



# HYDRA

80LGS

*PART*

## Sectional Control Valve

Simple, compact and heavy duty designed sectional valve from 1 - 12 sections for open and closed centred hydraulic systems.

## Features

**Simple, compact and heavy duty designed sectional valve from 1 to 12 sections for open and closed center hydraulic systems.**

- ▶ Fitted with a main pressure relief valve and a load check valve on every working section
- ▶ Available with parallel, tandem or series circuit.
- ▶ Optional carryover port.
- ▶ A wide variety of auxiliary valves.
- ▶ Intermediate sections for several types of circuit.
- ▶ Available manual, pneumatic, hydraulic, electro-hydraulic, and remote with flexible cables spool control kits.
- ▶ Diameter 18 mm (0.71 in) interchangeable spools.

### Additional information

This catalogue shows the product in the most standard configurations. Please contact Sales Dpt. for more information that is detailed or special request.

### WARNING!

All specifications of this catalogue refer to the standard product at this date. Approved Hydraulics Limited, oriented to a continuous improvement, reserves the right to discontinue, modify or revise the specifications, without notice.

APPROVED HYDRAULICS LIMITED IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN INCORRECT USE OF THE PRODUCT.

1st edition January 2023:

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## Valve general information

### Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm<sup>2</sup>/s (46cSt) viscosity at 40°C (104°F) temperature.

Nominal flow rating		80 l/min.	21 US gpm
Max. flow		100 l	26 US gpm
Operating pressure (max.)	Series-parallel (tandem) circuit	315 bar	4600 psi
Back pressure (max.)	T outlet port	25 bar	360 psi
Internal leakage (standard) A(B) T	p=100 bar (1450 psi)	3cm <sup>3</sup> /min.	0.18 in <sup>3</sup> /min.
Hydraulic fluid		Mineral base oil	
Fluid temperature	with NBR seals	from - 20° to 80°C	from -4°F to 176°F
	with FPM (VITON) seals	from - 20° to 100°C	from -4°F to 212°F
Viscosity	operating range	from 15 to 75 mm <sup>2</sup> /s	from 15 to 75 cSt
	min.	12 mm <sup>2</sup> /s	12 cSt
	max.	400 mm <sup>2</sup> /s	400 cSt
Max. contamination level		-/19/16 - ISO 4406	NAS 1638 - class 10
Ambient temperature for working conditions	with mechanical devices	from -40°C to 60°C	from -40°F to 140°F
	with pneumatic and hydraulic devices	from -30°C to 80°C	from -22°F to 140°F
	with electric devices	from -20°C to 50°C	from -4°F to 122°F
Tie rods tightening torque (wrench 13)		30 Nm	22 lbft

### Standard threads

REFERENCE STANDARD					
		BSP	UN-UNF	METRIC	NPTF
THREAD ACCORDING TO		ISO 228/1	ISO 263	ISO 262	ANSI B1.20.3
		BS 2779	ANSI B1.1 unified		
CAVITY DIMENSION ACCORDING TO	ISO	1179-1	11926-1	9974-1	
	SAE		J1926-1	J2244	J476a
	DIN	3852-2 shape X or Y		3852-1 shape X or Y	

PORTS THREADING			
MAIN PORTS	BSP	UN-UNF	METRIC
<b>P</b> inlet	G 1/2	7/8-14 (SAE 10)	M22x1.5
<b>A</b> and <b>B</b> ports	G 1/2	3/4-16 (SAE 8)	M22x1.5
<b>T</b> outlet and <b>C</b> carry-over	G 3/4	7/8-14 (SAE 10)	M27x2
PILOT PORTS			
Hydraulic	G 1/4	-	-
Pneumatic	G 1/8	-	-

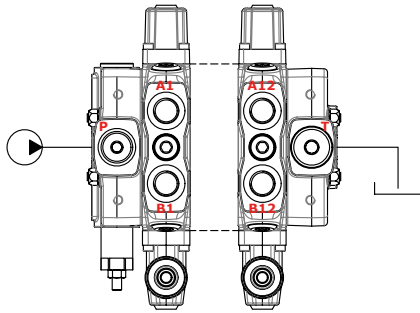


## Valve general information

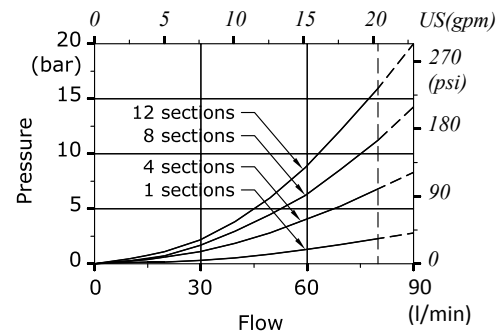
### Performance data (pressure drop vs. flow)

#### Open centre

From side inlet to side outlet.

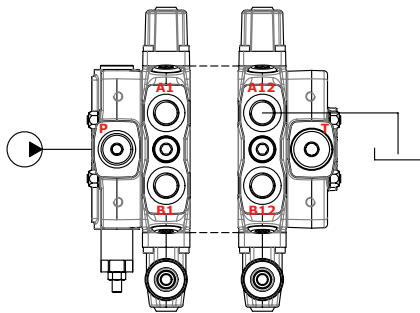


**P ⇒ T pressure drop**

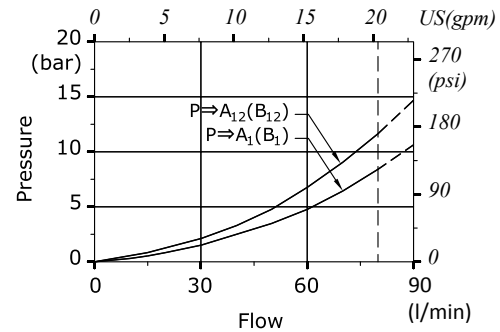


#### Inlet to work port

From side inlet to A port (spool in position 1) or B port (spool in position 2).

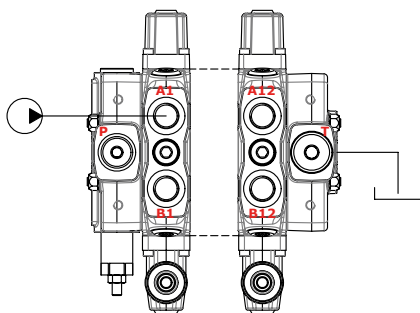


**P ⇒ A(B) pressure drop**

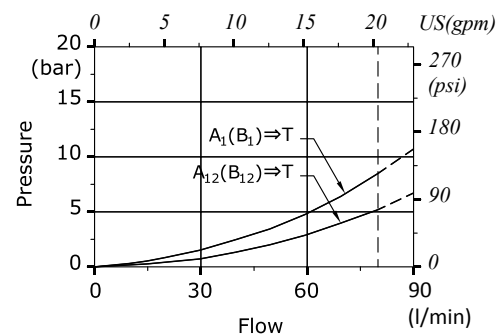


#### Work port to outlet

From A port (spool in position 2) or B port (spool in position 1) to side outlet.



**A(B) ⇒ T pressure drop**

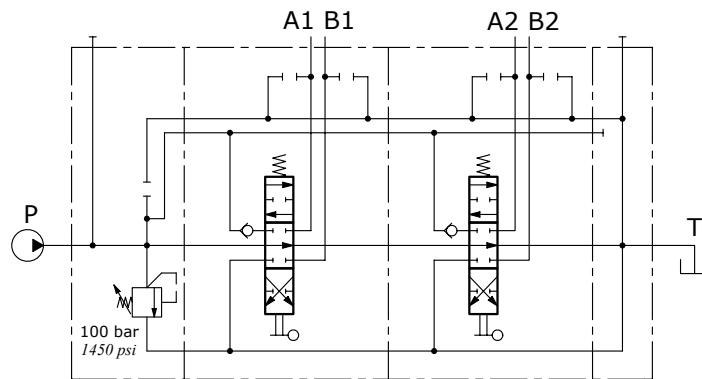


## Valve general information

### Hydraulic circuit

#### Parallel circuit

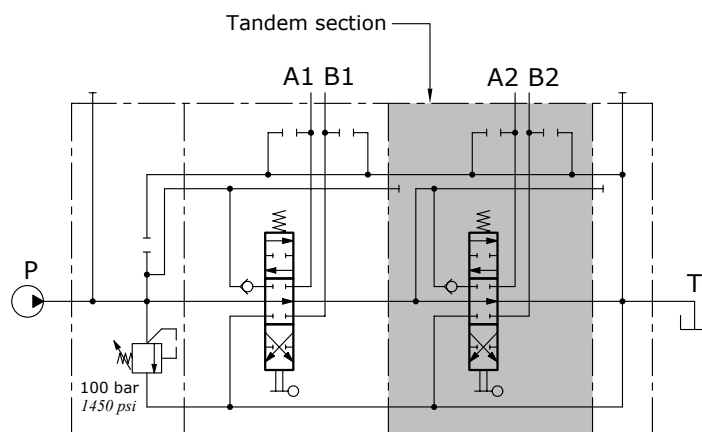
Standard configuration with open centre and side inlet and outlet.



**Description example**  
80L GS10/2/AC(X-100)/18L/18L/RC

#### Series-parallel (tandem) circuit

It needs a special working section kit.  
Tandem section is fed from the free flow pressure line; it's excluded when an up stream section is operated.

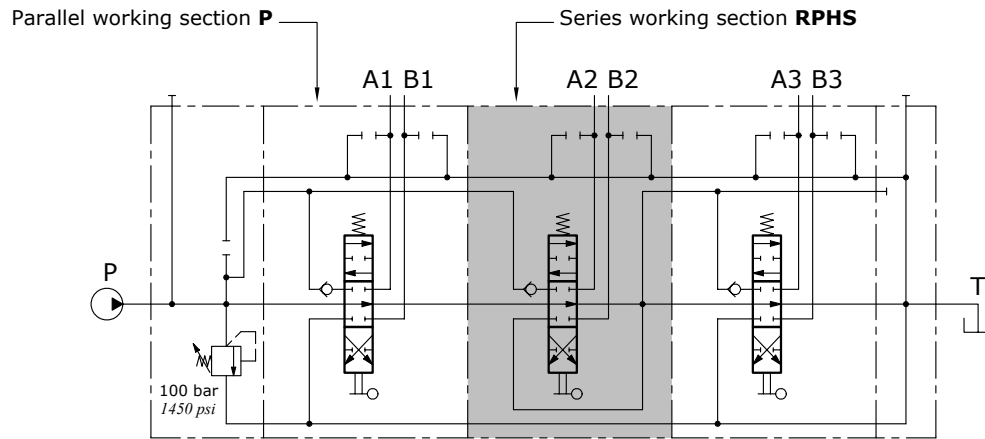


**Description example**  
80L GS10/2/AC(X-100)/18L/SP-18L/RC

## Valve general information

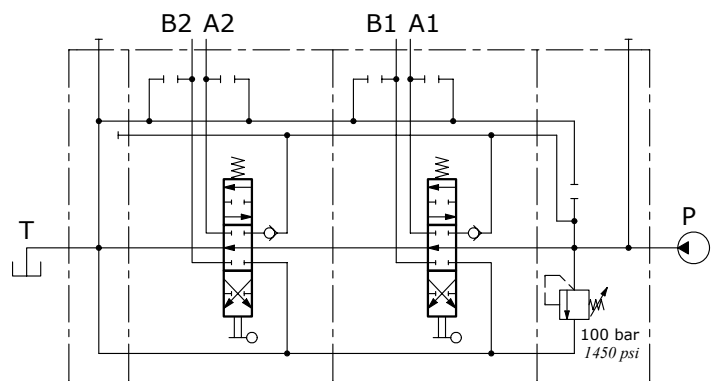
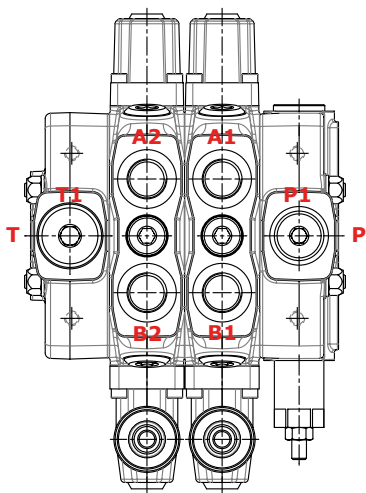
### Hydraulic circuit

#### Series circuit



**Description example**  
80L GS10/3/AC(X-100)/18L/RPHS-18L/18L/RC

#### Right inlet directional valve



**Description example**  
80L GS10/2/BC(X-100)/18L/18L/RC

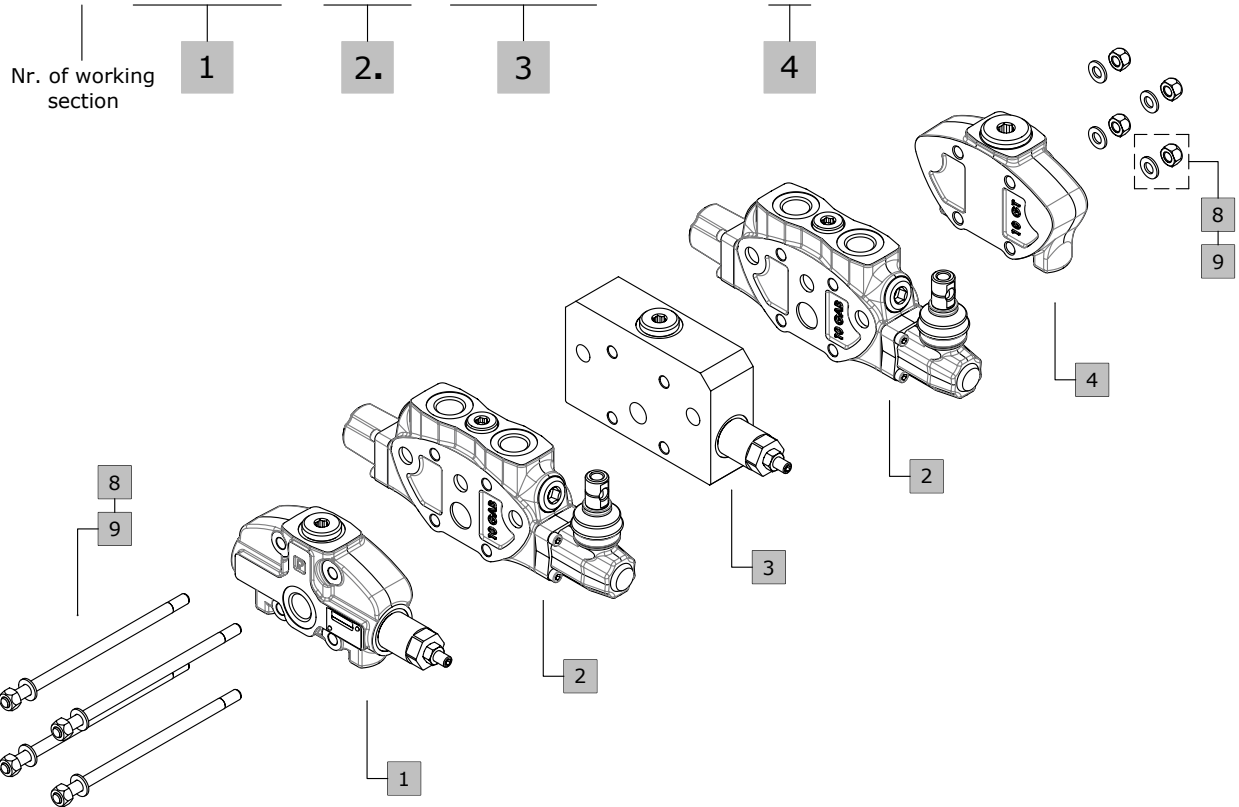


## Valve general information

### Complete sections ordering codes

#### Standard configuration with side inlet and outlet

80L GS10 / 2 / AC(X-100) / P-18L / EI1(X-100) / P-18L / RC



#### 1. Inlet section \* page 10

TYPE <b>AC(X-100)</b> .....	CODE 80IN010004
DESCRIPTION With direct pressure relief valve	
TYPE <b>AC(Z-100)</b> .....	CODE 80IN010005
DESCRIPTION With pilot pressure relief valve	
TYPE <b>AC(V)</b> .....	CODE 80IN010006
DESCRIPTION Without pressure relief valve	

#### 2. Working section \* page 18

TYPE	CODE	DESCRIPTION
<b>P-18L</b>	80W010000	Parallel circuit, lever control to combine with series working section
<b>SP-18L</b>	80W010003	For series-parallel (tandem) circuit, prearranged for port valves, double acting spool with spring return, lever control
<b>RPHS-18L</b>	80W010001	Series circuit, double acting spool with spring return, lever control
<b>RPHT-18L</b>	80W010036	Parallel circuit, prearranged for valves with fixed setting
<b>RPHSP-18L</b>	80W010042	As RPHT for series-parallel (tandem) circuit

#### 3. Intermediate sections \* page 50

TYPE	CODE	DESCRIPTION
<b>EI1(X-100)</b>	30 08 5732	With direct pressure relief valve
<b>EI1(Z-100)</b>	30 08 5903	With pilot pressure relief valve
<b>DFG</b>	30 08 5774	Pressure compensated flow divider section

#### 4. Outlet section \* page 52

TYPE	CODE	DESCRIPTION
<b>RC</b>	80OU010003	With side outlet
<b>RD</b>	80OU010004	With upper outlet
<b>RE</b>	80OU010005	With upper outlet and side carry-over sleeve
<b>RK</b>	80OU010006	With upper outlet, closed center
<b>RV</b>	80OU010007	With backpressure valve 10 bar (145 psi)
<b>VRC</b>	80OU010008	Backpressure valve for VRC configuration

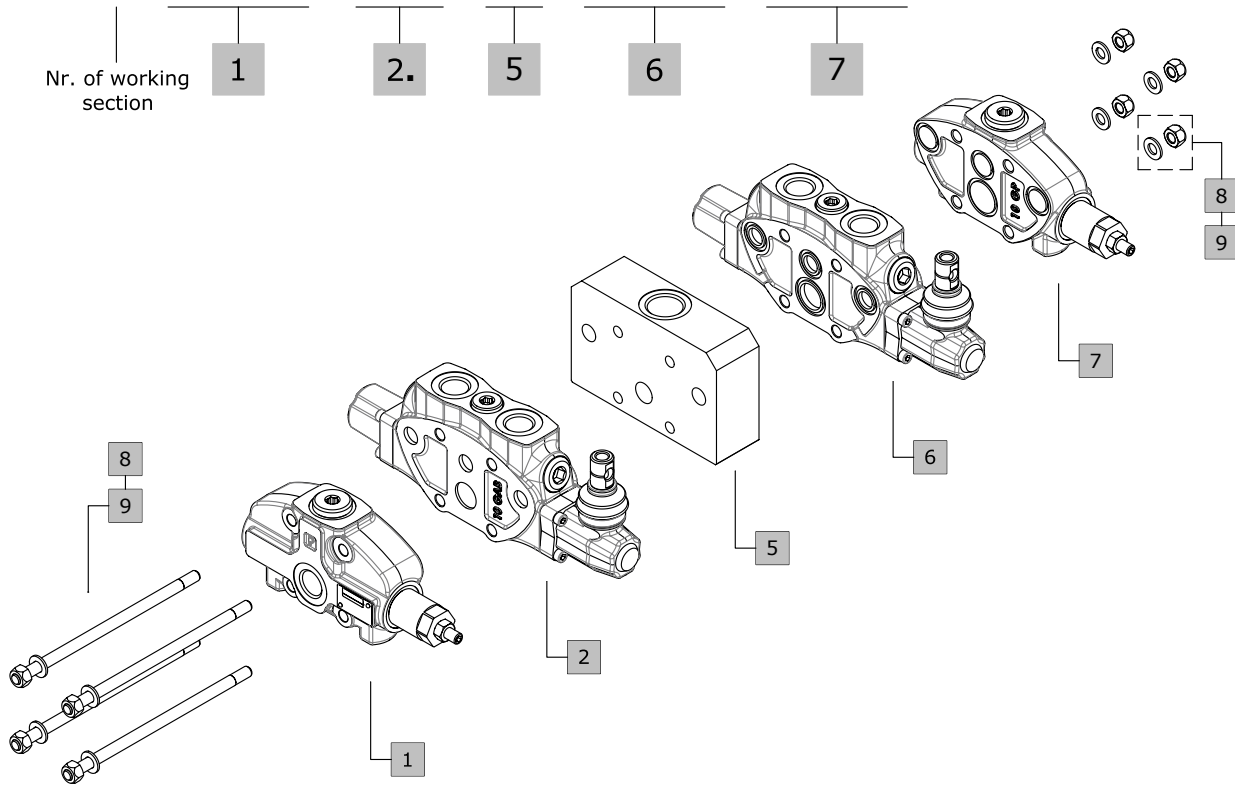
NOTE (\*) – Codes are referred to **BSP** thread.

## Valve general information

### Complete sections ordering codes

#### Configuration with 2 side inlets and mid return manifold

80L GS10 / 2 / AC(X-100) / P-18L / CS1 / P-ED-18L / BC(X-100)



#### 5. Return manifold \*

page 49

TYPE	CODE	DESCRIPTION
CS1	30 08 5779	Mid return manifold

#### 6. Right inlet working section \*

TYPE	CODE	DESCRIPTION
P-ED-18L	80W010007	Parallel circuit, prearranged for port valves, double acting spool with spring return, lever control
SP-ED-18L	80W010006	As previous with series-parallel (tandem) circuit
RPHS-ED-18L	80W010008	As previous with series circuit

#### 7. Right inlet section \*

TYPE	CODE	DESCRIPTION
BC(X-100)	80IN010011	Side inlet with direct pressure relief valve
BC(Z-100)	80IN010010	Side inlet with pilot pressure relief valve
BC(V)	80IN010012	Side inlet without pressure relief valve
BD(X-100)	80IN010014	Upper inlet with direct pressure relief valve
BD(Z-100)	80IN010013	Upper inlet with pilot pressure relief valve
BD(V)	80IN010002	Upper inlet without pressure relief valve

#### 8. Assemb. kit without intermediate section

CODE	DESCRIPTION
30 05 6076	Tie rod kit for 1 working section directional valve
30 05 6078	Tie rod kit for 2 working section directional valve
30 05 6079	Tie rod kit for 3 working section directional valve
30 05 6080	Tie rod kit for 4 working section directional valve
30 05 6081	Tie rod kit for 5 working section directional valve
30 05 6082	Tie rod kit for 6 working section directional valve
30 05 6083	Tie rod kit for 7 working section directional valve
30 05 6084	Tie rod kit for 8 working section directional valve
30 05 6085	Tie rod kit for 9 working section directional valve
30 05 6112	Tie rod kit for 10 working section directional valve
30 05 6113	Tie rod kit for 11 working section directional valve
30 05 6077	Tie rod kit for 12 working section directional valve

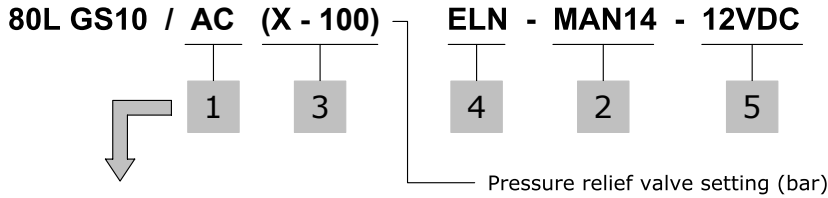
#### 9. Assemb. kit with intermediate section

CODE	DESCRIPTION
30 05 6079	Tie rod kit for 2 working section directional valve
30 05 6080	Tie rod kit for 3 working section directional valve
30 05 6081	Tie rod kit for 4 working section directional valve
30 05 6082	Tie rod kit for 5 working section directional valve
30 05 6083	Tie rod kit for 6 working section directional valve
30 05 6084	Tie rod kit for 7 working section directional valve
30 05 6085	Tie rod kit for 8 working section directional valve
30 05 6112	Tie rod kit for 9 working section directional valve
30 05 6113	Tie rod kit for 10 working section directional valve
-	Tie rod kit for 11 working section directional valve
-	Tie rod kit for 12 working section directional valve

NOTE (\*) - Codes are referred to **BSP** thread.

