Wedge 563™

2 3/8" TO 16"

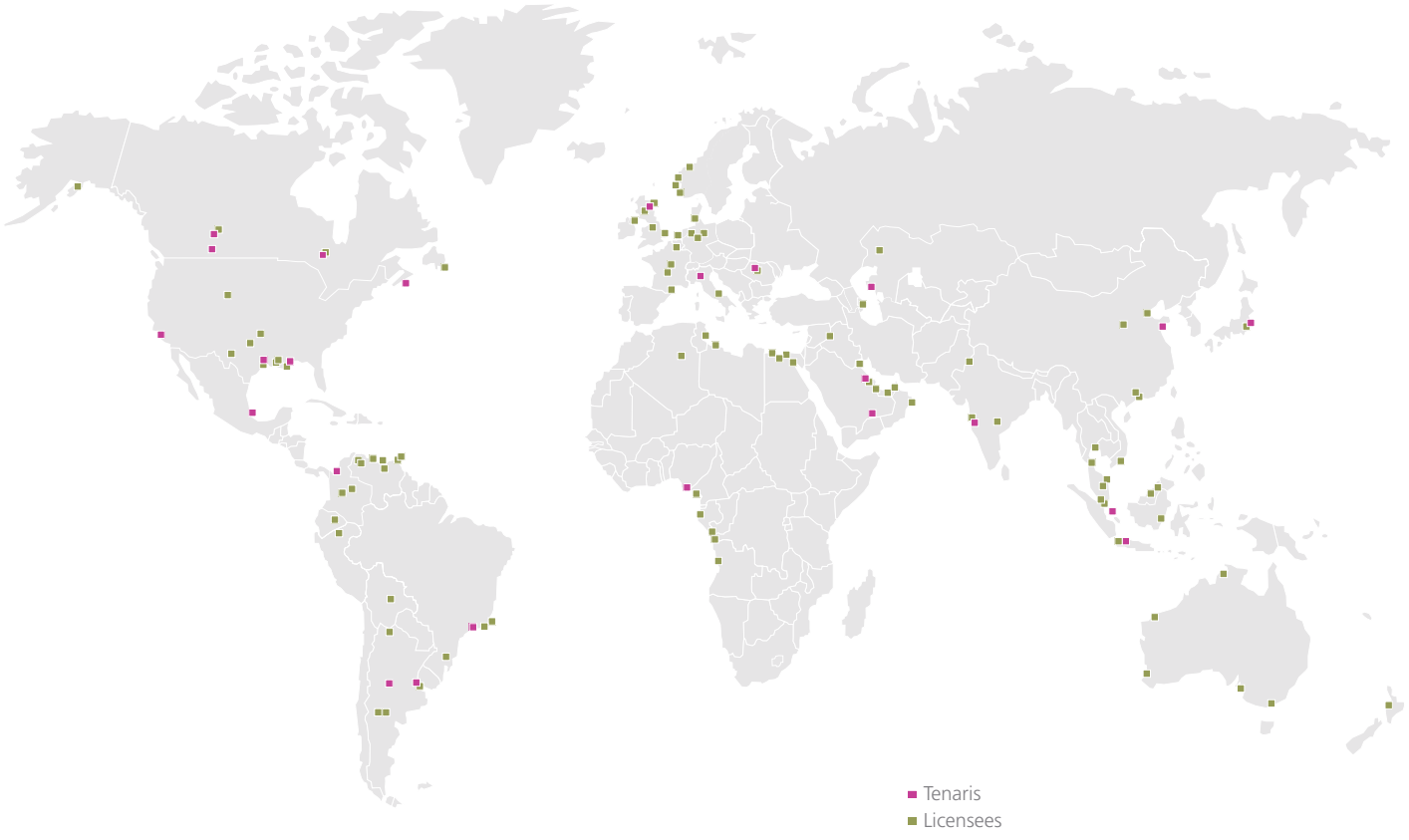
TenarisHydril

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.



Wedge 563™ Casing main attributes

SIZE AVAILABILITY

5" TO 16"

FEATURES

- 100% ratings in tension and compression provided by the dovetail threads.
- Internal pressure metal to metal seal and external pressure thread seal created by full form contact of the dovetail threads.
- Wedge 563™ is interchangeable with Wedge 533™, Wedge 503™ and Wedge 553™ for their common sizes.

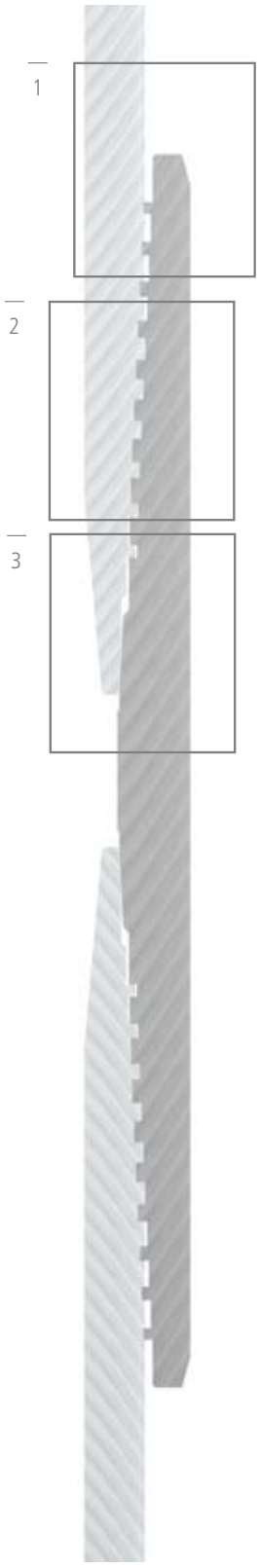
APPLICATIONS

- Surface casing
- Intermediate casing
- Production casing and tie-backs
- Drilling with casing
- Liners
- Horizontal and extended reach wells
- Thermal wells
- HP/HT and deep wells

OPTIONS

- Dopeless®
- Matched strength
- Recess free bore (RFB)
- Corrosion barrier

Operational features



1

- Roller-stenciled make-up confirmation band.

2

- Trouble-free make-up is developed with the rugged, coarse pitch thread and steep taper for deep stabbing.
- 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.
- The shallow angle run out chamfer on the pin ID promotes uniform stress under the seal around the full circumference of the connection.

Wedge 563™ Tubing main attributes

SIZE AVAILABILITY

2 3/8" TO 7" (*)

FEATURES

- 100% ratings in tension and compression provided by the dovetail threads.
- 100% collapse rated thread seal created by full form contact of the dovetail threads, also providing a secondary internal pressure seal rated at pipe body.
- Wedge 563™ is interchangeable with Wedge 533™, Wedge 503™ and Wedge 553™.

