

English
Low pressure regulator with an over-pressure shut off safety device (OPSO)

Fig.1

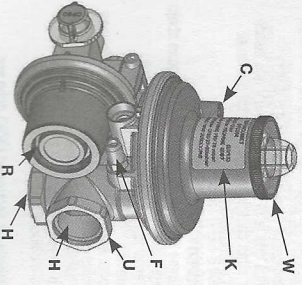


Fig.2

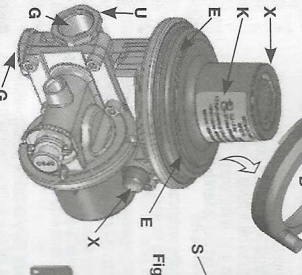


Fig.3

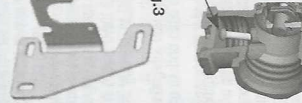


Fig.4

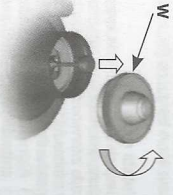
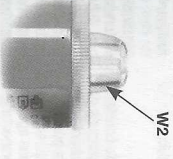
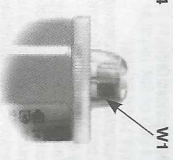


Fig.5

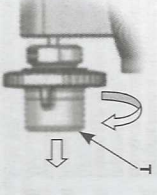
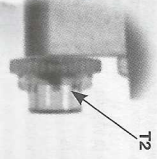
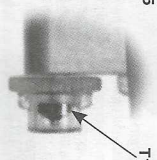


Fig.6

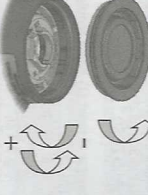
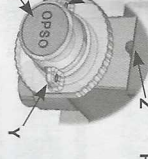
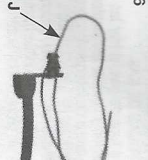
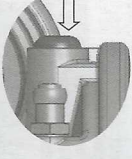
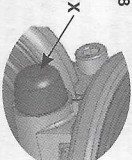


Fig.8



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Application
This regulator with an over-pressure shut off safety device (OPSO) is designed to be used primarily with LPG (butane, propane or their mixtures) in vapour service. DO NOT USE WITH LPG IN THE LIQUID PHASE. Can also be used with all other non-aggressive gases (methane, air, nitrogen, etc...).

To ensure optimum operation throughout its duration, the gas used must not contain aggressive substances (e.g. pitthalates or plasticisers) that can be extracted from the hoses from the LPG in the liquid phase).

The BP4203 model is commonly used in the facilities of the network (natural gas or LPG) with maximum pressure of 5 bar (EN 1775) as a regulator upstream of the meter. In LPG installations (non-network) is commonly used as a second stage regulator (downstream of a first stage regulator). Operating temperature -20° C/+60° C.

Design and construction

Designed, assembled and tested in accordance with the European standard EN16129. The main components of the regulator are made of the following materials:

- body and cover: zinc alloy,
- diaphragm and sealing: rubber conform to EN549.

The cover of the regulator may be proposed in two versions (Fig.1 and Fig.2):

- single vent hole (G) with a connection for a tube,
- adjustable vent hole through the ring girth (ED).

The regulator has two inlet (G) and outlet (H) connections. The taps fixed on the inlet and outlet connections of BP2284 model may be unscrewed, removed and positioned as needed to organise the requested configuration. To modify the outlet geometry of the BP4204 model (from horizontal to vertical), it's necessary to remove firstly the tap and secondly the internal component (S); this operation has to be carried out only by qualified service or installation personnel/engineer.

Depending on the model, the regulator can be equipped with:

- a wall fixing bracket (fig.3),
- an outlet pressure adjustment system (servicing that must be carried out only by qualified persons during commissioning) (fig.7),
- an over-pressure relief valve (PRV) with a limited flow rate,
- an over-pressure shut off safety device (OPSO) (fig.5),
- an under-pressure shut off safety device (UPS) (fig.4 or fig.9),
- a pressure testing point for tube connection (F),
- a security seal (J).

