LPG Sampling Cylinder

• Introduction

BPY G series stainless steel sampling cylinders strictly comply with TSG R0004-2009 <Fixed Pressure Vessel Safety Technical Supervision Regulations >, GB/T 5099-2017 <Steel Seamless Gas Cylinders" and SH/T0233 "LIQUEFIED petroleum Gas sampling Method>, ISO 4257 and ASTM D1265 <manual sampling method for LIQUEFIED petroleum Gas> standards are designed, produced and strictly tested according to relevant standards. The content includes wall thickness measurement, material analysis, metallographic inspection, pressure test, air tightness test, fatigue cycle test and hydraulic blasting test, etc. Special equipment manufacturing license issued by the General Administration of Quality Supervision, Inspection and Quarantine, and national patent certificate.

Sampling cylinder standard configuration: sampling cylinder body x 1, valve X 2, safety relief device X 1, handling handle x 1. Suitable for the collection, transportation and storage of liquefied petroleum gas (LPG), liquefied natural gas (LNG), hydrogen sulfide (H2S), sulfur-containing sewage, hydrocarbons and other toxic and harmful substances as well as nitrogen (N2), oxygen (O2), carbon dioxide (CO2) and other gaseous or liquid samples.

The stainless steel seamless gas cylinders produced by our company are widely used, mainly serving petrochemical, pharmaceutical, teaching and scientific research, food inspection and other industries. They can be sampled in conventional devices such as storage tanks, tank cars, tower equipment, production pipelines and so on.

Tel/Fax:(+86)0411-84203824 Email:sales@awdsy.com.cn & andydiao@hotmail.com & diaoshouyuan@gmail.com
Mobile:(+86)13942632309 WhatsApp:0086 139 4263 2309 Website: www.awdsy.com.cn
Address:No.4-1 RongShen Industrial Park, No.2 XueZi Street, QiXian Road, High Technology Zone, Dalian, LiaoNing Province, China.

Tel/Fax:(+86)0411-84203824 Email:sales@awdsy.com.cn & andydiao@hotmail.com & diaoshouyuan@gmail.com
Mobile:(+86)13942632309 WhatsApp:0086 139 4263 2309 Website: www.awdsy.com.cn
Address:No.4-1 RongShen Industrial Park, No.2 XueZi Street, QiXian Road, High Technology Zone, Dalian, LiaoNing Province, China.

• Main Features

1. Single spinning forming technology, no welding, 316L stainless steel material; Corrosion resistance and high temperature resistance are superior.

2. The sampling cylinder wall thickness is uniform, the inner surface is passivated by pickling, and the smooth inner wall is easy to clean.

3. With over-pressure protection function, the valve is equipped with explosion-proof pressure relief device.

4. More than ten kinds of accessories are available for purchase to meet the sampling needs of different environments, different media and other complex factors.

5.PTFE can be sprayed on the inner surface of the bottle according to user requirements to obtain a smooth anti-corrosion inner coating and effectively prevent trace elements of gas samples from being adsorbed on the surface of stainless steel.

• Main Technology Parameters

No.	Tech Indicator	Description
1	Working Pressure	BPY series: 4Mpa; BPY - G series: 20Mpa
2	Design Pressure	BPY series: 6Mpa; BPY - G series: 30Mpa
3	Operating Temperature	-60℃ ~ +80℃
4	Applicable Medium	Non-corrosive Liquid and Gaseous Medium for 316L Stainless Steel Within The Specified Range of Temperature and Pressure.
5	Material	316L Stainless Steel
6	Valve	M14*1.5(8mm jacket) / 1/4 NPT- M, Angle valve with pressure relief device
7	Specifications	50ml, 100ml, 150ml, 250ml, 300ml, 500ml, 1000ml, 2000ml, 2500ml, 4000ml, 5000ml, 10000ml
8	Bottle Body	1/4 NPT-F Feature - Double End Spinning Without Welding

Tel/Fax:(+86)0411-84203824 Email:sales@awdsy.com.cn & andydiao@hotmail.com & diaoshouyuan@gmail.com
Mobile:(+86)13942632309 WhatsApp:0086 139 4263 2309 Website: www.awdsy.com.cn
Address:No.4-1 RongShen Industrial Park, No.2 XueZi Street, QiXian Road, High Technology Zone, Dalian, LiaoNing Province, China.

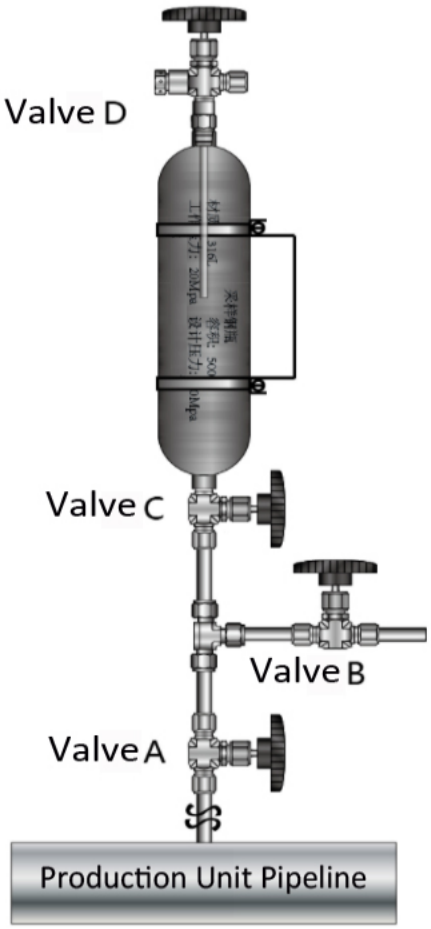
• LPG Sampling Method

Our seamless cylinders can be sampled in today's mainstream installations such as tanks, tankers, tower equipment, production lines, etc. The following is a typical sampling method for LPG production pipelines.

