

METAL PROCESSING

MEKU®



The Product Range



Development partner and system supplier for high-efficiency, low-emission combustion systems

Development partner and system supplier

MEKU is one of the leading partners of the national and international heating industry.

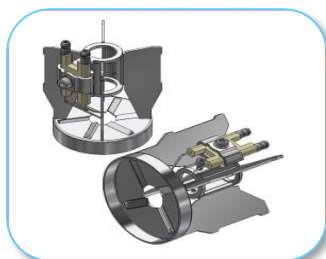
MEKU develops, manufactures and markets high-quality mixing facilities and high-quality combustion systems for oil and gas burners.

The success of MEKU is based on consistent research and development work and the customer-oriented focus of the company.

The satisfaction of our customers has been the yardstick for the quality of the product; in this way, MEKU developed an excellent reputation as a systems supplier and development partner for the heating industry.

Product range

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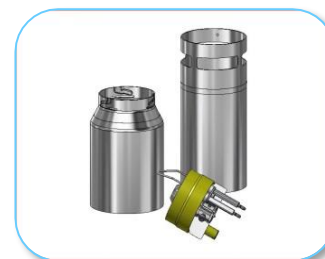
Swirl-/ Diffusor-Disks



Flame Tubes



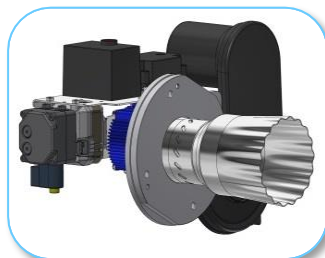
Recirculation Tubes



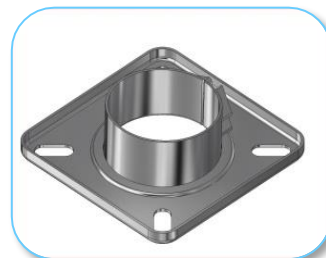
Blue-Flame Burner Heads



Burner Housings



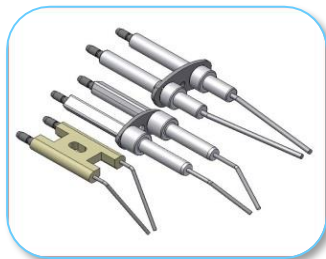
Modulating Burners



Boiler Flanges



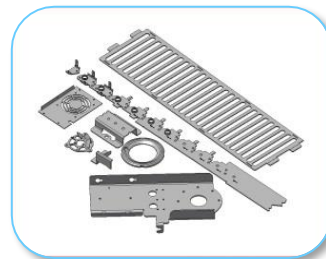
Boiler Combustion Chambers



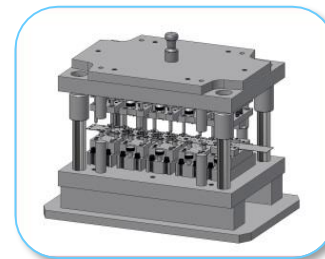
Ignition Electrodes



R & D



Punching and Forming Technology

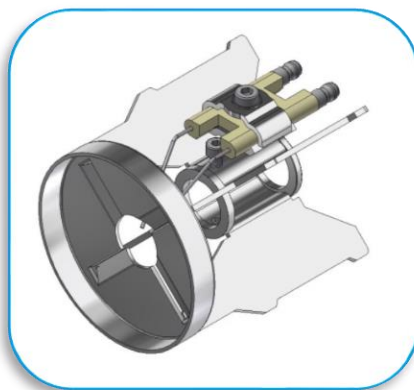


Tools and Production Facilities

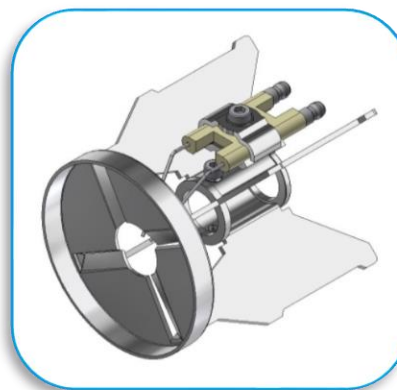
Swirl disks for yellow flame burners



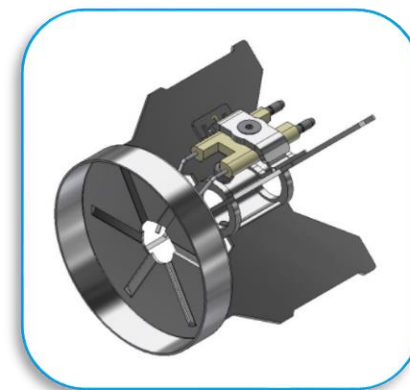
Swirl disk Ø 64 mm
for flame tube Ø 80x1,5 mm



Swirl disk Ø 75 mm
for flame tube Ø 90x2 mm



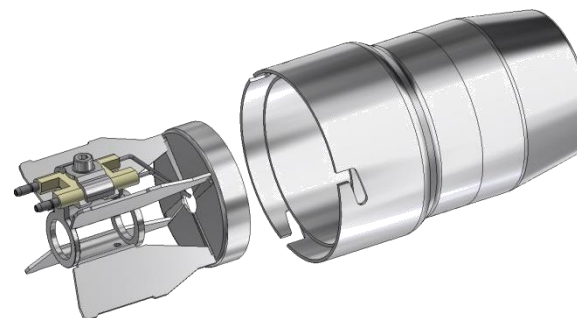
Swirl disk Ø 80 mm
for flame tube Ø 100x2 mm



Swirl disk Ø 90 mm
for flame tube Ø 115x2 mm

We manufacture swirl disks of different sizes and variants.
Other designs on request.

Performance data of mixing systems



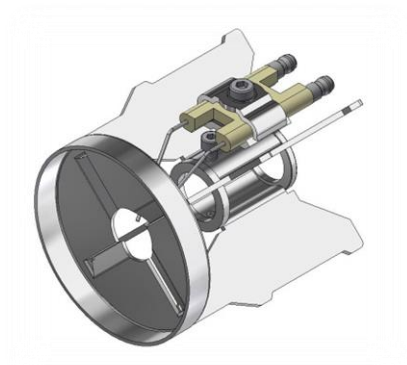
Swirl disk Ø 64 mm
for flame tube Ø 80 x 1,5 mm



Nozzle holder = Ø 18,55 mm
Hight cup = 13,0 mm
Length without electrodes = 83,0 mm

Part-No.	Number of slots	Center hole Ø (mm)	Slot width (mm)	Electrode connection Ø (mm)	Special features
194035	4	14	0,3	6,3	
194036	4	14	0,5	6,3	
194037	4	15	0,5	4,0	
194038	4	15	0,5	4,0	
192000	4	17,5	0,8-1,2	4,0	
192001	4	17,5	0,8-1,2	4,0	Additional four holes Ø4 mm
195024	4	17,5	0,8-1,2	4,0	
194039	6	14	0,5	6,3	
194040	6	16	0,5	6,3	
192002	6	20	0,8-1,2	4,0	
192003	12	18	1,2	4,0	
192004	12	22	1,2	4,0	
195026	12	18	1,2	-	

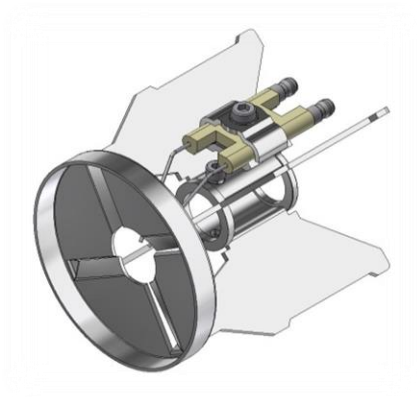
Swirl disk Ø 75 mm
for flame tube Ø 90 x 2 mm



Nozzle holder = Ø 18,55mm
Hight cup = 11,0 mm
Length without electrodes = 91,0mm

Part-No.	Number of slots	Center hole Ø (mm)	Slot width (mm)	Electrode connection Ø (mm)
193150	4	20	0,8	6,3
187017	4	22	0,5-1,8	6,3
193142	4	22	0,8	4,0
191003	6	22	1,4-2,4	6,3
187018	8	22	0,8	4,0

Swirl disk Ø 80 mm
for flame tube Ø 100 x 2 mm



Nozzle holder = Ø 18,55mm
Hight cup = 11,0mm
Length without electrodes = 101,0mm

Part-No.	Number of slots	Center hole Ø (mm)	Slot width (mm)	Electrode connection Ø (mm)
188046	4	18	0,7-1,9	6,3
188041	4	22	0,7-1,9	6,3
191027	6	22	1,4-2,4	4,0
189073	8	18	0,8	4,0

Swirl disk Ø 90 mm
for flame tube Ø 115 x 2 mm



Nozzle holder = Ø 18,55mm
Hight cup = 16,5 mm
Length without electrodes = 106,5 mm

Part-No.	Number of slots	Center hole Ø (mm)	Slot width (mm)	Electrode connection Ø (mm)
199051	6	20	0,5	4,0
199117	6	22	1,4-2,4	6,3

We manufacture burner tubes in different sizes and variants



for yellow flame burners



for lowNOx yellow flame burners

Other shapes and materials on request

Flame tubes for yellow flame burners



Flame tubes Ø 80 x 1,5 mm

Material: St 37
with 6 welded guiding ridges
for swirl disk Ø 64 mm

Part-No.	Length (mm)	Cone Ø (mm)	Flanged rim Ø (mm)
191089	172	64	95,5
185027	200	64	-



Flame tubes Ø 90 x 2,0 mm

Material: St 37
with 6 welded guiding ridges
for swirl disk Ø 64 mm

Part-No.	Length (mm)	Cone Ø (mm)	Flanged rim Ø (mm)
185071	200	78	105



Flame tubes Ø 100 x 2,0 mm

Material: St 37
with 6 welded guiding ridges
for swirl disk Ø 64 mm

Part-No.	Length (mm)	Cone Ø (mm)	Flanged rim Ø (mm)
191073	250	82	112

Other burner adaptations and material qualities on request

Flame tubes for lowNOx- yellow flame burners



Material: St 37
with 6 welded guiding ridges,
with modified cone

Flame tube	Part-No.	Length (mm)	Cone Ø (mm)	Flanged rim Ø (mm)	Special features
Ø80 x 1,5	196155	54	176	95,5	
	196281	54	204	-	
	197058	56	184	95,0	
	196231	56	204	104,0	
	201042	58	174,7	95,5	
	197323	60	174,5	95,5	
	195028	60	203,5	-	without bayonet trap
	195073	62	202,5	-	without bayonet trap
Ø90 x 1,5	197054	68	174	104,0	
Ø100 x 2	197198	70	95	-	
	196093	70	220	-	
	196289	77	250	-	
	198045	79	250	-	
	197317	79	349,5	-	
Ø115 x 2	199050	80	200	-	for swirl disk Ø95
	199118	80	260	128	
	199049	88	110	-	for swirl disk Ø90

Other burner adaptations and material qualities on request

Recirculation tubes with 10°- cone for flame tubes Ø 80 x 1,5 mm



Material: 1.4841
with detachable bayonet locking

Other shapes and materials on request

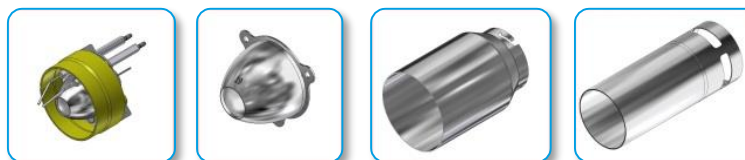
Part-No.	Rec.-tube (D x L mm)	Length (mm)	Special features
200132	Ø80 x 50	80	without holes
197230	Ø100 x 70	100	8 holes
198014	Ø100 x 100	130	without holes
195136	Ø100 x 100	130	8 holes
198104	Ø120 x 100	130	without holes

Blue flame burner heads

the power range depends on the burner and fan performance

MB 800

Burner power range 13 - 35 kW



MB 900

Burner power range 28 - 55 kW



MB 1000

Burner power range 50 -150 kW



Please select the required component

MB description

Blue flame burner heads

the power range depends on the burner and fan performance

MBK 900

Burner power range 38 - 79 kW



MBF 800

Burner power range 8 - 44 kW



MBF 1000

Burner power range 45 - 150 kW



Please select the required component

MBF description

Burner heads MB 800

Burner power 13 – 35 kW



Burner heads
for adapter tube Ø 80 x1,5 mm



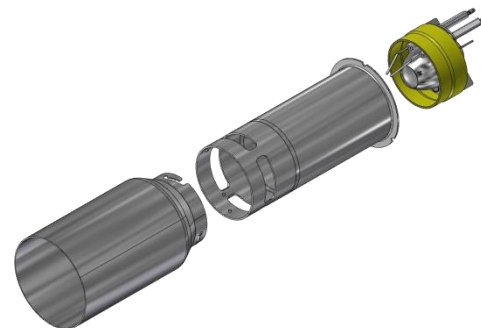
Air nozzles
for nozzle holder Ø 18,55 mm



