

# VAM Family of Products for Unconventional Drilling



DWC/C



VAM SG



VAM TOP HT



DWC/C-HT

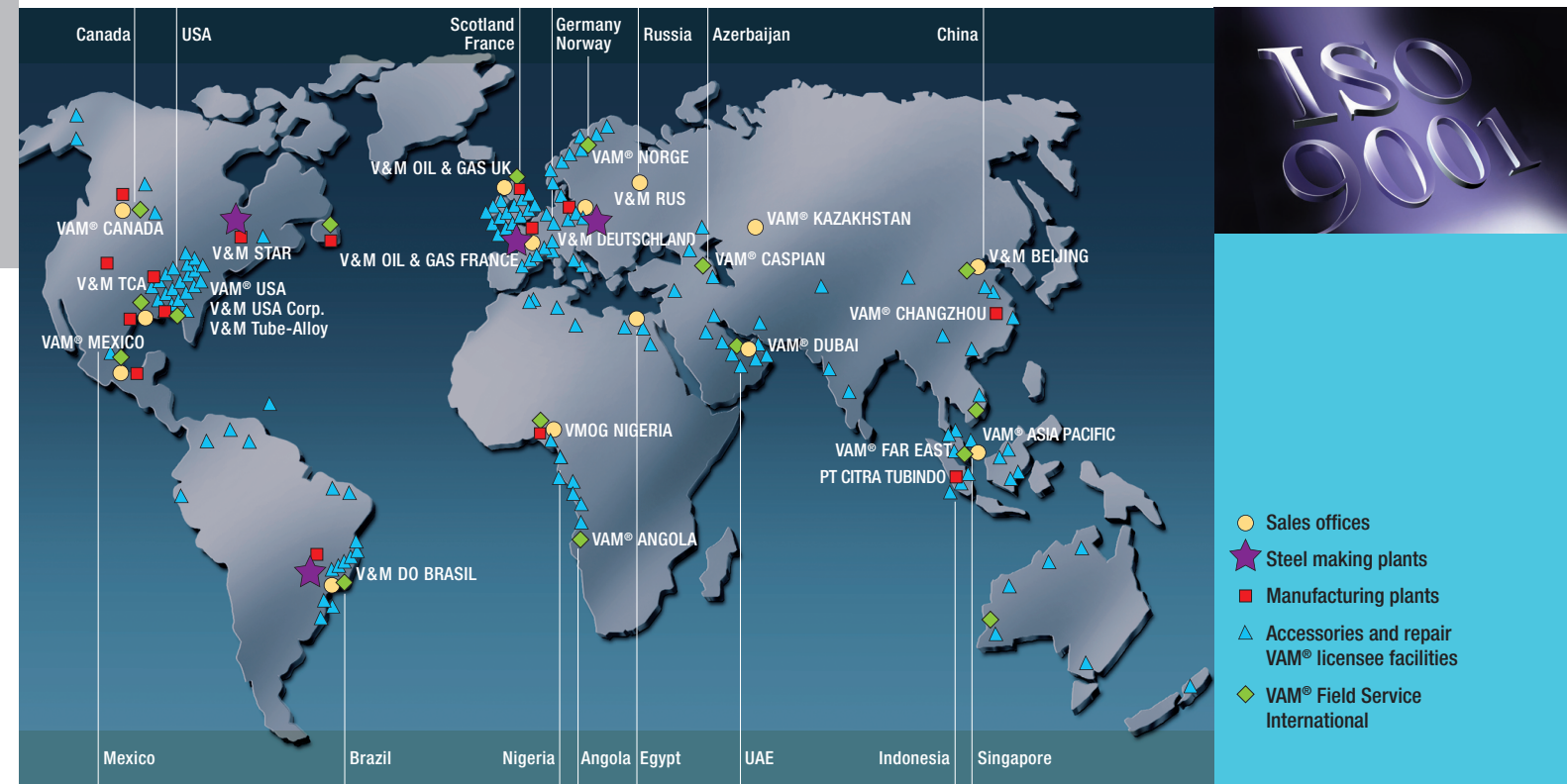


VAM SFC



VAM 21 HT

## Our worldwide network for your success



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DWC/C

Proven in the lab.  
Proven in the field.



