

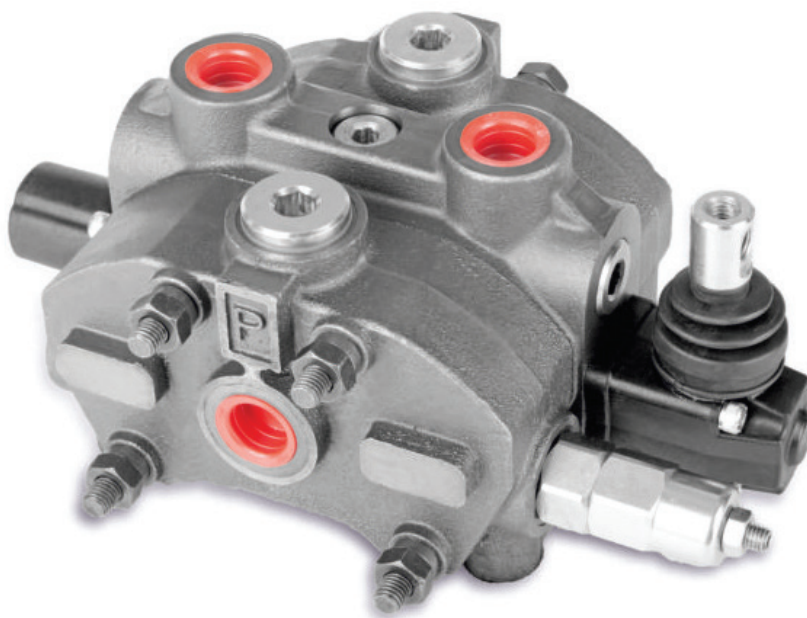


SECTIONAL  
VALVES

**GMM-PD150**

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.

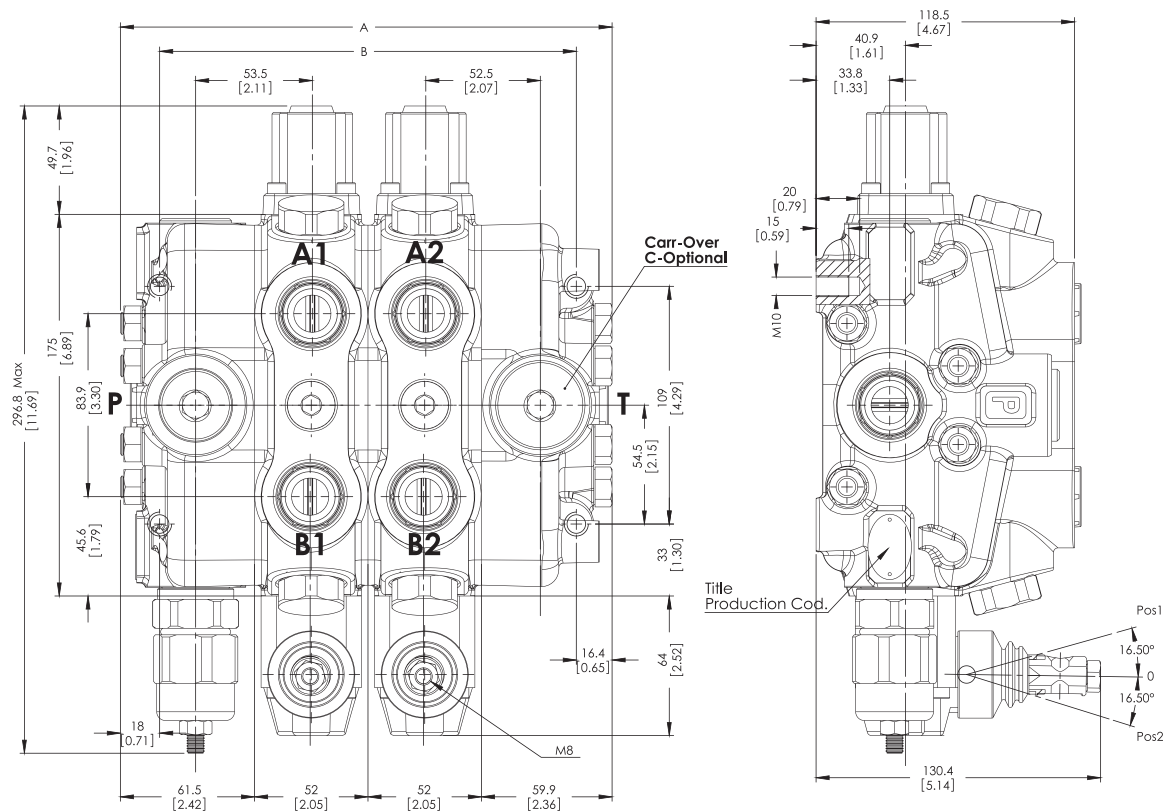
**WORKING CONDITIONS**

Nominal Flow Rating / Displacement	150 l/min	38 U.S.G.P.M
Maximum Working Pressure (Series Circuit)	210 Bar	3050 PSI
Maximum Working Pressure (Parallel 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 <sup>2</sup> /s	From 10 to 75 cSt
Minimum / Maximum	10 / 400 mm <sup>2</sup> /s	10 / 400 cSt
Oil Filtration	≤30 μ	
Ambiant Temperature Range	-35 to 60 C°	-31 to 140 F°
Number Of Spools	1 to 12	
Internal Leakage (at 100 bar (1450 PSI), 40C° (110 F°), 46 cSt – A(B)–T)	3 cm <sup>3</sup> /min	0,18 in <sup>3</sup> /min
Max. Level Of Contamination	19/16 - ISO 4406	
Tie rod tightening torque	40 Nm	30 lbft

**Not:** This catalogue shows technical specifications measured with mineral oil of 46 mm<sup>2</sup>/s-46 cSt viscosity at 40 C° temperature.

**Features**

- Simple, compact and heavy duty designed sectional valves from 1 to 12 sections for open and closed center hydraulic systems.
- Optional Carry-Over port only tandem circuit.
- Fitted with a main pressure relief valve.
- Interchangeable spool diameter is 20 mm – 0,79 in.
- Available manual, pneumatic, hydraulic and electro-pneumatic spool control kits.

**DIMENSIONAL DATA**


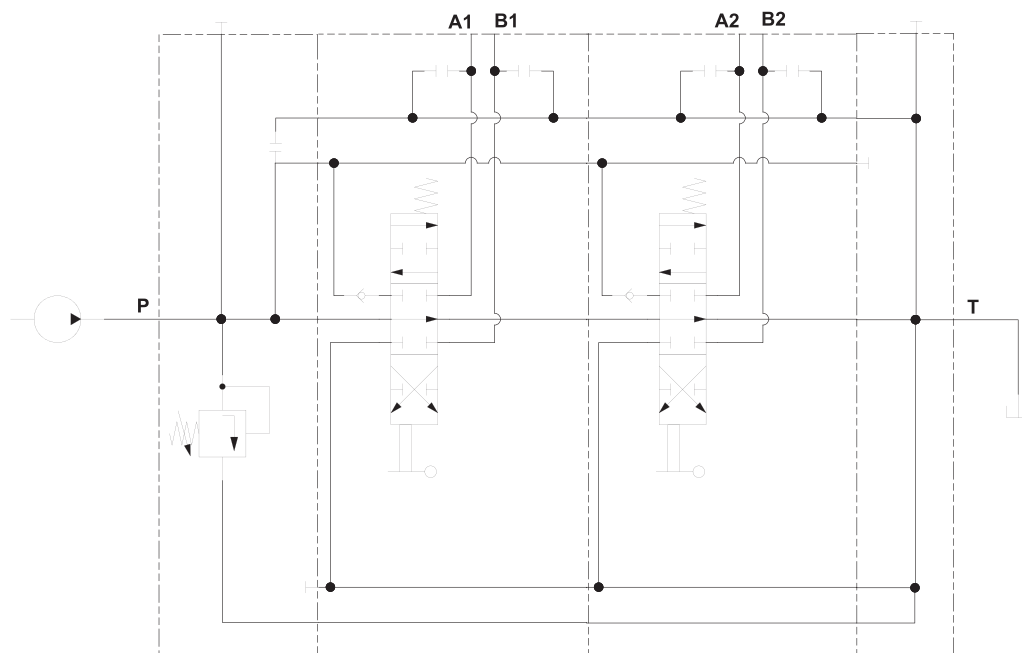
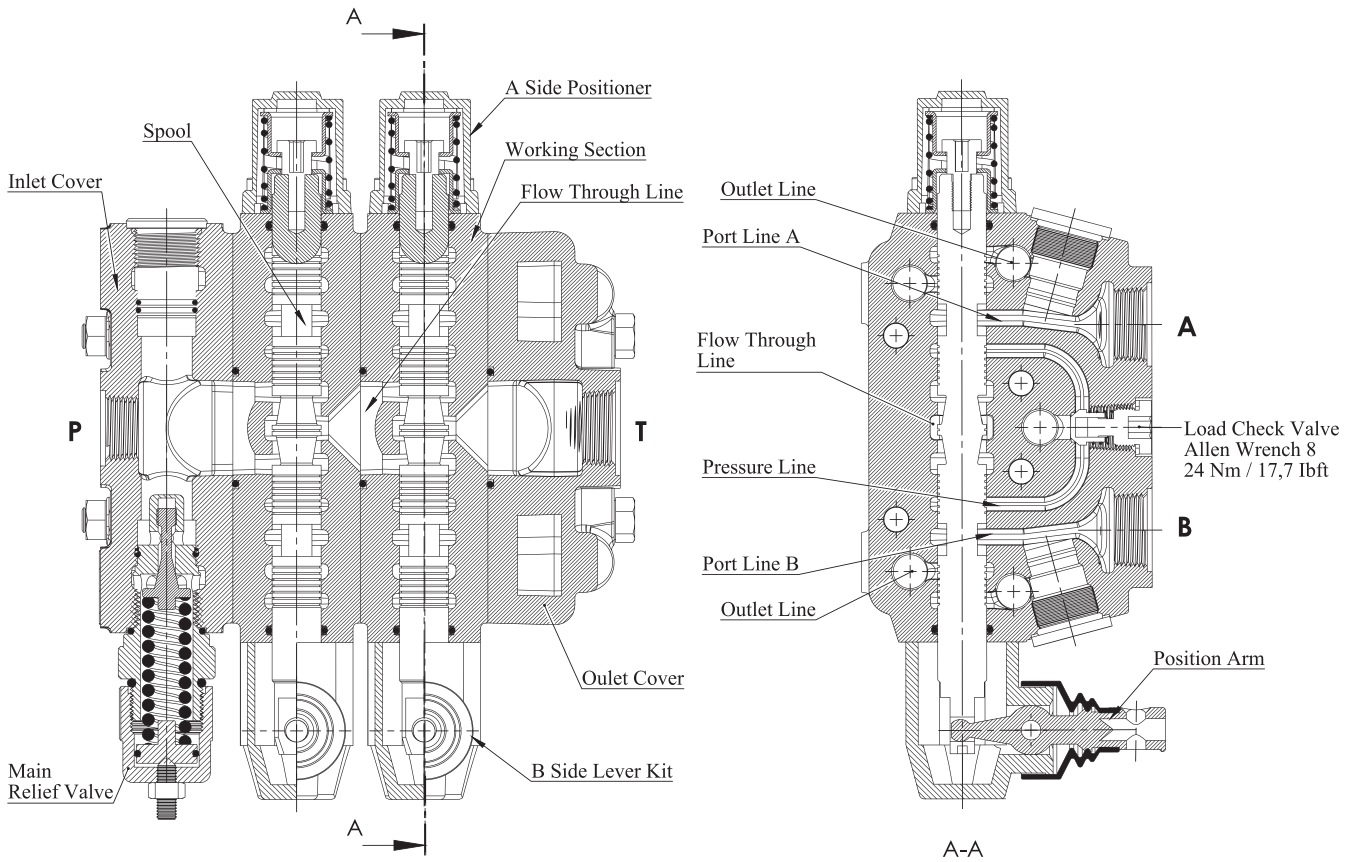
TYPE	A		B		Weight	
	mm	in	mm	in	Kg	lb
GMM- PD150-1P	160	6.30	73	2.87	13.46	29.67
GMM- PD150-2P	212.5	8.37	125.5	4.94	19.60	43.21
GMM- PD150-3P	265	10.43	178	7.00	25.74	56.75
GMM- PD150-4P	317.5	12.50	230.5	9.07	31.88	70.29
GMM- PD150-5P	370	14.56	283	11.14	38.02	83.83
GMM- PD150-6P	422.5	16.63	335.5	13.20	44.16	97.37
GMM- PD150-7P	475	18.50	388	14.96	50.30	110.91
GMM- PD150-8P	527.5	20.76	440.5	17.34	56.44	124.45
GMM- PD150-9P	580	22.83	493	19.41	62.58	137.99
GMM- PD150-10P	632.5	24.90	545.5	21.48	68.72	151.53
GMM- PD150-11P	685	26.97	598	23.54	74.86	165.07
GMM- PD150-12P	737.5	29.03	650.5	25.61	81.00	178.61

**STANDARD THREADS**

PORT	BSP (Iso 228)		UN-UNF (Iso 11926-1)
	3/4" Series	1" Series	
P Inlet	G 3/4	G 1	1 5/16 -12 UN
A-B Ports	G 3/4	G 1	1 1/16 - 12 UN
T Outlet	G 1	G 1	1 5/16 -12 UN
Pneumatic	G 1/4	G 1/4	NPTF 1/8 - 27
Carry-Over	G 3/8	G 3/8	G 3/8

**HYDRAULIC CIRCUIT**

**Parallel**

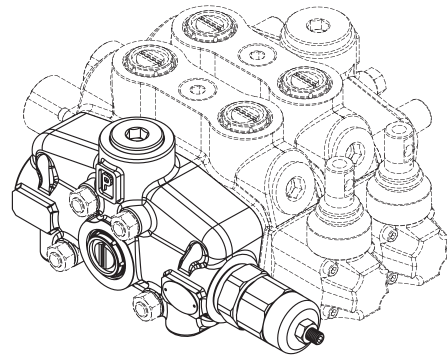


**Code:** GMM PD150-2P (SD(LA)-SMR2-125-PP)/P-1A-STL-SR/ P-1A-STL-SR/ SO-PT1 / SGT

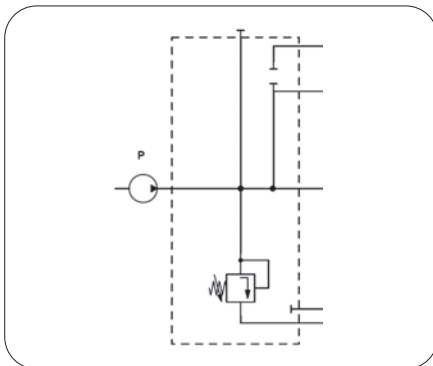
HYDRAULIC CIRCUIT

Inlet Cover – Pump Side

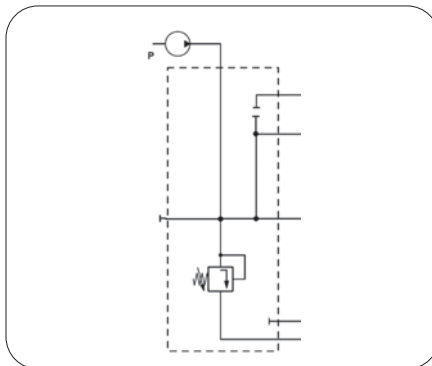
SD - Side inlet with direct pressure relief valve  
 TD - Top inlet with direct pressure relief valve  
 SP - Side inlet with relief valve blanking plug



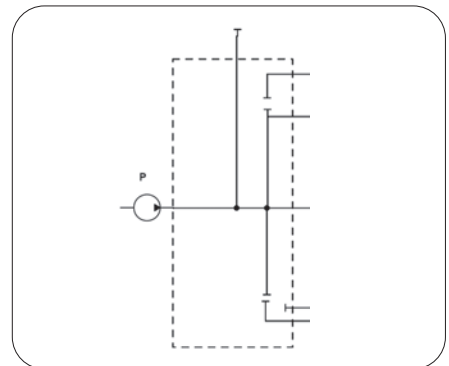
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Type = TD

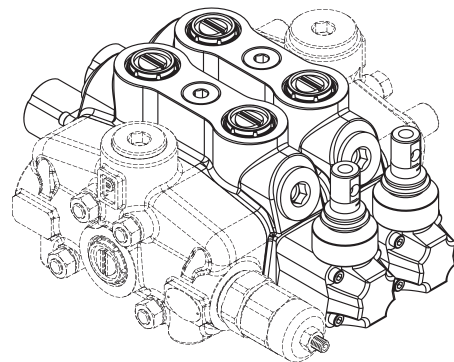


Type = SP

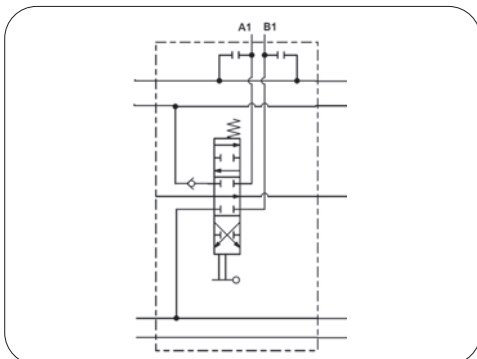


Working Sections

P – Parallel



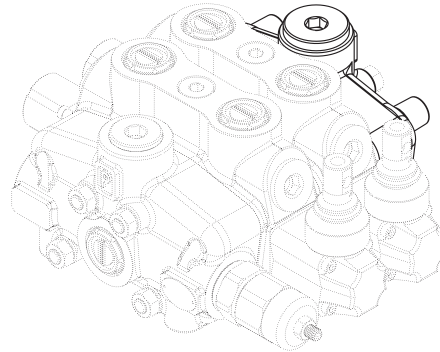
Type = P



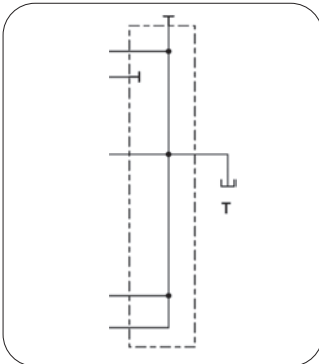
**HYDRAULIC CIRCUIT**

**Outlet Cover (Tank Side)**

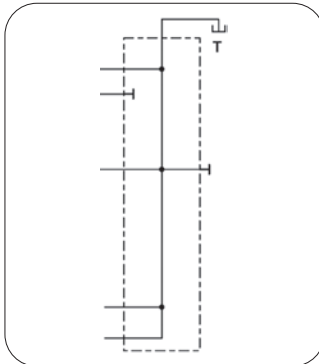
SO - Side outlet  
TO - Top outlet  
TCO - Top outlet with carry-over  
TC - Top outlet with closed centre



