SIEMENS

7664

VGU7…

VGU8…

Combination Gas Valves VGU7... VGU8…

The combination gas valves type VGU… have been developed for use in gas-fired domestic central heating boilers and water heating appliances with automatic ignition systems and premix burners. The controls are also suited for use on a wide variety of gas-fired appliances such as catering equipment, warm air furnaces and back boilers.

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

Use

- Compact design suitable for installation in small modern boilers and heaters
- Specially designed for gas appliances with DBI system to light the main burner
- Servo pressure regulator ensures stable outlet pressure

VGU7...

Gas / air ratio 1:1

- 2 shutoff valves
- Servo pressure regulator
- Inlet / outlet pressure test points
- All adjustments are accessible from the top of valve
- A fine-mesh screen is integrated at the inlet side
- Setting parallel shift

VGU8...

Gas / air ratio 1:1 with main gas flow throttle

- Same as VGU7…
- Test point for gas pressure on ratio regulator
- Adjustment of gas volume

Warning notes

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

Do not open, interfere with or modify the valve!

- All activities (mounting, installation and service work, etc.) must be carried out by qualified staff
- Before performing any wiring changes in the connection area of the VGU7…, completely isolate the unit from the mains supply (all-polar disconnection)
- Ensure protection against electric shock hazard by providing adequate protection for the connection terminals
- Check to ensure that wiring is in an orderly state
- Fall or shock can adversely affected the safety functions. Such valves must not be put into operation even if the unit does not exhibit any damage

Mounting notes

- Ensure that the relevant national safety regulations are complied with

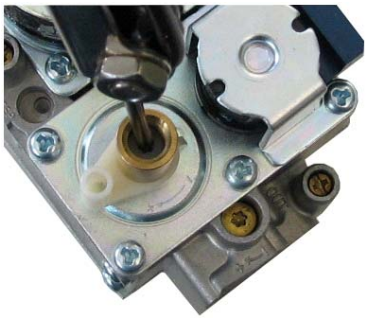
VGU7… / VGU8…

Adjustment of parallel shift for gas / air ratio

1. Check the inlet and outlet pressure using the pressure test points provided

2. Remove the protective cap

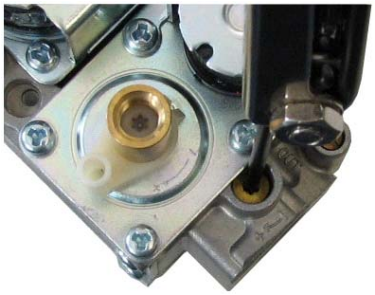
3.
- Rotate the screw (white color) **clockwise** to **increase** the outlet pressure (10 %)
- Rotate the screw (white color) **counterclockwise** to **decrease** the outlet pressure (10 %)
- Ensure that the outlet pressure is correctly adjusted before replacing the protective cap



Only VGU8…

Adjustment of main gas flow throttle

- Rotate the screw (metallic color) **clockwise** to **increase** the gas flow
- Rotate the screw (metallic color) **counterclockwise** to **decrease** the gas flow



Installation notes

Main gas connection

- To prevent distortion and / or damage of the external thread, take care not to tighten the pipe fitting too far
- Ensure that the gasket is properly placed in the right position
- Ensure that the gas flow is in the same direction as the arrow on the valve body

Pressure test points

- The valve is provided with an inlet and outlet pressure test point
- When checking the pressure, undo the screw one half turn and slip the tube over the nipple

Warning
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

Checkout and installation

- After each adjustment, put the control into operation, run it through several complete cycles and check to ensure that all burner components function correctly

Commissioning notes

- Prior to commissioning, ensure that wiring is in an orderly state

Norms and certificates

Conformity according to EEC directives
- Electromagnetic compatibility EMC (immunity) 89 / 336 EEC
- Directive for gas appliances 90 / 396 EEC

ISO 9001: 2000
Cert. 00739

ISO 14001: 1996
Cert. 38233

Service notes

- Each time a unit has been replaced, check to ensure that wiring is in an orderly state
- Each time a unit has been replaced, check all safety functions

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

Gas leakage test

- Gas valves are factory-tested for gas leakage. Only the main burner connection needs to be checked for gas leakage

Disposal

The unit 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 U 7 0 . A 0 0 0 9

Versions
09 Standard

Type class of shutoff valve
1 Classes B and J
2 Classes B and C

Modulation coil
0 None
1 165 mA
2 310 mA
3 Stepper motor

Power supply and terminal arrangement
A AC 230 V for DBI, version 1
B AC 24 V for DBI, version 1
C AC 230 VR for DBI, version 0
D AC 24 VR for DBI, version 0
E AC 230 VR for IP, version 2
F AC 24 VR for IP, version 2
H DC 24 V for DBI, version 0
I DC 24 V for IP, version 2
J AC 120 V for DBI, version 1

Valve body
0 3/4" inlet / outlet valve thread, gas line straight, with bottom feet
1 3/4" inlet valve thread, outlet flange, gas line 90°, with bottom feet
2 Inlet / outlet flange, gas line straight
3 Inlet / outlet flange, gas line 90°
4 1/2" inlet / outlet valve thread, gas line straight, without bottom feet
5 1/2" inlet valve thread, outlet flange, gas line 90°, with bottom feet
6 3/4" inlet / outlet valve thread, gas line straight, without bottom feet
7 Inlet flange, 3/4" outlet valve thread, gas line straight, without bottom feet
8 3/4" inlet valve thread, outlet flange, gas line straight, without bottom feet

Control
2 On / off, opening slowly
5 Electronicaly modulating
7 Gas / air ratio regulator
8 Gas / air ratio regulator with main gas flow throttle

7664t01e/1205

Accessories

Ignition module, combined with connecting cable, suited for VGU... gas valves, ignition DC 24 V, 3-electrode operation (ignition), valve control DC 24 V, connected valve type: **VGUxx.Hxxxx**
Refer to Data Sheet N7806

TQG3...

