



**walvoil**  
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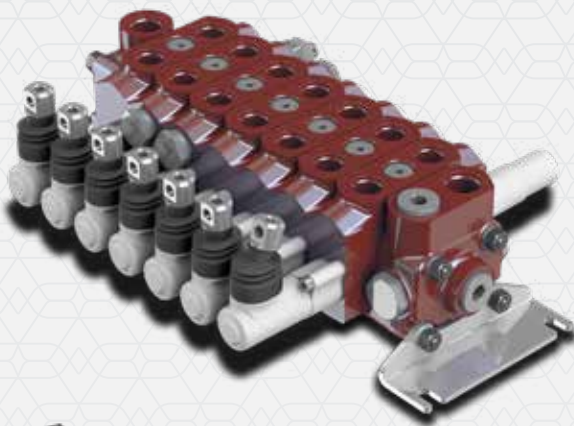
**NEW**

## DVS SERIES

Sectional Valves

### DVS SERIES SECTIONAL VALVES

- Designed for wide range of applications
- Compact design
- Manual, hydraulic and electrohydraulic controls



The DVS Series directional valves are a new family of sectional valves specifically designed for several applications: Forestry Machines, Skid Steer Loaders and Mini Dumper, Cranes, Wheel Loaders, Backhoe Loaders, Garbage Compactors, Hook and Skip Loaders, Drilling Rigs and Forklifts. The valves have very exact control characteristics and they are smooth and precise in operation, with compact light weight design.

These valves are available in several configurations and custom solutions.

Working sections have auxiliary valves and a wide range of interchangeable spools.

The DVS valves can be fitted with integrated proportional electrohydraulic controls.

## WORKING CONDITIONS

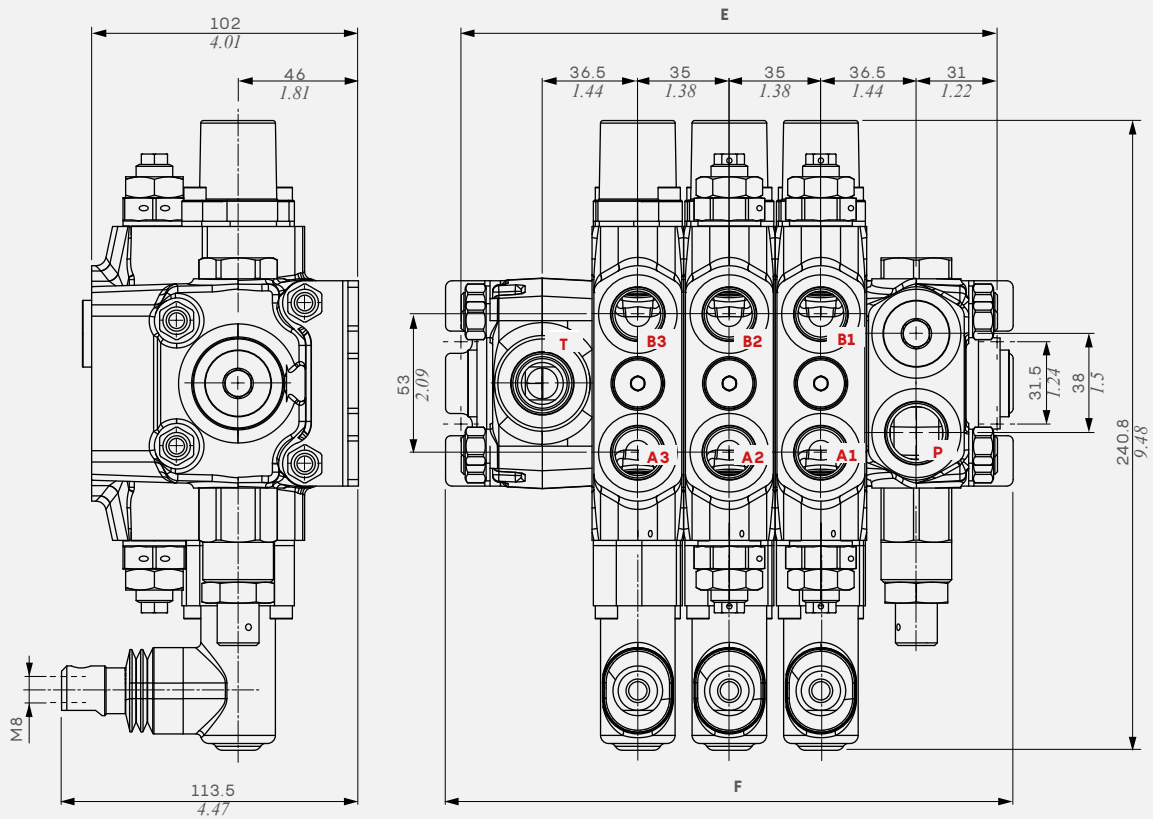
Technical specifications and diagrams measured with mineral oil of 46 mm<sup>2</sup>/s (46 cSt) viscosity at 40°C - (104°F) temperature.

