

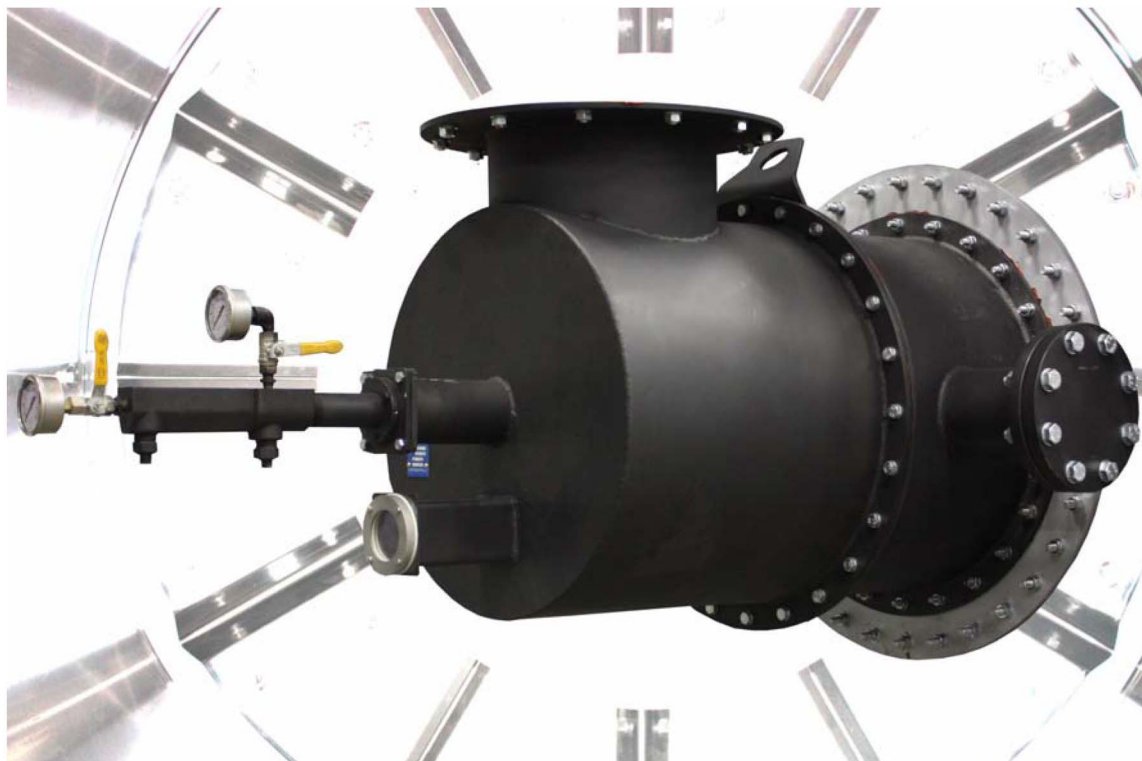
Honeywell

MAXON

MEGAFIRE®

MEDIUM TEMPERATURE DUAL FUEL BURNERS

TECHNICAL CATALOG



FEATURES

- High heat release up to 13.200 kW.
- Provides clean combustion of natural gas, propane, butane, LPG, light oil and biogas.
- Easy installation due to compact design.
- High turndown for maximum operation flexibility.
- Lower fuel consumption by use of preheated combustion air up to 200 °C.
- Alternate refractory block option for high outlet temperatures up to 850 °C.

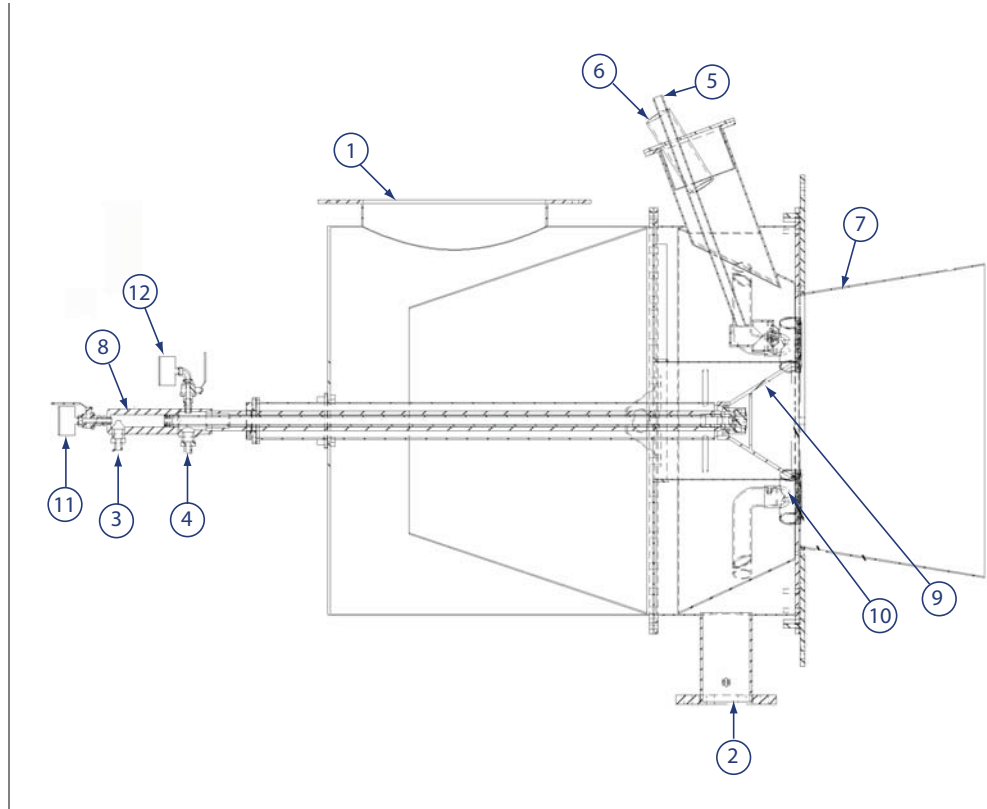


32M-01008-01

PRODUCT DESCRIPTION

The MEGAFIRE® burner is a nozzle-mixing dual fuel burner, capable of firing natural gas, propane, butane, biogas and light oil. Due to the oil and gas nozzle design, the MEGAFIRE® burner is capable of firing gas and oil simultaneously.

