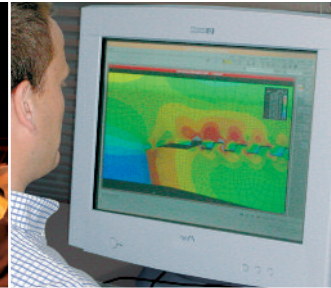


DINO VAM®

Safer. Faster. Stronger.



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

Vallourec Group

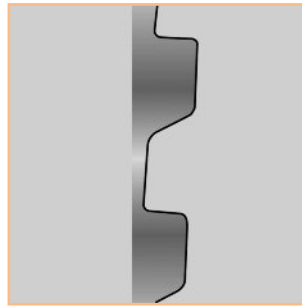
VALLOUREC & MANNESMANN TUBES



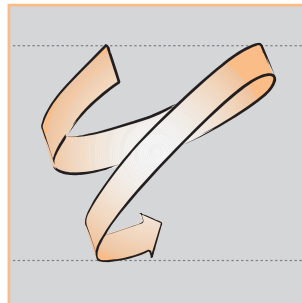


DINO VAM

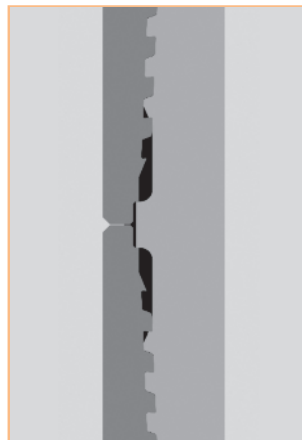
3 TPI, from 9 5/8" to 16"



1.4 turns - Quick make-up



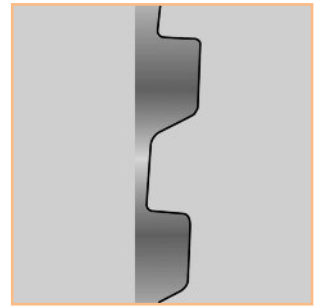
DINO VAM



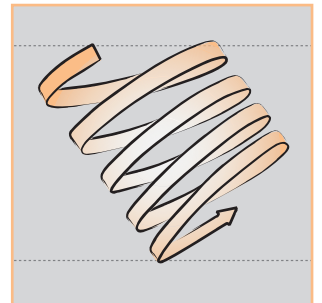
Make-Up arrestor
Torque controlled

API Buttress (BTC)

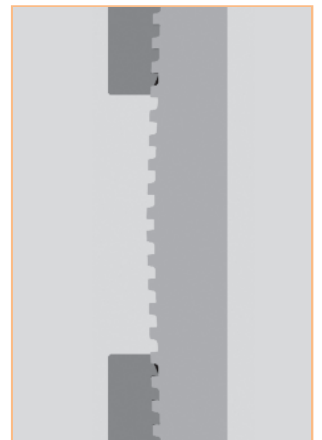
5 TPI



4.4 turns - to make-up



API Buttress (BTC)



