

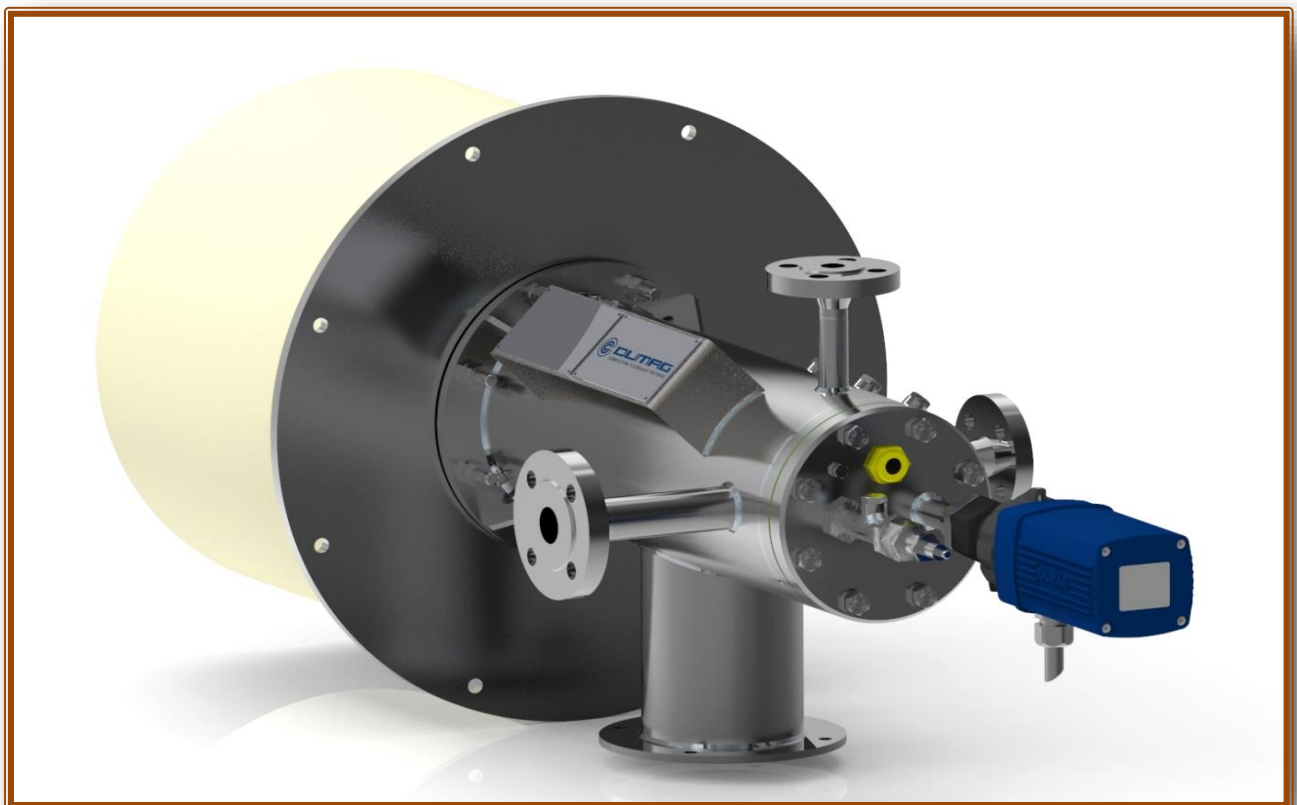
DUMAG® - Multifuel Burner MFB

Multi-fuel burner for fuel gas, fuel oil, waste gas, waste oil

MFB350 ... 350kW	MFB700 ... 700kW
MFB1200 ... 1200kW	MFB2000 ... 2000kW
MFB3000 ... 3000kW	MFB4000 ... 4000kW
MFB5000 ... 5000kW	MFB6000 ... 6000kW

