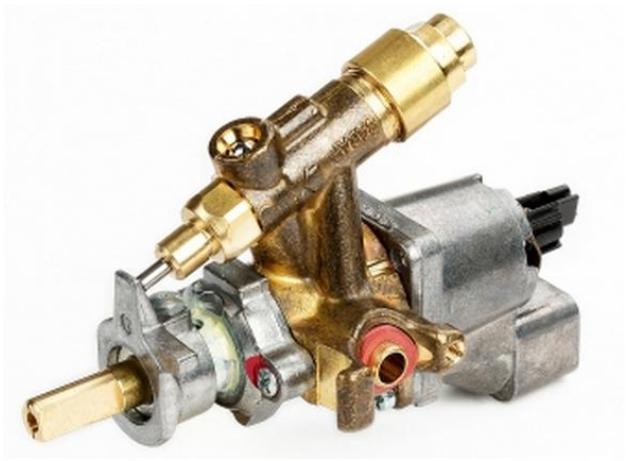
SABAF S.p.A.
Via dei Carpini, 1
25035 Ospitaletto (Brescia) Italia

TECHNICAL CHARACTERISTICS

INSTRUCTIONS FOR USE, ASSEMBLY INSTRUCTIONS,

MAINTENANCE INSTRUCTIONS



MODEL 22 – 22P – 22NC

MANUALLY OPERATED VALVE WITH THERMOELECTRIC FLAME SUPERVISION AND ADJUSTABLE MECHANICAL THERMOSTAT

C US		
ANSI Z21.78 – CSA 6.2		
models	**22 – 22P – 22NC (1091812)**	

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GENERAL INSTRUCTIONS

Feature	Description
type	conical plug valve
applications	hot plates, ovens, grills etc.
types of gas used	1st – 2nd – 3rd family
number of outlets	1
nominal diameter	8
Group	1
thermoelectric flame supervisor class	B (10,000 cicles)
maximum working pressure	½ psi
minimum working temperature (body)	0°C
maximum working temperature (body)	150°C
nominal flow rate	20.00 ft^3/h (569 l/h) (test gas: air - pressure drop 249 Pa)
calculated nominal capacity	11.000 Btu/h (test gas: air - pressure drop 249 Pa)
Reduced flow rate	0.100 m3/h (test gas: air – pressure drop 249 Pa)
calculated nominal capacity (reduced)	4,400 Btu/h (test gas: air - pressure drop 249 Pa)
opening angle of max. flow rate	231°
opening angle of min. flow rate	52°
external leak tightness	leakage ≤ 60 cc/h (air - pressure 3 psi (20.7 kPa))
internal leak tightness	leakage ≤ 20 cc/h (air - pressure 3 psi (20.7 kPa))
gas valve continued operation	10,000 cycles
Flame supervisor device continued operation	8,000 cycles
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
mechanical differential	8°A
Temperature variation (130°C)	17°C
Drift for thermal overload	±5°C
Range of modulation	30°C
operating torque	≤ 30 N

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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.

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

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ASSEMBLY INSTRUCTIONS

The thermostats are designed to be used inside the 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 suitable for assembly onto manifolds of various diameters either by means of a nut and olive fixing system or by means of a direct screwing onto the tubing. When screwing the thermostat onto the manifold, tightness will be obtained by use of a proper sealant.
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 attached tables.
To avoid dirt or other material entering the equipment which may affect functioning and safety of the thermostat, a suitable filter should be mounted on the manifold supply inlet.

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.

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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

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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 + boulged aluminium tube for oven outlet of thermostats	15	133
Nut for fixing thermocouple to magnet	4	35
Screws for brackets	1.5	13

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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 14TH 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