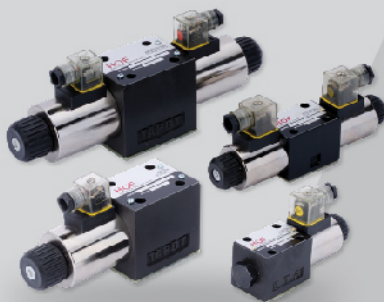


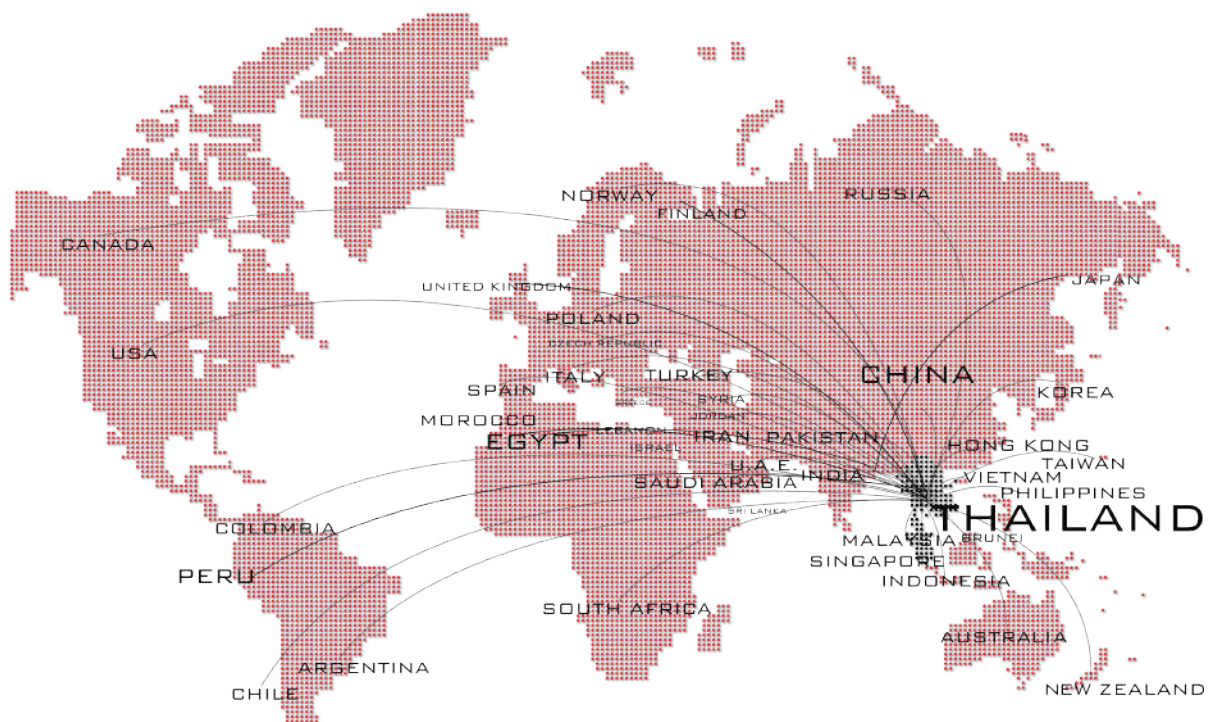


Directional Control Valves, Relief Valves, Flow Control Valve, Pilot Operated Check Valve, Manifold/ Subplate

catalogue 2025



YOUR PARTNER FOR A BETTER TOMORROW



“Find us at your nearest distributor”



BUREAU
VERITAS

Bureau Veritas Certification

FLO-TECH ENGINEERING CO., LTD.

47 SOI SUKSAWAD 14/18 JOMTONG, JOMTONG, BANGKOK 10150 THAILAND

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

DESIGN & DEVELOP, PRODUCTION AND TRADING OF HYDRAULIC PUMP,
HYDRAULIC MOTOR, HYDRAULIC VALVE, PNEUMATIC VALVE,
POWER UNIT AND HYDRAULIC ACCESSORIES

Original cycle start date:	17 March 2009
Expiry date of previous cycle:	NA
Certification / Recertification Audit date:	NA
Certification / Recertification cycle start date:	16 March 2024
Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on:	16 March 2027

Certificate No.: TH022197

Version: 1

Issue date: 16 March 2024



0008

Signed on behalf of BVCH SAS UK Branch

Certification Body Address: 5th Floor, 66 Prescott Street, London, E1 8HG, United Kingdom

Local Office: Bureau Veritas Certification (Thailand) Ltd. 16th Floor, Bangkok Tower, 2170 New Petchburi Road, Bangkapi, Huaykwang, Bangkok 10310, Thailand

Further clarifications regarding the scope and validity of this certificate, and the applicability of the management system requirements, please call: 66 2 670 4800

UKAS Certificate Template Single Site Rev.4.1

28 Aug 2023





BUREAU
VERITAS

Bureau Veritas Certification

บริษัท โฟล-เทคเอ็นจิเนียริง จำกัด

47 ซอยสุขสวัสดิ์ 14/18 แขวงจอมทอง เขตจอมทอง, กรุงเทพมหานคร 10150 ประเทศไทย

บูโร เวอร์ิตัส เซอทิฟิเคชัน (ประเทศไทย) รับรองว่าระบบบริหารงานขององค์กรนี้ได้รับการตรวจประเมิน
และพบว่าสอดคล้องกับข้อกำหนดของมาตรฐานระบบบริหารตามรายละเอียดต่อไปนี้

ISO 9001:2015

ขอบข่ายการรับรอง

การออกแบบพัฒนา, การผลิต, จัดหาและจัดจำหน่าย บั้มไฮดรอลิก, มอเตอร์ไฮดรอลิก,
วาล์วไฮดรอลิก, วาล์วนิวเมติกส์, ชุดต้นกำลังไฮดรอลิกและอุปกรณ์เสริมในระบบไฮดรอลิก

ได้รับการอนุมัติครั้งแรกเมื่อ	17 มีนาคม 2552
วันที่ใบรับรองหมดอายุของรอบการรับรองที่ผ่านมา	NA
วันที่ตรวจเพื่อให้การรับรอง	NA
รอบการให้การรับรองมีผลจากวันที่ / รอบการให้การรับรองเพื่อต่ออายุมีผลจากวันที่	16 มีนาคม 2567
ภายใต้เงื่อนไขการดำเนินการของระบบบริหารงานที่เป็นที่น่าพอใจอย่างต่อเนื่องของ องค์กรดังกล่าวใบรับรองนี้หมดอายุวันที่	16 มีนาคม 2570

เลขที่ใบรับรอง TH022196

แก้ไขครั้งที่ 1

วันที่มีผลบังคับใช้ 16 มีนาคม 2567

ผู้อนุมัติการรับรอง



สำนักงาน: บริษัท บูโร เวอร์ิตัส เซอทิฟิเคชัน (ประเทศไทย) จำกัด ชั้น 16 อาคารกรุงเทพทาวเวอร์ 2170 ถ.เพชรบุรีตัดใหม่
บางกะปิ ห้วยขวาง กรุงเทพฯ 10310 ประเทศไทย

หากต้องการตรวจสอบถึงผลบังคับใช้ของใบรับรองนี้โปรดติดต่อ (+662 670 4800)

คำอธิบายเพิ่มเติมเกี่ยวกับขอบข่ายของใบรับรองนี้และการประยุกต์ใช้ข้อกำหนดของ ระบบบริหารงาน
สามารถติดต่อขอรับได้จากองค์กรดังกล่าวตามที่ระบุไว้ด้านบน



HOF Hydraulic Solutions Warranty Policy

Warranty

Flowlution Co.,Ltd, sole distributor of "HOF Hydraulic Solutions", Warrants all of its products to be free from defects in material and workmanship under normal operating conditions and proper application in accordance with the specifications for operation as described by the manufacturer for the period of twelve (12) months in service.

Limitations on Warranty

This Warranty is expressly in lieu of any other warranties expressed or implied. Buyer's sole and exclusive remedy under this Warranty shall be limited to the repair, replacement or exchange of warranted products at our option, F.O.B. our factory, or designated service center.

No special, incidental, consequential or other damage shall be recoverable. Flowlution Co.,Ltd shall not be liable for consequential damages or contingent liabilities including, but not limited to, loss of life, personal injury, loss of crops, loss due to fire or water damage, loss of business or business income, down time costs and trade or other commercial loss arising out of the failure of the product. Flowlution Co.,Ltd will in no event be liable for any sum in excess of the price received by it for the product for which liability is claimed or asserted.

No product shall be returned without prior authorization from Flowlution Co.,Ltd. Buyers and their agents shall prepay all transportation charges for the return of such products to Flowlution Co.,Ltd's factory or designated service center. There will be no acceptance of any charges for labor and/or parts incidental to the removal or remounting of product repaired or replaced under this Warranty.

The above Warranty does not cover conditions over which Flowlution Co.,Ltd has no control, including, without limitation, contamination, pressures in excess of recommended maximum, products damaged or subject to accident abuse or misuse after shipment from our factory, products altered or repaired by anyone other than Flowlution Co.,Ltd personnel, authorized Flowlution Co.,Ltd factory personnel or persons so designated in writing by Flowlution Co.,Ltd prior to commencement of said work.

A return goods authorization number must be obtained from Flowlution Co.,Ltd or Flowlution Co.,Ltd's authorized Service center, or Flowlution Co.,Ltd's authorized agent prior to any products being returned for Warranty.

For more details please contact info@flowlution.com or contact@hofhydraulic.com



นอกจากบริษัทจะมีผลิตภัณฑ์ที่มีคุณภาพแล้ว ด้านงานบริการหลังการขายก็เป็นอีกปัจจัยหนึ่งที่บริษัทให้ความสำคัญเป็นอย่างยิ่ง ทุกผลิตภัณฑ์ของบริษัทมีการรับประกันคุณภาพตามระยะเวลา และอายุการใช้งาน

1. เงื่อนไขการรับประกัน

การเริ่มต้นการรับประกัน

บริษัท ไอพี คออินดัส จำกัด จะรับประกันสินค้าใหม่ที่ขายให้ผู้แทนจำหน่าย หรือ ลูกค้าทั่วไปโดยตรงจากบริษัท ไอพี คออินดัส จำกัด โดยเริ่มนับตั้งแต่วันที่ลูกค้า (รายแรก) ซื้อสินค้า

ระยะเวลาประกัน

สินค้าทุกตัวที่จัดจำหน่ายโดย บริษัท ไอพี คออินดัส จำกัด จะมีอายุการรับประกัน เป็นระยะเวลา 1 ปี โดยเริ่มนับจาก เดือน/ปี ที่ลูกค้าซื้อสินค้า **ยกเว้น** ไส้กรอง , Suction filter (HF series) ทางบริษัท จะรับประกัน ในระยะเวลา 6 เดือน หรือ 500 ชั่วโมง โดยเริ่มนับจาก เดือน/ปี ที่ลูกค้าซื้อไปใช้งาน

หมายเหตุ ในกรณีที่ไม่มีหลักฐานการซื้อขาย ระยะเวลาการรับประกันจะเริ่มนับจาก เดือน/ปี ที่ผลิตเป็นหลัก

ขอบเขตการรับประกัน

การรับประกันเป็นไปตามระยะเวลาประกันดังกล่าวและภายใต้เงื่อนไขของการรับประกัน ถ้าหากมีความเสียหายอันเนื่องมาจากความบกพร่องของวัสดุชิ้นส่วนหรือกระบวนการผลิตจากโรงงานผู้ผลิตภายใต้การใช้งาน และการบำรุงรักษาตามปกติ บริษัทฯ ยินดีซ่อมหรือเปลี่ยนวัสดุชิ้นส่วนที่บกพร่องให้โดยไม่คิดมูลค่า

การซ่อม หรือเปลี่ยนชิ้นส่วน

ข้อตกลงในการรับประกันจำกัดเฉพาะการซ่อมหรือเปลี่ยนวัสดุชิ้นส่วน ซึ่งต้องดำเนินการโดย บริษัทไอพี คออินดัส จำกัด หรือผู้แทนจำหน่ายที่ได้รับการแต่งตั้งเท่านั้น

2. ข้อยกเว้นในการรับประกัน

การรับประกันไม่ครอบคลุมถึงกรณีต่อไปนี้

- ความเสียหาย ซึ่งเกิดจากการใช้สินค้าที่ไม่ถูกต้อง และการละเลย ไม่เอาใจใส่บำรุงรักษา
- ความเสียหาย ซึ่งเกิดกับชิ้นส่วนภายนอกที่เสื่อมสภาพได้จากการสัมผัส การเสียดสี การฉีกขาด รวมทั้งการเกิดสนิม
- ความเสียหาย ซึ่งเกิดจากการดัดแปลงสภาพ แก๊ว ต่อเติม การแยกออกจากกัน การซ่อมที่ไม่ถูกต้อง

การรับประกัน (Warranty)

2/2

- ความเสียหาย ซึ่งเกิดจากการใช้เชื้อเพลิง น้ำมันเชื้อเพลิง สารหล่อลื่นต่าง ๆ ที่ผิดประเภท มีคุณภาพต่ำ
- ความเสียหาย ที่เกิดจากภัยธรรมชาติ และอุบัติเหตุ
- ความเสียหาย ที่เกิดจากการซ่อม หรือปรับแต่งโดยบุคคลซึ่งไม่ใช่จากบริษัท ฯ หรือผู้แทนจำหน่าย ที่บริษัท โอฟ/ คออินดัส จำกัด แต่งตั้ง (ต้องมีการแต่งตั้งอย่างจริงจัง มีเอกสาร, มีการอบรมสอนวิธีการใช้อุปกรณ์-เครื่องมือในการเปลี่ยนที่ถูกต้อง)
- ความเสียหายที่เกิดจากการขนส่งสินค้า เช่น การขนส่งสาธารณะ
- ค่าใช้จ่ายต่าง ๆ ค่าน้ำมัน ค่ารถบรรทุก ค่าลากจูง ค่าที่พักรถ ค่าเสียเวลา รวมทั้งค่าเสียหาย เนื่องจากความไม่สะดวกหรือทำให้ธุรกิจเสียหาย
- ปรากฏการณ์ปกติ เช่น เสียงดัง การสั่นสะเทือน ซึ่งไม่มีผลกระทบต่อคุณภาพและสมรรถนะของสินค้า
- สินค้าที่ถูกทำให้มีเตอร์วัดชั่วโมงการใช้งานไม่ตรงกับความเป็นจริง

* บริษัท ฯ สงวนสิทธิ์ในการที่จะเปลี่ยนแปลงข้อกำหนดในเงื่อนไขการรับประกันนี้ได้โดยไม่ต้องแจ้งล่วงหน้า



CONTENTS

Description	Page
I. Pressure and Flow Control Valve	9
1. Pressure Switch P-02 Series	10
2. Remote Control Relief Valve RM Series	12
3. Pilot Operated Relief Valve RB Series	15
4. Pilot Operated Relief Valve HDB Series	22
5. Pilot Operated Pressure Control, Flange type HR5 Series	27
6. Single Station Subplate HM Series	32
7. Pilot Operated Check Modular Valve MCP Series	34
8. Flow Control Valve CF Series	38
9. Check Valve CNT Series	40
10. Manifold Line Mount HMLM Series	46
11. Manifold Line Mount Double counterbalance Valves HMLM - CB - OC - T04 - 35 Series	49
12. Manifold Bar Standard HSUB Series	51
II. Directional Control Valve	53
1. Solenoid Operated Directional Valve HWE Series	54
2. Manual Operated Directional Control Valve L-4HWE Series	62
3. Compact Monoblock Directional Control Valve MB20 Series	67
4. Monoblock Directional Control Valve MCD20 Series	71
5. Monoblock Directional Control Valve MCD50 Series	74
6. Sectional Directional Control Valve MCD10 Series	78
7. Sectional Directional Control Valve MCD24 Series	82
8. Sectional Directional Control Valve MCD25 Series	87

I. Pressure and Flow Control Valve

Pressure Switch

P-02 Series

Features and Handling

- P-02 is a spring loaded piston type pressure switch. The pressure of hydraulic oil acts on the piston in the pressure switch. The piston acts against the infinitely adjustable force of the spring which transfers the movement of the piston to the switch to open or close the electrical contact.
- Knob Set Screw is available for panel mounting.
- For installation, the pressure switch should be mounted in such a way as to prevent them being subject to vibration.



Specification

Model	Valve Size	Pressure Range bar (psi)	Electrical Rating	Usage
P-02 (H)	1/4"	15-400 (217 - 5800)	DC 24V AC 110-250V/3A	Hydraulic Oil

Ordering Code

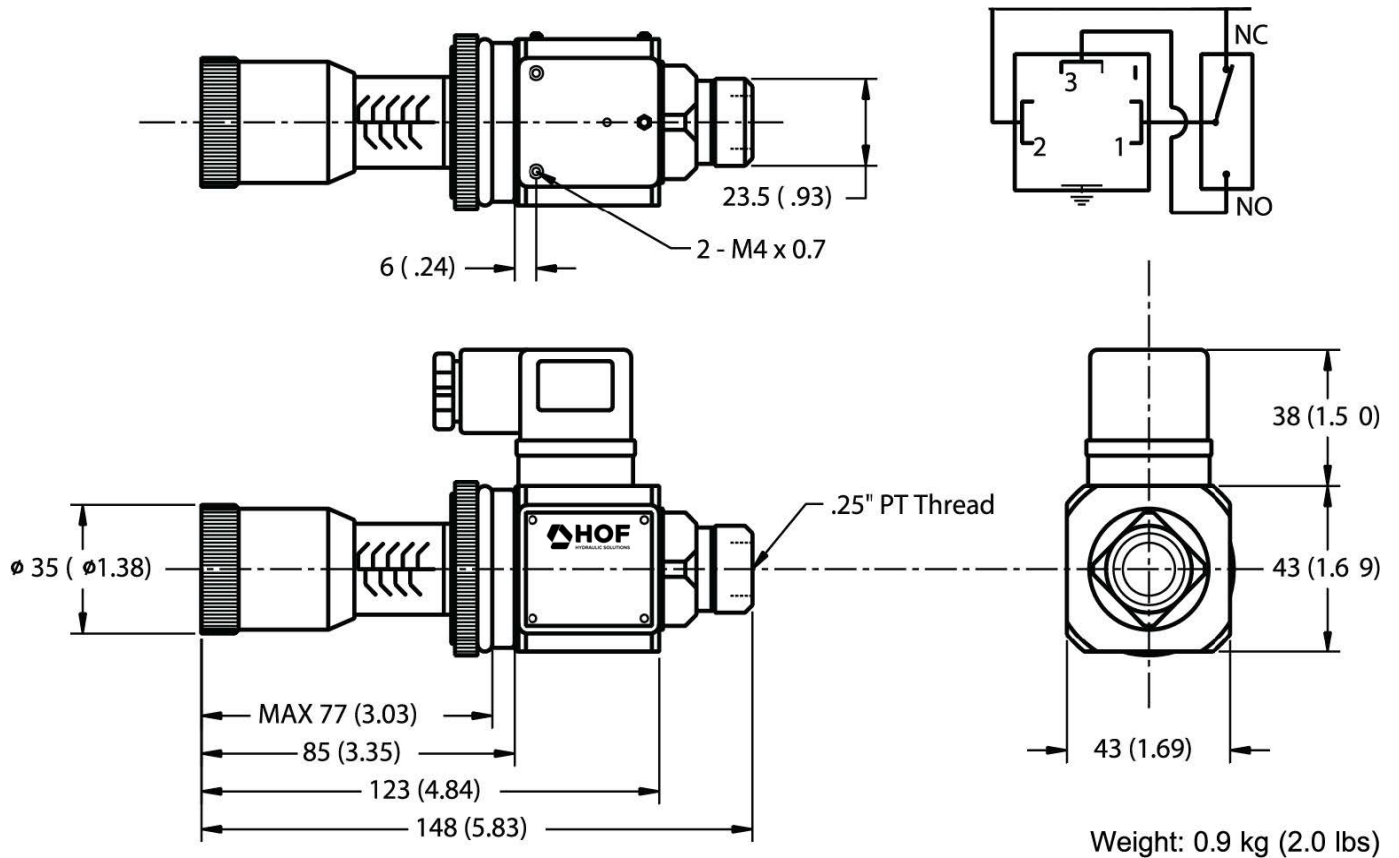
P	-	02	-	N	-	H
1		2		3		4

1. Model : P-02
2. Valve size
02 - 1/4"
3. Port Connection (Threaded connection only)
P - 1/4" BSPT
N - 1/4" NPT
4. Pressure Range
H - 15 -400 bar (217-5800 psi)

Pressure Switch

P-02 Series

Installation Dimension mm (inch)



Remote Control Relief Valve

RM Series

Features and Handling

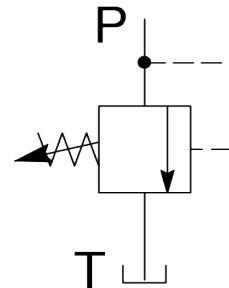
- RM series are Direct type relief valves with three pressure ranges available. They can be used as remote control relief valve when they are connected to the vent port of any balanced piston type relief valves.
- To adjust the set pressure, loosen the lock nut of the valve and turn the handle to adjust the pressure. Maintain the back pressure at the tank port as low as possible, less than 2 bar (28 psi).



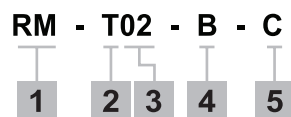
Specification

Model	Maximum Flow L/min (USgpm)	Maximum Pressure bar (psi)	Weight kg (lb)
RM-T02	12 (3.2)	240 (3500)	1.5 (3.3)
RM-G02	2 (0.5)		1.4 (3.1)

Symbols



Ordering Code



1. Model : RM

2. Mounting

- T - Threaded connections
G - Gasket mounting

3. Valve Size

02 - 1/4"

4. Threaded Size (Threaded connections only)

Code	Thread size
N	1/4" NPT
B	1/4" BSP

5. Pressure Range

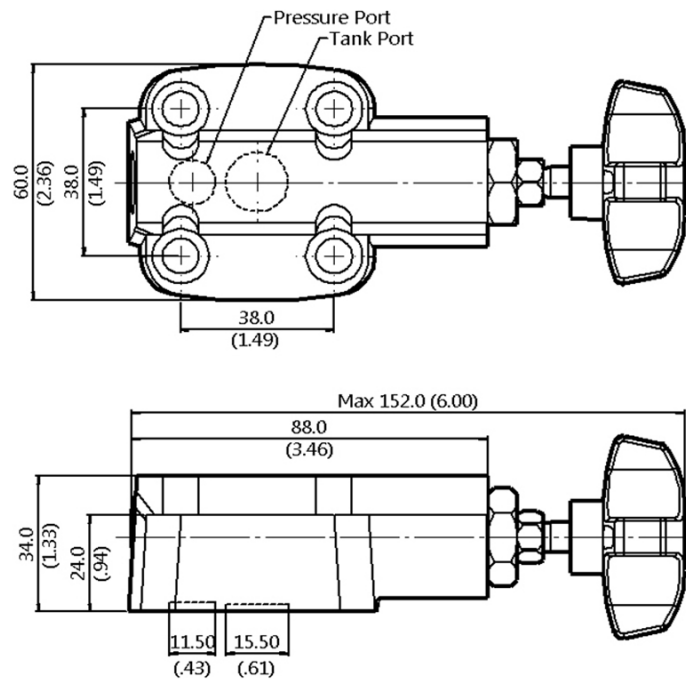
- A - 7-70 bar (100-1000 psi)
B - 35-140 bar (500-2000 psi)
C - 70-240 bar (1000-3500 psi)

Remote Control Relief Valve

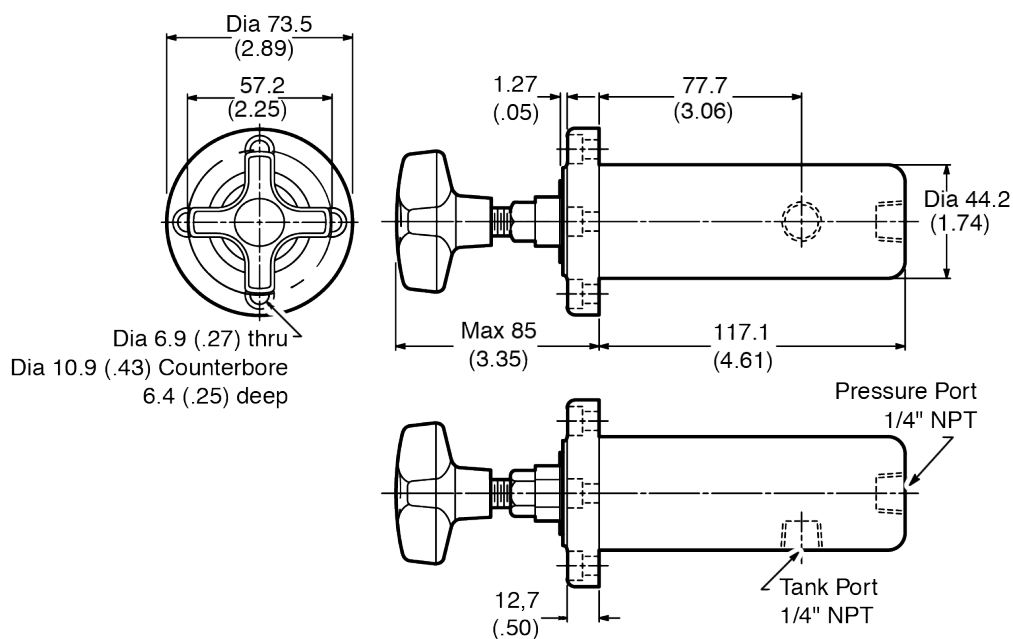
RM Series

Installation Dimension mm (inch)

RM-G02



RM-T02

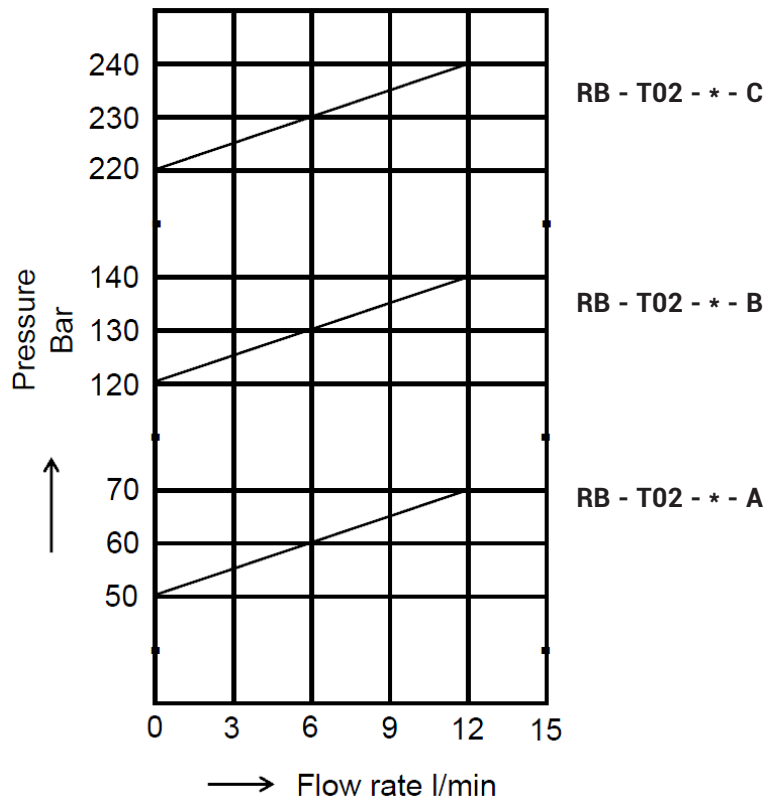


Remote Control Relief Valve

RM Series

Graph Performance

RM-T02



Pilot Operated Relief Valve

RB Series

Features and Handling

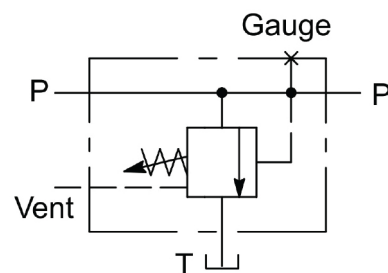
- RB series are Balanced Piston type relief valves with three pressure ranges available. The valves come with optional Vent port and Gauge port. The valves can be controlled by Solenoid Operated Directional Control valve with optional cover setting for mounting the Solenoid Operated Directional Control valve on top.
- To adjust the set pressure, loosen the lock nut of the valve and turn the handle to adjust the pressure. Maintain the back pressure at the tank port as low as possible, less than 2 bar (28 psi).



