



RS 25÷200/E-EV-BLU Series

Low NO_x Modulating Gas Burners

RS 25/E C05	45/125 ÷ 340 kW
RS 35/E C05	70/200 ÷ 440 kW
RS 45/E C05	90/190 ÷ 570 kW
RS 25/E BLU	45/125 ÷ 370 kW
RS 35/E BLU	72/202 ÷ 480 kW
RS 55/E BLU	100/300 ÷ 680 kW
RS 68/E-/EV BLU	150/350 ÷ 860 kW
RS 120/E-/EV BLU	300/600 ÷ 1300 kW
RS 160/E-/EV BLU	300/930 ÷ 1860 kW
RS 200/E-/EV BLU	570/1375 ÷ 2400 kW



The RS/E C05 – RS/E/EV BLU burners series covers a firing range from 125 to 2400 kW, and it is based on the Digital Burner Management System, Riello REC27-37, which is able to manage the air-fuel ratio by independent servomotors in order to obtain a perfect output control and to assure a correct combustion and safe operation on all modulation range.

Operation can be “two stage progressive” or, alternatively, “modulating” with the installation of a PID logic regulator and respective probes.

RS/E C05 – RS/E/EV BLU burners series guarantees high efficiency levels in all the various applications, thus reducing fuel consumption and running costs.

The exclusive design ensures reduced dimensions, simple use and maintenance.

A wide range of accessories guarantees elevated working flexibility.

Technical Data

Model			RS 25/E C05	RS 35/E C05	RS 45/E C05
Output (1)	Max.	kW	125 ÷ 340	200 ÷ 440	190 ÷ 570
		Mcal/h	108 ÷ 295	190 ÷ 380	164 ÷ 491
	Min.	kW	70	82	90
		Mcal/h	60	71	78
Fuel			Natural gas: G20 (methane gas) - G21 - G22 - G23 - G25		
Gas pressure at max. output.(2) Gas: G20 / G25		mbar	21.0 / 30.4	18.5 / 23.2	18.0 / 27.0
Servomotor	Type		SQN 13... (air and gas)		
	Run time	s	Min. 5 - Max 120		
Operation			Intermittent (min. 1 stop in 24 hours) Two progressive or modulating stages with kit (see ACCESSORIES)		
Standard applications			Boilers: water, steam, diathermic oil		
Ambient temperature		°C	0 - 40		
Combustion air temperature		°C max	60		
Noise levels (3)	Sound pressure	dB(A)	68	70	70
	Sound power		79	81	81

Electrical data

Model		RS 25/E C05	RS 35/E C05	RS 35/E C05	RS 45/E C05	
Main electrical supply		230V ~ +/-10% 50/60Hz single phase		230/400V with neutral ~ +/-10% 50/60Hz three- phase	230V ~ +/-10% 50Hz	
Control circuit power supply		-		1N 230V ~ +/-10% 50/60Hz	-	
Fan motor	Hz	50 - 60	50 - 60	50 - 60	50	60
	rpm	2800 - 3400	2800 - 3400	2800 - 3400	2800	3400
	V	230	230	230/400-260/460	230	230
	kW	0.3	0.42	0.45	0.42	0.42
	A	2.4 - 2.2	2.6 - 2.46	1.73/1 - 1.55/1.0	2.6	2.46
Motor capacitor		µF	12.5	-	12,5	
Ignition transformer		V1 - V2 I1 - I2	230 V - 1 x 15 kV 1 A - 25 mA			220/240 V - 1 x 15 kV 45 VA - 25 mA
Absorbed electrical power		W max	600	700	750	700
Protection level			IP 40	IP 40	IP 40	IP 44
Approval						
Directive		2006/42/CE- 2016/426/EU - 2014/30/EU - 2014/35/EU				
Conforming to		EN 676 - EN 12100				
Certification		CE-0123CT1607				

(01) Reference conditions: Room temperature 20°C - Gas temperature 15°C - Barometric pressure 1013 mbar - Altitude 0 m above sea level.
(02) Pressure on the pressure switch socket (Fig. 31 at page 31) with zero pressure in the combustion chamber and at maximum burner output.
(03) Sound pressure measured in manufacturer's combustion laboratory, with burner operating on test boiler and at maximum rated output. The sound power is measured with the "Free Field" method, as per EN 15036, and according to an "Accuracy: Category 3" measuring accuracy, as set out in EN ISO 3746.

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Model			RS 25/E BLU	RS 35/E BLU
Output (1)	Max.	kW	125 ÷ 370	202 ÷ 480
		Mcal/h	108 ÷ 320	174 ÷ 413
	Min.	kW	45	70
		Mcal/h	39	62
Fuel			Natural gas: G20 (methane gas) - G21 - G22 - G23 - G25	
Gas pressure at max. output.(2) Gas: G20 / G25		mbar	15.6 / 23.3	14.1 / 21.0
Servomotor	Type		SQN 13... (air and gas)	
	Run time		Min. 5 - Max 120	
Operation			Intermittent (min. 1 stop in 24 hours) Two progressive or modulating stages with kit (see ACCESSORIES)	
Standard applications			Boilers: water, steam, diathermic oil	
Combustion air temperature		°C	0 - 40	
Temperatura aria comburente		°C max	60	
Noise levels (3)	Sound pressure	dB(A)	68	70
	Sound power		79	81

Electrical data

Model			RS 25/E BLU	RS 35/E BLU	RS 35/E BLU
Main electrical supply			230V ~ +/-10% 50/60Hz single phase	230V ~ +/-10% 50/60Hz single phase	230/400V with neutral ~ +/-10% 50/60Hz three-phase
Control circuit power supply			-	-	1N 230V ~ +/-10% 50/60Hz
Fan motor		Hz	50 - 60	50 - 60	50 - 60
		rpm	2800 - 3400	2800 - 3400	2800 - 3400
		V	230	230	230/400-260/460
		kW	0.3	0.42	0.45
		A	2.4 - 2.2	2.6 - 2.46	1.73/1 - 1.55/0.9
Motor capacitor		µF	12.5	12.5	-
Ignition transformer		V1 - V2 I1 - I2	230 V - 1 x 15 kV 1 A - 25 mA		
Absorbed electrical power		W max	600	700	750
Protection level			IP 40	IP 40	IP 40
Approval					
Directive			2006/42/CE- 2016/426/EU - 2014/30/EU - 2014/35/EU		
Conforming to			EN 676 - EN 12100		
Certification			CE-0085BS0379		

(01) Reference conditions: Room temperature 20°C - Gas temperature 15°C - Barometric pressure 1013 mbar - Altitude 0 m above sea level.

(02) Pressure on the pressure switch socket (Fig. 31 at page 31) with zero pressure in the combustion chamber and at maximum burner output.

(03) Sound pressure measured in manufacturer's combustion laboratory, with burner operating on test boiler and at maximum rated output. The sound power is measured with the "Free Field" method, as per EN 15036, and according to an "Accuracy: Category 3" measuring accuracy, as set out in EN ISO 3746.

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Model			RS 55/E BLU
Output (1)	Max.	kW	300 ÷ 680
		Mcal/h	259 ÷ 586
	Min.	kW	100
		Mcal/h	86
Fuel			Natural gas: G20 (methane gas) - G21 - G22 - G23 - G25
Gas pressure at max. output.(2) Gas: G20 / G25		mbar	15.2 / 22.7
Servomotor	Type		SQM 33... (air and gas)
	Run time	s	Min. 5 - Max 120
Operation			Intermittent (min. 1 stop in 24 hours) Two progressive or modulating stages with kit (see ACCESSORIES)
Standard applications			Boilers: water, steam, diathermic oil
Ambient temperature		°C	0 - 40
Combustion air temperature		°C max	60
Noise levels (3)	Sound pressure	dB(A)	64
	Sound power		75

Electrical data

Model		RS 55/E BLU	RS 55/E BLU
Main electrical supply		3 ~ 400/230V +/-10% 50Hz	
Control circuit power supply		1N 230V ~ +/-10% 50/60Hz	
Fan motor	Hz	50	60
	rpm	2850	3475
	V	220/240-380/415	254-440
	kW	1.1	1.1
	A	4.2/3.8 - 2.4/2.2	3.8 - 2.2
Ignition transformer	V1 - V2 I1 - I2	220-240V - 1 x 15 kV 1 A - 25 mA	
Absorbed electrical power	W max	1500	1500
Protection level		IP 40	IP 40
Approval			
Directive		2006/42/CE- 2016/426/EU - 2014/30/EU - 2014/35/EU	
Conforming to		EN 676 - EN 12100	
Certification		CE-0085CM0293	

(01) Reference conditions: Room temperature 20°C - Gas temperature 15°C - Barometric pressure 1013 mbar - Altitude 0 m above sea level.
(02) Pressure on the pressure switch socket (Fig. 31 at page 31) with zero pressure in the combustion chamber and at maximum burner output.
(03) Sound pressure measured in manufacturer's combustion laboratory, with burner operating on test boiler and at maximum rated output. The sound power is measured with the "Free Field" method, as per EN 15036, and according to an "Accuracy: Category 3" measuring accuracy, as set out in EN ISO 3746.

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Model			RS 68/E BLU	RS 68/EV BLU
Output (1)	Max.	kW	350 ÷ 860	350 ÷ 860
		Mcal/h	301 ÷ 740	301 ÷ 740
	Min.	kW	150	150
		Mcal/h	130	130
Fuel			Natural gas: G20 (methane gas) - G21 - G22 - G23 - G25	
Gas pressure at max. output.(2) Gas: G20 / G25		mbar	11.7 / 17.5	11.7 / 17.5
Servomotor	Type		SQM 33... (air and gas)	
	Run time	s	Min. 5 - Max 120	
Operation			Intermittent (min. 1 stop in 24 hours) Two progressive or modulating stages with kit (see ACCESSORIES)	
Standard applications			Boilers: water, steam, diathermic oil	
Ambient temperature		°C	0 - 40	
Combustion air temperature		°C max	60	
Noise levels (3)	Sound pressure	dB(A)	77	77
	Sound power		88	88

Electrical data

Electrical data

Model		RS 68/E BLU	RS 68/E BLU	RS 68/EV BLU	RS 68/EV BLU
Main electrical supply		3 ~ 230/400V +/-10% 50Hz		3 ~ 400V +/-10% 50Hz	
Control circuit power supply		1N 230V ~ +/-10% 50Hz		1N 230V ~ +/-10% 50Hz	
Fan motor	Hz	50	60	50	60
	rpm	2860	3430	2860	3430
	V	220/240-380/415	250/280-440/480	220/240-380/415	250/280-440/480
	kW	1.5	1.5	1.5	1.5
	A	5.5 - 3.4	5.5 - 3.2	5.5 - 3.4	5.5 - 3.2
Ignition transformer	V1 - V2 I1 - I2	230 V - 1 x 8 kV 1 A - 20 mA		230 V - 1 x 8 kV 1 A - 20 mA	
Absorbed electrical power	W max	2300		1500	
Protection level		IP44		IP44	
Approval					
Directive		2006/42/CE- 2016/426/EU - 2014/30/EU - 2014/35/EU			
Conforming to		EN 676 - EN 12100			
Certification		CE-0085BS0267			

(01) Reference conditions: Room temperature 20°C - Gas temperature 15°C - Barometric pressure 1013 mbar - Altitude 0 m above sea level.

(02) Pressure on the pressure switch socket (Fig. 31 at page 31) with zero pressure in the combustion chamber and at maximum burner output.

(03) Sound pressure measured in manufacturer's combustion laboratory, with burner operating on test boiler and at maximum rated output. The sound power is measured with the "Free Field" method, as per EN 15036, and according to an "Accuracy: Category 3" measuring accuracy, as set out in EN ISO 3746.

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Model			RS 120/E BLU	RS 120/EV BLU
Output (1)	Max.	kW	600 ÷ 1300	600 ÷ 1300
		Mcal/h	516 ÷ 1118	516 ÷ 1118
	Min.	kW	300	300
		Mcal/h	258	258
Fuel			Natural gas: G20 (methane gas) - G21 - G22 - G23 - G25 - G31	
Gas pressure at max. output.(2) Gas: G20 / G25 Gas: G31		mbar	22.5 / 33.6 -	22.5 / 33.6 19.6
Servomotor	Type		SQM 33... (air and gas)	
	Run time	s	Min. 5 - Max 120	
Operation			Intermittent (min. 1 stop in 24 hours) Two progressive or modulating stages with kit (see ACCESSORIES)	
Standard applications			Boilers: water, steam, diathermic oil	
Ambient temperature		°C	0 - 40	
Combustion air temperature		°C max	60	
Noise levels (3)	Sound pressure	dB(A)	78.5	78.5
	Sound power		89.5	89.5

Electrical data

Model		RS 120/E BLU	RS 120/E BLU	RS 120/EV BLU	RS 120/EV BLU
Main electrical supply		3 ~ 230/400V +/-10% 50Hz		3 ~ 400V +/-10% 50Hz	
Control circuit power supply		1N 230V ~ +/-10% 50Hz		1N 230V ~ +/-10% 50Hz	
Fan motor	Hz	50	60	50	60
	rpm	2870	3440	2870	3440
	V	220/240 - 380/415	250/280-440/480	220/240 - 380/415	250/280-440/480
	kW	2.2		2.2	
	A	7.95 - 4.59		7.95 - 4.59	
Ignition transformer	V1 - V2	230 V - 1 x 8 kV		230 V - 1 x 8 kV	
	I1 - I2	1 A - 20 mA		1 A - 20 mA	
Absorbed electrical power		W max		3000	
Protection level		IP44		IP44	

Approval

Directive	2006/42/CE- 2016/426/EU - 2014/30/EU - 2014/35/EU
Conforming to	EN 676 - EN 12100
Certification	CE-0085BS0268

(01) Reference conditions: Room temperature 20°C - Gas temperature 15°C - Barometric pressure 1013 mbar - Altitude 0 m above sea level.
(02) Pressure on the pressure switch socket (Fig. 31 at page 31) with zero pressure in the combustion chamber and at maximum burner output.
(03) Sound pressure measured in manufacturer's combustion laboratory, with burner operating on test boiler and at maximum rated output. The sound power is measured with the "Free Field" method, as per EN 15036, and according to an "Accuracy: Category 3" measuring accuracy, as set out in EN ISO 3746.

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Model			RS 160/E BLU	RS 160/EV BLU
Output (1)	Max.	kW Mcal/h	930 ÷ 1860	930 ÷ 1860
			800 ÷ 1600	800 ÷ 1600
	Min.	kW Mcal/h	300	300
			258	258
Fuel			Natural gas: G20 (methane gas) - G21 - G22 - G23 - G25 - G31	
Pressure at max. output.(2) Gas: G20 / G25 Gas: G31		mbar	17.7 / 26.4 -	17.7 / 26.4 19.6
Servomotor	Type		SQM 33... (air and gas)	
		s	Min. 5 - Max 120	
Operation			Intermittent (min. 1 stop in 24 hours) Two progressive or modulating stages with kit (see ACCESSORIES)	
Standard applications			Boilers: water, steam, diathermic oil	
Ambient temperature		°C	0 - 40	
Combustion air temperature		°C max	60	
Noise levels (3)	Sound pressure	dB(A)	80.5	80.5
	Sound power		91.5	91.5

Electrical data

Model		RS 160/E BLU	RS 160/E BLU	RS 160/EV BLU	RS 160/EV BLU
Main electrical supply		3 ~ 230/400V +/-10% 50Hz		3 ~ 400V +/-10% 50Hz	
Control circuit power supply		1N 230V ~ +/-10% 50Hz		1N 230V ~ +/-10% 50Hz	
Fan motor	Hz	50	60	50	60
	rpm	2880	3430	2880	3460
	V	220/240-380/415	250/280-440/480	220/240-380/415	250/280-440/480
	kW	4.5		4.5	
	A	15.1 - 8.72		15.1 - 8.72	
Ignition transformer		V1 - V2 I1 - I2 230 V - 1 x 8 kV 1 A - 20 mA		230 V - 1 x 8 kV 1 A - 20 mA	
Absorbed electrical power		W max		5300	
Protection level		IP44		IP44	

Approval

Directive	2006/42/CE- 2016/426/EU - 2014/30/EU - 2014/35/EU
Conforming to	EN 676 - EN 12100
Certification	CE-0085BS0266

(01) Reference conditions: Room temperature 20°C - Gas temperature 15°C - Barometric pressure 1013 mbar - Altitude 0 m above sea level.

(02) Pressure on the pressure switch socket (Fig. 31 at page 31) with zero pressure in the combustion chamber and at maximum burner output.

(03) Sound pressure measured in manufacturer's combustion laboratory, with burner operating on test boiler and at maximum rated output. The sound power is measured with the "Free Field" method, as per EN 15036, and according to an "Accuracy: Category 3" measuring accuracy, as set out in EN ISO 3746.

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Model			RS 200/E BLU	RS 200/EV BLU
Output (1)	Max.	kW	1380 ÷ 2400	1380 ÷ 2400
		Mcal/h	1187 ÷ 2064	1187 ÷ 2064
	Min.	kW	550	550
		Mcal/h	473	473
Fuel			Natural gas: G20 (methane gas) - G21 - G22 - G23 - G25 - G31	
Pressure at max. output.(2)		mbar	28.0 / 41.8 19.6	28.0 / 41.8 19.6
Gas: G20 / G25				
Gas: G31				
Servomotor	Type		SQM 33... (air and gas)	
	Run time	s	Min. 5 - Max 120	
Operation			Intermittent (min. 1 stop in 24 hours) Two progressive or modulating stages with kit (see ACCESSORIES)	
Standard applications			Boilers: water, steam, diathermic oil	
Ambient temperature		°C	0 - 40	
Combustion air temperature		°C max	60	
Noise levels (3)	Sound pressure	dB(A)	83.0	83.0
	Sound power		94.0	94.0

Electrical data

Electrical data

Model		RS 200/E BLU		RS 200/E BLU	RS 200/EV BLU	RS 200/EV BLU
Main electrical supply		3 ~ 230/400V +/-10% 50Hz		3 ~ 220/380V +/-10% 60Hz	3 ~ 400V +/-10% 50Hz	
Control circuit power supply		1N 230V ~ +/-10% 50Hz		1N 220V ~ +/-10% 60Hz	1N 230V ~ +/-10% 50Hz	
Fan motor	Hz	50	60	60	50	60
	rpm	2910	3490	3480	2910	3490
	V	220/240 380/415	250/280 440/480	220/380	220/240 - 380/415	250/280 - 440/480
	kW	5.5	6.6	4.5	5.5	6.6
	A	18.2-10.5	18.2-10.5	16.5/9.5	18.2 - 10.5	
Ignition transformer		V1 - V2 I1 - I2	230 V - 1 x 8 kV 1 A - 20 mA		230 V - 1 x 8 kV 1 A - 20 mA	
Absorbed electrical power		W max	6500	5300	6500	
Protection level		IP44			IP44	

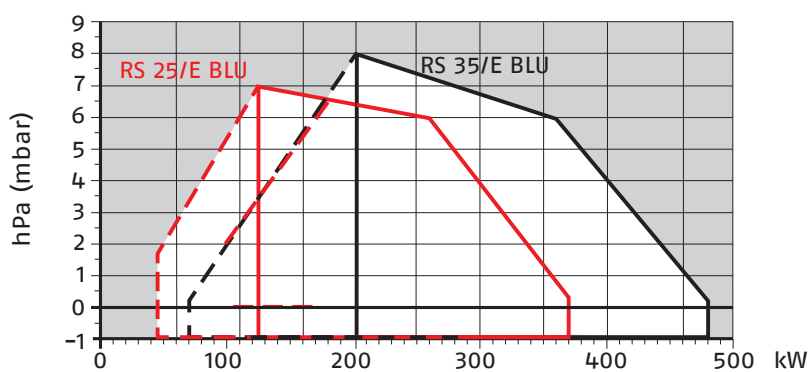
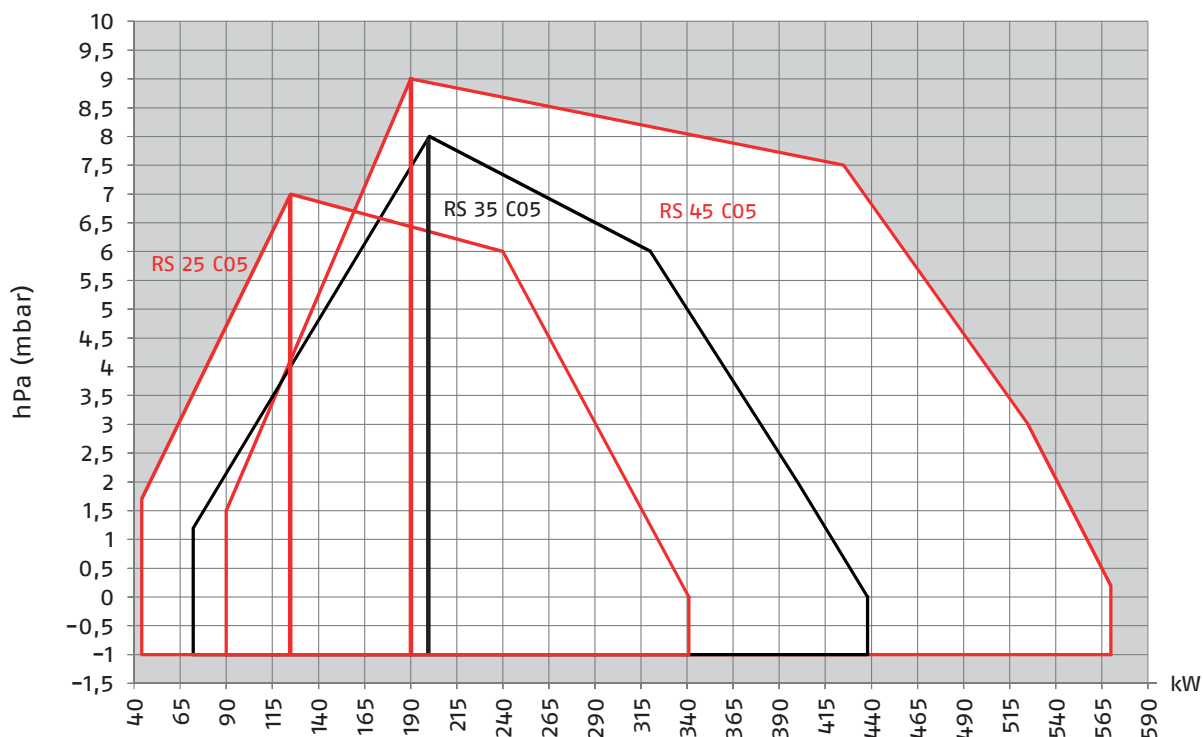
Approval

Directive	2006/42/CE - 2016/426/EU - 2014/30/EU - 2014/35/EU
Conforming to	EN 676 - EN 12100
Certification	CE-0085BT0419

(01) Reference conditions: Room temperature 20°C - Gas temperature 15°C - Barometric pressure 1013 mbar - Altitude 0 m above sea level.
(02) Pressure on the pressure switch socket (Fig. 31 at page 31) with zero pressure in the combustion chamber and at maximum burner output.
(03) Sound pressure measured in manufacturer's combustion laboratory, with burner operating on test boiler and at maximum rated output. The sound power is measured with the "Free Field" method, as per EN 15036, and according to an "Accuracy: Category 3" measuring accuracy, as set out in EN ISO 3746.

