

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 8 MBtu/h 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

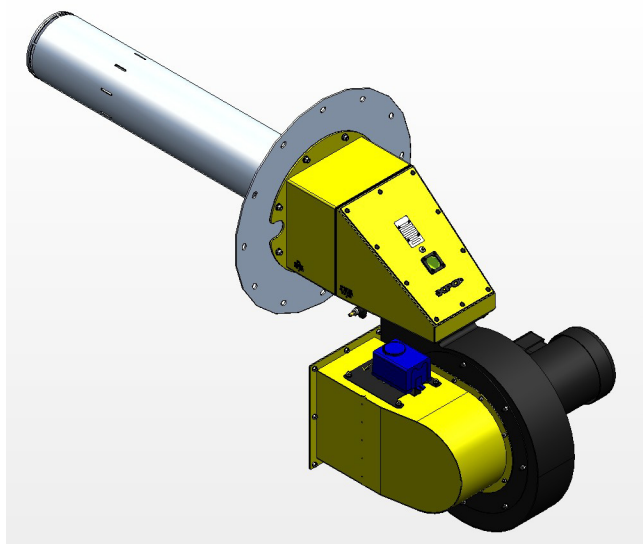
XPO™ burners provide high efficiency operation with low excess air requirements. They are designed for ease of retrofitting into existing liquid backed applications.

XPO™ burners are available in two basic versions:

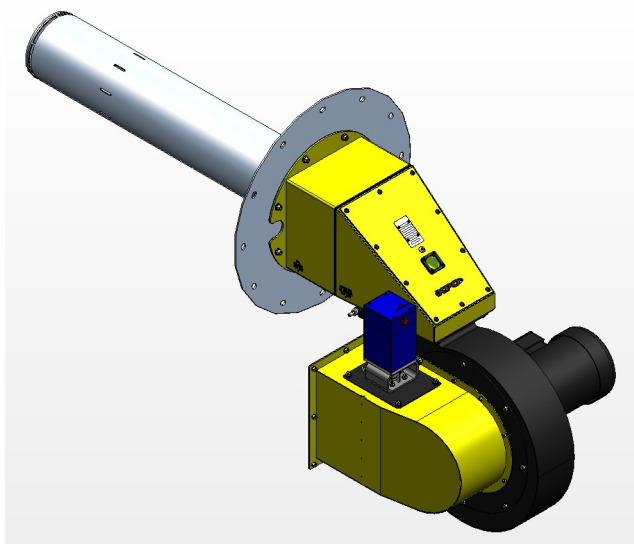
- Packaged (PB) with integral combustion air blower
- External blower (EB) for use with an external combustion air source for extended capacities

Both packaged (PB) and external blower (EB) versions include two different choices for blast tube lengths. A 2 foot or 4 foot 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 60°F with 1000 Btu/ft ³ (st) HHV - sg = 0.6 [1]											
Combustion air: 60°F - 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.											
		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]	MBtu/h	1.2	1.0	2.35	2.1	3.3	3.0	5.0	4.5	6.6	6.0
Minimum burner capacity [2]	MBtu/h	0.3	0.3	0.59	0.59	0.66	0.66	1.0	1.0	1.0	1.0
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 = 0.0763 lb/ft³ (st))

[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 (<8000 Btu/in²) 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 60°F with 1000 Btu/ft ³ (st) HHV - sg = 0.6 [1]					
Combustion air: 60°F - 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.					
		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]	MBtu/h	4.5	4.2	8.8	8.0
Minimum burner capacity [2]	MBtu/h	0.75	0.75	1.5	1.5
Turndown ratio [3]		6:1	5.6:1	5.9:1	5.3:1

[1] sg (specific gravity) = relative density to air (density air = 0.0763 lb/ft³ (st))

[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 (<8000 Btu/in²) will result with lower turndown ratios.

