

GAS BURNER AGRR



AGRR LINEAR



AGRR CIRCULAR

Introduction

AGRR gas burner has a compact design and provides ignition, combustion and protection functions. The main component parts of the burner are indicated in Figure 1; the small door indicated in Figure 2 is supplied together with the burner and is used to mount the burner on the stove.

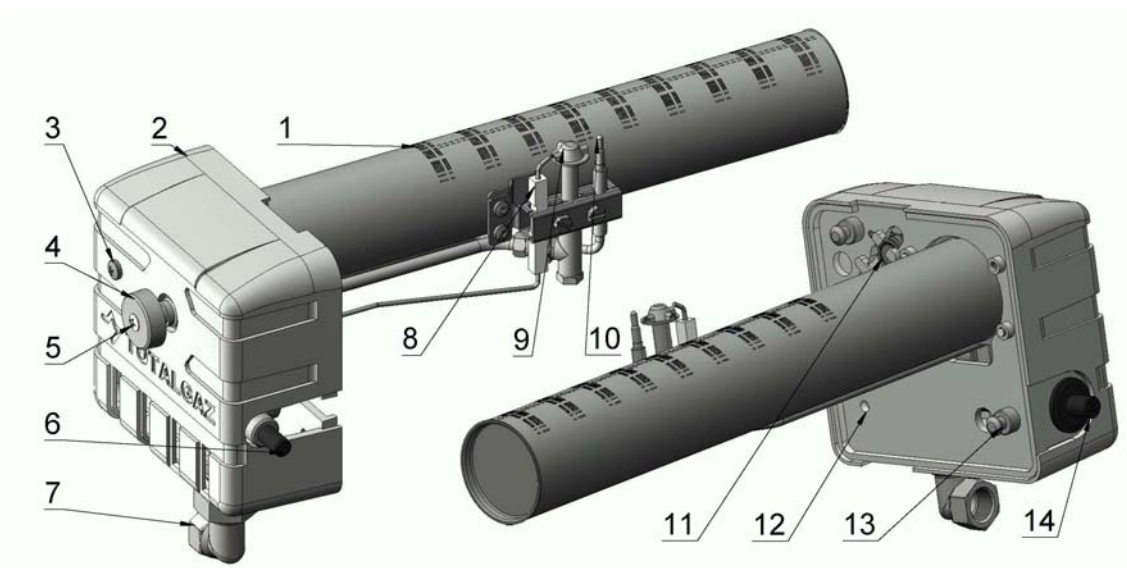


Figure 1 – AGRR burner of linear type

- 1. Stainless steel burner with Venturi tube; 2. Housing;*
3. Housing securing screw; 4. Control valve rosette; 5. Rosette retaining screw; 6. Valve arming knob; 7. Elbow fitting; 8. Ignition electrode; 9. Pilot burner; 10. Thermocouple; 11. Stop thermostat;
12. Frame comprising the burner active parts and the automation block; 13. Spacer for door securing; 14. Piezoelectric igniter

