HYDRA

45L GM PART

45L GM Monoblock Valve

Specifications

Spool: 1,2,3,4,5,6,7 / Double - Single - Closed Center- Motor- Floating - Regenerative Spool .....
Flow: 45L Nominal - 65L Max
Ports: 3/8 Standard- 1/2-M18x1.5 Optional
Front Cap: Handle - Mechanical Joystick- Hydraulic Joystick- Remote Cable Control - Lock Handle
End Cap: Spring - Detent- Floating - Wood Splitter - Pneumatic - Proportional Coil - Hydraulic Control-Electro Hydraulic-Remote Cable Control

Open Center I Carry over I Parallel Circuit

Features

Simple, compact and heavy duty designed monoblock valves from 1 to 6 sections for open and closed centre hydraulic systems.

► fitted with a main pressure relief valve and a load check valve at GMC series.

► Available with parallel, series or tandem circuit. Series circuit GMCS. Tandem circuit GMT.

► Optional carry-over port (only for parallel or tandem circuit).

► Diameter 16 mm-*0.63 in* interchangeable spools.

► A wide variety of service port valve options.

► Actuation is manual, pneumatic, electro-pneumatic, hydraulic, electro-hydraulic, with solenoid and remote with flexible cables spool control kits.

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.

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^2/s *(46cSt)* viscosity at 40°C *(104°F)* temperature.

Nominal flow rating		45 l/min.	*12 US gpm*
Max. flow		65 l	*17 US gpm*
Operating pressure (max.)		315 bar	*4600 psi*
Back pressure (max.)	T outlet port	20 bar	*290 psi*
Internal leakage (standard) A(B) T	p=100 bar *(1450 psi)*	3cm^3/min.	*0.18 in^3/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^2/s	*from 15 to 75 cSt*
	min.	12 mm^2/s	*12 cSt*
	max.	400 mm^2/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*

Standard threads

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

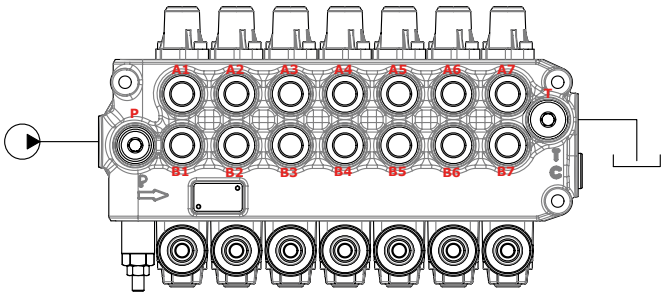
PORTS THREADING				
MAIN PORTS	**BSP**	**OPTIONAL**	**UN-UNF**	**METRIC**
P inlet and **C** carry-over	G 3/8	G 1/2	3/4-16 (SAE 8)	M18x1.5
A and **B** ports	G 3/8	G 1/2	9/16-18 (SAE 6)	M18x1.5
T outlet	G 1/2	G 1/2	3/4-16 (SAE 8)	M22x1.5
PILOT PORTS				
Hydraulic	G 1/4	-	-	-
Pneumatic	G 1/8	-	-	-

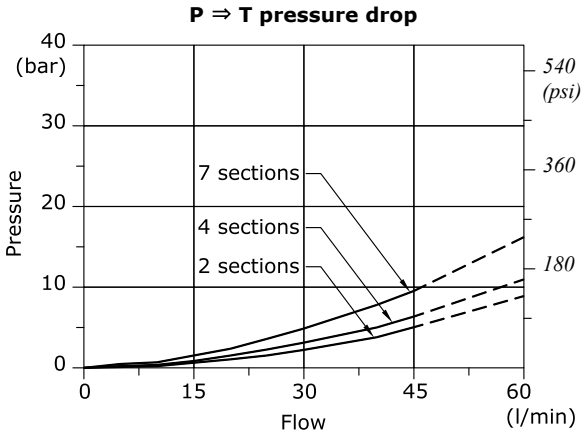
Valve general information

Performance data (pressure drop vs. flow)

Open centre

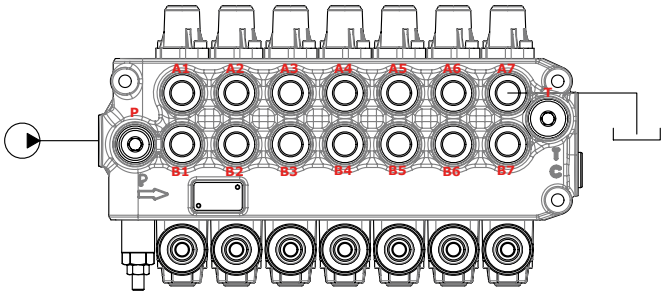
From side inlet to side outlet.

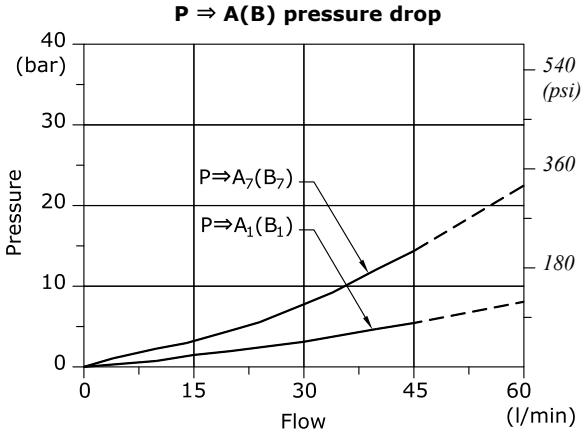




Inlet to work port

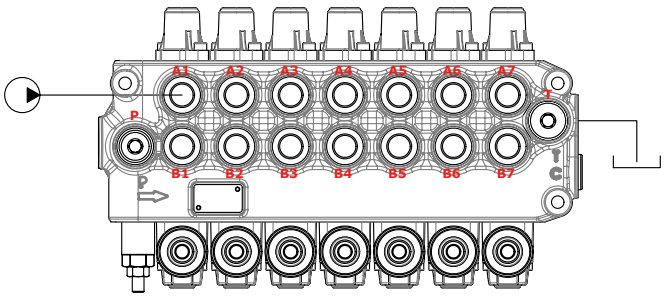
From side inlet to **A** port (spool in position **1**) or **B** port (spool in position **2**).

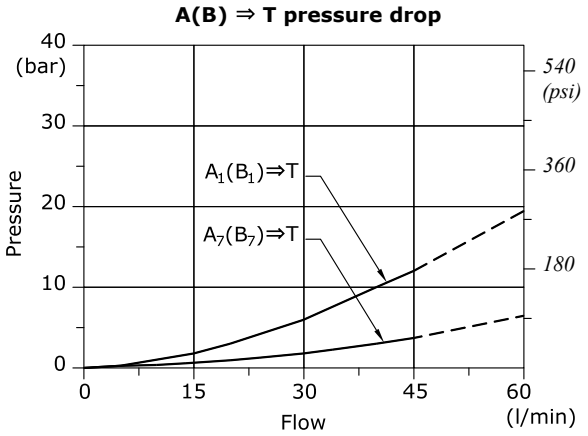




Work port to outlet

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





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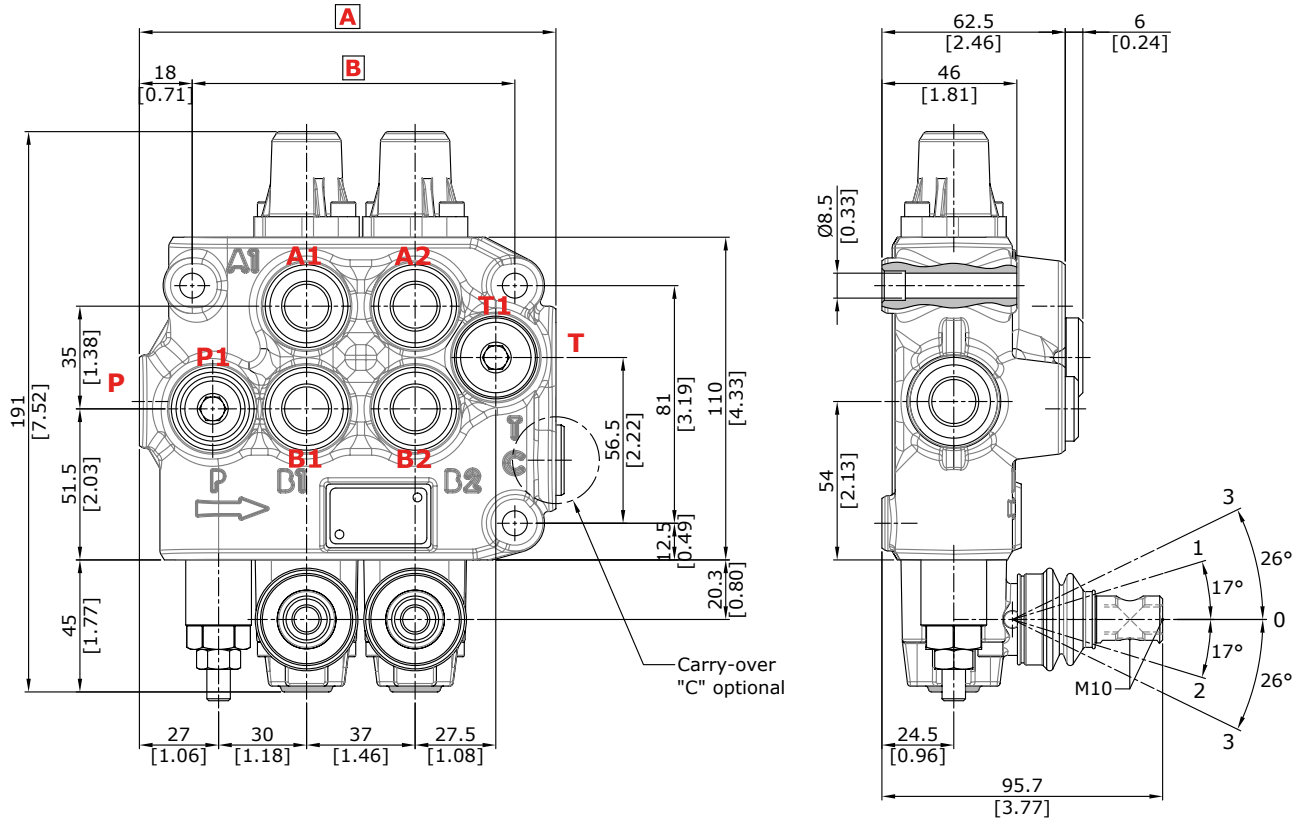
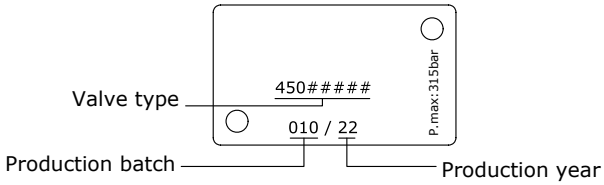
directional valve with left inlet

Dimensional data (parallel circuit)





TYPE	A		B		Weight	
	mm	*in*	mm	*in*	Kg	*lb*
45L GM08/1-P	105	*4.13*	73	*2.87*	3.1	*6.83*
45L GM08/2-P	142	*5.60*	110	*4.33*	4.4	*9.70*
45L GM08/3-P	179	*7.05*	147	*5.79*	5.7	*12.57*
45L GM08/4-P	216	*8.50*	184	*7.24*	7.2	*15.87*

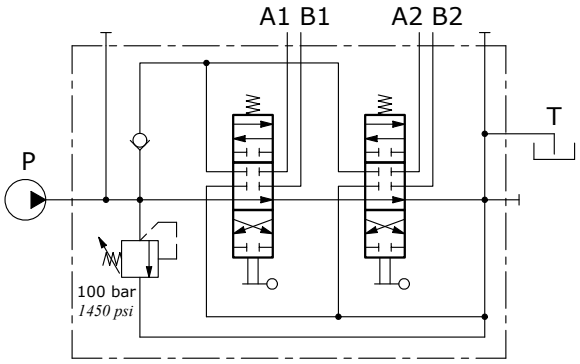
TYPE	A		B		Weight	
	mm	*in*	mm	*in*	Kg	*lb*
45L GM08/5-P	253	*9.96*	221	*8.70*	8.7	*19.18*
45L GM08/6-P	290	*11.42*	258	*10.16*	10.2	*22.49*
45L GM08/7-P	327	*12.87*	295	*11.61*	11.7	*25.79*

NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

directional valve with left inlet

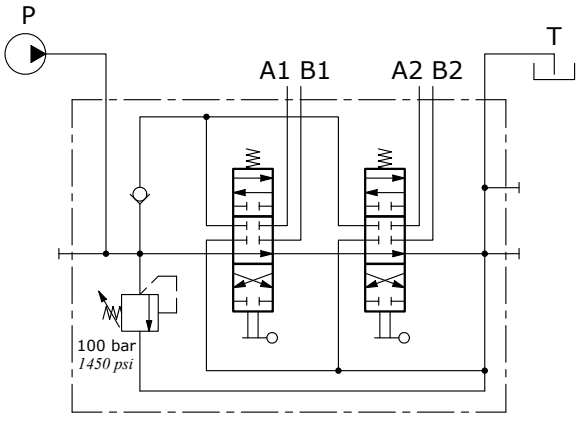
Hydraulic circuit

Standard configuration



Description example
45L GM08/2-P(X-100)/18L/18L/AET-**PSL2**

Upper inlet and outlet ports configuration

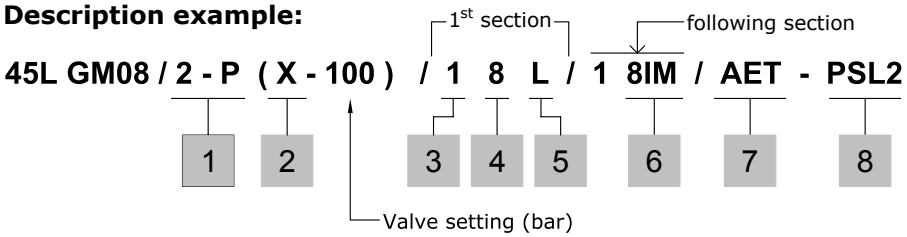


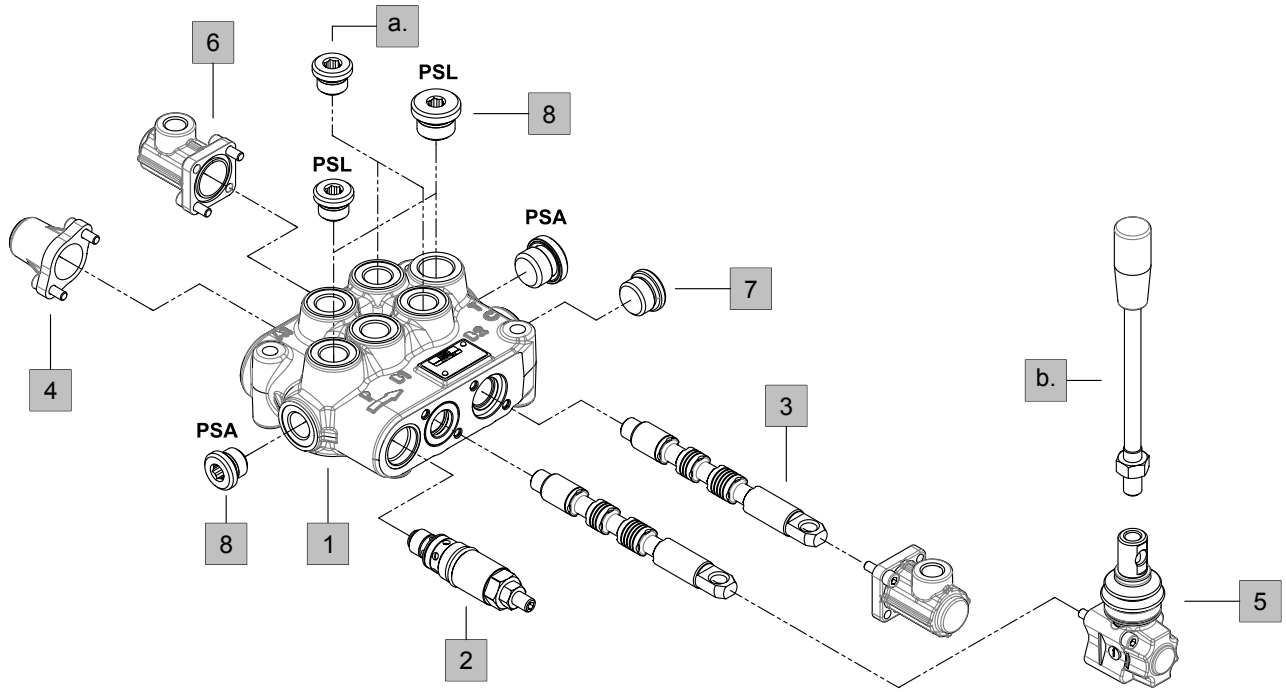
Description example
45L GM08/2-P(X-100)/18L/18L/AET-**PSA2**

directional valve with left inlet

Ordering codes

Description example:





1. Body kits *

TYPE	CODE	DESCRIPTION
1-P	30 08 9067	Parallel, 1 section
2-P	30 08 9068	Parallel, 2 sections
3-P	30 08 9069	Parallel, 3 sections
4-P	30 08 9070	Parallel, 4 sections
5-P	30 08 9071	Parallel, 5 sections
6-P	30 08 9072	Parallel, 6 sections
7-P	30 08 9073	Parallel, 7 sections

Include body, seals, rings and load check valve.

2. Inlet relief options page 10

TYPE	CODE	DESCRIPTION
Direct pressure relief valve X type (standard)		
(X-100)	30 05 4917	Range 20-315 bar *(290-4600 psi)* standard setting 100 bar *(1450 psi)*

Standard setting is referred to 6 l/min flow.

V	30 05 5004	Relief valve blanking plug

3. Spools page 11

TYPE	CODE	DESCRIPTION
1	30 01 3501	Double acting, 3 positions, with A and B closed in neutral position
1CS	30 01 3502	As type 1, sensitive type
1A	30 01 3647	Double acting, 3 positions, with A open to tank in neutral position

3. Spools

TYPE	CODE	DESCRIPTION
1B	30 01 3648	Double acting, 3 positions, with B open to tank in neutral position
2 open	30 01 3503	Double acting, 3 positions, with A and B to tank in neutral position
2H	30 01 3504	Double acting, 3 positions, with A and B partially opento tank in neutral position
3	30 01 3507	Single acting on A, 3 positions, B plugged; requires G3/8 plug (see part a)
4	30 01 3508	Single acting on B, 3 positions, A plugged; requires G3/8 plug (see part a)
D4	30 01 3818	Double acting, 2 positions, without neutral position
J6	30 01 3505	-
J7	30 01 3506	-
5BY	30 01 3509	Double acting, 4 positions, float in position 3 with spool out, **13QN type positioner kit is required**
5DY	30 01 3511	Double acting, 4 positions, float in position 3 with spool in, **13NZ type positioner kit is required**
5PY	30 01 3512	Double acting, 4 positions, float in position 3 with spool out, with check valve **13QN type positioner kit is required**
8	30 01 3513	Double acting, 4 positions, regenerative in position 3 with spool in **13FZ type positioner kit is required**

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

directional valve with left inlet

Ordering codes

4. "A" side spool positioners — page 12

TYPE	CODE	DESCRIPTION
8	30 07 5300	With spring return in neutral position
8D	30 07 5307	As type 8, M6 female threaded pin extension for dual control
8D2	30 07 5308	As type 8, M8 male threaded pin extension for dual control
8T	30 07 5301	With spring return in neutral position, for single acting spool type 3 and 4
8TL	30 07 5327	As type 8, for flexible cable control
8F2	30 07 5302	As type 8 with adjustable stroke limiter
19	30 07 5410	With spring return in position 0 from 1
20	30 07 5411	With spring return in position 0 from 2
11	30 07 5303	Detent in positions neutral, 1 and 2
12	30 07 5334	Detent in positions 1 and 2
15	30 07 5304	2 positions, detent in positions 1 and neutral
16	30 07 5408	2 positions, detent in positions 2 and neutral
17	30 07 5412	With spring return position 1
18	30 07 5305	With spring return position 2
17D	30 07 5413	With spring return position 1 and pin with M6 female thread for dual control
18D	30 07 5306	With spring return position 2 and pin with M6 female thread for dual control
9B	30 07 5309	With detent in position 1 and spring return in neutral position
10B	30 07 5310	With detent in position 2 and spring return in neutral position
11B	30 07 5311	Detent in positions 1 and 2 and spring return inneutral position
9BT	30 07 5312	With detent in position 1 and spring return in neutral position, for single acting spool type 3 and 4
10BT	30 07 5313	With detent in position 2 and spring return in neutral position, for single acting spool type 3 and 4
11BT	30 07 5314	Detent in positions 1 and 2 and spring return inneutral position, for single acting spool type 3 and 4
8MG1(NO)	30 07 5320	As type 8, operation with microswitch (NO) in position 1
8MG1(NC)	30 07 5323	As previous, (NC)
8MG2(NO)	30 07 5321	As type 8, operation with microswitch (NO) in position 2
8MG2(NC)	30 07 5324	As previous, (NC)
8MG3(NO)	30 07 5319	As type 8, operation with microswitch (NO) in positions 1 and 2
8MG3(NC)	30 07 5322	As previous, (NC)
8P	30 07 5329	ON/OFF pneumatic kit
8EP3	30 07 5420	12 VDC ON/OFF electro-pneumatic kit
	30 07 5330	24 VDC ON/OFF electro-pneumatic kit
8EP4	30 07 5343	12 VDC ON/OFF electro-pneumatic kit with manifold
	30 07 5344	24 VDC ON/OFF electro-pneumatic kit with manifold
8IZ	30 07 5432	Unilateral hydraulic proportional spool control kit
8EI3	30 07 5331	12 VDC ON/OFF electro-hydraulic kit
	30 07 5332	24 VDC ON/OFF electro-hydraulic kit
8EI3F	30 07 7605	12 VDC Proportional electro-hydraulic kit
	30 07 7606	24 VDC Proportional electro-hydraulic kit
13NZ	30 07 5316	4 positions with spring return in neutral position and detent in pos.3: **for 5DY spool**
13QN	30 07 5315	4 positions with spring return in neutral position and detent in pos.3: **for 5BY and 5PY spool**
11NZ	30 07 5317	Detent in positions neutral, 1,2 and detent in pos.3: **for 5DY spool**
13FZ	30 07 5318	4 positions with spring return in neutral and reduced spool stroke: **for 8 spool**

5. "B" side options — page 23

TYPE	CODE	DESCRIPTION
L	30 07 5335	Standard lever box
LF1	30 07 5337	Lever box with spool stroke limiter in position 1
LCB	30 07 5426	Joystick lever for 2 sections operation
SL	-	Without lever box
SLP	30 07 5338	Without lever box, with dust-proof plate
TQ	30 07 5328	Flexible cable connection; for CT cables
LEB	30 07 5340	Safety lever box, vertical configuration
LUP	30 07 5341	Safety lever box, horizontal configuration
SLCZ	30 07 7621	Without lever box, with endcap.

6. Complete controls * — page 27

TYPE	CODE	DESCRIPTION
ON/OFF Hydraulic control		
8IM	30 07 5348	ON/OFF Hydraulic control
Proportional hydraulic kit		
8IMSPSD	30 07 7558	With spool position sensor esecution. (ON/OFF)
8IMSPSL	30 07 7561	With spool position sensor esecution.
Rotative control type		
R	30 07 5333	Rotative control type

7. Outlet port options * — page 32

TYPE	CODE	DESCRIPTION
AET	30 05 4923	Open centre plug
AEK	30 05 4927	Closed centre plug
AE	30 05 6002	G3/8 carry-over sleeve
AE1	30 05 4926	G1/2 carry-over sleeve

8. Inlet and outlet selection * — page 7

TYPE	CODE	DESCRIPTION
PSL2	30 05 4918	G3/8 plug for upper inlet
	30 05 4919	G1/2 plug for upper outlet
PSA2	30 05 4918	G3/8 plug for side inlet
	30 05 4919	G1/2 plug for side outlet

a. "A" and "B" ports plugs *

TYPE	CODE	DESCRIPTION
G3/8	30 05 4918	For single acting spools type 3 and 4

b. Optional handlevers

TYPE	CODE	DESCRIPTION
M10x180	20 03 2380	Lenght L = 180mm / *7.09in*

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

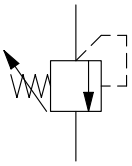
directional valve with left inlet

Inlet relief options

Direct pressure relief valve

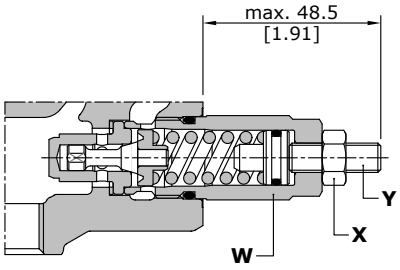
30 05 4917 **(X - 100)**

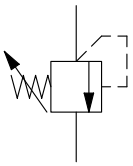
Configuration — Valve setting (bar)



Adjustment type

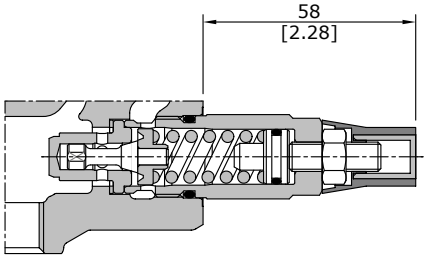
Configuration **X** type: adjustable with screw

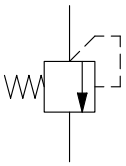




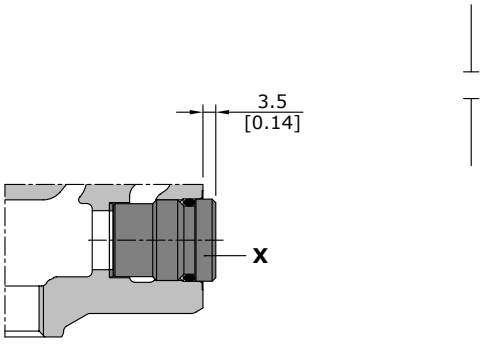
Wrenches and tightening torques
X = wrench 13 - 24 Nm *(17.7 lbft)*
Y = allen wrench 4
W = wrench 19 - 42 Nm *(31 lbft)*

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



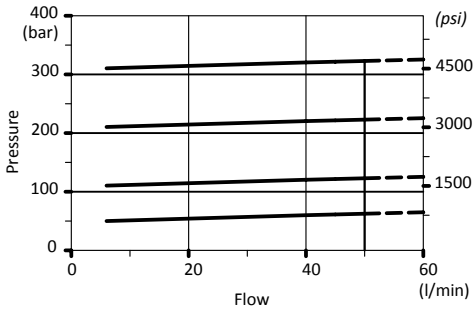


V: relief valve blanking plug



Wrenches and tightening torques
X = allen wrench 8 - 42 Nm *(31 lbft)*

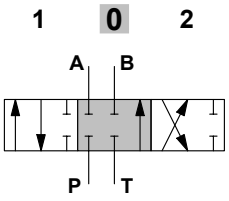
Performance data



directional valve with left inlet

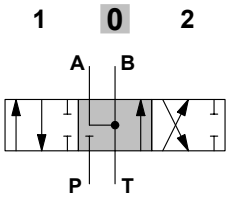
Spools options

1 (30 01 3501), 1CS (30 01 3502) spool type
Double acting, 3 positions, with A and B closed in neutral position



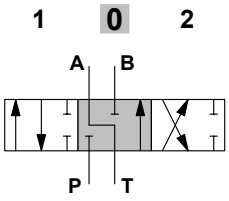
Spool stroke
position 1: + 6 mm *(+ 0.24 in)*
position 2: - 6 mm *(- 0.24 in)*

2 (30 01 3503), J7 (30 01 3506) spool type
Double acting, 3 positions, with A and B open to tank in neutral position



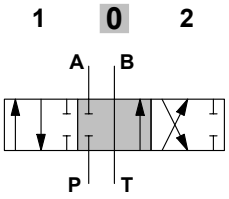
Spool stroke
position 1: + 6 mm *(+ 0.24 in)*
position 2: - 6 mm *(- 0.24 in)*

1A (30 01 3647) spool type
Double acting, 3 positions, with A open to tank in neutral position



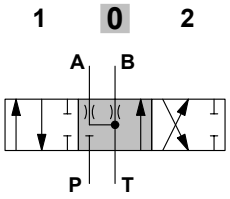
Spool stroke
position 1: + 6 mm *(+ 0.24 in)*
position 2: - 6 mm *(- 0.24 in)*

1B (30 01 3648) spool type
Double acting, 3 positions, with B open to tank in neutral position



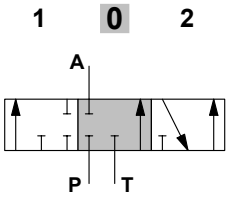
Spool stroke
position 1: + 6 mm *(+ 0.24 in)*
position 2: - 6 mm *(- 0.24 in)*

2H (30 01 3504) spool type
Double acting, 3 positions, with A and B partially open to tank in neutral position



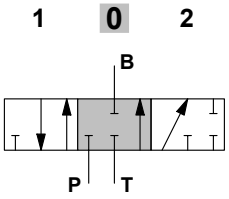
Spool stroke
position 1: + 6 mm *(+ 0.24 in)*
position 2: - 6 mm *(- 0.24 in)*

3 (30 01 3507) spool type
Single acting on A, 3 positions, B plugged; requires G3/8 plug



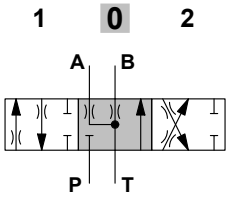
Spool stroke
position 1: + 4.2 mm *(+ 0.17 in)*
position 2: - 4.2 mm *(- 0.17 in)*

4 (30 01 3508) spool type
Single acting on B, 3 positions, A plugged; requires G3/8 plug



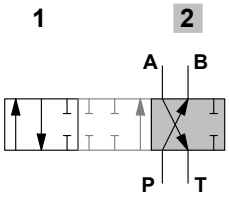
Spool stroke
position 1: + 4.2 mm *(+ 0.17 in)*
position 2: - 4.2 mm *(- 0.17 in)*

J6 (30 01 3505) spool type
Double acting, 3 positions, with A and B partially open to tank in neutral position



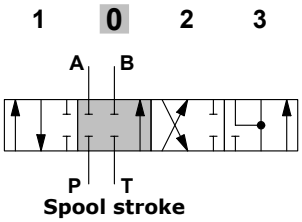
Spool stroke
position 1: + 6 mm *(+ 0.24 in)*
position 2: - 6 mm *(- 0.24 in)*

D4 (30 01 3818) spool type
Double acting, 2 positions, without neutral position



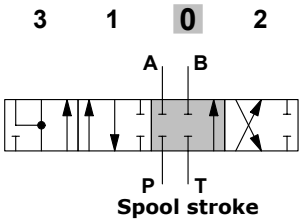
Spool stroke
position 1: + 12 mm *(+ 0.48 in)*

5DY (30 01 3511) spool type
Double acting, with A and B closed in neutral position, 4 positions, floating in position 3, with spool in



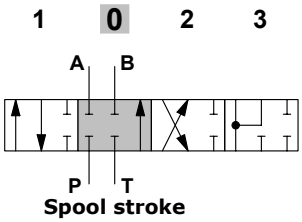
Spool stroke
position 1: + 4.5 mm *(+ 0.18 in)*
position 2: - 4.5 mm *(- 0.18 in)*
position 3: - 9 mm *(- 0.35 in)*

5BY (30 01 3509) spool type
Double acting, with A and B closed in neutral position, 4 positions, floating in position 3, with spool out



Spool stroke
position 3: + 9 mm *(+ 0.35 in)*
position 1: + 4.5 mm *(+ 0.18 in)*
position 2: - 4.5 mm *(- 0.18 in)*

8 (30 01 3513) spool type
Double acting, 4 positions, regenerative in position 3



Spool stroke
position 1: + 4.5 mm *(+ 0.18 in)*
position 2: - 4.5 mm *(- 0.18 in)*
position 3: - 7.5 mm *(- 0.30 in)*

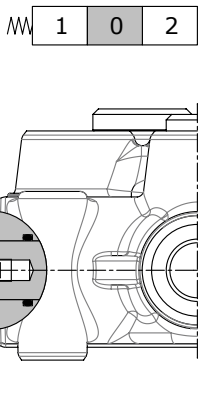
directional valve with left inlet

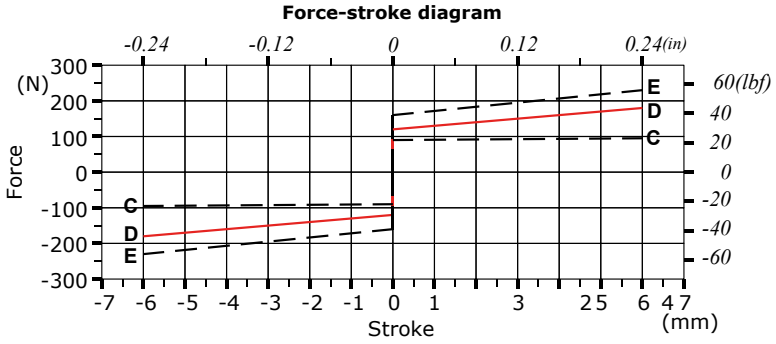
"A" side spool positioners

With spring return in neutral position

8 type (30 07 5300)

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)**.

