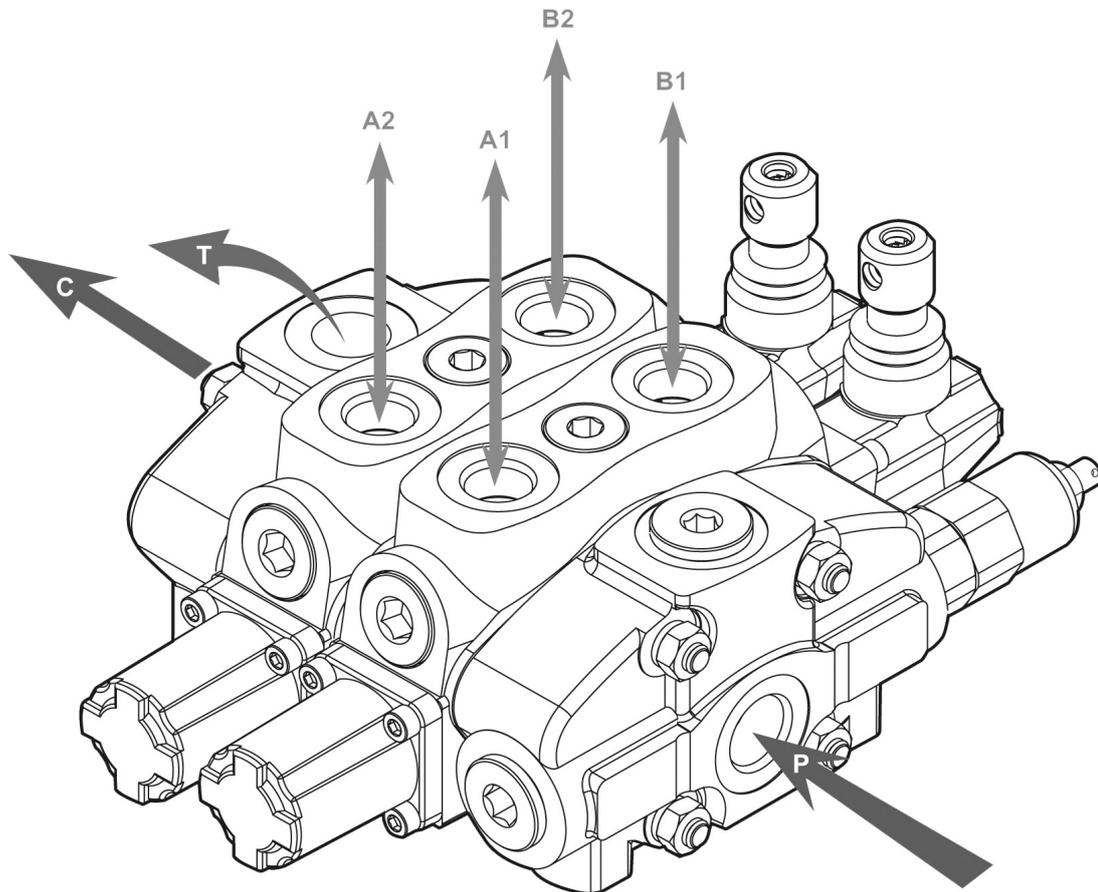


VS4

Sectional Directional Control Valves



VS4 Specifications

Nominal flow rate		80 l/min	21 US gpm
Operating pressure (maximum)	parallel or tandem circuit	315 bar	4600 psi
	series circuit	210 bar	3050 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

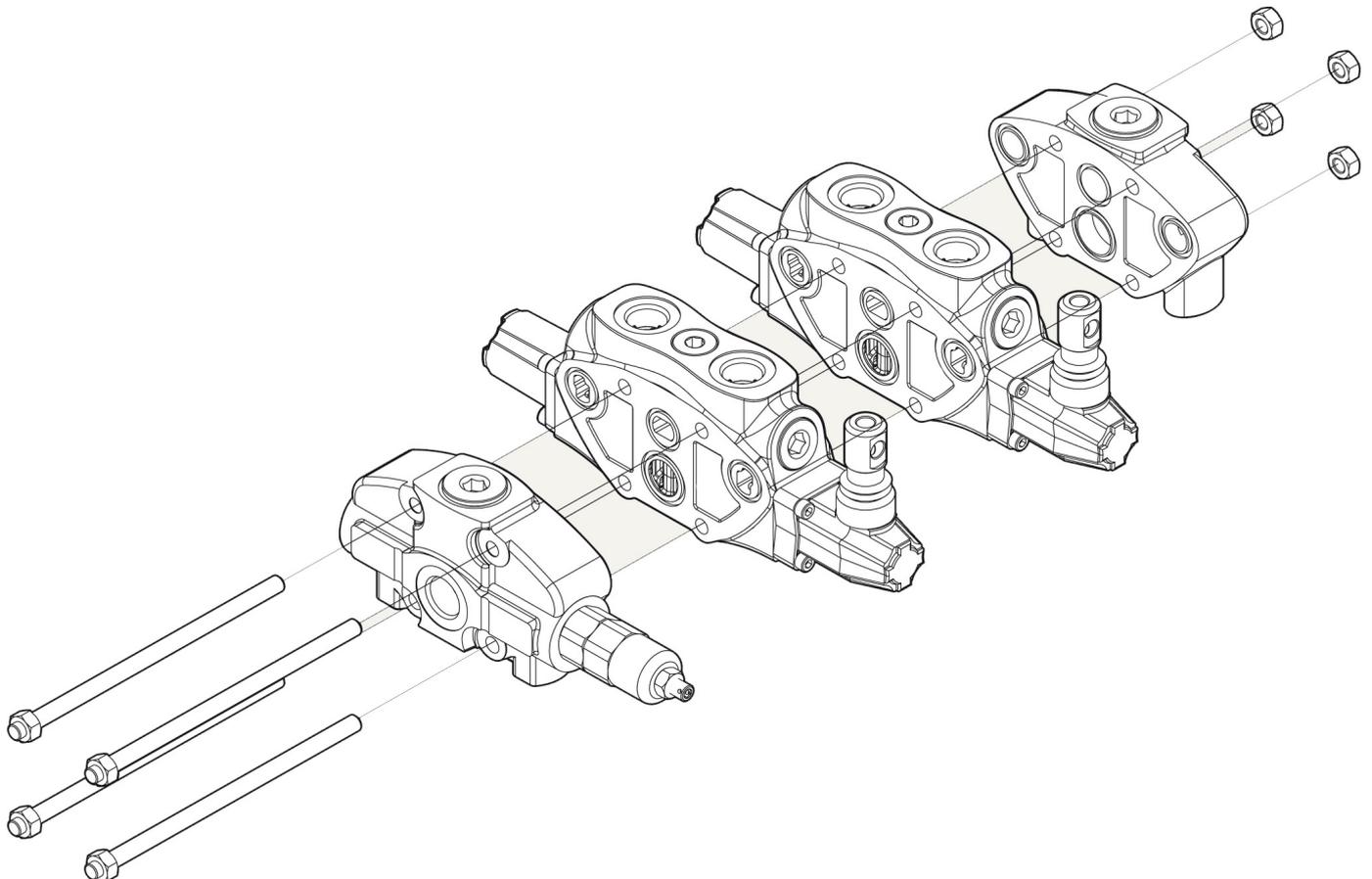
VS4 Complete

Sectional Directional Control Valves

HOW TO ORDER FOR A COMPLETE ASSEMBLED VALVE

VS4 / **2S** - **3** / **18L** / **28L** / **G-4-6** / **M3**

- 2S** No. of working section
- 3** Inlet cover with a main pressure relief valve
- 18L** 1st section (complete working section)
- 28L** Following section (complete working section)
- G-4-6** BSP ports
- M3** Outlet cover