Multifuel Burner MFB for

- Fuel gas**
- Fuel gas / Waste Gas**
- Fuel gas / Fuel oil**
- Fuel gas / Waste liquid**
- Fuel oil / Ignition gas**



**General
Assembly
Description**

**Rules and Regulations
Certificates
Dimensional Drawing
Materials**

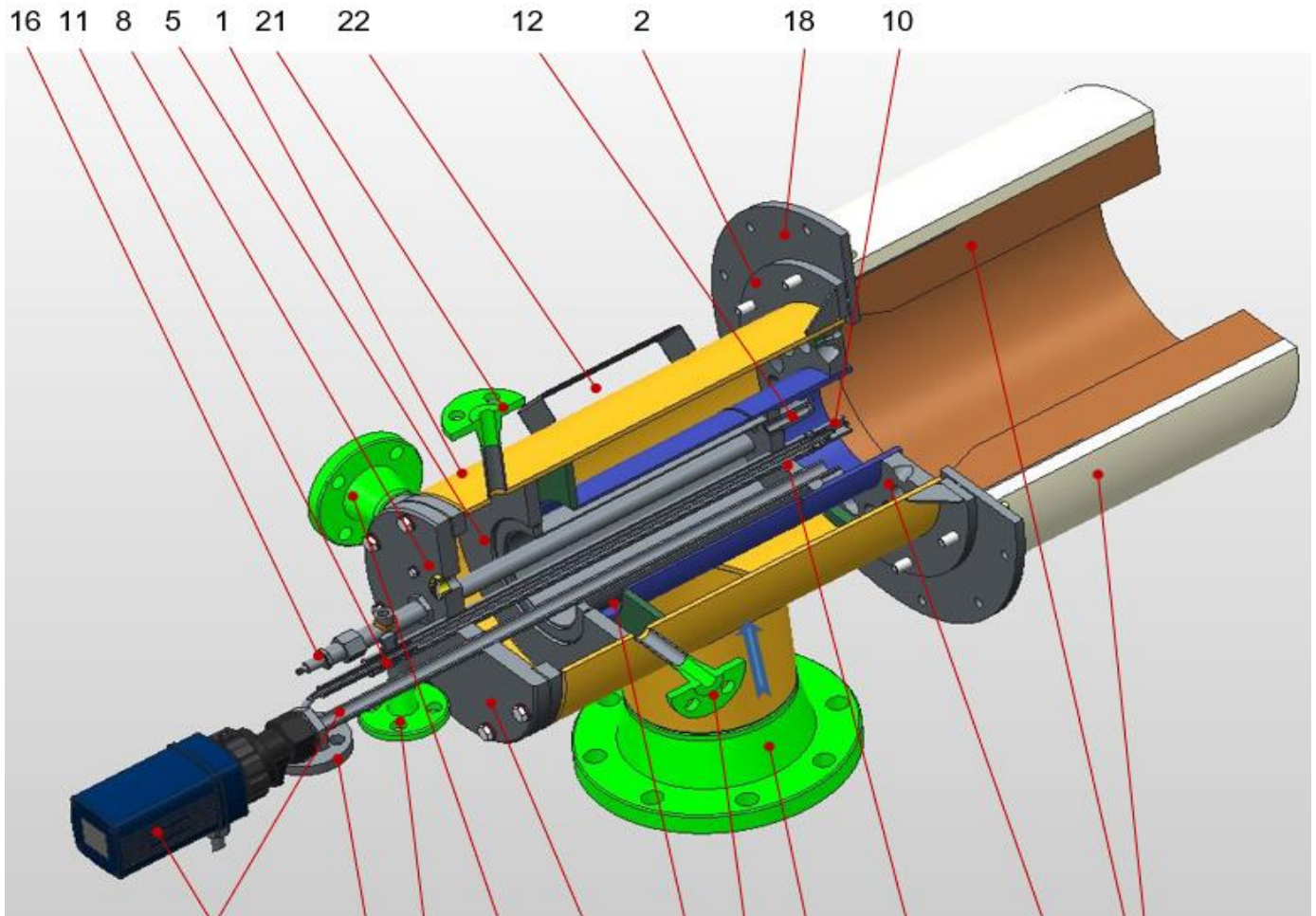
Data sheet

General:

The Multifuel Burner is a burner that can burn one or two liquid or gaseous fuels or waste materials. These fuels, when burned independently, can be burned individually or jointly.

