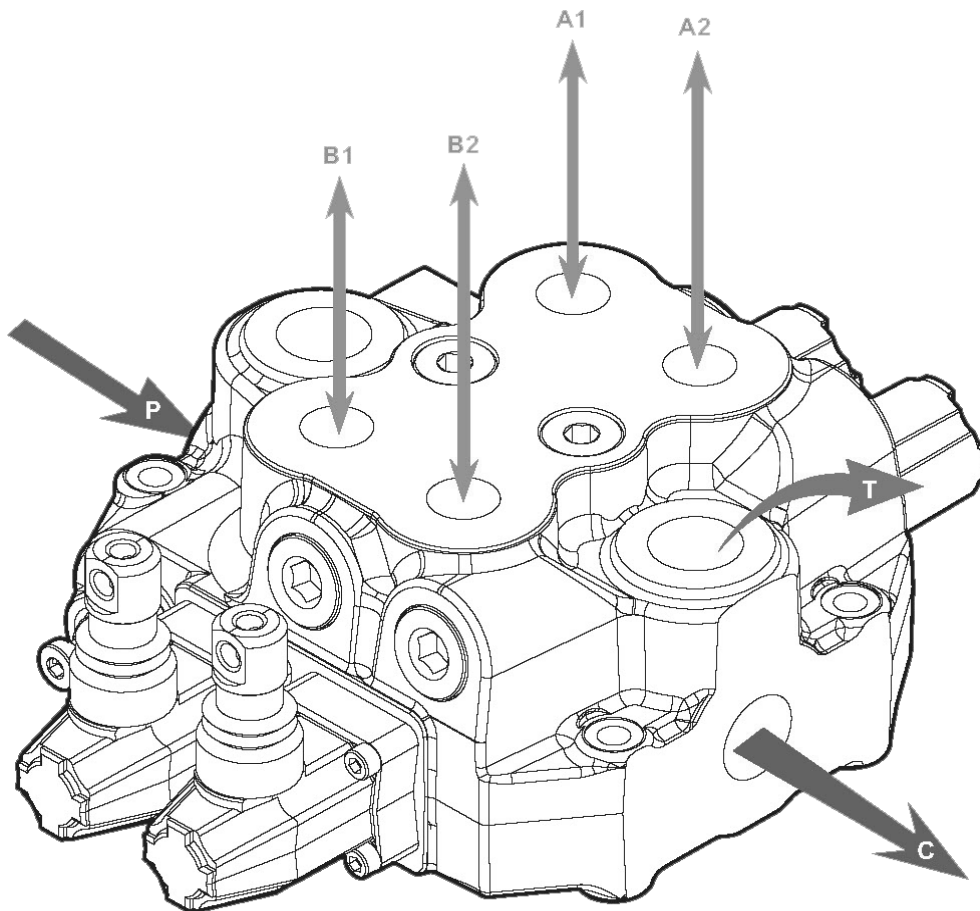


VSB5

Monoblock Directional Control Valves



VSB5 Specifications

Nominal flow rate		80 l/min	21 US gpm
Operating pressure (maximum)		315 bar	4600 psi
Back pressure (maximum)	on outlet port T	25 bar	360 psi
Fluid temperature range	with NBR(BUNA-N) seals	from -20°C to 80°C	from -4° to 176° F
	with FPM(VITON) seal	from -20°C to 100°C	from -4° to 212° F
Viscosity	operating range	from 15 to 75 mm ² /s	from 15 to 75 cst
	min	12 mm ² /s	12 cst
	max.	400 mm ² /s	400 cst
Ambient temperature range		from -40°C to 60°C	from -40° to 140° F

• All specifications, dimensions and design characteristics shown in this catalogue are subject to change without notice



VSB5

Monoblock Directional Control Valves

VSB5 / **2S** - **3** / **1 8 L** / **P1 (G3-100)** / G 6-4-6 / M3

1
2
3
4
5
6

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

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
	XWG	VMSB52001	Pilot operatid pressure relief valve Range 25 to 315 bar / 360 to 4600 psi, standard setting 125 bar / 1800psi
	WG-2	VMSB52002	Direct pressure relief valve Range 80 to 160 bar / 1150 to 2300 psi, standard setting 125 bar / 1800 psi
	WG-3	VMSB52003	Direct pressure relief valve Range 125 to 250 bar / 1800 to 3600 psi, standard setting 175 bar / 2500 psi
	WG-4	VMSB52002	Direct pressure relief valve Range 200 to 315 bar / 2900 to 4600 psi, standard setting 220 bar / 3200 psi
	SV	VMSB52100	Relief valve blanking plug



3: Spool Options		
TYPE	CODE	DESCRIPTION
1	VMSB53001	Double acting, 3 positions, with A, B closed in neutral position
2	VMSB53002	Double acting, 3 positions, with A, B open to Tank in neutral position
3	VMSB53003	Single acting on A closed in neutral position, 3 positions, B plugged
4	VMSB53004	Single acting on B closed in neutral position, 3 positions, A plugged
5	VMSB53005	Double acting, 3 positions, with B open to Tank in neutral position
6	VMSB53006	Double acting, 3 positions, with A open to Tank in neutral position
7	VMSB53007	Single acting on A open to Tank in neutral position, 3 positions, B plugged
8	VMSB53008	Single acting on B open to Tank in neutral position, 3 positions, A plugged
4: B Side Spool Positioners		
TYPE	CODE	DESCRIPTION
6-1	VMSB43061	Detent in pos. 1-0-2, without spring centered
6-2	VMSB43062	2 positions, detent in pos. 0-2, without spring centered
6-3	VMSB43063	2 positions, detent in pos. 1-0, without spring centered
8D2	VMSB43082	With spring return to neutral position and pin with M8 male thread for dual control
8EP3	VMSB44300	ON/OFF Electro-Pneumatic actuator
8P	VMSB43080	ON/OFF Pneumatic actuator
8MG1 (NO)	VMSB43801	Microswitch kit operated in pos. 1 (Normally Open)
8MG2 (NO)	VMSB43802	Microswitch kit operated in pos. 2 (Normally Open)
8MG3 (NO)	VMSB43803	Microswitch kit operated in pos. 1&2 (Normally Open)
MG (NO)	VMSB43804	Microswitch with NO terminal
8MG1 (NC)	VMSB438011	Microswitch kit operated in pos. 1 (Normally Closed)
8MG2 (NC)	VMSB438021	Microswitch kit operated in pos. 2 (Normally Closed)
8MG3 (NC)	VMSB438031	Microswitch kit operated in pos. 1&2 (Normally Closed)
MG (NC)	VMSB438041	Microswitch with NC terminal
8	VMSB43008	With spring return to neutral position
8-1	VMSB44801	2 positions, with spring centered from pos. 1
8-2	VMSB44082	2 positions, with spring centered from pos. 2
9-1	VMSB43091	Detent in pos. 1, 2 with spring centered
9-2	VMSB43092	Detent in pos. 2 with spring centered
9-3	VMSB43093	Detent in pos. 1 with spring centered
8ED3+RV-KE1R3	VMSB54201	1S: ON/OFF Electro-hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE2R3	VMSB54202	2S: ON/OFF Electro-hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE3R3	VMSB54203	3S: ON/OFF Electro-hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE4R3	VMSB54204	4S: ON/OFF Electro-hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE5R3	VMSB54205	5S: ON/OFF Electro-hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE6R3	VMSB54206	6S: ON/OFF Electro-hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ER3+KE1SO	VMSB54401	1S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+KE2SO	VMSB54402	2S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+KE3SO	VMSB54403	3S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+KE4SO	VMSB54404	4S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+KE5SO	VMSB54405	5S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+KE6SO	VMSB54406	6S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain

VSB5

Monoblock Directional Control Valves

VSB5 / **2S** - **3** / **1 8 L** / **P1 (G3-100)** / G 6-4-6 / M3

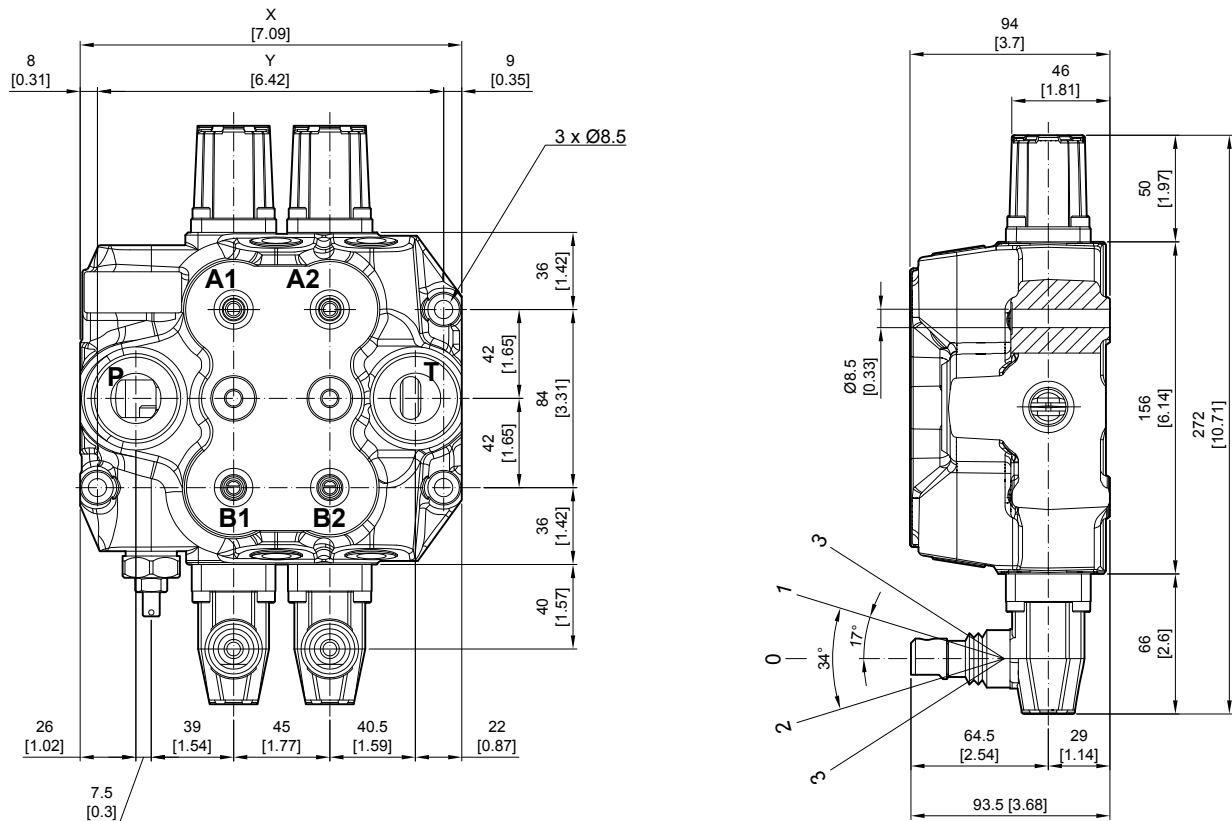
1
 2
 3 4 5
 6

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

5: A Side controls		
TYPE	CODE	DESCRIPTION
L	VMSB44000	Standard lever box
SLP	VMSB44001	Without lever box, with dust-proof plate
LCB	VMSB45002	Joystick lever for 2 section operation
TQ	VMSB44003	Flexible cable connection
6: Port Relief		
TYPE	CODE	DESCRIPTION
P (G2-63)	VMSB45002	Anti-shock valve, range 63 to 125 bar / form 900 to 1800 psi standard setting 63 bar / 900 psi
P (G3-100)	VMSB45003	Anti-shock valve, range 100 to 250 bar / form 1450 to 3600 psi standard setting 100 bar / 1450 psi
P (G4-200)	VMSB45004	Anti-shock valve, range 200 to 315 bar / form 2900 to 4600 psi standard setting 200 bar / 2900 psi
PM (G2-63)	VMSB45005	Anti-shock valve, range 63 to 125 bar / form 900 to 1800 psi standard setting 63 bar / 900 psi, for low setting
U (G2-63)	VMSB45012	Anti-shock valve and Anti-cavitation valve, range 63 to 125 bar / form 900 to 1800 psi standard setting 63 bar / 900 psi
U (G3-100)	VMSB45013	Anti-shock valve and Anti-cavitation valve, range 100 to 250 bar / form 1450 to 3600 psi standard setting 100 bar / 1450 psi
U (G4-200)	VMSB45014	Anti-shock valve and Anti-cavitation valve, range 200 to 315 bar / form 2900 to 4600 psi standard setting 200 bar / 2900 psi
C	VMSB45100	Anti - cavitation

VSB5 Dimensions

Monoblock Directional Control Valves



Standard threads

Ports	Inlet P	A and B ports	Outlet T and power beyond C
BSP	G3/4	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	M27x2	M22x1.5	M27x2

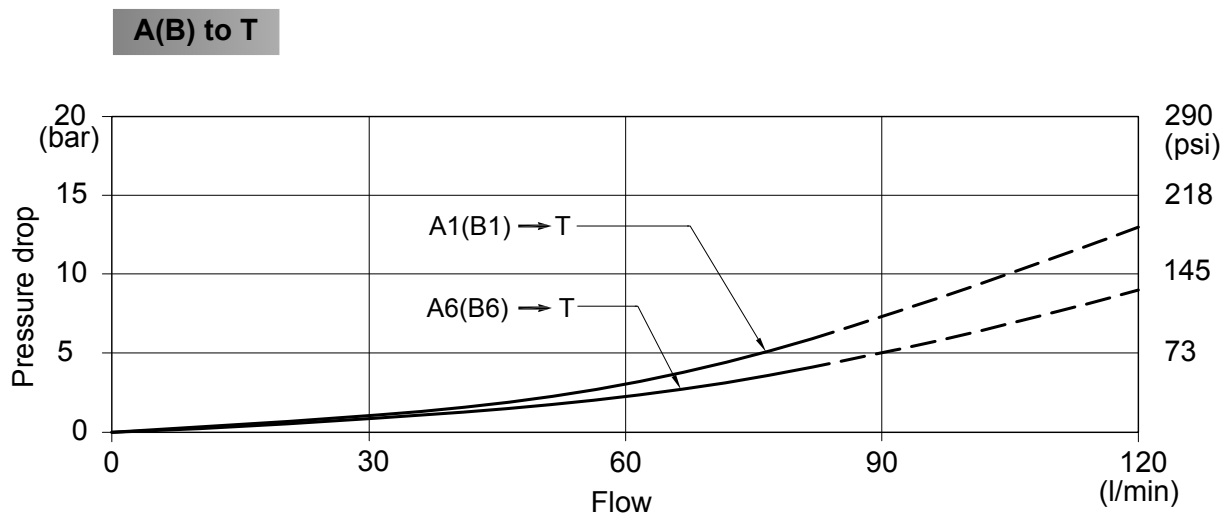
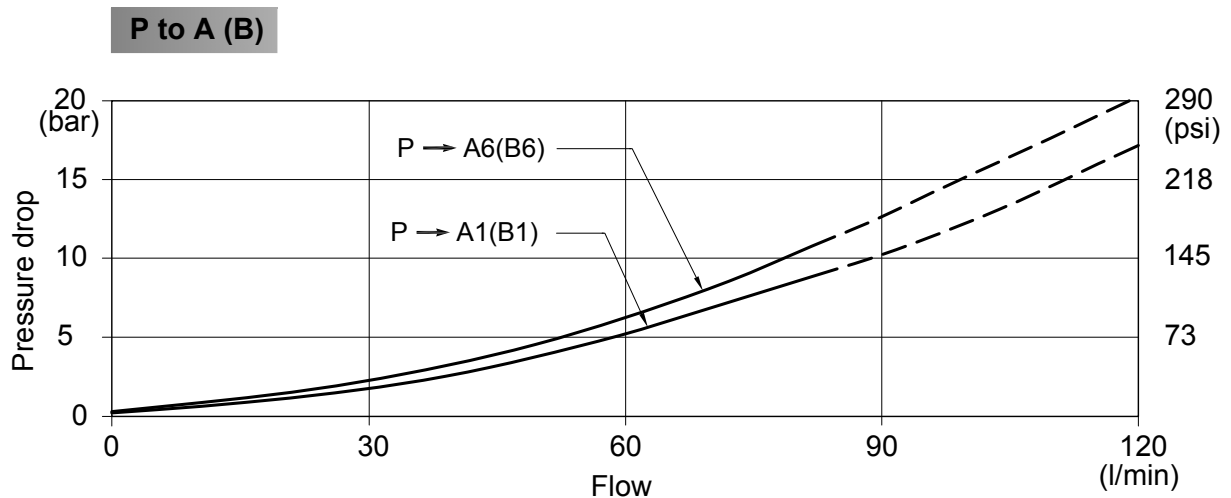
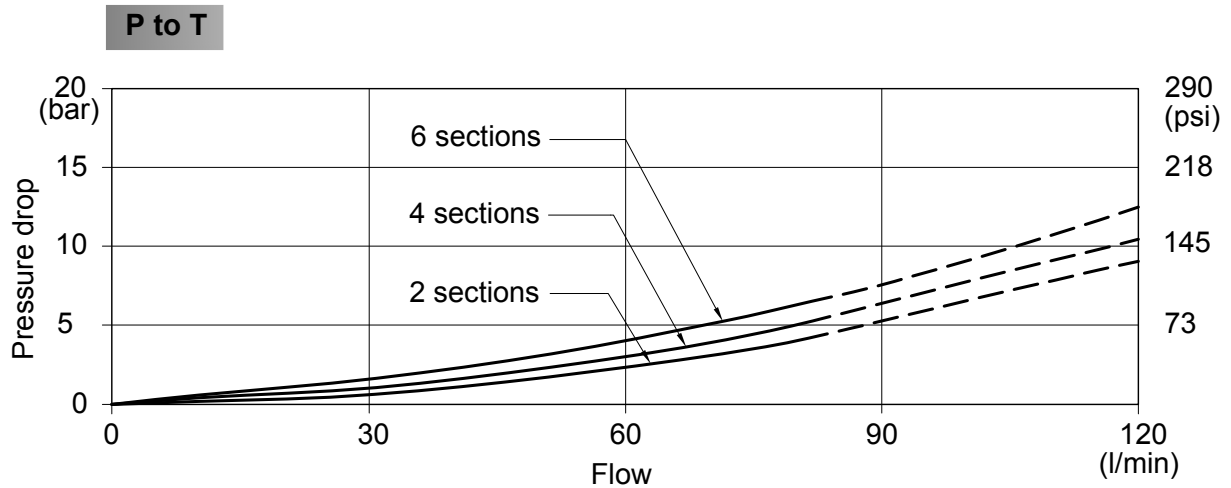
- G-1/2 : G4 G-3/8 : G3 G-3/4 : G6
- SAE 8 : E8 SAE 10 : E10 SAE 12 : E12 SAE 16 : E16