Specification

Model	Maximum Flow L/min (USgpm)	Maximum Pressure bar (psi)	Weight kg (lb)
RB-G03	30 (8)	240 (3500)	4.30 (9.5)
RBE-G03			4.40 (9.7)
RB-T04	80 (21)		2.40 (5.3)
RB-T06	175 (46)		4.30 (9.5)
RB-G06			7.20 (15.8)
RBE-T06			4.40 (9.7)
RBE-G06			7.20 (15.8)
RB-T10	454 (120)		6.70 (14.7)
RBE-T10			8.40 (18.50)

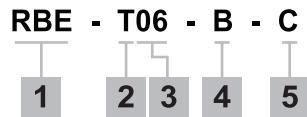
Symbols



Pilot Operated Relief Valve

RB Series

Ordering Code



1. Model Series

- RB - Standard Cover
- RBE - Cover for mounting CETOP 3 or NG6 Solenoid Valve (size 06 and size 10 only)

2. Mounting

- T - Threaded connections
- G - Gasket mounting (size 03 and size 06 only)

3. Valve Size

- 03 - 3/8"
- 04 - 1/2"
- 06 - 3/4"
- 10 - 1-1/4"

4. Threaded Size (Threaded connections only)

RB-T04

Code	Thread size
P	1/2" BSPT
B	1/2" BSP

RB-T06 or RBE-T06

Code	Thread size
N	3/4" NPT
B	3/4" BSP
S	SAE #12

RB-T10 or RBE-T10

Code	Thread size
N	1-1/4" NPT
B	1-1/4" BSP
S	SAE #20

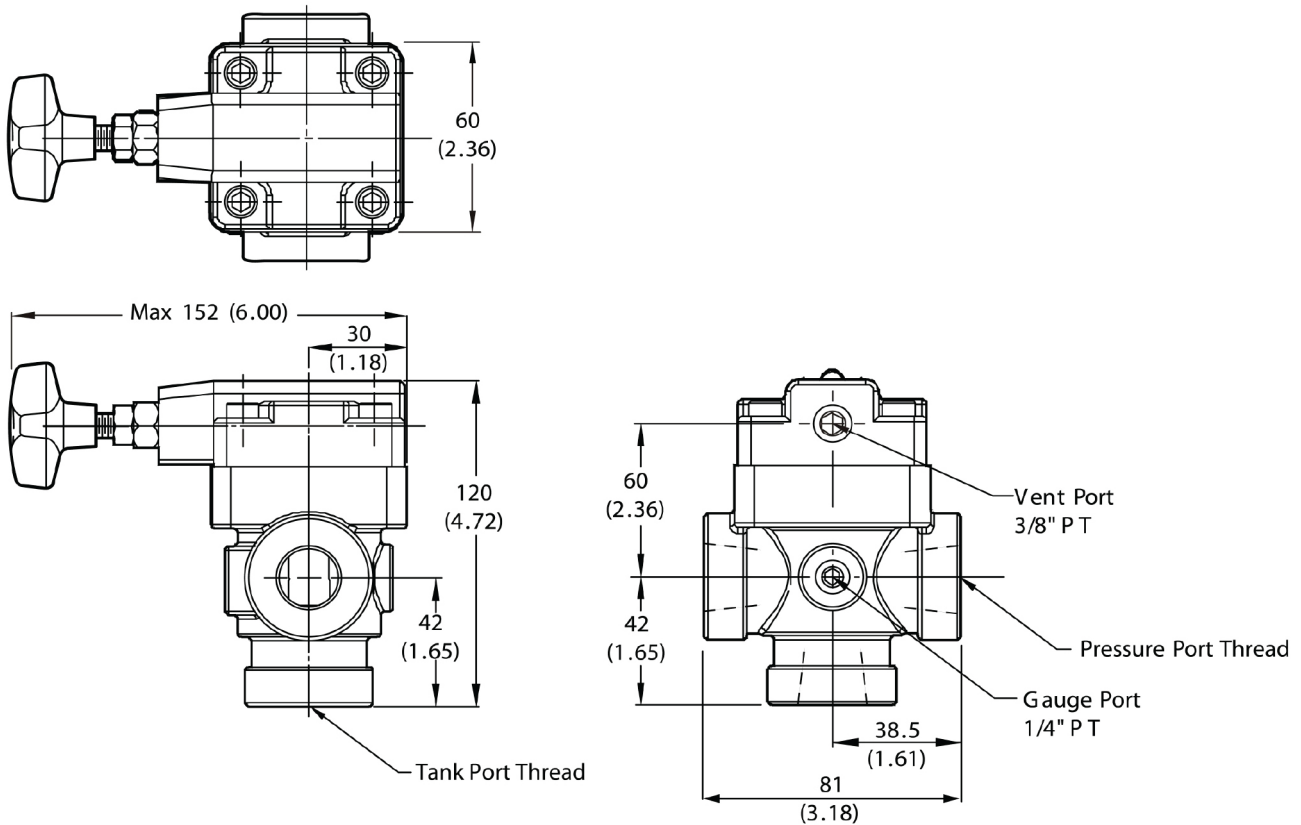
5. Pressure Range

- A - 7-70 bar (100-1000 psi)
- B - 35-140 bar (500-2000 psi)
- C - 70-240 bar (1000-3500 psi)

Pilot Operated Relief Valve RB Series

Installation Dimension mm (inch)

RB-T04

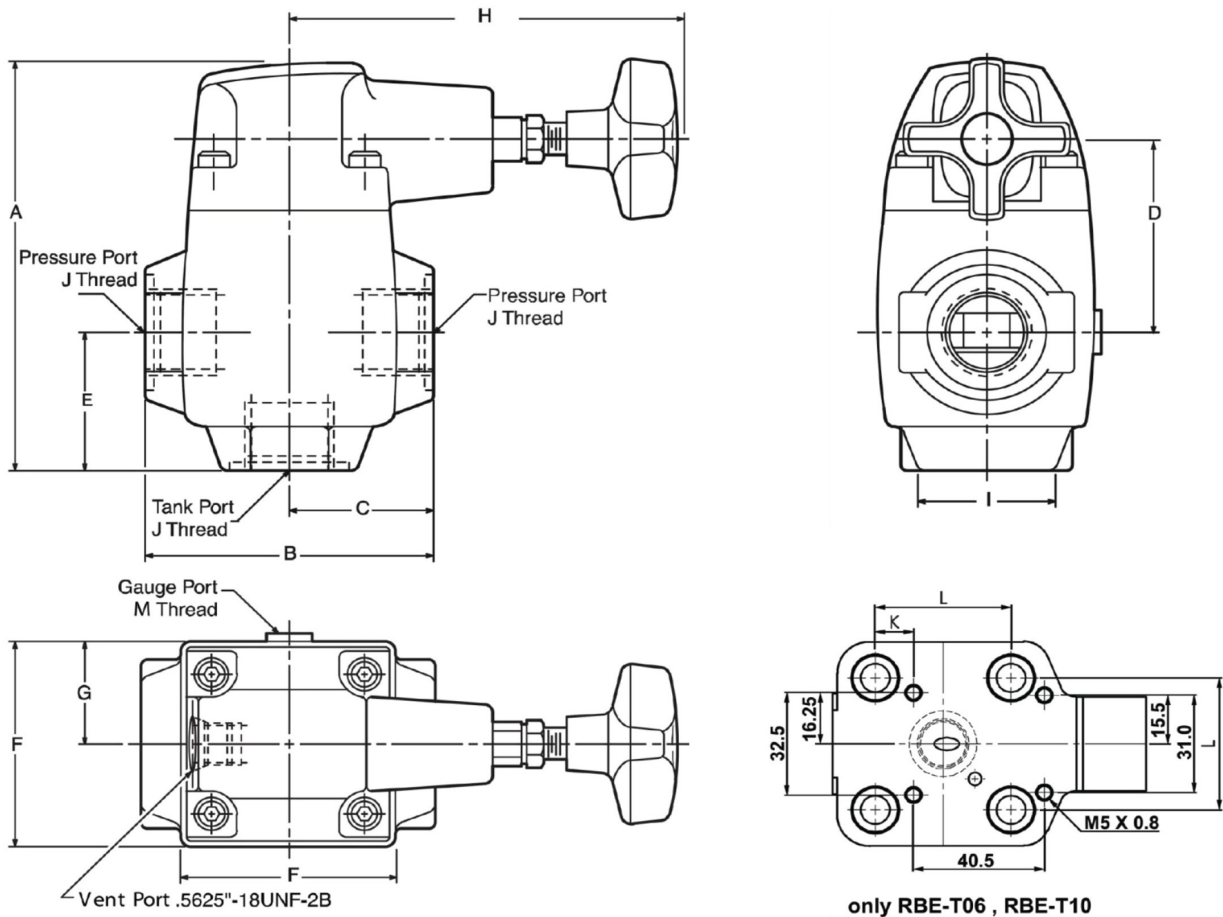


Pilot Operated Relief Valve

RB Series

Installation Dimension mm (inch)

RB-T06, RBE-T06, RB-T10, RBE-T10



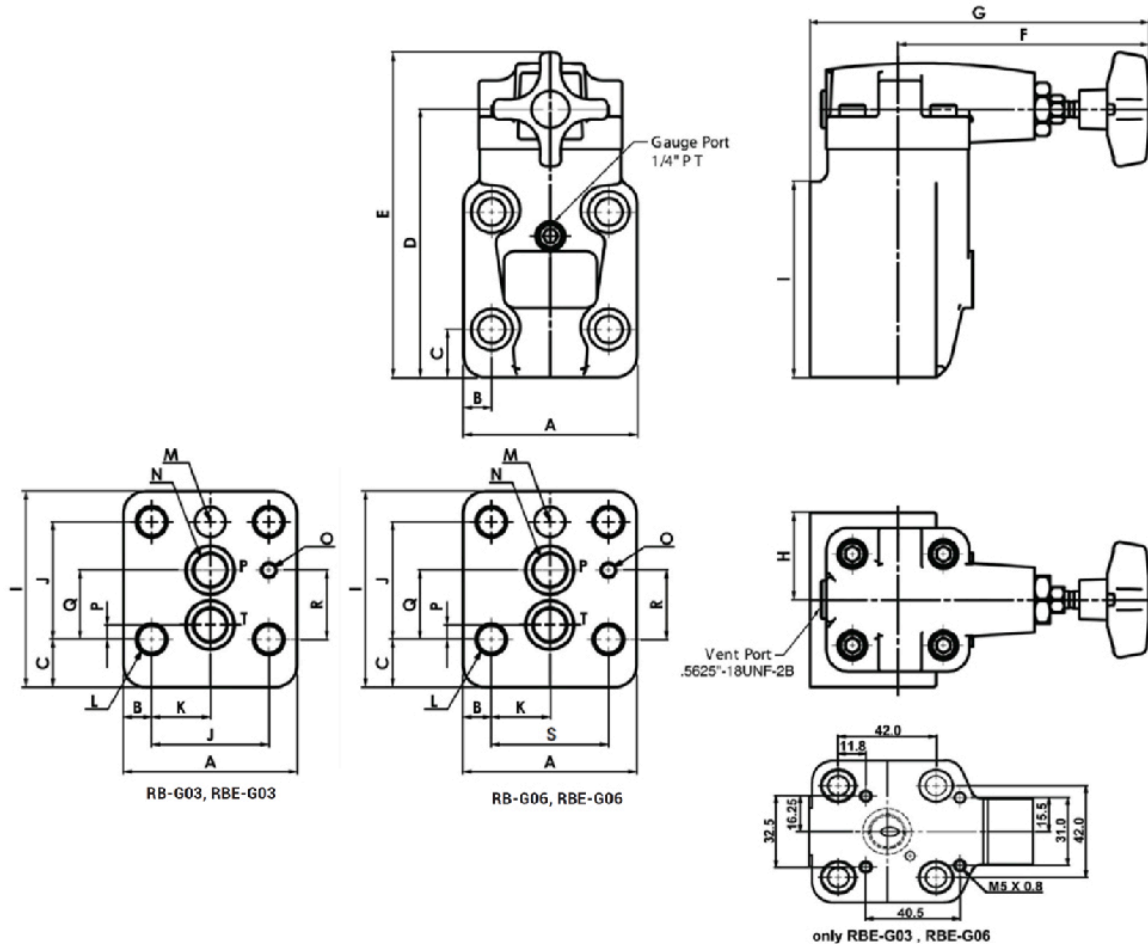
Model	Dimension mm (inch)												
	A	B	C	D	E	F	G	H	I	J	K	L	M
RB-T06 RBE-T06	128.8	92.5	46.3	63.0	45.5	73.0	36.5	134.0	57.0	3/4" NPT 3/4" BSP 1.0625" - 12UN-2B	11.8	42.0	1/4"PT
RB-T010 RBE-T010	157.2	124.0	61.9	66.5	61.9	83.3	41.7	134.0	61.9	1-1/4" NPT 1-1/4" BSP 1.0625" - 12UN-2B	6.75	54.0	.4375"-20UNF-2B

Pilot Operated Relief Valve

RB Series

Installation Dimension mm (inch)

RB-G03, RBE-G03, RB-G06, RBE-G06



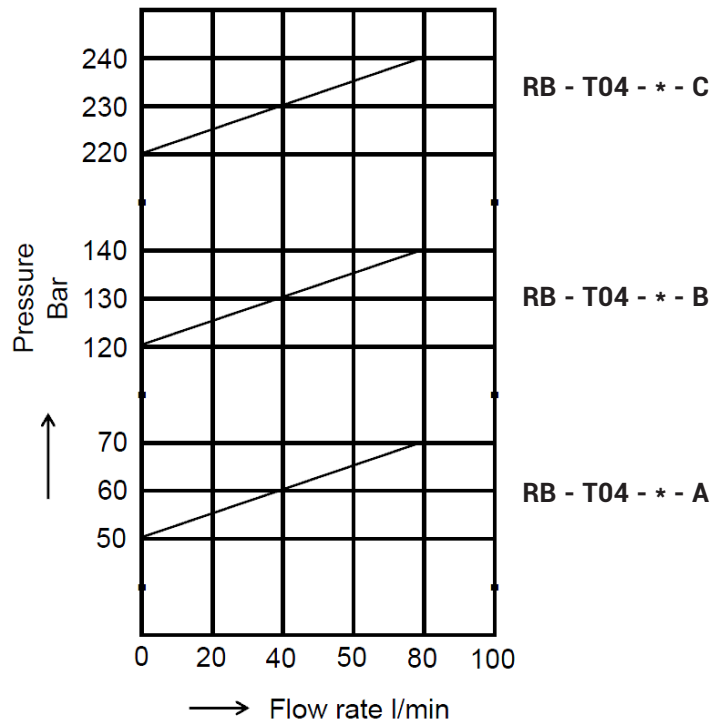
Model	Dimension mm (inch)																		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
RB-G03 RBE-G03	80.0	13.0	23.0	123.5	150.0	134.0	175.0	40.0	90.0	54.0	27.0	Ø 12.5	Ø 1.8	Ø 16.0	Ø 6.0	6.6	31.8	31.8	-
RB-G06 RBE-G06	103.0	16.5	17.6	148.5	175.0	134.0	175.0	51.5	113.5	66.7	35.0	Ø 17.0	Ø 3.0	Ø 24.0	Ø 6.3	11.2	49.2	23.9	70.0

Pilot Operated Relief Valve

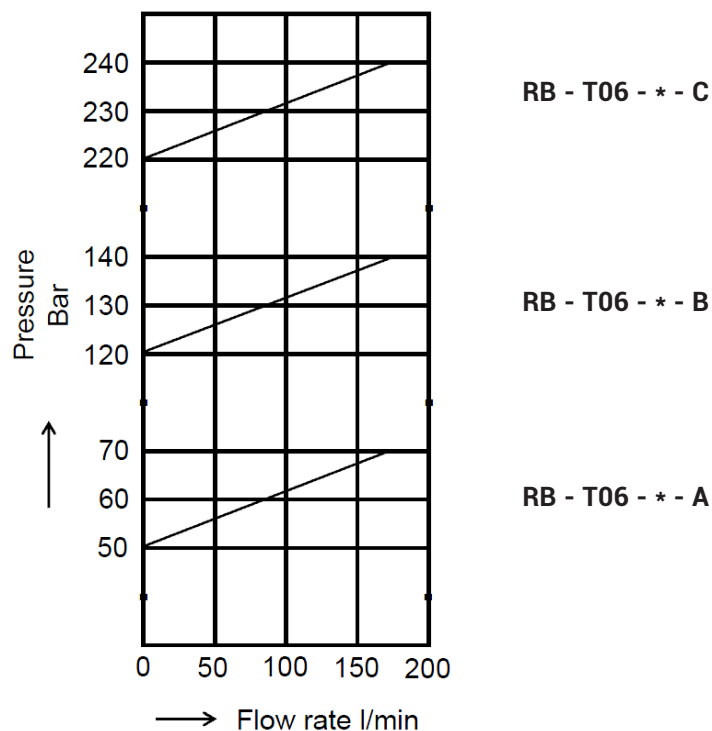
RB Series

Graph Performance

RB-T04



RB-T06

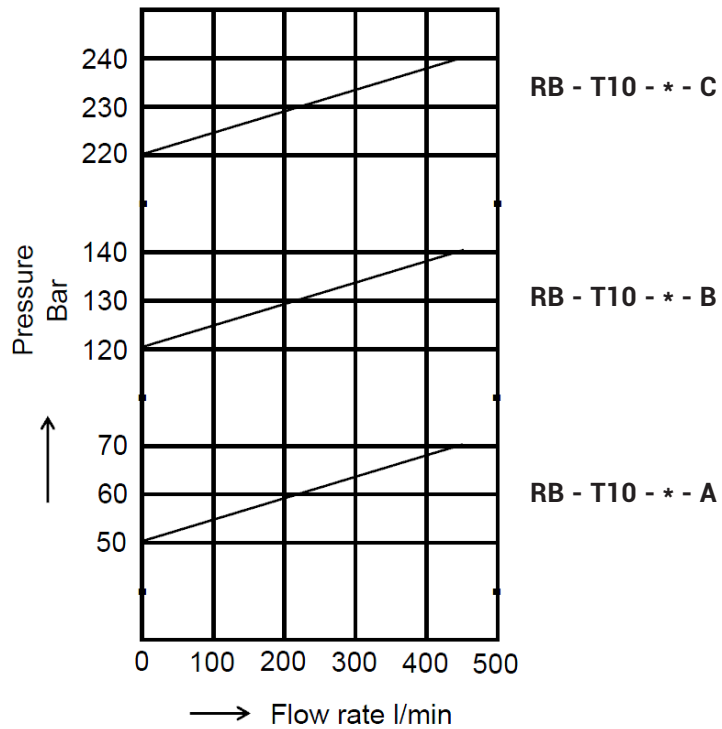


Pilot Operated Relief Valve

RB Series

Graph Performance

RB-T10



Pilot Operated Relief Valve

HDB Series

Features and Handling

• The relief valve is a pressure control valve. It maintains constant pressure at inlet by discharging excess fluid in the system. Solenoids relief valve is a combination of electro-magnetic directional valve and pilot-operated pressure relief valve, it is used to control or unload multi-stage pressure in hydraulic system.



Specification

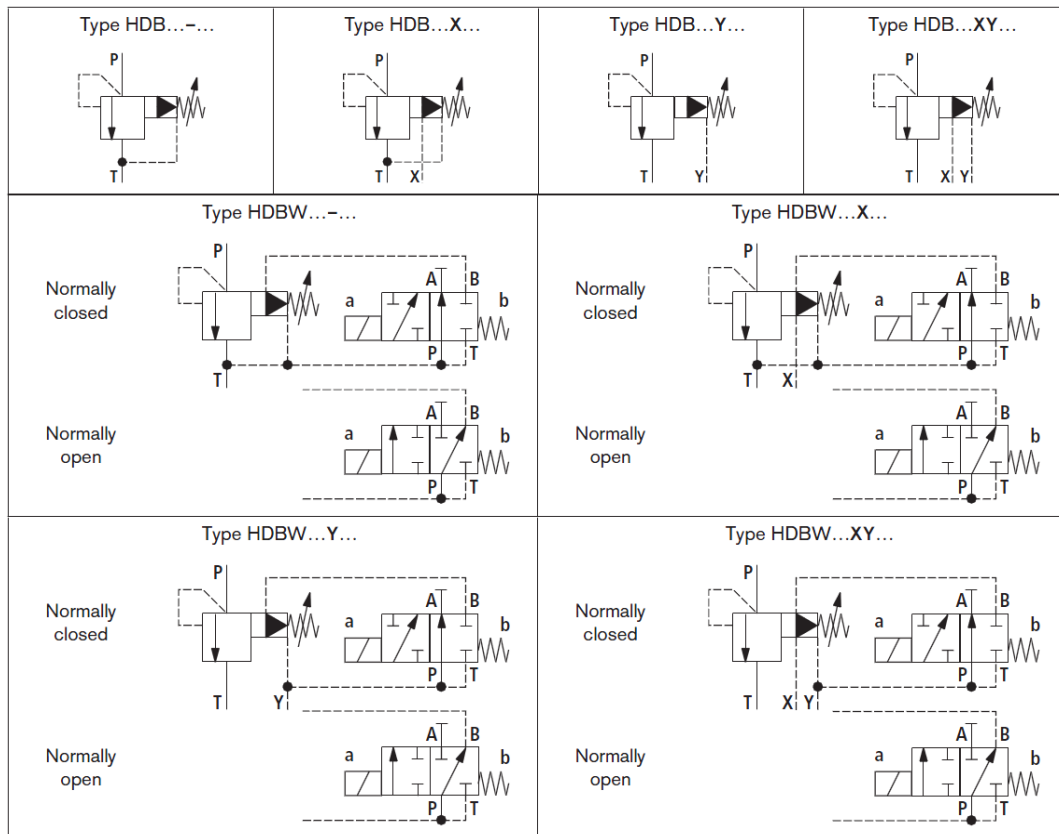
Model	Maximum Flow L/min (USgpm)	Maximum Pressure bar (psi)	Weight kg (lb)
HDB20	500	350 (5000)	3.9
HDBW20			5.4
HDB30	600		5.3
HDBW30			6.8

- Working fluid : Mineral oil; phosphate-ester
- Cleanliness : The maximum allowable cleanliness of the oil should be according to 9th degree of Standard NAS1638. It is suggested that the minimum filter rating should be $\beta_{10} \geq 75$.
- Fluid temp : $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$
- Viscosity : $12 \sim 380 \text{ mm}^2/\text{s}$

Pilot Operated Relief Valve

HDB Series

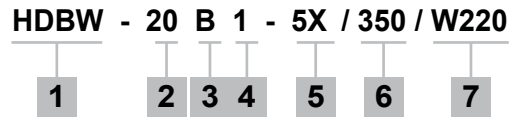
Symbols



Pilot Operated Relief Valve

HDB Series

Ordering Code



1. Model Series

- HDB - Without directional valve
- HDBW - With built-on directional valve

2. Subplate Mounting

- 20 - 25 (1")
- 30 - 32 (1 1/2")

3. Operation

- A - Normally closed
- B - Normally open
- Ordering code required only for version with built-on directional valve HDBW.

4. Rotary knob -1

5. Component series 50 to 59

- (50 to 59: unchanged installation and connection dimensions)

6. Pressure

- 50 - Pressure setting up to 50 bar
- 100 - Pressure setting up to 100 bar
- 200 - Pressure setting up to 200 bar
- 315 - Pressure setting up to 315 bar
- 350 - Pressure setting up to 350 bar

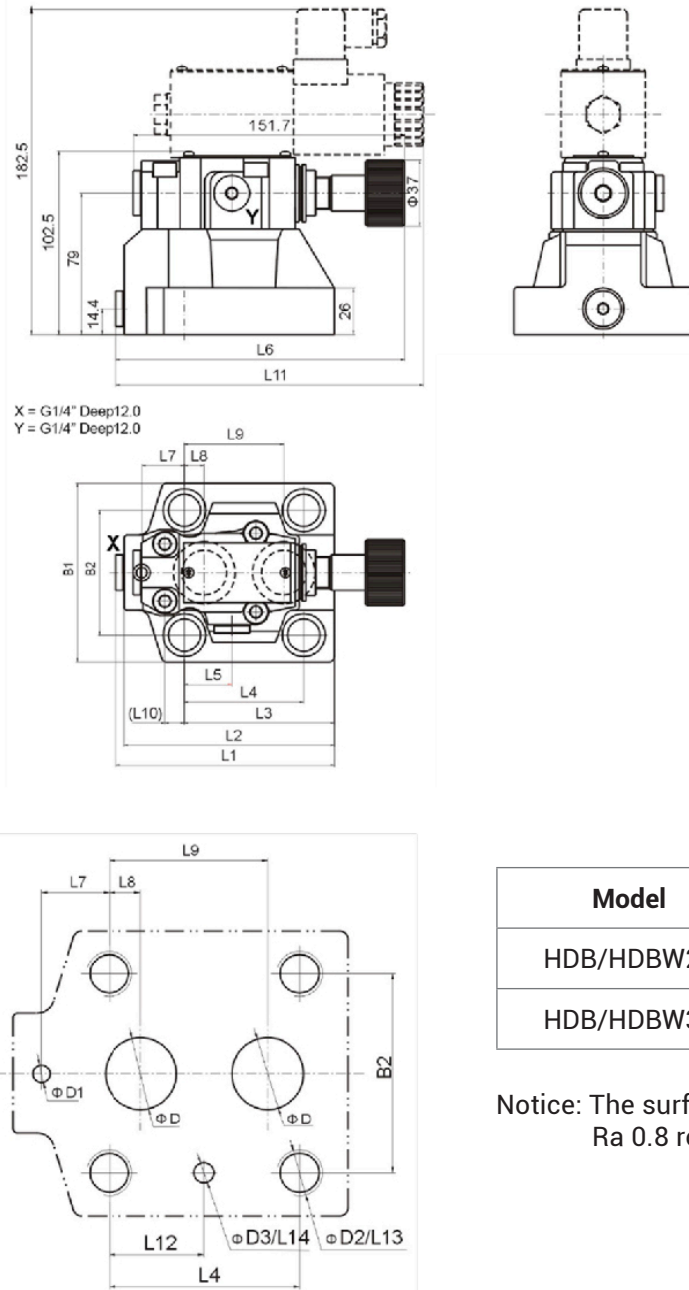
7. Working voltage

- D24 - DC24V
- W220 - AC220V
- Ordering code required only for version with built-on directional valve HDBW.

Pilot Operated Relief Valve

HDB Series

Installation Dimension mm (inch)



Model	Mounting screw	Tighten torque
HDB/HDBW20	M16x50 - 10.9	310 Nm
HDB/HDBW30	M18x50 - 10.9	430 Nm

Notice: The surface, connecting with the valve should be Ra 0.8 roughness and 0.01/100 mm flatness.

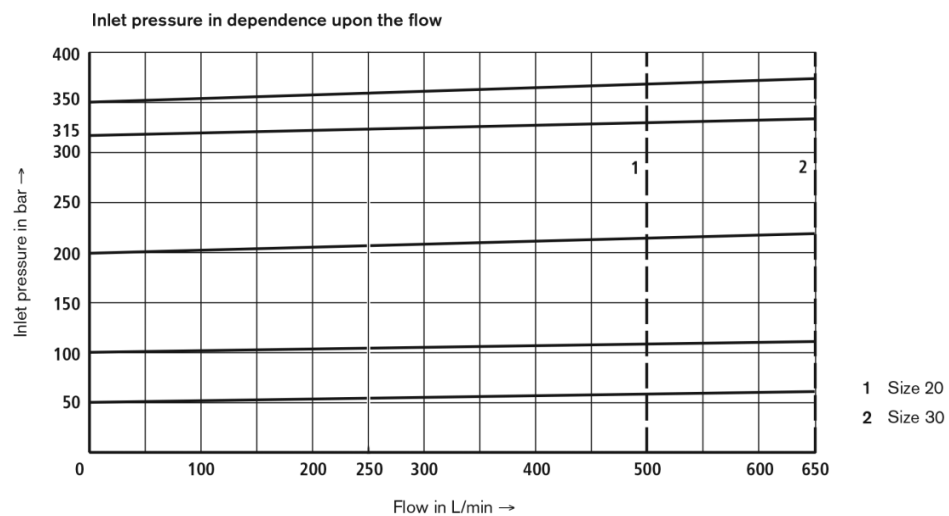
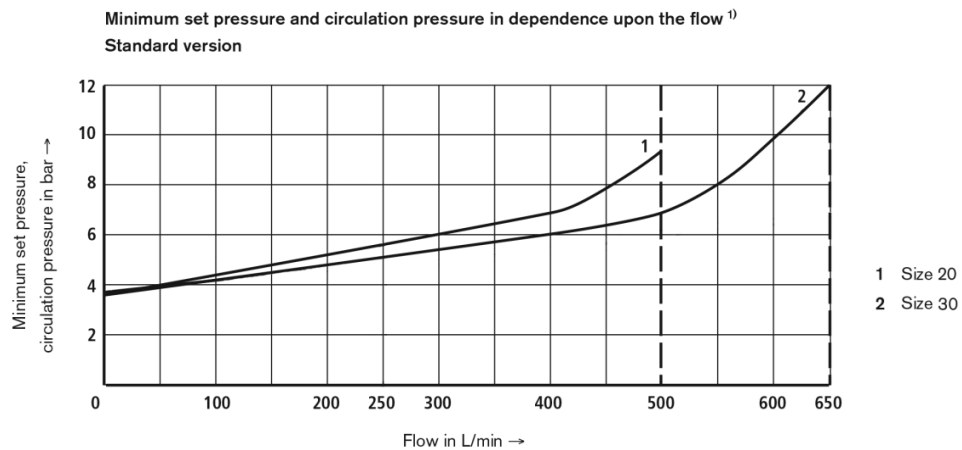
Model	Dimension mm (inch)																			
	B1	B2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	D	D1	D2	D3
HDB20 HDBW30	100.0	69.8	122.2	117.5	83.7	66.7	26.5	161.8	23.8	11.1	55.6	11.0	172.2	33.3	25.0	6.0	25.0	6.0	M16	7.0
HDB20 HDBW30	115.0	82.6	154.5	149.5	106.9	88.9	28.1	172.5	31.8	12.7	76.2	9.4	182.9	44.4	30.0	6.0	32.0	49.2	M18	7.0

Pilot Operated Relief Valve

HDB Series

Characteristic curves

Measure with HLP 46, Voil = 40°C±5°C)

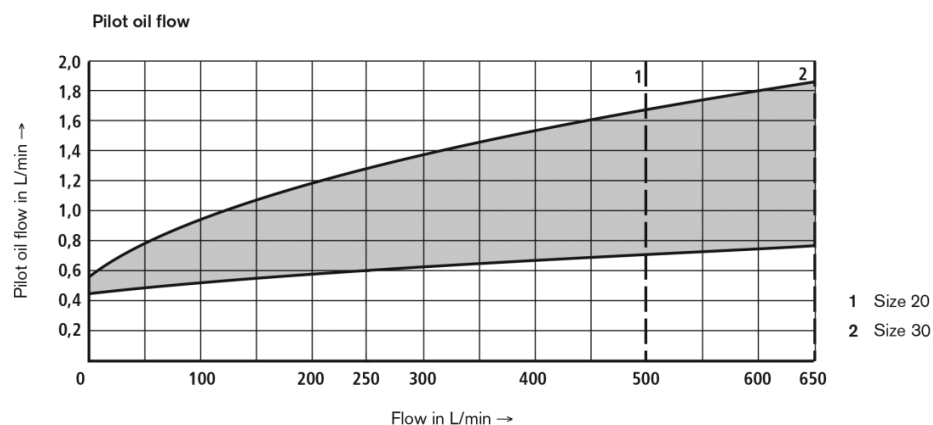


Note!

The characteristic curves were measured with **external, pressureless pilot oil drain**.

In the case of internal pilot oil drain, the inlet pressure increases by the outlet pressure present in port T.

¹⁾ The characteristic curves are valid for an outlet pressure of $p_T = 0$ over the entire flow range!



Pilot Operated Pressure Control, Flange type HR5 Series

Features and Handling

Series HR5 pilot operated pressure control valves with SAE flanges allow to mount the valves directly on the outlet flanges of pumps or inlet flanges of actuators to achieve a very compact design.

Valves with SAE flanges can also be bolted together to combine functions without the need of a manifold block.