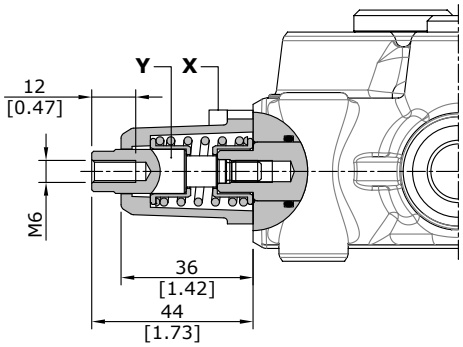




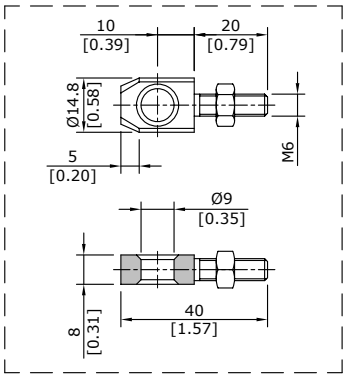
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

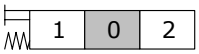
8D type (30 07 5307)

With M6 female threaded pin extension for dual control.



Spool end joint dimensions (optional)

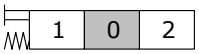


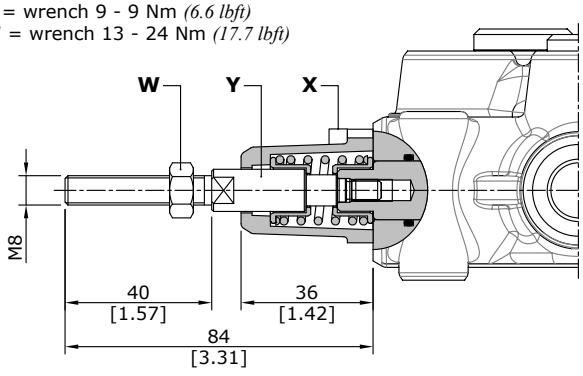


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 10 - 9 Nm *(6.6 lbft)*

8D2 type (30 07 5308)

Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 9 - 9 Nm *(6.6 lbft)*
W = wrench 13 - 24 Nm *(17.7 lbft)*

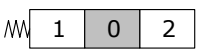


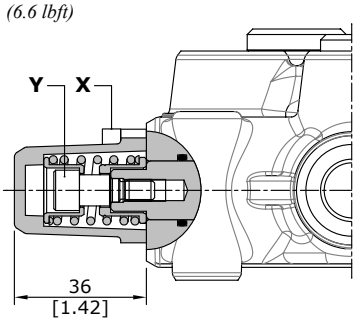


8T type (30 07 5301)

For single acting spool type 3 and 4

Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*



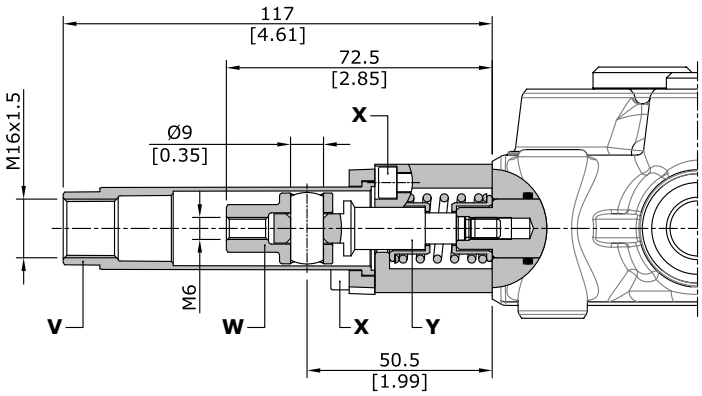


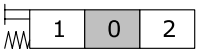
directional valve with left inlet

"A" side spool positioners

With spring return in neutral position

8TL type (30 07 5327)

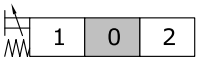


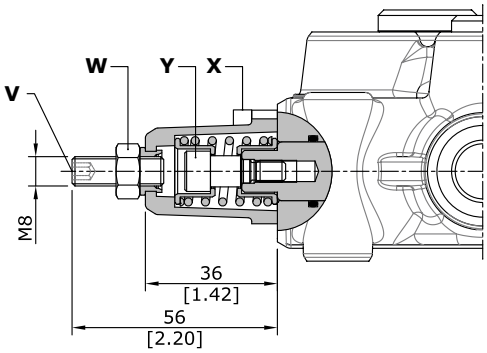


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 8 - 9 Nm *(6.6 lbft)*
W = wrench 13
V = wrench 20

8F2 type (30 07 5302)

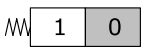
With spool stroke adjustment in position 2 (P→B)



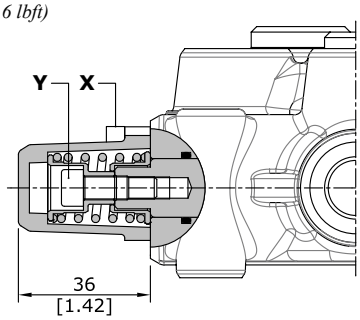


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*
W = wrench 13 - 24 Nm *(17.7 lbft)*
V = allen wrench 4

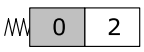
19 type (30 07 5410)



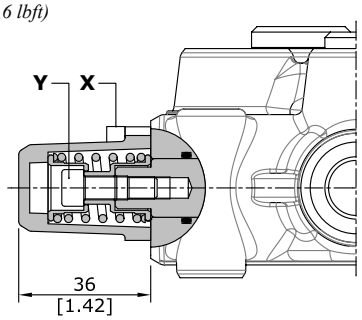
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 5 - 9 Nm *(6.6 lbft)*



20 type (30 07 5411)



Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 5 - 9 Nm *(6.6 lbft)*

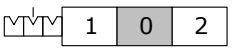


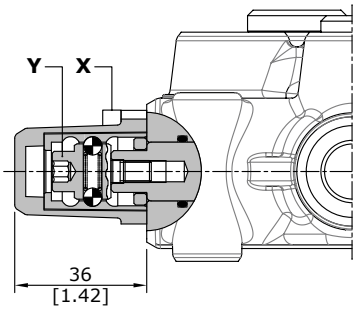
directional valve with left inlet

"A" side spool positioners

With detent

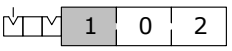
11 type (30 07 5303)

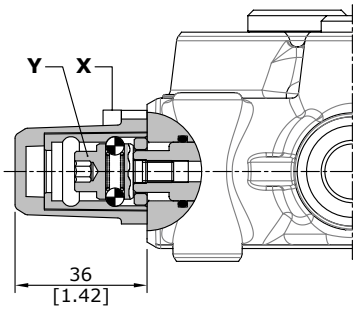




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

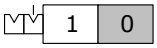
12 type (30 07 5334)

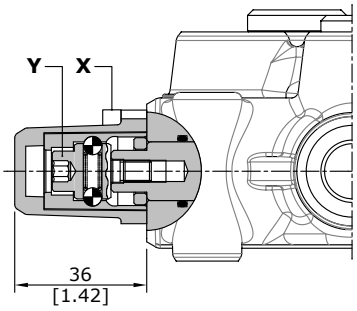




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

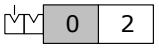
15 type (30 07 5304)

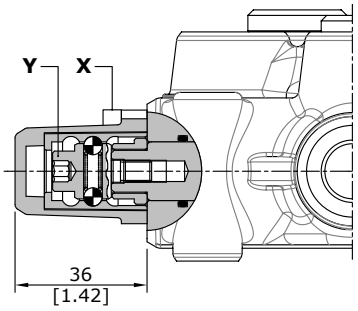




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

16 type (30 07 5408)





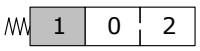
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

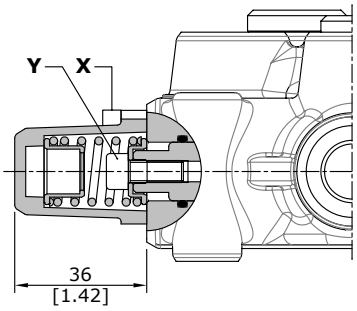
directional valve with left inlet

"A" side spool positioners

With spring return

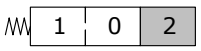
17 type (30 07 5412)

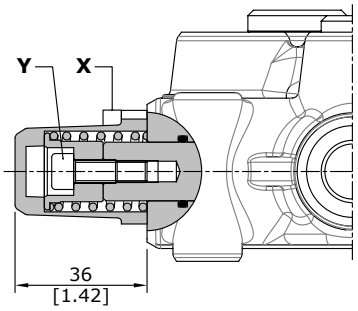




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 5 - 9 Nm *(6.6 lbft)*

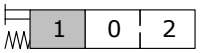
18 type (30 07 5305)

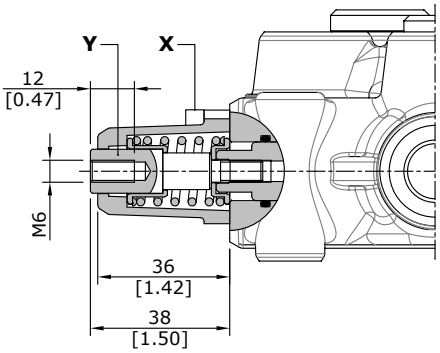




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 5 - 9 Nm *(6.6 lbft)*

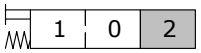
17D type (30 07 5413)

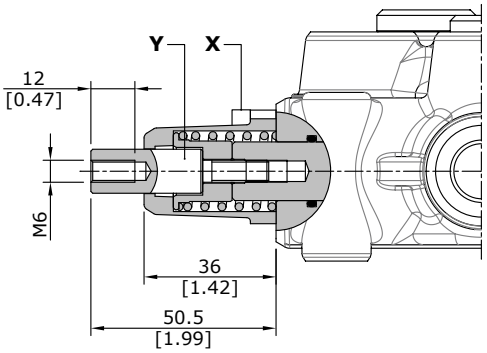




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 11 - 9 Nm *(6.6 lbft)*

18D type (30 07 5306)





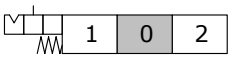
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 11 - 9 Nm *(6.6 lbft)*

directional valve with left inlet

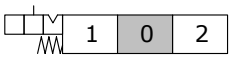
"A" side spool positioners

With detent and spring return to neutral position from either directions

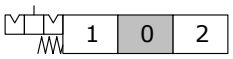
9B type (30 07 5309)
detent in position 1
(curve A)



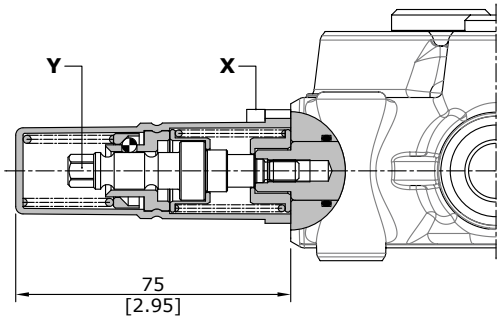
10B type (30 07 5310)
detent in position 2
(curve B)



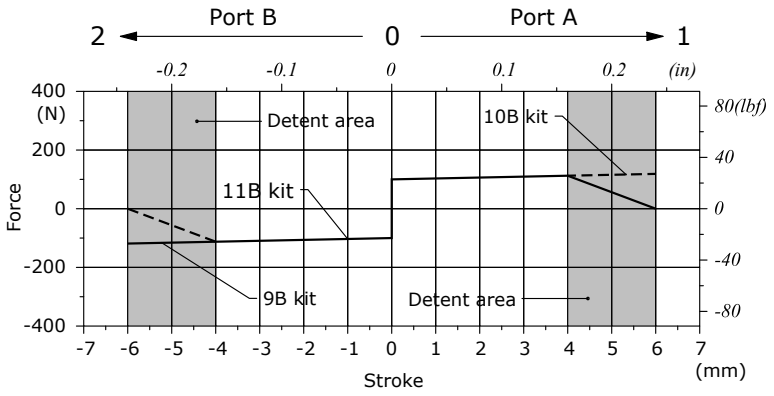
11B type (30 07 5311)
detent in position 1 and 2
(curves A and B)



11B type



Detent force-stroke

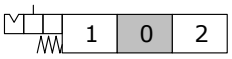


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 8 - 9 Nm *(6.6 lbft)*

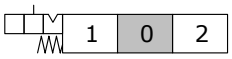
Position 1 - Detent force: 120 N *(27 lbf)* ± 10% / Release force: 230 N *(51.7 lbf)* ± 10%
Position 2 - Detent force: 120 N *(27 lbf)* ± 10% / Release force: 230 N *(51.7 lbf)* ± 10%

For single acting spool type 3 and 4
Stroke : 4.2mm

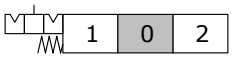
9BT type (30 07 5312)
detent in position 1
(curve A)



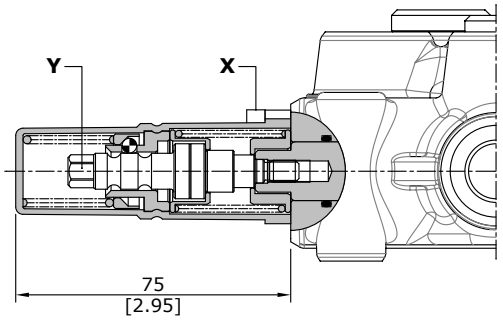
10BT type (30 07 5313)
detent in position 2
(curve B)



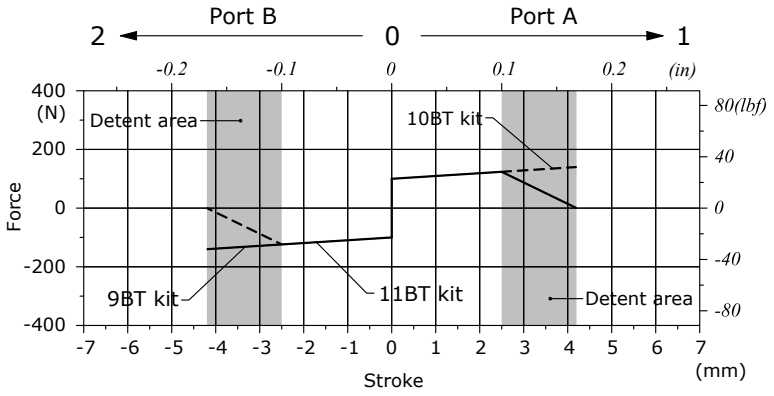
11BT type (30 07 5314)
detent in position 1 and 2
(curves A and B)



11BT type



Detent force-stroke



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: 120 N *(27 lbf)* ± 10% / Release force: 230 N *(51.7 lbf)* ± 10%
Position 2 - Detent force: 120 N *(27 lbf)* ± 10% / Release force: 230 N *(51.7 lbf)* ± 10%

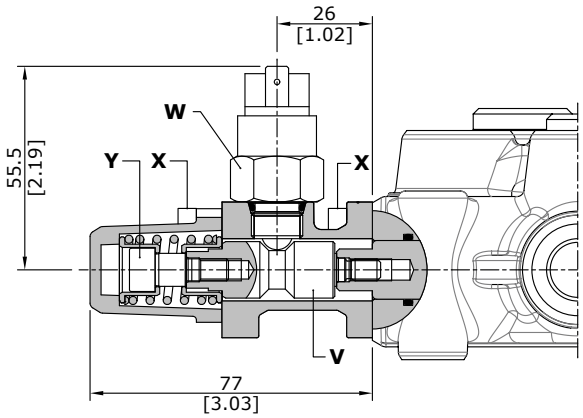
directional valve with left inlet

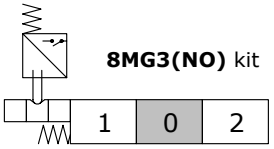
"A" side spool positioners

With microswitch

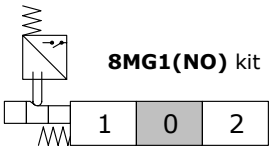
8MG3(NO) type (30 07 5319)

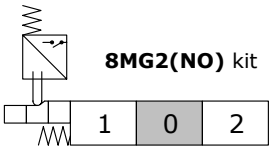
With spring return in neutral position and microswitch operated in both directions.
Also available **8MG1(NO)** (microswitch operated in position 1) and **8MG2(NO)** (microswitch operated in position 2) configurations; dimension are the same of **8MG3(NO)** configuration.
Same configurations are available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





Other configurations



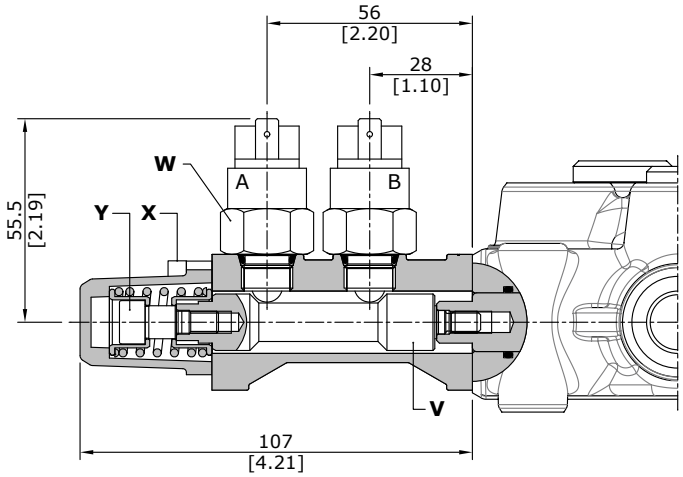


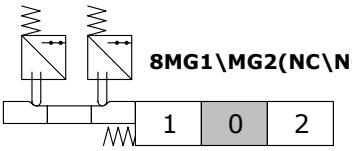
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*
W= wrench 22 - 42 Nm *(31 lbft)*
V = wrench 10 - 9.8 Nm *(7.2 lbft)*

Operating features
MICROSWITCH
Mechanical life : $5x10^5$ operations
Electrical life (resistive load) : $5x10^4$ operations 10A / 12VDC
: $5x10^4$ operations 3A / 24VDC

8MG1\MG2(NC\NC) type (30 07 5326)

With double microswitch in position 1 and 2.





Positions	A	B
1	⟋	—
0	—	—
2	—	⟋

Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*
W= wrench 22 - 42 Nm *(31 lbft)*
V = wrench 10 - 9.8 Nm *(7.2 lbft)*

Operating features
MICROSWITCH
Mechanical life : $5x10^5$ operations
Electrical life (resistive load) : $5x10^4$ operations 10A / 12VDC
: $5x10^4$ operations 3A / 24VDC

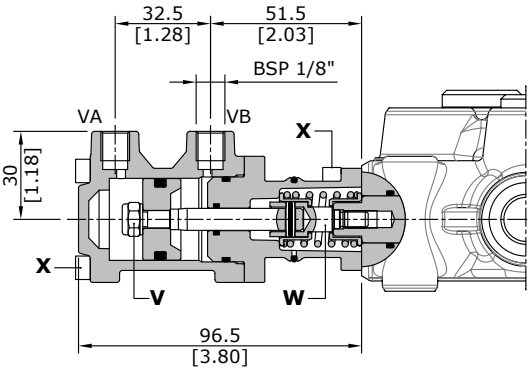
directional valve with left inlet

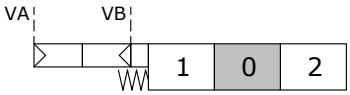
"A" side spool positioners

ON/OFF pneumatic kit

ON/OFF pneumatic: 8P type (30 07 5329)

With spring return to neutral position.





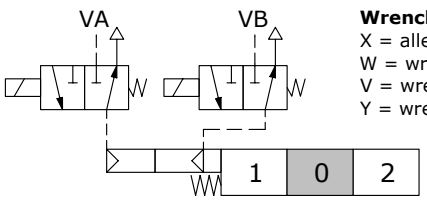
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
W = wrench 10 - 9 Nm *(6.6 lbft)*
V = wrench 10 - 9 Nm *(6.6 lbft)*

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

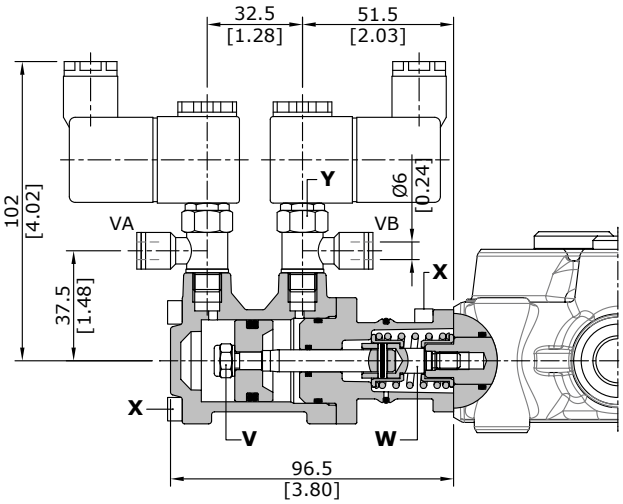
ON/OFF electro-pneumatic kit

Electro-pneumatic: 8EP3 type

With spring return to neutral position.

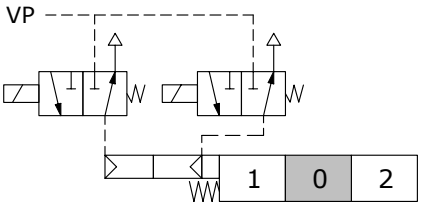


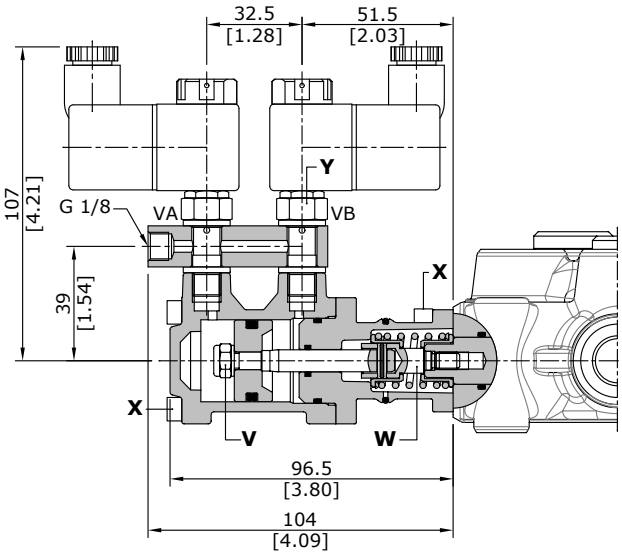
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
W = wrench 10 - 9 Nm *(6.6 lbft)*
V = wrench 10 - 9 Nm *(6.6 lbft)*
Y = wrench 15 - 6 Nm *(4.4 lbft)*



Electro-pneumatic: 8EP4 type

With spring return to neutral position.



