

TB&F

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RIELLO
BURNERS



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TWO STAGE PROGRESSIVE GAS BURNERS

► RS SERIES

THAIBURNER89.CO.,LTD

► RS 28	81/163÷	325 kW
► RS 34 MZ	70/125÷	390 kW
► RS 38	105/232÷	440 kW
► RS 44 MZ	100/200÷	550 kW
► RS 50	116/290÷	580 kW
► RS 64 MZ	150/400÷	850 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 burners series covers a firing range from 70 to 2290 kW, and it has been designed for use in low or medium temperature hot water boilers, hot air or steam boilers, diathermic oil boilers.

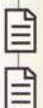
Operation is "two stage progressive"; the burners are fitted with a microprocessor control panel which supplies indication of operation and diagnosis of fault cause.

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.

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TECHNICAL DATA

Model			▼ RS 28	▼ RS 34 MZ	▼ RS 38		▼ RS 44 MZ		▼ RS 50	▼ RS 64 MZ
Burner operation mode			Two stage progressive							
Modulation ratio at max. output			2 ÷ 1							
Servo- motor	Type		SQN90							
	Run time	s	12							
Heat output		kW	81/163÷325	70/125÷390	105/232÷440		100/200÷550		116/290÷581	150/400÷850
		Mcal/h	70/140÷280	60/108÷335	90/200÷378		86/172÷473		100/249÷500	129/344÷731
Working temperature		°C min./max.	0/40							
Net calorific value G20 gas		kWh/Nm³	10							
Density gas G20		kg/Nm³	0,71							
Output gas G20		Nm³/h	8/16÷32	7/13÷39	10,5/23÷44		10/20÷55		11,6/29÷58	15/40÷85
Net calorific value G25 gas		kWh/Nm³	8,6							
Density gas G25		kg/Nm³	0,78							
Output gas G25		Nm³/h	9,4/19÷38	8/15÷45	12/27÷51		12/23÷64		13,5/34÷68	17/47÷99
Net calorific value LPG gas		kWh/Nm³	25,8							
Density LPG gas		kg/Nm³	2,02							
Output LPG gas		Nm³/h	3/6,5÷12,5	3/5÷15	4/9÷17		4/8÷21		4,5/11÷23	6/16÷33
Fan		Type	(01)	(02)	(01)		(02)		(01)	(02)
Air temperature		Max. °C	60							
Electrical supply		Ph/Hz/V	(03)	(04)	(03)	(05)	(04)	(06)	(05)	(05)
Auxiliary electrical supply		Ph/Hz/V	(03)	(04)	(03)		(04)		(03)	(03)
Control box		Type	RMG							
Total electrical power		kW	0,37	0,6	0,6	0,56	0,7	0,8	0,75	1,4
Auxiliary electrical power		kW	0,12	0,3	0,12		0,28	0,35	0,12	0,3
Protection level		IP	44	40	44		40		44	40
Motor electrical power		kW	0,25	0,3	0,42	0,45	0,42	0,45	0,65	1,1
Rated motor current		A	2,1	3,2	2,9	2 - 1,2	3,5	2 - 1,4	3 - 1,7	4,8 - 2,8
Motor start current		A	10	15	11	9,5 - 5,5	17	14 - 10	13,8 - 8	25 - 14,6
Motor protection level		IP	40	40	54		40		54	40
Ignition transformer		V1 - V2	230V-1x8 kV	230V-1x15 kV	230V-1x8 kV		230V-1x15 kV		230V-1x8 kV	230V-1x15 kV
		I1 - I2	1A - 20 mA	1A - 25 mA	1A - 20 mA		1A - 25 mA		1A - 20 mA	1A - 25 mA
Operation			Intermittent (at least one stop every 24 h)							
Emissions	Sound pressure	dBA	68	70	70		72		72	76
	Sound output	W	--							
	CO Emission	mg/kWh	< 40							
	NOx Emission	mg/kWh	< 130	< 120	< 130		< 120		< 130	< 120
Approval	Directive		90/396 - 89/336 - 73/23 - 92/42 EEC							
	Conforming to		EN 676							
	Certification		CE 0085AP0733	CE 0085BR0381	CE 0085AP0734		CE 0085BR0381		CE 0085AP0735	in progress

