

TenarisHydril MACII™ Connection

Scope

These guidelines apply specifically to the use of TenarisHydril MACII™ 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 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 being 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.
- MACII™ Handling Plugs TN-9804-D.

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 Tenaris website. 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 cleaned 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 MACII™ 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 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. Check single joint elevators have sufficient clearance to slide over box expanded area and seat against the handling plug.
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. Ensure handling plug OD / weight is compatible with pipe connections, MACII™ has limited same OD / weight interchange capability.
15. Refer to the TenarisHydril running manual for the care and use of handling / lift plugs.

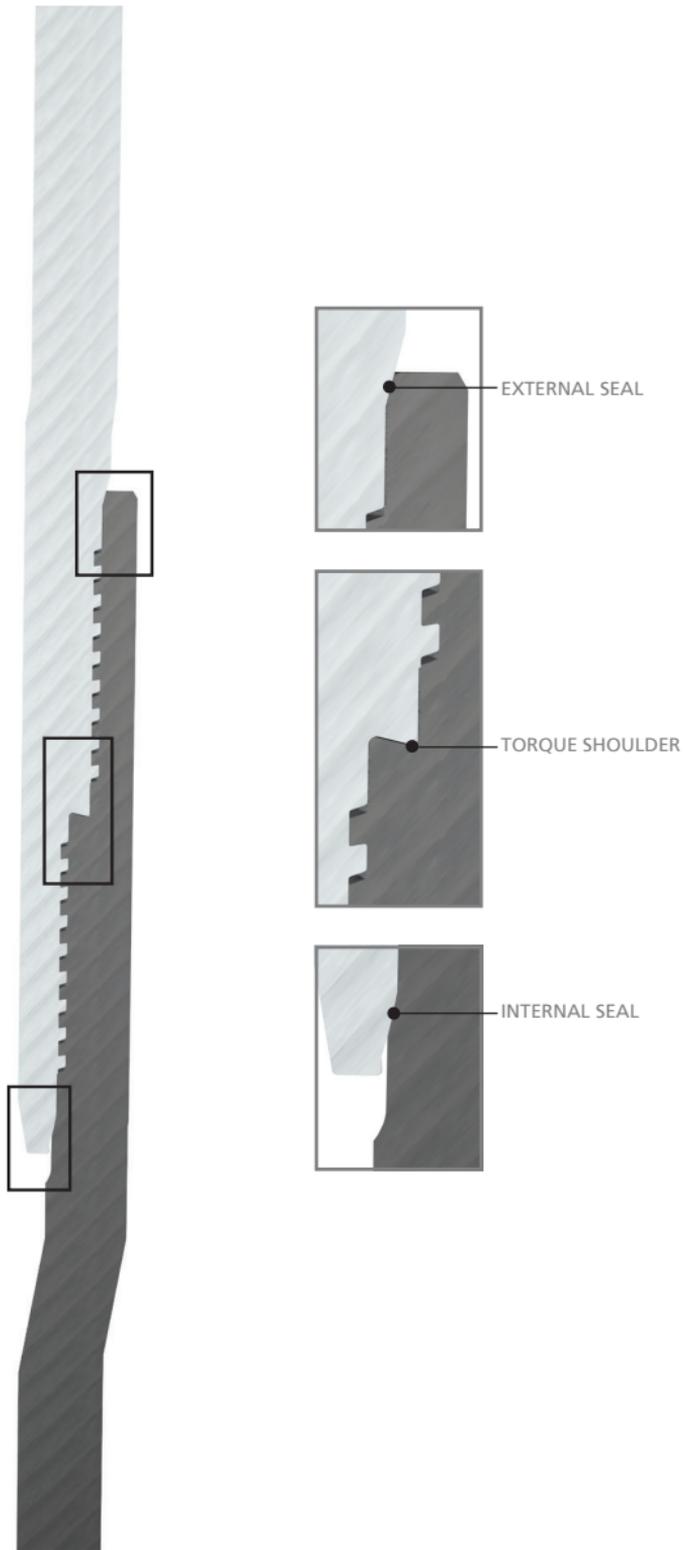
Inspection

1. Inspection criteria for all TenarisHydril connections is as outlined in the Field Service Operative Guideline GDL31457.
2. Pay particular attention to seal areas.
3. Ensure the area from pin nose to seal has no tears, gouges or raised metal.
4. Ensure the pin and box torque shoulders have no dents, tears or raised material which could interfere with correct assembly.
5. Check box connections for meshes or ovality caused by transportation, handling or storage.

