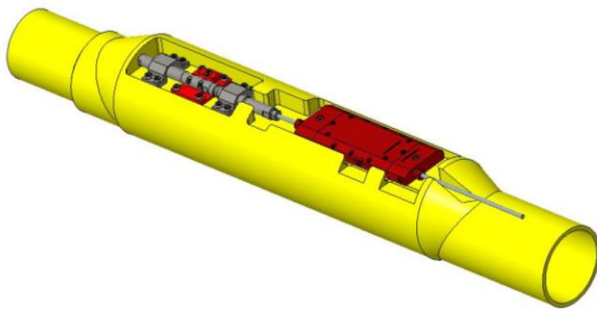


SmartMandrel with SmartPort P/T Gauge



SmartMandrel with SmartPort & Splitter Housing

Key Features

- Tubing and/or Annulus Pressure and Temperature Measurements
- Protects Full Length of Gauge
- No Welds
- All Metal-to-Metal Gauge to Mandrel Sealing
- Full Bore Access
- Designed to API5CT

About SmartMandrel

SmartMandrel is a gauge carrier mandrel, designed to API 5CT standards, for mounting SmartPort fiber optic PT gauge(s) on the completion's tubing string. SmartMandrel offers full mechanical protection during the Run-In-Hole process and after installation, ensuring long term reliability of the fibre optic (FO) PT gauge.

Tubing pressure and temperature is communicated to the FO gauge via a small pressure port on the body of the mandrel to the pressure inlet of the PT gauge. Sealing integrity between the SmartMandrel and SmartPort PT gauge is maintained with the use of dual metal-to-metal pressure testable seals.

Annulus pressure and temperature are simply measured by leaving the SmartPort pressure inlet port open to the annulus.

SmartMandrel can also accommodate a splitter housing (SmartSplit) for connecting the SmartPort to the downhole FO cable.

Dimensions and Ratings

The table below provides dimensional and rating information for gauge mandrels of various thread sizes, weights and materials. These ratings do not take into account the end connections so are best case.

Tubing connections may de-rate the figures therefore connection specifications should be checked to ascertain the actual values.

Tubing OD ¹ (in)	Nominal ID (in)	Weight ² (ppf)	Material	Mandrel OD ² (Single SmartPort) (in)	Mandrel OD ² (SmartPort + Splitter Housing) (in)	Internal Yield Pressure (psi)	Collapse (psi)	Tensile ³ (lbs.)
3 ½	2.867	9.2#	4140	4.850"	5.05"	10,160	10,540	207,000
3 ½	2.867	9.2#	13% Cr	4.850"	5.05"	10,160	10,540	207,000
3 ½	2.867	9.2#	Inconel 718	4.850"	5.05"	15,240	14,450	311,000
3 ½	2.625	12.7#	4140	4.850"	5.05"	15,000	15,310	295,000
3 ½	2.625	12.7#	13% Cr	4.850"	5.05"	15,000	15,310	295,000
3 ½	2.625	12.7#	Inconel 718	4.850"	5.05"	22,500	22,965	442,000
4 ½	3.833	12.6#	4140	5.722"	6.594"	8,430	7,500	288,000
4 ½	3.833	12.6#	13% Cr	5.722"	6.594"	8,430	7,500	288,000
4 ½	3.833	12.6#	Inconel 718	5.722"	6.594"	12,650	9,680	432,000
4 ½	3.795	13.5#	4140	6.1"	6.181"	9,020	8,540	307,000
4 ½	3.795	13.5#	13% Cr	6.1"	6.181"	9,020	8,540	460,000
4 ½	3.795	13.5#	Inconel 718	6.1"	6.181"	13,530	11,310	460,000
5 ½	4.767	17#	4140	6.1"	7.657"	7,740	6,290	397,000
5 ½	4.767	17#	13% Cr	6.1"	7.657"	7,740	6,290	397,000
5 ½	4.767	17#	Inconel 718	6.1"	7.657"	11,610	7,770	595,000

1. More pipe sizes and weights available on request.

2. Stated OD is an indication only based on current designs. Final OD will be confirmed after full requirements are known.

3. Material yield:

a. AISI 4140 and 13Cr (AISI 410 Mod SS), 80 ksi.
b. Inconel 718, 120 ksi.

Specifications may change without notice

Ordering Information

Product Type	Mandrel Configuration	SmartPort Type	Tubing Size	Material	Tube Connection Type	Thread Connection Type
S-Mandrel	- XX	- X	- XX	- XXX	- XXX	- XXX
	SP	I	2 7/8	4140	B/P	JFE-Lion, Bear
	SPSH	T	3 ½	13Cr	B/B	VAM Top
			4 ½	25Cr	P/P	Tenaris Hydril Blue
			5 ½	Inc718		New VAM
			7			CDC HTQ
						LTC

Order code example:

S-Mandrel-SP-T-7-4140-P/P-LTC

Variant Description	Variant Options	Variant Code
Mandrel Configuration	SmartPort Only	SP
	SmartPort with Splitter Housing	SPSH
SmartPort Type	In Line SmartPort	I
	Terminal SmartPort	T
Tubing Size	2 7/8" Tubing	2 7/8
	3 1/2" Tubing	3 1/2
	4 1/2" Tubing	4 1/2
	5 1/2" Tubing	5 1/2
	7" Tubing	7
Material	4140	4140
	13% Chrome	13Cr
	25% Chrome	25Cr
	Inconel 718	Inc718
Tube Connections Type	Box-Pin (Upper Connection - Female Thread Lower Connection - Male Thread)	B/P
	Box-Box (Upper Connection - Female Thread Lower Connection - Female Thread)	B/B
	Pin-Pin (Upper Connection - Male Thread Lower Connection - Male Thread)	P/P
Thread Connection Type	JFE-Lion, Bear	XXXXX
	VAM Top	
	Tenaris Hydril Blue	
	New VAM	
	CDC HTQ	
	LTC	
	(Other industry thread options available on request)	