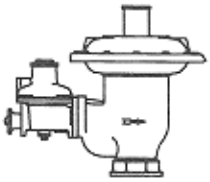
OPERATING INSTRUCTIONS
for gas governors PN1, fire resistant coaxial connection, with integrated slam shut valve (SAV)



MAF 25 EI, MAF 25 EII
MAF 40 EI, MAF 40 EII
p_e 0.026 - 1 bar, p_{as} 20 - 300 mbar

MAF 25 ME, MAF 40 ME
p_e 0.026 - 1 bar, p_{as} 22 - 30 mbar

For natural gas, town gas, gaseous propane (gases to G 260 II) and air.

Ambient temperature: -20 °C to +60 °C

Installation, adjustment and maintenance ONLY by trained and authorized staff!

WARNING: Incorrect handling during installation, adjustment, modification, functional testing and/or maintenance activities may cause injuries and/or material demage.

Read the operating instructions prior to starting the installation.

This unit must be installed and monitored in accordance with the rules in force.

ATTENTION:
To ensure the proper operation of the unit, connection pieces are required that have been tested with respect to inside and outside impermeability.

Maximum inlet pressure:	$p_{e\,max}$	: according to typeplate
Set outlet pressure:	p_{as}	: according to typeplate
Slam shut pressures:	p_{so}	: according to typeplate
	p_{su}	: according to typeplate

We recommend installing a filter upstream of each unit.

Optionally (ordering option or at a later date), each unit can be equipped with a sieve in the inlet.

Install governor into the pipework

- Remove sealing caps and/or foils from the connecting surfaces.
- The direction of the gas flow must coincide with the arrow on the housing or as indicated in the diagram below.
- Test and ensure that the inside of the gas lines is clean.
- The governor can be installed both into vertical and horizontal pipes.
  ATTENTION: If required, the setting of the outlet pressure must be corrected.
  As a rule, the factory adjustment is for horizontal installation with the diaphragm housing upwards.
  ATTENTION: In the case that the diaphragm housing is installed downwards, ensure that no dirt and no condensate can enter into the unit.
- The housing must not touch any surrounding walls.
- Use only approved jointing compounds and gaskets respectively.
- Only use new gaskets that are not graphitized.
- No jointing compound must be allowed to enter the gas pipe when installing the governor.
- Always use an appropriate tool. Do not use chimney on top of the diaphragm housing as a lever.
  When using the standard gasket made of REINZ AFM 30 and a straight connection piece to DIN 33822, we recommend the following torques:

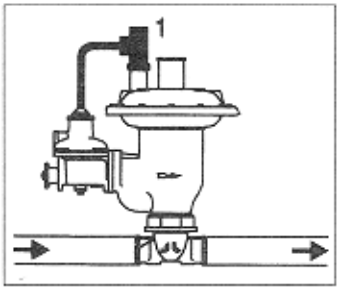
Type / Nominal width	Thread, dry	Thread, greased*
MAF 25 ...	330 Nm	230 Nm
MAF 40 ...	475 Nm	330 Nm

* The values apply to greases with molybdenum disulfide (MoS_2).

1 = Install and connect breather line

Attention: only applicable to flood-proof units.

- Connection G1/2"; line diameter: DN 15 for line lengths up to 3 m; DN 20 for lengths 3 - 5 m; DN 25 for lengths exceeding 5 m.
- Connect relief line to threaded nozzle using approved jointing compounds and lead it above flood level.

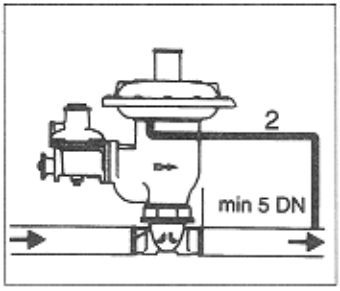


2 = Connect additional sensing line

Attention: only applicable to units with connection plug (order option)

Only connect, if required, e.g. for downstream quick-acting solenoid valves at high flow rates. Connection thread: G1/8"

- Unscrew and remove sealing plug wrench size 9 mm.
- Connect and install sensing line.
- Use approved jointing compounds.



Leakproof Test

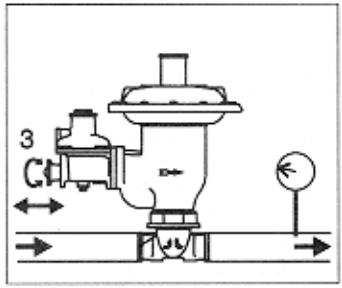
Attention: The gas governor must not be included when carrying out the leak test for the overall system (if required, insert blinds).

- Pressurize gas governor inlet: 1.1 x $p_{e\ max}$
  outlet: 1.1 x $p_{as\ max}$ (however, not higher than 0.5 bar)
  The inlet pressure must always be equal to or higher than the outlet pressure.
- Use detergents at ends of pipe and ends of sensing line to check for leaks.

Attention: Foaming agents that are used as leak indicators should not be allowed to enter into the breathing openings. If required, the passage of the breathing openings should be checked.

