



Designed to accommodate the need for an alternative to conventional toe preparation.

**SIMPLE PRESSURE INCREASE TO
INITIATE FULL COMMUNICATION**

SMART SLEEVE™

INNOVATION REVEALED

The Smart Sleeve™ is an interventionless alternative to conventional fracturing preparation for the toe section of a wellbore. By adapting field proven sliding sleeve technology, Nine Energy Service has eliminated the need for costly TCP operations, replacing it with a simple wellbore pressure increase to initiate full communication.

The Smart Sleeve™ system was designed to accommodate the need for an alternative to conventional toe preparation in today's unconventional horizontal completions. However, it works equally well when used in vertical or deviated wellbores. As always, Nine Energy Service offers a configuration tailored for your specific completion requirements, including many thread styles, material types, and a variety of activation values. The internal sliding sleeve is held in place by shear pins to guard against premature movement during deployment. Additionally, it strokes in the uphole direction to prevent accidental manual opening during intervention. The tool also features a "lock open" ratcheting mechanism to prevent de-stroking during and after use. Additionally, the sub features a redundant rupture disk 180° opposite from the other. This measure overcomes the potential issue of mis-orientation a single disk poses.

4 1/2 & 5 FEATURES

- Rupture disk values available in increments of 500 psi
- Large 9.57 in² perforated flow area, 3.38" inside diameter
- Slim 5.60" outside diameter
- Shift up sleeve configuration
- All API casing threads available upon request
- Patent Pending Technology

4 1/2 & 5 OPERATING RANGE

(Using P110 Material. Casing threads not considered.)

- 18,000 psi absolute internal pressure rating
- 15,000 psi absolute external pressure rating
- 400°F temperature rating
- 436,000 lbs tensile rating
- 12,000 ft-lbs torque rating

5 1/2 FEATURES

- Rupture disk values available in increments of 500 psi
- Large 17.54 in² perforated flow area, 4.625" inside diameter
- Slim 7.625" outside diameter
- Shift up sleeve configuration
- All API casing threads available upon request
- Patent Pending Technology

5 1/2 OPERATING RANGE

(Using P110 Material. Casing threads not considered.)

- 19,000 psi absolute internal pressure rating
- 16,000 psi absolute external pressure rating
- 400°F temperature rating
- 590,000 lbs tensile rating

Size inch (mm)	Max O.D. inch (mm)	Min I.D. inch (mm)	Length inch (mm)	Internal Absolute Pressure Rating psi (MPa)	External Absolute Pressure Rating psi (MPa)	Differential Pressure Rating psi (MPa)	Maximum Reliable Temperature °F (°C)	Maximum Tensile Rating °F (°C)	Maximum Torque Rating ft-lb (kg-m)
4.50 (114.3)	5.60 (142.2)	3.38 (85.9)	43.9 (1,115.1)	18,000 (124.1)	15,000 (103.4)	15,000 (103.4)	400 (204.4)	300,000 (136,078)	12,000 (1,659)
5.00 (127.0)	5.60 (142.2)	3.38 (85.9)	43.9 (1,115.1)	18,000 (124.1)	15,000 (103.4)	15,000 (103.4)	400 (204.4)	300,000 (136,078)	12,000 (1,659)
5.50 (139.7)	6.92 (175.8)	4.625 (117.5)	44.5 (1,130.3)	14,000 (96.5)	12,000 (82.7)	10,500 (72.4)	400 (204.4)	436,000 (197,766)	19,800 (2,737)
5.50 (139.7)	7.625 (193.7)	4.625 (117.5)	46.64 (1,184.7)	19,000 (131.0)	16,000 (110.3)	13,000 (89.6)	400 (204.4)	590,000 (267,619)	30,000 (4,148)

Values based on P110 material, plane end burst casing threads not considered.

For more information, and to find a representative near you, visit nineenergyservice.com