GOK **Installation and operating instruction** | Issue 06.2010

Low Pressure Reducer Type EN 61-DS 1.5 kg/h

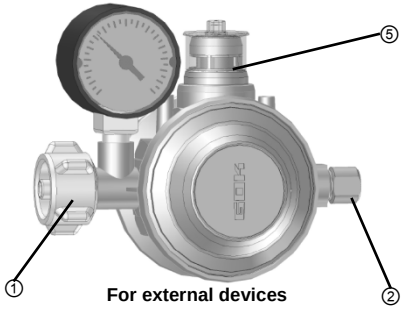
Pressure reducer with integrated high-pressure relief for liquid gas devices

CONSTRUCTION

Low pressure reducer type EN 61-DS maintains outlet pressure at a constant level, within the prescribed range, regardless of fluctuations of the inlet pressure (cylinder pressure or working pressure) and the changes in flow and temperature.

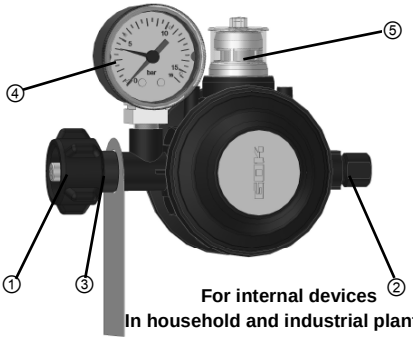
Integrated high pressure relief "**Lim**" limits the outlet pressure to 100 or 150 mbar and thus prevents the delivery of pressure which is unacceptable for the connected devices. Integrated high pressure relief is consistent with the requirements for devices preventing unacceptably high increase in pressure in accordance with the TRF, BGV D34 "Use of Liquefied Petroleum Gas" DA to § 11 Part 4 and the EU directive concerning gas equipment.

Low pressure reducer In the following versions:



For external devices
In household and industrial plants

- Pressure reducer according to DIN EN 12864.
- Pressure reducer according to DIN 4811-F.
- Each option with **PRV** pressure relief valve reducing high pressure or with integrated safety valve In case of pressure failure – see the drawing on page 2.



For internal devices
In household and industrial plants

- Pressure reducer according to DIN EN 12864 Annex B for the TRF requirements and industrial plants with a thermally actuated blocking element (TAE) ③ and manometer ④ to display the pressure at the inlet and as a leakage control.
- Pressure reducer according to DIN 4811-F1-t.

This installation and operating instruction must be provided to the user and respected for its intended use and to meet the guarantees.

OPERATING MEDIA	Liquid gas (LPG In gaseous form)	According to DIN 51622 / DIN EN 589 norms

CONNECTIONS (optional)

Connection	Connection for	Dimensions	According to the standards
Inlet ①	Pressurised gas cylinder	**GF** connection to the large gas cylinder, the weight of the fill, up to 33 kg	DIN 477-1 nr. 1 DIN EN 12864 G.4
		Comb.-A combined connection for both small and large gas cylinders with a hard or soft seal	DIN 477-1 i DIN 4811-2 DIN EN 12864 G.5
		KLF connection to the small gas cylinder, the weight of the fill, up to 14 kg	DIN 477-1 nr. 2 DIN EN 12864 G.12
	Pipe	Screw pipe connection with a cutting ring	DIN EN ISO 8434-1 DIN EN 12864 G.15 ; H.9
Outlet ②		Internal thread G 1/4	DIN EN ISO 228-1
	Hose	G ¼ A - LH – KN with 45°internal taper	DIN EN 560 DIN EN 12864 H.4

INSTALLATION

Before installation, the pressure reducer valve should be checked for any damage during transport and whether the delivery is complete. The condition for the proper functioning of the pressure reducer valve is its correct installation whilst observing technical rules, such as rules for liquid gas **TRF**, required during the planning, building and operation of the device.

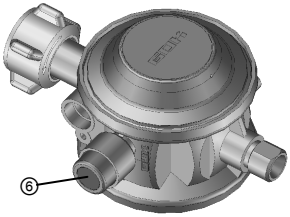
When choosing a pressure reducer valve with pressure threshold protection against high pressure p_{SO} 100 or 150 mbar it should be remembered to adapt the connected equipment for its safe operation!

Pressure reducer valve with an option of pressure relief valve "PRV" (see the nameplate):

Using this pressure reducer valve indoors and in households is unacceptable. Due to the integrated pressure relief valve **PRV** (high pressure relief valve with limited flow pressure) liquid gas can flow out to avoid unacceptably high pressure at the output and to protect the device.

