



MONOBLOCK
DIRECTIONAL
CONTROL VALVES
GMM-M80

CE





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Additional Informations

Note: This catalog shows the product in the most standard configurations. For Other Configurations, more detailed information or special request, Please contact Customer Service Dpt.

Warning!: All specifications of this catalog refer to the standard product at this date (01/2020). GEMMA, oriented to a continuous improvement, reserves the right to discontinue, modify or revise the specifications, without notice.

GEMMA IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN INCORRECT USE OF THE PRODUCT.

WORKING CONDITIONS

Nominal Flow Rating / Displacement	80 l/min	21 U.S.G.P.M
Maximum Working Pressure (Series Circuit)	315 Bar	4600 PSI
Max. Back Pressure	25 Bar	360 PSI
Oil Temperature with NBR Seals	-20 to 80 C°	-4 to 176 F°
with FPM (Viton) Seals	-20 to 100 C°	-4 to 212 F°
Oil Viscosity – Operating Range	From 10 to 75 mm ² /s	From 10 to 75 cSt
Minimum / Maximum	10 / 400 mm ² /s	10 / 400 cSt
Oil Filtration	≤30 μ	
Ambiant Temperature Range	-35 to 60 C°	-31 to 140 F°
Number Of Spools	1 to 6	
Internal Leakage (at 100 bar (1450 PSI), 40C° (110 F°), 46 cSt – A(B)–T)	3 cm ³ /min	0,18 in ³ /min
Max. Level Of Contamination	19/16 – ISO 4406	

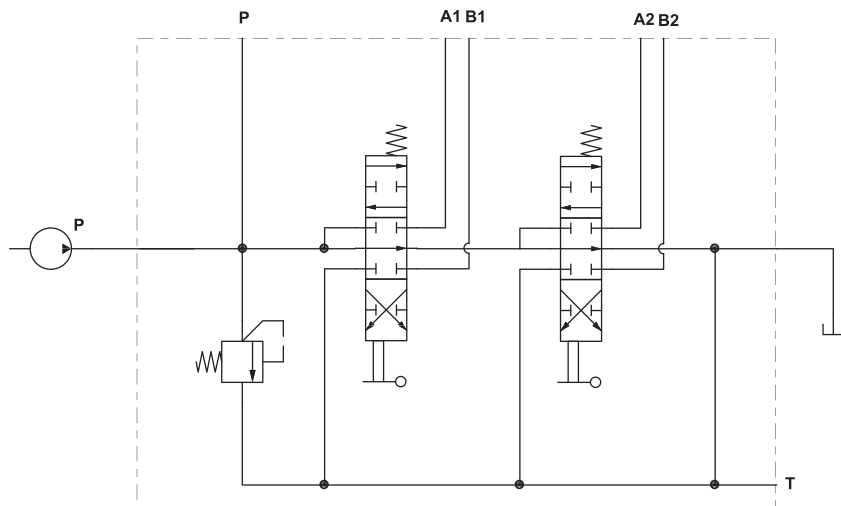
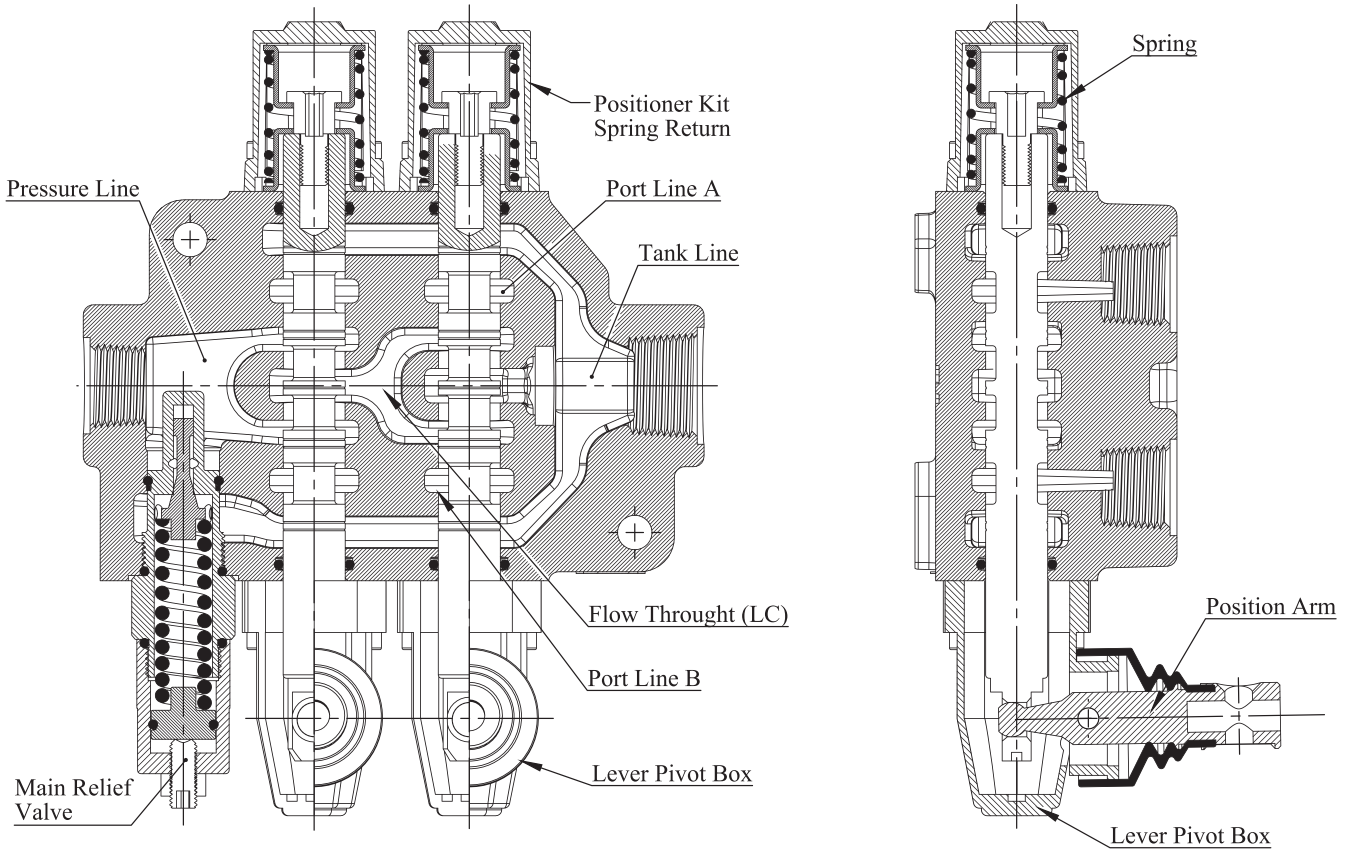
Not: This catalogue shows technical specifications measured with mineral oil of 46 mm²/s-46 cSt viscosity at 40 C° temperature.

Features

- Simple, compact and heavy duty designed monoblock valves from 1 to 6 sections for open and closed center hydraulic systems.
- Fitted with a main pressure relief valve.
- Optional Carry-Over port only tandem circuit.
- Interchangeable spool diameter is 18 mm – 0,71 in.
- Available manual, pneumatic, hydraulic and electro-pneumatic spool control kits.

HYDRAULIC CIRCUIT

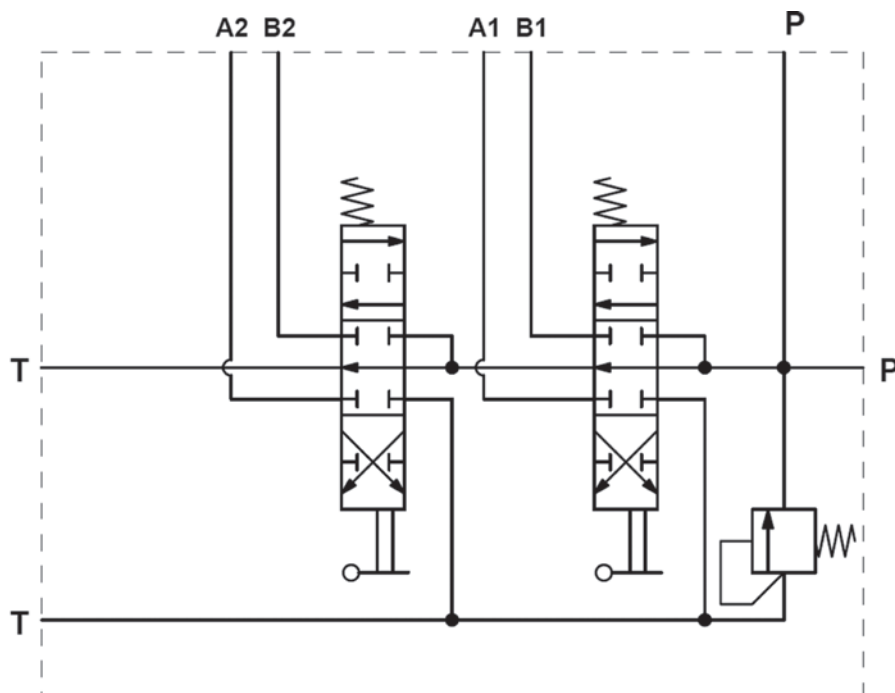
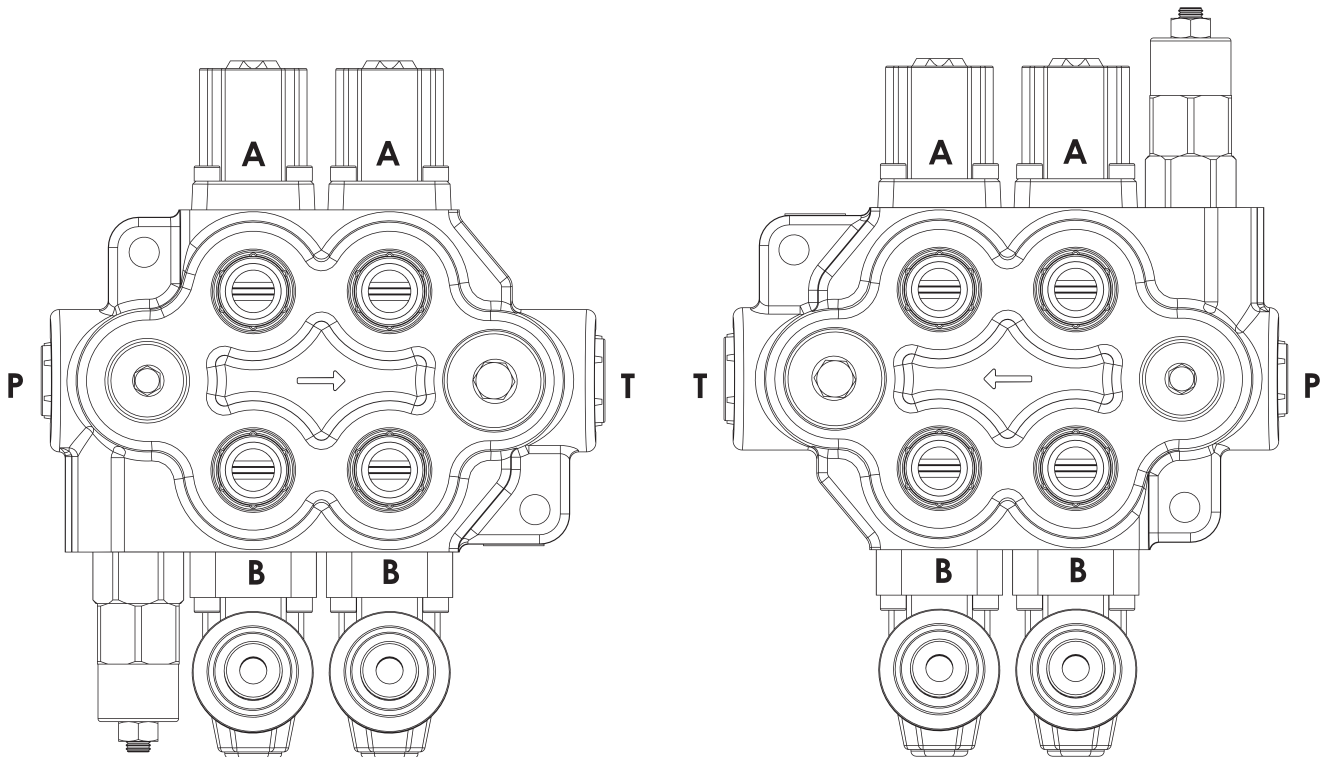
Standard Configurations With Top Inlet And Outlet Ports - LH



