

**XPO™****Ultra low NOx indirect burner**

- Low temperature burner for use with clean fuel gases
- Single digit NOx emissions at 30% excess air
- High efficiency with low excess air requirements
- Capacities up to 2340 kW with a least 3:1 turndown ratio
- For use in indirect fired solution backed heaters

W W W . M A X O N C O R P . C O M

COMBUSTION SYSTEMS FOR INDUSTRY

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## Product description

MAXON XPO™ burners are low temperature burners for use in liquid backed applications, including:

- Water back heater
- Fire tube boiler
- Thermal oil heater
- Direct contact water heater
- Solution heating/tanks
- Snow melters

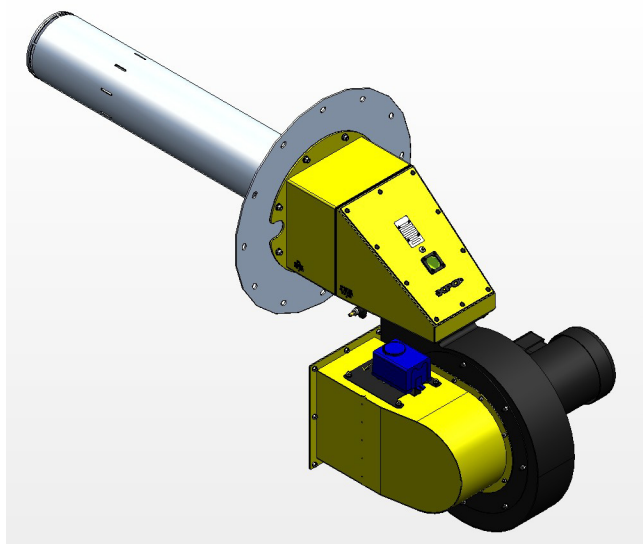
XPO™ burners provide high efficiency operation with low excess air requirements. They are designed for ease of retrofitting into existing liquid backed applications.

XPO™ burners are available in two basic versions:

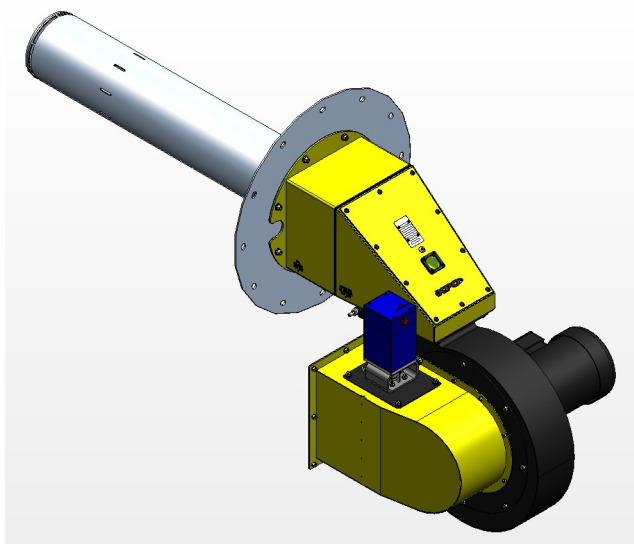
- Packaged (PB) with integral combustion air blower
- External blower (EB) for use with an external combustion air source for extended capacities

Both packaged (PB) and external blower (EB) versions include two different choices for blast tube lengths. A 610 mm or 1220 mm long blast tube is available. Blast tube length should be selected based on the wall penetration depth or non-liquid cooled portion of fire tube.

The packaged (PB) version also includes a choice of blower voltage and a choice of air/fuel ratio control actuators. MAXON requires the use of parallel positioning control systems. For indoor, general purpose installations, use Honeywell ControlLink™ or equivalent system. For outdoor or hazardous duty service installations, use MAXON SMARTLINK® MRV control systems.