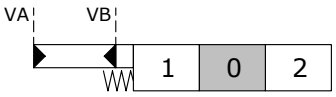


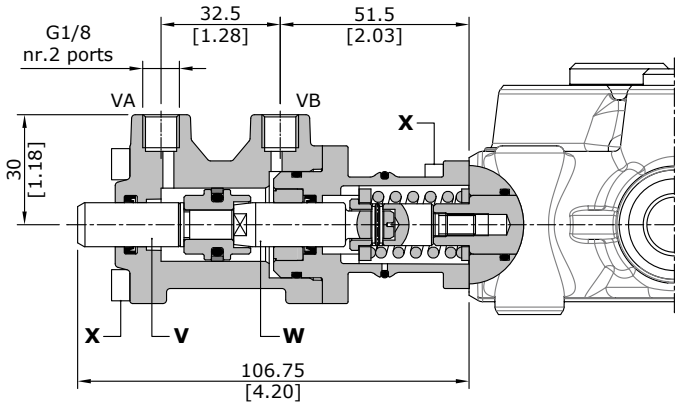
Common features
Pilot pressure.....: min. 5.5 bar *(min. 80 psi)*
: max. 10 bar *(min. 145 psi)*

directional valve with left inlet

"A" side spool positioners

Unilateral hydraulic proportional spool control kit 8IZ (30 07 5432)

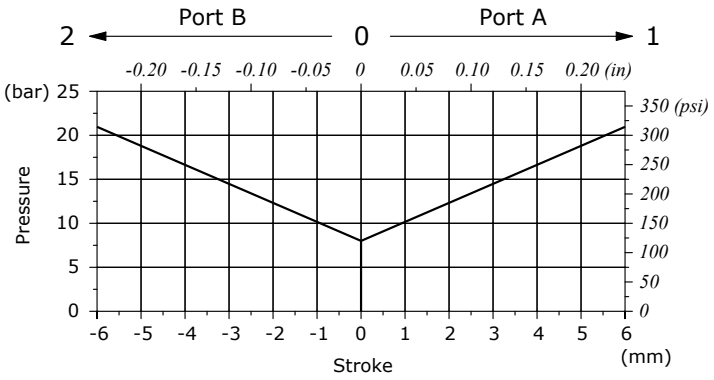




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
W = wrench 9 - 9 Nm *(6.6 lbft)*
V = allen wrench 6 - 9 Nm *(6.6 lbft)*

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

Pressure - stroke diagram

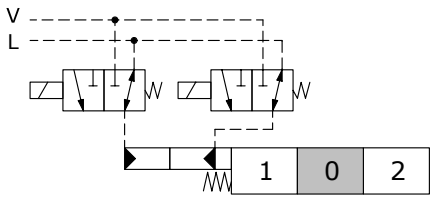


directional valve with left inlet

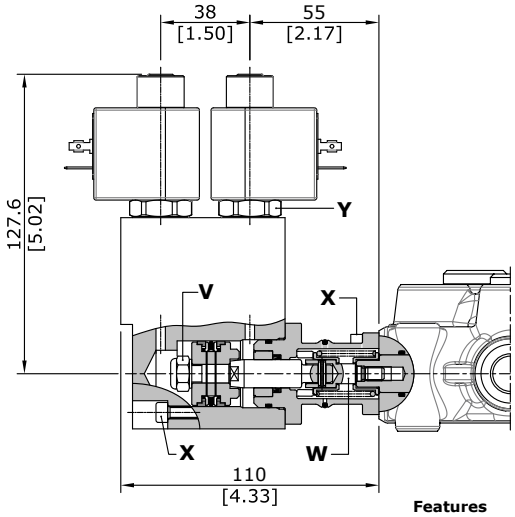
"A" side spool positioners

ON/OFF electro-hydraulic kit and proportional electro-hydraulic kit

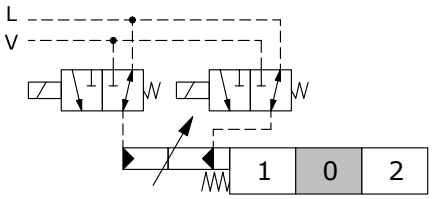
ON/OFF electro-hydraulic: 8EI3 type

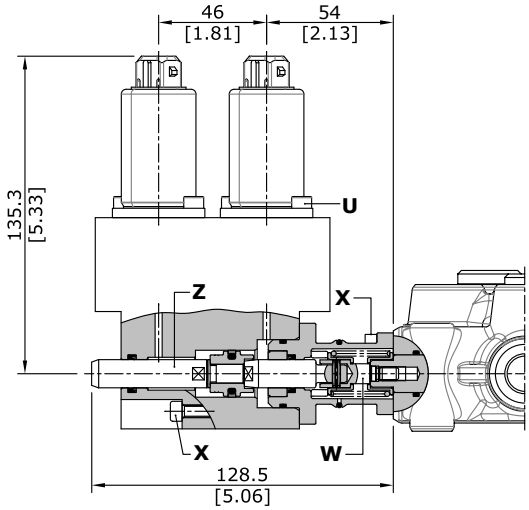


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
W = wrench 10 - 9 Nm *(6.6 lbft)*
V = wrench 13 - 9 Nm *(6.6 lbft)*
Y = wrench 24 - 9.8 Nm *(7.2 lbft)*
Z = wrench 11 - 9 Nm *(6.6 lbft)*
U = allen wrench 4



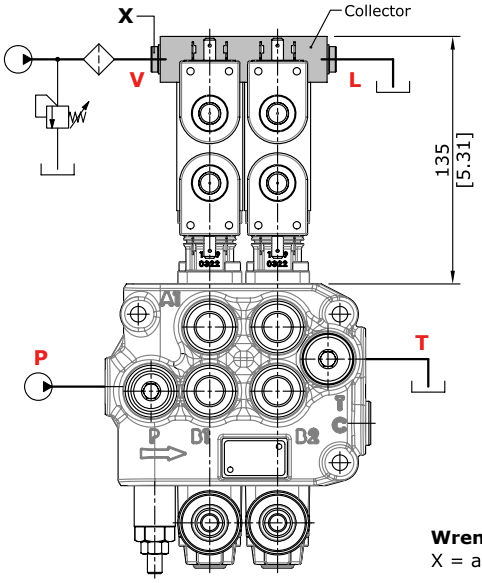
Proportional electro-hydraulic: 8EI3F type

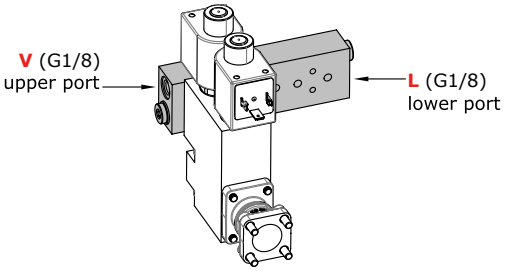




Features
Pilot pressure.....: min. 10 bar / *145 psi*
: max. 50 bar / *725 psi*
Max backpressure on drain L.....: 25 bar / *360 psi*

Collector kit for external pilot and drain





Wrenches and tightening torques
X = allen wrench 5 - 24 Nm *(17.7 lbft)*

Description example:
45L GM08/2-P(X-100)/1**8EI3**L/1**8EI3**L/
AET-PSL2-**KE2S0**-**24VDC**

COLLECTOR KIT CODES		
Type	**Code ***	**Description**
KE1S0	30 07 5537	Kit for one section
KE2S0	30 07 5512	Kit for 2 sections
KE3S0	30 07 5513	Kit for 3 sections
KE4S0	30 07 5514	Kit for 4 sections
KE5S0	30 07 5515	Kit for 5 sections
KE6S0	30 07 5516	Kit for 6 sections
KE7S0	30 07 7633	Kit for 7 sections

(*) codes are referred to BSP thread

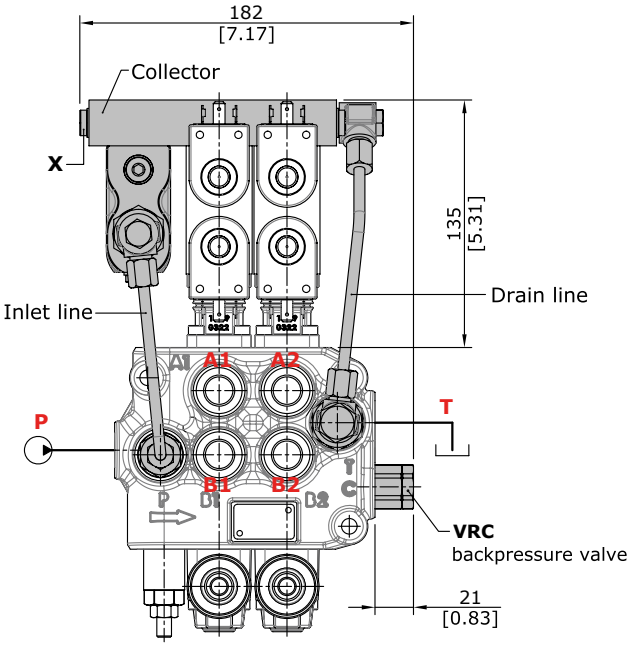
directional valve with left inlet

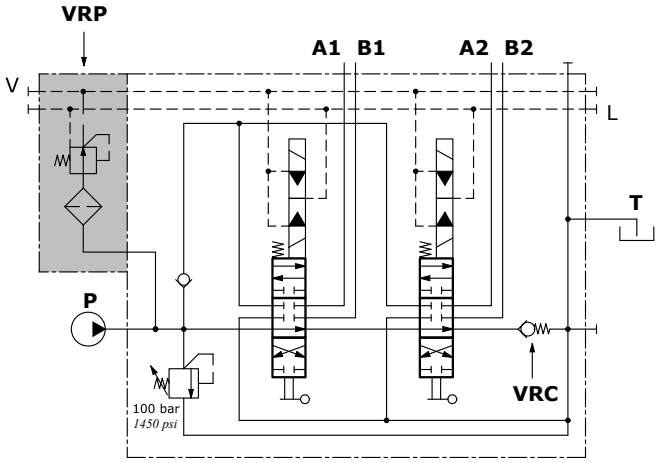
"A" side spool positioners

ON/OFF electro-hydraulic kit 8EI3 type

Collector kit for internal pilot and drain

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





Wrenches and tightening torques
X = allen wrench 5 - 24 Nm *(17.7 lbft)*

Description example:
45L GM08/2-P(X-100)/
1**8EI3**L/1**8EI3**L/
VRC–PSL2-**KE2R0**–**24VDC**

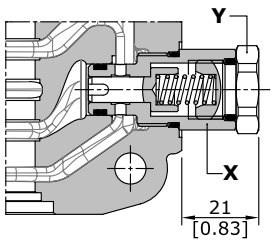
Features
VRP VALVE
Output pressure.....: 25 bar / *363 psi*
Max. flow..... : 8 l/min
Filtering..... : 80 µ

COLLECTOR KIT CODES		
Type	**Code ***	**Description**
KE1R0	30 07 5476	Kit for one section
KE2R0	30 07 5477	Kit for 2 sections
KE3R0	30 07 5478	Kit for 3 sections
KE4R0	30 07 5479	Kit for 4 sections
KE5R0	30 07 5480	Kit for 5 sections
KE6R0	30 07 5481	Kit for 6 sections
KE7R0	30 07 7634	Kit for 7 sections

(*) codes are referred to BSP thread

VRC backpressure valve

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



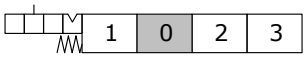
Wrenches and tightening torques
X = wrench 22 - 42 Nm *(31 lbft)*
Y = wrench 22 - 24 Nm *(17.7 lbft)*

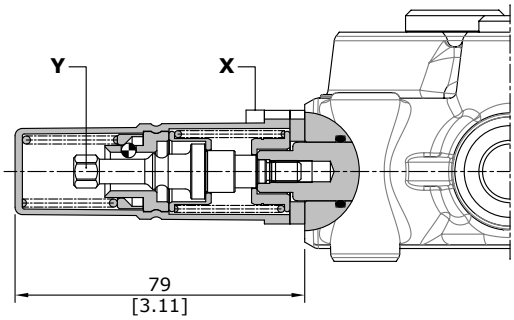
directional valve with left inlet

Particular positioner kits for special spools

13NZ type (30 07 5316)

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

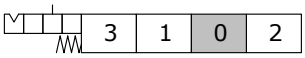


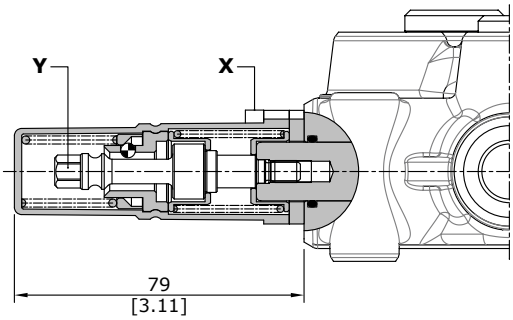


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 8 - 9 Nm *(6.6 lbft)*

13QN type (30 07 5315)

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

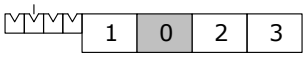


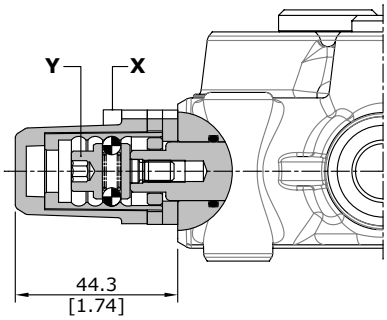


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 8 - 9 Nm *(6.6 lbft)*

11NZ type (30 07 5317)

4 positions, detent in all positions. **for 5DY spool.**

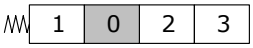


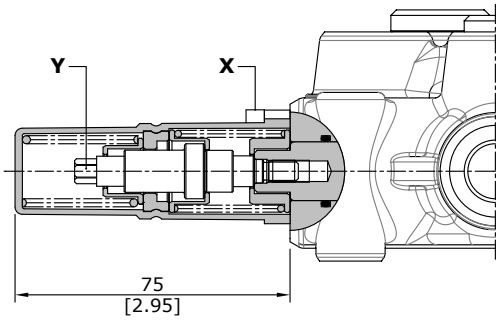


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

13FZ type (30 07 5318)

4 positions with spring return in neutral and reduced spool stroke: **for 8 spool**





Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 6 - 9 Nm *(6.6 lbft)*

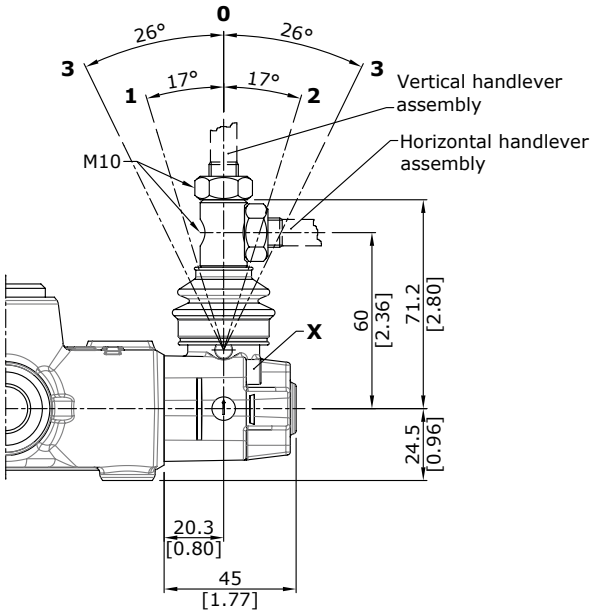
directional valve with left inlet

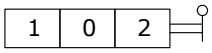
"B" side options

Lever control

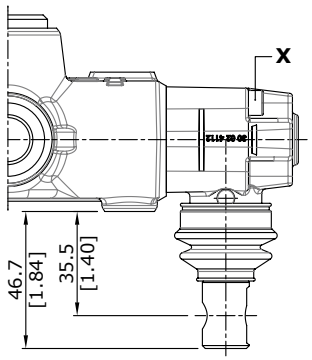
L type (30 07 5335)

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





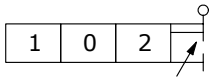
configuration L180

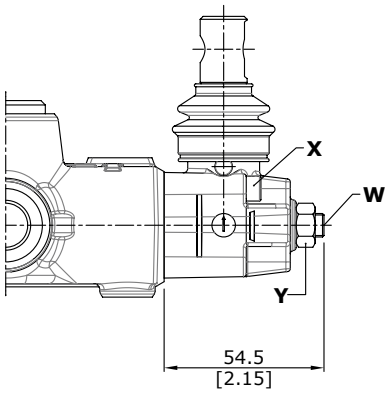


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*

LF1 type (30 07 5337)

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





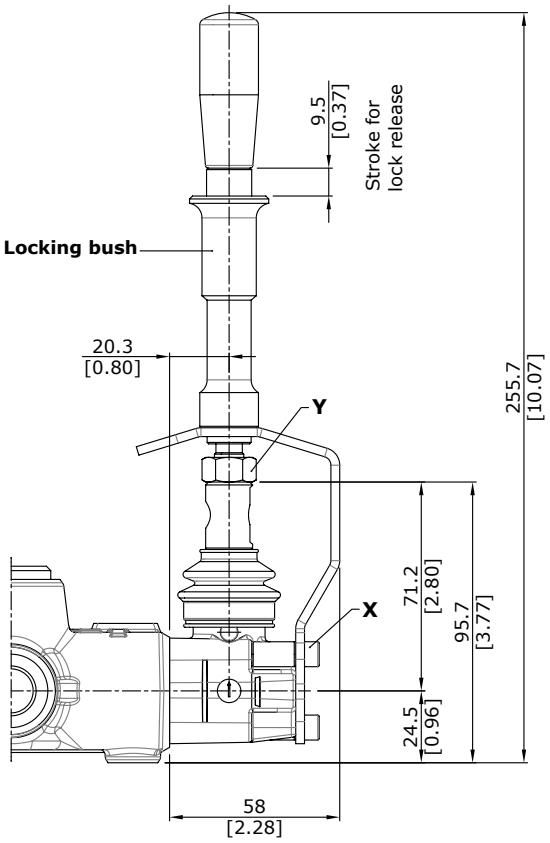
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 13 - 24 Nm *(17.7 lbft)*
W = allen wrench 4

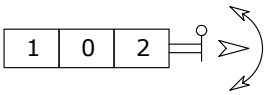
directional valve with left inlet

Lever control

Safety lever LEB type (30 07 5340)

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

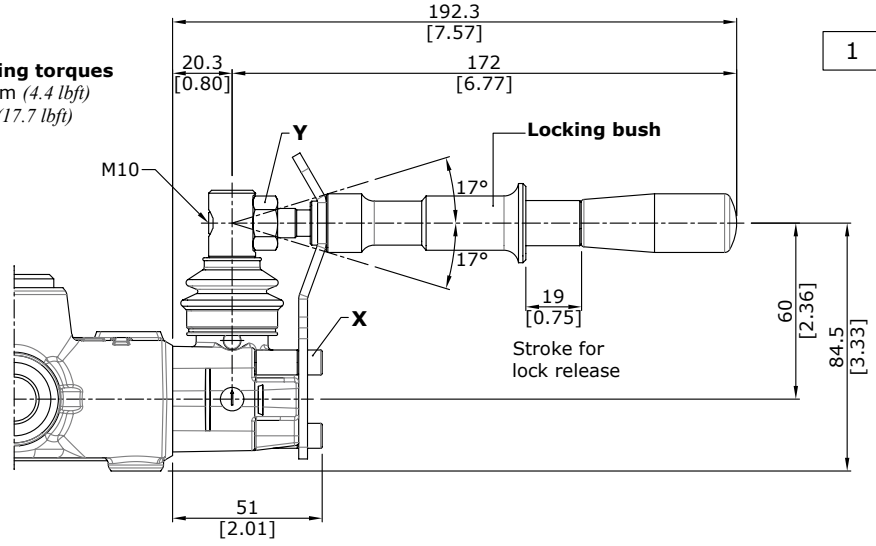


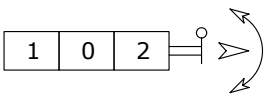


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 17 - 24 Nm *(17.7 lbft)*

Safety lever LUP type (30 07 5341)

Available as **LUP** configuration



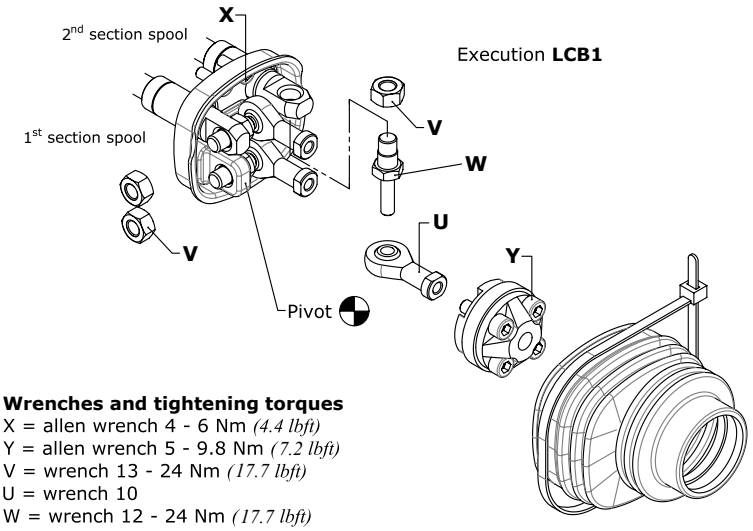


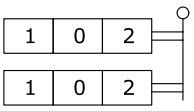
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 17 - 24 Nm *(17.7 lbft)*

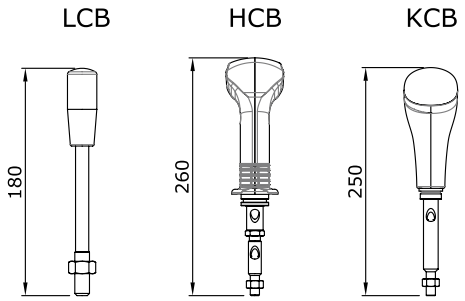
directional valve with left inlet

"B" side options

LCB mechanical joystick for two sections control (30 07 5426)





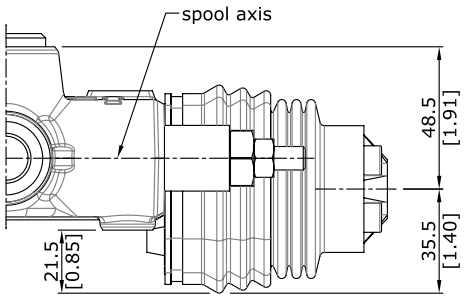


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 5 - 9.8 Nm *(7.2 lbft)*
V = wrench 13 - 24 Nm *(17.7 lbft)*
U = wrench 10
W = wrench 12 - 24 Nm *(17.7 lbft)*

Description example
45L GM08/2-P(X-100)/18**LCB1**/18**LCB1**/AET-PSL2

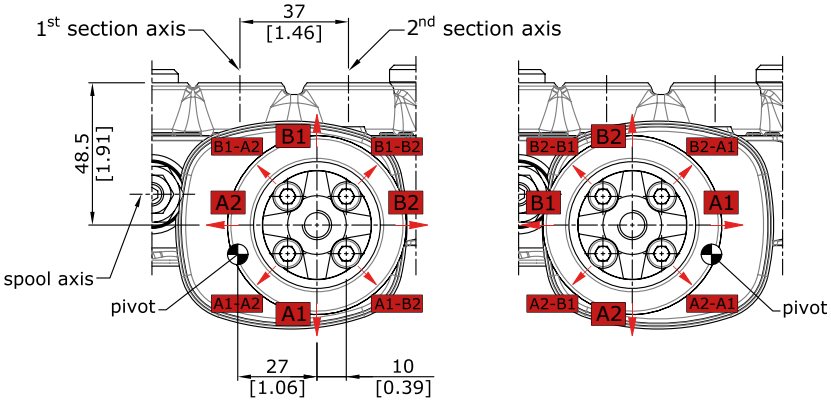
Dimensions and movement scheme for left inlet directional valve

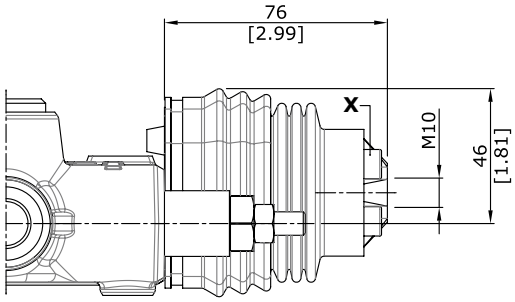
Wrenches and tightening torques
X = allen wrench 5 - 9.8 Nm *(7.2 lbft)*



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

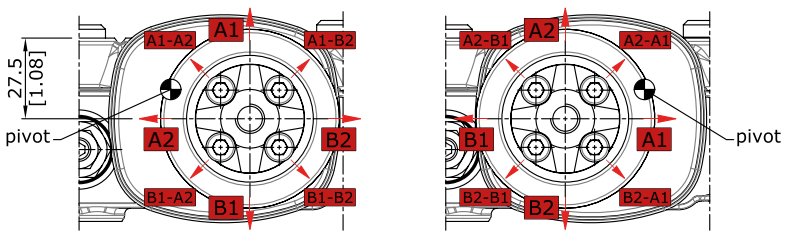
Execution **LCB2**
pivot placed down on the right





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

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



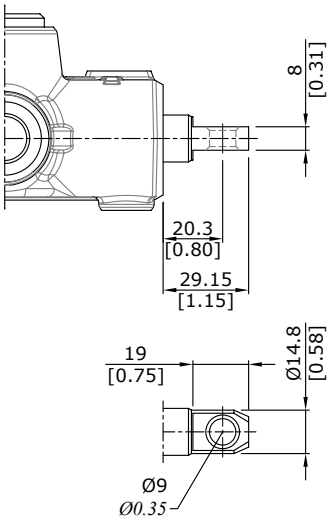
NOTE : Don't use with spool type 5DY.

directional valve with left inlet

"B" side options

SL type

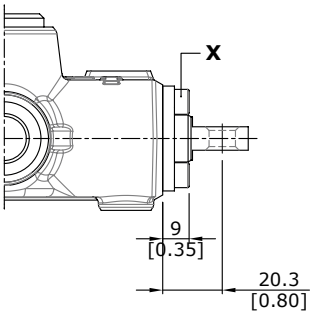
1	0	2



SLP type (30 07 5338)

Mechanical control with dust-proof plate kit.

1	0	2

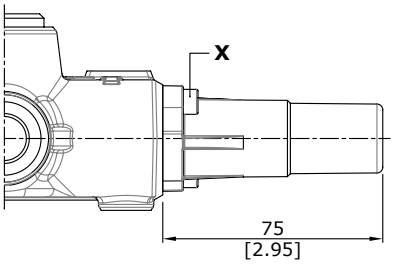


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*

SLCZ type (30 07 7621)

Protection cap usable with pneumatic, electropneumatic, and electrohydraulic spool positioners.

1	0	2

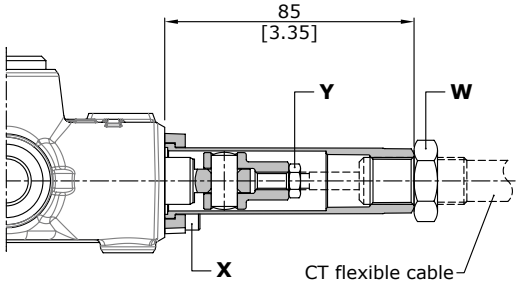


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*

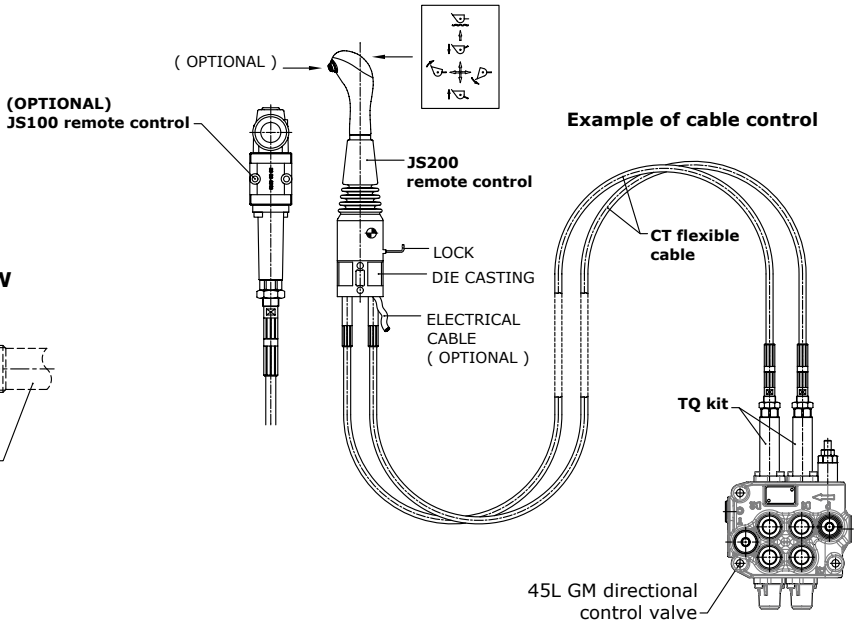
TQ cable remote control kit (30 07 5328)

Prearranged for remote control with flexible cable.

1	0	2



Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 10 - 9.8 Nm *(7.2 lbft)*
W = wrench 24 - 24 Nm *(17.7 lbft)*



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

directional valve with left inlet

Complete controls

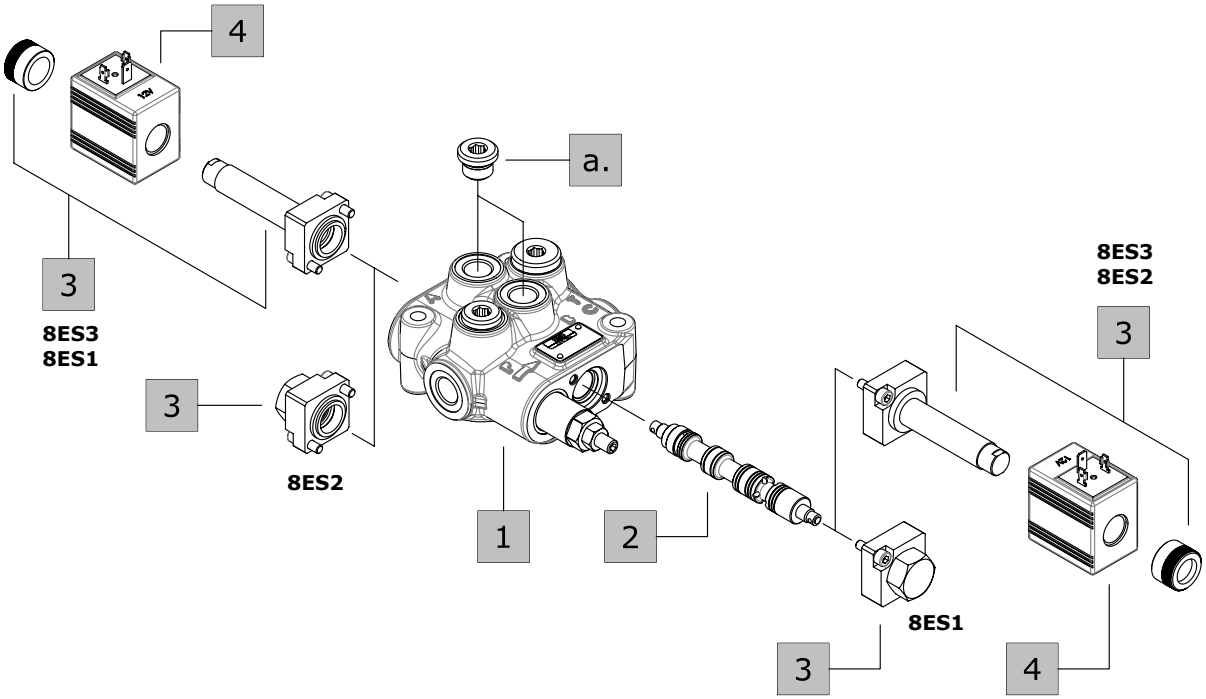
8ES solenoid control

Solenoid direct control with spring return to neutral position; it needs special spools and standard body (body kit without seals on spool).

