

Multi-Lobe Torque™ (MLT) Rings



APPLICATIONS & ADVANTAGES

CASING RUNNING

- Positive torque shoulder increases torque capacity of API threads in drilling. Highest torque performance is achieved with API Buttress threads.
- Improves cementing operations, allows rotation of casing and liners without thread damage. This is particularly effective when used on problem wellbores with top drive and casing running systems.

TUBING WORK STRINGS

- Positive torque shoulder provides enhanced torque capacity for API EUE tubing used in work strings.
- Reduce rethreading costs. Torque shoulder prevents over make-up (surface and downhole) while extending thread and seal life by controlling coupling and pin stresses.

TUBING PRODUCTION STRINGS

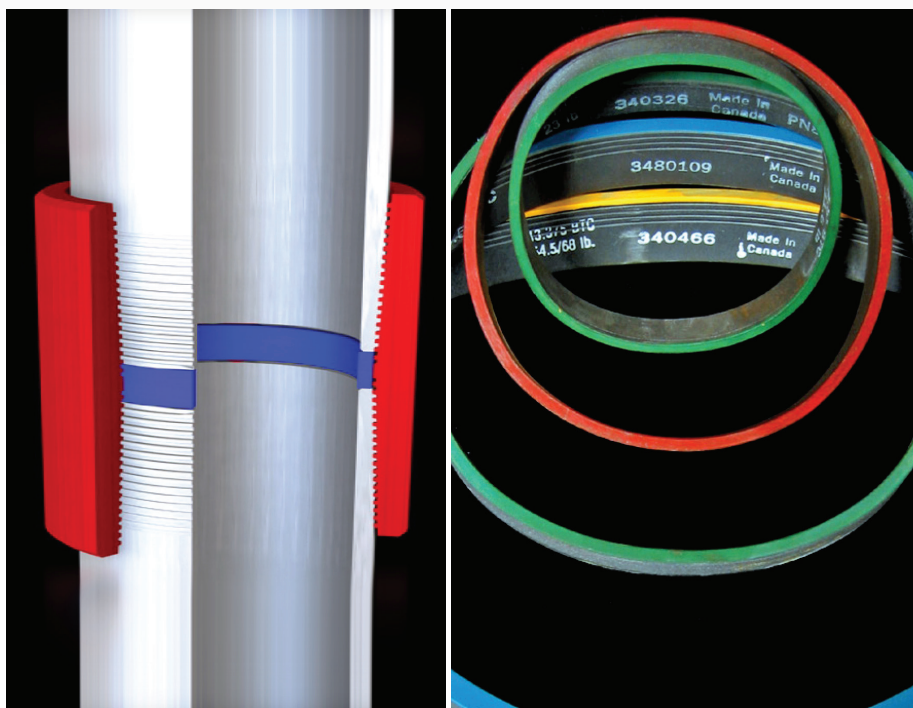
- Reduce wear and thread damage during breakout. Smooth bore reduces turbulence and erosion while improving flow performance. Sand and debris are blocked from entering threads.
- Higher connection torques eliminates the need for progressive cavity pumps anchors in production tubing strings and reduce connection back-off.

EASY TO USE AND FIELD PROVEN

- MLT Rings are compatible with full API make-up tolerances through selection from four lengths for each size and weight of casing or tubing.
- MLT Ring installation is fast and easy and can be done at well-site, pipe yard, and/or pipe mill.

COST SAVINGS

- MLT Rings fit standard API “off the shelf” casing and tubing connections and extend the utility and value of Oil Country Tubular Goods (OCTG) inventories.
- MLT Rings offer a new strategy for cost savings.



DESIGN & FEATURES

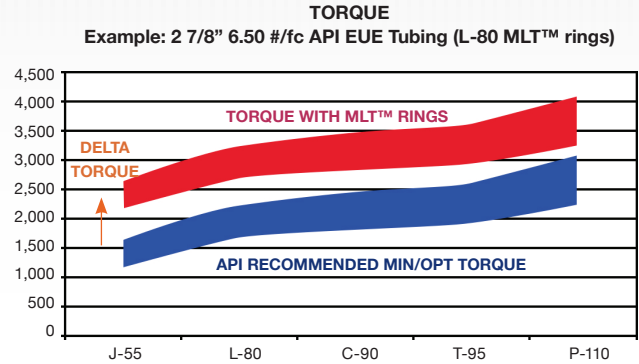
- MLT Rings provide a positive make-up shoulder when installed in standard API Round and Buttress threaded and coupled connections. The Multi-lobe ring shape and OD surface-finish hold rings firmly in place during transporting, handling, and running casing.
- The positive shoulder provides a dual benefit of (a) increasing torque capacity (termed Delta Torque), allowing use of API casing and tubing connections in drilling and work-over applications, and (b) preventing couplings and pins from being overstressed, particularly relevant for extending thread life and reducing rethreading cost of API tubing.
- MLT Ring sizes are specific for pipe size (OD), weight (wall thickness), and API connection type (EUE, STC, LTC, BTC), balancing flexibility with high torque capacity.
- The MLT Ring inner diameter creates a flush geometry with the casing which enhances flow efficiency while protecting threads from debris.
- MLT Rings are easily field installed and are made from API specified steel grades. The standard grade is L-80 with the option to increase torque capacity utilizing higher strength grades.

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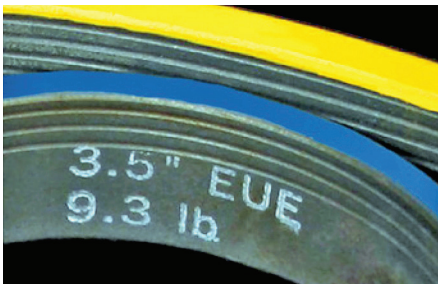


TECHNICAL SPECIFICATIONS (Availability with API connections*)				
SIZE	EUE	STC	LTC	BTC
2-3/8"	✘			
2-7/8"	✘			
3-1/2"	✘			
4-1/2"		✘	✘	✘
5-1/2"		✘	✘	✘
7"		✘	✘	✘
8-5/8"		✘	✘	✘
9-5/5"		✘	✘	✘
13-3/8"		✘		✘

* Other items available upon inquiry



*DELTA TORQUE is the torque boost added to the normal make-up torque, referred to as "shoulder torque". Higher torques may be available with higher strength MLT Rings.



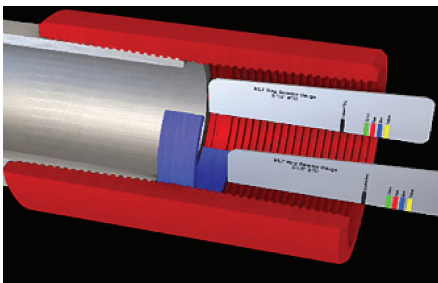
MLT Rings are color coded to 4 specific lengths to accommodate full API make-up tolerances.



The shoulder prevents over penetration of the pin in coupling and flush to the inner diameter which improves flow performance and keeps debris from the coupling threads, improving connection life through repeated make-break cycles.



INSTALLATION OF MLT RING IS FAST AND EASY



MLT Ring selection is made simply with a tool inserted into the end of the coupling.



Installation is fast and easy with a simple handheld hydraulically actuated tool. Rings can be installed in the field, pipe yard, and/or pipe mill.

