



青岛创梦仪器有限公司

Qingdao Chuangmeng Instrument Co., Ltd.



高压管汇

High Pressure Reduction Valve

版本 1.0

Version 1.0

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请你仔细阅读《使用手册》，正确掌握本产品的安装和使用方法。阅读后请将本《使用手册》妥善保管，以备今后进行检修和维护时使用。

Please read the *Instruction Manual* carefully, for correctly grasping the installation and using method of this product. Please keep properly this *Instruction Manual* after reading, for the usage during troubleshooting and maintenance in the future.

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I. 概述 Introduction

该系列产品是一种气体减压输出装置。适用于各种用气装置的压力调整。可连接在与之相对接的大气瓶、中气瓶及其他气源装置上。通过对两套减压阀的调整，可获得在额定范围内两种压力的输出气体。每一组减压阀都备有一组安全阀，在供气管路中起超载卸荷自动保护作用。该管汇系列有1~4个输出胶管，用户可根据需要选用。气源管汇主要配套于我厂生产的需气源控制的多种钻井液分析仪器。

This series of products is a kind of gas pressure reducing output device. It is suitable for pressure adjustment of various gas use devices. It can be connected to the big gas cylinder, the midsize gas cylinder and other air supply connected with them. By adjusting the two sets of pressure reduction valves, it can obtain two kinds of pressure output gas in the rated range. Each set of pressure reduction valves is equipped with a set of safety valves to protect the gas supply pipeline from overloading and unloading. There are 1~4 output rubber hose in this series. Users can choose according to the needs. The Gas Supply Pressure Reduction Valve is mainly matched with various drilling fluid analysis instruments controlled by our production.

II. 型号及规格 Model and specification

型号 Model	(左) 减压阀输出压力 (left) Output pressure of Pressure reduction valve	(右) 减压阀输出压力 (right) Output pressure of Pressure reduction valve	配置 Parts
1320	~0.7MPa	~7.6MPa	配 2 根输出胶管 2 output rubber hose
1321	~8.0MPa	~8.0MPa	配 2 根输出胶管 2 output rubber hose
1322	~8.0MPa	~8.0MPa	配 3 根输出胶管 3 output rubber hose
1323	~7.6MPa	~8.0MPa	配 4 根输出胶管 4 output rubber hose
1324	~8.0MPa	~8.0MPa	配 2 根输出胶管 2 output rubber hose

III. 主要技术参数 Technical parameter

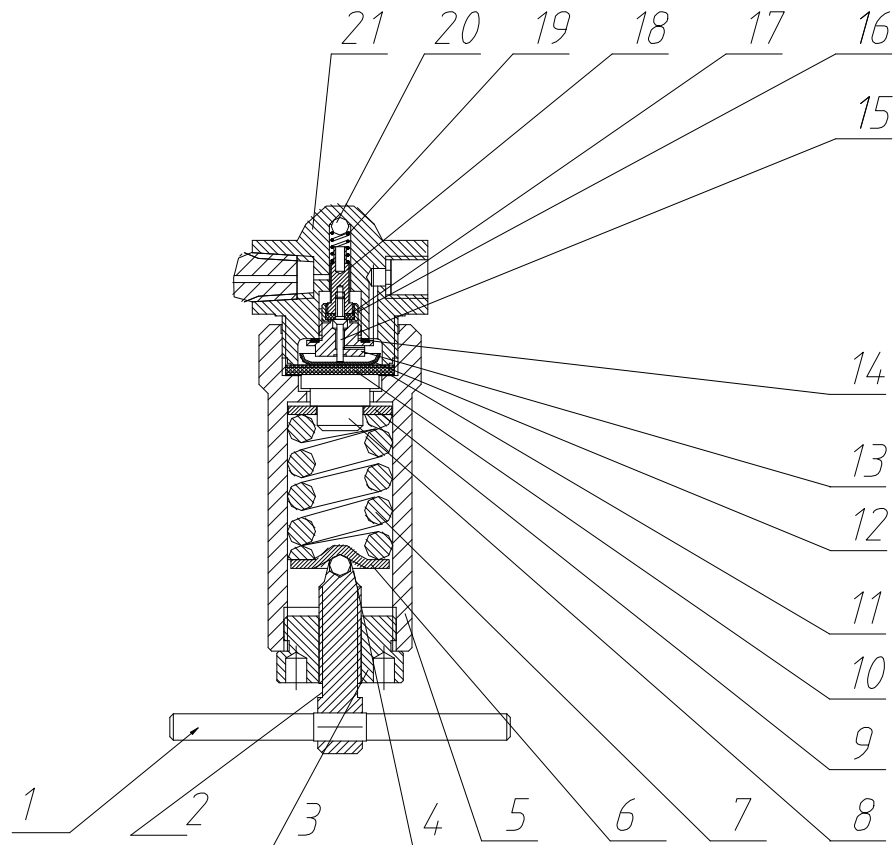
名称 Name	技术指标 Technical parameter
气源输入压力 Input pressure of air supply	最大工作压力的 1.2 倍~15MPa 1.2 times the maximum working pressure~15MPa
输出压力调整范围 Justification range of output pressure	~8.0MPa
安全阀压力调整范围 Justification range of safety valve' s pressure	1~8.5MPa
适用温度范围 Operating temperature range	-10℃~+50℃
气源 Air supply	氮气、二氧化碳、压缩空气等无杂质，无腐蚀作用的气体。严禁使用氧气。 N ₂ , CO ₂ , compressed air and other impurities, no corrosive gas. <i>Prohibit the use of oxygen (O₂).</i>
胶管最大工作压力 Maximum working pressure of rubber hose	15MPa
输入端联接螺纹 Connecting thread of the input end	G5/8
输出端联接螺纹 Connecting thread of the output end	M12×1.25

