

Q130

Sectional directional control valve

- Available with parallel, tandem or series circuit
- Optional carry over port
- A wide range of antishock + anticavitation port valves
- Intermediate sections for several types of circuit
- Manual, pneumatic, electropneumatic, hydraulic, direct solenoid and electrohydraulic on-off controls

Working conditions

This catalogue shows technical specifications and diagrams measured through mineral oil of 46mm²/s - 46 cSt viscosity at 40°C - 104°F temperature.

Nominal flow rating		130 l/min - (34.3 Us gpm)
Max. pressure	from 1 up to 3 sections	370 bar (5450 psi)
	from 4 up to 6 sections	350 bar (5070 psi)
	from 7 up to 10 sections	325 bar (4710 psi)
Max. back pressure on outlet T port		25 bar (360 psi)
Number sections		from 1 to 10
Internal leakage A(B)⇒T	Δp = 100 bar (1450 psi)	10 cm ³ /min (0.61 in ³ /min)
Fluid		Mineral oil
Fluid temperature	with NBR (BUNA-N) seals	from -30°C to 80°C - from -22 °F to 176 °F
Viscosity	operating range	from 10 to 400 mm ² /s - from 10 to 400 cSt
Max. contamination level		16/14/12 - ISO 4406 - NAS1638 class 6
Ambient temperature	without electric devices	from -40°C to 60°C - from 40 °F to 140 °F
	with electric devices	from -20°C to 50°C - from -4 °F to 122 °F

NOTE - For different conditions please contact our Sales Department.

REFERENCE STANDARD

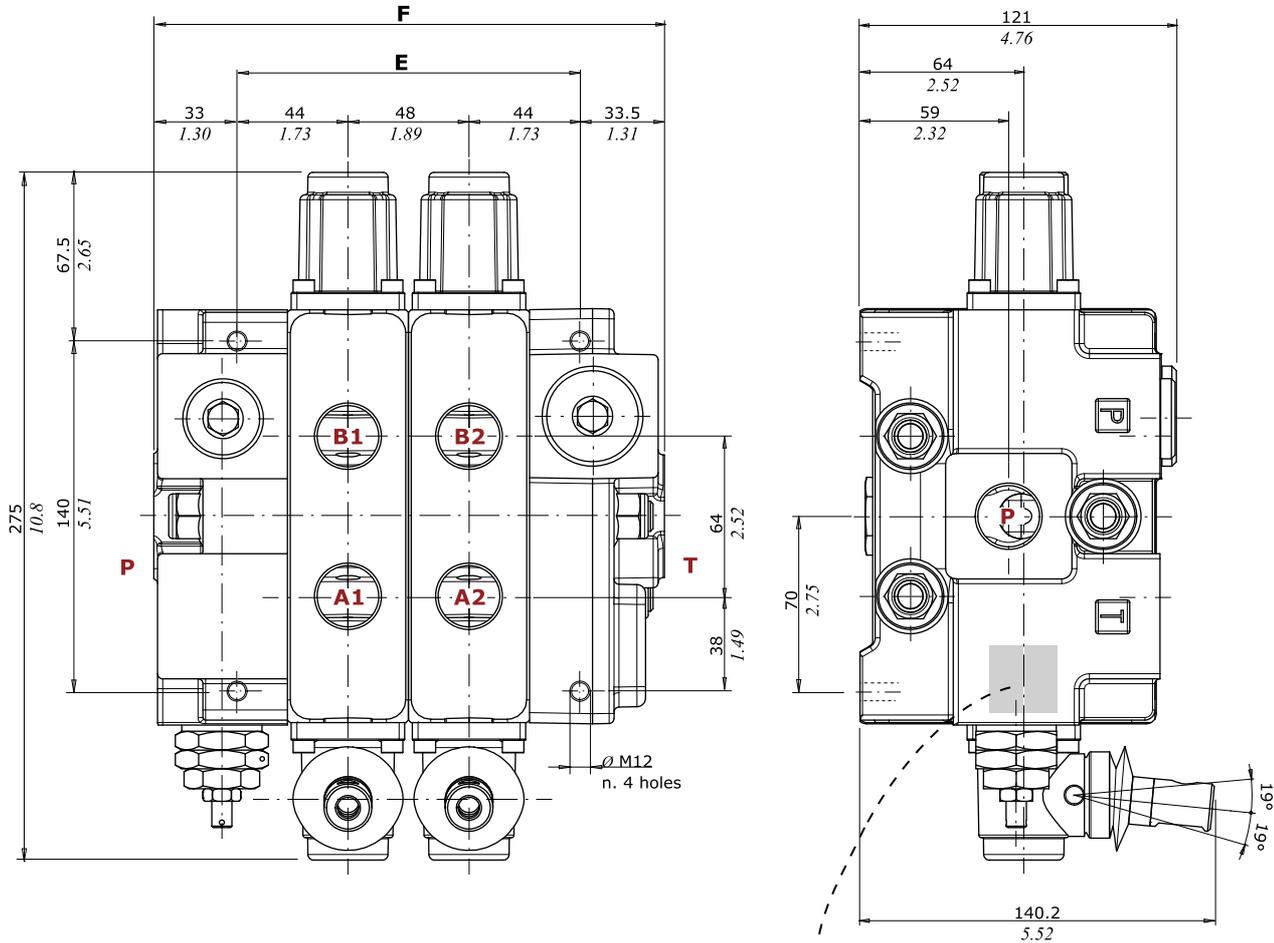
		BSP	UN-UNF
THREAD ACCORDING TO		ISO 228/1	ISO 263
		BS 2779	ANSI B1.1 unified
CAVITY DIMENSION ACCORDING TO	ISO	1179	11926
	SAE		J11926
	DIN	3852-2 shape X or Y	

PORT THREADING

PORTS	BSP (standard)	BSP (G 1")	UN-UNF
P Inlet	G 3/4	G 1"	1" 5/16-12 (SAE16)
P1 Inlet	G 3/4	G 1"	1" 5/16-12 (SAE16)
A and B ports	G 3/4	G 1"	1" 5/16-12 (SAE16)
T Outlet	G 1"	G 1"	1" 5/16-12 (SAE16)
T1 Outlet	G 1"	G 1"	1" 5/16-12 (SAE16)
Lc port (Carry-over plug - T port)	G 3/4-G 1"	G 1"	1" 1/16-12 (SAE12)
Hydraulic controls	G 1/4	G 3/4	9/16-18 (SAE 6)
Pneumatic controls	NPTF 1/8-27	NPTF 1/8-27	NPTF 1/8-27

Dimensional data

Standard configuration*



Type	E		F	
	mm	in	mm	in
Q130/1	88	3.46	154.5	6.08
Q130/2	136	5.35	202.5	7.97
Q130/3	184	7.24	250.5	9.86
Q130/4	232	9.13	298.5	11.75
Q130/5	280	11	346.5	13.64
Q130/6	328	12.91	394.5	15.53
Q130/7	376	14.80	442.5	17.42
Q130/8	424	16.70	490.5	19.31
Q130/9	472	18.58	538.5	21.20
Q130/10	520	20.47	586.5	23.09

walvoil

MADE IN ITALY
1GB75040009

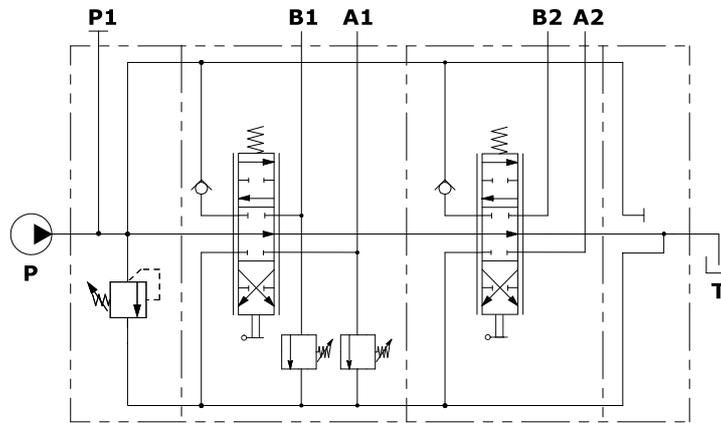
DISTRIBUTORE
Q130/2
MD1600464-001

MD1600464-001

- Product code
- Code description
- Product allotment
- Datamatrix with product allotment

NOTE: Drawings and dimensions are referred to a **BSP** threading configuration.

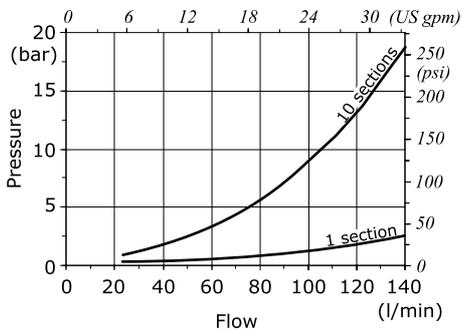
(*): For other configurations, see page 254



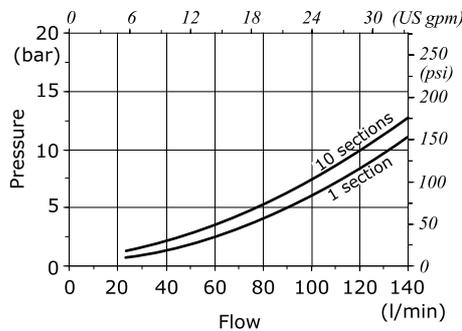
Description example (parallel circuit):
 Q130/2/F7S(N150)/103-A1-M1.V32(N105\N105)/103-A1-M1/F3D

Performance data

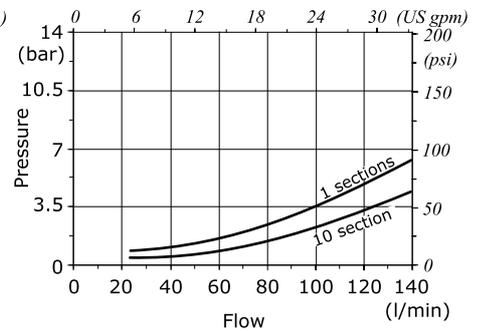
P⇒T pressure drops



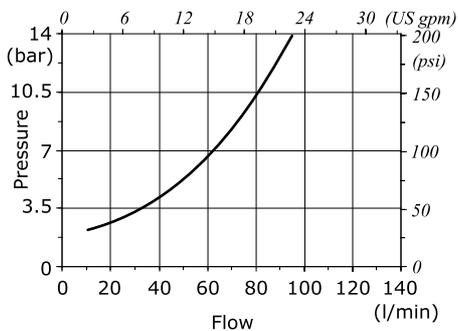
P⇒A(B) pressure drops



A(B)⇒T pressure drops



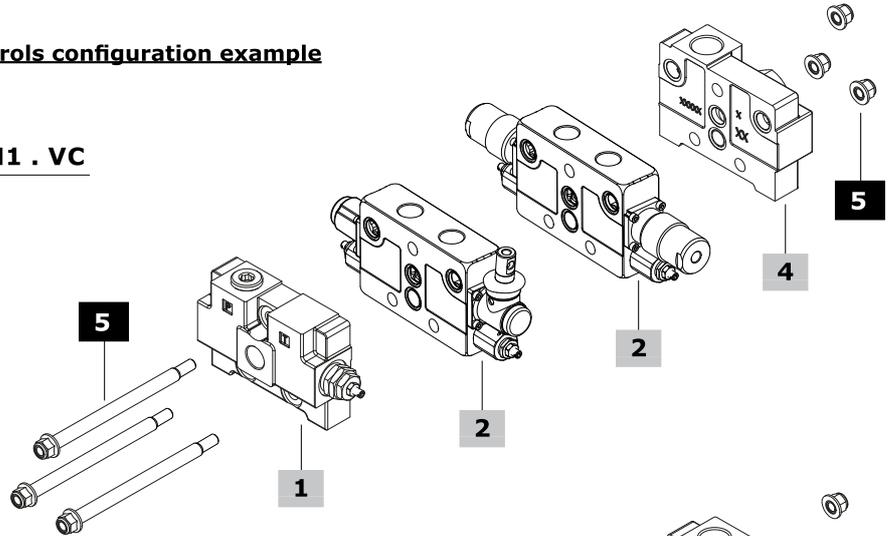
A1(B1)⇒A2(B2) pressure drops
 (with series circuit)



Complete section ordering codes

Valve with mechanical and hydraulic controls configuration example

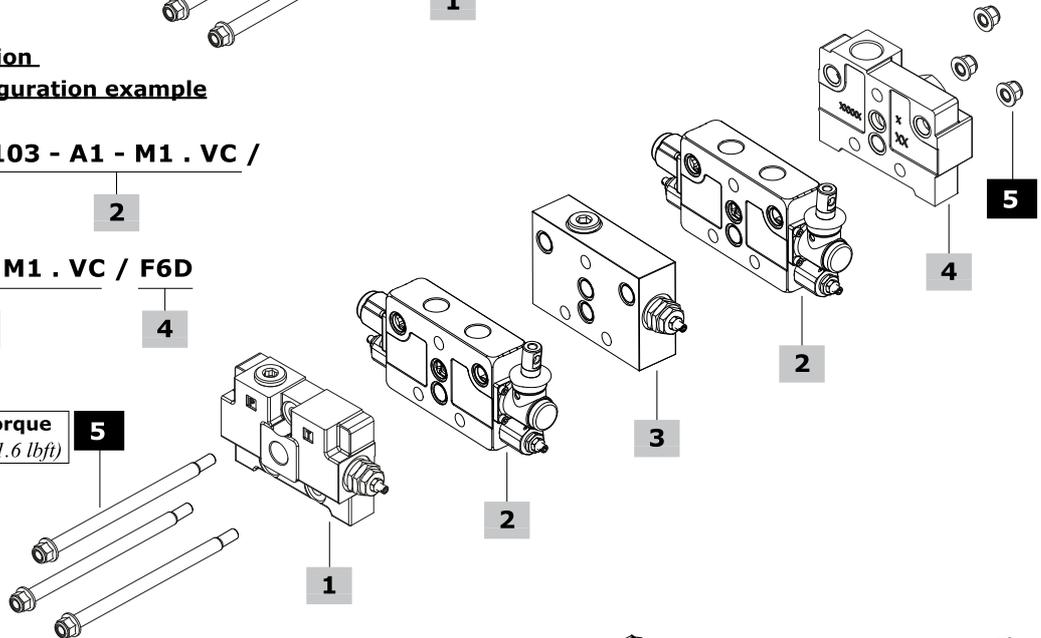
valve setting (bar)
Q130 / 2 / F7S(N150) / 103 - A1 - M1 . VC
 N. of section **1** **2**
/ 103 - H1 . VC / F6D
 2 **4**



Valve with intermediate section and mechanical control configuration example

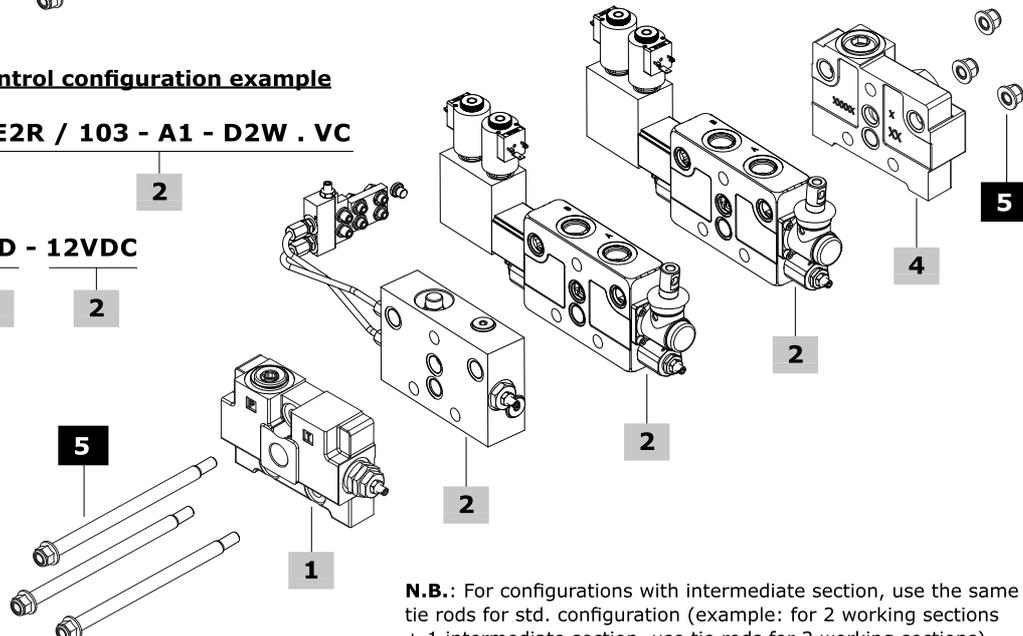
valve setting (bar)
Q130 / 2 / F7S(N150) / 103 - A1 - M1 . VC /
/ E50(N150) / 103 - A1 - M1 . VC / F6D
 3 **2** **4**

Tie rod tightening torque
 wrench 18 - 70 Nm (51.6 lbft)



Valve with electrohydraulic control configuration example

Q130 / 2 / F7S(N150) / KE2R / 103 - A1 - D2W . VC
 1 **2**
/ 103 - A1 - D2W . VC / F6D - 12VDC
 2 **4** **2**

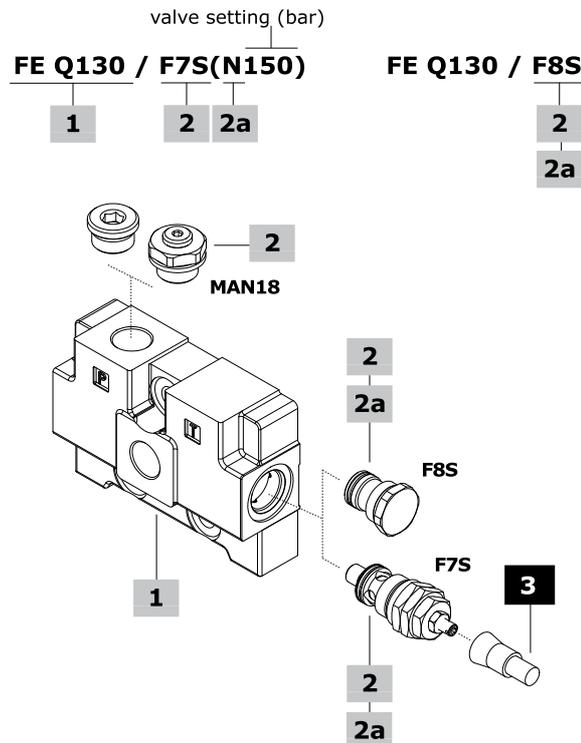


N.B.: For configurations with intermediate section, use the same tie rods for std. configuration (example: for 2 working sections + 1 intermediate section, use tie rods for 3 working sections)

