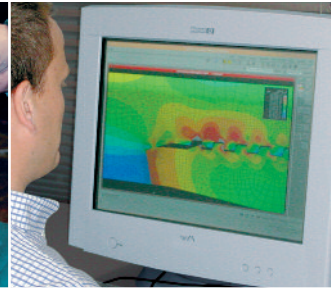
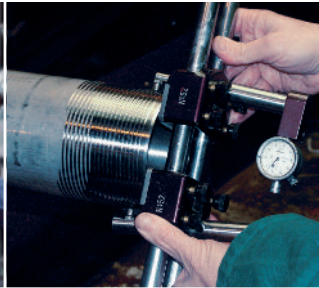


**VAM® TOP HT**

# Beyond the TOP with torque

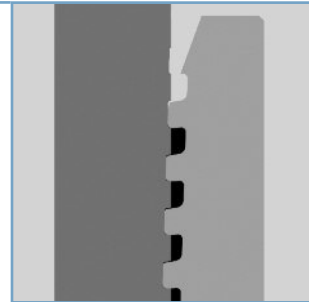


- VAM® 21*
- VAM® TOP*
- VAM® TOP HC*
- VAM® TOP HT***
- VAM® SLIJ II*
- VAM® FJL*
- VAM® HTF*
- DINO VAM®*
- BIG OMEGA™*
- VAM® TOP FE*
- VAM® HW ST*
- VAM® MUST*

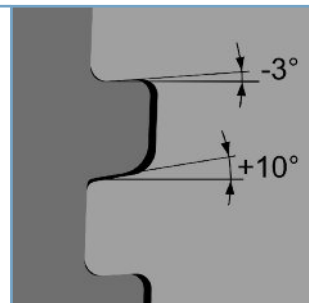
**VAM**® *TOP HT*



Thread run-out

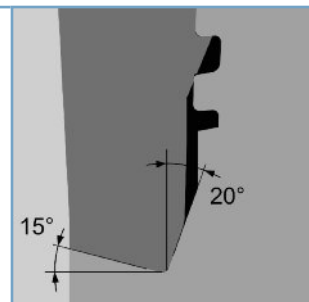


Thread form



Ø 4 1/2" to 7" – 5 TPI  
Taper 1:16

Seal geometry



Joint yield strengths are calculated from the minimum specified material yield stress and the critical joint cross sectional area, pipe or coupling, as appropriate.

For 4 1/2" OD, VAM® TOP is NOT compatible or interchangeable with VAM® TOP HT. A crossover must be used.

