

# TenarisHydril Wedge 523® / 521® Connections

## Scope

These guidelines apply specifically to the use of TenarisHydril Wedge 523® and Wedge 521® connections. 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.
- Wedge 521® Handling plugs TSH-BD-35.0002.
- Wedge 523® Handling Plugs TSH-BD-34.0002.

## 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 523® / 521® 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 the condition of both pin and box coating ensuring no peel off or degradation has occurred.

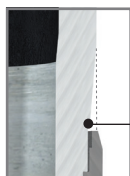
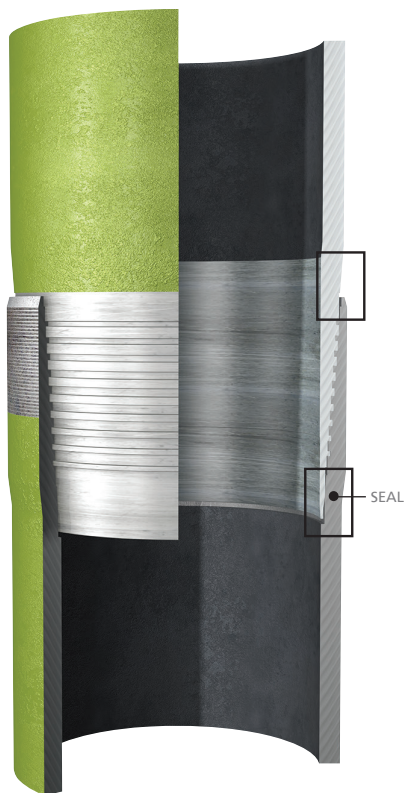
8. Check availability of handling plugs, minimum of 3 to ensure efficiency of running process.
9. Check the handling plugs are in good condition and fit correctly onto pipe.
10. Check single joint elevators have sufficient clearance to slide over the box expanded area and seat against the handling plug.
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 the pipe connections, Wedge 523® / 521® have limited same OD / weight interchange capability.
15. Refer to the TenarisHydril running manual for the care and use of handling / lift plugs.

## Inspection

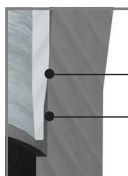
1. Inspection criteria for all Wedge Series 500™ connections is as outlined in the Field Service Operative Guideline GDL31457.
2. Pay particular attention to seal areas of Wedge 523® connection.
3. Check box and pin for signs of mashes or deformation caused during transportation / handling.
4. Ensure there are no gouges, tears or raised material on seal saver area of Wedge 523® connection.

# Wedge 523® Configuration

No make up band on Wedge 523®.



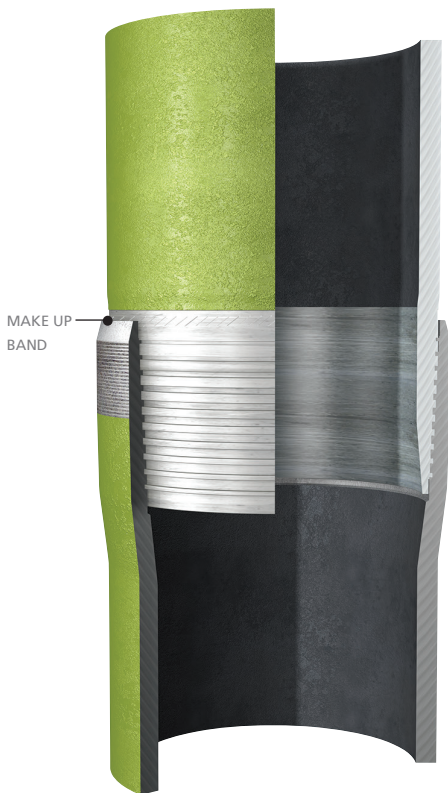
MACHINED  
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AREA



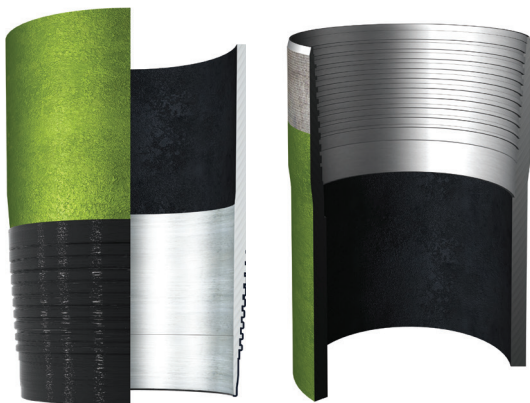
SEAL  
SEAL SAVER

## Wedge 521® Configuration

No metal to metal seal on Wedge 521®.

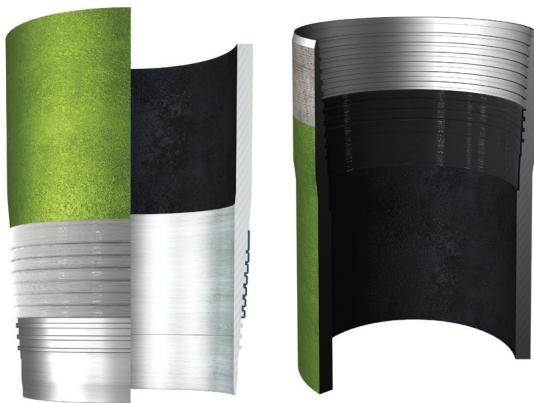


## Thread Compound Application



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'.

