



CE

MODULATING GAS BURNERS

▶ RS/M SERIES

▶ RS 28/M	52/163 ÷	325 kW
▶ RS 38/M	70/232 ÷	440 kW
▶ RS 50/M	85/290 ÷	580 kW
▶ RS 70/M	135/465 ÷	814 kW
▶ RS 100/M	150/698 ÷	1163 kW
▶ RS 130/M	160/930 ÷	1512 kW
▶ RS 190/M	470/1279 ÷	2290 kW

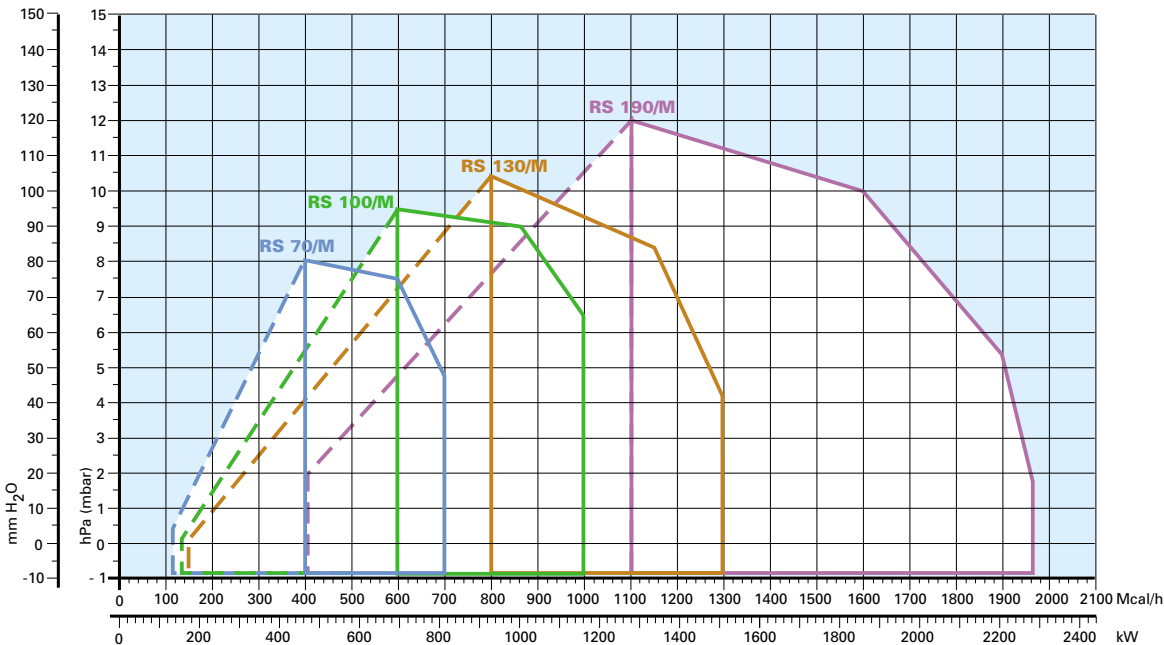
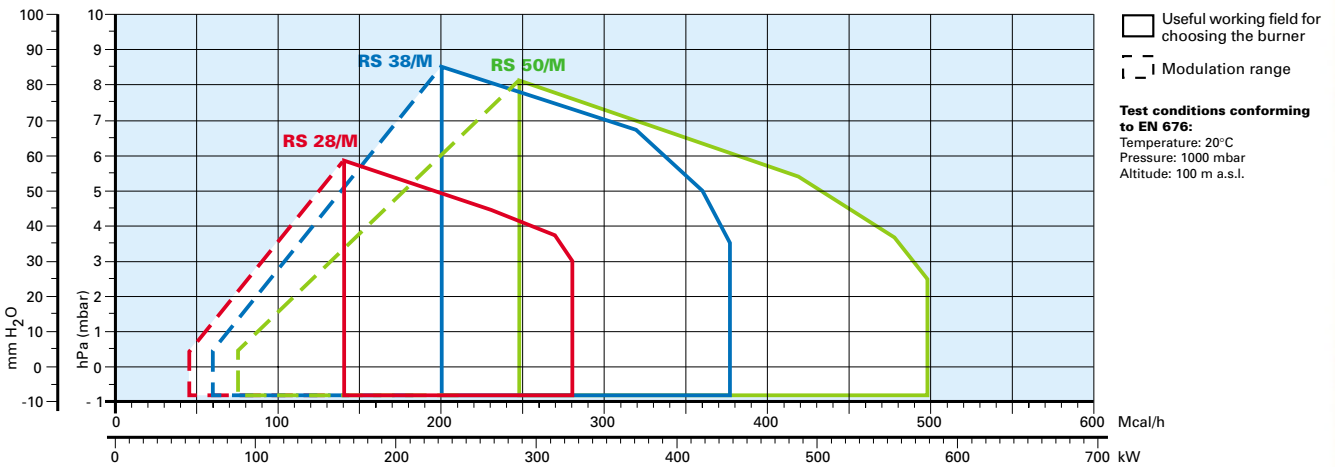


