



VM5

Monoblock Directional Control Valves

VM5 / **2S** - **3** / **1 8 L** / G-4-6 / M3
 1 2 3 4 5

- 1** Body
- 2** Inlet relief
- 3** Spool options
- 4** "B" side spool positioners
- 5** "A" side controls

1: Body		WITHOUT SERVICE PORT VALVES PREARRANGEMENT (INCLUDE BODY, SEALS, RINGS AND LOAD CHECK VALVE.)	
TYPE	DESCRIPTION		
1 - S	1 section		
2 - S	2 section		
3 - S	3 section		
4 - S	4 section		
5 - S	5 section		
6 - S	6 section		
2: Inlet Relief			
TYPE	CODE	DESCRIPTION	
XAG	VMX21000	Pilot operated pressure relief valve Range 25 to 315 bar / 360 to 4600 psi, standard setting 125 bar / 1800psi	
AG-2	VM52002	Direct pressure relief valve Range 80 to 160 bar / 1150 to 2300 psi, standard setting 125 bar / 1800 psi	
AG-3	VM52003	Direct pressure relief valve Range 125 to 250 bar / 1800 to 3600 psi, standard setting 175 bar / 2500 psi	
AG-4	VM52004	Direct pressure relief valve Range 200 to 315 bar / 2900 to 4600 psi, standard setting 220 bar / 3200 psi	
SV	VM52100	Relief valve blanking plug	



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3: Spool Options		
TYPE	CODE	DESCRIPTION
1	VM53001	Double acting, 3 positions, with A, B closed in neutral position
2	VM53002	Double acting, 3 positions, with A, B open to Tank in neutral position
3	VM53003	Single acting on A closed in neutral position, 3 positions, B plugged
4	VM53004	Single acting on B closed in neutral position, 3 positions, A plugged
5	VM53005	Double acting, 3 positions, with B open to Tank in neutral position
6	VM53006	Double acting, 3 positions, with A open to Tank in neutral position
9	VM53009	Double acting, 3 positions, with P, T, A, B closed in neutral position (Closed center)
10	VM53010	Double acting, 3 positions, with A, B open to Tank and P, T closed in neutral position (Closed center)
5DY	VM53052	Double acting, 4 positions, floating circuit in 4th position with A, B open to Tank by pulling the lever
5PY	VM53051	Double acting, 4 positions, floating circuit in 4th position with A, B open to Tank by pushing the lever
4: B Side Spool Positioners		
TYPE	CODE	DESCRIPTION
6-1	VM54061	Detent in pos. 1-0-2, without spring centered
6-2	VM54062	2 positions, detent in pos. 0-2, without spring centered
6-3	VM54063	2 positions, detent in pos. 1-0, without spring centered
8D2	VM54082	With spring return to neutral position and pin with M8 male thread for dual control
8EP3	VM54300	ON/OFF Electro-Pneumatic actuator
8P	VM54080	ON/OFF Pneumatic actuator
8MG1 (NO)	VM54801	Microswitch kit operated in pos. 1 (Normally Open)
8MG2 (NO)	VM54802	Microswitch kit operated in pos. 2 (Normally Open)
8MG3 (NO)	VM54803	Microswitch kit operated in pos. 1&2 (Normally Open)
MG (NO)	VM54804	Microswitch with NO terminal
8MG1 (NC)	VM548011	Microswitch kit operated in pos. 1 (Normally Closed)
8MG2 (NC)	VM548021	Microswitch kit operated in pos. 2 (Normally Closed)
8MG3 (NC)	VM548031	Microswitch kit operated in pos. 1&2 (Normally Closed)
MG (NC)	VM548041	Microswitch with NC terminal
8	VM54008	With spring return to neutral position
8-1	VM54810	2 positions, with spring centered from pos. 1
8-2	VM54820	2 positions, with spring centered from pos. 2
9-1	VM54091	Detent in pos. 1, 2 with spring centered
9-2	VM54092	Detent in pos. 2 with spring centered
9-3	VM54093	Detent in pos. 1 with spring centered
8ED3+RV-KE1R3	VM54201	1S: ON/OFF Electro-Hidraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE2R3	VM54202	2S: ON/OFF Electro-Hidraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE3R3	VM54203	3S: ON/OFF Electro-Hidraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE4R3	VM54204	4S: ON/OFF Electro-Hidraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE5R3	VM54205	5S: ON/OFF Electro-Hidraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE6R3	VM54206	6S: ON/OFF Electro-Hidraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)

VM5

Monoblock Directional Control Valves

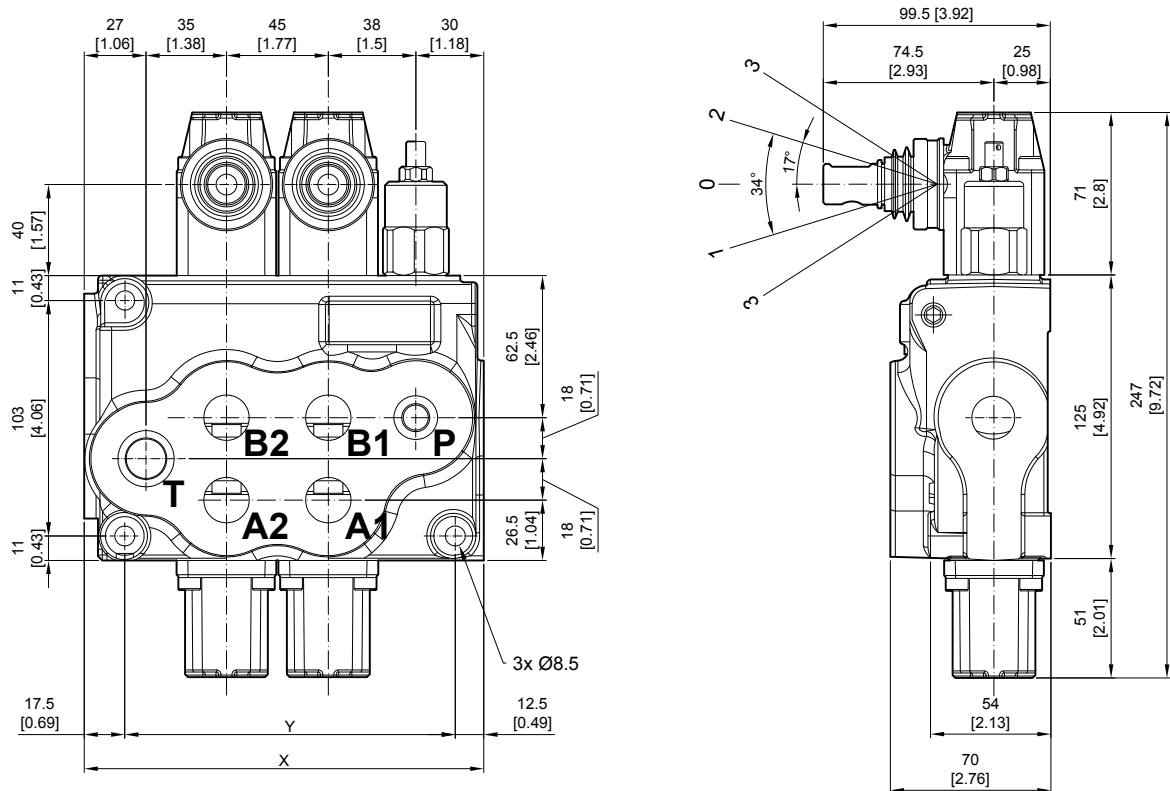
VM5 / **2S** - **3** / **1 8 L** / G-4-6 / M3
 1 2 3 4 5

