PREMIUM CONNECTIONS CATALOGUE

TenarisHydril

Premium Connections Catalogue

TenarisHydril

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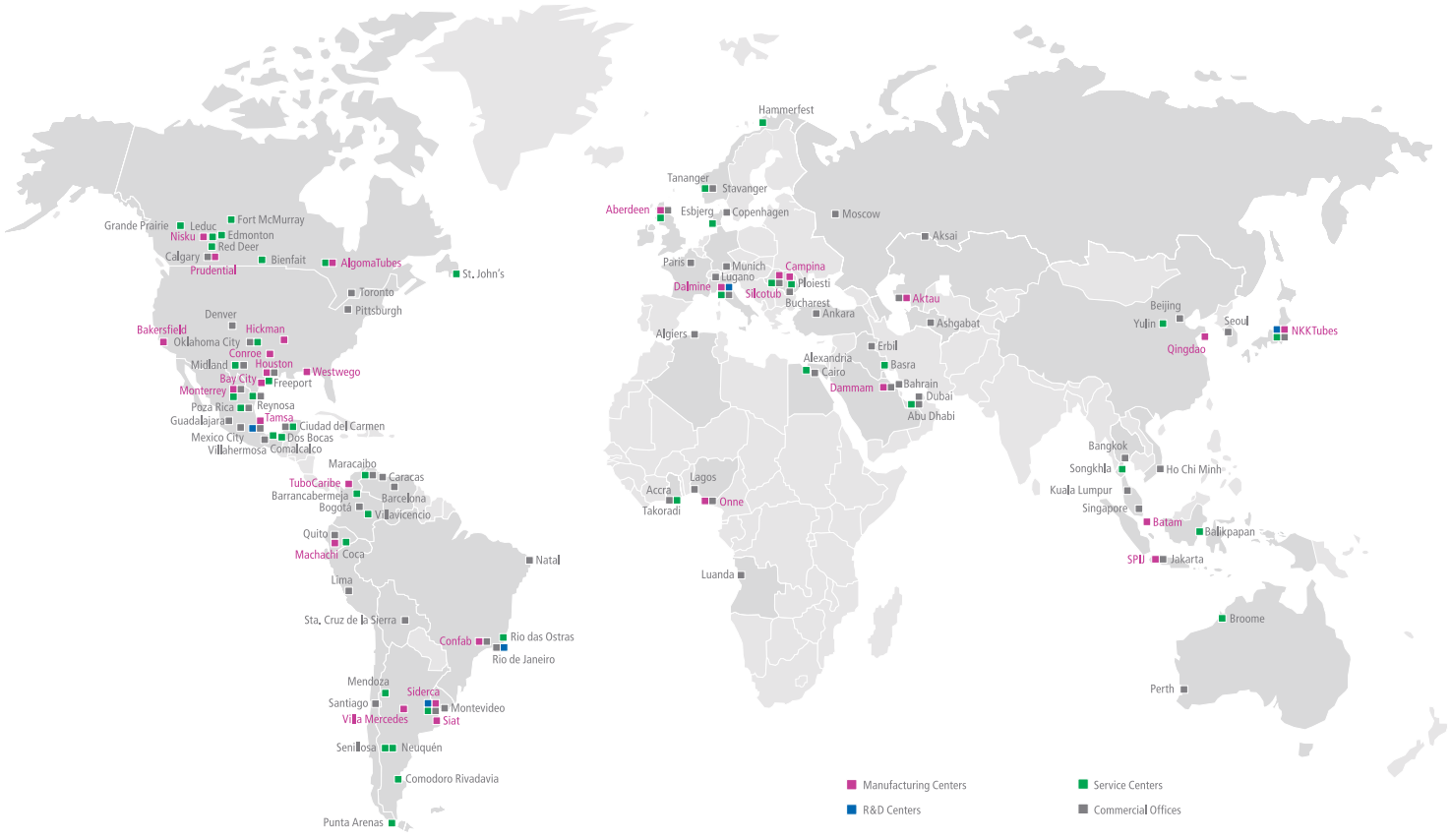
For information on other connections, visit www.tenaris.com

TenarisHydril

TenarisHydril offers outstanding premium connection design and technology worldwide. With a comprehensive range of high performance products backed by an extensive global field service network and licensed threading shops, we develop solutions to meet the needs of ever more demanding E&P environments.

TenarisHydril premium connections are supplied and supported by Tenaris, the leading manufacturer and supplier of steel tubes and integrated tubular services to the world's energy industry. For further information please visit our website at www.tenaris.com.



Integrated Tubular Solutions

Tenaris meets the evolving needs of the oil and gas industry with a commitment to unparalleled service, quality and innovative technology.

Over the years, the oil and gas industry has moved from its onshore roots to more complex shallow water and deepwater operations, and on to unconventional reserves. Operators seek not just reliable and safe technologies to support their drilling operations, but efficient supply chain systems so they can drill their wells in the most profitable way possible.

To deliver the best results requires an integrated approach combining outstanding technology, reliable product quality and efficient service with continuous innovation.

Through constant investment in research and development over many years, Tenaris has built up a unique range of product technologies that deliver unmatched performance benefits for oil and gas drilling operations in many applications. Such is the case of the TenarisHydril Wedge Series of connections, which provide exceptional torque performance and are recognized as the most robust and fastest running connections in the market.

Our TenarisHydril Blue® Series of connections are renowned for their outstanding performance in critical offshore and high pressure applications, where fully tested gas-tight seals are required. Our Dopeless® technology is an industrially-applied coating that simplifies pipe handling and running and reduces environmental contamination through making the use of manually-applied dope lubricants superfluous in oil and gas operations. And when it comes to large diameter surface and conductor casing, we have a unique range of technologies and integrated solutions.

At Tenaris, innovation goes beyond product technology. We are transforming the tubular supply chain through our Rig Direct® service. This fully integrated approach saves customers both time and money as it reduces total costs and significantly cuts on-site inventories by synchronizing the supply chain, feeding materials from the mill or yard to rigs in real-time – all this while maintaining the highest QHSE standards under one single system.

Unparalleled product and service combined in our Rig Direct® model.

Unparalleled Product Technology

Tenaris is the leader in product technology, backed by an extensive R&D network. Our products and services provide outstanding performance in the field.

WEDGE SERIES

Wedge connections provide robust, fast and easy running. Soon after TenarisHydril introduced the Wedge technology 35 years ago, operators around the world broadly adopted the solution.

TenarisHydril Wedge connections are renowned for their best-in-class torque capacity, surpassing that of most competing technologies, their outstanding performance in integral designs and their robust comportment in the field. Ideal for use in demanding applications such as offshore wells requiring slim clearance strings or horizontal wells with long laterals, or strings that must be rotated and pushed into place, our Wedge connections can offer additional sealing capabilities and compression ratings, suitable for the most severe shale and deepwater conditions.

The latest addition to the TenarisHydril's Wedge Series, the Wedge XP™ 2.0, offers extreme torque capability, mainly for production casing in unconventional applications.

BLUE® SERIES

Ranging from the original Blue® to the complementary Blue® Max and Blue® Heavy Wall connections, the TenarisHydril Blue® Series incorporates advanced casing and tubing connections design features for challenging E&P operations around the world.

Blue® connections have been extensively tested under the most demanding industry standards, including the API RP 5C5 Testing Protocol. These threaded and coupled connections are the perfect choice for drilling in HP/HT and deepwater environments.

LARGE OD

TenarisHydril's connection portfolio for the top of the well section is comprehensive, starting with its BlueDock® connector.

The BlueDock® weld-on connector was developed for surface and conductor casing in deepwater applications. Testing shows excellent performance under combined loads and fatigue. The BlueDock® connector is offered as an integrated pipe and connector solution based on Tenaris's

A DEDICATED RESEARCH AND DEVELOPMENT NETWORK

Tenaris's global R&D network consists of laboratories and testing facilities in Argentina, Italy, Japan, Mexico and Brazil, staffed by more than 360 scientists and engineers.

PRODUCTS FOR TOMORROW'S OPERATIONS

Tenaris supports its customers in the design, testing and qualification of its premium connections for applications such as deepwater, HP/HT, unconventionals and more. From finite element analysis as a key design input to full-scale performance testing to verify critical features such as galling resistance and sealability, Tenaris develops new premium connection technologies with its world-class assets.

TESTING FOR PERFORMANCE

Within this system, premium connections can be tested under the most demanding procedures including the newest version of the ISO 13679 standard and the API RP 5C5, or with ad-hoc, fit-for-purpose protocols that reflect possible application conditions, including fatigue. These technologies are also tested in the field, gathering valuable input to improve them.

experience in pipe manufacturing, premium connection design and welding technology, all carried out under the same quality management system.

To complement this, Tenaris offers two different threaded and coupled products. The Blue® Quick Seal, an extension of the Blue® Series, features a qualified metal-to-metal seal and provides a complete seal for gas. The ER™ connection, for surface and intermediate casing, offers fast make-up with minimum risk of cross threading. Easy to run and stab, this product has achieved a solid track record in a variety of applications worldwide.

TENARISXP® SERIES

The TenarisXP® Series combines enhanced performance with API compatibility. TXP® Buttress connections have become widely popular for production casing in unconventional and drilling-while-casing applications. The TXP® Buttress connection, with its special shouldered coupling design, offers extra torque and compression resistance and greater make-up stability than standard buttress connections.

LEGACY SERIES

TenarisHydril's Legacy connections include proven performers, such as the 3SB™, MS™ and MACII™ connections, that have provided many years of reliable service in challenging drilling environments around the world.

Our products and services have been proven in the most challenging operations around the world.

More than 360 scientists and engineers support Tenaris's R&D efforts worldwide.

Wedge Series Thread Identification Code

FIRST DIGIT	SECOND DIGIT	THIRD DIGIT
SERIES 500	**CONFIGURATION AND PIPE ENDS**	**METAL TO METAL SEAL**
Wedge threads	0- Integral connection on external API upset pipe	
	1- Integral connection on non-upset pipe with pipe with body OD box (flush)	1- Not present
	2- Integral connection on non-upset pipe with swaged and turned OD box (semi-flush)	
	3- Integral connection on internal/external upset pipe	3- Internal seal
	5- Integral connection on non-upset pin end and upset box end pipe	
	6- Coupled connection on non-upset pipe	

FIRST DIGIT	SECOND DIGIT	THIRD DIGIT
SERIES 600	**CONFIGURATION AND PIPE ENDS**	**METAL TO METAL SEAL**
Advanced Wedge threads	2- Integral connection on non-upset pipe with swaged and turned OD box (semi-flush)	3- Internal and External seals
		5- Mid seal on step-to-step Wedge threads

Steel Grades

Our proprietary range of steel grades is designed for the most demanding well conditions.

Tenaris has developed a broad range of proprietary steel grades to meet the most demanding well conditions, from severe sour environments to high external pressure conditions and deep wells.
In addition, leveraging its global industrial infrastructure and R&D capabilities, Tenaris works with customers to develop operator-driven tubular solutions.

SOUR SERVICE
Tenaris provides a wide variety of Sour Service grades to efficiently fit different applications' needs, always with an improved resistance to Sulfide Stress Cracking through their steel microstructure and tight mechanical properties.

HIGH COLLAPSE
Our High Collapse Series (HC, HCY and the cost-efficient ICY and IC) exhibit higher collapse resistance than that determined for API 5CT/ISO 11960 products.

Producing proprietary steel grades to meet high demanding requirements.

HIGH COLLAPSE & SOUR SERVICE
The design of our High Collapse & Sour Service grades is based on the development of carbon and low alloy steels. The manufacturing process is strictly controlled from steelmaking through rolling and heat treatment.

CORROSION RESISTANT ALLOY
Tenaris provides 13% Chromium grades and Corrosion Resistant Alloys (CRA) for oil and gas operations in highly corrosive environments where steel carbon pipe cannot be used.

DEEP WELL
Designed for deep wells, where added strength with good ductility and fracture toughness is required.

CRITICAL SERVICE
These steel grades are designed to resist corrosion produced under the presence of mild CO_2 where Corrosion Resistant Alloys are not economically justified.

LOW TEMPERATURE
Designed for oil and gas wells in very low temperature conditions, including Arctic regions, where highly effective ductility and fracture toughness are required.

HIGH DUCTILITY
These grades provide good performance when plastic deformation is expected – typical applications of these expandable pipes range from casing patching to monobore completions.

THERMAL SERVICE
Our Thermal Service pipes are the perfect choice for heavy oil applications.

API Steel Grades Manufactured by Tenaris

SMYS [ksi]	40	55	65	80	90	95	110	125
GROUP 1	H40	J55, K55		N80.1, N80.Q		R95		
GROUP 2			M65	L80.1, L80 Cr13	C90.1	T95.1	C110	
GROUP 3							P110	
GROUP 4								Q125.1

Seamless Proprietary Steel Grades Manufactured by Tenaris

SMYS [ksi]	35/45	55	70	80	85	90	95	100	110	125	130	135	140	150
SOUR SERVICE				TN 80S TN 80SS		TN 90S TN 90SS	TN 95S TN 95SS	TN 100SS	TN 110SS	TN 125SS				
MILD SOUR ENVIRONMENT									TN 110S P110-S					
CONTROLLED YIELD									P110-CY P110-CYE		TN 130CY		TN 140CY	
CONTROLLED YIELD HIGH COLLAPSE											TN 130CY-HC		TN 140CY-HC	
HIGH COLLAPSE				TN 80HC			TN 95HC		TN 110HC	TN 125HC TN110HCY		TN125HCY	TN 140HC	
IMPROVED COLLAPSE				L80-IC	L80-ICY		T95-IC	T95-ICY	P110-IC	Q125-IC P110-ICY		Q125-ICY		
HIGH COLLAPSE & SOUR SERVICE				TN 80HS			TN 95HS	TN 100HS	TN 110HS	TN 125HS				
DEEP WELL												TN 135DW	TN 140DW	TN 150DW
CRITICAL SERVICE		TN 55CS	TN 70CS	TN 80Cr3			TN 95Cr3		TN 110Cr3					
LOW TEMPERATURE		TN 55LT		TN 80LT			TN 95LT		TN110LT	TN 125LT				
HIGH DUCTILITY	TN 35HD TN 45HD		TN 70HD											
THERMAL SERVICE		TN 55TH TN 55TL		TN 80TH TN 80TL										

Steel Grades developed for Unconventionals.

Martensitic Stainless Steels for CO_2 Corrosion

SMYS [ksi]	80	85	95	110	125
MARTENSITIC	TN 80Cr13	TN 85Cr13	TN 95Cr13		
MODIFIED MARTENSITIC			TN 95Cr13M	TN 110Cr13M	
SUPER MARTENSITIC			TN 95Cr13S	TN 110Cr13S	TN 125Cr13S TN 125Cr13U

Corrosion Resistant Alloys

ALLOY	ISO 13680 / API 5CRA GROUP AND CATEGORY	UNS NUMBER	YIELD STRENGTH [ksi] MIN.	TENSILE STRENGTH [ksi] MIN.	YIELD STRENGTH [ksi] MAX.	ELONGATION [%] MIN.	HARDNESS [HRC] MAX.
DUPLEX 22CR	2; 22-5-3	S31803	65	90	90	25	26
			140	160	145	9	38
SUPER DUPLEX 25CR	2; 25-7-4	S32750	80	105	110	20	28
			125	150	130	10	37
			140	160	145	9	38
ALLOY 28	3; 27-31-4	N08028	110	140	115	11	35
			125	150	130	10	37
ALLOY 29	Similar to 3; 27-31-4	NA	110	140	115	11	35
			125	150	130	10	37
G-3	4; 22-50-7	N06985	110	140	115	11	35
			125	150	130	10	37
C-276	4; 15-60-16	N10276	110	140	115	11	35
			125	150	130	10	37
ALLOY 825	4; 21-42-3	N08825	110	140	115	11	35
			125	150	130	10	37

Other alloy and grade combinations not listed will be considered on a case-by-case basis.

Tenaris has established alliances with Sandvik and PCC Energy Group to assist the oil and gas industry in this particular segment. We commercialize both companies' seamless, stainless steel downhole production tubing and other high performance products.

Dopeless® Technology

TenarisHydril premium connections coated with Dopeless® technology increase operational efficiency, improve safety at the rig and minimize drilling operations' impact on the environment.

A ROBUST DOPE-FREE SOLUTION

Dopeless® technology makes the use of contaminating thread compounds unnecessary and improves the performance of the connections on which it is applied. A dry multifunctional coating, Dopeless® technology is applied in a fully automatic process at Tenaris mills worldwide. The process guarantees that the exact amount of lubricant required by each casing and tubing connection is distributed in a controlled and uniform way on its surface. In standard E&P operations thread compounds are applied manually in the field with a brush.

This coating provides:

- Corrosion protection
- Robust, dry lubrication
- Field torque stability

Dopeless® technology has been qualified in accordance with the industry's highest standards, tested under ISO 13679, API RP 5C5 and customer-specific tests, for a whole range of connections, sizes and materials, including CRAs.

FULLY SUPPORTED TECHNOLOGY, ADOPTED WORLDWIDE

Our Dopeless® production lines are located in the United States, Mexico, Argentina, the UK, Italy, Romania and Indonesia. Additionally, 10 self-contained Dopeless® technology units have been deployed worldwide, capable of preparing accessories and repairing pipes. More than 34 million feet have been sold in all type of applications (65% used in offshore). Tenaris has become the leader in the provision of dope-free connections, with Dopeless® technology being adopted in more than 60 countries and used by more than 100 customers.

Dopeless® technology is the leading dope-free solution with more than 15 years of proven experience worldwide.

Reliable Manufacturing Quality

TenarisHydril premium connections are manufactured in Tenaris's global network of production facilities under a single QHSE management system.

GLOBAL TO PROVIDE YOU LOCALLY

Tenaris's global manufacturing network and consistent application of its QHSE management system means Tenaris can supply operators locally, being present in multiple locations around the world, providing reliability and flexibility to customers.

TenarisHydril premium connections are manufactured as part of an integrated process of pipe design, production, treatment and finishing to ensure our products' quality. We thread our connections using state-of-the-art manufacturing centers and finishing facilities worldwide, with a supporting international network of licensed threading shops.

The largest Tenaris production centers are in Argentina, Italy, Mexico, and the United States. In 2017, Tenaris inaugurated a state-of-the-art seamless pipe mill in Bay City, Texas. The Bay City mill, which shortens the supply chain for Tenaris's Rig Direct® service in the US and is the most productive and environmentally-efficient facility of its kind, has the capacity to produce 600,000 tons of steel pipe per year. The facility's strategic location, close to the US shale plays, makes Tenaris a natural choice for customers' operations.

STRINGENT QHSE AND SUSTAINABILITY STANDARDS YOU CAN RELY ON

Tenaris delivers outstanding quality every day, be it products, safe manufacturing operations, advanced engineering solutions or comprehensive customer support.

The company manages its stringent QHSE management system according to ISO 9001, OSHAS 18001 and ISO 14001 standards.

Tenaris maintains a culture of transparency and integrity based on ethical behavior and compliance with the law. The core values of safety, quality and transparency guide every employee's efforts to protect people and the environment.

Tenaris is a signatory on the World Steel Association's Sustainability Policy and the Sustainability Charter, which uphold and promote standards for safety and health, local communities, ethical standards, stakeholder engagement, disclosure and transparency, value for stakeholders and environmental protection.

Upholding these principles is fundamental to the long-term health and sustainability not just of Tenaris, but the entire oil and gas industry.

TenarisBayCity, Texas, US. Streamlined supply chain with direct delivery of pipes, serving operators throughout the country.

Application Guide

Connections Nomenclature

Dimensional Range

Application Guide

OPERATIONAL APPLICATION	TORQUE	FUNCTIONAL APPLICATION	TYPE	PRODUCT
UNCONVENTIONALS	**EXTREME TORQUE**	**PRODUCTION CASING / LINERS AND TUBING**	**Threaded & Coupled**	Wedge XP™ 2.0
			Integral Semi Flush	Wedge 625® (*)
	HIGH TORQUE	**PRODUCTION CASING / LINERS AND TUBING**	**Threaded & Coupled**	Wedge 563® (*) TXP® Buttress Blue® (*)
			Integral Flush	Wedge 513® (*)
			Integral Semi Flush	Wedge 521®

(*) With Metal-to-Metal Seal.

OPERATIONAL APPLICATION	FUNCTIONAL APPLICATION	TYPE	PRODUCT
DEEPWATER	**CONDUCTOR AND SURFACE CASING**	**Weld-on Connector**	BlueDock®
	INTERMEDIATE CASING, LINERS AND TIE-BACKS	**Threaded & Coupled**	Blue® Blue® Max
		Integral Semi Flush	Wedge 623® Wedge 523® / 521®
		Integral Flush	Wedge 513® / 511®
	PRODUCTION CASING / LINERS, TIE-BACKS AND TUBING	**Threaded & Coupled**	Blue® Blue® Max Blue® Heavy Wall
		Integral Semi Flush	Wedge 623® Wedge 523®
		Integral Flush	Wedge 513®
	TOP-TENSIONED / DRILLING RISER	**Threaded & Coupled**	Blue® Riser
SHALLOW WATER	**CONDUCTOR AND SURFACE CASING**	**Weld-on Connector**	BlueDock®
		Threaded & Coupled	Blue® Quick Seal ER™
	INTERMEDIATE CASING, LINERS AND TIE-BACKS	**Threaded & Coupled**	Blue® Wedge 563®
		Integral Semi Flush	Wedge 523® / 521®
		Integral Flush	Wedge 513® / 511®
	PRODUCTION CASING / LINERS, TIE-BACKS AND TUBING	**Threaded & Coupled**	Blue® Wedge 563®
		Integral Semi Flush	Wedge 523®
		Integral Flush	Wedge 513®

OPERATIONAL APPLICATION	FUNCTIONAL APPLICATION	TYPE	PRODUCT
HP/HT & DEEP WELLS	**CONDUCTOR AND SURFACE CASING**	**Weld-on Connector**	BlueDock®
		Threaded & Coupled	Blue® Quick Seal ER™
	INTERMEDIATE CASING, LINERS AND TIE-BACKS	**Threaded & Coupled**	Blue® Blue® Max
		Integral Semi Flush	Wedge 623® Wedge 523® / 521®
		Integral Flush	Wedge 513® / 511®
	PRODUCTION CASING / LINERS, TIE-BACKS AND TUBING	**Threaded & Coupled**	Blue® Blue® Max Blue® Heavy Wall Wedge 563®
		Integral Semi Flush	Wedge 623® Wedge 523®
		Integral Flush	Wedge 513®
CASING WHILE DRILLING	**SURFACE CASING**	**Threaded & Coupled**	ER™
	INTERMEDIATE CASING AND LINERS	**Threaded & Coupled**	Blue® Wedge 563® ER™ TXP® Buttress
		Integral Semi Flush	Wedge 523® / 521®
		Integral Flush	Wedge 513® / 511®
	PRODUCTION CASING / LINERS AND TUBING	**Threaded & Coupled**	Blue® Wedge 563® ER™ TXP® Buttress Wedge XP™ 2.0
		Integral Semi Flush	Wedge 523® / 521®
		Integral Upset	Wedge 533®
		Integral Flush	Wedge 513® / 511®
HORIZONTAL & EXTENDED REACH WELLS	**INTERMEDIATE CASING AND LINERS**	**Threaded & Coupled**	Wedge 563® Blue®
		Integral Semi Flush	Wedge 523® / 521®
		Integral Flush	Wedge 513® / 511®
	PRODUCTION CASING / LINERS AND TUBING	**Threaded & Coupled**	Wedge 563® Blue®
		Integral Semi Flush	Wedge 625® Wedge 523® / 521®
		Integral Flush	Wedge 513® / 511®

OPERATIONAL APPLICATION	FUNCTIONAL APPLICATION	TYPE	PRODUCT
THERMAL (SAGD & CSS)	**SURFACE CASING**	**Threaded & Coupled**	ER™
		Integral Semi Flush	Wedge 521®
	INTERMEDIATE CASING AND LINERS	**Threaded & Coupled**	Blue® Wedge 563®
	PRODUCTION CASING / SLOTTED LINERS AND TUBING	**Threaded & Coupled**	TXP® Buttress
		Integral Flush	Wedge 511®
GEOTHERMAL	**SURFACE CASING**	**Threaded & Coupled**	ER™
	INTERMEDIATE CASING AND LINERS	**Threaded & Coupled**	Blue® Wedge 563® ER™
		Integral Semi Flush	Wedge 521®
		Integral Flush	Wedge 511®
	PRODUCTION CASING / LINERS AND TUBING	**Threaded & Coupled**	Blue® Wedge 563® ER™ TXP® Buttress
		Integral Semi Flush	Wedge 521®
		Integral Flush	Wedge 511®
WORKSTRINGS	**WORKSTRINGS AND TUBING**	**Threaded & Coupled**	Wedge 563®
		Integral Upset	Wedge 533®
		Integral Flush	Wedge 511®
CORROSION PROTECTION & ID COATING	**TUBING**	**Threaded & Coupled**	Wedge 563® CB* (with Corrosion Barrier)
		Integral Upset	Wedge 533® CB* (with Corrosion Barrier)
OTHER APPLICATIONS	**CONDUCTOR AND SURFACE CASING**	**Weld-on Connector**	BlueDock®
		Threaded & Coupled	Blue® Quick Seal ER™
	INTERMEDIATE CASING AND LINERS	**Threaded & Coupled**	Blue® Wedge 563® ER™
	PRODUCTION CASING / LINERS AND TUBING	**Threaded & Coupled**	Blue® TXP® Buttress
		Integral Semi Flush	Wedge 523® / 521®
		Integral Flush	Wedge 513® / 511®

NOTE: Dopeless® technology alternative is available for Blue® and Wedge technologies, as well as for TenarisHydril ER™ and TenarisHydril MACII™.
This application guide is only a recommendation. Contact a Tenaris technical specialist before selecting connections.
In addition to this guide, most connections can perform in different environments and under load modes not listed here.
For tubing applications check connection size availability in the Dimensional Range section.

Connections Nomenclature

TECHNOLOGY	ACRONYMS
WEDGE SERIES	
TenarisHydril Wedge 623® Dopeless®	TSH WEDGE 623-DOPELESS
TenarisHydril Wedge 625®	TSH WEDGE 625
TenarisHydril Wedge 625® Dopeless®	TSH WEDGE 625-DOPELESS
TenarisHydril Wedge 563®	TSH WEDGE 563
TenarisHydril Wedge 563® Dopeless®	TSH WEDGE 563-DOPELESS
TenarisHydril Wedge 563® Matched Strength	TSH WEDGE 563-MS
TenarisHydril Wedge 563® Corrosion Barrier	TSH WEDGE 563-CB
TenarisHydril Wedge 563® Recess Free Bore	TSH WEDGE 563-RFB
TenarisHydril Wedge 563® Wider Face	TSH WEDGE 563-WF
TenarisHydril Wedge XP® 2.0	TSH WEDGE XP 2.0
TenarisHydril Wedge 523®	TSH WEDGE 523
TenarisHydril Wedge 523® Dopeless®	TSH WEDGE 523-DOPELESS
TenarisHydril Wedge 521®	TSH WEDGE 521
TenarisHydril Wedge 521® Dopeless®	TSH WEDGE 521-DOPELESS
TenarisHydril Wedge 513®	TSH WEDGE 513
TenarisHydril Wedge 513® Dopeless®	TSH WEDGE 513-DOPELESS
TenarisHydril Wedge 511®	TSH WEDGE 511
TenarisHydril Wedge 511® Dopeless®	TSH WEDGE 511-DOPELESS
TenarisHydril Wedge 533®	TSH WEDGE 533
TenarisHydril Wedge 533® Dopeless®	TSH WEDGE 533-DOPELESS
TenarisHydril Wedge 533® Corrosion Barrier	TSH WEDGE 533-CB
BLUE® SERIES	
TenarisHydril Blue®	TSH BLUE
TenarisHydril Blue® Dopeless®	TSH TSH BLUE-DOPELESS
TenarisHydril Blue® Matched Strength	TSH BLUE-MS
TenarisHydril Blue® Special Clearance	TSH BLUE-SCXX (1)
TenarisHydril Blue® Special Bevel	TSH BLUE-SBYY (2)
TenarisHydril Blue® Max Dopeless®	TSH BLUE MAX-DOPELESS
TenarisHydril Blue® Heavy Wall Dopeless®	TSH BLUE HW-DOPELESS
TenarisHydril Blue® Riser	TSH BLUE RISER
TenarisHydril Blue® Riser Special Clearance	TSH BLUE RISER-SCXX (1)

TECHNOLOGY	ACRONYMS
LARGE OD	
TenarisHydril BlueDock® LR 70 ELS	TSH BLUEDOCK LR 70 ELS
TenarisHydril BlueDock® LR 70 MTM	TSH BLUEDOCK LR 70 MTM
TenarisHydril BlueDock® LR 90 ELS	TSH BLUEDOCK LR 90 ELS
TenarisHydril BlueDock® LR 90 MTM	TSH BLUEDOCK LR 90 MTM
TenarisHydril BlueDock® HR 70 ELS	TSH BLUEDOCK HR 70 ELS
TenarisHydril BlueDock® HR 70 MTM	TSH BLUEDOCK HR 70 MTM
TenarisHydril BlueDock® HR 90 ELS	TSH BLUEDOCK HR 90 ELS
TenarisHydril BlueDock® HR 90 MTM	TSH BLUEDOCK HR 90 MTM
TenarisHydril Blue® Quick Seal Dopeless®	TSH BLUE QS-DOPELESS
TenarisHydril ER™	TSH ER
TenarisHydril ER™ Dopeless®	TSH ER-DOPELESS
TenarisHydril ER™ Matched Strength	TSH ER-MS
TenarisHydril ER™ Special Clearance	TSH ER-SCXX (1)
TenarisHydril ER™ Special Bevel	TSH ER-SBYY (2)
TENARISXP® SERIES	
TXP® BTC	TXP BTC
TXP® BTC Special Clearance	TXP BTC-SCXX (1)
TXP® BTC Seal Ring	TXP BTC-SR
TXP® BTC Regular API	TXP BTC-RA

(1) The XX refers to the tension efficiency of the particular product.
(2) The YY refers to the bevel angle of the particular product.