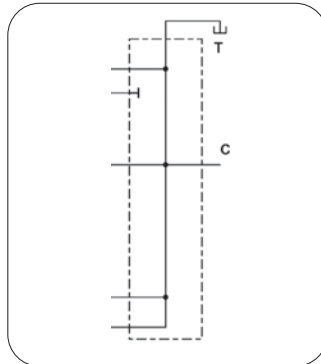
Type = SO



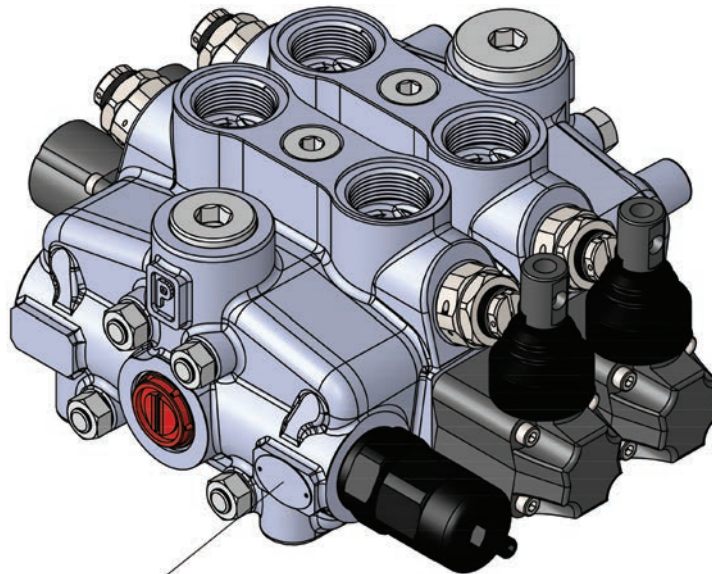
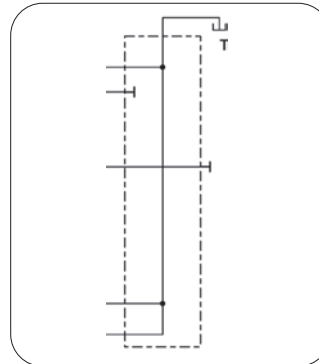
Type = TO



Type = TCO



Type = TC



Valve Type

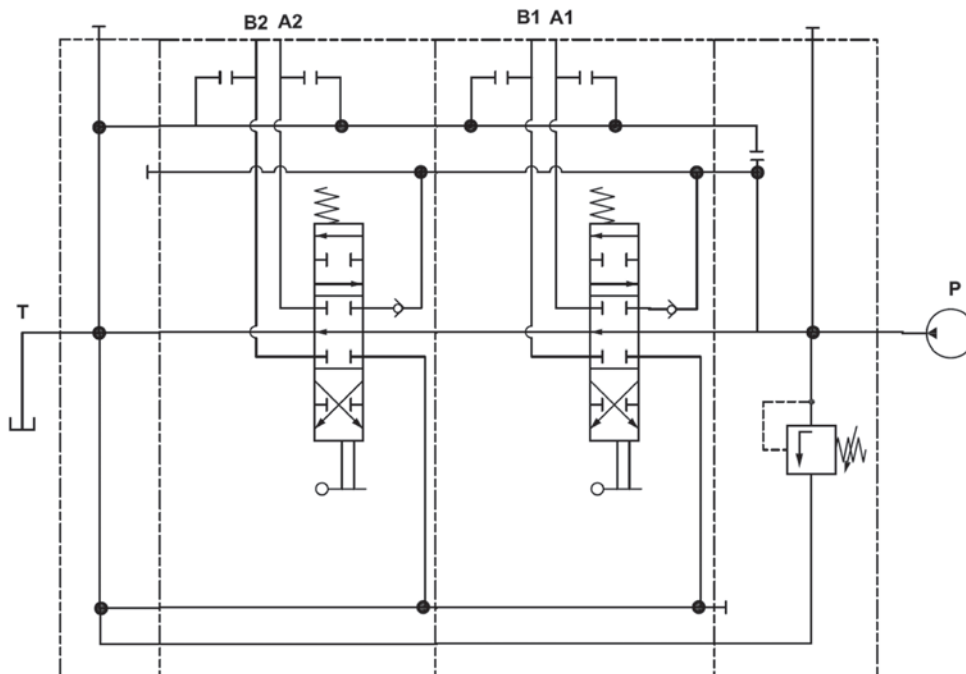
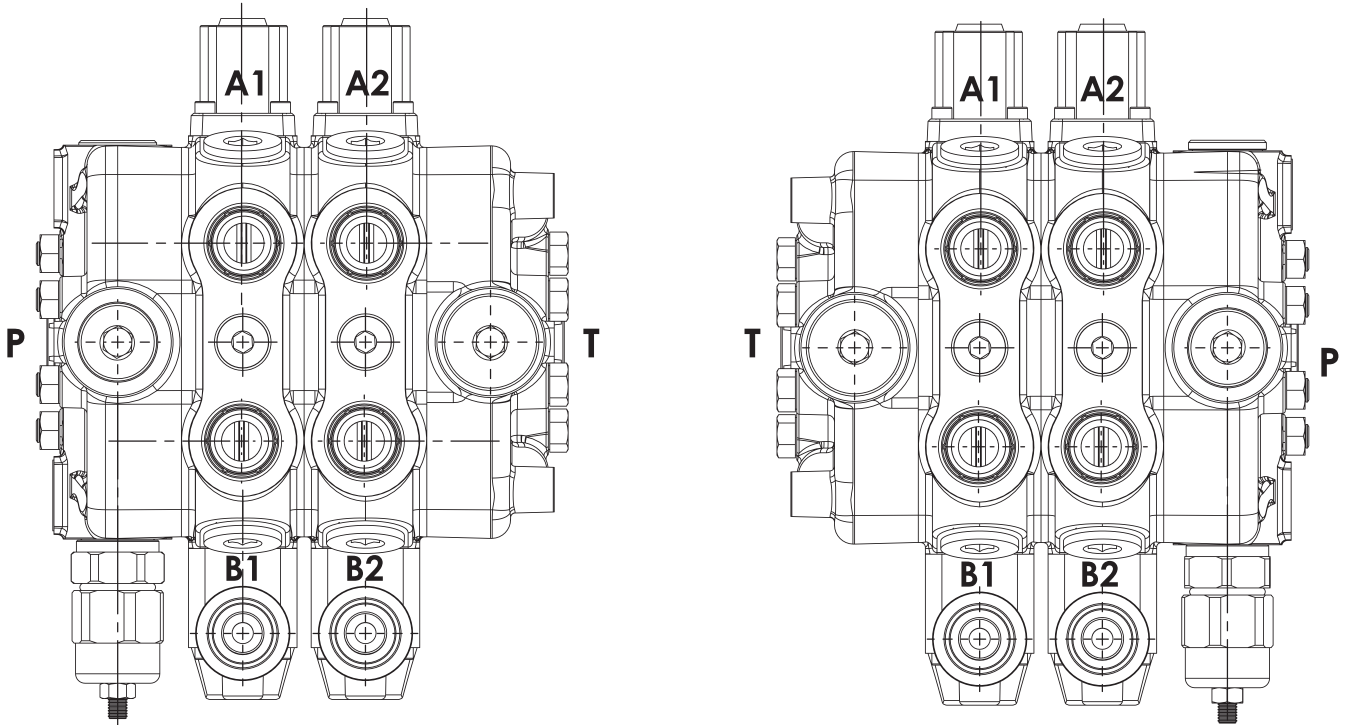
Production Batch

39.10 = Production Year - Week (2010/39)

101149 = Progressive Party Number

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

A symmetrical body allows the reverse assembly of spool.

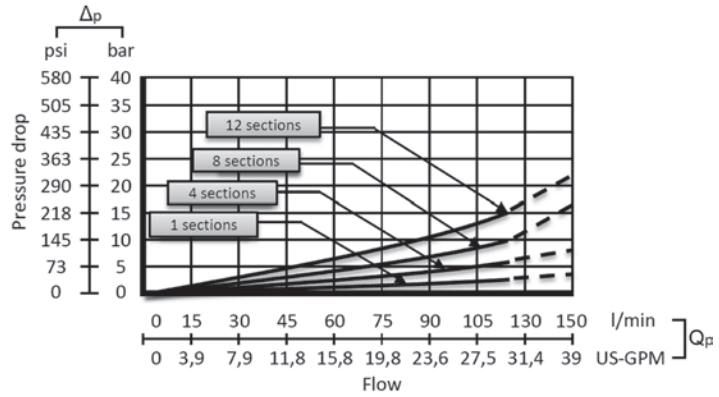
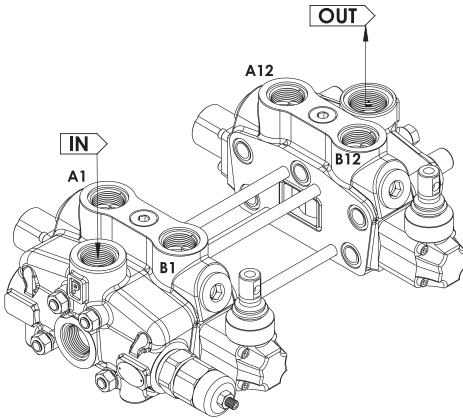


**Code:** GMM PD150-2P (SD(RA)-SMR2-125-PP)/P-1A-STL-SR/ P-1A-STL-SR/ SO-PT1 /

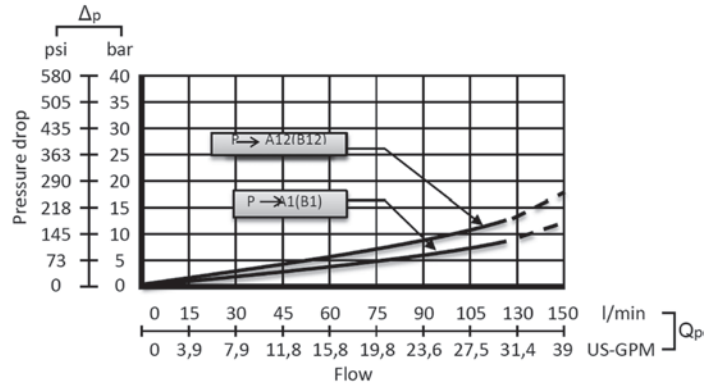
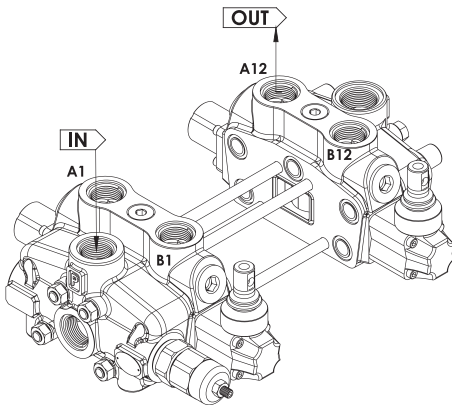


**PERFORMANCE DATA AND CURVE**

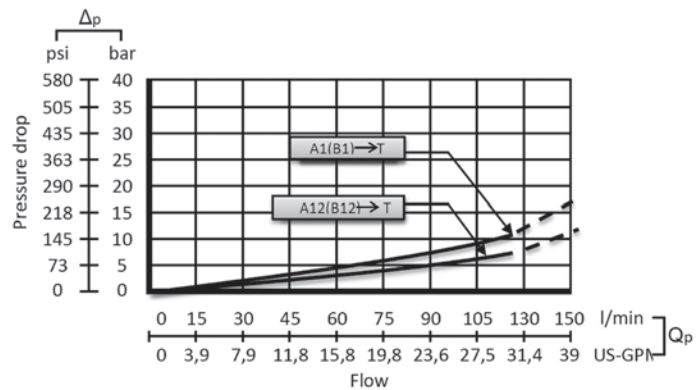
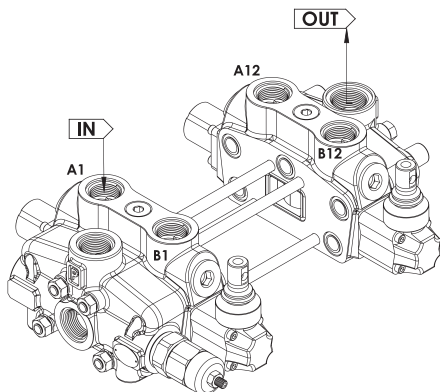
**Open Center - Pressure Drop (P-T)**



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



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



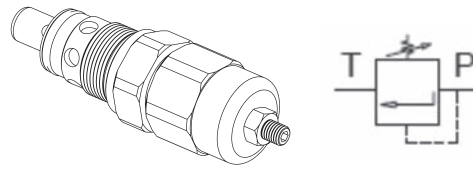
INLET RELIEF OPTIONS

Direct Pressure Relief Valve

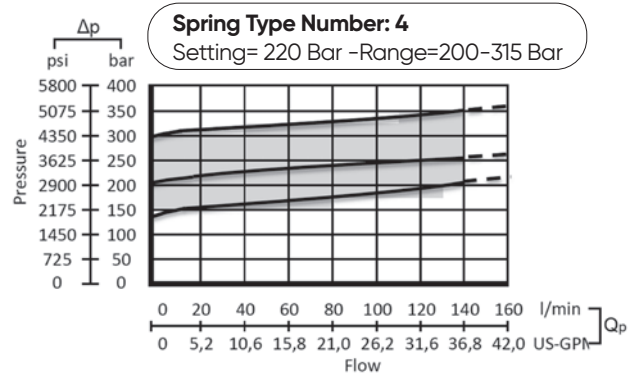
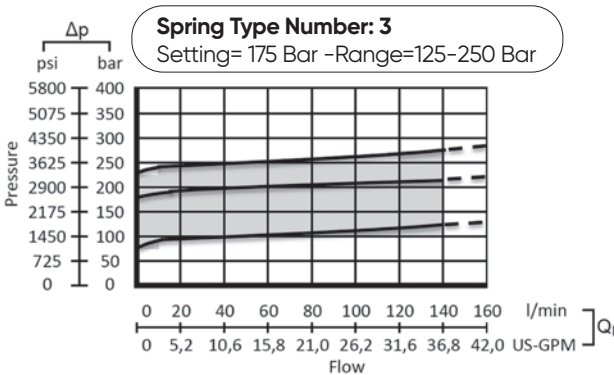
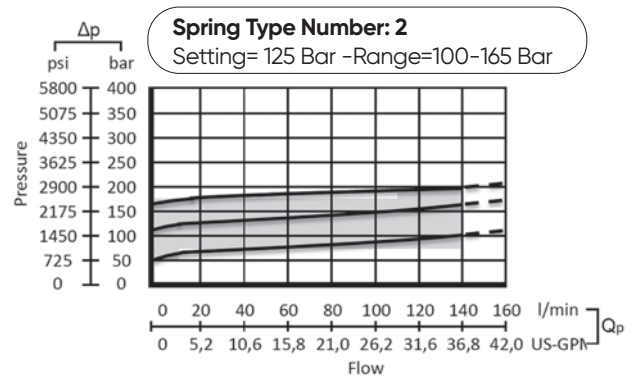
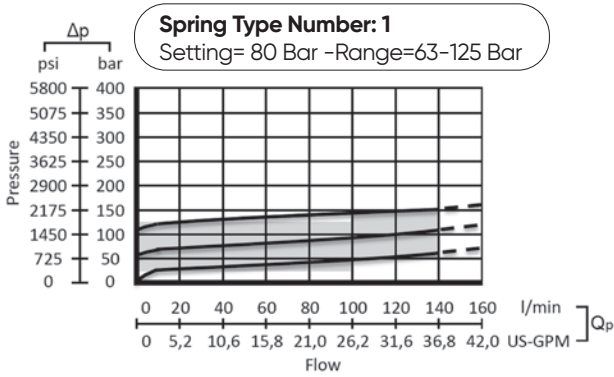
Code:

SMR2 – 125

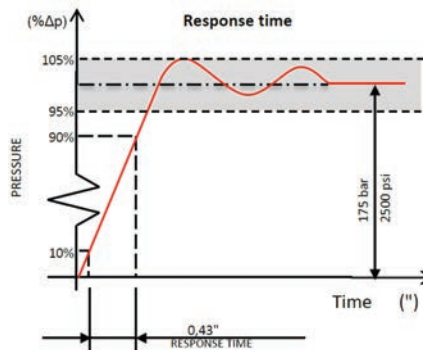
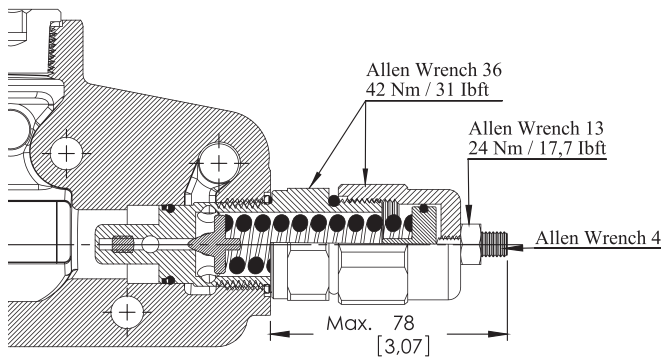
- Pressure Setting Bar in (Standard 125 bar)
- Standard Main Relief Spring Type -2



Performance Data



Adjustment Type on Valve



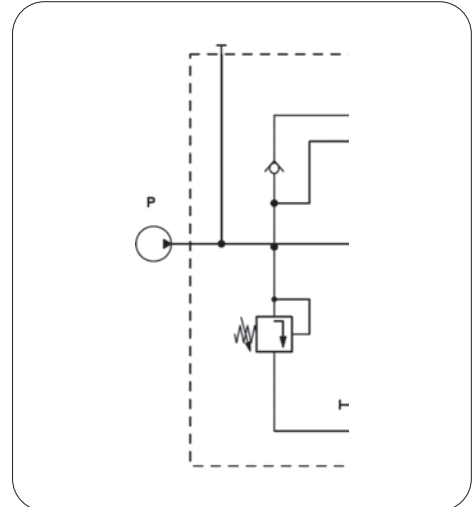
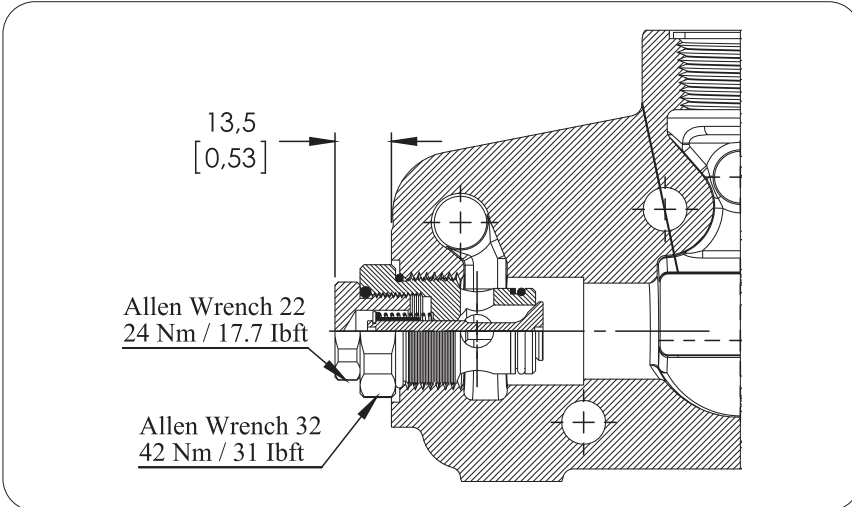
**INLET RELIEF OPTIONS**