- 1) Combustion air inlet
- 2) Gas inlet
- 3) Atomizing air inlet (oil firing)
- 4) Oil inlet
- 5) Pilot gas inlet
- 6) UV-scanner port
- 7) Burner discharge sleeve
- 8) Retractable oil gun
- 9) Mixing cone
- 10) Gas nozzle
- 11) Manometer atomizing air
- 12) Manometer oil



Principle of operation

Combustion air enters the burner body and is guided over the gas nozzles and the mixing cone into the burner discharge sleeve.

On gas firing, the gas enters the burner gas manifold and travels down through the inside of the gas nozzles, which are positioned around the mixing cone. As the gas passes through the nozzles, it is spun out into the discharge sleeve where it is thoroughly mixed with the combustion air.

On oil firing, the oil and atomizing air are brought into the oil gun. The atomizing air pulverizes the stream of liquid oil at the face of the oil gun. The atomized oil will mix thoroughly with the combustion air and ignite.

In both the gas firing and oil firing options, a spark ignited gas pilot burner provides a stable pilot flame to ignite either the oil or gas main flame. An optional oil pilot will be mounted in case no gas is available.

Provision is made for a single UV scanner to monitor both pilot and main flame.

AVAILABLE MEGAFIRE® SIZES

MEGAFIRE® burners are available in two different types:

EB	Arranged for external combustion air blower and external air/gas ratio control valve.
HD	Heavy duty version for high back pressures and preheated air, arranged for external combustion air blower and external air/gas ratio control valve.

MEGAFIRE® burners are available in 3 different sizes: 15M, 30M, 45M. Each type is available in 3 versions:

G	Gas only
O	Oil only
COMBO	Gas-oil firing possible

Depending on the application, a choice between a stainless steel discharge sleeve or a high temperature refractory block is available. Refer to "Specifications of MEGAFIRE® Burners" on page 7 for full description of burner type availability.

Typical burner data

The data given in this table are limited and valid for a burner firing under normal conditions. Refer to “Specifications of MEGAFIRE® Burners” on page 7 for full details.

Typical burner data								
Fuels: natural gas at 15 °C with 10.9 kWh/Nm ³ (st) HHV - sg = 0.6 [1]								
Light oil (#2) : 12.5 kWh/kg [2]								
Combustion air: 15 °C -21%O ₂ - 50% humidity - sg = 1.0 [1]								
Stated pressures are indicative. Actual pressures are a function of air humidity, altitude, type of fuel and gas quality								
BURNER TYPE			15M-EB	30M-EB	45M-EB	15M-HD	30M-HD	45M-HD
Max. capacity gas firing	[3]	kW (HHV)	4400	8800	13200	4400	8800	13200
Max. capacity oil firing	[4]	kW (HHV)	4000	8000	12000	4000	8000	12000
Min. capacity gas firing		kW (HHV)	300	600	900	250	500	500
Min. capacity oil firing	[5]	kW (HHV)	500	1000	1200	500	1000	1000
Gas pressure at max. capacity	[6]	mbar	65	60	95	75	60	92
Oil pressure at max. capacity	[7]	bar	4.75	4.5	3.9	5.5	5	2.9
Combustion air flow	[8]	m ³ /h	5000	10000	16000	5000	10000	14500
Combustion air pressure	[9]	mbar	15	22.5	25	35	39	31
Flame length	[10]	m	5.5	6	6.5	3.5	5.5	6.5

- [1] sg (specific gravity) = relative density to air (density air = 1.293 kg/Nm³)
- [2] Light oil (#2) with heating value 12.5 kWh/kg : viscosity to be max. 7cSt (7.10⁻⁶m³/s)
- [3] Overfiring up to 20% is possible when sufficient combustion air is allowed to the burner.
- [4] Stated capacities shall not be exceeded. Maximum capacities on oil are lower than those on gas firing.
- [5] Stated capacities are those for firing in process air temperatures above 200 °C. For lower temperatures, the minimum allowed capacity on oil firing will be higher. Refer to “Specifications of MEGAFIRE® Burners” on page 7 for full details.
- [6] Natural gas differential pressure measured between the burner gas inlet and combustion chamber.
- [7] Oil pressure measured at burner oil inlet.
- [8] Stated air flows are valid in applications where secondary air is available.
- [9] Differential pressure measured between the burner air inlet and combustion chamber.
- [10] Typical flame lengths for gas fired burners. Firing on oil will result in a longer flame. Refer to “Specifications of MEGAFIRE® Burners” on page 7 for full details.

APPLICATIONS

MEGAFIRE® burners have a high thermal output capacity and are primarily designed for direct heating of process air flows. The MEGAFIRE® can also be applied in higher temperature applications. The dual fuel characteristic of this burner makes it ideal in cases where natural gas cannot be guaranteed and back-up oil is required.

Typical applications

- Yankee hoods and TAD's
- Waste and fume incinerators
- Sand and cement dryers
- Kilns
- Fertilizer dehydrators

Application example

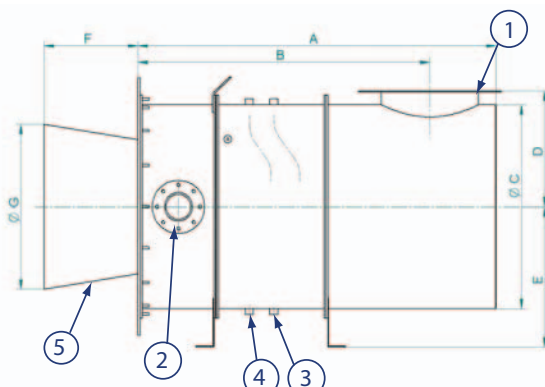


Two gas fired MEGAFIRE® 45M EB burners, total capacity 20 Megawatt heating a recirculating process air stream which feeds a TAD on a paper machine.

DIMENSIONS AND WEIGHTS

MEGAFIRE® - Type EB

- 1) Combustion air inlet
- 2) Gas inlet 4"
- 3) Oil inlet 3/4"
- 4) Atomizing air inlet 3/4"
- 5) Stainless steel discharge sleeve



Dimensions in mm unless stated otherwise									
Burner size	Comb. air inlet Ø ext.	A	B	C Ø	D	E	F	G Ø	Weight kg
15M	305	1230	1049	534	381	426	251	490	188
30M	406	1497	1220	852	483	586	394	687	355
45M	508	1548	1220	951	546	645	394	798	520

Threaded fuel connections are available in NPT or ISO.

