TenarisHydril Wedge 613™ / 623® / 624® Connection

Scope

These guidelines apply specifically to the use of TenarisHydril Wedge 613™, Wedge 623® and Wedge 624® connections. In the specific cases of connections with Tenaris dope-free technologies, this document addresses products sold and marked as Dopeless® and does not address the use of versions identified as Dopeless® 3.0 or Dopeless® 3.1. If the product has been procured with Dopeless® 3.0/3.1 technology refer to document GDL43273.

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.

Tenaris Field Service Representatives can modify these guidelines when circumstances dictate. Implementation will only occur if the representative deems the modification to be non-detrimental to product integrity. All modifications need to be clearly explained and agreed with the client representative prior to implementation and fully documented in the running report.

References

- TenarisHydril Running Manual.
- Premium connection approved thread compounds FTD29356.
- Recommended guidelines for the field inspection of TenarisHydril connections, GDL31457.

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Equipment, Material & Documents

1. 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.

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

4. Verify all pipe and accessories have genuine TenarisHydril manufactured connections.

5. Verify the compatibility of the Wedge 613™ / 623® / 624® connection with any accessories such as cement heads, safety valves, cross-overs, etc.

6. Check condition of both pin and box Dopeless® Technology coating ensuring no peel off or degradation has occurred.

7. Wedge 623®, Wedge 613™ and Wedge 624® are not interchangeable between each other, nor with any other Wedge connection. Connection weight interchange compatibility is indicated in the TenarisHydril premium connections catalogue.

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

9. Check availability, compatibility and condition of handling plugs, minimum of 3 to ensure efficiency of process.

10. Ensure handling plugs are genuine TenarisHydril connections and are marked as Wedge 613™ or Wedge 623® or Wedge 624®.

11. Wedge 523® / 513® handling plugs cannot be used.

12. Note part number and maximum load rating stamped on flange.

13. Never exceed maximum load rating.

14. Ensure handling plug OD / weight is compatible with the pipe connections, Wedge 613™ / 623® / 624® have limited same OD / weight interchange capability.

15. Ensure the single joint elevators to be used with the handling plugs have adequate clearance to move over the expanded box connection and fit securely against the plug flange.

16. Refer to the TenarisHydril running manual for the care and use of handling / lift plugs.

Inspection

1. Inspection criteria for all Wedge Series 600™ connections is as outlined in the Field Service Operative Guideline GDL31457.

2. Pay particular attention to seal areas.

3. Ensure the pin seal saver has no deformation or dents which cause material to protrude.

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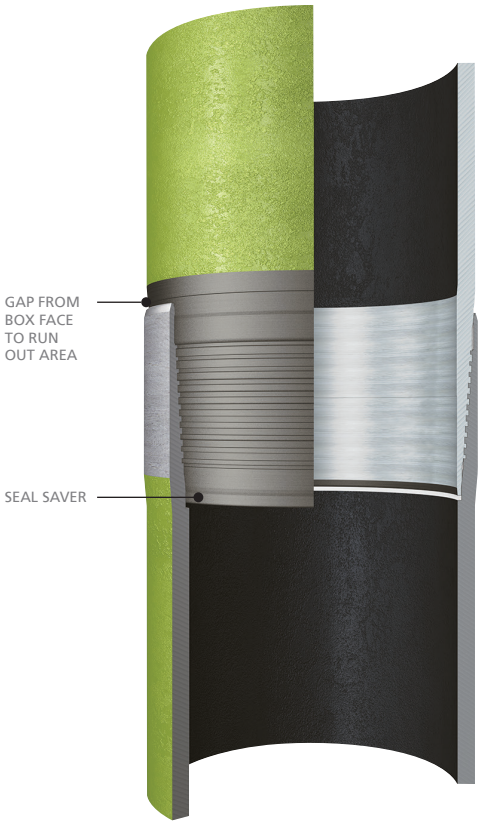
4. Ensure the cylindrical area between the last thread and the external seal of the pin has no tearing or raised areas which may contact the corresponding box external seal during make up.