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Firing rates



□ Useful working field for choosing the burner

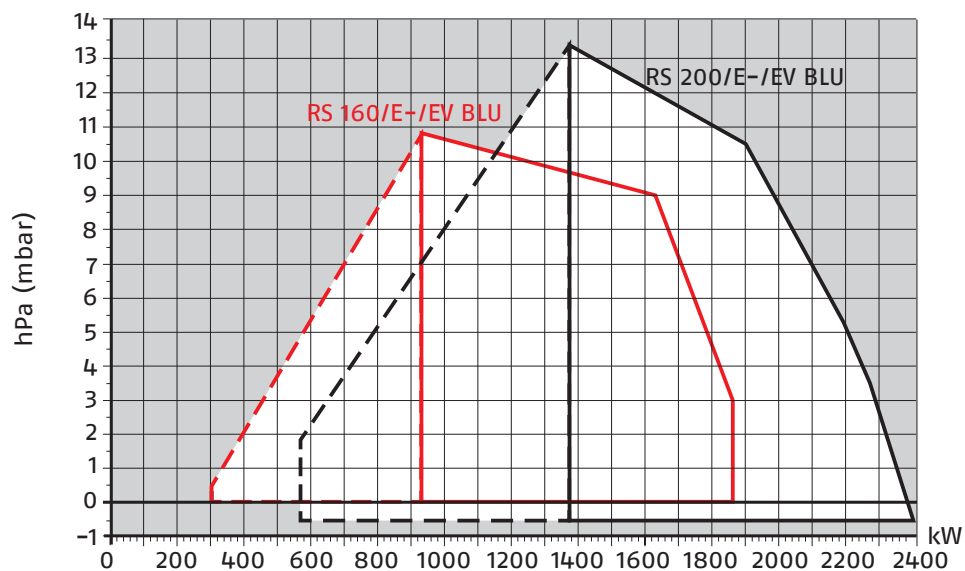
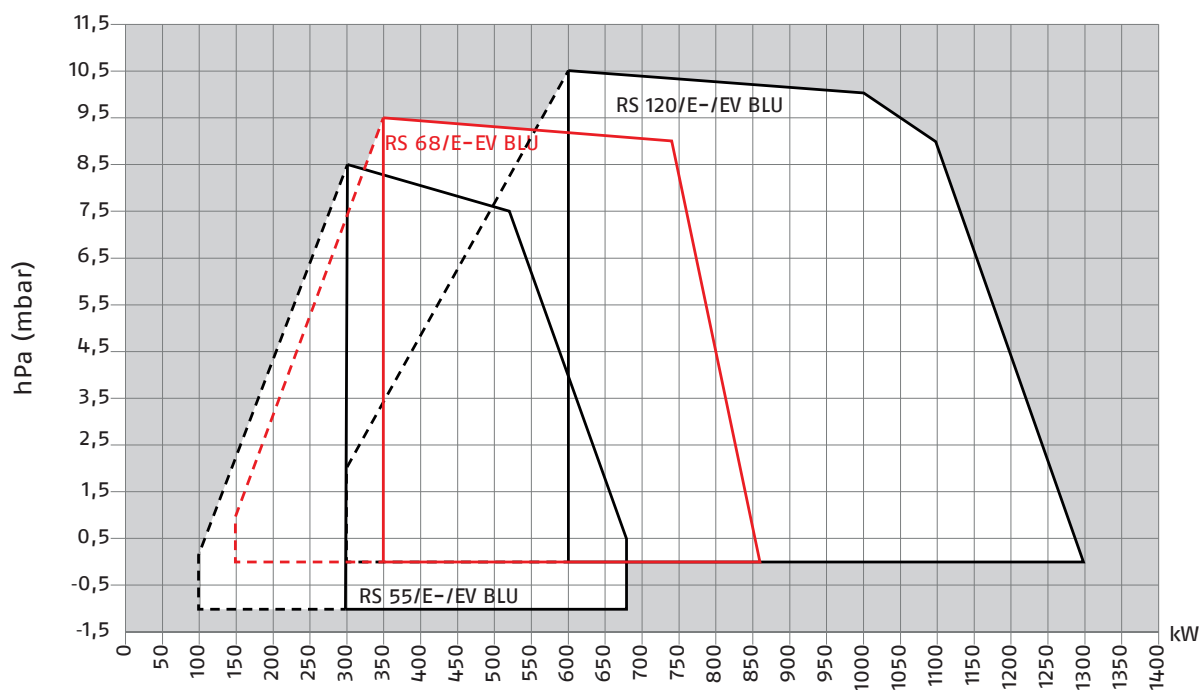
▤ Modulation range

Test conditions conforming to EN 676:

Temperature: 20°C

Pressure: 1013.5 mbar

Altitude: 0 m a.s.l.



□ 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

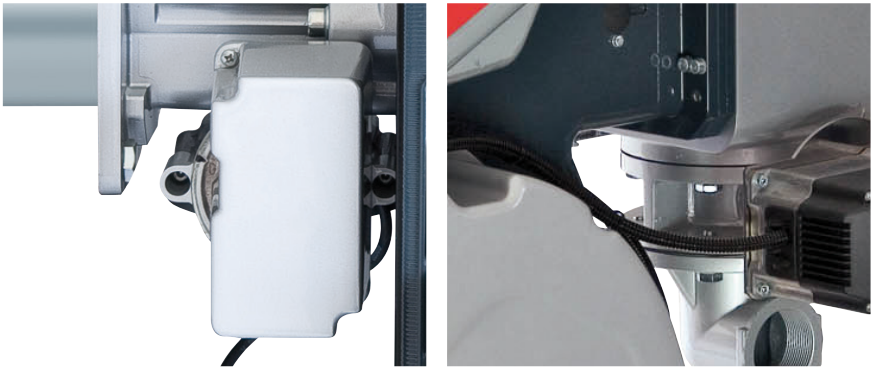
GAS TRAINS

The burners are fitted with a butterfly valve to regulate the fuel, controlled by a stepper motor with high accuracy position and absence of joint clearance and mechanical hysteresis.

Fuel can be supplied either from the right or left hand sides. A maximum gas pressure switch stops the burner in case of excess pressure in the fuel line (as accessory on RS 25-35/E C05 and RS 25-35/E BLU).

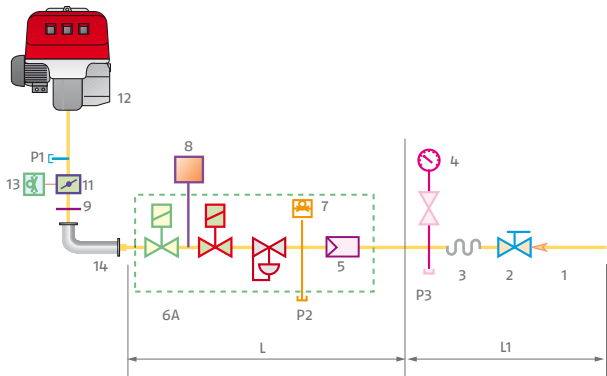
The gas train can be selected to best fit system requirements depending on the fuel output and pressure in the supply line.

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

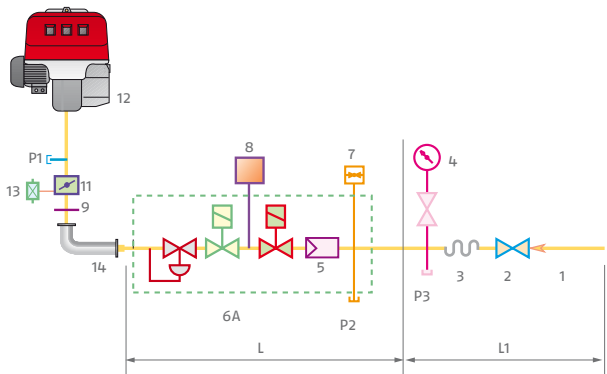


Example of fuel adjusting stepper motors on RS 25/E BLU and RS 200/E BLU burners.

MB "THREADED"

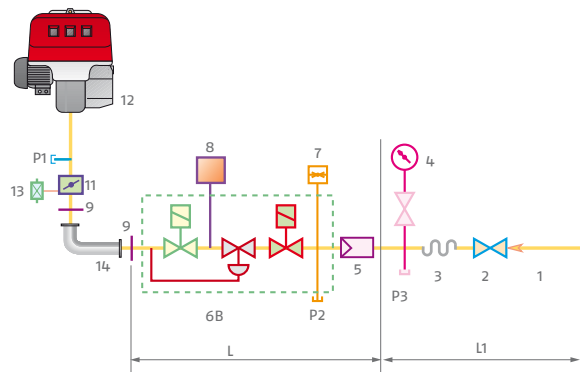


MBC "THREADED"

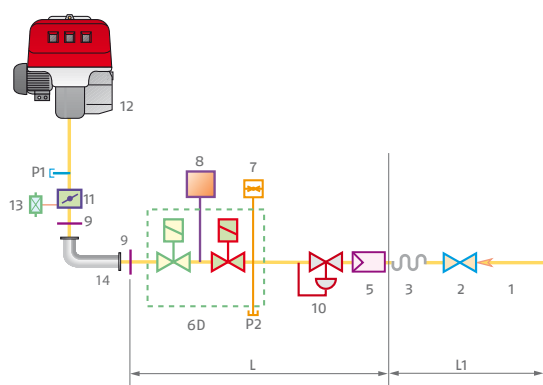


1	Gas input pipework
2	Manual valve
3	Anti-vibration joint
4	Pressure gauge with pushbutton cock
5	Filter
6A	Includes: - filter - operation valve - safety valve - pressure adjuster
7	Minimum gas pressure switch
8	Leak detection device, supplied as an accessory or incorporated, based on the gas train code
9	Gasket
10	Pressure adjuster
11	Gas adjuster butterfly valve
12	Burner
13	Maximum gas pressure switch
14	Gas train-burner adaptor
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's responsibility

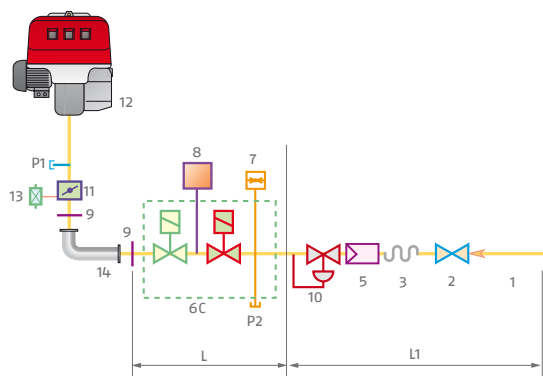
MBC "FLANGED"



CB "FLANGED OR THREADED"



DMV "FLANGED OR 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
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
10	Pressure adjuster
11	Gas adjuster butterfly valve
12	Burner
13	Maximum gas pressure switch
14	Gas train-burner adaptor
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

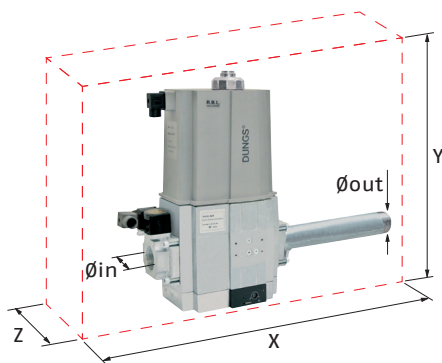
Gas trains are approved by standard EN 676 together with the burner.

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 RS/E-EV C05-BLU burners, intake and outlet diameters and seal control if fitted.

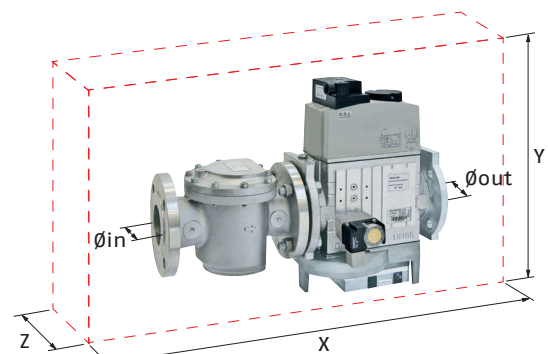
The gas train valves proofing control is an integrated function of REC 27 Electronic Cam device.

The maximum gas pressure of gas train "Multibloc" type is 360 mbar, and the one of gas train "Composed" type is 500 mbar.

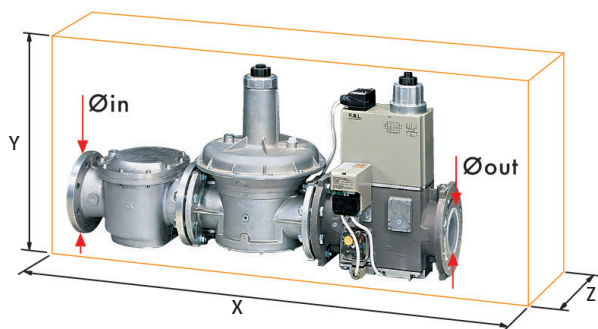
The range of pressure in the MULTIBLOC with flange can be modified choosing the stabiliser spring (see gas train accessory).



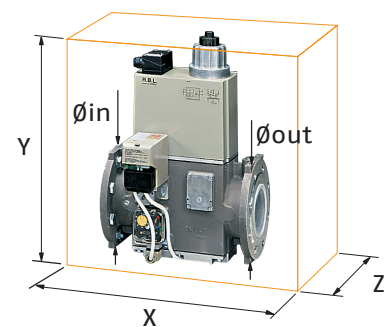
Example of gas train "MULTIBLOC" type without seal control (i.e. MBC 1200)



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



Example of gas train "CB" series with seal control



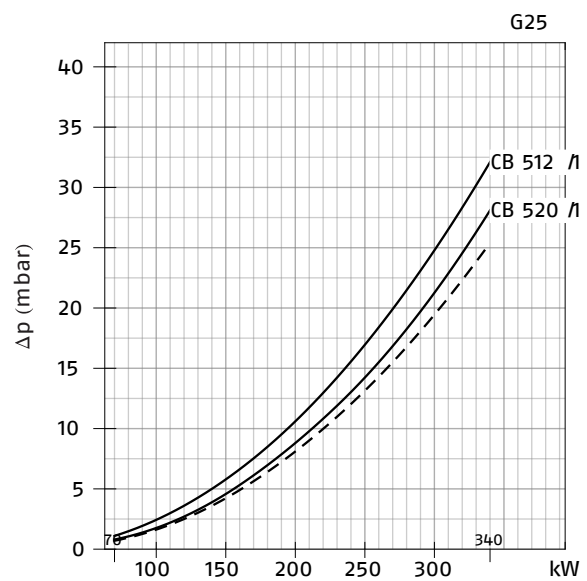
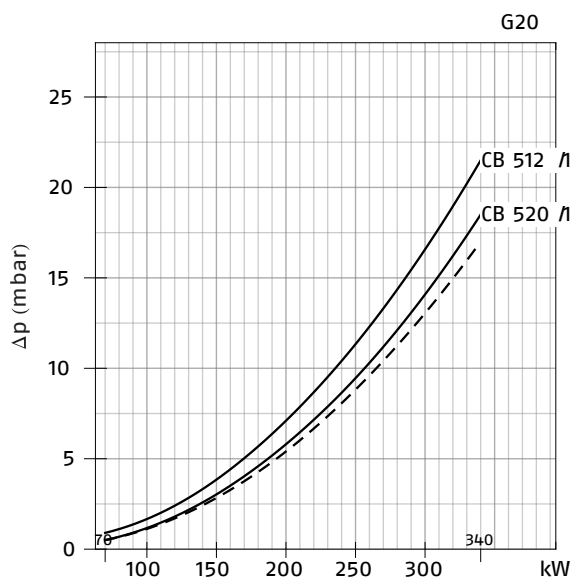
Example of gas train "DMV" series with seal control

GAS TRAIN						
CODE	MODEL	Ø in	Ø out	X mm	Y mm	Z mm
3970599	MB 407/1 - RT 52	Rp ¾"	Rp ¾"	371	196	92
3970258	MB 410/1 - RT 52	Rp 1" ½	Rp 1" ½	405	217	116
3970600	MB 410/1 - RT 52	Rp ¾"	Rp ¾"	405	217	116
3970256	MB 412/1 - RT 52	Rp 1" ½	Rp 1" ½	433	217	116
3970250	MB 415/1 - RT 52	Rp 1" ½	Rp 1" ½	523	250	100
3970257	MB 420/1 - RT 52	Rp 2"	Rp 2"	523	289	100
3970221	MBC 1200/1 - RSM 60	Rp 2"	Rp 2"	528	424	161
3970222	MBC 1900/1 - FSM 40	DN 65	DN 65	613	430	237
3970223	MBC 3100/1 - FSM 40	DN 80	DN 80	633	500	240
3970224	MBC 5000/1 - FSM 80	DN 100	DN 100	733	576	280
3970145	CB 512/1 - RSM 30	Rp 1" ½	Rp 1" ½	891	261	245
3970146	CB 520/1 - RSM 30	Rp 2"	Rp 2"	986	328	255
20044659	CB 525/1 - RSM 30	Rp 2"	Rp 2"	1025	356	285
3970147	CB 5065/1 - FSM 30	DN 65	DN 65	906	356	285
3970148	CB 5080/1 - FSM 30	DN 80	DN 80	934	416	285
3970149	CB 50100/1 - FSM 30	DN 100	DN 100	1054	501	350
20015871	CB 50125/1 - FSM 30	DN 125	DN 125	1164	780	400
20043035	DMV 512/1 - RSM - 0	Rp 1-1/2"	Rp 1-1/2"	490	292	245
20043037	DMV 512/1 CQ RSM - 2	Rp 1-1/2"	Rp 1-1/2"	490	292	245
20043038	DMV 520/1 - RSM - 0	Rp 2"	Rp 2"	490	292	255
20043040	DMV 520/1 CQ RSM - 2	Rp 2"	Rp 2"	490	292	255
20043053	DMV 525/1 - RSM - 0	Rp 2"	Rp 2"	530	338	270
20043055	DMV 525/1 - CQ RSM - 2	Rp 2"	Rp 2"	530	338	270
20043041	DMV 5065/1 - FSM - 0	DN 65	DN 65	290	338	270
20043043	DMV 5065/1 CQ FSM - 2	DN 65	DN 65	290	338	270
20043044	DMV 5080/1- FSM - 0	DN 80	DN 80	310	397	290
20043046	DMV 5080/1 CQ FSM - 2	DN 80	DN 80	310	397	290
20043047	DMV 50100/1 FSM - 0	DN 100	DN 100	350	449	307
20043049	DMV 50100/1 CQ FSM - 2	DN 100	DN 100	350	449	307
20043050	DMV 50125/1 FSM - 0	DN 125	DN 125	400	554	333
20043052	DMV 50125/1 CQ FSM - 2	DN 125	DN 125	400	554	333

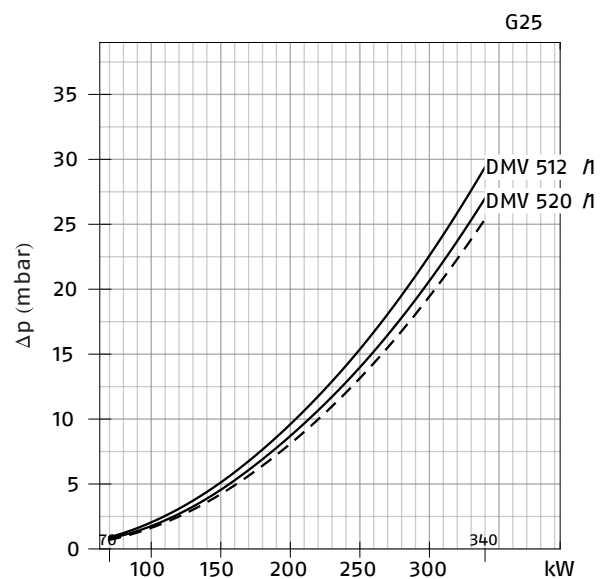
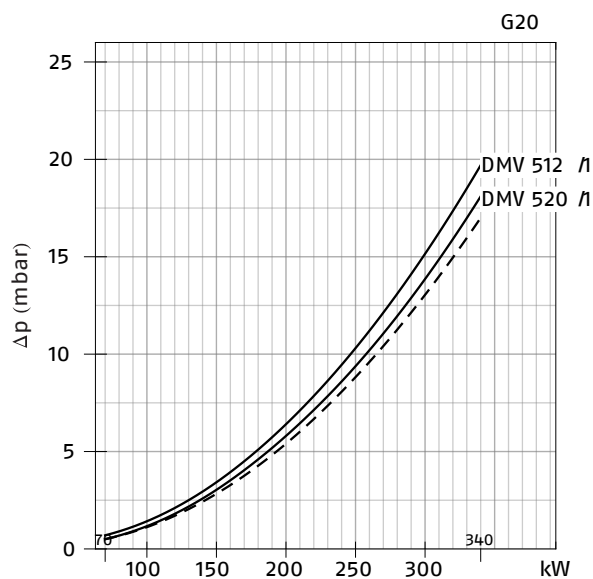
PRESSURE DROP DIAGRAM

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.

