GW40B/GW50B

GAS-WATER COMBINATION CONTROLS

MAXITROL®

www.maxitrol.com

CONTENT

⚠ WARNING

Service and installation must be performed by a trained/experienced service technician.
All products used with combustible gas **must** be installed and used **strictly** in accordance with the instructions of the Original Equipment Manufacturer (OEM) and with all applicable government codes and regulations, e.g. plumbing, mechanical, and electrical codes and practices. Maxitrol products should be installed and operated in accordance with Maxitrol Safety Warning Instructions.

CE

▲ CE Certified

Maxitrol is NOT responsible for any errors or omissions in reliance by anyone of any information set forth in this catalog without additional reference to local requirements and applicable ordinances or codes.

The products in this catalogue comply with EU legislation. The technical specifications refer to the CE certification. Additional international approvals and certifications are available upon request.

GENERAL INFORMATION

GW40B/50B gas-water combination controls are suitable for use in instantaneous gas water heaters manufactured according to Gas Appliances Regulation EU/2016/426 (GAR) and DIN EN 126; fueled by natural gas, liquefied petroleum gas or town gas.

- Proportional gas/water adjustment (constant outlet water temperature rise), temperature setting knob and a gas control knob
- Piezo ignition (GW40B), electronic ignition for pilotless operation (GW50B)
- 5 to 16 l/min (1.32 to 4.23 GPM) warm water (ΔT = 45 F)
- For all gas types according to EN437 and all common water pressures
- Same size pipe connections for GW40B and GW50B
- Compact design, lightweight
- Patented lever mechanism improves safety and performance
- Ignition interlock (main valve closed during ignition)
- Water flow operates the main gas valve
- Modern pipe connection technology using clips

Valves can be customized to OEM specifications.

▲ GW40B

▲ GW50B

FEATURES & OPTIONS

GW40B – FEATURES
- Thermoelectric flame failure device
- One knob operates the igniter and the gas valve
- Adjustable pilot gas flow
- Integrated pilot gas filter

GW40B – OPTIONS
- Integrated piezo ignitor
- Pre-set gas throttle/integrated gas pressure regulator

GW50B – FEATURES
- Gas differential pressure valve
- Electronic ignition control (incl. microswitch, battery box for 2 x R20 1.5 V and cables)
- Low start point water pressure allows use of hydrogenerator

GW50B – OPTIONS
- Integrated gas control knob with fixed min. rate setting and OFF position
- Low battery indicator (LED and cable)

Adjustment of the gas flow and gas burner pressure is possible at the installation by means of:
- Integrated pressure regulator or throttle (GW40B)
- Separate upstream pressure regulator (GW50B)

WATER FEATURES
- Water switch made of high quality plastic with lack-of-water safety mechanism (venturi and diaphragm)
- Slow ignition main burner at start
- Water flow limiter, independent of inlet pressure
- Water inlet screen
- Adjustable water bypass (temperature setting knob)
- Proportional gas/water adjustment: the gas flow is controlled in proportion to the water flow, so that the water outlet temperature rise remains constant.

ACCESSORIES

- ½" gas inlet flange, including gasket and screws
- ¾" flange adaptor
- Gas outlet gasket
- 20 x 2 o-ring at gas inlet
- Conversion kits for changing type of gas (customized)
- Water inlet adapter
- Water outlet adapter

GW40B only
- Gas inlet screen
- 4 and 6 mm compression fittings for pilot gas connection
- M10x1, M9x1, M8x1, 11/32" thermocurrent interrupters

PERFORMANCE CHARACTERISTICS

Valid for gas families 2 and 3. For gas family I (town gas) the input is limited to max. 10 kW/34460 BTU. Other applications available on request. All values given are mean values. Production related variances are possible.

Type		GW40B	GW50B
Ambient temperature range	Valve	0°C - 80°C / 32°F - 176°F	0°C - 80°C / 32°F - 176°F
	Electronic components	–	max. 60°C (140°F)
Max. inlet pressure (water)	13 bar (188.2 PSI) on request	10 bar (13 bar) / 144.8 PSI (188.2 PSI)	10 bar (13 bar) / 144.8 PSI (188.2 PSI)
Standard gas pressure regulator to EN 88 class C		7.5 - 12.5 mbar / 2.95 - 4.92 w.c.	–