<p>1 Inlet section* page 226</p> <p>TYPE: FE-Q130/F7S(N150) CODE: 10000F7S/D-N DESCRIPTION: Side inlet open, upper inlet plugged, with pressure relief valve, setting range 101-200 bar (1460-2900 psi) TYPE: FE-Q130/F8S CODE: 10003F8S/D DESCRIPTION: As previous one, without valves (pressure relief valve plugged port)</p>	<p>3 Intermediate section* page 254</p> <table border="0"> <thead> <tr> <th>TYPE</th> <th>CODE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>E50</td> <td>10850E50-B</td> <td>With pressure relief valve setting range 10-100 bar (145-1450 psi)</td> </tr> <tr> <td></td> <td>10850E50-N</td> <td>As previous one, setting range 101-200 bar (1460-2900 psi)</td> </tr> <tr> <td></td> <td>10850E50-R</td> <td>As previous one, setting range 201-380 bar (2910-5500 psi)</td> </tr> <tr> <td>E53</td> <td>10854E53-B</td> <td>With pressure relief valve setting range 10-100 bar (145-1450 psi) and P2 port open for 2nd pump</td> </tr> <tr> <td></td> <td>10854E53-N</td> <td>As previous one, setting range 101-200 bar (1460-2900 psi)</td> </tr> <tr> <td></td> <td>10854E53-R</td> <td>As previous one, setting range 201-380 bar (2910-5500 psi)</td> </tr> <tr> <td>E51</td> <td>10853E51</td> <td>Intermediate outlet section, T2 port open</td> </tr> <tr> <td>E61</td> <td>10877E61</td> <td>Intermediate spacer section</td> </tr> </tbody> </table>	TYPE	CODE	DESCRIPTION	E50	10850E50-B	With pressure relief valve setting range 10-100 bar (145-1450 psi)		10850E50-N	As previous one, setting range 101-200 bar (1460-2900 psi)		10850E50-R	As previous one, setting range 201-380 bar (2910-5500 psi)	E53	10854E53-B	With pressure relief valve setting range 10-100 bar (145-1450 psi) and P2 port open for 2 nd pump		10854E53-N	As previous one, setting range 101-200 bar (1460-2900 psi)		10854E53-R	As previous one, setting range 201-380 bar (2910-5500 psi)	E51	10853E51	Intermediate outlet section, T2 port open	E61	10877E61	Intermediate spacer section
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E61	10877E61	Intermediate spacer section																										
<p>2 Working section* page 229</p> <p>With mechanical controls TYPE: EL-Q130/103-A1-M1.VC CODE: SGL130004 DESCRIPTION: Parallel circuit with valve arrangement (seat plugged), 3 positions double acting spool, lever control and spring return to neutral position TYPE: EL-Q130/103-A1-M1 CODE: 100000103001000 DESCRIPTION: As previous one, without valve arrangement</p> <p>With proportional hydraulic controls TYPE: EL-Q130/103-H1.VC CODE: SGL130005 DESCRIPTION: Parallel circuit with valve arrangement (seat plugged), 3 positions double acting spool, high pressure hydraulic controls, spring return to neutral position TYPE: EL-Q130/103-H1 CODE: SGL130006 DESCRIPTION: As previous one, without valve arrangement TYPE: EL-Q130/103-H5.VC CODE: SGL130007 DESCRIPTION: Parallel circuit with valve arrangement (seat plugged), 3 positions double acting spool, low pressure hydraulic controls, spring return to neutral position TYPE: EL-Q130/103-H5 CODE: SGL130008 DESCRIPTION: As previous one, without valve arrangement</p> <p>With electrohydraulic ON/OFF controls - one side type TYPE: EL-Q130/KE1S/103-A1-D2W.VC -12VDC CODE: SGL130011 DESCRIPTION: Parallel circuit with valve arrangement (seat plugged), 3 positions double acting spool, 12VDC one-side electrohydraulic ON/OFF control, internal pilot and drain, lever control and spring return to neutral position TYPE: EL-Q130/KE1S/103-A1-D2W-12VDC CODE: SGL130012 DESCRIPTION: As previous one, without valve arrangement</p>	<p>4 Outlet section* page 256</p> <p>TYPE: FS-Q130-F3D CODE: 10012F3D DESCRIPTION: T port open, T1 port plugged. For open center circuit TYPE: FS-Q130-F16D CODE: 10016F16D DESCRIPTION: T port open, T1 port plugged. For closed center circuit TYPE: FS-Q130-F6D CODE: 10014F6D DESCRIPTION: Lc port and T1 port open. With joint for carry-over (HPCO) circuit</p>																											
	<p>5 Tie rods kit</p> <table border="0"> <thead> <tr> <th>CODE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>10901TX1</td> <td>For 1 section valve</td> </tr> <tr> <td>10902TX2</td> <td>For 2 sections valve</td> </tr> <tr> <td>10903TX3</td> <td>For 3 sections valve</td> </tr> <tr> <td>10904TX4</td> <td>For 4 sections valve</td> </tr> <tr> <td>10905TX5</td> <td>For 5 sections valve</td> </tr> <tr> <td>10906TX6</td> <td>For 6 sections valve</td> </tr> <tr> <td>10907TX7</td> <td>For 7 sections valve</td> </tr> <tr> <td>10908TX8</td> <td>For 8 sections valve</td> </tr> <tr> <td>10909TX9</td> <td>For 9 sections valve</td> </tr> <tr> <td>10910TX10</td> <td>For 10 sections valve</td> </tr> </tbody> </table>	CODE	DESCRIPTION	10901TX1	For 1 section valve	10902TX2	For 2 sections valve	10903TX3	For 3 sections valve	10904TX4	For 4 sections valve	10905TX5	For 5 sections valve	10906TX6	For 6 sections valve	10907TX7	For 7 sections valve	10908TX8	For 8 sections valve	10909TX9	For 9 sections valve	10910TX10	For 10 sections valve					
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(*): Codes are referred to **BSP** thread

Inlet section - parts ordering codes



1 Inlet body section* page 227

TYPE: **FE-Q130** CODE: 060012839699
 DESCRIPTION: Side inlet port, upper inlet plugged, for pressure relief valve arrangement

2 Configuration coding* page 227

TYPE	DESCRIPTION
F7S	With pressure relief valve
F8S	Without valves (pressure relief valve plugged port)

Note: Inlet configurations require upper P port:
 n. 1 G3/4 plug code 3XTAP732200, or n. 1 pressure gauge arrangement code 5MAN632231

2a Main pressure relief valve page 228

TYPE: B	CODE: 700105205000000
DESCRIPTION:	VLP105S valve, setting range 10-100 bar (145-1450 psi)
TYPE: N	CODE: 700105105000000
DESCRIPTION:	VLP105S valve, setting range 101-200 bar (1460-2900 psi)
TYPE: R	CODE: 700105305000000
DESCRIPTION:	VLP105S valve, setting range 201-380 bar (2910-5500 psi)
TYPE: -	CODE: 06000468999
DESCRIPTION:	Relief valve blanking plug

3 Accessory

TYPE	CODE	DESCRIPTION
-	4COP120420	Antitamper cap for pressure relief valve

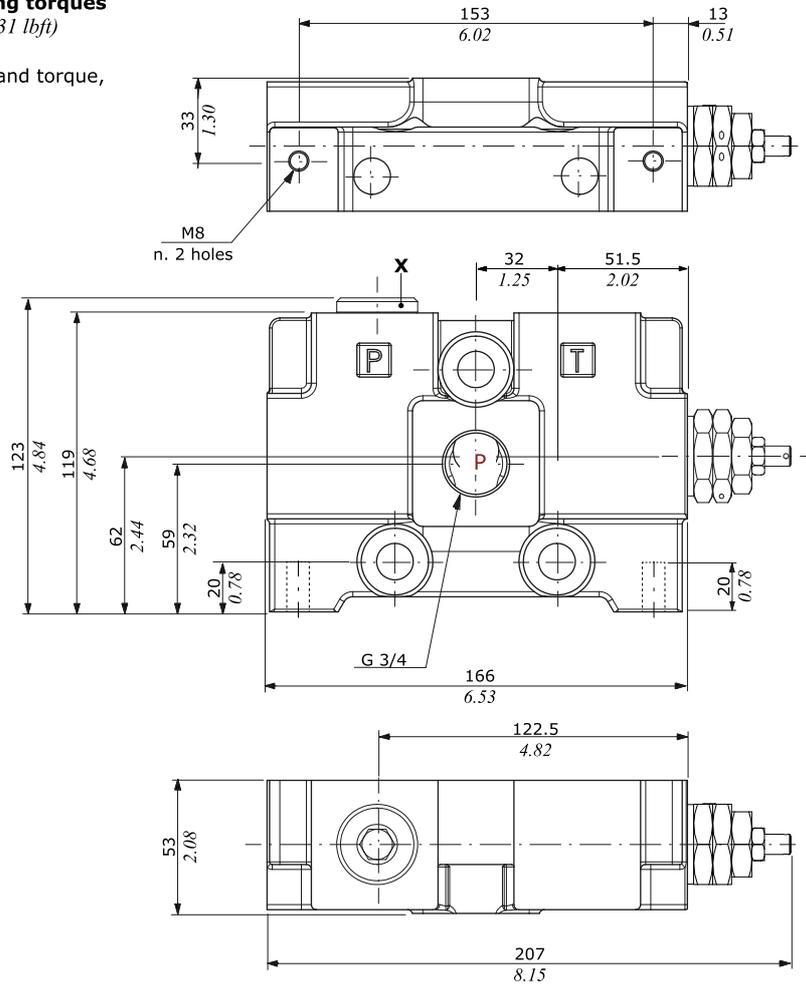
(*): Codes are referred to **BSP** thread

Dimensional data and hydraulic circuits

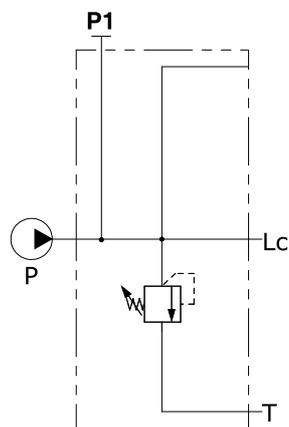
Wrenches and tightening torques

X = wrench 12 - 42 Nm (31 lbf^t)

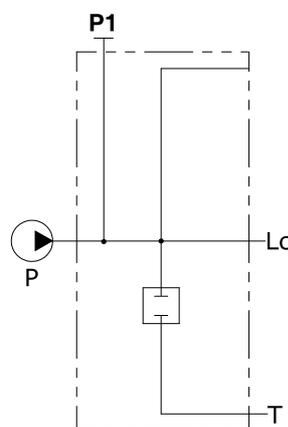
Note: For valves wrench and torque, see related pages



F7S configuration
With pressure relief valve



F8S configuration
Without valves
(pressure relief valve plugged port)



Inlet section

Main pressure relief valve

Relief valve blanking plug

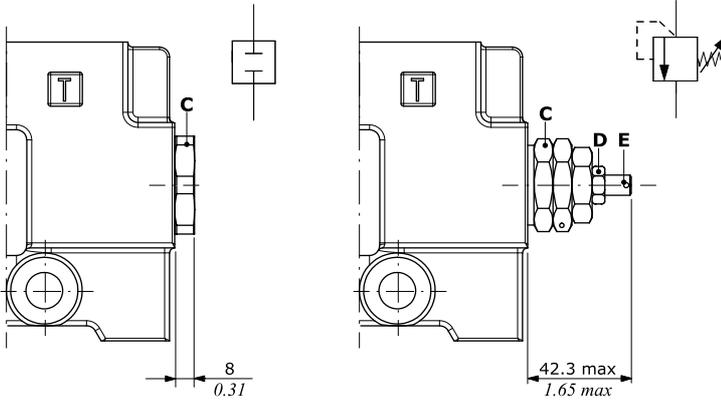
Main pressure relief valve

Wrenches and tightening torques

C = wrench 32 - 80 Nm (59 lbft)

D = wrench 13 - 24 Nm (17.7 lbft)

E = allen wrench 4

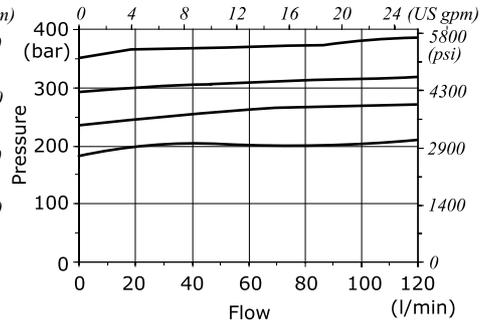
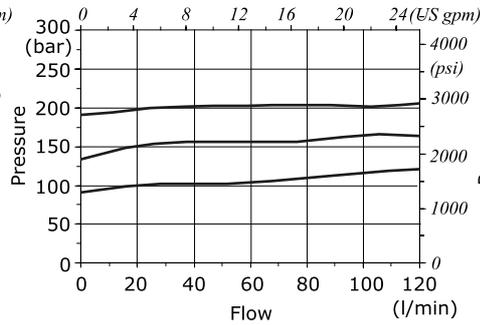
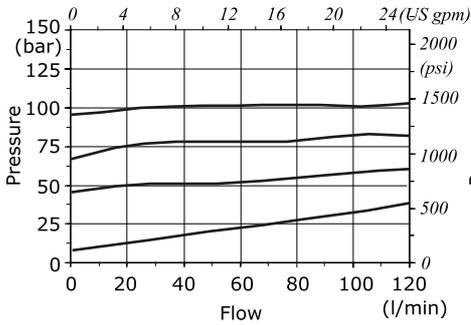


Spring type	Setting ranges (bar - psi)
B (white)	From 10 to 100 - from 145 to 1450
N (black)	From 101 to 200 - from 1460 to 2900
R (red)	From 201 to 380 - from 2910 to 5500

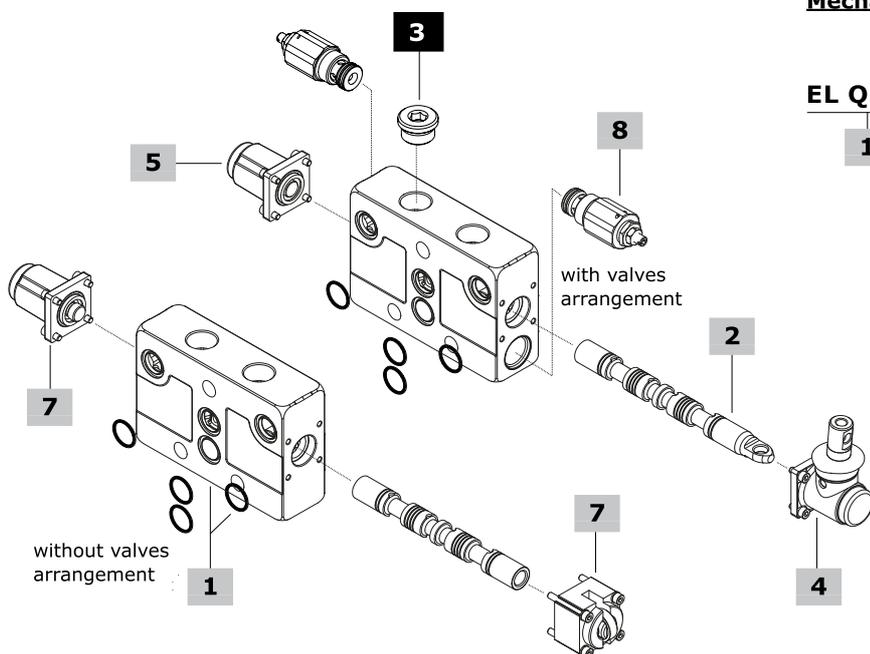
Setting example (B type spring)

Setting example (N type spring)

Setting example (R type spring)



Working section - parts ordering codes



Mechanical control valve configuration example

spring type and valve setting (bar)

EL Q130 / 102 - A1 - M1 . V40(N)120

1 2 4 5 8

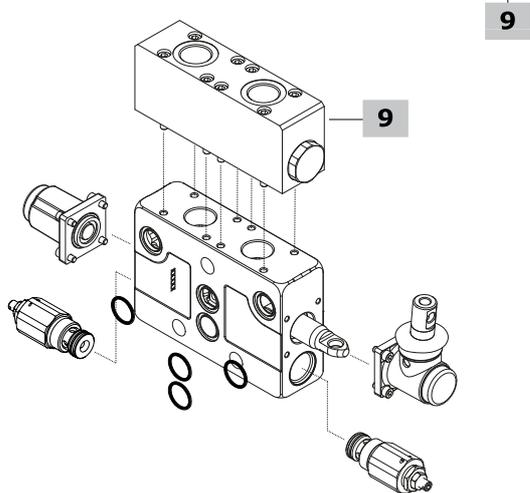
C2/C3 complete mechanical control configuration example

EL Q130 / 103 - C3 . V40(N)120

7

Mechanical control valve with arrangement for secondary aux valves block: configuration example

EL Q130 / 103 - A1 - M1 . V40(N)120 / VC03



1 Working section body kit* page 233

- TYPE: **EL-Q130.VC** CODE: 5EL0600127898
- DESCRIPTION: Parallel circuit, with port valves arrangement
- TYPE: **EL-Q130.VC.VPC** CODE: 5EL0600128894
- DESCRIPTION: Parallel circuit with port valves arrangement, for secondary aux valves block
- TYPE: **EL-Q130** CODE: 5EL0600127893
- DESCRIPTION: Parallel circuit, without port valves arrangement
- TYPE: **EL-Q130.VC** CODE: 5EL0600127896
- DESCRIPTION: Series circuit, with port valves arrangement

2 Spool page 234

TYPE	CODE	DESCRIPTION
Standard spools		
103	060102983699	Double acting, A and B closed in neutral position
	KR130103K	As previous one, for kick-out control
106	KR130106	Double acting for closed circuit
107	KR130107-108	Double acting, A to tank and B closed in neutral position
108	KR130107-108	Double acting, B to tank and A closed in neutral position
111	060102996399	Double acting, A and B to tank in neutral position
	KR103111K	As previous one, for kick-out control
101	3CUG2996000	Single acting on port A. G3/4 plug is required, see #3
102	3CUG2996001	Single acting on port B. G3/4 plug is required, see #3
116	KR130116	Double acting, with floating in the 4 th position (spool in): requires dedicated spool control
603	060103218199	Double acting, A and B closed in neutral position, for series circuit

Special spools for cam, microswitch controls and other leverless controls

103	060102996199	Double acting, A and B closed in neutral position
111	060102996299	Double acting, A and B to tank in neutral position
603	060103236499	Double acting, A and B to tank in neutral position, for series circuit