- (01) Centrifugal with reverse curve blades
 (02) Centrifugal with forward curve blades
 (03) 1/50/230~(±10%)
 (04) 1/50-60/220-230~(±10%)
 (05) 3N/50/230-400~(±10%) 3/50/230~(±10%)△
 (06) 3N/50-60/220-400~(±10%) 3/50-60/220-230~(±10%)△

Reference conditions:

Temperature: 20°C
 Pressure: 1013.5 mbar
 Altitude: 100 m a.s.l.
 Noise measured at a distance of 1 meter.

Since the Company is constantly engaged in the production improvement, the aesthetic and dimensional features, the technical data, the equipment and the accessories can be changed.
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Model			▼ RS 70	▼ RS 100	▼ RS 130	▼ RS 190
Burner operation mode			Two stage progressive			
Modulation ratio at max. output			2 ÷ 1			
Servo- motor	Type		LKS210		SQN31	
	Run time	s	15			
Heat output		kW	192/465÷814	232/698÷1163	372/930÷1512	470/1279÷2290
		Mcal/h	165/400÷700	200/600÷1000	320/800÷1300	405/1100÷1970
Working temperature		°C min./max.	0/40			
Net calorific value G20 gas		kWh/Nm³	10			
Density gas G20		kg/Nm³	0,71			
Output gas G20		Nm³/h	19/46,5÷81,4	23/70÷116	37/93÷151	47/128÷229
Net calorific value G25 gas		kWh/Nm³	8,6			
Density gas G25		kg/Nm³	0,78			
Output gas G25		Nm³/h	22/54÷95	27/81÷135	43/108÷176	55/149÷266
Net calorific value LPG gas		kWh/Nm³	25,8			
Density LPG gas		kg/Nm³	2,02			
Output LPG gas		Nm³/h	7,4/18÷32	9/27÷45	14,4/36÷59	18/50÷89
Fan		Type	(01)	(01)	(01)	(02)
Air temperature		Max. °C	60			
Electrical supply		Ph/Hz/V	3N/50/230-400~(±10%) 3/50/230~(±10%)△			
Auxiliary electrical supply		Ph/Hz/V	1/50/230 ~ (±10%)			
Control box		Type	RMG			
Total electrical power		kW	1,4	1,8	2,6	5,5
Auxiliary electrical power		kW	0,3	0,3	0,4	1
Protection level		IP	44			
Motor electrical power		kW	1,1	1,5	2,2	4,5
Rated motor current		A	4,8 - 2,8	5,9 - 3,4	8,8 - 5,1	15,8 - 9,1
Motor start current		A	25 - 14,6	27,7 - 16	57,2 - 33,2	126 - 73
Motor protection level		IP	54			
Ignition transformer		V1 - V2	230V - 1x8 kV			
		I1 - I2	1A - 20 mA			
Operation			Intermittent (at least one stop every 24 h)			
Emissions	Sound pressure	dBA	75	77	78,5	83
	Sound output	W	--			
	CO Emission	mg/kWh	< 40			
	NOx Emission	mg/kWh	< 130			
Approval	Directive		90/396 - 89/336 - 73/23 - 92/42 EEC			
	Conforming to		EN 676			
	Certification		C 0085AP0944	CE 0085AP0945	CE 0085AP0946	CE 0085AT0042

- (01) Centrifugal with reverse curve blades
 (02) Centrifugal with forward curve blades

Reference conditions:

Temperature: 20°C
 Pressure: 1013.5 mbar
 Altitude: 100 m a.s.l.
 Noise measured at a distance of 1 meter.