The RS/M series of burners covers a firing range from 52 to 2290 kW, and they have been designed for use in hot water boilers or superheaters, hot air or steam generators, diathermic oil boilers. Operation can be "two stage progressive" or, alternatively, "modulating" with the installation of a PID logic regulator and respective probes. RS/M series burners guarantees high efficiency levels in all the various applications, thus reducing fuel consumption and running costs.

Optimisation of sound emissions is guaranteed by the use of fans with forward inclined blades and sound deadening material incorporated in the

air suction circuit. The exclusive design ensures reduced dimensions, simple use and maintenance. A wide range of accessories guarantees elevated working flexibility.

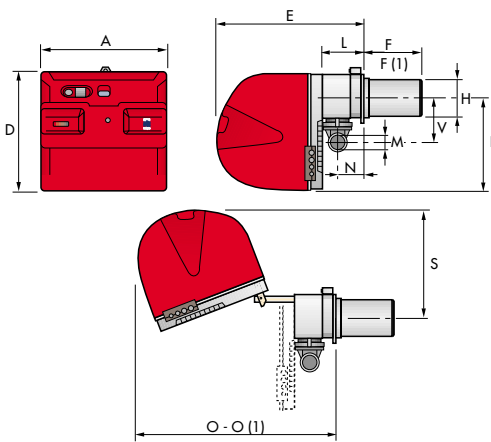
FIRING RATES



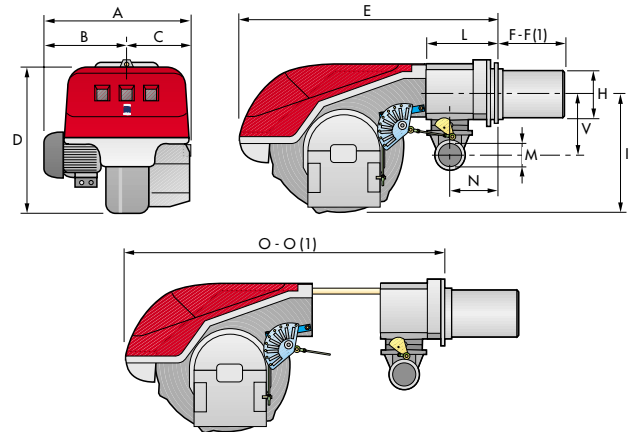
RS/M series - OVERALL DIMENSIONS (mm)

BURNER

RS 28/M - 38/M - 50/M



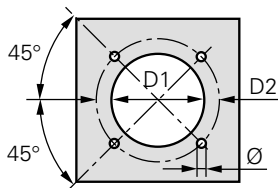
RS 70/M - 100/M - 130/M - 190/M



Model	A	B	C	D	E	F - F (1)	H	I	L	M	N	O - O(1)	S	V
▶ RS 28/M	476	-	-	474	580	216 - 351	140	352	164	1"1/2	108	810 - 810	367	168
▶ RS 38/M	476	-	-	474	580	216 - 351	140	352	164	1"1/2	108	810 - 810	367	168
▶ RS 50/M	476	-	-	474	580	216 - 351	152	352	164	1"1/2	108	810 - 810	367	168
▶ RS 70/M	511	296	215	555	840	250 - 385	179	430	214	2"	134	1161 - 1296	-	221
▶ RS 100/M	527	312	215	555	840	250 - 385	179	430	214	2"	134	1161 - 1296	-	221
▶ RS 130/M	553	338	215	555	840	280 - 415	189	430	214	2"	134	1161 - 1296	-	221
▶ RS 190/M	681	366	315	555	856	372 - 530	222	430	230	DN 80	150	1312 - -	-	186