**Direct Pressure Relief Valve**

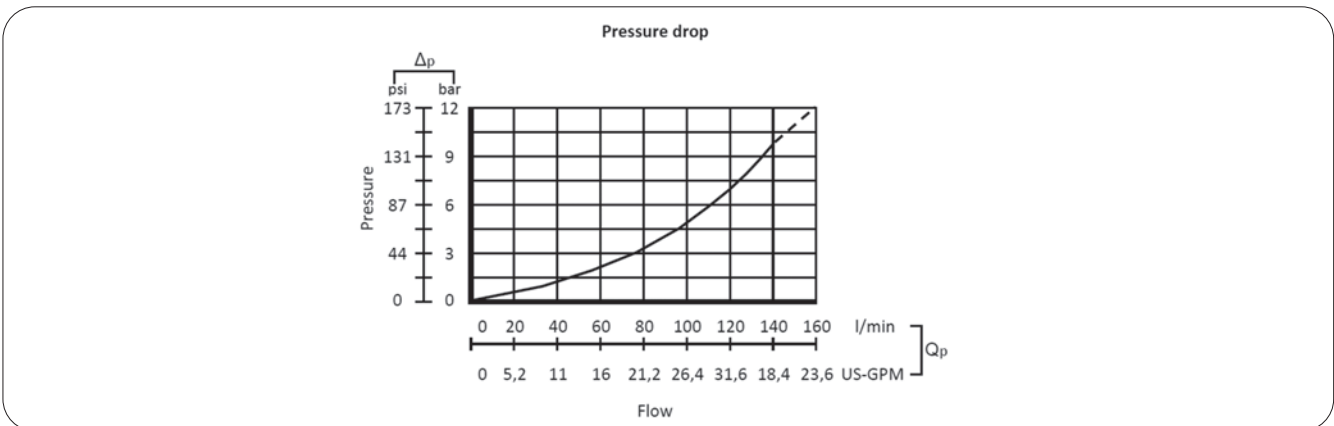
Kit No: **PAC**

Sectional Appearance

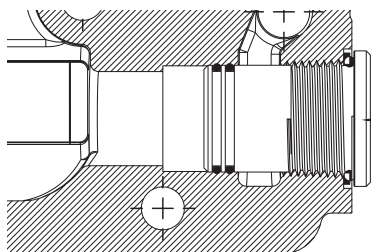
Diagram



Performance Data



**Relief Blanking Plug - SP**

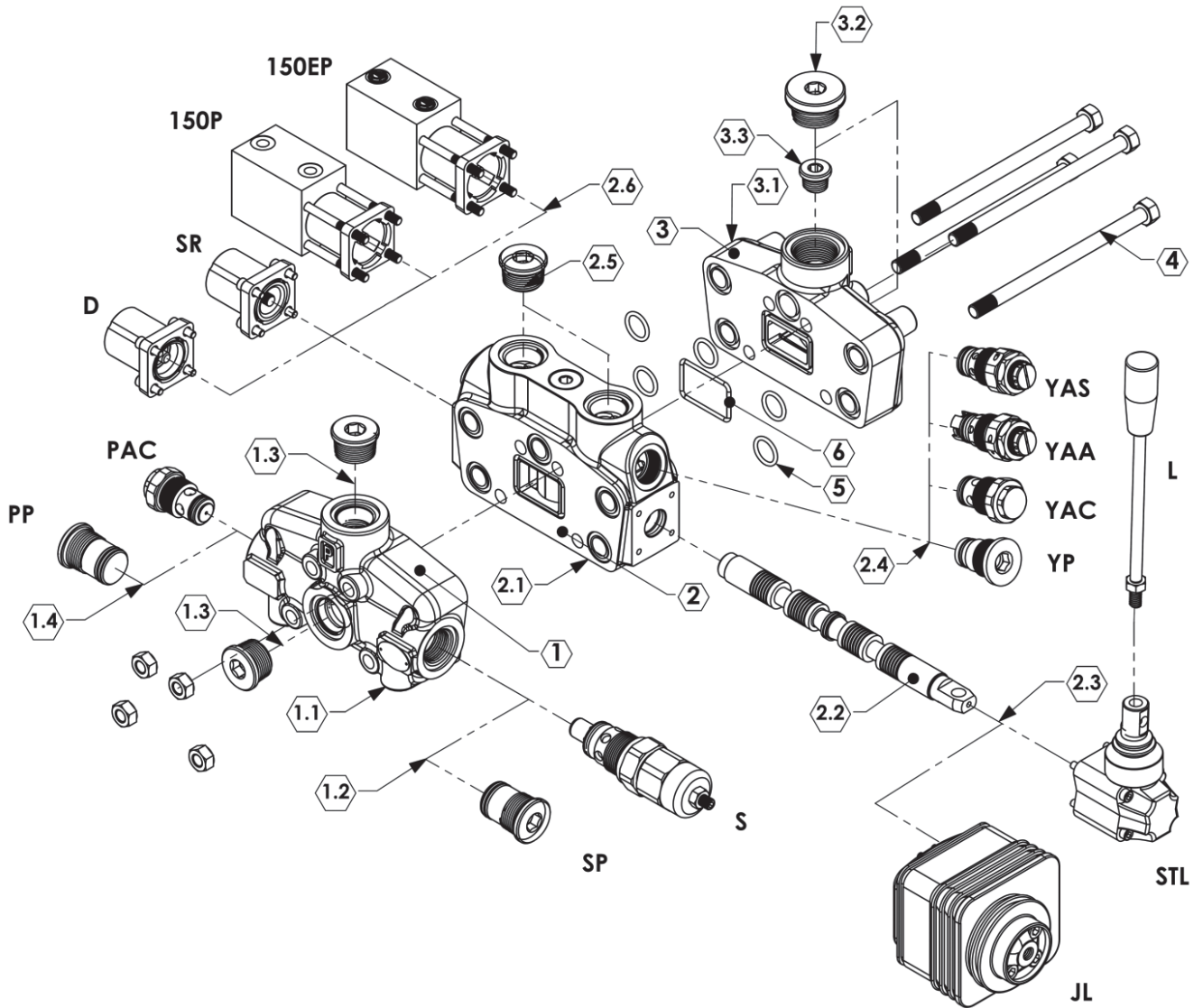
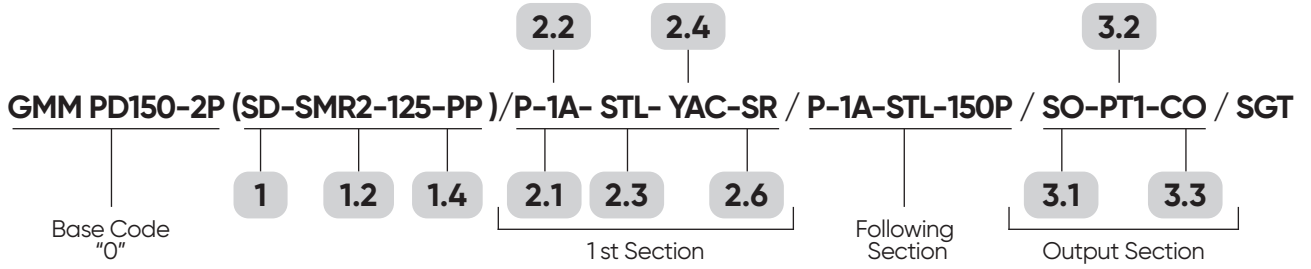


Allen Wrench 12 - 42 Nm / 31 lbft



ORDERING CODES

Order Example



## ORDERING CODES

### 1- Inlet Section

GMM PD150-2P PD150 = Valve Type-(PD)- Sectional (150) - Max. Flow Rate  
 2P =Sections Quantity  
 SD = Side inlet with direct pressure relief valve (1SD150100)  
 TD = Top inlet with direct pressure relief valve (1TD150100)  
 SP = Side inlet with relief valve blanking plug (1SP150100)

### 2- Working Section

**P** = Parallel (2P150100)

### 3- Output Section

**SO** = Side outlet (3SO150100)  
**TO** = Top outlet (3TO150100)  
**TCO** = Top outlet with carry-over (3TCO150100)  
**TC** = Top outlet with closed centre (3TC150100)

### 4- Assembling Kit

Tie rod kit for 1 section valve - (4TRK1150100)  
 Tie rod kit for 2 section valve - (4TRK2150100)  
 Tie rod kit for 3 section valve - (4TRK3150100)  
 Tie rod kit for 4 section valve - (4TRK4150100)  
 Tie rod kit for 5 section valve - (4TRK5150100)  
 Tie rod kit for 6 section valve - (4TRK6150100)  
 Tie rod kit for 7 section valve - (4TRK7150100)  
 Tie rod kit for 8 section valve - (4TRK8150100)  
 Tie rod kit for 9 section valve - (4TRK9150100)  
 Tie rod kit for 10 section valve - (4TRK10150100)  
 Tie rod kit for 11 section valve - (4TRK11150100)  
 Tie rod kit for 12 section valve - (4TRK12150100)

### 5-6- O\_Ring Kit

**5.** -17.00x2.65 NBR 70 SH O-Ring seal (3 Qty.) (5MK150100)  
**6.** -34.60x2.62 NBR 70 SH O-Ring seal (1 Qty.) (6MK150100)

### 1.\*-Inlet Options

#### 1.1 Inlet Cover

**Body** = Standard (11BS150100)

#### 1.2 Inlet Relief

**SMR1**-080 - (12SMR1150080)-Range 63-125 bar  
 Setting 80 bar  
**SMR2**-125 - (12SMR2150120)- Range 100-160 bar  
 Setting 125 bar  
**SMR3**-175 - (12SMR3150175)- Range 125-250 bar  
 Setting 175 bar  
**SMR4**-220 - (12SMR4150220)-Range 200-315 bar  
 Setting 220 bar

#### 1.3 Ports Plug

**PA1** = G3/4 Top and side input - (13PA1150100)  
**PA2** = G1 Top and side input - (13PA2150100)

#### 1.4 Inlet Valve

**PAC** =Inlet anti-cavitation valve - (14PAC150100)  
**PP(SP)** = Relief valve blanking plug - (14PSP150100)

### 2.\*- Working Options

#### 2.1 Working Section

**PA** = Without ports valve prearrangement, with parallel circuit - Body (21BSPA150100)

#### 2.2 Spool Options

**1A** -(22SS150110) - 3 Positions ,Double acting  
**2A** -(22SS150120) - 3 Positions ,Double acting  
 A to tank B Blocked  
**3A** -(22SS150130) - 3 Positions ,Double acting  
 B to tank A blocked  
**4A** -(22SS150140) - 3 Positions ,Double acting  
 A and B tank  
**5A** -(22SS150150) - 3 Positions ,Single acting on  
 A (A to tank)  
**6A** -(22SS150160) - 3 Positions ,Single acting on  
 B (B to tank)

#### 2.3 Lever Options

**L** = Standard HandLever (L=120mmxM10) - (7L040100)  
**JL** = Joystick lever for two sections operation (5JL 080100)

**STL** = Standard Lever - (23STL150100)

**HL** = Remote Cable Kit - (80HL80100)

#### 2.4 Port Relief Valves

##### Anti-Shock Valve

**YAS (T1-50)** - (24YAC150050)-Range 35-70 bar  
 Setting 50 bar

**YAS (T1-100)** - (24YAC150100)-Range 63-220 bar  
 Setting 100 bar

**YAS (T1-200)** - (24YAC150200)-Range 180-350 bar  
 Setting 200 bar

##### Anti-Shock and Anti-Cavitation Valve

**YAA (T1-63)** - (24YAA150063)-Range 35-70 bar  
 Setting 50 bar

**YAA (T1-100)** - (24YAA150100)-Range 63-220 bar  
 Setting 100 bar

**YAA (T1-200)** - (24YAA150200)-Range 180-350 bar  
 Setting 200 bar

**YAC** - Anti Cavitation- (24YAS150100)

**YP**- A and B ports valve blanking plug (24YP150100)

**DST**-A and B ports valve blanking plugs with  
 connection to tank-(24DST150100)

#### 2.5 Ports Plug Options

**PL1** =Plug for single action spool for 2A-3A, G3/4  
 (25PL1150100)

**PL2** =Plug for single action spool for 2A-3A, G1  
 (25PL2150100)

#### 2.6 Spool Positioners

**SR**=Spring Return in neutral position - (26SR150100)

**D** =Detent in position 1, neutral and 2 - (26D150100)

**100P**=ON/OFF Pneumatic - (2645P150100)

**100EP**=12 VDC ON/OFF electro-pneumatic  
 (26150EP150112)

**100EH**= 12 VDC/24 VDC ON/OFF electro-hydraulic  
 (36150EH100112)

### 3.\*- Working Options

#### 3.1 Working Section

**Body** = Standard (31BS150100)

#### 3.2 Output Plug

**PT1** =G1 Top and Side output (32PT1150100)

#### 3.3 Circuits Options

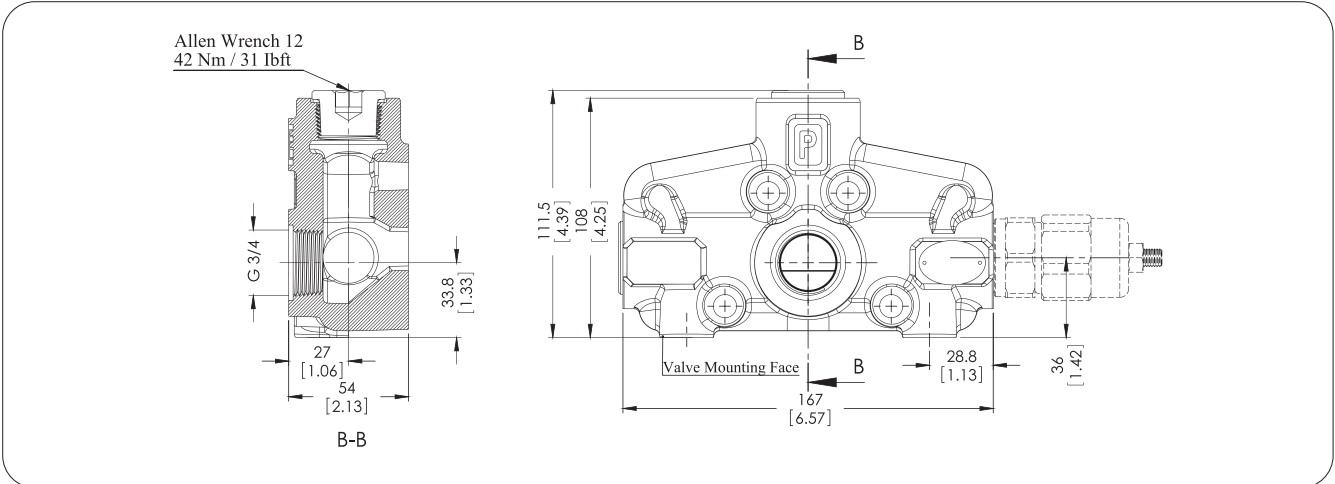
**CO** =G1/8 Carry-Over Connector (33CO150100)