Variable make-up position
Triangle controlled

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

Size (OD)	Nominal weight	Wall thickness		Drift diameter	Special drift	Coupling regular		Coupling matched strength		Make-up loss	Coupling length	Pipe body section	Regular tensile yield strength			
		inch	mm			OD inch	Section sq. in.	OD inch	Section sq. in.				inch	inch	sq. in.	55 ksi
9 5/8 244.48	36.00	0.352	8.94	8.765		10.626	18.451	10.138	10.490	4.746	9.493	10.254	564	820	923	974
	40.00	0.395	10.03	8.750 A		10.626	18.451	10.213	11.685	4.746	9.493	11.454	630	916	1031	1088
	43.50	0.435	11.05	8.599		10.626	18.451	10.283	12.826	4.746	9.493	12.559	691	1005	1130	1193
	47.00	0.472	11.99	8.525		10.626	18.451	10.346	13.848	4.746	9.493	13.572	746	1086	1221	1289
	53.50	0.545	13.84	8.500 A		10.626	18.451	10.472	15.908	4.746	9.493	15.546	855	1244	1399	1477
	58.40	0.595	15.11	8.375 A		10.626	18.451	10.555	17.272	4.746	9.493	16.879	928	1350	1519	1604
	59.40	0.609	15.47	8.251		10.626	20.401	10.457	17.599	4.578	9.156	17.250	949	1380	1553	1639
	61.10	0.625	15.88	8.219		10.626	20.401	10.484	18.051	4.578	9.156	17.671	972	1414	1590	1679
	64.90	0.672	17.07	8.125		10.626	20.401	10.559	19.288	4.578	9.156	18.901	1040	1512	1701	1796
	70.30	0.734	18.64	8.001		10.626	20.401	10.657	20.928	4.578	9.156	20.502	1122	1632	1836	1938
71.80	0.750	19.05	7.969		10.626	20.401	10.685	21.390	4.578	9.156	20.911	1122	1632	1836	1938	
9 3/4 247.65	59.20	0.595	15.11	8.404		10.626	17.785	10.606	17.456	4.155	8.310	17.113	941	1369	1540	1626
	60.20	0.609	15.47	8.376		10.626	17.785	10.630	17.850	4.155	8.310	17.489	962	1399	1574	1661
9 7/8 250.83	62.80	0.625	15.88	8.469	8.500	10.870	20.655	10.748	18.583	4.488	8.976	18.162	999	1453	1635	1725
	66.40	0.661	16.79	8.397		10.870	20.655	10.803	19.516	4.488	8.976	19.134	1052	1531	1722	1818
	67.50	0.678	17.22	8.363		10.870	20.655	10.831	19.984	4.488	8.976	19.590	1077	1567	1763	1861
	68.90	0.700	17.78	8.319		10.870	20.655	10.866	20.589	4.488	8.976	20.177	1110	1614	1816	1917
	70.50	0.720	18.29	8.279		10.870	20.655	10.898	21.127	4.488	8.976	20.708	1136	1652	1859	1962
10 3/4 273.05	40.50	0.350	8.89	9.894		11.752	20.993	11.236	11.682	5.044	10.088	11.435	629	915	1029	1086
	45.50	0.400	10.16	9.875 A		11.752	20.993	11.327	13.287	5.044	10.088	13.006	715	1040	1171	1236
	51.00	0.450	11.43	9.694		11.752	20.993	11.417	14.903	5.044	10.088	14.561	801	1165	1310	1383
	55.50	0.495	12.57	9.625 A	9.700	11.752	20.993	11.496	16.322	5.044	10.088	15.947	877	1276	1435	1515
	60.70	0.545	13.84	9.504		11.752	20.993	11.583	17.892	5.044	10.088	17.473	961	1398	1573	1660
	65.70	0.595	15.11	9.404		11.752	20.993	11.665	19.400	5.044	10.088	18.982	1044	1519	1708	1803
	66.15	0.611	15.52	9.372		11.752	23.417	11.559	19.887	4.896	9.793	19.462	1070	1557	1752	1849
	73.20	0.672	17.07	9.25		11.752	23.417	11.661	21.753	4.896	9.793	21.276	1170	1702	1915	2021
	76.10	0.709	18.01	9.176		11.752	23.417	11.720	22.838	4.896	9.793	22.365	1230	1789	2013	2125
