



Hydraulic Multiple Shut-In Tool

Description

The hydraulic Multiple Shut-In Tool Assembly is a downhole master valve designed to keep the drillstring or tubing closed (&dry) while running test tools into the well.

The hydraulic system in the tool allows the tool to open slowly with applied set down weight from the tubing/drillstring after the packer has been set.

The time delay mechanism prevents premature opening if bridges or tight hole sections are encountered while running in hole.

The HMST is used to obtain flow periods and shut in periods while testing. Multiple cycling capacity of the tool enables any number of these flow periods to be obtained.

Total mandrel travel in the HMST is 152 mm. (6")

With applied drillstring or tubing weight, all hydraulic fluid must pass through the metering mechanism for the initial travel of 114 mm.(4.5") Mandrel travel is slow for this period of travel, for the final 38 mm (1.5") hydraulic fluid is allowed to bypass the metering system, at this time mandrel travel will be very rapid and a sudden weight increase will occur on the weight indicator. This provides a positive indication of tool opening.

To close the valve, the drillstring or tubing is picked up and overpull is applied to the HMST. When picked up the hydraulic oil bypasses the metering system, the mandrel returns to the fully extended position and remains there until such time as weight is again applied to activate the time delay mechanism.

With the HMST vertical motion is used for obtaining flow and shut in periods. While running in the hole the valve remains in the extended or closed position.

After the packers are set the valve is opened by setting down or applying 5000 to 10000 DaN (10 klbs to 20 klbs) of weight to the valve for a period of 2 to 5 minutes.

Assembly # : 05 - 701-37800

TOOL OD : 5 ins

Thread Connection : 3.5" API IF

