



# MONOBLOCK VALVES

160LS



## Features

HYDRA Part compact and heavy duty designed Monoblock valves from 1 to 4 sections for open and closed centre hydraulic systems.

- Fitted with a direct or pilot operated main pressure relief valve.
- Parallel circuit.
- Optional power beyond port.
- Diameter 25 mm -- 0.98 in interchangeable spools.
- A wide variety of service port valves.
- Available manual, pneumatic, electro--pneumatic, hydraulic and electro--hydraulic spool control kits.

### Additional information

This catalogue shows the product in the most standard configurations.  
Please contact Sales Dpt. for more detailed information or special request  
All specifications of this catalogue refer to the standard product at this date.

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## Working Conditions

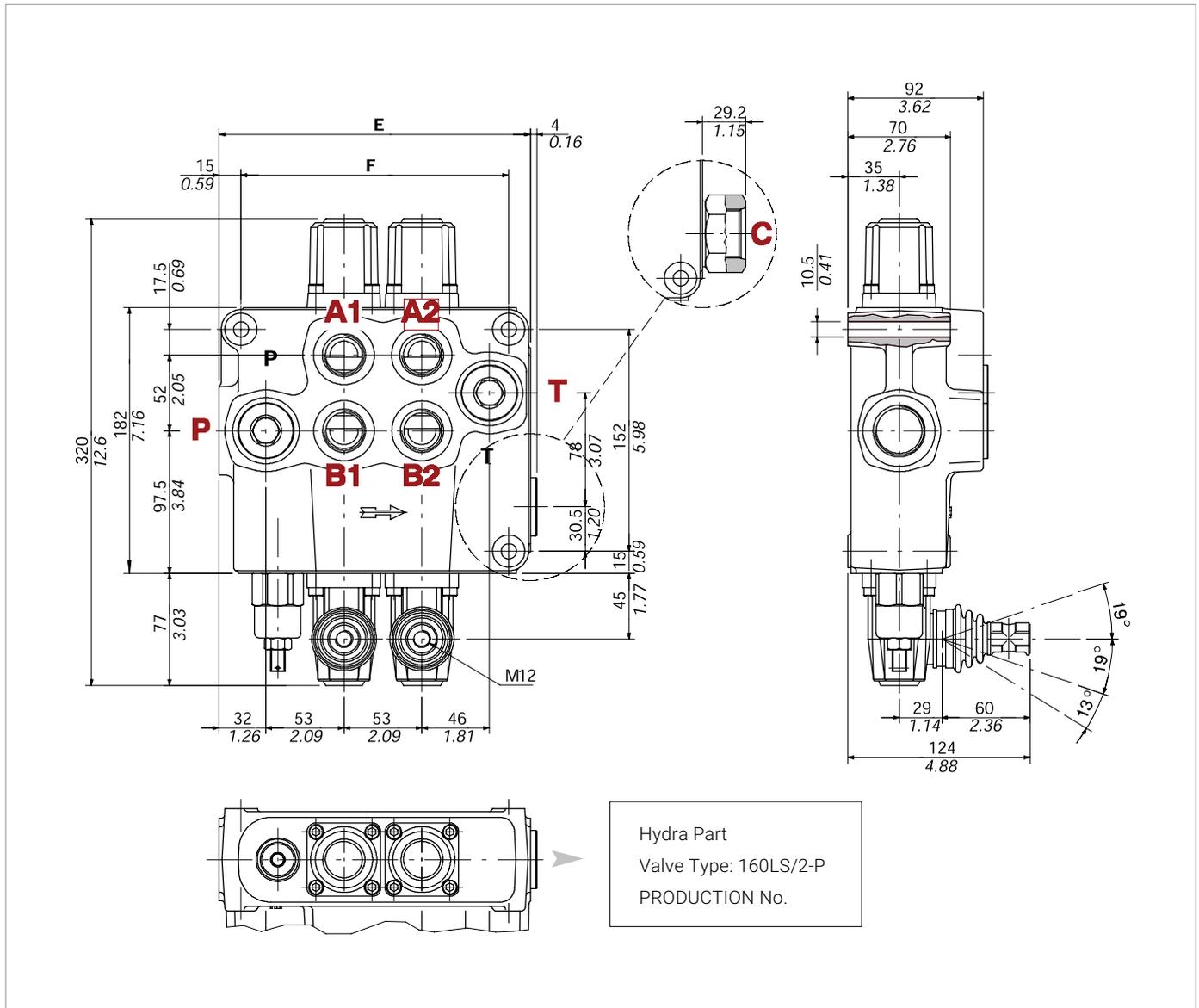
This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mms - 46 cSt viscosity at 40°C - 104°F temperature.

<b>Nominal flow rating</b>		160 l/min	42 US gpm
<b>Operating pressure (max.)</b>		250 bar	3620 psi
<b>Max. back pressure</b>	on outlet port T	25 bar	360 psi
<b>Internal leakage A(B) T</b>	p=100 bar - 1450psi with fluid and valve at 40 °C - 104 °F	4 cm <sup>3</sup> /min	0.24 in <sup>3</sup> /min
<b>Hydraulic fluid</b>		Mineral base oil	
<b>Fluid temperature</b>	with NBR seals	from -20° to 80°C	from -4° to 176°F
	with FPM (VITON) seals	from -20° to 100°C	from -4° to 212°F
<b>Viscosity</b>	operating range	from 15 to 75 mm <sup>2</sup> /s	from 15 to 75 cSt
	minimum	12 mm <sup>2</sup> /s	12 cSt
	maximum	400 mm <sup>2</sup> /s	400 cSt
<b>Max. level of contamination</b>		19/16 - ISO 4406	NAS 1638 - class10
<b>Ambient temperature</b>		from -40° to 60°C	from -40° to 140°F

Note - For different conditions please contact Customer Service.