3 Plug for single acting spool*

TYPE	CODE	DESCRIPTION
-	060002800899	G3/4 plug

(*): Codes are referred to **BSP** thread

Working section - parts ordering codes

4 A side control page 235

TYPE	CODE	DESCRIPTION
For standard spools		
<u>With lever control:</u>		
A1	10600A1-A2	M10 thread aluminium lever box
A2	10600A1-A2	As A1 type, with lever box rotated 180°
A1/Z1	10610A1-A2/Z1	Aluminium lever box for 116 spool type
A2/Z1	10610A1-A2/Z1	As A1/Z1 type, with lever box rotated 180°
<u>With safety lever control:</u>		
A1/S⁽¹⁾	10624A1-A2/S	M10 thread aluminium lever box
A2/S⁽¹⁾	10624A1-A2/S	As A1/S type, with lever box rotated 180°
<u>Without lever control:</u>		
A6	10620A6	With flange
A6/Z1	10620A6/Z1	As A6 type, for 116 spool type
A6H	10620A6HH	As A6 type, with scraper
A8	10622A8	Arrangement for flexible cable control
A8/Z1	10622A8/Z1	As A8 type, for 116 spool type
<u>Joystick controls for 2 section operation:</u>		
A35/1	10637A35-12	Joystick 1 type
A35/2	10637A35-12	Joystick 2 type
A35/3	10637A35-34	Joystick 3 type
A35/4	10637A35-34	Joystick 4 type
For types 103, 111 and 603 special spools		
<u>With spool position microswitch:</u>		
Note: to complete the control you must use the assembly kit at #6		
N1-A1	10641N1-A1/A2	Micro operation in pos. 1 and 2, with lever box
N1A-A1	10642N1A-A1/A2	Micro operation in pos. 1, with lever box
N1B-A1	10643N1B-A1/A2	Micro operation in pos. 2, with lever box
N1-A3	10648N1-A3	Micro operation in pos. 1 and 2, without lever with cap
N1A-A3	10648N1A-A3	Micro operation in pos. 1, without lever with cap
N1B-A3	10648N1B-A3	Micro operation in pos. 2, without lever with cap
<u>Without lever control:</u>		
A3	10614A3	Without lever, with cap
A4	10617A4	M10 thread male external pin with flange
A5⁽²⁾	10619A5	Flange with spherical spool end

5 B side control page 242

TYPE	CODE	DESCRIPTION
<u>With spring return:</u>		
M1	10730M1	3 pos., spring return in neutral position
M1/O1	10730M1/O1	As M1 type, for joystick control
M1/B1	10753M1-B1	As M1 type, with microswitch arrangement
M1-U1	10701M1-U1	As M1 type, with M10 male thread external pin
M2	10732M2	2 pos. (0-1), spring return in neutral position
M2-U1	10702M2-U1	As M2 type, with M10 male thread external pin
M3	10733M3	2 pos. (0-2), spring return in neutral position
M3-U1	10702M3-U1	As M3 type, with M10 male thread external pin
M4	10735M42-1	2 pos. (2-1), spring return in position 2
<u>With flexible cable control arrangement:</u>		
M1-U2	10715M1-U2	3 pos., spring return in neutral position
M2-U2	10716M2-U2	2 pos. (0-1), spring return in neutral position
M3-U2	10717M3-U2	2 pos. (0-2), spring return in neutral position
<u>With friction:</u>		
R0	10740R0	Adjustable friction control
<u>With detent:</u>		
R1	10741R1	3 pos., detent in position 1
R2	10742R2	3 pos., detent in position 2
R3	10743R3	3 pos., detent in all position
R4	10744R4	2 pos., detent in position 0-1
R5	10745R5	2 pos., detent in position 0-2
R6	10746R6	2 pos., detent in position 1-2
R8	10748R8	4 pos., detent in 4 th pos., for 116 spool type

5 B side controls (cont.) page 242

TYPE	CODE	DESCRIPTION
<u>With detent and kick out function:</u>		
R1K	10741R1K	3 pos., detent in position 1
R2K	10742R2K	3 pos., detent in position 2
R3K	10743R3K	3 pos., detent in all position
<u>With spool position microswitch:</u>		
Note: To complete the control you must use the assembly kit at #6		
M1-N1	10766M1-N1	3 pos., micro operation in pos. 1 and 2, spring return in neutral position
M1-N1A	10767M1-N1A	As M1-N1 type, micro operation in pos. 1
M1-N1B	10768M1-N1B	As M1-N1 type, micro operation in pos. 2
M2-N1	10769M2-N1	2 pos. (0-1), spring return in neutral position
M3-N1	10772M3-N1	2 pos. (0-2), spring return in neutral position
<u>Pneumatic and electropneumatic controls:</u>		
P1N	10561P1-N	ON/OFF pneumatic control
P1NP	10561P1-NP	Proportional pneumatic control
D3	10591D3-O-12DC	12 VDC, ON/OFF electropneumatic control
	10592D3-O-24DC	24 VDC, ON/OFF electropneumatic control

6 Microswitch assembly kit

CODE	DESCRIPTION
10650N1-01	Kit for 1 section
10650N1-02	Kit for 2 sections
10650N1-03	Kit for 3 sections
10650N1-04	Kit for 4 sections
10650N1-05	Kit for 5 sections
10650N1-06	Kit for 6 sections
10650N1-07	Kit for 7 sections
10650N1-08	Kit for 8 sections
10650N1-09	Kit for 9 sections
10650N1-10	Kit for 10 sections

7 Complete controls A+B sides page 247

TYPE	CODE	DESCRIPTION
For types 103, 111 and 603 special spools		
C2	10792C2-C3	Cam control from pos. 1 to 2
C3	10792C2-C3	Cam control from pos. 2 to 1

8 Auxiliary port valve page 251

TYPE	CODE	DESCRIPTION
<u>Antishock valve:</u>		
V30-B	10800V30-B	Setting range: from 30 to 80 bar (from 435 to 1150 psi)
V30-N	10800V30-N	Setting range: from 81 to 200 bar (from 1170 to 2900 psi)
V30-R	10800V30-R	Setting range: from 201 to 350 bar (from 2910 to 5100 psi)
<u>Antishock/anticavitation valve:</u>		
V33-B	10803V33-B	Setting range: from 30 to 80 bar (from 435 to 1150 psi)
V33-N	10803V33-N	Setting range: from 81 to 200 bar (from 1170 to 2900 psi)
V33-R	10803V33-R	Setting range: from 201 to 350 bar (from 2910 to 5100 psi)
<u>Anticavitation valve:</u>		
V04	10808V04	Anticavitation valve
<u>Plug:</u>		
VC	060002798999	Valve blanking plug
For other configurations and positions, see page 251		

9 Secondary aux valves* page 253

TYPE	CODE	DESCRIPTION
VRP-VC01	10835V01	Single piloted check valve on A port, 250 bar (3600 psi)
VRP-VC03	10837V03	Double piloted check valve on A and B ports, 250 bar (3600 psi)

(*): Codes are referred to **BSP** thread
 (1): Always complete with lever knob
 (2): To be assembled only with M4 control

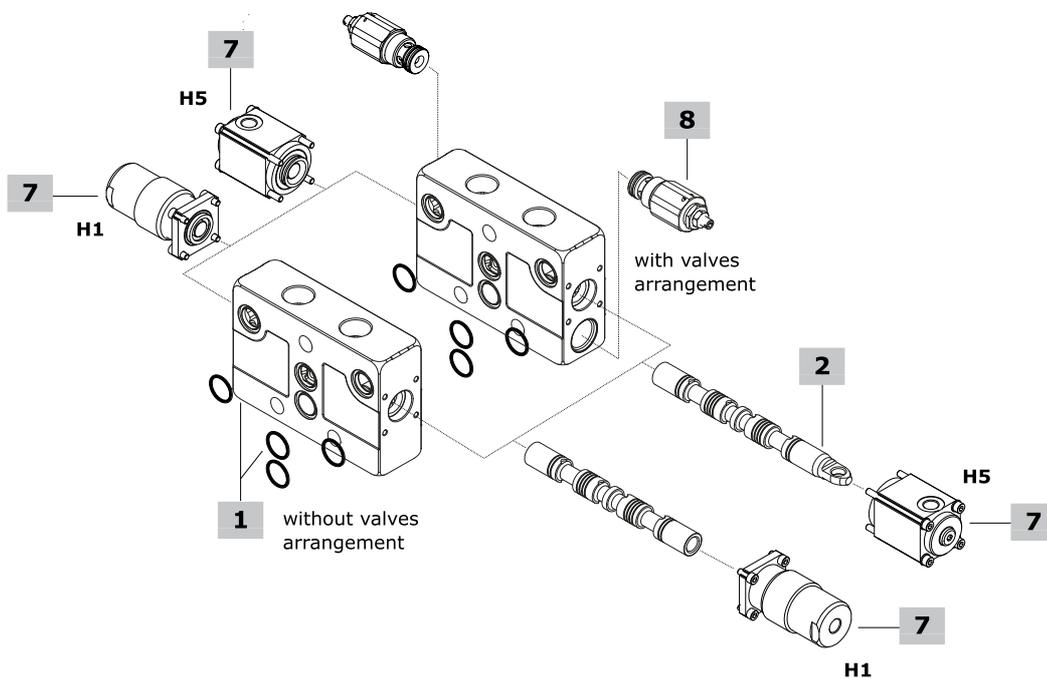
Working section - parts ordering codes

Proportional hydraulic controls valve configuration example

spring type and valve setting (bar)

EL Q130 / 103 - H5 . V40(N)120
 1 2 7 8

EL Q130 / 103 - H1 . V40(N)120
 7



<p>1 Working section body kit* page 233</p> <p>The body kits listed below are for H5 hydraulic control. H1 hydraulic control requires standard body: see #1, page 229 TYPE: EL-Q130-H5.VC CODE: 5EL0600127898H5 DESCRIPTION: Parallel circuit, with port valves arrangement TYPE: EL-Q130-H5 CODE: 5EL0600127893H5 DESCRIPTION: Parallel circuit, without port valves arrangement</p>			<p>7 Hydraulic controls A+B sides* page 248</p> <table border="0"> <tr> <td>TYPE</td> <td>CODE</td> <td>DESCRIPTION</td> </tr> <tr> <td>H5</td> <td>10785H5</td> <td>Low pressure proportional type, upper ports</td> </tr> <tr> <td>H1</td> <td>10779H1</td> <td>High pressure proportional type, side ports</td> </tr> </table>			TYPE	CODE	DESCRIPTION	H5	10785H5	Low pressure proportional type, upper ports	H1	10779H1	High pressure proportional type, side ports						
TYPE	CODE	DESCRIPTION																		
H5	10785H5	Low pressure proportional type, upper ports																		
H1	10779H1	High pressure proportional type, side ports																		
<p>2 Spool page 234</p> <table border="0"> <tr> <td>TYPE</td> <td>CODE</td> <td>DESCRIPTION</td> </tr> <tr> <td colspan="3">For H5 hydraulic control</td> </tr> <tr> <td>103</td> <td>060102983699</td> <td>Double acting, A and B closed in neutral position</td> </tr> <tr> <td colspan="3">For H1 hydraulic control</td> </tr> <tr> <td>103</td> <td>060102996199</td> <td>Double acting, A and B closed in neutral position</td> </tr> </table>			TYPE	CODE	DESCRIPTION	For H5 hydraulic control			103	060102983699	Double acting, A and B closed in neutral position	For H1 hydraulic control			103	060102996199	Double acting, A and B closed in neutral position	<p>8 Auxiliary port valve page 251</p> <p>See #8, page 230</p>		
TYPE	CODE	DESCRIPTION																		
For H5 hydraulic control																				
103	060102983699	Double acting, A and B closed in neutral position																		
For H1 hydraulic control																				
103	060102996199	Double acting, A and B closed in neutral position																		

(*): Codes are referred to **BSP** thread

Working section - parts ordering codes

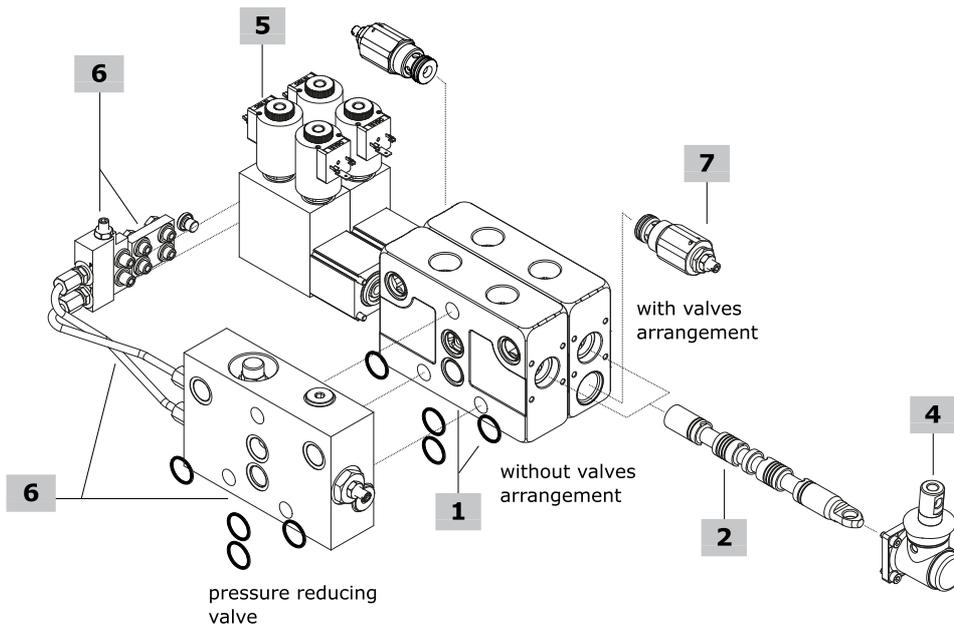
One side - ON/OFF electrohydraulic control valve configuration example

R = with pressure reducing valve
S = without pressure reducing valve

spring type and valve setting (bar)

EL Q130 / KE1R / 103 - A1 - D2W . V40(N)120 - 12VDC

1 6 2 4 5 7 5



1 Working section body kit* page 233

See #1, page 229

2 Spool page 234

See #2, page 229

4 A side control page 235

See #4, page 230

5 B side electrohydraulic control page 249

TYPE	CODE	DESCRIPTION
D2W-12VDC	10681D2W1200	3 pos., 12VDC ON/OFF electrohydraulic control
D2W-24VDC	10681D2W2400	3 pos., 24VDC ON/OFF electrohydraulic control

Note: For **BT** type coils, see page 257

6 Connector kit page 250

TYPE CODE DESCRIPTION

Without pressure reducing valve

KE1S	5GKE13S010	Kit for 1 section
KE2S	5GKE13S020	Kit for 2 sections
KE3S	5GKE13S030	Kit for 3 sections
KE4S	5GKE13S040	Kit for 4 sections
KE5S	5GKE13S050	Kit for 5 sections
KE6S	5GKE13S060	Kit for 6 sections
KE7S	5GKE13S070	Kit for 7 sections
KE8S	5GKE13S080	Kit for 8 sections
KE9S	5GKE13S090	Kit for 9 sections
KE10S	5GKE13S100	Kit for 10 sections

Note: Connector kit are included collector and feeding block

With pressure reducing valve

KE1R	5GKE13R010	Kit for 1 section
KE2R	5GKE13R020	Kit for 2 sections
KE3R	5GKE13R030	Kit for 3 sections
KE4R	5GKE13R040	Kit for 4 sections
KE5R	5GKE13R050	Kit for 5 sections
KE6R	5GKE13R060	Kit for 6 sections
KE7R	5GKE13R070	Kit for 7 sections
KE8R	5GKE13R080	Kit for 8 sections
KE9R	5GKE13R090	Kit for 9 sections
KE10R	5GKE13R100	Kit for 10 sections

Note: Connector kit are included collector and feeding block, drain lines and pressure reducing valve

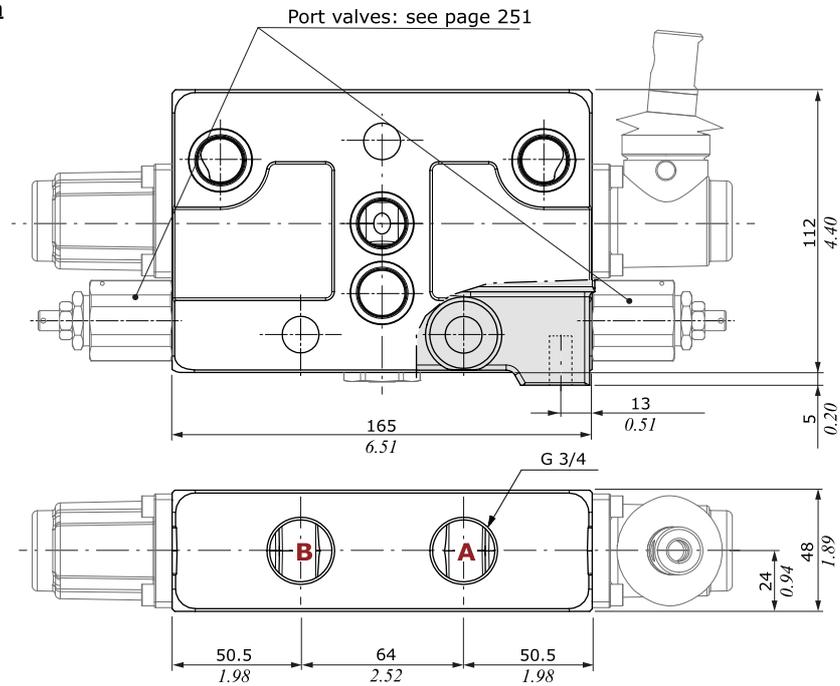
7 Auxiliary port valve page 251

See #8, page 230

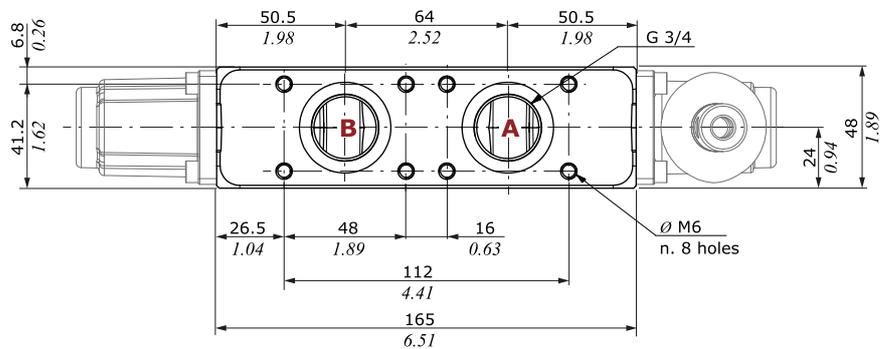
(*): Codes are referred to **BSP** thread