		DVS10	DVS14	DVS16
<b>Nominal flow rating</b>	Standard	45 l/min - 12 US gpm	80 l/min - 21 US gpm	160 l/min - 42 US gpm
	For Flow Unloader	-	120 l/min - 32 US gpm	200 l/min - 53 US gpm
<b>Max. pressure</b>		350 bar - 5100 psi	350 bar - 5100 psi	(P) 305 bar - 4400 psi (A-B) 350 bar - 5100 psi
	With mechanical devices	20 bar - 290 psi	20 bar - 290 psi	20 bar - 290 psi
<b>Back pressure (max.) on T outlet port</b>	With hydraulic and pneumatic devices	20 bar - 290 psi	20 bar - 290 psi	20 bar - 290 psi
	With electrohydraulic devices	5 bar - 72.5 psi	5 bar - 72.5 psi	5 bar - 72.5 psi
<b>Internal leakage A(B)⇒T (standard)</b>	Δp = 100 bar / 1450 psi	5 cm <sup>3</sup> /min - 0.30 in <sup>3</sup> /min	8 cm <sup>3</sup> /min - 0.49 in <sup>3</sup> /min	10 cm <sup>3</sup> /min - 0.61 in <sup>3</sup> /min
<b>Fluid</b>		Mineral oil-based		
<b>Fluid temperature range</b>	With NBR seals (BUNA-N)	from -20°C to 80°C - from -4°F to 176°F		
<b>Viscosity</b>	Operating range	from 15 to 300 mm <sup>2</sup> /s - from 15 to 300 cSt		
<b>Max. contamination level</b>		-/19/16 - ISO 4406 - NAS 1638 - class 10		
<b>Environmental temperature for working conditions</b>	All devices	from -40°C to 60°C - from -40°F to 140°F		
<b>Tie rod tightening torque (wrench 13)</b>		24.5 Nm - 18 lbft	40 Nm - 30 lbft	40 Nm - 30 lbft

### DVS10 DIMENSIONAL DATA

The DVS10 is designed for Mini Skid Steer Loaders and Mini Dumper applications. This valve is smooth and precise in operation with compact light weight design. Auxiliary valves and wide range of interchangeable spools are available.

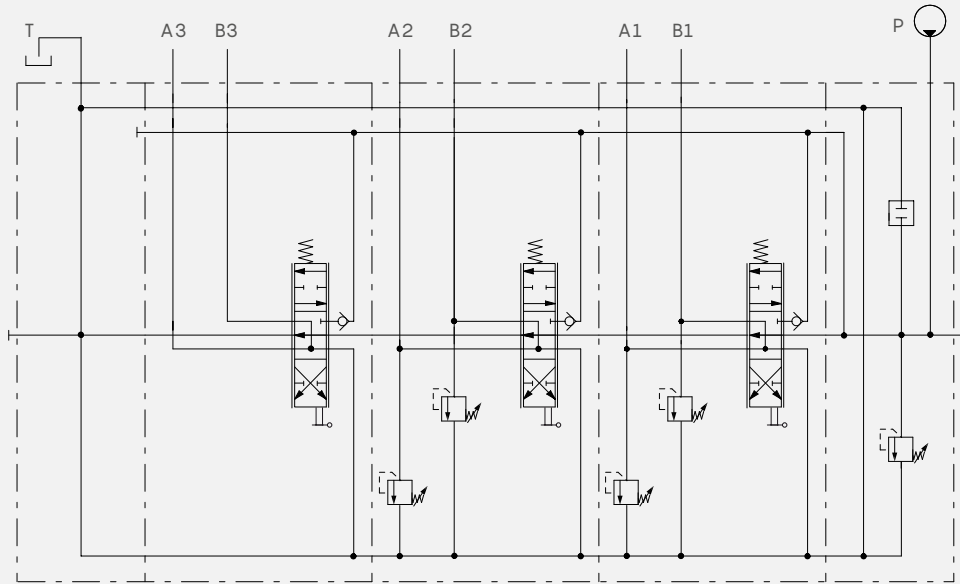
The DVS10 valves may be ordered with right or left inlet; for more detailed information, please contact our Sales Dpt.



Type	E		F	
	mm	in	mm	in
DVS10/1	135	5.31	147	5.79
DVS10/2	170	6.69	182	7.16
DVS10/3	205	8.07	217	8.54
DVS10/4	240	9.45	252	9.92
DVS10/5	275	10.83	287	11.3
DVS10/6	310	12.2	322	12.68
DVS10/7	345	13.58	357	14.05
DVS10/8	380	14.96	392	15.43
DVS10/9	415	16.34	427	16.81
DVS10/10	450	17.72	462	18.19
DVS10/11	485	19.09	497	19.57
DVS10/12	520	20.47	532	20.94

PORT THREADING		
MAIN PORTS	BSP	UN-UNF
P inlet	G 3/8 - G 1/2	3/4-16 (SAE 8) - 7/8-14 (SAE 10)
A and B ports	G 3/8	3/4-16 (SAE 8)
T outlet and C carry-over	G 1/2	7/8-14 (SAE 10)
PILOT PORTS		
Hydraulic	G 1/4	9/16-18 (SAE 6)
Pneumatic	G 1/8	NPTF 1/8-27