- Choice between Relief valve (V) and unloading valve (U) or electrical/proportional control.
- Pilot operated with manual adjustment.
- with 3-port body :
 - 3 sizes (SAE 1", 1-1/4", 1-1/2")
 - SAE 61 and SAE 62 flange
- 3 pressure stages.
- With optional vent function.



Specification

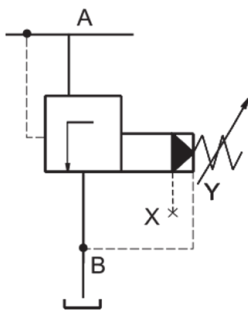
General				
Size		08	10	12
Mounting	Flanged according to SAE 61 / SAE 62			
Mounting Position	Unrestricted			
Ambient Temperature Range	-20°C to +50°C (-4°F to +122°F)			
Hydraulic				
Maximum Operating Pressure	SAE 61 Ports A, B	350 Bar (5075 PSI)	280 Bar (4060 PSI)	210 Bar (3045 PSI)
	SAE 61 Port Y1	30 Bar (435 PSI)	30 Bar (435 PSI)	30 Bar (435 PSI)
	SAE 62 Ports A, B	350 Bar (5075 PSI)	350 Bar (5075 PSI)	350 Bar (5075 PSI)
	SAE 62 Port Y1	30 Bar (435 PSI)	30 Bar (435 PSI)	30 Bar (435 PSI)
Pressure Ranges	105 Bar (1523 PSI), 210 Bar (3045 PSI), 350 Bar (5075 PSI)			
Nominal Flow	300 LPM (79.4 GPM)		600 LPM (158.7 GPM)	600 LPM (158.7 GPM)
Fluid	Hydraulic oil as per DIN 51524 to 51525			
Fluid Temperature	-20°C to +80°C (-4°F to +176°F)			
Viscosity	Permitted Recommended	10 to 650 cSt / mm²/s (46 to 3013 SSU) 30 cSt / mm²/s (139 SSU)		
Filtration	ISO Class 4406 (1999) 18/16/13 (acc. NAS 1638: 7)			
Electrical (Solenoid)				
Duty Ratio	100%			
Solenoid Connection	Connector as per EN175301-803			
Protection Class	IP65 in accordance with EN60529 (plugged and mounted)			
	Code	G12	G24	W110 W220
Supply Voltage		12V	24V	110V at 50Hz/ 220V at 50Hz/
Tolerance Supply Voltage		+5 to -10	+5 to -10	±5 ±5
Power Consumption	Hold	31W	31W	78W 78W
	In Rush	31W	31W	264W 264W
Response Time	Energized / De-energized AC 20/18ms, DC 46/27 ms			
Maximum Switching Frequency	AC up to 7200 switchings/hour; DC up to 16,000 switchings/hour			
Coil Insulation Class	H (180°C) (356°F)			

Pilot Operated Pressure Control, Flange type HR5 Series

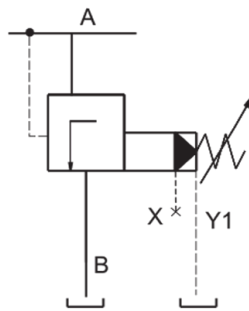
Symbols

HR5V

Internal Drain

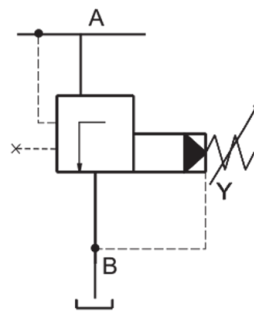


External Drain

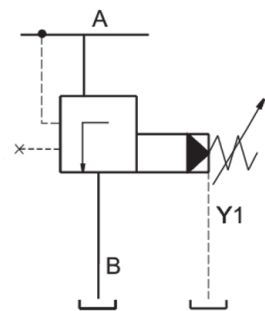


HR5U

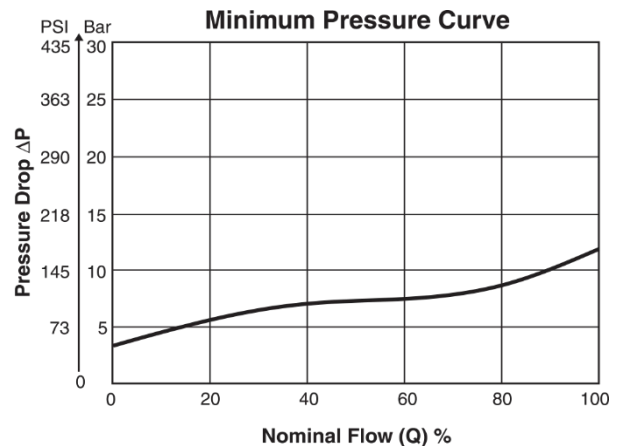
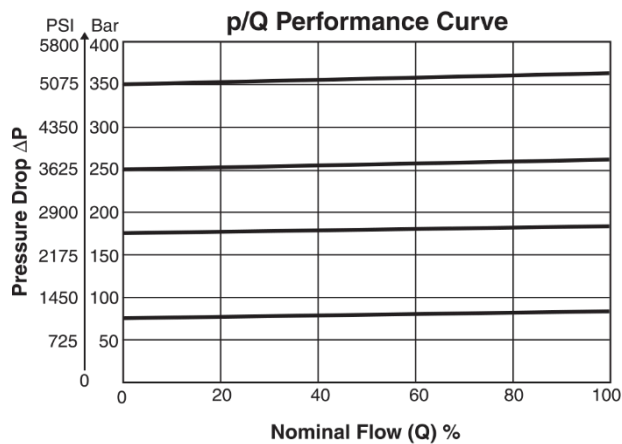
Internal Drain



External Drain



Performance Curves



Pilot Operated Pressure Control, Flange type

HR5 Series

Ordering Code

HR5V 08 - 5 9 3 - 3 2 - P2 - G12 - A 1 ***

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----

1. Proportional Pressure Relief Valve

HR5V - Pressure Relief Valve
 HR5U - Pressure Unloading Valve

2. Valve Size

08 - SAE1"
 10 - SAE 1-1/4"
 12 - SAE 1-1/2"

3. SAE Interface

SAE 61 :

Code	Size	Maximum Pressure
3	12	210 Bar (3045 PSI)
4	10	280 Bar (4060 PSI)
5	08	350 Bar (5075 PSI)

SAE 62 :

Code	Size	Maximum Pressure
6	08/10/12	350 Bar (5075 PSI)

4. Pilot Ports

1 - Y1*, X1, M = 1/4" NPTF
 3 - Y1*, X1, M = SAE4 (7/16"-20UNF)
 9 - Y1*, X1, M = G1/4"

*3-Port: Y1 only available at external drain
 (pilot oil code 6)

5. Pressure Range

1 - up to 105 Bar (1523 PSI)
 HR5U:Pressure Differential 20%
 3 - up to 210 Bar (3045 PSI)
 HR5U:Pressure Differential 20%
 5 - up to 350 Bar (5075 PSI)
 HR5U:Pressure Differential 15%

6. Adjustment

1 - Hand Knob
 3 - Acorn Nut with Lead Seal

7. Pilot Oil

2 - Internal PD - Internal PP (HR5V)
 4 - External PD - External PP² (HR5U)
 5 - Internal PD - External PP² (HR5U)
 6 - External PD - Internal PP (HR5V)

²) External pilot pressure connection on flange face

8. Electrical Vent (3way Vent VALVE HVV01)

Omit - non vent version
 P2 - Proportional Pressure Control
 (only 12V, 24V)
 09 - With manual override
 (Solenoid de-energized : open to tank
 NO Solenoid de-energized : vent line
 blocked)
 10 - Without manual override
 (Solenoid de-energized : open to tank
 NO Solenoid energized : vent line
 blocked)
 11 - With manual override
 (Solenoid de-energized : vent line
 blocked
 NC Solenoid energized : open to tank)
 12 - Without manual override
 (Solenoid de-energized : vent line
 blocked
 NC Solenoid energized : open to tank)

9. Solenoid Voltage

Omit - Standard w/o vent function
 G12 - 12V
 G24 - 24V
 W110 - 110V 50Hz
 W220 - 220V 50Hz

10. Design

11. Seal

1 - Nitrile
 5 - Fluorocarbon

12. Options

Omit - Standard
 152 - 3-Port body with metric threads
 only Pilot Ports Code 9

Pilot Operated Pressure Control, Flange type HR5 Series

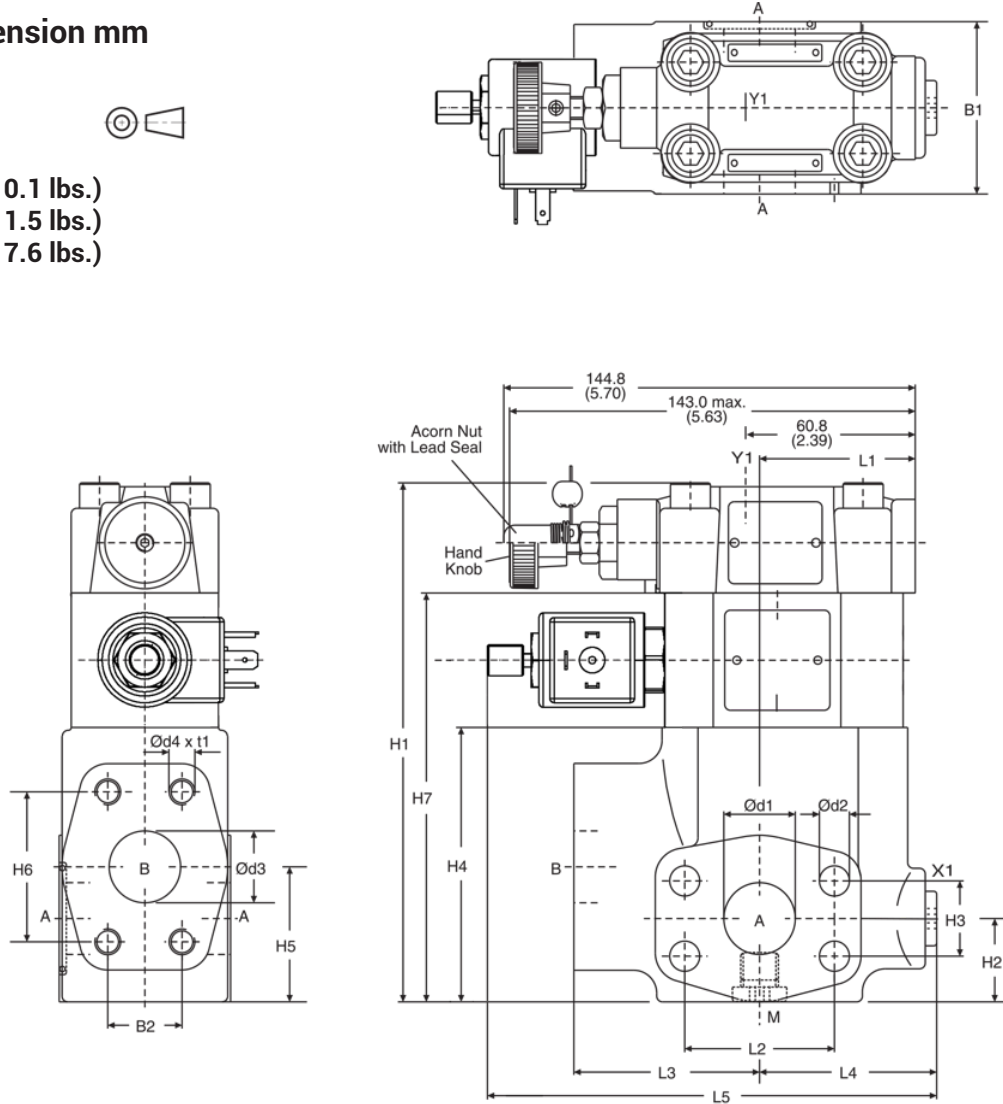
Installation Dimension mm

Weight:

HR5V08 - 4.6 kg (10.1 lbs.)

HR5V10 - 5.2 kg (11.5 lbs.)

HR5V12 - 8.0 kg (17.6 lbs.)



SAE 61

Size	B1	B2	H1	H2	H3	H4	H5	H6	H7	L1	L2	L3	L4	L5	d1	d2	d3	d4 (option 152)	t1
08	60.0 (2.36)	26.2 (1.03)	188.0 (7.40)	29.0 (1.14)	26.2 (1.03)	103.0 (4.06)	47.0 (1.85)	52.4 (2.06)	150.0 (5.91)	51.0 (2.00)	52.4 (2.06)	65.0 (2.56)	58.0 (2.28)	175.0 (6.88)	25.0 (0.98)	10.5 (0.41)	25.0 (0.98)	3/8"-16 UNC (M10)	23.0 (0.91)
10	75.0 (2.95)	30.2 (1.19)	198.0 (7.80)	34.5 (1.36)	30.2 (1.19)	113.0 (4.45)	64.0 (2.52)	58.7 (2.31)	160.0 (6.30)	57.8 (2.28)	58.7 (2.31)	61.0 (2.40)	62.0 (2.44)	174.1 (6.85)	32.0 (1.26)	12.5 (0.49)	32.0 (1.26)	7/16"-14 UNC (M12)	22.0 (0.87)
12	80.0 (3.15)	35.7 (1.41)	225.0 (8.86)	34.0 (1.34)	35.7 (1.41)	140.0 (5.51)	73.0 (2.87)	69.8 (2.75)	187.0 (7.36)	32.3 (1.27)	69.8 (2.75)	92.5 (3.64)	55.2 (2.17)	190.6 (7.50)	38.0 (1.50)	13.5 (0.53)	38.0 (1.50)	1/2"-13 UNC (M12)	27.0 (1.06)

SAE 62

Size	B1	B2	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	d1	d2	d3	d4 (option 152)	t1
08	60.0 (2.36)	27.8 (1.09)	141.0 (5.55)	29.0 (1.14)	27.8 (1.09)	103.0 (4.06)	47.0 (1.85)	57.2 (2.25)	51.0 (2.00)	57.2 (2.25)	65.0 (2.56)	58.0 (2.28)	147.0 (5.78)	25.0 (0.98)	12.5 (0.49)	25.0 (0.98)	7/16"-14 UNC (M12)	22.0 (0.87)
10	75.0 (2.95)	31.8 (1.25)	151.0 (5.94)	34.5 (1.36)	31.8 (1.25)	113.0 (4.45)	64.0 (2.52)	66.7 (2.63)	57.8 (2.28)	66.7 (2.63)	61.0 (2.40)	62.0 (2.44)	145.5 (5.73)	32.0 (1.26)	13.5 (0.53)	32.0 (1.26)	1/2"-13 UNC (M12)	24.0 (0.94)
12	80.0 (3.15)	36.5 (1.44)	178.0 (7.01)	34.0 (1.34)	36.5 (1.44)	140.0 (5.51)	73.0 (2.87)	79.4 (3.13)	32.3 (1.27)	79.4 (3.13)	92.5 (3.64)	55.2 (2.17)	175.0 (6.88)	38.0 (1.50)	17.0 (0.67)	38.0 (1.50)	5/8"-11 UNC (M16)	33.0 (1.30)

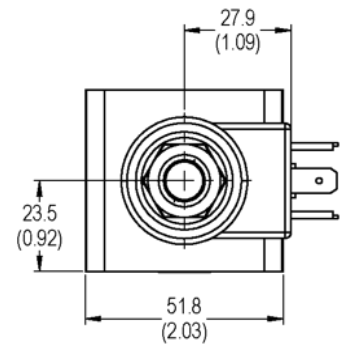
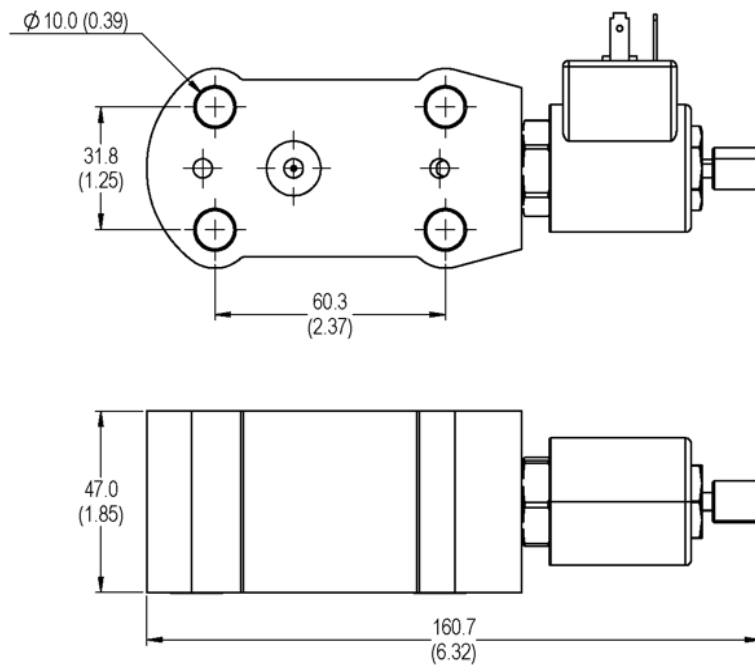
Port	Function	Port size		
		R5V08	R5V10	R5V12
A (2)	Pressure	1" SAE 61/62	1-1/4" SAE 61/62	1-1/2" SAE 61/62
B	Tank	1" SAE 61/62	1-1/4" SAE 61/62	1-1/2" SAE 61/62
X1	External pilot port *	1/4" NPTF or G 1/4" or SAE - 4		
Y1	External drain	1/4" NPTF or G 1/4" or SAE - 4		
M	Pressure gauge	1/4" NPTF or G 1/4" or SAE - 4		

Pilot Operated Pressure Control, Flange type HR5 Series

Installation Dimension mm

Weight:

HVV01-cartridge valve : 1.6 kg (3.52 lbs.)



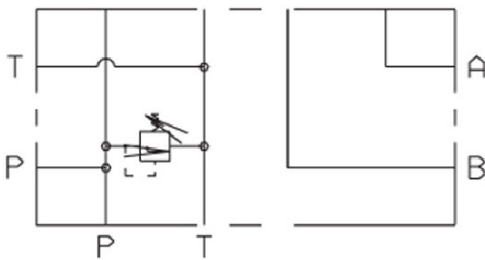
Single Station Subplate HM Series

Features and Handling

- Solenoid Valve / Cetop 3 interface
- Max Relief Pressure 240 bar
- Side / Rear Entry
- 3/8" BSP Ports



Symbols



Ordering Code

HM	-	G01	-	01	-	A
1		2		3		4

1. Model : HM - Single Station Subplate

2. Valve size
G01 - NG06 (CETOP3)

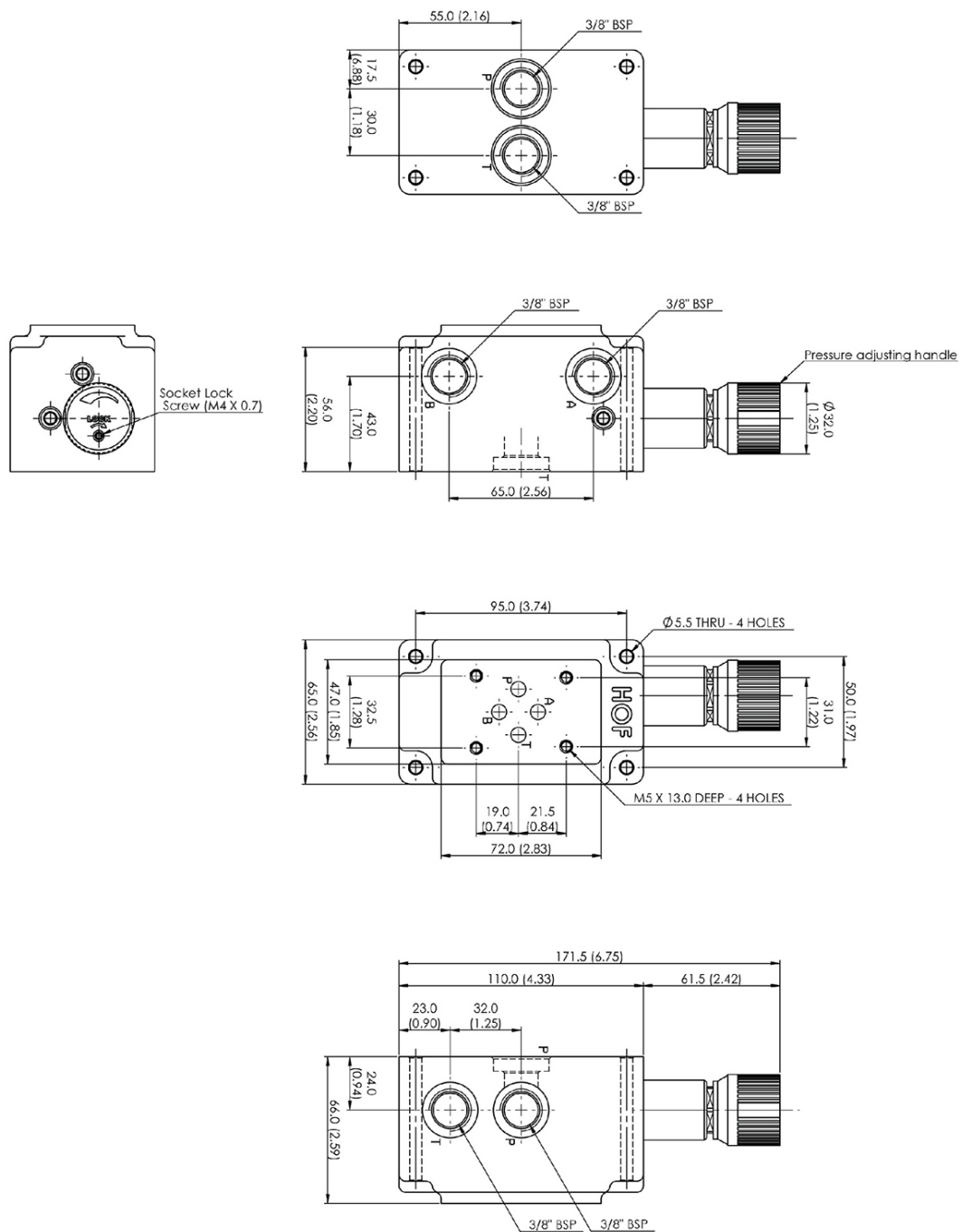
3. Service Valve
01 - With relief valve
02 - Without relief valve

4. Pressure Range
A - 7-70 bar (100-1000 psi)
B - 35-140 bar (500-2000 psi)
C - 70-240 bar (1000-3500 psi)

Single Station Subplate HM Series

Installation Dimension mm (inch)

HM-G01-01



Pilot Operated Check Modular Valve

MCP Series

Features and Handling

- Sandwich plate valve for use in vertical stackings
- Suitable for cetop 3 and cetop 5
- For the leakage-free blocking of one or two actuator ports, optional
- Special versions upon request
- Maximum Flow rate G01:60L/Min, G03:100L/Min
- Maximum Intermittent Pressure 315 bar (4570 psi)



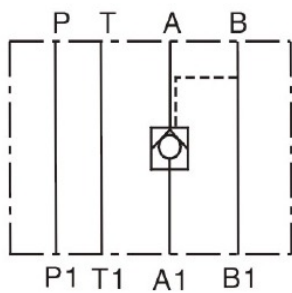
Specification

Model	Maximum Pressure bar (psi)	Maximum Flow L/min (USgpm)	Fluid temp. (°C)	Viscosity (mm ² /s)	Opening Pressure (bar)	Weight (kg)	Cleanliness
G01	315	60	-20~70	2.8~500	a : 0.5 b : 2.5 c : 4.0	0.8	The maximum allowable cleanliness of the oil should be according to 9th degree of Standard NAS 1638. It is suggested that the minimum filter rating should be $\beta_{10} \geq 75$
G03		100				2.0	

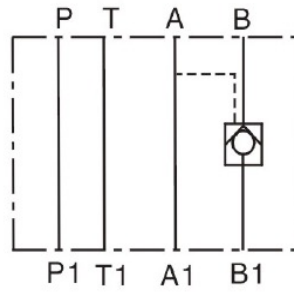
Pilot Operated Check Modular Valve

MCP Series

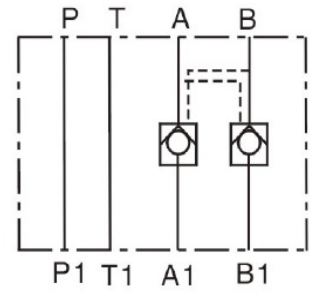
Symbol



A Pipeline



B Pipeline

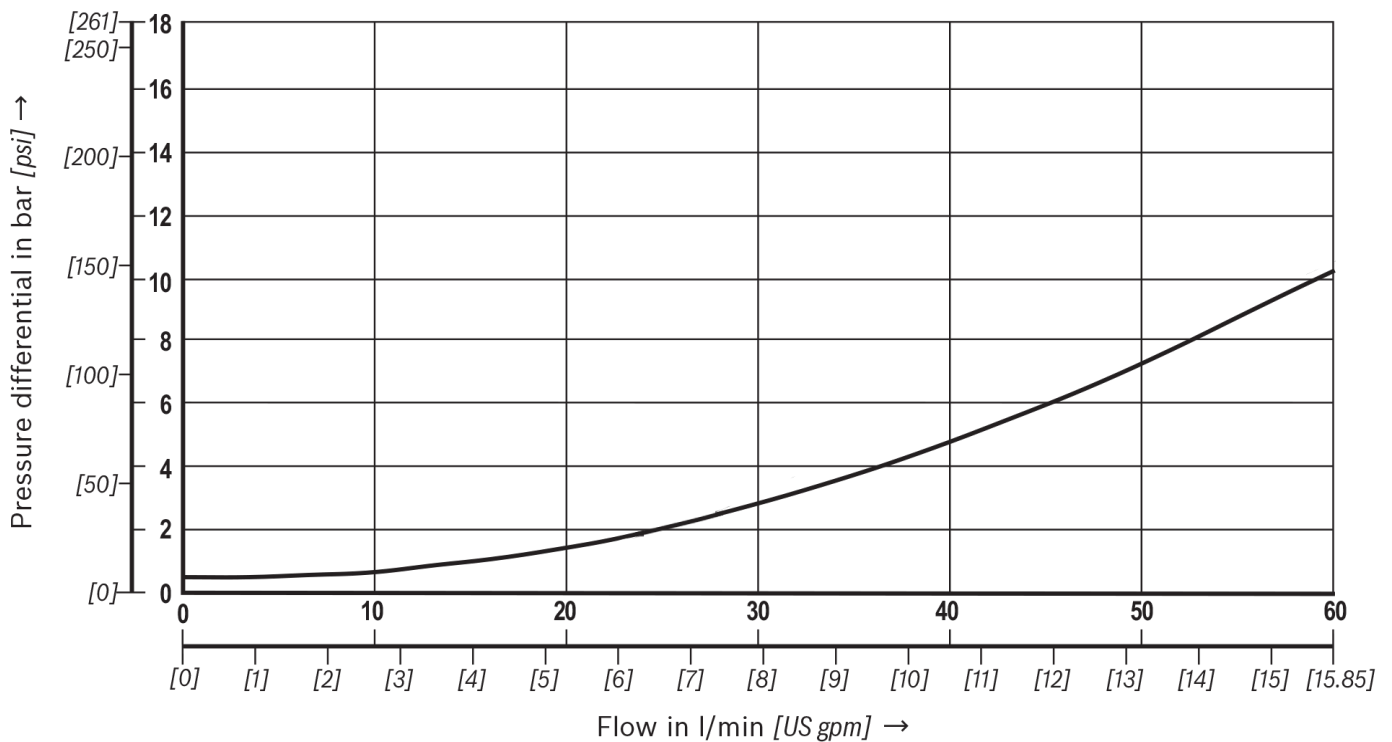


W Pipeline

Performance graph

Cracking pressure 0.5 bar

Δp - q_v characteristic curves



Pilot Operated Check Modular Valve MCP Series

Ordering Code

MCP - G01 - W - a / * - 00

1	2	3	4	5	6
---	---	---	---	---	---

1. Model : MCP - Pilot Operated Check Modular Valve

2. Valve size

G01 - NG06 (CETOP3)

G03 - NG10 (CETOP5)

3. Control port

W - A, B ports

A - A port

B - B port

4. Cracking pressure

a - 0.5 bar

b - 2.5 bar

c - 4.0 bar

5. Seal material

Omit - NBR Seals

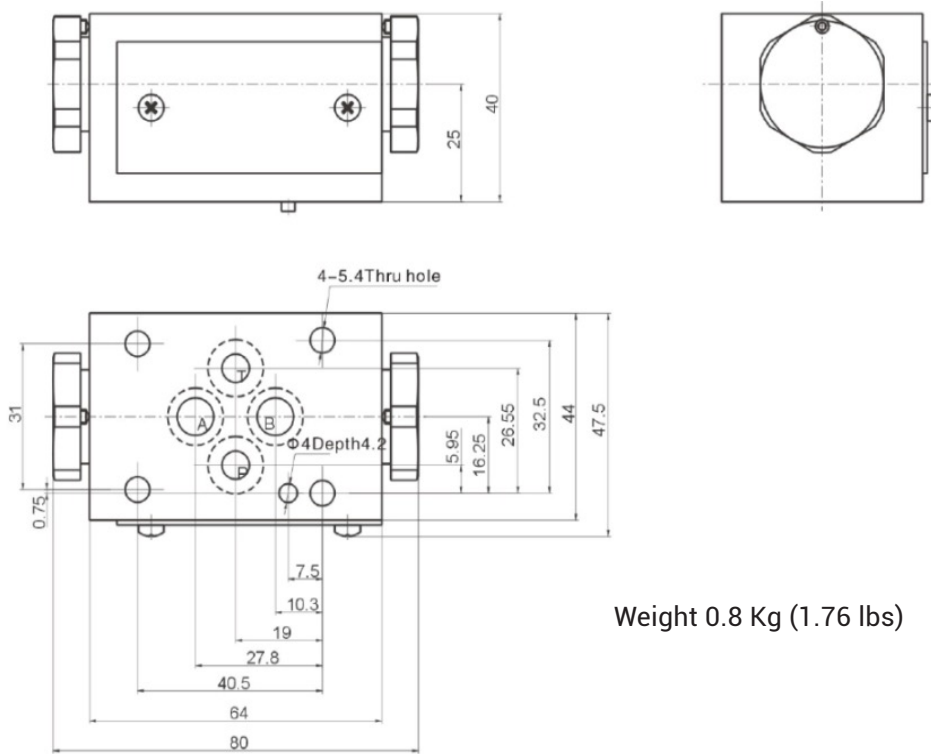
V - FPM Seals

6. Design number

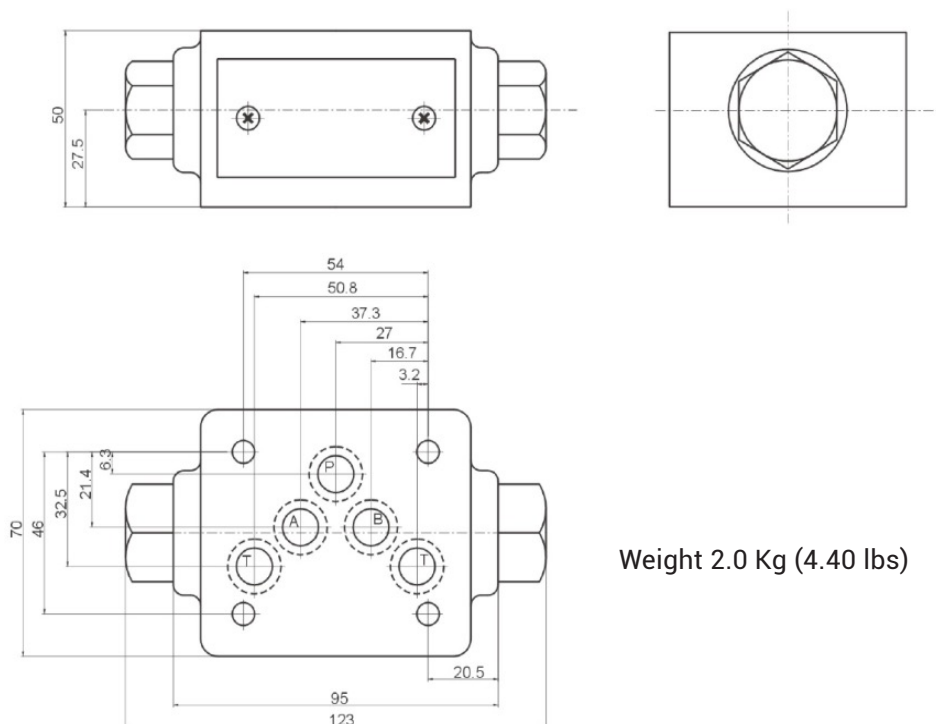
Pilot Operated Check Modular Valve MCP Series

Installation Dimensions mm (inch)

MCP-G01



MCP-G03



Flow Control Valve

CF Series

Features and Handling

• CF Series are flow control valves with check valve. The valves control the flow in one direction and allow free flow in the other direction. With two step control range, the first three turns of the knob can control fine adjustment of low flow and the next three turns can open the valve of full flow. The knob comes with numeric indicator.



