

# TenarisHydril Wedge 533<sup>®</sup> / 503<sup>®</sup> / 553<sup>®</sup> Connections

## Scope

These guidelines apply specifically to the use of TenarisHydril Wedge 533<sup>®</sup>, Wedge 503<sup>®</sup> and Wedge 553<sup>®</sup> connections. In the specific cases of connections with Tenaris dope-free technologies, this document addresses products sold and marked as Dopeless<sup>®</sup> and does not address the use of versions identified as Dopeless<sup>®</sup> 3.0 or Dopeless<sup>®</sup> 3.1. If the product has been procured with any of these newer versions please contact our regional Technical Sales team.

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.

- Wedge 533® / 553® / 503® Handling Plugs TN 0004-A.

## Equipment, Material & Documents

1. Verify the appropriate thread compound is available.
2. Refer to document FTD29356 for a list of compounds approved by Tenaris.
3. Latest version of the specific Product Data Sheet can be obtained from the Tenaris website. In case this is unavailable, 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. Visually inspect threads and seal areas prior to running, ensuring no damage is evident.
4. Verify the connections to be assembled are genuine TenarisHydril manufactured connections.
5. Verify compatibility of the Wedge 533® / 503® / 553® connection with any accessories such as pup joints, cross overs, cement heads, etc.
6. Verify material grade of all accessories ensuring compatibility with main string.
7. On Dopeless® Technology connections check condition of both pin and box coating ensuring no peel off or degradation has occurred.

8. Wedge 533® / 503® / 553® handling plugs are designed to protect the box threads during running with slip type elevators.
9. Check availability of handling plugs, minimum of 3 to ensure efficiency of running process.
10. Check the handling plugs are in good condition and fit correctly onto pipe.
11. Check the handling plugs are genuine TenarisHydril threads.
12. Verify handling plug number and maximum lift capacity.
13. Never exceed the maximum lift capacity.
14. Refer to the TenarisHydril running manual for the care and use of handling / lift plugs.

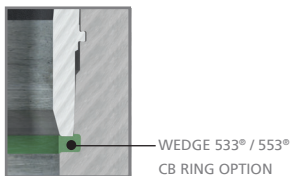
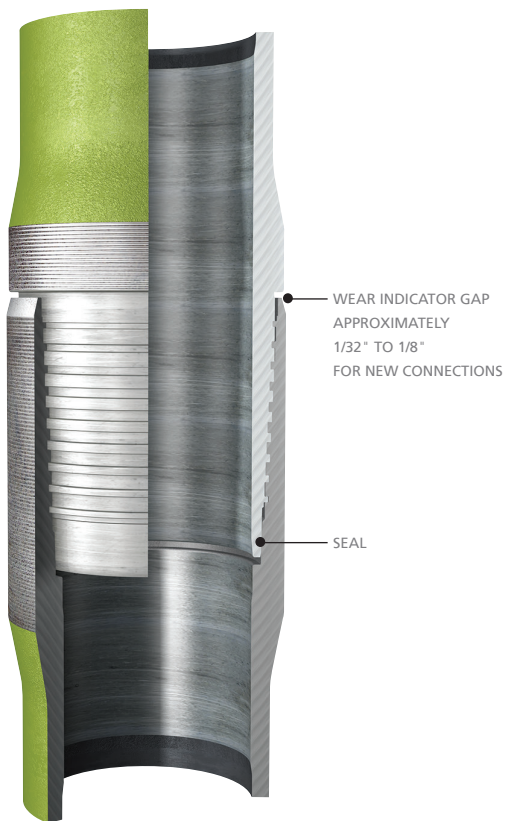
## Inspection

1. Inspection criteria for all Wedge Series 500™ connections is as outlined in the Field Service Operative Guideline GDL31457.
2. Pay particular attention to seal areas.
3. Ensure there are no gouges, tears or raised material on the pin nose.
4. For Wedge 533® / 553®-CB variant, ensure the CB groove is free of debris or damage which may preclude correct installation of the CB ring.
5. Wedge 533® and Wedge 553® check box and pin external shoulders for signs of contact, connections indicating contact at the shoulders should be rejected for re-cut.

## Wedge 533® / 503® Configuration

Wedge 533® / 503® connections end type:

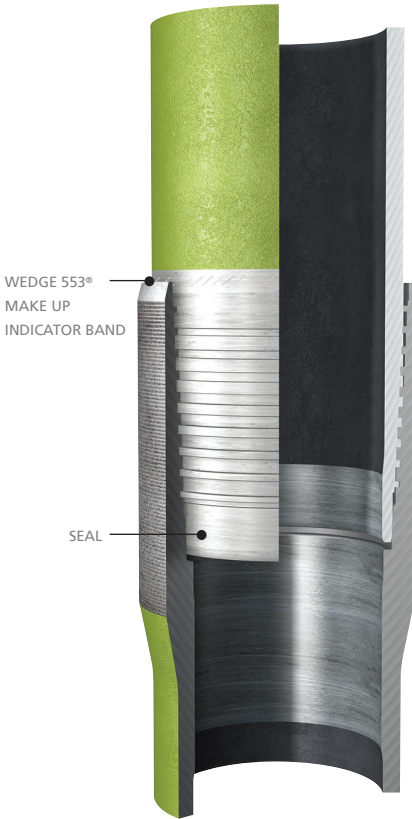
- Wedge 533® = IEU Pipe
- Wedge 503® = EU Pipe



