

GI/EMME 1400÷4500 SERIES

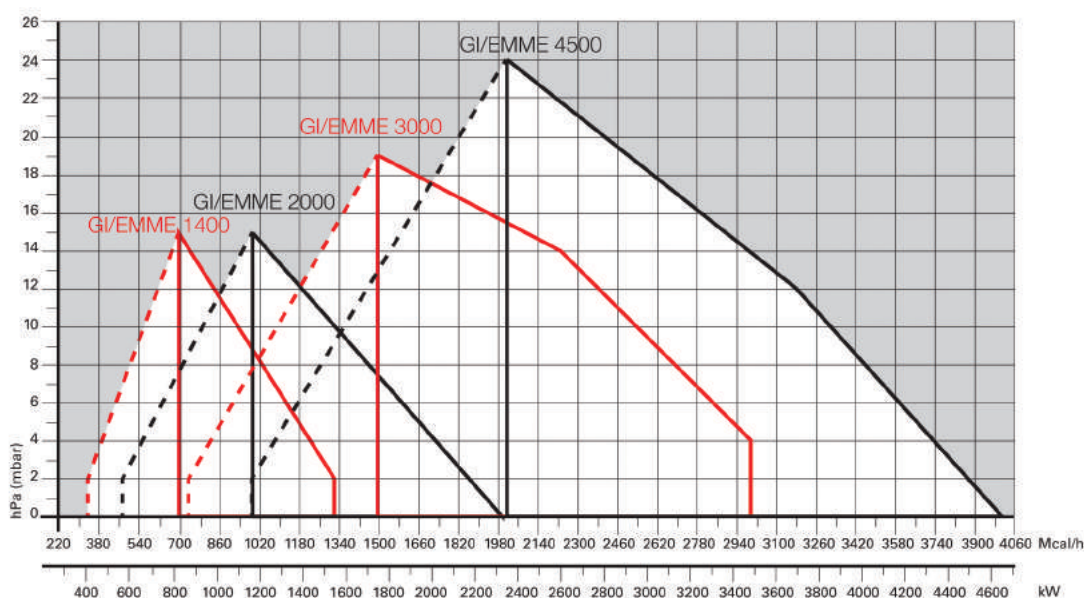
The GI/EMME 1400-4500 series of burners covers a firing range from 820 to 4650 kW. They have been designed for high output users and they are suitable for matching with every kind of boilers, with normal or pressurized combustion chamber.

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

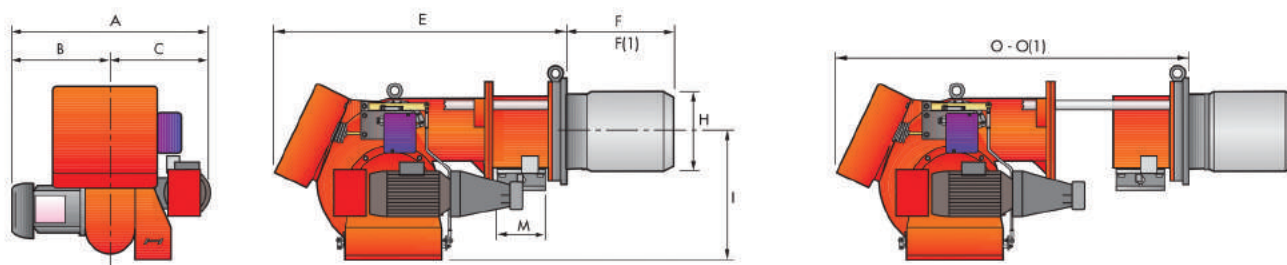
Test conditions conforming to EN267- EN676
Temperature: 20°C
Pressure: 1013,5 mbar
Altitude: 0 m a.s.l.

