

Low pressure regulator type NDR 0516 for installation in LPG systems



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ABOUT THE MANUAL



- This manual is part of the product.
- This manual must be observed and handed over to the operator to ensure that the component operates as intended and to comply with the warranty terms.
- Keep it in a safe place while you are using the product.
- In addition to this manual, please also observe national regulations, laws and installation guidelines.

SAFETY ADVICE

Your safety and the safety of others are very important to us. We have provided many important safety messages in this assembly and operating manual.

✓ Always read and obey all safety messages.



This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and either the word "DANGER", "WARNING", or "CAUTION". These words mean:

⚠ DANGER

describes a **personal hazard** with a **high degree of risk**.

→ May result in **death or serious injury**.

⚠ WARNING

describes a **personal hazard** with a **medium degree of risk**.

→ May result in **death or serious injury**.

⚠ CAUTION

describes a **personal hazard** with a **low degree of risk**.

→ May result in **minor or moderate injury**.

NOTICE

describes **material damage**.

→ Has an **effect** on ongoing operation.

PRODUCT-RELATED SAFETY ADVICE**⚠ DANGER**

Escaping liquid petroleum gas (category 1):

- is highly flammable
- may cause explosions
- severe burns in case of direct skin contact
- ✓ Regularly check connections for leak-tightness.
- ✓ If you smell gas or detect a leak, shut the system down immediately.
- ✓ Keep ignition sources and electrical devices out of reach.
- ✓ Observe applicable laws and regulations.

GENERAL PRODUCT INFORMATION

The product keeps the specified outlet pressure constant within defined limits regardless of fluctuations in the inlet pressure and changes in flow and temperature.

INTENDED USE**Operating media**

- LPG (gas phase)



You will find a **list of operating media** with descriptions, the relevant standards and the country in which they are used in the Internet at **www.gok-online.de/de/downloads/technische-dokumentation**.

**Area of Application**

- Commercial and industrial applications

Place of operation

- operate indoors and outdoors, if protected against the weather

Installation location

- directly in the low pressure piping

Installation position

- optional
- observe installation direction

INAPPROPRIATE USE

All uses exceeding the concept of intended use:

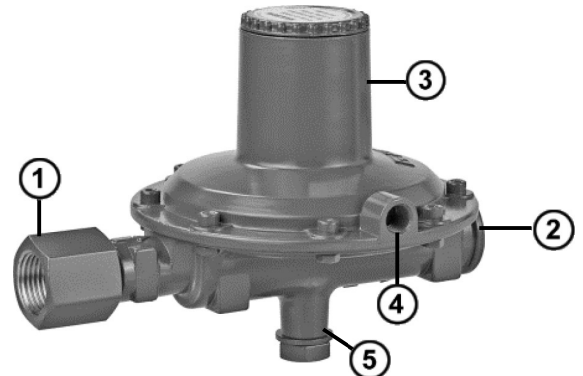
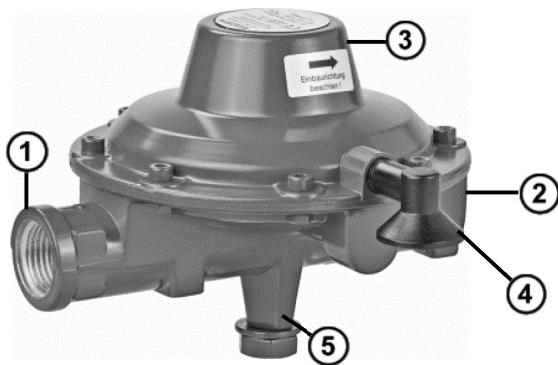
- e.g. operation using different media, pressures
- use of gases in the liquid phase
- installation against the flow direction
- operation with inappropriate hoses
- changes to the product or parts of the product
- Use at ambient temperature varying from: see TECHNICAL DATA

USER QUALIFICATION

This product may be installed only by qualified experts. These are personnel who are familiar with setting up, installing, starting up, operating and maintaining this product.

"Equipment and systems requiring supervision may be operated only by persons aged at least 18, who are physically capable and who have the necessary specialist knowledge or who have been instructed by a competent person. Instruction at regular intervals, but at least once per year, is recommended."

DESIGN



- | | |
|---|--|
| ① Inlet connection | ④ Breather,
Insect protection device (option) |
| ② Outlet connection | ⑤ Regulator support, adjustable |
| ③ Low pressure regulator with integrated
pressure relief valve PRV | |

ADVANTAGES AND EQUIPMENT



Optional insect protection device

Screw this into the breather the female thread G 1/8.

NOTICE

Check regularly that the sieve is not blocked. A blocked sieve may increase or decrease outlet pressures. Clean or replace as required.