Dimensional Range

SIZE	CONNECTIONS BY TECHNOLOGY																	
in	Wedge Series									Blue® Series				Large OD			TenarisXP® Series	
	Wedge 563®	Wedge XP™ 2.0	Wedge 625®	Wedge 623®	Wedge 523®	Wedge 521®	Wedge 513®	Wedge 511®	Wedge 533®	Blue®	Blue® Max	Blue® Heavy Wall	Blue® Riser	BlueDock® Connector	Blue® Quick Seal	ER™	TXP® BTC	
2 3/8	•							•	•	•								
2 7/8	•							•	•	•								
3 1/2	•							•	•	•								
4	•					•		•	•	•								
4 1/2	•	•	•			•	•	•	•	•							•	
5	•	•	•			•	•	•	•	•							•	
5 1/2	•	•	•			•	•	•	•	•							•	
5 3/4								•										
6	•	•						•		•							•	
6 5/8	•					•		•	•	•							•	
7	•	•		•	•	•	•	•	•	•	•					•	•	
7 1/4										•								
7 5/8	•			•	•	•	•	•	•	•		•	•				•	
7 3/4	•				•		•			•	•							
8								•										
8 1/8								•										
8 5/8	•				•	•	•	•		•		•	•			•	•	
9								•										
9 3/8							•											
9 5/8	•			•	•	•	•	•		•	•	•	•			•	•	
9 7/8	•			•	•		•			•	•					•		
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10 1/8					•		•				•							
10 3/4	•			•	•	•	•	•		•	•	•	•			•	•	
10 7/8												•						
11													•					
11 1/2				•				•										
11 3/4	•			•	•	•	•	•		•		•	•				•	
11 7/8	•			•	•	•	•	•		•			•			•		
12 3/4					•		•						•					
13 3/8	•			•	•	•	•			•	•		•			•	•	
13 1/2	•					•				•						•		
13 5/8	•				•	•	•			•	•		•			•		
13 7/8				•			•											
14				•	•		•				•	•	•			•		
15						•										•		

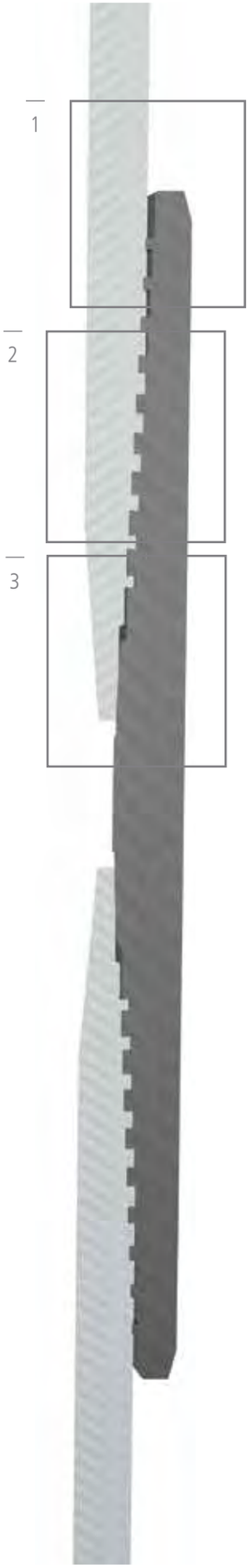
SIZE	CONNECTIONS BY TECHNOLOGY																
in	Wedge Series									Blue® Series				Large OD			TenarisXP® Series
	Wedge 563®	Wedge XP™ 2.0	Wedge 625®	Wedge 623®	Wedge 523®	Wedge 521®	Wedge 513®	Wedge 511®	Wedge 533®	Blue®	Blue® Max	Blue® Heavy Wall	Blue® Riser	BlueDock® Connector	Blue® Quick Seal	ER™	TXP® BTC
16				•	•	•	•	•			•		•			•	•
16.080				•									•				
16.100				•													
16 1/8						•											
16.150				•													
16.264				•													
17					•	•											
17 7/8					•	•											
18						•	•	•						•			
18 5/8						•		•							•	•	
20														•	•	•	
22														•		•	
24														•		•	
24 1/2																•	
26														•			
28														•			
30														•			
32														•			
36														•			
38														•			
42														•			

Connections by Technology

Wedge Series

Wedge 563® | 2 3/8" TO 13 5/8"

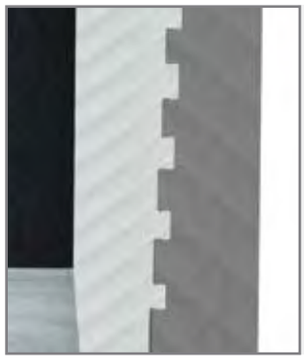
Dopeless® technology available



1

- Roller-stenciled make-up confirmation band.
- Easy make-up is developed with the rugged, coarse pitch thread and steep taper for deep stabbing.

2



- Low TPI profile enables fast installation.
- Exceptional torque strength developed through the simultaneous engagement of opposing flanks of the double hooked dovetail thread.

3

- 100% internal pressure rated metal seal maintains gas sealing capability under high axial loads.
- With the RFB option, flow stream continuity is maintained with the recess-free streamlined ID configuration. Corrosion protection and ID coating possibility without reduction on performance properties.

FEATURES

- 100% ratings in tension and compression provided by the TenarisHydril Wedge threads.
- Wedge 563® is interchangeable with Wedge 533® and Wedge 553®.

APPLICATIONS

- **HP/HT & Deep Wells**
- **Deepwater**
- **Shallow Water**
- **Unconventionals**
- **Horizontal & Extended Reach Wells**
- **Casing-while-drilling**
- **Thermal (SAGD & CSS)**
- **Geothermal**
- **Workstrings**
- **Corrosion Protection & ID Coating**
- Intermediate Casing
- Production Casing / Liners and Tie-Backs

OPTIONS

- Dopeless® technology
- Matched strength
- Recess free bore (RFB)
- CB® ring
- Wider Face

- Sizes 2 3/8" to 4 1/2" have a closed coupling (RFB option) as standard. Sizes 5" to 7" must be specified as RFB option if a closed coupling is required.

Wedge 563® | 2 3/8'' TO 13 5/8''

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						MATCHED STRENGTH
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length					55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter
in	lb/ft	in	in	in	in	in	in	in	%	%	x 1000 lb						in
2 3/8	4.60	0.190	1.995	1.901	2.875	8.250	1.945	3.642	95.1	100	68	99	112	118	136	155	2.657
	5.10	0.218	1.939	1.845	2.875	8.250	1.889	3.642	100	100	81	118	133	140	163	185	2.685
	5.80	0.254	1.867	1.773	2.875	8.250	1.817	3.642	100	100	93	135	152	161	186	212	2.737
	6.60	0.295	1.785	1.691	2.875	8.250	1.785	3.642	100	100	106	154	174	183	212	241	2.793
	7.35	0.336	1.703	1.609	2.875	8.250	1.703	3.642	100	100	118	172	194	205	237	269	2.845
2 7/8	6.40	0.217	2.441	2.347	3.500	8.250	2.391	3.642	100	100	100	145	163	172	199	227	3.192
	7.80	0.276	2.323	2.229	3.500	8.250	2.273	3.642	100	100	124	180	203	214	248	282	3.282
	8.60	0.308	2.259	2.165	3.500	8.250	2.259	3.642	100	100	137	199	224	236	273	311	3.328
	9.35	0.340	2.195	2.101	3.500	9.250	2.195	4.093	100	100	149	217	244	257	298	339	3.337
	10.50	0.392	2.091	1.997	3.500	9.250	2.091	4.093	100	100	168	245	275	291	336	—	3.405
	11.50	0.440	1.995	1.901	3.500	9.250	1.995	4.093	100	100	185	269	303	320	370	—	3.464
3 1/2	9.20	0.254	2.992	2.867	4.250	8.250	2.942	3.642	100	100	143	207	233	246	285	324	3.886
	10.20	0.289	2.922	2.797	4.250	8.250	2.872	3.642	100	100	160	233	262	277	321	364	3.941
	12.70	0.375	2.750	2.625	4.250	8.250	2.750	3.642	100	100	203	295	331	350	405	460	4.067
	14.30	0.430	2.640	2.515	4.250	10.000	2.640	4.491	100	100	228	332	373	394	456	—	4.100
	15.50	0.476	2.548	2.423	4.250	10.000	2.548	4.491	100	100	249	362	407	430	497	—	4.160
	16.70	0.510	2.480	2.355	4.250	10.000	2.480	4.491	100	100	264	383	431	455	527	—	4.202
	17.00	0.530	2.440	2.315	4.250	10.000	2.440	4.491	100	100	272	396	445	470	544	—	—
4	11.00	0.262	3.476	3.351	4.750	8.250	3.426	3.642	100	100	169	246	277	292	338	385	4.406
	11.60	0.286	3.428	3.303	4.750	8.250	3.378	3.642	100	100	184	267	300	317	367	417	4.444
	13.20	0.330	3.340	3.215	4.750	8.250	3.340	3.642	100	100	209	304	342	362	419	476	4.513
	14.80	0.380	3.240	3.115	4.750	9.250	3.240	4.093	100	100	238	346	389	411	475	—	4.548
	16.10	0.415	3.170	3.045	4.750	9.250	3.170	4.093	100	100	257	374	421	444	514	—	4.599
	18.90	0.500	3.000	2.875	4.750	11.500	3.000	5.280	100	100	302	440	495	522	605	—	4.598
	21.10	0.562	2.876	2.751	4.750	11.500	2.876	5.280	100	100	334	486	546	577	668	—	4.679
	22.20	0.610	2.780	2.655	4.750	11.500	2.780	5.280	100	100	357	520	585	617	715	—	—
4 1/2	11.60	0.250	4.000	3.875	5.200	8.250	3.950	3.642	100	100	184	267	300	317	367	417	4.891
	12.60	0.271	3.958	3.833	5.200	8.250	3.908	3.642	100	100	198	288	324	342	396	450	4.926
	13.50	0.290	3.920	3.795	5.200	8.250	3.870	3.642	100	100	211	307	345	364	422	479	4.958
	15.20	0.337	3.826	3.701	5.200	9.250	3.826	4.093	100	100	242	353	397	419	485	551	4.992
	16.60	0.375	3.750	3.625	5.200	9.250	3.750	4.093	100	100	267	389	437	462	535	608	5.051
	17.00	0.380	3.740	3.615	5.200	9.250	3.740	4.093	100	100	271	394	443	467	541	615	5.058
	18.90	0.430	3.640	3.515	5.200	9.250	3.640	4.093	100	100	302	440	495	522	605	687	5.133
	21.50	0.500	3.500	3.375	5.200	11.500	3.500	5.280	100	100	346	503	566	597	691	785	5.114
	23.70	0.560	3.380	3.255	5.200	11.500	3.380	5.280	100	100	381	555	624	659	762	867	—
	26.10	0.630	3.240	3.115	5.300	11.500	3.240	5.280	100	100	421	613	689	728	843	957	—
5	13.00	0.253	4.494	4.369	5.563	9.250	4.444	3.990	96.0	100	199	289	326	343	398	452	5.332
	15.00	0.296	4.408	4.283	5.563	9.250	4.358	3.990	100	100	241	350	394	416	481	547	5.404
	18.00	0.362	4.276	4.151	5.563	9.250	4.276	3.990	100	100	290	422	475	501	580	659	—
	21.40	0.437	4.126	4.001	5.750	12.000	4.076	5.360	96	100	331	480	541	571	661	751	5.507
	23.20	0.478	4.044	3.919	5.750	12.000	4.044	5.360	100	100	373	543	611	645	747	849	5.568
	24.10	0.500	4.000	3.875	5.750	12.000	4.000	5.360	100	100	389	565	636	672	778	884	5.600
	26.70	0.562	3.876	3.751	5.750	12.000	3.876	5.360	100	100	431	627	705	744	862	979	5.686
5 1/2	14.00	0.244	5.012	4.887	6.050	9.250	4.962	3.990	95.0	100	212	307	346	365	423	481	5.820
	15.50	0.275	4.950	4.825	6.050	9.250	4.900	3.990	100	100	248	361	406	429	497	564	5.873
	17.00	0.304	4.892	4.767	6.050	9.250	4.842	3.990	100	100	273	397	447	471	546	620	5.921
	20.00	0.361	4.778	4.653	6.050	9.250	4.778	3.990	100	100	321	466	525	554	641	729	—
	23.00	0.415	4.670	4.545	6.050	9.250	4.670	3.990	100	100	365	530	597	630	729	829	—
	26.00	0.476	4.548	4.423	6.125	9.750	4.498	4.300	100	100	413	601	676	714	826	939	6.057
	26.80	0.500	4.500	4.375	6.125	9.750	4.450	4.300	100	100	432	628	707	746	864	982	—
	28.40	0.530	4.440	4.315	6.125	9.750	4.390	4.300	100	100	455	662	745	786	910	1034	—
	29.70	0.562	4.376	4.251	6.250	11.250	4.326	5.060	100	100	480	697	785	828	959	1090	6.085
	32.60	0.625	4.250	4.125	6.250	11.250	4.250	5.060	100	100	526	766	861	909	1053	1197	6.174

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- For the MS option, the coupling OD is reduced to the minimun critical area capable of providing the same tensile efficiency as the standard option.

Wedge 563® | 2 3/8'' TO 13 5/8''

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						MATCHED STRENGTH
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length					55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter
in	lb/ft	in	in	in	in	in	in	in	%	%	x 1000 lb						in
6	24.50]	0.400	5.200	5.075	6.750	9.500	5.150	4.160	100	100	387	563	633	669	774	880	—
	25.10	0.415	5.170	5.045	6.750	9.500	5.120	4.160	100	100	400	583	655	692	801	910	—
	29.80]	0.500	5.000	4.875	6.750	9.500	5.000	4.160	100	100	475	691	778	821	950	1080	—
6 5/8	20.00]	0.288	6.049	5.924	7.390	9.250	5.999	4.050	96.0	100	301	439	494	522	604	686	7.012
	24.00	0.352	5.921	5.796	7.390	9.250	5.871	4.050	100	100	382	555	624	659	763	867	7.121
	28.00	0.417	5.791	5.666	7.390	9.250	5.791	4.050	100	100	447	651	732	773	895	1017	7.227
	32.00]	0.475	5.675	5.550	7.390	9.250	5.675	4.050	100	100	505	734	826	872	1010	1147	—
7	20.00]	0.272	6.456	6.331	7.656	9.250	6.406	4.050	100	100	300	437	491	519	600	683	7.371
	23.00	0.317	6.366	6.241*	7.656	9.250	6.316	4.050	100	100	366	532	599	632	732	832	7.449
	26.00	0.362	6.276	6.151	7.656	9.250	6.226	4.050	100	100	415	604	679	717	830	944	7.525
	29.00	0.408	6.184	6.059*	7.656	9.250	6.184	4.050	100	100	465	676	760	803	929	1056	—
	32.00]	0.453	6.094	5.969*	7.656	9.250	6.094	4.050	100	100	512	745	839	885	1025	1165	—
	35.00]	0.498	6.004	5.879	7.750	11.250	5.954	5.060	100	100	559	814	916	966	1119	1272	7.557
	38.00	0.540	5.920	5.795	7.750	11.250	5.870	5.060	100	100	603	877	986	1041	1206	1370	7.623
	41.00	0.590	5.820	5.695	7.750	11.250	5.820	5.060	100	100	653	950	1069	1129	1307	1485	—
	42.70]	0.625	5.750	5.625	7.750	11.250	5.750	5.060	100	100	688	1001	1127	1189	1377	1565	—
7 5/8	26.40]	0.328	6.969	6.844	8.500	9.250	6.919	4.050	100	100	414	602	677	714	827	940	8.097
	29.70	0.375	6.875	6.750	8.500	9.250	6.875	4.050	100	100	470	683	769	811	940	1068	8.177
	33.70]	0.430	6.765	6.640	8.500	9.250	6.765	4.050	100	100	535	778	875	923	1069	1215	8.268
	39.00]	0.500	6.625	6.500	8.500	11.250	6.575	5.060	100	100	616	895	1007	1063	1231	1399	8.216
	42.80	0.562	6.501	6.376	8.500	11.250	6.501	5.060	100	100	686	998	1122	1185	1372	1559	8.315
	45.30	0.595	6.435	6.310	8.500	11.250	6.435	5.060	100	100	723	1051	1183	1248	1445	1643	8.366
	47.10]	0.625	6.375	6.250	8.500	11.250	6.375	5.060	100	100	756	1100	1237	1306	1512	1718	8.412
	51.20]	0.687	6.251	6.126	8.500	13.500	6.251	6.170	96.0	100	789	1146	1290	1362	1576	1792	8.336
	52.80	0.712	6.201	6.076	8.500	13.500	6.201	6.170	100	100	850	1237	1392	1469	1701	1933	8.373
	55.30]	0.750	6.125	6.000	8.500	13.500	6.125	6.170	100	100	891	1296	1458	1539	1782	2025	—
7 3/4	46.10]	0.595	6.560	6.435*	8.500	11.500	6.560	5.190	100	100	736	1070	1204	1271	1471	1672	8.413
	48.60]	0.640	6.470	6.345	8.500	11.500	6.470	5.190	100	100	786	1144	1287	1358	1573	1787	—
8 5/8	32.00]	0.352	7.921	7.796*	9.625	9.250	7.933	4.050	100	100	503	732	823	869	1006	1144	9.143
	36.00	0.400	7.825	7.700	9.625	9.250	7.825	4.050	100	100	568	827	930	982	1137	1292	9.225
	40.00]	0.450	7.725	7.600*	9.625	9.250	7.725	4.050	100	100	636	925	1040	1098	1271	1445	9.309
	44.00]	0.500	7.625	7.500	9.625	11.250	7.575	5.060	100	100	702	1021	1149	1212	1404	1595	9.226
	49.00]	0.557	7.511	7.386	9.625	11.250	7.511	5.060	100	100	776	1129	1271	1341	1553	1765	9.319
	52.00]	0.595	7.435	7.310	9.625	11.250	7.435	5.060	100	100	826	1201	1351	1426	1651	1876	9.379
	54.00]	0.625	7.375	7.250	9.625	11.250	7.375	5.060	100	100	864	1257	1414	1492	1728	1964	9.427
	59.60]	0.700	7.225	7.100	9.625	13.500	7.225	6.180	100	100	959	1394	1569	1656	1917	2179	9.364
	61.10]	0.719	7.187	7.062	9.625	13.500	7.187	6.180	100	100	982	1429	1607	1697	1964	2232	9.393
	63.50]	0.750	7.125	7.000	9.625	13.500	7.125	6.180	100	100	1021	1484	1670	1763	2041	2319	9.440
	68.10]	0.812	7.001	6.876	9.625	13.500	7.001	6.180	100	100	1096	1594	1794	1893	2192	2491	—

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Wedge 563® | 2 3/8'' TO 13 5/8''

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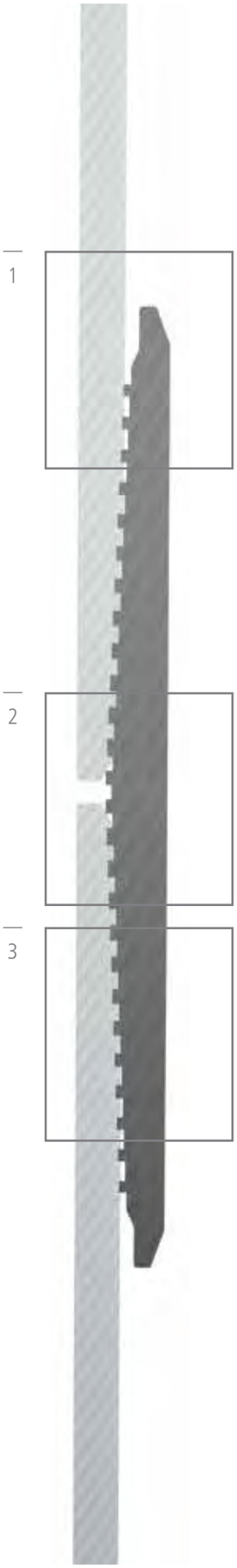
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length					55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter
in	lb/ft	in	in	in	in	in	in	in	%	%	x 1000 lb						in
9 5/8	36.00]	0.352	8.921	8.765	10.625	9.250	8.871	4.050	100	100	564	820	923	974	1128	1282	10.147
	40.00	0.395	8.835	8.679*	10.625	9.250	8.835	4.050	100	100	630	916	1031	1088	1260	1432	10.222
	43.50	0.435	8.755	8.599	10.625	9.250	8.755	4.050	100	100	691	1005	1130	1193	1381	1570	10.291
	47.00	0.472	8.681	8.525	10.625	9.250	8.681	4.050	100	100	746	1086	1222	1289	1493	1697	10.353
	53.50]	0.545	8.535	8.379*	10.625	9.250	8.535	4.050	100	100	855	1244	1399	1477	1710	1943	10.474
	58.40]	0.595	8.435	8.279	10.625	11.250	8.435	5.060	100	100	928	1350	1519	1604	1857	2110	10.380
	59.40	0.609	8.407	8.251	10.625	11.250	8.407	5.060	100	100	949	1380	1552	1639	1897	2156	10.403
	61.10]	0.625	8.375	8.219	10.625	11.250	8.375	5.060	100	100	972	1414	1590	1679	1944	2209	10.428
9 7/8	62.80]	0.625	8.625	8.469*	10.625	11.250	8.625	5.060	100	100	999	1453	1635	1725	1998	2270	—
	65.10]	0.650	8.575	8.419*	10.625	11.250	8.575	5.060	95.0	100	988	1438	1617	1708	1977	2247	—
10 3/4	40.50]	0.350	10.050	9.894	11.750	10.250	10.000	4.570	100	100	629	915	1029	1086	1258	1429	11.288
	45.50	0.400	9.950	9.794*	11.750	10.250	9.950	4.570	100	100	715	1040	1171	1236	1431	1626	11.376
	51.00]	0.450	9.850	9.694	11.750	10.250	9.850	4.570	100	100	801	1165	1311	1383	1602	1820	11.463
	55.50]	0.495	9.760	9.604*	11.750	12.000	9.710	5.370	100	100	877	1276	1435	1515	1754	1993	11.380
	60.70	0.545	9.660	9.504	11.750	12.000	9.660	5.370	100	100	961	1398	1573	1660	1922	2184	11.465
	65.70	0.595	9.560	9.404	11.750	12.000	9.560	5.370	100	100	1044	1519	1708	1803	2088	2373	11.549
	73.20]	0.672	9.406	9.250	11.750	12.000	9.406	5.370	100	100	1170	1702	1915	2021	2340	2660	11.630
	79.20	0.734	9.282	9.126	11.750	13.000	9.282	5.940	100	100	1270	1848	2079	2194	2541	2887	—
11 3/4	47.00]	0.375	11.000	10.844	12.750	10.000	11.000	4.450	100	100	737	1072	1206	1273	1474	1675	12.299
	54.00]	0.435	10.880	10.724	12.750	10.000	10.880	4.450	100	100	850	1237	1392	1469	1701	1933	12.406
	60.00]	0.489	10.772	10.616*	12.750	12.000	10.722	5.360	100	100	951	1384	1557	1643	1903	2162	12.401
	65.00	0.534	10.682	10.526*	12.750	12.000	10.682	5.360	100	100	1035	1505	1693	1788	2070	2352	12.479
	71.00	0.582	10.586	10.430	12.750	12.000	10.586	5.360	100	100	1123	1634	1838	1940	2246	2552	12.560
	75.00	0.618	10.514	10.358	12.750	12.000	10.514	5.360	100	100	1189	1729	1945	2053	2377	2702	12.621
	79.00]	0.656	10.438	10.282	12.750	12.000	10.438	5.360	100	100	1257	1829	2058	2172	2515	2858	—
11 7/8	71.80	0.582	10.711	10.555*	12.750	11.500	10.711	5.220	100	100	1136	1652	1858	1962	2271	2581	—
13 3/8	54.50]	0.380	12.615	12.459	14.375	11.500	12.540	5.170	100	100	853	1241	1396	1474	1706	1939	13.923
	61.00	0.430	12.515	12.359	14.375	11.500	12.440	5.170	100	100	962	1399	1574	1661	1924	2186	14.013
	68.00	0.480	12.415	12.259	14.375	11.500	12.415	5.170	100	100	1069	1556	1750	1847	2139	2431	14.102
	72.00]	0.514	12.347	12.191*	14.375	11.500	12.347	5.170	100	100	1142	1661	1869	1973	2284	2596	14.162
	77.00]	0.550	12.275	12.119	14.375	13.250	12.200	6.060	100	100	1219	1773	1994	2105	2438	2770	14.090
	80.70	0.580	12.215	12.059	14.375	13.250	12.140	6.060	100	100	1282	1865	2098	2215	2565	2914	14.142
	85.00	0.608	12.159	12.003	14.375	13.250	12.159	6.060	100	100	1341	1951	2195	2317	2682	3048	14.190
	86.00]	0.625	12.125	11.969	14.375	13.250	12.125	6.060	100	100	1377	2003	2253	2378	2754	3129	14.219
13 1/2	81.40	0.580	12.340	12.152*	14.375	11.500	12.340	5.170	95.0	100	1232	1791	2015	2126	2463	2799	—
13 5/8	88.20	0.625	12.375	12.188*	14.625	13.250	12.375	6.060	100	100	1404	2042	2297	2425	2808	3191	14.470

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
- TSH WEDGE 563 OD: 13.500" wt: 0.580" is interchangeable with TSH WEDGE 563 OD: 13.375" Wt: 0.380" to 0.514".
- Torque recommendation values available at www.tenaris.com
- For the MS option, the coupling OD is reduced to the minimun critical area capable of providing the same tensile efficiency as the standard option.

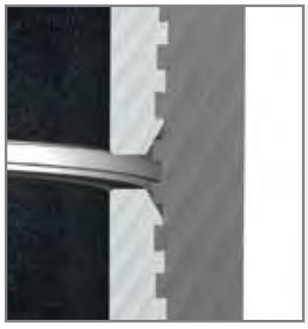
Wedge XP™ 2.0 | 4 1/2" TO 7"



1

- The make-up indicator allows for visual confirmation of appropriate make-up, even with operating torque.

2



- Easy make up: no need for a Torque vs. Turns chart.
- Pins provide extra torque capacity when subjected to incremented torque resulting in pin-to-pin contact.

3

- Exceptional torque capability and compression efficiency developed through the simultaneous engagement of opposing flanks of the dovetail thread.
- Unrivaled running reliability and robustness given by the Wedge thread.

FEATURES

- TenarisHydril Wedge thread design provides maximum over torque capacity to manage longer laterals.
- Pin-to-Pin back up mechanism granting additional torque capability to handle rotation.
- Robustness of Wedge profile reduces number of rejects / re-make-ups.
- 100% tension.
- 100% compression.
- Evaluated per ad-hoc protocols simulating fracking and production loads following ISO 13679 load paths.
- Lower threads per inch profile (3.4 vs. 5 TPI of a typical BTC modified), rugged coarse thread design and deep stabbing allow for speed of installation, enhancing the performance of an industrial drilling approach.
- Easy Make-up: No need of Torque-turn chart. Standard field equipment fully sufficient for regular make up.
- Reduced hoop stresses on coupling compared to BTC profile connections.
- Standard Bevel of 20°.
- Make up indicator in pin with 24"x 1" colored locator stripe.

APPLICATIONS

- **Unconventionals**
- **Casing-while-drilling**
- **Rotating while cementing**
- Production casing and liners

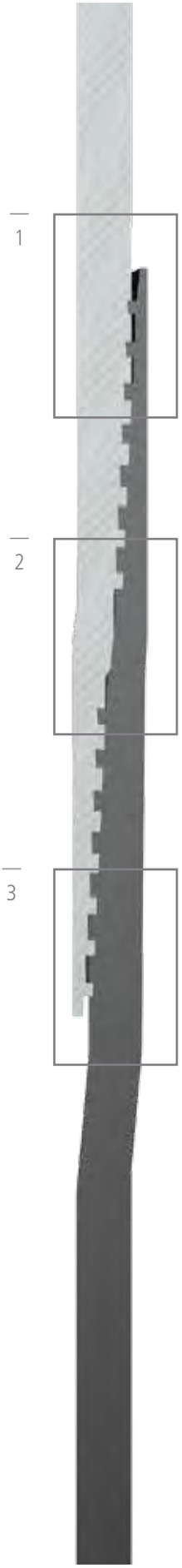
Wedge XP™ 2.0 | 4 1/2" TO 7"

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length					55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	in	in	in	in	in	in	%	%	x 1000 lb					
4 1/2	11.60]	0.250	4.000	3.875	5.250	7.714	4.000	3.486	100	100	184	267	300	317	367	417
	13.50	0.290	3.920	3.795	5.250	7.714	3.920	3.775	100	100	211	307	345	364	422	479
	15.20	0.337	3.826	3.701	5.250	7.714	3.826	3.775	100	100	242	353	397	419	485	551
	16.60]	0.375	3.750	3.625	5.250	7.714	3.750	3.775	100	100	267	389	437	462	535	608
5	15.00]	0.296	4.408	4.283	5.800	7.714	4.408	3.486	100	100	241	350	394	416	481	547
	18.00	0.362	4.276	4.151	5.800	7.714	4.276	3.775	100	100	290	422	475	501	580	659
	20.30	0.408	4.184	4.059	5.800	7.714	4.184	3.775	100	100	324	471	530	559	647	736
	20.80	0.422	4.156	4.031	5.800	7.714	4.156	3.775	100	100	334	486	546	577	668	759
	21.40	0.437	4.126	4.001	5.800	7.714	4.126	3.775	100	100	345	501	564	595	689	783
	23.20]	0.478	4.044	3.919	5.800	7.714	4.044	3.775	100	100	373	543	611	645	747	849
5 1/2	17.00]	0.304	4.892	4.767	6.300	7.714	4.892	3.775	100	100	273	397	447	471	546	620
	20.00	0.361	4.778	4.653	6.300	7.714	4.778	3.775	100	100	321	466	525	554	641	729
	23.00	0.415	4.670	4.545	6.300	7.714	4.670	3.775	100	100	365	530	597	630	729	829
	26.00]	0.476	4.548	4.423	6.300	7.714	4.548	3.775	100	100	413	601	676	714	826	939
6	24.50]	0.400	5.200	5.075	6.800	7.714	5.200	3.775	100	100	387	563	633	669	774	880
	25.10	0.415	5.170	5.045	6.800	7.714	5.170	3.775	100	100	400	583	655	692	801	910
	29.80]	0.500	5.000	4.875	6.800	7.714	5.000	3.775	100	100	475	691	778	821	950	1080
7	23.00]	0.317	6.366	6.241	7.656	7.714	6.366	3.775	100	100	366	532	599	632	732	832
	26.00	0.362	6.276	6.151	7.656	7.714	6.276	3.775	100	100	415	604	679	717	830	944
	29.00	0.408	6.184	6.059	7.656	7.714	6.184	3.775	100	100	465	676	760	803	929	1056
	32.00]	0.453	6.094	5.969	7.656	7.714	6.094	3.775	100	100	512	745	839	885	1025	1165

-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com

Wedge 625® | 4 1/2" TO 5 1/2"

Dopeless® technology available



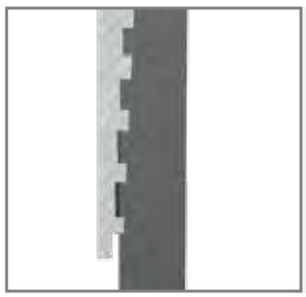
1

- Roller-stenciled make-up confirmation band.
- Vanishing thread in the pin for optimum tensile efficiency.
- Trouble-free make-up is developed through the rugged, coarse pitch thread.
- Semi-flush integral connection for smoother installation in the well.

2

- Outstanding torque, bending, and compression strength developed through the simultaneous engagement of opposing flanks of the two-step, Wedge threads.
- Exceptional torque retention developed by the step-to-step Wedge feature.
- 100% internal and external pressure rated locked-in metal-to-metal seal maintains gas sealing capability under high tension, compression, bending, and torsional loads.

3



- Vanishing thread in the box for optimum tensile efficiency.
- The steep tapered, two-step Wedge design allows for this semi-flush integral connection to approach the performance of bulkier traditional coupled connections.

FEATURES

- TenarisHydril Wedge thread.
- Exceptional ratings in tension (90%) provided by the vanishing threads at the pin OD and the box ID.
- Over 94% ratings in compression provided by the stab flank contact of the dovetail, vanishing threads.
- 100% burst and collapse ratings provided by the two-way metal-to-metal mid seal locked in by the adjacent dovetail Wedge threads and reinforced by the step-to-step Wedge.
- 90% ratings in bending provided by the two-step Wedge threads and reinforced by the step-to-step Wedge design.
- Sealability, overtorque and fatigue life successfully validated through FEA and Full Scale Testing.
- Box OD approximately 5% over pipe body.

