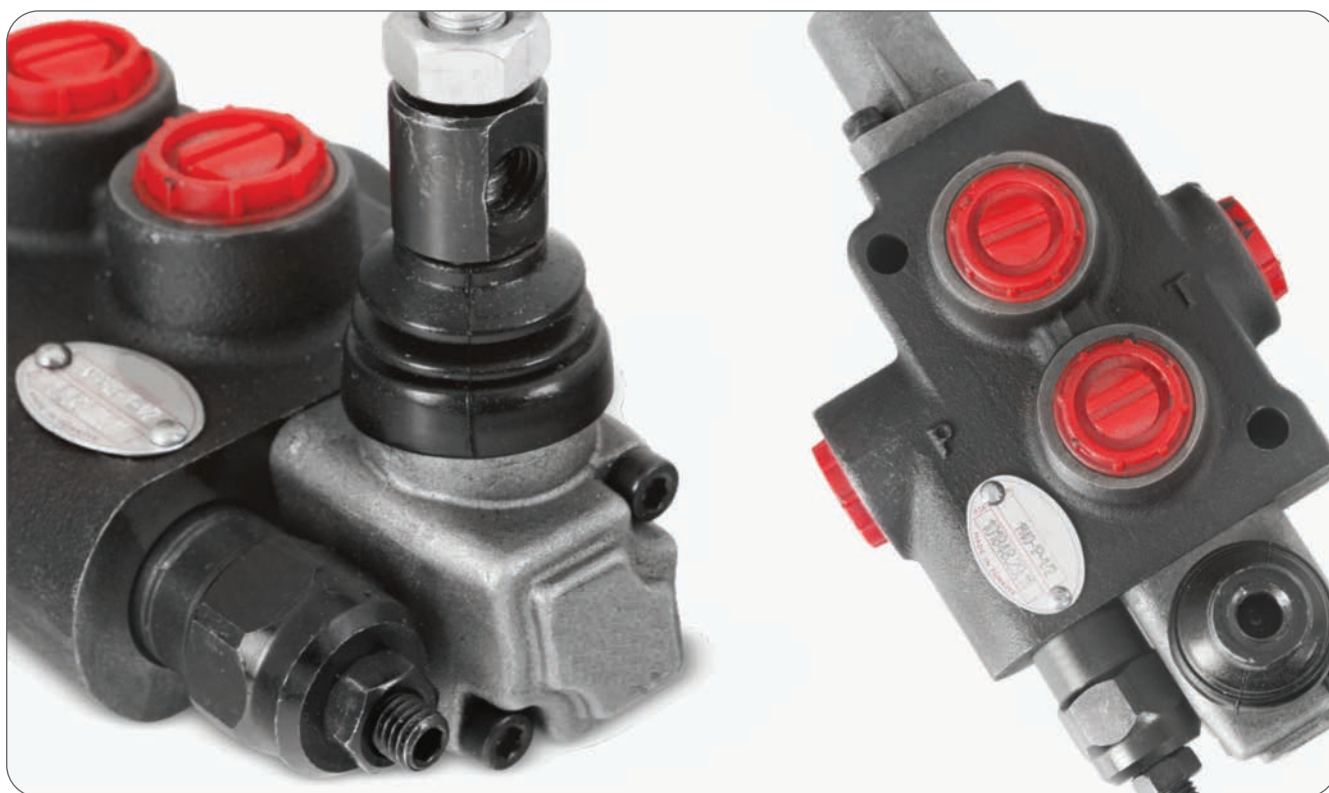




MONOBLOCK
DIRECTIONAL
CONTROL VALVES
GMM-M40

CE





CONTENTS

Working Conditions	7
Dimensional Data	8
Hydraulic Circuit	9
Performance Data And Curve	10
Inlet Relief Options	11
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Technical Data	18

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 (01/2011). 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 USAGE OF THE PRODUCT.