Modulating Dual Fuel Burners

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Overall dimensions (mm)

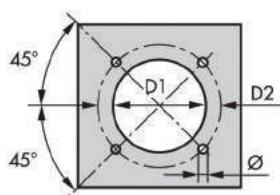
BURNER



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

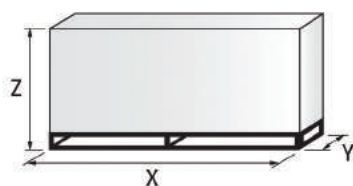
(1) Length with extended combustion head

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

Modulating Dual Fuel Burners

GI/EMME 1400÷4500 SERIES

RIELLO

Specification

DESIGNATION OF SERIES

Series : GI/EMME						
Size						
Emission : Class 1 EN267 - EN676						
Head : TC Standard head						
TL Extended head						
Flame control system : FS1 Standard (1 stop every 24 h)						
Electrical supply to the system :						
			1/230/50	1/230V/50Hz		
			1/210/60	1/210V/60Hz		
			1/220/60	1/220V/60Hz		
			3/230-400/50	3/230V/50Hz - 3N/400V/50Hz		
			3/210/60	3/210V/60Hz		
			3/400/50	3N/400V/50Hz		
			3/220/60	3/220V/60Hz		
			3/380/60	3N/380V/60Hz		
			3/230/50	3/230V/50Hz		
			3/220-380/60	3/220/60Hz - 3N/380V/60Hz		
Auxiliary voltage :						
			230/50	230V/50Hz		
			120/60	120V/60Hz		
			220/60	220V/60Hz		
GI/EMME	1400		TC	FS1	3/230-400/50	230/50
BASIC DESIGNATION						
EXTENDED DESIGNATION						

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 ³ /h)			
20163249	GI/EMME 1400 TC FS1 3/230-400/50 230/50	407/820-1540	34/69-130	41/82-154	5,0	(1)	(7)
20163270	GI/EMME 2000 TC FS1 3/220-380/60 220/60	590/1163-2370	50/98-200	59/116-237	6,4	-	(7)
20163312	GI/EMME 2000 TC FS1 3/230-400/50 230/50	581/1163-2325	49/98-196	58/116-233	6,4	(2)	(7)
20163306	GI/EMME 3000 TC FS1 3/380/60 220/60	890/1744-3560	75/147-300	89/174-356	10,7 - 12,5	-	(5)(7)
20160903	GI/EMME 3000 TC FS1 3/400/50 230/50	872/1744-3488	74/147-294	87/174-349	10,7 - 12,5	(3)	(5)(7)
20162388	GI/EMME 3000 TC FS1 3/400/50 230/50	872/1744-3488	74/147-294	87/174-349	10,7 - 12,5	(3)	(6)(7)
20160912	GI/EMME 4500 TC FS1 3/400/50 230/50	1163/2350-4650	98/198-392	116/235-465	10,7 - 12,5	(4)	(6)(7)

(1) CE 0085AQ0712.

(2) CE 0085AQ0712.

(3) CE 0085AQ0712.

(4) CE 0085AQ0712.

(5) For the 3/230/50 version use the 220 - 230 V conversion kit (see the burner accessories paragraph)

(6) Star delta starter.

(7) with RFGO control box

Net calorific value light oil: 11,8 kWh/kg; 10.200 kcal/kg - Viscosity at 20°C: 4-6 mm²/s (cSt).

Net calorific value G20 gas: 10 kWh/Nm³; 8.600 kcal/Nm³ - Density: 0,71 kg/Nm³.

The burners of GI/EMME series are in according to 2016/426/EU - 2014/30/EU - 2014/35/EU - 2006/42 CE Directive and EN 267-676 Norm.

Due to the improvement of the technical specification of some products, some burner codes have been changed. The table below summarizes the correspondence between the previous and the new code.

MODEL		NEW CODE	OLD CODE
GI/EMME 1400 TC FS1 3/230-400/50 230/50		20163249 (7)	3486655
GI/EMME 2000 TC FS1 3/230-400/50 230/50		20163312 (7)	3487657
GI/EMME 2000 TC FS1 3/220-380/60		20163270 (7)	3487683
GI/EMME 3000 TC FS1 3/400/50 230/50		20162388 (7)	3488759
GI/EMME 3000 TC FS1 3/400/50 230/50		20160903 (7)	3488757
GI/EMME 3000 TC FS1 3/380/60		20163306 (7)	3488783
GI/EMME 4500 TC FS1 3/400/50 230/50		20160912 (7)	3489065