APPLICATIONS

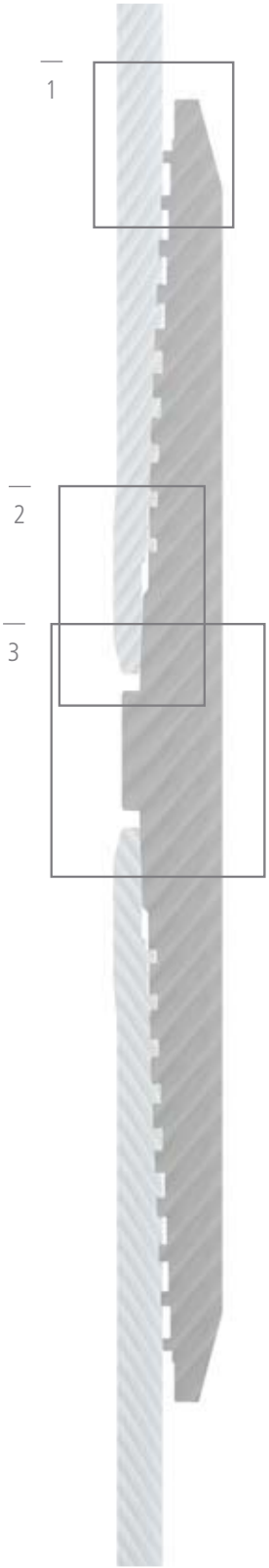
- Production tubing and workstrings
- Horizontal and extended reach wells
- Thermal wells
- Drilling with tubing
- Tubing for internal coating (CB)
- HP/HT and deep wells

OPTIONS

- Dopeless®
- Matched strength
- Corrosion barrier

(*) 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.

Operational features



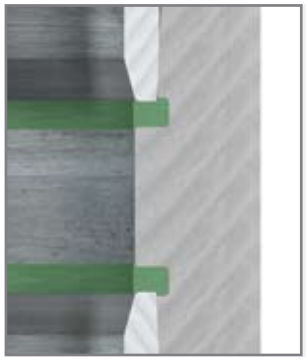
1

- Trouble-free make-up is developed with the rugged, coarse pitch thread and steep taper for deep stabbing.
- Roller-stenciled make-up confirmation band.
- Exceptional torque strength developed through the simultaneous engagement of opposing flanks of the double hooked dovetail thread.

2

- 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 of the connection.
- Flow stream continuity maintained with the recess-free streamlined ID configuration.

3



- Corrosion barrier option.

Performance characteristics

The high performance and reliability of the Wedge 563™ design is field-proven and backed by more than 25 years of history, becoming a standard part on many worldwide operations.

SUPERIOR TORQUE

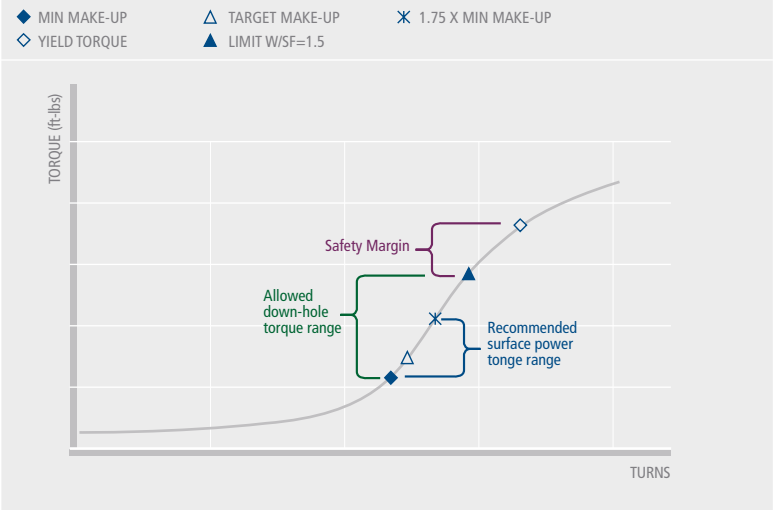
Torque resistance and capability provide a greater safety margin against unpredictable down-hole torque.

This large safety margin can be seen in a normal torque versus turns make-up graph for this connection. Beyond the normal operational window (which ensures proper connection make-up in field conditions) there is a limit torque, and further on (1.5 safety factor) looms the yield torque.

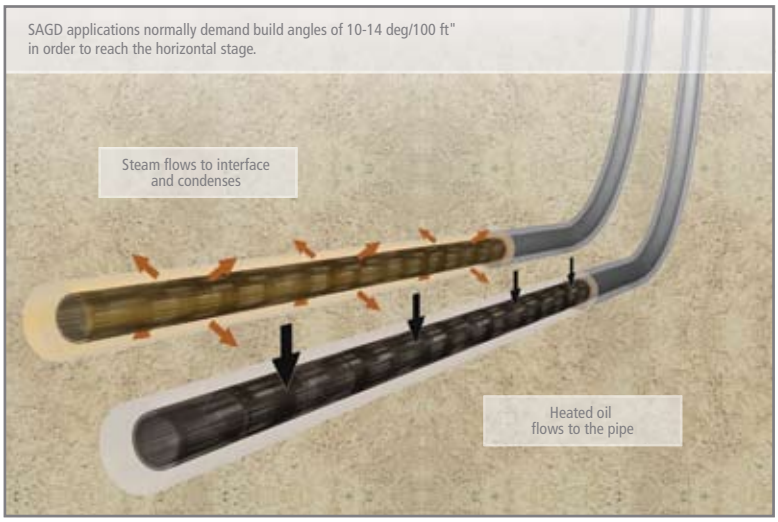
BENDING

The connection's bending capabilities depend on tension or compression capacity, whichever is less robust. Bending loads produce axial tensile and compressive stresses on opposite sides of the connection. For TenarisHydril Wedge 563™ connections, the bending efficiency is equal to tensile efficiency: 100% of the pipe body for

MAKE-UP
A substantial safety margin for torque is available with TenarisHydril Wedge 563™.



THERMAL APPLICATION
The severe bending imposed by SAGD applications is effectively managed by the TenarisHydril Wedge 563™.

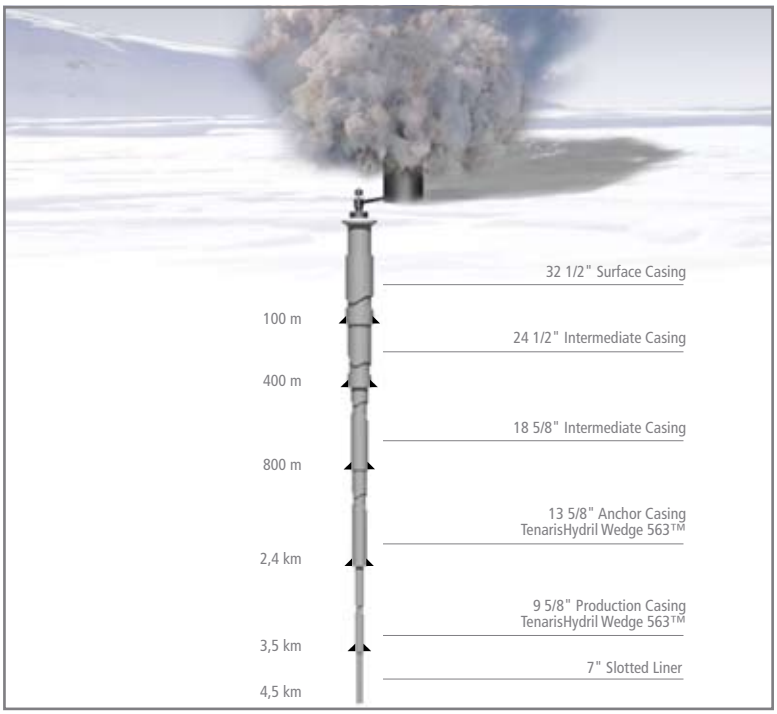


most sizes (higher than 95% of the pipe body in all cases).

