

## 楼栋调压箱 Gas Pressure Regulating Cabinet

代理商标贴处

### 上海飞奥燃气设备有限公司 SHANGHAI FIORENTINI GAS EQUIPMENT CO.,LTD.

中文域名: 飞奥.com 飞奥.cn 上海飞奥.com 上海飞奥.cn

#### 上海总部 Headquarter

地址: 上海市浦东新区龙东大道4493号  
邮编: 201201  
Tel: 021-58589889  
Fax: 021-58584691  
E-mail: shanghai@fiorentini.com.cn  
http://www.fiorentini.cn

#### 兰州办事处 Lanzhou Office

地址: 兰州市庆阳路169号陇鑫大厦  
2208室  
邮编: 730030  
Tel: 0931-8480960  
Fax: 0931-8480596  
E-mail: lanzhou@fiorentini.com.cn

#### 武汉办事处 Wuhan Office

地址: 武汉市汉阳大道139号  
汉商写字楼1528号  
邮编: 430050  
Tel: 027-85510781  
Fax: 027-85712606  
E-mail: wuhan@fiorentini.com.cn

#### 重庆办事处 Chongqing Office

地址: 重庆市江北区洋河路4号  
北岸星座2115号  
邮编: 400020  
电话: 023-67756809  
传真: 023-67756814  
E-mail: chongqing@fiorentini.com.cn

#### 南京飞奥燃气设备有限公司

Nanjing Fiorentini Gas Equipment Co.,Ltd.  
地址: 南京市玄武区锁金村  
83号5楼(公用金卡大厦)  
邮编: 210042  
Tel: 025-85401516  
Fax: 025-85401516-203  
E-mail: nanjing@fiorentini.com.cn

#### 新疆办事处 Xinjiang Office

地址: 乌鲁木齐经济技术开发区  
口岸南路8号  
邮编: 830026  
Tel: 0991-8832510、3839533  
Fax: 0991-8832510、3833635  
E-mail: xinjiang@fiorentini.com.cn

#### 深圳办事处 Shenzhen Office

地址: 深圳市南山区文心二路海印长城  
一期一栋4A  
邮编: 518054  
Tel: 0755-86211537  
Fax: 0755-86211537  
E-mail: shenzhen@fiorentini.com.cn

#### 济南办事处 Jinan Office

地址: 济南市天桥区水屯路水园小区  
北区1-1附属楼18号  
邮编: 250033  
电话: 0531-88603357  
传真: 0531-88603357  
E-mail: jinan@fiorentini.com.cn

#### 北京办事处 Beijing Office

地址: 北京市朝阳区光华路12A号科伦大厦  
A座1007室  
邮编: 100020  
Tel: 010-65819490、65818493  
Fax: 010-65816410  
E-mail: Beijing@fiorentini.com.cn

#### 广州办事处 Guangzhou Office

地址: 广州市西华路256号港丰大厦西塔  
1002室  
邮编: 510160  
Tel: 020-88901392  
Fax: 020-88901551  
E-mail: Guangzhou@fiorentini.com.cn

#### 杭州办事处 Hangzhou Office

地址: 杭州市潮王路167号稻香园高层公寓  
405室  
邮编: 310014  
Tel: 0571-85211980  
Fax: 0571-85113281  
E-mail: hangzhou@fiorentini.com.cn



## 产品概述

RJ系列楼栋调压箱由FE型调压器、过滤器、进出口球阀及箱体组成，并可根据用户需要配置皮膜表等流量仪表。调压器采用两级平衡式结构设计，可确保在进口压力不断波动的情况下保持出口压力的稳定。箱体内附有专用调试工具和详细的操作维护手册。楼栋调压计量装置获国家外观设计专利证书，专利号：ZL200630046113.1



楼栋调压箱 Gas Dressure Regulating Cabinets

## 产品特点

- ◆ 调压器入口内置过滤网；
- ◆ 调压箱进口采用过滤与球阀一体式结构；（获得实用新型专利受理，专利申请号：200720077184.7）
- ◆ 调压器内置超高压/超低压切断、安全放散及过流关闭装置；
- ◆ 调压器具有皮膜破裂自动关闭功能；
- ◆ 调压器采用两级平衡式结构设计，调压精度高；
- ◆ 调压器进出口采用活套螺母连接，拆卸和安装便利；
- ◆ 所有连接采用O形圈或平垫密封，避免螺纹密封产生泄漏；
- ◆ 不锈钢箱体、钢板喷塑箱体或玻璃钢箱体，适用于各种恶劣环境；
- ◆ 安装、调试、维护方便；
- ◆ 过滤器专用滤芯流量大，可供不同用户对滤材和过滤精度的要求。