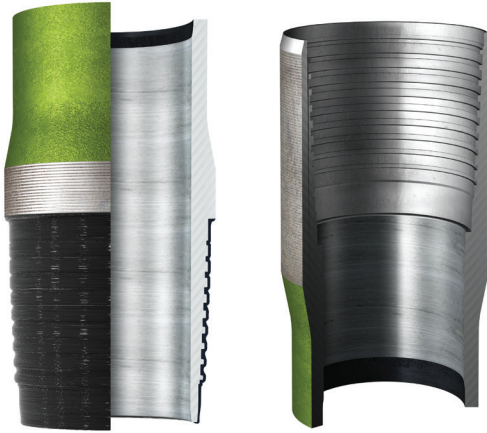
# Wedge 553® Configuration

Wedge 553® connection end type:

- Wedge 553® = IEU Box / Non Upset Pin

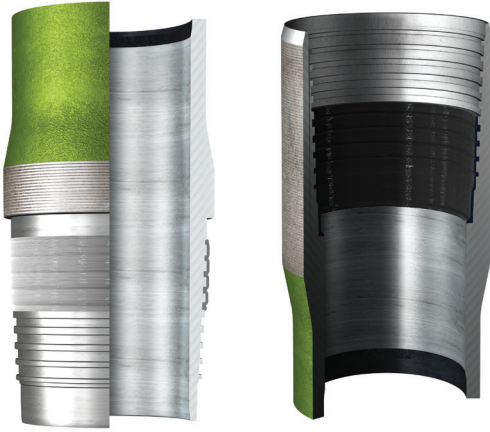


## Thread Compound Application



1. Apply a thin coating of thread compound on the full pin end only, threads, seal and pin nose, the thread form should be clearly visible.
2. Do not apply running compound to the box end.
3. Thread compound should be cleaned from the box if received 'rig ready'.

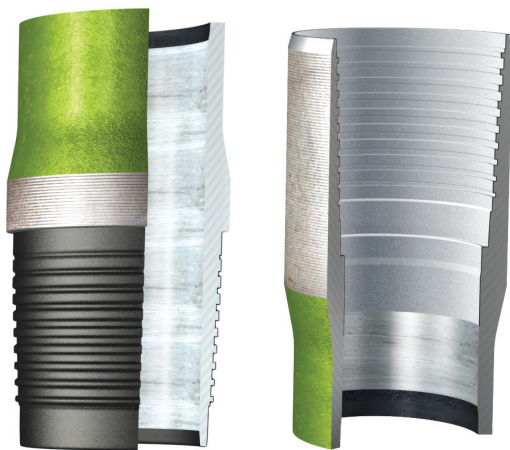
## Thread Lock Application



Connections must be clean and dry when applying thread lock.

1. Thread lock should be applied to 50% of the threads at the back of the pin connection.
2. Running compound should then be applied to the threads and seal at the back of the box connection.
3. When assembling standard non Dopeless® Technology connections with thread lock use standard non Dopeless® Technology torque values.

## Wedge 533® / 503® / 553® 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 make up.
4. If for whatever reason dope has to be applied to Dopeless® Technology connections, whether both pin and box are Dopeless® Technology or when mixing a standard connection with a Dopeless® Technology, 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.

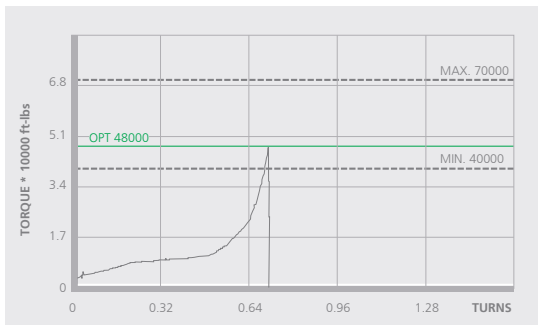
## Wedge 533® / 503® / 553® Dopeless® Technology Thread Lock

1. Ideally when running a Dopeless® Technology string the connections to be thread locked should be the non Dopeless® Technology variant with the connections cleaned of thread compound and completely dried, then thread lock applied as per page 7.
2. 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.
3. 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.
4. Leave the Dopeless® Technology coating on the pin seal and threads where no thread lock is to be applied.
5. Dopeless® Technology boxes should be washed with hot water then dried prior to thread locking.
6. Thread lock should be applied to the threads furthest from the pin nose, approximately 50% of the threads should have thread lock applied.
7. The application of thread compound is not required.
8. Do not apply thread lock to seal area.