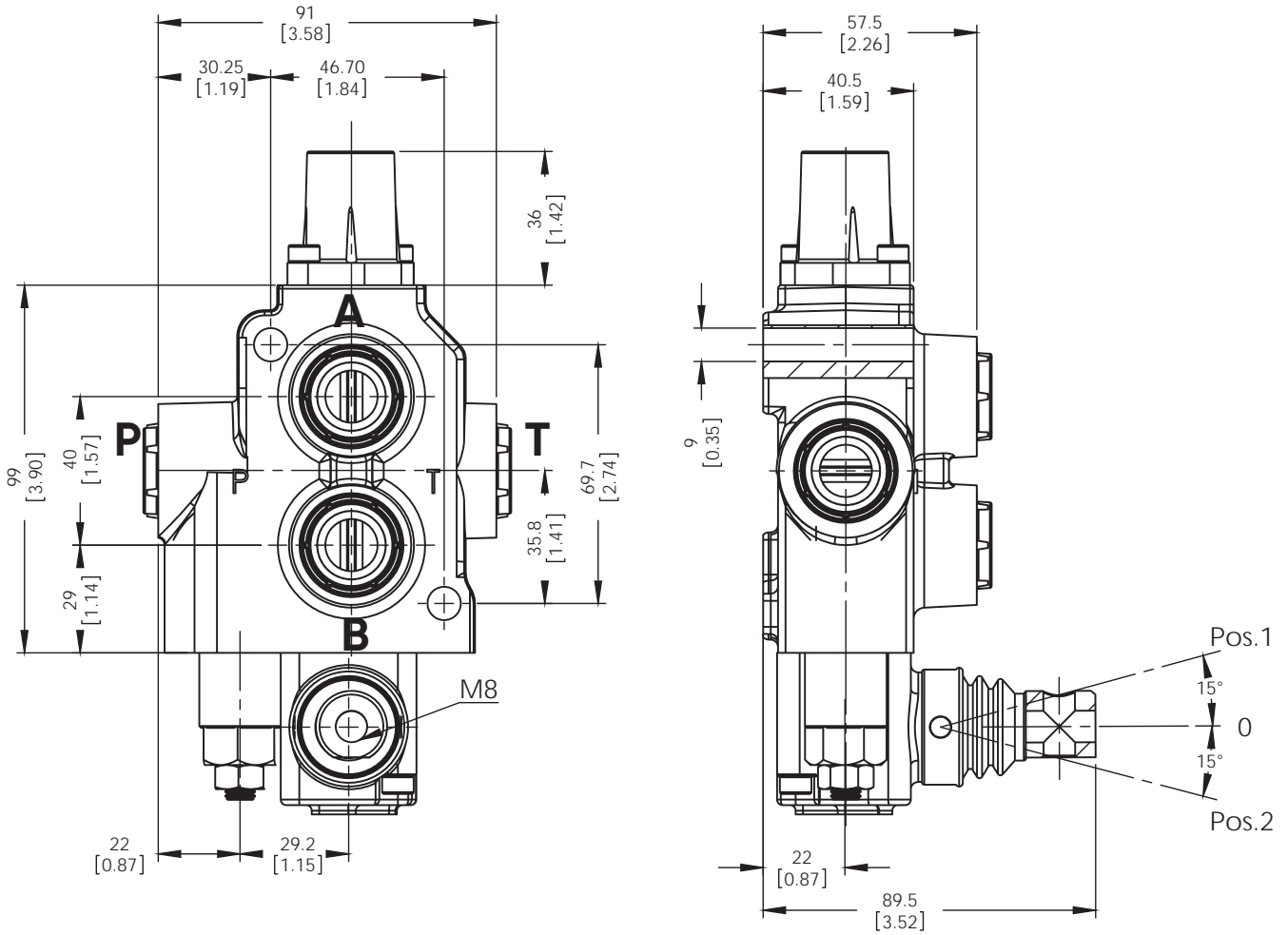
WORKING CONDITIONS

Nominal Flow Rating / Displacement	40 l/min	11 U.S.G.P.M
Maximum Working Pressure	250 Bar	3600 PSI
Max Back Pressure	25 Bar	360 PSI
Oil Temperature with NBR Seals	-20 to 80 C°	4 to 180 F°
with FPM (Viton) Seals	-20 to 100 C°	4 to 200 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°	-11 to 160 F°
Number Of Spools	1	
Internal Leakage (at 100 bar (1450 PSI), 40C° (110 F°), 46 cSt – A(B)–T)	4 cm ³ /min	0,24 in ³ /min
Max. Level Of Contamination	19/16 – ISO 4406	

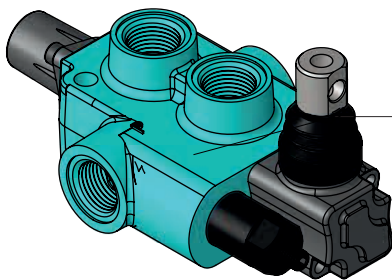
Not: This catalogue shows technical specifications measured with mineral oil of 46 mm²/s-46 cSt viscosity at 40 C° temperature.

Features

- This valve is only one section for open center and close center hydraulic systems.
- Fitted with a main pressure relief valve.
- Interchangeable spool diameter is 16 mm – 0,63 in.
- Available manual and pneumatic spool control kits.

DIMENSIONAL DATA

STANDARD THREADS

PORT	BSP (Iso 228)		UN-UNF (Iso 11926-1)	Metric (Iso 262)	Kg
	3/8" Series	1/2" Series			
P Inlet	G 3/8	G 1/2	3/4-16 UNF	M18x1.5	2,21 Kg
A-B Ports	G 3/8	G 1/2	9/16-18 UNF	M18x1.5	2,21 Kg
T Outlet	G 3/8	G 1/2	3/4-16 UNF	M18x1.5	2,21 Kg
Pneumatic	G 1/4	G 1/4	NPTF 1/8 - 27	NPTF 1/8 - 27	2,21 Kg



Valve Type

GMM-M45-1P-1/2

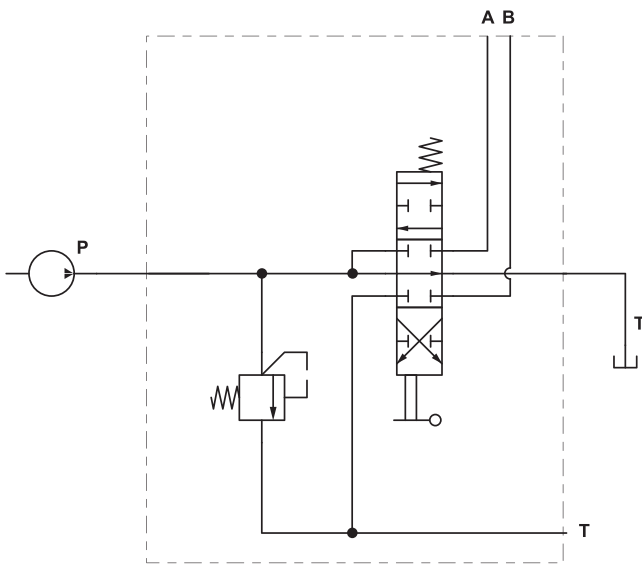
Production Batch

39.10 = Production Year - Week (2010/39)

