Schlumberger

PV-3

Liner top packer with or without hold-down slips

Rated up to 10,000 psi [69 MPa]

Rated up to 204 degC [400 degF]

APPLICATIONS

- Vertical and horizontal wells
- Deepwater and deep onshore wells
- ISO-14310 V3 liner top packoff requirements
- Liner hanger applications requiring drilldown capabilities
- High-pressure, high-temperature environments

BENEFITS

- Has large fluid bypass area that aids hole cleaning, reduces circulation time, and decreases trip time
- Optimizes well integrity and enhances well stability and safety with ISO-14310 V3-qualified equipment
- Minimizes completion time with drilldown liner
- Can be supplied with or without hold-down slips that prevent upward movement of the liner, resulting in more secure liner installation

FEATURES

- Antiswab element design
- Compatibility with mechanical- or hydraulic-release setting tools
- ISO-14310 V3 tested and qualified
- High torque capacity to rotate long liners
- Integral mandrel and setting adapter design
- Standard tieback receptacle (TBR)
- Standard hold-down slips
- Integral retrievable cementing bushing (RCB) profile

The PV-3 liner top packer with or without hold-down slips, part of the COLOSSUS CMT* cemented liner hanger system, is ISO-14310 V3-qualified and rated to a differential pressure of 10,000 psi [68.9 MPa] in most sizes. The PV-3 packer is run above a liner hanger with either a mechanical right-hand release running tool (RRT) or a hydraulic collet-running tool (CRT) in high-pressure and high-temperature environments. After the liner hanger has been set and cemented, the packer is set by picking up the running string, placing the tamping dogs of the setting tool above the liner top, and slacking off weight. Excess cement above the liner top can then be circulated out after the packer is set.

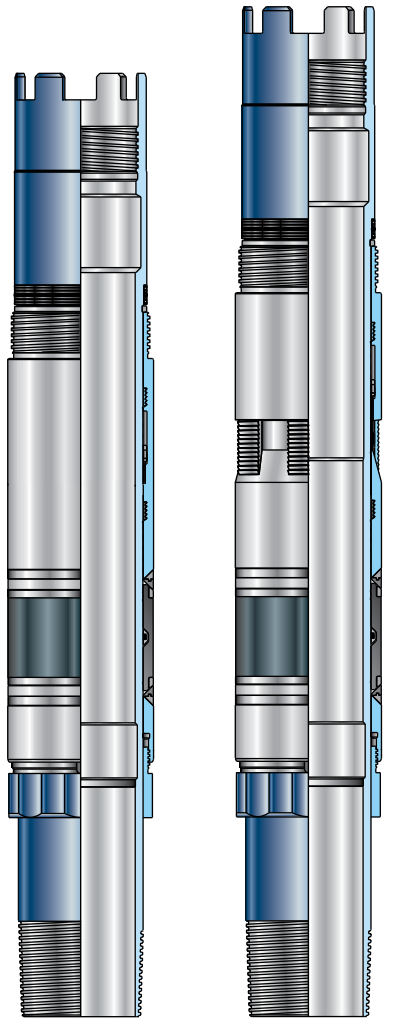
The integral setting adaptor and mandrel design permits the transmission of high torque from the running string to the liner. This feature is used to drill down the liner while it is being run in hole. When a rotational hanger is deployed, the liner can be rotated after the liner hanger is set to improve cement integrity. Optimized design and materials maximize mandrel performance criteria such as burst, collapse, torque, and tensile ratings.

During running and cementing operations, a cementing packoff maintains a seal between the workstring and the liner. The weight-set PV-3 liner top packer includes an integral retrievable cementing bushing (RCB) profile, which is designed to eliminate extra connections in the liner hanger assembly.

The PV-3 packer uses standard 80,000-psi [552-MPa] through 125,000-psi [862-MPa] yield materials. Other yield strengths and materials are available on request.

Hold-down slips promote uniform setting requirements

The hold-down slips are optional components that can be added to the PV-3 packer. The design ensures weight is evenly distributed around the supporting casing ID, and is typically used to accommodate high capacity requirements. Hold-down slips are protected from damage by the body of the packer while running into the well. Their recessed configuration also provides a larger fluid bypass area.



PV-3 liner top packer without hold-down slips, left, and with hold-down slips, right.

When setting, the tool's slip design and positive setting method create complete contact with the intermediate casing from the top to the bottom of the slip. The result is efficient, predictable, and uniform transfer of weight to the intermediate casing. Slips setting is synchronized to ensure all slips take weight at the same time, thereby distributing weight evenly.

PV-3

PV-3 Packer Specifications for ISO 14310 V3-Qualified Systems

Liner × Casing Size,† in [mm]	Casing Weight Range, lbm/ft [kg/m]	Max. Pressure Differential, psi [MPa]	Temperature, degF [degC]
5.000 × 7.000 [127.0 × 177.8]	26.0–32.0 [38.7–47.7]	10,000 [68.9]	325 [162]
5.000 × 7.000 [127.0 × 177.8]	35.0–38.0 [52.1–56.5]	10,000 [68.9]	325 [162]
5.000 × 7.000 [127.0 × 177.8]	35.0–38.0 [52.1–56.5]	10,000 [68.9]	400 [204]
5.500 × 7.625 [139.7 × 193.7]	26.4–29.7 [39.3–44.2]	10,000 [68.9]	325 [162.7]
5.500 × 7.625 [139.7 × 193.7]	33.7–39.0 [50.2–58.1]	10,000 [68.9]	325 [162.7]
7.000 × 9.625 [177.8 × 244.5]	36.0–43.5 [53.6–64.7]	7,500 [51.8]	325 [162.7]
7.000 × 9.625 [177.8 × 244.5]	43.5–53.5 [64.8–79.7]	10,000 [68.9]	325 [162.7]
7.000 × 9.625 [177.8 × 244.5]	53.5–58.4 [79.7–86.9]	10,000 [68.9]	325 [162.7]
7.625 × 9.625 [193.7 × 244.5]	47.0–53.5 [70.0–79.7]	10,000 [68.9]	325 [162.7]
9.625 × 11.750 [244.5 × 298.5]	60.0–66.7 [89.3–99.3]	10,000 [68.9]	325 [162.7]
9.625 × 13.375 [244.5 × 339.8]	61.0–72.0 [90.8–107.1]	10,000 [68.9]	325 [162.7]
11.750 × 13.375 [298.5 × 339.8]	68.0–72.0 [101.2–107.1]	7,500 [51.8]	325 [162.7]
13.375 × 16.000 [339.8 × 406.4]	109.0 [162.2]	5,000 [34.47]	300 [149]
13.375 × 16.000 [339.8 × 406.4]	84.0–97.0 [125.0–144.3]	5,000 [34.47]	300 [149]
13.375 × 16.000 [339.8 × 406.4]	75.0–84.0 [111.0–125.0]	5,000 [34.47]	300 [149]
16.000 × 20.000 [406.4 × 508.0]	203.0 [302.0]	5,000 [34.47]	300 [149]

†Other sizes available on request

slb.com/colossus

Schlumberger