



Monoblock Directional Control Valve

Catalog 2021

Compact Monoblock Directional Control Valve MB20 Series

Features and Handling

- MB20 series is a monoblock directional control valve entirely developed to perform equivalent basic function as MCD20. MB20 is very compact in size yet comes with all standard feature such as adjustable main relief valve, check valve, carry over circuit, and 2 mounting holes.
- MB20 made of high strength cast iron. The spools are made of hardened and tempered steel with varieties of spool types and controls.



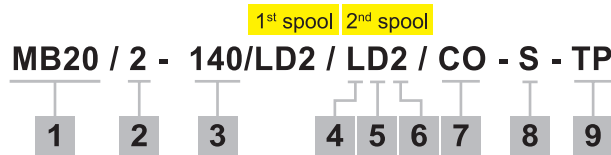
Specification

Model	Nominal Flow L/min (USgpm)	Maximum Pressure bar (psi)
MB20	45 (12)	350 (5100)

Compact Monoblock Directional Control Valve

MB20 Series

Ordering Code



1. Model : MB20

2. Number of Spool
1 - 2

3. Relief Valve Setting
210 bar
140 bar

4. Spool Control B Port side
L - Standard Lever

5. Spool Control A Port side
S - Spring return to center
D - Detent in three positions
I - Detent in two positions
O - Detent out two positions

6. Spool Type
(Type.1) 1 - Double acting, 3 position with A and B closed in center (Cylinder spool)
(Type.2) 2 - Double acting, 3 position with A and B to tank in center (Motoring spool)
(Type.3) 3 - Single acting on A, 3 position B plugged
(Type.4) 4 - Single acting on B, 3 position A plugged

7. Circuit Option (Outlet cover)
OC - With open center plug
CO - With carry over plug
CC - With closed center plug

8. Port Connection

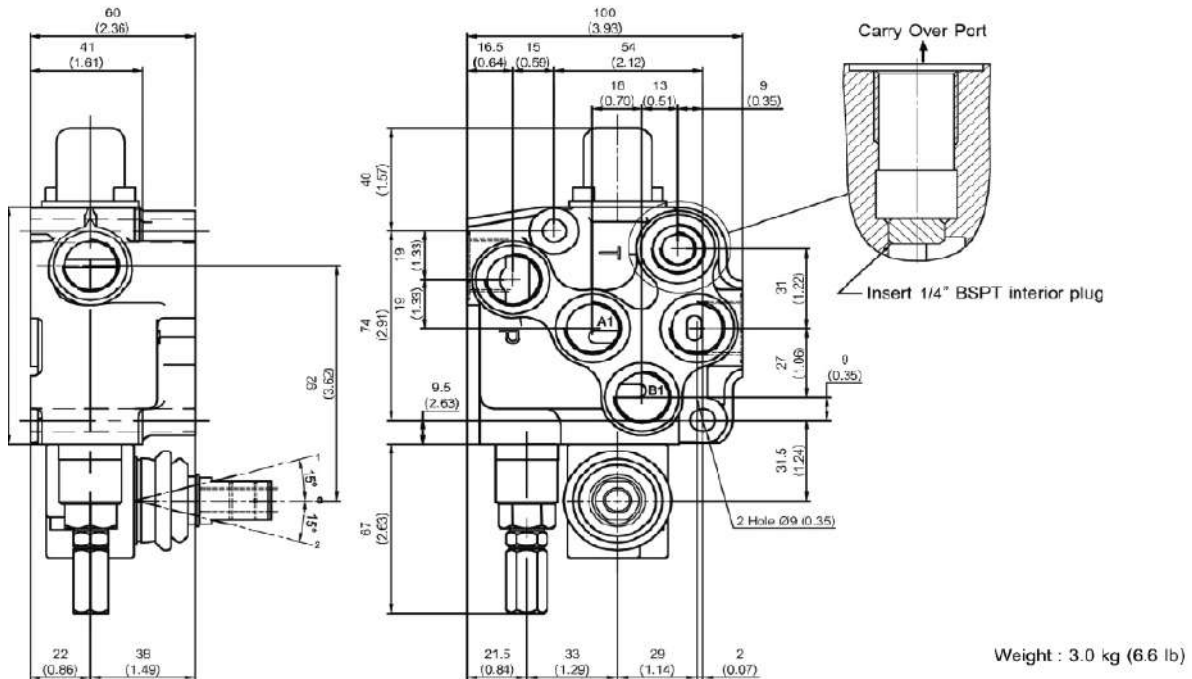
Code	Thread	Port A-B	Port P	Port T	Port CO
B3	BSP	3/8"	3/8"	3/8"	3/8"
S	SAE	SAE 8	SAE 8	SAE 8	SAE 8

9. Optional Port Connection
SP - Use port P and T at side
plugged P and T on top (standard)
TP - Use port P and T on top
plugged P and T at side