Code: GMM M80-2P / SMR2-120 / 1A-SR-STL/1A-SR-STL/PA1/SGT

Standard Configurations With Top Inlet And Outlet Ports - RH (Right Inlet)

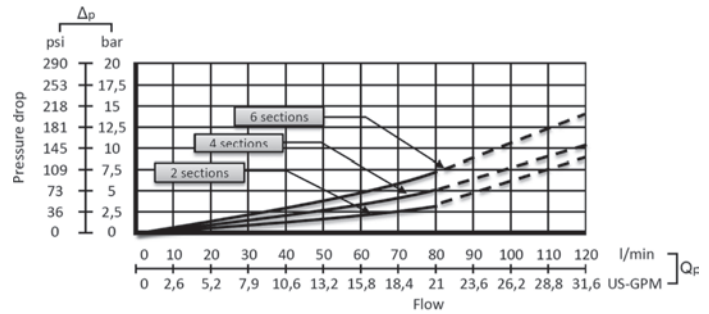
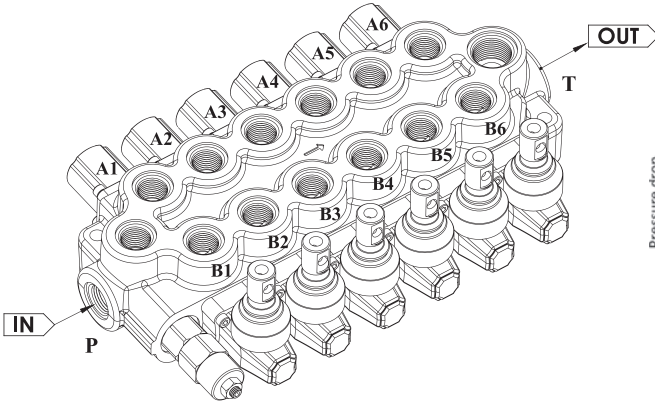
A symmetrical body allows the reverse assembly of spool and this with connected control kit (RH Configuration).



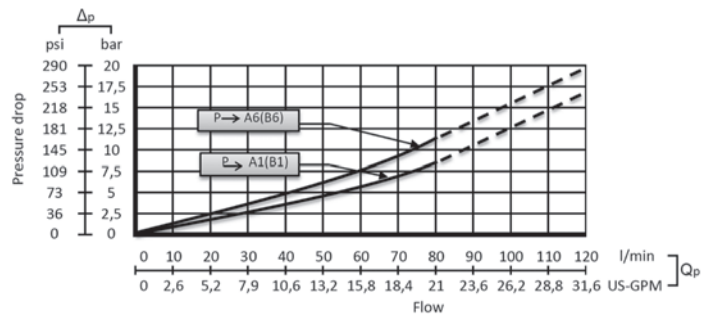
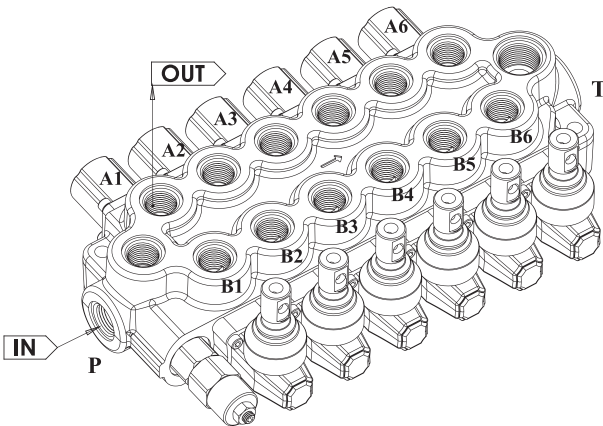
Code: GMM M80-2P / SMR2-120 / (RH) 1A-SR-STL/1A-SR-STL/PA1/SGT

PERFORMANCE DATA AND CURVE

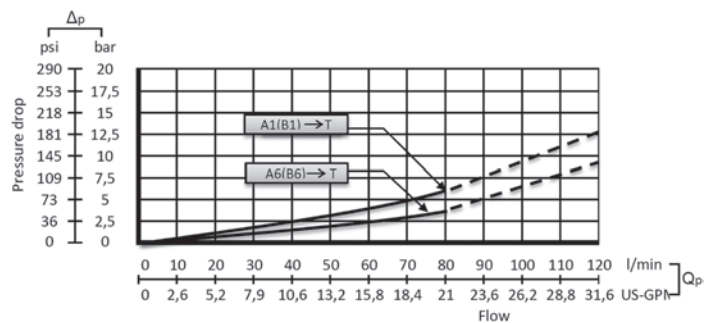
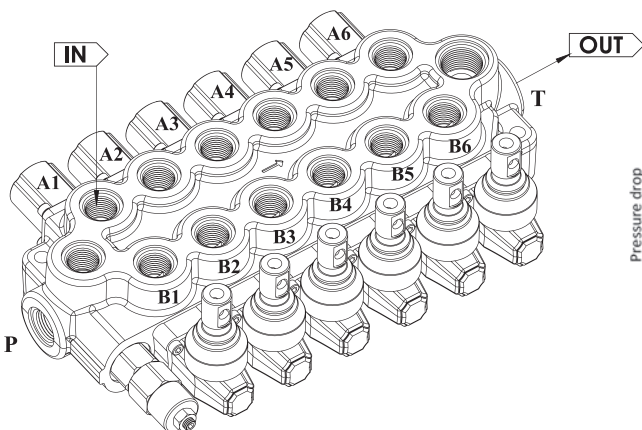
Open Center - Pressure Drop (P-T)



Inlet to Work Port - Pressure Drop (P-A/B)



Work Port to Outlet - Pressure Drop (A/B-T)



Note: Measured and chart value with spool type 1A.

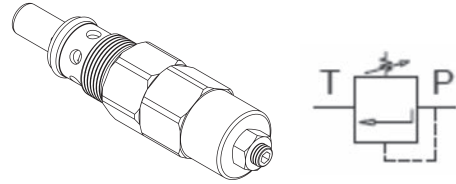
INLET RELIEF OPTIONS

Direct Pressure Relief Valve

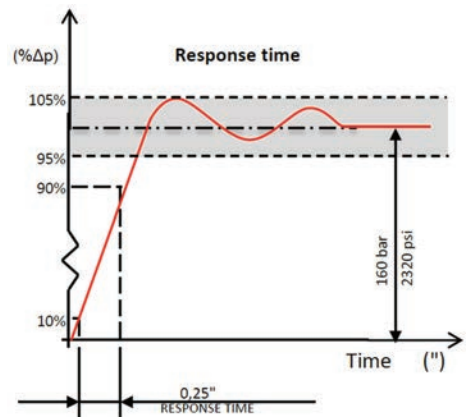
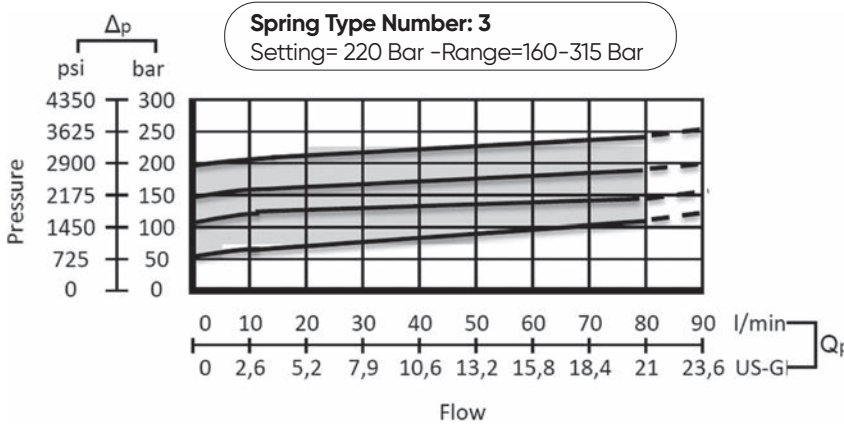
Code:

SMR2 - 120

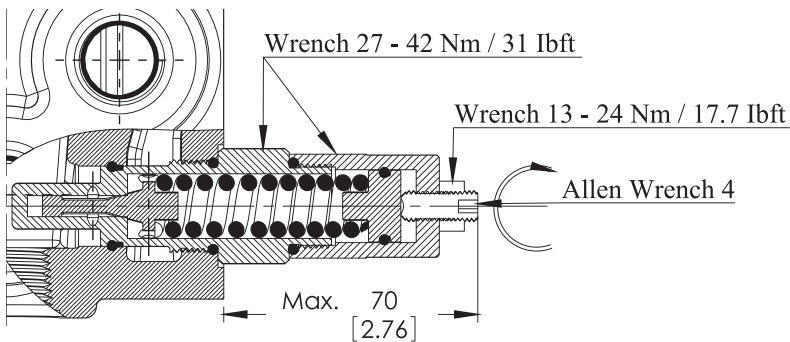
- Pressure Setting Bar in (Standard 120 bar)
- Standard Main Relief Spring Type -2