INLET COVER- PUMP SIDE

LH Inlet Valve Options

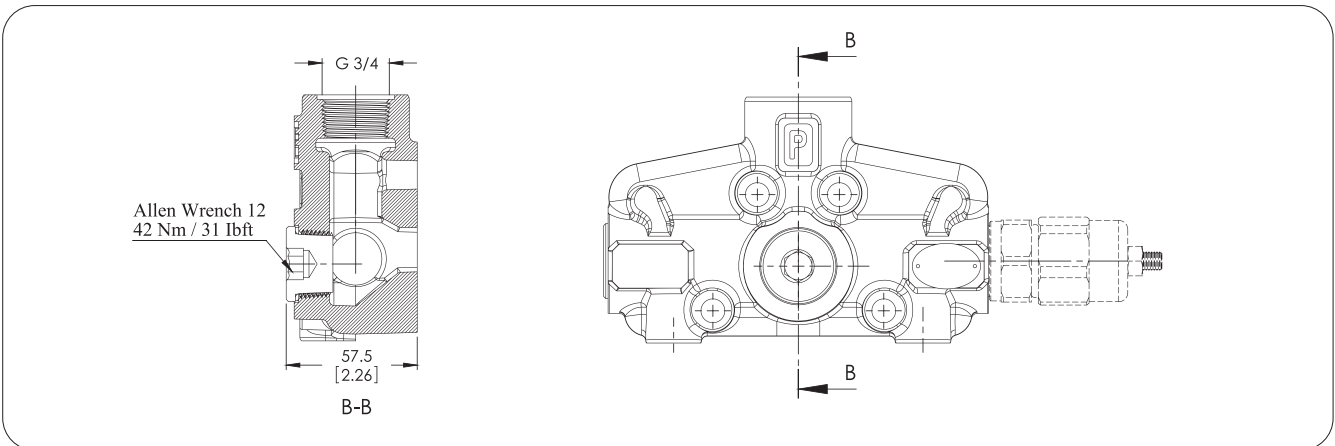
Type No: SD

Sectional Appearance



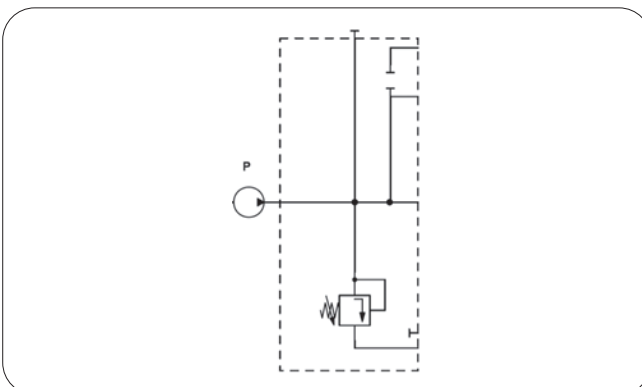
Type No: TD

Sectional Appearance

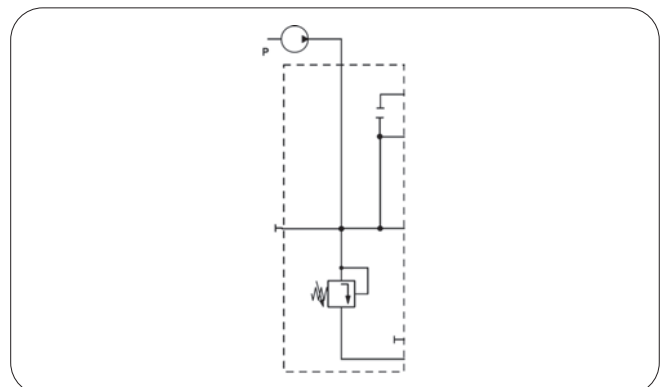


Hydraulic Diagram

Type No: SD



Type No: TD

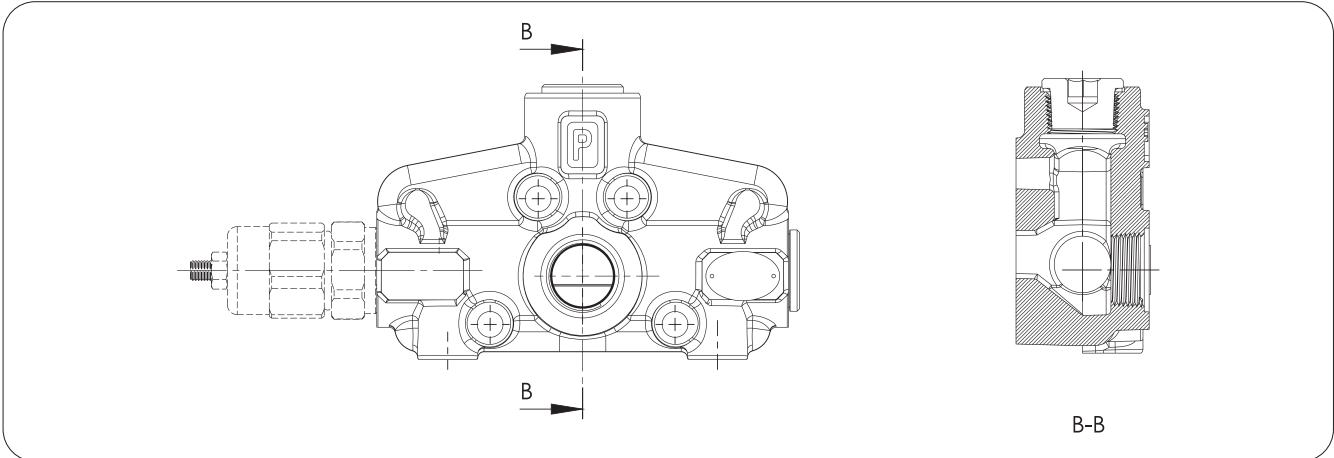


**INLET COVER- PUMP SIDE**

**RH Inlet Valve Options**

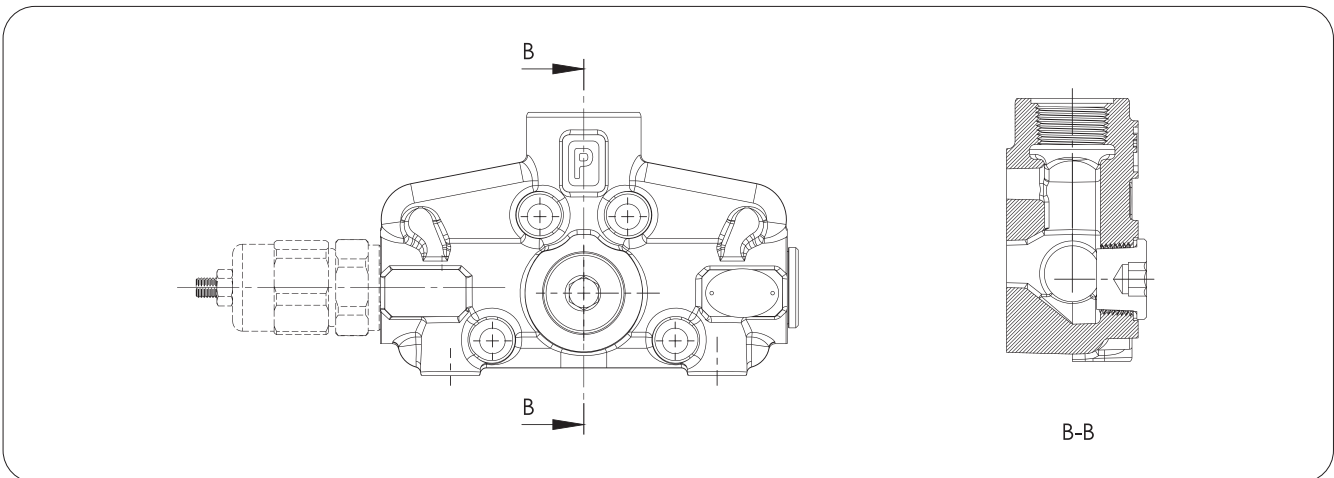
Type No: **RA**

Sectional Appearance



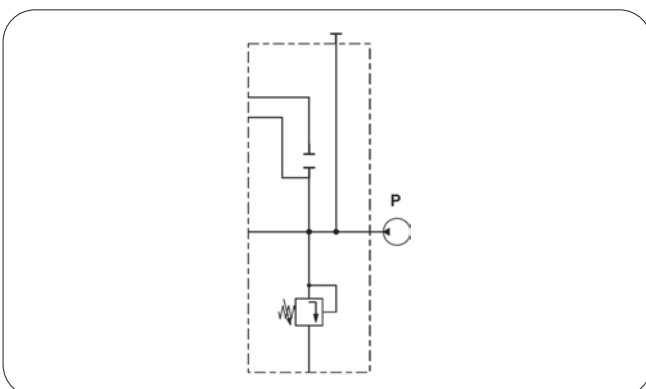
Type No: **RB**

Sectional Appearance

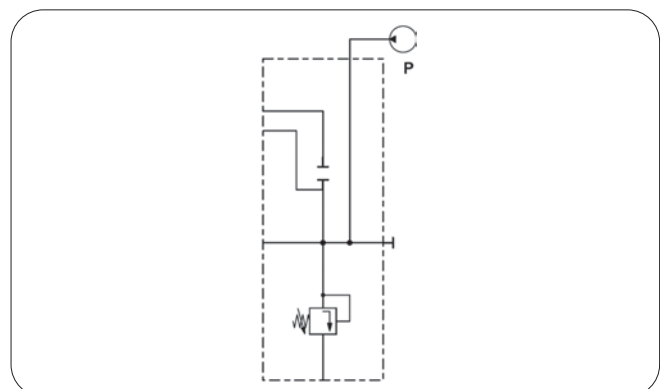


**Hydraulic Diagram**

Type No: **RA**

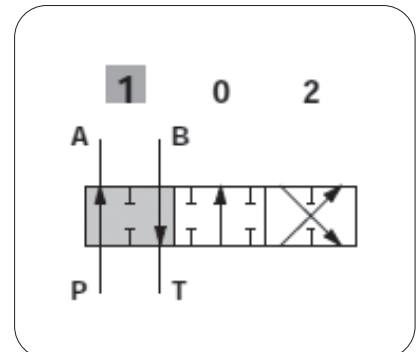
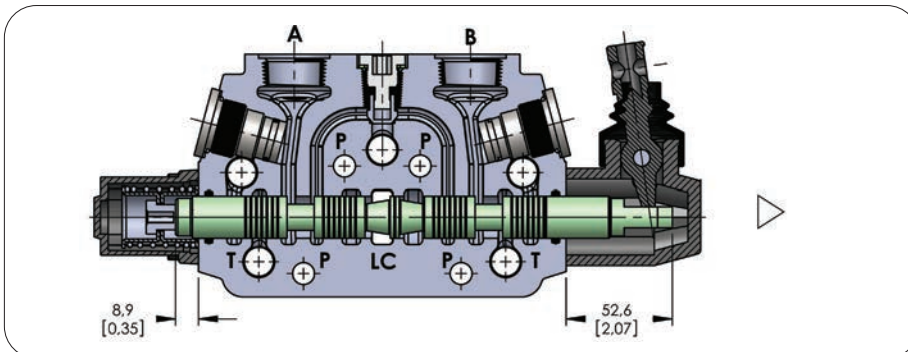
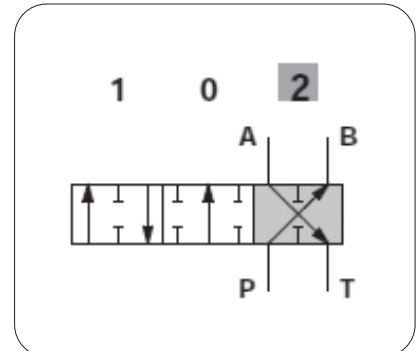
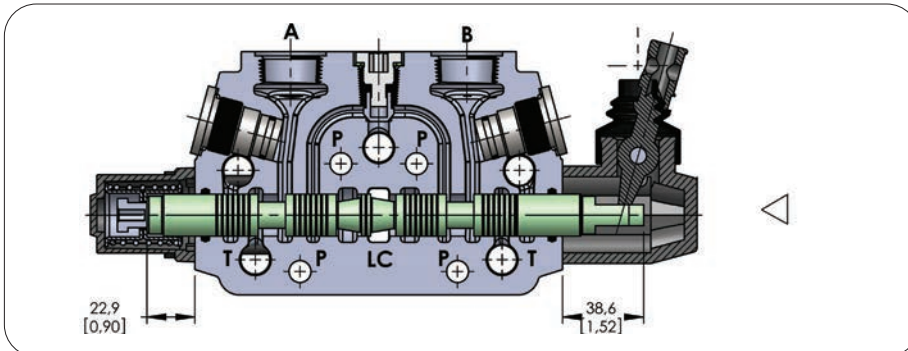
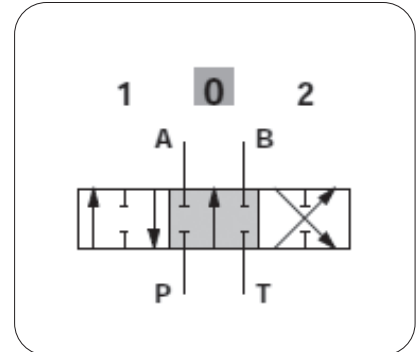
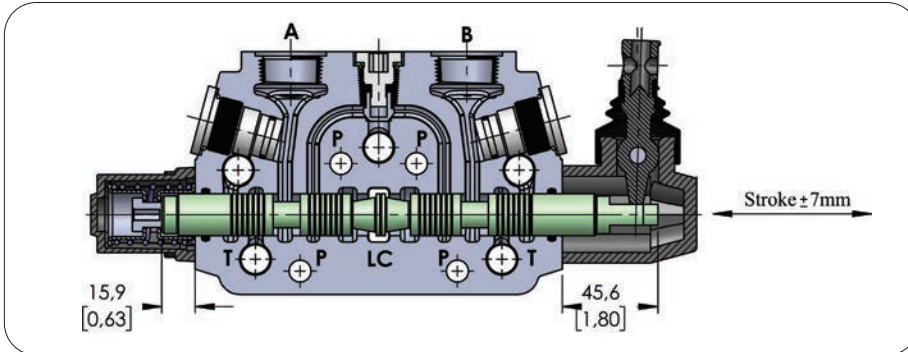


Type No: **RB**

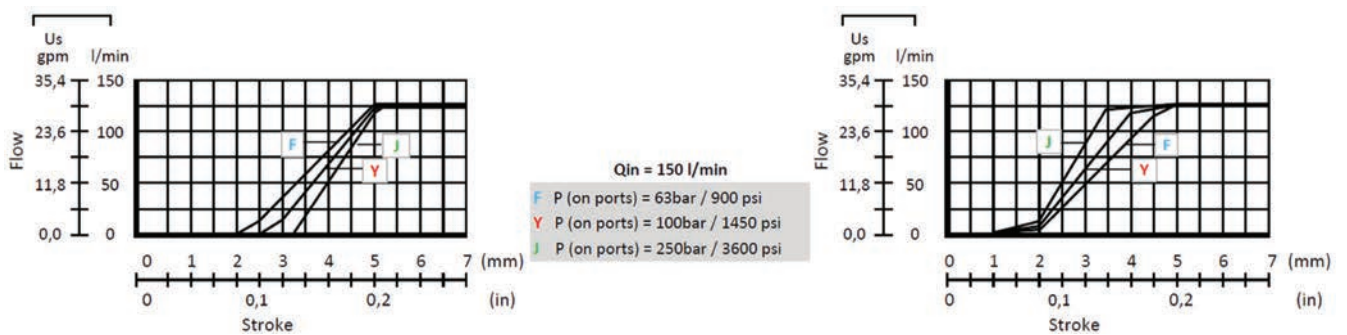


SPOOL OPTIONS

Spool Type - 1A



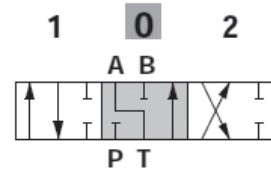
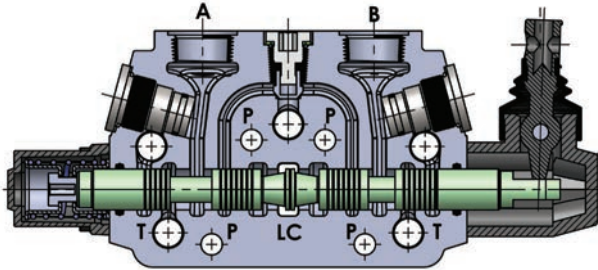
Performance Curve And Data



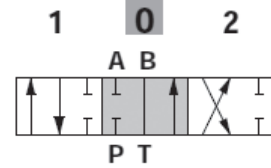
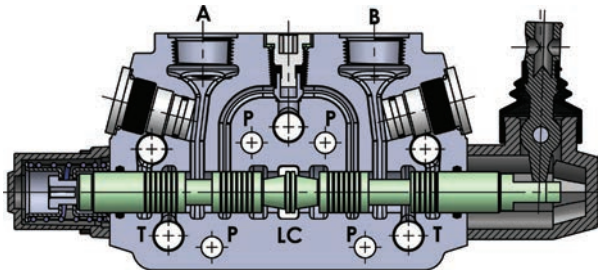


SPOOL OPTIONS

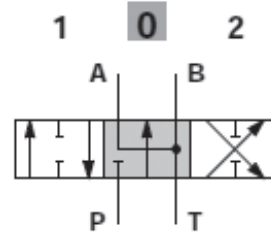
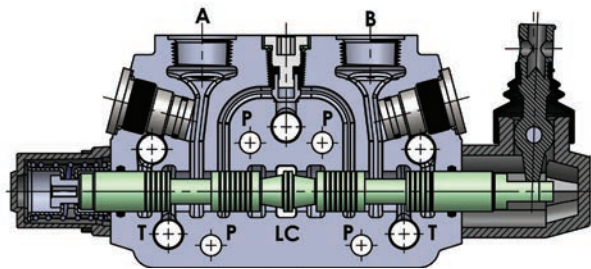
Spool Type - 2A



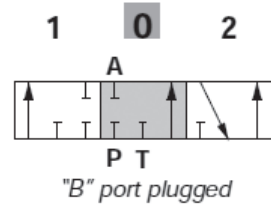
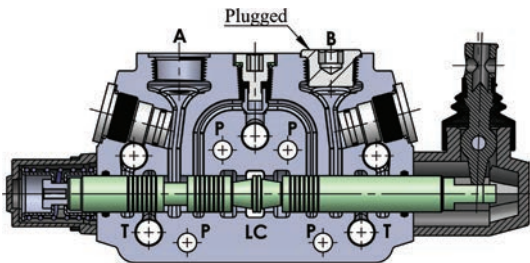
Spool Type - 3A



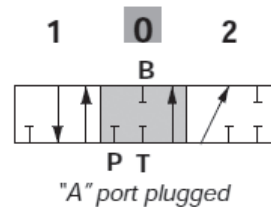
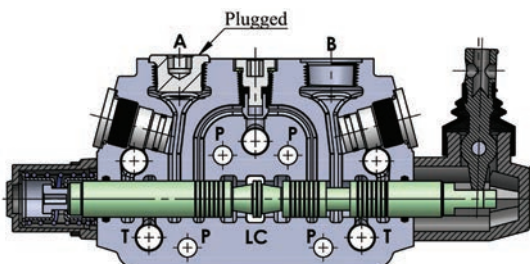
Spool Type - 4A



Spool Type - 5A



Spool Type - 6A



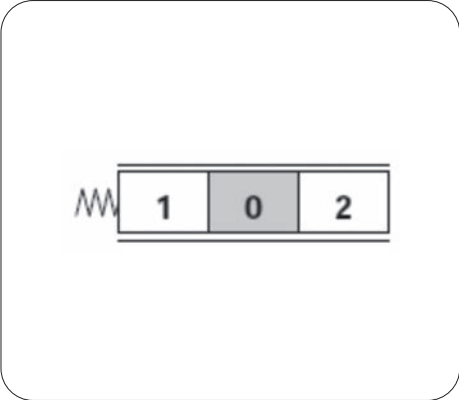
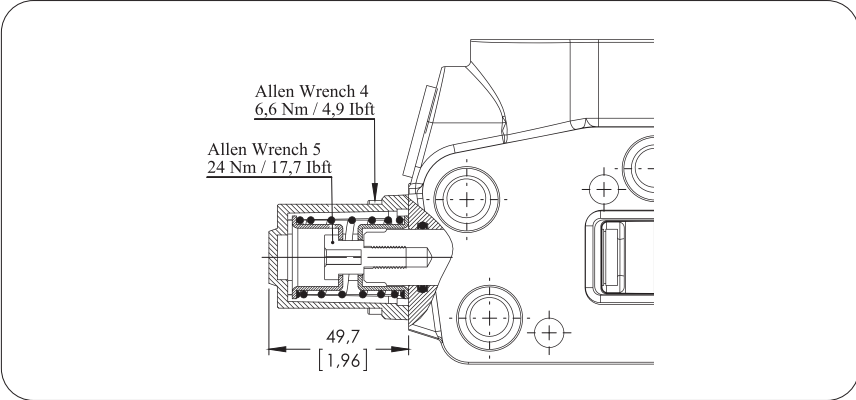
**SPOOL POSITIONERS – SIDE OF RETURN**

