

HIGH-PRESSURE LOCK B30 - B40

INSTALLATION AND MAINTENANCE
MANUAL



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1.SCOPE



Before installing or performing any maintenance on the shut-off valve, read this manual carefully and strictly follow the instructions provided.

This shut-off valve must be installed, operated, and maintained in accordance with the standards applicable to the equipment or facility where it is installed and with this manual. The manufacturer is not liable for damage caused by misuse or incorrect operating procedures resulting from a lack of familiarity with this manual.

Any gas leak to the outside indicates that the service must be shut off and technical support contacted.

Only a qualified technician should install or repair the shut-off valve.

This manual provides instructions for installation, adjustment, maintenance, and ordering parts for the equipment described here. This equipment is generally shipped separately for installation; however, it may sometimes be shipped pre-installed with other equipment. If this is the case, refer to the instruction manual for the other equipment for installation and operating instructions.

Any gas leak outside the shut-off valve indicates that the service must be shut off and technical support contacted.

Only a qualified technician should install or repair the equipment.

Whenever requesting a replacement part or technical service, provide the equipment's nameplate information (Model – **Serial No.** – Pressures).

2.DESCRPTION

New Overpressure Shut-off Safety Valve:

Comprehensive protection and operational autonomy for gas systems.

Our family of shut-off valves is expanding to offer a high-performance safety solution, designed to act as the last line of defense against pressure anomalies in the network. This device continuously monitors the outlet pressure and, in the event of any increase above the preset safety threshold, instantly and mechanically interrupts the fluid flow.

Maximum Integration Versatility:

Unlike conventional integrated systems, this line has been developed as a standalone, independent unit. This feature allows for unprecedented versatility: it can be incorporated into new plant projects or used to upgrade and raise safety standards in existing facilities.

Its robust design allows for installation both upstream and downstream of regulators, adapting to your plant's specific configuration.

Key Features:

Guaranteed Safety (Non-Self-Resetting): The shut-off requires mandatory manual intervention to restore service. This ensures that the operator identifies and resolves the root cause of the incident before restarting the system.

Advanced Hydrostatic Balance: Thanks to its internal design, once closed, the inlet pressure itself ensures a hermetic seal.

Simplified Reset System: To facilitate start-up, it features an internal equalization mechanism that allows internal pressures to be safely balanced, preventing abrupt operations on the main line.

Self-Sufficiency: It does not require external power sources or driving fluids; it operates exclusively using the energy of the line fluid through an external 1/4" control tap.

Technical Specifications:

Operating Range: Optimized for line pressures from 4.5 bar to 40 bar.

Compatibility: Suitable for Natural Gas, LPG, and various fluids compatible with its construction materials.

Customization: Wide range of configurations available to adjust the critical shut-off point according to current regulations or specific process requirements.

Connections: Available in threaded and flanged versions in accordance with international standards (ANSI).

3.SPECIFICATIONS

SPECIFICATIONS	MODEL					
	B30			B40		
Sensor Type	Diaphragm			Piston		
High Pressure Lock	YES			YES		
Low Pressure Lock	NO			NO		
Blockage due to Excessive Flow	NO			NO		
Min. Operating Pressure (bar)	3,8			8		
Max. Operating Pressure (bar)	8			40		
Max. Inlet Pressure (Bar)	19		50	19		50
Body Material	Ductile iron ASTM A 536 Grade 65-45-12 (IRAM 700 42012)		ASTM A-216 WCB Steel Casting	Ductile iron ASTM A 536 Grade 65-45-12 (IRAM 700 42012)		ASTM A-216 WCB Steel Casting
Connections	2" threaded (BSP) (DN 50)	2" ANSI B16.5 S150	2" ANSI B16.5 S300	2" threaded (BSP) (DN 50)	2" ANSI B16.5 S150	2" ANSI B16.5 S300
Mounting Position	Indistinct					

4. TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS	
Connections	2" threaded (BSP) (DN 50) 2" ANSI B16.5 S150 2" ANSI B16.5 S300
Operating Temperature	-20°C to 60°C (-4 °F a 140 °F)
Operating Pressure	4 to 40 bar

