

R100 SERIES PRESSURE REGULATORS

R100

INTERNAL RELIEF VALVE AND FILTER

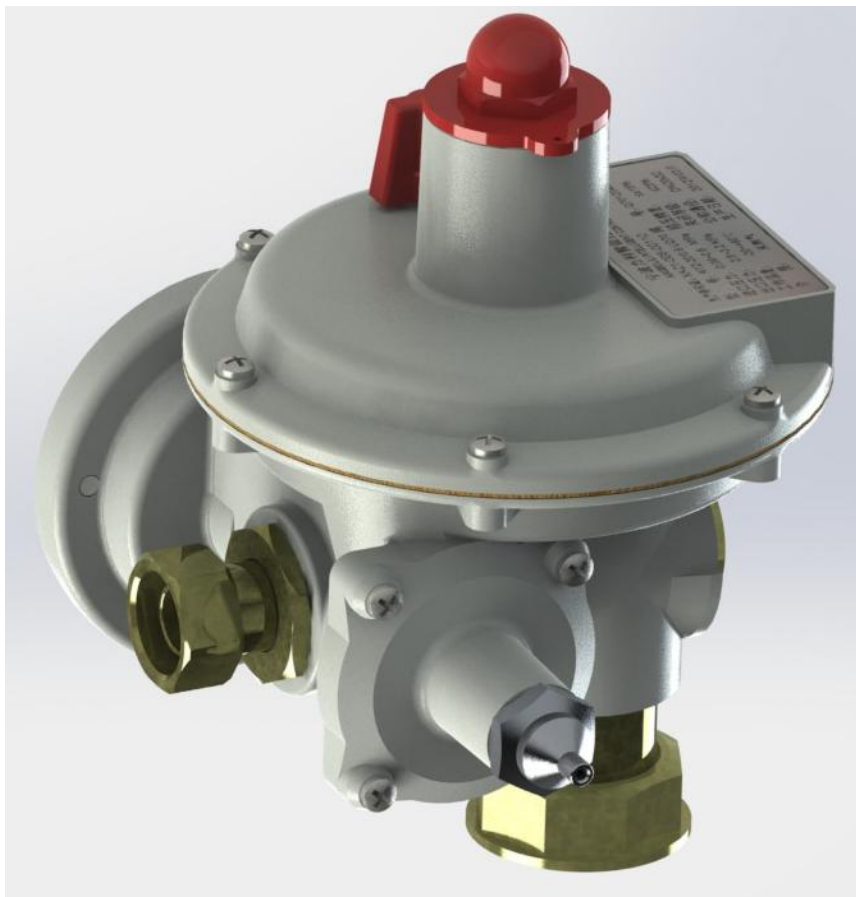
OPTIONAL MAXIMUM AND/OR MINIMUM PRESSURE SLAM-SHUT VALVE

WIDE OUTLET-PRESSURE REGULATION RANGE

ACCURATE PRESSURE REGULATION

MANUAL RESET

TWO-STAGE REGULATION

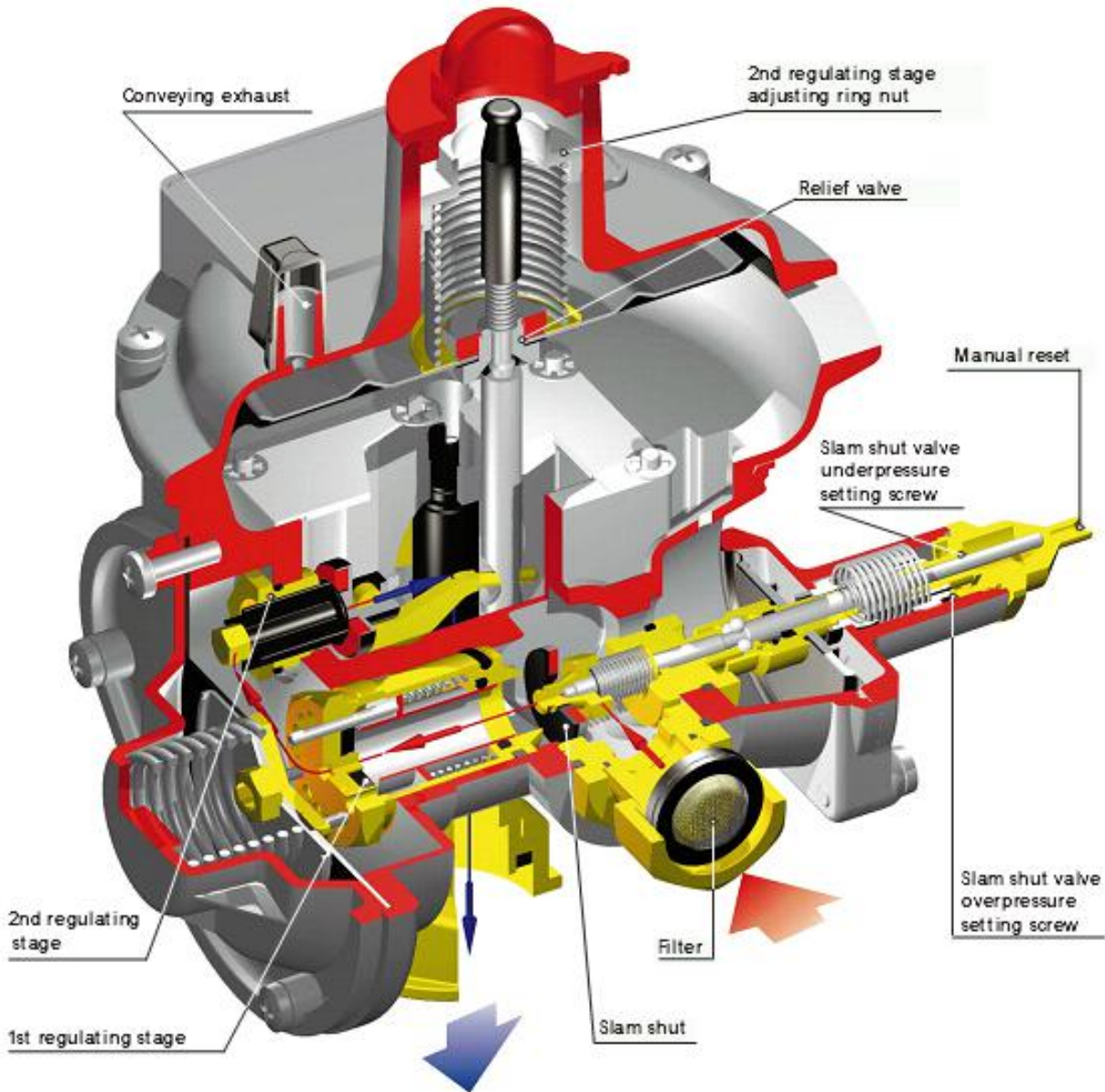


Construction and performance features make the R 100 series spring-loaded regulators the ideal choice in applications involving sudden changes in capacity or where the gas shut-off is solenoid-controlled as with domestic or industrial burners. These regulators can be employed with natural, manufactured,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

The R 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 R 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 R 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

