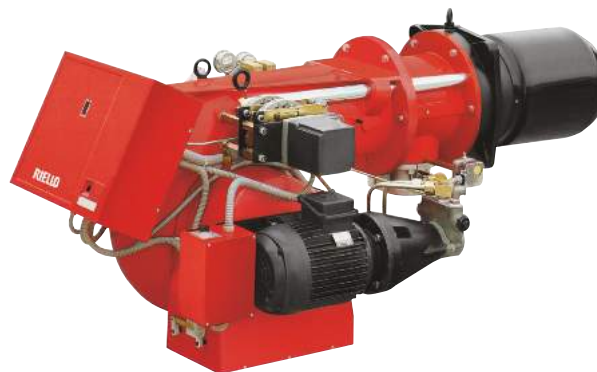


## GI/EMME 1400÷4500 SERIES

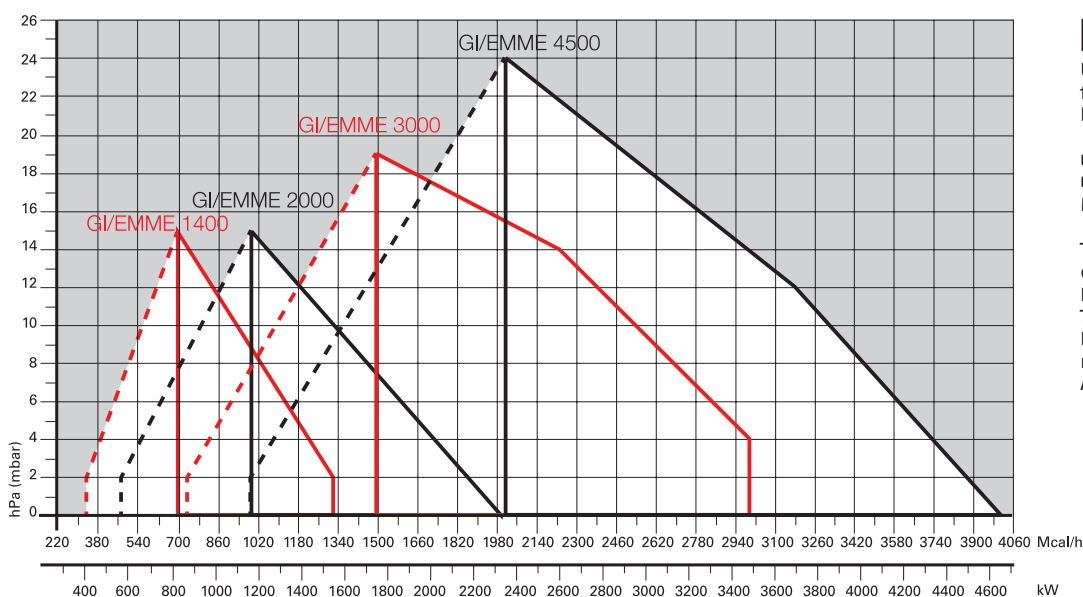
The GI/EMME 1400-4500 series of burners covers a firing range from 820 to 4650 kW. They have been designed for high output users and they are suitable for matching with every kind of boilers, with normal or pressurized combustion chamber.

Operation can be "two stage progressive" or, alternatively, "modulating" with the installation of a PID logic regulator and respective probes. Two options of operation are available: only gas and only light oil, thus settable by a manual switch. Light oil circuit is fitted with his own electric motor: this permits pump stop during gas operation preventing danger of pumping seizure and avoiding oil circulation. A wide range of accessories and gas trains suitable to the burners guarantee an elevated working flexibility.



GI/EMME 1400	407/820 ÷ 1540 kW
GI/EMME 2000	581/1163 ÷ 2325 kW
GI/EMME 3000	872/1744 ÷ 3488 kW
GI/EMME 4500	1163/2350 ÷ 4650 kW