Standard dimensions

TYPE	X		Y	
	mm	in	mm	in
VSB5/1S	135	5.32	118	4.65
VSB5/2S	180	7.09	163	6.42
VSB5/3S	225	8.86	208	8.19
VSB5/4S	270	10.63	253	9.96
VSB5/5S	315	12.40	298	11.73
VSB5/6S	360	14.17	343	13.50

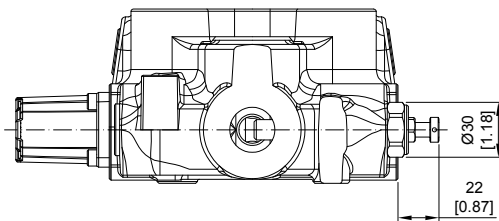
VSB5 Performance curve chart

Monoblock Directional Control Valves

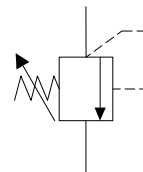


VSB5 Inlet Relief (Optional) Monoblock Directional Control Valves

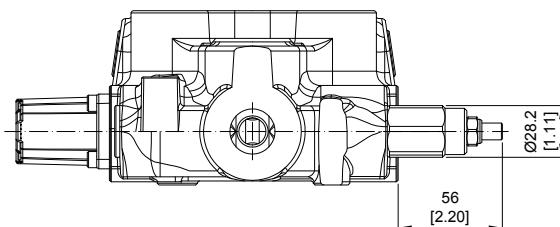
Type WG



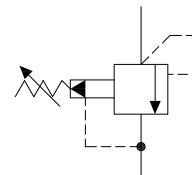
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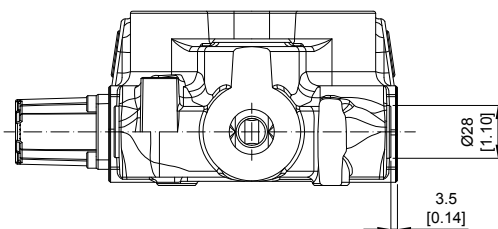
Type XWG



Pilot operated pressure relief valve:



Type SV



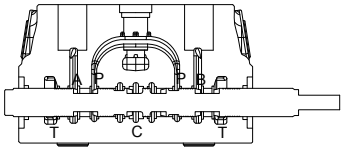
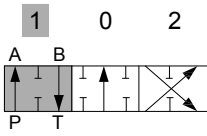
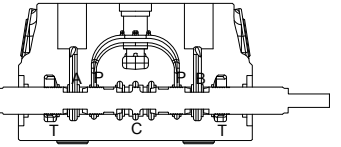
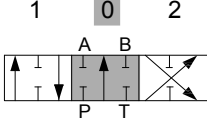
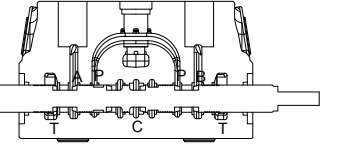
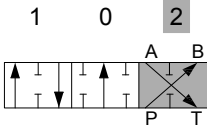
Relief valve blanking plug:



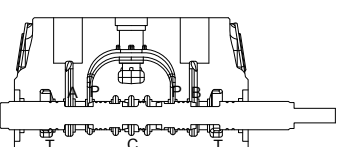
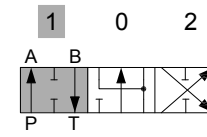
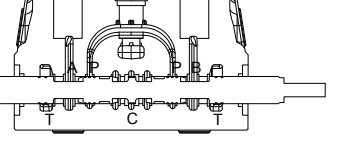
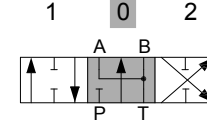
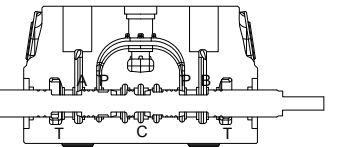
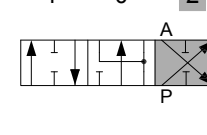
VSB5 Spool Options

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>	

VSB5 Spool Options

Monoblock Directional Control Valves

TYPE 3

	<p>P → A C closed</p>	<p>"B" port plugged</p>
	<p>P & T & A closed C open</p>	<p>"B" port plugged</p>
	<p>A → T C open</p>	<p>"B" port plugged</p>

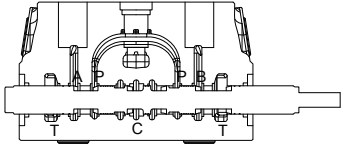
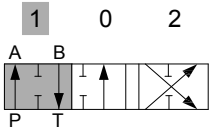
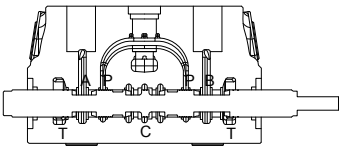
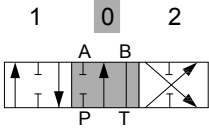
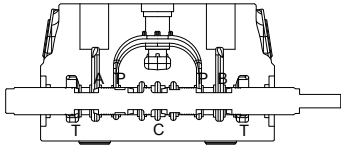
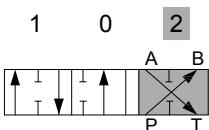
TYPE 4