VS4

Sectional Directional Control Valves

FP VS4 / SG-3 / G4

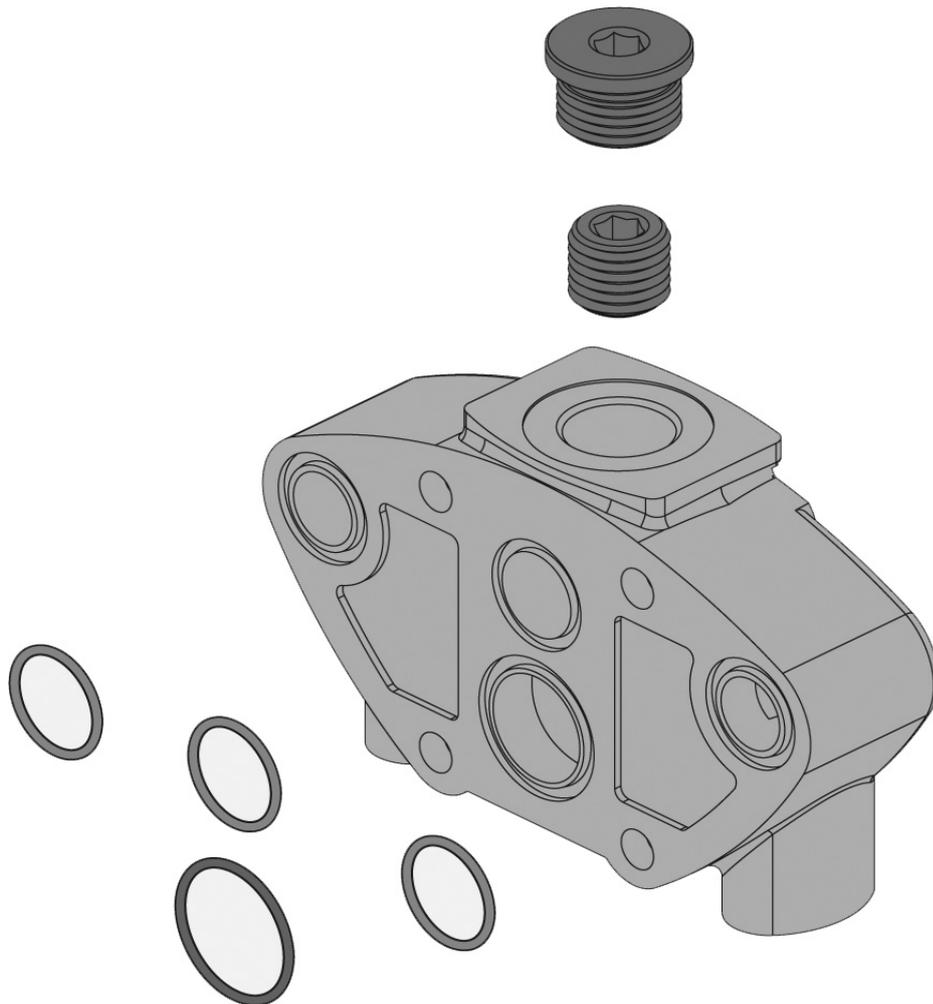
Inlet relief

Inlet Relief		
TYPE	CODE	DESCRIPTION
SG-2	VS43002	Range 80 to 160 bar / 1150 to 2300 psi, standard setting 125 bar / 1800psi
SG-3	VS43003	Range 125 to 250 bar / 1800 to 3600 psi, standard setting 175 bar / 2500 psi
SG-4	VS43004	Range 200 to 315 bar / 2900 to 4600 psi, standard setting 220 bar / 3200 psi Standard setting is referred to 10 l/min - 2.6 US gpm flow.
SV	VS44000	Relief valve blanking plug
XSG	VSX21000	Pilot operated pressure relief valve Range 25 to 315 bar/360 to 4600 psi, standard setting 125 bar/1800 psi

VS4 Outlet Section

Sectional Directional Control Valves

FT VS4 / G-6 / M3



VS4 Working Section

Sectional Directional Control Valves

EW VS4 / 1S / **1 8 L** / **P1 (G3-100)** / G-4
 1 2 3 **4**

- 1** Spool symbol
- 2** "B" side Spool positioners
- 3** "A" side controls
- 4** Port relief

1: Spool Symbol		
TYPE	CODE	DESCRIPTION
1	VS42001	Double acting, 3 positions, with A and B closed in neutral position
1S	VS42010	Double acting, 3 positions, with A and B closed in neutral position, for series circuit
2	VS42002	Double acting, 3 positions, with A and B open to tank in neutral position
3	VS42003	Single acting on A closed in neutral position, 3 positions, B plugged
4	VS42004	Single acting on B closed in neutral position, 3 positions, A plugged
5	VS42005	Double acting, 3 positions, with B open to Tank in neutral position
6	VS42006	Double acting, 3 positions, with A open to Tank in neutral position
5PY	VS43051	Double acting, 4 positions, floating circuit in 4th position with A, B open to Tank by pushing the lever