Description example:

45L GM08 / 1 - P (X-100) / 1(ES) 8ES3 / AET - PSL2 - 12VDC

1 2 3 4



1. Body kits *

TYPE	CODE	DESCRIPTION
1-P	30 08 9101	Parallel, 1 section
2-P	30 08 9102	Parallel, 2 sections
3-P	30 08 9103	Parallel, 3 sections
4-P	30 08 9104	Parallel, 4 sections
5-P	30 08 9105	Parallel, 5 sections
6-P	30 08 9106	Parallel, 6 sections
7-P	30 08 9107	Parallel, 7 sections

Include body, seals, rings and load check valve.

2. Spools

TYPE	CODE	DESCRIPTION
1(ES)	30 01 3643	Double acting, 3 positions, with A and B closed in neutral position
2(ES)	30 01 3644	Double acting, 3 positions, with A and B open to tank in neutral position

3. Control kit

TYPE	CODE	DESCRIPTION
8ES1	30 07 5474	P→A, with spring return to neutral position
8ES2	30 07 5474	P→B, with spring return to neutral position
8ES3	30 07 5475	Double acting with spring return to neutral position

4. Coils

TYPE	CODE	DESCRIPTION
12VDC	20 03 2295	Nominal voltage 12VDC
24VDC	20 03 2296	Nominal voltage 24VDC

a. "A" and "B" ports plugs

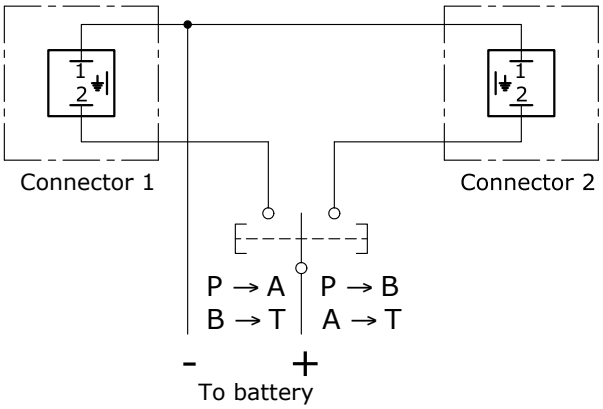
TYPE	CODE	DESCRIPTION
G3/8	30 05 4918	For single acting controls type 8ES1 and 8ES2

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

directional valve with left inlet

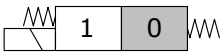
8ES solenoid control

Electric wiring example

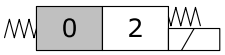


8ES3 kit
double acting

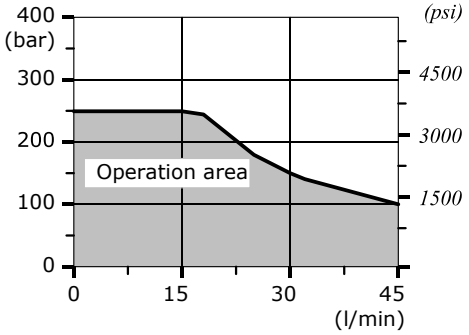
8ES1 kit
single acting on A



8ES2 kit
single acting on B

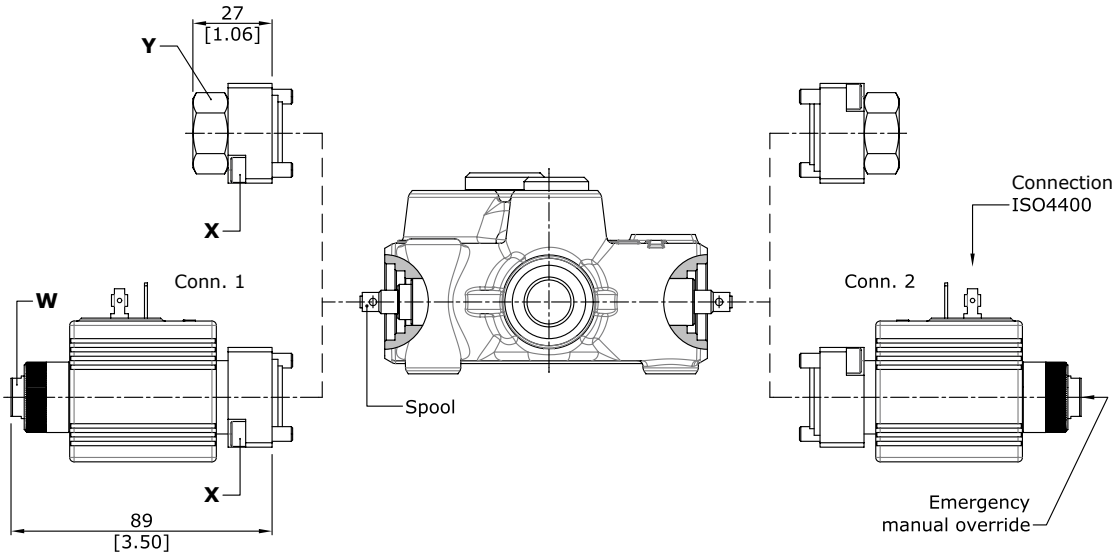


Operating condition diagram



Operating features

CONTROL
Internal leakage A(B) → T
(Δp = 100 bar - 1450 psi / T = 40°C) : max. 15 cm³/min - *0.91 in³/min*
COIL
Nominal voltage tolerance..... : ±10%
Power rating.....: 36 W
Coil insulance.....: class H
Duty cycle.....: 100%



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

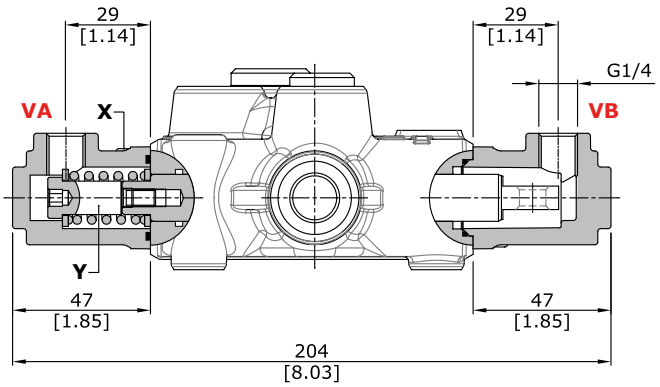
directional valve with left inlet

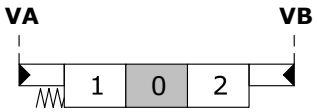
Complete controls

Proportional hydraulic controls

8IM type (30 07 5348)

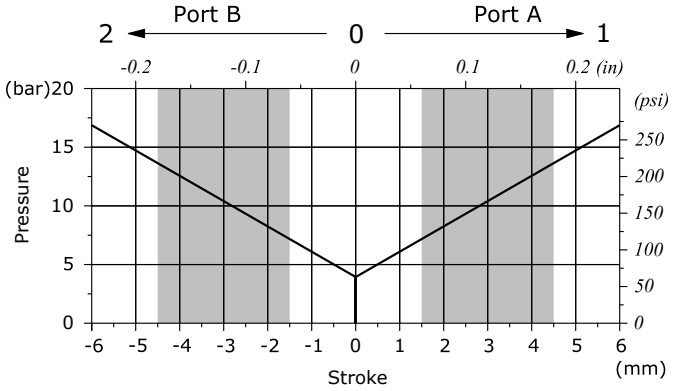
It can be used with standard spools and body





Diagrams and features of proportional hydraulic controls

Pressure - stroke diagram
(for controls represented)

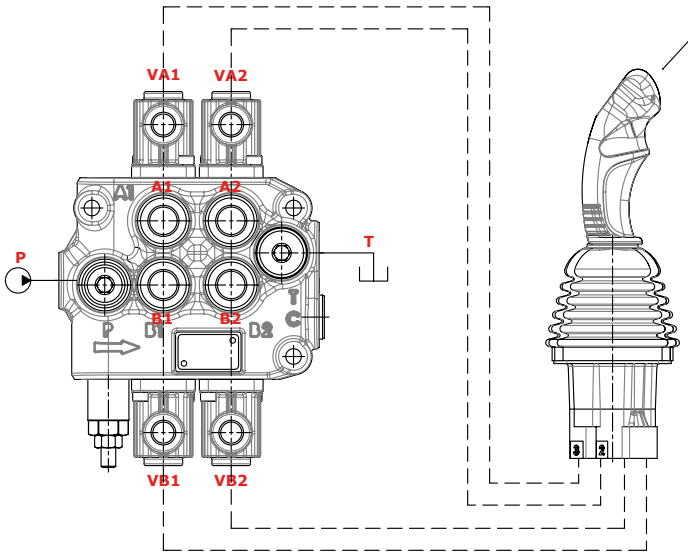


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

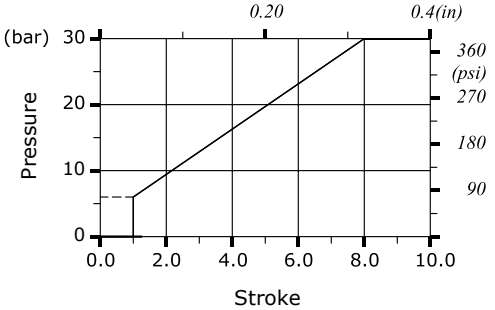
Operating features
Pilot pressure : max. 50 bar *(725 psi)*
Internal leakage A(B)→ T (Δ = 100 bar - *(1450 psi)*
/ T = 40°C)
..... : max. 6cm³/min - *0.37 in³/min*

Spool overlap area
Metering area

Connection example



8IM control kit
curve 001 without step

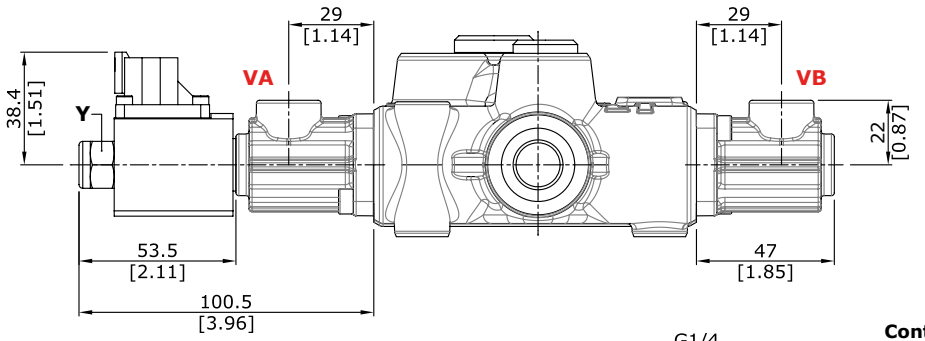


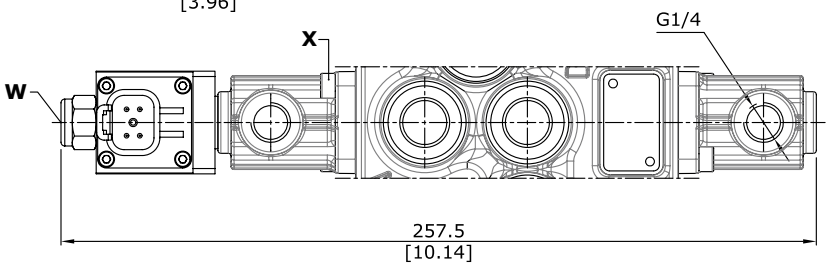
directional valve with left inlet

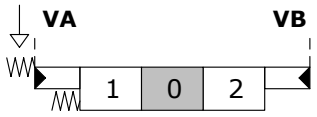
Proportional hydraulic control type

8IMSPSD (30 07 7558), 8IMSPSL (30 07 7561)

With spool position sensor.

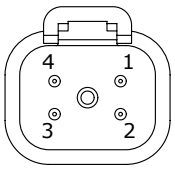






Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 17 - 9.8 Nm *(7.23 lbft)*
W = allen wrench 4 - 9.8 Nm *(7.23 lbft)*

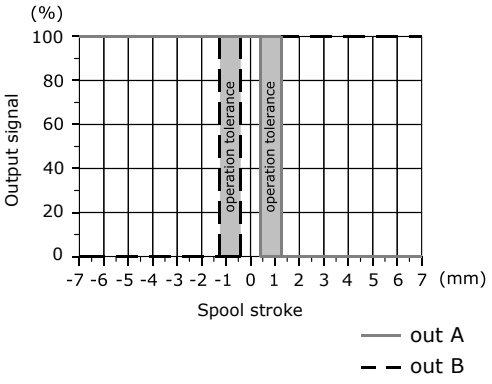
Control features
Pilot pressure..... : max. 100 bar *(1450 psi)*
Connector ..... : Deutsch DT04-4P



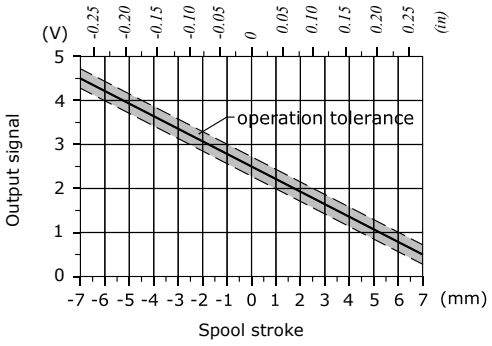
Connector PIN-OUT		
	Functions	
Pin	for 5V supply	for 8-32V supply
1	+5V	signal OUT
2	N.C.	GND
3	GND	Vb+
4	signal Out	not connected

Spool position sensor features
Voltage supply range..... : from 9 to 32 VDC or 5 VDC
Current absorption..... : <10 mA
Mechanical life..... : $3x10^6$
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



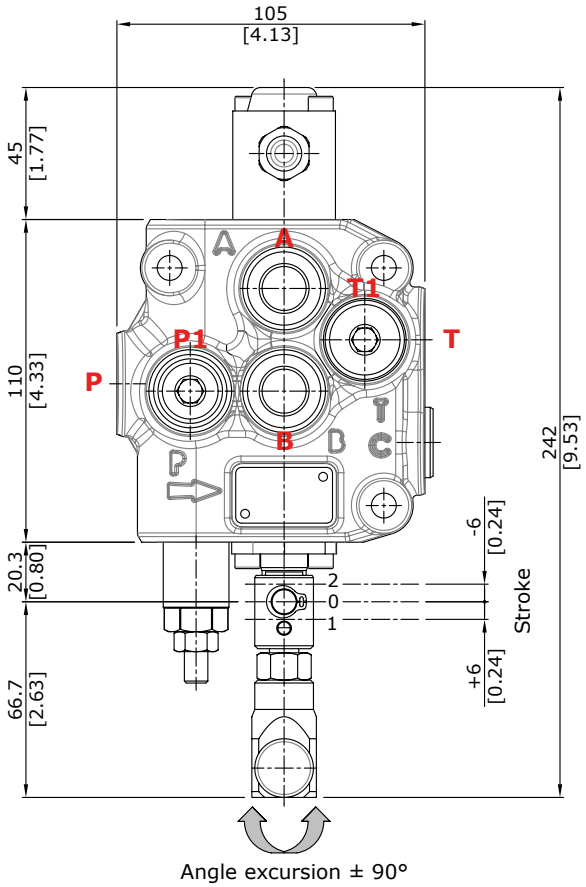
Output signal
Range.....: from 0.5 to 4.5 V
Linearity.....: ± 5%
Spool in neutral..... : 2.5 ± 0.2 V
Max current..... : 1 mA
Mechanical vibrations,
shock, bumps..... : IEC 68-2-6,27,29
EMC compatibility..... : ISO 13766 - ISO 15982

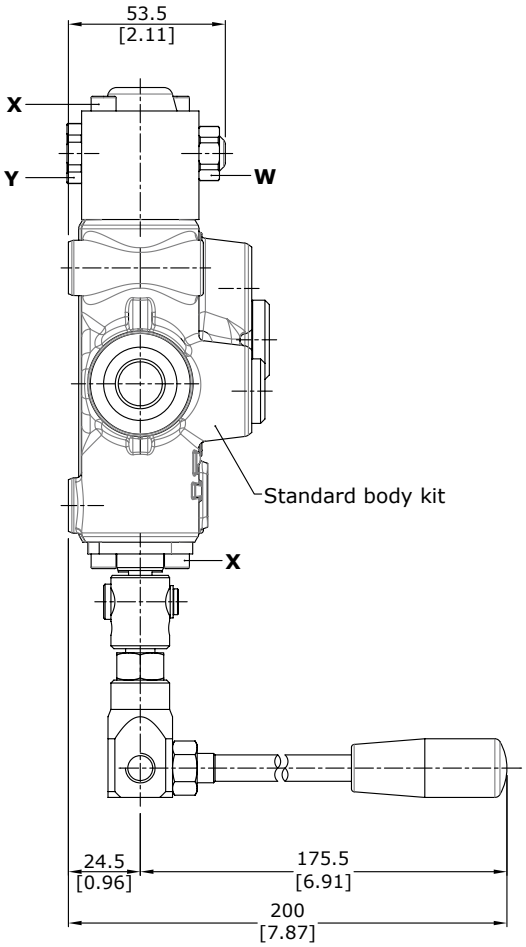
directional valve with left inlet

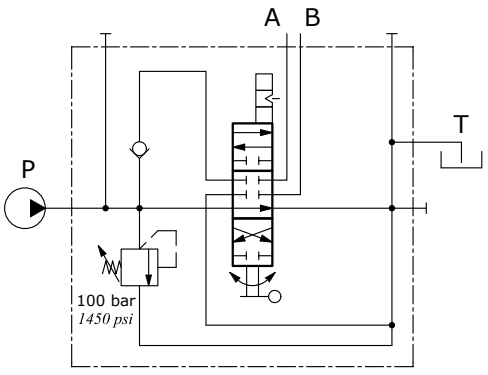
Special configurations

Directional valve with rotary control kit

R type (30 07 5333)







Description example
45L GM08/1(X-100)/1 **R SLP**/AET-PSL2

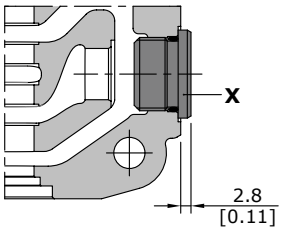
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 19 - 9.8 Nm *(7.23 lbft)*
W = wrench 17 - 9.8 Nm *(7.23 lbft)*

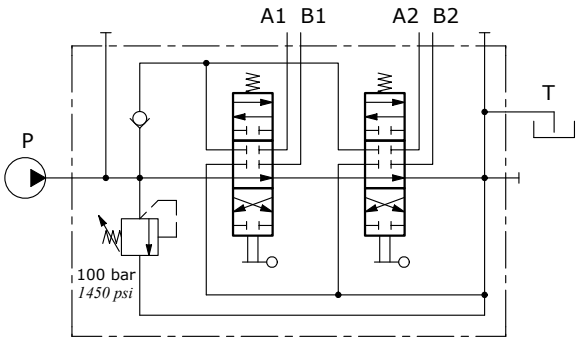
directional valve with left inlet

Outlet port options

It's possible to have open centre, closed centre and carry-over.

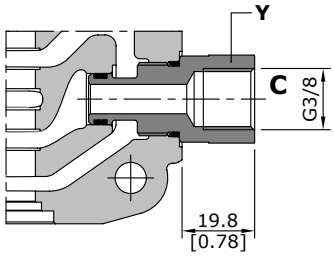
AET: open centre (standard)

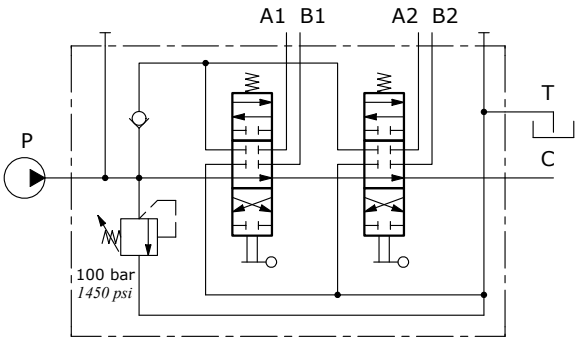




Description example
45L GM08/2-P(X-100)/18L/18L/**AET**-PSL2

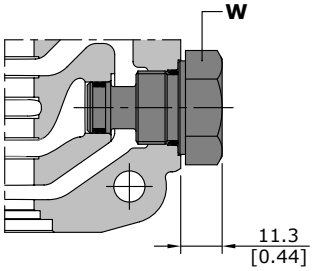
AE: with carry-over

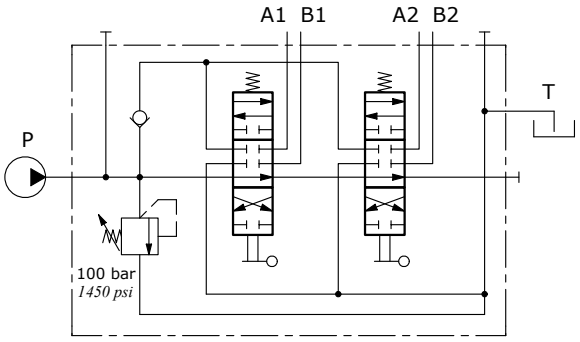




Description example
45L GM08/2-P(X-100)/18L/18L/**AE**-PSL2

AEK: closed centre





Description example
45L GM08/2-P(X-100)/18L/18L/**AEK**-PSL2

Wrenches and tightening torques
X = allen wrench 8 - 42 Nm *(31 lbft)*
Y = wrench 24 - 42 Nm *(31 lbft)*
W = wrench 27 - 42 Nm *(31 lbft)*

directional valve with left inlet

Inlet port options

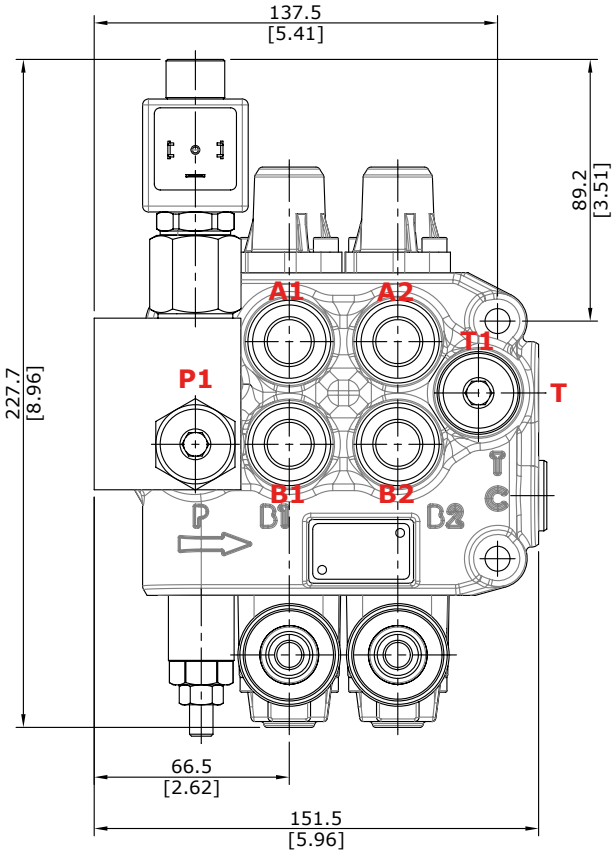
With solenoid pilot unloader valve

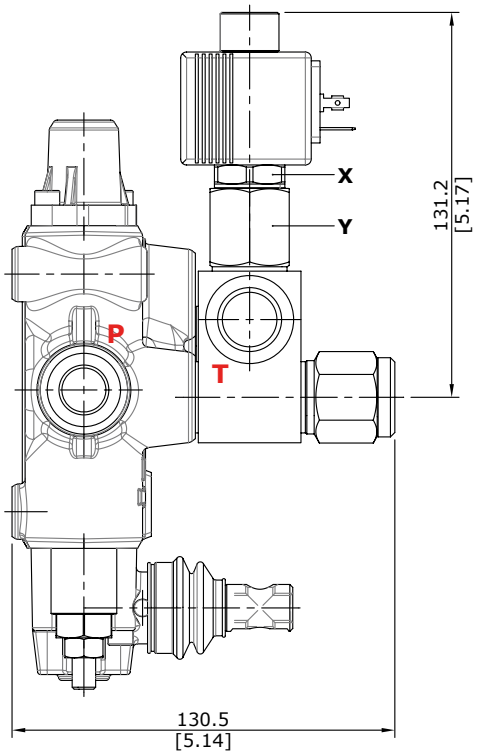
Description example:
45L GM08/2-P(X-100) **ELN(NO) - 12VDC**

Solenoid operated valve: **ELN** / **ELP** / **ELT**

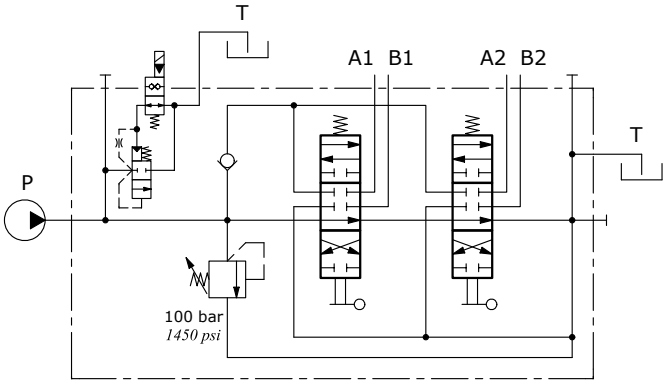
Feeding voltage: for solenoid operated

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.



