

PRODUCT LINEWell Construction | Stage
Cementing**PRODUCT**Mechanical Combination Stage
Tool**INNOVEX**

The **Mechanical Combination Stage Tool** is run as an integral part of the casing string. The tool provides a mechanical annular isolation barrier between the run-in casing and the parent casing and further allows for a two or three stage cement job.

The Mechanical Combination Stage tool is opened by dropping a plugging device that lands in the tool. Applied pressure will mechanically set the packer and hold-down slips. Additional pressure will open the cementing ports allowing for a cement job. The cement displacement wiper plug lands in the stage tool closing the ports.

The Mechanical Combination Stage Tool utilizes a mechanical packer, similar in design to a liner top packer and is set with applied pressure as opposed to inflation pressure. The packer and hold-down slips are held in place with a body lock-ring configuration.

Specification Guide

Size	9.625" x 13.375"	13.375" x 18.625"
Casing Weight (ppf)	9.625" 46.5 ppf	13.375" 54.5 ppf
Casing Setting Weight Range	13.375" 60 ppf to 68 ppf	18.625" 81 ppf
Threads	TBD	TBD
Material	L-80	L-80
Maximum OD (in)	11.98" Cone OD	16.25" Cone OD
Seat ID (in)	7.280"	8.250"
Drill Out Diameter (in)	8.500"	12.375"
Opening Mechanism	Free Fall Cone or Pump Down Cone	
Opening Pressure (psi)	400 psi	
Min. Setting Pressure Required (psi)	2400 psi	
Closing Pressure (psi)	400 psi over Cement Lift Pressure	
Element Differential Pressure Rating (psi)	3,500 psi	2,000 psi
Element Material	HNBR	HNBR
Temperature Rating (F)	350 F	350 F
Burst (psi)	6,500 psi	3,980 psi
Collapse (psi)	4,000 psi	1,140 psi
Tensile (lbf)	810,000 lbf	1,100,000 lbf
Cement Port Diameter (in)	1.125"	1.125"
Diameter of Ports	6	6