RS 25/E C05 (NATURAL GAS)

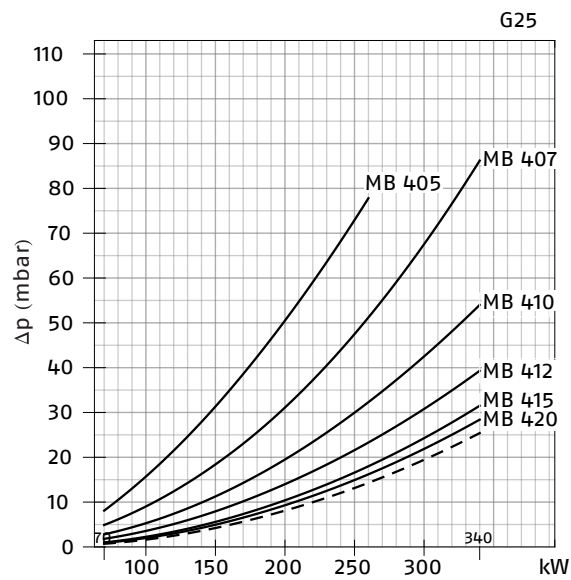
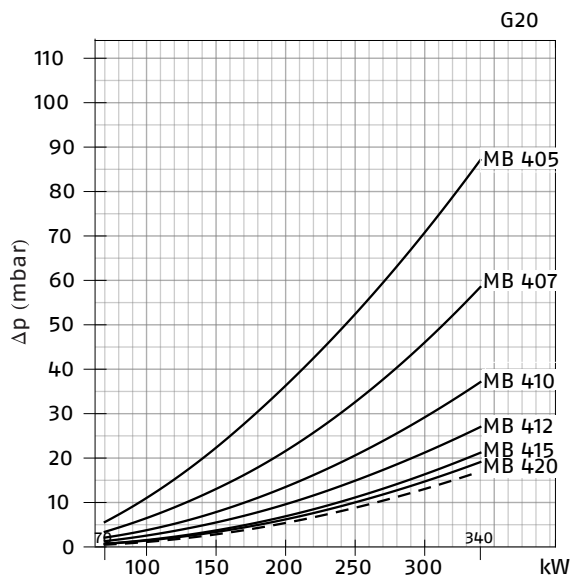


RS 25/E C05 (NATURAL GAS)

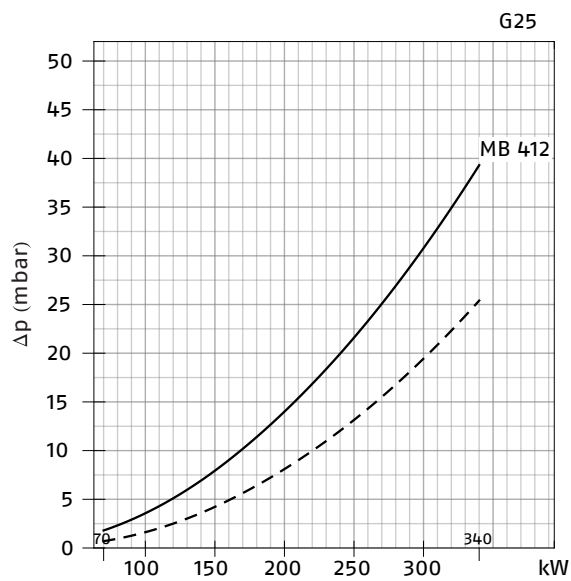
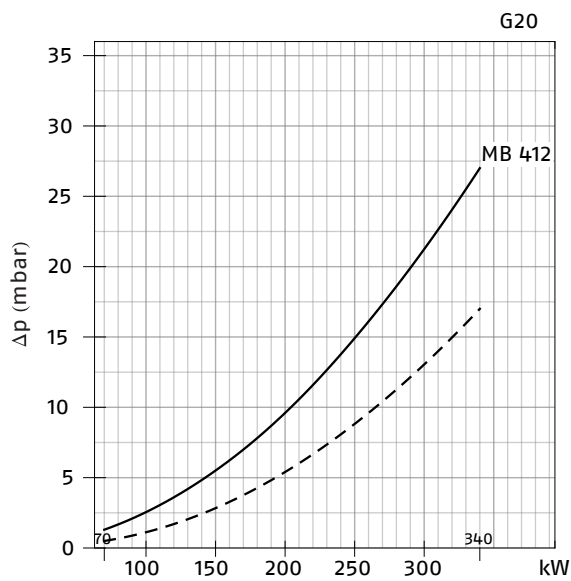


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 25/E C05 (NATURAL GAS)

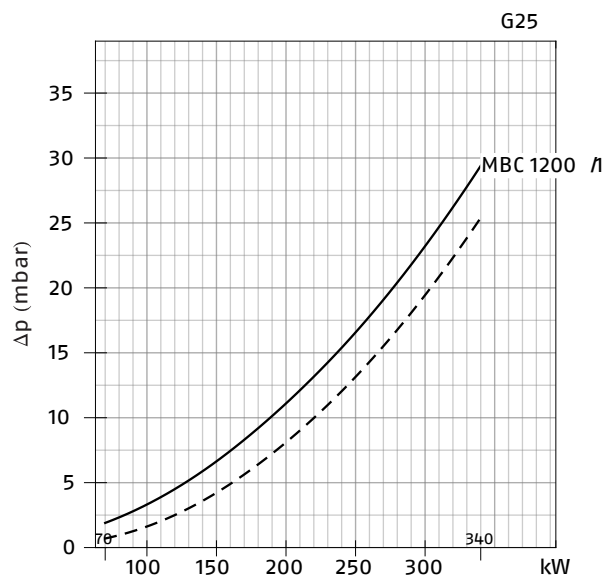
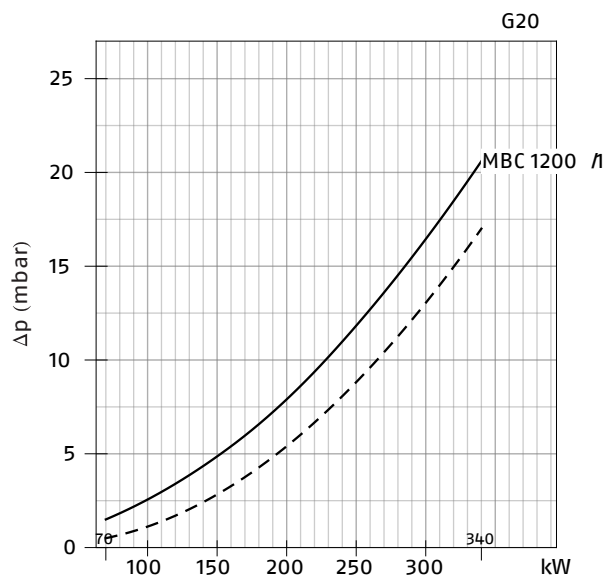


RS 25/E C05 (NATURAL GAS)



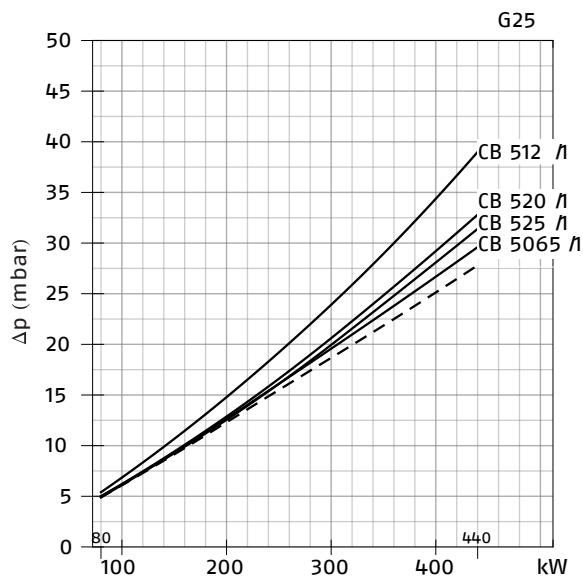
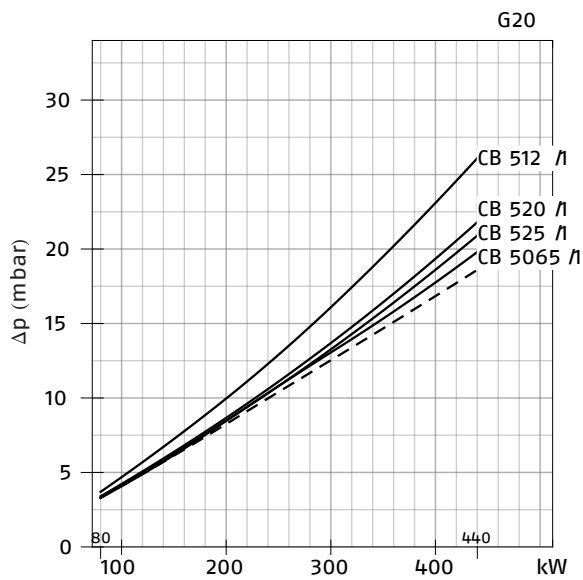
— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 25/E C05 (NATURAL GAS)

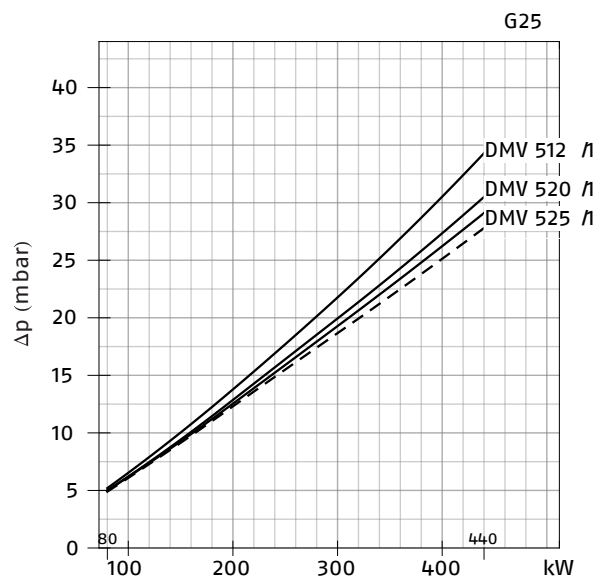
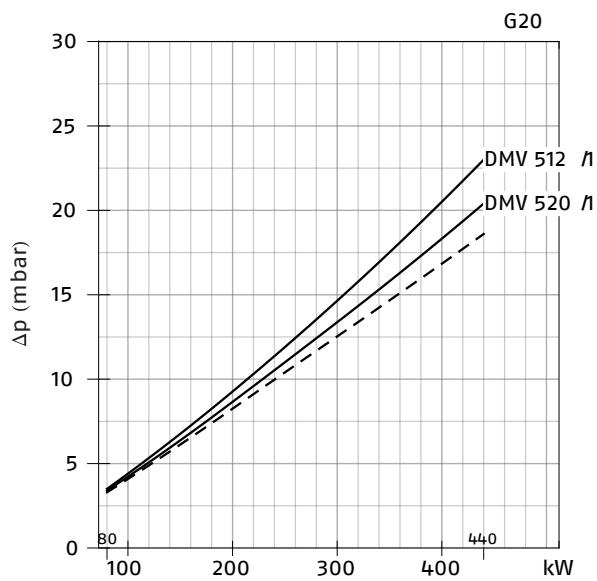


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 35/E C05 (NATURAL GAS)

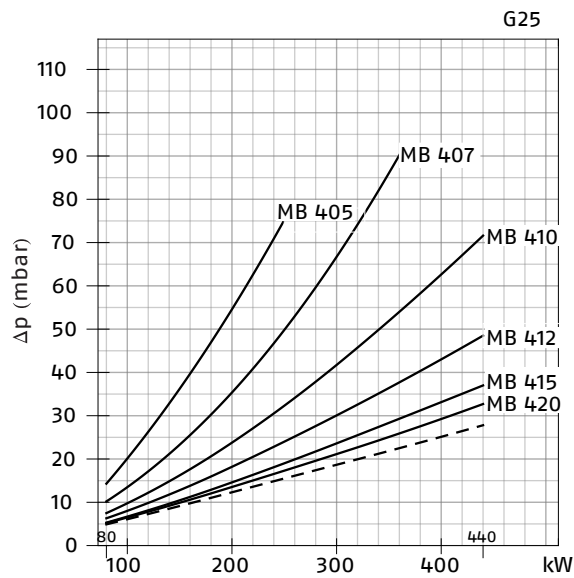
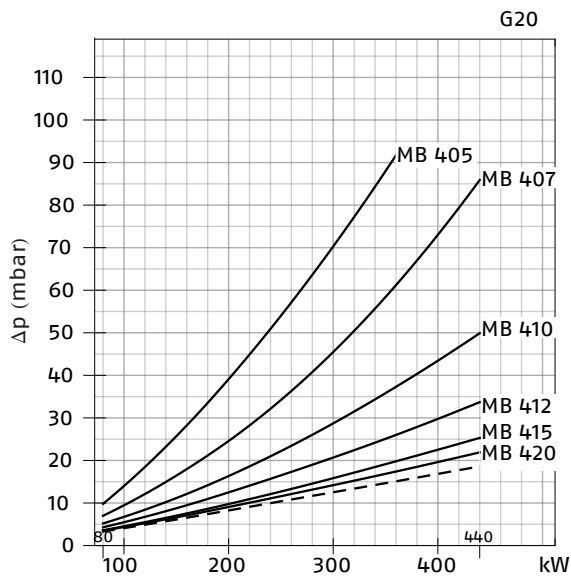


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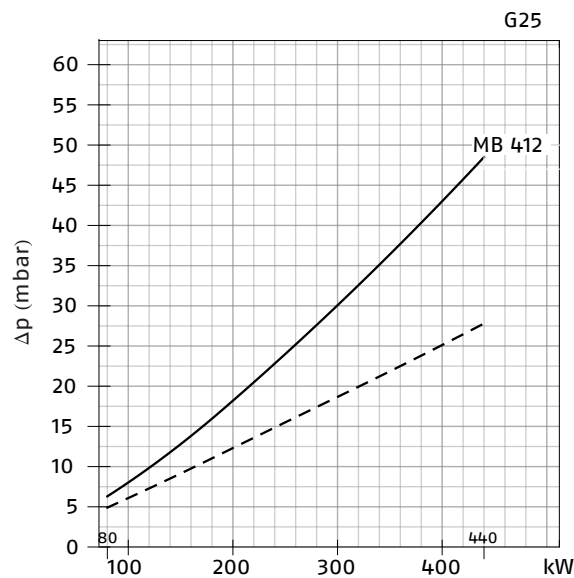
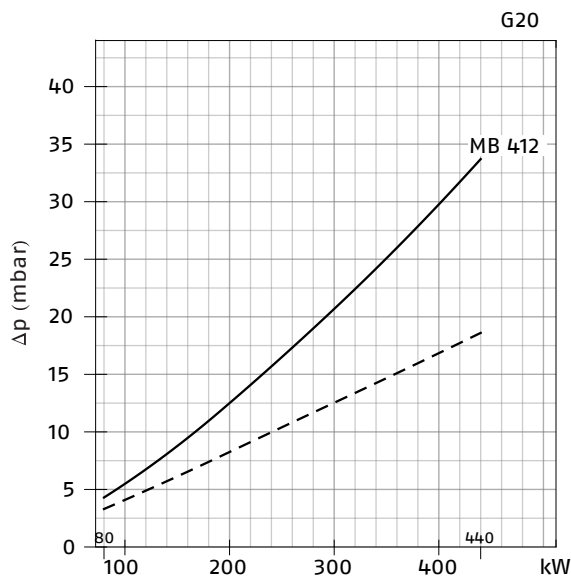


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 35/E C05 (NATURAL GAS)

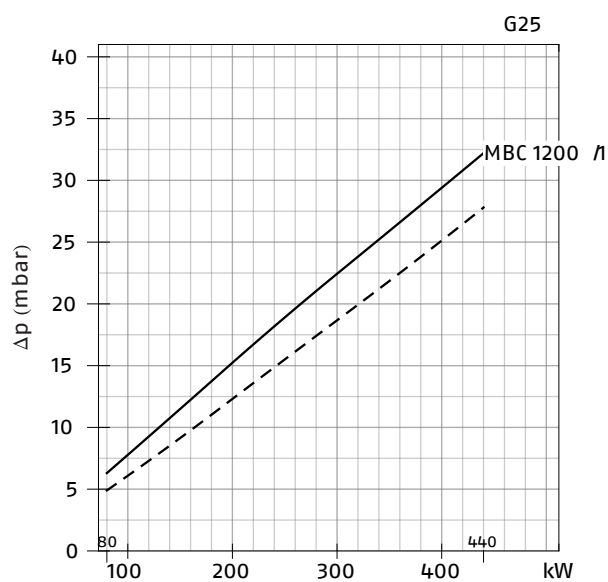
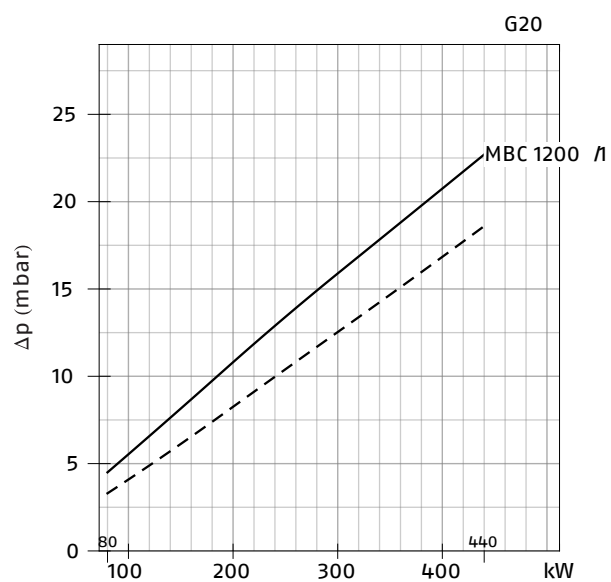


RS 35/E C05 (NATURAL GAS)



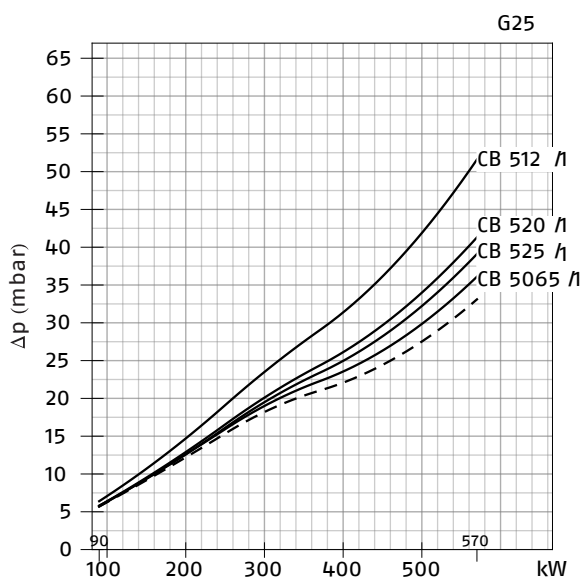
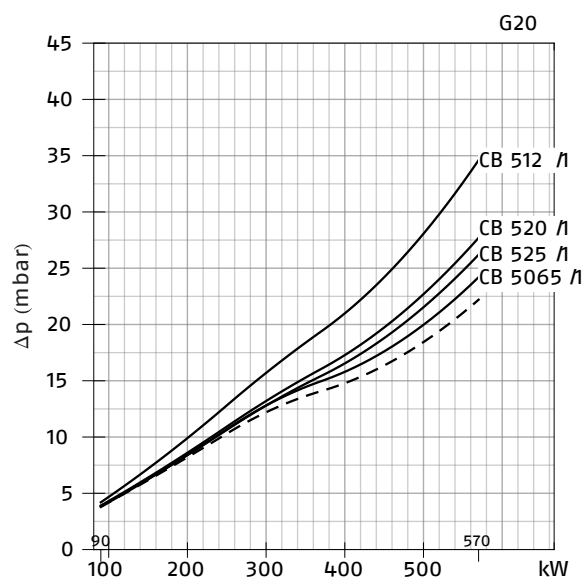
— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 35/E C05 (NATURAL GAS)

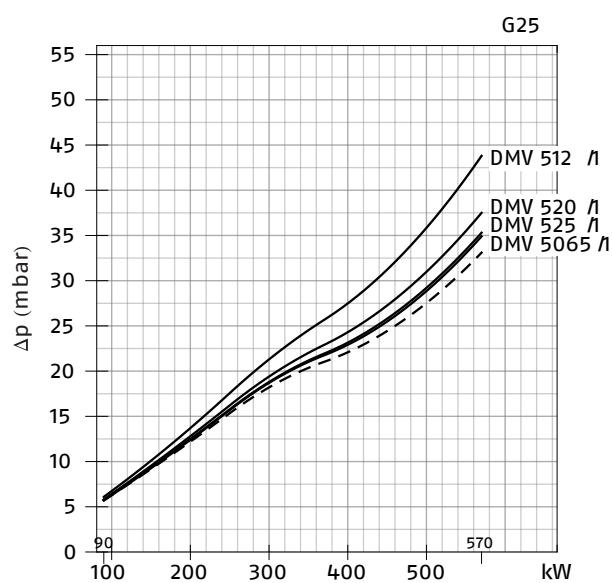
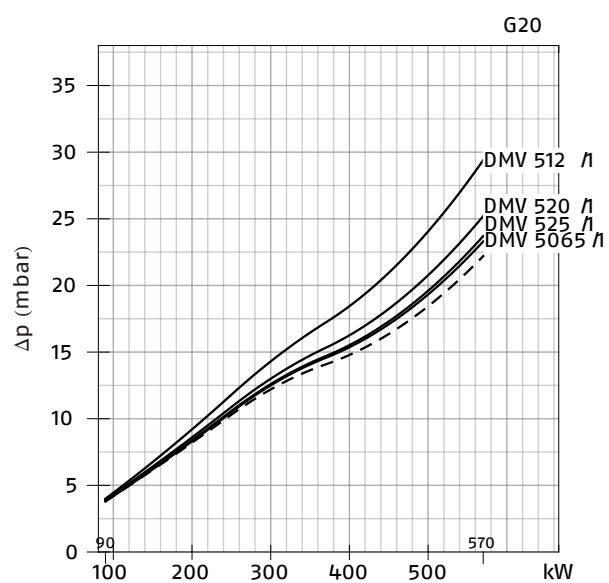


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 45/E C05 (NATURAL GAS)

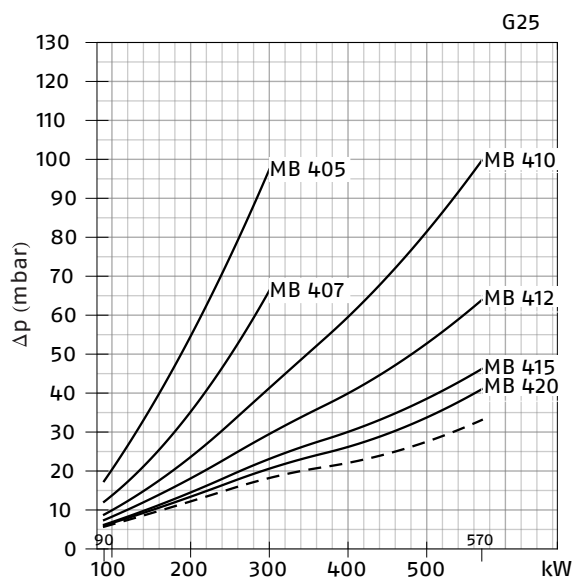
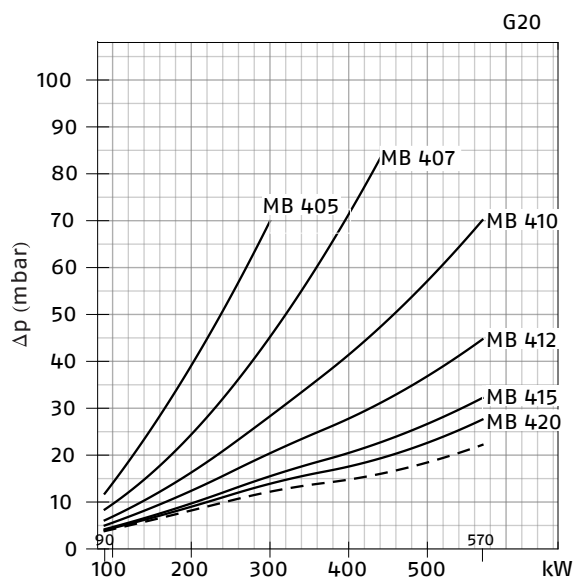