Specification

Model	Maximum Flow L/min (USgpm)	Maximum Pressure bar (psi)	Weight kg (lb)
CF-T02	19 (5)	350 (5070)	0.30 (0.66)
CF-T03	30 (8)		0.40 (0.88)
CF-T04	57(15)		0.70 (1.54)
CF-T06	95 (25)		1.00 (2.20)

Ordering Code

CF - T04

1 2 3

1. Model : CF

2. Mounting

T - Threaded connections

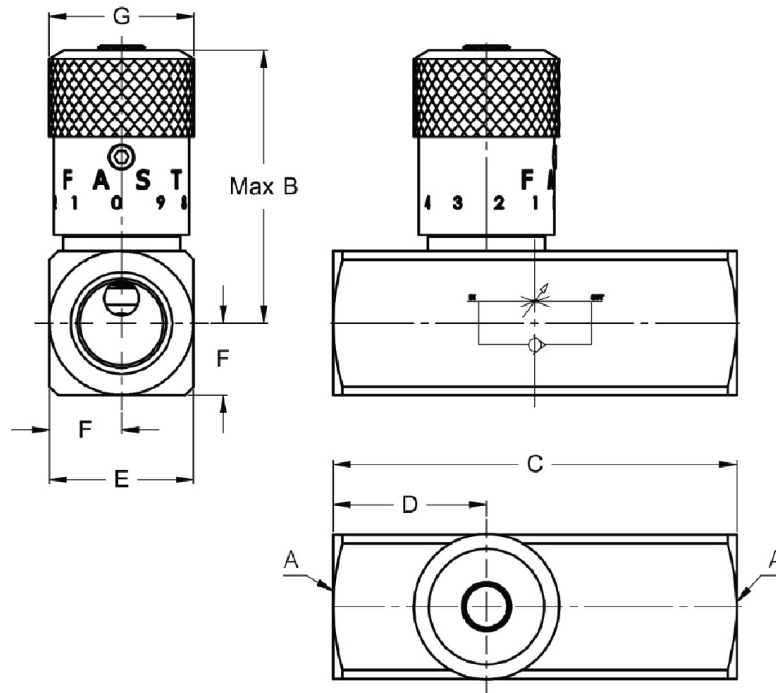
3. Valve size

02 - 1/4"
03 - 3/8"
04 - 1/2"
06 - 3/4"

Flow Control Valve

CF Series

Installation Dimensions mm (inch)



Model	Dimension mm (inch)						
	A Thread	B	C	D	E	F	G
CF-T02	1/4"NPT	40.4 (1.59)	66.5 (2.62)	26.6 (1.05)	25.4 (1.00)	12.7 (0.50)	20.6 (0.81)
CF-T03	3/8"NPT	55.4 (2.18)	70.0 (2.75)	26.6 (1.05)	25.4 (1.00)	12.7 (0.50)	25.2 (0.99)
CF-T04	1/2"NPT	68.6 (2.70)	87.0 (3.42)	33.0 (1.30)	31.7 (1.25)	15.9 (0.63)	29.8 (1.17)
CF-T06	3/4"NPT	85.9 (3.38)	98.5 (3.88)	37.5 (1.48)	38.1 (1.50)	19.05 (0.75)	34.9 (1.37)

*CF-T08 and CF-T10 are available upon request.

Check Valve

CNT Series

Features and Handling

• CNT Series are check valve with optional cracking pressure. The valves allow free flow in one direction and shut-off in the other direction. The valve comes with flow rate ranges from 30L/min to 500 L/min and port size from 3/8" to 2".



Specification

Model	Thread Connection	Operating Pressure (bar)	Crack Pressure (bar)	Flow L/min	Weight kg (lb)
CNT-T03	PT 3/8"	210 (3000 PSI)	A : 0.5 B : 5.0	40	0.18
CNT-T04	PT 1/2"			60	0.32
CNT-T06	PT 3/4"			100	0.48
CNT-T08	PT 1"			150	1.10
CNT-T10	PT 1 1/4"			200	1.88
CNT-T12	PT 1 1/2"			270	2.18
CNT-T16	PT 2"			400	3.9

Ordering Code

CNT - T03 - A

1 2 3 4

1. Model : CNT

2. Mounting

T - Threaded connections

3. Valve size

03 - 3/8"
 04 - 1/2"
 06 - 3/4"
 08 - 1"
 10 - 1-1/4"
 12 - 1-1/2"
 16 - 2"

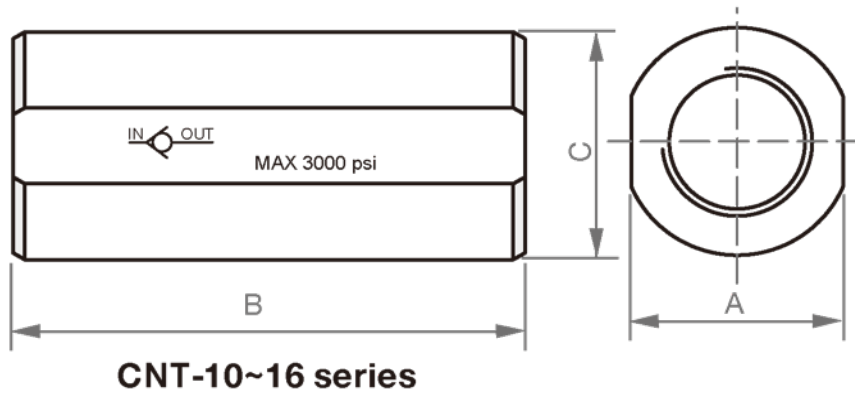
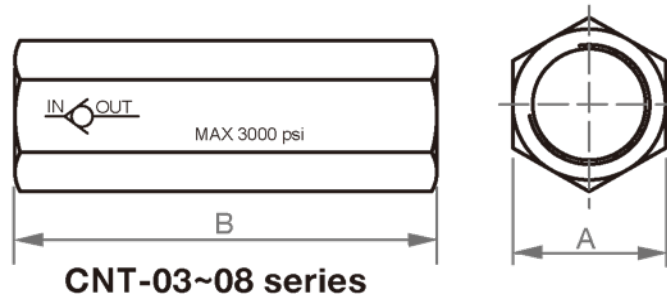
4. Cracking Pressure

A - 0.5 bar (7 psi)
 B - 5.0 bar (72 psi)

Check Valve

CNT Series

Installation Dimensions mm (inch)

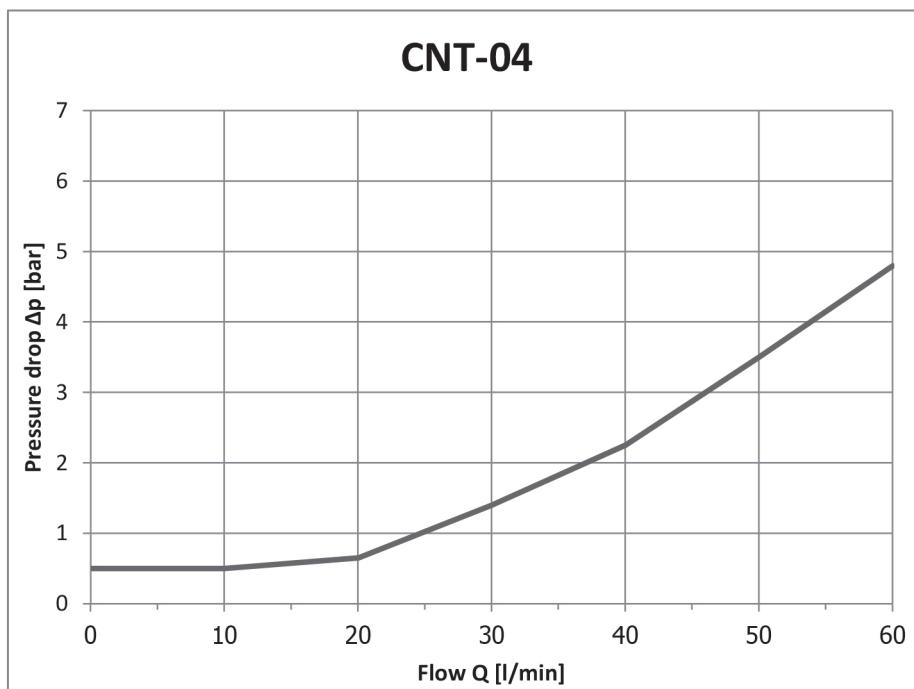
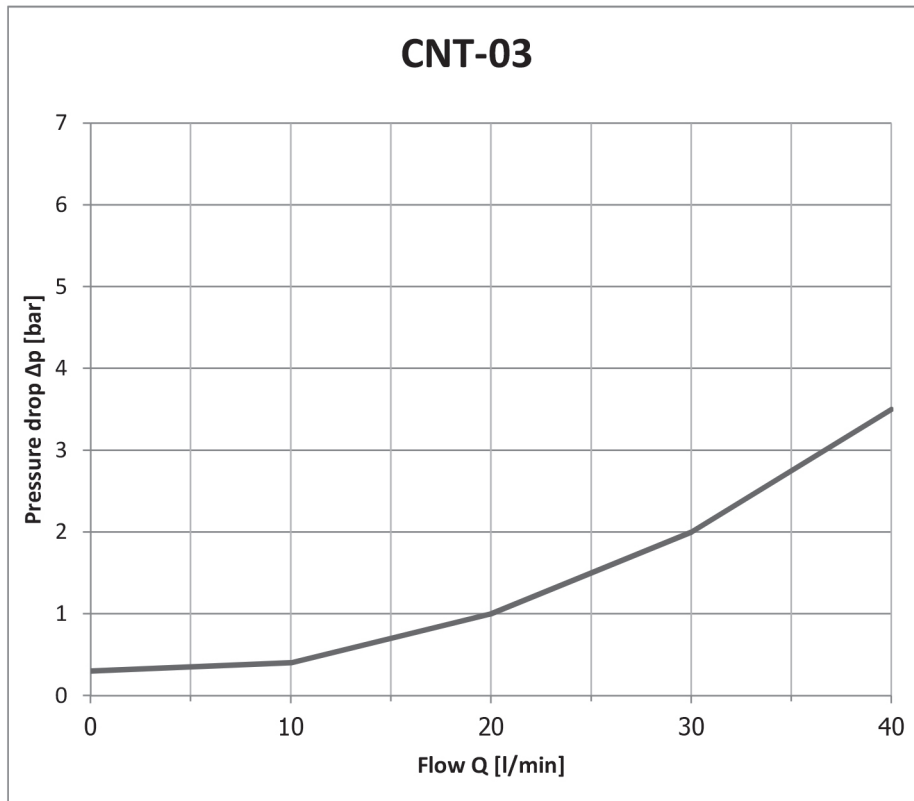


Model	A	B	C
CNT-T03	23	74	-
CNT-T04	29	80	-
CNT-T06	35	90	-
CNT-T08	46	113	-
CNT-T10	55	133	60
CNT-T12	60	139	65
CNT-T16	75	154	80

Check Valve CNT Series

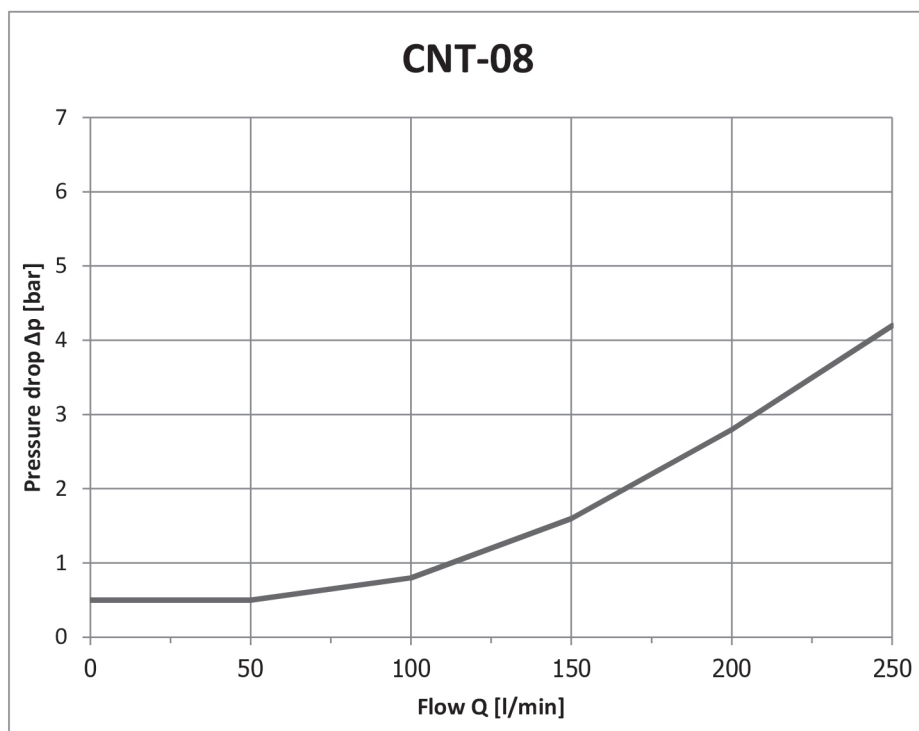
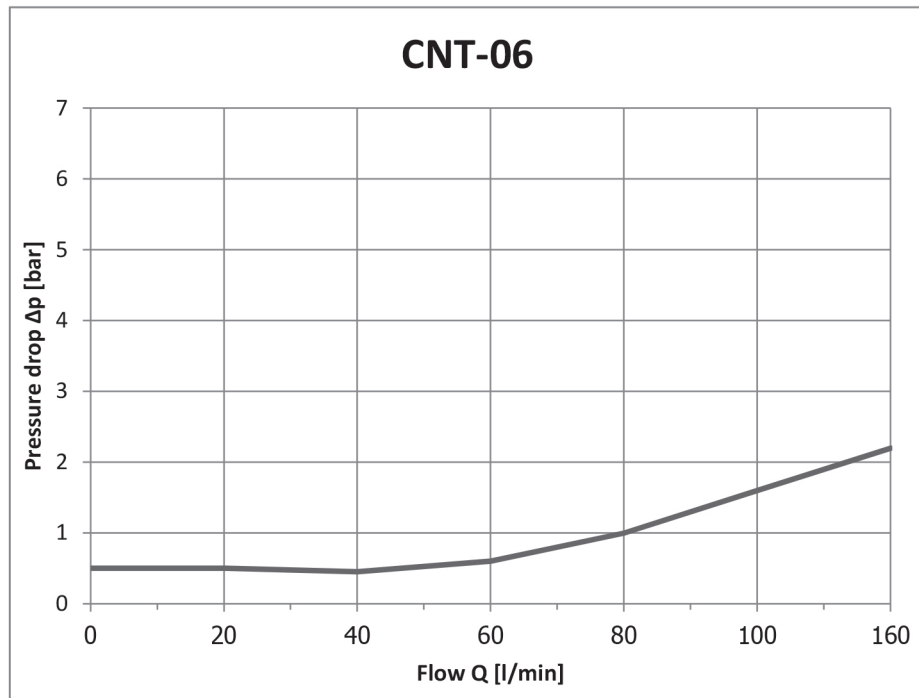
Performance Characteristics

Pressure Drop Characteristics measured at $\nu = 32 \text{ cSt (156 SUS)}$



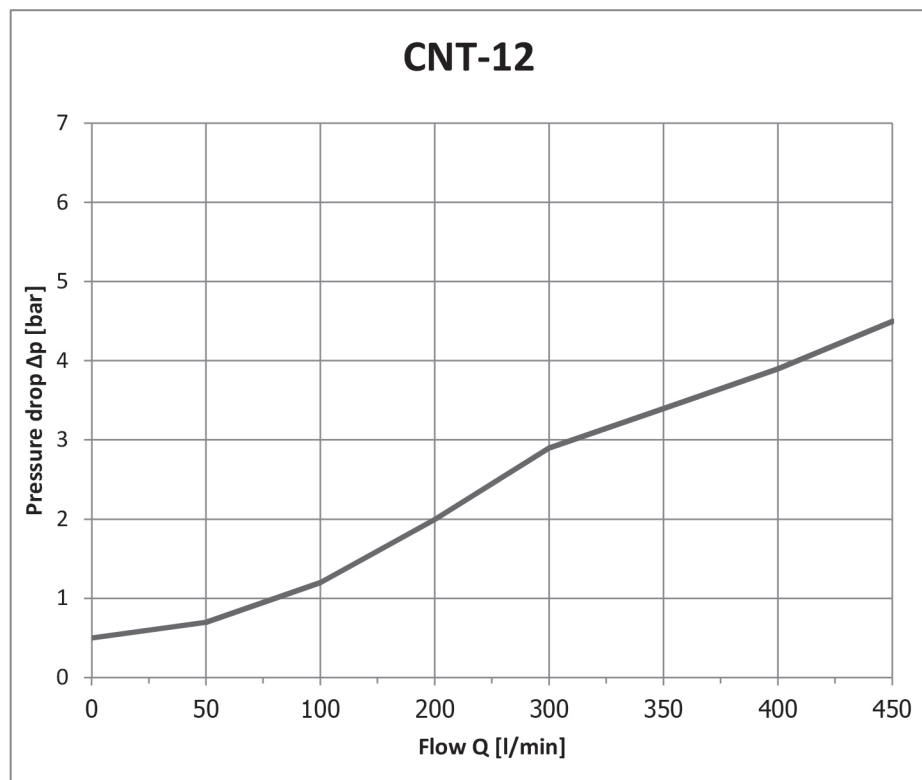
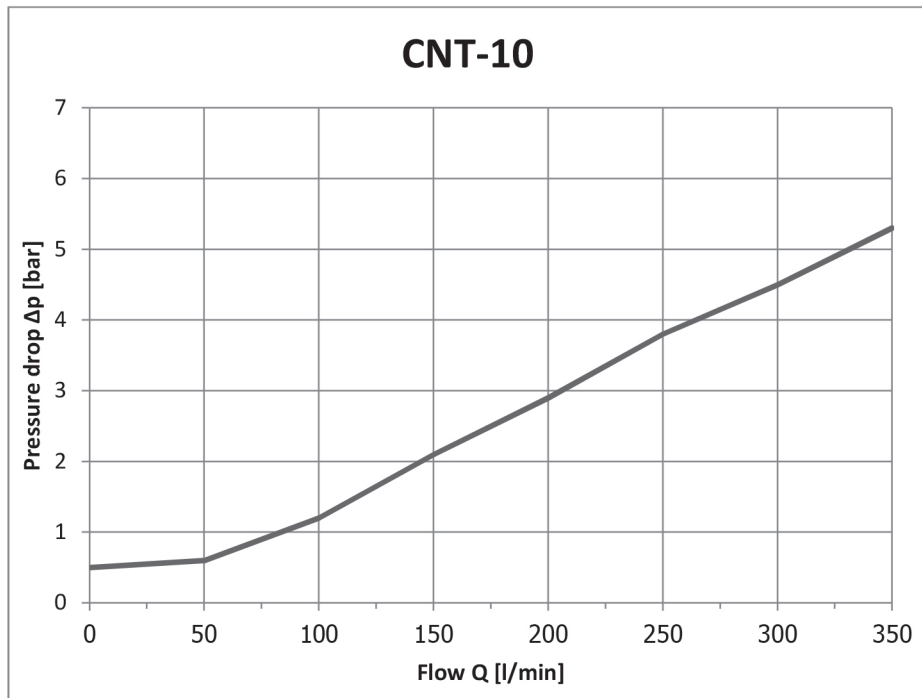
Check Valve

CNT Series



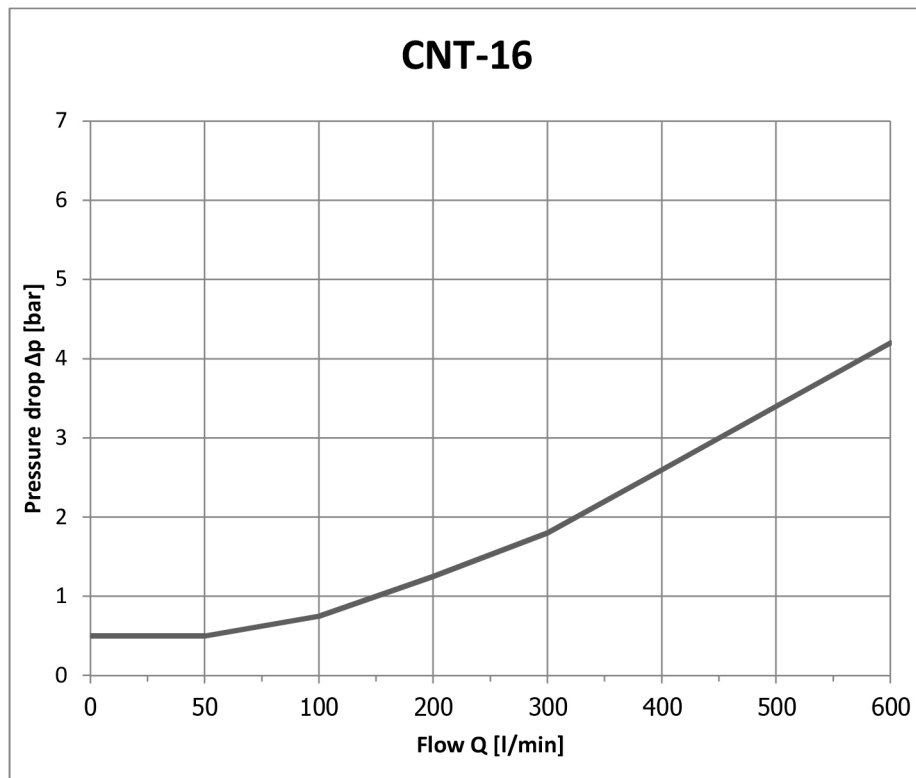
Check Valve

CNT Series



Check Valve

CNT Series



Manifold Line Mount HMLM Series

Features

Line mount hydraulic manifolds with choice of Single and Double (cross pilot).

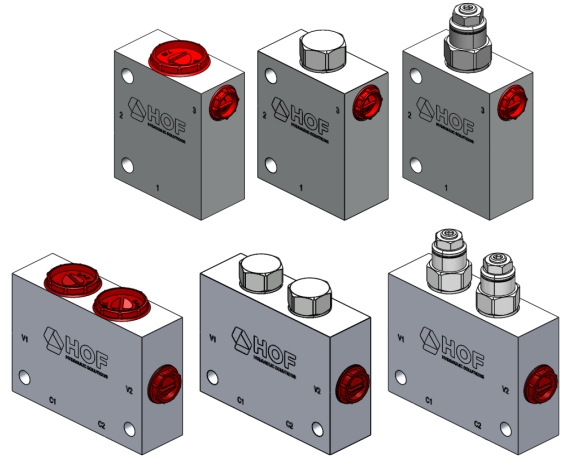
Cavity: T11A/ T10A

Material: Aluminum Alloy with high corrosion resistance

Functions: Pilot to Open Check Valve/ Counter Balance or other valves

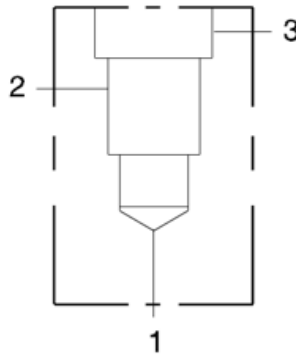
Max pressure: 210 bar

Port size: Various port size

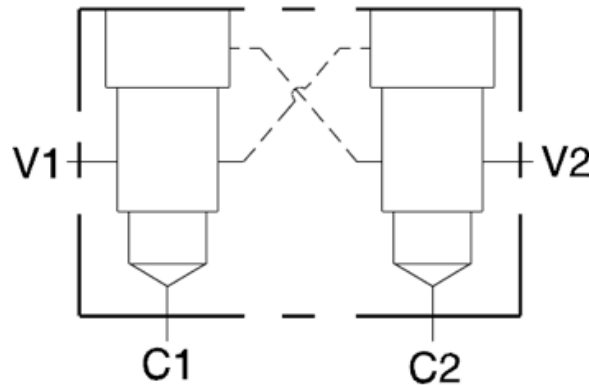


Symbols

Code S



Code D

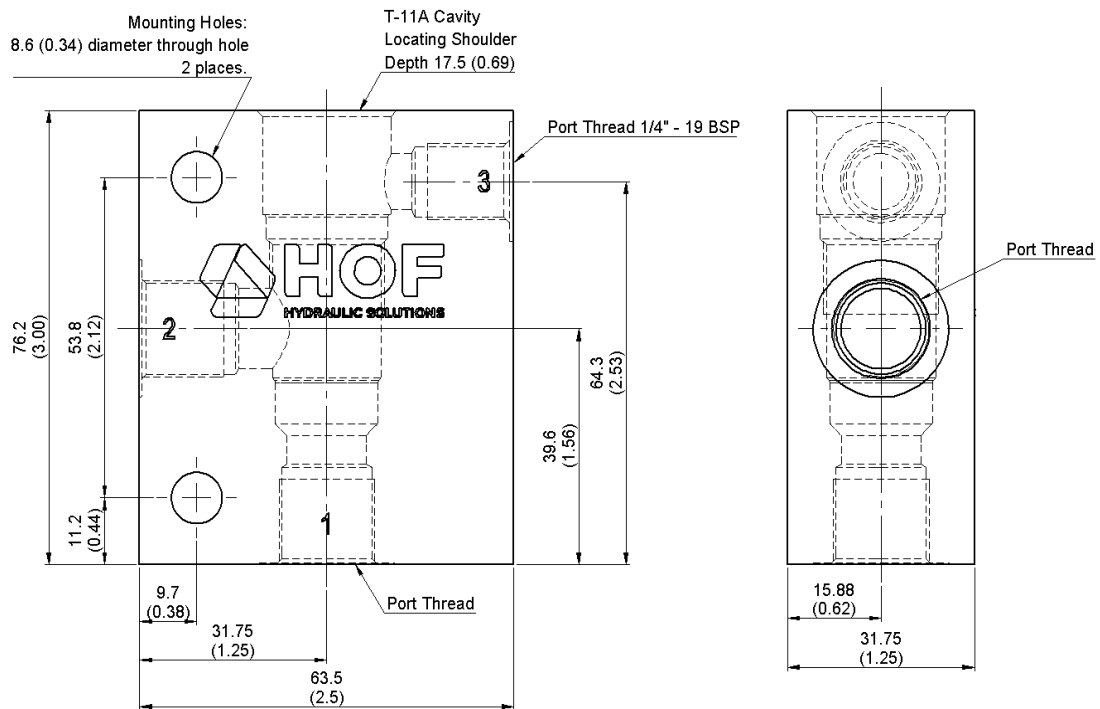


Manifold Line Mount HMLM Series

Installation Dimensions mm (inch)

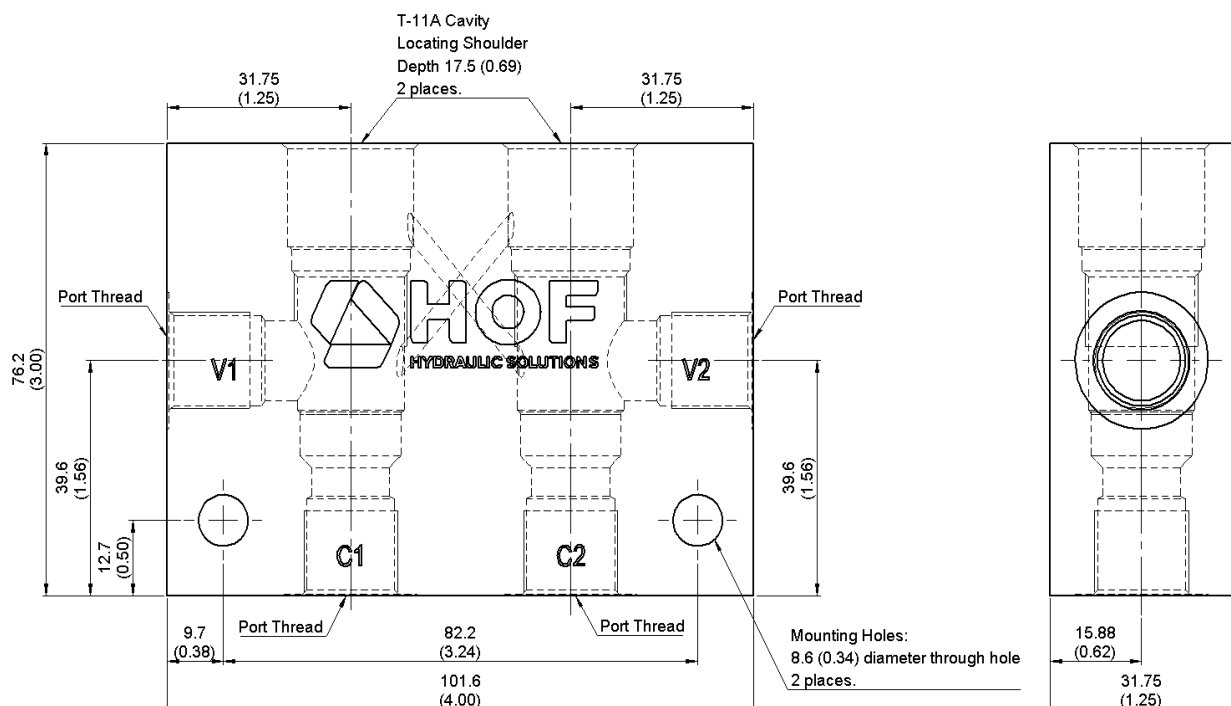
Code S

Weight: 0.4 kg (0.9lb)



Code D

Weight: 0.5 Kg (1.09lb)



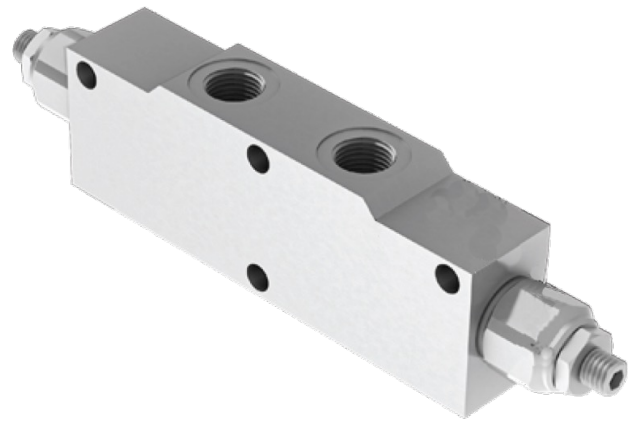
Manifold Line Mount Double counterbalance Valves

HMLM - CB - OC - T04 - 35 Series

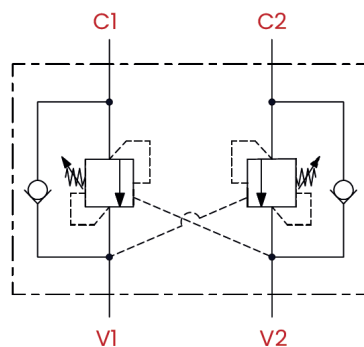
Features and Handling

Counterbalance valves Over center are used to keep a load locked, the built-in relief valve protects the system from overpressure in the cylinder by draining the oil.

