

01. TenarisHydril

Worldwide 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.
3. General application of TenarisHydril Running Manual recommendations.
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.
2. General application of field services guidelines, Tenaris procedures and TenarisHydril Running Manual.
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.
11. Organize rig-ready preparation.
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.

BLUE® SERIES

TenarisHydril Blue®

TenarisHydril Blue® Max

TenarisHydril Blue® Heavy Wall

TenarisHydril Blue® Quick Seal

TenarisHydril Blue® Thermal Liner

TenarisHydril Blue® Near Flush

TenarisHydril Blue® Riser

WELD-ON CONNECTORS

TenarisHydril BlueDock®

TenarisHydril EasyDock™

WEDGE SERIES 400™

TenarisHydril Wedge 441™

TenarisHydril Wedge 461™

TenarisHydril Wedge 463™

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 MACII™	_____
TenarisHydril PH4™	_____
TenarisHydril PH6™	_____
TenarisHydril CS®	_____
TenarisHydril ER™	_____
TenarisHydril MS™	_____
TenarisHydril MS XT/XC™	_____
TenarisHydril MS28™	_____
TenarisHydril MS28 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.

1 ST DIGIT	2 ND DIGIT	3 RD DIGIT
	Describes the End's Geometric Configuration	Describes Metal-to-Metal Seal Configuration
4	Unconventionals	
	0 External API Upset Integral Connection	
	1 Flush Integral Connection	1 No Metal Seal
	2 Semi-flush Integral Connection	
5	All-round	
	3 Internal /external upset Integral Connection	3 Internal seal (Additional external seal on S600)
	4 Slim Line Thread & Coupled Connection	4 Optimized seal positioning for enhanced wear resistance
6	High Performance	
	5 Non-upset pin and internal /external upset box integral Connection	5 Mid-seal on two step Wedge threads
	6 Thread & Couple Connection	7 Internal and mid-seal on two step Wedge threads

NOTE: INDIVIDUAL CONNECTION DESIGN CONFIGURATIONS CAN BE VIEWED IN THE CONNECTION SPECIFIC RUNNING GUIDELINES.

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