Gas / air mixing unit for compact gas control loops in connection with combination gas valves VGU…
Refer to Data Sheet N7211

AGU3.6…

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. 60 mbar
	Operating voltage tolerance	gas valve operates correctly between 85 % and 110 % of rated voltage
	Degree of protection	IP 44 with optional connector
	Dimensions	refer to «Dimensions»
	Inlet filter	no. 100 fine mesh
	Pipe connections	refer to «Type code»
	Regulation capacity	min. 0.30 m³/h air
	Outlet pressure range	0,5...15 mbar
	Valve class - 1st safety valve - 2nd safety valve	EN 126 class B class D, J or C
	Class of regulator	class B, EN 88
	Closing time of safety shutoff valves	within 1 s
	Connection for inlet and outlet pressure	9 mm outside dia. tube
	Connection for air pressure supply	6.5 mm outside dia. tube
	Air pressure - with gas pressure - without gas pressure	 max. 15 mbar max. 8 mbar
	Capacity in m³/h air at pressure drop flow rate at pressure drop of 5 mbar	3.6 m³/h air
	Weight	approx. 870 g
Electrical connections	Safety shutoff valves	male contact 3003 Molex interchangeable, suitable for female Molex series 3001

Electrical data — Power consumption and current:

Type	Pin connection	1st shutoff valve			2nd shutoff valve			1st and 2nd shut off valve		
		Supply voltage	Power consumption	Current	Supply voltage	Power consumption	Current	Supply voltage	Power consumption	Current
VGUxx.A…	1	---	---	---	---	---	---	230 VAC	13 VA	60 mA
VGUxx.B…	1	---	---	---	---	---	---	24 VAC	13 VA	570 mA
VGUxx.C…	0	145 VRAC	8.2 VA	60 mA	85 VRAC	4.8 VA	60 mA	230 VRAC	13 VA	60 mA
VGUxx.D…	0	15.4 VRAC	8.2 VA	570 mA	8.6 VRAC	4.8 VA	570 mA	24 VRAC	13 VA	570 mA
VGUxx.E…	2	230 VRAC	8.2 VA	38 mA	230 VRAC	4.8 VA	22 mA	---	---	---
VGUxx.F…	2	24 VRAC	8.7 VA	380 mA	24 VRAC	4.3 VA	190 mA	---	---	---
VGUxx.H…	0	15.7 VDC	8.5 VA	540 mA	8.3 VDC	4.5 VA	540 mA	24 VDC	13 VA	540 mA
VGUxx.I…	2	24 VDC	8.7 VA	360 mA	24 VDC	4.3 VA	180 mA	---	---	---
VGUxx.J…	1	---	---	---	---	---	---	120 VAC	13 VA	120 mA

Environmental conditions

Storage	DIN EN 60 721-3-1
Climatic conditions	class 1K3
Mechanical conditions	class 1M2
Temperature range	-30...+70 °C
Humidity	< 95 % r.h.
Transport	DIN EN 60 721-3-2
Climatic conditions	class 2K2
Mechanical conditions	class 2M2
Temperature range	-20...+60 °C
Humidity	< 95 % r.h.
Operation	DIN EN 60 721-3-3
Climatic conditions	class 3K5
Mechanical conditions	class 3M2
Temperature range	0…+60 °C -20...+60 °C (on request)
Humidity	< 95 % r.h.

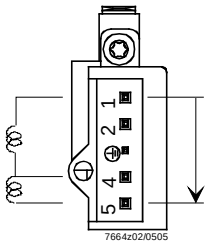
⚠ **Condensation, formation of ice and ingress of water are not permitted!**

Function

Pin connections

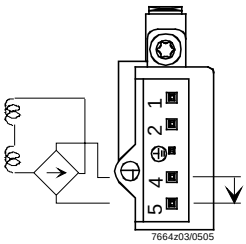
3 types of terminal arrangements are available for using different types of cable connectors.

Variant 0



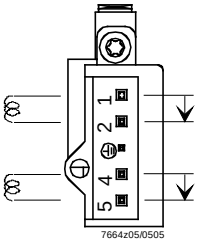
VRAC or VDC

Variant 1



VAC
(Full wave rectifier is integrated in the terminal for electrical connection)

Variant 2



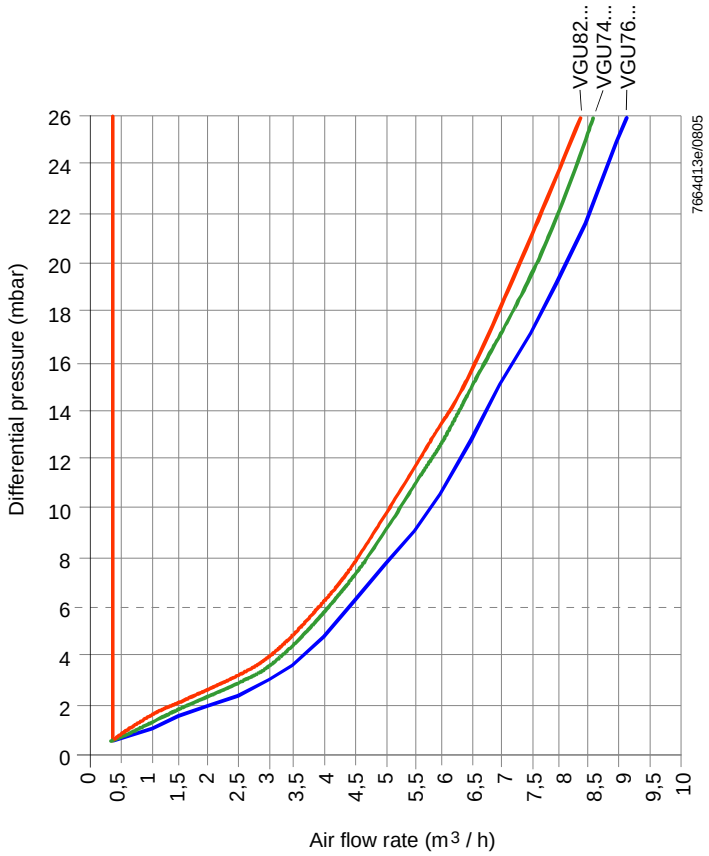
VRAC or VDC (2nd shutoff valve)