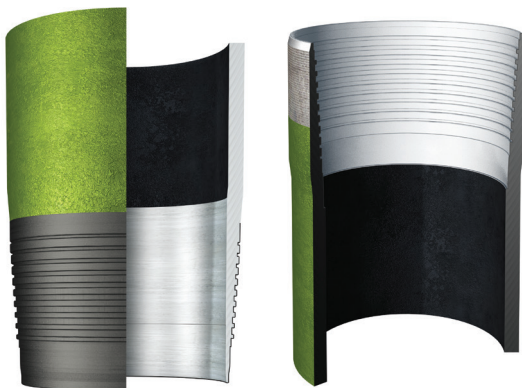
## Thread Lock Application



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 523® / 521® 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 Dopeless® Technology, apply thread compound as below:

### NON DOPELESS® PIN INTO DOPELESS® BOX

- Apply a thin coating of thread compound on the full pin end, threads and pin nose. Also Dope the pin seal of Wedge 523®.

### DOPELESS® PIN INTO STANDARD BOX

- Apply a thin coating of thread compound on the pin end threads only.
- Do not dope pin seal or box connection.

### DOPELESS® PIN INTO DOPELESS® BOX

- Apply a very thin layer of thread compound on the 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 & Nose. Also dope pin Seal of Wedge 523®.

## Wedge 523® / 521® 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 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 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® 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 1/2" 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. Double bump, (as above) every connection with an OD of 10 3/4" or larger.

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

8. 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.

9. When applying thread lock to standard doped connections, doped version torque values +20% should be used then double bump the connection.

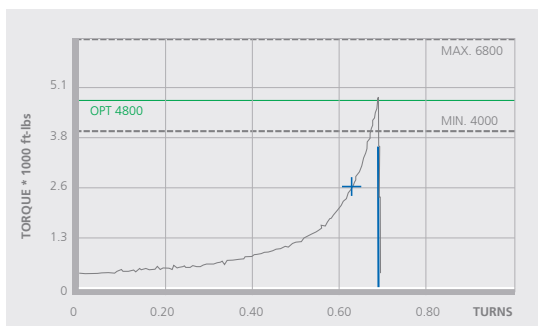
**10.** When applying thread lock to Dopeless® Technology connections, Dopeless® Technology torque values +20% should be used then double bump the connection.

**11.** Computer make up equipment is not mandatory for Wedge 523® / 521® connections in carbon steel, but is recommended.

**12.** Computer make up equipment is strongly recommended for Wedge 523® / 521® connections in chrome steel.

**13.** Graph analysis for Wedge 523® / 521® connections is similar to that for all Wedge Series 500™, refer to the TenarisHydril Running Manual make up acceptance section for further explanation.

**14.** When computer equipment is used to monitor connection make up, the graph profiles should be similar to the one below.



**15.** Wedge 523® connection has limited same size / weight interchange capability, if mixing weight / grade ensure compatibility of design and apply the higher torque value of the two connections.

**16.** Wedge 521® connection has limited same size / weight interchange capability, if mixing weight / grade ensure compatibility of design and apply the higher torque value of the two connections.

**17.** Wedge 521® and Wedge 523® connections are not interchangeable.

**18.** Wedge 523® and 513® connections are compatible in the same size / weight combination. For other weight combinations check the TenarisHydril premium connections catalogue.

**19.** When correctly assembled, Wedge 521® connection box face should finish within the make up band lines.



**WEDGE 521® MAKE UP BAND**

## 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 Wedge 523® / 521® connections.
- 4.** The use of a weight compensator is strongly recommended for chrome, large OD or heavy weight 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 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 tables 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	Standard Product	4 1/2" - 7 5/8"	25	10
		> 7 5/8"	25	10
	Dopeless® Technology	4 1/2" ≥	30	10

TSH W521		OD	SPIN IN RPM	FINAL M/U RPM
Carbon Steel	Standard Product	4 1/2" - 7 5/8"	40	15
		> 7 5/8"	25	10
	Dopeless® Technology	4 1/2" - 7 5/8"	40	15
		> 7 5/8"	30	10

10. Do not exceed 15 RPM during spin in.
11. Walk chrome pipe all the way in to hand tight, then apply tong only for final make up.
12. Ensure the back up tong is located below the box upset to prevent damage.
13. 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 single joint compensator is strongly recommended for chrome, large OD or heavy pipe.
4. The use of a safety clamp is strongly recommended.
5. Apply the back up tong jaw well below the box.
6. Apply power tong in low RPM (3-5 RPM) to break out the connection, ensuring the pipe is stabilised during the break out process.
7. Do not exceed 15 RPM during spin out.
8. Walk chrome pipe all the way out by hand after initial break out.

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

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