

JUNK MUNCHER (JM)

Specialized Tools: Debris Recovery Tools

The JUNK MUNCHER tool from M-I SWACO is used to validate wellbore cleanup operations. It collects larger pieces of milling debris generated during casing milling or window-cutting operations. It can also clean up perforation debris that restricts the ID of perforated pipe.

Advantages

The JUNK MUNCHER tool is suitable to run after casing-milling or window-cutting operations to collect larger pieces of milling debris sometimes produced during these operations and which cannot otherwise be removed. It is also suitable for use in already perforated pipe to clean up or remove perforation debris that restricts the ID while retrieving junk that cannot be circulated out.

The milling profile can be supplied suitable to dress off liner-top Polished-Bore Receptacle (PBR) profiles. The bypass and swallowing capacity have been maximized by using a smaller, high-torque, rotary-shouldered connection on the bottom of the tool.

Features

- One-piece mandrel with box-up/pin-down connections
- Integral liner-top dress-mill profile or junk-mill profile available
- Pilot mill available

Advantages

- Designed to remove large pieces of debris from the wellbore through large entry throats
- Run as part of the cleanup operation or as part of a dedicated junk cleanout run
- When run below the WELL PATROLLER* device, the tool allows smaller debris to pass through to be collected by the WELL PATROLLER tool

Operation

The JUNK MUNCHER unit can be run in a combination drillstring to collect junk in larger casing above a liner, or directly above a mill or bit to collect large pieces of junk off the bottom. The bit or mill acts to jet and circulate the junk up into the catcher.

When the integral liner-top dress mill lands out on the PBR it can be used to dress off the PBR top. If required, a tieback mill can be run below the tool to clean the PBR ID. The JUNK MUNCHER tool is run with a maximum running-in-hole/pulling-out-of-hole speed of 150 ft/min (46 m/min), which means that there are no restrictions compared to others in the string.

How it works

The collection vessel is a large-OD tube ported to allow debris, cuttings, cement particles and smaller pieces of junk to pass through and be circulated out of the hole. The large pieces of junk that enter the collector are retained and prevented from falling out the bottom by flapper valves that are flow-assisted to open and spring-assisted to close.

A significant volume of large junk pieces can be collected in the tool. In the case of extremely large pieces of junk, drilling/milling services can be provided to assist in reducing the size of the junk.



The JUNK MUNCHER tool can be run on the same trip as a precompletion mechanical wellbore cleanup run or during a dedicated junk cleanout run.



Operating parameters

Box connection size, in.	Maximum rotating speed in tension, rpm	Maximum rotating speed in compression, rpm	Maximum compression at tool when rotating, lb (kg)
3½ IF	100	60	5,000 (2,268)
4½ IF	120	90	10,000 (4,536)
5½ NK DSTJ	120	90	10,000 (4,536)

These are general guidelines only and are subject to review, if required, for individual circumstances.