IV. 结构及工作原理 Structure and working principle

该管汇主要由输入连接三通部件、减压阀组件、安全组件、输出胶管组件等组成。见（图 1-8）

The manifold is mainly composed of in-connection tee parts, pressure reduction valve assembly, safety assembly, output rubber hose assembly and so on. See (Figure 1-8)

1. 减压阀组件 Pressure reduction valve assembly:

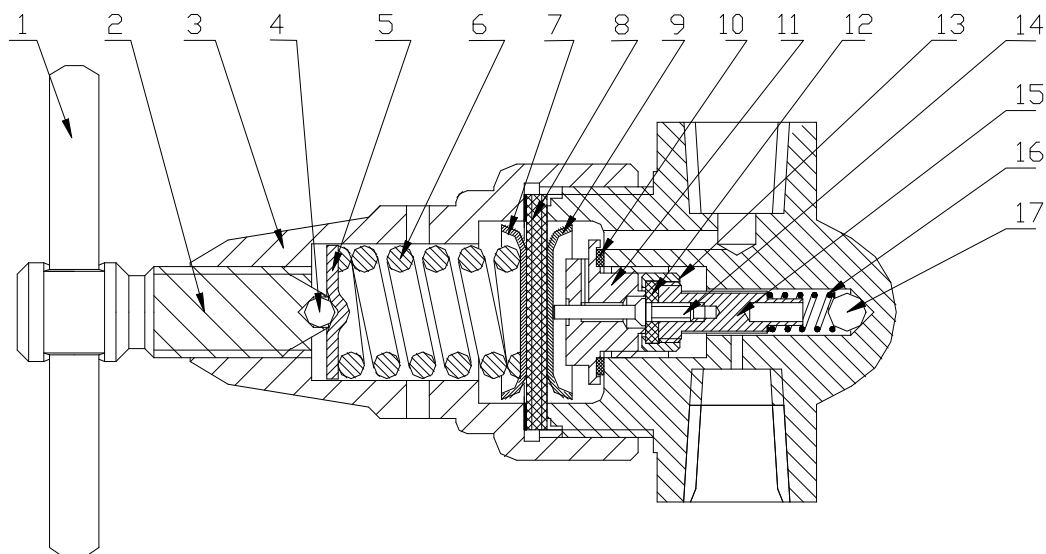


(图1) 减压阀组件结构图 Structure diagram of pressure reduction valve assembly

减压阀组件明细表 Detailed list of pressure reduction valve assembly

序号 No	名称 Name	序号 No	名称 Name	序号 No	名称 Name
1	丝杠手柄 Screw handle	8	弹簧座 Spring seat	15	阀芯 Spool
2	丝杠 Screw	9	弹簧座圈 Spring retaining in position	16	压紧帽 Compress tightly_cap
3	上壳体盖 Upper shell cover	10	橡胶膜片 Rubber diaphragm	17	密封垫 Sealing gasket
4	钢球 Steel ball	11	垫圈 Gasket	18	阀芯座 Spool seat
5	上壳体 Upper shell	12	传压盘 Pressure plate	19	弹簧 Spring
6	弹簧压板 Spring bearer plate	13	压帽 Pressure cap	20	钢球 Steel ball
7	弹簧 Spring	14	垫圈 Gasket	21	阀座 Valve seat

2. 1320 管汇 1.6MPa 减压阀组件:



