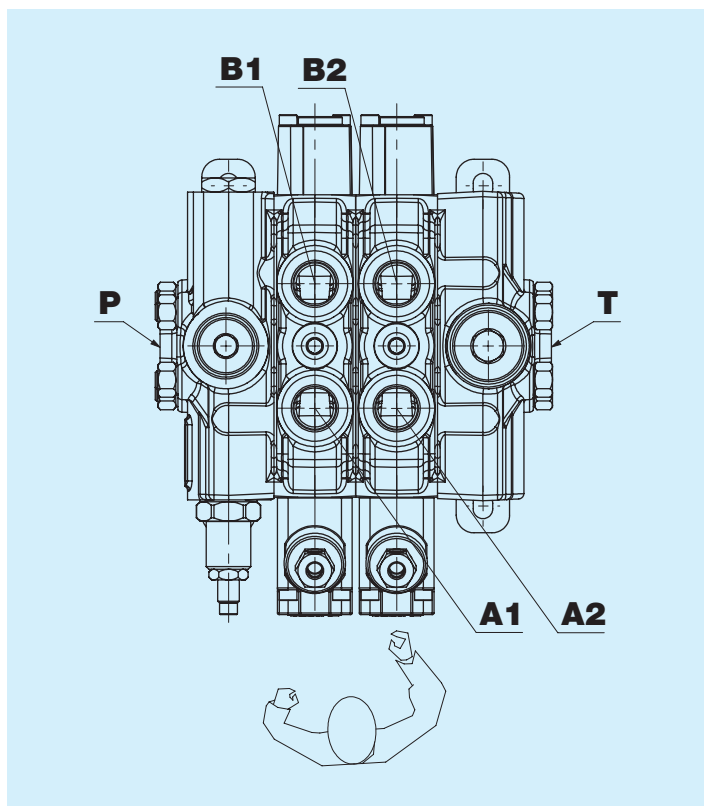
Metering



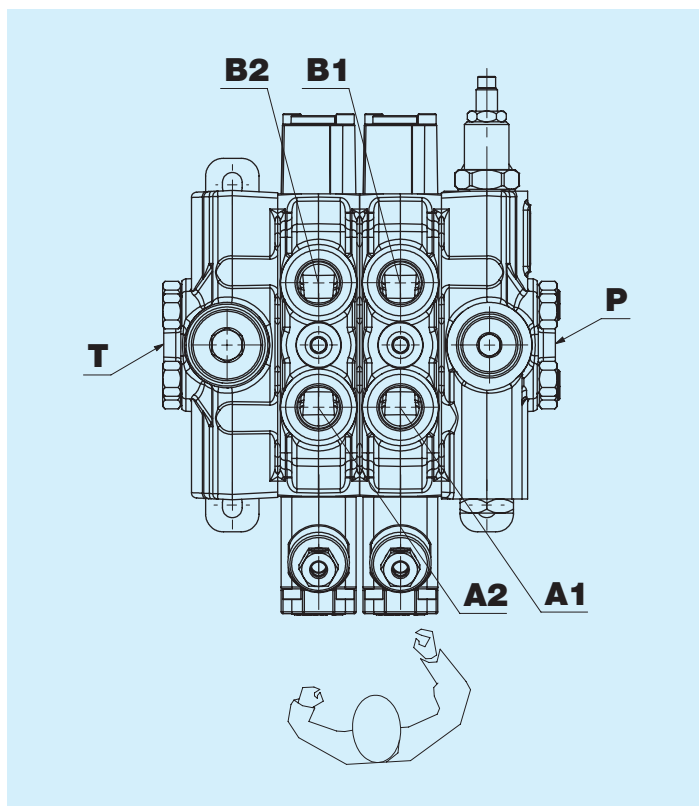
A Power unit



S Left (standard)



D Right



Port A is usually the nearest port to the actuator side.

Thread ports P - P1

Code	Type	Torque $\pm 10\%$ Nm
0	Not processed	
F	3/4" GAS ISO 1179	150
G	1" GAS ISO1179	200
5	M27x2 ISO 9974	150
6	M33x2 ISO 9974	200
Z	M33x2 ISO 6149	200
U	M27x2 ISO 6149	150
S	1" 5/16 - 12 SAE ISO 11926	200
V	1" 1/16 - 12 SAE ISO 11926	150

Thread ports A - B

Code	Type	Torque $\pm 10\%$ Nm
F	3/4" GAS ISO 1179	150
5	M27x2 ISO 9974	150
U	M27x2 ISO 6149	150
V	1" 1/16 - 12 SAE ISO 11926	150

Thread ports T - T1

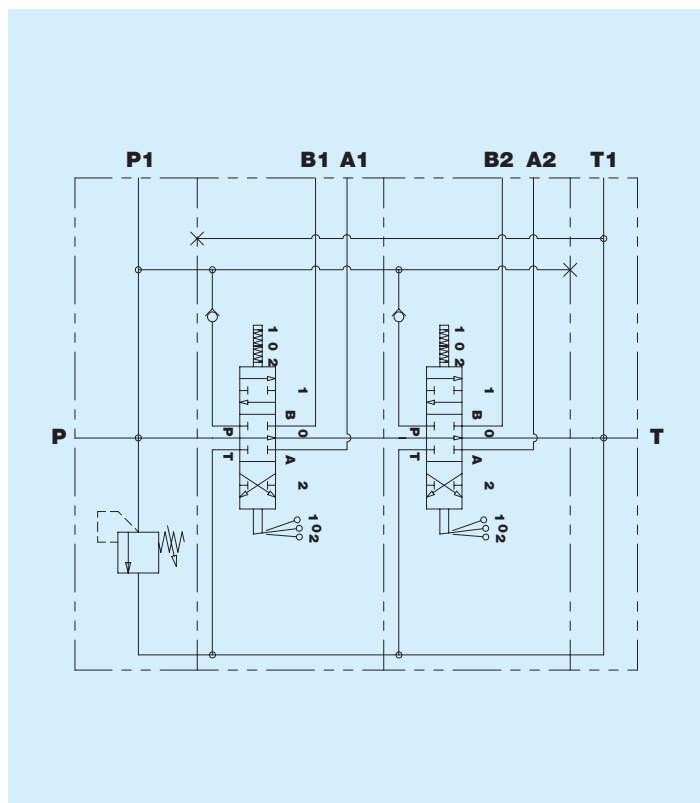
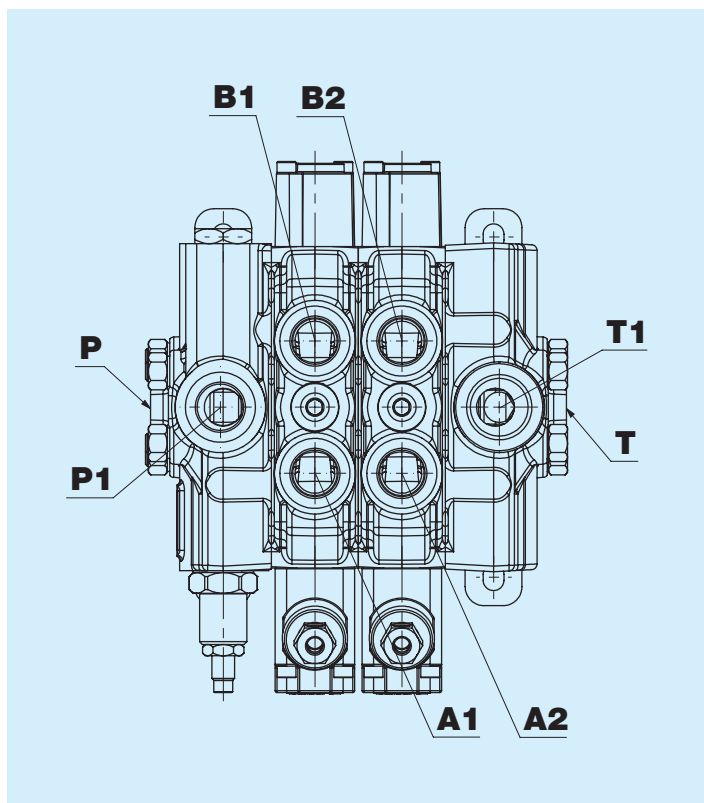
Code	Type	Torque $\pm 10\%$ Nm
0	Not processed	
F	3/4" GAS ISO 1179	150
G	1" GAS ISO1179	200
5	M27x2 ISO 9974	150
6	M33x2 ISO 9974	200
Z	M33x2 ISO 6149	200
U	M27x2 ISO 6149	150
S	1" 5/16 - 12 SAE ISO 11926	200
V	1" 1/16 - 12 SAE ISO 11926	150