### FIRING RATES



Useful working field for choosing the burner

Modulation range

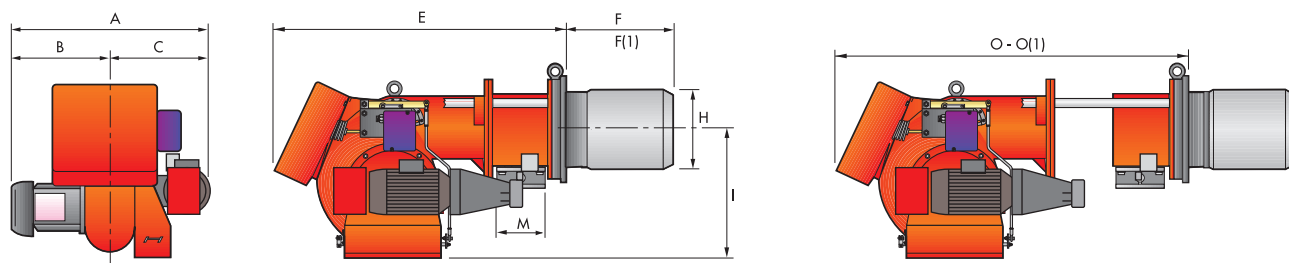
Test conditions conforming to EN267- EN676  
 Temperature: 20°C  
 Pressure: 1013,5 mbar  
 Altitude: 0 m a.s.l.

# Modulating Dual Fuel Burners

## GI/EMME 1400÷4500 SERIES

### Overall dimensions (mm)

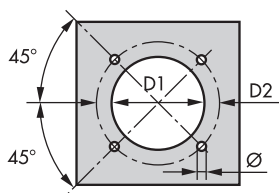
#### BURNER



MODEL	A	B	C	E	F - F(1)	H	I	M	O - O(1)
▶ GI/EMME 1400	858	376	482	1090	385 - 495	250	467	2"	1407 - 1585
▶ GI/EMME 2000	878	396	482	1090	385 - 495	260	467	DN 80	1407 - 1585
▶ GI/EMME 3000	985	447	538	1320	476 - 606	336	525	DN 80	1796 - 2000
▶ GI/EMME 4500	1046	508	538	1320	476 - 606	336	525	DN 80	1796 - 1926

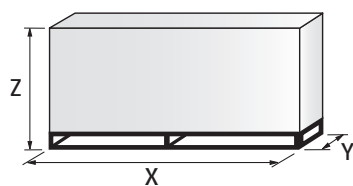
(1) Length with extended combustion head

#### BURNER - BOILER MOUNTING FLANGE



MODEL	D1	D2	Ø
▶ GI/EMME 1400	255	368	M16
▶ GI/EMME 2000	265	368	M16
▶ GI/EMME 3000	340	438	M20
▶ GI/EMME 4500	340	438	M20