## Product Introduction

The RJ Series Domestic Pressure Reducing Box consists of FE regulator, filter, inlet/outlet ball valves and cabinet, etc, and can equip flow meter instruments such as film meter according to user's requirement. The regulator is designed by the two-level balance structure which can keep the outlet pressure steady while the inlet pressure changes continually. Special adjusting tools, detailed operation and maintenance manual are enclosed in the cabinet. The Regulating and Metering Domestic Cabinet has gained the certificate of apparent design patent in nation. Patent No.: ZL200630046113.1



## Product characteristic

- ◆ Incorporated filtering net in the regulator inlet;
- ◆ Integrative filter and ball valve used in the inlet of the Box;(gained the practicality and new type patent application, application No.: 200720077184.7)
- ◆ Incorporated over pressure/under pressure shut-off, safety relief and excess flow close devices in the regulator;
- ◆ The regulator has the function of shutting off automatically in case the film is broken;
- ◆ The regulator is designed by the two-level balance structure which makes high accuracy of regulating;
- ◆ Connection by the active nuts are used in the inlet/outlet of the regulator, which makes the disassembly and installation become convenient;
- ◆ All connections are sealed by O-rings or flat gaskets to avoid the leakage from thread seal;
- ◆ The cabinet made of stainless steel, powder coating steel or fiberglass-reinforced plastics can apply to any bad environment;
- ◆ It is convenient to install, adjust and maintain;
- ◆ The special cartridge in the filter provides high flow that can satisfy different users' requirement for the cartridge material and the accuracy.

## 安装说明

安装前必须清理上游管道，防止管道内的杂质进入调压箱；检查调压箱各连接是否可靠，若有松动应先拧紧后再安装。

- ◆ 安装调压箱的墙体应为牢固的永久性实体墙，其建筑物耐火等级不低于二级；
- ◆ 调压箱底部距离地面的高度以1.0~1.2米为宜；
- ◆ 调压箱距建筑物门、窗或其它通向室内的孔槽的水平净距应不小于1.5米,且不得安装在建筑物窗下和阳台的下方，不应安装在室内通风机进风口墙上；
- ◆ 将调压箱门打开，箱底板上有3个 $\phi 12$ 安装用长园孔，用M10的膨胀螺栓将箱体底板固定于墙体或预制的安装支架上，将进、出口法兰与燃气管网连接即可（注意：严禁法兰强行就位连接）。
- ◆ 调压箱安装完毕，与之连接的管网内应进行清理，并进行压力试验和气密性试验。试验时应将调压箱上的进、出口阀门关闭（调压箱在出厂前已进行过严格试验），否则可能会损坏调压器。
- ◆ 试验完成，管路全部采用惰性气体置换完成后即可投入运行。

## 订货须知

用户在订货时，请提供以下参数：

- ◆ 气体种类（必要时须提供气体成分）；
- ◆ 气体进、出口压力范围；
- ◆ 气体流量；
- ◆ 其它特殊要求

## Installation description

It is necessary to clean the upstream pipeline before installation to avoid the impurities coming into the Box; Check the reliability for all connections, screw down the connections before installation in case the connections are loose.

- ◆ The wall for installing the Box should be firm, permanence and entitative one, its fire-retardant level is higher than 2nd level.
- ◆ The distance from the ground to the bottom of the Box should be between 1.0~1.2 meter.
- ◆ The aclinic distance from the Box to the gate, window or other hatches of the building should not less than 1.5 meter. the Box can't be installed neither below the window and the balcony of the building nor the wall which is already hatched for the fan inlet of the fanner;
- ◆ Open the door of the Box, you'll see 3 long-round  $\phi 12$  holes which are for installation, use M10expansion bolt to fixup the Box soleplate on the wall or the prefab brackets, lastly connect the inlet/outlet flanges to the gas pipeline. (note: connect flange in position by force is strictly forbidden)
- ◆ The pipelines connected to the Box should be cleaned up when finish installing the Box, and the pressure test and airproof test must be taken. Close the inlet/outlet valves in the Box before the tests (the Box is strictly tested before leaving the factory), otherwise the regulator may be damaged.
- ◆ When the teats are completed, use inert gases to replace the gas in all pipelines, then the Box can be used.

