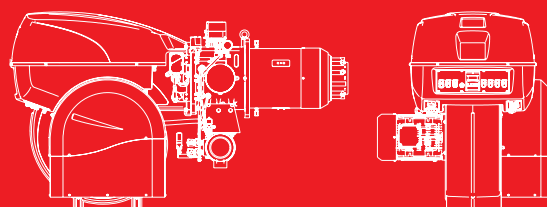




RLS 300÷1200/E-EV Series

Low NO_x Dual Fuel Burners

RLS 300/E-EV MX	600/1250	÷	3550	kW
RLS 400/E-EV MX	800/1800	÷	4300	kW
RLS 500/E-EV MX	1120/2500	÷	5050	kW
RLS 650/E-EV MX	1430/3000	÷	6550	kW
RLS 800/E-EV MX	1750/3500	÷	8000	kW
RLS 1000/E-EV MX	1200/3750	÷	10600	kW
RLS 1200/E-EV MX	1500/5500	÷	11500	kW



RLS/E-EV series burners are characterised by a modular monoblock structure that means all necessary components can be combined in a single unit thus making installation easier, faster and, above all, more flexible.

The series covers a firing range from 1250 to 11500 kW, and they have been designed for use in hot water boilers, overheated water boilers as well as steam boilers. Operation can be "two stage progressive" or alternatively "modulating" for both fuels, light oil and gas, with the installation of a PID logic regulator on the RLS 300÷800/E series burners while RLS/EV and RLS 1000-1200/E series is fully "modulating". The burner can, therefore, supply with precision the demanded power, guaranteeing an high efficiency system level and the stability setting, obtaining fuel consumption and operating costs reduction.

The innovative combustion head, adjustment system ensures perfect movement during modulation as well as reducing noise and pollutants.

Technical Data

MODEL			RLS 300	RLS 400	RLS 500
Burner operation mode			Progressive two-stage or modulating		
Modulation ratio at max. output			4 ÷ 1		
Servomotor	type		SQM 48.4... (OIL and GAS)		
	run time s		30s / 90°		
Heat output	kW		600/1250 ÷ 3550	800/1800 ÷ 4300	1120/2500 ÷ 5050
	Mcal/h		516/1075 ÷ 3053	688/1548 ÷ 3698	963/2150 ÷ 4342
Working temperature		°C min./max.	0/50		
FUEL/AIR DATA					
Light oil	net calorific value	kWh/kg	11.86		
	viscosity at 20°C	mm²/s (cSt)	4 ÷ 6		
	output	kg/h	50/105 - 299	67/152 - 363	95/211 - 425
Pump	type		TA4		TA5
	output	kg/h	560 (at 16.5 bar)		
Atomised pressure		bar	7 - 40		6 - 30
Fuel temperature		max. °C	140		140
Fuel pre-heater			-		-
G20 gas	net calorific value	kWh/Nm³	10		
	gas density	kg/Nm³	0.71		
	gas delivery	Nm³/h	60/125 ÷ 355	80/180 ÷ 430	112/250 ÷ 505
G25 gas	net calorific value	kWh/Nm³	8.6		
	gas density	kg/Nm³	0.78		
	gas delivery	Nm³/h	70/145 ÷ 412	93/209 ÷ 500	130.23/290.7 ÷ 587.21
LPG gas	net calorific value	kWh/Nm³	25.8		
	gas density	kg/Nm³	2.02		
	gas delivery	Nm³/h	23.3/48.5 ÷ 138	31/70 ÷ 167	43.4/97 ÷ 196
Fan		type	Reverse blade fan wheels		Forward fan wheels
Air temperature		max °C	60		
ELECTRICAL DATA					
Electrical supply		Ph/Hz/V	3/400/50 (±10%)		
Auxiliary electrical supply		Ph/Hz/V	1/230/50 ~ (±10%)		
Control box		type E/EV	LMV51.0/LMV52.2		
Total electrical power		kW	7.8 (oil) / 6 (gas)	11 (oil) / 9.2 (gas)	15.8 (oil) / 14 (gas)
Auxiliary electrical power		kW	-		
Heaters electrical power		kW	-		
Protection level		IP	54		
Fan motor	electrical power	kW	4.5	7.5	12
	rated current	A	15 - 8.7	16 - 9	23 - 13.2
	start up current	A	7 x In		
	protection level	IP	54		
Pump motor	electrical power	kW	1.5		
	rated current	A	5.9/3.4		
	start up current	A	7 x In		
	protection level	IP	54		

MODEL			RLS 300	RLS 400	RLS 500
Ignition transformer	V1 - V2		230V - 2 x 5 kV		
	I1 - I2		1.9 A - 35 mA		
Operation			Intermittent (at least one stop every 24 h) or Progressive two-stage or modulating by kit		
EMISSIONS					
Noise levels	sound pressure	dB (A)	83	85.3	86.5
	sound power	W	-	-	100.5
Light oil	CO emission	mg/kWh	< 10		
	grade of smoke indicator	Nº Bacharach	< 2		
	CxHy emission	mg/kWh	< 2		
	NOx emission	mg/kWh	< 185		
Gas G20	CO emission	mg/kWh	< 10		
	NOx emission	mg/kWh	< 80		
APPROVAL					
Directive			2006/42 - 2009/142 - 2004/108 - 2006/95 EC		
Conforming to			EN 267 - EN 676		
Certification			CE-0085BR0471	CE-0085BR0472	CE-0085CL0207

MODEL			RLS 650	RLS 800	RLS 1000	RLS 1200
Burner operation mode			Progressive two-stage or modulating			
Modulation ratio at max. output			4 ÷ 1		1 ÷ 4 (oil and gas)	
Servomotor	type		SQM 48.4... (Oil and Gas)		SQM48.4	
	run time s		30s / 90°			
Heat output	kW		1430/3000 ÷ 6550	1750/3500 ÷ 8000	1200/3750 ÷ 10600	1500/5500 ÷ 11500
	Mcal/h		1230/2580 ÷ 5632	1505/3009 ÷ 6879	987/3109 ÷ 8557	1688/4560 ÷ 9297
Working temperature		°C min./ max.	0/50			
FUEL/AIR DATA						
Light oil	net calorific value	kWh/kg	11,86			
	viscosity at 20°C	mm2/s (cSt)	4 ÷ 6			
	output	kg/h	121/253 - 552	148/295 - 675	100/315 - 867	171/462 - 942
Pump	type		TA5		VBHRG	VBHGRP
	output	kg/h	560 (at 16.5 bar)		1400 (at 30 bar)	1826 (at 30 bar)
Atomised pressure		bar	6 ÷ 30		9 ÷ 40	
Fuel temperature		max. °C	140			
Fuel pre-heater			-	-	NO	
G20 gas	net calorific value	kWh/Nm3	10			
	gas density	kg/Nm3	0,71			
	gas delivery	Nm3/h	143/300 ÷ 655	175/350 ÷ 800	120/375 ÷ 1060	150/550 ÷ 1150
G25 gas	net calorific value	kWh/Nm3	8,6			
	gas density	kg/Nm3	0,78			
	gas delivery	Nm3/h	166.28/349 ÷ 762	204/407 ÷ 930	140/436 ÷ 1233	174/640 ÷ 1337
LPG gas	net calorific value	kWh/Nm3	25,8			
	gas density	kg/Nm3	2,02			
	gas delivery	Nm3/h	55.4/116.3 ÷ 254	68/136 ÷ 310	46.5/145.3 ÷ 411	58/213.2 ÷ 446
Fan		type	Forward curve blades		Reverse curve blades	
Air temperature		max °C	60			

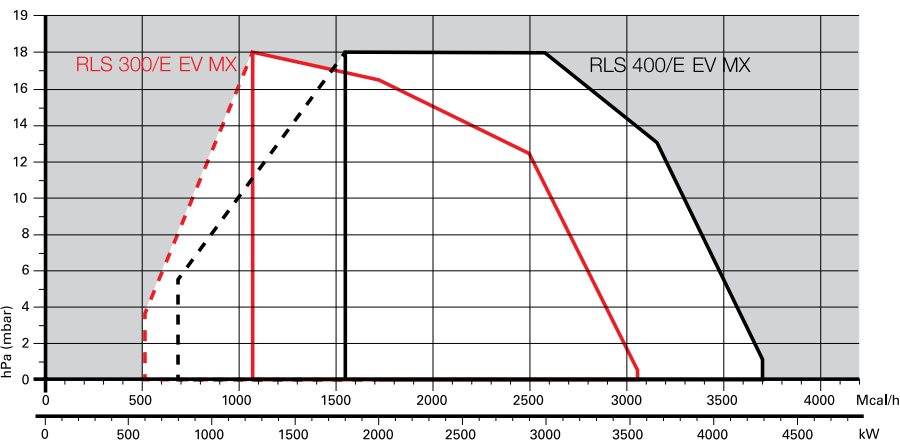
MODEL			RLS 650	RLS 800	RLS 1000	RLS 1200
ELECTRICAL DATA						
Electrical supply		Ph/Hz/V	3N/400/50 (±10%)			
Auxiliary electrical supply		Ph/Hz/V	1/230/50 ~ (±10%)			
Control box		type E/EV	LMV51.0/LMV52.2		LMV 51.1 / LMV 52.2	
Total electrical power		kW	22.5 (oil) / 20.8 (gas)	26 (oil) / 24 (gas)	27 (oil) / 24 (gas)	31 (oil) / 27 (gas)
Auxiliary electrical power		kW	-			
Heaters electrical power		kW	-			
Protection level		IP	54			
Fan motor	electrical power	kW	18.5	21	22	25
	rated current	A	35.7 - 20.6	41.8 - 24.2	38.6 - 22.3	44.1 - 25.5
	start up current	A	7 x In			
	protection level	IP	54			
Pump motor	electrical power	kW	1.5		2,2	4
	rated current	A	5.9/3.4		9.3 - 5.4	8.2
	start up current	A	7 x In			
	protection level	IP	54			
Ignition transformer		V1 - V2	230V - 1 x 5 kV		230V - 1 x 8 kV	
		I1 - I2	1 A - 20 mA			
Operation			Intermittent (at least one stop every 24 h) or Progressive two-stage or modulating by kit			
EMISSIONS						
Noise levels	sound pressure	dB (A)	80.1	89.6	85,4	84,4
	sound power	W	104.3	103.9	100,6	99.7
Light oil	CO emission	mg/kWh	< 10			
	grade of smoke indicator	Nº Bacharach	< 2			
	CxHy emission	mg/kWh	< 2			
	NOx emission	mg/kWh	< 185		< 250	
Gas G20	CO emission	mg/kWh	< 10			
	NOx emission	mg/kWh	< 80			
APPROVAL						
Directive			2006/42 - 2009/142 - 2004/108 - 2006/95 EC			
Conforming to			EN 267 - EN 676			
Certification			CE-0085CL0207	CE-0085CL0422	CE-0085CN0120	

Reference conditions:

Temperature: 20°C - Pressure: 1013,5 mbar - Altitude: 0 m a.s.l. - Noise measured at a distance of 1 meter.

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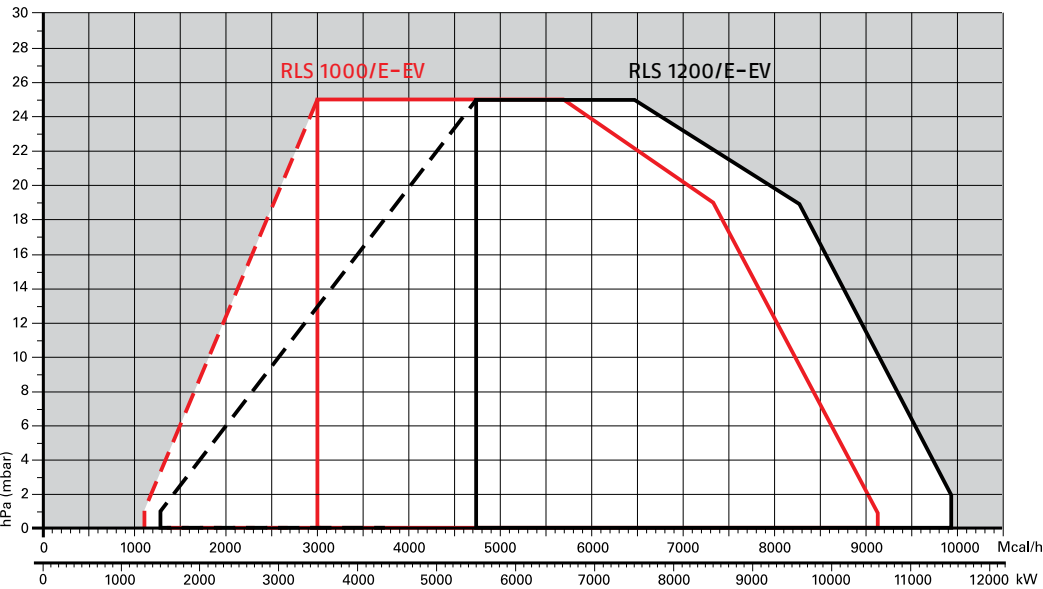
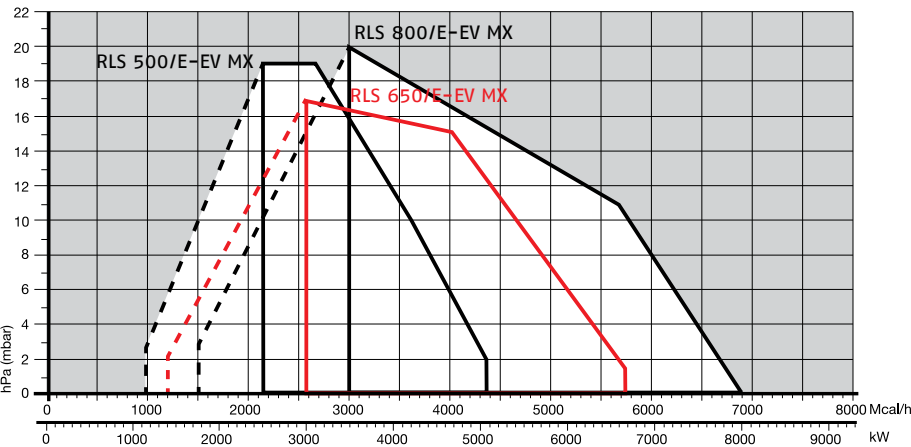
Firing Rates



Useful working field for choosing the burner

Modulation range

Test conditions
conforming to
EN 676:
Temperature: 20°C
Pressure: 1013,5 mbar
Altitude: 0 m a.s.l.



Fuel Supply

GAS TRAIN DESIGNATION

Series:	MB
	MBC
	DMV
	DMV12
	VG
	CB
	CBH
	MV
	CG

Size:	405	407	410	412	415	420							
		65	120	300	700	1200	-	1900	3100	5000			
	505	507	510	512	-	520	525	5065	5080	50100	50125	50150	
10	15	20	32	40	-	50	-	65	80	100	125	150	
		120	220										

Operation:	/S	only ON-OFF function
	/1	stage mode opening
	/2	2nd stage mode opening
	/P	1st stage mode opening with air/gas proportional regulator

Leak detection control:	-	0
	CT	leak detection control device installed on the gas train
	CQ	equipped with pressure switch for leak detection control

Joint type:	R	threaded joint
	F	standard flange ISO
	F1	square flange BS1
	F2	square flange BS2
	F3	square flange BS3 - BS4

Electrical connection:	T	Terminals - Terminal strip
	SD	Domestic plug
	SM	Medium voltage plug

Standard output pressure range:	-	without pressure governor
	0	with governor and air/gas proportional pressure
	2	with governor and output pressure up to 20 mbar
	3	with governor and output pressure up to 30 mbar
	4	with governor and output pressure up to 40 mbar
	5	with governor and output pressure up to 50 mbar
	6	with governor and output pressure up to 60 mbar
	8	with governor and output pressure up to 80 mbar
	15	with governor and output pressure up to 150 mbar

Valve control:	0	shared
	2	separate

CB	5065	/1	CT	F	SM	3	0
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BASIC DESIGNATION

EXTENDED DESIGNATION

GAS TRAINS

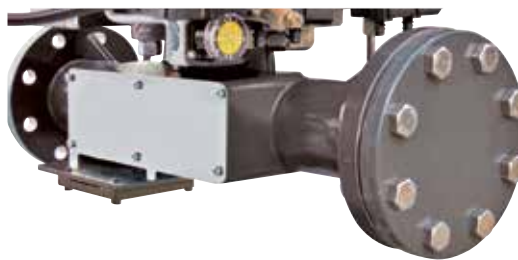
The burners are fitted with a butterfly valve to regulate the fuel, controlled by the main management module of burner through a high precision servomotor.

Fuel can be supplied either from the right or left sides, on the basis of the application requirements.

A maximum gas pressure switch stops the burner in case of excess pressure in the fuel line.

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

The gas trains are "Multibloc" and "Composed" type (assembly of the single components) with or without seal control.