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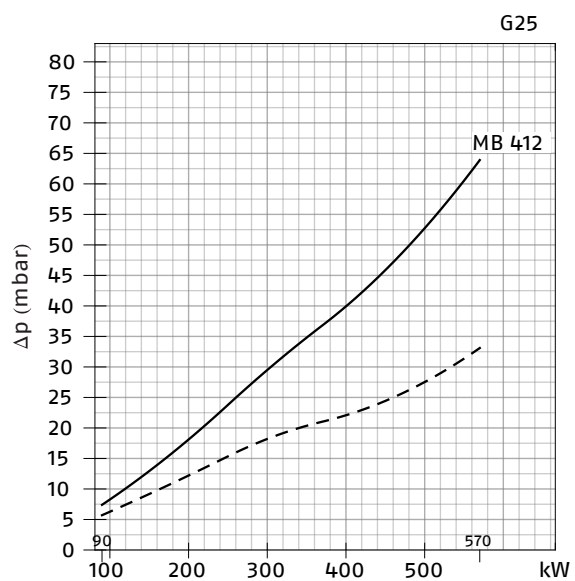
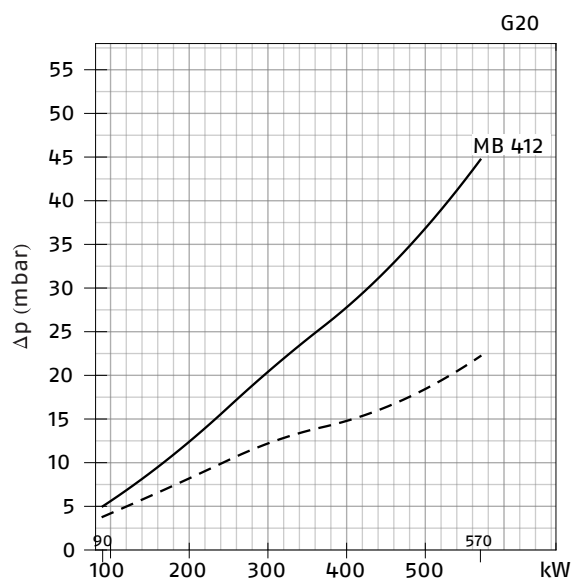


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 45/E C05 (NATURAL GAS)

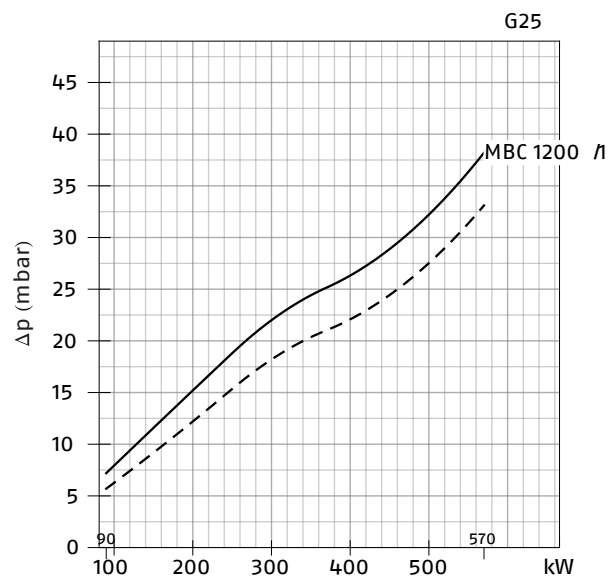
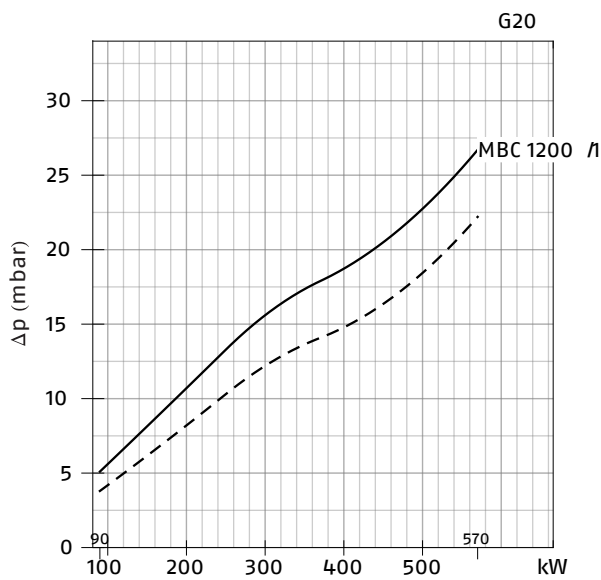


RS 45/E C05 (NATURAL GAS)



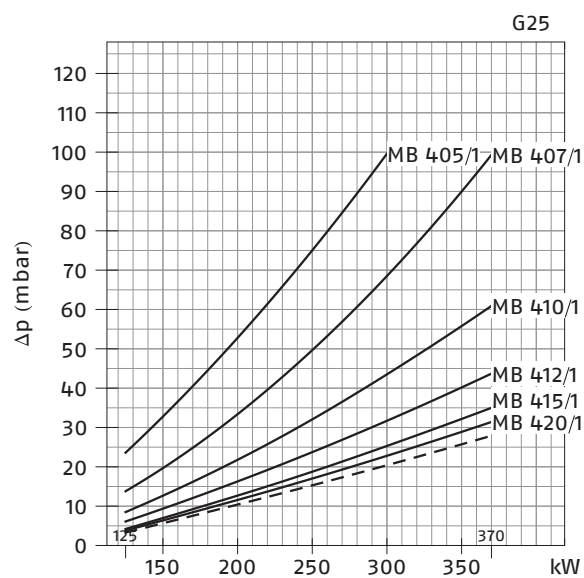
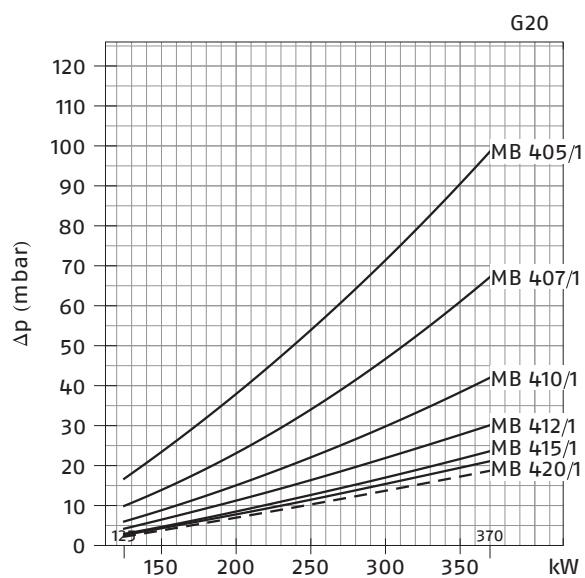
— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 45/E C05 (NATURAL GAS)

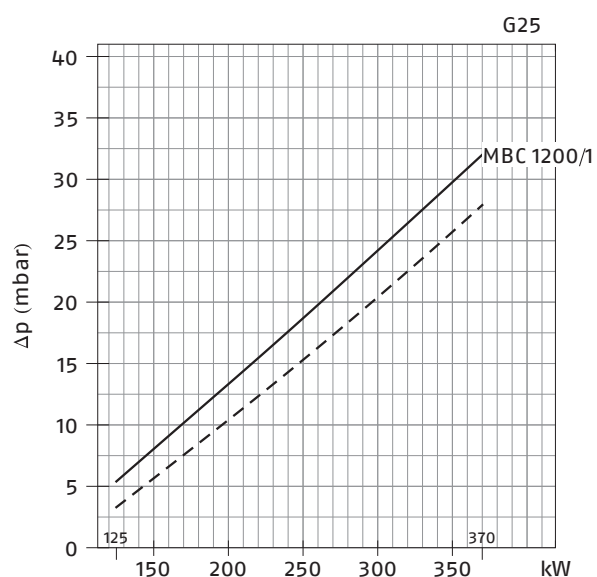
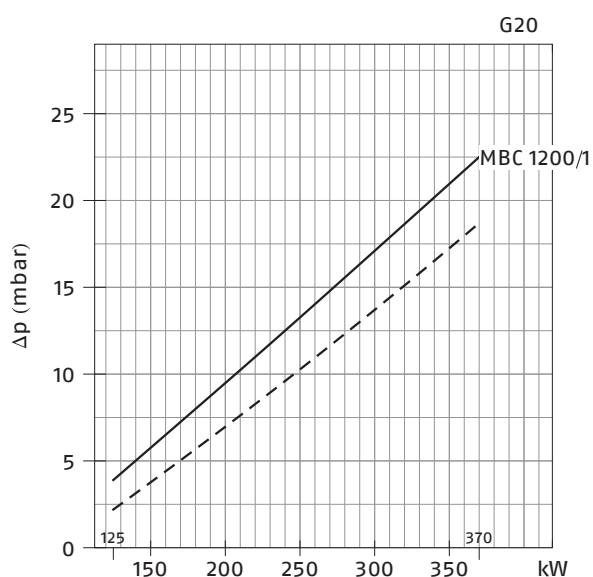


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 25/E (NATURAL GAS)

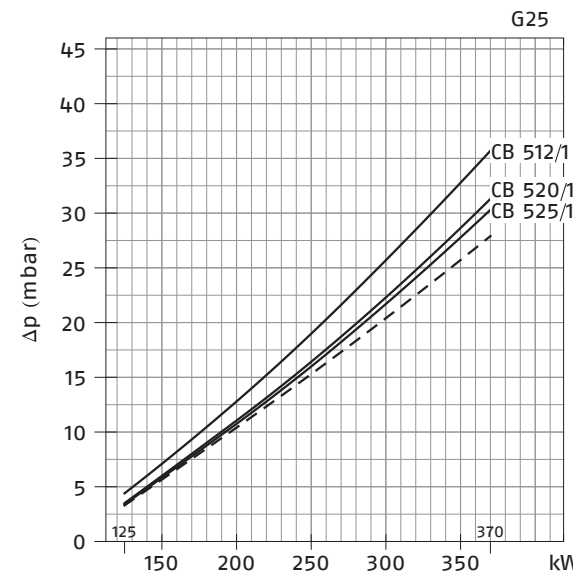
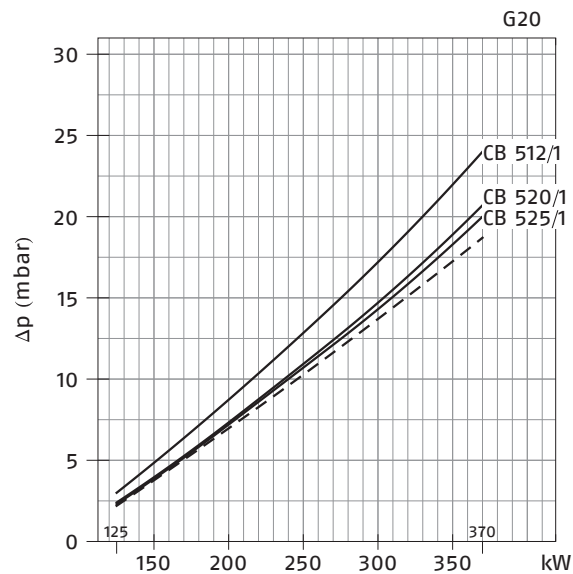


RS 25/E (NATURAL GAS)

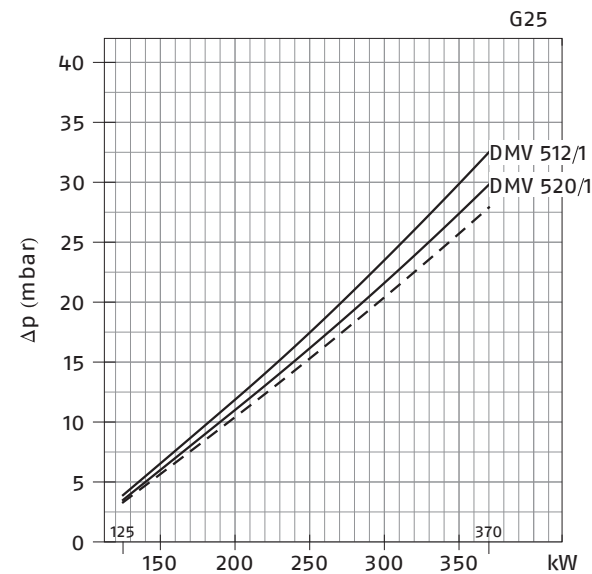
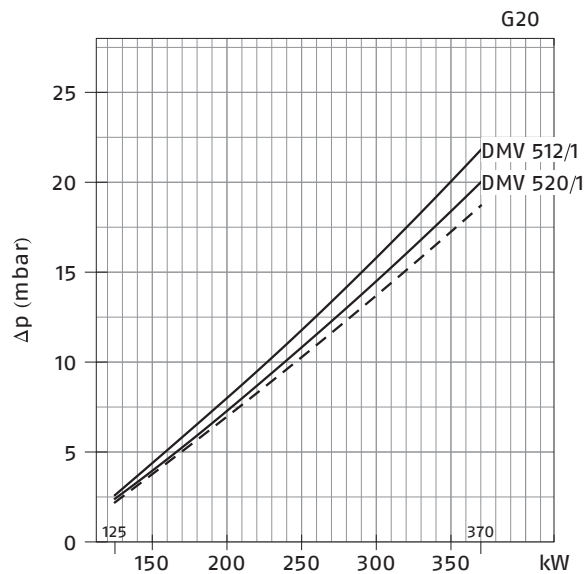


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 25/E (NATURAL GAS)

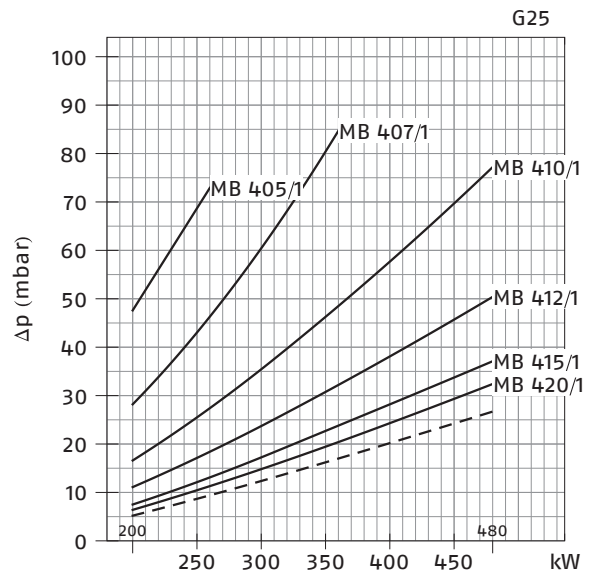
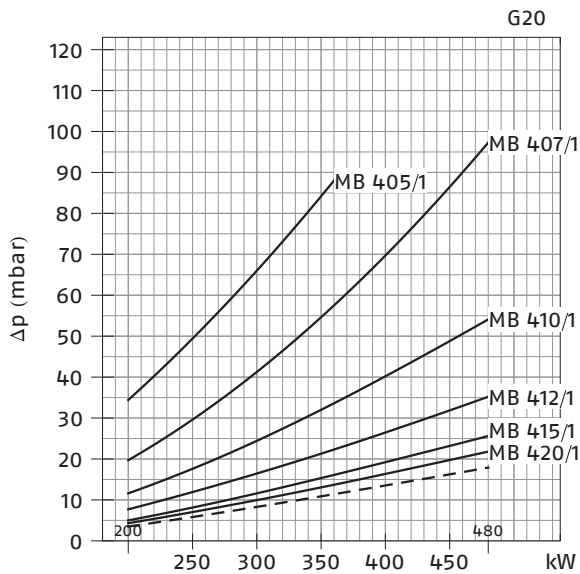


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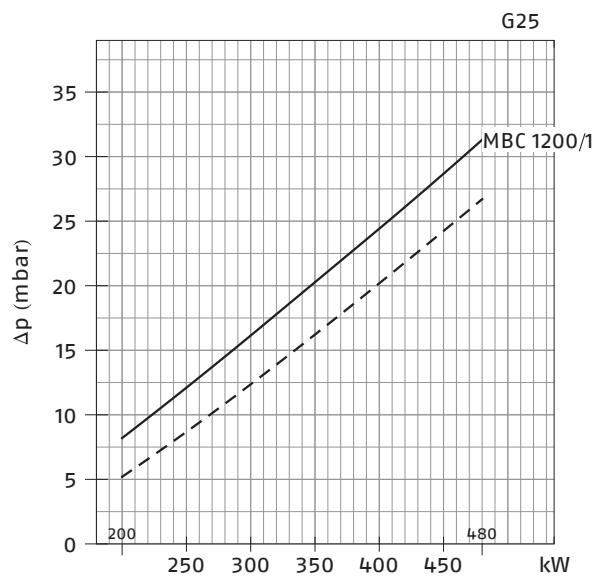
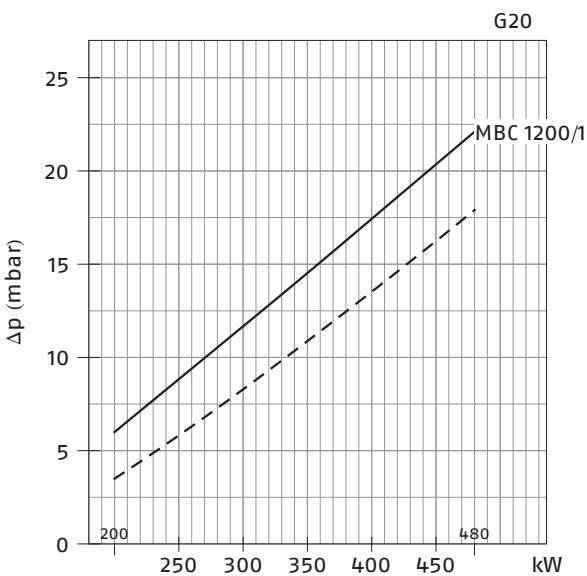


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 35/E (NATURAL GAS)

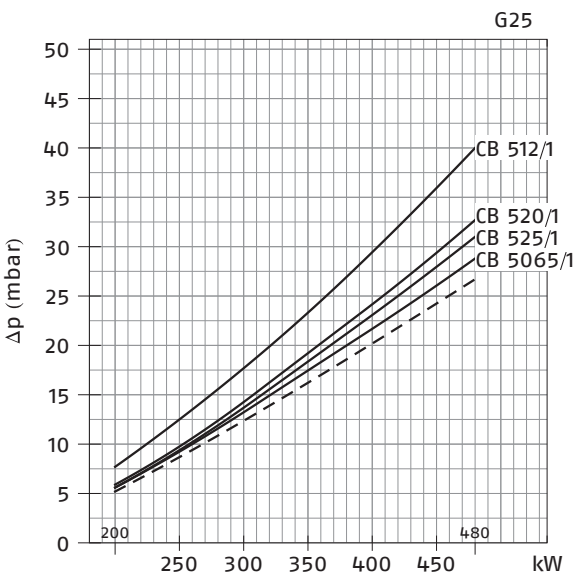
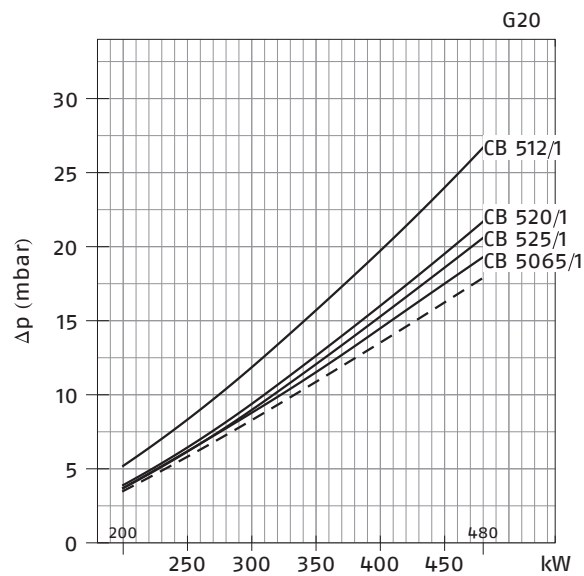


RS 35/E (NATURAL GAS)

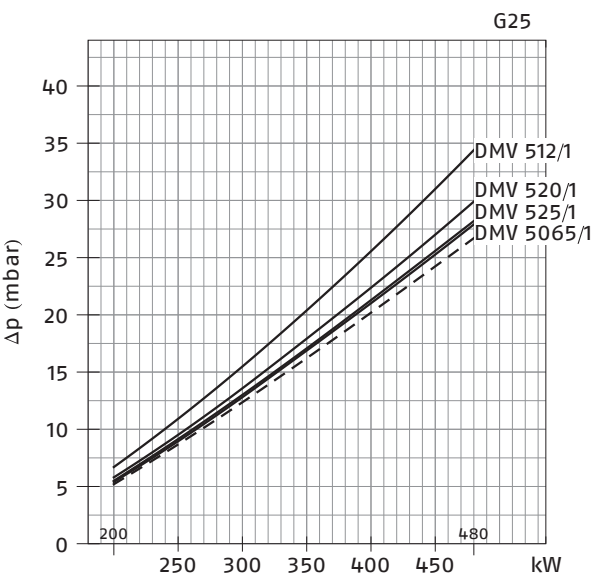
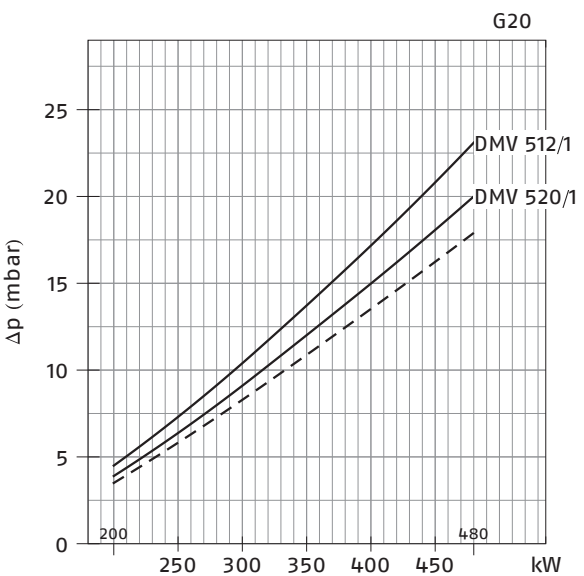


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 35/E (NATURAL GAS)

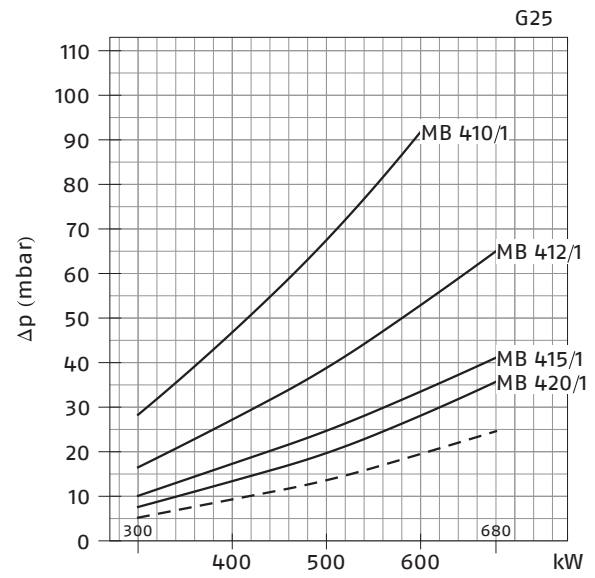
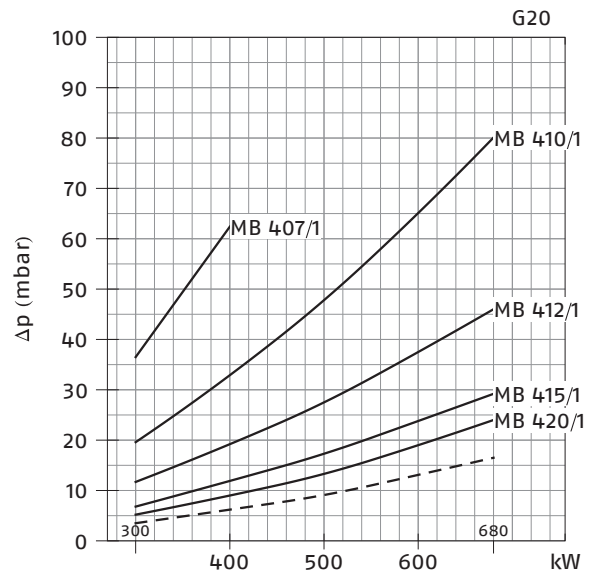