## Ordering description

When ordering, please offer the following descriptions:

- ◆ Kind of gas (offer the gas component if necessary);
- ◆ Inlet/outlet pressure range;
- ◆ Flow rate;
- ◆ Other special requirements

### 安全装置及附件

楼栋调压箱配有如下装置：

- 装在调压器进口的内装式过滤器，系一塑料网，它可以滤除固体杂质，以免损坏启闭件；
- 超压切断装置：当下游压力超过切断装置的设定值时，自动切断气流；
- 欠压切断装置：当下游压力低于设定值的70% - 85%时，截断气流；
- 过流量切断装置：当流量达到额定流量的120 ~150%之间时，截断气流；
- 供气不足的切断装置：当上游供气不足时，截断气流；
- 放散阀：当下游出现诸如零流量时燃气温度升高而造成的超压时，排放出少量燃气（最多400升/小时）
- 二级膜片破裂时安全切断。各安全切断装置都只能手动复位。

### Safety device and accessories

Domestic Pressure Reducing Box are equipped with following devices:

- Incorporated filter placed at the regulator's entry: performed in plastic mesh; it retains the solid impurities which may damage the closing devices.
- Over pressure shut-off device: it stops the flow in case the downstream pressure exceeds the set value of the device.
- Under pressure shut-off device: it stops the flow in case the downstream pressure goes below a value of about 70%~85% of the regulator's set value.
- Excess flow shut-off device: it interrupts the flow in case the flow reaches values ranging between 120%~150% of the rating value.
- Safety shut-off device for lack of feeding: it interrupts the flow in case there is a lack in upstream feeding.
- Relief valve: in vents small gas flows (maximum 400L/h) in case there is overpressure downstream the regulator (for example due to temprature increase of the gas under null flow rate).
- Safety shut-off due to the second stage diaphragm breakage. The reset of the safety shut-off devices is solely manual.

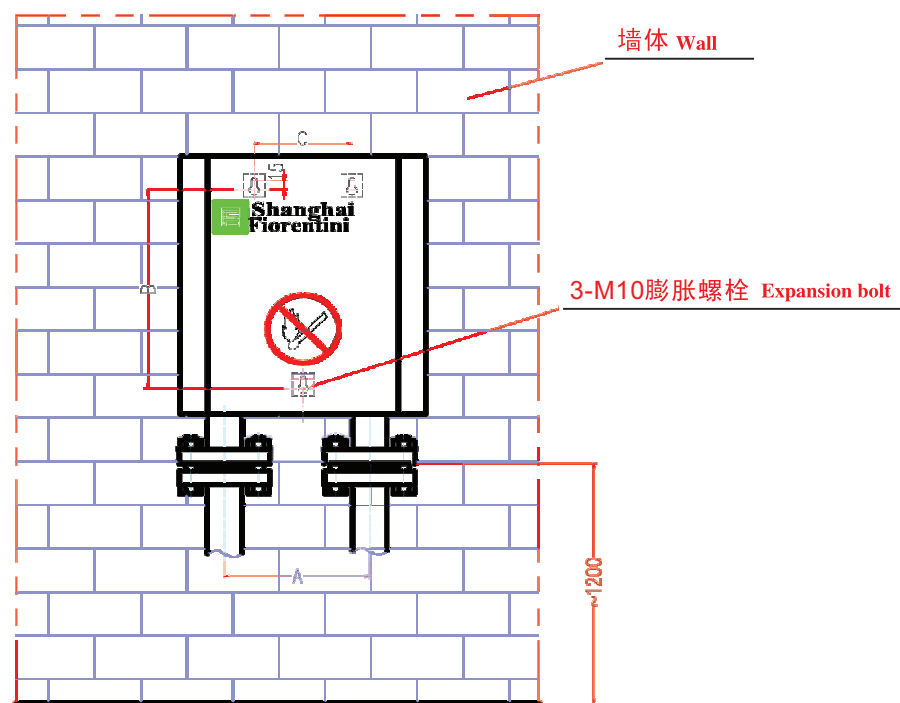


图2 调压箱安装图 Figure 2 Installation of Box

### 技术特性

进口压力Pe: 0.02~0.5Mpa

出口压力Pa: 1.3~18kpa (50kpa)

