

Gas pressure regulators J78R, GDJ

OPERATING INSTRUCTIONS

· Edition 03.26 · EN · 03250861



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1 SAFETY

1.1 Read the operating instructions before use



Please read through these instructions carefully before installing or operating. Following the installation, pass the instructions on to the operator. This unit must be installed and commissioned in accordance with the regulations and standards in force. These instructions can also be found at www.docuthek.com.

1.2 Explanation of symbols

1, 2, 3, a, b, c = Action

→ = Instruction

1.3 Liability

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

1.4 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.

1.5 Conversion, spare parts

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

2 CHECKING THE USAGE

Gas pressure regulators J78R and GDJ serve to maintain a constant outlet pressure p_d despite changing gas flow rates and inlet pressures p_u in gas pipelines.

This function is only guaranteed when used within the specified limits – see page 5 (10 Technical data). Any other use is considered as non-compliant.

2.1 Type code J78R

J78R	Pressure regulator for gas
0	No pressure test point
1	Screw plug at the inlet
-L*	Only for air (without approval)

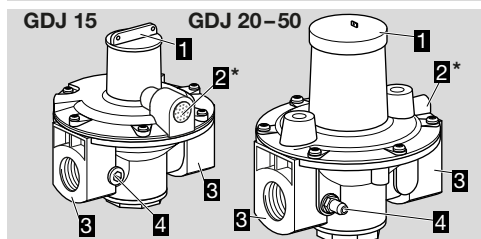
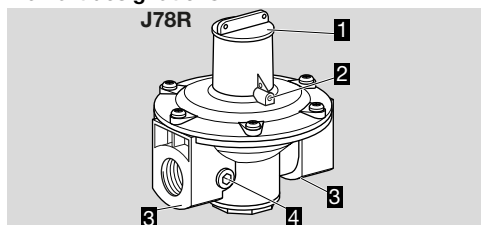
* If "none", this letter is omitted.

2.2 GDJ

GDJ	Gas pressure regulator
15-50	Nominal size
R	Rp internal thread
04	p_u max. 400 mbar (40 kPa)
-0	No pressure test point
-4	Pressure test point at the inlet
L	For air only (without approval)
Z	Special outlet pressure range

* Not for T-product.

2.3 Part designations

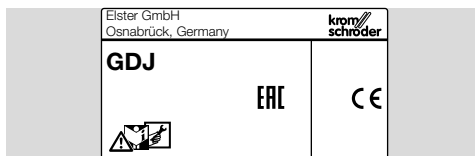


* GDJ..T: a vent restrictor is enclosed. This is to be screwed into the breather orifice in place of the vent screen.

- 1 Cover cap and adjusting screw
- 2 Breather orifice
- 3 Arrow of direction of flow
- 4 Measuring connection for inlet pressure p_u

2.4 Type label

Inlet pressure p_u , outlet pressure p_d and adjusting range: see type label.



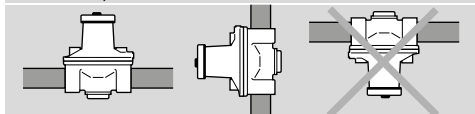
3 INSTALLATION

⚠ CAUTION

Incorrect installation

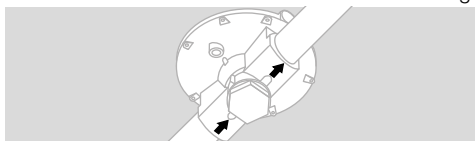
Please observe the following to ensure that the unit is not damaged during installation and operation:

- Sealing material and dirt, e.g. thread cuttings, must not be allowed to get into the housing.
- The installation location must be dry, see page 5 (10 Technical data).
- Install the device so that neither dirt nor water can penetrate the breather orifice during operation.
- Dropping the device can cause permanent damage. In this event, replace the entire device and associated modules before use.
- Install the unit in the pipe free of mechanical stress.
- Do not clamp the unit in a vice or use it as a lever. Risk of external leakage.
- Installation in the vertical or horizontal position, never upside down.



→ The outlet pressure p_d 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_d , see page 3 (5 Changing the outlet pressure).

- 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 clearance 20 mm (0.8").
- Ensure that there is sufficient space for changing the spring.
- 2 Remove the screw caps.
- Note direction of flow: see arrow on the housing.



- 3 Install the device using approved sealing material.
- Use an appropriate spanner – do not use the spring dome as a lever.