Flame tubes
for adapter tube Ø 80 x1,5 mm



Adapter tubes
Ø 80 x1,5 mm

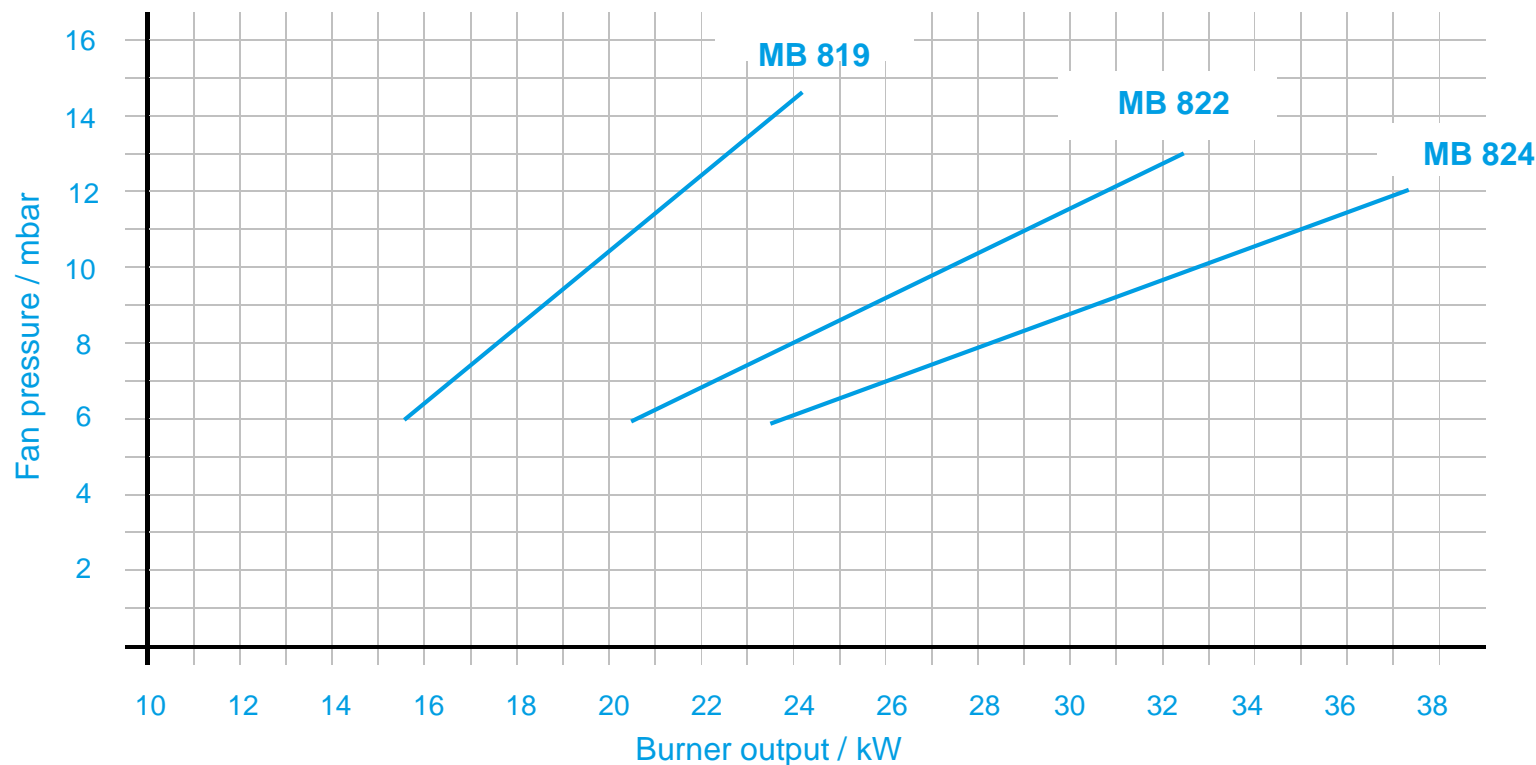


Performance data of the burner heads

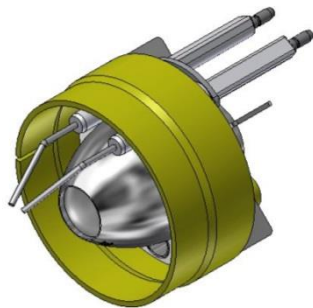
Power range of burner and mixing systems

Characteristic curves of the mixing system MB 800

(L-max 90 burner chassis, pressure combustion chamber ± 0 hPa)



Burner heads MB 800



for adapter tube Ø 80 x 1,5 mm
Nozzle holder = Ø 18,55 mm
Brass ring = Ø 76,6 mm

Part-No.	Description	Length without electrodes (mm)	Height air nozzle (mm)	Air nozzle Ø (mm)	Electrode connection Ø (mm)
203014	Burner head MB 817,5	62,5	35,0	17,5	4,0
197060	Burner head MB 819	63,2	35,7	19,0	4,0
197061	Burner head MB 819	63,2	35,7	19,0	6,4
197062	Burner head MB 821	62,0	34,5	21,0	4,0
197063	Burner head MB 821	62,0	34,5	21,0	6,4
197064	Burner head MB 822	63,2	35,7	22,0	4,0
197065	Burner head MB 822	63,2	35,7	22,0	6,4
197066	Burner head MB 824	63,2	35,7	24,0	4,0
197067	Burner head MB 824	63,2	35,7	24,0	6,4

Flame tubes MB 800



Part-No.	Diameter (mm)	Length (mm)
197163	100 x 1	150

for adapter tube Ø 80 x 1,5 mm
Connection Ø 76,6 mm
Material: 2.4851 (Alloy 601)

Other shapes and materials on request

Air nozzles MB 800



Part-No.	Description	Height (mm)	Vent Ø (mm)
202147	Air nozzle MB 817,5	35,0	17,5
197068	Air nozzle MB 819	35,7	19,0
197069	Air nozzle MB 821	34,5	21,0
197070	Air nozzle MB 822	35,7	22,0
197071	Air nozzle MB 824	25,7	24,0

Different nozzle diameters and wing angle on request

Nozzle holder = Ø 18,55 mm

Inlet-Ø = 45 mm

Reference-Ø mounting tabs= Ø 55,5 mm

Material nozzle: St 37

Material wings: 1.4301

Adapter tubes MB 800



Tube-Ø 80 x 1,5 mm
two-piece welded
Tail part material: St 37
Adapter tube material: 1.4841

Part-No.	Length (mm)	Special features
196023	200	-
202007	185	Expansion Ø 90 x 22,5 mm for L-max90 bayonet connection

Other shapes and materials on request

Burner heads MB 900

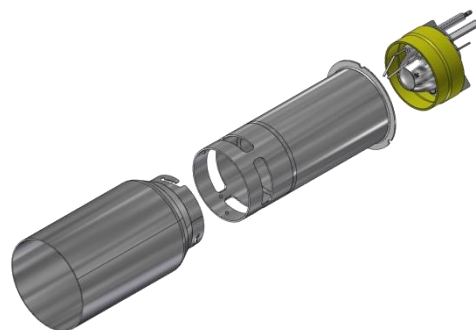
Burner power 28 - 55 kW



Burner heads
for adapter tube Ø 90 x 1,5 mm



Air nozzles
Nozzle holder Ø 18,55 mm



Flame tubes
for adapter tube Ø 90 x 1,5 mm (MB900)
adapter tube Ø 100 x 1,5 mm (MBK900)



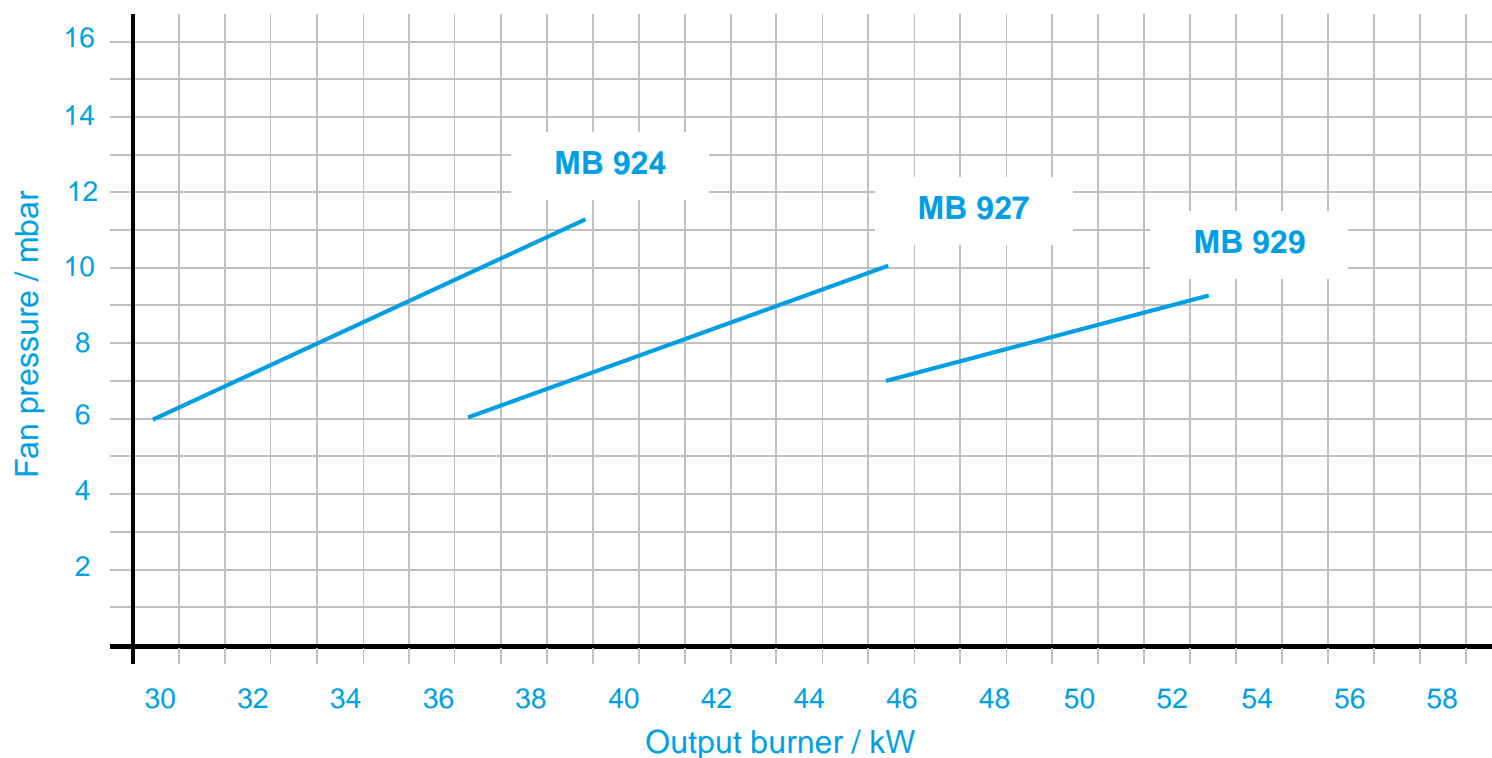
Adapter tubes
Ø 90 x 1,5 mm

Performance data of the burner heads

Power range of burner and mixing systems

Characteristic curves of the mixing system MB 900

(L-max 90 burner chassis, pressure combustion chamber ± 0 hPa)



Burner heads MB 900



for adapter tube Ø 90 x 1,5 mm
Nozzle holder = Ø 18,55 mm
Brass ring = Ø 86,6 mm

Part-No.	Description	Length without electrodes (mm)	Height air nozzle (mm)	Air nozzle Ø (mm)	Electrode connection Ø (mm)
196200	Burner head MB 924	64,3	34,3	24,0	4,0
196203	Burner head MB 924	64,3	34,3	24,0	6,4
196201	Burner head MB 927	62,0	32,0	27,0	4,0
196204	Burner head MB 927	62,0	32,0	27,0	6,4
196202	Burner head MB 929	60,5	30,5	29,0	4,0
196205	Burner head MB 929	60,5	30,5	29,0	6,0

Air nozzles MB 900



Part-No.	Description	Height (mm)	Vent Ø (mm)
196206	Air nozzle MB 924	34,3	24,0
196207	Air nozzle MB 927	32,0	27,0
197208	Air nozzle MB 929	30,5	29,0

Nozzle holder = Ø 18,55 mm
 Inlet-Ø = 55 mm
 Reference-Ø mounting tabs= Ø 65,5 mm
 Material nozzle: St 37
 Material wings: 1.4301

Different nozzle diameters and wing angle on request

Adapter tubes MB 900



Tube-Ø 90 x 1,5 mm
two-piece welded
Tail part material: St 37
Adapter tube material: 1.4841

Part-No.	Length (mm)	Special features
196213	200	Without bayonets
202008	190	With bayonets for L-max90 connection

Other shapes and materials on request

Flame tubes MB 900



Part-No.	Diameter (mm)	Length (mm)
196212	120 x 1,0	190

for adapter tube Ø 90 x 1,5 mm
 adapter tube Ø100 x1,5 mm (MBK-900)
 Connection Ø 86,6 mm
 Material: 2.4851 (Alloy 601)

Other shapes and materials on request

Burner heads MBK 900

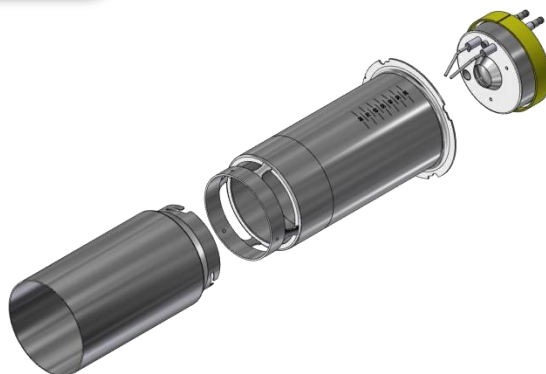
Burner power 38 - 79 kW



Burner heads
for adapter tube Ø 100 x 1,5 mm



Flame tube
for adapter tube Ø 90 x 1,5 mm (MB900)
Adapter tube Ø 100 x 1,5 mm (MBK900)



Adapter tubes
Ø100 x 1,5 mm

Performance data of the burner heads

Burner heads MBK 900



for adapter tube Ø 100 x 1,5 mm
Nozzle holder = Ø 18,55 mm
Brass ring = Ø 96,6 mm

Part-No.	Description	Length without electrodes (mm)	Height air nozzle (mm)	Air nozzle Ø (mm)	Electrode connection Ø (mm)
208016	Burner head MBK 924	60,8	34,3	24,0	4,0
207064	Burner head MBK 924	60,8	34,3	24,0	6,4
208017	Burner head MBK 927	58,5	32,0	27,0	4,0
207065	Burner head MBK 927	58,5	32,0	27,0	6,4
208018	Burner head MBK 929	57,0	30,5	29,0	4,0
207066	Burner head MBK 929	57,0	30,5	29,0	6,4
208019	Burner head MBK 931	55,7	29,2	31,0	4,0
207067	Burner head MBK 931	55,7	29,2	31,0	4,0
208020	Burner head MBK 933	54,4	27,9	33,0	4,0
207067	Burner head MBK 933	54,4	27,9	33,0	4,0