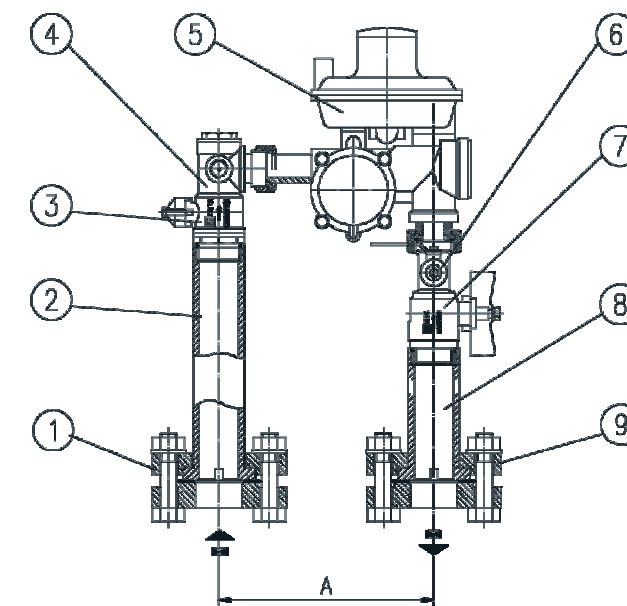
工作精度: RG5/SG10/AG10

工作温度: -20℃~60℃

适用介质: 天然气、城市煤气、液化石油气等非腐蚀性气体

安全装置: 一体式超高压切断和超低压切断装置、内置安全放散装置

结构形式 二级调压、一体式超高压切断和超低压切断装置、入口过滤装置、内置安全放散装置



### 楼栋调压箱工作原理

流体从上游管道进入调压箱进口直管②→经打开的进口球阀③及过滤器④→进入调压器进行压力调节后经出口球阀⑦和出口直管⑧流出。下游气体的压力通过调压器内取压信号管进入调压器皮膜下腔，驱使调压器处于理想的工作状态，以保证满足气体流量和设定出口压力的要求。

过滤器④为与球阀一体型结构，用以保证进入调压器⑤的气体的洁净，并有多种滤材和过滤精度可供选择，以满足不同用户的需要。排气球阀⑥用以满足必须时的排气要求和检测出口压力。

### Technical characteristic

Inlet pressure Pe: 0.02~0.5 Mpa

Outlet pressure Pa: 1.3~18kpa (50kpa)

Working accuracy: RG5/SG10/AG10

Working temperature: -20℃~60℃

Gas media: non-corrosive gas such as natural gas, city gas, LPG, etc.

Safety devices: Integrative over pressure shut-off and under pressure shut-off device, incorporated safety relief device;

Structure: two-level regulation, integrative over pressure shut-off and under pressure shut-off device, inlet filter device, incorporated safety relief device;

Installation: install in verticality.

### 主要零部件

- |           |         |
|-----------|---------|
| ①进口活套法兰   | ⑥排气球阀   |
| ②进口直管     | ⑦出口球阀   |
| ③进口球阀     | ⑧出口直管   |
| ④过滤器（一体式） | ⑨出口活套法兰 |
| ⑤调压器      |         |

### Main parts

- |                      |                       |
|----------------------|-----------------------|
| ①Inlet active flange | ⑥Vent ball valve      |
| ②Inlet straight pipe | ⑦Outlet ball valve    |
| ③Inlet ball valve    | ⑧Outlet straight pipe |
| ④Filter (integrated) | ⑨Outlet active flange |
| ⑤Regulator           |                       |

### Work principle of Domestic Pressure Reducing Box

The gas flow comes into the inlet straight pipe from the upstream pipeline, via the inlet ball valve and filter, goes into the regulator and is regulated and then comes out via the outlet ball valve and the outlet straight pipe. The downstream gas pressure goes through the preasure signal tube into the cavity, which is below the membrane, driving the regulator to work in ideal state, in order to satisfy the requirement between the gas flow and the setting of out pressure.

The integrative structure of the filter and the ball valve can insure the purity of the gas going into the regulator, and has various cartridge materials and the accuracies for selection in order to satisfy different users' requirements. The vent ball valve is used for exhausting when necessary and measuring the out pressure.