- 1** Body
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4: B Side Spool Positioners			
TYPE	CODE	DESCRIPTION	
8ER3+KE1SO	VM54401	1/S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	
8ER3+KE2SO	VM54402	2/S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	
8ER3+KE3SO	VM54403	3/S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	
8ER3+KE4SO	VM54404	4/S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	
8ER3+KE5SO	VM54405	5/S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	
8ER3+KE6SO	VM54406	6/S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain	
5: A Side controls			
TYPE	CODE	DESCRIPTION	
L	VM55000	Standard lever box	
SLP	VM55001	Without lever box, with dust-proof plate	
LCB	VM55002	Joystick lever for 2 section operation	
TQ	VM55003	Flexible cable connection	

VM5 Dimensions

Monoblock Directional Control Valves



Standard threads

Ports	Inlet P	A and B	Outlet T and carry-over C
BSP	G1/2	G1/2	G3/4
UN-UNF	1"1/16-12 UN (SAE 12)	7/8-14 UNF (SAE 10)	1"1/16-12 UN (SAE 12)
METRIC	M18x1.5	M18x1.5	M22x1.5

- G-1/2 : G4 G-3/8 : G3 G-3/4 : G6
- SAE 8 : E8 SAE 10 : E10 SAE 12 : E12 SAE 16 : E16

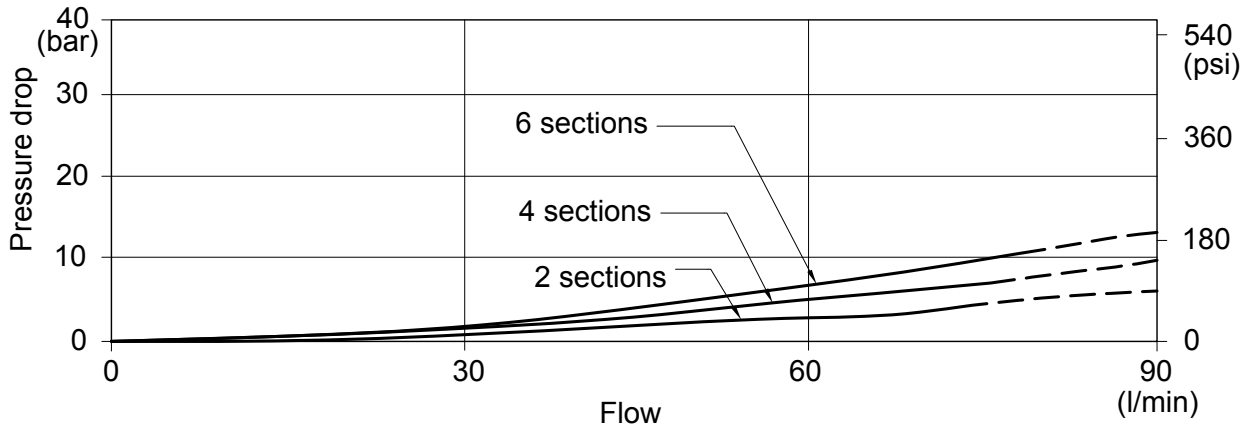
Standard dimensions

TYPE	X		Y	
	mm	in	mm	in
VM5/1S	130	5.12	100	3.94
VM5/2S	174.5	6.87	145	5.71
VM5/3S	219.5	8.64	190	7.48
VM5/4S	264.5	10.41	235	9.25
VM5/5S	309.5	12.19	280	11.02
VM5/6S	354.5	13.96	325	12.80

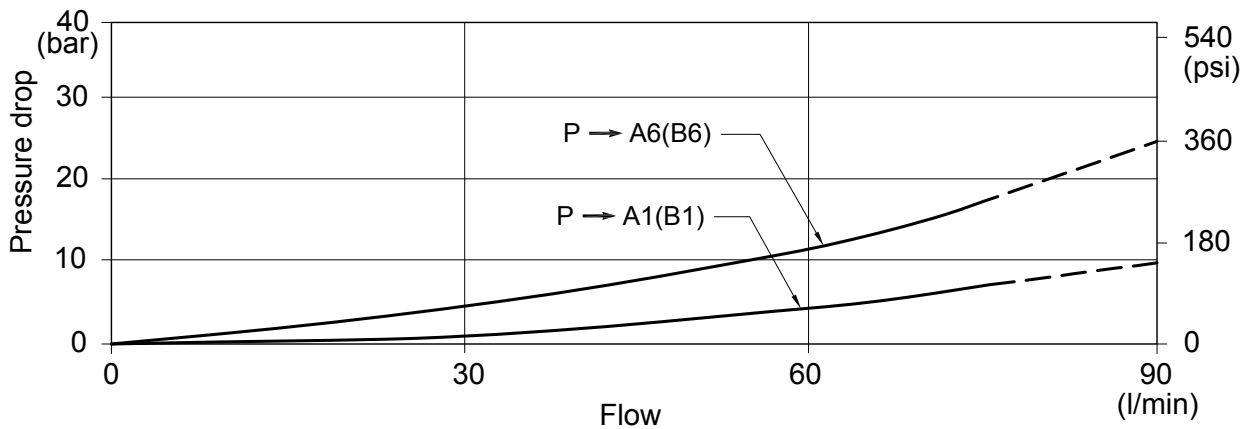
VM5 Performance curve chart

Monoblock Directional Control Valves

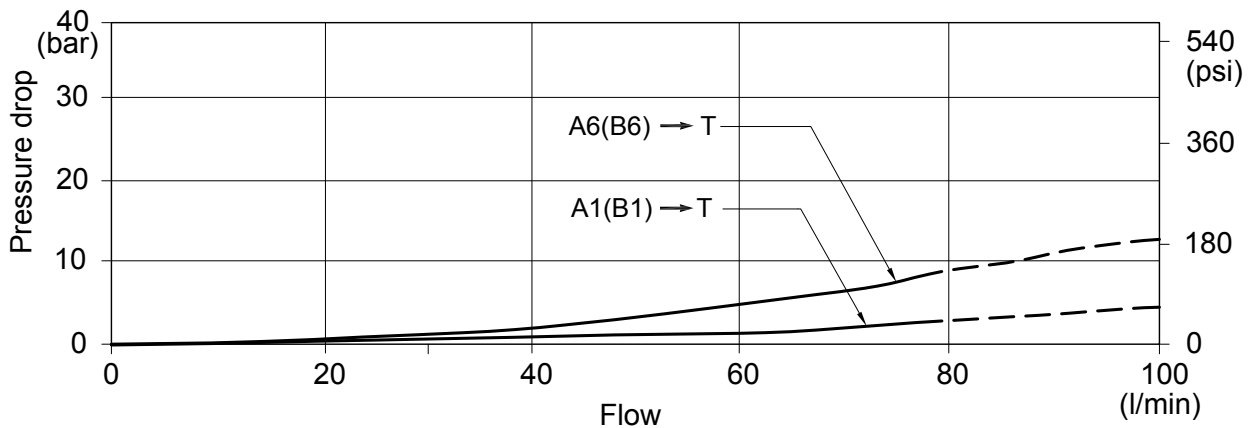
P to T



P to A (B)