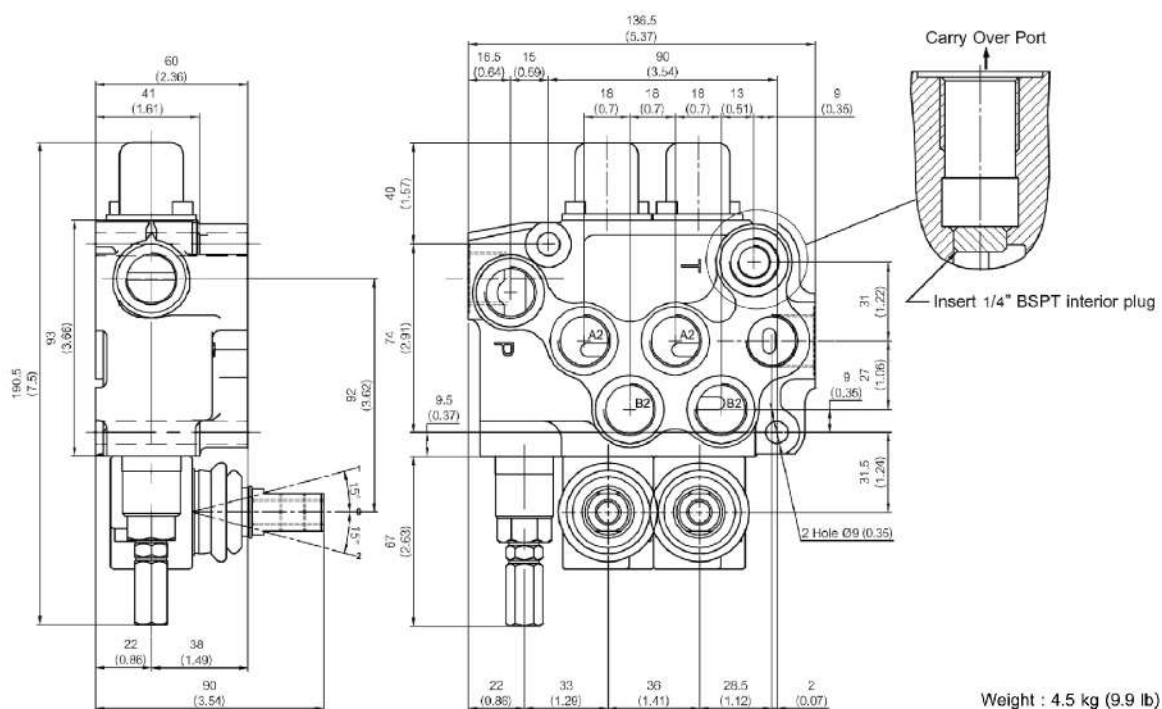
Compact Monoblock Directional Control Valve MB20 Series

Installation Dimension mm (inch)