Thread port Y*

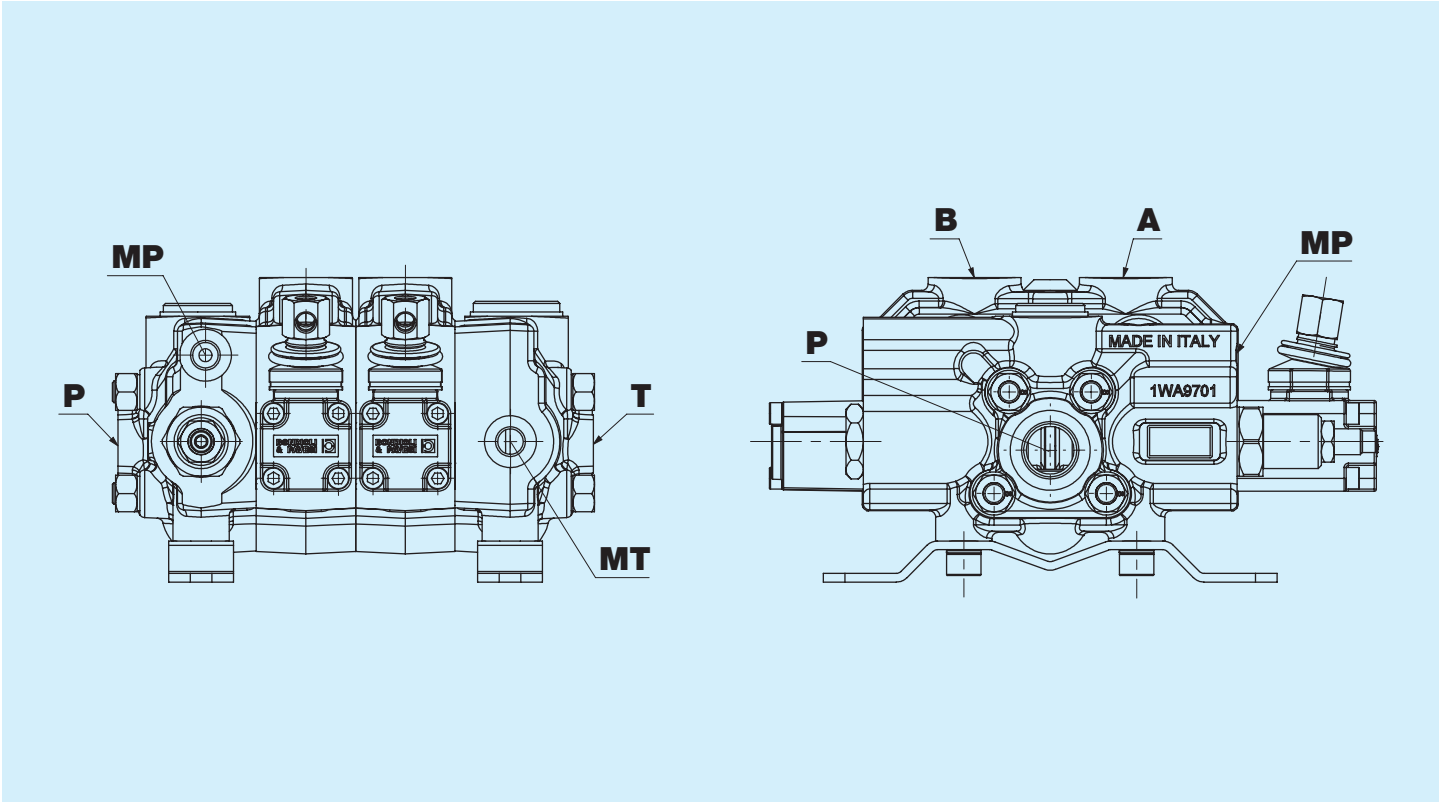
Code	Type	Torque $\pm 10\%$ Nm
L	1/4" GAS ISO 1179	27
3	M14x1.5 ISO 9974	27
K	M14x1.5 ISO 6149	27
P	9/16" - 18 SAE ISO 11926	27

*Only if power unit is present.

