



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



**MODEL 22 – 22P – 22NC**

MANUALLY OPERATED VALVE WITH THERMOELECTRIC FLAME SUPERVISION AND ADJUSTABLE MECHANICAL THERMOSTAT

 Gas Safety Certified			
<b>AS 4624</b>		<b>EN 126 EN13611</b>	
models	<b>22 (SAI-400192)</b>	models	<b>22-22P-22NC (51BR3390)</b>

**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	0.403 m <sup>3</sup> /h (test gas: air - pressure drop 125 Pa - AS 4624) 0.360 m <sup>3</sup> /h (test gas: air - pressure drop 100 Pa - EN 126)
reduced flow rate	0.071 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)
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)
Themocouples maximum closing time	90 sec
sensor's maximum temperature (bulb)	315 °C
temperature adjustment range	128 – 300°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
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

## INSTRUCTIONS FOR USE

### Model 22P:

At 0°A the control shaft can be pressed completely to open the safety valve and allow the gas to flow through the pilot outlet. Few seconds after the pilot burner ignites, the thermocouple generates enough current to hold the safety magnet open. The control shaft needs no longer be pressed down.

In all the other allowed rotations isn't possible to open the safety valve and consequently hold on the magnet. In this position (0°A) the thermostat (main burner outlet) is closed.

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

Holding down and turning the control shaft anti-clockwise allows the gas to pass to the main burner. Once the thermostat has been turned through 52°A, 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 128°C to 300°C

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.

**The pilot can't be turned off by the thermostat; the pilot's turning off must be realised by an external device.**

### Model 22:

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 128°C to 300°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.

### Model 22NC:

At 0°A the control shaft can be pressed completely to open the safety valve and allow the gas to flow through the pilot outlet. Few seconds after the pilot burner ignites, the thermocouple generates enough current to hold the safety magnet open. The control shaft needs no longer be pressed down.

In all the other allowed rotations isn't possible to open the safety valve and consequently hold on the magnet. In this position (0°A) the thermostat (main burner outlet) is closed.

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

Holding down and turning the control shaft anti-clockwise allows the gas to pass to the main burner. Once the thermostat has been turned through 52°A, 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 128°C to 300°C. Turning the control shaft clockwise (from 0°A to 52°A) the thermostat (main burner outlet) is always closed, is activated the microswitch that cuts off the circuit that feeds the thermocouple, so the safety valve closes the gas flow also through the pilot outlet.

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.