MB-20/1



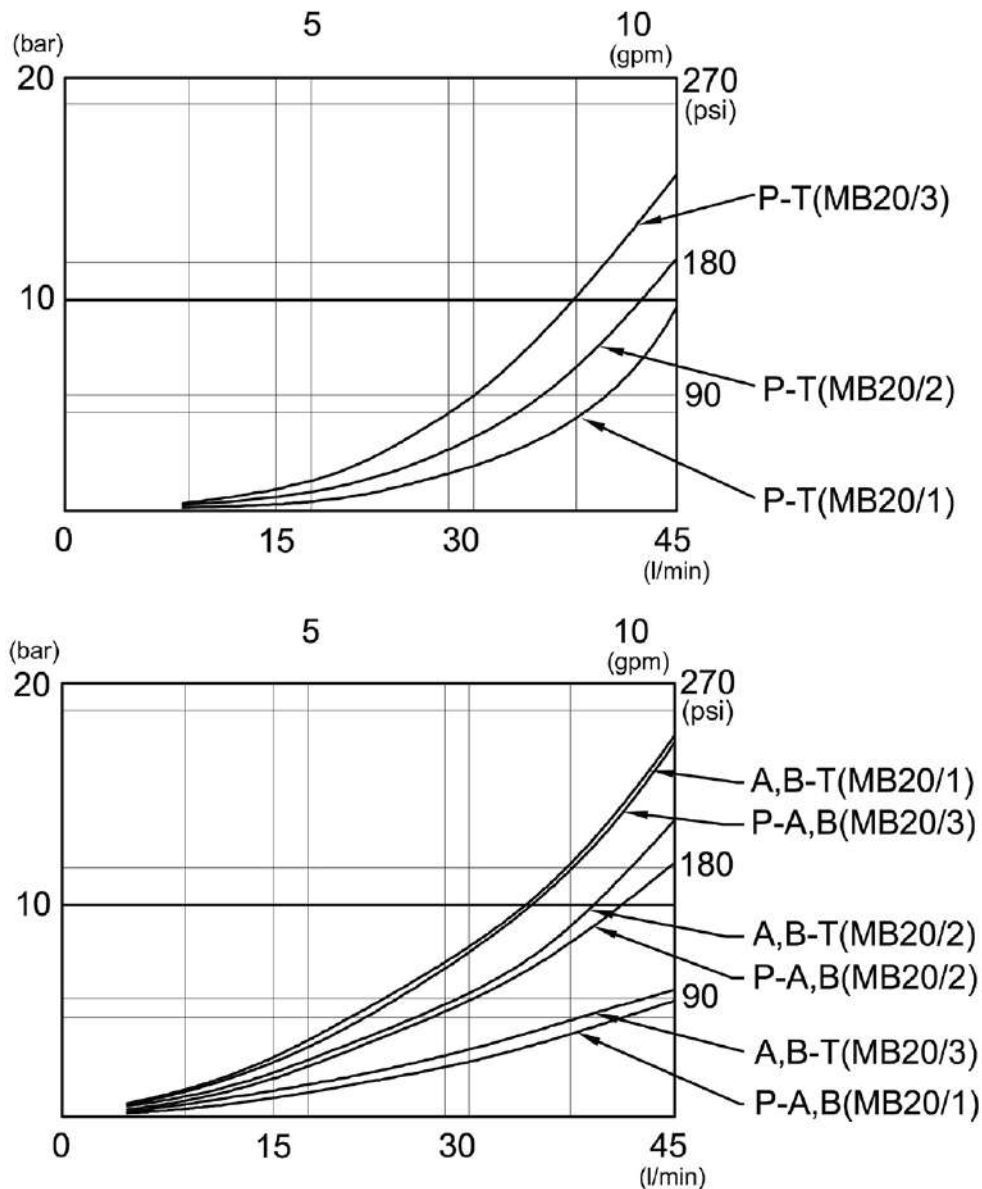
MB-20/2



Compact Monoblock Directional Control Valve MB20 Series

Performance Characteristics

Pressure Drop



Monoblock Directional Control Valve

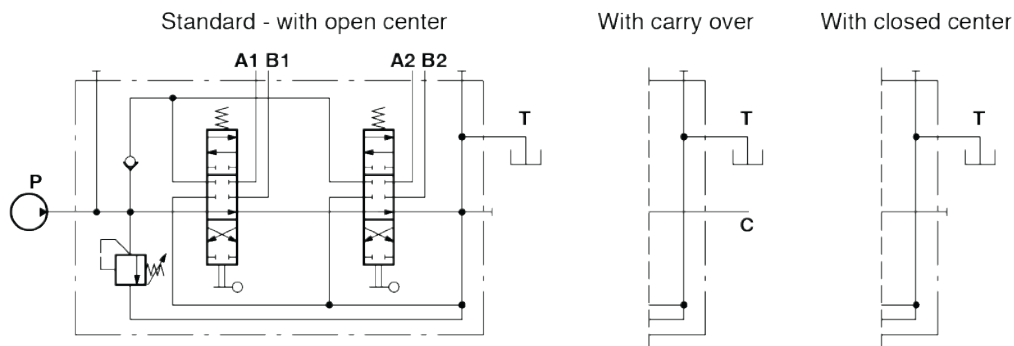
MCD20 Series

Features and Handling

- MCD20 series are monoblock directional control valve with parallel circuits. The standard valve comes with an adjustable main relief valve, check valve, and 4 mounting holes for standard and optional mounting. The carry over circuit, spool controls, and other options are available.
- The compact casting is made of high strength cast iron. The spools are made of hardened and tempered steel.



Specification



Model	Nominal Flow L/min (USgpm)	Maximum Pressure bar (psi)
MCD 20	45 (12)	350 (5100)

Monoblock Directional Control Valve

MCD20 Series

Ordering Code



1. Model : MCD20

2. Number of Spool
1 - 4

3. Relief Valve Setting
210 bar
140 bar

4. Spool Control B Port side
L - Standard Lever

5. Spool Control A Port side
S - Spring return to center
D - Detent in three positions
I - Detent in two positions
O - Detent out two positions
M - Microswitch connector operated in port 1 and 2

6. Spool Type
(Type.1) 1 - Double acting, 3 position with A and B closed in center (Cylinder spool)
(Type.2) 2 - Double acting, 3 position with A and B to tank in center (Motoring spool)
(Type.3) 3 - Single acting on A, 3 position B plugged
(Type.4) 4 - Single acting on B, 3 position A plugged

7. Service valve
N - Without valve
P - Without valve, but with pre-arranged holes
C - With pilot operated check valves on port A and B

