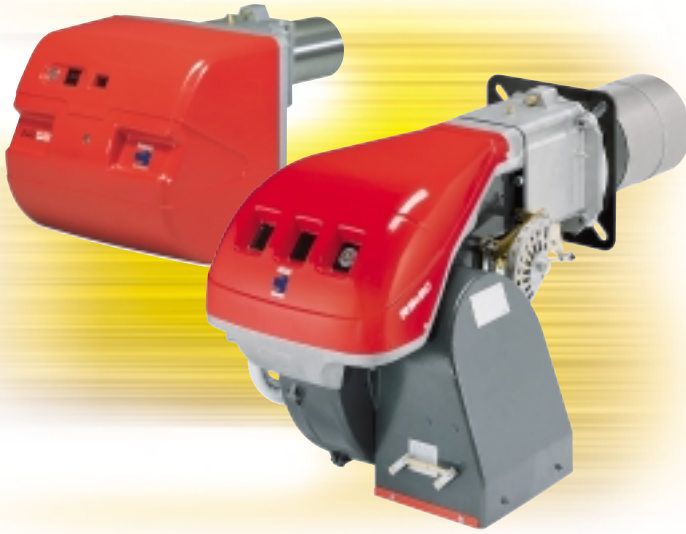




## TWO STAGE GAS BURNERS

### ► RS SERIES

► RS 28	81/163 ÷	325 kW
► RS 38	105/232 ÷	440 kW
► RS 50	116/290 ÷	580 kW
► RS 70	192/465 ÷	814 kW
► RS 100	232/698 ÷	1163 kW
► RS 130	372/930 ÷	1512 kW
► RS 190	470/1279 ÷	2290 kW



The RS series of burners covers a firing range from 81 to 2290 kW, and they have been designed for use in hot or superheater water boilers, hot air or steam generators, diathermic oil boilers.

