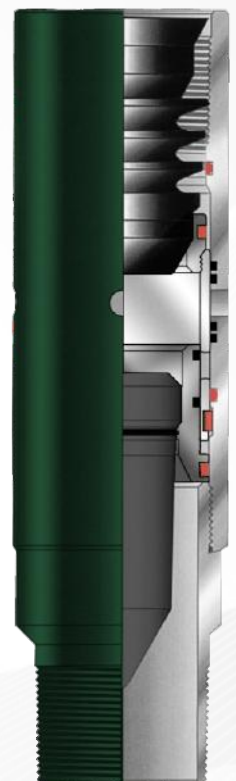
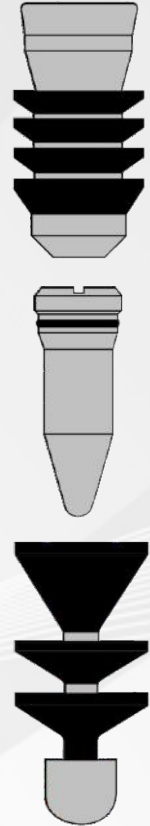


MDV Stage Cementing Collar Mechanical Type (two stage)

Applications & Features

- MDV Stage Cementing Collar can be made from material grades up to 135,000 psi minimum yield, including material suitable for sour gas service.
- Common steel grades i.e. J-55, K-55, L-80, P-110 form standard manufacturing steel grades, how ever other grades are available upon request.
- API & Premium connections are available upon request.
- No welds are used on any portion of the tool.
- The reduced length of the tool minimizes the effect of bending stresses.
- The seals providing internal and external pressure integrity are housed in the stage collar body and remain stationary throughout operation, minimizing chances of their being damaged.
- The pressure-relief design prevents fluid trapping and compression between the opening device and the closing plug during the closing phase of the tool's operation.
- The closing sleeve is held in the closed position by an internal lock ring.
- Both the opening and closing sleeves lock against rotation for easy drill-out.
- A minimum amount of aluminum and rubber are the only materials encountered during drill-out.

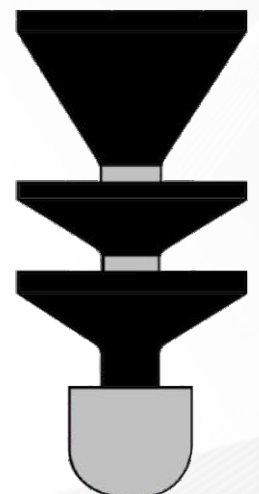
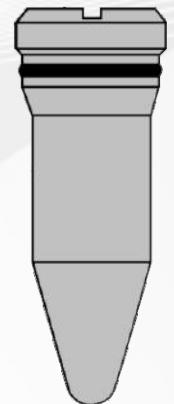
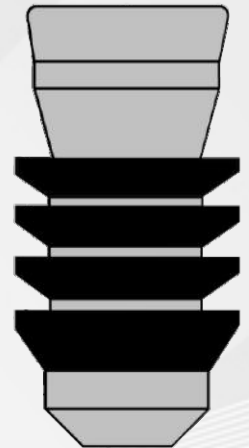


MDV Stage Cementing Collar Mechanical Type (two stage)

Two-Stage Cementing with MDV Stage Cementing Collar using:

- I. First-Stage Sealing Plug
- II. Free-Fall Opening Device, and
- III. Closing Plug

- Float shoe and Float collar along with the MDV Stage Cementing Collar, are installed in the casing string and the casing is run to bottom.
- Circulation is established and first-stage cement is mixed and pumped.
- The first-stage sealing plug is launched and cement is displaced. At the conclusion of displacement, the first-stage sealing plug lands and effects a seal against the Float collar. **No baffle is required!**
- The free-fall opening device is dropped and allowed to gravitate to position. Pressure is applied to the casing and the stage collar is opened.
- Circulation is established and second-stage cement is mixed and pumped.
- The closing plug is dropped and cement is displaced.
- At the conclusion of displacement, the closing plug lands and effects a seal in the stage collar. Pressure is applied to the casing and the stage collar is closed.



MDV Stage Cementing Collar Mechanical Type (two stage)

Specification Tables

Nominal Casing Size (in.)	Maximum Diameter	Wt. Range (Lbs.)	Drill-Out I.D. (in.)	Overall Length (in.)	Opening		Closing		Opening Seat I.D. (in.)	Closing Seat I.D. (in.)
					Pressure (PSI)	Force (Lbs.)	Pressure (PSI)	Force (Lbs.)		
5 1/2	6.625	14.0–17.0	4.892	27.38	1200	32,000	1500	39,000	3.750	4.062
		20.0–23.0	4.810							
6 5/8	7.875	20.0–28.0	6.030	28.50	1200	45,000	1500	57,000	4.625	5.000
7	8.275	17.0–23.0	6.276	28.50	1200	49,000	1500	62,000	4.625	5.125
		26.0–29.0	6.200							
		32.0–38.0	6.004							
9 5/8	11.125	32.3–40.0	8.921	29.50	1000	78,000	1200	94,000	7.000	7.750
		43.5–53.5	8.600							
10 3/4	12.375	40.5–45.5	9.950	30.88	1000	100,000	1200	120,000	8.000	8.750
13 3/8	15.000	54.5–61.0	12.515	30.88	900	133,000	1000	148,000	10.500	11.250
		68.0–72.0	12.415							
16	18.000	65.0	15.125	32.38	500	90,000	700	126,000	13.125	14.000
		75.0–84.0	14.880							