VS4 Working Section

Sectional Directional Control Valves

EW VS4 / 1S / **1 8 L** / **P1 (G3-100)** / G-4
 1 2 3 **4**

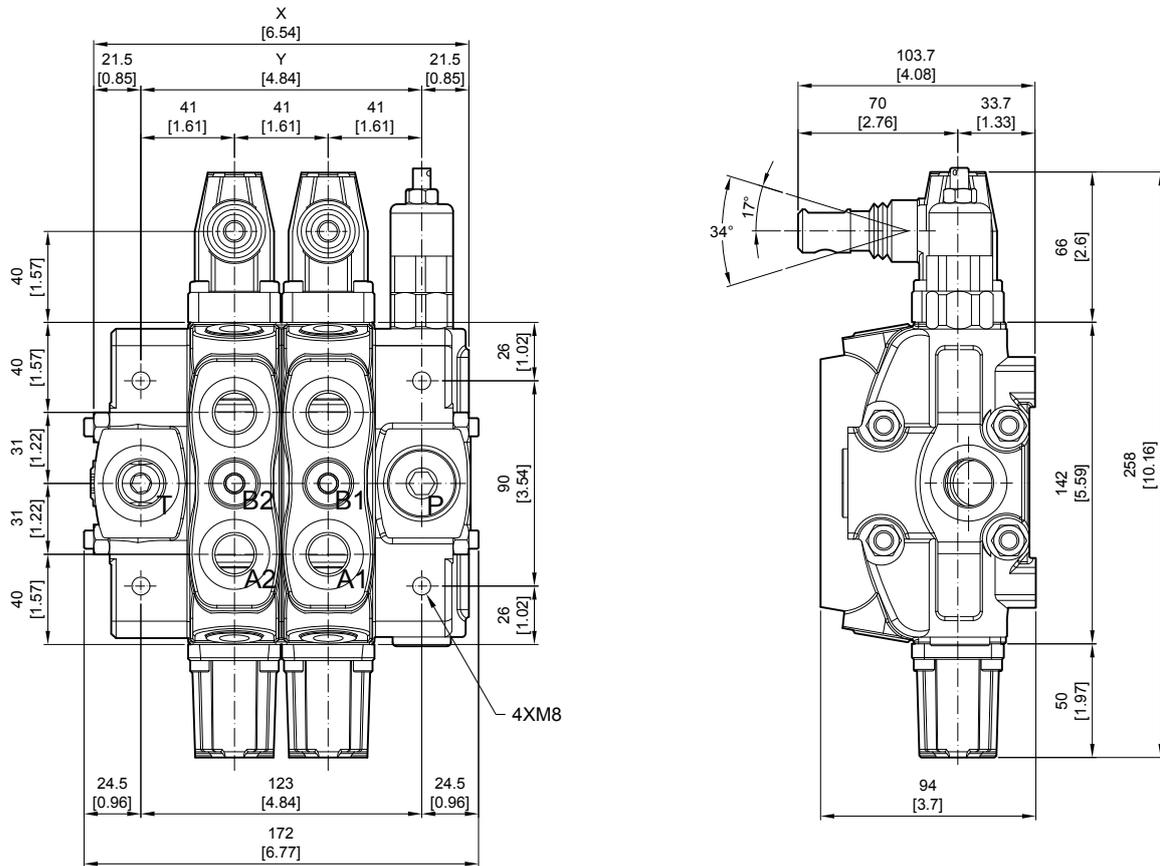
- 1** Spool symbol
- 2** "B" side Spool positioners
- 3** "A" side controls
- 4** Port relief

2: B Side Spool Positioners		
TYPE	CODE	DESCRIPTION
6-1	VS43061	Detent in pos. 1-0-2, without spring centered
6-2	VS43062	2 positions, detent in pos. 0-2, without spring centered
6-3	VS43063	2 positions, detent in pos. 1-0, without spring centered
8D2	VS43082	With spring return to neutral position and pin with M8 male thread for dual control
8P	VS43080	ON/OFF Pneumatic actuator
8EP3	VS44300	ON/OFF Electro-Pneumatic actuator
8MG1 (NO)	VS43801	Microswitch kit operated in pos. 1 (Normally Open)
8MG2 (NO)	VS43802	Microswitch kit operated in pos. 2 (Normally Open)
8MG3 (NO)	VS43803	Microswitch kit operated in pos. 1&2 (Normally Open)
MG(NO)	VS43804	Microswitch with NO terminal
8MG1 (NC)	VS438011	Microswitch kit operated in pos. 1 (Normally Open)
8MG2 (NC)	VS438021	Microswitch kit operated in pos. 2 (Normally Open)
8MG3 (NC)	VS438031	Microswitch kit operated in pos. 1&2 (Normally Open)
MG(NC)	VS438041	Microswitch with NC terminal
8	VS43008	With spring return to neutral position
8-1	VS44081	2 positions, with spring centered from pos. 1
8-2	VS44082	2 positions, with spring centered from pos. 2
9-1	VS43091	Detent in pos. 1, 2 with spring centered
9-2	VS43092	Detent in pos. 2 with spring centered
9-3	VS43093	Detent in pos. 1 with spring centered

2: B Side Spool Positioners		
TYPE	CODE	DESCRIPTION
8ED3+RV-KE1R3	VS43201	1S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE2R3	VS43202	2S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE3R3	VS43203	3S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE4R3	VS43204	4S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE5R3	VS43205	5S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE6R3	VS43206	6S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE7R3	VS43207	7S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE8R3	VS43208	8S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE9R3	VS43209	9S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE10R3	VS43210	10S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE11R3	VS43211	11S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ED3+RV-KE12R3	VS43212	12S: ON/OFF Electro-Hydraulic control kit with pilot and drain line+backpressure valve (12/24 VDC)
8ER3+RV-KE1SO	VS43401	1S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+RV-KE2SO	VS43402	2S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+RV-KE3SO	VS43403	3S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+RV-KE4SO	VS43404	4S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+RV-KE5SO	VS43405	5S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+RV-KE6SO	VS43406	6S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+RV-KE7SO	VS43407	7S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+RV-KE8SO	VS43408	8S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+RV-KE9SO	VS43409	9S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+RV-KE10SO	VS43410	10S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+RV-KE11SO	VS43411	11S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
8ER3+RV-KE12SO	VS43412	12S: ON/OFF Electro-hydraulic control kit with collector kit for external pilot and drain
3: A Side controls		
TYPE	CODE	DESCRIPTION
L	VS44000	Standard lever
SLP	VS44001	Without lever, with dust proof plate
LCB	VS44002	Joystick lever for 2 section operation
TQ	VS44003	Flexible cable connection
4: Port Relief		
TYPE	CODE	DESCRIPTION
P (G2-63)	VS45002	Anti-shock valve, range 63 to 125 bar / from 900 to 1800 psi standard setting 63 bar / 900 psi
P (G3-100)	VS45003	Anti-shock valve, range 100 to 250 bar / from 1450 to 3600 psi standard setting 100 bar / 1450 psi
P (G4-200)	VS45004	Anti-shock valve, range 200 to 315 bar / from 2900 to 4600 psi standard setting 200 bar / 2900 psi
PM (G2-63)	VS45005	Anti-shock valve, range 63 to 125 bar / from 900 to 1800 psi standard setting 63 bar / 900 psi, for low setting
U (G2-63)	VS45012	Anti-shock valve and Anti-cavitation valve, range 63 to 125 bar / from 900 to 1800 psi standard setting 63 bar / 900 psi
U (G3-100)	VS45013	Anti-shock valve and Anti-cavitation valve, range 100 to 250 bar / from 1450 to 3600 psi standard setting 100 bar / 1450 psi
U (G4-200)	VS45014	Anti-shock valve and Anti-cavitation valve, range 200 to 315 bar / from 2900 to 4600 psi standard setting 200 bar / 2900 psi
C	VS45100	Anti-cavitation

VS4 Dimensions

Sectional Directional Control Valves



Standard threads

Ports	Inlet P and carry-over C	A and B	Outlet T
BSP	G1/2	G1/2	G3/4
UN-UNF	7/8-14 UNF-2B (SAE 10)	3/4-16 UNF-2B (SAE 8)	7/8-14 UNF-2B (SAE 10)
METRIC	M22x1.5	M22x1.5	M22x1.5