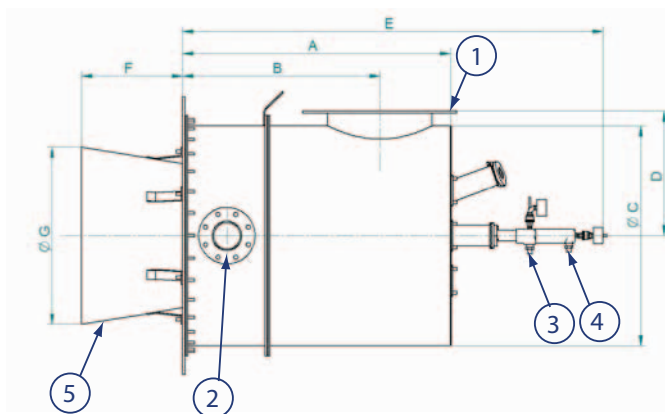
Flanged gas connection is available in DIN or ANSI.

Displayed model is an EB type with stainless steel discharge sleeve.

Read "Specifications of MEGAFIRE® burners" for more detailed dimensions, refractory block data and other options.

MEGAFIRE® - Type HD

- 1) Combustion air inlet
- 2) Gas inlet 4"
- 3) Oil inlet
- 4) Atomizing air inlet
- 5) Stainless steel discharge sleeve



Dimensions in mm unless stated otherwise											
Burner size	Comb. air inlet Ø ext.	Oil inlet	Atom. air inlet	A	B	C Ø	D	E	F	G Ø	Weight kg
15M	305	1/4"	1/4"	774	596	534	381	1380	251	490	188
30M	406	3/8"	3/8"	1043	769	852	483	1632	394	687	355
45M	508	3/8"	3/8"	1091	763	955	546	1683	394	797	520

Threaded fuel connections are available in NPT or ISO.

Flanged gas connection is available in DIN or ANSI.

Displayed model is an HD type combo burner with standard discharge sleeve.

Read "Specifications of MEGAFIRE® Burners" on page 7 for more detailed dimensions, refractory block details and other options.

Typical emissions (burner only)

In combination with MAXON MICRO-RATIO® Valves or SMARTLINK® MRV electronically linked ratio control system,

MEGAFIRE® emissions will be below most conventional nozzle mix burners.

Contact MAXON for more information.

SPECIFICATIONS OF MEGAFIRE® BURNERS

MEGAFIRE® gas fired burners

Typical burner data								
Fuels: natural gas at 15 °C with 10.9 kWh/Nm ³ HHV - sg = 0.6 [1]								
Combustion air: 15 °C - 21%O ₂ - 50% humidity - sg = 1.0 [1]								
Stated pressures are indicative. Actual pressures are a function of air humidity, altitude, type of fuel and gas quality								
BURNER TYPE			15M-EB	30M-EB	45M-EB	15M-HD	30M-HD	45M-HD
Max. capacity	[2]	kW (HHV)	4400	8800	13200	4400	8800	13200
Min. capacity	[3]	kW (HHV)	300	600	900	250	500	500
Gas pressure at max. capacity	[4]	mbar	65	60	95	75	60	92
Combustion air flow	[5]	m ³ /h	5000	10000	16000	5000	10000	14500
Combustion air pressure at burner inlet	[6]	mbar	15	22.5	25	35	39	31
Combustion air pressure at burner test connection	[6]	mbar	5.5	18	8.3	18.5	19	13.1
Typical flame length	[7]	m	5.5	6	6.5	3.5	5.5	6.5
Typical flame diameter	[7]	m	0.9	1.05	1.2	0.9	1.05	1.2

[1] sg (specific gravity) = relative density to air (density air = 1.293 kg/Nm³).

[2] On natural gas, max. capacities can be up to 20% higher than the stated values if sufficient combustion air is allowed to the burner.

[3] Min. capacities are valid for natural gas firing. For LPG firing, the min. capacity will be higher.

[4] Gas differential pressure between burner inlet and combustion chamber for listed maximum capacity.

[5] Combustion air flow for listed maximum capacity for applications where sufficient secondary air is available.

[6] Combustion air differential pressure for listed max. capacity measured relative to the combustion chamber pressure.

[7] Process conditions such as process air flow, process air oxygen content, etc. can influence the listed flame dimensions.

NOTE: All data are valid for air heating applications with sufficient oxygen available in the process air. Using MEGAFIRE® burners for direct heating of oxygen lean air streams requires special attention. Maximum capacities, combustion air flows and flame lengths will have to be adapted accordingly.

MEGAFIRE® oil fired burners

Typical burner data Fuel: light oil (#2) : 12.5 kWh/kg Combustion air: 15 °C - 21%O₂ - 50% humidity - sg = 1.0 [1] Stated pressures are indicative. Actual pressures are a function of air humidity, altitude, type of fuel and gas quality								
BURNER TYPE			15M-EB	30M-EB	45M-EB	15M-HD	30M-HD	45M-HD
Max. capacity	[2]	kW (HHV)	4000	8000	12000	4000	8000	12000
Min. capacity low temperature applications	[3]	kW (HHV)	750	1500	2000	750	750	1500
Min. capacity high temperature applications	[3]	kW (HHV)	500	1000	1200	500	1000	1000
Oil pressure at max. capacity	[4]	mbar	4.75	4.5	3.9	5.5	5	2.9
Combustion air flow	[5]	m ³ /h	4500	9000	14500	4500	9000	13300
Combustion air pressure at burner inlet	[6]	mbar	12	18	20	28	32	27
Combustion air pressure at burner test connection	[6]	mbar	4.5	14	7	15.5	16	12.7
Typical flame length	[7]	m	5.5	6	7.5	4	7.5	7.5
Typical flame diameter	[7]	m	0.9	1.05	1.2	0.9	1.05	1.2

[1] sg (specific gravity) = relative density to air (density air = 1.293 kg/Nm³)

[2] On oil, it is not possible to overfire the burner - no higher capacities than those listed are allowed.