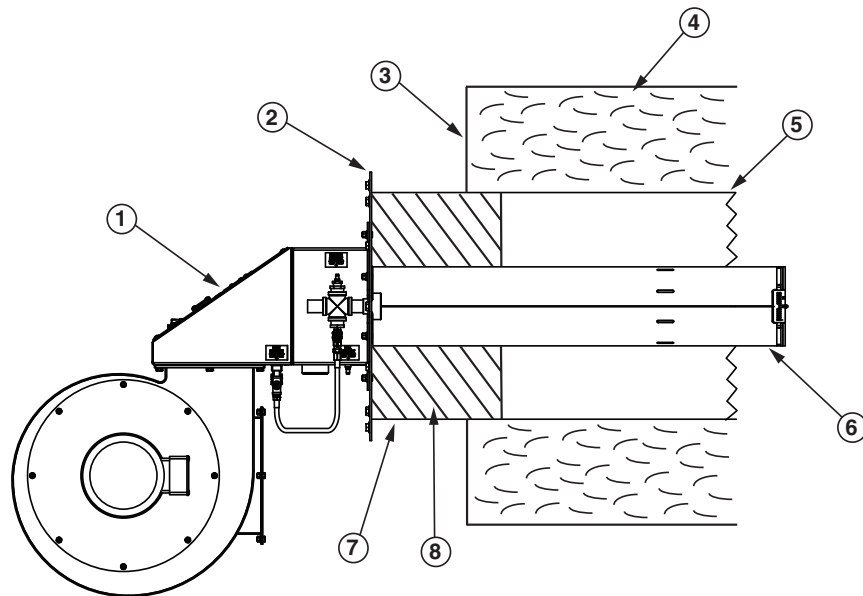
[4] Capacity displayed assumes blower operation on 60Hz electrical supply. Gross output will be reduced by 17% if operated on 50Hz. Fuel and air pressure should be reduced by 30% while motor power will reduce 40% with 50Hz operation. Turndown ratio will be reduced in kind with minimum capacity remaining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

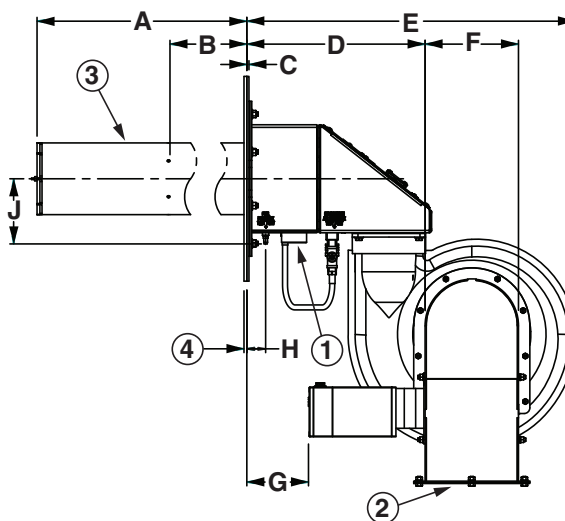


*All non-liquid cooled surfaces **must be insulated** as shown above.

Dimensions and weights

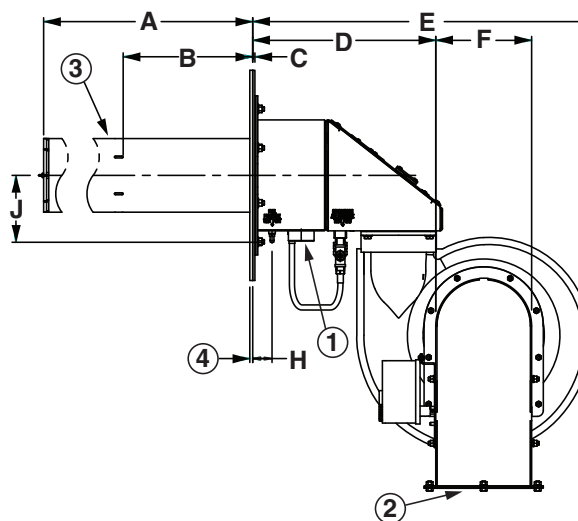
XPO™ 1 PB (packaged) burners with MAXON SMARTLINK® actuator

