



LQ50/70/100调压器说明书

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LQ10/LQ25系列
调压器



LQ50/70/100系列
调压器



RX25/50/70/100系列
楼栋调压箱



LT25/50/80/100系列
调压器



LT17系列调压器



LT30系列调压器

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LQ50/70/100 系列燃气调压器



概述

LQ50/70/100 系列调压器为直接作用式二级平衡调压器。内置过滤放散阀超压和低压切断保护装置。具有体积小、易于安装、压力稳定、反应迅速等特点。

应用

调节空气或燃气的出口压力，适用于工业用户和民用用户的气体输配

适用气体的种类：

- 人工煤气
- 天然气
- 液化气
- 非腐蚀性气体
- 空气

技术参数

产品范围

LQ50/70/100 系列燃气调压器口径为 G3/4" 和 G1¹/₄"，带过滤器，人工复位超压和低压切断阀，二级调压，内置放散阀。

尺寸

见第二页尺寸图表

管径

入口 G3/4" 和出口 G1¹/₄"采用内螺纹连接

流量

参照第 3 页流量表

最大进口压力/P1max.....6bar

进口压力范围/ & P10.6~5 bar

出口压力范围/低压 & P220~70mbar

/高压 & P270~300mbar

备注：具体进出口压力见流量表

稳压精度等级/AC.....≤±10%

关闭压力等级/SG.....≤20%

切断精度/AQ.....≤±5%

响应时间/ta.....≤1sec

最大流量 (NG) /Qmax.....100Nm³/h

工作温度.....-20℃~+60℃

重量/低压型.....2.0KG

/高压型.....2.5KG

调压器性能.....符合 GB27790 要求

可选配置：超压切断低压切断、放散阀和其他进出口

连接尺寸

最大允许压力

阀体到 10bar 不损坏

密封件材料

NBR 丁腈橡胶

阀体材料

压铸铝合金

内部零件材料

黄铜、不锈钢、铝合金

过滤精度

≤0.5mm

安装

注意事项

1. 使用调压器之前请仔细阅读说明书,错误的操作会导致产品损坏或引发危险事故。
2. 必须由专业人员进行安装与安装。
3. 安装完成后要对整个系统进行彻底检查校验。

警告



- 安装前请关闭气源。
- 安装调压器前,请不要将进气端和出气端的密封堵头拆下。
- 不要取下带呼吸孔的放散帽(5),也不要堵塞呼吸孔。
- 气体流向与压力调压器阀体上的箭头方向保持一致

安装位置

为保证良好运行,调压器应选择水平安装,也可以选择与水平成 90 度的方向安装。

安装场所

调压器不允许和墙或地板接触,周围至少保持 50 mm 的距离。

螺纹连接

- 注意在安装时不能有杂物进入调压器。
- 气体流向与压力调压器阀体上的箭头方向保持一致。
- 采用可靠的螺纹密封材料连接,螺纹应符合 ISO 7-1 标准,连接管应清理干净。
- 连接管或连接头不允许过度旋紧,以免过滤器变形或损坏。
- 紧固连接管时,不允许利用调压器盖上部的弹簧套管作为着力杆,而应使用合适的扳手加力于调压器的接头处。