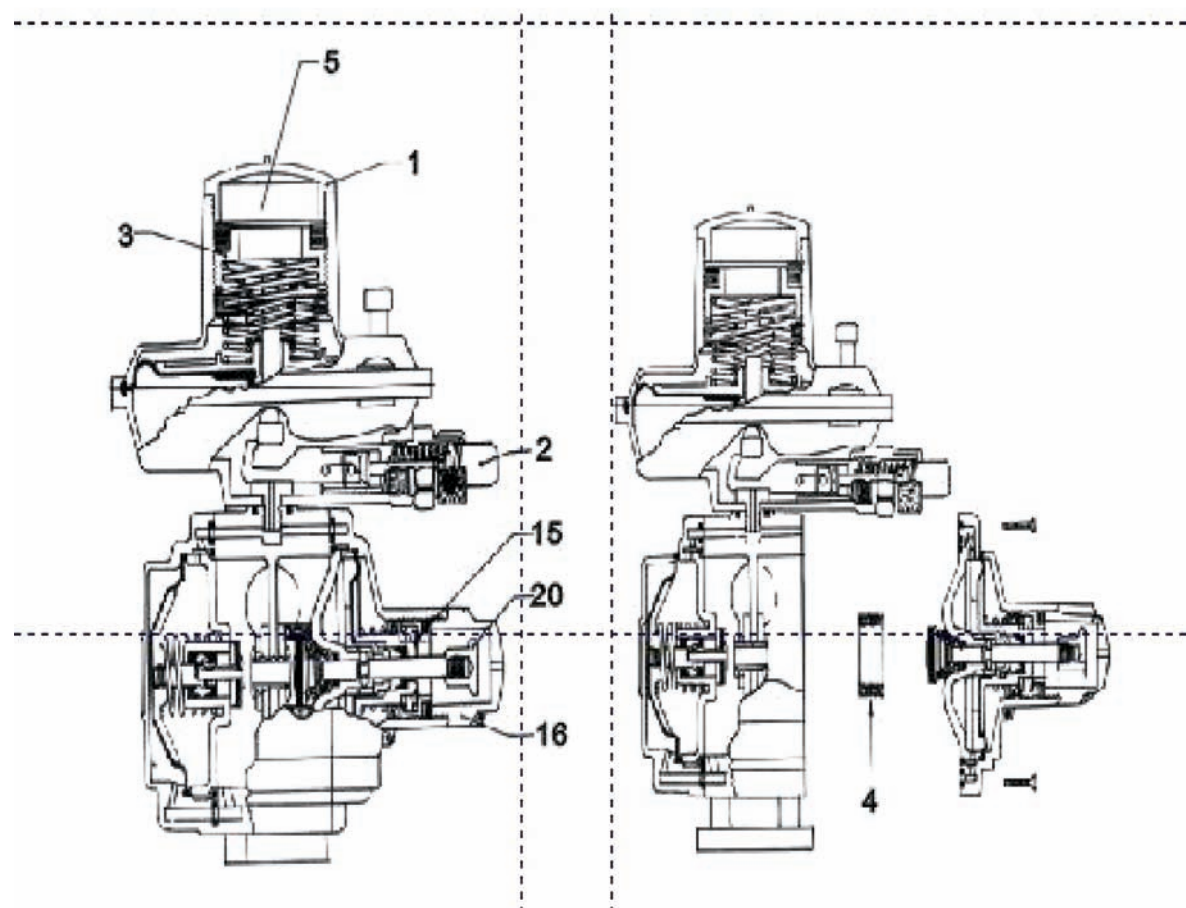


图1:FE(X)调压器结构与调试  
Figure1:the structure & commissioning of FE(E)regulator

调压箱故障及维修 Trouble shoot and maintenance for regulators

故障现象 Problem	可能原因 Possible reason	处理方法 Measurement
供气不足或不供气 Insufficient gas supply or no gas supply	主弹簧松动 Main spring is loose	重新设定出口压力：用套筒扳手（大）顺时针旋转件3，调高压力。 Reset the outlet pressure: use the special sleeve spanner (large) to screw 3 clockwise to increase the set pressure
	过滤器堵塞 A block in filter	清洗或更换滤芯（包括调压器进口滤芯） Clean or replace cartridge (including the inlet filter of the regulator)

连接尺寸(mm) Connection dimension(mm)

调压箱型号 Type	进口法兰 Inlet flange	出口法兰 Outlet flange	中心距A Center distance A	安装孔距B Installation hole distance B	安装孔距C Installation hole distance C	连接标准 Connection standard
RJ25	DN25 PN1.0 RF	DN25 PN1.0 RF	160	200	180	GB/T9121.1
RJS50	DN25 PN1.0 RF	DN25 PN1.0 RF	160	200	180	
RJX75	DN40 PN1.0 RF	DN50 PN1.0 RF	180	270	220	

非标楼栋调压箱

- 本公司的楼栋调压箱箱体有不锈钢箱体、钢板喷塑箱体和玻璃钢箱体三种；过滤器滤芯材料有聚酯纤维和不锈钢丝网二种，且有5μ、10μ、20μ、50μ等多种过滤精度可供选择，以满足客户不同气源的需要。
- 可按客户要求设计、生产各种规格型号的非标楼栋调压箱。

Nonstandard Domestic Pressure Reducing Box

- The company provides three kind of cabinet: stainless steel, powder coating steel and fiberglass-reinforced plastics, two kind of cartridge material in the filter: polyester fibres and stainless steel mesh, various accuracies: 5μ,10μ,20μ,50μ,etc., in order to satisfy different gas resources requirements for customers.
- The company designs and manufactures various type of nonstandard domestic pressure reducing boxes according to the customers' requirements.