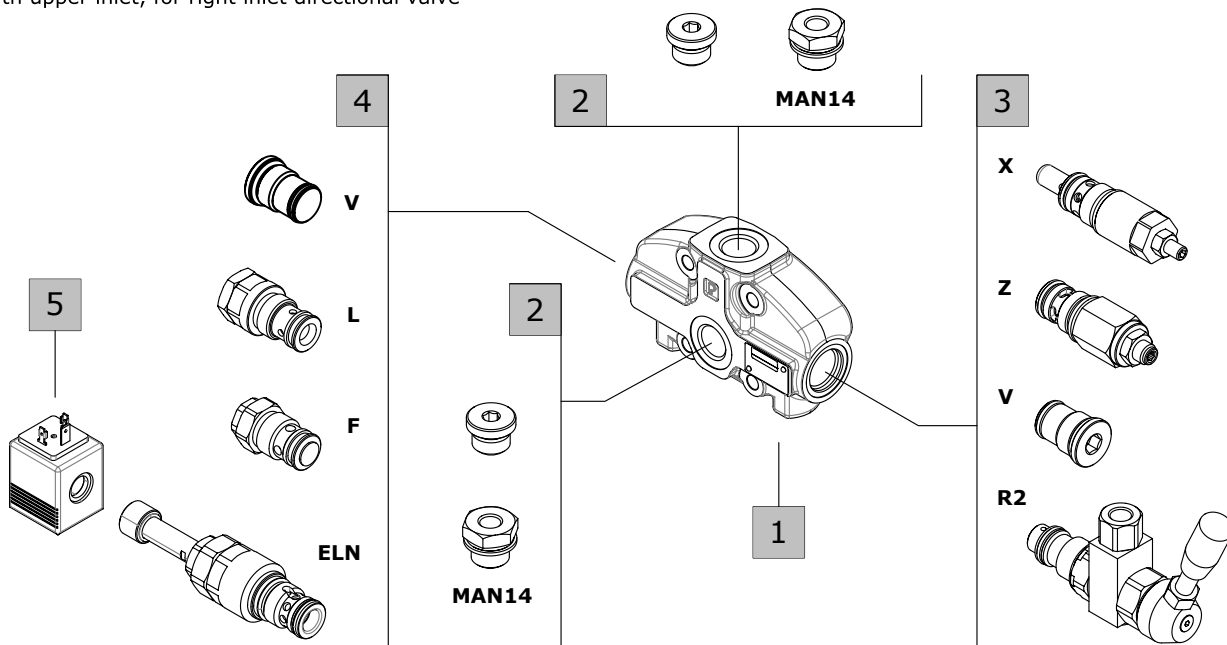
## Inlet section

### Parts ordering codes



### Available configurations

- AC:** with side inlet, for left inlet (standard) directional valve
- AD:** with upper inlet, for left inlet (standard) directional valve
- BC:** with side inlet, for right inlet directional valve
- BD:** with upper inlet, for right inlet directional valve



1. Inlet cover body * <span style="float: right;">page 11</span>		
CODE	: 30 08 5630	
DESCRIPTION	: Standard body	

2. Parts *		
TYPE	CODE	DESCRIPTION
<b>MAN18</b>	30 05 6100	G1/8 Pressure gauge arrangement
<b>MAN14</b>	30 05 6099	G1/4 Pressure gauge arrangement

3. Inlet relief valve options <span style="float: right;">page 13</span>		
TYPE	CODE	DESCRIPTION
<b>Direct pressure relief valve X type (standard) (X-100)</b>		
	30 05 4912	Range 60-315 bar (870-4570 psi) standard setting 100 bar (1450 psi)
<b>Pilot operated pressure relief valve Z type (Z-100)</b>		
	30 05 4915	Range 60-315 bar (870-4570 psi) standard setting 100 bar (1450 psi)
Standard setting is referred to 6 l/min flow.		
<b>(V)</b>	30 05 4914	Relief valve blanking plug

4. Inlet valve options <span style="float: right;">page 15</span>		
TYPE	CODE	DESCRIPTION
<b>V</b>	30 05 4914	Relief valve blanking plug (omit in description)
<b>F</b>	-	Inlet anti-cavitation valve
<b>L</b>	-	Hydraulic pilot unloader valve
<b>R2</b>	30 07 5430	Rotary commutator
<b>Solenoid operated unloader valve</b>		
<b>ELN(NO)</b>	30 05 6108	Without emergency
<b>ELP(NO)</b>	30 05 6109	Push-button emergency
<b>ELT(NO)</b>	30 05 6110	Push and twist type with detent emergency
<b>ELN(NC)</b>	30 05 5032	Without emergency
<b>ELP(NC)</b>	30 05 5033	Push-button emergency
<b>ELT(NC)</b>	30 05 5034	Push and twist type with detent emergency

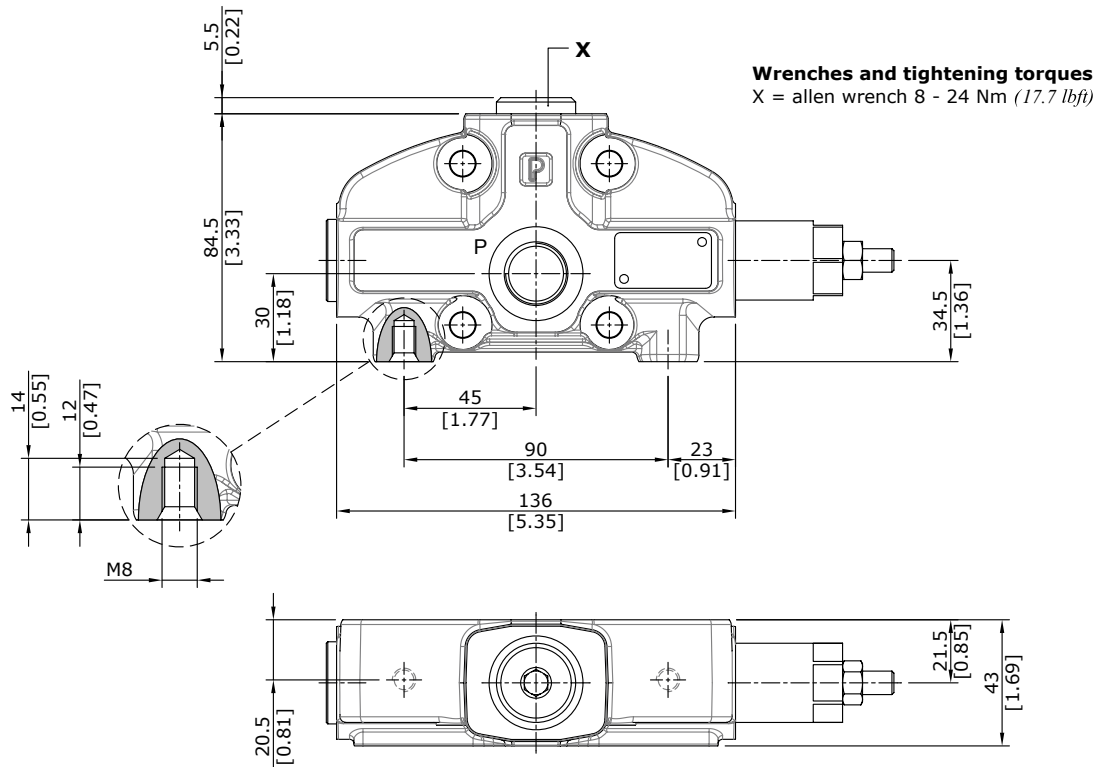
  

5. Coils		
TYPE	CODE	DESCRIPTION
<b>12VDC</b>	20 03 2268	Coil type <b>BER</b> , ISO4400 integrated type 12VDC
<b>24VDC</b>	20 03 2269	Coil type <b>BER</b> , ISO4400 integrated type 24VDC

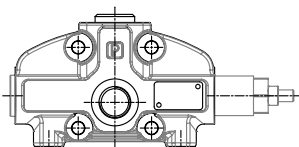
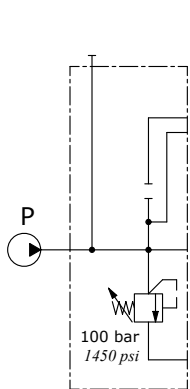
NOTE (\*) – Codes are referred to **BSP** thread.

## Inlet section

### Dimensional data and hydraulic circuit

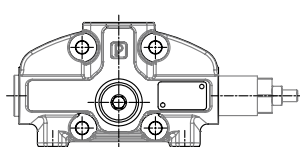
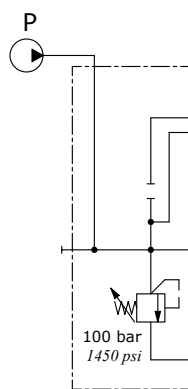


For left inlet directional valve, side port



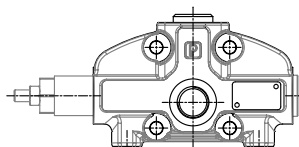
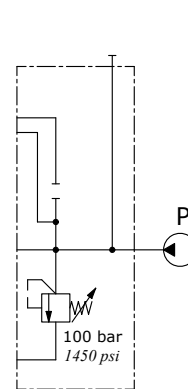
Description example:  
**AC(X-100)**

For left inlet directional valve, upper port



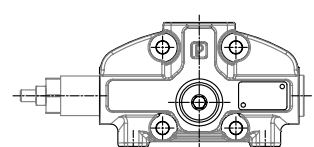
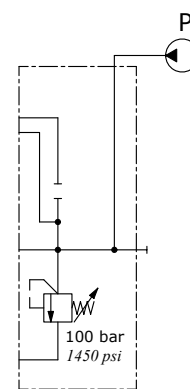
Description example:  
**AD(X-100)**

For right inlet directional valve, side port



Description example:  
**BC(X-100)**

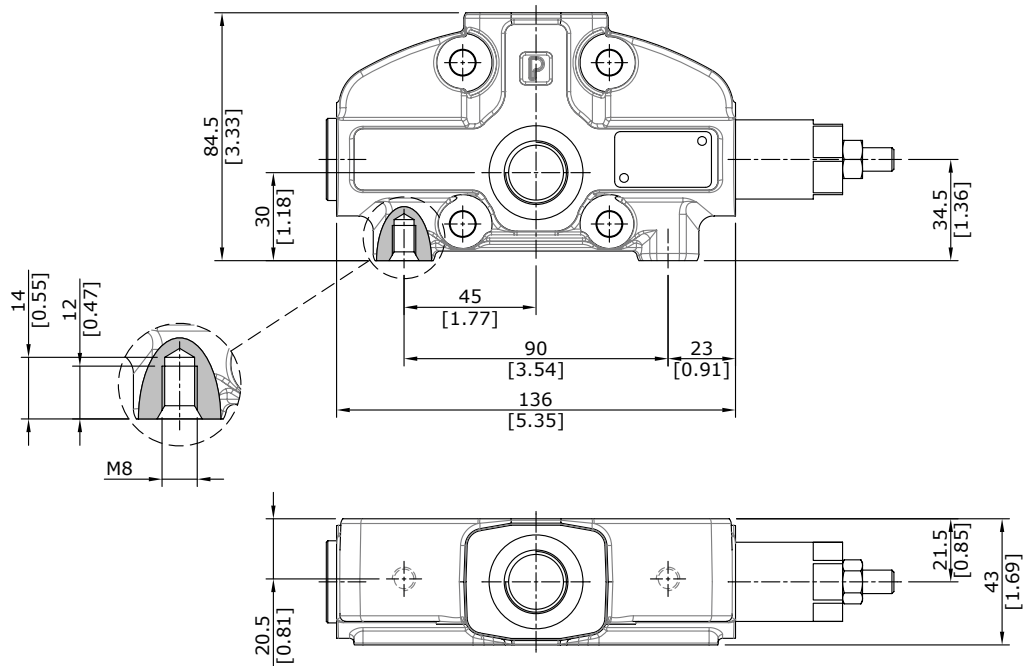
For right inlet directional valve, upper port



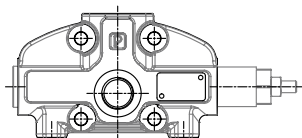
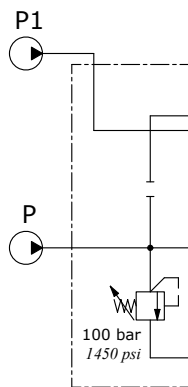
Description example:  
**BD(X-100)**

## Inlet section

### Dimensional data and hydraulic circuit

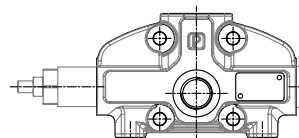
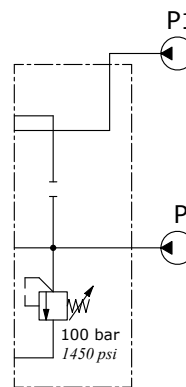


For left inlet directional valve, side and upper port



Description example:  
**PC(X-100)**

For right inlet directional valve, side and upper port



Description example:  
**PD(X-100)**

## Inlet section

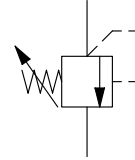
### Inlet valve options

#### Direct overpressure relief valve

30 05 4912 ( **X - 100** )

Configuration

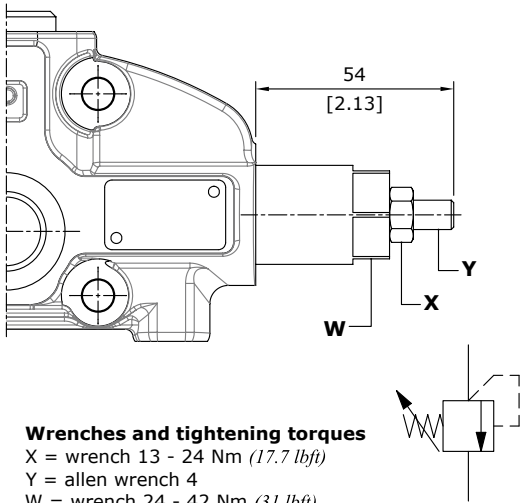
Valve setting (bar)



#### Adjustment type

Configuration **X** type: adjustable with screw

Configuration **XH** type: valve set and locked

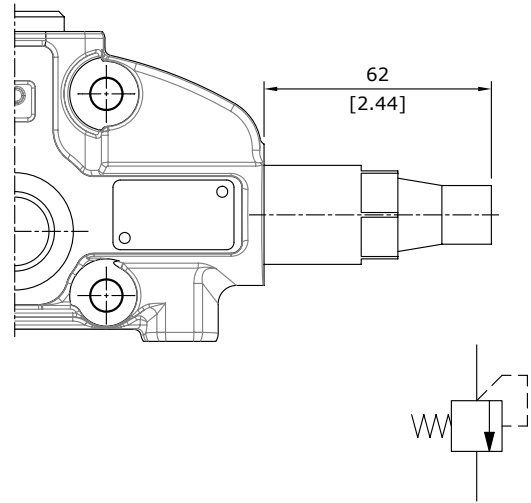


#### Wrenches and tightening torques

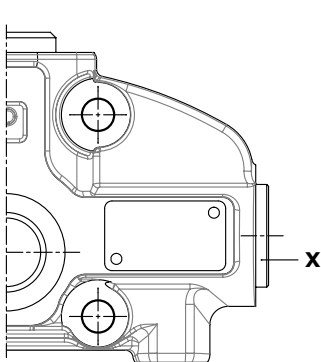
X = wrench 13 - 24 Nm (17.7 lbf<sub>t</sub>)

Y = allen wrench 4

W = wrench 24 - 42 Nm (31 lbf<sub>t</sub>)



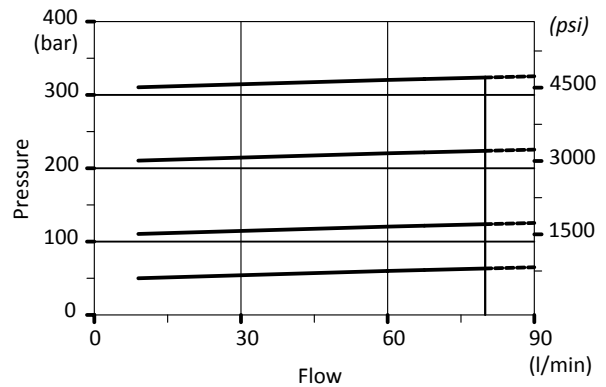
#### V: relief valve blanking plug



#### Wrenches and tightening torques

X = allen wrench 10 - 42 Nm (31 lbf<sub>t</sub>)

#### Performance data



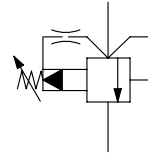
## Inlet section

### Inlet valve options

#### Pilot operated overpressure relief valve

30 05 4915 ( **Z - 100** )

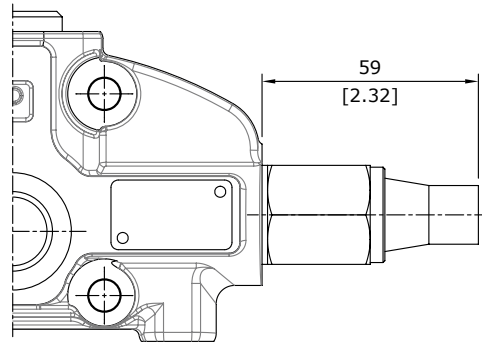
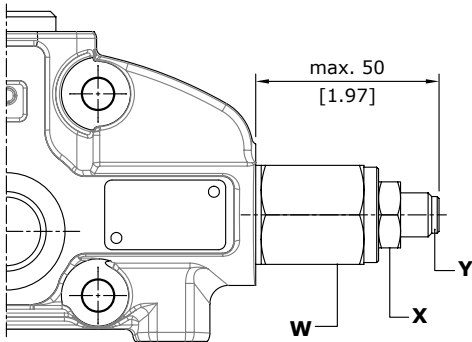
Configuration ——— Valve setting (bar)



#### Adjustment type

Configuration **Z** type: adjustable with screw

Configuration **ZH** type: valve set and locked

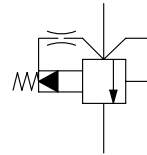
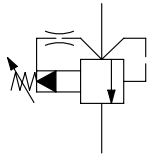


#### Wrenches and tightening torques

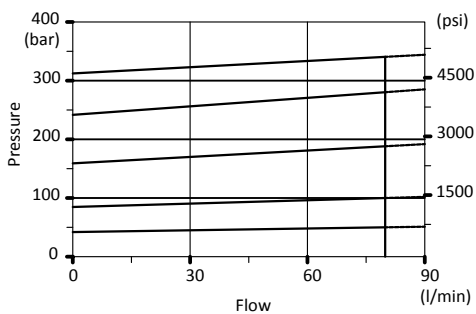
X = wrench 19 - 24 Nm (17.7 lbf<sub>t</sub>)

Y = allen wrench 5

W = wrench 27 - 42 Nm (31 lbf<sub>t</sub>)



#### Performance data



## Inlet section

### Inlet valve options

#### Unloader valves

Description example: AC (X - 100) **ELN** - 12VDC

Hydraulic operated valve: **L**  
 Solenoid operated valve: **ELN**  
**ELP**  
**ELT**

Feeding voltage:  
 for solenoid operated

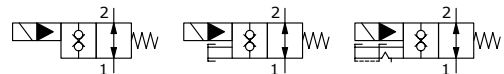
#### Solenoid operated

Emergency with push button and spring return; for detent position turn the button after press it.  
**WARNING:** the manual override option is intended for emergency use, not for continuous duty operation.

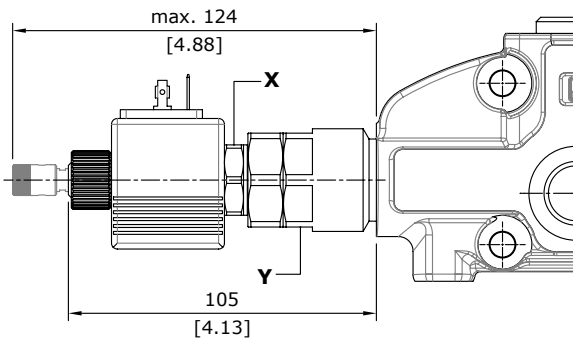
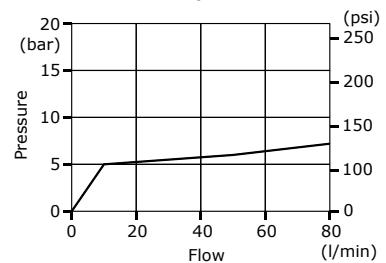
**ELN:** without emergency

**ELP:** push button type

**ELT:** "push & twist" type

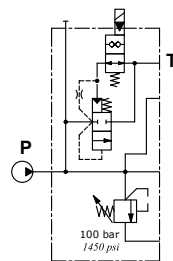


Pressure drop curve P → T

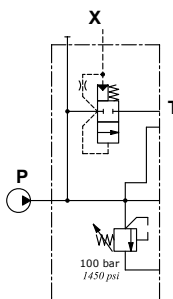
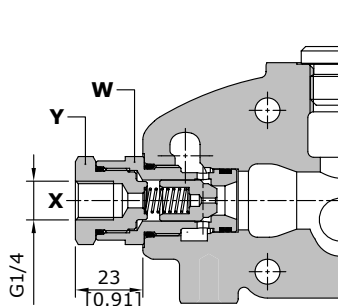


#### Wrenches and tightening torques

X = wrench 24 - 35 Nm (26 lbf<sub>t</sub>)  
 Y = wrench 32 - 42 Nm (31 lbf<sub>t</sub>)



#### Hydraulic operated

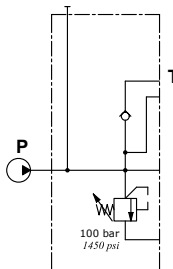
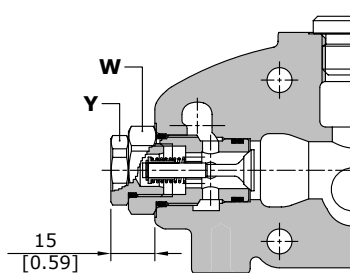


#### Wrenches and tightening torques

Y = wrench 27 - 42 Nm (31 lbf<sub>t</sub>)  
 W = wrench 27 - 42 Nm (31 lbf<sub>t</sub>)

#### Anti-cavitation valve

Description example: AC (X - 100) **F**



#### Wrenches and tightening torques

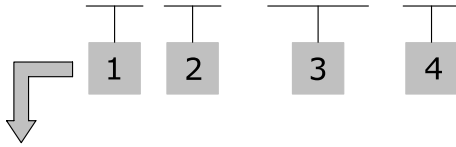
Y = wrench 22 - 24 Nm (17.7 lbf<sub>t</sub>)  
 W = wrench 27 - 42 Nm (31 lbf<sub>t</sub>)



## Inlet section for special applications

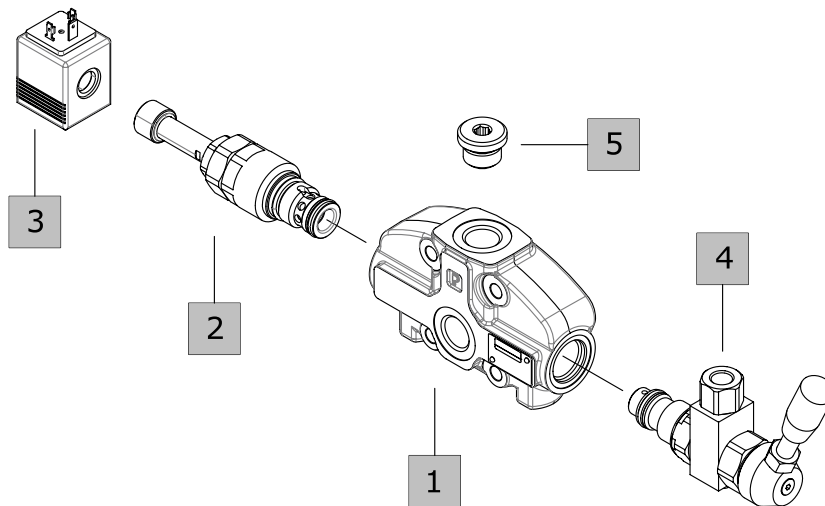
### Configuration with rotary commutator

#### 80L GS10 / AC ELN - 12VDC - R2



#### Available configurations

- AC:** with side inlet, for left inlet (standard) directional valve
- AD:** with upper inlet, for left inlet (standard) directional valve
- BC:** with side inlet, for right inlet directional valve
- BD:** with upper inlet, for right inlet directional valve



#### 1. Inlet cover body \* page 17

CODE : 30 08 5630  
 DESCRIPTION : Predisposition for rotary commutator

#### 2. Inlet valve options page 13

Standard setting is referred to 6 l/min flow.