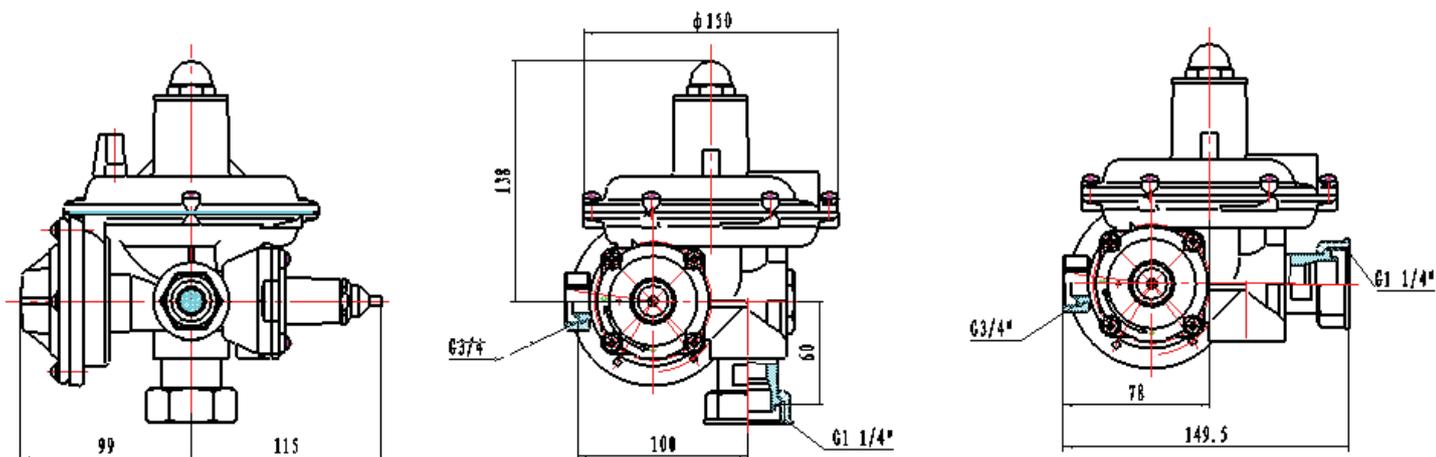
警告



安装后需进行密封泄漏检测

- 在安装进出口连接处均匀的喷上检漏液。仔细观察是否有气泡产生,如在连接处发现气泡,则需要重新安装或更换调压器

尺寸图表 (mm)



调节



注意

调节必须由专业人员来操作!

调压器出口压力调节 (图 1)

1. 旋下球帽螺钉(1)
2. 用 22mm 标准套筒扳手顺时针旋转主调螺母(2)来增加出口压力 P_2 , 逆时针旋转减小出口压力 P_2 。(增大或减少出口压力需调节高压切断的设定压力)
3. 调整并记录出口压力值。

4. 旋上球帽螺钉(1)

注: 公司出厂已按客户需要调整了出口压力

更换弹簧

1. 旋下球帽螺钉(1)
2. 逆时针旋转并取下主调螺母(2)
3. 取出原先的弹簧, 放入新弹簧
4. 旋回主调螺母(2)
5. 按照调压器出口压力调节 1-4 步骤调节调压器出口压力。

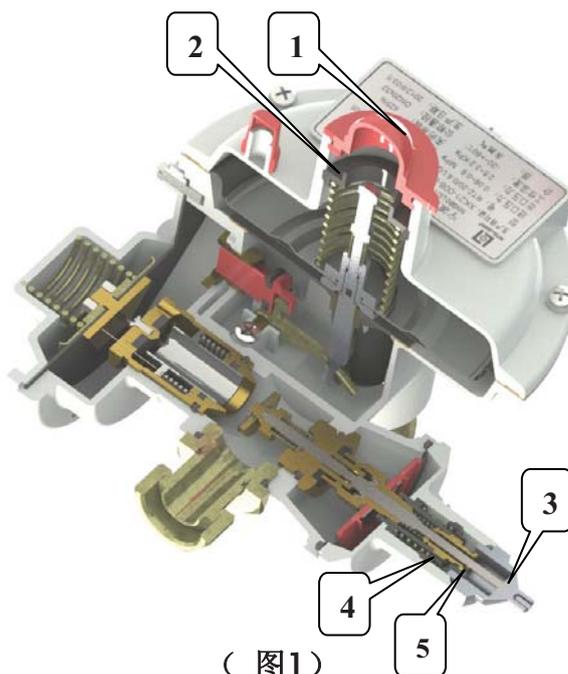
调压器切断压力的设定 (图1)

1. 旋下切断闷盖(3)
2. 用 14mm 标准套筒扳手顺时针旋转高压调节螺钉(4)来增加切断压力 P_b , 逆时针旋转减小切断压力 P_b 。
3. 调整并记录超压切断压力值。
4. 用 8mm 标准套筒扳手顺时针旋转低压切断调节螺栓(5)来增加低压切断压力 P_b , 逆时针旋转减小低压切断压力 P_b 。
5. 调整并记录低压切断压力值。
6. 旋上切断闷盖(3)

注: 公司出厂已按客户需要调整了切断压力

最终安装检查

调整完成之后, 运行设备几个循环, 检查设备功能正常。



(图 1)

