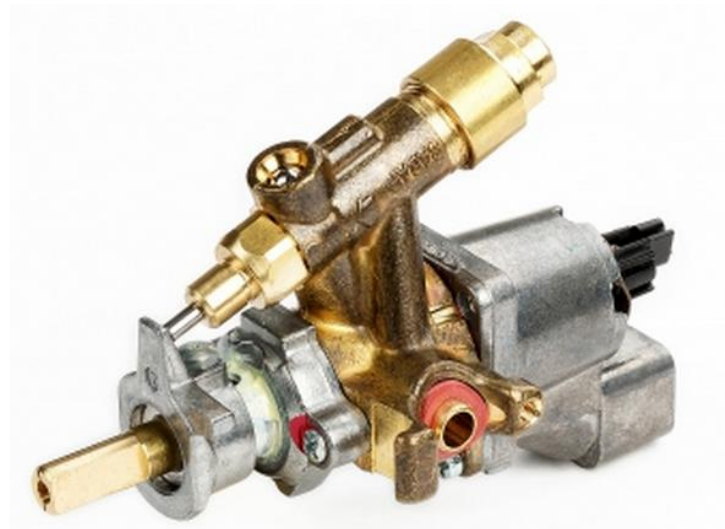




**TECHNICAL CHARACTERISTICS**  
**INSTRUCTIONS FOR USE, ASSEMBLY INSTRUCTIONS,**  
**MAINTENANCE INSTRUCTIONS**



**MODEL 20**

MANUALLY OPERATED VALVE WITH THERMOELECTRIC FLAME SUPERVISION AND ADJUSTABLE MECHANICAL THERMOSTAT

 Gas Safety Certified			
<b>AS 4624</b>		<b>EN 126 EN13611</b>	
model	20 (SAI-400192)	model	20 (51BR3390)

GENERAL INSTRUCTIONS	
Feature	Description
Type	adjustable mechanical thermostat
Applications	ovens
types of gas used	1 <sup>st</sup> – 2 <sup>nd</sup> – 3 <sup>rd</sup> family
group	1
thermoelectric flame supervisor class	B (10,000 cycles)
number of outlets	1
nominal diameter	8
maximum working pressure	6.5 kPa
minimum working temperature (body)	0°C
maximum working temperature (body)	80/130°C
nominal flow rate (except inlet variants 15-15N-16-16N)	0.339 m <sup>3</sup> /h (test gas: air - pressure drop 125 Pa - AS 4624) 0.303 m <sup>3</sup> /h (test gas: air - pressure drop 100 Pa - EN 126)
reduced flow rate (except inlet variants 15-15N-16-16N)	0.07 m <sup>3</sup> /h (test gas: air - pressure drop 125 Pa - AS 4624) 0.063 m <sup>3</sup> /h (test gas: air - pressure drop 100 Pa - EN 126)
nominal flow rate (inlet variants 15-15N-16-16N)	0.157 m <sup>3</sup> /h (test gas: air - pressure drop 125 Pa - AS 4624) 0.140 m <sup>3</sup> /h (test gas: air - pressure drop 100 Pa - EN 126)
reduced flow rate (inlet variants 15-15N-16-16N)	0.056 m <sup>3</sup> /h (test gas: air - pressure drop 125 Pa - AS 4624) 0.05 m <sup>3</sup> /h (test gas: air - pressure drop 100 Pa - EN 126)
opening angle of max. flow rate	231°
opening angle of min. flow rate	52°
external leak tightness	leakage ≤ 60 cc/h (1 ml/min) (air - pressure 15 kPa)
internal leak tightness	leakage ≤ 20 cc/h (0.3 ml/min) (air - pressure 15 kPa)
gas valve continued operation	10,000 cycles (EN 126 - EN 13611) 10,000 cycles (AS 4624)
Flame supervisor device continued operation	10,000 cycles (EN 126 - EN 13611) 2,000 cycles (AS 4624)
inlet gas connection	bracket, flange (see attached sheets)
outlet gas connection	see attached sheets
storage temperature range	-15°C to + 50°C
hold-on current/drop-out current (safety device)	≤ 180 mA / ≥ 60 mA (version 1) ≤ 110 mA / ≥ 20 mA (version 2) ≤ 60 mA / ≥ 10 mA (version 3)
Thermocouples maximum closing time	90 sec
sensor's maximum temperature (bulb)	315 °C
temperature adjustment range	100 – 315°C
temperature tolerance	+ 8.5°C
assembly position	Any position
Range of modulation	30°C
operating torque	≤ 30 N
mechanical differential	8°A
Temperature variation (130°C)	17°C
Temperature tolerance	± 10°C
Drift for thermal overload	±5°C

