

yeten combustion

industrial burners & control equipments



MSB HIGH & MEDIUM VELOCITY BURNERS

MSB Burners are based on staged combustion technology. Fuel and air are mixed more than once inside the burner turbulator and high quality mixture is occurred. With their high flame velocity, MSB Burners circulate the furnace atmosphere and pull inert gases to the reaction zone. As a result, local high temperatures are avoided and NOx emissions are reduced.

ADVANTAGES

Suitable for Heavy Duty Conditions
Wide Combustion Range
Uniform Temperature Distribution
Elongated Refractory Life
Low NOx & CO Emissions
Economical Spare Parts
Easy Installation & Commissioning

APPLICATIONS

Ceramic Kilns
Reheat Furnaces
Ladle & Tundish Heating Systems
Aluminium Holding & Rotary Tilting Furnaces
Glass Holding Furnaces
Annealing Furnaces, Galvanizing Lines
Incinerators, Thermal Oxidizers, Crematoriums

TECHNICAL FEATURES

MSB Burners provide advantages for various applications with their high turndown ratio, possibility of Xs air operation, high & medium flame velocities, various flame tubes and others.

Capacity	90 kW - 3000 MW
Working Temp.	Metal Flame Tube (AISI 310 SS) - Max. 900 °C SiC Flame Tube - Max. 1380 °C Refractory Tile - Max. 1600 °C
Comb. Air Temp.	Max. 350 °C
Turndown Ratio	1:10 (With proportional pressure regulator) ⁽¹⁾
Lambda (λ)	0,7 - 40
Ignition	Igniter (Spark Plug) - Pilot Burner (Available only for MSB 100)
Flame Detection	Flame Rod (Ionization) - UV Adapter with Air Cooling
⁽¹⁾ With Xs air operation, turndown ratio can be increased up to 1:50.	

Model	Capacity ⁽²⁾	Flame Velocity ⁽³⁾	Air Pressure	Gas Pressure	Flame Length
MSB 50	90 kW	MV	24 mbar	28 mbar	550 mm
		HV	46 mbar	46 mbar	400 mm
MSB 50A	150 kW	MV	25 mbar	20 mbar	650 mm
		HV	36 mbar	36 mbar	450 mm
MSB 50B	220 kW	MV	25 mbar	25 mbar	800 mm
		HV	29 mbar	26 mbar	650 mm
MSB 65	300 kW	MV	21 mbar	21 mbar	850 mm
		HV	37 mbar	37 mbar	750 mm
MSB 80	450 kW	MV	26 mbar	26 mbar	950 mm
		HV	39 mbar	33 mbar	850 mm
MSB 80A	600 kW	MV	26 mbar	12 mbar	1000 mm
		HV	40 mbar	20 mbar	950 mm
MSB 100	1000 kW	MV	35 mbar	27 mbar	1800 mm
		HV	45 mbar	33 mbar	1500 mm
⁽²⁾ Combustion Air Temperature: 20 °C					
⁽³⁾ MV: Medium Velocity, HV: High Velocity					

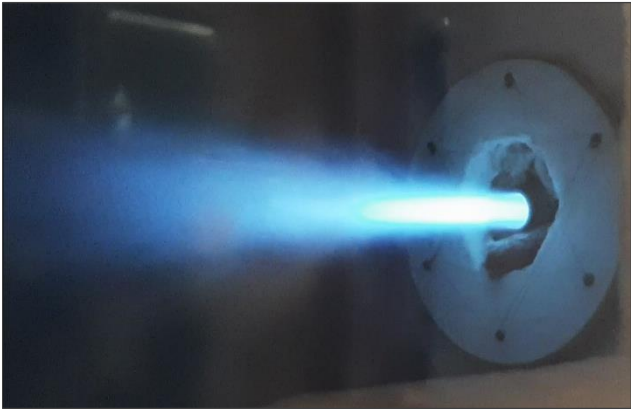
HIGH FLAME VELOCITY

LOW NOx EMISSIONS

MSB Burners have high and medium flame velocity options for different applications in the industry. With their high flame velocity, they circulate the furnace inside atmosphere, pull inert gases to the reaction zone and burn them. With this process, local high temperatures are avoided and NOx emissions are reduced.