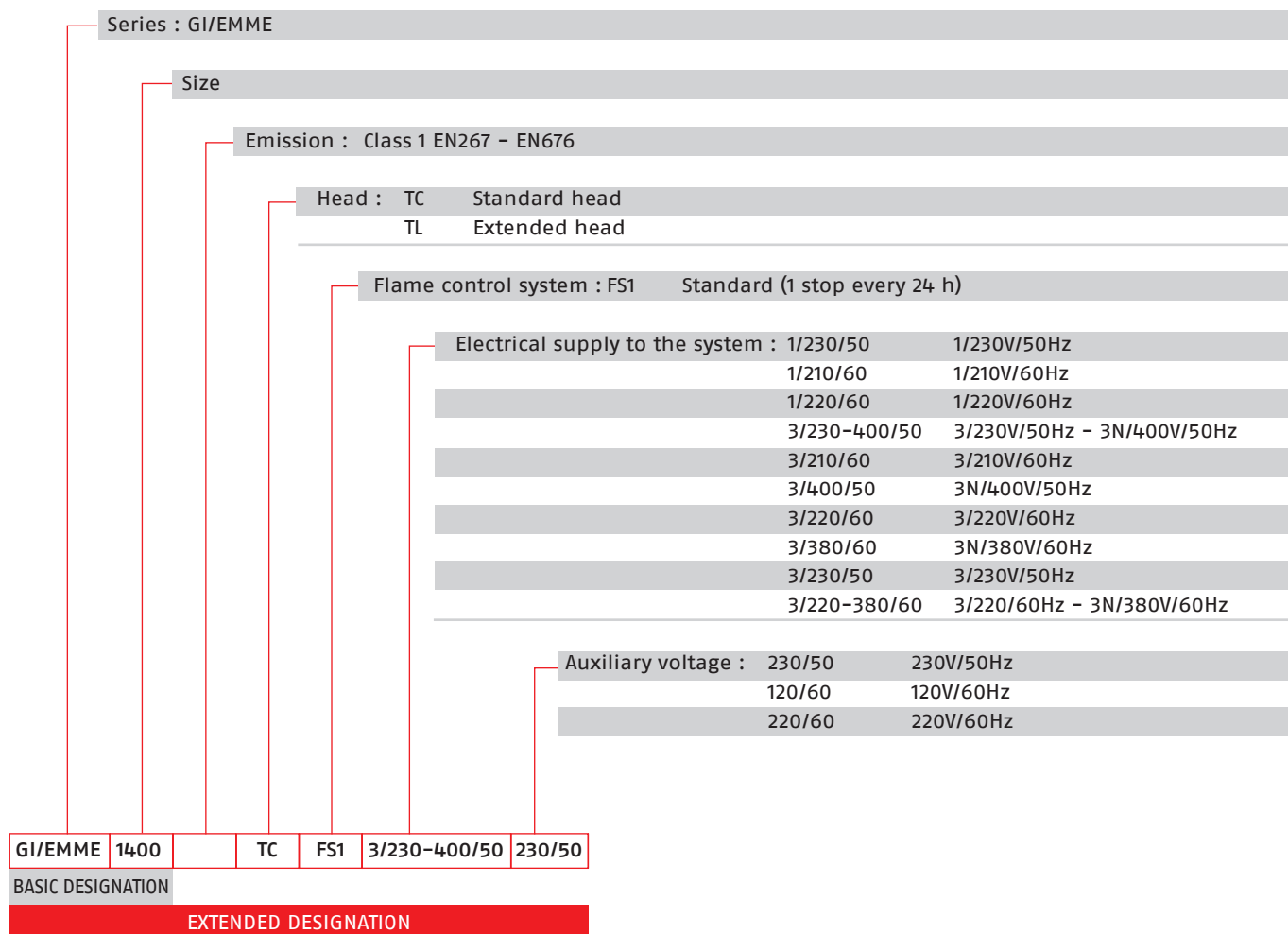
#### PACKAGING



MODEL	X	Y	Z	kg
▶ GI/EMME 1400	1740	990	950	190
▶ GI/EMME 2000	1740	990	950	200
▶ GI/EMME 3000	2040	1180	1125	280
▶ GI/EMME 4500	2040	1180	1125	500

## Specification

### DESIGNATION OF SERIES



# Modulating Dual Fuel Burners

## GI/EMME 1400÷4500 SERIES

### Specification

#### STATE OF SUPPLY

Monoblock forced draught dual fuel burner, two stage progressive or modulating operation with a kit, made up of:

- Air suction circuit
- Fan with forward curved blades
- Air damper for setting and butterfly valve for regulating fuel output controlled by a servomotor
- Combustion head, that can be set on the basis of required output
- Maximum gas pressure switch
- Minimum air pressure switch
- Fan electrical motor
- Pump electrical motor
- Gears pump for high pressure fuel supply, fitted with:
  - filter
  - pressure regulator
  - connections for installing a pressure gauge and a a vacuumeter
  - internal by-pass for single pipe installation
- Valve unit with a double oil safety valve on the output circuit and safety valve on the return circuit
- UV photocell for flame detection
- Flame inspection window
- Slide bars for easier installation and maintenance
- Protection filter against radio interference
- IP X0D (IP 40) protection level.

#### Standard equipment:

- 1 flange (for GI/EMME 1400)
- 1 gas train flange
- 8 screws for fixing the burner flange to the boiler (for GI/EMME 1400)
- 12 screws for fixing the burner flange to the boiler
- 1 insulating screen
- 2 flexible hoses for connection to the oil supply circuit
- 2 nipples for connection to the pump
- 4 wiring looms fittings for electrical connections
- 2 pin extensions
- 8 washers (for GI/EMME 1400)
- 12 washers
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