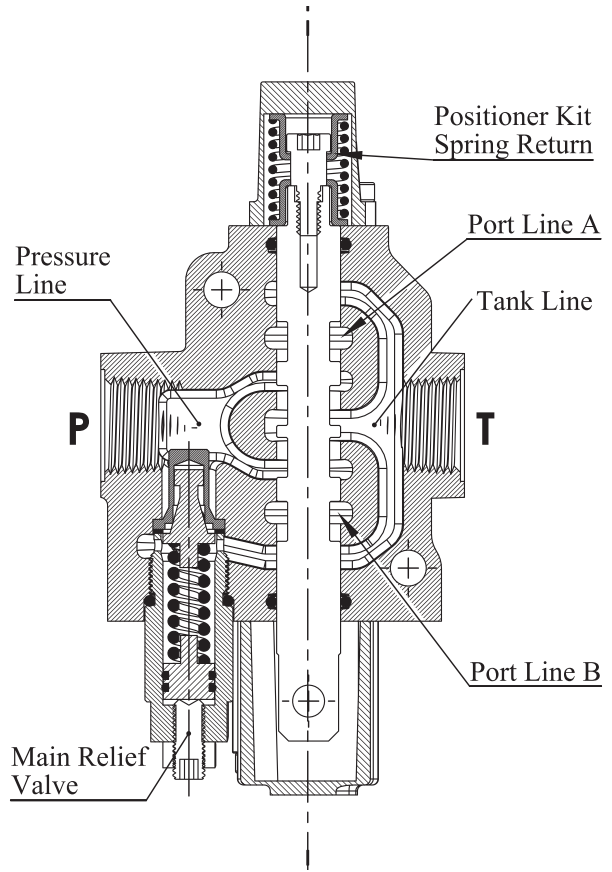
101149 = Progressive Party Number

HYDRAULIC CIRCUIT

Standard Configurations With Side Inlet And Outlet Ports (1CP) - LH

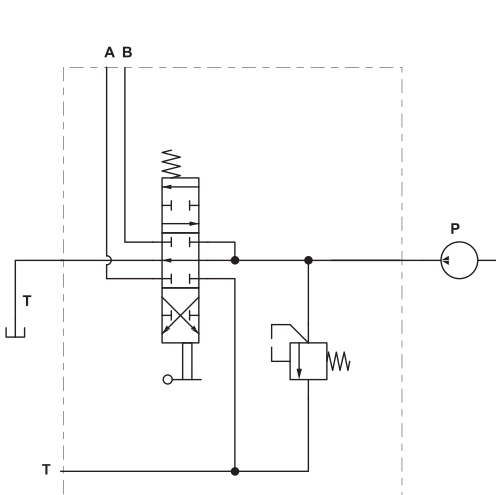


Code: GMM M40-1P / SMR2-120 / 1A-SR-STL

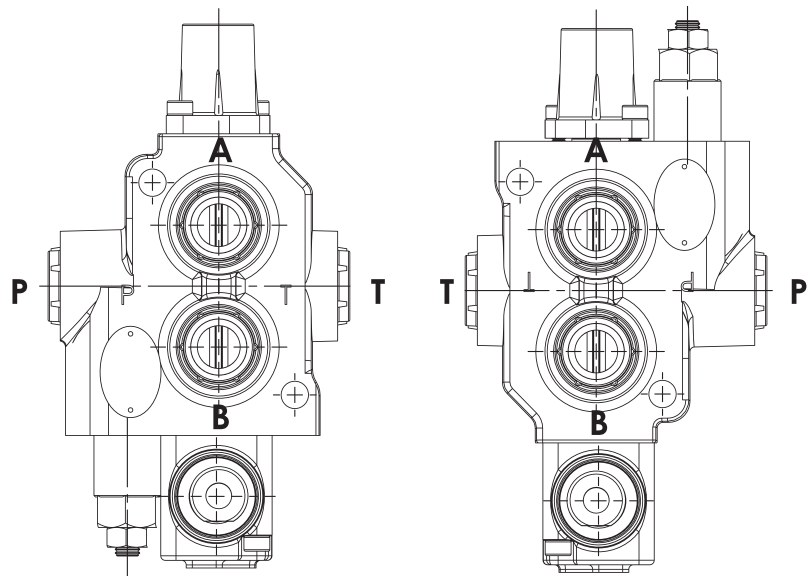


Standard Configurations (1CP) – RH (Right Inlet)

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

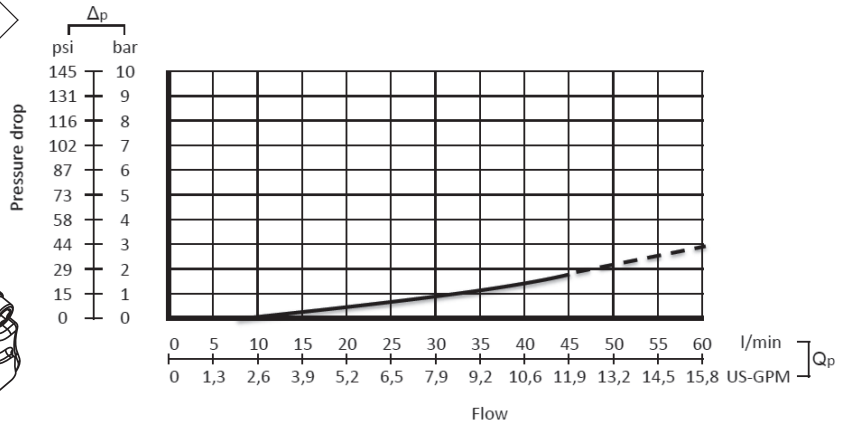
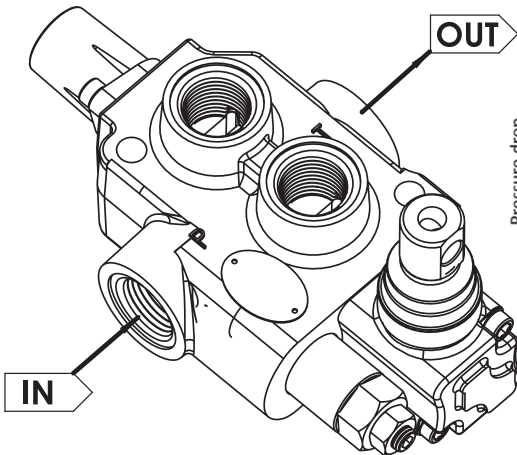


Code: GMM M40-1P / SMR2-120 / (RH)1A-SR-STL

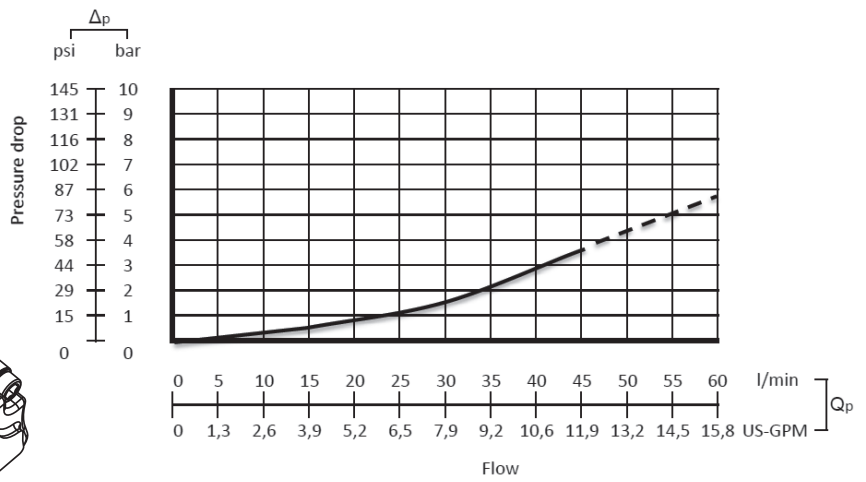
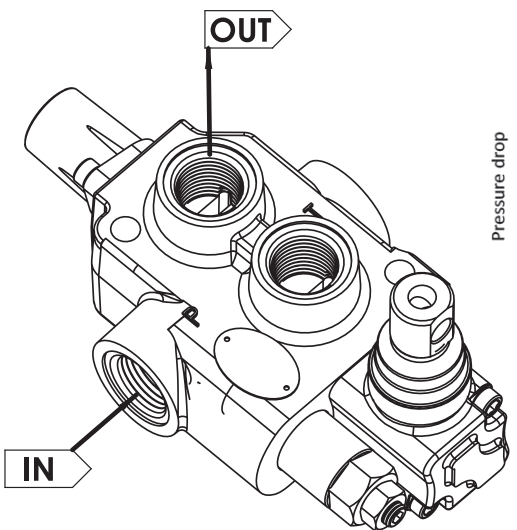


