

# TenarisXP® Buttress Connection

## Scope

These guidelines apply specifically to the use of TenarisXP® Buttress connections. This document should be used in conjunction with the TenarisHydril Running Manual, which is the main document applicable to the running of all TenarisHydril premium connections.

TenarisXP® Buttress connection is a Buttress threaded connection with a positive stop torque shoulder, compatible with API Buttress connection (restricted capability, dependent upon what is required of the connections when assembled).

## References

- TenarisHydril Running Manual.
- Premium Connection Approved Thread Compounds TSH-MD-00.0002.
- TenarisXP® Buttress Buck on Instructions TSH-MD-25.0003.
- API Specification 5B.
- API Recommended Practice 5C1.
- API Recommended Practice 5A5.

## Equipment, Material & Documents

1. Verify the appropriate thread compound is available for this connection.
2. Refer to document TSH-MD-00.0002 for a list of thread compounds approved by Tenaris.

3. Latest version of the specific Product Data Sheet can be obtained from Tenaris web site. In case it is not available, request the data sheet from the local Technical Sales representative or [contact-tenarishydril@tenaris.com](mailto:contact-tenarishydril@tenaris.com).

## Pre-Running

1. Never move or handle pipe without the correct thread protectors securely in place.
2. Ensure connections are clean and free of all debris and / or contaminants, cleaning methods employed should conform to the recommendations contained within the TenarisHydril Running Manual.
3. Verify all pipe and accessories have genuine TenarisHydril manufactured connections.
4. Visually inspect threads, pin nose and couplings prior to running, ensuring no damage is evident.
5. Verify the compatibility of the TenarisXP® Buttress connection with accessories such as cement heads, safety valves, cross overs, etc.
6. Verify material grade of all accessories ensuring compatibility with main string.
7. If TenarisXP® Buttress Seal Ring (SR) variant is being run ensure the correct type and quantity of seal rings are available.

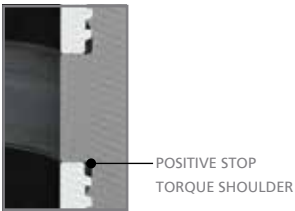
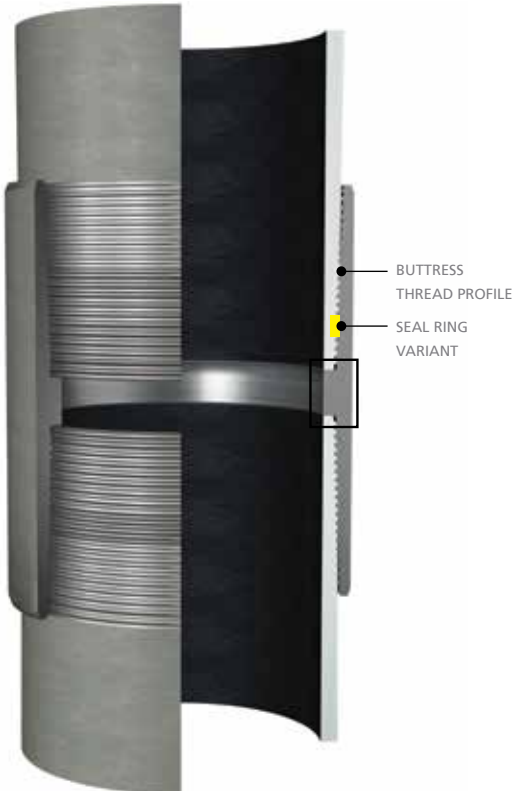
## Inspection

1. Visual inspection guidelines as outlined in API RP 5A5 should be applied.
2. Pay particular attention to pin nose and box torque shoulder ensuring there is no raised material which may preclude correct make up.
3. Ensure threads are clean and free of any debris or contamination.
4. Check the condition of the seal ring of TenarisXP® Buttress-SR variant.
5. Ensure the seal ring has no cuts, gouges or tears.
6. Ensure the seal ring is correctly seated with no proud areas which may cause the ring to be displaced during make up.
7. TenarisXP® Buttress connection will be identifiable by a 1" wide Magenta band painted round the coupling OD opposite the grade identification bands.
8. TenarisXP® Buttress with a regular API coupling OD will have two magenta paint bands.