**With Spring Return in Neutral Position**

Kit No: **SR**

Sectional Appearance

Diagram

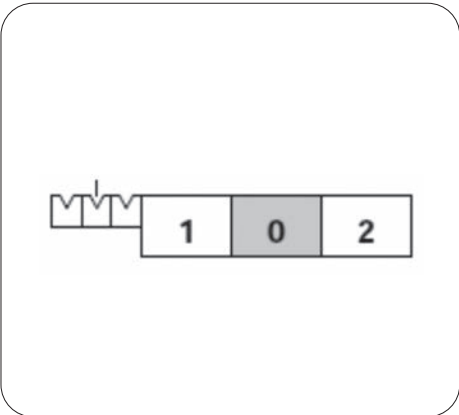
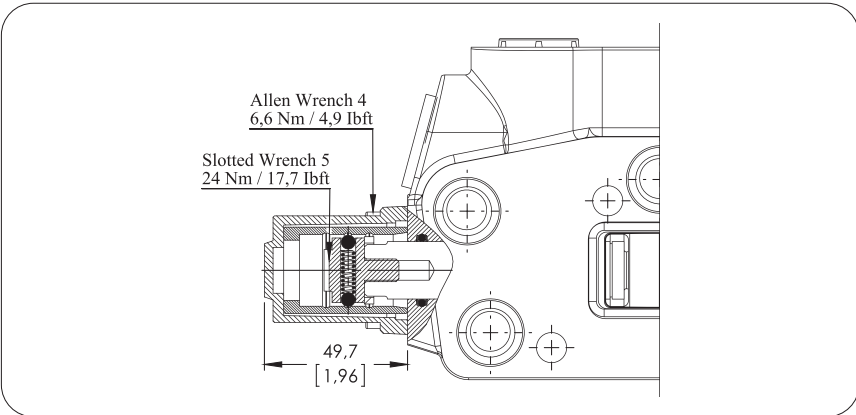


**With Detent**

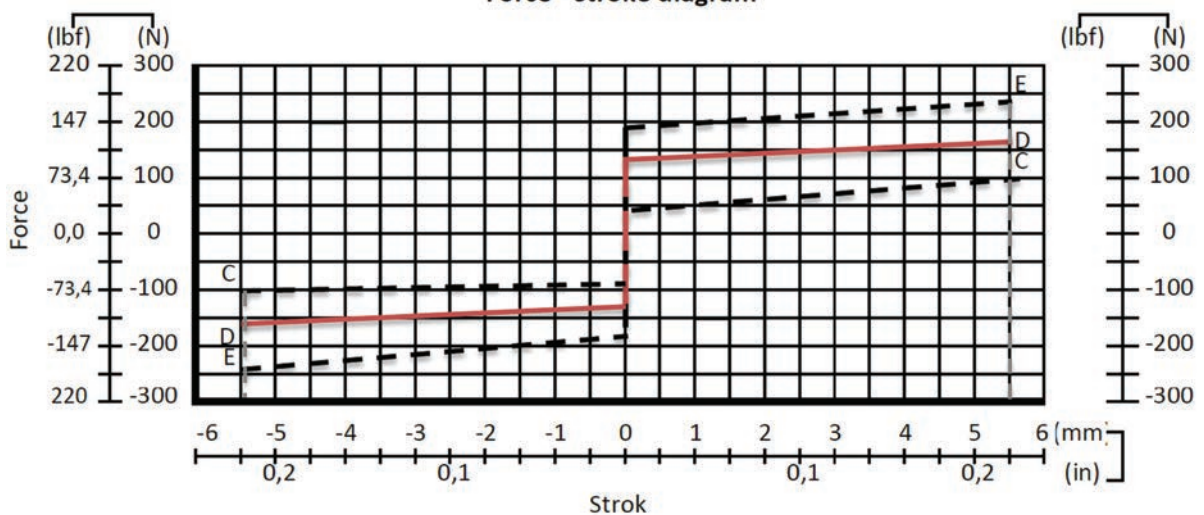
Kit No: **D**

Sectional Appearance

Diagram



Force - stroke diagram



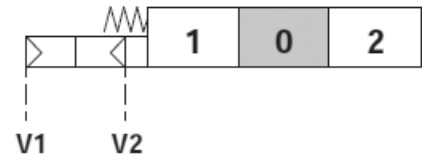
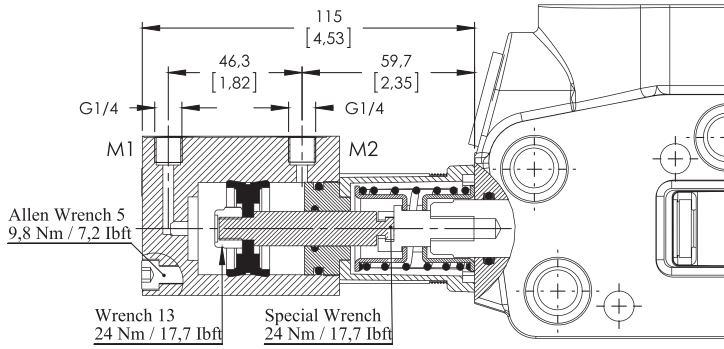
**SPOOL POSITIONERS – SIDE OF RETURN**

**ON/OFF Pneumatic Control**

Kit No: **150P**

Sectional Appearance

Diagram



**Operating Features**

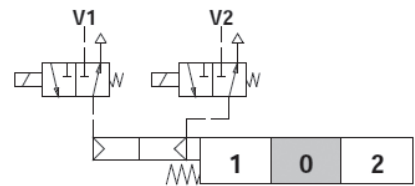
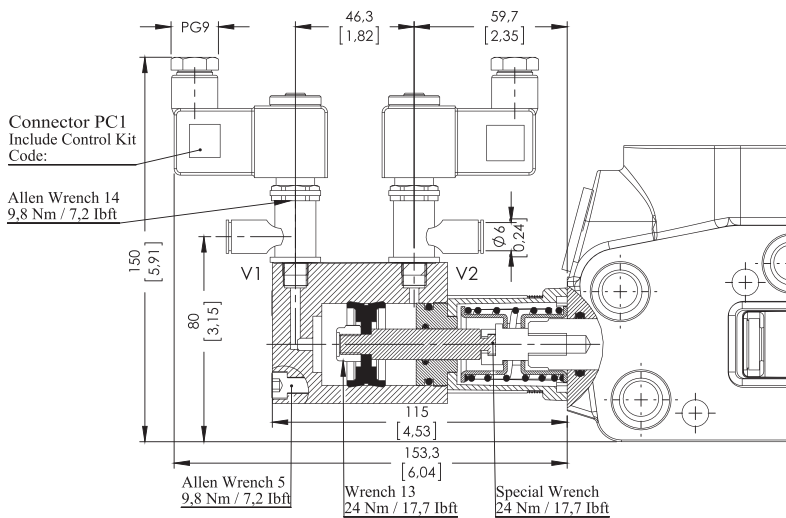
Pilot Pressure .....: 6 Bar (Max. 10) / 87 Psi (Max. 145)

**ON/OFF Electro-Pneumatic Control**

Kit No: **150EP**

Sectional Appearance

Diagram



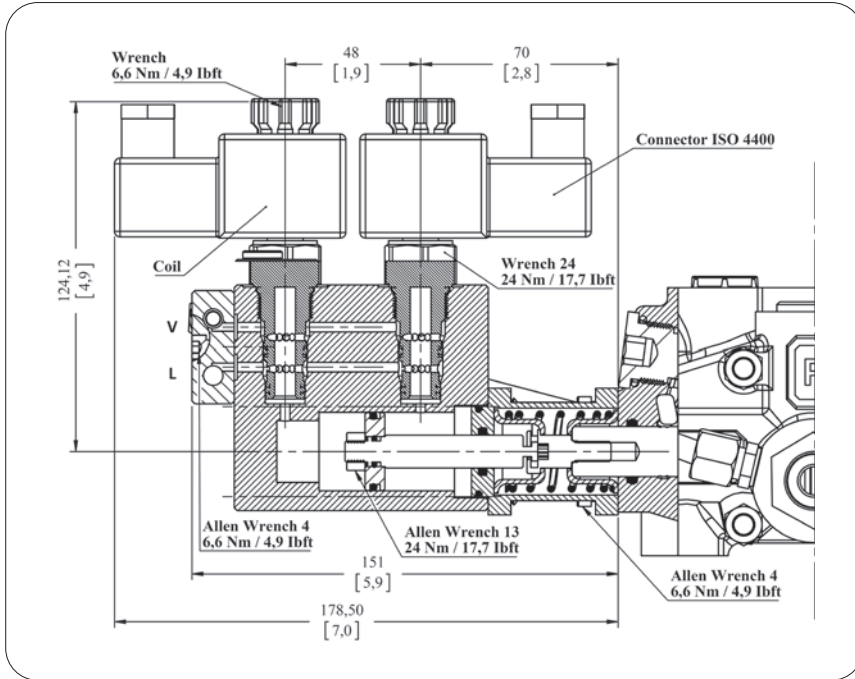
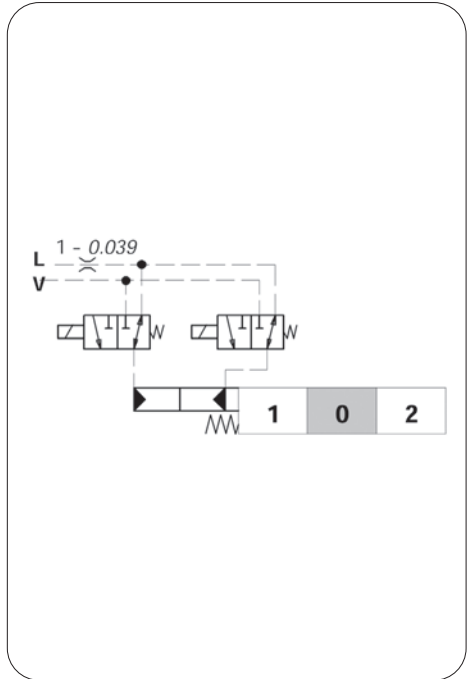
**Operating Features**

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 RETURN**
**ON/OFF Electro - Hydraulic Control**
**Kit No: 150EH**
**Sectional Appearance**

**Diagram**

**Operating Features**

Pilot Pressure .....: 10 Bar / 145 Psi  
 : 50 Bar / 725 Psi  
 Max back pressure on drain L.....: 25 Bar / 360 Psi

**Solenoid Operating Features**

Coil Connection.....: ISO 4400  
 Nominal voltage.....: 12 VDC / 24 VDC  
 Power rating.....: 21 W  
 Duty cycle.....: %100  
 Protection type.....: IP 65  
 Nominal voltage tolerance.....: ±10  
 Max temperatures.....: 100 C°  
 Stroke.....: ±5,5 mm

**ORDER CODE**
**External Pilot Collector**

COL 11 - 10COL1001 – Kit For Section 1  
 COL 12 - 10COL1001 – Kit For Section 2  
 COL 13 - 10COL1001 – Kit For Section 3  
 COL 14 - 10COL1001 – Kit For Section 4  
 COL 15 - 10COL1001 – Kit For Section 5  
 COL 16 - 10COL1001 – Kit For Section 6  
 COL 17 - 10COL1001 – Kit For Section 7  
 COL 18 - 10COL1001 – Kit For Section 8

**Standard Pilot Collector**

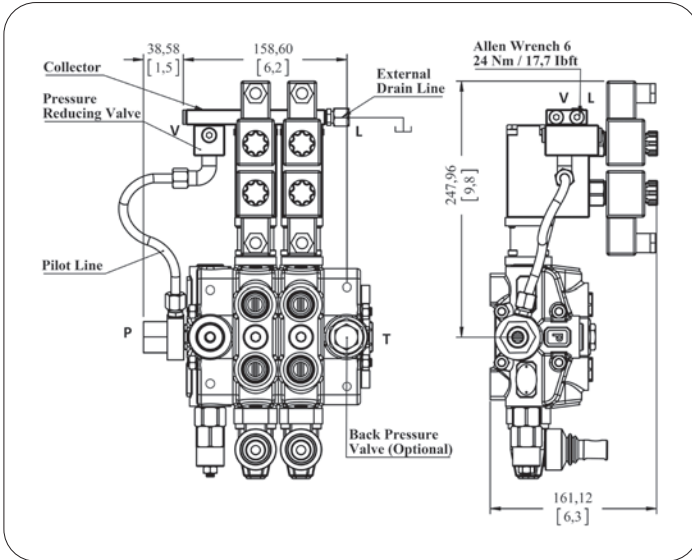
COL 21 - 10COL2001 – Kit For Section 1  
 COL 22 - 10COL2001 – Kit For Section 2  
 COL 23 - 10COL2001 – Kit For Section 3  
 COL 24 - 10COL2001 – Kit For Section 4  
 COL 25 - 10COL2001 – Kit For Section 5  
 COL 26 - 10COL2001 – Kit For Section 6  
 COL 27 - 10COL2001 – Kit For Section 7  
 COL 28 - 10COL2001 – Kit For Section 8

**SPOOL POSITIONERS – SIDE OF RETURN**

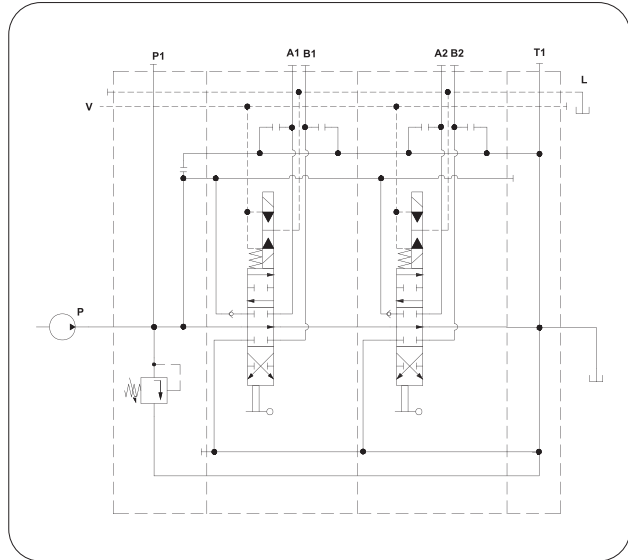
**ON/OFF Electro - Hydraulic Control Connections**

**Connection Type 1: Collector kit for external pilot and drain**

Sectional Appearance



Diagram



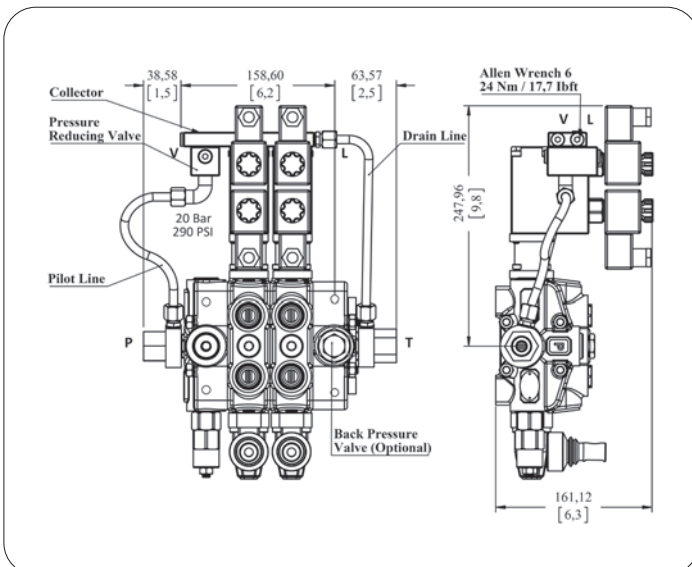
**Operating Features**

External Pressure Reducing Valve .....: 20 Bar / 290 Psi (For V line)

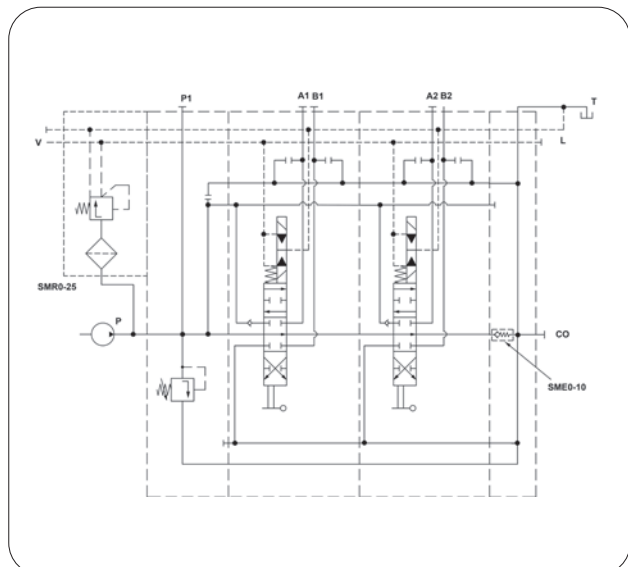
Code= GMM PD150-2P (SD(LA)-SMR2-125-PP)/P-1A-STL-150EH/ P-1A-STL-150EH (SMR0 -COL12-12V)/ SO-PT1 / SGT

**Connection Type 2: Collector kit with pilot and drain lines**

Sectional Appearance



Diagram



**SMR 0-25 Valve Operating Features (Pressure reducing valve)**

Outlet Pressure .....: 20 Bar / 290 Psi

Max. Flow.....: 8 l/min

Filtration .....: 80 µ

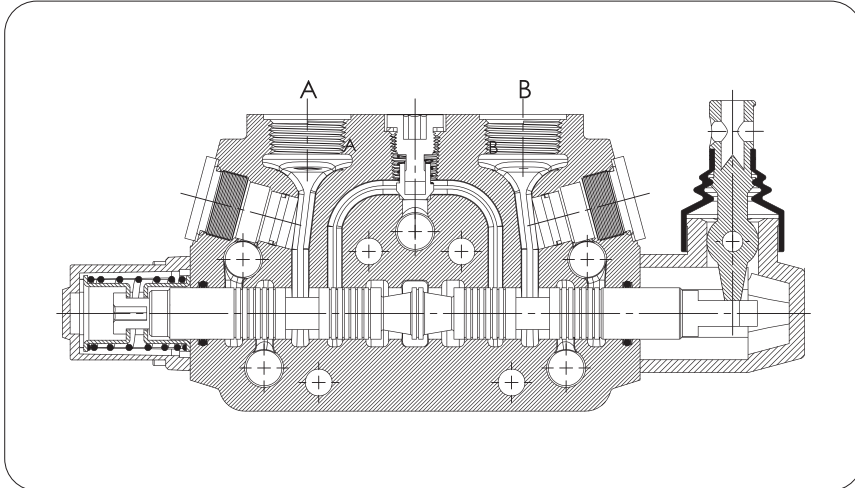
Code= GMM PD150-2P (SD(LA)-SMR2-125-PP)/P-1A-STL-150EH/ P-1A-STL-150EH (SMR0 -COL22-12V)/ SO-PT1 / SGT

