

## GENERAL

Caproco offers a range of high quality, high integrity hydrogen probes which utilize a measuring head and sensing element configuration to measure the level of hydrogen present in a system.

Hydrogen probes are composed of three components: measuring head, hollow plug assembly (retrievable) or probe body (fixed) and sensing element. The sensing element is comprised of a thin walled tube, designed to simulate a material delamination or inclusion.

## APPLICATION

When the hydrogen sensing element inserted into the process stream begins corroding, hydrogen generated by the corrosion reaction will permeate through the wall of the tube. Measuring the pressure in the tube will indicate hydrogen buildup; the rate of pressure increase is proportional to the corrosion rate.

Hydrogen probes are available in retrievable, retractable or fixed designs, and measuring heads (bleed cross) are available in either electronic or mechanical form.

## MECHANICAL HEAD

The mechanical head is constructed of four separate components:

### Thermometer

Dial thermometer (-40°F - 212°F / -40°C to 100°C) used to monitor temperature in the head.

### Pressure Gauge

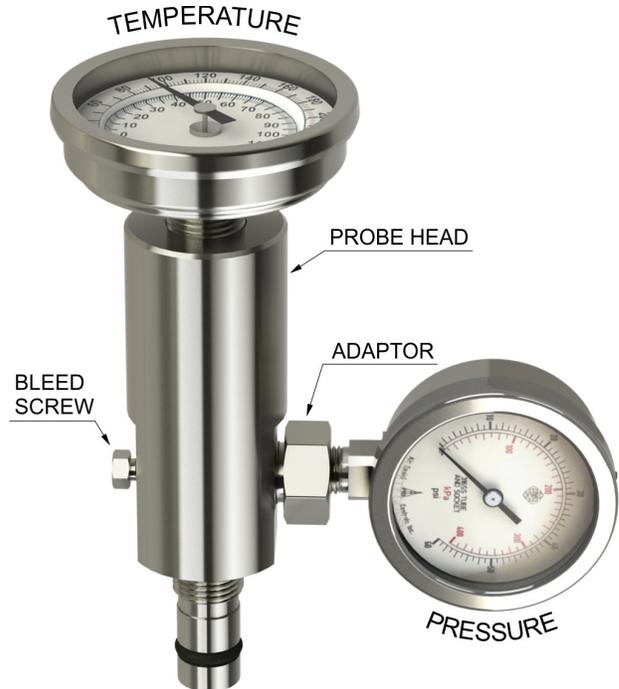
A 0-60 psig (414 kPag) dual-scale pressure gauge with O-Ring seal for mounting into the head.

### Bleeder Valve

Metal to metal seal with an O-Ring backup.

### Head

Central component where thermometer, pressure sensor, bleeder valve and sensing element (via hollow plug) are all attached. Shank and buttsealing O-Rings seal connection to plug body.



**Mechanical Head**

## ELECTRONIC HEAD

The electronic head uses pressure and temperature transducers with the same ranges and functions as the mechanical assembly. Electronic heads permit monitoring through the use of a portable Caproco Hydrogen Pressure Temperature (HP/T) Analyzer.

The electronic head / analyzer combination offers advantages such as data storage and electronic accuracy of readings.



**Electronic Head**

## SPECIFICATIONS

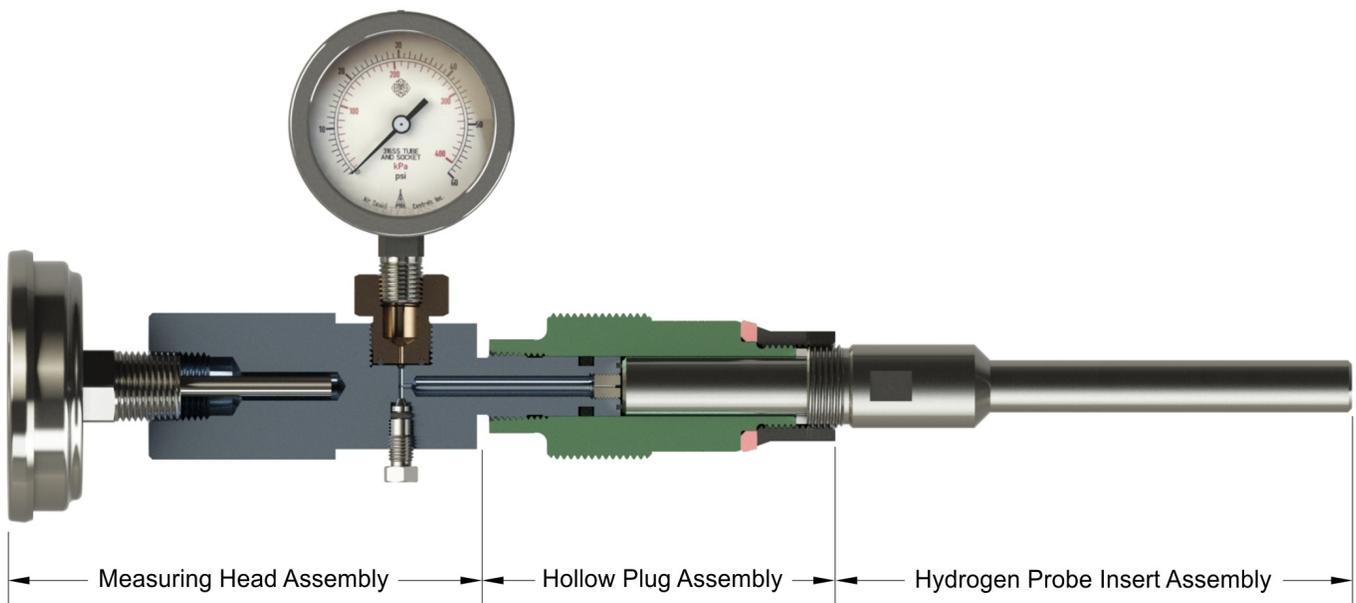
Caproco hydrogen probes are custom manufactured to suit any application. Each probe is individually calibrated and pressure tested, and supplied with calibration sheets.

The measuring head and probe body are manufactured from 316 stainless steel and the sensing element is made of AISI 1018 mild steel. Probe bodies and elements are available in alternative materials upon request. Retrievable probes use a Caproco hollow plug assembly which mounts into any standard 2" access fitting. Fixed probes have an integrated threaded design for mounting in NPT thread-o-lets.

Probe assemblies are suitable for service in systems pressurized up to 3,600 psi (24.8 MPa), and can operate in temperatures up to 500°F (260°C).

ITEM	PART NUMBER
Mechanical Measuring Head Assembly	11667
Electronic Measuring Head Assembly	13934
Hollow Plug Assembly (Retrievable)	10591

**See *Hydrogen Probe Inserts Catalog Sheet* for Insert Sizing and Part Numbers**



**Retrievable Hydrogen Probe with Mechanical Head Assembly**