PERFORMANCE DATA AND CURVE

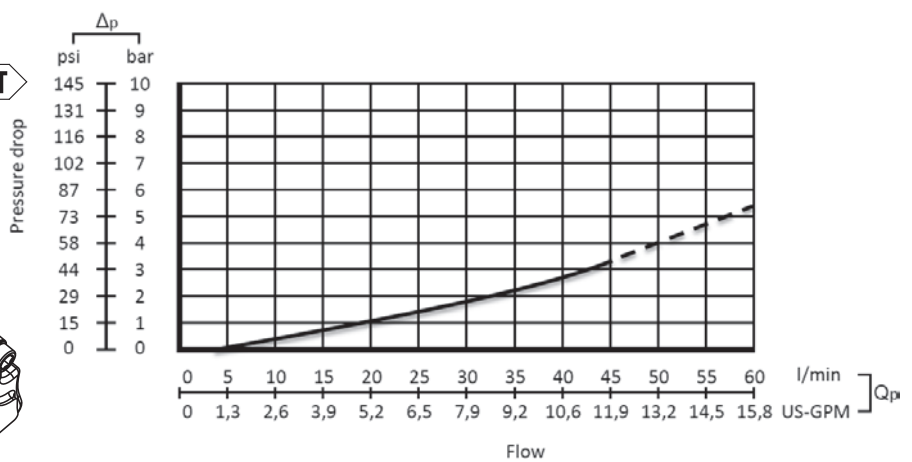
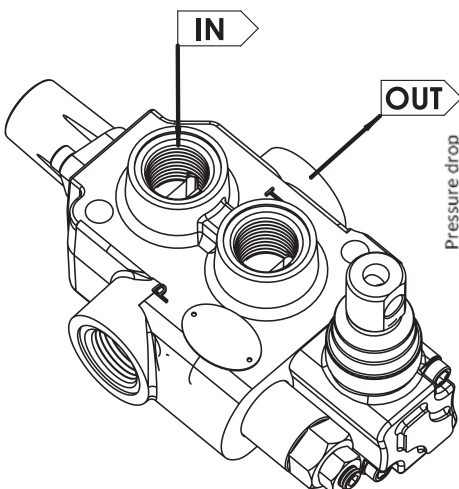
Open Center - Pressure Drop (P-T)



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.

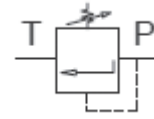
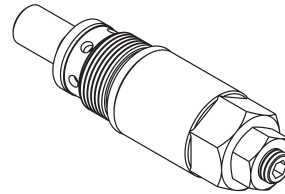
INLET RELIEF OPTIONS

Direct Pressure Relief Valve

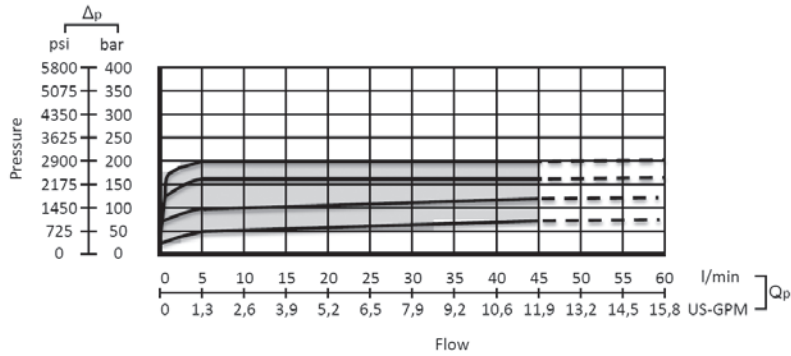
Code:

SMR2 – 120

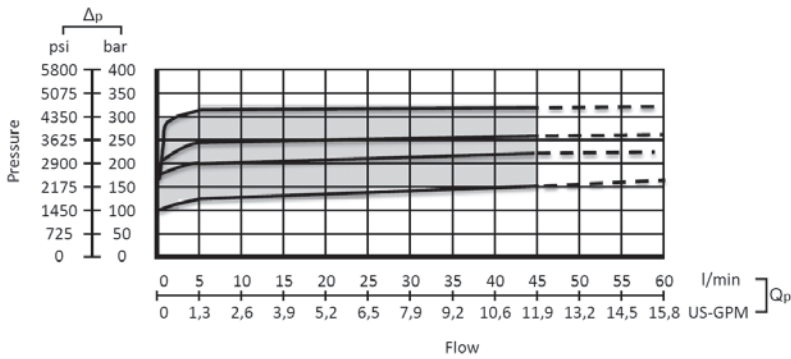
- Pressure Setting Bar in (Standard 120 bar)
- Standard Main Relief Spring Type -2



Performance Data

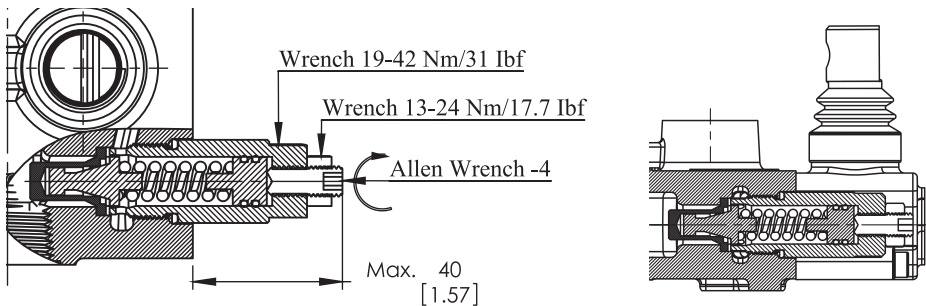


Spring Type Number: 2
Setting= 120 Bar - Range=60-200 Bar



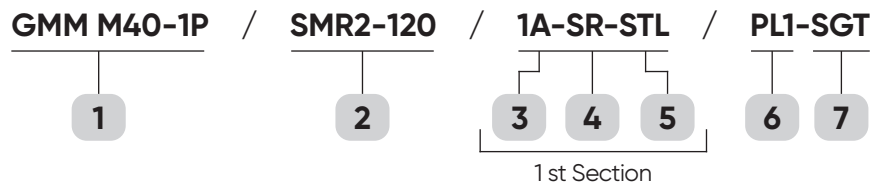
Spring Type Number: 3
Setting= 220 Bar -Range=160-250 Bar

Adjustment Type on Valve



Relief Blanking Plug - WM



ORDERING CODES
Order Sample

1- Valve Type and Body

M40 = Valve Type - (M) - Monoblok
 (40) - Max. Flow Rate
1P = Body Section - (1BM140100)

2- Pressure Relief Options

SMR = Standard direct pressure relief valve
SMR1-080 - (2SMR140080) - Range 0-80 bar
 Setting 80 bar
SMR2-120 - (2SMR240120) - Range 60-200 bar
 Setting 120 bar
SMR3-220 - (2SMR340220) - Range 160-250 bar
 Setting 220 bar
SP = Standard relief plug - (2SP040100)

3- Spool Options

1A - (3SM140110) - 3 Positions, Double acting
 2A - (3SM140120) - 3 Positions, Double acting
 A to tank B Blocked
 3A - (3SM140130) - 3 Positions, Double acting
 B to tank A blocked
 4A - (3SM140140) - 3 Positions, Double acting
 A and B tank
 5A - (3SM140150) - 3 Positions, Single acting on
 A (A to tank)
 6A - (3SM140160) - 3 Positions, Single acting on
 B (B to tank)

4- Spool Positioners

SR = Spring Return in neutral position - (4SR040100)
D = Detent in position 1, neutral and 2 - (4D040100)

5- Lever Options

STL = Standard Lever - (5STL040100)

6- Port and Output Options "If Required"

PL1(5A) = Plug for single action spool 5A -
 G1/2" - (6PL1040112)
PL1(6A) = Plug for single action spool 6A -
 G1/2" - (6PL2040112)
 *Page 11 for detail spool options.