- 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
- VAM® BOLT
- DWC/C™

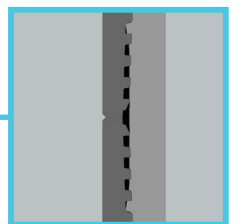
VAM USA

DWC/C



**Modified API buttress thread form**

- Widely accepted thread form
- Easily run
- Improved pressure resistance due to reduced thread flank clearances
- Thread sealing obtained with any API connection thread compound



**Pin-to-pin internal torque shoulder**

- Mill-end made up to position
- Field-end pin made up to a makeup torque
- Positive stop controls position of field-end pin
- Tight tolerances for torque shoulder control
- Adds preload into the shoulder for fatigue resistance

**Stress reduction groove**

- Patented stress reduction groove reduces the stresses in the coupling to enhance fatigue life
- Allows pin noses to shoulder without a long pin nose addition
- Allows for a shorter coupling compared to API BTC

**Optional Teflon® seal ring**

- All DWC models are offered with an optional seal ring groove
- Seal provided by entrapped seal ring
- Provides a reliable seal for the life of the string, unlike the thread seal which relies on solids in the thread compound to provide the sealing mechanism
- Seal ring modification does not affect the connection's tensile rating

Please visit our website:  
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 ✉ [VAMUSAsales@na.vallourec.com](mailto:VAMUSAsales@na.vallourec.com)  
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VAM USA





DWC/C is the original solution for casing rotation applications that exceeded API Buttress torque capabilities. Its validated performances make DWC/C the product of choice for drilling with casing and production casing in the Shales.

Every technical feature has been first proven in the lab and sequential field history supports that DWC/C benefits have been also proven in the field.

### PIN TO PIN SHOULDER FOR ENHANCED TORQUE CAPACITY

DWC/C is fully compatible with API BTC coupling dimensions.

The pin to pin shoulder offers the required rotational resistance for most of the Shale applications.

A controlled mill end make-up procedure ensures an easy and accurate field make-up.

### IMPROVED THREAD SEALING CAPABILITY VS. API BUTTRESS

An enhanced Buttress thread form ensures a superior thread sealing capability, while still maintaining interchangeability with the API buttress connection. In addition, an optional Teflon ring provides a reliable seal for the life of the string.

### SCIENTIFICALLY VALIDATED

#### Fatigue testing

Following an extensive Finite Element Analysis, comprehensive physical tests have been performed to correlate with the finding of the FEA.

All of the fatigue samples were tested to failure, validating the performance capability when subjected to down hole conditions that are experienced during production casing installation.

#### BENEFITS

- Sound economics
- High resistance to cyclic torsional loads
- Superior sealing capability while subjected to dramatic cyclic loads
- Enhanced fatigue resistance
- Field friendly running procedures

#### Torque to failure

Torque-to-failure testing was also conducted to verify the torsional limits of the connection.

#### Up to 100% compression resistance

DWC/C compression capacity has been validated as being the same as the tension capacity. This new validation allows operators to utilize DWC/C in deviated wells where excessive torque, tension, and compression are required.

#### SUCCESSFUL RUNNING SINCE 2000

More than 10 years of experience make a huge difference. DWC/C has been widely adopted by end-users as the best alternative to API Buttress connections.