Ports Thread		
Main ports	BSP	UN- UNF
Inlet <b>P</b> and power beyond <b>C</b>	G 3/4	1 5/16-12 UN-2B (SAE 16)
Ports <b>A</b> and <b>B</b>	G 3/4	1 1/16-12 UN-2B (SAE 12)
Outlet <b>T</b>	G 1	1 5/16-12 UN-2B (SAE 16)
<b>Pilot ports</b>		
<b>Hydraulics</b>	G 1/4	9/16-18 UNF-2B (SAE 6)
<b>Pneumatics</b>	NPTF 1/8-27	NPTF 1/8-27

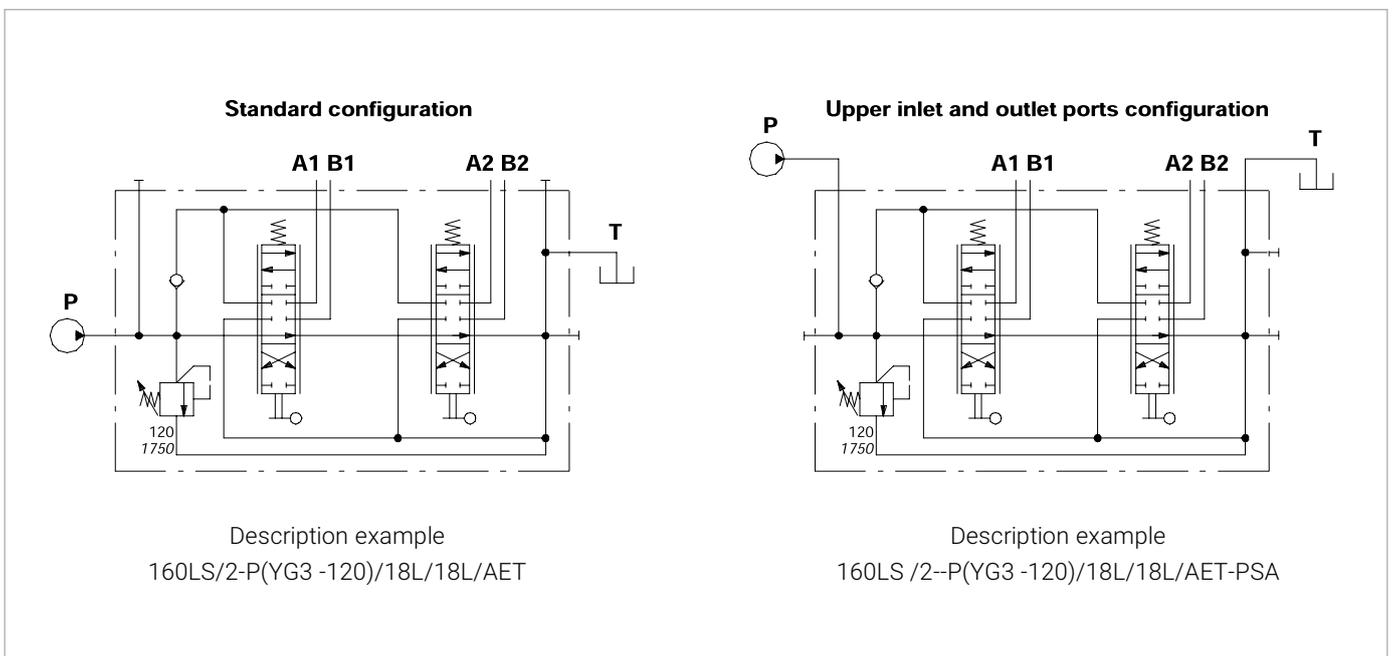
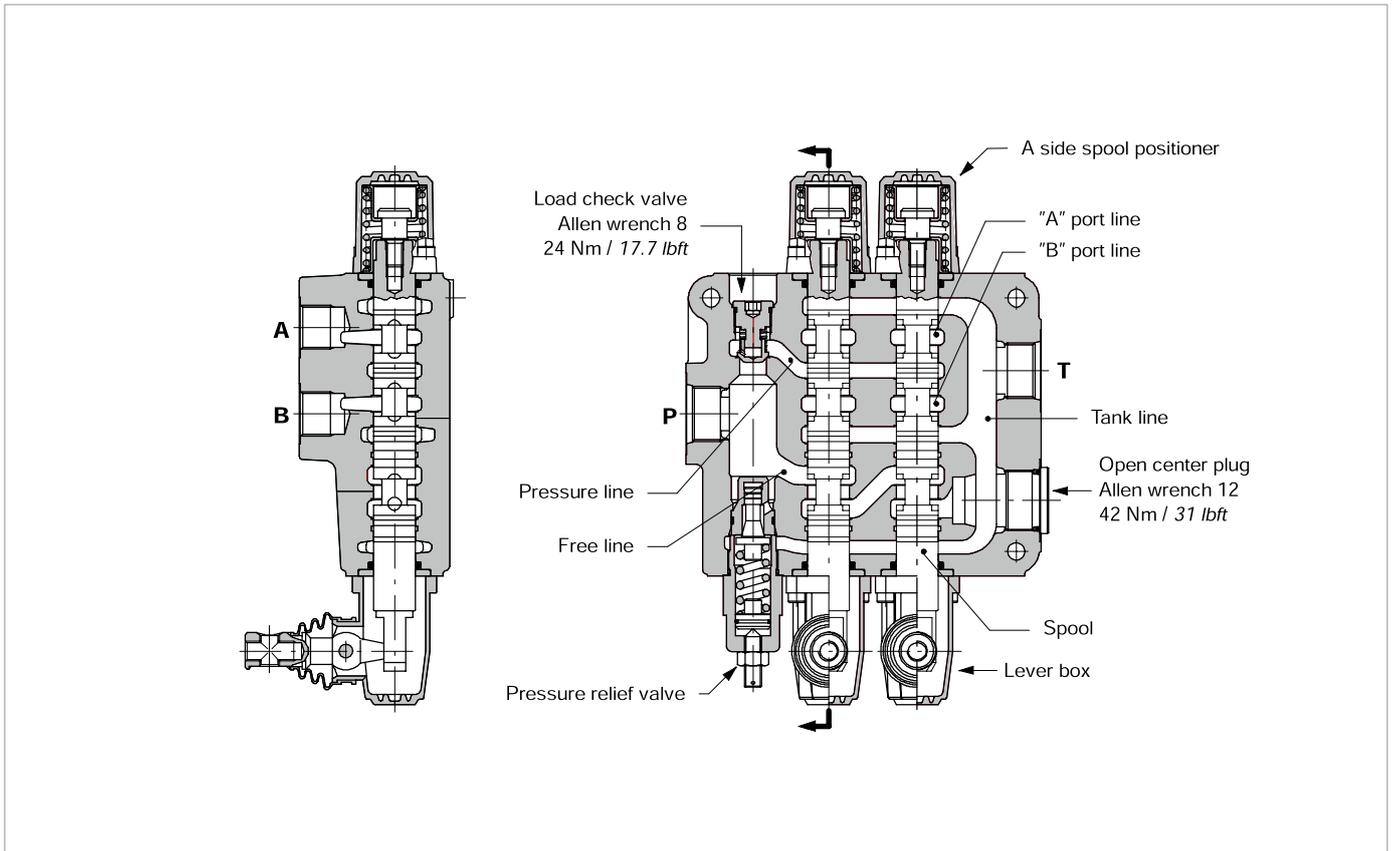
## Dimensional Data