Dimensional data and hydraulic circuits

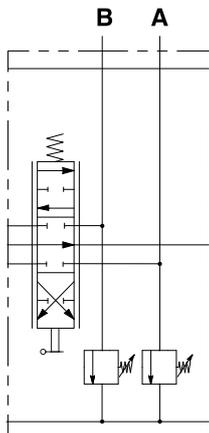
Standard working section



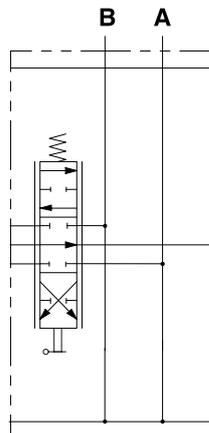
Working section for secondary aux valves block



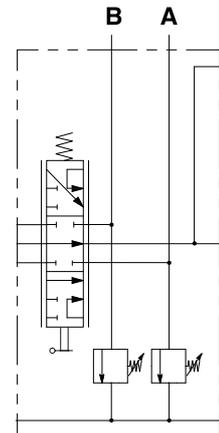
Q130.V40(N)120 configuration
Parallel circuit,
mechanical control with aux valves



Q130 configuration
Parallel circuit,
mechanical control without aux valves



Q130.V40(N)120 configuration
Series circuit,
mechanical control with aux valves



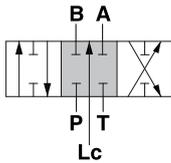
Working section

Spool

103 type

A and B closed
in neutral position

2 0 1



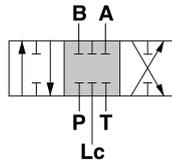
Stroke

Position 1: + 7 mm (+ 0.27 in)
Position 2: - 7 mm (- 0.27 in)

106 type

A, B and Lc closed in
neutral position. For closed center

2 0 1



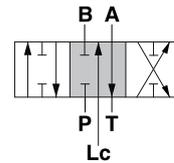
Stroke

Position 1: + 7 mm (+ 0.27 in)
Position 2: - 7 mm (- 0.27 in)

107 type

A to tank, B closed
in neutral position

2 0 1



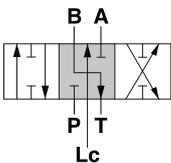
Stroke

Position 1: + 7 mm (+ 0.27 in)
Position 2: - 7 mm (- 0.27 in)

108 type

B to tank, A closed
in neutral position

2 0 1



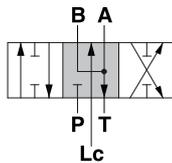
Stroke

Position 1: + 7 mm (+ 0.27 in)
Position 2: - 7 mm (- 0.27 in)

111 type

A and B to tank
in neutral position

2 0 1



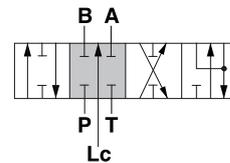
Stroke

Position 1: + 7 mm (+ 0.27 in)
Position 2: - 7 mm (- 0.27 in)

116 type

With floating in the 4th position
(spool in)

2 0 1 3



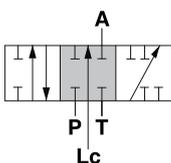
Stroke

Position 1: - 4.5 mm (- 0.17 in)
Position 2: + 7 mm (+ 0.27 in)
Position 3: - 10.25 mm (- 0.40 in)

101 type

Single acting on A,
B plugged

2 0 1



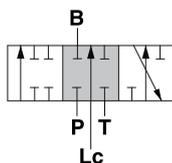
Stroke

Position 1: + 7 mm (+ 0.27 in)
Position 2: - 7 mm (- 0.27 in)

102 type

Single acting on B,
A plugged

2 0 1



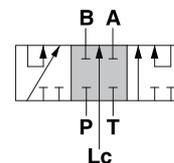
Stroke

Position 1: + 7 mm (+ 0.27 in)
Position 2: - 7 mm (- 0.27 in)

603 type

A and B closed in neutral
position. For series circuit

2 0 1



Stroke

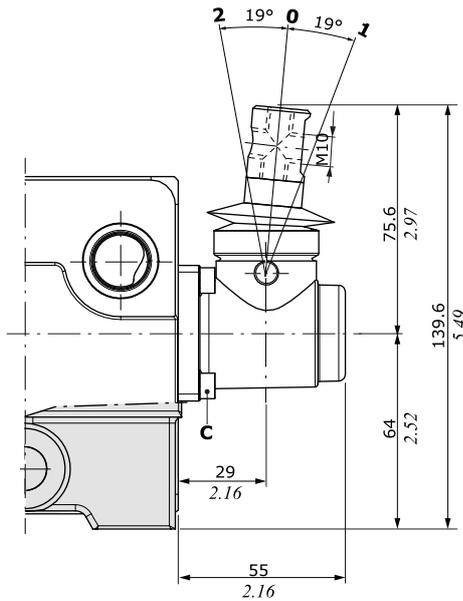
Position 1: + 7 mm (+ 0.27 in)
Position 2: - 7 mm (- 0.27 in)

A side controls

With lever control

A1 type

M10 thread aluminium lever box

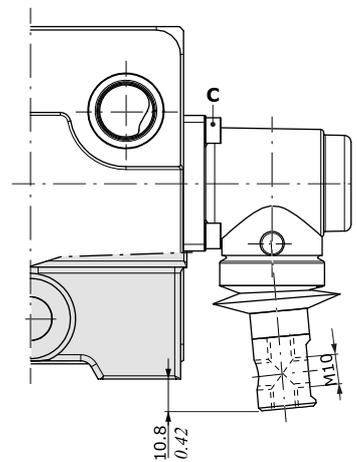


Wrenches and tightening torques

C = allen wrench 4 - 6.6 Nm (4.8 lbf^t)

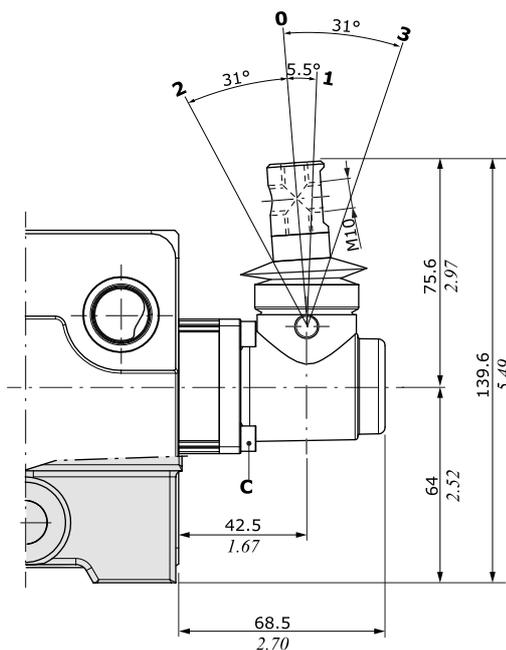
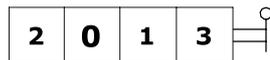
A2 type

As A1 type, rotated 180°



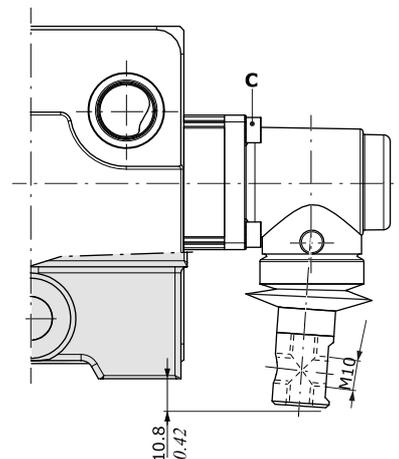
A1/Z1 type

M10 thread, for 116 floating spool type



A2/Z1 type

As A1/Z1 type, rotated 180°



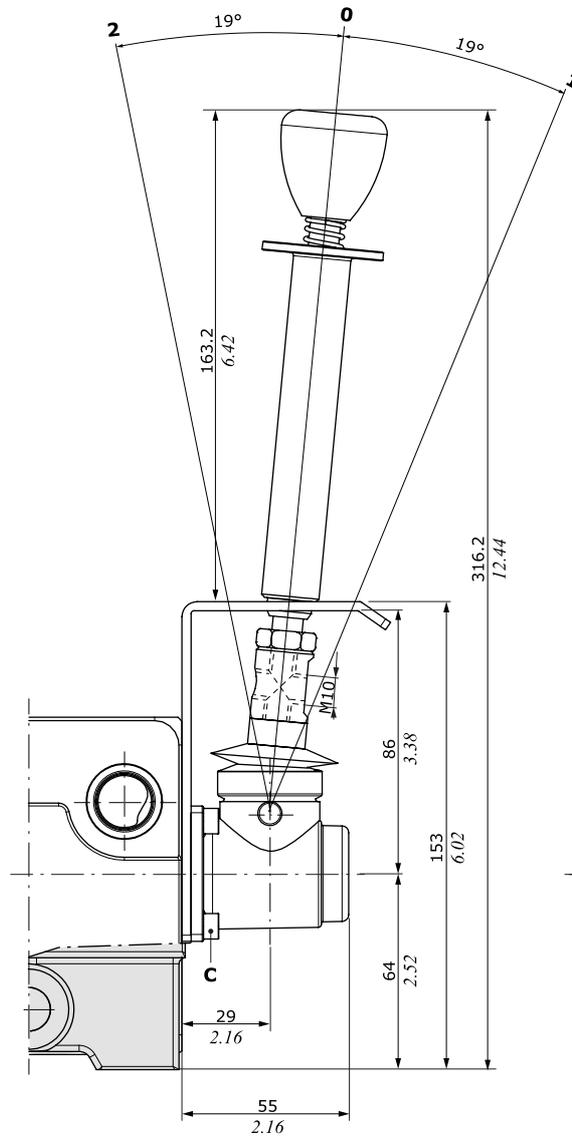
Working section

A side controls

With safety lever control

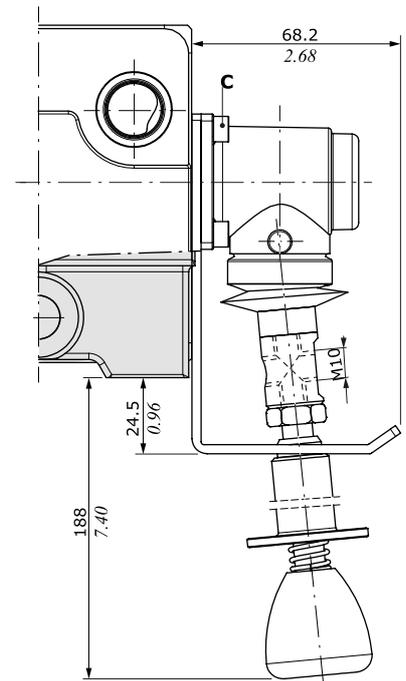
A1/S type

M10 thread, aluminium lever box



A2/S type

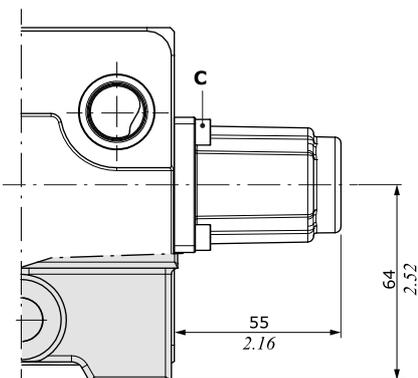
As A1/S type, rotated 180°



Without lever control

A3 type

With cap



Wrenches and tightening torques

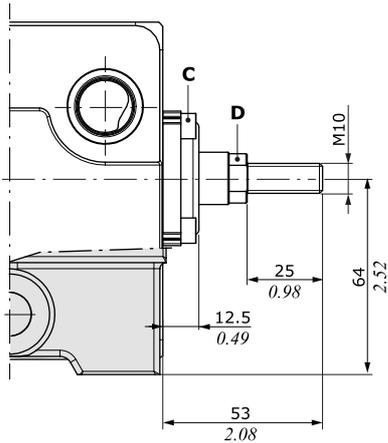
C = allen wrench 4 - 6.6 Nm (4.8 lbf)

A side controls

Without lever control

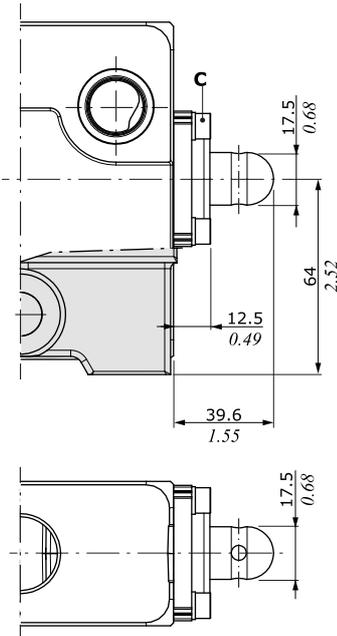
A4 type

M8 male thread external pin with flange



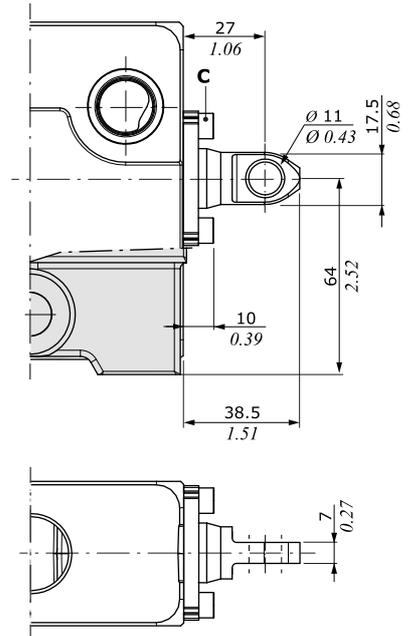
A5 type

Flange with spherical spool end



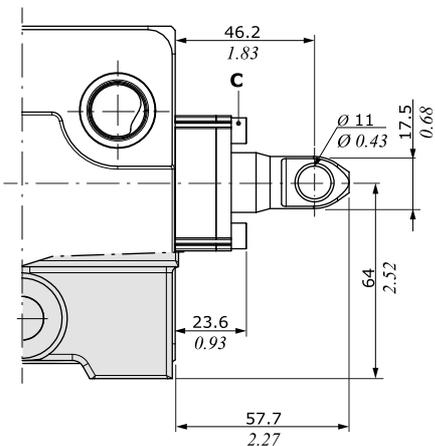
A6 type

With flange



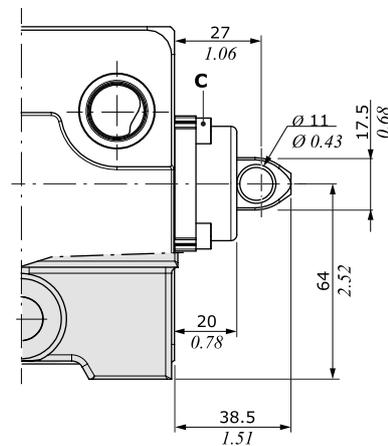
A6/Z1 type

As A6 type,
for 116 floating spool type



A6H type

As A6 type, with scraper



Wrenches and tightening torques

C = allen wrench 4 - 6.6 Nm (4.8 lbft)

D = wrench 13 - 9.8 Nm (7.2 lbft)

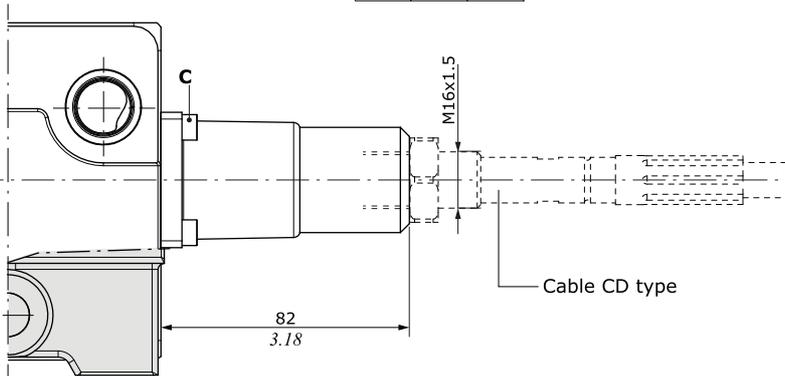
Working section

A side controls

With flexible cable control arrangement

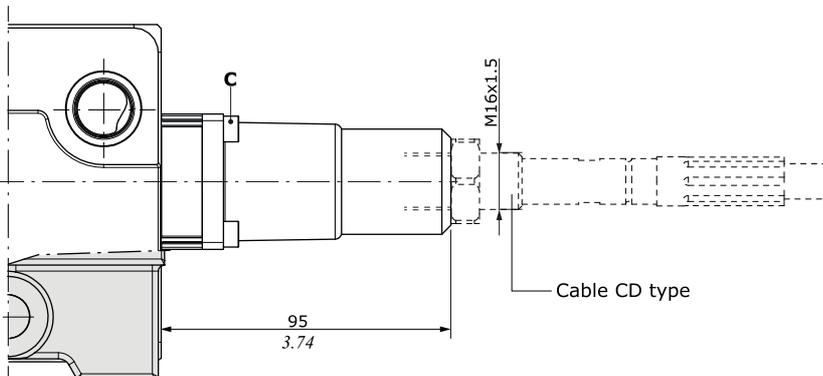
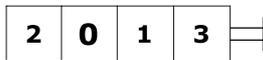
A8 type

Flexible cable control arrangement



A8/Z1 type

As A8 type,
for 116 floating spool type



Wrenches and tightening torques

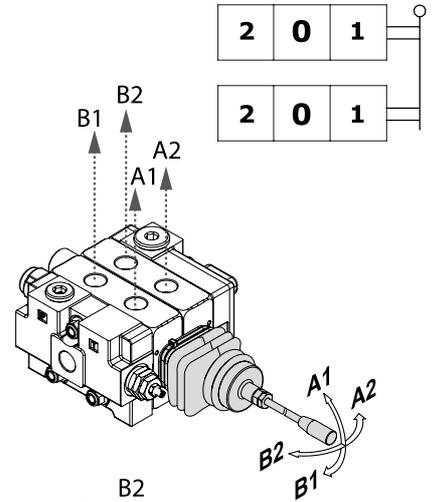
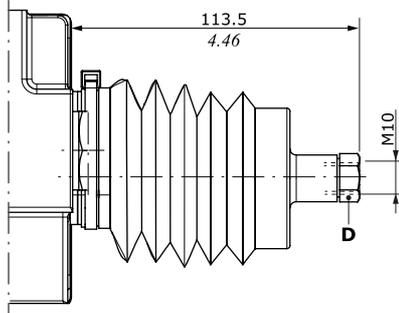
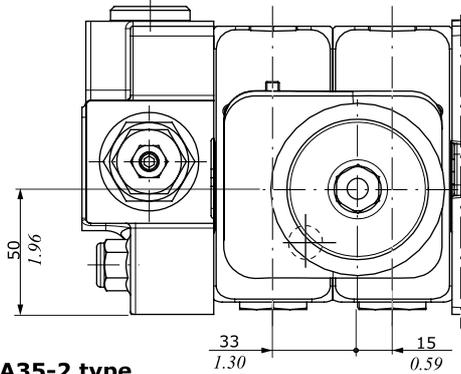
C = allen wrench 4 - 6.6 Nm (4.8 lbf)

A side controls

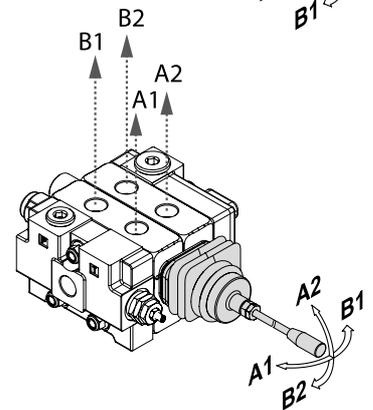
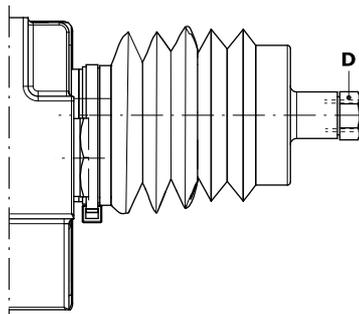
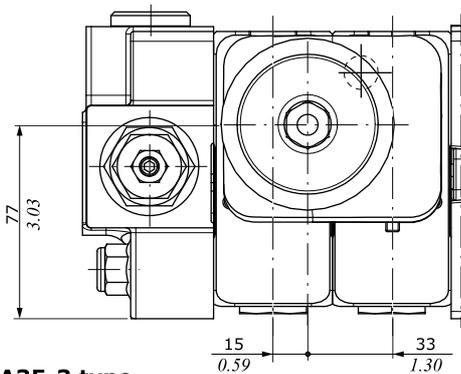
Joystick control

For operating the joystick control in the floating position, contact Sales Department.

