

PP PACKAGED AIR HEAT BURNERS

MODEL: PP

Revision: 0

BULLETIN
8809

DESCRIPTION

The Pyronics PP Package Burner Series is designed to offer the oven designer, process engineer or user a complete pre-wired, pre-piped burner package.

The system offers the precise package required for virtually all types of low temperature gas fired process heating applications.

Available gas trains include either FM or IRI with modular components or the "traditional" individual components.

Most sizes offer a choice of firing methods: on-off, high-low, or gas only modulation with constant air.

A NEMA 12 electrical enclosure is standard and includes the burner management and flame safeguard components.



BENEFITS

- Pre-packaged, pre-piped assembly
- FM and IRI gas trains available
- Gas-only modulation, high-low or on-off firing as required
- Electrical components pre-wired to electrical enclosure
- Ease of maintenance and installation
- Easy access to gas nozzle, spark plug and flame sensor
- Twelve sizes - two lineal heat rates
- Designed for high turndown

PREPACKAGED BURNERS - COMPLETE HEAT!

Each burner unit is supplied with a packaged and pre-piped valve assembly, including the safety valves and controls necessary to form a fully prepackaged combustion module. Optionally PP burners can be supplied without selected components as required by the user or OEM equipment designer.

All burners have an integral combustion air fan, air pressure switch, ignition spark plug and flame sensor. The flame sensor can be either a flame rod (flame rectification) or an optional UV sensor. All the electrical components on the burner are pre-wired to an integral terminal enclosure mounted on the burner assembly.

The NEMA 12 electrical terminal enclosure contains an on-off switch, reset button and burner run and flame failure indication lights.

As an option, full custom-designed control panels containing temperature controls, high temperature limits and any other control equipment the user or OEM may desire are available.

Burners are supplied complete with a gas valve assembly consisting of pilot/start valve assembly, automatic shut-off valves, pressure switches and regulators. Either FM or IRI may be supplied as standard. Valve trains are supplied either with modular components or with pre-piped individual components. Other gas trains are available upon request.

Prebuilt burner packages are fully tested and the operation of all components checked before shipment.

CAUTION: Operation of combustion equipment can be hazardous resulting in bodily injury or equipment damage. Each burner should be supervised by a combustion safeguard and only qualified personnel should install, make system adjustments and perform any required service.



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PP PACKAGED AIR HEAT BURNERS

BULLETIN 8809
PAGE NO. 2

THE PP BURNER

The PP series of gas burners are pre-packaged fan assisted units designed to suit virtually all types of low temperature gas fired applications.

Typical applications include the firing of box ovens, industrial dryers and air heaters.

The burner system produces a wide, relatively short flame. This feature makes the burner ideal for applications where chamber length is restricted.

The PP burners have been designed with ease of maintenance and installation in mind. All parts of the burner, including the gas manifold and combustion head, can be removed without removing the burner from the equipment. For ease of maintenance and service the spark plug and flame sensor are externally mounted.

A heat resistant peepsight is fitted in the casing of all burners allowing visual inspection of the flame during operation.

The nozzle mix design of the burner and the progressive air mixing feature of the combustion head ensure that burners can operate with high turn down capability. Turndown ratios up to 40:1 are possible depending on burner application and selection.

TWO LINEAL HEAT RATES

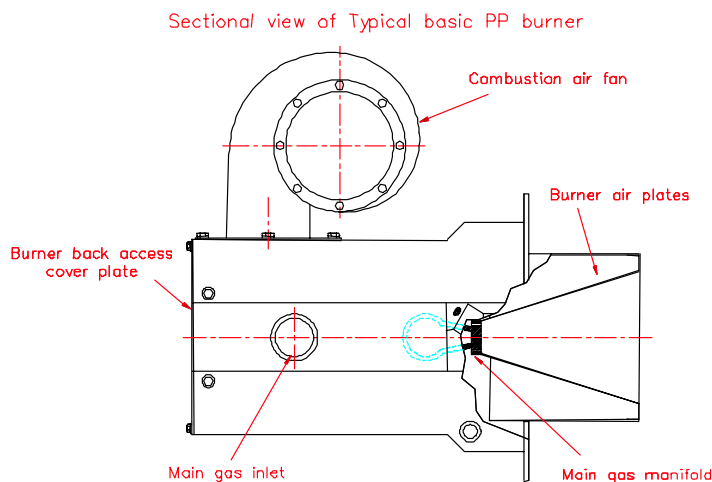
The PP burner is manufactured in two basic gas manifold and air plate designs making possible a burner range with heat input concentrations of 1,000,000 and 2,000,000 Btu/hr per foot length of burner gas manifold.