Port:	1/2 BSPP
Max Flow:	60 l/min (15.9 USgpm)
Standard setting:	350 bar (5075 PSI)
Range spring:	60/350 bar (870/5075 PSI)
Increase to turn:	135 bar (1960 PSI)
Pilot ratio:	1:4.25
Max Pressure:	350 bar (5075 PSI)
Weight:	2 kg (4.4 lb)



Symbols



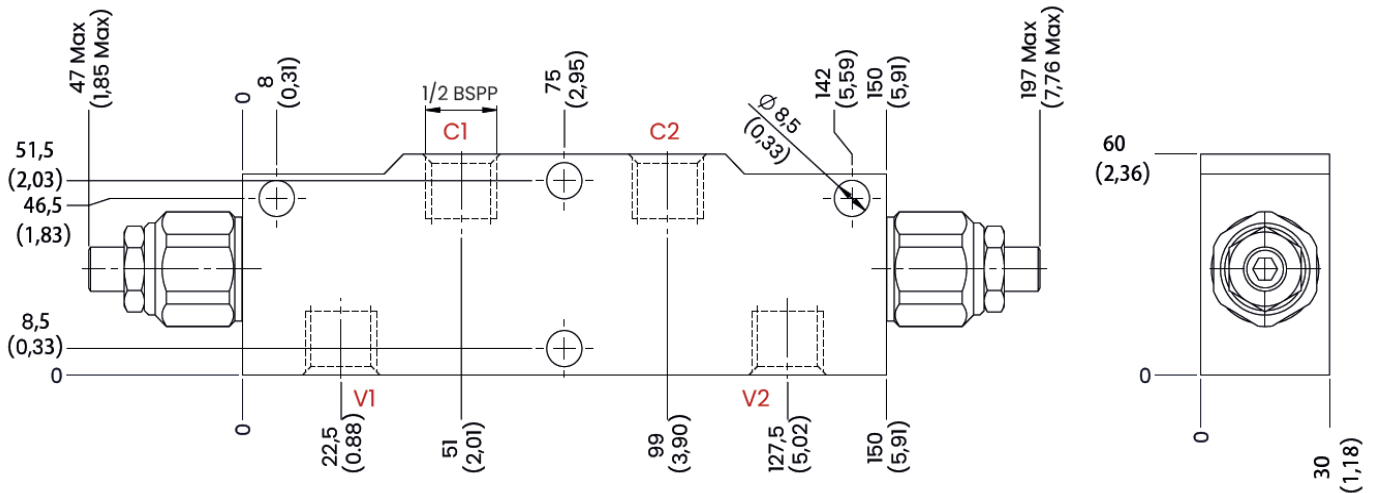
Ordering Code

HMLM	- CB	- OC	- T04	- 35
1	2	3	4	5

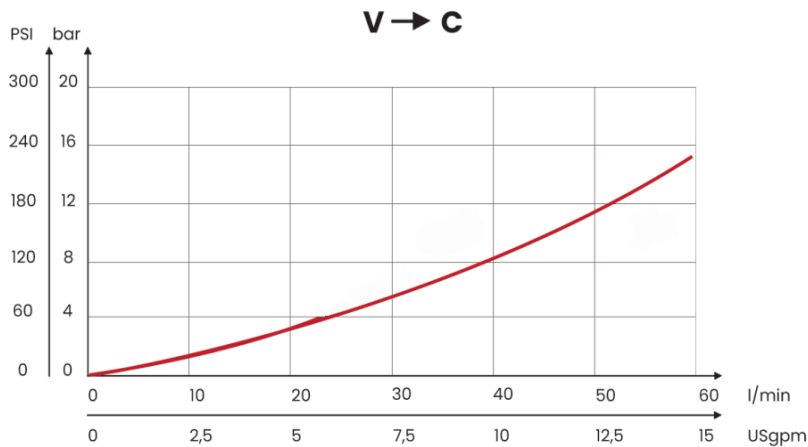
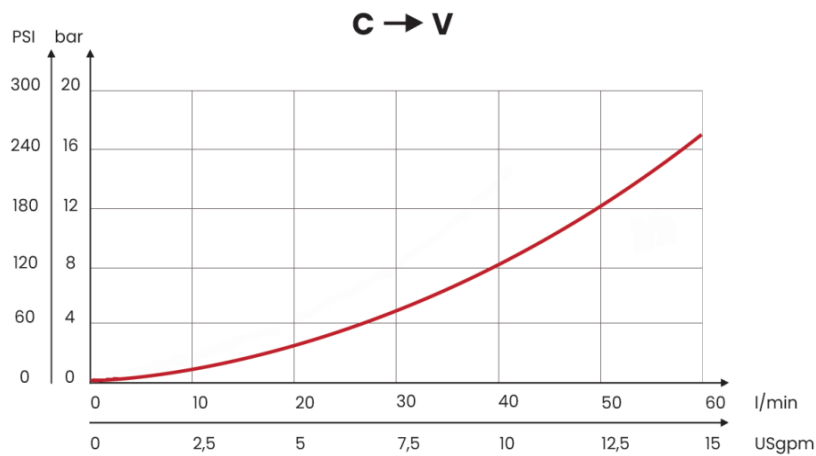
1. Model : HMLM - Manifold Line Mount
2. Cartridge Valve Insert
CB - Counterbalance Valve
3. Circuit
OC - Open Center
4. Valve Thread size
T04 - 1/2" - 14 BSP
5. Standard Setting
35 - 350 bar

Manifold Line Mount Double counterbalance Valves HMLM - CB - OC - T04 - 35 Series

Installation Dimensions mm (inch)



Performance

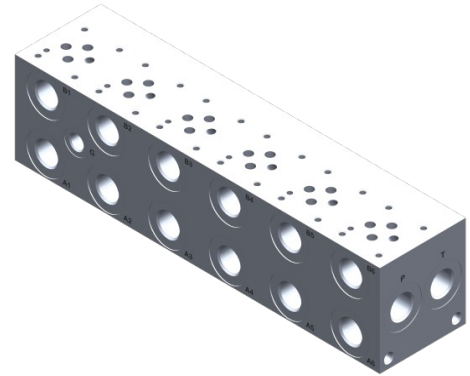


Manifold Bar Standard HSUB Series

Features and Handling

We offer a complete line of standard manifolds and subplates that meet all ISO and NFPA standards. Steel and Aluminum bodies are available that are suitable for CETOP3 and CETOP5.

Custom Manifold Blocks are available upon request, please contact contact@hofhydraulic.com



Ordering Code

HSUB	-	G01 B	-	A - 6 - R - G
1		2 3		4 5 6 7

1. Model : HSUB - HOF Hydraulic Subplates

2. Valve size

G01 - NG06 (CETOP3)

G03 - NG10 (CETOP5)

3. Port Connections

B - BSP threaded port

S - SAE threaded port

4. Material

A - Aluminum (240 bar)

S - Ductile Iron (350 bar)

5. Number of Stations

1-6

6. Option valve

Omit - Without relief valve

R - With relief valve

7. Gauge port

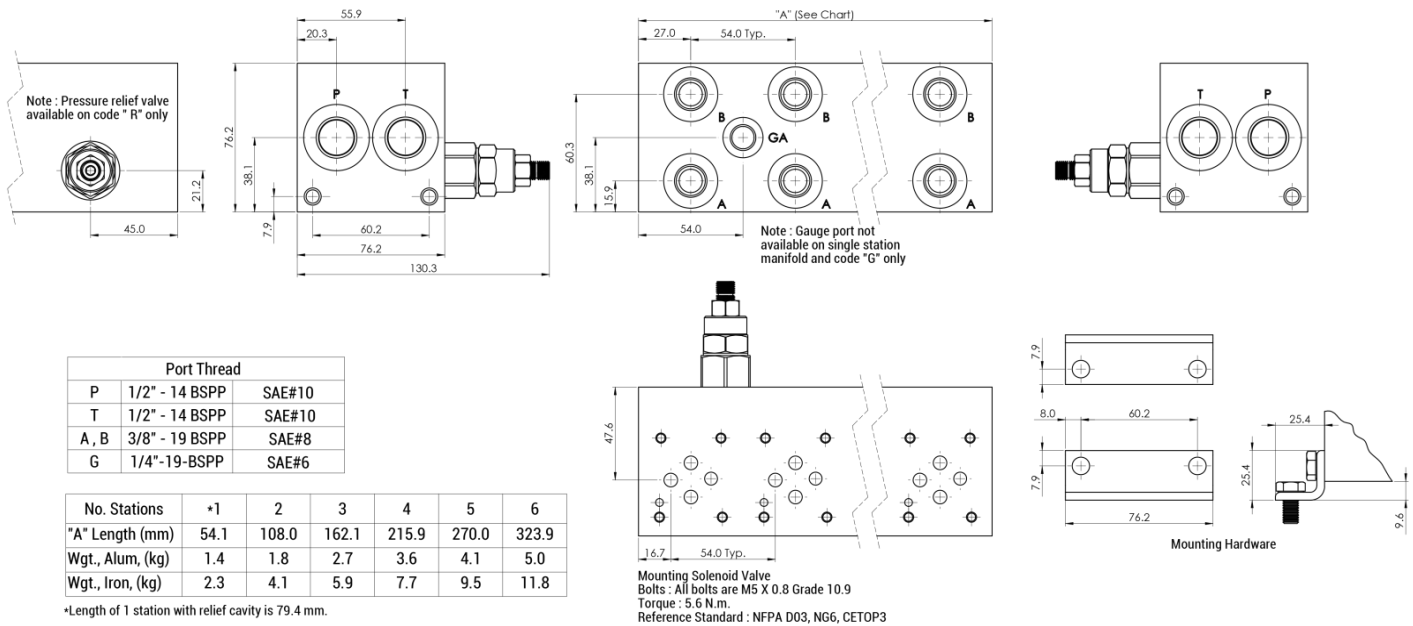
Omit - Without Gauge port

G - With Gauge port

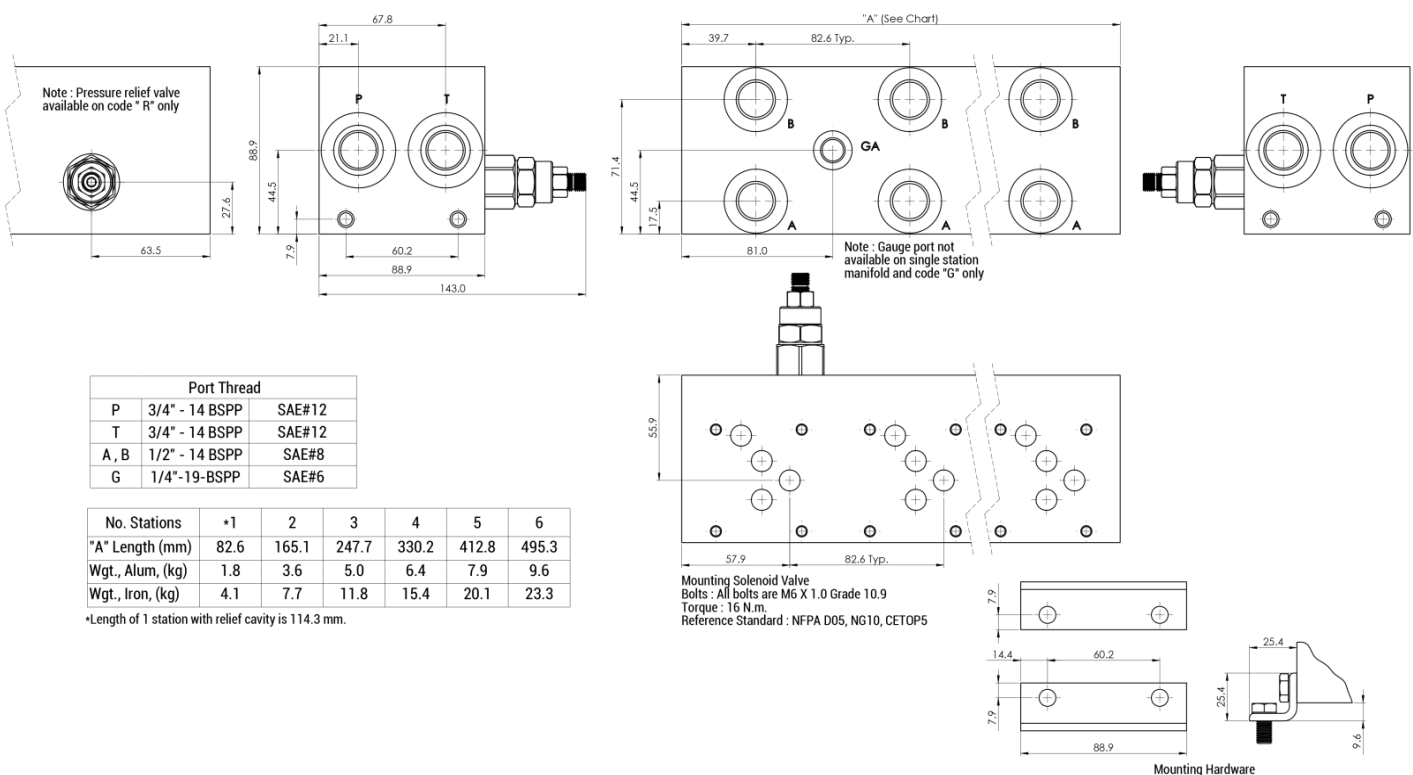
Manifold Bar Standard HSUB Series

Installation Dimension mm (inch)

HSUB-G01



HSUB-G03



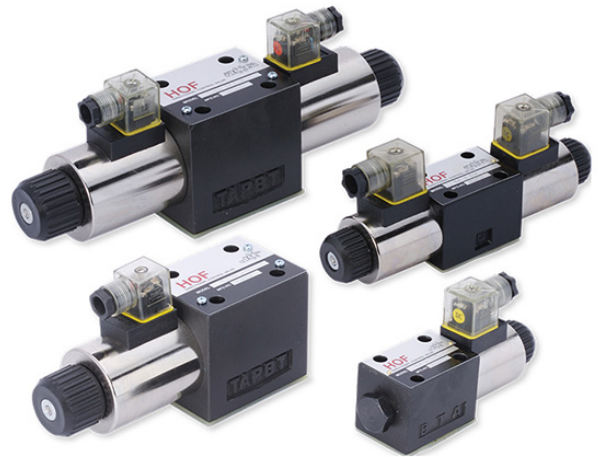
II. Directional Control Valve

Solenoid Operated Directional Valve

HWE Series

Features and Handling

- WE Series is a direct solenoid operated directional spool valve. The valve porting pattern follows DIN 24 340 form A. The Valves come with wet pin DC or AC solenoids with removable coil which can be rotated through 90 degree.
- The standard valves come with DIN 43650 electrical connector with light and manual override to permit the spool to be moved without the solenoid being energized.
- For correct operation, ensure that the solenoid pressure chamber is filled with oil. Do not exceed permissible voltage range of the coil.
- Keep surge pressure below the maximum permissible back pressure port T. Keep hydraulic oil clean at ISO cleanliness code 19/16



Specification

Model	Maximum Flow L/min (USgpm)	Maximum Pressure bar (psi)	Weight kg (lb)
4HWE 6	60 (15.8)	300 (4350)	Single coil 1.6 (3.52) Double coil 2.4 (5.28)
4HWE10	100 (26.4)		Single coil 4.5 (9.9) Double coil 6.2 (13.64)

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change at any time without notice.

Solenoid Operated Directional Valve

HWE Series

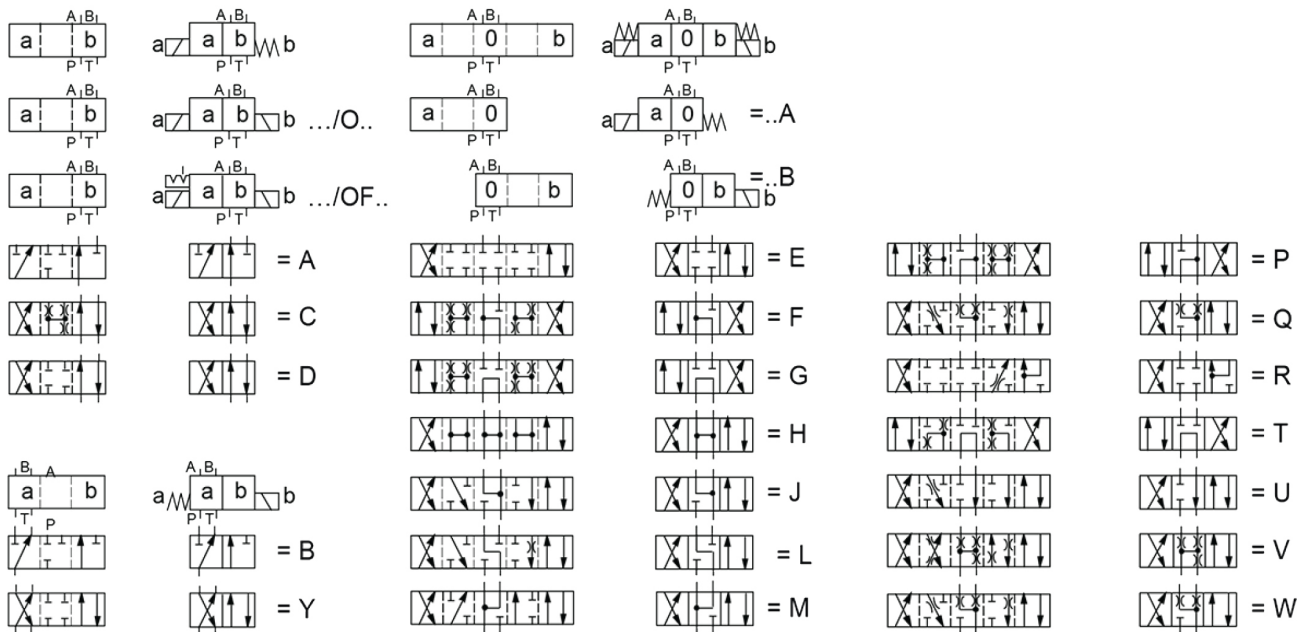
Symbols

Notes

1. With ../O and ../OF, spool A, C, and D can come without spring return with or without detent.
2. With ordering a spool with only two position "0" & "a" or "0" & "b", specify the desired position a or b after the spool code.

Example : Spool E with spool position "a"

Ordering code : 4HWE6EA-60/0AW110-10



Solenoid Operated Directional Valve

HWE Series

Ordering Code

4HWE6EA - 60/SAW110 -10



1. Number of port

4 - 4 ports

2. Valve Size

6 - NG6 (CETOP3)

10 - NG10 (CETOP5)

3. Spool type (see the table below)

4. Three position spool with

solenoid A only = A

solenoid B only = B

5. Design

60 - for HWE6

30 - for HWE10

6. Spring and Detent

S - Spring return

7. Coil type

A - Wet pin oil immersed with removable coil

8. Coil Voltage

G12 - 12V DC

G24 - 24V DC

W220 - 220V AC 50/60 Hz

W110 - 110V AC 50/60 Hz

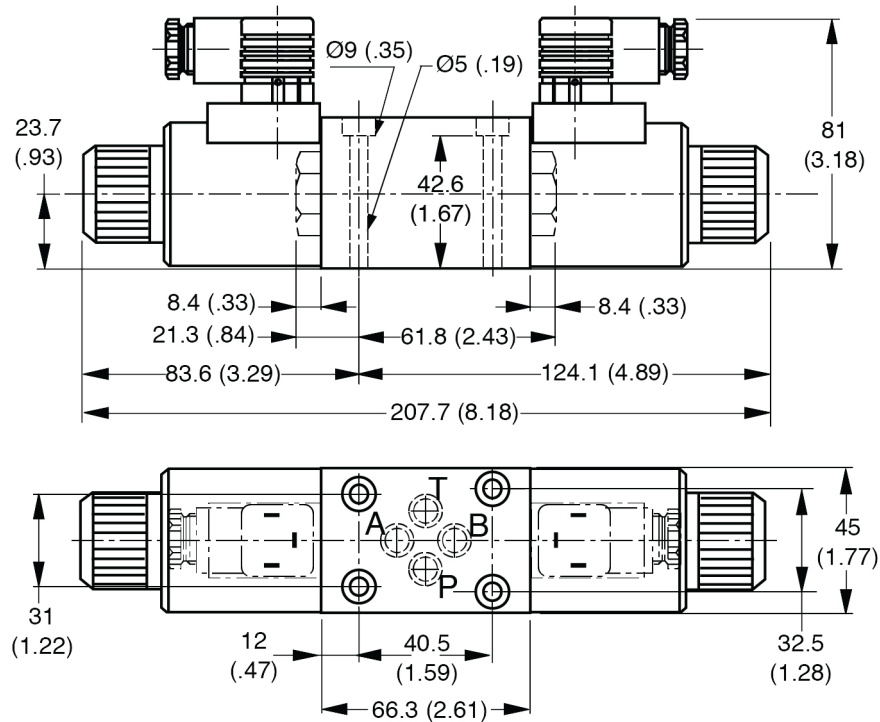
9. Further detail for future use

Solenoid Operated Directional Valve

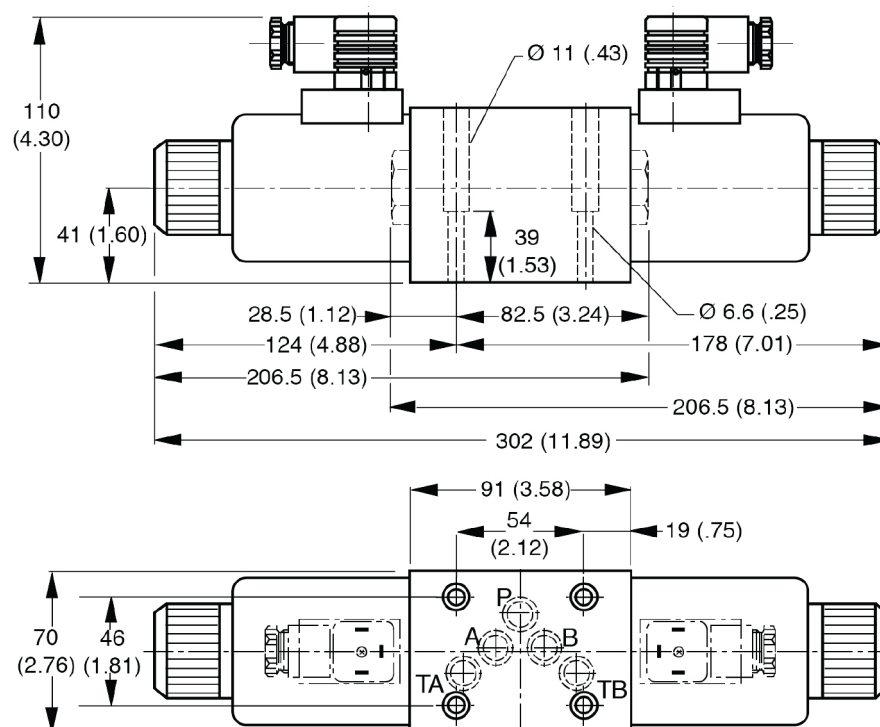
HWE Series

Installation Dimension mm (inch)

4HWE 6



4HWE 10

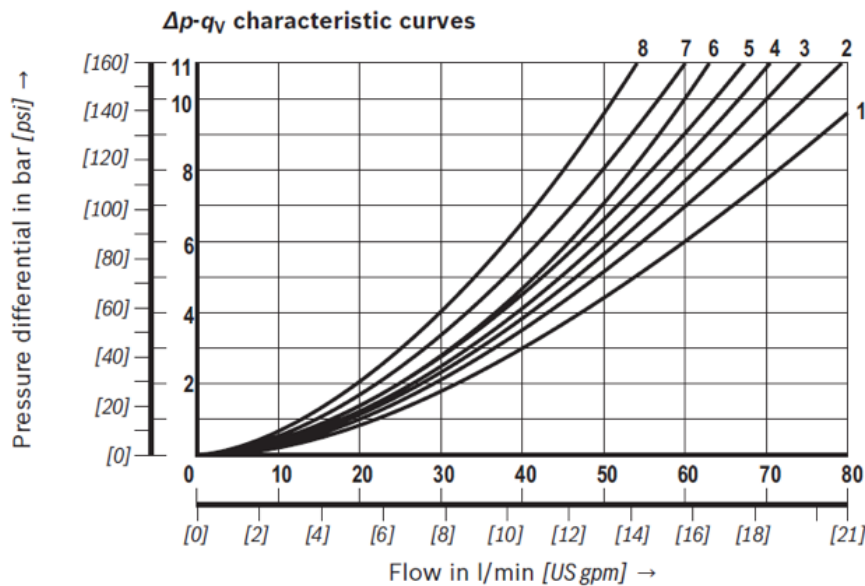


Solenoid Operated Directional Valve

HWE Series

Characteristic curves HWE6

(measured with HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^{\circ}\text{C}$ [$104 \pm 9 \text{ }^{\circ}\text{F}$])



- 7 Symbol "R" in spool position B – A
- 8 Symbol "G" and "T" in central position P – T
- 9 Symbol "H" in central position P – T

Symbol	Direction of flow			
	P – A	P – B	A – T	B – T
A; B	5	5	–	–
C	3	3	5	3
D; Y	6	6	5	5
E	5	5	3	3
F	3	5	3	3
T	8	8	4	4
H	2	1	2	2
J; Q	3	3	2	3
L	5	5	1	4
M	2	1	5	5
P	5	3	3	3
R	6	6	1	–
V	3	2	3	3
W	3	3	2	2
U	5	5	4	1
G	7	7	4	4

Solenoid Operated Directional Valve

HWE Series

Performance limits HWE6

(measured with HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^{\circ}\text{C}$ [$104 \pm 9 \text{ }^{\circ}\text{F}$])

Notice!

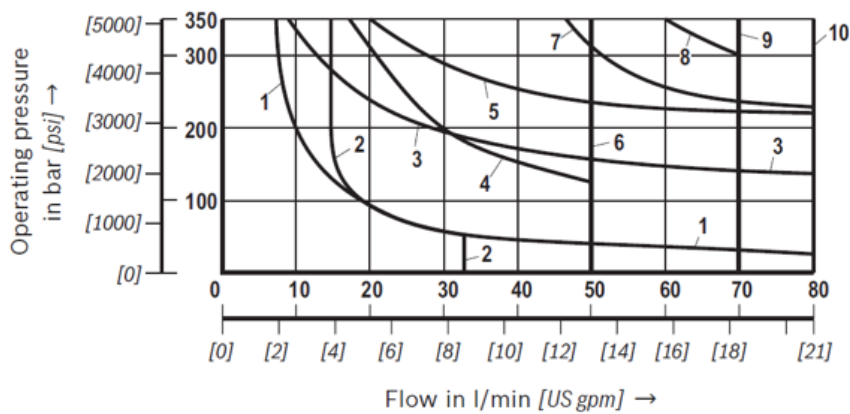
The specified performance limits are valid for operation with two directions of flow (e.g. from P to A and simultaneous return flow from B to T).

Due to the flow forces acting within the valves, the admissible performance limit may be considerably lower

with only one direction of flow (e.g. from P to A while port B is blocked).

In such cases of application, please consult us!

The performance limit was determined when the solenoids were at operating temperature, at 10% under-voltage and without tank preloading.