Pilot ports	Hydraulic	Pneumatic
BSP	G1/4	NPTF 1/8-27
UN-UNF	9/6-18 UNF-2B (SAE 6)	NPTF 1/8-27
METRIC	G1/4	NPTF 1/8-27

• 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

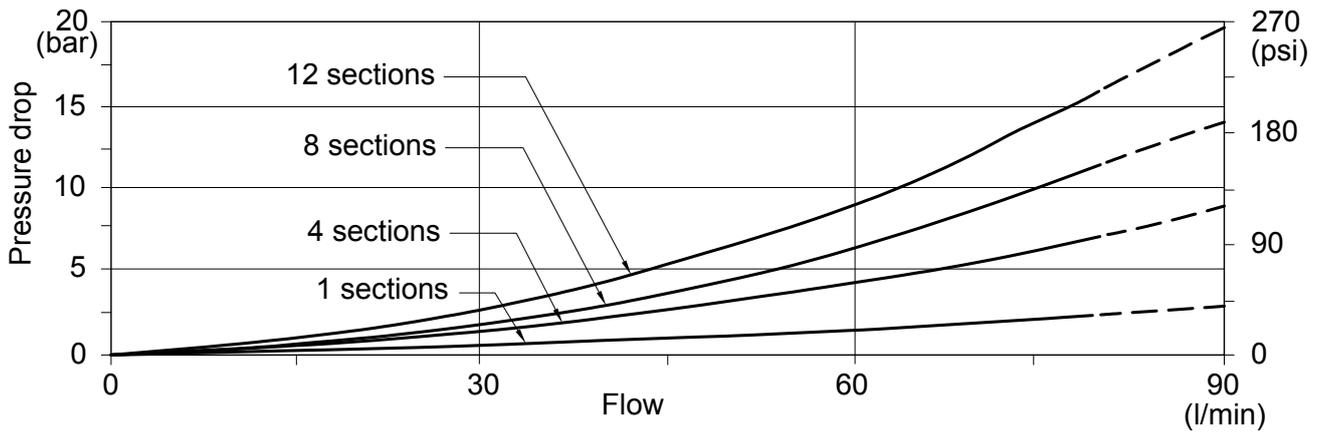
TYPE	X		Y	
	mm	in	mm	in
VS4/1S	128	5.04	82	3.23
VS4/2S	169	6.65	123	4.84
VS4/3S	210	8.27	164	6.46
VS4/4S	251	9.88	205	8.07
VS4/5S	292	11.5	246	9.69
VS4/6S	333	13.11	267	11.3

TYPE	X		Y	
	mm	in	mm	in
VS4/7S	374	14.72	328	12.91
VS4/8S	415	16.33	369	14.52
VS4/9S	456	17.94	410	16.13
VS4/10S	497	19.55	451	17.74
VS4/11S	538	21.16	492	19.35
VS4/12S	579	22.77	533	20.96

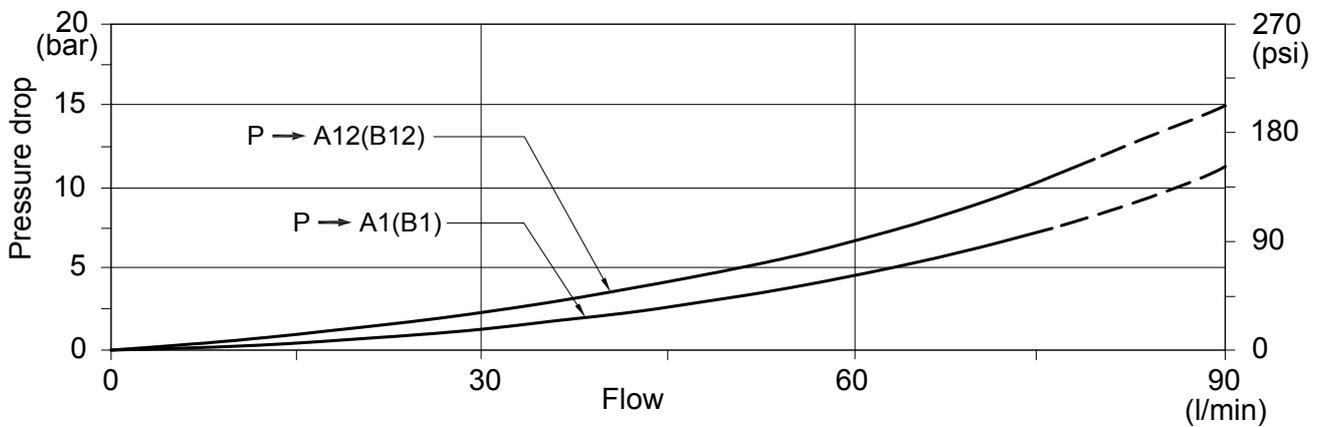
VS4 Performance curve chart

Sectional Directional Control Valves

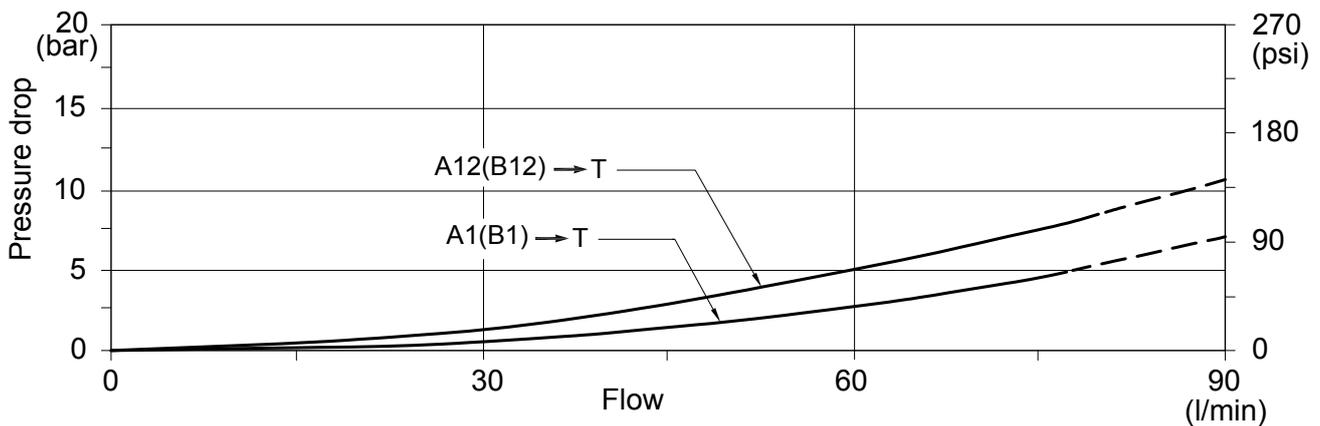
P to T



P to A (B)