Commissioning and functional testing
3 = Release safety shut-off valve (SAV)

- Connect manometer to measure the outlet pressure.
- Open valve upstream of the governor.
- Check slam shut lock up: observe pressure reading; no pressure increase is allowed downstream of the unit.
- Unscrew and remove reset cap.



Only units without under pressure cut off (MAF 25 EI, MAF 25 EII, MAF 40 EI, MAF 40 EII):

- Slightly pull reset cap; approx. 1 mm, and observe pressure reading. The line downstream of the unit is now pressurizing. The outlet pressure will be stabilized at approx. 1.3 x p_{as}.
- Pull reset cap up to the stop and keep holding for approximately 10 seconds.
- Screw down reset cap again.

Only units with under pressure cut off (MAF 25 ME, MAF 40 ME):

- Pull reset cap up to the stop and keep holding for approximately 10 seconds, then screw down.
- The under pressure cut off will then open automatically after a waiting time. The time is dependent on the downstream line volume and the inlet pressure at the governor.

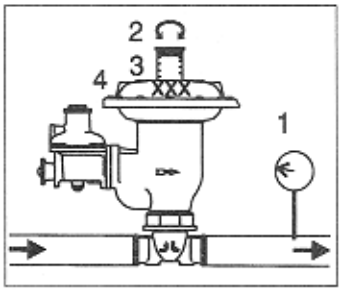
Attention: In the case of leaks in the downstream installation, the under pressure cut off will remain shut.

- Check lock up of the control valve: observe pressure reading; the outlet pressure must not rise.
- Briefly cause consumption.
- Determine closing pressure: maximum 1.3 x p_{as} for lock-up pressure class 30; maximum 1.2 x p_{as} for lock-up pressure class 20.
- Check slam shut set overpressure: increase outlet pressure via feed line (approx. 1 mbar/s) until the slam shut is actuated. Observe pressure reading.
  Attention: The measuring result will be distorted by a rapid pressure rise.
- Lower outlet pressure and reset slam shut.

Only applicable to MAF 25 EII, MAF 40 EII (overpressure & underpressure slam shut):

- Close valve upstream of the governor.
- Check slam shut set underpressure. Lower outlet pressure (approx. 1 mbar/s) until the slam shut is actuated. Observe pressure reading.
  Attention: The measuring result will be distorted by a rapid pressure drop.
- Open valve upstream of the governor. Reset slam shut.

Change outlet pressure p_{as}



Attention: The outlet pressure range is covered by several adjusting springs. In case the desired outlet pressure cannot be adjusted by means of the built-in spring, the appropriate spring must be mounted.

- Activate consumer or cause consumption.

1 Measure outlet pressure.

2 Unscrew sealing cap.

3 Turn adjusting ring by means of special key or Allen key.
Clockwise: outlet pressure increases.
Anticlockwise: outlet pressure decreases.

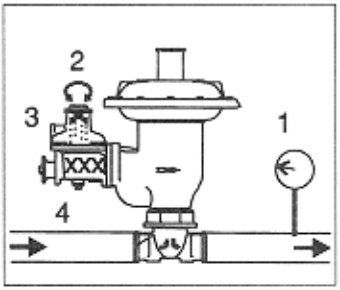
4 Mark adjusted value of outlet pressure on the unit (xxx).

- Screw down sealing cap.

Only applicable to flood-proof models:

- Check sealing cap O-ring. Screw down sealing cap tight.

Change slam shut set pressures



Attention: The outlet pressure range is covered by several adjusting springs. In case the desired outlet pressure cannot be adjusted by means of the built-in spring, the appropriate spring must be mounted.

- Activate consumer.

1 Measure outlet pressure.

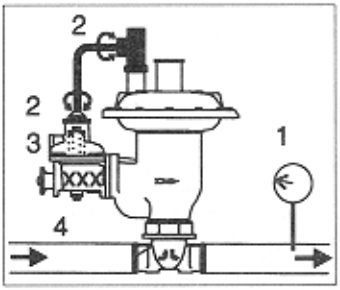
Standard models:

2 Unscrew sealing cap.

3 Turn adjusting ring by means of special key for slam shut overpressure and screw driver for slam shut underpressure.
Clockwise: set pressure increases.
Anticlockwise: set pressure decreases.

- Screw sealing cap tight.
- Test set pressure and set pressures respectively.

4 Mark adjusted values of set pressures on the unit (xxx).



Flood-proof models:

2 Loosen breather line (Ermeto) on both screw connections. Unscrew and remove sealing cap.

3 Turn adjusting ring by means of special key for slam shut overpressure and screw driver for slam shut underpressure.
Clockwise: set pressure increases.
Anticlockwise: set pressure decreases.

- Check sealing cap O-ring. Screw sealing cap tight.
- Test set pressure and set pressures respectively.
- Connect breather line (Ermeto) tight.

4 Mark adjusted values of set pressures on the unit (xxx).

ELSTER HANDEL GMBH, Steinernstr. 19 – 21, D-55252 Mainz-Kastel,
Telephone + 49 / 0 61 34 / 6 05-0 · Telefax + 49 / 0 61 34 / 6 05-390

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