Pressure reducer valve with an option of a safety valve in the case of pressure failure "SBS":

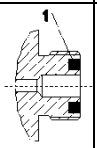
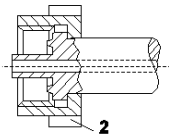
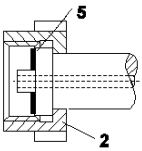
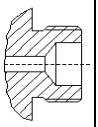
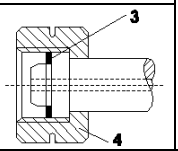
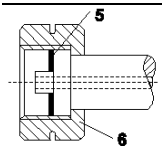
The reducers with **integrated safety valve in case of pressure failure** (SBS) in accordance with DIN 12 864 the gas outlet closes automatically if the rated flow rate exceeds by 10 - 40%, for example in case of hose rupture or loosening of a hose connection. SBS closes tightly and completely after the onset of this situation and can only be re-opened after pressing the button ⑥.



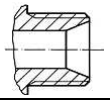
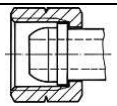
Installation Tips

- Installation should be performed using only spanners of suitable sizes. The connecting stub pipes should always be held on the other side. Only the connectors made out of cast iron by the pressure reducer housing, to be held on the other side. Do not use adjustable pliers for piping.
- Before installing visual examination shall be performed for the presence of any metal chips or other elements in the connectors. Such elements must be removed for example, by blowing them out to exclude any interference to the operation of the device.
- Install the pressure reducer valve without the use of tension (do not bend it or twist it)
- Remember the direction of rotation for installation ➡!
- Install clean and undamaged seals!
- Winged-nuts and knurled nuts should be tightened by hand only. Do not use tools.
- When using outdoors the pressure reducer valve should be set or protected in order that there is no water ingress.
- Do not install the pressure reducer valve in an explosive area 0.

Installation of connectors, inlet at the pressurised gas cylinder LH = COUNTERCLOCKWISE THREAD!

Side stub connectors Cylinder valve	Connection - inlet pressure reducer connect with side stub pipes		Explanations
weight of the fill up to 14 kg 	**KLF** 	Comb.-A 	**1** – Seal In the cylinder valve **2** – Union nut (wing-nut or knurled nut**)** **5** – Soft seal of the pressure reducer valve **2 – should only be connected by hand!**
weight of the fill up to 33 kg 	**GF** 		**3** - Seal of the pressure reducer **4** – Union nut (hexagon nut) **5** – Hard seal of the pressure reducer valve **6** – Union nut (hexagon nut)

Installation of an external thread G ¼ A LH - KN (45 °inner taper) LH = COUNTERCLOCKWISE THREAD!

Subassembly	Drawing of the connecting element	Explanations
Pressure reducer		Pipe thread: cylindrical external thread G ¼ LH („Left Hand“) n the tolerance class A according to the standard DIN EN ISO 228-1 with 45 ° inner taper
Connecting screw joint		Union nut with internal thread G ¼ LH according to the DIN EN ISO 228-1standard, the end of the hose with a sphere seal according to the DIN EN 560 standard

Tightening torque of 10 Nm

Mounting screw pipe connection with cutting ring

Subassembly	Connecting element	Explanations
Pressure reducer	Screw connector for an external diameter of the pipe ... mm	screw pipe joint with cutting ring according to DIN 2353 / DIN EN ISO 8434-1
Connecting screw joint	Stub pipes at outside diameter... mm	① Precision steel tube, e.g. according to the DIN EN 10305-1standard ② Copper tubes, e.g. according to the DIN EN 1057standard: and not to TRF!

Installation according to **instructions GOK** regarding screw pipe connection with cutting ring according to the DIN 2353 standard and DIN EN ISO 8434-1 based on the DIN 3859-2 standard.

The website www.gok-online.de in the "Service" section for the downloadable version.

After the tightening of the union nut the pressure reducer valve cannot be rotated. Turning can lead to leaking connections.

CHECKING FOR LEAKS

Before the first operation of the device with liquid gas it must be subjected to a leak check, also in case of cylinder replacement and after a long non-operational period of the device. To do this, turn off all locking elements of connected devices and open the cylinder or tank valve. Then check the tightness of all connections using a leak detector or other suitable foaming agent. Leakage control is positive only when it receives the result of "tight".