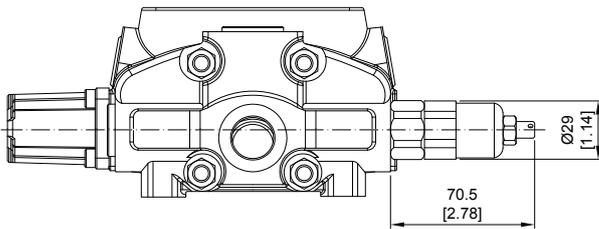


A(B) to T

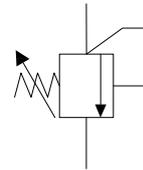


VS4 Inlet Relief (Optional) Sectional Directional Control Valves

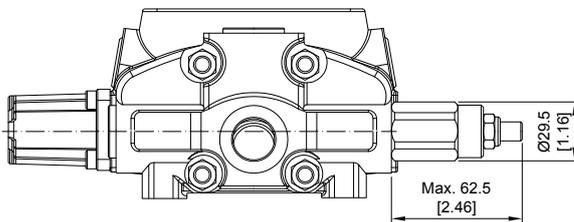
Type SG



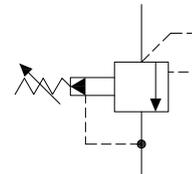
Direct pressure relief valve:



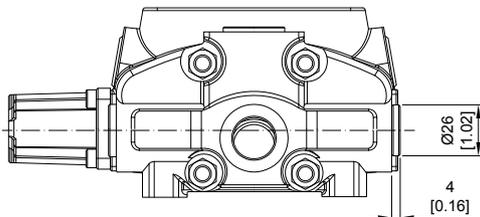
Type XSG



Pilot operated pressure relief valve:



Type SV



Relief valve blanking plug:



VS4 Spool Options

Sectional 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>	

VS4 Spool Options

Sectional Directional Control Valves

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

VS4 Spool Options

Sectional 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>B → T P & A closed C open</p>	
	<p>P → B A → T C closed</p>	

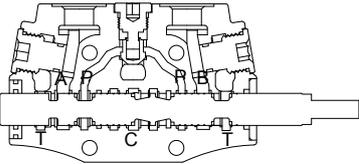
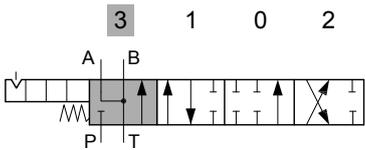
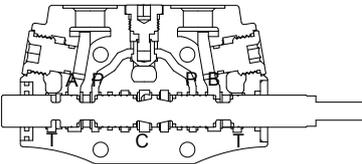
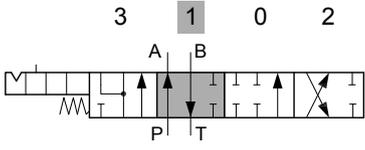
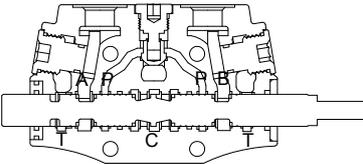
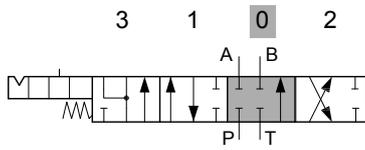
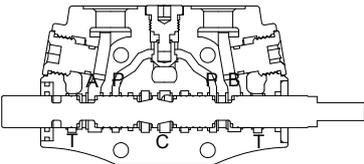
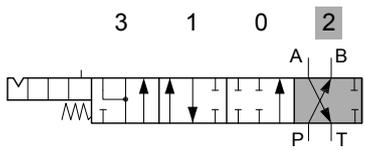
VS4 Spool Options

Sectional Directional Control Valves

TYPE 1S		
	<p>P → A B → C T closed</p>	<p>"B" port plugged</p>
	<p>P & A & B & T closed C open</p>	<p>"B" port plugged</p>
	<p>P → B A → C T closed</p>	<p>"B" port plugged</p>

VS4 Spool Options

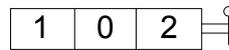
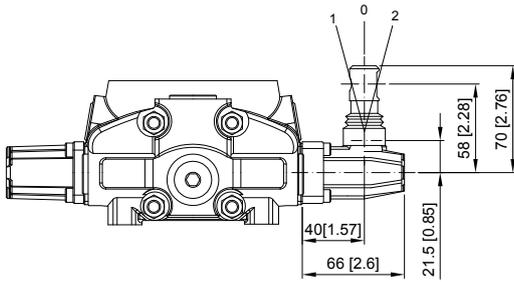
Sectional Directional Control Valves

