IPSCO CONNECTIONS
RUNNIG MANUAL

BPN

Tenaris

BPN

In addition to this section, ensure that all instructions from the GENERAL GUIDELINES section starting on page 9 are followed. Refer to the Pre-run Checklist on page ¡Error! No se encuentra el origen de la referencia.¡Error! No se encuentra el origen de la referencia.¡Error! Marcador no definido.¡Error! No se encuentra el origen de la referencia. to aid in proper running of BPN connections.

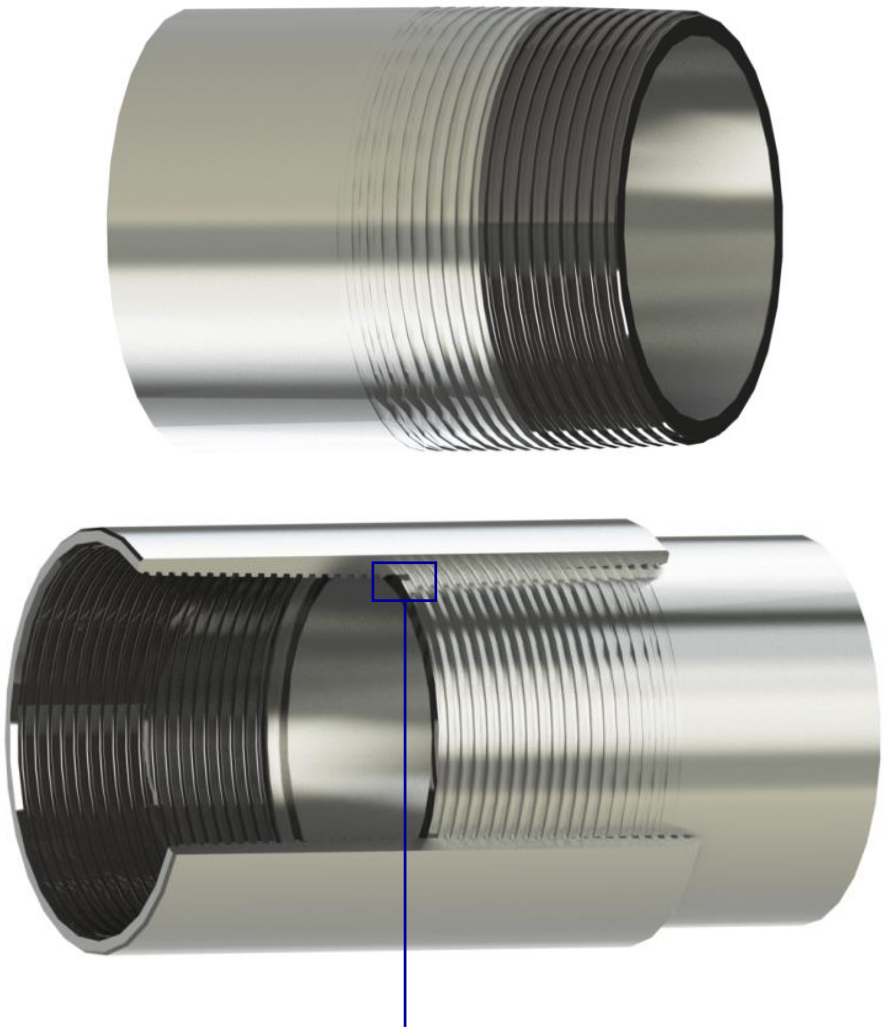
Interchangeability

1. BPN pins are interchangeable with API BTC and with different weights of the same nominal OD. However, the connection is limited to all the mechanical properties of the weakest pin including the make-up torque and downhole rotation.
2. Interchanging pins between weights will not provide an internally flush connection.

3. When making up a BPN pin into an API BTC coupling, API make-up procedures take precedence.
4. When making up an API BTC pin into a BPN coupling, BPN procedures prevail.
5. Never make-up past the base of the triangle or beyond the maximum make-up torque when using a BPN coupling.

