

15. Running, Pulling and Racking Pipe in Stands

In order to ensure performance continuity of the Tenaris product and connections whilst being racked, run and pulled in stands of two or three pipe, the following recommendations are applicable to all TenarisHydril premium connections.

Flush, Near Flush and Blue® Riser connections, by their very design, are more susceptible to damage from impact and pressure acting on the thinner wall of the pin nose when racked in stands. Damage can be caused by incorrect or poorly fitted protectors, uneven / hard stand back area, rough handling resulting in high impact when setting stands down on stand back area, side loading created by non-vertical racking and cyclical loading on the pin nose created by rig movement during adverse weather. For these reasons there is a higher risk of damage being inflicted on thin walled flush or near flush connections, this risk increases relative to the OD of the pipe but can be minimized by studiously applying these guidelines. If any doubt exists on racking pipe in the derrick please contact Tenaris for further analysis.

When running or pulling stands, a weight compensator is recommended to assist in maneuvering and stabbing in a smooth, controlled, safe manner.

Initial Running Guidelines

1. Once delivered to the rig the pipe should be visually inspected for any obvious handling damage to pipe bodies.
2. Drifting of the pipe if completed on location should be carried out from box to pin end.
3. Connections should be cleaned and inspected then have clean, dry thread protectors re-installed.
4. All protectors should be left securely in place until the pipe is at the rig floor just prior to running.
5. When protectors are removed they must be stored in such a manner as to prevent debris or fluid contaminating them.
6. When removing Dopeless® Technology protectors ensure the rubber seal rings have not remained attached to the pin or box connections.
7. When transporting the pipe to the V-Door care should be taken to prevent damage being inflicted on the connections.
8. During the initial run the recommended running and make up practices as indicated in the TenarisHydril Running Manual should be implemented.
9. When running stands, it is imperative that the torque of each intermediate connection is checked by applying specified optimum torque.
10. For Wedge series 400™, Wedge Series 500™ and Wedge Series 600™ connections:
 - If rotation of the intermediate connection is witnessed relax the tong once optimum torque has been attained scribe a line across the pin and box connections then re-apply optimum torque.

- If rotation of more than $\frac{1}{2}$ " is witnessed upon the second application of optimum torque proceed as follows:
- Re-apply optimum torque + 20%.
- For Dopeless® connections apply optimum torque once.
- For Wedge 400™ Series movement up to 1" is acceptable when applying double bump.

11. For non-wedge connections:

- If any rotation of the intermediate connection is witnessed when applying optimum torque, break out completely and inspect.
- If the connection is OK re-make using optimum torque.
- It is not necessary to check the torque of each intermediate connection of any Dopeless® Technology connection when running in stands.

Pulling Stands

1. If possible prior to pulling the string it would be beneficial to pump 10 barrels of fresh water into the string above the high viscosity pill in order to flush hole fluid from the pipe ID.
2. As the stand is pulled excess hole fluid should be wiped from the OD with a wiper.
3. As the stands are POOH scribe an indelible paint mark across the connections, to be used as a visual verification aid during RIH that no movement of either field or mill end make up has occurred.
4. Once initial break is achieved the connection should be rotated out at 5 RPM or slower ensuring no excessive pipe movement or sway is induced to the stand during rotation. If pipe sway or wobble does occur cease rotation immediately.
5. Do not allow the connection to 'bounce' heavily on disassembly, count the turns from break and slow rotation at final turn.

6. Once fully rotated out the stabbing guide should be placed over the connection to assist centralization of the pin connection and prevent thread hang up.

7. The stand should be lifted out of the box slowly.

8. When disconnected, the pin and box connections should be rinsed with fresh water, dried and inspected. If no damage is witnessed clean dry protectors must be securely installed.

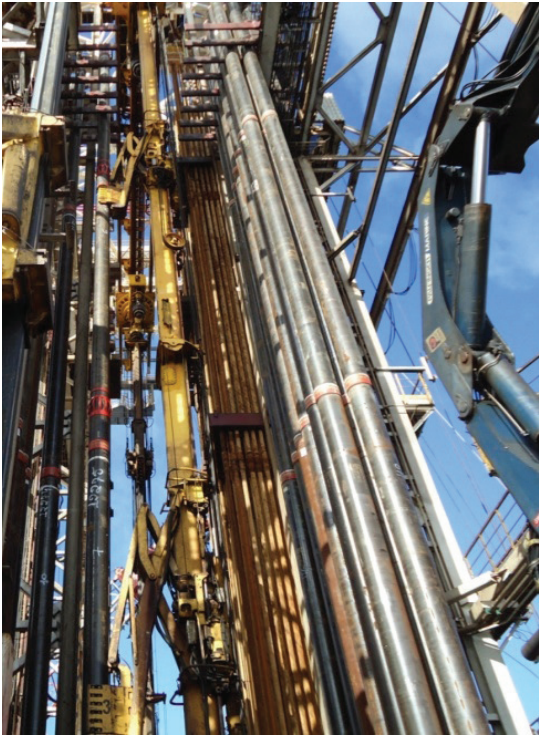
9. With the exception of Dopeless® Technology connections ensure all threads and seal areas are adequately covered with thread compound.

