

## GULLIVER BSF SERIES

The Riello Gulliver BSF series of one stage gas burners, is a complete range of products developed to respond to any request for light industrial processes like bakery ovens, spray painting ovens, small steam or thermal boilers and all applications which require a reliable, user-friendly industrial product with enhanced performance and specific functions.

The Gulliver BSF series is available in four different models, with an output ranging from 16 to 246 kW, divided in four different structures.

All the models use the same components designed by Riello for the Gulliver series and have the same ventilation system and overall dimensions as the previous one stage gas models.

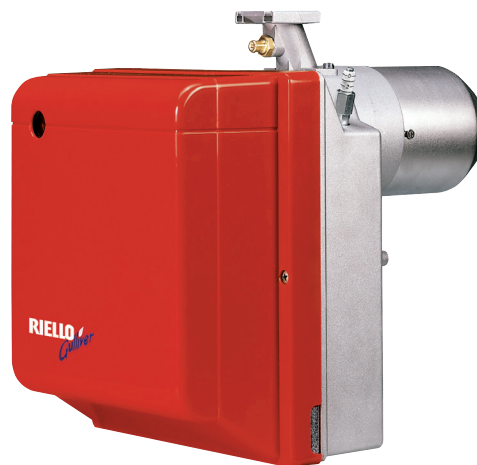
The burners are fitted with a microprocessor-based burner safety control box which supplies indication of operation and diagnosis of fault cause.

This new series can operate on 50 or 60 Hz and a Voltage 220 - 230 Volt (dual frequency).

All these burners conform to the EN 676 Standard (Forced draught gas burners) and to European Directives for EMC, Low Voltage and Gas Appliance.

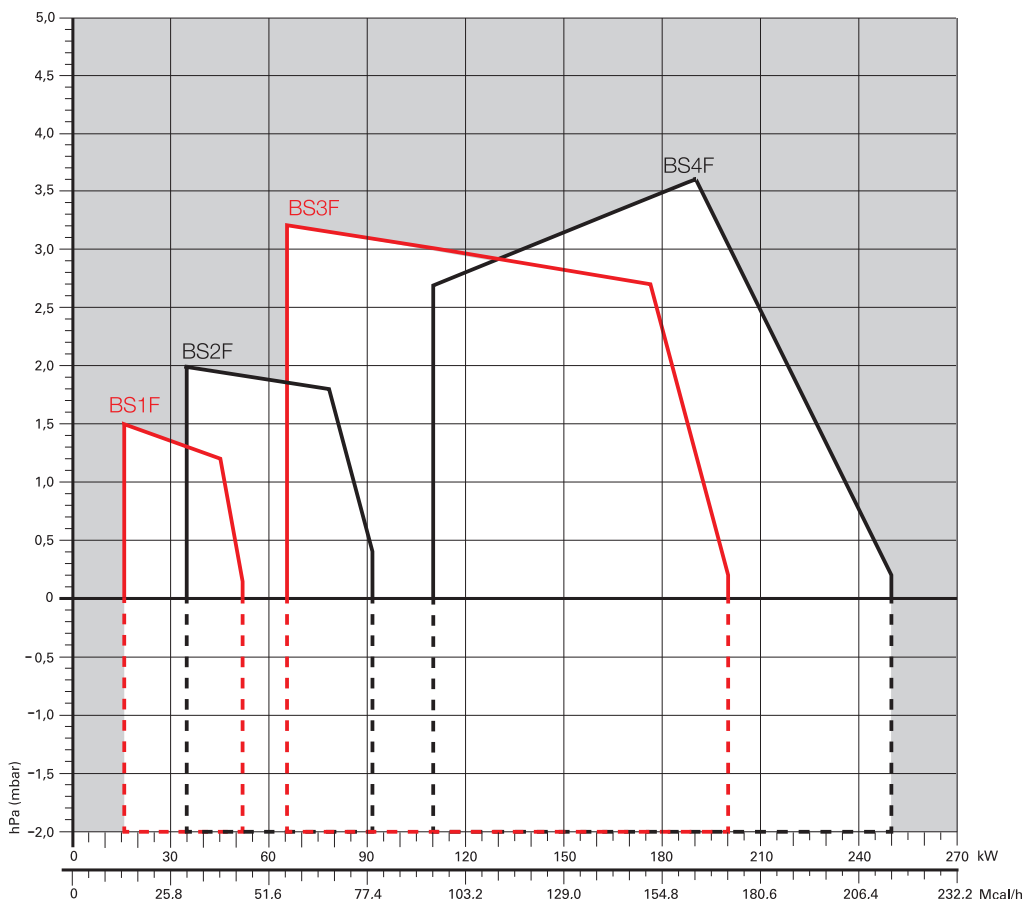
For depressurised working field see EN 746-2 Standard.