*With service valve, the main valve body will come without Port P and T on top and Port A and B can be BSPT 3/8" only, but Port A and B on check valve can be any threads as specified in Ordering Code

8. Circuit Option

OC - With open center plug
CO - With carry over plug
CC - With closed center plug

9. Port Connection

Code	Thread	Port A-B	Port P	Port T	Port CO
B3	BSP	3/8"	3/8"	3/8"	3/8"
B4	BSP	1/2"	1/2"	1/2"	1/2"
S	SAE	SAE 8	SAE 10	SAE 10	SAE 10

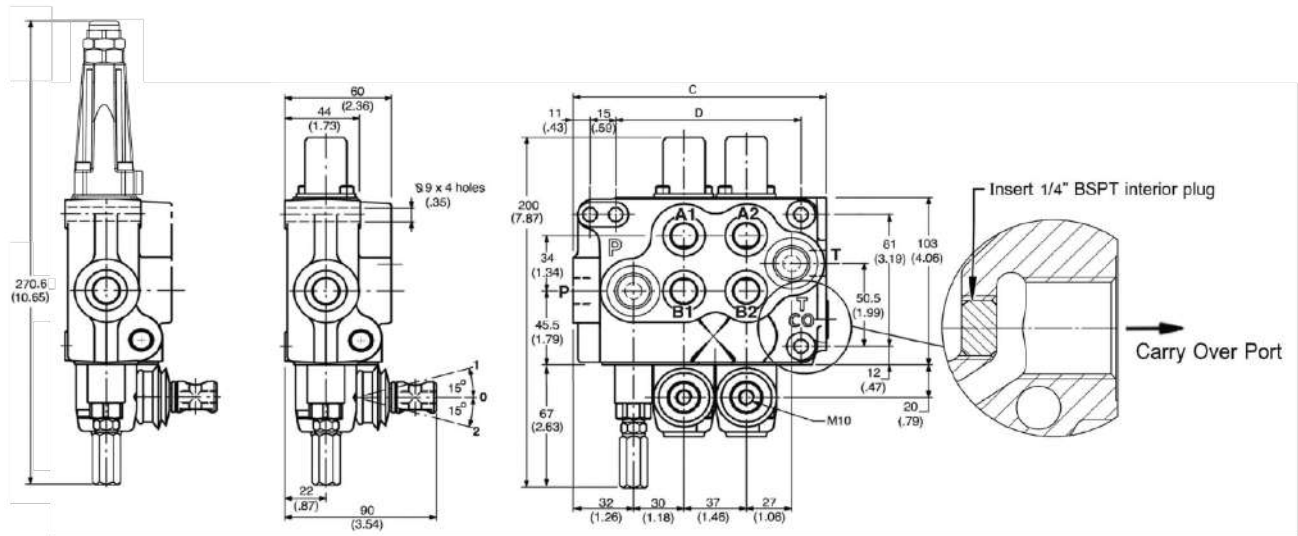
10. Optional Port Connection

SP - Use port P and T at side plugged P and T on top (standard)
TP - Use port P and T on top plugged P and T at side