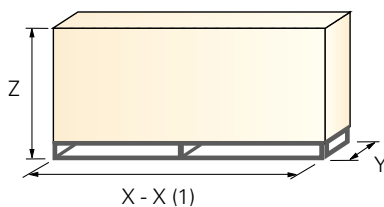
(1) Length with extended combustion head

BURNER - BOILER MOUNTING FLANGE



Model	D1	D2	Ø
▶ RS 28/M	160	224	M8
▶ RS 38/M	160	224	M8
▶ RS 50/M	160	224	M8
▶ RS 70/M	185	275-325	M12
▶ RS 100/M	185	275-325	M12
▶ RS 130/M	195	275-325	M12
▶ RS 190/M	230	325-368	M16

PACKAGING

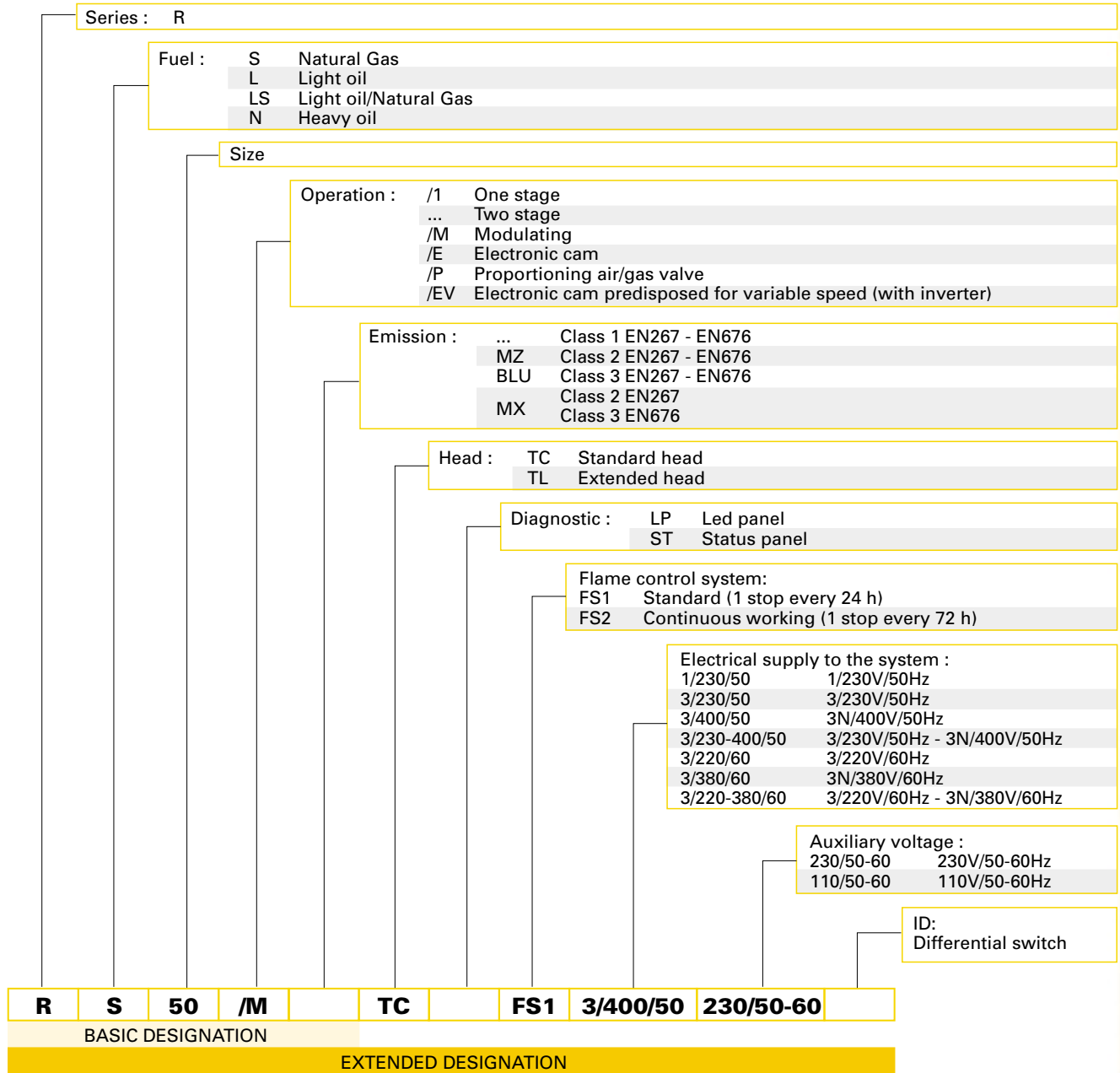


Model	X - X (1)	Y	Z	kg
▶ RS 28/M	872 - 1007	540	550	38
▶ RS 38/M	872 - 1007	540	550	40
▶ RS 50/M	872 - 1007	540	550	41
▶ RS 70/M	1190 - 1325	692	740	70
▶ RS 100/M	1190 - 1325	692	740	73
▶ RS 130/M	1190 - 1325	692	740	76
▶ RS 190/M	1250	785	725	82

(1) Length with extended combustion head

RS/M series - SPECIFICATION

DESIGNATION OF SERIES



RS/M series - STATE OF SUPPLY

- Monoblock forced draught gas burner, two stage progressive or modulating operation with a kit, made up of:
- Air suction circuit lined with sound-proofing material
 - Fan with reverse curve blades (forward curve blades on the 190/M model)
 - Air damper for air setting and butterfly valve for regulating fuel output controlled by a servomotor with variable cam
 - Combustion head, that can be set on the basis of required output
 - Maximum gas pressure switch
 - Minimum air pressure switch
 - Flame control panel, fitted with control functions for the correct positioning of the servomotor and possibility of post-ventilation by just changing the electric wiring
 - Burner on/off switch
 - Flame inspection window
 - Manual or automatic output increase/decrease switch
 - Slide bars for easier installation and maintenance
 - Protection filter against radio interference
 - IP 44 electric protection level.

Standard equipment:

- 1 gas train gasket
- 1 flange gasket
- 4 screws for fixing the flange
- 1 thermal screen
- 4 screws for fixing the burner flange to the boiler
- Fairleads for electrical connections (for RS 28-38-50/M model)
- 2 slide bar extensions (for extended head models and RS 190/M)
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