Type	E		F		Weight	
	mm	in	mm	in	kg	lb
<b>160LS/1-P</b>	159	6.26	129	5.08	13.2	29.1
<b>160LS/2-P</b>	212	8.35	182	7.17	18.6	41

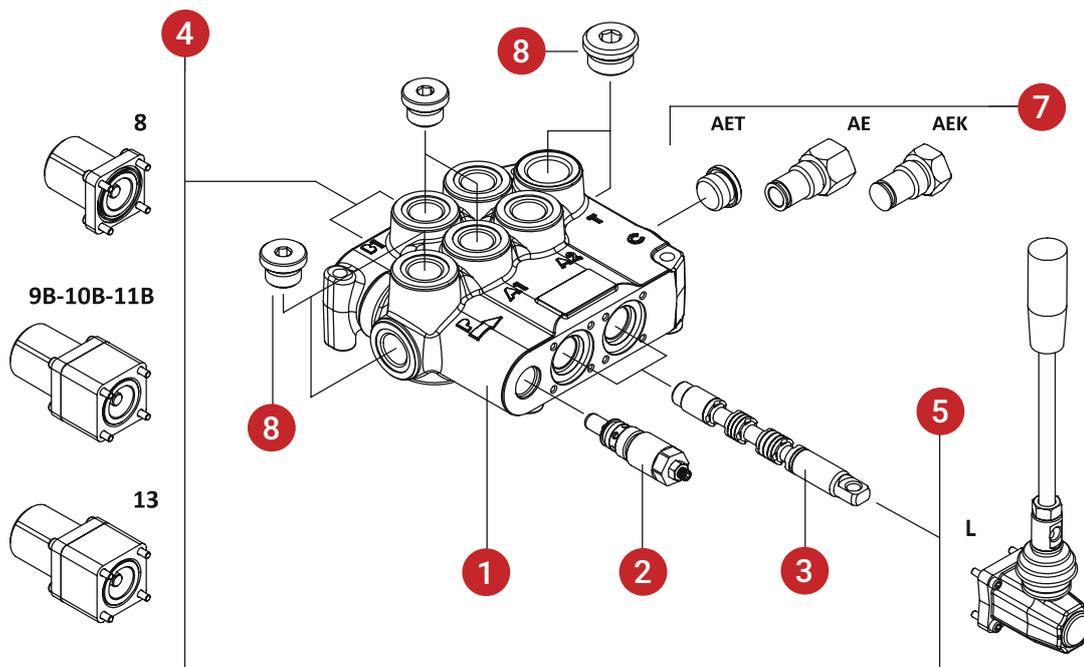
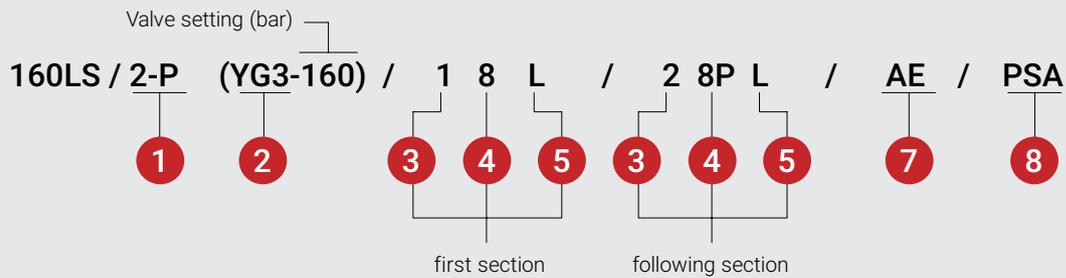
Type	E		F		Weight	
	mm	in	mm	in	kg	lb
<b>160LS/3-P</b>	265	10.4	235	9.25	23.5	51.8
<b>160LS/4-P</b>	318	12.5	288	11.3	28.8	63.5