Adapter tube MBK 900

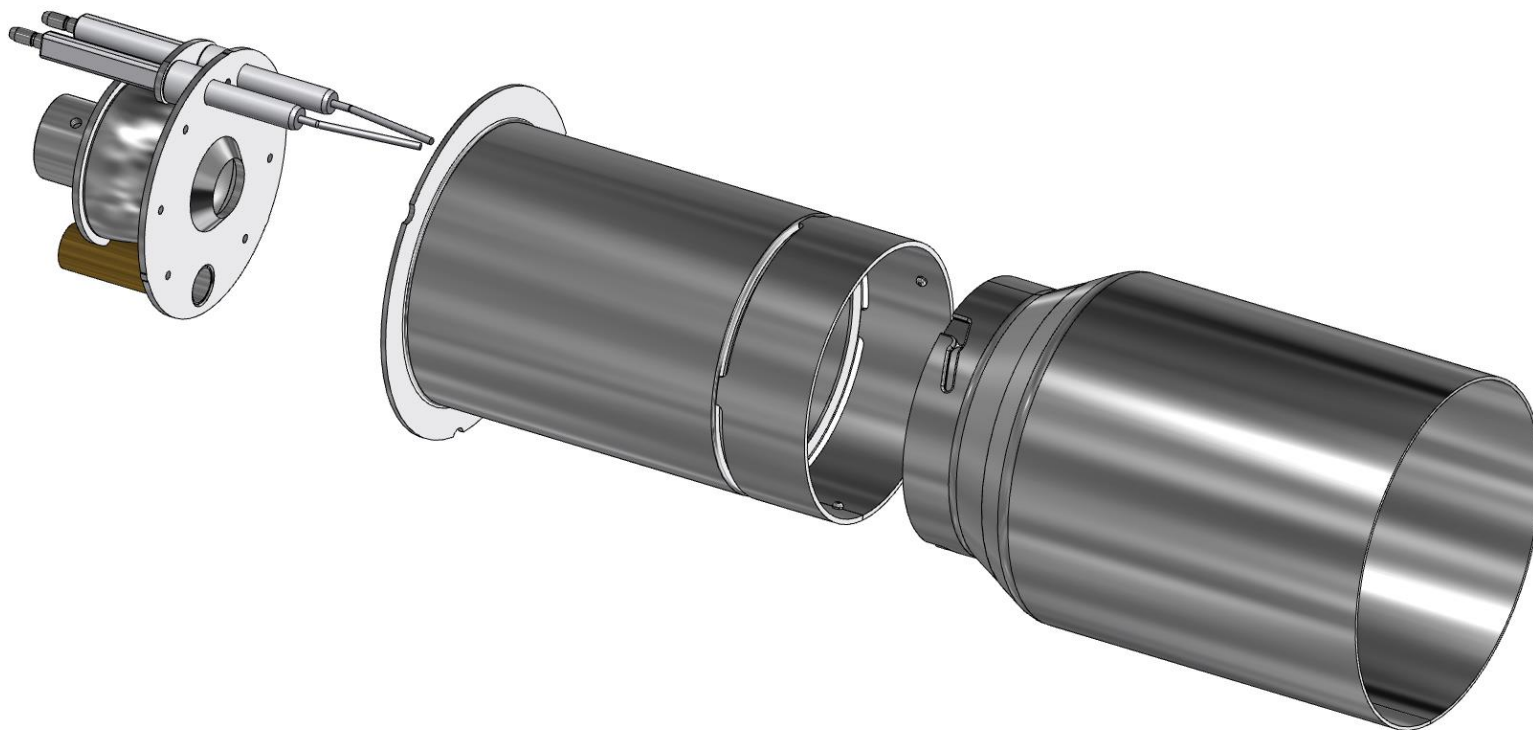


Part-No.	Length (mm)	Special features
207069	233	Inner flange Ø 87 mm

Other shapes and materials on request

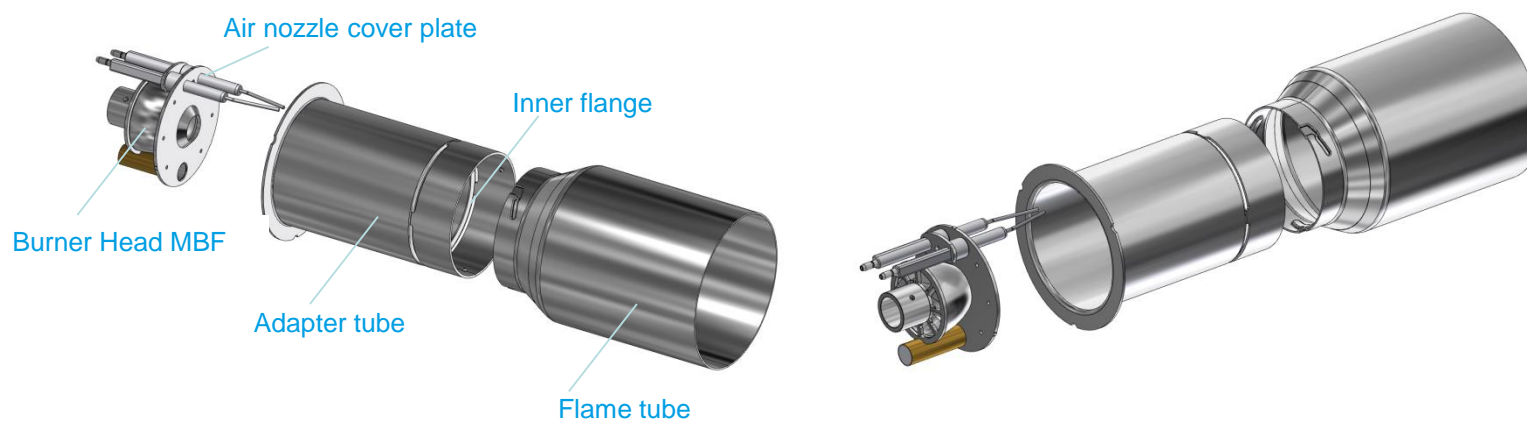
Tube-Ø 90 x 1,5 mm
 three-piece welded
 Tail part material: St 37
 Front tube material: 1.4828
 Adapter tube material: 1.4841

MBF- 800/1000 blue flame burner system



Blue flame burner system MBF

- The spring-biased MBF blue flame systems sealed directly against the inner metallic flange of the adapter tube.
- The flue gas recirculation by means of a non-adjustable, fixed recirculation slots.
- The burner output varies according to the air aperture dimensions and the available combustion / blower air pressure (at least 5 mbar) and the enforced amount of combustion air.



Special features of the MBF system compared to the existing MB-mixing systems

- Significant reduction of the air leakages because of the metallic sealing between the head and the inner flange of the adapter tube.
- Flow-optimised supply of the recirculated exhaust gas near the nozzle aperture increase the flame stability and reduce soot formation in the area of the mixing head and the flame tube.
- The flow direction of the mixing head is improved by means of the eight-winged grid (2 mm thickness) and the turned nozzle holder. Hereby the power range reached from 8 – 140 kW (instead of 10 to 75 kW with MB/MBK)
- For the first time a stainless steel air is used in the MBF-800 version, in this way, the mixing head is completely protected against corrosion.
- The mixing head components will be produced very precise, airtight and mechanically reliable because of laser welding and CNC processing.
- The spring loaded mixing head is mounted in an adapter tube with no adjustable recirculation openings, therefore an incorrect positioning of the head during service is not possible.
- The homogeneous, low-emission flame reduces the CO- emissions (higher partial pressure of oxygen) in the area of the flame root which avoids metal dusting corrosion, especially in the less temperate area of the flame tube.



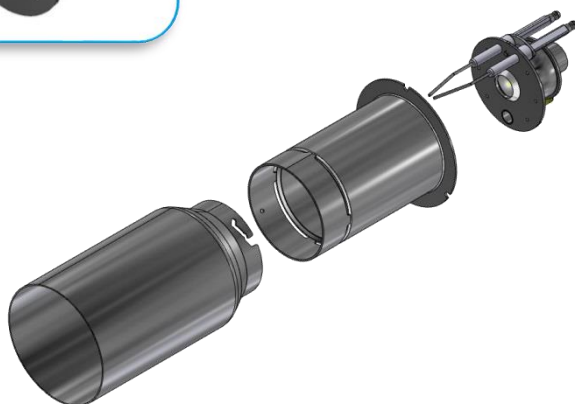
Burner head MBF 800



Burner heads
for adapter tube Ø 80 x 1,5 mm



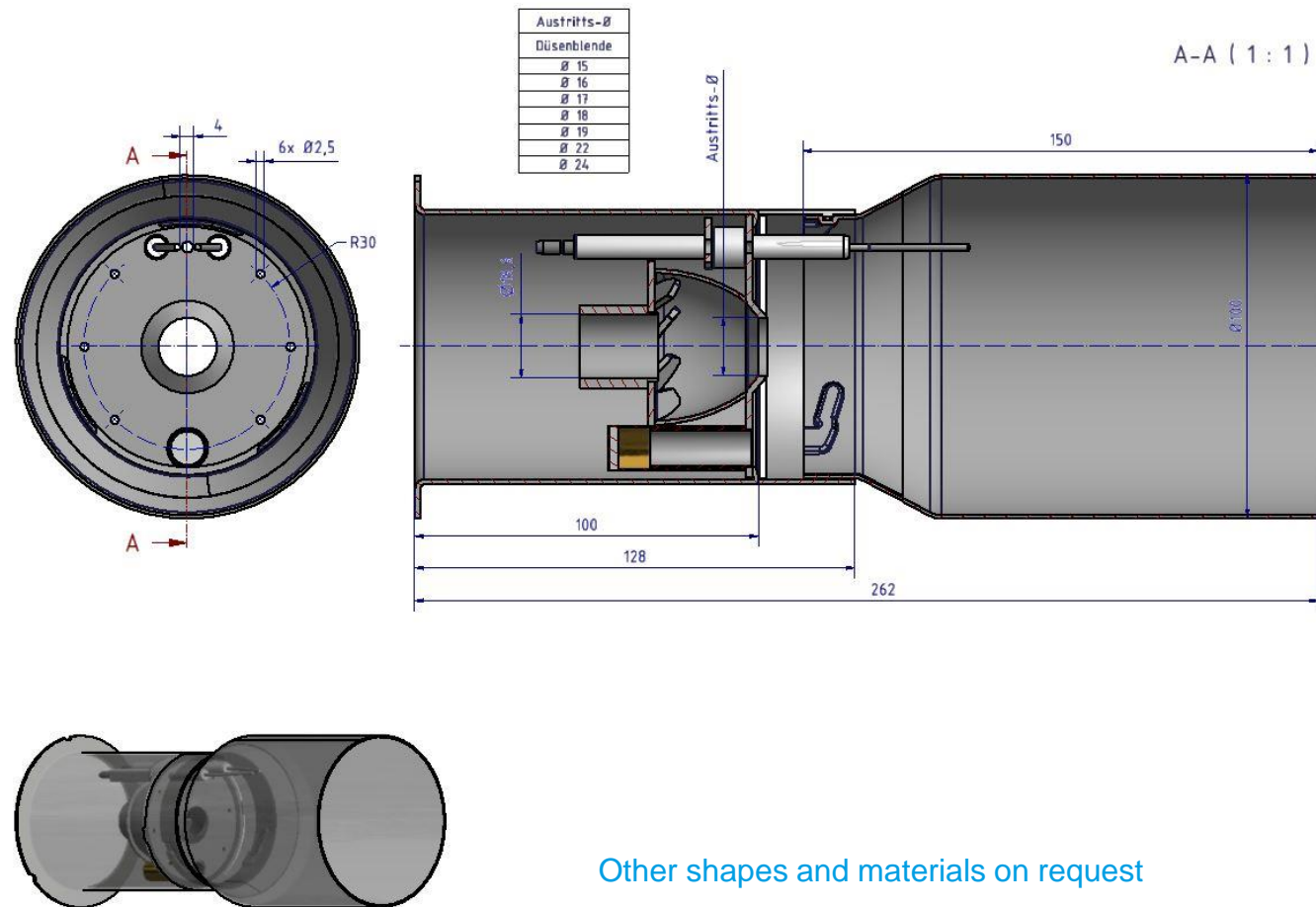
Flame tube
for adapter tube Ø 80 x 1,5 mm



Adapter tube
Ø 80 x 1,5 mm

Performance data of the burner heads

Dimensions MBF-800



Other shapes and materials on request

Burner heads MBF 800



for adapter tube Ø80 x 1,5
Nozzle holder = Ø18,6mm

Part-No.	Description	Length without electrodes (mm)	Height air nozzle (mm)	Air nozzle Ø (mm)	Special features
212139	Burner head MBF 815	57	5	15	Optical flame detection
212140	Burner head MBF 816	56,6	5	16	Optical flame detection
212141	Burner head MBF 817	56,2	4	17	Optical flame detection
212142	Burner head MBF 818	55,8	4	18	Optical flame detection
212143	Burner head MBF 819	55,4	3	19	Optical flame detection
212144	Burner head MBF 822	54,1	2	22	Optical flame detection
212145	Burner head MBF 824	53,3	1	24	Optical flame detection
212146	Burner head MBF 815	57	5	15	
212147	Burner head MBF 816	56,6	5	16	
212148	Burner head MBF 817	56,2	4	17	
212149	Burner head MBF 818	55,8	4	18	
212150	Burner head MBF 819	55,4	3	19	
212151	Burner head MBF 822	54,1	2	22	
212152	Burner head MBF 824	53,3	1	24	

Adapter tubes MBF 800



Part-No.	Length (mm)	Rec.-slot (mm)	Inner flange Ø (mm)
212202	104	1	96,5
212203	134	1	96,5
212251	134	4	96,5

Other shapes and materials on request

Tube-Ø 80 x 1,5 mm
two-piece welded
Front tube material: 1.4841
Adapter tube material: 1.4301

Burner heads MBF 1000

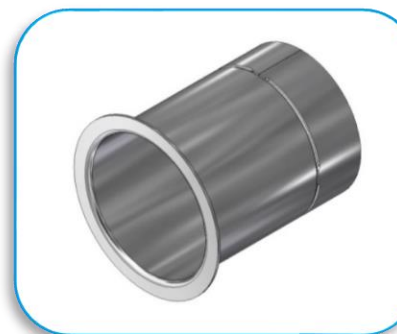
Burner power 45-150 kW



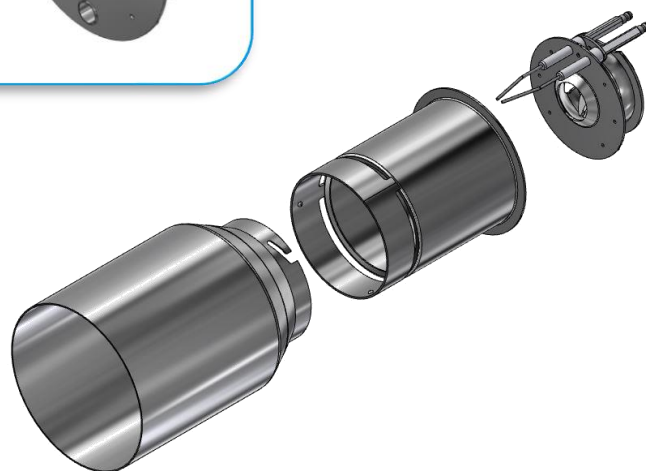
Burner heads
for adapter tube Ø 100 x 1,5 mm