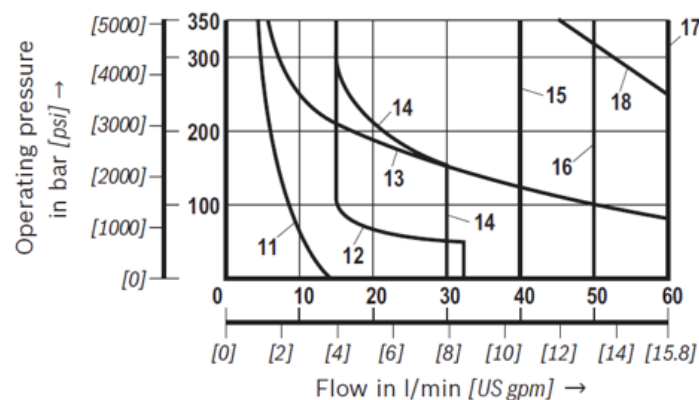
DC solenoid	
Characteristic curve	Symbol
1	A; B ¹⁾
2	V
3	A; B
4	F; P
5	J
6	G; H; T
7	A/O; A/OF; L; U
8	C; D; Y
9	M
10	E ²⁾ ; R ³⁾ ; C/O; C/OF; D/O; D/OF; Q; W

1) With manual override

2) P – A/B pre-opening

3) Return flow from actuator to tank

Solenoid voltage (DC solenoid)	
12; 24 V	



Solenoid voltage (AC solenoid)	
110 V; 50 Hz 220 V; 50 Hz	

AC solenoid	
Characteristic curve	Symbol
11	A; B ¹⁾
12	V
13	A; B
14	F; P
15	G; T
16	H
17	A/O; A/OF; C/O; C/OF; D/O; D/OF; E ²⁾ ; J; L; M; Q; R ³⁾ ; U; W
18	C; D; Y

1) With manual override

2) P – A/B pre-opening

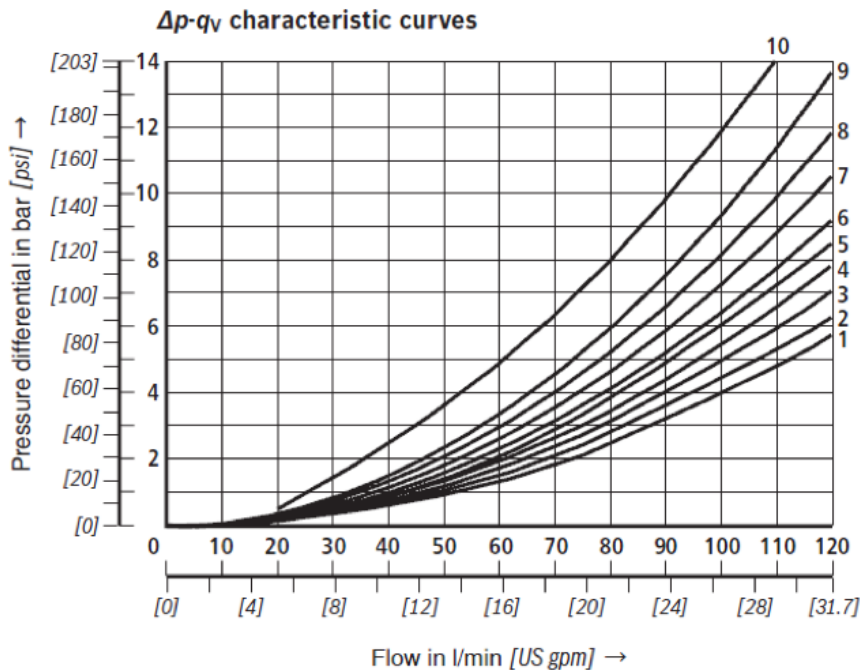
3) Return flow from actuator to tank

Solenoid Operated Directional Valve

HWE Series

Characteristic curves HWE10

(measured with HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^{\circ}\text{C}$ [$104 \pm 9 \text{ }^{\circ}\text{F}$])



Central position:

Spool symbol	Direction of flow				
	P - A	P - B	B - T	A - T	P - T
F	4	—	—	9	9
P	—	5	8	—	10
G, T	—	—	—	—	9
H	—	—	—	—	3

Spool symbol	Direction of flow			
	P - A	P - B	A - T	B - T
A; B	3	3	—	—
C	3	3	4	5
D; Y	5	5	6	6
E	1	1	4	4
F	2	3	7	4
G	3	3	6	7
H	1	1	6	7
J	1	1	3	3
L	2	2	3	5
M	1	1	4	5
P	4	2	5	7
Q	1	2	1	3
R	3	6	4	—
T	3	3	6	7
U; V	2	2	3	3
W	2	2	4	5

Spool position:

Spool symbol	Direction of flow			
	P - A	B - A	A - T	P - T
R	—	9	—	—

Solenoid Operated Directional Valve

HWE Series

Performance limits HWE10

(measured with HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^{\circ}\text{C}$ [$104 \pm 9 \text{ }^{\circ}\text{F}$])

Notice!

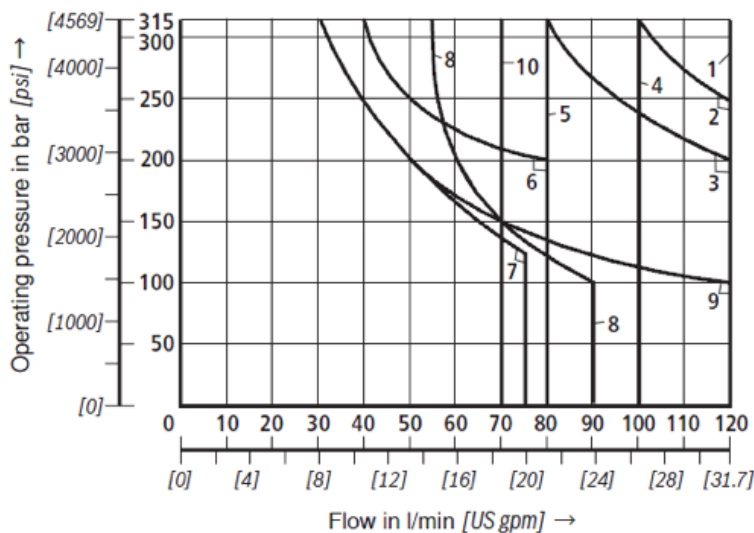
The specified performance limits are valid for operation with two directions of flow (e.g. from P to A and simultaneous return flow from B to T).

Due to the flow forces acting within the valves, the admissible performance limit may be considerably lower

with only one direction of flow (e.g. from P to A while port B is blocked).

In such cases of application, please consult us!

The performance limit was determined when the solenoids were at operating temperature, at 10% under-voltage and without tank preloading.



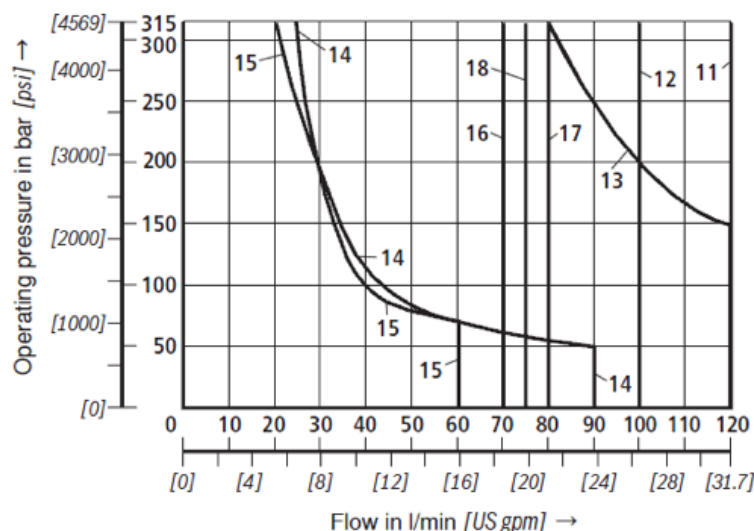
Solenoid voltage (DC solenoid)

12; 24 V

Curve	DC voltage Spool symbol
1	C; C/O; C/OF; D; D/O; D/OF; Y; M
2	E
3	A/O; A/OF; L; U; J; Q; W
4	H
5 ¹⁾	R; L ²⁾ ; U ²⁾
6	G
7	T
8	F; P
9	A; B
10	V

¹⁾ Return flow from actuator to tank (irrespective of the area ratio)

²⁾ Central position only



Solenoid voltage (AC solenoid)

110 V; 50 Hz 220 V; 50 Hz

Curve	AC voltage Spool symbol
11	C; C/O; C/OF; D; D/O; D/OF; Y
12	E; L; U; Q; W
13	A/O; A/OF; J
14	F; P
15	T
16	H
17	R
18 ²⁾	L; U
19	M

²⁾ Central position only

Manual Operated Directional Control Valve L-4HWE Series

Features and Handling

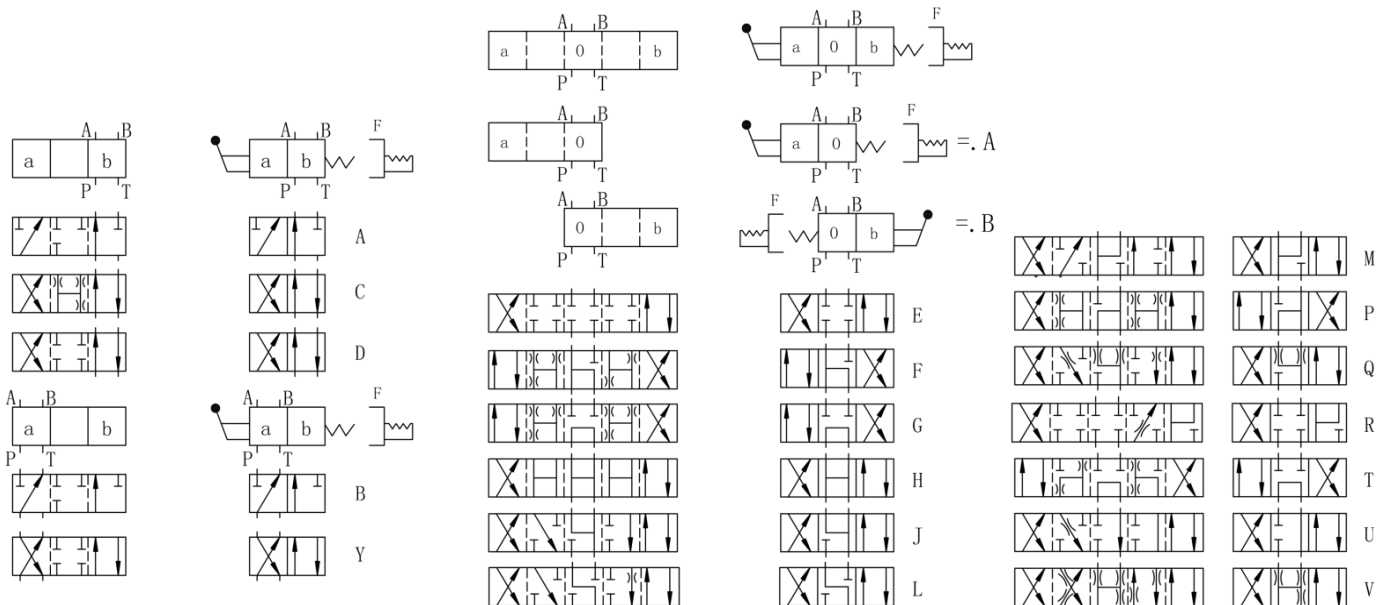
Manual operated directional control valve are direct type directional valves. It can control the start, stop & direction of fluid flow. This series with detent or return spring are available.



Specification

Model	Working Pressure		Flow rate	Working fluid	Fluid temp	Viscosity	Weight
	Port P, A, B	Port T					
L-4HWE6	315 bar (4570 psi)	100 bar (1450 psi)	60 L/min (15.8 USgpm)	Mineral oil; phosphate-ester	-20 - 70 °C	2.8 - 380 mm ² /S	1.4 kg.
L-4HWE10			100 L/min (26.4 USgpm)				3.3 kg.

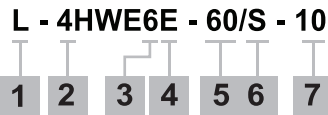
Symbols



Manual Operated Directional Control Valve

L-4HWE Series

Ordering Code



1. Control Lever

2. Number of Port

4 - 4 port

3. Valve Size

6 - NG6 (CETOP3)

10 - NG10 (CETOP5)

4. Spool Type (see the table below)

5. Design

60 - for HWE6

30 - for HWE10

6. Spring and Detent

S - Spring return

D - With detent

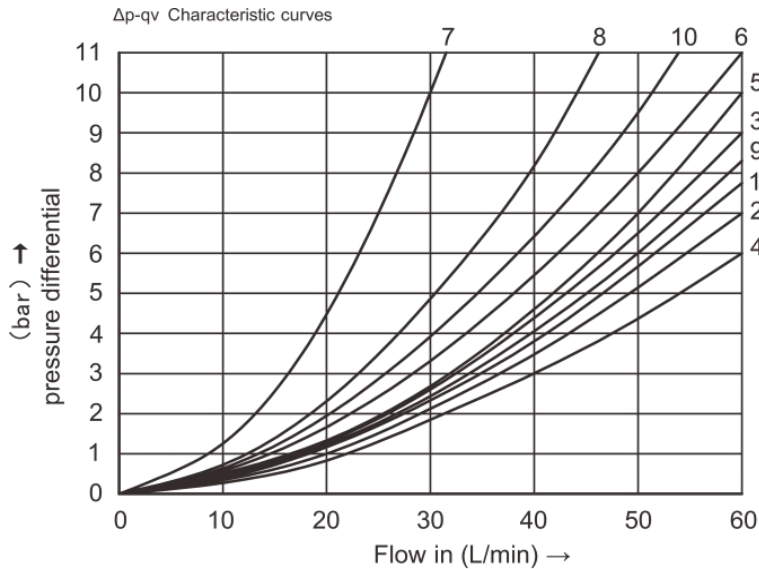
7. Further detail for future use

Manual Operated Directional Control Valve

L-4HWE Series

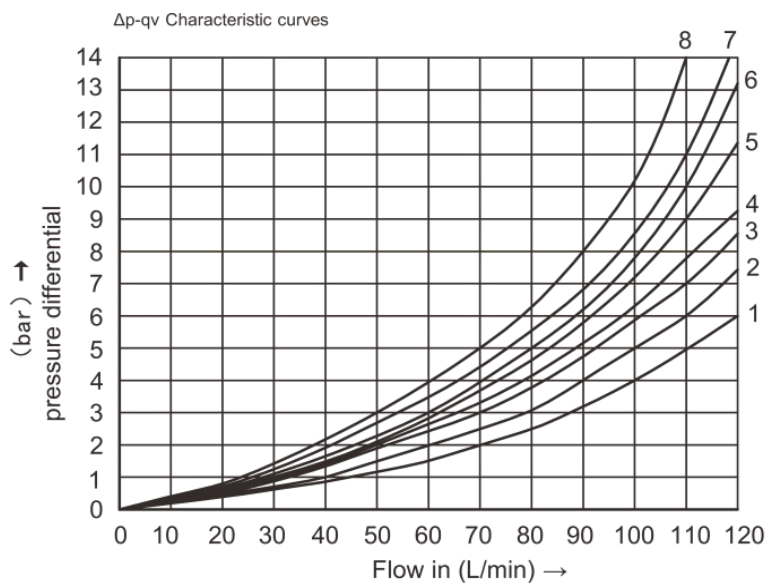
Characteristic curves

L-4HWE6



Spool symbol	Spool position			
	P-A	P-B	A-T	B-T
A	3	3	-	-
B	3	3	-	-
C	1	1	3	1
D	5	5	3	3
E	3	3	1	1
F	1	3	1	1
G	6	6	9	9
H	2	4	2	2
J	1	1	2	1
M	2	4	3	3
P	3	1	1	1
Q	1	1	2	1
T	10	10	9	9
U	3	3	9	4
V	1	2	1	1
Y	5	5	3	3

L-4HWE10

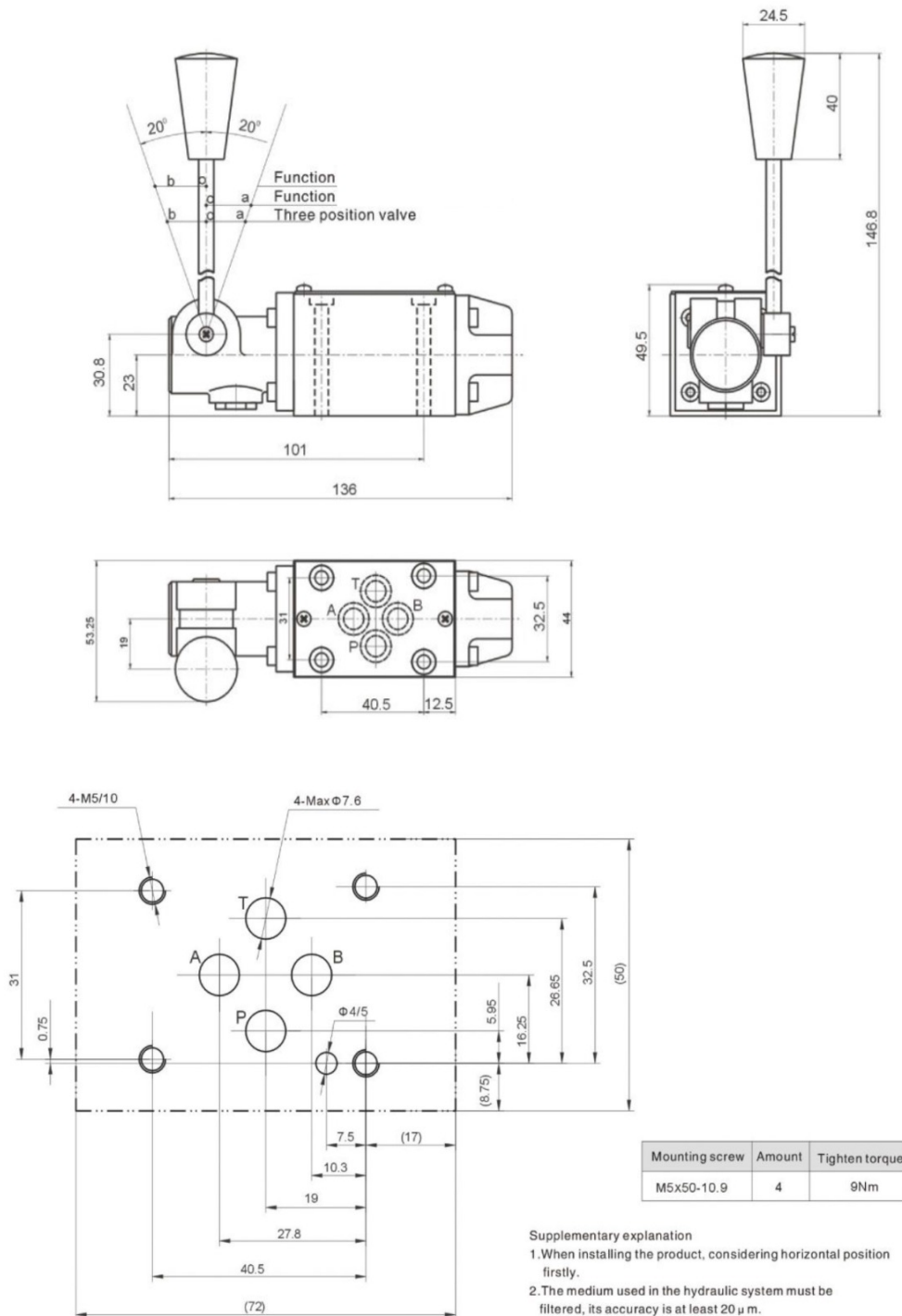


Spool symbol	Spool position			
	P-A	P-B	A-T	B-T
A	4	3	-	-
B	3	4	-	-
C	3	3	4	4
D	3	3	5	5
E	2	2	4	4
F	1	2	3	4
G,T	4	4	7	7
H	1	1	5	5
J	2	2	3	3
L	3	3	2	4
P	3	1	5	5
R	3	4	3	-
U	3	3	5	2
V	2	2	3	3

Manual Operated Directional Control Valve L-4HWE Series

Installation Dimension mm (inch)

L-4HWE6



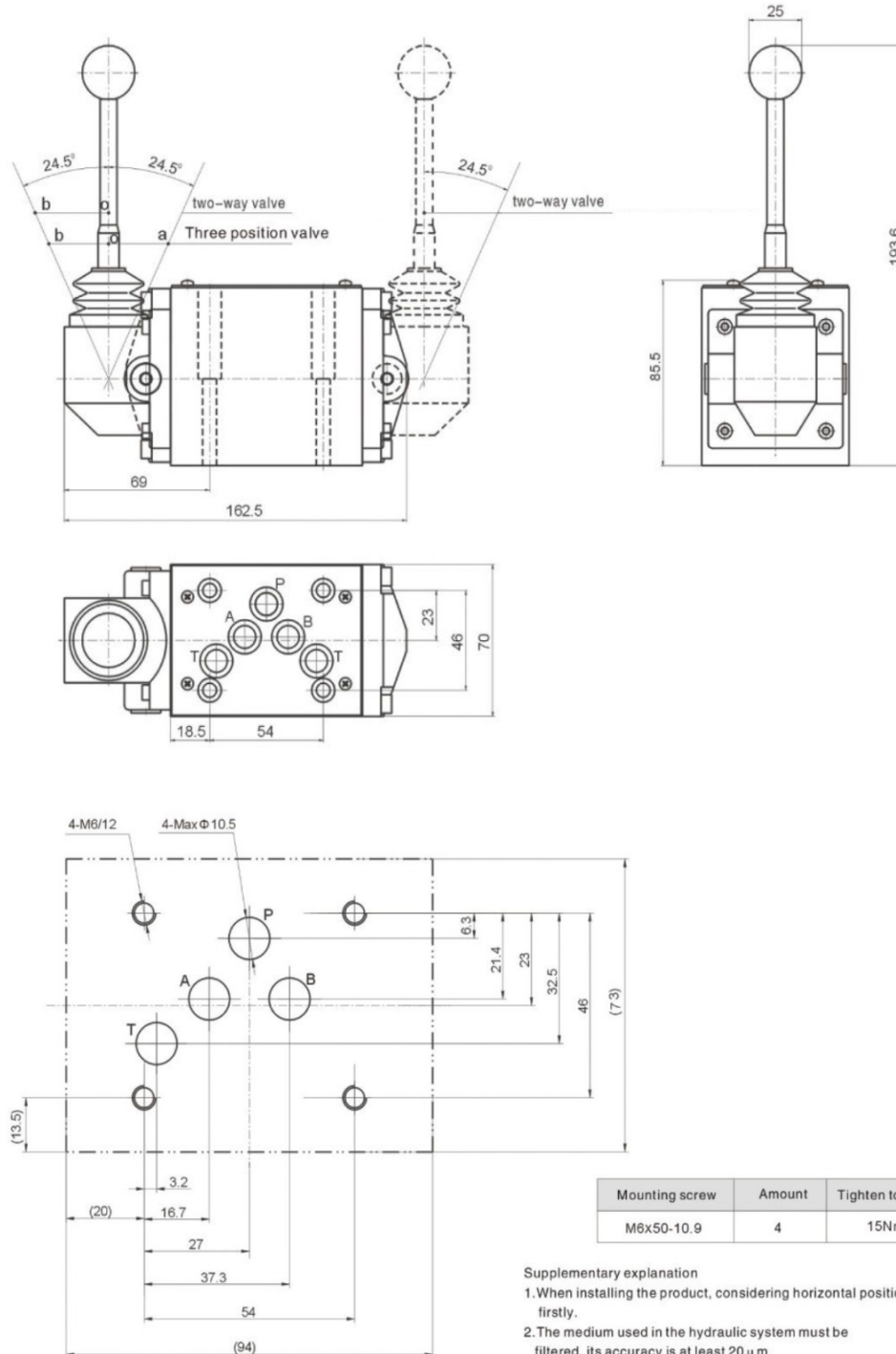
Supplementary explanation

1. When installing the product, considering horizontal position firstly.
2. The medium used in the hydraulic system must be filtered, its accuracy is at least $20\ \mu\text{m}$.
3. Screw should be according to the parameters in catalogue.
4. The surface, connecting with the valve, should be $Ra0.8$ roughness, and $0.01/100\text{mm}$ flatness.

Manual Operated Directional Control Valve

L-4HWE Series

L-4HWE10



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.



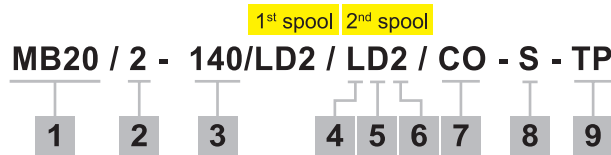
Specification

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

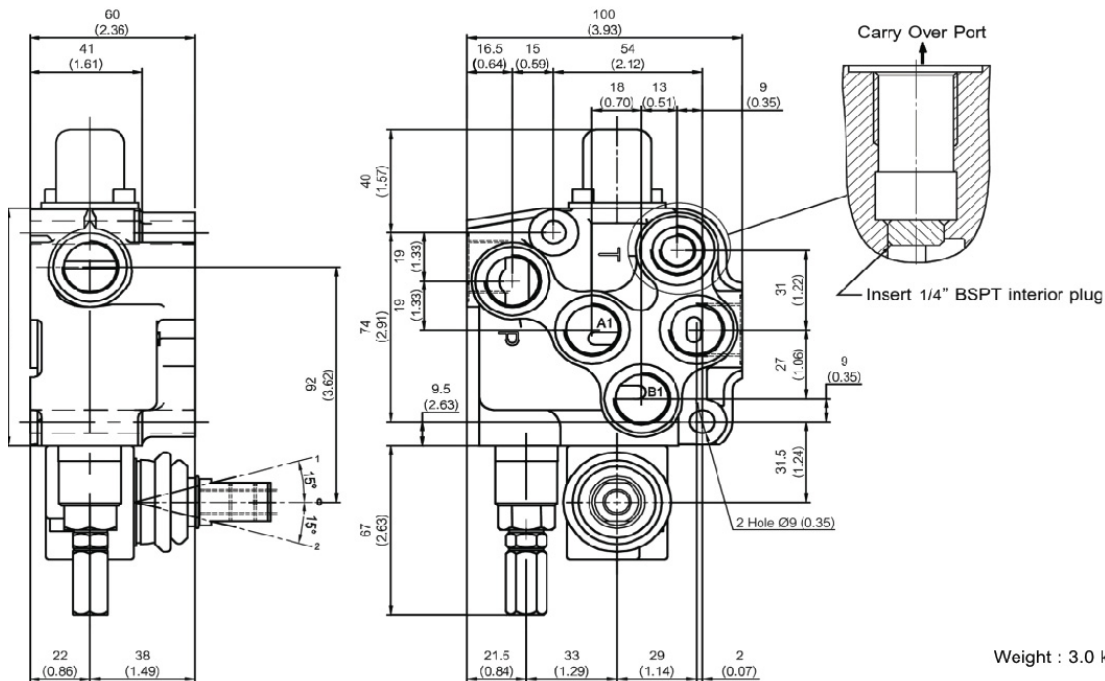
Code	Thread	Port A-B	Port P	Port T	Port CO
B3	BSP	3/8"	3/8"	3/8"	3/8"
S	SAE	SAE 8	SAE 8	SAE 8	SAE 8

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

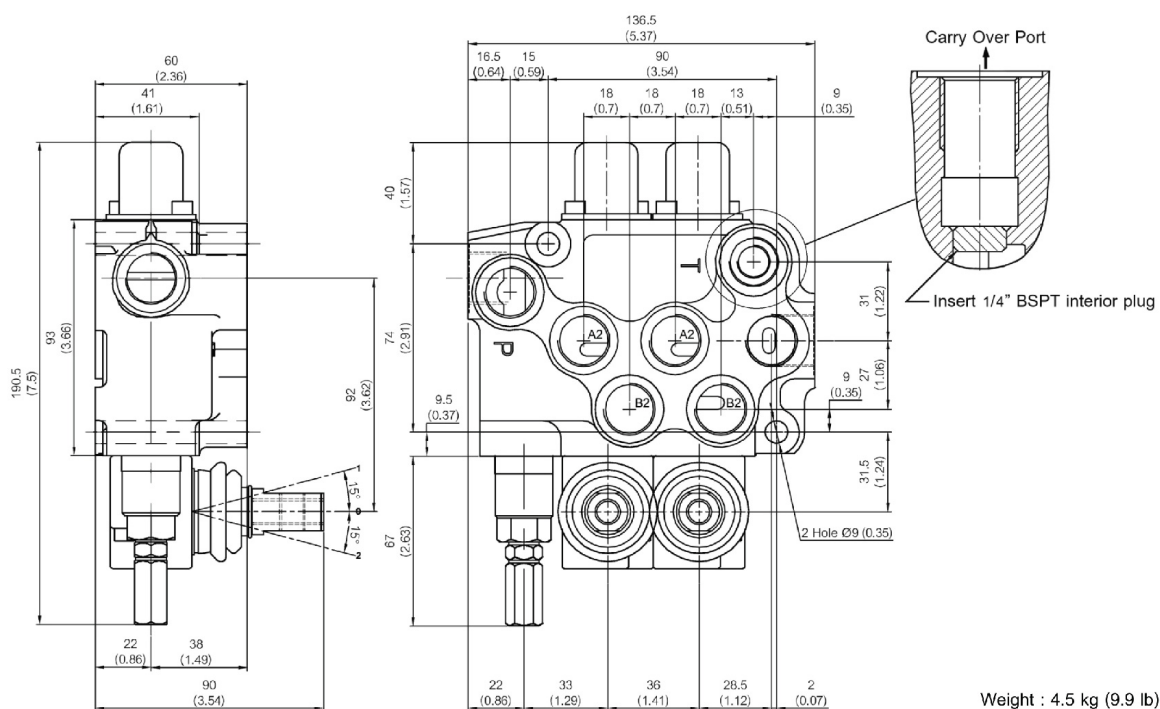
Compact Monoblock Directional Control Valve MB20 Series

Installation Dimension mm (inch)

