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We do - you succeed!

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UPGRADING YOUR API THREADS

How to go from API to the FCR Ring

The TDI FCR connection provides the following benefits:

The TDI FCR connection system is a means of extending the performance of your API connections both in tubing and casing.

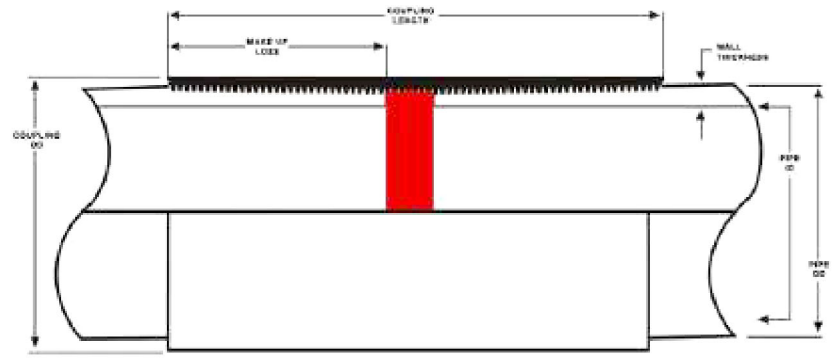
The FCR ring is a "patented" drop-in or press fit convertible metal ring that occupies what would be the open "J" area of an API connection. In conjunction with the special pin end finish, the design permits the pin ends to shoulder in the coupling, providing a high torque, power tight make-up.

The FCR ring enhances the connection's structural strength and provides an axial metal-to-metal seal to complement the thread seal.

Also, the use of the FCR Ring results in an internally flush bore for improved bending, compression and torsional resistance, especially for Drilling with Casing (DWC) and horizontal coal bed methane (CBM) and shale gas drilling where the casing has to be rotated into the well prior to cementing.

We have a range of data sheets from 2-3/8" to 4- 1/2" tubing sizes and, from 5-1/2" to 20" casing sizes. These data sheets and the complete price list for all sizes, weights and grades are available upon request.

TDI-FCR



Typical Data Sheet

9-5/8 (9.625)" OD 47.00 lb/ft L80 BTC

Pipe

Plain End Weight	Wall Thickness	Inside Diameter	Drift Diameter	Plain End Area	Longitudinal Plain End Yield	Internal Yield	Collapse Pressure
Lbs/Ft	Inches	Inches	Inches	Sq. Inches	Lb	PSI	PSI
46.14	0.472	9.681	8.525	13.572	1,085,800	5,870	4,760

Connection

Coupling Outside Diameter		REGULAR Coupling Length	REGULAR Make-up Loss	Longitudinal Joint Strength (Pipe Body)
Standard	Sp. Clearance			
Inches	Inches	Inches	Inches	Lb
10.625	10.125	10.625	4.873	1,122,000

Pressure

Internal Pressure Resistance
PSI
6,870

Torque

Using MIN PFW Pin Face Width 75%	Min. Ft-lb	Opt. Ft-lb	Max. FT-lb
Est Make-up Torque	8,500	9,500	10,500
Delta Torque	9,050	21,875	35,125
Total Torque	17,550	31,375	45,625

Compression

Maximum Lb
740,000

Bending

Max. Bend Radius
*/100"
31"

Tension

Max. Rec. Setting Depth	
Feet	S.F.
14,920	1,6

Note:

Delta Torque is the torque applied after nose/center ring contact.
Delta Torque is 75% of recommended to allow for Minimum PFW.
Add the makeup torque to the Delta Torque to obtain the total torque

Caution: Est Make-up Torque values and Final Field Torque Values are approximation and for guidance only.

UPGRADING YOUR API THREADS

Upgrading your API Buttress, LTC or STC Threads

How to go from -

This to this to this

OPEN "J" AREA

FCR RING

INTEGRAL

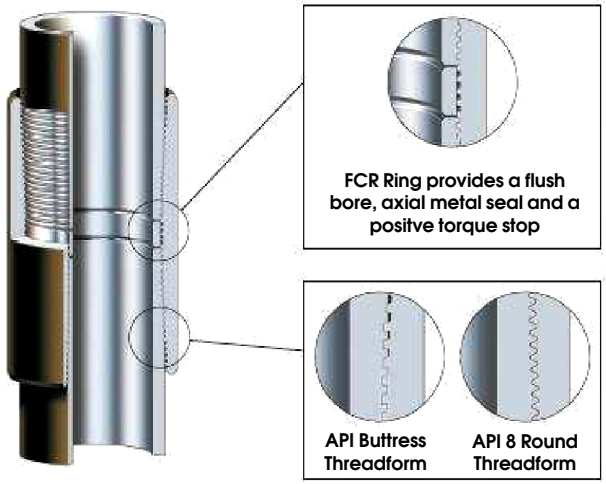
UPGRADING YOUR API BUTTRESS, LTC AND STC THREADS

