When deploying completions, casings and liners in ERD wells to reduce drag, centralizers are often fixed to the casing or liner. They are then all turned at the same time as the casing to reduce axial drag. Consequently, as all the centralizers are fixed to the casing, this could increase the torque required to turn the casing - often beyond the connection limits. Additionally, when cementing the casing or liner, it is often not possible to turn all the fixed centralizers while cement is being circulated, which can compromise cementing integrity.

Introducing the Rubicon RotoGLIDE Ultra Low Friction FRP (Fibre Re-enforced Polymer) fixed drive composite centralizer. The RotoGLIDE includes drive teeth that when mated with the RotoGLIDE profiled stop collar, provides full rotational drive when the casing or liner is rotated and the stop collar is pushed or pulled against the centralizer. The drive speed can be fine-tuned to suit specific well conditions, maximize friction reduction and reduce stick slip, simply by varying the casing rotational speed. Should torque start to rise above safe levels, the casing can simply be raised to disconnect the centralizer drive to allow the casing to rotate and build momentum before re-engaging the drive. By rotating the centralizer with the casing when required, it will provide a significant reduction in axial friction – improving the ability to deploy the casing or liner to planned TD.

When TD is reached and axial motion is no longer required, the teeth on the RotoGLIDE are disengaged with the stop collar to provide low torsional friction as the casing runs on the low friction polymer centralizer - like a journal bearing without vibrating. This ability to facilitate rotation at TD results in improvements in cementing operations and enhanced zonal isolation.

Unlike fixed centralizers, the RotoGLIDE is not permanently fixed to the casing and is only engaged to produce rotation when the centralizer is dragging against the hole, meaning not all centralizers are engaged at the same time. This reduces the amount of torque required to turn the casing compared with fixed centralizers.

Indeed, when the RotoGLIDE centralizer does engage with the rotating casing and stop collar, there is a marked reduction in axial friction resulting in reduced drag. This effect is repeated at each centralizer as the casing is rotated and lowered into the wellbore providing significant reduction in friction and improvement in deployment efficiency.

The RotoGLIDE tools are a derivative of the highly successful field proven EzeeGLIDER® with the added feature of drive teeth on the centralizer and drive profiles on the heavy duty stop collars. These features have been tested for wear with applied loads and provide continuous drive while rotating the casing for extended periods in excess of most casing/liner deployment operations.
Rubicon RotoGLIDE centralizers were developed to address the challenges of deploying casings and completions in ERD, Horizontal and high angle wells. These main challenges are:

- Centralizers when fixed to the casing or liner result in increased torque and often exceed connection limits or prevent rotation while cementing
- Axial friction
- Radial friction
- Cement bonds and zonal isolation due to lack of rotation
- Wellbore tortuosity
- Dog leg severity
- High side force
- Helical buckling

Rubicon RotoGLIDE centralizers address these challenges, improve and assist by:

- Providing temporary rotation of each centralizer when required to reduce axial friction
- Reducing drag for running casings, liners or sand screens
- Reducing torque to rotate Liners while cementing
- Providing low friction, high wear resistance
- Mitigating helical buckling by reduction in torque and drag.
- Improving zonal isolation by aiding rotation while cementing

**Features**

- Drives each centralizer independently
- No difference between static and dynamic friction and low coefficient of friction
- Drive profile on stop collar(s)
- Available for both uni-directional and bi-directional applications
- Ultra-low axial static and dynamic coefficient of friction
- Proven wear resistance and toughness
- High thermal stability
- High impact resistance
- High compressive and tensile strength
- Short compact design to fit onto screens

**Customer Benefits**

- Rotation combined with composite material provides a significant reduction in axial friction
- Rides over ledges and short design does not stiffen the string
- Does not increase torque to turn pipe while cementing
- Turns easily around high dog leg severity
- Toughness and abrasion resistance to address high side forces
- Greater than normal reduction in drag reduces helical buckling
- Extends the current well construction boundaries on high step out wells
- Should casing or completion fail to reach TD then low drag aids removal from the wellbore
- Light weight - improves manual handling
- Assists passage through casing exits and multilateral junctions
- Low start up torque

**MAKING IT BETTER**

Whether it be vertical, horizontal or ERD wells, cased or open hole applications, or weak formations, Rubicon’s broad selection of centralizers are playing a key role in reducing torque and drag and reaching planned TD.

Rubicon RotoGLIDE casing tools provide our industry with the ability to rotate the entire casing string to reduce drag significantly while rotating allowing the ERD envelope to be pushed ever further.