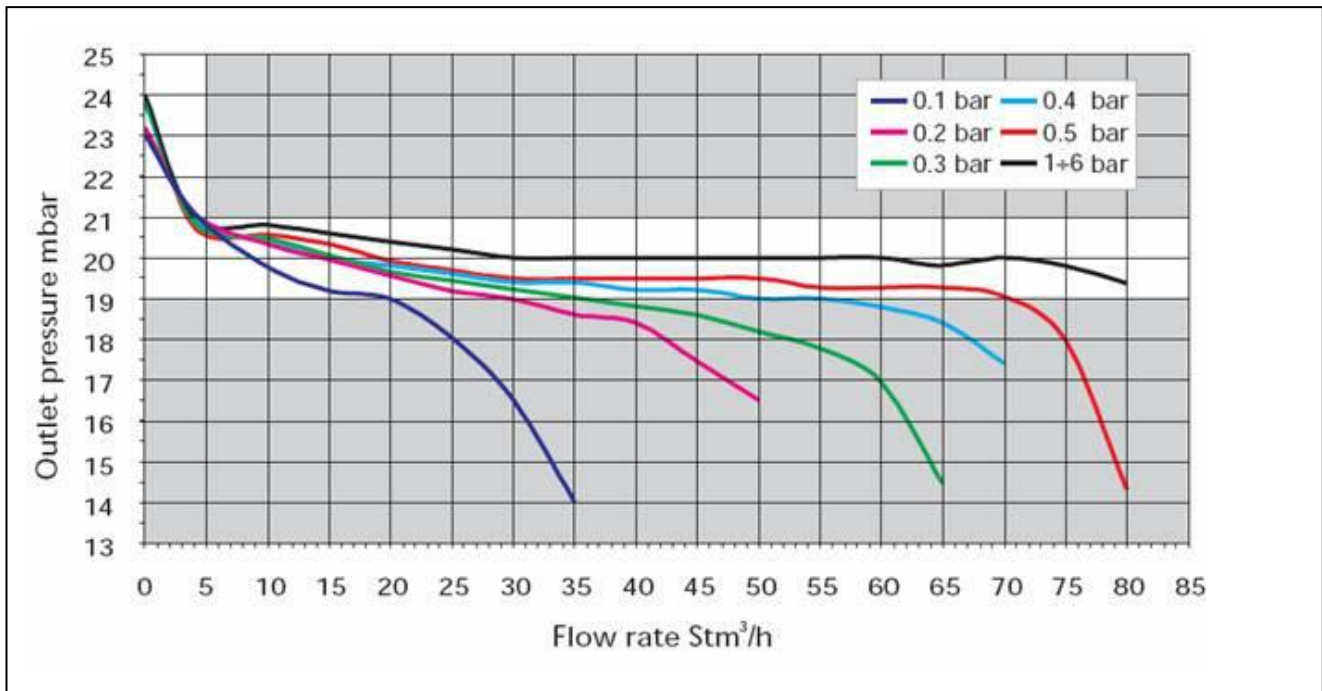
Inlet pressure	Pemax. ≤6 bar	
Shut-off when over-pressure	Who: 22.5-350 mbar	
Inlet pressure range	Bpe: 1-5 bar	
Shut-off when low-pressure	Whu: 12.8-60 mbar	
Outlet pressure set range	standard	Wh: 15-70 mbar
	HP	Wh: 20-300 mbar
Shut-off accuracy	AG: ≤5%	
Regulate accuracy	AC: ±10%	
Response time	Ta: ≤1 sec	
Shut-off pressure class	SG: +20%	
Flow rate (natural gas)	Qmax. ≤100Nm ³ /h	
Operating temperature	-20°C-60°C	
Threaded connection	3/4"X1 1/4"	
Ambient temperature	-30°C-60°C	