[3] Firing in low temperature process air (<200 °C) results in lower burner turndown.

[4] Oil pressure at burner inlet listed for maximum capacity.

[5] Combustion air flow for listed maximum capacity for applications where sufficient secondary air is available.

[6] Combustion air differential pressure for listed max. capacity measured relative to the combustion chamber pressure.

[7] Process conditions such as process air flow, process air oxygen content, etc. can influence the listed flame dimensions. Note that an oil flame is much more radiant than a gas flame and will consequently transfer more heat to its environment.

NOTE: All data are valid for air heating applications with sufficient oxygen available in the process air. Using MEGAFIRE® burners for direct heating of oxygen lean air streams requires special attention. Maximum capacities, combustion air flows and flame lengths will have to be adapted accordingly.

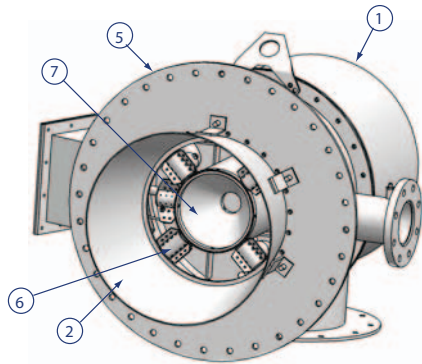
Pilot burner specifications

MEGAFIRE® burners require a pilot burner for ignition. The standard pilot operates on gas. An optional pilot is available on request. (Contact MAXON)

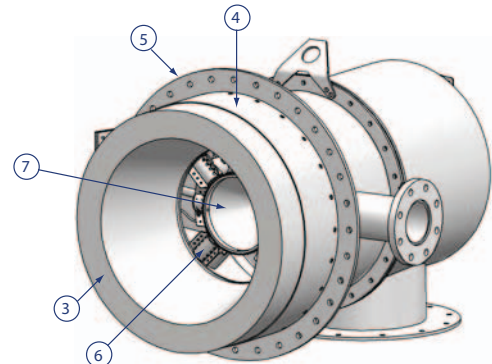
Typical burner data Fuel: light oil (#2) : 12.5 kWh/kg Combustion air: 15 °C - 21%O₂ - 50% humidity - sg = 1.0 [1] Stated pressures are indicative. Actual pressures are a function of air humidity, altitude, type of fuel and gas quality		
Capacity	kW (HHV)	70
Gas inlet pressure	mbar	10

[1] sg (specific gravity) = relative density to air (density air = 1.293 kg/Nm³)

MATERIALS OF CONSTRUCTION



MEGAFIRE® burner with standard discharge sleeve



MEGAFIRE® burner with high temperature discharge sleeve

1	Housing	CARBON STEEL (1.0037)
2	Standard discharge sleeve	AISI310 (1.4841)
3	High temperature discharge sleeve	CALDE CAST LX58 [1]
4	Seal and support housing	AISI310 (1.4841)
5	Burner mounting flange	CARBON STEEL (1.0037)
6	Gas nozzles	AISI304 (1.4301)
7	Mixing cone	CAST GRAY IRON

[1] high quality castable refractory material, main components : AISI203/ SiO₂ / CaO / Fe₂O₃

Selection criteria

Application details

MEGAFIRE®-EB type burners are designed for air heating applications where large capacities are required. This type of burner can fire on oil or gas, or it can fire both gas and oil simultaneously.

MEGAFIRE®-HD type burners are designed for “heavy duty” applications where burners need to operate at high combustion chamber back pressures or on those applications where preheated combustion air is desired.

MEGAFIRE® burners have been successfully applied in large industrial dryers, paper machines, cement and sand dryers, fertilizer dehydrators, municipal solid waste incinerators, food process dryers, gypsum board dryers and others. Note that when firing in low oxygen atmospheres, the design of the system needs special attention.

Burner designation

Burner	Size	Type	Fuel	Gas	Discharge sleeve	Connection	Orientation
MEGAFIRE®	30M	HD	COMBO	NAT	STD	ISO	U

Size

15M
30M
45M

Discharge sleeve

STD: standard stainless steel
HT: refractory block

Connection

Gas, oil and air connection types
ISO: ISO 7-1 threads
DIN2576-PN10 flanges
ANSI: NPT threads
ANSI class 150 flanges
(ISO7005 PN20)

Fuels

MEGAFIRE® burners are dual fuel burners, meaning they can either fire on gas or on oil, or gas and oil simultaneously.

Type

EB: External Blower
HD: Heavy Duty

Gas

NAT: Natural gas
PROP: Propane
BUT: Butane
BIO: Biogas
-: in case FUEL = OIL

Fuel

GAS: Gas only
OIL: Oil only
COMBO: Gas and oil

Orientation

U: air inlet 'up'
D: air inlet 'down' (standard)
L: air inlet 'left'
R: air inlet 'right' (refer to page 16)

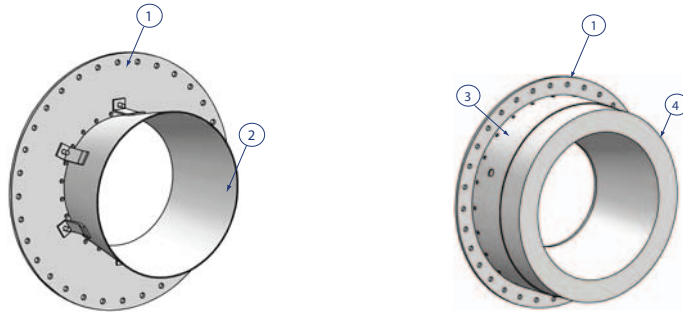
MEGAFIRE® burners can fire any clean gas; natural gas, propane, butane or biogas and light oil (#2) and kerosene. Specify the type of gas to be used when ordering the burner. Burner gas nozzles are drilled to suit the applicable gas.

Discharge sleeves

MEGAFIRE® burner discharge sleeves are available in two versions :

STD	Standard	Stainless steel
HT	High temperature	Refractory block with stainless steel seal and support housing

- 1) Burner mounting plate (carbon steel)
- 2) Discharge sleeve (AISI310)
- 3) Seal and support housing (AISI310)
- 4) Refractory block



A HT refractory block is recommended for installations where:

- the layout of the combustion chamber does not allow process air to flow over the entire surface of the discharge sleeve
- upstream process air temperatures are too high to have an effective cooling effect on the sleeve
- the combustion air is preheated up to 200 °C
- the burner frequently uses oil as a fuel

Both STD discharge sleeve and HT refractory block are available as loose items. Note that HT refractory blocks are always delivered complete with the burner mounting plate. STD discharge sleeves can be delivered without the burner mounting plate.