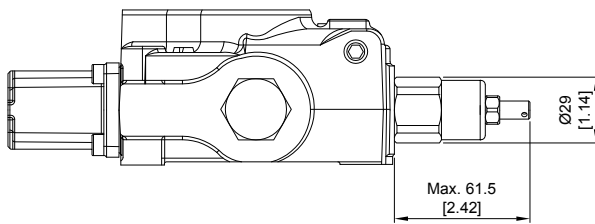


A(B) to T

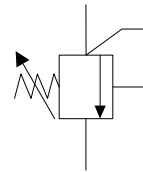


VM5 Inlet Relief (Optional) Monoblock Directional Control Valves

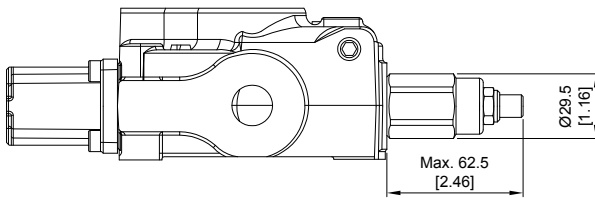
Type AG



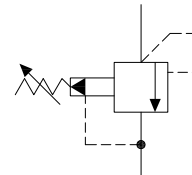
Direct pressure relief valve:



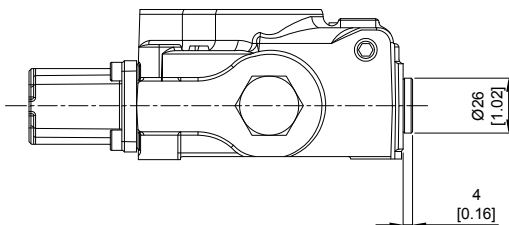
Type XAG



Pilot operated pressure relief valve:



Type SV



Relief valve blanking plug:



VM5 Spool Options

Monoblock Directional Control Valves

TYPE 1		
	<p>P → A B → T C closed</p>	
	<p>P & T & A & B closed C open</p>	
	<p>P → B A → T C closed</p>	
TYPE 2		
	<p>P → A B → T C closed</p>	
	<p>A & B → T P closed C open</p>	
	<p>P → B A → T C closed</p>	

VM5 Spool Options

Monoblock Directional Control Valves

TYPE 3		
	<p>P → A T & C closed</p>	<p>1 0 2</p> <p>"B" port plugged</p>
	<p>P & A & T closed C open</p>	<p>1 0 2</p> <p>"B" port plugged</p>
	<p>A → T P closed C open</p>	<p>1 0 2</p> <p>"B" port plugged</p>
TYPE 4		
	<p>B → T P closed C open</p>	<p>1 0 2</p> <p>"A" port plugged</p>
	<p>P & B & T closed C open</p>	<p>1 0 2</p> <p>"A" port plugged</p>
	<p>P → B P & T closed</p>	<p>1 0 2</p> <p>"A" port plugged</p>

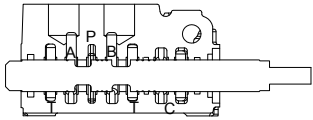
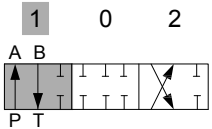
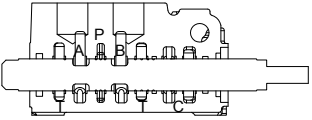
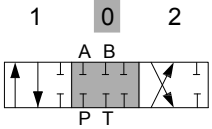
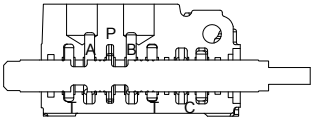
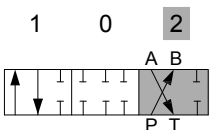
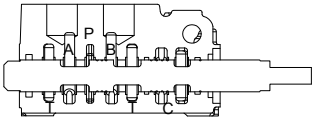
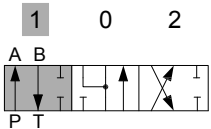
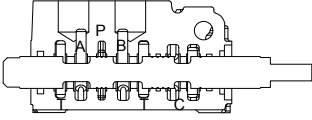
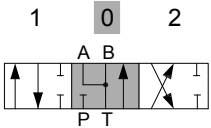
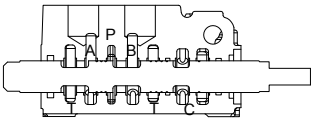
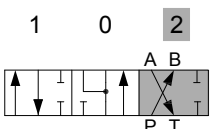
VM5 Spool Options

Monoblock Directional Control Valves

TYPE 5		
	<p>P → A B → T C closed</p>	
	<p>B → T P & A closed C open</p>	
	<p>P → B A → T C closed</p>	
TYPE 6		
	<p>P → A B → T C closed</p>	
	<p>A → T P & B closed C open</p>	
	<p>P → B A → T C closed</p>	

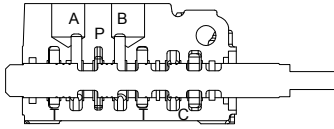
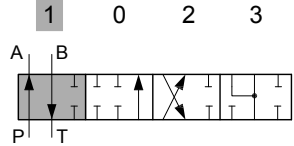
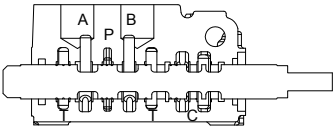
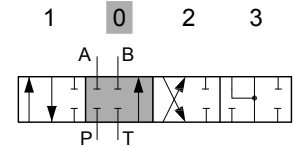
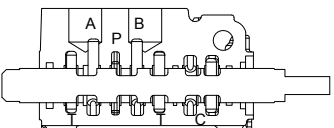
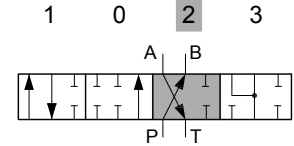
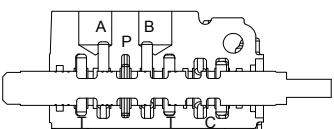
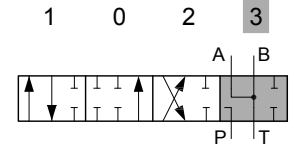
VM5 Spool Options

Monoblock Directional Control Valves

TYPE 9		
	<p>P → A B → T C closed</p>	
	<p>P & T & A & B closed C closed</p>	
	<p>P → B A → T C closed</p>	
TYPE 10		
	<p>P → A B → T C closed</p>	
	<p>A & B → T P & C closed</p>	
	<p>P → B A → T C closed</p>	

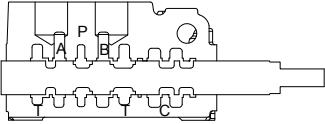
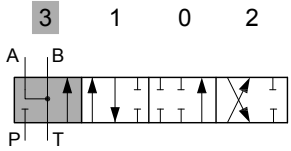
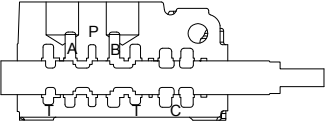
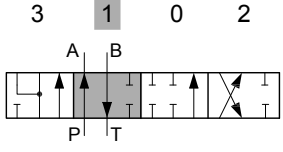
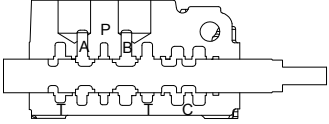
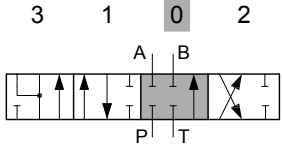
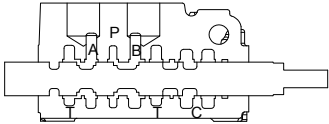
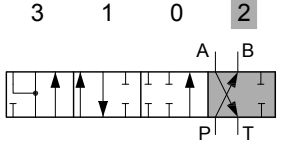
VM5 Spool Options

Monoblock Directional Control Valves

TYPE 5DY	NOTE: WITH SPECIAL BODY AND SPECIAL POSITIONER	
	<p>P → A B → T C closed</p>	
	<p>P & T & A & B closed C open</p>	
	<p>P → B A → T C closed</p>	
	<p>A & B → T P closed C open</p>	