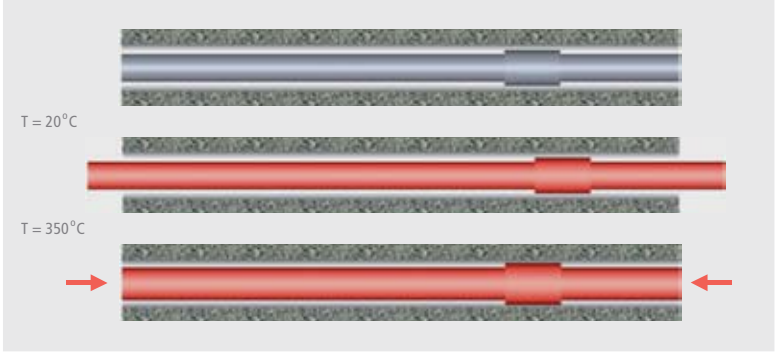
A typical case where bending capabilities are used is the SAGD applications, where the wells take a horizontal direction. TenarisHydril Wedge 563™ has been extensively utilized in such applications in Canada, the country where SAGD is most developed.

COMPRESSION

The high compression capabilities of TenarisHydril Wedge 563™ connections have long been used in geothermal applications. Geothermal wells in California usually employ these as the connection of choice to handle the high compression demands made by thermal expansion on the connections. TenarisHydril Wedge 563™ was also selected in Iceland for an advanced technology experimental well that would tap into a source of superheated steam more than 4 km deep, where the demands predicted call for a strong, proven compression capacity.



GEOTHERMAL APPLICATIONS
TenarisHydril Wedge 563™ was chosen for an experimental deep geothermal well.



HANDLING THERMAL COMPRESSION
Thermal expansion causes compression on cemented pipes and connections.

Thread design

DOVETAILED-WEDGE THREAD

This design creates the largest possible contact surface area at make-up to provide superior compression and several times the torque strength of most competing technologies. The negative angles of load and stab flanks form a dovetail which mechanically locks the pin and box together. The dovetail and the large thread surface contact area create a more rigid connection, resisting internal movement when subjected to very high bending and compressive loads. Movement after full thread contact is minimized thus reducing the chances for galling. The connection's coarse-pitch threads with parallel crests minimize cross-threading risks.

CORROSION BARRIER AND RECESS-FREE BORE

When the corrosion barrier (CB) connection option is required for high velocity flow, or to keep continuity on internally-coated pipes, the TenarisHydril Wedge 563™ design is the best solution.

This feature is achieved without reducing any performance of the standard connection.

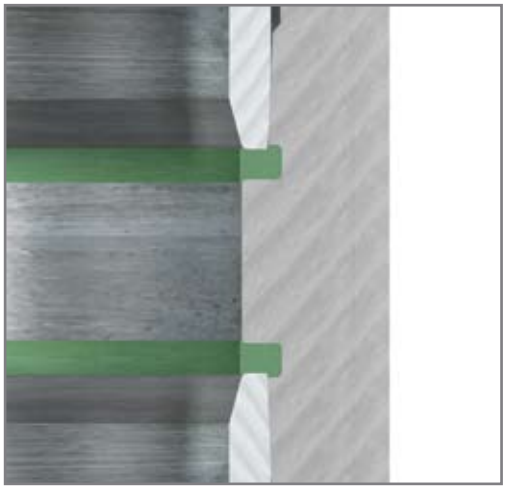
TenarisHydril Wedge 563™ requires almost no modifications to allocate a CB ring. Using the RFB option, a special groove is allocated at the pin final position without modifying any of the connection performances like compression and bending rating or torque capacity.

This option generates a complete internal flush profile and provides continuity between pipe and coupling on internal coated tubulars.

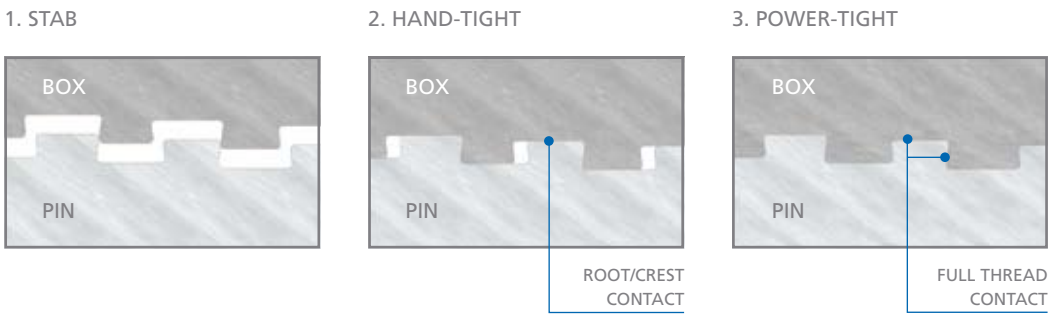
TenarisHydril Wedge 563™ design has a progressive thread width as it moves helically around the pipe.

CB RING

TenarisHydril Wedge 563™ with CB ring provides a solution for continuity without sacrificing performance.



The dovetail profile helps to mechanically lock the pin and box together, creating a more rigid connection.



Technical data table for Wedge 563™ Tubing

Technical data table - Tubing | 2 3/8" TO 5 1/2"