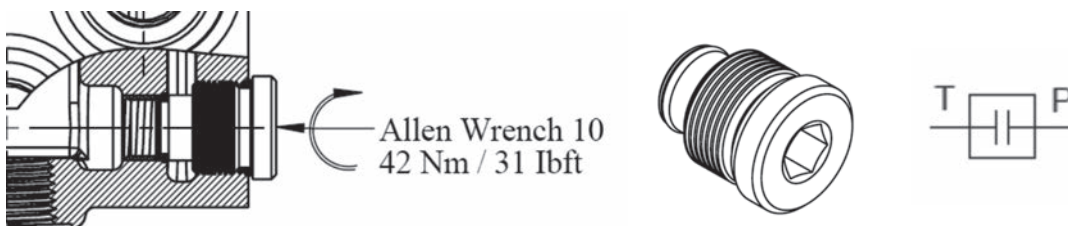
Performance Data



Adjustment Type on Valve

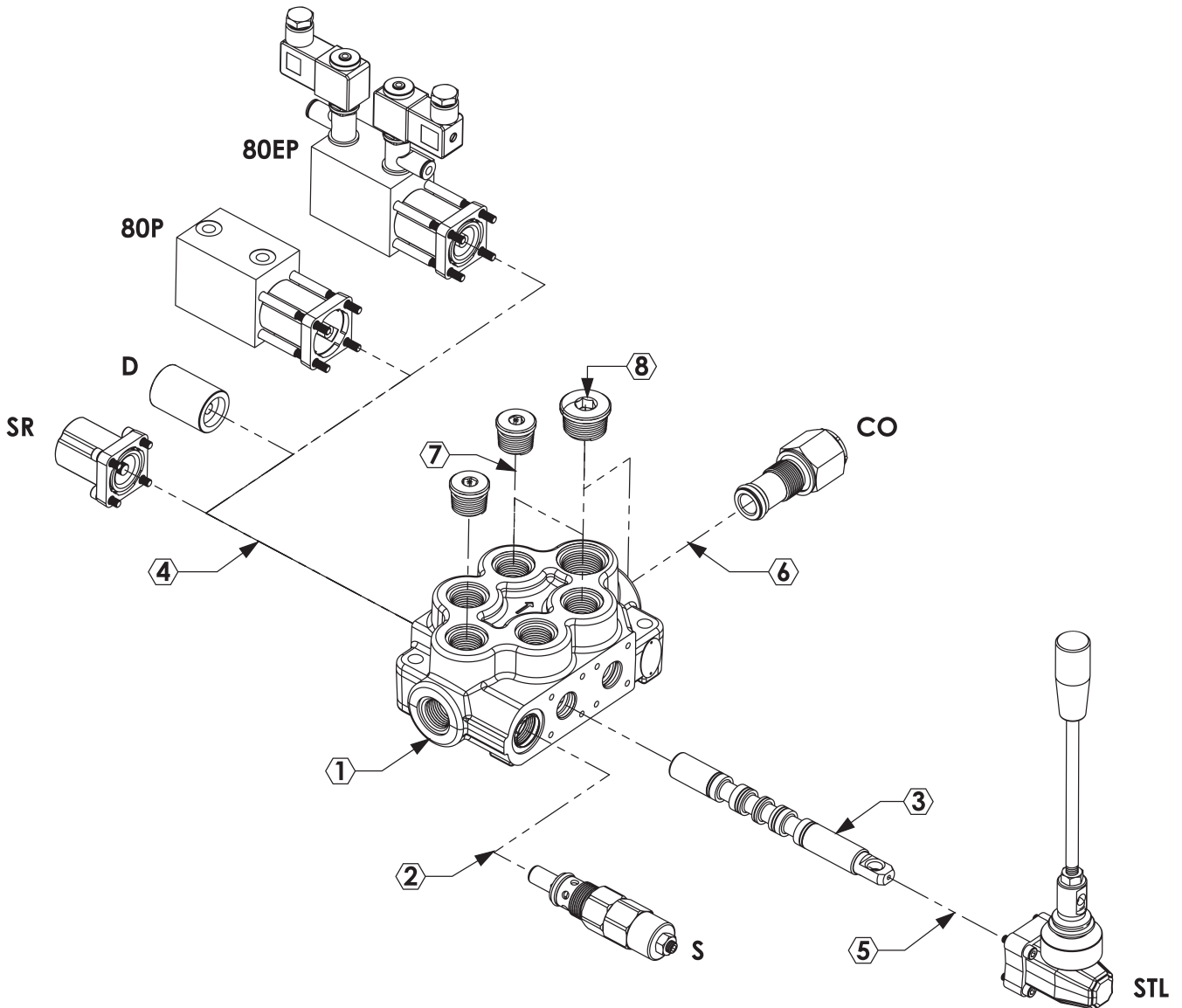
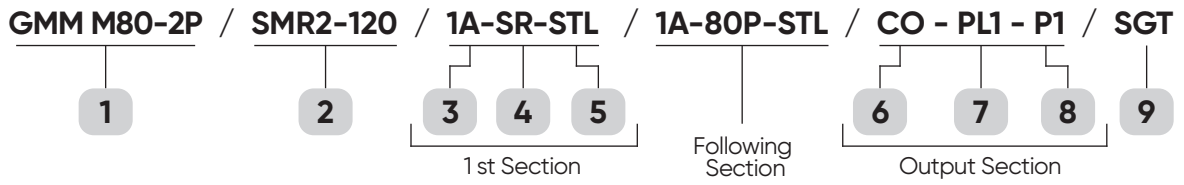


Relief Blanking Plug - WM



ORDERING CODES

Order Example



ORDERING CODES
1- Valve Type and Body

M80 =Valve Type - (M) - Monoblok
(80) - Max. Flow Rate

1P = Body for 1 Section - (1BM180100)
2P = Body for 2 Sections - (1BM280100)
3P = Body for 3 Sections - (1BM380100)
4P = Body for 4 Sections - (1BM480100)
5P = Body for 5 Sections - (1BM580100)
6P = Body for 6 Sections - (1BM680100)

2- Pressure Relief Options

SMR = Standard direct pressure relief valve

SMR1-080 - (2SMR180080) - Range 0-80 bar
Setting 80 bar

SMR2-120 - (2SMR280120) - Range 60-200 bar
Setting 120 bar

SMR3-220 - (2SMR380220) - Range 160-315 bar
Setting 220 bar

3- Spool Options

1A - (3SM180110) - 3 Positions, Double acting

2A - (3SM180120) - 3 Positions, Double acting
A to tank B Blocked

3A - (3SM180130) - 3 Positions, Double acting
B to tank A blocked

4A - (3SM180140) - 3 Positions, Double acting
A and B tank

5A - (3SM180150) - 3 Positions, Single acting on
A (A to tank)

6A - (3SM180160) - 3 Positions, Single acting on
B (B to tank)

4- Spool Positioners

SR = Spring Return in neutral position -
(4SR080100)

D = Detent in position 1, neutral and 2 -
(4D080100)

80P = ON/OFF Pneumatic - (445P045100)

80EP = 12 VDC ON/OFF electro-pneumatic -
(480EP080112)

5- Lever Options

STL = Standard Lever - (5STL080100)

JL = Joystick lever for two sections operation
- (5JL 080100)

6- Output Options

PA2(T) = G3/4 Top output plug - (6PL1080134)

PA2(S) = G3/4 Side output plug - (6PL1080134)

CO = G3/4 Carry-Over Connector - (6CO080100)

7- Ports Plug Options "If Required"

PL3(5A) = Plug for single action spool for 5A
G3/4 - (6PL1080134)

PL3(6A) = Plug for single action spool for 6A
G3/4 - (6PL1080134)

PL2(5A) = Plug for single action spool for 5A
G1/2 - (6PL1040112)

PL2(6A) = Plug for single action spool for 6A
G1/2 - (6PL1040112)

*Page 13 for detail spool options.

8- Ports Input Plug Options

PI1(T) = G1/2 Top input - (6PL1040112)

PI1(S) = G1/2 Side input - (6PL1040112)

PI3(T) = G3/4 Top input - (6PL1080134)

PI3(S) = G3/4 Side input - (6PL1080134)

9- Ports Thread Options

SGT1 = 1/2" Series Port Options - (9P045112)

SGT3 = 3/4" Series Port Options - (9P080134)

UNF = UNF Series Port Options - (9U045138)

M = Metric Series Port Options - (9M045138)

*Page 4 for detail port information.

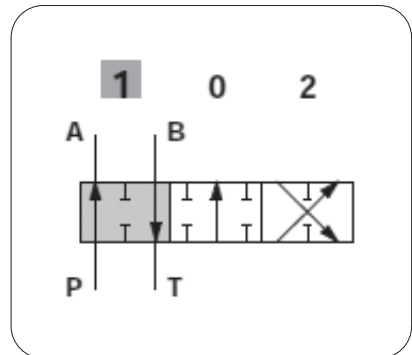
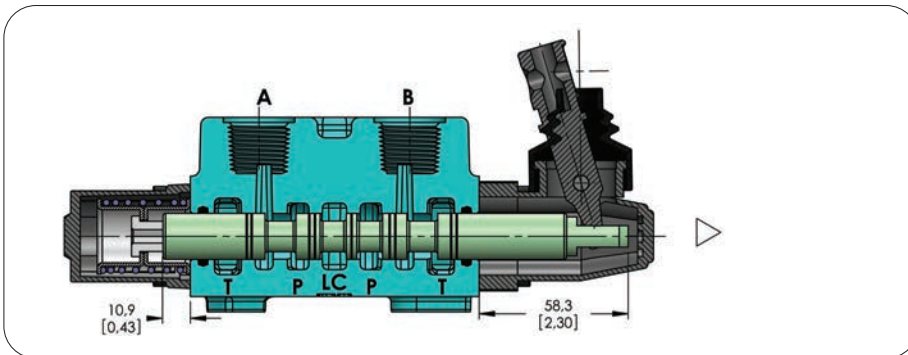
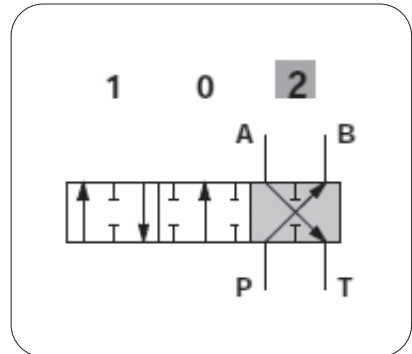
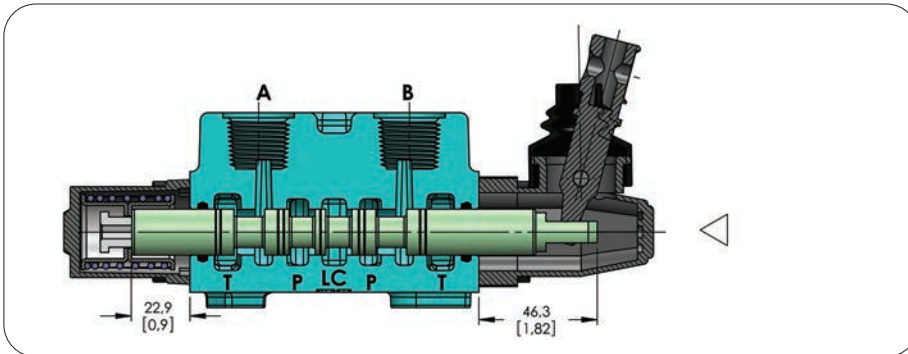
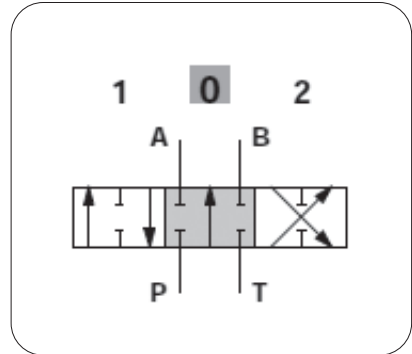
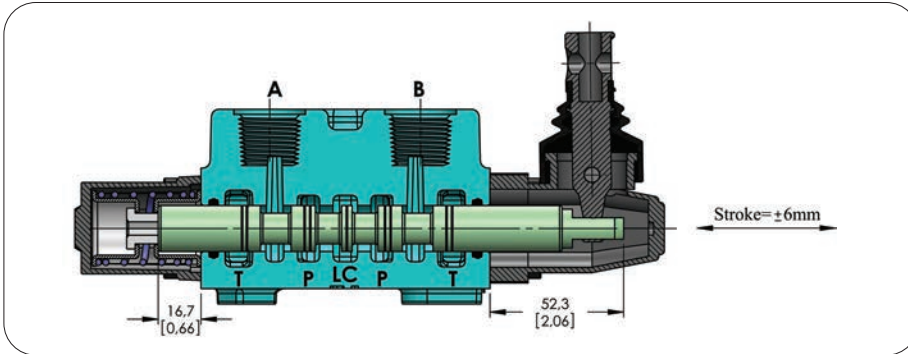
HandLever