**WORKING SECTION KIT**

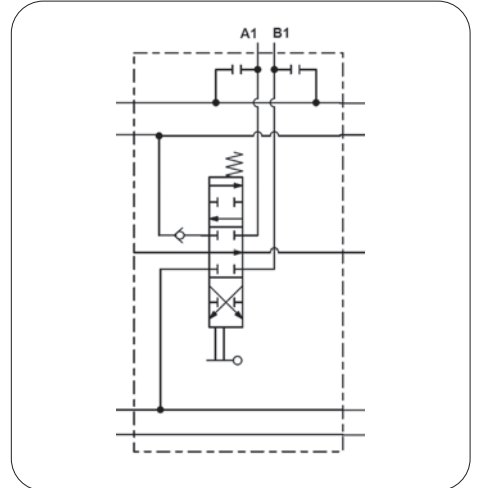
**With Port Valves Type**

Kit No: **AA**

Sectional Appearance



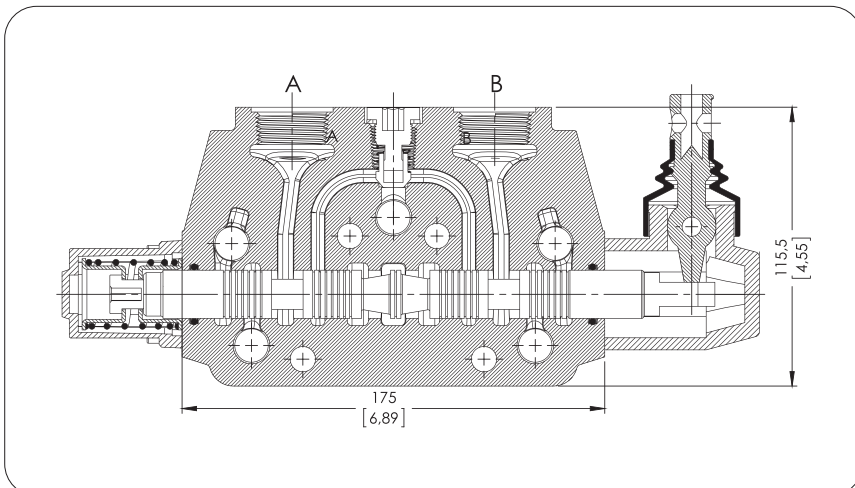
Diagram



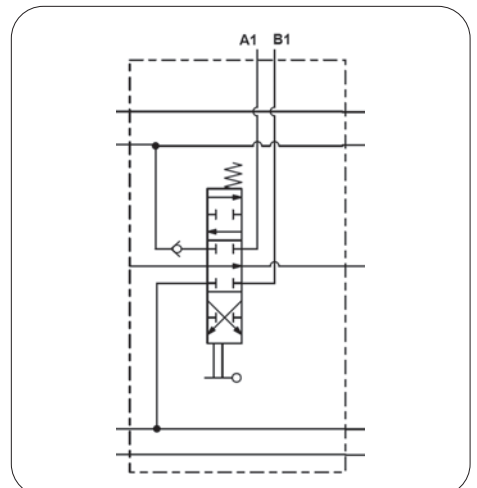
**With Port Valves Type**

Kit No: **AB**

Sectional Appearance



Diagram



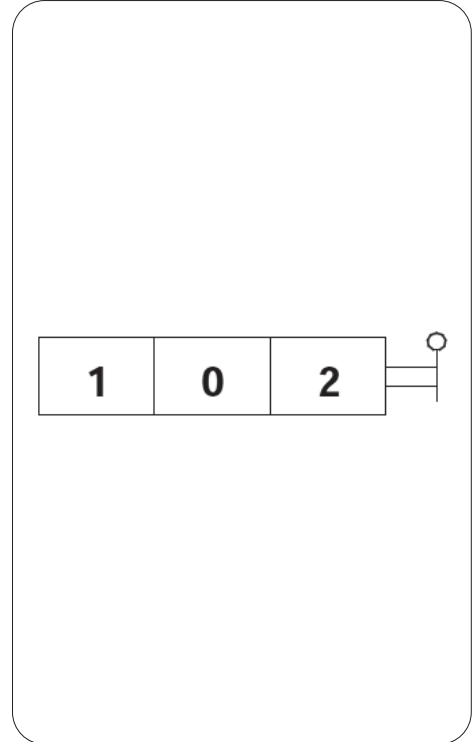
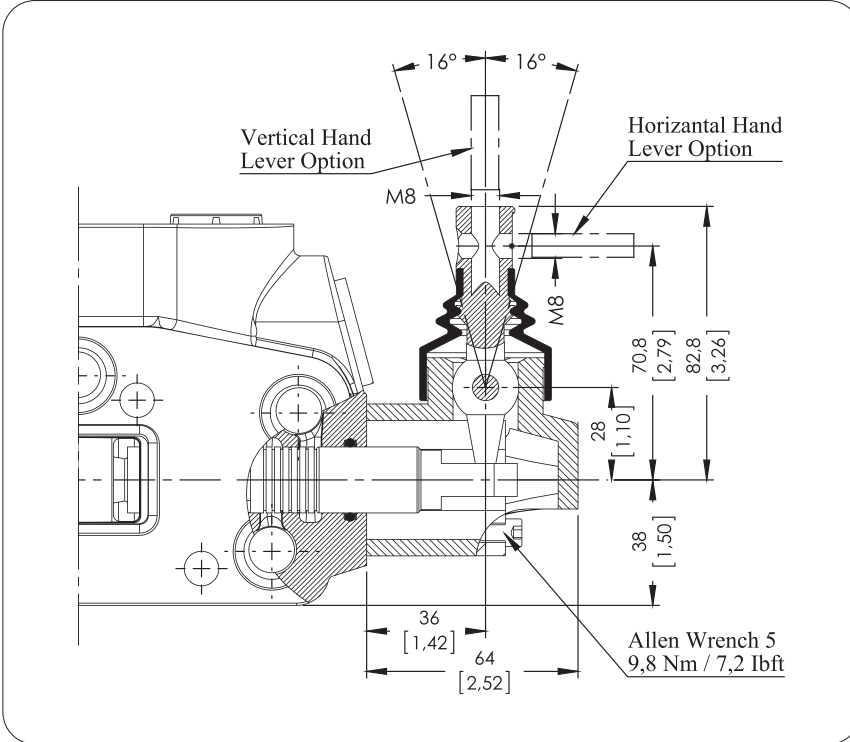
**SPOOL POSITIONERS – SIDE OF LEVER CONTROL**

**Lever Controls**

Kit No: **STL - L0**

Sectional Appearance

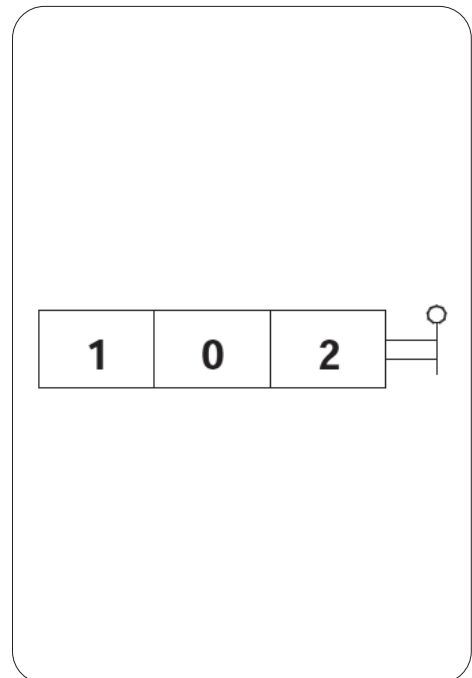
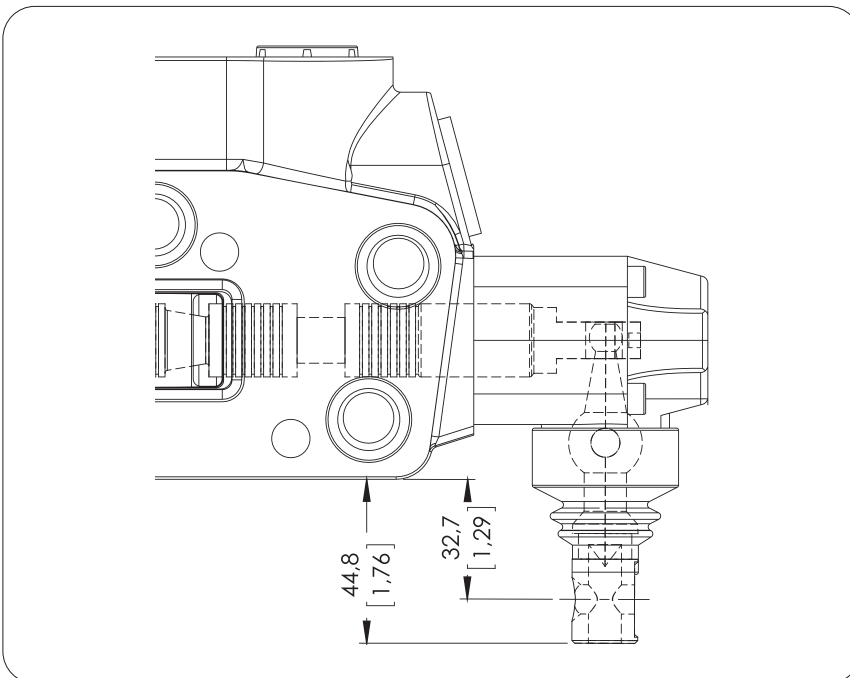
Diagram



Kit No: **STL - L180**

Sectional Appearance

Diagram



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

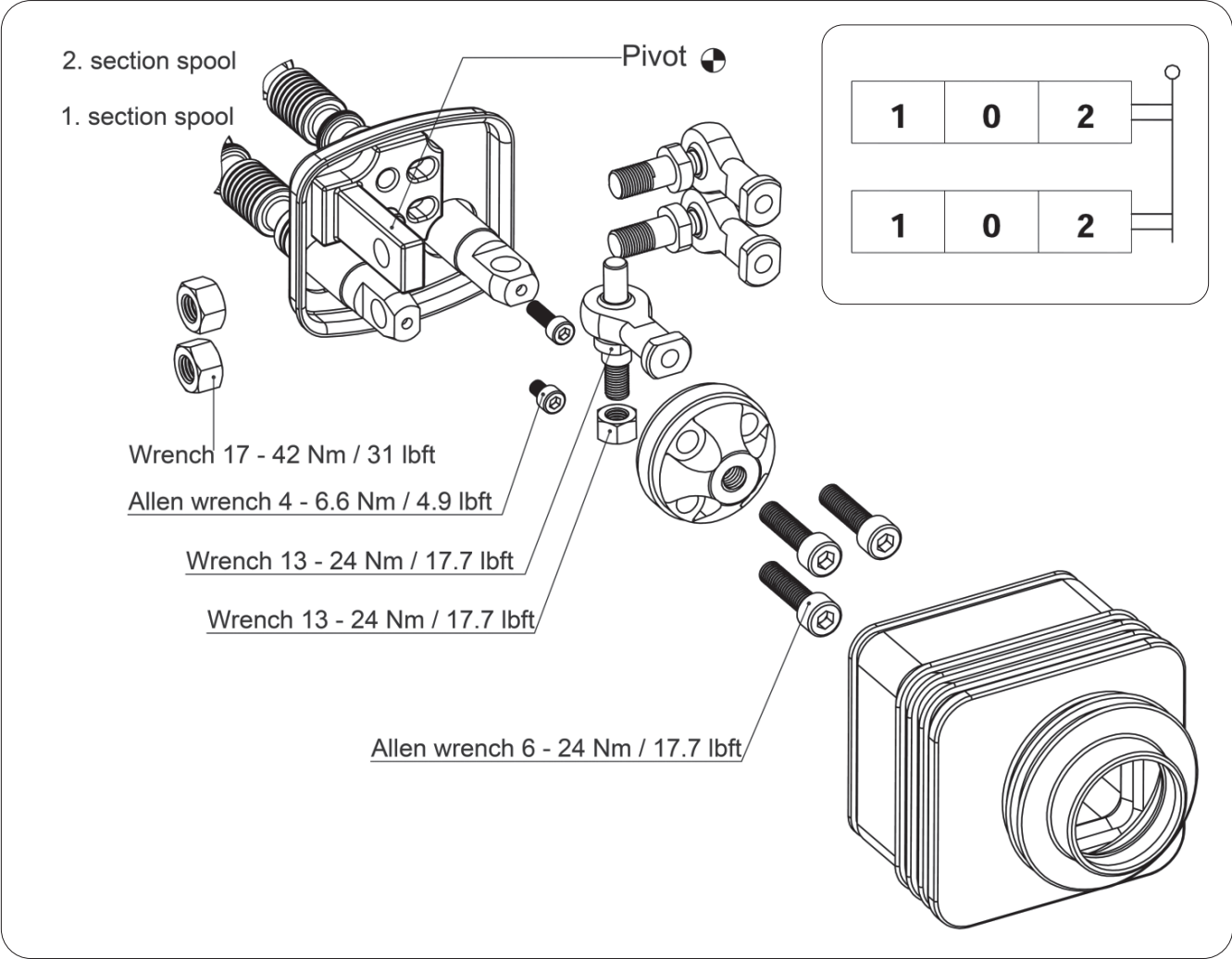
**SPOOL POSITIONERS – SIDE OF LEVER CONTROL**

**Lever Controls - Joystick**

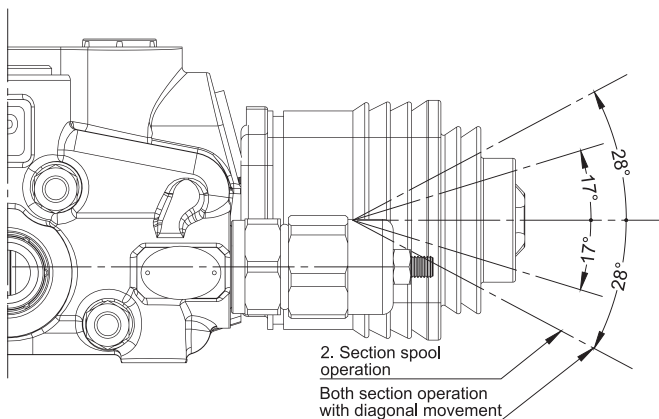
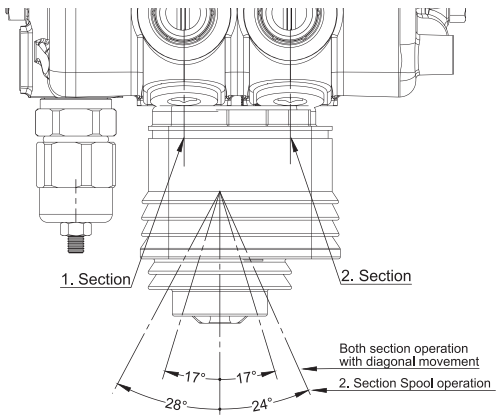
Kit No: JL

Exploded View

Diagram



**Operation Angle:**





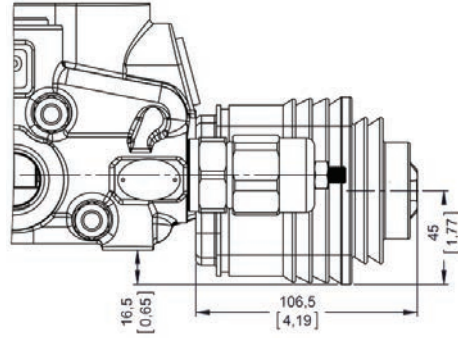
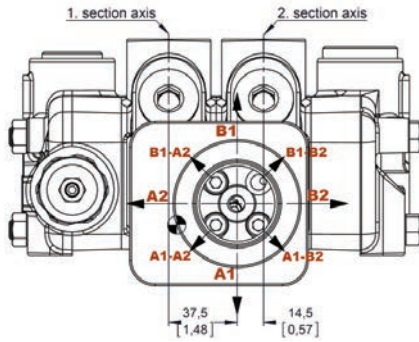
**SPOOL POSITIONERS – SIDE OF LEVER CONTROL**

**Lever Controls – Joystick**

**Dimensions and movement sceme**

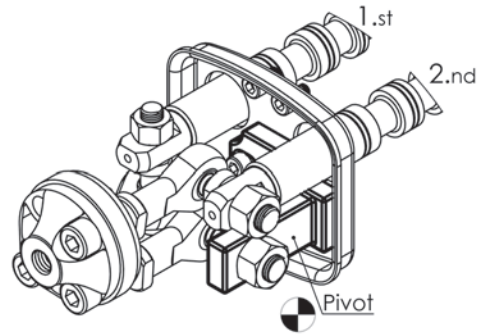
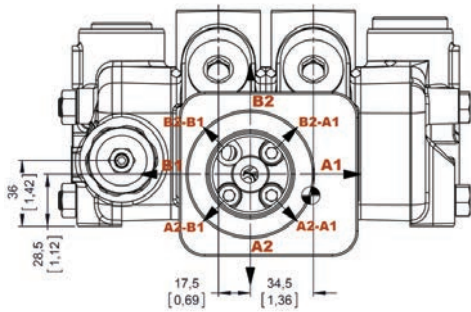
Type No: **JL1**

**Application:** Pivot placed down on the Left



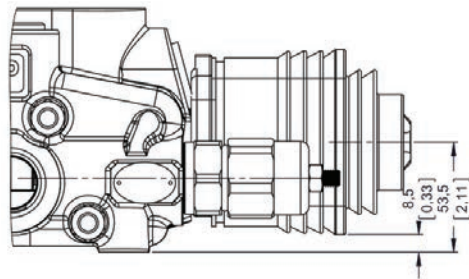
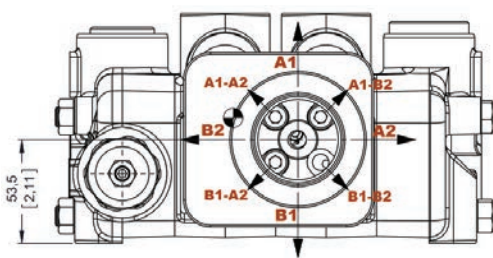
Type No: **JL2**

**Application:** Pivot placed down on the right



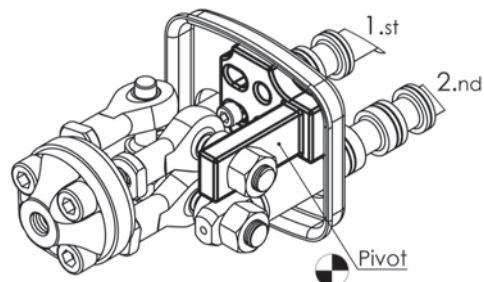
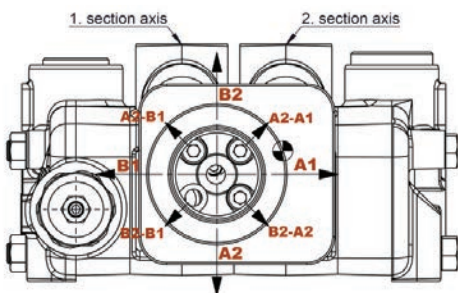
Type No: **JL3**