RS 35/E (NATURAL GAS)

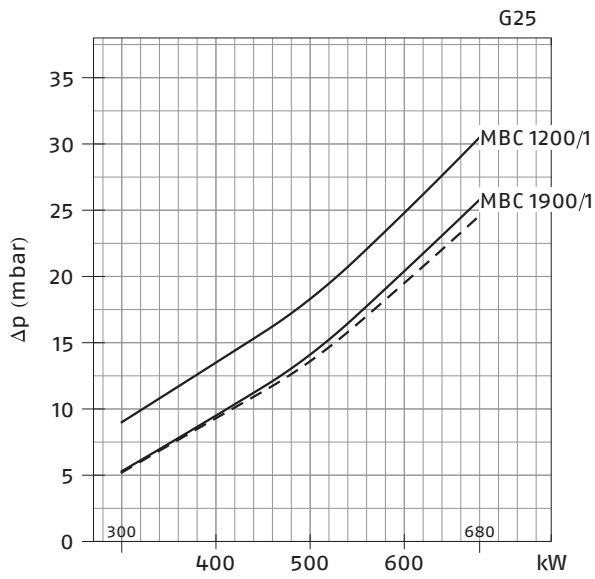
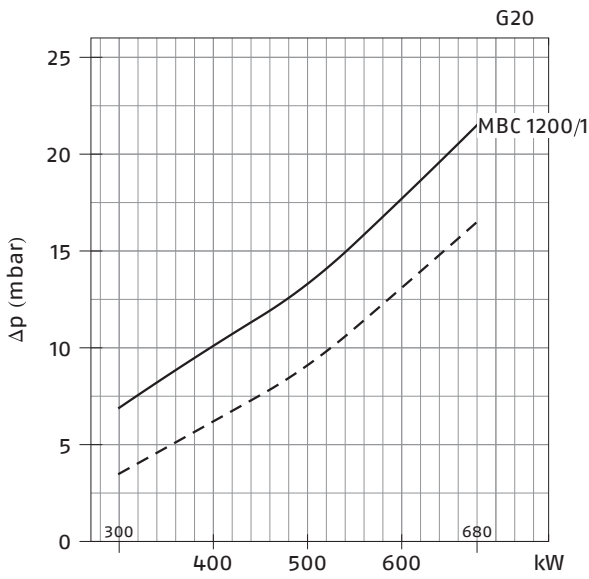


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 55/E (NATURAL GAS)

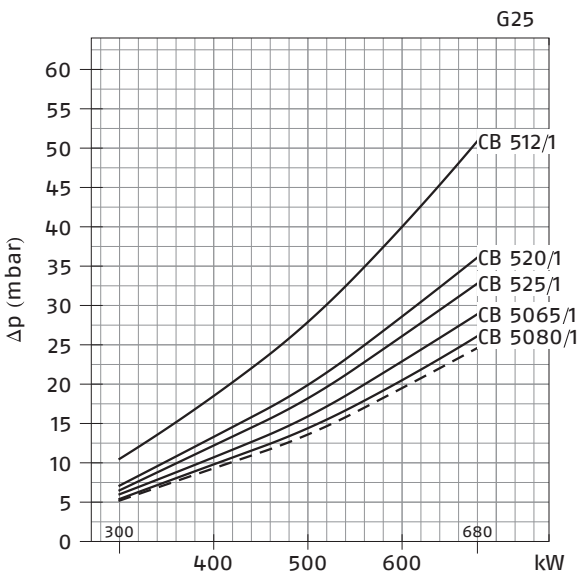
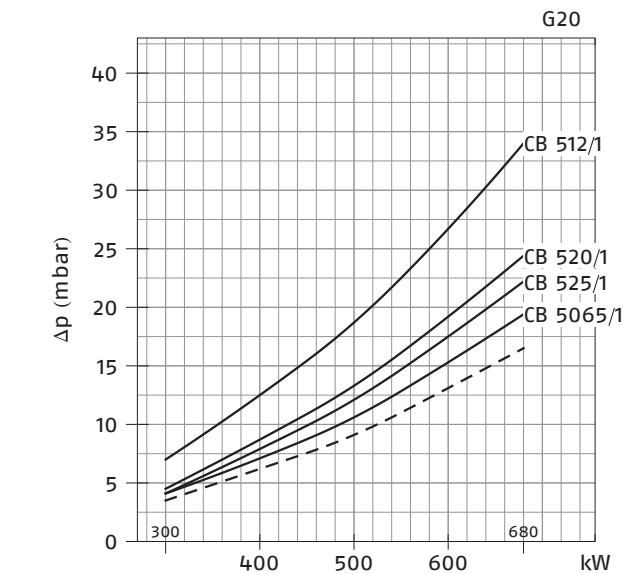


RS 55/E (NATURAL GAS)

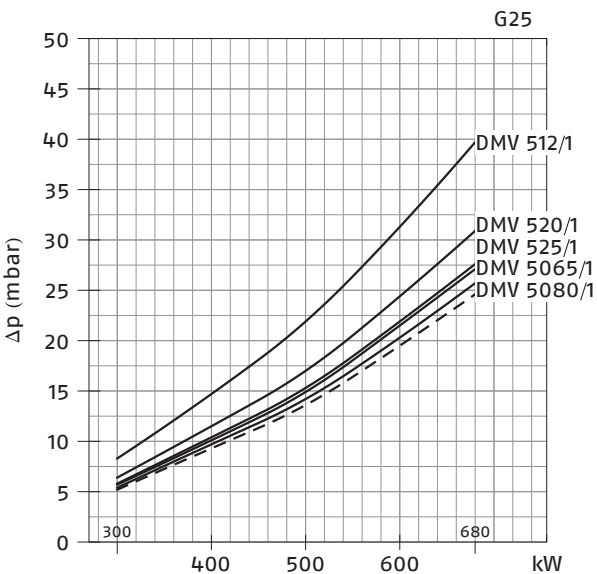
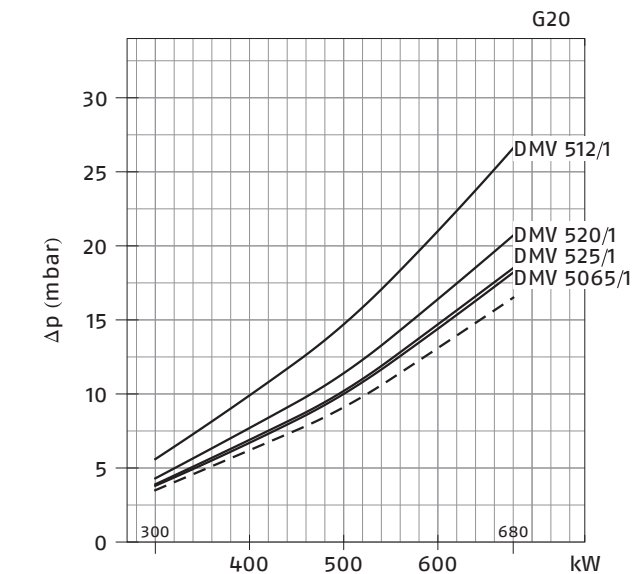


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 55/E (NATURAL GAS)

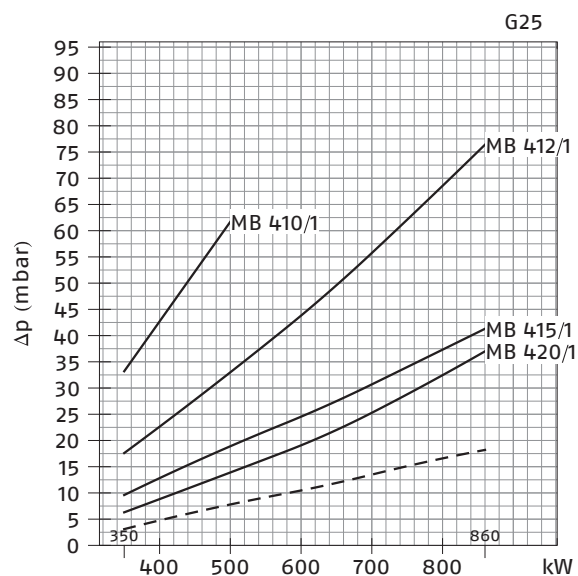
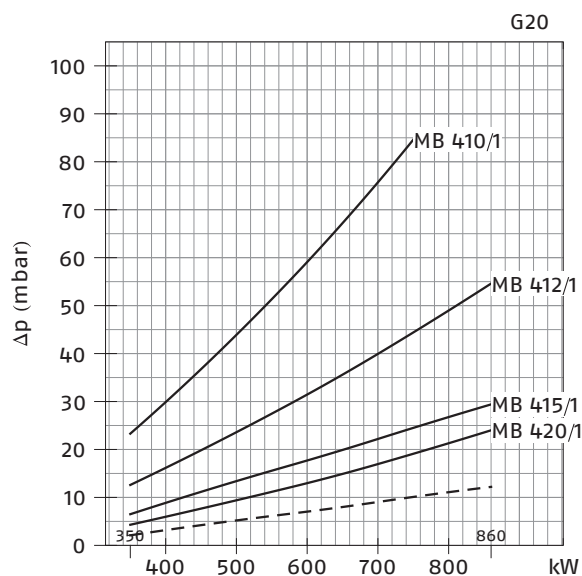


RS 55/E (NATURAL GAS)

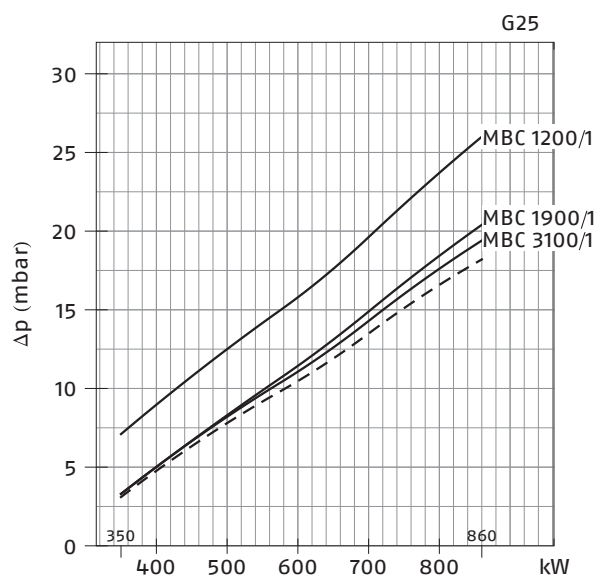
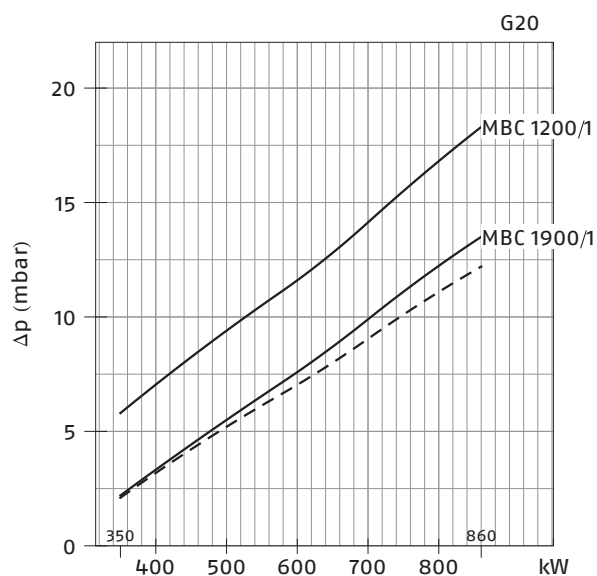


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 68/E (NATURAL GAS)

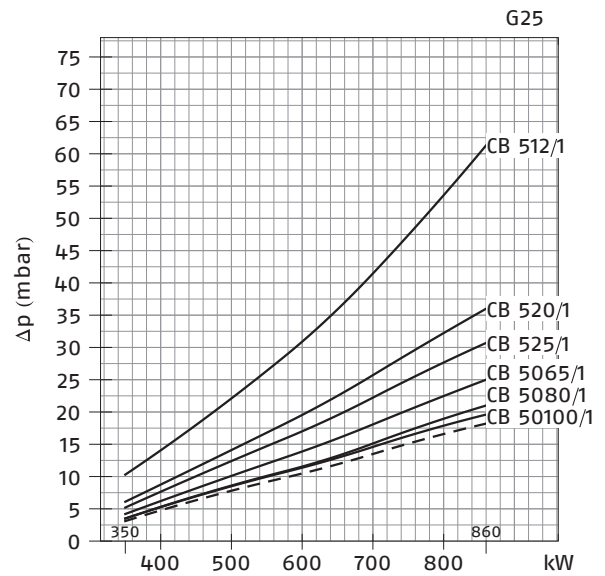
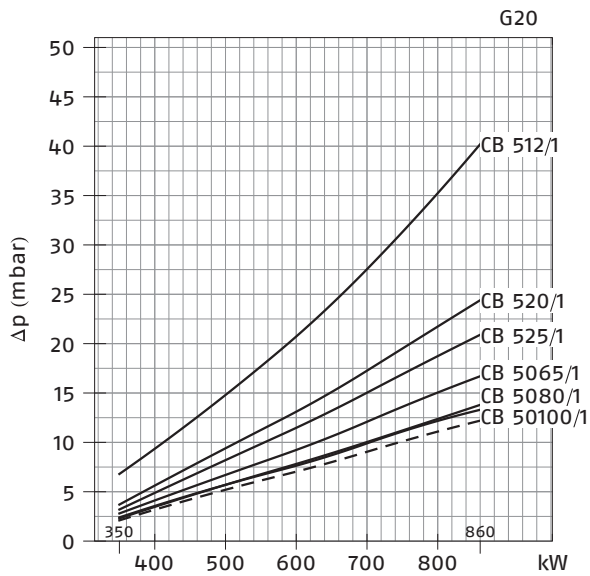


RS 68/E (NATURAL GAS)

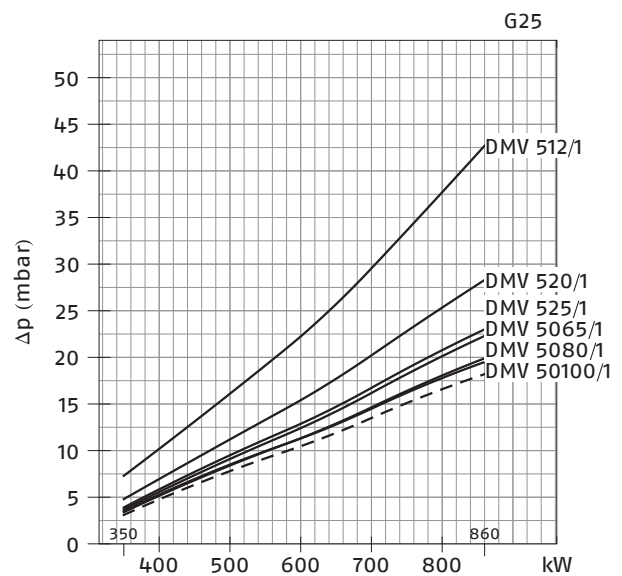
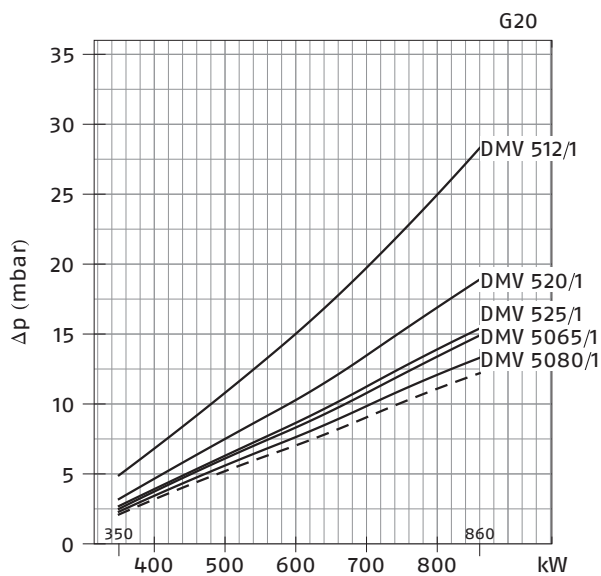


— Combustion head + gas butterfly valve + gas train
 - - - Combustion head + gas butterfly valve

RS 68/E (NATURAL GAS)

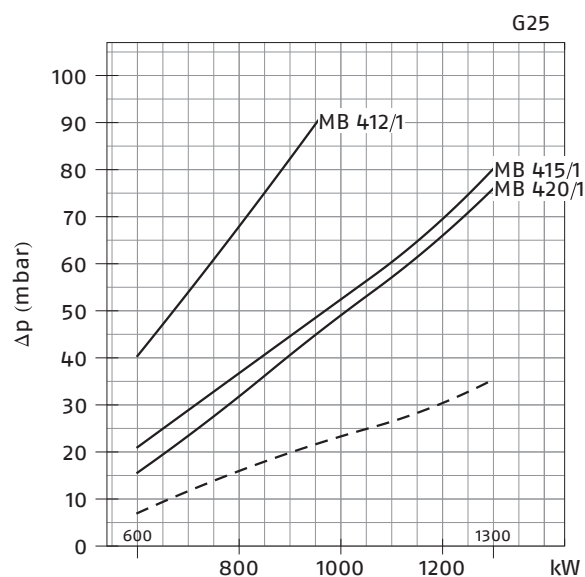
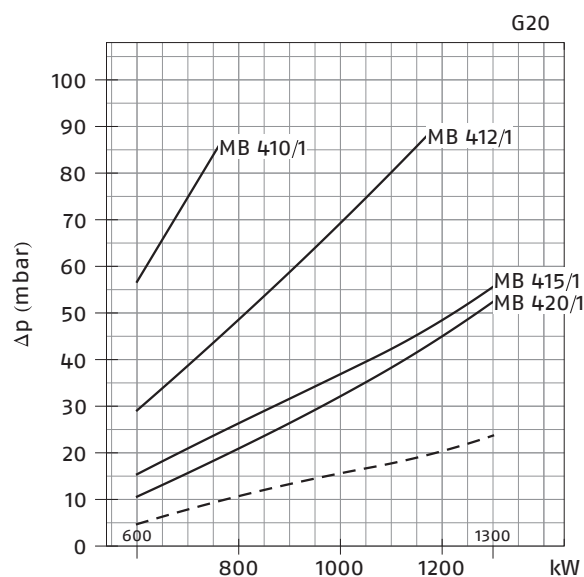


RS 68/E (NATURAL GAS)

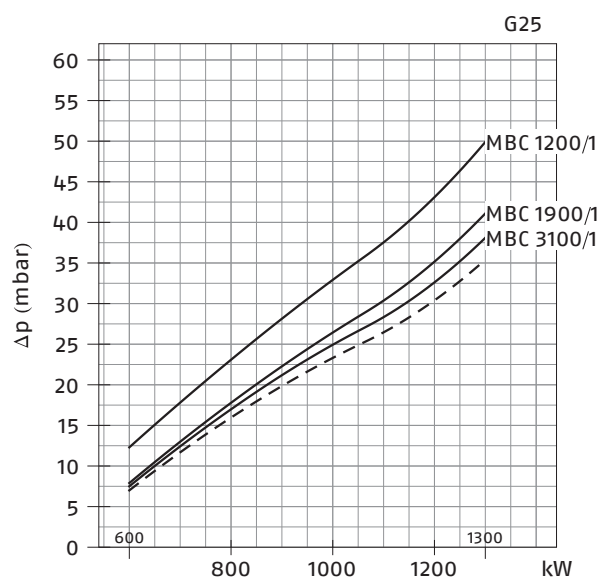
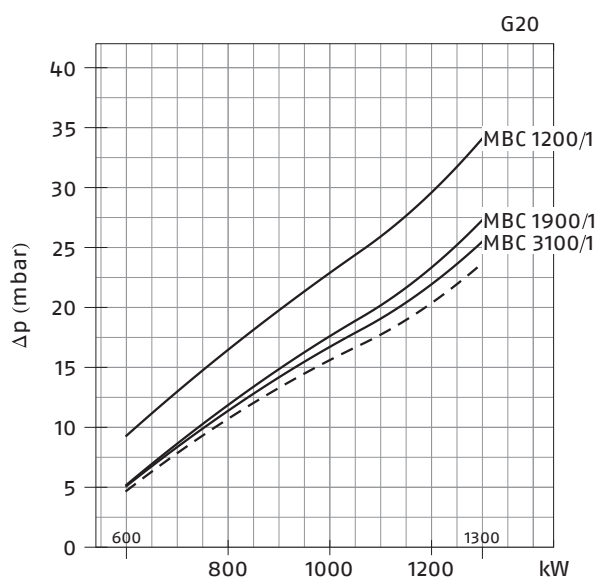


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 120/E (NATURAL GAS)

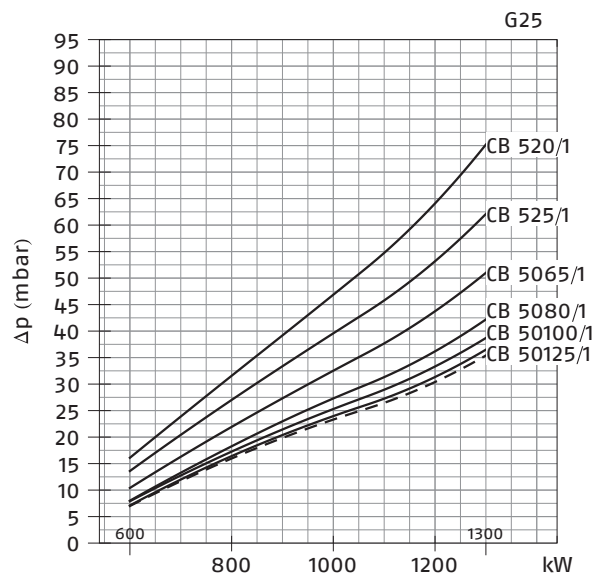
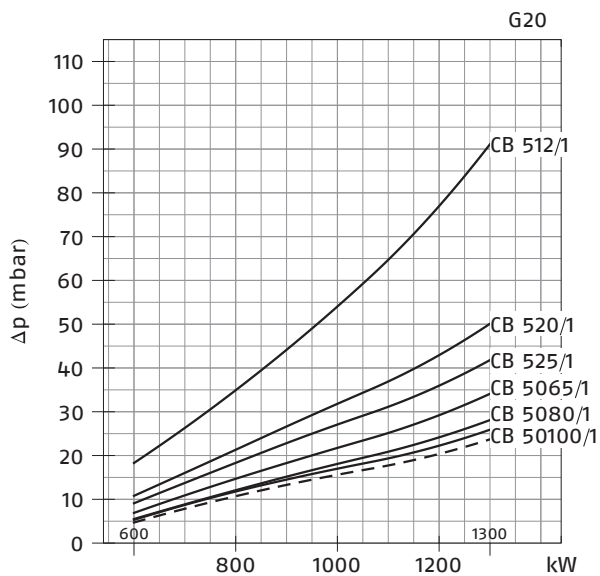