MB-20/1



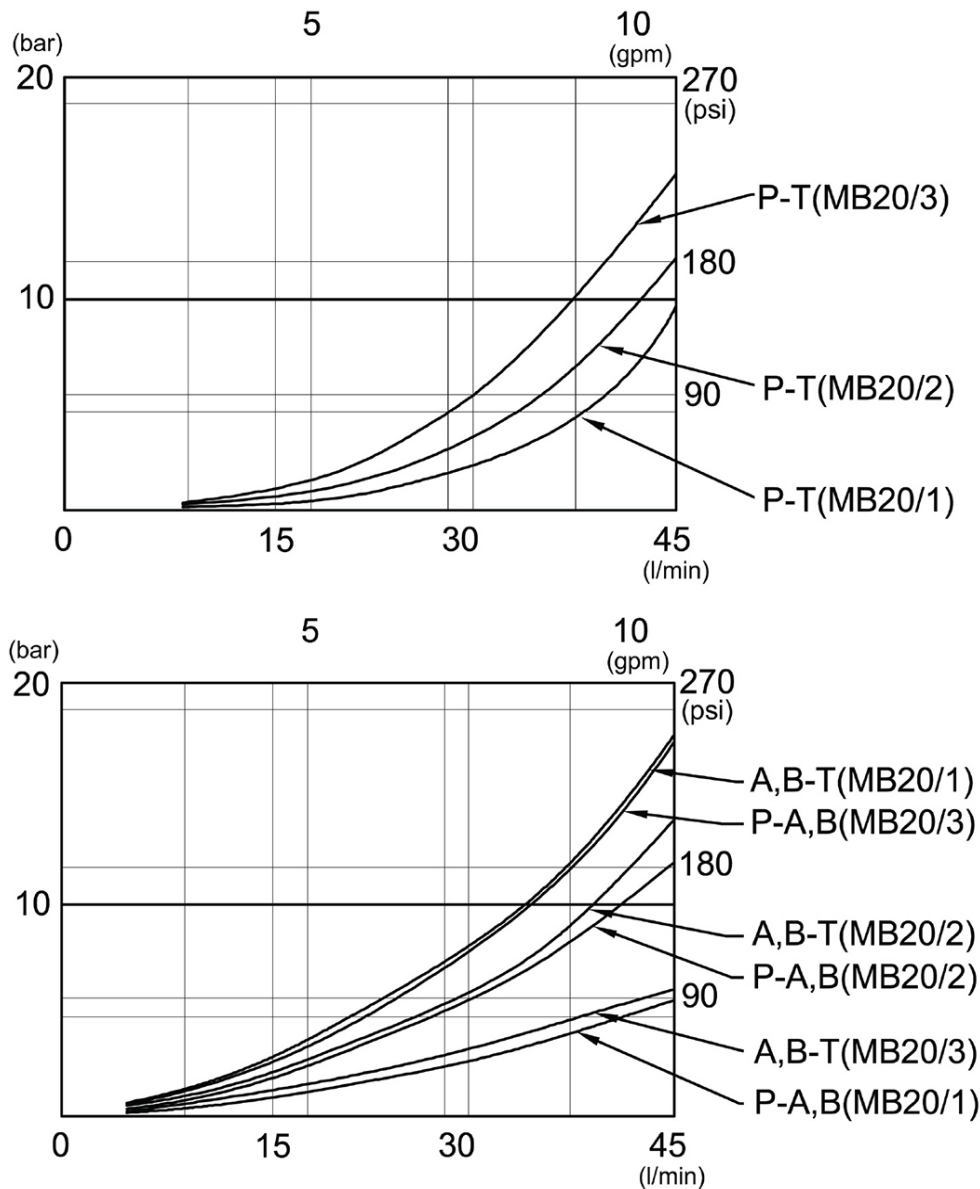
MB-20/2



Compact Monoblock Directional Control Valve MB20 Series

Performance Characteristics

Pressure Drop



Monoblock Directional Control Valve

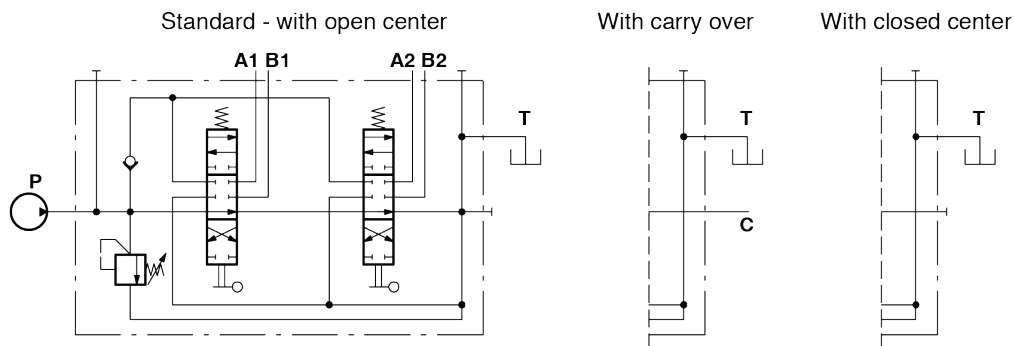
MCD20 Series

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

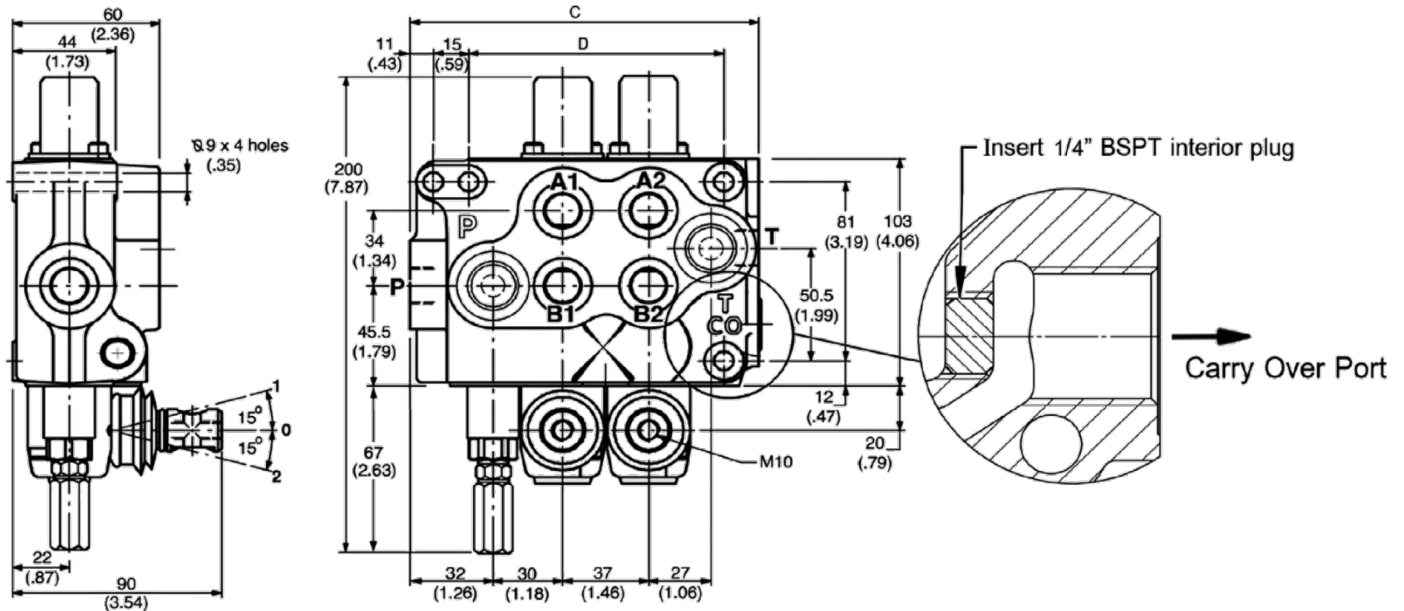
Code	Thread	Port A-B	Port P	Port T	Port CO
B3	BSP	3/8"	3/8"	3/8"	3/8"
S	SAE	SAE 8	SAE 10	SAE 10	SAE 10

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

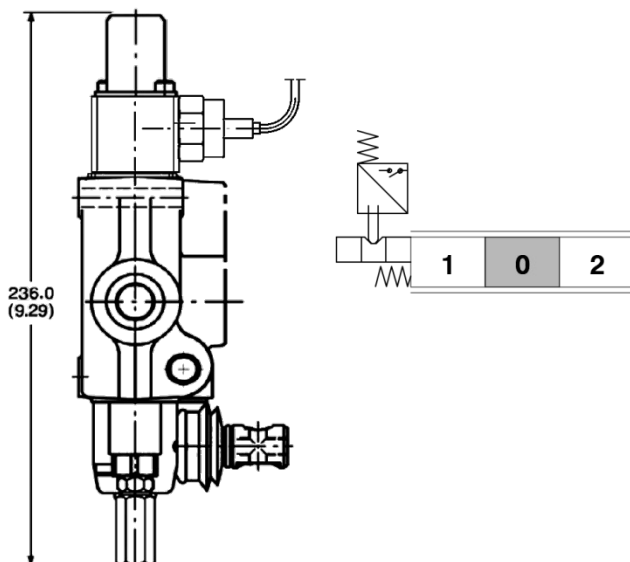
Monoblock Directional Control Valve MCD20 Series

Installation Dimension mm (inch)

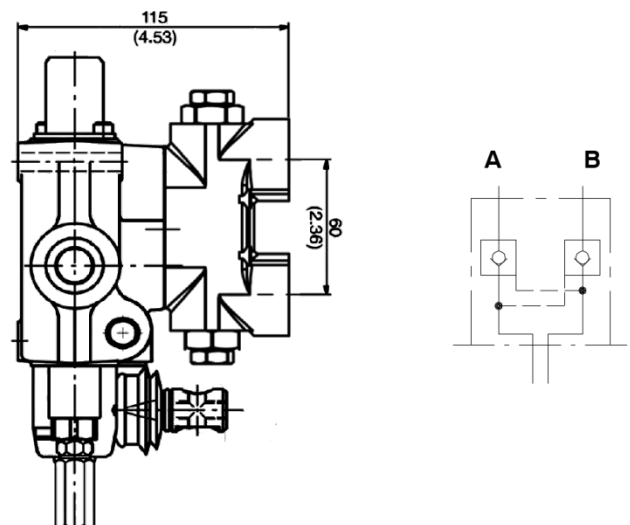


Model	Dimension mm (inch)		Weight kg (lb)
	C	D	
MCD 20/1	112 (4.41)	73 (2.87)	3.6 (7.9)
MCD 20/2	151 (5.95)	110 (4.33)	5.2 (11.4)
MCD 20/3	188 (7.40)	147 (5.78)	6.9 (15.18)
MCD 20/4	225 (8.86)	184 (7.25)	8.6 (18.9)

Option Microswitch



Option Service Valve (C)



Monoblock Directional Control Valve

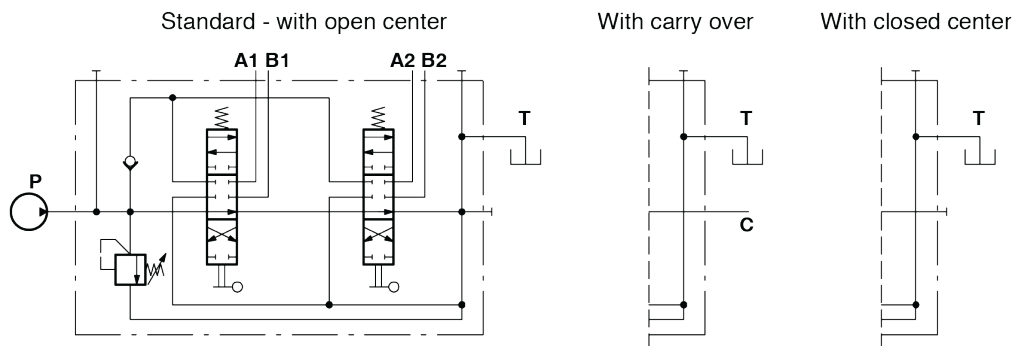
MCD50 Series

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 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

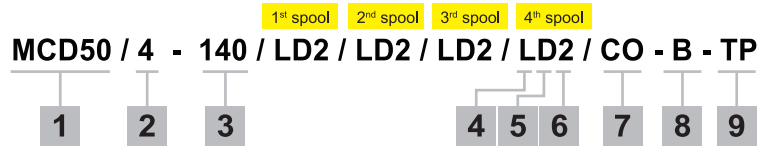


Model	Nominal Flow L/min (USgpm)	Maximum Pressure bar (psi)
MCD 50	70 (18)	350 (5100)

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
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. 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"
S	SAE	SAE 10	SAE 12	SAE 12	SAE 12

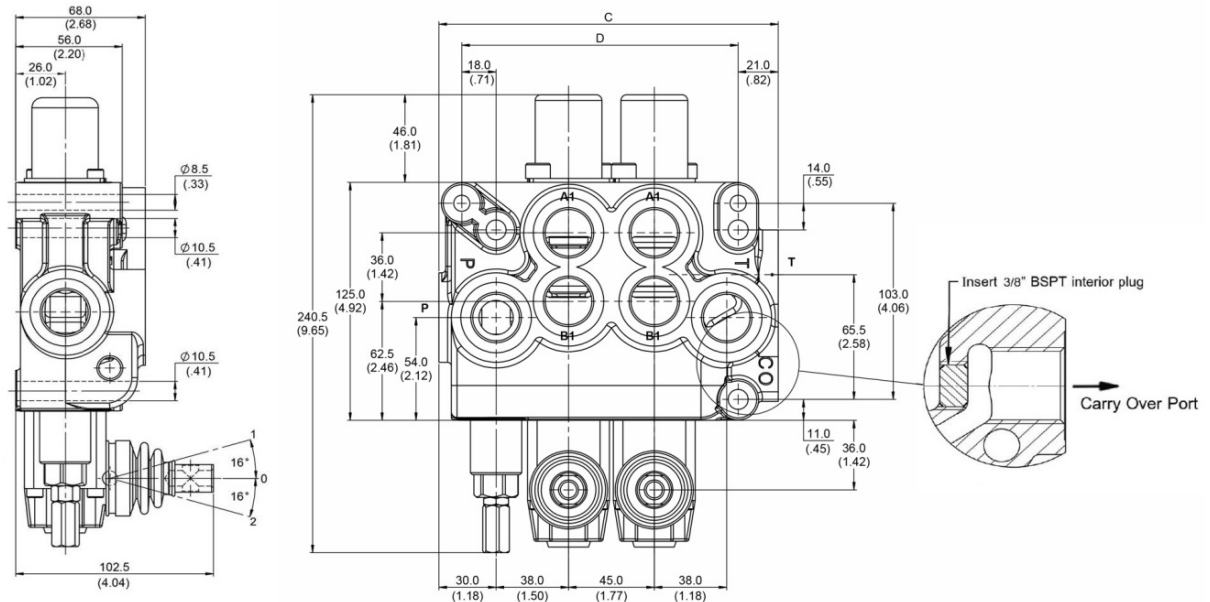
9. Optional Port Connection

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

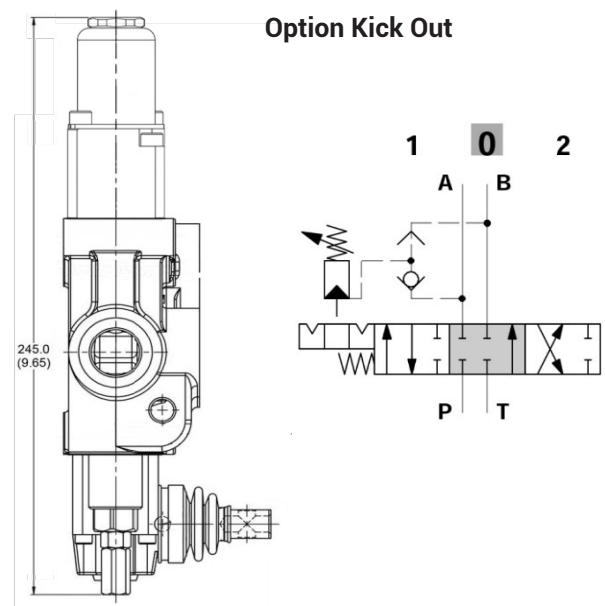
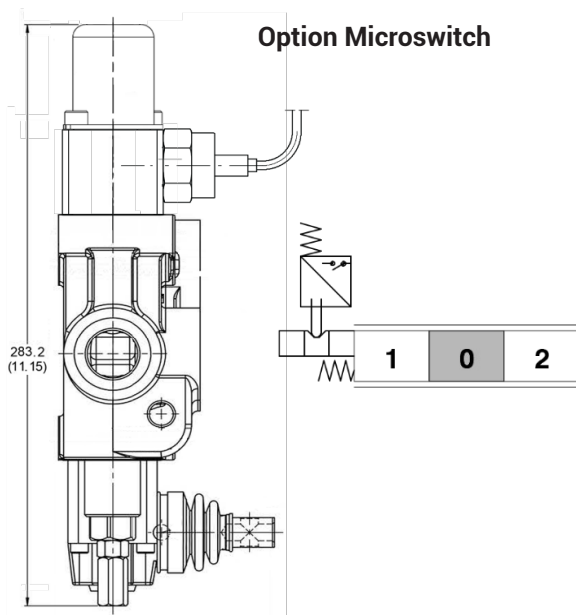
Monoblock Directional Control Valve

MCD50 Series

Installation Dimension mm (inch)



Model	Dimension mm (inch)		Weight kg (lb)
	C	D	
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)



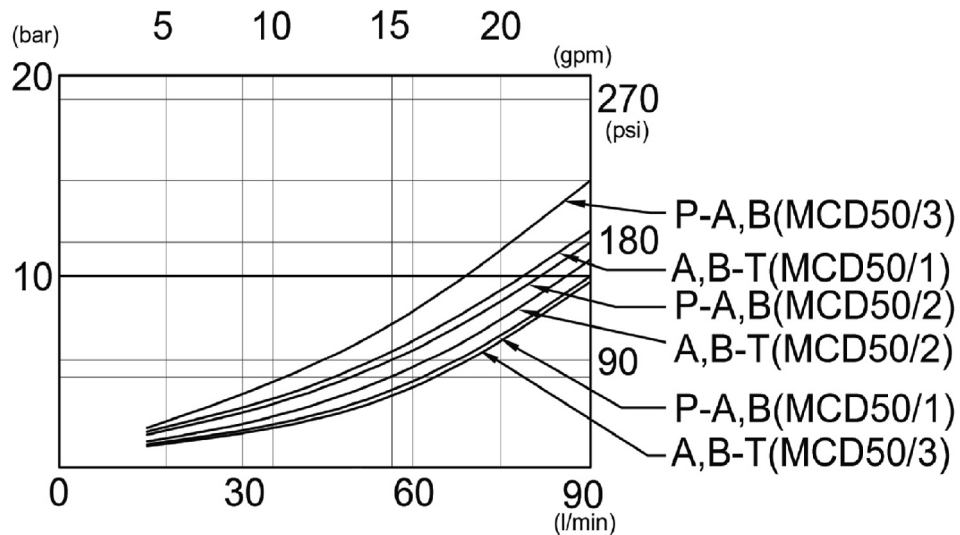
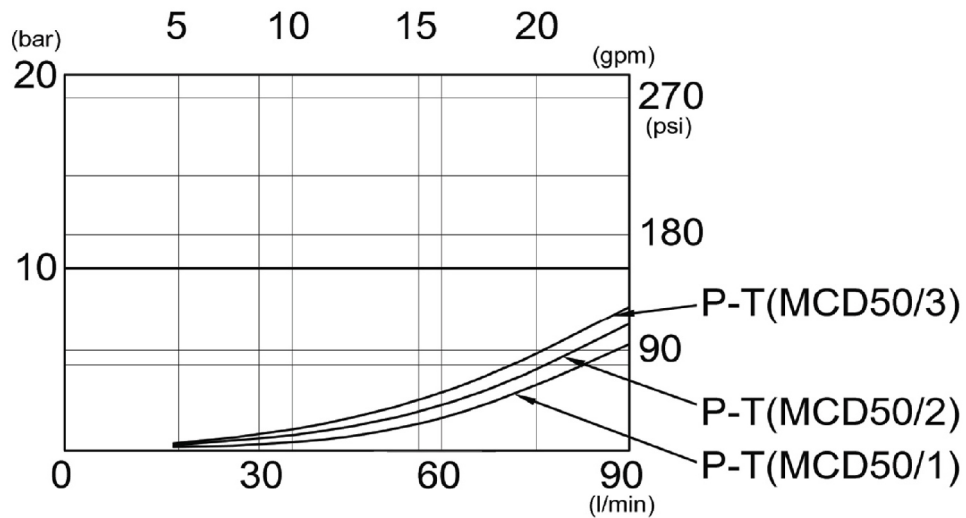
• Standard pressure setting 100 bar and pressure range from 20 to 120 bar max.

Monoblock Directional Control Valve

MCD50 Series

Performance Characteristics

Pressure Drop



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

Sectional Directional Control Valve

MCD10 Series

Features and Handling

MCD10 series is a manual sectional directional control valve with nominal flow of 80L/min and operating pressure at 350 bar.

It can be used as open centre, carry over or closed centre circuit with extended range of options to cater various usage:

- Work port relief valve
- Anti-cavitation valve
- Combinations of anti-cavitation valve & work port relief valve

Applications : wheel loader, combined harvester, sugarcane harvester, truck crane, sea platform crane, hydraulic press, drilling rigs, and etc.



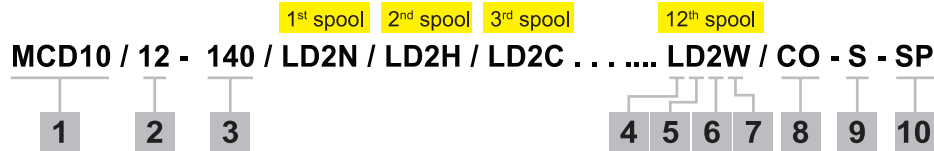
Specification

Model	Nominal Flow L/min (USgpm)	Maximum Pressure bar (psi)
MCD 10	80 (21)	350 (5100)

Sectional Directional Control Valve

MCD10 Series

Ordering Code



1. Model : MCD10

2. Number of Spool
1 - 12

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. Service valve
N - Without pre-arranged holes and valve (Standard)
H - Without valve, but with pre-arranged holes
C - With anti-cavitation valves on port A and B
W - With work port relief valves on port A and B
CW - With anti-cavitation valves on port A and with work port relief valves on port B
WC - With work port relief valves on port A and with anti-cavitation valves on port B
ACBH - With anti-cavitation valves on port A
BCAH - With anti-cavitation valves on port B
AWBH - With work port relief valves on port A
BAWH - With work port relief valves on port B

8. Circuit Option

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

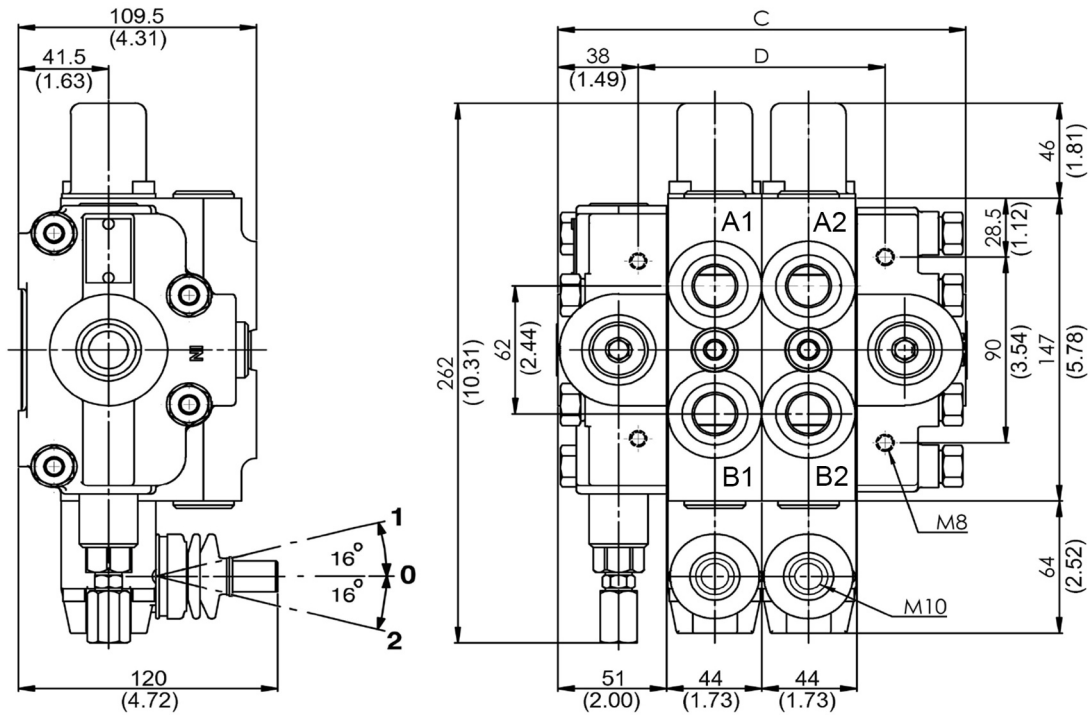
9. Port Connection

Code	Thread	Port A-B	Port P	Port T	Port CO
B4	BSP	1/2"	1/2"	3/4"	3/4"
B6	BSP	3/4"	3/4"	3/4"	3/4"
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
plug P and T at side

Installation Dimension mm (inch)



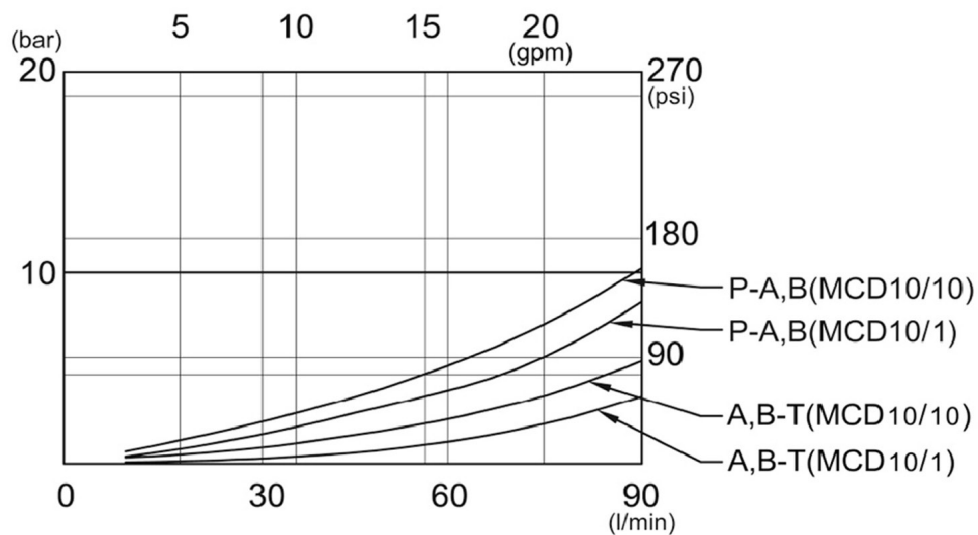
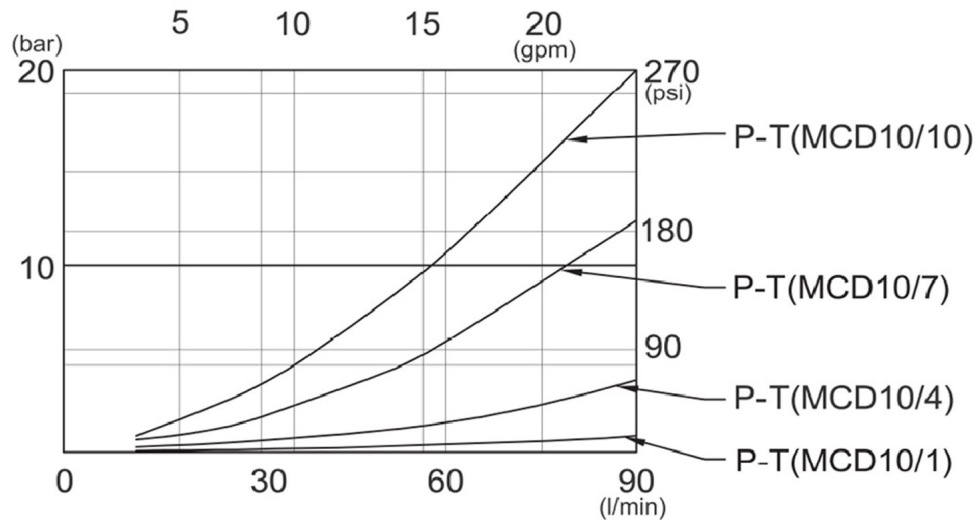
Model	Dimension mm (inch)		Weight
	C	D	kg (lb)
MCD 10/1	144 (5.67)	70 (2.76)	10.2 (22.4)
MCD 10/2	188 (7.40)	114 (4.49)	14.9 (32.8)
MCD 10/3	232 (9.13)	158 (6.22)	19.6 (43.1)
MCD 10/4	276 (10.87)	202 (7.95)	24.3 (53.5)
MCD 10/5	320 (12.60)	246 (9.69)	29.0 (63.8)
MCD 10/6	364 (14.33)	290 (11.42)	33.7 (74.1)
MCD 10/7	408 (16.06)	334 (13.15)	38.4 (84.5)
MCD 10/8	452(17.80)	378 (14.88)	43.1 (94.8)
MCD 10/9	496 (19.53)	422 (16.61)	47.8 (105.2)
MCD 10/10	540 (21.26)	466 (18.35)	52.5 (115.5)
MCD 10/11	584 (23.00)	510 (20.07)	57.2 (126.1)
MCD 10/12	628 (24.70)	554 (21.81)	61.9 (136.4)

Sectional Directional Control Valve

MCD10 Series

Performance Characteristics

Pressure Drop



Sectional Directional Control Valves

MCD24 Series

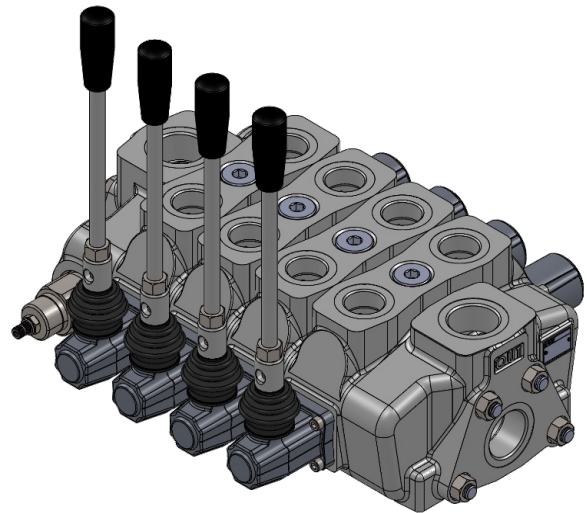
Features and Handling

MCD24 series sectional directional control valve , nominal flow of 240L/min(63GPM) at maximum pressure of 350 bar (5100 psi), with Spool options of Standard Lever, Hydraulic Pilot or Rotative Controller.

