TEXAS SAMPLING, INCORPORATED

TSI3 FIXED VOLUME SAMPLING SYSTEMS

TEXAS SAMPLING'S MANUAL FIXED VOLUME SYSTEMS ARE CLOSED-LOOP SAMPLE SYSTEMS DESIGNED TO TAKE A PREDETERMINED AMOUNT OF SAMPLE. THIS VOLUME IS SPECIFIED BY THE CUSTOMER ACCORDING TO THE PROCESS REQUIREMENTS. THESE SYSTEMS ARE DESIGNED FOR USE IN APPLICATION RANGING FROM VACUUM TO HIGH PRESSURE IN VESSELS AND PIPELINES AND WITH A WIDE VARIETY OF VISCOSITIES. HERE'S HOW IT WORKS. A FIXED AMOUNT OF SAMPLE IS ISOLATED FROM THE PROCESS, THEN LOW PRESSURE NITROGEN IS USED TO BLOW THE SAMPLE DOWN INTO THE SAMPLE CONTAINER . PROCESS NEEDLE PURGE REMOVES ANY RESIDUAL SAMPLE. AS ALWAYS, THIS SYSTEM CAN BE CUSTOMIZED TO MEET THE CUSTOMER'S NEEDS. FOR INSTANCE, A FIXED-VOLUME COOLER MAY BE ADDED THAT COOLS JUST THE CAPTURED AMOUNT OF PROCESS BEFORE BEING DISPENSED INTO THE BOTTLE. TSI EVALUATES EACH APPLICATION AND HELPS THE CUSTOMER SPECIFY THE CORRECT SYSTEM TO MEET THEIR REQUIREMENTS.

WHAT IS PROCESS NEEDLE PURGE (PNP)?

PROCESS NEEDLE PURGE REFERS TO THE SYSTEM CLEAN-OUT AFTER THE SAMPLE HAS BEEN COLLECTED. PRESSURIZED NITROGEN REMOVES THE SAMPLE FROM THE PROCESS NEEDLE, ELIMINATES PLUGGING OF ALL COMPONENTS, ALLOWS THE OPERATOR TO CHECK IF THE VENT LINE IS OPEN, AND PROVIDES A CLEAN, REPRESENTATIVE SAMPLE.

TSI3-Fixed Volume Sampling System

THE TSI3 IS DESIGNED TO TAKE A SPECIFIED AMOUNT OF SAMPLE. IT CAN BE USED IN BOTH LOW AND HIGH PRESSURE APPLICATIONS. A FIXED AMOUNT OF SAMPLE IS ISOLATED FROM THE PROCESS, THEN LOW PRESSURE NITROGEN IS USED TO BLOW THE SAMPLE DOWN INTO THE SAMPLE CONTAINER. PROCESS NEEDLE PURGE REMOVES AND RESIDUAL SAMPLE. THE ENTIRE OPERATION IS PERFORMED WITH A SINGLE VALVE. SAMPLE SIZES AS SMALL AS 1CC ARE AVAILABLE. NO SHAFTS, RODS, OR TRANSMISSIONS TO WORRY ABOUT FAILING OR MAINTAINING!

TEXAS SAMPLING, INC.

TSI3 Manual Fixed Volume Sample System

Needle Size
A .083" Process / .083" Vent
B .109" Process / .083" Vent (TFE Coated)
C .148" Process / .083" Vent (TFE Coated)
D .203" Process / .083" Vent (TFE Coated)
E Stinger 1/4" Tube

Shroud Size includes PVC Sleeve for Boston Round style bottle, if different please provide customer bottle
02 2 oz.
04 4 oz.
08 8 oz.
16 16 oz.
32 32 oz. (doesn't require PVC sleeve)
F Special
R RVP (assembly includes special needles and shroud)
X No Shroud

Process Needle Purge
M Manual Purge (includes hand pump, check valve & bracket)
F Flush and Purge (same components as PNP plus 3-way ball valve)

P **Sample Isolation / Double Block Valve**
R Isolation Valve with Spring Return Handle
X Without

Process Connections
A 3/8" -1/2" Tube
B 3/8" - 1/2" NPT or Socket Weld
C Up to 3/4" x 150# Flange
X 1/4" Tube Connection

Block Valves - 1/4"
A High temp ball valve (for use with temperatures up to 450°F)
B Process block valve 1/4" ball type (for use with temperatures up to 350°F)
C Needle valve
D Other process block valve
V Check Valve w/ Viton
X Without

Vent Options
E Emission Filter (Activated Carbon in SS Canister)
C Emission Filter with crystals to indicate when carbon needs changing
X Without

