



Mudsaver Valve

(MSVe1-4.5, MSVi1-4.5, MSVi-5.5, MSVi1-7.0)

Mudsaver Valve (MSV™)¹

Volant's MSV adapts to the Casing Running Tool with either internal grip (CRTi™) or external grip (CRTe™) architecture. Installed between the CRT and casing seal, the MSV is designed to entirely stop fluid flow after fluid circulating or casing running operations. The valve opens with applied pressure when circulating begins, and closes when it is stopped. The MSV allows back flow and will not trap pressure in the casing string.

The MSV has been designed to the same flow rate limit of each corresponding CRTi and CRTe³.

Tool Model: MSVe1-4.5, MSVi1-4.5, MSVi1-5.5, MSVi1-7.0 Specification Summary

Tool Characteristics

Model		MSVe1-4.5	MSVi1-4.5	MSVi1-5.5	MSVi1-7.0	
Compatible Tool		CRTe-1.0	CRTi2-4.5	CRTi2-5.5	CRTi3-7.0 CRTi4-7.0	CRTi2-8.63
Maximum Flow Rate ^{2,3}	US gpm (m ³ /min)	449 (1.7)	291 (1.1)	449 (1.7)	660 (2.5)	1,162 (4.4)
Typical Pressure Drop ^{3,4}	psi (MPa)	92 (0.63)	131 (0.9)	92 (0.63)	73 (0.5)	53 (0.37)
Opening Pressure	psi (MPa)	200 (1.38)	200 (1.38)	150 (1.03)	150 (1.03)	150 (1.03)
Closing Pressure	psi (MPa)	180 (1.24)	180 (1.24)	130 (0.9)	130 (0.9)	130 (0.9)
Pressure Limit ⁵	psi (MPa)	5,000 (34)	5,000 (34)	5,000 (34)	5,000 (34)	5,000 (34)
Maximum Pressure End Load	ton (tonne)	60 (54)	50 (45)	125 (113)	250 (227)	250 ⁶ (227)
Maximum MSV Diameter ⁷	in (mm)	3.45 (87.6)	3.77 (95.8)	4.53 (115.1)	5.85 (148.6)	5.85 ⁶ (148.6)
MSV Length ⁸	in (mm)	11.2 ⁹ (284)	10.1 (257)	11.6 (295)	13.3 (338)	14.1 (358)

1. Patents Pending.
2. Maximum flow rate is based on minimizing erosion rates when using typical fluids. Erosion rates will vary based on fluid contents. Please regularly inspect MSV internals and wear surfaces indicated in operation manual.
3. Ratings provided represent design intent. These values may change pending outcome of design verification testing.
4. Value calculated based on 160 lb/gal (1,200 kg/m³) density, 63 s.qt (60 s/L) viscosity working fluid at maximum rated flow rate. Does not include pressure drop induced by CRT or casing seal.
5. Circulation pressure is generally governed by packer cup pressure capacity. Pressure capacity may be less than indicated if alternative seal arrangements are used or end load is exceeded. Contact Volant for maximum MSV body pressure capacity.
6. Provision for 500 ton (455 tonne) CRTi2-8.63 end load capacity is available upon request. Maximum MSV diameter will increase to 6.33 in (160.8 mm).
7. Does not consider CRT or casing seal assembly.
8. MSV length added to entire CRT assembly.
9. MSVe1-4.5 does not add any length to assembly. It is housed entirely within CRTe body.

MSVi1-7.0



MSVi1-7.0 installed on CRTi4-7.0



Give us a problem. Or just drop us a line if you want to know more.

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