If applicable,

TABLE 1 - MICROSWITCH CHARACTERISTICS	
Nominal tension	250 V
Method for operation	push-button
Max. operating temperature	125 °C
Contact distance	small – standard
Protection level	IP00
Insulation class	I
Pollution situation	standard
Heat-resistance	category D
Tracking index	PTI250

These valves can be used with pipes of various diameters and flat manifolds.

To ensure a perfect seal, place an elastomer gasket between the manifold and the valve.

Gaskets of different materials can be used for the manifold depending on the temperature reached: silicon elastomer gaskets are resistant up to 130°C while nitrile elastomer gaskets are resistant up to 80°C.

## INSTRUCTIONS FOR USE

To turn the thermostat on, simultaneously press and turn the control shaft.

Holding down the control shaft and turning it anti-clockwise allows the gas to pass to the burner.

A few seconds after the burner ignites, the thermocouple generates enough current to hold the safety magnet open. The control shaft needs no longer be pressed down.

Once the thermostat has been turned through 52°, gas begins to flow giving the minimum adjustable temperature. The thermostat can be turned through 231°A giving a continuous increase in temperature.

Temperatures may be adjusted from 100°C to 315°C.

If the flame should accidentally go out, the thermocouple cools and the current is reduced, the safety magnet is closed and the flow of gas is blocked after a few seconds.

The thermostat has an adjustable perforated metering screw (by-pass) which fixes the reduced flow-rate at a preset value when fully tightened. If a different type of gas is used, the amount of reduced flow can be adjusted by turning the by-pass with a screwdriver.

The thermostat can be equipped with one or more microswitches, which are firmly fastened by means of a metal staff. The microswitches are activated by simply pushing the spindle inward (microswitch used to activate the electric ignition) or by rotation of the spindle (microswitches used to perform other functions) – see table 1.

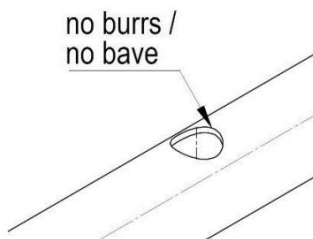
## ASSEMBLY INSTRUCTIONS

**The thermostats are designed to be used inside the gas cooking appliances, protected from any possible infiltrations of liquid or dirt and from the atmospheric agents. The non-observance of this prescription can compromise the correct working and the safety of the product.**

The thermostats are designed to be used with manifolds with different diameters using flange or bracket fastenings.

To ensure a perfect seal:

- Place an elastomer gasket between the manifold tube and the thermostat
- Realize, on the manifold, the seating holes according to the table “inlet variants” and ensure they are free of burrs (see following sketch)



The outlet is designed for a connection pipe to the burner.

Calibration is determined in the factory and should not be altered even by qualified personnel. In case of irregularity, the whole thermostat should be replaced.