MAIN APPLICATIONS

- **Unconventionals**
- **Horizontal & extended reach wells**
- Production casing and liners

OPTIONS

- Dopeless® technology

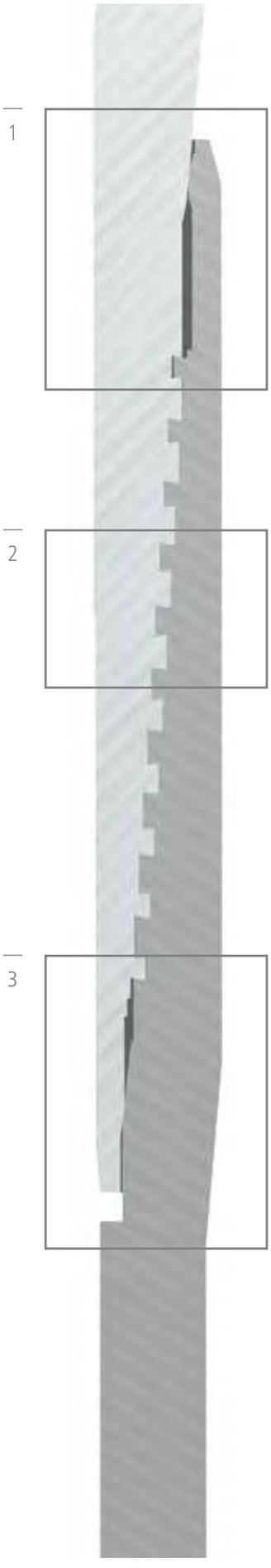
Wedge 625® | 4 1/2" TO 5 1/2"

DESIGNATION		PIPE BODY			BOX OUTSIDE DIAMETER	CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	in	in	in	in	sq in	%	%	x 1000 lb					
4 1/2	13.50	0.290	3.920	3.795	4.714	3.849	4.830	91.0	94.5	192	279	314	332	384	436
	15.10	0.337	3.826	3.701	4.724	3.755	5.230	90.1	94.8	218	318	357	377	437	496
5	18.00	0.362	4.276	4.151	5.242	4.206	5.310	91.5	94.6	265	386	435	458	531	603
	21.40	0.437	4.126	4.001	5.256	4.056	5.600	91.3	95.5	315	457	515	543	629	715
	23.20	0.478	4.044	3.919	5.276	3.974	5.930	90.8	95.0	339	493	555	586	678	771
5 1/2	20.00	0.361	4.778	4.653	5.739	4.709	5.290	91.8	94.5	295	428	482	509	588	669
	23.00	0.415	4.670	4.545	5.766	4.601	5.600	91.3	94.5	333	484	545	575	666	757
	26.00	0.476	4.548	4.423	5.788	4.479	5.940	90.0	95.5	372	541	608	643	743	845

- Torque recommendation values available at www.tenaris.com

Wedge 623® | 7 TO 16.264"

Comes with Dopeless® technology



1

- 100% external pressure seal for added reliability.
- Clearance OD 1.5 – 2% of specified nominal pipe body OD for high clearance applications.

2

- Exceptional torque capability and compression efficiency developed through the simultaneous engagement of opposing flanks of the Wedge thread.
- No drift restrictions after over torque.
- Unrivaled running reliability and robustness given by the Wedge thread.

3

- 100% internal pressure rated metal seal maintains gas sealing capability under high axial loads.
- Patented seal saver protects pin seal from handling damage and acts as a stiffener to improve metal seal functioning.

FEATURES

- TenarisHydril Wedge thread.
- Internal and external pressure seals (metal-to-metal) in line with API RP96 for Deepwater applications.
- Outstanding compression efficiency.
- Being API RP 5C5 CAL-IV compliant, the Wedge 623® connection provides validated reliability under combined loads.
- Comes with Dopeless® technology.

APPLICATIONS

- **HP/HT & Deep Wells**
- **Deepwater**
- **Shallow Water**
- Intermediate Casing
- Production Casing
- Liners & Tie-Backs

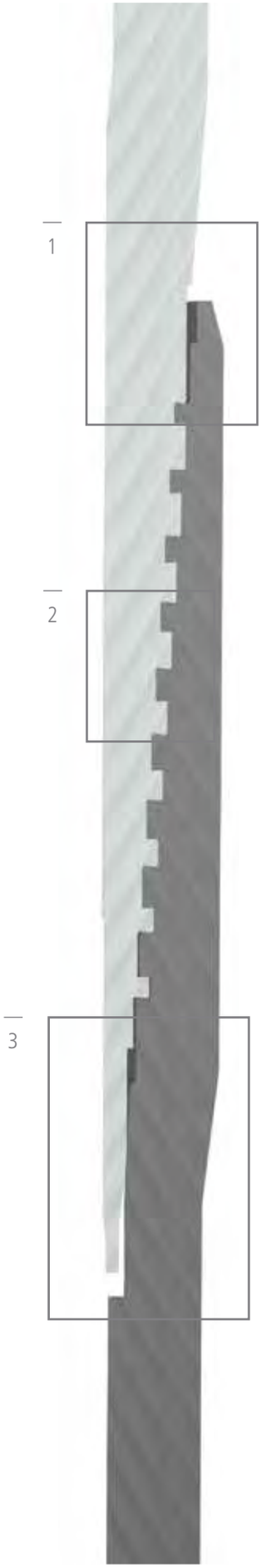
Wedge 623® Dopeless® | 7 TO 16.264"

DESIGNATION		PIPE BODY			BOX OUTSIDE DIAMETER	CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	TESTED SEALABILITY COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter								55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	135 ksi
in	lb/ft	in	in	in	in	in	in	sq in	%	%	%	x 1000 lb						
7	32.00	0.453	6.094	5.969*	7.210	6.032	6.300	6.522	70.0	87.2	60.0	358	522	587	620	718	816	881
7 5/8	55.30	0.750	6.125	6.000	7.850	6.031	7.410	11.598	71.6	82.5	72.8	638	928	1044	1102	1276	1450	1566
9 5/8	47.00]	0.472	8.681	8.525	9.834	8.563	6.020	8.890	65.5	85.1	66.2	489	711	800	844	978	1112	1200
	53.50]	0.545	8.535	8.379*	9.834	8.538	6.020	10.089	64.9	80.1	65.9	555	807	908	959	1110	1261	1362
9 7/8	62.80]	0.625	8.625	8.469*	10.100	8.538	7.010	12.713	70.0	86.3	57.2	699	1017	1145	1208	1399	1589	1716
	65.10]	0.650	8.575	8.419*	10.100	8.538	7.010	13.187	70.0	83.2	57.2	725	1055	1187	1253	1450	1649	1780
10 3/4	85.30	0.797	9.156	9.000	10.966	9.050	7.000	17.769	71.3	80.0	63.3	978	1422	1599	1688	1954	2221	2399
11 1/2	98.20	0.860	9.780	9.624*	11.675	9.693	7.260	20.784	72.3	80.8	57.4	1143	1663	1870	1975	2286	2598	2806
11 3/4	65.00	0.534	10.682	10.526*	11.965	10.663	6.060	13.961	74.2	83.0	75.5	768	1117	1256	1327	1536	1745	1885
	82.60	0.691	10.368	10.212	11.930	10.308	6.600	17.045	71.0	82.3	72.0	937	1364	1534	1620	1875	2131	2301
11 7/8	71.80	0.582	10.711	10.555*	12.072	10.663	7.020	14.681	71.1	81.5	72.6	808	1175	1321	1395	1615	1835	1982
13 3/8	68.00]	0.480	12.415	12.259	13.643	12.297	5.700	13.845	71.2	83.6	72.0	761	1108	1246	1315	1523	1731	1869
	72.00]	0.514	12.347	12.191*	13.643	12.288	5.700	15.098	72.7	81.8	73.6	830	1208	1359	1434	1660	1887	2039
	77.00]	0.550	12.275	12.119	13.695	12.288	5.700	16.132	72.8	81.3	74.6	887	1291	1452	1532	1775	2017	2178
13 7/8	106.00]	0.755	12.365	12.178*	14.160	12.292	8.080	22.748	73.1	82.6	74.2	1251	1820	2048	2161	2502	2844	3071
14	113.00	0.800	12.400	12.212*	14.253	12.292	8.080	24.550	74.0	82.8	75.3	1351	1964	2210	2332	2700	3069	3314
	115.00]	0.812	12.376	12.188*	14.253	12.292	8.080	24.525	72.9	81.7	73.3	1349	1962	2207	2330	2698	3065	3311
	116.00]	0.820	12.360	12.172*	14.253	12.292	8.080	24.548	72.3	80.9	72.6	1350	1964	2209	2332	2700	3068	3314
16	109.00]	0.656	14.688	14.500*	16.241	14.640	7.190	22.768	72.0	80.3	71.4	1252	1822	2049	2163	2504	2846	3074
16.080	109.80]	0.667	14.746	14.558*	16.241	14.640	7.190	22.802	70.6	78.6	69.9	1254	1824	2052	2166	2508	2850	3078
16.100	110.50]	0.667	14.766	14.579*	16.261	14.640	7.190	22.993	71.1	78.5	72.7	1265	1839	2070	2184	2529	2874	3104
16.150	127.50]	0.772	14.606	14.418*	16.392	14.541	7.570	27.263	73.1	81.8	73.4	1499	2181	2454	2590	2999	3408	3681
16.264	122.50]	0.734	14.796	14.608	16.480	14.649	8.220	26.429	73.8	84.4	75.2	1454	2114	2379	2511	2907	3303	3568

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com

Wedge 523® | 7" TO 17 7/8"

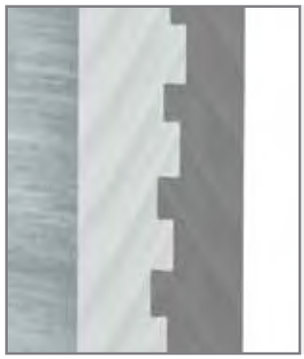
Dopeless® technology available



1

- Clearance OD 1.5–2% of specified pipe body OD (0.5–1% larger than API maximum) for high clearance situations.
- Easy and fast make-up is developed with the low-TPI, rugged, coarse pitch Wedge thread and steep taper for deep stabbing.

2



- Exceptional torque strength developed through the simultaneous engagement of opposing Wedge dovetail thread.

3

- 100% internal pressure rated metal seal maintains gas sealing capability under high axial loads.
- Patented seal saver protects pin seal from handling damage and acts as a stiffener to improve metal seal functioning.

FEATURES

- TenarisHydril Wedge thread.
- High compression rating provided by the reverse angle stab flank of the threads makes the Wedge 523® suitable for the most severe compression applications. Compression strength exceeds tension strength.
- Wedge 523® is interchangeable with Wedge 513®.

APPLICATIONS

- **HP/HT & Deep Wells**
- **Deepwater**
- **Shallow Water**
- **Horizontal & Extended Reach Wells**
- **Casing-while-drilling**
- Intermediate Casing / Liners
- Production Casing

OPTIONS

- Dopeless® technology

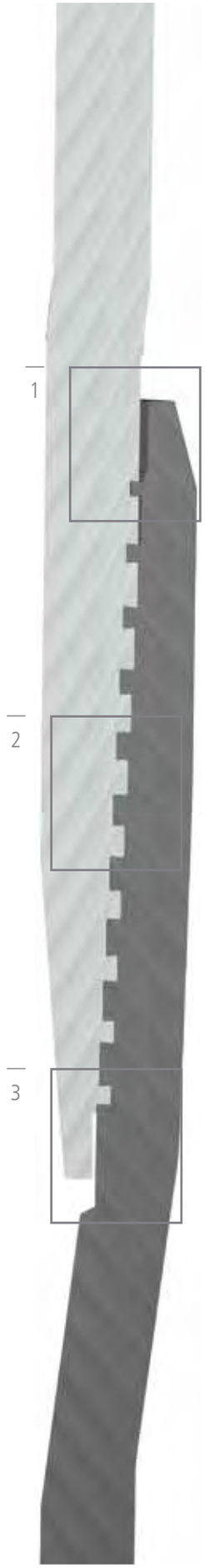
Wedge 523® | 7" TO 17 7/8"

DESIGNATION		PIPE BODY			BOX OUTSIDE DIAMETER	CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter							55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	in	in	in	in	in	sq in	%	%	x 1000 lb					
7	29.00	0.408	6.184	6.059	7.129	6.093	4.070	6.041	71.5	81.9	332	483	543	574	664	755
	32.00	0.453	6.094	5.969*	7.153	6.034	4.700	6.811	73.1	82.6	374	545	613	647	749	852
	35.00	0.498	6.004	5.879	7.168	5.913	4.650	7.558	74.3	83.1	415	605	681	718	831	945
	38.00	0.540	5.920	5.795	7.182	5.829	5.460	8.143	74.3	86.4	448	652	733	773	896	1018
7 5/8	29.70	0.375	6.875	6.750	7.752	6.800	4.420	6.021	70.5	81.7	331	482	542	572	663	753
	33.70	0.430	6.765	6.640	7.775	6.675	4.060	7.057	72.6	82.4	388	565	635	670	776	882
	39.00	0.500	6.625	6.500	7.787	6.535	4.690	8.327	74.4	82.9	458	666	749	791	916	1041
	42.80]	0.562	6.501	6.376	7.787	6.411	5.510	9.078	72.8	81.8	499	727	817	863	999	1135
	45.30]	0.595	6.435	6.310	7.811	6.345	5.510	9.737	74.1	82.6	536	779	877	925	1071	1217
	47.10]	0.625	6.375	6.250	7.811	6.285	5.510	9.854	71.7	79.9	542	789	887	936	1084	1232
7 3/4	46.10	0.595	6.560	6.435*	7.937	6.535	5.490	9.616	71.9	80.5	529	769	866	914	1058	1202
8 5/8	40.00	0.450	7.725	7.600*	8.773	7.665	4.730	8.229	71.2	80.6	453	659	740	782	905	1029
9 5/8	47.00	0.472	8.681	8.525	9.784	8.566	4.750	9.948	73.3	82.0	547	796	896	945	1094	1244
	53.50	0.545	8.535	8.379*	9.834	8.541	5.560	11.457	73.7	82.8	630	917	1031	1089	1260	1432
	58.40	0.595	8.435	8.279	9.830	8.320	5.560	12.828	76.0	84.3	705	1026	1154	1219	1411	1604
9 7/8	62.80]	0.625	8.625	8.469*	10.087	8.541	5.560	13.458	74.1	82.1	740	1077	1212	1278	1481	1682
	65.10]	0.650	8.575	8.419*	10.087	8.541	5.560	13.450	71.4	79.2	740	1076	1210	1278	1479	1681
10	68.42]	0.688	8.624	8.468*	10.150	8.541	5.560	13.465	66.9	74.1	741	1077	1212	1279	1481	1683
	68.80]	0.700	8.600	8.444	10.175	8.541	5.560	13.478	65.9	72.9	741	1078	1213	1280	1483	1684
10 1/8	79.29	0.795	8.535	8.379*	10.340	8.541	6.420	16.311	70.0	79.2	897	1305	1468	1550	1794	2039
10 3/4	55.50	0.495	9.760	9.604*	10.922	9.665	4.750	11.211	70.3	78.8	617	897	1009	1065	1233	1401
	60.70]	0.545	9.660	9.504	10.931	9.546	5.540	12.371	70.8	83.4	680	990	1114	1175	1361	1546
	65.70]	0.595	9.560	9.404	10.966	9.542	5.540	13.800	72.7	80.7	759	1104	1242	1311	1518	1725
11 3/4	60.00]	0.489	10.772	10.616*	11.928	10.666	4.790	12.283	71.0	83.2	675	983	1105	1167	1351	1535
	65.00]	0.534	10.682	10.526*	11.965	10.666	4.790	13.435	71.4	79.0	739	1075	1209	1277	1478	1679
11 7/8	71.80	0.582	10.711	10.555*	12.072	10.665	5.870	14.660	71.0	80.9	807	1173	1319	1393	1612	1833
12 3/4	88.00	0.672	11.406	11.250	13.000	11.291	5.690	19.022	74.6	82.2	1046	1522	1712	1807	2093	2378
13 3/8	68.00]	0.480	12.415	12.259	13.564	12.303	4.940	13.456	69.2	81.9	740	1077	1211	1278	1480	1682
	72.00]	0.514	12.347	12.191*	13.602	12.294	4.940	14.849	71.5	82.3	817	1188	1336	1411	1633	1856
13 5/8	88.20	0.625	12.375	12.188*	13.875	12.295	6.440	18.250	71.5	83.4	1004	1460	1642	1734	2008	2282
14	99.60]	0.700	12.600	12.412	14.234	12.456	6.580	20.912	71.5	84.6	1150	1673	1882	1987	2300	2614
	104.20]	0.734	12.532	12.344	14.241	12.388	6.580	22.117	72.3	82.1	1216	1769	1990	2101	2433	2765
	112.60]	0.797	12.406	12.218*	14.253	12.293	6.620	24.430	73.9	82.9	1344	1955	2199	2321	2687	3054
	113.00]	0.800	12.400	12.212*	14.253	12.293	6.620	24.483	73.8	82.7	1347	1959	2204	2326	2693	3060
	115.00]	0.812	12.376	12.188*	14.253	12.293	6.620	24.424	72.6	81.4	1343	1954	2198	2320	2687	3053
	116.00]	0.820	12.360	12.172*	14.253	12.293	6.620	24.480	72.1	80.8	1346	1958	2203	2326	2693	3060
16	95.00]	0.566	14.868	14.680*	16.224	14.793	6.020	19.375	70.6	82.5	1065	1550	1744	1841	2131	2422
	96.00]	0.575	14.850	14.662*	16.226	14.793	6.020	19.839	71.2	81.4	1091	1587	1786	1885	2182	2480
	102.90]	0.625	14.750	14.562	16.235	14.605	5.860	22.310	73.9	82.6	1227	1785	2008	2119	2454	2789
	109.00]	0.656	14.688	14.500*	16.241	14.643	5.860	22.831	72.2	79.5	1256	1827	2055	2169	2511	2854
17	77.50	0.438	16.124	15.936*	17.197	16.037	5.230	12.626	55.4	55.4	694	1010	1136	1199	1389	1578
17 7/8	107.00	0.575	16.725	16.538	18.000	16.599	6.310	17.188	55.0	55.0	945	1375	1547	1633	1891	2148

- TSH WEDGE 523 OD:17.000" & OD 17.875" come with Dopeless® technology.
- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
- TSH WEDGE 523-DOPELESS OD:17.875" Wt:0.575" is interchangeable with TSH WEDGE 513-DOPELESS OD:18.000" Wt:0.625".
- Torque recommendation values available at www.tenaris.com

Wedge 521® | 4" TO 18 5/8"

Dopeless® technology available



1

- Roller-stenciled make-up confirmation band.
- Easy and fast make-up is developed with the low-TPI, rugged, coarse pitch Wedge thread.

2

- Exceptional torque strength developed through the simultaneous engagement of opposing flanks of the Wedge thread, permitting washing and drilling operations.

3

- Rugged nose to improve stabbing resistance.

FEATURES

- TenarisHydril Wedge thread.
- High compression rating provided by the reverse angle stab flank of the dovetail threads makes the Wedge 521® suitable for the more severe compression applications. Compression rating is typically 80–89% of the pipe body, and is usually higher than the tension rating.
- Excellent for large diameter pipe, the dovetail thread eliminates thread pull-out, even on thin wall pipe.

APPLICATIONS

- **Deepwater**
- **Shallow Water**
- **Unconventionals**
- **Horizontal & Extended Reach Wells**
- **Casing-while-drilling**
- **Thermal (SAGD & CSS)**
- **Geothermal**
- Surface Casing
- Intermediate Casing
- Production Casing and Liners

OPTIONS

- Dopeless® technology

Wedge 521® | 4" TO 18 5/8"

DESIGNATION		PIPE BODY			BOX OUTSIDE DIAMETER	CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter							55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	in	in	in	in	in	sq in	%	%	x 1000 lb					
4	9.50	0.226	3.548	3.423	4.103	3.457	3.620	1.646	61.4	83.6	91	132	148	156	181	206
	11.00	0.262	3.476	3.351	4.162	3.401	3.620	2.029	66.0	85.9	112	162	183	193	223	254
	11.60	0.286	3.428	3.303	4.200	3.353	3.620	2.284	68.4	86.9	126	183	205	217	251	285
4 1/2	9.50	0.205	4.090	3.965	4.629	4.040	2.740	1.678	60.7	76.8	92	134	151	160	185	210
	10.50	0.224	4.052	3.927	4.651	3.976	3.620	1.821	60.5	82.6	100	146	164	173	200	228
	11.00	0.237	4.026	3.901	4.673	3.976	3.620	1.977	62.3	83.6	109	158	178	188	217	247
	11.60	0.250	4.000	3.875	4.695	3.960	3.620	2.141	64.2	84.8	118	171	193	204	236	268
	12.60	0.271	3.958	3.833	4.729	3.918	3.620	2.393	66.5	86.0	132	192	215	227	263	299
	13.50	0.290	3.920	3.795	4.759	3.880	3.620	2.617	68.2	86.7	144	209	235	249	288	327
5	13.00	0.253	4.494	4.369	5.185	4.444	3.620	2.431	64.4	84.3	134	194	219	231	267	304
	15.00	0.296	4.408	4.283	5.255	4.358	3.620	3.014	68.9	86.8	166	241	271	287	331	377
	18.00	0.362	4.276	4.151	5.359	4.226	3.620	3.891	73.8	88.7	214	311	351	370	428	486
5 1/2	14.00	0.244	5.0A12	4.887	5.660	4.947	3.620	2.552	63.3	83.5	141	204	230	242	280	319
	15.50	0.275	4.950	4.825	5.713	4.900	3.620	3.022	67.0	85.7	166	242	272	287	333	378
	17.00	0.304	4.892	4.767	5.761	4.842	3.620	3.453	69.6	87.0	190	276	311	328	380	432
	20.00	0.361	4.778	4.653	5.852	4.728	3.620	4.300	73.8	88.7	237	344	387	409	473	538
	23.00	0.415	4.670	4.545	5.936	4.620	3.620	5.069	76.5	89.6	279	405	457	482	558	634
6 5/8	20.00	0.288	6.049	5.924	6.818	5.999	3.700	3.755	65.5	86.0	206	301	338	357	413	470
	24.00	0.352	5.921	5.796	6.925	5.871	3.700	4.924	71.0	88.3	271	394	443	468	542	616
	28.00	0.417	5.791	5.666	7.029	5.741	3.700	6.079	74.7	89.5	334	486	547	577	669	760
	32.00	0.475	5.675	5.550	7.120	5.625	3.700	7.097	77.3	90.4	390	567	638	674	781	887
7	20.00	0.272	6.456	6.331	7.148	6.381	3.700	3.629	63.1	84.4	199	290	326	345	399	454
	23.00	0.317	6.366	6.241*	7.225	6.291	3.700	4.507	67.7	86.8	248	360	406	428	496	563
	26.00	0.362	6.276	6.151	7.300	6.201	3.700	5.373	71.2	88.0	295	430	483	511	591	672
	29.00	0.408	6.184	6.059	7.375	6.109	3.700	6.248	73.9	89.0	344	500	562	593	687	780
	32.00	0.453	6.094	5.969*	7.447	6.050	3.700	7.086	76.0	89.7	389	566	638	673	779	885
7 5/8	26.40	0.328	6.969	6.844	7.868	6.894	3.700	5.088	67.7	85.8	280	408	458	483	560	636
	29.70	0.375	6.875	6.750	7.947	6.800	3.700	6.080	71.2	87.5	335	486	548	577	669	760
	33.70	0.430	6.765	6.640	8.037	6.690	3.700	7.220	74.3	88.6	398	578	650	686	794	903
	39.00	0.500	6.625	6.500	8.148	6.550	3.700	8.650	77.3	89.7	476	692	778	822	952	1081
	51.20	0.687	6.251	6.126	8.080	6.176	4.970	11.672	77.9	89.3	642	933	1050	1109	1283	1458
	52.80	0.712	6.201	6.076	8.080	6.126	4.970	11.672	75.5	88.8	642	934	1051	1109	1284	1459
8 5/8	32.00	0.352	7.921	7.796*	8.889	7.924	3.700	6.234	68.1	83.9	343	498	560	592	685	779
	36.00	0.400	7.825	7.700	8.970	7.750	3.700	7.384	71.4	86.7	406	590	664	701	812	922
	40.00	0.450	7.725	7.600*	9.053	7.674	3.700	8.572	74.2	87.8	472	686	772	815	943	1072
	44.00	0.500	7.625	7.500	9.134	7.550	3.700	9.744	76.4	88.7	536	780	878	926	1073	1219
9 5/8	36.00	0.352	8.921	8.765	9.883	8.846	3.700	6.841	66.7	83.7	376	547	616	650	752	855
	40.00	0.395	8.835	8.679*	9.957	8.799	3.700	8.012	70.0	85.4	441	641	722	762	882	1002
	43.50	0.435	8.755	8.599	10.025	8.680	3.700	9.083	72.3	86.4	500	727	817	863	998	1135
	47.00	0.472	8.681	8.525	10.087	8.606	3.700	10.052	74.1	87.1	553	805	906	955	1106	1257
	53.50	0.545	8.535	8.379*	10.206	8.535	3.700	11.976	77.0	88.4	658	958	1077	1137	1317	1496
10 3/4	40.50	0.350	10.050	9.894	10.863	9.975	4.140	7.231	63.2	78.1	398	578	650	686	795	903
	45.50	0.400	9.950	9.794*	10.950	9.926	4.140	8.651	66.5	78.9	475	692	779	822	952	1081
	51.00	0.450	9.850	9.694	11.037	9.775	4.140	10.247	70.4	82.1	564	820	923	974	1128	1281
	55.50	0.495	9.760	9.604*	11.010	9.685	4.970	11.463	71.9	84.5	631	917	1032	1089	1261	1433
	60.70	0.545	9.660	9.504	11.094	9.585	4.970	12.937	74.0	85.6	711	1035	1164	1228	1422	1616
	65.70	0.595	9.560	9.404	11.177	9.551	4.970	14.370	75.7	85.3	790	1150	1293	1365	1581	1796

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
- TSH WEDGE 521 OD:16.125" Wt:0.566" is interchangeable with TSH WEDGE 521 OD:16.000" Wt:0.375" to 0.575".
- TSH WEDGE 521 OD:17.825" Wt:0.500" is interchangeable with TSH WEDGE 521 OD:18.000" Wt:0.500" to 0.562".
- Torque recommendation values available at www.tenaris.com

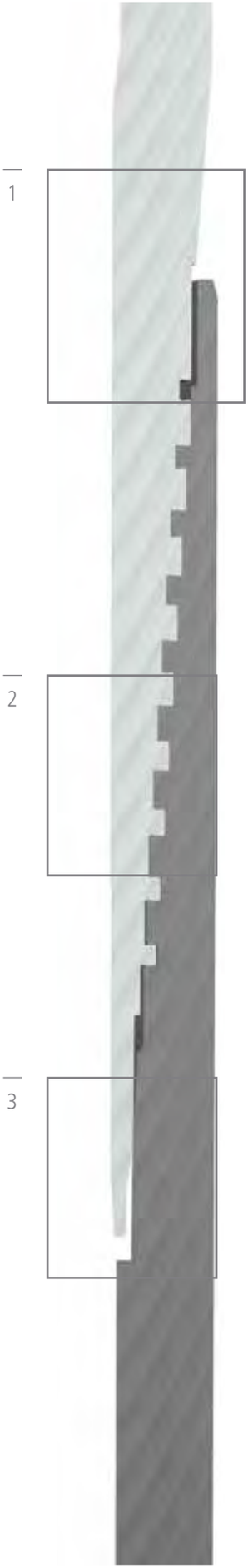
Wedge 521® | 4" TO 18 5/8"

DESIGNATION		PIPE BODY			BOX OUTSIDE DIAMETER	CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter							55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	in	in	in	in	in	sq in	%	%	x 1000 lb					
11 3/4	47.00]	0.375	11.000	10.844	11.892	10.925	4.140	8.577	64.0	78.3	472	686	772	815	943	1072
	54.00]	0.435	10.880	10.724	11.998	10.805	4.140	10.586	68.5	80.7	582	847	954	1006	1165	1324
	60.00]	0.489	10.772	10.616*	11.928	10.687	4.970	12.205	70.6	82.5	671	977	1099	1160	1344	1526
	65.00	0.534	10.682	10.526*	11.965	10.676	4.970	13.198	70.1	80.8	726	1055	1187	1253	1451	1649
	71.00	0.582	10.586	10.430	12.125	10.501	4.970	15.235	74.6	84.7	838	1219	1371	1447	1676	1904
	73.60	0.609	10.532	10.376	12.170	10.447	4.970	16.103	75.5	85.2	885	1287	1448	1529	1770	2011
	80.50]	0.672	10.406	10.250	12.274	10.321	4.970	18.097	77.4	86.2	995	1448	1629	1720	1992	2262
11 7/8	71.80	0.582	10.711	10.555*	12.269	10.676	4.970	15.353	74.4	85.8	845	1229	1382	1460	1690	1920
13 3/8	54.50]	0.380	12.615	12.459	13.531	12.540	4.650	9.461	61.0	81.9	520	757	852	899	1041	1183
	61.00]	0.430	12.515	12.359	13.620	12.440	4.650	11.362	65.0	83.8	625	909	1023	1080	1251	1421
	68.00]	0.480	12.415	12.259	13.707	12.340	4.650	13.254	68.2	85.1	729	1061	1194	1260	1459	1658
	72.00]	0.514	12.347	12.191*	13.766	12.317	4.650	14.537	70.0	85.8	799	1163	1308	1381	1599	1817
	77.00]	0.550	12.275	12.119	13.686	12.200	5.600	15.587	70.3	85.7	857	1246	1402	1480	1714	1947
	80.70	0.580	12.215	12.059	13.738	12.140	5.600	16.693	71.6	86.2	918	1335	1502	1586	1837	2086
	85.00]	0.608	12.159	12.003	13.785	12.084	5.600	17.740	72.7	86.6	975	1418	1596	1684	1950	2216
	86.00]	0.625	12.125	11.969	13.814	12.050	5.600	18.361	73.3	86.9	1009	1468	1651	1743	2019	2294
13 1/2	81.40]	0.580	12.340	12.152*	13.940	12.315	5.600	16.793	71.3	87.3	923	1343	1511	1594	1847	2098
13 5/8	88.20]	0.625	12.375	12.188*	13.940	12.305	5.600	18.708	73.3	86.9	1029	1497	1684	1778	2058	2339
15	77.50	0.500	14.000	13.812	15.149	13.875	4.650	15.041	66.0	78.0	827	1203	1353	1428	1653	1879
16	65.00]	0.375	15.250	15.062	16.125	15.122	4.650	11.137	60.5	77.6	612	891	1002	1058	1225	1392
	75.00]	0.438	15.124	14.936	16.155	15.049	4.650	14.058	65.6	80.3	773	1124	1264	1334	1545	1756
	84.00]	0.495	15.010	14.822	16.257	14.935	4.650	16.644	69.0	82.2	915	1331	1497	1581	1830	2080
	84.80]	0.500	15.000	14.812	16.266	14.925	4.650	16.873	69.3	82.2	928	1350	1518	1603	1856	2109
	94.50]	0.562	14.876	14.688*	16.412	14.809	4.650	19.707	72.3	83.8	1084	1577	1774	1872	2168	2463
	95.00]	0.566	14.868	14.680*	16.397	14.809	4.650	19.886	72.5	83.9	1094	1592	1791	1890	2189	2487
	96.00]	0.575	14.850	14.662*	16.397	14.809	4.650	20.296	72.8	84.1	1116	1623	1826	1927	2231	2536
	109.00]	0.656	14.688	14.500	16.465	14.613	5.600	23.487	74.3	88.4	1292	1880	2115	2232	2584	2937
	118.00]	0.715	14.570	14.382	16.566	14.495	5.600	26.116	76.1	89.1	1437	2090	2351	2482	2874	3266
16 1/8	95.60	0.566	14.993	14.806	16.427	14.864	4.650	19.645	71.0	81.5	1081	1571	1768	1866	2161	2455
17	77.50]	0.438	16.124	15.936*	17.197	16.067	4.650	14.950	65.6	80.7	822	1196	1345	1420	1645	1869
	88.10]	0.500	16.000	15.812	17.308	15.925	4.650	17.967	69.3	82.6	988	1437	1617	1706	1976	2245
	151.00	0.875	15.250	15.062	17.673	15.175	5.880	34.664	78.2	86.0	1907	2773	3119	3293	3813	4333
17 7/8	93.50	0.500	16.875	16.688	18.000	16.843	4.650	17.254	63.2	79.3	949	1380	1552	1639	1897	2156
	105.00]	0.562	16.751	16.564	18.000	16.628	5.600	19.942	65.2	77.4	1096	1594	1794	1893	2192	2491
	107.00]	0.575	16.725	16.538	18.000	16.628	5.600	20.623	66.0	77.9	1135	1650	1857	1960	2269	2578
	121.00]	0.650	16.575	16.388	18.020	16.565	5.600	22.815	64.9	75.5	1256	1826	2055	2169	2511	2854
18	94.00]	0.500	17.000	16.812	18.060	16.883	4.650	17.699	64.4	75.4	974	1416	1593	1681	1947	2213
	105.00]	0.562	16.876	16.688	18.135	16.759	4.650	20.978	68.1	78.0	1153	1677	1887	1992	2307	2621
18 5/8	87.50]	0.435	17.755	17.568	18.854	17.638	4.650	16.223	65.3	83.1	893	1299	1461	1542	1785	2029
	94.50]	0.460	17.705	17.518	18.899	17.588	4.650	17.580	67.0	84.0	967	1407	1583	1671	1935	2198
	97.70]	0.486	17.653	17.466*	18.946	17.571	4.650	18.969	68.5	85.0	1043	1518	1708	1802	2087	2371
	100.00]	0.500	17.625	17.438	18.971	17.571	4.650	19.709	69.2	85.4	1084	1576	1773	1872	2167	2463
	101.00]	0.510	17.605	17.418*	18.989	17.571	4.650	20.243	69.7	85.7	1112	1618	1821	1922	2226	2529
	109.35]	0.563	17.499	17.312	18.948	17.387	5.600	22.588	70.7	86.9	1242	1807	2033	2146	2484	2823
	112.00]	0.579	17.467	17.280	18.976	17.355	5.600	23.445	71.4	87.3	1289	1875	2109	2226	2578	2930

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
- TSH WEDGE 521 OD:16.125" Wt:0.566" is interchangeable with TSH WEDGE 521 OD:16.000 Wt:0.375" to 0.575".
- TSH WEDGE 521 OD:17.825" Wt:0.500" is interchangeable with TSH WEDGE 521 OD:18.000 Wt:0.500" to 0.562".
- TSH WEDGE 521 OD:17.875" Wt:0.562" to 0.650" are interchangeable with TSH WEDGE 511 OD:18.000" Wt:0.625" to 0.688".
- Torque recommendation values available at www.tenaris.com

Wedge 513® | 4 1/2" TO 18"

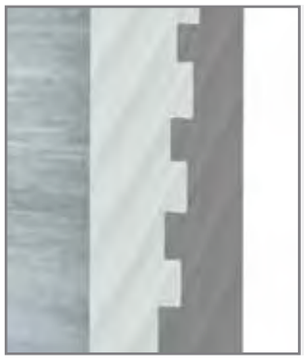
Dopeless® technology available



1

- Flush OD connection facilitates running and circulating and eliminates down hole coupling face hang-up. Boxes machined onto as-received pipe ends.
- Easy and fast make-up is developed with the low-TPI, rugged, coarse pitch Wedge thread

2



- Exceptional torque strength developed through the simultaneous engagement of opposing flanks of the Wedge thread, permitting washing and drilling operations.

