

RAZOR BACK (RB)

Specialized Tools: Casing Cleaning Tools

This new-generation improvement in metal-bladed scraper design brings even the most complex wellbore cleanups under control. The RAZOR BACK* (RB) tool has critically important features not found on any other metal-bladed casing scraper that render it more effective, more robust and safer to use in wellbore cleanup and casing scraping operations.

Advantages

The lantern is self-centralizing inside the tubular to ensure equal cleaning force at all angles of well inclination. The mandrel rotates through the stabilizer sleeves and lantern to avoid wear or damage to the casing during pipe rotation. The tool is HTHP-compatible and is not vulnerable to chemical or acid attack.

Operation

The RAZOR BACK unit is run with maximum running-in-hole/pulling-out-of-hole speed of 150 ft/min (46 m/min), and should be positioned at least 30 ft (9 m) above the drill bit/mill and placed so that

it does not pass through any drilled-out accessories such as landing or float collars. The string should regularly be picked up off-bottom and circulated to clear any accumulated debris.

Where possible, the bit or mill OD should be greater than the stabilizer sleeve OD of the RAZOR BACK device. If this is not possible, it is recommended that a full-gauge mill be run below the first RAZOR BACK unit in the bottomhole assembly. It is not recommended to drill cement with a small RAZOR BACK (3½ to 5½ in.) device. Alternatively, it is suggested that a dedicated slick-drilling run be made first to drill out the excess cement and establish Plug Back Total Depth (PBDT) prior to the cleanup run. Should a slick run not be possible, a Heavy-Duty RAZOR BACK unit is recommended.

Features

- Non-rotating, 360° coverage, self-centralizing metal-bladed lantern
- Right-hand spiral stabilizer sleeves with flutes for fluid and debris bypass
- Available in all common casing and liner sizes
- Supplied with drill-pipe box-up/pin-down connections

Advantages

- Removes cement sheath, burrs, pipe scale
- Eliminates risk of casing wear/damage from stabilizers or blades during rotation
- Enhances chemical cleaning action



How it works

The RAZOR BACK tool from M-I SWACO is run as an integral part of the drillstring to scrape the casing as the pipe is run in hole. It can be run as part of most drilling/milling/polishing assemblies, as a standalone device or, more often, with circulating tools and the WELL PATROLLER* tool as part of

the cleanup system. It can be rotated and reciprocated without fear of damage to casing or the tool itself.

The RAZOR BACK device consists of a one-piece main mandrel complete with non-rotating, right-hand spiral stabilizer sleeves and a metal-bladed lantern covering 360°. The metal-bladed lantern is both strong and flexible,

and provides the force to contact and scrape the pipe ID effectively. While running in hole, it is good practice to break circulation and reciprocate the pipe regularly (every 5,000 ft [1,524 m]) to disperse and enhance the cleanup of any debris buildup.

Operating parameters

Tool size	Maximum rotating speed in tension, rpm	Maximum rotating speed in compression, rpm	Maximum compression at tool when rotating, lb (kg)
3½	60	60	3,000 (1,361)
3½ – 5½	90	60	5,000 (2,268)
6½ – 8½	100	60	10,000 (4,536)
9½ – 13½	120	90	15,000 (6,804)
16	120	90	50,000 (22,680)

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