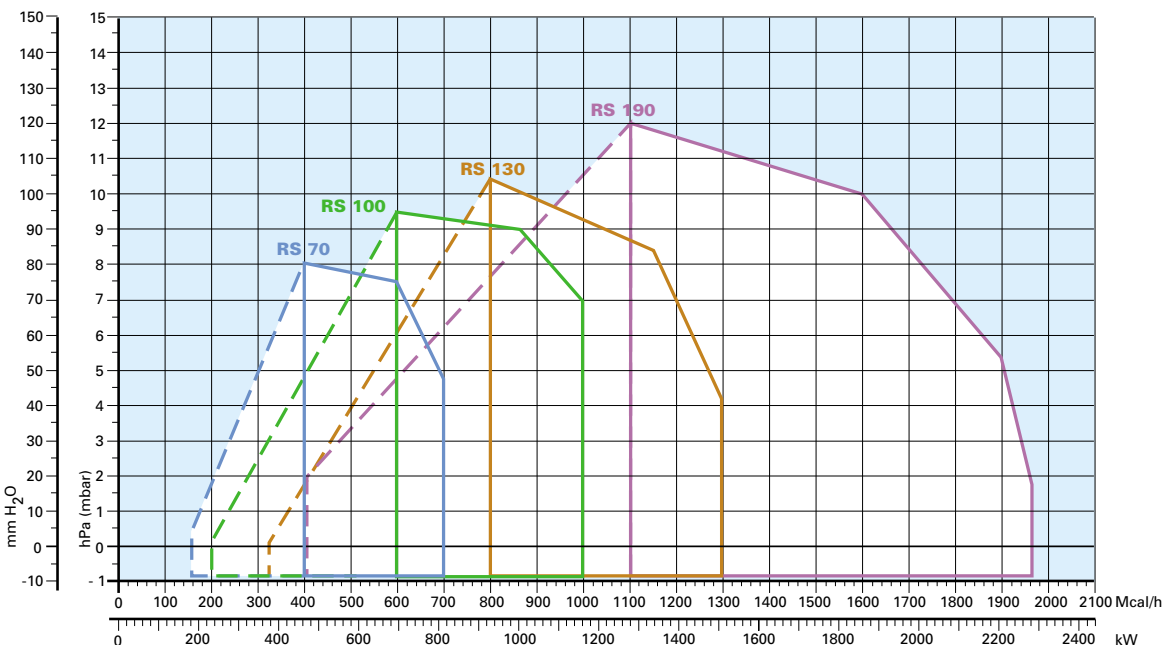
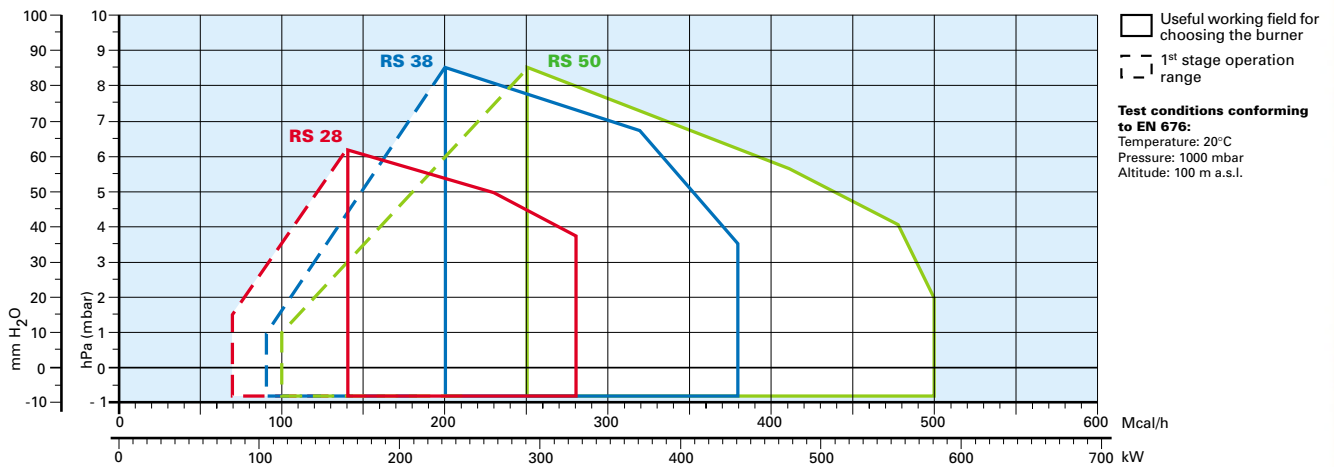
Operation is "two stage"; the burners are fitted with a microprocessor control panel which supplies indication of operation and diagnosis of fault cause. Optimisation of sound emissions is guaranteed by the use of fans with forward inclined blades and sound deadening material incorporated in the air suction circuit.

The elevated performance of the fans and

combustion head, guarantee flexibility of use and excellent working at all firing rates.