Model:1320 1.6MPa:Pressure reduction valve assembly

(图 2) 1320 管汇 1.6MPa 减压阀组件结构图

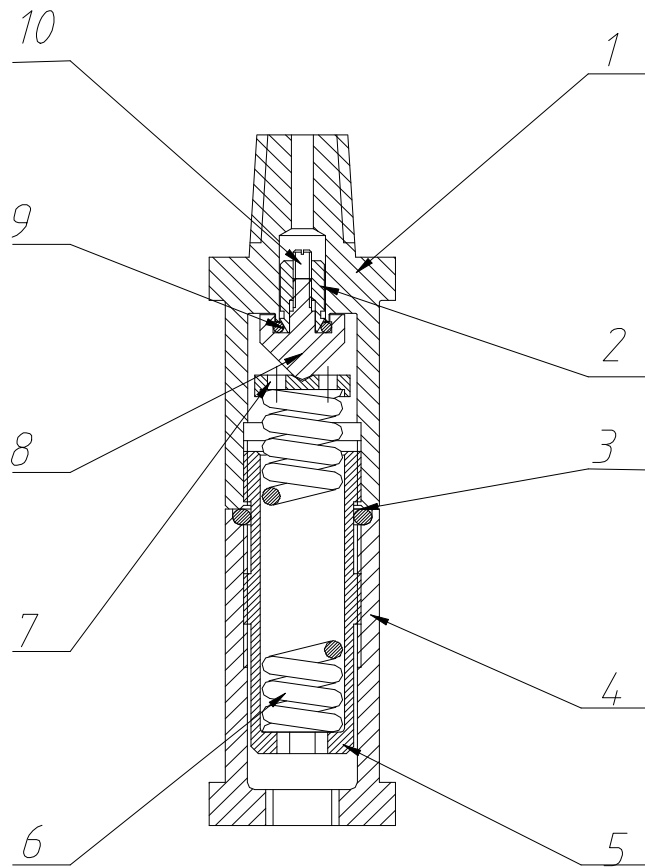
Structure diagram of Model: 1320 1.6MPa

(表 2) 1320 管汇 1.6MPa 减压阀组件明细表

Detailed list

序号 No	名称 Name	序号 No	名称 Name	序号 No	名称 Name
1	调压手柄 Pressure regulating handle	7	弹簧座 Spring seat	13	压紧帽 Compress tightly_cap
2	调压螺杆 Pressure regulating screw	8	橡胶膜片 Rubber diaphragm	14	阀芯 Spool
3	阀盖 Valve cover	9	传压盘 Pressure transfer plate	15	阀芯座 Spool seat
4	钢球 Steel ball	10	垫圈 Gasket	16	弹簧 Spring
5	垫板 Bearing plate	11	压帽 Pressure cap	17	钢球 Steel ball
6	弹簧 Spring	12	密封垫 Sealing gasket		

3. 保险阀组件结构图及明细表 The safety valve assembly:

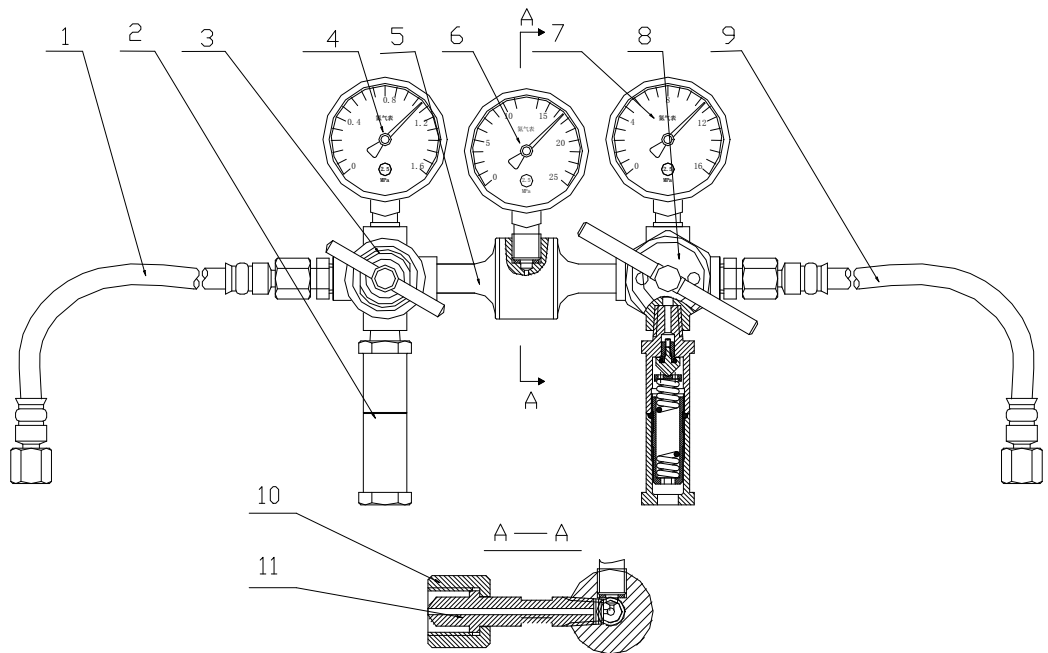


(图 3) 保险阀组件结构图 The structure diagram of the safety valve assembly

(表 3) 保险阀组件明细表 Detailed list

序号 No	名称 Name	序号 No	名称 Name
1	安全阀座 Safety valve seat	6	调压弹簧 Pressure regulating spring
2	定位压帽 Positioning pressure cap	7	传压盘 Pressure transfer plate
3	“O”型圈 O-ring	8	安全阀芯 Safety valve core
4	锁紧螺帽 Locking nut	9	“O”型圈 O-ring
5	调压阀套 Pressure regulating valve sleeve	10	紧定螺钉 Holding screw

4. 1320 型气源管汇结构图及明细表



Model:1320 The Gas Supply Pressure reduction valve:

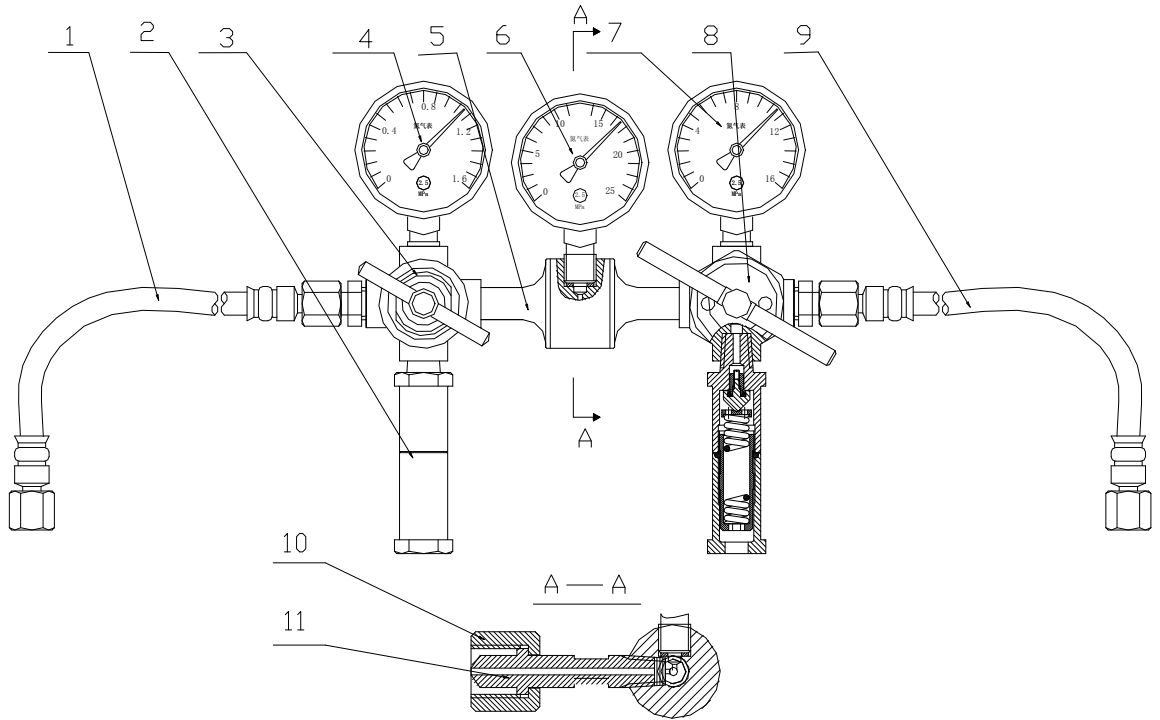
(图 4) 1320 管汇结构图 The structure diagram

(表 4) 1320 管汇明细表 Detailed list

序号 No	名称 Name	序号 No	名称 Name
1	高压胶管 High pressure rubber hose	7	16MPa 压力表 16MPa Pressure gauge
2	保险阀 Safety valve	8	减压阀 (右) Pressure reduction valve(right)
3	减压阀 (左) Pressure reduction valve(left)	9	高压胶管 High pressure rubber hose
4	1.6MPa 压力表 1.6MPa Pressure gauge	10	气瓶接帽 Gas cylinder's cap
5	三通 Tee valve	11	气瓶接管 Gas cylinder's takeover
6	25MPa 压力表 25MPa Pressure gauge		

5. 1321 型气源管汇结构图及明细表

Model:1321 The Gas Supply Pressure reduction valve:



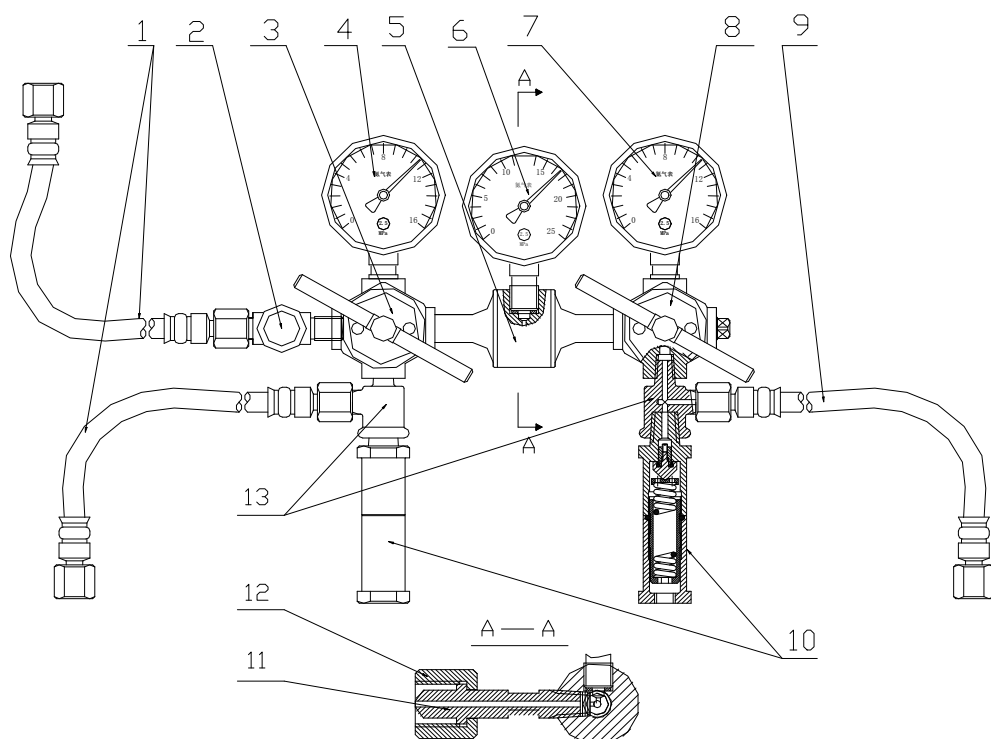
(图 5) 1321 管汇结构图 The structure diagram

(表 5) 1321 管汇明细表 Detailed list

序号 No	名称 Name	序号 No	名称 Name
1	高压胶管 High pressure rubber hose	7	16MPa 压力表 16MPa Pressure gauge
2	保险阀 Safety valve	8	减压阀 (右) Pressure reduction valve(right)
3	减压阀 (左) Pressure reduction valve(left)	9	高压胶管 High pressure rubber hose
4	16MPa 压力表 16MPa Pressure gauge	10	气瓶接帽 Gas cylinder's cap
5	三通 Tee valve	11	气瓶接管 Gas cylinder's takeover
6	25MPa 压力表 25MPa Pressure gauge		

6. 1322 型气源管汇结构图及明细表

Model:1322 The Gas Supply Pressure reduction valve:



(图 6) QG80A 管汇结构图 The structure diagram

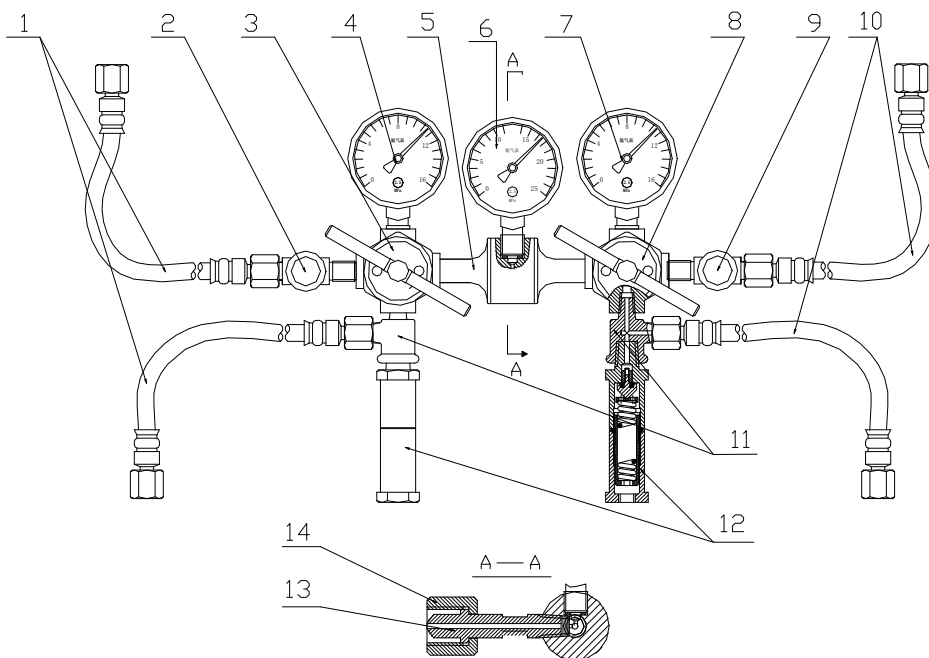
(表 6) QG80A 管汇明细表 Detailed list

序号 No	名称 Name	序号 No	名称 Name
1	高压胶管 High pressure rubber hose	8	减压阀 (右) Pressure reduction valve(right)
2	放气阀 Deflation valve	9	高压胶管 High pressure rubber hose
3	减压阀 (左) Pressure reduction valve(left)	10	保险阀 Safety valve
4	16MPa 压力表 16MPa Pressure gauge	11	气瓶接管 Gas cylinder's takeover
5	三通 Tee valve	12	气瓶接帽 Gas cylinder's cap
6	25MPa 压力表 25MPa Pressure gauge	13	三通管接 Tee pipe connection
7	16MPa 压力表		

	16MPa Pressure gauge		
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7. 1323 型气源管汇结构图及明细表

Model:1323 The Gas Supply Pressure reduction valve:



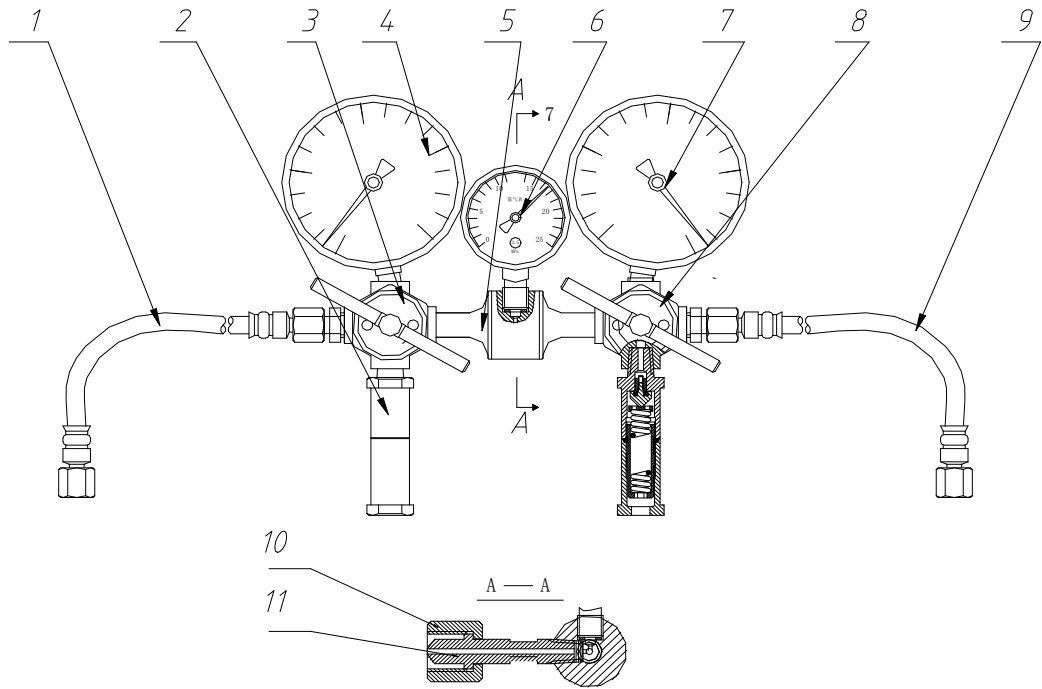
(图 7) 1323 管汇结构图 The structure diagram

(表 7) 1323 管汇明细表 Detailed list

序号 No	名称 Name	序号 No	名称 Name
1	高压胶管 High pressure rubber hose	8	减压阀 (右) Pressure reduction valve(right)
2	放气阀 Deflation valve	9	放气阀 Deflation valve
3	减压阀 (左) Pressure reduction valve(left)	10	高压胶管 High pressure rubber hose
4	16MPa 压力表 16MPa Pressure gauge	11	三通管接 Tee pipe connection
5	三通 Tee valve	12	保险阀 Safety valve
6	25MPa 压力表 25MPa Pressure gauge	13	气瓶接管 Gas cylinder's takeover
7	16MPa 压力表 16MPa Pressure gauge	14	气瓶接帽 Gas cylinder's cap