L = Standard HandLever (L=120mmxM8)-(7L040100)

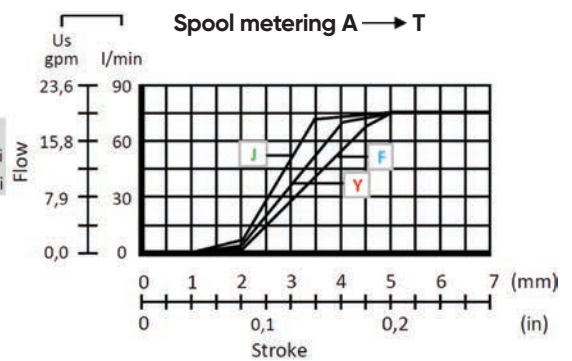
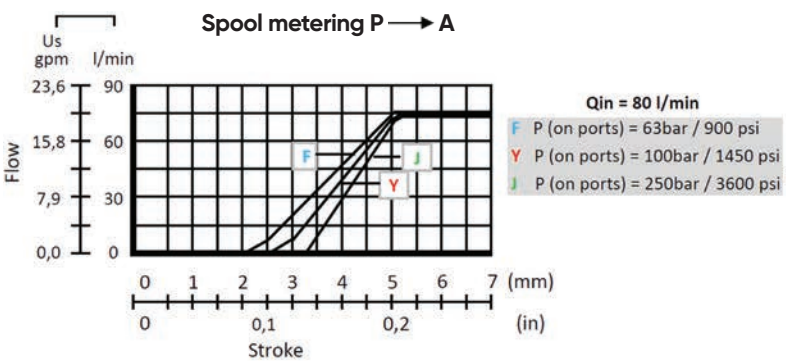
HL = Remote Cable Kit - (80HL80100)

SPOOL OPTIONS

Spool Type - 1A

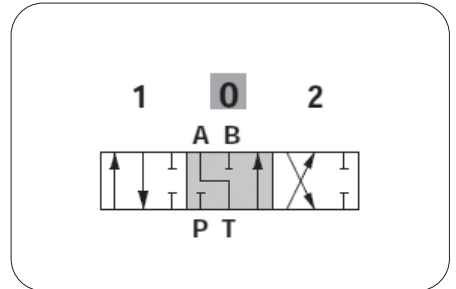
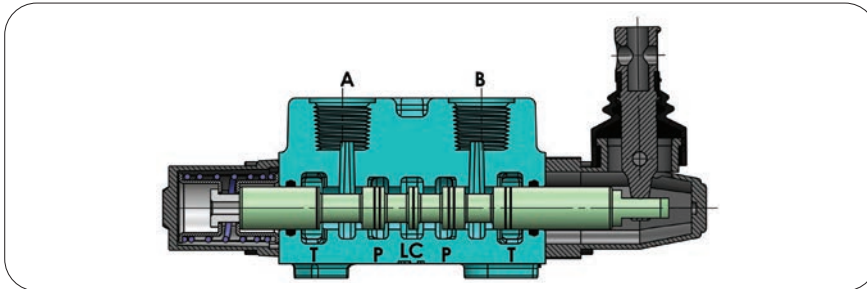


Performance Curve And Data

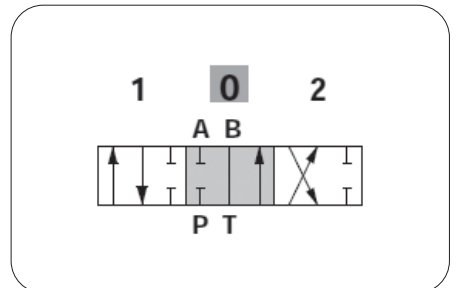
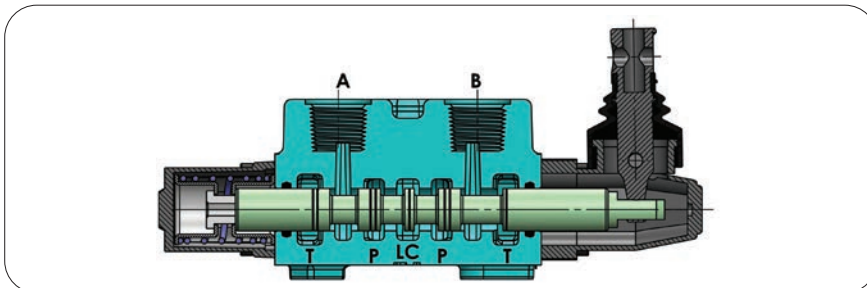


SPOOL OPTIONS

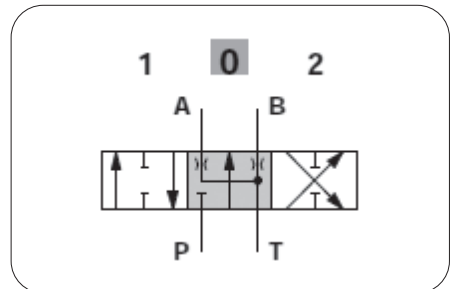
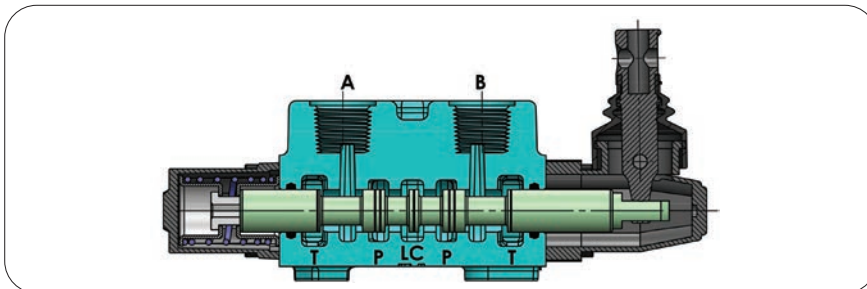
Spool Type - 2A



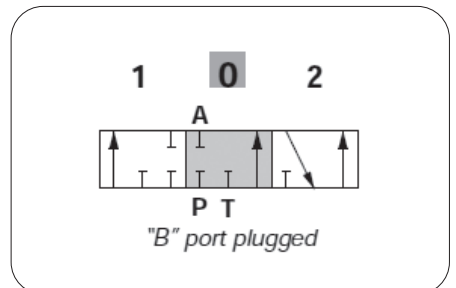
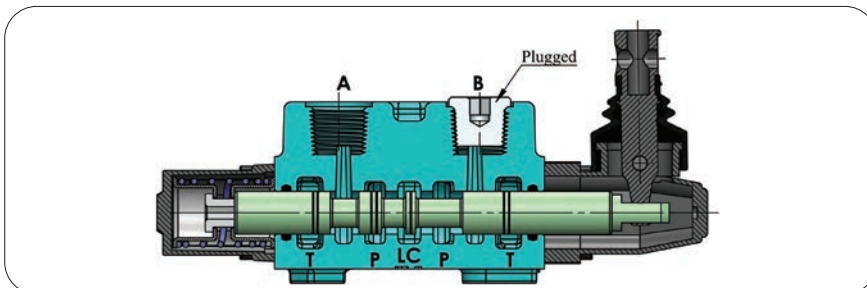
Spool Type - 3A



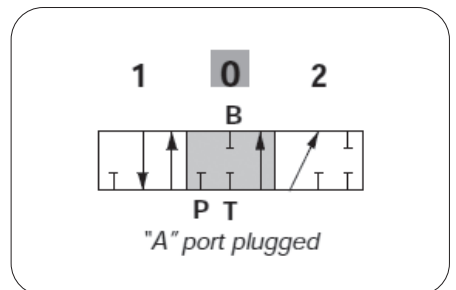
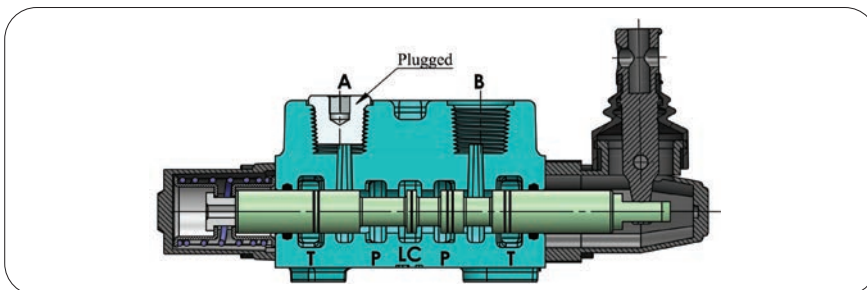
Spool Type - 4A