Medium Flame Velocity
MSB 65 - MV - M - 300 kW



High Flame Velocity
MSB 50A - HV - S - 150 kW

UNIFORM TEMPERATURE DISTRIBUTION

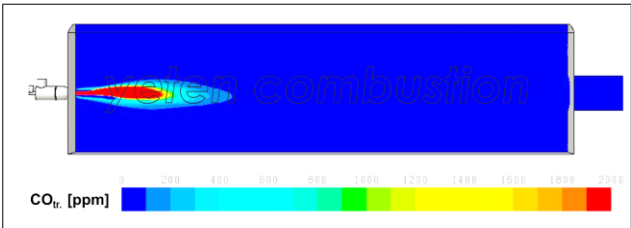
ELONGATED REFRACTORY LIFE

By avoiding local high temperatures, uniform temperature distribution is achieved inside the furnace. As a result, refractory linings around the burners are less damaged and furnace refractory life is elongated.

MSB Burners are optimized in cooperation with **GWl, Gas und Wärme Institut, Essen - Germany** and performance tests have been made in our test furnaces.



Temperature Distribution



Flame Shape

APPLICATIONS



Reheat Furnaces



Annealing Furnaces



Aluminium Holding Furnaces



Rotary Tilting Furnaces



Ceramic Kilns



Refractory Kilns



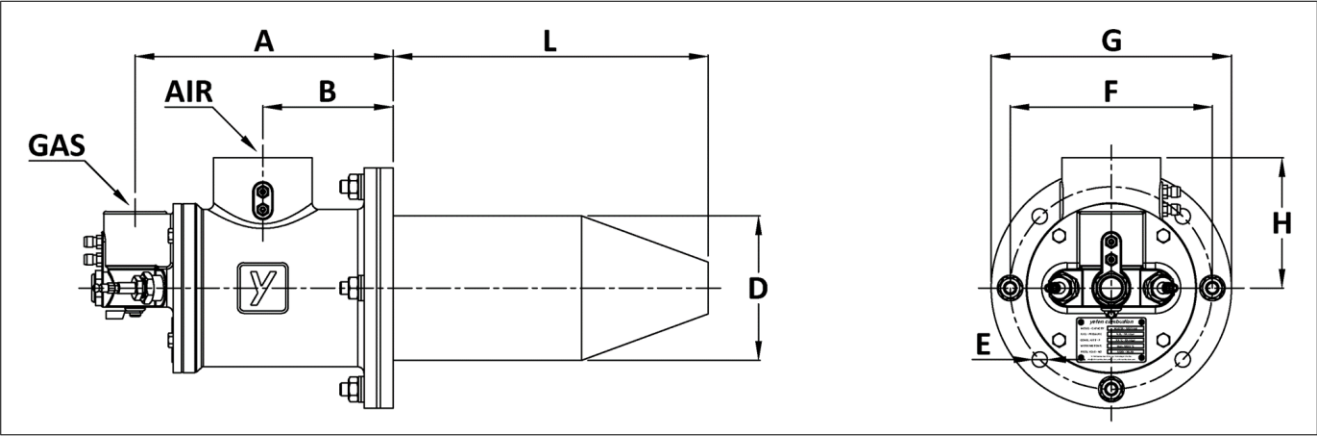
Glass Holding Furnaces



Incinerators, Crematoriums & RTOs