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

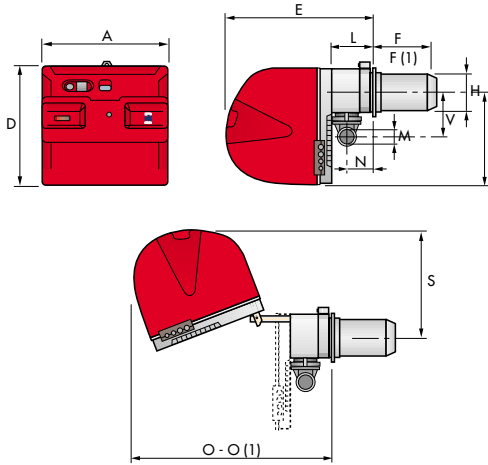
## FIRING RATES



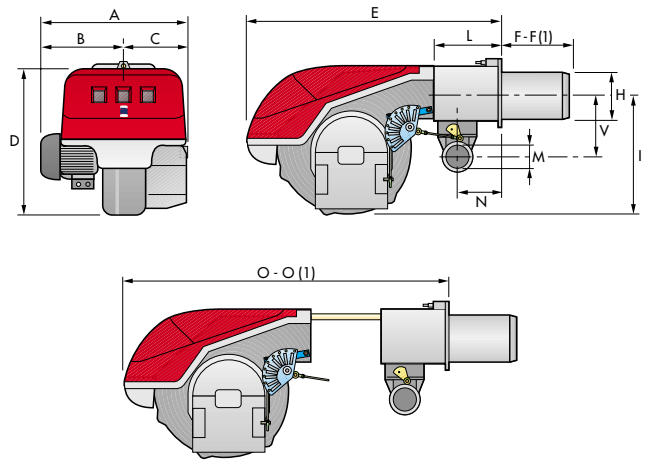
# RS series - OVERALL DIMENSIONS (mm)

## BURNER

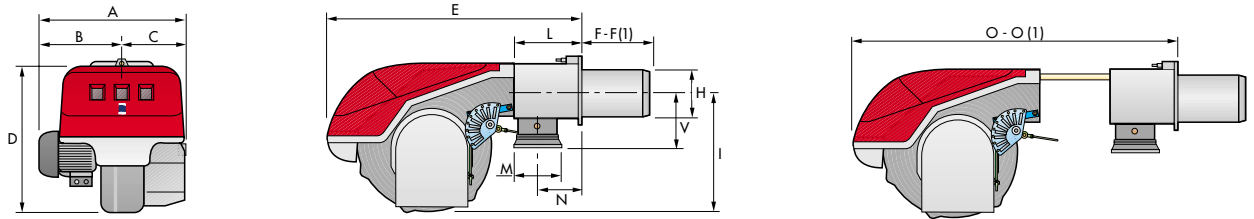
RS 28 - 38 - 50



RS 70 - 100 - 130



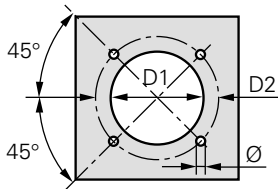
RS 190



Model	A	B	C	D	E	F - F (1)	H	I	L	M	N	O - O (1)	S	V
▶ RS 28	476	-	-	474	580	216 - 351	140	352	164	1"1/2	108	810	367	168
▶ RS 38	476	-	-	474	580	216 - 351	140	352	164	1"1/2	108	810	367	168
▶ RS 50	476	-	-	474	580	216 - 351	152	352	164	1"1/2	108	810	367	168
▶ RS 70	511	296	215	555	840	250 - 385	179	430	214	2"	134	1161 - 1296	-	221
▶ RS 100	527	312	215	555	840	250 - 385	179	430	214	2"	134	1161 - 1296	-	221
▶ RS 130	553	338	215	555	840	280 - 415	189	430	214	2"	134	1161 - 1296	-	221
▶ RS 190	681	366	315	555	856	372 - 530	222	430	230	DN80	150	1312	-	186

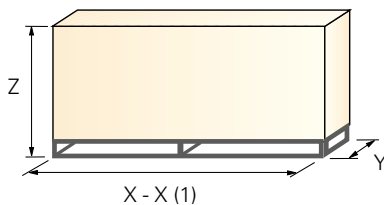
(1) Length with extended combustion head