Indication of the ports



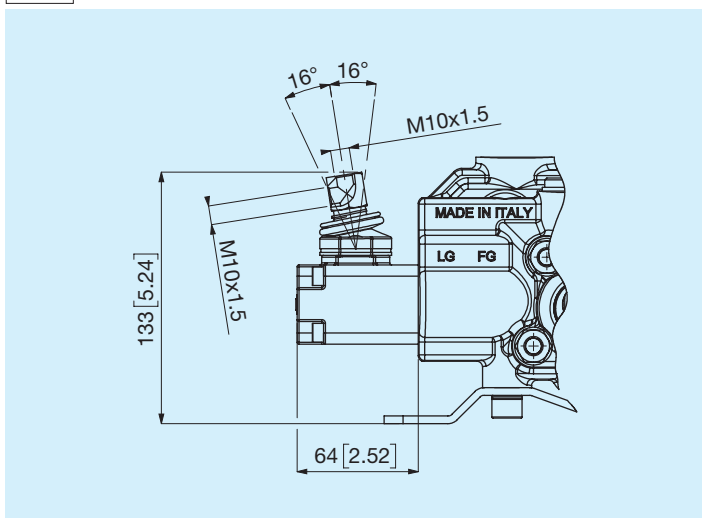
MP and MT - Gauge ports



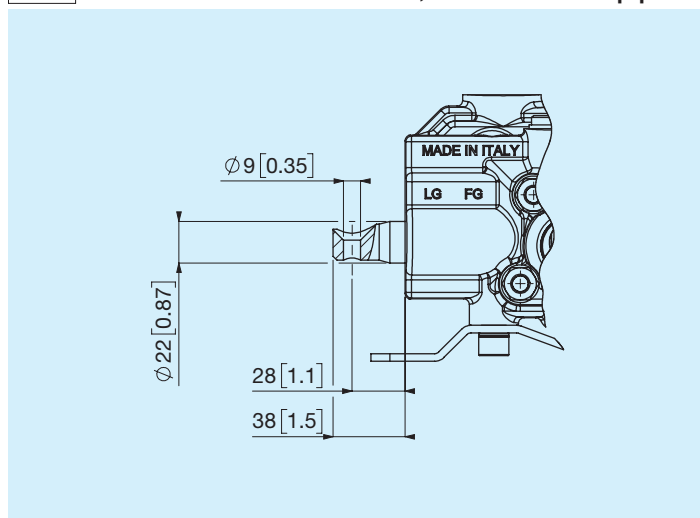
Thread Ports MP and MT

Code	Type	Torque $\pm 10\%$ Nm
N	None	
L	1/4" GAS ISO 1179	27
3	M14x1.5 ISO 9974	27
K	M14x1.5 ISO 6149	27
P	9/16" - 18 SAE ISO 11926	27

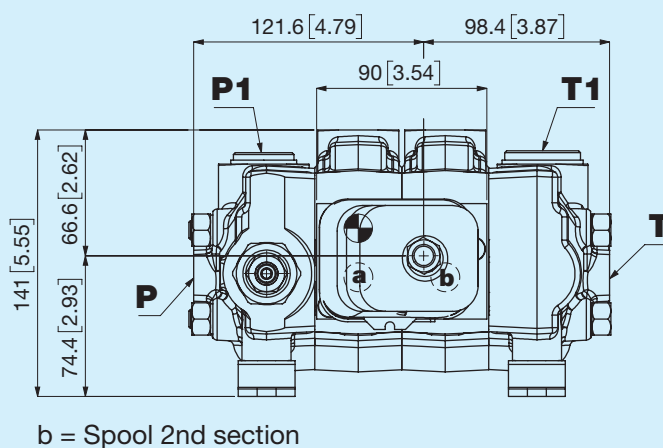
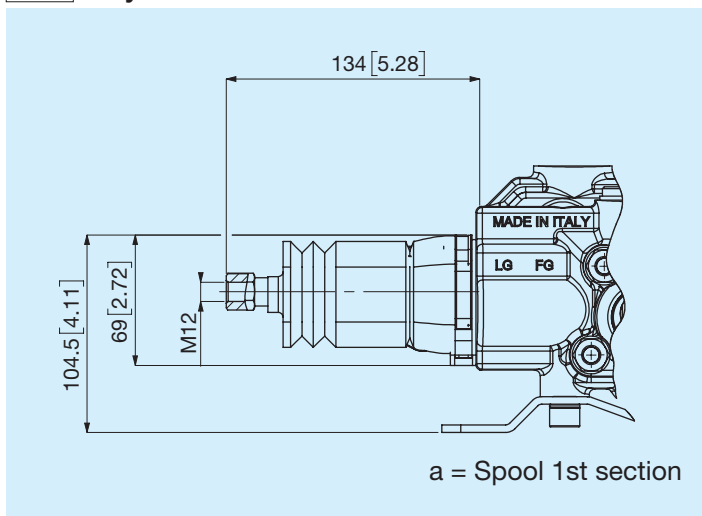
L Standard kit for lever holder



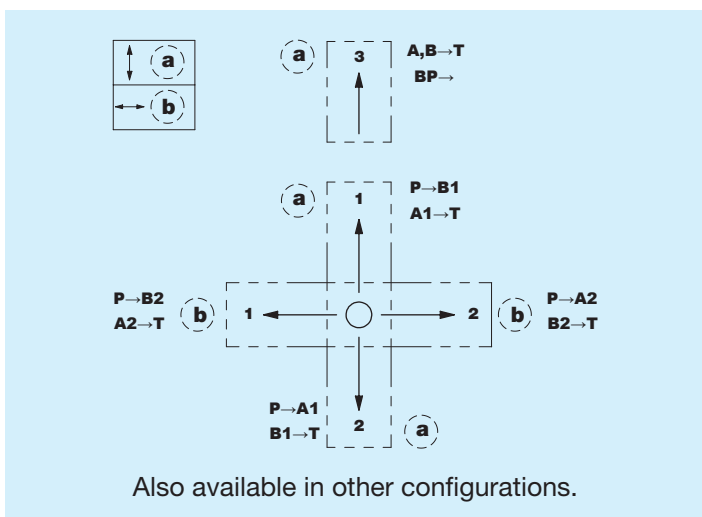
A Without lever holder, standard appendix