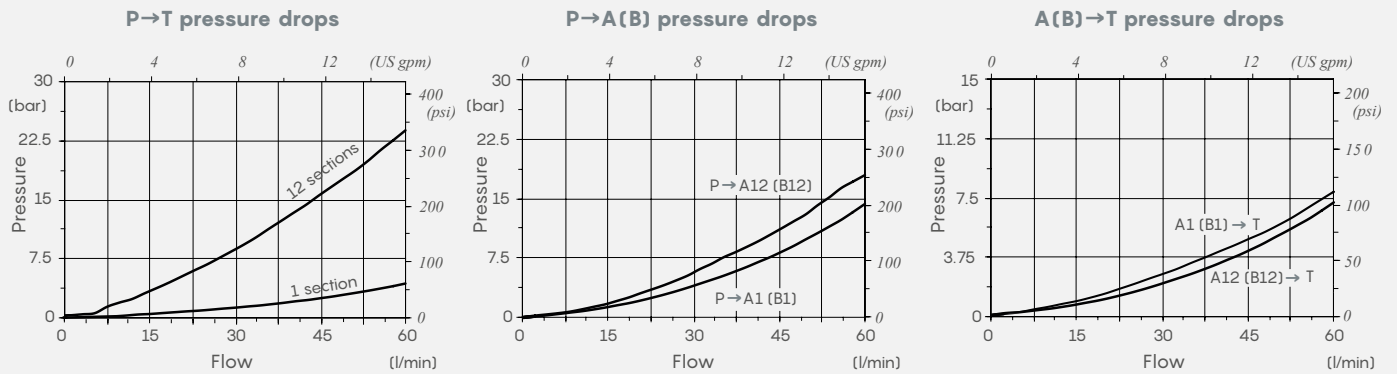
DVS10 HYDRAULIC CIRCUIT



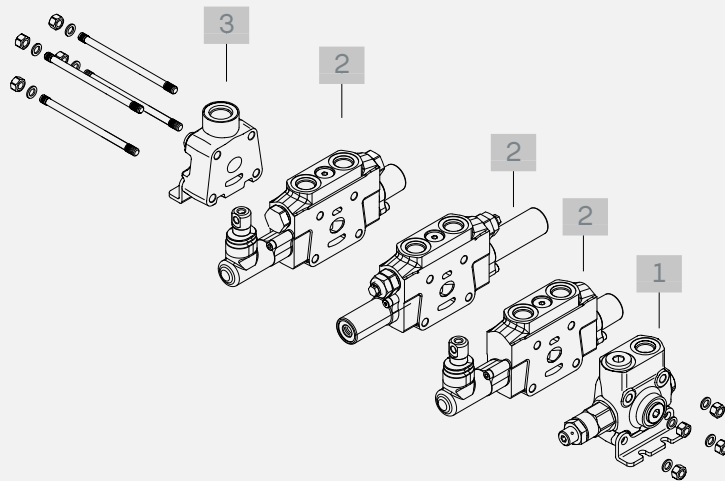
Description example with lever control configuration:

DVS10/3/IR001(205)-AG03/W002A-H001-F001A-RPG03-01TPA(140)-01TPB(140)/W002A-H001-F001A-RPG03-01TPA(140)-01TPB(140)/W002A-H001-F001A-RPG03/TJAG04

DVS10 PERFORMANCE DATA



DVS10 COMPLETE ORDERING CODES



**1 Complete inlet section**

TYPE: **IR001(205)-AG03**  
 DESCRIPTION: Upper inlet (thread G 3/8) with direct acting pressure relief valves  
 TYPE: **IR019-EG03**  
 DESCRIPTION: Upper inlet and outlet (thread G 3/8) without valves

**2 Complete working section**

TYPE: **W002A-H001-F001A-RPG03**  
 DESCRIPTION: Parallel circuit, 3 positions, lever control with spring return in neutral position  
 TYPE: **W002A-H005-RPG03-01PA(140)-01PB(140)**  
 DESCRIPTION: Parallel circuit with valves, 3 positions, hydraulic control with spring return in neutral position  
 TYPE: **W002A-H001-F001A-RPG03-05PA-05PB**  
 DESCRIPTION: Parallel circuit arranged for port valves (ports plugged), 3 positions, lever control with spring return in neutral position

**3 Complete outlet section**

TYPE	DESCRIPTION
<b>TJAG04</b>	Upper outlet section with single return (T)
<b>TMWG04</b>	Upper outlet section with two return (HPCO) carry-over