DIMENSIONS

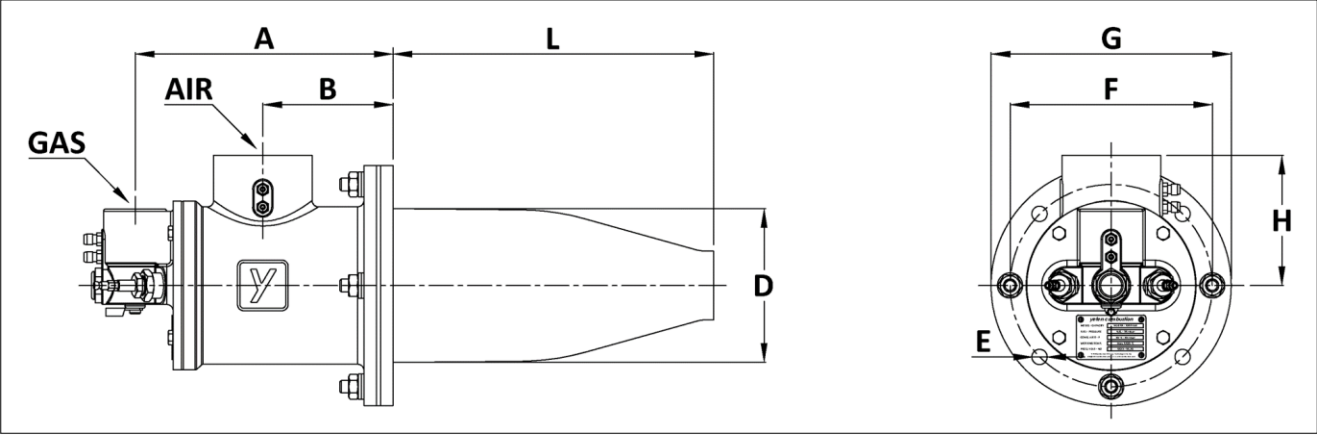
METAL FLAME TUBE



Model	Air	Gas	A	B	ØD	ØE	ØF	ØG	H	L
MSB 50	2"	1"	204	103	114	12	165	190	105	250
MSB 50A	2"	1"	204	103	114	12	165	190	105	250
MSB 50B	2"	1"	204	103	114	12	165	190	105	250
MSB 65	3"	1 1/2"	276	142	143	14	190	220	138	300
MSB 80	3"	1 1/2"	276	142	143	14	190	220	138	300
MSB 80A	3"	1 1/2"	276	142	143	14	190	220	138	300
MSB 100	DN 125	2"	363	173	219	18	265	310	195	350

DIMENSIONS

SiC FLAME TUBE

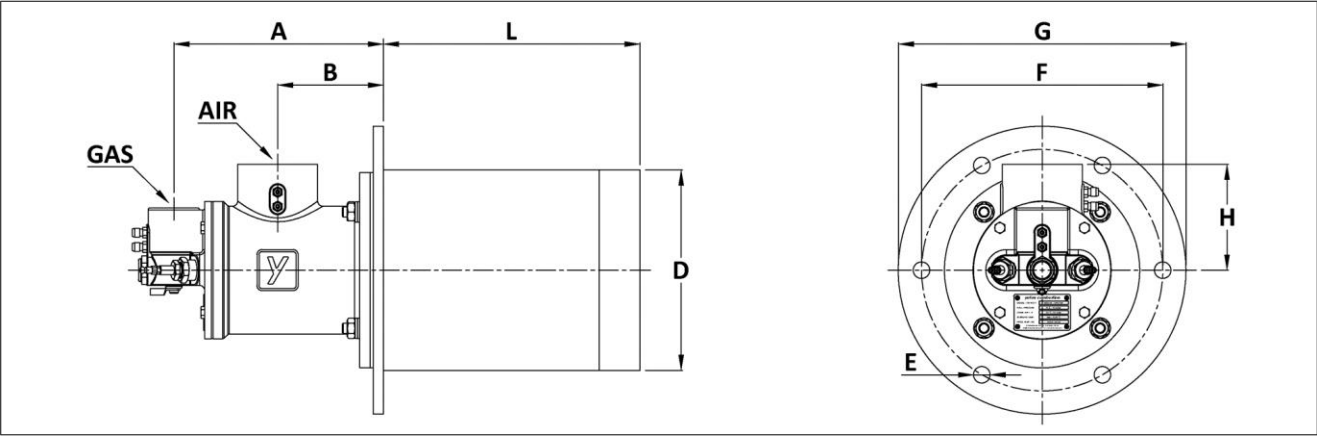


Model	Air	Gas	A	B	ØD	ØE	ØF	ØG	H	L
MSB 50	2"	1"	204	103	122	12	165	190	105	250
MSB 50A	2"	1"	204	103	122	12	165	190	105	250
MSB 50B	2"	1"	204	103	122	12	165	190	105	250
MSB 65	3"	1 1/2"	276	142	148	14	190	220	138	300
MSB 80	3"	1 1/2"	276	142	148	14	190	220	138	300
MSB 80A	3"	1 1/2"	276	142	148	14	190	220	138	300

SiC Flame Tube isn 't available for MSB 100.