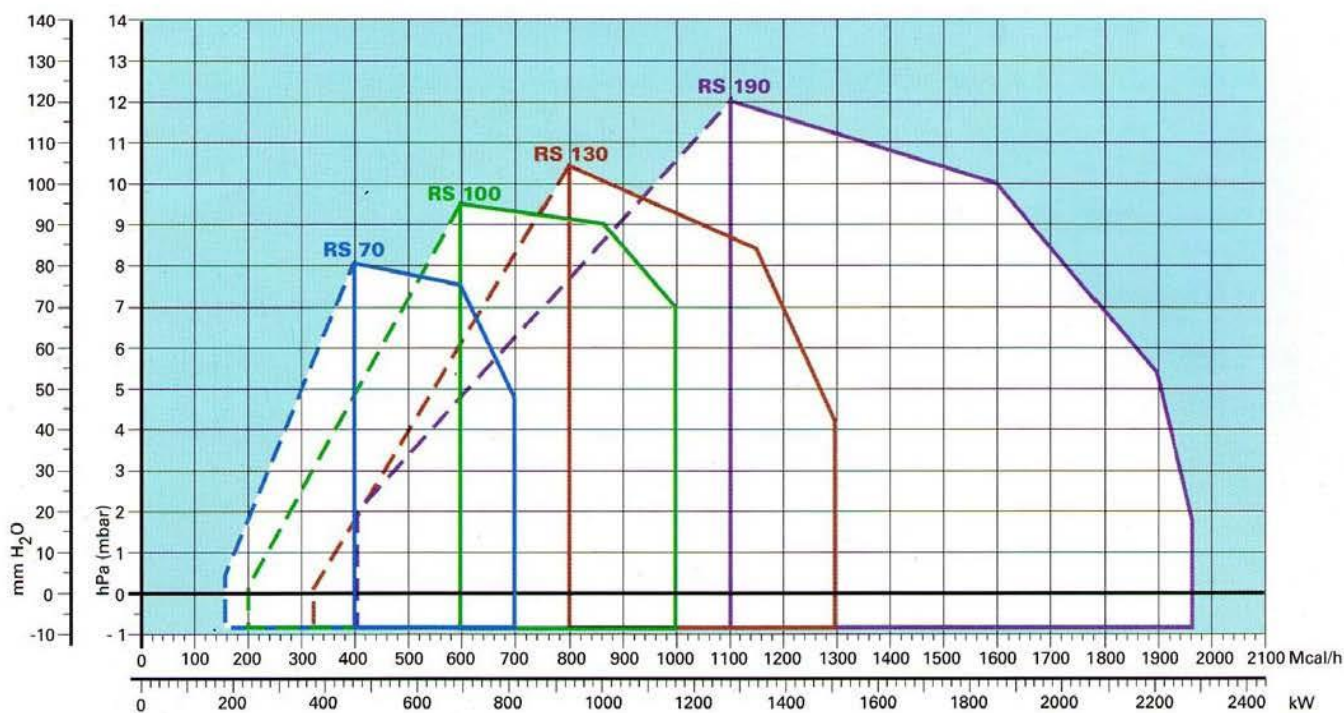
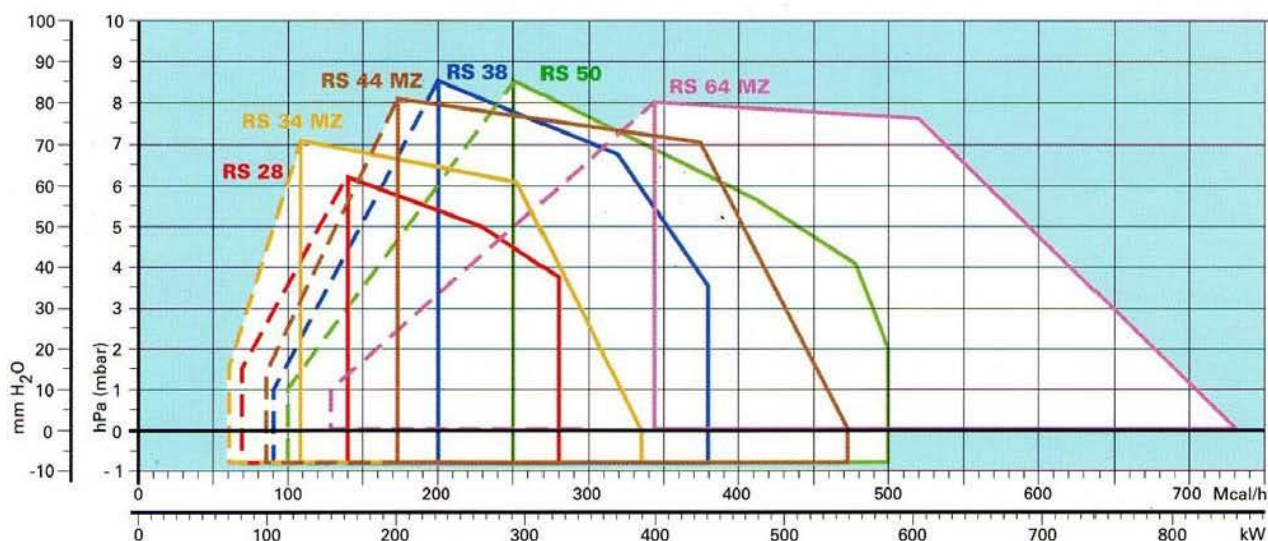
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FIRING RATES