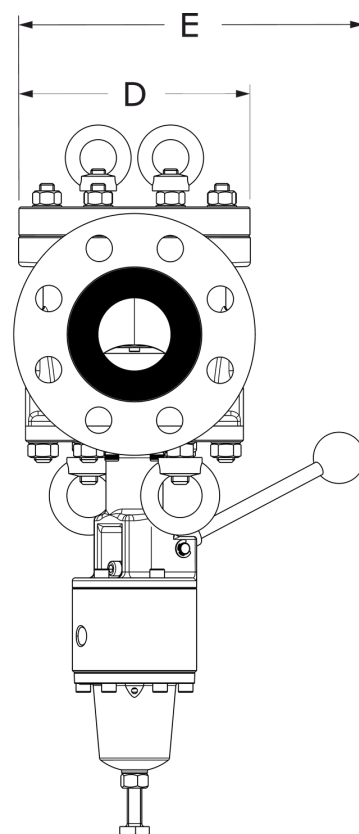
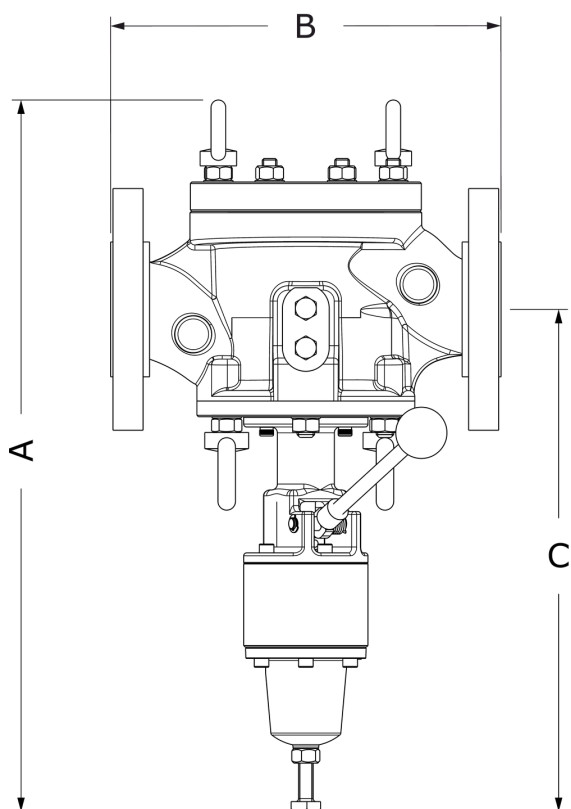
MATERIALS	
Main Body	Ductile iron ASTM A 536 Grade 65-45-12 (IRAM 700 42012) ASTM A-216 WCB steel casting
Assembly	Brass
Shutter	Acrylonitrile (NBR)

MODEL	WEIGHT (Kg-Lbs)
B30	20.0 - 44.1
B40	34.0 - 75.0

4.1.Dimensions (mm/Kg):

It is recommended to leave at least 10 cm between the bottom of the unit and the rest of the installation to allow for easy adjustment of the shut-off pressure.

		DIMENSIONS					WEIGHT	
		A	B	C	D	E	Kg	lbs
B30	2" NPT	475	294	355	158	236	15	33
	2" #150	475	254	355	158	236	18	40
	2" #300	498	267	355	158	236	22	49
B40	2" NPT	529	294	409	158	236	19	42
	2" #150	529	254	409	158	236	22	49
	2" #300	558	267	410	158	236	26	58



5. SPRING RANGE

The operating pressures of the valves are adjusted by setting the various springs provided (see table).

5.1 Lock Spring Table:

LOCK	SPRING	Ø WIRE
B30	R108	(Ø5)
B40	R107	(Ø4)