DIMENSIONS

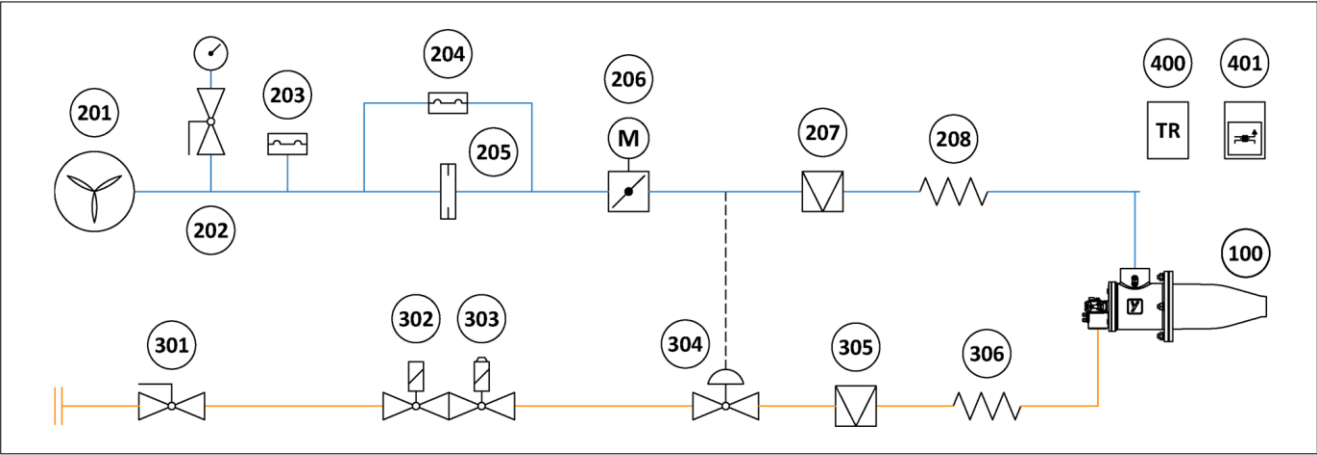
REFRACTORY TILE



Model	Air	Gas	A	B	ØD	ØE	ØF	ØG	H	L
MSB 50	2"	1"	204	103	195	16	235	280	105	250
MSB 50A	2"	1"	204	103	195	16	235	280	105	250
MSB 50B	2"	1"	204	103	195	16	235	280	105	250
MSB 65	3"	1 1/2"	276	141	245	16	295	330	142	275
MSB 80	3"	1 1/2"	276	141	245	16	295	330	142	275
MSB 80A	3"	1 1/2"	276	141	245	16	295	330	142	275
MSB 100	DN 125	2"	366	176	295	18	365	420	195	350

