



## 1. Intended use

Pressure regulator for compressed air, gases and liquids for reducing the outlet pressure to a pressure independent of the flow. Pressure regulators cannot be used as an element to control flow or as a shut-off valve. The pressure regulators are compact spring-loaded pressure regulators.

## 2. Note on the operating manual

Any handling of the device requires expert knowledge and compliance with this operating manual. The device is only intended for the use described.

### 2.1 Symbols



This symbol indicates special information or any dos and don'ts to prevent damage. These instructions serve to ensure **occupational safety!**



This symbol appears in front of particularly important information regarding compliance with regulations or if there is a risk of property damage!

## 3. Safety



### 3.1 Safety instructions

Do not put yourself or others in danger. Read the following safety instructions before installing, operating or maintaining the product in question.

They serve to avoid harm to people and the product itself. Handling technical gases – especially flammable, combustible or poisonous gases – requires expertise, compliance with this operating manual and special safety measures. In addition, any relevant regulations and guidelines may need to be observed. (see 3.2)

Use the product only as intended (see section on "Intended Use") The same applies to the gas used with the product: improper operation can result in damage to the system or injury or even death to people. Use gas monitoring devices when working with dangerous gases. These monitoring devices detect leaks and alert personnel.

Wear a respirator mask, safety goggles and safety gloves when working with toxic gases and ensure the space is well ventilated. Ensure that exhaust vents do not become blocked and that toxic gases are properly expelled from fittings and

systems with ventilation valves. Some gases may displace oxygen from the air and cause suffocation. Ensure good ventilation when handling such gases. It is highly recommended to install detectors that sound an alarm when there is a lack of oxygen in the workplace.

Oils and fats must never be used on gas control systems. These can easily ignite and react violently with some pressurized gases. **In certain cases, lubricants may be used, but they must be specially designed for the respective application.**

The use of pressure regulators in oxygen applications is only permitted with appropriately marked devices.

#### Special safety instructions for pressure regulators.

When connecting devices to the pressure regulator, special protective devices must be used to ensure that no dangerous pressure can build up inside them. The secondary venting of a pressure regulator (if applicable) does not count as protection for these devices.

When changing the gas type, the pressure reducer should be sufficiently flushed with inert gas.

### 3.2 Regulations and Guidelines



The following regulations and guidelines must be observed on a case-by-case basis in Germany:

- Preventative principles
- Operating work equipment
- Laboratory guidelines
- Industrial safety regulations
- Information sheets "Working with Dangerous Materials"

## 4. Installation

### 4.1 Transport and packaging

Upon delivery, please check the pressure regulators for any damage caused by transport or factory defects. Any pressure regulator connections may be closed with caps for transport to prevent dirt particles from entering. Only remove the caps immediately before assembly. If the system is to be dismantled at a later date, any connections must be closed again before storage or transport. A strip of adhesive tape can be affixed over the openings as a makeshift solution. The pressure regulator may only be transported in proper, sturdy packaging.

### 4.2 Preparation

Turn the adjusting screw (handwheel, spindle, hexagon) on the pressure regulator counter-clockwise until the spring range is completely slack.

Connect the pressure regulator – connection threads must match.

To ensure that the pressure regulator functions properly, all pipes must be blown out before installation. Deposits and other foreign objects may damage the valve seat and thus impair or completely hinder operation.

No lubricant should be used during installation. The pressure regulator may become dirty and, if used for oxygen or nitrous oxide, there is a risk of cauterisation.

The pressure regulator must be installed in such a way that the flow direction corresponds to the arrows stamped/glued on the casing (IN to OUT).

Internal filters are only to protect against possible contamination during installation. It is recommended to use external inlet pressure filters. All gases should be free of moisture to prevent the regulator from freezing at high flow rates.

### 4.3 Operation

The desired output pressure is set by turning the adjusting screw (handwheel, spindle, hexagon). Turning clockwise increases the output pressure; turning counter-clockwise reduces the output pressure. If the pressure regulator is not reversible (without secondary venting), the medium must be discharged from the outlet on the pressure regulator; otherwise the outlet pressure will not be reduced.

In order to achieve the right setting, any minor adjustments to the pressure should always be increased, not decreased. These pressure regulators work with all media that are compatible with the specified materials. The pressure regulators may only be operated within the values specified in the technical data. Operation outside the permissible values may overload and damage the seals.

The pressure regulator was developed and tested exclusively for operation with clean, dry, and chemical additives and unladen compressed air. Operating with media or additives other than those specified by the manufacturer is not permissible and requires the agreement of the manufacturer.

**Warning:**

On some devices, "over-tightening" the adjusting screw (handwheel, spindle, hexagon) may cause much higher maximum outlet pressure than the factory-specified maximum outlet pressure. Using a pressure regulator with an outlet pressure much higher than the factory-specified values may result in the following:

The adjusting spring, which is compressed to a value close to the block length, may significantly change its characteristic curved shape and negatively impact the pressure regulator operation (e.g. incomplete closing of the main regulator valve can result in a gradual decrease/increase in the outlet pressure).

Internal parts are subjected to loads beyond their intended design and may therefore be permanently deformed. Damage caused by excessive outlet pressure is not covered by any warranty.

**4.4 End of operations**

- Turn off inlet.
- Completely use up or discharge any remaining medium.
- Turn the handwheel counter-clockwise until the pressure spring range is completely slack.

**5. Maintenance**

**Do not carry out any maintenance/repair work on fittings that are under pressure!**

Maintenance and servicing may only be carried out by trained professionals! Under normal use, it is recommended to carry out an inspection every 6 months, during which the device is examined externally for damage and checked for functionality. In the event of unusually heavy use, more frequent maintenance may be required.

**5.1 Troubleshooting**

1. Problem: The outlet pressure continues to rise after adjusting the controller, without turning the adjusting screw (handwheel, spindle, hexagon).

Possible cause: The valve seat is dirty or damaged!

Solution: The valve seat must be cleaned or replaced.

2. Problem: Leakage around or on the spring cap

Possible cause:

1. The spring cap needs to be tightened.
2. There is dirt or scratches on the valve tappet/membrane/piston.

Solution: Replace the membrane/piston or tappet (repair kit).

**5.3 Spare parts**

Only original spare parts should be used for repairs. Parts should only be replaced by trained professionals!

**Reversible, stainless steel pressure regulator with self-relieving design, stainless steel pressure gauge**

Item no.	Type no.
129270	DRES.G12R.05-8B
129271	DRES.G12R.1-15B

**Non-reversible, stainless steel pressure regulator, for liquid media, without self-relieving design, stainless steel pressure gauge**

Item no.	Type no.
129272	DRES.G12NR.05-8B
129273	DRES.G12NR.1-15B