Size OD	Nominal Weight	Wall Thickness	Nominal ID	Drift Diameter	Coupling OD	Coupling Length	Makeup Loss	Pipe Body Area	Connection Tension Area	Connection Tension Efficiency	Connection Compression Efficiency	Connection Internal Pressure (psi)				Joint Strength (kips)				Connection Torque (ft-lbs)											
												J/K-55	L-80	P-110	Q-125	J/K-55	L-80	P-110	Q-125	J/K-55			L-80			P-110			Q-125		
												Min	Max	Yield	Min	Max	Yield	Min	Max	Yield	Min	Max	Yield	Min	Max	Yield					
3.500	7.70	0.216	3.068	2.943	4.250	6.750	3.38	2.228	2.228	100.0	100.0	5,940	8,640	11,880	13,500	123	178	245	279	2,400	2,500	2,700	2,700	3,000	3,300	3,200	3,600	4,000	3,500	3,900	4,300
	9.20	0.254	2.892	2.867	4.250	6.750	3.38	2.260	2.260	100.0	100.0	6,890	10,160	13,970	15,880	142	207	285	324	2,900	3,100	3,400	3,400	3,800	4,200	4,100	4,700	5,200	4,500	5,100	5,700
	10.20	0.282	2.922	2.797	4.250	6.750	3.38	2.915	2.915	100.0	100.0	7,950	11,560	15,900	18,060	160	233	321	364	3,300	3,700	4,000	4,000	4,500	5,000	4,900	5,600	6,200	5,300	6,100	6,900
	12.70	0.375	2.750	2.625	4.250	6.750	3.38	3.682	3.682	100.0	100.0	10,310	15,000	20,630	23,440	202	295	405	460	4,300	4,800	5,300	5,400	6,100	6,800	6,600	7,600	8,600	7,200	8,400	9,500
	10.50	0.224	4.052	3.927	5.000	7.875	3.94	3.009	3.009	100.0	100.0	4,790	6,970	10,890	166	241	331	376	360	4,100	4,400	4,400	4,400	5,000	5,300	5,200	5,800	6,500	5,600	6,300	7,000
4.500	11.60	0.250	4.000	3.875	5.000	7.875	3.94	3.338	3.338	100.0	100.0	5,360	7,780	10,690	12,150	184	267	367	417	4,300	4,800	5,200	5,200	5,800	6,400	6,200	7,100	7,900	6,800	7,700	8,600
	12.60	0.271	3.958	3.833	5.000	7.875	3.94	3.600	3.600	100.0	100.0	5,800	8,430	11,590	13,170	198	288	396	450	4,800	5,300	5,800	5,800	6,500	7,200	7,000	8,000	9,000	7,600	8,700	9,800
	13.50	0.290	3.920	3.795	5.000	7.875	3.94	3.836	3.836	100.0	100.0	6,200	9,020	12,410	14,100	211	307	422	479	5,200	5,700	6,300	6,300	7,100	7,900	7,700	8,800	9,900	8,400	9,700	10,900
	15.10	0.337	3.826	3.701	5.000	7.875	3.94	4.407	4.348	98.7	98.7	6,730	9,790	13,460	15,300	239	348	478	544	6,100	6,800	7,500	7,500	8,600	9,700	9,400	10,800	12,200	10,300	11,900	13,500
	18.00	0.296	4.408	4.283	5.563	8.125	4.06	4.374	4.374	100.0	100.0	5,700	8,290	11,400	12,950	241	350	481	547	6,900	7,600	8,300	8,400	9,400	10,400	10,200	11,600	12,900	11,000	12,600	14,200
5.000	18.00	0.362	4.276	4.151	5.563	8.125	4.06	5.275	5.275	100.0	100.0	6,810	9,910	13,620	15,480	290	422	580	659	8,600	9,600	10,500	10,700	12,100	13,500	13,100	15,100	17,000	14,400	16,600	18,800
	20.30	0.408	4.184	4.059	5.563	8.125	4.06	5.886	5.466	92.9	92.9	6,810	9,910	13,620	15,480	301	437	601	683	9,700	10,800	12,000	12,100	13,800	15,500	15,100	17,400	19,700	16,500	19,100	21,800
	20.80	0.422	4.156	4.031	5.563	8.125	4.06	6.069	5.466	90.1	90.1	6,810	9,910	13,620	15,480	301	437	601	683	10,000	11,200	12,400	12,600	14,300	16,100	15,600	18,000	20,400	17,200	19,900	22,600
	21.40	0.437	4.126	4.001	5.563	8.125	4.06	6.264	5.466	87.3	87.3	6,810	9,910	13,620	15,480	301	437	601	683	10,300	11,600	12,900	13,000	14,800	16,700	16,200	18,700	21,300	17,800	20,700	23,600