## Torque Application

1. Set tong dump valve at optimum torque then test on pipe body.
2. For Dopeless® Technology connections apply the specified torques as indicated on the TenarisHydril Dopeless® Technology data sheet.
3. For doped connections, apply the specified torques indicated on the TenarisHydril standard variant data sheet.
4. Do not apply thread compound manufacturer's friction factor.
5. Standard 'Doped' variant, first connection make up;
  - 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.
  - Refer to the TenarisHydril Running Manual torque application section.
6. For Dopeless® Technology connections applying optimum torque twice (double bump) is not necessary.
7. When any doped variant is made up to a Dopeless® Technology connection apply the doped variant torque values. Double bump the connection as point 5.

8. When applying thread lock to standard doped connections, doped version torque values +20% should be used then double bump the connection.
9. When applying thread lock to Dopeless® Technology connections, Dopeless® Technology torque values +20% should be used then double bump the connection.
10. Computer make up equipment is not mandatory for Wedge 533®/ 503®/ 553® connections in carbon steel, but is recommended.
11. Computer make up equipment is strongly recommended for Wedge 533® / 503® / 553® connections in chrome steel.
12. Graph analysis for Wedge 533® / 503® / 553® connections is similar to that for all Wedge Series 500™ connections. Refer to the TenarisHydril Running Manual make up acceptance section for further explanation.
13. When computer equipment is used, reference torque should be initially set at 5% of optimum torque.
14. The dump valve should be set at optimum torque, verify correct operation on the pipe body prior to first make up.
15. Set the computer turns to 2 initially, then adjust as necessary to attain good graph depiction.
16. Graph profile should be similar to the one below.



14. Wedge 533<sup>®</sup> / 503<sup>®</sup> / 553<sup>®</sup> connections have limited same size / weight interchange capability, if mixing weight / grade ensure compatibility of design and apply the higher torque value of the two connections.

15. Wedge 533<sup>®</sup> / 503<sup>®</sup> / 553<sup>®</sup> connections are compatible in the same size / weight combination. For other weight combinations check the TenarisHydril premium connections catalogue.

16. Wedge 533<sup>®</sup> / 553<sup>®</sup> connections are compatible with Wedge 533<sup>®</sup> / 553<sup>®</sup> CB option in the same size / weight, apply standard optimum torque.

17. When Wedge 533<sup>®</sup> and 503<sup>®</sup> connections are correctly assembled a gap should exist between the external shoulders of the connections, as indicated on page 4.

18. The gap should not be excessive, approximately 1/32" to 1/8" for new connections when correctly assembled for the first time.

19. After several make ups, some wear will occur to the connections during each assembly, reducing the gap size.

20. When the gap closes the connections are worn, both connections should be rejected for re-cut.

21. Connection wear can only be assessed after assembly, it is not possible to determine wear quantity by gauging.
22. For Wedge 553<sup>®</sup>, the make up band can be used as an additional verification of correct final position after assembly, visually checking that box face finishes within the make up band lines.
23. Frequency of the visual check of make up band on Wedge 553<sup>®</sup> should be agreed with Tenaris Field Services representative and documented in running report. It is suggested to visually check the first 5 joints, then every 20 joints during the job.



## Running

1. The use of a stabbing guide is strongly recommended.
2. The use of slip type elevators is recommended, never use drill pipe / bottle neck elevators.
3. The use of a weight compensator is strongly recommended for chrome, large OD or heavy weight pipe.
4. For the CB variant a new CB ring should be installed prior to every make up.
5. 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 make up operation.

6. Upon commencement of initial rotation use low RPM (5 RPM or below) in order to ensure the pipe has not cross threaded during stabbing.
7. If cross threading is evident, immediately reverse rotate the pipe, completely disassemble, clean and inspect both connections
8. Apply power tong at low RPM (do not exceed 5 RPM), for final make up.
9. Walk chrome pipe all the way in to hand tight, then apply tong only for final make up.
10. Ensure the back up tong is located below the box upset to prevent damage.
11. Never apply either tong over the connection area.
12. A factor which may preclude complete assembly is excessive thread compound applied to the connection, reduce the quantity applied if this is found to be the case.

## Pulling

1. A stabbing guide is strongly recommended to prevent hang up.
2. The use of a single joint compensator is recommended for chrome, large OD or heavy pipe.
3. Apply the back up tong jaw well below the box.
4. Do not apply tongs over either pin or box connection.
5. Apply power tong in low RPM (3-5 RPM) to break out the connection, ensuring the pipe is stabilised during the break out process.

6. Walk chrome pipe all the way out by hand after initial break out.
7. Visual inspection is recommended to classify the thread condition, any rejected connections should be clearly marked and segregated for further investigation.
8. Apply clean, dry thread protectors after applying storage compound on clean, dry connections.
9. Storage / thread compound should always be applied to connections post job, even rejects.
10. Do not apply storage compound to Dopeless® Technology connections.
11. For long term storage of Dopeless® Technology connections, refurbishment by qualified personnel is recommended.
12. Ensure clean, dry, Dopeless® Technology protectors with seal rings correctly in place are installed.

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