CAPACITY CHART

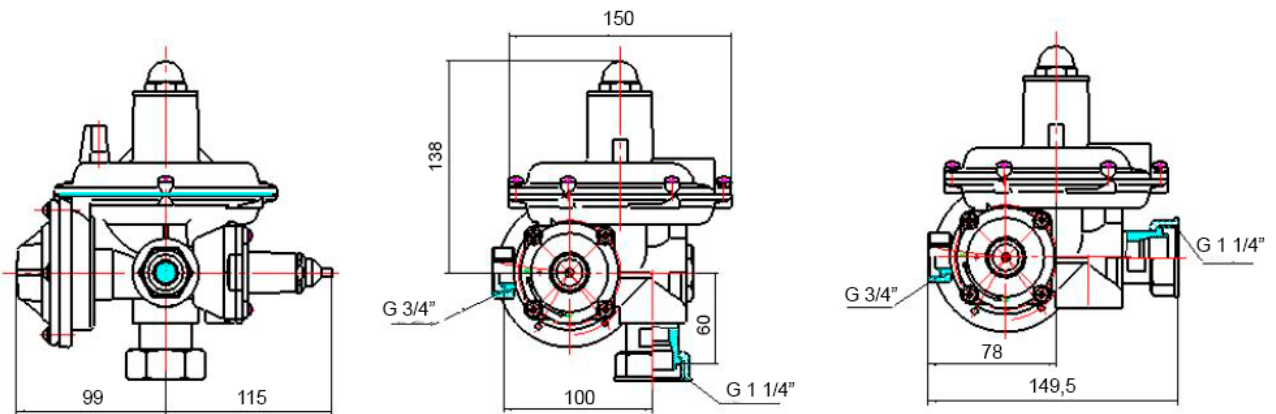
出口压力 Outlet(mbr)	进口压力 Inlet(bar)										
	0.4	0.5	0.8	1.0	1.5	2.0	3.0	4.0	5.0	6.0	
standard	20	50	65	80	100	100	110	110	100	100	100
	30	50	65	80	100	100	110	110	100	100	100
	40	50	65	80	100	100	110	110	100	100	100
	50	50	65	80	100	100	110	110	100	100	100
	60	50	65	80	100	100	110	110	100	100	100
	70	50	65	80	100	100	110	110	100	100	100
HP	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
	250	30	50	75	95	120	130	140	130	130	130
300	30	40	75	95	120	130	140	130	130	130	

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.

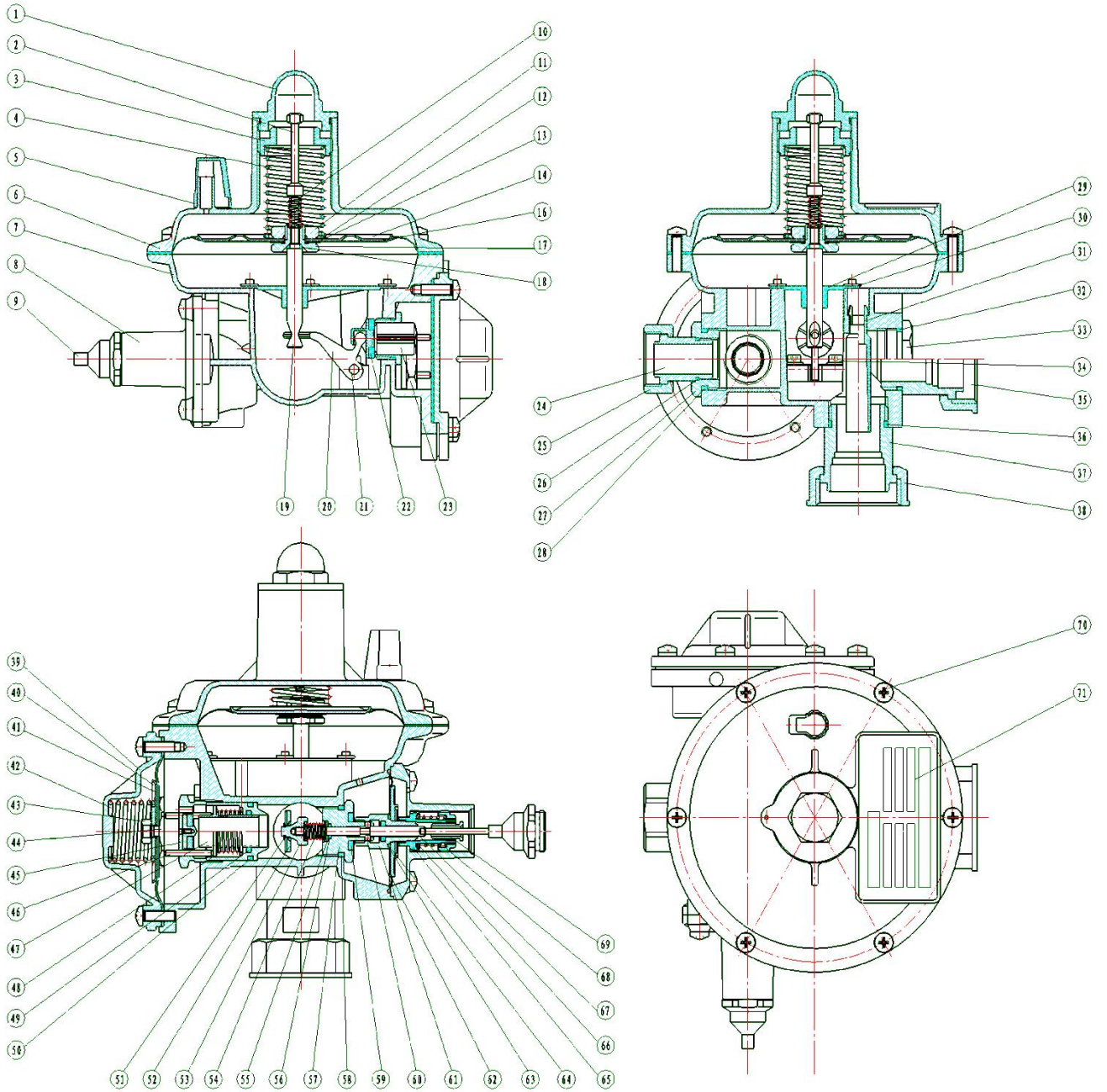
CHARACTERISTIC CURVES - SET POINT AT 20MBAR