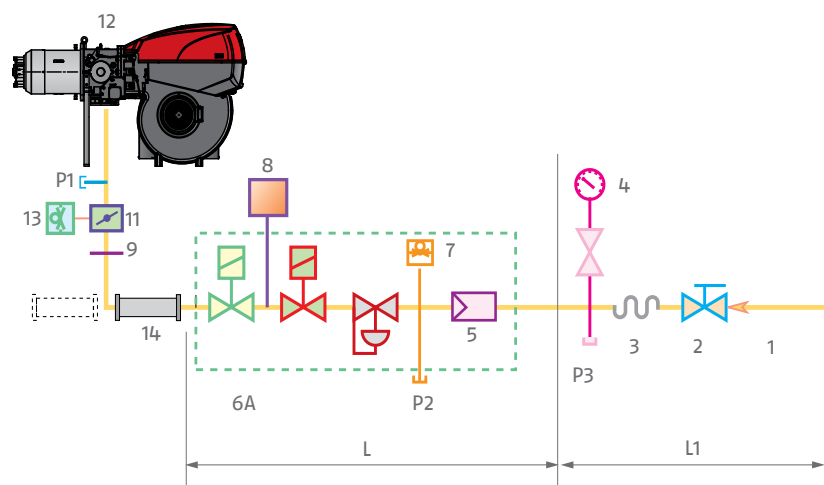


Example of gas adjustment butterfly valve for RLS 300-400-500-650-800 models.



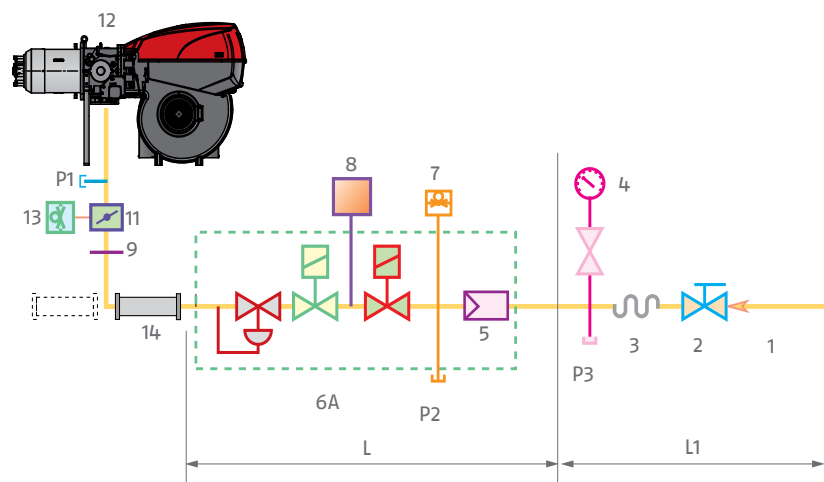
Example of gas adjustment butterfly valve for RLS 1000-1200 models.

MB "THREADED"

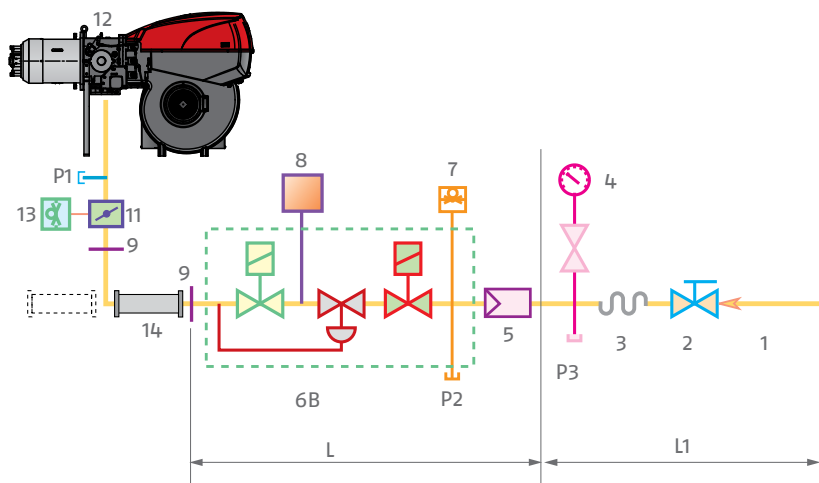


1	Gas input pipework
2	Manual valve
3	Anti-vibration joint
4	Pressure gauge with pushbutton cock
5	Filter
6A	Includes:
	- filter
	- operation valve
	- safety valve
	- pressure adjuster
7	Minimum gas pressure switch
8	Leak detection device, supplied as an accessory or incorporated, based on the gas train code.
9	Gasket, for "flanged" versions only
10	Pressure adjuster
11	Gas adjuster butterfly valve
12	Burner
13	Maximum gas pressure switch
14	Gas train-burner adaptor, supplied separately
P1	Combustion head pressure
P2	Upstream pressure of valves
P3	Upstream pressure of the filter
L	Gas train supplied separately, with the code given in the table
L1	Installer' responsibility

MBC "THREADED"

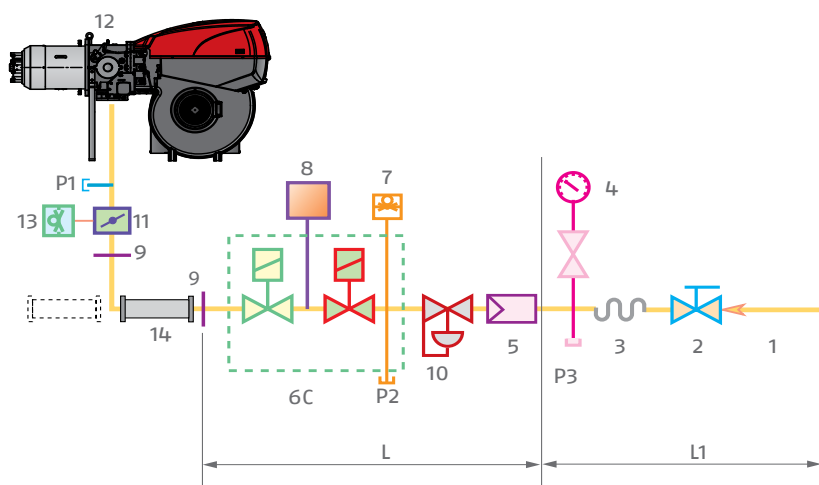


MBC "FLANGED"

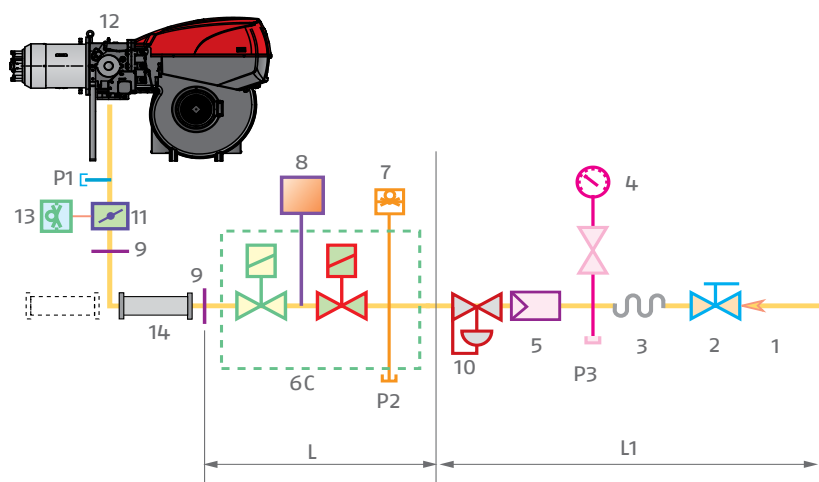


1	Gas input pipework
2	Manual valve
3	Anti-vibration joint
4	Pressure gauge with pushbutton cock
5	Filter
6B	Includes:
	- operation valve
	- safety valve
	- pressure adjuster
6C	Includes:
	- operation valve
	- safety valve
7	Minimum gas pressure switch
8	Leak detection device, supplied as an accessory or incorporated, based on the gas train code.
9	Gasket, for "flanged" versions only
10	Pressure adjuster
11	Gas adjuster butterfly valve
12	Burner
13	Maximum gas pressure switch
14	Gas train-burner adaptor, supplied separately
P1	Combustion head pressure
P2	Upstream pressure of valves
P3	Upstream pressure of the filter
L	Gas train supplied separately, with the code given in the table
L1	Installer' responsibility

CB "FLANGED OR THREADED"



DMV "FLANGED OR THREADED"



Gas trains are approved by standard EN 676 together with the burner.

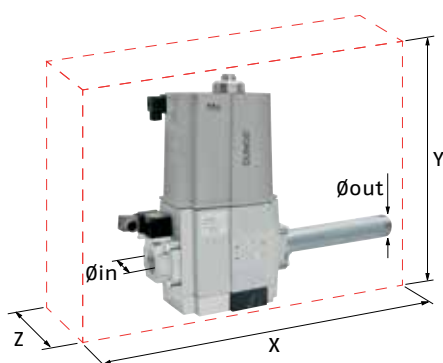
The overall dimensions of the gas train depends on how they are constructed. The following table shows the maximum dimensions of the gas trains that can be fitted to RLS/E-EV burners, intake and outlet diameters and seal control if fitted.

The maximum gas pressure of gas train "MULTIBLOC" type is 360 mbar, and that one of gas train "COMPOSED" type is 500 mbar.

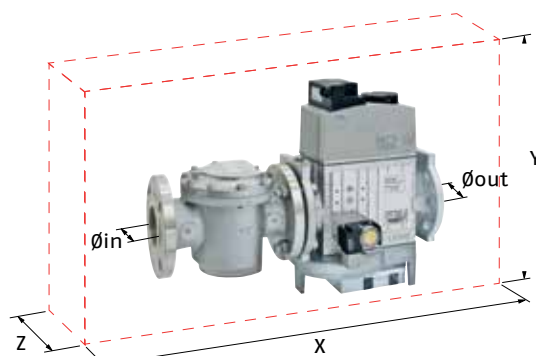
"MULTIBLOC" guarantees a range of pressure towards the burner from 4 to 60 mbar. For version DN 65 and DN 80 is from 20 to 40 mbar. For version DN 100 is from 40 to 80 mbar. The range of pressure in the "MULTIBLOC" with flange can be modified choosing the stabiliser spring (see gas train accessory).

The maximum gas pressure of gas train "CB" series is 500 mbar. "CB" gas train guarantees a range of pressure towards the burner from 10 to 30 mbar. The range of pressure can be modified choosing the stabilizer spring (see accessories).

The maximum gas pressure of gas train "DMV" series is 500 mbar. "DMV" gas train is supplied without pressure governor.



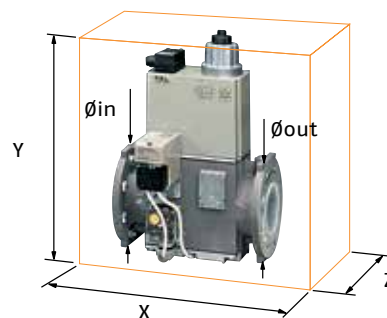
Example of gas train "MULTIBLOC" type without seal control (i.e. MBC 1200)



Example of gas train "COMPOSED" type without seal control (i.e. MBC 1900-3100-5000)



Example of gas train "CB" series with seal control



Example of gas train "DMV" series with seal control

GAS TRAIN

MODEL	CODE	Ø in	Ø out	X mm	Y mm	Z mm
MB 415/1 - RT 30	3970180	Rp 1-1/2"	Rp 1-1/2"	523	250	100
MB 415/1 CT RT 30	3970198	Rp 1-1/2"	Rp 1-1/2"	523	250	229
MB 415/1 - RT 52	3970250	Rp 1-1/2"	Rp 1-1/2"	523	250	100
MB 415/1 CT RT 52	3970253	Rp 1-1/2"	Rp 1-1/2"	523	250	229
MB 415/1 RSM 30	3970232	Rp 1-1/2"	Rp 1-1/2"	523	250	100
MB 420/1 RT 30	3970181	Rp 2"	Rp 2"	523	289	100
MB 420/1 CT RT 30	3970182	Rp 2"	Rp 2"	523	289	229
MB 420/1 RT 52	3970257	Rp 2"	Rp 2"	523	289	100
MB 420/1 CT RT 52	3970252	Rp 2"	Rp 2"	523	289	229
MB 420/1 RSM 30	3970233	Rp 2"	Rp 2"	523	289	100
MB 420/1 CT RSM 30	3970234	Rp 2"	Rp 2"	523	289	229

GAS TRAIN						
MODEL	CODE	Ø in	Ø out	X mm	Y mm	Z mm
MBC 1200/1 - RSM 60	3970221	Rp 2"	Rp 2"	528	424	161
MBC 1200/1 CT RSM 60	3970225	Rp 2"	Rp 2"	528	424	290
MBC 1900/1 - FSM 40	3970222	DN 65	DN 65	613	430	237
MBC 1900/1 CT FSM 40	3970226	DN 65	DN 65	613	430	298
MBC 3100/1 - FSM 40	3970223	DN 80	DN 80	633	500	240
MBC 3100/1 CT FSM 40	3970227	DN 80	DN 80	633	500	319
MBC 5000/1 - FSM 80	3970224	DN 100	DN 100	733	576	280
MBC 5000/1 CT FSM 80	3970228	DN 100	DN 100	733	576	348

GAS TRAIN						
MODEL	CODE	Ø in	Ø out	X mm	Y mm	Z mm
CB 512/1 - RSM 30	3970145	Rp 1-1/2"	Rp 1-1/2"	891	261	245
CB 512/1 - CT RSM 30	20045589	Rp 1-1/2"	Rp 1-1/2"	891	261	245
CB 520/1 - RSM 30	3970146	Rp 2"	Rp 2"	986	328	255
CB 520/1 - CT RSM 30	3970160	Rp 2"	Rp 2"	986	328	255
CB 525/1 - RSM 30	20044659	Rp 2"	Rp 2"	1025	356	285
CB 525/1 - CT RSM 30	20044660	Rp 2"	Rp 2"	1025	356	285
CB 5065/1 - FSM 30	3970147	DN 65	DN 65	906	356	285
CB 5065/1 CT FSM 30	3970161	DN 65	DN 65	906	356	285
CB 5080/1 - FSM 30	3970148	DN 80	DN 80	934	416	285
CB 5080/1 CT FSM 30	3970162	DN 80	DN 80	934	416	285
CB 50100/1 - FSM 30	3970149	DN 100	DN 100	1054	501	350
CB 50100/1 CT FSM 30	3970163	DN 100	DN 100	1054	501	350
CB 50125/1 - FSM 30	20015871	DN 125	DN 125	1164	780	400
CB 50125/1 CT FSM 30	3970196	DN 125	DN 125	1164	780	400

GAS TRAIN						
MODEL	CODE	Ø in	Ø out	X mm	Y mm	Z mm
DMV 512/1 - RSM - 0	20043035	Rp 1-1/2"	Rp 1-1/2"	490	292	245
DMV 512/1 - CT RSM - 0	20043036	Rp 1-1/2"	Rp 1-1/2"	490	292	245
DMV 512/1 - CQ RSM - 2	20043037	Rp 1-1/2"	Rp 1-1/2"	490	292	245
DMV 520/1 - RSM - 0	20043038	Rp 2"	Rp 2"	490	292	255
DMV 520/1 CT RSM - 0	20043039	Rp 2"	Rp 2"	490	292	255
DMV 520/1 CQ RSM - 2	20043040	Rp 2"	Rp 2"	490	292	255
DMV 525/1 - RSM - 0	20043053	Rp 2"	Rp 2"	530	338	270
DMV 525/1 CT RSM - 0	20043054	Rp 2"	Rp 2"	530	338	270
DMV 525/1 CQ RSM - 2	20043055	Rp 2"	Rp 2"	530	338	270
DMV 5065/1 - FSM - 0	20043041	DN 65	DN 65	290	338	270
DMV 5065/1 CT FSM - 0	20043042	DN 65	DN 65	290	338	270
DMV 5065/1 CQ FSM - 2	20043043	DN 65	DN 65	290	338	270
DMV 5080/1 - FSM - 0	20043044	DN 80	DN 80	310	397	290
DMV 5080/1 CT FSM - 0	20043045	DN 80	DN 80	310	397	290
DMV 5080/1 CQ FSM - 2	20043046	DN 80	DN 80	310	397	290
DMV 50100/1 - FSM - 0	20043047	DN 100	DN 100	350	449	307
DMV 50100/1 CT FSM - 0	20043048	DN 100	DN 100	350	449	307
DMV 50100/1 CQ FSM - 2	20043049	DN 100	DN 100	350	449	307
DMV 50125/1 - FSM - 0	20043050	DN 125	DN 125	400	554	333
DMV 50125/1 CT FSM - 0	20043051	DN 125	DN 125	400	554	333
DMV 50125/1 CQ FSM - 2	20043052	DN 125	DN 125	400	554	333

Pressure Drop Diagram

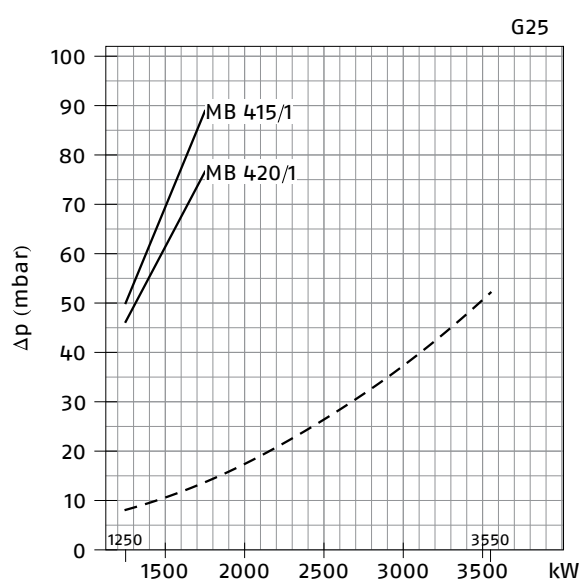
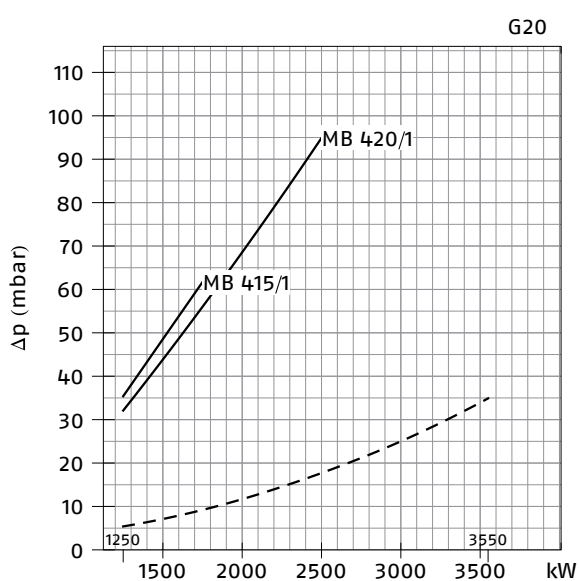
The diagrams indicate the minimum pressure drop of the burners with the various gas trains that can be matched with them; at the value of these pressure drop add the combustion chamber pressure.

