ROSS® S Remotely Operated, Shrouded Sliding Sleeve

Weatherford's *ROSS* S remotely operated shrouded sliding sleeve is a tubing-mounted sleeve within a completion installation. The *ROSS* S provides selective downhole tubing-to-tubing flow control in completion installations to enhance reservoir management and optimize production. This sleeve allows downhole flow regulation between tubing without wellbore intervention while using conventional tools. The *ROSS* S system is identical to the standard *ROSS* sliding sleeve except for the addition of an outer shroud and a standard wireline blanking plug to control flow from a lower interval without requiring an isolation packer and control-line bypass above.

The balanced-piston design requires two control lines per sliding sleeve. Application of hydraulic pressure to one line while venting the opposite line provides significant axial force to ensure the sleeve is shifted to either fully opened or closed, depending on which line is receiving pressure.

Applications

- Intelligent wells that require enhanced reservoir management and optimized production
- Wells that require shutoff of excess water or gas production
- Injection wells requiring selective isolation for improved sweep efficiency
- Remote locations that cannot be accessed with intervention equipment
- High-day-rate platforms, where intervention is cost prohibitive
- Small satellite wells with limited deck space, or footprint, for temporary installation and operation of intervention equipment
- Horizontal or highly deviated wells that require threaded pipe or coiled tubing for sliding-sleeve manipulation
- Locations where governmental regulations prohibit commingling of production fluids from multi-layered reservoirs

Features, Advantages and Benefits

- The system's outer shroud allows remote control of tubing-to-tubing flow, eliminating intervention operations to open or close a lower zone.
- The *ROSS* S sleeve can be installed above a gravel pack or sealbore packer while still allowing zonal isolation from below the packer, eliminating the need for control-line penetrations.
- Non-elastomeric sealing system ensures sealing integrity of the system, providing a longer life cycle in harsh environments.
- Standard wireline blanking plug can be retrieved for easy access to the completion below the sleeve and can be reinstalled after the operation is completed, extending equipment life.

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Features, Advantages and Benefits *(continued)*

- The sleeve's nipple, located below the plug, enables redirection of wellbore fluids, while the system's pin × pin configuration facilitates handling.
- Balanced flow areas within the system maximize production on the outside of the shroud as well as internally (equal to the tubing flow area), ensuring unrestricted flow.
- Testable control-line connections allow external testing of connections to ensure proper metal-to-metal sealing of connection points, enhancing the system's reliability.
- The sleeve uses field-proven OptiSleeve seals, providing proven reliability.

Specifications

Tool size	2-7/8	3-1/2	4-1/2	5-1/2
Maximum OD (in./*mm*)	5.555 *141.09*	7.070 *179.58*	7.701 *195.61*	9.721 *246.92*
Minimum OD (in./*mm*)	2.250 *57.10*	2.750 *69.85*	3.625 *92.08*	4.475 *113.67*
Shroud flow area (in.^{2}/cm^2)	5.91 *38.13*	9.20 *59.35*	11.79 *76.06*	16.50 *106.45*
Overall Length (ft/*m*)	13.92 *4.24*	15.75 *4.80*	16.00 *4.88*	16.17 *4.93*
Burst (psi/*MPa*)	5,000 *34.47*			
Collapse (psi/*MPa*)	5,000 *34.47*			
Maximum control-line pressure (psi/*MPa*)	7,500 *51.71*			
Maximum opening differential (psi/*MPa*)	1,500 *10.34*			
Temperature (°F/°*C*)	70° to 350° *21° to 177°*			
Type of elastomers	Non-elastomeric			
Standard plug	QN profile, unless otherwise specified			
Standard material	13% chrome, 80-ksi minimum yield strength			

Options

- Pressure rating depends on shroud size and material.
- Alternative material available, depending on environment.