RS 120/E (NATURAL GAS)

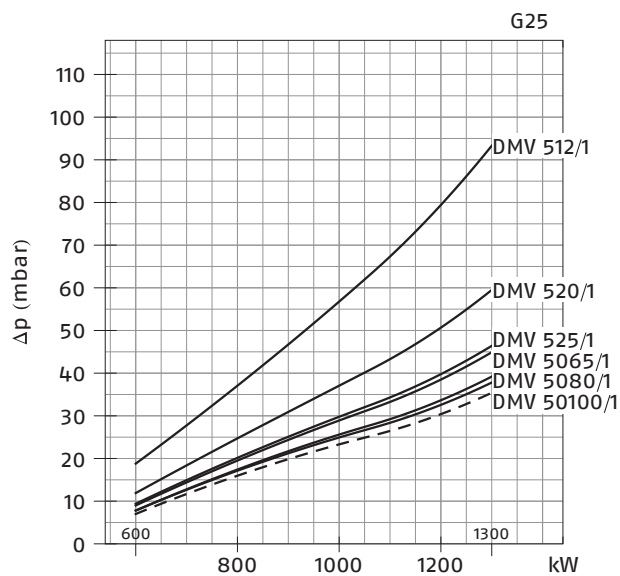
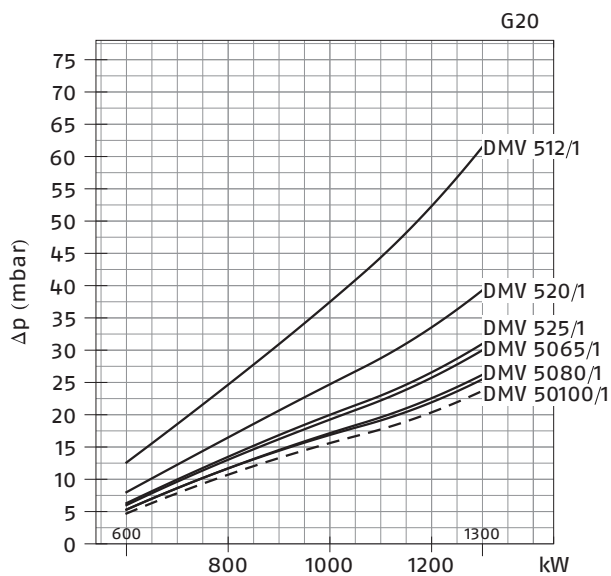


- Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 120/E (NATURAL GAS)

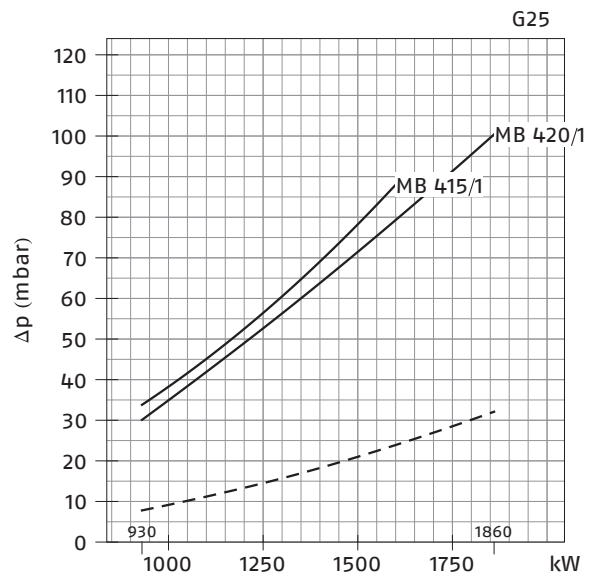
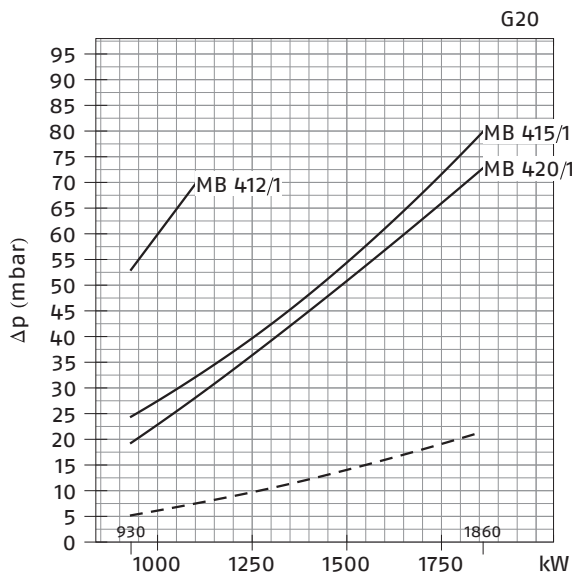


RS 120/E (NATURAL GAS)

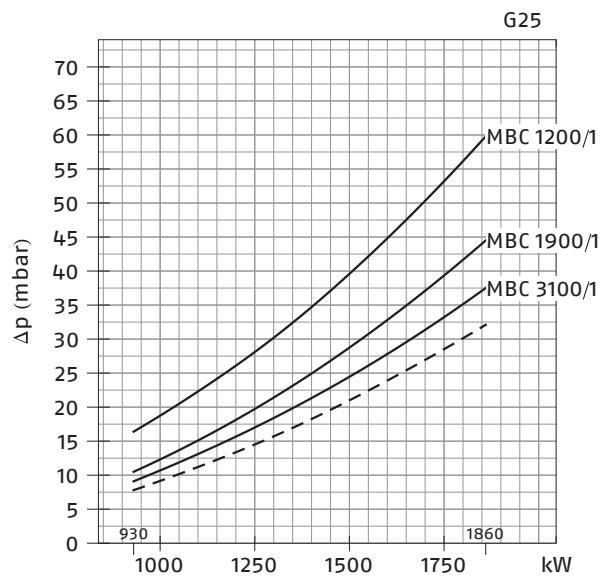
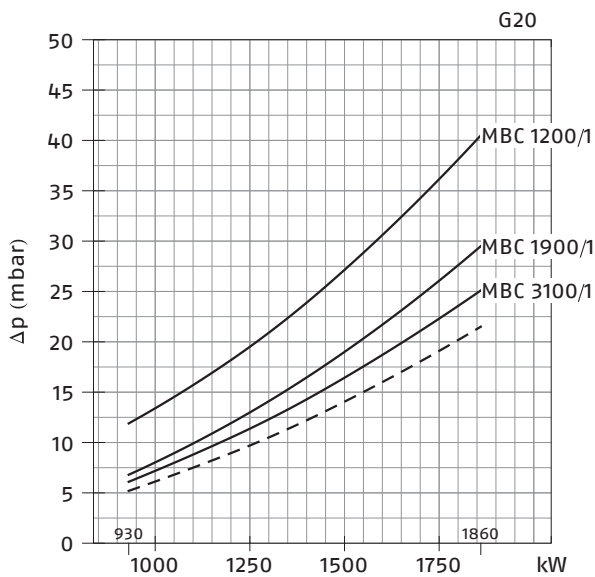


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 160/E (NATURAL GAS)

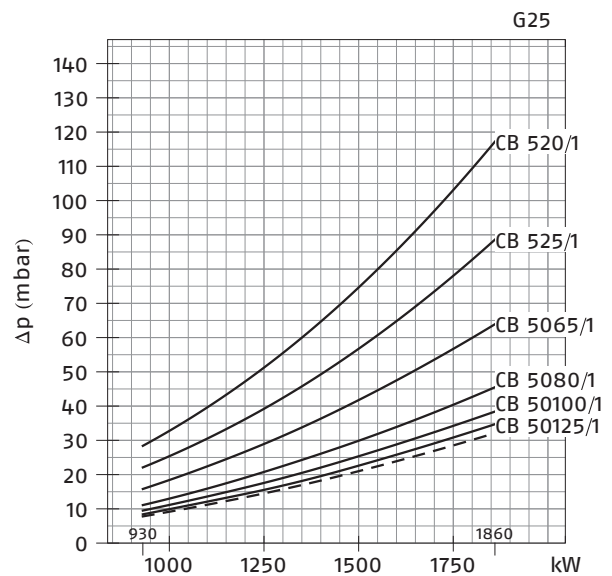
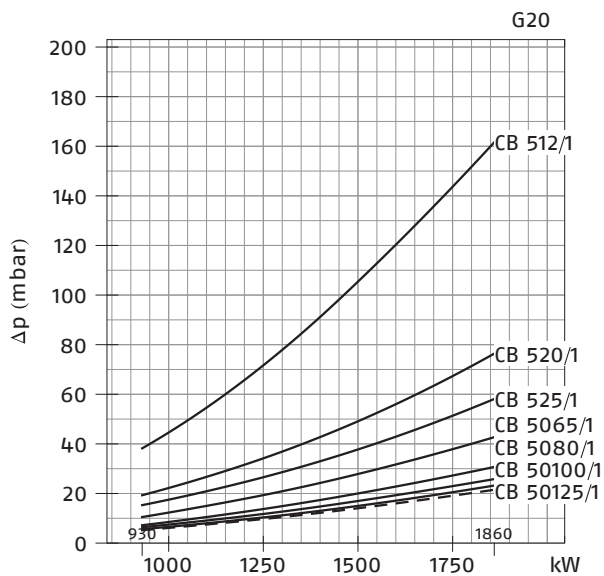


RS 160/E (NATURAL GAS)

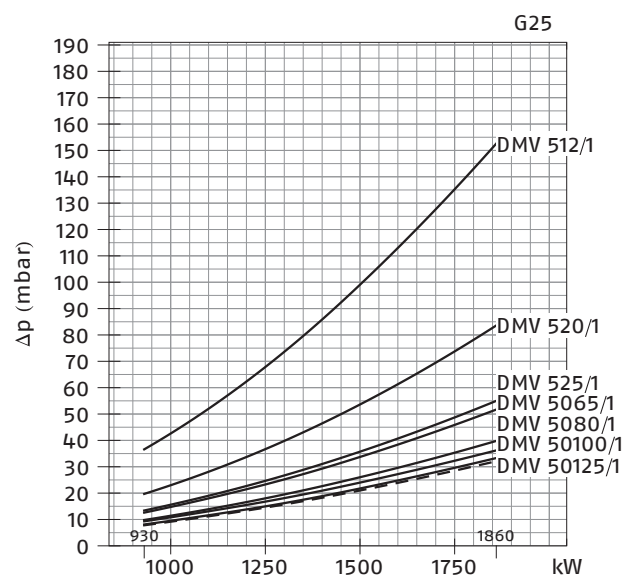
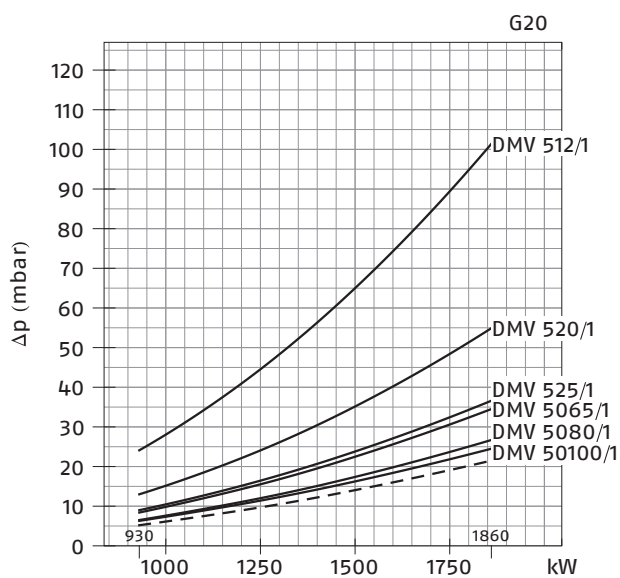


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 160/E (NATURAL GAS)

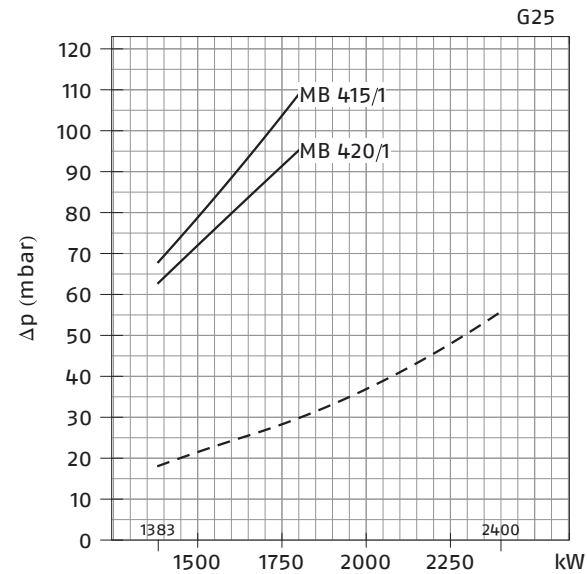
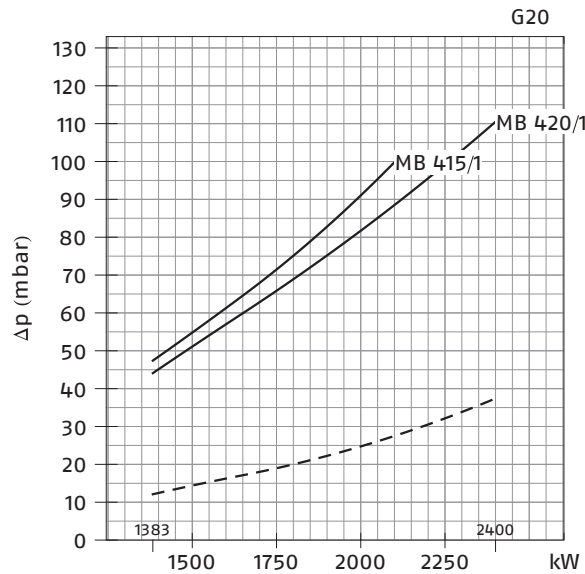


RS 160/E (NATURAL GAS)

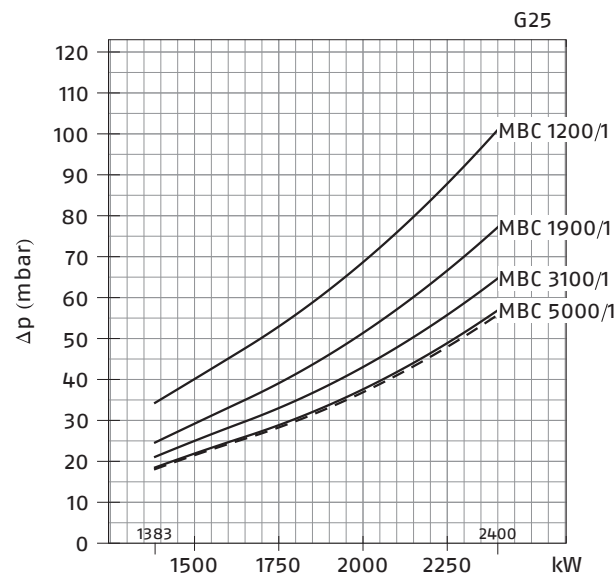
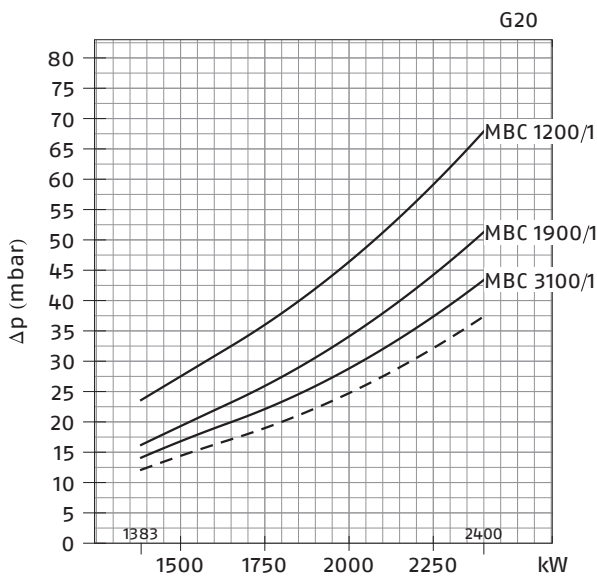


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 200/E (NATURAL GAS)

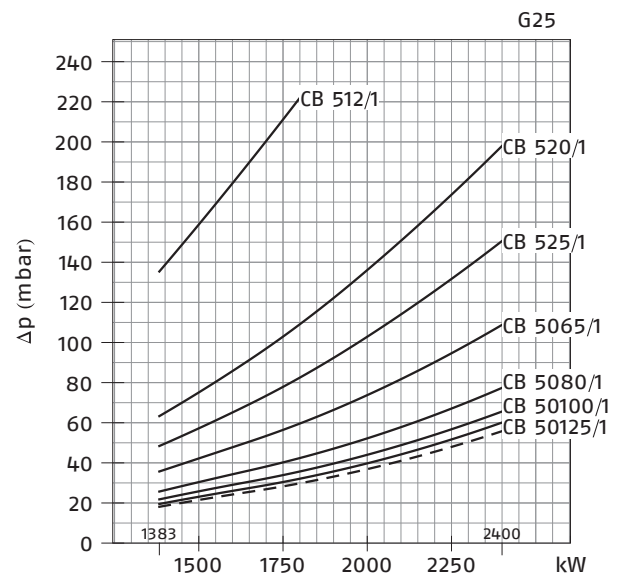
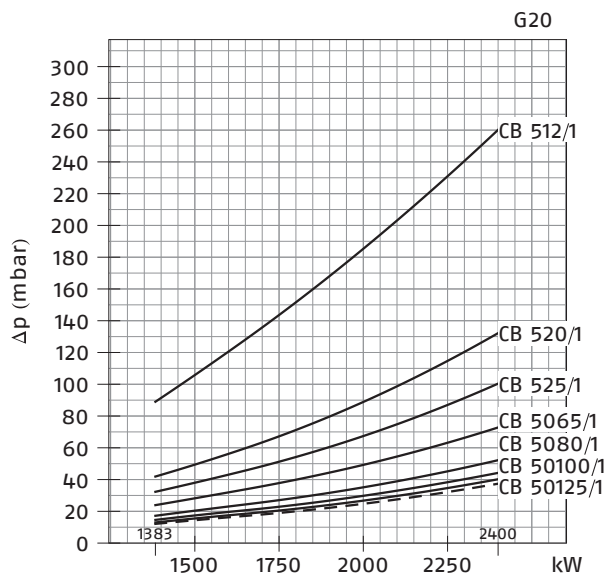


RS 200/E (NATURAL GAS)

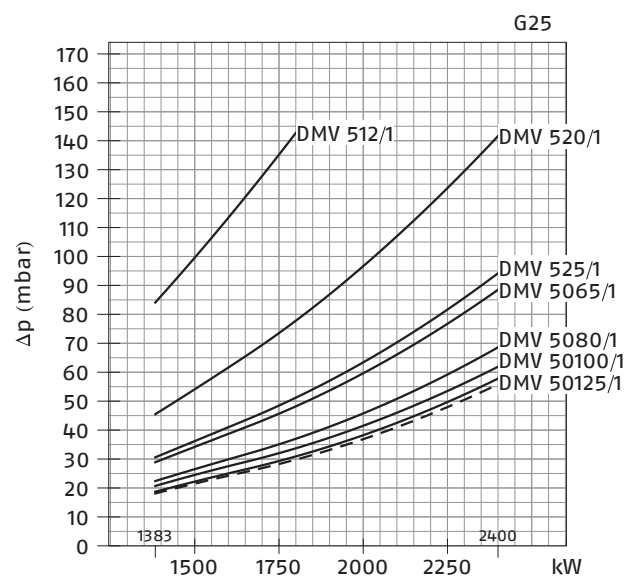
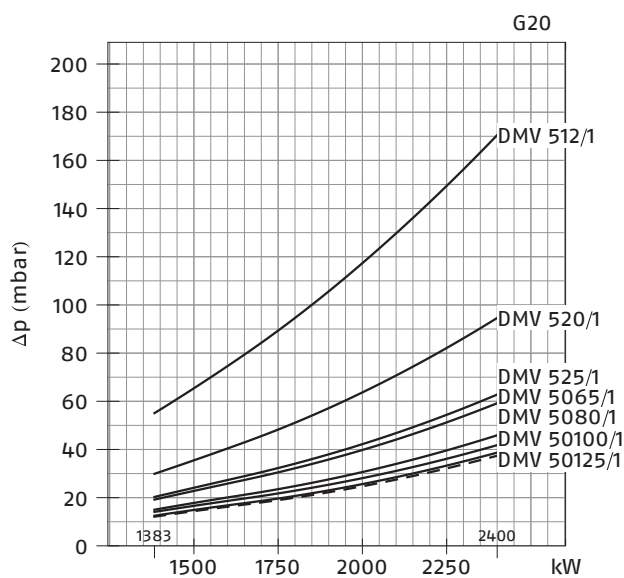


— Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

RS 200/E (NATURAL GAS)



RS 200/E (NATURAL GAS)



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

GAS TRAIN			ADAPTER CODE						
CODE	MODEL	Ø	RS 25	RS 35-45	RS 55	RS 68	RS 120	RS 160	RS 200
3970599*	MB 407/1 - RT 52	Rp ¾"	3000824		3000824 + 3000843	●	●	●	●
3970258*	MB 410/1 - RT 52	Rp 1" ¼	3010124		3010126			●	●
3970600*	MB 410/1 - RT 52	Rp ¾"	3000824		3000824 + 3000843			●	●
3970256*	MB 412/1 - RT 52	Rp 1" ½	□	□	3000843				●
3970250*	MB 415/1 - RT 52	Rp 1" ½	□		3000843				
3970257*	MB 420/1 - RT 52	Rp 2"	3000822		□				
3970221*	MBC 1200/1 - RSM 60	Rp 2"			□				
3970222*	MBC 1900/1 - FSM 40	DN 65	●	●	3000825				
3970223*	MBC 3100/1 - FSM 40	DN 80	●	●	●	3000826			
3970224*	MBC 5000/1 - FSM 80	DN 100	●		●	●	●	●	3010370 + 3000826
3970145*	CB 512/1 - RSM 30	Rp 1" ½	□		3000843				
3970146*	CB 520/1 - RSM 30	Rp 2"	3000822		□				
20044659*	CB 525/1 - RSM 30	Rp 2"			□				
3970147*	CB 5065/1 - FSM 30	DN 65	●	3000825					
3970148*	CB 5080/1 - FSM 30	DN 80	●	●	3000826				
3970149*	CB 50100/1 - FSM 30	DN 100	●	●	●	3010370 + 3000826			
20015871*	CB 50125/1 - FSM 30	DN 125	●	●	●	●	3010224 + 3000826		
20043035	DMV 512/1 - RSM - 0	Rp 1-1/2"	●	●	3000843				
20043037	DMV 512/1 CQ RSM - 2	Rp 1-1/2"	●	●	3000843				
20043038	DMV 520/1 - RSM - 0	Rp 2"	3000822		●	●	●	●	●
20043040	DMV 520/1 CQ RSM - 2	Rp 2"			●	●	●	●	●
20043053	DMV 525/1 - RSM - 0	Rp 2"	●	3000822	●	●	●	●	●
20043055	DMV 525/1 - CQ RSM - 2	Rp 2"	●	3000822	●	●	●	●	●
20043041	DMV 5065/1 - FSM - 0	DN 65	●	3000825					
20043043	DMV 5065/1 CQ FSM - 2	DN 65	●	3000825					
20043044	DMV 5080/1- FSM - 0	DN 80	●	●	3000826				
20043046	DMV 5080/1 CQ FSM - 2	DN 80	●	●	3000826				
20043047	DMV 50100/1 FSM - 0	DN 100	●	●	●	3010370+3000826			
20043049	DMV 50100/1 CQ FSM - 2	DN 100	●	●	●	3010370+3000826			
20043050	DMV 50125/1 FSM - 0	DN 125	●	●	●	●	●	3010224+3000826	
20043052	DMV 50125/1 CQ FSM - 2	DN 125	●	●	●	●	●	3010224+3000826	

* 230V/50Hz - 220V/60Hz Electrical supply

The valves seal control device is compulsory (conforming to EN 676) on gas trains to burners with a maximum output over 1200 kW.