The flame length produced by the PP burner is shorter than that produced by conventional burners and depends on burner setting, combustion chamber conditions and application.

Maximum flame lengths for the heat inputs of 1,000,000 and 2,000,000 Btu/hr per foot length of burner gas manifold are 28" and 40" respectively.

HIGH TURNDOWN CAPABILITY

The Pyronics PP burners are designed with progressive air mixing and feature an engineered partial premix system at low firing rates for extended turndown capability. In most applications, turndowns up to 40:1 are possible.



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PP PACKAGED AIR HEAT BURNERS

BULLETIN 8809
PAGE NO. 3

UTILITY REQUIREMENTS

Gas – PP burners can be supplied for operation on natural or LP gases and are available in twelve basic sizes, ranging from nominal thermal capacities of 500,000 Btu/hr to 6,000,000 Btu/hr.

Valve assemblies on the burners are sized to handle an inlet pressure of 8" WC natural gas or 12" WC propane. Burners and valves can be sized to handle other inlet pressures as required.

Electrical – PC burners are supplied with combustion air blower motors either 115/230/1/60 or 230/460/3/60 depending upon burner capacity and customer preference. Both TEFC (standard) and ODP motors are available.

TYPES OF CONTROL

Most PP models may be fired in one of three control methods:

Gas only modulation with constant air.

High-low.

On-off.

INSTALLATION, START-UP, MAINTENANCE

A complete installation and maintenance manual is supplied for all complete packages. Commissioning should be carried out by qualified personnel using the instructions in the manual. If desired, Pyronics' representatives can arrange for installation and/or maintenance services.

Burners, parts and service are available worldwide.

BURNER MODEL	Btu/Hr	kw	Blower Motor HP
PP21	500,000	145	1/3
PP22	1,000,000	290	1/3
PP23	1,500,000	435	1/2
PP24	2,000,000	580	1/2
PP34	2,000,000	580	1/2
PP35	2,500,000	725	3/4

BURNER MODEL	Btu/Hr	kw	Blower Motor HP
PP36	3,000,000	870	3/4
PP42	2,000,000	580	1/2
PP43	3,000,000	870	3/4
PP44	4,000,000	1,160	1-1/2
PP45	5,000,000	1,450	2
PP46	6,000,000	1,740	3

Capacities and blower sizing based upon neutral to slight negative draft pressure. Capacities and/or blowers will be different with positive pressure. Consult factory.

Standard motors supplied are TEFC. 115/230/1/60 for 3/4 HP and less. 230/460/3/60 for 1 HP and greater.