Proportional Gas Water Flow 50%

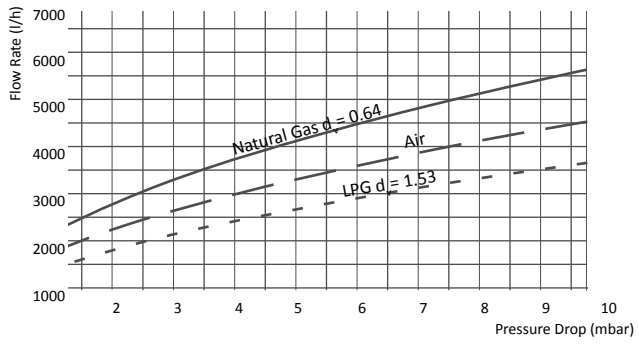
Nominal water flow rate at ΔT=25K (Position "warm")		l/min	5	6	10	11.5	13	14	16
Water flow at ΔT=50K (Position "hot")		l/min	2.5	3	5	5.75	6.5	7	8
Max. input*		kW	10	12	20	23	26	28	32
Start water flow rate at ΔT	25K 50K	l/min	2.5 1.25	3 1.5	5 2.5	5.75 2.88	6.5 3.25	7 3.5	8 4
Min. start point water pressure at at ΔT**	25K 50K	bar	0.06 0.05	0.06 0.05	0.06 0.05	0.1 0.06	0.11 0.07	0.12 0.07	0.14 0.08
Min. water pressure at 95% high fire at ΔT**	25K 50K	bar	0.18 0.16	0.25 0.2	0.4 0.3	0.7 0.32	1.1 0.33	1.2 0.34	1.5 0.42
Nominal water flow rate at temperature rise 45° (position "warm")		GPM	1.32	1.58	2.64	3.04	3.45	3.7	4.23
Water flow rate at temperature rise 90° (position "hot")		GPM	0.66	0.79	1.32	1.52	1.725	1.85	2.115
Max. input*		BTU	34460	41248	68921	79363	90067	96593	110430
Start water flow rate at temperature rise	45° 90°	GPM	0.66 0.33	0.79 0.4	1.32 0.66	1.52 0.76	1.725 0.86	1.85 0.93	2.115 1.06
Min. start point water pressure at temperature rise**	45° 90°	PSI	0.84 0.7	0.84 0.7	0.84 0.7	1.4 0.85	1.54 0.98	1.69 0.98	1.97 1.12
Min. water pressure at 95% high fire at temperature rise**	45° 90°	PSI	2.53 2.24	3.51 2.81	5.62 4.22	9.84 4.5	15.46 4.64	16.87 4.78	21.09 5.9

Proportional Gas Water Flow 40% (only for GW40B)

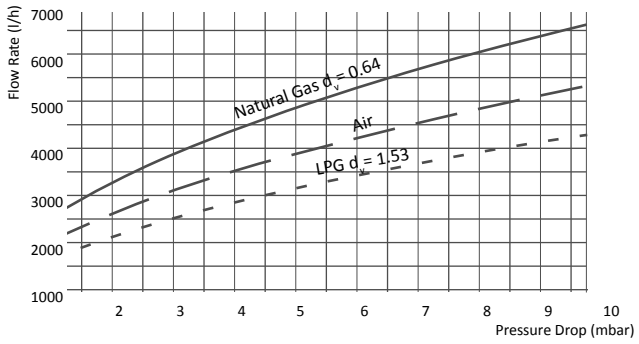
Start water flow rate at ΔT	25K 50K	l/min	2 1	2.4 1.2	4 2	4.6 2.3	5.2 2.6	5.6 2.8	6.4 3.2
Min. start point water pressure at ΔT**	25K 50K	bar	0.05 0.04	0.05 0.04	0.05 0.04	0.08 0.05	0.09 0.06	0.1 0.06	0.11 0.07
Min. water pressure at 95% high fire at ΔT**	25K 50K	bar	0.18 0.16	0.25 0.2	0.4 0.3	0.7 0.32	1.1 0.33	1.2 0.34	1.5 0.42
Start water flow rate at temperature rise	45° 90°	GPM	0.528 0.26	0.632 0.32	1.056 0.53	1.216 0.61	1.38 0.69	1.48 0.74	1.692 0.85
Min. start point water pressure at temperature rise**	45° 90°	PSI	0.7 0.56	0.7 0.56	0.7 0.56	1.12 0.7	1.26 0.84	1.4 0.84	1.54 0.98
Min. water pressure at 95% high fire at temperature rise**	45° 90°	PSI	2.53 2.24	3.51 2.81	5.62 4.21	9.84 4.5	15.46 4.64	16.87 4.78	21.09 5.9

* In relation to the heat load Hi calculated at 87% efficiency. ** Pressure drop of the water heater and the downstream water line must be considered.