##### INLET RELIEF OPTIONS

TYPE	CODE	DESCRIPTION
<b>V</b>	30 05 4914	Relief valve blanking plug
<b>Direct pressure relief valve X type (standard)</b>		
<b>(X-100)</b>	30 05 4912	Range 60-315 bar (870-4570 psi) standard setting 100 bar (1450 psi)

##### Pilot operated pressure relief valve Z type

<b>(Z-100)</b>	30 05 4915	Range 60-315 bar (870-4570 psi) standard setting 100 bar (1450 psi)
----------------	------------	------------------------------------------------------------------------

##### INLET VALVE OPTIONS

TYPE	CODE	DESCRIPTION
<b>F</b>	-	Inlet anti-cavitation valve
<b>L</b>	-	Hydraulic pilot unloader valve

##### Solenoid operated unloader valve

<b>ELN(NO)</b>	30 05 6108	Without emergency
<b>ELP(NO)</b>	30 05 6109	Push-button emergency
<b>ELT(NO)</b>	30 05 6110	Push and twist type with detent emergency
<b>ELN(NC)</b>	30 05 5032	Without emergency
<b>ELP(NC)</b>	30 05 5033	Push-button emergency
<b>ELT(NC)</b>	30 05 5034	Push and twist type with detent emergency

#### 3. Coils

TYPE	CODE	DESCRIPTION
<b>12VDC</b>	20 03 2268	Coil type <b>BER</b> , ISO4400 integrated type 12VDC
<b>24VDC</b>	20 03 2269	Coil type <b>BER</b> , ISO4400 integrated type 24VDC

#### 4. Commutator \*

TYPE	CODE	DESCRIPTION
<b>R2</b>	30 07 5430	Rotary commutator

#### 5. Parts \*

TYPE	CODE	DESCRIPTION
-	30 05 4919	G1/2 Plug

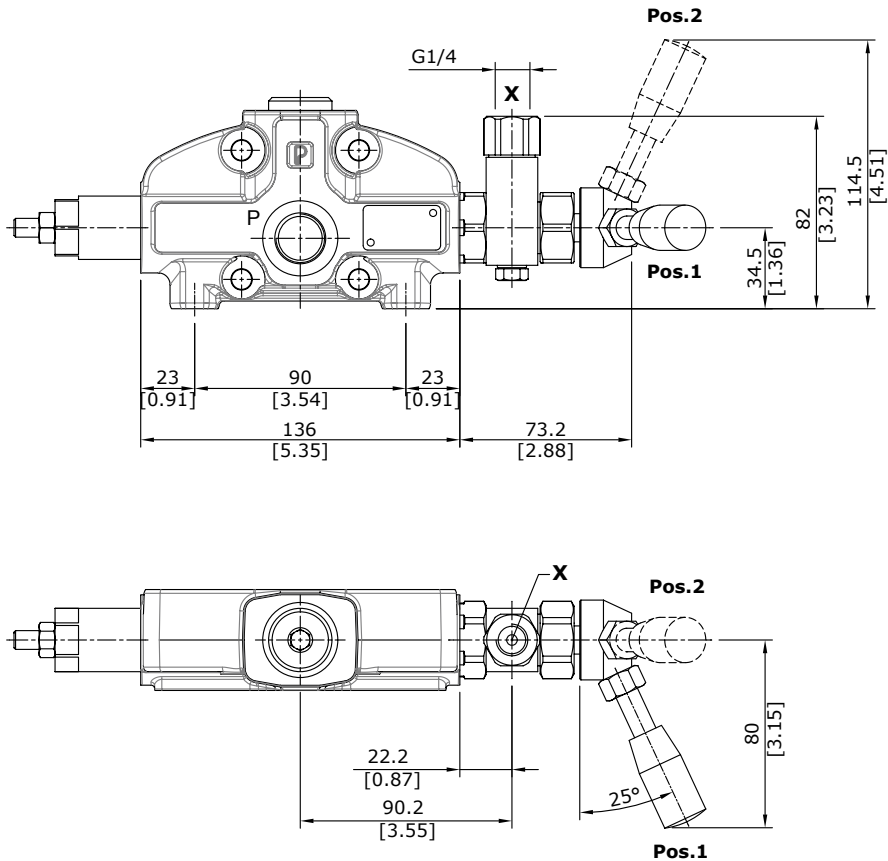
NOTE (\*) – Codes are referred to **BSP** thread.

## Inlet section for special applications

### Configuration with rotary commutator

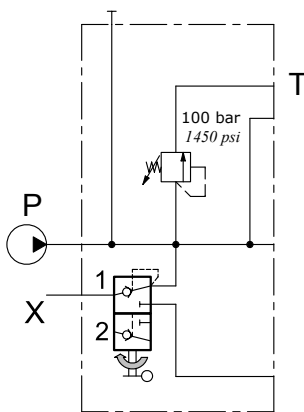
### Dimensional data and hydraulic circuit

Drawing and circuit are referred to left inlet directional valve.



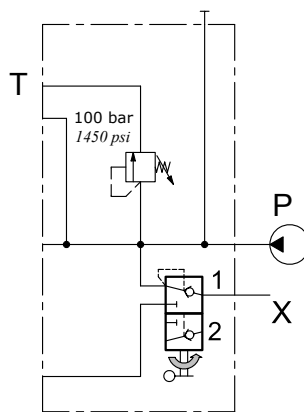
### Hydraulic circuit and ordering codes

#### Left inlet



AC(X-100)R2

#### Right inlet



BC(X-100)R2

#### Rotary commutator features

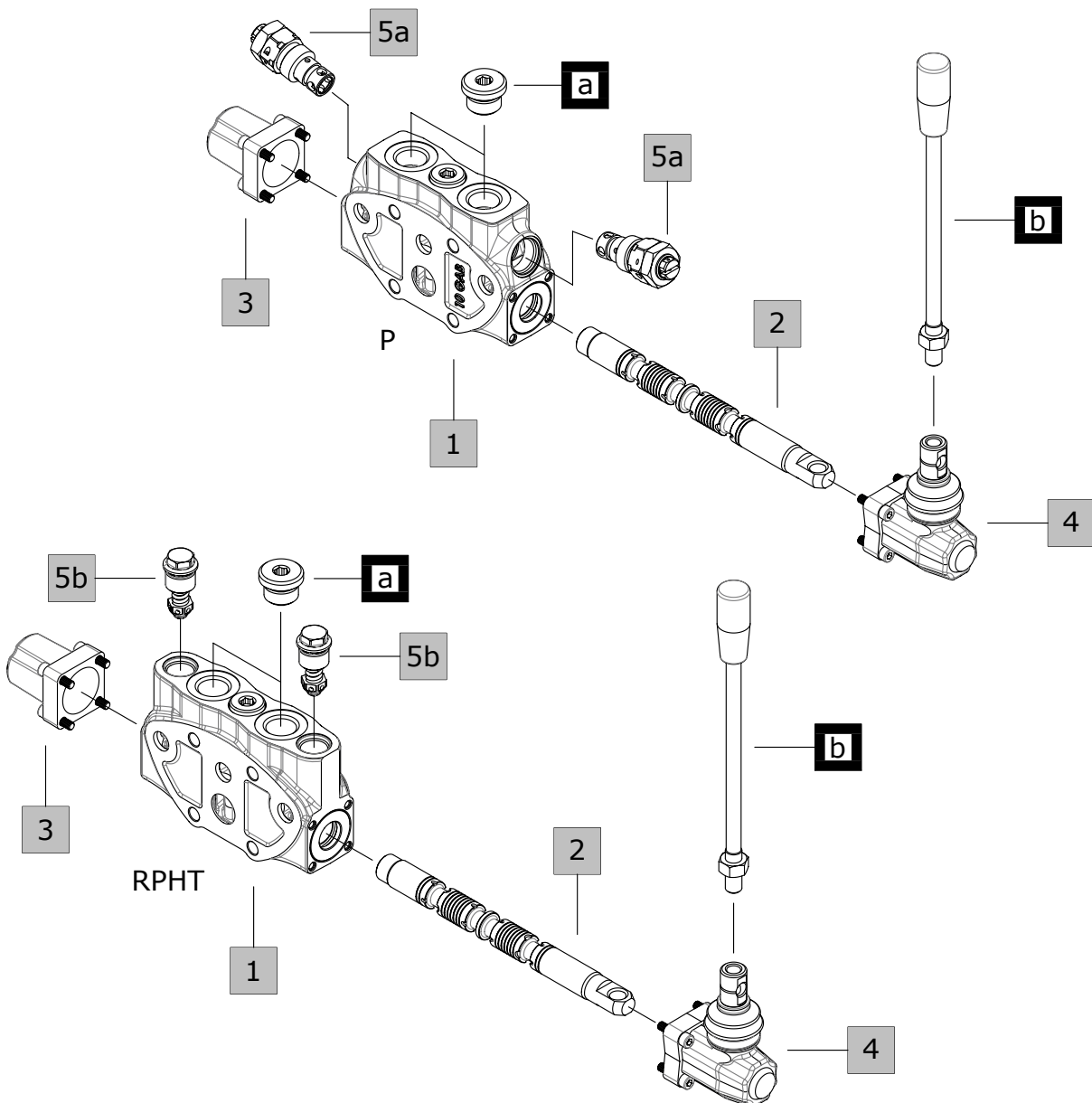
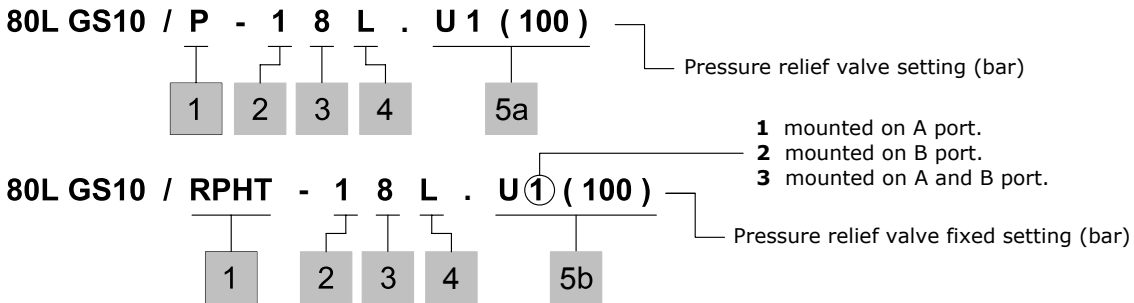
Max. pressure .....: 210 bar (3050 psi)

Internal leakage .....: 3 cm<sup>3</sup>/min @ 100 bar  
(0.18 in<sup>3</sup>/min @ 1450 psi)

## Working section

### Parts ordering codes (mechanical control)

#### Description example:



### Parts ordering codes (mechanical control)

#### 1. Working section kit \* page 21

TYPE	CODE	DESCRIPTION
<b>P</b>	30 08 5695	For parallel circuit, for valve with series circuit
<b>SP</b>	30 08 5843	For tandem circuit
<b>RPHT</b>	30 08 8555	For parallel circuit with upper arrangement for fixed setting port valves
<b>RPHSP</b>	30 08 8556	For tandem circuit with upper arrangement for fixed setting port valves
<b>RPHS</b>	30 08 8557	For series circuit
<b>RPHSBY</b>	30 08 8558	For parallel circuit with floating circuit with upper arrangement for fixed setting port valves

Include body, seals, rings and load check valve.

#### 2. Spools page 22

TYPE	CODE	DESCRIPTION
<b>1</b>	30 01 3556	Double acting, 3 positions, with A and B closed in neutral position
<b>1CSG</b>	30 01 3804	As type 1, with metering suggested for flow up to 70 l/min (18.5 US gpm)
<b>1A</b>	30 01 3559	Double acting, 3 positions, with A open to tank in neutral position
<b>1B</b>	30 01 3560	Double acting, 3 positions, with B open to tank in neutral position
<b>1AH</b>	30 01 3561	Double acting, 3 positions, with A partially open to tank in neutral position
<b>1BH</b>	30 01 3562	Double acting, 3 positions, with B partially open to tank in neutral position
<b>1TX</b>	30 01 3808	Double acting with A and B closed in neutral position, B partially connect to tank in position 1, A partially connect to tank in position 2
<b>2</b>	30 01 3557	Double acting, 3 positions, with A and B open to tank in neutral position
<b>2H</b>	30 01 3558	Double acting, 3 positions, with A and B partially open to tank in neutral position
<b>3</b>	30 01 3563	Single acting on A, 3 positions, B plugged; requires G1/2 plug
<b>4</b>	30 01 3564	Single acting on B, 3 positions, A plugged; requires G1/2 plug
<b>8F</b>	30 01 3567	Double acting, 3 positions, regenerative in position 1, <b>8CR type positioner kit is required</b>
<b>5BY</b>	30 01 3654	Double acting, 4 positions, float in position 3 with spool out, <b>13QN type positioner kit is required</b>

#### 3. "A" side spool positioners page 23

TYPE	CODE	DESCRIPTION
<b>8</b>	30 07 5349	With spring return in neutral position
<b>8D</b>	30 07 5352	As type 8, M8 female threaded pin extension for dual control
<b>8D1</b>	30 07 5551	As type 8, pin with Ø 8 mm (0.31 in) radial hole
<b>8D2</b>	30 07 5353	As type 8, M8 male threaded pin extension for dual control
<b>8TL</b>	30 07 5552	As type 8, for flexible cable control
<b>8F2</b>	30 07 5350	As type 8 with adjustable stroke limiter
<b>19</b>	30 07 5553	With spring return in position 0 from 1
<b>20</b>	30 07 5554	With spring return in position 0 from 2
<b>11</b>	30 07 5351	Detent in positions neutral, 1 and 2
<b>12</b>	30 07 5555	Detent in positions 1 and 2
<b>15</b>	30 07 5556	2 positions, detent in positions 1 and neutral
<b>16</b>	30 07 5557	2 positions, detent in positions 2 and neutral
<b>17</b>	30 07 5558	With spring return position 1
<b>18</b>	30 07 5559	With spring return position 2
<b>17D</b>	30 07 5560	With spring return position 1 and pin with M8 female thread for dual control
<b>18D</b>	30 07 5561	With spring return position 2 and pin with M8 female thread for dual control
<b>9B</b>	30 07 5386	With detent in position 1 and spring return in neutral position
<b>10B</b>	30 07 5387	With detent in position 2 and spring return in neutral position
<b>11B</b>	30 07 5388	Detent in positions 1 and 2 and spring return in neutral position
<b>8K</b>	30 07 7553	As type 8 and 12 VDC solenoid lock device
	30 07 7554	As previous, 24 VDC
<b>8MG1(NO)</b>	30 07 7538	As type 8, operation with microswitch (NO) in position 1
<b>8MG1(NC)</b>	30 07 7539	As previous, (NC)
<b>8MG2(NO)</b>	30 07 7536	As type 8, operation with microswitch (NO) in position 2
<b>8MG2(NC)</b>	30 07 7537	As previous, (NC)
<b>8MG3(NO)</b>	30 07 5562	As type 8, operation with microswitch (NO) in positions 1 and 2
<b>8MG3(NC)</b>	30 07 5563	As previous, (NC)
<b>8P</b>	30 07 5399	ON/OFF pneumatic kit
<b>8PF</b>	30 07 5596	Proportional pneumatic kit
<b>8EP3</b>	30 07 5443	12 VDC ON/OFF electro-pneumatic kit
	30 07 5400	24 VDC ON/OFF electro-pneumatic kit
<b>8EP4</b>	30 07 5345	12 VDC ON/OFF electro-pneumatic kit with manifold
	30 07 5346	24 VDC ON/OFF electro-pneumatic kit with manifold
<b>8IZ</b>	30 07 7542	Unilateral hydraulic proportional spool control kit
<b>8EI3</b>	30 07 5401	12 VDC ON/OFF electro-hydraulic kit
	30 07 5361	24 VDC ON/OFF electro-hydraulic kit
<b>8EI3F</b>	30 07 7565	12 VDC Proportional electro-hydraulic kit
	30 07 7566	24 VDC Proportional electro-hydraulic kit
<b>13QN</b>	30 07 5564	4 positions with spring return in neutral position and detent in pos.3:
		<b>for 5BY spool</b>
<b>8CR</b>	30 07 5565	3 positions with spring return in neutral and reduced spool stroke: <b>for 8F spool</b>

NOTE (\*) – Codes are referred to **BSP** thread.

## Working section

### Parts ordering codes (mechanical control)

4. "B" side options <span style="float: right;">page 34</span>		
TYPE	CODE	DESCRIPTION
<b>L</b>	30 07 5363	Standard lever box
<b>LF1</b>	30 07 5365	Lever box with spool stroke limiter in position 1
<b>LB</b>	30 07 5367	Steel lever kit (LB1-LB3)
	30 07 7623	Steel lever kit (LB2-LB4)
	30 07 7557	Steel lever kit (LB5-LB7)
<b>LCB</b>	30 07 5370	Joystick lever for 2 sections operation
<b>SL</b>	-	Without lever box
<b>SLP</b>	30 07 5366	Without lever box, with dust-proof plate
<b>TQ</b>	30 07 5354	Flexible cable connection; for CT cables
<b>LEB</b>	30 07 5369	Safety lever box, vertical configuration
<b>SLCZ</b>	30 07 5347	Without lever box, with endcap.

5a Adjustable port valves <span style="float: right;">page 44</span>		
TYPE	CODE	DESCRIPTION
<b>P3T</b>	30 05 4940	Valve blanking plug
<b>C</b>	-	Anticavitation valve
<b>Anti-shock valve</b>		
<b>P</b>	30 05 6195	From 0 to 315 bar / 0 to 4600 psi standard setting 100 bar / 1450 psi
<b>Anti-shock and anti-cavitation valve</b>		
<b>U</b>	30 05 4908	From 0 to 315 bar / 0 to 4600 psi standard setting 100 bar / 1450 psi

5b Fixed setting port valves <span style="float: right;">page 47</span>		
TYPE	CODE	DESCRIPTION
<b>For RPH... working section kit</b>		
<b>P3T</b>	30 05 6234	Valve blanking plug
<b>C</b>	30 05 6307	Anticavitation valve
<b>Fixed setting antishock and anticavitation valves:</b> setting is referred to 6 l/min		
TYPE : <b>U 100</b>	CODE : 30 05 02 <b>100</b>	
└── setting (bar) ──┘	└── setting (bar) ──┘	
<b>U020</b>	30 05 02020	Setting 20 bar (290 psi)
<b>U030</b>	30 05 02030	Setting 30 bar (435 psi)
<b>U040</b>	30 05 02040	Setting 40 bar (580 psi)
<b>U050</b>	30 05 02050	Setting 50 bar (725 psi)
<b>U060</b>	30 05 02060	Setting 60 bar (870 psi)
<b>U080</b>	30 05 02080	Setting 80 bar (1160 psi)
<b>U100</b>	30 05 02100	Setting 100 bar (1450 psi)
<b>U110</b>	30 05 02110	Setting 110 bar (1595 psi)
<b>U125</b>	30 05 02125	Setting 125 bar (1800 psi)
<b>U140</b>	30 05 02140	Setting 140 bar (2030 psi)
<b>U150</b>	30 05 02150	Setting 150 bar (2175 psi)
<b>U160</b>	30 05 02160	Setting 160 bar (2320 psi)
<b>U175</b>	30 05 02175	Setting 175 bar (2550 psi)
<b>U190</b>	30 05 02190	Setting 190 bar (2750 psi)
<b>U200</b>	30 05 02200	Setting 200 bar (2900 psi)
<b>U210</b>	30 05 02210	Setting 210 bar (3050 psi)
<b>U220</b>	30 05 02220	Setting 220 bar (3190 psi)
<b>U230</b>	30 05 02230	Setting 230 bar (3350 psi)
<b>U240</b>	30 05 02240	Setting 240 bar (3500 psi)
<b>U250</b>	30 05 02250	Setting 250 bar (3600 psi)
<b>U260</b>	30 05 02260	Setting 260 bar (3750 psi)
<b>U270</b>	30 05 02270	Setting 270 bar (3900 psi)
<b>U280</b>	30 05 02280	Setting 280 bar (4050 psi)
<b>U290</b>	30 05 02290	Setting 290 bar (4200 psi)
<b>U300</b>	30 05 02300	Setting 300 bar (4350 psi)

NOTE (\*) - Codes are referred to **BSP** thread.

5b Fixed setting port valves (continued)		
TYPE	CODE	DESCRIPTION
<b>U310</b>	30 05 02310	Setting 310 bar (4500 psi)
<b>U320</b>	30 05 02320	Setting 320 bar (4650 psi)
<b>U330</b>	30 05 02330	Setting 330 bar (4800 psi)
<b>U340</b>	30 05 02340	Setting 340 bar (4930 psi)
<b>U350</b>	30 05 02350	Setting 350 bar (5075 psi)
<b>U360</b>	30 05 02360	Setting 360 bar (5220 psi)
<b>U370</b>	30 05 02370	Setting 370 bar (5365 psi)
<b>U380</b>	30 05 02380	Setting 380 bar (5510 psi)
<b>U390</b>	30 05 02390	Setting 390 bar (5650 psi)
<b>U400</b>	30 05 02400	Setting 400 bar (5800 psi)
<b>U410</b>	30 05 02410	Setting 410 bar (5950 psi)
<b>U420</b>	30 05 02420	Setting 420 bar (6090 psi)

6. Complete controls * <span style="float: right;">page 40</span>		
TYPE	CODE	DESCRIPTION
<b>ON/OFF Hydraulic control</b>		
<b>8IM</b>	30 07 5414	ON/OFF Hydraulic control
<b>8IMF3</b>	30 07 7569	With screws spool stroke adjusting.
<b>13IM</b>	30 07 7622	For floating circuit. <b>need RPH5BY working section and 5BY spool type</b>
<b>Proportional hydraulic kit</b>		
<b>8IMSPSD</b>	30 07 7559	With spool position sensor execution. (ON/OFF)
<b>8IMSPSL</b>	30 07 7562	With spool position sensor execution.
<b>Rotative control type</b>		
<b>R</b>	30 07 5373	Rotative control type

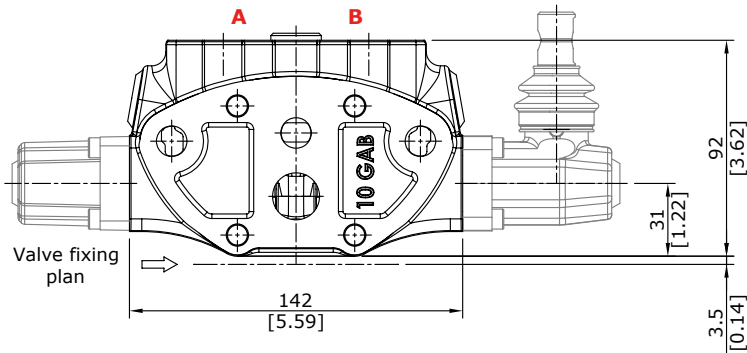
a. Port plugs *		
TYPE	CODE	DESCRIPTION
<b>G1/2</b>	30 05 4919	G1/2 Plug

b. Optional handlevers		
TYPE	CODE	DESCRIPTION
<b>M10x225</b>	20 03 2381	Lenght L = 225mm / 8.86in

