PRE-MEASUREMENT DEVICE

Technical Data / Specification

Dimensions (overall)

Measurement Tool Length (back side bolt heads-scale edge)	30 % in
Width (pointer tip-opposite side handle tip)	13 in
Height (pin tip-flotation top)	43 in
Weight in Air	326 lbs
Weight in water	40 lbs

Measurement Pin

Length (back side bolt heads-scale edge)	29 in
Width (pointer tip-opposite side handle tip)	7.5 in
Height (pin tip-flotation top)	43.2 in
Weight in Air	28lbs
Weight in water	21 lbs
Depth Rating	10,000 ft
Nominal Measurement Length	70 ft
Maximum Measurement Length	200 ft
Elevation Angle	-/+ 26°

Hydraulic Performance

Hydraulic Fluid	Tellus32 or equivalent
Max Pressure Design	3,000 psi
Max Pressure Operating	1,500 psi
Min Operating Pressure	1,400 psi
Max Flow Design	3.0 gpm

Overview

The Pre-Measurement Tool (PMT) has been designed, fabricated, and tested to determine, through a taut-wire, the distances and elevations between two subsea structures. The primary use of the PMT is to determine the spool piece lengths required between a subsea manifold and the pipeline tie-in base. The PMT system takes a taut-wire measurement of up to 200ft at a maximum depth of 10,000 ft. The PMT assembly consists of two parts: the Measurement Tool (MT) and Measurement Pin (MP).

The deployed cable length is measured by passing the measurement cable over a calibrated measuring wheel. Pressure rollers ride over the cable and ensure the cable remains in contact with the measuring wheel at all times. Measuring wheel rotations are counted, and the length of cable paid out is obtained from the difference between the initial and final counter readings displayed on a mechanical counter.

The PMT is used as a relative measurement device rather than an absolute measurement device. When the subsea measurements (both linear and angular) are repeated with identical receptacles and measurement gear on the surface, the relative positions of the two subsea structures can be simulated to a high degree of accuracy.