The value thus calculated represents the minimum required input pressure to the gas train.

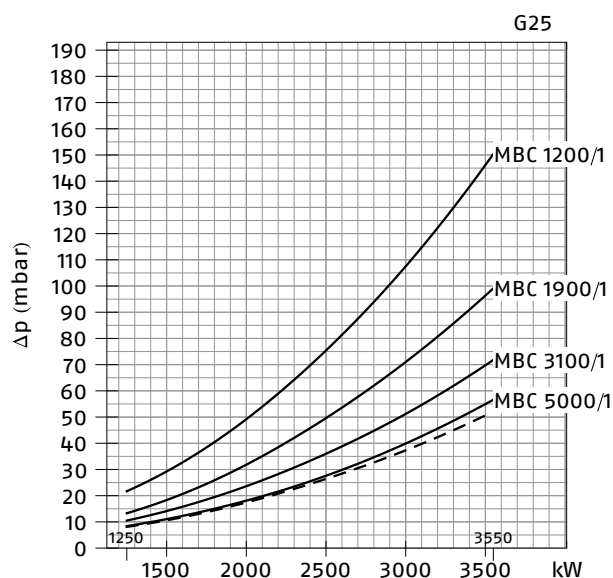
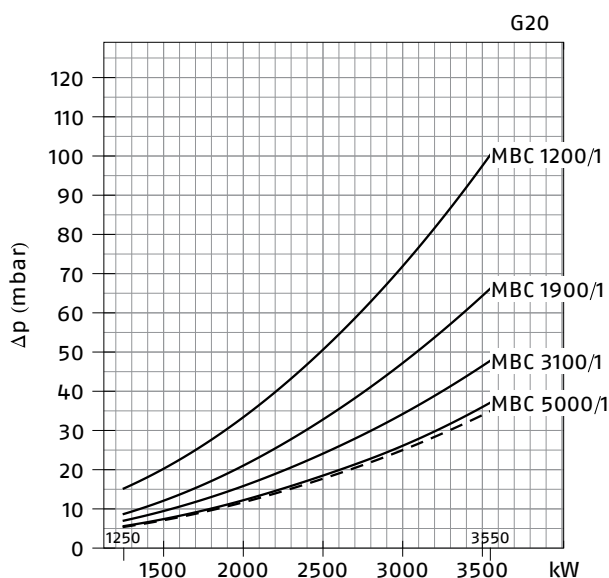
The minimum input gas pressure required is 15 mbar while burner operating.

In particular, the pressure difference between gas train upstream and downstream has to remain always over pressure drop values indicated below.

RLS 300/E-EV (NATURAL GAS)

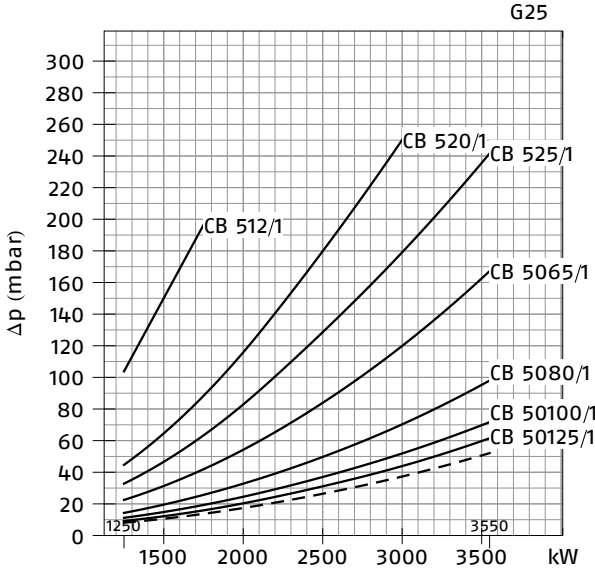
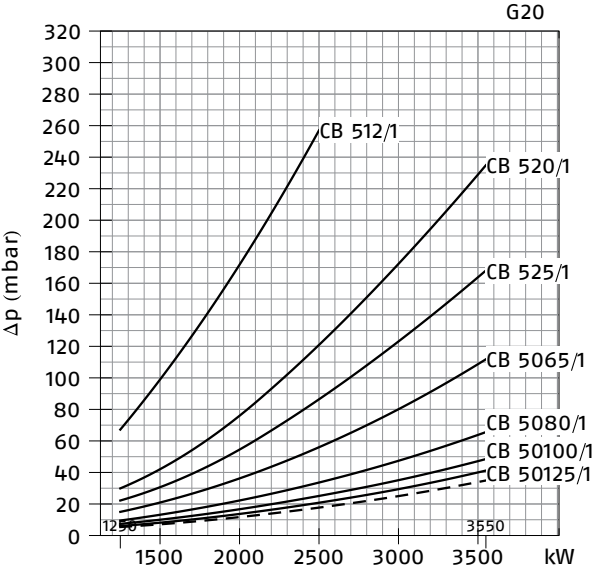


RLS 300/E-EV (NATURAL GAS)

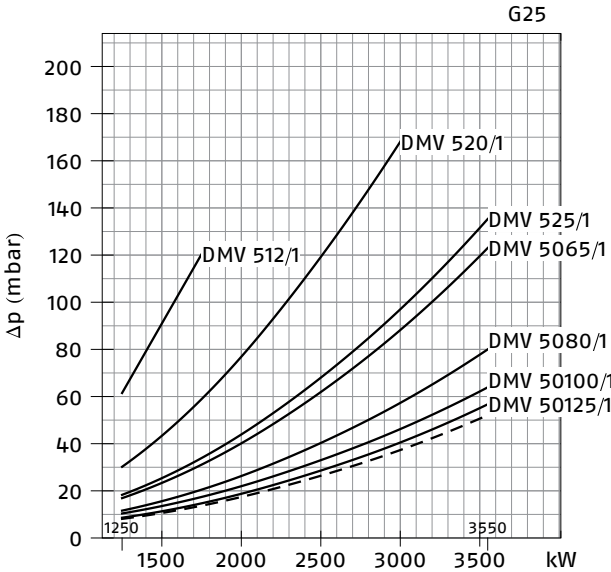
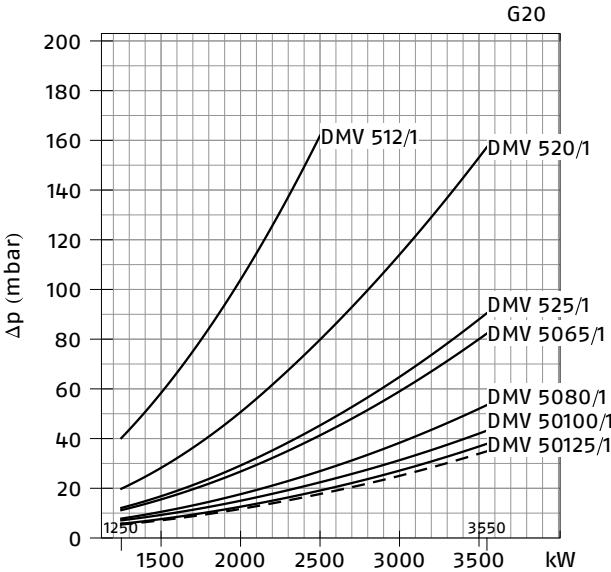


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RLS 300/E-EV (NATURAL GAS)

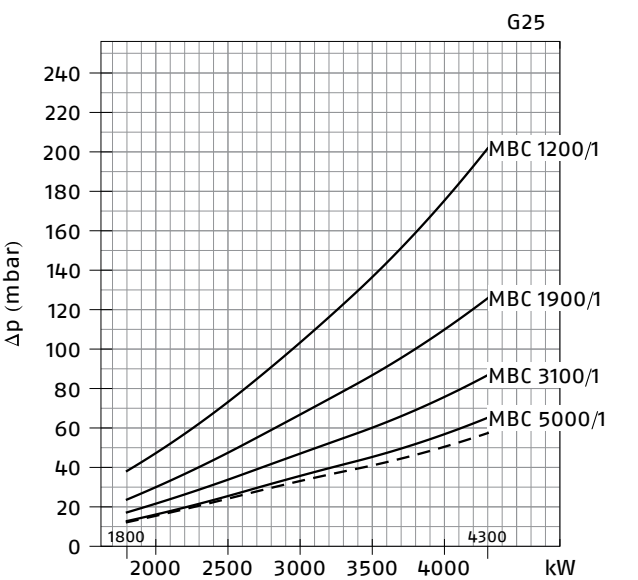
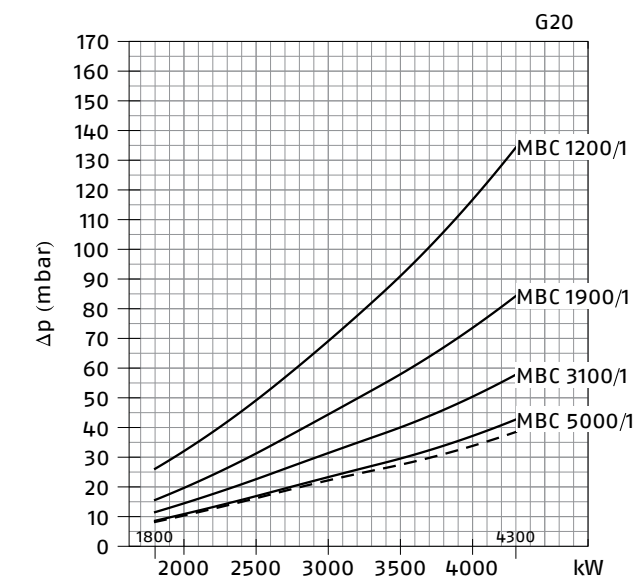


RLS 300/E-EV (NATURAL GAS)

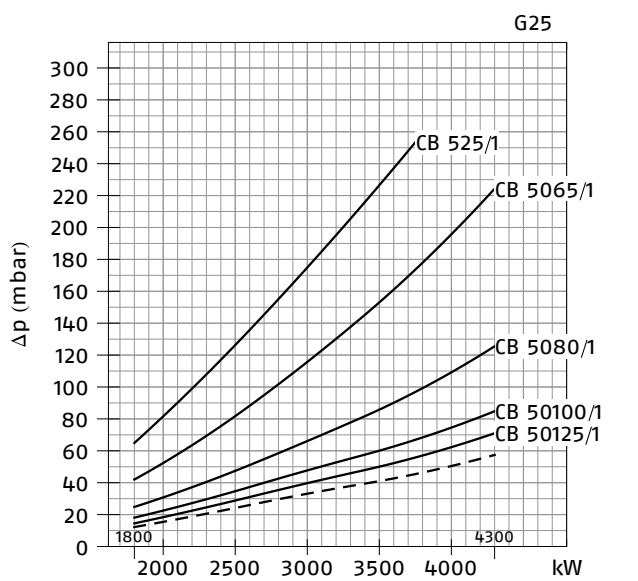
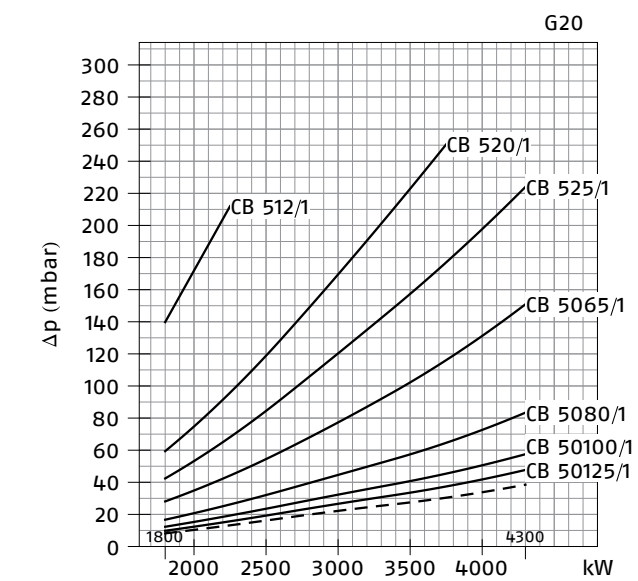


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RLS 400/E-EV (NATURAL GAS)



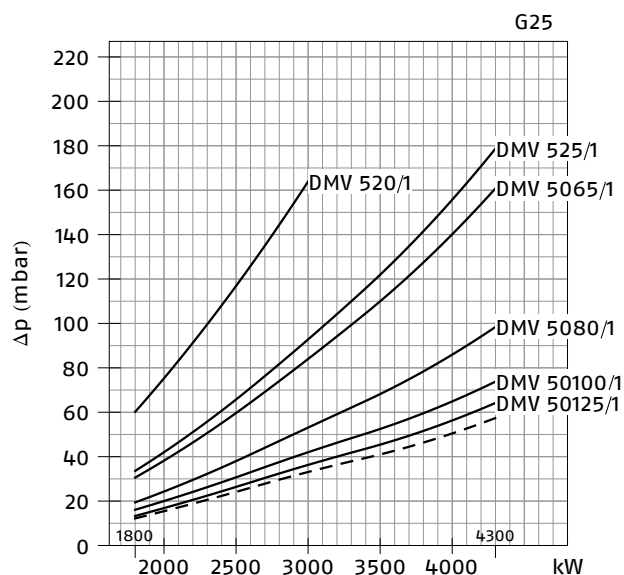
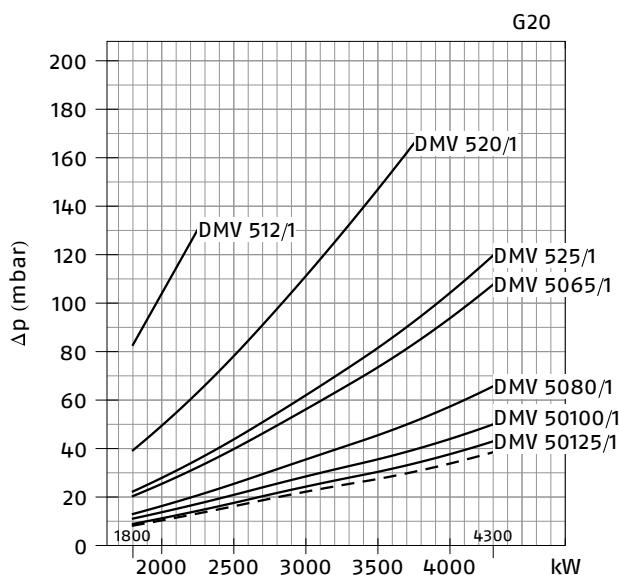
RLS 400/E-EV (NATURAL GAS)



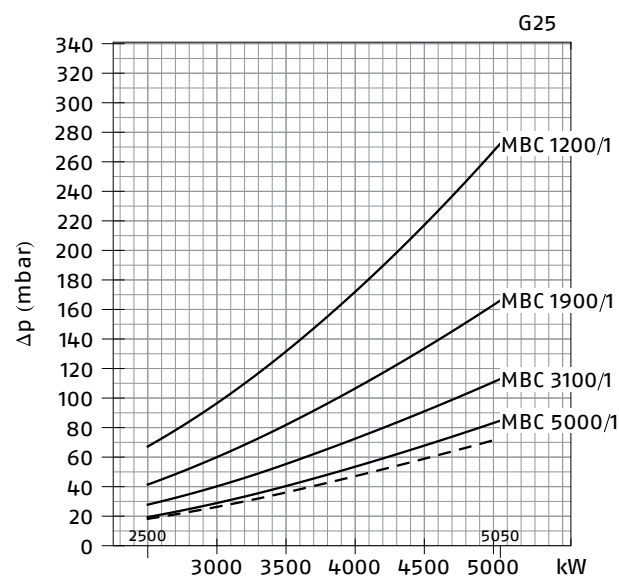
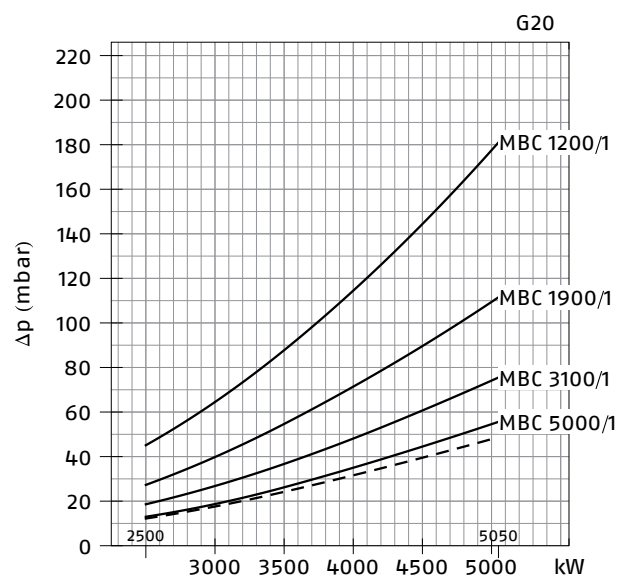
Combustion head + gas butterfly valve + gas train

