High Viscosity Sample Valve

Trico's Pitot Tube and Liquid Level Gauge Sampling ports are designed to provide a safe, simple and effective method of sampling fluids from sumps and non-flooded horizontal drain lines. They ensure samples are drawn from the most appropriate location of the sump reservoir, and that the sample is taken from the exact location each time maintaining consistent sampling for oil analysis.

A product enhancement review was completed on various products during the integration of Schematic Approach Inc. parts into the Trico product line. The one complaint customers had on the Pitot Tube sampling ports was the time it took to draw samples with higher viscosity fluids, specifically in colder environments. Trico's Engineer team designed a new valve assembly that is capable of retrofitting existing tubes and has an increased flow rate due to larger internal diameter.

A test was conducted with three different fluids using the original valve assembly and the new valve assembly. The test measured the amount of time required to transfer a typical oil sample when using a vacuum type of pump, a given pitot tube length and standard length of poly tubing. The results were as follows:

Original Valve Assembly

Oil	Viscosity @40°C	Viscosity @100°C	Specific Gravity	Ambient Temperature	Test Viscosity	Volume of Oil Transferred	Time (min)
85W-140	345	27.7	.902	24°C	1100 cSt	62 ml	4:58
80W-90	145	15.8	.889	24°C	380 cSt	62 ml	1:39
AW68	66.1	8.5	.881	24°C	150 cSt	62 ml	0:44

New Valve Assembly

Oil	Viscosity @40°C	Viscosity @100°C	Specific Gravity	Ambient Temperature	Test Viscosity	Volume of Oil Transferred	Time (min)
85W-140	345	27.7	.902	24°C	1100 cSt	62 ml	2:15
80W-90	145	15.8	.889	24°C	380 cSt	62 ml	0:48
AW68	66.1	8.5	.881	24°C	150 cSt	62 ml	0:21

Oil sample drawing time when comparing original valve assembly to the new valve assembly decreased by over half in all testing completed.

Any carbon steel Pitot Tube or Liquid Liquid Level Gauge sample port purchased after February of 2005 was supplied with the new high viscosity sample valve assembly. The new valve assembly will require a different Sample Port Adaptor for pulling samples. All new valve assemblies and sample port adaptors are plated black where as the original versions are plated with a clear coat. This was done to allow for easy visual confirmation of which adaptor is required for those customers who had previously purchased Pitot Tubes.

Part Number = 23001R
High Viscosity Valve Assembly required for upgrading existing Carbon Steel Pitot Tubes and Liquid Level Gauges sampling ports

Part Number = 36133
Sample Port Adaptor for use with New High Viscosity Valve Assembly and any Carbon Steel Pitot Tube and Liquid Level Gauge Sample Port purchased after February of 2005

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Part Number = 36109
Sample Port Adaptor for use with any Carbon Steel Pitot Tube and Liquid Level Gauge sample port purchased prior to February of 2005 and any Stainless steel Pitot tubes and Liquid Level Gauges as well as the 1/8" and ¼" NPT Sample ports (both stainless and carbon steel). ***Note:*** Sample port Adaptor 36109 will open the check valve on the new valve assembly but will not seal properly and oil leaking will occur.

The new valve assembly design will be carried over to the Stainless Steel Pitot Tubes and Liquid Level Gauges as well as the NPT Sample Ports in the near future. The NPT Sample ports are also used in the Breather Kits, Catch Pipe, and Spacer Flange product lines.

Photo of new pitot tube with black plated valve assembly.

Photo of new sample port adapter with black plated cap (36133).

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