VM5 Spool Options

Monoblock Directional Control Valves

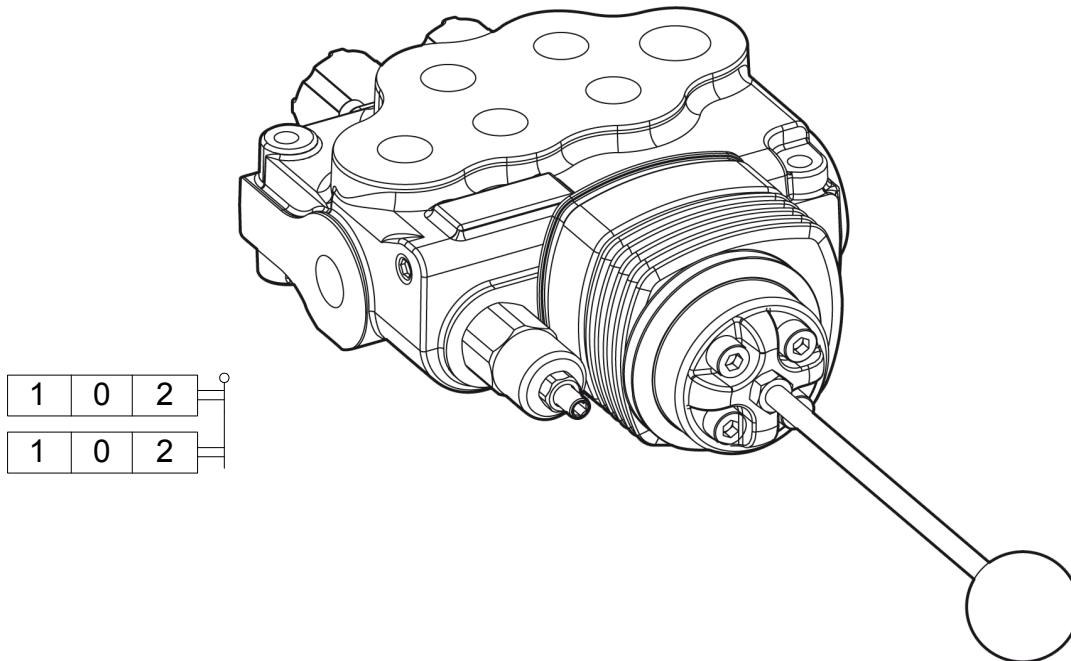
TYPE 5PY		NOTE: WITH SPECIAL BODY AND SPECIAL POSITIONER
	<p>A & B → T P closed C open</p>	
	<p>P → A B → T C closed</p>	
	<p>P & T & A & B closed C open</p>	
	<p>P → B A → T C closed</p>	

VM5 A Side Monoblock Directional Control Valves

Type L		
		<p>Type L: STANDART LEVER KIT</p>
Type R		
		<p>Type R: STANDART LEVER KIT (ROTATED 180 DEGREE)</p>
Type SLP		
		<p>Type SLP: WITH DUST-PROOF PLATE</p>

VM5 A Side Monoblock Directional Control Valves

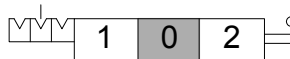
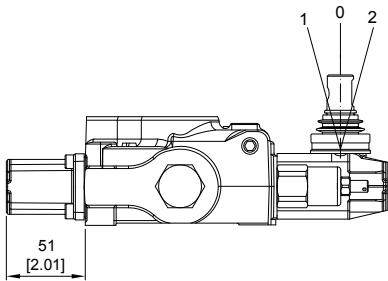
LCB: Joystick control



Type LCB	LCB 1	LCB 2
Type LCB	LCB 3	LCB 4

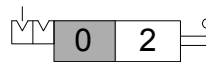
VM5 B Side Monoblock Directional Control Valves

Type 6



6-1 Kit:

DETENT IN POS. 1-0-2, WITHOUT SPRING CENTERED



6-2 Kit:

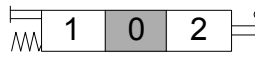
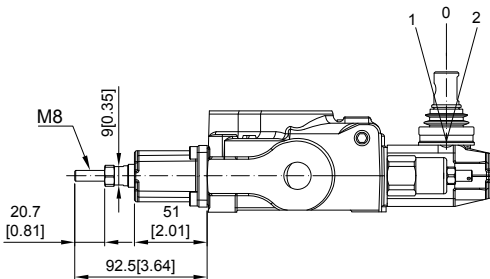
2 POSITIONS, DETENT IN POS. 0-2, WITHOUT SPRING CENTERED



6-3 Kit:

2 POSITIONS, DETENT IN POS. 1-0, WITHOUT SPRING CENTERED

Type 8D2



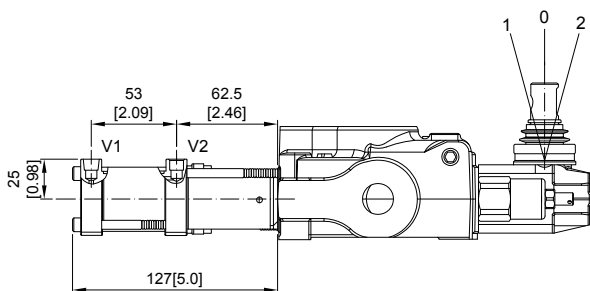
8D2 Kit:

WITH SPRING RETURN TO NEUTRAL POSITION AND PIN WITH M8 MALE THREAD FOR DUAL CONTROL

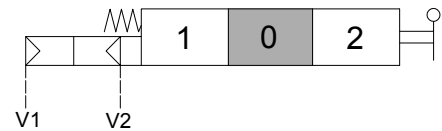
VM5 B Side Monoblock Directional Control Valves

Type 8P

V1 & V2: NPT 1/8 - 27



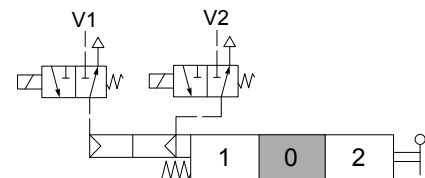
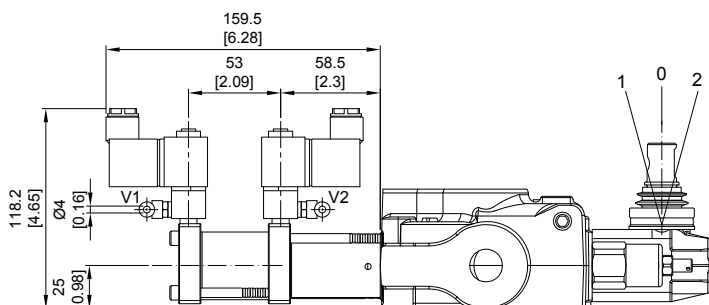
ON/OFF PNEUMATIC KIT



Operating feature:

PILOT PRESSURE (MIN.) 6 BAR / 87 PSI
PILOT PRESSURE (MAX.) 12 BAR / 174 PSI

Type 8EP3



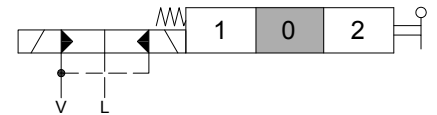
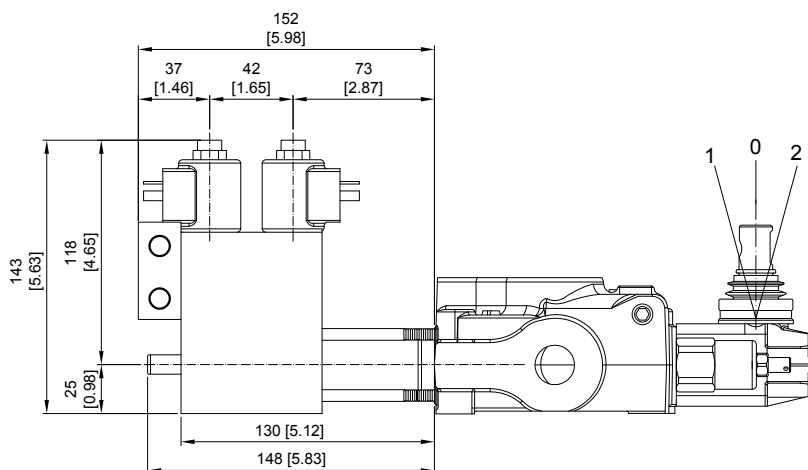
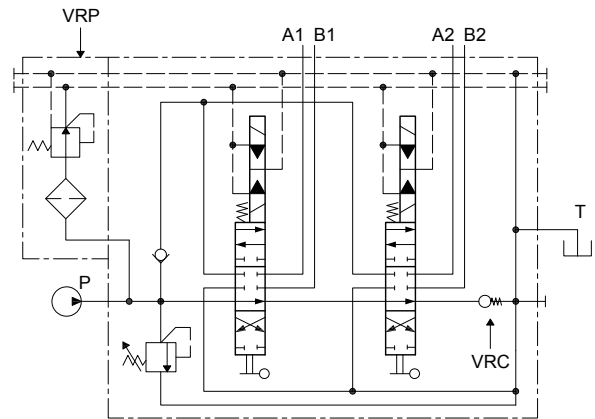
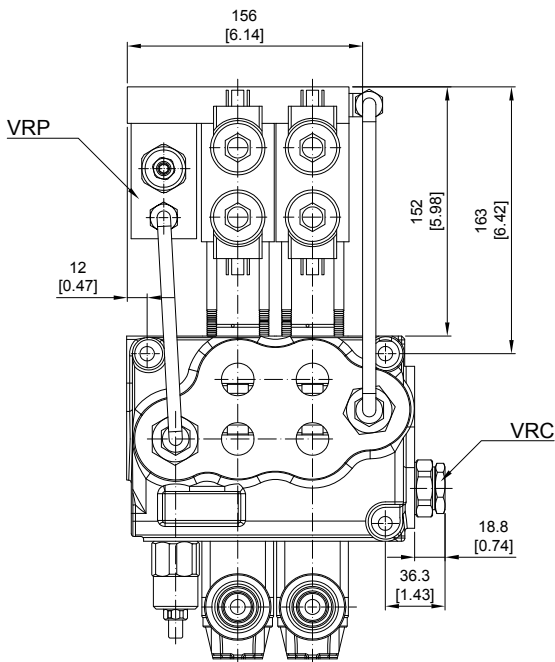
Solenoid operating features:

NOMINAL VOLTAGE: 24VDC
NOMINAL VOLTAGE TOLERANCE: $\pm 10\%$
POWER RATING: 5W

VM5 B Side

Monoblock Directional Control Valves

Type 8ED3



Operating features:

PILOT PRESSURE: • MIN. 10 BAR / 145 PSI
 • MAX. 50 BAR / 725 PSI
 MAX. BACKPRESSURE ON DRAIN L: 25 BAR / 360 PSI

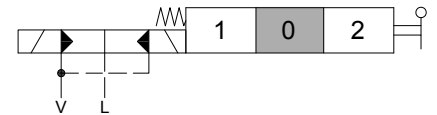
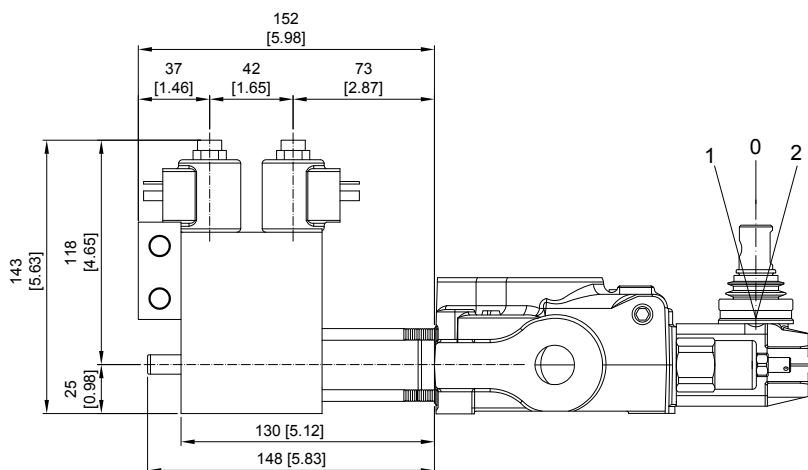
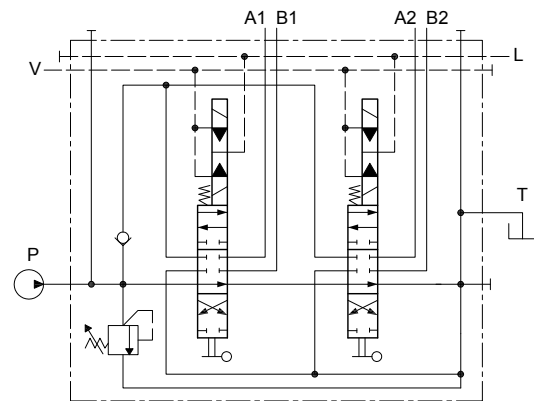
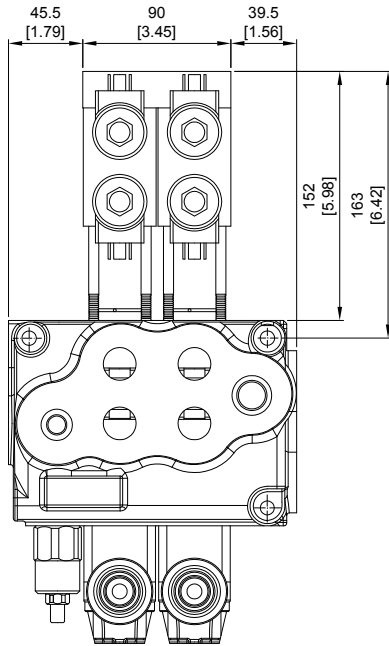
Coil features:

NOMINAL VOLTAGE TOLERANCE: $\pm 10\%$
 ELECTRIC POWER: 21 W
 STANDARD VOLTAGE: 12 VDC / 24 VDC

VM5 B Side

Monoblock Directional Control Valves

Type 8ER3



Operating features:

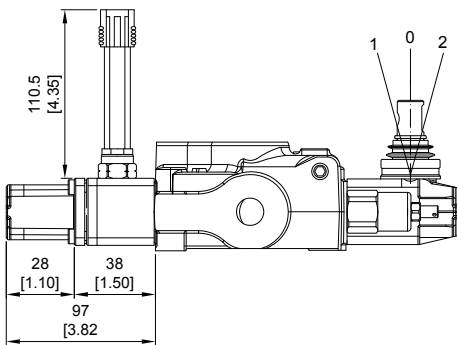
PILOT PRESSURE: • MIN. 10 BAR / 145 PSI
 • MAX. 50 BAR / 725 PSI
 MAX. BACKPRESSURE ON DRAIN L: 25 BAR / 360 PSI

Coil features:

NOMINAL VOLTAGE TOLERANCE: $\pm 10\%$
 ELECTRIC POWER: 21 W
 STANDARD VOLTAGE: 12 VDC / 24 VDC

VM5 B Side Monoblock Directional Control Valves

Type 8MG



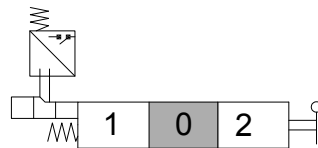
MICROSWITCH

Operating features:

MECHANICAL LITE: • 5X10⁵ OPERATIONS

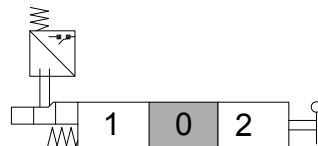
ELECTRICAL LITE (RESISTIVE LOAD):

- 10⁵ OPERATIONS - 7A / 13.5 VDC
- 5X10⁴ OPERATIONS - 10A / 12 VDC
- 5X10⁴ OPERATIONS - 3A / 28 VDC



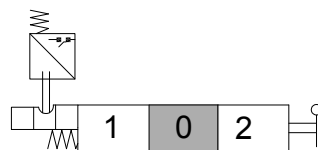
8MG1 Kit:

MICROSWITCH WITH MALE/FEMALE CONNECTOR, OPERATED IN POS. 1



8MG2 Kit:

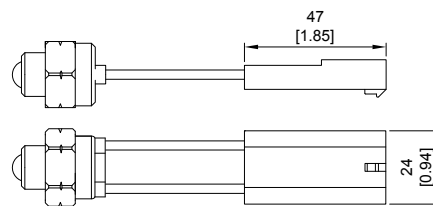
MICROSWITCH WITH MALE/FEMALE CONNECTOR, OPERATED IN POS. 2



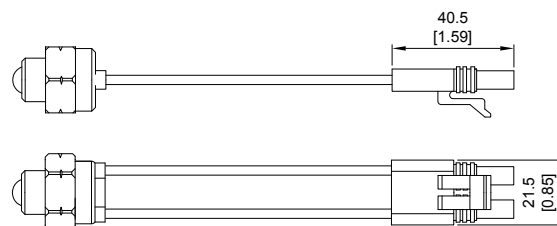
8MG3 Kit:

MICROSWITCH WITH MALE/FEMALE CONNECTOR, OPERATED IN POS. 1 AND POS. 2

With NO contact (female connector with male end)

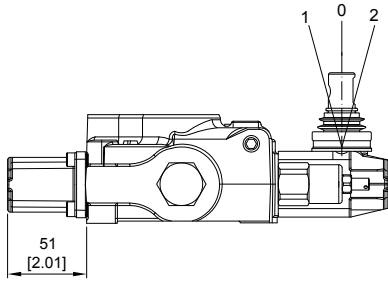


With NC contact (male connector with female end)



VM5 B Side Monoblock Directional Control Valves

Type 8



8 Kit:

SPRING RETURN TO NEUTRAL POSITION.



8-1 Kit:

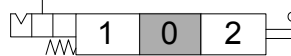
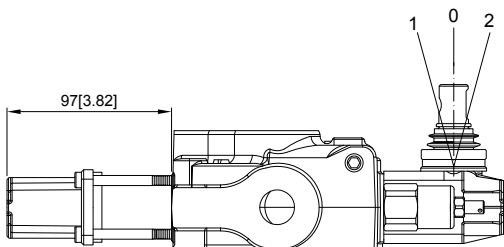
SPRING RETURN TO NEUTRAL POSITION.
(2 POSITIONS)



8-2 Kit:

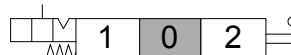
SPRING RETURN TO NEUTRAL POSITION.
(2 POSITIONS)

Type 9



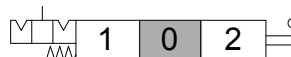
9-1 Kit:

DETENT IN POS. 1, 2 WITH SPRING CENTERED



9-2 Kit:

DETENT IN POS. 2 WITH SPRING CENTERED



9-3 Kit:

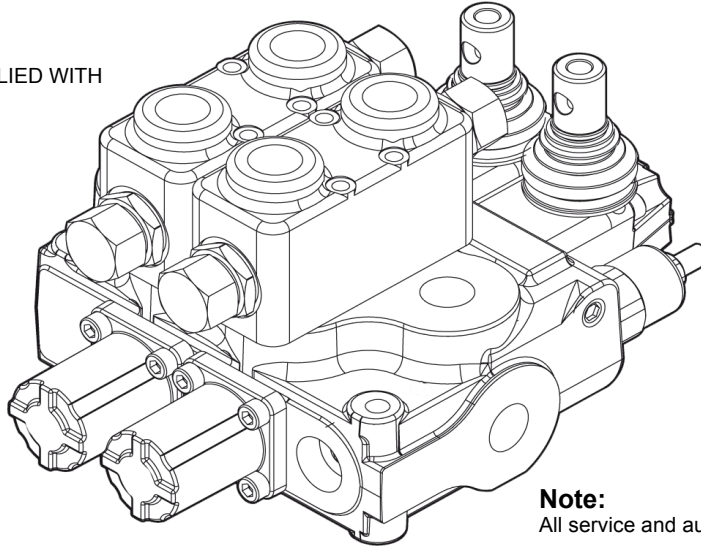
DETENT IN POS. 1 WITH SPRING CENTERED

VM5 Service and auxiliary valves

Monoblock Directional Control Valves

Anti-shock valves

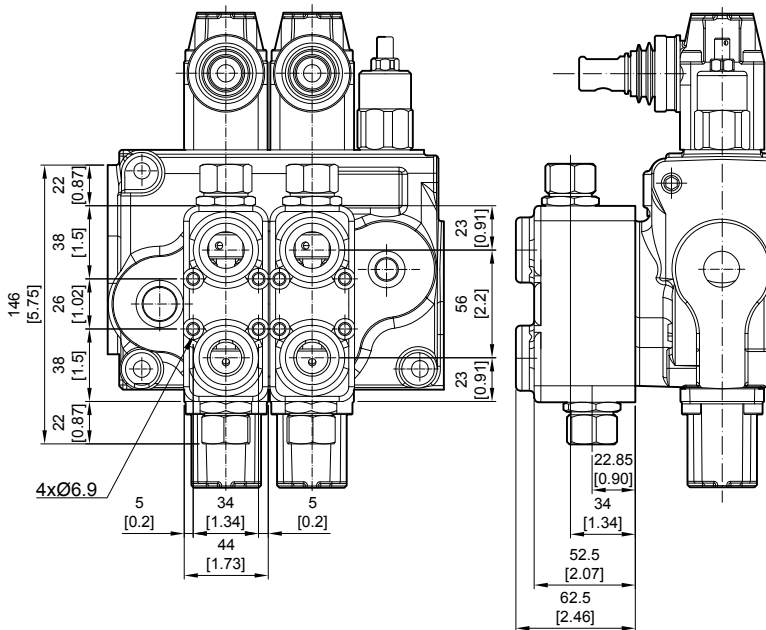
(CROSS RETURN TYPE, SUPPLIED WITH MOUNTING BLOCK)



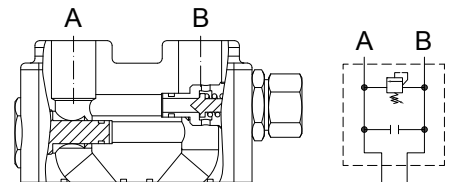
Note:

All service and auxiliary valves need special body

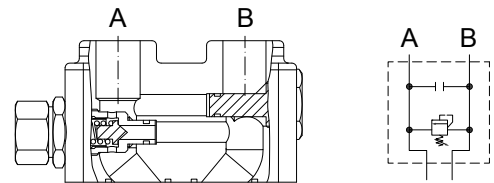
Type P



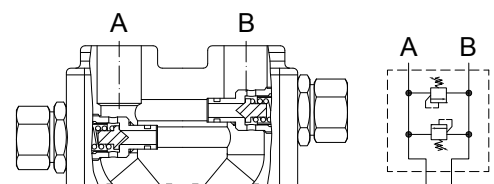
P1 Kit: VM56001, Block with valve on port A