# Parallel Circuit



# 160LS Monoblock Control Valves Coding

Description example:



## 1 Body kits - Ordering codes

Type	Description
1-P	Parallel, 1 section
2-P	Parallel, 2 sections
3-P	Parallel, 3 sections
4-P	Parallel, 4 sections

## 2 Inlet relief options

Type	Description
YG2	Range 40 - 80 Bar / 580 to 1150 PSI
YG3	Range 63 - 200 Bar / 915 to 2900 PSI
YG4	Range 160 - 315 Bar / 2320 to 4567 PSI
SV	Relief Valve Blanking Plug

## 160LS Monoblock Control Valves Coding *(continued)*

<b>3 Spools</b>		
Type	Code	Description
<b>1</b>	P0101011732	160LS - Double acting with positive overlap, 3 positions, with A and B closed in neutral position (Type 1)
<b>2</b>	P0101011664	160LS - Motor spool D/Acting, 3 positions, with A and B open to tank in neutral position (Type 2)
<b>3</b>	P0101011663	160LS - Single acting on A, 3 positions, B plugged requires G3/4plug (Type 3)
<b>4</b>	P0101011662	160LS - Single acting on B, 3 positions, A plugged requires G3/4 plug (Type 4)
<b>1C</b>	P0101011732	As type 1, spools for 8IM hydraulic control
<b>2C</b>	P0101011664	As type 2, spools for 8IM hydraulic control
<b>3C</b>	P0101011663	As type 3, spools for 8IM hydraulic control

<b>4 Spool 'A' Side Positioners</b>		
Type	Code	Description
<b>8</b>	P0101011645	160LS - 3 Position Spring kit Type 8
<b>9B</b>	P0101011642	160LS - With detent in position 1 and spring return in neutral position Type 9B
<b>10B</b>	P0101011643	160LS - With detent in position 2 and spring return in neutral position Type 10B
<b>11</b>	P0101011667	160LS - 3 posn. detent in Positions - Neutral - 1 and 2 - Kit type 11
<b>11B</b>	P0101011720	160LS - Detent in positions 1 and 2 and spring return in neutral position Kit type 11 B
<b>15</b>	P0101011666	160LS - 2 positions, detent in positions 1 and neutral Kit type 15
<b>16</b>	P0101011665	160LS - 2 positions, detent in positions 2 and neutral Kit type 16
<b>19</b>	**	160LS 2 positions, with spring return in neutral position from position 1
<b>20</b>	**	160LS 2 positions, with spring return in neutral position from position 2
<b>8P</b>	P0101011675	160LS - ON/OFF pneumatic 8P
<b>8EP3(12V)</b>	P0101011719	160LS - ON/OFF 12 VDC electro--pneumatic kit 12VDC 8EP3
<b>8EP3(24V)</b>	P0101011718	160LS - ON/OFF 24 VDC electro--pneumatic kit 24VDC 8EP3
<b>8ED3</b>	**	ON/OFF 12 VDC electro--hydraulic kit 12V
<b>8ED4</b>	**	ON/OFF 24 VDC electro--hydraulic kit 24V

## 160LS Monoblock Control Valves Coding *(continued)*

<b>5 'B' Side Positioners Options</b>		
Type	Code	Description
<b>L</b>	P0101011706	160LS - Standard lever box (L)
<b>R</b>	P0101011706	160LS - Standard lever box (L) 180 degree
<b>SLP</b>	P0101011705	160LS - Without lever, with dust proof plate (SLP)
<b>LR</b>	P0101011704	160LS - Rotary Lever Kit (LR)
<b>TQ</b>	P0101011703	160LS - Cable connection (TQ)

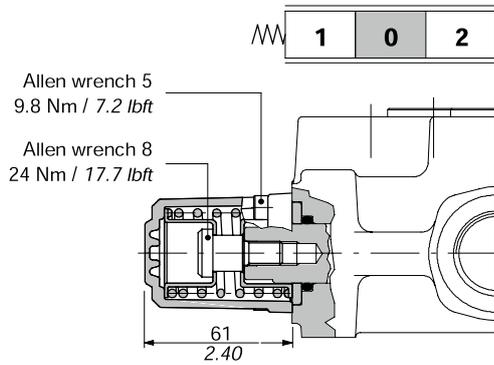
<b>6 Complete controls</b>		
Type	Code	Description
<b>8IM</b>	P0101011641	160LS - Proportional hydraulic control