It can be used as open centre, carry over or closed centre circuit with extended range of options to cater various usage:

- Anti-shock valve with 3 pressure setting range
- Anti-cavitation valve
- Pilot-combined valve with 3 pressure setting ranges
- Combinations of anti-cavitation valve & anti-shock valve
- Combinations of anti-cavitation valve & pilot-combined valve

Applications : sea platform crane, hydraulic press, drilling rigs, and etc.



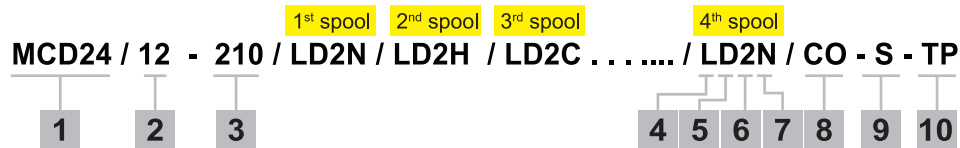
Specification

Model	Nominal Flow L/min (USgpm)	Maximum Pressure bar (psi)	Maximum Backpressure bar (psi)
MCD 24	240 (63)	350 (5100)	25 (360)

Sectional Directional Control Valves

MCD24 Series

Ordering Code



1. Model : MCD24

2. Number of Spool
1 -12

3. Relief Valve Setting
210 bar
140 bar

4. Spool Control B Port side
L - Standard Lever
HG02 - Hydraulic control ports 1/4"-19BSP
(A,B Port side)
HU02 - Hydraulic control ports 9/16"-18UNF
(A,B Port side)
R - Rotative control

5. Spool Control A Port side
S - Spring return to center
D - Detent in three positions
Omit - Hydraulic control and Rotative control

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 pre-arranged holes and valve (Standard)
H - Without valve, but with pre-arranged holes
C - With anti-cavitation valves on port A and B
S - With anti-shock valves on port A and B
P - With pilot combined valves on port A and B
CS - With anti-cavitation valves on port A and with anti-shock valves on port B
CP - With anti-cavitation valves on port A and with pilot combined valves on port B
SC - With anti-shock valves on port A and with anti-cavitation valves on port B

PC - With pilot combined valves on port A and with anti-cavitation valves on port B
PS - With pilot combined valves on port A and with anti-shock valves on port B
ACBH - With anti-cavitation valves on port A
BCAH - With anti-cavitation valves on port B
ASBH - With anti-shock valves on port A
BSAH - With anti-shock valves on port B
APBH - With pilot combined valves on port A
BPAH - With pilot combined valves on port B

Code	Description	Setting range (bar)
		at full flow
C	Anti-cavitation valve	-
S	Anti-shock valve	63 / 125
		100 / 250
		200 / 315
P	Pilot combined valve	63 / 125
		100 / 250
		200 / 315

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
B08	BSP	1"	1"	1"/1/4	1"/1/4
B10	BSP	1"/1/4	1"/1/4	1"/1/4	1"/1/4
S	SAE	SAE 16	SAE 20	SAE 20	SAE 20

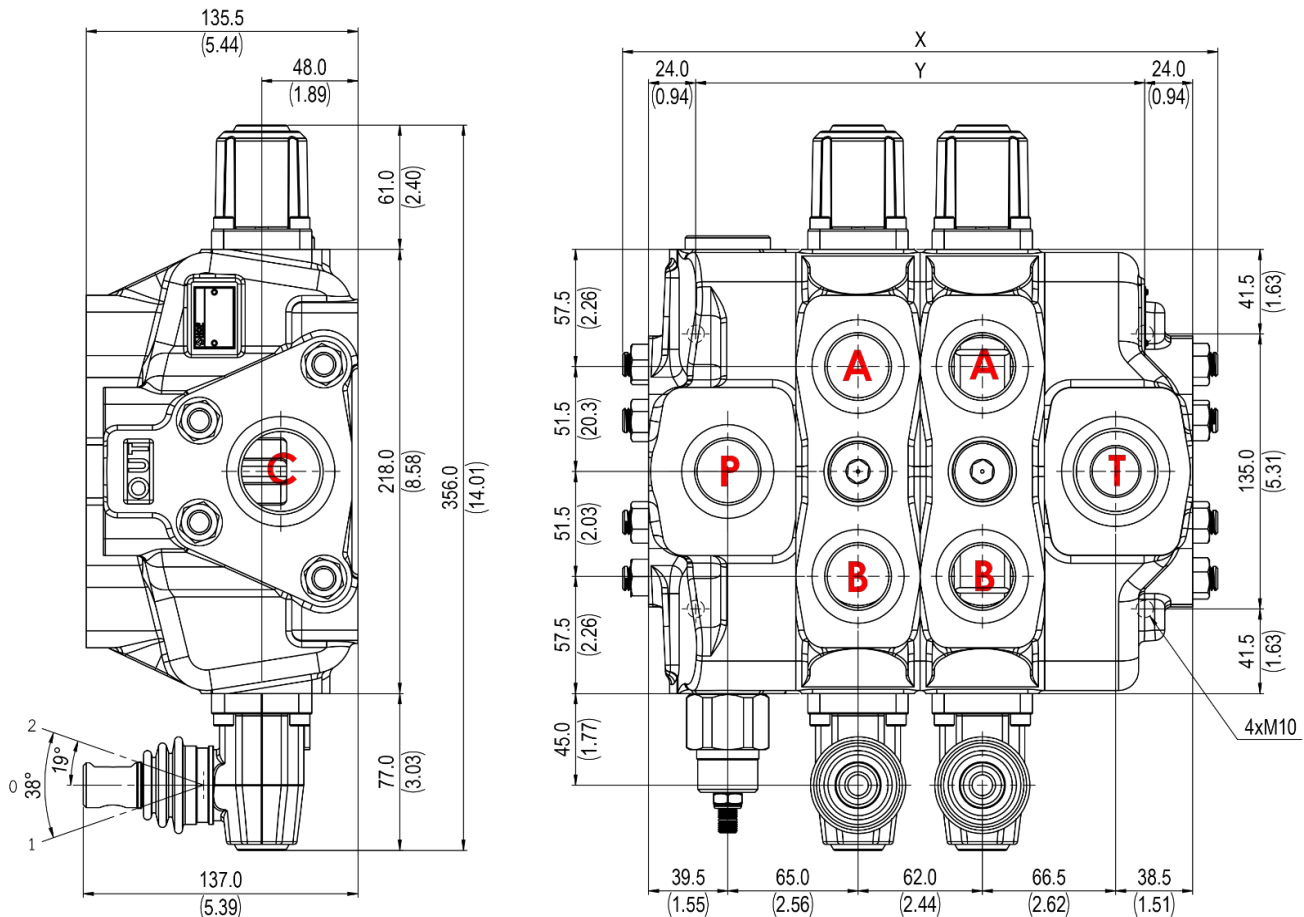
10. Optional Port Connection

TP - Use port P and T on top
Without port P and T at side

Sectional Directional Control Valves

MCD24 Series

Installation Dimensions mm (inch)



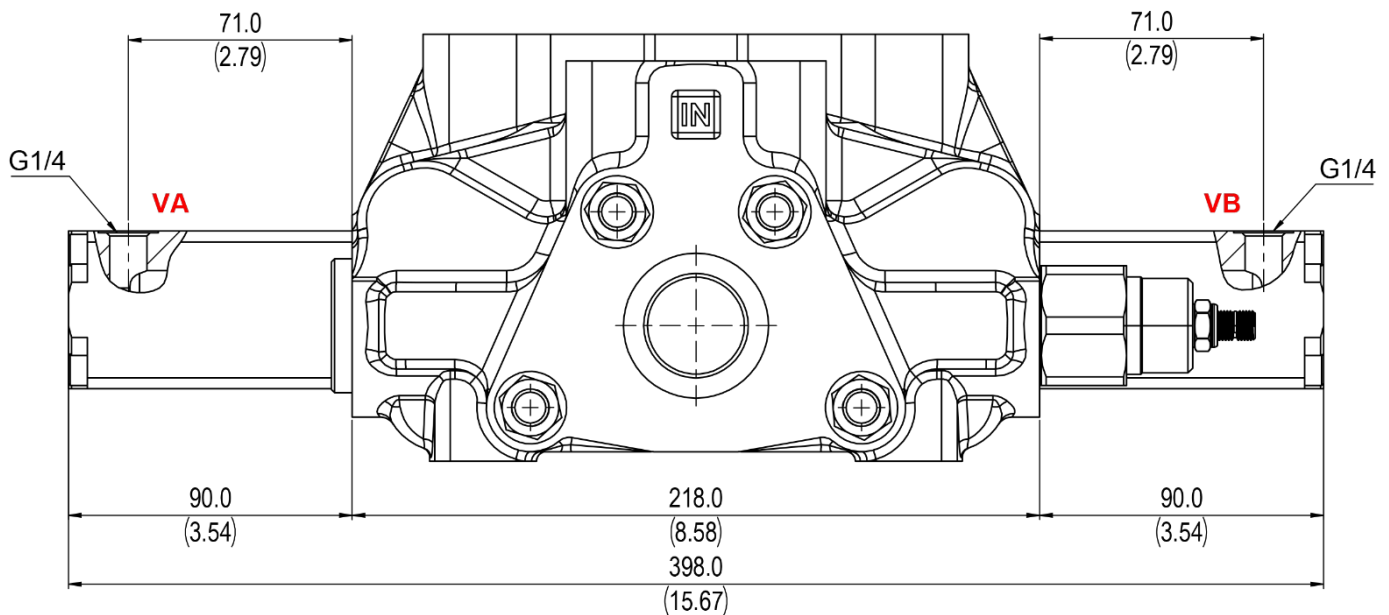
Model	Dimension mm (inch)		Weight kg (lb)
	X	Y	
MCD 24/1	235 (9.25)	162 (6.38)	26.5 (58.42)
MCD 24/2	297 (11.69)	224 (8.28)	36.9 (81.35)
MCD 24/3	359 (14.13)	286 (11.26)	47.3 (104.27)
MCD 24/4	421 (16.57)	348 (13.70)	57.7 (127.20)
MCD 24/5	483 (19.02)	410 (16.14)	68.1 (150.13)
MCD 24/6	545 (21.46)	472 (18.58)	78.5 (173.06)
MCD 24/7	607 (23.90)	534 (21.02)	88.9 (195.99)
MCD 24/8	669 (26.34)	596 (23.46)	99.3 (218.92)
MCD 24/9	731 (28.78)	658 (25.90)	109.7 (241.85)
MCD 24/10	793 (31.22)	720 (28.34)	120.1 (264.77)
MCD 24/11	855 (33.66)	780 (30.78)	130.5 (287.70)
MCD 24/12	917 (36.10)	844 (33.22)	140.9 (310.63)

Sectional Directional Control Valves

MCD24 Series

Installation Dimensions mm (inch)

Hydraulic pilot control

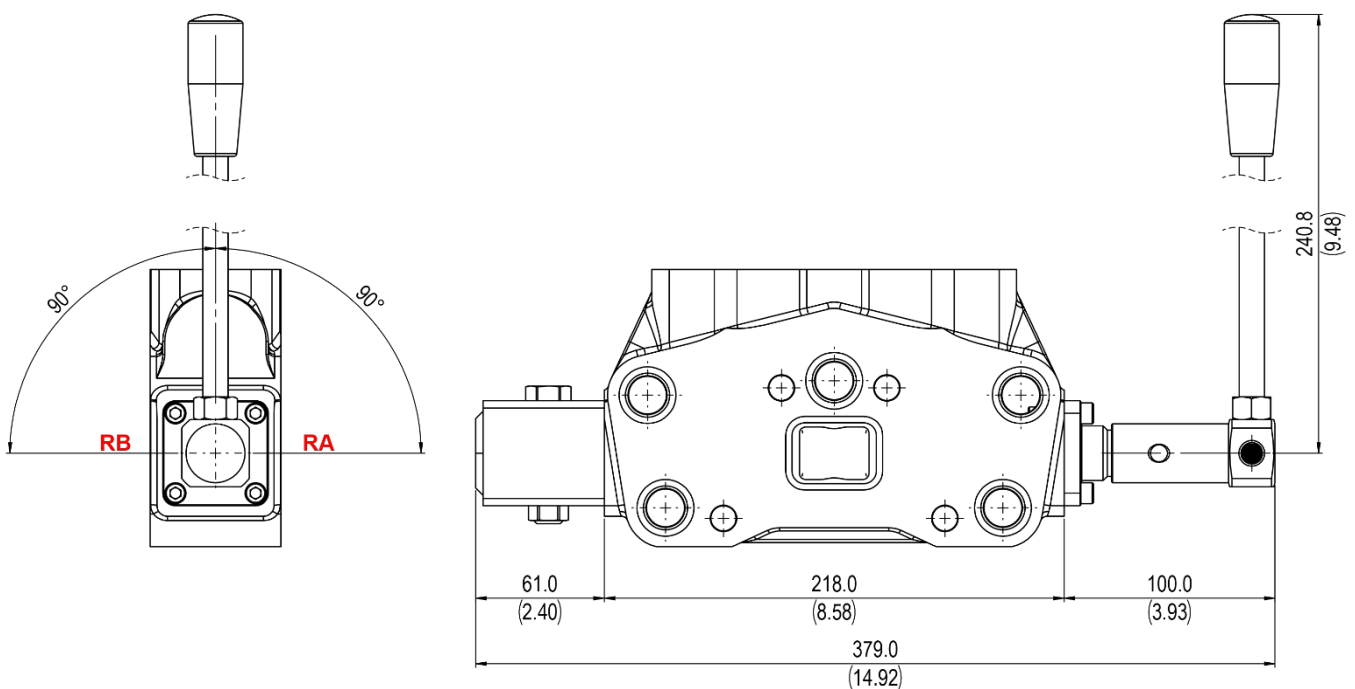


Operating features :

PILOT PRESSURE : MAX. 50 BAR

INTERNAL LEAKAGE A(B) -> T : MAX. 6 CM³/MIN (100 BAR / 40°C)

Rotative control

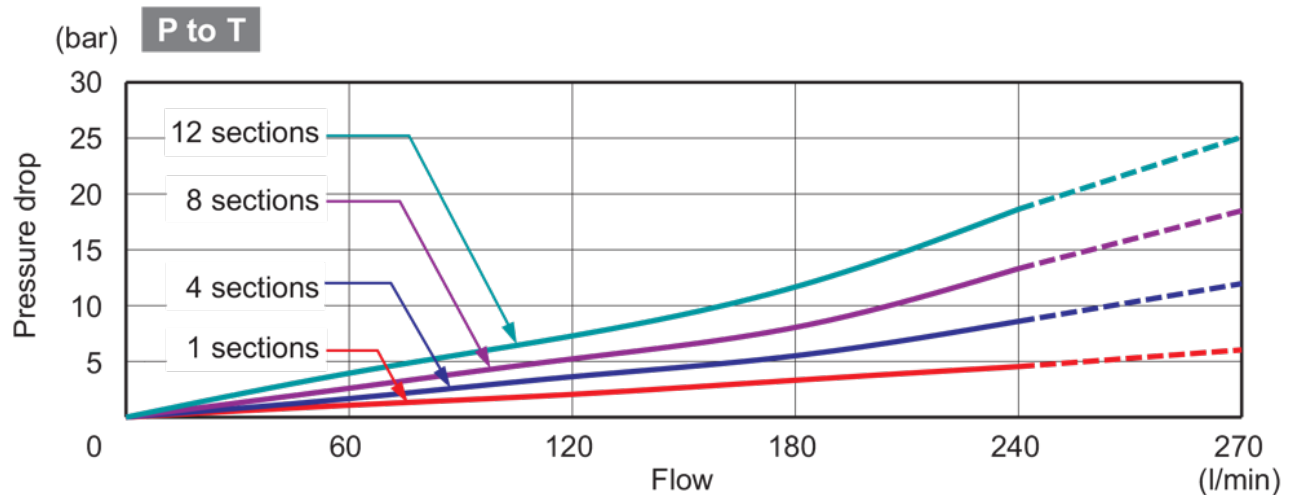


Sectional Directional Control Valves

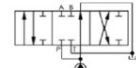
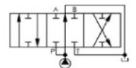
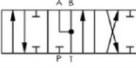
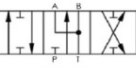
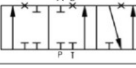
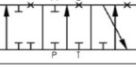
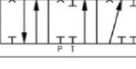
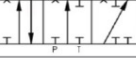
MCD24 Series

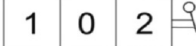
Performance Characteristics

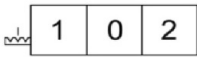
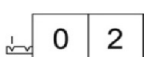
Pressure Drop



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	

Sectional Directional Control Valve

MCD25 Series

Features and Handling

MCD25 series is a manual sectional directional control valve with nominal flow of 380L/min and operating pressure at 350 bar.

It can be used as open centre, carry over or closed centre circuit with extended range of options to cater various usage:

- Anti-shock valve with 5 pressure setting range
- Anti-cavitation valve
- Pilot-combined valve with 2 pressure setting ranges
- Combinations of anti-cavitation valve & anti-shock valve
- Combinations of anti-cavitation valve & pilot-combined valve

Applications : sea platform crane, hydraulic press, drilling rigs, and etc.



Specification

Model	Nominal Flow L/min (USgpm)	Maximum Pressure bar (psi)	Maximum Backpressure bar (psi)	Tightening Torque Nm (lbft)
MCD 25	380 (100)	350 (5100)	20 (290)	110 (81.13)

Sectional Directional Control Valve

MCD25 Series

Ordering Code

1st spool 2nd spool 3rd spool 12th spool
MCD25 / 12 - 140 / LD2N / LD2H / LD2C LD2W / CO - S - TP
1 2 3 4 5 6 7 8 9 10

1. Model : MCD25

2. Number of Spool
1 - 12

3. Relief Valve Setting
210 bar
140 bar

4. Spool Control B Port side
L - Standard Lever
HG02 - Hydraulic control ports 1/4"-19BSP
(A,B Port side)
HU02 - Hydraulic control ports 9/16"-18UNF
(A,B Port side)
R - Rotative control

5. Spool Control A Port Side
S - Spring return to center
D - Detent in three positions
Omit - Hydraulic control and Rotative control

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 pre-arranged holes and valve (Standard)
H - Without valve, but with pre-arranged holes
C - With anti-cavitation valves on port A and B
S - With anti-shock valves on port A and B
P - With pilot combined valves on port A and B
CS - With anti-cavitation valves on port A and with anti-shock valves on port B
CP - With anti-cavitation valves on port A and with pilot combined valves on port B

SC - With anti-shock valves on port A and with anti-cavitation valves on port B
PC - With pilot combined valves on port A and with anti-cavitation valves on port B
PS - With pilot combined valves on port A and with anti-shock valves on port B
ACBH - With anti-cavitation valves on port A
BCAH - With anti-cavitation valves on port B
ASBH - With anti-shock valves on port A
BSAH - With anti-shock valves on port B
APBH - With pilot combined valves on port A
BPAH - With pilot combined valves on port B

Code	Description	Setting range (bar) at full flow
C	Anti-cavitation valve	-
S	Anti-shock valve	0/70
		71/120
		121/150
		151/300
		301/350
P	Pilot combined valve	30/110
		111/350

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
B10	BSP	1"1/4	1"1/4	1"1/2	1"1/2
B12	BSP	1"1/2	1"1/2	1"1/2	1"1/2
S	SAE	SAE 20	SAE 20	SAE 20	SAE 20

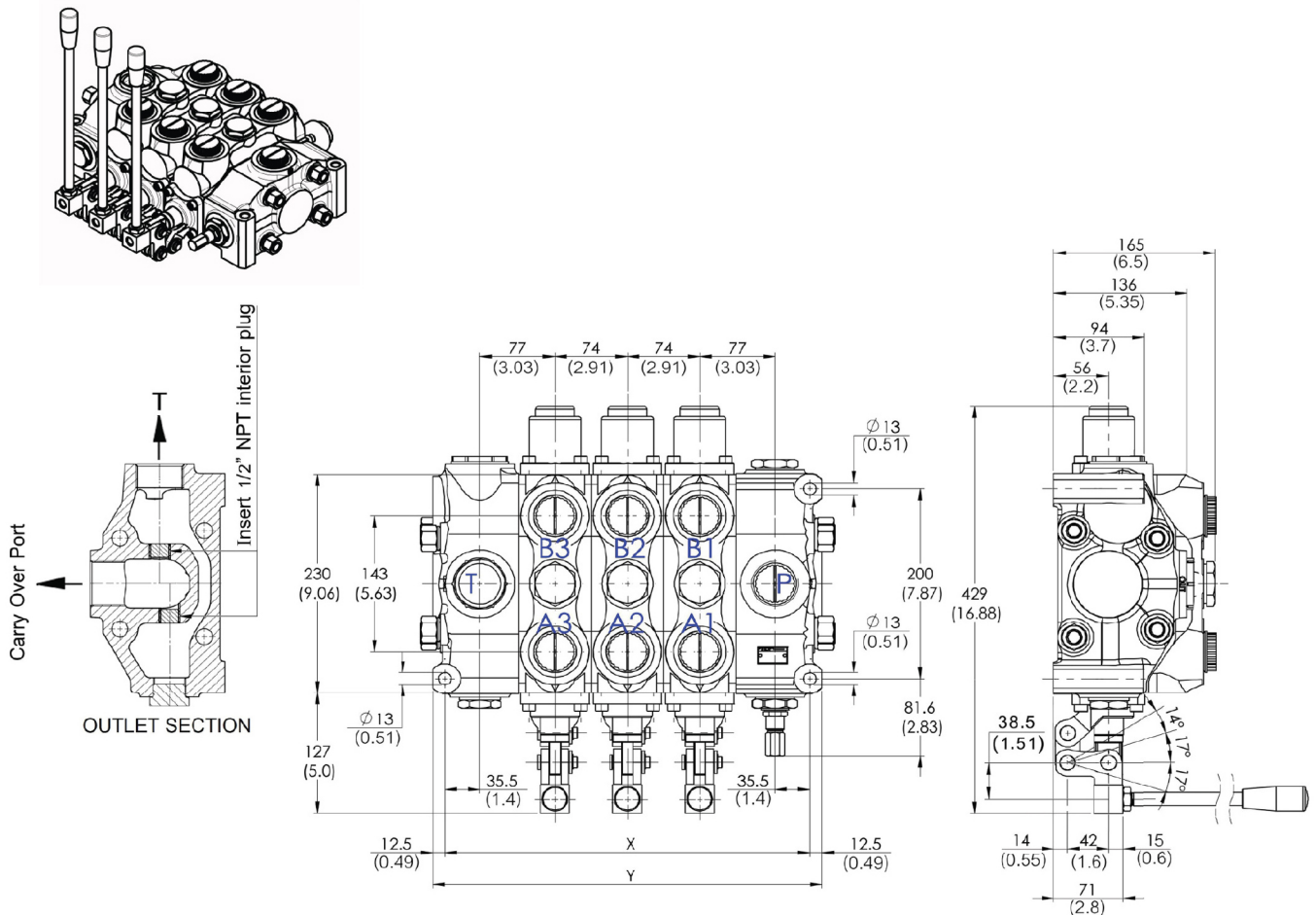
10. Optional Port Connection

TP - Use port P and T on top
Without port P and T at side

Sectional Directional Control Valve

MCD25 Series

Installation Dimension mm (inch)



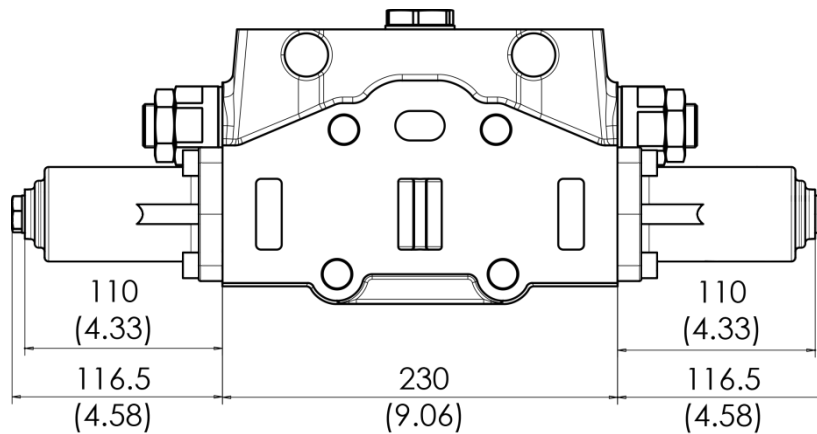
Model	Dimension mm (inch)		Weight kg (lb)
	X	Y	
MCD 25/1	225 (8.9)	250 (9.84)	40.4 (89.06)
MCD 25/2	299 (11.8)	324 (12.8)	55.8 (123)
MCD 25/3	373 (14.7)	398 (15.7)	71.2 (156.9)
MCD 25/4	447 (17.6)	472 (18.6)	86.6 (190.9)
MCD 25/5	521 (20.5)	546 (21.5)	102 (224.8)
MCD 25/6	595 (23.4)	620 (24.4)	117.4 (258.8)
MCD 25/7	669 (25.6)	694 (27.3)	132.8 (292.7)
MCD 25/8	743 (28.5)	768 (30.2)	148.2 (326.7)
MCD 25/9	817 (31.4)	842 (33.1)	163.6 (360.6)
MCD 25/10	891 (34.3)	916 (36.1)	179 (394.6)
MCD 25/11	965 (37.2)	990 (38.9)	194.4 (428.5)
MCD 25/12	1039 (40.1)	1064 (41.8)	209.8 (462.5)

Sectional Directional Control Valve

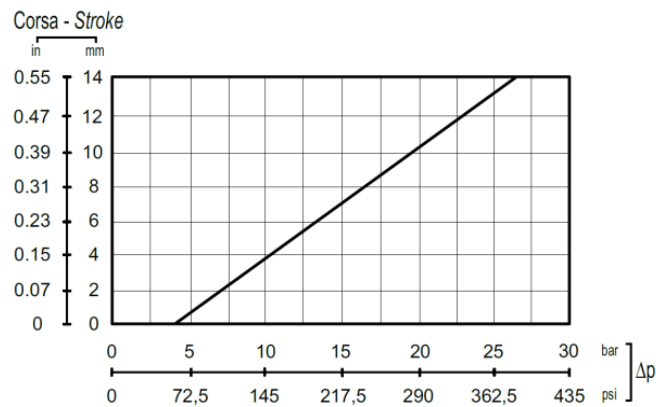
MCD25 Series

Installation Dimension mm (inch)

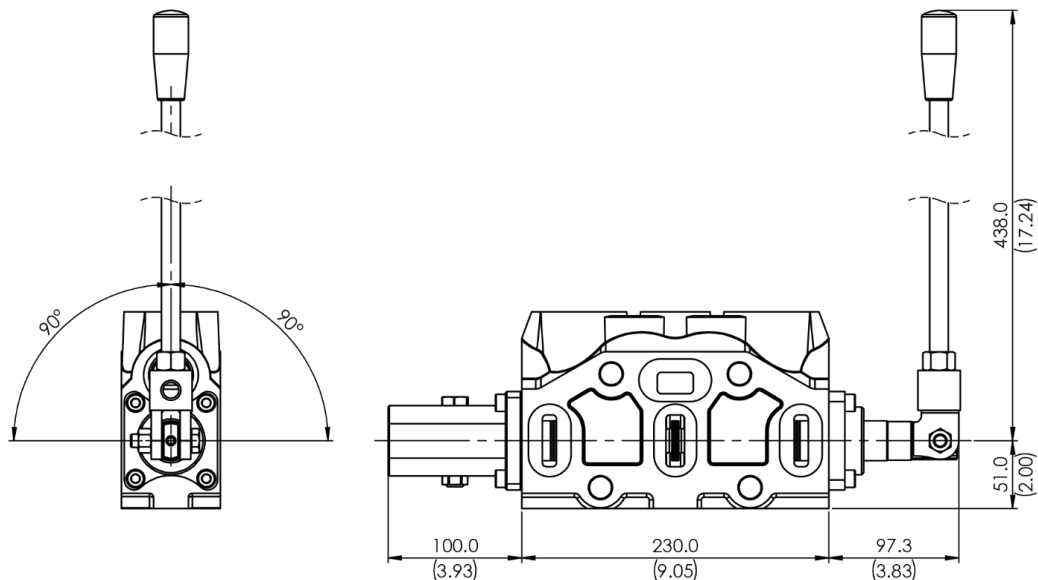
Hydraulic pilot control



Hydraulic pilot control curve



Rotative control

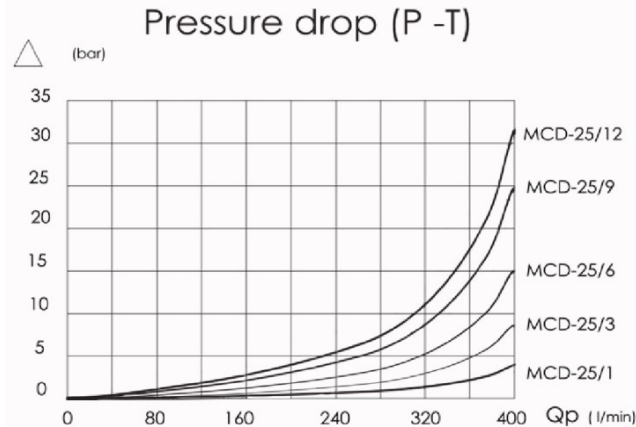


Sectional Directional Control Valve

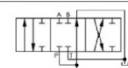
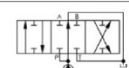
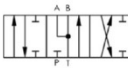
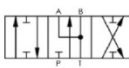
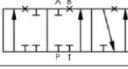
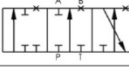
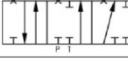
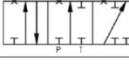
MCD25 Series

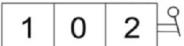
Performance Characteristics

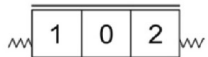
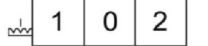
Pressure Drop



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	

HOF Hydraulic represented by

Flowlution Co.,Ltd.

26/48 Moo4 Suksavadh Road, Jomthong, 10150 Bangkok, Thailand
Tel: +662 877 3223 Fax: +662 877 3373 info@flowlution.com

HOF Corindus Co.,Ltd. (Thailand only)

891 Rama3 Road, Bangpongpan, Yannawa, 10120 Bangkok
Tel: 02 284 1100 Fax: 02 683 4414 info@hofcorindus.co.th
www.hofcorindus.co.th