维护与保养

1. 根据燃气的净化程度, 定期检修调压器和过滤器。清理污物, 更换薄膜、阀口垫等易损件。一般弹簧及膜片在1~2年更换一次, 阀口垫及其它密封件在1年左右更换一次, 过滤器内滤芯一般每半年清洗一次。
2. 调压箱管理维修人员应熟练掌握本调压器的工作原理及检修方法, 及有关的安全操作过程。
3. 调压器应远离火源, 避免潮湿和空气不通, 若装在露天, 则应加设防雨装置。
4. 若燃气中含有水分, 应采取相应保温设施, 避免阀口产生冰冻。

常见故障及排除方法

故障	原因	故障排除
出口压力降低	过滤器堵塞	清洗或更换滤芯
	主调弹簧变形	更换弹簧
	阀口内污物较多	清洗阀口
	超负荷运行	更换调压器
出口压力升高	主调膜片破损	更换主调膜片
	主调阀口变形	更换垫片
	阀口边缘污物较多	清洗阀口
外漏	“O”型圈破损	更换相应的“O”型圈
	相应的密封件破损	更换密封件

LQ50/70流量表

出口压力 Outlet (mbar)		进口压力 Inlet (bar)						
		0.1	0.2	0.3	0.4	0.5	0.8	1.0-6.0
低 压 型 Low pressure type	15	25	35	50	60	70	70	75
	20	25	35	50	60	70	70	75
	30	25	30	45	55	70	70	75
	40	25	30	40	50	65	70	75
	50	20	30	40	50	65	65	70
	60	15	30	40	50	60	60	70
高 压 型 High pressure type	70	15	30	40	45	55	60	70
	70	20	30	40	45	55	70	70
	80	20	30	35	45	55	70	70
	90	20	30	35	45	50	65	70
	100	-	20	30	35	45	65	70
	150	-	20	30	35	45	60	70
High pressure type	200	-	-	25	30	40	50	70
	250	-	-	20	30	40	50	70
	300	-	-	-	25	30	45	70

LQ100流量表

出口压力 Outlet(mbr)		进口压力 Inlet(bar)									
		0.4	0.5	0.8	1.0	1.5	2.0	3.0	4.0	5.0	6.0
低 压 型 Low pressure type	20	50	65	80	100	100	110	110	100	100	100
	30	50	65	80	100	100	110	110	100	100	100
	40	50	65	80	100	100	110	110	100	100	100
	50	50	65	80	100	100	110	110	100	100	100
	60	50	65	80	100	100	110	110	100	100	100
	70	50	65	80	100	100	110	110	100	100	100
高 压 型 High pressure type	70	35	50	75	95	120	130	140	130	130	130
	80	35	50	75	95	120	130	140	130	130	130
	90	35	50	75	95	120	130	140	130	130	130
	100	35	50	75	95	120	130	140	130	130	130
	150	35	50	75	95	120	130	140	130	130	130
	200	35	50	75	95	120	130	140	130	130	130
High pressure type	250	30	50	75	95	120	130	140	130	130	130
	300	30	40	75	95	120	130	140	130	130	130

注：表中的流量单位是标准立方米/小时，是在标准状态下天然气相对密度 0.6 的流量。1bar=1000mbar=100kpa=0.1mpa

LQ50/70 /100SERIES PRESSURE REGULATORS

INTERNAL RELIEF VALVLE AND FILTER

OPTIONAL MAXIMUM AND/OR MINIMUM PRESSURE SLAM-SHUT VALVE

WIDE OUTLET-PRESSURE REGULATION RANGE

ACCURATE PRESSURE REGULATION

MANUAL RESET

TWO-STAGE REGULATION



Construction and performance features make the LQ 50/70 /100series spring-loaded regulators the ideal choice in applications involving sudden changes in capacity or where the gas shut-off is solenoid-controlled as with domestic or industrial burners. These regulators can be employed with natural, manufactured, propane, air and other gases so long as they are duly filtered and do not contain high percentages of benzol .



CONSTRUCTION FEATURES

The LQ 50/70/100 series spring-loaded regulators feature plain seat. Compact size, high-quality materials, easy setting and accurate pressure regulation are all distinctive features of these specially designed regulators. In particular, they have been constructed for maximum ease of maintenance: access to the valve seat and to the seals for inspection or replacement can be gained without removing the regulator from the line.

OPERATION

The gas arriving at the regulator inlet through the piping goes through the filter and reaches the first regulating stage where a first pressure reduction takes place.