## BURNER - BOILER MOUNTING FLANGE



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

## PACKAGING

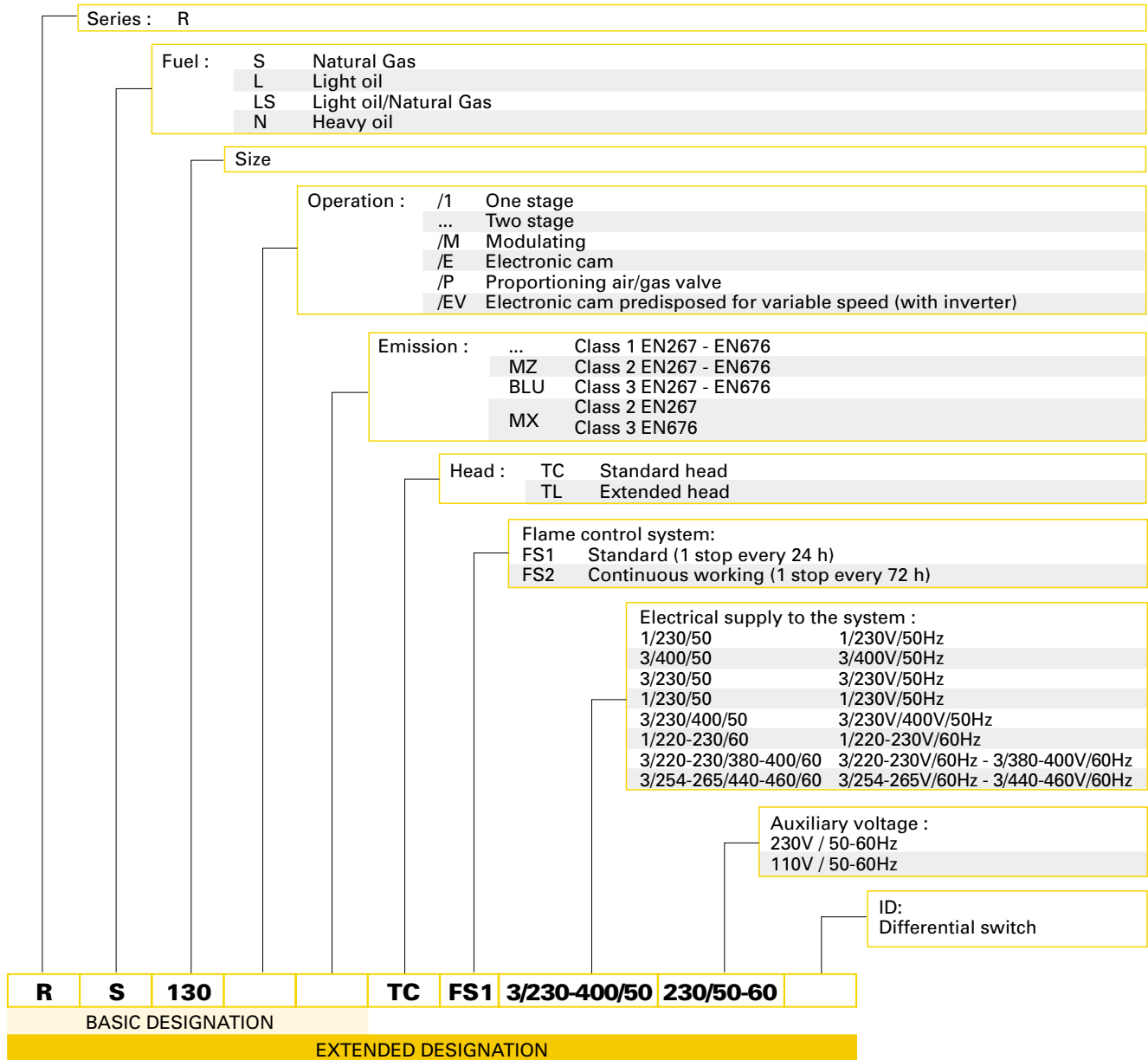


Model	X - X (1)	Y	Z	kg
▶ RS 28	872 - 1007	540	550	38
▶ RS 38	872 - 1007	540	550	40
▶ RS 50	872 - 1007	540	550	41
▶ RS 70	1190 - 1325	692	740	70
▶ RS 100	1190 - 1325	692	740	73
▶ RS 130	1190 - 1325	692	740	76
▶ RS 190	1250	785	725	82