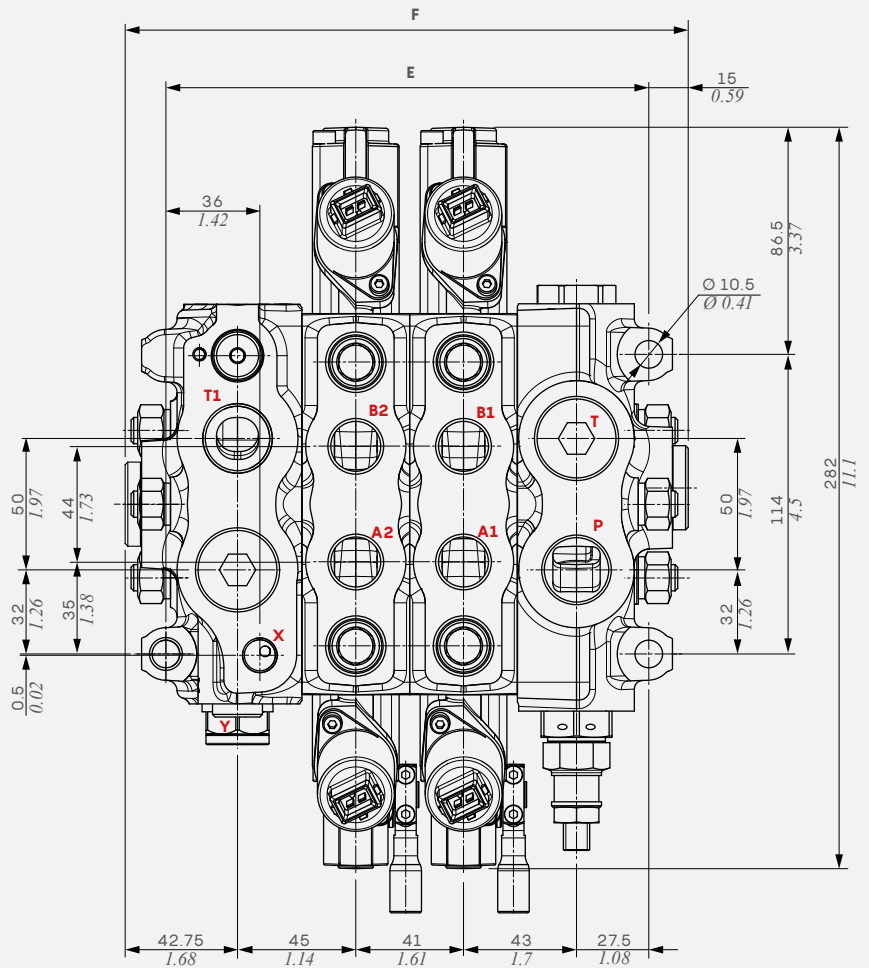
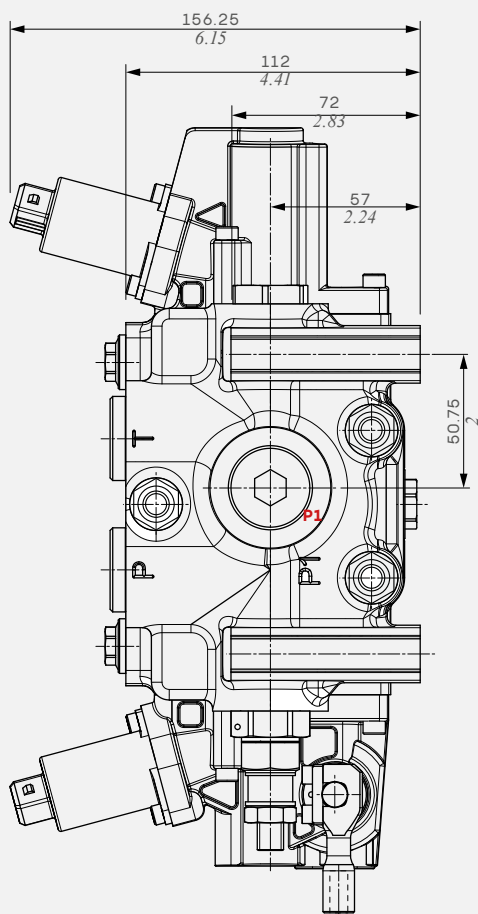
NOTES - The DVS10 valves are available with right or left inlet. For more detailed information, please contact our Sales Dpt.

### DVS14 DIMENSIONAL DATA

The DVS14 directional valve is an Open Center sectional valve, that can be equipped with integrated proportional electrohydraulic controls. This product is indicated for several applications: Forestry Cranes, Truck Mounted Cranes, Wheel Loaders, Backhoe Loaders, Compactors, Hook and Skip Loaders, Forklifts.

Its flexibility allows to match applications' different requirements and its easy assembly is appreciated by retail market. Available with flow unloader section.

The DVS14 valves are available with right or left inlet; for more detailed information, please contact our Sales Dpt.