Eight burner sizes with 350 kW, 700 kW, 1200 kW, 2000 kW, 3000 kW, 4000 kW, 5000 kW, 6000 kW
 Due to the high control range for gas 1:20 (liquid 1:5) is a wide range of applications available.

Assembly



- | | |
|--|--|
| <ul style="list-style-type: none"> 1 Burner unit 2 Burner flange 3, 3a Burner block, ceramic fibre 4 Burner plate with flame scanner [9] and ignition 5 Gas supply chamber for fuel gas 1 + connection for ignition gas [20] (if necessary) 6 Fuel oil od waste liquid (or gas 2 without connection for atomizer [7]) 7 Atomizer (only lance for liquids) 8 Sight port (not shown) 9 Flame scanner and tube for flame scanner 10 DUMAG®-Ultrasonic Nozzle for liquids (or gas 2 outlet) 11 Lance LS.. (liquids) or GE (gas 2) | <ul style="list-style-type: none"> 12 Gas nozzle (for gas 1) 13 Swirl body, exchangeable (various swirl rates) 14 Ignition air supply 15 Combustion air supply, connection via elastic link, EN- or ANSI-flange 16 Ignition electrode 17 Interior part with gas nozzle bracket (for gas 1) 18 Burner brick flange 19 Connection fuel gas 1 20 Connection ignition air 21 Connection ignition gas (if necessary) 22 Ignition transformer (not shown, optional) |
|--|--|

Data sheet

Description

The DUMAG® Multifuel Burner MFB is a burner for following fuel combinations:

- fuel gas (gas 1)
- fuel gas (gas 1) and/or waste gas (gas 2)
- fuel oil and/or fuel gas or waste gas
- fuel gas (gas 1) and/or waste liquid
- fuel oil and ignition gas

Notice:

- instead of fuel gas or fuel oil alternative gas or alternative oil can be used (self burning)
- instead of fuel gas or fuel oil waste gas or waste liquid can be used. If these substances have a low LHV, then a supplementary fuel must simultaneously be in operation.

Control range:

Control range of gas = 1:20.

Control range of liquid = 1:5 (if larger control range is necessary -> consult DUMAG).

Atomizing liquids [6]:

For the combustion of the fuel oil or liquid waste DUMAG® - Ultrasonic Nozzles GS [10] and lances LS [11] are used. It is therefore necessary to take for atomizing air or steam [7].

Combustion air [15]:

The combustion air is swirled by a swirl disc [13].

This swirl disc is exchangeable. There are swirl disks with different swirl rates available

The combustion air may be preheated up to 200°C, in special design up to 400 °C. It is, however, paying attention to that correspondingly with the increase in combustion air temperature performance of the burner is reduced.

Ignition [4]:

The ignition of the burner happens in all applications with gas [21].

In case of combustion liquids, therefore a gas supply is required. Ignition of the gas by high voltage ignition

Burner block [3], 2 versions:

- Burner block delivered by client according DUMAG design (Standard)
- Burner block [3, 3a] tailored to the particular burner (optional). This burner block is to attach to the burner and is therefore easily replaceable. The ceramic fibre [3a] fills the gap between burner block [3] and opening in the combustion chamber. It also evens out irregularities in the gap and prevents radiation reflection onto the burner plate [2].

Ask DUMAG for the data sheets for the burner blocks for the different applications.

Design data:

Natural gas = Gas1	Differential pressure to the combustion chamber at connection flange "G1"	50 mbar
Combustion air:	Differential pressure to the combustion chamber at connection flange "CA"	60 mbar
Ignition:	at 15 to 25% of max burner capacity	
Ignition air pressure:	constantly ignition air during operation of the burner	10 - 20 mbar

Design for flow rate data as indicated in the tables below.