(1) Length with extended combustion head

# RS series - SPECIFICATION

## DESIGNATION OF SERIES



## ► RS series - STATE OF SUPPLY

Monoblock forced draught gas burner with two stage operation, fully automatic, made up of:

- Air suction circuit lined with sound-proofing material
- Fan with reverse curve blades (straight blades on the 190 model) high performance with low sound emissions
- Air damper for air flow setting and butterfly valve for regulating fuel output on 1st and 2nd stage controlled by a servomotor with variable cam
- Starting motor at 2800 rpm, three-phase 400V with neutral, 50Hz (available also single-phase, 230V, 50Hz for the RS 28 and 38 models)
- Combustion head, that can be set on the basis of required output, fitted with:
  - stainless steel end cone, resistant to corrosion and high temperatures
  - ignition electrodes
  - ionisation probe
  - gas distributor
  - flame stability disk
- Minimum air pressure switch stops the burner in case of insufficient air quantity at the combustion head
- Microprocessor-based flame control panel, with diagnostic functions
- Plug and socket for electrical connections (RS 28-38-50 models)
- Burner on/off selection switch
- 1st - 2nd stage manual switch
- Flame inspection window
- 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
- Wiring loom fittings for the electrical connection (RS 28 - 38 - 50)
- 2 slide bar extensions (for extended head models and RS 190 model)
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