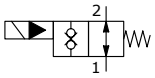


Normally open configuration type ELN

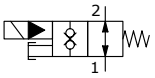


Wrenches and tightening torques
X = wrench 24 - 35 Nm *(26 lbft)*
Y = wrench 27 - 42 Nm *(31 lbft)*

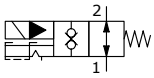
ELN: without emergency



ELP: push button type



ELT: "push & twist" type

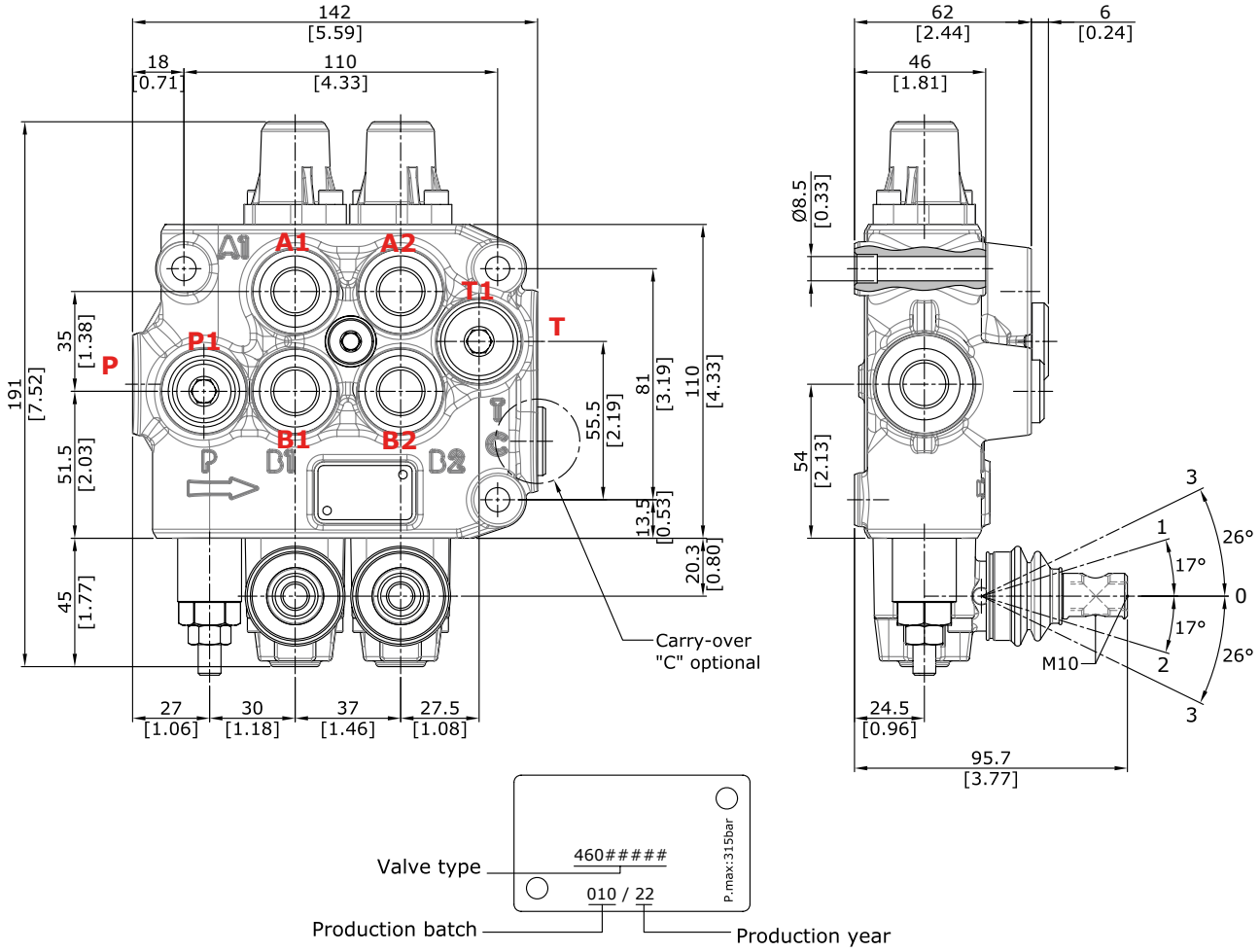


Valve operating features
Maximum operating pressure : 250 bar
Maximum flow : 15 l/min
Internal leakage: max 5 drops/min @ 250bar

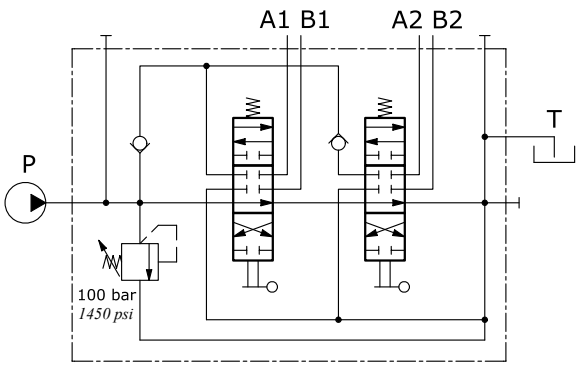
Description example
45L GM08/2-P(X-100)**ELN(NO)-12VDC**/18L/18L/AET-PSL2

directional valve with left inlet

Dimensional data (parallel circuit)

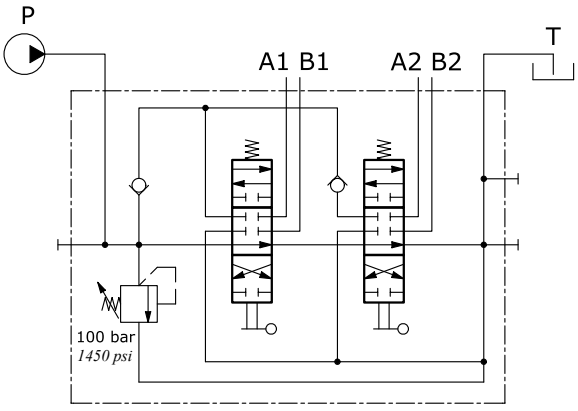


Standard configuration



Description example
45L **GMC**08/2-P(X-100)/18L/18L/AET-**PSL2**

Upper inlet and outlet ports configuration



Description example
45L **GMC**08/2-P(X-100)/18L/18L/AET-**PSA2**

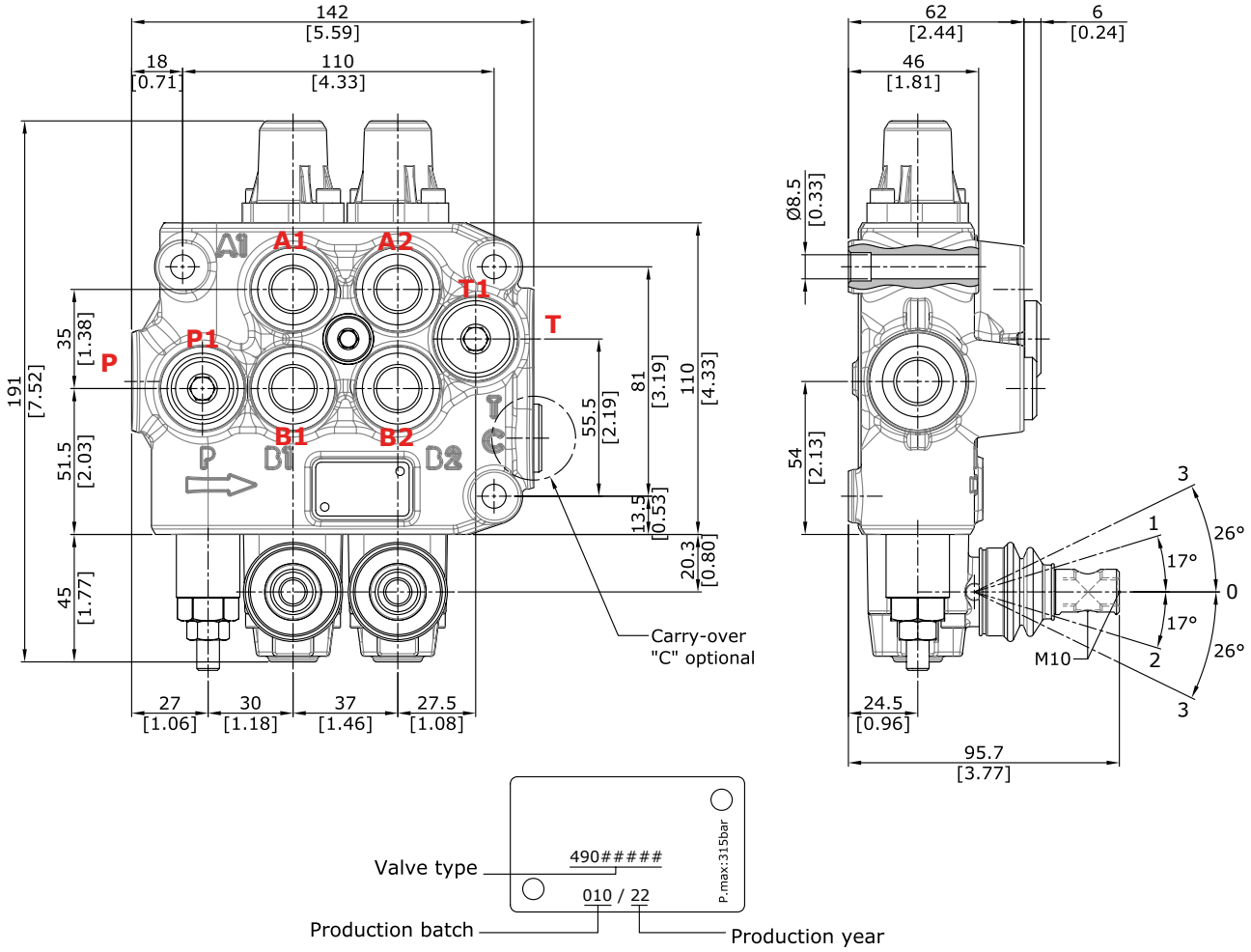
NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

45L GMCS

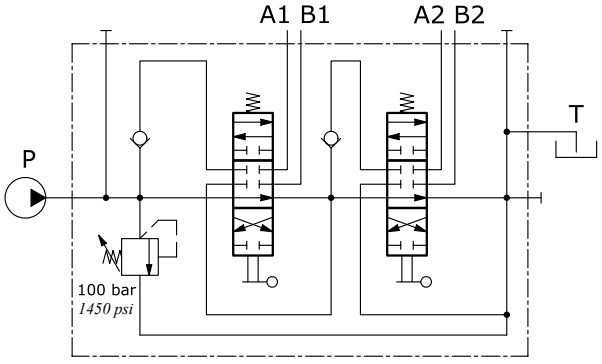
directional valve with left inlet

Dimensional data (series circuit)

The description of **45L GMCS** valve with series circuit is marked with letter **"S"** and one figure wich indicate the downstream sections from series connection.

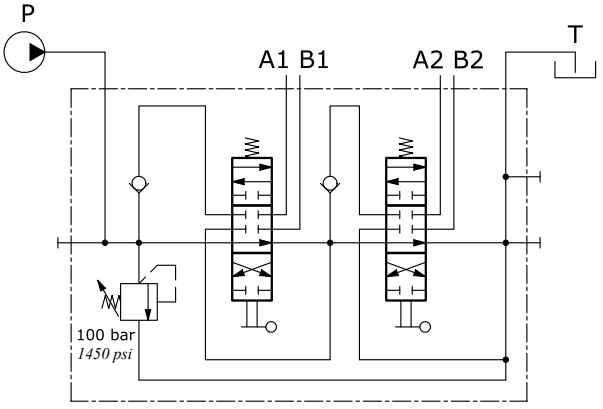


Standard configuration



Description example
45L **GMCS**08/2-**S1**(X-100)/18L/18L/AET-**PSL2**

Upper inlet and outlet ports configuration



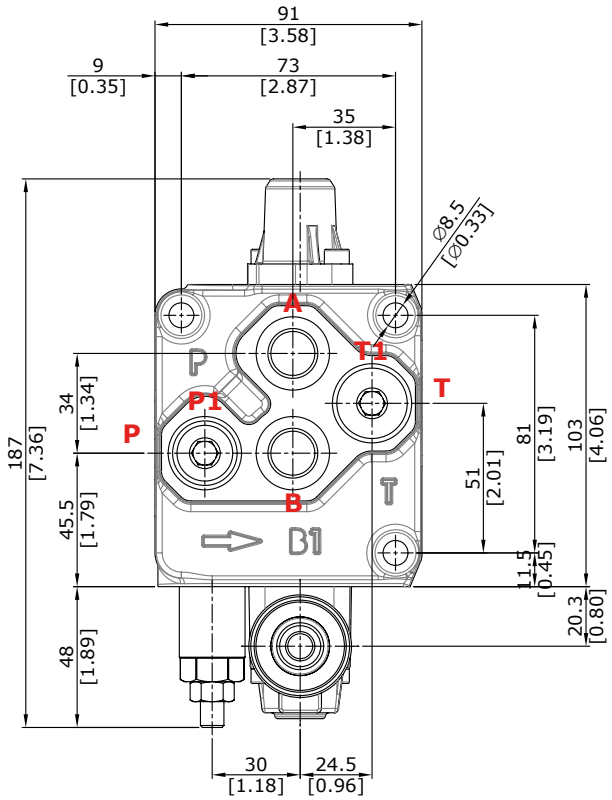
Description example
45L **GMCS**08/2-**S1**(X-100)/18L/18L/AET-**PSA2**

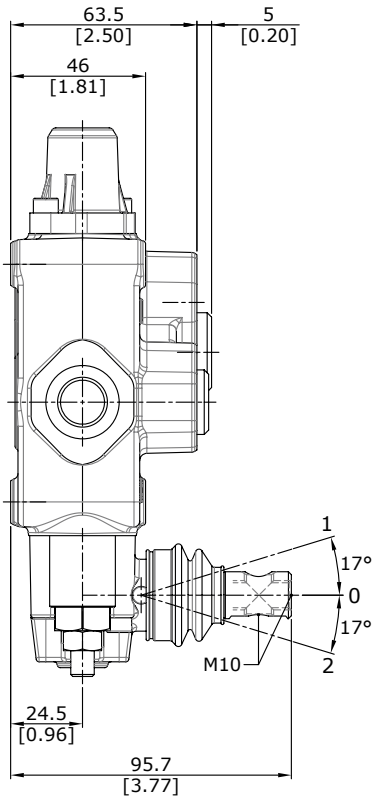
NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

directional valve with left inlet

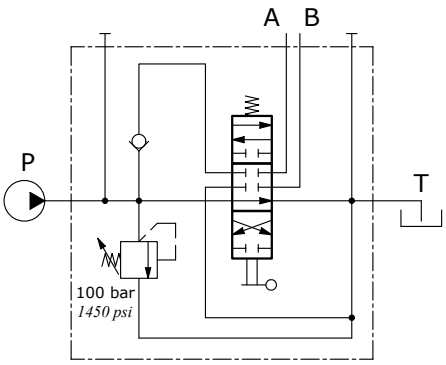
45L GMT

Dimensional data



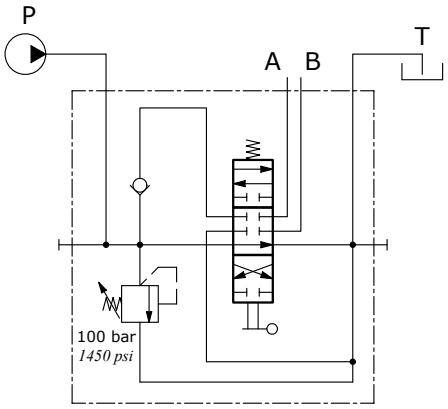


Standard configuration



Description example
45L **GMT**08/1-**N**(X-100)/18L-**PSL2**

Upper inlet and outlet ports configuration



Description example
45L **GMT**08/1-**N**(X-100)/18L-**PSA2**

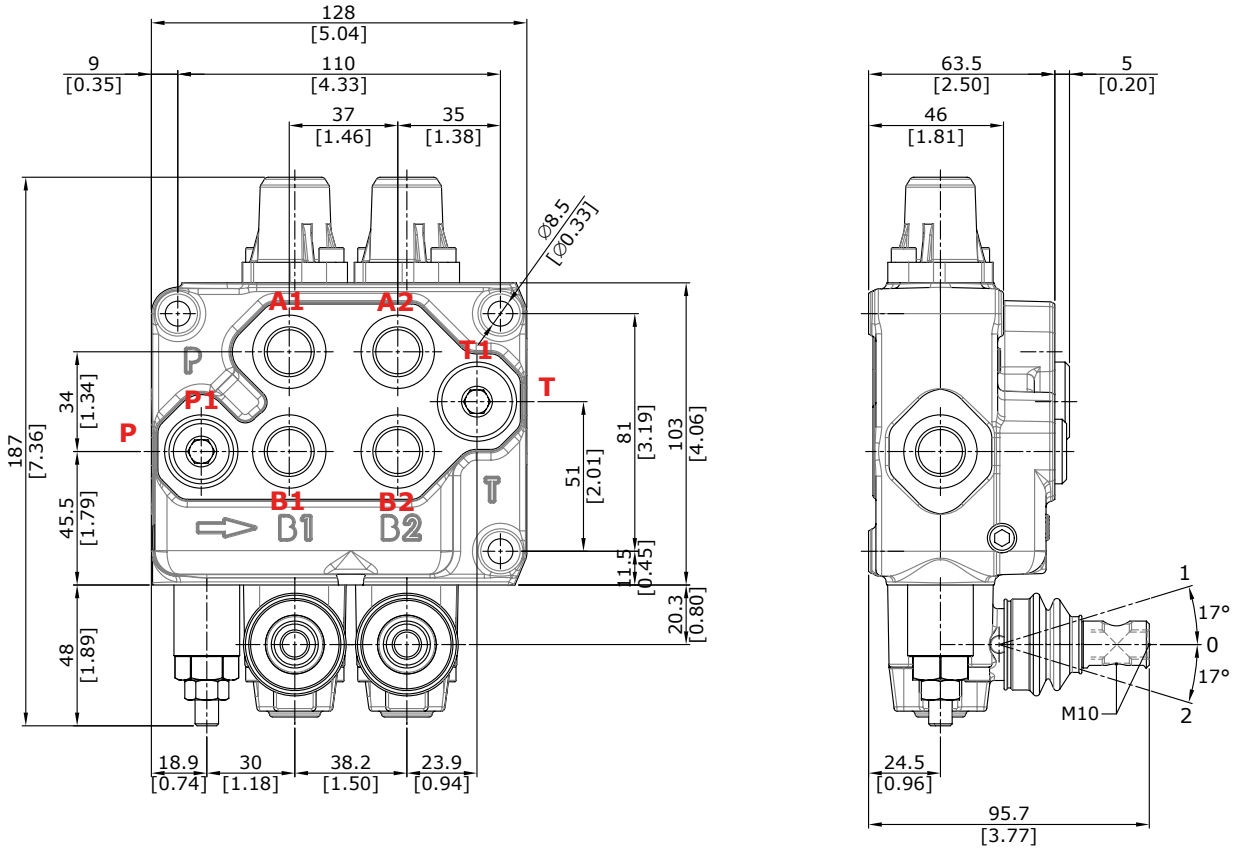
NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

45L GMT

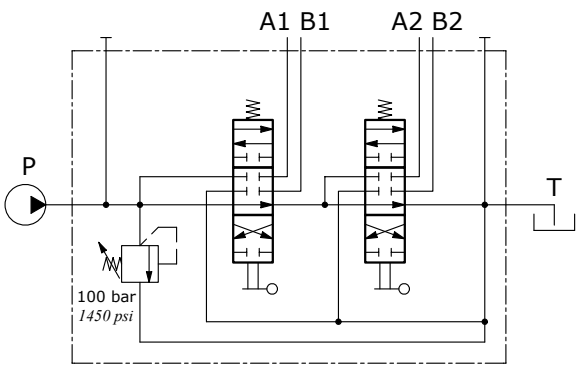
directional valve with left inlet

Dimensional data (with tandem circuit)

The description of **45L GMT** valve with tandem circuit is marked with letters **"SP"** and one figure wich indicate the downstream sections from tandem connection.

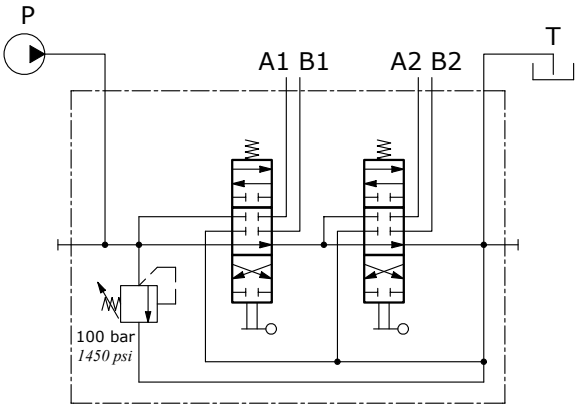


Standard configuration



Description example
45L **GMT**08/2-**SP1**(X-100)/18L/18L-**PSL2**

Upper inlet and outlet ports configuration



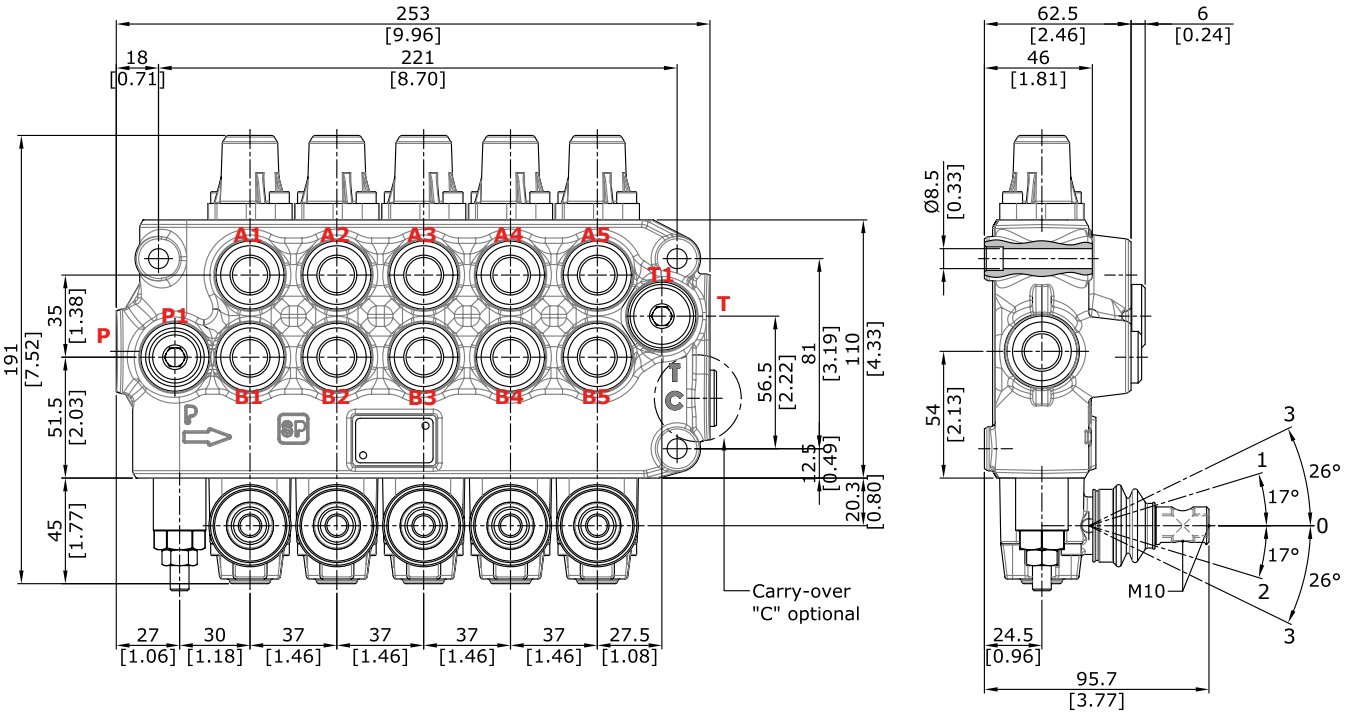
Description example
45L **GMT**08/2-**SP1**(X-100)/18L/18L-**PSA2**

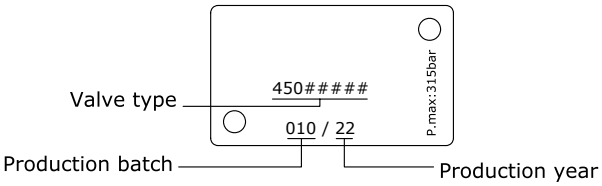
NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

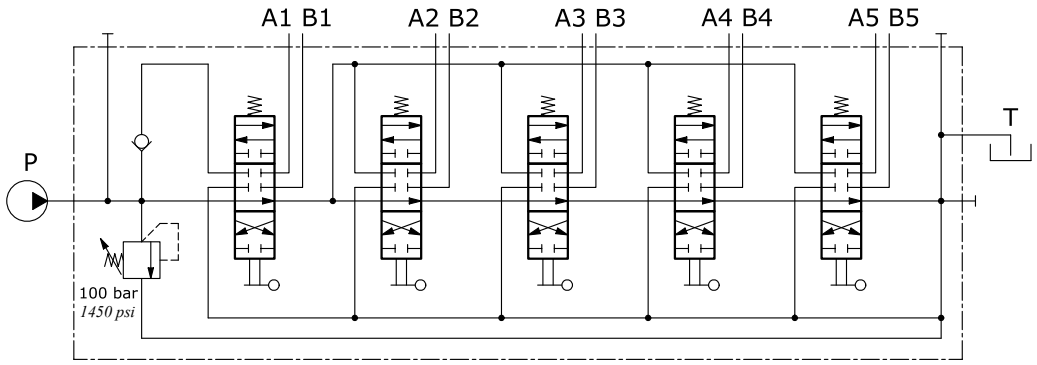
directional valve with left inlet

Dimensional data (with tandem circuit)

The description of **45L GM** valve with tandem circuit is marked with letters **"SP"** and one figure wich indicate the downstream sections from tandem connection.







Description example

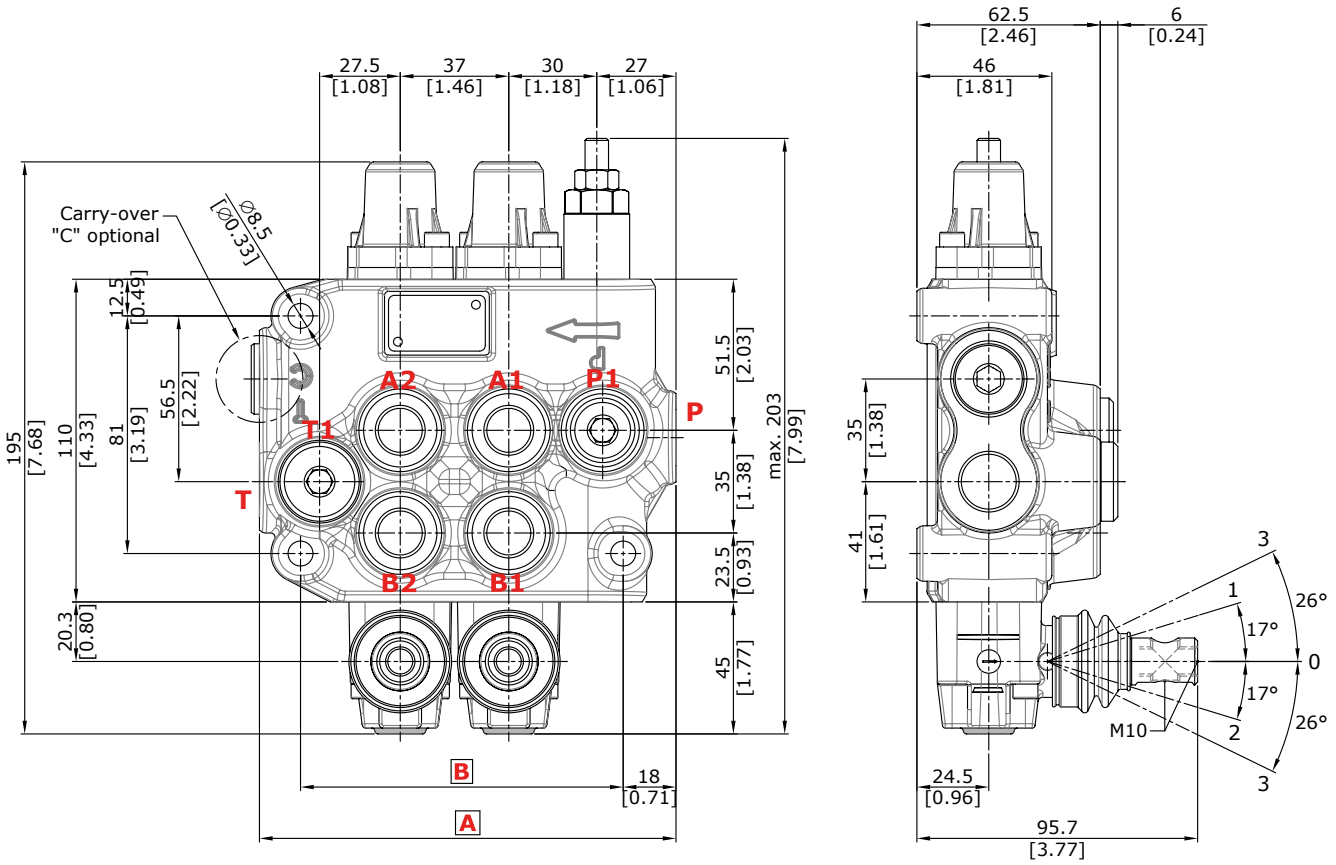
45L GM08/5-**SP4**(X-100)/18L/18L/18L/18L/18L/AET-PSL2

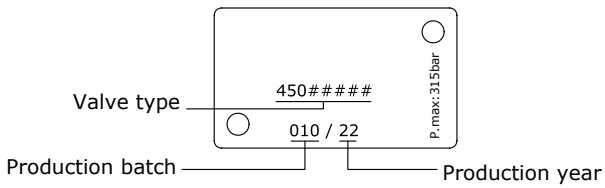
NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

Index

directional valve with right inlet

Dimensional data (parallel circuit)





TYPE	A		B		Weight	
	mm	*in*	mm	*in*	Kg	*lb*
45L GM08/1-P	105	*4.13*	73	*2.87*	3.1	*6.83*
45L GM08/2-P	142	*5.60*	110	*4.33*	4.4	*9.70*
45L GM08/3-P	179	*7.05*	147	*5.79*	5.7	*12.57*
45L GM08/4-P	216	*8.50*	184	*7.24*	7.2	*15.87*

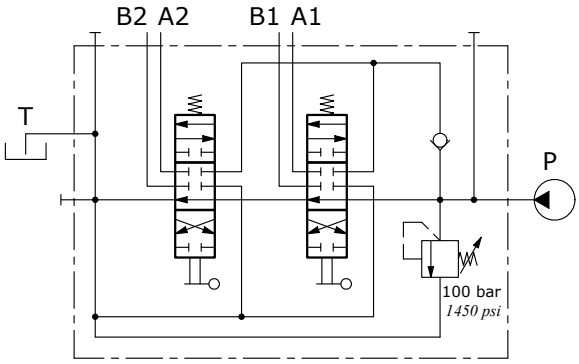
TYPE	A		B		Weight	
	mm	*in*	mm	*in*	Kg	*lb*
45L GM08/5-P	253	*9.96*	221	*8.70*	8.7	*19.18*
45L GM08/6-P	290	*11.42*	258	*10.16*	10.2	*22.49*
45L GM08/7-P	327	*12.87*	295	*11.61*	11.7	*25.79*

NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

directional valve with right inlet

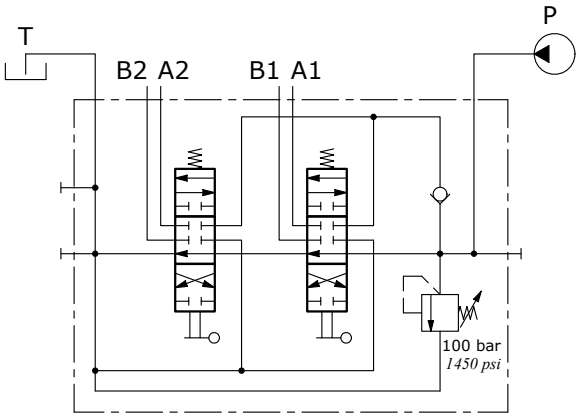
Hydraulic circuit

Standard configuration



Description example
45L GM08/2-P(X-100)/ED-18L/ED-18L/AET-**PSL2**

Upper inlet and outlet ports configuration

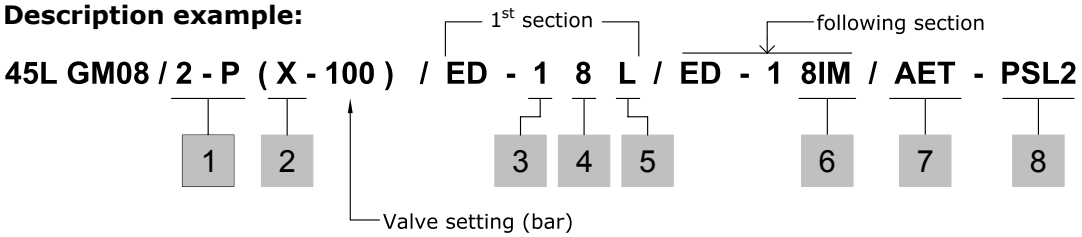


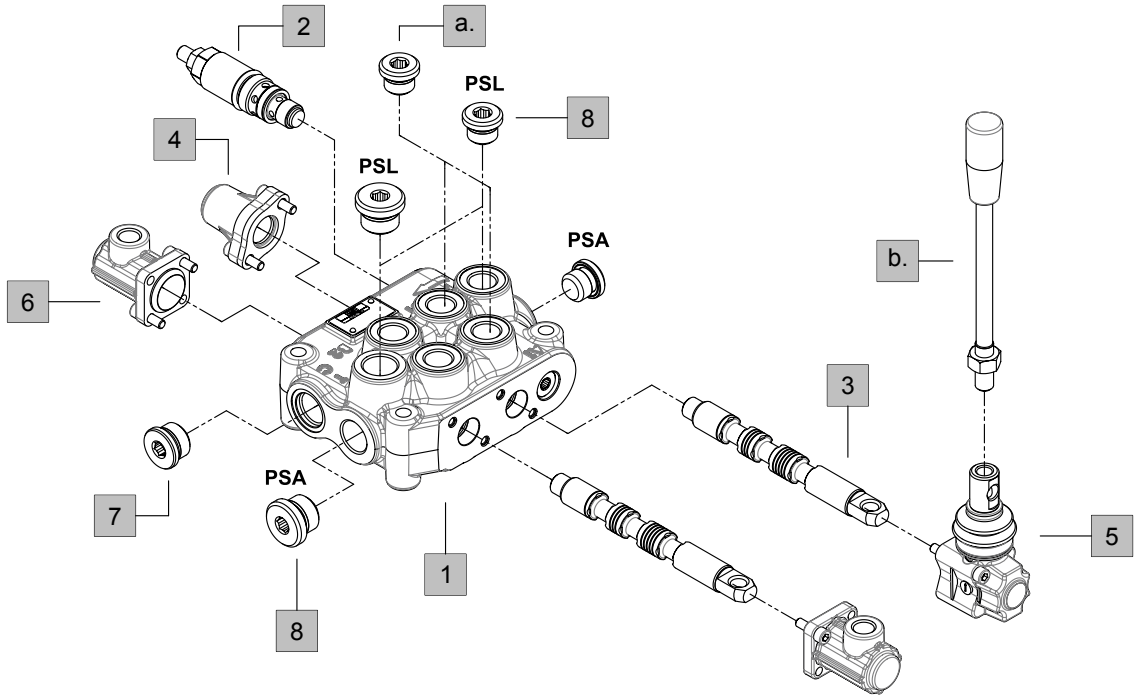
Description example
45L GM08/2-P(X-100)/ED-18L/ED-18L/AET-**PSA2**

directional valve with right inlet

Ordering codes

Description example:





1. Body kits *

TYPE	CODE	DESCRIPTION
1-P	30 08 9067	Parallel, 1 section
2-P	30 08 9068	Parallel, 2 sections
3-P	30 08 9069	Parallel, 3 sections
4-P	30 08 9070	Parallel, 4 sections
5-P	30 08 9071	Parallel, 5 sections
6-P	30 08 9072	Parallel, 6 sections
7-P	30 08 9073	Parallel, 7 sections

Include body, seals, rings and load check valve.