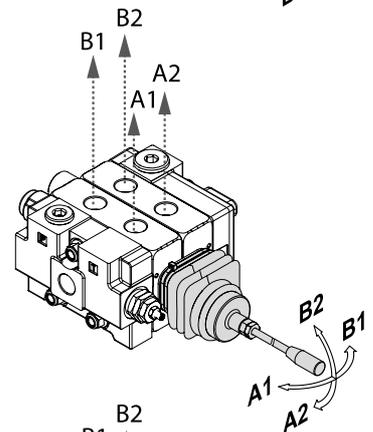
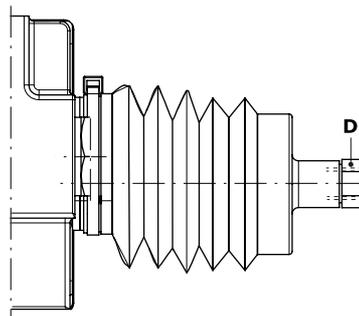
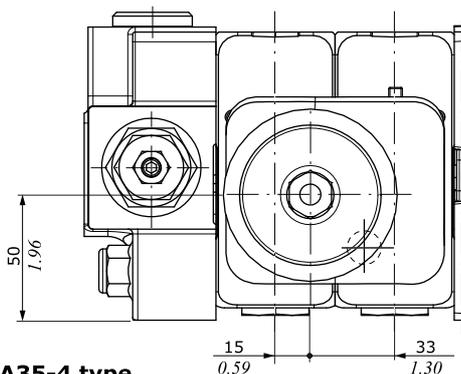
A35-1 type



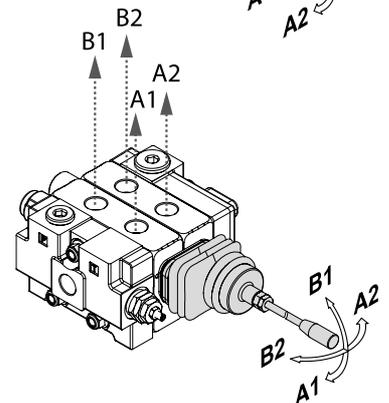
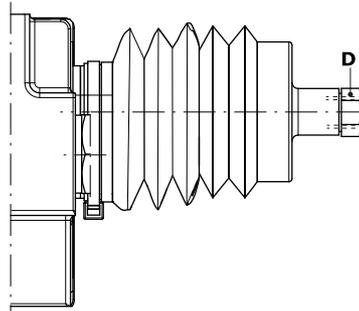
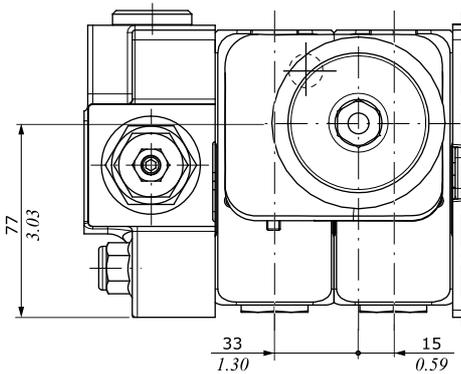
A35-2 type



A35-3 type



A35-4 type



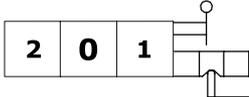
Wrenches and tightening torques
D = wrench 17 - 24 Nm (17.7 lbf)

Working section

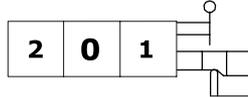
A side controls

With spool position microswitch, with lever

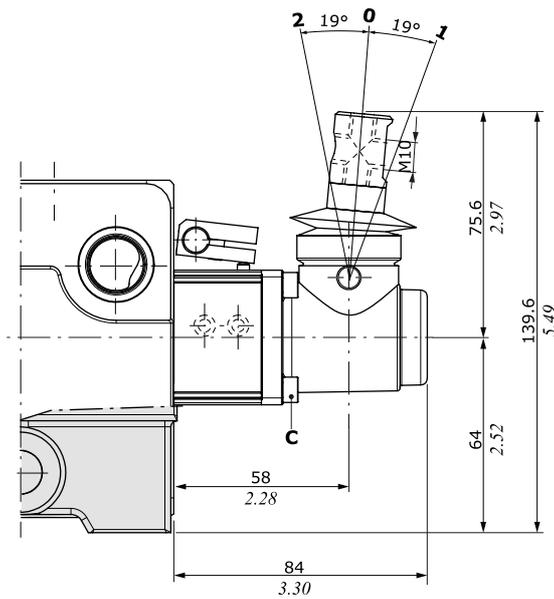
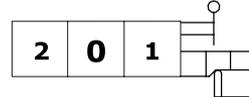
N1-A1 type
Micro operation
in position 1 and 2



N1A-A1 type
Micro operation in
position 1

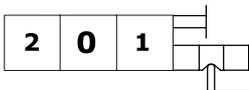


N1B-A1 type
Micro operation in
position 2

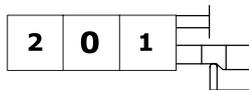


With spool position microswitch, with cap

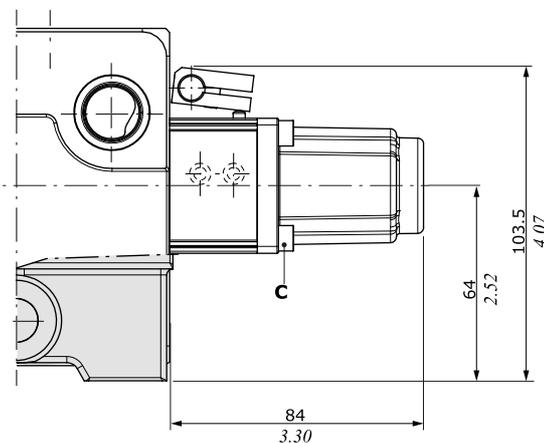
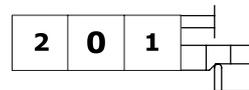
N1-A3 type
Micro operation
in position 1 and 2



N1A-A3 type
Micro operation in
position 1



N1B-A3 type
Micro operation in
position 2

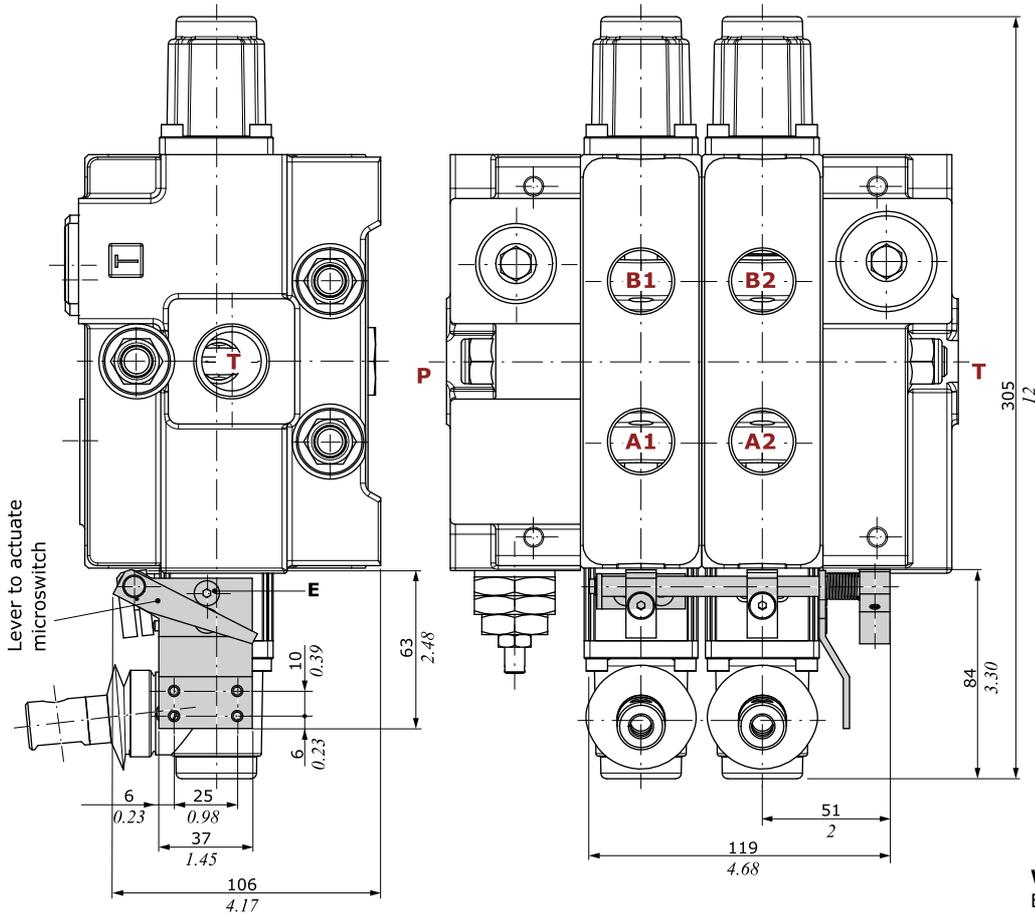


Wrenches and tightening torques
C = allen wrench 4 - 6.6 Nm (4.8 lbf_t)

A side controls

With spool position microswitch

Microswitch assembly kit for 2 working section (N1-A1 type)



Wrenches and tightening torques
 E = allen wrench 3 - 6.6 Nm (4.8 lbf)

Working section

B side controls

With spring return

M1 type

3 position, spring return
in neutral position

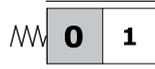


M1/01 type

As M1 type,
for joystick control

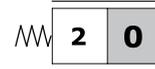
M2 type

2 position (0-1), spring return
in neutral position



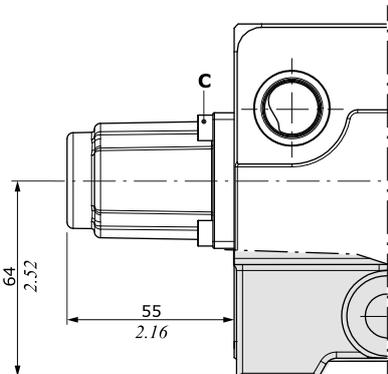
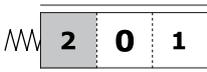
M3 type

2 position (0-2), spring return
in neutral position

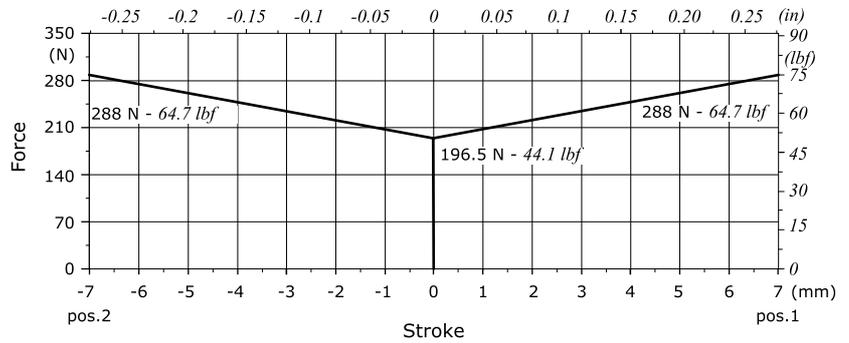


M4 type

2 position (2-1), spring return
in position 2

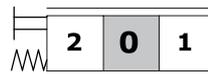


M1 control type - Force vs. Stroke diagram



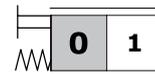
M1-U1 type

3 position, with M10 male
thread external pin



M2-U1 type

2 position (0-1), with M10 male
thread external pin



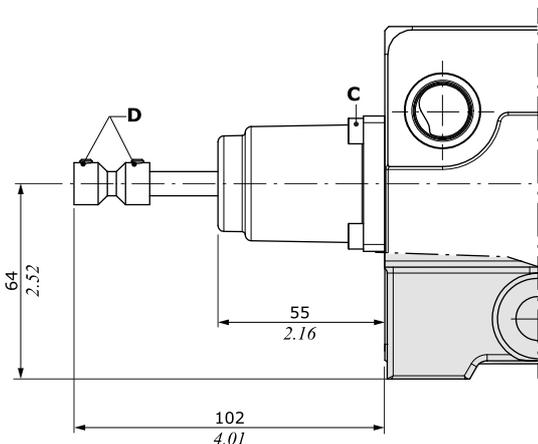
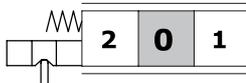
Wrenches and tightening torques

C = allen wrench 4 - 6.6 Nm (4.8 lbf_t)

D = allen wrench 3 - 5 Nm (3.68 lbf_t)

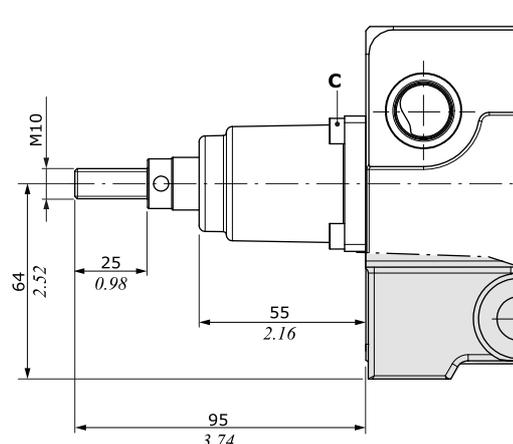
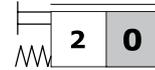
M1-B1 type

3 position, microswitch arrangement



M3-U1 type

2 position (0-2), with M10
male thread external pin



B side controls

With flexible cable control arrangement

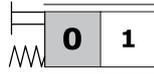
M1-U2 type

3 position, spring return in neutral position



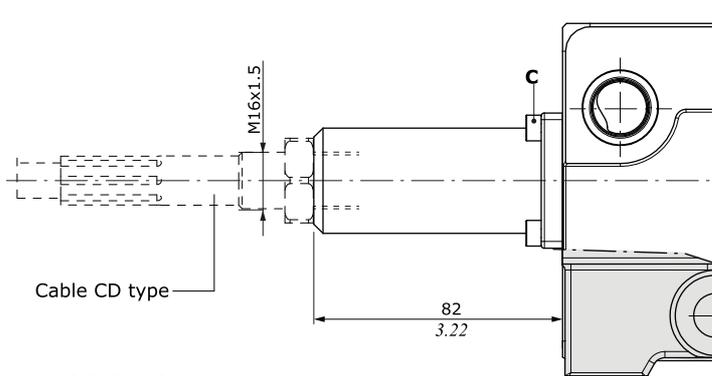
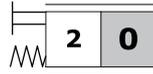
M2-U2 type

2 position (0-1), spring return in neutral position



M3-U2 type

2 position (0-2), spring return in neutral position



Wrenches and tightening torques

C = allen wrench 4 - 6.6 Nm (4.8 lbf_t)

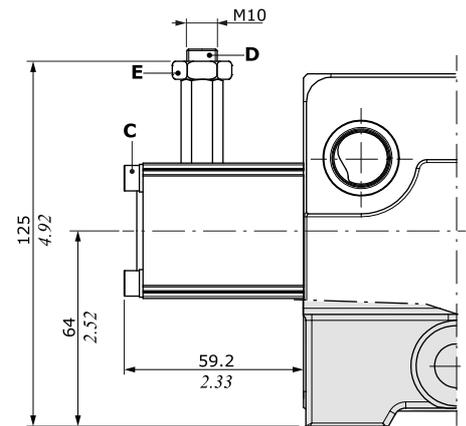
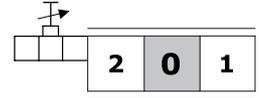
D = allen wrench 5 - 15 Nm (11.1 lbf_t)

E = wrench 17 - 9.8 Nm (7.2 lbf_t)

With friction control

R0 type

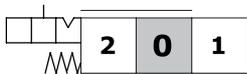
Adjustable friction control



With detent control

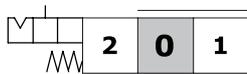
R1 type

3 position, detent in position 1



R2 type

3 position, detent in position 2



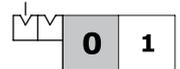
R3 type

3 position, detent in all position



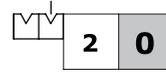
R4 type

2 position, detent in position 0-1



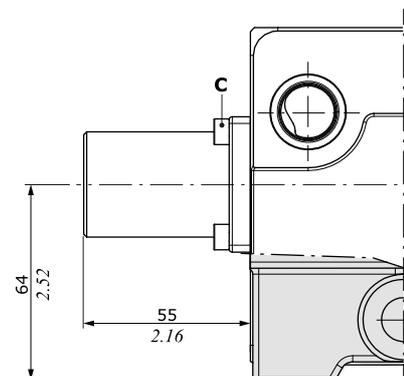
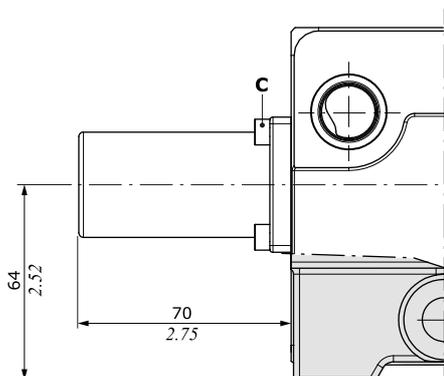
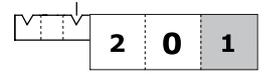
R5 type