Thread Compound Application

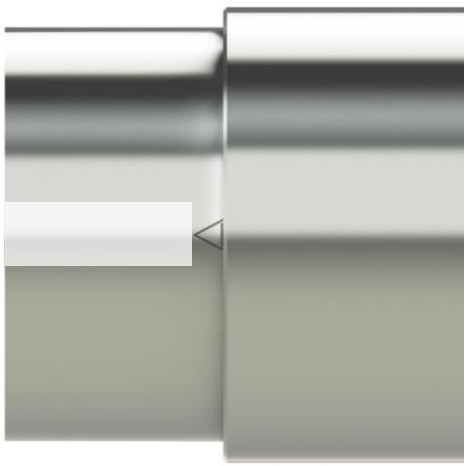
1. Tenaris recommends the use of thread compounds that meet or exceed ISO 13678 or API RP 5A3 requirements.
2. The use of an applicator "moustache" brush is recommended for the box and a paintbrush for the pin to best control the application and quantity of thread compound.
3. Inspect that the brush is clean and free of any dirt. If the brush has been recently cleaned, make sure that no water or other foreign debris remains in the bristles.
4. Water that is on the brush, connection, or in the running compound bucket must be completely removed before applying the compound. The brush and connection can be dried with a clean rag.
5. Apply an evenly distributed light coat of thread compound to the pin and coupling as demonstrated in the graphics below. A "light coat" means that the machined thread profile can be clearly and distinctly seen, with no more than 30% of the thread height filled with thread compound. Do not fill the dope pocket (see coupling diagram).



Make-up

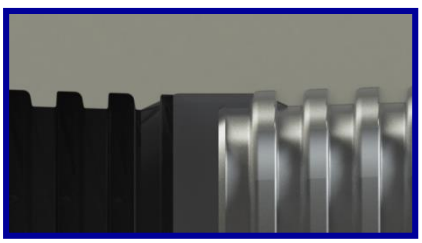
Do not fill thread compound

1. The BPN connections may be made up without the preferred method of a torque turn graph.
2. Make-up the first 10 joints at a low speed (1-3 RPM) until a shoulder is observed with some additional delta torque and record the shoulder torque values. Do not exceed the maximum make-up torque.
3. For make-up without a torque turn graph, the torque shoulder is indicated when the torque gauge needle spikes.
4. The minimum make-up torque specified on the data sheet is for reference and adjustment to this value may need to be determine in the field. The field stablished make-up will be the higher of:
   - Data sheet minimum make-up torque
   - Highest shoulder torque observed + 10%
5. Make-up the remainder of the string to a torque value high enough to ensure shoulder torque +10% additional torque. In most cases the optimum make-up torque specified on the data sheet will be sufficient to ensure this.
6. All make-ups must have an observable shoulder.
7. A 4" long stripe is painted on the mill end pin and a 24" stripe is painted on the field end pin to aid in locating the triangle.
8. Make-up of BPN connections can be verified by checking that the base of the triangle is aligned with the coupling face ± 1/16".
9. Check position of the triangle stamp randomly with a frequency of 1 in 10 joints if no torque turn graph is available.



Make-up Torque

1. The specified minimum make-up torque in the data sheet is for reference only.
2. The specific make-up torque used during the casing run may be adjusted anywhere between the minimum make-up torque established in bullet point 4 of the above Make-up section and the maximum make-up torque. This is to allow flexibility to work within the capabilities of the equipment used for make-up.



3. The specified maximum make-up torque in the data sheet should be used as the highest recommended make-up torque for normal operations.
4. Add 10% to the optimum make-up torque when using thread locking compound. A torque shoulder must be visible for proper make-up.