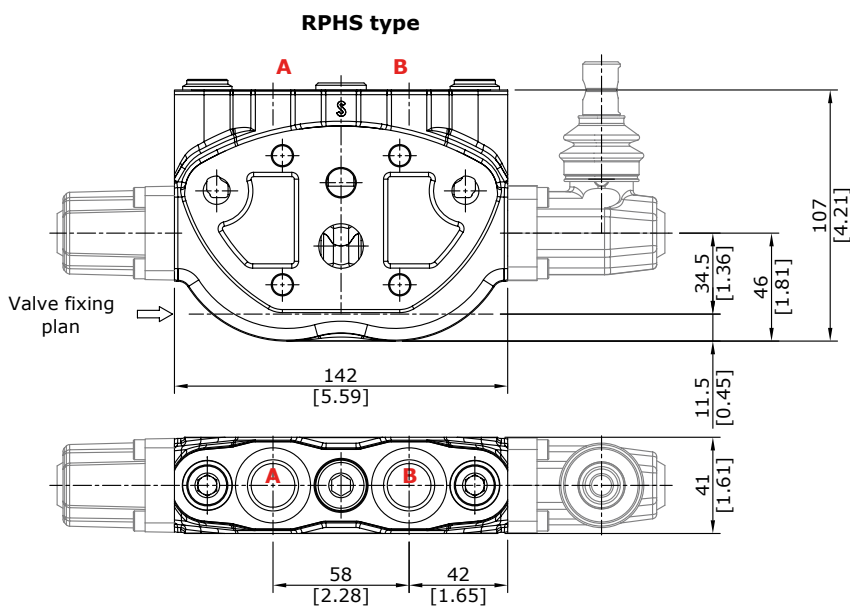
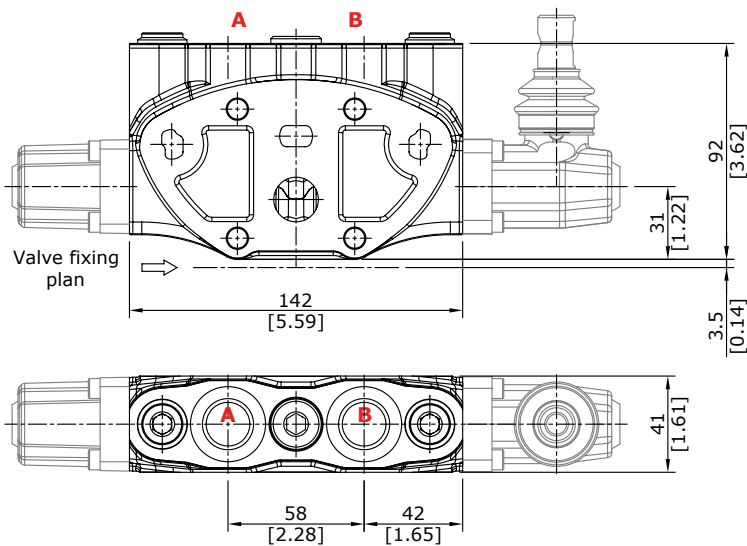
## Working section

### Dimensional data and hydraulic circuit

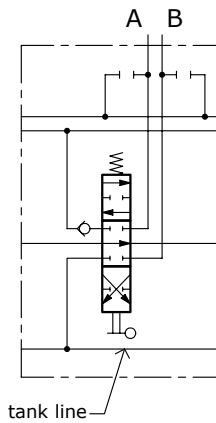
**P type**  
(Dimensions are the same for SP type)



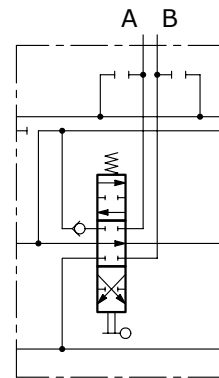
**RPHT type**  
(Dimensions are the same for RPHSP/RPH5BY type)



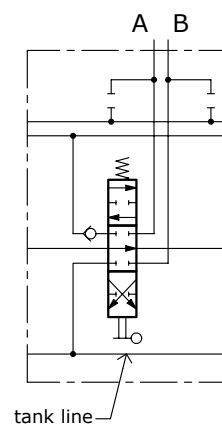
**P type**



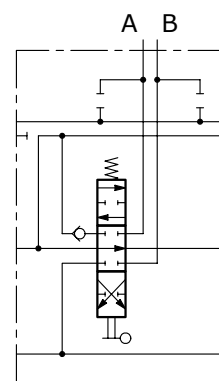
**SP type**



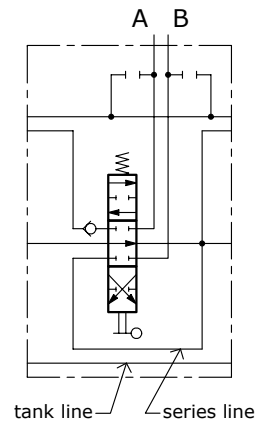
**RPHT type**



**RPHSP type**



**RPHS type**

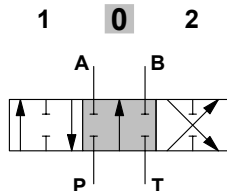


## Working section

### Spools options

#### 1 (30 01 3556), 1CSG (30 01 3804) spool type

Double acting, 3 positions, with A and B closed in neutral position

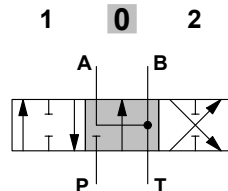


##### Spool stroke

position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

#### 2 (30 01 3557) spool type

Double acting, 3 positions, with A and B open to tank in neutral position

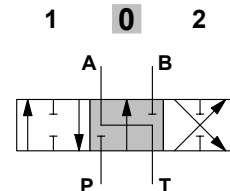


##### Spool stroke

position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

#### 1A (30 01 3559) spool type

Double acting, 3 positions, with A open to tank in neutral position

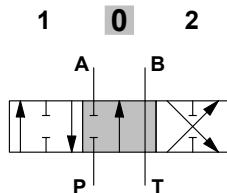


##### Spool stroke

position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

#### 1B (30 01 3560) spool type

Double acting, 3 positions, with B open to tank in neutral position

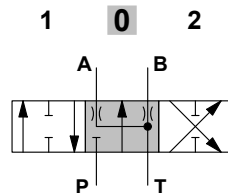


##### Spool stroke

position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

#### 2H (30 01 3558) spool type

Double acting, 3 positions, with A and B partially open to tank in neutral position

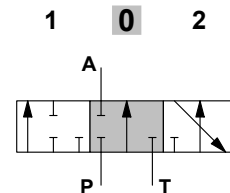


##### Spool stroke

position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

#### 3 (30 01 3563) spool type

Single acting on A, 3 positions, B plugged; requires G1/2 plug

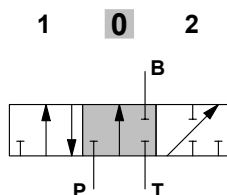


##### Spool stroke

position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

#### 4 (30 01 3564) spool type

Single acting on B, 3 positions, A plugged; requires G1/2 plug

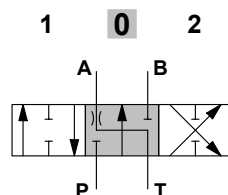


##### Spool stroke

position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

#### 1AH (30 01 3561) spool type

Double acting, 3 positions, with A partially open to tank in neutral position

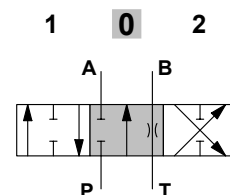


##### Spool stroke

position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

#### 1BH (30 01 3562) spool type

Double acting, 3 positions, with B partially open to tank in neutral position

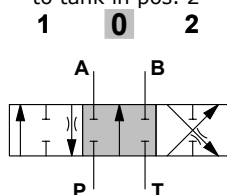


##### Spool stroke

position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

#### 1TX (30 01 3808) spool type

Double acting with A and B closed in neutral position, B partially connect to tank in pos. 1, A partially connect to tank in pos. 2

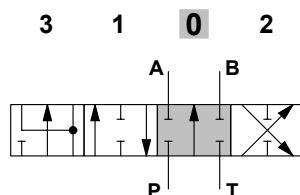


##### Spool stroke

position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

#### 5BY (30 01 3654) spool type

Double acting, with A and B closed in neutral position, 4 positions, floating in position 3, with spool out

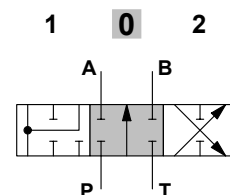


##### Spool stroke

position 1: + 5.5 mm (+ 0.22 in)  
position 2: - 5.5 mm (- 0.22 in)  
position 3: + 10.5 mm (+ 0.41 in)

#### 8F (30 01 3567) spool type

Double acting, 3 positions, regenerative circuit in 2<sup>nd</sup> position (pos.1)



##### Spool stroke

position 1: + 5.7 mm (+ 0.23 in)  
position 2: - 5.7 mm (- 0.23 in)

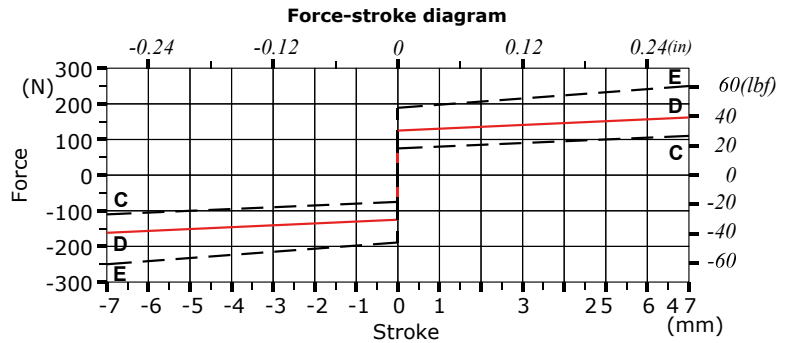
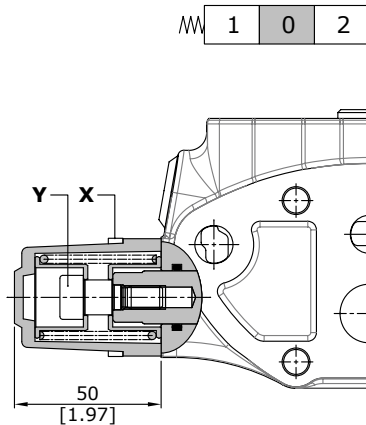
## Working section

### "A" side spool positioners

#### With spring return in neutral position

##### 8 type (30 07 5349)

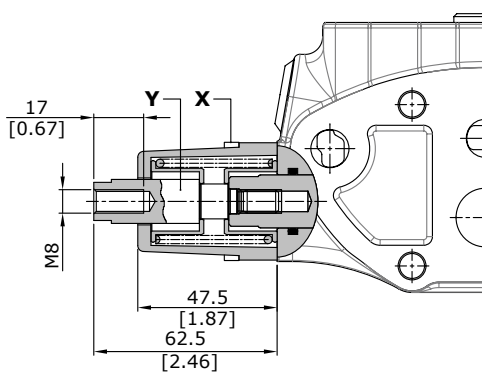
It's supplied with standard spring type D (see force-stroke diagram) and available with lighter spring type C (**8MC**) or heavier type E (**8ME**).



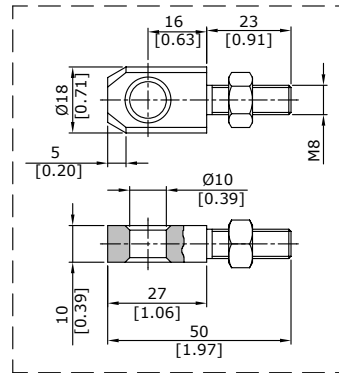
**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbf)  
 Y = allen wrench 6 - 24 Nm (17.7 lbf)

##### 8D type (30 07 5352)

With M8 female threaded pin extension for dual control.



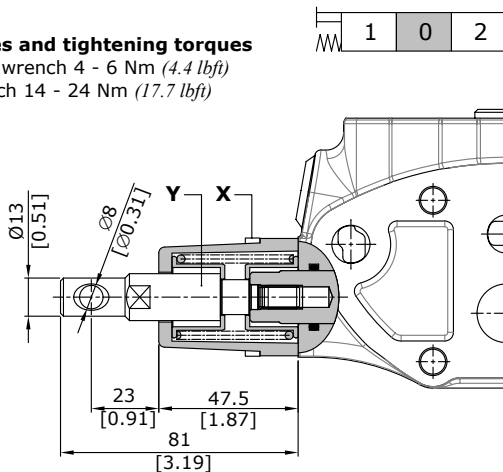
#### Spool end joint dimensions (optional)



**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbf)  
 Y = wrench 13 - 24 Nm (17.7 lbf)

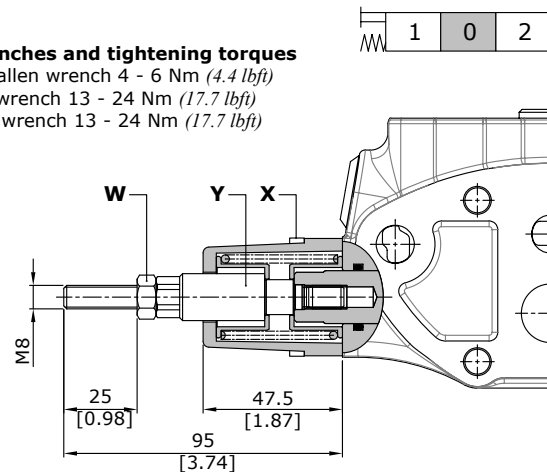
##### 8D1 type (30 07 5551)

**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbf)  
 Y = wrench 14 - 24 Nm (17.7 lbf)



##### 8D2 type (30 07 5353)

**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbf)  
 Y = wrench 13 - 24 Nm (17.7 lbf)  
 W = wrench 13 - 24 Nm (17.7 lbf)



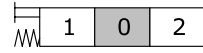
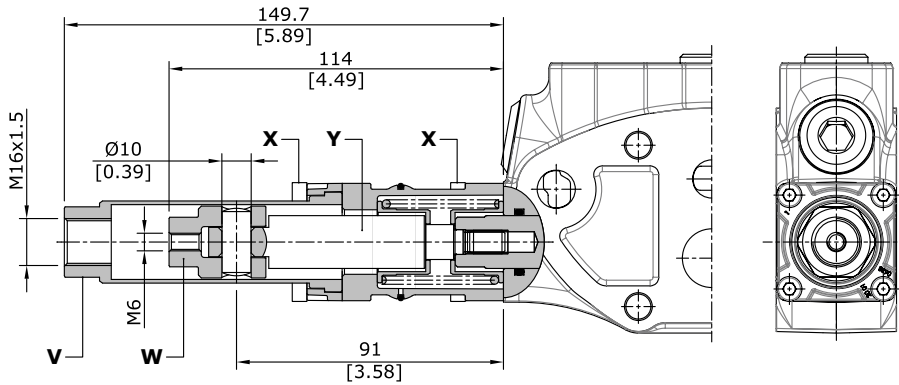


## Working section

### "A" side spool positioners

#### With spring return in neutral position

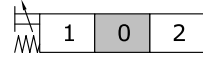
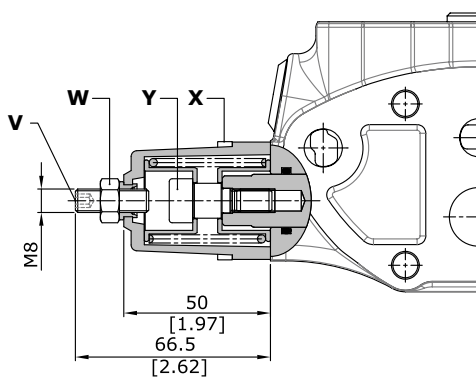
#### 8TL type (30 07 5552)



**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = wrench 10 - 24 Nm (17.7 lbft)  
 W = wrench 17  
 V = wrench 24

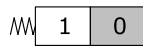
#### 8F2 type (30 07 5350)

With spool stroke adjustment in position 2 (P→B)

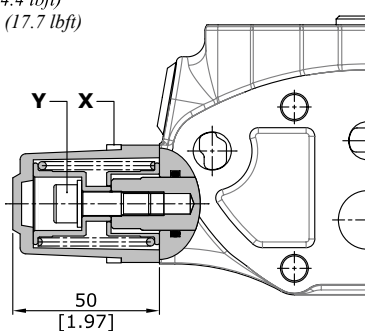


**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = allen wrench 6 - 24 Nm (17.7 lbft)  
 W = wrench 13 - 24 Nm (17.7 lbft)  
 V = allen wrench 4

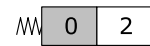
#### 19 type (30 07 5553)



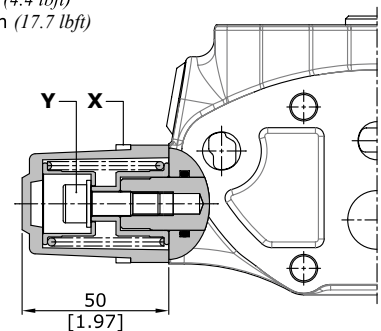
**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = allen wrench 6 - 24 Nm (17.7 lbft)



#### 20 type (30 07 5554)



**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = allen wrench 6 - 24 Nm (17.7 lbft)

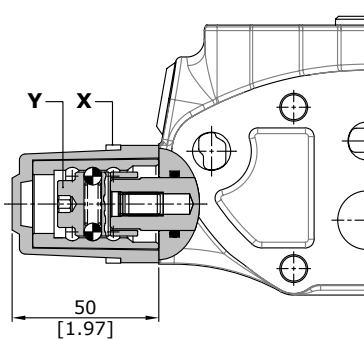
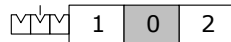


## Working section

### "A" side spool positioners

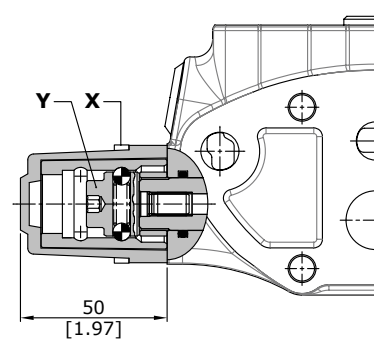
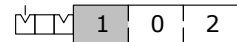
#### With detent

#### 11 type (30 07 5351)



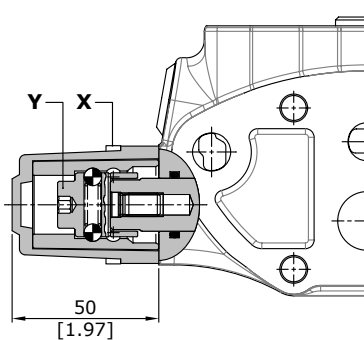
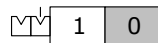
**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = allen wrench 6 - 24 Nm (17.7 lbft)

#### 12 type (30 07 5555)



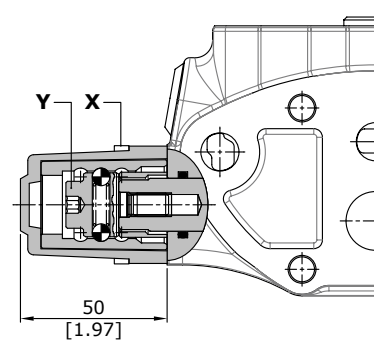
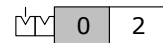
**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = allen wrench 6 - 24 Nm (17.7 lbft)

#### 15 type (30 07 5556)



**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = allen wrench 6 - 24 Nm (17.7 lbft)

#### 16 type (30 07 5557)



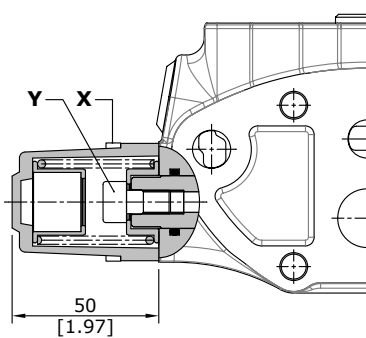
**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = allen wrench 6 - 24 Nm (17.7 lbft)

## Working section

### "A" side spool positioners

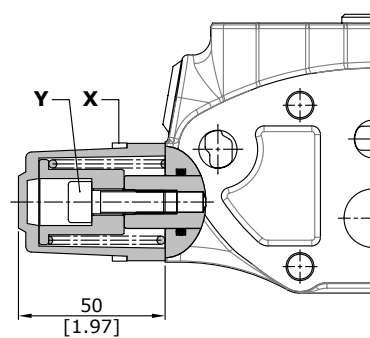
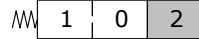
#### With spring return

#### 17 type (30 07 5558)



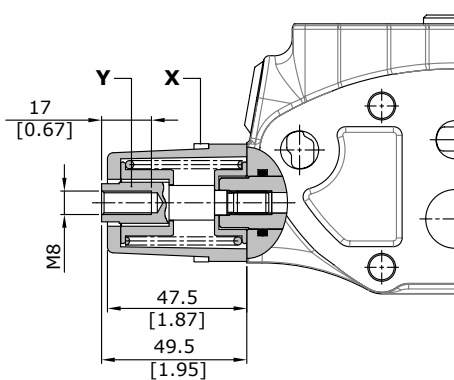
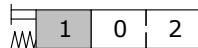
**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = allen wrench 6 - 24 Nm (17.7 lbft)

#### 18 type (30 07 5559)



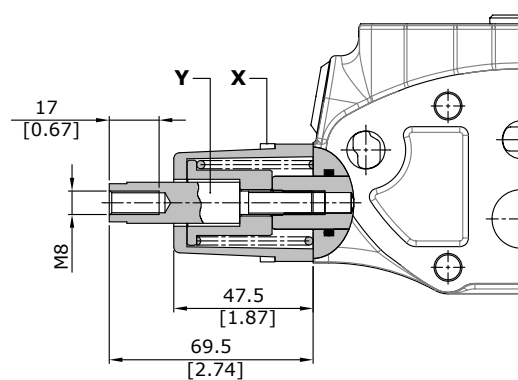
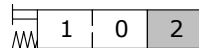
**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = allen wrench 6 - 24 Nm (17.7 lbft)

#### 17D type (30 07 5560)



**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = wrench 13 - 24 Nm (17.7 lbft)

#### 18D type (30 07 5561)

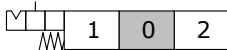


**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = wrench 13 - 24 Nm (17.7 lbft)

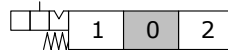
**"A" side spool positioners**

With detent and spring return to neutral position from either directions

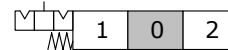
**9B type (30 07 5386)**  
detent in position 1  
(curve A)



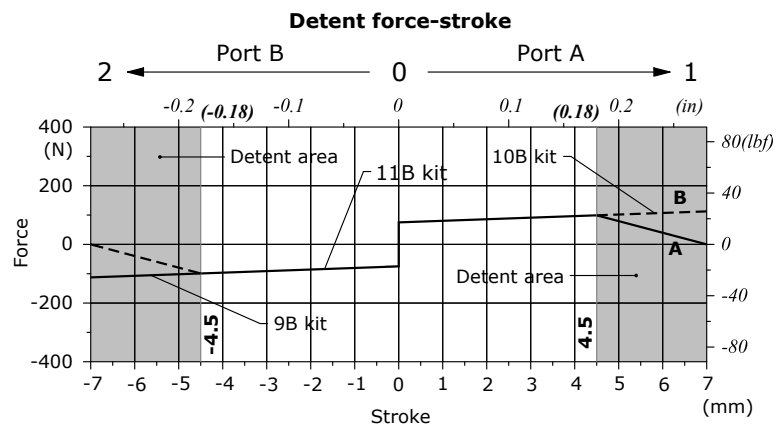
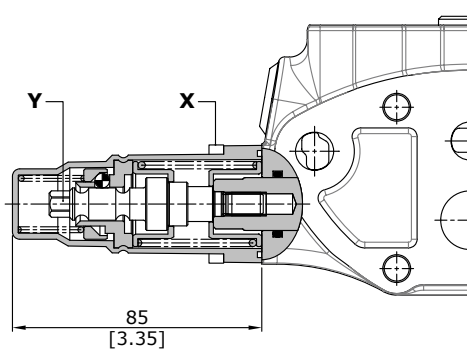
**10B type (30 07 5387)**  
detent in position 2  
(curve B)



**11B type (30 07 5388)**  
detent in position 1 and 2  
(curves A and B)



**11B type**



**Wrenches and tightening torques**

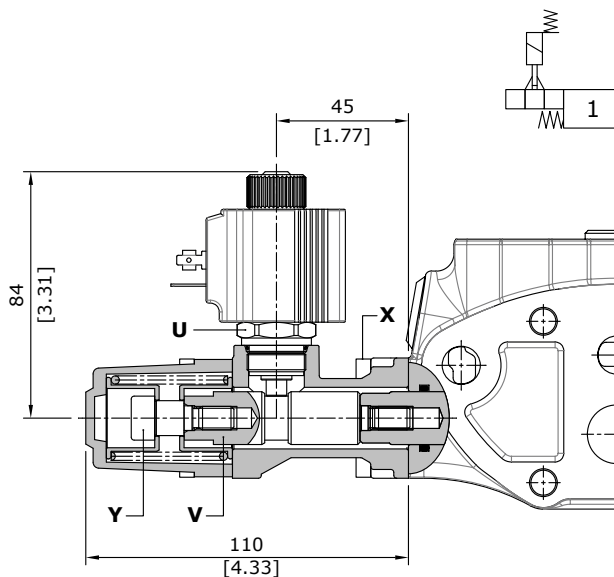
X = allen wrench 4 - 6 Nm (4.4 lbft)  
Y = wrench 8 - 9 Nm (6.6 lbft)

**Position 1** - Detent force: 130 N (29.2 lbft) ± 10% / Release force: 215 N (48.3 lbft) ± 10%

**Position 2** - Detent force: 145 N (32.6 lbft) ± 10% / Release force: 300 N (67.4 lbft) ± 10%

**Solenoid lock device 8K type (30 07 7553)**

With spring return and spool electromechanical lock in neutral position; when coil is feeded the spool can be moved. it's possible to obtain further configurations with several "A" side spool positioners: contact Sales Dept.