P2 Kit: VM56002, Block with valve on port B



P3 Kit: VM56003, Block with valve on port A and B

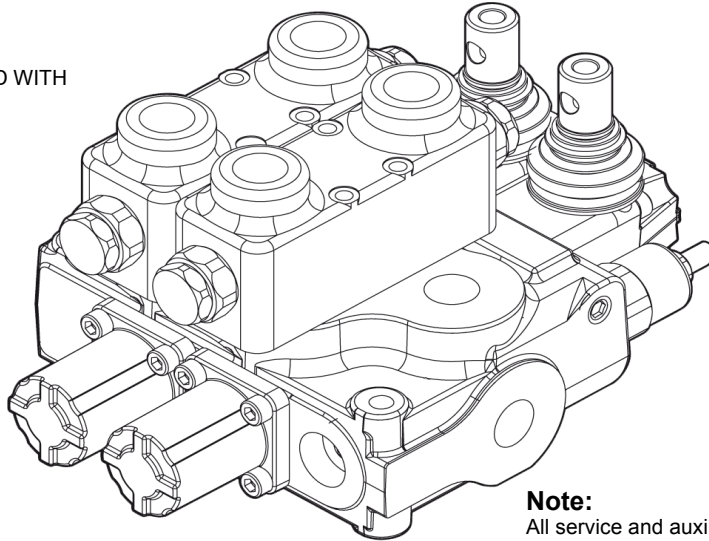


VM5 Service and auxiliary valves

Monoblock Directional Control Valves

Pilot check valves

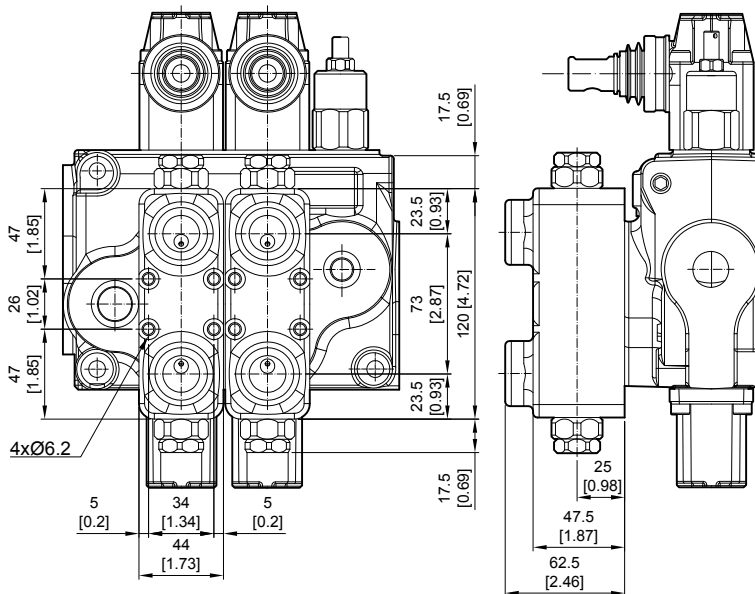
(WITH PRE-OPENING, SUPPLIED WITH MOUNTING BLOCK)



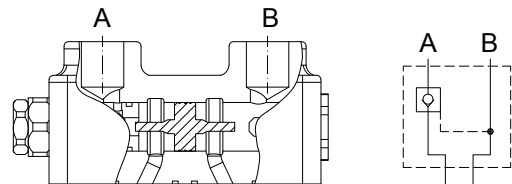
Note:

All service and auxiliary valves need special body

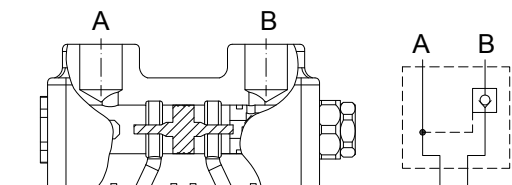
Type BSP Pilot check valves (With Pre-opening, supplied with mounting block)



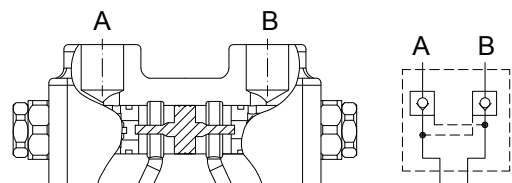
BSP1 Kit: VM57001, Block with valve on port A



BSP2 Kit: VM57002, Block with valve on port B



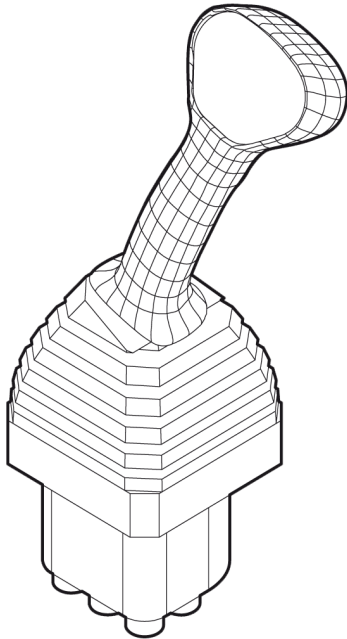
BSP3 Kit: VM57003, Block with valve on port A and B



VM5 Accessories

Monoblock Directional Control Valves

Type JS

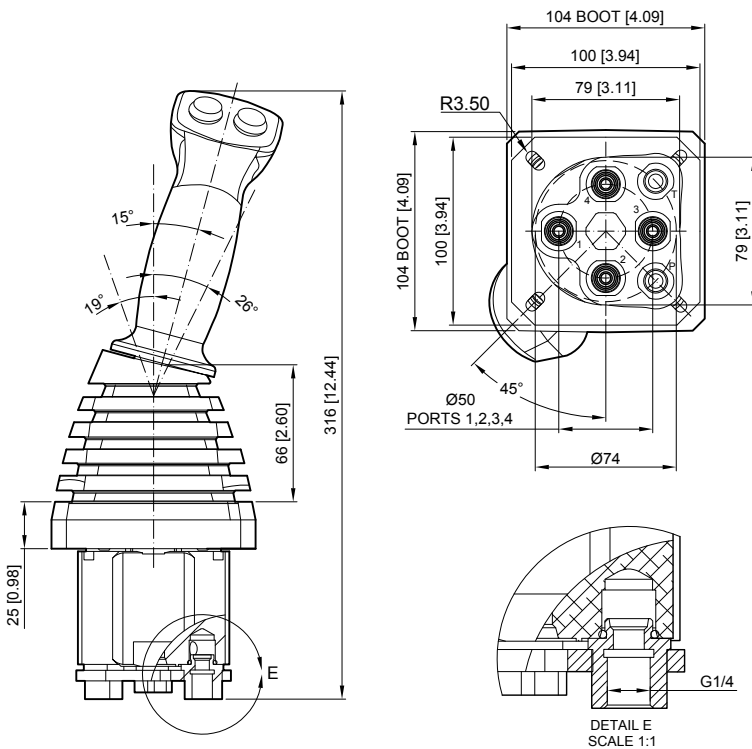


CODE: VMJS446

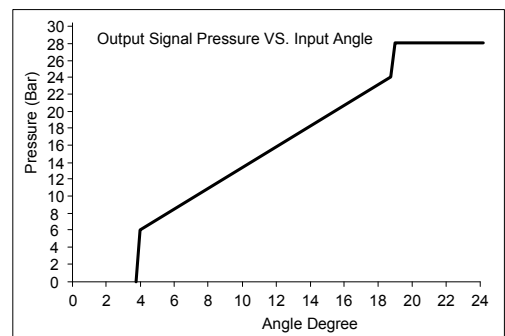
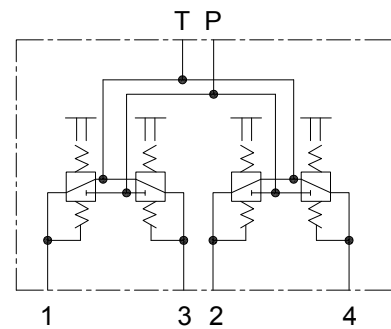
Hydraulic Pilot Valve - handle type