Flame tubes
for adapter tube Ø 100 x 1,5 mm

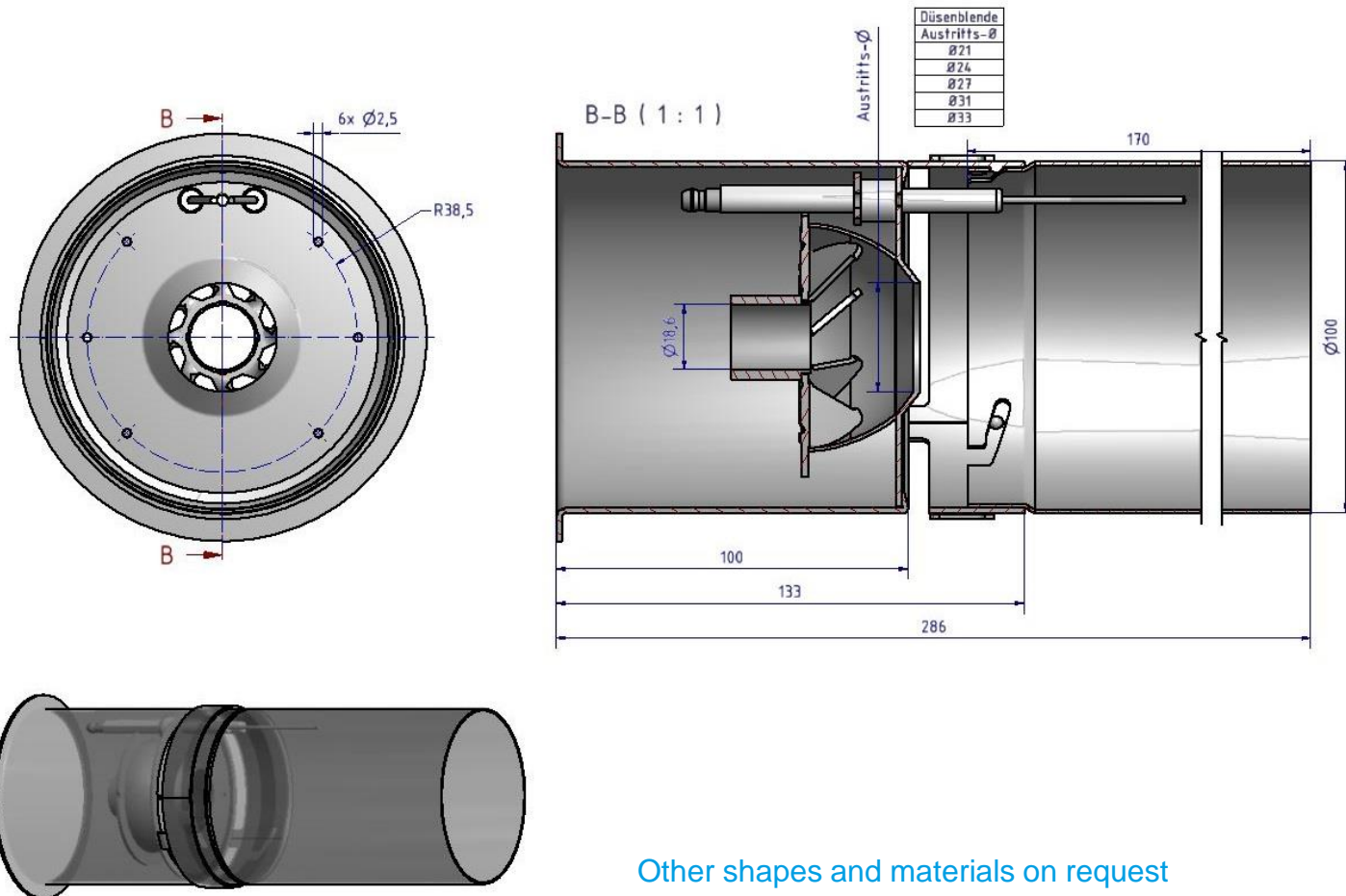


Adapter tube
Tube-Ø 100 x 1,5 mm



Performance data of the burner heads

Dimensions MBF-1000



Other shapes and materials on request

Burner heads MBF 1000



for adapter tube Ø 100 x 1,5 mm
Nozzle holder = Ø 18,6 mm

Part-No.	Description	Length without electrodes (mm)	Height air nozzle (mm)	Air nozzle Ø (mm)	Special features
212211	Burner head MBF 1021	58,6	10	21	Optical flame detection
212212	Burner head MBF 1024	57,3	9	24	Optical flame detection
212213	Burner head MBF 1027	56,1	8	27	Optical flame detection
212214	Burner head MBF 1031	53,9	5	31	Optical flame detection
212215	Burner head MBF 1031	53,9	5	31	Optical flame detection

Adapter tubes MBF 1000



Part-No.	Length (mm)	Rec.-slot (mm)	Inner flange Ø (mm)
212205	125	1	112,7
212206	125	2	112,7
212207	125	3	112,7
212208	125	4	112,7
212209	125	5	112,7
212210	125	6	112,7

Other shapes and materials on request

Tube-Ø 100 x 1,5 mm
two-piece welded
Front tube material: 1.4841
Adapter tube material: 1.4301

Flame tubes MBF 1000



Part-No.	Diameter (mm)	Length (mm)
113859	134 x 1,0	190

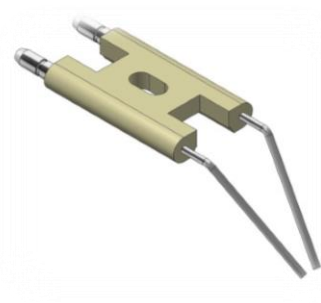
Other shapes and materials on request

For adapter tube Ø100x1,5 mm
Connection Ø 94,6 mm
Material: 2.4851 (Alloy 601)

MEKU burner and burner heads power range

Blue Flame (Low-NOx)												
Mixing Head	Burner Type	Ø Burner Tube (mm)	Ø Burner Tube (inch)	Ø Air Nozzle (mm)	Ø Air Nozzle (inch)	Wing angel (°)	Fuel mass flow (kg/h)	Fuel volume flow (Usgal/h)	Power (kW)	Power (BTU/h)	Power (HP)	Power (BHP)
MB(F) 816	L-max 80 or L-max 90	80	3,1496	16	0,62992	47 (40)	0,68 - 1,27	0,18 - 0,33	8 - 15	27.297 - 51.181	10,9 - 20,4	0,81 - 1,52
MB(F) 819	L-max 80 or L-max 90	80	3,1496	19	0,74803	47 (40)	1,10 - 1,60	0,29 - 0,42	13 - 19	44.357 - 64.830	17,7 - 25,8	1,32 - 1,94
MB(F) 821	L-max 80 or L-max 90	80	3,1496	21	0,82677	47 (40)	1,26 - 1,94	0,33 - 0,51	15 - 23	51.182 - 78.480	20,4 - 31,3	1,53 - 2,34
MB(F) 822	L-max 80 or L-max 90	80	3,1496	22	0,86614	47 (40)	1,43 - 1,94	0,38 - 0,51	17 - 23	58.006 - 78.480	23,1 - 31,3	1,73 - 2,34
MB(F) 823	L-max 80 or L-max 90	80	3,1496	23	0,90551	47 (40)	1,43 - 2,11	0,38 - 0,56	17 - 25	58.006 - 85.303	23,1 - 34,0	1,73 - 2,55
MB(F) 824	L-max 80 or L-max 90	80	3,1496	24	0,94468	47 (40)	1,70 - 2,26	0,45 - 0,62	20 - 28	68.243 - 95.540	27,2 - 38,0	2,04 - 2,85
MB 924	L-max 90	90	3,5433	24	0,94488	47	2,36 - 2,87	0,62 - 0,76	28 - 34	95.540 - 116.013	28,0 - 46,2	2,85 - 3,47
MB 927	L-max 90	90	3,5433	27	1,06299	47	2,69 - 3,62	0,71 - 0,96	32 - 43	109.188 - 146.722	43,5 - 58,5	3,26 - 4,38
MB 929	L-max 90	90	3,5433	29	1,14173	47	3,20 - 5,10	0,85 - 1,33	38 - 60	129.661 - 204.728	51,7 - 81,6	3,87 - 6,12
MBK 924	L-max 90	90	3,5433	24	0,94488	57,6	3,20 - 3,88	0,85 - 1,02	38 - 46	129.661 - 156.958	51,7 - 62,6	3,87 - 4,69
MBK 927	L-max 90	90	3,5433	27	1,06299	57,6	3,96 - 4,63	1,02 - 1,22	46 - 55	156.958 - 187.668	62,6 - 74,8	4,69 - 5,61
MBK 929	L-max 90	90	3,5433	29	1,14173	57,6	4,72 - 5,23	1,22 - 1,38	55 - 62	187.668 - 211.553	74,8 - 84,3	5,61 - 6,32
MBK 931	L-max 90	90	3,5433	31	1,22047	57,6	5,31 - 5,82	1,38 - 1,54	62 - 69	211.553 - 235.437	84,3 - 93,8	6,32 - 7,03
MBK 933	-	90	3,5433	33	1,29921	57,6	5,90 - 6,66	1,56 - 1,76	70 - 79	238.850 - 269.559	95,2 - 107,4	7,13 - 8,05
MBF 1028	-	100	3,937	28	1,10236	40	3,96 - 5,32	1,02 - 1,38	46 - 62	156.958 - 211.553	62,6 - 84,3	4,69 - 6,32
MBF 1030	-	100	3,937	30	1,1811	40	5,31 - 7,10	1,38 - 1,87	62 - 84	211.553 - 286.620	84,3 - 114,2	6,32 - 8,56
MBF 1033	-	100	3,937	33	1,29921	40	6,66 - 8,78	1,76 - 2,317	79 - 104	269.559 - 354.863	107,4 - 141,4	8,05 - 10,60
Yellow Flame												
Mixing Head	Burner Type	Ø Burner Tube (mm)	Ø Burner Tube (inch)	Ø Swirl Disk (mm)	Ø Swirl Disk (inch)	Number of Slots	Fuel mass flow (kg/h)	Fuel volume flow (Usgal/h)	Power (kW)	Power (BTU/h)	Power (HP)	Power (BHP)
Standard	L-max 80 or L-max 90	80	3,1496	64	2,51968	4 - 6	1,10 - 4,0	0,29 - 1,07	13 - 48	44.357 - 163.783	17,7 - 65,2	1,32 - 4,89
Standard	L-max 90	80	3,1496	64	2,51968	8	2,69 - 5,23	0,71 - 1,83	32 - 62	109.188 - 211.553	43,5 - 84,3	3,26 - 6,32
Standard	L-max 90	80	3,1496	64	2,51968	12	2,7 - 6,0	0,74 - 1,58	33 - 71	112.600 - 242.262	44,9 - 96,6	3,36 - 7,24
Standard	L-max 90	90	3,5433	75	2,95275	4 - 6 - 8	3,5 - 8,5	0,91 - 2,3	41 - 101	139.898 - 344.626	55,8 - 137,4	4,18 - 10,30
Standard	-	100	3,937	80	3,1496	4 - 6 - 8	4,0 - 12	1,05 - 3,16	47 - 142	160.371 - 484.524	64,0 - 193,1	4,79 - 14,47
TriNoX (LowNOx)	like standard minus 10% power											

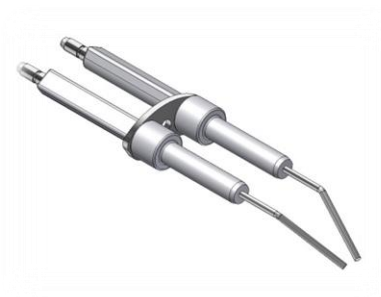
Double-electrodes for yellow flame



Ceramic body: KER 221 Sondersteatit
Wire: Kanthal Cr Al 25 5

Part-No.	Connector Ø (mm)	Wire-Ø (mm)
189200	4,0	1,7
195163	4,0	1,2
189201	6,3	1,7
195164	6,3	1,2

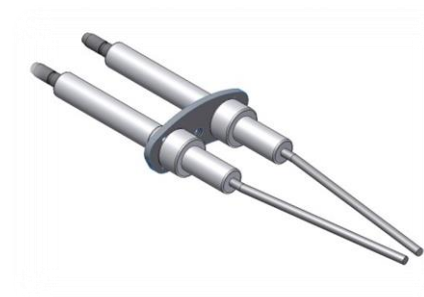
Ignition electrodes for MB-Systems



Ceramic body: Al₂O₃ (95%)
Wire: Kanthal Cr Al 25 5

for MB	Part-No.	Connector Ø (mm)
MB 800	198140	4,0
MB 800	198141	6,3
MB 900	198142	4,0
MB 900	198143	6,3

Ignition electrodes for MBK-Systems



Ceramic body: Al₂O₃ (95%)
Wire: Kanthal 1

for MBK	Part-No.	Connector Ø (mm)
MBK 900	207125	4,0
MBK 900	207126	6,3

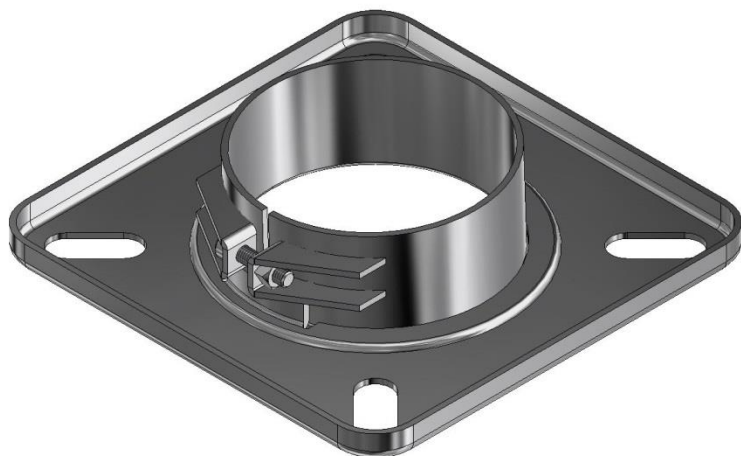
Combustion chambers for boilers



Combustion chambers are made from all heat-resistant stainless steels up to a sheet thickness of 2 mm. The dimensioning depends on the request of the boiler geometry.

