

RIVAL FRICTION REDUCTION TOOL (FRT)



The **Rival Friction Reduction Tool (Rival FRT)** is a downhole friction reduction technology that, when paired with a Shock Tool, creates an axial oscillation along the drill string to increase steering efficiency, rates of penetration, and practical reach in drilling and completion operations.

Key **Differentiating Features** of the Rival FRT Design:

- The utilization of proven drilling motor style thrust and radial bearings improves **run reliability** and **component life predictability**.
- Rolling thrust bearings versus sliding thrust bearings reduce friction over the course of a run, **improving life** of valve system.
- Placement of the valve above the power section **improves shape and effect of pressure pulse**.

Tool Size (OD)	2-7/8"	5-1/8"	7-1/8"
Overall Length	87"	132"	183"
Weight	95 lbs	525 lbs	1200 lbs
Recommended Flow Range	126-168 gpm	350 gpm	700 gpm
Temperature Range	300°F	340°F	340°F
Operating Frequency	6.5 Hz@136gpm	8 Hz@300gpm	10 Hz@600gpm
Operating Average Pressure	1200 psi*	600 psi*	625 psi*
Operating Pressure Spike	1000 psi*	400 psi*	500 psi*
Max Pull (pooh 90%)	180,000 lbs	660,000 lbs	1,350,000 lbs
Max Pull (rerun 65%)	130,000 lbs	475,000 lbs	1,000,000 lbs
Connections	2-3/8" PAC	3-1/2" IF XT39 GPDS40 GPDS42	4-1/2" IF

* Expected

Rival FRT **Value** and **Benefits**:

- Improves sliding ability and tool face control for **steering operations**.
- More **efficient weight transfer** to bit reduces stick slip and increases ROP.
- Reduces drill pipe buckling.
- Use two Rival FRT's in a **tandem application** for extended reach wells.
- The Rival FRT can be run in oil-based mud and hot hole, high temperature

