

TenarisHydril Wedge 425® Connection

Scope

These guidelines apply specifically to the use of Wedge 425® connections (formerly TORQ® SFW™). 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.

References

- FTD29356 - Premium Connection Approved Thread Compounds.
- GDL31457 - Recommended Guidelines for the Field Inspection of TenarisHydril Connections.
- GDL23355 - Wedge™ Series Make up Acceptance.
- GDL23349 - Pre-Running Preparation.
- GDL23351 - Handling / Lift Plugs

Equipment, Material & Documents

1. Verify the appropriate thread compound is available for this connection. Refer to document FTD29356 for a list of compounds approved by Tenaris.
2. 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. Visually inspect threads 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 425® pipe with accessories such as pup joints, cross overs, cement heads, etc.
6. Verify material grade of all accessories ensuring compatibility with main string.
7. Tenaris recommends slip type elevators are used to run and pull Wedge 425®.

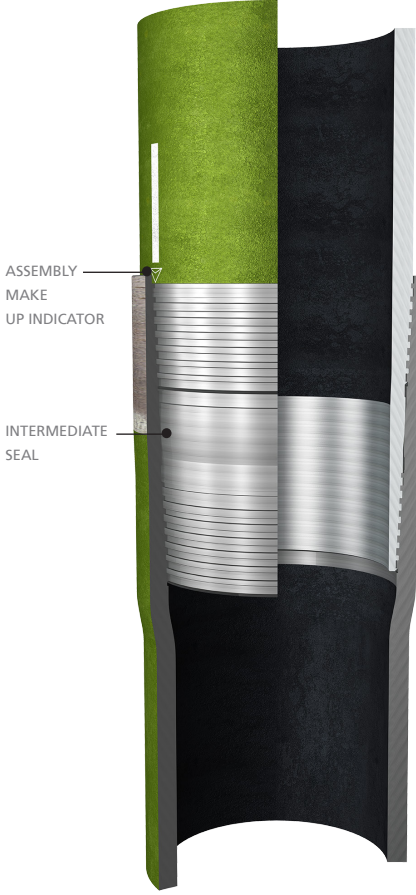
8. Check the extension plate of the slip type elevators actuates on the handling plug, ensuring the slips are set on the pipe body below the connection.
9. Check availability of handling plugs, minimum of 3 to ensure efficiency of running process.
10. Check the handling plugs are in good condition and fit correctly onto the pipe.
11. 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.
12. Check the handling plugs have 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 425® is not compatible with same OD in different weights.
16. Refer to GDL23351; Handling / Lift Plugs, for the care and use of handling and lift plugs.
17. Check single joint has sufficient clearance to slide over the box expanded area and seat against the handling plug.

Inspection

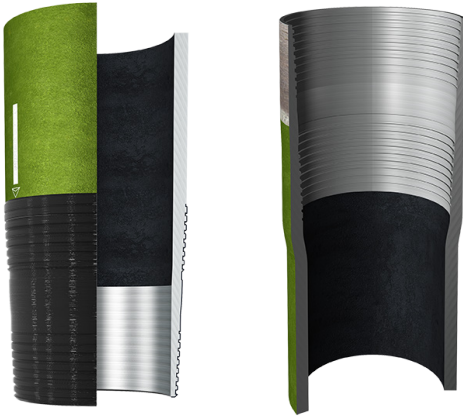
1. Inspection criteria for all Wedge™ Series 400 connections is as outlined in GDL31457; Recommended Guidelines for the Field Inspection of TenarisHydril Connections.
2. Pay particular attention to the seal area.
3. Ensure there are no gouges, tears or raised material on the lead-in areas from final thread to seal.
4. Check box connections for damage or ovality caused by transportation, handling or storage.
5. Ensure there is at least 75% coverage of 'Dry Moly' present on the connection if it is bead blasted (chrome steel). If the connection is phosphated (carbon steel) 'Dry Moly' is not required.

Wedge 425® Configuration

IDM Code GDL40739/1 / August 2024

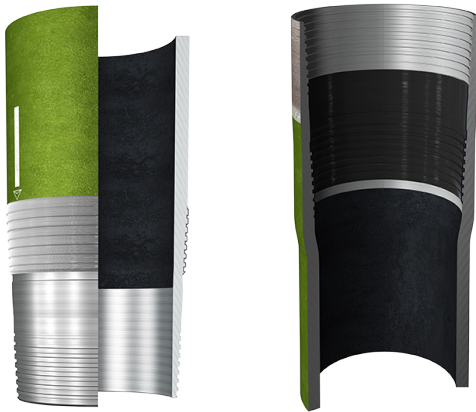


Thread Compound Application



1. All storage compound should be completely cleaned from the connections.
2. 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.
3. Do not apply running compound to the box end. If thread compound has been applied previously, remove before running.
4. 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, seal and pin nose.

Thread Lock Application

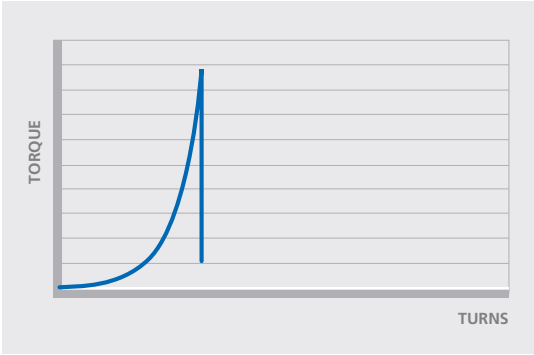


1. Connections should be clean and dry when applying thread lock. 'Dry Moly' should also be removed if present.
2. Thread lock should be applied to 50% of the threads at the back of the pin connection (large step).
3. Do not apply thread lock to the intermediate seal.
4. Running compound should then be applied to the seal and threads at the back of the box connection (small step).