DESIGNATION		PIPE BODY				COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	TENSILE EFFICIENCY
Size	Nominal Weight	Wall Thickness	Inside Diameter	Standard Drift Diameter	Special Drift Diameter	Outside Diameter	Length			
in	lb/ft	in	in	in	in	in	in	in	in	%
2 3/8	4.60]	0.190	1.995	1.901	—	2.875	8.25	1.945	3.64	95.1
	5.10	0.218	1.939	1.845	—	2.875	8.25	1.889	3.64	100
	5.80	0.254	1.867	1.773	—	2.875	8.25	1.817	3.64	100
	6.60	0.295	1.785	1.691	—	2.875	8.25	—	3.64	100
	7.35]	0.336	1.703	1.609	—	2.875	8.25	—	3.64	100
2 7/8	6.40]	0.217	2.441	2.347	—	3.500	8.25	2.391	3.64	100
	7.80	0.276	2.323	2.229	—	3.500	8.25	2.273	3.64	100
	8.60]	0.308	2.259	2.165	—	3.500	8.25	—	3.64	100
	9.35]	0.340	2.195	2.101	—	3.500	9.25	—	4.09	100
	10.50	0.392	2.091	1.997	—	3.500	9.25	—	4.09	100
	11.50]	0.440	1.995	1.901	—	3.500	9.25	—	4.09	100
3 1/2	9.20]	0.254	2.992	2.867	—	4.250	8.25	2.942	3.64	100
	10.20	0.289	2.922	2.797	—	4.250	8.25	2.872	3.64	100
	12.70]	0.375	2.750	2.625	—	4.250	8.25	—	3.64	100
	14.30]	0.430	2.640	2.515	—	4.250	10.00	—	4.49	100
	14.70	0.449	2.602	2.477	—	4.250	10.00	—	4.49	100
	15.50	0.476	2.548	2.423	—	4.250	10.00	—	4.49	100
	16.70	0.510	2.480	2.355	—	4.250	10.00	—	4.49	100
	17.00]	0.530	2.440	2.315	—	4.250	10.00	—	4.49	100
4	11.00]	0.262	3.476	3.351	—	4.750	8.25	3.426	3.64	100
	11.60	0.286	3.428	3.303	—	4.750	8.25	3.378	3.64	100
	13.20]	0.330	3.340	3.215	—	4.750	8.25	—	3.64	100
	14.80]	0.380	3.240	3.115	—	4.750	9.25	—	4.09	100
	16.10]	0.415	3.170	3.045	—	4.750	9.25	—	4.09	100
	18.90]	0.500	3.000	2.875	—	4.750	11.50	—	5.28	100
	21.10	0.562	2.876	2.751	—	4.750	11.50	—	5.28	100
	22.20]	0.610	2.780	2.655	—	4.750	11.50	—	5.28	100
4 1/2	11.60]	0.250	4.000	3.875	—	5.200	8.25	3.950	3.64	100
	12.60	0.271	3.958	3.833	—	5.200	8.25	3.908	3.64	100
	13.50]	0.290	3.920	3.795	—	5.200	8.25	3.870	3.64	100
	15.20]	0.337	3.826	3.701	—	5.200	9.25	—	4.09	100
	17.00	0.380	3.740	3.615	—	5.200	9.25	—	4.09	100
	18.90]	0.430	3.640	3.515	—	5.200	9.25	—	4.09	100
	21.50]	0.500	3.500	3.375	—	5.200	11.50	—	5.28	100
	23.70	0.560	3.380	3.255	—	5.200	11.50	—	5.28	100
	26.10]	0.630	3.240	3.115	—	5.300	11.50	—	5.28	100
5	13.00]	0.253	4.494	4.369	—	5.563	9.25	4.444	3.99	95.8
	15.00	0.296	4.408	4.283	—	5.563	9.25	4.358	3.99	100
	18.00]	0.362	4.276	4.151	—	5.563	9.25	—	3.99	100
	21.40]	0.437	4.126	4.001	—	5.750	12.00	4.076	5.36	95.9
	23.20	0.478	4.044	3.919	—	5.750	12.00	—	5.36	100
	24.10]	0.500	4.000	3.875	—	5.750	12.00	—	5.36	100
5 1/2	14.00]	0.244	5.012	4.887	—	6.050	9.25	4.962	3.99	95.4
	15.50	0.275	4.950	4.825	—	6.050	9.25	4.900	3.99	100
	17.00	0.304	4.892	4.767	—	6.050	9.25	4.842	3.99	100
	20.00	0.361	4.778	4.653	—	6.050	9.25	—	3.99	100
	23.00]	0.415	4.670	4.545	—	6.050	9.25	—	3.99	100
	26.00]	0.476	4.548	4.423	—	6.125	9.75	4.498	4.30	100
	26.80	0.500	4.500	4.375	—	6.125	9.75	4.450	4.30	100
	28.40]	0.530	4.440	4.315	—	6.125	9.75	4.390	4.30	100
	29.70]	0.562	4.376	4.251	—	6.250	11.25	4.326	5.06	100
	32.60]	0.625	4.250	4.125	—	6.250	11.25	—	5.06	100

-] Interchangeable where bracketed.
- When no value is shown for "Wedge ID", swaging is omitted and the ID is the pipe body ID.
- Torque recommendation values available at www.tenaris.com/tenarishydril.
- For the MS option, the coupling OD is reduced to the minimum critical area capable of providing the same tensile efficiency as the standard option.

COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						MATCHED STRENGTH
	55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter
%	x 1000 lb						in
100	68.2	99.2	111.6	117.8	136.4	155.0	2.657
100	81.2	118.2	133.0	140.3	162.5	184.7	2.685
100	93.1	135.4	152.3	160.8	186.2	211.6	2.737
100	106.0	154.2	173.5	183.1	212.0	241.0	2.793
100	118.4	172.2	193.7	204.5	236.8	269.0	—
100	99.7	145.0	163.1	172.1	199.3	226.5	3.192
100	123.9	180.3	202.8	214.1	247.9	281.7	3.282
100	136.6	198.7	223.5	236.0	273.2	310.5	3.328
100	148.9	216.6	243.7	257.2	297.9	338.5	3.337
100	168.2	244.6	275.2	290.5	336.4	382.2	3.405
100	185.1	269.3	302.9	319.8	370.2	420.7	3.464
100	142.5	207.2	233.1	246.1	284.9	323.8	3.886
100	160.3	233.2	262.4	277.0	320.7	364.4	3.941
100	202.5	294.5	331.3	349.7	405.0	460.2	4.067
100	228.1	331.8	373.2	394.0	456.2	518.4	4.100
100	236.7	344.3	387.3	408.8	473.4	538.0	4.125
100	248.7	361.8	407.0	429.6	497.4	565.3	4.160
100	263.5	383.2	431.2	455.1	527.0	598.8	4.202
100	272.0	395.6	445.1	469.8	544.0	618.1	—
100	169.2	246.1	276.9	292.3	338.4	384.6	4.406
100	183.5	267.0	300.3	317.0	367.1	417.1	4.444
100	209.3	304.4	342.4	361.5	418.5	475.6	4.513
100	237.7	345.7	388.9	410.5	475.4	540.2	4.549
100	257.1	373.9	420.7	444.0	514.1	584.2	4.599
100	302.4	439.8	494.8	522.3	604.8	687.2	4.598
100	333.9	485.6	546.3	576.7	667.7	758.8	4.679
100	357.3	519.7	584.7	617.2	714.6	812.1	—
100	183.6	267.0	300.4	317.1	367.2	417.2	4.891
100	198.0	288.0	324.0	342.0	396.0	450.1	4.926
100	211.0	306.8	345.2	364.4	421.9	479.4	4.958
100	242.4	352.6	396.7	418.7	484.8	550.9	4.992
100	270.5	393.5	442.7	467.3	541.0	614.8	5.058
100	302.4	439.8	494.8	522.3	604.8	687.3	5.133
100	345.6	502.7	565.5	596.9	691.2	785.4	5.114
100	381.2	554.5	623.8	658.5	762.5	866.5	—
100	421.3	612.8	689.4	727.7	842.5	957.4	—
100	199	289	325	343	398	452	5.332
100	241	350	394	416	481	547	5.404
100	290	422	475	501	580	659	—
100	330	481	541	571	661	751	5.511
100	373	543	611	645	747	849	5.571
100	389	565	636	672	778	884	5.603
100	211	307	346	365	423	480	5.820
100	248	361	406	429	497	564	5.873
100	273	397	447	471	546	620	5.921
100	321	466	525	554	641	729	—
100	365	530	597	630	729	829	—
100	413	601	676	714	826	939	6.057
100	432	628	707	746	864	982	—
100	455	662	745	786	910	1034	—
100	480	697	785	828	959	1090	6.085
100	526	766	861	909	1053	1197	6.174

6 5/8" TO 7"