Diameter up to 400 mm and lengths up to 600 mm are available

Boiler flanges

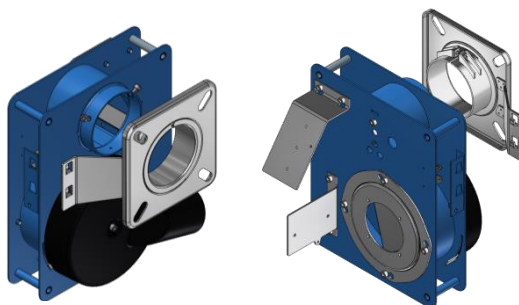


Edge dimensions 153 x 153 mm
Long hole pitch circle diameter Ø 140 -172 mm
Fixing screws max. M10
Fully galvanized

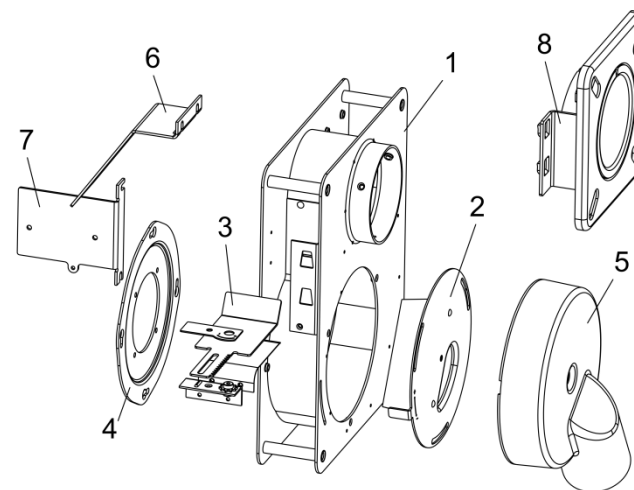
Part-No.	Flame tube-Ø (mm)	inclination angle (Grad)
193178	80	0°
193009	80	2°
197006	90	0°
193010	90	2°
194030	90	4°
193180	100	2°

L-max burner chassis

- The MEKU L-max main components can be delivered in separate parts or as a completed assembly
- The fan wheel, the burner heads, the flame tubes and the nozzle holder with oil preheater are optional parts
- The fuel pump, the fan motor, the controls, the wiring, the igniter and the flame scanner should be selected and ordered by the costumer
- We suggest the BST KLC 2002 flame scanner for the blue flame application



L-max 90



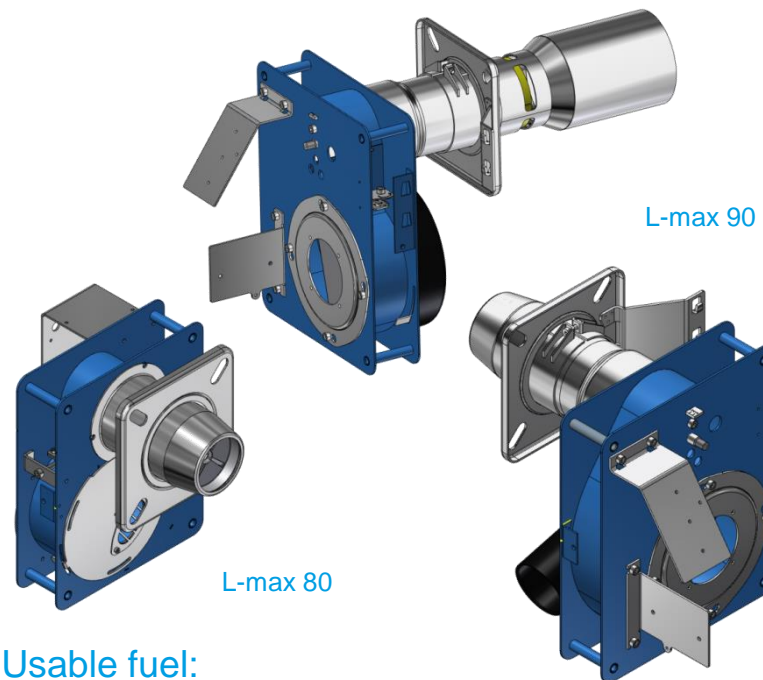
Pos.	Part-No.	Description
1	201025	Burner chassis, powder coated
2	201052	Air control plate, galvanized
3	201065	Air slide, galvanized
4	201027	Motor flange, galvanized
5	203070	Silencer
6	201028	Relay angel, galvanized
7	201026	Transformer angle, galvanized
8	201085	Boiler flange Ø80 with service holder, galvanized

L-max burner

The MEKU L-max are very compact, highly efficient, low-emission combustion systems for liquid fuels, which can work as Low-NOx yellow flame or blue flame burners.

Benefits at a glance:

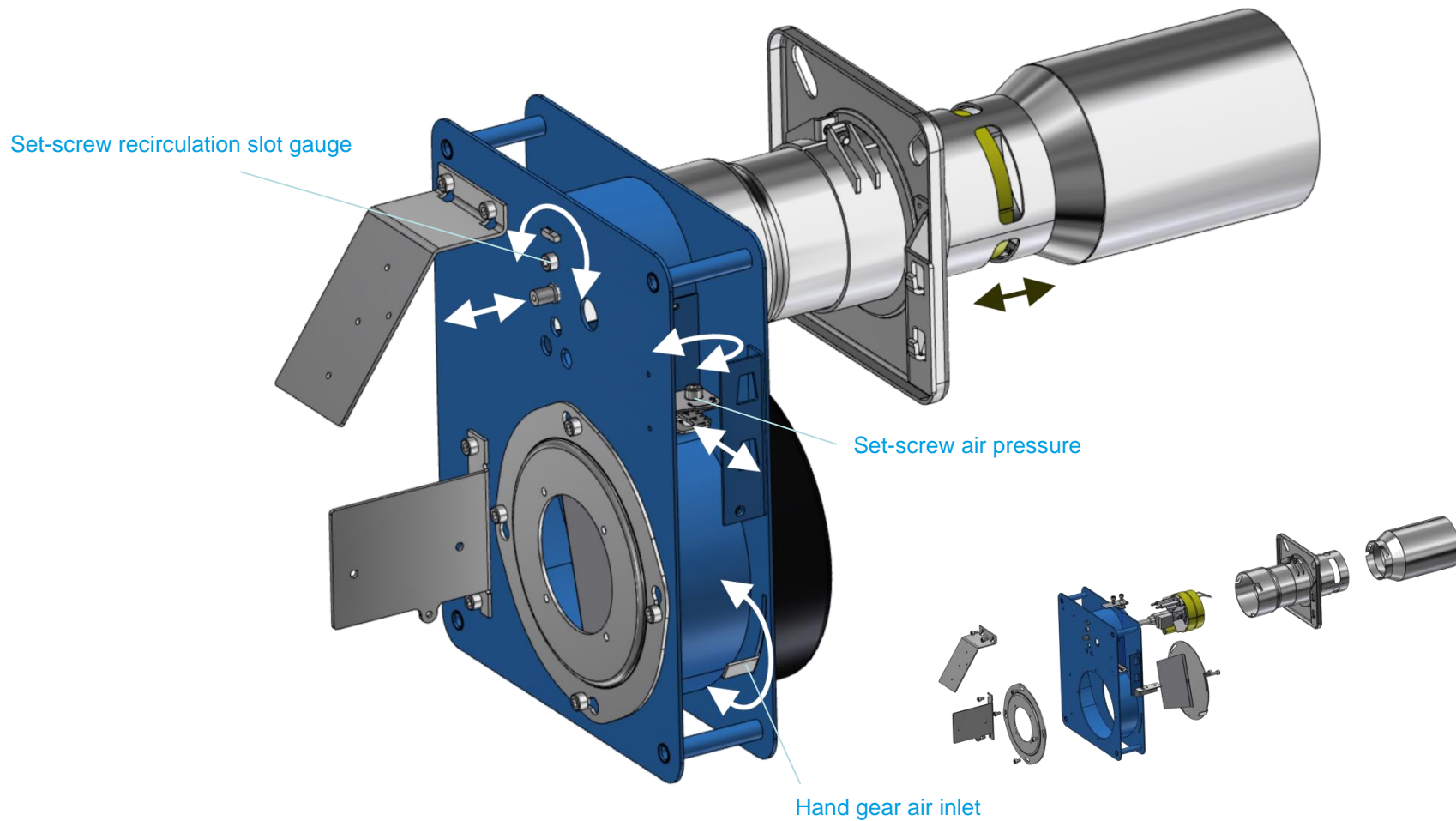
- Proven system with compact dimensions
- Applicable as blue or yellow flame burner
- Unique and variable design
- Soot free blue flame combustion
- Easy mounting of attached parts
- Powerful fan with high air pressure
- Balanced flue gas adapter with silencer (L-max 90)
- Different colors possible
- Ready for Bio-Oil



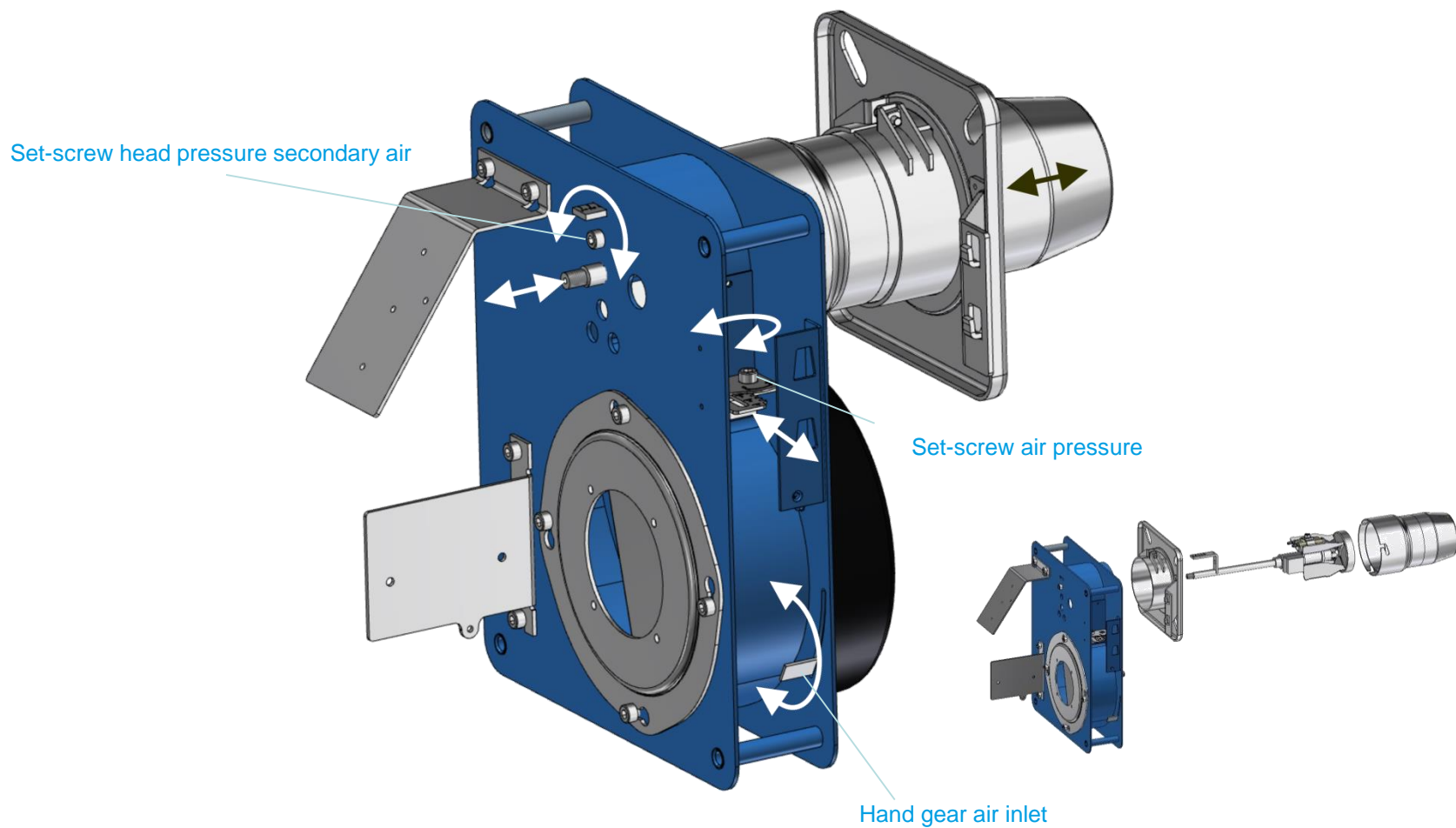
Usable fuel:

- Domestic light fuel oil
- Diesel
- Kerosine
- Bio-Oil or Bio-Oil blends (with modified oil pre-heater)
- FAME (Fatty Acid Methyl Ester)