Spool Type - 5A



Spool Type - 6A



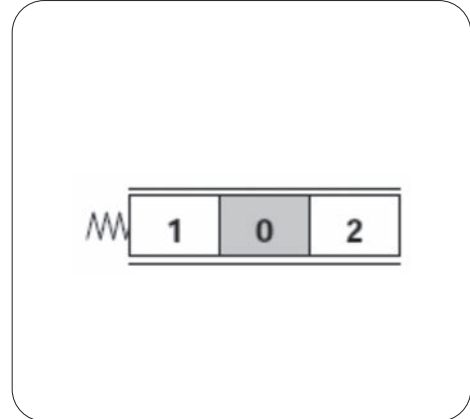
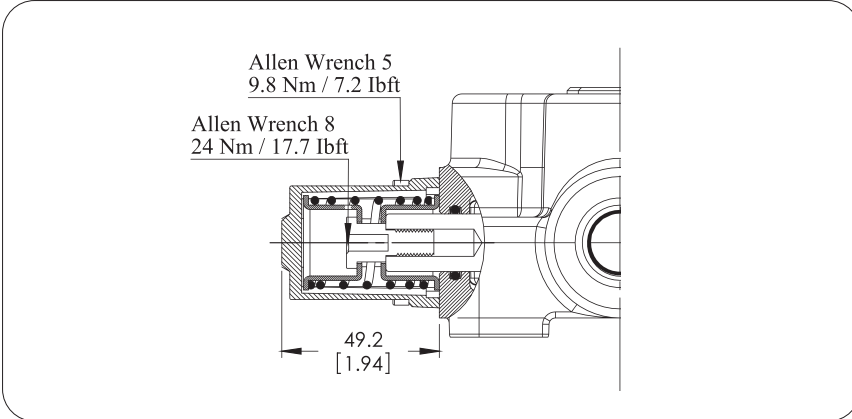
SPOOL POSITIONERS – SIDE OF RETURN

With Spring Return in Neutral Position

Kit No: **SR**

Sectional Appearance

Diagram

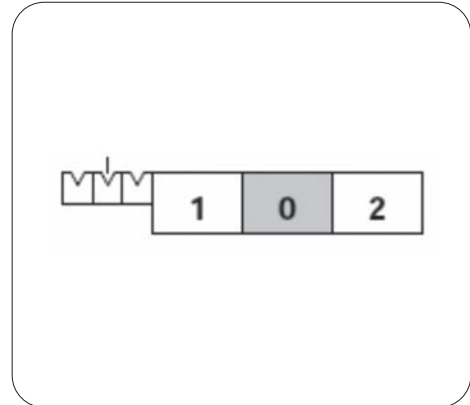
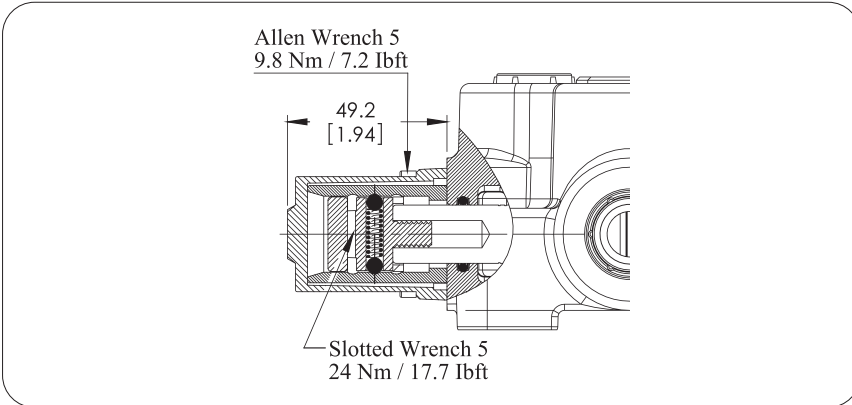


With Detent

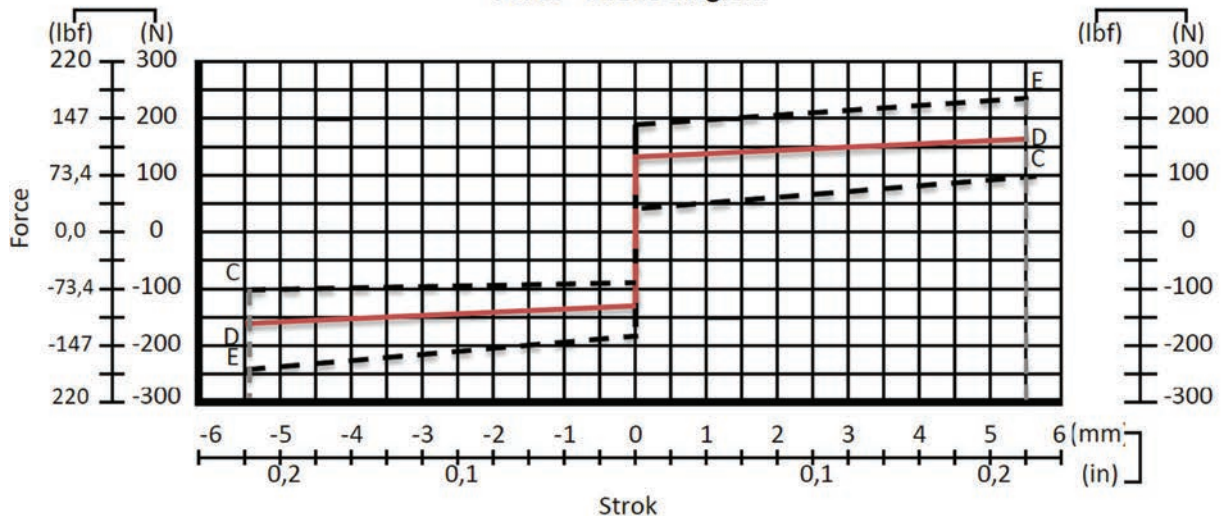
Kit No: **D**

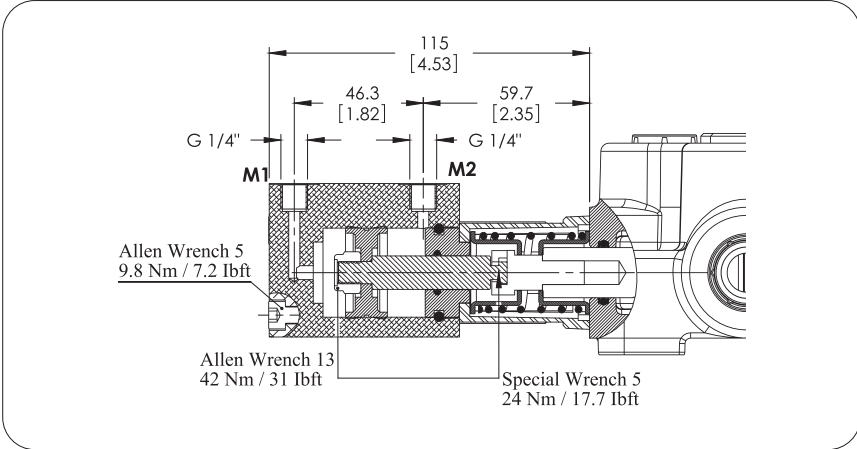
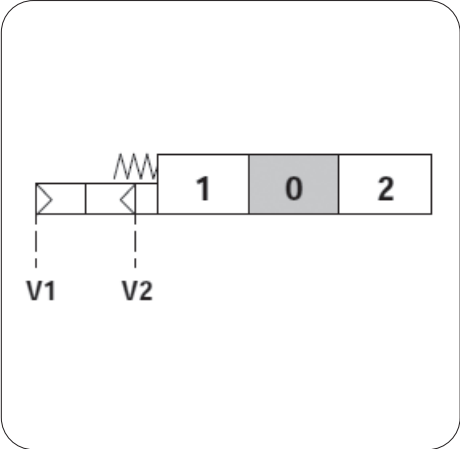
Sectional Appearance

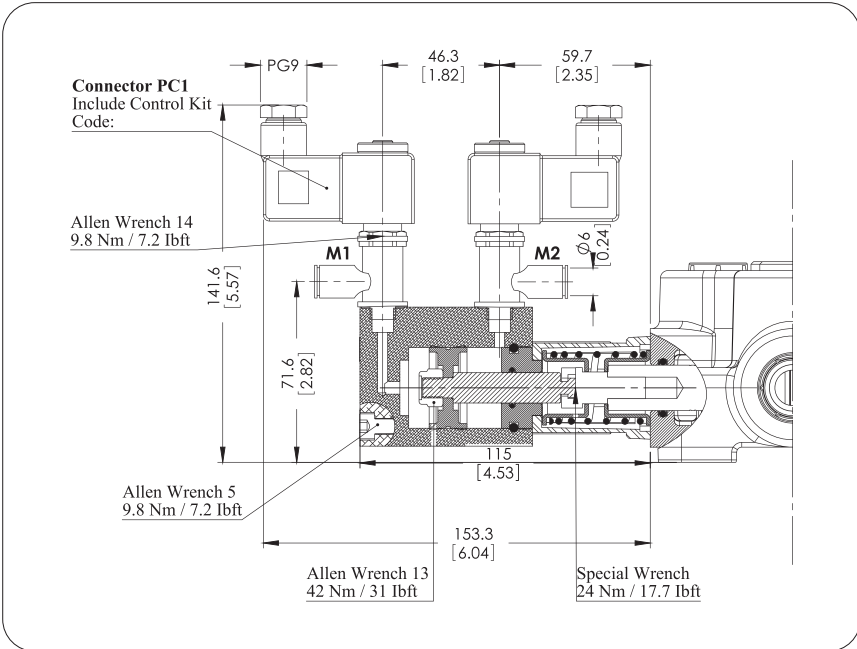
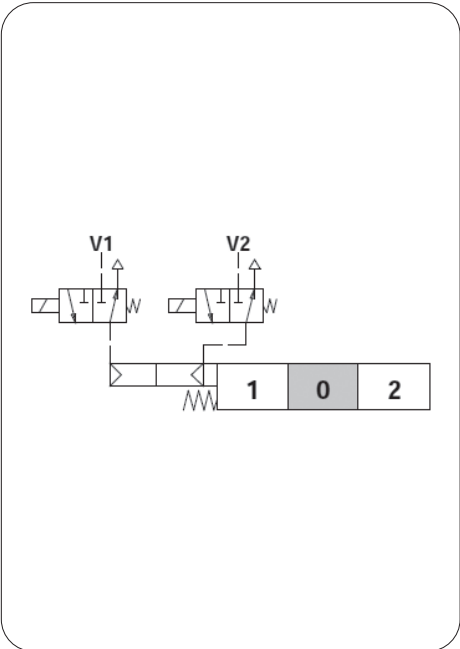
Diagram



Force - stroke diagram



SPOOL POSITIONERS – SIDE OF RETURN
ON/OFF Pneumatic Control
Kit No: 80P
Sectional Appearance

Diagram

Operating Features
 Pilot Pressure: 6 Bar (Max. 10) / 87 Psi (Max. 145)