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>	

VS4 A Side

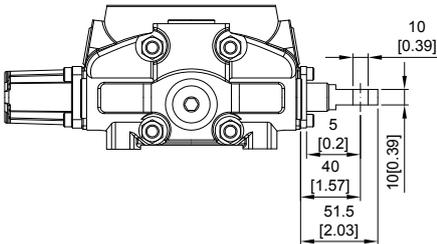
Sectional Directional Control Valves

Type L



Type L:
STANDART LEVER KIT

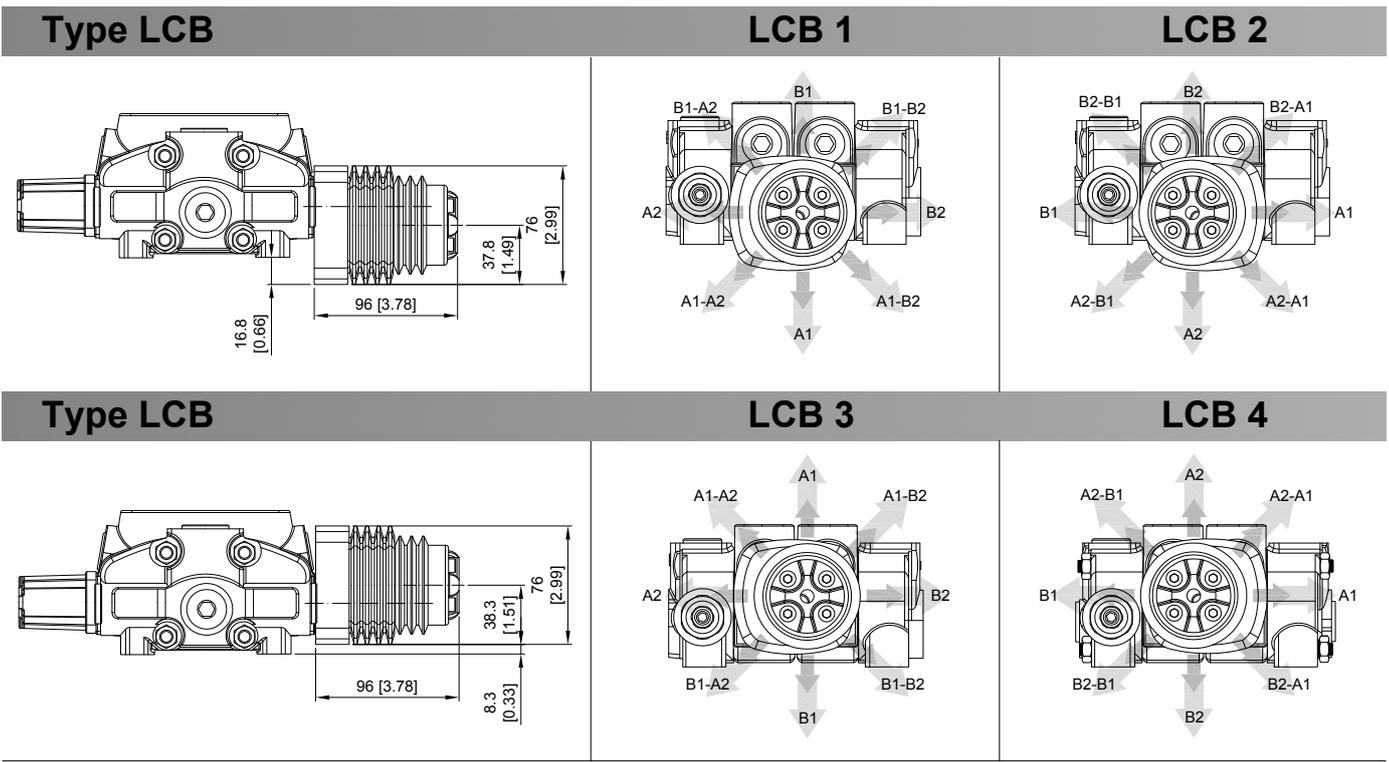
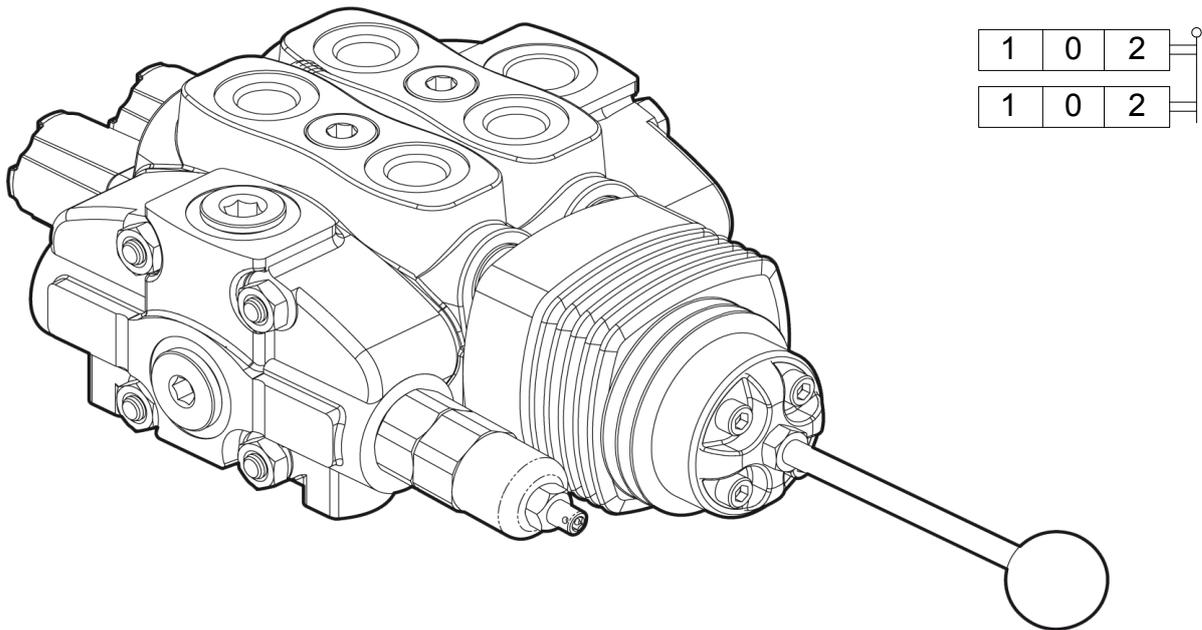
Type SLP



Type SLP:
WITH DUST-PROOF PLATE

VS4 A Side Sectional Directional Control Valves

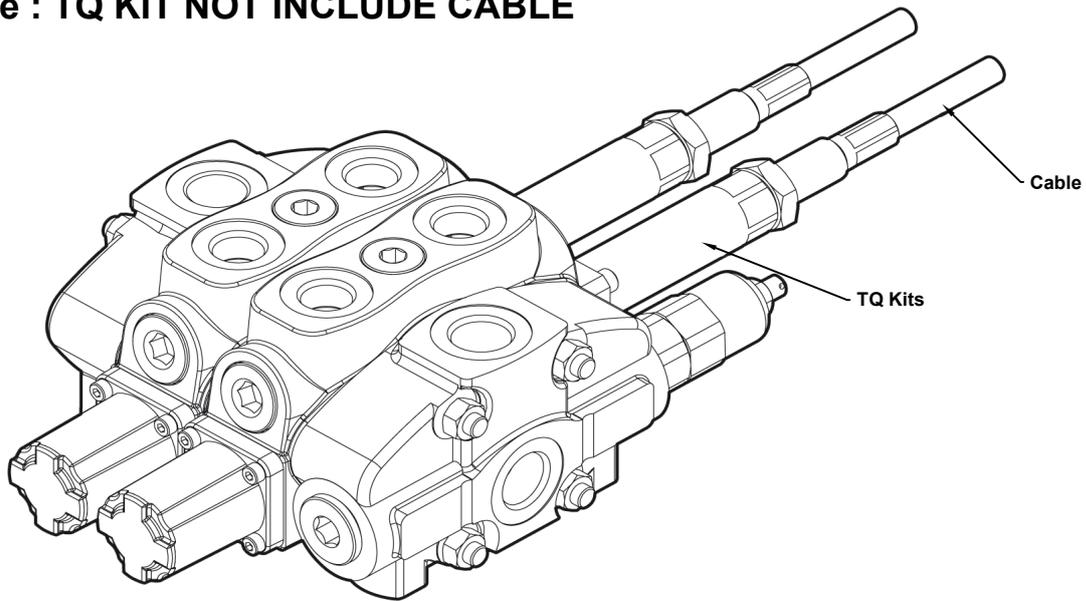
LCB: Joystick control



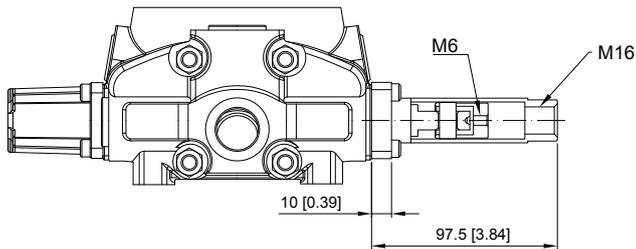
VS4 A Side

Sectional Directional Control Valves

Note : TQ KIT NOT INCLUDE CABLE



Type TQ

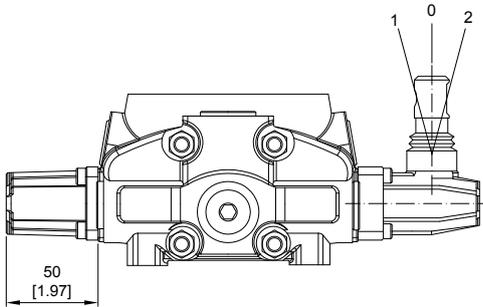


TQ Kit:



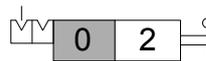
VS4 B Side Sectional Directional Control Valves

Type 6



6-1 Kit:

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



6-2 Kit:

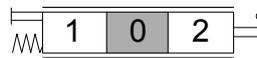
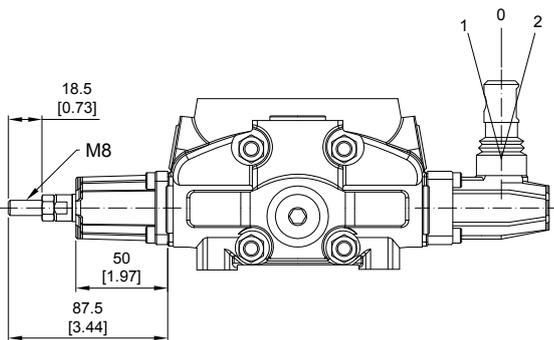
2 POSITIONS, DETENT IN POS. 0-2, WITHOUT SPRING CENTERED



6-3 Kit:

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

Type 8D2



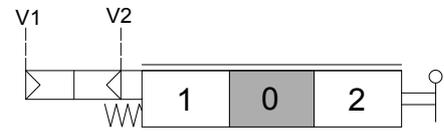
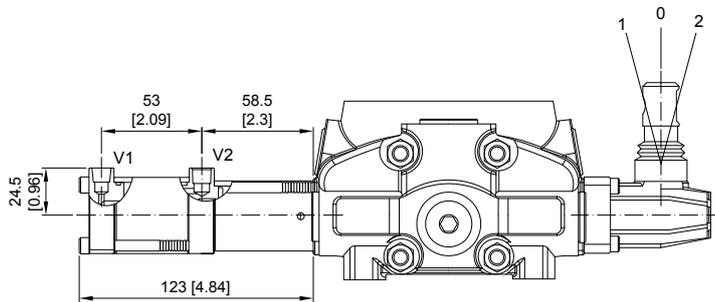
8D2 Kit:

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

VS4 B Side Sectional Directional Control Valves

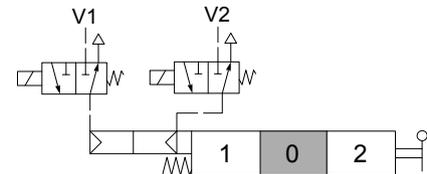
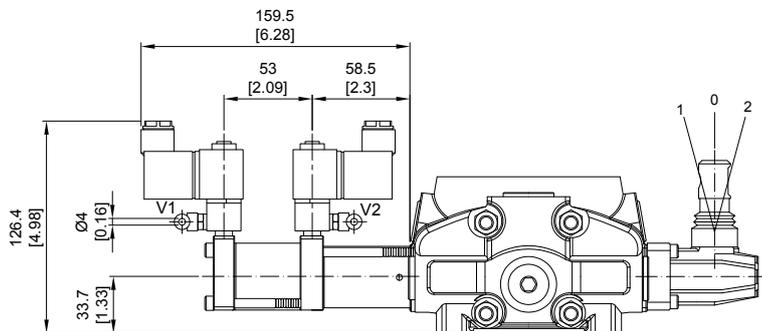
Type 8P

V1 & V2: NPT 1/8 - 27



Pilot pressure: FROM 7 TO 10 BAR / 101 TO 145 PSI

Type 8EP3



Solenoid operating features:

NOMINAL VOLTAGE: 24VDC

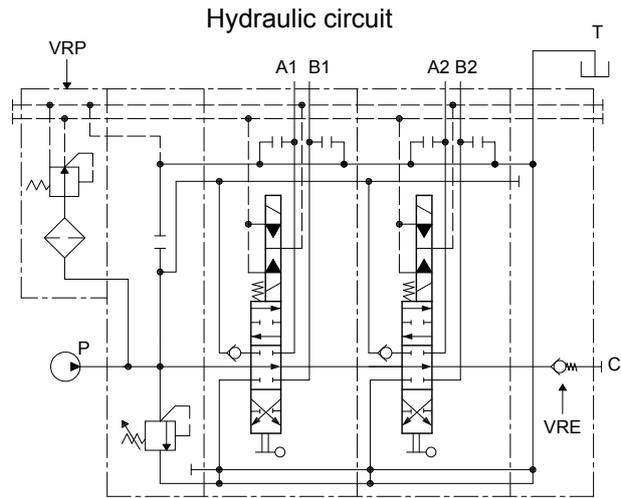
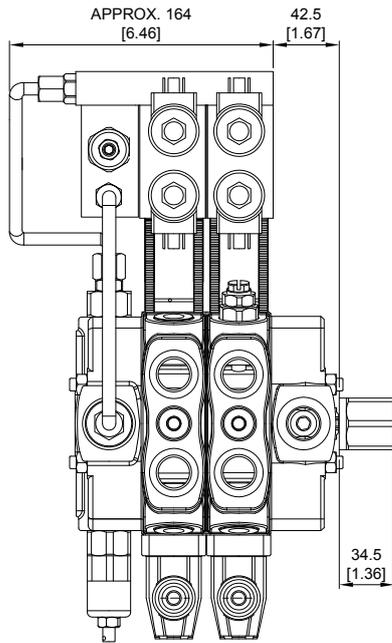
NOMINAL VOLTAGE TOLERANCE: $\pm 10\%$

POWER RATING: 5W

VS4 B Side

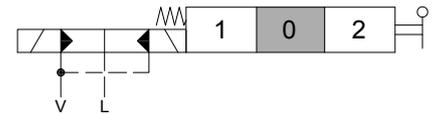
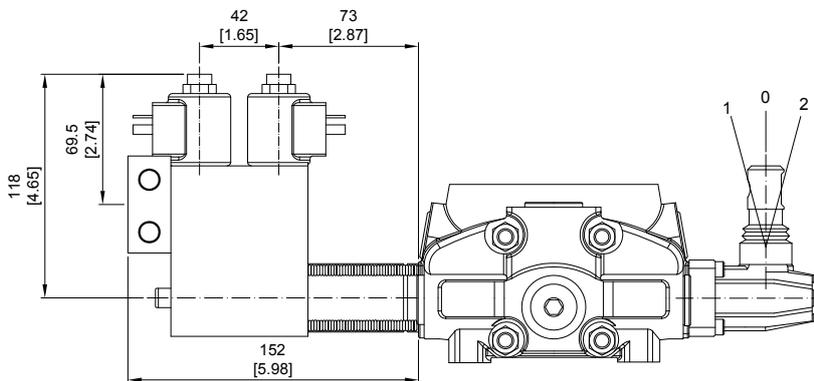
Sectional Directional Control Valves