PS **Pipestand** (2" x 48" Galvanized with 10" x 10" base)
X Without

Enclosure all 304 SS
N Non-Insulated w/ window
IE Insulated with Electric Heater and window
IS Insulated with Steam or Glycol heating coils mounted w/ window
BI Bottle Enclosure (Non-insulated) w/ window
X Without

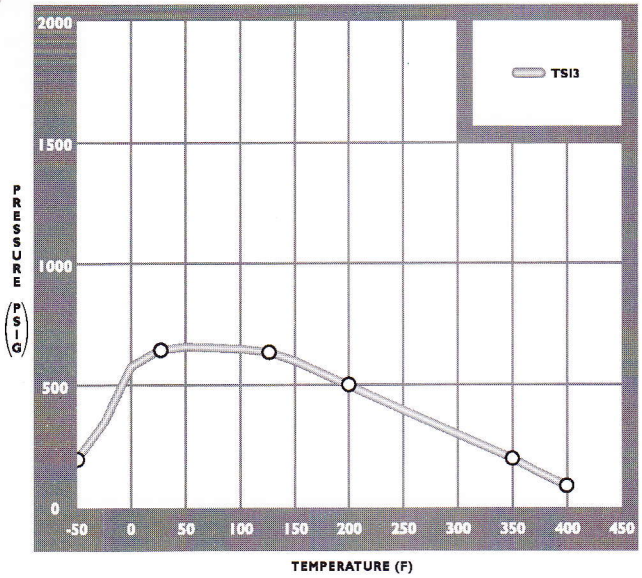
Coolers - High Efficiency Tube in a tube counter flow (includes TV & TI in thermowell, H2O block valves, plate mounted)
C13 1/4" X 1/2" X 30'
C14 1/4" X 1/2" X 40'
C22 3/8" X 3/4" X 20'
C23 3/8" X 3/4" X 30'
C24 3/8" X 3/4" X 40'
C32 1/2" X 3/4" X 20'
C33 1/2" X 3/4" X 30'
C34 1/2" X 3/4" X 40'
FV Cooling Jacket

Recommended for temperatures over 130 F. Cooling Data sheet must be submitted for proper sizing.

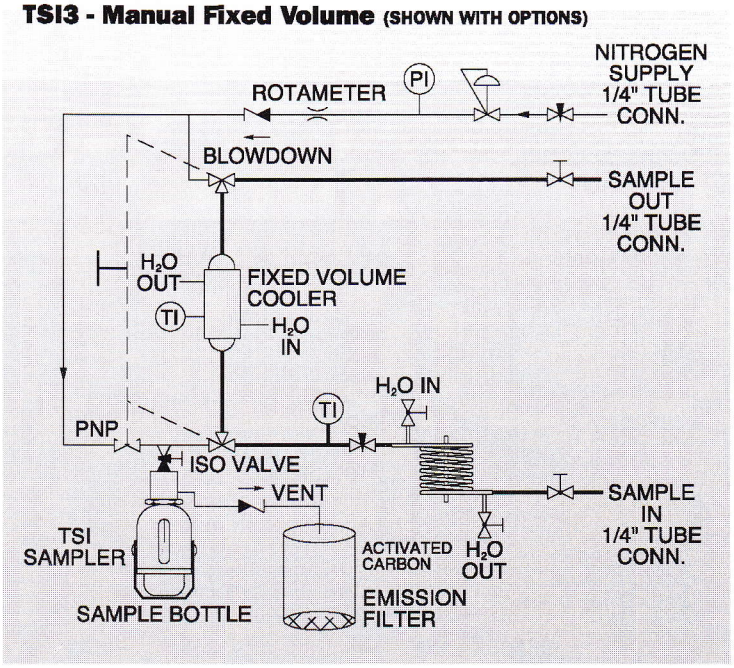
Miscellaneous
K Kalrez oring on check valve for PNP or Vent
F Specify fittings other than standard Hoke

TSI3S											

PRESSURE VS. TEMPERATURE



TSI3 - Manual Fixed Volume (SHOWN WITH OPTIONS)



- Wetted Parts are 316 SS, Teflon, and Viton
- TSI3 valve includes Sample, Bypass, Blowdown and PNP in one valve
- Fixed volume will fill 70% of the bottle
- .083" Dia. Process needle with PNP / .083 Dia. Pencil Point Vent needle
- Shroud assembly for 2 oz. Boston Round bottle
- N2 for Purge and Blowdown includes block valve, regulator, pressure guage, rotameter, and check valve
- System will mount on 304 SS plate with 2" clamps for pipe stand mounting
- System I.D. and procedure tags
- All connections are 1/4" tube