Pressure relief valve PRV

The pressure relief valve (PRV) is an automatic safety device with limited flow that is installed in the pressure regulator to protect connected devices against inadmissible high pressures. If there is inadmissible high pressure at the outlet side, for example due to high temperatures, the PRV opens and relieves the excess pressure through the breather. When the pressure falls, the PRV closes again automatically.

A connection to the open air must be created if a pressure regulator with PRV is to be operated indoors, inside housing or in any other areas that could be at risk.

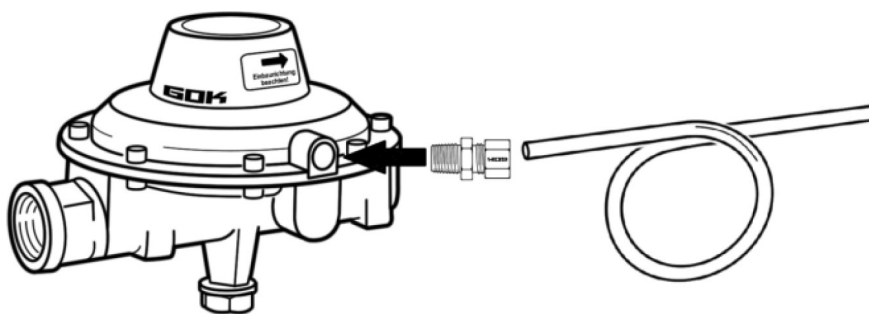
"PRV" is marked on the type label of the pressure regulator.

⚠ WARNING

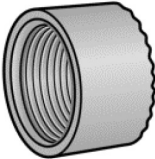

Risk of asphyxiation from gas leaks in enclosed spaces.

High concentrations of gas can cause difficulty in breathing and lead to unconsciousness.

✓ A discharge line ④ must be connected from the breather on the product to outdoors.



CONNECTIONS

Inlet, Outlet, optional	Trading name and dimensions acc. to standard	Installation instructions
	Screw-in connector • G.37, X.6 or H.22, Y.2 = IG G 1/2 • For a screw-in connector with O-ring	

NOTICE

Alternatively, other connections can be obtained from the manufacturer on request.

ASSEMBLY

Before assembly, check that the product is complete and has not suffered any damage during transport.

ASSEMBLY must be carried out by a specialised company.

See USER QUALIFICATION!

The specialised company and the operator must observe, comply with and understand all of the following instructions in this assembly and operating manual. For the system to function as intended, it must be installed professionally in compliance with the technical rules applicable to the planning, construction and operation of the entire system.

⚠ CAUTION



Risk of injuries due to blown-out metal chips!

Metal chips may cause eye injuries.

Wear safety goggles!

NOTICE Malfunctions caused by residues! Proper functioning is not guaranteed.

- ✓ Visually check that there are no metal chips or other residues in the connections!
- ✓ It is important that metal chips or other residues are blown out!

NOTICE Install with suitable tools, if required.

Regarding screw connections, use a second spanner to brace against the connection nozzle.
Do not use unsuitable tools, such as pliers.

NOTICE Product damaged through incorrect installation direction

Proper functioning is not guaranteed.

- ✓ Observe the installation direction (marked on the product with an arrow ).

Screw connections

⚠ WARNING If connections leak, there is a danger of explosion, fire or suffocation!

Gas may escape if the product is turned.

- ✓ Do not turn the product after it has been installed and the connections have been tightened.
- ✓ Tighten connections only when they are not pressurised.

Installing a gas filter

NOTICE

We recommend installation of a gas filter (Part no. 02 013 10) in front of the pressure regulator.

LPG may contain foreign matter, such as dirt particles. From a certain size, these particles are trapped in the filter. If no gas filter is installed, wear and tear of sensitive components is increased and the complete LPG system may break down.

NOTICE

Install the pressure regulator so that it is not under tension.
Use the regulator support.

NOTICE

For outdoor applications, the product must be located or protected so that no dripping water can enter. We recommend installation in under a hood and in a control cabinet, respectively, or in a housing.

NOTICE

If the pressure regulator is installed in the flow direction downstream from another pressure regulator, the supply pressure range must correspond to the regulated pressure range of the first pressure regulator, with consideration of the pressure loss in the piping between the two devices.

LEAK CHECK



⚠ CAUTION Risk of burning or fire

Serious burns to the skin or damage to property.

- ✓ Do not use an open flame to check for leaks.

Leak check before start-up

Before start-up, check the product connections for leaks.

1. Close all shut-off fittings on the gas appliance.
2. Slowly open the withdrawal valve or the gas cylinder valve.
3. Spray all connections with a foam producing substance according to EN 14291 (e.g. leak spray, Part no. 02 601 00).
4. Bubbles will form in the foam producing substance if there are any leaks.