All the Gulliver BSF burners are fired before leaving the factory.



BS1F	16	÷	52	kW
BS2F	35	÷	91	kW
BS3F	65	÷	200	kW
BS4F	110	÷	250	kW

## FIRING RATES



Useful working field for choosing the burner

Test conditions conforming to EN676  
 Temperature: 20°C  
 Pressure: 1013,5 mbar  
 Altitude: 0 m a.s.l.

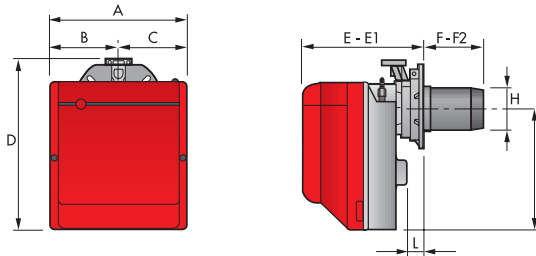
**IMPORTANT:**  
 For the part of the working field that is depressurised, refer to EN 746-2 Standard.

# Low NOx One Stage Gas Burners

## GULLIVER BSF SERIES

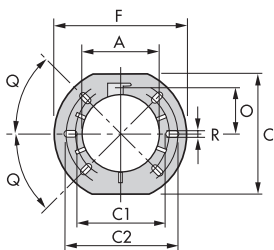
### Overall dimensions (mm)

#### BURNER



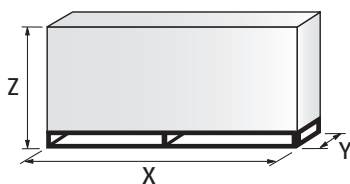
MODEL	A	B	C	D	E	E1	F	F2	H	I	L
▶ BS1F	234	122	112	295	230	276	116	70	89	210	41
▶ BS2F	255	125,5	125,5	325	238	252	114	100	106	230	45
▶ BS3F	300	150	150	391	262	280	128	110	129	285	45
▶ BS4F	300	150	150	392	278	301	168	145	137	286	45

#### BURNER - BOILER MOUNTING FLANGE



MODEL	A	C	C1	C2	F	O	Q	R
▶ BS1F	89	167	140	170	192	66	45°	11
▶ BS2F	106	167	140	170	192	66	45°	11
▶ BS3F	129	201	160	190	216	76,5	45°	11
▶ BS4F	137	203	170	200	218	80,5	45°	11