**Application:** Pivot placed above on the Left



Type No: **JL4**

**Application:** Pivot placed above on the right



SPOOL POSITIONERS – SIDE OF LEVER CONTROL

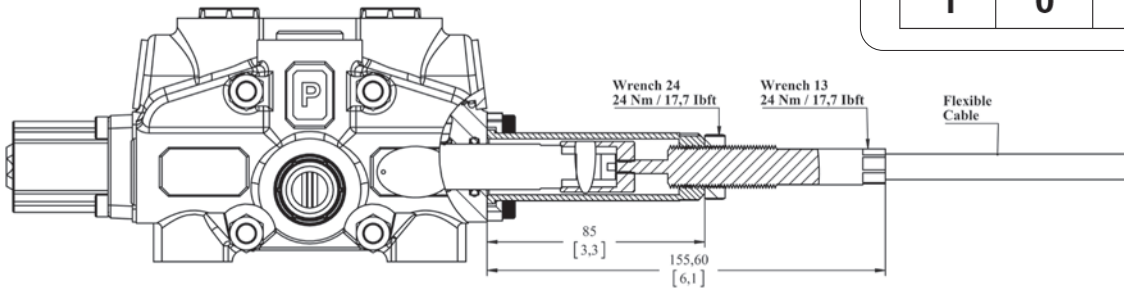
Lever Controls - Cable Control

Kit No: HL

Sectional Appearance

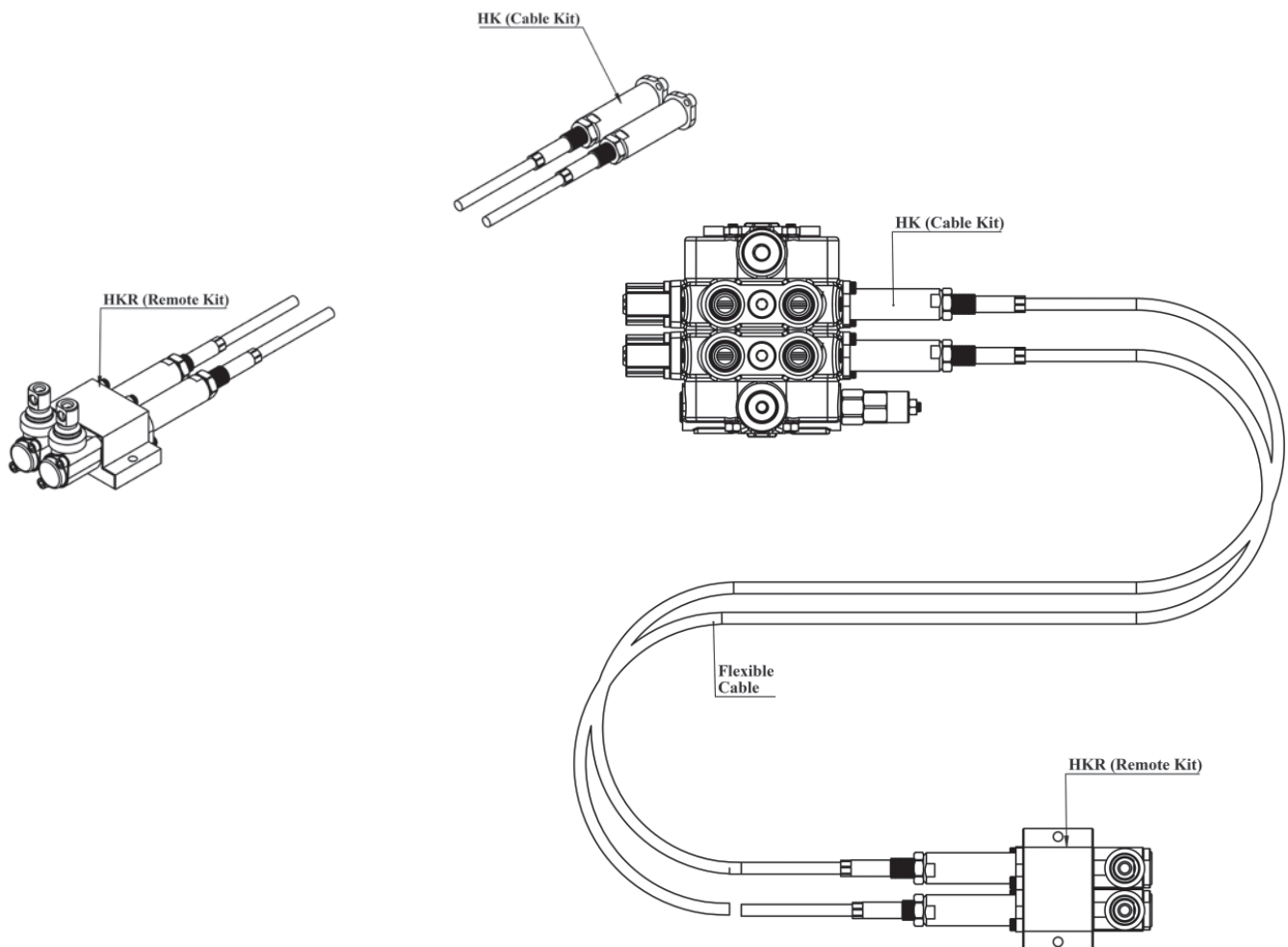
Diagram

Waterproof cap prearranged for remote control with flexible cable.



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

Example Operation

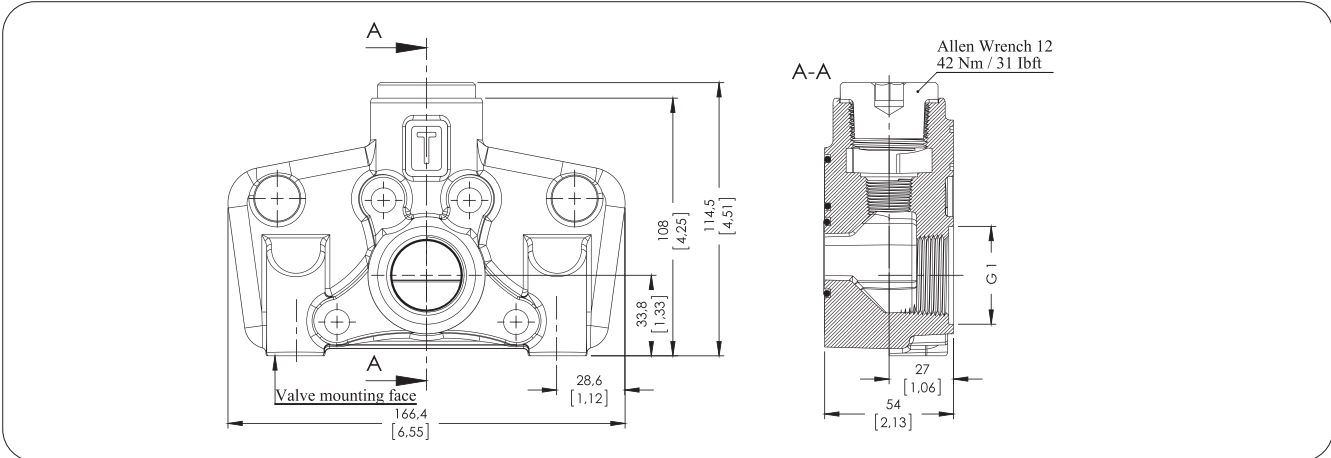


**OUTLET COVER - TANK SIDE**

**Output Cover Options**

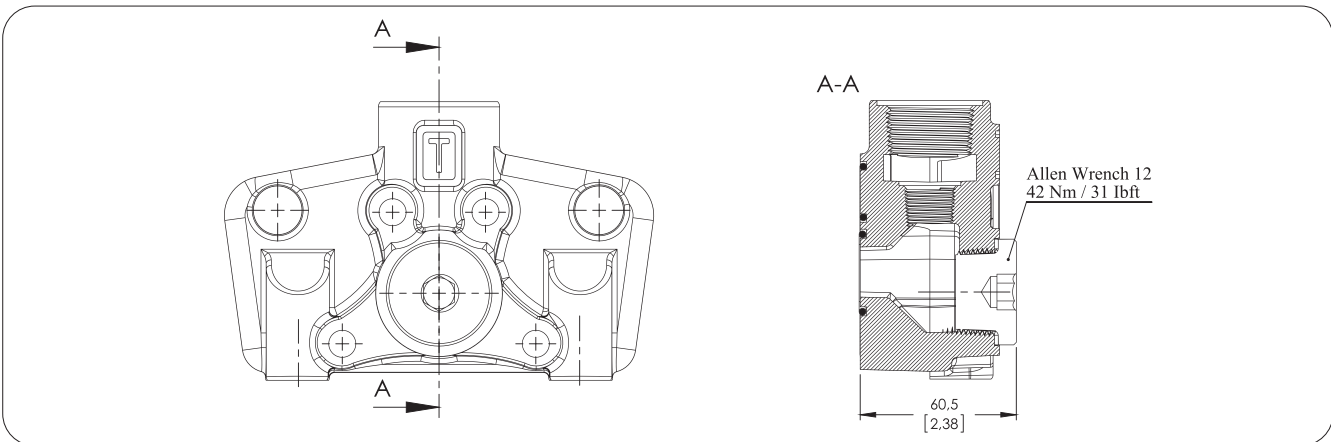
Kit No: **SO**

Sectional Appearance



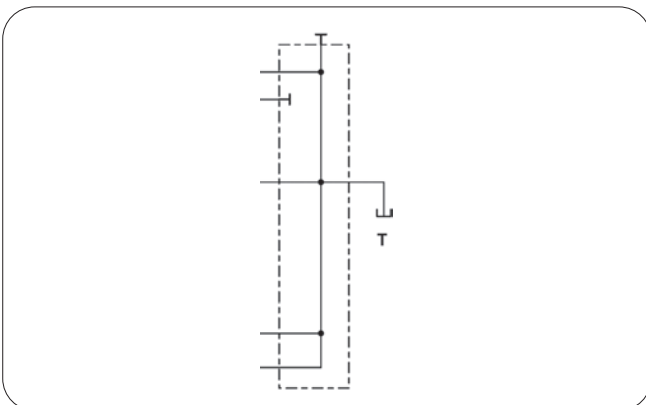
Type No: **TO**

Sectional Appearance

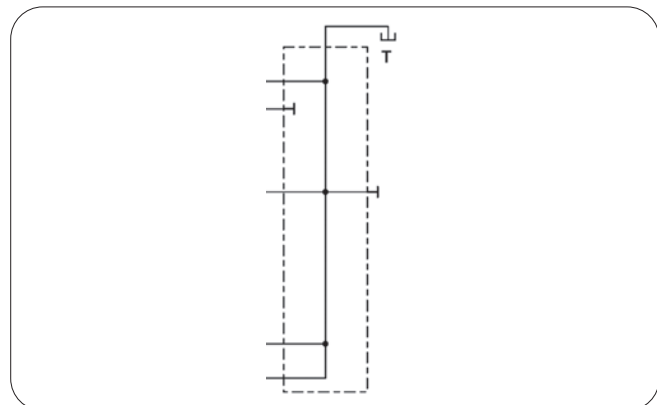


**Hydraulic Diagram**

Type No: **SO**



Type No: **TO**

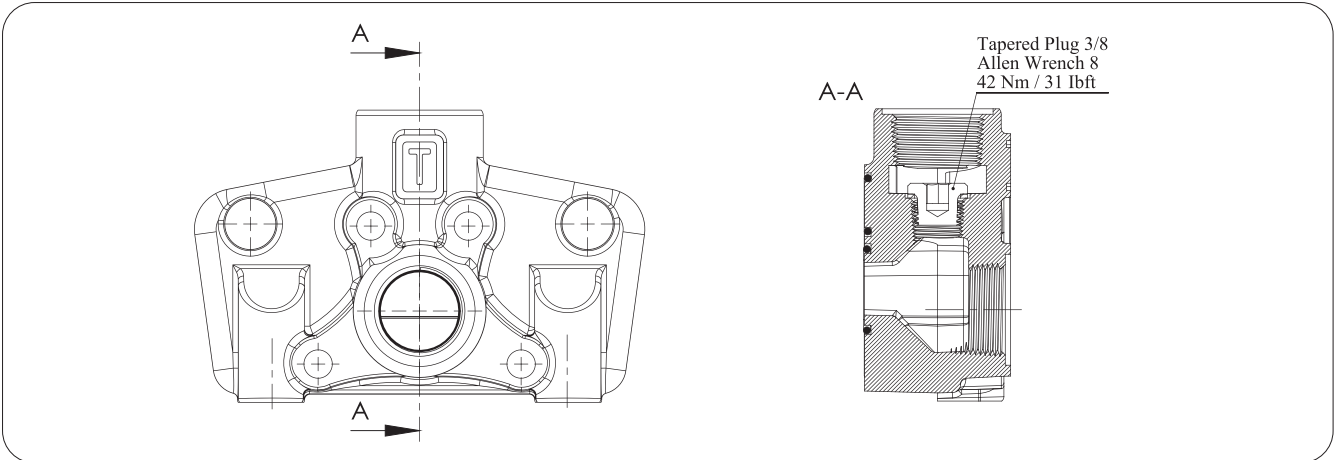


**OUTLET COVER - TANK SIDE**

**Output Cover Options**

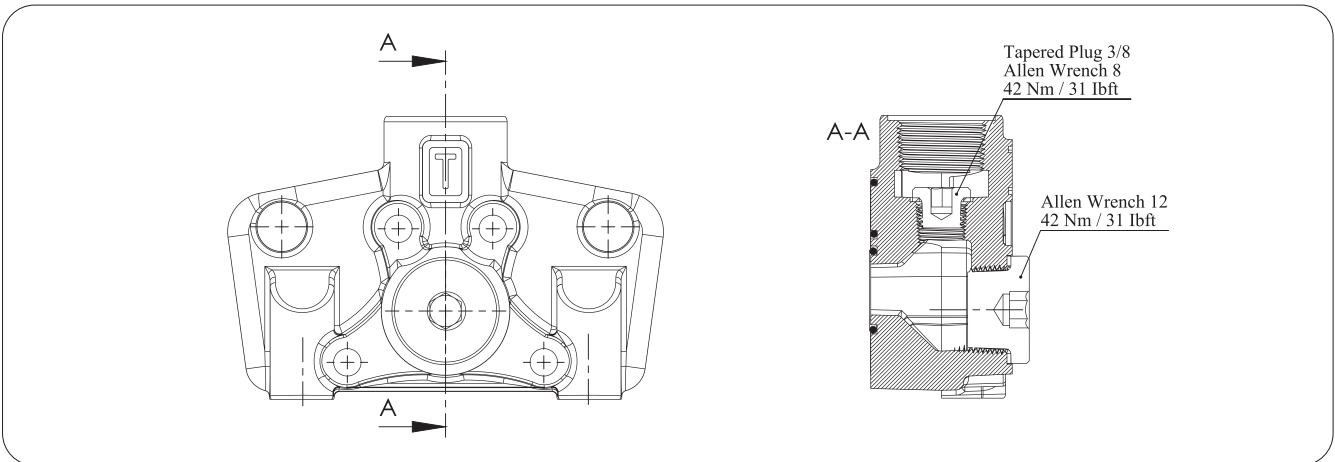
Kit No: **TCO**

Sectional Appearance



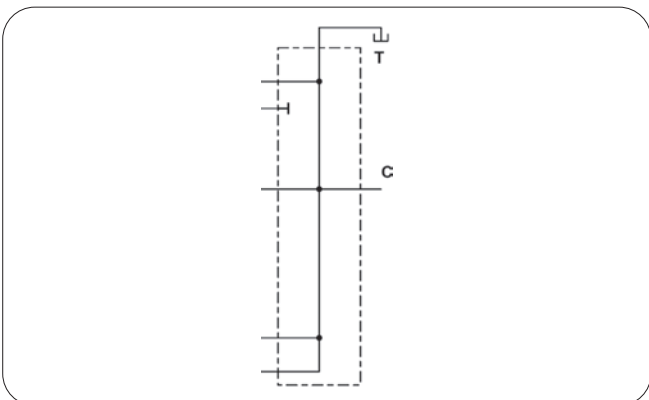
Kit No: **TC**

Sectional Appearance

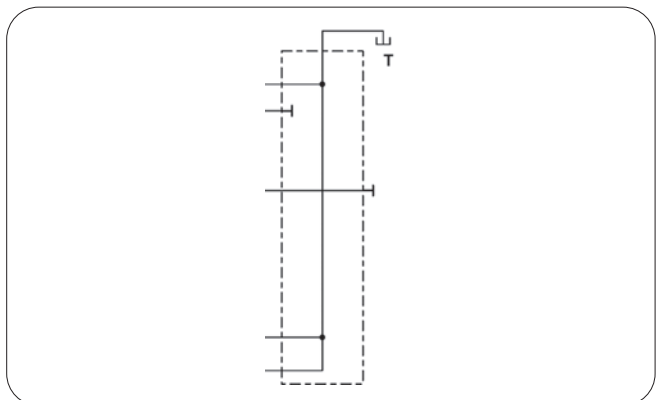


**Hydraulic Diagram**

Type No: **TCO**



Type No: **TC**



**PORT VALVES OPTIONS**

**Anti Shock Valves**

Code:

**YAS-1 (T1-100)**

→ Pressure Setting in Bar

→ Adjusting type T=With screw , L=Valve Set / Spring Type (1,2,3)

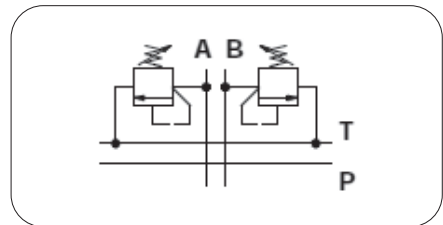
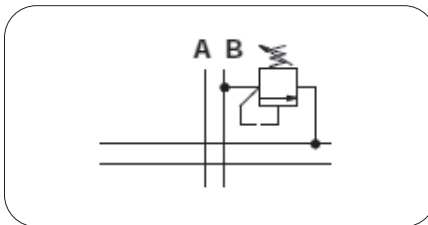
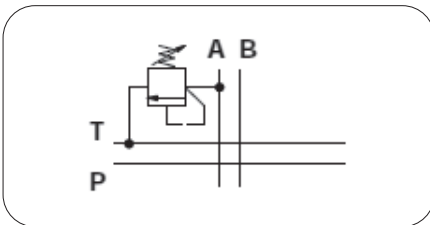
→ 1 = Mounted Port A , 2 = Mounted Port B , 3 = Mounted Port A and B

