



Combination Gas Valves VGE... (Smart)

The combination gas valves type VGE... have been developed for use in gas-fired heating boilers, direct-fired air heaters and back boilers with automatic ignition systems. They are suited for use with atmospheric burners or premix burners using an electronic cam.

The VGE... and this Data Sheet are intended for use by OEMs which integrate the combination gas valves in their products.

Use

- Valves of compact design, suitable for installation in small, modern gas-fired boilers and gas appliances
- Specially designed for gas appliances with DBI system to ignite the main burner
- Multiple actuating device conforming to EN 126 with linear actuator for modulating operation
- 2 independent shutoff valves
- 1st solenoid shutoff valve of conventional design
- Combination of linear actuator control section and 2nd shutoff valve
- Choice of valve versions and control characteristics depending on application
- Output limitation or change of type of gas via control electronics
- Pressure test points for inlet and outlet pressure accessible from top of valve
- No mechanical settings required
- Fine-mesh filter integrated on the gas inlet side

Warning notes



To avoid injury to persons, damage to property or the environment, the following warning notes must be observed!

Do not open, interfere with or modify the valve!

- All activities (mounting, installation and service work, etc.) must be performed by qualified staff
- Before making any wiring changes in the connection area, completely isolate the plant from mains supply (all-polar disconnection). Ensure that the plant cannot be inadvertently switched on again and that it is indeed dead. If not observed, there is a risk of electric shock hazard
- Ensure protection against electric shock hazard by providing adequate protection for the connection terminals
- Each time work has been carried out (mounting, installation, service work, etc.), check to ensure that wiring is in an orderly state and make the safety checks
- Fall or shock can adversely affect the safety functions. Such valves must not be put into operation even if they does not exhibit any damage
- Use a suitable screwdriver to open or close manually the screws of the pressure test points. Observe the permissible tightening torque (refer to «Technical Data»). If this is not observed, the threaded connections of the pressure test points might get damaged, which can lead to loss of tightness

Mounting notes

- Ensure that the relevant national safety regulations are complied with
- Check inlet and outlet pressure using the pressure test points provided

Installation notes

Main gas connection

- In order not to damage the external thread, take care not to tighten the pipe fitting too far
- Ensure that the gasket is placed in the right position
- Ensure that the flow of gas is in the same direction as the arrow on the valve

Pressure test points

- The valve has inlet and outlet pressure test points
- To check the pressure, undo the screw one half turn and slip the tube over the nipple



Note!

Make sure the screw is retightened after making the test.

Electrical connections



Warning!

Switch off power supply before making the electrical connections. Wiring must be in accordance with local regulations. Follow the instructions supplied by the manufacturer.

- Install power in accordance with the required pin connections (refer to «Function»)
- When making connections to the terminals of the valve, use wires and connectors which are suited for temperatures up to 105 °C
- After each adjustment, put the control into operation, run it through several complete cycles and check to ensure that all burner components function correctly

Checkout and installation

Standards and certificates



Conformity according to EEC directives
- Electromagnetic compatibility EMC (immunity)
- Directive for gas appliances
- Directive for pressure devices

2004/108/EC
90/396/EEC
97/23/EEC

¹⁾ In conjunction with LMS15...

When using BMUs other than the LMS15..., the system integrator assumes responsibility for the plant and must provide proof that the relevant directives are complied with.



ISO 9001: 2010
Cert. 00739



ISO 14001: 2010
Cert. 38233



Service notes



Important!
Follow the appliance manufacturer's service and maintenance instructions!

Gas leakage test

- Combination gas valves are factory-tested for gas leakage.
- After any activity in the field (mounting, installation, service work, etc.), make a safety check including valve proving test

Life cycle

- Combination gas valves has a designed lifetime* of 500,000 burner startup cycles which, under normal operating conditions in heating mode, correspond to approx. 10 years of usage (starting from the production date given on the type field). This lifetime is based on the endurance tests specified in standard EN161 and the table containing the relevant test documentation as published by the European Association of Component Manufacturers (Afecor) (www.afecor.org).