Over-pressure relief valve with a limited flow rate (PRV)

Its function is to protect the regulator from untimely intervention of OPSO due to small overpressure (fast pressurization, small impurities on the seat, temperature increase, etc...). The relief valve closes automatically when the overpressure is reduced. When opened, the gas is released through the vent hole (E/G) of the regulator. It is needed to prevent all risks of gas build up indoors and/or poorly ventilated area.

Over-pressure shut off safety device (OPSO). Its function is to protect regulator downstream installation and appliances from overpressure that could be as a result of:

- LPG in liquid service that could go through the regulator,
- impurities (dust, ice,...) on the seat of the

regulator,

- excessive thermal expansion,
- excessive shocks on the regulator,
- non regular commissioning.

When one of the previous situation occurs, then the OPSO automatically shuts off the gas flow. The reset is only possible via a manual operation.

Under-pressure shut off safety device (UPS)

Its function is to protect the downstream appliances from under pressure that could be generated by: gas exhaustion in cylinders / tanks or insufficient vaporisation capacity.

- LPG supply interruption in the upstream pipe or supply valve closing,
- Le supply pipe or upstream regulator filter obstruction (if any),
- excessive consumption.

When one of the previous situation occurs, then the UPSO automatically shuts off the gas flow. The reset is only possible via a manual operation.

Marking

In conformity with EN16129 requirements the following information is marked on the regulator sticker (K):

- inlet (G) and outlet (H) connection type,
- regulation type: single or second stage,
- inlet pressure range, indicated in bar,
- outlet set pressure (eventually outlet adjustable pressure range), indicated in mbar,
- regulator capacity, indicated in kg/h and gas type,
- setting of the over-pressure relief valve PRV, if any, indicated in mbar,
- setting of the over-pressure shut off safety device OPSO, if any, indicated in mbar,
- setting of the under-pressure shut off safety device UPSO, if any, indicated in mbar,
- referring standard,
- manufacturing date: www.y (week/year).

Warning before installation
FAILURE TO FOLLOW THESE INSTRUCTIONS CONTAINED IN THIS DOCUMENT WILL RESULT IN THE EXCLUSION OF THE LIABILITY OF THE MANUFACTURER FOR ANY DAMAGE OR LOSSES THAT COULD OCCUR.

Pressurised gases can be dangerous. Failure to follow these instructions or to properly install and maintain this product could result in an explosion or in a fire, that could cause damage property, serious injuries and fatal accident.

Installation, inspection and maintenance must be performed by persons with the necessary competence (certified in certain countries), in relation to the type of gas and its required usage.

The installation must be performed, inspected, used and maintained in conformity with the laws in force in the country of installation. If in doubt, contact qualified service or installation personnel/engineer.

Check that the regulator has not been damaged or contaminated during storage and transport. Make sure that cylinder and installation valves are closed and that no sources of ignition are nearby. Verify that the inlet connection (G) and the outlet connection (H) of the regulator are compatible with those of the installation. Thoroughly clean (blow through) tubing. If required, check the suitability, conservation status and validity of seals and connecting hoses. If gaskets must be used in the installation (connector with a nut), check the presence of the gasket and its integrity. Replace it if necessary.

If the regulator must be connected directly to a tank or a multi cylinder system, make sure the regulator

is marked "single stage". In case of use of a second stage regulator make sure a first stage regulator is installed upstream with an output pressure compatible with the input pressure range marked on the regulator.

It is recommended to install a filter upstream of the regulator.

To achieve satisfactory operation in all conditions of use you must carefully assess the capacity of vaporisation of cylinders or bulk storage used and the losses of pressure in pipes, fittings, valves and other components.

Installation
The regulator should preferably be installed outdoors (see local legislation restrictions) and be protected from rain, rain splatters, snow, submerging in water and from all other agents (ie. dust, sand, mortar,...) which could obstruct the vents (G, ED).

Never install inside a building regulator with an over pressure relief valve (PRV).

