TenarisHydril Wedge 563® Connection

Scope

These guidelines apply specifically to the use of TenarisHydril Wedge 563® connections, all variants including Dopeless® connections.

This document is part of the TenarisHydril Running Manual, and provides an overview of best practices for these specific products. It should be used in conjunction with the rest of the sections within the TenarisHydril Running Manual.

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

- FTD29356 - Premium Connections Approved Thread Compounds.
- GDL31457 - Recommended Guidelines for the Field Inspection of TenarisHydril Connections.
- GDL23355 - Wedge™ Series Make up Acceptance
- GDL23356 - Dopeless® connections
- GDL23352 - Torque Application
- GDL23349 - Pre-Running Preparation.

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Equipment, Material & Documents

1. Verify the recommended thread compound is available.

2. Identify the product to be run including the version of Dopeless® Technology if applicable, and the connections of all accessories.

3. Latest version of the specific Product Data Sheet can be obtained from the Tenaris website. In case this is not available, request the data sheet from the local Technical Sales representative.

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, (GDL23349 - Pre-Running Preparation).

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. On Dopeless® connections, check condition of both pin and box coating ensuring no peel off or degradation has occurred.

6. Verify the compatibility of the Wedge 563® connection with accessories such as cement heads, safety valves, cross overs, etc.

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

Inspection

1. Inspection criteria for all Wedge™ Series 500 connections is as outlined in the GDL31457, Recommended Guidelines for Field Inspection of TenarisHydril Connections.

2. Pay particular attention to seal areas.

3. Ensure the pin nose has no raised metal.

4. For corrosion barrier (CB) variant ensure seal ring groove is clear of debris or damage which may preclude correct installation of the CB ring.

5. On Dopeless® connections ensure the coating is not damaged or peeling off.

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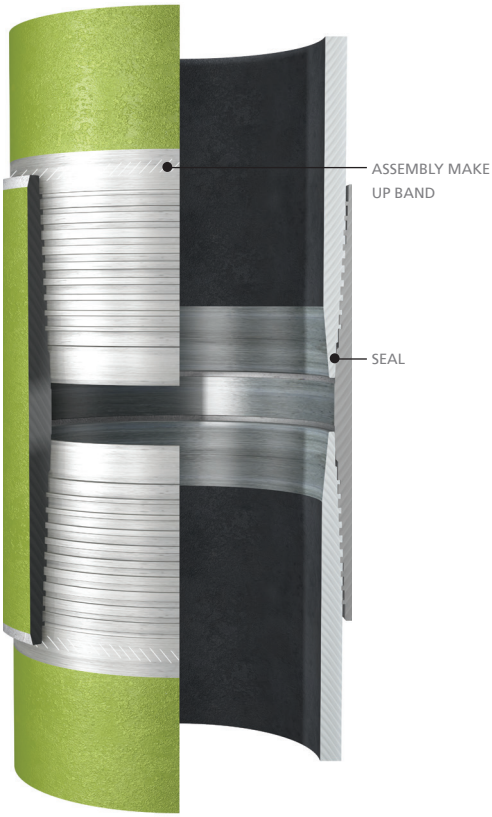
Wedge 563® Casing Configuration

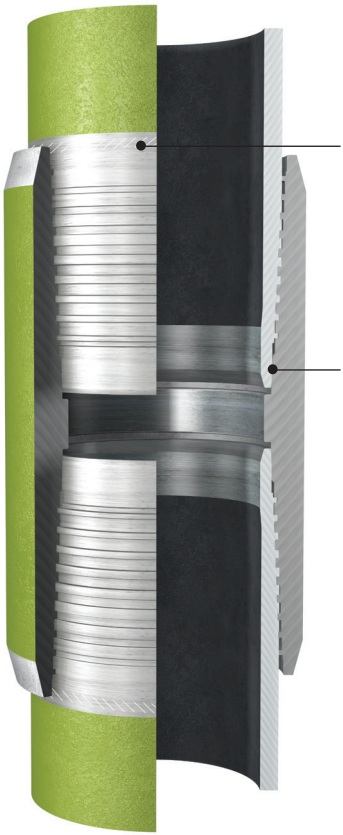
The diagrams below are applicable to doped and Dopeless® variants.



