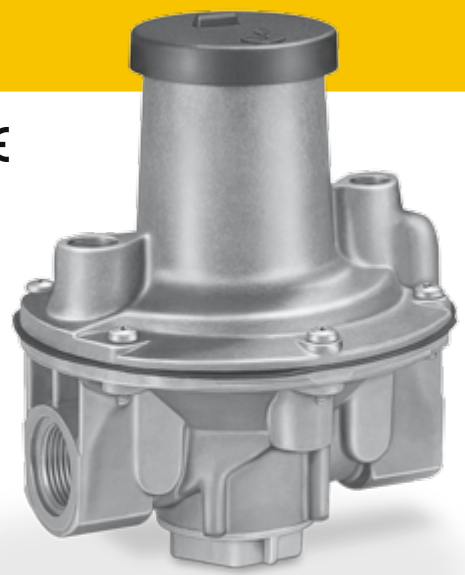
Gas pressure regulator GDJ

Technical Information · GB
2 Edition 08.12



- Universal pressure regulator for gaseous media
- Design with inlet pressure compensation diaphragm ensures high control accuracy
- Internal impulse
- No breather line required
- EC type-tested and certified
- Certified by Gosstandart pursuant to GOST-TR

krom//schroder

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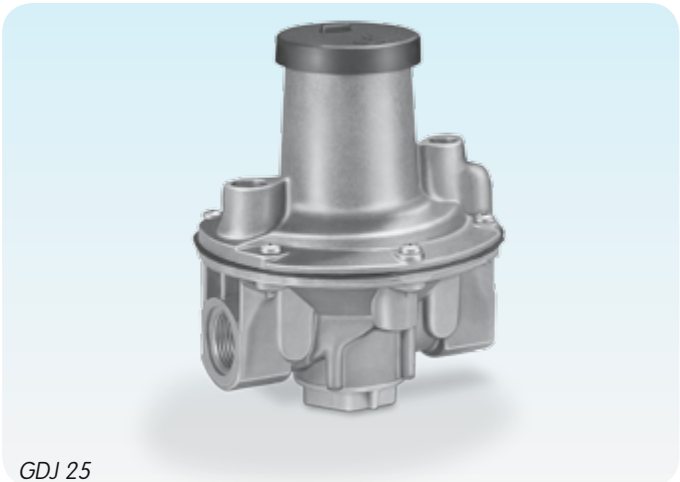
= To be continued

1 Application



GDJ 25

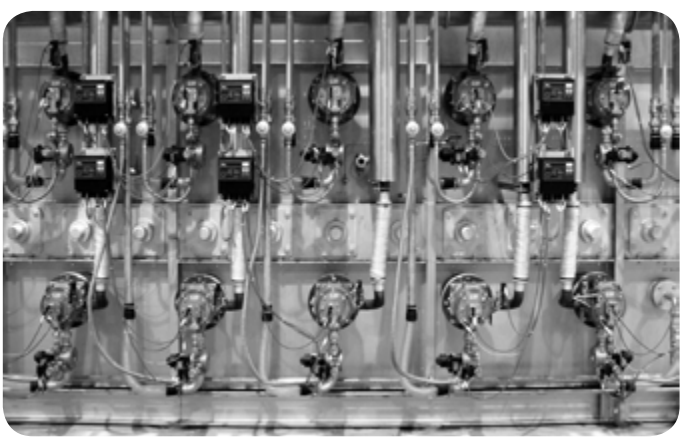
The spring-loaded gas pressure regulator GDJ with inlet pressure compensation diaphragm and zero shut-off serves to maintain the set outlet pressure constant despite changing gas flow rates and inlet pressures in gas pipelines. Thanks to an additional safety diaphragm, no breather line is required.

For controlling the pressure of the gas and air supply to gas burners and gas appliances in industry and the heating sector.

1.1 Examples of application

Bogie hearth furnace

Bogie hearth furnace



Roller hearth furnace

2 Certification

EC type-tested and certified

pursuant to

– Gas Appliances Directive (2009/142/EC) in conjunction with DIN EN 88.