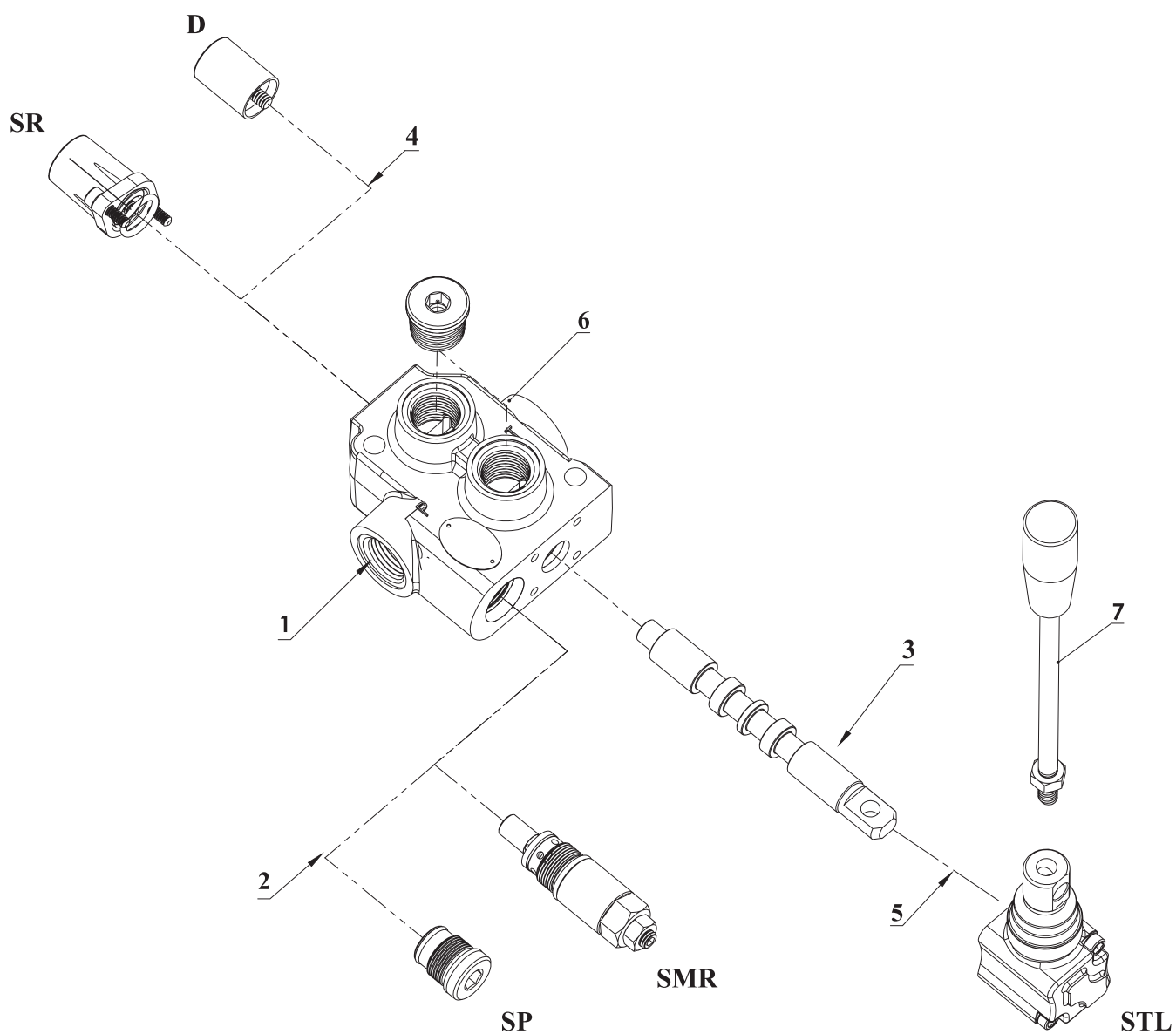
7- Ports Thread Options

SGT1 = 1/2" Series Port Options - (7P040112)
SGT2 = 3/8" Series Port Options - (7P040138)
UNF = UNF Series Port Options - (7U040100)
M = Metric Series Port Options - (7M040100)
 *Page 4 for detail port information.

HandLever

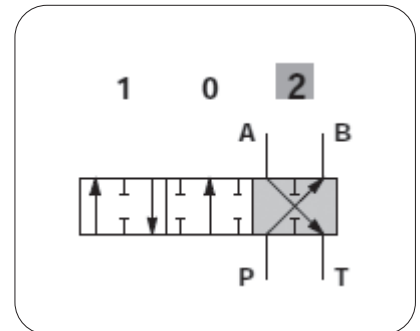
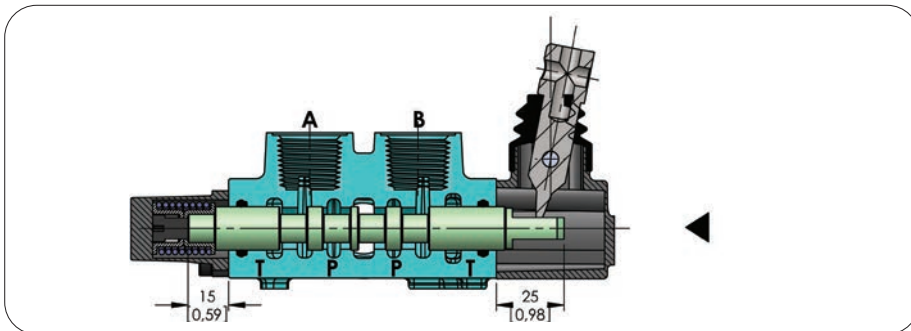
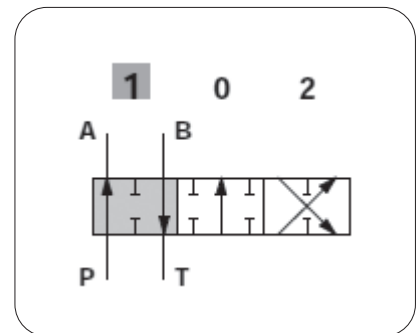
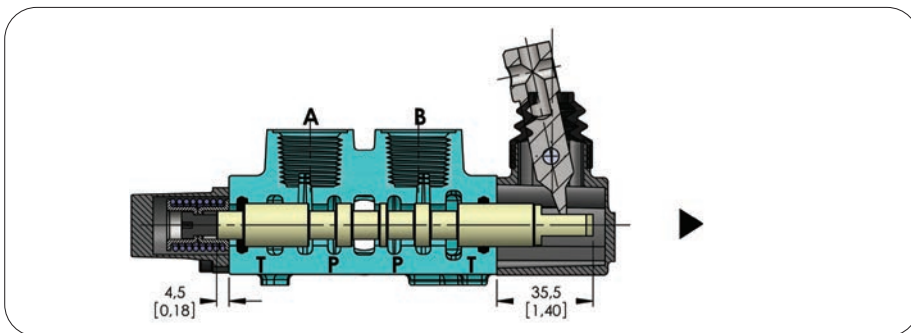
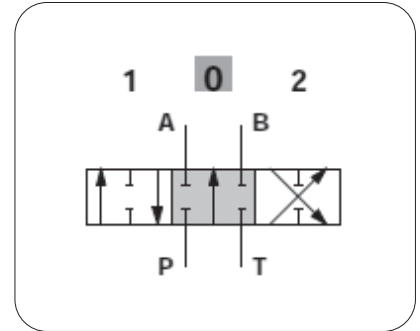
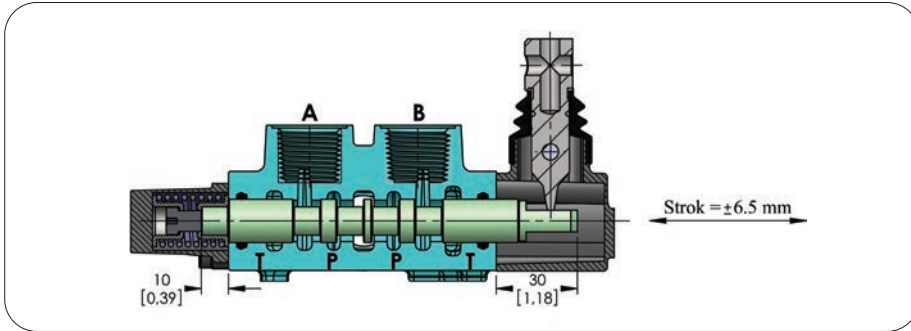
L = Standard HandLever (L=120mmxM8) - (7L040100)

