

TOUGHMET 3 TS95 VALVE ROD GUIDE BUSHING COUPLING

The ToughMet 3 Valve Rod Guide Bushing Coupling is Materion's newest solution for eliminating production interruptions in artificial lift systems. It is installed directly above the pump connecting the rod string to the pump drive rod. By reducing HIT failures in an area prone to extreme rod buckling and tubing wear, this oversized coupling provides the opportunity to avoid costly workovers and lower production costs.



THE TOUGHMET VRGB COUPLING:

- Is installed on top of the valve rod bushing
- Acts as a centralizer for the bottom of the rod string
- Prevents the valve rod bushing from wearing out production tubing due to a thicker body design
- Eliminates tubing leaks by preserving adjacent production tubing
- Survives metal-on-metal contact with tubing wall
- Withstands high impact loads from rod buckling

Dimensions:

- 2" outer body diameter
- 3/4" rolled threads
- 4" long

MATERION'S HIGH PERFORMANCE TOUGHMET 3 TS95

The ToughMet 3 TS95 VRGB coupling is made from a cold worked and spinodally hardened copper-nickel-tin alloy. A unique alloy system and special processing give ToughMet 3 TS95 unparalleled material properties for oil field applications.

- **Strength**- ToughMet 3 TS95 is the strongest coupling material available that mitigates coupling on tubing wear
- **Upgraded fatigue strength**- mechanical stability to survive artificial lift loading cycles
- **Increased fracture toughness**- high charpy impact energy for well tortuosity
- **Low friction**- unmatched wear and galling resistance for longer life and preservation of steel production tubing
- **Corrosion resistance**- ToughMet does not crack in hydrogen sulfide and is resistant to general weight loss corrosion in sweet and mildly sour wells and CO₂ corrosion.

FRICITION OF MATERIALS IN CONTACT WITH CARBON STEEL

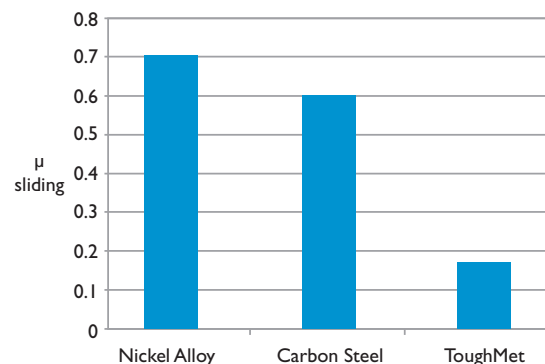


Figure I-T and Spray Metal couplings exhibit similar sliding friction coefficients to the carbon steel and nickel alloy, respectively.

MINIMUM MECHANICAL PROPERTIES

Alloy	0.2% Offset Yield Strength (ksi)	Ultimate Tensile Strength (ksi)	Elongation (%)	Hardness (HRB)	Impact Toughness (ft-lbs)	10 ⁸ Cycle Fatigue Limit (ksi)
ToughMet 3 TS95	95	106	18	97	30	40

For more information, please call 1-216-486-6280 or visit materion.com/couplings