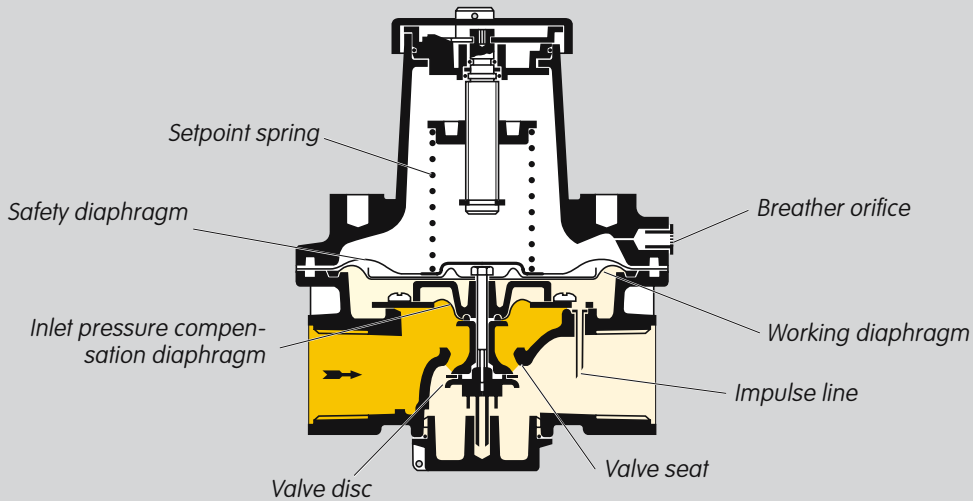
Approval for Russia

Certified by Gosstandart pursuant to GOST-TR.

Approved by Rostekhnadzor (RTN).

Scan of the approval for Russia (RUS) – see www.docuthek.com ➔ Elster Kromschröder ➔ Products ➔ 02 Pressure regulators ➔ Gas pressure regulators GDJ ➔ Kind of document: Certificate ➔ GDJ B00093 (nationales Zertifikat Russland) (RUS).

3 Function



GDJ 25

Gas pressure regulator GDJ is open when no pressure is applied.

The gas supply is opened slowly and the gas flows via the valve seat to the pressure regulator outlet. The outlet pressure is applied to the working diaphragm from below via the impulse line. As soon as the outlet pressure corresponds to the set spring force, the working diaphragm lifts and the valve disc connected to it reduces the flow rate.

If the outlet pressure drops, e.g. due to switching on a consumer, the valve disc is opened further and the outlet pressure increases again.

If the outlet pressure increases, e.g. due to reduced consumption, the valve disc is closed further and the outlet pressure decreases again.

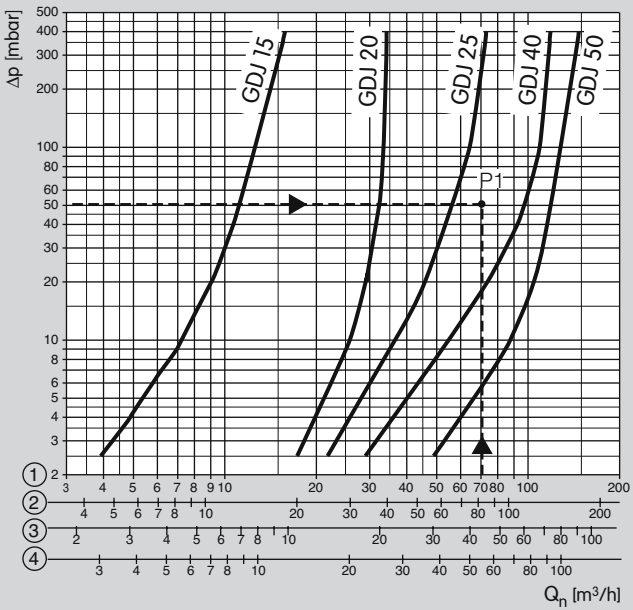
Thus, the outlet pressure is maintained constant despite changing gas flow rates.

If consumption is stopped, the valve disc closes completely (zero shut-off).

Fluctuations in the inlet pressure are compensated by the inlet pressure compensation diaphragm.

For measuring the inlet pressure, the optional pressure test nipple at the inlet can be used.

4 Flow rate



① = natural gas (ρ = 0.80 kg/m³)
② = town gas (ρ = 0.64 kg/m³)
③ = LPG (ρ = 2.01 kg/m³)
④ = air (ρ = 1.29 kg/m³)

Example:

Gas type: natural gas,
flow rate Q = 70 m³/h,
inlet pressure p_u = 70 mbar,
outlet pressure p_d = 20 mbar,
pressure loss $\Delta p = p_u - p_d$ = 50 mbar.

The result is intersection P1.
The next largest nominal size is selected: GDJ 40.