DESIGNATION		PIPE BODY				COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	TENSILE EFFICIENCY
Size	Nominal Weight	Wall Thickness	Inside Diameter	Standard Drift Diameter	Special Drift Diameter	Outside Diameter	Length			
in	lb/ft	in	in	in	in	in	in	in	in	%
6 5/8	20.00]	0.288	6.049	5.924	—	7.390	9.25	5.999	4.05	95.7
	24.00	0.352	5.921	5.796	—	7.390	9.25	5.871	4.05	100
	28.00	0.417	5.791	5.666	—	7.390	9.25	—	4.05	100
	32.00]	0.475	5.675	5.550	—	7.390	9.25	—	4.05	100
7	20.00]	0.272	6.456	6.331	—	7.656	9.25	6.406	4.05	95
	23.00	0.317	6.366	6.241	6.250	7.656	9.25	6.316	4.05	100
	26.00	0.362	6.276	6.151	—	7.656	9.25	6.226	4.05	100
	29.00	0.408	6.184	6.059	—	7.656	9.25	—	4.05	100
	32.00]	0.453	6.094	5.969	6.000	7.656	9.25	—	4.05	100
	35.00]	0.498	6.004	5.879	—	7.750	11.25	5.954	5.06	100
	38.00	0.540	5.920	5.795	—	7.750	11.25	5.870	5.06	100
	41.00	0.590	5.820	5.695	—	7.750	11.25	—	5.06	100
	42.70]	0.625	5.750	5.625	—	7.750	11.25	—	5.06	100

-] Interchangeable where bracketed.
- When no value is shown for "Wedge ID", swaging is omitted and the ID is the pipe body ID.
- Torque recommendation values available at www.tenaris.com/tenarishydril.
- For the MS option, the coupling OD is reduced to the minimum critical area capable of providing the same tensile efficiency as the standard option.

COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						MATCHED STRENGTH
	55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter
%	x 1000 lb						in
100	302	439	494	521	604	686	7.012
100	382	555	624	659	763	867	7.121
100	447	651	732	773	895	1017	7.227
100	505	734	826	872	1010	1147	—
100	300	437	492	519	601	683	7.371
100	366	532	599	632	732	832	7.449
100	415	604	679	717	830	944	7.525
100	465	676	760	803	929	1056	—
100	512	745	839	885	1025	1165	—
100	559	814	916	966	1119	1272	7.557
100	603	877	986	1041	1206	1370	7.623
100	653	950	1069	1129	1307	1485	—
100	688	1001	1127	1189	1377	1565	—

Technical data table for Wedge 563™ Casing

Technical data table - Casing | 5" TO 9 7/8"

DESIGNATION		PIPE BODY				COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	TENSILE EFFICIENCY
Size	Nominal Weight	Wall Thickness	Inside Diameter	Standard Drift Diameter	Special Drift Diameter	Outside Diameter	Length			
in	lb/ft	in	in	in	in	in	in	in	in	%
5	13.00	0.253	4.494	4.369	—	5.563	9.25	4.444	3.99	95.8
	15.00	0.296	4.408	4.283	—	5.563	9.25	4.358	3.99	100
	18.00	0.362	4.276	4.151	—	5.563	9.25	—	3.99	100
	21.40	0.437	4.126	4.001	—	5.750	12.00	4.076	5.36	95.9
	23.20	0.478	4.044	3.919	—	5.750	12.00	—	5.36	100
	24.10	0.500	4.000	3.875	—	5.750	12.00	—	5.36	100
	26.70	0.562	3.876	3.751	—	5.750	12.00	—	5.36	100
5 1/2	14.00	0.244	5.012	4.887	—	6.050	9.25	4.962	3.99	95.4
	15.50	0.275	4.950	4.825	—	6.050	9.25	4.900	3.99	100
	17.00	0.304	4.892	4.767	—	6.050	9.25	4.842	3.99	100
	20.00	0.361	4.778	4.653	—	6.050	9.25	—	3.99	100
	23.00	0.415	4.670	4.545	—	6.050	9.25	—	3.99	100
	26.00	0.476	4.548	4.423	—	6.125	9.75	4.498	4.30	100
	26.80	0.500	4.500	4.375	—	6.125	9.75	4.450	4.30	100
	28.40	0.530	4.440	4.315	—	6.125	9.75	4.390	4.30	100
	29.70	0.562	4.376	4.251	—	6.250	11.25	4.326	5.06	100
	32.60	0.625	4.250	4.125	—	6.250	11.25	—	5.06	100
6 5/8	20.00	0.288	6.049	5.924	—	7.390	9.25	5.999	4.05	95.7
	24.00	0.352	5.921	5.796	—	7.390	9.25	5.871	4.05	100
	28.00	0.417	5.791	5.666	—	7.390	9.25	—	4.05	100
	32.00	0.475	5.675	5.550	—	7.390	9.25	—	4.05	100
7	20.00	0.272	6.456	6.331	—	7.656	9.25	6.406	4.05	95
	23.00	0.317	6.366	6.241	6.250	7.656	9.25	6.316	4.05	100
	26.00	0.362	6.276	6.151	—	7.656	9.25	6.226	4.05	100
	29.00	0.408	6.184	6.059	—	7.656	9.25	—	4.05	100
	32.00	0.453	6.094	5.969	6.000	7.656	9.25	—	4.05	100
	35.00	0.498	6.004	5.879	—	7.750	11.25	5.954	5.06	100
	38.00	0.540	5.920	5.795	—	7.750	11.25	5.870	5.06	100
	41.00	0.590	5.820	5.695	—	7.750	11.25	—	5.06	100
	42.70	0.625	5.750	5.625	—	7.750	11.25	—	5.06	100
7 5/8	26.40	0.328	6.969	6.844	—	8.500	9.25	6.919	4.05	100
	29.70	0.375	6.875	6.750	—	8.500	9.25	—	4.05	100
	33.70	0.430	6.765	6.640	—	8.500	9.25	—	4.05	100
	39.00	0.500	6.625	6.500	—	8.500	11.25	6.575	5.06	100
	42.80	0.562	6.501	6.376	—	8.500	11.25	—	5.06	100
	45.30	0.595	6.435	6.310	—	8.500	11.25	—	5.06	100
	55.30	0.750	6.125	6.000	—	8.500	13.50	—	6.17	100
7 3/4	46.10	0.595	6.560	6.435	6.500	8.500	11.50	—	5.19	100
	48.60	0.640	6.470	6.345	—	8.500	11.50	—	5.19	100
8 5/8	32.00	0.352	7.921	7.796	7.875	9.625	9.25	7.933	4.05	100
	36.00	0.400	7.825	7.700	—	9.625	9.25	—	4.05	100
	40.00	0.450	7.725	7.600	7.625	9.625	9.25	—	4.05	100
	44.00	0.500	7.625	7.500	—	9.625	11.25	7.575	5.06	100
	49.00	0.557	7.511	7.386	—	9.625	11.25	—	5.06	100
	52.00	0.595	7.435	7.310	—	9.625	11.25	—	5.06	100
	54.00	0.625	7.375	7.250	—	9.625	11.25	—	5.06	100
	63.50	0.750	7.125	7.000	—	9.625	13.50	—	6.18	100
	68.10	0.812	7.001	6.876	—	9.625	13.50	—	6.18	100
9 5/8	36.00	0.352	8.921	8.765	—	10.625	9.25	8.871	4.05	100
	40.00	0.395	8.835	8.679	8.750	10.625	9.25	—	4.05	100
	43.50	0.435	8.755	8.599	—	10.625	9.25	—	4.05	100
	47.00	0.472	8.681	8.525	—	10.625	9.25	—	4.05	100
	53.50	0.545	8.535	8.379	8.500	10.625	9.25	—	4.05	100
9 7/8	62.80	0.625	8.625	8.469	8.500	10.625	11.25	—	5.06	100
	65.10	0.650	8.575	8.419	8.500	10.625	11.25	—	5.06	95.4

- Drift diameters displayed are standard. Items marked with * will pass popular oversize drift.
-] Interchangeable where bracketed.
- When no value is shown for "Connection ID", swaging is omitted and the ID is the pipe body ID.
- Torque recommendation values available at www.tenaris.com.
- For the MS option, the coupling OD is reduced to the minimum critical area capable of providing the same tensile efficiency as the standard option.

COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						MATCHED STRENGTH
	55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter
%	x 1000 lb						in
100	199	289	325	343	398	452	5.332
100	241	350	394	416	481	547	5.404
100	290	422	475	501	580	659	—
100	330	481	541	571	661	751	5.507
100	373	543	611	645	747	849	5.568
100	389	565	636	672	778	884	5.600
100	431	627	705	744	862	979	5.686
100	211	307	346	365	423	480	5.820
100	248	361	406	429	497	564	5.873
100	273	397	447	471	546	620	5.921
100	321	466	525	554	641	729	—
100	365	530	597	630	729	829	—
100	413	601	676	714	826	939	6.057
100	432	628	707	746	864	982	—
100	455	662	745	786	910	1034	—
100	480	697	785	828	959	1090	6.085
100	526	766	861	909	1053	1197	6.174
100	302	439	494	521	604	686	7.012
100	382	555	624	659	763	867	7.121
100	447	651	732	773	895	1017	7.227
100	505	734	826	872	1010	1147	—
100	300	437	492	519	601	683	7.371
100	366	532	599	632	732	832	7.449
100	415	604	679	717	830	944	7.525
100	465	676	760	803	929	1056	—
100	512	745	839	885	1025	1165	—
100	559	814	916	966	1119	1272	7.557
100	603	877	986	1041	1206	1370	7.623
100	653	950	1069	1129	1307	1485	—
100	688	1001	1127	1189	1377	1565	—
100	414	602	677	714	827	940	8.097
100	470	683	769	811	940	1068	8.177
100	535	778	875	923	1069	1215	8.268
100	616	895	1007	1063	1231	1399	8.216
100	686	998	1122	1185	1372	1559	8.315
100	723	1051	1183	1248	1445	1643	8.366
100	891	1296	1458	1539	1782	2025	—
100	736	1070	1204	1271	1471	1672	8.413
100	786	1144	1287	1358	1573	1787	—
100	503	732	823	869	1006	1144	9.143
100	568	827	930	982	1137	1292	9.225
100	636	925	1040	1098	1271	1445	9.309
100	702	1021	1149	1212	1404	1595	9.226
100	776	1129	1271	1341	1553	1765	9.319
100	826	1201	1351	1426	1651	1876	9.379
100	864	1257	1414	1492	1728	1963	9.427
100	1021	1484	1670	1763	2041	2319	9.440
100	1096	1594	1794	1893	2192	2491	—
100	564	820	923	974	1128	1282	10.147
100	630	916	1031	1088	1260	1432	10.222
100	691	1005	1130	1193	1381	1570	10.291
100	746	1086	1222	1289	1493	1697	10.353
100	855	1244	1399	1477	1710	1943	10.474
100	999	1453	1635	1725	1998	2270	—
100	988	1438	1617	1707	1977	2246	—

10 3/4" TO 16"

DESIGNATION		PIPE BODY				COUPLING		CONNECTION INSIDE DIAMETER	MAKE-UP LOSS	TENSILE EFFICIENCY
Size	Nominal Weight	Wall Thickness	Inside Diameter	Standard Drift Diameter	Special Drift Diameter	Outside Diameter	Length			
in	lb/ft	in	in	in	in	in	in	in	in	%
10 3/4	40.50]	0.350	10.050	9.894	—	11.750	10.25	10.000	4.45	100
	45.50	0.400	9.950	9.794	9.875	11.750	10.25	—	4.45	100
	51.00]	0.450	9.850	9.694	—	11.750	10.25	—	4.45	100
	55.50]	0.495	9.760	9.604	9.625	11.750	12.00	9.710	5.22	100
	60.70	0.545	9.660	9.504	—	11.750	12.00	—	5.22	100
	65.70	0.595	9.560	9.404	9.500	11.750	12.00	—	5.22	100
	73.20]	0.672	9.406	9.250	—	11.750	12.00	—	5.22	100
	79.20	0.734	9.282	9.126	—	11.750	13.00	—	6.06	100
11 3/4	47.00]	0.375	11.000	10.844	—	12.750	10.00	—	4.45	100
	54.00]	0.435	10.880	10.724	—	12.750	10.00	—	4.45	100
	60.00]	0.489	10.772	10.616	10.625	12.750	12.00	10.722	5.22	100
	65.00	0.534	10.682	10.526	10.625	12.750	12.00	—	5.22	100
	71.00]	0.582	10.586	10.430	—	12.750	12.00	—	5.22	100
11 7/8	71.80	0.582	10.711	10.555	10.625	12.750	11.50	—	5.22	100
13 3/8	54.50]	0.380	12.615	12.459	—	14.375	11.50	12.540	5.17	100
	61.00	0.430	12.515	12.359	—	14.375	11.50	12.440	5.17	100
	68.00	0.480	12.415	12.259	—	14.375	11.50	—	5.17	100
	72.00]	0.514	12.347	12.191	12.250	14.375	11.50	—	5.17	100
	77.00]	0.550	12.275	12.119	—	14.375	13.25	12.200	6.06	100
	80.70	0.580	12.215	12.059	—	14.375	13.25	12.140	6.06	100
	85.00	0.608	12.159	12.003	—	14.375	13.25	—	6.06	100
	86.00]	0.625	12.125	11.969	—	14.375	13.25	—	6.06	100
13 1/2	81.40	0.580	12.340	12.153	12.250	14.375	11.50	—	5.17	95.1
13 5/8	88.20	0.625	12.375	12.188	12.250	14.625	13.25	—	6.06	100
14	92.68]	0.650	12.700	12.544	—	15.000	13.25	—	6.06	92
	99.43	0.700	12.600	12.444	—	15.000	13.25	—	6.06	92.6
	106.13	0.750	12.500	12.344	—	15.000	13.25	—	6.06	93.1
	112.78]	0.800	12.400	12.244	12.250	15.000	13.25	—	6.06	93.5
16	95.00]	0.566	14.868	14.681	14.750	17.000	13.25	14.832	6.06	100
	96.00	0.575	14.850	14.662	14.750	17.000	13.25	14.832	6.06	100
	109.00	0.656	14.688	14.500	—	17.000	13.25	—	6.06	100
	118.00]	0.715	14.570	14.382	—	17.000	13.25	—	6.06	100

- Drift diameters displayed are standard. Items marked with * will pass popular oversize drift.
-] Interchangeable where bracketed.
- When no value is shown for "Connection ID", swaging is omitted and the ID is the pipe body ID.
- 13 1/2" 81.4 lb/ft is interchangeable with the 13 3/8" 54.50–72.00 lb/ft profile.
- Torque recommendation values available at www.tenaris.com.
- For the MS option, the coupling OD is reduced to the minimum critical area capable of providing the same tensile efficiency as the standard option.