Useful working field for choosing the burner

Modulation range (1st stage operation range)

Test conditions conforming to EN 676:

Temperature: 20°C

Pressure: 1000 mbar

Altitude: 100 m a.s.l.

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GASTRAIN

The burners are fitted with a butterfly valve to regulate the fuel delivery on 1st and 2nd stage, controlled by a variable profile cam servomotor.
 Fuel can be supplied either from the right or left hand sides.

The gas train can be selected to best fit system requirements depending on the fuel output and pressure in the supply line.

The gas train can be "Multibloc" type (containing the main components in a single unit) or "Composed" type (assembly of the single components).

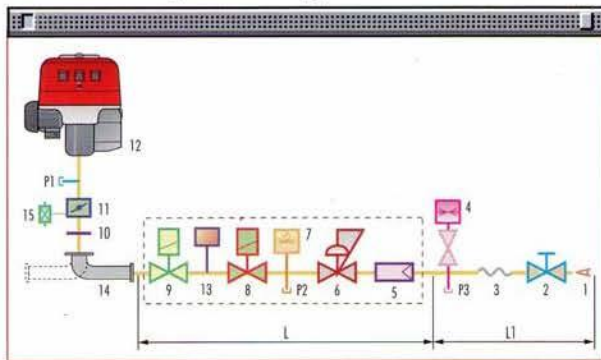


Example of the variable profile cam on RS 34-44 MZ burners.

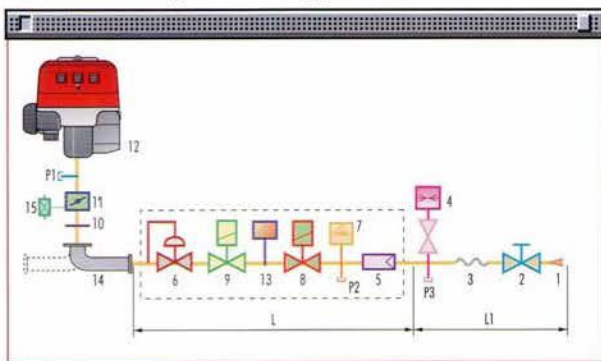


Example of the variable profile cam on RS 70-100-130 burners.