Specifications:

- This data sheet shows technical spec. with mineral oil of 46 mm²/s (cSt) viscosity at 40°C (104°F)
- Flow: 5~20 LPM
- Feeding pressure: 30~100 bar
- Max. backpressure: 3 bar
- Output pressure: see diagram
- Internal leakage at 30 bar: 18~24 cm³/min
- Fluid: mineral oil
- Fluid temperature: -10~80°C
- Ambient temperature: -40~60°C



HYDRAULIC SCHEME:



VM5 Accessories

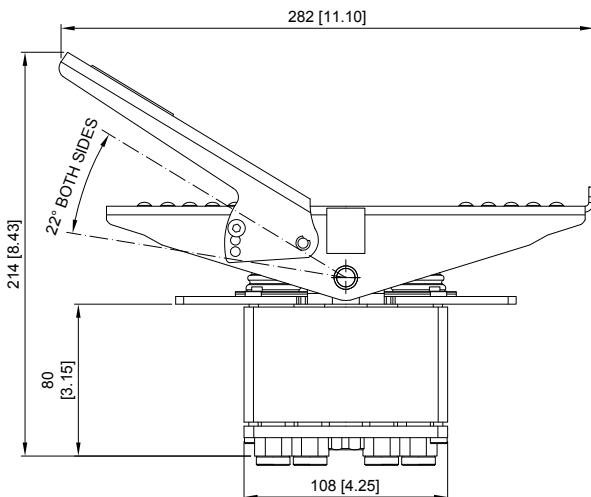
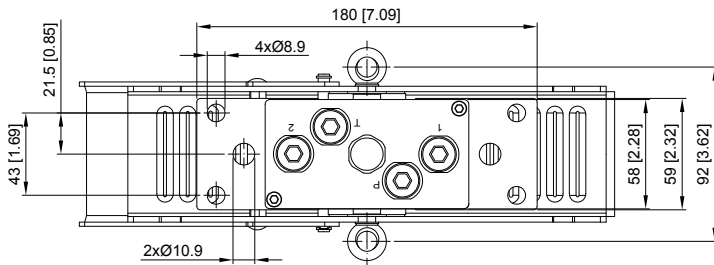
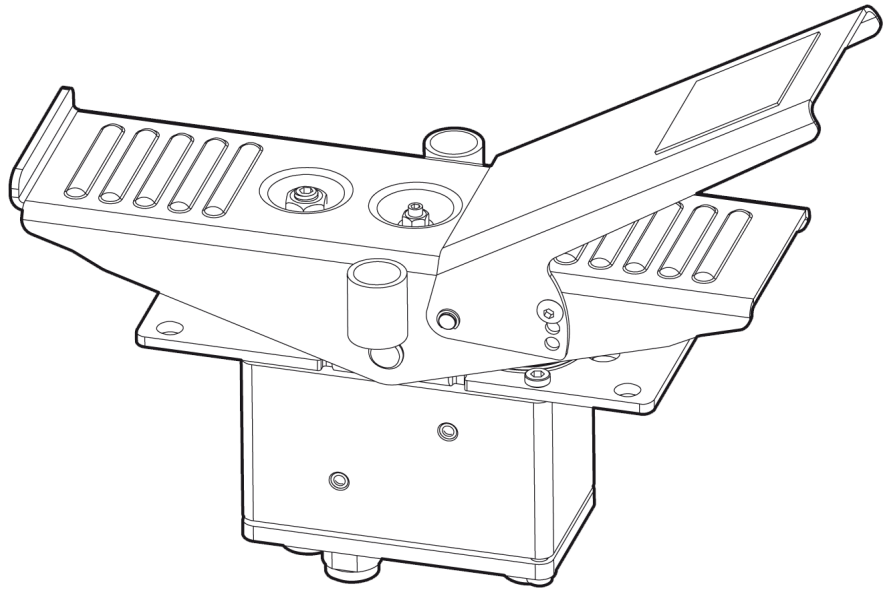
Monoblock Directional Control Valves

Type FP

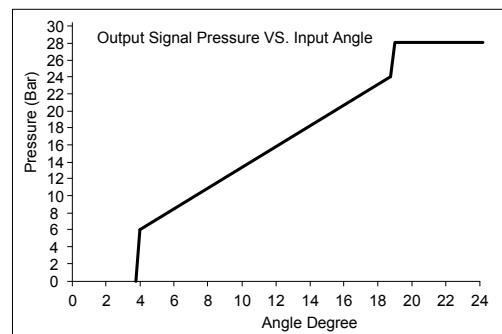
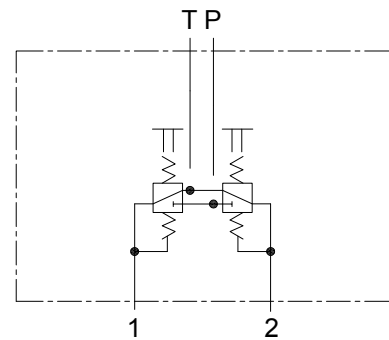
CODE: VMFP246
Hydraulic Pilot Valve - pedal type

Specifications:

- This data sheet shows technical spec. with mineral oil of 46 mm²/s (cSt) viscosity at 40°C (104°F)
- Flow: 5~20 LPM
- Feeding pressure: 30~100 bar
- Max. backpressure: 3 bar
- Output pressure: see diagram
- Internal leakage at 30 bar: 18~24 cm³/min
- Fluid: mineral oil
- Fluid temperature: -10~80°C
- Ambient temperature: -40~60°C



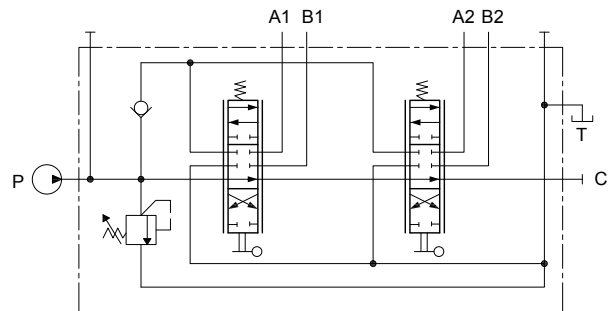
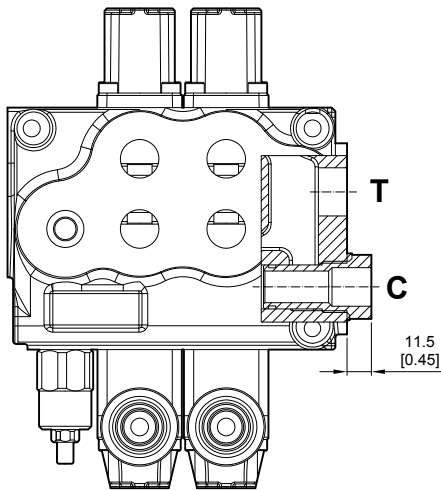
HYDRAULIC SCHEME:



VM5 Outlet

Monoblock Directional Control Valves

M8 Power Beyond Conversion plug
(Closed center plug)



M3