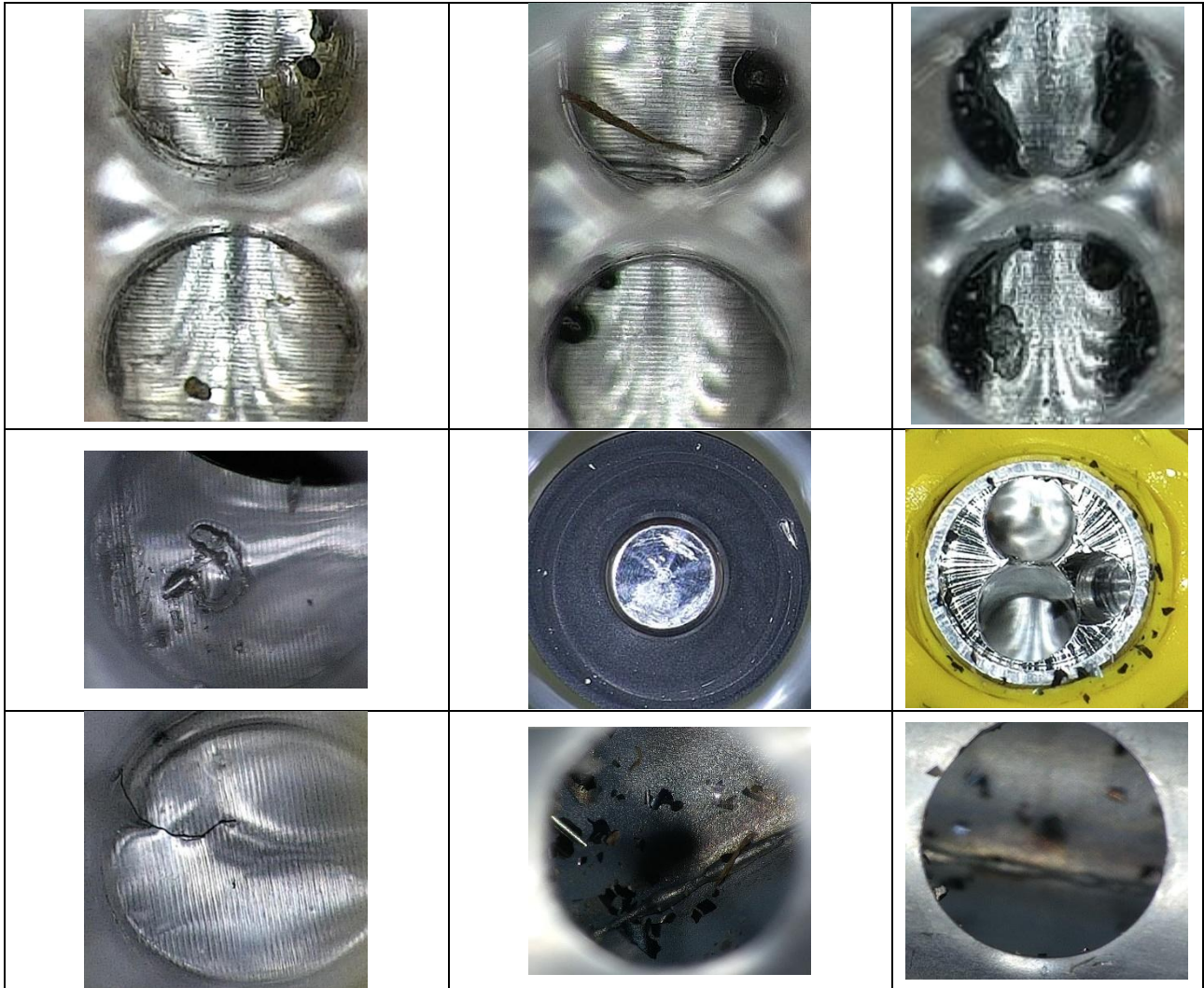
To avoid damage that may compromise correct functioning of the thermostats, do not exceed the tightening torques listed in the table “maximum torque value”.

**To avoid dirt or other material (solid or liquid) entering the equipment which may affect functionality of the thermostat, a suitable filter should be mounted on the manifold inlet.**

**The thermostat has to be stored and assembled in a cleaned area to avoid any contamination.**

**To avoid any damage on the thermostat, the manifold must be completely cleaned and free of burrs before the thermostat assembling. In order to guarantee a cleaned manifold, moreover an air blowing process, a degreasing washing system has to be considered, like an ultrasonic system.**

*Examples of possible particles contamination that could come in the thermostat from the inlet compromising its functionality:*



## MAINTENANCE INSTRUCTIONS

Maintenance of the taps is not foreseen, in case of failure or incorrect operation replace the tap with a new one (same model and same characteristics).

**NB.: Leak test should be performed using a suitable appliance. Leak test mustn't be done by means of a flame or immersion of the valve in water or other liquids. The non-observance of this prescription can compromise the correct working and the safety of the product.**

## SAFETY & ENVIRONMENT INSTRUCTIONS

Please note that none of our products / components contain substances that may be released intentionally during normal or reasonably foreseeable use.