玻璃钢箱体调压箱 Fiberglass-reinforced plastics cabinet box



RJX75型双路调压箱 (2+0)  
RJX75type double-way box (2+0)



钢板喷塑箱体调压箱  
Powder coating steel cabinet box



带流量表调压箱 (用于出口产品)  
Box with gas meter inside (for export)



## 调试

### ● 调压器启动

调压器内装的超高压、超低压紧急切断装置在出厂时处于关闭状态，通气使用时需首先打开。

对照图1，按以下方法操作：

缓慢打开调压器上游（进口）球阀和下游的测压球阀，确保调压器进气后，拧开件16塑料盖；

缓慢拉出件20拉杆，此过程会感到有阻力，而且进口压力越大则阻力越大，待拉杆定位在拉出位置时，则调压器已顺利启动。

### ● 调压器参数的设定

调压器的出口压力、放散压力和超高压切断压力已在出厂前按用户的要求进行了设定并标示在铭牌上，设定值允许相对于铭牌给定值有少许偏差，且该设定值可在小范围（约10%）内调整。

参照图1，其设定方法如下：

● **超压紧急切断压力设定：**拧下件16塑料盖，用套筒扳手（小）旋转件15六角形螺塞，顺时针方向旋转（压缩弹簧），为增大超压切断压力设定值，反之，则减小超压切断压力设定值。

● **放散压力设定：**通过测压球阀用充气球向调压器缓慢充气，当压力达到紧急切断压力值后，紧急切断切断，停止充气，用套筒扳手（中）旋转放散压力调节螺母，顺时针方向旋转（压缩弹簧），为增大放散压力设定值，反之，则减小放散压力设定值。

● **出口压力设定：**若调整调压器出口压力，则打开件1调压器塑料盖，用套筒扳手（大）旋转件3六角形螺塞，顺时针方向旋转（压缩弹簧），为增大调压箱出口压力，反之，则减小调压箱出口压力。压力设定后，关闭测压球阀。

## Commissioning

### ● Commissioning of the regulator

The built-in over pressure and under pressure shut-off device is closed when the regulator leaves the factory. During the commissioning, it should be opened first. To open the regulator, the following steps should be followed according to the figure 1:

Open the inlet ball valve in upstream and pressure test ball valve in downstream slowly, when there is gas flows into the regulator, open the item 16 (plastic); Pull out the item 20 (pole) slowly, a resistance will be felt during this process. Moreover, the resistance will grow bigger while the inlet pressure is bigger. When the pole is in the complete out position, it means the regulator is opened fully.

### ● The setting for regulator's parameter

The outlet pressure, relief pressure and over pressure is already set before the regulator leaves the factory according to the request of the customer. And those parameters are in the nameplate of the regulator. A little difference is allowed between the actual setting and the parameters in the nameplate. The actual setting can be adjusted in a small range (10%). The setting procedure is as follows referring to the figure 1.

● **The steps for the setting of over pressure shut off:** screw item 16, then use sleeve spanner (small) to screw the hexagon nut clockwise to press the spring. In this way, the setting pressure for over pressure shut off will increase. On the contrary, the setting pressure for over pressure shut off will decrease.

● **The steps for the setting of relief pressure:** use pressure test ball valve to fill gas into the regulator slowly. When the pressure reaches the over pressure shut off valve, the shut off valve will close the regulator. Then stop the gas supply and use the sleeve spanner (medium) to screw the internal nut for adjusting relief valve. To screw the spring clockwise is the way to increase the set pressure of relief pressure. On the contrary, is to decrease the relief pressure.

● **The steps for the setting of outlet pressure:** open the item 1 on the regulator and use the sleeve spanner (large) to screw hexagon nut 3 clockwise (press the spring) to increase the outlet pressure of the regulator. On the contrary, to reduce the outlet pressure of the regulator. After the outlet pressure is set, close the pressure test ball valve.