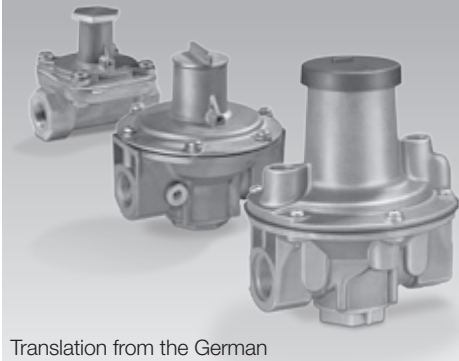


Operating instructions
**Gas pressure regulators 60DJ,
 J78R, GDJ**



Translation from the German
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Safety

Please read and keep in a safe place



Please read through these instructions carefully before installing or operating. Following the installation, pass the instructions on to the operator. These instructions can also be found at www.docuthek.com.

Explanation of symbols

- , **1**, **2**, **3**... = Action
- > = Instruction

Liability

We will not be held liable for damages resulting from non-observance of the instructions and non-compliant use.

Safety instructions

Information that is relevant for safety is indicated in the instructions as follows:

⚠ DANGER

Indicates potentially fatal situations.

⚠ WARNING

Indicates possible danger to life and limb.

! CAUTION

Indicates possible material damage.

All interventions may only be carried out by qualified gas technicians. Electrical interventions may only be carried out by qualified electricians.

Conversion, spare parts

All technical changes are prohibited. Only use OEM spare parts.

Transport

On receipt of the product, check that the delivery is complete (see Part designations). Report any transport damage immediately.

Storage

Store the product in a dry place. Ambient temperature: see Technical data.

Checking the usage

Intended use

Gas pressure regulators 60DJ, J78R and GDJ serve to maintain a constant outlet pressure p_a despite changing gas flow rates and inlet pressures p_e in gas pipelines.

This function is only guaranteed when used within the specified limits – see [Technical data – p. 5]. Any other use is considered as non-compliant.

Type code 60DJ

| Code | Description |
|-------------|---------------------------------|
| 60DJ | Gas pressure regulator |
| L | For air only (without approval) |
| Z | Set to 80 mbar |

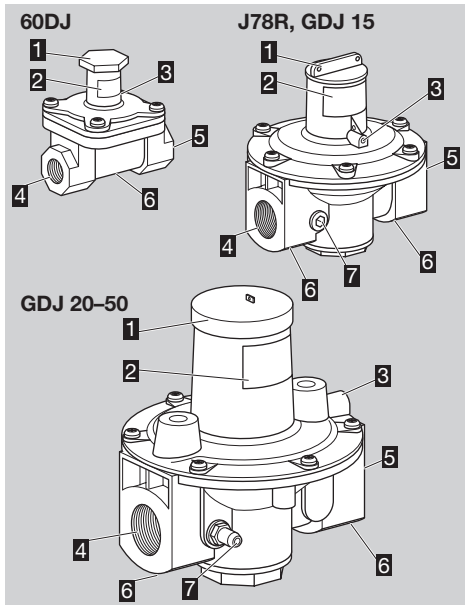
Type code J78R

| Code | Description |
|-------------|---------------------------------|
| J78R | Gas pressure regulator |
| 0 | Without measuring connection |
| 1 | Screw plug at the inlet |
| -L | For air only (without approval) |

Type code GDJ

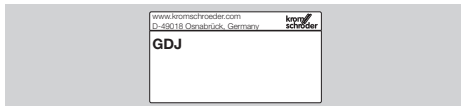
| Code | Description |
|--------------|-----------------------------------|
| GDJ | Gas pressure regulator |
| 15–50 | Nominal size |
| R | Rp internal thread |
| 04 | $p_{e, \max.}$ 400 mbar |
| -0 | Without measuring connection |
| -4 | Pressure test nipple at the inlet |
| L | For air only (without approval) |

Part designations



- 1 Cover cap and adjusting screw
- 2 Type label
- 3 Breather orifice
- 4 Inlet
- 5 Outlet
- 6 Arrow of direction of flow
- 7 Measuring connection for inlet pressure p_e

Inlet pressure p_e , outlet pressure p_a and adjusting range: see type label.



Installation

! CAUTION

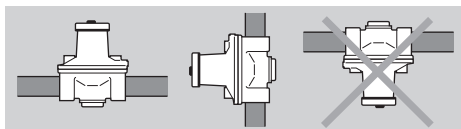
Please observe the following to ensure that the gas pressure regulator is not damaged during installation:

Install the unit free of mechanical stress.