<b>7 Outlet Port Options</b>		
Type	Code	Description
<b>AET</b>	P0101011699	160LS - Open centre plug (AET)
<b>AEK</b>	P0101011698	160LS - Closed centre plug (AEK)
<b>AE</b>	P0101011644	160LS - Carry over plug 1" (AE)

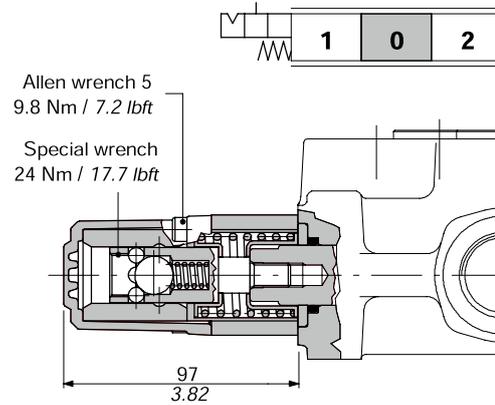
<b>8 Inlet &amp; Outlet Selection</b>	
Type	Description
<b>PSL</b>	Upper ports need 1 x G3/4" and 1 x G1" (Standard configuration)
<b>PSA</b>	Side ports need 1 x G3/4" and 1 x G1" (Standard configuration)

# 'A' Side Spool Positioners

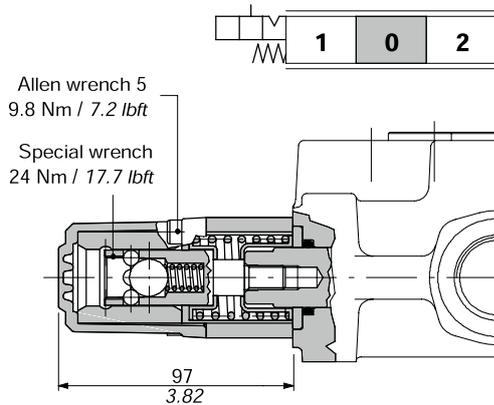
**8 Kit**



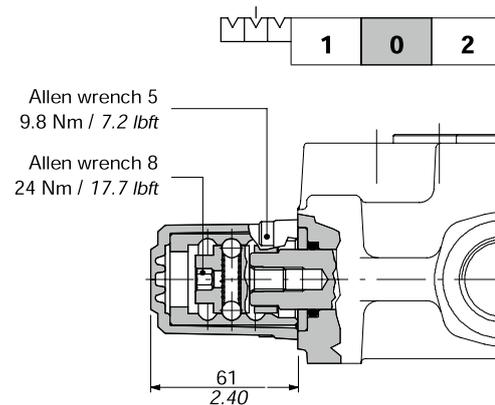
**9B Kit**



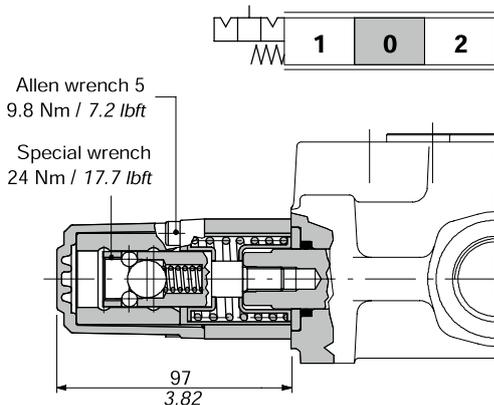
**10B Kit**



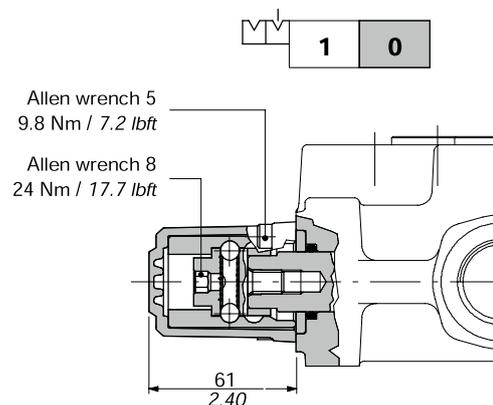
**11 Kit**



**11B Kit**

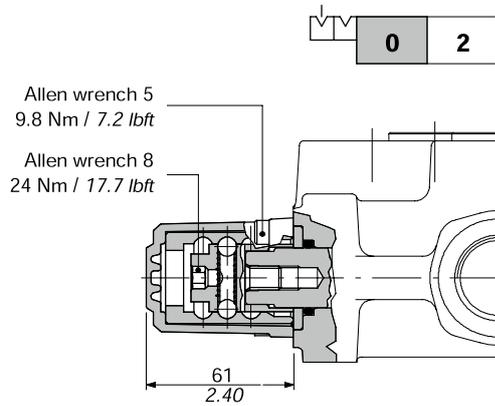


**15 Kit**

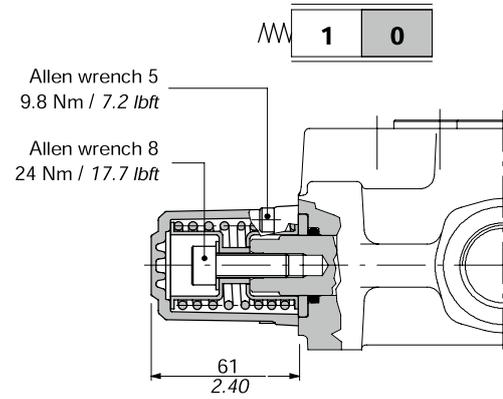


# 'A' Side Spool Positioners (continued)

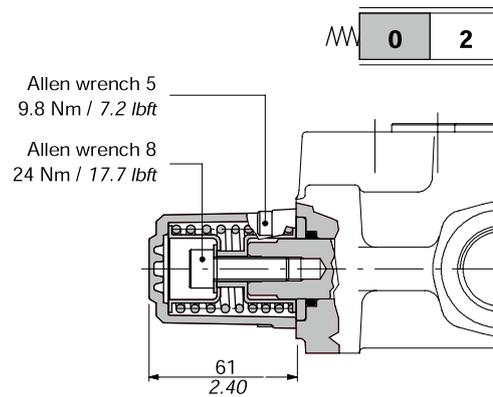
## 16 Kit



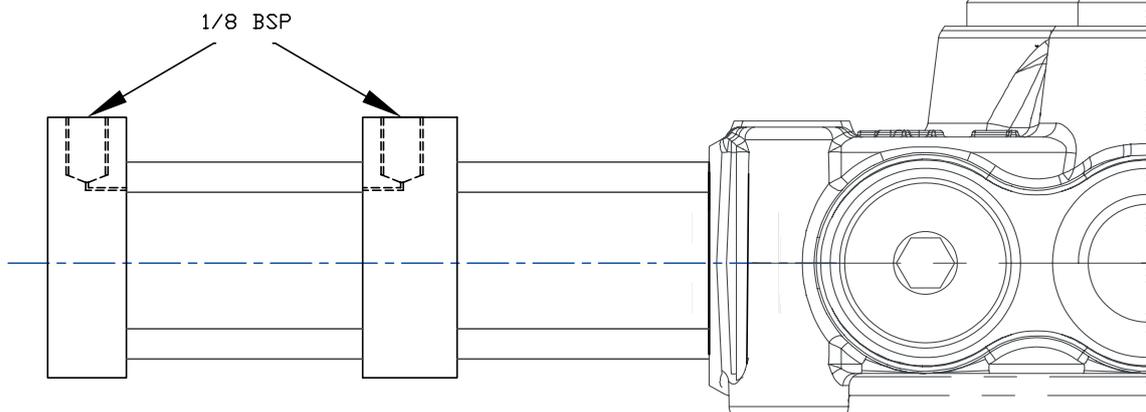