Combustion head + gas butterfly valve

RLS 400/E-EV (NATURAL GAS)

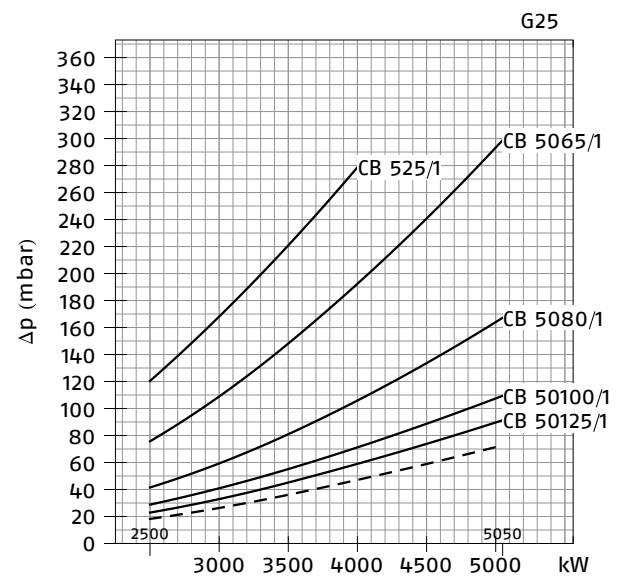
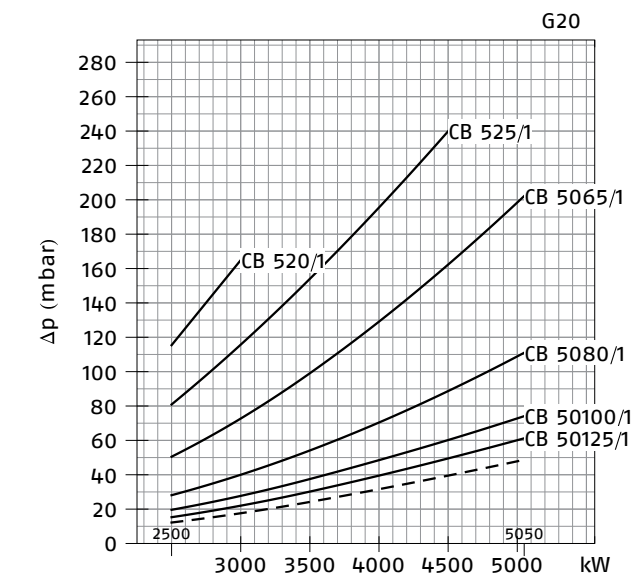


RLS 500/E-EV (NATURAL GAS)

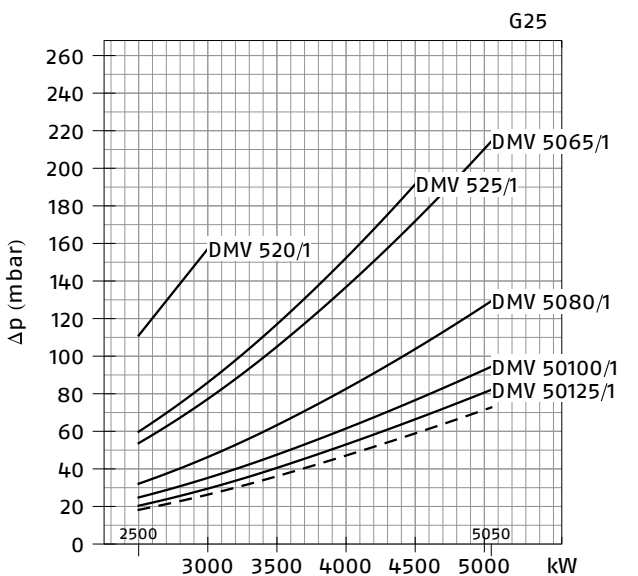
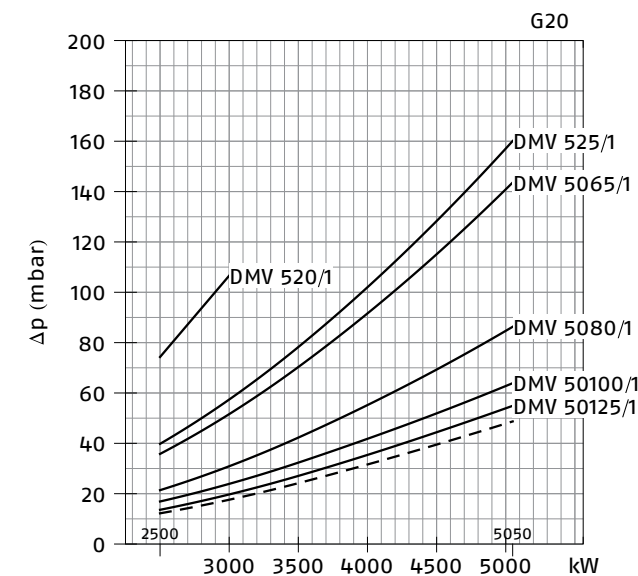


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RLS 500/E-EV (NATURAL GAS)



RLS 500/E-EV (NATURAL GAS)



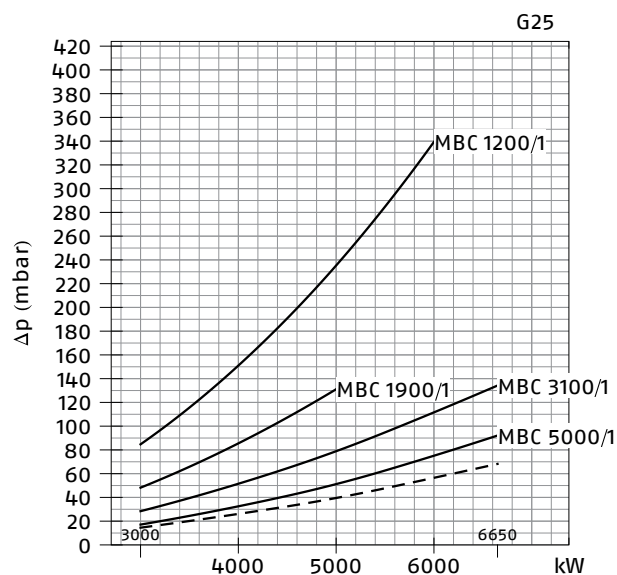
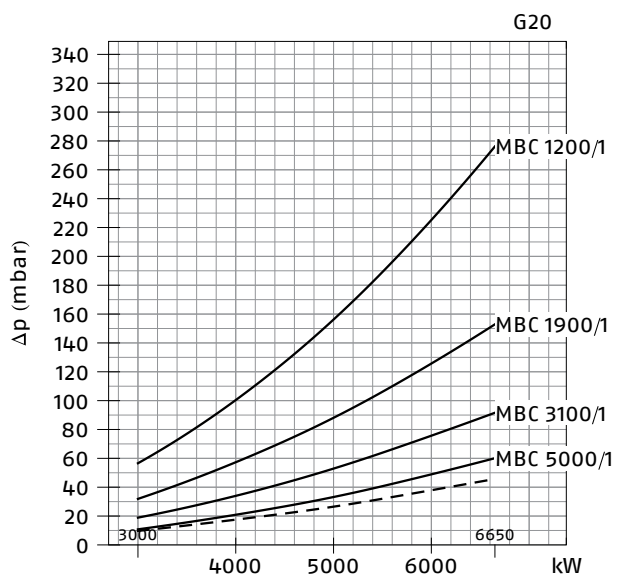
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Combustion head + gas butterfly valve + gas train

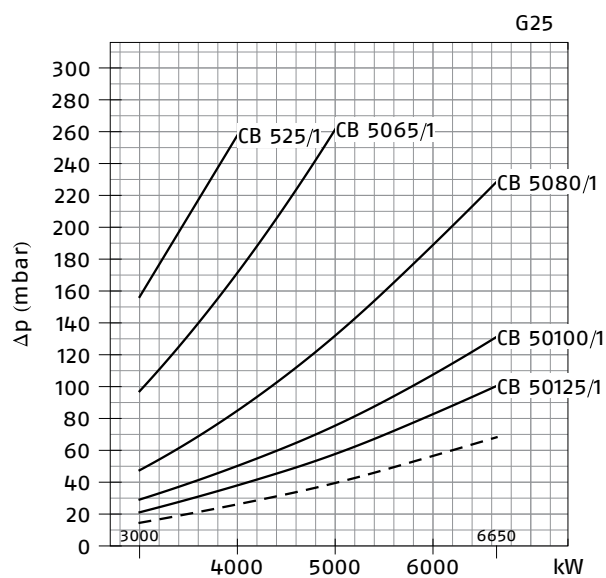
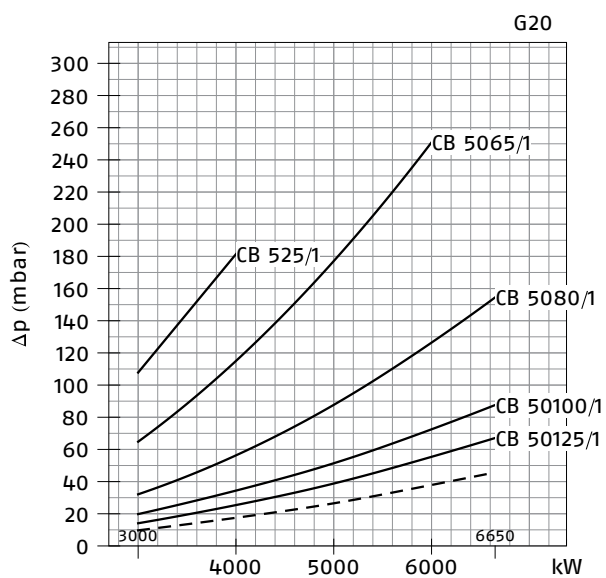
- - -

Combustion head + gas butterfly valve

RLS 650/E-EV (NATURAL GAS)

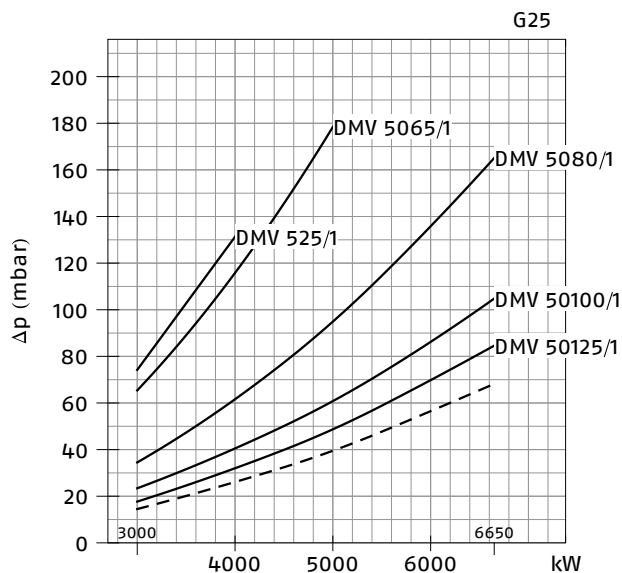
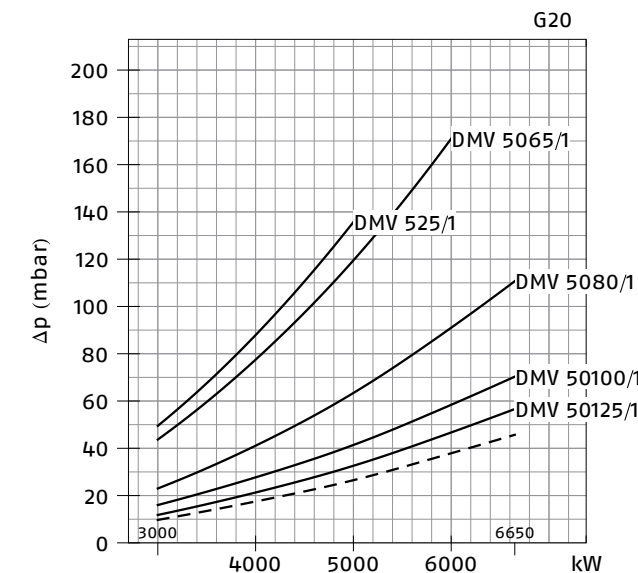


RLS 650/E-EV (NATURAL GAS)

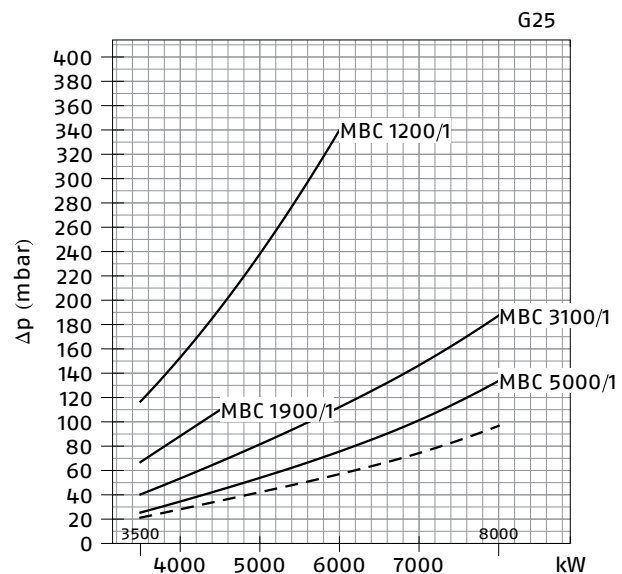
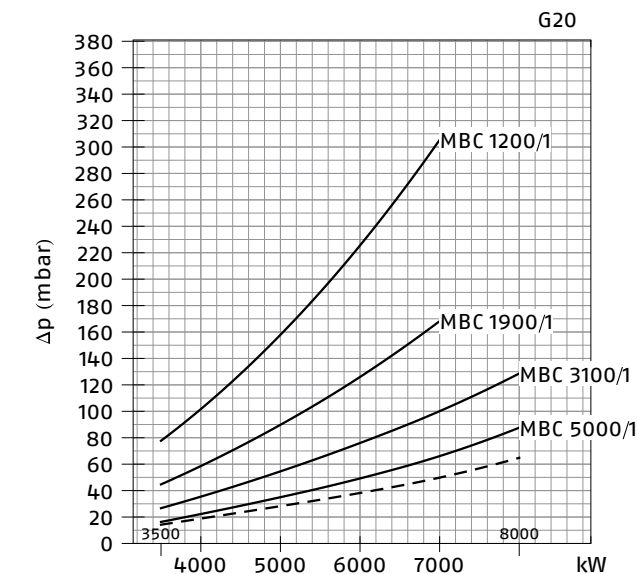


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RLS 650/E-EV (NATURAL GAS)

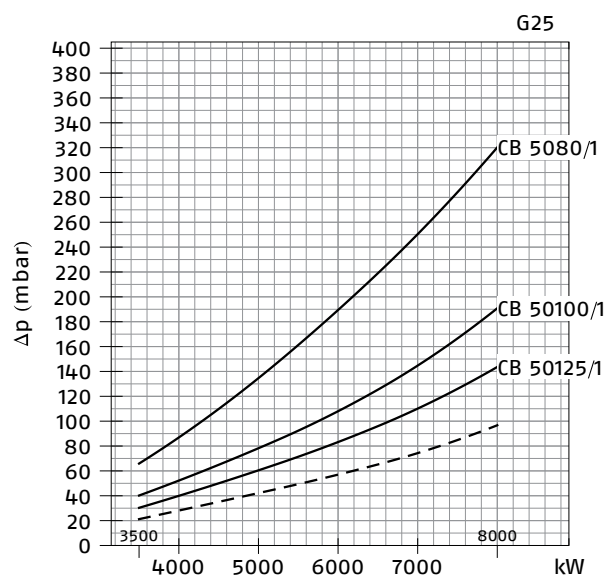
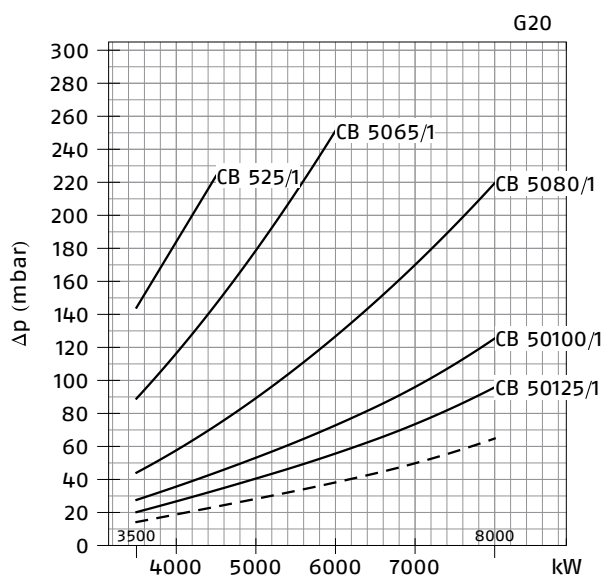