6. INSTALLATION

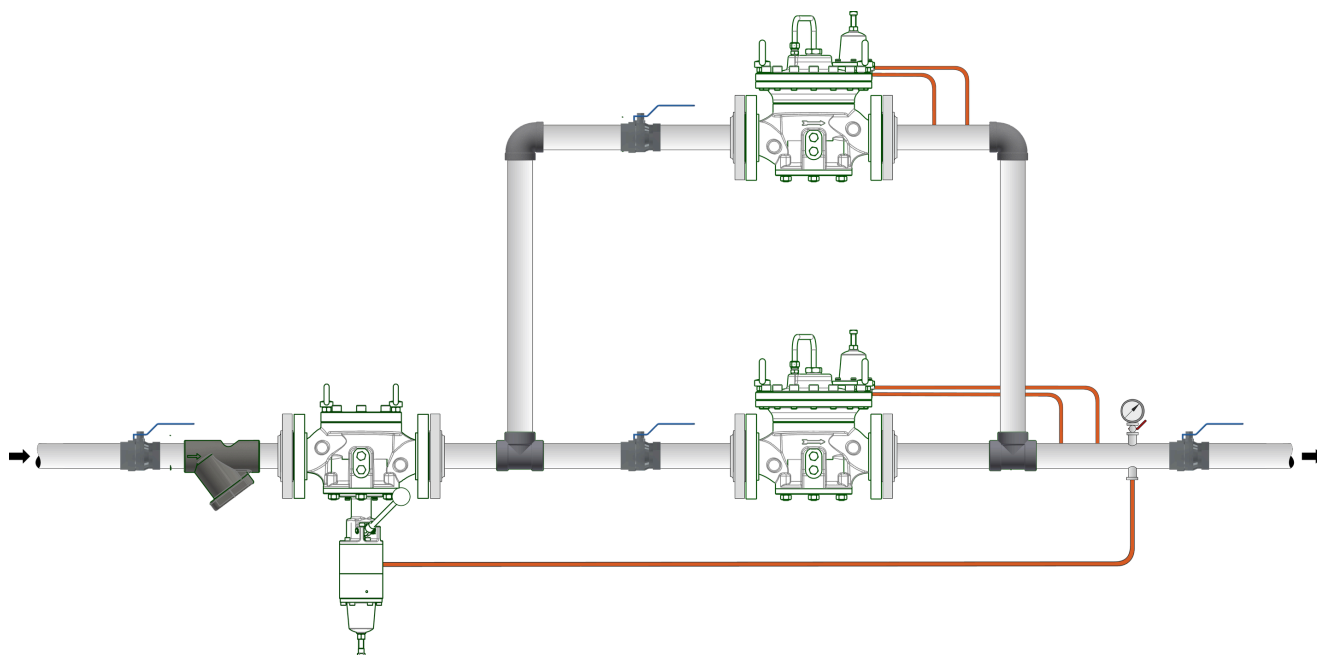


The equipment is designed for natural gas and clean, moisture-free LPG: do not use liquids, corrosive substances, or gas containing solid particles.
All installation and operating procedures must be performed slowly.
Avoid sudden movements when opening and closing the upstream and downstream valves, as well as when resetting the lock.
Do not exceed the pressure range specified on the equipment's nameplate.

This equipment has been manufactured to operate safely and without risk under the specified design conditions, provided that the following points are observed:

1. Installation, operation, and maintenance are performed by trained personnel with extensive experience in this type of equipment and who are familiar with the contents of this manual; all activities are carried out in strict accordance with the instructions provided in this manual.
2. Operating conditions, particularly pressure and temperature, are within the equipment's design specifications.
3. It is not permitted to use the equipment in any other manner or to make modifications that do not comply with the manufacturer's instructions.
4. The user is responsible for any damage or malfunctions caused by improper use; the warranty will immediately become void in the event of improper use.
5. This equipment contains pressurized parts; therefore, any maintenance or operation must be performed only by trained and qualified personnel who are aware of the necessary precautions. Before opening any part of the equipment, ensure that the pressure has been completely released.

6.1 Installation Scheme:



6.2 Prevention:

Before beginning any installation or maintenance work, verify that the following points have been met.

1. The personnel responsible for the work are qualified, trained in the use of this type of equipment, and fully familiar with the contents of this manual.
2. All necessary safety precautions have been taken before beginning work, in accordance with this manual and local regulations.
3. The operator is equipped with the appropriate tools and supplies required to safely and correctly perform the procedures described.
4. All necessary replacement parts are available and are all original EQA S.A.I.C. replacement parts.

6.3 Installation Procedure:

Before installing the unit, check for any damage that may have occurred during shipping and ensure there is no dirt inside the housing.

This unit can be installed in any position, provided that the direction of gas flow indicated by the arrow on the housing is observed. The unit must be protected from vehicle traffic.

Purge the supply line several times until no particles are emitted. (This is the cause of most startup problems.)

7.COMMISIONING

After completing the installation, check that the upstream and downstream isolation valves and the downstream vent valve are closed. Verify that any bypass valves, if present, are also closed, and ensure there is no pressure in the system.



Be sure to apply pressure to the system slowly to avoid excessive downstream pressure caused by a potential rapid pressure increase. It is recommended to perform the startup using pressure gauges suitable for the regulator's inlet and outlet pressures to monitor this procedure.

1. Verify that all isolation valves are closed.
2. Open the upstream isolation valve of the lockout device and verify that the system pressure is at the required operating pressure.
3. Slightly lift the operating lever, without exceeding half of its travel, until the downstream pressure of the lockout device is equalized with the upstream pressure.
4. Fully lift the operating lever to release the lockout device.
5. Slowly open the downstream isolation valve of the lockout device.
6. Verify that the downstream pressure of the lockout device is within the operating range indicated on the nameplates.
7. Slowly open the downstream isolation valve of the regulator.
8. Carefully inspect all piping connections for possible leaks. Please note that vibrations and impacts during transportation may cause fittings and connections to loosen.

7.1 Adjustment:



It is not recommended to change the set activation pressure for the unit; however, if necessary, this can only be done at the factory or by an authorized service technician. If the activation pressure is changed, the nameplate must be replaced; this must be done at the EQA factory or by an authorized service technician to ensure proper traceability of the unit.

If it becomes necessary to adjust the lock's activation pressure, please contact the manufacturer or an authorized service center so they can perform the proper sizing and replace the equipment's identification plate.

8. PERIODIC OPERATIONAL CHECKS



The ongoing integrity of the gas pressure regulators and safety shut-off valves is ensured through regular functional checks.