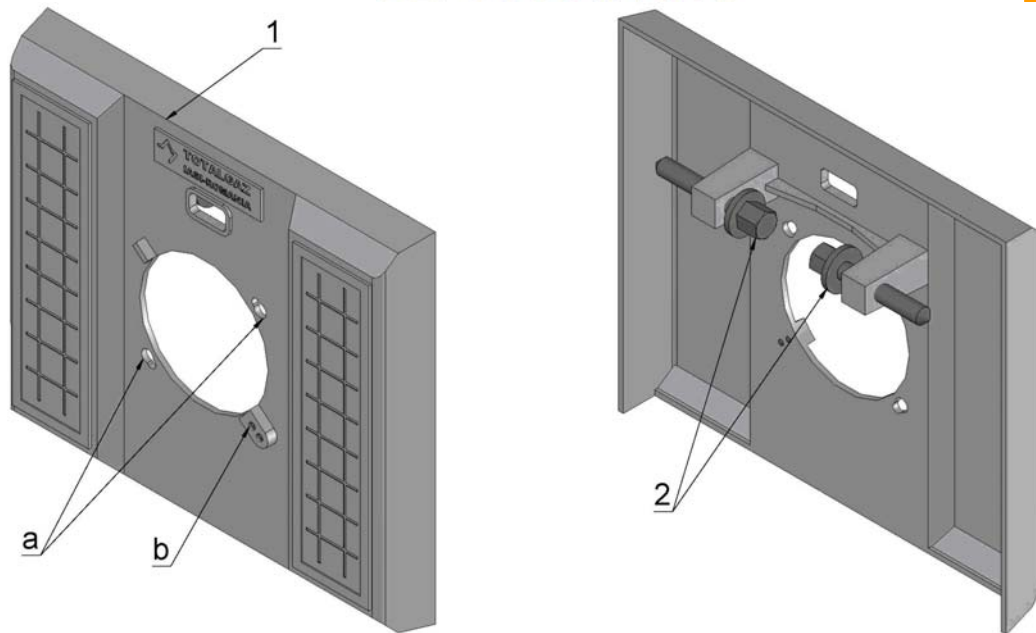


Figure 2 – Small door provided

1. Burner door; 2. Securing screws; a) Spacer securing holes; b) Tapped hole

Operation

Gas enters the inlet (7) and flows to the electrical-magnetic valve (B3-420 valve).

Gas stream is controlled by a normally closed valve that is actuated by an electromagnet. Open the valve manually by depressing the knob (6). Gas is allowed to enter the burner.

The pilot burner is ignited by depressing and releasing the knob (14) of the piezoelectric igniter. An ignition spark is produced between the ignition electrode (8) and pilot burner (9).

The pilot flame heats the thermocouple (10) generating voltage. The electric circuit closes by means of the thermostat (11) and valve electromagnet and keeps the valve open. This allows the gas to flow to the burner tube (1) after releasing the knob (6).

In case of faulty draft (clogged stack), the burner is stopped by means of thermostat (11) mounted on the apparatus frame. When temperature reaches 80 °C, the thermostat opens the electromagnetic electric circuit, which results in valve and gas circuit closing.

Burner manual stopping ensures two possibilities:

- pilot burner running (stand-by mode);
- pilot burner switched-off.

When the pilot burner is switched-off (manually or accidentally), the thermocouple does not supply power to hold the valve open. The valve closes and stops gas flowing to burner.

For rearming procedure, repeat the ignition cycle after minimum 3 minutes.

Technical characteristics

The technical characteristics of AGRR burner are indicated in the table below.

Table 1- Technical characteristics of AGRR burners

Overall sizes [mm]	Height: 172±2	Width: 170±2	Length: 400±2 for closed valve 405±2 for open valve
Fuel gas	Natural gas (NG) 20 mbar SR 3317		Liquefied petroleum gas (LPG) 30 mbar SR 66
Apparatus efficiency class	1		
Product weight [kg]	1,8 ± 0,1		
Inlet	Elbow fitting G3/8		
Firebox: minimum dimensions [mm]	Height: 250	Width: 300	Length: 350
Firebox material	Metallic or ceramic		
Firebox negative pressure	5÷10 mmH ₂ O		

Performance

The construction of the burner ensures:

- Combustion efficiency: minimum 98%
- Excess air coefficient: maximum secured $\alpha=1,35$
- CO₂ generated in the combustion products ($\alpha=1$): < 0.1 %
- Flame maximum width: 65 mm
- Flame maximum height: 75 mm
- Safety time at gas supply failure or total lack of draft:
 - opening: < 10 seconds
 - closing: < 60 seconds
- Safety time at partial lack of draft or overheating of stove:
 - for hot stove (30-40 °C): < 20 minute
 - for cold stove (5-15 °C): < 35 minute

Constructive types

Table 2 – Constructive types of AGRR burners

No	Valve type	Power [Kw]	Nominal consumption [Nm ³ /h]	Burner code
1.	420 B3	10	1	AGRR1-L-PE
2.	420 B3	16.5	1.65	AGRR1.65-L-PE
3.	420 B3	15	1.5	AGRR1.5-L-PE-500
4.	420 B3	10	1	AGRR1-C-PE
5.	420 B3	20	2	AGRR2-C-PE

REMARKS:

1. The values in Table 2 have been calculated for the lower calorific values of gas.
2. The nominal flow rate of the fuel is the flow rate at normal operation and maximum opening of the control valve.

The manufacturer reserves the right to make modifications without any prior notification.

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TOTALGAZ INDUSTRIE
Nr. R.C.: J-22-3277/1994 Șos. Păcurari, nr. 128,
CUI: RO6658553 Iași, cod 700545, România
IBAN: RO28BRDE240SV13842272400 Tel. : 0040-232-216.391(2)
B.R.D. G.S.G. Iași Fax : 0040-232-215.983
E-mail: office@totalgaz.ro
Web: www.totalgaz.ro