For further information on Dopeless® connections refer to GDL23356, Dopeless® connections.

Wedge 563® Tubing Configuration

Recess Free Bore (RFB).



RFB CORROSION
BARRIER (CB) OPTION

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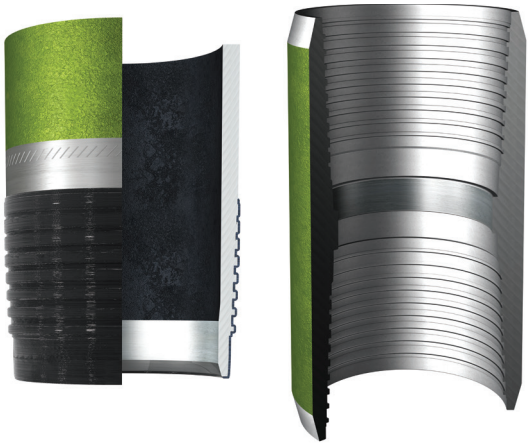
Thread Compound Application

Doped Variant

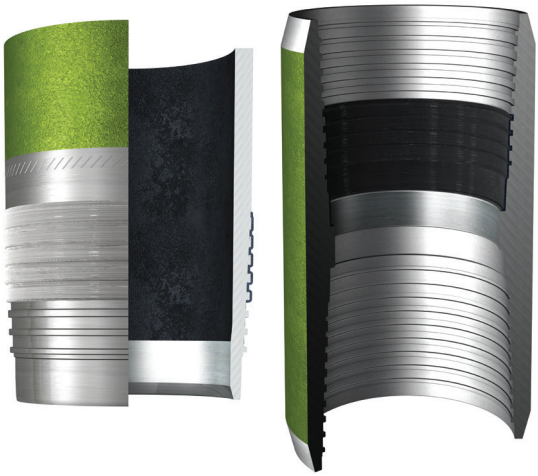


1. Apply a thin coating of thread compound on the full pin end only, threads, seal and pin nose, the thread form should be clearly visible. Refer to FTD29356 - Premium Connections Approved Thread Compounds.

2. Do not apply running compound to the box end.

3. If pipe is received from Tenaris as RunReady™ with running compound already applied , no additional cleaning or compound application is required prior to running. Remove thread protectors, redistribute thread compound on the pin with a clean brush to ensure homogeneous coverage of threads and pin nose.

Thread Lock Application



Doped Variant

Connections should 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

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threads and seal at the back of the box connection.

Thread compound application Wedge 563® Dopeless® Connections

1. Dopeless® connections do not require the application of thread compound for make up.

2. If for whatever reason dope has to be applied to Dopeless® connections, whether both pin and box are Dopeless® or when mixing a doped variant connection with Dopeless®, 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 563® Dopeless® Thread Lock

1. Ideally when running a Dopeless® string the connections to be thread locked should be the doped variant with the connections cleaned of thread compound and completely dried, then thread lock applied as per page 7.

2. When thread locking Dopeless® connections remove the Dopeless® 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® coating from the threads, ensuring no contact is made with the seal.

4. Leave the Dopeless® coating on the pin seal and threads where no thread lock is to be applied.

5. Dopeless® boxes should be washed with hot water

then dried prior to thread locking.

6. Thread lock should be applied to 50% of the pin threads furthest from the pin nose as per the diagram on page 7.

7. The application of thread compound is not required.

8. Do not apply thread lock to seal area.

Torque Application

1. Computer make up equipment is recommended for Wedge 563® connections in carbon steel.

2. Computer make up equipment is strongly recommended for Wedge 563® connections in chrome steel.

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

4. For Dopeless® connections apply the specified torques as indicated on the TenarisHydril Dopeless® connection data sheet.