Monoblock Directional Control Valve

MCD20 Series

Option Microswitch



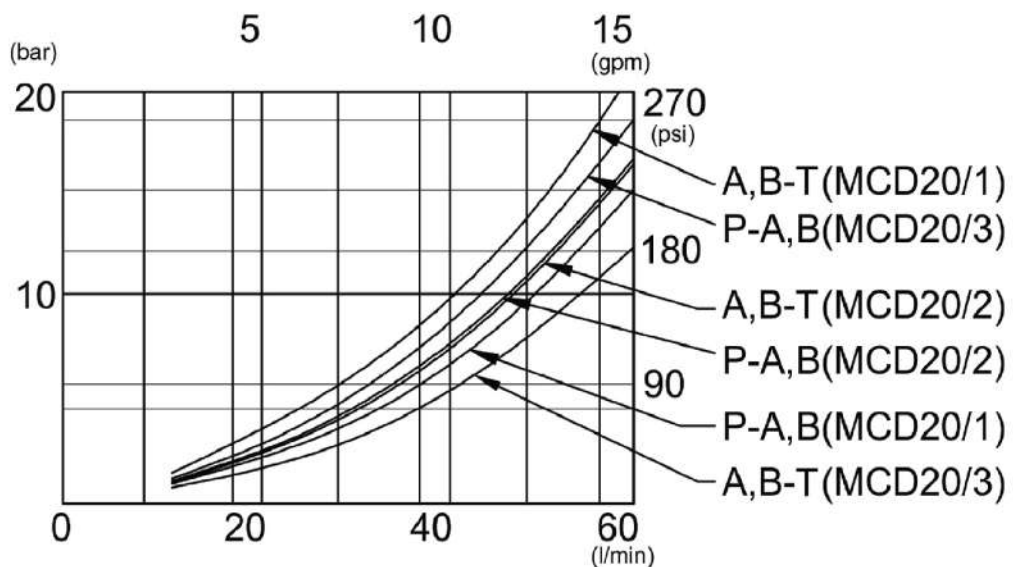
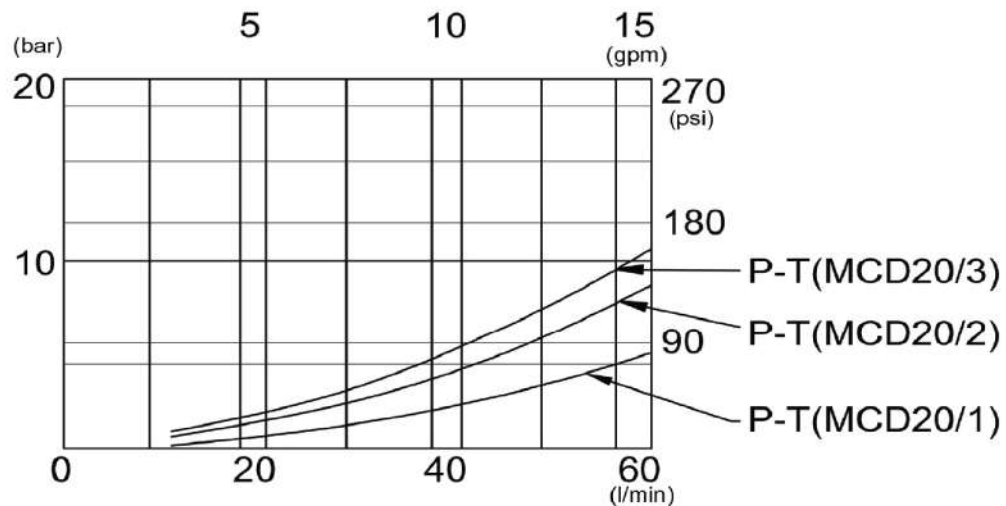
Model	Dimension mm (inch)		Weight kg (lb)
	C	D	
MCD 20/1	112 (4.41)	73 (2.87)	3.6 (7.9)
MCD 20/2	151 (5.95)	110 (4.33)	5.2 (11.4)
MCD 20/3	188 (7.40)	147 (5.78)	6.9 (15.18)
MCD 20/4	225 (8.86)	184 (7.25)	8.6 (18.9)

Monoblock Directional Control Valve

MCD20 Series

Performance Characteristics

Pressure Drop



Test condition Hydraulic oil ISO VG 32 temperature 50°C Viscosity 23.6 cSt

Monoblock Directional Control Valve

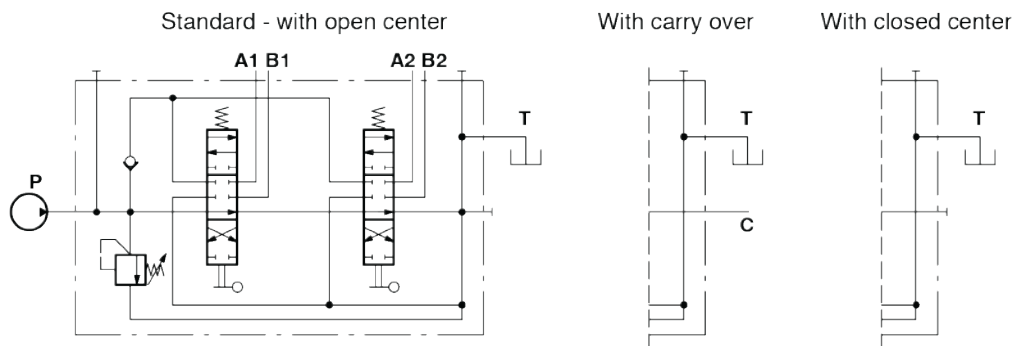
MCD50 Series

Features and Handling

- MCD50 series are monoblock directional control valve with parallel circuits. The standard valve comes with an adjustable main relief valve, check valve, and 4 mounting holes for standard and optional mounting. The carry over circuit, spool types, spool controls, and other options are available.
- The compact casting is made of high strength cast iron. The spools are made of hardened and tempered steel.