- 1) 1-1/2" NPT main gas inlet
- 2) Air inlet
- 3) Burner blast tube
- 4) .25" 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) .25" optional oven wall gasket

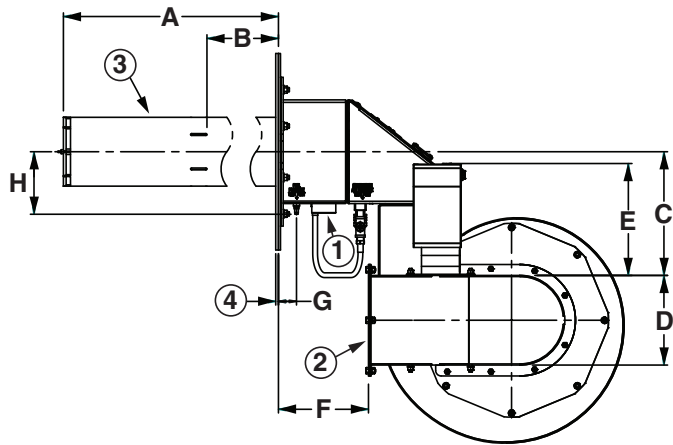


Dimensions in inches unless stated otherwise

Burner size	A	B	C	D	E	F	G	H	J	Weight lbs
XPO 1 PB 2	23.3	11.1	.19	15.7	28.9	8.2	5.42	1.65	5.73	150
XPO 1 PB 4	45.1	33.4	.19	15.7	28.9	8.2	5.42	1.65	5.73	170

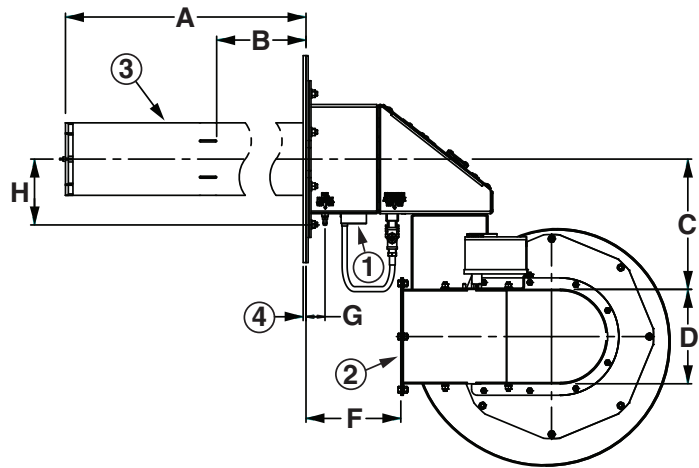
XPO™ 2 & 3 PB (packaged) burner with MAXON SMARTLINK® actuator

- 1) 1-1/2" NPT main gas inlet
- 2) Air inlet
- 3) Burner blast tube
- 4) .25" optional oven wall gasket



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

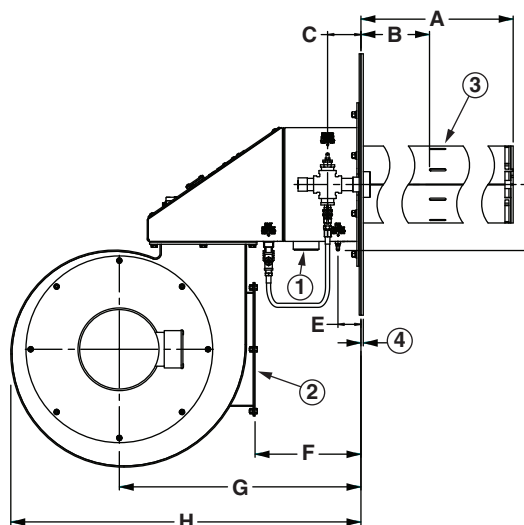
- 1) 1-1/2" NPT main gas inlet
- 2) Air inlet
- 3) Burner blast tube
- 4) .25" optional oven wall gasket