# Modulating Dual Fuel Burners

## GI/EMME 1400÷4500 SERIES

**RIELLO**

## Available models

### Burners

CODE	MODEL	HEAT OUTPUT			MOTORS ELECTRICAL POWER (kW)	CERTIFICATION	NOTE
		(kW)	LIGHT OIL (kg/h)	NATURAL GAS (Nm <sup>3</sup> /h)			
3486683	GI/EMME 1400 TC FS1 3/220-380/60 220/60	415/814-1660	35/69-140	41/81-166	5,0	-	
3486655	GI/EMME 1400 TC FS1 3/230-400/50 230/50	407/820-1540	34/69-130	41/82-154	5,0	(1)	
3486684	GI/EMME 1400 TL FS1 3/220-380/60 220/60	415/814-1660	35/69-140	41/81-166	5,0	-	
3486656	GI/EMME 1400 TL FS1 3/230-400/50 230/50	407/820-1540	34/69-130	41/82-154	5,0	(1)	
3487683	GI/EMME 2000 TC FS1 3/220-380/60 220/60	590/1163-2370	50/98-200	59/116-237	6,4	-	
3487657	GI/EMME 2000 TC FS1 3/230-400/50 230/50	581/1163-2325	49/98-196	58/116-233	6,4	(2)	
3487659	GI/EMME 2000 TC FS1 3/400/50 230/50	581/1163-2325	49/98-196	58/116-233	6,4	(2)	*
3487684	GI/EMME 2000 TL FS1 3/220-380/60 220/60	590/1163-2370	50/98-200	59/116-237	6,4	-	
3487658	GI/EMME 2000 TL FS1 3/230-400/50 230/50	581/1163-2325	49/98-196	58/116-233	6,4	(2)	
3487660	GI/EMME 2000 TL FS1 3/400/50 230/50	581/1163-2325	49/98-196	58/116-233	6,4	(2)	*
3488783	GI/EMME 3000 TC FS1 3/220-380/60 220/60	890/1744-3560	75/147-300	89/174-356	10,7 - 12,5	-	
3488757	GI/EMME 3000 TC FS1 3/230-400/50 230/50	872/1744-3488	74/147-294	87/174-349	10,7 - 12,5	(3)	
3488759	GI/EMME 3000 TC FS1 3/400/50 230/50	872/1744-3488	74/147-294	87/174-349	10,7 - 12,5	(3)	*
3488784	GI/EMME 3000 TL FS1 3/220-380/60 220/60	890/1744-3560	75/147-300	89/174-356	10,7 - 12,5	-	
3488758	GI/EMME 3000 TL FS1 3/230-400/50 230/50	872/1744-3488	74/147-294	87/174-349	10,7 - 12,5	(3)	
3488760	GI/EMME 3000 TL FS1 3/400/50 230/50	872/1744-3488	74/147-294	87/174-349	10,7 - 12,5	(3)	*
3489085	GI/EMME 4500 TC FS1 3/220/60 220/60	1190/2325-5100	100/196-430	119/233-510	10,7 - 12,5	-	*
3489063	GI/EMME 4500 TC FS1 3/230/50 230/50	1163/2350-4650	98/198-392	116/235-465	10,7 - 12,5	(4)	*
3489087	GI/EMME 4500 TC FS1 3/380/60 220/60	1190/2325-5100	100/196-430	119/233-510	10,7 - 12,5	-	*
3489065	GI/EMME 4500 TC FS1 3/400/50 230/50	1163/2350-4650	98/198-392	116/235-465	10,7 - 12,5	(4)	*
3489086	GI/EMME 4500 TL FS1 3/220/60 220/60	1190/2325-5100	100/196-430	119/233-510	10,7 - 12,5	-	*
3489064	GI/EMME 4500 TL FS1 3/230/50 230/50	1163/2350-4650	98/198-392	116/235-465	10,7 - 12,5	(4)	*
3489088	GI/EMME 4500 TL FS1 3/380/60 220/60	1190/2325-5100	100/196-430	119/233-510	10,7 - 12,5	-	*
3489066	GI/EMME 4500 TL FS1 3/400/50 230/50	1163/2350-4650	98/198-392	116/235-465	10,7 - 12,5	(4)	*

(1) CE 0085AQ0712.

(2) CE 0085AQ0712.

(3) CE 0085AQ0712.

(4) CE 0085AQ0712.

\* Star delta starter.

Net calorific value light oil: 11,8 kWh/kg; 10.200 kcal/kg - Viscosity at 20°C: 4-6 mm<sup>2</sup>/s (cSt).