#### PACKAGING

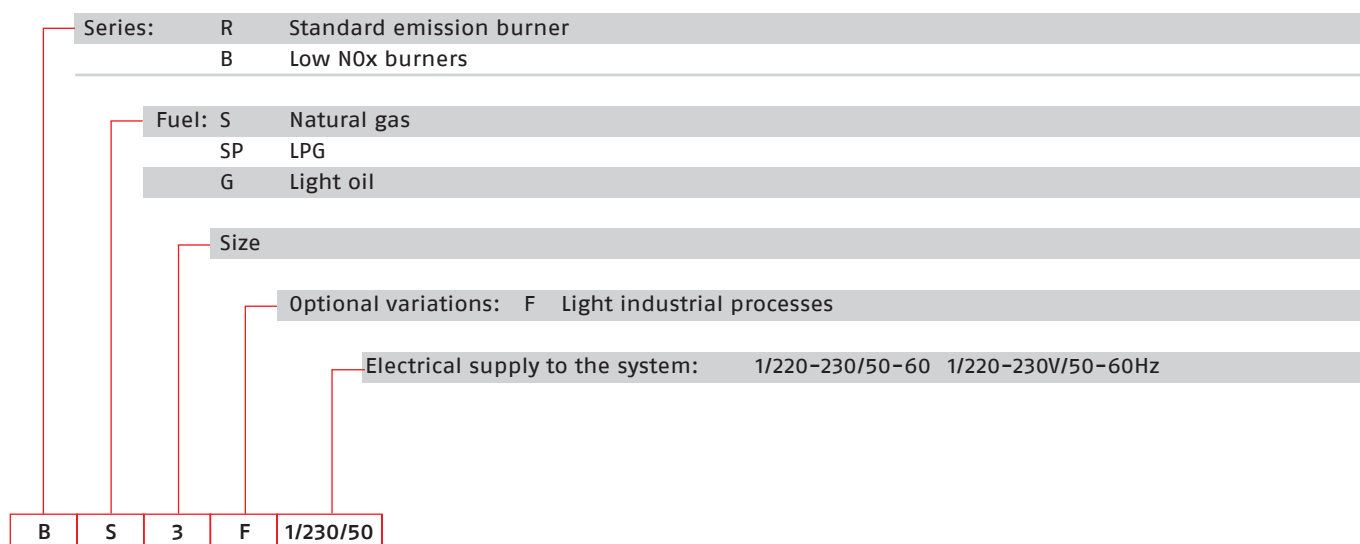


MODEL	X	Y	Z	kg
▶ BS1F	395	278	350	10
▶ BS2F	405	298	375	11
▶ BS3F	450	345	440	15
▶ BS4F	510	345	440	16,5

## GULLIVER BSF SERIES

## Specification

### DESIGNATION OF SERIES



### STATE OF SUPPLY

Monobloc, gas burners, completely automatic, with one stage operation fitted with:

- Fan with forward curve blades
- Cover lined with sound-proofing material
- Air damper always open in stand by, with external adjustment, with no need to remove the cover
- Single phase electric motor 220 - 230 V/50 - 60 Hz
- Combustion head fitted with:
  - stainless steel head cone, resistant to high temperatures
  - ignition electrodes
  - ionisation probe
  - gas distributor
  - flame stability disk
- Flame inspection window
- Adjustable air pressure switch, with graduated selector, to guarantee burner lock out in the case of insufficient combustible air
- Microprocessor-based burner safety control box, with diagnostic and remote reset functions
- Protection filter against radio interference (included into burner safety control box)
- IP X0D (IP 40) electric protection level.

#### Standard equipment:

- Flange with insulating gasket
- Screw and nut for flange
- Screw and nuts for flange to be fixed to the heat generator
- 7-pin plug
- Remote control release kit
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

# Low NOx One Stage Gas Burners

## GULLIVER BSF SERIES

### Available models

#### Burners

CODE	MODEL	HEAT OUTPUT		TOTAL ELECTRICAL POWER (kW)	CERTIFICATION	NOTE
		(kW)	NATURAL GAS (Nm <sup>3</sup> /h)			
3761171	BS1F 1/220-230/50-60	16 - 52	1,6 - 5,2	0,135 (at 50Hz) - 0,165 (at 60 Hz)	CE - 0085 AQ0409	(1)
3761271	BS2F 1/220-230/50-60	35 - 91	3,5 - 9,1	0,155 (at 50Hz) - 0,200 (at 60 Hz)	CE - 0085 AQ0409	(1)
3761371	BS3F 1/220-230/50-60	65 - 200	6,5 - 20	0,355 (at 50Hz) - 0,485 (at 60 Hz)	CE - 0085 AQ0409	(1)
3761471	BS4F 1/220-230/50-60	110 - 250	11,0 - 25	0,420 (at 50Hz) - 0,600 (at 60 Hz)	CE - 0085 AQ0409	(1)

Net calorific value G20: 10 kWh/Nm<sup>3</sup> - Density: 0,71 kg/Nm<sup>3</sup>.  
The burners of BSF series are in according to EN 676.  
(1) With plug and socket.