	79.20	0.734	18.64	9.126		11.752	23.417	11.760	23.563	4.896	9.793	23.096	1270	1848	2079	2194
11 3/4 298.45	47.00	0.375	9.53	10.844		12.752	22.078	12.327	13.704	4.485	8.969	13.401	737	1072	1206	1273
	54.00	0.435	11.05	10.724		12.752	22.078	12.437	15.847	4.485	8.969	15.463	850	1237	1392	1469
	60.00	0.489	12.42	10.625 A		12.752	24.388	12.413	17.695	4.365	8.729	17.300	952	1384	1557	1644
	65.00	0.534	13.56	10.625 A		12.752	24.388	12.492	19.236	4.365	8.729	18.816	1035	1505	1693	1788
	71.00	0.582	14.78	10.43	10.500	12.752	24.388	12.575	20.863	4.365	8.729	20.420	1123	1634	1838	1940
13 3/8 339.73	54.50	0.380	9.65	12.459		14.374	25.502	13.941	15.872	4.761	9.523	15.513	853	1241	1396	1474
	61.00	0.430	10.92	12.359		14.374	25.502	14.031	17.861	4.761	9.523	17.487	962	1399	1574	1661
	68.00	0.480	12.19	12.259		14.374	25.502	14.122	19.863	4.761	9.523	19.445	1069	1556	1750	1847
	72.00	0.514	13.06	12.250 A		14.374	25.502	14.177	21.088	4.761	9.523	20.768	1142	1661	1869	1973
	77.00	0.550	13.97	12.119		14.374	28.047	14.134	22.670	4.516	9.032	22.160	1219	1773	1994	2105
	80.70	0.580	14.73	12.059		14.374	28.047	14.185	23.808	4.516	9.032	23.314	1282	1865	2098	2215
	85.00	0.608	15.44	12.003		14.374	28.047	14.236	24.950	4.516	9.032	24.386	1341	1951	2195	2317
	86.00	0.625	15.88	11.969		14.374	28.047	14.264	25.567	4.516	9.032	25.035	1377	2003	2253	2378
13 5/8 346.08	88.20	0.625	15.88	12.188	12.250	14.488	25.453	14.516	26.080	4.516	9.032	25.525	1400	2036	2291	2418
14 355.6	82.50	0.562	14.27	12.689	12.750	15.043	33.094	14.661	24.185	5.528	11.056	23.726	1305	1898	2135	2254
	86.00	0.600	15.24	12.613		15.043	33.094	14.732	25.822	5.528	11.056	25.258	1389	2021	2273	2400
	93.00	0.650	16.51	12.513		15.043	33.094	14.819	27.830	5.528	11.056	27.261	1499	2181	2453	2590
	94.80	0.656	16.66	12.501		15.043	33.094	14.831	28.106	5.528	11.056	27.500	1513	2200	2475	2613
	99.00	0.688	17.48	12.437		15.043	33.094	14.886	29.393	5.528	11.056	28.773	1583	2302	2590	2733
	100.00	0.700	17.78	12.413		15.043	33.094	14.906	29.853	5.528	11.056	29.248	1609	2340	2632	2779
	106.00	0.750	19.05	12.313		15.043	33.094	14.990	31.840	5.528	11.056	31.220	1717	2498	2810	2966
	114.00	0.800	20.32	12.213	12.250	15.043	33.094	15.075	33.840	5.528	11.056	33.175	1820	2648	2978	3144
16 406.4	65.00	0.375	9.53	15.063		17.000	31.414	16.524	18.871	5.212	10.424	18.408	1012	1473	1657	1749
	75.00	0.438	11.13	14.937		17.000	31.414	16.638	21.846	5.212	10.424	21.414	1178	1713	1927	2034
	84.00	0.495	12.57	14.823		17.000	31.414	16.744	24.633	5.212	10.424	24.112	1326	1929	2170	2291
	84.80	0.500	12.70	14.813		17.000	31.414	16.752	24.839	5.212	10.424	24.347	1339	1948	2191	2313
	94.50	0.562	14.27	14.689	14.750	17.000	37.602	16.630	27.826	5.843	11.686	27.257	1499	2181	2453	2589
	104.00	0.625	15.88	14.563		17.000	37.602	16.744	30.819	5.843	11.686	30.189	1660	2415	2717	2868
	109.00	0.656	16.66	14.501		17.000	37.602	16.799	32.271	5.843	11.686	31.622	1739	2530	2846	3004
	128.00	0.781	19.84	14.251		17.000	37.602	17.020	38.127	5.843	11.686	37.341	2054	2987	3361	3547