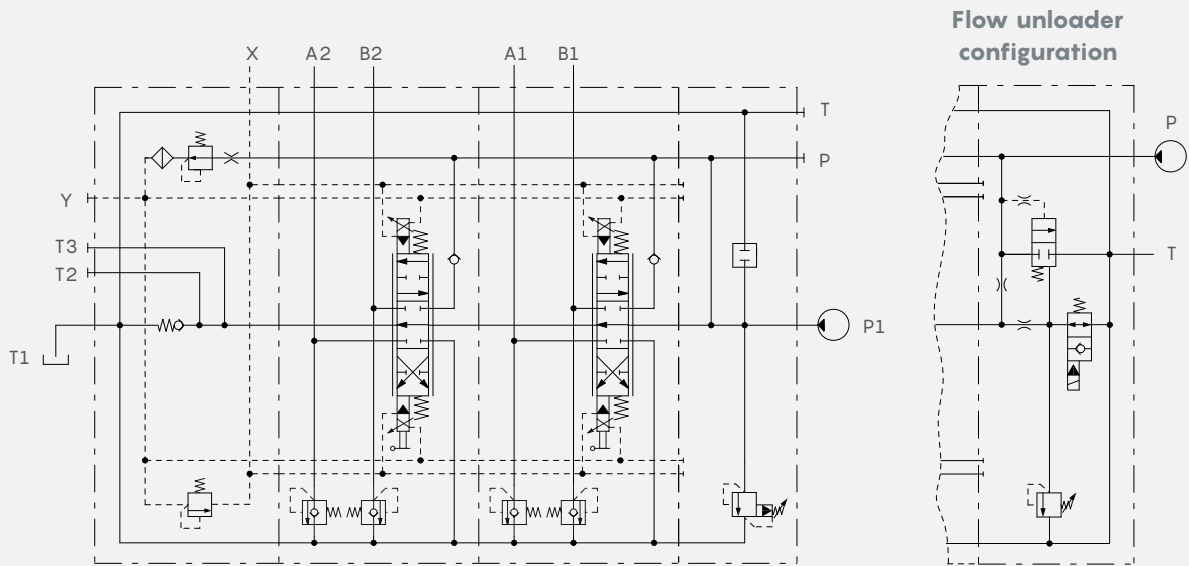


Type	E		F	
	mm	in	mm	in
DVS14/1	144	5.67	173.25	6.82
DVS14/2	185	7.28	214.25	8.42
DVS14/3	226	8.9	255.25	10.04
DVS14/4	267	10.5	296.25	11.66
DVS14/5	308	12.12	337.25	13.27
DVS14/6	349	13.7	378.25	14.9
DVS14/7	390	15.35	419.25	16.5
DVS14/8	431	16.96	460.25	18.12
DVS14/9	472	18.58	501.25	19.73
DVS14/10	513	20.2	542.25	21.34

The dimensions are referred to the electrohydraulic configuration.

PORT THREADING		
MAIN PORTS	BSP	UN-UNF
P inlet	G 1/2 - G 3/4	7/8-14 (SAE 10) - 1 1/6-12 (SAE 12)
A and B ports	G 1/2	3/4-16 (SAE 8)
T outlet and C carry-over	G 1/2 - G 3/4	7/8-14 (SAE 10) - 1 1/6-12 (SAE 12)
PILOT PORTS		
Hydraulic	G 1/4	9/16-18 (SAE 6)
Pneumatic	NPTF 1/8-27	NPTF 1/8-27