2. Inlet relief options page 10

TYPE	CODE	DESCRIPTION
Direct pressure relief valve X type (standard)		
(X-100)	30 05 4917	Range 20-315 bar *(290-4600 psi)* standard setting 100 bar *(1450 psi)*
Standard setting is referred to 6 l/min flow.		
V	30 05 5004	Relief valve blanking plug

3. Spools page 44

TYPE	CODE	DESCRIPTION
ED-1	30 01 3516	Double acting, 3 positions, with A and B closed in neutral position
ED-1A	-	Double acting, 3 positions, with A open to tank in neutral position
ED-1B	-	Double acting, 3 positions, with B open to tank in neutral position

3. Spools

TYPE	CODE	DESCRIPTION
ED-2 open	30 01 3517	Double acting, 3 positions, with A and B to tank in neutral position
ED-2H	-	Double acting, 3 positions, with A and B partially opento tank in neutral position
ED-3	30 01 3514	Single acting on A, 3 positions, B plugged; requires G3/8 plug (see part a)
ED-4	30 01 3515	Single acting on B, 3 positions, A plugged; requires G3/8 plug (see part a)
ED-4FAS	30 01 3642	Double acting, 3 positions, with A and carry-over C open to tank in neutral position
ED-4FASB	30 01 3764	Double acting, 3 positions, with A-B and carry-over C open to tank in neutral position
ED-4FASC	30 01 3800	Double acting, 3 positions, with A and B closed in neutral position
ED-1E	30 01 3641	Double acting, 3 positions, with A and B closed in neutral position
ED-5BY	-	Double acting, 4 positions, float in position 3 with spool out, **13QN type positioner kit is required**

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

directional valve with right inlet

Ordering codes

4. "A" side spool positioners — page 45

TYPE	CODE	DESCRIPTION
8	30 07 5427	With spring return in neutral position
8D	30 07 5449	As type 8, M6 female threaded pin extension for dual control
8D2	30 07 5450	As type 8, M8 male threaded pin extension for dual control
8T	-	With spring return in neutral position, for single acting spool type 3 and 4
8TL	-	As type 8, for flexible cable control
8F2	30 07 5444	As type 8 with adjustable stroke limiter
8OR	30 07 7546	As type 8, for outrigger control
19	30 07 5471	With spring return in position 0 from 1
20	30 07 5472	With spring return in position 0 from 2
11	30 07 5445	Detent in positions neutral, 1 and 2
12	30 07 5446	Detent in positions 1 and 2
15	30 07 5447	2 positions, detent in positions 1 and neutral
16	30 07 5448	2 positions, detent in positions 2 and neutral
17	30 07 5467	With spring return position 1
18	30 07 5468	With spring return position 2
17D	30 07 5469	With spring return position 1 and pin with M6 female thread for dual control
18D	30 07 5470	With spring return position 2 and pin with M6 female thread for dual control
9B	30 07 5451	With detent in position 1 and spring return in neutral position
10B	30 07 5452	With detent in position 2 and spring return in neutral position
11B	30 07 5453	Detent in positions 1 and 2 and spring return inneutral position
9BT	-	With detent in position 1 and spring return in neutral position, for single acting spool type 3 and 4
10BT	-	With detent in position 2 and spring return in neutral position, for single acting spool type 3 and 4
11BT	-	Detent in positions 1 and 2 and spring return inneutral position, for single acting spool type 3 and 4
8MG3(NO)	30 07 5455	As type 8, operation with microswitch (NO) in positions 1 and 2
8P	30 07 5463	ON/OFF pneumatic kit
8EP3	30 07 5473	12 VDC ON/OFF electro-pneumatic kit
	30 07 5464	24 VDC ON/OFF electro-pneumatic kit
8EP4	-	12 VDC ON/OFF electro-pneumatic kit with manifold
	-	24 VDC ON/OFF electro-pneumatic kit with manifold
8EI3	30 07 5465	12 VDC ON/OFF electro-hydraulic kit
	30 07 5466	24 VDC ON/OFF electro-hydraulic kit
8EI3F	-	12 VDC Proportional electro-hydraulic kit
	-	24 VDC Proportional electro-hydraulic kit
13QN	30 07 5315	4 positions with spring return in neutral position and detent in pos.3: **for ED-5BY spool**

5. "B" side options — page 23

TYPE	CODE	DESCRIPTION
L	30 07 5335	Standard lever box
LF1	30 07 5337	Lever box with spool stroke limiter in position 1
LCB	30 07 5426	Joystick lever for 2 sections operation
SL	-	Without lever box
SLP	30 07 5338	Without lever box, with dust-proof plate
TQ	30 07 5328	Flexible cable connection; for CT cables
LEB	30 07 5340	Safety lever box, vertical configuration
LUP	30 07 5341	Safety lever box, horizontal configuration
SLCZ	30 07 7621	Without lever box, with endcap.

6. Complete controls * — page 27

TYPE CODE DESCRIPTION

Proportional hydraulic control type **8IM** and ON/OFF solenoid controls type **8ES** and rotative control type **R.**

7. Outlet port options * — page 32

TYPE	CODE	DESCRIPTION
AET	30 05 4923	Open centre plug
AEK	30 05 4927	Closed centre plug
AE	30 05 6002	G3/8 carry-over sleeve
AE1	30 05 4926	G1/2 carry-over sleeve

8. Inlet and outlet selection * — page 41

TYPE	CODE	DESCRIPTION
PSL2	30 05 4918	G3/8 plug for upper inlet
	30 05 4919	G1/2 plug for upper outlet
PSA2	30 05 4918	G3/8 plug for side inlet
	30 05 4919	G1/2 plug for side outlet

a. "A" and "B" ports plugs *

TYPE	CODE	DESCRIPTION
G3/8	30 05 4918	For single acting spools type 3 and 4

b. Optional handlevers

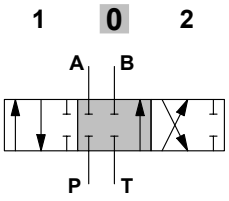
TYPE	CODE	DESCRIPTION
M10x180	20 03 2380	Lenght L = 180mm / *7.09in*

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

directional valve with right inlet

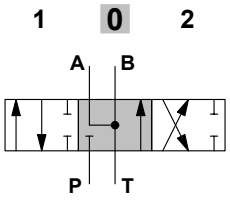
Spools options

ED-1 (30 01 3516) spool type
Double acting, 3 positions, with A and B closed in neutral position



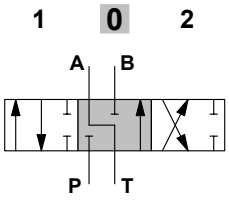
Spool stroke
position 1: + 6 mm *(+ 0.24 in)*
position 2: - 6 mm *(- 0.24 in)*

ED-2 (30 01 3517) spool type
Double acting, 3 positions, with A and B open to tank in neutral position



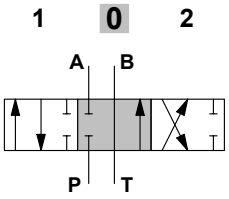
Spool stroke
position 1: + 6 mm *(+ 0.24 in)*
position 2: - 6 mm *(- 0.24 in)*

ED-1A spool type
Double acting, 3 positions, with A open to tank in neutral position



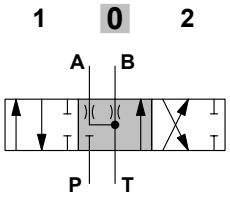
Spool stroke
position 1: + 6 mm *(+ 0.24 in)*
position 2: - 6 mm *(- 0.24 in)*

ED-1B spool type
Double acting, 3 positions, with B open to tank in neutral position



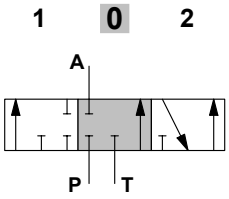
Spool stroke
position 1: + 6 mm *(+ 0.24 in)*
position 2: - 6 mm *(- 0.24 in)*

ED-2H spool type
Double acting, 3 positions, with A and B partially open to tank in neutral position



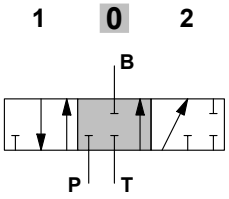
Spool stroke
position 1: + 6 mm *(+ 0.24 in)*
position 2: - 6 mm *(- 0.24 in)*

ED-3 (30 01 3514) spool type
Single acting on A, 3 positions, B plugged; requires G3/8 plug



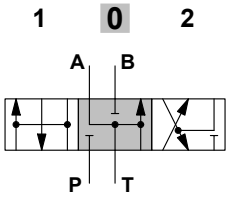
Spool stroke
position 1: + 4.2 mm *(+ 0.17 in)*
position 2: - 4.2 mm *(- 0.17 in)*

ED-4 (30 01 3515) spool type
Single acting on B, 3 positions, A plugged; requires G3/8 plug



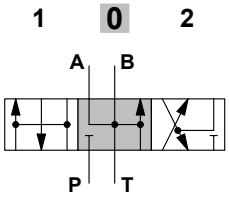
Spool stroke
position 1: + 4.2 mm *(+ 0.17 in)*
position 2: - 4.2 mm *(- 0.17 in)*

ED-4FAS (30 01 3642) spool type
Double acting, 3 positions, with A and carry-over C open to tank in neutral position



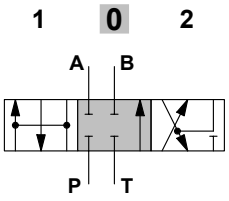
Spool stroke
position 1: + 5.5 mm *(+ 0.22 in)*
position 2: - 5.5 mm *(- 0.22 in)*

ED-4FASB (30 01 3764) spool type
Double acting, 3 positions, with A-B and carry-over C open to tank in neutral position



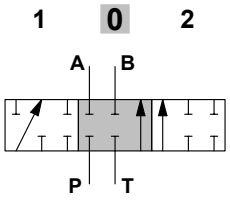
Spool stroke
position 1: + 5.5 mm *(+ 0.22 in)*
position 2: - 5.5 mm *(- 0.22 in)*

ED-4FASC (30 01 3800) spool type
Double acting, 3 positions, with A and B closed in neutral position



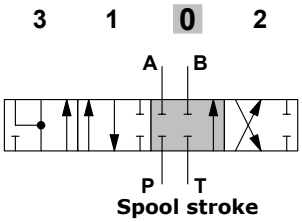
Spool stroke
position 1: + 5.5 mm *(+ 0.22 in)*
position 2: - 5.5 mm *(- 0.22 in)*

ED-1E (30 01 3641) spool type
Double acting, 3 positions, with A and B closed in neutral position



Spool stroke
position 1: + 5.5 mm *(+ 0.22 in)*
position 2: - 5.5 mm *(- 0.22 in)*

ED-5BY spool type
Double acting, with A and B closed in neutral position, 4 positions, floating in position 3, with spool out



Spool stroke
position 3: + 9 mm *(+ 0.35 in)*
position 1: + 4.5 mm *(+ 0.18 in)*
position 2: - 4.5 mm *(- 0.18 in)*

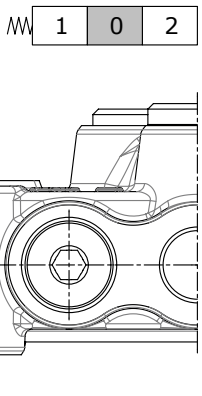
directional valve with right inlet

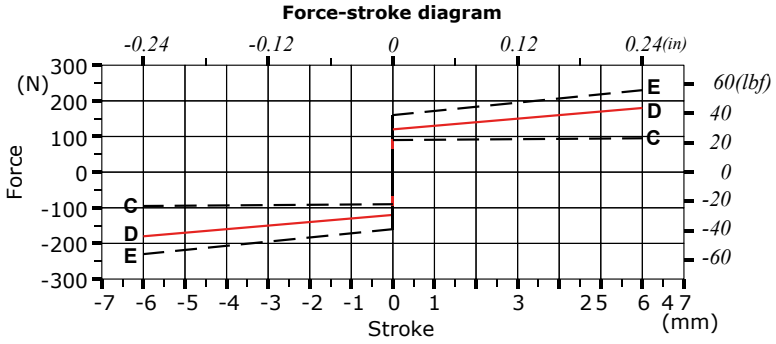
"A" side spool positioners

With spring return in neutral position

8 type (30 07 5427)

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)**.

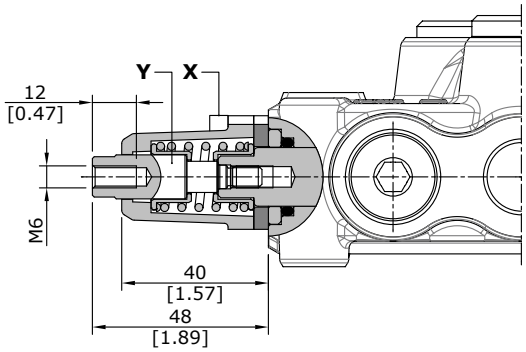




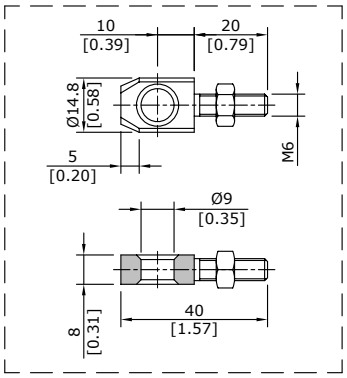
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

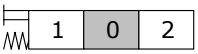
8D type (30 07 5449)

With M6 female threaded pin extension for dual control.



Spool end joint dimensions (optional)

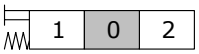


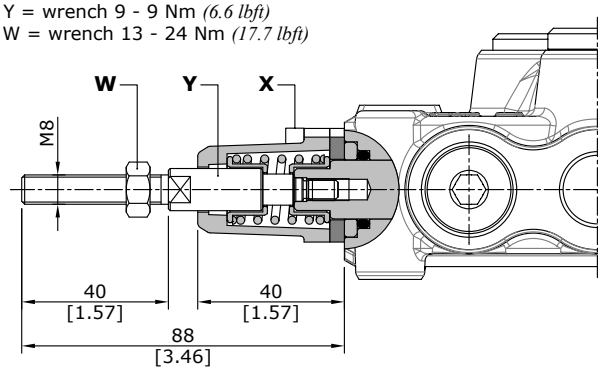


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 10 - 9 Nm *(6.6 lbft)*

8D2 type (30 07 5450)

Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 9 - 9 Nm *(6.6 lbft)*
W = wrench 13 - 24 Nm *(17.7 lbft)*

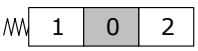


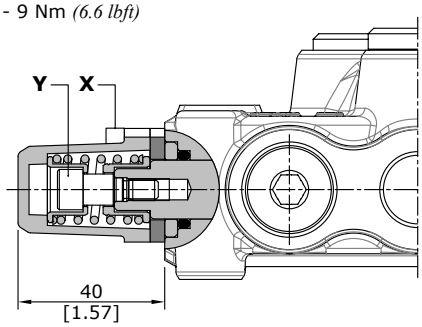


8T type

For single acting spool type 3 and 4

Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*



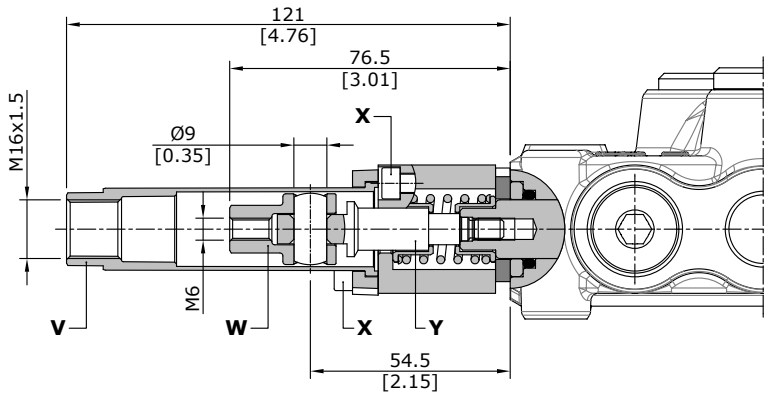


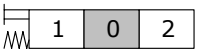
directional valve with right inlet

"A" side spool positioners

With spring return in neutral position

8TL type



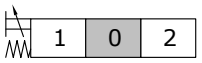


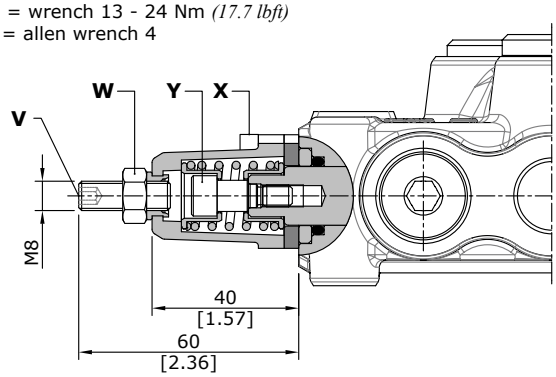
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 8 - 9 Nm *(6.6 lbft)*
W = wrench 13
V = wrench 20

8F2 type (30 07 5444)

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 - 9 Nm *(6.6 lbft)*
W = wrench 13 - 24 Nm *(17.7 lbft)*
V = allen wrench 4

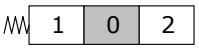


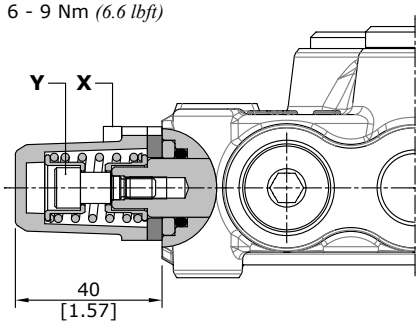


8OR type (30 07 7546)

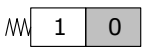
For spool type ED-4FAS, ED-4FASB, ED-4FASC and ED-1E
Stroke : 5.5mm

Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

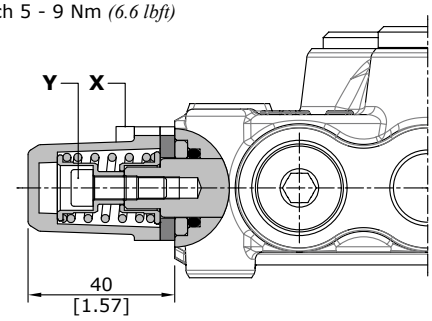




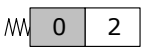
19 type (30 07 5471)



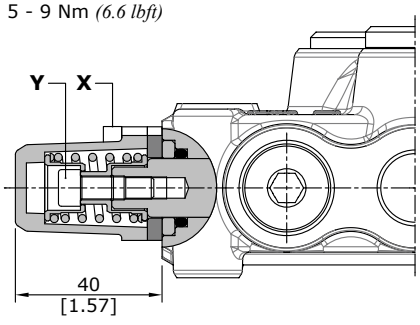
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 5 - 9 Nm *(6.6 lbft)*



20 type (30 07 5472)



Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 5 - 9 Nm *(6.6 lbft)*

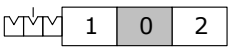


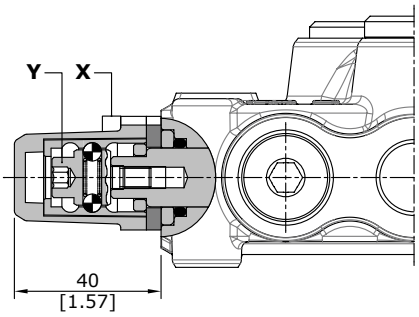
directional valve with right inlet

"A" side spool positioners

With detent

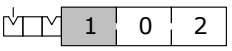
11 type (30 07 5445)

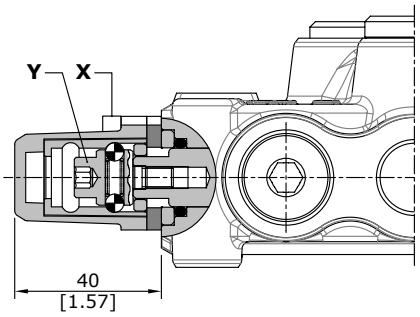




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

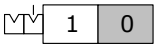
12 type (30 07 5446)

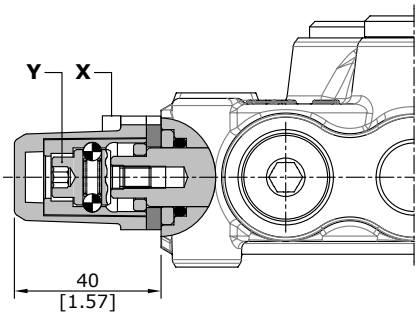




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

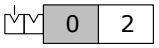
15 type (30 07 5447)

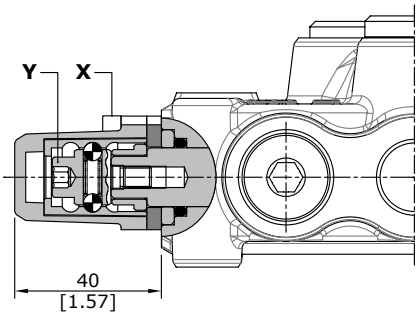




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

16 type (30 07 5448)





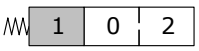
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*

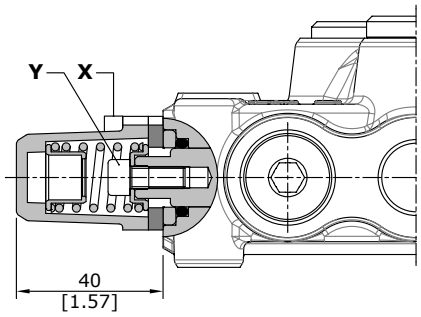
directional valve with right inlet

"A" side spool positioners

With spring return

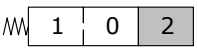
17 type (30 07 5467)

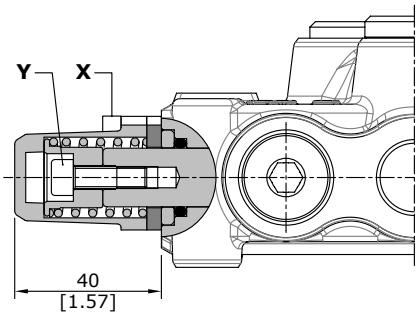




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 5 - 9 Nm *(6.6 lbft)*

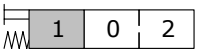
18 type (30 07 5468)

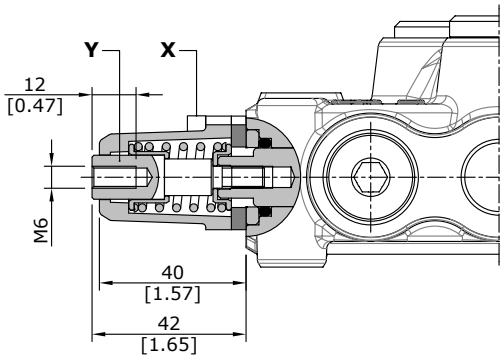




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 5 - 9 Nm *(6.6 lbft)*

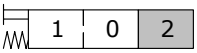
17D type (30 07 5469)

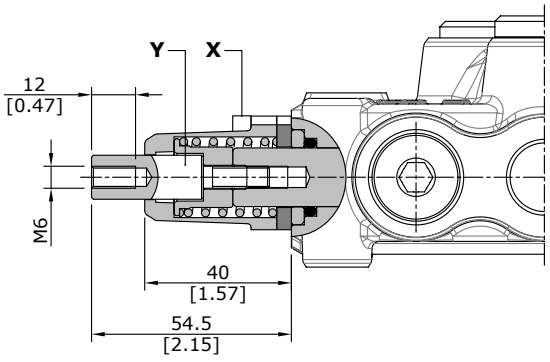




Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 11 - 9 Nm *(6.6 lbft)*

18D type (30 07 5470)





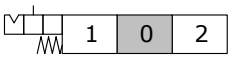
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 11 - 9 Nm *(6.6 lbft)*

directional valve with right inlet

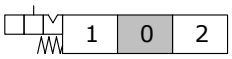
"A" side spool positioners

With detent and spring return to neutral position from either directions

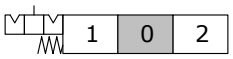
9B type (30 07 5451)
detent in position 1
(curve A)



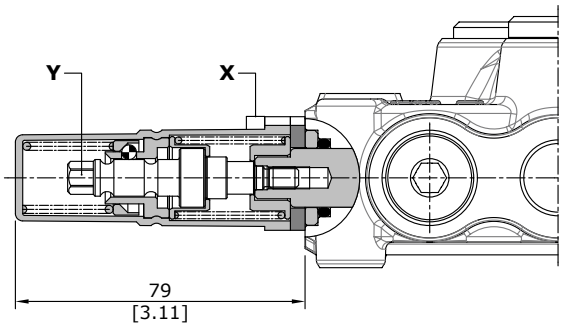
10B type (30 07 5452)
detent in position 2
(curve B)



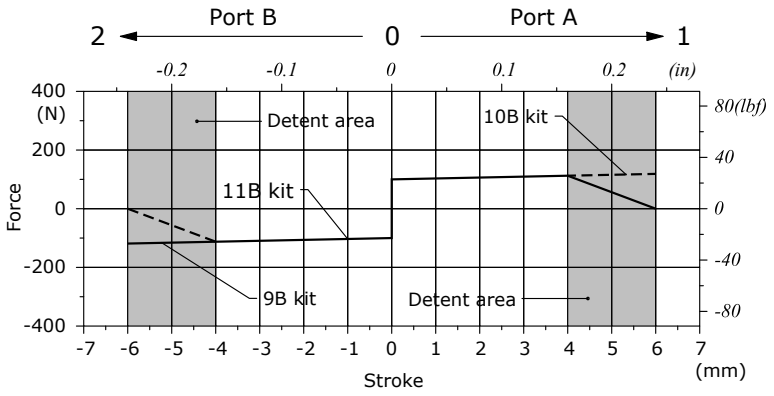
11B type (30 07 5453)
detent in position 1 and 2
(curves A and B)



11B type



Detent force-stroke

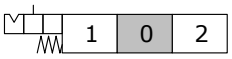


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 8 - 9 Nm *(6.6 lbft)*

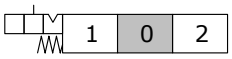
Position 1 - Detent force: 120 N *(27 lbf)* ± 10% / Release force: 230 N *(51.7 lbf)* ± 10%
Position 2 - Detent force: 120 N *(27 lbf)* ± 10% / Release force: 230 N *(51.7 lbf)* ± 10%