OUTLINE DIMENSIONS (mm)



MORE DETAILS



R100 REGULATORS MANUAL

NO	NAME	NO.	NAME	NO.	NAME	NO.	NAME
1	Cap	21	Axes	41	1st stage diaphragm	61	Locked organ
2	Releasing stem	22	2nd stage pad unit gasket	42	1st stage spring	62	Shut off diaphragm
3	Adjusting nut	23	2nd stage control member	43	Nut	63	O-Ring
4	Main spring	24	Inlet coneion pipe	44	1st stage diaphragm splint	64	Shut off diaphragm seat
5	Releasing cap	25	Inlet nut	45	1st stage pad unit	65	Shut off spring seat
6	2nd stage cover	26	O-Ring	46	Handspike	66	Over pressure shut off spring
7	Body	27	Inlet bolt	47	1st stage control member	67	Shut off valve stem
8	Casing of shut off valve	28	O-Ring	48	1st releasing closed spring	68	Over pressure adjusting nut
9	Manual reset	29	Oriented board	49	O-Ring	69	Under pressure adjusting nut
10	Releasing spring	30	Quincunx gasket	50	O-Ring	70	PH pan head screw
11	2nd stage nut	31	Signal pipe	51	Gasket	71	nameplate
12	2nd stage spring seat	32	O-Ring	52	Shut off valve pad unit	72	
13	2nd stage gasket	33	Plug	53	1st stage control nut	73	
14	2nd stage salver	34	Quincunx gasket	54	Shut off spring	74	
15	-	35	Outlet nut	55	Gasket	75	
16	2nd stage diaphragm	36	O-Ring	56	O-Ring	76	
17	Releasing valve seat	37	Outlet nut	57	Shut off valve housing	77	
18	O-Ring	38	Outlet bolt	58	O-Ring	78	
19	2nd stage stem	39	1st stage cover	59	Gasket	79	
20	2nd stage lever	40	1st stage diaphragm seat	60	Steel ball	80	