3

- 100% internal pressure rated metal seal maintains gas sealing capability under high axial loads.
- The shallow angle run out chamfer on the pin ID promotes uniform stress under the seal around the full circumference.

FEATURES

- TenarisHydril Wedge thread.
- High compression rating provided by the reverse angle stab flank of the dovetail threads makes the Wedge 513® suitable for all liner applications. Compression strength exceeds tension strength.
- Wedge 513® is interchangeable with Wedge 523®

APPLICATIONS

- **HP/HT & Deep Wells**
- **Deepwater**
- **Shallow Water**
- **Unconventionals**
- **Horizontal & Extended Reach Wells**
- **Casing-while-drilling**
- Intermediate Casing & Liners
- Production Casing & Tubing

OPTIONS

- Dopeless® technology

Wedge 513® | 4 1/2" TO 18"

DESIGNATION		PIPE BODY			CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	in	in	in	in	sq in	%	%	x 1000 lb					
4 1/2	11.60	0.250	4.000	3.875	3.918	3.430	2.066	61.9	71.2	114	165	186	196	227	258
	12.60	0.271	3.958	3.833	3.876	3.430	2.261	62.8	71.7	124	181	203	215	249	283
	13.50	0.290	3.920	3.795	3.838	3.730	2.290	59.7	72.6	126	183	206	218	252	286
	15.10	0.337	3.826	3.701	3.744	4.300	2.781	63.1	74.1	153	222	250	264	306	348
	16.60]	0.375	3.750	3.625	3.668	4.370	3.144	64.7	76.6	173	252	283	299	346	393
	17.00]	0.380	3.740	3.615	3.658	4.370	3.177	64.6	76.6	175	254	286	302	349	397
	18.80	0.430	3.640	3.515	3.558	4.370	3.458	62.9	73.5	190	277	311	329	381	432
	21.50	0.500	3.500	3.375	3.418	4.000	3.952	62.9	72.0	218	316	356	375	435	494
5	15.00	0.296	4.408	4.283	4.327	3.750	2.629	60.1	72.4	145	210	237	250	289	329
	18.00	0.362	4.276	4.151	4.194	4.320	3.360	63.7	73.7	185	269	303	319	369	420
	20.30]	0.408	4.184	4.059	4.103	4.390	3.567	60.6	71.2	196	285	321	339	392	446
	21.40]	0.437	4.126	4.001	4.045	4.390	3.915	62.5	72.8	216	313	353	372	431	489
	23.20]	0.478	4.044	3.919	3.963	4.020	4.251	62.6	71.7	233	340	382	404	468	531
	24.10]	0.500	4.000	3.875	3.919	4.020	4.369	61.8	70.7	240	349	393	415	481	546
	26.70	0.562	3.876	3.751	3.795	4.660	5.031	64.2	72.1	277	403	453	478	553	629
5 1/2	17.00	0.304	4.892	4.767	4.813	3.780	3.116	62.8	74.4	171	249	281	296	343	389
	20.00	0.361	4.778	4.653	4.698	4.350	3.718	63.8	73.9	205	297	335	353	409	465
	23.00	0.415	4.670	4.545	4.590	4.420	4.210	63.5	74.1	232	337	379	400	463	526
	26.00	0.476	4.548	4.423	4.468	4.050	4.771	63.5	72.8	262	382	429	453	525	596
7	26.00	0.362	6.276	6.151	6.199	4.360	4.711	62.4	72.3	259	377	424	447	518	589
	29.00	0.408	6.184	6.059	6.093	4.070	5.196	61.5	75.8	286	416	467	494	571	649
	32.00	0.453	6.094	5.969*	6.034	4.700	5.935	63.7	76.7	326	475	534	564	653	742
	35.00	0.498	6.004	5.879	5.913	4.650	6.286	61.8	73.6	345	503	566	597	692	786
	38.00	0.540	5.920	5.795	5.829	5.460	6.893	62.9	75.4	379	552	620	655	759	862
7 5/8	29.70	0.375	6.875	6.750	6.800	4.420	5.125	60.0	75.2	282	410	461	487	564	641
	33.70	0.430	6.765	6.640	6.675	4.060	5.813	59.8	73.4	320	465	523	552	639	727
	39.00	0.500	6.625	6.500	6.535	4.690	6.939	62.0	73.8	382	555	624	659	763	867
	42.80]	0.562	6.501	6.376	6.411	5.510	8.168	65.5	77.4	449	654	735	776	899	1021
	45.30]	0.595	6.435	6.310	6.345	5.510	8.161	62.1	73.4	449	653	735	775	897	1020
	47.10]	0.625	6.375	6.250	6.285	5.510	8.164	59.4	70.2	449	653	735	776	898	1020
7 3/4	46.10	0.595	6.560	6.435*	6.535	5.490	8.131	60.8	72.2	447	651	732	773	894	1017
8 5/8	40.00	0.450	7.725	7.600*	7.665	4.730	7.154	61.9	75.2	394	573	644	680	787	894
9 3/8	39.00	0.400	8.575	8.450*	8.540	4.470	6.643	58.9	73.2	365	531	598	631	731	830
9 5/8	47.00	0.472	8.681	8.525	8.566	4.750	8.374	61.7	74.3	460	670	754	795	921	1047
	53.50	0.545	8.535	8.379*	8.535	5.560	9.405	60.5	72.9	517	753	846	894	1035	1176
	58.40	0.595	8.435	8.279	8.320	5.560	10.617	62.9	74.3	584	849	955	1009	1168	1327
9 7/8	62.80]	0.625	8.625	8.469*	8.541	5.560	11.369	62.6	73.4	625	910	1024	1080	1251	1421
	65.10]	0.650	8.575	8.419*	8.541	5.560	11.378	60.4	70.8	626	910	1024	1081	1251	1422
10	68.42]	0.688	8.624	8.468*	8.541	5.560	12.821	63.7	73.5	705	1026	1154	1218	1410	1603
	68.80]	0.700	8.600	8.444	8.541	5.560	12.823	62.7	72.3	705	1026	1154	1218	1411	1603
10 1/8	79.29	0.795	8.535	8.379*	8.535	6.420	14.144	60.7	72.1	778	1131	1273	1344	1556	1768
10 3/4	55.50	0.495	9.760	9.604*	9.665	4.750	9.712	60.9	73.2	534	777	874	923	1068	1214
	60.70]	0.545	9.660	9.504	9.546	5.540	11.602	66.4	79.0	638	928	1044	1102	1276	1450
	65.70]	0.595	9.560	9.404	9.542	5.540	11.598	61.1	72.7	638	928	1044	1102	1276	1450
11 3/4	60.00]	0.489	10.772	10.616*	10.666	4.790	11.366	65.7	78.1	625	909	1023	1079	1250	1420
	65.00]	0.534	10.682	10.526*	10.666	4.790	11.365	60.4	71.8	625	909	1023	1080	1250	1421
	77.60	0.645	10.460	10.304	10.399	5.670	14.424	64.1	74.7	794	1154	1298	1370	1586	1803
11 7/8	71.80	0.582	10.711	10.555*	10.665	5.870	12.760	61.8	74.5	702	1021	1148	1213	1403	1595
12 3/4	88.00	0.672	11.406	11.250	11.291	5.690	15.987	62.7	73.0	879	1279	1439	1519	1759	1998
13 3/8	68.00]	0.480	12.415	12.259	12.303	4.940	12.348	63.5	75.9	679	988	1111	1173	1358	1544
	72.00]	0.514	12.347	12.191*	12.294	4.940	12.897	62.1	73.7	709	1031	1161	1225	1418	1612

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com

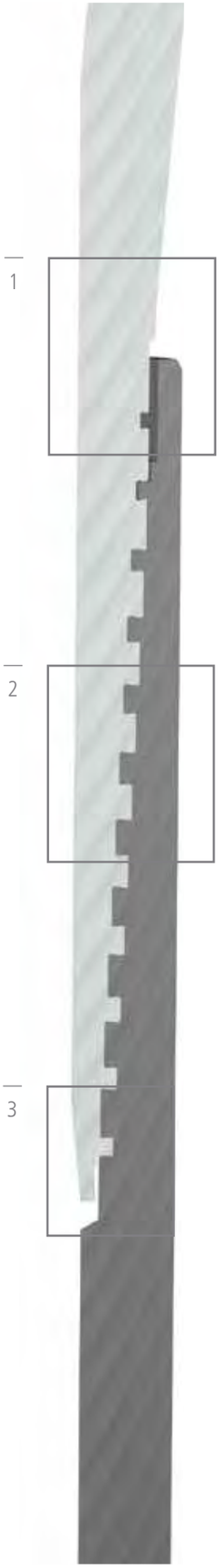
Wedge 513® | 4 1/2" TO 18"

DESIGNATION		PIPE BODY			CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	in	in	in	in	sq in	%	%	x 1000 lb					
13 5/8	88.20	0.625	12.375	12.188*	12.295	6.440	15.341	60.1	74.5	844	1227	1380	1457	1688	1918
13 7/8	106.00	0.755	12.365	12.178*	12.322	5.400	19.574	62.9	70.9	1077	1566	1762	1859	2153	2447
14	99.60]	0.700	12.600	12.412	12.456	6.580	18.543	63.4	76.5	1020	1484	1669	1762	2040	2318
	104.20]	0.734	12.532	12.344	12.388	6.580	18.538	60.6	73.1	1019	1483	1668	1761	2039	2317
	112.60]	0.797	12.406	12.218*	12.293	6.620	20.694	62.6	74.1	1138	1656	1862	1966	2276	2587
	113.00]	0.800	12.400	12.212*	12.293	6.620	21.332	64.3	75.8	1173	1707	1920	2027	2346	2667
	115.00]	0.812	12.376	12.188*	12.293	6.620	21.329	63.4	74.7	1173	1706	1920	2026	2346	2666
	116.00]	0.820	12.360	12.172*	12.293	6.620	21.322	62.8	74.0	1172	1706	1919	2026	2346	2665
16	95.00]	0.566	14.868	14.680*	14.793	6.020	17.454	63.6	76.7	960	1397	1571	1658	1920	2181
	96.00]	0.575	14.850	14.662*	14.793	6.020	17.443	62.6	75.5	960	1395	1570	1657	1919	2180
	102.90]	0.625	14.750	14.562	14.605	5.860	18.959	62.8	73.9	1042	1517	1706	1801	2086	2370
	109.00]	0.656	14.688	14.500*	14.643	5.860	19.795	62.6	73.2	1089	1584	1782	1881	2177	2475
18	94.00	0.500	17.000	16.812	16.850	4.960	15.119	55.0	55.0	832	1209	1361	1436	1663	1890
	117.00	0.625	16.750	16.562	16.599	6.310	18.764	55.0	55.0	1032	1501	1689	1783	2064	2345

- TSH WEDGE 513 OD:18.000" come with Dopeless® technology.
- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
- TSH WEDGE 513-DOPELESS OD:18.000 Wt:0.625" is interchangeable with TSH WEDGE 523-DOPELESS OD:17.875" Wt:0.575"
- Torque recommendation values available at www.tenaris.com

Wedge 511® | 2 3/8" TO 18 5/8"

Dopeless® technology available



1

- Flush OD connection facilitates running and circulating and eliminates down hole coupling face hang-up.
- Easy and fast make-up is developed with the low-TPI, rugged, coarse pitch Wedge thread.

2

- Exceptional torque strength developed through the simultaneous engagement of opposing flanks of the Wedge thread, permitting rotating and wash over in deviated holes without fear of structural failure.

3

- Stabbing resistance of the pin end face is maintained with the swaged, stress relieved and machined ID to receive a standard drift.

FEATURES

- TenarisHydril Wedge thread.
- High compression rating provided by the reverse angle stab flank. Compression strength exceeds tension strength.

APPLICATIONS

- **HP/HT & Deep Wells**
- **Deepwater**
- **Shallow Water**
- **Horizontal & Extended Reach Wells**
- **Casing-while-drilling**
- **Thermal (SAGD & CSS)**
- **Geothermal**
- **Workstrings**
- Intermediate Casing & Liners
- Production Casing, Slotted Liners & Tubing

OPTIONS

- Dopeless® technology

Wedge 511® | 2 3/8" TO 18 5/8"

DESIGNATION		PIPE BODY			CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	in	in	in	in	sq in	%	%	x 1000 lb					
2 3/8	4.60[1]]	0.190	1.995	1.901	1.930	2.268	0.780	59.8	75.0	43	62	70	74	86	97
	5.10[1]]	0.218	1.939	1.845	1.887	2.268	0.899	60.9	75.0	49	72	81	85	99	112
2 7/8	6.40	0.217	2.441	2.347	2.377	2.268	0.996	54.9	67.8	55	80	90	94	109	124
3 1/2	7.70]	0.216	3.068	2.943	2.973	2.742	1.227	55.1	67.9	68	98	111	117	135	154
	9.20]	0.254	2.992	2.867	2.897	2.742	1.578	60.9	72.0	87	126	142	150	174	197
	10.20]	0.289	2.922	2.797	2.827	2.742	1.760	60.4	72.3	97	141	158	167	194	220
4	9.50]	0.226	3.548	3.423	3.454	2.742	1.657	61.8	74.0	91	132	149	157	182	207
	11.00]	0.262	3.476	3.351	3.382	2.742	1.902	61.8	75.0	105	152	171	181	209	238
	11.60]	0.286	3.428	3.303	3.334	2.742	2.035	61.0	78.6	112	163	183	193	224	254
	16.10	0.415	3.170	3.045	3.077	3.704	2.827	60.5	72.5	156	226	255	269	311	—
4 1/2	10.50]	0.224	4.052	3.927	3.959	2.742	1.902	63.2	75.3	105	152	171	181	209	238
	11.00]	0.237	4.026	3.901	3.934	2.742	2.058	64.8	76.2	113	165	185	195	226	257
	11.60]	0.250	4.000	3.875	3.908	2.742	2.111	63.2	77.1	116	169	190	200	232	264
	12.60]	0.271	3.958	3.833	3.865	2.673	2.096	58.2	73.7	115	168	189	199	230	262
	13.50]	0.290	3.920	3.795	3.827	2.673	2.326	60.6	75.2	128	186	209	221	256	291
	15.10	0.337	3.826	3.701	3.733	3.035	2.696	61.2	73.7	148	216	243	256	297	337
5	15.00	0.296	4.408	4.283	4.317	2.673	2.654	60.7	74.9	146	212	239	253	292	332
	18.00	0.362	4.276	4.151	4.185	3.615	3.311	62.8	74.5	182	265	298	315	364	414
5 1/2	15.50	0.275	4.950	4.825	4.860	2.673	2.727	60.4	75.5	150	218	245	259	300	341
	17.00	0.304	4.892	4.767	4.802	2.673	3.021	60.9	74.6	166	242	272	287	333	378
	20.00	0.361	4.778	4.653	4.688	3.237	3.636	62.4	74.0	200	291	328	346	400	455
	32.60	0.625	4.250	4.125	4.160	4.784	6.297	65.8	75.3	346	504	567	598	693	788
5 3/4	18.00	0.312	5.126	5.001	5.036	2.673	3.196	60.0	73.3	176	256	288	304	352	400
	21.80	0.375	5.000	4.875	4.910	3.704	3.885	61.4	74.4	214	311	350	370	428	486
	24.20	0.420	4.910	4.785	4.820	3.704	4.202	59.8	71.4	231	337	379	399	463	526
6	20.00	0.324	5.352	5.227	5.263	3.035	3.515	60.8	73.5	193	281	316	334	387	439
	23.00	0.380	5.240	5.115	5.151	3.098	4.026	60.0	73.1	221	322	362	382	443	503
6 5/8	24.00	0.352	5.921	5.796	5.832	3.615	4.393	63.3	75.0	242	351	395	417	483	549
	28.00	0.417	5.791	5.666	5.702	3.704	4.871	59.9	71.5	268	390	438	463	536	609
7	23.00	0.317	6.366	6.241*	6.286	3.035	4.045	60.8	73.7	223	323	364	384	445	506
	26.00	0.362	6.276	6.151	6.187	3.704	4.595	60.9	74.2	253	368	414	437	505	575
	29.00	0.408	6.184	6.059	6.095	3.690	5.124	60.6	72.8	282	410	461	487	563	640
7 5/8	26.40	0.328	6.969	6.844	6.881	3.035	4.633	61.6	74.0	255	371	417	440	509	579
	29.70	0.375	6.875	6.750	6.787	3.704	5.218	61.1	73.8	287	417	470	496	574	653
	33.70	0.430	6.765	6.640	6.677	4.138	5.841	60.1	73.1	322	468	526	555	642	730
	51.20	0.687	6.251	6.126	6.163	5.597	9.411	62.8	74.4	517	752	847	894	1034	1176
8	31.00	0.375	7.250	7.125	7.168	3.704	5.525	61.5	74.1	304	442	497	525	608	691
8 1/8	32.50	0.375	7.375	7.250	7.293	3.704	5.581	61.1	73.7	307	446	502	530	613	697
	35.50	0.420	7.285	7.160	7.203	3.690	6.199	61.0	72.5	341	496	558	589	682	775
	39.50	0.470	7.185	7.060	7.103	4.138	6.741	59.6	71.4	371	539	606	640	741	842
8 5/8	32.00	0.352	7.921	7.796*	7.918	3.237	5.242	57.3	68.8	288	419	472	498	576	656
	36.00	0.400	7.825	7.700	7.743	3.690	6.348	61.4	73.6	349	508	571	603	698	793
	40.00	0.450	7.725	7.600*	7.668	4.138	6.777	58.6	70.9	373	542	609	643	745	847
9	40.00	0.425	8.150	8.025	8.069	3.690	7.120	62.2	73.5	392	570	641	677	783	890
9 5/8	40.00	0.395	8.835	8.679*	8.794	3.704	6.824	59.6	71.4	375	546	614	648	751	853
	43.50	0.435	8.755	8.599*	8.669	3.690	7.849	62.5	73.6	432	628	706	746	863	981
	47.00	0.472	8.681	8.525	8.569	4.138	8.306	61.2	72.8	457	665	748	789	914	1039
10 3/4	45.50	0.400	9.950	9.794*	9.922	3.704	7.671	59.0	70.6	422	614	691	729	844	959
	51.00	0.450	9.850	9.694	9.741	4.138	9.159	62.9	74.9	504	733	825	870	1008	1145
	55.00	0.495	9.760	9.604*	9.672	4.138	9.629	60.4	71.3	530	771	867	915	1059	1204
	60.70]	0.545	9.660	9.504	9.551	4.965	11.258	64.4	75.6	619	900	1013	1069	1238	1406
	65.70]	0.595	9.560	9.404	9.547	4.965	11.318	59.6	69.9	622	905	1018	1075	1244	1414

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
- [1] This weight has a box OD 0.031" larger than nominal pipe OD.
- Torque recommendation values available at www.tenaris.com

Wedge 511® | 2 3/8" TO 18 5/8"

DESIGNATION		PIPE BODY			CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	in	in	in	in	sq in	%	%	x 1000 lb					
11 1/2	51.00	0.425	10.650	10.494	10.650	3.704	7.899	53.4	64.3	434	632	711	750	869	987
11 3/4	60.00]	0.489	10.772	10.616*	10.674	4.647	10.499	60.7	74.0	577	840	945	997	1155	1312
	65.00]	0.534	10.682	10.526*	10.674	4.647	10.499	55.8	68.0	578	840	945	998	1155	1312
11 7/8	58.80	0.470	10.935	10.779*	10.926	4.138	9.356	55.6	66.7	515	749	843	890	1030	1170
	71.80	0.582	10.711	10.555*	10.675	4.965	12.658	61.3	71.5	696	1013	1139	1203	1392	1582
16	84.00	0.495	15.010	14.822	14.881	4.223	15.812	65.6	76.9	870	1265	1424	1503	1740	1977
	95.00]	0.566	14.868	14.680*	14.807	4.965	17.416	63.5	73.6	958	1394	1568	1655	1917	2178
	96.00]	0.575	14.850	14.662*	14.807	4.965	17.416	62.5	72.5	958	1393	1568	1654	1916	2177
	102.90]	0.625	14.750	14.562	14.621	5.597	19.186	63.6	75.1	1056	1536	1728	1824	2112	2400
	109.00]	0.656	14.688	14.500	14.559	5.597	20.608	65.2	76.2	1134	1650	1856	1959	2268	2577
18	105.00	0.562	16.876	16.688	16.751	4.647	17.864	58.0	69.0	982	1429	1607	1697	1964	2232
	117.00]	0.625	16.750	16.562	16.625	5.597	21.195	62.1	73.6	1165	1695	1906	2013	2331	2648
	119.00]	0.640	16.720	16.532	16.595	5.597	21.979	63.0	74.2	1210	1759	1979	2089	2419	2749
	126.00]	0.677	16.646	16.458*	16.563	5.597	22.813	61.9	72.6	1254	1824	2053	2167	2509	2850
	128.00]	0.688	16.624	16.436*	16.563	5.597	22.813	61.0	71.5	1255	1826	2054	2169	2511	2853
	162.00	0.875	16.250	16.062	16.125	5.876	30.884	65.6	73.8	1698	2470	2779	2934	3397	3860
18 5/8	123.40	0.625	17.375	17.188	17.254	5.597	22.801	64.5	75.7	1254	1823	2052	2166	2508	2850
	136.00]	0.693	17.239	17.052	17.118	5.597	25.283	64.8	74.9	1391	2024	2277	2403	2783	3162
	139.00]	0.720	17.185	16.998	17.064	5.597	25.563	63.1	75.5	1406	2044	2300	2428	2811	3195

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
- TSH WEDGE 511 OD:18.000" Wt:0.625" to 0.688" are interchangeable with TSH WEDGE 521 OD:17.875" Wt:0.562" to 0.650".
- Torque recommendation values available at www.tenaris.com

Wedge 533® | 2 3/8" TO 7 5/8"

Dopeless® technology available

1

- Streamlined, clearance OD facilitates running, pulling, and circulating.
- Torque strength developed through the simultaneous engagement of opposing flanks of the Wedge thread.

2

- 100% internal pressure rated metal seal maintains gas sealing capability under high axial and bending loads.
- The shallow angle on the pin ID promotes uniform stress under the seal around the connection.

3

- Corrosion protection and ID coating possibility without reduction on performance properties.

FEATURES

- TenarisHydril Wedge thread.
- 100% ratings for tension and bending provided by machining pin and box on hot forged internal-external upsets. Reverse angle stab flank provides 100% compression rating.
- Wedge 533® is interchangeable with Wedge 553® and Wedge 563®.

APPLICATIONS

- **Casing-while-drilling**
- **Workstrings**
- **Corrosion protection & ID coating**
- Tubing

OPTIONS

- Dopeless® technology
- CB® ring

Wedge 533® | 2 3/8" TO 7 5/8"

DESIGNATION		PIPE BODY			TURNED OUTSIDE DIAMETER		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Box	Pin					55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	in	in	in	in	in	in	%	%	x 1000 lb					
2 3/8	4.70]	0.190	1.995	1.901	2.657	2.657	1.945	3.642	100	100	72	104	117	124	144	163
	5.30	0.218	1.939	1.845	2.685	2.679	1.889	3.642	100	100	81	118	133	140	163	185
	5.95	0.254	1.867	1.773	2.737	2.690	1.817	3.642	100	100	93	135	152	161	186	212
	6.60	0.295	1.785	1.691	2.793	2.718	1.735	3.642	100	100	106	154	174	183	212	241
	7.45]	0.336	1.703	1.609	2.845	2.744	1.653	3.642	100	100	118	172	194	205	237	269
2 7/8	6.50]	0.217	2.441	2.347	3.192	3.179	2.391	3.642	100	100	100	145	163	172	199	227
	7.90	0.276	2.323	2.229	3.282	3.213	2.273	3.642	100	100	124	180	203	214	248	282
	8.70]	0.308	2.259	2.165	3.328	3.236	2.209	3.642	100	100	137	199	224	236	273	311
	9.50]	0.340	2.195	2.101	3.337	3.231	2.145	4.093	100	100	149	217	244	257	298	339
	10.70]	0.392	2.091	1.997	3.405	3.265	2.041	4.093	100	100	168	245	275	291	336	—
	11.65]	0.440	1.995	1.901	3.464	3.295	1.945	4.093	100	100	185	269	303	320	370	—
3 1/2	9.30]	0.254	2.992	2.867	3.886	3.827	2.942	3.642	100	100	143	207	233	246	285	324
	10.30]	0.289	2.922	2.797	3.941	3.854	2.872	3.642	100	100	160	233	262	277	321	364
	12.95]	0.375	2.750	2.625	4.067	3.917	2.700	3.642	100	100	203	295	331	350	405	460
	14.30]	0.430	2.640	2.515	4.100	3.943	2.590	4.491	100	100	228	332	373	394	456	—
	15.80]	0.476	2.548	2.423	4.160	3.973	2.498	4.491	100	100	249	362	407	430	497	—
	16.70]	0.510	2.480	2.355	4.202	3.994	2.430	4.491	100	100	264	383	431	455	527	—
	17.05]	0.530	2.440	2.315	4.226	4.006	2.390	4.491	100	100	272	396	445	470	544	—
4	11.00]	0.262	3.476	3.351	4.406	4.336	3.426	3.642	100	100	169	246	277	292	338	385
	11.60]	0.286	3.428	3.303	4.444	4.355	3.378	3.642	100	100	184	267	300	317	367	417
	13.40]	0.330	3.340	3.215	4.513	4.390	3.290	3.642	100	100	209	304	342	362	419	476
	14.80]	0.380	3.240	3.115	4.548	4.396	3.190	4.093	100	100	238	346	389	411	475	—
	16.10]	0.415	3.170	3.045	4.599	4.422	3.120	4.093	100	100	257	374	421	444	514	—
	19.00]	0.500	3.000	2.875	4.598	4.459	2.950	5.280	100	100	302	440	495	522	605	—
	21.10]	0.562	2.876	2.751	4.679	4.499	2.826	5.280	100	100	334	486	546	577	668	—
	22.50]	0.610	2.780	2.655	4.739	4.529	2.730	5.280	100	100	357	520	585	617	715	—
4 1/2	11.60]	0.250	4.000	3.875	4.891	4.828	3.950	3.642	100	100	184	267	300	317	367	417
	12.75]	0.271	3.958	3.833	4.926	4.846	3.908	3.642	100	100	198	288	324	342	396	450
	13.50]	0.290	3.920	3.795	4.958	4.862	3.870	3.642	100	100	211	307	345	364	422	479
	15.50]	0.337	3.826	3.701	4.992	4.868	3.776	4.093	100	100	242	353	397	419	485	551
	16.60]	0.375	3.750	3.625	5.051	4.897	3.700	4.093	100	100	267	389	437	462	535	608
	17.00]	0.380	3.740	3.615	5.058	4.901	3.690	4.093	100	100	271	394	443	467	541	615
	19.20]	0.430	3.640	3.515	5.133	4.938	3.590	4.093	100	100	302	440	495	522	605	687
	21.60]	0.500	3.500	3.375	5.114	4.966	3.450	5.280	100	100	346	503	566	597	691	785
	24.00]	0.560	3.380	3.255	5.196	5.007	3.330	5.280	100	100	381	555	624	659	762	867
	26.50]	0.630	3.240	3.115	5.288	5.053	3.190	5.280	100	100	421	613	689	728	843	957
5	21.40]	0.437	4.126	4.001	5.526	5.416	4.076	5.360	100	100	345	501	564	595	689	783
	24.10]	0.500	4.000	3.875	5.618	5.462	3.950	5.360	100	100	389	565	636	672	778	884
5 1/2	15.50]	0.275	4.950	4.825	5.895	5.779	4.900	3.990	100	100	248	361	406	429	497	564
	17.00]	0.304	4.892	4.767	5.944	5.779	4.842	3.990	100	100	273	397	447	471	546	620
	20.00]	0.361	4.778	4.653	6.037	5.779	4.728	3.990	100	100	321	466	525	554	641	729
	23.00]	0.415	4.670	4.545	6.124	5.779	4.620	3.990	100	100	365	530	597	630	729	829
	28.40	0.530	4.440	4.315	6.159	5.798	4.374	4.300	100	100	455	662	745	786	910	1034
6 5/8	32.00	0.475	5.675	5.550	7.342	6.932	5.625	4.050	100	100	505	734	826	872	1010	1147
7	23.00]	0.317	6.366	6.241	7.472	7.318	6.316	4.050	100	100	366	532	599	632	732	832
	26.00]	0.362	6.276	6.151	7.548	7.318	6.226	4.050	100	100	415	604	679	717	830	944
	29.00]	0.408	6.184	6.059	7.624	7.318	6.134	4.050	100	100	465	676	760	803	929	1056
	32.00]	0.453	6.094	5.969	7.696	7.318	6.050	4.050	100	100	512	745	839	885	1025	1165
	35.00	0.498	6.004	5.879	7.580	7.320	5.944	5.060	100	100	559	814	916	966	1119	1272
7 5/8	39.00	0.500	6.625	6.500	8.239	7.971	6.575	5.060	100	100	616	895	1007	1063	1231	1399

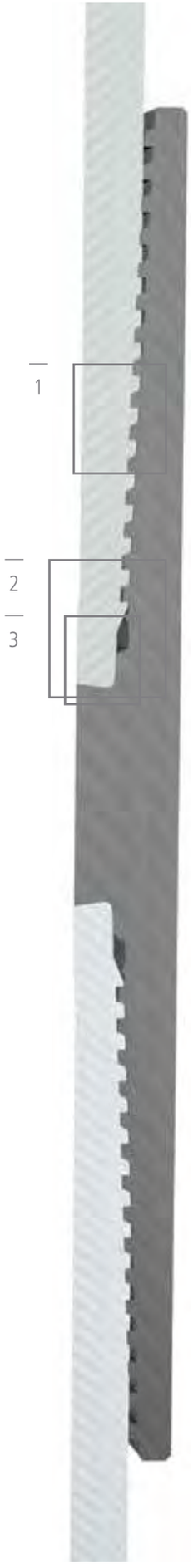
-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com

Blue® Series

Blue® Series

Blue® | 2 3/8" TO 13 5/8"

Dopeless® technology available



1

- Easy make-up is developed with the rugged, coarse pitch thread and steep taper for deep stabbing.