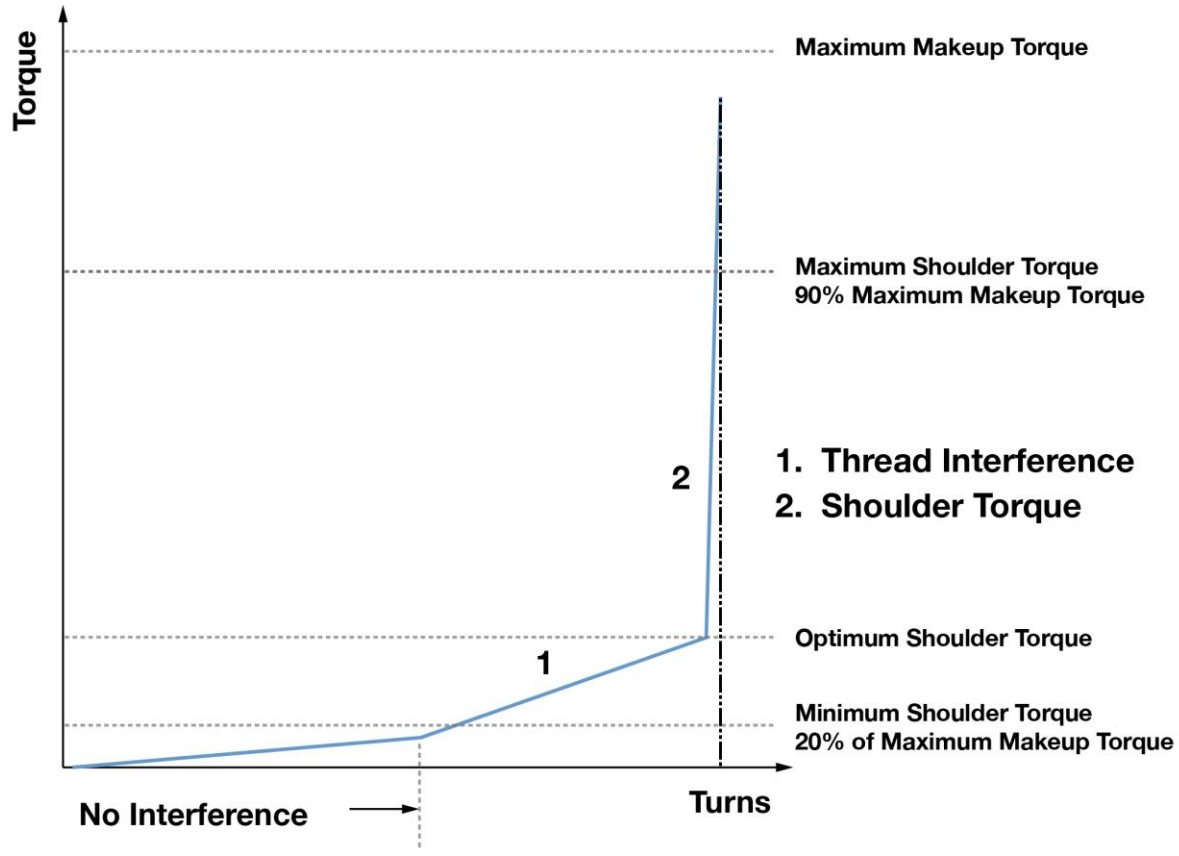
Make-up RPM

1. Initial RPM shall start in high gear with a low torque and high RPM.
2. Switch to low gear before the shoulder engagement appears in the torque turn graph.
3. The below table lists the approximate recommended make-up RPM for the BPN connections.

TARGET MAKE-UP RPM		
OD	INITIAL RPM	FINAL RPM
4 – 5 ½	30	15
6 ⅝ – 7 ⅝	20	10
8 ⅝ – 9 ⅝	15	7
10 ¾ – 14	10	5
16 ≥	8	4

Shoulder Torque

1. The shoulder torque shall be clearly visible at a minimum of 20% of maximum make-up torque and at a maximum of 90% of maximum make-up torque, with a minimum delta torque of 10% of shoulder torque and with a 0.015 – 0.080 delta turn range.
2. If the shoulder torque is outside of these specifications, break out and inspect the pin and coupling.
3. A large torque increase prior to 1 turn from shouldering may indicate a problem in make-up such as cross threading or galling.
4. Ensure the mill end pin is made up to half way the coupling length to prevent a low or high shoulder torque.
5. See the example graph below that demonstrates the make-up limits for BPN connections.



Spinning Coupling

1. Ensure the mill end pin is made up to the center of the coupling to prevent spinning couplings.
2. Tenaris allows coupling movement of no more than ½ turn on the mill end during make-up.
3. If any coupling movement is noticed, Tenaris recommends applying the backup tongs to the lower half of the coupling and completing the connection make-up.
4. A ruler or caliper may be used to verify the coupling position. Measure from the coupling face to the pin nose face. The acceptable length is ½ the overall coupling length ± 1/32". Take two readings 180° apart and verify that both readings are within tolerance, if either reading is out of tolerances, take two more and average the four readings.

