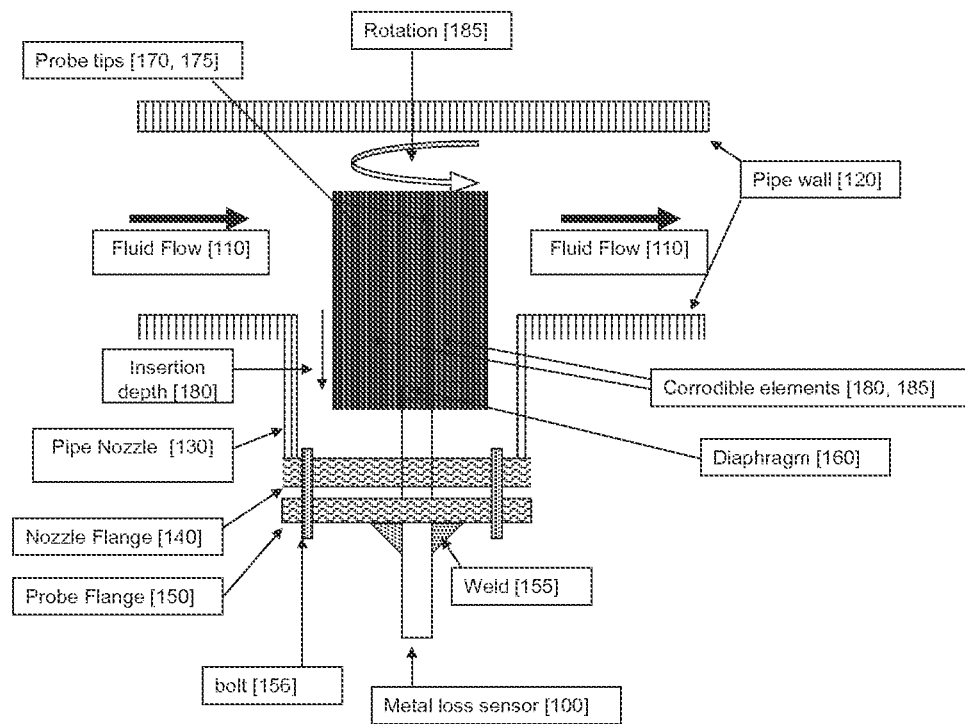


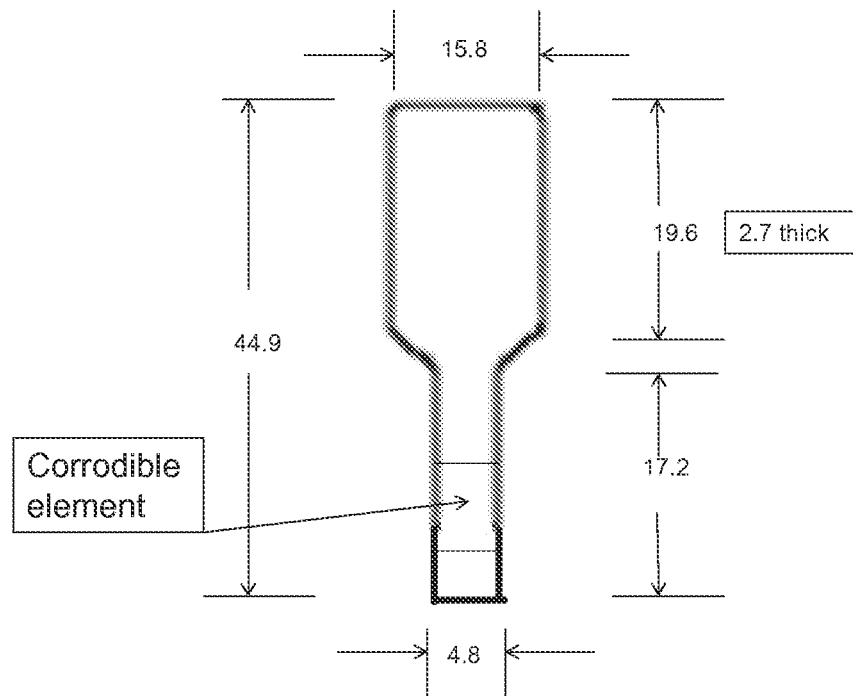
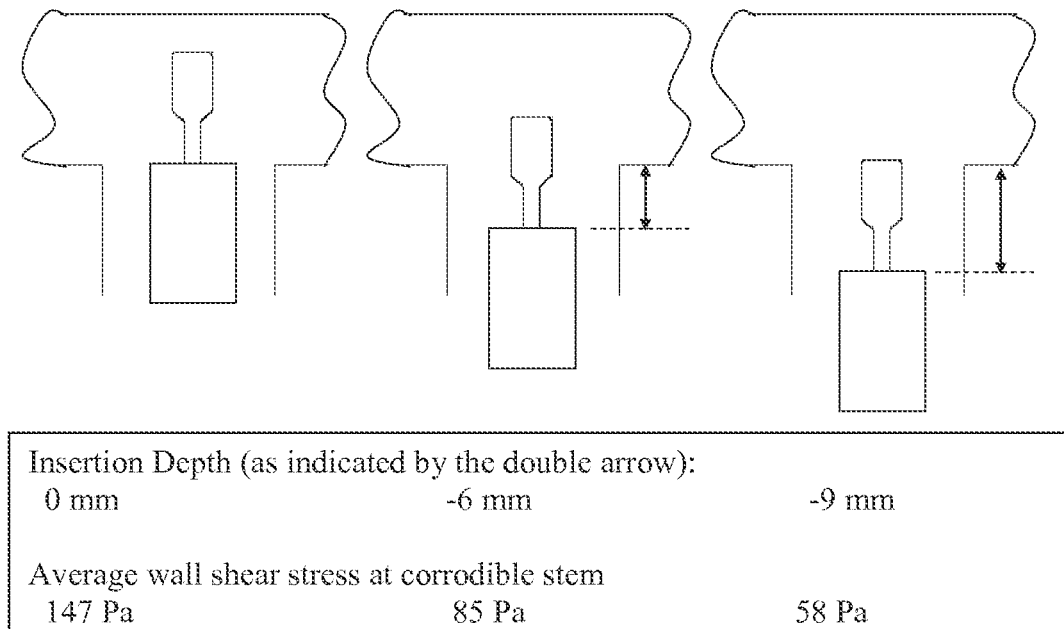
**Figure 1a**