RLS 800/E-EV (NATURAL GAS)

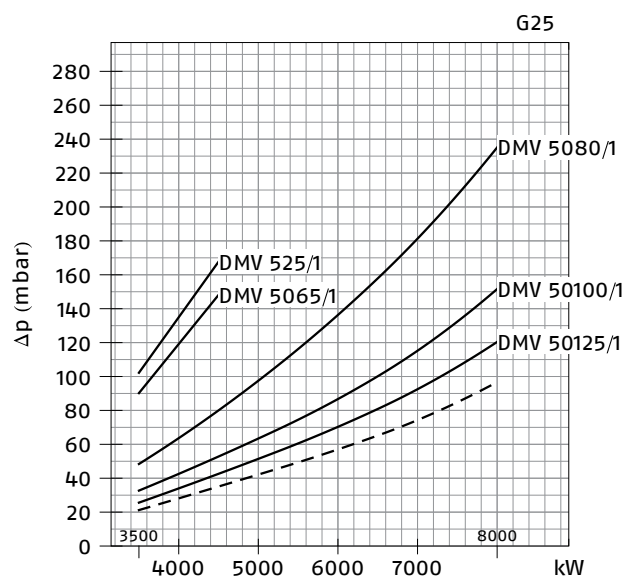
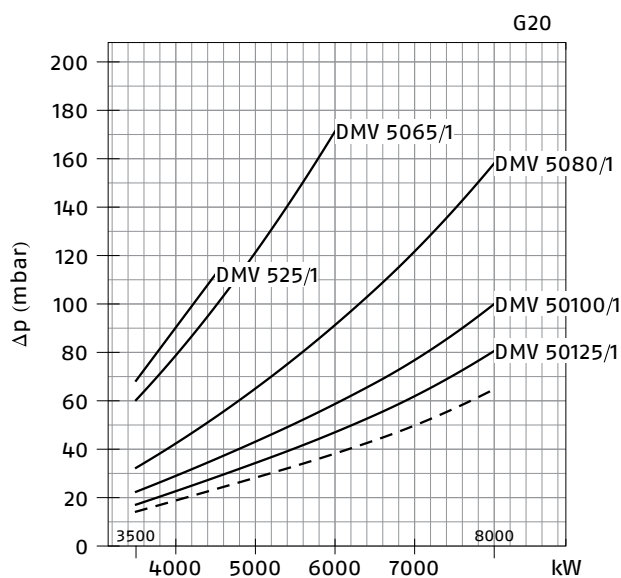


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RLS 800/E-EV (NATURAL GAS)

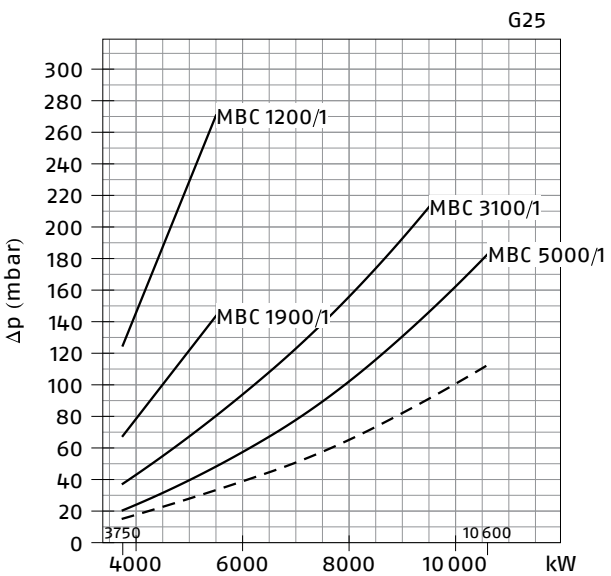
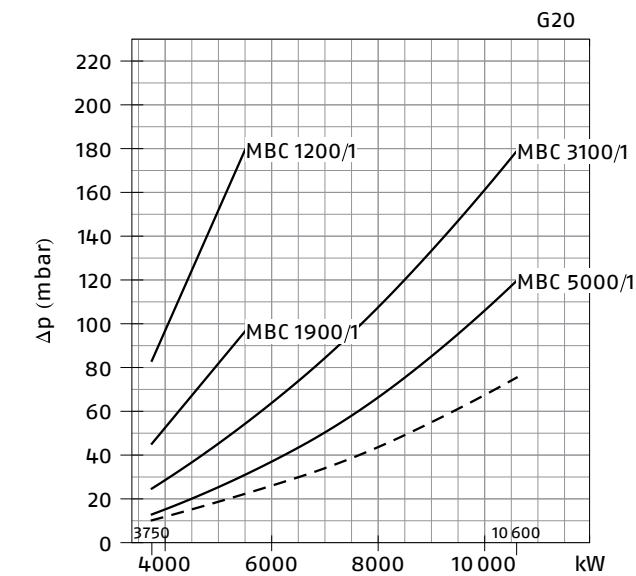


RLS 800/E-EV (NATURAL GAS)

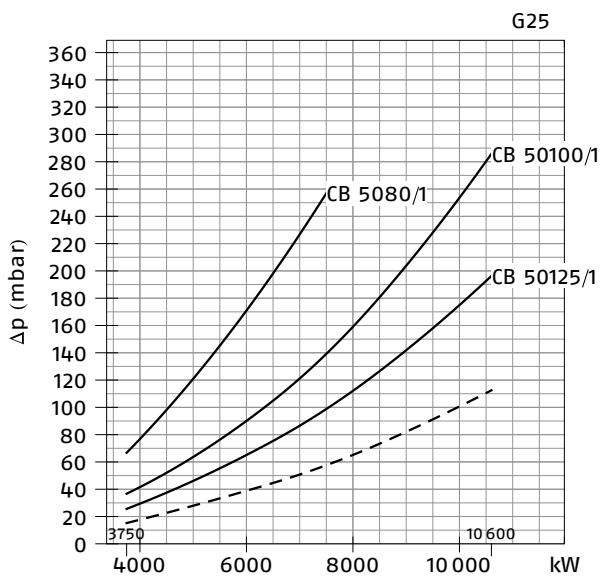
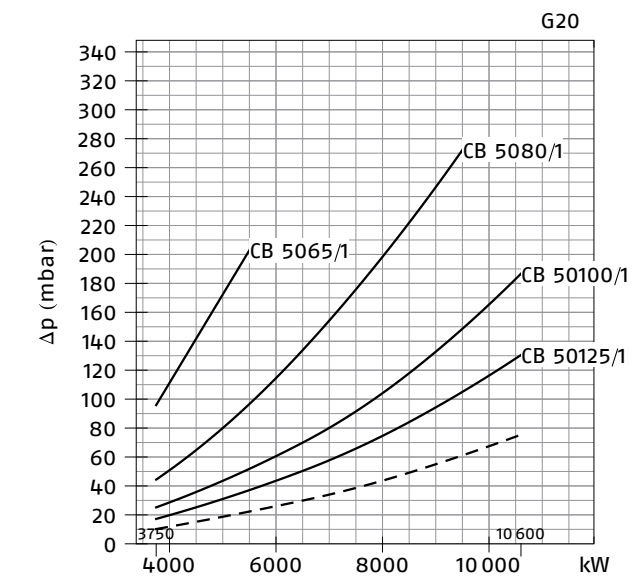


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RLS 1000/E-EV C13 (NATURAL GAS)

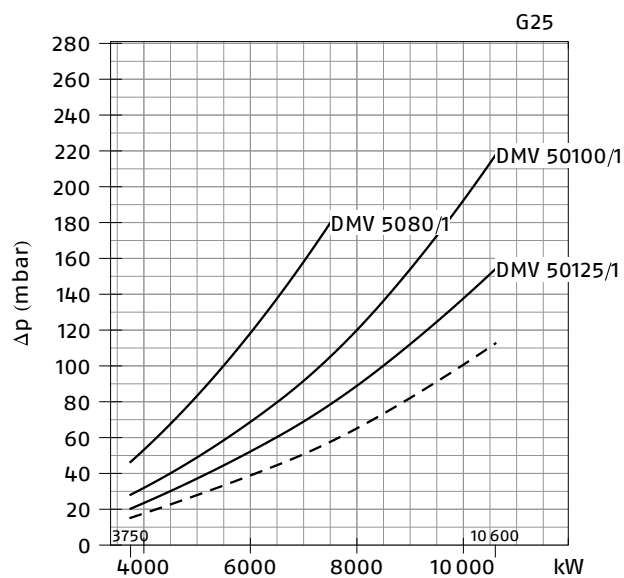
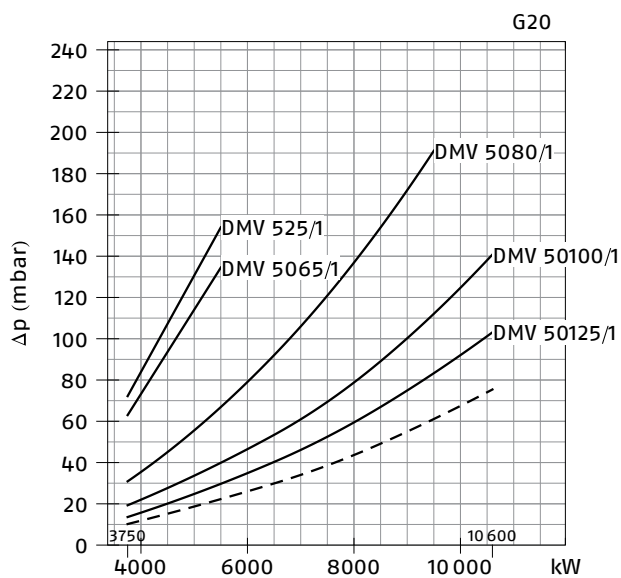


RLS 1000/E-EV C13 (NATURAL GAS)

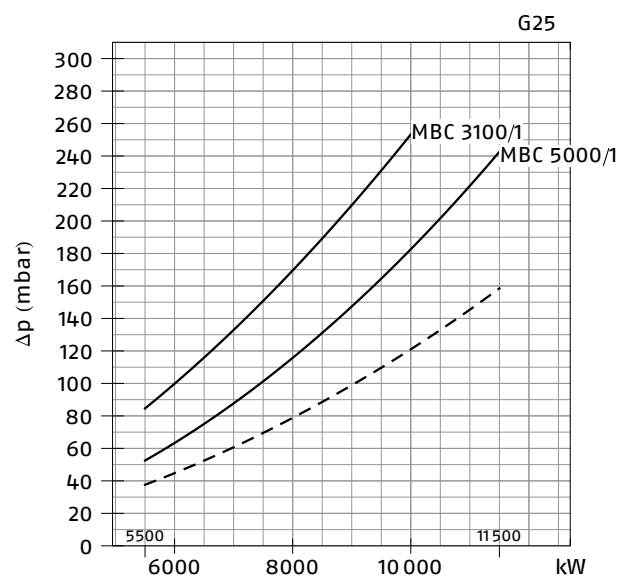
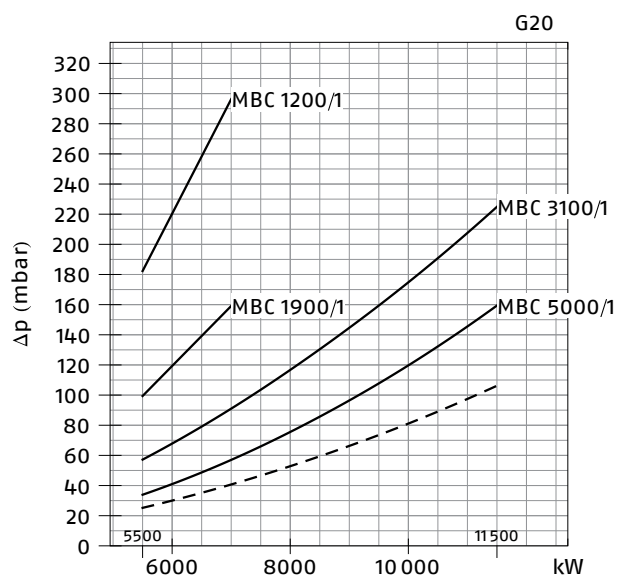


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RLS 1000/E-EV C13 (NATURAL GAS)

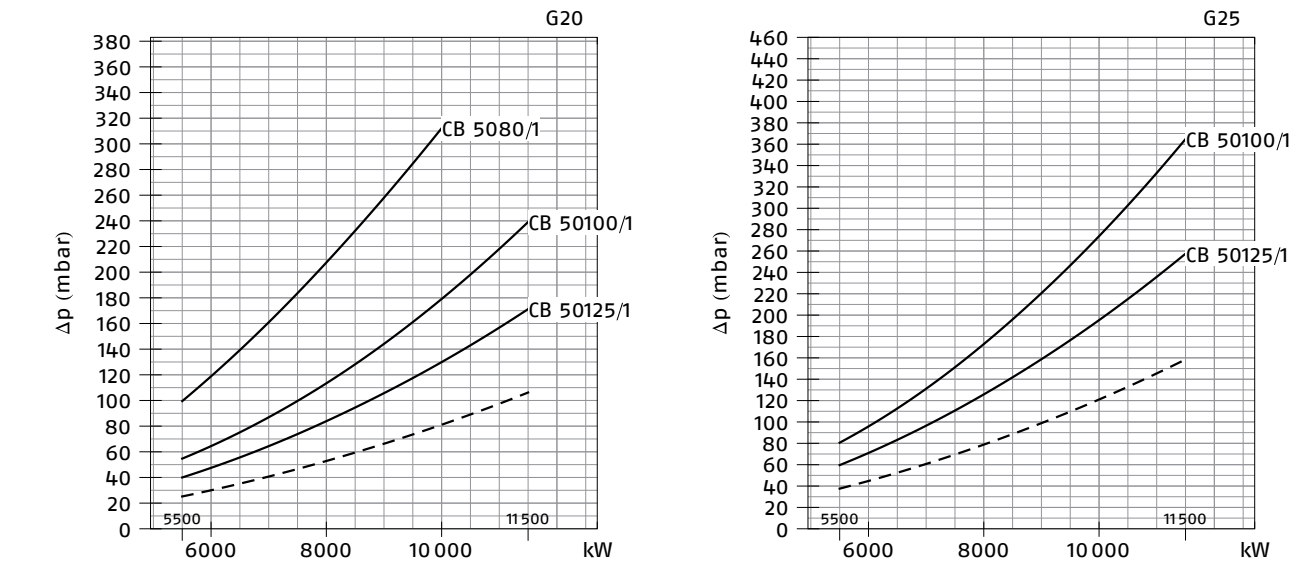


RLS 1200/E-EV C13 (NATURAL GAS)

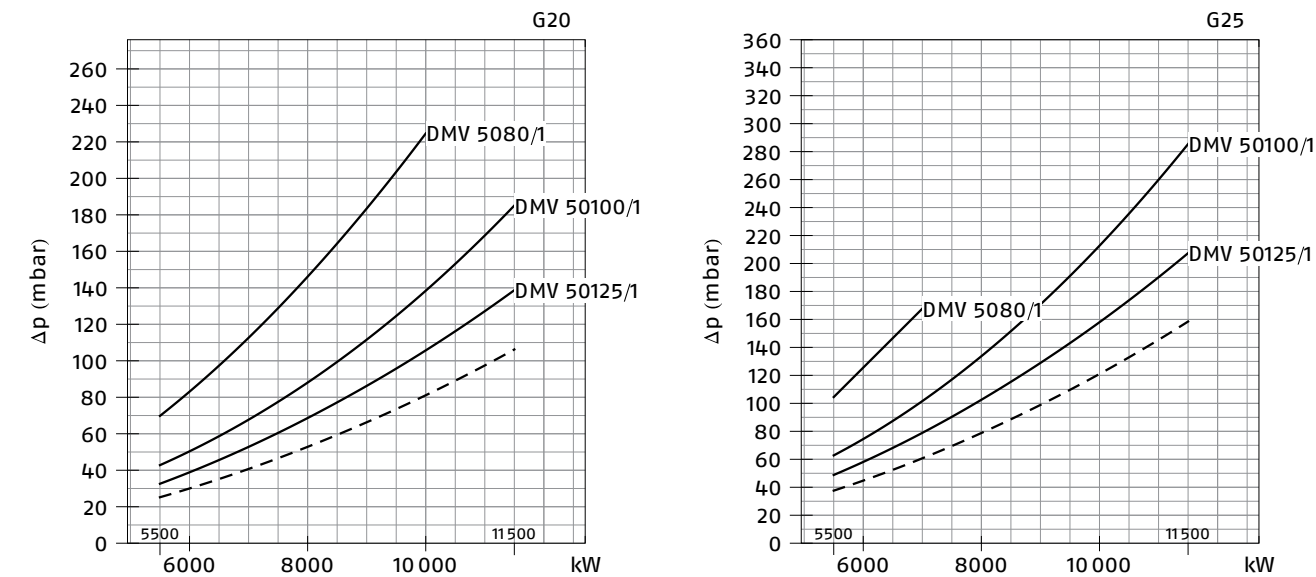


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RLS 1200/E-EV C13 (NATURAL GAS)



RLS 1200/E-EV C13 (NATURAL GAS)



— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

Gas Trains

CODE	GAS TRAIN		ADAPTER CODE			
	MODEL	Ø	RLS 300	RLS 400	RLS 500	RLS 650
3970250	MB 415/1 - RT 52	Rp 1" ½	3000843 + 3000826 + 20064220	●	●	●
3970257	MB 420/1 - RT 52	Rp 2"	3000826 + 20042324	●	●	●
3970221	MBC 1200/1 - RSM 60	Rp 2"	3000826 + 20042324			
3970222	MBC 1900/1 - FSM 40	DN 65	3010221 - 3010369			
3970223	MBC 3100/1 - FSM 40	DN 80	3010222			
3970224	MBC 5000/1 - FSM 80	DN 100	3010223 - 3010370			
3970145	CB 512/1 - RSM 30	Rp 1" ½	3000843 + 3000826 + 20064220	●		●
3970146	CB 520/1 - RSM 30	Rp 2"	3000826 + 20042324			●
20044659	CB 525/1 - RSM 30	Rp 2"	3000826 + 20042324			
3970147	CB 5065/1 - FSM 30	DN 65	3010221 - 3010369			
3970148	CB 5080/1 - FSM 30	DN 80	3010222			
3970149	CB 50100/1 - FSM 30	DN 100	3010223 - 3010370			
20015871	CB 50125/1 - FSM 30	DN 125	3010224			

CODE	GAS TRAIN		ADAPTER CODE		
	MODEL	Ø	RLS 800	RLS 1000	RLS 1200
3970250	MB 415/1 - RT 52	Rp 1" ½	●	●	●
3970257	MB 420/1 - RT 52	Rp 2"	●	●	●
3970221	MBC 1200/1 - RSM 60	Rp 2"	3000826 + 20042324		
3970222	MBC 1900/1 - FSM 40	DN 65	3010221 - 3010369		
3970223	MBC 3100/1 - FSM 40	DN 80	3010222		
3970224	MBC 5000/1 - FSM 80	DN 100	3010223 - 3010370		
3970145	CB 512/1 - RSM 30	Rp 1" ½	●	●	●
3970146	CB 520/1 - RSM 30	Rp 2"	●	●	●
20044659	CB 525/1 - RSM 30	Rp 2"	3000826 + 20042324	●	●
3970147	CB 5065/1 - FSM 30	DN 65	3010221 - 3010369		●
3970148	CB 5080/1 - FSM 30	DN 80	3010222		
3970149	CB 50100/1 - FSM 30	DN 100	3010223 - 3010370		
20015871	CB 50125/1 - FSM 30	DN 125	3010224		

● Not available.