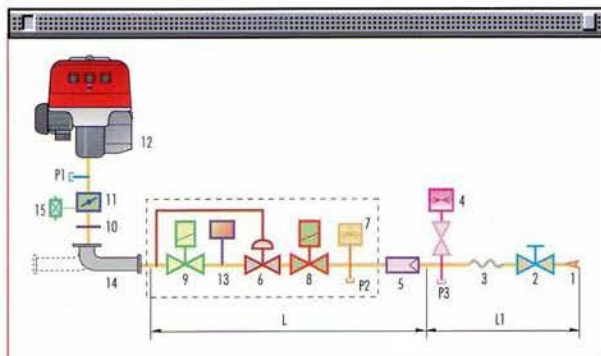
MULTIBLOC gas train type MBD 420



MULTIBLOC gas train type MBC 1200



COMPOSED gas train



1	Gas input pipework
2	Manual valve
3	Anti-vibration joint
4	Pressure gauge with pushbutton cock
5	Filter
6	Pressure regulator (vertical)
7	Minimum gas pressure switch
8	VS safety solenoid (vertical)
9	VR regulation solenoid (vertical) Two settings: - firing output (rapid opening) - maximum output (slow opening)
10	Gasket and flange supplied with the burner
11	Gas adjustment butterfly valve
12	Burner
13	Seal control mechanism for valves 8-9. According to standard EN 676, the seal control is compulsory for burners with maximum output above 1200 kW (in gas train with seal control)
14	Gas train-burner adapter
15	Maximum gas pressure switch
P1	Combustion head pressure
P2	Pressure downstream from the regulator
P3	Pressure upstream from the filter
L	Gas train supplied separately, with the code given in the table
L1	Installer's responsibility

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Example of a RS burner combustion head

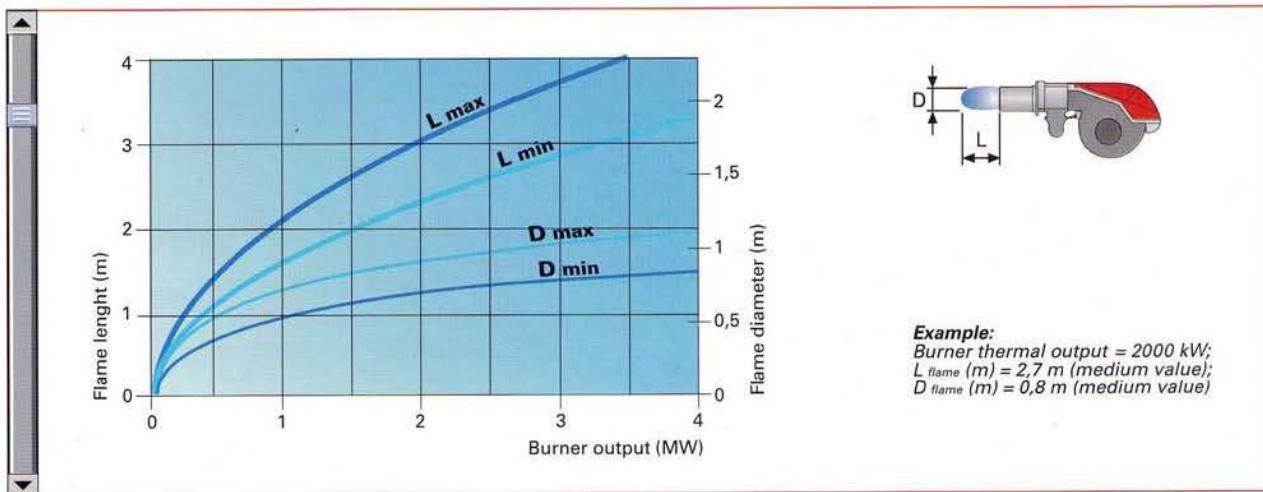
Different lengths of the combustion head can be chosen for the RS series of burners.

The choice depends on the thickness of the front panel and the type of boiler.

Depending on the type of generator, check that the penetration of the head into the combustion chamber is correct.

The internal positioning of the combustion head can easily be adjusted to the maximum defined output by adjusting a screw fixed to the flange.

Flame dimensions



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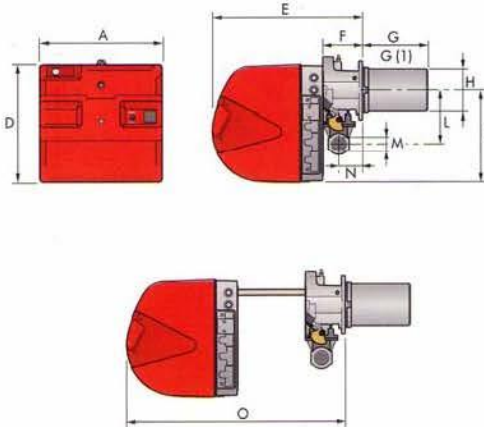


OVERALL DIMENSIONS (mm)