**Wrenches and tightening torques**

X = allen wrench 4 - 6 Nm (4.4 lbft)  
Y = allen wrench 6 - 24 Nm (17.7 lbft)  
V = wrench 15 - 24 Nm (17.7 lbft)  
U = wrench 24 - 24 Nm (17.7 lbft)

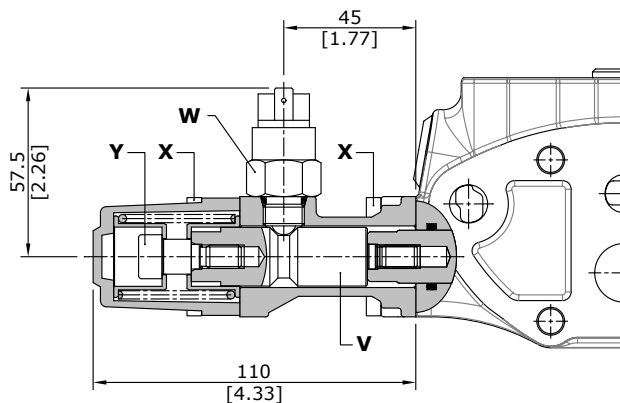
## Working section

### "A" side spool positioners

#### With microswitch

#### 8MG3(NO) type (30 07 5562)

With spring return in neutral position and microswitch operated in both directions.  
 Also available **8MG1(NO)** (microswitch operated in position 1) and **8MG2(NO)** (microswitch operated in position 2) configurations; dimension are the same of **8MG3(NO)** configuration.  
 Same configurations are available with normally closed (NC) contact.  
 For more information contact Sales Department.

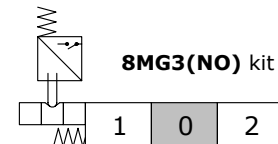


#### Wrenches and tightening torques

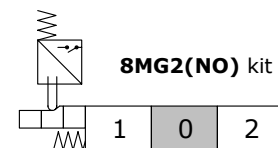
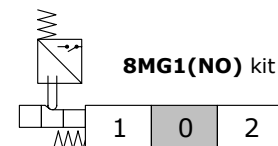
- X = allen wrench 4 - 6 Nm (4.4 lbf<sup>t</sup>)
- Y = allen wrench 6 - 24 Nm (17.7 lbf<sup>t</sup>)
- W = wrench 22 - 42 Nm (31 lbf<sup>t</sup>)
- V = wrench 17 - 9.8 Nm (7.2 lbf<sup>t</sup>)

#### Operating features

- MICROSWITCH**
- Mechanical life : 5x10<sup>5</sup> operations
  - Electrical life (resistive load) : 5x10<sup>4</sup> operations 10A / 12VDC
  - : 5x10<sup>4</sup> operations 3A / 24VDC

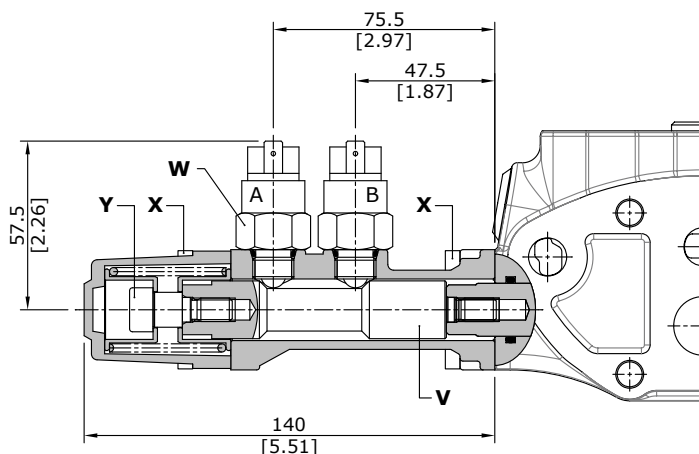


#### Other configurations



#### 8MG1\MG2(NC\NC) type (30 07 5360)

With double microswitch in position 1 and 2.

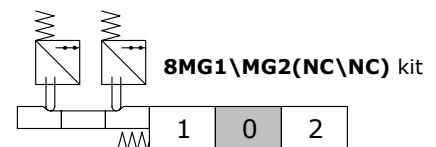


#### Wrenches and tightening torques

- X = allen wrench 4 - 6 Nm (4.4 lbf<sup>t</sup>)
- Y = allen wrench 6 - 24 Nm (17.7 lbf<sup>t</sup>)
- W = wrench 22 - 42 Nm (31 lbf<sup>t</sup>)
- V = wrench 17 - 9.8 Nm (7.2 lbf<sup>t</sup>)

#### Operating features

- MICROSWITCH**
- Mechanical life : 5x10<sup>5</sup> operations
  - Electrical life (resistive load) : 5x10<sup>4</sup> operations 10A / 12VDC
  - : 5x10<sup>4</sup> operations 3A / 24VDC



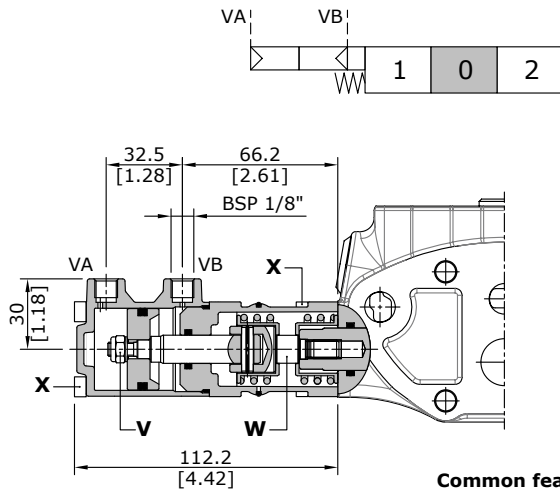
Positions	A	B
1		
0		
2		

## "A" side spool positioners

### ON/OFF pneumatic kit and proportional pneumatic kit

#### ON/OFF pneumatic: 8P type (30 07 5399)

With spring return to neutral position.

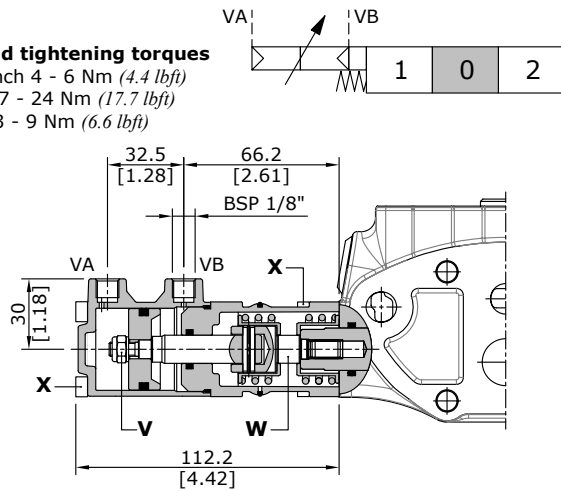


#### Proportional pneumatic: 8PF type (30 07 5596)

With spring return to neutral position.

#### Wrenches and tightening torques

- X = allen wrench 4 - 6 Nm (4.4 lbft)
- W = wrench 17 - 24 Nm (17.7 lbft)
- V = wrench 13 - 9 Nm (6.6 lbft)



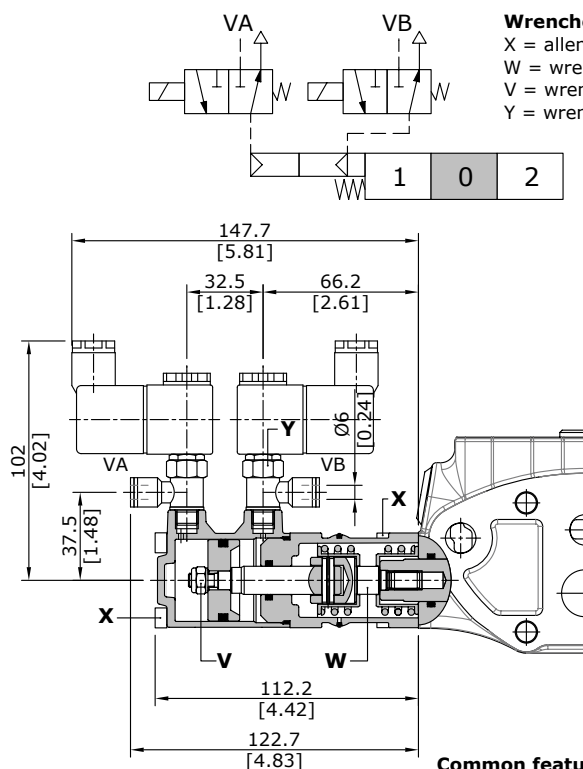
#### Common features

Pilot pressure.....: min. 5.5 bar (min. 80 psi)  
: max. 10 bar (min. 145 psi)

### ON/OFF electro-pneumatic kit

#### Electro-pneumatic: 8EP3 type

With spring return to neutral position.

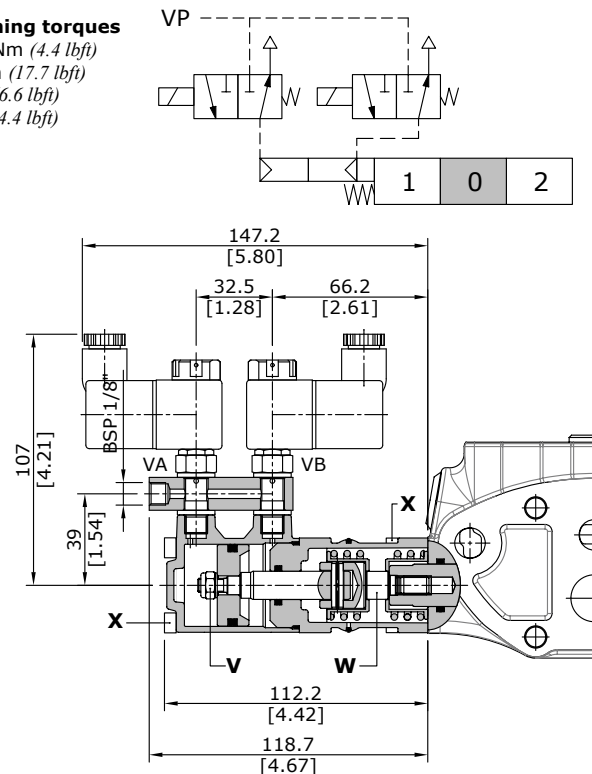


#### Common features

Pilot pressure.....: min. 5.5 bar (min. 80 psi)  
: max. 10 bar (min. 145 psi)

#### Electro-pneumatic: 8EP4 type

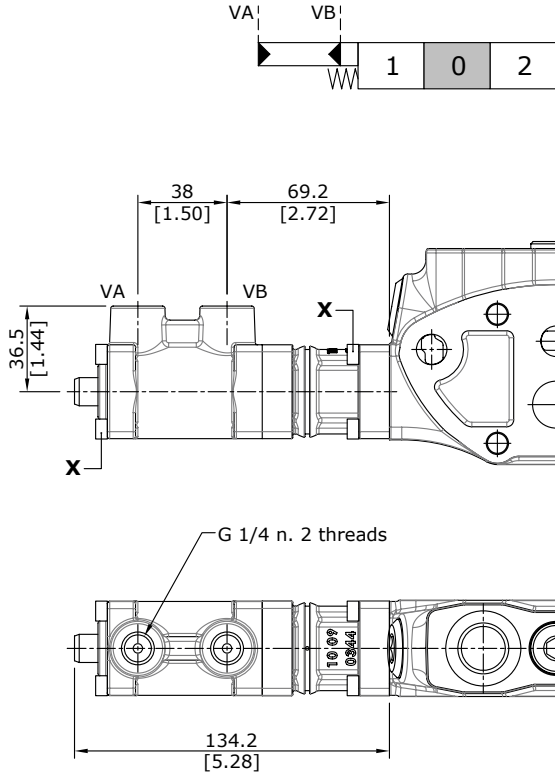
With spring return to neutral position.



## Working section

"A" side spool positioners

Unilateral hydraulic proportional spool control kit 8IZ (30 07 7542)



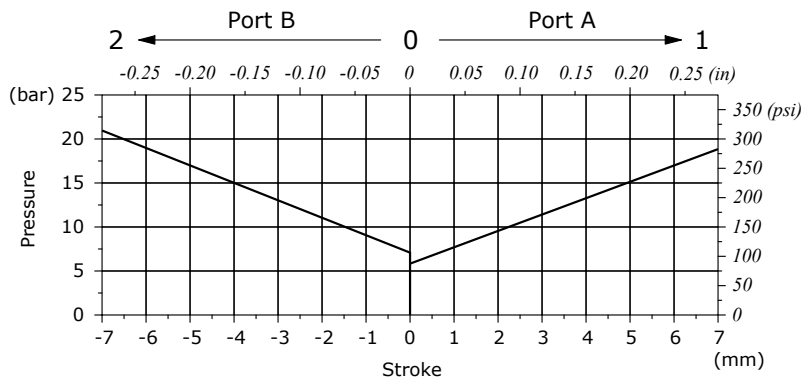
### Wrenches and tightening torques

X = allen wrench 4 - 6 Nm (4.4 lbft)

### Features

adjustment range .....: from 8 to 22 bar  
(from 110 to 310 psi)

Pressure - stroke diagram







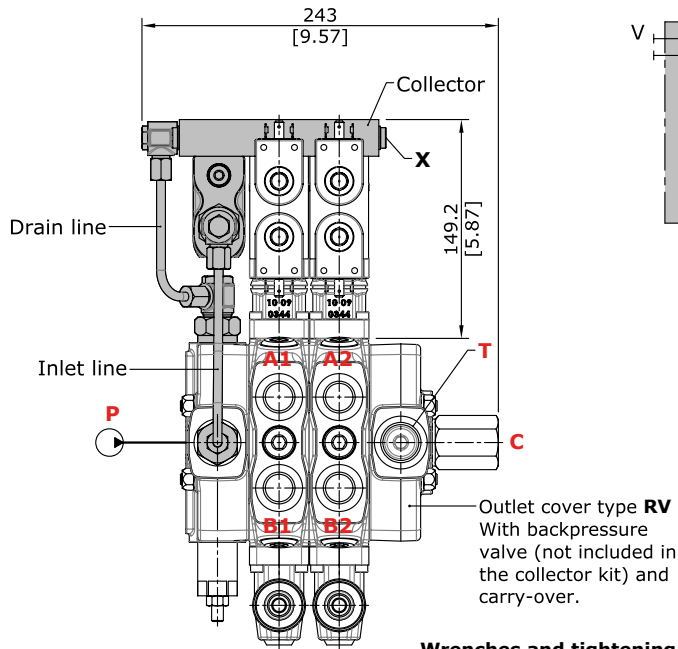
## Working section

"A" side spool positioners

### ON/OFF electro-hydraulic kit 8E13 type

#### Collector kit for internal pilot and drain

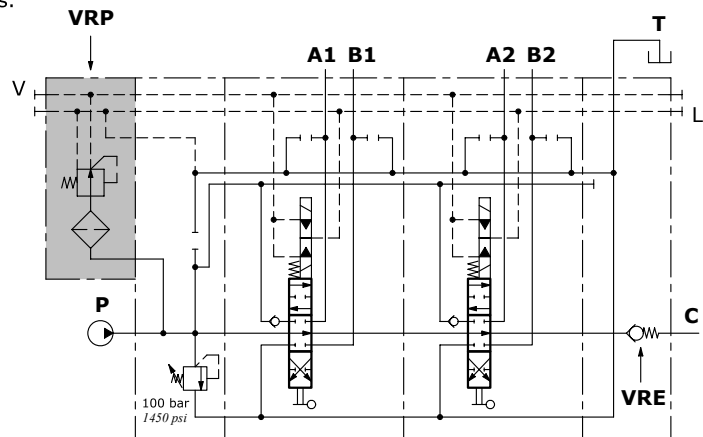
The kit include collector, VRP pressure reducing valve and pipes.



**Wrenches and tightening torques**  
X = allen wrench 5 - 24 Nm (17.7 lbf<sub>t</sub>)

Description example:  
80L GS10/2/AC(X-100)/  
18E13L/18E13L/  
RV-KE2R3-24VDC

**Features**  
VRP VALVE  
Output pressure..... : 25 bar / 363 psi  
Max. flow..... : 8 l/min  
Filtering..... : 80 μ



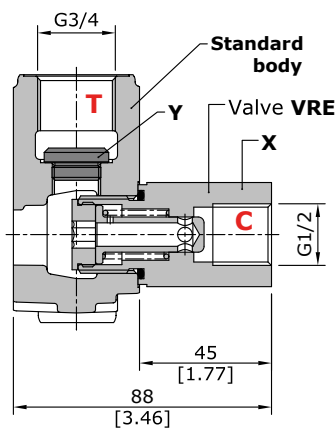
#### COLLECTOR KIT CODES

Type	Code *	Description
KE1R3	30 07 5488	Kit for one section
KE2R3	30 07 5489	Kit for 2 sections
KE3R3	30 07 5490	Kit for 3 sections
KE4R3	30 07 5491	Kit for 4 sections
KE5R3	30 07 5492	Kit for 5 sections
KE6R3	30 07 5493	Kit for 6 sections
KE7R3	-	Kit for 7 sections

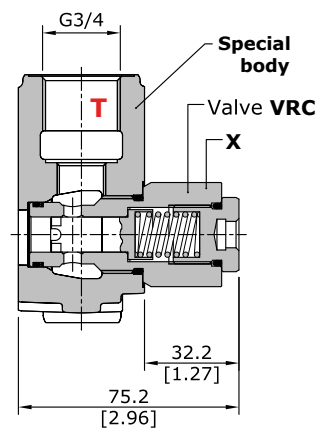
(\*) codes are referred to BSP thread

### VRE - VRC backpressure valve

Valve assembled on flow through passage to provide pilot pressure to the actuator.



**Wrenches and tightening torques**  
X = wrench 32 - 42 Nm (31 lbf<sub>t</sub>)  
Y = Allen wrench 8 - 42 Nm (31 lbf<sub>t</sub>)



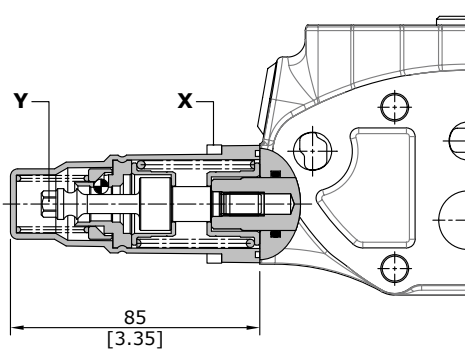
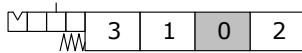
**Wrenches and tightening torques**  
X = wrench 32 - 42 Nm (31 lbf<sub>t</sub>)

## "A" side spool positioners

### Particular positioner kits for special spools

#### 13QN type (30 07 5564)

4 positions with spring return in neutral and detent in position 3: **for 5BY spool.**

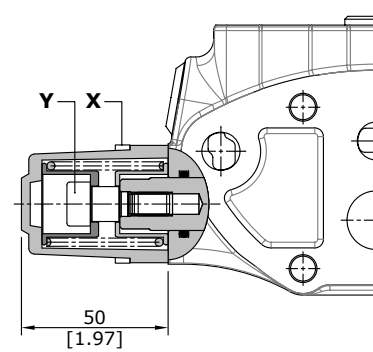


**Wrenches and tightening torques**

X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = wrench 8 - 9 Nm (6.6 lbft)

#### 8CR type (30 07 5565)

3 positions with spring return in neutral and reduced spool stroke: **for 8F spool.**



**Wrenches and tightening torques**

X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = allen wrench 6 - 24 Nm (17.7 lbft)

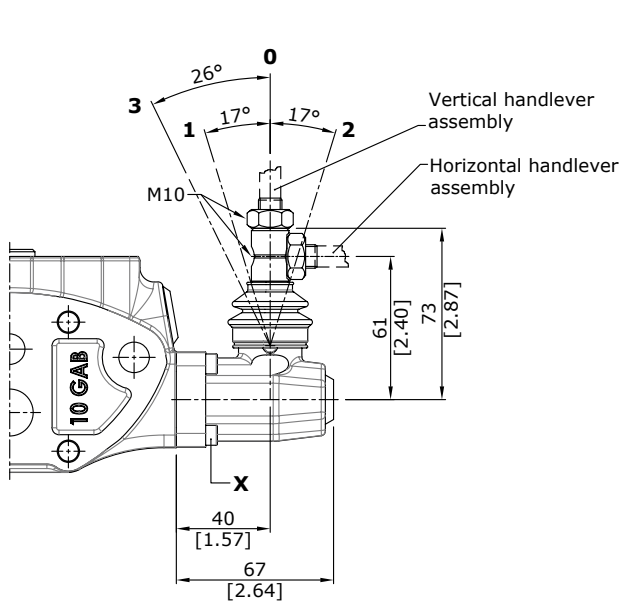
## Working section

"B" side options

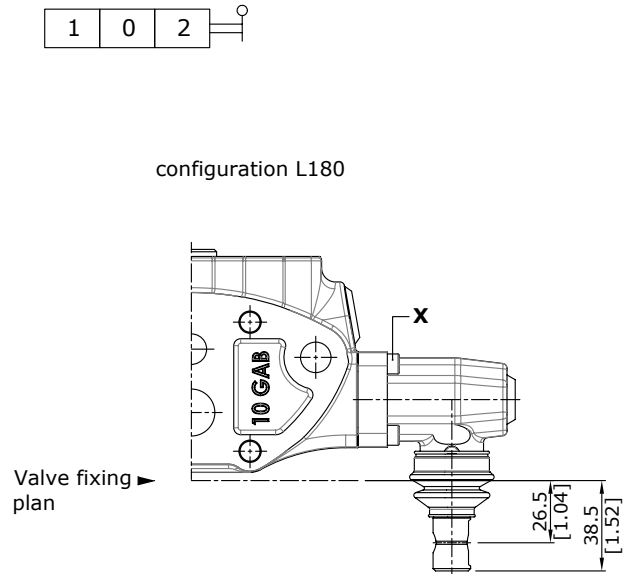
### Lever control

#### L type (30 07 5363)

Alluminium lever pivot box with protective rubber bellow; it can be roated 180° (configuration **L180**).



configuration L180

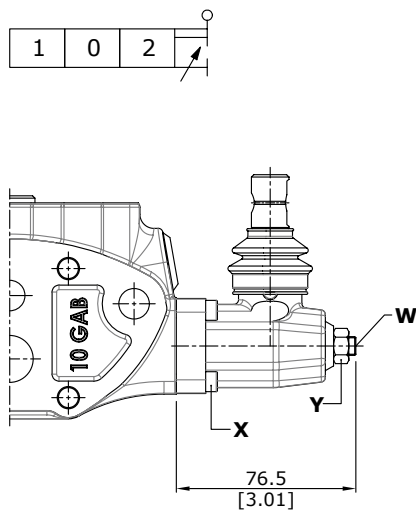


#### Wrenches and tightening torques

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

#### LF1 type (30 07 5365)

With spool stroke adjustment in position 12 (P A). It can be roated 180° (configuration **LF1180**).



#### Wrenches and tightening torques

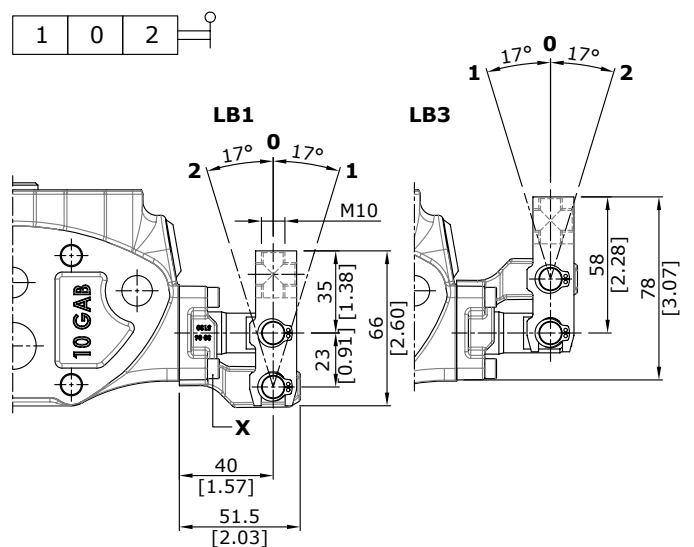
X = allen wrench 4 - 6 Nm (4.4 lbf<sub>t</sub>)

Y = wrench 13 - 24 Nm (17.7 lbf<sub>t</sub>)

W = allen wrench 4

#### LB type (30 07 5367)

Steel construction, LB1 with pivot placed down and LB3 with pivot placed over.



