TenarisHydril 3SB™ Connection

Scope

These guidelines apply specifically to the use of TenarisHydril 3SB™ 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.

References

- TenarisHydril Running Manual.
- Premium Connection Approved Thread Compounds TSH-MD-00.0002.
- Recommended guidelines for the field inspection of TenarisHydril connections, FSOG 13-005.

Equipment, Material & Documents

1. Verify the appropriate thread compound is available.

2. Refer to document TSH-MD-00.0002 for a list of compounds approved by Tenaris.

3. Latest version of the specific Product Data Sheet can be obtained from Tenaris web site. In case this is unavailable, request the data sheet from the local Technical Sales representative or contact-tenarishydril@tenaris.com.

IDM Code GDL23374/1 / March 2018

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 thread and seal areas prior to running, ensuring no damage is evident.

5. Verify the compatibility of the 3SB™ pipe with accessories such as cement heads, safety valves, cross overs, etc.

6. Verify material grade of all accessories ensuring compatibility with main string.

7. Verify connection type:

- 4 ½" 3SB™ 13.5# and 21.6# have casing (5TPI) and Tubing (8TPI) variants, which are incompatible.

8. TenarisHydril 3SB™ is interchangeable with:

- TenarisHydril 3SB™ / A
- TenarisHydril 3SB ST™
- NK3SB / TS3SB

9. TenarisHydril 3SB™ is not interchangeable with:

- TenarisHydril New 3SB™
- TenarisHydril 3SB SL™

Inspection

1. Inspection criteria for all TenarisHydril connections is as outlined in the Field Service Operative Guideline FSOG 13-005.

2. Pay particular attention to seal areas.

3. Ensure the pin nose has no tears, gouges or raised metal.

4. Ensure the pin and box torque shoulders have no dents, tears or raised material which would interfere with correct assembly.

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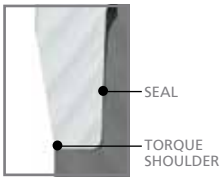
3SB™ Configuration

Tubing 8 TPI ≤ 4 ½" 13.5#
Casing 5 TPI ≥ 4 ½" 13.5#



Thread Compound Application

1. Apply a thin coating of thread compound on the pin and box connections, fully covering all threads, seals, pin nose and box torque shoulder, the thread form should be fully visible.

2. Use approximately 50% of the quantity applied to the pin when doping the box.

3. 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.

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Thread Lock Application

Connections must be clean and dry when applying thread lock

1. Apply a thin coating of thread lock on 50% of the pin threads furthest from the pipe body.

2. Do not apply thread lock on the seal or torque shoulder.

3. Apply thread compound to the box seal and torque shoulder.

4. Apply the thread lock manufacturers indicated friction factor.

Torque Application

1. The use of computer make up analysis equipment is strongly recommended when assembling 3SB™ connections.

2. Shoulder points for 3SB™.

- Minimum 5% of optimum.
- Maximum 80% of optimum.

3. Reference torque should initially be set at 5% of optimum.

4. The dump valve should be set at optimum, verify correct operation on the pipe body prior to first make up.

5. Set the computer turns to 2 initially then adjust as necessary to attain good graph depiction.

6. Refer to the TenarisHydril Running Manual make up acceptance section for further explanation.

7. 3SB™ connections of the same weight and grade are fully interchangeable. See Pre-Running Section for exceptions.

8. If different weight or grade of connections are to be mixed apply the lower of the indicated make up torques.

9. The computer make up profile for 3SB™ should be similar to the ones below.

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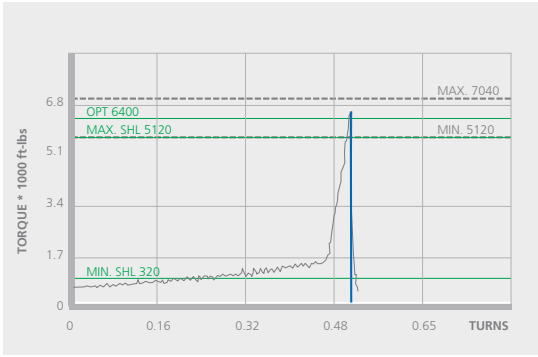

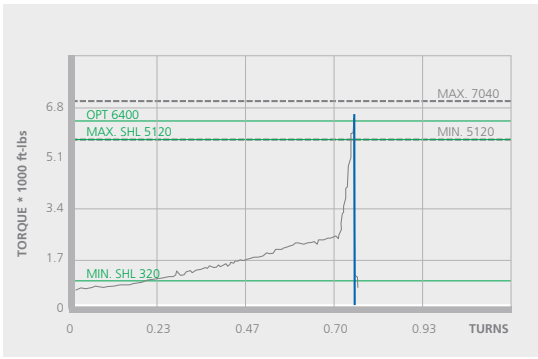

10. If 3SB™ is to be mixed with 3SB-ST™ the lower variant torque should be applied.

11. Special clearance couplings require an adjustment to regular coupling torque, this should be available as an option when downloading the latest data sheet.

12. If the special clearance data sheet is unavailable adjust regular coupling torques as below:

- Special Clearance Casing = 0.95 of regular torque.
- Special Clearance Tubing = 0.90 of regular torque.

Running

1. The use of a stabbing guide is strongly recommended.

2. The use of a weight compensator is strongly recommended for chrome, large OD or heavy pipe.

3. 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.

4. Upon commencement of initial rotation use low RPM (5 RPM or below) in order to ensure the pipe has not cross threaded during stabbing.

5. If cross threading is evident, immediately reverse rotate the pipe, completely disassemble, clean and inspect both connections.

6. Maximum spin in speed should not exceed 15 RPM.

7. Apply power tong at low RPM (do not exceed 5 RPM), for final make up.

8. Walk chrome pipe all the way in to hand tight, then apply tong only for final make up.

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Pulling

1. Automatic stabbing system or stabber is highly recommended to maintain the pipe in a vertical position.

2. The use of a stabbing guide is recommended to prevent hang up.

3. A weight compensator is strongly recommended for chrome, large OD or heavy pipe.

4. Apply the back up tong jaw on the lower part, over the mill end of the coupling.

5. Apply power tong in low RPM (3-5 RPM) to break the connection, ensuring the pipe is stabilised during the break and spin out process.

6. Do not exceed 15 RPM during spin out.

7. Walk chrome pipe all the way out after initial break.

8. Visual inspection is recommended to classify the thread condition. Any rejected connections should be clearly marked and segregated for further investigation.

9. Apply clean, dry thread protectors after applying storage compound on clean, dry connections.

10. Storage / thread compound should always be applied to connections post job, even rejects.