ALWAYS POSITION THE VENT DOWNWARD

to prevent water entering and/or accumulating in the regulator by humidity condensation. Connect the inlet (G) and outlet (H) following the gas passage direction, indicated by the arrow (P). Use a spanner, close to the pipe on the spanner profiles (U) to apply the connecting torque.

Commissioning

After installation is completed, replacement of a cylinder, closing the supplying valve and after every intervention of the OPSO or UPSO safety device, then it is necessary to commission the gas installation:

- 1) open the upstream valves, one by one. It's important to avoid any quick opening that could generate an excessive pressure on the inlet of the regulator and make intervene the OPSO device.
- 2) check and reset, if necessary, the over-pressure shut off safety device OPSO.
- 3) check and reset, if necessary, the under-pressure shut off safety device UPSO,
- 4) slowly open the supply valves, if any.

OPSO indicator

Its function is to indicate the current state of the OPSO valve.

Check the transparent reset handgrip (T) on the side of the regulator (fig.5):

- if the green indicator is not visible through the reset handgrip, it means that the OPSO has intervened (fig.5-12).
- if the green indicator is visible (fig.5-11), it means that the OPSO did not intervene. In case of lack of gas pressure, there may be other causes such as: cylinder/bulk gas tank valve closed, empty cylinder, any excess flow valve of the pipe intervened (including UPSO), obstructions, etc...

OPSO reset

close all gas supply valves (cylinders or others) and all connected appliances

- out and remove the security seal (if any). Action only by qualified personnel,
- slowly unscrew the cap reset handgrip (fig.5 (T)). This opens the cap flow and allows the balancing of pressure in the device,
- firmly pull the transparent OPSO cap reset (T) in order to re-attach the device to complete the resetting.
- screw back the cap (T).
- if necessary replace the seal (U) inserting it in the hole (V) of the cap reset and into the hole (Z) of the body (fig.6).

Repeat the commissioning.

If after resetting the OPSO safety valve it continues to block the gas flow, DO NOT CONTINUE to USE the regulator, close all gas supplies and contact your installer.

UPSO indicator functioning

Its function is to indicate the current state of the UPSO valve.

Check the transparent cap (W) over the knob (fig.4):

- if the green indicator is not visible through the cap, it means that the UPSO intervened (fig.4-W(2)).
- if the green indicator is visible (fig.4-W(1)), it means that the UPSO did not intervene and that there could be other reasons for the lack of gas pressure.

UPSO reset

ensure that ALL downstream valves are closed,

- slowly open the gas supply upstream,
- press the reset button (X) for a few seconds (fig.8) or unscrew the cap (W) and pull up the green rod located inside the cover (fig.4),
- replace back the cap (W).

Maintenance

Due to normal wear or damage that may occur from external sources, it is recommended the operation of the regulator and gas installation shall be inspected periodically. In normal use conditions and in order to guarantee the correct operation of the installation, we recommend replacing the regulator within 10 years of use. In severe service conditions, the inspections shall be more frequent and the regulator replaced sooner.

Safety instructions

Periodically and in any case after first commissioning, after a prolonged disuse, after an intervention on the gas installation or in suspicion of possible gas leaks always check gas pressure tightness of the system with an appropriate methods such a leak detector fluid (eg. DETECTO CELSSE).

NEVER USE FLAME FOR LEAK TEST.

In the case of smell of gas and/or gas leaks, shut off the valves and ventilate the rooms (open doors and windows) before working on the potential causes of the gas leak. If the leak persists, turn off gas cylinder valve, disconnecting them, taking them to outdoors (only if possible to do so safely) and call qualified service personnel.

INSTRUCTIONS TO BE KEPT BY THE USER

The content of this instruction sheet is presented solely as information, as despite efforts to ensure its correctness, it should not be interpreted as an explicit or implicit cover guarantee for the products or services described or for their use or applicability.

We reserve the right to change or improve product design or specifications at any moment and without notice.

We do not assume any responsibility for the selection, use or maintenance of any product.

The responsibility for proper selection, use and maintenance remains solely with the purchaser.