VRAC or VDC (1st shutoff valve)

Note:
The coils for safety shutoff function of VGU7... gas valve are DC type

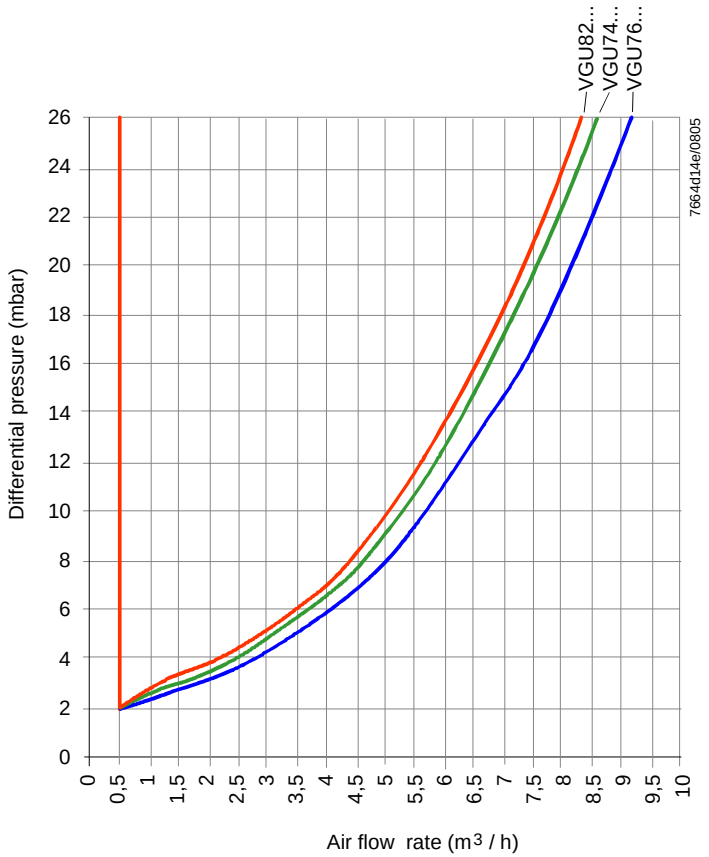
Flow chart for classes B and J

VGU74…
VGU76…
VGU82…



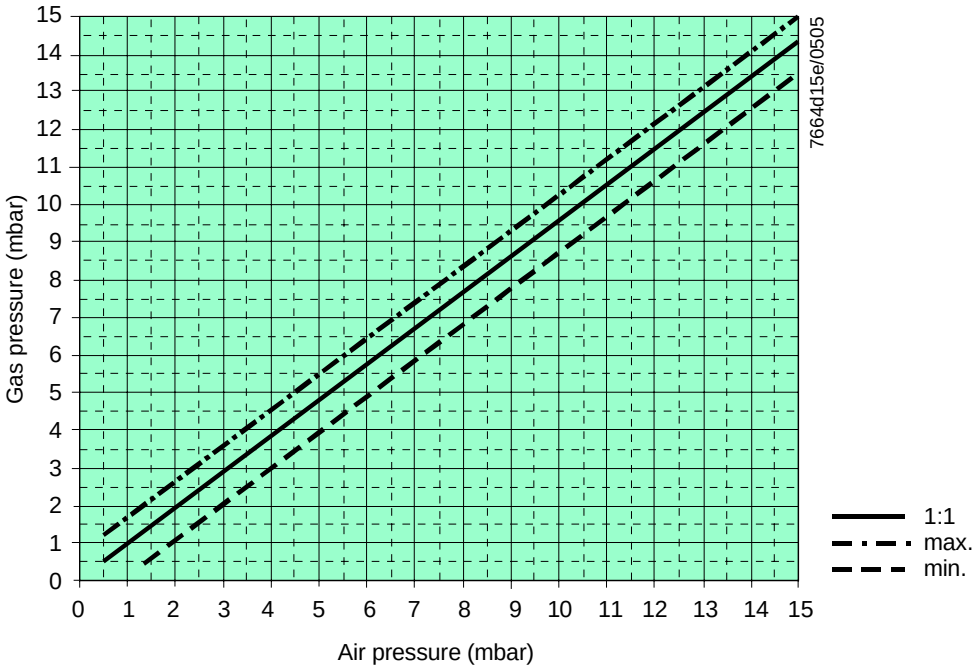
Flow chart for classes B and C

VGU74…
VGU76…
VGU82…