Process temperature

Typical process temperatures for MEGAFIRE® burners in air heating applications:

Max. upstream process temperature	500 °C
Max. downstream process temperature	850 °C

Process flows and oxygen content

MEGAFIRE® burners are designed to fire in process air flows with sufficient oxygen content. The data listed on page 7 and page 8 applies on applications where the oxygen content of the process air flow is at least 10 Vol.% wet.

Firing in atmospheres with lower oxygen contents, such as recirculation processes, is possible. However, the listed maximum capacities, combustion air flows and flame lengths on page 7 and page 8 will have to be adapted accordingly. Contact MAXON for applications in low oxygen atmospheres

Piloting & ignition

MEGAFIRE® burners shall always be ignited using a built-in pilot burner.

The standard pilot burner can operate on natural gas, propane, butane or biogas.

An optional oil pilot burner is available on request (contact MAXON for more information).

The burner combustion air should be available prior to starting the pilot burner. At burner start, the combustion air flow should be limited to 20% or less of the maximum rated combustion air flow. Higher combustion air flows will disturb a good cross ignition when lighting the main flame of the burner. When firing on LPG, the combustion air flow should be slightly higher than the minimum rated air flows for proper burner lighting.

See page 8 for specifications of this pilot burner.

Ratio control

All MEGAFIRE® burners are provided for external air, gas and oil control. Accurate control of combustion air and fuel can be accomplished with MAXON MICRO-RATIO® and MAXON SMARTLINK® technology.

Changes in combustion air temperature, system back pressure and other parameters can influence the fuel/air ratio if the control system is not designed for compensation. Contact MAXON for more details and/or assistance.

NOTE: For correct burner setting on oil firing, an oil flow meter is required.

Preheated combustion air

Preheated combustion air up to 200 °C can be accommodated by MEGAFIRE®-HD type burners, resulting in lower fuel consumptions. The MEGAFIRE®-HD burner is designed in such a way that it allows for external insulation.

When MEGAFIRE®-HD burners are operated at high combustion air temperatures, it is recommended to use a HT-refractory block.

Typical ignition sequence of gas fired burners

- Pre-purge of burner and installation, according to the applicable codes and installation's requirements.
- Combustion air control valve shall be in the start position to allow minimum combustion air flow to the burner.
- Pre-ignition (typically 2 s sparking in air).
- Open pilot gas and continue to spark the ignitor (typically 5 s).
- Stop sparking, continue to power the pilot gas valves and start flame check.
- Check pilot flame stability (typically 5 s to prove the stable pilot).
- Open main gas valves and allow enough time to have main gas in the burner (typically 5 s + time required to have main gas in the burner).
- Close the pilot gas valves.
- Release to modulation (allow modulation of the burner).

Above sequence shall be completed to include all required safety checks during the start-up of the burner (process & burner safeties).

Typical ignition sequence of oil fired burners

- Pre-purge of burner and installation, according to the applicable codes and the installation's requirements.
- Combustion air control valve shall be in the start position to allow minimum combustion air flow to the burner.
- Atomizing air should be applied to the burner.
- Pre-ignition (typically 2 s sparking in air).
- Open pilot gas valves and continue to spark the ignitor (typically 5 s).
- Stop sparking, continue to power the pilot gas valves and start flame check.
- Check pilot flame stability (typically 5 s to prove the stable pilot).
- Open main oil valves and allow enough time to have main oil in the burner. (typically 5 s + time required to have main oil in the burner).
- Close the pilot gas valves.
- Release to modulation (allow modulation of the burner).

Above sequence shall be completed to include all required safety checks during the start-up of the burner (process & burner safeties).

Typical stop sequence of oil fired MEGAFIRE® burners

- Send burner to its minimum capacity and wait for low fire position switch signal.
- Open pilot gas valves.
- Start spark ignitor (typically 5 s).
- Wait for stable pilot flame (typically 5 s).

- Close the main oil valves.
- Open the purge air valves.
- Purge the main oil burner for 40 seconds.
- Close the purge air valves.
- Close the pilot gas valves.
- Close the atomizing air valve.

Flame supervision

MEGAFIRE® burners shall use UV scanners for flame supervision. The use of a flame rod is not possible. The burner design incorporates one UV scanner port which is suitable for supervision of both pilot and main flame.

Pay attention to possible pick-up of strange flames (if any) when using UV scanners on multi-burner installations. Allow some cooling or purge air to the scanner connections. (typically 2m³(st)/hof fresh clean air)

Piping

In case MAXON MICRO-RATIO® control valves are used, locate the air/gas/oil control valves in a position that allows viewing of the burner flame during adjustment. Make sure the control valve operator is not subjected to excessive radiant and/or ambient heat.

Oil piping should be piped below the burner to prevent oil leakage towards the burner when oil valves are shut. In order not to block oil orifices inside the burner, make sure adequate filters are mounted on pilot and main oil lines and on purge/atomizing air.

Dual fuel operation

Most dual fuel applications use either oil or gas when firing. Since the oil nozzle and the gas nozzles in the MEGAFIRE® burner are physically not connected, it is possible to fire both oil and gas simultaneously. When firing of liquid and gaseous fuels simultaneously is required, special attention needs to be paid to the ratio control system. There should always be a correct combustion air flow available depending on the total amount of fuel input to the burner. Contact MAXON in cases where simultaneous dual fuel firing is required.

Dual fuel burners on gas

When a MEGAFIRE®-HD combo burner is fired on gas for a longer period of time, it is advised to remove the retractable oil nozzle and replace it with an oil nozzle dummy. Refer to page 15 for more information on the oil nozzle dummy.