	<p>B → T C closed</p>	<p>"A" port plugged</p>
	<p>P & T & B closed C open</p>	<p>"A" port plugged</p>
	<p>P → B C closed</p>	<p>"A" port plugged</p>

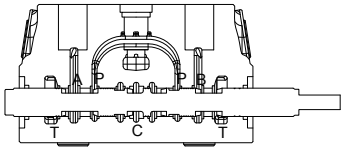
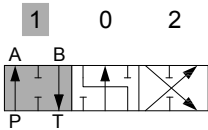
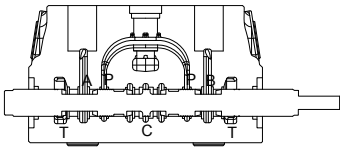
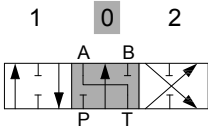
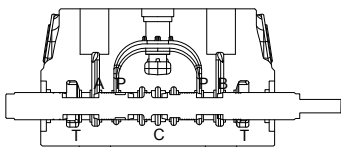
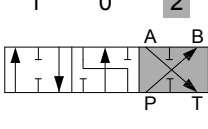
VSB5 Spool Options

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>	

VSB5 Spool Options

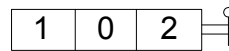
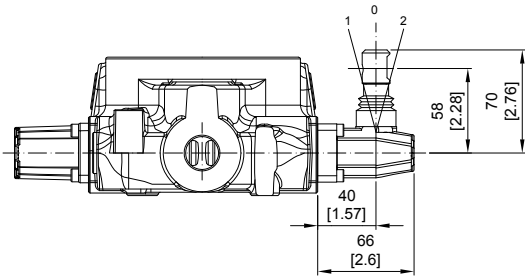
Monoblock Directional Control Valves

TYPE 7		
	<p>A → T P closed C open</p>	<p>1 0 2 A P T "B" port plugged</p>
	<p>P → A P closed C open</p>	<p>1 0 2 A P T "B" port plugged</p>
	<p>A → T P closed C open</p>	<p>1 0 2 A P T "B" port plugged</p>
TYPE 8		
	<p>B → T P closed C open</p>	<p>1 0 2 B P T "A" port plugged</p>
	<p>B → T P closed C open</p>	<p>1 0 2 B P T "A" port plugged</p>
	<p>P → B C & T closed</p>	<p>1 0 2 B P T "A" port plugged</p>

VSB5 A Side

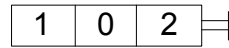
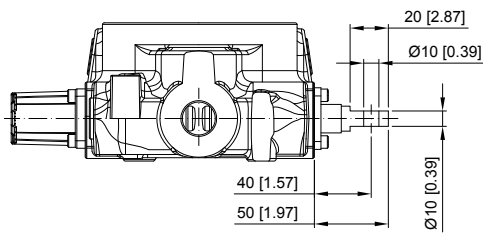
Monoblock Directional Control Valves

Type L



Type L:
STANDART LEVER KIT

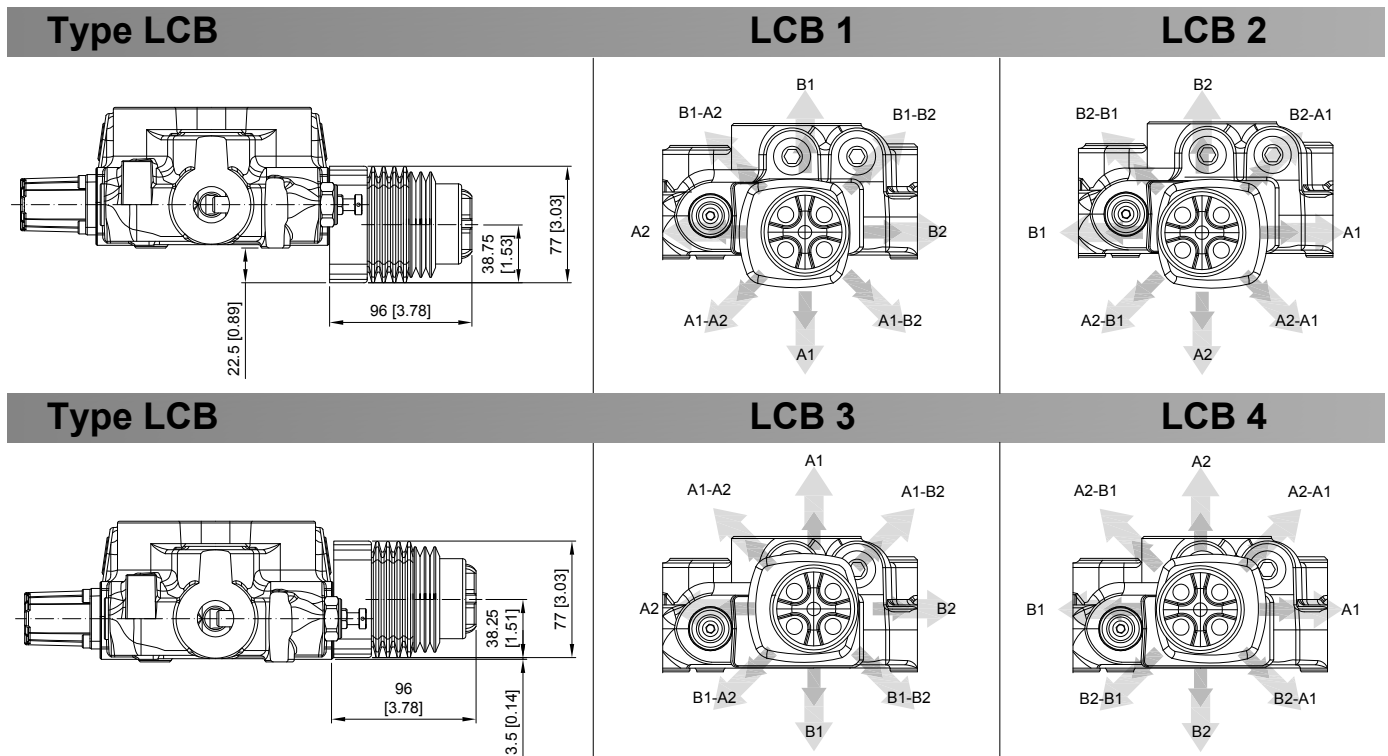
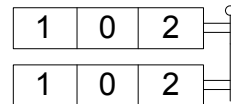
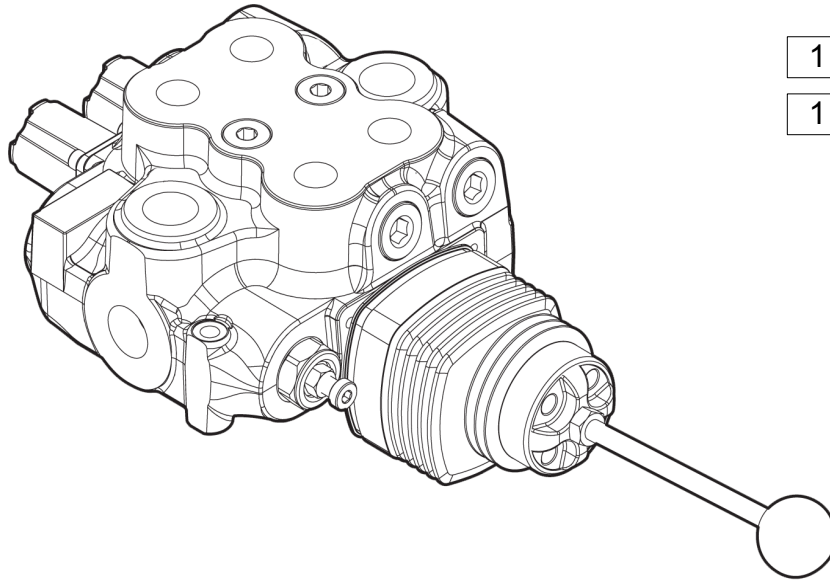
Type SLP