The seal control function is managed by REC control box, by installation on gas train of a pressure switch; it is included as standard equipment on RS 120 - 160 - 200/E - /EV BLU models.

Legenda

● Not available.

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

Ventilation

The ventilation circuit produces low noise levels with high performance pressure and air output, in despite of the compact dimensions.

On RS 68 - 120/E - /EV BLU models, the use of reverse curve blades and sound-proofing material keeps noise level very low.

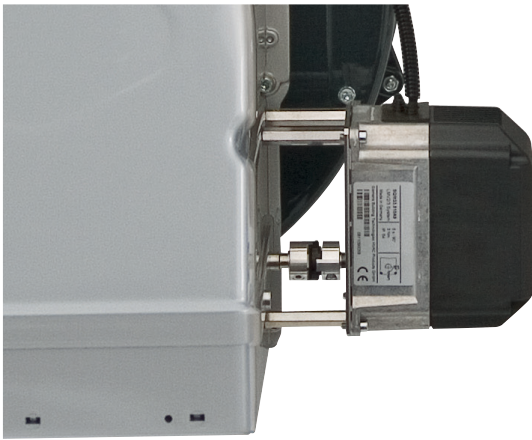
In the RS 25 - 35 - 160 - 200/E - /EV C05 - BLU models, noise has been reduced by the special design of the air suction circuit.

A stepper motor with high accuracy position and absence of joint clearance and mechanical hysteresis controls the air regulations, ensuring high fuel efficiency at all firing ranges.

A minimum air pressure switch stops the burner when there is an insufficient quantity of air at the combustion head.

Between the burner front base and the reinforcing steel front plate, had been create an air cavity offering an high thermal insulation against the front boiler reflection heat, and to further improve the insulation efficiency the innovative **HCS (Housing Cooling System)** technology had been developed.

Inside the front base cavity an air circulation is activated with continuous air volume refresh to obtain an active cooling system and avoid any heat transfer to the electrical component housing.



Example of stepper motor for air flow setting on RS 200/E - EV BLU burner.



Example of HCS (Housing Cooling System) working concept.

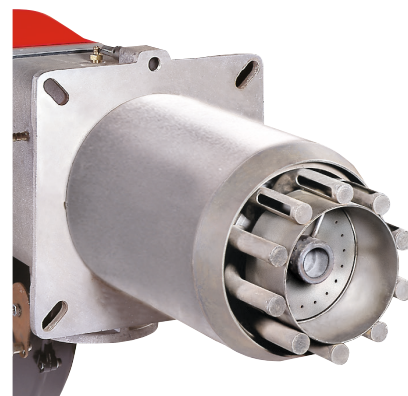
Combustion Head

Different lengths of the combustion head can be chosen for the RS/E - /EV C05 - BLU series of burners.

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

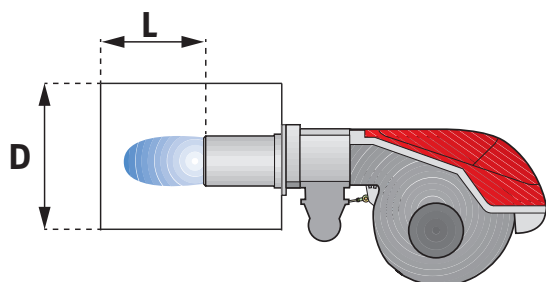
Depending on the type of generator, check that the penetration of the head into the combustion chamber is correct.

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



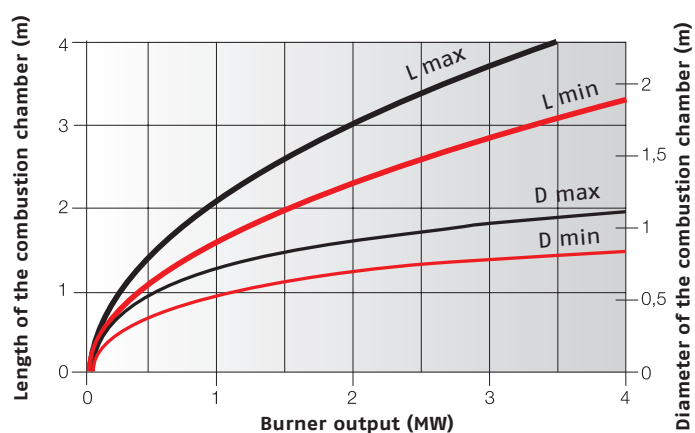
Example of a RS 160/E BLU burner combustion head.

SUGGESTED COMBUSTION CHAMBER DIMENSIONS



Example:

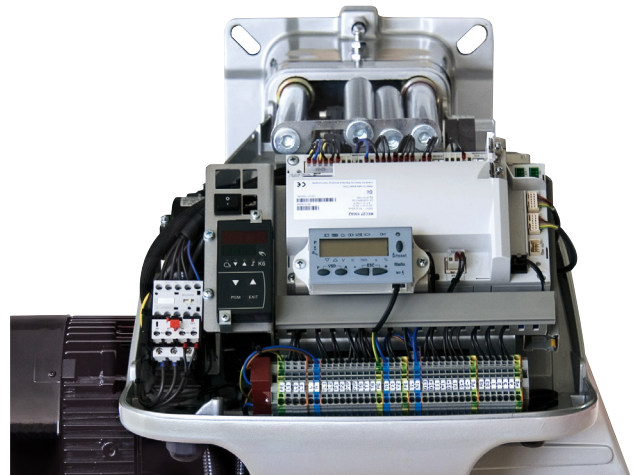
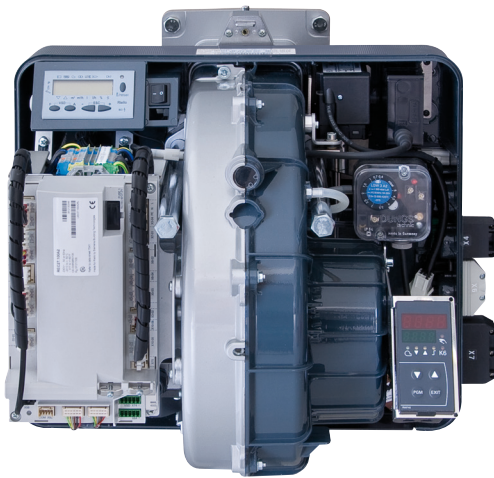
Burner thermal output = 2000 kW;
L Combustion Chamber (m) = 2.7 m (medium value);
D Combustion Chamber (m) = 0.8 m (medium value)



Operation

The models of RS/E - /EV C05 - BLU series of burners are based on the Digital Burner Management System, Riello REC27-REC37, which is able to manage the air-fuel ratio by independent servomotors in order to obtain a perfect output control and to assure a correct combustion and safe operation on all modulation range.

The new Combustion Management System includes the standard function of a Flame Control Panel and offers many advantages such as, for example, a simple and fast commissioning, the burner status and fault causes diagnostic to facilitate the maintenance, the Integrated Gas Valves Proving function.



Example of Riello REC27, Digital Burner Management System, installed on a RS 35/E BLU and RS 160/E BLU burner models.

The REC27-37 Electronic Cams, control the complete burner operating cycle, included the valves proofing test before the start-up, and the correct air-fuel mixing in every point of modulation range.

The actuators, connected to the air damper and fuel adjusting device with absence of joint clearance and mechanical hysteresis, are stepper motors with high accuracy position while the Display Interface RDI21 is the operating unit to easily adjust the system.

Operation can be "two stage progressive" or "modulating" with the installation of RWF electronic modulator and related temperature or pressure probe.

REC ELECTRONIC CAM SYSTEM

The REC37 version, used in the /EV models is suitable for continuous operation, variable speed drive operation and with 4/20 mA remote analogue control signal.

Function	Digital Burner Management System Model	
	REC27	REC37
Intermittent	•	•
Continuous operation		•
Two stage progressive operation	•	•
Modulating operation with the installation of a PID electronic regulator	•	•
Variable speed drive operation		•
Valve proofing system	•	•
Air fuel mixing control	•	•
Independent Ignition Point Position	•	•
Closed air damper during burner stand-by	•	•
Password protection levels	•	•
Burner status display	•	•
Error message	•	•
Error history	•	•
Remote lockout reset	•	•
Continuous Ventilation	•	•
Start without pre-purging	•	•
Remote Connections by external OCI410-412 modules	•	•
4/20 mA Remote Analogue Control signal		•
Indication of current burner output DC 0 ... 10 V	•	
Indication of current burner output DC 0 ... 10 V (alternative to VSD control)		•

FAN SPEED CONTROL (ON DEMAND)

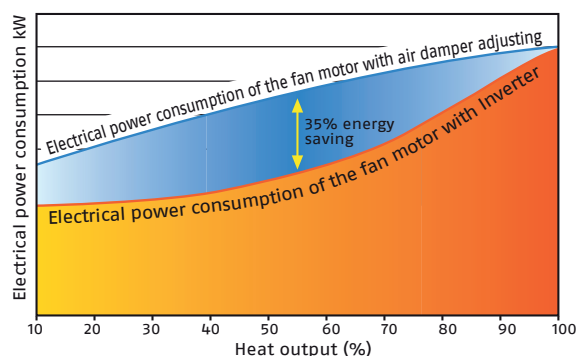
The inverter device fitted to the RS/EV series burner acts on the electrical supply frequency of the fan motor to adjust the air flow through the motor speed variation.

The main advantages of speed control:

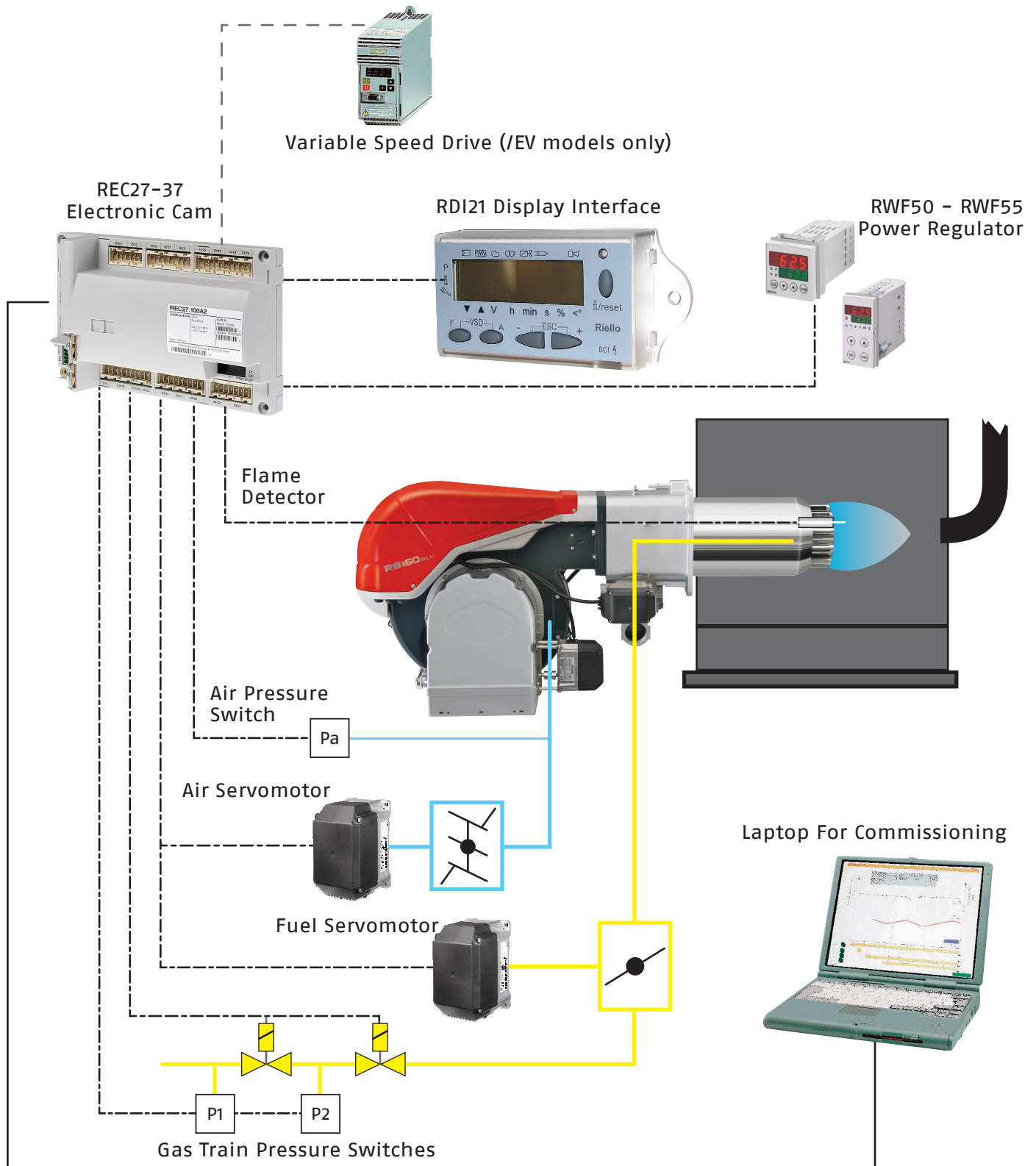
- lower sound emissions
- electric power saving.

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.



REC27-37 DIGITAL BURNER MANAGEMENT SYSTEM LAYOUT



Remote Connections

It is possible to connect the REC27-37 electronic cam to a data network based on a Modbus system by using of its Modbus functionality.

This facilitates implementation of the following applications:

- Visualisation of plant states
- Plant control
- Logging

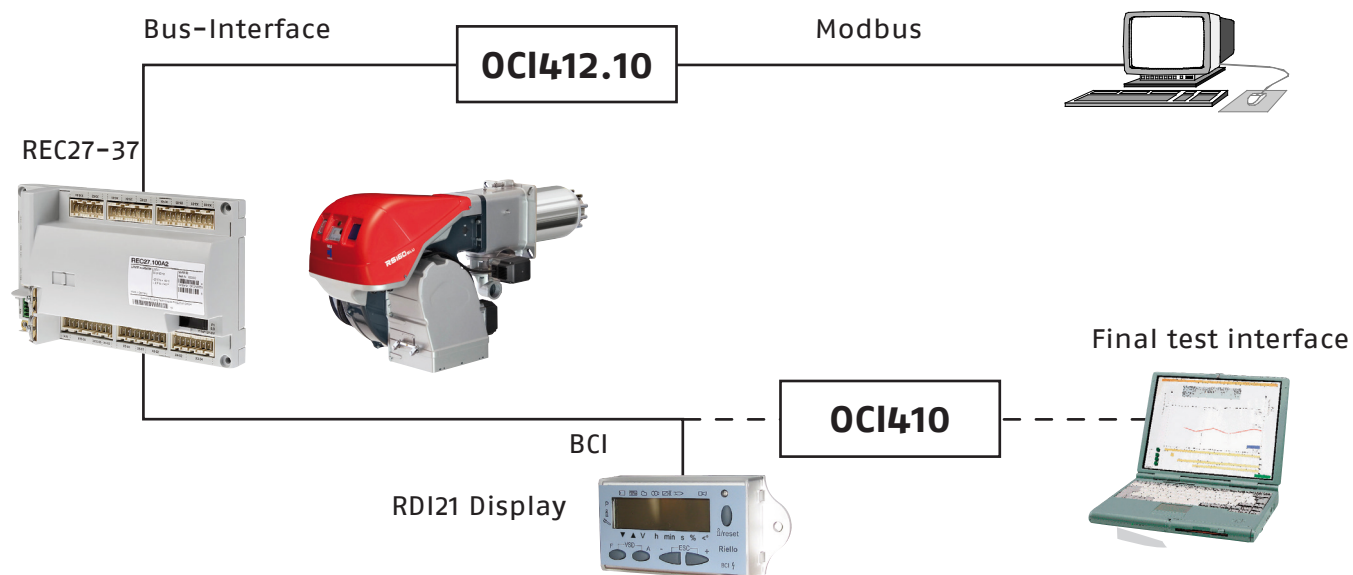
The physical connection to the Modbus system is made via an external OCI module.

The transmission mode used is RTU (Remote Terminal Unit).

The data are transmitted in binary format (hexadecimal) with 8 Bits.

The LSB (least significant bit) is transmitted first.

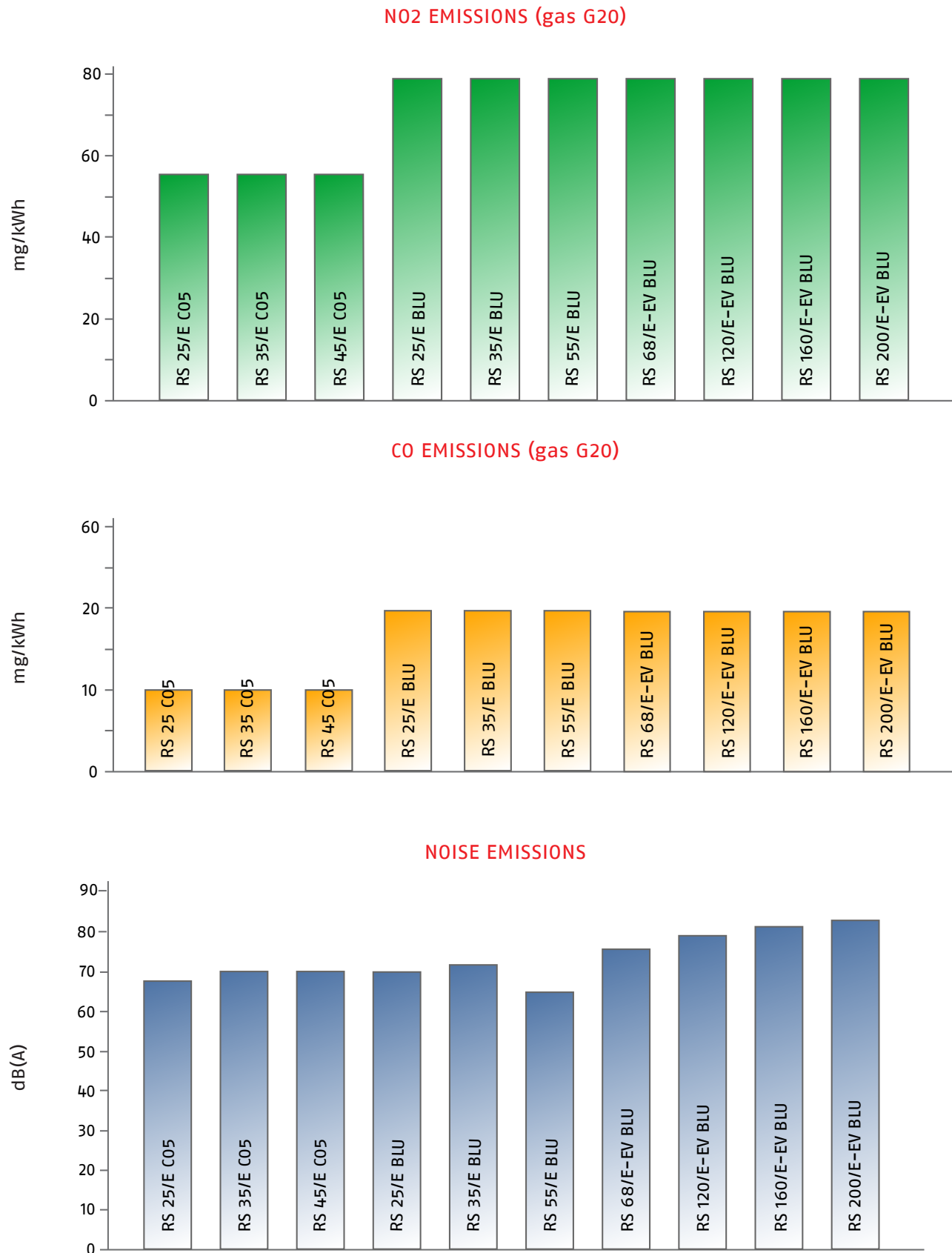
ASCII mode is not supported.



REC27 Remote Connections layout.

Emission

The emissions have been measured in various models at maximum output, according to EN 676 standard.



The noise emissions have been measured at the maximum output.

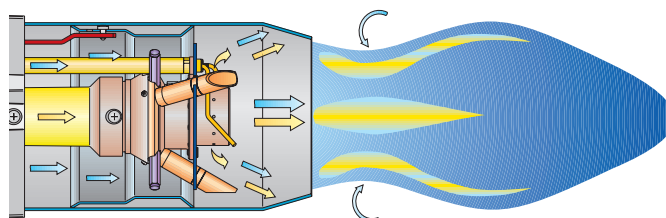
Safe and Green

The RS/E C05 - RS/E BLU - RS/EV BLU series combustion heads reduce polluting emissions thanks to their special design which optimises the air fuel mix.

The RS/E C05 - RS/E BLU - RS/EV BLU models have an oblique radial pipe distributor through which gas is injected directly into the passing air flow for a perfect distribution.

This prevents no homogeneous concentrations in the flame with areas of high oxidation; part of the premixed gas/air is injected into the centre of the flame.

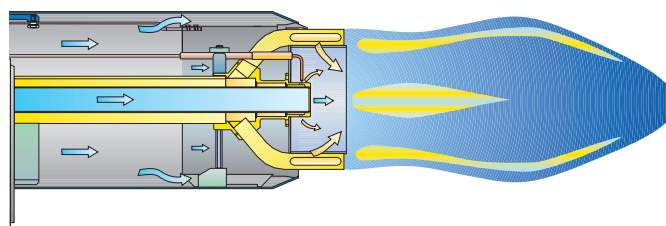
These methods produce a very stable flame with gradual and progressive combustion as the flame develops, thus giving polluting emission values below even the most restrictive norm values.



Combustion head operating diagram of RS 25/E - 35/E BLU models.

In RS 68-120-160-200/E-/EV BLU models part of the gas is distributed through outlets which are perpendicular to the air flow, while 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.

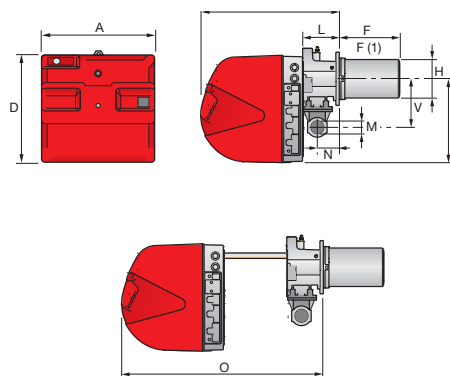


Combustion head operating diagram of RS 68/E-/EV - 120/E-/EV
RS 160/E-/EV - 200/E-/EV BLU models.