	23.20	0.478	4.044	3.919	5.563	8.125	4.06	6.791	5.466	80.5	80.5	6,810	9,910	13,620	15,480	301	437	601	683	11,200	12,600	14,000	14,200	16,300	18,300	17,800	20,600	23,500	19,600	22,800	26,000
5.500	24.10	0.500	4.000	3.875	5.563	8.125	4.06	7.069	5.466	77.3	77.3	6,810	9,910	13,620	15,480	301	437	601	683	11,700	13,100	14,600	14,800	17,000	19,200	18,600	21,600	24,500	23,900	27,300	
	15.50	0.275	4.950	4.825	6.050	8.250	4.13	4.514	4.514	100.0	100.0	4,810	7,000	9,630	10,940	248	361	497	564	7,000	7,700	8,400	8,500	9,600	10,600	10,400	11,800	13,300	11,300	12,900	14,600
	17.00	0.304	4.892	4.767	6.050	8.250	4.13	4.962	4.962	100.0	100.0	5,320	7,740	10,640	12,090	273	397	546	620	7,900	8,800	9,700	9,800	11,000	12,300	12,000	13,800	15,500	13,100	15,100	17,100
	20.00	0.361	4.778	4.653	6.050	8.250	4.13	5.828	5.828	100.0	100.0	6,180	8,990	12,360	14,050	321	466	641	729	9,600	10,800	12,000	12,100	13,800	15,500	15,100	17,400	19,800	16,600	19,300	21,900
	23.00	0.415	4.670	4.545	6.050	8.250	4.13	6.630	5.898	89.0	89.0	6,180	8,990	12,360	14,050	324	472	649	737	11,100	12,600	14,000	14,200	16,300	18,400	17,800	20,700	23,600	19,700	23,000	26,200
6.625	26.00	0.476	4.548	4.423	6.050	8.250	4.13	7.513	5.898	78.5	78.5	6,180	8,990	12,360	14,050	324	472	649	737	12,700	14,400	16,200	16,400	18,900	21,400	20,800	24,200	27,700	23,000	26,900	30,800
	26.80	0.500	4.500	4.375	6.050	8.250	4.13	7.854	5.898	75.1	75.1	6,180	8,990	12,360	14,050	324	472	649	737	13,300	15,100	17,000	17,200	19,900	22,500	21,900	25,500	29,200	24,200	28,400	32,600
	20.00	0.288	6.049	5.924	7.390	8.625	4.31	5.734	5.734	100.0	50.0	4,180	6,090	8,370	9,510	315	459	631	717	9,700	10,900	12,000	12,100	13,800	15,400	15,000	17,300	19,500	16,500	19,000	21,600
	23.20	0.330	5.965	5.840	7.390	8.625	4.31	6.526	6.526	100.0	50.0	4,790	6,970	9,590	10,900	359	522	718	816	11,700	13,100	14,600	14,800	16,900	19,000	18,500	21,400	24,400	20,400	23,700	27,000
	24.00	0.352	5.921	5.796	7.390	8.625	4.31	6.937	6.937	100.0	50.0	5,110	7,440	10,230	11,620	392	555	763	867	12,600	14,300	15,900	16,100	18,500	20,900	20,300	23,600	26,800	22,400	26,100	29,900
7.000	28.00	0.417	5.791	5.666	7.390	8.625	4.31	8.153	8.153	100.0	50.0	6,090	8,810	12,120	13,770	447	651	896	1,017	15,400	17,500	19,700	19,900	23,000	26,100	25,500	29,600	33,900	28,100	32,900	37,700
	29.00	0.432	5.761	5.636	7.390	8.625	4.31	8.405	8.405	100.0	50.0	6,290	9,130	12,550	14,260	462	672	925	1,051	16,000	18,300	20,500	20,800	24,000	27,300	26,500	31,000	35,400	29,300	34,400	39,500
	32.00	0.475	5.675	5.550	7.390	8.625	4.31	9.177	9.177	100.0	50.0	6,750	9,820	13,500	14,780	505	734	1,010	1,147	17,700	20,300	22,800	23,100	26,800	30,600	29,600	34,700	39,800	32,900	38,700	44,500
	35.00	0.525	5.575	5.450	7.390	8.625	4.31	10.061	9.637	95.8	47.9	6,750	9,820	13,500	14,780	530	771	1,060	1,205	19,600	22,500	25,400	25,800	30,000	34,200	33,200	38,900	44,700	36,800	43,400	50,000
	23.00	0.317	6.366	6.250	7.656	9.000	4.50	6.655	6.655	100.0	50.0	4,360	6,340	8,720	9,910	366	532	732	832	11,500	13,000	14,500	14,700	16,800	18,900	18,400	21,400	24,300	20,300	23,600	27,000
7.625	26.00	0.362	6.276	6.151	7.656	9.000	4.50	7.549	7.549	100.0	50.0	4,980	7,240	9,96																	