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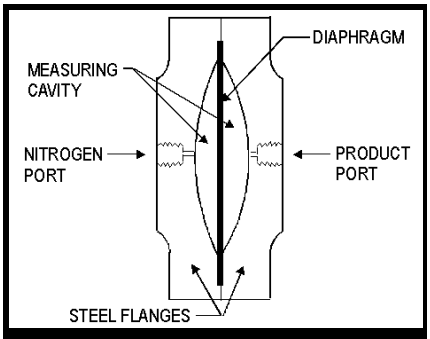
SAMPLE MASTER DIAPHRAGM SAMPLE PUMP MODEL 500

FOR LIQUID HYDROCARBON COMPOSITE SAMPLING



Cutaway Side View Of A Model 500 Sample Master Diaphragm Sample Pump

FUNCTION

The Sample Master Diaphragm Sample Pumps are designed to provide a low maintenance alternative to sample pumps in composite samplers. They are especially well suited for sampling of gasoline. Diaphragm sample pumps of this design have been in service for over 5 years without requiring any maintenance.

The Sample Pumps may be integrated into a new system or retrofit into an existing system.

Sample Master
Diaphragm Sample Pump

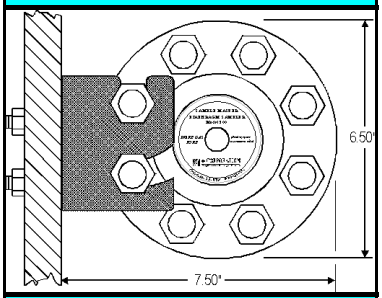
Model 500 Sample Master Diaphragm Sample Pump With Bracket

CONSTRUCTION

The only moving part in the Sample Pump is a sturdy teflon diaphragm sandwiched between two 316 stainless steel flanges. The measuring cavity is comprised of a shallow recess in the inner face of each flange.

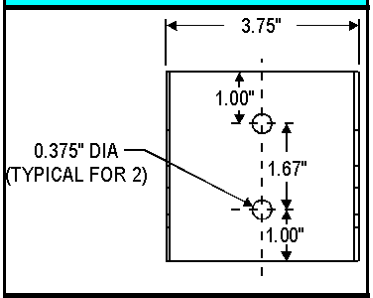
A difference in pressure of 30 PSI (or greater) between the "Product" and "Nitrogen" 1/4" Female NPT ports will cause the teflon diaphragm to actuate.

MODEL 500 MOUNTING DIAGRAM



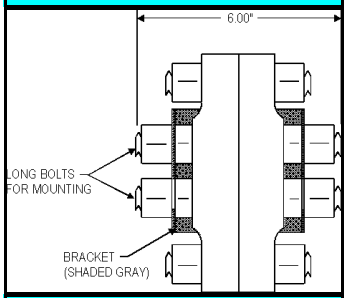
SIDE VIEW OF PUMP & BRACKET

MODEL 500 MOUNTING DIAGRAM



FRONT VIEW OF BRACKET

MODEL 500 MOUNTING DIAGRAM



FRONT VIEW OF PUMP & BRACKET

ORDERING INFORMATION

Stainless Steel Sample Master Diaphragm Sample Pump	**Part # 500—00T—SS**
Mounting Bracket	**Part # 500—509**
Replacement Diaphragm	**Part # 500—50T**

PRODUCT SPECIFICATIONS

Measuring Cavity Volume	**8-9 cc**
Maximum Operating Pressure	**1500 PSIG**
Operating Temperature	**0^0 to 130^0F**