Type 8ED3



VRP valve operating features:

OUTLET PRESSURE: 25 BAR / 363 PSI
 MAX. FLOW: 8 L/MIN / 2.1 US GPM
 FLTRING: 80 μ



Operating features:

PILOT PRESSURE:

- MIN. 10 BAR / 145 PSI
- MAX. 50 BAR / 725 PSI

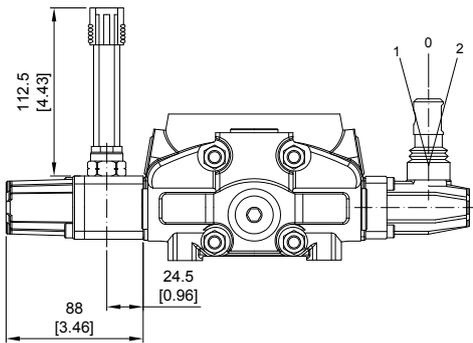
 MAX. BACKPRESSURE ON DRAIN L:
 25 BAR / 360 PSI

Solenoid operating features:

NOMINAL VOLTAGE: 12 VDC / 24 VDC
 POWER RATING: 21 W
 DUTY CYCLE: 100%

VS4 B Side Sectional Directional Control Valves

Type 8MG



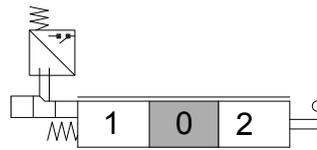
MICROSWITCH

Operating features:

MECHANICAL LITE: • 5X10⁵ OPERATIONS

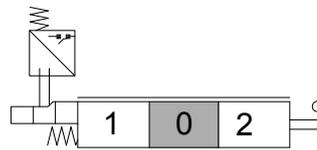
ELECTRICAL LITE (RESISTIVE LOAD):

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



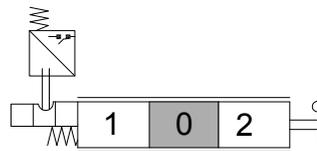
8MG1 Kit:

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



8MG2 Kit:

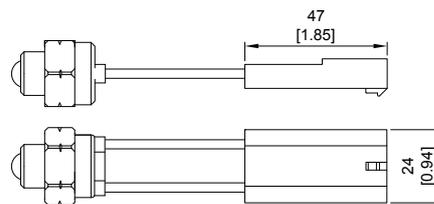
MICROSWITCH WITH MALE/FEMALE CONNECTOR, OPERATED IN POS. 2



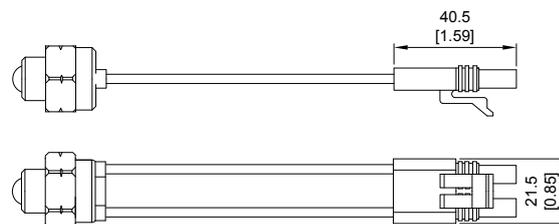
8MG3 Kit:

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

With NO contact (female connector with male end)

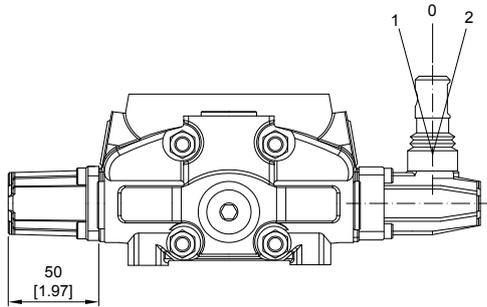


With NC contact (male connector with female end)



VS4 B Side Sectional Directional Control Valves

Type 8



8 Kit:

SPRING RETURN TO NEUTRAL POSITION.



8-1 Kit:

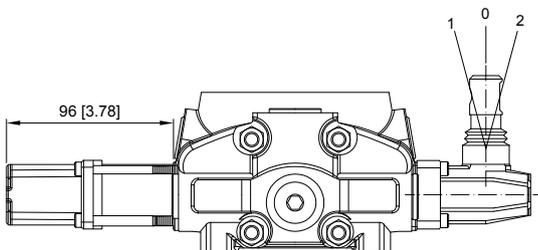
SPRING RETURN TO NEUTRAL POSITION.
(2 POSITIONS)



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

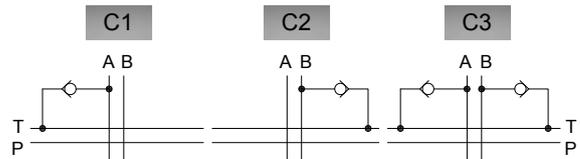
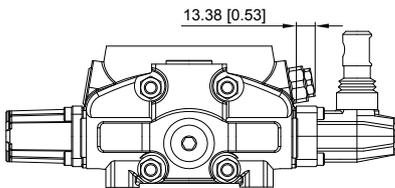


9-3 Kit:

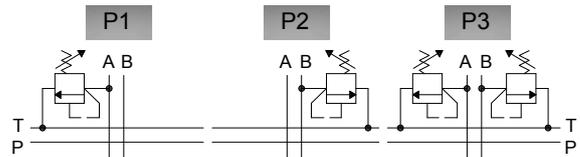
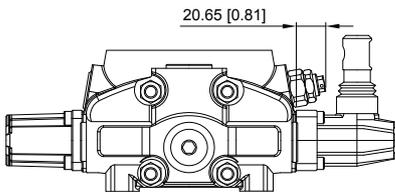
DETENT IN POS. 1 WITH SPRING CENTERED

VS4 Port Relief Sectional Directional Control Valves

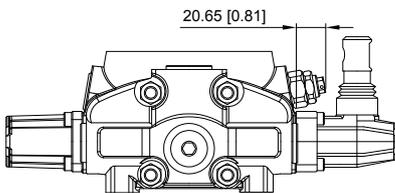
TYPE C



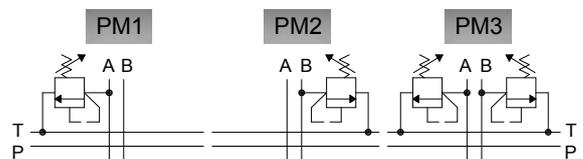
TYPE P



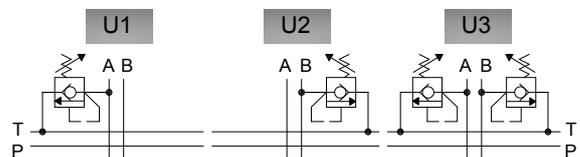
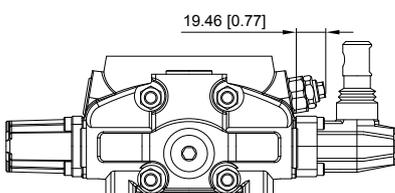
TYPE PM



PM G2-63 HIGH FLOW - LOW PRESSURE SETTING



TYPE U



VS4 Outlet

Sectional Directional Control Valves

Power Beyond Conversion plug
(Closed center plug)