COMPRESSION EFFICIENCY	JOINT YIELD STRENGTH						MATCHED STRENGTH
	55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	Outside Diameter
%	x 1000 lb						in
100	629	915	1029	1086	1258	1429	11.288
100	715	1040	1171	1236	1431	1626	11.376
100	801	1165	1311	1383	1602	1820	11.463
100	877	1276	1435	1515	1754	1993	11.380
100	961	1398	1573	1660	1922	2184	11.465
100	1044	1519	1708	1803	2088	2373	11.549
100	1170	1702	1915	2021	2340	2660	11.630
100	1270	1848	2079	2194	2541	2887	—
100	737	1072	1206	1273	1474	1675	12.299
100	850	1237	1392	1469	1701	1933	12.406
100	951	1384	1557	1643	1903	2162	12.401
100	1035	1505	1693	1788	2070	2352	12.479
100	1123	1634	1838	1940	2246	2552	12.560
100	1136	1652	1858	1962	2271	2581	—
100	853	1241	1396	1474	1706	1939	13.923
100	962	1399	1574	1661	1924	2186	14.013
100	1069	1556	1750	1847	2139	2431	14.102
100	1142	1661	1869	1973	2284	2596	14.162
100	1219	1773	1994	2105	2438	2770	14.090
100	1282	1865	2098	2215	2565	2914	14.142
100	1341	1951	2195	2317	2682	3048	14.190
100	1377	2003	2253	2378	2754	3129	14.219
100	1231	1791	2015	2127	2463	2799	—
100	1404	2042	2297	2425	2808	3191	14.470
100	1379	2006	2257	2383	2759	3135	14.830
100	1490	2167	2438	2573	2979	3385	—
100	1599	2325	2616	2761	3197	3633	—
100	1706	2482	2792	2947	3412	3877	—
100	1509	2196	2470	2607	3019	3430	—
100	1533	2229	2508	2647	3065	3483	—
100	1739	2530	2846	3004	3478	3953	—
100	1888	2747	3090	3262	3777	4292	—

Torque table for Wedge 563™ Tubing

Torque table - Tubing | 2 3/8" TO 7"

SIZE (OD)	NOMINAL WEIGHT	WALL THICKNESS	MAKE UP TORQUE			YIELD TORQUE (BY SMYS OF STEEL GRADE)				
			Minimum	Target	Operational	55 ksi	80 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb
2 3/8	4.60	0.190	1300	1600	2200	2800	3600	4300	4900	5600
	5.10	0.218	1500	1800	2600		3600	4300	4900	5600
	5.80	0.254	1700	2000	2900		3600	4300	4900	5600
	6.60	0.295	1900	2300	2900		3600	4300	4900	5600
	7.35	0.336	2200	2600	2900		3600	4300	4900	5600
2 7/8	6.40	0.217	1600	1900	2800	3900	5300	6100	6900	7800
	7.80	0.276	2000	2400	3500		5300	6100	6900	7800
	8.60	0.308	2100	2500	3700		5300	6100	6900	7800
	9.35	0.340	3500	4200	6100		8800	10000	11300	12800
	10.50	0.392	4000	4800	7000		8800	10000	11300	12800
	11.50	0.440	4500	5400	7000		8800	10000	11300	12800
3 1/2	9.20	0.254	2400	2900	4200	5900	8000	9200	10400	11800
	10.20	0.289	2700	3200	4700		8000	9200	10400	11800
	12.70	0.375	3300	4000	5800		8000	9200	10400	11800
	14.30	0.430	6000	7200	10500		14500	16400	18400	21000
	15.50	0.476	6600	7900	11600		14500	16400	18400	21000
	16.70	0.510	7000	8400	11600		14500	16400	18400	21000
	17.00	0.530	7400	8900	11600		14500	16400	18400	21000
4	11.00	0.262	2800	3400	4900	7500	10200	11800	13400	15200
	11.60	0.286	3100	3700	5400	7500	10200	11800	13400	15200
	13.20	0.330	3400	4100	6000		10200	11800	13400	15200
	14.80	0.380	5500	6600	9600		16600	19100	21600	25000
	16.10	0.415	6000	7200	10500		16600	19100	21600	25000
	18.90	0.500	9100	10900	15900		23000	27000	30000	34000
	21.10	0.562	10300	12400	18000		23000	27000	30000	34000
	22.20	0.610	11300	13600	18400		23000	27000	30000	34000
4 1/2	11.60	0.250	3000	3600	5300	9200	12600	14600	16600	18900
	12.60	0.271	3200	3800	5600	9200	12600	14600	16600	18900
	13.50	0.290	3500	4200	6100		12600	14600	16600	18900
	15.20	0.337	5100	6100	8900		19900	23000	26000	30000
	17.00	0.380	5800	7000	10200		19900	23000	26000	30000
	18.90	0.430	6600	7900	11600		19900	23000	26000	30000
	21.50	0.500	10200	12200	17900		29000	33000	37000	42000
	23.70	0.560	11500	13800	20000		29000	33000	37000	42000
	26.10	0.630	13000	15600	23000		29000	33000	37000	42000
5	15.00	0.296	5500	6600	9600	12700	18400	21900	25000	28000
	18.00	0.362	6500	7800	11400		18400	22000	25000	28000
	21.40	0.437	13900	16700	24000		31000	37000	43000	49000
	23.20	0.478	14500	17400	25000		31000	37000	43000	49000
	24.10	0.500	15000	18000	25000		31000	37000	43000	49000
5 1/2	15.50	0.275	5200	6200	9100	15400	22000	27000	31000	35000
	17.00	0.304	5800	7000	10200	15400	22000	27000	31000	35000
	20.00	0.361	6600	7900	11600		22000	27000	31000	35000
	23.00	0.415	7700	9200	13500		22000	27000	31000	35000
	26.00	0.476	11000	13200	19300		27000	32000	37000	42000
	26.80	0.500	12000	14400	21000		27000	32000	37000	42000
	28.40	0.530	12500	15000	22000		27000	32000	37000	42000
	29.70	0.562	16100	19300	28000		35000	41000	48000	55000
	32.60	0.625	17600	21000	28000		35000	41000	48000	55000
6 5/8	24.00	0.352	7500	9000	13100	25000	37000	43000	50000	57000
	28.00	0.417	8600	10300	15100		37000	43000	50000	57000
	32.00	0.475	9900	11900	17300		37000	43000	50000	57000

SIZE (OD)	NOMINAL WEIGHT	WALL THICKNESS	MAKE UP TORQUE			YIELD TORQUE (BY SMYS OF STEEL GRADE)				
			Minimum	Target	Operational	55 ksi	80 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb
7	23.00	0.317	6700	8000	11700	27000	39000	47000	54000	61000
	26.00	0.362	7800	9400	13700	27000	39000	47000	54000	61000
	29.00	0.408	8400	10100	14700		39000	47000	54000	61000
	32.00	0.453	9500	11400	16600		39000	47000	54000	61000
	35.00	0.498	14800	17800	26000		55000	65000	75000	85000
	38.00	0.540	16200	19400	28000		55000	65000	75000	85000
	41.00	0.590	17300	21000	30000		55000	65000	75000	85000
	42.70	0.625	18700	22000	33000		55000	65000	75000	85000

- SMYS: Specified Minimum Yield Strength.
- The minimum, field target, and operational torque values apply to all grades of steel.
- Many factors influence torque application. To ensure that minimum torque is attained, a field target torque (optimum torque) 20% over minimum is recommended.
- An appropriate safety factor should be applied to these yield torque values.