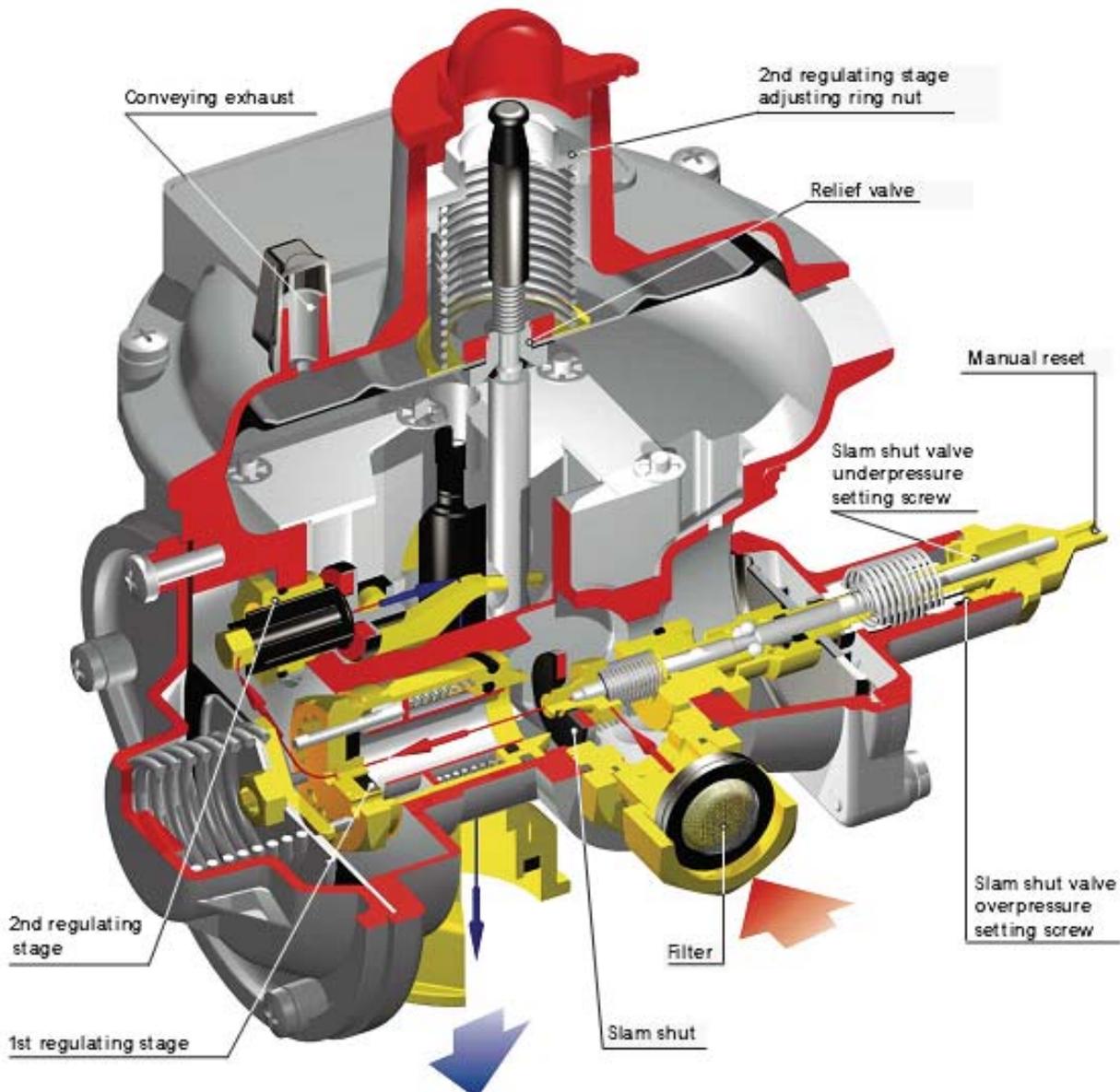
With this pressure, the gas arrives at the second regulating stage where a second pressure reduction to the set value takes place (set by means of the provided adjusting ring nut).

The regulator is equipped with a manual reset slam shut valve which comes into operation if the downstream pressure is not within established set ranges.

Slam shut valve overpressure and underpressure set values can be adjusted by means of the provided setting screws.

The regulator is also equipped with a built-in relief valve which, in case of gas leakage at zero flow, allows releasing small quantities of gas thus avoiding the coming into operation of the slam shut valve.