RS/M series - AVAILABLE BURNER MODELS

Code	Model	Heat output		Total electrical power (kW)	Certification	Note	Price
		(kW)	Natural Gas (Nm ³ /h)				
3781012	RS 28/M TC FS1 1/230/50 230/50-60	52/163-325	5/16-32,5	0,37	CE 0085AQ0709		
3781040	RS 28/M TC FS1 1/230/50 230/50-60 ID	52/163-325	5/16-32,5	0,37	CE 0085AQ0709		
3781013	RS 28/M TL FS1 1/230/50 230/50-60	52/163-325	5/16-32,5	0,37	CE 0085AQ0709		
3781041	RS 28/M TL FS1 1/230/50 230/50-60 ID	52/163-325	5/16-32,5	0,37	CE 0085AQ0709		
3781412	RS 38/M TC FS1 3/230-400/50 230/50-60	70/232-440	7/23-44	0,56	CE 0085AQ0709		
3781440	RS 38/M TC FS1 3/230-400/50 230/50-60 ID	70/232-440	7/23-44	0,56	CE 0085AQ0709		
3781413	RS 38/M TL FS1 3/230-400/50 230/50-60	70/232-440	7/23-44	0,56	CE 0085AQ0709		
3781441	RS 38/M TL FS1 3/230-400/50 230/50-60 ID	70/232-440	7/23-44	0,56	CE 0085AQ0709		
3781612	RS 50/M TC FS1 3/230-400/50 230/50-60	85/290-580	8,5/29-58	0,75	CE 0085AQ0709		
3781640	RS 50/M TC FS1 3/230-400/50 230/50-60 ID	85/290-580	8,5/29-58	0,75	CE 0085AQ0709		
3781613	RS 50/M TL FS1 3/230-400/50 230/50-60	85/290-580	8,5/29-58	0,75	CE 0085AQ0709		
3781641	RS 50/M TL FS1 3/230-400/50 230/50-60 ID	85/290-580	8,5/29-58	0,75	CE 0085AQ0709		
3787012	RS 70/M TC FS1 3/230-400/50 230/50-60	135/465-814	13,5/46,5-81	1,4	CE 0085AQ0708		
3787040	RS 70/M TC FS1 3/230-400/50 230/50-60 ID	135/465-814	13,5/46,5-81	1,4	CE 0085AQ0708		
3787013	RS 70/M TL FS1 3/230-400/50 230/50-60	135/465-814	13,5/46,5-81	1,4	CE 0085AQ0708		
3787041	RS 70/M TL FS1 3/230-400/50 230/50-60 ID	135/465-814	13,5/46,5-81	1,4	CE 0085AQ0708		
3787212	RS 100/M TC FS1 3/230-400/50 230/50-60	150/698-1163	15/70-116	1,8	CE 0085AQ0708		
3787240	RS 100/M TC FS1 3/230-400/50 230/50-60 ID	150/698-1163	15/70-116	1,8	CE 0085AQ0708		
3787213	RS 100/M TL FS1 3/230-400/50 230/50-60	150/698-1163	15/70-116	1,8	CE 0085AQ0708		
3787241	RS 100/M TL FS1 3/230-400/50 230/50-60 ID	150/698-1163	15/70-116	1,8	CE 0085AQ0708		
3787412	RS 130/M TC FS1 3/230-400/50 230/50-60	160/930-1512	16/93-151	2,6	CE 0085AQ0708		
3787440	RS 130/M TC FS1 3/230-400/50 230/50-60 ID	160/930-1512	16/93-151	2,6	CE 0085AQ0708		
3787413	RS 130/M TL FS1 3/230-400/50 230/50-60	160/930-1512	16/93-151	2,6	CE 0085AQ0708		
3787441	RS 130/M TL FS1 3/230-400/50 230/50-60 ID	160/930-1512	16/93-151	2,6	CE 0085AQ0708		
3787611	RS 190/M TC FS1 3/230-400/50 230/50-60	470/1279-2290	47/128-229	5,5	CE 0085AT0042		
3787640	RS 190/M TC FS1 3/230-400/50 230/50-60 ID	470/1279-2290	47/128-229	5,5	CE 0085AT0042		

Natural Gas, net calorific value: 10 kWh/Nm³ - Density at 20°C: 0,71 kg/Nm³

The burners of RS/M series are in according to 90/396 - 89/336 - 73/23 - 92/42 EEC Directive and EN 676 Norm.