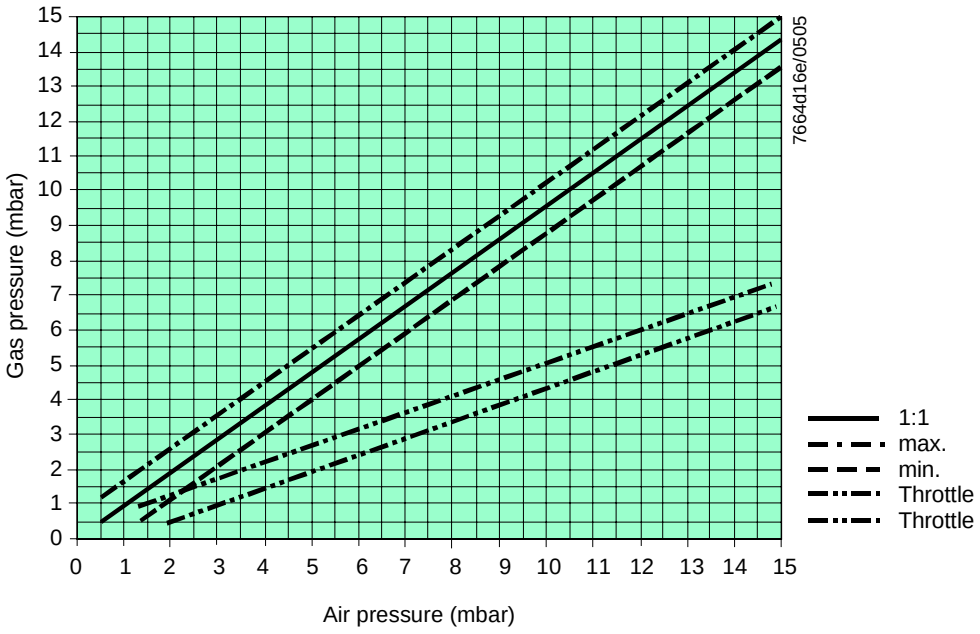


Performance characteristics

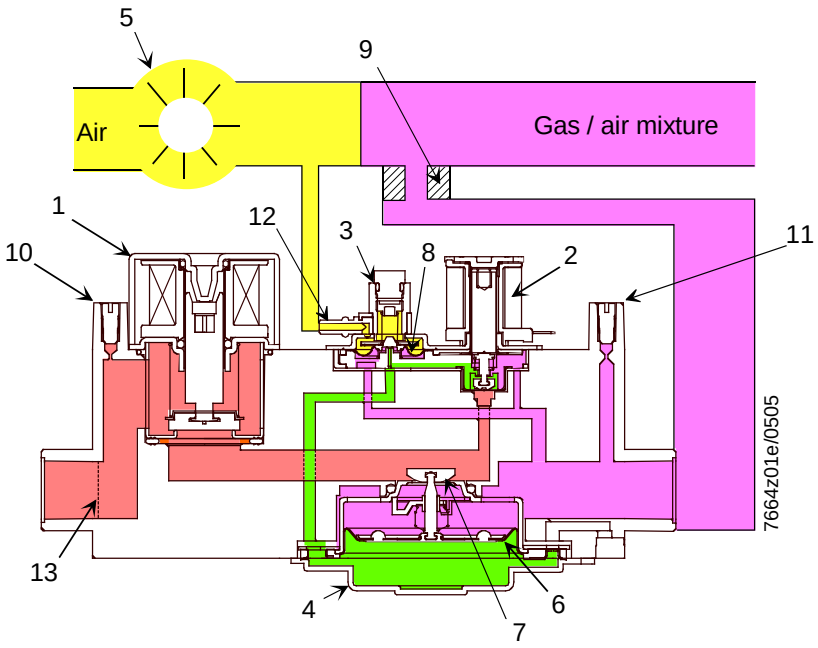
Parallel shift can be adjusted with a screw on the servo pressure regulator.



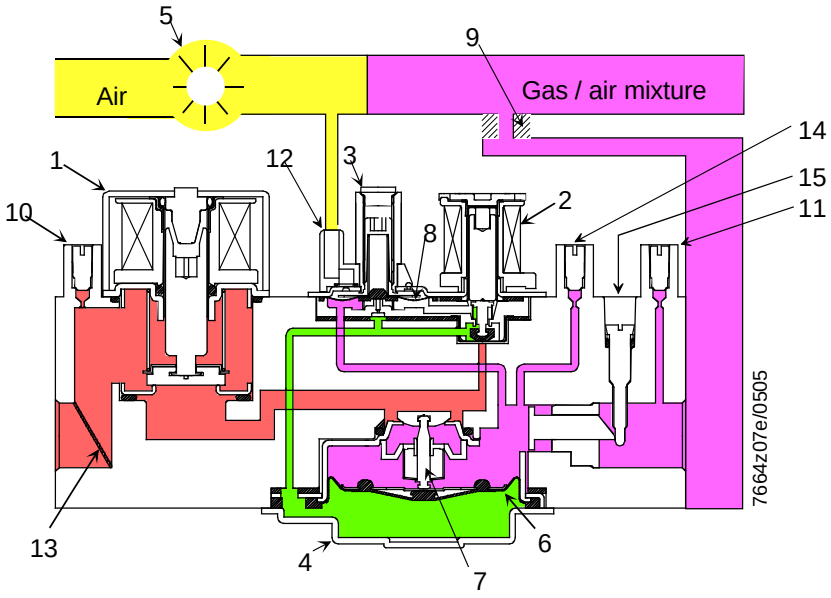
Adjustment of gas flow with main flow throttle.



Sectional view of VGU7…



Sectional view of VGU8...