Torque table for Wedge 563™ Casing

Torque table - Casing | 5" TO 16"

SIZE (OD)	NOMINAL WEIGHT	WALL THICKNESS	MAKE UP TORQUE			YIELD TORQUE (BY SMYS OF STEEL GRADE)			
			Minimum	Target	Operational	80 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb
5	13.00	0.253	4500	5400	7900	18400	22000	25000	29000
	15.00	0.296	5500	6600	9600	18400	22000	25000	29000
	18.00	0.362	6500	7800	11400	18400	22000	25000	29000
	21.40	0.437	13900	16700	24000	31000	37000	43000	48000
	23.20	0.478	14500	17400	25000	31000	37000	43000	48000
	24.10	0.500	15000	18000	25000	31000	37000	43000	48000
5 1/2	14.00	0.244	4500	5400	7900	22000	27000	31000	35000
	15.50	0.275	5200	6200	9100	22000	27000	31000	35000
	17.00	0.304	5800	7000	10200	22000	27000	31000	35000
	20.00	0.361	6600	7900	11600	22000	27000	31000	35000
	23.00	0.415	7700	9200	13500	22000	27000	31000	35000
	26.00	0.476	11000	13200	19300	27000	32000	37000	42000
	26.80	0.500	12000	14400	21000	27000	32000	37000	42000
	28.40	0.530	12500	15000	22000	27000	32000	37000	42000
	29.70	0.562	16100	19300	28000	35000	41000	48000	54000
	32.60	0.625	17600	21000	28000	35000	41000	48000	54000
6 5/8	20.00	0.288	5900	7100	10300	37000	43000	50000	57000
	24.00	0.352	7500	9000	13100	37000	43000	50000	57000
	28.00	0.417	8600	10300	15100	37000	43000	50000	57000
	32.00	0.475	9900	11900	17300	37000	43000	50000	57000
7	20.00	0.272	5600	6700	9800	39000	47000	54000	61000
	23.00	0.317	6700	8000	11700	39000	47000	54000	61000
	26.00	0.362	7800	9400	13700	39000	47000	54000	61000
	29.00	0.408	8400	10100	14700	39000	47000	54000	61000
	32.00	0.453	9500	11400	16600	39000	47000	54000	61000
	35.00	0.498	14800	17800	26000	55000	65000	75000	86000
	38.00	0.540	16200	19400	28000	55000	65000	75000	86000
	41.00	0.590	17300	21000	30000	55000	65000	75000	86000
	42.70	0.625	18700	22000	33000	55000	65000	75000	86000
7 5/8	26.40	0.328	7800	9400	13700	47000	55000	64000	73000
	29.70	0.375	8600	10300	15100	47000	55000	64000	73000
	33.70	0.430	10100	12100	17700	47000	55000	64000	73000
	39.00	0.500	16100	19300	28000	62000	74000	86000	97000
	42.80	0.562	17800	21000	31000	62000	74000	86000	97000
	45.30	0.595	19000	23000	33000	62000	74000	86000	97000
	55.30	0.750	28000	34000	49000	81000	96000	112000	127000
7 3/4	46.10	0.595	25000	30000	44000	79000	93000	108000	123000
	48.60	0.640	25000	30000	44000	79000	93000	108000	123000
8 5/8	32.00	0.352	9400	11300	16500	60000	71000	82000	93000
	36.00	0.400	10500	12600	18400	60000	71000	82000	93000
	40.00	0.450	12000	14400	21000	60000	71000	82000	93000
	44.00	0.500	18200	22000	32000	80000	95000	110000	125000
	49.00	0.557	19800	24000	35000	80000	95000	110000	125000
	52.00	0.595	21000	25000	37000	80000	95000	110000	125000
	54.00	0.625	23000	28000	40000	80000	95000	110000	125000
	68.10	0.812	36000	43000	63000	105000	125000	145000	163000
9 5/8	36.00	0.352	10000	12000	17500	75000	89000	103000	117000
	40.00	0.395	10800	13000	18900	75000	89000	103000	117000
	43.50	0.435	11900	14300	21000	75000	89000	103000	117000
	47.00	0.472	13200	15800	23000	75000	89000	103000	117000
	53.50	0.545	15500	18600	27000	75000	89000	103000	117000
9 7/8	62.80	0.625	24000	29000	42000	108000	129000	149000	169000
	65.10	0.650	24000	29000	42000	108000	129000	149000	169000
10 3/4	40.50	0.350	12200	14600	21000	103000	122000	142000	161000
	45.50	0.400	13500	16200	24000	103000	122000	142000	161000
	51.00	0.450	15500	18600	27000	103000	122000	142000	161000
	55.50	0.495	23000	28000	40000	145000	172000	199000	226000
	60.70	0.545	25000	30000	44000	145000	172000	199000	226000
	65.70	0.595	27000	32000	47000	145000	172000	199000	226000
	73.20	0.672	31000	37000	54000	145000	172000	199000	226000
	79.20	0.734	45000	54000	79000	198000	235000	273000	310000
11 3/4	47.00	0.375	13000	15600	23000	123000	147000	170000	193000

SIZE (OD)	NOMINAL WEIGHT	WALL THICKNESS	MAKE UP TORQUE			YIELD TORQUE (BY SMYS OF STEEL GRADE)			
			Minimum	Target	Operational	80 ksi	95 ksi	110 ksi	125 ksi
in	lb/ft	in	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb	ft.lb
11 3/4	54.00	0.435	15400	18500	27000	123000	147000	170000	193000
	60.00	0.489	23000	28000	40000	161000	191000	221000	250000
	65.00	0.534	24000	29000	42000	161000	191000	221000	250000
	71.00	0.582	27000	32000	47000	161000	191000	221000	250000
11 7/8	71.80	0.582	27000	32000	47000	164000	195000	226000	260000
13 3/8	54.50	0.380	17400	21000	30000	188000	223000	260000	290000
	61.00	0.430	20000	24000	35000	188000	223000	260000	290000
	68.00	0.480	21000	25000	37000	188000	223000	260000	290000
	72.00	0.514	23000	28000	40000	188000	223000	260000	290000
	77.00	0.550	34000	41000	60000	250000	300000	340000	390000
	80.70	0.580	36000	43000	63000	250000	300000	340000	390000
	85.00	0.608	36000	43000	63000	250000	300000	340000	390000
	86.00	0.625	37000	44000	65000	250000	300000	340000	390000
13 1/2	81.40	0.580	31000	37000	54000	242000	290000	330000	380000
13 5/8	88.20	0.625	37000	44000	65000	260000	310000	360000	410000
16	95.00	0.566	45000	54000	79000	360000	430000	490000	560000
	96.00	0.575	45000	54000	79000	360000	430000	490000	560000
	109.00	0.656	49000	59000	86000	360000	430000	490000	560000
	118.00	0.715	52000	62000	91000	360000	430000	490000	560000

- SMYS: Specified Minimum Yield Strength.
- The minimum, field target, and operational torque values apply to all grades of steel.
- Many factors influence torque application. To ensure that minimum torque is attained, a field target torque (optimum torque) 20% over minimum is recommended.
- An appropriate safety factor should be applied to these yield torque values.

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For further information on our connections, please visit our website and find:

- Running Manual (general guidelines on handling and care of connections and well installation recommendations)
- Premium Connections Performance Data (connections performance, torque values, geometries and pipe body data)
- Blanking Dimensions
- Threading & Repair Shops locations

For technical assistance, please contact
premiumconnections@tenaris.com

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