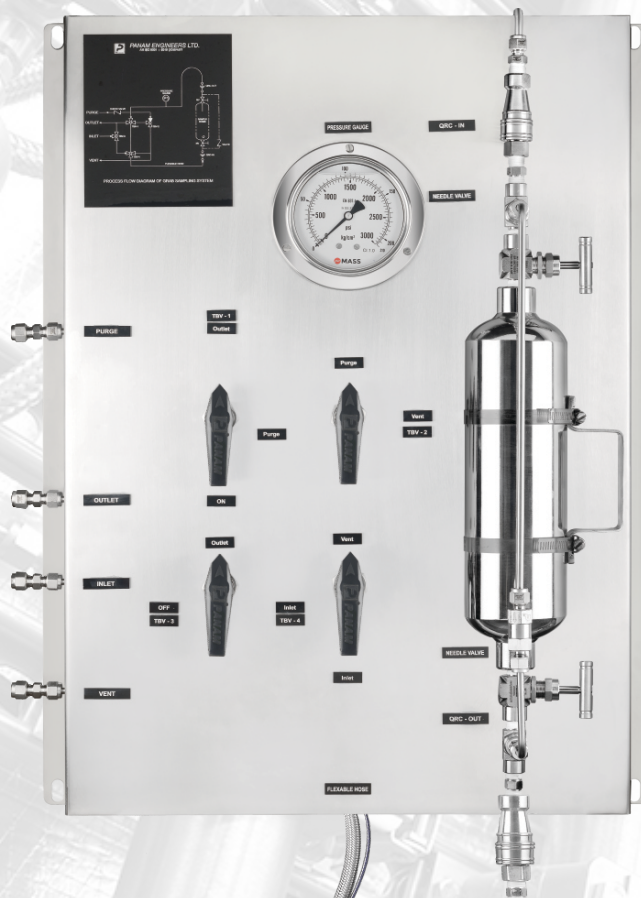


PANAM[®]

Grab Sampling System



PANAM[®] offers a series of solutions for use in all types of plants and facilities where fluids are being processed. Use **PANAM[®]** application solutions to create fully documented fluid sampling and control systems and bring consistency to your operations. Easy to install and operate, these solutions offer the high quality and support you expect from **PANAM[®]**

What is Grab Sampling?

Grab sampling, also known as lab sampling or spot sampling, is the collecting of a sample of fluid or gas in a pipeline, tank, or system with the intent of transporting the sample to a laboratory for analysis.

Why Use a Grab Sampling System?

Grab sampling can validate:

- Process conditions
- End products meet quality specifications
 - Online analyzers are “fit for use”
- Product quality during custody transfer
- It can also provide verification of environmental emissions.

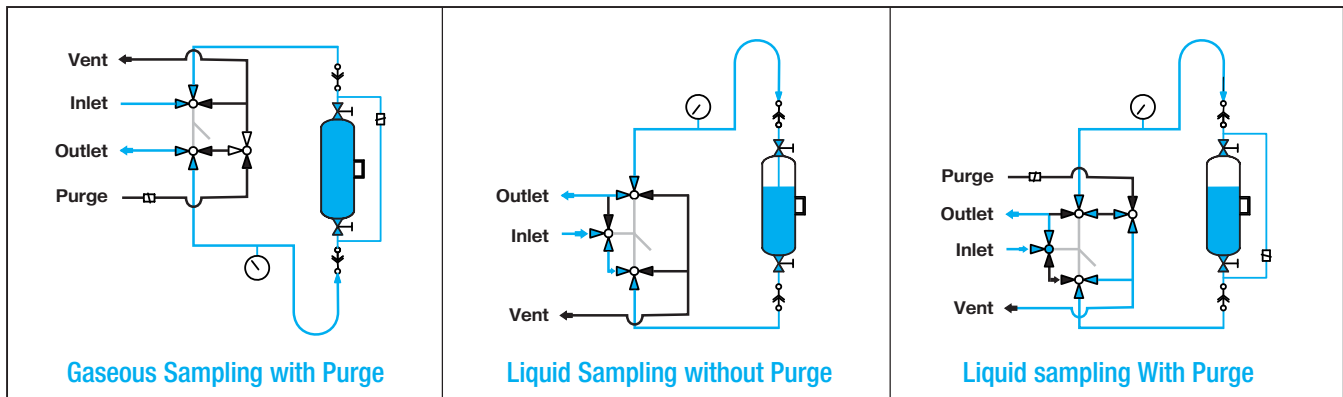
Specifying a Grab Sampling System

The **PANAM**® grab sampling systems provide solutions to satisfy gas and liquid non-slurry sampling service in a consistent, Reliable package. Two system types allow for capture into one of two types of containers - pressure-containing metal cylinders as found in the Grab Sample Module (GSM) or non-pressure-containing glass or polyethylene bottles as found in the Liquid Only Sampling Module (GSL). Given the wide variety of configurations available, there will be several criteria to consider in order to properly specify a grab sampling system:

- Pressure
- Temperature
- Phase (Sample)
- Hazardous / Flammable Material
- Materials of Construction
- Surface Treatments
- Electro Polished (EP) Tubing (For Critical Fluids)
- Purge

Configuration

Grab Sample Module (GSM) is a sampling panel using cylinders for capturing either liquid or gas into a sealed, pressure-containing vessel.



Grab Sample Cylinders (GSC)

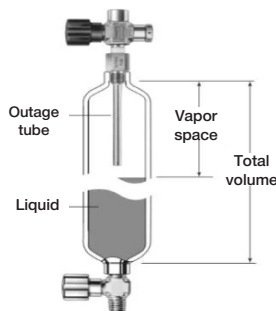
Features: A sample cylinder is required for every GSM system and should be ordered separately when purchasing a new GSM. Various configurations of sample cylinder assemblies, defined as Grab Sample Cylinders (GSC), are available. The options available for GSC assemblies include:



- Standard cylinder sizes (150, 300, 400, 500, & 1000 cm³)
- Multiple cylinder and valve material options
- With or without purge bypass tube
- Choice of quick connects
- Outage tubes, rupture discs, and handles
- Cylinder treatment/certification
- Stem and body protectors
- PTFE coated inner wall, SilcoNert® coating, or electro polished inner diameter
- DOT or TPED approved

Outage Tubes

Outage tubes provide a vapor space of the desired volume in cylinders containing liquefied gases, so that the liquid in the cylinder can expand if the temperature increases. Without enough vapor space, a small temperature increase can cause the liquid to expand and increase the pressure dramatically. See local regulations and other appropriate guidelines for safe filling



GSC Assembly Descriptions

PANAM® offers two types of GSC assemblies. Note: Regardless of orientation and implementation, the flow direction on all GSC isolation valves is away from the cylinder. Needle valves have a preferential shutoff direction for restraining pressure and the valve will be oriented such that it is best situated for resisting the internal pressure of the cylinder.
Standard :- A cylinder assembly for general use or for use with GSM systems without a purge option.
Purge :- A cylinder assembly for use with GSM systems with a purge option specified.



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