5. For doped connections, apply the specified torques indicated on the TenarisHydril doped variant data sheet.

6. Do not apply thread compound manufacturer's friction factor.

7. For doped connections, first make up:

- Once optimum torque has been attained relax the tong and re-apply optimum torque.
- If movement over ½" of the field pin end is witnessed re-apply optimum torque +20%.

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- 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 (GDL23352).

8. Double bump (as above) every connection with an OD of 10 ¾" or larger.

9. If the coupling rotates during make up / double bump, allow the assembly to complete then check both ends of the coupling are within the make up bands, if so accept the make up.

10. For Dopeless® connections, applying optimum torque twice (double bump) is not necessary unless dope or thread lock has been applied.

11. When applying thread lock to Dopeless® connections, Dopeless® torque values +20% should be used then double bump the connection.

12. When any doped variant is made up to a Dopeless® connection apply the higher of the two make up torque values. Double bump the connection.

13. Torque values of mixed assemblies can be obtained from the tool available at https://dcp.tenaris.com/Mixed_Assemblies

14. Wedge 563® has limited same size / weight interchange capability, if mixing weight / grade ensure

compatibility of design.

15. Wedge 563® is compatible with Wedge 563®-CB variant in the same size / weight.

16. For connection interchange capability see the connection data sheet.

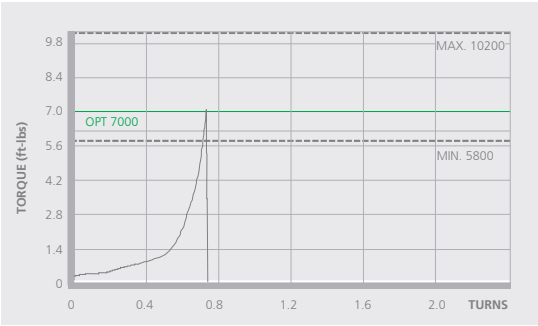
17. Graph analysis for Wedge 563® is similar to that for all Wedge™ Series 500, refer to the GDL23355, Wedge™ Series Make up Acceptance for further explanation.

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

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

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

21. Graph profile should be similar to the one below.



22. The make up band can be used as an additional verification of correct final position after assembly, visually checking that the box face finishes within the make up band lines.

23. Frequency of the visual check of make up band 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.

WEDGE 563® MAKE UP BAND

THE COUPLING FACE WILL FINISH WITHIN THE MAKE UP BAND LINES WHEN CORRECT ASSEMBLY POINT HAS BEEN REACHED.

Running

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

2. The use of slip type elevators is strongly recommended.

3. The use of a weight compensator is strongly recommended for chrome, pipe with an OD ≥ 14" and stands of 3 pipe ≥ 7".

4. For 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. Maximum assembly speeds are indicated in the table below. These are applicable for running in singles with tong or CRT and assuming ideal conditions.

9. Conditions may dictate lower assembly speeds than the maximums indicated. High winds or excessive pipe movement among other variables will necessitate a lower RPM to be used.

TSH W563		OD	SPIN IN RPM	FINAL M/U RPM
Carbon Steel	Doped Variant	4 1/2" - 7 5/8"	40	15
		Above 7 5/8"	25	10
	Dopeless® connections	4 1/2" - 7 5/8"	40	15
		Above 7 5/8"	30	10

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

11. Do not apply back up tong over the coupling, unless a torque higher than the recommended maximum is to be applied.

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

2. A single joint compensator is strongly recommended for chrome, pipe with an OD ≥ 14" and stands of 3 pipe ≥ 7".

3. Apply the back up tong on the pipe body below the coupling.

4. If the couplings turn during break out the back up tong can be placed on the lower half of the coupling and immediately released when torque is broken.

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

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

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

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.

11. Do not apply storage compound to Dopeless® connections.

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

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

14. If refurbishment cannot be done prior to storage, storage compound may be applied to Dopeless® connections. In this case, ensure to remove rubber rings from Dopeless® thread protectors prior to installation as they are not compatible with storage compound.

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