



N-GAGE™ SWIVEL



INTRODUCTION

The N-GAGE™ SWIVEL is a selectively engageable screen deployment swivel. It allows selective rotation of an upper drill string while allowing a screen assembly below to remain stationary. This simple yet highly effective technology assists in screen deployment in high angle wells by allowing the drill pipe to rotate without rotating the screen assembly. This reduces the friction of the drill pipe allowing additional string weight to be applied to push the screens to TD.

FEATURES

- Ceramic bearings allow extended rotation at high loads without the risk of damage to the bearing and will not become damaged by high compressive loads
- Robust spline mechanism disengages the lower string in compression and locks rotationally in tension
- Internal polymer bearings and rotating seals allow seamless rotation of the components without wear
- Available in API and Premium thread connections
- Full through bore for circulation

BENEFITS

- Allows screens to be safely deployed in long horizontal sections
- Increase well productivity by allowing longer reservoir penetration to be drilled
- Eliminates slip stick and drag problems with lower completion deployment

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APPLICATIONS

- Extended reach lower completion deployment
- Drag reduction for fishing/packer setting/liner deployment
- Wellbore clean-up



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OPERATIONAL

The N-GAGE™ SWIVEL is typically run immediately above a Running Tool used to install a Lower Completion Packer or Liner Hanger. The most common application is to allow deployment of long screen sections in extended high-angle wells, although many other applications exist.

While running the Screen Lower Completion, as the Screens are run into the horizontal section, drag tends to increase. Screen completions typically cannot be rotated without damage. Drag will increase and the neutral point will move up the string. Ultimately drag will exceed the applied weight until the string cannot move further.

Once the N-GAGE™ SWIVEL is in compression, the tool strokes closed and the engagement spline will release allowing rotation of the upper string. Rotating the upper string reduces axial drag and allows additional string weight to overcome the drag preventing the screens from being deployed.

The upper string can then be rotated into the hole, without fear of damage to the Lower Completion.

Once at depth, the through bore allows balls or darts to be pumped to activate the Lower Completion Packer or Liner Hanger. Picking the tool into tension re-engages the splines and allows the Running Tool to be backed off by left or right hand rotation.



TECHNICAL SPECIFICATIONS*

Nominal OD (in.)	Connection	Tool OD (in.)	Tool ID (in.)	Max. Length/Stroke (in.)	Seal Pressure Differential (psi)	Max. Bearing Load [§] (lbs.)	Tensile Yield [†] (lbs.)	Torsional Yield [†] (ft.lbs.)	Max. Slack-Off While Rotating (lbs.)	Burst/Collapse (psi.)	Max. Rotation (rpm.)
9.625	NC50 XT 57	8.125	2.875	114/15	5,000	1,000,000	946,768	96,000	175,000	>10,000	90

*Specifications are for marketing purposes only and may be subject to change. No warranties implied.

†Quoted value does not take external connections into consideration.

§ Not Rotating.