Low pressure reducer valve with a monometer version:

Open the cylinder valve. Set the red pointer by turning it to align with the black indicator (cylinder pressure indicator) to determine the actual pressure in the cylinder. In the case of a monometer without the red indicator, manually mark its position. Close the cylinder valve. Waiting time: 2 minutes, in order to equalise the temperature. Eventually, set the red pointer. Duration of control: 10 minutes. The indicated gas pressure cannot reduce during the control period. If the pressure drops, check the tightness of the entire liquid gas system.

Do not use an open flame to check the sealing!

STARTING

The pressure reducer is ready for operation immediately after installation and following a successful LEAK CHECK. Commissioning takes place through the opening of the cylinder valve or container with closed locking elements of the connected device. Now the connected device can be operated as indicated in the manual observing applicable regulations for installation (e.g. TRF rules).

In the case of pressure reducer valves with safety relief valve in the event of pressure failure (SBS), press and hold down the switching button until the pressure is equalized in the tubes (the time depends on the length of the connected tubes) and then slowly release the switch. Now you can operate the connected device in accordance with the operating instructions.

HANDLING

LPG is a flammable gas! The relevant laws, regulations and technical rules must be observed!

It is recommended that during the operation of the devices for liquefied gas at specified time intervals, LEAK CHECK of the pressure reducer valve is conducted.

In the case of rising gas odour, leakage, escape of gas through the pressure relief valve **PRV** and connected device fault TURN IT OFF IMMEDIATELY! It must be repaired by a specialised company.

Do not move the gas cylinder during operation! When tightening and loosening the connections at the cylinder valve, turn the unit nut only.

OPERATIONAL CONTROL of the pressure reducer valve:

Visible faults of the connected device: abnormal flame.

Pressure reducer valve with thermally actuated locking element (TAE)

At temperatures above +100℃ the blockade is activa ted, which itself blocks the gas flow. After activation of the thermal blockade, this low pressure reducer may not be used anymore and should be replaced.

Gas leaks by the pressure relief valve PRV /activation of the protection against high pressure

For long-term gas leak by the pressure relief valve PRV or at the moment of activation of the protection preventing high pressure Lim, this pressure reducer valve must be replaced with a new one.

Pressure reducer with indicator

After starting the operation of the device, the indicator ⑤ should show green colour If the outlet pressure exceeds 80 mbar (only for the versions with the outlet pressure of 29 and 50 mbar), the indicator changes to red. If after restarting the indicator is still red, this pressure reducer valve must be replaced with a new one.

Safety valve activation in the case of pressure failure (SBS)

In the case of safety valve activation in the event of pressure failure it is important to check the tightness of the whole gas installation (e.g. hoses, connection points). After checking the tightness the pressure reducer can be restarted.

SWITCHING OFF THE DEVICE

Close the cylinder valve or container, and then the blocking elements of the connected device. When not using the device for liquid gas, close all valves.

REPAIR

If the recommended measures in the section on STARTING and HANDLING do not lead to a proper RESTART, and the error cannot be determined, then the pressure reducer valve must be returned to the manufacturer for checking. Unauthorised tampering with the device leads to loss of approval and guarantee.

In normal use, and to ensure proper operation of the device it is recommended that the pressure reducer valve be replaced after 10 years from the date of manufacture.

SPECIFICATIONS

Maximum allowable pressure	PS 16 bar		
Inlet pressure p	Type EN 61-DS: 0,3 – 16 bar	Nominal outlet pressure p_d	29 (30), 37, 50, 67 or 100 mbar[1)]
Nominal flow M_g	Type EN 61-DS: max. 1,5 kg/h	Operational pressure PRV	80 – 120 mbar
Protection against high pressure **„Lim“** Operational pressure p_{SO}	100 mbar or 150 mbar[1)]	[1)] at p_d = 100 mbar	
Temperature range TS:	-20 ℃ ÷ +50 ℃		
Safety valve in case of pressure failure	value of operation 10 - 40% above nominal value of flow		

Other technical data (special versions) see the nameplate on the pressure reducer valve!

GOK Regler- und Armaturen-Gesellschaft mbH & Co. KG

Obernbreiter Straße 2-16, D-97 340 Marktbreit ☎ +49 9332 404-0 Faks +49 9332 404-43

E-Mail: info@gok-online.de Internet: www.gok-online.de

No art. 01150-50a Replaces the issue 11.2006