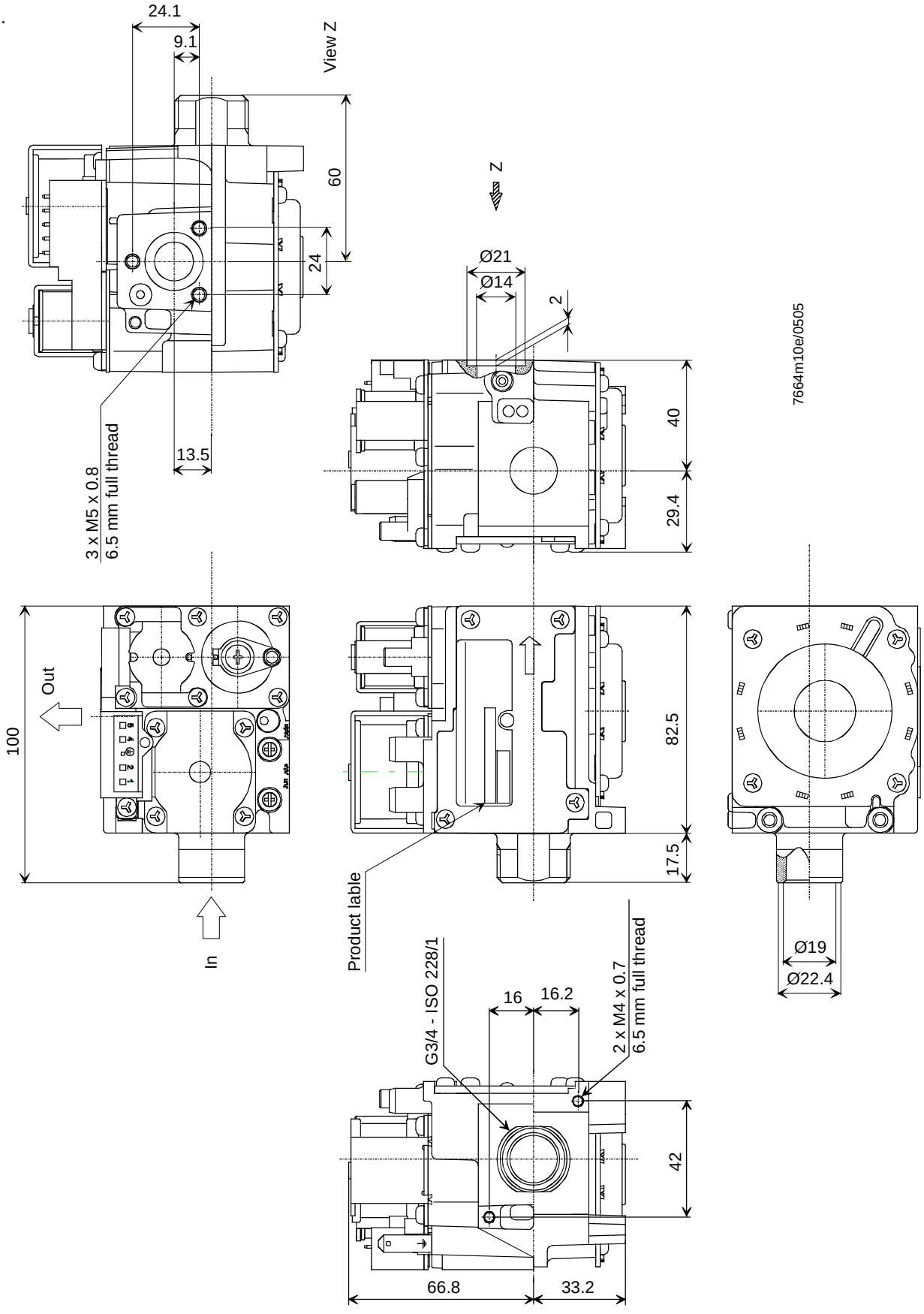
Legend

1	Main safety shutoff valve (class B)	9	Gas nozzle
2	Operating valve	10	Inlet pressure
3	Gas / air ratio regulator	11	Outlet pressure
4	Gas inlet governor (class C or J)	12	Connection for air pressure supply
5	Fan for combination air	13	Filter
6	Main diaphragm	14	Gas pressure at ratio regulator
7	2nd shutoff valve (regulator plug)	15	Main gas flow throttle
8	Servo diaphragm		

Dimensions

Dimensions in mm

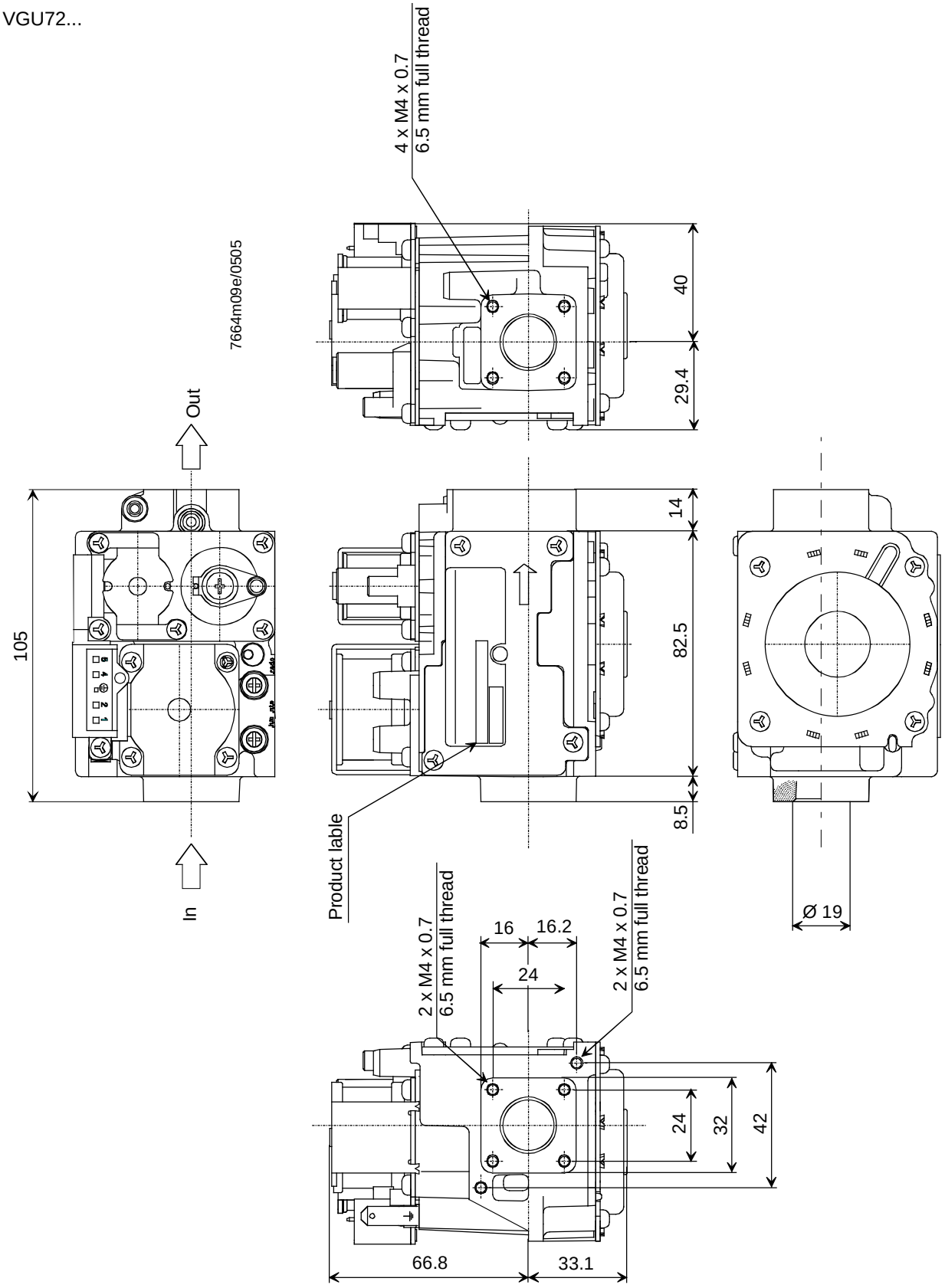
VGU71...