At a pressure loss of Δp = 50 mbar, the max. flow rate is $Q_{max.}$: 95 m³/h, the min. flow rate is $Q_{min.}$ derived from $Q_{min.} = Q_{max.} \times 10\% = 9.5$ m³/h.

5 Selection

Type	R	04	-0	-4	L
GDJ 15	●	●	●	●	○
GDJ 20	●	●	●	●	○
GDJ 25	●	●	●	●	○
GDJ 40	●	●	●	●	○
GDJ 50	●	●	●	●	○

● = *standard*, ○ = *available*

Order example

GDJ 40R04-4

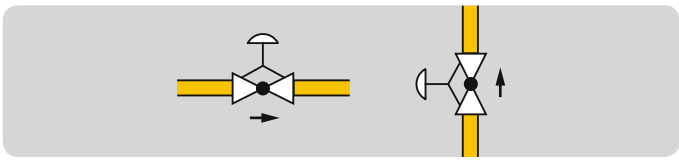
5.1 Type code

Code	Description
GDJ	Gas pressure regulator
15, 20, 25, 40, 50	Nominal size
R	Rp internal thread
04	p_U max. 400 mbar
-0	Without pressure test point
-4	Pressure test point at the inlet
L*	For air only (without approval)

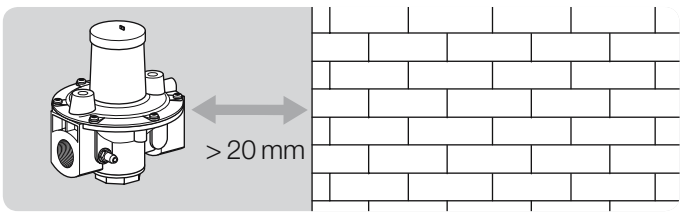
** If "none", this letter is omitted.*

6 Project planning information

6.1 Installation

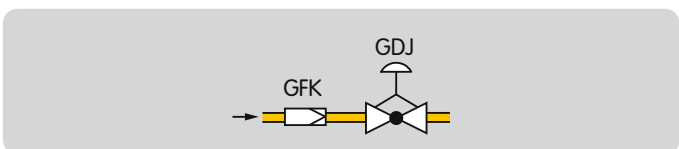


Installation position: spring dome pointing vertically upwards or to the side, not upside down.



The gas pressure regulator GDJ must not be in contact with masonry. Minimum clearance 20 mm.

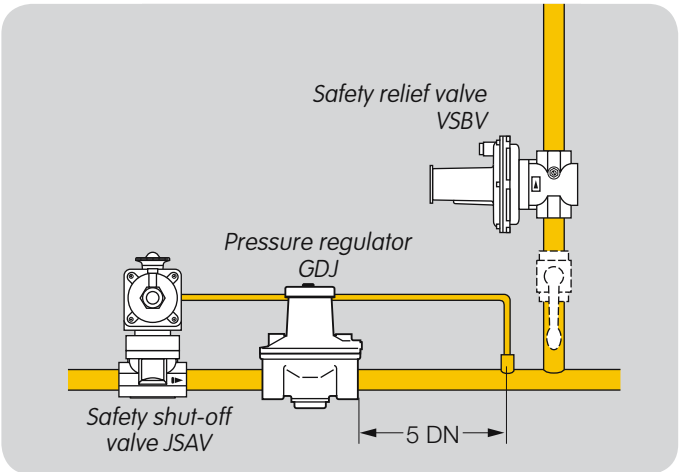
Do not store or install the unit in the open air.



Sealing material and dirt, e.g. thread cuttings, must not be allowed to get into the regulator housing.

Install a filter (GFK) upstream of every system.

6.2 Installation to EN 746-2



In accordance with EN 746-2, a safety shut-off valve upstream of the gas pressure regulator and a safety relief valve are required for gas pressure control systems.

These valves are not required if the highest possible operating pressure upstream of the regulator cannot exceed the maximum allowable operating pressure of the downstream devices.

7 Technical data

Gas types: natural gas, town gas, LPG (gaseous) and biologically produced methane (max. 0.02 %-by-vol. H_2S), GDJ..L also for air. The medium must be dry in all temperature conditions and must not contain condensate.

Inlet pressure range up to 400 mbar.

Outlet pressure ranges:
GDJ 15: 2 to 55 mbar,
GDJ 20 – 40: 5 to 160 mbar,
GDJ 50: 5 to 100 mbar.