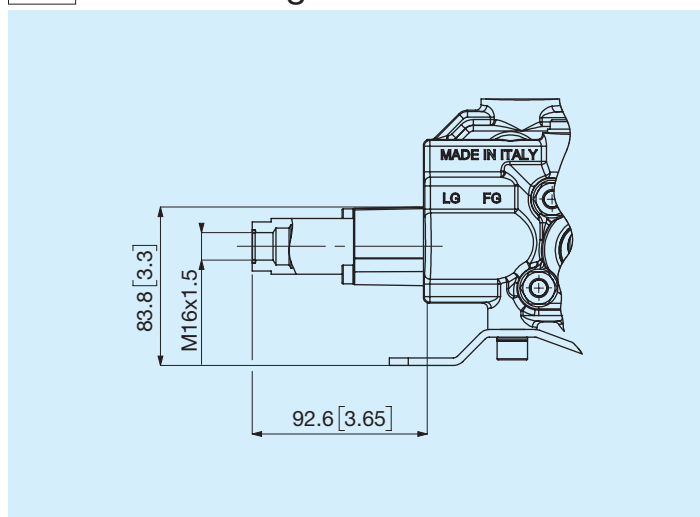
M Joystick



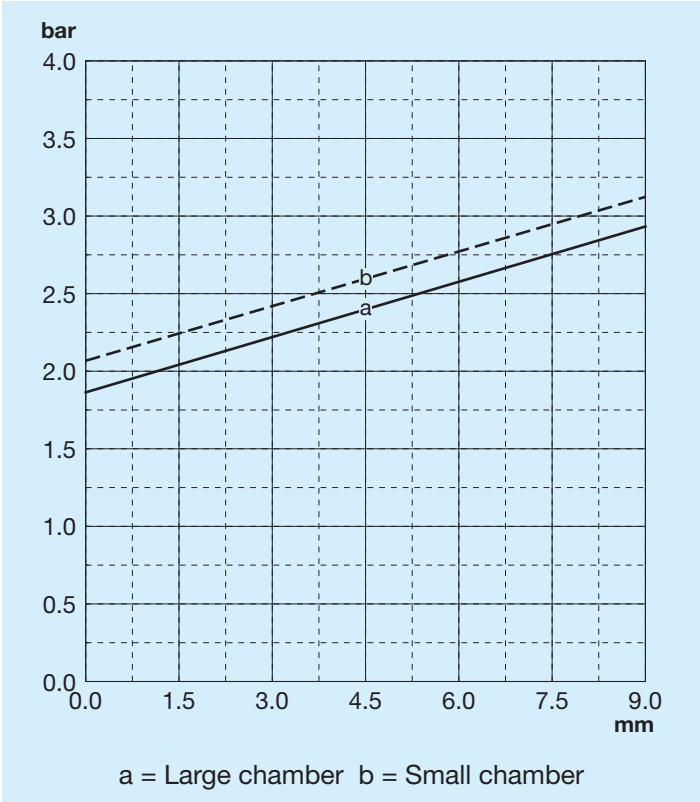
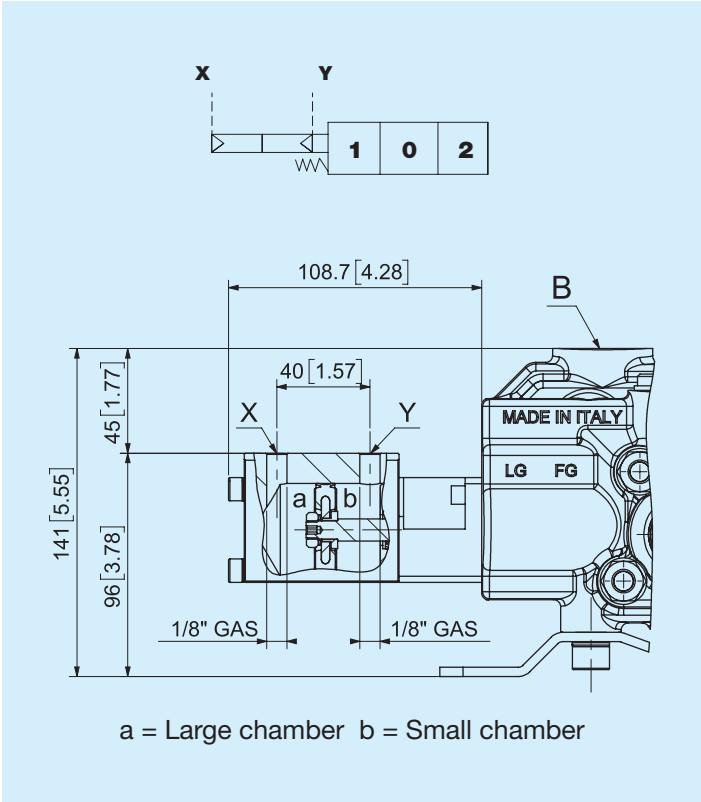
Joystick functions



T Cable setting

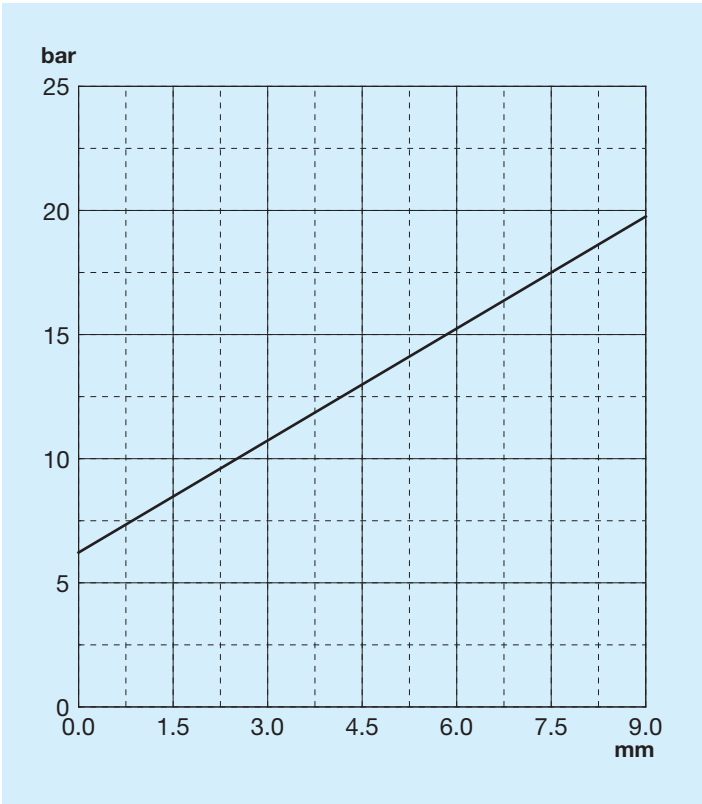
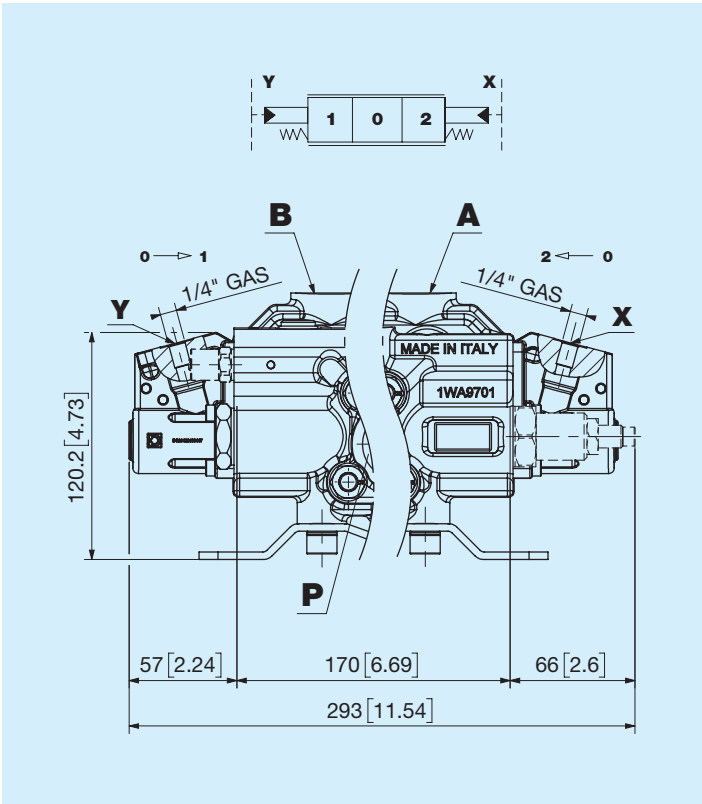