Data sheet

Exempel: MFB700G for temperature control in the combustion chamber with multiple - waste gas/air incineration

**Rules and Regulations**

There are to observe the legal rules and regulations for the operation of a burner.

for example:

EN 746-2 Industrial thermoprocessing equipment - Safety requirements for combustion and fuel handling systems

EN 12952-8 2002 and EN 12952-16 2002: Water-tube boilers and auxiliary installations

Certificates

ISO9001, EAC (Euroasian Conformity)

Products constructed according to European or American standards and laws/quality certificates.

Materials

- Burner housing: Standard 1.4571 or 1.4404 (AISI316L/AISI316Ti),
upon request P265GH or other materials.

- Burner lance: Standard 1.4571 or 1.4404 (AISI316L/AISI316Ti),
upon request Hastelloy or others.

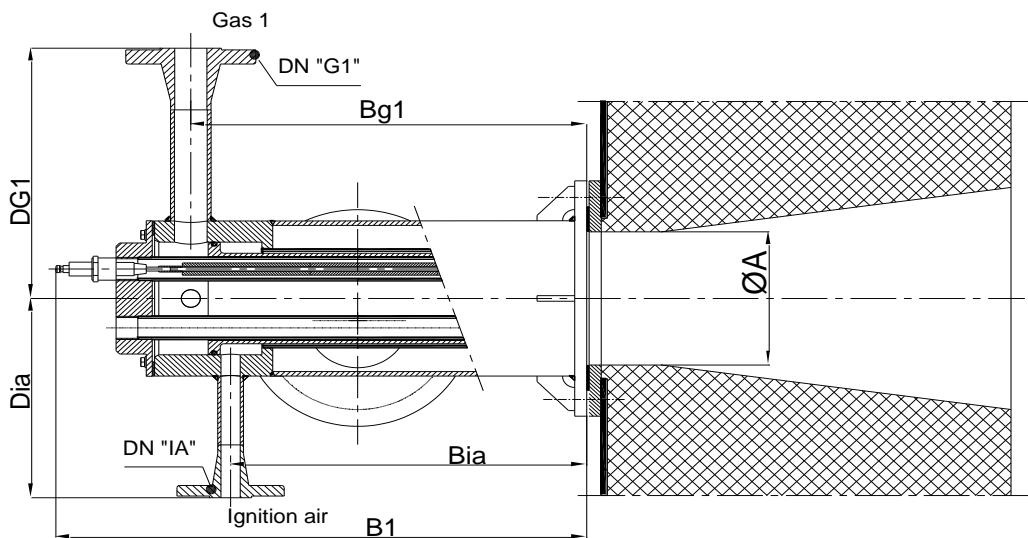
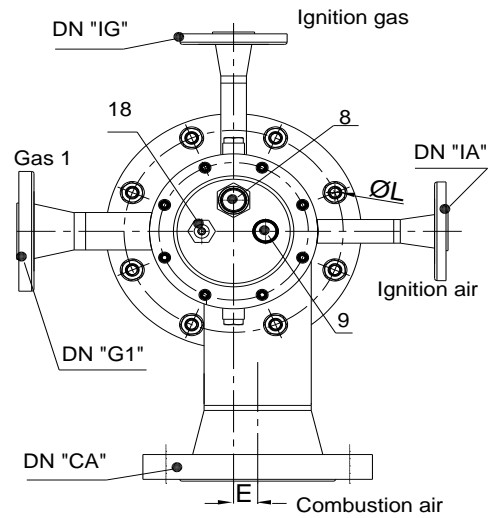
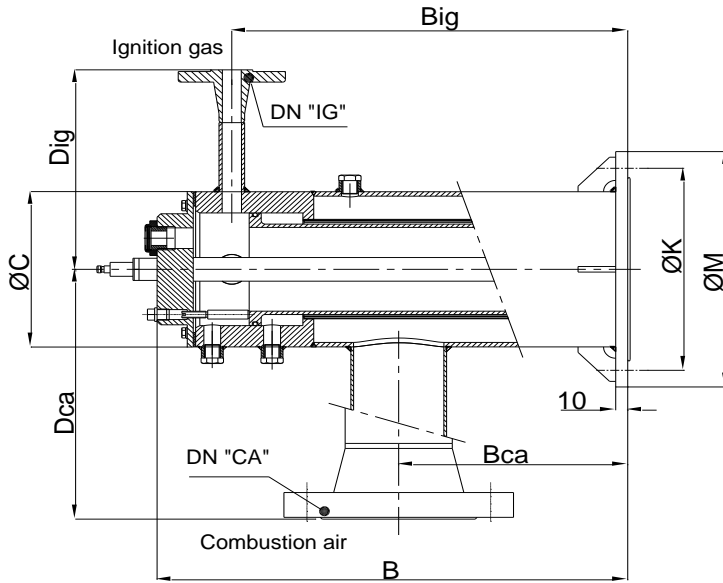
- Gas lance: Standard 1.4571 or 1.4404 (AISI316L/AISI316Ti)