Hydraulic circuits

The hydraulic circuit of the RLS/E-EV series of burners is characterised by a fuel pump with an independent motor.

The burners are fitted with two valves (a safety valve and an operation valve) and an oil filter along the oil line from the pump to the nozzle.

A pressure regulator on the return circuit from the nozzle enables the quantity of fuel burnt to be varied. Two safety valves on the return circuit avoid oil leakage from the nozzle when the burner is in stand-by and prepurge phase.

The models are fitted with a maximum pressure switch on the oil return circuit, and a minimum oil pressure switch on the oil line from the pump to the nozzle.

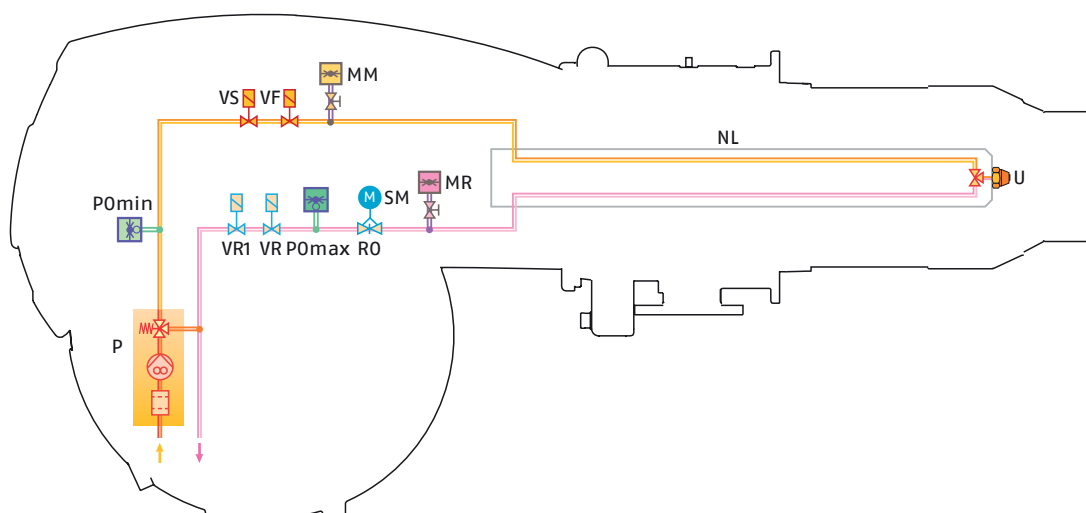
The burner is suitable for continuous operation.



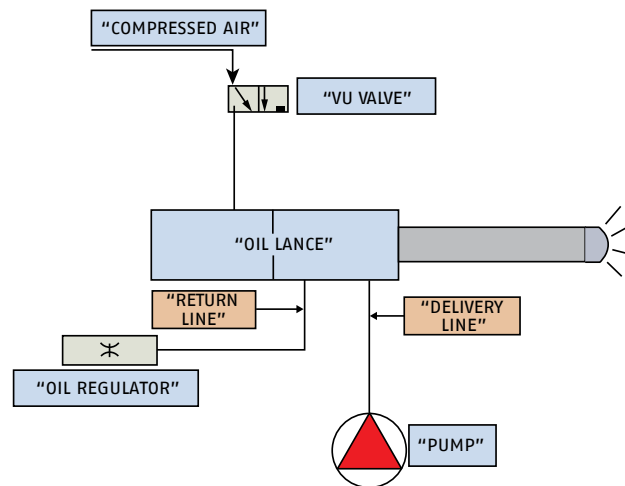
Example of the RLS 300-800/E-EV burner hydraulic circuit

P	Pump with filter and pressure regulator
P0 min	Min. oil pressure switch on the delivery circuit
VF	Operating valve
VS	Safety valve on the delivery circuit
MM	Pressure gauge on the delivery circuit
NL	Nozzle pipe
U	Nozzle
MR	Pressure gauge on the return circuit
SM	Servomotor
R0	Pressure regulator on the return circuit
P0 max	Max. oil pressure switch on the return circuit
VR	Safety valve on the return circuit
VR1	Safety valve on the return circuit

EN 267 > 100 Kg/h RLS 300-400-500-650-800/E-EV

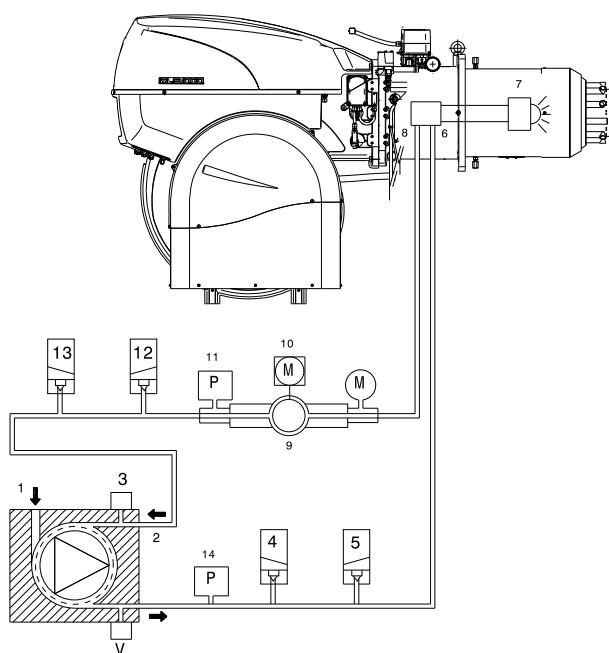


The RLS 1000-1200/E-EV burners are equipped with a spray lance for light oil activated by compressed air.



Example of light oil pump

RLS 1000-1200/E-EV



1	Pump suction
2	Pump return line and nozzle return line
3	Pump pressure regulator
4	Delivery safety valve
5	Delivery safety valve
6	Nozzle delivery line
7	Nozzle without interception rod
8	Nozzle return line
9	Pressure variator on nozzle return line
10	Pressure variator servomotor
11	Pressure switch on nozzle return line
12	Safety valve on nozzle return line
13	Safety valve on nozzle return line
14	Pressure switch on pump delivery line
M	Pressure gauges
V	Vacuometer connection

Selecting the fuel supply lines

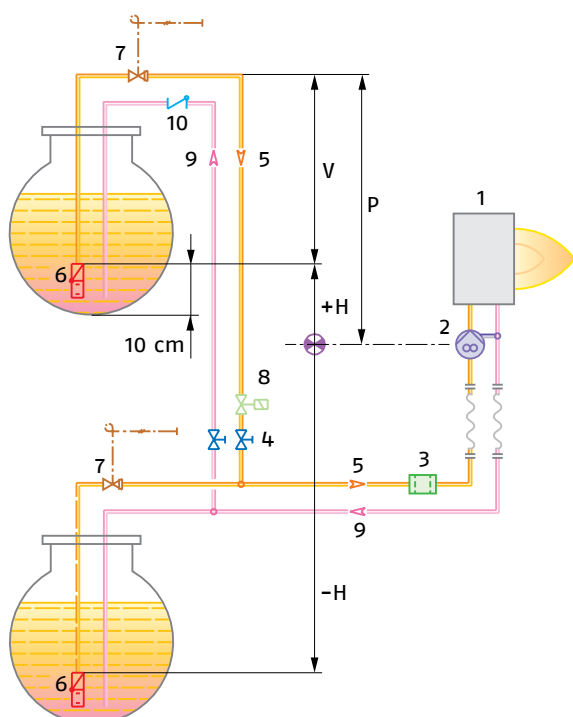
The fuel feed must be completed with the safety devices required by the local norms.

The table shows the choice of piping diameter, depending on the difference in height between the burner and the tank and their distance.

MAXIMUM EQUIVALENT LENGTH FOR THE PIPING L [m]

MODEL	RLS 300-400-500-650-800/E-EV			
DIAMETER PIPING	Ø 10 mm	Ø 12 mm	Ø 14 mm	Ø 16 mm
+/- H [m]	L max (m)			
4.0	14	30	55	95
3.5	13	28	52	89
3.0	12	26	48	82
2.5	11	24	44	76
2.0	10	22	41	70
1.5	9	20	37	63
1.0	8	18	33	57
0.5	7	16	29	51
0	6	14	26	44
-0.5	5	12	22	38
-1.0	4	10	18	32
-1.5	3	8	15	25
-2.0	-	6	11	19
-2.5	-	4	7	13
-3.0	-	-	4	7

MODEL	RLS 1000/E-EV				RLS 1200/E-EV			
DIAMETER PIPING	Ø 20 mm	Ø 22 mm	Ø 24 mm	Ø 27 mm	Ø 22 mm	Ø 24 mm	Ø 27 mm	Ø 36 mm
+/- H [m]	L max (m)				L max (m)			
4.0	26	45	73	138	19	33	65	300
3.0	22	39	63	120	16	28	55	260
2.0	18	33	53	102	13	23	45	220
1.0	15	26	44	84	10	18	38	185
0.5	13	23	39	75	9	16	33	165
0	11	20	34	66	7	13	30	145
-0.5	9	17	29	57	5	11	25	125
-1.0	7	14	24	48	-	9	20	108
-2.0	-	7	14	30	-	-	11	70
-3.0	-	-	-	12	-	-	-	30
-4.0	-	-	-	-	-	-	-	-



H	Pump/Foot valve height difference
L	Piping length
Ø	Inside pipe diameter
1	Burner
2	Pump
3	Filter
4	Manual on/off valve
5	Suction line
6	Foot valve
7	Quick closing manual valve with remote control (Italy only)
8	On/off solenoid valve (Italy only). See electrical layout. Connections to be carried out by the installer (SV).
9	Return line
10	Check valve (only Italy)

With ring distribution oil systems, the feasible drawings and dimensioning are the responsibility of specialised engineering studios, who must check compatibility with the requirements and features of each single installation.

Ventilation

The ventilation unit comes with a sound proofing system.

All the burners in the RLS 300-400-500-650-800-1000-1200/E-EV series are fitted with fans, which give excellent performance and are fitted in line with the combustion head. The air flow and sound-deadening materials used in the construction are designed to reduce sound emissions to the minimum and guarantee high levels of performance in terms of output and air pressure.

A high precision servomotor through the main management module installed on each burner of RLS 300-400-500-650-800-1000-1200/E-EV series, controls the air dampers position constantly.



Example of the RLS 1000-1200/E-EV sound proofing system.

Combustion Head

The innovative combustion head adjustment system ensures perfect movement during modulation as well as reducing noise and pollutants. Simple adjustment of the combustion head allows to adapt internal geometry of the head to the output of the burner.

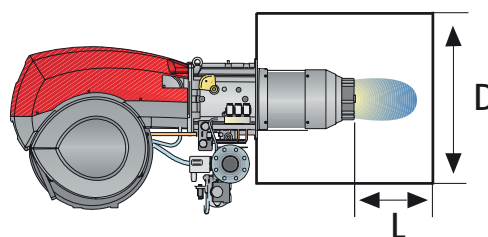
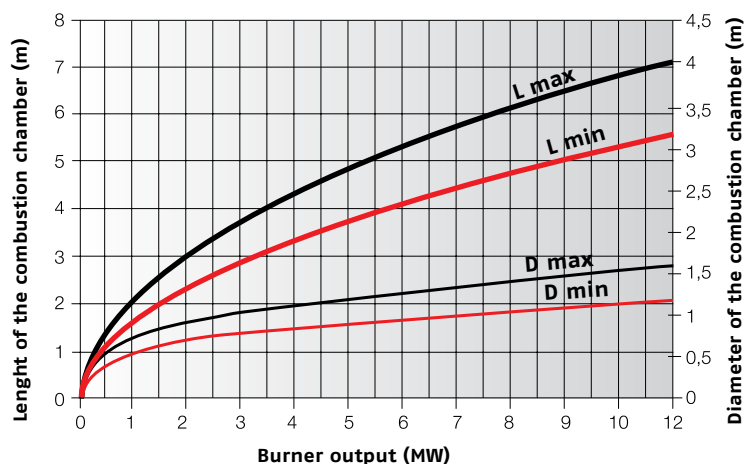
The same adjustment servomotor for the air damper also varies, depending on the required output, the setting of the combustion head, through a simple lever.

This system guarantees excellent mix on all firing rates range.



Example of a RLS 500/E-EV burner combustion head

DIMENSIONS OF THE COMBUSTION CHAMBER



Example:

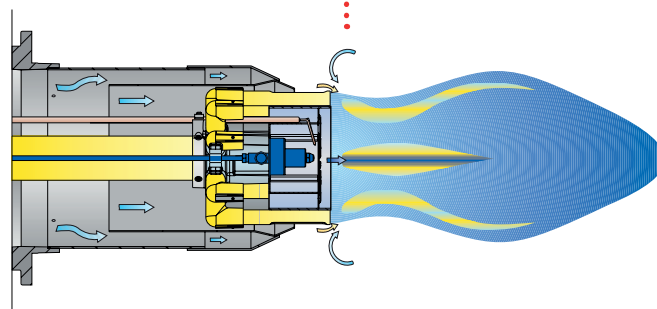
Burner thermal output = 3500 kW;
 L combustion chamber (m) = 3,5 m (medium value);
 D combustion chamber (m) = 1,5 m (medium value).

Safe and Green

The RLS/E-EV series combustion head reduce polluting emissions thanks to their special design which optimises the air fuel mix.

In the RLS/E-EV series part of the gas is distributed through outlets which the remaining gas is injected directly into the centre of the flame.

This prevents no homogeneous concentrations in the flame with areas of high oxidation, producing very stable flame with gradual and progressive combustion as the flame develops, thus giving polluting emission values below even the most restrictive norm values.



Combustion head operating diagram of RLS/E-EV series

Burner Operation Mode

Each RLS/E-EV series burner is equipped with an electronic microprocessor management panel, which controls the air damper servomotor as well the fuel servomotors.



Hysteresis is prevented by the precise control of the two servomotors and the software link by can - bus.

The high precision regulation is due to the absence of mechanical clearance normally found in mechanical regulation cams on traditional modulating burners. For the burner commissioning it is necessary to use the AZL unit display. It must be ordered separately for RLS 300÷800/E models, while for RLS 1000-1200/E and RLS 300÷1200/EV models it is included.

In the RLS 300÷800/E burners the standard working is two stage progressive and the PID regulator, to control the boiler temperature or pressure, is available as accessories. In the RLS 1000-1200/E and RLS 300÷1200/EV burners the PID regulator to control the boiler temperature or pressure is included in the control box. The burner can work for

a long time on intermediate output settings (see picture A).

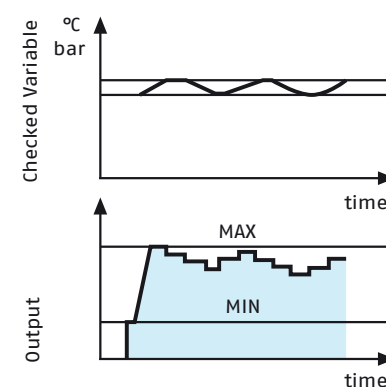
In the RLS/EV series variable speed drive control (VDS) and Oxygen control are obtained by installation of a special kit. The display operating unit (AZL) is already on board.