**Hydraulic Diagram**

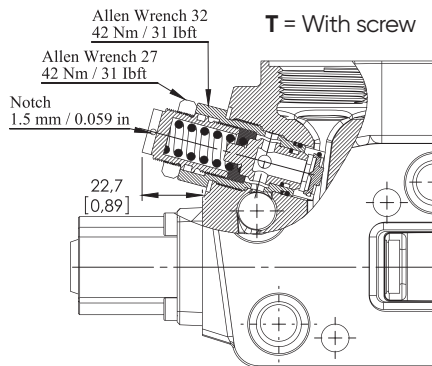
Kit No: **YAS1**

Kit No: **YAS2**

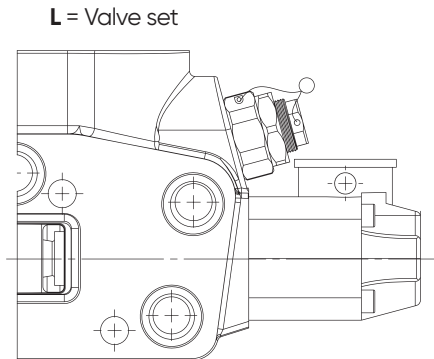
Kit No: **YAS3**



**Adjustment Type on Valve:**

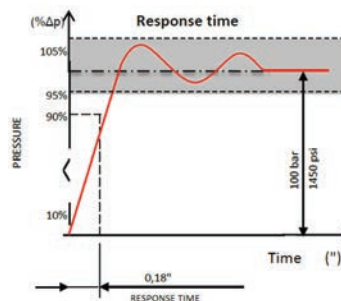
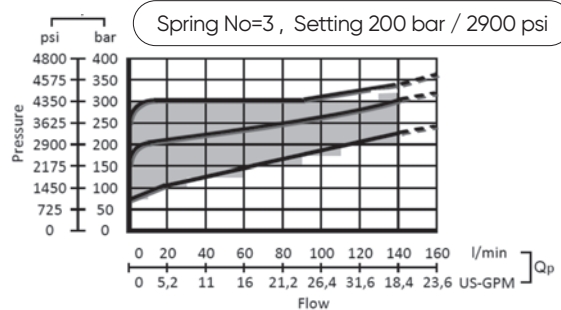
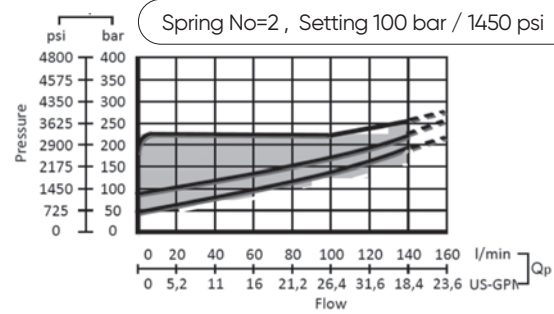
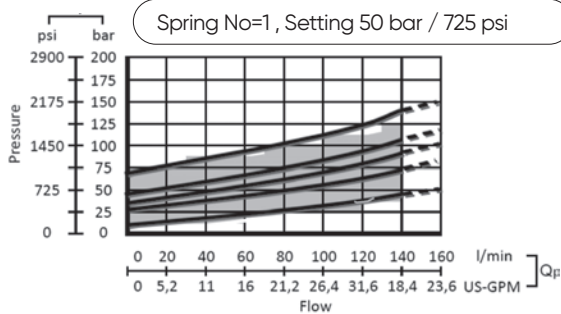


T = With screw



L = Valve set

**Performance Data:**



**PORT VALVES OPTIONS**
**Anti shock And Anti Cavitation Valves**

Code:

**YAA-1 (T1-100)**

→ Pressure Setting in Bar

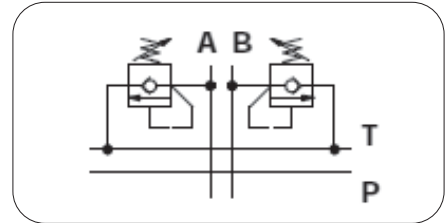
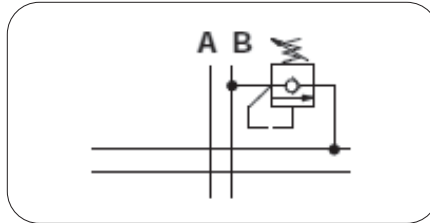
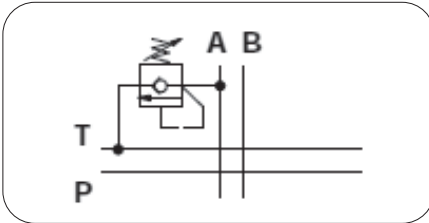
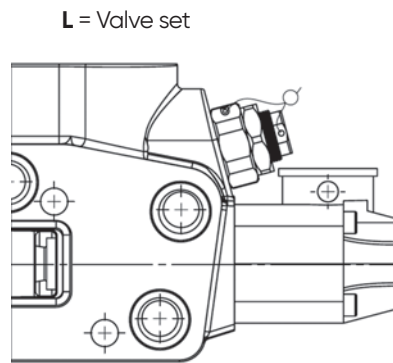
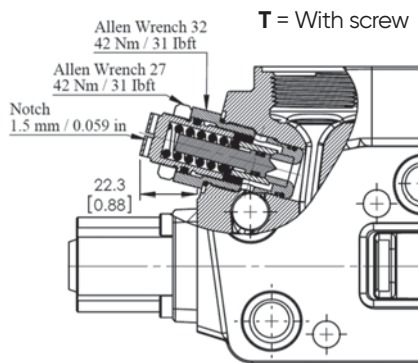
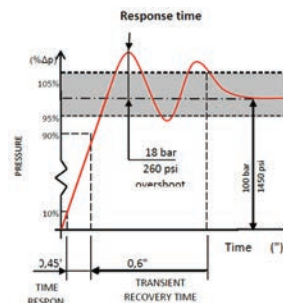
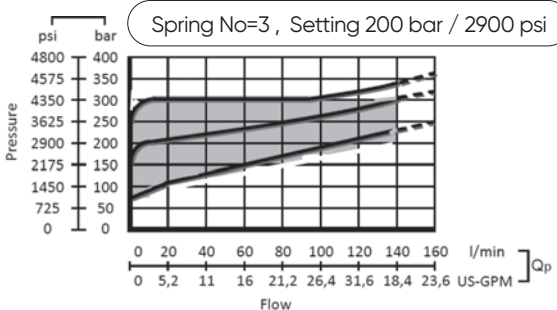
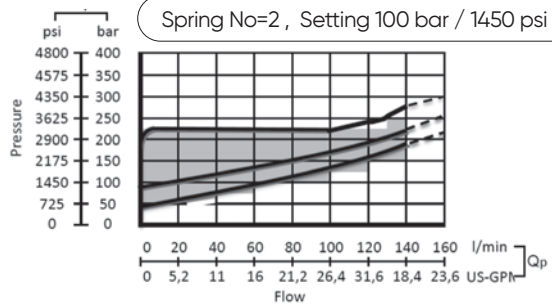
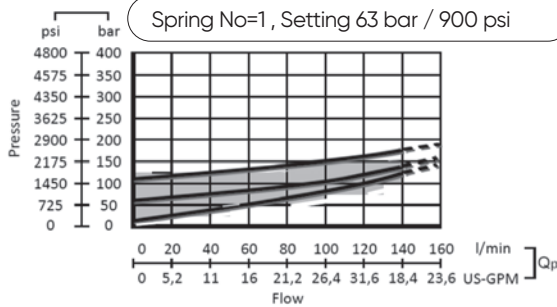
→ Adjusting type T=With screw , L=Valve Set / Spring Type (1,2,3)

→ 1 = Mounted Port A , 2 = Mounted Port B , 3 = Mounted Port A and B

**Hydraulic Diagram**

 Kit No: **YAA1**

 Kit No: **YAA2**

 Kit No: **YAA3**

**Adjustment Type on Valve:**

**Performance Data:**


**PORT VALVES OPTIONS**

**Anti Cavitation Valves**

Code:

**YAC-1**

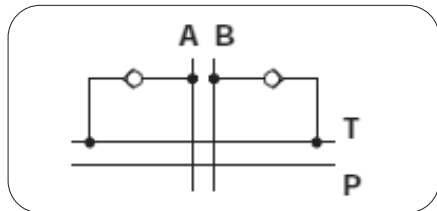
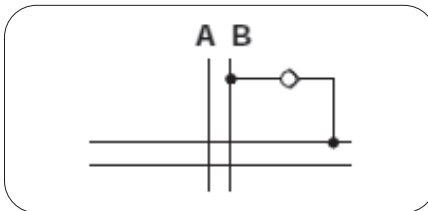
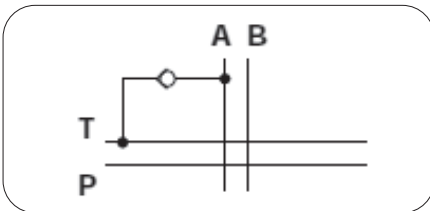
→ 1= Mounted Port A , 2=Mounted Port B , 3=Mounted Port A and B

**Hydraulic Diagram**

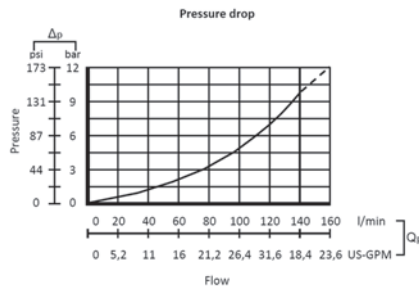
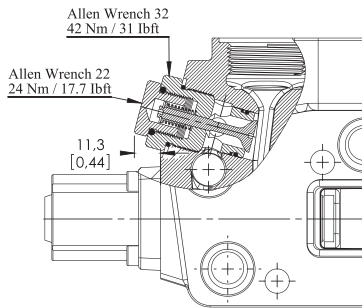
Kit No: **YAC1**

Kit No: **YAC2**

Kit No: **YAC3**



**Adjustment Type on Valve And Data:**



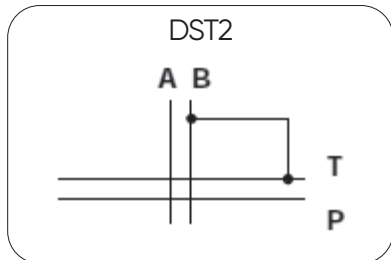
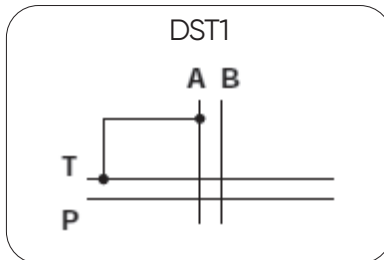
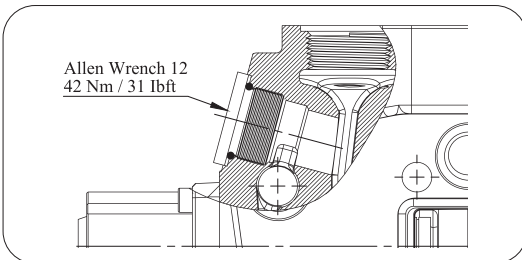
**Valve Blanking**

**Plug with tank connection**

**DST-1** (1:Mounted port A – 2:Mounted port B)

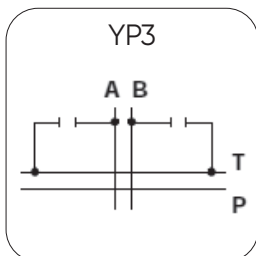
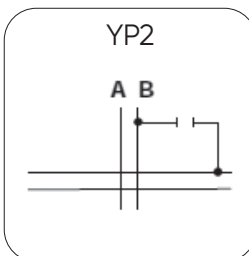
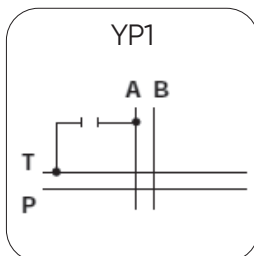
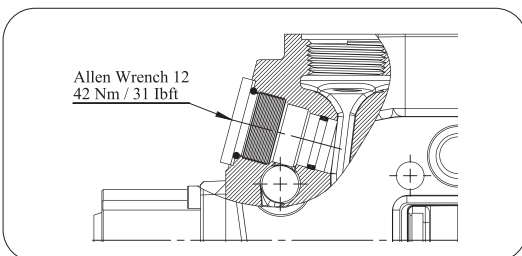
Sectional Appearance

Hydraulic Diagram



**Plug**

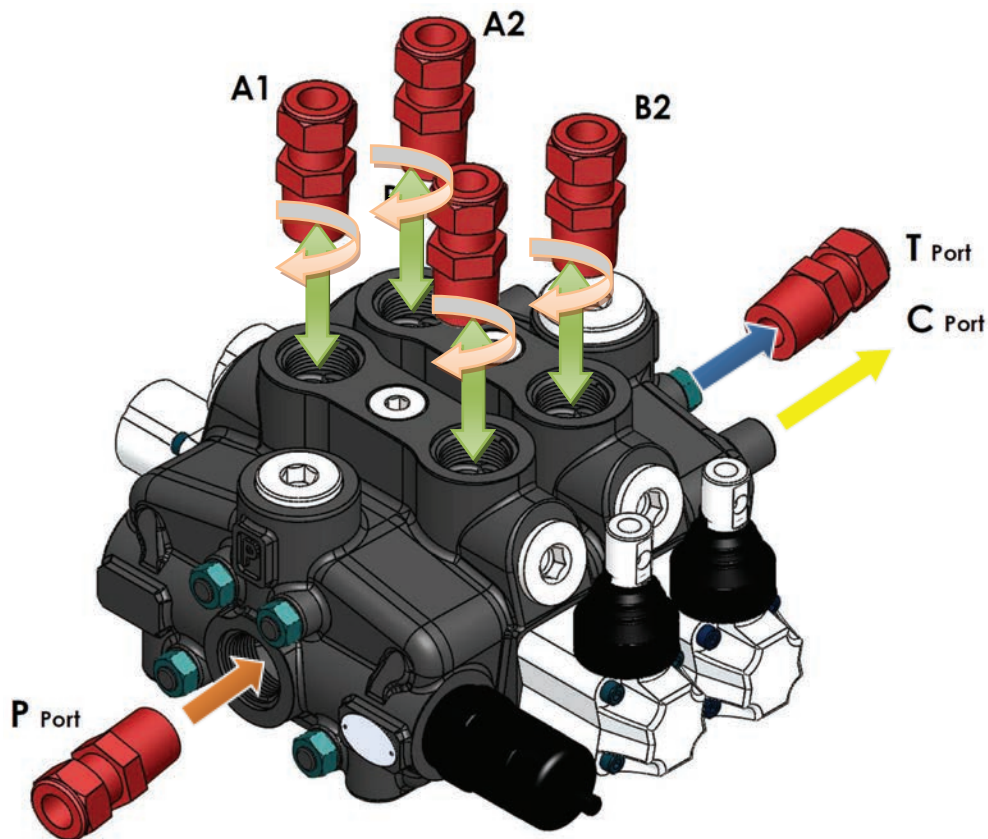
**YP-1** (1:Mounted port A – 2:Mounted port B – 3:Mounted port A and B)



**INSTALLATION AND MAINTENANCE**

The GMM-PD150 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 in place.

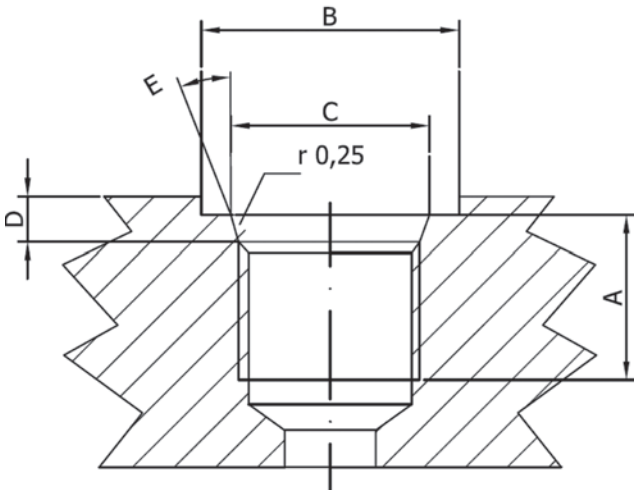


Threads Type (Nm / lbft)	P Port	A and B Port	T Port
BSP (ISO 228/1)	G 3/4	G 3/4	G 1
With O--Ring seal	70 / 51.6	70 / 51.6	100 / 73.7
With copper washer	70 / 51.6	70 / 51.6	90 / 66.3
With steel and rubber washer	70 / 51.6	70 / 51.6	100 / 51.6
BSP (ISO 228/1)	G 1	G 1	G 1
With O--Ring seal	100 / 73.7	100 / 73.7	100 / 73.7
With copper washer	90 / 66.3	90 / 66.3	90 / 66.3
With steel and rubber washer	100 / 51.6	100 / 51.6	100 / 51.6
UN--UNF (ISO 11926--1)	1 5/16--12 UNF--2B	1 1/16--12 UNF--2B	1 5/16--12 UNF--2B
With O--Ring seal	150 / 110.6	95 / 70	150 / 110.6

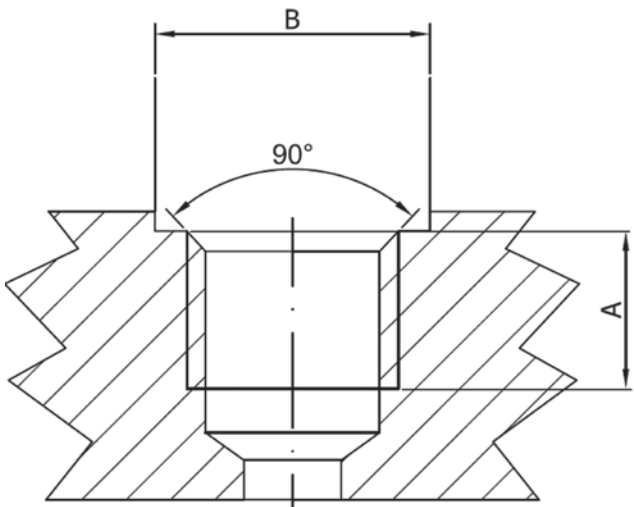


**TECHNICAL DATA**

**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"		G3/4		G1	
mm	in						
A		16	0,63	18	0,71	20	0,79
B		27	1,06	33	1,30	40	1,57