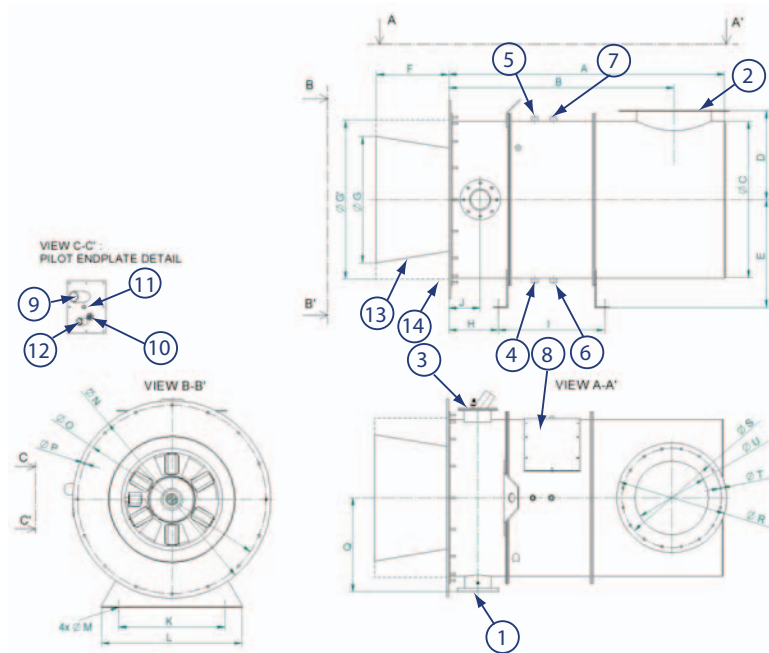
Process back pressures

Process back pressures can range from -30 to +30 mbar for MEGAFIRE®-EB burners. The HD version can be used for back pressures ranging between -100 mbar up to +100 mbar.

DIMENSIONS AND WEIGHTS

MEGAFIRE®-EB burners

- 1) Gas inlet flange 4"
- 2) Combustion air inlet
- 3) Pilot endplate
- 4) Atomizing air inlet Rp3/4"
- 5) Atomizing air inlet Rp3/4"
- 6) Oil inlet Rp3/4"
- 7) Oil inlet Rp3/4" (alternative pos.)
- 8) Burner access plate
- 9) UV scanner connection 2"
- 10) Spark ignitor
- 11) Pilot connection 1/2"
- 12) Observation glass
- 13) STD discharge sleeve
- 14) HT refractory block



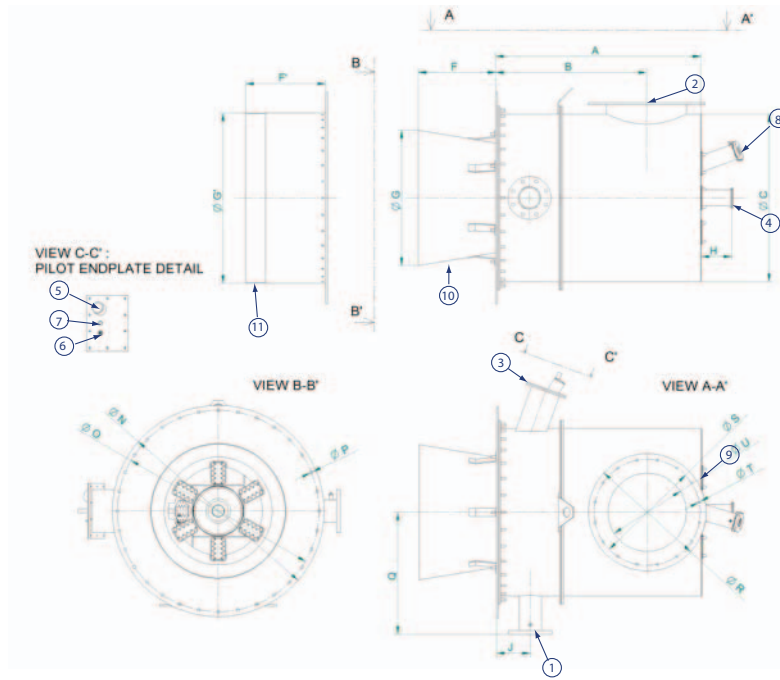
Dimensions in mm unless stated otherwise												
Burner size	A	B	C Ø	D	E	F	G Ø	G'	H	I	J	K
15M	1230	1049	534	381	426	251	490	653	270	572	169	686
30M	1497	1220	852	483	586	394	687	864	268	576	169	576
45M	1548	1220	951	546	645	394	798	978	280	576	169	686
Burner size	L	M Ø	N Ø	O Ø	P Ø	Q	R Ø	S Ø	T Ø	U Ø	Weight kg [1]	
15M	762	16	753	702	16 (16x)	337	482	432	14 (12x)	299	188 / 360	
30M	762	16	1075	1024	16 (16x)	510	597	540	14 (16x)	400	355 / 670	
45M	762	16	1188	1137	16 (16x)	557	699	635	14 (20x)	502	520 / 910	

[1] Use the lower value for burners with stainless steel discharge sleeve. Use the higher value for burners with refractory block.

NOTE: Combustion air inlet can be rotated in 22.5° increments (to be specified when ordering). Oil and atomizing air connections are available with NPT or ISO thread. Gas inlet flange is available according to DIN2576-PN10 or ANSI class 150 (ISO 7005 PN20). Dimension G valid for STD sleeve, dimension G' valid for HT sleeve.

MEGAFIRE®-HD burners

- 1) Gas inlet flange 4"
- 2) Combustion air inlet
- 3) Gas pilot endplate
- 4) Oil nozzle mounting connection
- 5) UV scanner connection 2"
- 6) Spark ignitor (for gas pilot only)
- 7) Gas pilot connection 1/2"
- 8) Observation glass
- 9) Oil pilot connection
- 10) STD discharge sleeve
- 11) HT refractory block



Dimensions in mm unless stated otherwise

Burner Size	A	B	CØ	F	GØ	F'	G'Ø	H	J
15M-HD	774	596	532	251	488	251	635	156	169
30M-HD	1043	766	852	393	687	406	864	156	172
45M-HD	1091	763	955	394	797	394	978	156	169
Burner Size	NØ	OØ	PØ	Q	RØ	SØ	TØ	UØ (int.)	Weight kg [1]
15M-HD	753	702	16 (32x)	381	482	432	14 (12x)	299	188/360
30M-HD	1075	1025	16 (32x)	620	597	540	14 (16x)	400	355/670
45M-HD	1188	1137	16 (32x)	670.5	699	635	14 (20x)	508	520/970

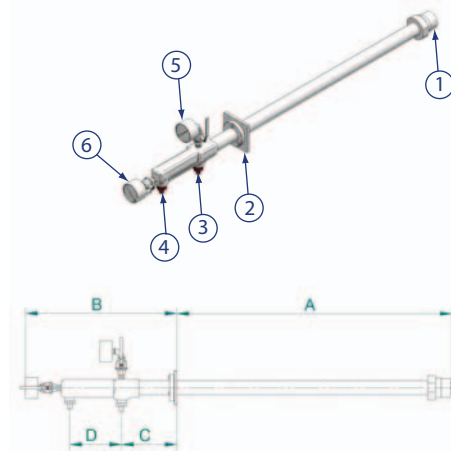
[1] Use the lower value for burners with stainless steel discharge sleeve. Use the higher value for burners with refractory block.