ORDERING CODES

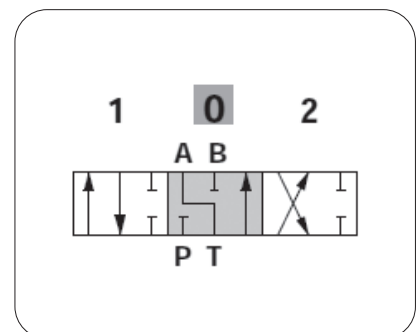
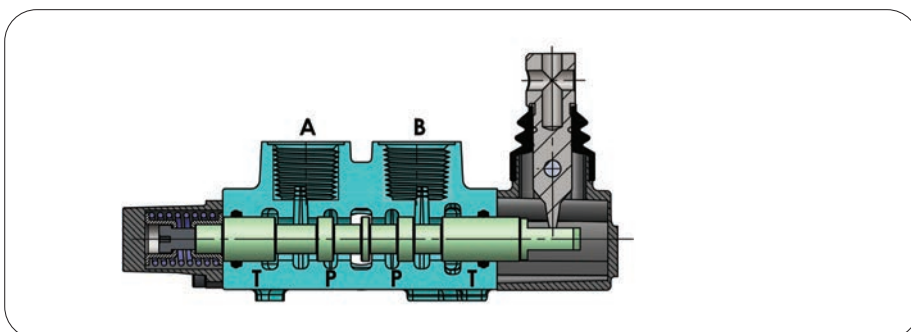


SPOOL OPTIONS

Spool Type - 1A

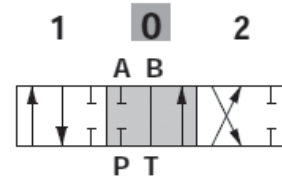
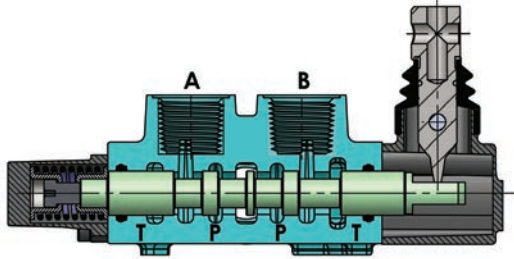


Spool Type - 2A

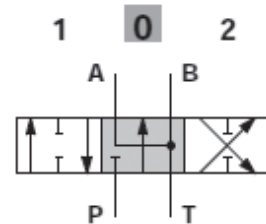
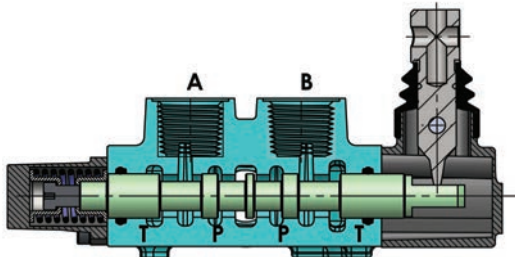


SPOOL OPTIONS

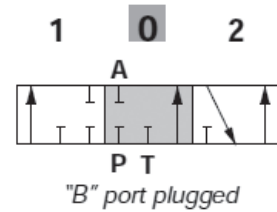
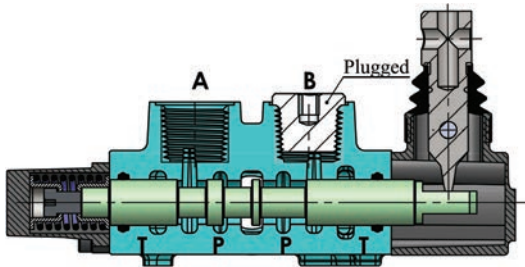
Spool Type - 3A



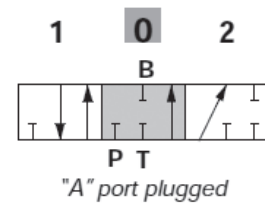
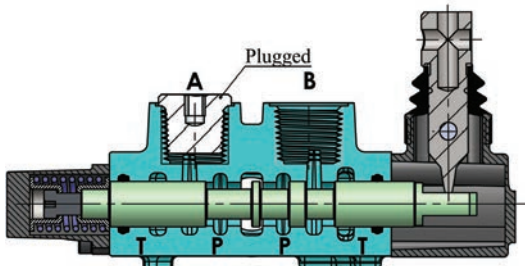
Spool Type - 4A