P Pneumatic control

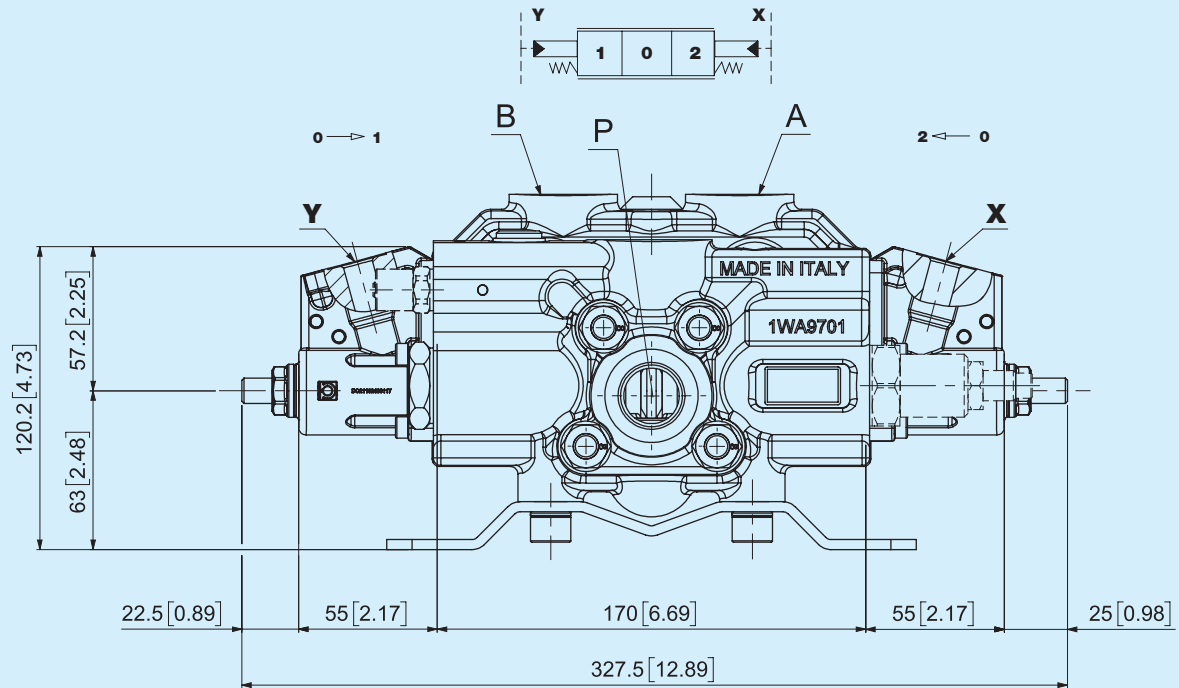


The pneumatic actuator is positioned on the side where the spool control is normally placed and is the main actuator. The distributor will also be supplied as standard, with the lever holder on the opposite side.

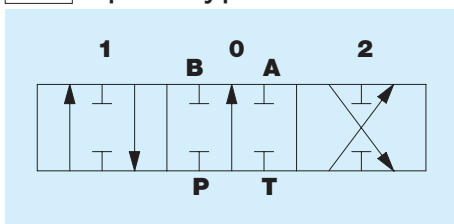
K Hydraulic control



A Spool stroke limiting port A and B



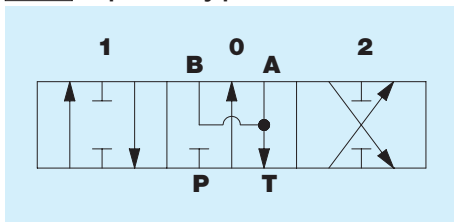
01 Spool type



Positions

3	1	0	2	4
	$P \rightarrow B$ $A \rightarrow T$ $BP \rightarrow$	$P, T \rightarrow$ $A, B \rightarrow$ $BP \rightarrow$	$P \rightarrow A$ $B \rightarrow T$ $BP \rightarrow$	

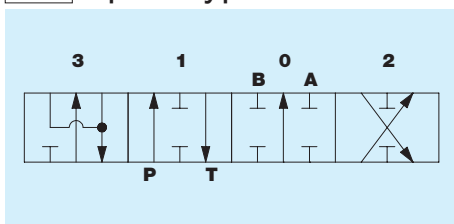
03 Spool type



Positions

3	1	0	2	4
	$P \rightarrow B$ $A \rightarrow T$ $BP \rightarrow$	$A, B \rightarrow T$ $P \rightarrow$ $BP \rightarrow$	$P \rightarrow A$ $B \rightarrow T$ $BP \rightarrow$	

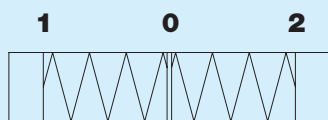
07 Spool type



Positions

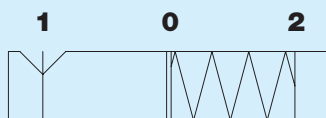
3	1	0	2	4
$A, B \rightarrow T$ $P \rightarrow$ $BP \rightarrow$	$P \rightarrow B$ $A \rightarrow T$ $BP \rightarrow$	$P, T \rightarrow$ $A, B \rightarrow$ $BP \rightarrow$	$P \rightarrow A$ $B \rightarrow T$ $BP \rightarrow$	