4 TIGHTNESS TEST

⚠ WARNING

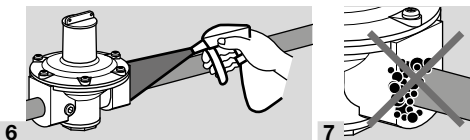
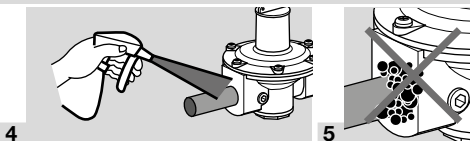
If gas-filled spaces have been opened, check them for tightness.

- 1 Block the pipeline at the inlet and outlet.
 - 2 Slowly apply inlet pressure p_U . ($p_U < 1.5 \times p_{U \max}$, see type label)
 - 3 Slowly apply outlet pressure p_d . ($p_d < 1.5 \times p_{d \max}$, 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

Incorrect use
Please observe the following to ensure that the unit is not damaged:

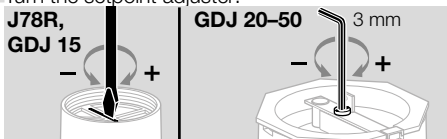
- First apply the inlet pressure p_U – then the outlet pressure p_d .
- The inlet pressure p_U must always be equal to or higher than the outlet pressure p_d .
- In the event of non-compliance with the sequence, the compensating diaphragm will reverse.



- 6 Relieve the outlet pressure p_d .
- 9 Relieve the inlet pressure p_U .

5 CHANGING THE OUTLET PRESSURE

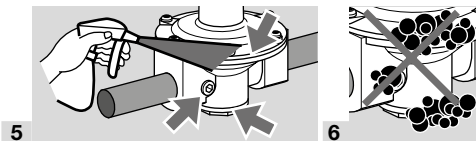
- 1 Measure the outlet pressure p_d .
- 2 Remove the cover cap.
- 3 Turn the setpoint adjuster:



- Clockwise: higher outlet pressure, anticlockwise: lower outlet pressure.
- 4 Clearly mark the adjusted value on the regulator.
- If the required outlet pressure p_d cannot be set, see page 3 (7 Replacing the spring).
- 5 Replace the cover cap.

6 CHECKING THE FUNCTION

- 1 Request different capacities 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_U .
- Despite changing flow rates and inlet pressures p_U (within the capacity range of the pressure regulator), the outlet pressure p_d must remain constant ($\pm 15\%$).
- 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_d should not increase significantly.
- 4 Check the tightness of the pressure regulator during operation to detect possible leaks due to hardened rubber materials.



- 5 If a leak is found, replace the rubber materials. A web app for selecting the correct spare part is available at www.adlatus.org.
- Replacing the diaphragms: see page 4 (8 Replacing the diaphragm).
- 8 Then check for tightness once again.

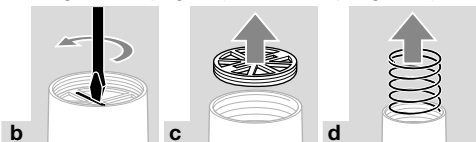
7 REPLACING THE SPRING

Various outlet pressure ranges can be achieved by using different springs.

- 1 Remove the cover cap.

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- a Choose a spring according to the outlet pressure range – see page 6 (10.3 J78R spring table).



GDJ 20–50

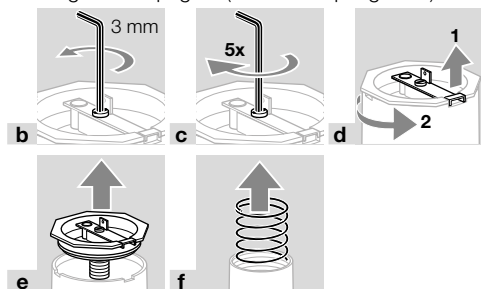
⚠ WARNING

Risk of injury!

The taut spring can pop out when opening the spring dome.

- Therefore, decompress the spring as far as it will go before opening. Then turn back 5 x to relax the spring counter bearing.

- a** Choose a spring according to the outlet pressure range – see page 6 (10.4 GDJ spring table).



J78R, GDJ

- 2** Insert new spring.
- 3** Follow the reverse procedure when reassembling.
- 4** Adjust the outlet pressure – see page 3 (5 Changing the outlet pressure).
- 5** Replace the cover cap.
- 6** After inserting the spring, take the spring's label from the packaging and stick it below the type label on the pressure regulator.
- 7** Clearly mark the adjusted value of the outlet pressure p_d on the type label.

