Global Support

TenarisHydril premium connections are supplied and supported by Tenaris, a leading manufacturer and supplier of steel pipe and integrated tubular services to the world’s energy industry.

REPAIR SHOPS

A broad international network of licensed threading facilities provides services for TenarisHydril products. Please check our website to find the nearest authorized repair shop.

Field Services

Based upon extensive experience and knowledge of pipe and connections starting at the initial design phase, Tenaris field service contributes to well integrity through process efficiency and optimal product performance. At every rig operation we assist, we prioritize the safety of our people and uphold the highest environmental standards. This Running Manual includes Tenaris’ recommendations on best practices for the care, handling and installation of our products. These recommendations aim to maximize the value of our products before, during and after installation. In addition to the guidelines described in our Running Manual, we recommend the assistance of a Tenaris field services representative when running TenarisHydril premium connections to
ensure optimum efficiency and best performance. We offer our customers running assistance and technical assistance in accordance with the summarized and general description detailed below. Should you require a complete description of Tenaris field services, please contact us at fieldservices@tenaris.com.

**RUNNING ASSISTANCE SERVICES – RIG SITE ACTIVITY**

1. Interaction with the operating company representative.

2. Interaction with services companies.


4. Visual inspection of TenarisHydril products at the well site.

5. Verification of running equipment calibration.

6. Verification of ancillary running equipment such as, but not limited to:
   - Appropriate Drift, OD & length
   - Stabbing guides
   - Handling plugs
   - Quick fit protectors

7. Advise the operating company representative on:
   - HSE issues relating to field service operations.
   - Care, handling and preparation of TenarisHydril products prior to, during and after running activities.
   - Correct application of appropriate thread compound to connections.
   - Connection make up parameters.
   - Recommended best practices for the running and pulling processes.
   - Preparation of surplus pipe post running.
   - Segregation and identification of rejected joints.
8. Monitor make up operations during running.

9. Field repair connections as per applicable guidelines if necessary.

Tenaris field service representatives are fully trained and highly experienced in Tenaris product design and running practices. This in depth knowledge and training allows flexibility of decision to amend recommended guidelines and criteria when special or unusual operational situations arise. All decisions made being done so in the knowledge no decision or change will be detrimental to product integrity. All modifications being explained and agreed with the client representative prior to implementation and fully documented in the running report.

TECHNICAL ASSISTANCE SERVICES - YARD, MACHINE SHOP, BUCKING FACILITY

1. Interaction with customers, operating company representatives, drilling and completion technicians.


3. Visual inspection of our pipe and connections on site.

4. Verification of make up / buck on equipment calibration.

5. Sub-assembly make up verification at Tenaris or at third-party premises:
   • Buck on / off couplings
   • Make up completion assemblies
   • Make up shoe tracks
   • Make up hangers
   • Make up packers
6. Accessory inspection at customer or third-party premises.

7. Field repair of TenarisHydril connections as per applicable guidelines.

8. Dopeless® technology support; inspection and repair of connections with Dopeless® technology.

9. Periodic stock inspection, traceability, coating condition check.

10. Advise best practices for storage and transportation.


12. Participate in pre-job and drilling on paper meetings.

13. Proactively advise on process efficiency improvement.

14. Customer and service company training and presentations.

**JOB DEVELOPMENT AND COMPLETION**

During job development, a field services representative will advise and recommend best practices for the handling and use of Tenaris products in accordance with the scope summarized above. Any final decision made on any job will remain with the customer company representative at the worksite.

Any deviations or anomalies contrary to Tenaris guidelines, the advice of the field service representative and / or the TenarisHydril Running Manual recommendations, which may be deemed detrimental
to the performance of the product will be documented by the field services representative.

Upon completion of field services, and prior to the departure of the Tenaris representative from the worksite, a service ticket shall be prepared by the Tenaris representative to be signed by the customer company representative at the worksite. The service ticket will contain a brief description of the services performed, including any deviations or anomalies mentioned, among other relevant information. In addition, a detailed report will be delivered to the customer if agreed by the parties.

**COMMITMENT TO SUSTAINABLE BUSINESS**

Tenaris would like to emphasize the importance of paying utmost attention to all aspects of health, safety and environmental protection during the running of our TenarisHydril premium connections.

Tenaris is committed to incorporating the principles of sustainable development throughout its operations with practices aiming to protect personal health, uphold group safety and minimize environmental impact.

During the execution of running operations on the premises of the oil and gas company, all HSE procedures applicable at the rig site should be fully acknowledged, addressed and followed.

Moreover, we strongly recommend the assistance of Tenaris field service representative, who receive comprehensive HSE training as part of their qualification plan.
Regarding health, rest periods should be respected as well as the physical fitness requirements for each job.

As regards safety pipe running operations generally involve several hazards and exposure to risks, including moving objects; H2S and risks involved in handling and exposure to chemical substances; manipulation of heavy pipe and equipment; road, sea and air transportation; fire and explosion risks and many more which are well known to oil and gas operators. All applicable safety measures must be addressed, including procedures, protective measures and equipment, risk analysis, emergency response drills and a toolbox safety talk prior to operations startup. An attitude involving a permanent awareness of safety should be fostered and encouraged among personnel.