Spool Type - 5A



Spool Type - 6A



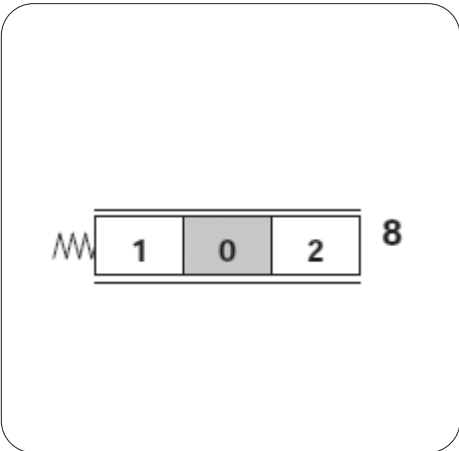
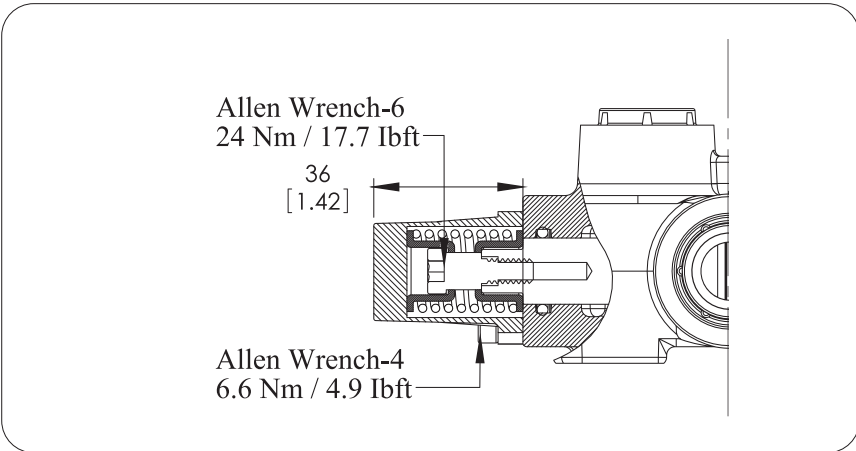
SPOOL OPTIONS

Spool Positioners – Side of Return

Kit No: **SR**

Sectional Appearance

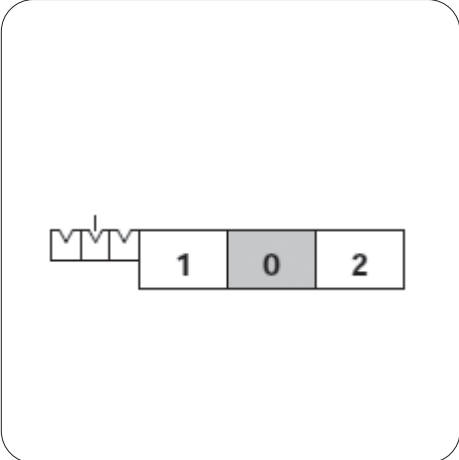
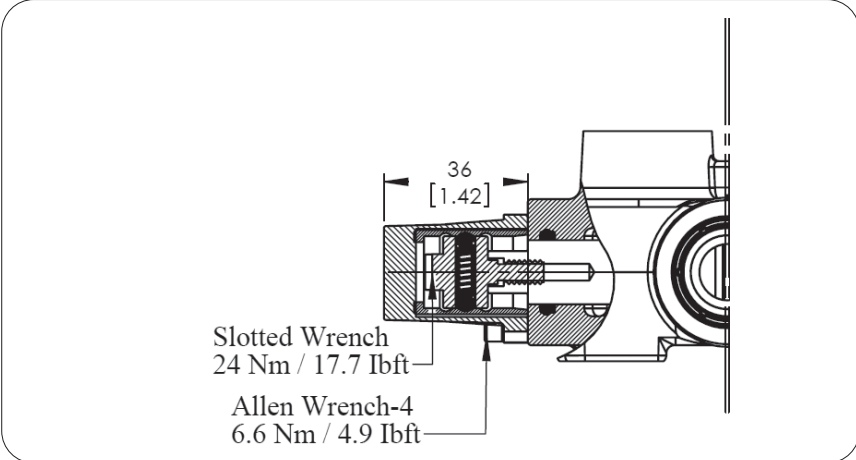
Diagram