The release value of the relief valve (usually 10 mbar higher than the downstream pressure) cannot be adjusted.





SETTING

Proceed as follows:

A–Check that gas is flowing through the regulator in the direction of the arrow stamped on the body of the regulator and that data shown on the regulator plate is compatible with system requirements.

B–Slowly open the inlet valve.

C–Slightly open the outlet valve.

D–Reset shut-off valve by first loosening cap A and then screwing it onto the stem, after which pull cap outward and wait a few moments until the outlet pressure is stabilized.

E–Open the outlet valve slowly to the full open position.

F–Reassembly the cap A in the initial position.

PERIODICAL CHECKS AND MAINTENANCE

It is recommended that the regulator be periodically checked in order to ensure its proper functioning.

A–Close the downstream valve. Wait for outlet pressure to stabilize at lock-up pressure.

B–Put an impulse connection between regulator and valve, and connect a pump, or the like, to it.

C–Raise pressure until relief valve trips. This occurs when gas is released through the exhaust pipe.

D–Plug exhaust pipe and raise pressure until high-pressure shut-off trips.

E–Close the upstream valve, and decrease the outlet pressure with the pump discharger as for as the

Minimum shut-off triggers. Proceed with the commissioning following the above mentioned procedures.

INSTALLATION

The standard version of the LQ 50/70/100 series regulators features specifications, can be mounted both on horizontal or vertical piping. In all cases, gas flow direction as indicated by arrow on regulator casing must be scrupulously observed.

IMPORTANT: Impulse pipe must be fitted into appropriate coupling upon installation.

TROUBLE-SHOOTING

1. In case of no gas flowing downstream of regulator, check that:
 - A. Gas is being regularly fed into the regulator.
 - B. The actuator is properly latched (only in models fitted with slam-shut valve).
2. In case of gas pressure decreasing on the outlet side of the regulator, check that:
 - A. Sufficient gas is being fed into the regulator.
 - B. Regulator capacity is compatible with desired flow rate.
 - C. The inlet filter is not clogged.
 - D. The spring is not broken.
3. In case of gas pressure increasing on the outlet side of the regulator or safety devices (relief valve or slam-shut valve) being activated, check that:
 - A. Seal pad or seat is not worn.
 - B. The seal pad is properly clean as dirt build-up may prevent regular functioning of the valve.
 - C. The diaphragm is not damaged or broken.

SAFETY DEVICE

The LQ 50/70/100series pressure regulators can be fitted with a slam-shut valve. This safety device operates independently of the regulator and, according to customer request, can be made to trigger by any pressure variation, whether above or below set point, or by both.



MATERIALS

Actuator casing	Die-cast aluminium
Cover	Die-cast aluminium
Valve casing*	Cast-iron
Valve disc	Brass
Valve seat	Brass
Diaphragm	NBR rubber
Seals	NBR rubber

* Steel valve casing available on request

TECHNICAL DATA

Inlet pressure	Pemax.≤6 bar	
Shut-off when over-pressure	Who:22.5-350 mbar	
Inlet pressure range	Bpe:0.6-5 bar	
Shut-off when low-pressure	Whu:12.8-60 mbar	
Outlet pressure set range	standard	Wh: 15-70 mbar
	HP	Wh:20-300 mbar
Shut-off accuracy	AG: ≤5%	
Regulate accuracy	AC: ±8%	
Response time	Ta: ≤1 sec	
Shut-off pressure class	SG: +20%	
Flow rate (natural gas)	Qmax. ≤100Nm ³ /h	
Operating temprature	-20℃-60℃	
Threaded connection	3/4"X1 1/4"	
Ambient temperature	-30℃-60℃	

CAPACITY CHART

Outlet pressure (mbar)	Inlet pressure (bar)						
	0.1 (bar)	0.2 (bar)	0.3 (bar)	0.4 (bar)	0.5 (bar)	0.75 (bar)	1.10 (bar)
15	25	35	50	60	70	70	75
20	25	35	50	60	70	70	75
30	25	30	45	55	70	70	75
40	25	30	40	50	65	70	70
50	20	30	40	50	65	70	70
60	20	30	40	50	60	60	65
50	15	30	40	45	55	60	60
60	15	30	40	45	55	70	70
70	20	30	40	45	55	70	70
80	20	30	35	45	55	70	70
90	20	30	35	45	50	70	70
100	20	20	30	35	45	65	70
150	-	20	30	35	45	60	70