Control range: 10:1.

Ambient temperature: -20 to +60°C.

Storage temperature: -20 to +40°C.

Valve housing: aluminium.
Valve seat: aluminium.

Valve disc: plastic.

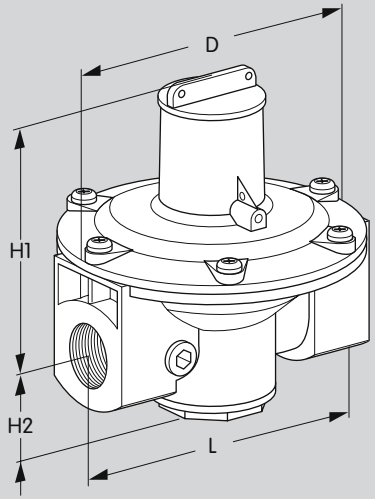
Valve disc seal: Perbunan.

Diaphragms: Perbunan.

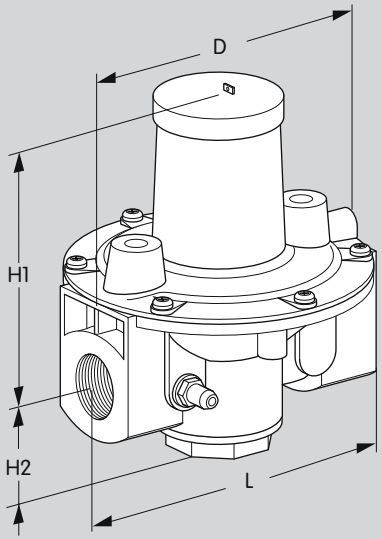
When used for air: special version.

Internal thread: Rp to ISO 7-1.

7.1 Dimensions



GDJ 15



GDJ 20

7.2 Data table

Type	Dimensions						p_U max.	Weight
	DN	Connection	L mm	H1 mm	H2 mm	D mm	mbar	kg
GDJ 15	15	Rp ½	100	90	30	100	400	0.6
GDJ 20	25	Rp ¾	125	132	34	134	400	1
GDJ 25	40	Rp 1	125	132	34	134	400	1
GDJ 40	40	Rp 1½	155	149	45	185	400	1.9
GDJ 50	50	Rp 2	200	167	52	234	400	3.1

7.3 Spring table

Type	Opening pressure range mbar	Spring marking	Order No.
GDJ 15	2 – 16	yellow	03089075
	10 – 20	black	03089076
	16 – 28*	orange	03089077
	22 – 40	brown	03089078
	40 – 55	light green/light blue	03089079
GDJ 20, 25	5 – 15	yellow	03089048
	12.5 – 25*	black	03089049
	22.5 – 35	orange	03089050
	25 – 75	yellow/black	03089051
	70 – 100	pink/gold	03089052
	90 – 160	yellow/orange	03089056
GDJ 40	5 – 15	red/yellow	03089053
	12.5 – 25*	red/black	03089054
	22.5 – 35	red/orange	03089055
	25 – 75	yellow/orange	03089056
	70 – 100	pink/silver	03089057
	90 – 160	grey/gold	03089062
GDJ 50	5 – 15	blue/yellow	03089058
	12.5 – 25*	blue/black	03089059
	22.5 – 35	blue/orange	03089060
	25 – 75	yellow/dark green	03089061
	70 – 100	grey/gold	03089062

** Standard equipment*

Dispatch complete with label for changed outlet pressure.

8 Maintenance cycles

At least once a year, at least twice a year in the case of biologically produced methane.

Feedback

Finally, we are offering you the opportunity to assess this "Technical Information (TI)" and to give us your opinion, so that we can improve our documents further and suit them to your needs.

Clarity

- ○ Found information quickly
- ○ Searched for a long time
- ◉ Didn't find information
  What is missing? sefsef
- ○ No answer

Comprehension

- ○ Coherent
- ○ Too complicated
- ○ No answer

Scope

- ○ Too little
- ○ Sufficient
- ○ Too wide
- ○ No answer

Use

- ☐ To get to know the product
- ☐ To choose a product
- ☐ Planning
- ☐ To look for information

Navigation

- ○ I can find my way around
- ○ I got "lost"
- ○ No answer

My scope of functions

- ○ Technical department
- ○ Sales
- ○ No answer

Remarks

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We reserve the right to make technical modifications in the interests of progress.

GDJ · Edition 08.12

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