2

- Superior compression strength obtained by optimized torque shoulder and controlled 25 degree stab flank reduced clearance.

3

- 100% internal and external pressure metal seal.
- Toroidal design generates stable seal behavior for all combined-load conditions.
- Dope pocket allows excessive dope to be lodged.

FEATURES

- Designed for high performance and versatility.
- ISO 13679 CAL IV and API RP 5C5 CAL IV tested and field proven.
- Evaluated per TWCEEP.
- Parabolic seal contact pressure profile minimizes galling risk while improves sealing performance stability.

APPLICATIONS

- **HP/HT & Deep Wells**
- **Deepwater**
- **Shallow Water**
- **Unconventionals**
- **Horizontal & Extended Reach Wells**
- **Casing-while-drilling**
- **Thermal (SAGD & CSS)**
- **Geothermal**
- Surface and intermediate casing
- Production Casing / Liners and Tie-Backs
- Tubing

OPTIONS

- Dopeless® technology
- Matched strength
- Special bevel
- Special clearance

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						SPECIAL CLEARANCE COUPLING			MATCHED STRENGTH
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency	Outside Diameter
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb						in	sq in	%	in
2 3/8	4.60]	0.190	1.995	1.901	2.776	5.906	1.947	2.655	1.304	100	100	72	104	117	124	144	163	2.646	1.114	85	2.705
	5.10	0.218	1.939	1.845	2.776	5.906	1.915	2.655	1.477	100	100	81	118	133	140	163	185	2.681	1.263	86	2.744
	5.80	0.254	1.867	1.773	2.827	5.906	1.868	2.655	1.693	100	100	93	135	152	161	186	212	2.720	1.431	85	2.795
	6.30	0.280	1.815	1.721	2.846	5.906	1.833	2.655	1.843	100	100	101	147	166	175	203	230	2.752	1.566	85	2.831
	6.60	0.295	1.785	1.691	2.862	5.906	1.837	2.655	1.928	100	100	106	154	174	183	212	241	2.768	1.634	85	2.850
	7.35]	0.336	1.703	1.609	2.913	5.906	1.797	2.655	2.153	100	100	118	172	194	205	237	269	2.811	1.823	85	2.902
2 7/8	6.40]	0.217	2.441	2.347	3.307	7.205	2.406	3.202	1.812	100	100	100	145	163	172	199	227	3.161	1.539	85	3.228
	7.80	0.276	2.323	2.229	3.346	7.205	2.339	3.202	2.254	100	100	124	180	203	214	248	282	3.236	1.914	85	3.319
	8.60	0.308	2.259	2.165	3.386	7.205	2.276	3.202	2.483	100	100	137	199	224	236	273	311	3.276	2.116	85	3.366
	9.35	0.340	2.195	2.101	3.437	7.205	2.228	3.202	2.708	100	100	149	217	244	257	298	339	3.311	2.299	85	3.409
	9.80	0.362	2.151	2.057	3.449	7.205	2.209	3.202	2.858	100	100	157	229	257	272	314	357	3.335	2.423	85	3.437
	10.50	0.392	2.091	1.997	3.488	7.205	2.185	3.202	3.058	100	100	168	245	275	291	336	—	3.370	2.609	85	3.476
	10.70]	0.405	2.065	1.971	3.504	7.205	2.161	3.202	3.143	100	100	173	251	283	299	346	—	3.382	2.672	85	3.492
3 1/2	7.70]	0.216	3.068	2.943	3.937	8.228	3.016	3.616	2.229	100	100	123	178	201	212	245	279	3.772	1.894	85	3.843
	9.20	0.254	2.992	2.867	3.937	8.228	2.969	3.616	2.590	100	100	143	207	233	246	285	324	3.823	2.199	85	3.906
	10.20	0.289	2.922	2.797	4.016	8.228	2.906	3.616	2.916	100	100	160	233	262	277	321	364	3.870	2.485	85	3.961
	12.70	0.375	2.750	2.625	4.150	8.228	2.799	3.616	3.681	100	100	203	295	331	350	405	460	3.976	3.140	85	4.087
	13.70	0.413	2.674	2.549	4.150	8.228	2.772	3.616	4.005	100	100	220	320	361	381	441	—	4.020	3.413	85	4.138
	14.30	0.430	2.640	2.515	4.169	8.228	2.736	3.616	4.148	100	100	228	332	373	394	456	—	4.035	3.512	85	—
	14.70	0.449	2.602	2.477	4.193	8.228	2.720	3.616	4.304	100	100	237	344	387	409	473	—	4.059	3.663	85	—
	15.50]	0.476	2.548	2.423	4.228	8.228	2.720	3.616	4.521	100	100	249	362	407	430	497	—	4.087	3.838	85	—
4	8.20]	0.190	3.620	3.495	4.441	8.780	3.537	3.805	2.274	100	100	125	182	205	216	250	284	4.276	2.209	97	4.299
	9.50	0.226	3.548	3.423	4.441	8.780	3.474	3.805	2.680	100	100	147	214	241	255	295	335	4.287	2.288	85	4.362
	10.90	0.262	3.476	3.351	4.441	8.780	3.431	3.805	3.077	100	100	169	246	277	292	338	385	4.335	2.607	85	4.421
	11.60	0.286	3.428	3.303	4.488	8.780	3.398	3.805	3.077	100	100	184	267	300	317	367	417	4.370	2.841	85	4.457
	13.20	0.330	3.340	3.215	4.567	8.780	3.356	3.805	3.805	100	100	209	304	342	362	419	476	4.425	3.230	85	4.528
	14.85	0.380	3.240	3.115	4.610	8.780	3.281	3.805	4.321	100	100	238	346	389	411	475	—	4.488	3.672	85	—
	16.10	0.415	3.170	3.045	4.661	8.780	3.262	3.805	4.673	100	100	257	374	421	444	514	—	4.531	3.979	85	—
	16.50	0.430	3.140	3.015	4.681	8.780	3.234	3.805	4.822	100	100	265	386	434	458	531	—	4.547	4.090	85	—
	18.90]	0.500	3.000	2.875	4.776	8.780	3.093	3.805	5.498	100	100	302	440	495	522	605	—	4.630	4.687	85	—
4 1/2	10.50]	0.224	4.052	3.927	4.921	9.213	3.996	4.012	3.009	100	100	166	241	271	286	331	376	4.780	2.562	85	4.854
	11.60	0.250	4.000	3.875	4.921	9.213	3.957	4.012	3.339	100	100	184	267	300	317	367	417	4.815	2.829	85	4.898
	12.60	0.271	3.958	3.833	4.961	9.213	3.917	4.012	3.601	100	100	198	288	324	342	396	450	4.846	3.067	85	4.933
	13.50	0.290	3.920	3.795	5.000	9.213	3.878	4.012	3.836	100	100	211	307	345	364	422	479	4.870	3.247	85	4.965
	15.20	0.337	3.826	3.701*	5.047	9.213	3.823	4.012	4.408	100	100	242	353	397	419	485	551	4.933	3.732	85	—
	16.60	0.375	3.750	3.625	5.106	9.213	3.799	4.012	4.860	100	100	267	389	437	462	535	608	4.992	4.193	86	—
	17.00	0.380	3.740	3.615	5.114	9.213	3.791	4.012	4.918	100	100	271	394	443	467	541	615	4.992	4.193	85	—
	17.70	0.402	3.696	3.571	5.146	9.213	3.768	4.012	5.175	100	100	285	414	466	492	569	647	5.020	4.410	85	—
	18.90	0.430	3.640	3.515	5.189	9.213	3.740	4.012	5.498	100	100	302	440	495	522	605	687	5.051	4.659	85	—
	21.50]	0.500	3.500	3.375	5.287	9.213	3.602	4.012	6.284	100	100	346	503	566	597	691	785	5.138	5.352	85	—
5	13.00]	0.253	4.494	4.369	5.512	10.551	4.421	4.579	3.773	100	100	208	302	340	358	415	472	5.315	3.377	90	5.382
	15.00	0.296	4.408	4.283	5.512	10.551	4.350	4.579	4.374	100	100	241	350	394	416	481	547	5.354	3.708	85	5.453
	18.00	0.362	4.276	4.151	5.630	10.551	4.264	4.579	5.275	100	100	290	422	475	501	580	659	5.445	4.475	85	5.563
	20.30	0.408	4.184	4.059	5.650	10.551	4.209	4.579	5.885	100	100	324	471	530	559	647	736	5.508	5.017	85	5.634
	20.80	0.422	4.156	4.031	5.673	10.551	4.193	4.579	6.070	100	100	334	486	546	577	668	759	5.524	5.154	85	5.657
	21.40	0.437	4.126	4.001	5.693	10.551	4.185	4.579	6.265	100	100	345	501	564	595	689	783	5.543	5.324	85	5.677
	23.20	0.478	4.044	3.919	5.756	10.551	4.134	4.579	6.791	100	100	373	543	611	645	747	849	5.594	5.772	85	5.740
	24.10	0.500	4.000	3.875	5.787	10.551	4.091	4.579	7.068	100	100	389	565	636	672	778	884	5.622	6.016	85	5.772
	26.70]	0.562	3.876	3.751	5.874	10.551	3.969	4.579	7.835	100	100	431	627	705	744	862	979	5.693	6.645	85	5.858

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. Small variations in the connection Internal Diameter will appear. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com
- Compression efficiency for SC option is the same as the standard connection.
- For the MS option, the coupling OD is reduced to the minimun critical area capable of providing the same tensile efficiency as the standard option.
- Special products (such as those for specific drift sizes) are also available or can be offered upon customer request.

Blue® 2 3/8" TO 13 5/8"

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						SPECIAL CLEARANCE COUPLING			MATCHED STRENGTH
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency	Outside Diameter
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb						in	sq in	%	in
5 1/2	15.50]	0.275	4.950	4.825	6.063	10.748	4.911	4.677	4.514	100	100	248	361	406	429	497	564	5.831	3.836	85	5.925
	17.00	0.304	4.892	4.767	6.063	10.748	4.860	4.677	4.963	100	100	273	397	447	471	546	620	5.874	4.235	85	5.972
	20.00	0.361	4.778	4.653	6.102	10.748	4.789	4.677	5.828	100	100	321	466	525	554	641	729	5.953	4.965	85	6.067
	23.00	0.415	7 .670	4.545	6.181	10.748	4.695	4.677	6.629	100	100	365	530	597	630	729	829	6.024	5.631	85	6.157
	26.00	0.476	4.548	4.423	6.307	10.748	4.616	4.677	7.513	100	100	413	601	676	714	826	939	6.102	6.381	85	6.220
	26.80	0.500	4.500	4.375	6.307	10.748	4.589	4.677	7.854	100	100	432	628	707	746	864	982	6.134	6.685	85	6.287
	28.40	0.530	4.440	4.315	6.350	10.748	4.530	4.677	8.275	100	100	455	662	745	786	910	1034	6.169	7.026	85	6.331
	29.70	0.562	4.376	4.251	6.382	10.748	4.506	4.677	8.719	100	100	480	697	785	828	959	1090	6.209	7.409	85	—
	32.60	0.625	4.250	4.125	6.469	10.748	4.427	4.677	9.571	100	100	526	766	861	909	1053	1197	6.283	8.144	85	—
	35.30]	0.687	4.126	4.001	6.551	10.748	4.230	4.677	10.388	100	100	571	831	935	987	1143	1298	6.358	8.854	85	6.512
6	24.50]	0.400	5.200	5.075	6.673	9.528	5.135	3.984	7.037	100	100	387	563	633	669	774	880	—	—	—	—
	25.10	0.415	5.170	5.045	6.697	9.528	5.127	3.984	7.282	100	100	400	583	655	692	801	910	—	—	—	—
	29.80]	0.500	5.000	4.875	6.831	9.528	5.056	3.984	8.639	100	100	475	691	778	821	950	1080	—	—	—	—
6 5/8	20.00]	0.288	6.049	5.924	7.283	10.551	5.973	4.480	5.733	100	100	315	459	516	545	631	717	7.020	5.397	94	7.071
	23.20	0.330	5.965	5.840	7.283	10.551	5.894	4.480	6.526	100	100	359	522	587	620	718	816	7.051	5.746	88	7.146
	24.00	0.352	5.921	5.796	7.283	10.551	5.855	4.480	6.936	100	100	382	555	624	659	763	867	7.063	5.876	85	7.181
	28.00	0.417	5.791	5.666	7.390	10.551	5.749	4.480	8.133	100	100	447	651	732	773	895	1017	7.157	6.932	85	7.291
	32.00	0.475	5.675	5.550	7.409	10.551	5.678	4.480	9.178	100	100	505	734	826	872	1010	1147	7.236	7.821	85	7.386
	35.00	0.525	5.575	5.450	7.492	10.551	5.619	4.480	10.061	100	100	553	805	905	956	1107	1258	7.299	8.541	85	7.465
	36.70]	0.562	5.501	5.376	7.539	10.551	5.623	4.480	10.704	100	100	589	856	963	1017	1178	1338	7.346	9.085	85	7.520
7	23.00]	0.317	6.366	6.241	7.677	10.551	6.287	4.480	6.656	100	100	366	532	599	632	732	832	7.409	6.050	91	7.484
	24.75	0.343	6.314	6.189	7.677	10.551	6.228	4.480	7.173	100	100	395	574	646	681	789	897	7.413	6.095	85	7.531
	26.00	0.362	6.276	6.151	7.677	10.551	6.189	4.480	7.549	100	100	415	604	679	717	830	944	7.441	6.417	85	7.563
	29.00	0.408	6.184	6.059	7.677	10.551	6.118	4.480	8.449	100	100	465	676	760	803	929	1056	7.508	7.203	85	7.642
	32.00	0.453	6.094	5.969*	7.732	10.551	6.063	4.480	9.317	100	100	512	745	839	885	1025	1165	7.567	7.902	85	—
	35.00	0.498	6.004	5.879	7.807	10.551	6.012	4.480	10.173	100	100	559	814	916	966	1119	1272	7.630	8.654	85	—
	38.00	0.540	5.920	5.795*	7.870	10.551	5.969	4.480	10.959	100	100	603	877	986	1041	1206	1370	7.685	9.316	85	—
	41.00	0.590	5.820	5.695	7.949	10.551	5.890	4.480	11.881	100	100	653	950	1069	1129	1307	1485	7.748	10.080	85	—
	42.70]	0.625	5.750	5.625	8.000	10.551	5.862	4.480	12.517	100	80.0	688	1001	1127	1189	1377	1565	—	—	—	—
7 1/4	41.80	0.578	6.094	5.969	8.177	10.591	6.098	4.508	12.115	100	80.0	666	969	1090	1151	1333	1514	8.000	10.295	85	8.142
7 5/8	29.70]	0.375	6.875	6.750	8.425	10.669	6.801	4.551	8.541	100	100	470	683	769	811	940	1068	8.075	7.263	85	8.201
	33.70	0.430	6.765	6.640	8.465	10.669	6.699	4.551	9.720	100	100	535	778	875	923	1069	1215	8.154	8.266	85	8.295
	35.80	0.465	6.695	6.570	8.465	10.669	6.659	4.551	10.459	100	100	575	837	941	994	1151	1307	8.201	8.874	85	8.354
	39.00	0.500	6.625	6.500	8.496	10.669	6.604	4.551	11.193	100	100	616	895	1007	1063	1231	1399	8.252	9.534	85	8.413
	42.80	0.562	6.501	6.376	8.539	10.669	6.553	4.551	12.470	100	100	686	998	1122	1185	1372	1559	8.335	10.611	85	8.512
	45.30]	0.595	6.435	6.310*	8.591	10.669	6.561	4.551	13.141	100	100	723	1051	1183	1248	1445	1643	8.378	11.180	85	8.563
7 3/4	46.10]	0.595	6.560	6.435*	8.740	11.496	6.691	4.968	13.375	100	100	736	1070	1204	1271	1471	1672	8.488	11.383	85	8.677
	47.60	0.625	6.500	6.375	8.740	11.496	6.632	4.968	13.990	100	100	769	1119	1259	1329	1539	1749	8.528	11.909	85	8.724
	48.60	0.640	6.470	6.345*	8.772	11.496	6.600	4.968	14.296	100	100	786	1144	1287	1358	1573	1787	8.547	12.172	85	8.744
	51.80	0.687	6.376	6.251	8.843	11.496	6.506	4.968	15.244	100	100	838	1220	1372	1448	1677	1905	8.606	12.969	85	8.819
	56.10]	0.750	6.250	6.125	8.937	11.496	6.380	4.968	16.494	100	100	907	1319	1484	1567	1814	2062	8.685	14.037	85	8.909
8 5/8	36.00]	0.400	7.825	7.700	9.488	11.693	7.787	5.065	10.335	100	100	568	827	930	982	1137	1292	9.126	9.033	87	9.244
	40.00	0.450	7.725	7.600*	9.488	11.693	7.709	5.065	11.557	100	100	636	925	1040	1098	1271	1445	9.181	9.825	85	9.331
	44.00	0.500	7.625	7.500	9.488	11.693	7.650	5.065	12.763	100	100	702	1021	1149	1212	1404	1595	9.252	10.852	85	9.417
	49.00	0.557	7.511	7.386	9.626	11.693	7.535	5.065	14.117	100	100	776	1129	1271	1341	1553	1765	9.331	12.000	85	9.512
	52.00	0.595	7.435	7.310	9.626	11.693	7.496	5.065	15.010	100	100	826	1201	1351	1426	1651	1876	9.382	12.753	85	9.575
	54.00	0.625	7.375	7.250	9.638	11.693	7.437	5.065	15.708	100	100	864	1257	1414	1492	1728	1964	9.421	13.335	85	—
	58.70]	0.687	7.251	7.126	9.736	11.693	7.390	5.065	17.132	100	100	942	1371	1542	1628	1885	2142	9.504	14.564	85	—

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- Torque recommendation values available at www.tenaris.com
- Compression efficiency for SC option is the same as the standard connection.
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Blue® 2 3/8" TO 13 5/8"

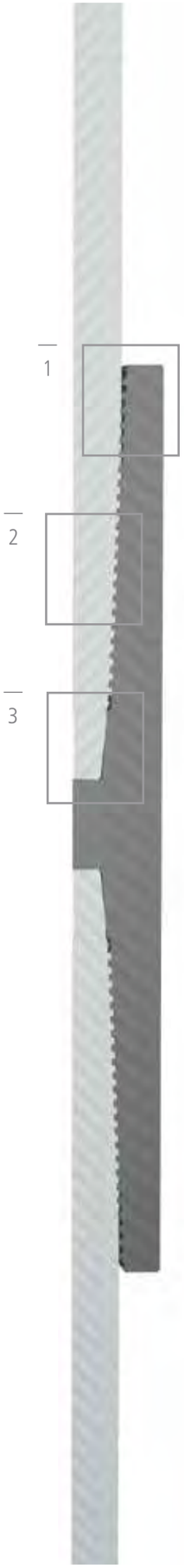
OPTIONS

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						SPECIAL CLEARANCE COUPLING			MATCHED STRENGTH
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency	Outside Diameter
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb						in	sq in	%	in
9 5/8	36.00]	0.352	8.921	8.765	10.626	11.693	8.829	5.065	10.255	100	100	564	820	923	974	1128	1282	10.079	9.309	91	10.165
	40.00	0.395	8.835	8.679	10.626	11.693	8.781	5.065	11.455	100	100	630	916	1031	1088	1260	1432	10.122	9.998	87	10.240
	43.50	0.435	8.755	8.599*	10.626	11.693	8.711	5.065	12.560	100	100	691	1005	1130	1193	1381	1570	10.165	10.687	85	10.311
	47.00	0.472	8.681	8.525	10.626	11.693	8.659	5.065	13.572	100	100	746	1086	1222	1289	1493	1697	10.217	11.506	85	10.378
	53.50	0.545	8.535	8.379*	10.626	11.693	8.545	5.065	15.547	100	100	855	1244	1399	1477	1710	1943	10.323	13.222	85	10.504
	58.40	0.595	8.435	8.279*	10.626	11.693	8.494	5.065	16.880	100	100	928	1350	1519	1604	1857	2110	10.394	14.375	85	10.587
	59.40	0.609	8.407	8.251	10.626	11.693	8.553	5.065	17.250	100	100	949	1380	1552	1639	1897	2156	10.409	14.632	85	—
	61.10	0.625	8.375	8.219	10.654	11.693	8.514	5.065	17.672	100	100	972	1414	1590	1679	1944	2209	10.433	15.018	85	—
	64.90	0.672	8.281	8.125	10.728	11.693	8.435	5.065	18.901	100	100	1040	1512	1701	1796	2079	2363	10.496	16.053	85	—
	70.30]	0.734	8.157	8.001	10.827	11.693	8.356	5.065	20.502	100	100	1128	1640	1845	1948	2255	2563	10.579	17.422	85	—
9 7/8	62.80]	0.625	8.625	8.469*	10.984	11.693	8.691	5.065	18.163	100	100	999	1453	1635	1725	1998	2270	10.654	15.410	85	10.858
	65.30	0.650	8.575	8.419*	10.984	11.693	8.658	5.065	18.163	100	100	1036	1507	1695	1790	2072	2355	10.693	16.071	85	10.858
	66.40	0.661	8.553	8.397	10.984	11.693	8.646	5.065	19.133	100	100	1052	1531	1722	1818	2105	2392	10.709	16.336	85	10.878
	66.90	0.668	8.539	8.383	10.984	11.693	8.646	5.065	19.322	100	100	1063	1546	1739	1836	2125	2415	10.717	16.408	85	10.890
	68.80	0.700	8.475	8.319	10.984	11.693	8.593	5.065	20.176	100	100	1110	1614	1816	1917	2219	2522	10.756	17.132	85	—
	70.40	0.707	8.461	8.305	10.984	11.693	8.608	5.065	20.362	100	100	1120	1629	1833	1934	2240	2545	10.768	17.332	85	—
	72.10]	0.725	8.425	8.269	11.031	11.693	8.573	5.065	20.840	100	100	1146	1667	1876	1980	2292	2605	10.791	17.732	85	—
10	69.90	0.700	8.600	8.444	11.197	11.693	8.593	5.054	20.452	100	100	1125	1636	1841	1943	2250	2556	—	—	—	—
10 3/4	40.50]	0.350	10.050	9.894	11.575	11.693	9.963	5.065	11.436	100	100	629	915	1029	1086	1258	1429	11.217	10.394	91	11.303
	45.50	0.400	9.950	9.794	11.575	11.693	9.885	5.065	13.006	100	100	715	1040	1171	1236	1431	1626	11.256	11.089	85	11.394
	51.00	0.450	9.850	9.694	11.654	11.693	9.806	5.065	14.561	100	100	801	1165	1311	1383	1602	1820	11.327	12.346	85	11.484
	55.50	0.495	9.760	9.604*	11.693	11.693	9.751	5.065	15.948	100	100	877	1276	1435	1515	1754	1993	11.394	13.539	85	11.563
	60.70	0.545	9.660	9.504	11.748	11.693	9.692	5.065	17.473	100	100	961	1398	1573	1660	1922	2184	11.469	14.883	85	11.650
	65.70	0.595	9.560	9.404*	11.890	11.693	9.633	5.065	18.983	100	100	1044	1519	1708	1803	2088	2373	11.539	16.163	85	11.736
	71.10	0.650	9.450	9.294	11.913	11.693	9.570	5.065	20.624	100	100	1134	1650	1856	1959	2269	2578	11.614	17.524	85	11.827
	73.20	0.672	9.406	9.250	11.929	11.693	9.558	5.065	21.277	100	100	1170	1702	1915	2021	2340	2660	11.646	18.099	85	11.862
	76.60	0.700	9.350	9.194	11.929	11.693	9.503	5.065	22.101	100	100	1216	1768	1989	2100	2431	2763	11.685	18.820	85	—
	79.20]	0.734	9.282	9.126	11.984	11.693	9.452	5.065	23.097	100	100	1270	1848	2079	2194	2541	2887	11.728	19.617	85	—
11 3/4	54.00]	0.435	10.880	10.724	12.752	11.693	10.950	5.065	15.463	100	100	850	1237	1392	1469	1701	1933	12.319	13.175	85	12.469
	60.00	0.489	10.772	10.616*	12.752	11.693	10.831	5.065	17.300	100	100	951	1384	1557	1643	1903	2162	12.398	14.703	85	12.567
	65.00	0.534	10.682	10.526*	12.752	11.693	10.753	5.065	18.815	100	100	1035	1505	1693	1788	2070	2352	12.465	16.010	85	12.646
	71.00]	0.582	10.586	10.430	12.752	11.693	10.670	5.065	20.420	100	100	1123	1634	1838	1940	2246	2552	12.531	17.324	85	12.728
11 7/8	58.80]	0.470	10.935	10.779*	12.854	12.283	10.973	5.361	16.841	100	100	926	1347	1516	1600	1852	2105	12.472	14.288	85	12.638
	71.80]	0.582	10.711	10.555*	12.854	12.283	10.879	5.361	20.648	100	100	1136	1652	1858	1962	2271	2581	12.638	17.549	85	12.835
13 3/8	54.50]	0.380	12.615	12.459	14.173	13.031	12.520	5.719	15.514	100	100	853	1241	1396	1474	1706	1939	13.858	13.973	90	13.957
	61.00	0.430	12.515	12.359	14.173	13.031	12.442	5.719	17.487	100	100	962	1399	1574	1661	1924	2186	13.898	14.830	85	14.051
	68.00	0.480	12.415	12.259	14.252	13.031	12.371	5.719	19.445	100	100	1069	1556	1750	1847	2139	2431	13.976	16.556	85	14.142
	72.00	0.514	12.347	12.191*	14.252	13.031	12.312	5.719	20.767	100	100	1142	1661	1869	1973	2284	2596	14.028	17.681	85	14.205
	77.00	0.550	12.275	12.119	14.299	13.031	12.261	5.719	22.160	100	100	1219	1773	1994	2105	2438	2770	14.079	18.811	85	14.268
	80.70	0.580	12.215	12.059	14.354	13.031	12.221	5.719	23.314	100	100	1282	1865	2098	2215	2565	2914	14.122	19.770	85	14.323
	85.00	0.608	12.159	12.003	14.402	13.031	12.182	5.719	24.386	100	100	1341	1951	2195	2317	2682	3048	14.165	20.731	85	14.370
	86.00	0.625	12.125	11.969*	14.433	13.031	12.174	5.719	25.034	100	100	1377	2003	2253	2378	2754	3129	14.189	21.258	85	14.402
	98.00]	0.719	11.937	11.781	14.598	13.031	12.150	5.719	28.587	100	100	1572	2287	2573	2716	3145	3573	14.323	24.256	85	14.563
13 1/2	81.40	0.580	12.340	12.152*	14.488	12.992	12.400	5.719	23.541	100	100	1295	1883	2119	2236	2590	2943	14.283	20.003	85	14.441
13 5/8	79.10]	0.555	12.515	12.328	14.665	12.992	12.478	5.719	22.788	100	100	1253	1823	2051	2165	2507	2849	14.323	19.479	85	14.472
	88.20]	0.625	12.375	12.188*	14.665	12.992	12.422	5.719	25.525	100	100	1404	2042	2297	2425	2808	3191	14.421	21.702	85	14.634

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. Small variations in the connection Internal Diameter will appear. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com
- Compression efficiency for SC option is the same as the standard connection.
- For the MS option, the coupling OD is reduced to the minimun critical area capable of providing the same tensile efficiency as the standard option.
- Special products (such as those for specific drift sizes) are also available or can be offered upon customer request.

Blue® Max | 7" TO 16"

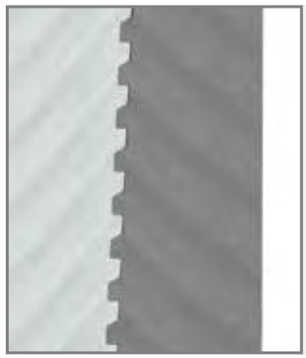
Comes with Dopeless® technology



1

- Twin start thread for quick make-up.

2



- Hooked design that improves tension strength and minimizes the risk of thread jump-out.

3

- High compression strength achieved by optimized torque shoulder.
- Internal seal with toroidal design for a more stable performance under high combined loads.

FEATURES

- Designed for high pressure / high temperature wells requiring heavier wall pipes and tested in accordance with API RP 5C5 CAL IV standard.
- 100% pipe body performance in terms of tension, compression, internal and external pressures.
- Parabolic seal contact pressure profile minimizes galling risk while improving sealing performance stability.
- Easier and faster make-up provided by the twin start thread.
- Comes with Dopeless® technology.