Sealing material, cuttings and other impurities must not be allowed to get into the regulator housing.

The installation location must be dry. Do not install the unit in the open air.

Installation in the vertical or horizontal position, never upside down.

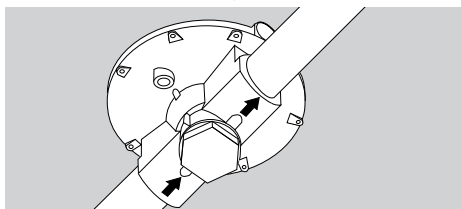


- ▷ The outlet pressure p_a is set at the factory with the spring dome pointing vertically upwards. If the gas pressure regulator is installed with the spring dome in the horizontal position, check and adjust the outlet pressure p_a , see [Changing the outlet pressure p_a – p. 3].

1 Install a filter upstream of the unit, in order to protect it against impurities in the pipe.

- ▷ The housing must not be in contact with masonry, minimum distance 20 mm.

2 Remove the screw caps.



- ▷ Note direction of flow: see arrow on the housing.

3 Install using approved sealing material.

- ▷ Use an appropriate spanner – do not use the spring dome as a lever.

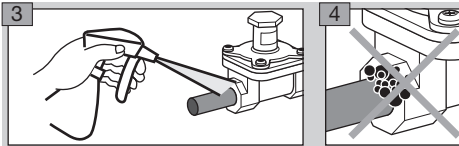
Tightness test

Also after maintenance.

- 1 Block the pipeline at the inlet and outlet.

60DJ

- 2 Slowly apply inlet pressure p_e – max. 100 mbar.
- ▷ To apply pressure, use a hand pump at the measuring connection of a neighbouring device.
 - ▷ Since the 60DJ does not have zero shut-off, the outlet pressure does not need to be applied separately.



- 7 Relieve the inlet pressure p_e .

J78R, GDJ

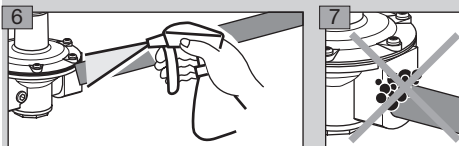
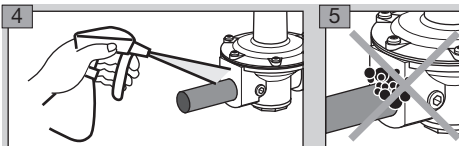
- 2 Slowly apply inlet pressure p_e . ($p_e \leq 1.5 \times p_{e \text{ max.}}$, see type label)
 - 3 Slowly apply outlet pressure p_a . ($p_a \leq 1.5 \times p_{a \text{ max.}}$, see type label)
- ▷ To apply pressure, use a hand pump at the measuring connections of the pressure regulator or at the measuring connections of neighbouring devices.

! CAUTION

First apply the inlet pressure p_e – then the outlet pressure p_a .

The inlet pressure p_e must always be equal to or higher than the outlet pressure p_a .

In the event of non-compliance with the sequence, the compensation diaphragm will reverse.

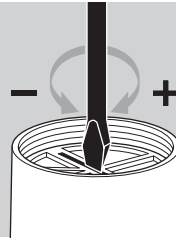


- 8 Relieve the outlet pressure p_a .
- 9 Relieve the inlet pressure p_e .

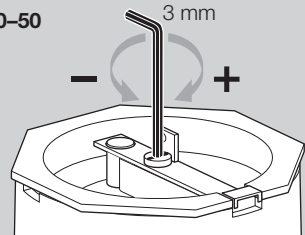
Changing the outlet pressure p_a

- 1 Measure the outlet pressure p_a .
- 2 Remove the cover cap.
- 3 Turn the setpoint adjuster:

60DJ, J78R, GDJ 15



GDJ 20-50



- ▷ Clockwise: higher outlet pressure, anti-clockwise: lower outlet pressure.
- 4 Clearly mark the adjusted value on the regulator.
- ▷ If the required outlet pressure p_a cannot be adjusted on J78R or GDJ, see [Replacing the spring on J78R, GDJ – p. 4]. No other springs are available for the 60DJ.
- 5 Replace the cover cap.