Method Summary

LPG samples in the liquid phase are obtained from the device using sampling cylinders. The sampling line and the sampling cylinder are cleaned first, and then the liquid phase sample is filled with the sampling cylinder. A sample of 20% of the sample cylinder volume is then drained so as to retain 80% or less of the liquid phase.

Sampling Procedure



Select sampling cylinders with appropriate volume according to the required sample quantity.
For sampling cylinders with non-reserved volume tubes, they should be weighed before sampling.

Flush Sampling Line:
Consists of metal hose, quick connector and valve. Connect the inlet valve C of the sampling cylinder to the production unit using the sampling line and ensure that the control valve A, discharge valve B and inlet valve C are closed. Open the valve of the production unit, then open control valve A and discharge valve B and flush the sampling line with the sample.

Flush Sampling Cylinders:
Place it in an upright position with outlet valve D at the top as shown. Ensure discharge valve B and inlet valve C are closed after the sampling line is flushed. Open control valve A, then open inlet valve C, slowly open outlet valve D to fill the container with liquid sample, close control valve A, discharge some gas sample from outlet valve D, close outlet valve D, and discharge liquid sample residue by opening discharge valve B, repeat this flushing operation at least 3 times.

Tel/Fax:(+86)0411-84203824 Email:sales@awdsy.com.cn & andydiao@hotmail.com & diaoshouyuan@gmail.com
Mobile:(+86)13942632309 WhatsApp:0086 139 4263 2309 Website: www.awdsy.com.cn
Address:No.4-1 RongShen Industrial Park, No.2 XueZi Street, QiXian Road, High Technology Zone, Dalian, LiaoNing Province, China.

Sampling Process:

Keep the sampling cylinder upright with outlet valve D at the top and close inlet valve C and outlet valve D as shown on the left. Close the discharge valve B, open the control valve A and inlet valve C to fill the container with liquid samples, close the inlet valve C and the production device valve, open the discharge valve B, after complete pressure relief, remove the sampling cylinder and sampling pipeline; Thereafter, the sample shall be scrapped if a leak is found or any valve is opened before the sampling amount is adjusted.

Sampling Equipment

Sampling cylinder: Standard configuration includes sampling cylinder body *1, valve *2, pressure relief device *1, throat collar handle *1.

Other accessories, such as quick connectors, pressure gauges, reserved volume pipes, and metal hoses, can be purchased based on actual requirements.

Sampling pipeline: metal hose, connector, needle valve composition.

Connecting joint: according to the situation of sampling device on site, our company can process and manufacture.

Adjusted Sampling Quantity

Non-reserved volume tube-weighing method: weigh the cylinder full of liquid samples to determine the sample mass at 80% of the sampler volume at 20℃. The sampling cylinder is then placed in a position to discharge the liquid sample, and the outlet valve D is slightly opened to release the excess sample.

Note: If the sampler cannot be weighed immediately, a small amount of sample should be released to prevent excessive pressure due to sample expansion due to temperature rise. If equipped with pressure gauge, you can observe the pressure change at any time.

Reserved volume tube type - discharge method: the sampling cylinder is placed in an upright position, the reserved volume tube is at the top of the valve D, slightly open the outlet valve D, liquid is discharged, when the steam appears, close the outlet valve D, you can retain 80% or less samples. If no liquid sample is discharged after opening outlet valve D, the sample shall be scrapped and re-sampled.

Leak Check

The sample cylinder with flushed gas is immersed in water to check for bubbles. If leakage is found during the sampling period, the sample will be scrapped.

Sample Preservation

Samples should be stored in a cool place as far as possible until all tests are completed. To prevent accidental opening or accidental damage of the valve, the sampling cylinder should be placed in a special frame or protected by a valve nut.

Notice to Users:

1. Sampling personnel need to determine the location of sampling points in advance to obtain typical samples. Samplers are required to know safety techniques and have relevant experience and skills.
2. This method is not suitable for all media, and users of this manual need to be able to preferentially select suitable and safe methods. This is the responsibility of the relevant sampler.
3. In the sampling process, due to the different structures of LPG devices, there are many complex factors and changes, so it is very difficult to specify a unified sampling method to obtain a representative typical sample.