TKC API Buttress, STC and LTC Connections with FCR Torque Ring Shoulder For Casing

A Tough Drilling with Casing (DWC) Connection

Advantages:

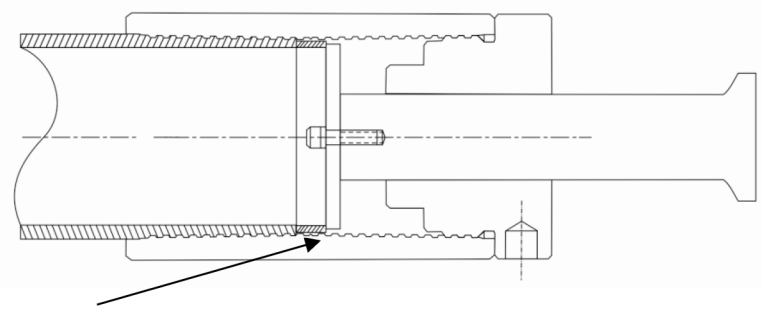
- Converts your API Buttress, STC or LTC, to a high torque superior connection. No need to purchase expensive premium pipe in advance.
- Rugged 90 deg. Shoulder prevents further down-hole make-up torque while rotating in the hole.
- FCR rings can be easily transported to any location and inserted in the coupling box on the pipe in the field with supplied insertion tool.
- API Buttress, STC and LTC pins can be cut at almost any machine shop world wide.
- The FCR Torque rings ensure multi – tripping capabilities with 100 percent pressure containment.
- An excellent connection for operators who wish to use the Drilling with Casing (DWC) techniques.



The FCR ring offers a positive Torque Shoulder For Casing

All field pins are qualified by gauging to API specs prior to installation of the FCR ring in the Coupling.

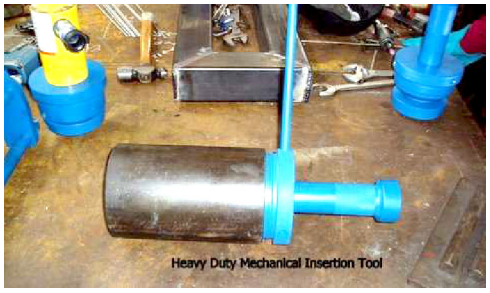
FCR Ring - Manual Insertion Tool



Strike position

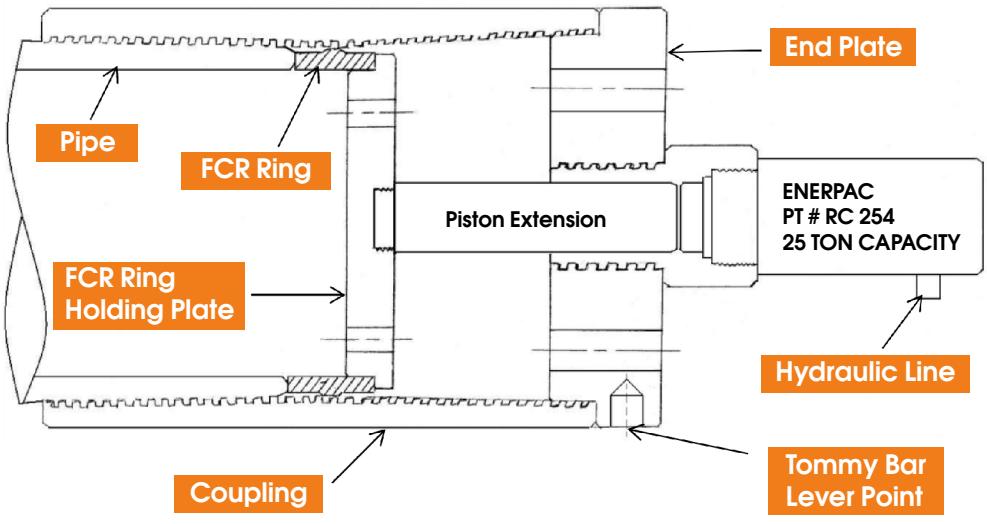
There is an interference fit between the crest of the coupling threads and OD of the FCR Ring

Final position before tapping home the FCR Ring with a hammer



After placing the FCR Ring on the end plate make up the tool on to the first three threads of the coupling.
This holds the tool and ring in the center of the coupling

FCR Ring - Manual Insertion Tool



Place the FCR Ring on the end plate. Locate the hydraulic tool on the pipe shoulder of the coupling, engage the first three threads of the tool by using a tommy bar as a lever. Ensure the tool is firmly engaged on the first three threads of the coupling, before engaging the hydraulic pump to drive home the FCR Ring on to the Mill End pin nose inside the coupling.