APPLICATIONS

- **HP/HT & Deep Wells**
- **Deepwater**
- Intermediate Casing
- Production Casing
- Tie-Backs
- Liners

OPTIONS

- Special clearance

Blue® Max 7" TO 16"

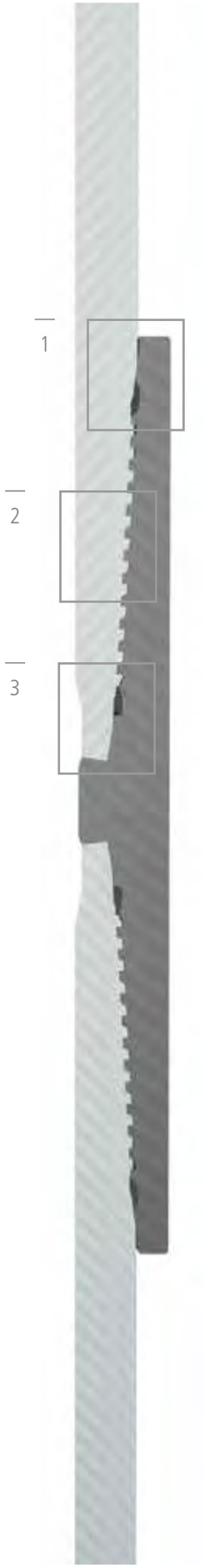
OPTIONS

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					SPECIAL CLEARANCE COUPLING		
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb					in	sq in	%
7	41.00	0.590	5.820	5.695	7.976	12.516	5.740	5.471	11.881	100	100	—	1069	1129	1307	1485	7.823	11.164	85
7 3/4	46.10	0.595	6.560	6.435*	8.803	12.102	6.545	5.264	13.375	100	100	—	—	1271	1471	1672	8.638	13.113	85
9 5/8	53.50	0.545	8.535	8.379*	10.638	11.736	8.545	5.080	15.547	100	100	1244	1399	1477	1710	1943	10.480	15.090	85
9 7/8	68.80	0.700	8.475	8.319	11.177	14.543	8.545	6.485	20.176	100	100	1614	1816	1917	2219	2522	10.984	19.525	85
10	73.90	0.732	8.536	8.380	11.209	15.327	8.545	6.876	21.313	100	100	1705	1918	2025	2344	2664	11.012	20.002	85
10 1/8	79.30	0.795	8.535	8.379*	11.555	14.512	8.545	6.469	23.303	100	100	1864	2097	2214	2563	2913	11.335	23.165	85
10 3/4	73.20	0.672	9.406	9.250	11.890	16.169	9.375	7.297	21.277	100	100	1702	1915	2021	2340	2660	11.693	21.277	85
	76.60	0.700	9.350	9.194	11.941	16.169	9.239	7.297	22.101	100	100	1768	1989	2100	2431	2763	11.736	21.849	85
	79.20	0.734	9.282	9.126	12.000	16.169	9.171	7.297	23.097	100	100	1848	2079	2194	2541	2887	11.791	22.868	85
13 3/8	72.00	0.514	12.347	12.191*	14.291	13.811	12.295	6.119	20.767	100	100	1661	1869	1973	2284	2596	14.142	19.471	85
13 5/8	88.20	0.625	12.375	12.188*	14.843	15.173	12.295	6.799	25.533	100	100	2042	2297	2425	2808	3191	14.642	25.533	85
14	114.00	0.800	12.400	12.212*	15.370	16.031	12.413	7.228	33.175	100	100	2654	2986	3152	3649	4147	15.146	31.036	85
	116.00	0.820	12.360	12.172*	15.500	16.031	12.413	7.228	33.953	100	100	2716	3056	3226	3735	4244	15.256	33.668	85
16	84.00	0.495	15.010	14.822	16.949	13.961	14.868	6.192	24.112	100	100	1929	2170	2291	2652	3014	16.795	23.442	85
	118.00	0.715	14.570	14.382	17.248	16.091	14.528	7.257	34.334	100	100	2747	3090	3262	3777	4292	17.039	32.181	85

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
- Torque recommendation values available at www.tenaris.com
- Compression efficiency for SC option is the same as the standard connection.

Blue® Heavy Wall | 7 5/8" TO 14"

Comes with Dopeless® technology



1

- External seal with toroidal design for a more stable performance under high combined loads.
- Slim coupling design to allow larger clearances, improving ECD.

2

- Hooked thread that improves tension strength.
- Two thread designs featuring three and four TPI.

3

- Special shoulder design provides high torque and compression capacity.
- Internal seal with toroidal design for a more stable performance under high combined loads.

FEATURES

- Designed for high pressure well sections requiring extra heavy wall pipe with 100% pressure rated seals and enhanced compression performance.
- Sphere-to-cone seal geometry provides a stable sealing performance under high combined loads.
- 100% pipe body performance in terms of internal and external pressure.
- 80% tension and compression ratings (highest compression rating in the market for the segment).
- Successfully certified in accordance with ISO 13679 CAL IV and under the API RP 5C5 protocol.
- Comes with Dopeless® technology.

APPLICATIONS

- **HP/HT & Deep Wells**
- **Deepwater**
- Intermediate Casing
- Production Casing
- Tie-Backs

OPTIONS

- Special clearance

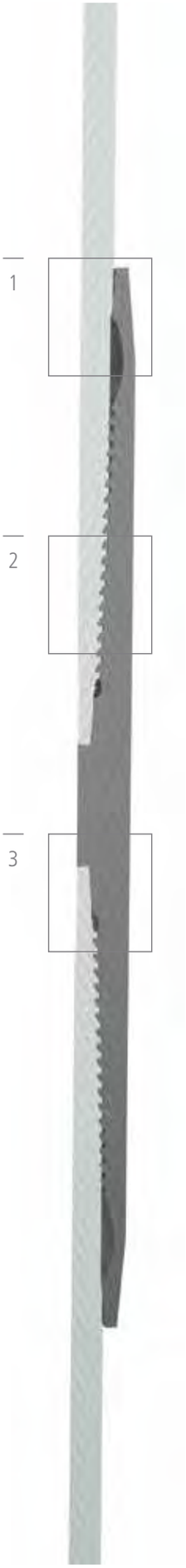
Blue® Heavy Wall 7 5/8" TO 14"

OPTIONS

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						SPECIAL CLEARANCE COUPLING		
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb						in	sq in	%
7 5/8	47.10]	0.625	6.375	6.250	8.371	10.979	6.289	4.899	11.545	80.0	80.0	605	880	990	1045	1210	1374	—	—	—
	52.10	0.700	6.225	6.100	8.371	10.979	6.139	4.899	12.567	80.0	80.0	670	974	1097	1158	1340	1523	—	—	—
	55.30	0.750	6.125	6.000	8.491	10.979	6.069	4.899	13.607	80.0	80.0	713	1037	1166	1231	1426	1620	8.350	12.293	70
	58.31	0.800	6.025	5.900	8.491	10.979	6.006	4.899	14.163	80.0	80.0	754	1098	1235	1304	1510	1715	—	—	—
	59.20]	0.812	6.001	5.876	8.550	10.979	5.991	4.899	14.599	80.0	80.0	765	1112	1251	1321	1530	1738	—	—	—
	70.76]	1.000	5.625	5.500	8.706	14.565	5.616	6.298	17.483	80.0	80.0	916	1332	1498	1582	1831	2082	—	—	—
	82.34	1.200	5.225	5.100	8.940	14.565	5.400	6.298	20.346	80.0	80.0	1066	1550	1744	1841	2131	2422	—	—	—
	85.11]	1.250	5.125	5.000	8.994	14.565	5.346	6.298	21.029	80.0	80.0	1102	1602	1802	1902	2203	2503	—	—	—
8 5/8	63.50]	0.750	7.125	7.000	9.543	13.613	7.128	5.822	15.586	80.0	80.0	817	1187	1336	1410	1633	1855	—	—	—
	72.70]	0.875	6.875	6.750	9.716	13.613	6.992	5.822	17.895	80.0	80.0	938	1363	1534	1619	1874	2130	—	—	—
	81.44]	1.000	6.625	6.500	9.722	14.819	6.605	6.425	20.122	80.0	80.0	1054	1533	1725	1821	2108	2395	—	—	—
	83.20]	1.025	6.575	6.450	9.754	14.819	6.577	6.425	20.557	80.0	80.0	1077	1566	1762	1860	2154	2447	—	—	—
9 5/8	71.80]	0.750	8.125	7.969	10.534	13.737	8.105	5.884	17.565	80.0	80.0	920	1338	1506	1590	1840	2091	—	—	—
	75.60	0.797	8.031	7.875	10.602	13.737	8.053	5.884	18.567	80.0	80.0	973	1414	1591	1680	1945	2210	—	—	—
	90.81]	0.984	7.657	7.501	10.862	13.737	7.850	5.884	22.438	80.0	80.0	1175	1710	1923	2030	2350	2671	—	—	—
	107.97	1.200	7.225	7.069	10.965	15.627	7.335	6.829	26.680	80.0	80.0	1398	2033	2287	2414	2795	3176	—	—	—
10 1/8	79.34	0.795	8.535	8.379	11.024	14.137	8.450	6.084	19.574	80.0	80.0	1026	1491	1678	1771	2050	2330	—	—	—
10 3/4	80.80]	0.750	9.250	9.094	11.434	13.507	9.135	6.163	19.595	80.0	80.0	1037	1508	1697	1790	2074	2356	—	—	—
	85.30	0.797	9.156	9.000	11.497	13.507	9.041	6.163	20.723	80.0	80.0	1097	1595	1794	1894	2193	2492	—	—	—
	90.30	0.850	9.050	8.894	11.566	13.507	8.935	6.163	21.978	80.0	80.0	1163	1692	1903	2009	2326	2644	—	—	—
	91.20	0.859	9.032	8.876	11.578	13.507	8.917	6.163	22.193	80.0	80.0	1174	1708	1922	2029	2349	2670	11.350	18.088	60
	94.68	0.900	8.950	8.794	11.631	13.507	8.835	6.163	23.154	80.0	80.0	1226	1782	2006	2117	2451	2785	—	—	—
	96.79	0.922	8.906	8.750	11.659	13.507	8.808	6.163	23.665	80.0	80.0	1253	1822	2050	2163	2505	2846	—	—	—
	100.40	0.960	8.830	8.674	11.707	13.507	8.766	6.163	24.547	80.0	80.0	1299	1890	2126	2244	2598	2953	—	—	—
	102.63	0.984	8.782	8.626	11.737	13.507	8.739	6.163	25.098	80.0	80.0	1328	1932	2174	2294	2657	3019	—	—	—
	104.13	1.000	8.750	8.594	11.756	13.507	8.722	6.163	25.461	80.0	80.0	1348	1960	2206	2328	2695	3063	—	—	—
	107.20]	1.033	8.684	8.528	11.797	13.507	8.685	6.163	26.211	80.0	80.0	1387	2018	2270	2397	2775	3154	—	—	—
10 7/8	72.00	0.656	9.563	9.407	11.673	12.209	9.539	5.120	17.691	80.0	80.0	926	1348	1516	1601	1854	2106	—	—	—
11 3/4	88.11]	0.750	10.250	10.094	12.436	13.964	10.135	6.391	21.556	80.0	80.0	1141	1658	1866	1970	2281	2592	—	—	—
	93.23	0.797	10.156	10.000	12.500	13.964	10.041	6.391	22.805	80.0	80.0	1206	1755	1974	2084	2414	2742	—	—	—
	98.95	0.850	10.050	9.894	12.570	13.964	9.935	6.391	24.200	80.0	80.0	1281	1863	2096	2212	2562	2910	—	—	—
	99.92	0.859	10.032	9.876	12.582	13.964	9.917	6.391	24.434	80.0	80.0	1293	1881	2116	2234	2586	2939	—	—	—
	104.29	0.900	9.950	9.794	12.636	13.964	9.835	6.391	25.502	80.0	80.0	1350	1963	2209	2331	2700	3068	—	—	—
	106.62	0.922	9.906	9.750	12.665	13.964	9.807	6.391	26.073	80.0	80.0	1380	2007	2258	2384	2760	3136	—	—	—
	109.05	0.945	9.860	9.704	12.695	13.964	9.782	6.391	26.669	80.0	80.0	1411	2053	2310	2438	2823	3208	—	—	—
	118.23]	1.033	9.684	9.528	12.807	13.964	9.685	6.391	28.909	80.0	80.0	1530	2226	2504	2643	3061	3478	—	—	—
14	106.00]	0.750	12.500	12.312	14.779	13.252	12.358	6.035	26.224	80.0	80.0	1374	1998	2248	2373	2747	3122	—	—	—
	114.00	0.800	12.400	12.212	14.779	13.252	12.292	6.035	27.577	80.0	80.0	1460	2123	2389	2522	2919	3318	—	—	—
	120.00]	0.850	12.300	12.112	14.984	13.252	12.241	6.035	29.497	80.0	80.0	1545	2247	2528	2669	3090	3511	—	—	—

- Drift diameter displayed are standard.
-] Interchangeable when bracketed. Small variations in the connection Internal Diameter will appear. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com
- Compression efficiency for SC option is the same as the standard connection.
- Special products (such as those for specific drift sizes) are also available or can be offered upon customer request.

Blue® Riser | 7 5/8" TO 16.08"



1

- Innovative R-Arch™ design minimizes fatigue loading in first engaged thread.
- Metal-to-metal seal provides external sealing efficiency.

2

- Patented double elliptical groove decreases stress concentration and improves fatigue resistance.

3

- Metal-to-metal toroidal seal minimizes risk of galling and improves sealing performance stability.

FEATURES

- High fatigue resistance design: performance comparable to the pipe body.
- First engaged thread with improved fatigue performance due to the innovative R-Arch™ design.
- Tested under the API 5C5 CAL-IV testing protocol and the most stringent fatigue qualification, the Blue® Riser connection provides validated reliability under combined and dynamic loads.
- Patented double elliptical groove to improve connection fatigue resistance.
- No fretting fatigue due to external seal design.
- Gas-tight and external seals.

APPLICATIONS

- **Deepwater**
- Top-tensioned risers
- High Pressure Drilling Risers
- Landing & Work-Over Strings

Blue® Riser 7 5/8" TO 16.08"

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH				SPECIAL CLEARANCE COUPLING		
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						80 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb				in	sq in	%
7 5/8	30.10]	0.380	6.865	6.740	8.508	15.125	6.770	6.927	6.797	78.0	60.0	540	641	742	843	—	—	—
	34.10	0.435	6.755	6.630	8.508	15.125	6.669	6.927	7.981	81.0	60.0	637	756	876	995	—	—	—
	38.60	0.495	6.635	6.510	8.508	15.125	6.615	6.927	9.251	83.0	60.0	736	874	1013	1150	—	—	—
	39.00	0.500	6.625	6.500	8.508	15.125	6.600	6.927	9.355	83.0	60.0	743	882	1022	1161	—	—	—
	42.80	0.562	6.501	6.376	8.618	15.125	6.556	6.927	10.642	85.0	60.0	848	1007	1166	1325	—	—	—
	45.30]	0.595	6.435	6.310	8.657	15.125	6.527	6.927	11.316	86.0	60.0	904	1073	1243	1413	—	—	—
	47.10]	0.625	6.375	6.250	8.709	17.996	6.446	8.363	11.924	86.0	60.0	946	1123	1300	1477	—	—	—
	51.20	0.687	6.251	6.126	8.713	17.996	6.392	8.363	13.161	87.0	60.0	1042	1238	1433	1629	—	—	—
	55.40	0.752	6.121	5.996	8.909	17.996	6.335	8.363	14.433	88.0	60.0	1143	1358	1572	1786	—	—	—
	59.20]	0.812	6.001	5.876	8.913	17.996	6.283	8.363	15.583	89.0	60.0	1237	1469	1702	1933	—	—	—
8 5/8	36.00]	0.400	7.825	7.700	9.492	15.477	7.741	7.020	8.167	79.0	60.0	653	776	898	1021	—	—	—
	40.00	0.450	7.725	7.600	9.492	15.477	7.645	7.020	9.394	81.0	60.0	749	889	1030	1170	—	—	—
	44.00	0.500	7.625	7.500	9.492	15.477	7.600	7.020	10.607	83.0	60.0	847	1006	1165	1324	—	—	—
	49.00	0.557	7.511	7.386	9.598	15.477	7.549	7.020	11.969	84.0	60.0	948	1126	1305	1483	—	—	—
	52.00]	0.595	7.435	7.310	9.665	15.477	7.516	7.020	12.866	85.0	60.0	1021	1212	1403	1595	—	—	—
	54.00]	0.625	7.375	7.250	9.657	18.348	7.437	8.455	13.568	86.0	60.0	1081	1283	1486	1689	—	—	—
	56.00	0.650	7.325	7.200	9.658	18.348	7.400	8.455	14.149	86.0	60.0	1121	1330	1540	1751	—	—	—
	58.70	0.687	7.251	7.126	9.722	18.348	7.382	8.455	15.001	87.0	60.0	1193	1416	1640	1864	—	—	—
	59.70	0.700	7.225	7.100	9.745	18.348	7.355	8.455	15.298	87.0	60.0	1213	1441	1668	1896	—	—	—
	63.00	0.743	7.139	7.014	9.817	18.348	7.332	8.455	16.274	88.0	60.0	1295	1538	1781	2024	—	—	—
	68.10]	0.812	7.001	6.876	9.931	18.348	7.272	8.455	17.815	89.0	60.0	1419	1685	1951	2217	—	—	—
9 5/8	36.00]	0.352	8.921	8.765	10.457	15.551	8.794	6.973	7.787	75.0	60.0	615	731	846	962	—	—	—
	40.00	0.395	8.835	8.679	10.457	15.551	8.755	6.973	8.993	78.0	60.0	714	849	983	1117	—	—	—
	43.50	0.435	8.755	8.599	10.457	15.551	8.668	6.973	10.104	80.0	60.0	804	954	1105	1256	—	—	—
	47.00	0.472	8.681	8.525	10.456	15.551	8.635	6.973	11.123	81.0	60.0	880	1044	1209	1375	—	—	—
	53.50	0.545	8.535	8.379	10.593	15.551	8.569	6.973	13.109	84.0	60.0	1045	1241	1436	1632	—	—	—
	58.40]	0.595	8.435	8.279	10.685	15.551	8.525	6.973	14.449	85.0	60.0	1148	1363	1578	1794	—	—	—
	59.30]	0.608	8.409	8.253	10.689	19.163	8.429	8.780	14.795	85.0	60.0	1171	1391	1611	1830	—	—	—
	61.10]	0.625	8.375	8.219	10.689	19.163	8.413	8.780	15.246	86.0	60.0	1216	1444	1672	1900	—	—	—
	64.90	0.672	8.281	8.125	10.689	19.163	8.371	8.780	16.483	87.0	60.0	1315	1563	1809	2056	—	—	—
	70.30	0.734	8.157	8.001	10.798	19.163	8.316	8.780	18.093	88.0	60.0	1443	1714	1984	2255	—	—	—
	75.60	0.797	8.031	7.875	10.907	19.163	8.261	8.780	19.704	89.0	60.0	1574	1869	2164	2459	—	—	—
	77.90	0.824	7.977	7.821	10.906	19.163	8.237	8.780	20.387	89.0	60.0	1622	1926	2230	2535	—	—	—
	80.80]	0.860	7.905	7.749	10.906	19.163	8.206	8.780	21.291	89.0	60.0	1686	2003	2318	2634	—	—	—
9 7/8	62.80]	0.625	8.625	8.469	10.871	18.742	8.683	8.548	15.665	86.0	60.0	1250	1484	1718	1952	—	—	—
	68.80	0.700	8.475	8.319	11.006	18.742	8.616	8.548	17.690	87.0	60.0	1404	1668	1931	2194	—	—	—
	72.10	0.725	8.425	8.269	11.050	18.742	8.594	8.548	18.358	88.0	60.0	1467	1742	2017	2292	—	—	—
	78.60	0.797	8.281	8.125	11.175	18.742	8.531	8.548	20.258	89.0	60.0	1618	1922	2225	2528	—	—	—
	81.00]	0.824	8.227	8.071	11.220	18.742	8.507	8.548	20.962	89.0	60.0	1668	1981	2294	2607	—	—	—

- In case of material grades with 80 ksi SMYS, compression efficiency to consider is 50%.
- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. Small variations in the connection Internal Diameter will appear. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com
- Compression efficiency for SC option is the same as the standard connection.
- Special products (such as those for specific drift sizes) are also available or can be offered upon customer request.

Blue® Riser 7 5/8" TO 16.08"

OPTIONS

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH				SPECIAL CLEARANCE COUPLING		
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						80 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb				in	sq in	%
10 3/4	40.50]	0.350	10.050	9.894	11.634	15.738	9.923	6.973	8.611	75.0	60.0	686	815	944	1072	—	—	—
	45.50	0.400	9.950	9.794	11.634	15.738	9.878	6.973	10.190	78.0	60.0	811	964	1116	1268	—	—	—
	51.00	0.450	9.850	9.694	11.634	15.738	9.782	6.973	11.753	80.0	60.0	932	1106	1282	1456	—	—	—
	55.50	0.495	9.760	9.604	11.634	15.738	9.741	6.973	13.147	82.0	60.0	1046	1242	1438	1634	—	—	—
	60.70	0.545	9.660	9.504	11.730	15.738	9.696	6.973	14.681	83.0	60.0	1160	1378	1595	1813	—	—	—
	65.70]	0.595	9.560	9.404	11.824	15.738	9.652	6.973	16.198	85.0	60.0	1291	1533	1775	2017	—	—	—
	76.60]	0.700	9.350	9.194	11.917	20.926	9.403	9.567	19.335	87.0	60.0	1538	1827	2115	2404	—	—	—
	79.20	0.734	9.282	9.126	11.917	20.926	9.372	9.567	20.336	87.0	60.0	1608	1909	2211	2512	—	—	—
	81.00	0.752	9.246	9.090	11.916	20.926	9.356	9.567	20.862	88.0	60.0	1663	1975	2286	2599	—	—	—
	85.30	0.797	9.156	9.000	11.996	20.926	9.316	9.567	22.171	88.0	60.0	1755	2083	2412	2741	—	—	—
	91.30	0.860	9.030	8.874	12.106	20.926	9.261	9.567	23.981	89.0	60.0	1903	2259	2616	2973	—	—	—
	97.20	0.923	8.904	8.748	12.213	20.926	9.206	9.567	25.766	90.0	60.0	2052	2436	2821	3206	—	—	—
	101.00]	0.959	8.832	8.676	12.273	20.926	9.174	9.567	26.775	90.0	60.0	2124	2522	2921	3318	11.929	26.775	90
11	50.40]	0.435	10.130	9.974	11.972	17.243	10.004	7.705	10.795	74.0	60.0	855	1015	1175	1336	—	—	—
	56.00	0.489	10.022	9.866	11.972	17.243	9.955	7.705	12.516	77.0	60.0	995	1181	1368	1554	—	—	—
	60.60	0.531	9.938	9.782	11.972	17.243	9.917	7.705	13.843	79.0	60.0	1104	1311	1518	1725	—	—	—
	66.20	0.582	9.836	9.680	11.971	17.243	9.819	7.705	15.439	81.0	60.0	1234	1466	1697	1929	—	—	—
	67.00	0.589	9.822	9.666	11.984	17.243	9.813	7.705	15.656	81.0	60.0	1248	1482	1716	1950	—	—	—
	73.50	0.650	9.700	9.544	12.098	17.243	9.759	7.705	17.541	82.0	60.0	1387	1647	1907	2166	—	—	—
	79.20	0.672	9.656	9.500	12.139	17.243	9.739	7.705	18.215	83.0	60.0	1448	1719	1990	2263	—	—	—
	82.30]	0.700	9.600	9.444	12.190	17.243	9.714	7.705	19.068	84.0	60.0	1522	1808	2093	2378	—	—	—
11 3/4	54.00]	0.435	10.880	10.724	12.654	17.137	10.778	7.589	12.253	79.0	60.0	977	1161	1344	1527	—	—	—
	60.00	0.489	10.772	10.616	12.654	17.137	10.678	7.589	14.097	81.0	60.0	1121	1331	1541	1751	—	—	—
	65.00	0.534	10.682	10.526	12.654	17.137	10.638	7.589	15.620	83.0	60.0	1249	1484	1718	1952	—	—	—
	71.00	0.582	10.586	10.430	12.746	17.137	10.595	7.589	17.230	84.0	60.0	1373	1630	1887	2144	—	—	—
	78.80	0.650	10.450	10.294	12.875	17.137	10.534	7.589	19.487	85.0	60.0	1541	1830	2119	2408	—	—	—
	85.00	0.672	10.406	10.250	12.916	17.137	10.514	7.589	20.211	86.0	60.0	1609	1911	2213	2514	—	—	—
	88.30	0.700	10.350	10.194	12.968	17.137	10.490	7.589	21.128	86.0	60.0	1672	1986	2299	2613	—	—	—
	92.30]	0.734	10.282	10.126	13.016	21.305	10.350	9.674	22.234	87.0	60.0	1768	2099	2431	2762	—	—	—
	96.70	0.779	10.192	10.036	13.016	21.305	10.310	9.674	23.688	88.0	60.0	1890	2245	2599	2953	—	—	—
	100.50	0.812	10.126	9.970	13.015	21.305	10.280	9.674	24.746	88.0	60.0	1964	2333	2701	3069	—	—	—
	104.80	0.860	10.030	9.874	13.101	21.305	10.238	9.674	26.272	89.0	60.0	2095	2488	2880	3273	—	—	—
	111.20	0.923	9.904	9.748	13.210	21.305	10.182	9.674	28.254	89.0	60.0	2236	2655	3073	3492	—	—	—
	113.00	0.959	9.832	9.676	13.272	21.305	10.151	9.674	29.375	90.0	60.0	2341	2780	3218	3658	—	—	—
	115.60]	1.004	9.742	9.586	13.348	21.305	10.112	9.674	30.765	90.0	60.0	2441	2898	3355	3813	—	—	—
11 7/8	59.00]	0.472	10.931	10.775	12.925	15.879	10.881	6.950	13.527	80.0	60.0	1082	1285	1488	1691	—	—	—
	71.80]	0.582	10.711	10.555	12.927	15.879	10.783	6.950	17.283	83.0	60.0	1371	1628	1885	2142	—	—	—
12 3/4	92.70]	0.672	11.406	11.250	14.008	23.126	11.336	10.500	20.656	81.0	55.0	1652	1962	2272	2581	—	—	—
	100.70]	0.734	11.282	11.126	14.008	23.126	11.202	10.500	22.576	82.0	60.0	1818	2158	2499	2840	—	—	—
	108.80	0.797	11.156	11.000	14.006	23.126	11.138	10.500	25.107	83.0	60.0	1987	2360	2732	3105	—	—	—
	114.40]	0.860	11.030	10.874	14.121	23.126	11.075	10.500	27.313	85.0	60.0	2185	2594	3004	3414	—	—	—
	121.50]	0.923	10.904	10.748	14.255	23.812	10.974	10.844	29.494	86.0	60.0	2360	2802	3244	3687	—	—	—
	128.90]	0.984	10.782	10.626	14.362	23.812	10.914	10.844	31.582	86.0	60.0	2503	2971	3441	3910	—	—	—
	133.40]	1.022	10.706	10.550	14.427	23.812	10.877	10.844	32.871	87.0	60.0	2620	3112	3604	4095	—	—	—

- In case of material grades with 80 ksi SMYS, compression efficiency to consider is 50%.
- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. Small variations in the connection Internal Diameter will appear. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com
- Compression efficiency for SC option is the same as the standard connection.
- Special products (such as those for specific drift sizes) are also available or can be offered upon customer request.

