TenarisHydril Wedge 523® Connection

Scope

These guidelines apply specifically to the use of TenarisHydril Wedge 523® connection, 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.
- GDL23351 - Handling / Lift Plugs.
- GDL23352 - Torque Application.
- GDL23356 - Dopeless® Connections.

- GDL23355 - Wedge™ Series Make up Acceptance.
- GDL23349 - Pre-Running Preparation.

Equipment, Material & Documents

1. Verify the recommended thread compound is available.

2. Identify the product to be run including the version of Dopeless® connections 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 unavailable, 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 TenarisHydril Running Manual (GDL23349 - Pre-Running Preparation).

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 523® 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® connections check the condition of both pin and box coating ensuring no peel off or degradation has occurred.

8. Check availability of handling plugs, minimum of 3 to ensure efficiency of running process.

9. Check the handling plugs are in good condition and fit correctly onto pipe.

10. Make up the plug by hand and then snug up tight with the assistance of a bar inserted into the holes of the flange. When correctly installed there should be no threads visible on the handling / lift plug nor should the box face contact the flange.

11. Check single joint elevators have sufficient clearance to slide over the box expanded area and seat against the handling plug.

12. Check the handling plugs are genuine TenarisHydril threads.

13. Verify handling plug number and maximum lift capacity.

14. Never exceed the maximum lift capacity.

15. Ensure handling plug OD / weight is compatible with the pipe connections, Wedge 523® has limited same OD / weight interchange capability.

16. Connection interchange compatibility is indicated in the connection data sheet.

17. For further information on the care and use of handling and lift plugs refer to GDL23351, Handling / Lift Plugs.

Inspection

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

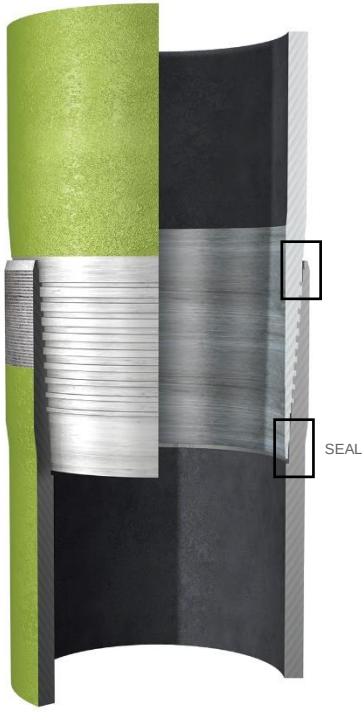
2. Pay particular attention to seal areas.

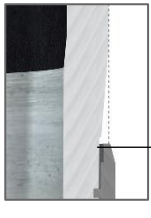
3. Check box and pin for signs of mashes or deformation caused during transportation / handling.

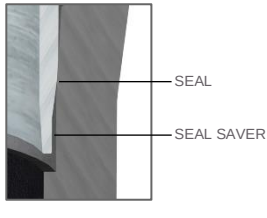
4. Ensure there are no gouges, tears or raised material on the seal saver area.

Wedge 523® Configuration

The diagram below is applicable to doped and Dopeless® variants.







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

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 Connection 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

Ensure the connections are 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.

Thread Compound Application Wedge 523® 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 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.

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

Wedge 523® Dopeless® Technology Thread Lock

1. Ideally when running a Dopeless® string the connections to be thread locked should be doped variant with the connections cleaned of thread compound and completely dried, then thread lock and dope 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 the seal area.

Torque Application

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

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

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

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

5. 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 GDL23352, Torque Application.

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

7. For Dopeless® connections applying optimum torque twice (double bump) is not necessary.

8. Whenever thread compound or thread lock is applied, apply double bump as in point 5.

9. When applying thread lock, optimum torque values +20% should be used then double bump the connection.

10. Computer make up equipment is recommended for Wedge 523® connections.

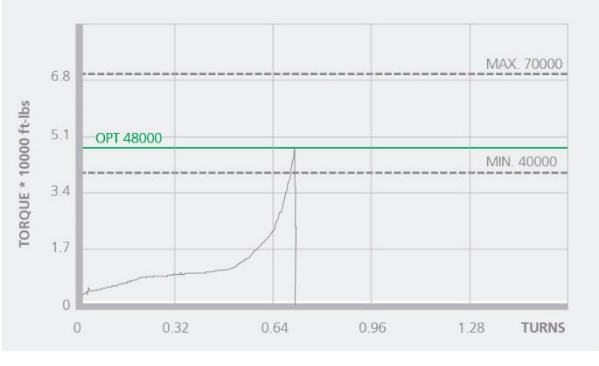
11. Graph analysis for Wedge 523® connections is similar to that for all Wedge™ Series 500, refer to GDL23355 (Wedge™ Series Make up Acceptance) for further explanation.

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

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

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

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



16. Wedge 523® has limited same size / weight interchange capability, if mixing weight / grade ensure compatibility of design.

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

Running

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

2. The use of slip type elevators is recommended.

3. The use of a safety clamp is strongly recommended when running Wedge 523® connections.

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

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-threading 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 W523		OD	SPIN IN RPM	FINAL M/U RPM
Carbon Steel	Doped Variant	4 1/2" and above	25	10
	Dopeless® connections	4 1/2" and above	30	10

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

11. Ensure the back up tong is located below the box connection area to prevent damage.

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. The use of slip type elevators is strongly recommended.

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

4. The use of a safety clamp is strongly recommended.

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. Do not exceed 15 RPM during spin out.

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

8. Visual inspection is recommended to classify the thread and seal 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. For long term storage of Dopeless® connections, refurbishment by qualified personnel is recommended.

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

13. 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.