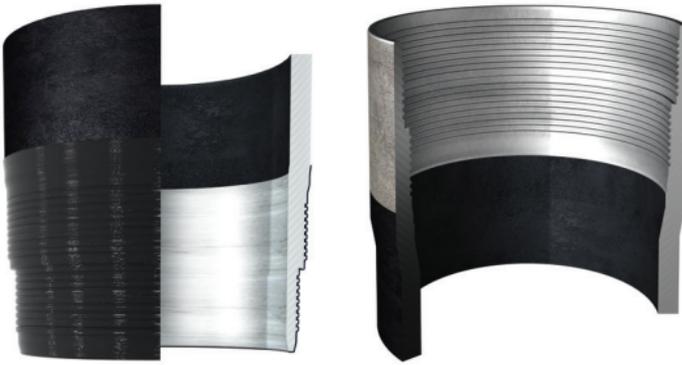
MAC II™ Configuration

Hooked Thread



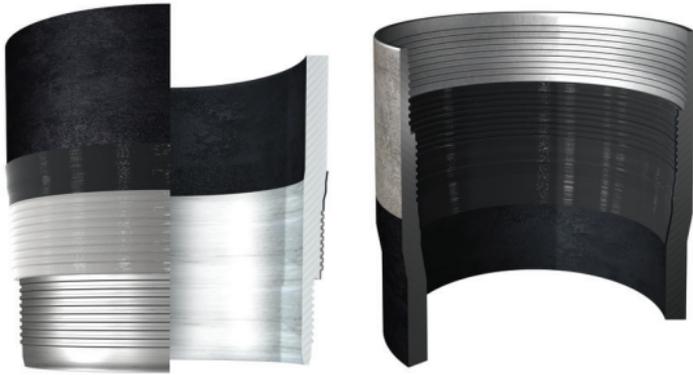


Thread Compound Application



1. Apply a thin coating of thread compound on the full pin end only, threads, seals 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'.
4. Do not apply the thread compound manufacturer's friction factor.

Thread Lock Application



Connections must be clean and dry when applying thread lock.

1. Apply a thin coating of thread lock on the threads of the large step of the pin connection.
2. Do not apply thread lock on the seals or torque shoulder.
3. Apply thread compound to the box internal seal, torque shoulder and the threads of the small step of the connection.
4. Apply thread compound to the pin external seal.
5. Do not apply the thread lock manufacturer's friction factor.
6. If the thread lock has a friction factor greater than 1, use maximum make up torque value indicated on the data sheet.

MAC II™ 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 thread compound has to be applied to MACII™ Dopeless® Technology connections, whether both pin and box are Dopeless® Technology or when mixing a doped connection with Dopeless® Technology, apply thread compound as indicated below.

NON DOPELESS® PIN INTO DOPELESS® BOX

- Apply a very thin coating of thread compound on all pin threads, seals and pin nose.
- Do not apply thread compound to the box.

DOPELESS® PIN INTO STANDARD BOX

- Apply a very thin coating of thread compound on all pin threads only.
- Do not dope pin seals or box connection.

DOPELESS® PIN INTO DOPELESS® BOX

- Apply a very thin layer of thread compound on all pin threads only.
- Do not dope pin seal or box connection.

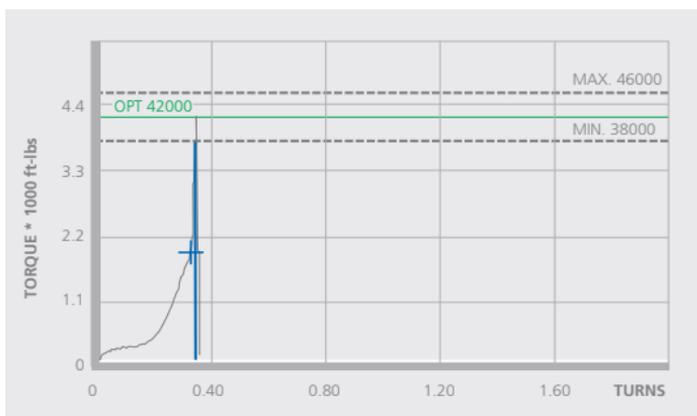
	DOPELESS® PIN	STANDARD PIN
Standard Box	Dope Pin Threads Only	See page 6
Dopeless® Box	Dope Pin Threads Only	Dope Pin Threads, Seals & Shoulder.