Dimensions (cont´d)

Dimensions in mm

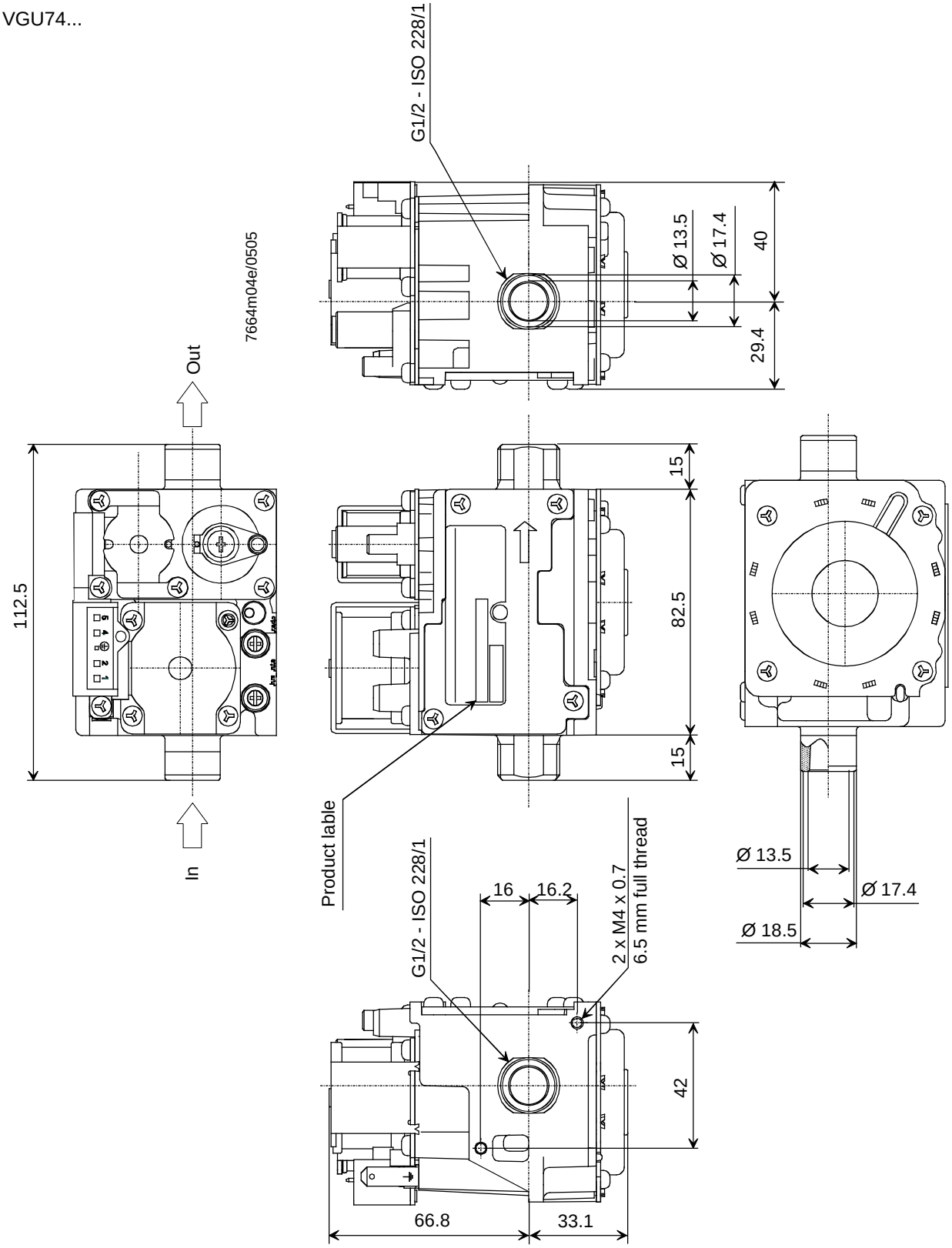
VGU72...



