

TSR Tubing Separation Tool

The TSR tubing separation tool is a relatchable, tubing-disconnect tool designed to release with either right-hand rotation or straight pull.

APPLICATION

- Tubing disconnects in single-string completions

BENEFITS

- Allows tubing to be plugged during upper tubing string workovers
- Automatic relatch
- Provides safe tubing separation above right-hand release equipment
- Seal replacement prior to running back to relatch

FEATURES

- Integral Type-D landing nipple
- Choice of metallurgy and seal materials
- Seals contained in upper connector

The TSR tubing separation tool enables the tubing to be disconnected above the packer and can be provided with an integral landing nipple to allow the tubing to be plugged prior to disconnection. The field-proven HSP-1 permanent packer stinger is used for the upper member of this tool. This stinger can be converted in the field to any of three release modes after the upper tubing completion has been retrieved during a workover.

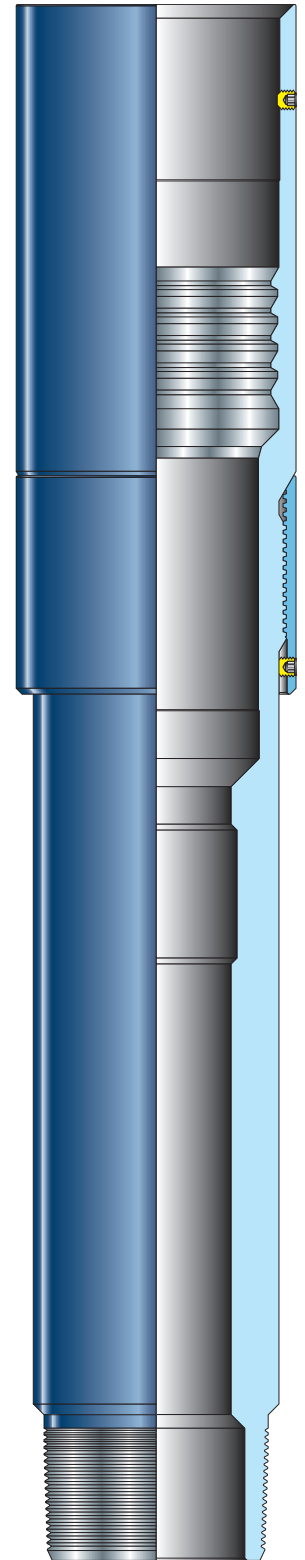
DESCRIPTION AND OPERATION

A high-strength threaded collet in the upper connector of the TSR engages a matching thread profile in the lower latching head portion of the tool to provide the connection. Chevron packing provides the seal to isolate the tubing from the casing annulus.

An optional guide can be mounted on the lower latching head to centralize the tubing and help guide the stinger back into place during relatching procedures.

The TSR can be provided with an optional landing nipple profile in the lower end of the latching head member. This profile can be specified at time of order to customize the tool to the specific completion requirements.

The TSR tool and optional guide shoe are installed in the tubing string. The TSR tool and lower completion should initially be installed on the snap-in, rotate-out stinger configuration. A hydraulic-set packer with the lower completion can be installed on a work string, and then the work string can be released and retrieved. The stinger can be configured to either a snap-in/ snap-out or bullnose configuration and rerun with the final upper-completion string. Either of these two configurations requires sufficient tubing weight be set down on the tool. This will prohibit any temperature or pressure effects in the tubing string from pumping the stinger from the latching head. The snap-in/ snap-out configuration requires 10,000 lbf [4,535 kgf] of tubing tension to snap the collet free from the tool. The bullnose configuration does not contain any latching mechanism, and the only force holding it in place is seal friction and set-down weight. These two configurations are ideal when tubing rotation is difficult or prohibitive and straight pull is the only option to separate the tool for tubing retrieval. When a landing nipple option is selected, a lock and blanking-plug assembly is installed before separation of the tubing. After the workover is complete and the upper completion string has been reinstalled, the blanking plug may be removed with standard slickline procedures and the well put back on production.



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TSR Tubing Separation Tool Specifications					
Tubing		Tubing Separation Tools [†]			
OD (in. [mm])	Weight (lbm/ft)	Casing Sizes for TSR Optional Guide		Max. OD (in. [mm])	Sealbore (in. [mm])
		(in. [mm])	(lbm/ft)		
2.375 [60.3]	4.7	5.500–7.000 [139.7–177.8]	‡	3.500 [88.9]	1.812 [46.0]
					1.875 [47.6]
					1.901 [48.3] [§]
2.875 [73.0]	6.5	6.625–8.625 [168.3–219.1]	‡	4.593 [116.7]	2.250 [57.2]
					2.312 [58.7]
					2.347 [59.6] [§]
3.500 [88.9]	9.3	6.625–9.625 [168.3–244.5]	‡	5.312 [134.9]	2.750 [69.9]
					2.812 [71.4]
					2.867 [72.8]
4.500 [114.3]	12.8	8.625–10.750 [219.1–273.1]	‡	7.125 [181.0]	3.562 [90.5]
					3.625 [92.1]
					3.687 [93.6]
					3.750 [95.25]
					3.812 [96.8]
5.500 [139.7]	17.0	9.625–10.750 [244.5–273.1]	‡	7.875 [200.0]	3.833 [97.4] [§]
					4.312 [109.5]
					4.437 [112.7]
					4.500 [114.3]
					4.563 [115.9]
7.000 [117.8]	26.0	10.750–11.750 [273.1–298.5]	‡	8.500 [215.9]	4.625 [117.5] [§]
					5.750 [146.1]
					5.812 [147.6]
					5.875 [149.2]
					5.937 [150.8]
					5.968 [151.6] [§]

[†] Other sizes are available on request. Contact your local Schlumberger representative.

[‡] Casing size and weight compatibility determined by optional guide shoe OD.

[§] Drift of tool. This TSR version does not have an integral landing nipple profile.

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