Blue® Riser 7 5/8" TO 16.08"

OPTIONS

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH				SPECIAL CLEARANCE COUPLING		
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						80 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb				in	sq in	%
13 3/8	61.70]	0.435	12.505	12.349	14.512	17.486	12.413	7.629	12.688	71.0	60.0	1005	1193	1381	1569	—	—	—
	68.00	0.480	12.415	12.259	14.512	17.486	12.368	7.629	14.458	74.0	60.0	1151	1367	1583	1799	—	—	—
	72.00	0.514	12.347	12.191	14.512	17.486	12.334	7.629	15.787	76.0	60.0	1262	1499	1736	1973	—	—	—
	76.30	0.545	12.285	12.129	14.512	17.486	12.303	7.629	16.993	77.0	60.0	1353	1607	1860	2114	—	—	—
	81.00	0.582	12.211	12.055	14.512	17.486	12.266	7.629	18.424	78.0	60.0	1459	1733	2007	2281	—	—	—
	85.00]	0.608	12.159	12.003	14.510	17.486	12.240	7.629	19.424	79.0	60.0	1541	1830	2119	2408	—	—	—
	86.00]	0.625	12.125	11.969	14.764	23.276	12.018	10.523	20.076	80.0	55.0	1602	1902	2203	2503	—	—	—
	98.10	0.720	11.935	11.779	14.764	23.276	11.855	10.523	23.685	82.0	60.0	1878	2230	2582	2934	—	—	—
	108.00	0.797	11.781	11.625	14.764	23.276	11.778	10.523	26.568	84.0	60.0	2116	2513	2910	3307	—	—	—
	115.80]	0.860	11.655	11.499	14.762	23.276	11.715	10.523	28.900	85.0	60.0	2299	2730	3161	3593	—	—	—
	123.50]	0.923	11.529	11.373	14.898	23.965	11.614	10.868	31.206	86.0	60.0	2485	2950	3416	3881	—	—	—
	131.30	0.984	11.407	11.251	15.006	23.965	11.554	10.868	33.416	87.0	60.0	2666	3166	3666	4166	—	—	—
	136.00]	1.022	11.331	11.175	15.072	23.965	11.516	10.868	34.781	87.0	60.0	2761	3278	3796	4313	—	—	—
13 5/8	88.20]	0.625	12.375	12.188	14.846	20.956	12.283	9.342	20.088	78.0	60.0	1593	1892	2190	2489	—	—	—
	94.50	0.672	12.281	12.094	14.846	20.956	12.236	9.342	21.917	80.0	60.0	1750	2078	2406	2734	—	—	—
	101.60	0.734	12.157	11.970	14.848	20.956	12.174	9.342	24.308	81.0	60.0	1926	2287	2649	3010	—	—	—
	117.90]	0.860	11.905	11.718	15.081	20.956	12.048	9.342	29.092	84.0	60.0	2318	2752	3187	3621	—	—	—
	127.30]	0.923	11.779	11.592	15.138	23.765	11.850	10.747	31.447	85.0	60.0	2505	2974	3444	3913	—	—	—
	135.00	0.984	11.657	11.470	15.246	23.765	11.790	10.747	33.704	86.0	60.0	2688	3192	3697	4201	—	—	—
	139.80]	1.022	11.581	11.394	15.313	23.765	11.752	10.747	35.097	86.0	60.0	2784	3306	3828	4350	—	—	—
14	80.10]	0.545	12.910	12.722	15.303	19.351	12.984	8.509	17.583	76.0	60.0	1401	1664	1926	2189	—	—	—
	98.80	0.694	12.612	12.424	15.303	19.351	12.748	8.509	23.585	81.0	60.0	1880	2232	2585	2937	—	—	—
	99.60]	0.700	12.600	12.412	15.303	19.351	12.743	8.509	23.823	81.0	60.0	1895	2251	2606	2961	—	—	—
	104.20]	0.734	12.532	12.344	15.303	19.351	12.713	8.509	25.172	82.0	60.0	2007	2383	2759	3136	—	—	—
	113.80]	0.806	12.388	12.200	15.350	23.519	12.486	10.593	28.516	85.0	60.0	2272	2698	3124	3550	—	—	—
	115.00	0.812	12.376	12.188 *	15.350	23.519	12.481	10.593	28.751	85.0	60.0	2287	2717	3146	3574	—	—	—
	121.30]	0.860	12.280	12.092	15.441	23.519	12.438	10.593	30.619	86.0	60.0	2442	2901	3358	3817	—	—	—
	129.60]	0.923	12.154	11.966	15.524	24.021	12.229	10.844	32.357	85.0	60.0	2579	3062	3545	4029	—	—	—
	134.20]	0.959	12.082	11.894	15.701	24.021	12.193	10.844	33.914	86.0	60.0	2703	3210	3717	4223	—	—	—
	137.50]	0.984	12.032	11.844	15.701	24.021	12.168	10.844	34.866	86.0	60.0	2768	3287	3806	4326	—	—	—
	142.40]	1.022	11.956	11.768	15.700	24.021	12.131	10.844	36.305	87.0	60.0	2900	3444	3988	4532	—	—	—
16	96.60]	0.575	14.850	14.662	17.366	20.538	14.749	8.936	21.160	75.0	60.0	1672	1985	2299	2612	—	—	—
	99.20]	0.595	14.810	14.623	17.366	20.538	14.729	8.936	22.095	76.0	60.0	1751	2079	2408	2735	—	—	—
	108.00	0.650	14.700	14.513	17.366	20.538	14.674	8.936	24.655	78.0	60.0	1956	2323	2689	3056	—	—	—
	111.50]	0.672	14.656	14.469	17.366	20.538	14.652	8.936	25.674	79.0	60.0	2045	2428	2812	3196	—	—	—
	121.00]	0.734	14.532	14.345	17.366	20.538	14.566	8.936	28.529	81.0	60.0	2281	2709	3136	3564	—	—	—
	125.50]	0.761	14.478	14.291	17.365	20.538	14.539	8.936	29.764	81.0	60.0	2361	2803	3246	3689	—	—	—
	128.30]	0.779	14.442	14.255	17.500	24.306	14.359	10.820	30.585	82.0	60.0	2444	2902	3360	3818	—	—	—
	137.40]	0.842	14.316	14.129	17.500	24.306	14.296	10.820	33.443	83.0	60.0	2663	3161	3661	4160	—	—	—
	147.10]	0.905	14.190	14.003	17.499	24.306	14.233	10.820	36.276	84.0	60.0	2884	3425	3966	4507	—	—	—
	155.40]	0.959	14.082	13.895	17.599	24.306	14.180	10.820	38.685	85.0	60.0	3081	3659	4237	4814	—	—	—
	159.20]	0.984	14.032	13.845	17.645	24.306	14.155	10.820	39.793	85.0	60.0	3157	3749	4340	4932	—	—	—
	164.90]	1.022	13.956	13.769	17.715	24.306	14.117	10.820	41.471	86.0	60.0	3308	3929	4549	5169	—	—	—
16.08	109.80	0.667	14.746	14.558	17.303	19.094	14.760	8.211	25.463	78.0	60.0	2016	2393	2771	3149	—	—	—

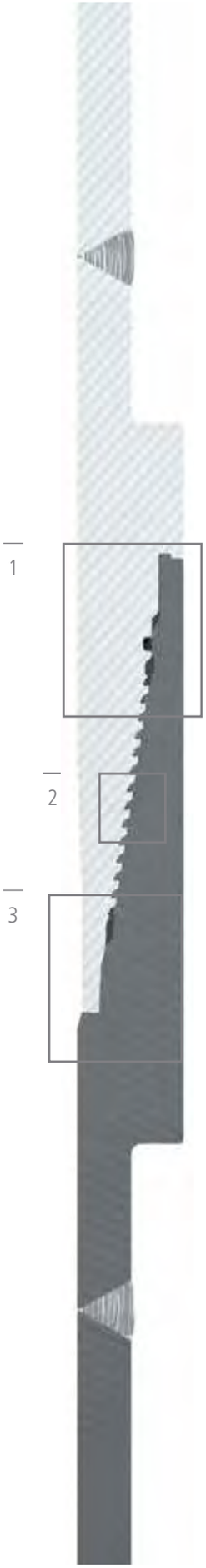
- In case of material grades with 80 ksi SMYS, compression efficiency to consider is 50%.
- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. Small variations in the connection Internal Diameter will appear. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com
- Compression efficiency for SC option is the same as the standard connection.
- Special products (such as those for specific drift sizes) are also available or can be offered upon customer request.

Large OD

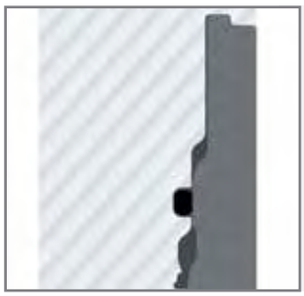
Large OD

Large OD

BlueDock® Connector | 18" TO 42"



1



- Double shoulder provides more than 100% compression efficiency, high over-torque capacity and enhanced fatigue response.
- Optional sea water exclusion seal.

2

- Proprietary hooked thread profile design provides fully reliable structural capacity under extreme loads and extra fatigue resistance.
- High thread taper makes stabbing deeper and easier.

3

- The multiple start and low TPI thread design with self-alignment guides allows fast, trouble-free make-up, requiring only 3/4 of a turn to final make-up.
- Metal-to-metal seal in sizes up to 24" or pre-installed elastomeric seal in sizes from 18" to 42".

FEATURES

- Easy and safe stabbing, minimized cross- threading risk.
- High sealability performance - gas and water sealability verified by full scale testing at 95% pipe body VME according to API RP 5C5 CAL I.
- 100% ratings in tension, compression and bending.
- High fatigue performance under bending and/or tension-compression cycling loads, given by maximized radii and avoidance of stress-risers.

TYPICAL PROFILE OPTIONS

- Internal Flush:
  - ELS / MTM / MTM-SWS / ELS-SWS
- External Flush:
  - ELS / ELS-SWS

APPLICATIONS

- **HP/HT & Deep Wells**
- **Deepwater**
- **Shallow Water**
- Conductor and surface Casing

VERSIONS

- Metal-to-metal seal in sizes up to 24".
- Pre-installed elastomeric seal in sizes from 18" to 42".
- Full Fatigue option, manufactured with state-of-the-art technologies to optimize fatigue service, supported by extensive full-scale testing.

BlueDock® Connector | 18" TO 42"

DESIGNATION			PIPE BODY			CONNECTOR																
			GEOMETRY			GEOMETRY						PERFORMANCE										
Size (OD)	Wall Thickness	Connector Type	Nominal ID	API Drift	Plain End Weight	Regular OD	Joint ID	Total Length	Make-up Loss	Threads per inch	Weight	Tension/ Compression efficiency	Bending Efficiency	External/Internal Pressure Efficiency	Joint Yield Strength						Max. Allowable Bending				
															Connector				90 ksi		70 ksi			90 ksi	
															Pipe	X52	X56	X65	X70	X80	X52	X56	X65	X70	X80
in	in		in	in	lb/ft	in	in	in	in		lb	%	%	%	x 1000 lb						kip-ft				
18	0.500]	LR	17.000	16.813	93.5	20.000	16.750	17.383	7.341	3	370	100	100	100	1435	1556	1795	1932	2213	509	552	637	686	785
	0.625]	LR	16.750	16.563	116.1	20.000	16.750	17.383	7.341	3	391	100	100	100	1781	1931	2228	2398	2746	623	676	779	839	961
	0.688]	LR	16.624	16.437	127.3	20.000	16.624	17.383	7.341	3	402	100	100	100	1953	2118	2443	2630	3012	679	736	849	914	1047
	0.750]	LR	16.500	16.313	138.3	20.000	16.500	17.383	7.341	3	412	100	100	100	2122	2300	2654	2857	3272	732	794	916	986	1129
	0.812]	LR	16.376	16.188	149.2	20.000	16.376	17.383	7.341	3	423	100	100	100	2289	2482	2863	3082	3530	784	850	981	1056	1210
	0.875]	LR	16.250	16.063	160.2	20.000	16.250	17.383	7.341	3	434	100	100	100	2457	2664	3074	3309	3790	836	907	1046	1126	1290
20	0.438]	LR	19.124	18.937	91.6	21.618	18.376	16.682	6.625	3	364	100	100	100	1405	1524	1758	1892	2167	560	608	701	755	864
	0.468]	LR	19.064	18.877	97.7	21.618	18.376	16.682	6.625	3	366	100	100	100	1499	1625	1875	2019	2312	596	646	746	803	919
	0.500]	LR	19.000	18.813	104.2	21.618	18.376	16.682	6.625	3	367	100	100	100	1599	1734	2000	2153	2466	634	687	793	853	977
	0.625]	LR	18.750	18.563	129.4	21.618	18.376	16.682	6.625	3	374	100	100	100	1986	2153	2484	2674	3062	777	843	972	1047	1199
	0.688]	LR	18.624	18.437	142.0	21.618	18.376	16.682	6.625	3	377	100	100	100	2179	2363	2726	2934	3360	848	919	1060	1141	1307
	0.750]	LR	18.500	18.313	154.3	21.618	18.376	16.682	6.625	3	380	100	100	100	2368	2567	2962	3189	—	915	992	1145	1233	—
	0.812]	LR	18.376	18.189	166.6	21.618	18.376	16.682	6.625	3	384	100	100	100	2555	2770	—	—	—	982	1064	—	—	—
	0.750]	HR	18.500	18.313	154.3	21.954	18.352	17.861	7.808	3	483	100	100	100	—	—	—	—	3651	—	—	—	—	1412
	0.812]	HR	18.376	18.189	166.6	21.954	18.228	17.861	7.808	3	497	100	100	100	—	—	3196	3441	3940	—	—	1228	1322	1514
	1.000]	HR	18.000	17.813	203.1	21.954	18.000	17.861	7.808	3	540	100	100	100	3116	3378	3898	4196	4805	1175	1274	1470	1582	1812
	1.125]	HR	17.750	17.563	227.0	21.954	17.750	17.861	7.808	3	568	100	100	100	3482	3776	4356	4690	5370	1297	1406	1622	1747	2000
	1.250]	HR	17.500	17.313	250.5	21.954	17.500	17.861	7.808	3	596	100	100	100	3844	4168	4808	5176	—	1414	1533	1769	1904	—
	1.500]	HR	17.000	16.813	296.6	21.954	17.000	17.861	7.808	3	653	100	100	100	4551	4934	—	—	—	1633	1771	—	—	—
22	0.625]	LR	20.750	20.563	142.8	23.824	20.602	16.767	6.540	3	430	100	100	100	2191	2375	2741	2950	3379	949	1029	1187	1278	1463
	0.688]	LR	20.624	20.437	156.7	23.824	20.602	16.767	6.540	3	449	100	100	100	2405	2607	3008	3238	3708	1035	1123	1295	1394	1597
	0.750]	LR	20.500	20.313	170.4	23.824	20.352	16.767	6.540	3	468	100	100	100	2614	2834	3270	3520	4031	1119	1213	1400	1507	1726
	0.812]	LR	20.376	20.189	183.9	23.824	20.228	16.767	6.540	3	488	100	100	100	2821	3059	3529	3800	—	1201	1302	1503	1618	—
	0.812]	HR	20.376	20.189	183.9	23.954	20.228	17.861	7.808	3	552	100	100	100	—	—	—	—	4351	—	—	—	—	1852
	1.000]	HR	20.000	19.813	224.5	23.954	20.000	17.861	7.808	3	595	100	100	100	3444	3734	4308	4638	5311	1441	1563	1803	1941	2223
	1.125]	HR	19.750	19.563	251.0	23.954	19.750	17.861	7.808	3	623	100	100	100	3851	4176	4818	5187	5939	1594	1728	1994	2147	2458
	1.250]	HR	19.500	19.313	277.3	23.954	19.500	17.861	7.808	3	651	100	100	100	4254	4612	5321	5728	6560	1741	1887	2177	2344	2684
	1.500]	HR	19.000	18.813	328.7	23.954	19.000	17.861	7.808	3	708	100	100	100	5043	5468	6308	—	—	2018	2188	2524	—	—
24	0.500]	LR	23.000	22.813	125.6	25.904	22.602	17.007	7.009	3	473	100	100	100	1927	2089	2410	2595	2972	924	1002	1156	1245	1425
	0.625]	LR	22.750	22.563	156.2	25.904	22.602	17.007	7.009	3	500	100	100	100	2396	2598	2997	3227	3695	1137	1233	1423	1531	1754
	0.688]	LR	22.624	22.437	171.5	25.904	22.550	17.007	7.009	3	514	100	100	100	2630	2852	3290	3542	4056	1242	1347	1554	1672	1915
	0.725]	LR	22.550	22.363	180.4	25.904	22.550	17.007	7.009	3	522	100	100	100	2767	3001	3462	3727	4267	1303	1412	1629	1754	2009
	0.750]	LR	22.500	22.313	186.4	25.904	22.500	17.007	7.009	3	527	100	100	100	2860	3101	3577	3851	4410	1343	1456	1680	1809	2071
	0.812]	LR	22.376	22.189	201.3	25.904	22.376	17.007	7.009	3	540	100	100	100	3088	3348	3863	4158	4762	1443	1565	1805	1943	2225
	1.000]	LR	22.000	21.813	245.9	25.904	22.000	17.007	7.009	3	580	100	100	100	3772	4090	4718	5080	—	1735	1882	2171	2337	—
	1.000]	HR	22.000	21.813	245.9	26.118	21.869	19.050	9.060	3	731	100	100	100	—	—	—	—	5817	—	—	—	—	2676
	1.125]	HR	21.750	21.563	275.1	26.118	21.750	19.050	9.060	3	765	100	100	100	4220	4576	5279	5684	6508	1922	2084	2404	2588	2963
	1.250]	HR	21.500	21.313	304.0	26.118	21.500	19.050	9.060	3	798	100	100	100	4663	5057	5834	6281	7192	2102	2279	2629	2830	3241
	1.500]	HR	21.000	20.813	360.8	26.118	21.000	19.050	9.060	3	864	100	100	100	5535	6001	6924	7454	—	2443	2649	3056	3290	—
26	0.625]	LR	24.750	24.563	169.5	27.490	24.102	16.762	6.781	3	544	100	100	100	2601	2820	3253	3503	4011	1343	1456	1680	1808	2071
	0.688]	LR	24.624	24.437	186.2	27.490	24.024	16.762	6.781	3	559	100	100	100	2856	3097	3573	3846	4404	1467	1591	1835	1976	2263
	0.750]	LR	24.500	24.313	202.4	27.490	23.984	16.762	6.781	3	569	100	100	100	3106	3367	3885	4182	4789	1588	1722	1986	2139	2449
	0.812]	LR	24.376	24.189	218.6	27.490	23.945	16.762	6.781	3	578	100	100	100	3354	3637	4196	4517	5172	1707	1851	2135	2299	2632
	1.000]	LR	24.000	23.813	267.3	27.490	23.787	16.762	6.781	3	612	100	100	100	4100	4445	5129	5521	—	2056	2230	2573	2770	—

- Performance stated in this table is valid for MTM and ELS versions and SWS option.
-] Interchangeable when bracketed. Small variations in the connection Internal Diameter will appear.
- Sea Water Exclusion Seal (SWS) is an optional for all the family and some dimensions and weights may vary for some products.
- Special products are also available (such as certain external flush OD's) or can be offered upon customer request.

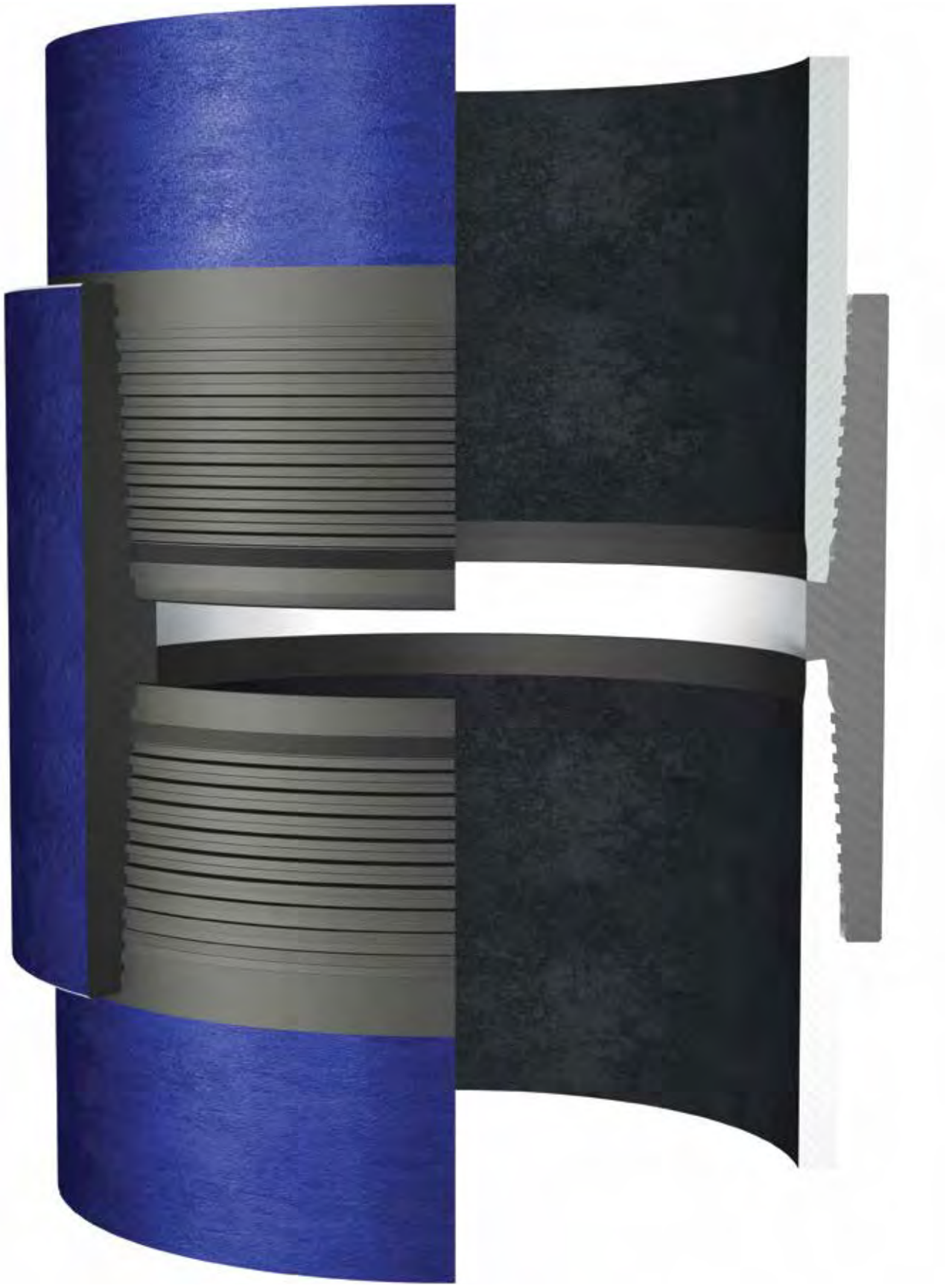
BlueDock® Connector | 18" TO 42"

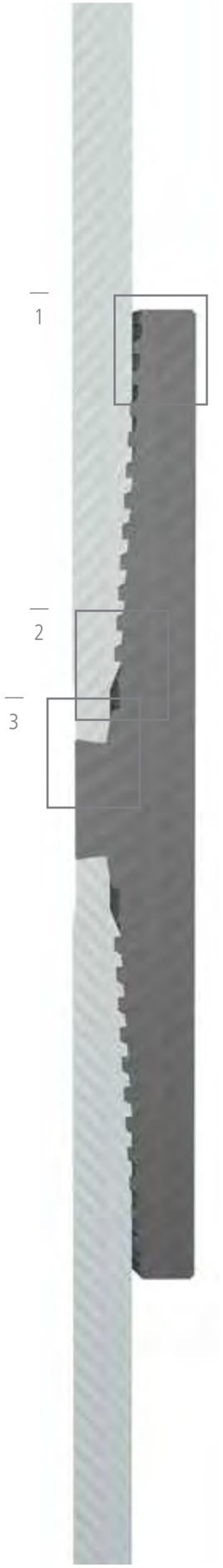
DESIGNATION			PIPE BODY			CONNECTOR																
			GEOMETRY			GEOMETRY						PERFORMANCE										
Size (OD)	Wall Thickness	Connector Type	Nominal ID	API Drift	Plain End Weight	Regular OD	Joint ID	Total Length	Make-up Loss	Threads per inch	Weight	Tension/ Compression efficiency	Bending Efficiency	External/Internal Pressure Efficiency	Joint Yield Strength						Max. Allowable Bending					
															Connector				90 ksi		70 ksi			90 ksi	
															Pipe	X52	X56	X65	X70	X80	X52	X56	X65	X70	X80
in	in		in	in	lb/ft	in	in	in	in		lb	%	%	%	x 1000 lb						kip-ft				
28	0.625	LR	26.750	26.563	182.9	29.800	26.352	17.943	7.963	3	663	100	100	100	2806	3042	3510	3779	4327	1565	1697	1958	2108	2414
	0.750	LR	26.500	26.313	218.5	29.800	26.352	17.943	7.963	3	700	100	100	100	3352	3634	4193	4514	5169	1853	2009	2318	2496	2858
	0.812	LR	26.376	26.189	236.0	29.800	26.228	17.943	7.963	3	719	100	100	100	3620	3926	4529	4876	5583	1993	2161	2493	2684	3073
	0.875	LR	26.250	26.063	253.7	29.800	26.102	17.943	7.963	3	738	100	100	100	3892	4220	4869	5242	6002	2133	2313	2668	2873	3289
	1.000	LR	26.000	25.813	288.6	29.800	25.852	17.943	7.963	3	775	100	100	100	4428	4801	5539	5963	—	2405	2608	3009	3239	—
30	0.500	LR	29.000	28.813	157.7	32.563	28.208	18.858	9.409	2	901	100	100	100	2419	2623	3026	3258	3730	1462	1585	1829	1969	2255
	0.625	LR	28.750	28.563	196.3	32.563	28.208	18.858	9.409	2	922	100	100	100	3011	3265	3766	4055	4643	1805	1957	2258	2431	2784
	0.750	LR	28.500	28.313	234.5	32.563	28.208	18.858	9.409	2	942	100	100	100	3598	3901	4500	4845	5548	2139	2319	2676	2880	3298
	0.812	LR	28.376	28.189	253.4	32.563	28.208	18.858	9.409	2	952	100	100	100	3887	4214	4862	5234	5994	2301	2495	2879	3099	3549
	1.000	LR	28.000	27.813	310.0	32.563	28.000	18.858	9.409	2	983	100	100	100	4756	5157	5949	6405	7334	2781	3015	3479	3745	4288
	1.125	HR	27.750	27.563	347.3	32.250	26.750	20.396	10.392	2	1279	100	100	100	5327	5776	6664	7174	8215	3089	3350	3864	4160	4764
	1.250	HR	27.500	27.313	384.2	32.250	26.750	20.396	10.392	2	1296	100	100	100	5893	6390	7372	7937	9089	3389	3675	4240	4564	5227
	1.500	HR	27.000	26.813	457.0	32.250	26.750	20.396	10.392	2	1313	100	100	100	7011	7602	8770	9442	10811	3965	4300	4961	5340	6115
	1.750	HR	26.500	26.313	528.5	32.250	26.500	20.396	10.392	2	1367	100	100	100	8107	8791	10142	—	—	4510	4891	5642	—	—
	2.000	HR	26.000	25.813	598.6	32.250	26.000	20.396	10.392	2	1614	100	100	100	9148	9852	11435	—	—	5006	5391	6258	—	—
32	0.500	LR	31.000	30.813	168.4	34.562	30.352	18.246	8.762	2	876	100	100	100	2583	2801	3231	3478	3983	1669	1810	2088	2248	2574
	0.625	LR	30.750	30.563	209.6	34.562	30.352	18.246	8.762	2	904	100	100	100	3216	3487	4023	4331	4959	2062	2236	2579	2777	3179
	0.750	LR	30.500	30.313	250.5	34.562	30.352	18.246	8.762	2	932	100	100	100	3844	4168	4808	5176	5927	2445	2651	3059	3293	3771
	0.812	LR	30.376	30.189	270.7	34.562	30.352	18.246	8.762	2	946	100	100	100	4153	4503	5195	5593	6405	2632	2854	3292	3544	4059
	0.877	LR	30.246	30.059	291.8	34.562	30.246	18.246	8.762	2	961	100	100	100	4476	4853	5599	6028	6903	2825	3063	3534	3805	4357
	0.983	LR	30.034	29.847	325.9	34.562	30.034	18.246	8.762	2	985	100	100	100	5000	5422	6255	6734	7711	3135	3399	3922	4222	4834
	1.000	LR	30.000	29.813	331.4	34.562	30.000	18.246	8.762	2	989	100	100	100	5084	5512	6360	6846	—	3184	3452	3983	4288	—
36	0.625	LR	34.750	34.563	236.3	37.250	32.191	20.717	9.756	2	1268	100	100	100	3626	3931	4536	4883	5591	2627	2848	3286	3537	4050
	0.812	LR	34.376	34.189	305.4	37.250	32.191	20.717	9.756	2	1299	100	100	100	4686	5081	5862	6310	7226	3359	3642	4202	4524	5181
	1.000	LR	34.000	33.813	374.2	37.250	32.191	20.717	9.756	2	1331	100	100	100	5740	6223	7180	7730	8851	4072	4416	5094	5484	6280
	1.125	LR	33.750	33.563	419.4	37.250	32.191	20.717	9.756	2	1352	100	100	100	6434	6976	8049	8665	9922	4533	4916	5671	6105	6991
	1.250	LR	33.500	33.313	464.3	37.250	32.191	20.717	9.756	2	1373	100	100	100	7123	7724	8911	9593	10985	4984	5405	6235	6713	7687
	1.500	LR	33.000	32.813	553.2	37.250	32.191	20.717	9.756	2	1414	100	100	100	8487	9202	—	11429	—	5857	6350	—	7887	—
	1.500	HR	33.000	32.813	553.2	37.250	30.708	24.408	13.033	2	2094	100	100	100	—	—	10616	—	13087	—	—	7326	—	9032
	1.750	HR	32.500	32.313	640.7	37.250	30.708	24.408	13.033	2	2135	100	100	100	9829	10658	12296	13237	15158	6690	7254	8369	9010	10317
	2.000	HR	32.000	31.813	726.9	37.250	30.708	24.408	13.033	2	2177	100	100	100	11151	12091	13950	15018	17197	7486	8117	9365	10082	11544
38	1.500	HR	35.000	34.813	585.3	39.901	33.500	25.431	13.033	2	2244	100	100	100	8979	9735	11232	12092	13846	6569	7123	8218	8847	10130
	1.750	HR	34.500	34.313	678.1	39.901	33.500	25.431	13.033	2	2278	100	100	100	10403	11280	13014	14010	16043	7512	8145	9397	10117	11585
	2.000	HR	34.000	33.813	769.7	39.901	33.500	25.431	13.033	2	2312	100	100	100	11807	12803	14771	15901	18209	8415	9125	10527	11333	12978
42	0.500	LR	41.000	40.813	221.8	43.630	39.500	19.482	7.447	2	1191	100	100	100	3390	3651	4237	4563	5215	2896	3119	3620	3899	4456
	0.625	LR	40.750	40.563	276.4	43.630	39.500	19.482	7.447	2	1204	100	100	100	4224	4549	5281	5687	6499	3588	3864	4485	4830	5520
	0.812	LR	40.376	40.189	357.5	43.630	39.500	19.482	7.447	2	1222	100	100	100	5464	5884	6830	7355	8406	4599	4953	5749	6191	7076
	1.000	LR	40.000	39.813	438.3	43.630	39.500	19.482	7.447	2	1241	100	100	100	6698	7213	8372	9016	—	5588	6018	6985	7523	—
	1.125	LR	39.750	39.563	491.6	43.630	39.500	19.482	7.447	2	1253	100	100	100	7512	8090	9390	—	—	6230	6710	7788	—	—
	1.250	LR	39.500	39.313	544.5	43.630	39.500	19.482	7.447	2	1265	100	100	100	8321	8961	—	—	—	6861	7388	—	—	—

- Performance stated in this table is valid for MTM and ELS versions and SWS option.
-] Interchangeable when bracketed. Small variations in the connection Internal Diameter will appear.
- Sea Water Exclusion Seal (SWS) is an optional for all the family and some dimensions and weights may vary for some products.
- Special products are also available (such as certain external flush OD's) or can be offered upon customer request.

Blue® Quick Seal | 18 5/8" TO 20"

Comes with Dopeless® technology





1

- Easier and faster make-up provided by the twin start thread.

2

- Reduced number of TPI (3) increase running efficiency.

3

- Internal seal with toroidal design for stable sealing performance under high combined loads.

FEATURES

- Designed for large OD surface casing that requires a gas-tight seal for operations potentially facing shallow gas.
- Tested in line with API RP 5C5 with test series at ambient and elevated temperature.
- 100% pipe body structural performance.
- Easy stabbing and fast make up with minimized crossed threading risk. Final make up position is reached in less than one turn.
- Comes with Dopeless® technology

APPLICATIONS

- **HP/HT & Deep Wells**
- **Deepwater**
- **Shallow Water**
- Surface Casing

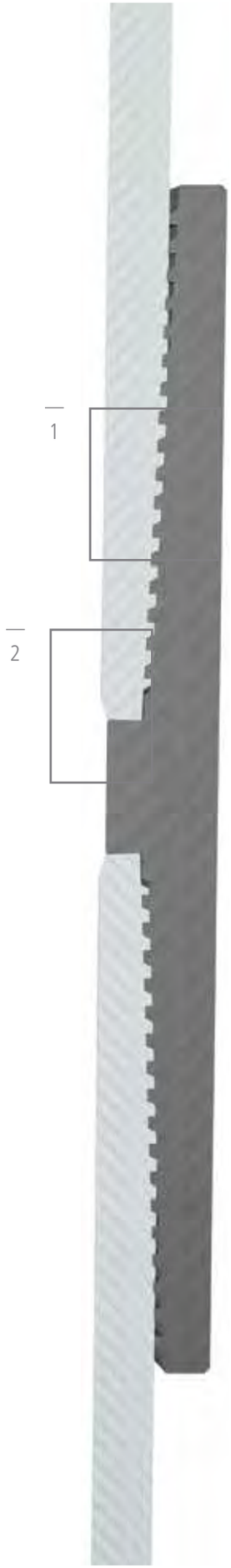
Blue® Quick Seal | 18 5/8" TO 20"

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH					
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb					
18 5/8	87.50]	0.435	17.755	17.568	19.488	11.457	17.630	5.138	24.859	100	100	1367	1989	2237	2362	2734	3107
	94.50	0.468	17.689	17.502	19.488	11.457	17.579	5.138	26.696	100	100	1468	2136	2403	2536	2937	3337
	96.50]	0.485	17.655	17.468*	19.488	11.457	17.559	5.138	27.640	100	100	1520	2211	2488	2626	3040	3455
	99.00]	0.500	17.625	17.438	19.488	12.205	17.559	5.512	28.470	100	100	1566	2278	2562	2705	3132	3559
	114.00	0.579	17.467	17.280	19.685	12.205	17.362	5.512	32.826	100	100	1805	2626	2954	3118	3611	4103
	115.00	0.594	17.437	17.250	19.685	12.205	17.362	5.512	33.647	100	100	1851	2692	3028	3197	3701	4206
	126.00	0.636	17.353	17.166	19.803	12.205	17.283	5.512	35.943	100	100	1977	2875	3235	3415	3954	4493
	136.00]	0.693	17.239	17.052	19.803	12.205	17.283	5.512	39.040	100	100	2147	3123	3514	3709	4294	4880
	139.00	0.720	17.185	16.998*	20.000	12.205	17.303	5.512	40.500	100	100	2228	3240	3645	3848	4455	5063
20	106.50]	0.500	19.000	18.812	20.866	10.630	18.937	4.724	30.631	100	100	1685	2450	2757	2910	3369	3829
	118.50	0.563	18.874	18.686	21.000	10.630	18.858	4.724	34.379	100	100	1891	2750	3094	3266	3782	4297
	131.50	0.625	18.750	18.562	21.000	10.630	18.799	4.724	38.043	100	100	2092	3043	3424	3614	4185	4755
	133.00	0.635	18.730	18.542	21.000	10.630	18.780	4.724	38.631	100	100	2125	3091	3477	3670	4249	4829
	147.00]	0.709	18.582	18.394	21.000	10.630	18.669	4.724	40.915	95.0	100	2245	3265	3674	3878	4491	5102

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. Small variations in the connection Internal Diameter will appear. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com

ER™ | 7" TO 24 1/2"

Dopeless® technology available



1

- Improved running efficiency in large diameter casing provided by low TPI thread design and increased taper.