Type SLP:
WITH DUST-PROOF PLATE

VSB5 A Side Monoblock Directional Control Valves

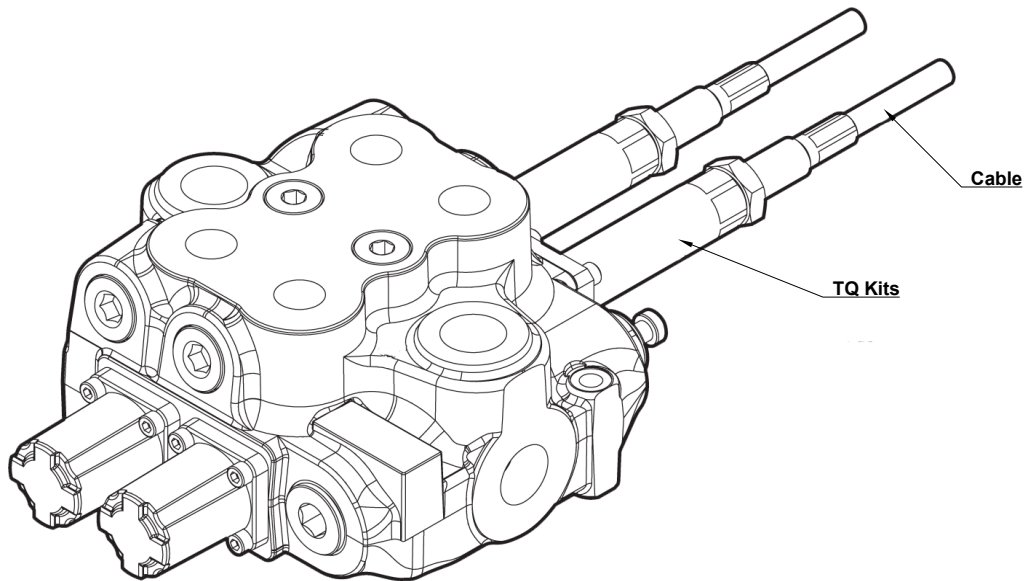
LCB: Joystick control



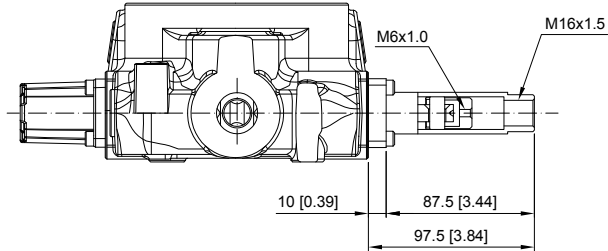
VSB5 A Side

Monoblock Directional Control Valves

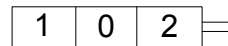
Note : CONNECTION KIT NOT INCLUDE CABLE



Type TQ



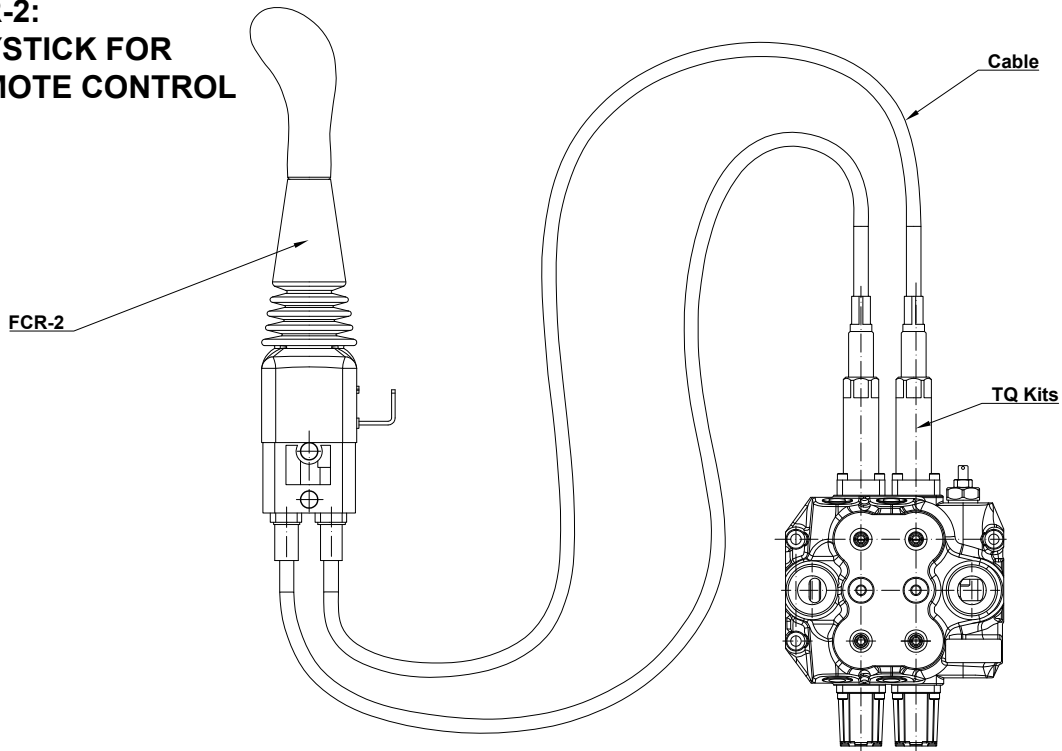
TQ Kit:



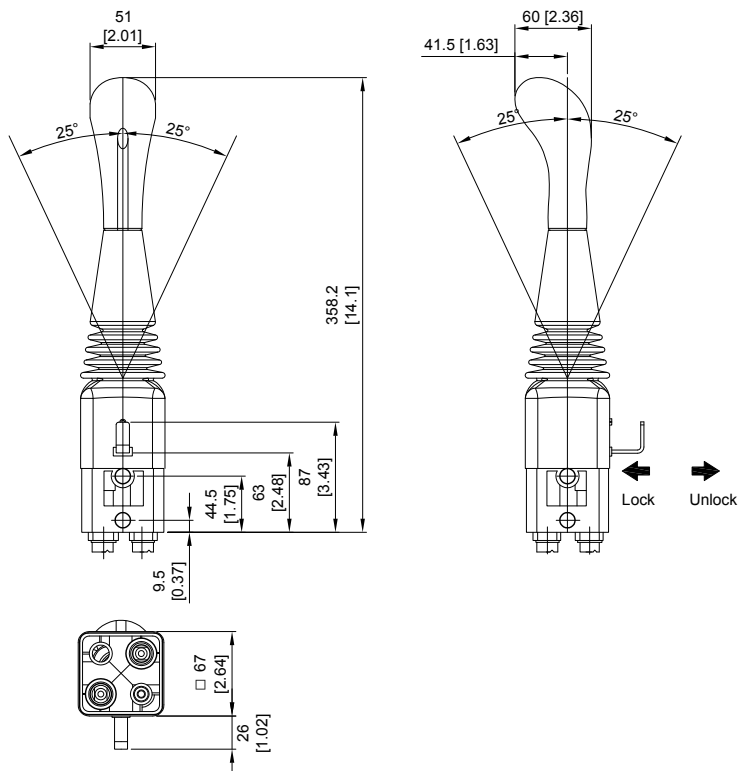
VSB5 A Side

Monoblock Directional Control Valves

**FCR-2:
JOYSTICK FOR
REMOTE CONTROL**

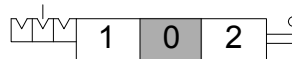
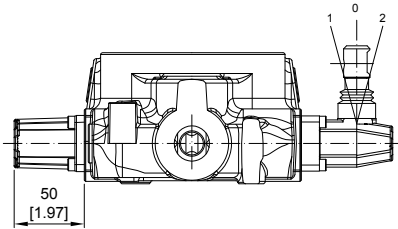


Type FCR-2



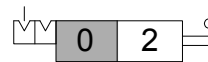
VSB5 B Side Monoblock Directional Control Valves