FLOW SCHEME

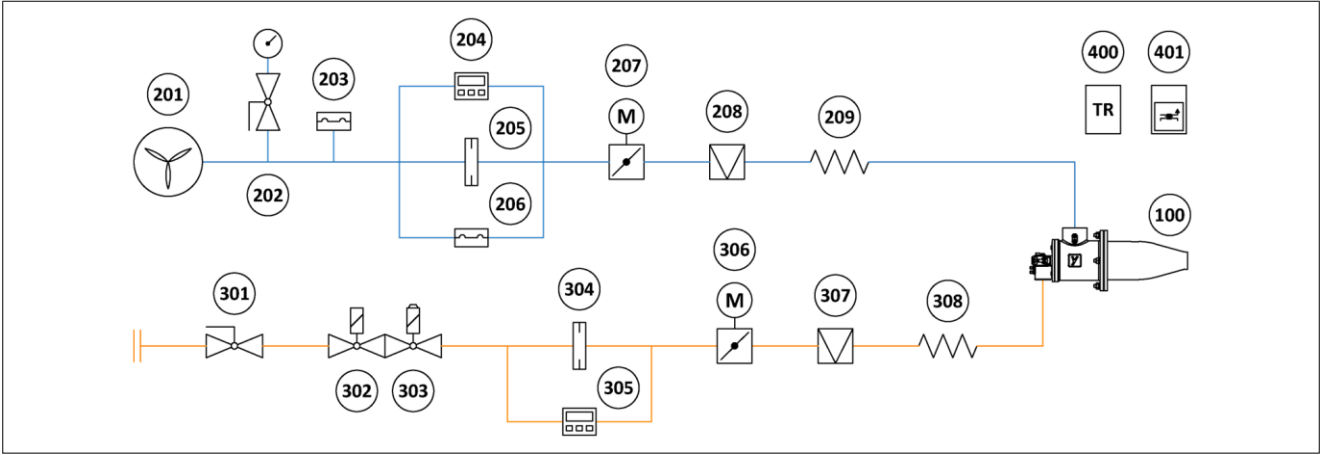
PROPORTIONAL PRESSURE REGULATOR CONTROL



100	MSB Burner	206	Air Control Valve	304	Proportional Pressure Regulator
201	Combustion Air Fan	207	Air Trim Valve	305	Gas Trim Valve
202	Manometer + Shut - Off Valve	208	Air Flex Connection	306	Gas Flex Connection
203	Air Pressure Switch	301	Shut - Off Valve	400	Ignition Transformer + Enclosure
204	Air Flow Switch	302	Solenoid Valve - Safety	401	Burner Control Unit
205	Air Orifice Meter	303	Solenoid Valve - Working		

FLOW SCHEME

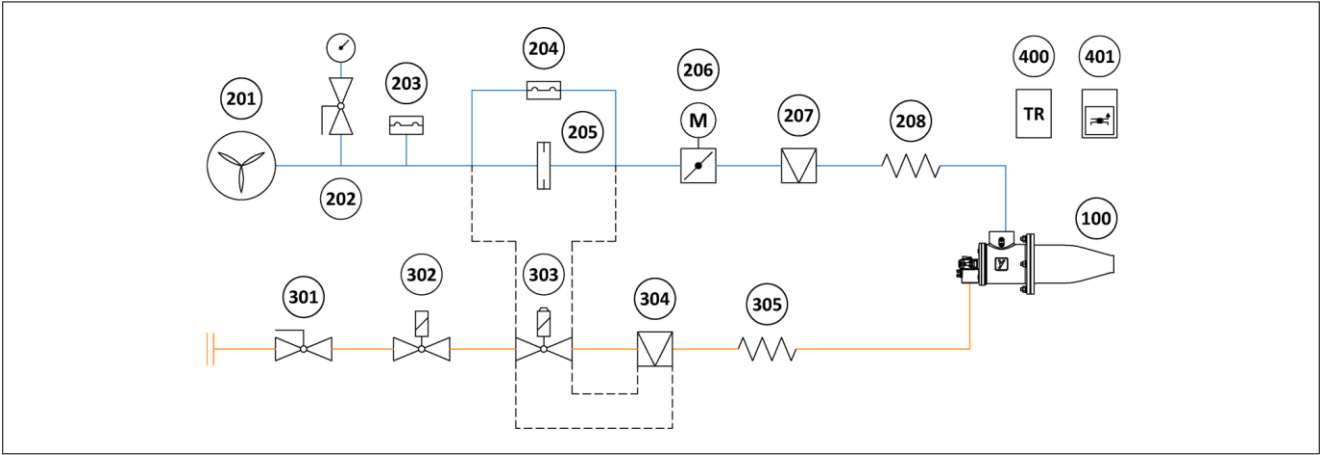
ELECTRONIC FLOW CONTROL



100	MSB Burner	207	Air Control Valve	305	Differential Pressure Transmitter
201	Combustion Air Fan	208	Air Trim Valve	306	Gas Control Valve
202	Manometer + Shut - Off Valve	209	Air Flex Connection	307	Gas Trim Valve
203	Air Pressure Switch	301	Shut - Off Valve	308	Gas Flex Connection
204	Differential Pressure Transmitter	302	Solenoid Valve - Safety	400	Ignition Transformer + Enclosure
205	Air Orifice Meter	303	Solenoid Valve - Working	401	Burner Control Unit
206	Air Flow Switch	304	Gas Orifice Meter		

FLOW SCHEME

PNEUMATIC FLOW CONTROL



100	MSB Burner	206	Air Control Valve	304	Air Trim Valve
201	Combustion Air Fan	207	Air Trim Valve	305	Air Flex Connection
202	Manometer + Shut - Off Valve	208	Air Flex Connection	400	Ignition Transformer + Enclosure
203	Air Pressure Switch	301	Shut - Off Valve	401	Burner Control Unit
204	Air Flow Switch	302	Solenoid Valve - Safety		
205	Air Orifice Meter	303	Solenoid Valve - Working + DP Reg.		

WORLDWIDE SHIPMENT



Authorized Representative:

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