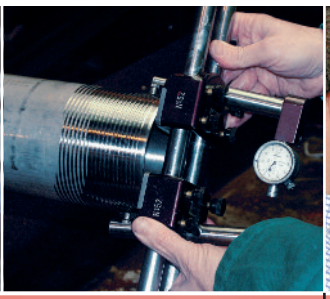
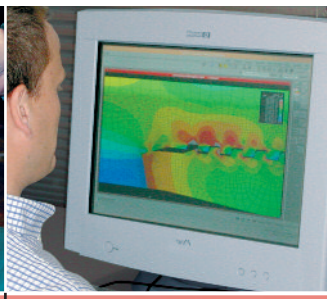
VAM® MUST

When success is a MUST

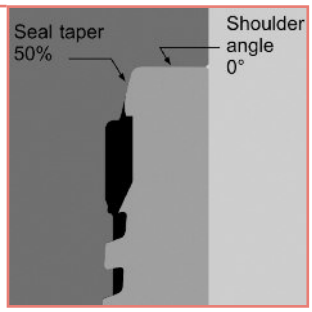


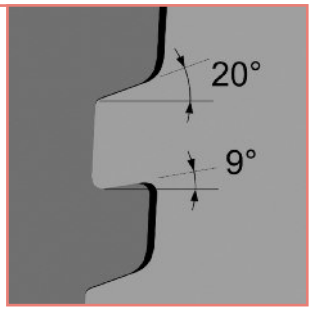
VAM® 21
VAM® TOP
VAM® TOP HC
VAM® TOP HT
VAM® SLIJ II
VAM® FJL
VAM® HTF
DINO VAM®
BIG OMEGA™
VAM® TOP FE
VAM® HW ST
VAM® MUST

SUMITOMO METALS

External seal geometry

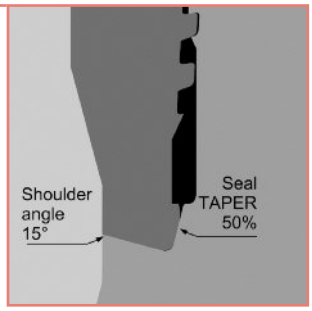


Thread form



Ø 7 5/8″ – 5 TPI
Ø 10 3/4″ – 5 TPI
Taper 10%

Internal seal geometry



VAM® MUST is a flush premium casing for shifting salt domes and high-collapse applications. As VAM® MUST has same OD as the couplings of the associated T&C casing for the same drift requirement, it may therefore be inserted in a casing string only in the section of the high-collapse pressure area without changing any drilling parameters. VAM® MUST is the reference for salt dome applications.

BENEFITS

- **Heavier wall thickness for maximum collapse resistance**
- **Gas-tight under combined load with external pressure**
- **Internally and externally flush**
- **Increased wall thickness but same drift and same clearance as the associated T&C casing**

Integral flush design

- VAM® MUST is an integral connection threaded on coupling stock mother pipes with the OD of the couplings of the casing string used. Typically 10 3/4″ ODs with 9 5/8″ strings or 7 5/8″ ODs with 7″ strings.
- 100% tension joint efficiency under tension compared to the associated T&C casing string.

Multiple seal system

- An external seal and an internal seal work independently of each other to achieve sealing against internal pressure and external pressure up to 100% of the rated burst and collapse for the coupling stock mother pipe body.

Improved thread design

- Thread load flank has a 9° reverse angle to resist jump-out.
- Thread stabbing flank has a 20° angle for fast, trouble-free make-up.

Internal reverse angle torque shoulder

- The reverse angle torque shoulder provides a positive torque stop, which allows accurate power-tight make-up.
- The reverse angle of the shoulder increases the internal seal contact pressure achieving excellent gas-tightness under internal pressure.
- The combination of the reverse angle torque shoulder and the 9° load flank of the threads creates a "wedge" effect which improves the structural strength of the connection.

Streamlined internal and external profile

- The OD and ID is 100% flush (no upset).
- The ID is bored and recess-free for smooth, efficient flow.
- The OD is turned to tight tolerance.

Connection 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	Pipe							Connection		Connection Yield Strength (1000 lb.)			External pressure (psi)**			Minimum Internal Yield Pressure (psi)**			Size (OD)
		Plain End Weight	Wall Thickness		I.D. Nominal	Drift Diameter	Pin I.D.	Pin Length	Joint C.C.S.*	Joint tensile Efficiency										
Inch mm	lb./ft.	lb./ft	inch	mm	Inch	Inch	Inch	Inch	sq. in.	%	80 ksi	95 ksi	110 ksi	80 ksi	95 ksi	110 ksi	80 ksi	95 ksi	110 ksi	Inch mm
7 5/8	55.30	55.07	0.750	19.05	6.125	6.000	6.315	5.294	9.153 P	57	732	870	1007	14190	16850	19510	13770	16350	18930	**7 5/8**
193.68	59.20	59.08	0.812	20.62	6.001	5.876	6.201	5.857	10.029 P	58	802	953	1103	15220	18080	20930	14910	17700	20500	**193.68**
10 3/4	109.00	107.20	1.033	26.24	8.684	8.528	8.937	6.289	17.723 P	56	1418	1684	1950	13900	16500	19110	13450	15980	18500	**10 3/4**
273.05																				**273.05**

** Joint C. C. S. = Joint Critical Cross Section*
P= Pin

1000 lb = 4.44822 Kn
1 ksi = 1000 psi
1 psi = 0.006895 Mpa
0.06895 bar

*** External pressure equal to collapse pressure calculated from API Bul. 5 C 3 Section 1. Minimum Internal Yield Pressure are calculated from API Bul 5C 3 section 3, formula 3.1.1.*

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.

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.

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.

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