GW40B – Flow Rate by Δp



GW50B – Flow Rate by Δp



OPERATION

GW40B – Manual Knob (A)

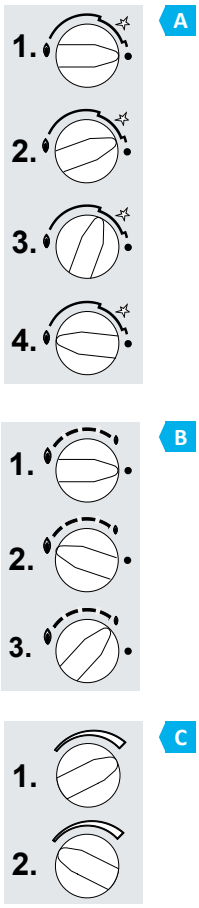
1. OFF position (manual knob in far right position).
2. Turn manual knob and press (pilot gas flows).
3. Continue pressing down while turning further counter-clockwise to activate piezo ignitor. Hold down for 10 seconds after pilot burner has been lit (to allow the thermocouple to warm up). During ignition, only the pilot gas valve is open (main gas valve remains closed).
4. Turn manual knob fully counter-clockwise until stop (standing pilot flame). The pilot flame ignites the main burner when the warm water faucet is opened. The main burner shuts off when the warm water faucet is closed, but the pilot flame continues burning.

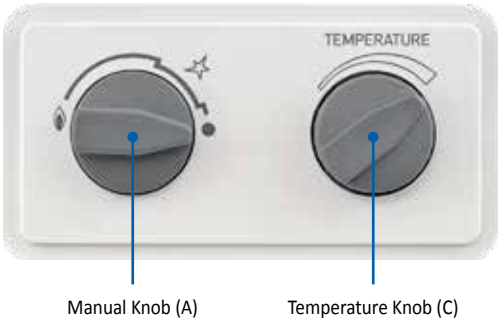
GW50B – Gas Control Knob (B)

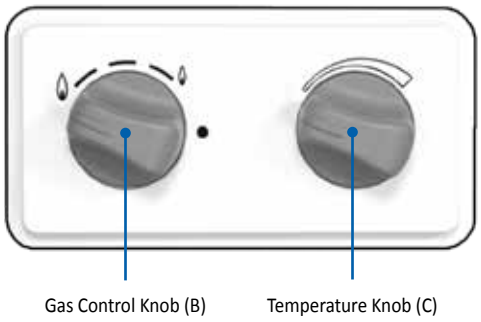
1. OFF position (control knob in far right position).
2. Turn control knob fully counter-clockwise until stop (maximum output).
3. Turn the control knob clockwise to decrease the gas flow. Open the warm water faucet. First, the intermittent pilot flame ignites, and then the main burner ignites. When the warm water faucet is closed the main burner shuts off.

GW40B/50B
Temperature Knob (Water Bypass) (C)

1. Temperature knob in far right position: hot water, bypass closed.
2. Temperature knob in far left position: warm water, bypass open. Fully adjustable between hot and warm.