Concerning the environment, water, pipe protectors, cleaning rags and all other site waste should be correctly disposed, in accordance with the oil and gas company procedures.

We are convinced that all efforts devoted to health, safety and environment will result in an improved performance and sustainable development.

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02. TenarisHydril Premium Connections

Tenaris product lines encompass many variants of connection design allowing complete flexibility for modern well design applications.

<table>
<thead>
<tr>
<th>BLUE® SERIES</th>
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<tbody>
<tr>
<td>TenarisHydril Blue®</td>
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<tr>
<td>TenarisHydril Blue® Max</td>
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<tr>
<td>TenarisHydril Blue® Heavy Wall</td>
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<tr>
<td>TenarisHydril Blue® Quick Seal</td>
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<tr>
<td>TenarisHydril Blue® Thermal Liner</td>
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<td>TenarisHydril Blue® Near Flush</td>
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<td>TenarisHydril Blue® Riser</td>
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<table>
<thead>
<tr>
<th>WELD-ON CONNECTORS</th>
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<tbody>
<tr>
<td>TenarisHydril BlueDock®</td>
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<tr>
<td>TenarisHydril EasyDock™</td>
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<table>
<thead>
<tr>
<th>WEDGE SERIES 400™</th>
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<tbody>
<tr>
<td>TenarisHydril Wedge 441™</td>
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<tr>
<td>TenarisHydril Wedge 461™</td>
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<td>TenarisHydril Wedge 463™</td>
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</table>
WEDGE SERIES 500™

TenarisHydril Wedge 563®
TenarisHydril Wedge 561™
TenarisHydril Wedge 523®
TenarisHydril Wedge 521®
TenarisHydril Wedge 513®
TenarisHydril Wedge 511®
TenarisHydril Wedge 533®
TenarisHydril Wedge 503®
TenarisHydril Wedge 553®

WEDGE SERIES 600™

TenarisHydril Wedge 623®
TenarisHydril Wedge 624®
TenarisHydril Wedge 625®
TenarisHydril Wedge 667®

LEGACY SERIES

TenarisHydril PJD™
TenarisHydril SLX®
TenarisHydril MACIITM
TenarisHydril PH4™
TenarisHydril PH6™
TenarisHydril CS®
TenarisHydril ER™
TenarisHydril MS™
TenarisHydril MS XT/XC™
TenarisHydril MS2BTM
TenarisHydril MS2B XT/XC™
TenarisHydril 3SB™
TenarisHydril HW
TenarisHydril HWSL
TenarisHydril New HWSL
Most TenarisHydril connections can also be manufactured with the following options:

- Special Clearance (SC)
- Matched Strength (MS)
- Special Bevel (SB)
- Corrosion Barrier (CB)
- Fiber Glass Lined (FGL)

**DOPELESS® TECHNOLOGY**

TenarisHydril Dopeless® technology is a dry, multifunctional coating applied to TenarisHydril premium connections in the mill, making thread compounds obsolete. By doing so, Dopeless® Technology coating makes operations more efficient, lessening the environmental footprint and minimizing risk and costs for E&P operators. Dopeless® technology is available on TenarisHydril Blue® Series, Wedge Series 500™, Wedge Series 600™, ER™ and MACII™ premium connections.

**Wedge Series**

Wedge Series 400™, Wedge Series 500™ and Wedge Series 600™ connection terminology is determined by a 3 digit system indicating specific designs.
<table>
<thead>
<tr>
<th>1st DIGIT</th>
<th>2nd DIGIT</th>
<th>3rd DIGIT</th>
<th>Series: Typical Application</th>
<th>Describes Metal-to-Metal Seal Configuration</th>
<th>Notes: Individual Connection Design Configurations Can Be Viewed In The Connection Specific Running Guidelines</th>
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<tbody>
<tr>
<td>4</td>
<td>0</td>
<td>1</td>
<td>Unconventionals</td>
<td>External API Upset Integral Connection</td>
<td>No Metal Seal</td>
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<tr>
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<td>2</td>
<td>Unconventionals</td>
<td>Flush Integral Connection</td>
<td>No Metal Seal</td>
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<td>2</td>
<td>3</td>
<td>Unconventionals</td>
<td>Semi-flush Integral Connection</td>
<td>No Metal Seal</td>
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<tr>
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<td>3</td>
<td>4</td>
<td>Unconventionals</td>
<td>Internal/external upset Integral Connection</td>
<td>Internal seal (Additional external seal on S600)</td>
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<tr>
<td>5</td>
<td>4</td>
<td>5</td>
<td>All-round</td>
<td>Non-upset pin and internal/external upset box Integral Connection</td>
<td>Optimized seal positioning for enhanced wear resistance</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>6</td>
<td>High Performance</td>
<td>Thread &amp; Coupled Connection</td>
<td>Mid-seal on two step Wedge threads</td>
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