Max Operating Temperature: 400 F @ 100 PSIG
Max Operating Pressure: 550 PSIG @ 100 F

OPTIONS

Emission Filter ABSORBS VAPORS VENTED FROM SAMPLE BOTTLE

Process Block Valves ISOLATES SYSTEM FROM PROCESS STREAM

Coolers AVAILABLE IN A VARIETY OF SIZES TO COOL PROCESS BEFORE DISPENSING INTO SAMPLE BOTTLE

Fixed Volume Cooler PROCESS CAPTURED IN FIXED VOLUME CYLINDER IS COOLED PRIOR TO DISPENSING INTO BOTTLE

Isolation Sample Valve PROVIDES ADDITIONAL SAFETY FOR OPERATOR (FOR TSI3 ONLY)

Double Stem Packing APPROVED FOR USE IN PHOSGONE AND OTHER LETHAL SERVICES

Vent Line Check Valve AVAILABLE ON SYSTEMS WHICH ARE VENTING TO FLARE

***Insulated Enclosure** MAINTAINS CONSTANT TEMPERATURE USING STEAM OR ELECTRIC HEAT

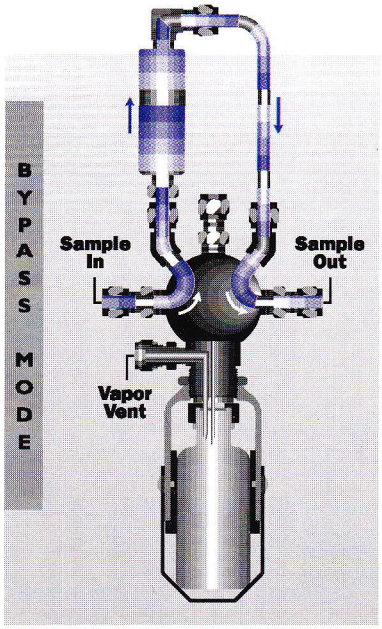
***Non-insulated Enclosure** AVAILABLE FOR PROTECTION FROM THE ENVIRONMENT. ADDITIONAL OPERATOR SAFETY

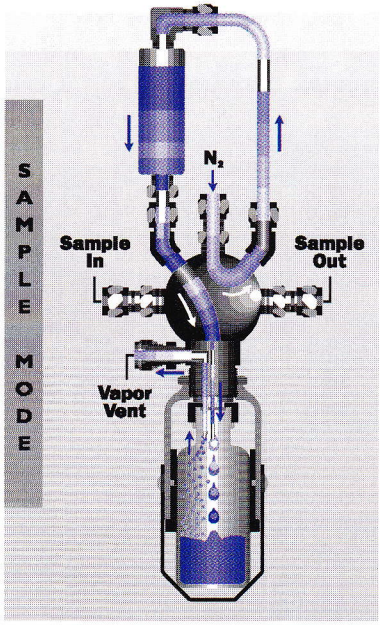
Pipe Stand AVAILABLE FROM TEXAS SAMPLING TO PROVIDE CONVENIENT SYSTEM INSTALLATION

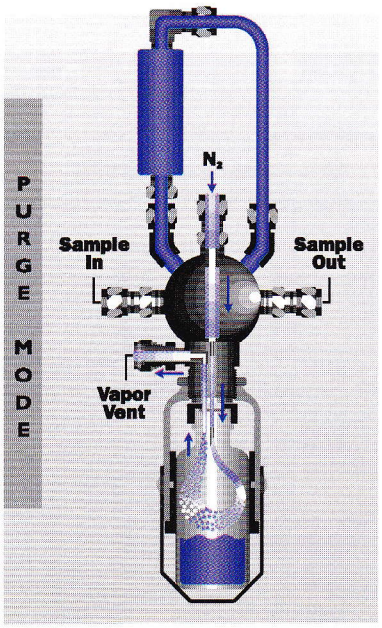
Spring Return Handle MOST HAVE ISO VALVE