## 19 Kit



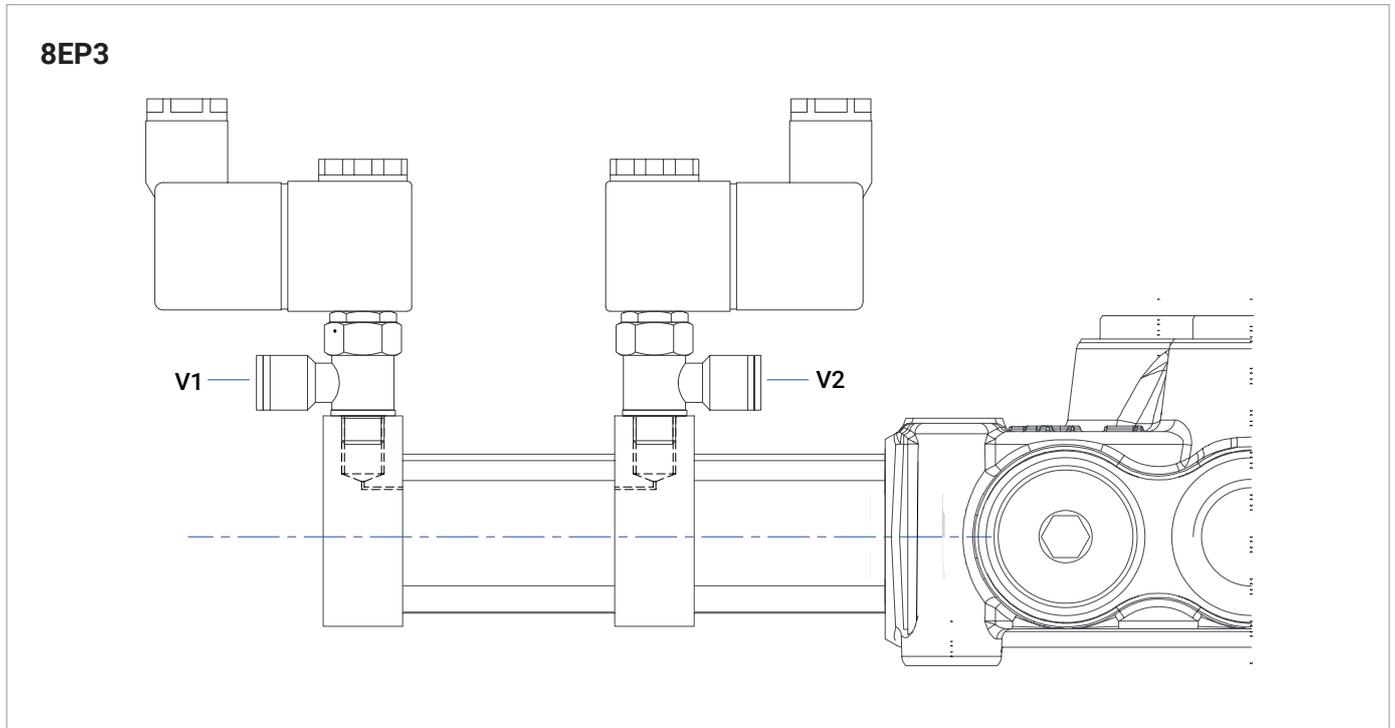
## 20 Kit



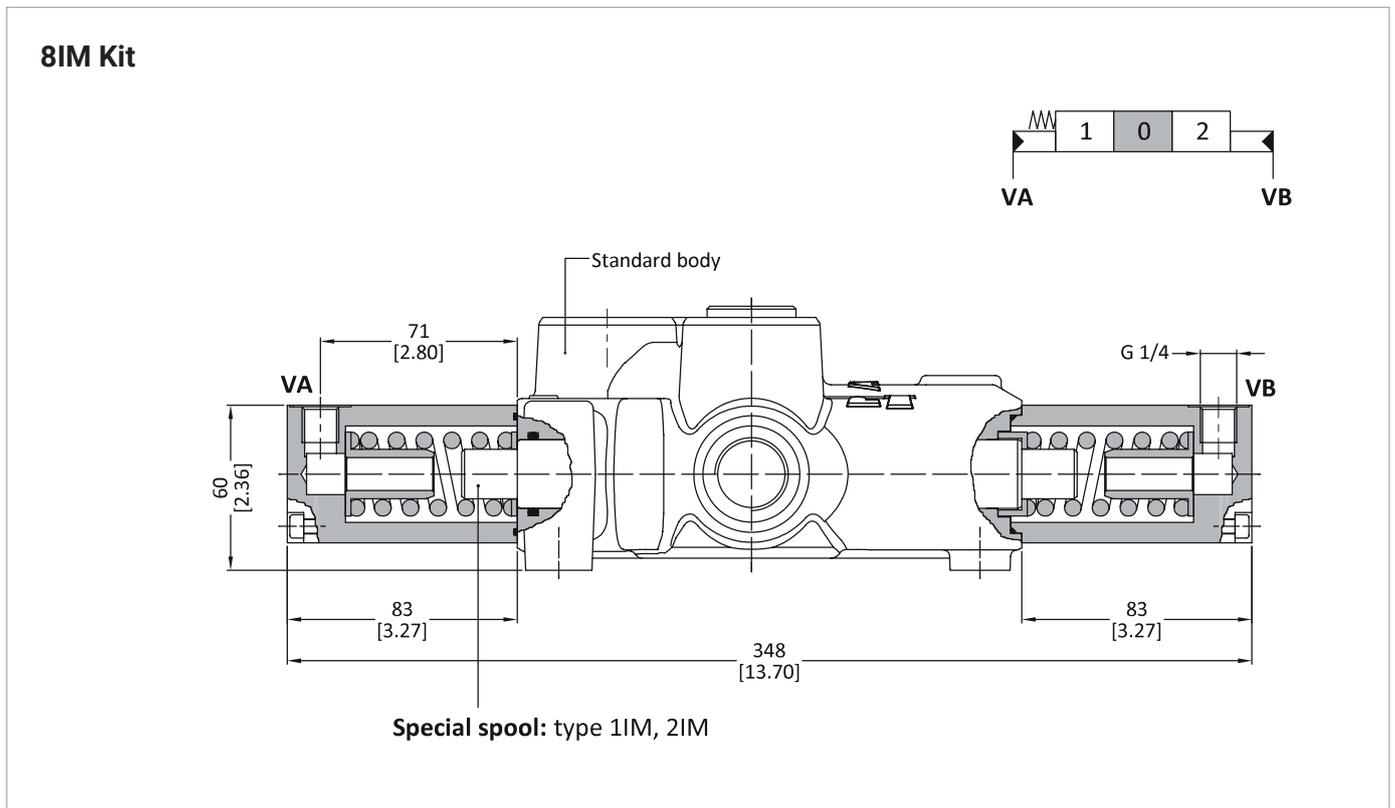
## 8P



## 'A' Side Spool Positioners (continued)

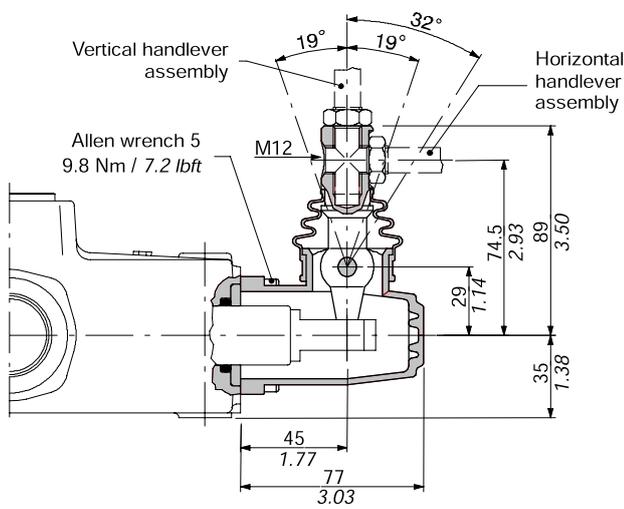


## 6. Complete Controls

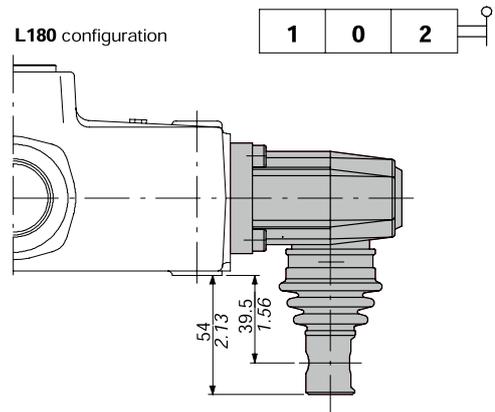


# 'B' Side Positioners Options

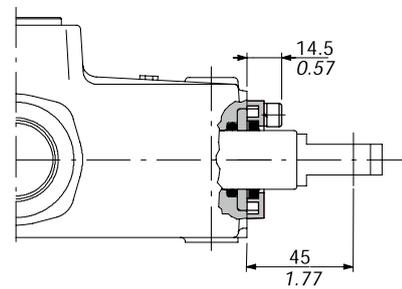
**Type L Standard Lever Box**



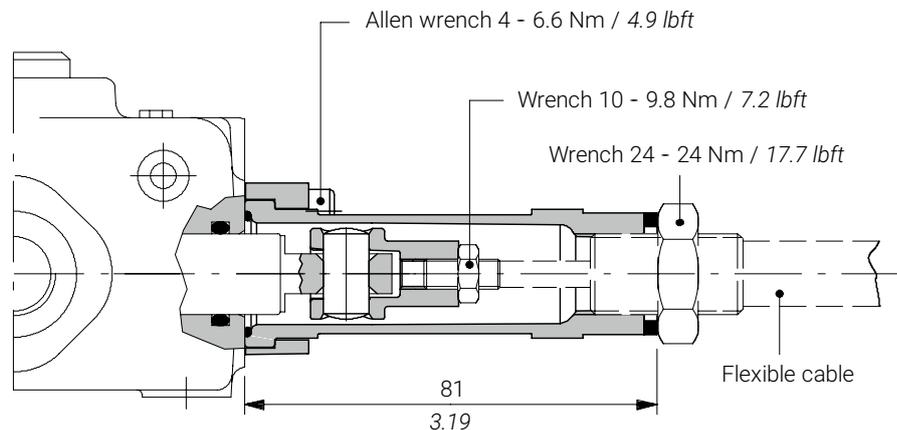
**Type R = 180 degrees inverted**



**Type SLP (Mec control with dust proof plate)**

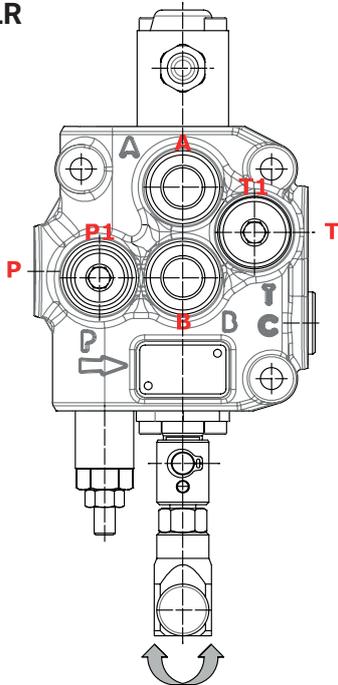