- Nozzle GS or GG: Standard 1.4841 (AISI314 or AISI310),
upon request 1.4571 or 1.4404 (AISI316L/AISI316Ti) or other materials

Components exposed to irradiation from the flue air duct might also be made from 1.4841.

Data sheet

Dimensional Drawing Burner MFB..G (for 1 Gas)

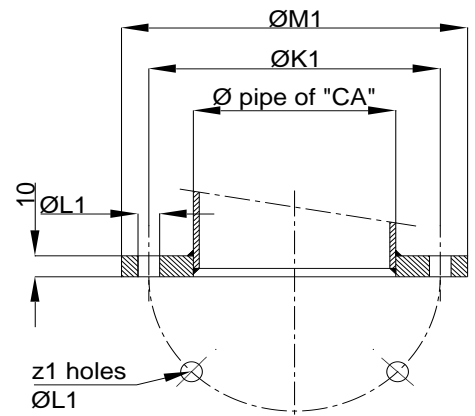
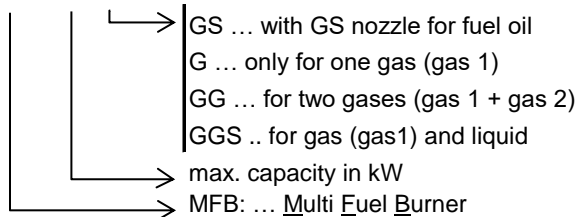


- 8 Sight port
- 9 Connection for flame scanner
- 16 Ignition electrode
- 23 Needle valve
- 24 Measuring socket

Standard version for "CA" (Combustion air connection):
 Flat flange, dimensions according to DIN24154, R2, T2

Example for the naming of the burner

DUMAG® MFB2000GS



Subject to change without notice

Vers. 34 20.06.2022

Data sheet

Dimension MFB (see page -5-):

Type DUMAG®	Capacity	ØA	B	B1	Bg1	Bca	Big	Bia	ØC	Dg1	Dca	Dig	Dia	E	ØK	ØM
	kW	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
MFB350G	350	149	391	B1=B+height of spark plug	329	190	329	290	168,3	226	225	180	180	10	200	232
MFB700G	700	149	461		380	190	380	295	168,3	226	225	180	180	10	200	232
MFB1200G	1200	236	513		427	225	422	360	273	244	276	247	247	20	332	363
MFB2000G	2000	263	513		427	225	422	360	273	244	276	247	247	20	332	363
MFB3000G	3000	295	690		584	300	584	493	324	292	354	259	259	20	366	398
MFB4000G	4000	295	690		584	300	584	493	324	292	354	259	259	20	366	398
MFB5000G	5000	330	785		685	350	685	562	355,6	430	430	330	330	20	405	438
MFB6000G	6000	380	825		725	350	725	602	406,4	465	445	330	330	20	448	484