Specification

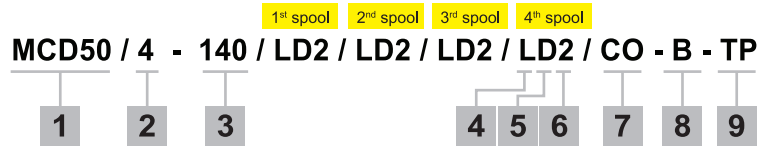


Model	Nominal Flow L/min (USgpm)	Maximum Pressure bar (psi)
MCD 50	70 (18)	350 (5100)

Monoblock Directional Control Valve

MCD50 Series

Ordering Code



1. Model : MCD50

2. Number of Spool
1 - 4

3. Relief Valve Setting
210 bar
140 bar

4. Spool Control B Port side
L - Standard Lever

5. Spool Control A Port side
S - Spring return to center
D - Detent in three positions
I - Detent in two positions
O - Detent out two positions
K - Kick out with detent automatic in neutral position

6. Spool Type
(Type.1) 1 - Double acting, 3 position with A and B closed in center (Cylinder spool)
(Type.2) 2 - Double acting, 3 position with A and B to tank in center (Motoring spool)
(Type.3) 3 - Single acting on A, 3 position B plugged
(Type.4) 4 - Single acting on B, 3 position A plugged

7. Circuit Option
OC - With open center plug
CO - With carry over plug
CC - With closed center plug

8. Port Connection

Code	Thread	Port A-B	Port P	Port T	Port CO
B4	BSP	1/2"	1/2"	3/4"	1/2"
B6	BSP	3/4"	3/4"	3/4"	3/4"
S	SAE	SAE 10	SAE 12	SAE 12	SAE 12

9. Optional Port Connection

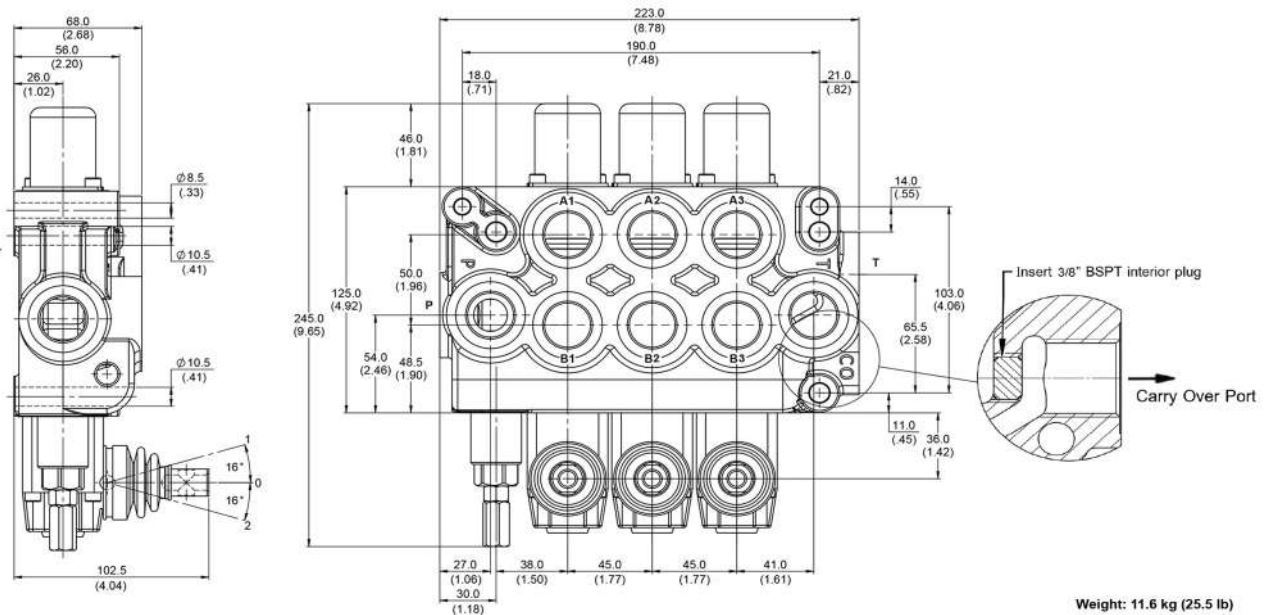
SP - Use port P and T at side
plugged P and T on top (standard)
TP - Use port P and T on top
plugged P and T at side