The designed lifetime is based on use of the Combination Gas Valves according to the manufacturer's Data Sheet. After reaching the designed lifetime in terms of the number of burner startup cycles, or the respective time of usage, the Combination Gas Valves is to be replaced by authorized personnel.

* The designed lifetime is not the warranty time specified in the Terms of Delivery

Disposal notes



The valve contains electrical and electronic components and must not be disposed of together with domestic waste.
Local and currently valid legislation must be observed.

Type code

V G E 5 6 08 G 4 0 z z

7669101e/0311

Versions

09 Standard version

Type of class

0 Class B and B

Motor

4 Stepper motor

Power supply

G DC 21 V

Diameter

06 6 mm

08 8 mm

10 10 mm

12 12 mm

Valve body

2 Gas inlet and gas outlet flange

6 Gas inlet and gas outlet external thread G3/4"

Type of control

5 Elektronik modulating

Accessories



Gas / air mixing unit AGU3.7..., for compact gas control loops in connection with combination gas valves VGE...

Suited for gas-fired appliances of low capacity (wall-hung and floor-standing models) with modulating premix burners.

Refer to Data Sheet N7214

Technical data

General unit data	Models	Refer to «Type code»		
	Mounting position	Vertical or horizontal ±5°		
	Types of gas	Gas families II and III		
	Gas inlet pressure	Max. 65 mbar		
	Degree of protection	IP40		
	Dimensions	Refer to «Dimensions»		
	Inlet filter	Fine-mesh		
	Pipe connections	Refer to «Type code»		
	Regulation capacity	Refer to «Flow characteristic»		
	Perm. tightening torque for screws of pressure test points	Max. 2 Nm		
		<u>Recommendation:</u>		
		Use a Phillips-head screwdriver		
	Valve class	EN 126 class B + B		
	Closing time of safety shutoff valves	Within 1 s		
	Connection for inlet and outlet pressure	G¾ to DIN ISO 228		
	Nominal size	DN15		
	Safety class	2		
	On time	100 % ED		
	Weight	Approx. 500 g		
Stepper motor	Control of control section	Bipolar		
	Resolution of control section	50 full steps		
	Stroke way	8 mm (0.16 mm / full step)		
	Step up rotation	24		
Electrical connections	Safety shutoff valves			
	- Coil	Molex (with plug Molex KK 3001)		
	- Stepper motor	Dubox (with plug COMPONA mini latch)		
Electrical data	Power consumption and current draw:			
		Operating voltage (+10 % / -15 %)	Power consumption	Current
	Coil	21 DC	5.4 W	---
	Control section	21 DC	4 W	200 mA (operating current)
		21 DC	approx. 1.5 W	120 mA (holding current)
Environmental conditions	Storage		DIN EN 60721-3-1	
	Climatic conditions		Class 1K3	
	Mechanical conditions		Class 1M2	
	Temperature range		-15...+70 °C	
	Humidity		<95 % r.h.	
	Transport		DIN EN 60721-3-2	
	Climatic conditions		Class 2K2	
	Mechanical conditions		Class 2M2	
	Temperature range		-15...+70 °C	
	Humidity		<95 % r.h.	
	Operation		DIN EN 60721-3-3	
	Climatic conditions		Class 3K3	
	Mechanical conditions		Class 3M2	
	Temperature range		0...+70 °C	
	Humidity		<95 % r.h.	

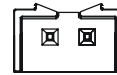
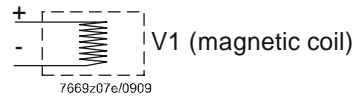


Caution!

Condensation, formation of ice and ingress of water are not permitted!