The normal or reasonably foreseeable use of our items does not involve particular precautions; only for disposal at the end of their life, it is recommended not to subject the products / components to mechanical processing such as cutting or drilling, which could cause exposure to the substances contained in the products / components or their dispersion into the environment.

**VARIANTS**

**INLET VARIANTS**

Inlet	denomination	assembly
1 – 1N	single bracket 1 screw	tube diameter 14 mm (hole diameter 8.2 mm)
2 – 2N	single bracket 1 screw	tube diameter 16 mm (hole diameter 8.2 mm)
5 – 5N	single bracket 1 screw	tube diameter 18 mm (hole diameter 8.2 mm)
8 – 8N	bracket 2 screws	tube diameter 18 mm (hole diameter 8.2 mm)
9 – 9N	bracket 2 screws	tube diameter ½" gas (hole diameter 8.2 mm)
13 – 13N	bracket 2 screws	tube diameter 16 mm (hole diameter 8.2 mm)
15 – 15N	bracket 2 screws	tube diameter 8 mm (hole diameter 5.7 mm)
16 – 16N	bracket 2 screws	tube diameter 10 mm (hole diameter 5.7 mm)
17 – 17N	bracket 2 screws	tube diameter 14 mm (hole diameter 8.2 mm)
19 – 19N	bracket 2 screws	tube diameter 19 mm (hole diameter 8.2 mm)
20 – 20N	bracket 2 screws	tube diameter 17 mm (hole diameter 8.2 mm)

**OUTLET VARIANTS**

Outlet	denomination	assembly
A	tube diameter 6 mm	compression fitting
B	tube diameter 8 mm	compression fitting
C	tube diameter 10 mm	compression fitting
D	tube diameter 6 mm	compression fitting
E	tube diameter 8 mm	compression fitting
F	G 3/8"	flared tube
G	G 1/4"	flared tube
H	M 14 x 1.5	flared tube
L	tube diameter 9.525 mm	compression fitting
M	tube diameter 7 mm	compression fitting
N	tube diameter 8 mm	compression fitting
O	tube diameter 6.35 mm	compression fitting
S	tube diameter 6.35 mm	compression fitting
T	tube diameter 10 mm	compression fitting
Z	tube diameter 4 mm	compression fitting

**Maximum torque values:**

Maximum torque value		
Component	Nm	lbf.in
Nut + olive + aluminium tube for oven outlet of thermostats	15	133
Nut + olive + copper tube for oven outlet of thermostats	15	133
Nut + olive + steel tube for oven outlet of thermostats	10	89
Nut + tapered aluminium tube (bundy) for oven outlet of thermostats	15	133
Nut + bouldged aluminium tube for oven outlet of thermostats	15	133
Nut for fixing thermocouple to magnet	4	35
Screws for brackets	1.5	13

**MANUFACTURING DATE CODES**

MONTH	CODE
JANUARY	N
FEBRUARY	O
MARCH	P
APRIL	R
MAY	S
JUNE	T
JULY	U
AUGUST	V
SEPTEMBER	W
OCTOBER	X
NOVEMBER	Y
DECEMBER	Z

YEAR	CODE
1992	A
1993	B
1994	C
1995	D
1996	E
1997	F
1998	H
1999	I
2000	J
2001	K
2002	L
2003	M
2004	4
2005	5
2006	6
2007	7
2008	8
2009	9
2010	0
2011	1
2012	2
2013	3
2014	4
2015	5
2016	6

EXAMPLE: A COMPONENT PRODUCED IN APRIL 2004 IS MARKED

**R4**

Alternatively, on the component can be marked a five digit code indicating the day (first two digits), the month (third digit – according with the code in table above) and the year of production (last two digits).

EXAMPLE: A COMPONENT PRODUCED IN APRIL, 19 2004 IS MARKED

**19 R 04**

Alternatively, on the component can be marked a four digit code indicating the week (first two digits) and the year of production (last two digits).

EXAMPLE: A COMPONENT PRODUCED THE 14<sup>TH</sup> WEEK OF 2004 IS MARKED

**1404**