

The **510 Hydraulic Stage Collar** allows for cementing casing in multiple stages at any inclination with a hydraulically opened sleeve system. Incorporating state-of-the-art design provides for a robust tool that ensures optimal performance in even the harshest environments. Years of experience have enabled our engineers to develop a tool that takes every possible variable that may affect performance into account

Composite Seat

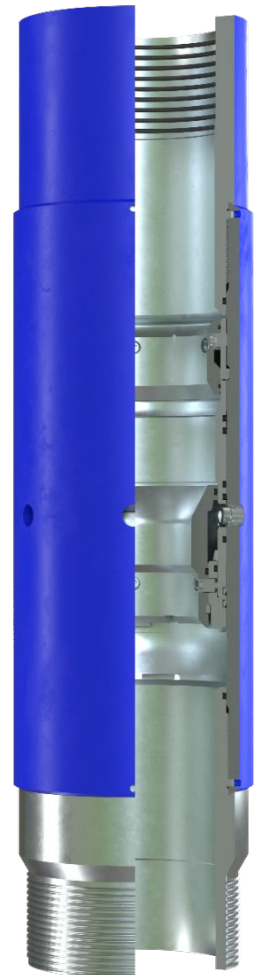
Composite seat option allows for quick drill out with conventional BHA, or with a bent sub, mud motor and PDC bit, saving valuable rig time.

Aluminum Seat

Standard aluminum seat provides a robust tool ensuring optimal performance in even the harshest environments.

Features & Customer Benefits

- **Available in 2 or 3 stage systems**
- Setting annulus casing packers in conjunction with stage collars
- Stage collar may be opened immediately after first stage shut-off plug is landed
- Minimal moving parts
- Reduces risk of first stage cement setting above tool before opening
- Large pump through diameters
- High burst and collapse pressure after closure of tool
- Robust dual snap ring locking mechanism
- Well protected components
- Multiple high pressure seals engaged around ports after closure
- Standard stage collar materials are suitable for sour service applications
- Suitable for operating at temperatures up to 300° F, High Temp version rated to 400° F
- All internal components within casing drift are PDC and Tri-cone bit drillable
- Optional opening may be used to open stage collar



PRODUCT LINEWell Construction | Stage
Cementing**PRODUCT**Mechanical Stage Cementing
Collar

This **Mechanical Stage Collar** allows for **cementing** to be completed in long casing strings, where low cement displacement pressure is required due to weak formations. The robust double snap ring locking mechanism ensures the tool does not open after it is closed and is able to withstand an upward force of 100,000 lb. minimum. Innovex's Mechanical Series has minimal moving parts, which reduces the chance of failure.

Composite Seat

Composite seat option allows for quick drill out with conventional BHA, or with a bent sub, mud motor and PDC bit, saving valuable rig time.

Aluminum Seat

Standard aluminum seat provides a robust tool ensuring optimal performance in even the harshest environments.

Features & Customer Benefits

- **Available in 2 or 3 stage systems**
- Large pump through diameter
- Anti-rotation system for the inner sleeve does not require holes through the tool body
- Single inner-sleeve design eliminates pressure traps and increases reliability
- API box threads are integrated into the body of the stage tool
- Short close tolerance seal length allows operations within well curvatures with dog leg severity (DLS) up to 12° per 100 ft.
- High temperature seals are available for temperatures above 300° F
- Pump-down opening plug systems are available for highly inclined wells
- Shut-off plug systems are available for setting casing packers and testing casing to high pressures
- Stage Collar - Patent Pending