Dimensions (cont´d)

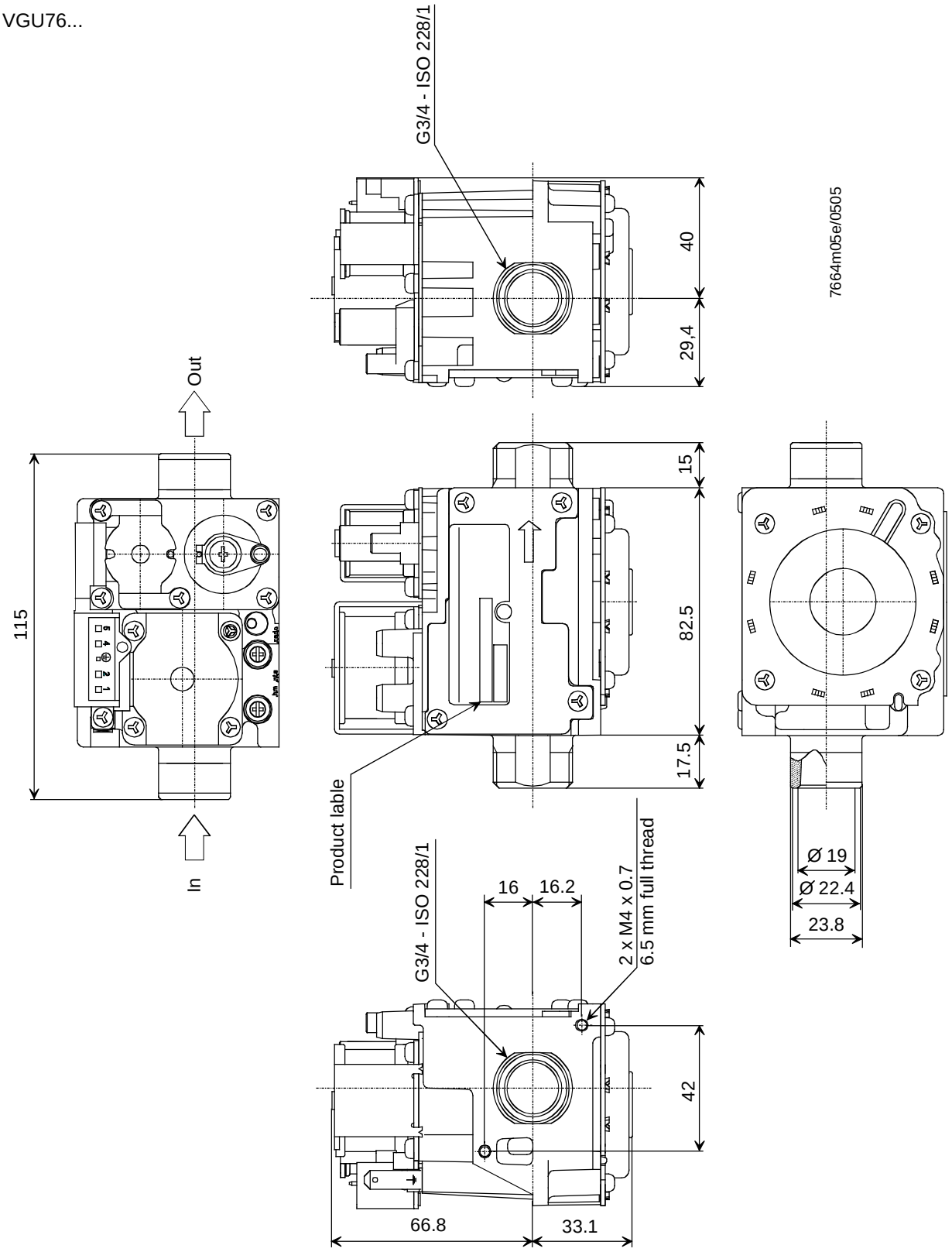
Dimensions in mm

VGU74...



Dimensions in mm

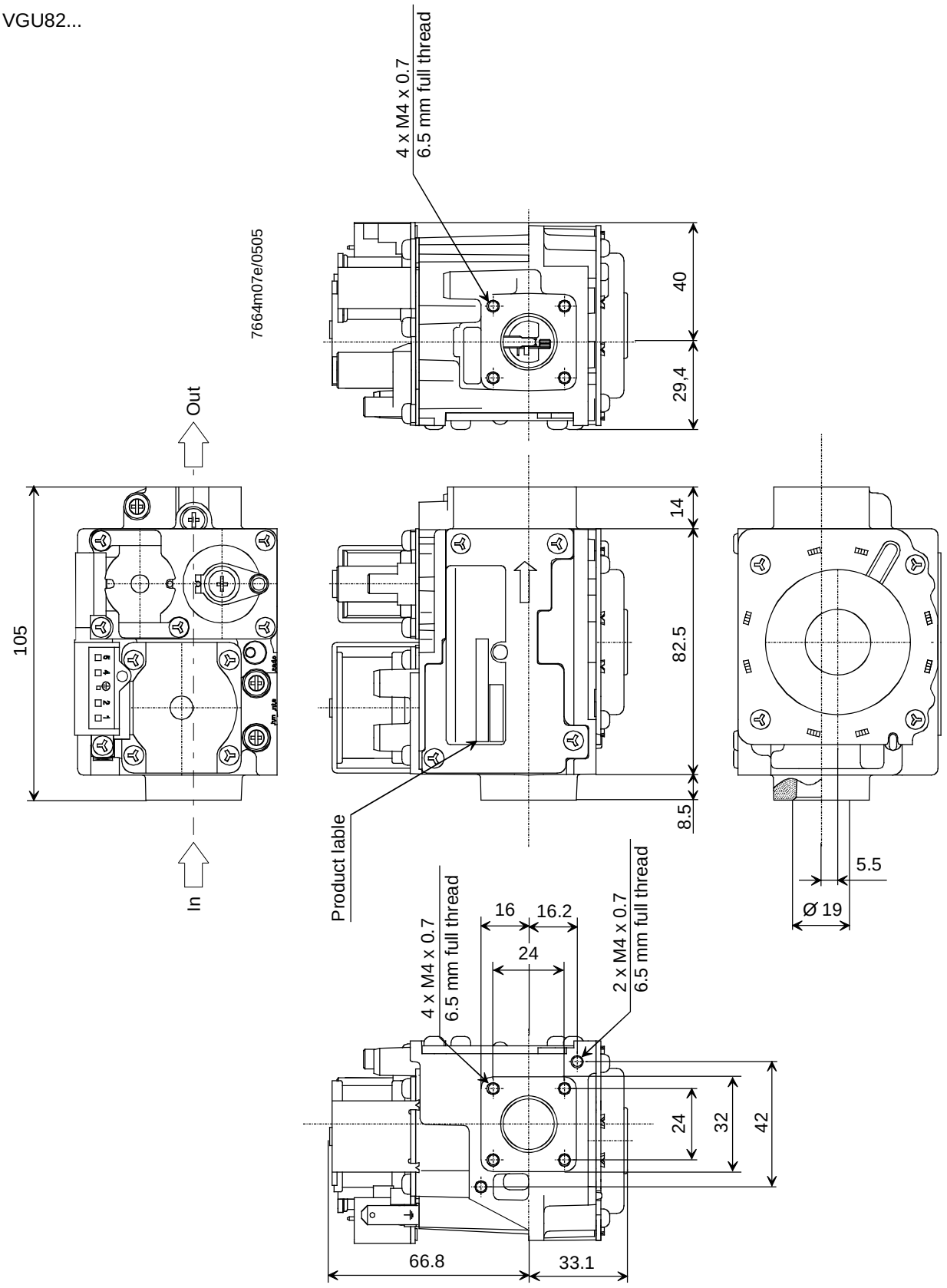
VGU76...