Torque Application

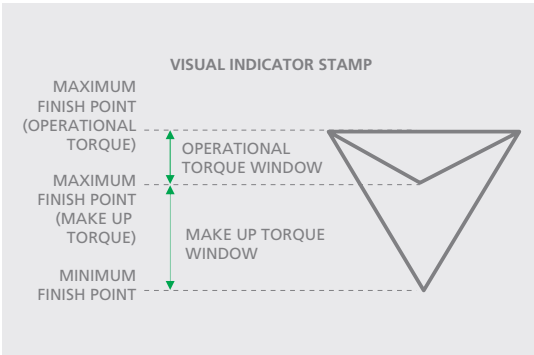
1. Set tong dump valve at optimum torque then test on pipe body.
2. Apply the specified torques as indicated on the Wedge 425[®] data sheet. Do not apply thread compound manufacturer's friction factor.

3. When applying thread lock 10% should be added to the optimum make-up torque.
4. Wedge 425® connections of the same size and different weights are not interchangeable.
5. If two different grades are to be made up, the torque to be applied should fall within the torque windows of both connections.
6. TenarisHydril Wedge 425® was formerly TORQ® SFW™ and therefore, is interchangeable with that connection in the same size and weight.
7. Computer make up equipment is recommended for Wedge 425® connections.
8. Computer make up equipment is strongly recommended for Wedge 425® connections in chrome steel.
9. Refer to GDL23355; Wedge™ Series Make up Acceptance, for further explanation.
10. When computer equipment is used, reference torque should be set at 5% of optimum torque.
11. Set the computer turns to 2 initially, then adjust as necessary to attain a good graph depiction.
12. Wedge 425® is correctly assembled when the required torque is attained along with an acceptable computer graph as indicated below.



13. If computer make up analysis is not used, ensure correct torque is applied and verify final position after assembly.

14. When assembled correctly, the face of the box will finish within the visual indicator stamp as indicated below depending on the torque applied.



15. When computer equipment is used the make up indicator can be used as an additional verification of correct final assembly position.

16. Frequency of the visual check of the make up indicator should be agreed with the Tenaris Field Services representative and documented in the running report. It is suggested to visually check the first 5 joints, then every 20 joints during the job.

17. Wedge 425® has at least one make up indicator stamp, or as many as three, TORQ® SFW™ has none. Therefore, computer assisted make up is strongly recommended when assembling TORQ® SFW™ to a compatible Wedge 425® connection.

18. Wedge 425® connections may have as many as two threads exposed after makeup which is normal for this connection and is not cause for concern.

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 safety clamp is strongly recommended.

4. The use of a weight compensator is strongly recommended for chrome, pipe with an OD ≥ 14 " and stands of three joints ≥ 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 stabilize the pipe throughout the stabbing and 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. If cross threading is evident, immediately reverse rotate the pipe, completely disassemble, clean and inspect both connections.

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

THS W425™	OD	SPIN IN RPM	FINAL MAKE-UP RPM
Carbon Steel	4" - 5 1/2"	35	15
	6 5/8" - 7 5/8"	20	10
	8 5/8" - 9 5/8"	10	5
	10 3/4" - 13 5/8"	3	3

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

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

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

11. Apply the back up tong on the pipe body, below the connection upset.

12. Never apply either tong over the connection area.

13. A factor which may preclude complete assembly is excessive thread compound being applied to the connection, reduce the quantity applied if this is found to be the case.

Downhole Rotation

1. Tenaris recommends utilizing the minimum amount of torque necessary to break the friction between the tubing, casing and the well bore if downhole rotation of the string is required.
2. Wedge 425[®] connections should not be rotated beyond the specified operating torque and the RPM should be limited to 40RPM or lower.
3. Care should be taken to gradually increase or decrease torque when rotating to allow the stored kinetic energy to dissipate in order to prevent connection yield or break out.
4. Caution is advised as torque measurement accuracy and dump valve response time can vary depending on the equipment utilized.

Pulling

1. Automatic stabbing system or stabber is strongly recommended to maintain the pipe in a vertical position.
2. The use of slip type elevators is strongly recommended.
3. The use of a safety clamp is strongly recommended.
4. The use of a weight compensator is strongly recommended for chrome pipe with an OD ≥ 14 " and stands of three joints ≥ 7 ".
5. Apply the back up tong on the pipe body, below the connection upset.
6. Do not apply tongs over either pin or box connection.

7. Apply power tong in low rpm (3-5 rpm) to break out the connection, ensuring the pipe is stabilized during the break out process.
8. Do not exceed 15 RPM during spin out.
9. Walk chrome pipe all the way out by hand after initial break out.
10. It is recommended the stabbing guide is used when lifting the pin from the box to prevent hang up of the threads.
11. Visual inspection is recommended to classify the thread condition, any rejected connections should be clearly marked and segregated for further investigation.
12. After applying storage compound, install clean, dry thread protectors.
13. Storage / thread compound should always be applied to connections post job, even rejects.
14. Unless the connections are phosphate coated apply an even coat of 'Dry Moly' to the connections and allow to dry.
15. Do not re-run the string if it has been taken beyond the specified operating torque.

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