NOTE: Combustion air inlet can be rotated in 90° increments (to be specified when ordering). Gas inlet flange is available according to DIN2576-PN10 or ANSI class 150 (ISO 7005 PN20). Dimensions G and F valid for STD sleeve, dimension G' and F' valid for HT sleeve.

Oil nozzle for MEGAFIRE®-HD

This retractable oil nozzle is installed as standard when an oil or combo type MEGAFIRE®-HD burner is ordered. See page 8 for specification data on this oil nozzle.

- 1) Oil nozzle tip
- 2) Mounting flange
- 3) Oil connection 1/4"
- 4) Atomizing air connection 1/4"
- 5) Oil pressure manometer
- 6) Atomizing air pressure manometer

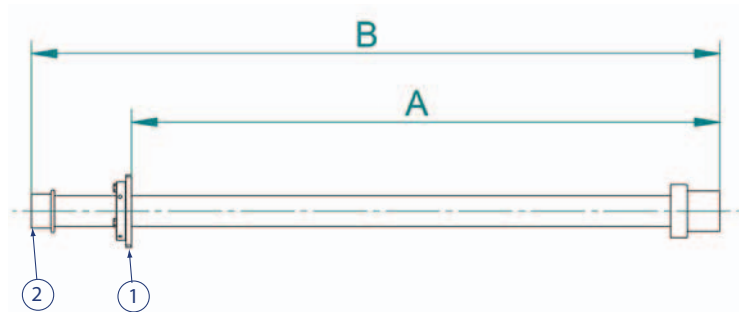


Dimensions in mm unless stated otherwise					
Burner Size	A	B	C	D	Weight kg
15M-HD	813	448	164	152	15
30M-HD	1074	432	148	152	17
45M-HD	1006	435	151	152	17

Oil nozzle dummy for MEGAFIRE®-HD

This oil nozzle dummy should be used on MEGAFIRE®-HD combo type burners when the burner is planning to be fired on gas for a longer period of time. In such cases, the oil nozzle should be removed from the burner and replaced with the oil nozzle dummy.

- 1) Mounting flange
- 2) Cap



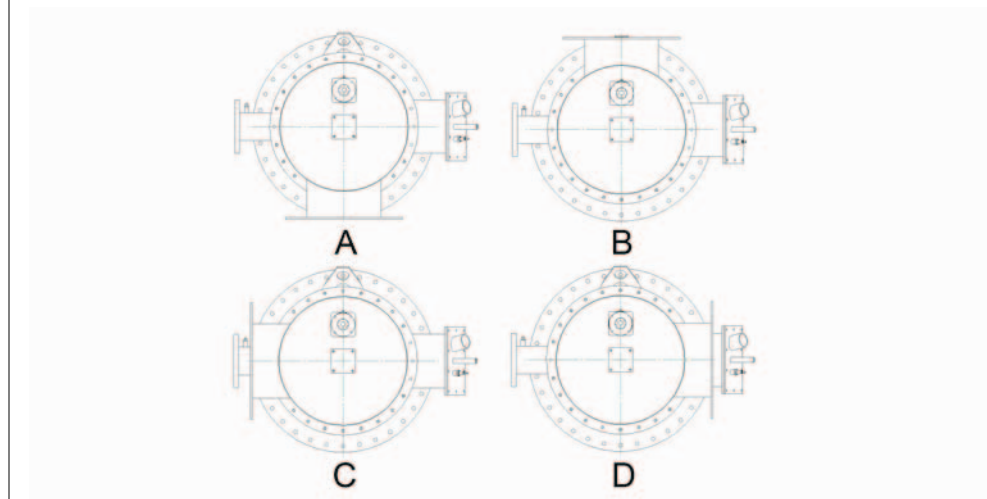
Dimensions in mm unless stated otherwise			
Burner Size	A	B	Weight kg
15M-HD	810	948	9
30M-HD	1056	1193	11
45M-HD	1017	1171	12

Available air inlet positions

The combustion air inlet can be arranged for different orientations to suit the existing layout of the surrounding equipment. Basic positions are U, D, L and R. The

MEGAFIRE®-EB version allows intermediate positions between the four basic positions by rotating the combustion air inlet section in 22.5° steps.

- A: position 'D' (standard)
- B: position 'U'
- C: position 'L'
- D: position 'R'



INSTALLATION AND OPERATING INSTRUCTIONS



Please read the operating and mounting instructions before using the equipment. Install the equipment in compliance with the prevailing regulations.

Bedrijfs- en montagehandleiding voor gebruik goed lezen! Apparaat moet volgens de geldende voorschriften worden geïnstalleerd.

Lire les instructions de montage et de service avant utilisation! L'appareil doit impérativement être installé selon les réglementations en vigueur.

Betriebs- und Montageanleitung vor Gebrauch lesen! Gerät muß nach den geltenden Vorschriften installiert werden.

MANUFACTURER AND IMPORTER ADDRESSES

Below are the addresses and contact information for the Honeywell – Maxon manufacturing location and European sales office. The European sales office serves as the importer and EU manufacturer's representative under the EU New Legislative Framework (NLF).