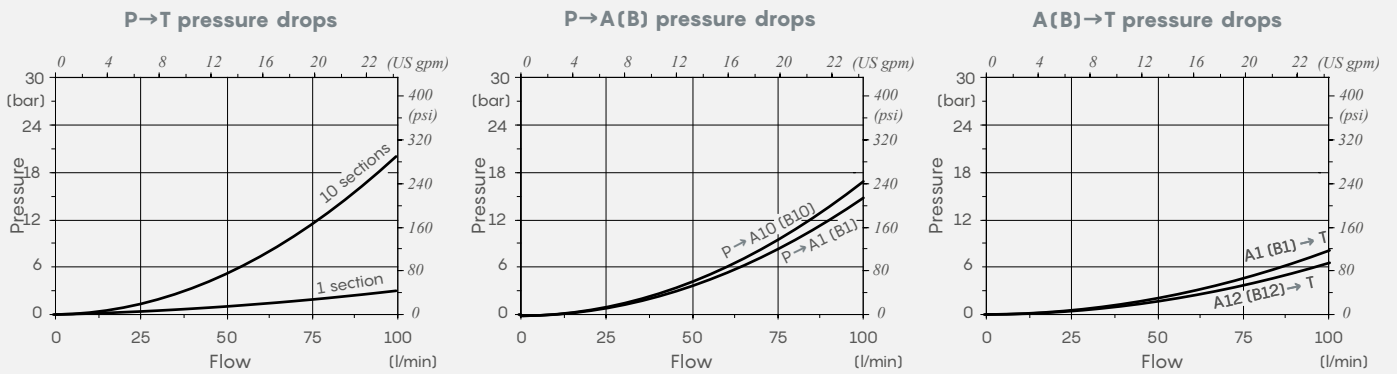
DVS14 HYDRAULIC CIRCUIT



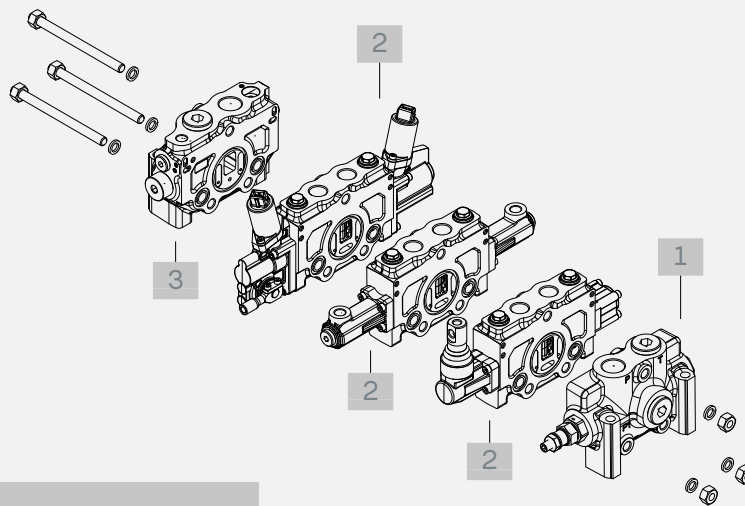
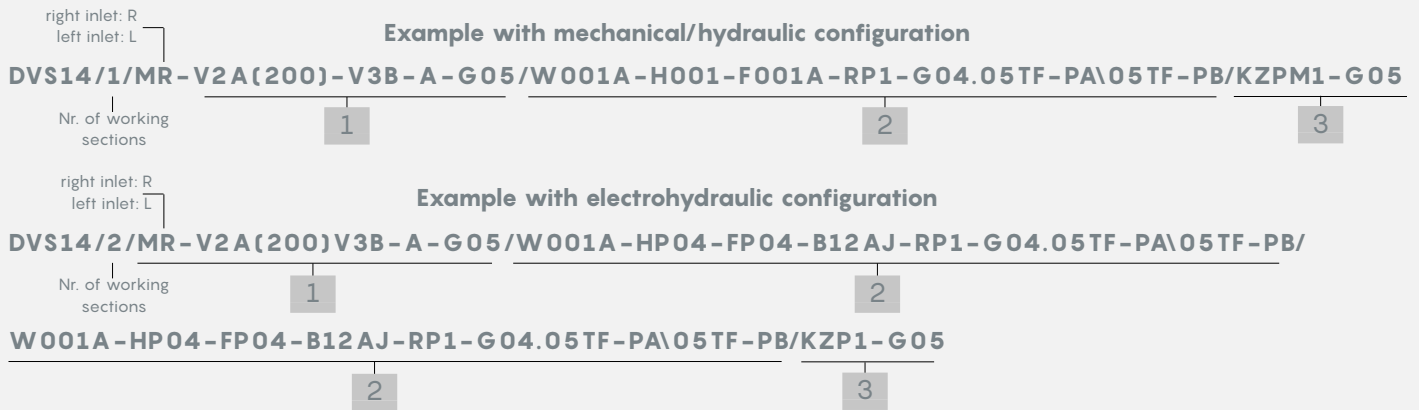
Description example with electrohydraulic configuration:

DVS14/2/MR-V2a(200)V7b-C12AJ-A-G05/W001A-HP04-FP04-B12AJ-RP1-G04.03TF-PA(100)\03TF-PB(100)/W001A-HP04-FP04-B12AJ-RP1-G04.03TF-PA(100)\03TF-PB(100)/KZP1-G05

DVS14 PERFORMANCE DATA



DVS14 COMPLETE ORDERING CODES



**1 Complete inlet section**

TYPE: **MR-V2A(200)-V3B-A-G05**  
 DESCRIPTION: Upper inlet, side inlet and upper outlet plugged. With pilot operated pressure relief valve.  
 TYPE: **MR-V3A-V3B-A-G05**  
 DESCRIPTION: Upper inlet, side inlet and upper outlet plugged. Without pilot operated pressure relief valve.  
 TYPE: **MRQ-V1A(200)-V7B-C12DI-A-MA-X-G05**  
 DESCRIPTION: Execution with compensator, upper inlet and outlet, direct pressure valve, unloader valve with electric control 12VDC (connector AMP JPT)

**2 Complete working section**

TYPE: **SDW001A-H001-F001A-RP1-G04.05TF-PA/05TF-PB**  
 DESCRIPTION: parallel circuit arranged for port valves (ports plugged), 3 positions double acting spool, lever control with spring return in neutral position  
 TYPE: **SDW001A-H001-F001A-RP2-G04**  
 DESCRIPTION: parallel circuit without port valves, lever control with spring return in neutral position  
 TYPE: **SDW001A-HP04-FP04-B12AJ-RP1-G04.05TF-PA/05TF-PB**  
 DESCRIPTION: parallel circuit arranged for port valves (ports plugged), 3 positions double acting spool, electrohydraulic control 12VDC (connector AMP JPT) lever control with spring return in neutral position  
 TYPE: **SDW001A-HP04-FP04-B12AJ-RP1-G04.05TF-PA/05TF-PB**  
 DESCRIPTION: As previous without port valves