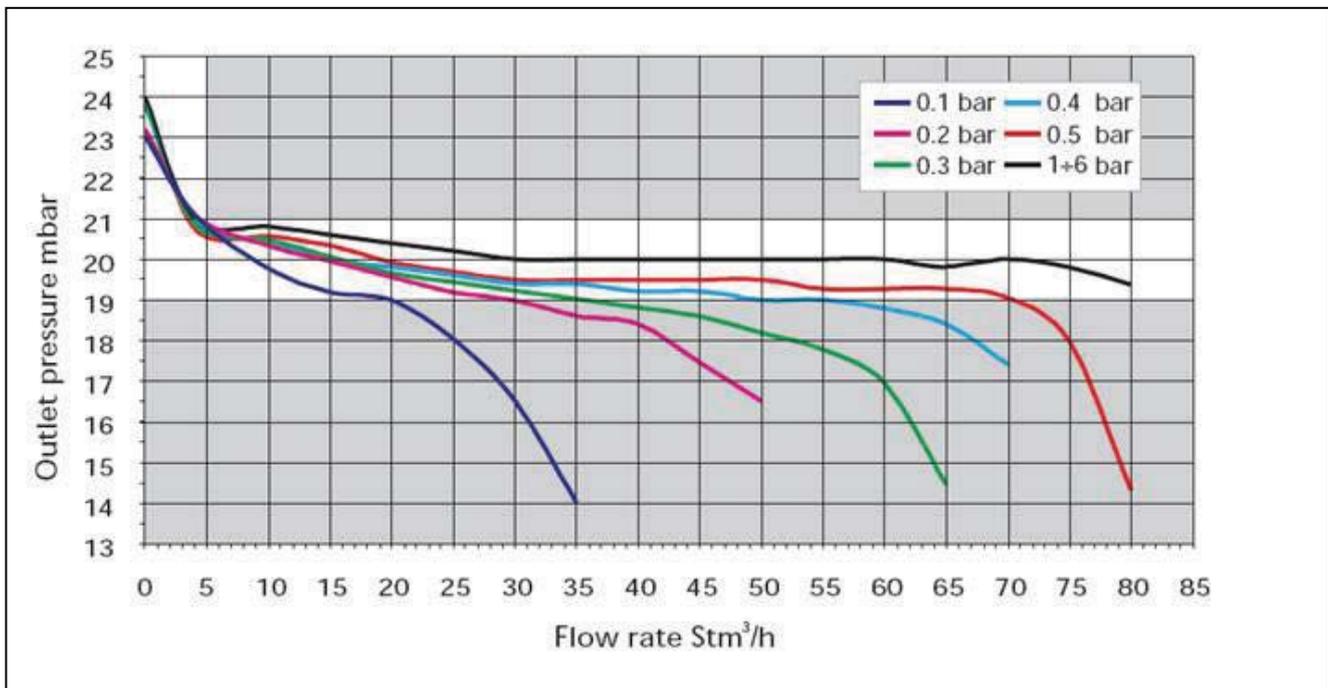
200	-	-	25	30	40	50	70
250	-	-	20	30	40	50	60
300	-	-	-	25	30	45	60

LQ 70 (low pressure type)

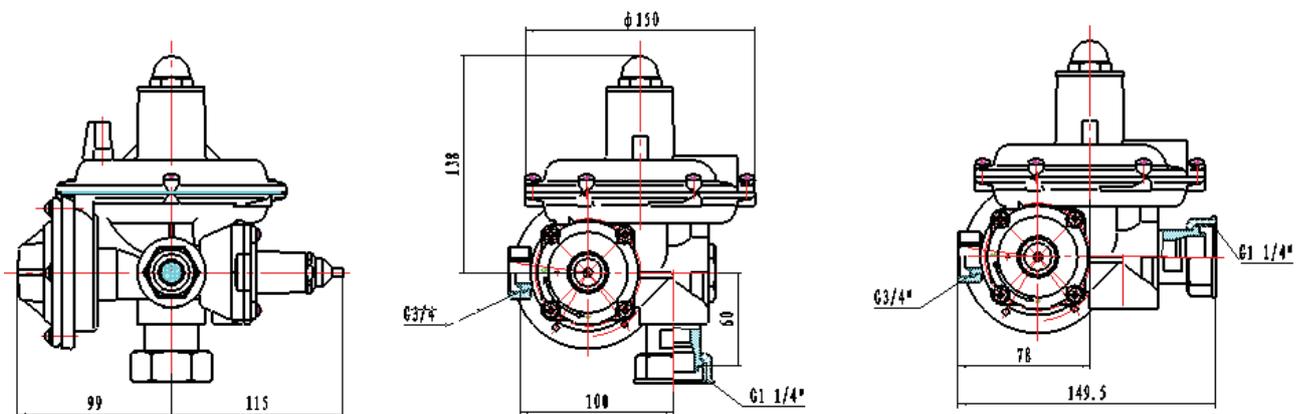
LQ 70-AP (high pressure type)