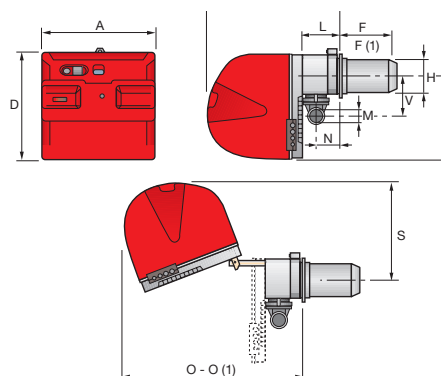
Overall dimensions (mm)

BURNER

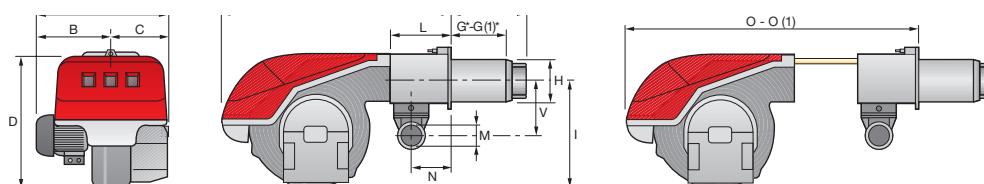
RS 25/E BLU – RS 35/E BLU – RS 25/E C05– RS 35/E C05



RS 45/E C05 – RS 55/E BLU



RS 68/E-EV BLU – RS 120/E-EV BLU – RS 160/E-EV BLU – RS 200/E-EV BLU

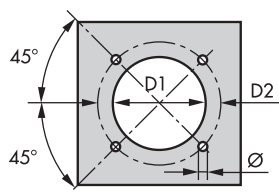


MODEL	A	B	C	D	E	F	F ⁽¹⁾	G*	G ^{(1)*}	H	I	L	M	N	O	O ⁽¹⁾	S	V
RS 25/E C05	442	-	-	422	508	230	365	-	-	140	305	138	1"1/2	84	780	-	-	177
RS 35/E C05	442	-	-	422	508	192	327	-	-	152	305	138	1"1/2	84	780	-	-	177
RS 45/E C05	476	-	-	474	580	192	327	-	-	160	352	164	1"1/2	108	810	810	367	168
RS 25/E BLU	442	-	-	422	508	230	365	-	-	140	305	138	1"1/2	84		-	-	177
RS 35/E BLU	442	-	-	422	508	230	365	-	-	152	305	138	1"1/2	84		-	-	177
RS 55/E BLU	533	300	-	490	640	255	390	-	-	189	352	222	2"	134		-	-	221
RS 68/E-EV BLU	527	312	215	555	840	255	390	200	335	189	430	214	2"	134		1296	-	221
RS 120/E-EV BLU	553	338	215	555	840	255	390	200	335	189	430	214	2"	134		1296	-	221
RS 160/E-EV BLU	671	366	305	555	863	373	503	272	402	221	436	221	2"	141		1296	-	264
RS 200/E-EV BLU	737	432	305	555	863	373	503	272	402	221	436	221	2"	141		1296	-	264

(1) dimension with extended head.

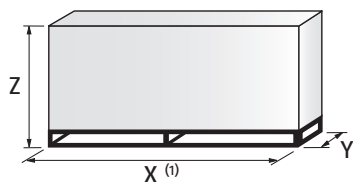
* Maximum depth of the boiler door including the depth of the burner flange insulating gasket.

BURNER – BOILER MOUNTING FLANGE



MODEL	D1	D2	Ø
RS 25/E C05	160	224	M8
RS 35/E C05	160	224	M8
RS 45/E C05	165	224	M8
RS 25/E BLU	160	224	M8
RS 35/E BLU	160	224	M8
RS 55/E BLU	195	275-325	M12
RS 68/E BLU	195	275-325	M12
RS 120/E-EV BLU	195	275-325	M12
RS 160/E-EV BLU	230	325-368	M12
RS 200/E-EV BLU	230	325-368	M16

PACKAGING



MODEL	X ⁽¹⁾	Y	Z	kg
RS 25/E C05	1000	485	500	39
RS 35/E C05	1000	485	500	40
RS 45/E C05	1015	500	630	48
RS 25/E BLU	1000	485	500	39
RS 35/E BLU	1000	485	500	40
RS 55/E BLU	1405	700	660	44
RS 68/E BLU	1405	700	660	78
RS 120/E-EV BLU	1405	700	660	84
RS 160/E-EV BLU	1405-1420	1000	660	89
RS 200/E-EV BLU	1405-1420	1000	660	125

(1) dimension with standard and extended head

Installation

Installation, start up and maintenance must be carried out by qualified and skilled personnel.
All operations must be performed in accordance with the technical handbook supplied with the burner.

BURNER SETTING

All the burners have slide bars, for easier installation and maintenance.

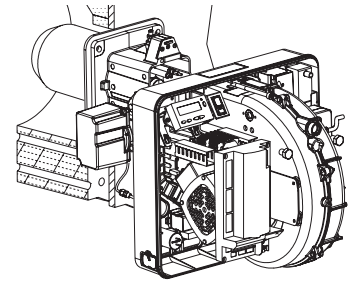
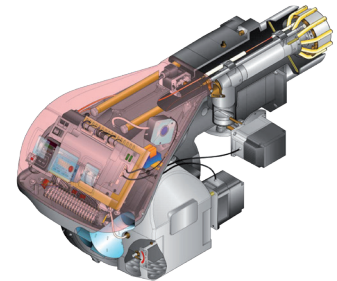
After drilling the boilerplate, using the supplied gasket as a template, dismantle the blast tube from the burner and fix it to the boiler.

Adjust the combustion head.

Fit the gas train, choosing this on the basis of the maximum output of the boiler and considering the enclosed diagrams.

Refit the burner casing to the slide bars.

Close the burner, sliding it up to the flange.



ELECTRICAL CONNECTIONS AND START UP

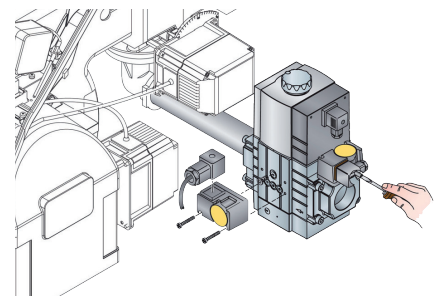
Make the electrical connections to the boiler following the wiring diagrams included in the instruction handbook.

Turn the motor to check rotation direction (if it is a three-phase motor).

Perform a first ignition calibration on the gas train.

On start up, check:

- Gas pressure at the combustion head (to max. and min. output)
- Combustion quality, in terms of unburned substances and excess air.

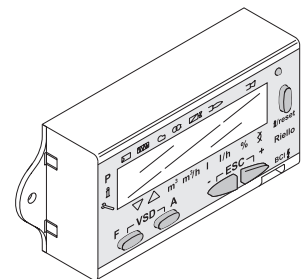
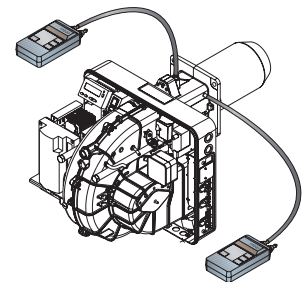


BURNER MAINTENANCE

The maintenance of RS/E C05 – RS/E-EV BLU burners is very simple thanks to the sliding bars system that allows an easy access to the internal components.

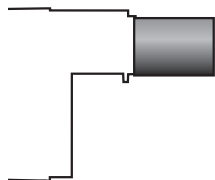
In particular the RS 25-35/E C05 – RS 25-35/E-EV BLU models have a new sliding bars system to make easier the access to the combustion head.

The RS 160-200/E-/EV BLU have new reinforced sliding bars that make very strong the burner structure during maintenance.



Burner Accessories

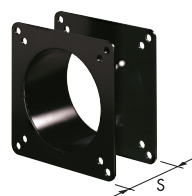
Extended head kit



“Standard head” burners can be transformed into “extended head” versions, by using the special kit. The KITS available for the various burners, giving the original and the extended lengths, are listed below.

BURNER	STANDARD HEAD LENGTH (mm)	EXTENDED HEAD LENGTH (mm)	KIT CODE
RS 25/E BLU - RS 25/E C05	230	365	3010430
RS 35/E BLU - RS 35/E C05	230	365	3010431
RS 45/E C05	229	354	20006586
RS 55/E BLU	255	390	20040373
RS 68/E-EV - 120/E-EV BLU	255	390	3010177
RS 160/E-EV BLU	373	503	3010442
RS 200/E-EV BLU	373	503	3010474

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
RS 25/E BLU - RS 25/E C05 RS 35/E BLU - RS 35/E C05 RS 45/E C05	110	3010095
RS 55/E BLU RS 68/E-EV BLU - RS 120/E-EV BLU	135	3010129
RS 160/E-EV - RS 200/E-EV BLU	102	3000722

Continuous ventilation kit

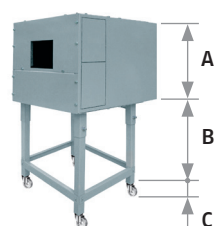


If the burner requires continuous ventilation in the stages without flame, a special kit is available as given in the following table.

BURNER	KIT CODE
RS 25/E BLU - RS 25/E C05 RS 35/E BLU - RS 35/E C05	3010449
RS 45/E C05 - RS 55/E BLU RS 68/E-EV BLU - RS 120/E-EV BLU RS 160/E-EV BLU - RS 200/E-EV BLU	3010094

Note: the Post-ventilation function is obtainable by modification of the Digital Burner Management System parameters (see burner instruction manual).

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	TYPE	A (mm)	B (mm) min-max	C (mm)	[dB(A)] (*)	KIT CODE
RS 25/E BLU - RS 25/E C05 RS 35/E BLU - RS 35/E C05 RS 45/E C05 - RS 55/E BLU	C1/3	650	372 - 980	110	10	3010403
RS 68/E-EV BLU - RS 120/E-EV BLU RS 160/E-EV BLU - RS 200/E-EV BLU	C4/5	850	160 - 980	110	10	3010404

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

Accessories for modulating operation



To obtain modulating operation, the RS/E BLU series of burners requires a regulator with three point outlet controls. On RS 25/E - 35/E BLU the regulator is connected to the burner electrical wiring by plug-in system in order to make the connection easier and faster.

The following table lists the accessories for modulating operation with their application range.

BURNER	REGULATOR TYPE	REGULATOR CODE
RS 25/E BLU - RS 25/E C05 - RS 35/E BLU - RS 35/E C05	RWF 50.2	20083339
RS 45/E C05 - RS 55/E BLU	RWF 55.5	20098541
RS 68/E-EV BLU - RS 120/E-EV BLU	RWF 50.2	20099869
RS 160/E-EV BLU - RS 200/E-EV BLU	RWF 55.5	20099905



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

Head kit for "reverse flame chamber"



In certain cases, the use of the burner on reverse flame boilers can be improved by using an additional Pipes Kit.

BURNER	KIT CODE
RS 68/E-EV BLU	3010247
RS 120/E-EV BLU	3010248
RS 160/E-EV BLU	3010249
RS 200/E-EV BLU	20035848

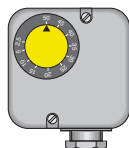
Ground fault interrupter kit



A "Ground fault interrupter kit" is available as a safety device in case of electrical system fault.

BURNER	KIT CODE
RS 25/E BLU - RS 25/E C05 - RS 35/E BLU - RS 35/E C05	3010448
RS 45/E C05 - RS 55/E BLU	20098335
RS 68/E-EV BLU - RS 120/E-EV BLU RS 160/E-EV BLU - RS 200/E-EV BLU	20098337

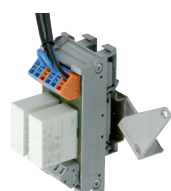
Gas max pressure switch



If necessary a Gas max pressure Switch kit is available and connectable to the burner electrical wiring trough Plugs & Sockets system.

BURNER	KIT CODE
RS 25/E BLU – RS 25/E C05 – RS 35/E BLU – RS 35/E C05	3010418

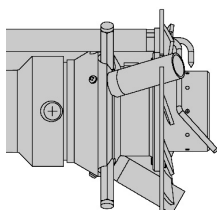
Volt free contact kit



A volt free contact kit is available for installation onto the burner. It can be used for a remote interface between burner operating signals. Every burner can be equipped with a single kit for a remote check of the flame presence signal and the burner lockout indication.

BURNER	KIT CODE
RS 25/E BLU – RS 25/E C05 – RS 35/E BLU – RS 35/E C05	3010419

LPG kit



For burning LPG gas, a special kit is available to be fitted to the combustion head on the burner, as given in the following table:

BURNER	KIT CODE FOR 'STANDARD HEAD'	KIT CODE FOR 'EXTENDED HEAD'
RS 25/E BLU – RS 25/E C05	3010423	3010423
RS 35/E BLU – RS 35/E C05	3010424	3010424
RS 45/E C05	(1)	(1)
RS 55-68-120-160-200/E BLU		
RS 200/E-EV BLU	3010491	3010491

(1) Not available

OCI410 interface for ACS410 software kit



Interface kit between burner management system and PC. It facilitates viewing, handling and recording setting parameters on site.

BURNER	KIT CODE
All models	3010436

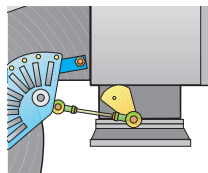
OCI412 interface kit



Interface kit between the REC27.100A2 and a Modbus system, such as a building automation and control system (BACS).
The Modbus interface is based on the RS-485 standard.

BURNER	KIT CODE
All models	3010437

DN80 gas flange kit



To modify the standard 2" burner gas input connection in to DN80 connection, a specific gas flange is available.

BURNER	KIT CODE
RS 68/E-EV - RS 120/E-EV - RS 160/E-EV - RS 200/E-EV BLU	3010439

Variable Speed Drive (VSD) for RS/EV series only



The motor speed variation for the RS/EV BLU burners series is obtained thanks to a frequency converter: variable speed drive (VSD).

BURNER	MAX POWER (kW)	KIT CODE
RS 68/EV BLU	1.5	20163060
RS 120/EV BLU	3.0	20163064
RS 160/EV - 200/EV BLU	5.5	20163071

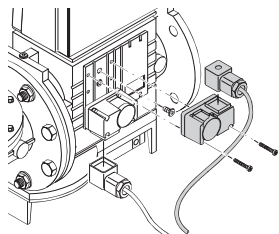
Gas train accessories

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. Below are given the available adapters; please see on the Gas Train list the correct adapter codes to select.

ADAPTER	LENGTH mm	ADAPTER CODE
2"  1" 1/2	70	3000822
3/4"  1" 1/2	31	3000824
2" 1/2  2" DN 65  2" 1/2  1" 1/2	300	3000825
DN 80  2" 1/2  2"	300	3000826
1" 1/2  2"	35	3000843
1" 1/4  1" 1/2	35	3010124
1" 1/4  2"	35	3010126

PVP (Pressure Valve Proving) kit *



The seal control function is included on Burner Digital Management System, it is only necessary to add the PVP kit on the gas train.

The PVP is included as standard equipment on RS 120/E-EV-160/E-EV-200/E-EV BLU models.

GAS TRAIN	KIT CODE
MB - MBC - CB - DMV type	3010344

* not necessary for the RS 120/E-EV - 160/E-EV - 200/E-EV BLU models where is included as a standard.

Stabiliser spring



Accessory springs are available to vary the pressure range of the gas train composed. 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 5000/1	White	4 - 20	3010381
	Red	20 - 40	3010382
	Black	40 - 80	3010383
	Green	80 - 150	3010384
CB 512/1 - DMV 512/1	Red	25 - 55	3010131
	Black	60 - 110	3010157
	Pink	90 - 150	3090486
CB 520/1 - 525/1 DMV 520/1 - 525/1*	Red	25 - 55	3010132
	Black	60 - 110	3010158
	Pink	90 - 150	3090487
CB 5065/1 - 5080/1 DMV 5065/1 - 5080/1	Red	25 - 55	3010133
	Black	60 - 110	3010135
	Pink	100 - 150	3090456
	Grey	140 - 200	3090992
CB / DMV 50100/1	Red	25 - 55	3010134
	Black	60 - 110	3010136
	Pink	100 - 150	3090489
	Grey	140 - 200	3092174
CB / DMV 50125/1	Red	25 - 55	3010315
	Yellow	30 - 70	3010316
	Black	60 - 110	3010317
	Pink	100 - 150	3010318

Specification

DESIGNATION

A specific index guides your choice of burner from the various models available in the RS/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									
/B Two stage									
/M Modulating-Mechanical cam									
/E Electronic cam									
/P Proportioning air/gas valve									
/EV Electronic cam predisposed for variable speed (with inverter)									
/EVi Electronic cam with integrated inverter									
Emission: ... or C01 Class 1 EN676									
MZ Class 2 EN676									
BLU Class 3 EN676									
MX Class 3 EN676									
C05 Class 5 EN676 (NOx < 56 mg/kWh)									
Head length: TC standard head									
TL extended head									
Flame control system: FS1 Standard/Intermittent (at least 1 stop every 24 h)									
FS2 Continuous (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/50-60H									
110/50-60 110V/50-60Hz									
R	S	120	/E	BLU	TC	FS1	3/230-400/50	230/50-60	
BASIC DESIGNATION									
EXTENDED DESIGNATION									

AVAILABLE BURNER MODELS

RS 25/E BLU	TC	FS1	1/220-230/50-60	220-230/50-60
RS 25/E BLU	TL	FS1	1/220-230/50-60	220-230/50-60
RS 25/E C05	TC	FS1	1/220-230/50-60	220-230/50-60
RS 25/E C05	TL	FS1	1/220-230/50-60	220-230/50-60
RS 35/E BLU	TC	FS1	1/220-230/50-60	220-230/50-60
RS 35/E BLU	TL	FS1	1/220-230/50-60	220-230/50-60
RS 35/E C05	TC	FS1	1/220-230/50-60	220-230/50-60
RS 35/E C05	TL	FS1	1/220-230/50-60	220-230/50-60
RS 45/E C05	TC	FS1	1/230/50	230/50-60
RS 45/E C05	TL	FS1	1/230/50	230/50-60
RS 55/E BLU	TC	FS1	3/230-400/50	230/50-60
RS 55/E BLU	TL	FS1	3/230-400/50	230/50-60
RS 68/E BLU	TC	FS1	3/230-400/50	230/50-60
RS 68/E BLU	TL	FS1	3/230-400/50	230/50-60
RS 120/E BLU	TC	FS1	3/230-400/50	230/50-60
RS 120/E BLU	TL	FS1	3/230-400/50	230/50-60
RS 160/E BLU	TC	FS1	3/400/50	230/50-60
RS 160/E BLU	TL	FS1	3/400/50	230/50-60
RS 200/E BLU	TC	FS1	3/400/50	230/50-60
RS 200/E BLU	TL	FS1	3/400/50	230/50-60
RS 200/E BLU	TC	FS1	3/230/50	230/50-60
RS 200/E BLU	TL	FS1	3/230/50	230/50-60
RS 68/EV BLU	TC	FS1/FS2	3/230-400/50	230/50-60
RS 68/EV BLU	TL	FS1/FS2	3/230-400/50	230/50-60
RS 120/EV BLU	TC	FS1/FS2	3/230-400/50	230/50-60
RS 120/EV BLU	TL	FS1/FS2	3/230-400/50	230/50-60
RS 120/EV BLU	TC	FS1/FS2	3/230-400/50	230/50-60
RS 160/EV BLU	TC	FS1/FS2	3/400/50	230/50-60
RS 160/EV BLU	TL	FS1/FS2	3/400/50	230/50-60
RS 160/EV BLU	TC	FS1/FS2	3/400/50	230/50-60
RS 200/EV BLU	TC	FS1/FS2	3/400/50	230/50-60
RS 200/EV BLU	TL	FS1/FS2	3/400/50	230/50-60

Other versions are available on request.

PRODUCT SPECIFICATION

RS 25/E C05-BLU e RS 35/E C05-BLU models

Monoblock forced draught Low NOx gas burner with two stage progressive or modulating operation, with a specific kit, fully automatic, made up of:

- Microprocessor-based Digital Burner Management System
- Display Interface operating unit to adjust the system
- Air suction circuit with sound proofing material
- High performance fan with straight blades
- Air damper for air flow setting and butterfly valve for regulating fuel output controlled by independent stepper motor actuators
- Starting motor at 2800 rpm, single-phase/220-230V/50-60Hz or three-phase/380-400V/50-60Hz
- 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
 - ionisation probe
 - gas distributor
 - flame stability disk
- Exclusive patented HCS (Housing Cooling System) with high thermal insulation and air circulation with continuous air volume refresh for an active cooling system and avoid heat transfer to the electrical component housing
- Minimum air pressure switch stops the burner in case of insufficient air quantity at the combustion head
- Plugs and sockets for electrical connection, accessible from the external of the cover
- Burner on/off selection switch
- Flame inspection window
- Slide bars for easier installation and maintenance
- Protection filter against radio interference
- IP X0D (IP 40) electric protection level.

Standard equipment:

- 1 gas train flange
- 1 flange gasket
- 4 screws for fixing the flange
- 1 thermal screen
- 4 screws for fixing the burner flange to the boiler
- 3 plugs for electrical connection (RS 25-35/E BLU single-phase)
- 4 plugs for electrical connection (RS 35/E BLU three-phase)
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

RS 45/E C05 – RS 55/E BLU – RS 68/E-EV BLU – RS 120/E-EV BLU – RS 160/E-EV BLU – RS 200/E-EV BLU models
Monoblock forced draught Low NOx gas burner with two stage progressive or modulating operation, with a specific kit, fully automatic, made up of:

- Microprocessor-based Digital Burner Management System (RS/E BLU models)
- Microprocessor-based Digital Burner Management System with Variable Speed Drive technology for the control of a Frequency Inverter (RS/EV BLU models)
- Display Interface operating unit to adjust the system
- Air suction circuit lined with sound-proofing material
- Fan with reverse curve blades (straight blades on the 160/E-EV – 200/E-EV BLU model) high performance with low sound emissions
- Air damper for air flow setting and butterfly valve for regulating fuel output controlled by independent stepper motor actuators
- Starting motor at 2800 rpm, three-phase 400V with neutral, 50Hz (single-phase, 230V and 50Hz for the RS 45/E C05 model)
- 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
 - ionisation probe
 - gas distributor
 - flame stability disk
- Maximum gas pressure switch to stop the burner in the case of excess pressure on the fuel supply line (on RS 55-68-120-160-200/E-EV BLU models)
- Minimum air pressure switch stops the burner in case of insufficient air quantity at the combustion head
- Burner on/off selection 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 flange
- 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 (for RS 45/E C05 model)
- 2 slide bar extensions (for extended head models and RS 160/E-EV – 200/E-EV BLU)
- Pressure switch for valve proofing system (RS 68-120/E-EV BLU models)
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

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

07/2019
TS0087UK04



[1]



[2]

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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S. PIETRO, LEGNAGO (VERONA) – ITALIA

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