Dimensions (cont´d)

Dimensions in mm

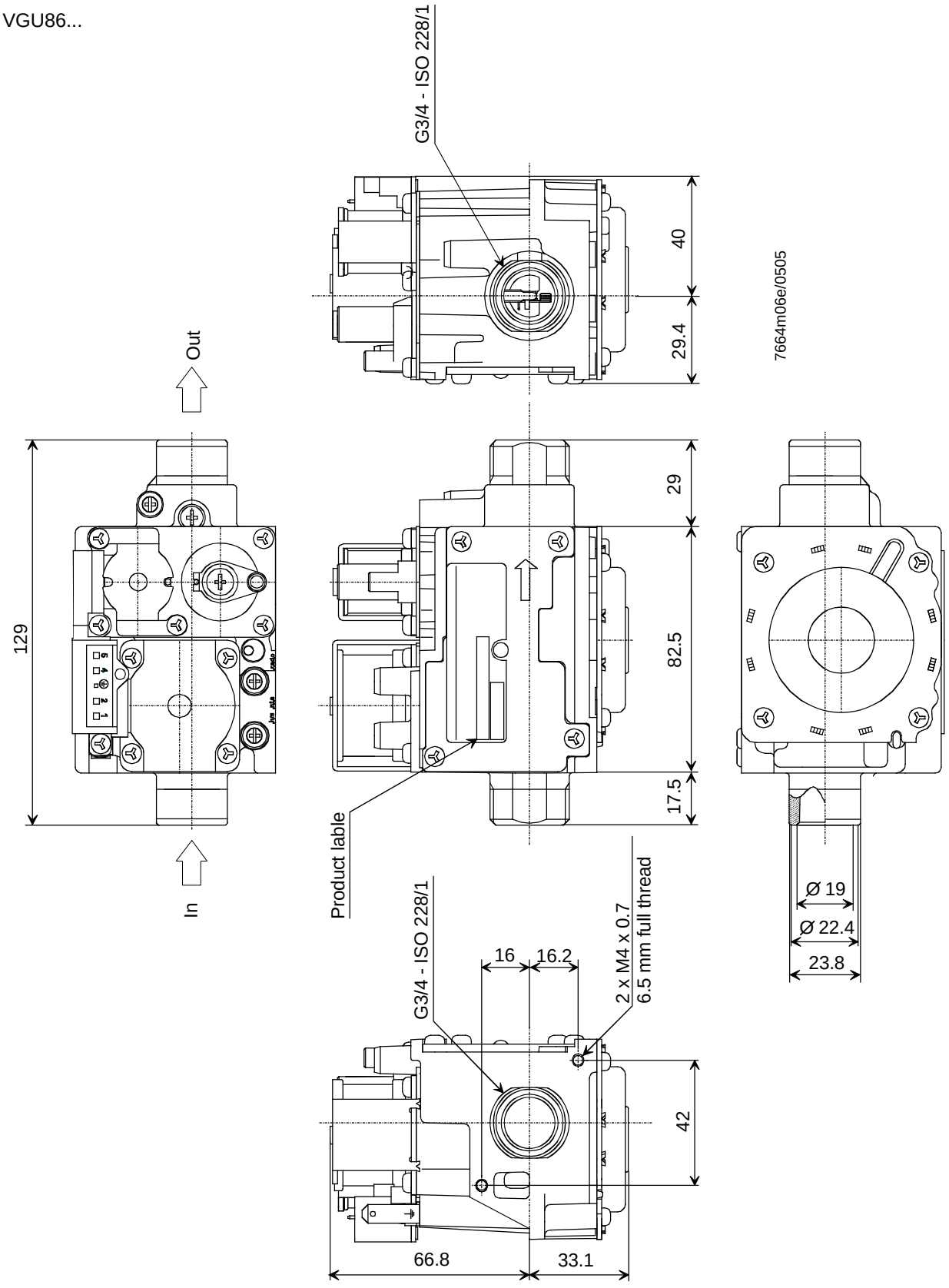
VGU82...



Dimensions (cont´d)

Dimensions in mm

VGU86...



Dimensions (cont´d)

Dimensions in mm

VGU87...