FILLING THE MEASURING CAVITY

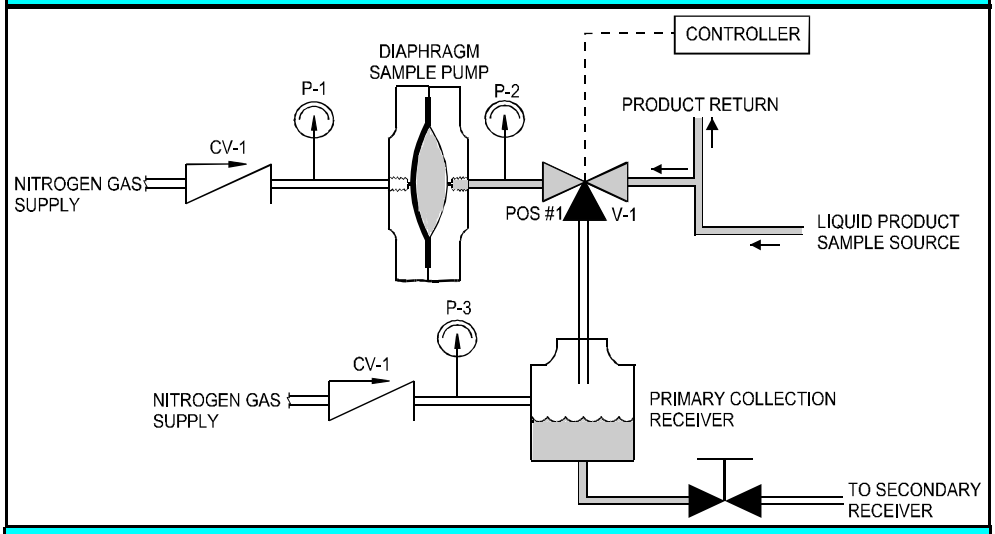


DIAGRAM #1 - Sample Master Diaphragm Sample Pump in a Simplified Typical Composite Sampler Installation

Sample Master
Diaphragm Sample Pump

In a typical composite sample system the diaphragm sample pump is installed as shown in diagram #1. When valve V-1 is in position #1, product sample flows into the measuring cavity. For this to occur, the product pressure (P-2) must exceed the nitrogen pressure (P-1) by a minimum of 30 PSI.

DIAPHRAGM DISPLACES LIQUID INTO RECEIVER

In diagram #2 valve V-1 is shown in position #2. This allows the nitrogen supply pressure to actuate the diaphragm, thereby displacing a measured amount of liquid product into an external primary collection receiver. A controller actuates a 3 way valve V-1 to position #2. The nitrogen pressure (P-1) must exceed the primary collection receiver pressure (P-3) by a minimum of 30 PSI for the diaphragm to actuate properly.

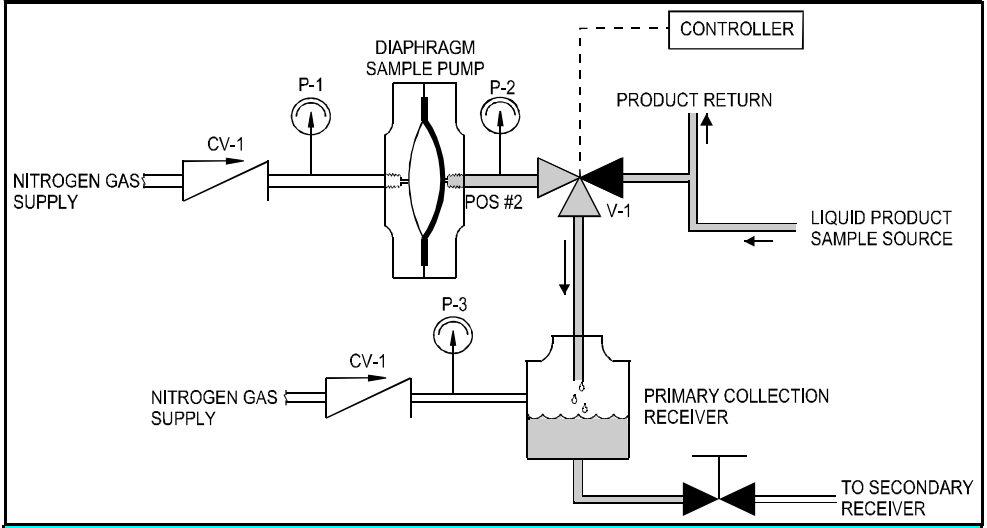


DIAGRAM #2 - Sample Master Diaphragm Sample Pump in a Simplified Typical Composite Sampler Installation

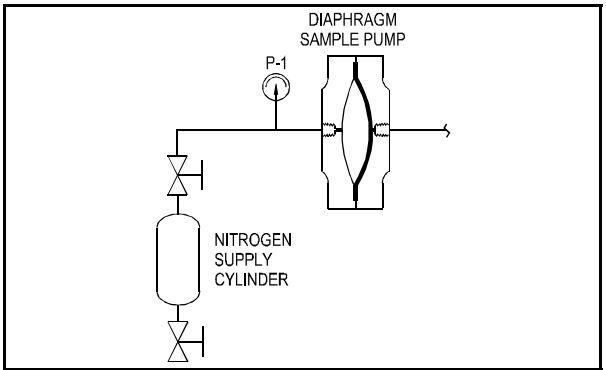


DIAGRAM #3- Nitrogen Supply to the Diaphragm

The nitrogen supply to the Diaphragm functions as a "pnuematic spring" and therefore is not expended.

When a constant nitrogen supply is not readily available a sample supply cylinder filled with nitrogen under pressure can be used as the "nitrogen supply" (refer to diagram #3).

An electrically actuated solenoid valve can be used for valve V-1 when the liquid product supply pressure is less than 400 PSIG. A higher product supply pressure will generally require a pneumatically actuated valve V-1.