8. 1324 型气源管汇结构图及明细表

Model:1324 The Gas Supply Pressure reduction valve:



(图 8) 1324 管汇结构图 The structure diagram

(表 8) 1324 管汇明细表 Detailed list

序号 No	名称 Name
1	高压胶管 High pressure rubber hose
2	安全阀组件 Safety valve assembly
3	减压阀组件 (左) Pressure reduction valve assembly (left)
4	Y-150 压力表 16MPa Y-150 Pressure gauge 16MPa
5	三通管接 Tee pipe connection
6	Y-60 压力表 25MPa Y-60 Pressure gauge 25MPa
7	Y-150 压力表 16MPa Y-150 Pressure gauge 16MPa
8	减压阀组件 (右) Pressure reduction valve assembly (right)
9	高压胶管 High pressure rubber hose
10	气瓶接帽 Gas cylinder's cap
11	气瓶接管 Gas cylinder's takeover

9. 输入、输出连接密封形式 The seal form of the input and output connection:

管汇的输入端连接螺纹为 G5/8 的管螺帽,密封性质为球面金属密封。输出端连接螺纹为 M12 ×1.25 螺帽,密封性质为球面金属密封。

The connecting thread of the input end of the Pressure Reduction Valve is G5/8 pipe nut, Sealing property is spherical metal seal. The connection thread of the output end is M12 * 1.25 nut, Sealing property is spherical metal seal.

10. 工作原理 Working principle.

将外部气体(最大工作压力的 1.2 倍 15MPa),输入至高压室,通过对两套减压阀的调整,可获得在额定范围内两种压力的输出气体。每一组减压阀都备有一组安全阀,在供气管路中起超载卸荷自动保护作用。

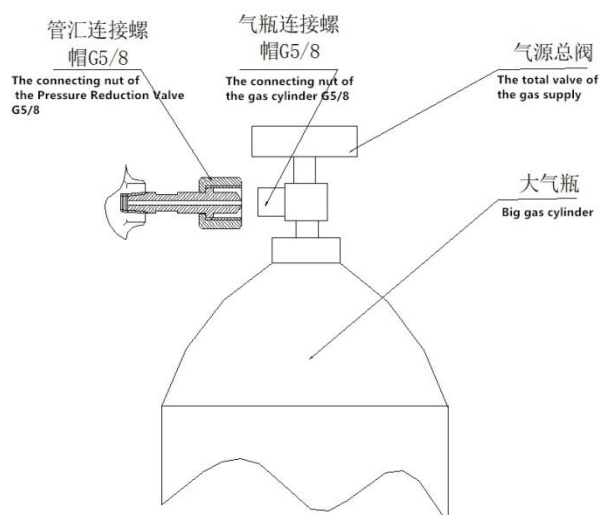
Input the external gas(1.2 times~15MPa of maximum working pressure) into the high pressure chamber, through the adjustment of the two sets of Pressure Reduction Valves, the output gas of the two pressures within the rated range can be obtained. Each set of the Pressure Reduction Valves is equipped with a set of safety valves to protect the gas supply pipeline from overloading and unloading.

V. 仪器的操作 The operation of the instrument

1. 检查气源装置通气孔内是否清洁、无杂质、密封面无损伤和杂质。
2. 将管汇输入端的连接螺母 G5/8 与气源装置输出孔 G5/8 端进行连接要求螺纹紧固力适宜,金属密封效果良好。见(图 9)

1. Check whether the ventilation holes in the Gas Supply device are clean, no impurities, no damage to the sealing surface and impurities.

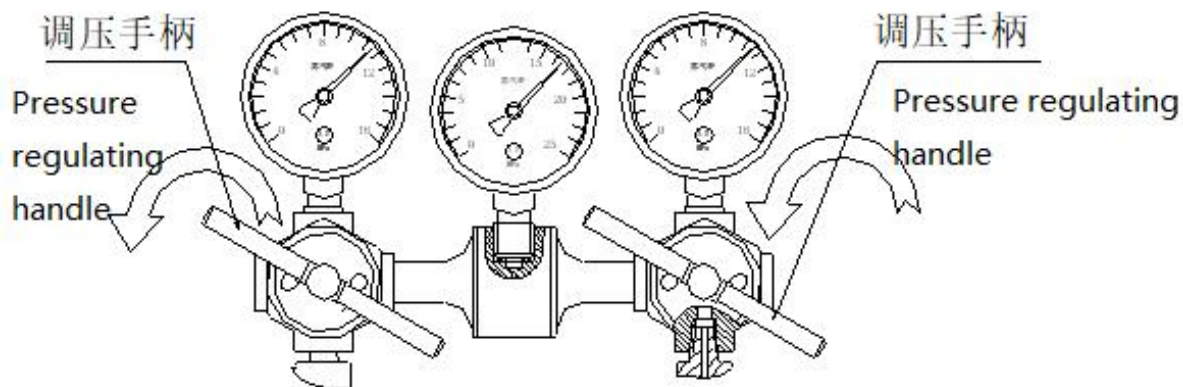
2. Connect the connecting nut G5/8 of the Pressure Reduction Valves input terminal to the G5/8 port of the Gas Supply output port. The thread fastening force is suitable and the metal seal effect is good. See (Figure 9)