5. Check box connections for mashes or ovality caused by transportation, handling or storage.

Wedge 613™ / 623® / 624® Configuration



THE OD FOR WEDGE 613™ IS LESS THAN OR EQUAL TO THE API PIPE OD TOLERANCE OF +1%.

TENARISHYDRIL WEDGE 624® IS AN IMPROVED VERSION OF THE WEDGE 623® CONNECTION DESIGN FEATURING GREATER RESISTANCE TO WEAR. SHIFTED UP TO ACCOMMODATE MORE TOOL JOINT ID WEAR WHILE MAINTAINING CONNECTION PERFORMANCE

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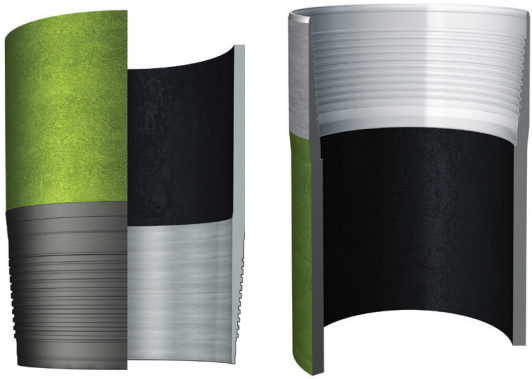
Wedge 613™ / 623® / 624® Dopeless® Technology



1. Minor rust or discolouring of the pin connection can be removed with the use of a clean, dry rag ensuring the Dopeless® Technology coating remains intact.

2. Minor rust or discolouring of the box connection can be removed with the use of a non abrasive plastic scouring pad and a clean, dry rag ensuring the Dopeless® Technology coating remains intact.

3. Dopeless® Technology connections do not require the application of thread compound for assembly.

Thread Compound Application Wedge 613™ / 623® / 624® Dopeless® Technology

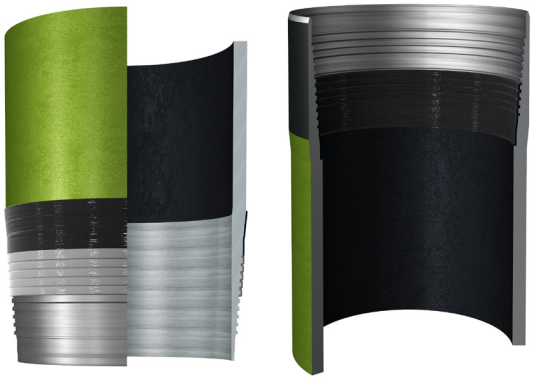
If for whatever reason dope has to be applied to Wedge 613™ / 623® / 624® Dopeless® Technology connections, whether both pin and box are Dopeless® Technology or when mixing a doped connection with a Dopeless® Technology one proceed as indicated below.

- Apply a very thin coating of thread compound on the full pin end, threads and seal.

- Do not dope any part of the box connection.

Thread Lock Application Non Dopeless® Technology Connections

1. Ideally when running a Dopeless® Technology string the connections to be thread locked should be non Dopeless® Technology with the connections cleaned of thread compound and completely dried, then thread lock and dope applied as below:



Connections must be clean and dry when applying thread lock.

2. Thread lock should be applied to the threads furthest from the pin nose, approximately 50% of the threads should have thread lock applied.

3. Running compound should then be applied to the threads at the back of the box connection and internal seal.

4. Thread compound should also be applied to the pin external seal and area from last thread.

Wedge 613™ / 623® / 624® Dopeless® Technology Thread Lock

1. When thread locking Dopeless® Technology connections remove the Dopeless® Technology coating from the threads on the pin connection where the thread lock is to be applied prior to the application of thread lock.

2. Use a hand or rotary brass wire wheel to remove the Dopeless® Technology coating from the threads, ensuring no contact is made with the seal.