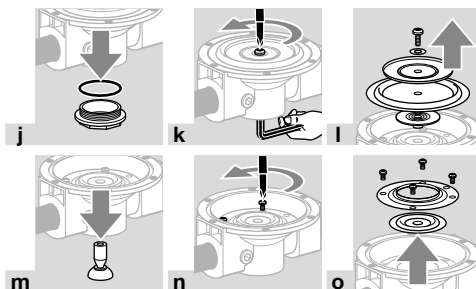
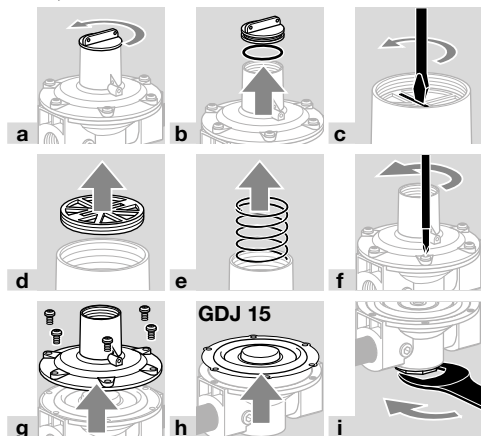
8 REPLACING THE DIAPHRAGM

Diaphragms and seals are subject to ageing, especially in the case of long-term use in the upper ambient temperature range.

A web app for selecting the correct spare part is available at www.adlatus.org.

- 1** Shut off the gas supply.

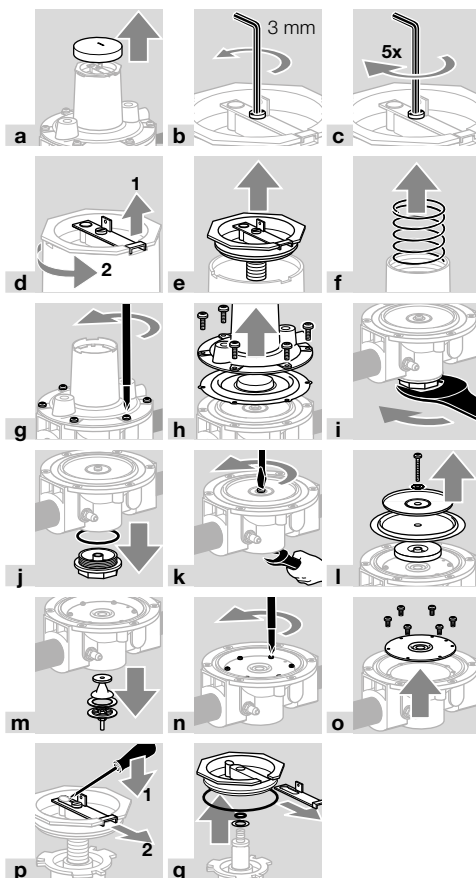
J78R, GDJ 15



- p** Replace all diaphragms and sealing elements, except the valve seat.

- q** Follow the reverse procedure when reassembling.

GDJ 20–50



- r** Replace all diaphragms and sealing elements.

- s** Follow the reverse procedure when reassembling.

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- 2** Check tightness and function – see page 3 (4 Tightness test) and page 3 (6 Checking the function).
- 3** Adjust the outlet pressure – see page 3 (5 Changing the outlet pressure).
- 4** Replace the cover cap.

9 MAINTENANCE

CAUTION

In order to ensure smooth operation, check the tightness and function of the unit:

- Once per annum, twice per annum for biogas, see page 3 (4 Tightness test) and page 3 (6 Checking the function).

A web app for selecting the correct spare part is available at www.adlatus.org.

→ If gas-filled space has been opened, check the tightness and function.

10 TECHNICAL DATA

10.1 Ambient conditions

Icing, condensation and dew in and on the unit are not permitted.

Avoid direct sunlight or radiation from red-hot surfaces on the unit. Note the maximum medium and ambient temperatures!

Avoid corrosive influences, e.g. salty ambient air or SO₂.

In outdoor installations, the gas line must be protected against weather influence, e.g. by adequate enclosure or roofing.

Ambient temperature: -20 – +60 °C (-4 – +140 °F), no condensation permitted.

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

Transport temperature: -20 – +60 °C (-4 – +140 °F).

Storage temperature: -20 – +40 °C (-4 – +104 °F).

This unit is not suitable for cleaning with a high-pressure cleaner and/or cleaning products.