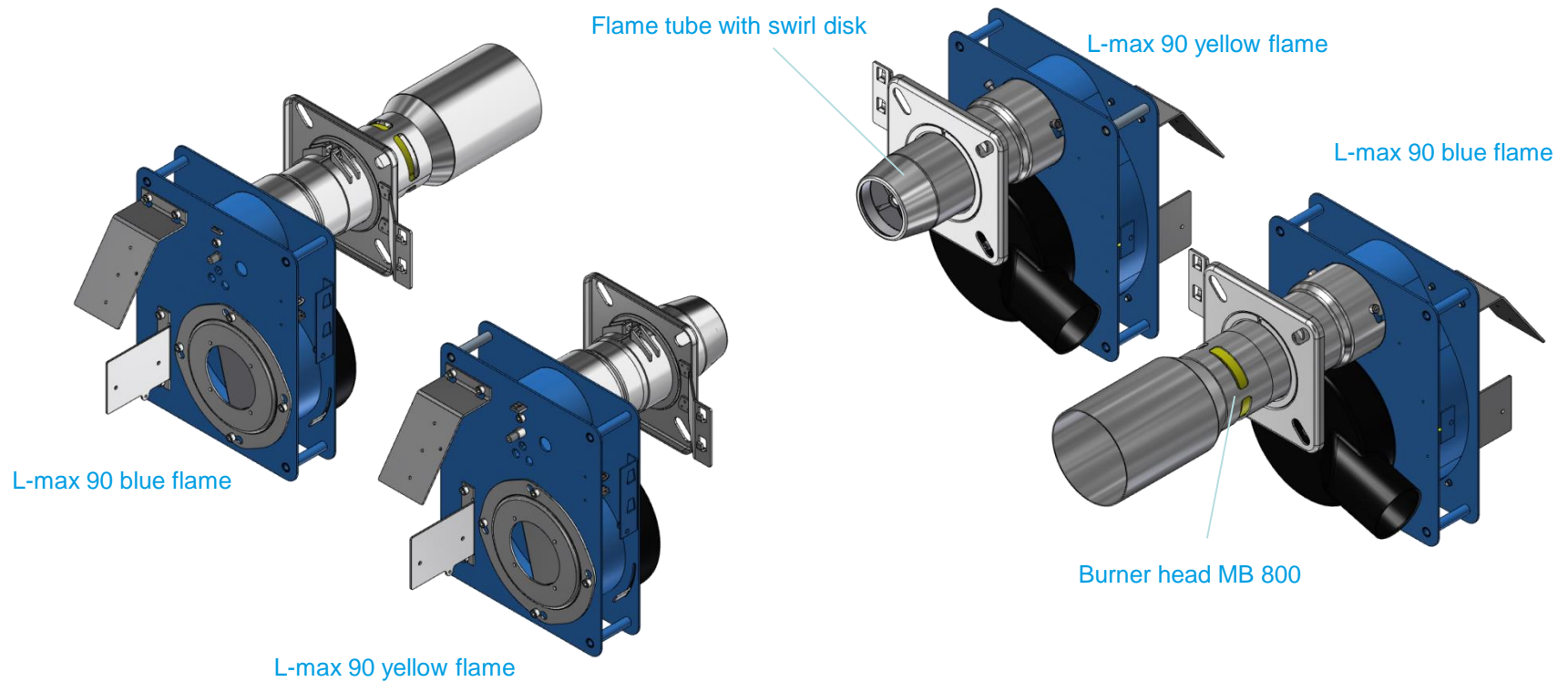
L-max burner operation blue flame



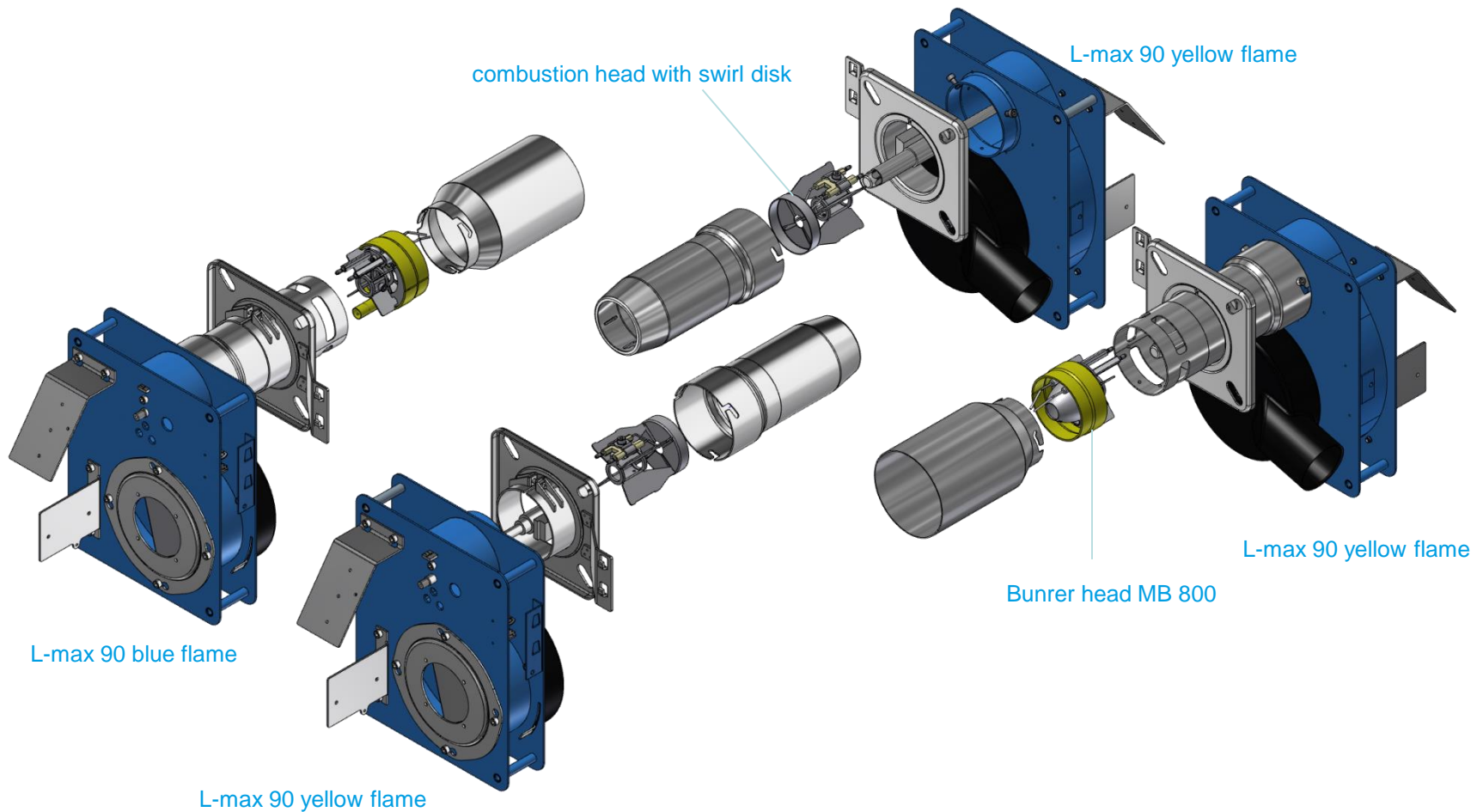
L-max burner operation yellow flame



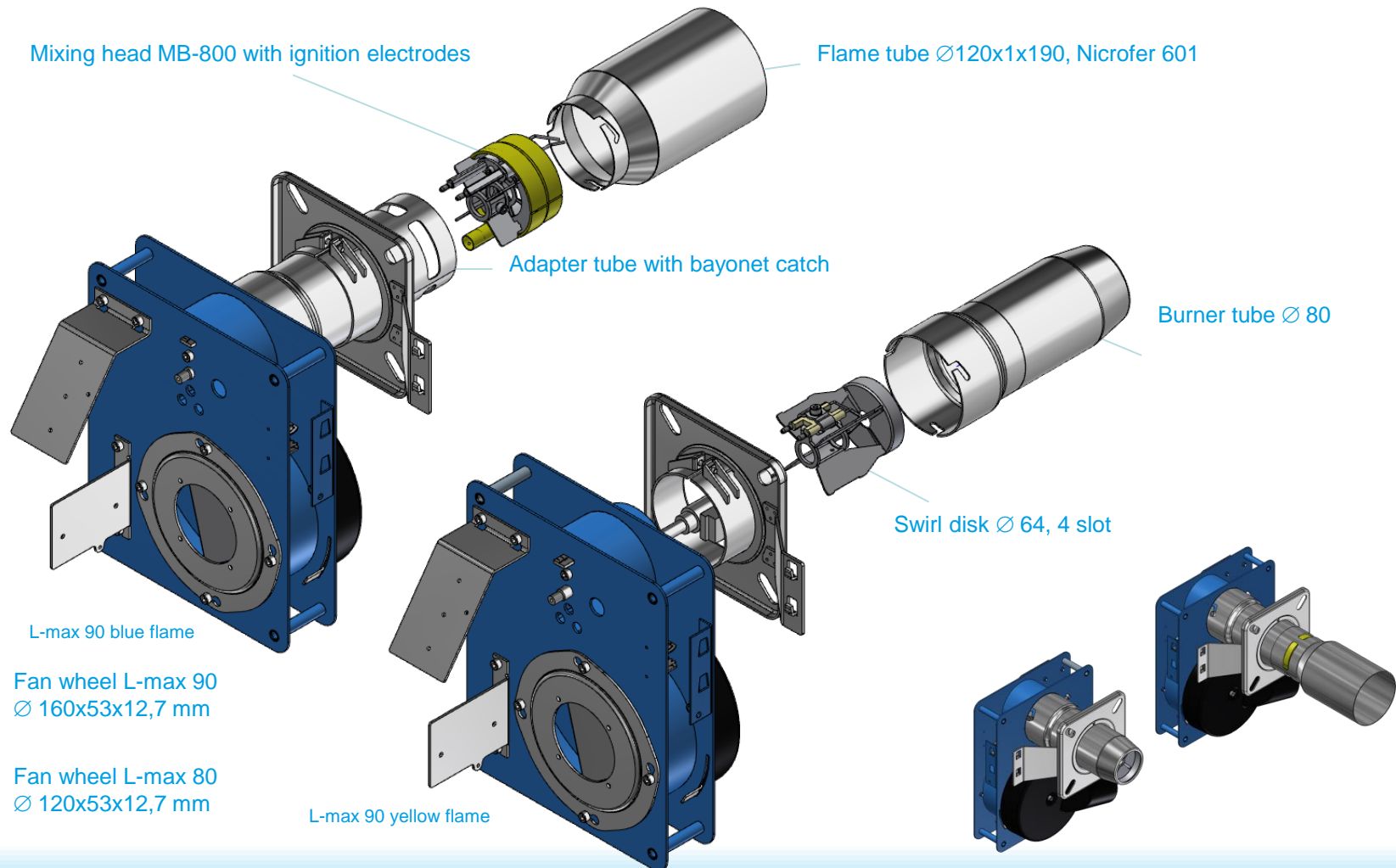
L-max burner chassis with combustion heads



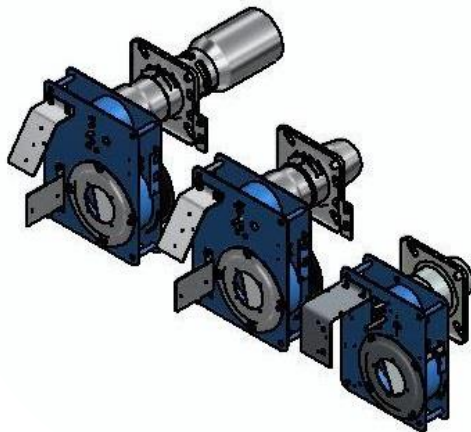
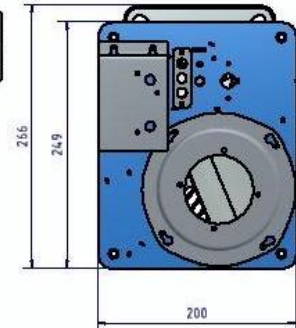
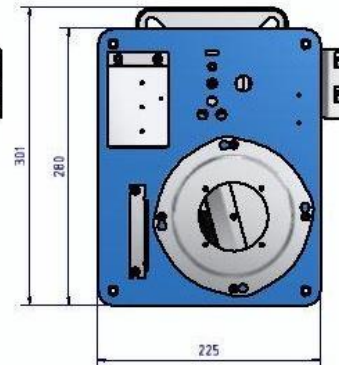
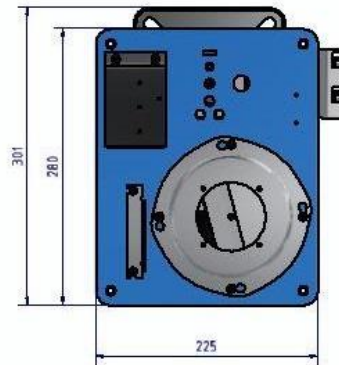
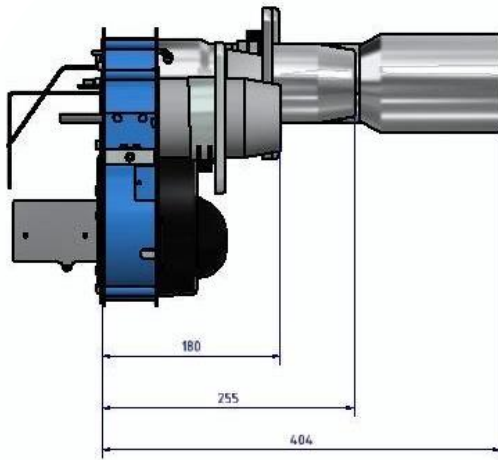
L-max burner chassis with combustion heads



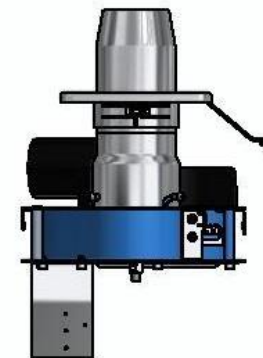
L-max Burner chassis with different combustion heads