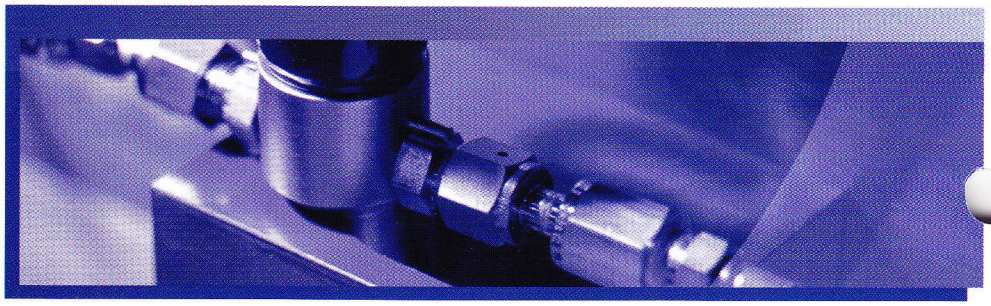
*EXTERNAL OPERATING HANDLES INCLUDED

TSI3 - MANUAL FIXED VOLUME









FEATURES & BENEFITS

Easily Operated	• OPERATOR FRIENDLY; ONE VALVE OPERATION
Fixed Volume Chamber	• 1 CC IS AVAILABLE • PROCESS IS ISOLATED IN FIXED VOLUME CHAMBER AND BLOWN DOWN WITH LOW PRESSURE NITROGEN. • ELIMINATES OVER-FILLING OF SAMPLE BOTTLE. • LAB CAN SPECIFY EXACT AMOUNT OF PROCESS DESIRED. • USED FOR VACUUM APPLICATIONS.
Rotameter on Front Panel	• OPERATOR CAN VERIFY VENT LINE IS OPEN
Replaceable Process Needle .065" to .203"	• EASY TO REMOVE WITH MINIMAL TOOLS. • ALLOWS VERSATILITY WHEN CONSIDERING PRESSURE, VISCOSITY, AND SIZE OF SAMPLE.
.109", .148", .203" Process Needle with Teflon Coating	• REDUCES FRICTION WHEN PUNCTURING SEPTA.
Replaceable Pencil Point Vent Needle	• PREVENTS VAPOR VENT NEEDLE FROM PLUGGING BY SEPTUM MATERIAL. • PREVENTS OVER-PRESSURING OF SAMPLE BOTTLE. • EASY TO REMOVE WITH MINIMAL TOOLS.
Shroud Assembly with Viewing Window	• ALLOWS OPERATOR TO SEE BOTTLE FILLING WHILE TAKING A SAMPLE. • HELPS PROTECT OPERATOR IF A SPILL OCCURS. • CONNECTION IS THE SAME FOR ALL SIZES FROM 1 OZ. TO 1 GALLON – ALLOWING VERSATILITY AT MINIMAL COST SHOULD CUSTOMER NEED TO CHANGE BOTTLE SIZE.
Removable Sleeve	• ALLOWS CUSTOMER WIDER CHOICE OF BOTTLE SIZE. • GUIDES SAMPLE BOTTLE ONTO NEEDLES.
Operation and Identification Tags Provided on Front of Panel	• STEP BY STEP OPERATING PROCEDURES. • OPERATOR CAN VERIFY AT ALL TIMES WHAT MODE THE SYSTEM IS IN.
Installation/Operation Manual	• PROVIDES VITAL INFORMATION FOR INSTALLATION, OPERATION, AND MAINTENANCE.