Net calorific value G20 gas: 10 kWh/Nm<sup>3</sup>; 8.600 kcal/Nm<sup>3</sup> - Density: 0,71 kg/Nm<sup>3</sup>.

The burners of GI/EMME series are in according to 90/396 - 2004/108 - 2006/95 EC Directive and EN 267-676 Norm.

# Modulating Dual Fuel Burners

## GI/EMME 1400÷4500 SERIES

### Available models

#### Gas Trains

CODE	GAS TRAIN			VPS CODE	ADAPTER CODE			
	MODEL	Ø	C.T.		G/M 1400	G/M 2000	G/M 3000	G/M 4500
3970256*	MB 412/1 - RT 52	Rp 1" ¼	-	3010123	3010126	●	●	●
3970144*	MB 412/1 - RT 20	Rp 1" ¼	-	3010123		●	●	●
3970197**	MB 412/1 CT RT 20	Rp 1" ¼	◆	-		●	●	●
3970231*	MB 412/1 - RSM 20	Rp 1" ¼	-	3010123		●	●	●
3970180*	MB 415/1 - RT 30	Rp 1" ½	-	3010123	3000843	20064220 + 3010128		●
3970198**	MB 415/1 CT RT 30	Rp 1" ½	◆	-				●
3970250*	MB 415/1 - RT 52	Rp 1" ½	-	3010123				●
3970253**	MB 415/1 CT RT 52	Rp 1" ½	◆	-				●
3970232*	MB 415/1 - RSM 30	Rp 1" ½	-	3010123	-			●
3970181*	MB 420/1 - RT 30	Rp 2"	-	3010123				●
3970182**	MB 420/1 CT RT 30	Rp 2"	◆	-				●
3970257*	MB 420/1 - RT 52	Rp 2"	-	3010123				●
3970252**	MB 420/1 CT RT 52	Rp 2"	◆	-	-	20042324 + 3010128		●
3970233*	MB 420/1 - RSM 30	Rp 2"	-	3010123				●
3970234**	MB 420/1 CT RSM 30	Rp 2"	◆	-				●
3970221*	MBC 1200/1 - RSM 60	Rp 2"	-	3010367				●
3970225**	MBC 1200/1 CT RSM 60	Rp 2"	◆	-	-	20042324 + 3010128		
3970222*	MBC 1900/1 - FSM 40	DN 65	-	3010367				
3970226**	MBC 1900/1 CT FSM 40	DN 65	◆	-	3000825	3000831		
3970223*	MBC 3100/1 - FSM 40	DN 80	-	3010367	3000826	3000832		
3970227**	MBC 3100/1 CT FSM 40	DN 80	◆	-				
3970224*	MBC 5000/1 - FSM 80	DN 100	-	3010367	●	●	3010127	
3970228**	MBC 5000/1 CT FSM 80	DN 100	◆	-	●			
3970145*	CB 512/1 - RSM 30	Rp 1" ½	-	3010367	3000843	20064220 + 3010128		●
20045589**	CB 512/1 CT RSM 30	Rp 1" ½	◆	-				●
3970146*	CB 520/1 - RSM 30	Rp 2"	-	3010367	-	20042324 + 3010128		
3970160**	CB 520/1 CT RSM 30	Rp 2"	◆	-				
20044659*	CB 525/1 - RSM 30	Rp 2"	-	3010367				
20044660**	CB 525/1 CT RSM 30	Rp 2"	◆	-				
3970147*	CB 5065/1 - FSM 30	DN 65	-	3010367	3000825	3000831		
3970161**	CB 5065/1 CT FSM 30	DN 65	◆	-				
3970148*	CB 5080/1 - FSM 30	DN 80	-	3010367	3000826	3000832		
3970162**	CB 5080/1 CT FSM 30	DN 80	◆	-				
3970149*	CB 50100/1 - FSM 30	DN 100	-	3010367	3010370 +	3010127		
3970163**	CB 50100/1 CT FSM 30	DN 100	◆	-	3000826			
20015871*	CB 50125/1 - FSM 30	DN 125	-	3010367	3010224 +	3090940		
3970196**	CB 50125/1 CT FSM 30	DN 125	◆	-	3000826			

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

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

\*\* 230V/50Hz electrical supply.

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.