ON/OFF Electro-Pneumatic Control
Kit No: 80EP
Sectional Appearance

Diagram

Operating Features
 Pilot Pressure: 6 Bar (Max. 10) / 87 Psi (Max. 145)
Solenoid Operating Features
 Nominal Voltage.....: 12VDC / 24 VDC
 Power Rating.....: 6 W

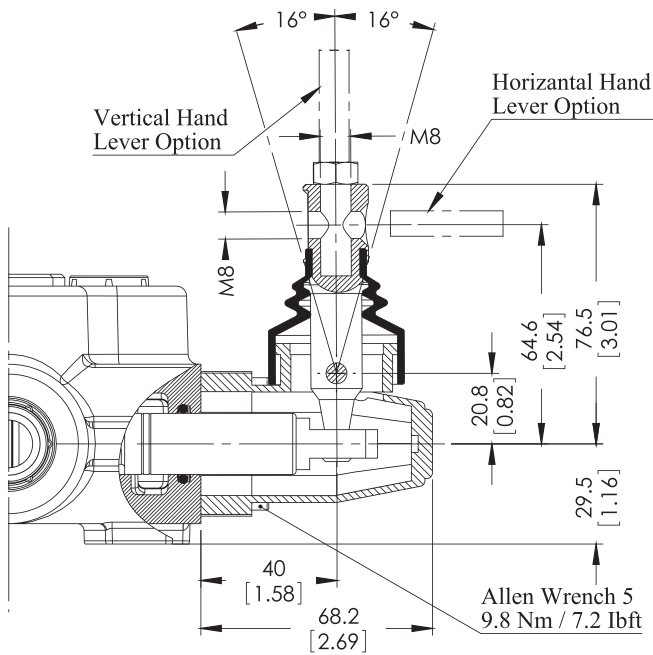
SPOOL POSITIONERS – SIDE OF LEVER CONTROL

Lever Controls

Kit No: **STL - L0**

Sectional Appearance

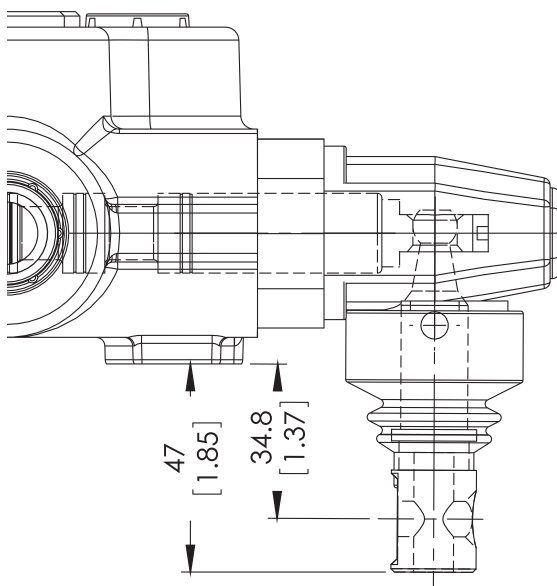
Diagram



Kit No: **STL - L180**

Sectional Appearance

Diagram



Note: Arm lever pivot box is aluminium cap protected. And it can be rotated 180°.

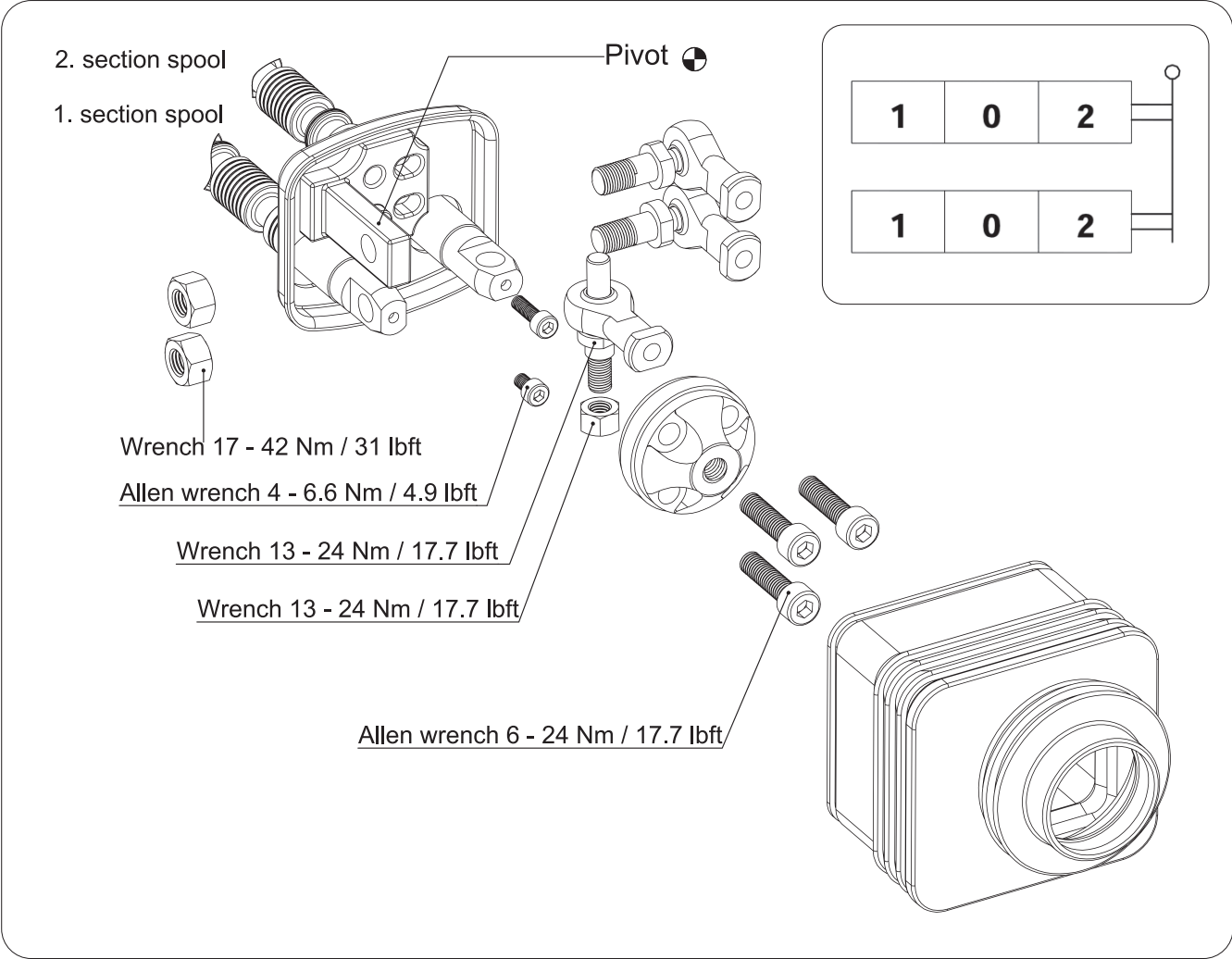
SPOOL POSITIONERS – SIDE OF LEVER CONTROL

Lever Controls - Joystick

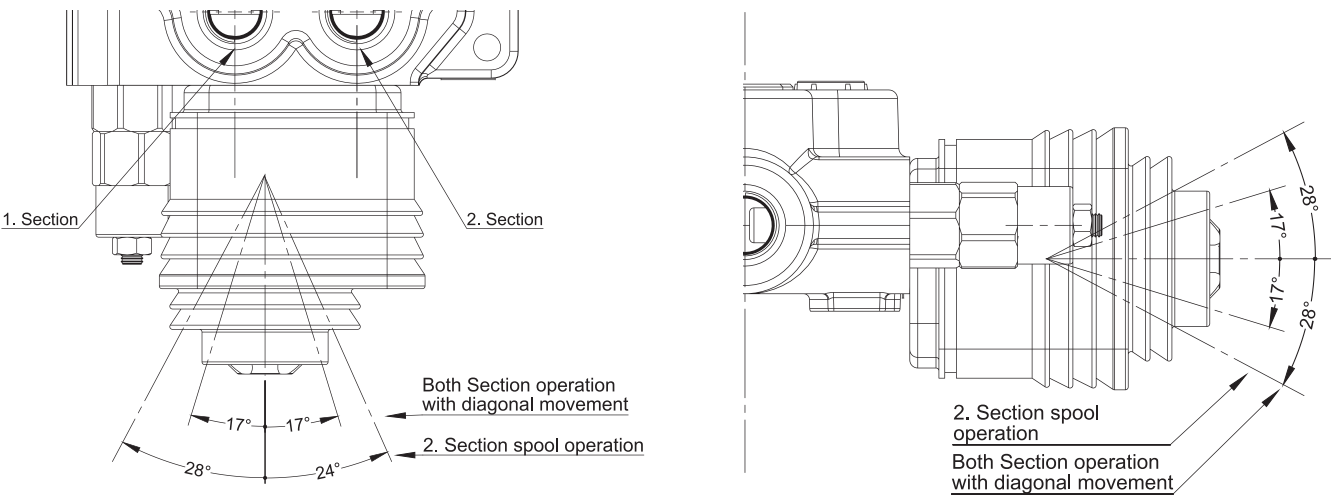
Kit No: JL

Exploded View

Diagram



Operation Angle:



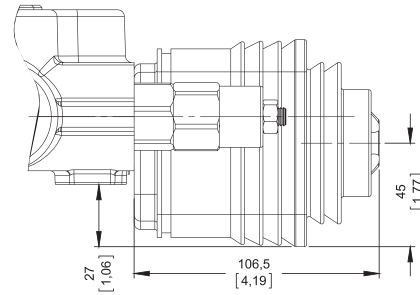
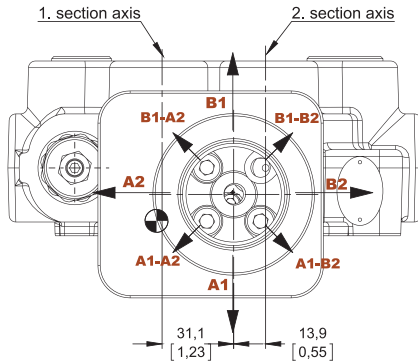
SPOOL POSITIONERS – SIDE OF LEVER CONTROL

Lever Controls – Joystick

Dimensions and movement scene

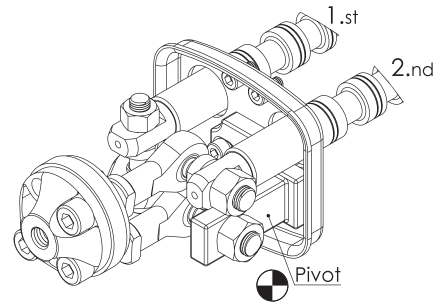
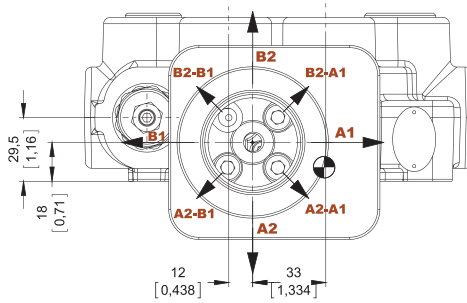
Type No: **JL1**