#### Wrenches and tightening torques

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

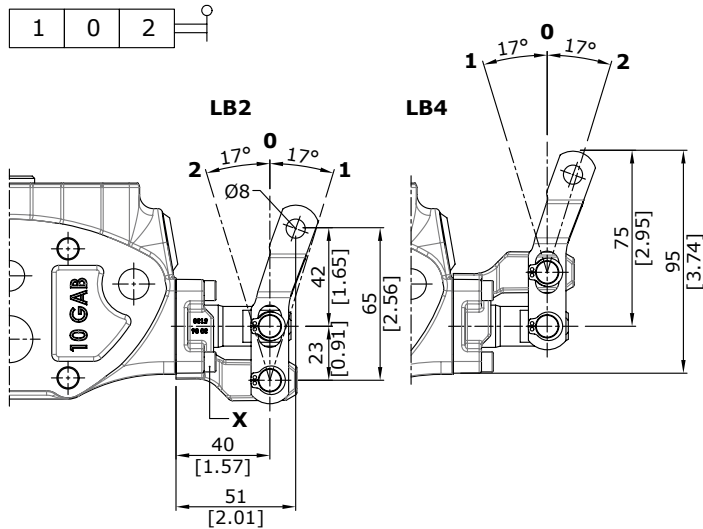
## Working section

### "B" side options

#### Lever control

##### LB type (30 07 7623)

Steel construction, LB2 with pivot placed down and LB4 with pivot placed over.

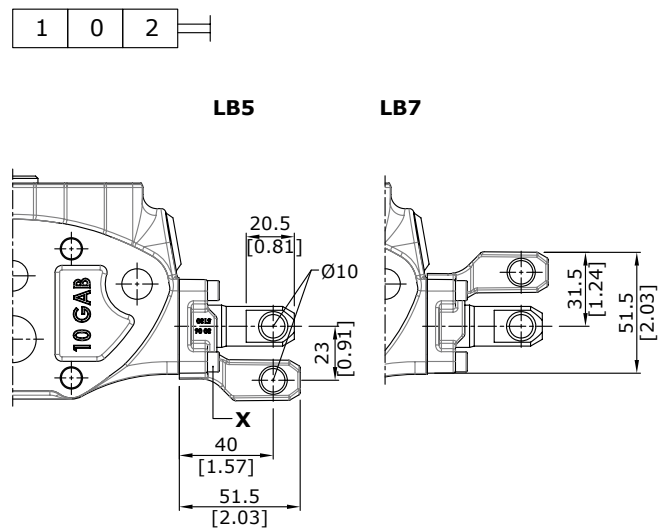


##### Wrenches and tightening torques

X = allen wrench 4 - 6 Nm (4.4 lbft)

##### LB type (30 07 7557)

Steel construction, LB5 with pivot placed down and LB7 with pivot placed over.

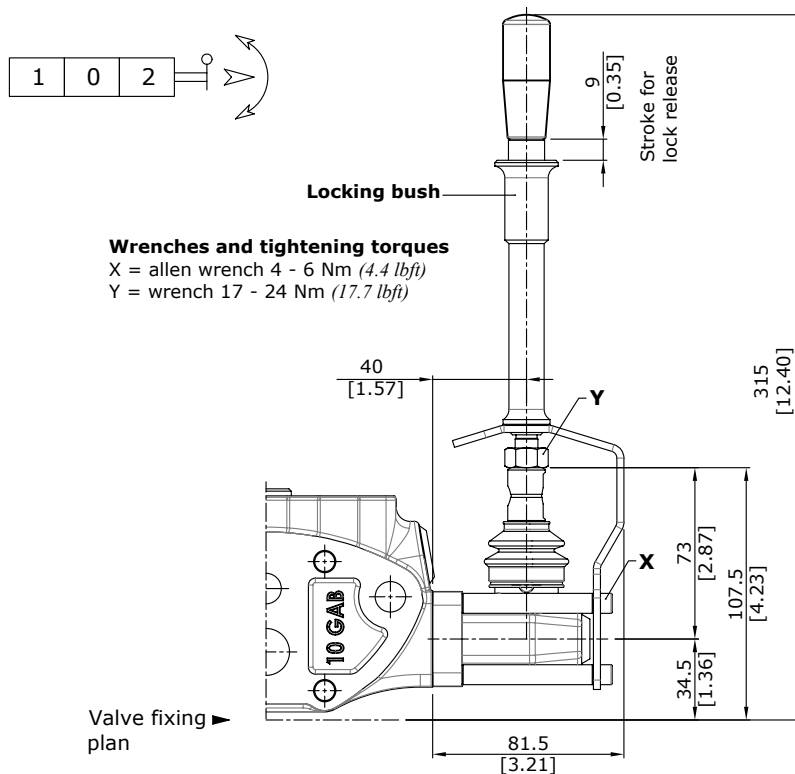


##### Wrenches and tightening torques

X = allen wrench 4 - 6 Nm (4.4 lbft)

##### Safety lever LEB type (30 07 5369)

Safety levers with lock in neutral complete with handlever; lift handlever knob to operate.



##### Wrenches and tightening torques

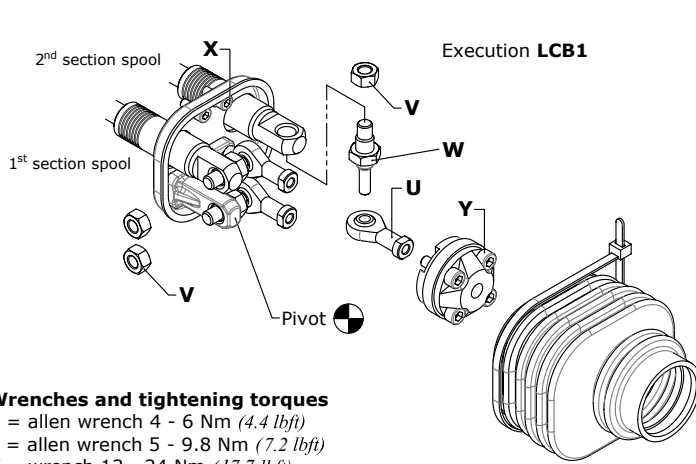
X = allen wrench 4 - 6 Nm (4.4 lbft)

Y = wrench 17 - 24 Nm (17.7 lbft)

## Working section

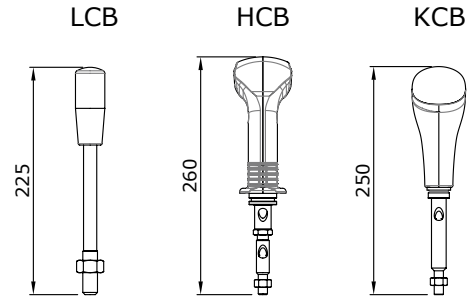
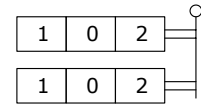
"B" side options

### LCB mechanical joystick for two sections control (30 07 5370)



#### Wrenches and tightening torques

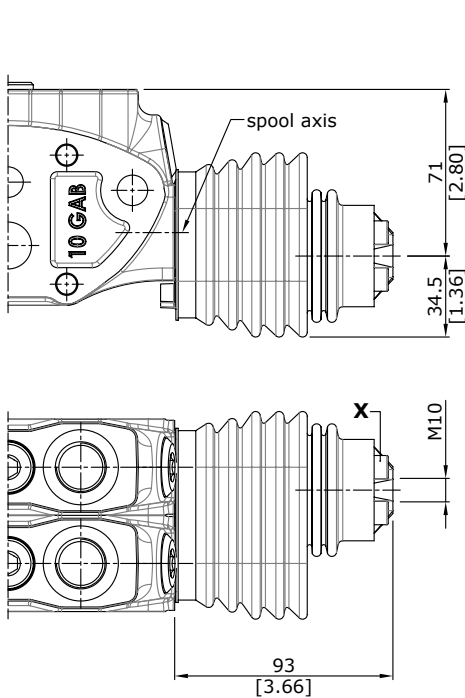
- X = allen wrench 4 - 6 Nm (4.4 lbf<sup>t</sup>)
- Y = allen wrench 5 - 9.8 Nm (7.2 lbf<sup>t</sup>)
- V = wrench 13 - 24 Nm (17.7 lbf<sup>t</sup>)
- U = wrench 10
- W = wrench 15 - 24 Nm (17.7 lbf<sup>t</sup>)



#### Description example

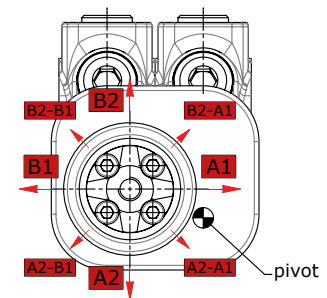
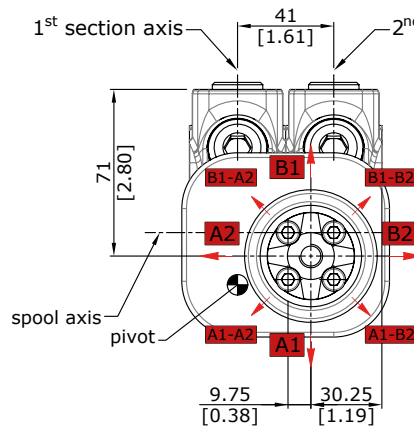
80L GS10/2/AC(X-100)/18LCB1/18LCB1/RC

### Dimensions and movement scheme for left inlet directional valve



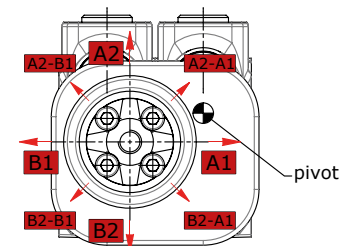
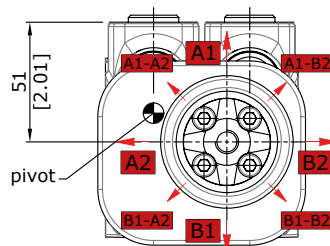
Execution **LCB1**  
pivot placed down on the left

Execution **LCB2**  
pivot placed down on the right



Execution **LCB3**  
pivot placed above on the left

Execution **LCB4**  
pivot placed above on the right



#### Wrenches and tightening torques

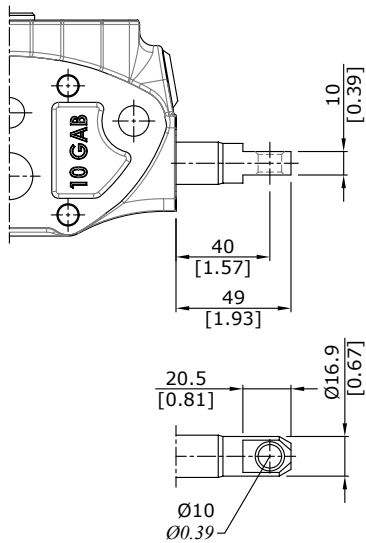
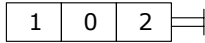
- X = allen wrench 5 - 9.8 Nm (7.2 lbf<sup>t</sup>)

NOTE : Due to limited space in case of LCB3 or LCB4 configuration the assembly of port valves is not possible.

## Working section

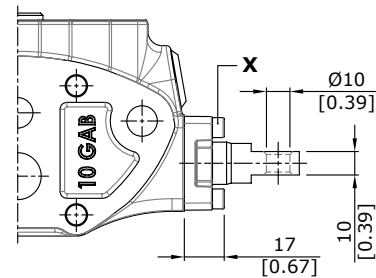
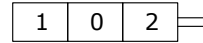
### "B" side options

#### SL type



#### SLP type (30 07 5366)

Mechanical control with dust-proof plate kit.

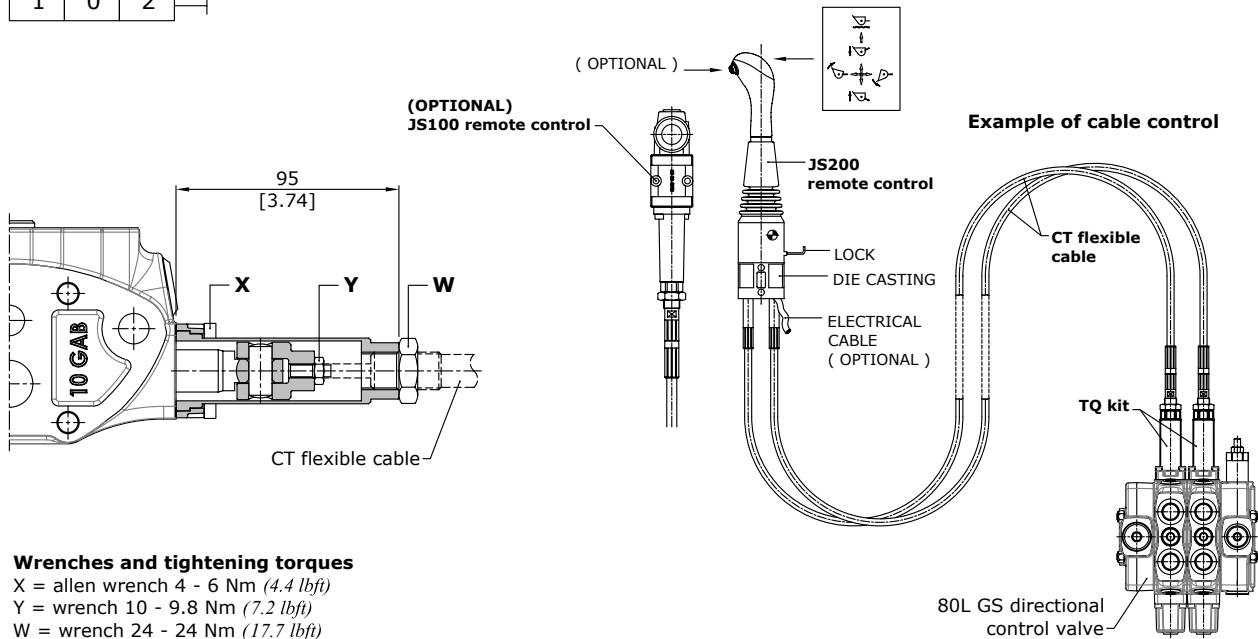
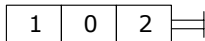


#### Wrenches and tightening torques

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

#### TQ cable remote control kit (30 07 5354)

Prearranged for remote control with flexible cable.



#### Wrenches and tightening torques

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

Y = wrench 10 - 9.8 Nm (7.2 lbf<sub>t</sub>)

W = wrench 24 - 24 Nm (17.7 lbf<sub>t</sub>)

NOTE : For further information about remote cable control, require related documentation.

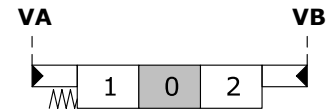
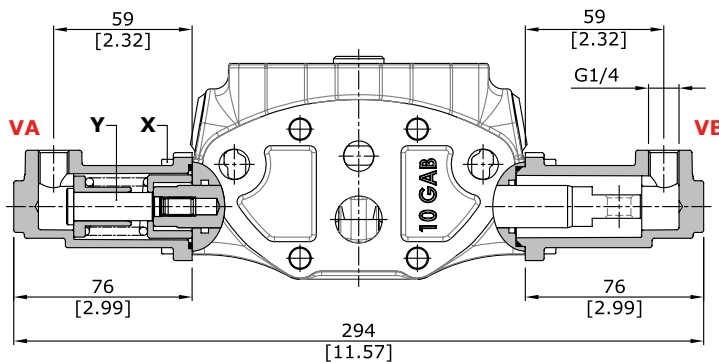
## Working section

Complete controls

### Proportional hydraulic controls

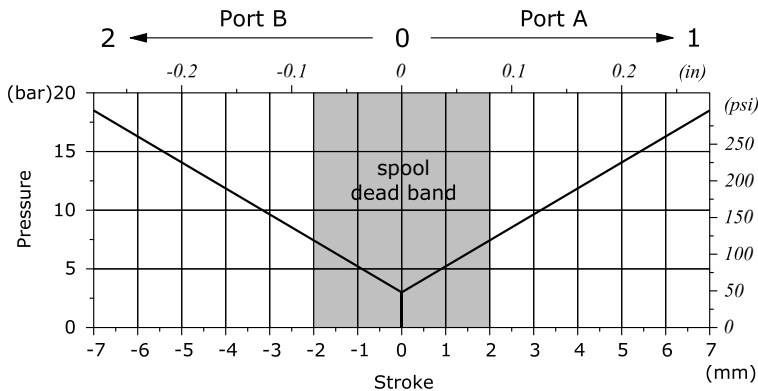
#### 81M type (30 07 5414)

It can be used with standard spools and body



#### Diagrams and features of proportional hydraulic controls

##### Pressure - stroke diagram (for controls represented)



#### Wrenches and tightening torques

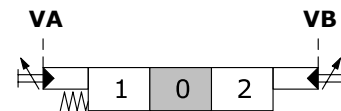
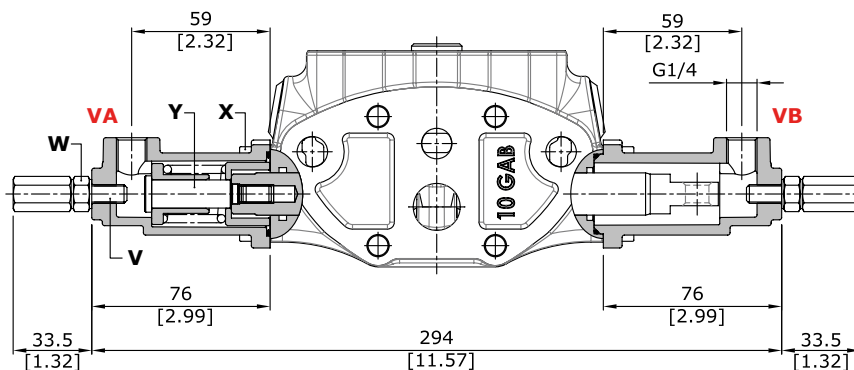
X = allen wrench 4 - 6 Nm (4.4 lbf<sup>t</sup>)  
Y = allen wrench 6 - 9 Nm (6.6 lbf<sup>t</sup>)

#### Operating features

Pilot pressure : max. 50 bar (725 psi)  
Internal leakage A(B) → T (Δ = 100 bar - (1450 psi) / T = 40°C)  
..... : max. 6cm<sup>3</sup>/min - 0.37 in<sup>3</sup>/min

#### 81MF3 type (30 07 7569)

Configuration with screws for spool stroke adjustment.



#### Wrenches and tightening torques

X = allen wrench 4 - 6 Nm (4.4 lbf<sup>t</sup>)  
Y = allen wrench 6 - 9 Nm (6.6 lbf<sup>t</sup>)  
V = allen wrench 4  
W = wrench 13 - 24 Nm (17.7 lbf<sup>t</sup>)

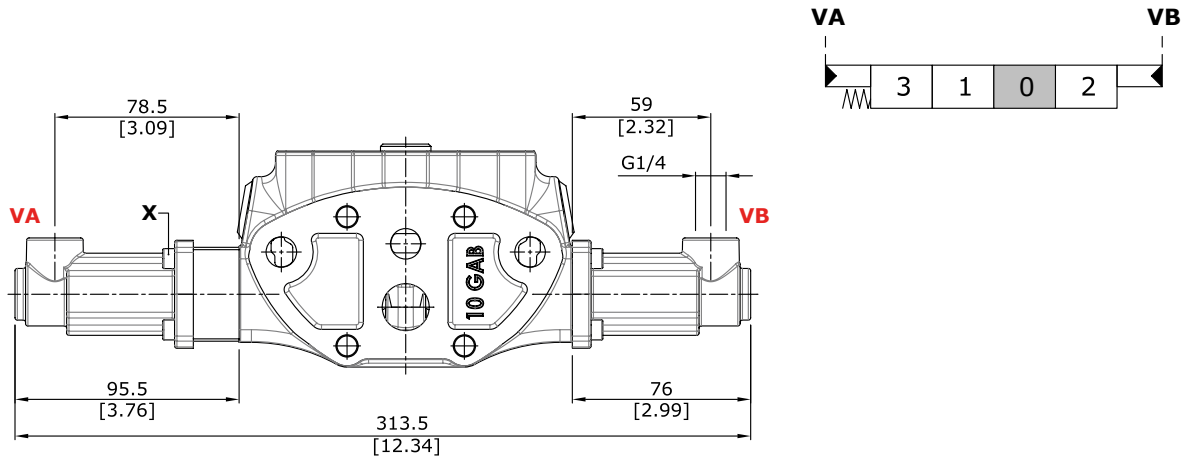
## Working section

### Complete controls

### Proportional hydraulic control

#### 13IM type (30 07 7622)

For floating circuit.



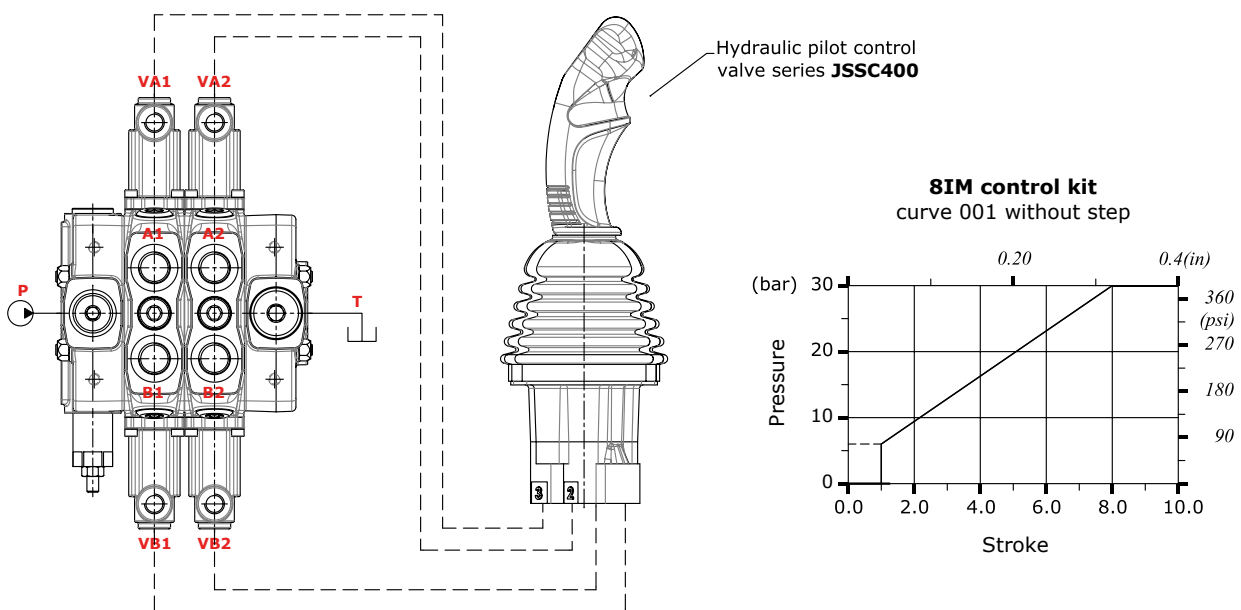
#### Wrenches and tightening torques

X = allen wrench 4 - 6 Nm (4.4 lbf)

#### Operating features

Pilot pressure : max. 50 bar (725 psi)  
 Internal leakage A(B) → T ( $\Delta = 100$  bar - (1450 psi)  
 / T = 40°C)  
 ..... : max. 6cm<sup>3</sup>/min - 0.37 in<sup>3</sup>/min

### Connection example





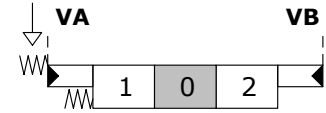
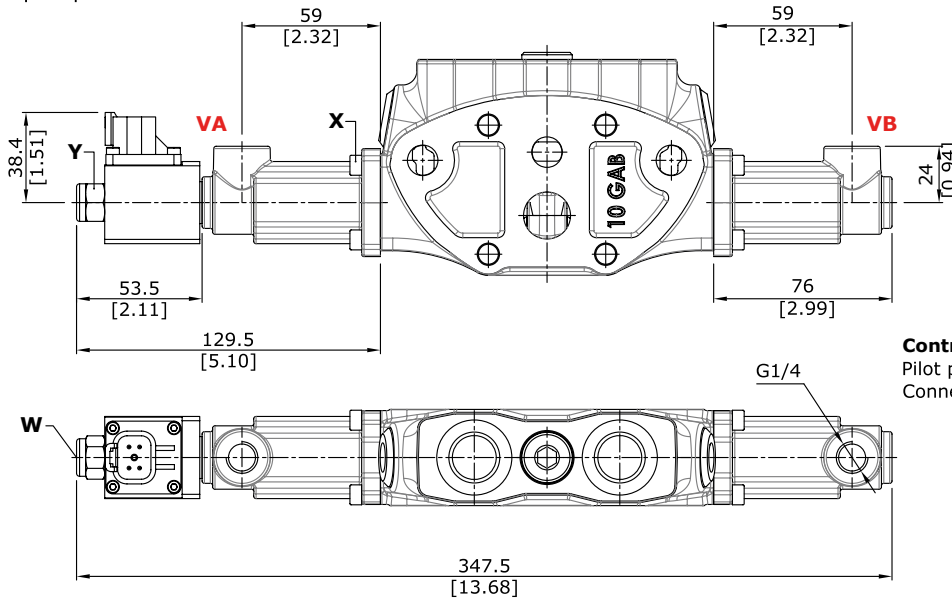
## Working section

## Complete controls

### Proportional hydraulic control type

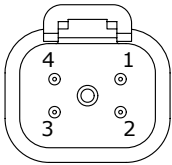
8IMSPSD (30 07 7559), 8IMSPSL (30 07 7562)

With spool position sensor.