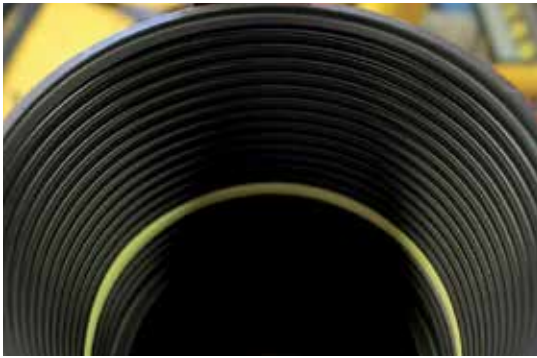
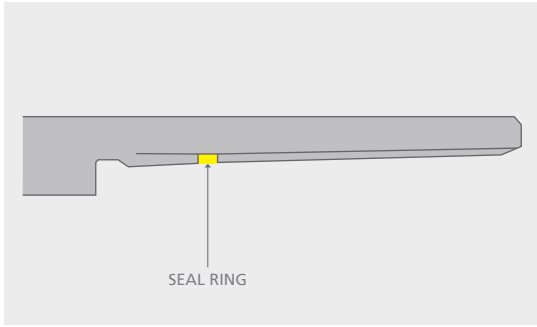
TXP® Buttress Coupling.

# TenarisXP® Buttress Configuration



## TenarisXP® Buttress Seal Ring Variant

1. The Seal Ring (SR) variant of TenarisXP® Buttress connection is designed to enhance the sealing capability of the original connection.
2. If the seal ring variant is ordered they will be delivered directly from the mill with the SR installed.
3. Seal rings are designed to be used once, therefore they must be replaced after every make up.
4. Prior to make up ensure the seal ring is undamaged and securely installed.
5. When replacing a seal ring ensure the groove is undamaged, clean and free of debris.
6. Only seal rings specifically manufactured for TenarisXP® Buttress connection can be used, ensure these are not mixed with other types of seal rings, such as corrosion barrier rings.
7. TenarisXP® Buttress seal rings are yellow therefore easily identifiable.
8. Install the seal ring as indicated in the TenarisHydril Running Manual FGL and CB® options section.
9. Ensure the seal ring is seated into the groove completely to prevent thread compound extruding the ring as the connection makes up.
10. Seal rings for any given size are compatible with connections of different weight.
11. Protectors specifically designed for the seal ring variant must be used in order to prevent damage and / or displacement of seal ring from the coupling groove.



**12.** As can be seen in the above photograph, when correctly installed the seal ring sits evenly and concentrically within the groove.

## Thread compound application



1. Apply thread running compound to both pin and box ends, covering all threads and shoulder areas.
2. The compound should be applied as a continuous even film round the entire circumference of the connection, the thread form should be clearly visible.
3. When applying thread compound to the TenarisXP® Buttress Seal Ring variant, ensure the seal ring is securely seated to prevent thread compound being pushed under the ring which may cause it to dislodge during assembly.
4. For Tenaris approved thread compounds, apply the friction factor indicated in TSH-MD-00.0002. For thread compounds other than those listed, apply the thread compound manufacturers indicated friction factor.

## Thread Lock Application



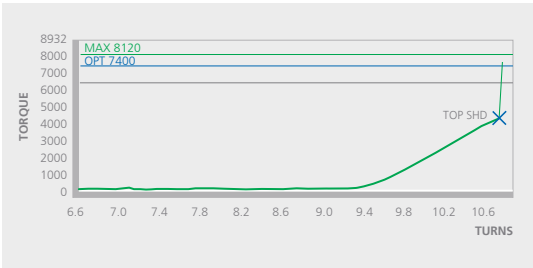
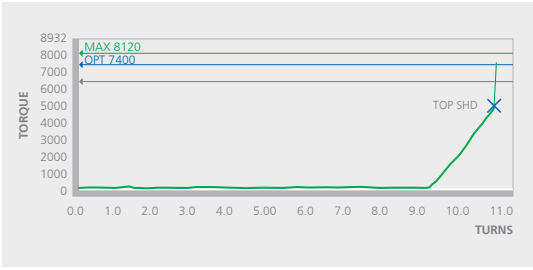
Connections must be clean and dry when applying thread lock.

1. Apply thread lock to the 50% of the pin threads furthest from the pipe body.
2. Apply the thread lock manufacturers indicated friction factor.

## Torque Application

1. Torques for TenarisXP® Buttress connection should always be taken from the latest TenarisHydril product data sheet.
2. The use of torque turn computer equipment is not necessary to make up TenarisXP® Buttress connection.
3. If torque turn computer equipment is used the guidelines indicated in the Blue® and Legacy Series Make up Acceptance section are applicable.
4. If using torque turn computer equipment the make up graphs should look similar to the ones below.





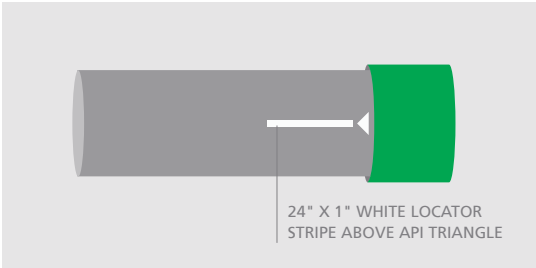
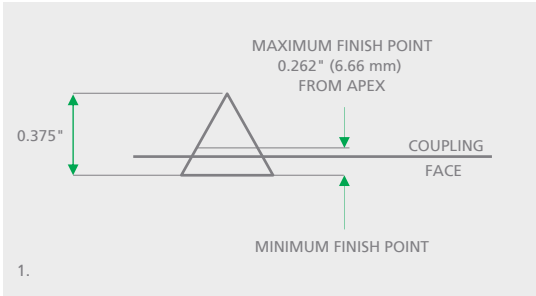
5. Shoulder point should be clearly observed on the torque turn graph.

