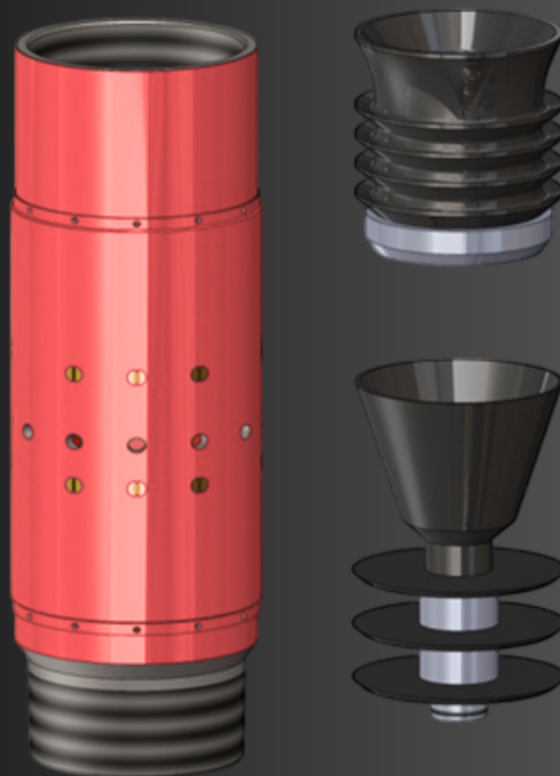


Stage Cementing Collar (Hydraulic)

AZM Slim Hole Stage Cementing Collar has been designed for stage cementing applications where the annular spaces dictate the use of a reduced OD stage collar.

The design features two internal sleeves that shift during the stage cementing operations. The bottom sleeve is shifted open hydraulically by increasing the pressure within the casing; opening pressure is field adjustable.



Closing of the stage cementing collar is achieved through the pumping of a closing plug behind second stage cement and applying pressure upon completing displacement. This Type can also be used in liner applications when the closing plug has been adapted to fit the closing seat in the stage collar.

Stage tool drill-out materials are all PDC drillable aluminum, rubber and phenolic.

Stage Cementing Collar (Hydraulic)

Casing Size	Max Diameter	Weight	Drill out I.D	Overall Length	Opening		Closing		Opening pressure /FREE-FALL DEVICE P.S.I
					Pressure P.S.I	Force L.B.S	Pressure P.S.I	Force L.B.S	
5"	6.125	15-18	4.400	29" (approx)	3000	14,000	1500	25,000	1100
7"	8.275	26-29	6.200	31" (approx)	2600	28,000	1500	57,000	1000
9 5/8"	11.125	43.5-53.5	8.600	32" (approx)	2400	50,000	1500	111,000	1000
13 3/8"	15.000	61-72	12.375	33" (approx)	2100	83,000	1500	19500	900