For single acting spool type 3 and 4
Stroke : 4.2mm

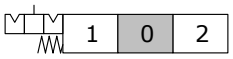
9BT type
detent in position 1
(curve A)



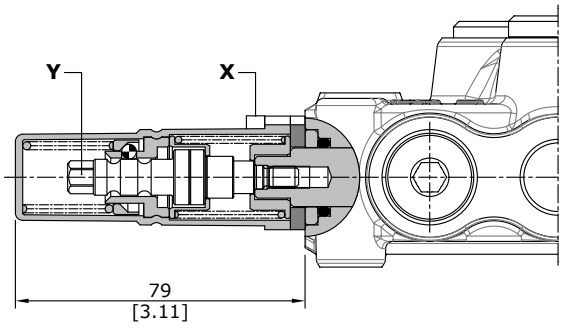
10BT type
detent in position 2
(curve B)



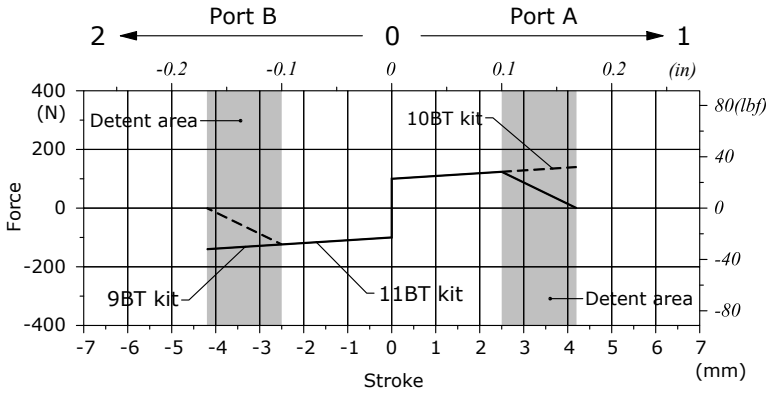
11BT type
detent in position 1 and 2
(curves A and B)



11BT type



Detent force-stroke



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: 120 N *(27 lbf)* ± 10% / Release force: 230 N *(51.7 lbf)* ± 10%
Position 2 - Detent force: 120 N *(27 lbf)* ± 10% / Release force: 230 N *(51.7 lbf)* ± 10%

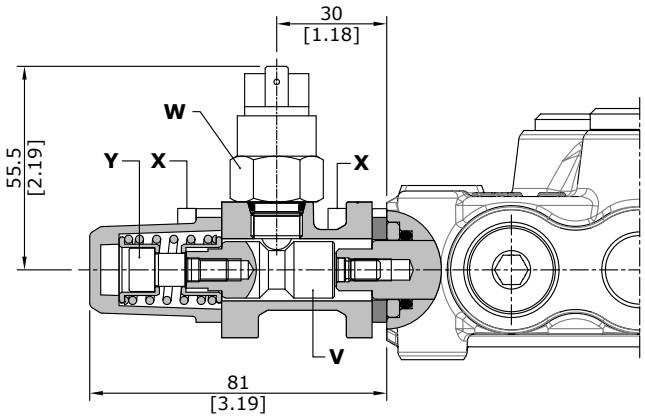
directional valve with right inlet

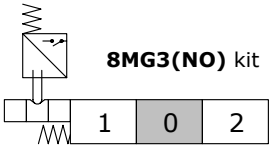
"A" side spool positioners

With microswitch

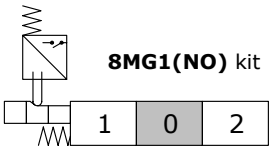
8MG3(NO) type (30 07 5455)

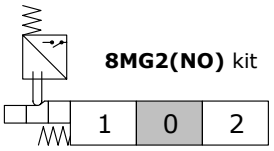
With spring return in neutral position and microswitch operated in both directions.
Also available **8MG1(NO)** (microswitch operated in position 1) and **8MG2(NO)** (microswitch operated in position 2) configurations; dimension are the same of **8MG3(NO)** configuration.
Same configurations are available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





Other configurations



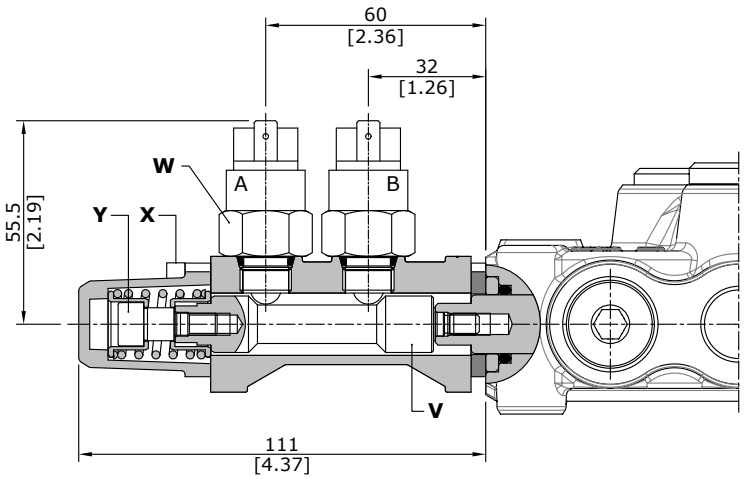


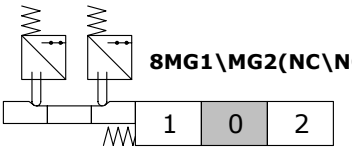
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*
W= wrench 22 - 42 Nm *(31 lbft)*
V = wrench 10 - 9.8 Nm *(7.2 lbft)*

Operating features
MICROSWITCH
Mechanical life : $5x10^5$ operations
Electrical life (resistive load) : $5x10^4$ operations 10A / 12VDC
: $5x10^4$ operations 3A / 24VDC

8MG1\MG2(NC\NC) type (30 07 5462)

With double microswitch in position 1 and 2.





Positions	A	B
1	⟋	—
0	—	—
2	—	⟋

Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = allen wrench 6 - 9 Nm *(6.6 lbft)*
W= wrench 22 - 42 Nm *(31 lbft)*
V = wrench 10 - 9.8 Nm *(7.2 lbft)*

Operating features
MICROSWITCH
Mechanical life : $5x10^5$ operations
Electrical life (resistive load) : $5x10^4$ operations 10A / 12VDC
: $5x10^4$ operations 3A / 24VDC

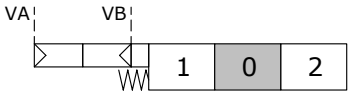
directional valve with right inlet

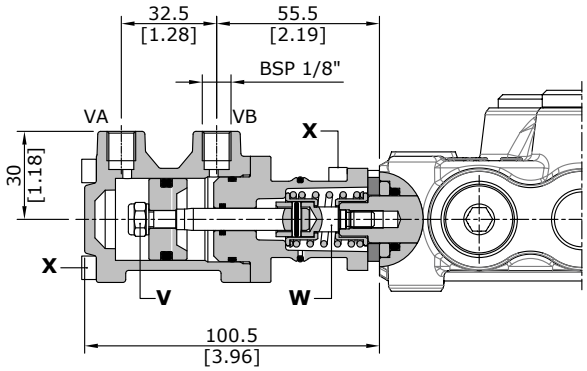
"A" side spool positioners

ON/OFF pneumatic kit

ON/OFF pneumatic: 8P type (30 07 5463)

With spring return to neutral position.





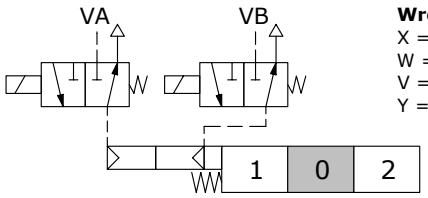
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
W = wrench 10 - 9 Nm *(6.6 lbft)*
V = wrench 10 - 9 Nm *(6.6 lbft)*

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

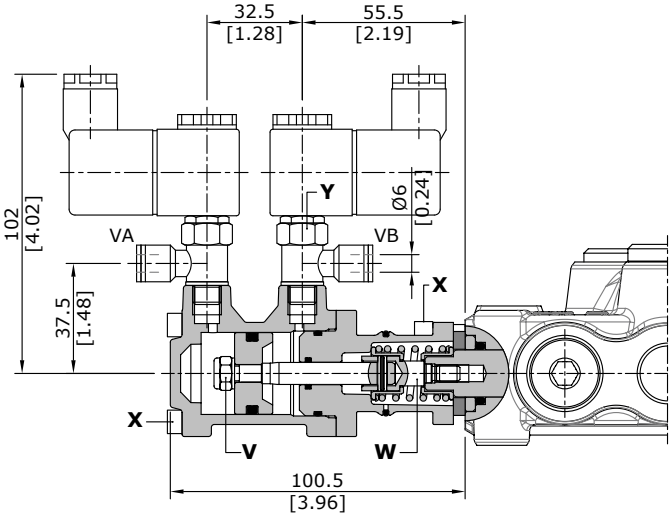
ON/OFF electro-pneumatic kit

Electro-pneumatic: 8EP3 type

With spring return to neutral position.

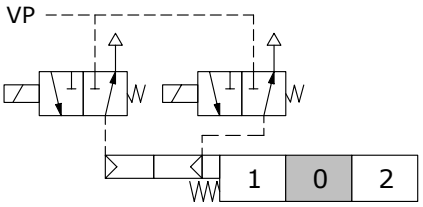


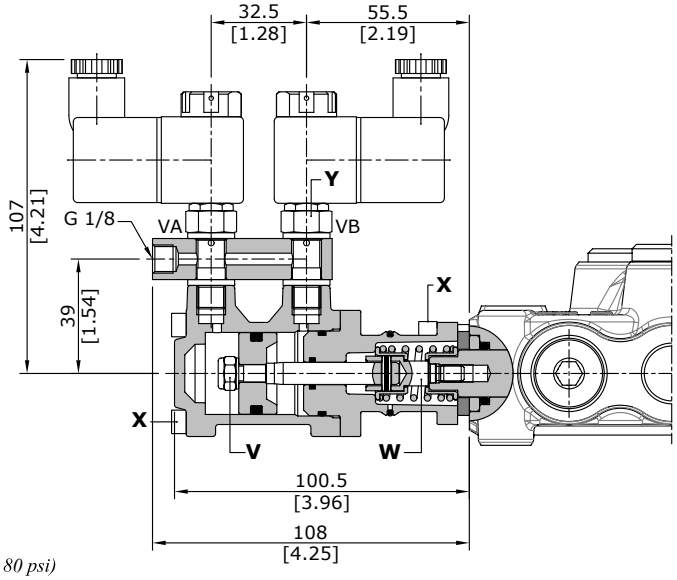
Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
W = wrench 10 - 9 Nm *(6.6 lbft)*
V = wrench 10 - 9 Nm *(6.6 lbft)*
Y = wrench 15 - 6 Nm *(4.4 lbft)*



Electro-pneumatic: 8EP4 type

With spring return to neutral position.





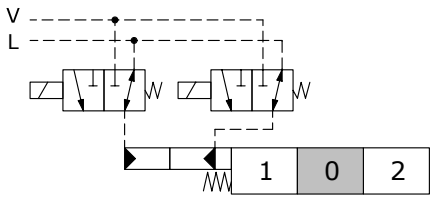
Common features
Pilot pressure.....: min. 5.5 bar *(min. 80 psi)*
: max. 10 bar *(min. 145 psi)*

directional valve with right inlet

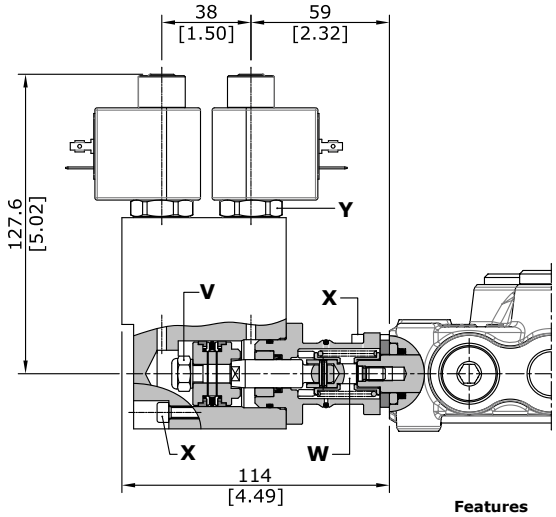
"A" side spool positioners

ON/OFF electro-hydraulic kit and proportional electro-hydraulic kit

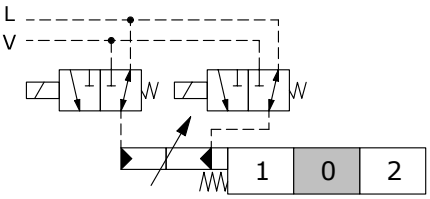
ON/OFF electro-hydraulic: 8EI3 type

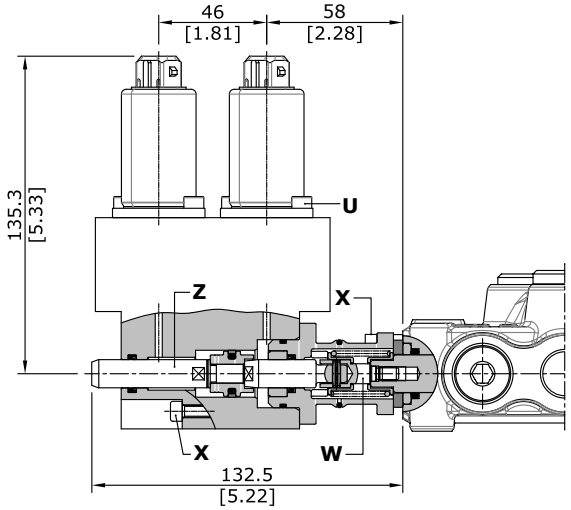


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
W = wrench 10 - 9 Nm *(6.6 lbft)*
V = wrench 13 - 9 Nm *(6.6 lbft)*
Y = wrench 24 - 9.8 Nm *(7.2 lbft)*
Z = wrench 11 - 9 Nm *(6.6 lbft)*
U = allen wrench 4



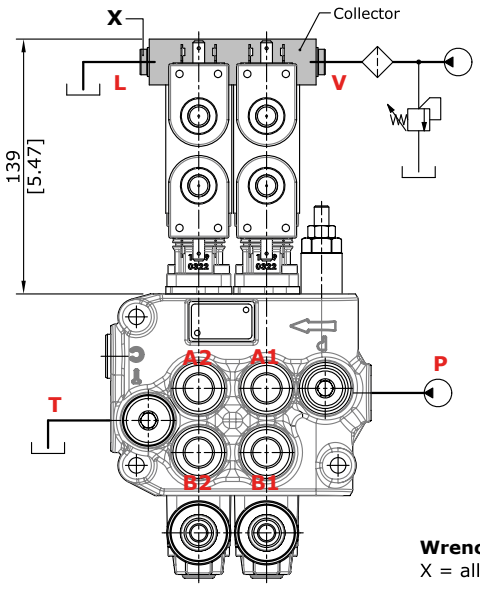
Proportional electro-hydraulic: 8EI3F type



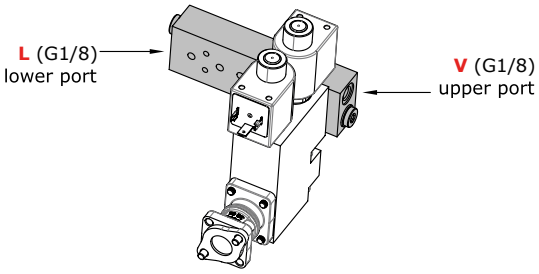


Features
Pilot pressure.....: min. 10 bar / *145 psi*
: max. 50 bar / *725 psi*
Max backpressure on drain L.....: 25 bar / *360 psi*

Collector kit for external pilot and drain



Wrenches and tightening torques
X = allen wrench 5 - 24 Nm *(17.7 lbft)*



COLLECTOR KIT CODES		
Type	**Code ***	**Description**
KE1S0	30 07 5537	Kit for one section
KE2S0	30 07 5512	Kit for 2 sections
KE3S0	30 07 5513	Kit for 3 sections
KE4S0	30 07 5514	Kit for 4 sections
KE5S0	30 07 5515	Kit for 5 sections
KE6S0	30 07 5516	Kit for 6 sections
KE7S0	30 07 7633	Kit for 7 sections

(*) codes are referred to BSP thread

Description example:
45L GM08/2-P(X-100)/ED-1**8EI3**L/ED-1**8EI3**L/
AET-PSL2-**KE2S0**-**24VDC**

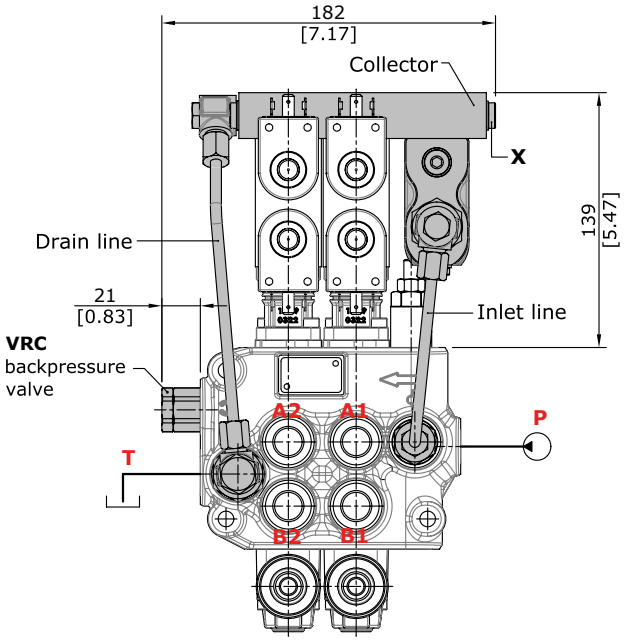
directional valve with right inlet

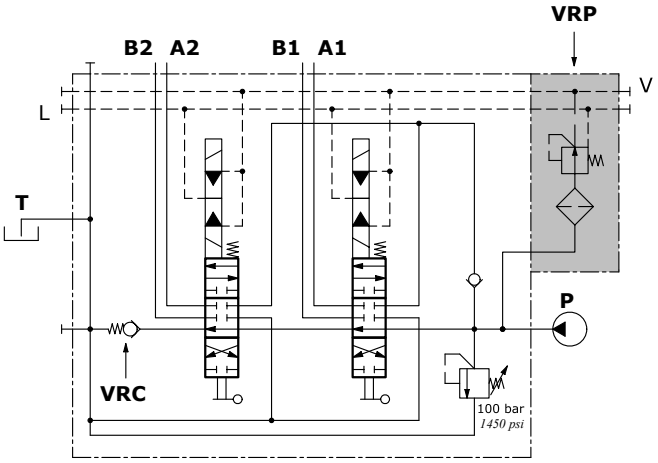
"A" side spool positioners

ON/OFF electro-hydraulic kit 8EI3 type

Collector kit for internal pilot and drain

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





Wrenches and tightening torques
X = allen wrench 5 - 24 Nm *(17.7 lbft)*

Description example:
45L GM08/2-P(X-100)/
ED-1**8EI3**L/ED-1**8EI3**L/
VRC–PSL2-**KE2R0**–**24VDC**

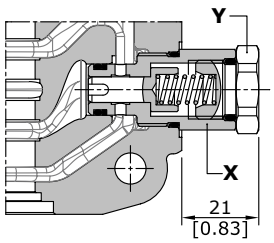
Features
VRP VALVE
Output pressure.....: 25 bar / *363 psi*
Max. flow..... : 8 l/min
Filtering..... : 80 µ

COLLECTOR KIT CODES		
Type	**Code ***	**Description**
KE1R0	30 07 5476	Kit for one section
KE2R0	30 07 5477	Kit for 2 sections
KE3R0	30 07 5478	Kit for 3 sections
KE4R0	30 07 5479	Kit for 4 sections
KE5R0	30 07 5480	Kit for 5 sections
KE6R0	30 07 5481	Kit for 6 sections
KE7R0	30 07 7634	Kit for 7 sections

(*) codes are referred to BSP thread

VRC backpressure valve

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



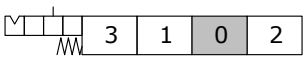
Wrenches and tightening torques
X = wrench 22 - 42 Nm *(31 lbft)*
Y = wrench 22 - 24 Nm *(17.7 lbft)*

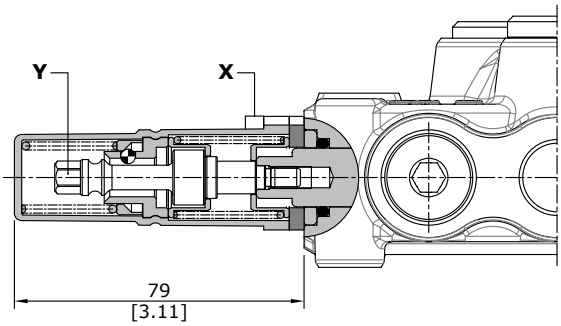
directional valve with right inlet

Particular positioner kits for special spools

13QN type (30 07 5315)

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

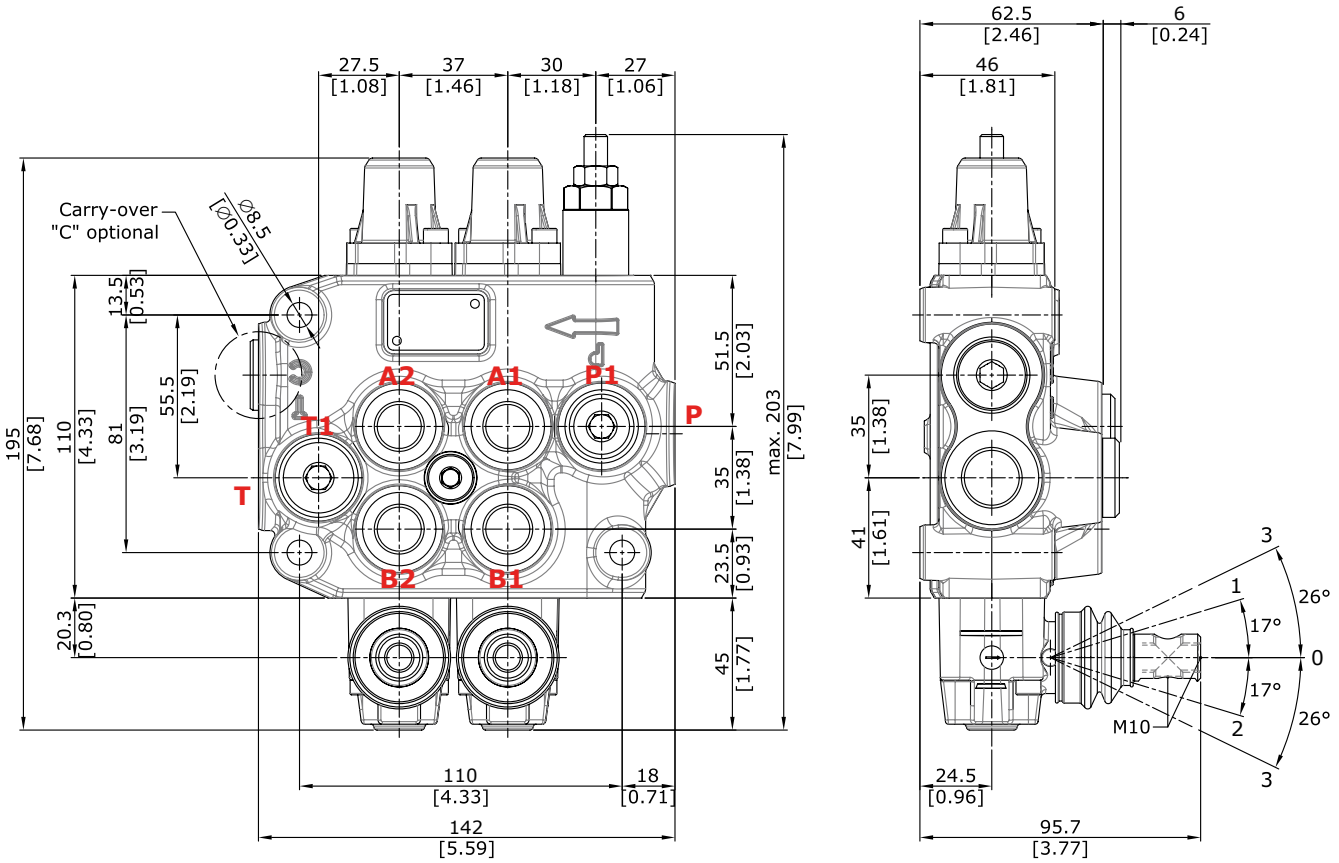


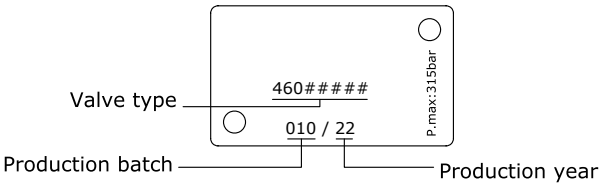


Wrenches and tightening torques
X = allen wrench 4 - 6 Nm *(4.4 lbft)*
Y = wrench 8 - 9 Nm *(6.6 lbft)*

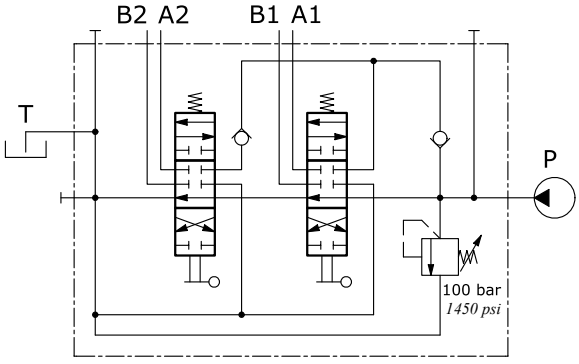
directional valve with right inlet

Dimensional data (parallel circuit)



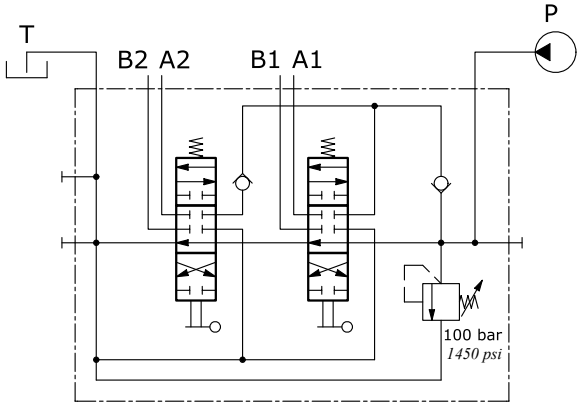


Standard configuration



Description example
45L **GMC**08/2-P(X-100)/ED-18L/ED-18L/AET-**PSL2**

Upper inlet and outlet ports configuration



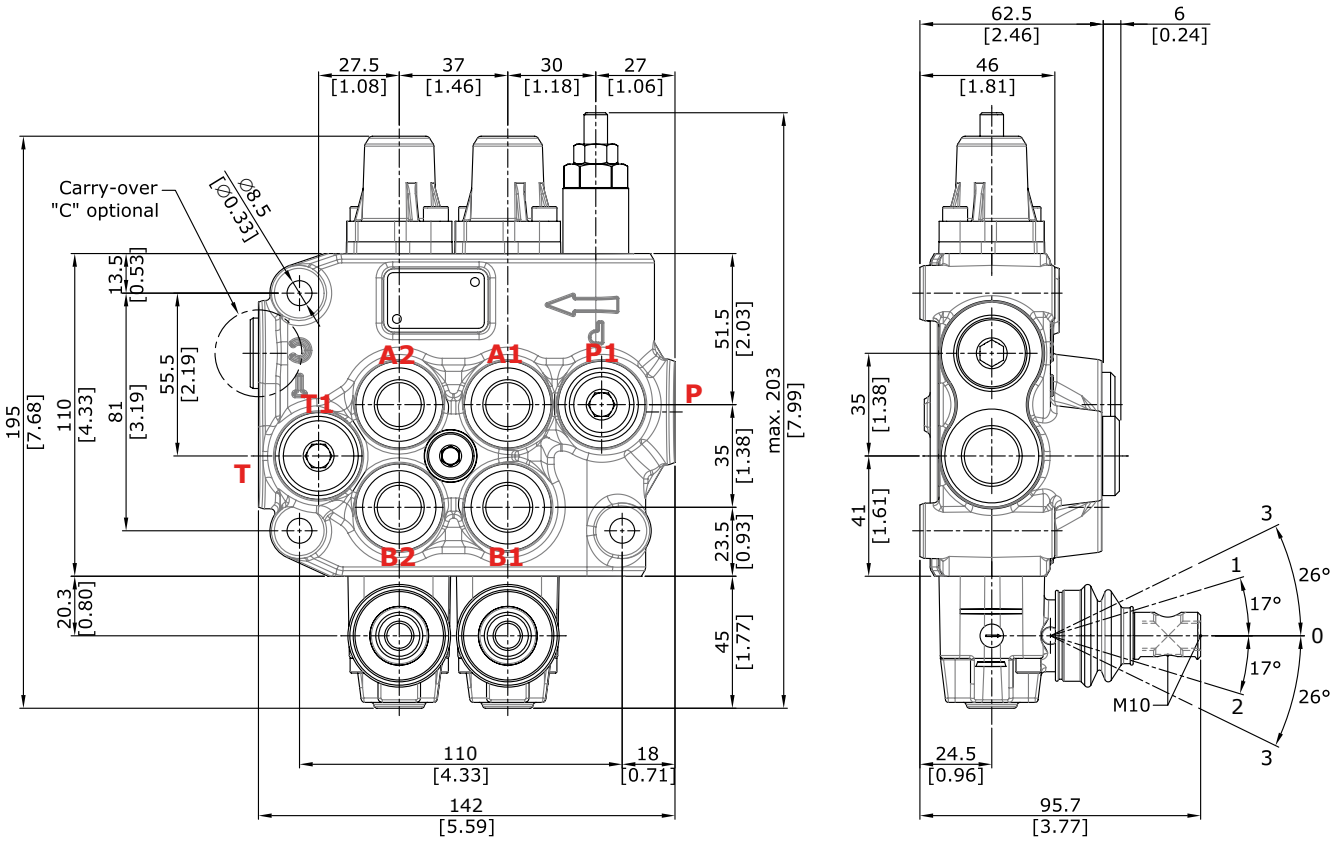
Description example
45L **GMC**08/2-P(X-100)/ED-18L/ED-18L/AET-**PSA2**

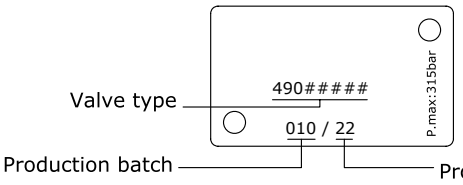
NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

directional valve with right inlet

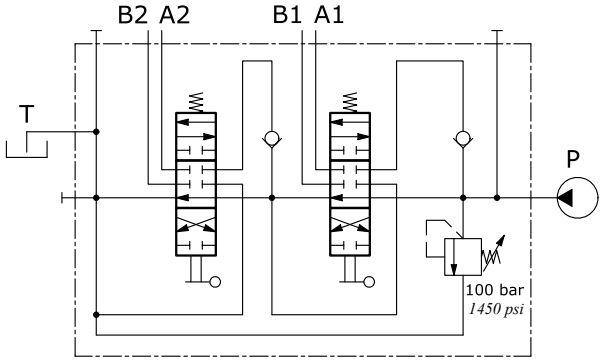
Dimensional data (series circuit)

The description of **45L GMCS** valve with series circuit is marked with letter **"S"** and one figure wich indicate the downstream sections from series connection.