Application: Pivot placed down on the Left



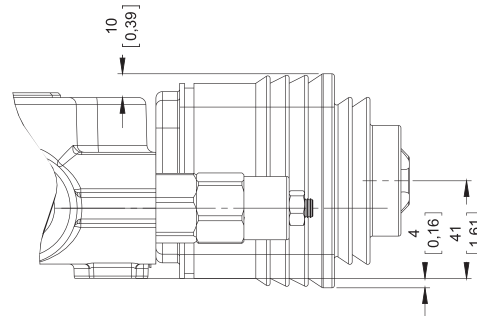
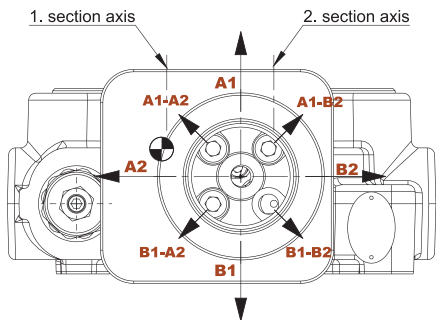
Type No: **JL2**

Application: Pivot placed down on the right



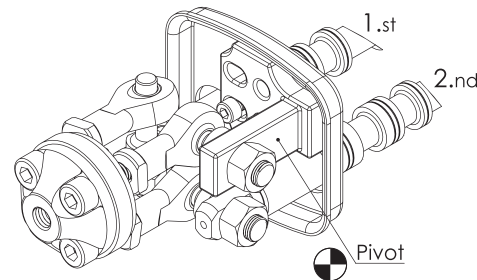
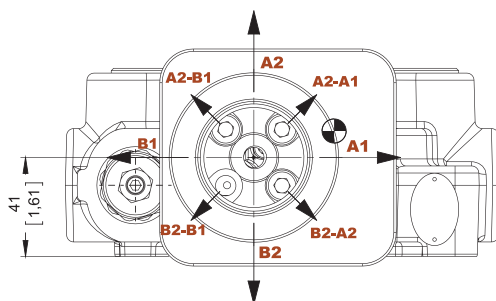
Type No: **JL3**

Application: Pivot placed above on the Left



Type No: **JL4**

Application: Pivot placed above on the right



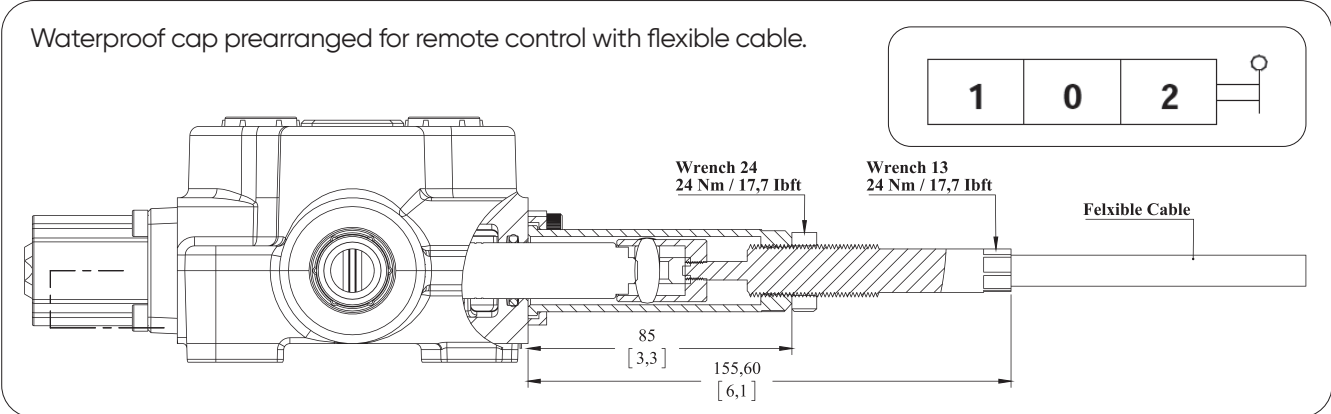
SPOOL POSITIONERS – SIDE OF LEVER CONTROL

Lever Controls – Cable Control

Kit No: **HL**

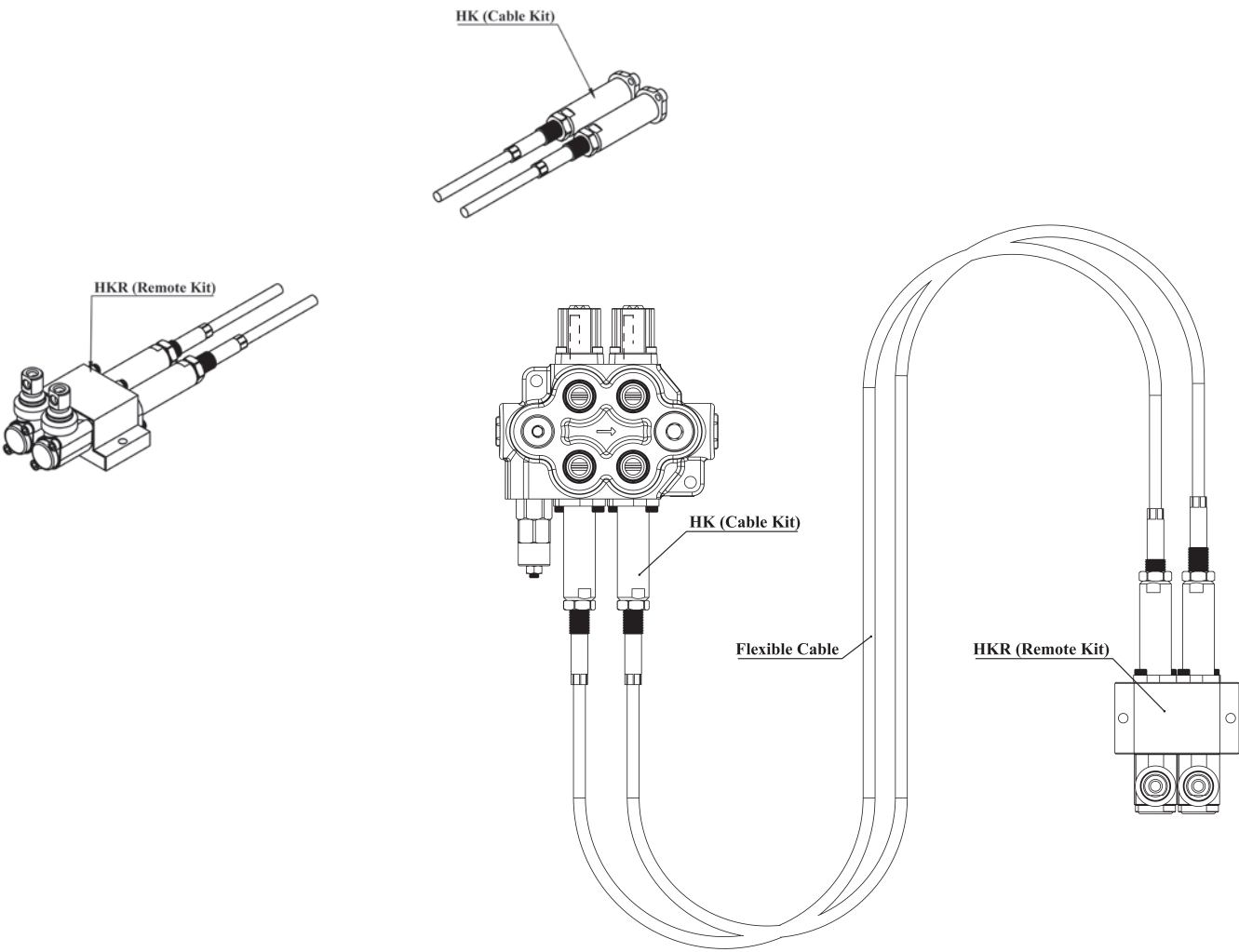
Exploded View

Diagram



Note: Remote cable control has several options. Please indicate the cable length demanded and contact our sales department.