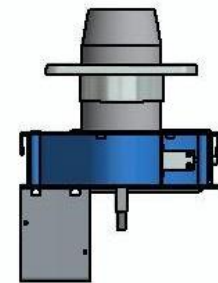
L-max burner dimensions



L-max 90 Blaubrenner

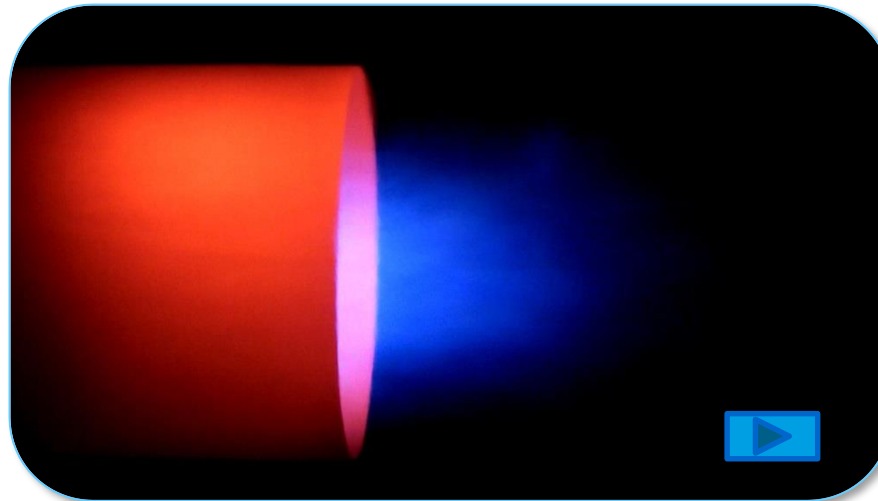


L-max 90 Gelbbrenner

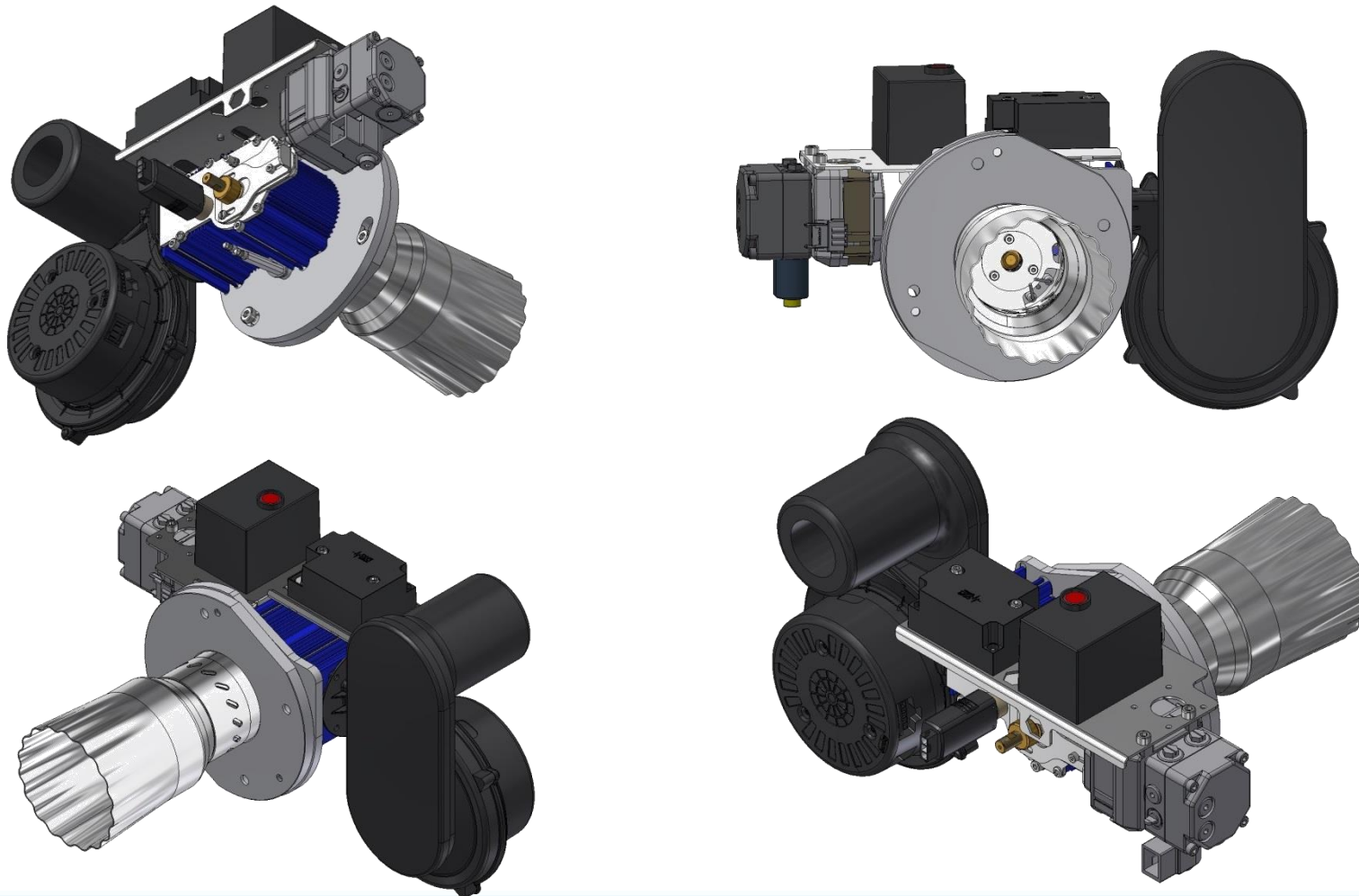


L-max 80 Gelbbrenner

Movie L-max



Modulating blue flame burner with pre-spin combustion air system



Main features of the blue flame system

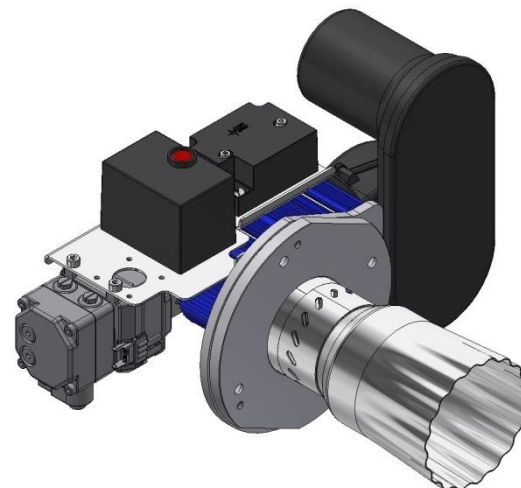
- The geometry of the blower air duct enables pressure-stable pre-twisting of the combustion air with a low pressure loss and low-noise inflow to the air nozzle
- The angled and tangentially positioned recirculation slots ensure optimum inflow of the exhaust gases
The recirculation adjustment is radial and is possible during burner operation (fixed adjustment on units)
- Axial adjustment of the fuel nozzle to the air nozzle enables adjustment of NOx and noise emissions and, in addition to adjusting the fan speed, is used to set the mixing pressure according to the respective requirements of the boiler and the exhaust gas path (fixed adjustment on units)
- The system is optimized for the use of PWM-controlled combustion air fans. Due to the optimized blower characteristic, the fan type HRG 134 from EBM-Papst is particularly recommended
- The fuel is preferably supplied by a fuel pump with a wide, infinitely variable pressure range (2 to >30 bar)
- Flame monitoring can be done either by flicker detectors (optical monitoring, BST KLC-2002) or ionization monitoring

Modulating blue flame burner with pre-spin combustion air system

The MEKU modulating blue flame burner system is a very compact, highly efficient, low-emission combustion systems for liquid fuels, which can operate as a modulating or two-stage Low-NOx blue flame burner.

Benefits at a glance:

- Very compact dimensions
- Modulation ratio 1:3
- Easy to maintain
- NOx-emission less than 50 ppm
- Unique and variable design
- Soot free blue flame combustion
- Easy mounting of attached parts
- Easy and quick disassembly for nozzle replacement in less than one minute
- Powerful fan with high air pressure
- Different colors possible
- Ready for Bio-Oil



Usable fuel:

- Domestic light fuel oil
- Diesel
- Kerosine
- HVO
- Bio-Oil or Bio-Oil blends (with modified oil pre-heater)
- FAME (Fatty Acid Methyl Ester)

Advantages of the blue flame system

- The homogeneous and gas flame-like combustion enables a particularly low-pollution and clean combustion (< 1 ppm CO)
- Optimized fuel-air mixing enables a very small burner capacity (6 KW) with conventional oil nozzles and low oil pressures
- Low NOx emission < 50 mg/kWh. (Under optimal operating conditions, NOx emission can be reduced to less than 40 mg/kWh)
- Easy and quick disassembly for nozzle replacement in less than one minute
- The external arrangement of the ignition electrodes also allows them to be changed in less than a minute
- Stable flame formation allows for wide power modulation and good cold start performance at high recirculation rates
- The use of industry-standard components simplifies customer service for the craftsman and minimizes staff training requirements
- The compact dimensions allow optimal integration of the system into modern condensing boilers
- Noise emissions can be significantly reduced due to combustion air guidance and the innovative mixing head design

Sectional views of the modulating blue flame burner

Fan with PWM-control

Fuel nozzle

Radial recirculation adjustment

Flame tube

Air nozzle

Optical flame scanner
BST-KLC-2002

Axially adjustable nozzle holder

Air channel with tangential air flow

Gear pump with
PWM controlled
permanent magnet motor

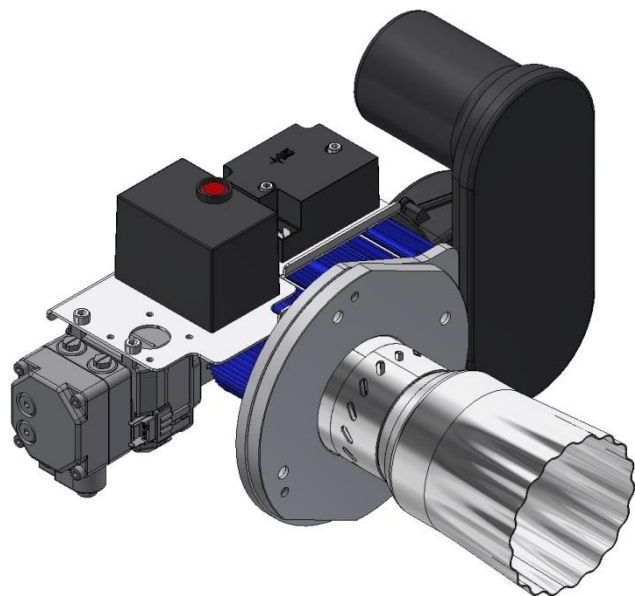
Tangential air inlet

Solenoid valve

Ignition electrodes

Service slider with screw guide

Power range modulating blue flame burner



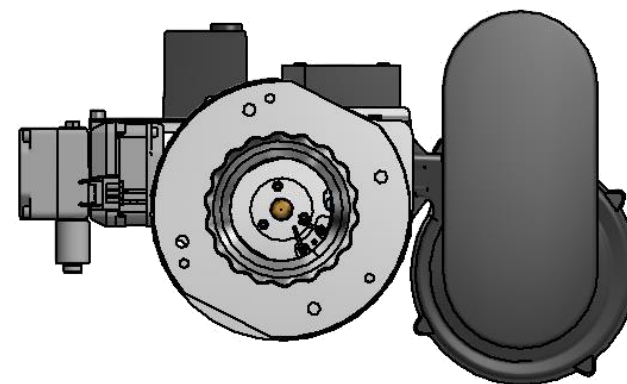
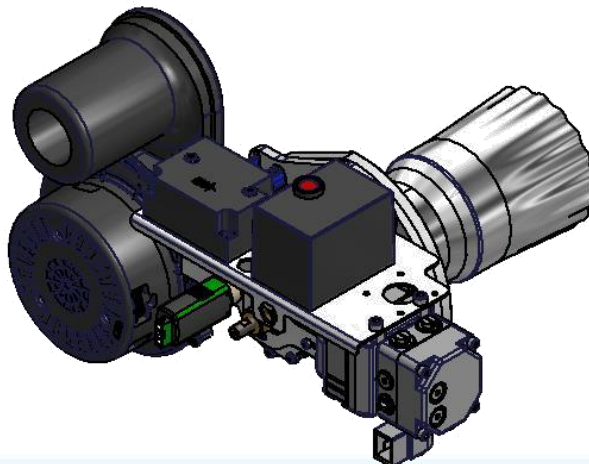
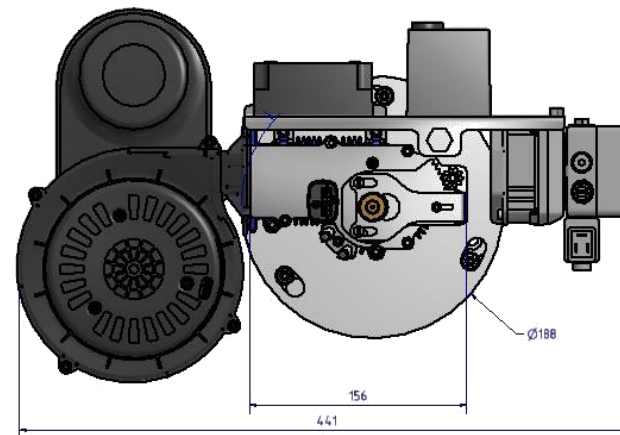
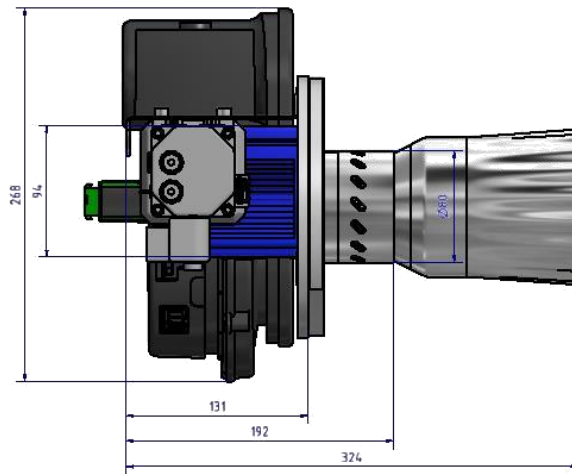
The most important European burner and boiler manufacturers trust in the MEKU spin-stabilized blue flame systems since two decades

Modulating burners will be part of the next generation of modern high efficient domestic heating systems

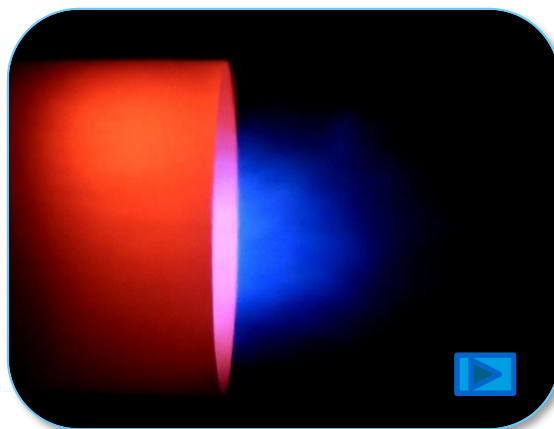
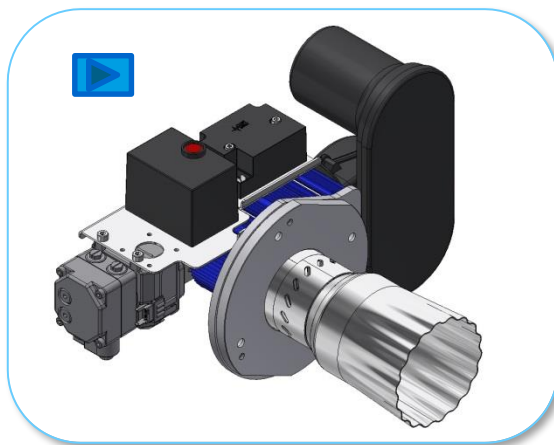
Power range modulating blue flame burner

Power range 1				
P_{min1}	7 kW	0,59 kg/h	0,70 l/h	0,18 USGal/h
P_{max1}	20 kW	1,69 kg/h	2,01 l/h	0,52 USGal/h
Power range 2				
P_{min1}	10 kW	0,93 kg/h	1,10 l/h	0,24 USGal/h
P_{max1}	29 kW	2,53 kg/h	3,02 l/h	0,79 USGal/h

Dimensions modulating blue flame burner



Movies modulating blue flame burner



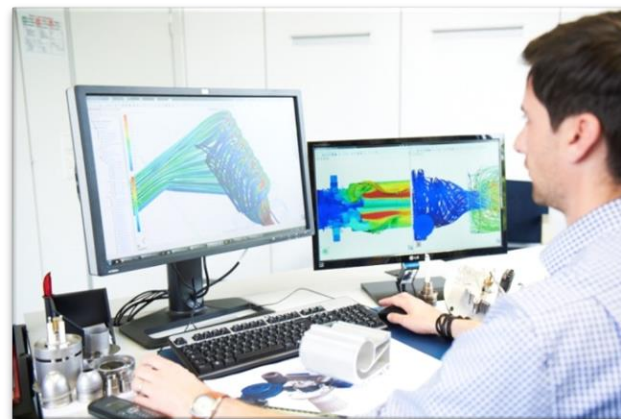
Innovative products for the efficient use of biogenic and fossil liquid fuels at the lowest emission level

The MEKU engineers and technicians design and test modern combustion, always looking for new ideas to realize a balanced combustion process. Leading burner manufacturers today use our experience in designing and implementing their specific solutions.