Shoulder point should fall between reference torque and minimum make up torque parameters. However, should shoulder torque exceed minimum make up torque then the connection can still be accepted if the following conditions are met: 1) final make up torque is within minimum and maximum make up torque values, 2) shoulder point is clearly visible, and 3) the graph profile meets Running Manual guidelines.

## Running

1. To avoid cross threading stab pipe in a smooth controlled fashion ensuring the pipe is vertical when doing so, continue to support and stabilise the pipe throughout the stabbing and make up operation.

2. Upon commencement of initial rotation use low RPM (5 RPM or below) in order to ensure the pipe has not cross threaded during stabbing.
3. If cross threading is evident, immediately reverse rotate the pipe slowly, break out and inspect both connections.
4. Maximum spin in speed should not exceed 15 RPM.
5. Apply power tong at low RPM (do not exceed 5 RPM) for final make up.
6. The make up criteria for TenarisXP® Buttress connection is the attainment of optimum torque along with the coupling face final position. As in the assembly of API Buttress there is a triangle stamped on the pin end which is used as a visual verification of correct assembly of the connection. Final position of the coupling face after make up should be anywhere from the base of the triangle to 70% below the apex. On average the coupling face should finish 25% of the height of the triangle stamp after application of the recommended make up torque (75% from Apex). The coupling face should never exceed 30% of the triangle height at final make up. If it does, break out the connection and inspect for deformation of pin nose bevel and box torque shoulder, if none is evident repeat doping and make up process. See diagram 1 below:



**7.** To make up API Buttress connections, API 5B states; 'The face of the coupling advances to within one full thread turn of the base of the triangle stamp for minimum power tight make up and to the apex of the triangle for maximum make up'.

## Interchange Capability

Compatibility of TenarisXP® Buttress connection and non Tenaris manufactured API Buttress is completely dependent on what the user requires from any given mix of API and TenarisXP® Buttress connections.

The make up criteria with resulting torque and compression capabilities of any given combination are indicated in Table 1.

Table 1

TenarisXP® Buttress and API Buttress Interchange Capability				
PIN END	TENARIS MANUFACTURED	BOX END	ASSEMBLY CRITERIA	TORQUE & COMPRESSION CAPABILITY
TenarisXP® Buttress	-	TenarisXP® Buttress	TenarisXP® Buttress	TenarisXP® Buttress
TenarisXP® Buttress	-	API Buttress	API Buttress	API Buttress
API Buttress	Yes	TenarisXP® Buttress	TenarisXP® Buttress	TenarisXP® Buttress
API Buttress	No	TenarisXP® Buttress	API Buttress*	API Buttress

(\*) WHEN ASSEMBLING A NON TENARIS MANUFACTURED API BUTTRESS PIN INTO A TENARISXP® BUTTRESS BOX THE FINISH POINT OF THE COUPLING FACE SHOULD NOT EXCEED THE TRIANGLE BASE.

Certain API Buttress box accessories are manufactured with a shoulder, these are not TenarisXP® Buttress specification. Best practice in each case is to measure the distance from the shoulder of the accessory to the box face and mark this make up loss length alongside the triangle of the TenarisXP® Buttress connection to be assembled. Any discrepancy in length of the box to that of the maximum make up point of the TenarisXP® Buttress will then be identifiable, thereafter the decision of what make up criteria to apply can be

discussed and agreed. The criteria applied will be dependent upon what is required of the application. There may be a situation where, to achieve the torque capability of TenarisXP® Buttress, the accessory face will have to finish higher up the TenarisXP® Buttress triangle in order to achieve shoulder contact. However the coupling face should never exceed the triangle apex, even if shoulder contact is not achieved.

## Pulling

1. Automatic stabbing system or stabber is highly recommended to maintain the pipe in a vertical position.
2. The use of a weight compensator is highly recommended for large OD and heavy weight pipe.
3. Apply the back up tong jaw low on the coupling (over mill end section of the coupling), leaving the field end free.
4. Apply power tong in low RPM (3-5 RPM) to break out the connection, ensuring the pipe is stabilized during the break out process.
5. Maximum spin out speed should not exceed 15 RPM.
6. Visual inspection is recommended to classify the thread condition. Any rejected connections should be clearly marked and segregated for further investigation.
7. If the Seal Ring variant, it may be advisable to remove the seal rings as the connections are pulled.
8. Apply clean dry thread protectors after applying storage compound on the connections.
9. Storage / thread compound should always be applied to connections post job, even rejects.