Tel/Fax:(+86)0411-84203824 Email:sales@awdsy.com.cn & andydiao@hotmail.com & diaoshouyuan@gmail.com
Mobile:(+86)13942632309 WhatsApp:0086 139 4263 2309 Website: www.awdsy.com.cn
Address:No.4-1 RongShen Industrial Park, No.2 XueZi Street, QiXian Road, High Technology Zone, Dalian, LiaoNing Province, China.

4. If the storage tank volume of the equipment is large, the sample can be circulated before sampling to achieve uniformity. If the sample is in flow, the pressure in the equipment pipeline should be higher than the standard atmospheric pressure to avoid two-phase conditions.
5. This sampling method cannot clearly describe all sampling situations, and needs to be supplemented according to judgment, skills and sampling experience. Additional care and accurate judgment are required to obtain a sample that represents general characteristics.
6. Because the sampling process involves hazards, the sampler should carry out the sampling with the assistance of staff who are familiar with safety measures.
7. In the process of sampling, the discharge of toxic and harmful samples and the disposal of waste liquid and steam should pay attention to safety. The discharge point must have safety measures and comply with safety and environmental protection regulations.
8. Avoid sampling from the bottom of the tank. Samplers should avoid contact with skin with LPG and wear gloves and protective glasses to avoid inhaling vapors.
9. The LPG discharge device will generate static electricity and should be connected to the LPG system before and until sampling is completed.

• Optional Accessories

Our company produces the stainless steel sampling steel cylinder is made of a hot spinning forming, such as pickling passivation technology, due to the complexity of sampling site environment, also have different laboratory analysis instruments, the diversification of the cylinder can collect sample and so on many factors, it is difficult to unify fixed sampling steel cylinder with accessories, need to users according to actual needs to choose and buy.

1. PTFE Coating:

The technology of institute of Metal Research, Chinese Academy of Sciences, spraying PTFE (polytetrafluoroethylene) on the inner surface of the sampled cylinder to obtain a non-stick surface, prevent trace components in the sample from being absorbed on the surface of stainless steel, but also improve the anti-corrosion ability of the cylinder, easy to clean. PTFE coating combines non-stick properties, heat resistance, chemical inertia and excellent insulation stability and low friction, with comprehensive advantages that other layers cannot compete.

2. Metal Hose:

Metal hose is an indispensable flexible connection pipe for modern industrial equipment. The inner layer is metal bellows, and the outer layer is covered with stainless steel braided net, which plays a role in strengthening the working ability of metal bellows. It has the advantages of corrosion resistance, high pressure resistance, high and low temperature resistance, good sealing and so on.

3. Pressure Gauge:

It is installed at one end of the Angle valve of the sampling cylinder to facilitate real-time observation of the pressure of the sample in the sampling cylinder. When the pressure is too high, the operator can timely open the valve for pressure relief treatment in the appropriate place, which further solves the hidden danger caused by the sharp increase of the pressure in the sampling cylinder due to the change of temperature. The user selects the appropriate pressure gauge according to the sampling medium

4. Quick Connector:

Specially designed for sampling cylinders, suitable for quick connection and disassembly of device pipelines, good sealing performance, no need to rotate, easy to operate, divided into push button type and push pull type.

5. Reserved Volume Tube:

Sampling cylinders containing liquefied gas provide a required volume of reserved evaporation space. Without sufficient evaporation space, small temperature increases can cause the liquefied gas medium in the cylinder to expand and cause a sharp increase in pressure, which can be a major safety hazard for the operator.

The reserved volume tube is installed in the top outlet valve position of the sampling cylinder according to SH/T0233, ASTM D1265 and screwed into the cylinder body. (The length of the reserved volume tube determines the reserved space.) The reserved evaporation space depends on the type of medium.

Tel/Fax:(+86)0411-84203824 Email:sales@awdsy.com.cn & andydiao@hotmail.com & diaoshouyuan@gmail.com
Mobile:(+86)13942632309 WhatsApp:0086 139 4263 2309 Website: www.awdsy.com.cn
Address:No.4-1 RongShen Industrial Park, No.2 XueZi Street, QiXian Road, High Technology Zone, Dalian, LiaoNing Province, China.

6. Reducer Pipe Joint:

The pipe joint is the connecting tool between the pipe and the pipe, and the connecting point between the component and the pipe can be disassembled. It can conveniently and quickly realize the connection function between sampling equipment and production device, analysis instrument, tank car and large tank.

7. Sampling Cylinder Holder:

According to the actual needs of users, the company has designed and developed a series of special supports for sampling cylinders, which are used by laboratory staff for analysis, analysis, transportation and storage. The problems of placement Angle of sampling cylinder and centralized transportation and storage are solved.

In addition, Our company also provides sampling cylinder injection needle, pressure reducer, low temperature needle valve, special cylinder needle valve, filter, clamp nut and other accessories for the majority of users to buy.

Tel/Fax:(+86)0411-84203824 Email:sales@awdsy.com.cn & andydiao@hotmail.com & diaoshouyuan@gmail.com
Mobile:(+86)13942632309 WhatsApp:0086 139 4263 2309 Website: www.awdsy.com.cn
Address:No.4-1 RongShen Industrial Park, No.2 XueZi Street, QiXian Road, High Technology Zone, Dalian, LiaoNing Province, China.