**NOTICE**

If more bubbles form, re-tighten the connections (see ASSEMBLY). If you cannot stop the leaks, you must not use the product.



Observe the applicable national installation regulations for LPG systems.

START-UP


After the product has been ASSEMBLED and LEAK TESTING has been carried out successfully, it is immediately ready for operation.

1. Start the system by slowly opening the gas feed.
2. The shut-off fitting of the consumer device must be closed.
3. Observe the assembly and operating instructions of the consumer device.
4. Open the shut-off fittings.

OPERATION

The product requires no operation while it is running.

TROUBLESHOOTING

Fault cause	Action
Abnormal flame pattern of non-adjustable pressure regulator	<p>Compare the nominal outlet pressure with the nominal connection pressure: → if they do not correspond, replace the pressure regulator or the gas appliance</p> <p>Measure the outlet pressure; outlet pressure is not within the specified limits: → check the system configuration → pressure regulator is defective, replace → check the gas filter</p>
No gas flow.	<p>→ Open the gas cylinder valve or the shut-off fittings. → Check the gas filter.</p>
 Gas smell Leaking LPG is extremely flammable. Can cause explosions.	<p>→ Close the gas supply. → Do not use any electric switches. → Do not use a phone in the building. → Ventilate rooms well. → Shut down the LPG system. → Contact a specialised company.</p>

MAINTENANCE

Upon proper ASSEMBLY and OPERATION, the product is maintenance-free.

REPLACEMENT

If there is any sign of wear or if the product or parts thereof are damaged, it must be replaced. When the product has been replaced, observe the steps ASSEMBLY, LEAK TESTING and START-UP.

To ensure that the installation works faultlessly under normal operating conditions, it is recommended that you replace the device within 10 years of the date of manufacture.

NOTICE In commercial applications, according to DGUV regulation 79, parts of consumer units that are subject to wear and ageing* must be replaced after 8 years. This does not apply if the proper condition has been confirmed by an expert.

* System parts that are subject to wear or ageing are, for example, membranes, automatic and manual changeover valves, pressure regulators, hoses assemblies.

⚠ CAUTION

Product damaged due to flooding!

This causes corrosion and malfunctions to the pressure regulator.

✓ Replace the pressure regulator following flooding!

RESTORATION

If the actions described in TROUBLESHOOTING do not lead to a proper restart and if there is no dimensioning problem, the product must be sent to the manufacturer to be checked. Our warranty does not apply in cases of unauthorised interference.

SHUT-DOWN

Close the gas supply and then the shut-off fittings of the connected loads. When the LPG system is not in use, all valves must remain closed.

NOTICE

Close all free connections in the feed lines of the LPG system tightly with a suitable cap to prevent gas from flowing out.

DISPOSAL



To protect the environment, our products may not be disposed of along with household waste.

The product must be disposed of via a local collection station or a recycling station.

TECHNICAL DATA

Inlet pressure p	0.5 to 2.5 bar, 0.5 to 10 bar; 1.5 to 10 bar
Outlet pressure p _d optionally	29 or 50 mbar
Nominal flow rate M _g	4, 6 or 12 kg/h
Maximum permissible pressure	PS 16 bar
Ambient temperature	-20 °C to +50 °C
maximum permitted pressure drop in downstream installation	ΔP2 for p _d 29 mbar ΔP5 for p _d 50 mbar
Nominal response pressure	PRV: 120 mbar



Refer to the type label of the pressure regulator for more technical data and special settings!

LIST OF ACCESSORIES

Product name	Order no.
• Insect protection for G 1/8 F	01 641 40
• Screw-in connector GELLRK 8 x R1/8	07 092 00
• Gas filter Rp 3/4 F x Rp 3/4 F	02 013 10
fitting AG G3/4 x IG G1/2	20 090 55
screw-in connector GELRB 18 x G3/4	07 096 00
connector GELRS18 x G1/2	07 917 00

WARRANTY

We guarantee that the product will function as intended and will not leak during the legally specified period. The scope of our warranty is based on Section 8 of our terms and conditions of delivery and payment.

**TECHNICAL CHANGES**

All the information contained in this assembly and operating manual is the result of product testing and corresponds to the level of knowledge at the time of testing and the relevant legislation and standards at the time of issue. We reserve the right to make technical changes without prior notice. Errors and omissions excepted. All figures are for illustration purposes only and may differ from actual designs.

CERTIFICATE NO.

Our management system is certified according to ISO 9001, ISO 14001 and ISO 50001, see:
www.gok-online.de/de/zertifikate/qualitaets-und-umweltmanagementsystem.