Size (OD)	Nominal weight	Wall thickness		Drift diameter	Coupling (OD) reg.	Make-up loss	Coupling length	Pipe body section	Coupling CCS*	VAM® TOP HT regular yield strength (1000 lb.)													
		inch	mm							inch	mm	65 ksi	75 ksi	80 ksi	85 ksi	90 ksi	95 ksi	100 ksi	110 ksi	120 ksi	125 ksi	135 ksi	140 ksi
4 1/2 114.30	10.50	0.224	5.69	3.927	4.827	3.662	9.331	3.009	3.077	196	226	241	256	271	286	301	331	361	376	406	421		
	11.60	0.250	6.35	3.875	4.870	3.662	9.331	3.338	3.407	217	250	267	284	300	317	334	367	401	417	451	467		
	12.60	0.271	6.88	3.833	4.906	3.662	9.331	3.600	3.678	234	270	288	306	324	342	360	396	432	450	486	504		
	13.50	0.290	7.37	3.795	4.937	3.662	9.331	3.836	3.922	249	288	307	326	345	364	384	422	460	480	518	537		
	15.10	0.337	8.56	3.701	5.012	3.662	9.331	4.407	4.507	286	331	353	375	397	419	441	485	529	551	595	617		
	17.00	0.380	9.65	3.615	5.077	3.662	9.331	4.918	5.022	320	369	393	418	443	467	492	541	590	615	664	689		
	17.70	0.402	10.21	3.571	5.110	3.662	9.331	5.175	5.289	336	388	414	440	466	492	518	569	621	647	699	725		
	18.90	0.430	10.92	3.515	5.152	3.662	9.331	5.498	5.622	357	412	440	467	495	522	550	605	660	687	742	770		
	21.50	0.500	12.70	3.375	5.248	3.662	9.331	6.283	6.411	408	471	503	534	565	597	628	691	754	785	848	880		
23.70	0.560	14.22	3.255	5.329	3.662	9.331	6.932	7.080	451	520	555	589	624	659	693	763	832	867	936	970			
5 127.00	15.00	0.296	7.52	4.283	5.470	4.191	10.394	4.374	4.462	284	328	350	372	394	416	437	481	525	547	590	612		
	18.00	0.362	9.19	4.151	5.577	4.191	10.394	5.275	5.385	343	396	422	448	475	501	528	580	633	659	712	739		
	20.30	0.408	10.36	4.059	5.648	4.191	10.394	5.886	6.009	383	441	471	500	530	559	589	647	706	736	795	824		
	20.80	0.422	10.72	4.031	5.669	4.191	10.394	6.069	6.202	394	455	486	516	546	577	607	668	728	759	819	850		
	21.40	0.437	11.10	4.001	5.691	4.191	10.394	6.264	6.395	407	470	501	532	564	595	626	689	752	783	846	877		
23.20	0.478	12.14	3.919	5.750	4.191	10.394	6.791	6.925	441	509	543	577	611	645	679	747	815	849	917	951			
5 1/2 139.70	17.00	0.304	7.72	4.767	5.978	4.382	10.748	4.962	5.069	323	372	397	422	447	471	496	546	595	620	670	695		
	20.00	0.361	9.17	4.653	6.071	4.382	10.748	5.828	5.944	379	437	466	495	525	554	583	641	699	729	787	816		
	23.00	0.415	10.54	4.545	6.156	4.382	10.748	6.630	6.756	431	497	530	564	597	630	663	729	796	829	895	928		
	26.00	0.476	12.09	4.423	6.248	4.382	10.748	7.513	7.659	488	563	601	639	676	714	751	826	902	939	1014	1052		
6 5/8 168.20	23.20	0.330	8.38	5.840	7.154	4.427	10.866	6.526	6.659	424	489	522	555	587	620	653	718	783	816	881	914		
	24.00	0.352	8.94	5.796	7.191	4.427	10.866	6.937	7.080	451	520	555	590	624	659	694	763	832	867	936	971		
	28.00	0.417	10.59	5.666	7.297	4.427	10.866	8.133	8.289	529	610	651	691	732	773	813	895	976	1017	1098	1139		
	32.00	0.475	12.07	5.550	7.390	4.427	10.866	9.177	9.357	597	688	734	780	826	872	918	1009	1101	1147	1239	1285		
	36.70	0.562	14.27	5.376	7.390	4.427	10.866	9.177	10.924	597	688	734	780	826	872	918	1009	1101	1147	1239	1285		
7 177.80	26.00	0.362	9.19	6.151	7.565	4.776	11.535	7.549	7.693	491	566	604	642	679	717	755	830	906	944	1019	1057		
	29.00	0.408	10.36	6.059	7.644	4.776	11.535	8.449	8.634	549	634	676	718	760	803	845	929	1014	1056	1141	1183		
	32.00	0.453	11.51	6.000A	7.717	4.776	11.535	9.317	9.512	606	699	745	792	839	885	932	1025	1118	1165	1258	1304		
	35.00	0.498	12.65	5.879	7.787	4.776	11.535	10.172	10.376	661	763	814	865	915	966	1017	1119	1221	1272	1373	1424		
	38.00	0.540	13.72	5.795	7.852	4.776	11.535	10.959	11.172	712	822	877	932	986	1041	1096	1205	1315	1370	1479	1534		
41.00	0.590	14.99	5.695	7.929	4.776	11.535	11.881	12.124	772	891	950	1010	1069	1129	1188	1307	1426	1485	1604	1663			

\* Coupling CCS = Coupling Critical Cross Section

1000 lb. = 4.44822 kN

External pressure equal to collapse pressure calculated from API Bul. 5 C 3 section 1. Minimum internal yield pressure are calculated from API Bul. 5 C 3 section 3, formula 3.1.1.