BPN Pin into API Buttress Couplings

1. When crossing over from a BPN pin to an API Buttress coupling, API procedures prevail.
2. BPN pins are 100% interchangeable with API Buttress pins of the same size and weight. Performance (including torque) is limited to that of standard API Buttress.
3. Rotation of the string is not permitted without the use of thread locking compound.

API Buttress Pin into BPN Couplings

1. When crossing over to a BPN coupling, make-up is to BPN torque and position. Follow all BPN recommended procedures.
2. ***Never make-up past the base of the triangle or beyond the maximum make-up torque when using a BPN coupling.***
3. ***Rotation of the string is not permitted without the use of thread locking compound.***

Accessories

1. BPN accessories are available and preferred over API Buttress accessories.
2. Float equipment threaded with API Buttress can be used with thread locking compound and rotated at BPN torque values.
3. It is strongly recommended that accessories other than float equipment be threaded with BPN to rotate at BPN torque values.

Downhole Rotation

1. Tenaris recommends using the minimum amount of torque necessary to break the friction between the tubing or casing and the well bore if downhole rotation of the string is required.
2. The BPN connection should not be rotated beyond the specified operating torque and RPM should be limited to 40 RPM or lower.
3. Care should be taken to gradually increase and decrease torque when rotating to allow the stored kinetic energy to dissipate and prevent downhole connection yielding or break out.
4. Tenaris advises caution as the torque measurement accuracy and dump-valve response time may vary depending on the specific equipment used.