The display and operating unit (AZL) shows all operational parameters in real time, so as to keep a constant check on the burner:

- servomotor angle
- required set-point and actual set-point
- fuel consumption (RLS/EV)
- smoke and environmental temperature (RLS/EV)
- O₂ value (RLS/EV)
- error checking, self diagnostic fault analysis.

Control box management table			
Function	LMV 51.0	LMV 51.1	LMV 52.2
Intermittent operation	●	●	●
Continuos operation	●	●	●
Intermittent operation flame detector	Infrared Detector	Infrared Detector	Infrared Detector
Continuos operation flame detector	Ionisation Probe / Infrared Detector	Infrared Detector	Infrared Detector
Numbers of regulating stepper actuators	4	4	5
Variable Speed Drive (VSD)	-	-	○
Input O ₂ probe	-	-	○
Built in O ₂ regulator	-	-	○
Single fuel operation	●	●	●
Double fuel operation (different timing for oil and gas)	●	●	●
Gas valve proving system	●	●	●
Built in temperature pressure PID regulator	○	●	●
External analog modulation	on demand	on demand	●
Analog 4÷20 mA output load signal	●	●	●
Efficiency Indication	-	-	○
External e-Bus Interface (AZL)	○	●	●
Commissioning PC Interface (AZL)	○	○	○
Commissioning Interface Display (AZL)	○	●	●

"Modulating" operation



Picture A

- Included in supply
- As accessory

Control box management version table			
	RLS 300 ÷ 800/E version	RLS 1000-1200/E version	RLS/EV version
LMV 51.0	●		
LMV 51.1		●	
LMV 52.2			●

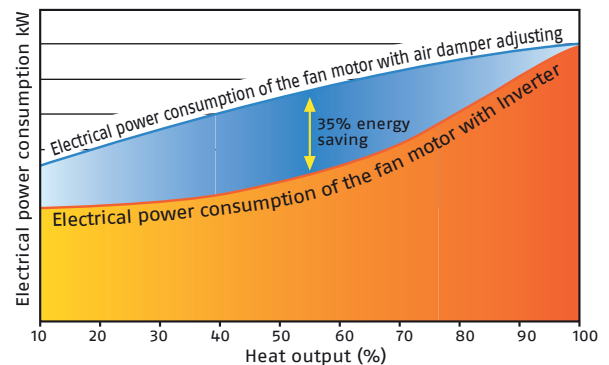
FAN SPEED CONTROL (ON DEMAND)

The inverter device fitted to the RLS/EV series burner acts on the electrical supply frequency of the fan motor to adjust the air flow through the motor speed variation.

The main advantages of speed control:

- lower sound emissions
- electric power saving.

The fan motor supplies just the necessary air flow, thus reducing sound emissions and avoiding energy loss due to the air damper regulation mechanism. The inverter technology can save up to 35% of the energy costs. A safety device to verify the correct speed of the motor is mounted on the air suction circuit of the burner.



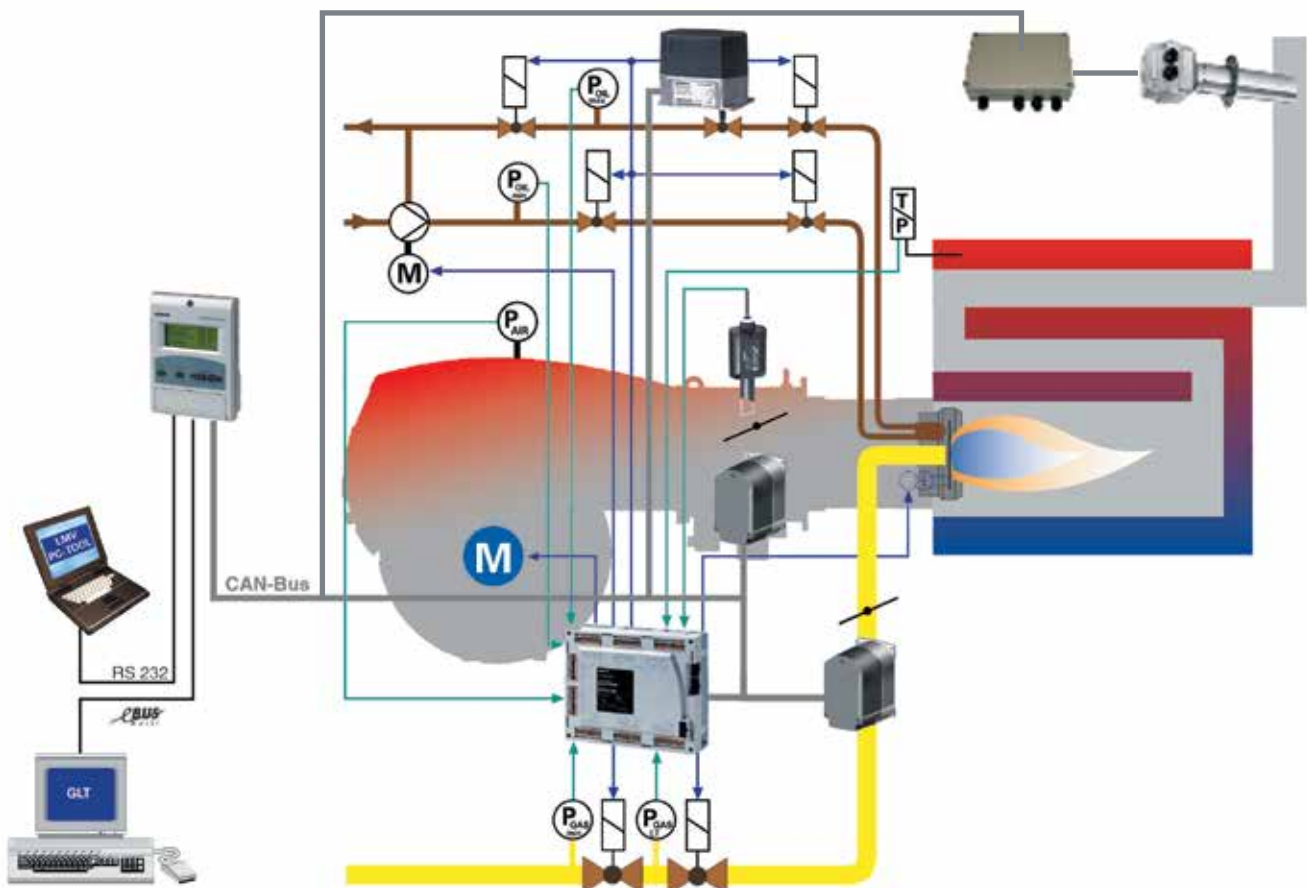
BURNER MANAGEMENT SYSTEM

The new electronic cam is a microprocessor based burner management system with matching system components for the control and supervision of forced draft burners.

The system components are interconnected via a bus system.

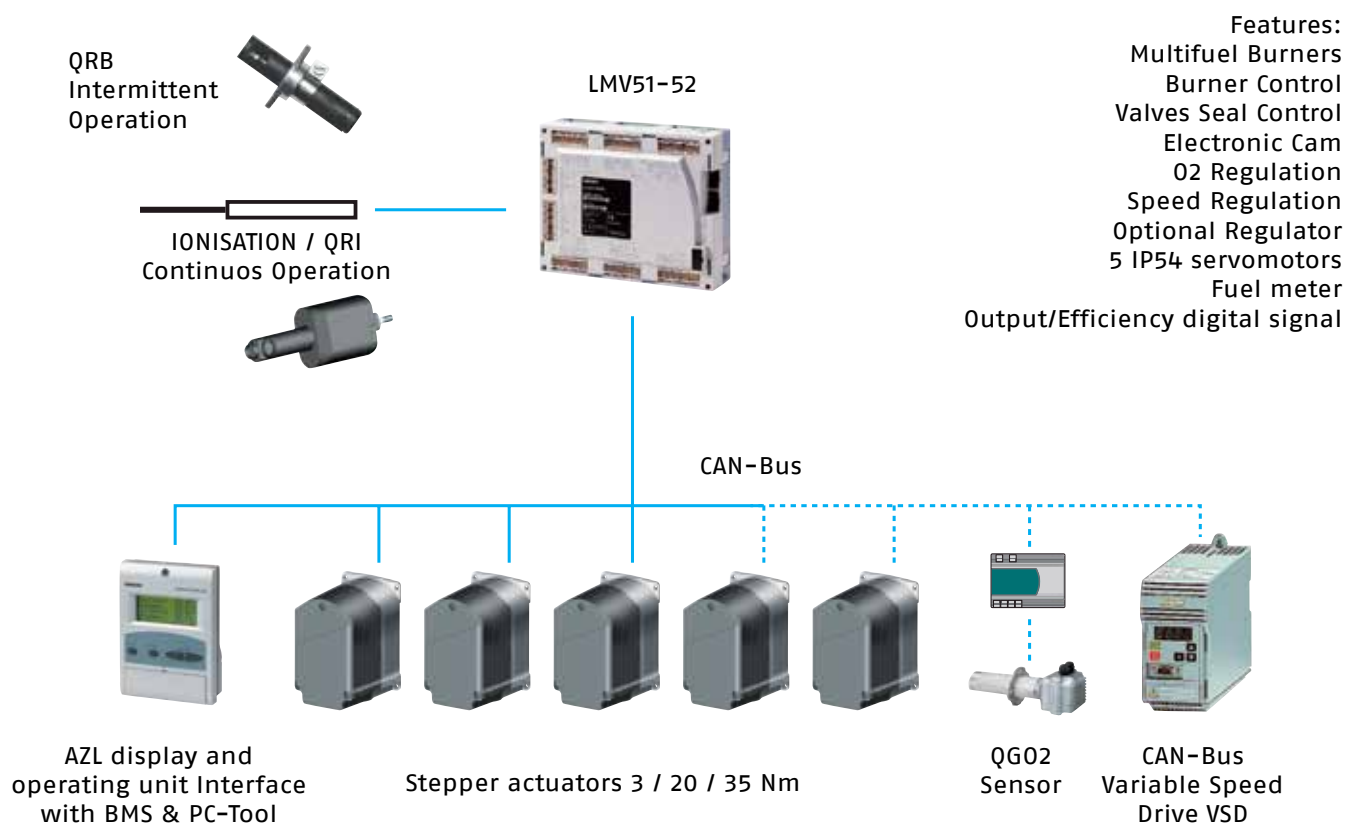
Communication between the individual bus users takes place via a reliable system-based data bus.

All safety-related digital outputs of the system are permanently monitored via a contact feedback network.

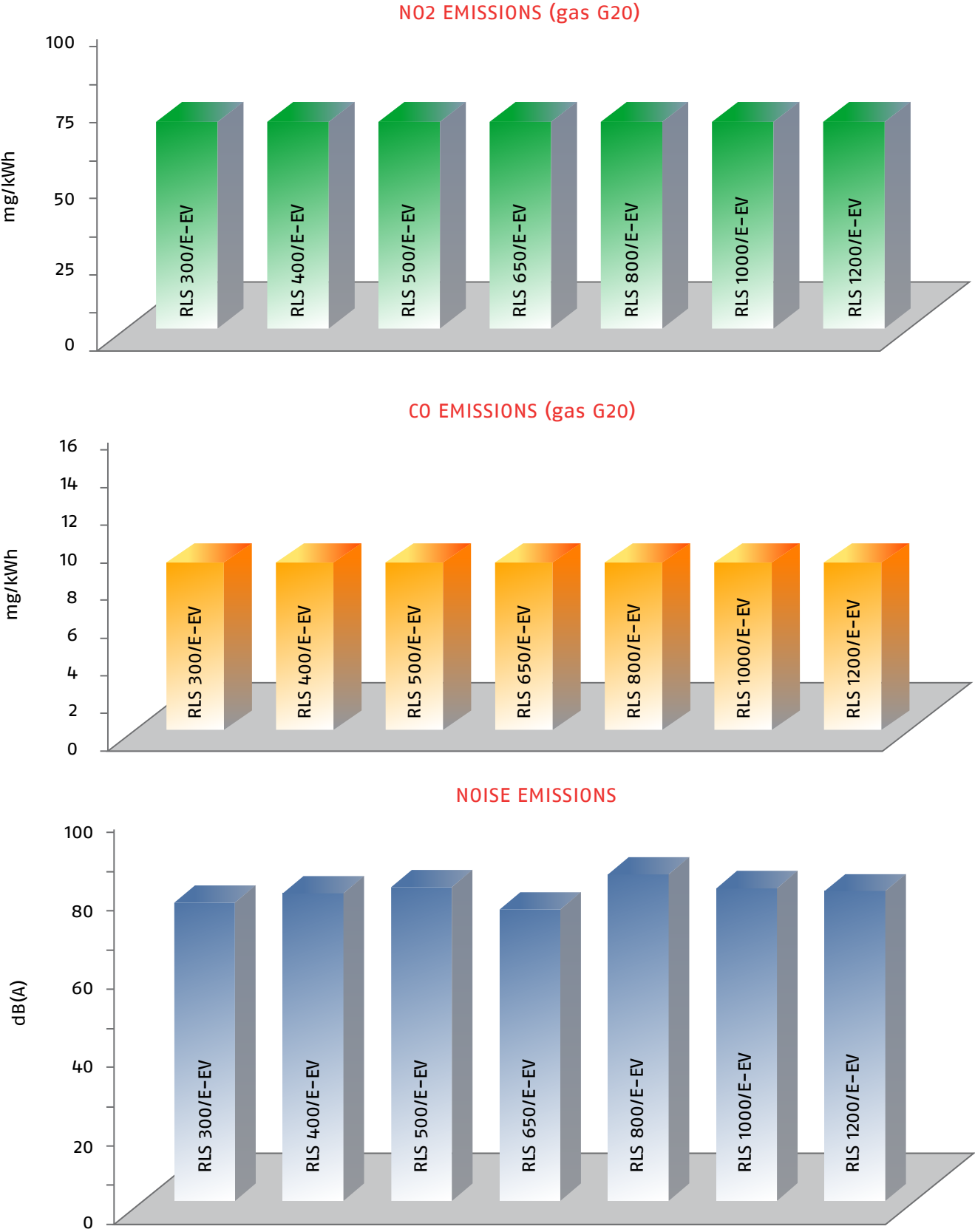


Example of burner management system in dual fuel burner configuration

ELECTRONIC CAM PLATFORM



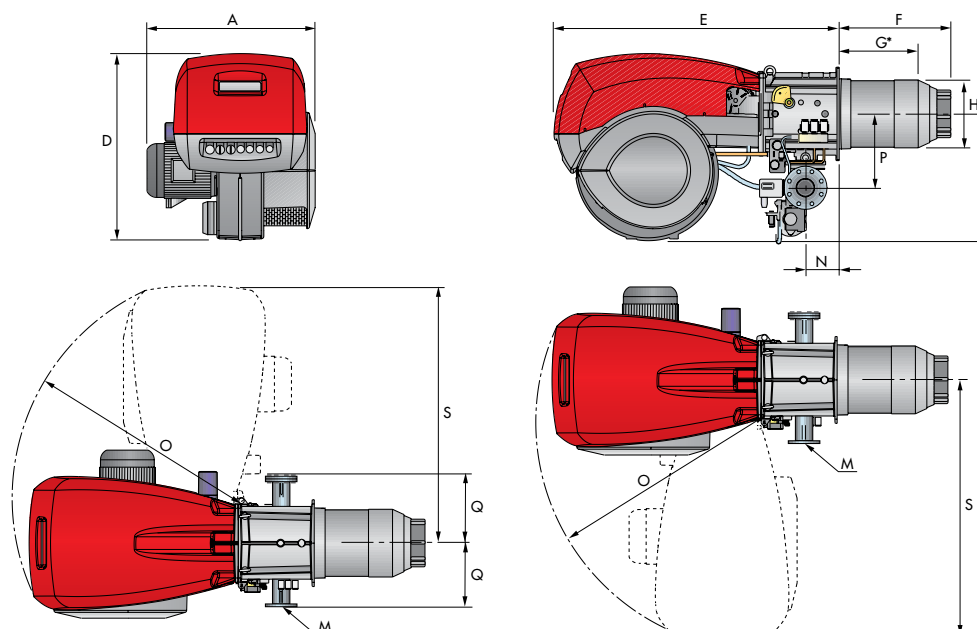
Emission



The noise emissions have been measured at the maximum output.

Overall Dimensions (mm)

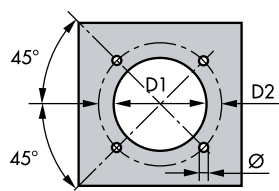
BURNER



MODEL	A	D	E	F	G*	H	I	M	N	O	P	Q	S
RLS 300/E-EV	720	890	1325	508	365	313	605	DN80	164	1055	342	320	1175
RLS 400/E-EV	775	890	1325	508	365	313	605	DN80	164	1055	342	320	1175
RLS 500/E-EV	815	890	1325	544	390	370	605	DN80	164	1055	342	320	1175
RLS 650/E-EV	880	950	1325	549	397	410	630	DN80	164	1055	427	320	1190
RLS 800/E-EV	940	937	1325	558	382	428	630	DN80	164	1055	427	320	1190

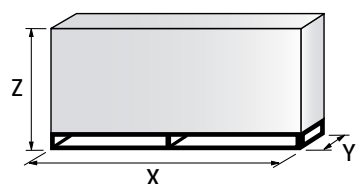
* Maximum depth of the boiler door including the depth of the burner flange insulating gasket.

