

Model HCA200

Bio-probe

Model HCA200 bio-probe was developed as a type of “Robbins Device”. Its purpose is to improve the sampling technique employed for assessment of biological activity. Conventional field methods for bio sampling are to take a bulk liquid sample of the process fluid and analyze this using any number of techniques in order to determine the presence of bacteria.



The main problem with this approach is that most of the harmful species of bacteria (sulfate reducers) are sessile and grow as colonies on the internal surfaces of the pipeline or vessel. Bulk fluid samples only provide information on those bacteria which are “in the flow” and not apt to cause damage. Therefore to help prevent significant damage before it can occur, pipe wall monitoring is needed which can show signs of biological activity when the colonies are established.

The concept of the bio-probe is to provide a series of (six) removable sample elements which are positioned via the probe body to be flush with the pipe or vessel wall. This allows a growth area for those bacteria which are going to colonize on the wall. The elements may be removed from the probe at regular intervals, and biological activity may be determined by several laboratory methods. Through regular monitoring, the operator will be alerted at the earliest stages of sessile colony growth so that treatment/actions may be taken.

Actual determination of biological activity is beyond the Metal Samples scope of supply, however there are several laboratory methods used in determining biological activity. The simplest is through Serial Dilution Broth Bottles. An initial sample is obtained by transferring the deposit from the bio element (scraped with a knife blade) to bottles which contain nutrient material for bacterial growth. By diluting the sample and allowing culturing time, bacterial presence can be determined. (There are bottles specific for sulfate reducers, aerobic and anaerobic bacteria.)

More sophisticated techniques include ATP Photometry and epifluorescence microscopy. These offer far better resolution than serial dilution and are more quantitative, but require expensive equipment and trained personnel - these measure the total biological activity rather than sulfate reducers only.



Metal Samples Company

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Bio-Probe Ordering Information

Part No.

HCA2158XXXX

(XXXX = insertion length in inches, stated in 2 decimal place format)

Description

Bio-probe Assembly with Delrin holder

EL4383770900000

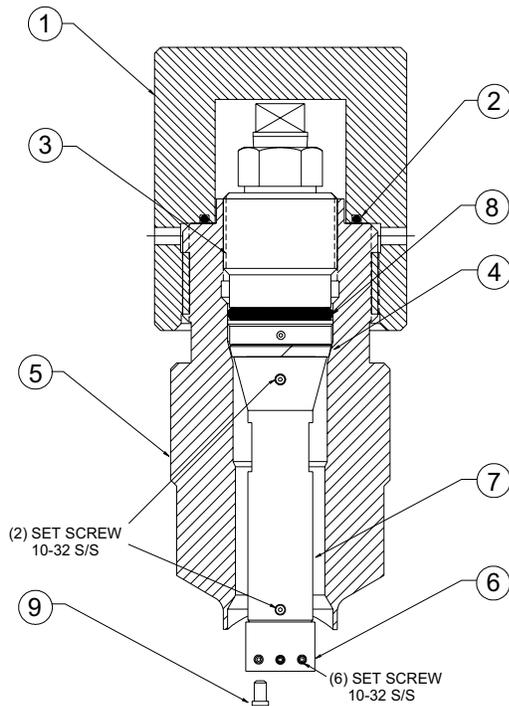
HA700645158

HA700644158

Biological Sample Elements, C.S.

Solid Plug, MH™ High Pressure Access System, 316

Solid Plug, HP™ High Pressure Access System, 316



Item No.	Description	Material
1	Heavy duty cover	Carbon steel
2	O-ring	Viton®
3	Solid plug	316
4	Primary packing (primary packing)	25% G.F. Teflon®
5	Access fitting	Carbon steel
6	Bacteria sample holder	Delrin
7	Bacteria fixture	316
8	O-ring	Viton®
9	Sample element "Bullet"	Carbon steel