RS/M series - AVAILABLE GAS TRAIN MODELS

Gas train code*	Gas train model	Natural gas		LPG		Note	Gas train price	
		Burner (type)	Adapter** (code)	Burner (type)	Adapter** (code)			
MULTIBLOC GAS TRAINS	3970076	MBD 407	RS28/M - -	3000824 - -	RS28/M RS38/M RS50/M	3000824 3000824 3000824	(1)	
	3970077	MBD 410	RS28/M RS38/M RS50/M	3000824 3000824 3000824	RS28/M RS38/M RS50/M	3000824 3000824 3000824	(1)	
	3970144	MBD 412	RS28/M RS38/M RS50/M	- - -	RS28/M RS38/M RS50/M	- - -	(1)	
	3970197	MBD 412 CT	RS28/M RS38/M RS50/M	- - -	RS28/M RS38/M RS50/M	- - -	(2)	
	3970180	MBD 415	RS28/M RS38/M RS50/M RS70/M RS100/M RS130/M	- - - 3000843 3000843 3000843	- RS38/M RS50/M RS70/M RS100/M RS130/M	- - - 3000843 3000843 3000843	(1)	
	3970198	MBD 415 CT	RS28/M RS38/M RS50/M RS70/M RS100/M RS130/M	- - - 3000843 3000843 3000843	- RS38/M RS50/M RS70/M RS100/M RS130/M	- - - 3000843 3000843 3000843	(2)	
	3970181	MBD 420	RS38/M RS50/M RS70/M RS100/M RS130/M RS190/M	3000822 3000822 - - - 3010128	RS38/M RS50/M RS70/M RS100/M RS130/M RS190/M	3000822 3000822 - - - 3010128	(1)	
	3970182	MBD 420 CT	RS38/M RS50/M RS70/M RS100/M RS130/M RS190/M	3000822 3000822 - - - 3010128	RS38/M RS50/M RS70/M RS100/M RS130/M RS190/M	3000822 3000822 - - - 3010128	(2)	
	3970145	CB 40/1	RS28/M RS38/M RS50/M RS70/M RS100/M RS130/M	- - - 3000843 3000843 3000843	RS38/M RS50/M RS70/M RS100/M RS130/M	- - 3000843 3000843 3000843	(1)	
	3970146	CB 50/1	RS38/M RS50/M RS70/M RS100/M RS130/M RS190/M	3000822 3000822 - - - 3010128	RS38/M RS50/M RS70/M RS100/M RS130/M RS190/M	3000822 3000822 - - - 3010128	(1)	
3970160	CB 50/1 CT	RS38/M RS50/M RS70/M RS100/M RS130/M RS190/M	3000822 3000822 - - - 3010128	RS38/M RS50/M RS70/M RS100/M RS130/M RS190/M	3000822 3000822 - - - 3010128	(2)		

* gas train are 230V/50Hz - 220V/60Hz electrical supply

** the adapter price is available in the "Gas train accessories" section

(1) Seal control accessory

(2) Seal control incorporated

The list of available gas train models follows in the next page.

Gas train code*	Gas train model	Natural gas		LPG		Note	Gas train price
		Burner (type)	Adapter** (code)	Burner (type)	Adapter** (code)		
3970147	CBF 65/1	RS70/M	3000825	-	-	(1)	
		RS100/M	3000825	-	-		
		RS130/M	3000825	RS130/M	3000825		
		RS190/M	3000831	RS190/M	3000831		
3970161	CBF 65/1 CT	RS70/M	3000825	-	-	(2)	
		RS100/M	3000825	-	-		
		RS130/M	3000825	RS130/M	3000825		
		RS190/M	3000831	RS190/M	3000831		
3970148	CBF 80/1	RS70/M	3000826	-	-	(1)	
		RS100/M	3000826	-	-		
		RS130/M	3000826	-	-		
		RS190/M	3000832	-	-		
3970162	CBF 80/1 CT	RS70/M	3000826	-	-	(2)	
		RS100/M	3000826	-	-		
		RS130/M	3000826	-	-		
		RS190/M	3000832	-	-		
3970149	CBF 100/1	RS130/M	3010223+3000826	-	-	(1)	
		RS190/M	3010127	-	-		
3970163	CBF 100/1 CT	RS130/M	3010223+3000826	-	-	(2)	
		RS190/M	3010127	-	-		

* gas train are 230V/50Hz - 220V/60Hz electrical supply

** the adapter price is available in the "Gas train accessories" section

(1) Seal control accessory

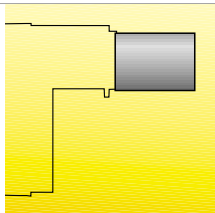
(2) Seal control incorporated

The following table shows the frequently matching between RS/M burners and the gas train, referred to different inlet gas pressure.