Maintenance

In order to ensure smooth operation: check the function annually, or every six months if operated with biologically produced methane.

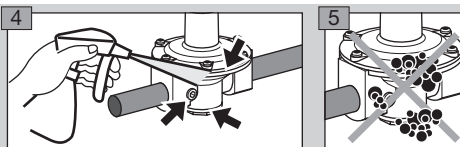
- 1 Request different outputs on the burner in order to change the flow rate.
 - 2 Close the manual valve at the inlet a little in order to change the inlet pressure p_e .
- ▷ Despite changing flow rates and inlet pressures p_e (within the capacity range of the pressure regulator), the outlet pressure p_a must remain constant ($\pm 15\%$).

J78R, GDJ only

- 3 Reduce the capacity to low-fire rate and close the valve downstream of the pressure regulator.
- ▷ Approx. 30 seconds after the valve has been closed, the outlet pressure p_a should not increase significantly.

All types

Check the tightness of the pressure regulator during operation to detect possible leaks due to hardened rubber materials.



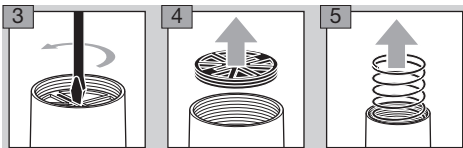
- 6** If a leak is found, replace the rubber materials – see [Replacing the diaphragms on J78R, GDJ – p. 4].
- 7** Then check for tightness once again.

Replacing the spring on J78R, GDJ

Various outlet pressure ranges can be reached by using different springs on J78R and GDJ:

- 1** Choose a spring according to the outlet pressure range – see [Spring table – p. 7].
- 2** Remove the cover cap.

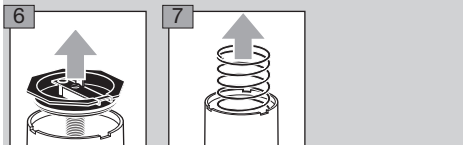
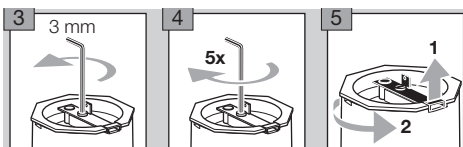
J78R, GDJ 15



GDJ 20–50

⚠ WARNING

The taut spring can pop out when opening the spring dome and lead to injury. Therefore, decompress the spring as far as it will go before opening. Then turn back 5 x to relax the spring counter bearing.



- 8** Insert new spring.
- 9** Follow the reverse procedure when reassembling.

All types

- 10** Set the outlet pressure – see [Changing the outlet pressure p_a – p. 3].
- 11** Replace the cover cap.
- 12** After inserting the spring, take the spring's label from the packaging and stick it below the type label on the pressure regulator.
- 13** Clearly mark the adjusted value of the outlet pressure p_a on the type label.

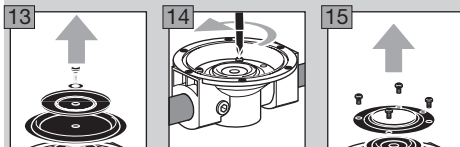
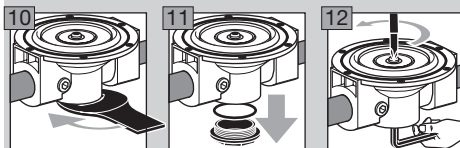
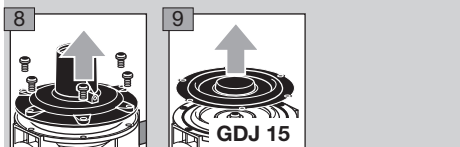
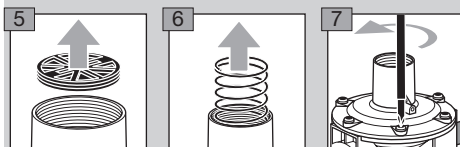
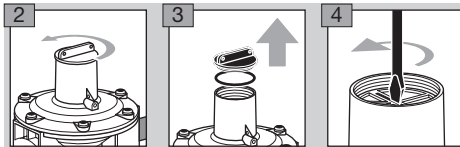
Replacing the diaphragms on J78R, GDJ

Diaphragms and seals are subject to ageing, especially in the case of long-term use in the upper ambient temperature range. Spare parts can be found on the “PartDetective” DVD.