The information provided here represents the manufacturer's recommendation for the minimum level of inspection required to maintain the functionality of the safety shut-off valve.

The following inspections and preventive maintenance activities must be performed and recorded in accordance with the user's quality system.

The intervals provided are intended to assist the user in managing preventive maintenance. Highly aggressive or demanding service conditions may require shortening the proposed intervals, as may critical applications with high availability requirements.



It is the user's responsibility to establish an appropriate interval for performing the periodic functional checks required by the specific service conditions, the criticality of the service, and local regulations.

PERIOD	ACTIVITY
1 Year	Perform a full set of functional tests.
3 Years	Change the dynamic seals and adjust the diaphragms
5 Years	Replace all gaskets and diaphragms

The following functional tests are described.

- Regulator tightness.
- Operation of the safety relief valve.



The periodic functional tests described here require that the pressure-reducing line, on which the equipment to be tested is installed, is taken out of service and made available solely for the purpose of conducting these periodic tests.

8.1 Functional Testing of the Locking Safety Valve:

The following procedures must be performed in accordance with the functions available on the safety shut-off valve.

8.1.1 High-Pressure Lock:

1. Close the downstream isolation valve, if present. Remember to bypass the relief valve, if present, and protect any components that could be affected by the pressure increase. (See Fig. 7)
2. Increase the regulator's set point until the shut-off valve trips. If the spring does not reach the shut-off pressure, SLOWLY increase the downstream pressure using an external source.
3. Compare the pressure at which the shut-off valve tripped with the value shown on the regulator's nameplate.
4. Completely vent the downstream pipe and close the isolation and vent valves in that section.
5. Verify the shutoff valve's tightness by ensuring there is no pressure increase in the downstream pipe.
6. Lower the regulator's set point (if it was modified for the test).
7. Open the shut-off valve by gently pulling the lever halfway and applying constant pressure (to avoid excessive pressure). You will feel a slight pressure surge that allows the pressures upstream and downstream of the shut-off valve to equalize; once these pressures have equalized, finish resetting the shut-off valve by moving the lever to its physical stop.
8. Open the downstream isolation valve and restore the other safety devices on the line.

9.SPARE PARTS

Always order them using the part number from the General Parts List and include the regulator's nameplate information (Model – **Serial Number** – Pressure ratings).

10.MAINTENANCE



- Check that there are no pressurized sections between the two isolation valves.
- Close the downstream isolation valve **VERY SLOWLY** to shut down the system.
- Close the upstream isolation valve **VERY SLOWLY**.
- Completely vent the downstream and upstream pipes using the downstream vent valve.

Due to normal wear and tear that can occur in any gas equipment, certain components must be inspected periodically and replaced if necessary. The frequency of inspections depends on the severity of use or on the requirements of the applicable standard. For more information, contact the manufacturer.

11.CONVERSION TABLES

11.1. Unit Conversion:

TO OBTAIN	POUNDS PER SQUARE INCH	INCHES OF WATER COLUMN	MILIMETERS OF WATER COLUMN	INCHES OF MERCURY	MILIMETERS OF MERCURY	BAR	MILIBAR	KILOGRAMS PER SQUARE CM	KILOPASCALS
MULTIPLY	psi	in H2O	mm H2O	in Hg	mm Hg	bar	mbar	Kg/cm ²	Kpa
psi	1	27.68	703.1	2.036	51.7	0.06895	68.95	0.0703	6.895
in H2O	0.0361	1	25.4	0.07355	1.87	0.002491	2.491	0.00254	0.22491
mm H2O	0.0014	0.0394	1	0.00289	0.07355	0.000098	0.0981	0.0001	0.00981
in Hg	0.4911	13.6	345.4	1	25.4	0.03386	33.86	0.03453	3.386
mm Hg	0.01934	0.535	13.6	0.03937	1	0.001333	1.333	0.00136	0.1333
bar	14.5	401.5	10198.1	29.53	750.06	1	1000	1.02	100
mbar	0.0145	0.4015	10.1981	0.02953	0.7501	0.001	1	0.00102	0.1
Kg/cm ²	14.22	393.7	10000	28.96	735.58	0.9807	980.7	1	98.07
Kpa	0.145	4.015	101.98	0.2953	7.501	0.01	10	0.0102	1

11.1. Flow Rate Conversion:

TO OBTAIN	CUBIC FOOT PER HOUR	CUBIC METER PER HOUR	CUBIC FOOT PER DAY	CUBIC METER PER DAY
MULTIPLY	(Scf/h)	(Scm/h)	(Scf/d)	(Scm/d)
Cubic foot per hour	1	0.028	24	0.672
Cubic meter per hour (15°C, 1.01325 bara)	35.71	1	857.04	24
Cubic foot per day	0.0417	0.0012	1	0.028
Cubic meter per day	1.4879	0.0417	35.71	1

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