#### Gas Trains

GAS TRAIN CODE *	GAS TRAIN MODEL	NATURAL GAS		LPG		NOTE
		BURNER (type)	ADAPTER (code)	BURNER (type)	ADAPTER (code)	
MULTIBLOC	3970570	MBC 65/1 - F1SD 20	BS1F		BS1F	(1)
	3970546	MB 405/1 - F1SD 20	BS1F		BS1F	(1)
	3970547	MB 405/1 - F2SD 20	BS2F		BS2F	(1)
	3970544	MB 407/1 - F2SD 20	BS2F		BS2F	(1)
	3970548	MB 407/1 - F3SD 20	BS3F - BS4F		BS3F - BS4F	(1)
	3970549	MB 410/1 - F3SD 20	BS3F - BS4F		BS3F - BS4F	(1)
	3970550	MB 412/1 - F3SD 20	BS3F - BS4F		BS3F - BS4F	(1)

Please see Designation of Gas Train Series in the page before the Catalogue index.

\* Gas trains are 230V/50Hz - 220V/60Hz electrical supply.

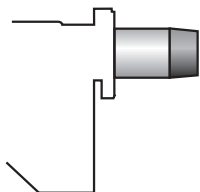
(1) With installed plug.

The valve seal control device is compulsory (conforming to EN 676) on gas trains to burners with a maximum output over 1200 kW.

To select the gas train please refer to the technical data leaflet and/or instruction manual.

## Burner accessories

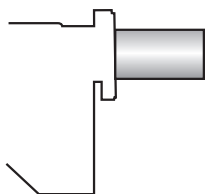
### Extended head kit



Burners standard head can be transformed into "extended head" versions by using the special kit. Here the kits available for the various burners are listed, showing the original and the extended lengths.

BURNER	STANDARD HEAD LENGTH (mm)	EXTENDED HEAD LENGTH (mm)	KIT CODE
▶ BS2F (long)	100 ÷ 114	170 ÷ 180	3001007
▶ BS2F (extra long)	100 ÷ 114	270 ÷ 280	3001008
▶ BS3F	110 ÷ 128	267 ÷ 282	3001009
▶ BS4F	145 ÷ 168	302 ÷ 317	3001016

### Alternative combustion head kit



This kit can be used to prevent combustion instability which could arise with particular heat generators.

To extend the adaptability of Gulliver BSF burners to any sort of application, alternative combustion heads have been developed.

These heads cause a very limited increase in NOx emissions, due to the slower air flow.

BURNER	KIT CODE
▶ BS1F	3001059
▶ BS2F	3001064
▶ BS3F	3001060
▶ BS4F	3001070

### LPG kit



For burning LPG gas, a special kit is available to be fitted to the combustion head on the burner, as shown in the following table.

BURNER	KIT CODE FOR STANDARD HEAD	KIT CODE FOR EXTENDED HEAD
▶ BS1F	3001003	3001003
▶ BS2F	3001004	3001004
▶ BS3F	3001005	3001005
▶ BS4F	3001011	3001011

### Town Gas kit



For burning Town Gas, a special kit is available to be fitted to the combustion head on the burner, as shown in the following table.

BURNER	KIT CODE FOR STANDARD HEAD (*)	KIT CODE FOR EXTENDED HEAD (*)
▶ BS1F	3002727	-
▶ BS2F	3002728	3002728
▶ BS3F	3002729	3002729

(\*) Without CE certification

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### Burner accessories

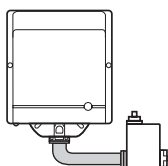
#### Ground fault interrupter kit



A "ground fault interrupter kit" is available as safety device in case of electrical system fault.

BURNER	KIT CODE
► BS1F – BS2F – BS3F – BS4F	3001180

#### Multibloc rotation kit



There is a special kit available that can be used to install the burner turned 180°. This kit is designed to ensure the gas train valve properly.

BURNER	KIT CODE
► BS1F	3001179
► BS2F	3001177
► BS3F – BS4F	3001178

#### 7-pin plug kit

If necessary a 7-pin plug kit is available (in packaging of n. 5 pieces).

BURNER	KIT CODE
► All models	3000945

#### PC interface kit



To connect the control box to a personal computer for the transmission of operation, fault signals and detailed service information, an interface adapter with PC software are available.

BURNER	KIT CODE
► BS1F – BS2F – BS3F – BS4F	3002731

### Gas train accessories

#### Seal control kit



To test the valve seals on the gas train, (except for the model with Multibloc MBC 65 DLE) a special "seal control kit" is available.

GAS TRAIN	KIT CODE for 50 Hz operation	KIT CODE for 60 Hz operation
► MB/1 type	3010123	20050030