External pressure (psi)													Minimum internal yield pressure (psi)													Nominal weight	Size (OD)
65 ksi	75 ksi	80 ksi	85 ksi	90 ksi	95 ksi	100 ksi	110 ksi	120 ksi	125 ksi	135 ksi	140 ksi	65 ksi	75 ksi	80 ksi	85 ksi	90 ksi	95 ksi	100 ksi	110 ksi	120 ksi	125 ksi	135 ksi	140 ksi	lb./ft.	inch mm		
4430	4780	4940	5070	5200	5310	5410	5560	5720	5830	6030	6110	5660	6530	6970	7400	7840	8280	8710	9580	10450	10890	11760	12200	10.50	4 1/2		
5560	6100	6360	6590	6810	7030	7230	7580	7870	8000	8210	8300	6320	7290	7780	8260	8750	9240	9720	10690	11670	12150	13130	13610	11.60	114.30		
6480	7170	7500	7810	8120	8410	8690	9210	9670	9890	10280	10450	6850	7900	8430	8960	9490	10010	10540	11590	12650	13170	14230	14750	12.60			
7310	8140	8540	8920	9300	9660	10020	10690	11300	11600	12150	12400	7330	8460	9020	9590	10150	10710	11280	12410	13530	14100	15230	15790	13.50			
9010	10390	11080	11660	12220	12760	13300	14340	15340	15830	16770	17220	8520	9830	10480	11140	11800	12450	13110	14420	15730	16380	17690	18350	15.10			
10050	11600	12370	13140	13920	14690	15460	17010	18560	19330	20870	21630	9610	11080	11820	12560	13300	14040	14780	16260	17730	18470	19950	20690	17.00			
10580	12200	13020	13830	14640	15460	16270	17900	19520	20340	21970	22780	10160	11730	12510	13290	14070	14850	15630	17200	18760	19540	21110	21890	17.70			
11240	12960	13830	14690	15560	16420	17280	19010	20740	21610	23330	24200	10870	12540	13380	14210	15050	15890	16720	18390	20070	20900	22580	23410	18.90			
12840	14810	15800	16790	17780	18770	19750	21730	23700	24690	26670	27650	12640	14580	15560	16530	17500	18470	19440	21390	23330	24310	26250	27220	21.50			
14160	16340	17430	18520	19610	20700	21790	23970	26150	27240	29420	30510	14160	16330	17420	18510	19600	20690	21780	23960	26130	27220	29400	30490	23.70			
6280	6940	7250	7540	7830	8110	8370	8850	9280	9480	9830	9980	6730	7770	8290	8810	9320	9840	10360	11400	12430	12950	13990	14500	15.00	5		
8730	9960	10500	11010	11520	12020	12520	13470	14380	14820	15670	16070	8240	9500	10140	10770	11400	12040	12670	13940	15200	15840	17100	17740	18.00	127.00		
9740	11240	11990	12740	13490	14240	14990	16490	17930	18550	19740	20320	9280	10710	11420	12140	12850	13570	14280	15710	17140	17850	19280	19990	20.30			
10050	11590	12360	13140	13910	14680	15460	17000	18550	19320	20860	21610	9600	11080	11820	12550	13290	14030	14770	16250	17720	18460	19940	20680	20.80			
10370	11960	12760	13560	14360	15150	15950	17550	19140	19940	21540	22330	9940	11470	12240	13000	13770	14530	15300	16820	18350	19120	20650	21410	21.40			
11240	12970	13830	14700	15560	16430	17290	19020	20750	21620	23340	24210	10870	12550	13380	14220	15060	15890	16730	18400	20080	20910	22590	23420	23.20			
5510	6040	6290	6510	6730	6940	7140	7480	7760	7890	8090	8170	6290	7250	7740	8220	8710	9190	9670	10640	11610	12090	13060	13540	17.00	5 1/2		
7540	8410	8830	9230	9630	10020	10400	11110	11760	12090	12670	12950	7470	8610	9190	9760	10340	10910	11490	12640	13780	14360	15510	16080	20.00	139.70		
9070	10460	11160	11810	12380	12930	13480	14540	15560	16060	17020	17480	8580	9900	10560	11220	11880	12540	13200	14530	15850	16510	17830	18490	23.00			
10280	11860	12650	13440	14230	15020	15810	17390	18970	19760	21340	22140	9840	11360	12120	12870	13630	14390	15150	16660	18170	18930	20450	21200	26.00			
4430	4790	4950	5080	5210	5320	5420	5570	5720	5840	6040	6120	5670	6540	6970	7410	7850	8280	8720	9590	10460	10900	11770	12200	23.20	6 5/8		
5090	5550	5760	5950	6140	6310	6470	6730	6930	7020	7140	7180	6040	6970	7440	7900	8370	8830	9300	10230	11160	11620	12550	13020	24.00	168.20		
7010	7800	8170	8530	8880	9220	9550	10160	10720	11000	11480	11710	7160	8260	8810	9360	9910	10460	11020	12120	13220	13770	14870	15420	28.00			
8650	9800	10320	10830	11330	11830	12300	13230	14100	14540	15360	15750	8160	9410	10040	10670	11290	11920	12550	13800	15060	15680	16940	17570	32.00			
10090	11650	12420	13200	13970	14750	15530	17080	18630	19410	20960	21740	9650	11130	11880	12620	13360	14100	14850	16330	17810	18560	20040	20780	36.70			
4810	5220	5410	5580	5740	5890	6020	6230	6390	6450	6590	6690	5880	6790	7240	7690	8150	8600	9050	9960	10860	11310	12220	12670	26.00	7		
6100	6730	7030	7300	7580	7840	8090	8530	8920	9110	9420	9560	6630	7650	8160	8670	9180	9690	10200	11220	12240	12750	13770	14280	29.00	177.80		
7360	8200	8610	8990	9370	9740	10110	10780	11410	11710	12270	12530	7360	8490	9060	9630	10190	10760	11330	12460	13590	14160	15290	15860	32.00			
8590	9670	10190	10680	11170	11650	12130	13030	13890	14320	15110	15490	8090	9340	9960	10580	11210	11830	12450	13700	14940	15560	16810	17430	35.00			
9250	10680	11390	12100	12810	13430	14010	15130	16210	16740	17770	18260	8780	10130	10800	11480	12150	12830	13500	14850	16200	16880	18230	18900	38.00			
10030	11580	12350	13120	13890	14660	15440	16980	18520	19300	20840	21560	9590	11060	11800	12540	13280	14010	14750	16230	17700	18440	19910	20650	41.00			