Capacities (cu.m./hr) are applicable to natural gas with a specific gravity of 0.702. For other gases, the values shown in the chart below must be multiplied by 0.595 for propane, 0.518 for butane, 0.755 for nitrogen and 0.744 for air.

CHARACTERISTIC CURVES - SET POINT AT 20MBAR



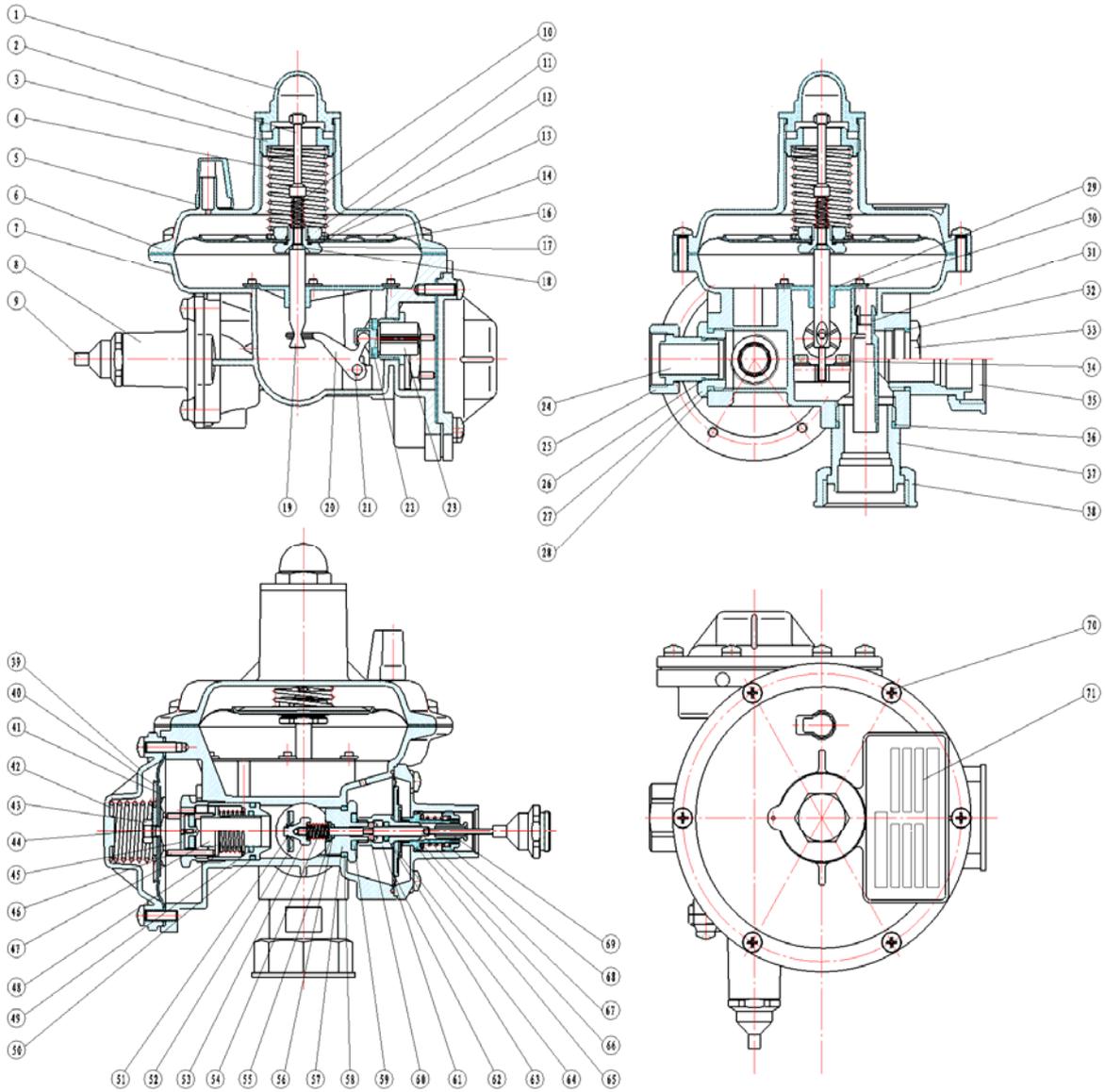
OUTLINE DIMENSIONS (mm)