BURNER - BOILER MOUNTING FLANGE



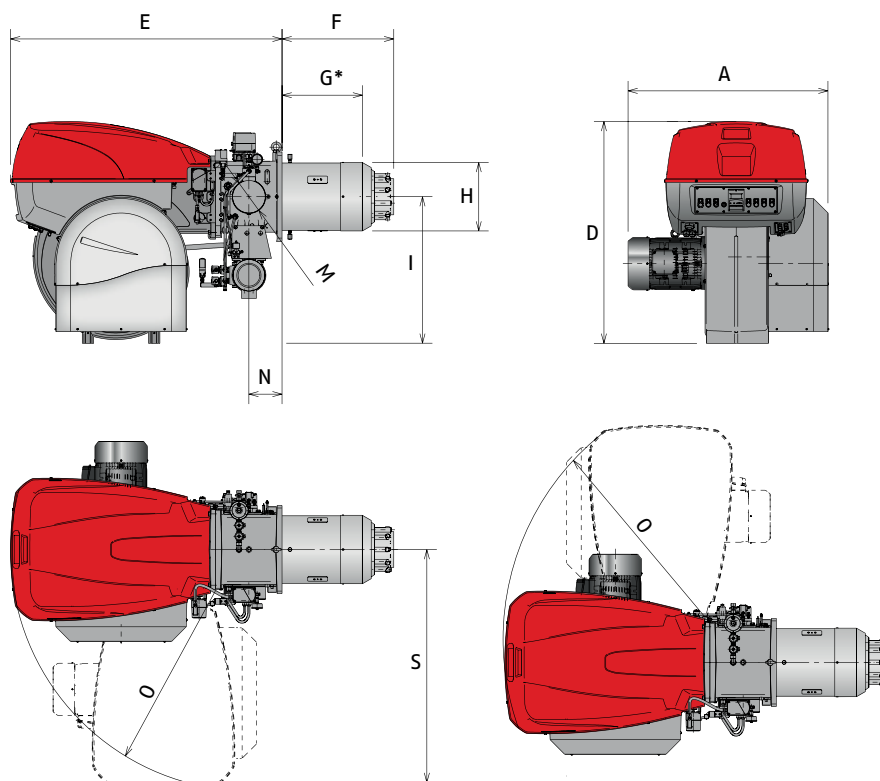
MODEL	D1	D2	Ø
RLS 300/E-EV	350	452	M18
RLS 400/E-EV	350	452	M18
RLS 500/E-EV	390	452	M18
RLS 650/E-EV	440	495	M18
RLS 800/E-EV	440	495	M18

PACKAGING



MODEL	X	Y	Z	kg
RLS 300/E-EV	1960	970	1100	280
RLS 400/E-EV	1960	970	1100	290
RLS 500/E-EV	1960	970	1100	300
RLS 650/E-EV	2190	1110	1450	320
RLS 800/E-EV	2190	1110	1450	320

BURNER

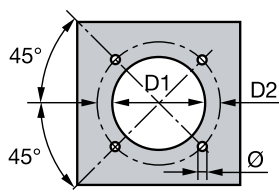


BURNER - BOILER MOUNTING FLANGE

MODEL	A	D	E	F	G*	H	I	M	N	O	S
RLS 1000/E-EV	1206	1338	1637	674	484	413	885	DN80	200	1350	1425
RLS 1200/E-EV	1250	1338	1637	658	465	456	885	DN80	200	1350	1425

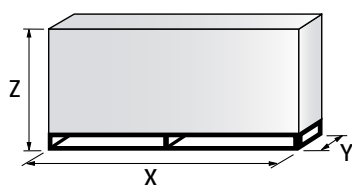
* Maximum depth of the boiler door including the depth of the burner flange insulating gasket.

BURNER - BOILER MOUNTING FLANGE



MODEL	D1	D2	Ø
RLS 1000/E-EV	460	608	M20
RLS 1200/E-EV	500	608	M20

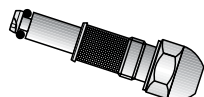
PACKAGING



MODEL	X	Y	Z	kg
RLS 1000/E-EV	2400	1400	1595	550
RLS 1200/E-EV	2400	1400	1595	600

Burner accessories

NOZZLES



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

BURNER	NOZZLE TYPE	RATED DELIVERY (kg/h)	NOZZLE CODE
RLS 300-400/E-EV	B5	150	3009363
RLS 300-400/E-EV	B5	200	3009364
RLS 300-400/E-EV	B5	225	3009365
RLS 300-400/E-EV	B5	250	3009366
RLS 300-400/E-EV	B5	275	3009367
RLS 300-400/E-EV	B5	300	3009368
RLS 400/E-EV	B5	325	3009369
RLS 400/E-EV	B5	350	3009370
RLS 400/E-EV	B5	375	3009371
RLS 400/E-EV	B5	400	3009372
RLS 400/E-EV	B5	425	3009373
RLS 500/E-EV	N2	350	3045495
RLS 500/E-EV	N2	400	3045499
RLS 500/E-EV	N2	450	3045501
RLS 500/E-EV	N2	500	3045503
RLS 650/E-EV	N2	350	3045495
RLS 650/E-EV	N2	450	3045501
RLS 650/E-EV	N2	550	3045505
RLS 650/E-EV	N2	600	3045507
RLS 800/E-EV	B5	375	3009332
RLS 800/E-EV	B5	550	3009346
RLS 800/E-EV	B5	650	3009352
RLS 800/E-EV	B5	750	3009356
RLS 1000/E-EV	B5	350	20047954
RLS 1000/E-EV	B5	600	20047978
RLS 1000/E-EV	B5	750	20047985
RLS 1000/E-EV	B5	900	20047994
RLS 1200/E-EV	CT5	700	20006479
RLS 1200/E-EV	CT5	700	20006479
RLS 1200/E-EV	CT5	900	20006482
RLS 1200/E-EV	CT5	1100	20006484

ACCESSORIES FOR MODULATING OPERATION



To obtain modulating operation, the RLS 300÷800/E series of burners requires a regulator.
In RLS/EV and RLS 1000-1200/E models PID regulator is integrated inside the control box.

BURNER	REGULATOR TYPE	REGULATOR CODE
All models	RWF 50.2	20101190
All models	RWF 55.5	20101191



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
All models	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

VARIABLE SPEED DRIVE (VSD) FOR RLS/EV SERIES ONLY



The motor speed variation for the RLS/EV burners series is obtained thanks to a frequency converter: variable speed drive (VSD). It always must be ordered with RLS/EV series.

BURNER	MAX POWER (kW)	KIT CODE
RLS 300-400/EV	7.5	20028307
RLS 500/EV	15	3090960
RLS 650/EV	18.5	3091174
RLS 800-1000/EV	22	3090913
RLS 1200/EV	30	20030338

OXYGEN CONTROL KIT (QG02)



The QG02 is an oxygen analyzer with relevant probe which controls and supervises the residual oxygen content in exhaust gases.

BURNER	KIT CODE
RLS 300÷800/EV	3010378
RLS 1000-1200/EV	20041584

PC INTERFACE SOFTWARE (ACS 450)



PC tool for convenient programming and burner settings, process visualization, data recording, selection of AZL language, software update AZL.

BURNER	KIT CODE
All models	3010388

KIT EFFICIENCY WITH OXYGEN CONTROL KIT (FOR RLS/EV ONLY)



The kit includes two temperature sensors: one for air and one for exhaust gas detection. They must be wired to oxygen control kit interface to allow the LMV 52 efficiency calculation. The value is showed on AZL display.

BURNER	KIT CODE
All models	3010377 (*)

(*) Probe type PT 1000 - range -80°C + 600°C

LPG KIT



For burning LPG gas, a special kit is available to be fitted to the combustion head on the burner.

BURNER	KIT CODE
RLS 300/E-EV MX	20039863 (*)
RLS 400/E-EV MX	in progress
RLS 500-650-800/E-EV MX	in progress
RLS 1000-1200/E-EV C13	in progress

(*) Certification in progress, CE approval on field is required.

DISPLAY AND OPERATING UNIT (AZL)

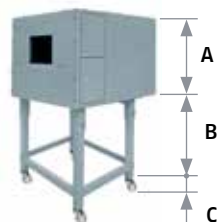


This tool is needed for combustion system commissioning and monitoring. The AZL, Display and Operating Unit, is included in RLS 1000-1200/E and RLS/EV models.

BURNER	KIT CODE
RLS 300-400-500-650-800/E	3010355
All models	3010469 (*)

*** for Russian market only**

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.

BURNER	BOX TYPE	A (mm)	B (mm) MIN-MAX	C (mm)	[dB(A)] (*)	BOX CODE
RLS 300-400-500-650-800/E-EV	C7	1255	160 - 980	110	10	3010376
RLS 1000-1200/E-EV	C8	1425	285 - 1000	110	10	3010401

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

SPACER KIT



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

BURNER	SPACER THICKNESS S (mm)	KIT CODE
RLS 300-400-500-650-800/E-EV	180	20008903

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	DIMENSIONS					ADAPTER CODE
	Ø1 DN	Ø0 DN	A mm	B mm	C mm	
	65	80	400	-	-	3010221
	80	80	400	-	-	3010222
	100	80	400	-	-	3010223
	125	80	320	-	-	3010224
	65	80	10	-	-	3010369
	100	80	50	-	-	3010370
	-	-	35	-	-	3000843
	-	-	300	-	-	3000826
	-	-	65	-	-	20064220
	-	-	65	-	-	20042324

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	90 – 150	3090487
CB 5065/1 – 5080/1	Red	25 – 55	3010133
	Black	60 – 110	3010135
	Pink	100 – 150	3090456
	Grey	140 – 200	3090992
CB 50100/1	Red	25 – 55	3010134
	Black	60 – 110	3010136
	Pink	100 – 150	3090489
	Grey	140 – 200	3092174
CB 50125/1	Red	25 – 55	3010315
	Yellow	30 – 70	3010316
	Black	60 – 110	3010317
	Pink	100 – 150	3010318

Specification

DESIGNATION OF SERIES

A specific index guides your choice of burner from the various models available in the RLS/E-EV series. Below is a clear and detailed specification description of the product.

Series: R									
Fuel:									
S		Natural Gas							
L		Light oil							
LS		Light oil/Natural Gas							
N		Heavy oil							
Size									
Setting :									
/1		Single stage				/E		Electronic cam	
/B		Two stage				/P		Proportioning air/gas valve	
/E-EV Modulating		Mechanical cam				/EV		Electronic cam predisposed for variable speed (with inverter)	
Emission :									
C11 or ...		Class 1 EN267 – EN676							
C22 or MZ		Class 2 EN267 – EN676							
C33 or BLU		Class 3 EN267 – EN676							
C23 or MX		Class 2 EN267 – Class 3 EN676							
C13		Class 1 EN267 – Class 3 EN676							
Head length:									
TC		standard head							
TL		extended head							
Flame control system:									
FS1		Standard (1 stop every 24 h)							
FS2		Continuous working (1 stop every 72 h)							
Electrical supply to the system:									
1/230/50		1/230V/50Hz							
3/230/50		3/230V/50Hz							
3/400/50		3N/400V/50Hz							
3/230-400/50		3/230V/50Hz – 3N/400V/50Hz							
3/220/60		3/220V/60Hz							
3/380/60		3N/380V/60Hz							
3/220-380/60		3/220/60Hz – 3N/380V/60Hz							
Auxiliary voltage:									
230/50-60		230V/50-60Hz							
110/50-60		110V/50-60Hz							
R	LS	1000	/E	C13	TC	FS1	3/400/50	230/50-60	
BASIC DESIGNATION									
EXTENDED DESIGNATION									

AVAILABLE BURNER MODELS

BURNER MODELS	HEAD LENGHT	FLAME CONTROL SYSTEM	ELECTRICAL SUPPLY	AUXILIARY VOLTAGE
RLS 300/E MX	TC	FS1-FS2	3/400/50	230/50-60
RLS 400/E MX	TC	FS1-FS2	3/400/50	230/50-60
RLS 500/E MX	TC	FS1-FS2	3/400/50	230/50-60
RLS 650/E MX	TC	FS1-FS2	3/400/50	230/50-60
RLS 800/E MX	TC	FS1-FS2	3/400/50	230/50-60
RLS 1000/E C13	TC	FS1-FS2	3/400/50	230/50-60
RLS 1200/E C13	TC	FS1-FS2	3/400/50	230/50-60
RLS 300/EV MX	TC	FS1-FS2	3/400/50	230/50-60
RLS 400/EV MX	TC	FS1-FS2	3/400/50	230/50-60
RLS 500/EV MX	TC	FS1-FS2	3/400/50	230/50-60
RLS 650/EV MX	TC	FS1-FS2	3/400/50	230/50-60
RLS 800/EV MX	TC	FS1-FS2	3/400/50	230/50-60
RLS 1000/EV C13	TC	FS1-FS2	3/400/50	230/50-60
RLS 1200/EV C13	TC	FS1-FS2	3/400/50	230/50-60

Other versions are available on request.

PRODUCT SPECIFICATION

Burner

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

- Fan with low sound emissions
- Air suction circuit lined with sound-proofing material
- Air damper for air setting controlled by a high precision servomotor
- Air pressure switch
- Fan starting motor at 2800 rpm, three-phase 230/400 - 400/690 V with neutral, 50Hz
- Separate light oil pump
- Low emission 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 for RLS 300-400-500/-ignition gas pilot with gas train for RLS 650-800-1000-1200
 - flame stability disk
- Maximum gas pressure switch, with pressure test point, for halting the burner in the case of over pressure on the fuel supply line
- Module for air/fuel setting and output modulation with separated PID control of temperature or pressure, available as accessory for RLS 300-400-500-650-800/E MX model
- Electronic cam for controlling the system safety
- Infrared flame detector
- Display unit AZL... for RLS 1000-1200/E and RLS/EV models
- Star/triangle starter for the fan motor (burners with motor electrical power $\geq 7,5$ kW - RLS/E versions)
- Main electrical supply terminal board
- Burner on/off switch
- Auxiliary voltage led signal
- Burner working led signal
- Contacts motor and thermal relay with release button
- Motor internal thermal protection
- Motor failure led signal
- Burner failure led signal and lighted release button
- Emergency button
- Connection plugs-sockets
- Burner opening hinge
- Lifting rings
- IP 54 electric protection level
- Gears pump for high pressure fuel supply
- Pump starting motor
- Oil safety valves
- Valve system with double oil safety valve on the output circuit and double safety valve on the return circuit
- Oil/Gas selector
- Flame inspection window.

Gas train:

Fuel supply line in the Multibloc configuration (for a diameter of 1-1/2" and 2") or Composed configuration (from a diameter of DN 65 to a diameter of DN 125) fitted with:

- Filter
- Stabilizer
- Minimum gas pressure switch
- Safety valve
- One stage working valve with ignition gas output regulator

Note: valve seal control already present inside burner control box.

Conforming to:

- 2004/108 EC directive (electromagnetic compatibility)
- 2006/95 EC directive (low voltage)
- 2006/42 EC directive (machine)
- 2009/142 EC directive (gas)
- EN 676 (gas burners)
- EN 267 (light oil burners).

Standard equipment:

- 1 flange gasket
- 4 screws for fixing the flange
- 1 thermal screen
- 4 screws for fixing the burner flange to the boiler
- 2 flexible pipes for connection to the oil supply network
- 2 nipples for connection to the pump with gaskets
- Seal control
- Seal control pressure switch (for installation on gas train)
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

Available accessories to be ordered separately:

- Nozzle
- RWF 40 for RLS 300-800/E MX
- Temperature probe -100 ÷ 500°C
- Pressure probe 0 ÷ 2.5 bar
- Pressure probe 0 ÷ 16 bar
- Pressure probe 0 ÷ 25 bar
- Variable speed drive (VSD) for /EV models
- Oxygen control kit
- PC interface software (ACS 450)
- Kit efficiency for /EV models
- LPG kit
- Display and operating unit (AZL)(included in /EV models and RLS 1000-1200/E)
- Sound proofing box
- Spacer
- Gas train adapters
- Spring.

Notes

[illegible]

Riello Burners a world of experience in every burner we sell.

10/2015
T50070UK02



[1]



[2]

[1] BURNERS PRODUCTION PLANT
S. PIETRO, LEGNAGO (VERONA) – ITALIA

[2] HEADQUARTER BURNERS DIVISION
S. PIETRO, LEGNAGO (VERONA) – ITALIA

Across the world, Riello sets the standard in reliable and high efficiency burner technology.

With burner capacity from 5 kW to 48 MW, Riello gas, oil, dual fuel and Low Nox burners deliver unbeatable performance across the full range of residential and commercial heating applications, as well as in industrial processes.

With headquarter in Legnago, Italy, Riello has been manufacturing premium quality burners for over 90 year. The manufacturing plant is equipped with the most innovative systems of assembling lines and modern manufacturing cells for a quick and flexible response to the market.

Besides, the Riello Combustion Research Centre, located in Angiari, Italy, represents one of the most modern facility in Europe and one of the most advanced in the world for the development of the combustion technology.

Today, the company's presence on worldwide markets is distinguished by a well-constructed and efficient sales network, alongside many important Training Centres located in various countries to meet its customers' needs. Riello has 13 operational branches abroad (in Europe, America and Asia), with customers in over 60 countries.

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