XPO™ burner with  
Honeywell ControlLink™



XPO™ burner with  
MAXON SMARTLINK®

## Available XPO™ ultra low NOx burner sizes

## Packaged (PB) versions

Typical burner data											
Fuel: natural gas at 15°C with 10.9 kWh/Nm <sup>3</sup> HHV - sg = 0.6 [1]											
Combustion air: 15°C - 21% O <sub>2</sub> - 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.											
		XPO 1 PB 2 XPO 1 PB 4		XPO 2 PB 2 XPO 2 PB 4		XPO 3 PB 2 XPO 3 PB 4		XPO 4 PB 4		XPO 5 PB 4	
		15% excess air	30% excess air	15% excess air	30% excess air	15% excess air	30% excess air	15% excess air	30% excess air	15% excess air	30% excess air
Maximum burner capacity [4]	kW	351	293	688	615	966	878	1464	1318	1932	1757
Minimum burner capacity [2]	kW	88	88	173	173	193	193	293	293	293	293
Turndown ratio [3]		4:1	3.3:1	4:1	3.6:1	5:1	4.5:1	5:1	4.5:1	6.6:1	6:1

[1] sg (specific gravity) = relative density to air (density air = 1.293 kg/Nm<sup>3</sup>)

[2] Minimum burner capacity will be affected by fuel and applications parameters (heat flux).

[3] Turndown ratio will vary depending on the application heat flux. Lower heat flux (<3631 kW/m<sup>2</sup>) will result with lower turndown ratios.

[4] Capacity displayed assumes blower operation on 60Hz electrical supply. Gross output will be reduced by 17% if operated on 50Hz. Fuel and air pressure should be reduced by 30% while motor power will reduce 40% with 50Hz operation. Turndown ratio will be reduced in kind with minimum capacity remaining fixed.

## External blower (EB) versions

Typical burner data					
Fuel: natural gas at 15°C with 10.9 kWh/Nm <sup>3</sup> HHV - sg = 0.6 [1]					
Combustion air: 15°C - 21% O <sub>2</sub> - 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.					
		XPO 3 EB 2 XPO 3 EB 4		XPO 5 EB 4	
		15% excess air	30% excess air	15% excess air	30% excess air
Maximum burner capacity [4]	kW	1318	1230	2577	2342
Minimum burner capacity [2]	kW	220	220	439	439
Turndown ratio [3]		6:1	5.6:1	5.9:1	5.3:1

[1] sg (specific gravity) = relative density to air (density air = 1.293 kg/Nm<sup>3</sup>)

[2] Minimum burner capacity will be affected by fuel and applications parameters (heat flux).

[3] Turndown ratio will vary depending on the application heat flux. Lower heat flux (<3631 kW/m<sup>2</sup>) will result with lower turndown ratios.

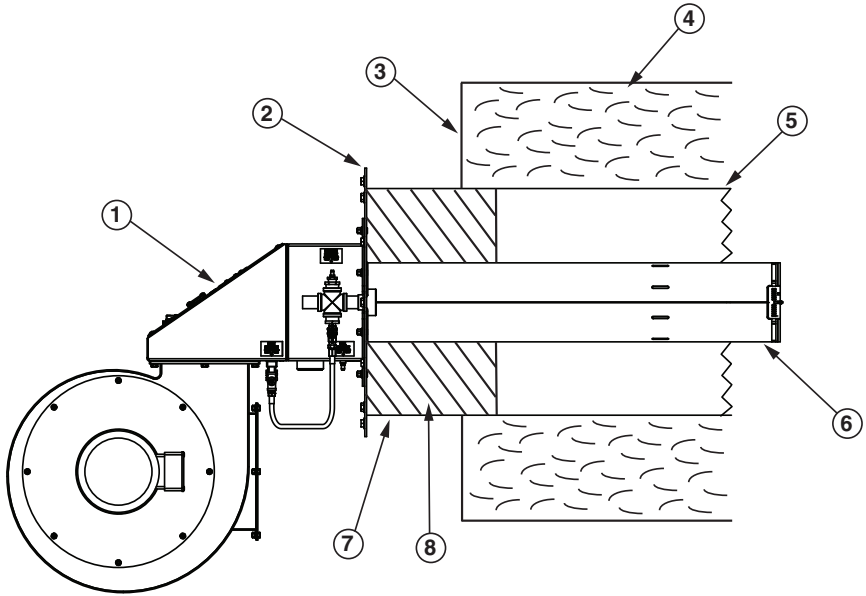
[4] Capacity displayed assumes blower operation on 60Hz electrical supply. Gross output will be reduced by 17% if operated on 50Hz. Fuel and air pressure should be reduced by 30% while motor power will reduce 40% with 50Hz operation. Turndown ratio will be reduced in kind with minimum capacity remaining fixed.