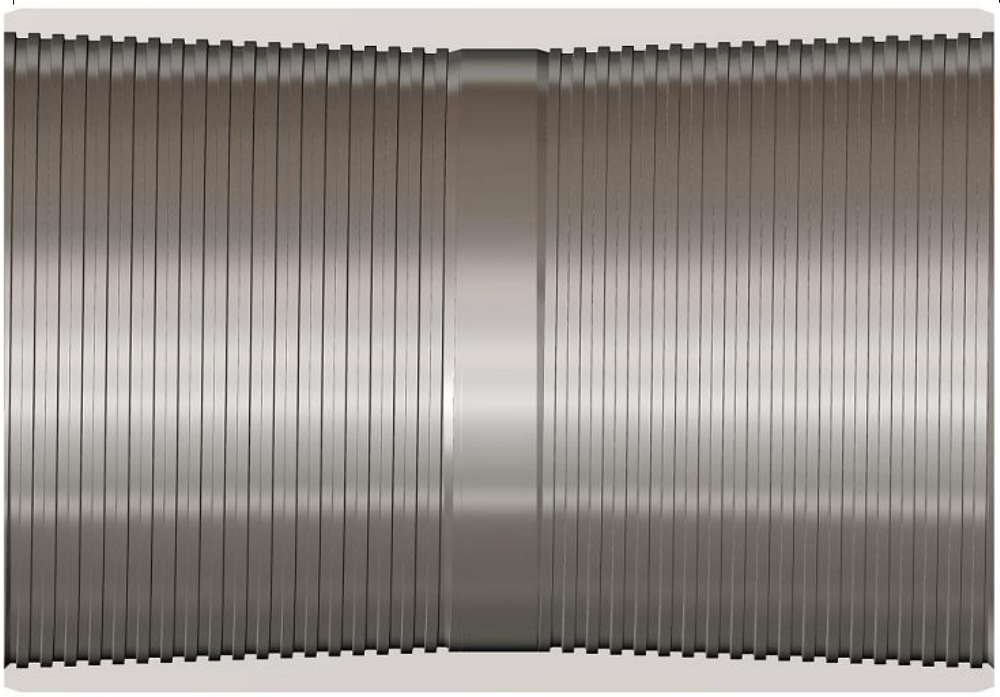
Re-run

1. It is recommended to apply the backup tongs to the lower half of the coupling or make a paint mark that extends from the mill side of the coupling to the mill end pin to help monitor any movement of the coupling on the mill end pin during field end break out.
2. Break out in low gear at a RPM equal to or lower than the target make-up RPM to prevent the connection from overheating and galling. If overheating is observed, lower the break out RPM to prevent damage to the connection.
3. The pin and coupling must be thoroughly cleaned and visually inspected for any damage after each break out.
4. Any subsequent make-up of the connection must be performed to a torque equal or greater than the previous torque to which the connection has experienced. If a different pin is made up into a coupling, the make-up torque must be greater than that which either pin or coupling member has previously experienced.
5. The joint must be laid down if for any reason it is determined that a coupling must be bucked-off.
6. Do not re-run the string if any portion of the string has been taken beyond the specified operating torque.
7. ***The BPN connections shall not be used as work strings.***

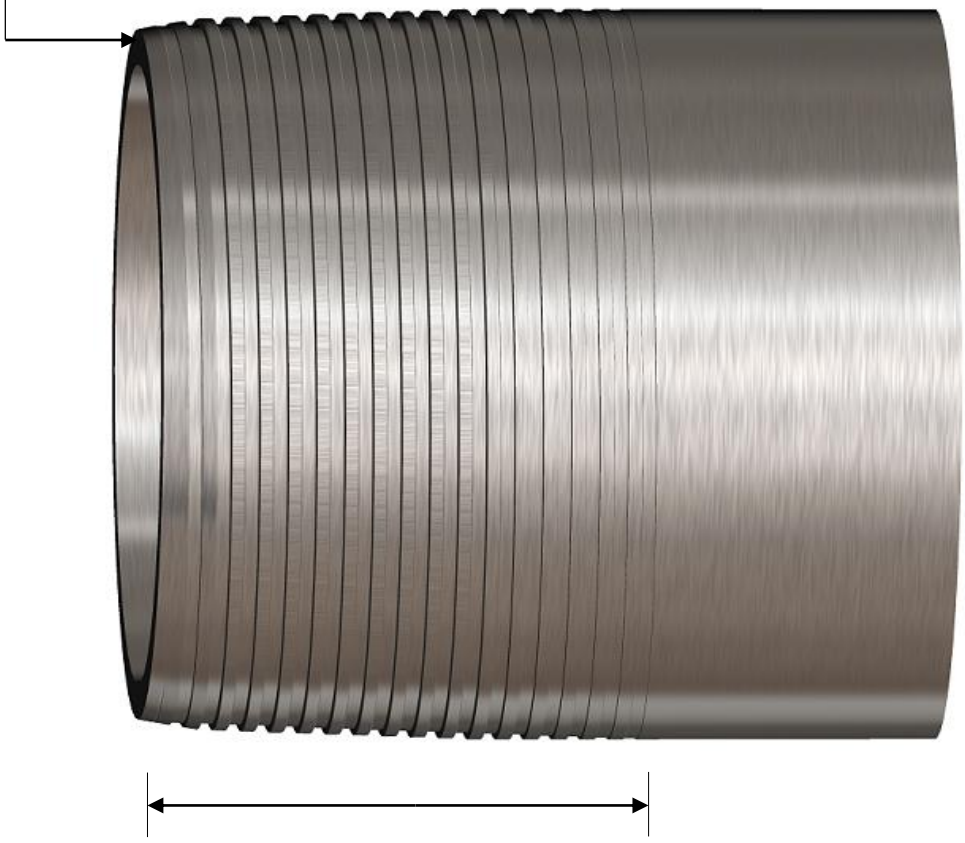
Field Repair

1. Field Repair of BPN connections shall only be conducted by Field Service Technicians certified by Tenaris.
2. Minor tears, galls or dents on the thread profile may be able to be repaired by qualified personnel in the field.
3. Galling on pin face may be repaired if it does not exceed 25% of the pipe circumference. The repair shall fully remove any protrusions which may cause galling on subsequent make-up.
4. Repair connections using a file, stone, sandpaper or appropriate abrasive tool, and Scotch-Brite™ sponge or equivalent.
5. Only qualified personnel may make the decision regarding the serviceability of a given connection.
6. ***Loose burrs and sharp raised edges must be removed or rounded down.***

Repairs may be made to the entire coupling



Pin nose face may be repaired



Entire threaded area of pin may be repaired