

Sliding Sleeve Separation Tool

The sliding sleeve separation tool is designed to allow flow from the casing and tubing annulus, through an open sliding sleeve, and up the production tubing, while blanking off the tubing just below the sliding sleeve. This allows alternate production of two zones without commingling them.

APPLICATION

- Zone isolation in multiple-zone wells

BENEFITS

- Adapts to most manufacturers' locks
- Simple operation
- Designed to adapt to most sliding sleeves

FEATURES

- Rugged, field-proven design
- Available in various materials
- Choice of sealing systems

DESCRIPTION AND OPERATION

A separation tool is pinned in the open position when run by slickline. This provides a flow path through the center of the tool while it is being set in the sliding sleeve.

The separation tool adapts to most manufacturers' locks to match the nipple profile in the sliding sleeve. The lock and separation tool assembly are installed with the appropriate running tool and prong.

When production is desired from an upper zone while blanking off the lower zone, a sliding sleeve with a nipple profile above and a polished sub below is installed in the tubing string opposite the upper zone. Packers are used to isolate the zones.

The sliding sleeve can be shifted to the open position and the separation tool can be run and locked into the bore of the sliding sleeve by standard slickline methods. The separation tool allows flow to enter from the annulus and produce up the tubing. The tool blanks off the tubing below the sleeve to isolate the lower zone.

The separation tool assembly is run on an appropriate running tool complete with a running prong. The running prong is connected to the top of the internal seal prong with a shear pin, and the running tool is attached to the lock in the normal manner. After locating the sliding sleeve, the operator jars downward to set the lock, then pulls upward to close the isolation plug in the separation tool. As this happens, a garter spring in the isolation plug moves a steel shear pin into a groove on the sealing prong, and an O-ring on the internal prong seals to isolate the tubing below the sliding sleeve. The running prong that is pinned to the top of the internal prong is then sheared, and the slickline tool string may be withdrawn from the well.

The WB-1 separation tool is retrieved using the appropriate J-series pulling tool.