## Applications

XPO™ ultra low NOx burners should be used in liquid backed applications, including:

- Water back heater
- Fire tube boiler
- Thermal oil heater
- Direct contact water heater
- Solution heating/tanks
- Snow melters

- 1) XPO™ burner
- 2) Mounting flange
- 3) Unit wall
- 4) Liquid solution
- 5) Fire tube
- 6) Burner blast tube
- 7) Non-cooled fire tube wall
- 8) Customer-supplied insulation\*

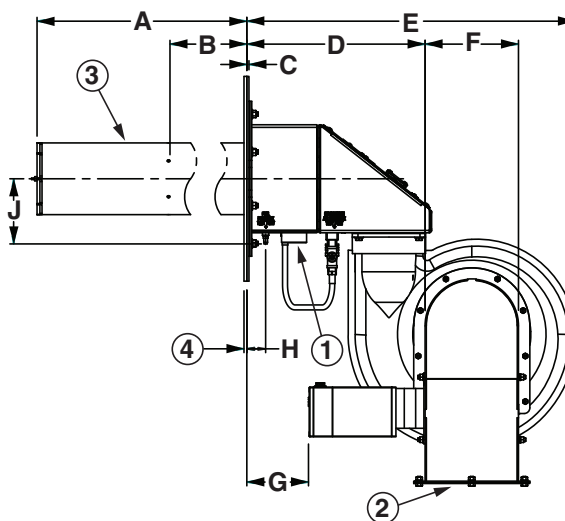


\*All non-liquid cooled surfaces **must be insulated** as shown above.

## Dimensions and weights

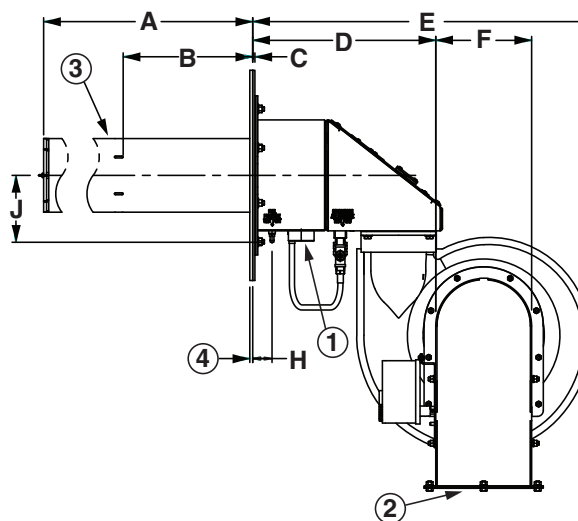
### XPO™ 1 PB (packaged) burners with MAXON SMARTLINK® actuator

- 1) 1-1/2" NPT main gas inlet
- 2) Air inlet
- 3) Burner blast tube
- 4) 6 mm optional oven wall gasket



### XPO™ 1 PB (packaged) burners with general purpose actuator (shown with Honeywell ControlLinks™ actuator)

- 1) 1-1/2" NPT main gas inlet
- 2) Air inlet
- 3) Burner blast tube
- 4) 6 mm optional oven wall gasket