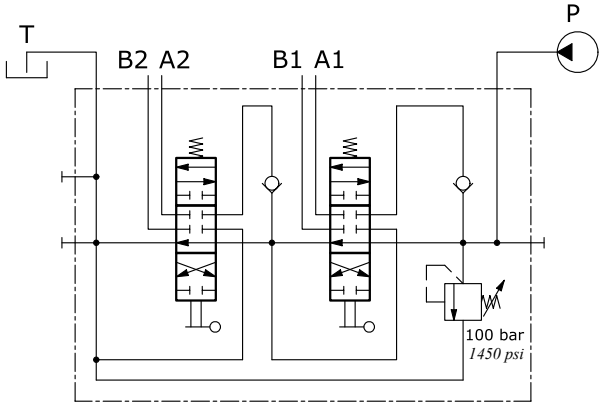


Standard configuration



Description example
45L **GMCS**08/2-**S1**(X-100)/ED-18L/ED-18L/AET-**PSL2**

Upper inlet and outlet ports configuration

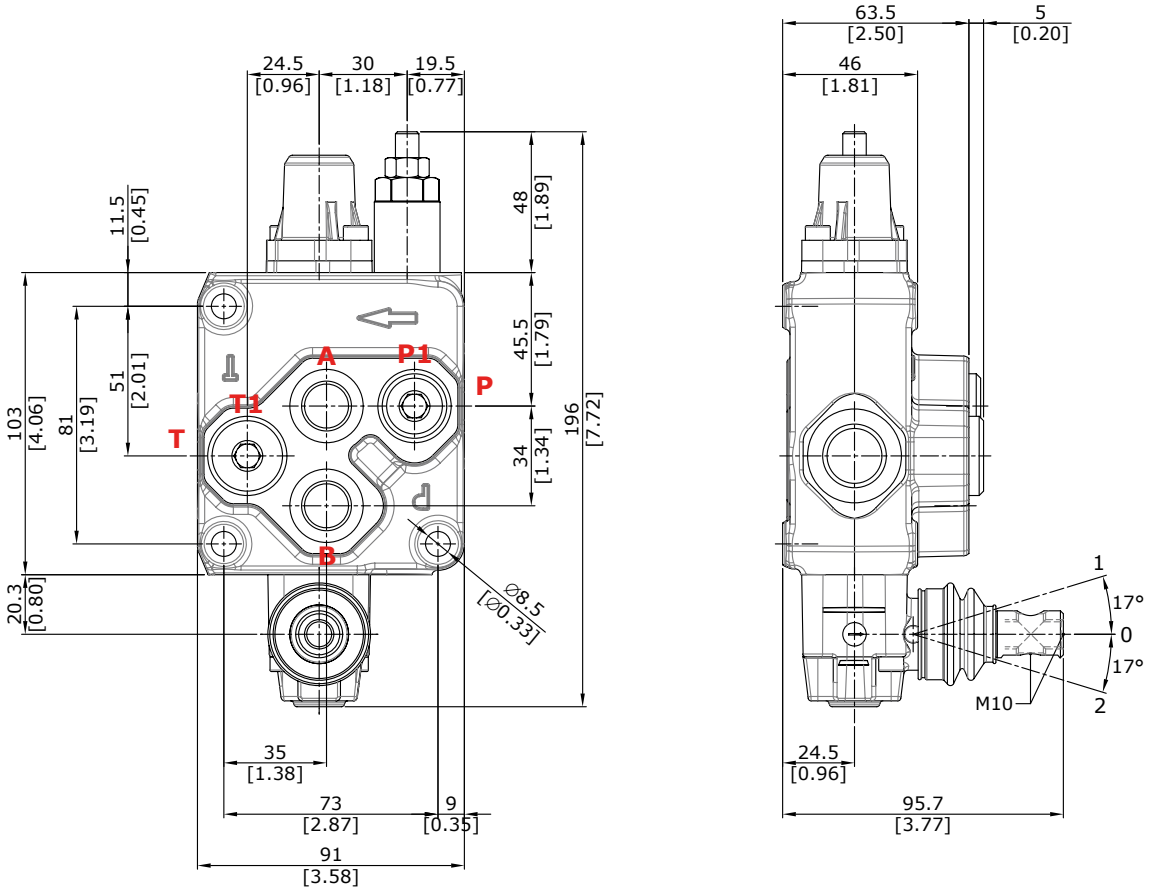


Description example
45L **GMCS**08/2-**S1**(X-100)/ED-18L/ED-18L/AET-**PSA2**

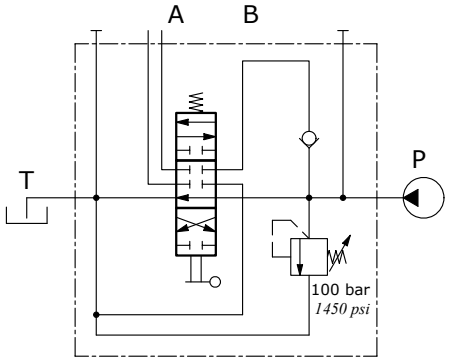
NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

directional valve with right inlet

Dimensional data

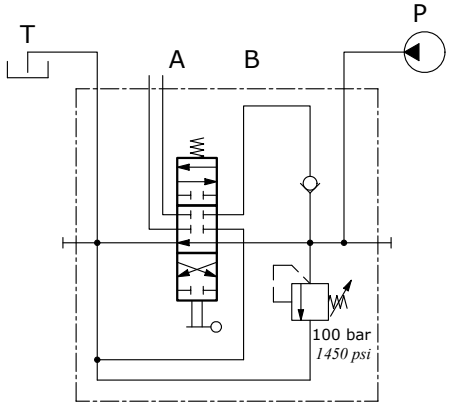


Standard configuration



Description example
45L **GMT**08/1-**N**(X-100)/ED-18L-**PSL2**

Upper inlet and outlet ports configuration



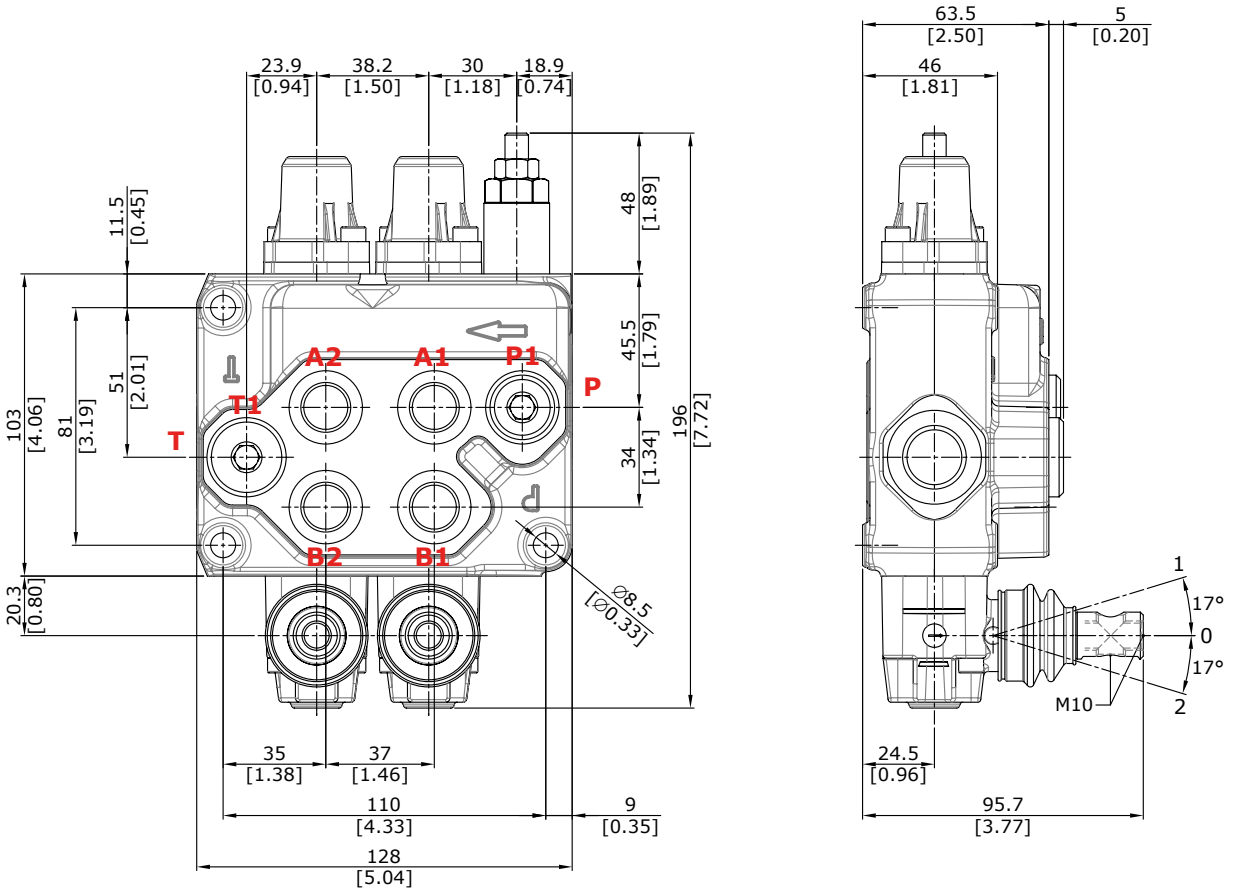
Description example
45L **GMT**08/1-**N**(X-100)/ED-18L-**PSA2**

NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

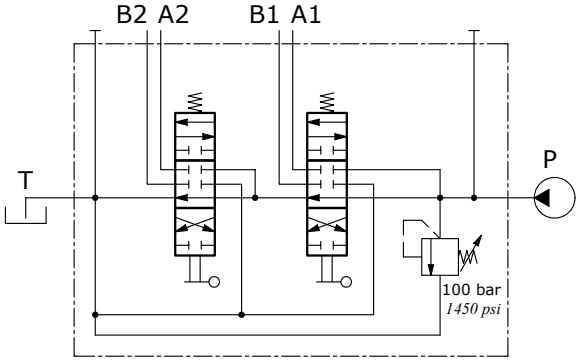
directional valve with right inlet

Dimensional data (with tandem circuit)

The description of **45L GMT** valve with tandem circuit is marked with letters **"SP"** and one figure wich indicate the downstream sections from tandem connection.

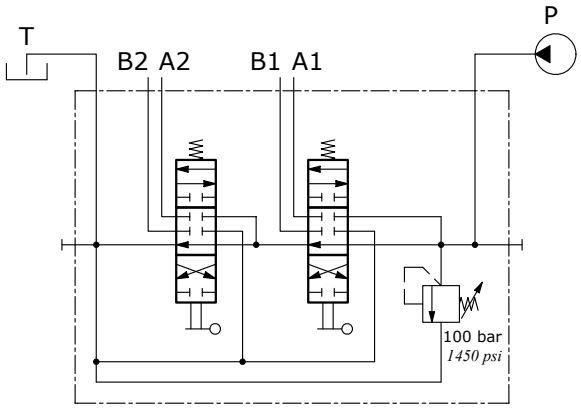


Standard configuration



Description example
45L **GMT**08/2-**SP1**(X-100)/ED-18L/ED-18L-**PSL2**

Upper inlet and outlet ports configuration



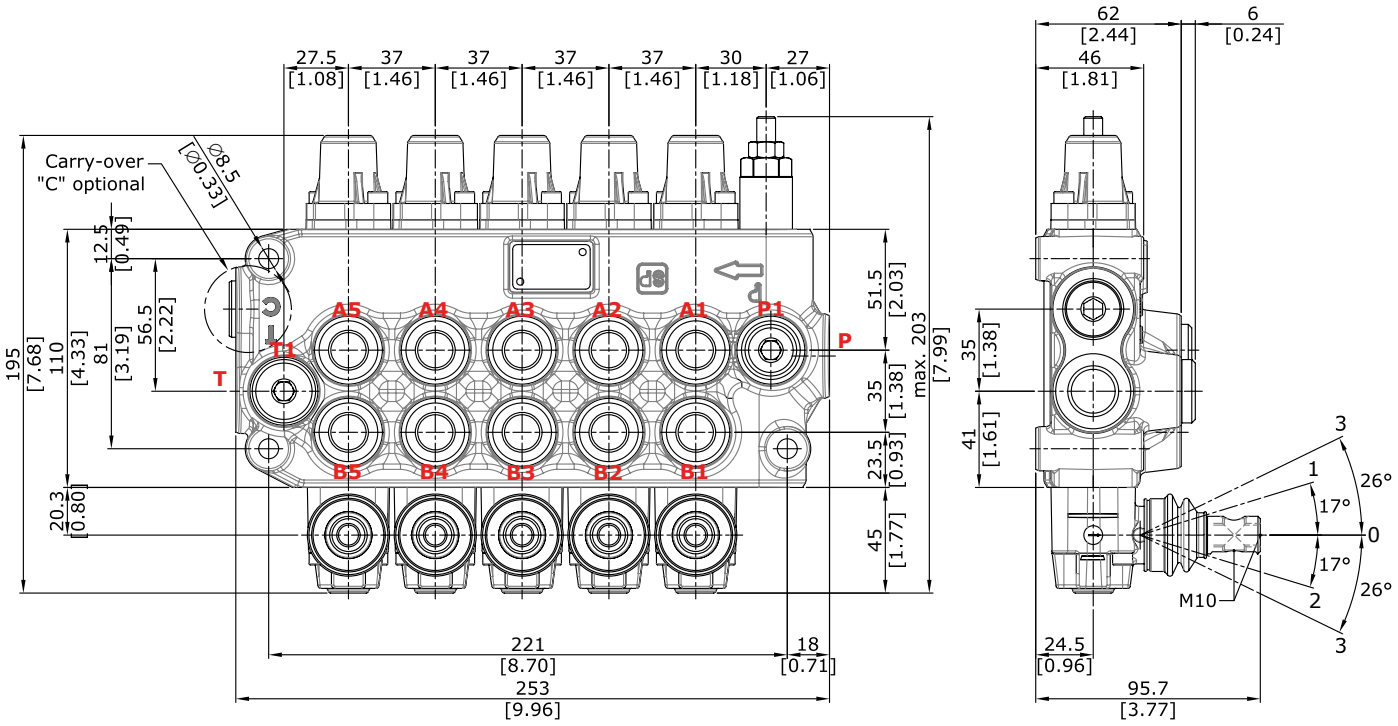
Description example
45L **GMT**08/2-**SP1**(X-100)/ED-18L/ED-18L-**PSA2**

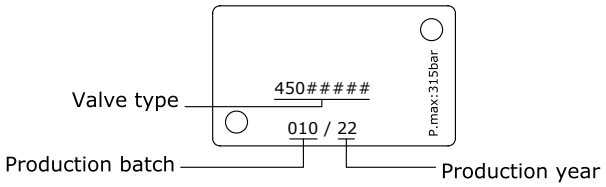
NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

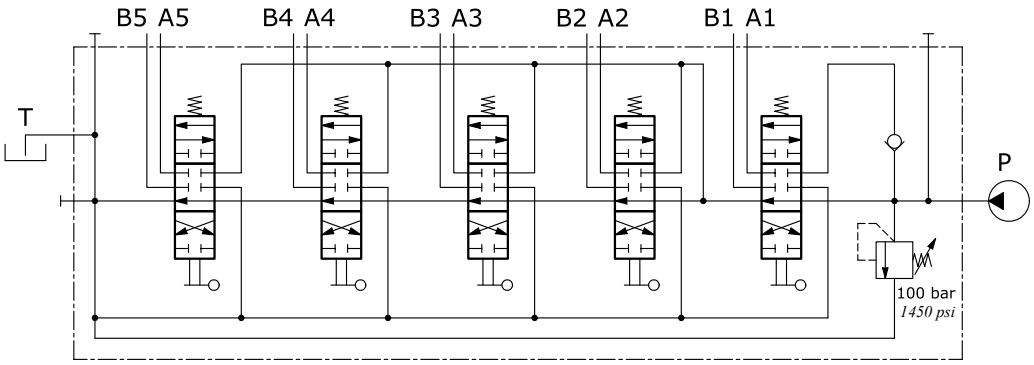
directional valve with right inlet

Dimensional data (with tandem circuit)

The description of **45L GM** valve with tandem circuit is marked with letters **"SP"** and one figure wich indicate the downstream sections from tandem connection.







Description example

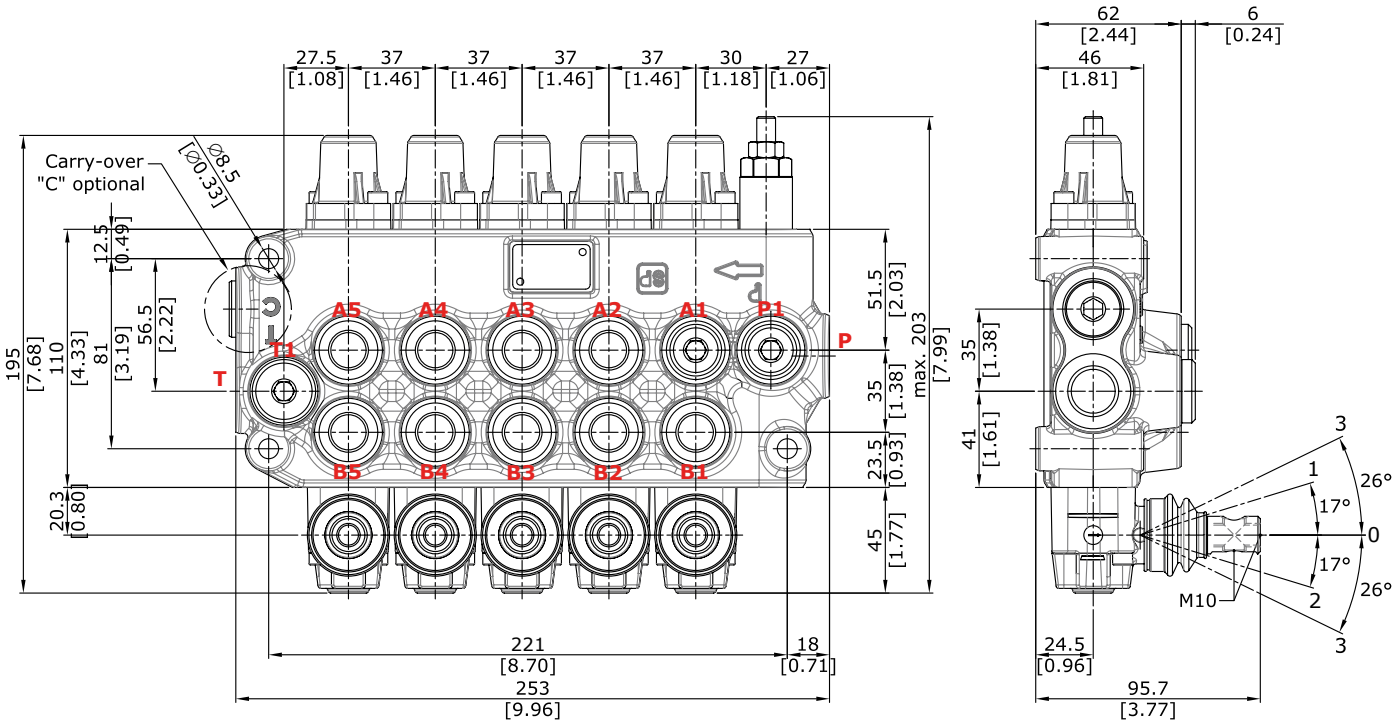
45L GM08/5-**SP4**(X-100)/ED-18L/ED-18L/ED-18L/ED-18L/ED-18L/AET-PSL2

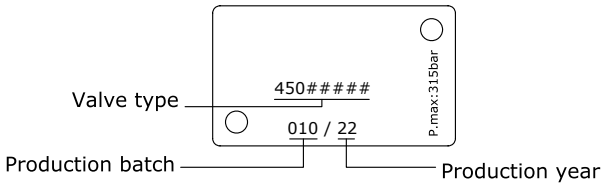
NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

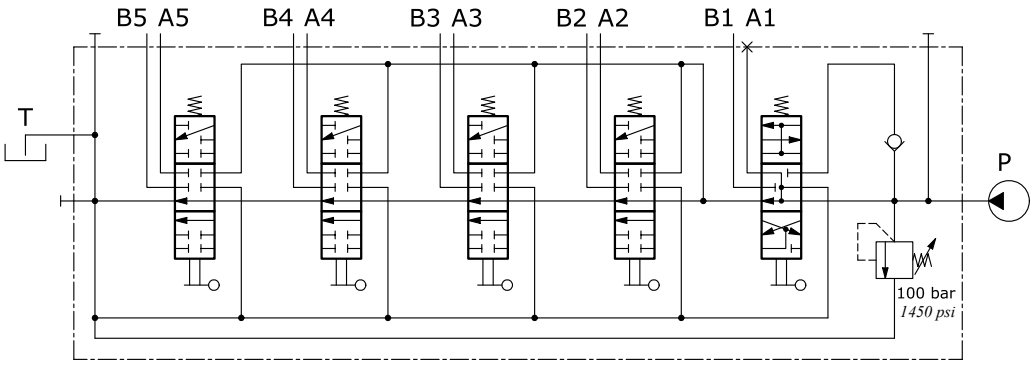
directional valve with right inlet

Dimensional data (with tandem circuit)

The description of **45L GM** valve with tandem circuit is marked with letters **"SP"** and one figure wich indicate the downstream sections from tandem connection.







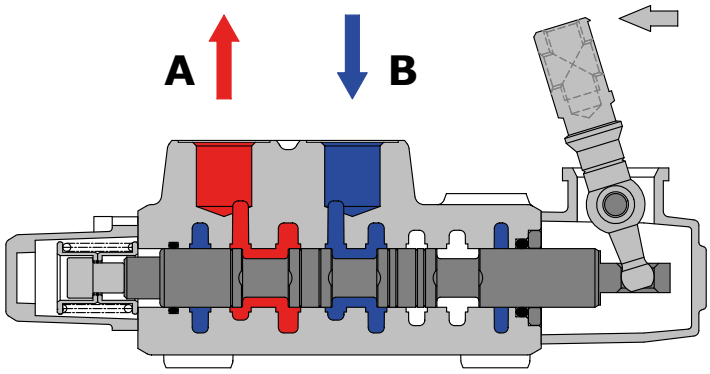
Description example
45L GM08/5-**SP4**(X-100)/**ED-4FAS8OR**L/**ED-1E8OR**L/
ED-1E8ORL/**ED-1E8OR**L/**ED-1E8OR**L/AET-PSL2

NOTE - Drawings and dimensions are referred to **BSP** thread configuration.

Sectional drawing

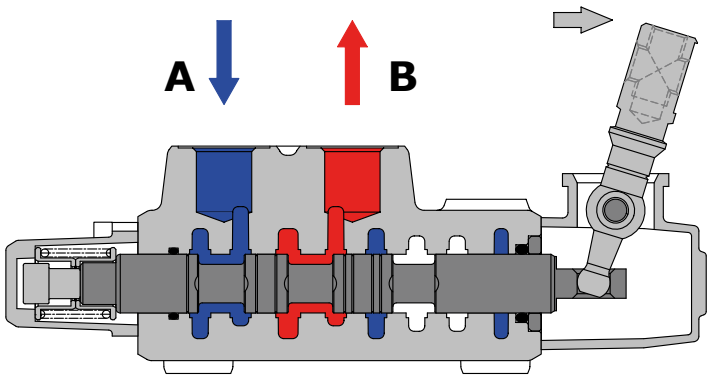
When hand lever pushed (spool out position) P to A port. B to T port.

Position 1



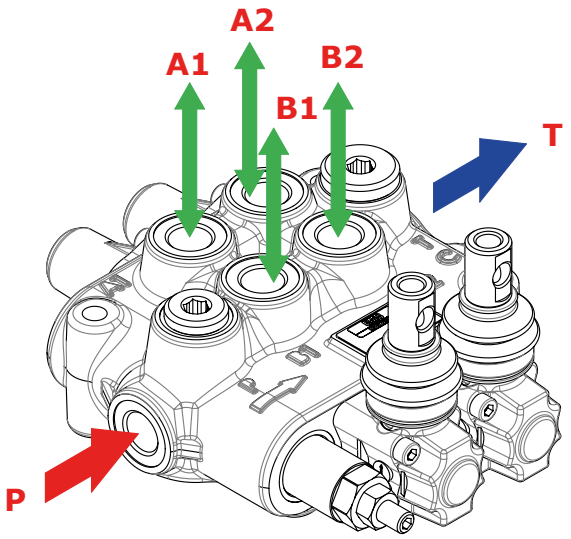
When hand lever pulled (spool in position) P to B port. A to T port.

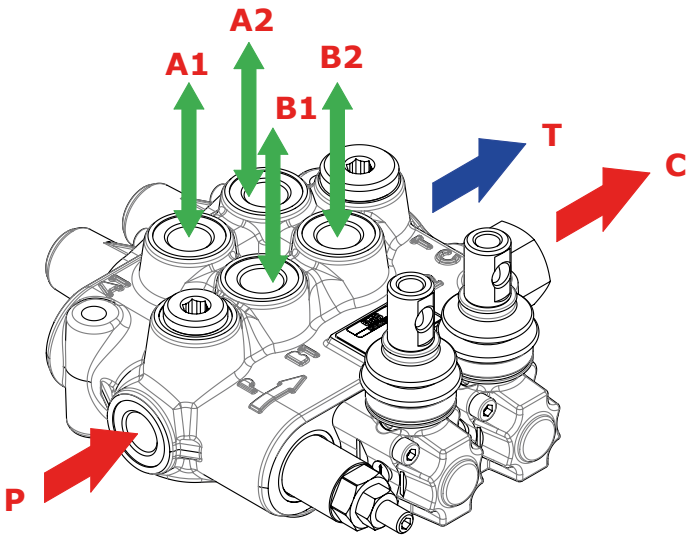
Position 2



Installation and maintenance

The 45L GM valve is 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; in order to prevent body 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 and C ports**	**A,B ports**	**T port**	**Hydraulic pilot**
BSP (ISO 228/1)	G 3/8	G 3/8	G 1/2	G 1/4
With O-Ring seal	35 *(25.8)*	35 *(25.8)*	50 *(36.9)*	20 *(14.7)*
With copper washer	40 *(29.5)*	40 *(29.5)*	50 *(36.9)*	25 *(18.4)*
With steel and rubber washer	30 *(22.1)*	30 *(22.1)*	50 *(36.9)*	16 *(11.8)*
UN-UNF (ISO 11926-1)	3/4-16 (SAE 8)	9/16-18 (SAE 6)	3/4-16 (SAE 8)	9/16-18 (SAE 6)
With O-Ring seal	40 *(29.5)*	30 *(22.1)*	30 *(22.1)*	30 *(22.1)*
METRIC (ISO 262)	M18x1.5	M18x1.5	M22x1.5	-
With O-Ring seal	35 *(25.8)*	35 *(25.8)*	50 *(36.9)*	-
With copper washer	40 *(29.5)*	40 *(29.5)*	50 *(36.9)*	-
With steel and rubber washer	40 *(29.5)*	40 *(29.5)*	50 *(36.9)*	-

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