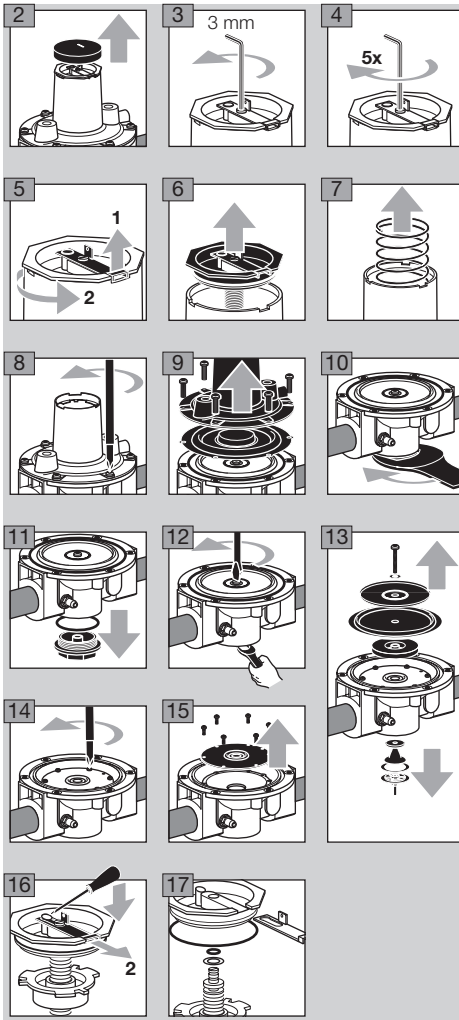
- ▷ On the 60DJ, replace the complete pressure regulator.

- 1** Shut off the gas supply.

J78R, GDJ 15



- 16** Replace all diaphragms and sealing elements, except the valve seat.
- 17** Follow the reverse procedure when reassembling.



- 18** Replace all diaphragms and sealing elements.
- 19** Follow the reverse procedure when reassembling.

All types

- 20** Check tightness and function – see [Maintenance – p. 3].
- 21** Set the outlet pressure – see [Changing the outlet pressure p_a – p. 3].
- 22** Replace the cover cap.

Technical data

Types of gas: town gas, natural gas, LPG (gaseous) and biologically produced methane, 60DJ L, J78R..L and GDJ..L for air only.
 Pressure regulator to EN 88, Class A, Group 2
 Ambient temperature: -20 to +60°C.
 Housing: aluminium,
 diaphragms: Perbunan.

60DJ Z

Inlet pressure p_e : max. 100 mbar.
 Outlet pressure p_a : 35–90 mbar, set to 80 mbar.
 Weight: 0.11 kg.
 Connecting thread: Rp 1/4 to ISO 7-1, DN 8.
 Valve seat: POM,
 valve disc: POM.

J78R

Measuring connection with screw plug Rp 1/8 at the inlet on the right-hand side (option).
 Inlet pressure p_e : up to 100 mbar.
 Outlet pressure p_a : 6–55 mbar.
 The outlet pressure p_a is adjusted by inserting different springs, see [Spring table – p. 7]. It is pre-set at the factory to 20 mbar (black spring).
 Weight: 0.52 kg.
 Connecting thread: Rp 1/2 to ISO 7-1, DN 15.
 Valve seat: Perbunan,
 valve disc: POM.

GDJ

Inlet pressure p_e : up to 400 mbar.
 Outlet pressure ranges:
 GDJ 15: 2–55 mbar,
 GDJ 20 to 40: 5–160 mbar,
 GDJ 50: 5–100 mbar.
 The outlet pressure range is reached through the use of different springs, see [Spring table – p. 7].
 The regulators are pre-set at the factory to 20 mbar.
 Control range: 10:1.
 Connecting thread: Rp to ISO 7-1.
 Valve seat: aluminium,
 valve disc: Perbunan.

Service life

The Pressure Equipment Directive (PED) and the Energy Performance of Buildings Directive (EPBD) demand regular checks on and maintenance of heating systems, in order to ensure a high level of use in the long term, a clean method of operation and safe function.

The service life on which the construction is based, hereinafter referred to simply as the “service life”, is compiled from the relevant standards. You can find further explanations in the applicable rules and regulations and on the afecor website (www.afecor.org).

This information on service life is based on using the product in accordance with these operating instructions.

The product must be serviced at regular intervals. Once the specified service life has been reached, the safety-related functions must be checked in accordance with the section entitled [Maintenance – p. 3].