2 position, detent in position 0-2



R6 type

2 position, detent in position 1-2



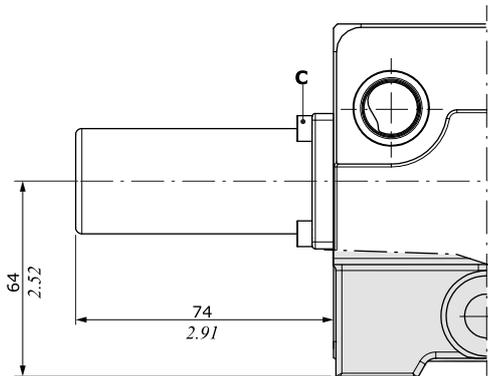
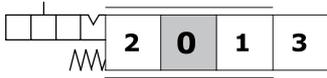
Working section

B side controls

With detent control

R8 type

4 position, detent in 4th position,
for 116 floating spool type



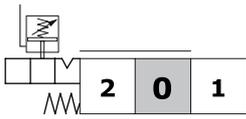
Wrenches and tightening torques

- C = allen wrench 4 - 6.6 Nm (4.8 lbf^t)
- D = wrench 30 - 42 Nm (30.9 lbf^t)
- E = wrench 22
- F = allen wrench 10 - 42 Nm (30.9 lbf^t)

With detent and kick out function

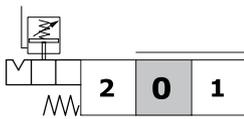
R1K type

3 position, detent in position 1



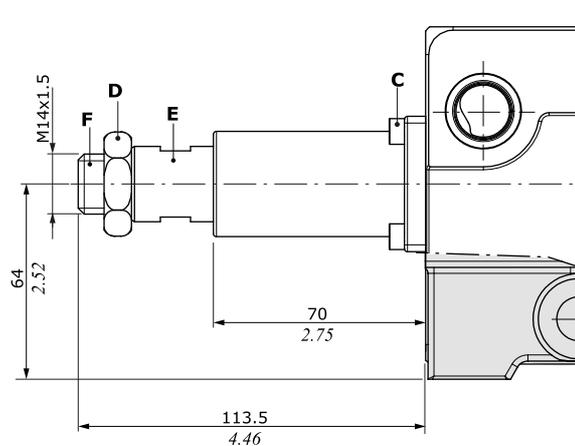
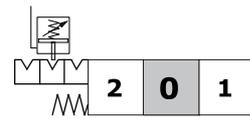
R2K type

3 position, detent in position 2



R3K type

3 position, detent in all position

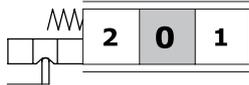


B side controls

With spool position microswitch

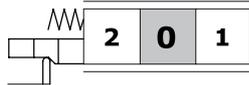
M1-N1 type

3 position, micro operation in position 1 and 2, spring return in neutral position



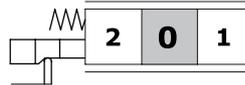
M1-N1A type

3 position, micro operation in position 1



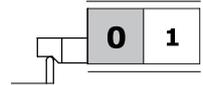
M1-N1B type

3 position, micro operation in position 2



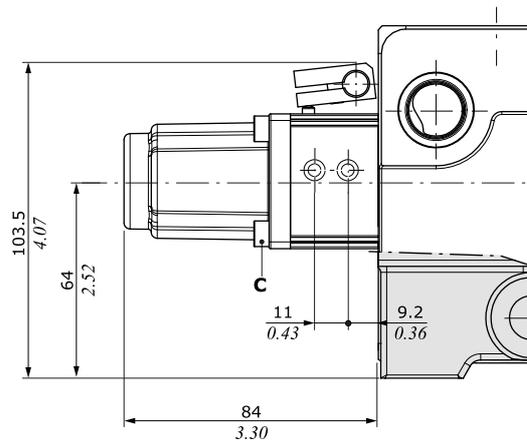
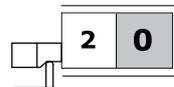
M2-N1 type

2 position (0-1), spring return in neutral position



M3-N1 type

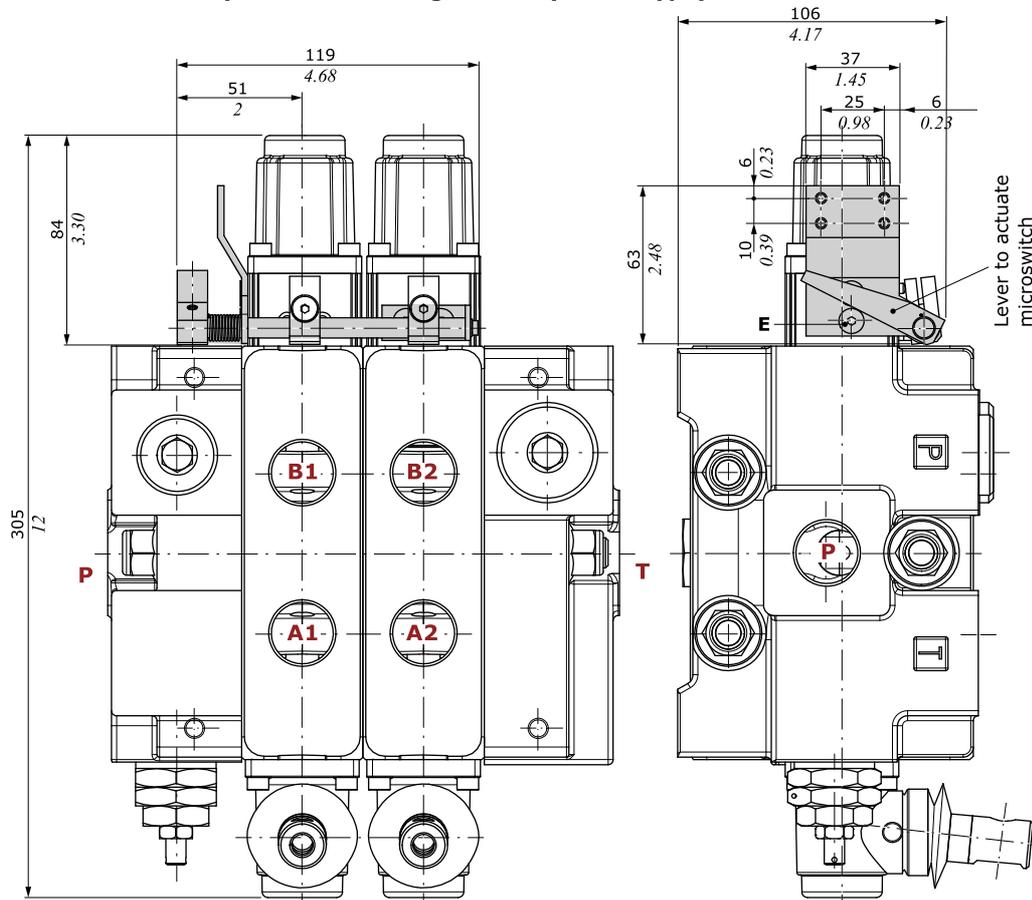
2 position (0-2), spring return in neutral position



Wrenches and tightening torques

C = allen wrench 4 - 6.6 Nm (4.8 lbft)
E = allen wrench 3 - 6.6 Nm (4.8 lbft)

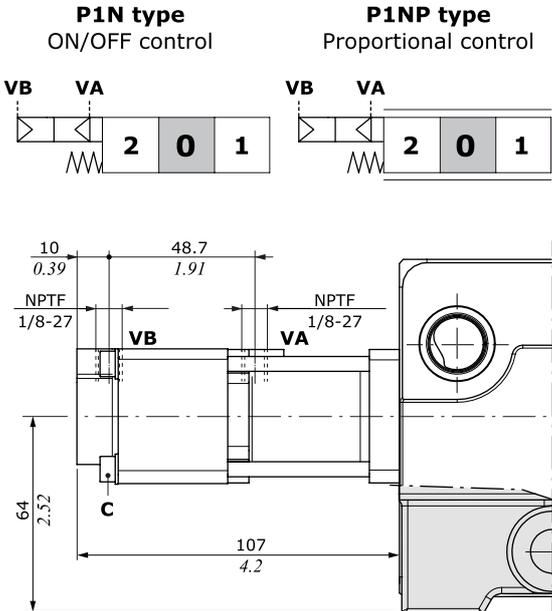
Microswitch assembly kit for 2 working section (M1-N1 type)



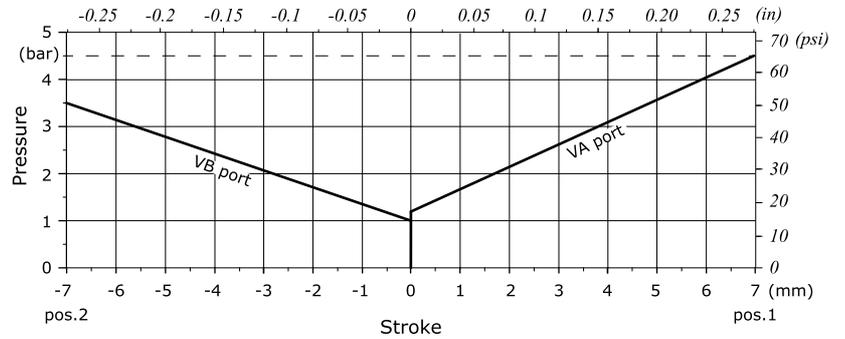
Working section

B side controls

With pneumatic control



Proportional pilot pressure curves



Operating features

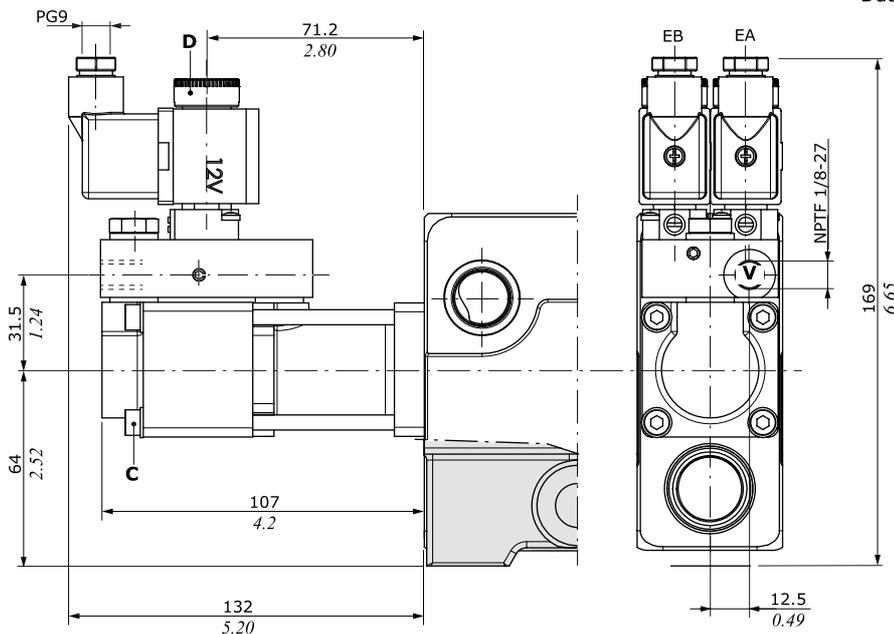
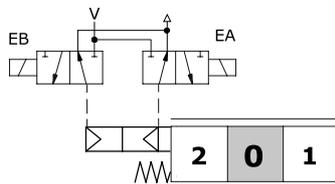
Pilot pressure..... : min. 5 bar (72.5 psi) - max. 30 bar (435 psi)
 Pilot volume..... : 9 cm³/min (0.54 in³/min)

Wrenches and tightening torques

C = wrench 4 - 6.6 Nm (4.8 lbft)

With ON/OFF electropneumatic control

D3 type ON/OFF control



Operating features

Pilot pressure..... : min. 1 bar (14.5 psi)
 max. 10 bar (145 psi)

COILS

Nominal voltage tolerance..... : -5% +10%
 Power rating..... : 5 W
 Nominal current..... : 12 VDC - 24VDC
 Coil insulation..... : Class F
 Weather protection..... : IP65
 Duty cycle..... : 100%

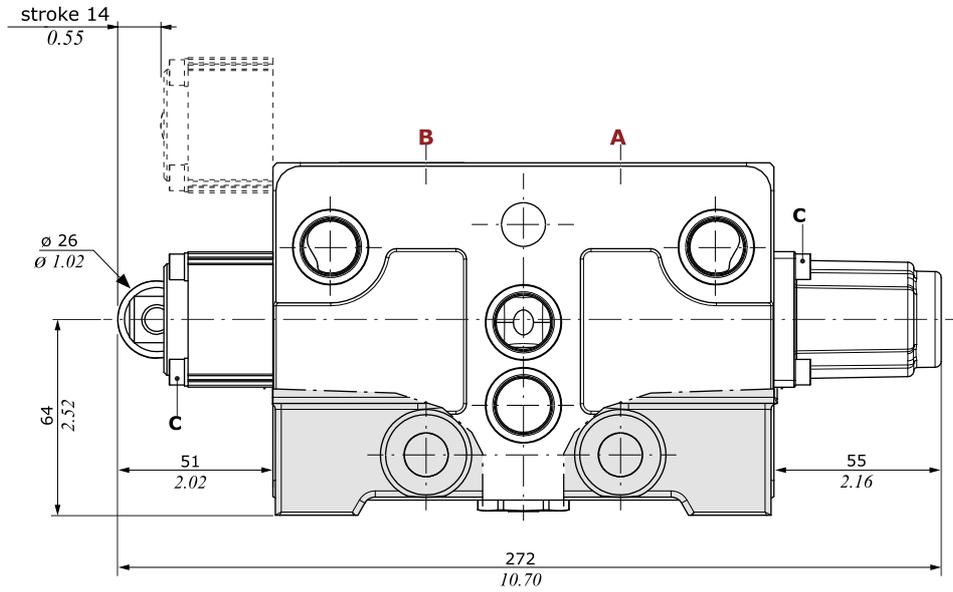
Wrenches and tightening torques

C = allen wrench 4 - 6.6 Nm (4.8 lbft)
 D = manual tightening - 6.6 Nm (4.8 lbft)

A+B side controls

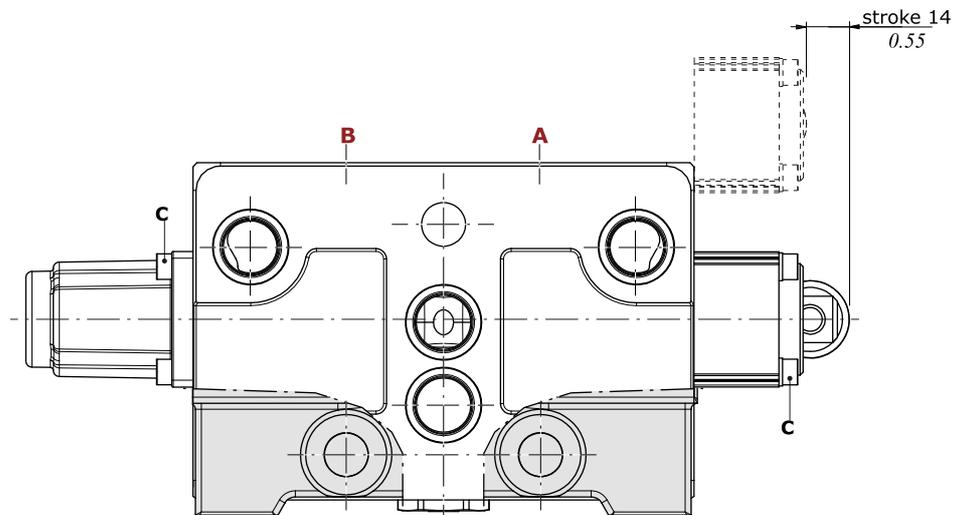
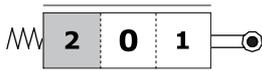
With cam control

C2 type
From position 1 to position 2,
spring return in position 1



Wrenches and tightening torques
C = allen wrench 4 - 6.6 Nm (4.8 lbf)

C3 type
From position 2 to position 1,
spring return in position 2.
Dimensions are the same of C2 type



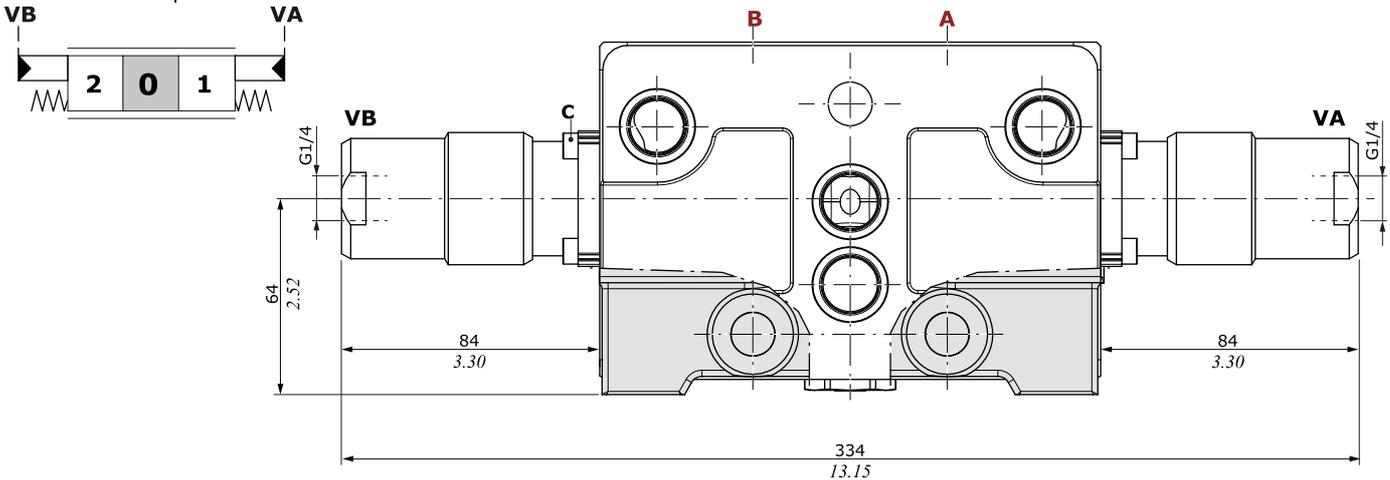
Working section

A+B side controls

With proportional hydraulic controls

H1 type

High pressure control
with side ports

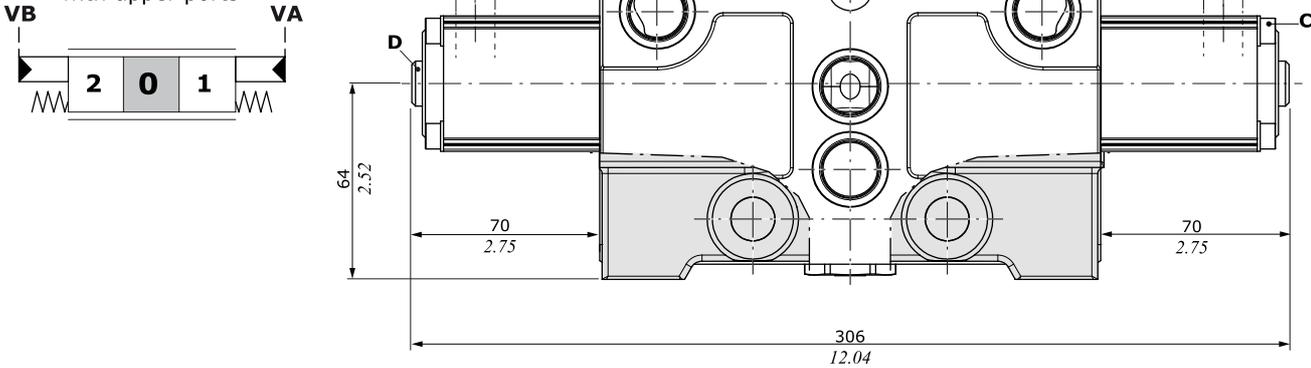


Operating features

Pilot pressure..... : min. 16 bar (232 psi) - max. 350 bar (5070 psi)