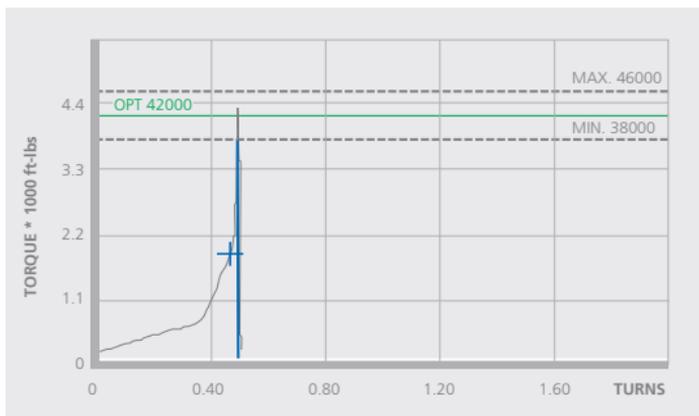
MAC II™ Dopeless® Technology Thread Lock

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 and dope applied as per the diagram on 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 large step pin threads, ensuring no contact is made with the seal.
4. Leave the Dopeless® Technology coating on the pin seals, torque shoulder 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 of the large step on the pin, as per the diagram on page 7.
7. The application of thread dope is not required.
8. When assembling Dopeless® Technology connections with thread lock, apply the non Dopeless® Technology torque values taken from the standard product data sheet.
9. Do not apply the thread lock manufacturers friction factor.
10. If the thread lock has a friction factor greater than 1 use maximum make up torque value indicated on the data sheet.

Torque Application

1. The use of computer make up analysis equipment is strongly recommended when assembling MACII™ connections.
2. There are no defined shoulder points for MACII™ connections, however a shoulder point must be in evidence.
3. Shoulder point must be lower than minimum make up torque and higher than reference torque.
4. Reference torque should initially be set at 5% of optimum torque.
5. The dump valve should be set at optimum torque, verify correct operation on the pipe body prior to first make up.
6. Set the computer turns to 1 initially then adjust as necessary to attain good graph depiction.
7. Refer to the TenarisHydril running manual make up acceptance section for further explanation.
8. The computer make up profile for MACII™ connections should be similar to the ones below.





9. MACII™ connections have limited same size different weight interchangeability, refer to TenarisHydril premium connections catalogue for interchange capability.

10. If different weight or grade of connections are to be mixed apply the lower weight or grade make up torque.

11. When assembling Dopeless® Technology connections the torques applied must be taken from the Dopeless® Technology variant product data sheet.

12. When mixing standard doped and Dopeless® Technology connections apply the torque values indicated in the table below.

TORQUE APPLICATION	DOPELESS® PIN	STANDARD PIN
Standard Box	Apply the higher torque value of Standard / Dopeless®	Doped Torques
Dopeless® Box	Dopeless® Torques	Apply the lower torque value of Standard / Dopeless®

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 MACII™ connections.
4. The use of a weight compensator is strongly recommended for chrome, large OD or heavy pipe.
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 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.
7. If cross threading is evident, immediately reverse rotate the pipe, completely disassemble, clean and inspect both connections.
8. Maximum spin in speed should not exceed 15 RPM.
9. Apply power tong at low RPM (do not exceed 5 RPM) for final make up.
10. Walk chrome pipe all the way in to hand tight then apply tong only for final make up.

Pulling

1. Automatic stabbing system or stabber is strongly recommended to stabilise the pipe vertically.
2. The use of a stabbing guide is recommended to prevent hang up.
3. The use of a safety clamp is strongly recommended.
4. The use of a weight compensator is strongly recommended for chrome, large OD and heavy pipe.
5. Apply the back up tong jaw on the pipe body, never grip the box connection.
6. Apply power tong in low RPM (3-5 RPM) to break the connection, ensuring the pipe is stabilised during the break and spin out process.
7. Walk chrome pipe all the way out 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® Technology connections.
12. For long term storage of Dopeless® Technology connections, refurbishment by qualified personnel prior to applying Dopeless® Technology specific protectors is recommended.

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

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