Type 6



6-1 Kit:

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



6-2 Kit:

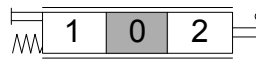
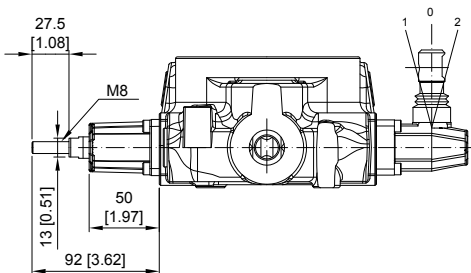
2 POSITIONS, DETENT IN POS. 0-2, WITHOUT SPRING CENTERED



6-3 Kit:

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

Type 8D2



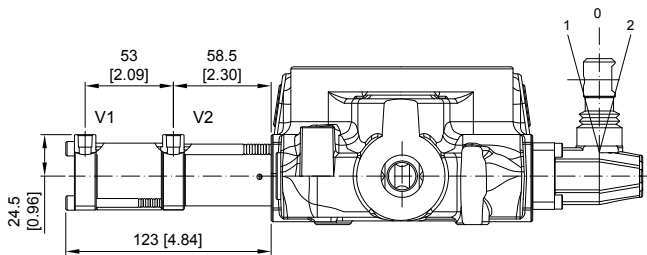
8D2 Kit:

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

VSB5 B Side Monoblock Directional Control Valves

Type 8P

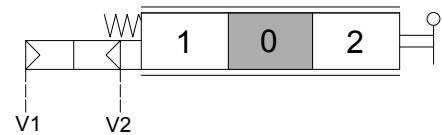
V1 & V2: NPT 1/8 - 27



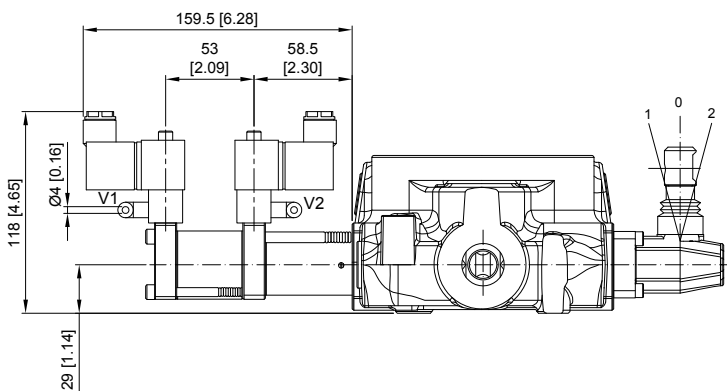
Operating feature:

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

ON/OFF PNEUMATIC KIT

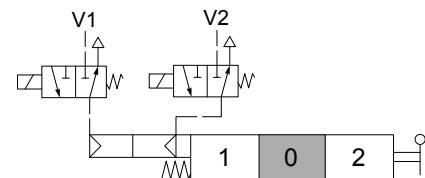


Type 8EP3



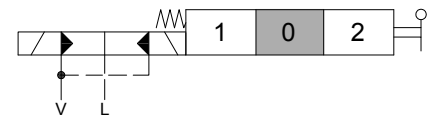
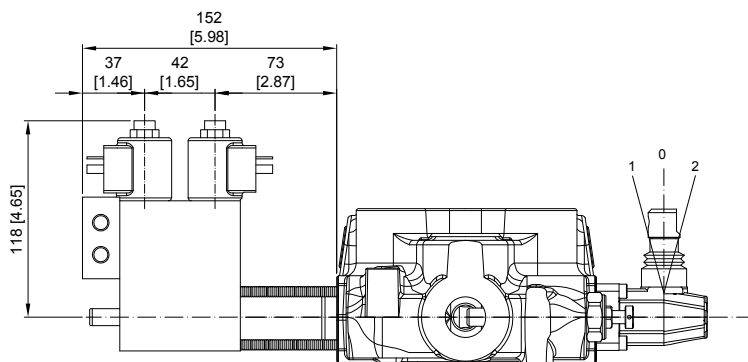
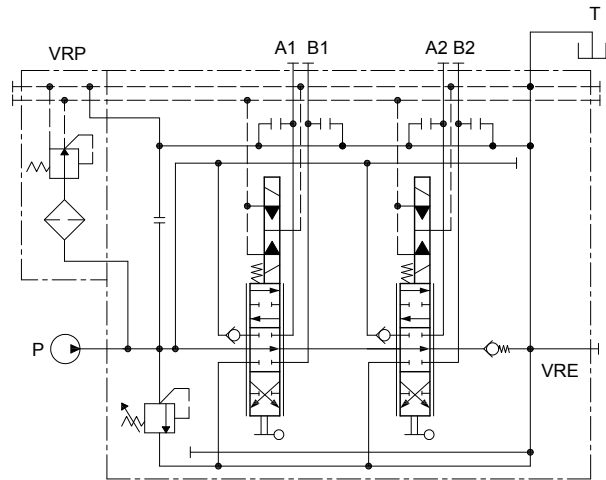
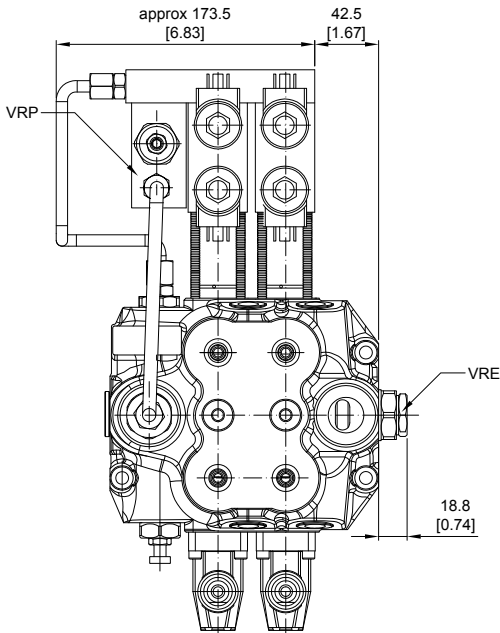
Solenoid operating features:

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



VSB5 B Side Monoblock Directional Control Valves

Type 8ED3



Operating features:

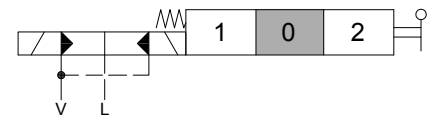
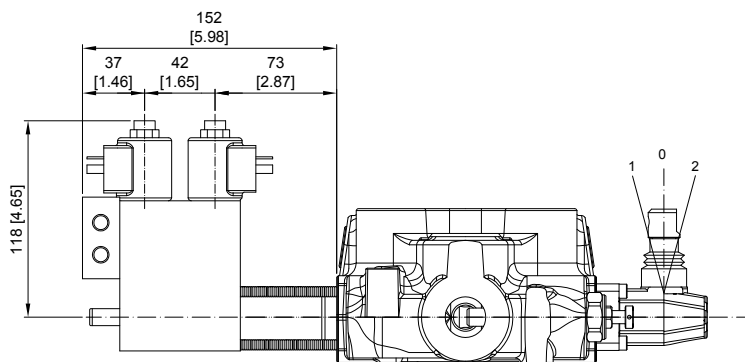
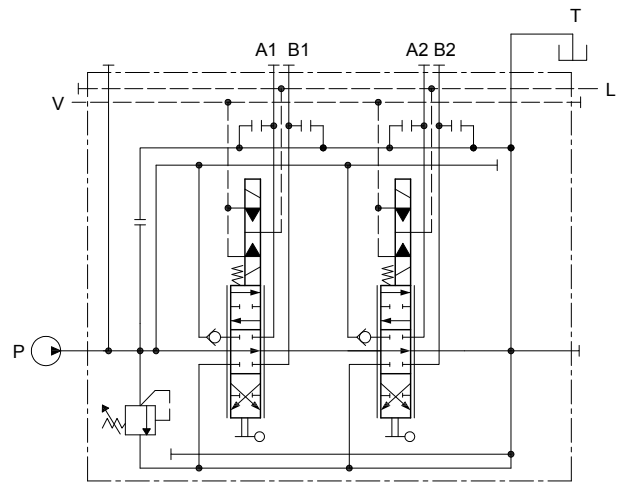
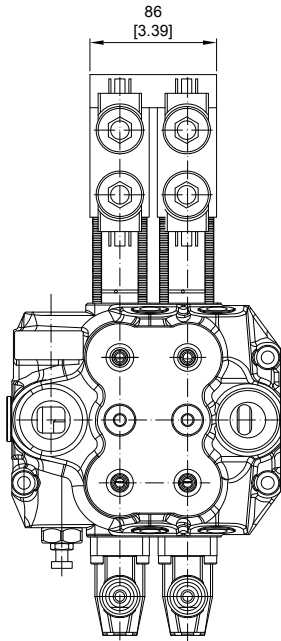
PILOT PRESSURE: · MIN. 10 BAR / 145 PSI
· MAX. 50 BAR / 725 PSI
MAX. BACKPRESSURE ON DRAIN L:
25 BAR / 360 PSI