3. Leave the Dopeless® Technology coating on the pin seals and threads where no thread lock is to be applied.

4. Dopeless® Technology boxes should be washed with hot water then dried prior to thread locking.

5. Thread lock should be applied to the threads furthest from the pin nose, approximately 50% of the threads should have thread lock applied as per diagram on page 7.

6. Do not apply thread lock to seal areas.

7. The application of thread compound is not required.

Torque Application

1. Set tong dump valve at optimum torque then test on pipe body.

2. If dope is to be applied to Dopeless® Technology, 'double bump' the first connection make up:

- Apply Dopeless® Technology torques as per appropriate data sheet.
- Once optimum torque has been attained relax the tong and re-apply optimum torque.

- If movement over ½" is witnessed re-apply optimum torque +20%.
- Repeat process, checking to ensure no other factors are absorbing the applied torque.
- Often the issue is caused by excessive application of thread compound.
- Continue making up further joints applying higher torque if required.
- For connections ≥ 10 ¾" double bump every make up when dope is applied.
- Refer to the TenarisHydril Running Manual torque application section.
- Dopeless® Technology connections do not require 'double bump'.

3. Do not apply the thread compound manufacturers friction correction factor.

4. Do not apply thread lock manufacturers friction factor, apply optimum torque + 20% then double bump the connection.

5. Computer make up equipment is not mandatory for Wedge 613™ / 623® / 624® connections in carbon steel however it is recommended.

6. Computer make up equipment is highly recommended for Wedge 613™ / 623® / 624® connections in chrome material.

7. Graph analysis for Wedge 613™ / 623® / 624® is similar to that of Wedge 625® and Wedge Series 500™, refer to the TenarisHydril Running Manual make up acceptance section for further explanation.

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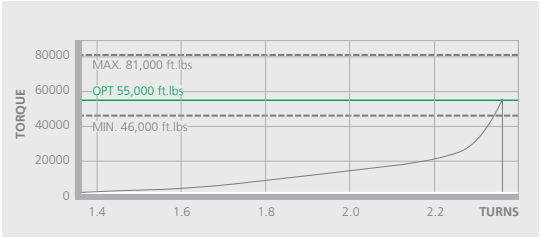
8. When computer equipment is used, reference torque should be initially set at 5% of optimum torque.

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

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

11. Graph profile should be similar to the one below:



12. Wedge 613™ / 623® / 624® connection has limited same size /weight interchange capability, if mixing weight / grade ensure compatibility of design and apply the higher torque values of the two connections.

13. Wedge 623®, Wedge 613™ and Wedge 624® are not interchangeable between each other, nor with any other Wedge connection.

Running

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

2. The use of slip type elevators are recommended.

3. The use of a safety clamp is strongly recommended when running Wedge 613™ / 623® / 624® connections.

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

5. Prior to stabbing ensure the rubber anti corrosion protection rings have been removed with the protectors and are not on the connection.

6. 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.

7. For chrome material pipe spin in by hand with the use of a strap wrench.

8. Upon commencement of initial rotation use low RPM (5 RPM or below) in order to ensure the pipe has not cross threaded during stabbing. If cross threading is evident, immediately reverse rotate the pipe slowly.

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

10. Do not exceed 15 RPM during spin in.

11. Ensure back up tong is located below the box expanded area to prevent distortion of the connection.

12. Upon attainment of optimum torque there should be a slight gap between the box face and the start of the machined run out area.

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 assist in centralising the pin to prevent hang up.

3. Apply the back up tong jaw well below the expanded area of the box.

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. Once the connection is broken release back up jaws and spin out below 15 RPM.

6. For Chrome material pipe, once the connection is broken spin out by hand with the use of a strap wrench.

7. It is recommended the stabbing guide is used when lifting the pin from the box to prevent hang up of the threads.

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.

10. Ensure clean, dry, Dopeless® Technology protectors with seal rings correctly in place are installed.

11. For long term storage of Dopeless® Technology connections, refurbishment by qualified personnel is recommended.