10. Open ended pin protectors should be installed on the pin end to allow the egress of any corrosive fluid from the pipe ID.

11. For Dopeless® Technology connections the correct Dopeless® Technology protectors must be used, ensuring the rubber seal rings are correctly in place.

12. Thread protectors can shatter or split with the extra weight of a stand bearing down upon them. For stands of three or heavy pipe use either open end composite thread protectors or stand back protectors designed for this type of operation. Dopeless® Technology connections should always have the correct Dopeless® Technology protectors installed, open ended to allow the egress of fluid.

13. When racking back, the stands should be secured as vertically as possible in order to prevent sag or excessive pipe movement due to rig heave / pitch / roll / strong wind.



Stands racked vertically
preventing sag / bending.

14. If the pipe stands are seen to be suffering excessive movement due to heave / pitch / roll / strong wind then a support band should be secured round the middle of the stands between the rig floor and the derrick racking fingers. This band should be of rope or other such soft material, under no circumstances should wire slings, hawsers or winch lines be used round the pipe.

15. When racking back, the stands should be lowered onto a wooden stand back area slowly in order to prevent the protectors fracturing or crossing. A

wooden stand back area is recommended to prevent pin protector shatter. Additionally special racking protectors can be used for stands of pipe.

16. On every second POOH the connection breaks should be rotated by breaking off the top joint, cleaning and protecting the connections and laying on deck to be RIH first on next run or made up to the last stand POOH.

17. A weight compensator is recommended when pulling stands of pipe.

Running in Stands

1. A weight compensator is recommended when running stands of pipe.

2. Once the stand is picked up and the pin protector removed, the connections should be wiped clean of excess fluid then inspected for damage or corrosion.

3. Any connection damage witnessed should be repaired as per Tenaris field repair guidelines by a qualified Tenaris representative.

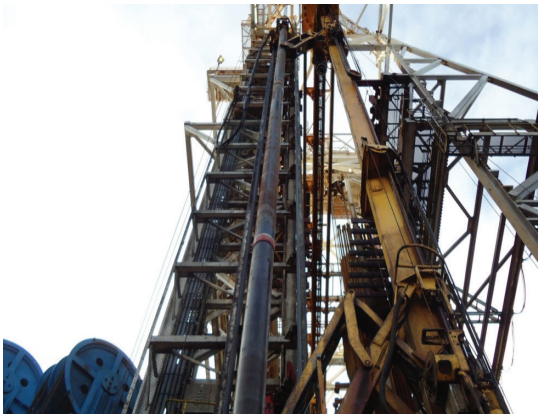
4. If it is found a connection is incapable of being repaired the joint should be laid out.

5. All damaged connections should be cleaned and dried then have storage compound applied prior to clean dry protectors being installed securely.

6. The rejected connection should be identified by a red paint band round the OD and the pipe segregated to ensure it is not picked up again.

7. It is imperative when rotating stands they do not exhibit excessive wobble or movement, ideally stands should be stabilized when rotating. Stabilization is critical during strong winds and / or heavy rig movement.

8. Reduce rotation speed if stands exhibit excessive wobble or movement.
9. A stabbing guide must be used every time a stand or single joint is stabbed or disconnected.
10. During an initial run of pre-assembled stands the torque of every connection should be checked by applying indicated optimum torque.
11. It is advisable that the torque of each connection is checked every RIH to ensure no back off occurs whilst the stands are racked in the derrick.
12. It is unnecessary to check the torque of the intermediate joints of Dopeless® Technology connections when running in stands.
13. Visually verify connection rotation has not occurred whilst stands have been racked by checking the line scribed across connections during previous POOH. Any suspicion of possible movement should be checked.



Stabilization of Stand during make up and break out.

Breaking Down and Laying Out

1. When breaking down the stands to lay out in singles, the process as indicated for pulling stands should be applied, ensuring all connections are thoroughly cleaned of corrosive fluid and protected by applying storage compound to both pin and box on non Dopeless® Technology connections, then securely installing clean, dry thread protectors.
2. Do not apply storage compound to Dopeless® Technology connections, if possible dry the connections prior to installing clean, dry protectors.
3. Ensure Dopeless® Technology protectors with seal rings correctly in place are installed on Dopeless® Technology connections.
4. All pipe should be cleaned thoroughly to remove all corrosive fluids and inspected as soon as possible upon return to logistics base or yard to prevent corrosion rejects.

Corrosion Barrier / Fiber Glass Lined

1. If the connections are of the Corrosion Barrier (CB) or FGL variants ensure the CB rings are removed and discarded each time the pipe is pulled. A new ring should be installed for every make up.
2. Inspect the CB ring groove for damage, corrosion and cleanliness (refer to section 10).

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