**Wrenches and tightening torques**  
 X = allen wrench 4 - 6 Nm (4.4 lbft)  
 Y = wrench 17 - 9.8 Nm (7.23 lbft)  
 W = allen wrench 4 - 9.8 Nm (7.23 lbft)

**Control features**  
 Pilot pressure..... : max. 100 bar (1450 psi)  
 Connector ..... : Deutsch DT04-4P

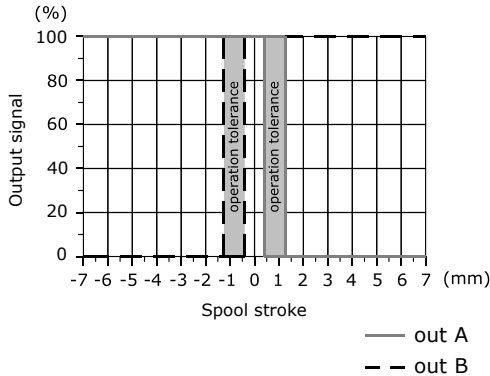


Connector PIN-OUT		
Functions		
Pin	for 5V supply	for 8-32V supply
1	+5V	signal OUT
2	N.C.	GND
3	GND	Vb+
4	signal Out	not connected

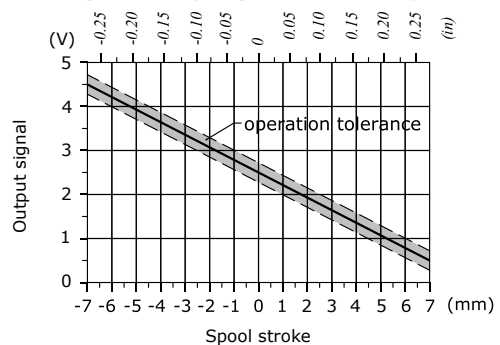
### Spool position sensor features

Voltage supply range..... : from 9 to 32 VDC or 5 VDC  
 Current absorption..... : <10 mA  
 Mechanical life..... : 3x10<sup>6</sup>  
 Connector type..... : Deutsch DT04-4P  
 Weather protection..... : IP 67 - IP 69K  
 Working temperature..... : -40/+105 °C  
 Minimum load resistance..... : 10 KΩ  
 Working pressure max..... : 350 bar • 5100 psi  
 Max. mechanical stroke..... : ± 10mm  
 Max. electrical stroke..... : ± 10mm

**Output signal (SPSD example) vs. spool stroke**



**Output Voltage-spool stroke diagram**

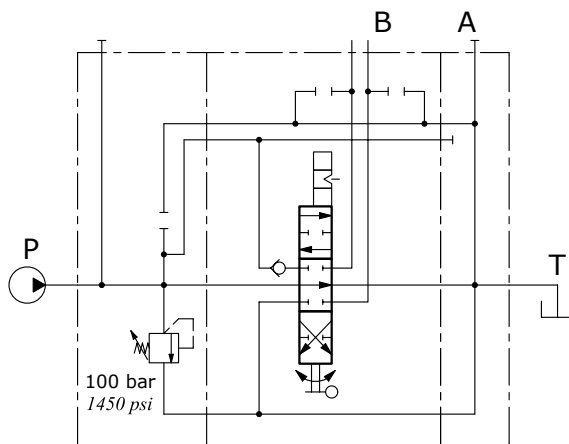
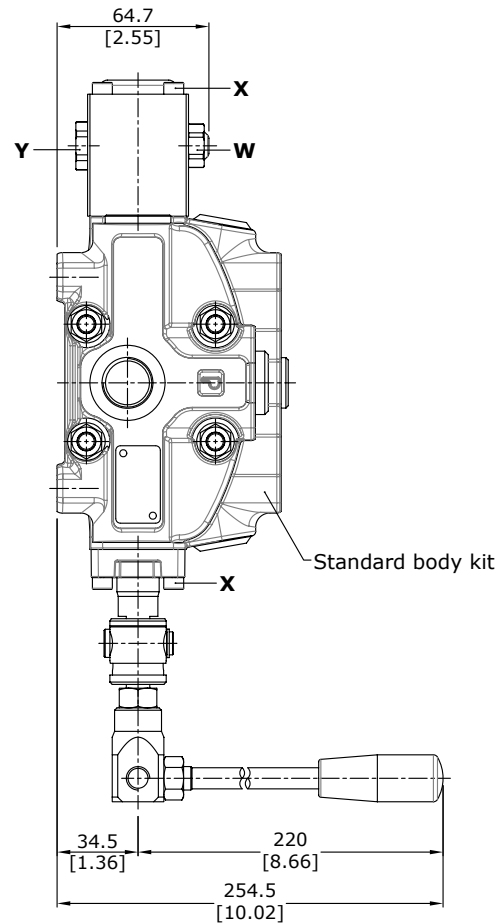
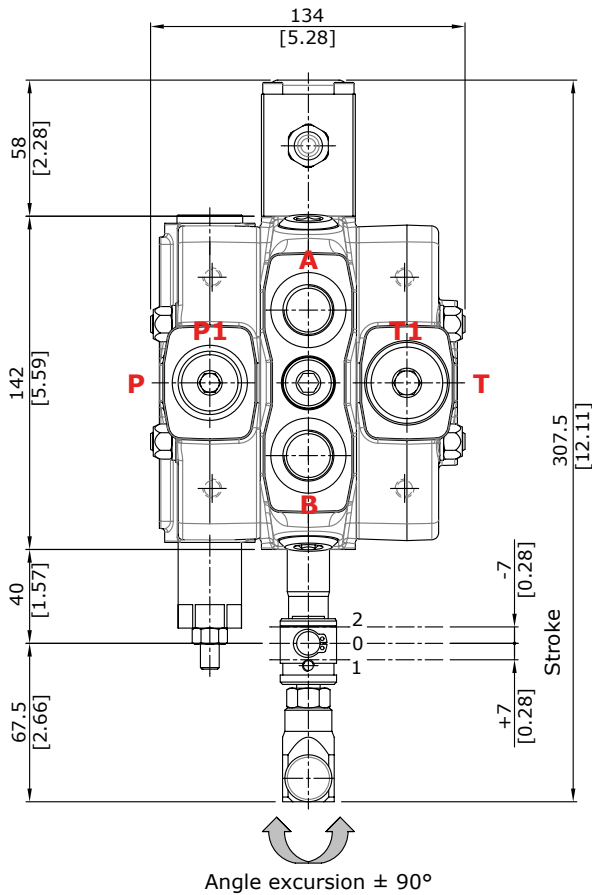


**Output signal**  
 Range..... : from 0.5 to 4.5 V  
 Linearity..... : ± 5%  
 Spool in neutral..... : 2.5 ± 0.2 V  
 Max current..... : 1 mA  
 Mechanical vibrations, shock, bumps..... : IEC 68-2-6,27,29  
 EMC compatibility..... : ISO 13766 - ISO 15982

Special configurations

Directional valve with rotary control kit

R type (30 07 5373)



**Wrenches and tightening torques**

- X = allen wrench 4 - 6 Nm (4.4 lbft)
- Y = wrench 19 - 9.8 Nm (7.23 lbft)
- W = wrench 17 - 9.8 Nm (7.23 lbft)

**Description example**

80L GS10/1/AC(X-100)/1 R SLP/RC

## Working section

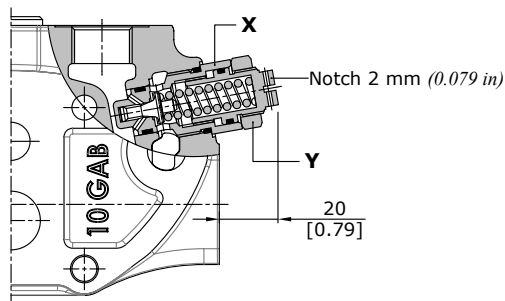
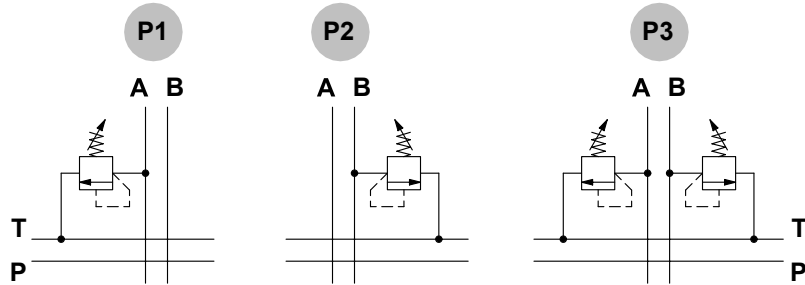
## Port valves

### Antishock valves

#### P1 (100)

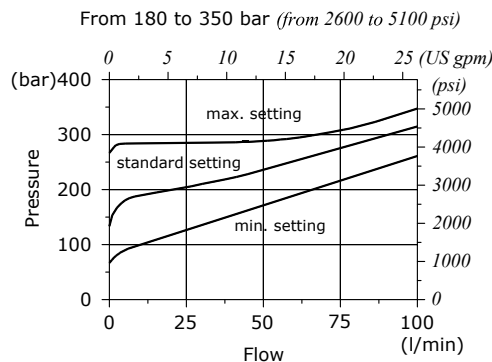
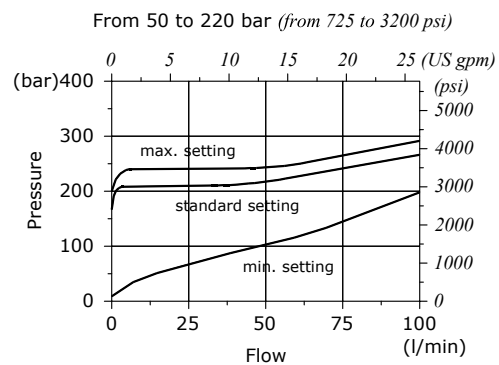
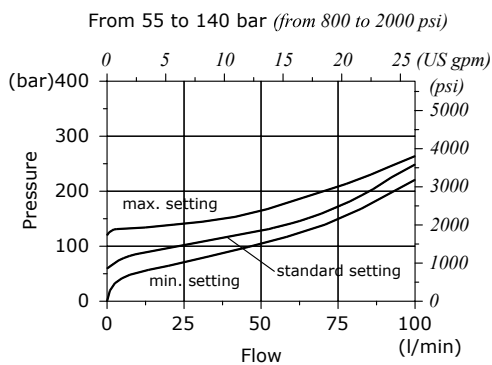
Valve setting (bar)

- 1 mounted on A port
- 2 mounted on B port
- 3 mounted on A and B ports



#### Wrenches and tightening torques

- X = wrench 24 - 42 Nm (31 lbft)
- Y = wrench 24 - 24 Nm (17.7 lbft)



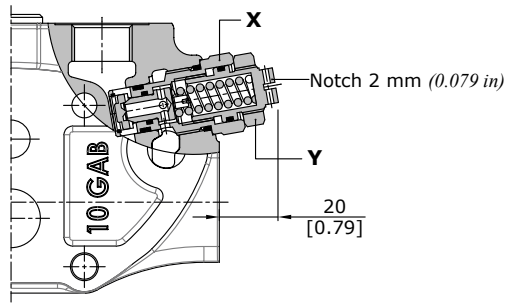
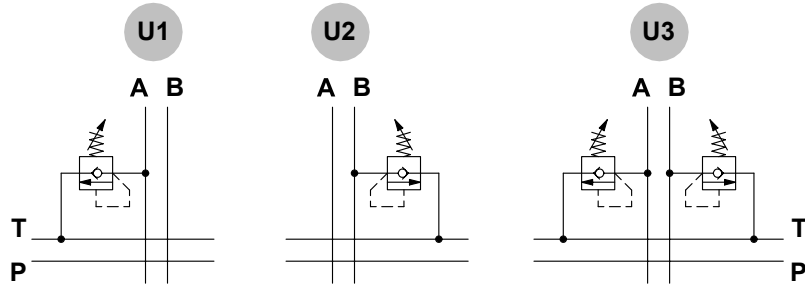
Port valves

Antishock and anticavitation valves

U1 (100)

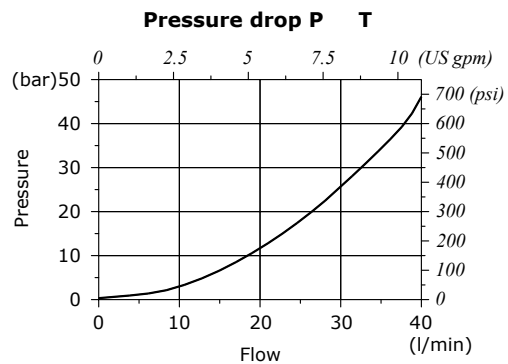
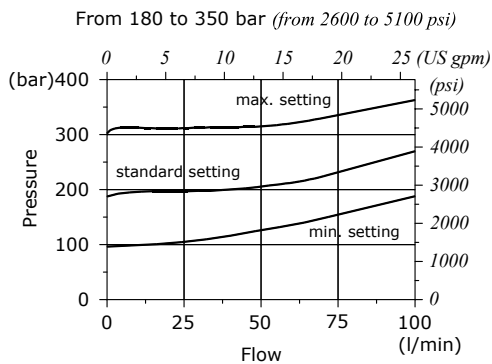
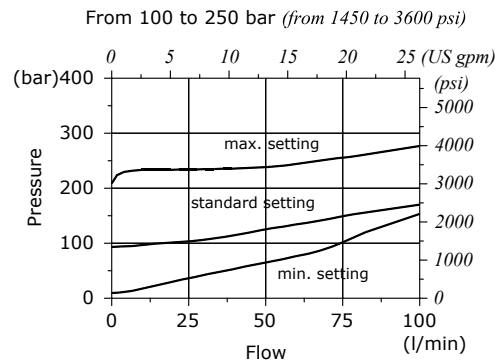
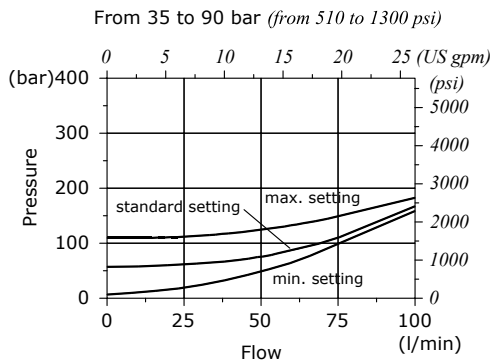
Valve setting (bar)

- 1 mounted on A port
- 2 mounted on B port
- 3 mounted on A and B ports



Wrenches and tightening torques

- X = wrench 24 - 42 Nm (31 lbf)
- Y = wrench 24 - 24 Nm (17.7 lbf)



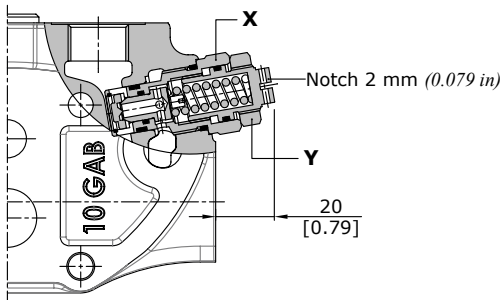
## Working section

## Port valves

### Anticavitation valve

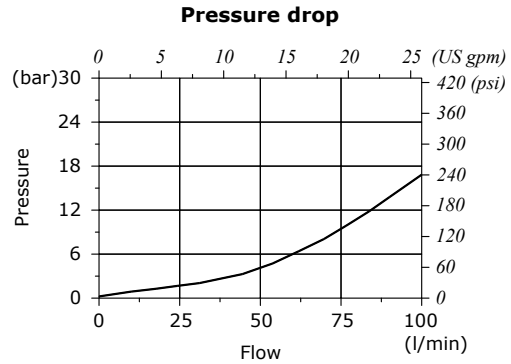
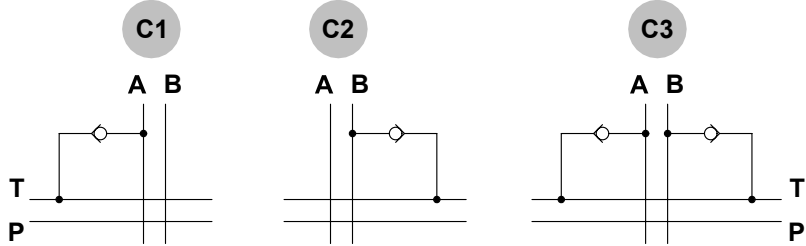
#### C1

- 1 mounted on A port
- 2 mounted on B port
- 3 mounted on A and B ports



#### Wrenches and tightening torques

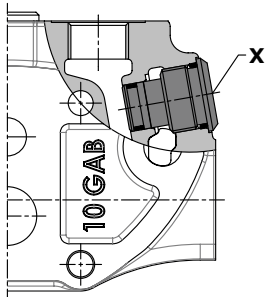
- X = wrench 24 - 42 Nm (31 lbf<sub>t</sub>)
- Y = wrench 24 - 24 Nm (17.7 lbf<sub>t</sub>)



### Valve blanking plug

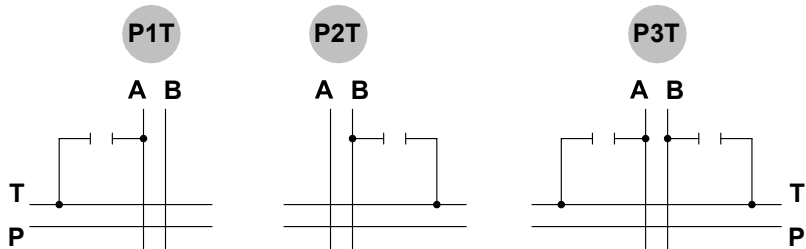
#### P 3 T

- 1 mounted on A port
- 2 mounted on B port
- 3 mounted on A and B ports



#### Wrenches and tightening torques

- X = Allen wrench 8 - 42 Nm (31 lbf<sub>t</sub>)



Port valves

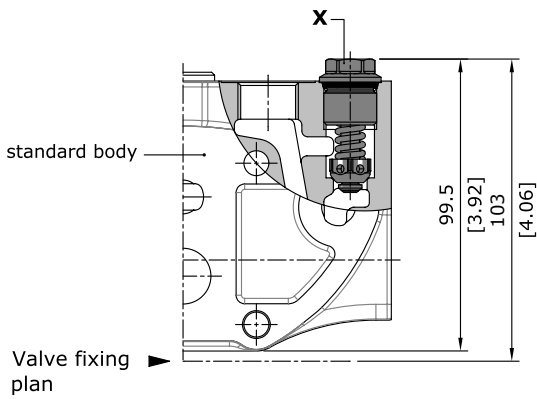
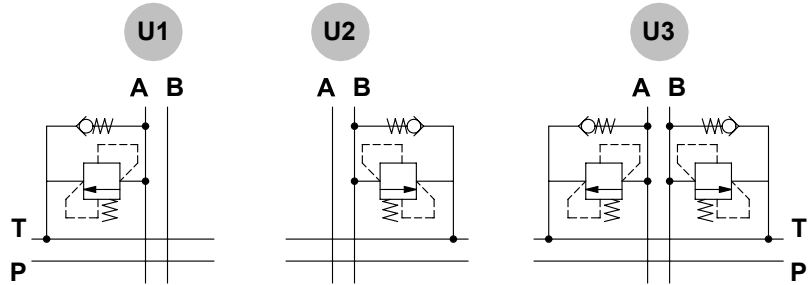
Fixed setting antishock and anticavitation valves

For RPHT, RPHSP, RPH5BY, RPHS working port.

U1 (100)

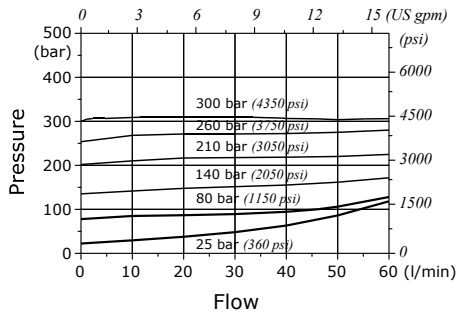
Valve setting (bar)

- 1 mounted on A port
- 2 mounted on B port
- 3 mounted on A and B ports

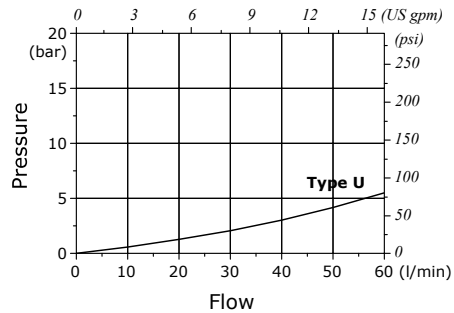


**Wrenches and tightening torques**  
 X = wrench 15 - 24 Nm (17.7 lbf<sub>t</sub>)

**Setting example**  
 (10 l/min - 2.6 US gpm)



**Pressure drop**  
 (in anticavitation)



## Working section

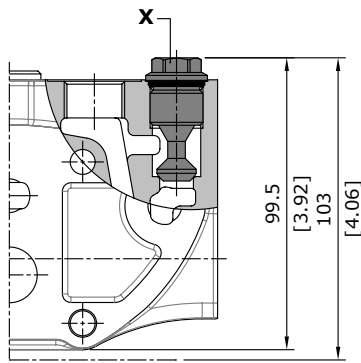
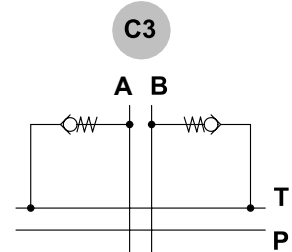
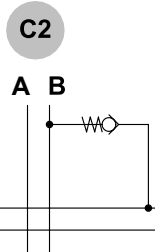
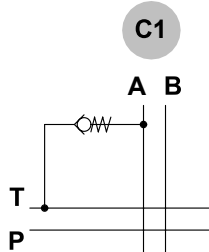
## Port valves

### Anticavitation valve

For RPHT, RPHSP, RPH5BY, RPHS working port.

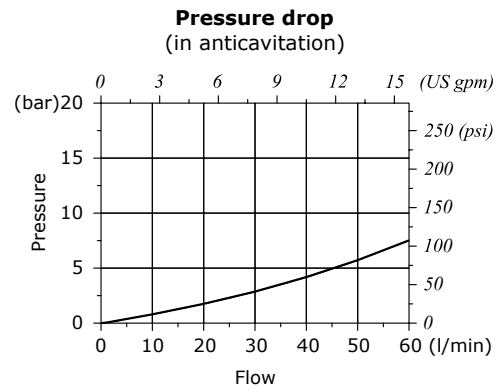
#### C1

- 1 mounted on A port
- 2 mounted on B port
- 3 mounted on A and B ports



Valve fixing plan

**Wrenches and tightening torques**  
X = wrench 15 - 24 Nm (17.7 lbf)

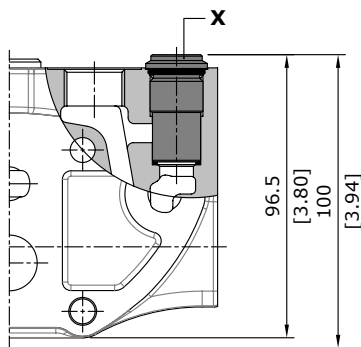
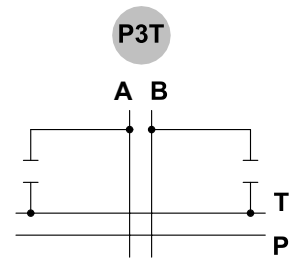
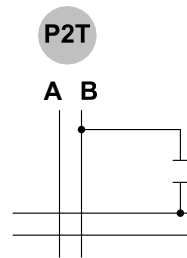
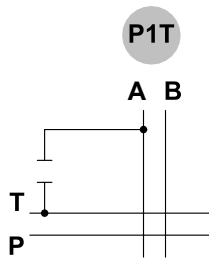


### Valve blanking plug

For RPHT, RPHSP, RPH5BY, RPHS working port.

