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.