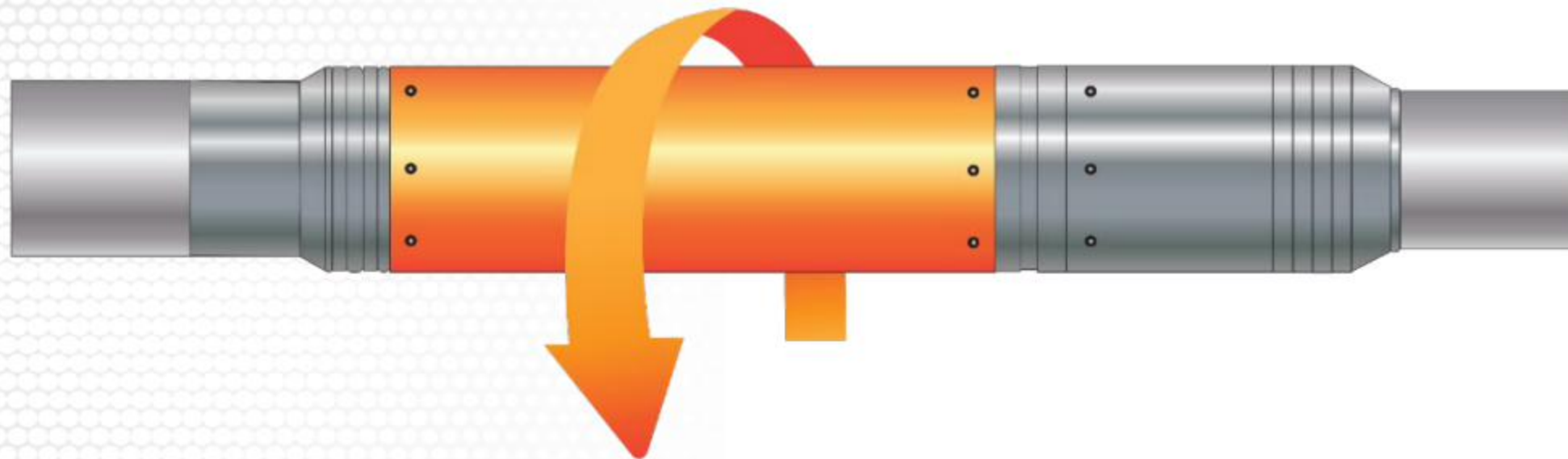


ROTAMAX™ CASING & SCREEN SWIVEL

Optimizing deployment, reducing drag,
and ensuring Completion Integrity



RotaMAX™



APPLICATION

The RotaMAX™ is a deployment casing swivel in the string. The swivel can be placed directly above the non-rotating part of the string and as deep as possible and/or allow orientation of the Anchor in MLT application at TD placed between the Anchor and the Flapper Valve together with ensuring left hand lock to ensure back up release for liner running tool.



FEATURES

- Left-hand lock for **backup release** of liner running tools
- Can run locked and **activated on demand**
- Free rotation options: left & right, or right-only with left-hand lock
- Full-bore system, **no ID restrictions**
- Reduces axial drag by up to **90%**, increases open-hole completion length



BENEFITS

- Optimizes wellbore design and length
- Reduces **axial drag and buckling**, increasing the likelihood of reaching TD
- No service personnel required, fixed price, **no operational delays**
- Ensures smoother, safer placement in long horizontal and deviated sections

TORQUE ISOLATION AND STRESS RELIEF

- Swivels act as torque breakers, decoupling sections to prevent torsional forces from accumulating.
- This mitigates left-hand torque buildup, reducing risk of backing off connections or inducing additional stress.
- Protects the lower string from helical buckling or side-loading.

SNAKE-LIKE FLEXIBILITY

- Swivels create a hinge effect: the lower string can **articulate and follow the wellbore curvature**.
- In tortuous ERD wells, the string adopts a **snake-like motion**, naturally finding the path of least resistance.

NATURAL WELLBORE CONFORMANCE

- Sand screens and liners beneath the swivel **self-align** with doglegs and undulations.
- This floating effect **lowers point stresses**, ensuring better contact along the reservoir.

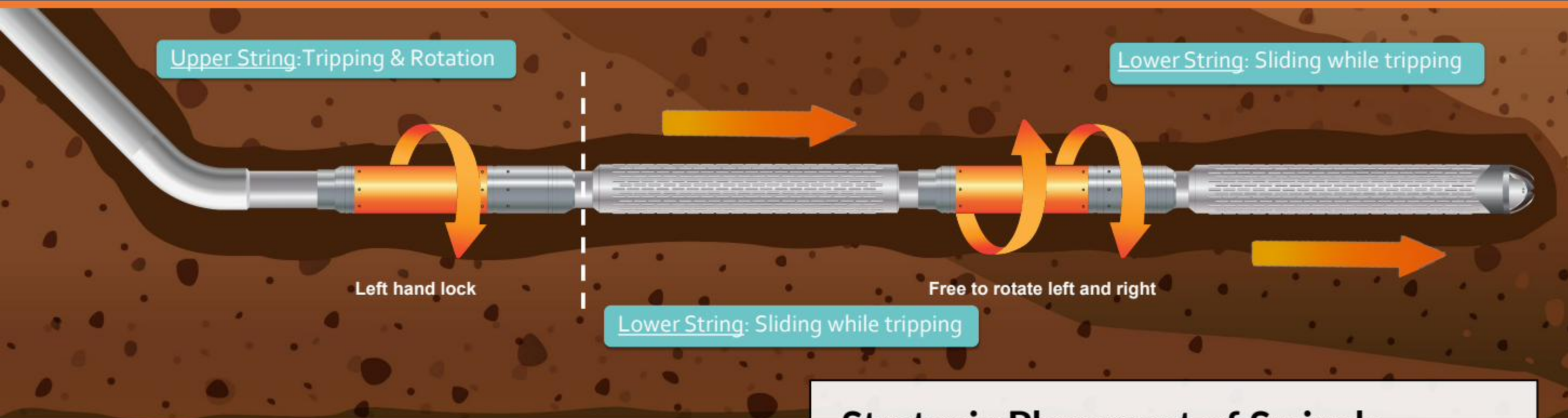
REDUCED DRAG AND IMPROVED DEPLOYMENT EFFICIENCY