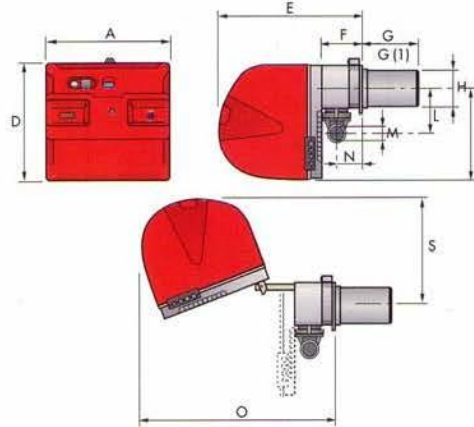
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BURNERS

RS 34 MZ - 44 MZ



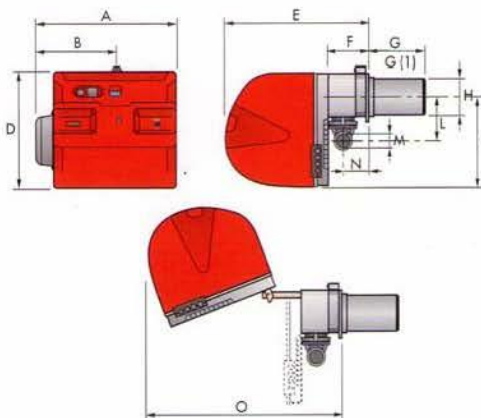
RS 28 - 38 - 50



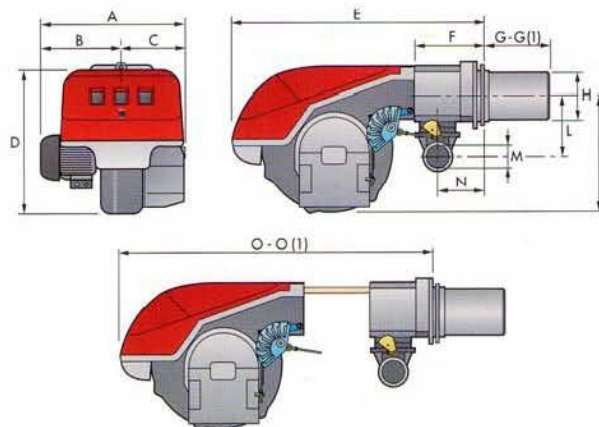
Model	A	D	E	F	G - G(1)	H	I	L	M	N	O	S
► RS 28	476	474	580	164	216 - 351	140	352	168	1"1/2	108	810	367
► RS 34 MZ	442	422	508	138	216 - 351	140	305	177	1"1/2	84	780	-
► RS 38	476	474	580	164	216 - 351	140	352	168	1"1/2	108	810	367
► RS 44 MZ	442	422	508	138	216 - 351	152	305	177	1"1/2	84	780	-
► RS 50	476	474	580	164	216 - 351	152	352	168	1"1/2	108	810	367

(1) dimension with extended head

RS 64 MZ



RS 70 - 100 - 130 - 190



Model	A	B	C	D	E	F	G - G(1)	H	I	L	M	N	O - O(1)
► RS 64 MZ	533	300	-	490	640	222	250 - 385	179	352	221	2"	134	810 - -
► RS 70	511	296	215	555	840	214	250 - 385	179	430	221	2"	134	1161 - 1296
► RS 100	527	312	215	555	840	214	250 - 385	179	430	221	2"	134	1161 - 1296
► RS 130	553	338	215	555	840	214	280 - 415	189	430	221	2"	134	1161 - 1296
► RS 190	681	366	315	555	856	230	372 - 530	222	430	186	2"	150	1312 - -

(1) dimension with extended head

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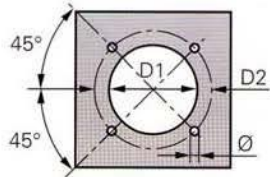




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► BURNER - BOILER MOUNTING FLANGE



Model	D1	D2	Ø
► RS 28	160	224	M8
► RS 34 MZ	160	224	M8
► RS 38	160	224	M8
► RS 44 MZ	160	224	M8
► RS 50	160	224	M8
► RS 64 MZ	185	275-325	M12
► RS 70	185	275-325	M12
► RS 100	185	275-325	M12
► RS 130	195	275-325	M12
► RS 190	230	325-368	M16

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