#### P 3 T

- 1 mounted on A port
- 2 mounted on B port
- 3 mounted on A and B ports



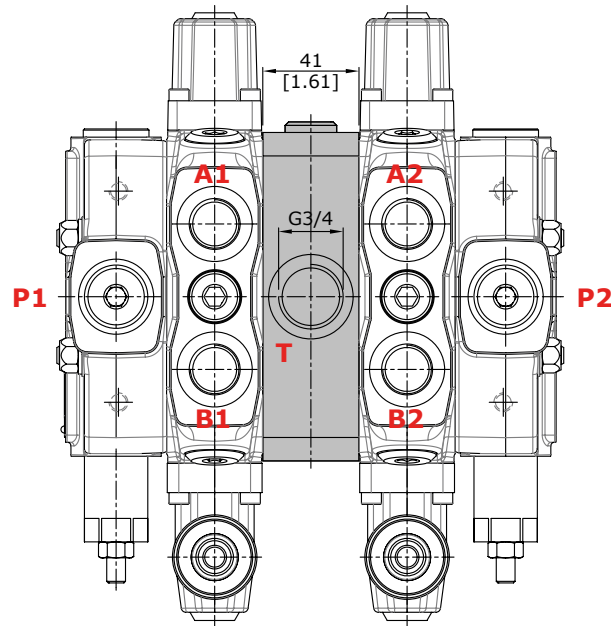
Valve fixing plan

**Wrenches and tightening torques**  
X = allen wrench 8 - 24 Nm (17.7 lbf)

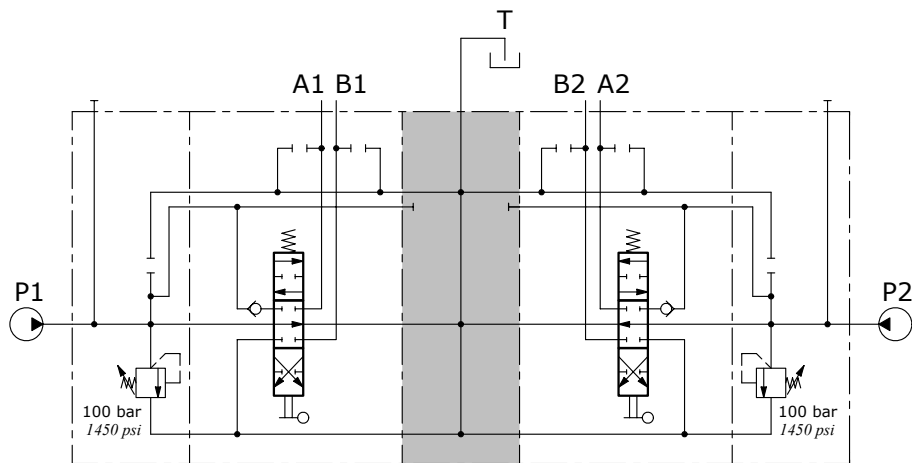
## Intermediate section

### CS1 mid return manifold

Mid return manifolds for directional valve with left and right inlet both; they allow 2 independent circuits with common outlet.



### Hydraulic circuit



**Description example:**  
80L GS10/2/AC(X-100)/18L/CS1/18L/BC(X-100)

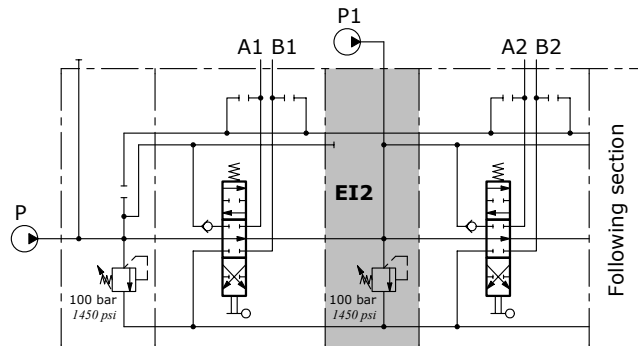
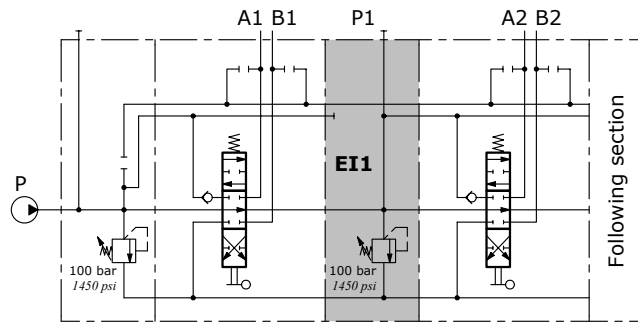
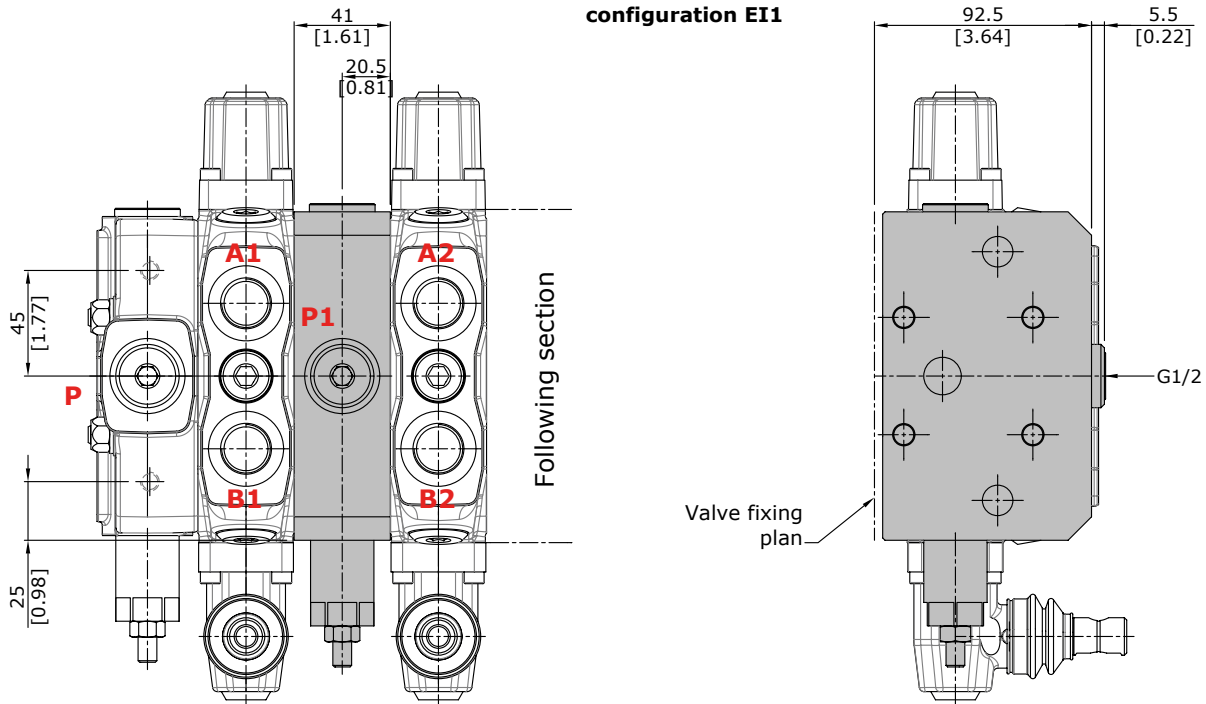


## Intermediate section

## Service relief valve section

### EI configuration

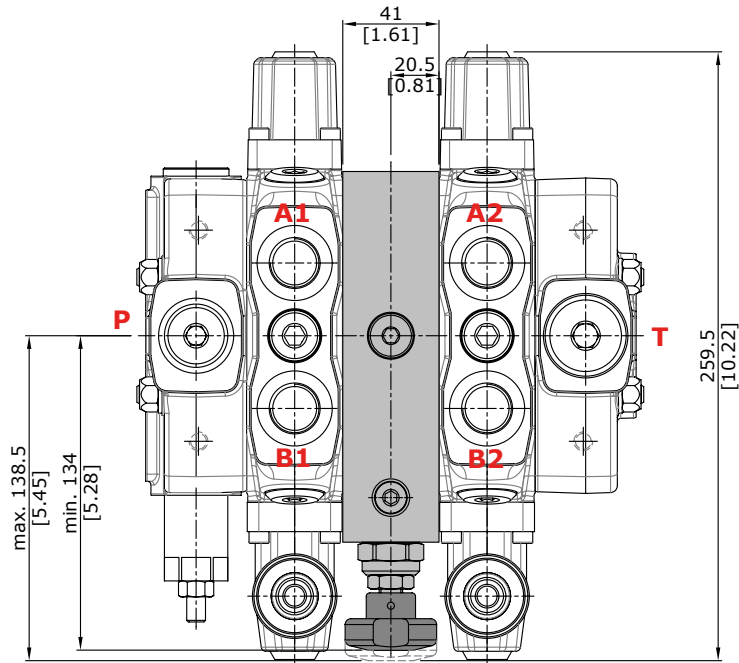
The operation of up stream section exclude the EI downstream section.  
 The pressure of the downstream sections should be adjusted at least 20 bar below the relief valve setting.  
 Execution EI2, without plug, is prearranged for a second inlet.



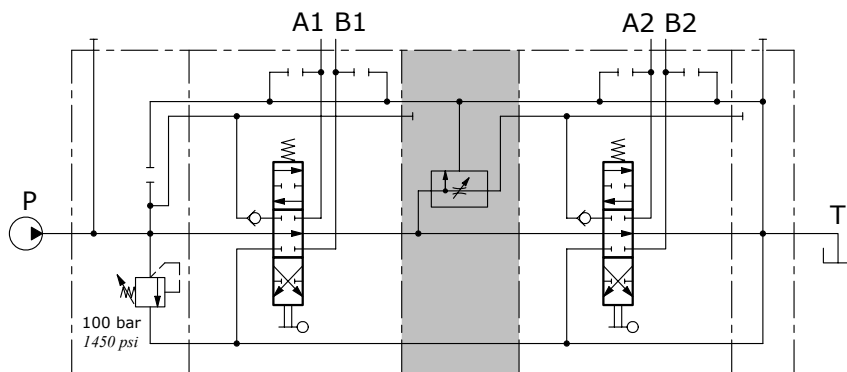
## Intermediate section

### DFG pressure compensated flow divider section

The flow on the downstream sections can be adjusted from 0 to 80 l/min. by means of graduated handwheel; exceeding setting flow goes to tank.



### Hydraulic circuit



**Description example:**  
80L GS10/2/AC(X-100)/18L/DFG/18L/RC

## Outlet section

Parts ordering codes

### Ordering example:

80L GS10 / RC



### Available configurations

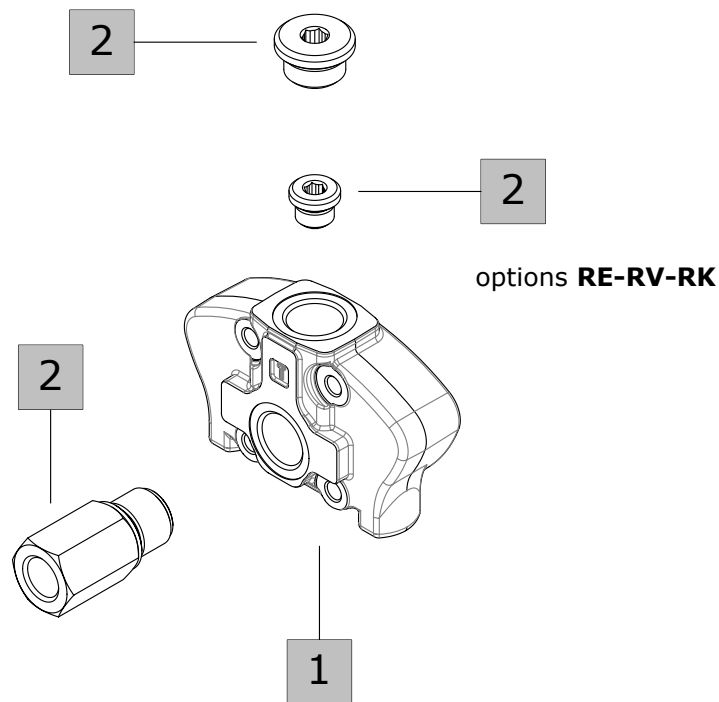
**RC:** side outlet

**RD:** upper outlet

**RE:** upper outlet with side carry-over

**RK:** upper outlet and closed centre

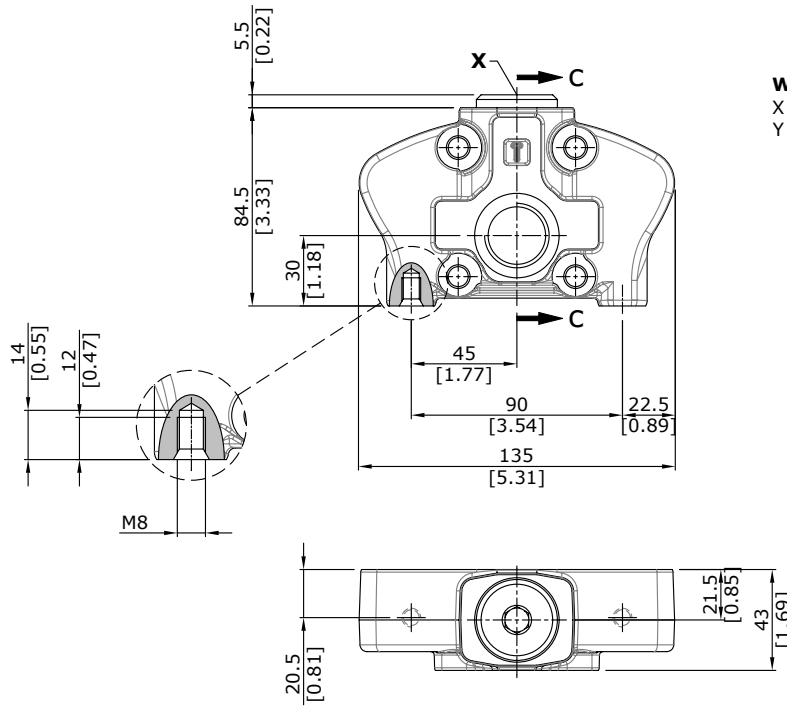
**RV:** With backpressure valve: **to be used together with the electro-hydraulic control**



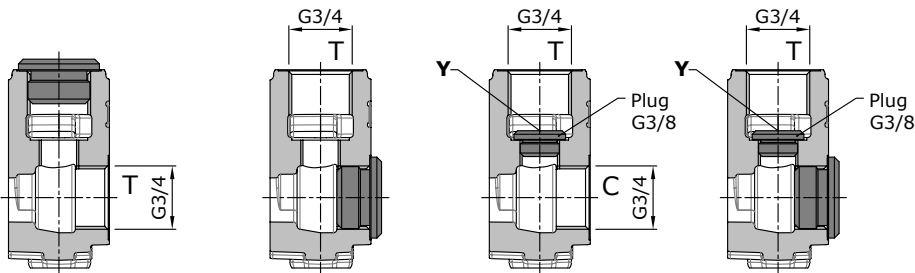
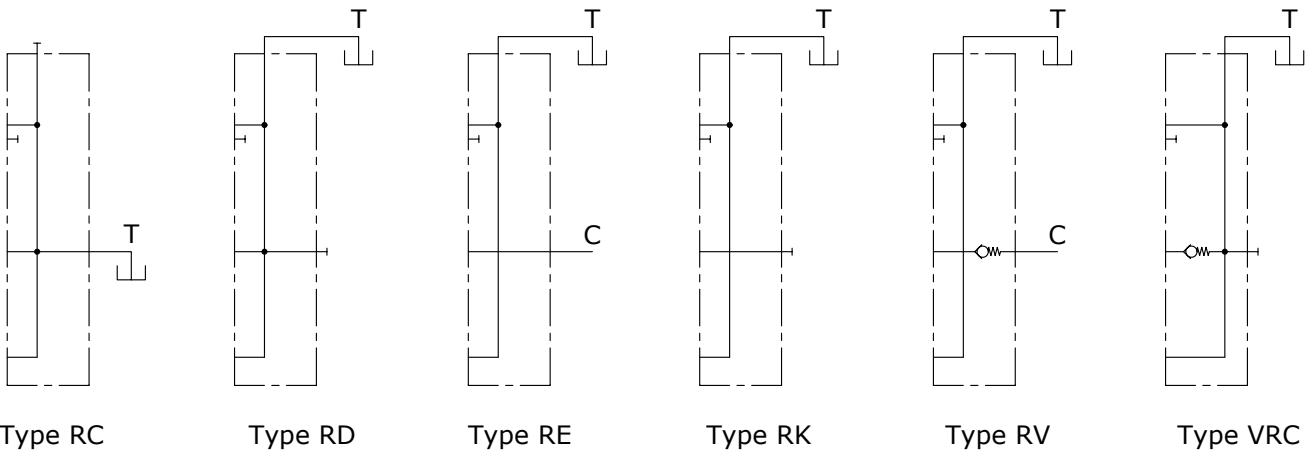
1. Complete outlet cover *			2. Circuit options *		
TYPE	CODE	DESCRIPTION	TYPE	CODE	DESCRIPTION
<b>RC</b>	80OU010003	With side outlet	-	30 05 6457	G3/8 tapered plug for carry-over (RE), carry-over with backpressure valve (RV) and closed centre (RK) options
<b>RD</b>	80OU010004	With upper outlet	<b>RV</b>	30 05 4990	Backpressure valve 10 bar (145 psi) for RV configuration (see page 32)
<b>RE</b>	80OU010005	With upper outlet and side carry-over sleeve	<b>VRC</b>	30 05 4904	Backpressure VRC configuration (see page 32)
<b>RK</b>	80OU010006	With upper outlet and closed center	-	30 05 4920	G3/4 plug
<b>RV</b>	80OU010007	With backpressure valve			
<b>VRC</b>	80OU010008	With backpressure valve			

NOTE (\*) - Codes are referred to **BSP** thread.

Dimensional data and hydraulic circuit



**Wrenches and tightening torques**  
 X = allen wrench 10 - 24 Nm (17.7 lbf<sup>t</sup>)  
 Y = allen wrench 8 - 42 Nm (31 lbf<sup>t</sup>)



Section C-C

Section C-C

Section C-C

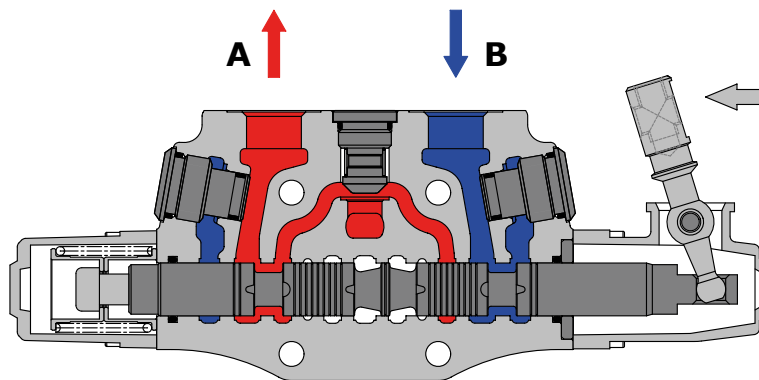
Section C-C

## Technical Information

## Sectional drawing

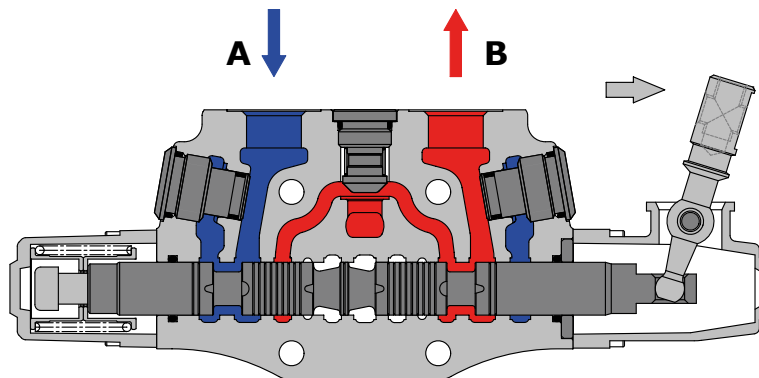
When hand lever pushed (spool out position) P to A port. B to T port.

Position 1



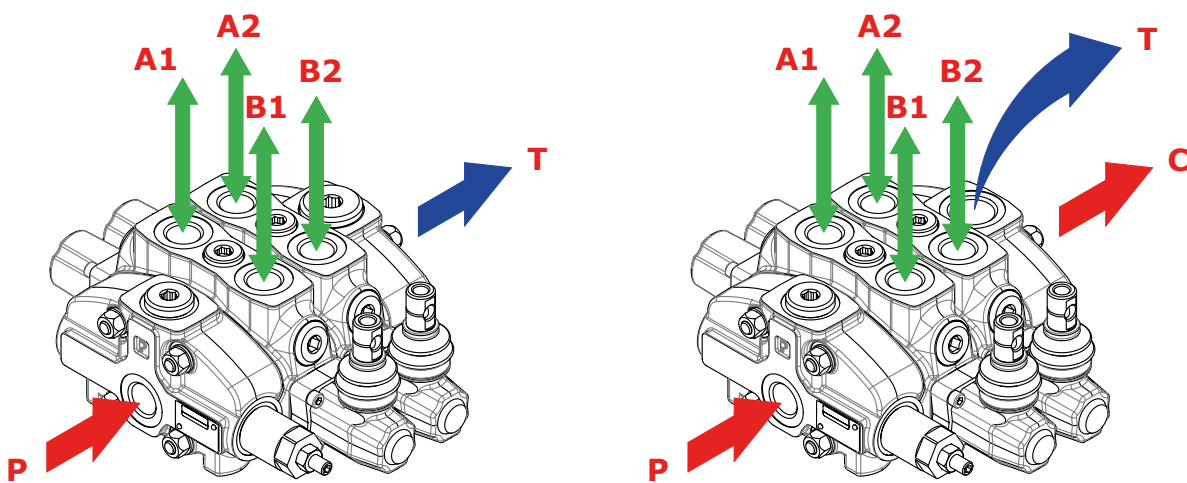
When hand lever pulled (spool in position) P to B port. A to T port.

Position 2



## Installation and maintenance

- The 80L GS valves are assembled and tested as per the technical specification of this catalogue. Before the final installation on your equipment, follow the below recommendations:
- the valve can be assembled in any position; order to prevent working section deformation and spool sticking mount the product on a flat surface;
  - In order to prevent the possibility of water entering the lever box and spool control kit, do not use high pressure wash down directly on the valve;
  - prior to painting, ensure plastic port plugs are tightly in place.



**Carry-over configuration**

Fitting tightening torque - Nm (lbft)				
THREAD TYPE	P port	A,B ports	T and C ports	Hydraulic pilot
BSP (ISO 228/1)	G 1/2	G 1/2	G 3/4	G 1/4
With O-Ring seal	50 (36.9)	50 (36.9)	70 (51.6)	20 (14.7)
With copper washer	60 (44.3)	60 (44.3)	70 (51.6)	25 (18.4)
With steel and rubber washer	60 (44.3)	60 (44.3)	70 (51.6)	16 (11.8)
UN-UNF (ISO 11926-1)	7/8-14 (SAE 10)	3/4-16 (SAE 8)	7/8-14 (SAE 10)	9/16-18 (SAE 6)
With O-Ring seal	90 (66.4)	60 (44.3)	90 (66.4)	30 (22.1)

NOTE – These torque are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finish. The manufacturer shall be consulted.