Burner	Reference combustion chamber pressure (mbar)	Natural gas G20 (20 mbar)		Natural gas G20 (300 mbar)		LPG (35 mbar)		LPG (150 mbar)	
		Gas train	Reference output (kW)	Gas train	Reference output (kW)	Gas train	Reference output (kW)	Gas train	Reference output (kW)
RS 28/M	4,5	MBD 412	270	MBD 407	270	MBD 407	270	MBD 407	270
RS 38/M	5,0	MBD 415 CB 40/1	370	MBD 410	370	MBD 410	370	MBD 407	370
RS 50/M	5,5	MBD 415 CB 40/1	480	MBD 410	480	MBD 410	480	MBD 407	480
RS 70/M	7,5	CBF 65/1	700	MBD 415 CB 40/1	700	MBD 415 CB 40/1	700	MBD 415 CB 40/1	700
RS 100/M	8,0	CBF 80/1	1010	MBD 415 CB 40/1	1010	MBD 420 CB 50/1	1010	MBD 415 CB 40/1	1010
RS 130/M	8,5	---	1320	MBD 415 CB 40/1	1320	CBF 65/1	1320	MBD 415 CB 40/1	1320
RS 190/M	8,5	---	1950	MBD 420 CB 50/1	1950	CBF 65/1	1950	MBD 420 CB 50/1	1950

RS/M series - BURNER ACCESSORIES

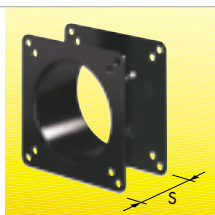
Extended head kit



"Standard head" burners can be transformed into "extended head" versions, by using the special kit.

Burner	Standard head length (mm)	Extended head length (mm)	Kit code	Price
RS 28/M	216	351	3010076	
RS 38/M	216	351	3010077	
RS 50/M	216	351	3010078	
RS 70/M	250	385	3010117	
RS 100/M	250	385	3010118	
RS 130/M	280	415	3010119	
RS 190/M	372	530	3010196	

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	Price
RS 28/M - 38/M - 50/M	90	3010095	
RS 70/M - 100/M - 130/M	135	3010129	
RS 190/M	110	3000722	

Continuous ventilation kit



If the burner requires continuous ventilation in the stages without flame, a special kit is available as given in the following table.

Burner	Kit code	Price
RS 28/M - 38/M - 50/M	3010094	
RS 70/M - 100/M - 130/M - 190/M	3010094	

Sound proofing box



If noise emission needs reducing even further, sound-proofing boxes are available.

Burner	Box type	Average noise reduction [dB(A)]	Box code	Price
RS 28/M - 38/M - 50/M	C2	11	3000777	
RS 70/M - 100/M - 130/M - 190/M	C3	14	3000778	

Accessories for modulating operation



To obtain modulating setting, the RS/M series of burners requires a regulator.

Regulator type	Regulator code	Price
RWF 40	3010212	



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

Probe type	Range (°C) (bar)	Probe code	Price
Temperature PT 100	-100 ÷ 500°C	3010110	
Pressure 4 ÷ 20 mA	0 ÷ 2,5 bar	3010213	
Pressure 4 ÷ 20 mA	0 ÷ 16 bar	3010214	



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	Price
RS 28/M - 38/M - 50/M	3010109	
RS 70/M - 100/M - 130/M - 190/M	3010021	

LPG kit



For burning LPG gas, a special kit is available.

Burner	Kit code for standard head	Price	Kit code for extended head	Price
RS 28/M	3010089		3010089	
RS 38/M	3010090		3010090	
RS 50/M	3010165		3010165	
RS 70/M	3010097		3010098	
RS 100/M	3010099		3010100	
RS 130/M	3010101		3010102	
RS 190/M	3010166		-	

Town Gas kit

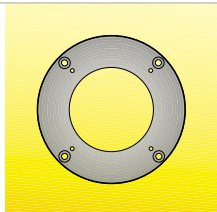


For burning Town Gas, a special kit is available.