Corrosion Sensor Inserted to a Specific Depth into the Process Fluid with  
Respect to a Pipe Wall using a Flange Mounting



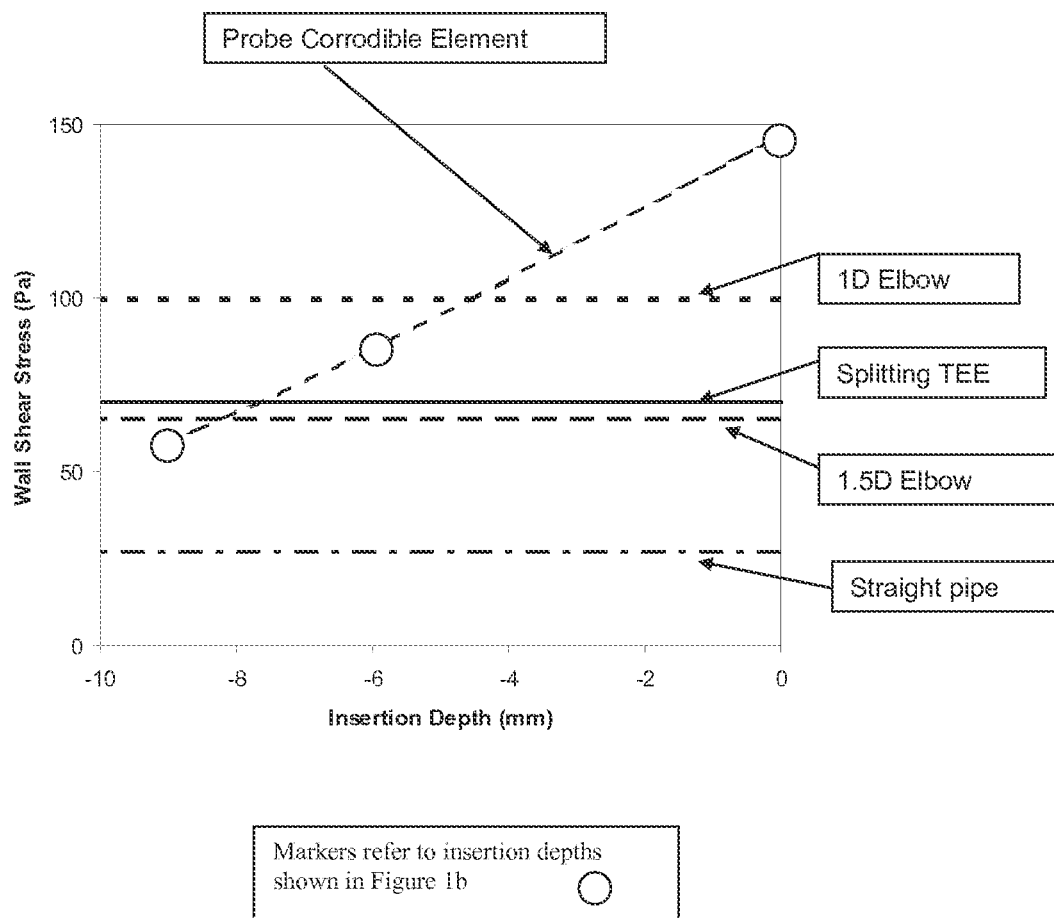
**Figure 1b**

Corrosion Probe Position Correlates with Wall Shear Stress