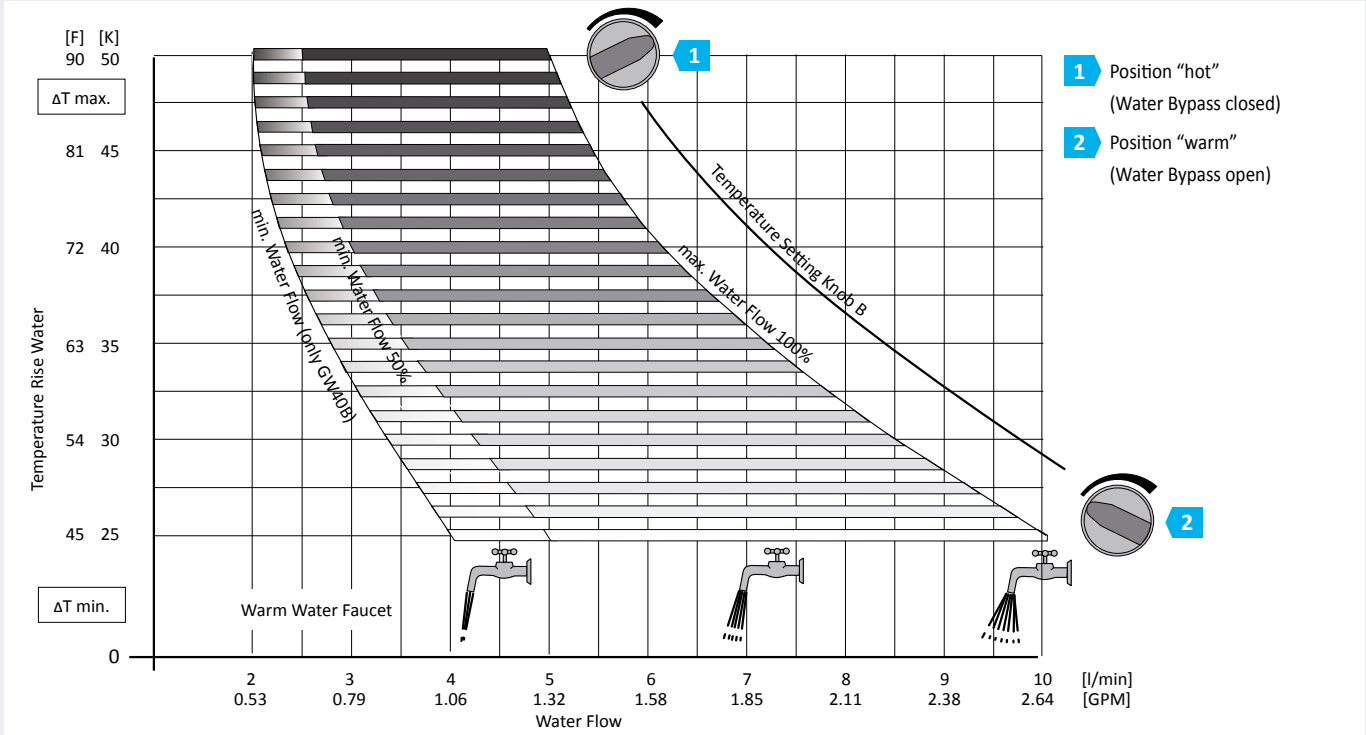






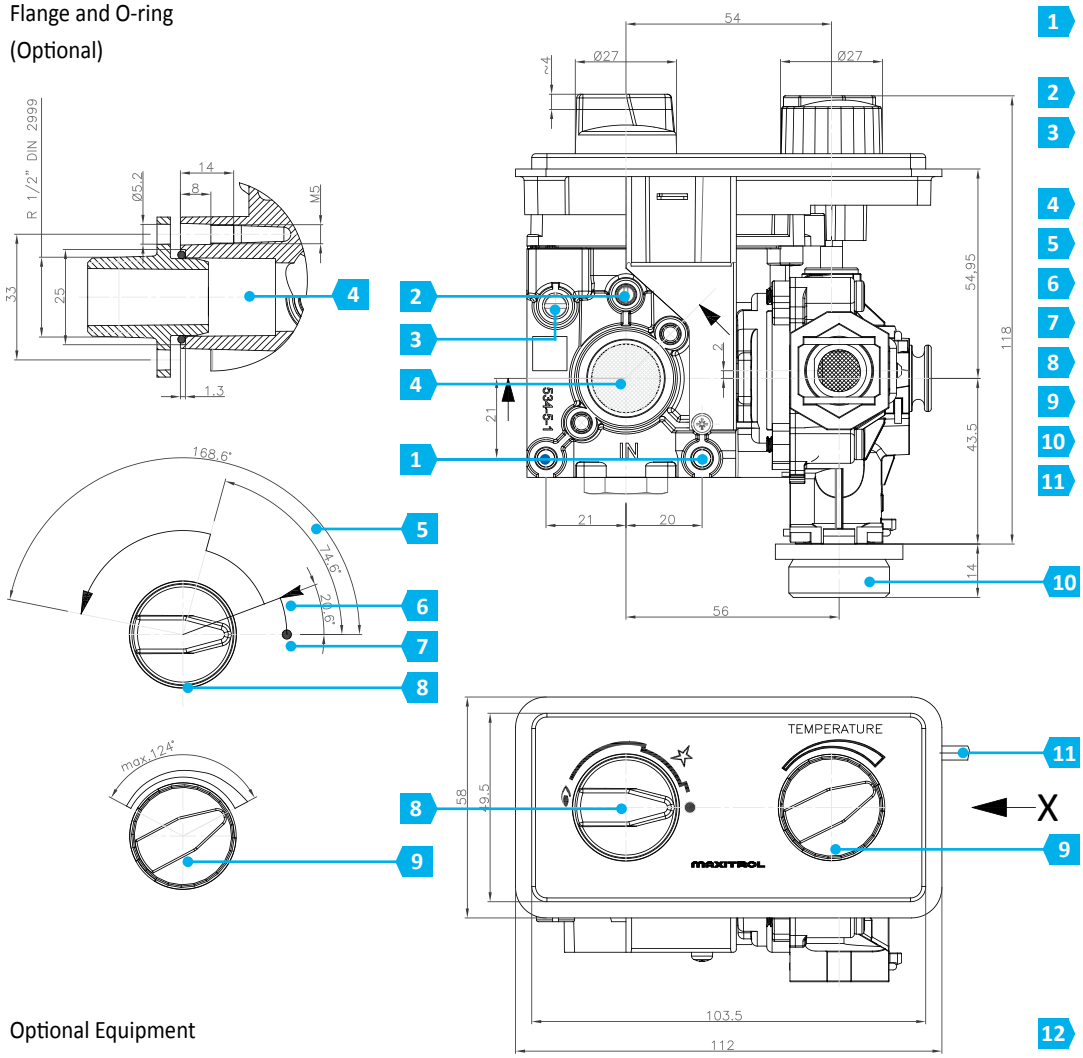
PERFORMANCE DIAGRAM

(Example for 10 l/min)



GW40B – DIMENSIONS

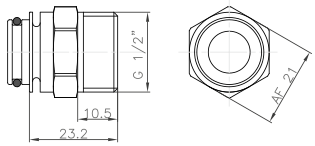
Flange and O-ring
(Optional)



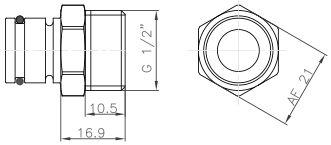
1 Mounting Point with Thread M5
2 Inlet Pressure Tab
3 Adjustable Throttle for Pilot Gas