Monoblock Directional Control Valve

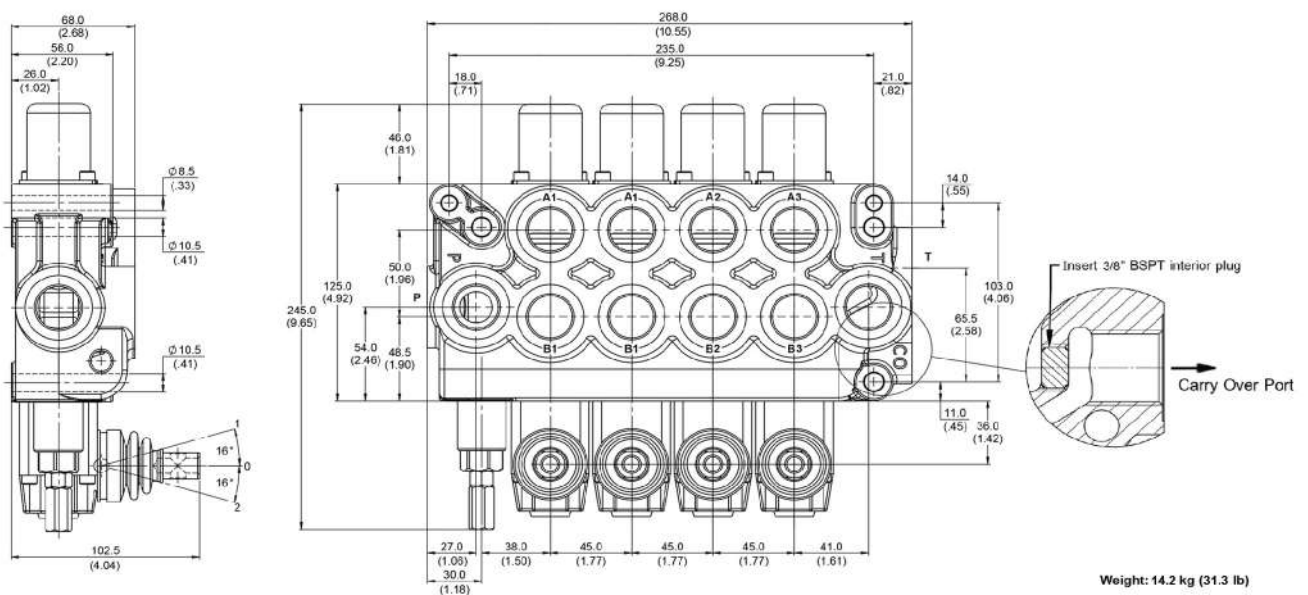
MCD50 Series

Installation Dimension mm (inch)