Function

Coil



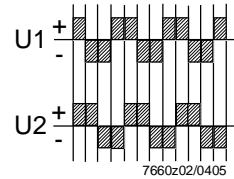
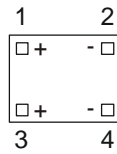
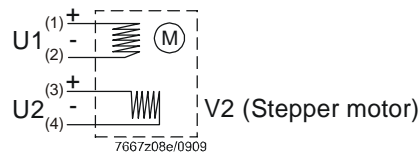
Connections can be interchanged:
DC 21 V

Stepper motor

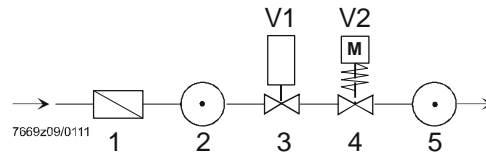
Electrical diagram

Connection pins

Full-step operation



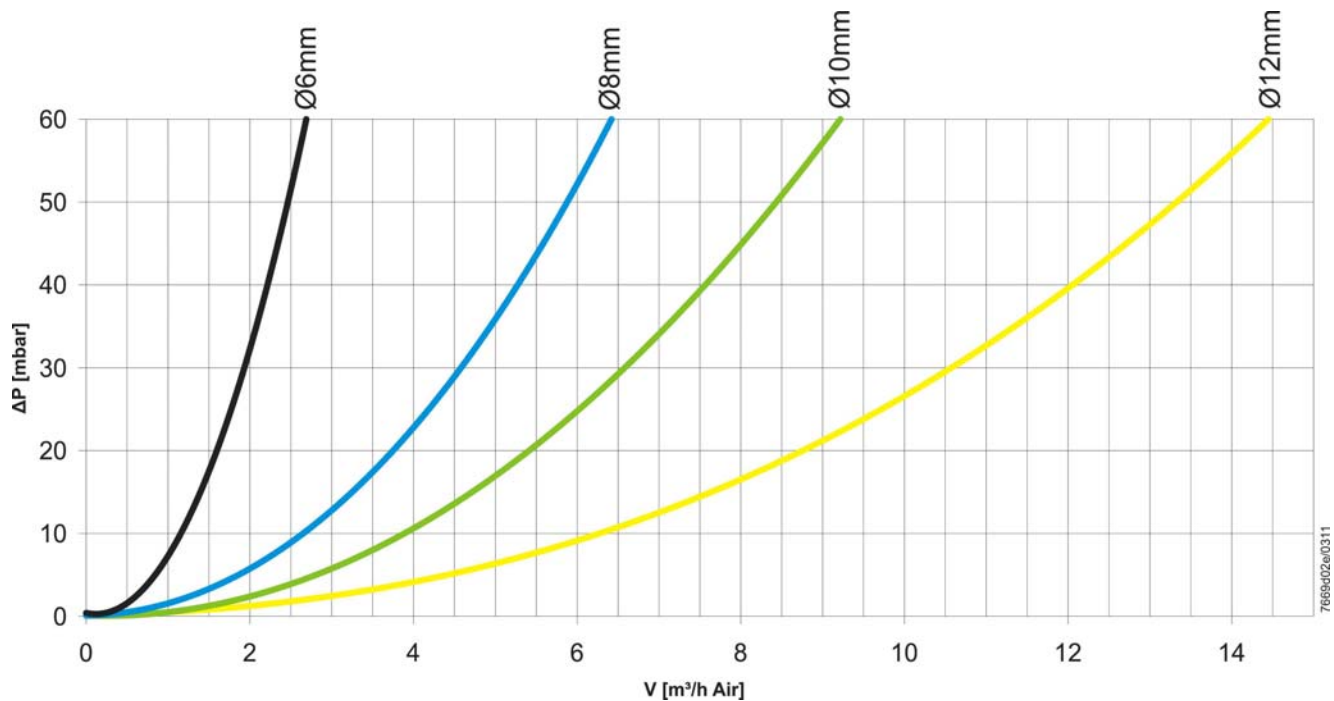
Function diagram



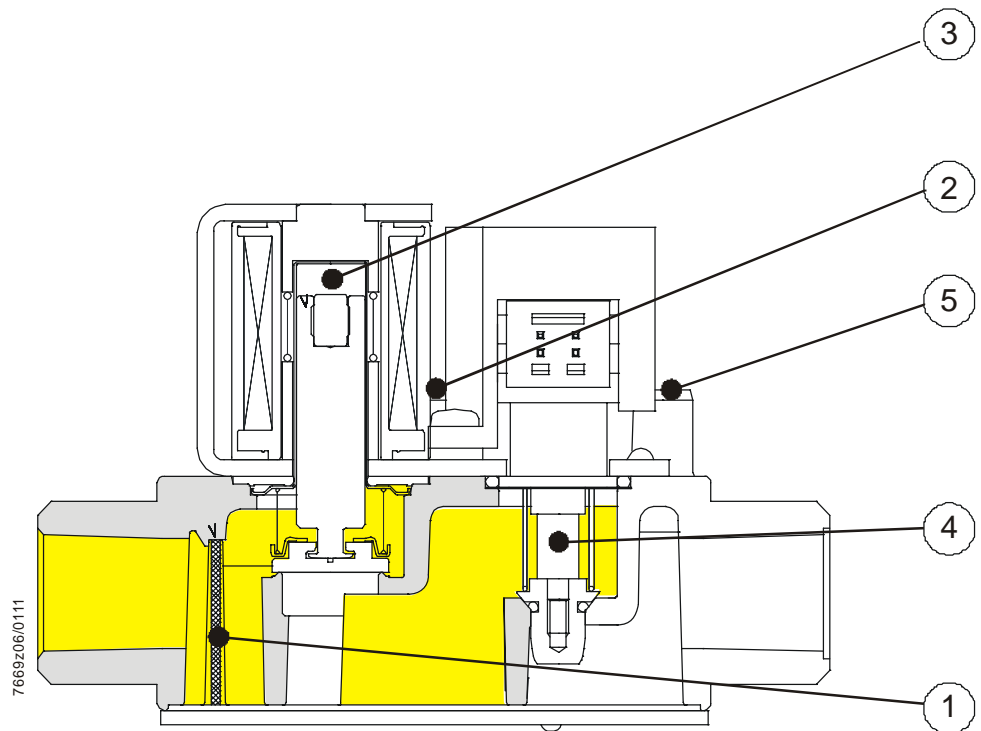
- 1 Filter
- 2 Pressures nozzle input pressure
- 3 Magnetic valve (V1)
- 4 Shut off valve only linear actuator
- 5 Pressure nozzle output pressure

Performance diagram

Ø 6 mm, Ø 8 mm, Ø 10 mm and Ø 12 mm



Sectional view of
VGE56...



Legend

- 1 Filter
- 2 Pressures nozzle input pressure
- 3 Magnetic valve (V1)
- 4 Shut off valve only linear actuator
- 5 Pressure nozzle output pressure

Technical drawing of the 7669m06e/0311 valve assembly, showing front, side, and top views with dimensions and labels.

Front View (Top): Shows the main body with dimensions (115) and (53.2). Arrows indicate "Input" and "Output" directions.

Front View (Bottom): Shows the main body with dimensions $\varnothing 22.4_{+0.2}$, $\varnothing 19_{+0.2}$, $\varnothing 17_{+0.2}$, and $1_{\pm 0.1}$. A label "Type label" points to the main body.

Side View (Left): Shows the side profile with dimensions 56.5, 21.6, (78.1), 25.6, and 27.6.

Side View (Right): Shows the side profile with dimensions 17.2, 80.6, 17.2, and 12. Labels include "Connector stepper motor", "G3/4-ISO 228-1", and "Molex contact 3003".

Top View (Right): Shows the top of the assembly with dimensions 23.8 (2x) and the part number 7669m06e/0311.