A: Alternative drift

1000 lb. = 4.44822 kN

Minimum internal yield pressure are calculated from API Bul. 5 C 3 section 3, formula 3.1.1.

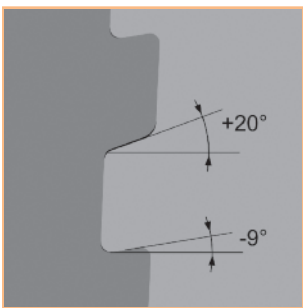
(1000 lb.)			External pressure resistance (psi)						Minimum internal yield pressure (psi)						Nominal weight	Size (OD)	
	110 ksi	125 ksi	55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	55 ksi	80 ksi	90 ksi	95 ksi	110 ksi	125 ksi	lb./ft.	inch mm	
	1128	1282	2020	2370	2450	2470	2470	2470	3520	5120	5760	6080	7040	800	36.00	244.48	
	1260	1432	2570	3080	3260	3330	3470	3530	3950	5745	6464	6823	7900	8977	40.00		
	1381	1570	3250	3810	4010	4130	4410	4620	4350	6327	7118	7514	8700	9886	43.50		
	1493	1697	3890	4760	4990	5090	5300	5630	4720	6865	7724	8153	9440	10727	47.00		
	1710	1943	5130	6620	7110	7340	7950	8440	5450	7927	8918	9414	10900	12386	53.50		
	1857	2110	5990	7900	8560	8880	9770	10540	5950	8655	9736	10277	11900	13523	58.40		
	1898	2156	6230	8250	8970	9320	10280	11130	6090	8858	9965	10519	12180	13841	59.40		
	1944	2209	6500	8660	9440	9810	10860	11800	6250	9091	10227	10795	12500	14205	61.10		
	2079	2363	7140	9860	10800	11260	12570	13780	6720	9775	10996	11607	13440	15273	64.90		
	2244	2550	7750	11270	12600	13170	14820	16390	7340	10676	12011	12678	14680	16682	70.30		
	2244	2550	7900	11500	12930	13650	15400	17060	7500	10909	12273	12955	15000	17045	71.80		
	1882	2139	5860	7700	9490	8650	9490	10220	5874	8544	9612	10146	11747	13349	59.20		9 3/4
	1924	2186	6090	8050	8740	9070	9990	10800	6012	8745	9838	10384	12024	13663	60.20	247.65	
	1998	2270	6230	8260	8980	9320	10290	11140	6092	8861	9968	10522	12184	13845	62.80	9 7/8	
	2105	2392	6830	9150	10000	10400	11560	12610	6443	9371	10543	11128	12885	14642	66.40	250.83	
	2155	2449	7030	9580	10480	10910	12160	13310	6608	9612	10814	11414	13217	15019	67.50		
	2219	2522	7240	10120	11100	11580	12940	14210	6823	9924	11165	11785	13646	15506	68.90		
	2272	2582	7440	10620	11670	12180	13650	15030	7018	10208	11484	12122	14035	15949	70.50		
	1258	1429	1580	1730	1730	1730	1730	1730	3134	4558	5128	5413	6267	712	40.50		273.05
	1431	1626	2090	2470	2560	2590	2610	2610	3581	5209	5860	6186	7163	8140	45.50		
	1602	1820	2700	3210	3410	3490	3660	3740	4029	5860	6593	6959	8058	9157	51.00		
	1754	1993	3390	4020	4170	4290	4610	4850	4432	6447	7252	7655	8864	10073	55.50		
	1922	2184	4160	5160	5460	5580	6070	6700	4880	7098	7985	8428	9759	11090	60.70		
	2088	2373	4920	6310	6760	6960	7510	7920	5327	7749	8717	9202	10655	12108	65.70		
	2141	2433	5170	6670	7170	7410	8030	8520	5471	7957	8952	9449	10941	12433	66.15		
	2340	2660	6100	8060	8760	9090	10010	10820	6017	8752	9846	10393	12033	13674	73.20		