TEXAS SAMPLING INCORPORATED

A DIVISION OF CIRCOR INTERNATIONAL

TEXAS SAMPLING INCORPORATED

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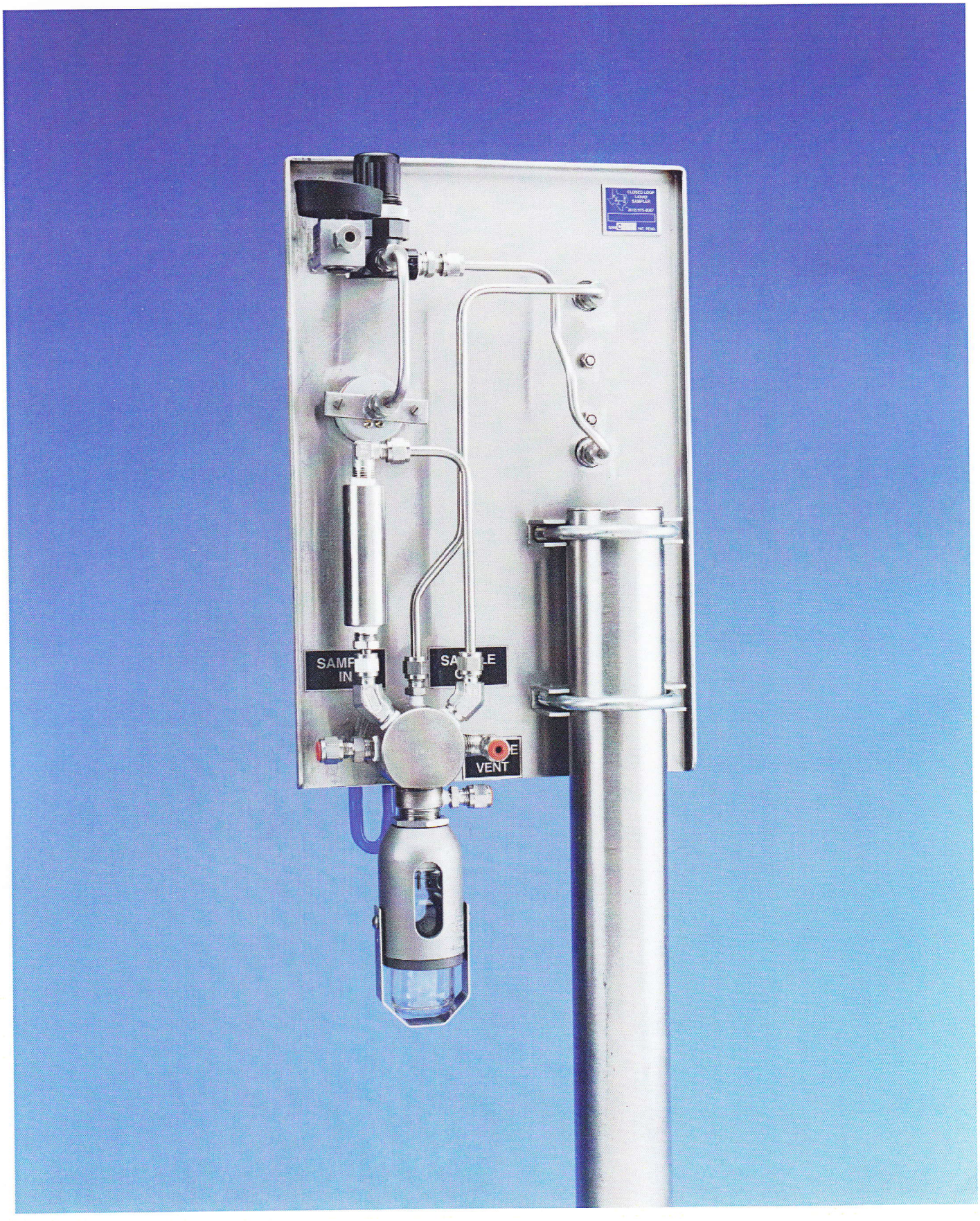
Texas Sampling, Inc.
TS13 Fixed Volume Sample System (Front)

Texas Sampling, Inc.
TS13 Fixed Volume Sample System (Back)



Texas Sampling, Inc.

*Information must be submitted for quote or order entry

Application Data Sheet – FIXED VOLUME Form 3-1.2

Date _____ Bid Due Date _____

Company _____ Contact _____

Location _____ Phone _____

Agent _____ Salesperson _____

PROCESS DATA

Media _____ Pressure In* _____ Pressure Out * _____

Vapor Pressure * _____ Temperature * _____ Viscosity _____

Particles in Sample ☐ YES ☐ NO Micron Size_____%_____

SAMPLER DATA*

☐ TSI3 Quantity _____

☐ Auto Fixed Volume Sample Size :* _____ (sample not to exceed 75%

☐ MD Fixed Volume Bottle Size : * _____ ofboottle capacity)

☐ Composite ☐ TSI Bottle

☐ Railcar ☐ Customer Bottle (secure sample)

☐ Other_____ ☐ Other_____

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*Wetted Parts Material ☐ 316 SS ☐ Alloy 20 ☐ Hastelloy B ☐ 304L SS ☐ Monel ☐ Hastelloy C ☐ Teflon ☐ Other____

*Elastomer ☐ Viton (standard) ☐ Kalrez ☐ Chemraz

Process & Vent Needles

*Material
316 SS
Hastelloy C
Alloy 20
Other _____

Process Needle Size ☐ 065 ☐ 083 ☐ 109/TFF coated ☐ 148/TFF coated ☐ 203/TFF coated

Vent Needle Size- 083 Other_____

Sample In/Out Connection : Size_____ Type (tube,mnpt,fnpt)_____

*Vapor Vent : Flare Header Pressure____PSIG TO: ☐ Flare ☐ Carbon Canister ☐ Other__

Check Valve on Vent Yes ☐ No ☐

Enclosure ☐ Yes ☐ No Insulated ☐ Yes ☐ No Sample Cooling ☐ Yes ☐ No

Light ☐ Yes ☐ No Heated ☐ Steam ☐ Electric (if yes attached cooler data sheet

Mount ☐ Wall ☐ Pipestand data sheet form 3-6)

Other _____

Electrical Enclosure Classification_____ Voltage_____

Comments/Include Sketch If available