Burner	Kit code for standard head (*)	Price	Kit code for extended head (*)	Price
RS 28/M	3010283		3010283	
RS 38/M	3010284		3010284	
RS 50/M	3010285		3010285	
RS 70/M	3010286		3010286	
RS 100/M	3010287		3010287	
RS 130/M	3010288		3010288	
RS 190/M	3010297		3010297	

(*) Without CE certification

Connection flange kit

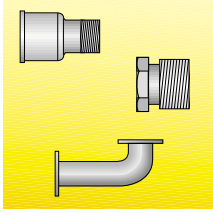


A kit is available for use where the burner opening on the boiler is of excessive diameter.

Burner	Kit code	Price
RS 28/M - 38/M - 50/M	3010138	

RS/M series - GAS TRAIN ACCESSORIES

Adapters



When the diameter of the gas train is different from the set diameter of the burners, an adapter must be fitted between the gas train and the burner.

Burner	Gas train	Dimensions	Adapter code	Price	
RS 28/M	MBD 407 - 410	3/4" 1" 1/2	3000824		
RS 38/M	MBD 407 - 410	3/4" 1" 1/2	3000824		
	MBD 420 - CB 50/1	2" 1" 1/2	3000822		
RS 50/M	MBD 407 - 410	3/4" 1" 1/2	3000824		
	MBD 420 - CB 50/1	2" 1" 1/2	3000822		
	MBD 415 - CB 40/1	1" 1/2 2"	3000843		
RS 70/M	CBF 65/1	DN 65 2" 1/2 1" 1/2	3000825		
		2"			
	CBF 80/1	DN 80 2" 1/2 2"	3000826		
RS 100/M	MBD 415 - CB 40/1	1" 1/2 2"	3000843		
	CBF 65/1	DN 65 2" 1/2 1" 1/2	3000825		
		2"			
		CBF 80/1	DN 80 2" 1/2 2"	3000826	
	MBD 415 - CB 40/1	1" 1/2 2"	3000843		
RS 130/M	CBF 65/1	DN 65 2" 1/2 1" 1/2	3000825		
		2"			
		CBF 80/1	DN 80 2" 1/2 2"	3000826	
		CBF 100/1	DN 100 DN 80	3010223	
	DN 80 2" 1/2 2"		3000826		
RS 190/M	MBD 420 - CB 50/1	DN 80 DN 65 2" 1/2 2"	3010128		
	CBF 65/1	DN 65 DN 80	3000831		
	CBF 80/1	DN 80 DN 80	3000832		
	CBF 100/1	DN 100 DN 80	3010127		

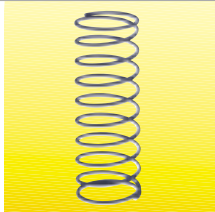
Seal control kit



To test the valve seals on the gas train, a special "seal control kit" is available.

Burner	Gas train	Kit code	Price
RS 28/M	MBD 407 - 410 - 412 - 415 - CB 40/1	3010123	
RS 38/M	MBD 410 - 412 - 415 - 420 - CB 40/1 - 50/1	3010123	
RS 50/M	MBD 410 - 412 - 415 - 420 - CB 40/1 - 50/1	3010123	
RS 70/M	MBD 415 - 420 - CB 40/1 - 50/1 - CBF 65/1	3010123	
RS 100/M	MBD 415 - 420 - CB 40/1 - 50/1 - CBF 65/1 - 80/1	3010123	
RS 130/M	MBD 415 - 420 - CB 40/1 - 50/1 - CBF 65/1 - 80/1	3010123	
RS 190/M	MBD 420 - CB 50/1 - CBF 65/1 - 80/1 - 100/1	3010123	

Stabiliser spring



Accessory springs are available to vary the pressure range of the gas train stabilisers.

Gas train	Spring	Code	Price
CBF 65/1 - CBF 80/1	Red from 25 to 55 mbar	3010133	
CBF 100/1	Red from 25 to 55 mbar	3010134	
CBF 65/1 - CBF 80/1	Black from 60 to 110 mbar	3010135	
CBF 100/1	Black from 60 to 110 mbar	3010136	
CBF 65/1 - CBF 80/1	Pink from 100 to 150 mbar	3090456	
CBF 100/1	Pink from 100 to 150 mbar	3090489	