4 Gas Inlet
5 Ignition Range
6 Push Manual Knob
7 Off
8 Manual Knob (A)
9 Temperature Knob (B)
10 Water Outlet Adapter
11 Ignition Cable

Optional Equipment

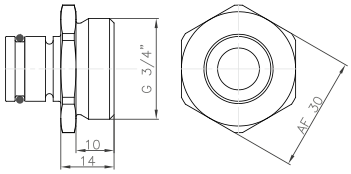
Water Inlet Adapter



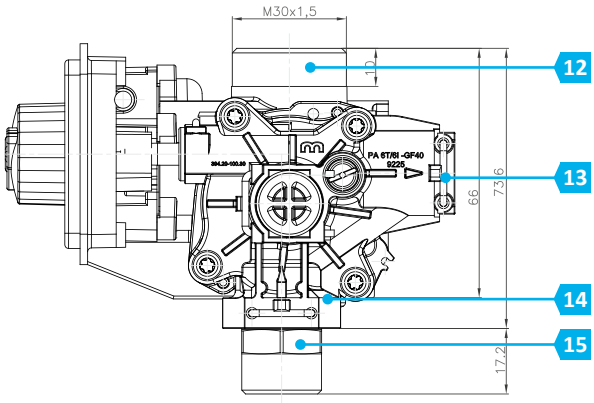
Water Outlet Adapter G 1/2"



Water Outlet Adapter G 3/4"