MUNCIE, INDIANA, USA – MANUFACTURER

201 East 18th Street

P.O. Box 2068

Muncie, IN 47307-0068

Tel: 765.284.3304

Fax: 765.286.8394

EUROPEAN SALES OFFICE – IMPORTER

BELGIUM

Maxon International BVBA

Luchthavenlaan 16-18

1800 Vilvoorde, Belgium

Tel: 32.2.255.09.09

Fax: 32.2.251.82.41

Application requirements

View port

The MEGAFIRE® burner has an integrated view port which allows visual detection of both pilot and main flame. An additional view port to observe the burner flame is essential to inspect the flame aspect. Locate the view port on the installation downstream of the flame, looking back to the burner. Make sure the complete flame can be evaluated.

Supporting burner air and gas piping

The MEGAFIRE® burner shall not be used as support for the piping to the burner. Gas and air piping shall be supported in such a way that no additional loads will be created on the burner.

Burner mounting flange loads

Check the burner weight and reinforce the burner mounting connections on the installation or the combustion chamber/furnace back wall if necessary to support the complete burner weight.

Installation instructions

Storage of MEGAFIRE® burners

MEGAFIRE® burners shall be stored dry (inside). Burner refractory blocks have been cured carefully before shipment. It is essential that these blocks are kept dry. Wetting of the blocks during transport or storage could result in premature failures.

Handling of MEGAFIRE® burners

MEGAFIRE® burners are shipped as complete units. Handle burners with care, using proper equipment during unpacking, transporting, lifting and installation. Any impact on the burner could result in damage. To prevent damage in transit, accessories such as UV scanners, control motors and solenoid valves may be packed separately and shipped loose.

Bolting on the installation

Bolt the burner to the installation's burner mounting flange, using all the mounting holes present in the burner mounting flange. Use a proper heat resisting gasket between burner and burner mounting flange when applicable (these gaskets are not supplied as a standard

item with the burner). Tighten the flange bolting with correct torque. Retighten all bolts after firing and regularly after commissioning.

Orientation

MEGAFIRE® burners can be mounted and fired in any direction. However, it is advised to avoid orientations which can permit flame supervision ports to collect debris and/or moisture. Also check limitations on orientation of other components mounted on the burner head.

WARNING

Hot surface can cause injury.

In some applications, the burner housing temperature can rise during operation. Hot surface can cause severe burn injuries. Insure appropriate measures are taken to prevent contact and/or correct warning signs are displayed.

START-UP INSTRUCTIONS FOR MEGAFIRE® BURNERS

Instructions provided by the company or individual responsible for the manufacture and/or overall installation of a complete system incorporating MAXON burners take precedence over the installation and operating instructions provided by MAXON. If any of the instructions provided by MAXON are in conflict with local codes or regulations, please contact MAXON before initial start-up of equipment.

CAUTION

Read instruction manual.

Read the combustion system manual carefully before initiating the start-up and adjustment procedure. Verify that all of the equipment associated with and necessary to the safe operation of the burner system has been installed correctly, that all pre-commissioning checks have been carried out successfully and that all safety related aspects of the installation are properly addressed.

Initial adjustment and light-off should be undertaken only by a trained commissioning engineer.

First firing or restart after shut-down

During cold starts, the temperature rise shall be limited. Allow the burner to fire on low fire for some time to allow the parts to heat up slowly. For burner with high temperature refractory sleeves, make sure to allow extended period at low firing range to minimize potential damage from accumulated and retained moisture in the refractory material during start-up of the burner.

Safety interlocks

Guarantee that all the required safety locks as described in the applicable local codes or regulations, or supplementary safety locks requested for safe operation of the overall installation, are working properly and result in a positive safety-lock of the burner.

Do not bypass any of these safety interlocks. This will result in unsafe operation.

Checks during and after start-up

During and after start-up, check the integrity of the system. Check all bolted connections after first firing (first time on temperature) and retighten if necessary.

Purge

For safety reasons, it is required to purge the installation sufficiently long enough to ensure that all possible combustibles are evacuated before ignition. Refer to applicable local codes and your specific application requirements to determine the purge time.

Pilot ignition

GAS PILOT

Adjust the pilot gas regulator at the correct set point before pilot ignition attempt. Turn the adjustable pilot gas orifice screw out (counter-clockwise) several turns from its fully seated position. Refine during lighting of the pilot to a yellow/blue flame and/or strongest flame signal.

OIL FIRING

Adjust the oil pressure regulator at the correct set point. Make sure the atomizing air is set at the correct pressure and available before igniting the main burner. Ensure that the oil/air ratio valve is in the start position when lighting the main burner.

After ignition of the main burner, allow some time on minimum capacity to allow the burner parts to heat up slowly.

Main burner ignition

GAS FIRING

Adjust the main gas regulator at the correct set point before igniting the main burner. Ensure that the gas/air ratio valve is in the start position when lighting the main burner.

OIL FIRING

Adjust the oil pressure regulator at the correct set point. Make sure the atomizing air is set at the correct pressure and available before igniting the main burner. Ensure that the oil/air ratio valve is in the start position when lighting the main burner.

After ignition of the main burner, allow some time on minimum capacity to allow the burner parts to heat up slowly.

Ratio adjustment

Once the main flame is ignited, adjust air/gas/oil ratio of the burner to have the required combustion quality. Slowly increase the capacity while observing the flame. Do not increase the capacity too fast to avoid damage to the burner parts or furnace due to excessive temperature gradient.



CAUTION

Use proper protection.

Oil flames are highly radiant. Use eye protection and avoid prolonged viewing.

MAINTENANCE AND INSPECTION

Safety requirements

Regular inspection, testing and recalibration of the combustion equipment according to the installation's manual are an integral part of its safety. Inspection activities and frequencies shall be carried out as specified in the installation manual. Perform the following activities at least annually as part of a recommended preventative maintenance routine.

- Inspect burner internal parts for wear and oxidation, paying special attention to the refractory of the burner block (when applicable).
- Inspect associated control instruments and devices for function with particular attention to all safety permissive switches.
- Perform leak tests on fuel shut off valves according to any schedule established by the authority having jurisdiction.

Visual inspections

Regular visual inspection of all air, oil and gas connections to the burner, bolting of the burner mounting flange and burner flame shape and aspect are essential for safe operation.

Recommended spare parts

Keep local stock of the spark ignitor and consult the installation manual for other burner spare parts and system accessories.

For More Information

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Eclipse, Exothermics, Hauck, Kromschröder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.

Honeywell MAXON branded products

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