**Type TQ**



## 'B' Side Positioners Options *(continued)*

Type LR



Angle rotation  $\pm 90^\circ$

**Wrenches and tightening torques**

X = allen wrench 4 - 6 Nm (4.4 lbf<sub>t</sub>)

Y = wrench 19 - 9,8 Nm (7.23 lbf<sub>t</sub>)

W = wrench 17 - 9,8 Nm (7.23 lbf<sub>t</sub>)

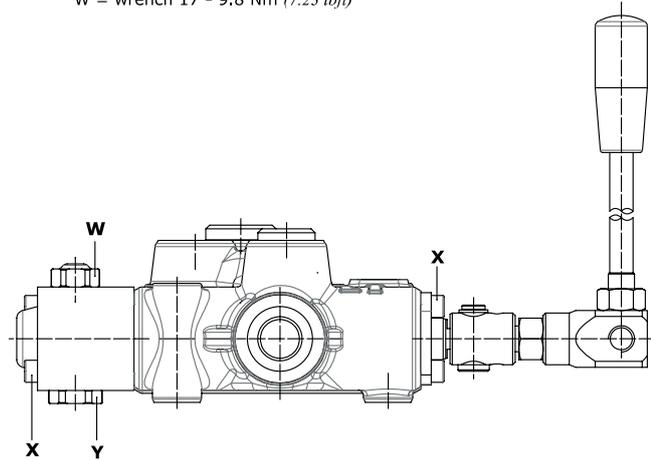


Image for illustrative purposes only. Actual part may differ.



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