Type DUMAG®	Com-bustion air (20°C)	Burner flange hole/screw ØL (M..)	"G1"	"CA"	"IG"	"IA"	Standard version for "CA": Flat flange, dimensions according to DIN24154, R2, T2									
			pipe dimension Ø				Ø pipe "CA"	ØK1	ØM1	z1 holes ØL1 / M..						
	Nm³/h	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
MFB350G	420	8xØ11,5 (M10)	26,9	88,9	21,3	21,3	NW90	128	152	4 x 9,5 / M8						
MFB700G	840	8xØ11,5 (M10)	33,7	114,3	21,3	21,3	NW112	151	174	4 x 9,5 / M8						
MFB1200G	1440	8xØ11,5 (M10)	48,3	139,7	21,3	26,9	NW140	182	212	8 x 11,5 / M10						
MFB2000G	2400	8xØ11,5 (M10)	60,3	168,3	21,3	26,9	NW180	219	252	8 x 11,5 / M10						
MFB3000G	3600	8xØ11,5 (M10)	76,1	219,1	21,3	26,9	NW224	265	297	8 x 11,5 / M10						
MFB4000G	4800	8xØ11,5 (M10)	76,1	273,0	21,3	26,9	NW280	332	363	8 x 11,5 / M10						
MFB5000G	5000	8xØ11,5 (M10)	88,9	273,0	21,3	33,7	NW280	332	363	8 x 11,5 / M10						
MFB6000G	6000	12xØ11,5 (M10)	88,9	323,9	21,3	33,7	NW315	366	398	8 x 11,5 / M10						

Flange types, "CA" in these versions can also be supplied as standard with flat flange (see above)

Type DUMAG®	Capacity	Combustion air (20°C)	"G1"	"CA"	"IG"	"IA"	"G1"	"CA"	"IG"	"IA"	"G1"	"CA"	"IG"	"IA"	Weight approx
			EN1092-1, PN16				ANSI B16,5, 150lbs				Whitworth Pipe Thread				
	kW	Nm³/h	DN	DN	DN	DN	-	-	-	-	-	-	-	-	kg
MFB350G	350	420	20	80	15	15	3/4"	3"	1/2"	1/2"	R3/4"	R3"	R1/2"	R1/2"	35
MFB700G	700	840	25	100	15	15	1"	4"	1/2"	1/2"	R1"	R4"	R1/2"	R1/2"	38
MFB1200G	1200	1440	40	125	15	20	1 1/2"	5"	1/2"	3/4"	R1 1/2"	R5"	R1/2"	R3/4"	67
MFB2000G	2000	2400	50	150	15	20	2"	6"	1/2"	3/4"	R2"	R6"	R1/2"	R3/4"	80
MFB3000G	3000	3600	65	200	15	20	2 1/2"	8"	1/2"	3/4"	R2 1/2"	**)	R1/2"	R3/4"	120
MFB4000G	4000	4800	65	250	15	20	2 1/2"	10"	1/2"	3/4"	R2 1/2"	**)	R1/2"	R3/4"	125
MFB5000G	5000	6000	80	250	15	25	3"	10"	1/2"	1"	R1"	**)	R1/2"	R1"	160
MFB6000G	6000	7200	80	300	15	25	3"	12"	1/2"	1"	R1"	**)	R1/2"	R1"	195

** is to be defined by client

"CA": Connection as pipe end possible (for direct connection of an elastic connection)

The arrangement of the connections can be chosen by the customer if the technical feasibility is given.

Type DUMAG®	largest lance Ø (Gas2; Liqu.) [mm]
MFB350G	21,3
MFB700G	21,3
MFB1200G	33,7
MFB2000G	33,7

Type DUMAG®	largest lance Ø (Gas2; Liqu.) [mm]
MFB3000	60,3
MFB4000	60,3
MFB5000	70
MFB6000	70