(图 9) 操作示意图(Figure 9) operation schematic diagram

3. 逆时针方向旋转两套减压阀上的调压手柄，确保调压手柄处于自由状态。见（图 10）

3. Turn the Pressure Regulating Handle on the two sets of Pressure Reduction Valve counterclockwise to ensure that the Pressure Regulating Handle is in free state. See (Figure 10)



(图 10) 操作示意图(Figure 10) operation schematic diagram

4. 打开气源总阀，检查气源压力（观察中间 25MPa 压力表）不得低于工作压力的 1.2 倍。

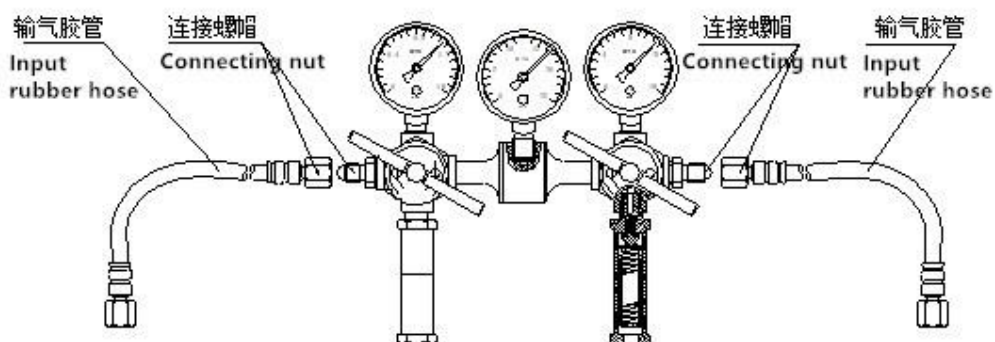
5. 按顺时针方向慢慢旋转减压阀上的调压手柄，使每套减压阀达到一开即关的目的，以使高压气体清除管路中的杂质。

6. 检查管汇输出端连接部件和输气管连接部件的密封面处有无杂质和损伤。通气孔内是否清洁。用螺纹进行连接，要求螺纹紧固力适宜，连接牢靠。金属密封效果良好。见（图 11）

4. Open the total valve of the Gas Supply, check the gas pressure (observe the middle 25MPa pressure gauge) shall not be less than 1.2 times the working pressure.

5. The Pressure Regulating Handle on the Pressure Reduction Valve is slowly rotated in clockwise direction so that each set of Pressure Reduction Valves can reach the purpose of closing immediately after opening, so that the High pressure gas can remove impurities in the pipeline.

6. Check whether there is any impurity or damage at the sealing surface of the connecting parts of Pressure Reduction Valves and the connecting parts of the gas pipe. Whether or not the ventilation hole is clean. Threaded connection is required for threaded fastening force and reliable connection. The sealing effect of metal is good. See (Figure 11)



(图 11) 操作示意图(Figure 10) operation schematic diagram

- 7.检查用气装置，各控制阀门是否处于正常工作状态。
 - 8.根据实验工作的需要，顺时针旋转减压阀上的调压手柄，观察相应的压力表，调整气源输出压力至实际需要的压力值。
 - 9.实验工作结束后，逆时针转动处于工作状态的调压手柄，使之处于自由状态
 - 10.关闭气源总阀。
 - 11.打开实验仪器上的放气阀，释放胶管和减压阀低压室的压力气体。(若需继续做重复实验，从第 8 条开始，重新操作)。
 - 12.转动输出胶管与仪器连接处螺帽，使之分离。(若继续作其他实验，从操作方法第 7 条开始，重新操作)。
 - 13.顺时针旋转减压阀上的调压手柄，至打开减压阀内针阀为止，释放气源管汇输入腔内剩余压力气体，再逆时针转动调压手柄，使之处于自由状态。
 - 14.逆时针转动气源管汇与气源装置连接处螺帽，卸下气源管汇。
 - 15.管汇使用完后，擦净，调压手柄恢复到自由状态。妥善保管。
7. Check whether the valve is in normal working condition.
 8. According to the needs of the experimental work, rotate the Pressure Regulating Handle on the Pressure Reduction Valves clockwise, observe the corresponding pressure gauge, adjust the pressure of the gas supply to the actual required pressure.
 9. After the experiment is finished, the Pressure Regulating Handle in the working state is rotated counterclockwise, so that it is in free state.
 10. Close the total valve of the Gas Supply.
 11. Open the Deflation valve on the experimental instrument, release the pressure gas of the hose and Pressure Reduction Valve. (if you need to repeat the experiment, start from eighth, re operation).
 12. Turn the nut between the output hose and the instrument to separate it. (if you continue with other experiments, start with the seventh method of operation, re operation).
 13. The pressure regulating handle on the Pressure Reduction Valve is rotated clockwise to open the needle valve in the Pressure Reduction Valve, and the gas supply pipe is released into the residual pressure gas in the cavity, and then the Pressure Regulating Handle is rotated counter clockwise to make it free.
 14. Counterclockwise rotation of the nut between the Gas Supply Pressure Reduction Valve and the connection of the Gas Supply' s device, unloading the Gas Supply Pressure Reduction Valve.
 15. After the Pressure Reduction Valve is used, wipe it off and adjust the Pressure Regulating Handle to free state. Keep it properly.