2

- Pin nose shoulder and thread profile provide high torque and 100% compression strength.

FEATURES

- Easy stabbing, fast make-up with minimized cross threading risk.

APPLICATIONS

- **HP/HT & Deep Wells**
- **Deepwater**
- **Shallow Water**
- **Casing-while-drilling**
- **Thermal (SAGD & CSS)**
- **Geothermal**
- Surface & Intermediate casing

OPTIONS

- Dopeless® technology
- Matched strength
- Special clearance
- Special bevel

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						SPECIAL CLEARANCE COUPLING			MATCHED STRENGTH
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency	Outside Diameter
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb						in	sq in	%	in
7	23.00]	0.317	6.366	6.241*	7.657	10.000	6.398	4.409	6.656	100	100	366	532	599	632	732	832	7.375	6.181	93	7.416
	26.00	0.362	6.276	6.151	7.657	10.000	6.339	4.409	7.549	100	100	415	604	679	717	830	944	7.375	6.181	82	7.492
	29.00	0.408	6.184	6.059*	7.657	10.000	6.272	4.409	8.449	100	100	465	676	760	803	929	1056	7.375	6.181	73	7.568
	32.00	0.453	6.094	5.969*	7.657	10.000	6.232	4.409	9.317	100	100	512	745	839	885	1025	1165	7.375	6.181	66	7.641
	35.00	0.498	6.004	5.879	7.657	10.000	6.193	4.409	9.517	93.6	100	523	762	857	904	1047	1191	7.375	6.181	61	7.712
	38.00	0.540	5.920	5.795*	7.657	10.000	6.161	4.409	9.517	86.8	100	523	761	856	904	1047	1189	7.375	6.181	56	7.776
	41.00	0.590	5.820	5.695	7.657	10.000	6.122	4.409	9.517	80.1	100	523	761	856	904	1047	1189	7.375	6.181	52	7.852
	44.00	0.640	5.720	5.595	7.657	10.000	6.083	4.409	9.517	74.4	100	523	761	856	904	1047	1189	7.375	6.181	48	7.925
	46.00]	0.670	5.660	5.535	7.657	10.000	6.083	4.409	9.517	71.4	100	523	761	856	904	1047	1189	7.375	6.181	46	7.968
8 5/8	24.00]	0.264	8.097	7.972	9.626	10.626	8.051	4.724	6.935	100	100	381	555	624	659	763	867	9.125	6.935	100	9.125
	28.00	0.304	8.017	7.892	9.626	10.626	8.008	4.724	7.947	100	100	437	636	715	755	874	993	9.125	7.947	100	9.125
	32.00	0.352	7.921	7.796*	9.626	10.626	7.980	4.724	9.148	100	100	503	732	823	869	1006	1144	9.125	9.148	100	9.125
	36.00	0.400	7.825	7.700	9.626	10.626	7.882	4.724	10.335	100	100	568	827	930	982	1137	1292	9.125	9.720	94	9.168
	40.00	0.450	7.725	7.600*	9.626	10.626	7.846	4.724	11.557	100	100	636	925	1040	1098	1271	1445	9.125	9.720	84	9.252
	44.00	0.500	7.625	7.500	9.626	10.626	7.807	4.724	12.763	100	100	702	1021	1149	1212	1404	1595	9.125	9.720	76	9.335
	49.00	0.557	7.511	7.386	9.626	10.626	7.764	4.724	14.117	100	100	776	1129	1271	1341	1553	1765	9.125	9.720	69	9.427
	52.00	0.595	7.435	7.310	9.626	10.626	7.717	4.724	15.010	100	100	826	1201	1351	1426	1651	1876	9.125	9.720	65	9.487
	54.00	0.625	7.375	7.250	9.626	10.626	7.717	4.724	15.708	100	100	864	1257	1414	1492	1728	1964	9.125	9.720	62	9.534
	58.70]	0.687	7.251	7.126	9.626	10.626	7.646	4.724	17.095	100	100	940	1368	1539	1625	1881	2138	9.125	9.720	57	9.628
9 5/8	36.00]	0.352	8.921	8.765	10.626	10.626	8.972	4.724	10.255	100	100	564	820	923	974	1128	1282	10.125	10.255	100	10.125
	40.00	0.395	8.835	8.679*	10.626	10.626	8.890	4.724	11.455	100	100	630	916	1031	1088	1260	1432	10.125	10.853	95	10.163
	43.50	0.435	8.755	8.599*	10.626	10.626	8.839	4.724	12.560	100	100	691	1005	1130	1193	1381	1570	10.125	10.853	86	10.232
	47.00	0.472	8.681	8.525	10.626	10.626	8.807	4.724	13.572	100	100	746	1086	1222	1289	1493	1697	10.125	10.853	80	10.294
	53.50	0.545	8.535	8.379*	10.626	10.626	8.748	4.724	15.547	100	100	855	1244	1399	1477	1710	1943	10.125	10.853	70	10.416
	58.40	0.595	8.435	8.279*	10.626	10.626	8.705	4.724	16.880	100	100	928	1350	1519	1604	1857	2110	10.125	10.853	64	10.497
	59.40	0.609	8.407	8.251	10.626	10.626	8.705	4.724	17.250	100	100	949	1380	1552	1639	1897	2156	10.125	10.853	63	10.520
	61.10	0.625	8.375	8.219	10.626	10.626	8.689	4.724	17.672	100	100	972	1414	1590	1679	1944	2209	10.125	10.853	61	10.545
	64.90]	0.672	8.281	8.125	10.626	10.626	8.654	4.724	18.901	100	100	1040	1512	1701	1796	2079	2363	10.125	10.853	57	10.619
9 7/8	62.80	0.625	8.625	8.469*	10.827	10.626	9.055	4.724	18.163	100	100	999	1453	1635	1725	1998	2270	—	—	—	—
10 3/4	45.50]	0.400	9.950	9.794*	11.748	10.626	9.980	4.724	13.006	100	100	715	1040	1171	1236	1431	1626	11.250	12.056	93	11.304
	51.00	0.450	9.850	9.694	11.748	10.626	9.980	4.724	14.561	100	100	801	1165	1311	1383	1602	1820	11.250	12.056	83	11.391
	55.50	0.495	9.760	9.604*	11.748	10.626	9.980	4.724	15.948	100	100	877	1276	1435	1515	1754	1993	11.250	12.056	76	11.468
	60.70	0.545	9.660	9.504	11.748	10.626	9.764	4.724	17.473	100	100	961	1398	1573	1660	1922	2184	11.250	12.056	69	11.552
	65.70]	0.595	9.560	9.404*	11.748	10.626	9.764	4.724	18.983	100	100	1044	1519	1708	1803	2088	2373	11.250	12.056	64	11.635
11 7/8	71.80	0.582	10.711	10.555*	12.756	10.626	10.866	4.724	20.648	100	100	1136	1652	1858	1962	2271	2581	—	—	—	—
13 3/8	54.50	0.380	12.615	12.459	14.374	10.626	12.689	4.724	15.514	100	100	853	1241	1396	1474	1706	1939	—	—	—	13.898
	61.00]	0.430	12.515	12.359	14.374	10.626	12.559	4.724	17.487	100	100	962	1399	1574	1661	1924	2186	—	—	—	13.988
	68.00	0.480	12.415	12.259	14.374	10.626	12.559	4.724	19.445	100	100	1069	1556	1750	1847	2139	2431	13.976	17.111	88	14.076
	72.00]	0.514	12.347	12.191*	14.374	10.626	12.559	4.724	20.767	100	100	1142	1661	1869	1973	2284	2596	—	—	—	14.136
13 1/2	80.40	0.576	12.348	12.160*	14.500	10.626	12.559	4.724	23.386	100	100	1286	1871	2105	2222	2573	2923	—	—	—	14.370
13 5/8	88.20]	0.625	12.375	12.188*	14.626	10.626	12.598	4.724	25.525	100	100	1404	2042	2297	2425	2808	3191	—	—	—	14.580
	105.00]	0.760	12.105	11.918	14.626	10.626	12.402	4.724	26.569	86.5	100	1461	2125	2392	2524	2923	3322	—	—	—	14.806
14	82.50]	0.562	12.876	12.688	15.000	10.626	12.996	4.724	23.726	100	100	1305	1898	2135	2254	2610	2966	—	—	—	14.706
	94.80	0.656	12.688	12.500	15.000	10.626	12.874	4.724	27.500	100	100	1513	2200	2475	2613	3025	3438	—	—	—	14.868
	99.30	0.688	12.624	12.436	15.000	10.626	12.874	4.724	28.773	100	100	1583	2302	2590	2733	3165	3597	—	—	—	14.922
	110.00	0.772	12.456	12.268	15.000	10.626	12.795	4.724	30.597	95.4	100	1684	2449	2754	2908	3367	3826	—	—	—	—
	111.00	0.779	12.442	12.254	15.000	10.626	12.795	4.724	30.597	94.6	100	1684	2448	2755	2908	3367	3826	—	—	—	—
	114.00]	0.800	12.400	12.212*	15.000	10.626	12.756	4.724	30.597	92.2	100	1683	2447	2753	2906	3364	3824	—	—	—	—
15	109.00	0.715	13.570	13.382	16.000	12.205	13.602	5.512	32.088	100	100	1765	2567	2888	3048	3530	4011	—	—	—	—

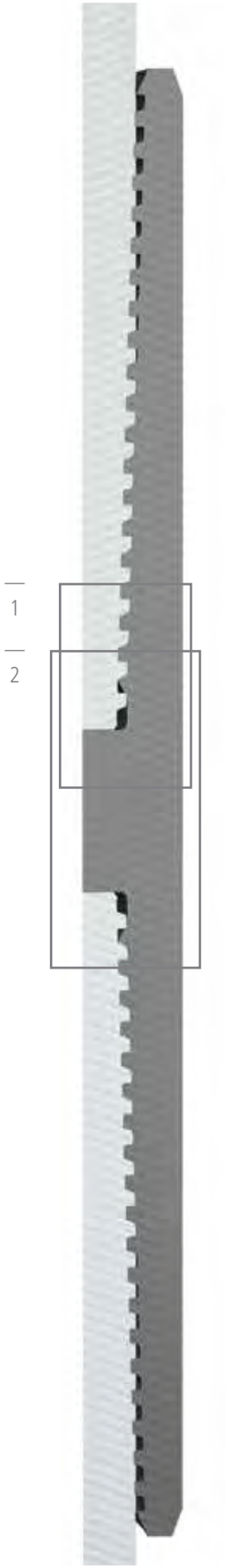
- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. Small variations in the connection Internal Diameter will appear. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com
- Compression efficiency for SC option is the same as the standard connection.
- For the MS option, the coupling OD is reduced to the minimun critical area capable of providing the same tensile efficiency as the standard option.

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						SPECIAL CLEARANCE COUPLING			MATCHED STRENGTH
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency	Outside Diameter
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb						in	sq in	%	in
16	65.00]	0.375	15.250	15.062	17.000	9.646	15.252	4.232	18.408	100	100	1012	1473	1657	1749	2025	2301	—	—	—	—
	75.00]	0.438	15.124	14.936	17.000	9.646	15.118	4.232	21.413	100	100	1178	1713	1927	2034	2355	2677	16.438	18.201	85	16.547
	84.00]	0.495	15.010	14.822	17.000	10.626	15.020	4.724	24.112	100	100	1326	1929	2170	2291	2652	3014	16.406	19.266	80	16.592
	94.50]	0.562	14.876	14.688*	17.000	10.626	14.961	4.724	27.257	100	100	1499	2181	2453	2589	2998	3407	16.556	23.168	85	16.712
	97.50]	0.575	14.850	14.662*	17.000	10.626	14.961	4.724	27.257	100	100	1533	2229	2508	2647	3065	3483	—	—	—	—
	104.00]	0.625	14.750	14.562	17.000	10.626	14.921	4.724	30.197	100	100	1660	2415	2717	2868	3321	3774	—	—	—	16.833
	109.00]	0.656	14.688	14.500*	17.000	10.626	14.902	4.724	31.622	100	100	1739	2530	2846	3004	3478	3953	16.654	25.297	80	16.878
	118.00]	0.715	14.570	14.382	17.000	12.205	14.744	5.512	34.334	100	100	1888	2747	3090	3262	3777	4292	—	—	—	16.889
	128.00]	0.781	14.438	14.250	17.000	12.205	14.705	5.512	37.281	100	100	2054	2987	3361	3547	4108	4668	—	—	—	17.002
18 5/8	87.50]	0.435	17.755	17.568	20.000	9.646	17.803	4.232	24.859	100	100	1367	1989	2237	2362	2734	3107	19.685	24.859	100	19.171
	94.50]	0.468	17.689	17.502	20.000	9.646	17.764	4.232	26.696	100	100	1468	2136	2403	2536	2937	3337	—	—	—	19.232
	96.50]	0.485	17.655	17.468*	20.000	9.646	17.764	4.232	27.640	100	100	1520	2211	2488	2626	3040	3455	—	—	—	19.263
	99.00]	0.500	17.625	17.438	20.000	10.626	17.657	4.724	28.470	100	100	1566	2278	2562	2705	3132	3559	—	—	—	19.232
	114.00	0.579	17.467	17.280	20.000	10.626	17.579	4.724	32.826	100	100	1805	2626	2954	3118	3611	4103	—	—	—	19.376
	115.00	0.594	17.437	17.250	20.000	10.626	17.579	4.724	33.647	100	100	1851	2692	3028	3197	3701	4206	19.150	25.909	77	19.403
	124.00]	0.625	17.375	17.188	20.000	10.626	17.559	4.724	35.343	100	100	1944	2827	3181	3358	3888	4418	—	—	—	—
	126.00]	0.636	17.353	17.166	20.000	10.626	17.559	4.724	35.943	100	100	1977	2875	3235	3415	3954	4493	—	—	—	19.478
	136.00]	0.693	17.239	17.052	20.000	10.626	17.559	4.724	39.040	100	100	2147	3123	3514	3709	4294	4880	—	—	—	19.579
	139.00	0.720	17.185	16.998*	20.000	12.205	17.323	5.512	40.500	100	100	2228	3240	3645	3848	4455	5063	—	—	—	19.535
20	94.00	0.438	19.124	18.936	21.000	9.646	19.177	4.232	26.917	100	100	1480	2153	2423	2557	2961	3365	—	—	—	20.553
	106.50]	0.500	19.000	18.812	21.000	10.626	19.012	4.724	30.631	100	100	1685	2450	2757	2910	3369	3829	—	—	—	20.609
	118.50]	0.563	18.874	18.686	21.000	10.626	18.965	4.724	34.379	100	100	1891	2750	3094	3266	3782	4297	—	—	—	20.724
	131.50]	0.625	18.750	18.562	21.000	10.626	18.917	4.724	38.043	100	100	2092	3043	3424	3614	4185	4755	—	—	—	20.837
	133.00]	0.635	18.730	18.542	21.000	10.626	18.917	4.724	38.631	100	100	2125	3091	3477	3670	4249	4829	—	—	—	20.854
	147.00]	0.709	18.582	18.394	21.000	10.626	18.858	4.724	42.969	100	100	2363	3437	3867	4082	4727	5371	—	—	—	20.987
	156.00]	0.750	18.500	18.312	21.000	10.626	18.827	4.724	43.417	95.7	100	2388	3473	3906	4124	4774	5426	—	—	—	21.059
	169.00]	0.812	18.376	18.188	21.000	10.626	18.787	4.724	43.417	88.7	100	2388	3473	3907	4125	4776	5428	—	—	—	—
	209.00]	1.000	18.000	17.812	21.000	10.626	18.701	4.724	43.417	72.7	100	2387	3471	3905	4123	4773	5424	—	—	—	—
22	146.50]	0.625	20.750	20.562	23.130	12.205	20.906	5.512	41.969	100	100	2308	3358	3777	3987	4617	5246	—	—	—	22.748
	180.00]	0.781	20.438	20.250	23.130	12.205	20.689	5.512	52.063	100	100	2863	4165	4686	4946	5727	6508	—	—	—	23.031
	202.00]	0.880	20.240	20.052	23.209	12.205	20.551	5.512	58.389	100	100	3211	4671	5255	5547	6423	7299	—	—	—	—
	226.00]	1.000	20.000	19.812	23.130	12.205	20.394	5.512	55.735	84.5	100	3067	4460	5018	5296	6132	6969	—	—	—	23.409
	257.40	1.125	19.750	19.562	23.504	14.488	20.118	6.654	73.779	100	100	4058	5902	6640	7009	8116	9222	23.217	62.712	85	—
24	125.50	0.500	23.000	22.812	25.000	9.646	23.118	4.232	36.913	100	100	2030	2953	3322	3507	4061	4614	—	—	—	24.791
	159.20]	0.625	22.750	22.562	25.000	10.626	22.906	4.724	45.897	100	100	2524	3672	4131	4360	5049	5737	24.647	35.800	78	24.845
	162.00]	0.635	22.730	22.542	25.000	10.626	22.906	4.724	46.612	100	100	2564	3729	4195	4428	5127	5826	—	—	—	24.863
	174.00]	0.688	22.624	22.436	25.000	10.626	22.866	4.724	50.388	100	100	2771	4031	4535	4787	5543	6298	—	—	—	24.960
	189.00	0.750	22.500	22.312	25.000	10.626	22.815	4.724	51.964	94.9	100	2859	4159	4679	4939	5719	6499	—	—	—	25.072
24 1/2	133.00	0.500	23.500	23.312	25.591	9.646	23.638	4.232	37.699	100	100	2073	3016	3393	3581	4147	4712	—	—	—	25.174
	140.00]	0.531	23.438	23.250	25.591	10.626	23.488	4.724	39.985	100	100	2199	3199	3599	3799	4398	4998	—	—	—	25.172
	162.00]	0.625	23.250	23.062	25.591	10.626	23.417	4.724	46.878	100	100	2578	3750	4219	4453	5157	5860	—	—	—	25.346
	165.00]	0.635	23.230	23.042	25.591	10.626	23.417	4.724	47.608	100	100	2618	3809	4285	4523	5237	5951	—	—	—	25.365
	182.00]	0.709	23.082	22.894	25.591	10.626	23.417	4.724	52.992	100	100	2915	4239	4769	5034	5829	6624	—	—	—	25.499

- Drift diameter displayed are standard. Items marked with * will pass popular oversize drift (Special Drift).
-] Interchangeable when bracketed. Small variations in the connection Internal Diameter will appear. For make-up torque information, refer to TenarisHydril Running Manual.
- Torque recommendation values available at www.tenaris.com
- Compression efficiency for SC option is the same as the standard connection.
- For the MS option, the coupling OD is reduced to the minimun critical area capable of providing the same tensile efficiency as the standard option.

TenarisXP® Series

TXP® Buttress | 4 1/2" TO 16"



1

- Positive stop shoulder that provides 100% compression capacity and extra torque capability, together with an easy yet robust running.
- Buttress thread profile that makes the connection compatible with standard API Buttress products .

2

- Torque shoulder that covers J-area, minimizing turbulence and erosion generated by flow during fracking and production.

FEATURES

- API Buttress compatible
- 100% tension efficiency
- Enhanced structural capacity:
  - 100% compression efficiency
  - Bending same as pipe body
- Evaluated per ad-hoc protocols simulating fracking and production loads following ISO 13679 load paths
- Extra torque capability
- Positive torque shoulder
- Enhanced ID flow
- Make-up repeatability
- Standard Bevel of 20°
- API triangle in pin with 24" x 1" white locator stripe

APPLICATIONS

- **Unconventionals**
- **Casing-while-drilling**
- **Geothermal**
- Intermediate Casing
- Production Casing

OPTIONS

- Special Clearance
- Seal Ring
- Regular API

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						SPECIAL CLEARANCE COUPLING		
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb						in	sq in	%
4 1/2	10.50]	0.224	4.052	3.927	5.000	9.075	4.040	4.016	3.009	100	100	166	241	271	286	331	376	—	—	—
	11.60	0.250	4.000	3.875	5.000	9.075	3.988	4.016	3.338	100	100	184	267	300	317	367	417	—	—	—
	12.60	0.271	3.958	3.833	5.000	9.075	3.946	4.016	3.600	100	100	198	288	324	342	396	450	—	—	—
	13.50	0.290	3.920	3.795	5.000	9.075	3.908	4.016	3.836	100	100	211	307	345	364	422	479	—	—	—
	15.10]	0.337	3.826	3.701	5.100	9.075	3.814	4.016	4.407	100	100	242	353	397	419	485	551	—	—	—
5	13.00]	0.253	4.494	4.369	5.563	9.325	4.482	4.141	3.773	100	100	208	302	340	358	415	472	—	—	—
	15.00	0.296	4.408	4.283	5.563	9.325	4.396	4.141	4.374	100	100	241	350	394	416	481	547	—	—	—
	18.00	0.362	4.276	4.151	5.720	9.325	4.264	4.141	5.275	100	100	290	422	475	501	580	659	—	—	—
	21.40	0.437	4.126	4.001	5.720	9.325	4.114	4.141	6.264	100	100	345	501	564	595	689	783	—	—	—
	23.20	0.478	4.044	3.919	5.820	9.325	4.032	4.141	6.791	100	100	373	543	611	645	747	849	—	—	—
	24.10]	0.500	4.000	3.875	5.820	9.325	3.988	4.141	7.069	100	100	389	565	636	672	778	884	—	—	—
5 1/2	15.50]	0.275	4.950	4.825	6.050	9.450	4.938	4.204	4.514	100	100	248	361	406	429	497	564	—	—	—
	17.00	0.304	4.892	4.767	6.050	9.450	4.880	4.204	4.962	100	100	273	397	447	471	546	620	—	—	—
	20.00	0.361	4.778	4.653	6.100	9.450	4.766	4.204	5.828	100	100	321	466	525	554	641	729	—	—	—
	23.00	0.415	4.670	4.545	6.200	9.450	4.658	4.204	6.630	100	100	365	530	597	630	729	829	—	—	—
	26.00]	0.476	4.548	4.423	6.300	9.450	4.536	4.204	7.513	100	100	413	601	676	714	826	939	—	—	—
6	24.50]	0.400	5.200	5.075	6.800	9.768	5.188	4.363	7.037	100	100	387	563	633	669	774	880	—	—	—
	25.10	0.415	5.170	5.045	6.800	9.768	5.158	4.363	7.282	100	100	400	583	655	692	801	910	—	—	—
	29.80]	0.500	5.000	4.875	6.800	9.768	4.988	4.363	8.639	100	100	475	691	778	821	950	1080	—	—	—
6 5/8	20.00]	0.288	6.049	5.924	7.390	9.825	6.037	4.391	5.734	100	100	315	459	516	545	631	717	—	—	—
	24.00	0.352	5.921	5.796	7.390	9.825	5.909	4.391	6.937	100	100	382	555	624	659	763	867	—	—	—
	28.00	0.417	5.791	5.666	7.390	9.825	5.779	4.391	8.133	100	100	447	651	732	773	895	1017	—	—	—
	32.00]	0.475	5.675	5.550	7.420	9.825	5.663	4.391	9.177	100	100	505	734	826	872	1010	1147	—	—	—
7	23.00]	0.317	6.366	6.241*	7.656	10.200	6.354	4.579	6.655	100	100	366	532	599	632	732	832	—	—	—
	26.00	0.362	6.276	6.151	7.656	10.200	6.264	4.579	7.549	100	100	415	604	679	717	830	944	—	—	—
	29.00	0.408	6.184	6.059	7.750	10.200	6.172	4.579	8.449	100	100	465	676	760	803	929	1056	—	—	—
	32.00	0.453	6.094	5.969*	7.750	10.200	6.082	4.579	9.317	100	100	512	745	839	885	1025	1165	—	—	—
	35.00	0.498	6.004	5.879	7.890	10.200	5.992	4.579	10.172	100	100	559	814	916	966	1119	1272	—	—	—
	38.00]	0.540	5.920	5.795	7.890	10.200	5.908	4.579	10.959	100	100	603	877	986	1041	1206	1370	—	—	—
7 5/8	26.20]	0.328	6.969	6.844	8.500	10.575	6.957	4.766	7.519	100	100	414	602	677	714	827	940	8.014	6.391	85
	29.70	0.375	6.875	6.750	8.500	10.575	6.863	4.766	8.541	100	100	470	683	769	811	940	1068	—	—	—
	33.70	0.430	6.765	6.640	8.500	10.575	6.753	4.766	9.720	100	100	535	778	875	923	1069	1215	—	—	—
	39.00	0.500	6.625	6.500	8.500	10.575	6.613	4.766	11.192	100	100	616	895	1007	1063	1231	1399	—	—	—
	42.80	0.562	6.501	6.376	8.650	10.575	6.489	4.766	12.470	100	100	686	998	1122	1185	1372	1559	—	—	—
	45.30	0.595	6.435	6.310	8.650	10.575	6.423	4.766	13.141	100	100	723	1051	1183	1248	1445	1643	—	—	—
	47.10]	0.625	6.375	6.250	8.650	10.575	6.363	4.766	13.744	100	100	756	1100	1237	1306	1512	1718	—	—	—

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- Torque recommendation values available at www.tenaris.com
- Compression efficiency for SC option is the same as the standard connection.

TXP® Buttress | 4 1/2" TO 16"

DESIGNATION		PIPE BODY			COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	CRITICAL SECTION AREA	TENSILE EFFICIENCY	COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						SPECIAL CLEARANCE COUPLING		
Size	Nominal Weight	Wall Thickness	Inside Diameter	Drift Diameter	Outside Diameter	Length						55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter	Critical Section Area	Tensile Efficiency
in	lb/ft	in	in	in	in	in	in	in	sq in	%	%	x 1000 lb						in	sq in	%
8 5/8	32.00]	0.352	7.921	7.796	9.625	10.825	7.909	4.891	9.149	100	100	503	732	823	869	1006	1144	—	—	—
	36.00	0.400	7.825	7.700	9.625	10.825	7.813	4.891	10.336	100	100	568	827	930	982	1137	1292	—	—	—
	40.00	0.450	7.725	7.600	9.625	10.825	7.713	4.891	11.557	100	100	636	925	1040	1098	1271	1445	—	—	—
	44.00	0.500	7.625	7.500	9.625	10.825	7.613	4.891	12.763	100	100	702	1021	1149	1212	1404	1595	—	—	—
	49.00]	0.557	7.511	7.386	9.625	10.825	7.499	4.891	14.118	100	100	776	1129	1271	1341	1553	1765	—	—	—
9 5/8	36.00]	0.352	8.921	8.765	10.625	10.825	8.909	4.891	10.254	100	100	564	820	923	974	1128	1282	—	—	—
	40.00	0.395	8.835	8.679	10.625	10.825	8.823	4.891	11.454	100	100	630	916	1031	1088	1260	1432	—	—	—
	43.50	0.435	8.755	8.599	10.625	10.825	8.743	4.891	12.559	100	100	691	1005	1130	1193	1381	1570	—	—	—
	47.00	0.472	8.681	8.525	10.625	10.825	8.669	4.891	13.572	100	100	746	1086	1222	1289	1493	1697	—	—	—
	53.50	0.545	8.535	8.379	10.625	10.825	8.535	4.891	15.546	100	100	855	1244	1399	1477	1710	1943	—	—	—
	58.40]	0.595	8.435	8.279	10.625	10.825	8.423	4.891	16.879	100	100	928	1350	1519	1604	1857	2110	—	—	—
10 3/4	40.50]	0.350	10.050	9.894	11.750	10.825	10.038	4.891	11.435	100	100	629	915	1029	1086	1258	1429	—	—	—
	45.50	0.400	9.950	9.794	11.750	10.825	9.938	4.891	13.006	100	100	715	1040	1171	1236	1431	1626	—	—	—
	51.00]	0.450	9.850	9.694	11.750	10.825	9.838	4.891	14.561	100	100	801	1165	1311	1383	1602	1820	—	—	—
11 3/4	47.00]	0.375	11.000	10.844	12.750	10.825	10.988	4.891	13.401	100	100	737	1072	1206	1273	1474	1675	—	—	—
	54.00	0.435	10.880	10.724	12.750	10.825	10.868	4.891	15.463	100	100	850	1237	1392	1469	1701	1933	—	—	—
	60.00]	0.489	10.772	10.616	12.750	10.825	10.760	4.891	17.300	100	100	951	1384	1557	1643	1903	2162	—	—	—
13 3/8	54.50]	0.380	12.615	12.459	14.375	10.825	12.603	4.891	15.513	100	100	853	1241	1396	1474	1706	1939	—	—	—
	61.00	0.430	12.515	12.359	14.375	10.825	12.503	4.891	17.487	100	100	962	1399	1574	1661	1924	2186	—	—	—
	68.00	0.480	12.415	12.259	14.375	10.825	12.403	4.891	19.445	100	100	1069	1556	1750	1847	2139	2431	—	—	—
	72.00]	0.514	12.347	12.191	14.375	10.825	12.335	4.891	20.768	100	100	1142	1661	1869	1973	2284	2596	—	—	—
16	75.00]	0.438	15.124	14.936	17.000	10.825	15.112	4.891	21.414	100	100	1178	1713	1927	2034	2355	2677	—	—	—
	84.00]	0.495	15.010	14.822	17.000	10.825	14.998	4.891	24.112	100	100	1326	1929	2170	2291	2652	3014	—	—	—

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-] Interchangeable when bracketed. For make-up torque information, refer to TenarisHydril Running Manual.
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- Compression efficiency for SC option is the same as the standard connection.

Legacy Series

Legacy Series

Tenaris's Legacy Series includes proven performers that have provided many years of reliable service in challenging drilling environments around the world, such as TenarisHydril.

Legacy connections are available in three types. See some examples below:

THREADED & COUPLED CONNECTIONS

3SB™
Tubing sizes from 2 3/8" to 4 ½".
Casing sizes from 4 ½" to 13 5/8".

MS™
Sizes from 2 3/8" to 14".

INTEGRAL SEMI FLUSH CONNECTIONS

MACII™
Sizes from 5 ½" to 16".

INTEGRAL UPSET CONNECTIONS

PH4™/PH6™/CS®
Sizes from 3/4" to 7".

Explore more and contact our Legacy technical representatives at: tenaris.com/LegacySeries.

TenarisHydril

For contact information, please visit
our website: www.tenaris.com

www.tenaris.com/tenarishydril