0A



Neutral position in 0

0B



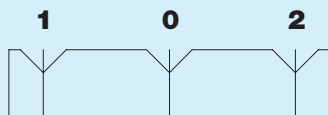
Neutral position in 0,
detent in 1

0C



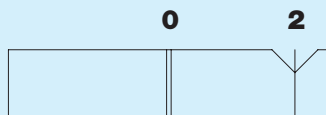
Neutral position in 0,
detent in 2

0D



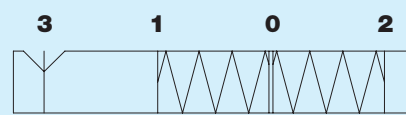
Detent in 0, 1, 2

0H



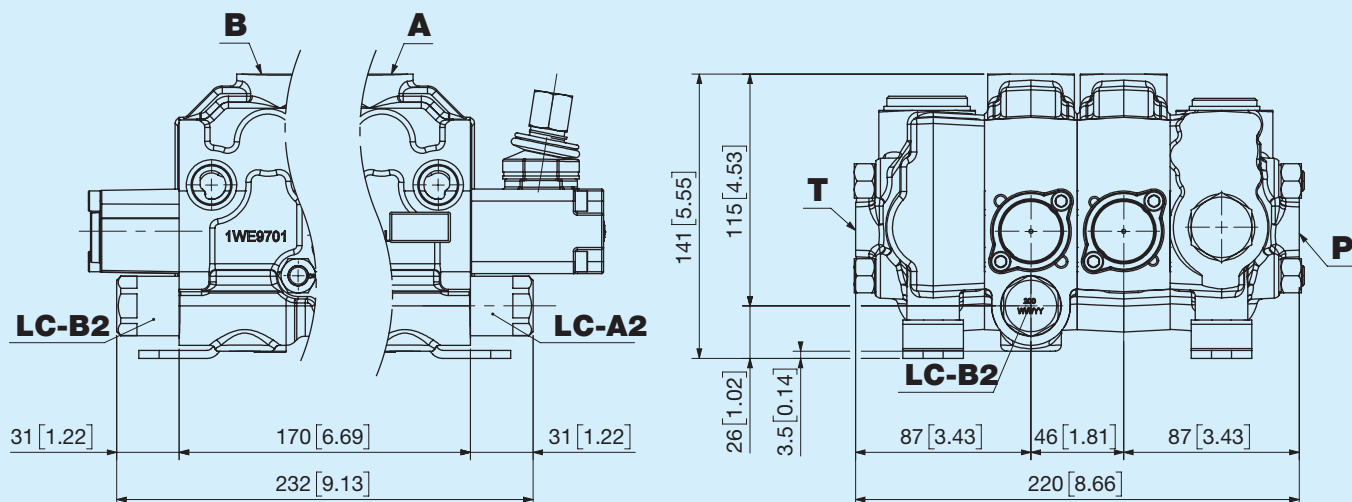
Detent in 2

NS

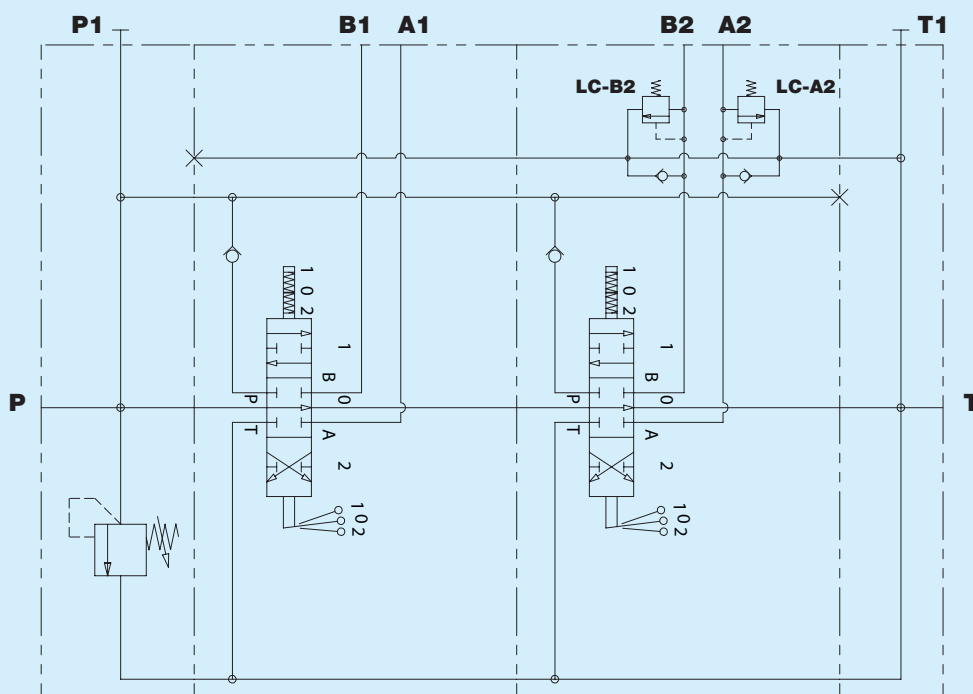


Neutral position in 0, detent in 3

LC Pressure limiter and anticavitation valve

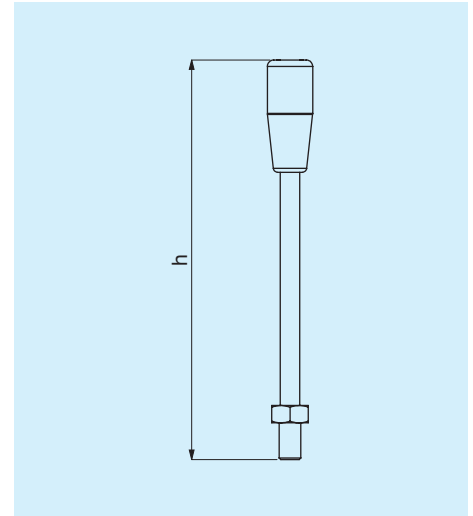


The option includes special cast iron



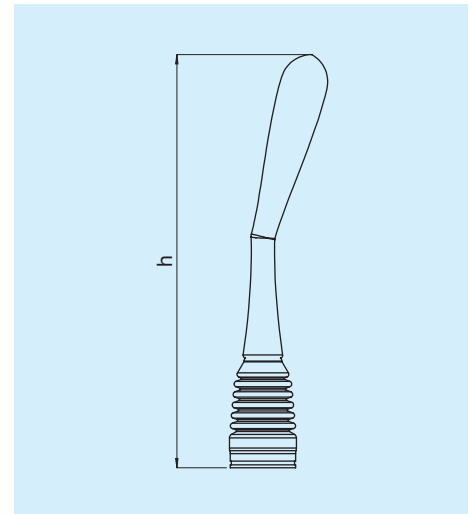
Straight standard knob

Code	Description	h [mm]	h [in]
A	Straight standard knob	109	4.3
B	Straight standard knob	134	5.28
C	Straight standard knob	184	7.24
D	Straight standard knob	214	8.42
E	Straight standard knob	254	10
F	Straight standard knob	304	11.97