Coil features:

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

VSB5 B Side Monoblock Directional Control Valves

Type 8ER3



Operating features:

PILOT PRESSURE: · MIN. 10 BAR / 145 PSI
· MAX. 50 BAR / 725 PSI

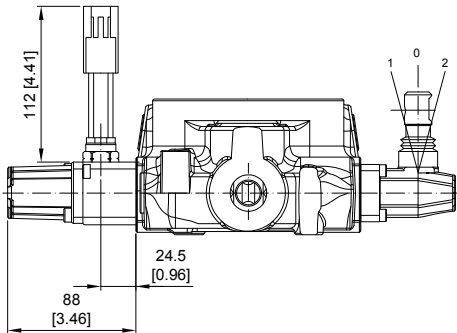
MAX. BACKPRESSURE ON DRAIN L:
25 BAR / 360 PSI

Coil features:

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

VSB5 B Side Monoblock Directional Control Valves

Type 8MG



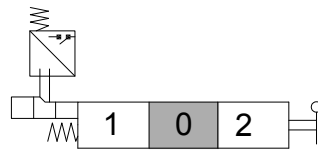
MICROSWITCH

Operating features:

MECHANICAL LITE: • 5X10⁵ OPERATIONS

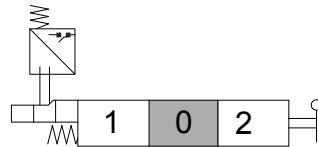
ELECTRICAL LITE (RESISTIVE LOAD):

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



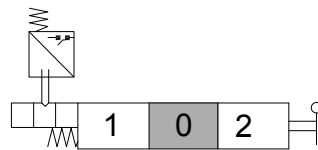
8MG1 Kit:

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



8MG2 Kit:

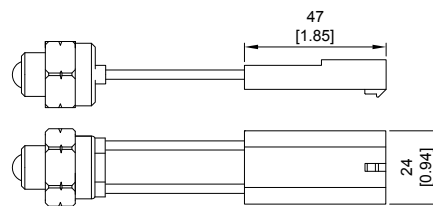
MICROSWITCH WITH MALE/FEMALE CONNECTOR, OPERATED IN POS. 2



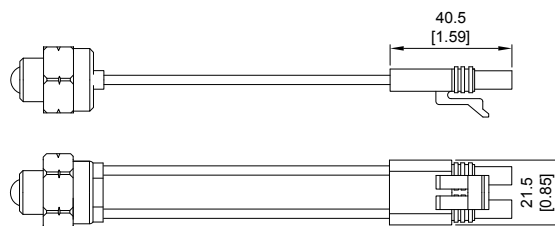
8MG3 Kit:

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

With NO contact (female connector with male end)

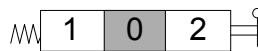
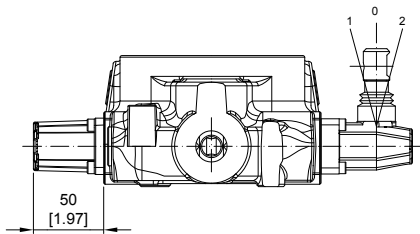


With NC contact (male connector with female end)



VSB5 B Side Monoblock Directional Control Valves

Type 8



8 Kit:

SPRING RETURN TO NEUTRAL POSITION.



8-1 Kit:

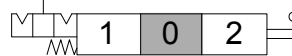
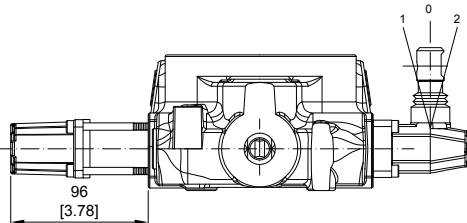
SPRING RETURN TO NEUTRAL POSITION.
(2 POSITIONS)



8-2 Kit:

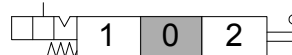
SPRING RETURN TO NEUTRAL POSITION.
(2 POSITIONS)

Type 9



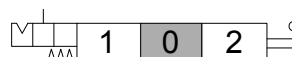
9-1 Kit:

DETENT IN POS. 1, 2 WITH SPRING CENTERED



9-2 Kit:

DETENT IN POS. 2 WITH SPRING CENTERED



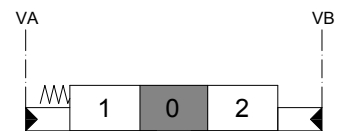
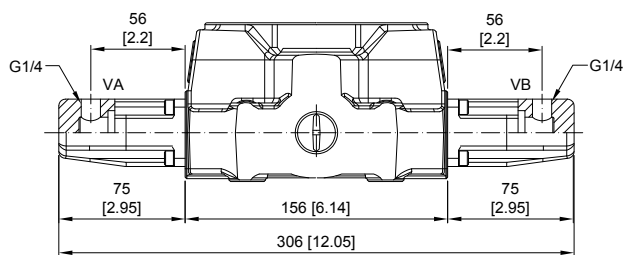
9-3 Kit:

DETENT IN POS. 1 WITH SPRING CENTERED

VSB5 B Side

Monoblock Directional Control Valves

Type 8IM



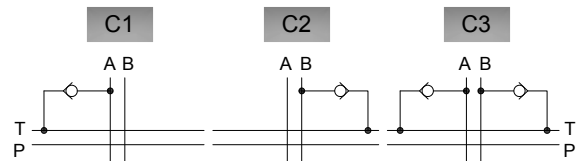
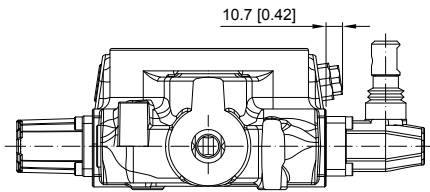
Operating features:

PILOT PRESSURE: MAX. 50 BAR

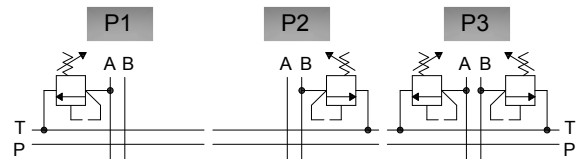
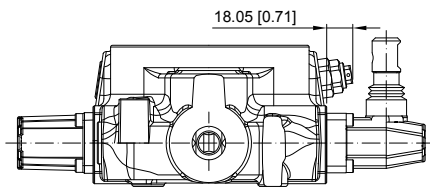
INTERNAL LEAKAGE A(B) - > T: MAX. 6CM ³/MIN
(100 BAR / 40°C)

VSB5 Port Relief Monoblock Directional Control Valves

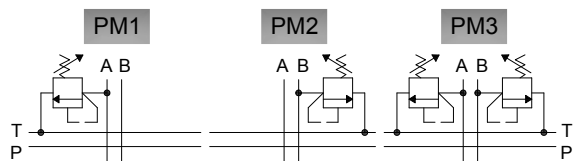
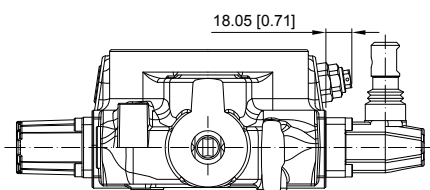
TYPE C