\* Coupling CCS = Coupling Critical Cross Section

1 ksi = 1000 psi  
1 psi = 0.006895 Mpa  
0.06895 bar



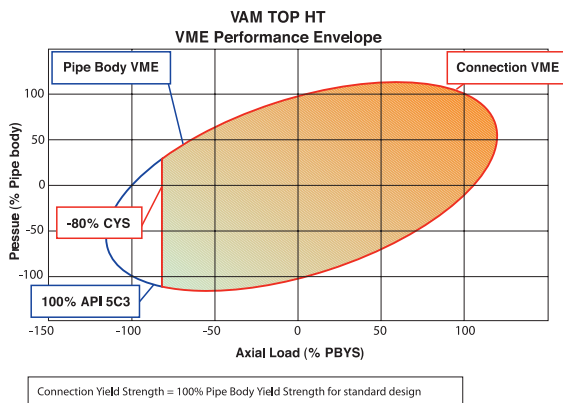
**VAM® TOP HT (High Torque)** is a T&C connection based on the main features of the VAM® TOP connection. This connection provides reinforced torque capability for liners and where high torque is anticipated due to string rotation during running operations (torque rotating liner while running, rotating casing when cementing).

### New metal-to-metal seal

- A patented metal-to-metal seal system offers excellent gas-tight sealing from 4 1/2" to 7", even under the most severe combined loads.
- Sealing integrity remains constant despite repeated make-ups and break-outs.
- Seal geometry protects against galling.

### Reverse angle torque shoulder

- A reverse angle torque shoulder provides a positive torque stop which allows for accurate power-tight make-up and minimizes hoop stresses in the connection.
- The “wedge” effect caused by the reverse angle gives the connection superior structural strength.
- The shoulder design was optimized in order to resist adverse conditions such as combined compression and external pressure or combined bending, compression, and torque.
- The torque shoulder dimension on VAM® TOP HT is significantly larger than VAM® TOP which enables the connection to withstand combined load for various applications using high torque (see the corresponding gas-tight VME performance envelope).



## BENEFITS

- **Excellent torque capability (improved with regards to VAM® TOP one)**
- **Excellent gas-tight sealing under combined loads**
- **Excellent resistance to bending**
- **Excellent resistance to external pressure and compression**
- **Easy to use and repair**

### Improved hook thread design

- A modified hook thread profile with 3° reverse angle on the load flank not only provides the connection with superior tension strength but also increases its resistance to compression.
- The excellent structural strength including the increased bending and compression resistance, makes this connection especially suited for highly deviated and long horizontal wells.
- Optimized thread geometry minimizes the risk of galling, even when thread lubricants are poorly applied.

### Coupling design

- Coverage of the vanishing threads, long internal shoulder, and coupling critical cross sections greater than those of the pipe body contribute to a high-performance, 100% efficient connection.

### Streamlined internal profile

- A pin ID chamfer, tight tolerances on the coupling center and a long shoulder combine to minimize turbulence and energy loss inside the connection for high-velocity gas flows.

# Popular VAM® connections



## VAM® TOP

VAM® TOP is a T&C connection ideal for tubing and production casing strings applications. VAM® TOP provides gastight sealing under the most severe conditions including great depths, highly deviated holes, and hostile environments. It outperforms the majority of today's premium connections designed according to casing and tubing requirements.



## VAM® FJL

(Flush Joint Liner)

100% flush ID and OD to provide maximum clearance with optimum strength for liners, moderate depth casing, and tight-hole tubing strings.



## DINO VAM®

A cost effective T&C connection for surface and intermediate casing applications. Increased running reliability and reduced rig costs result from its deep stabbing, non cross-threading and fast make-up. Sealing and structural strength are provided by a coarse 3 TPI tapered, hooked thread design.

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