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" 1/4	-	3010123	3010126	●	●	●
3970144*	MB 412/1 - RT 20	Rp 1" 1/4	-	3010123		●	●	●
3970197**	MB 412/1 CT RT 20	Rp 1" 1/4	◆	◆		●	●	●
3970231*	MB 412/1 - RSM 20	Rp 1" 1/4	-	3010123		●	●	●
3970180*	MB 415/1 - RT 30	Rp 1" 1/2	-	3010123	3000843	20064220 + 3010128		●
3970198**	MB 415/1 CT RT 30	Rp 1" 1/2	◆	◆				●
3970250*	MB 415/1 - RT 52	Rp 1" 1/2	-	3010123				●
3970253**	MB 415/1 CT RT 52	Rp 1" 1/2	◆	◆				●
3970232*	MB 415/1 - RSM 30	Rp 1" 1/2	-	3010123	□	20042324 + 3010128		●
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"	◆	◆				●
3970233*	MB 420/1 - RSM 30	Rp 2"	-	3010123				●
3970234**	MB 420/1 CT RSM 30	Rp 2"	◆	◆	□			●
20137718*	VGd 50/1 - RT 122	Rp 2"	-	3010123+ 20186306	□	20042324+3010128		
20169190**	VGd 50/1 CT RT 122	Rp 2"	◆	◆	□	20042324+3010128		
20140762*	VGd 65/1 - FT 122	DN 65 (1)	-	3010123	3000826	3000832		
20169191**	VGd 65/1 CT FT 122	DN 65 (1)	◆	◆	3000826	3000832		
20140763*	VGd 80/1 - FT 122	DN 80	-	3010123	3000826	3000832		
20169192**	VGd 80/1 CT FT 122	DN 80	◆	◆	3000826	3000832		
20169193*	VGd 100/1 - FT 122	DN 100	-	3010123	3010370 + 3000826	3010127		
20169194**	VGd 100/1 CT FT 122	DN 100	◆	◆	3010370 + 3000826	3010127		
20169195*	VGd 125/1 - FT 122	DN 125	-	3010123	●	●	3090940	
20169196**	VGd 125/1 CT FT 122	DN 125	◆	◆	●	●	3090940	

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.

(1) Øin = DN 65, Øout = DN 80.

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.

□ Additional adapter not necessary, the gas train may be connected directly to the burner.

Modulating Dual Fuel Burners

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RIELLO

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.

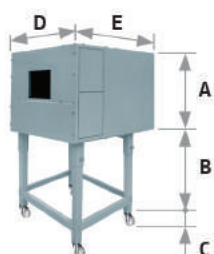
Spacer kit



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. When a lower "B" dimension is required, it is available the Box Support Kit code 20065135 which allows to reduce it at the fixed dimension of 55 mm. The sound-proofing boxes are 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 GI/EMME 3000 - 4500	C7	1255	160 - 980	110	1140	1345	10	3010376

(*) 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. For remote setpoint use RWF 55.

BURNER	REGULATOR TYPE	REGULATOR CODE
► GI/EMME 1400 – 2000 – 3000 – 4500	RWF 50.2	20100018
	RWF 55.5	20101965

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	20096322

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

Burner accessories

220-230 V conversion kit

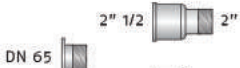
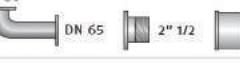
This kit is required to convert the 380-400 V models into the 220 or 230 V version.

BURNER	SUPPORT CODE
► GI/EMME 3000	20163347

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
	300	3000825
		
	300	3000826
	35	3000843
	35	3010126
	50	3010370
	65	20064220
	65	20042324
	320	3000831
	320	3000832
	320	3010127
	540	3010128

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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
► VGD/1 series	Neutral	0 - 22	20181839
	Yellow	15 - 120	20141900
	Red	100 - 250	20141901

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
► VGD 50/1	3010123+20186306	20050030+20186306
► VGD 65/1 - 80/1 - 100/1 - 125/1	3010123	20050030