## RS series - AVAILABLE BURNER MODELS

Code	Model					Heat output		Total Electrical power (kW)	Certification	Note	Price
						(kW)	Natural Gas (Nm <sup>3</sup> /h)				
3783302	RS 28	TC	FS1	1/230/50	230/50-60	81/163-325	8/16-33	0,37	CE 0085AP0733		
3783303	RS 28	TL	FS1	1/230/50	230/50-60	81/163-325	8/16-33	0,37	CE 0085AP0733		
in progress	RS 28	TC	FS1	1/220-230/60	230/50-60	81/163-325	8/16-33	0,37	-		
in progress	RS 28	TL	FS1	1/220-230/60	230/50-60	81/163-325	8/16-33	0,37	-		
3784402	RS 38	TC	FS1	1/230/50	230/50-60	105/232-440	10,5/23-44	0,6	CE 0085AP0734		
3784403	RS 38	TL	FS1	1/230/50	230/50-60	105/232-440	10,5/23-44	0,6	CE 0085AP0734		
in progress	RS 38	TC	FS1	1/220-230/60	230/50-60	105/232-440	10,5/23-44	0,6	-		
in progress	RS 38	TL	FS1	1/220-230/60	230/50-60	105/232-440	10,5/23-44	0,6	-		
3784502	RS 38	TC	FS1	3/230/400/50	230/50-60	105/232-440	10,5/23-44	0,6	-		
3784503	RS 38	TL	FS1	3/230/400/50	230/50-60	105/232-440	10,5/23-44	0,6	-		
in progress	RS 38	TC	FS1	3/220-230/380-400/60	230/50-60	105/232-440	10,5/23-44	0,6	-		
in progress	RS 38	TL	FS1	3/220-230/380-400/60	230/50-60	105/232-440	10,5/23-44	0,6	-		
in progress	RS 38	TC	FS1	3/254-265/440-460/60	230/50-60	105/232-440	10,5/23-44	0,6	-		
in progress	RS 38	TL	FS1	3/254-265/440-460/60	230/50-60	105/232-440	10,5/23-44	0,6	-		
3784702	RS 50	TC	FS1	3/230/400/50	230/50-60	116/290-581	12/29-58	0,75	CE 0085AP0735		
3784703	RS 50	TL	FS1	3/230/400/50	230/50-60	116/290-581	12/29-58	0,75	CE 0085AP0735		
in progress	RS 50	TC	FS1	3/220-230/380-400/60	230/50-60	116/290-581	12/29-58	0,75	-		
in progress	RS 50	TL	FS1	3/220-230/380-400/60	230/50-60	116/290-581	12/29-58	0,75	-		
in progress	RS 50	TC	FS1	3/254-265/440-460/60	230/50-60	116/290-581	12/29-58	0,75	-		
in progress	RS 50	TL	FS1	3/254-265/440-460/60	230/50-60	116/290-581	12/29-58	0,75	-		
3785102	RS 70	TC	FS1	3/230/400/50	230/50-60	192/465-814	19/46,5-81	1,4	CE 0085AP0744		
3785103	RS 70	TL	FS1	3/230/400/50	230/50-60	192/465-814	19/46,5-81	1,4	CE 0085AP0744		
in progress	RS 70	TC	FS1	3/220-230/380-400/60	230/50-60	192/465-814	19/46,5-81	1,4	-		
in progress	RS 70	TL	FS1	3/220-230/380-400/60	230/50-60	192/465-814	19/46,5-81	1,4	-		
in progress	RS 70	TC	FS1	3/254-265/440-460/60	230/50-60	192/465-814	19/46,5-81	1,4	-		
in progress	RS 70	TL	FS1	3/254-265/440-460/60	230/50-60	192/465-814	19/46,5-81	1,4	-		
3785302	RS 100	TC	FS1	3/230/400/50	230/50-60	232/698-1163	23/70-116	1,8	CE 0085AP0745		
3785303	RS 100	TL	FS1	3/230/400/50	230/50-60	232/698-1163	23/70-116	1,8	CE 0085AP0745		
in progress	RS 100	TC	FS1	3/220-230/380-400/60	230/50-60	232/698-1163	23/70-116	1,8	-		
in progress	RS 100	TL	FS1	3/220-230/380-400/60	230/50-60	232/698-1163	23/70-116	1,8	-		
in progress	RS 100	TC	FS1	3/254-265/440-460/60	230/50-60	232/698-1163	23/70-116	1,8	-		
in progress	RS 100	TL	FS1	3/254-265/440-460/60	230/50-60	232/698-1163	23/70-116	1,8	-		
3785502	RS 130	TC	FS1	3/230/400/50	230/50-60	372/930-1512	37/93-151	2,6	CE 0085AP0746		
3785503	RS 130	TL	FS1	3/230/400/50	230/50-60	372/930-1512	37/93-151	2,6	CE 0085AP0746		
in progress	RS 130	TC	FS1	3/220-230/380-400/60	230/50-60	372/930-1512	37/93-151	2,6	-		
in progress	RS 130	TL	FS1	3/220-230/380-400/60	230/50-60	372/930-1512	37/93-151	2,6	-		
in progress	RS 130	TC	FS1	3/254-265/440-460/60	230/50-60	372/930-1512	37/93-151	2,6	-		
in progress	RS 130	TL	FS1	3/254-265/440-460/60	230/50-60	372/930-1512	37/93-151	2,6	-		
3785813	RS 190	TC	FS1	3/230/400/50	230/50-60	470/1279-2290	47/128-229	5,5	CE 0085AT0042		
in progress	RS 190	TC	FS1	3/220-230/380-400/60	230/50-60	470/1279-2290	47/128-229	5,5	-		
in progress	RS 190	TC	FS1	3/254-265/440-460/60	230/50-60	470/1279-2290	47/128-229	5,5	-		

Net calorific value gas G20 10 kWh/Nm<sup>3</sup> 8600 kcal/Nm<sup>3</sup> - Density gas G20: 0,71 kg/Nm<sup>3</sup>.