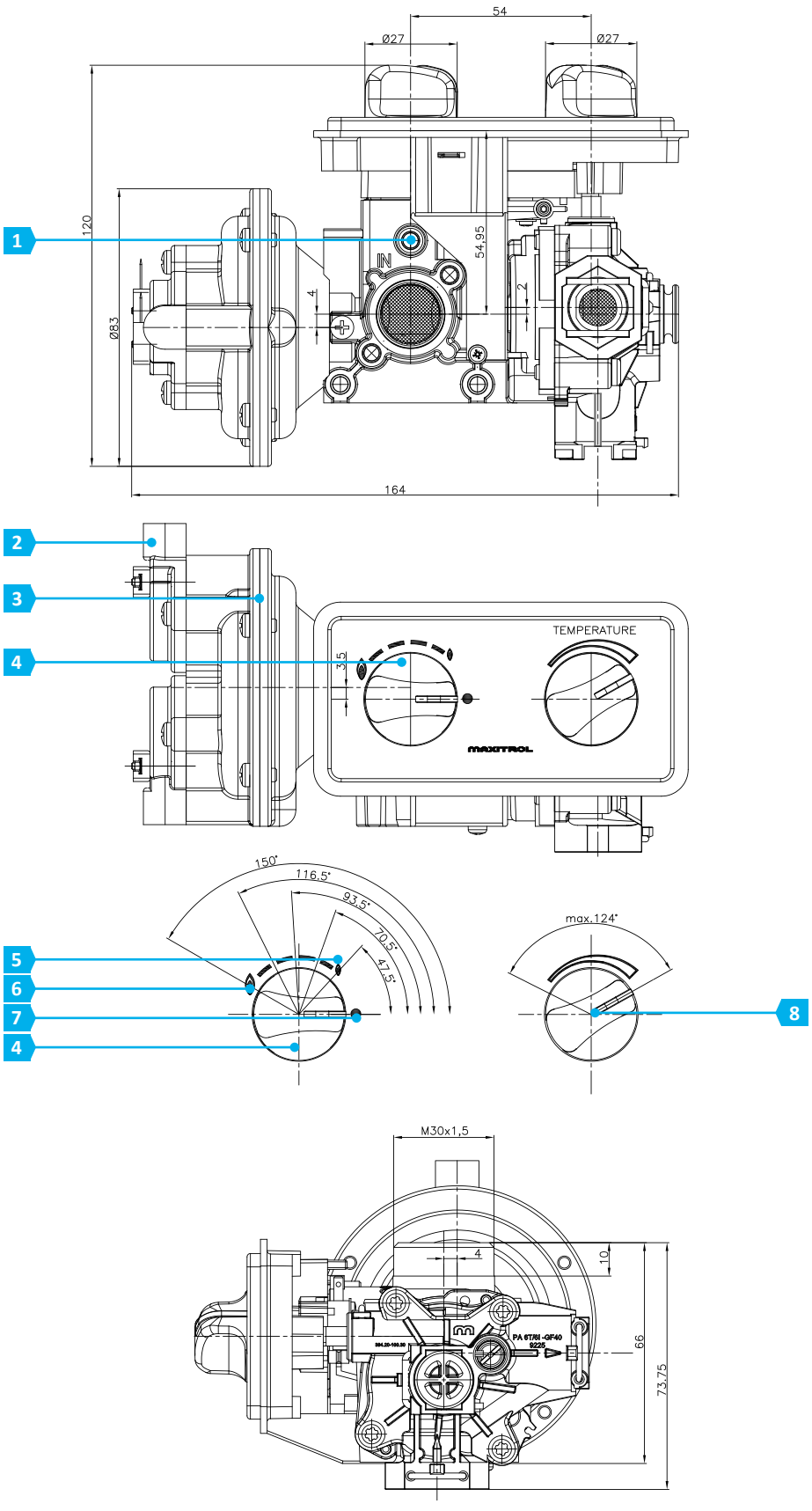


View X



12 Gas Outlet
13 Water Outlet
14 Water Inlet
15 Water Inlet Adapter

GW50B – DIMENSIONS



1. Inlet Pressure Tab
2. Pilot Outlet
3. Pressure Differential Gas Valve
4. Gas Control Knob (B)
5. Min. rate
6. Full on
7. Off
8. Temperature Knob (C)

MAXITROL®

Maxitrol Company
23555 Telegraph Road
Southfield, MI 48033
USA

T: (+1) 248 356-1400
infoNA@maxitrol.com

Maxitrol GmbH & Co. KG
Warnstedter Str. 3
06502 Thale
Germany

T: (+49) 3947 400-0
infoEU@maxitrol.com

Maxitrol GmbH & Co. KG
Valleys Innovation Centre
Navigation Park
Abercynon CF45 4SN
United Kingdom

T: (+44) 1443 742-755
M: (+44) 7866 492-261
infoEU@maxitrol.com

Maxitrol GmbH & Co. KG
Industriestr. 1
48308 Senden
Germany

T: (+49) 2597 9632-0
senden@maxitrol.com

GWB-LT-EN-11.2021