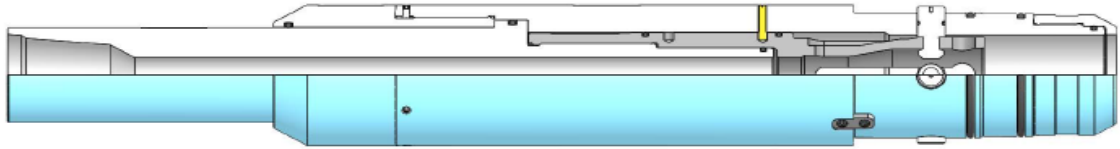


Mechanical Release Tool



Many tools and tubular are intended to be left down hole in many types of wells. The most common of these would be casing strings. When running a string of production casing, it is more economical to run the casing from the bottom of the well to the bottom of the intermediate casing and hang/seal it at this position. This eliminates running the entire string of casing to surface, within a previously cased hole.

The required amount of casing is assembled and then run into the well to a determined depth using drill pipe above the casing. At the change over area (casing to drill pipe) there is usually a seal type casing hanger and some type of release mechanism. Once the seal or casing hanger is activated and set, the release mechanism is activated, separating the drill pipe from the hanger, allowing the drill pipe to be removed from the well, and leaving the production casing in place down hole. The release mechanism can be activated mechanically or hydraulically. Mechanical release refers to any mechanical means used like pulling (tensile loads), pushing (compressive loads), or rotating (axial loads), to activate a mechanical device of releasing. Hydraulic release refers to any hydraulic means used like fluid flows or pressures to activate a hydraulic device of releasing. Depending on the well and its circumstances, either a mechanical or hydraulic release type tool will be chosen.

This Mechanical Release Tool (MRT) will release using rotation. The MRT is designed with pins to grip the tubular. The MRT does not use gripping dies to hold the tubular it will release, like some conventional mechanical release tools. The MRT relies on pins that extend through the body of the tubular it releases at four positions 90° apart. The top of the tubular will also contain four torque slots where torque blocks of the MRT reside. The four pins will withstand all compressive and tensile loads, while the torque blocks withstand the torsional loads. To activate the MRT, righthand rotation will shear a pin and allow further righthand rotation, which causes the pins to retract from the tubular to be released. Upward movement of the work string will separate the MRT from the released tubular. The MRT can re-attach/release again to the separated tubular down hole if required.

APPLICATION

- For use in releasing tubular down hole in vertical or horizontal wells.
- Mechanical release using right hand rotation only.

FEATURES

- No gripping dies used that can slip or fail, and damage the tube being released.
- Can be released and re-attached down hole if required.
- High torque, tensile and compressive load capabilities.
- Right hand rotation to activate the tool will not cause unwanted connections to back-off.
- The torque blocks relieve any torsional and compressive loads to the pins.

BENEFITS

- Additional tooling is not required to find neutral point.
- Can be functioned in a compressive state.



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3908 - 71 Avenue | Leduc, Alberta T9E 0R8 | (780) 986-4049 | coredesignltd.com

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