



GENERAL PRODUCT SHEET

Inflatable Casing Annulus Packer (CAP) with Deadbolt™

PRODUCT DESCRIPTION:

The Casing Annulus Packer (CAP) with Deadbolt™ valve system is run as an integral part of the casing string and inflated to provide an annular seal between the casing and open hole or previous casing string. The Deadbolt™ valve system is integrated into the Inflation Sub of the inflatable CAP to control the inflation process and prevent any leaks in the casing mandrel.

CAPs can inflate to greater than 2.5 times their run-in diameters. A CAP can be inflated by straddling the inflation port or by simply applying pressure to the entire casing string. Internal pressure activates the Deadbolt™ valve system which prevents the CAP from inflating early and traps pressure inside of the Inflation Element. At any time during the inflation process, pressure can be increased to activate the Deadbolt™ locking valve and isolate the casing string from the annulus. This fail-safe mechanism shuts off any potential leak paths in the casing mandrel, eliminating risk to casing integrity.

Customers may supply premium threaded pup joints of their casing to TAM and have the inflatable CAP built on their pipe. This maintains complete integrity and traceability in their casing string, especially for critical well completions using exotic metals. The greatest advantage is that CAPs enhance customer flexibility in planning a completion.

PROVIDE SOLUTIONS FOR:

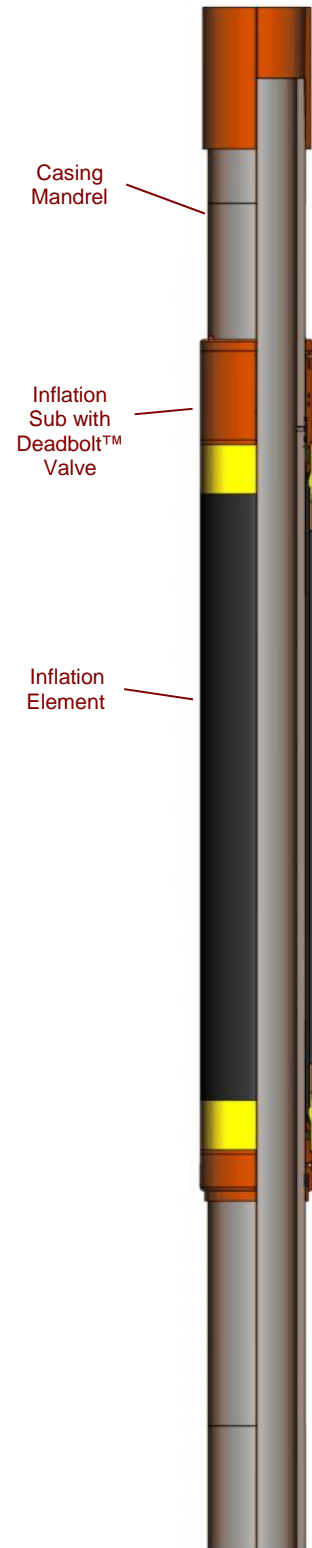
- Two-stage cementing
- Annular gas migration
- Wellbore compartmentalization
- One trip, off bottom cement operations
- Annular isolation for multi-stage fracture treatments
- Water shut off or cement squeeze in open hole
- Cement support in low pressure zones

FEATURES:

- Two distinct constructions:
 - The TAMCAP and LONGCAP products use high-strength stainless steel slats to reinforce the full length of the inflatable element from 3 ft to 10 ft
 - The XTRACAP product is partially reinforced the full length of the inflatable element from 5 ft to 20 ft, enabling the element to seal in irregular-shaped wellbores
- The Deadbolt™ SafeLok valve system can be run to provide security in extreme environments
- Ultra-slim designs are available for tight downhole applications
- Smart well completion features are available on request

BENEFITS:

- Constructed using a one-piece casing mandrel
- No hidden internal connections
- No welding to the casing mandrel during construction
- Deadbolt™ valve system
 - Maintains casing string integrity in low pressure zones
 - Provides delayed opening
 - Locks pressure inside Inflation Element