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



## RS 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	RS 28 - -	3000824 - -	RS 28 RS 38 RS 50	3000824 3000824 3000824	(1)	
	3970077	MBD 410	RS 28 RS 38 RS 50	3000824 3000824 3000824	RS 28 RS 38 RS 50	3000824 3000824 3000824	(1)	
	3970144	MBD 412	RS 28 RS 38 RS 50	- - -	RS 28 RS 38 RS 50	- - -	(1)	
	3970197	MBD 412 CT	RS 28 RS 38 RS 50	- - -	RS 28 RS 38 RS 50	- - -	(2)	
	3970180	MBD 415	RS 28 RS 38 RS 50 RS 70 RS 100 RS 130	- - - 3000843 3000843 3000843	RS 28 RS 38 RS 50 RS 70 RS 100 RS 130	- - - 3000843 3000843 3000843	(1)	
	3970198	MBD 415 CT	RS 28 RS 38 RS 50 RS 70 RS 100 RS 130	- - - 3000843 3000843 3000843	RS 28 RS 38 RS 50 RS 70 RS 100 RS 130	- - - 3000843 3000843 3000843	(2)	
	3970181	MBD 420	RS 38 RS 50 RS 70 RS 100 RS 130 RS 190	3000822 3000822 - - - 3010128	- - RS 70 RS 100 RS 130 RS 190	- - - - - 3010128	(1)	
	3970182	MBD 420 CT	RS 38 RS 50 RS 70 RS 100 RS 130 RS 190	3000822 3000822 - - - 3010128	- - RS 70 RS 100 RS 130 RS 190	- - - - - 3010128	(2)	
	3970145	CB 40/1	RS 28 RS 38 RS 50 RS 70 RS 100 RS 130	- - - 3000843 3000843 3000843	- RS 38 RS 50 RS 70 RS 100 RS 130	- - - 3000843 3000843 3000843	(1)	
	3970146	CB 50/1	RS 38 RS 50 RS 70 RS 100 RS 130 RS 190	3000822 3000822 - - - 3010128	- - RS 70 RS 100 RS 130 RS 190	- - - - - 3010128	(1)	
	3970160	CB 50/1 CT	RS 38 RS 50 RS 70 RS 100 RS 130 RS 190	3000822 3000822 - - - 3010128	- - RS 70 RS 100 RS 130 RS 190	- - - - - 3010128	(1)	
	3970147	CBF 65/1	RS 70 RS 100 RS 130 RS 190	3000825 3000825 3000825 3000831	RS 70 RS 100 RS 130 RS 190	3000825 3000825 3000825 3000831	(2)	
	3970161	CBF 65/1 CT	RS 70 RS 100 RS 130 RS 190	3000825 3000825 3000825 3000831	RS 70 RS 100 RS 130 RS 190	3000825 3000825 3000825 3000831	(2)	
	3970148	CBF 80/1	RS 70 RS 100 RS 130 RS 190	3000826 3000826 3000826 3000832	- - - -	- - - -	(1)	
3970162	CBF 80/1 CT	RS 70 RS 100 RS 130 RS 190	3000826 3000826 3000826 3000832	- - - -	- - - -	(2)		
3970149	CBF 100/1	RS 130 RS 190	3010223+3000826 3010127	- -	- -	(1)		
3970163	CB 100/1 CT	RS 130 RS 190	3010223+3000826 3010127	- -	- -	(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

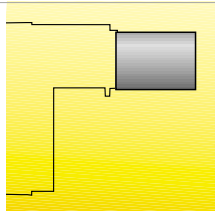
(2) Seal control Incorporated

The following table shows the frequently matching between RS 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	5,0	MBD 412	270	MBD 407	270	MBD 407	270	MBD 407	270
RS 38	6,5	CB 40/1	370	MBD 410	370	MBD 410	370	MBD 410	370
RS 50	5,5	CB 50/1	480	MBD 410	480	MBD 410	480	MBD 410	480
RS 70	7,5	-	-	CB 40/1	700	CB 40/1	700	CB 40/1	700
RS 100	9,0	-	-	CB 40/1	1010	CB 50/1	1010	CB 40/1	1010
RS 130	8,0	-	-	CB 40/1	1320	CB 50/1	1320	CB 40/1	1320
RS 190	9,0	-	-	CB 50/1	1950	-	-	CB 50/1	1950