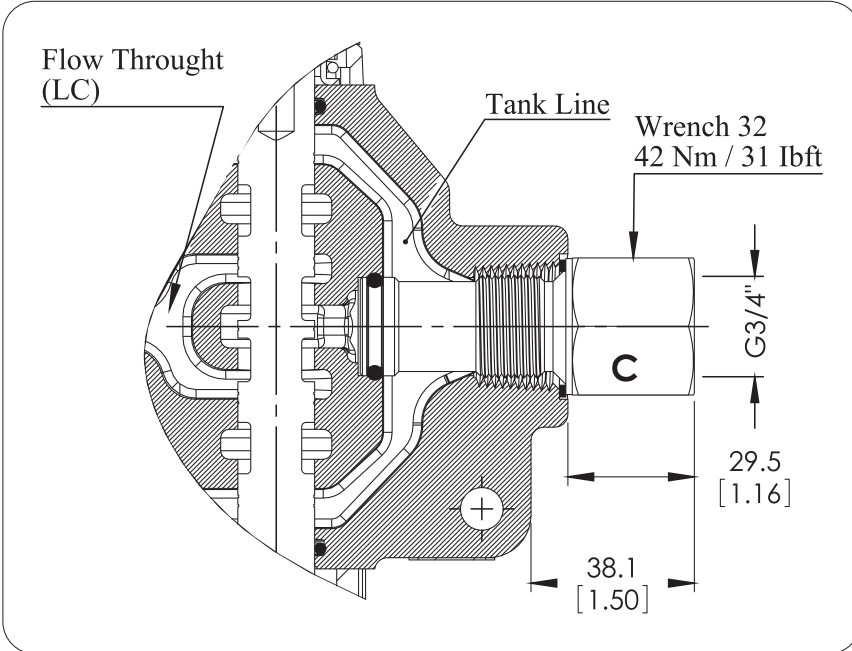
Example Operation



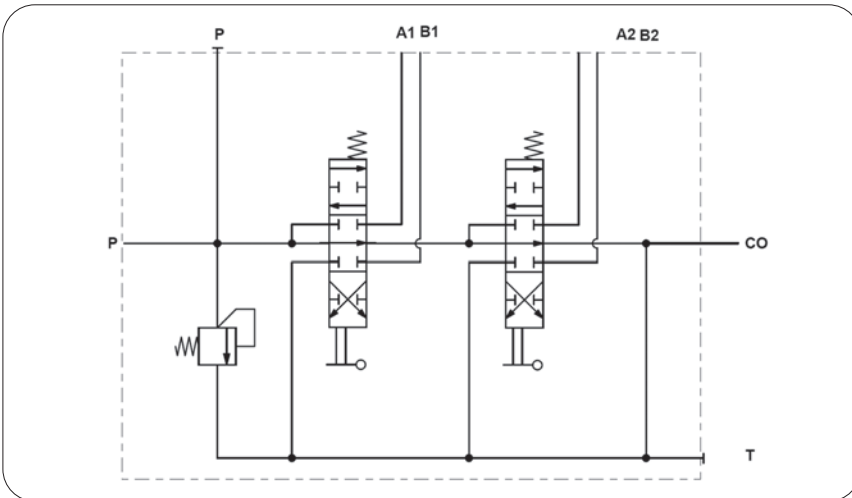
OUTLET PORT OPTIONS

Carry - Over Connection

Kit No: **CO**

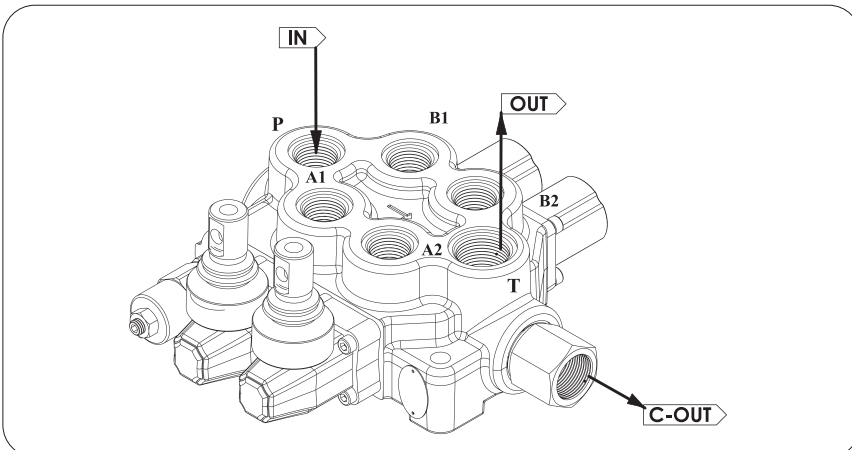


Sectional Appearance



Hydraulic Circuit

Code: GMM M80-2P / SMR2-120 / 1A-SR-STL/1A-SR-STL/CO-PA1/SGT



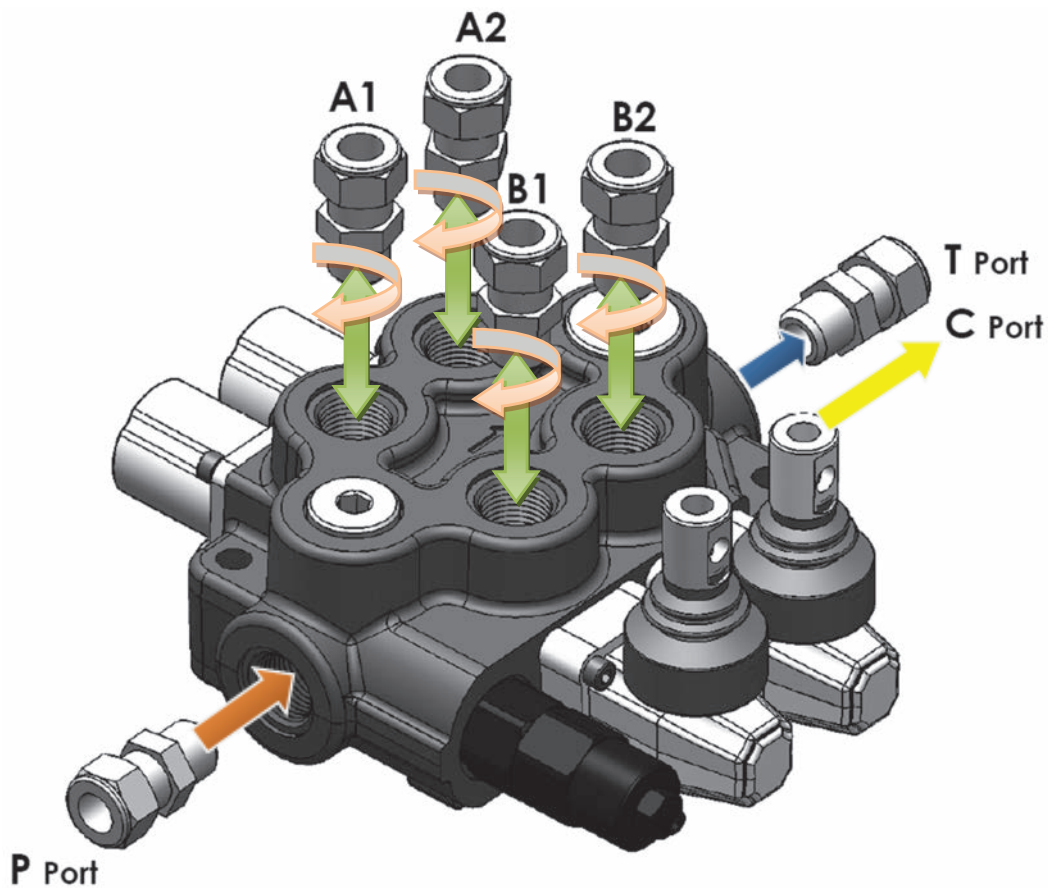
Direction of Port Connected

SGT : See page 5 for Standard center

INSTALLATION AND MAINTENANCE

The GMM M80 valve is assembled and tested as per the technical specification of this catalog. Before the final installation on your equipment, follow the below recommendation:

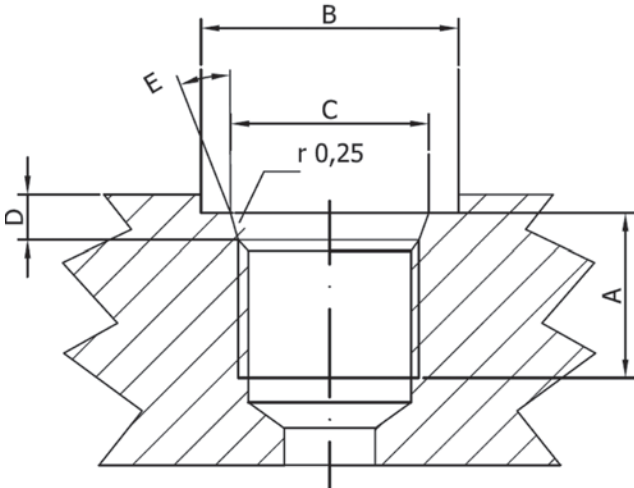
- The valve can be assembled in any position, in order to prevent body deformation and spool sticking mount the product on a flat surface;
- In order to prevent the possibility of water entering the lever box and spool control kit, do not use high pressure wash down directly on the valve;
- Before painting, ensure plastic port plugs are tightly fitted.



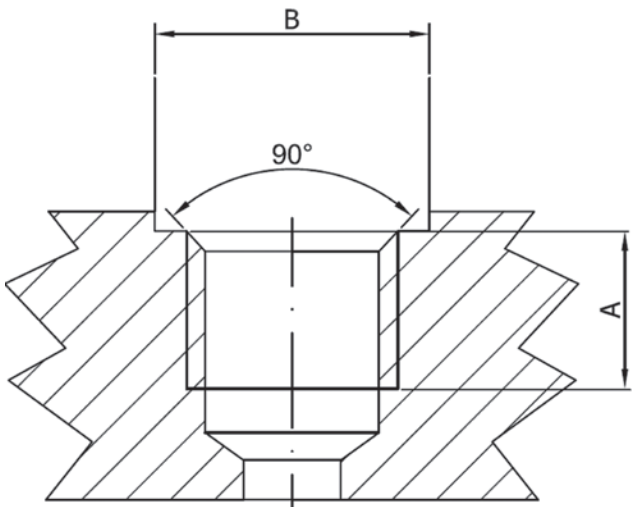
Threads Type (Nm / lbft)	P Port	A and B Port	T and C Port
BSP (ISO 228/1)	G 1/2	G 1/2	G 3/4
With O--Ring seal	50 / 36.9	50 / 36.9	70 / 51.6
With copper washer	60 / 44.3	60 / 44.3	70 / 51.6
With steel and rubber washer	60 / 44.3	60 / 44.3	70 / 51.6
BSP (ISO 228/1)	G 3/4	G 3/4	G 3/4
With O--Ring seal	70 / 51.6	70 / 51.6	70 / 51.6
With copper washer	70 / 51.6	70 / 51.6	70 / 51.6
With steel and rubber washer	70 / 51.6	70 / 51.6	70 / 51.6
UN--UNF (ISO 11926--1)	11/16--12 UNF--2B	9/16--18 UNF--2B	11/16--12 UNF--2B
With O--Ring seal	95 / 70	30 / 22.1	95 / 70
METRIC (ISO 262)	M27 x 2	M22 x 1.5	M27 x 2
With O--Ring seal	100 / 73.8	50 / 36.9	100 / 73.8
With copper washer	100 / 73.8	60 / 44.3	100 / 73.8
With steel and rubber washer	100 / 73.8	60 / 44.3	100 / 73.8

TECHNICAL DATA

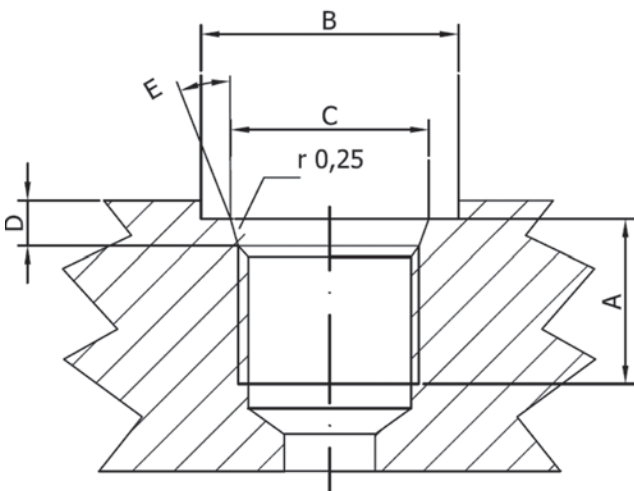
Ports Dimensional Data



SAE UN-UNF (ISO 725)							
Dimensions		7/8-14 UNF SAE10		1"1/16-12 UN SAE12		1"5/16-12 UN SAE16	
mm	in						
A	17	0,67	20	0,79	20	0,79	
B	34	1,34	41	1,61	49	1,92	
C	23,9	0,94	29,2	1,15	35,5	1,40	
D	2,5	0,10	3,3	0,13	3,3	0,13	
E	15°		15°		15°		



BSP (ISO 228)							
Dimensions		G 1/2"		G 3/4		G1	
mm	in						
A	16	0,63	18	0,71	20	0,79	
B	27	1,06	33	1,30	40	1,57	



METRIC (ISO 262)							
Dimensions		M22x1,5 ISO 262		M27x2 ISO 262			
mm	in						
A	16	0,63	18	0,71			
B	31,5	1,24	37,7	1,48			