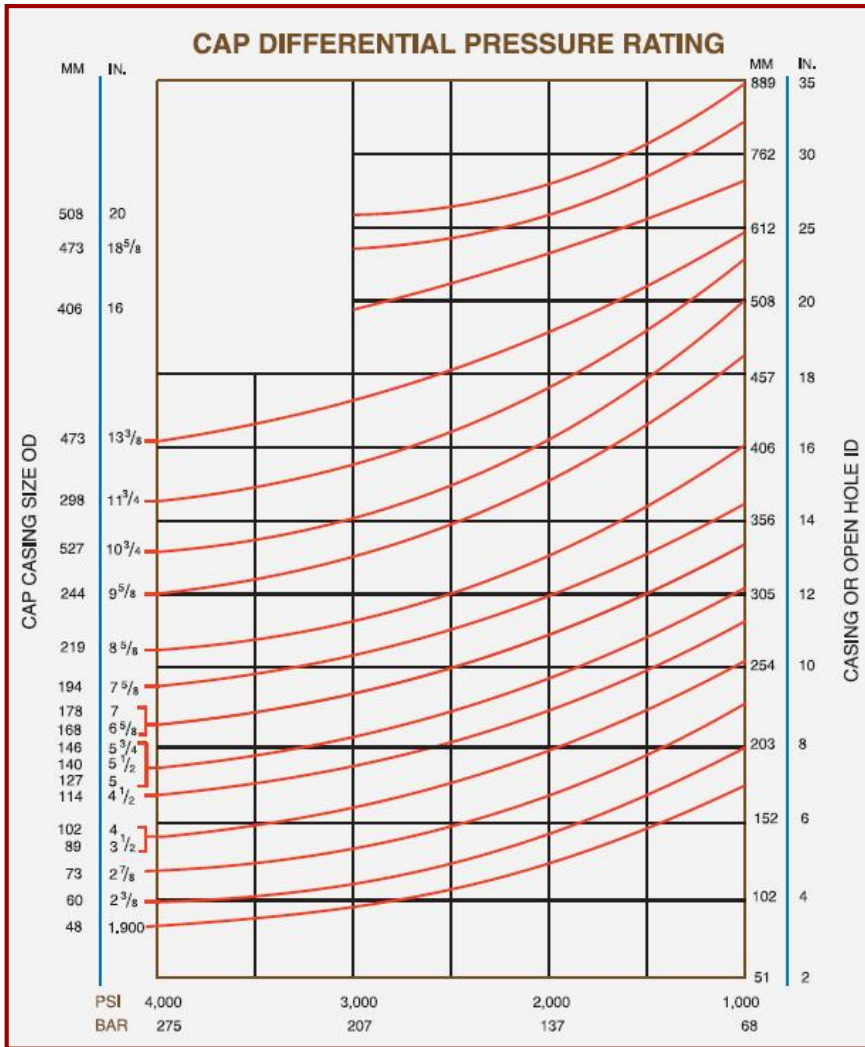




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TOOL SIZE AND DIFFERENTIAL PRESSURE RATING:

Use the chart by drawing a horizontal line from the casing or open hole ID on the right side of the chart to intersect the curve corresponding to the selected CAP casing size (OD). Drawing a vertical line to the bottom of the chart from the intersection defines the rated working pressure of the CAP. If anticipated differential pressures exceed the rated working pressure, the CAP must be inflated with a solidifying fluid such as cement, or operations must be changed to reduce the applied differential.



Casing Size		Element Outside Diameter	
(in.)	(mm)	(in.)	(mm)
1.90	48	3.06	78
2.38	60	3.50	89
2.88	73	4.00	102
3.50	89	4.63	118
4.00	102	5.13	130
4.50	114	5.56	141
5.00	127	6.06	154
5.50	140	6.56	167
6.63	168	7.69	195
7.00	178	8.06	205
7.63	194	8.75	222
8.63	219	10.25	260
9.63	244	10.88	276
10.75	273	12.75	324
11.75	298	13.75	349
13.38	340	15.25	387
16.00	406	18.50	470
18.63	473	20.63	524
20.00	508	23.00	584