10.2 Mechanical data

Gas types: town gas, natural gas, LPG (gaseous) and biogas, J78R..L and GDJ..L for air only. The gas must be clean and dry in all temperature conditions and must not contain condensate.

Medium temperature = ambient temperature.

Pressure regulator to EN 88-1, Class A, Group 2.

Housing: aluminium.

Diaphragms: NBR.

J78R

Inlet pressure p_{d} : up to 100 mbar (10 kPa, 1.5 psig).

Outlet pressure p_{d} : 6–55 mbar (0.6–5.5 kPa, 2.4–22 "WC).

The outlet pressure p_{d} is adjusted by inserting different springs, see page 6 (10.3 J78R spring table).

It is preset at the factory to 20 mbar (2 kPa, 8 "WC) (black spring).

Connecting thread: Rp 1/2 to ISO 7-1, DN 15.

Valve seat: NBR.

Valve plate: POM.

Weight: 0.52 kg.

GDJ

Inlet pressure p_{d} : up to 400 mbar (40 kPa, 5 psig).

Outlet pressure ranges:

GDJ 15: 2–55 mbar (0.2–5.5 kPa, 0.8–22 "WC),

GDJ 20–40: 5–160 mbar (0.5–16 kPa, 2–64 "WC),

GDJ 50: 5–100 mbar (0.5–10 kPa, 2–40 "WC).

The outlet pressure p_{d} is adjusted by inserting different springs, see page 6 (10.4 GDJ spring table).

It is preset at the factory to 20 mbar (2 kPa, 8 "WC).

Turndown: 10:1.

Connecting thread: Rp to ISO 7-1.

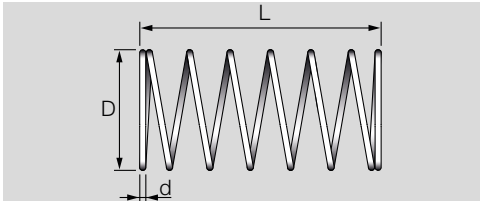
Valve seat: aluminium.

Valve plate: plastic.

Valve plate seal: NBR.

When used for air: special version.

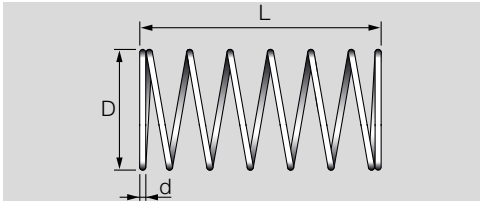
10.3 J78R spring table



Outlet pressure			Spring marking	[mm]			Coils	Order No.
mbar	kPa	"WC		D	d	L		
6–9	0.6–0.9	2.4–3.6	dark green/red	21.80	1.2	40.3	12.5	03089041
9–17	0.9–1.7	3.6–6.8	yellow	21.84	1.2	42.1	10.0	03089042
15–23 ¹⁾	1.5–2.3	6–9.3	black	21.64	1.2	54.4	11.5	03089043
22–31	2.2–3.1	8.8–12.5	orange	21.84	1.2	63.5	11.0	03089044
31–42	3.1–42	12.5–16.9	brown	21.95	1.3	65.1	10.5	03089045
42–55	4.2–5.5	16.9–22.1	light green/light blue	20.92	1.4	40.0	6.5	03089047

1) Standard equipment

10.4 GDJ spring table



Outlet pressure			Spring marking	[mm]			Coils	Order No.
mbar	kPa	"WC		D	d	L		
GDJ 15								
2–16	0.2–1.6	0.8–6.4	yellow	21.84	1.2	42.1	10	03089075
10–20	1–2	4.0–8.0	black	21.64	1.2	54.4	11.5	03089076
16–28 ¹⁾	1.6–2.8	6.4–11.3	orange	21.84	1.2	63.5	11	03089077
22–40	2.2–4	8.8–16.1	brown	21.95	1.3	65.1	10.5	03089078
40–55	4–5.5	16.1–22.1 ²⁾	light green/light blue	20.92	1.4	40	6.5	03089079
GDJ 20, GDJ 25								
5–15	0.5–1.5	2.0–6.0	dark green/light blue	36.90	2.0	64.4	11	03089121
12.5–25 ¹⁾	1.25–2.5	5–10.1	black	36.03	2.0	76	11	03089122
22.5–35	2.25–2.5	9.0–14.1	dark green/brown	36.90	2.0	80.3	7.75	03089123
30–50	3–5	12.1–20.1	dark green/orange	37.08	2.2	83.1	8	03089124
45–65	4.5–6.5	18.1–26.1	black/light green	36.59	2.3	81.9	8.75	03089125
60–80	6–8	24.1–32.1	red/orange	36.01	2.3	119	12	03089126
75–100	7.5–10	30.2–40.2 ²⁾	pink/gold	36.50	2.5	80	6.8	03089127
100–160	10–16	40.2–64.3	yellow/orange	36.29	2.8	74	5.2	03089128
GDJ 40								
5–15	0.5–1.5	2.0–6.0	black/light blue	36.43	2.2	70.5	8.5	03089129
12.5–25 ¹⁾	1.25–2.5	5–10.1	black/light green	36.59	2.3	81.9	8.75	03089130
22.5–35	2.25–3.5	9.0–14.1	silver/orange	36.59	2.3	97.8	8.5	03089131
30–50	3–5	12.1–20.1	black/brown	36.59	2.3	98.3	7.25	03089132