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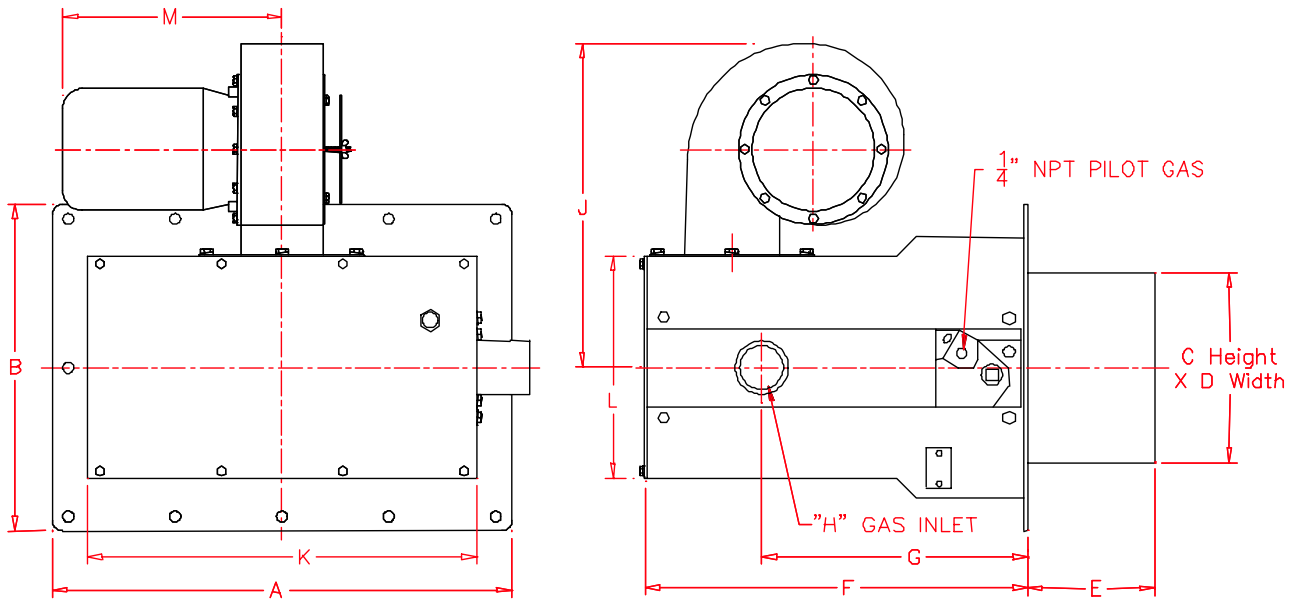
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BULLETIN 8809
PAGE NO.4

DIMENSIONS



BURNER TYPE	A	B	C	D	E	F	G	H	J	K	L	M
PP21	11-3/4	14-1/8	6-3/4	7-5/8	3-1/4	13-3/4	9-3/4	1	13-1/2	8	8-3/4	10
PP22	17-3/4	14-1/8	6-3/4	13-5/8	3-1/4	13-3/4	9-3/4	1-1/2	13-1/2	14	8-3/4	10-1/2
PP23	23-5/8	14-1/8	6-3/4	19-5/8	3-1/4	13-3/4	9-3/4	1-1/2	15-1/2	20	8-3/4	11
PP24	29-1/2	14-1/8	6-3/4	25-5/8	3-1/4	13-3/4	9-3/4	1-1/2	15-1/2	26	8-3/4	11-1/4
PP34	29-1/2	16-3/4	6-3/4	25-5/8	3-1/4	19-3/4	13-5/8	1-1/2	16-3/4	26	11-1/2	11-1/4
PP35	35-3/8	16-3/4	6-3/4	31-5/8	3-1/4	19-3/4	13-5/8	1-1/2	16-3/4	32	11-1/2	12
PP36	41-3/8	16-3/4	6-3/4	37-5/8	3-1/4	19-3/4	13-5/8	1-1/2	16-3/4	38	11-1/2	12
PP42	17-3/4	16-3/4	9-1/4	13-5/8	6-1/2	19-3/4	13-5/8	2	16-3/4	14	11-1/2	11-1/4
PP43	23-5/8	16-3/4	9-1/4	19-5/8	6-1/2	19-3/4	13-5/8	2	16-3/4	20	11-1/2	12
PP44	29-1/2	16-3/4	9-1/4	25-5/8	6-1/2	19-3/4	13-5/8	2	17-1/2	26	11-1/2	13-1/4
PP45	35-3/8	16-3/4	9-1/4	31-5/8	6-1/2	19-3/4	13-5/8	2	18-1/2	32	11-1/2	15
PP46	41-3/8	16-3/4	9-1/4	37-5/8	6-1/2	19-3/4	13-5/8	2	18-1/2	38	11-1/2	16-1/2

Note :

All dimensions are in inches + or - 1/8

M Dimension approximate, dependent upon motor manufacturer.

All dimensions subject to change without notice.

