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

TECHNICAL CHARACTERISTICS
INSTRUCTIONS FOR USE, ASSEMBLY INSTRUCTIONS,
MAINTENANCE INSTRUCTIONS

MODEL 23P

MANUALLY OPERATED VALVE WITH THERMOELECTRIC FLAME SUPERVISION AND ADJUSTABLE MECHANICAL THERMOSTAT

		CE	
		EN 126:2012 **EN 13611:2007 + A2:2011**	
		models	**23P (51BR3390)**

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GENERAL INSTRUCTIONS

Feature	Description
Type	adjustable mechanical thermostat
Applications	ovens
types of gas used	1st – 2nd – 3rd family
group	1
thermoelectric flame supervisor class	B (10,000 cicles)
number of outlets	2
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)	0.33 m^3/h (test gas: air - pressure drop 125 Pa) 0.297 m^3/h (test gas: air - pressure drop 100 Pa - EN 126-2012)
reduced flow rate (except inlet variants 15-15N-16-16N)	0.071 m^3/h (test gas: air - pressure drop 125 Pa) 0.063 m^3/h (test gas: air - pressure drop 100 Pa - EN 126-2012)
nominal flow rate (inlet variants 15-15N-16-16N)	0.33 m^3/h (test gas: air - pressure drop 125 Pa) 0.297 m^3/h (test gas: air - pressure drop 100 Pa - EN 126-2012)
reduced flow rate (inlet variants 15-15N-16-16N)	0.057 m^3/h (test gas: air - pressure drop 125 Pa) 0.051 m^3/h (test gas: air - pressure drop 100 Pa - EN 126-2012)
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 126:2012 - EN 13611:2007 + A2:2011) 10,000 cycles
Flame supervisor device continued operation	10,000 cycles (EN 126:2012 - EN 13611:2007 + A2:2011) 2,000 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
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

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 (all colors except black) while nitrile elastomer gaskets are resistant up to 80°C (black gasket).

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INSTRUCTIONS FOR USE

At 0°A the control shaft can be pressed completely to open the safety valve and allow the gas flow through the pilot outlet.
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 (starting from 0°A) allows the gas to pass to the main burner. Once the thermostat has been turned trough 52°A, gas begins to flow giving the minimum adjustable temperature. The thermostat can be turned trough 231°A giving a continuous increase in temperature.
Temperature may be adjusted from 128°C to 300°C
Turning the control shaft clockwise (from 0°A to 62°A) the thermostat (mai 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 can be equipped with one more other 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

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 designed to be used with manifolds of different diameters using flange or bracket fastenings.
To ensure a perfect seal, place an elastomer gasket between the manifold and the valve.
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.

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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

inlet	denomination	assembly
1	Single bracket – 1 screw	Tube diameter 14 mm
2	Single bracket – 1 screw	Tube diameter 16 mm
5	Single bracket – 1 screw	Tube diameter 18 mm
8	Bracket – 2 screws	Tube diameter 18 mm
9	Bracket – 2 screws	Tube diameter ½ “ mm
13	Bracket – 2 screws	Tube diameter 16 mm
15	Bracket – 2 screws	Tube diameter 8 mm
16	Bracket – 2 screws	Tube diameter 10 mm
17	Bracket – 2 screws	Tube diameter 14 mm
19	Bracket – 2 screws	Tube diameter 19 mm
20	Bracket – 2 screws	Tube diameter 17 mm

OVEN 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
X	tube diameter 7 mm	compression fitting
Z	tube diameter 4 mm	compression fitting

PILOT OUTLET VARIANTS

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
O	tube diameter 3.175 mm (1/8”)	compression fitting
R	tube diameter 4 mm	compression fitting
S	tube diameter 4.76 mm (3/16”)	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

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