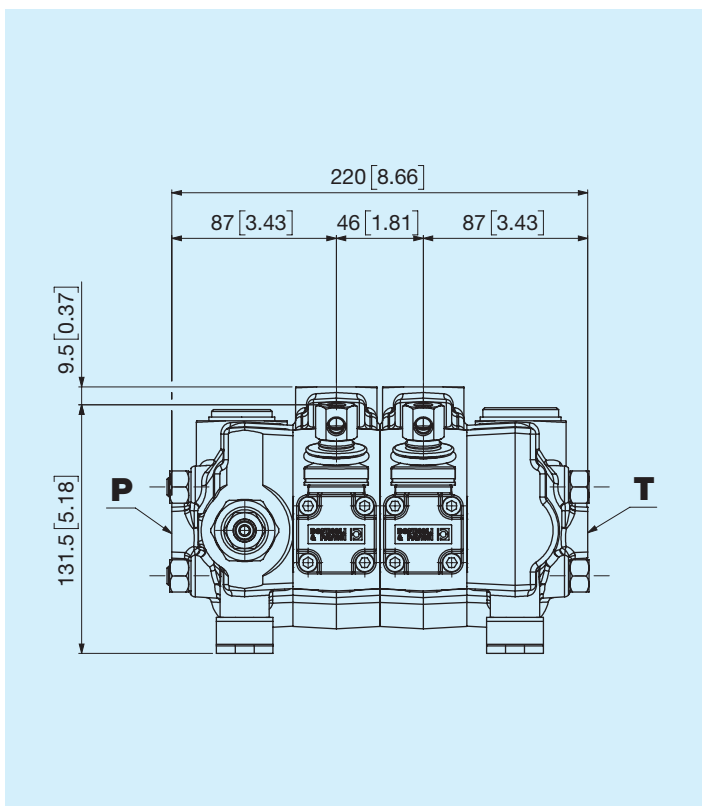


Ergonomic lever

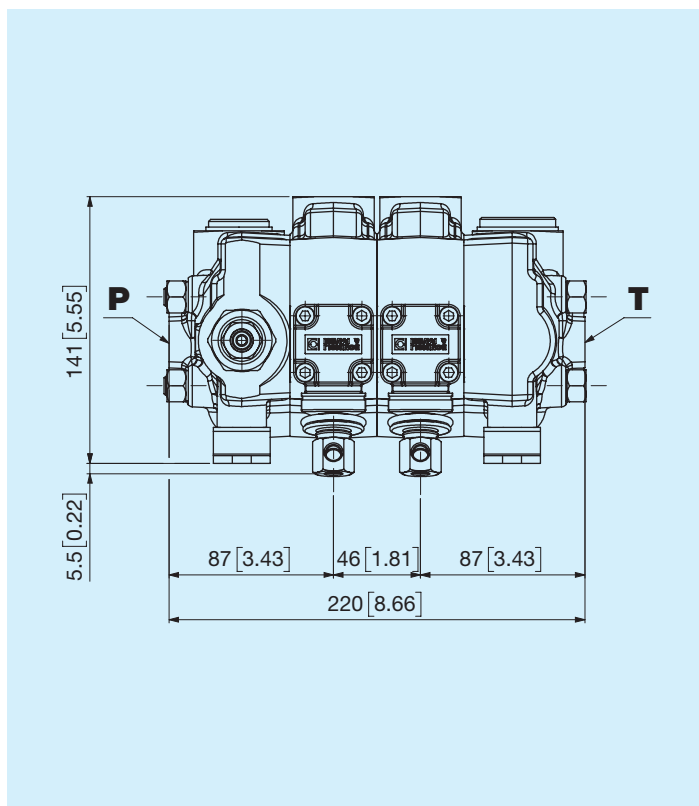
Code	Description	h [mm]	h [in]
L	Straight vertical	180	7.09
O	Bent 15° vertical	180	7.09
R	Bent 30° vertical	180	7.09
M	Straight horizontal	180	7.09
Y	Bent 15° horizontal	180	7.09
Q	Bent 30° horizontal	180	7.09



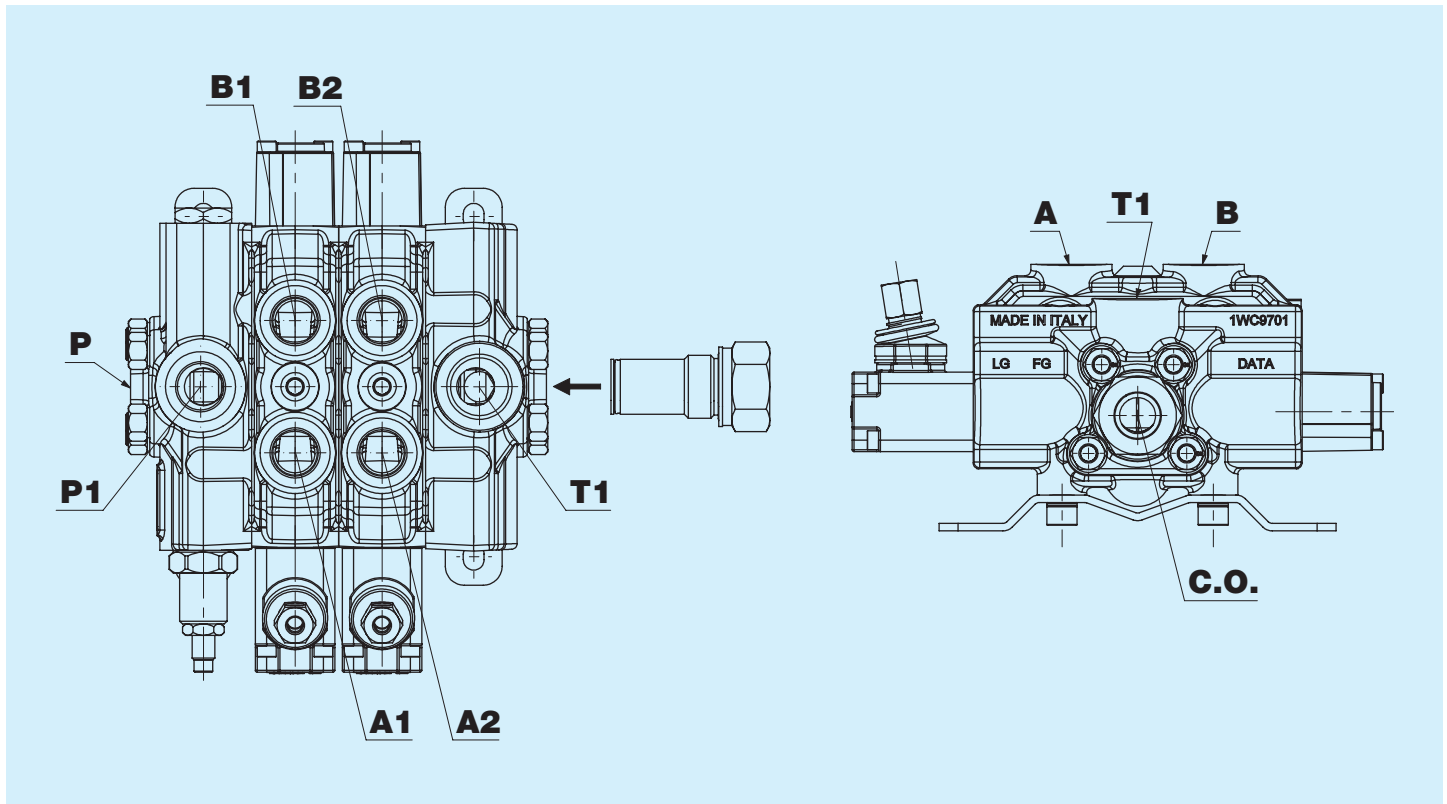
A Straight



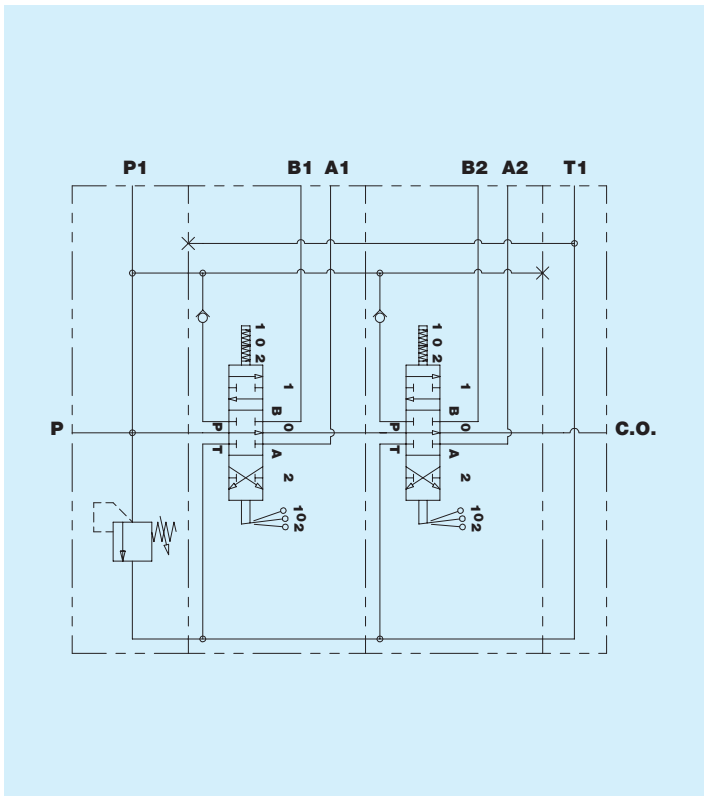
C Rotated 180°



Carry-over port T



All DNC160 directional control valves have the C.O. option - Carry over. For functional reasons, the version with power unit is an exception.