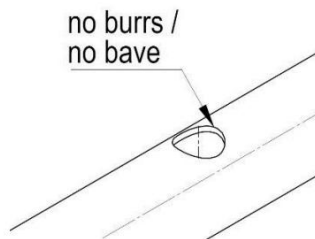
## ASSEMBLY INSTRUCTIONS

**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.

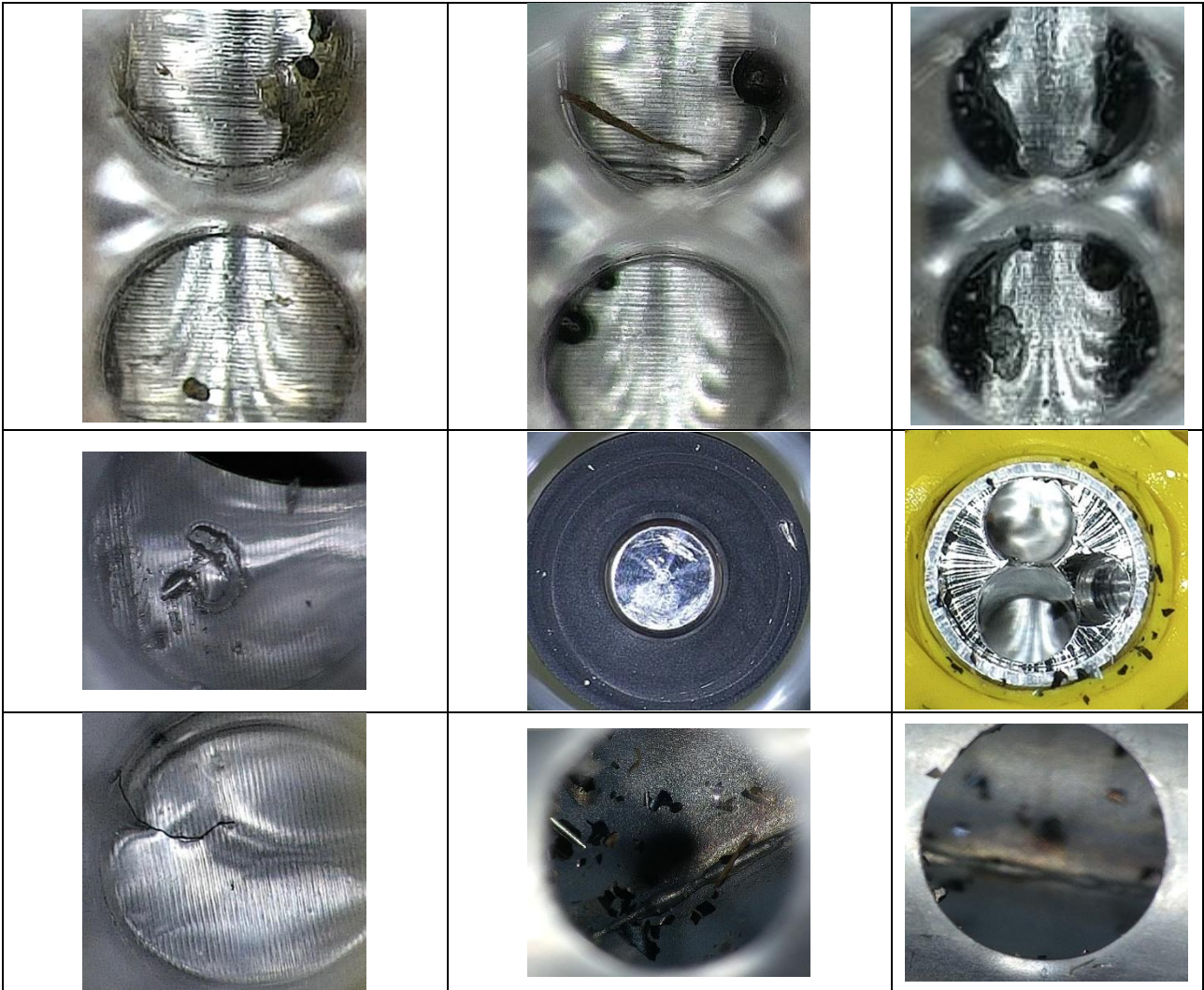
To avoid damage that may compromise correct functioning of the thermostats, do not exceed the tightening torques listed in the table “maximum torque value”.

**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**

outlet	denomination	assembly
50	tube diameter 6 mm	compression fitting
51	tube diameter 7 mm	compression fitting
52	tube diameter 8 mm	compression fitting
53	tube diameter 10 mm	compression fitting

**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
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

**PILOT Outlet variants (p version)**

outlet	denomination	assembly
A	tube diameter 3.175 mm (1/8")	compression fitting
B	tube diameter 4 mm	compression fitting
C	tube diameter 4.76 mm (3/16")	compression fitting
D	tube diameter 6 mm	compression fitting
E	tube diameter 6.35 mm (1/4")	compression fitting
F	tube diameter 3.5 mm	compression fitting
G	tube diameter 3.175 mm (1/8")	compression fitting
H	tube diameter 4 mm	compression fitting
I	tube diameter 4.76 mm (3/16")	compression fitting
L	tube diameter 6 mm	compression fitting
M	tube diameter 6.35 mm (1/4")	compression fitting
N	tube diameter 3.5 mm	compression fitting
O	tube diameter 3.175 mm (1/8")	compression fitting
R	tube diameter 4 mm	compression fitting
S	tube diameter 4.76 mm	compression fitting
X	tube diameter 3.5 mm	compression fitting

**Maximum torque values:**

<b>Maximum torque value</b>		
<b>Component</b>	<b>Nm</b>	<b>lbf.in</b>
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 + boulged 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
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EXAMPLE: A COMPONENT PRODUCED IN APRIL 2004 IS MARKED

**R4**

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**

Alternatively, on the component can be marked the day (first digits), the month (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**