C.T. Gas valve leak detection control device:

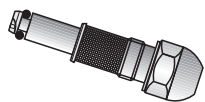
- gas train not equipped with leak detection control device; this device can be ordered separately - see VPS column - and installed later.
- ◆ gas train equipped with leak detection control device.

VPS Valve leak detection control device. Supplied separately from the gas train (please see Gas train accessories paragraph for both 50 Hz and 60 Hz codes).

● Not available.

## Burner accessories

### Nozzles type B5-SA 45°



The nozzles must be ordered separately. The following table shows the features and codes on the basis of the maximum required fuel output.

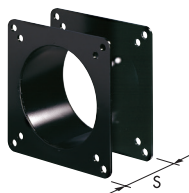
NOTE: each burner needs N° 1 nozzle.

BURNER	RATED DELIVERY (kg/h)	NOZZLE CODE (1)	NOZZLE CODE (2)
▶ GI/EMME 1400	70	3009303	3045471
▶ GI/EMME 1400	80	3009305	3045472
▶ GI/EMME 1400	90	3009307	3045473
▶ GI/EMME 1400 - 2000	100	3009310	3045475
▶ GI/EMME 1400 - 2000	125	3009312	3045477
▶ GI/EMME 2000 - 3000	150	3009314	3045479
▶ GI/EMME 2000 - 3000	175	3009316	3045481
▶ GI/EMME 2000 - 3000 - 4500	200	3009318	3045483
▶ GI/EMME 3000 - 4500	225	3009320	3045485
▶ GI/EMME 3000 - 4500	250	3009322	3045487
▶ GI/EMME 3000 - 4500	275	3009324	3045489
▶ GI/EMME 3000 - 4500	300	3009326	3045491
▶ GI/EMME 4500	325	3009328	3045493
▶ GI/EMME 4500	350	3009330	3045495
▶ GI/EMME 4500	375	3009332	3045497
▶ GI/EMME 4500	400	3009334	3045499

(1) Nozzles Bergonzo B5 45° - without "SA" needle code.

(2) Nozzles Fluidics N2 45° - without needle code.

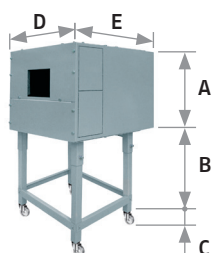
### Spacer kit



If burner head penetration into the combustion chamber needs reducing, varying thickness spacers are available, as given in the following list.

BURNER	SPACER THICKNESS S (mm)	KIT CODE
▶ GI/EMME 1400 - 2000	102	3000722
▶ GI/EMME 3000 - 4500	130	3000751

### Sound proofing box



If noise emission needs reducing even further, sound-proofing boxes are available. In case of generator heights, where a lower dimension "B" is required, ask for the Box Support Kit code 20065135. The useful dimensions are 40 mm less than the total dimensions indicated in the table (A, D, E). Not suitable for outdoor use.

BURNER	BOX TYPE (mm)	A (mm)	B (mm) min-max	C (mm)	D (mm)	E (mm)	[dB(A)] (*)	BOX CODE
▶ GI/EMME 1400 - 2000	C7	1255	160 - 980	110	1140	1345	10	3010376
▶ GI/EMME 3000 - 4500								

(\*) Average noise reduction according to EN 15036-1 standard

# Modulating Dual Fuel Burners

## GI/EMME 1400÷4500 SERIES

### Burner accessories

#### Accessories for modulating operation



To obtain modulating operation, the GI/EMME series of burners requires a regulator.

BURNER	REGULATOR TYPE	REGULATOR CODE
▶ GI/EMME 1400 - 2000 - 3000 - 4500	RWF 40	3010211



The relative temperature or pressure probes fitted to the regulator, must be chosen on the basis of the application.

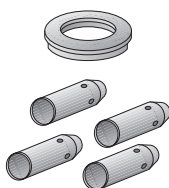
BURNER	PROBE TYPE	RANGE (°C) (bar)	PROBE CODE
▶ GI/EMME 1400 - 2000 GI/EMME 3000 - 4500	Temperature PT 100	-100 ÷ 500°C	3010110
	Pressure 4 ÷ 20 mA	0 ÷ 2,5 bar	3010213
	Pressure 4 ÷ 20 mA	0 ÷ 16 bar	3010214
	Pressure 4 ÷ 20 mA	0 ÷ 25 bar	3090873



Depending on the servomotor fitted to the burner, a three-pole potentiometer (1000 Ω) can be installed to check the position of the servomotor.