**3 Complete outlet section**

TYPE	DESCRIPTION
<b>For all control types, without pressure reducing valve</b>	
<b>KZM1-G05</b>	T1 port open, Y pilot and drain X plugged
<b>KZMH1-G05</b>	With carry-over (HPCO) on T1 port, Y pilot and drain X plugged
<b>For electrohydraulic control, with pressure reducing valve</b>	
<b>KZP1-G05</b>	With backpressure valve, upper T1 port and X drain open, T2-T3 outlets and Y pilot plugged
<b>KZPH1-G05</b>	Without backpressure valve, carry-over (HPCO) on upper T2 port, upper T1 port and drain X open, side T3 port and Y pilot plugged

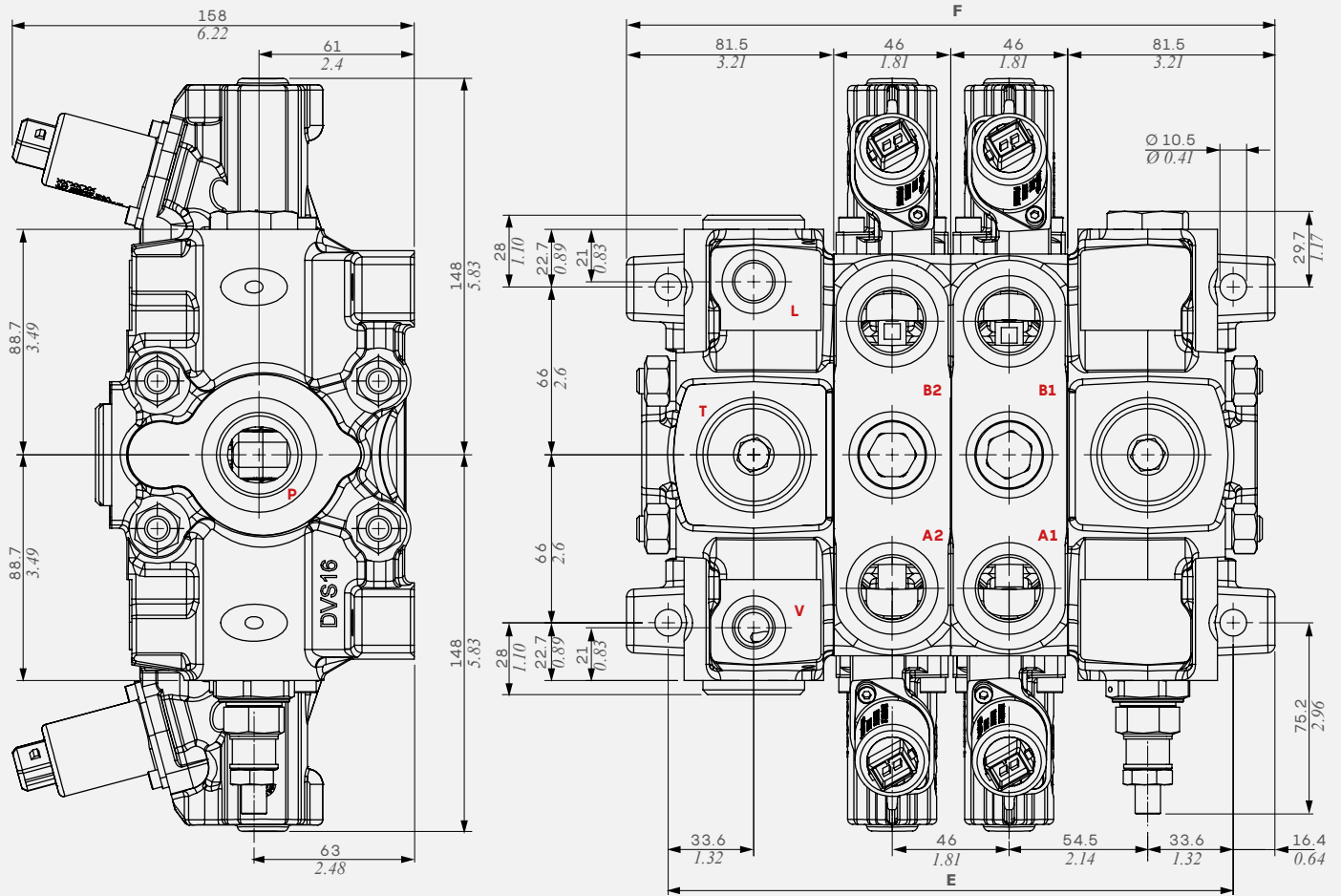
NOTES - The DVS14 valves are available with right or left inlet. For more detailed information please contact our Sales Dpt.



DVS16 DIMENSIONAL DATA

The DVS16 is a versatile, flexible sectional valve, that complete the DVS valves range. It combines the same features of DVS14 with flow up to 160 l/min (42 US gpm). Available with flow unloader section.