- Relieving torque and lateral forces **significantly lowers friction**, reducing required weight-on-string.
- Enables operators to **run longer, heavier completions** without sticking



IMPROVE ZONAL ISOLATION

- Maximize rotational length of your completion
- Efficient Mud and filter cake removal
- Improved cement placement
- Improved zonal isolation
- Maximize the SRV (Stimulated reservoir volume)
- Increased hook load to secure deployment to TD

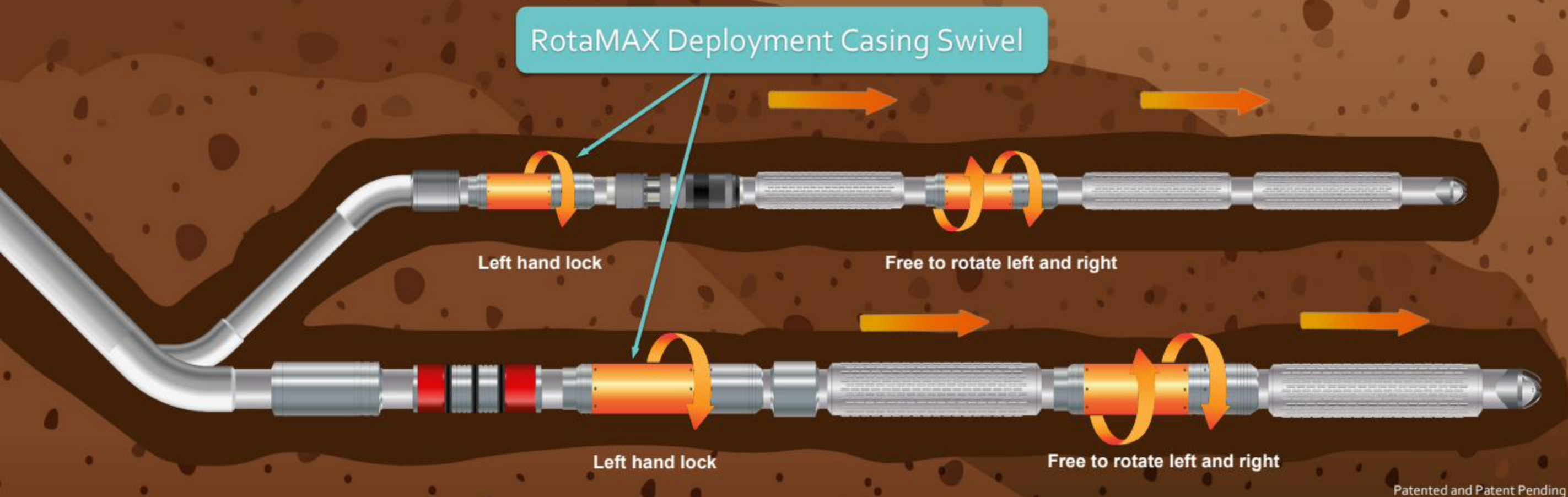


Role of Swivels in ERD Applications

In Extended Reach Drilling (ERD) wells, long completion strings—especially those with extended sand screens or liners—face severe torque build-up, drag, and buckling forces as they traverse the lateral. Strategically placed swivels in the lower completion introduce rotational freedom at key points, breaking mechanical lock-up and enabling smoother deployment. The RotaMAX casing swivel, placed on top with a left-hand lock, enhances this effect, ensuring reliable orientation and backup release in MLT applications

Strategic Placement of Swivels

- **Between Sand Screen Sections:**
Sections align independently, protecting screens from buckling.
- **Transition Points:**
Heel-to-lateral, doglegs, or tortuous zones benefit from added flexibility.
- **Mid-String in Long Liners:**
Breaks torque buildup across thousands of feet, improving weight transfer.
- **Below Anchor in MLT Applications:**
With RotaMAX, placed above the top packer and below the anchor/flapper valve for orientation, with left-hand lock as backup



Key Benefits in ERD Wells

- Extended Deployment Reach
 - Longer screen/liner sections run to TD with reduced surface force
- Lower Sticking Risk
 - Snake-like flexibility allows smoother passage in tortuous zones
- Protection of Screens & Liners
 - Less side loading, maintains sand control integrity
- Optimized Reservoir Contact
 - Natural alignment improves production performance
- Reduced Buckling Risk
 - Freer movement of lower completion
- Reliable TD Placement
 - Ensures smoother and safer deployment

CONCLUSION

The combination of swivels in the lower completion and the RotaMAX™ swivel on top with left-hand lock transforms a rigid completion string into a flexible, segmented system.

- Torque isolation, drag reduction, and natural wellbore conformance make deployment safer.
- Lower screens move freely, navigating tortuous paths without stress accumulation.
- RotaMAX ensures top-down control, orientation, and backup release reliability.

RESULT:

Safer, deeper, and more reliable ERD completions with enhanced mechanical integrity and long-term sand control performance.





NESA
ENERGY

Thank you!



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