BURNER	POTENTIOMETER KIT CODE
▶ GI/EMME 1400 - 2000 - 3000 - 4500	3010021

#### LPG kit

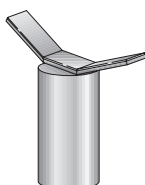


For burning LPG gas, a special kit is available to be fitted to the combustion head on the burner, as given in the following table.

BURNER	KIT CODE FOR 'STANDARD HEAD' (*)	KIT CODE FOR 'EXTENDED HEAD' (*)
▶ GI/EMME 1400 - 2000	3010063	3010063
▶ GI/EMME 3000	3090223	3090223
▶ GI/EMME 4500	3090937	3090937

(\*) Without CE certification

#### Burner support



For easier maintenance, a mobile burner support has been designed, which means the burner can be dismantled without the need of forklift trucks.

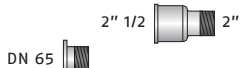
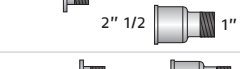


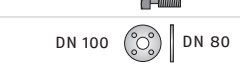

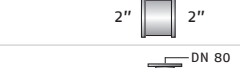

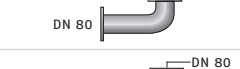



BURNER	SUPPORT CODE
▶ GI/EMME 1400 - 2000 - 3000 - 4500	3000731



## Gas train accessories

### Adapters

In certain cases, an adapter must be fitted between the gas train and the burner, when the diameter of the gas train is different from the set diameter of the burner. Below are given the available adapters; please see on the Gas Train list the correct adapter codes to select.

ADAPTER	LENGTH mm	ADAPTER CODE
 DN 65 2" 1/2 2"	300	3000825
 DN 65 2" 1/2 1" 1/2		
 DN 80 2" 1/2 2"	300	3000826
 1" 1/2 2"	35	3000843
 1" 1/4 2"	35	3010126
 DN 100 DN 80	50	3010370
 1" 1/2 2"	65	20064220
 2" 2"	65	20042324
 DN 65 DN 80	320	3000831
 DN 80 DN 80	320	3000832
 DN 100 DN 80	320	3010127
 DN 80 DN 65 2" 1/2 2"	540	3010128

# Modulating Dual Fuel Burners

## GI/EMME 1400÷4500 SERIES

### Gas train accessories

#### Stabiliser spring



To vary the pressure range of the gas train stabilisers, accessory springs are available. The following table shows these accessories with their application range. Please refer to the technical manual for the correct choice of spring.

GAS TRAIN	SPRING COLOUR	SPRING PRESSURE RANGE mbar	SPRING CODE
▶ MBC 1900/1 – 3100/1 MBC 5000/1	White	4 – 20	3010381
	Red	20 – 40	3010382
	Black	40 – 80	3010383
	Green	80 – 150	3010384
▶ CB 512/1	Red	25 – 55	3010131
	Black	60 – 110	3010157
	Pink	90 – 150	3090486
▶ CB 520/1 – 525/1	Red	25 – 55	3010132
	Black	60 – 110	3010158
	Pink	100 – 150	3090487
▶ CB 5065/1 – 5080/1	Red	25 – 55	3010133
	Black	60 – 110	3010135
	Pink	100 – 150	3090456
▶ CB 50100/1	Grey	140 – 200	3090992
	Red	25 – 55	3010134
	Black	60 – 110	3010136
	Pink	100 – 150	3090489
▶ CB 50125/1	Grey	140 – 200	3092174
	Red	25 – 55	3010315
	Yellow	30 – 70	3010316
	Black	60 – 110	3010317
	Pink	100 – 150	3010318

#### Seal control kit



To test the valve seals on the gas train, a special “seal control kit” is available. The valve seal control device is compulsory (EN 676) on gas trains to burners with a maximum output over 1200 kW. The seal control is type VPS 504.

GAS TRAIN	KIT CODE for 50 Hz operation	KIT CODE for 60 Hz operation
▶ MB/1 type	3010123	20050030
▶ MBC/1 type	3010367	20029057
▶ CB/1 type	3010367	20029057