Therefore MEKU develops their products by means of modern 3D-CAD, CFD and CAM systems.

We are able to produce the prototypes and samples in our own tool and test the samples in our lab in a short period of time.

MEKU makes an active contribution to reducing harmful CO₂ emissions, because only the soot-free blue flame technology allows to realize the highly efficient, fuel-saving condensing technology with liquid fuels.



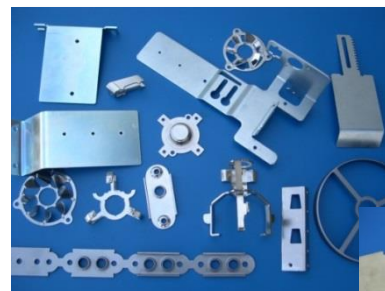
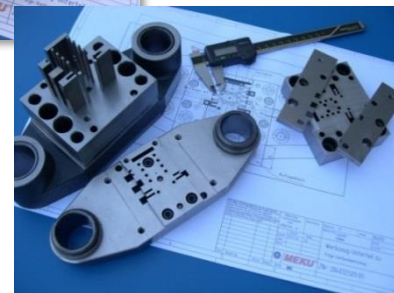
The tool shop

We are able to produce our tools and devices by means of modern CNC- machines like:

- CNC milling machines
- CNC turning centers
- CNC eroding machines
- CNC laser cutter
- CNC laser welding machines
- CNC bending machines
- CNC punching machines

We develop all of the necessary production tools for our internal and as well for the external customer demand:

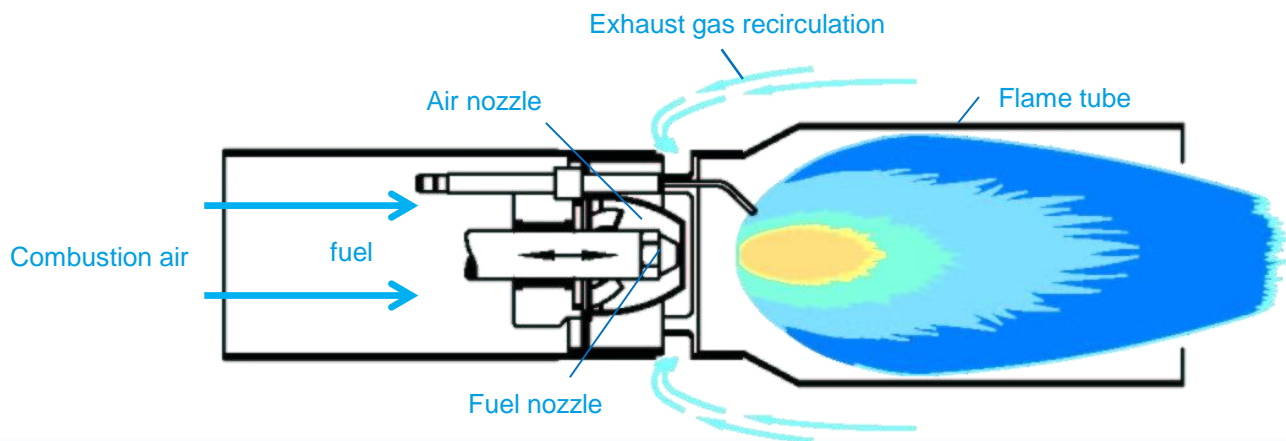
- Stamping and bending tools
- Forming tools
- Progressive dies
- Drilling and tapping devices
- Electric resistance and laser welding equipment
- Beading tools
- Mounting devices
- Individual manufacturing tools



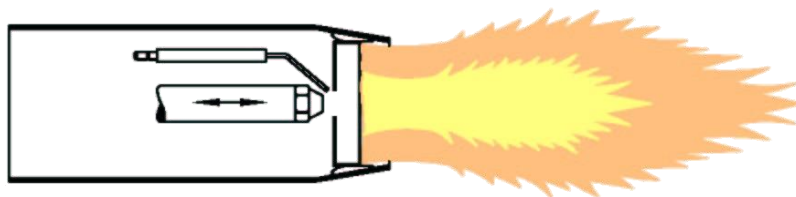
The spin and flame tube stabilized MEKU blue flame system

The main features of the MEKU system:

- Homogeneous and flame-like burning with very low emissions
- Clean and soot free combustion (< 10 ppm CO)
- Optimal fuel air mixture formation with standard fuel nozzles
- Very low NO_x- emissions < 40 ppm
- Stable blue flame and good cold start behavior
- Wide modulation range
- Compact dimensions for optimal integration into modern condensing and non condensing boilers

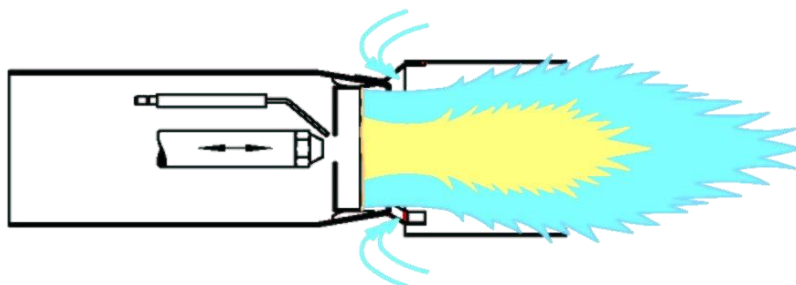


Different combustion systems for liquid fuels



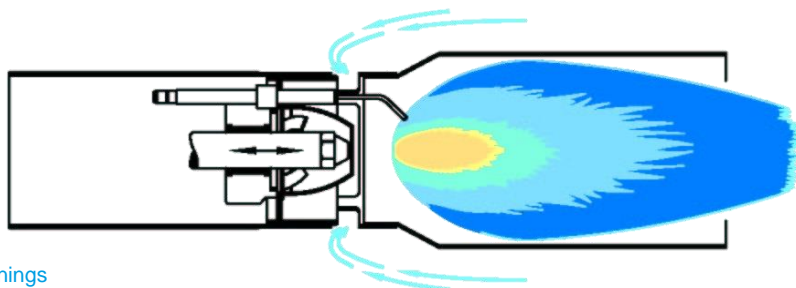
Swirl disk stabilized standard yellow flame system

- Low soot
- Low CO (40-100 ppm)
- High NOx (60-100 ppm)
- Low air pressure (0,015-0,045 psi)
- Low fuel pressure (90-175 psi)
- Medium CO2 stability
- In countries with more stringent emission standard not permitted



Swirl disk stabilized Low-NOx yellow flame system

- Low soot
- Low CO (20-80 ppm)
- Medium NOx (50-70 ppm)
- Medium air pressure (0,03-0,06 psi)
- Medium fuel pressure (145-200 psi)
- Medium CO2 stability
- In countries with high stringent emission standard not permitted



Swirl nozzle and flame tube stabilized Low-NOx blue flame system (MB(x)) with flue gas recirculation

- No soot
- Very Low CO (0-20 ppm)
- Very Low NOx (20-50 ppm)
- High air pressure (0,1-0,45 psi)
- High fuel pressure (90-435 psi)
- High CO2 stability
- In all countries with high stringent emission standard permitted

Combustion air openings

Different combustion systems for liquid fuels



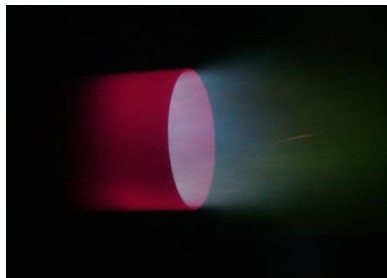
Standard yellow flame burner

- Large flame length
- High flame core temperature
- High NO_x level



Low-NO_x Burner Yellow (air staging)

- Constricted flame
- Medium flame length
- Yellow flame with blue strings
- Medium NO_x level

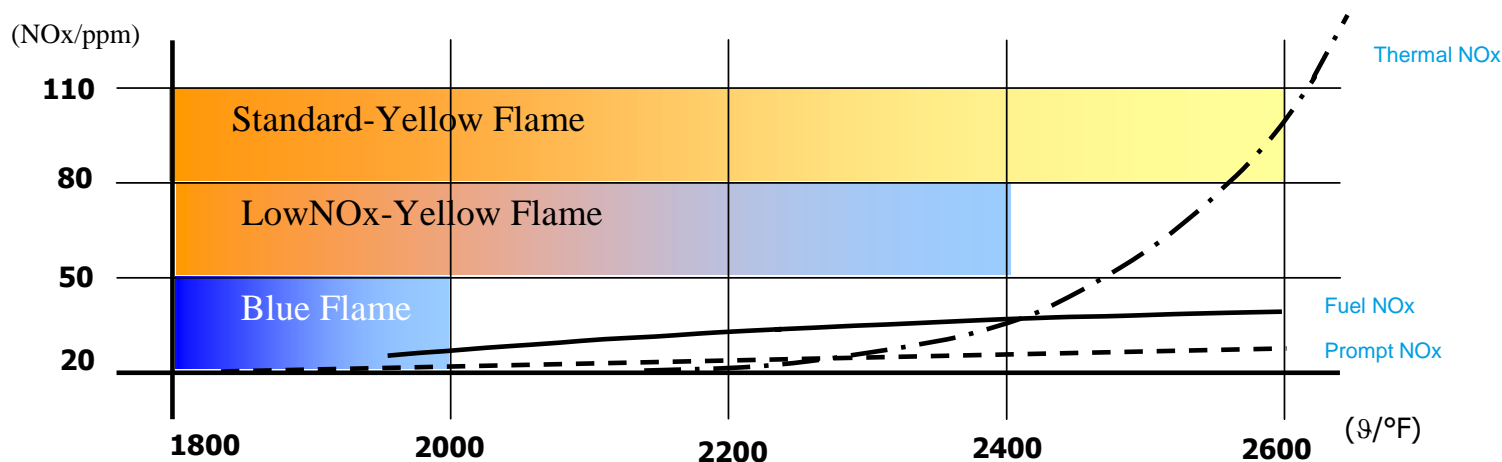


Blue flame burner with flue gas recirculation

- Blue flame
- Gasification of the fuel
- Short flame length
- Low-NO_x level

Thermal NO_x- Emissions

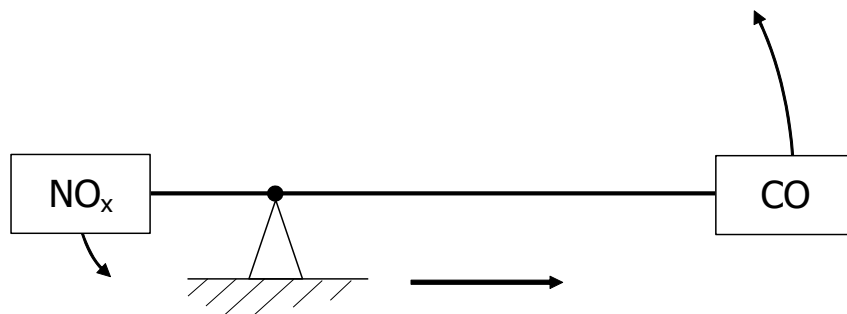
The thermal NO_x synthesis is subject to a complex reaction mechanism, the reaction rate at combustion temperatures above 2400 ° F increases sharply



- The formation of thermal NO_x increases exponentially with increasing temperature which is proportional to the concentration of atomic oxygen and depends on the residence time in the hot flame and gas zones
- Fuel NO_x synthesis starts at 1500 ° F and is only slightly dependent on temperature

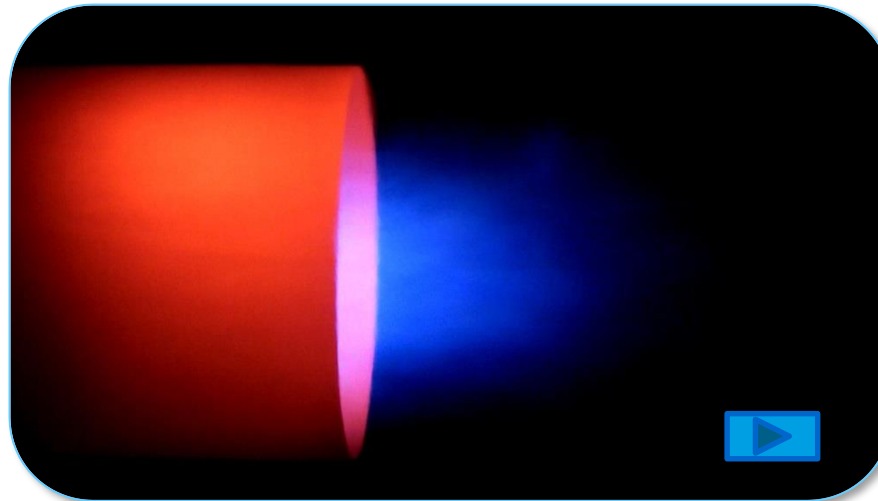
Thermal Nox- Reduction

NO_x reduction by lowering the flame temperature with the related effects on the development of CO



The requirement for a CO-free combustion is the demand for low NO_x emissions in opposite direction.

Company movie





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