	2460	2796	6670	8910	9720	10110	11220	12210	6348	9233	10388	10965	12696	14427	76.10		
	2541	2887	7000	9480	10370	10800	12030	13160	6572	9559	10754	11351	13144	14936	79.20		
	1474	1675	1510	1630	1630	1630	1630	1630	3072	4468	5027	5306	6144	6981	47.00	11 3/4	
	1701	1933	2070	2440	2530	2550	2570	2570	3563	5183	5831	6155	7127	8098	54.00		
	1903	2163	2660	3170	3360	3440	3600	3680	4006	5826	6555	6919	8011	9104	60.00		
	2070	2352	3290	3870	4060	4180	4470	4690	4374	6363	7158	7556	8749	9941	65.00		
	2246	2553	3970	4880	5130	5240	5470	5760	4767	6934	7801	8235	9535	10835	71.00		
	1706	1939	1130	1140	1140	1140	1140	1140	2735	3978	4475	4723	5469	6215	54.50		13 3/8
	1924	2186	1540	1670	1670	1670	1670	1670	3094	4501	5064	5345	6189	7033	61.00		
	2139	2431	1950	2260	2320	2330	2330	2330	3454	5024	5652	5966	6908	7850	68.00		
	2284	2596	2230	2660	2790	2820	2880	2880	3699	5380	6053	6389	7398	8407	72.00		
	2438	2770	2580	3090	3270	3340	3490	3550	3958	5757	6477	6836	7916	8995	77.00		
	2565	2914	2950	3450	3680	3780	4000	4140	4174	6071	6830	7209	8348	9486	80.70		
	2682	3048	3300	3880	4060	4180	4470	4690	4375	6364	7160	7557	8751	9944	85.00		
	2754	3129	3510	4190	4350	4420	4760	5030	4498	6542	7360	7769	8995	10222	86.00		
	2800	3182	3360	3980	4140	4260	4570	4800	4415	6422	7225	7626	8830	10034	88.20	13 5/8	
	2610	2966	2420	2940	3100	3150	3270	3300	3864	5620	6323	6674	7728	8781	82.50	14	
	2778	3157	2870	3370	3590	3680	3880	4010	4125	6000	6750	7125	8250	9375	86.00	355.6	
	2999	3408	3460	4120	4260	4370	4690	4950	4469	6500	7313	7719	8938	10156	93.00		
	3025	3438	3530	4220	4380	4450	4790	5060	4510	6560	7380	7790	9020	10250	94.80		
	3165	3597	3900	4780	5020	5120	5330	5660	4730	6880	7740	8170	9460	10750	99.00		
	3217	3656	4040	4990	5260	5380	5630	5890	4813	7000	7875	8313	9625	10938	100.00		
	3434	3903	4630	5870	6260	6440	6880	7200	5156	7500	8438	8906	10313	11719	106.00		
	3640	4137	5220	6750	7260	7500	8130	8650	5500	8000	9000	9500	11000	12500	114.00		
	2025	2301	630	630	630	630	630	630	2256	3281	3691	3896	4512	512	65.00		16
	2356	2677	1020	1020	1020	1020	1020	1020	2635	3833	4312	4551	5270	5988	75.00		
	2652	3014	1410	1480	1480	1480	1480	1480	2978	4331	4873	5143	5955	6768	84.00		
	2678	3043	1440	1530	1530	1530	1530	1530	3008	4375	4922	5195	6016	6836	84.80		
	2998	3407	1870	2140	2190	2190	2190	2190	3381	4918	5532	5840	6762	7684	94.50		
	3321	3774	2300	2770	2900	2950	3020	3030	3760	5469	6152	6494	7520	8545	104.00		
	3478	3953	2560	3070	3250	3320	3460	3520	3946	5740	6458	6816	7893	8969	109.00		
	4108	4668	3850	4700	4930	5020	5240	5570	4698	6834	7688	8115	9396	10678	128.00		