V. 仪器的维护与保养 Maintenance and maintenance of instrument

1. 清洗各部件并干燥待用，仪器置于干燥环境中。确保通气孔内清洁。“O”型圈和滤网未变形、无破损，密封面无损伤。

2. 移动、维修或保养仪器时，必须切断气源。要轻拿、轻放，以免造成部件变形影响精度和使用。

3. 放置时要将调压手柄处于自由状态。调压手柄螺栓处，应定期旋下涂抹润滑脂，以免生锈，造成调压失灵。

4. 调节压力时不能将压力调至超过压力表总量程的 2/3，逐渐加压，不得敲击压力表。

5. 仪器使用结束后，应将各部件内的压力、气体释放干净。泄压后方可取下管汇。

6. 输气管禁止与腐蚀性介质接触，不得敲击和划伤。

7. 气源严禁使用氧气。

8. 安全阀不得随意调节，若需重新调整安全极限压力时，需有专人根据工作需要仔细调节。

1. Clean the components and dry them up. The instruments are placed in a dry environment. Make sure that the ventilation hole is clean. The "O" ring and filter screen are not deformed and damaged, and the sealing surface is free from damage.

2. When moving, repairing or maintaining the instrument, the gas source must be cut off. It is necessary to take lightly and put it lightly so as not to cause deformation of parts and affect accuracy and use.

3. When placing the handle in a free state. The Pressure Regulating Handle should be regularly screwed down with grease so as to avoid rusting and cause voltage regulation failure.

4. When pressure is adjusted, the pressure can not be adjusted to 2/3 over the total range of the pressure gauge. Gradually pressurize, not to knock the pressure gauge.

5. After the instrument is used, the pressure and gas in each part should be released clean. The Pressure Reduction valve should be unloaded after the decompression operations.

6. It is forbidden to contact with corrosive medium and not to strike or scratch.

7. The air supply is strictly forbidden to use Oxygen.

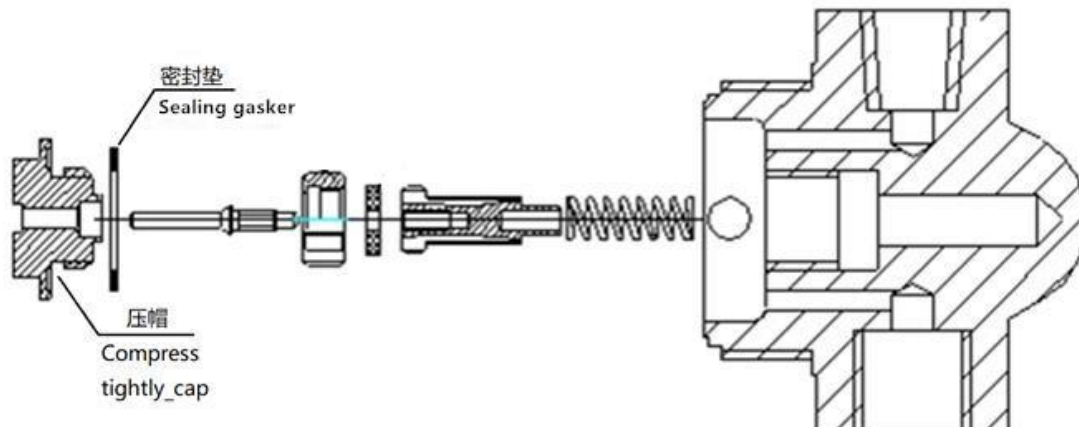
8. The safety valve must not be adjusted at will. If there is a need to re adjust the safety limit pressure, special personnel should be carefully adjusted according to the needs of the work.

VI. 故障的判定与排除 Fault determination and elimination

故障：压力表指针自动上升

原因：减压阀芯漏气。

排除：应卸下减压阀盖，上紧阀芯压帽或更换密封垫。



Fault: the pointer of the pressure gauge will rise automatically.

Reason: the pressure relief valve core is leaking.

Exclude: the Pressure Relief Valve's cover should be unloaded, Tighten the Compress tightly-cap or replace the sealing gasket.

VII. 一年备件（选购）One year spare parts (selected)

编号 Number	规格及名称 Specifications and names	使用部位 Use part
S0502	“0”型圈 (φ8×1.8) O-ring (φ8×1.8)	保险阀 Safety valve
S0505	“0”型圈 (φ18×2.4) O-ring (φ18×2.4)	保险阀 Safety valve
132109	膜片 Diaphragm	减压阀 Pressure reduction valve
132115	密封垫 Sealing gasket	减压阀芯 Pressure reduction valve core
	高压胶管 ≥15MPa High pressure rubber hose ≥15MPa	输出接头 Output connector

青岛创梦仪器有限公司 装箱单

Qingdao Chuangmeng Instrument Co., Ltd. Packing list

生产企业：青岛创梦仪器有限公司

Manufacturing enterprise: Qingdao Chuangmeng Instrument Co.,Ltd.

生产地址：青岛市城阳区流亭街道兴海路3号

Production address: No. 3 Xinghai Road, Liuting Street, Chengyang District, Qingdao

主机型号：高压管汇

Model of the main motor: High Pressure Reduction Valve

出厂编号：

Manufacturing No:

序号 No	编号	名称及规格 Name and specification	数量 Quantity	备注 Remarks
1		管汇整机 Pressure Reduction Valve	1	
2		1320 型-胶管 Rubber Hose Model: 1320	2	
		1321 型-胶管 Rubber Hose Model: 1321	2	
		1322 型-胶管 Rubber Hose Model: 1322	3	
		1223 型-胶管 Rubber Hose Model: 1323	4	
		1324 型-胶管 Rubber Hose Model: 1324	2	
3		手柄 Handle	2	
4		使用手册 Manual Instruction	1	
5		装箱单 Packing list	1	
6		合格证 Certificate	1	