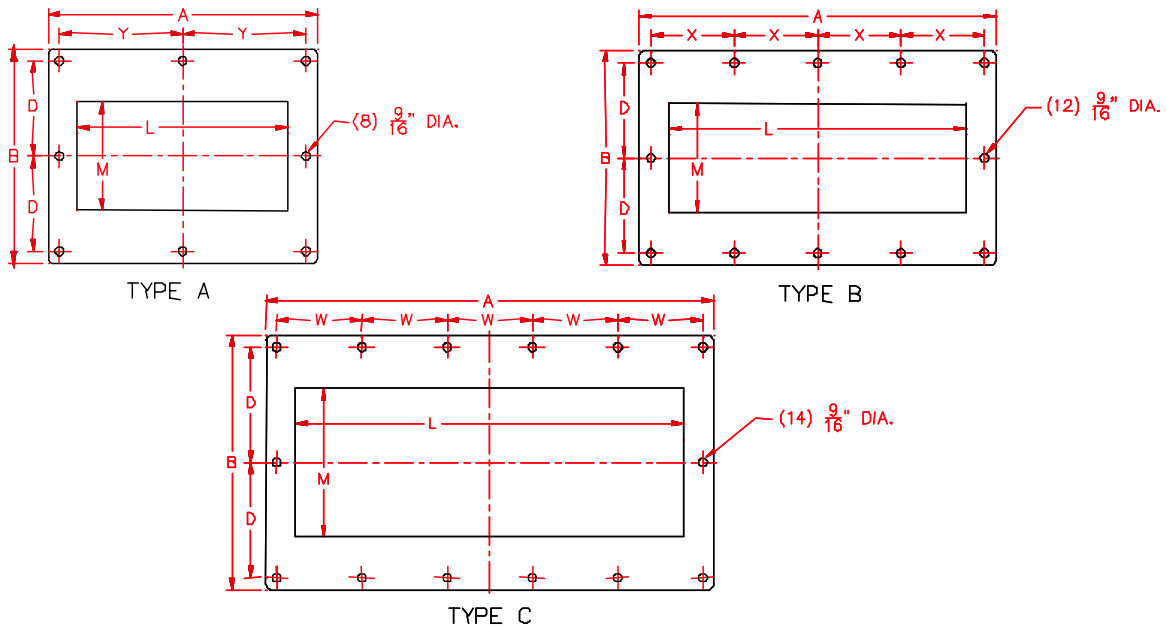
Blower may be mounted in other configurations.

PP23 & PP24 blower housing mounted sideways with motor facing away from mounting flange

PP PACKAGED AIR HEAT BURNERS

BULLETIN 8809
PAGE NO. 5

MOUNTING PLATE DIMENSIONS



BURNER TYPE	FLANGE STYLE	A	B	D	L	M	W	X	Y
PP21	A	11-3/4	14-1/8	6-5/16	7-7/8	7-1/8			5-1/8
PP22	A	17-3/4	14-1/8	6-5/16	13-7/8	7-1/8			8-1/16
PP23	B	23-5/8	14-1/8	6-5/16	19-7/8	7-1/8		5-1/2	
PP24	C	29-1/2	14-1/8	6-5/16	25-7/8	7-1/8	5-19/32		
PP34	C	29-1/2	16-3/4	7-19/32	25-7/8	7-1/8	5-19/32		
PP35	C	35-3/8	16-3/4	7-19/32	31-3/4	7-1/8	6-3/4		
PP36	C	41-3/8	16-3/4	7-19/32	37-3/4	7-1/8	7-31/32		
PP42	A	17-3/4	16-3/4	7-19/32	13-7/8	9-5/8			8-1/16
PP43	B	23-5/8	16-3/4	7-19/32	19-7/8	9-5/8		5-1/2	
PP44	C	29-1/2	16-3/4	7-19/32	25-7/8	9-5/8	5-19/32		
PP45	C	35-3/8	16-3/4	7-19/32	31-3/4	9-5/8	6-3/4		
PP46	C	41-3/8	16-3/4	7-19/32	37-3/4	9-5/8	7-31/32		

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