LQ50/70/100 MORE DETAILS

更多详情





NO	NAME	NO.	NAME	NO.	NAME	NO.	NAME
1	Cap	19	2nd stage stem	37	Outlet nut	55	Gasket
2	Releasing stem	20	2nd stage lever	38	Outlet bolt	56	O-Ring
3	Adjusting nut	21	Axes	39	1st stage cover	57	Shut off valve housing
4	Main spring	22	2nd stage pad unit gasket	40	1st stage diaphragm seat	58	O-Ring
5	Releasing cap	23	2nd stage control member	41	1st stage diaphragm	59	Gasket
6	2nd stage cover	24	Inlet coneion pipe	42	1st stage spring	60	Steel ball
7	Body	25	Inlet nut	43	Nut	61	Locked organ
8	Casing of shut off	26	O-Ring	44	1st stage diaphragm splint	62	Shut off diaphragm
9	valve	27	Inlet bolt	45	1st stage pad unit	63	O-Ring
10	Manual reset	28	O-Ring	46	Handspike	64	Shut off diaphragm seat
11	Releasing spring	29	Oriented board	47	1st stage control member	65	Shut off spring seat
12	2nd stage nut	30	Quincunx gasket	48	1st releasing closed spring	66	Over pressure shut off spring
13	2nd stage spring seat	31	Signal pipe	49	O-Ring	67	Shut off valve stem
14	2nd stage gasket	32	O-Ring	50	O-Ring	68	Over pressure adjusting nut
15	2nd stage salver	33	Plug	51	Gasket	69	Under pressure adjusting nut
16	-	34	Quincunx gasket	52	Shut off valve pad unit	70	PH pan head screw
17	2nd stage diaphragm	35	Outlet nut	53	1st stage control nut	71	nameplate
18	Releasing valve seat O-Ring	36	O-Ring	54	Shut off spring		

序号	名称	序号	名称	序号	名称	序号	名称
1	球帽螺钉	19	主调阀拉杆	37	出口接管	55	平垫圈
2	放散阀杆	20	主调杠杆	38	出口活接螺母	56	“O”型圈
3	主调螺母	21	心轴	39	一级调压端盖	57	切断阀座
4	主调弹簧	22	主调阀芯密封垫圈	40	一级减压膜片座	58	“O”型圈
5	放散帽	23	主调阀芯	41	一级调压膜片	59	切断阀缓冲挡圈
6	主调盖	24	进口接管	42	一级减压弹簧	60	钢珠
7	主阀体	25	进口活接螺母	43	螺母	61	切断阀锁定器
8	切断阀盖	26	“O”型圈	44	一级减压膜夹板	62	切断阀膜片
9	切断阀闷盖螺钉	27	进口连接螺母	45	一级减压阀阀垫架	63	Y"形密封圈
10	放散弹簧	28	“O”型圈	46	一级减压阀推杆	64	切断阀膜片座
11	主调膜压紧螺母	29	主调阀导向板	47	一级减压阀芯	65	梅花挡圈
12	主调弹簧座	30	梅花挡圈	48	一级减压关闭弹簧	66	切断阀弹簧座组件
13	主调膜密封垫圈	31	信号管	49	“O”型圈	67	切断阀组件
14	主调膜承压盘	32	“O”型圈	50	“O”型圈	68	高压切断调节螺钉
16	主调膜片	33	闷头螺钉	51	卡口挡圈	69	低压切断调节螺钉
17	放散阀座	34	内六角螺栓	52	切断阀口垫圈	70	十字槽盘头螺钉
18	“O”型圈	35	出口活接螺母	53	切断阀阀芯	71	铭牌
		36	“O”型圈	54	切断关闭弹簧		