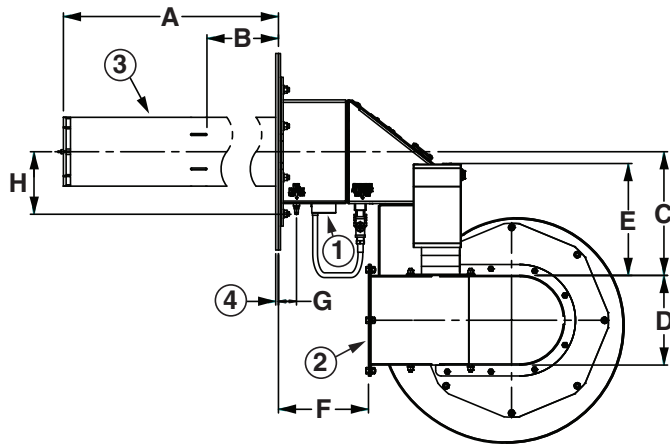


Dimensions in mm unless stated otherwise

Burner size	A	B	C	D	E	F	G	H	J	Weight kg
XPO 1 PB 2	592	282	5	398	734	208	138	41	146	68
XPO 1 PB 4	1145	848	5	398	734	208	138	41	146	77

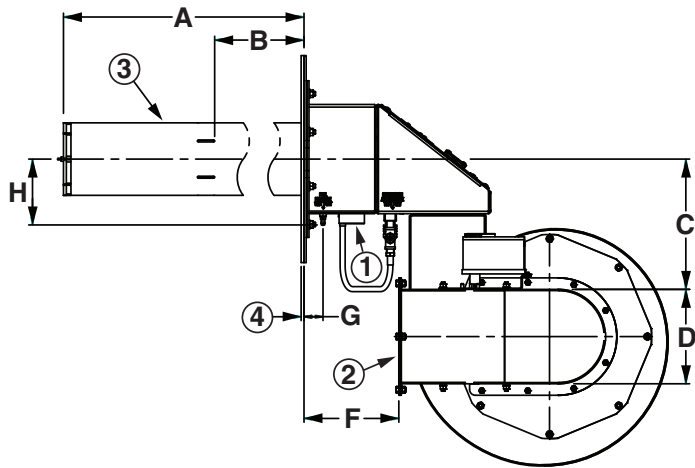
XPO™ 2 & 3 PB (packaged) burner with MAXON SMARTLINK® actuator

- 1) 1-1/2" NPT main gas inlet
- 2) Air inlet
- 3) Burner blast tube
- 4) 6mm optional oven wall gasket



XPO™ 2 & 3 PB (packaged) burners with general purpose actuator  
(shown with Honeywell ControlLinks™ actuator)

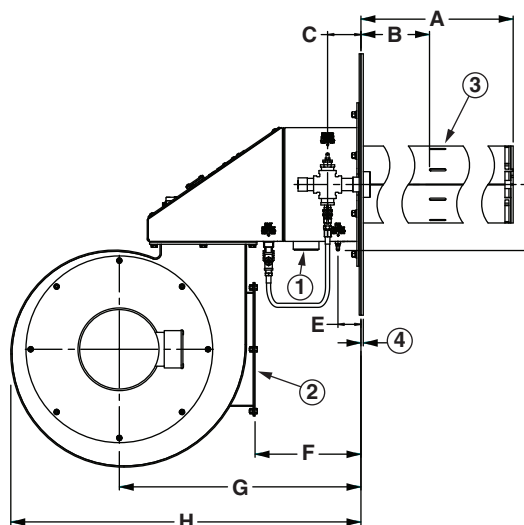
- 1) 1-1/2" NPT main gas inlet
- 2) Air inlet
- 3) Burner blast tube
- 4) 6mm optional oven wall gasket