H5 type

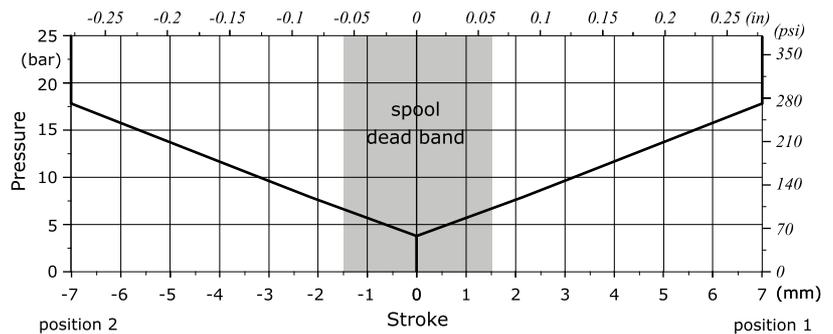
Low pressure control
with upper ports



Operating features

Pilot pressure..... : max. 100 bar (1450 psi)

Stroke vs. Pressure diagram for H5 type control



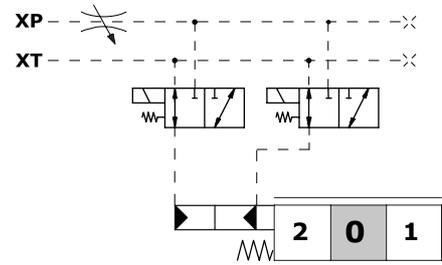
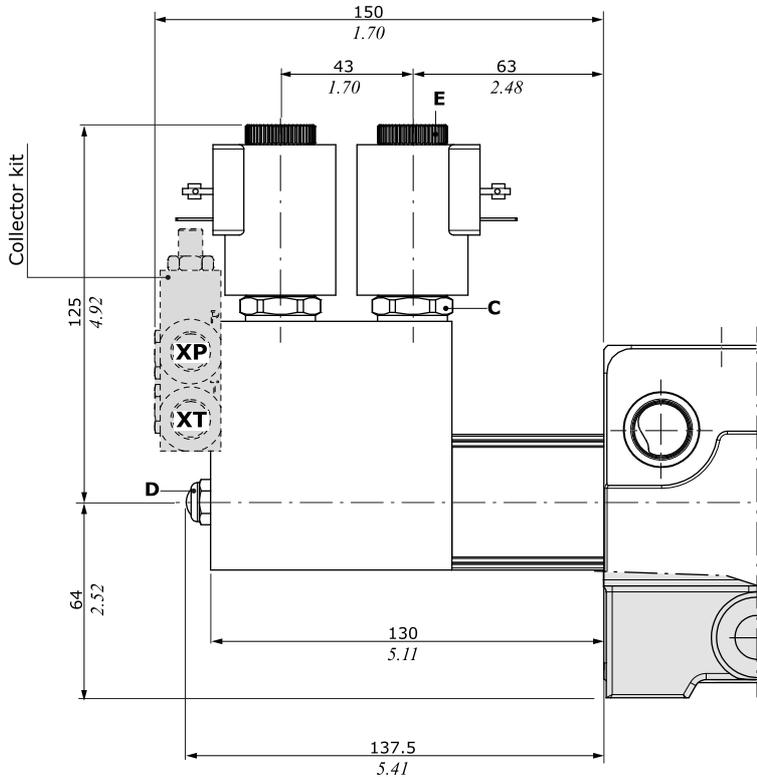
Wrenches and tightening torques

C = allen wrench 4 - 6.6 Nm (4.8 lbft)

D = allen wrench 4 - 9.8 Nm (7.2 lbft)

Electrohydraulic control

D2W type: ON/OFF one side

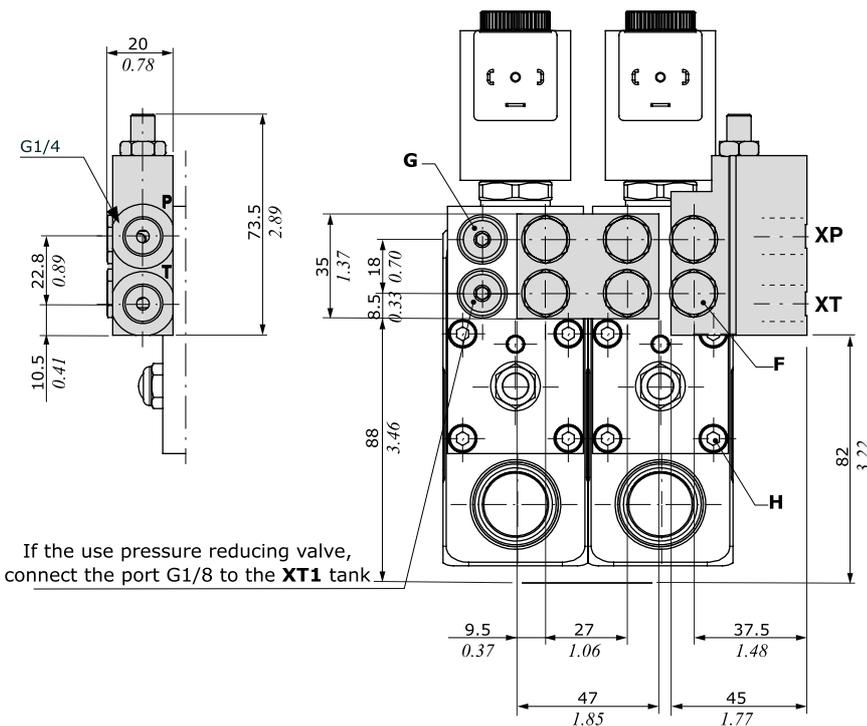


Features

- Pilot pressure on XP..... : min. 20 bar (290 psi)
- : max. 35 bar (500 psi)
- Max backpressure on XT..... : 4 bar (58 psi)

For **BT** type coils and mating connectors see page 257

KE2S connector kit



If the use pressure reducing valve, connect the port G1/8 to the **XT1** tank

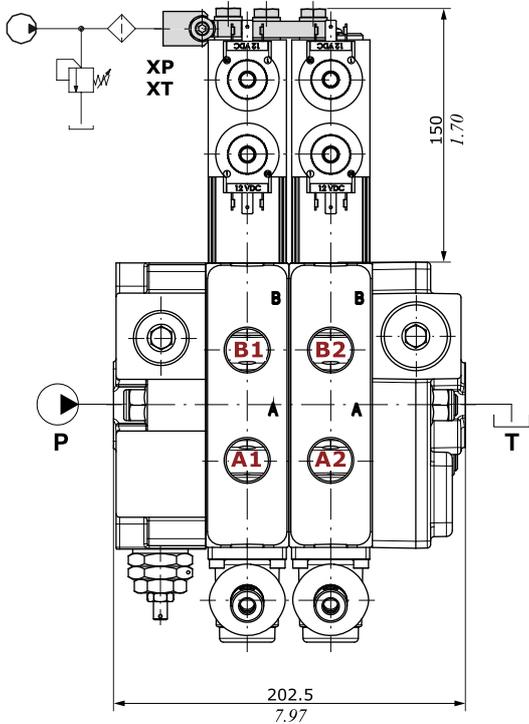
Wrenches and tightening torques

- C = wrench 24 - 30 Nm (22 lbft)
- D = wrench 13 - 9 Nm (6.6 lbft)
- E = wrench 6.6 - 9.8 Nm (7.2 lbft)
- F = wrench 14 - 24 Nm (17.7 lbft)
- G = allen wrench 4 - 9.8 Nm (6.6 lbft)
- H = allen wrench 4 - 3 Nm (2.2 lbft)

Working section

Electrohydraulic control

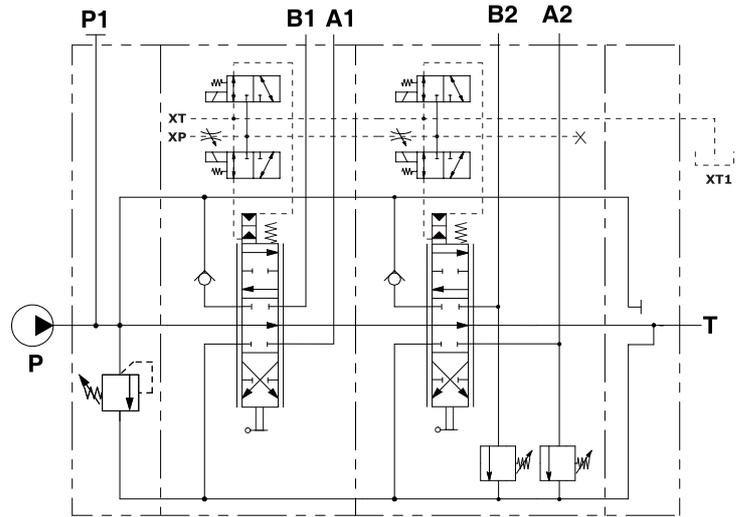
Connector kit for external pilot and drain



CONNECTOR KIT CODES

Type	Code*	Description
KE2S	5GKE13S020	Kit for 2 section

For other connector kit codes, see page 232

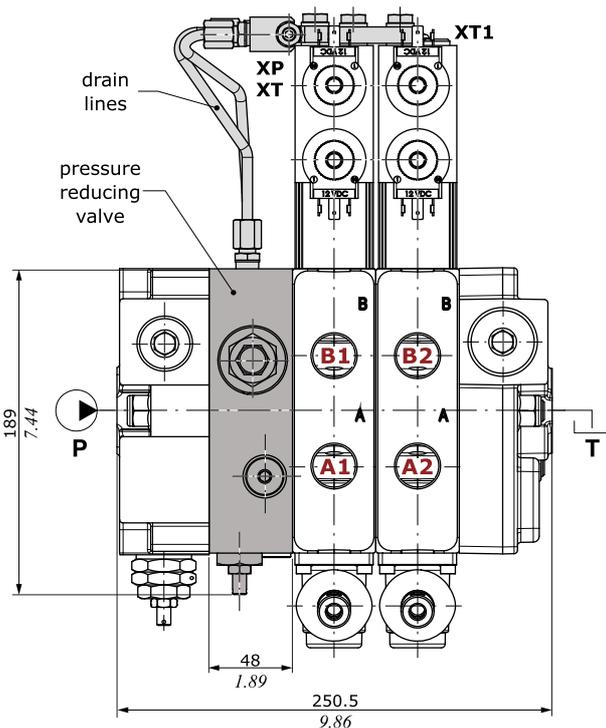


Description example:

Q130/2/F7S(N120)/**KE2S**/103-A1-D2W.V40(N)120/
103-A1-D2W.V40(N)120/F3D-12VDC-S

Connector kit for internal pilot and drain

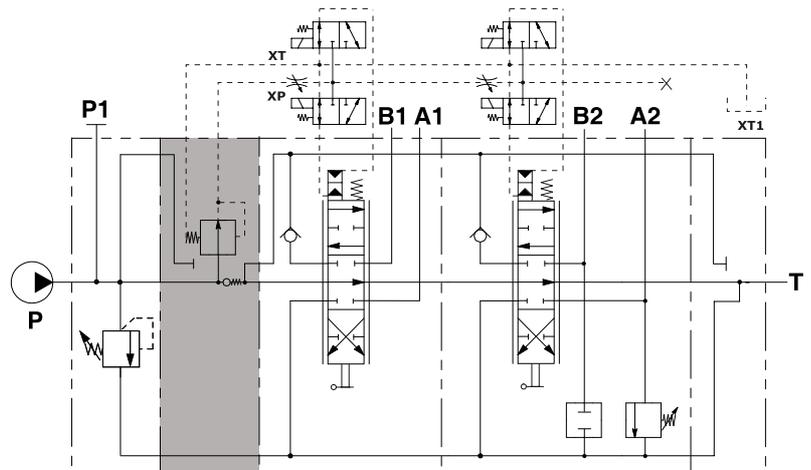
The kit is made of collector, pressure reducing valve and drain lines.



CONNECTOR KIT CODES

Type	Code*	Description
KE2R	5GKE13R020	Kit for 2 section

For other connector kit codes, see page 232



Description example:

Q130/2/F7S(N120)/**KE2R**/103-A1-D2W.V40(N)120/
103-A1-D2W.V40(N)120/F3D-12VDC-S

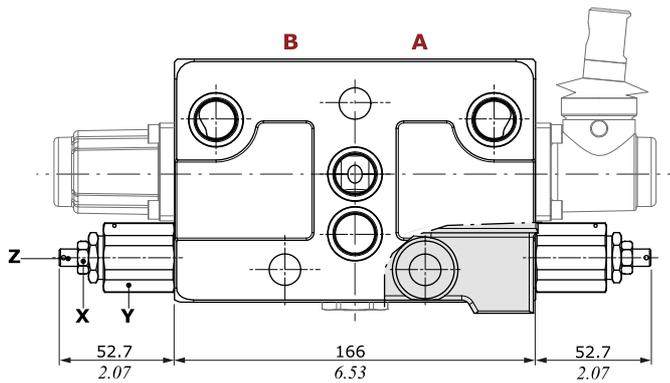
VRP pressure reducing valve

Auxiliary valve configuration

Dimensional data and hydraulic circuits

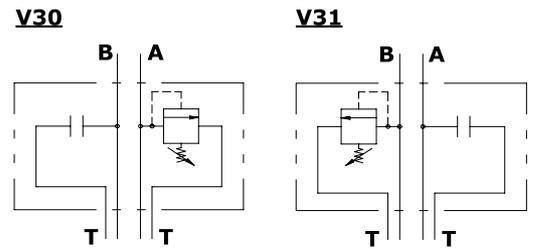
Antishock valve example

Q130 / 1 / ... / 103 - A1 - M1 - **V32(N)120** / ...
 aux valve and valve setting (bar) spring type



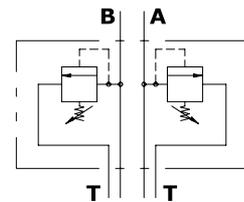
Spring type	Setting ranges (bar - psi)
B (white)	From 30 to 80 - from 435 to 1150
N (black)	From 81 to 200 - from 1170 to 2900
R (red)	From 201 to 350 - from 2910 to 5100

A side configuration: B side configuration:



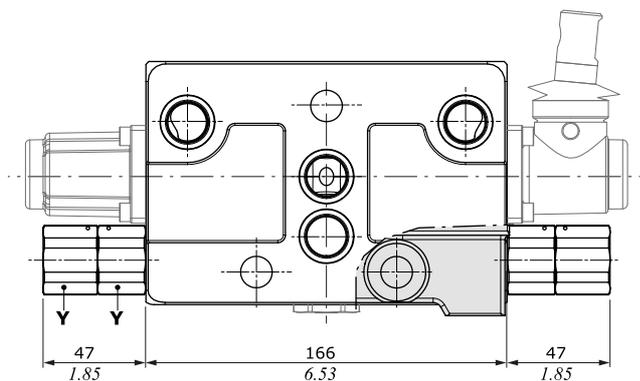
A+B side configuration:

V32 (V30 + V31)

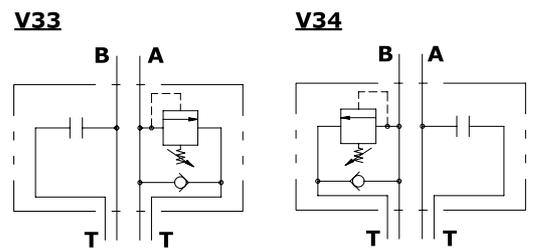


Antishock/anticavitation valve example

Q130 / 1 / ... / 103 - A1 - M1 - **V33(N)120** / ...
 aux valve and valve setting (bar) spring type

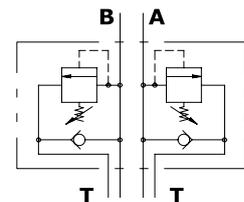


A side configuration: B side configuration:



A+B side configuration:

V35 (V34 + V33)



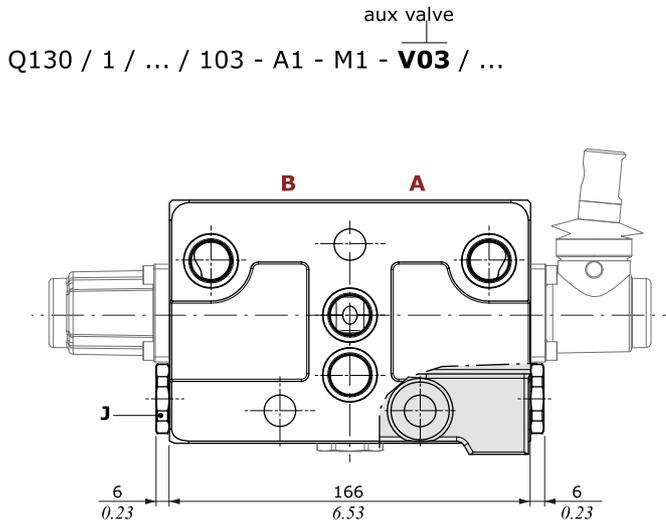
Wrenches and tightening torques

Y = wrench 30 - 80 Nm (59 lbf ft)
 X = wrench 20 - 24 Nm (17.7 lbf ft)
 Z = allen wrench 4