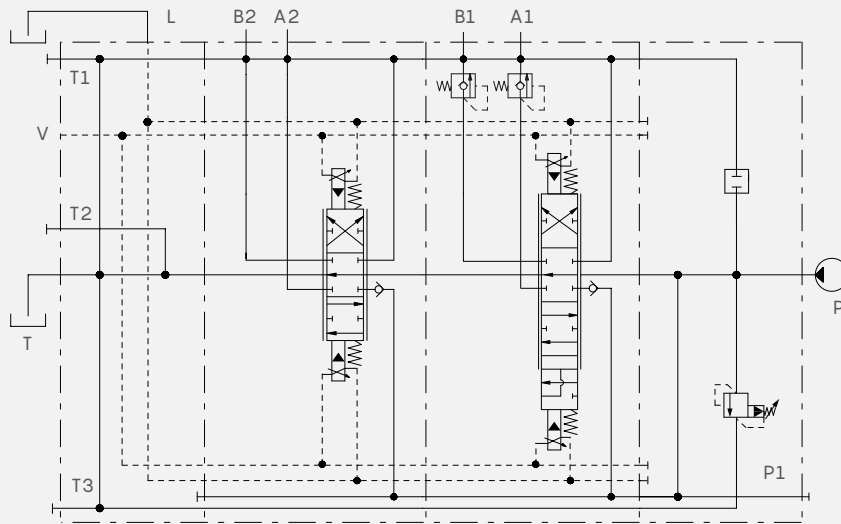
The DVS16 valves are available with right or left inlet; for more detailed information please, contact our Sales Dpt.



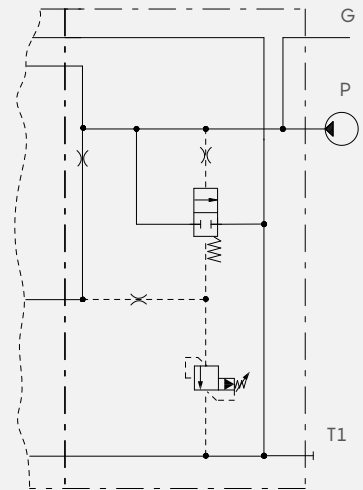
Type	E		F	
	mm	in	mm	in
DVS16/1	176.2	6.9	209	8.2
DVS16/2	222.2	8.7	255	10
DVS16/3	268.2	10.6	301	11.9
DVS16/4	314.2	12.4	347	13.7
DVS16/5	360.2	14.2	393	15.5
DVS16/6	406.2	16	439	17.3
DVS16/7	452.2	17.8	485	19.1
DVS16/8	498.2	19.6	531	20.9
DVS16/9	544.2	21.4	577	22.7
DVS16/10	590.2	23.2	623	24.5
DVS16/11	636.2	25	669	26.3
DVS16/12	682.2	26.9	715	28.1

PORT THREADING		
MAIN PORTS	BSP	UN-UNF
P inlet	G 1	1 1/16-12 (SAE 12) 1 5/16-12 (SAE 16)
A and B ports	G 3/4	7/8-14 (SAE 10)
T outlet and C carry-over	G 1	1 1/16-12 (SAE 12) 1 5/16-12 (SAE 16)
M, L, V	G 1/4 - G 3/8	9/16-18 (SAE 6)

DVS16 HYDRAULIC CIRCUIT



Flow unloader configuration

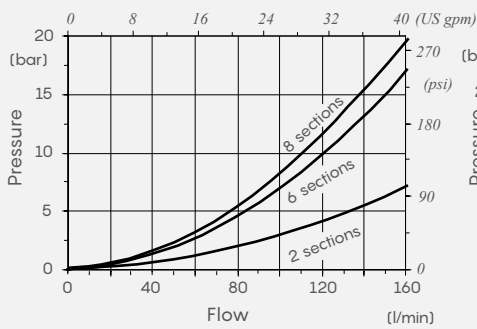


Example with electrohydraulic configuration:

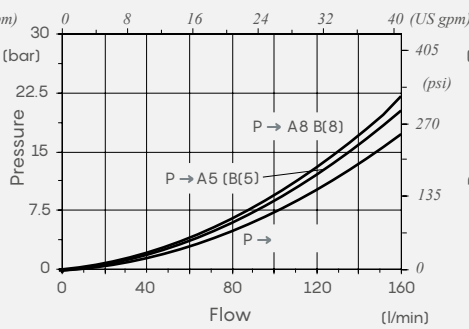
DVS16/2/MR-V2a(180)-V3b-C-G06/W0012A-HP07-FP04-B24AJ-RP1-G05.03TF-PA(250)/W001A-HP07-FP04-B24AJ-RP2-G05\03TF-PB(250)/KZP2-G06

DVS16 PERFORMANCE DATA

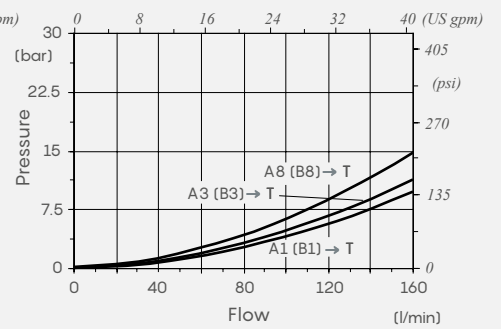
P→T pressure drops



P→A(B) pressure drops



A(B)→T pressure drops





# DVS SERIES SECTIONAL VALVES

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