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DNC160															
1	Number of sections														
	1 1 section			3 3 sections				5 5 sections				7 7 sections			
	2 2 sections			4 4 sections				6 6 sections				8 8 sections			
2	General options														
	N None			Z Zinc plating				B Power unit and black paint							
	V Black paint			A Power unit				E Power unit and zinc plating							
3	Inlet type														
	S Left (standard)			D Right											
4	Thread Port P														
	F 3/4" GAS ISO 1179			5 M27x2 ISO 9974				U M27x2 ISO 6149				V 1" 1/16 - 12 SAE ISO 11926			
	G 1" GAS ISO 1179			6 M33x2 ISO 9974				Z M33x2 ISO 6149				S 1" 5/16 - 12 SAE ISO 11926			
5	Thread Port P1														
	0 Not processed			5 M27x2 ISO 9974				Z M33x2 ISO 6149							
	F 3/4" GAS ISO 1179			6 M33x2 ISO 9974				V 1" 1/16 - 12 SAE ISO 11926							
	G 1" GAS ISO 1179			U M27x2 ISO 6149				S 1" 5/16 - 12 SAE ISO 11926							
6	Options on port P - P1														
	A P open - P1 not processed (standard)			B P open - P1 plugged				C P open - P1 open				D P plugged - P1 open			
7	Thread port MP														
	N None			3 M14x1.5 ISO 9974				P 9/16" - 18 SAE ISO 11926							
	L 1/4" GAS ISO 1179			K M14x1.5 ISO 6149											
8	Thread port MT														
	N None			3 M14x1.5 ISO 9974				P 9/16" - 18 SAE ISO 11926							
	L 1/4" GAS ISO 1179			K M14x1.5 ISO 6149											
9	Options on ports MP - MT														
	N None			B MP plugged, MT open				D MP and MT plugged							
	A MP and MT open			C MP open, MT plugged				E MP open, MT not processed							
10 11	Maximum pressure relief valve type														
	00 VMP replacement plug			15 150 bar				21 210 bar				27 270 bar			
	10 100 bar			16 160 bar				22 220 bar				28 280 bar			
	11 110 bar			17 170 bar				23 230 bar				29 290 bar			
	12 120 bar			18 180 bar				24 240 bar				30 300 bar			
	13 130 bar			19 190 bar				25 250 bar							
	14 140 bar			20 200 bar				26 260 bar							
12	Sealing type maximum pressure relief valve														
	G Grub screw			C Cap				P Sealed				N None			

Repeat for each section of the valve

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

13	Thread ports A - B		
F 3/4" GAS ISO 1179	5 M27x2 ISO 9974	U M27x2 ISO 6149	V 1" 1/16 - 12 SAE ISO 11926

14	Actuators	
L Standard kit for lever holder	T Cable setting	P Pneumatic control
A Without lever holder, standard appendix	M Joystick	K Hydraulic control

15	Electro-hydraulic control options
N None	A Spool stroke limiting port A and B

16	17	Spool types
01 Spool type	03 Spool type	07 Spool type

18	Spool options
A Standard spool	B Nickel-plated spool

19	20	Spool control
NN None	0C Neutral position in 0, detent in 2	NS Neutral position in 0, detent in 3
0A Neutral position in 0	0D Detent in 0, 1, 2	...
0B Neutral position in 0, detent in 1	0H Detent in 2	... To select, see the relevant section

21	22	Valve type port A
NN None	LC Pressure limiter and anticavitation valve	

23	24	Setting LC valve on port A	
00 None	15 LC 150 bar	21 LC 210 bar	27 LC 270 bar
10 LC 100 bar	16 LC 160 bar	22 LC 220 bar	28 LC 280 bar
11 LC 110 bar	17 LC 170 bar	23 LC 230 bar	29 LC 290 bar
12 LC 120 bar	18 LC 180 bar	24 LC 240 bar	30 LC 300 bar
13 LC 130 bar	19 LC 190 bar	25 LC 250 bar	
14 LC 140 bar	20 LC 200 bar	26 LC 260 bar	

25	26	Valve type port B
NN None	LC Pressure limiter and anticavitation valve	

27	28	Setting LC valve on port B	
00 None	15 LC 150 bar	21 LC 210 bar	27 LC 270 bar
10 LC 100 bar	16 LC 160 bar	22 LC 220 bar	28 LC 280 bar
11 LC 110 bar	17 LC 170 bar	23 LC 230 bar	29 LC 290 bar
12 LC 120 bar	18 LC 180 bar	24 LC 240 bar	30 LC 300 bar
13 LC 130 bar	19 LC 190 bar	25 LC 250 bar	
14 LC 140 bar	20 LC 200 bar	26 LC 260 bar	

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Lever options

N None	C h 184 mm / 7.24 in	L Straight vertical	Y Bent 15° horizontal
S Without lever	D h 214 mm / 8.42 in	O Bent 15° vertical	Q Bent 30° horizontal
A h 109 mm / 4.3 in	E h 254 mm / 10 in	R Bent 30° vertical	
B h 134 mm / 5.28 in	F h 304 mm / 11.97 in	M Straight horizontal	

30



Lever holder position

A Straight	C Rotated 180°	N None
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31



Thread port Y

N None	3 M14x1.5 ISO 9974	P 9/16" - 18 SAE ISO 11926
L 1/4" GAS ISO 1179	K M14x1.5 ISO 6149	

32



Options on port Y

N None	A Open	B Plugged
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33



Thread port T

F 3/4" GAS ISO 1179	5 M27x2 ISO 9974	U M27x2 ISO 6149	V 1" 1/16 - 12 SAE ISO 11926
G 1" GAS ISO 1179	6 M33x2 ISO 9974	Z M33x2 ISO 6149	S 1" 5/16 - 12 SAE ISO 11926

34



Thread port T1

O Not processed	5 M27x2 ISO 9974	Z M33x2 ISO 6149
F 3/4" GAS ISO 1179	6 M33x2 ISO 9974	V 1" 1/16 - 12 SAE ISO 11926
G 1" GAS ISO 1179	U M27x2 ISO 6149	S 1" 5/16 - 12 SAE ISO 11926

35



Options on port T - T1

A P open - T1 not processed (standard)	B T open - T1 plugged	C T open - T1 open	D T plugged - T1 open
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36



Discharge options

A Carry-over option (standard)	B With carry-over port T
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