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

Safer. Faster. Stronger: **DINO VAM**[®]

Safer:

- Better stabbing, less handling, increased safety
- Compliant with environmental friendly thread compounds



3 Thread Per Inch
Designed for no
cross-threading

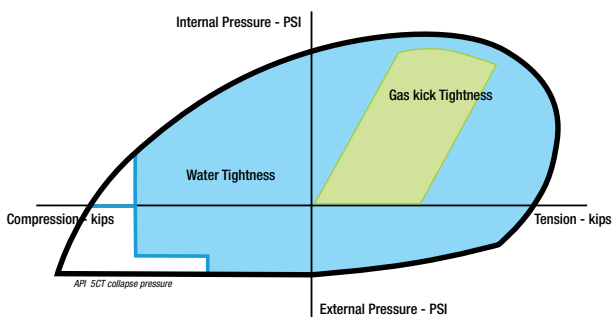
Faster:

- Easy stabbing
- No cross threading, tolerates misalignment
- Quicker to make-up than BTC
- Make-up controlled though Pin-to-Pin shoulder

Stronger:

- High galling resistance, even for critical grades
- Immune to jump-in / jump-out
- 100% tensile efficiency for all sizes
- Better sealing performances than a BTC
- Tested for tightness to gas kicks

Service Load Envelope

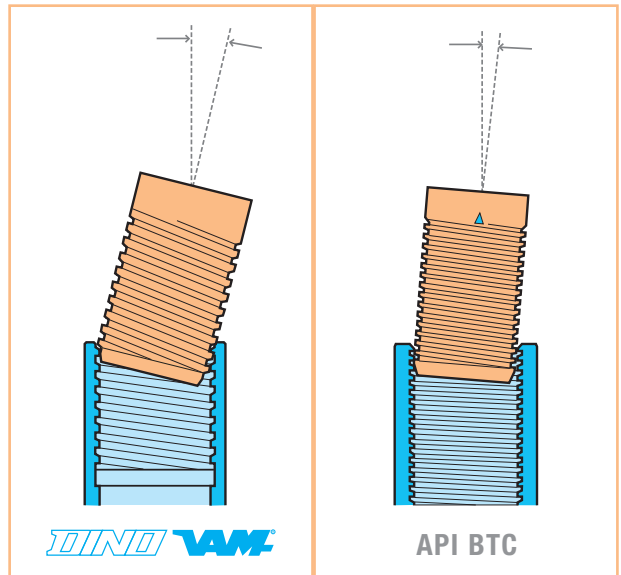


13 3/8" 72# DINO VAM - 12 1/4" drift - intermediate casing
Test report available upon request

BENEFITS

- Increased safety on the rig floor with better stabbing
- Reduced running time by 30% compared with API Buttress
- Can be run without torque / turn equipment

+40 % allowable misalignment!



Field proven:

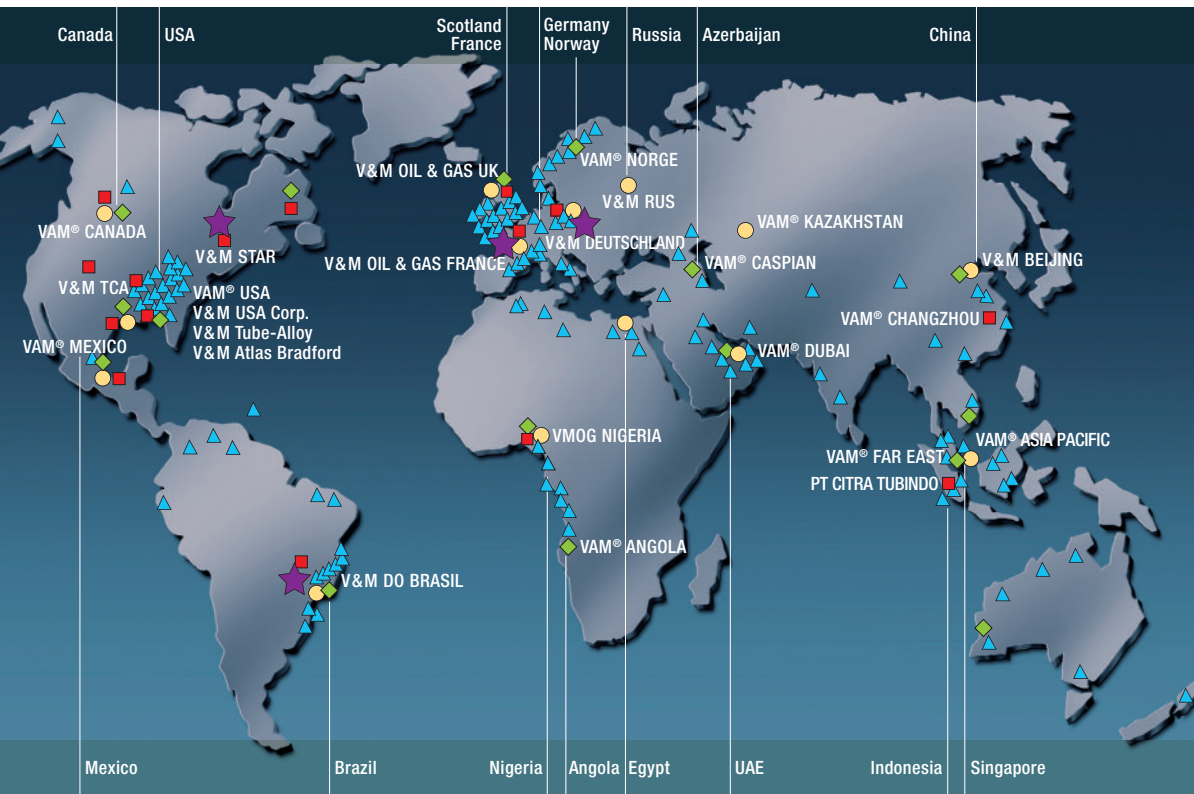
Rig trial	Running 3.300 ft of 13 3/8" 72# K55 mixed string of DINO VAM and BTC	
	DINO VAM	13.0 joints / hour
	BTC	9.6 joints / hour



Field records

- Successful field experience for 10 years
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