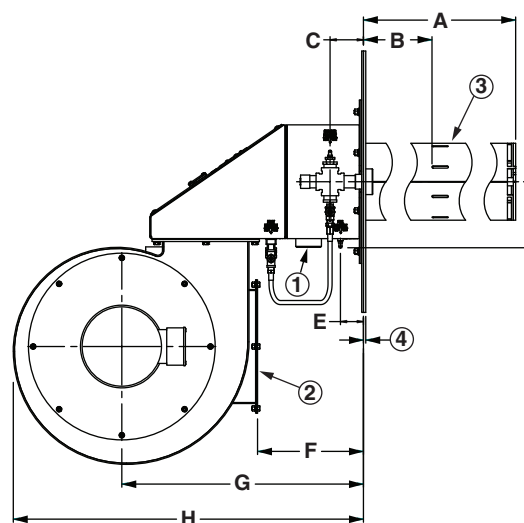
Dimensions in mm unless stated otherwise									
Burner size	A	B	C	D	E	F	G	H	Weight kg
XPO 2 PB 2	592	269	288	208	262	210	42	146	86
XPO 2 PB 4	1145	838	288	208	262	210	42	146	95
XPO 3 PB 2	592	259	288	208	262	210	42	146	104
XPO 3 PB 4	1145	810	288	208	262	210	42	146	113

**XPO™ 4 & 5 PB (packaged) burner with MAXON SMARTLINK® actuator**

- 1) 2" NPT main gas inlet
- 2) Air inlet
- 3) Burner blast tube
- 4) 6mm optional oven wall gasket

**XPO™ 4 & 5 PB (packaged) burners with general purpose actuator  
(shown with Honeywell ControLinks™ actuator)**

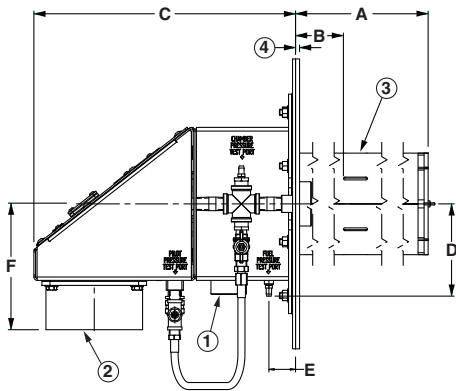
- 1) 2" NPT main gas inlet
- 2) Air inlet
- 3) Burner blast tube
- 4) 6mm optional oven wall gasket

**Dimensions in mm unless stated otherwise**

Burner size	A	B	C	D	E	F	G	H	Weight kg
XPO 4 PB 4	10.96	756	90	180	62	288	657	952	153
XPO 5 PB 4	10.96	736	90	180	62	288	657	952	153

XPO™ 3 EB (external blower) burner

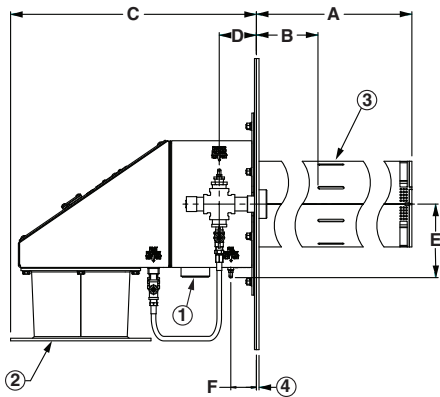
- 1) 1-1/2" NPT gas inlet
- 2) Combustion air inlet
- 3) Burner blast tube
- 4) 6 mm optional oven wall gasket



Dimensions in mm unless specified otherwise							
Burner size	A	B	C	D	E	F	Weight kg
XPO 3 EB 2	591	259	412	145	42	200	32
XPO 3 EB 4	1145	810	412	145	42	200	41

XPO™ 5 EB (external blower) burner

- 1) 2" NPT gas inlet
- 2) Combustion air inlet
- 3) Burner blast tube
- 4) 6 mm optional oven wall gasket



Dimensions in mm unless specified otherwise							
Burner size	A	B	C	D	E	F	Weight kg
XPO 5 EB 4	1096	737	600	90	180	62	59

Typical emissions

XPO™ burner will achieve ultra low NOx emissions while operating at 30% excess air level.

Exact emissions performance may vary in your application. Contact MAXON for information on installation specific estimates or guarantees. No guarantee of emissions is intended or implied without specific written guarantee from MAXON.

Read “Specifications of XPO™ burners” for complete information on XPO™ burners.