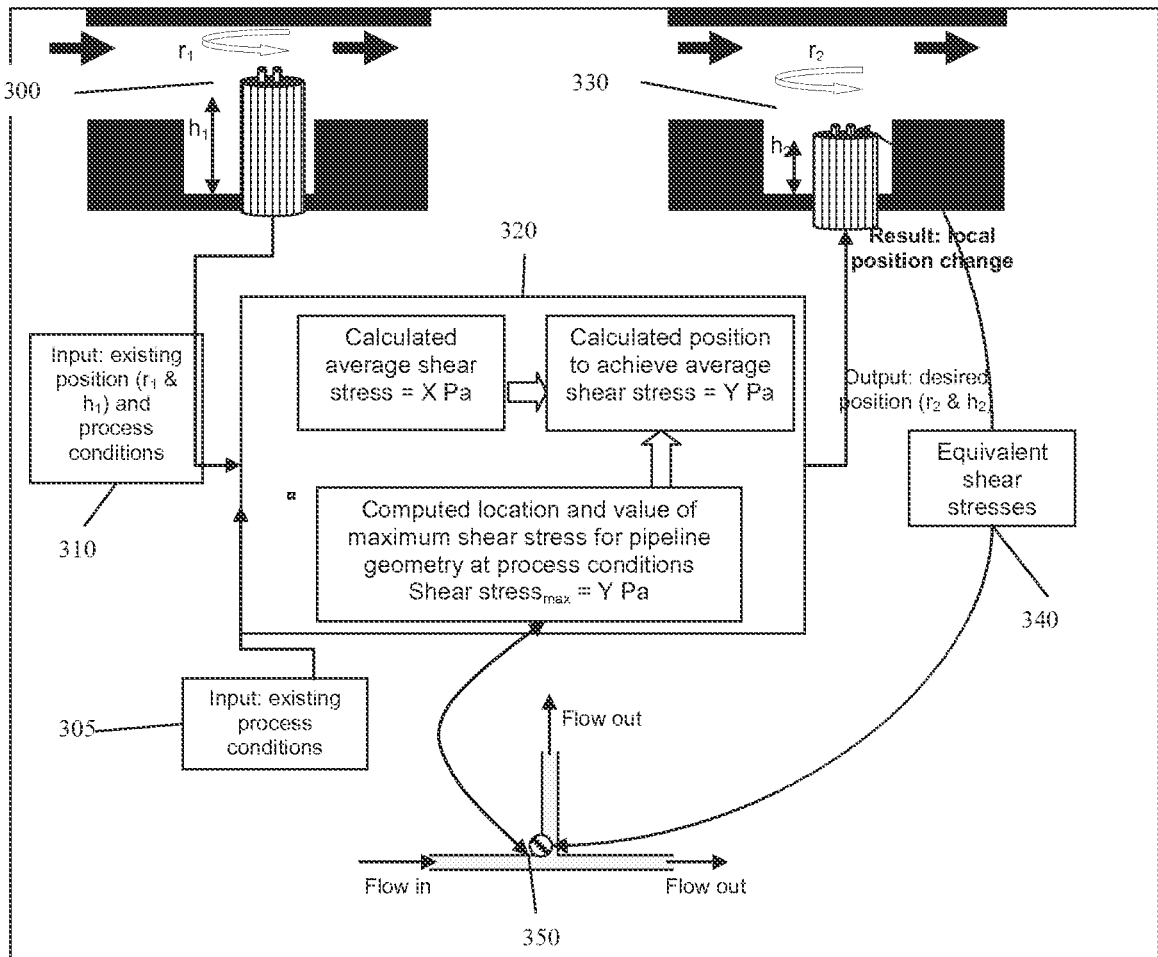
**Figure 2**

Examples of Wall Shear Stress on Various Piping Components Compared to the Wall Shear Stress at the Corrodible Elements of the Mechanical Oscillator