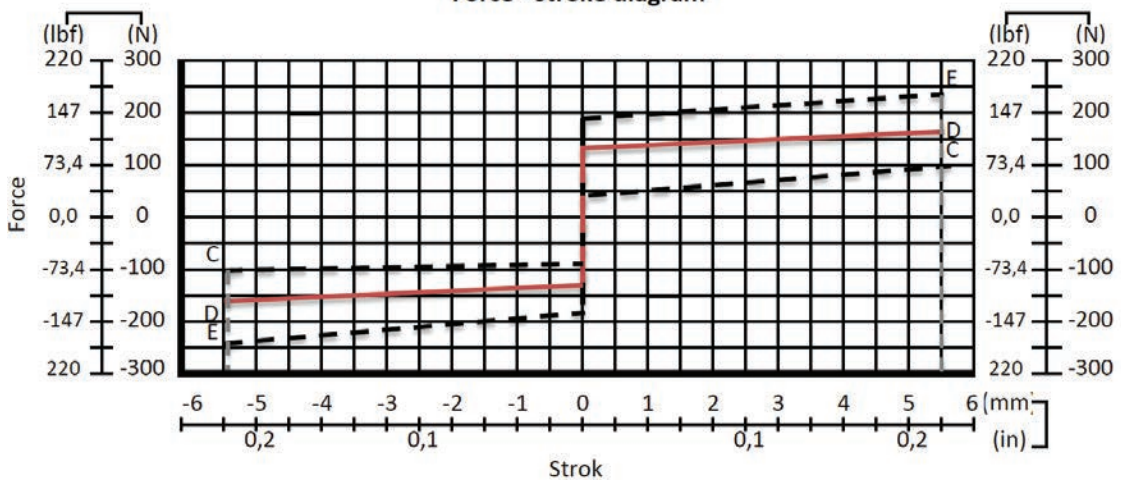
Kit No: **D**

Sectional Appearance

Diagram



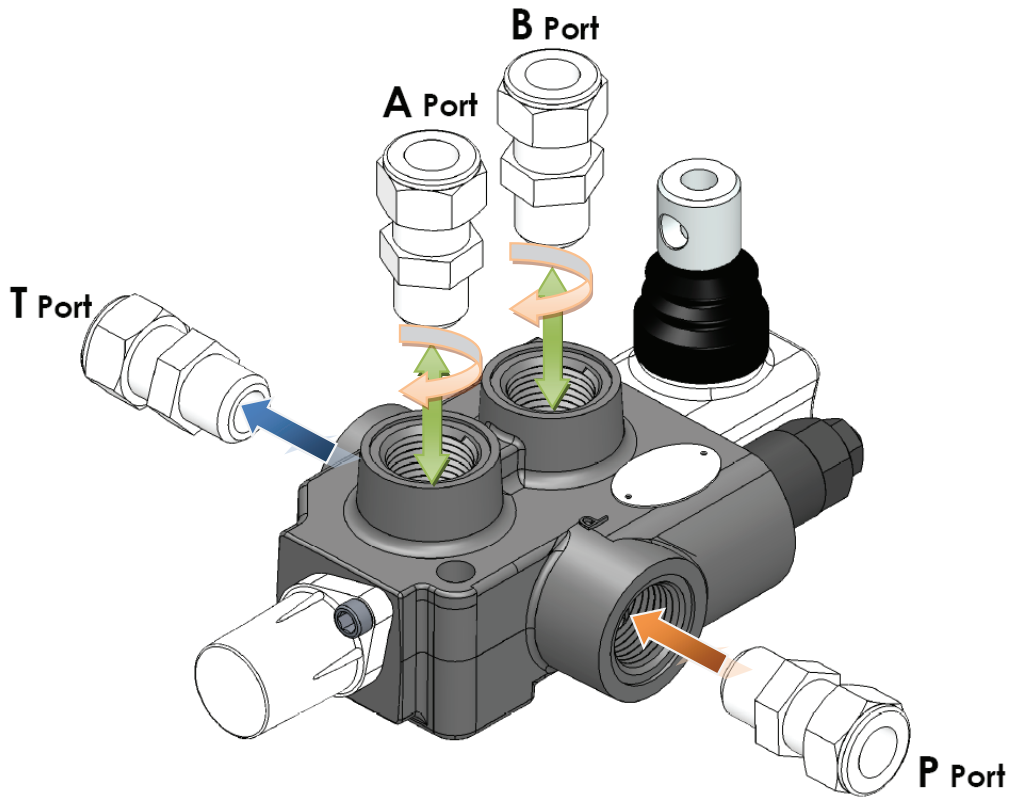
Force - stroke diagram



INSTALLATION AND MAINTENANCE

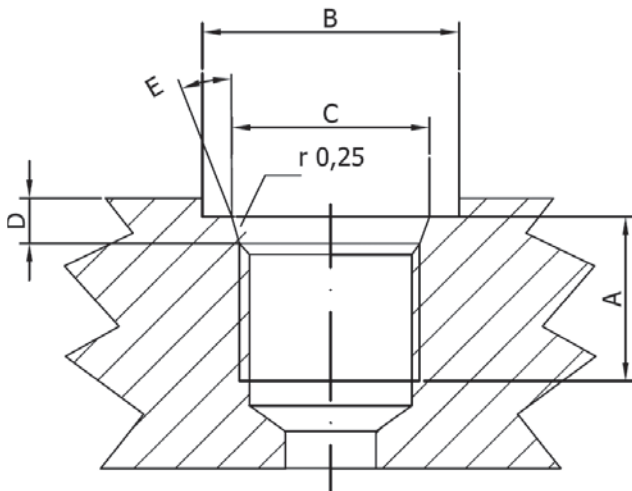
The GMM-M40 valve is assembled and tested as per the technical specification of this catalog. Before the final installation on your equipment, follow the below recommendation:

- 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.

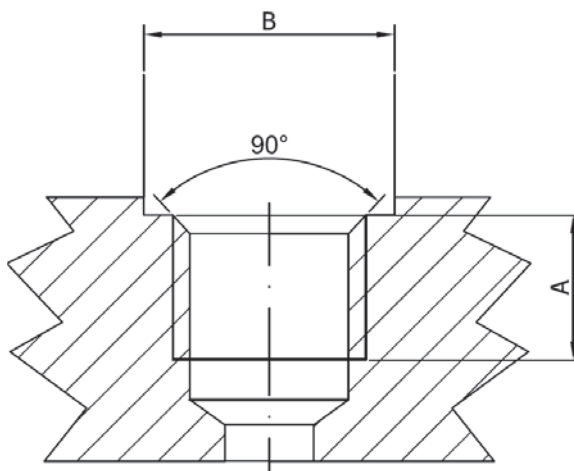


Ports Fitting Tightening Torque - Nm / lbft

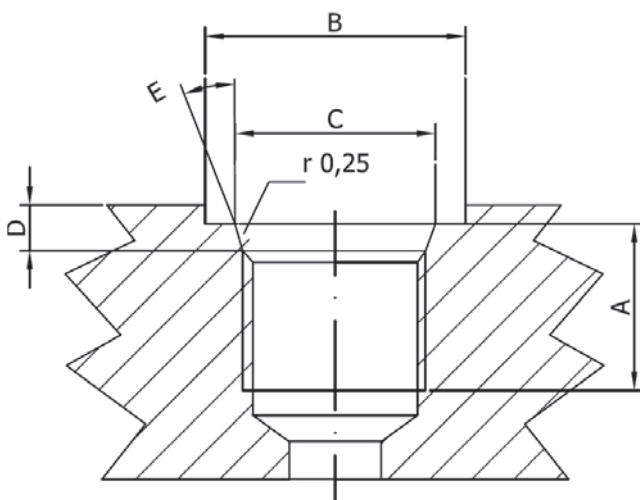
Threads Type (Nm / lbft)	P Port	A and B Port	T Port
BSP (ISO 228/1)	G 3/8	G 3/8	G 3/8
With O--Ring seal	35 / 25.8	35 / 25.8	35 / 25.8
With copper washer	40 / 29.5	40 / 29.5	40 / 29.5
With steel and rubber washer	30 / 22.1	30 / 22.1	30 / 22.1
BSP (ISO 228/1)	G 1/2	G 1/2	G 1/2
With O--Ring seal	50 / 36.9	50 / 36.9	50 / 36.9
With copper washer	60 / 44.3	60 / 44.3	60 / 44.3
With steel and rubber washer	60 / 44.3	60 / 44.3	60 / 44.3
UN--UNF (ISO 11926--1)	3/4--16 UNF--2B	9/16--18 UNF--2B	3/4--16 UNF--2B
With O--Ring seal	50 / 36.9	30 / 22.1	50 / 36.9
METRIC (ISO 262)	M18 x 1.5	M18 x 1.5	M18 x 1.5
With O--Ring seal	35 / 25.8	35 / 25.8	35 / 25.8
With copper washer	40 / 29.5	40 / 29.5	40 / 29.5
With steel and rubber washer	40 / 29.5	40 / 29.5	40 / 29.5

TECHNICAL DATA
Ports Dimensional Data


SAE UN-UNF (ISO 725)							
Dimensions		9/16-18 UNF SAE6		3/4-16 UNF SAE8		7/8-14 UNF SAE10	
mm	in						
A		13	0,51	15	0,59	17	0,67
B		25	0,83	30	1,18	34	1,34
C		13,6	0,61	20,6	0,81	23,9	0,94
D		2,5	0,10	2,5	0,10	2,5	0,10
E		15°		15°		15°	



BSP (ISO 228)							
Dimensions		G1/4		G3/8		G1/2	
mm	in						
A		14	0,55	14	0,55	16	0,63
B		19	0,75	23	0,91	27	1,06



METRIC (ISO 262)					
Dimensions		M18x1,5 ISO 262		M22x1,5 ISO 262	
mm	in				
A		14	0,55	16	0,63
B		27,5	1,08	31,5	1,24