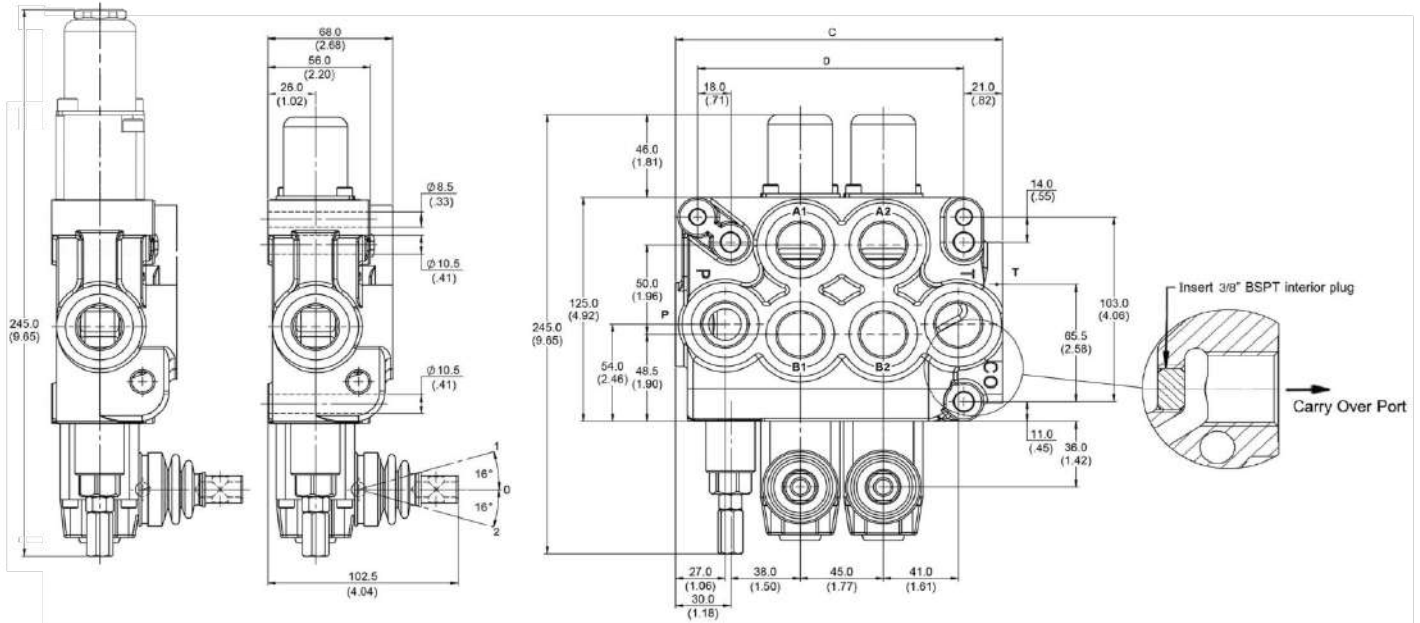
MCD-50/3



MCD-50/4



Option Kick Out



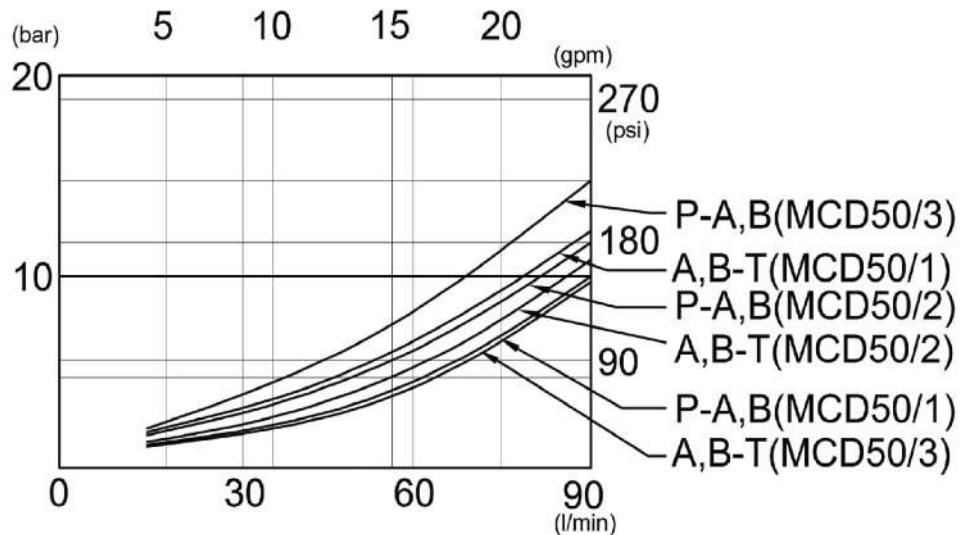
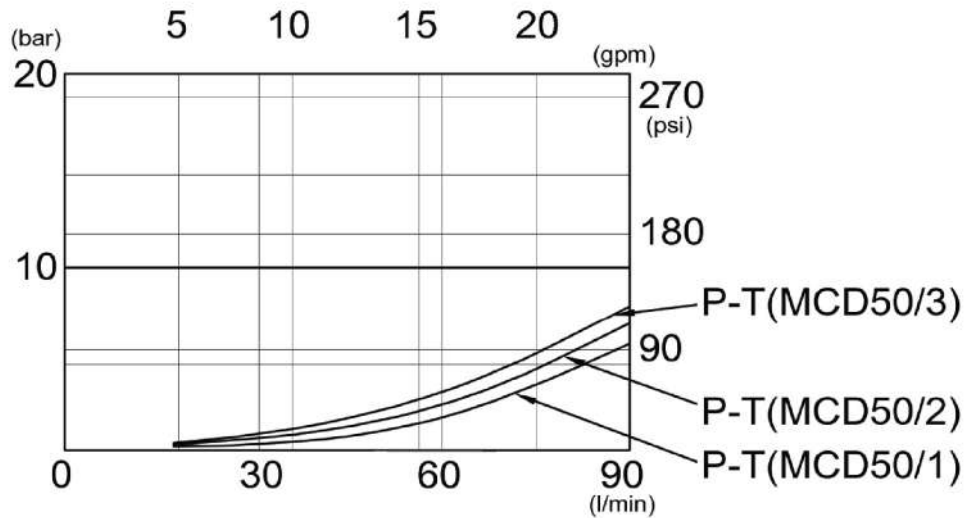
Model	Dimension mm (inch)		Weight
	C	D	kg (lb)
MCD 50/1	133 (5.23)	100 (3.94)	6.4 (14.8)
MCD 50/2	178 (7.00)	145 (5.71)	9.0 (19.8)
MCD 50/3	223 (8.78)	190 (7.48)	11.6 (25.5)
MCD 50/4	268 (10.55)	235 (9.25)	14.2 (31.3)

Monoblock Directional Control Valve

MCD50 Series

Performance Characteristics

Pressure Drop

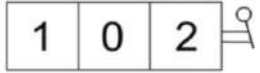


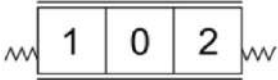



Test condition Hydraulic oil ISO VG 32 temperature 50°C Viscosity 23.6 cSt

Monoblock and Sectional Directional Control Valve

Spool type and Spool control System

Spools for Monoblock and Sectional Valves			
Type	Spools Description	Monoblock	Sectional
1	Double acting, 3 position with A and B closed in center (Cylinder spool)		
2	Double acting, 3 position with A and B to tank in center (Motor spool)		
3	Single acting on A, 3 position B plugged		
4	Single acting on B, 3 position A plugged		

Spools Control B Port side		
Code	Description	Scheme
1	Standard Lever	

Spools Control B Port side		
Code	Description	Scheme
S	Spring return to center	
D	Detent in three positions	
I	Detent in two positions	
O	Detent out two positions	

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