Auxiliary valve configuration

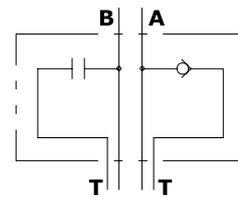
Dimensional data and hydraulic circuits

Anticavitation valve example



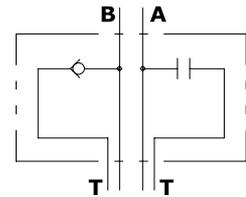
A side configuration:

V04



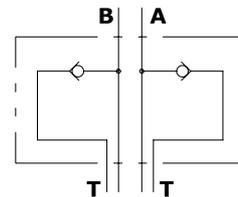
B side configuration:

V05



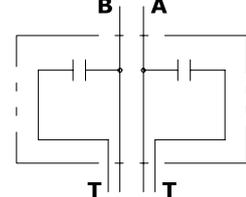
A+B side configuration:

V03 (V04 + V05)



Plug valve:

VC



Wrenches and tightening torques

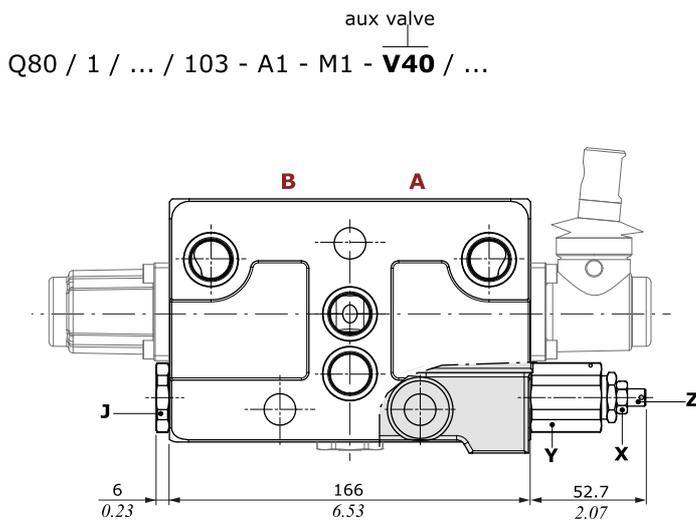
J = wrench 30 - 42 Nm (30.9 lbf^t)

Y = wrench 30 - 80 Nm (59 lbf^t)

X = wrench 20 - 24 Nm (17.7 lbf^t)

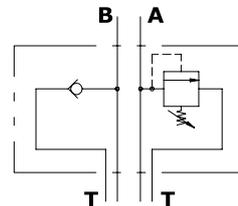
Z = allen wrench 4

Antishock and anticavitation combining valves example



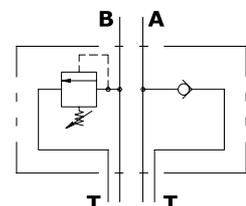
A side configuration:

V40 (V30 + V05)



B side configuration:

V41 (V31 + V04)



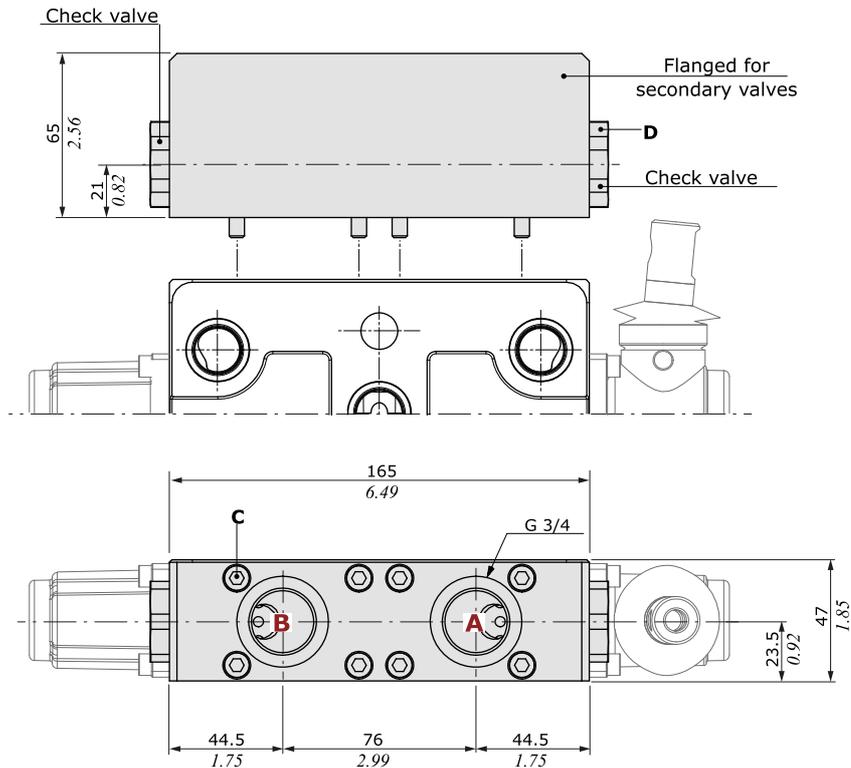
Secondary valve configuration

Dimensional data and hydraulic circuits

Description example

secondary aux valve valves block

Q130 / 1 / ... / 103 - A1 - M1 - V32(N)120 / VC03

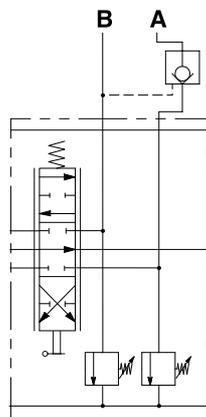


Wrenches and tightening torques

C = allen wrench 5 - 9.8 Nm (7.2 lbf·ft)
 D = wrench 12 - 42 Nm (31 lbf·ft)

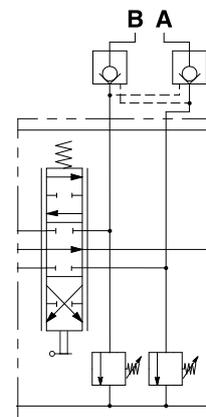
Q130.V40(N)120/VC01 configuration

Parallel circuit, mechanical control with aux valves and flanged for single piloted check valve on A port



Q130.V40(N)120/VC03 configuration

Parallel circuit, mechanical control with aux valves and flanged for double piloted check valve on A and B ports

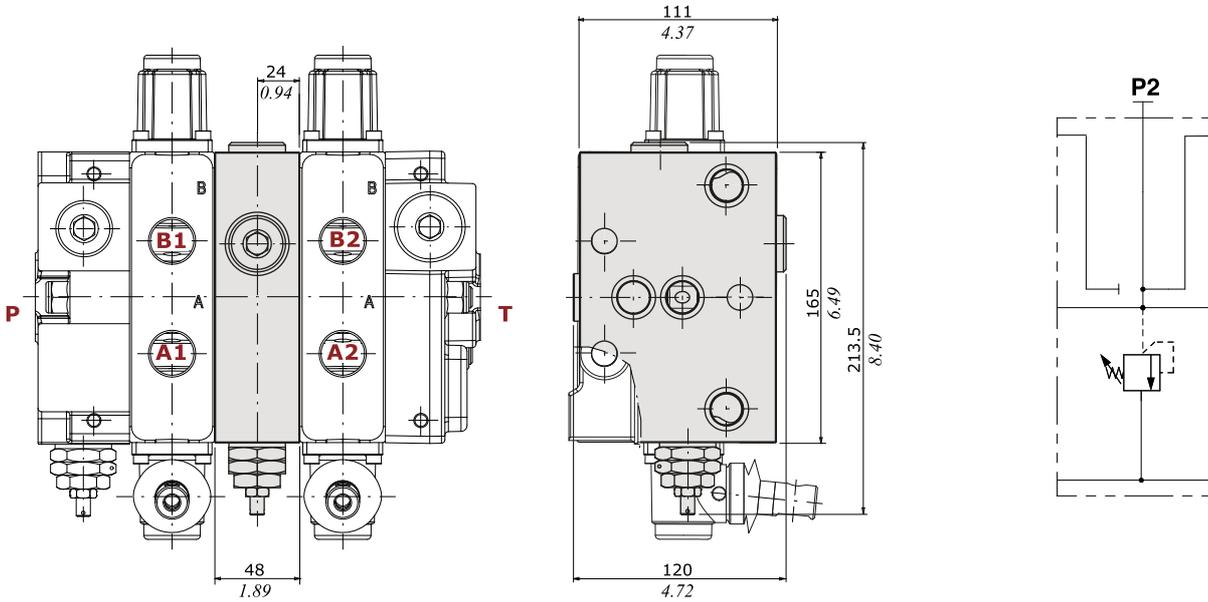


Intermediate section

Dimensional data and hydraulic circuit

E50 type

Intermediate inlet section with pressure relief valve

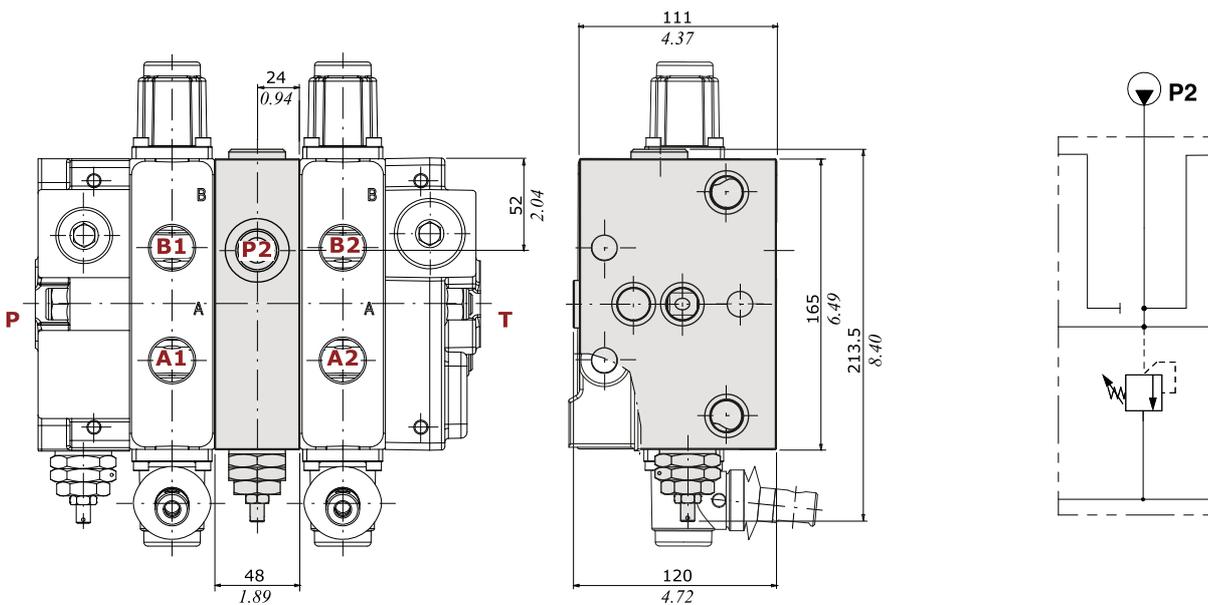


Description example: Q130/2/F7S(N150)/103-A1-M1/**E50(N150)**/103-A1-M1/F3D

intermediate section spring type and valve setting (bar)

E53 type

Intermediate inlet section with pressure relief valve and P2 port open



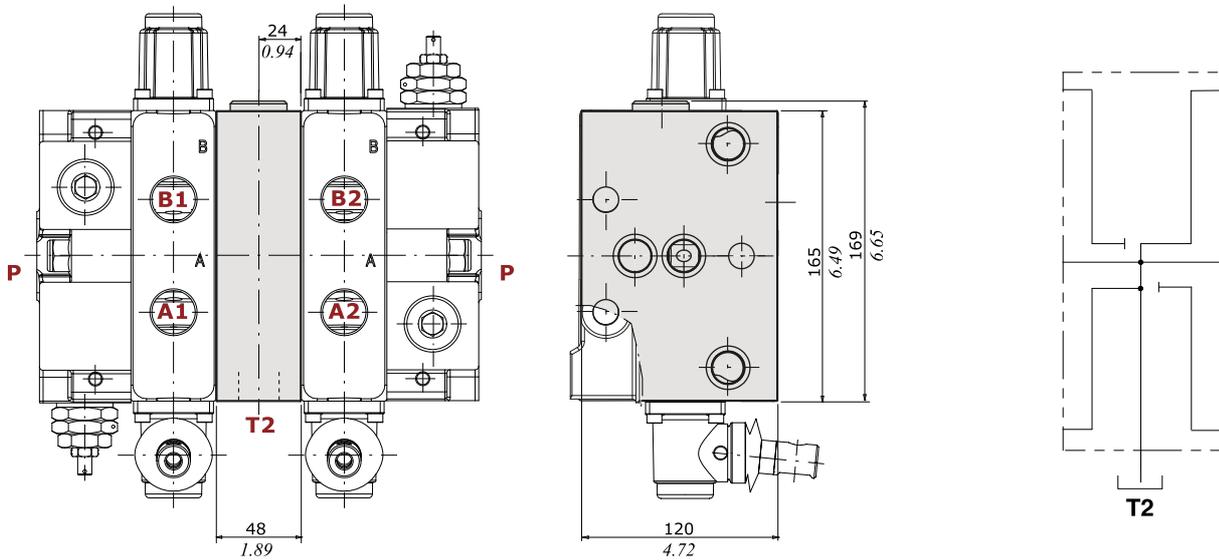
Description example: Q130/2/F7S(N150)/103-A1-M1/**E53(N150)**/103-A1-M1/F3D

intermediate section spring type and valve setting (bar)

Dimensional data and hydraulic circuit

E51 type

Intermediate outlet section, T2 port open

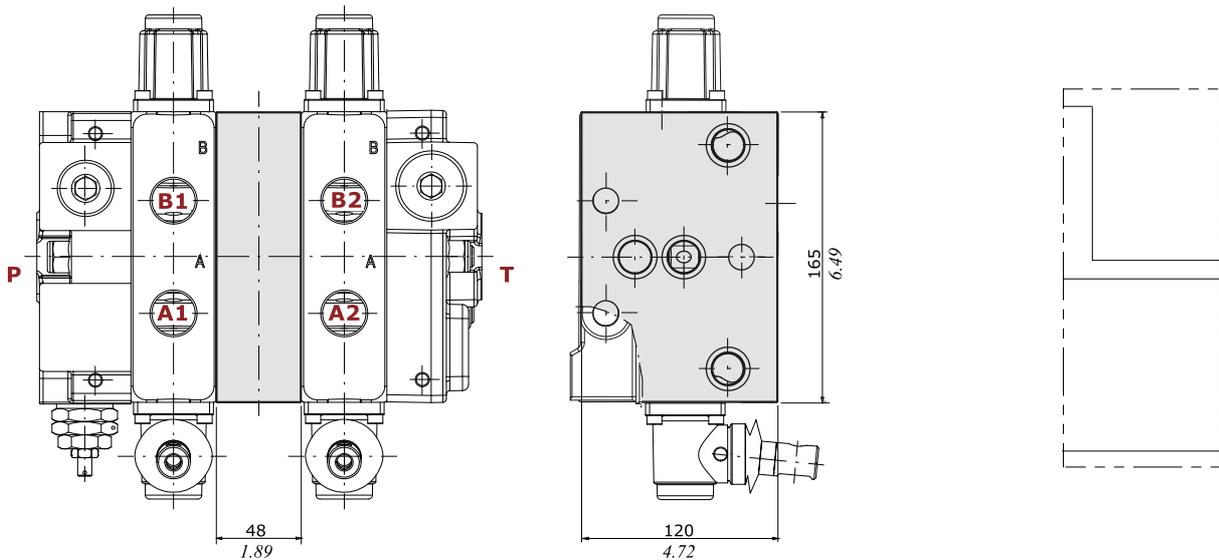


Description example: Q130/2/F7S(N150)/103-A1-M1/**E51**/103-A1-M1/F3D

intermediate section

E61 type

Intermediate spacer section

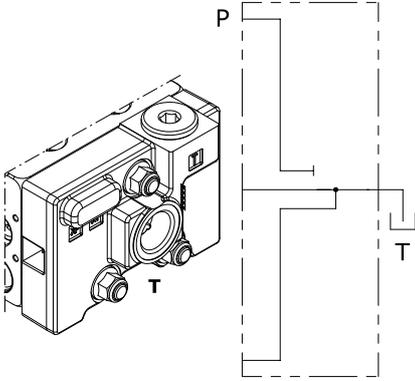


Description example: Q130/2/F7S(N150)/103-A1-M1/**E61**/103-A1-M1/F3D

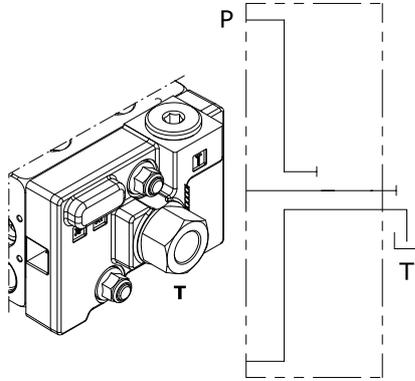
intermediate section

Outlet section

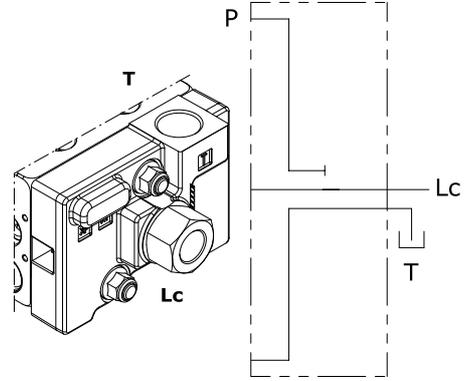
F3D configuration
Open center configuration



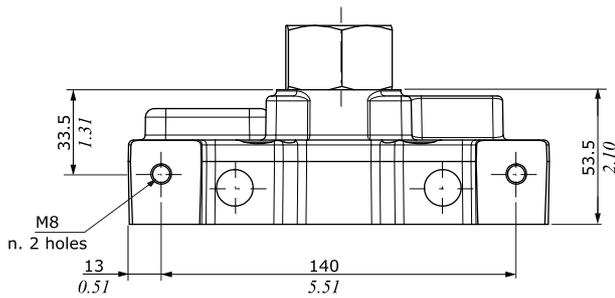
F16D configuration
Closed center configuration



F6D configuration
Carry-over configuration



F16D configuration example



Wrenches and tightening torques
E = allen wrench 12 - 42 Nm (30.9 lbft)
F = wrench 41 - 80 Nm (59 lbft)