## RS 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	216	351	3010076	
RS 38	216	351	3010077	
RS 50	216	351	3010078	
RS 70	250	385	3010117	
RS 100	250	385	3010118	
RS 130	280	415	3010119	
RS 190	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 - 38 - 50	90	3010095	
RS 70 - 100 - 130	135	3010129	
RS 190	110	3000722	

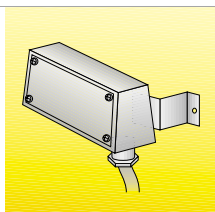
### Continuous ventilation kit



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 - 38 - 50 - 70 - 100 - 130 - 190	3010094	

### Post-ventilation kit



To prolong ventilation for approximately 5 seconds after opening of thermostats chain, a special kit is available.

Burner	Kit code	Price
RS 28 - 38 - 50 - 70 - 100 - 130 - 190	3010004	

### 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 - 38 - 50	C2	11	3000777	
RS 70 - 100 - 130 - 190	C3	14	3000778	



## 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	3010089		3010089	
RS 38	3010090		3010090	
RS 50	3010165		3010165	
RS 70	3010097		3010098	
RS 100	3010099		3010100	
RS 130	3010101		3010102	
RS 190	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	3010283		3010283	
RS 38	3010284		3010284	
RS 50	3010285		3010285	
RS 70	3010286		3010286	
RS 100	3010287		3010287	
RS 130	3010288		3010288	
RS 190	3010297		3010297	

(\*) Without CE certification

## Status panel kit



The RS burners can be equipped with an exclusive electronic device "Status Panel" which continuously monitors and displays all the burner operational modes and picks up any anomalies during the operational cycle.

Burner	Kit code	Price
RS 28 - 38 - 50 - 70 - 100 - 130 - 190	3010322	

## Ground fault interrupter kit



A "Ground fault interrupter kit" is available as a safety device for electrical system fault.

Burner	Kit code	Price
RS 28 - 38 - 50	3010321	
RS 70 - 100 - 130 - 190	3010329	

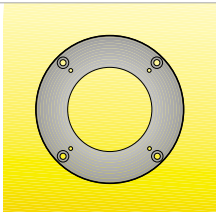
## Interface adapter kit



To connect the flame control panel 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	Price
RS 28 - 38 - 50 - 70 - 100 - 130 - 190	3002719	

## 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 - 38 - 50	3010138	

## RS series - GAS TRAIN ACCESSORIES

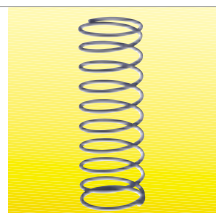
### Seal control kit



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

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

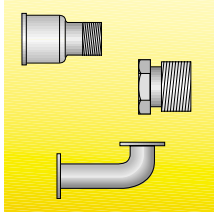
### Stabiliser spring



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	

## 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	MBD 407 - 410	3/4"  1" 1/2	3000824	
RS 38	MBD 407 - 410	3/4"  1" 1/2	3000824	
	MBD 420 - CB 50/1	2"  1" 1/2	3000822	
RS 50	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	CBF 65/1	DN 65  2" 1/2  2"	3000825	
	CBF 80/1	DN 80  2" 1/2  2"	3000826	
RS 100	MBD 415 - CB 40/1	1" 1/2  2"	3000843	
	CBF 65/1	DN 65  2" 1/2  2"	3000825	
	CBF 80/1	DN 80  2" 1/2  2"	3000826	
	MBD 415 - CB 40/1	1" 1/2  2"	3000843	
RS 130	CBF 65/1	DN 65  2" 1/2  2"	3000825	
	CBF 80/1	DN 80  2" 1/2  2"	3000826	
	CBF 100/1	DN 100  DN 80	3010223	
	CBF 100/1	DN 80  2" 1/2  2"	3000826	
RS 190	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	