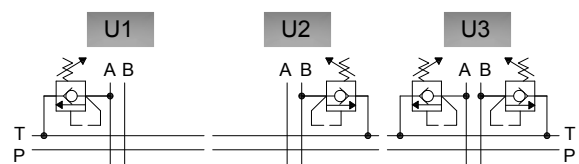
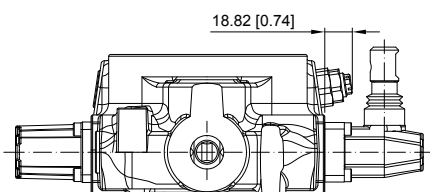
TYPE P



TYPE PM



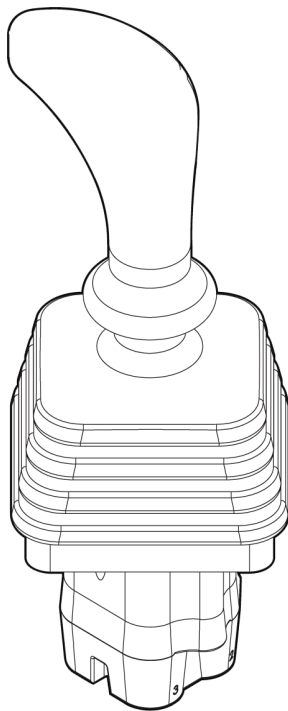
TYPE U



VSB5 Accessories

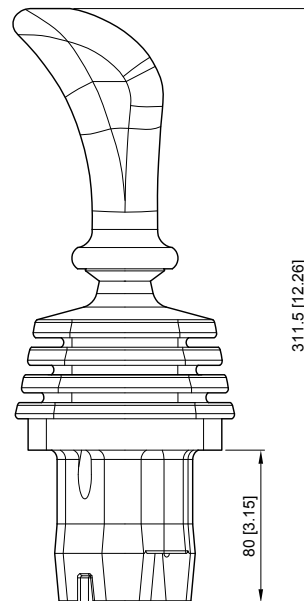
Monoblock Directional Control Valves

Type JHP-2

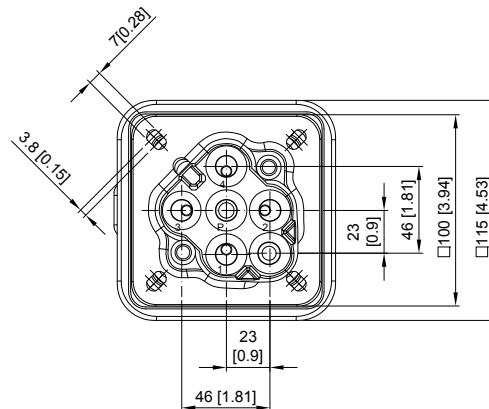
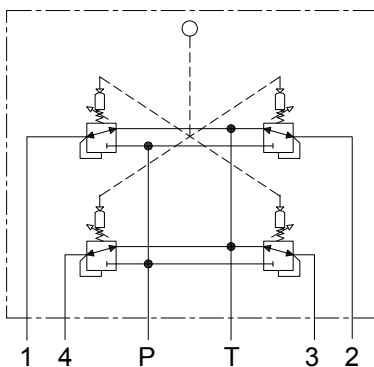


Specifications:

- 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
- Internal leakage at 30 bar: 10~18 cm³/min
- Fluid: mineral oil
- Fluid temperature: -10~80°C
- Ambient temperature: -40~60°C



HYDRAULIC SCHEME:



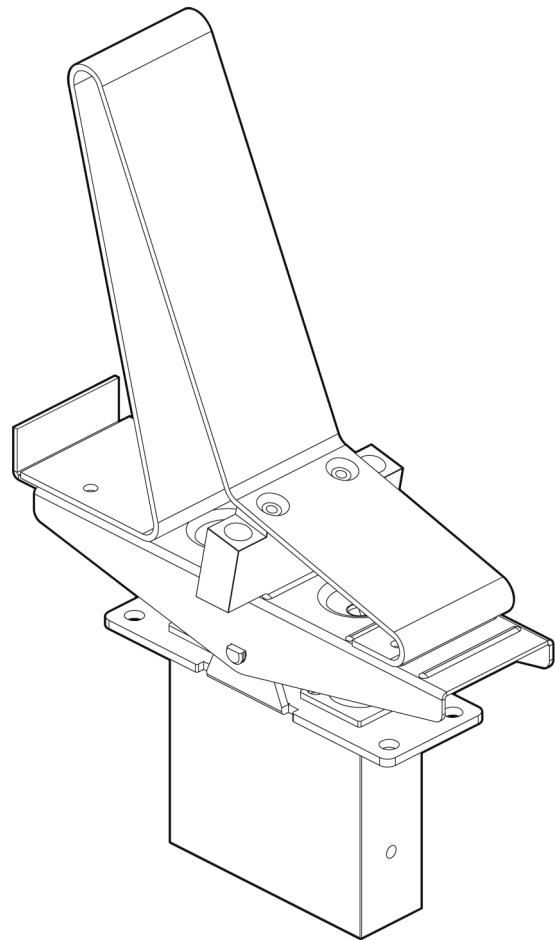
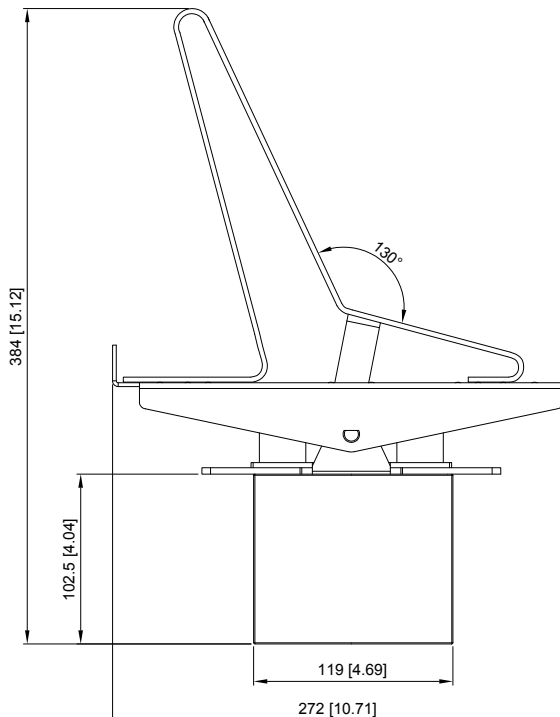
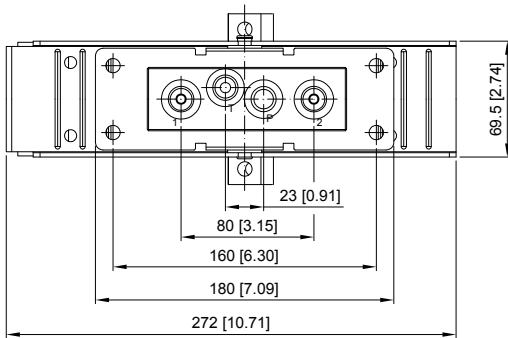
VSB5 Accessories

Monoblock Directional Control Valves

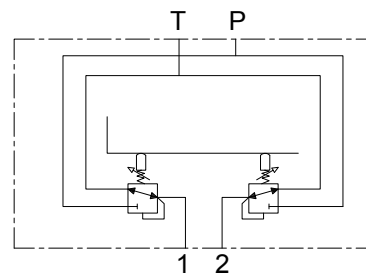
Type PHP-1

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
- Internal leakage at 30 bar: 10~18 cm³/min
- Fluid: mineral oil
- Fluid temperature: -10~80°C
- Ambient temperature: -40~60°C



HYDRAULIC SCHEME:



VSB5 Outlet

Monoblock Directional Control Valves

Power Beyond Conversion plug
(Closed center plug)