Outlet pressure			Spring marking	[mm]			Coils	Order No.
mbar	kPa	"WC		D	d	L		
45–65	4.5–6.5	18.1–26.1	red/gold	36.28	2.6	109	9.9	03089133
60–80	6–8	24.1–32.1	black/orange	36.80	2.8	106	8	03089134
75–100	7.5–10	30.2–40.2 ¹⁾	pink/silver	36.30	2.8	100	7	03089135
100–160	10–16	40.2–64.3	grey/gold	36.60	3.1	101	5.75	03089136
GDJ 50								
5–15	0.5–1.5	2.0–6.0	white/brown	36.59	2.3	76.8	8	03089137
12.5–25 ¹⁾	1.25–2.5	5–10.1	white/dark blue	36.59	2.3	81.3	6	03089138
22.5–35	2.25–3.5	9.0–14.1	white/dark green	36.89	2.6	97.3	7.5	03089139
30–50	3–5	12.1–20.1	white/red	36.80	2.8	94.3	7	03089140
45–65	4.5–6.5	18.1–26.1	white/orange	36.70	3.0	93.3	6.5	03089141
60–80	6–8	24.1–32.1	dark blue/grey	36.74	2.9	138.7	9	03089142
75–100	7.5–10	30.2–40.2 ²⁾	grey/gold	36.60	3.1	101	5.75	03089143

¹⁾ GDJ standard equipment, ²⁾ GDJ..T standard equipment
Dispatch complete with label for heating outlet pressure.

11 DESIGNED LIFETIME

This information on the designed lifetime is based on using the product in accordance with these operating instructions. Once the designed lifetime has been reached, safety-relevant products must be replaced.

Designed lifetime (based on date of manufacture) in accordance with EN 88 for J78R, GDJ: 15 years. You can find further explanations in the applicable rules and regulations and on the afecor website (www.afecor.org).

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

12 LOGISTICS

Transport

Protect the unit from external forces (blows, shocks, vibration).

Transport temperature: see page 5 (10 Technical data).

Transport is subject to the ambient conditions described.

Report any transport damage on the unit or packaging without delay.

Check that the delivery is complete.

Storage

Storage temperature: see page 5 (10 Technical data).

Storage is subject to the ambient conditions described.

Storage time: 6 months in the original packaging before using for the first time. If stored for longer than this, the overall service life will be reduced by the corresponding amount of extra storage time.

Packaging

The packaging material is to be disposed of in accordance with local regulations.

Disposal

Components are to be disposed of separately in accordance with local regulations.

13 CERTIFICATION

Declaration of conformity



We, the manufacturer, hereby declare that the products J78R, GDJ with product ID No. CE826118 comply with the requirements of the listed Directives and Standards.

Directives:

- 2011/65/EU – RoHS II
- 2015/863/EU – RoHS III

Regulation:

- (EU) 2016/426 – GAR

Standards:

- EN 88-1:2022 + A1:2023

The relevant product corresponds to the tested type sample.

The production is subject to the surveillance procedure pursuant to Regulation (EU) 2016/426 A III.

The air pressure regulators J78R..L and GDJ..L are not subjected to this Directive.

Elster GmbH

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

13.1 UKCA certified



Gas Appliances (Product Safety and Metrology etc.
(Amendment etc.) (EU Exit) Regulations 2020)
BS EN 88-1:2022+A1:2023

13.2 Eurasian Customs Union



The products J78R, GDJ meet the technical specifications of the Eurasian Customs Union.

FOR MORE INFORMATION

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Eclipse, Exothermics, Hauck, Kromschöder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.
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