If the product passes the aforementioned function tests, you can continue to use it until the next scheduled maintenance operation. At this point, these tests must be repeated.

If the product fails one of the aforementioned tests, it must be replaced immediately.

This procedure applies to heating systems. For thermoprocessing equipment, observe national regulations.

Service life (based on date of manufacture) in accordance with EN 13611 and EN 88 for 60DJ, J78R and GDJ: 15 years.

Long-term use in the upper ambient temperature range accelerates the ageing of the elastomer materials and reduces the service life (please contact manufacturer).

Declaration of conformity



We, the manufacturer, hereby declare that the products 60DJ, marked with product ID No. C87AO7, J78R, marked with product ID No. C87AO6, and GDJ, marked with the product ID No. CE-0087AO22, comply with the requirements of the listed Directives and Standards.

Directives:

- 90/396/EEC

Standards:

- EN 88

The relevant products correspond to the type tested by the notified body 0087.

- ▷ The air pressure regulators 60DJ L, J78R..L and GDJ..L are not subjected to this Directive.

The production is subject to the surveillance procedure pursuant to DIN EN ISO 9001 according to annex II, paragraph 3 of Directive 90/396/EEC.

Elster GmbH

Scan of the Declaration of conformity (D, GB) – see www.docuthek.com

Spring table

| Outlet pressure p _a [mbar] | Marking | D [mm] | d [mm] | L [mm] | Coils | Order No. |
|--|------------------------|--------|--------|--------|-------|-----------|
| J78R (GDJ 15)* | | | | | | |
| 6–9 | green/red | 21.8 | 1.2 | 40 | 12.5 | 03089041 |
| 9–17 (2–16) | yellow | 21.8 | 1.2 | 42 | 10 | 03089042 |
| 15–23 (10–20) | black | 21.6 | 1.2 | 54 | 11.5 | 03089043 |
| 22–31 (16–28)** | orange | 21.8 | 1.2 | 64 | 11 | 03089044 |
| 31–42 (22–40) | brown | 22.0 | 1.3 | 65 | 10.5 | 03089045 |
| 42–55 (40–55) | light green/light blue | 20.9 | 1.4 | 40 | 6.5 | 03089047 |
| GDJ 20, GDJ 25 | | | | | | |
| 5–15 | yellow | 35.8 | 1.8 | 68 | 10.5 | 03089048 |
| 12.5–25** | black | 36.0 | 2.0 | 76 | 11 | 03089049 |
| 22.5–35 | orange | 35.9 | 1.9 | 101 | 12 | 03089050 |
| 25–75 | yellow/black | 35.8 | 2.3 | 68 | 5.5 | 03089051 |
| 70–100 | pink/gold | 36.0 | 2.5 | 80 | 7 | 03089052 |
| 90–160 | yellow/orange | 36.3 | 2.8 | 74 | 5.25 | 03089056 |
| GDJ 40 | | | | | | |
| 5–15 | red/yellow | 36.2 | 2.2 | 84 | 12.5 | 03089053 |
| 12.5–25** | red/black | 36.3 | 2.3 | 89 | 10.5 | 03089054 |
| 22.5–35 | red/orange | 36.3 | 2.3 | 119 | 12 | 03089055 |
| 25–75 | yellow/orange | 36.3 | 2.8 | 74 | 5.25 | 03089056 |
| 70–100 | pink/silver | 36.6 | 2.8 | 100 | 7 | 03089057 |
| 90–160 | grey/gold | 36.6 | 3.1 | 98 | 5.75 | 03089062 |
| GDJ 50 | | | | | | |
| 5–15 | dark blue/yellow | 36.6 | 2.6 | 80 | 10.5 | 03089058 |
| 12.5–25** | dark blue/black | 36.6 | 2.6 | 90 | 10 | 03089059 |
| 22.5–35 | dark blue/orange | 36.6 | 2.6 | 118 | 11 | 03089060 |
| 25–75 | yellow/dark green | 36.5 | 3.0 | 87 | 5.8 | 03089061 |
| 70–100 | grey/gold | 36.6 | 3.1 | 98 | 5.75 | 03089062 |

* Values in brackets apply to GDJ 15.

** Standard spring

Contact

If you have any technical questions, please contact your local branch office/agent. The addresses are available on the Internet or from Elster GmbH.

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

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