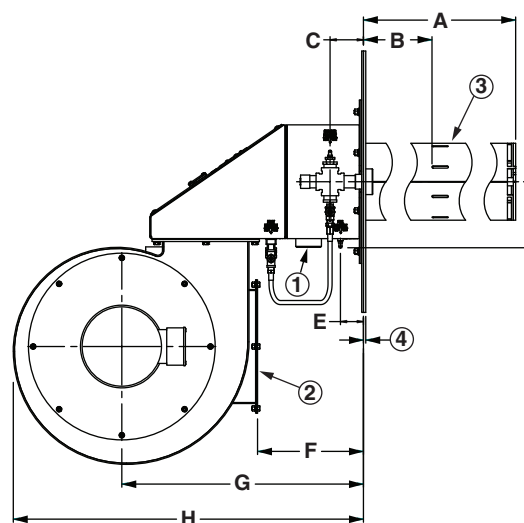
Dimensions in inches unless stated otherwise									
Burner size	A	B	C	D	E	F	G	H	Weight lbs
XPO 2 PB 2	23.3	10.6	11.33	8.21	10.3	8.25	1.65	5.73	190
XPO 2 PB 4	45.1	33.0	11.33	8.21	10.3	8.25	1.65	5.73	210
XPO 3 PB 2	23.3	10.2	11.33	8.21	10.3	8.25	1.65	5.73	230
XPO 3 PB 4	45.1	31.9	11.33	8.21	10.3	8.25	1.65	5.73	250

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

- 1) 2" NPT main gas inlet
- 2) Air inlet
- 3) Burner blast tube
- 4) .25" optional oven wall gasket

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

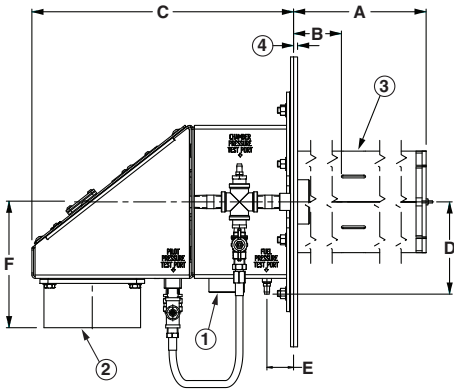
- 1) 2" NPT main gas inlet
- 2) Air inlet
- 3) Burner blast tube
- 4) .25" optional oven wall gasket

**Dimensions in inches unless stated otherwise**

Burner size	A	B	C	D	E	F	G	H	Weight lbs
XPO 4 PB 4	43.14	29.76	3.58	7.07	2.46	11.34	25.88	37.51	337
XPO 5 PB 4	43.14	29.01	3.58	7.07	2.46	11.34	25.88	37.51	337

XPO™ 3 EB (external blower) burner

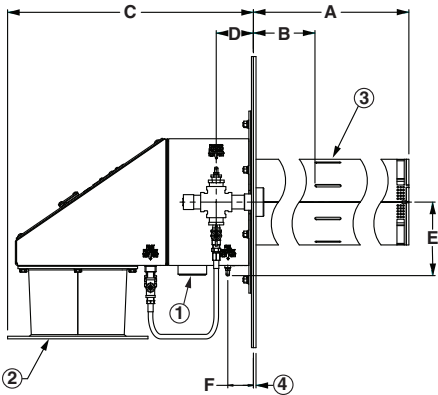
- 1) 1-1/2" NPT gas inlet
- 2) Combustion air inlet
- 3) Burner blast tube
- 4) .25" optional oven wall gasket



Dimensions in inches unless specified otherwise							
Burner size	A	B	C	D	E	F	Weight lbs
XPO 3 EB 2	23.28	10.2	16.25	5.73	1.65	7.86	70
XPO 3 EB 4	45.1	31.9	16.25	5.73	1.65	7.86	90

XPO™ 5 EB (external blower) burner

- 1) 2" NPT gas inlet
- 2) Combustion air inlet
- 3) Burner blast tube
- 4) .25" optional oven wall gasket



Dimensions in inches unless specified otherwise							
Burner size	A	B	C	D	E	F	Weight lbs
XPO 5 EB 4	43.14	29.01	23.64	3.58	7.07	2.46	131

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.