**Figure 3**

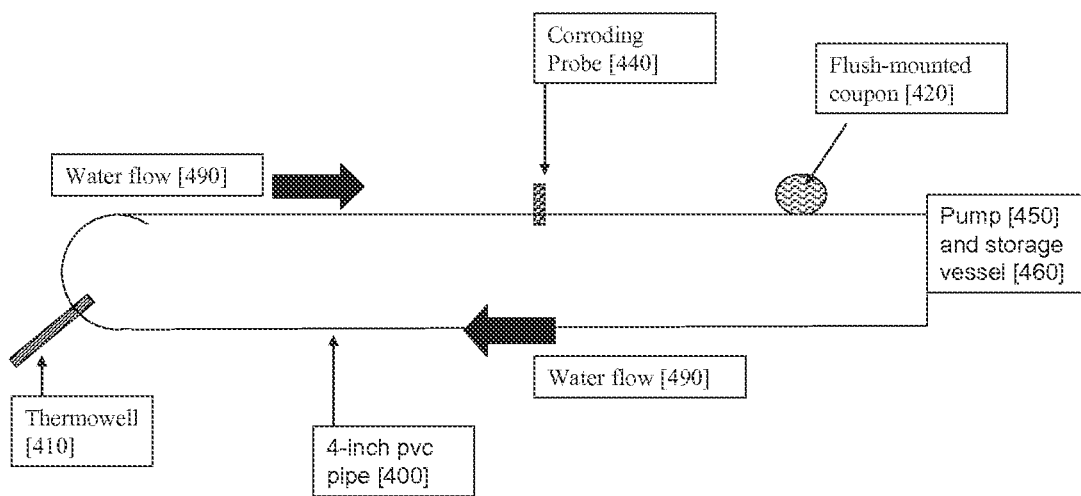
Flow chart example using pipe geometry: splitting tee



An alternative parameter to wall shear stress is to relate the metal loss sensor response to corrosion rate at the piping component of interest. The corrosion rate can be measured with NDT or with a sacrificial coupon. Once the desired corrosion rate and metal loss sensor relationship is established, the corrosion sensor response can be used to assess metal loss at the remote piping component.

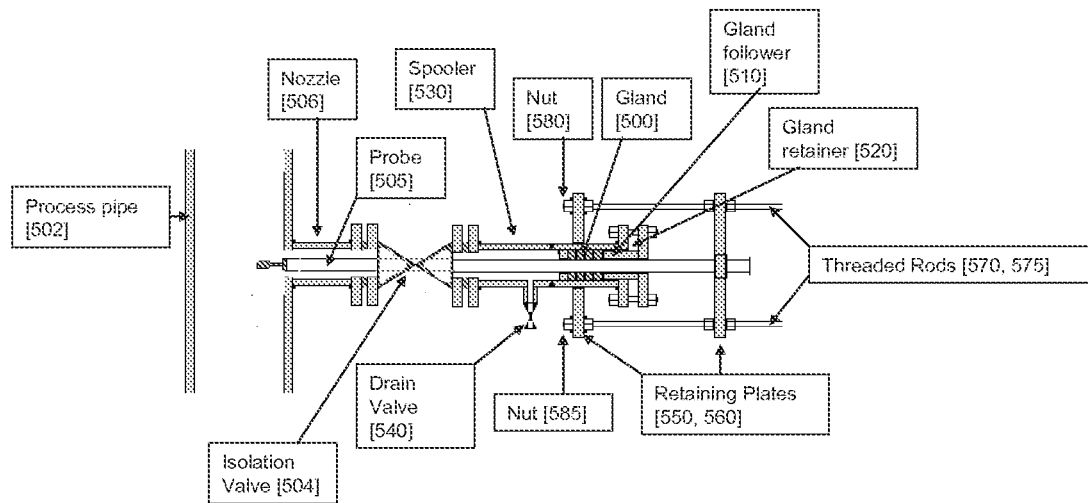
**Figure 4**

Flow Loop Set-up to Measure and Compare Corrosion at the Metal Loss  
Corrosion Probes and the Pipe Wall Corrosion Rate



**Figure 5**

Example of probe installation allowing on-stream adjustment of insertion depth



**Figure 6**

Example of Safety Retaining Ring

