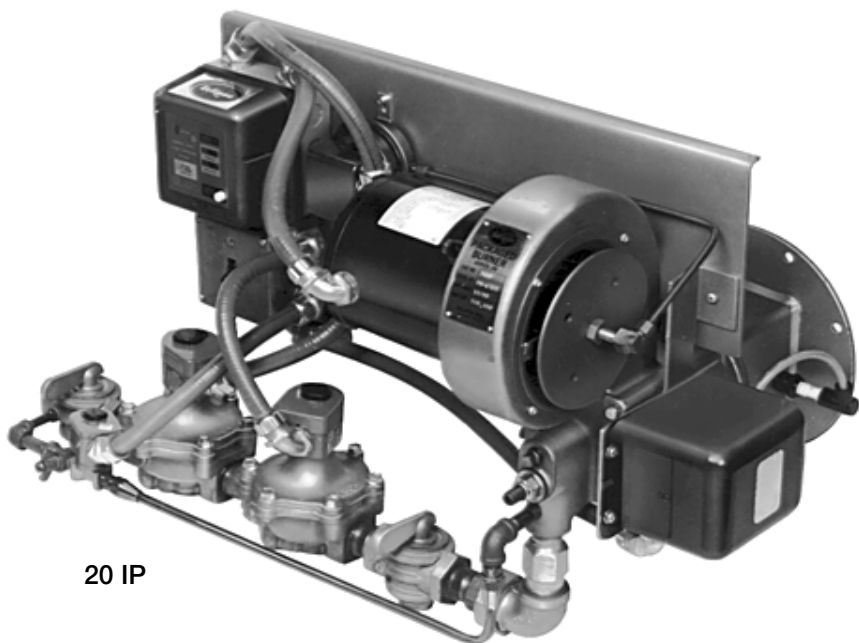


# ECLIPSE IMMERSO-PAK BURNERS

Models 16 & 20 "IP"



20 IP

- For 4, 5, & 6" immersion tubes.
- Easy to install and operate.
- Rugged construction for long life in industrial environments.
- Low maintenance.
- Low noise levels.
- Electronic flame monitoring.
- Two automatic gas shut-off valves.
- Air flow proving switch.
- 100% factory tested and adjusted.

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Eclipse Immerso-Pak Burners (IP) are packaged burners that are easy to install, simple to operate, and offer long service life in industrial environments. They are ideal for heating immersion tubes on cleaning tanks, spray washers, salt baths, quenching tanks, tempering tanks, and similar equipment.

IP burners are fully piped, wired, tested, and adjusted before shipment. To install the burner, simply mount it on the immersion tube and connect gas and electricity. To operate the burner, just turn the burner switch on or off as required.



**ECLIPSE COMBUSTION**

## Specifications

**Maximum Inputs**—Natural gas only. LP gases must not be used.

16 IP	300,000 Btu/hr.	87.9 kw
20 IP	500,000 Btu/hr.	146.5 kw

<b>Immersion Tube I.D.</b>	16 IP	4" & 5"	102 mm & 127 mm
See pg. 4 for sizing.	20 IP	5" & 6"	127 mm & 152 mm

<b>Maximum Flame Lengths</b>	16 IP	8'	2.44 m
	20 IP	11'	3.35 m

<b>Gas Inlet Pressures</b>	<b>Minimum</b>		<b>Maximum</b>	
At valve train inlet	8" w.c.	19.9 mbar	14" w.c.	34.8 mbar
Supply pressure must be steady. Install a pressure regulator if necessary.				

**Electrical Supply** 120 VAC, 1 cycle, 60 hz.

**Motor Type** 1/6 hp, 3600 rpm, TEFC, with built-in overload protection.

**Firing Chamber Limits** Operates best with neutral pressure at exhaust end of immersion tube.

**Ambient Temperature Limits** -40° to +104° F (-40° to +40° C)

<b>Materials</b>	Burner Body:	Cast iron
	Blower Housing:	Cast iron.
	Impeller:	Steel.

<b>Net Weight</b>	16 IP	68 pounds	30.8 kilograms
	20 IP	74 pounds	33.6 kilograms

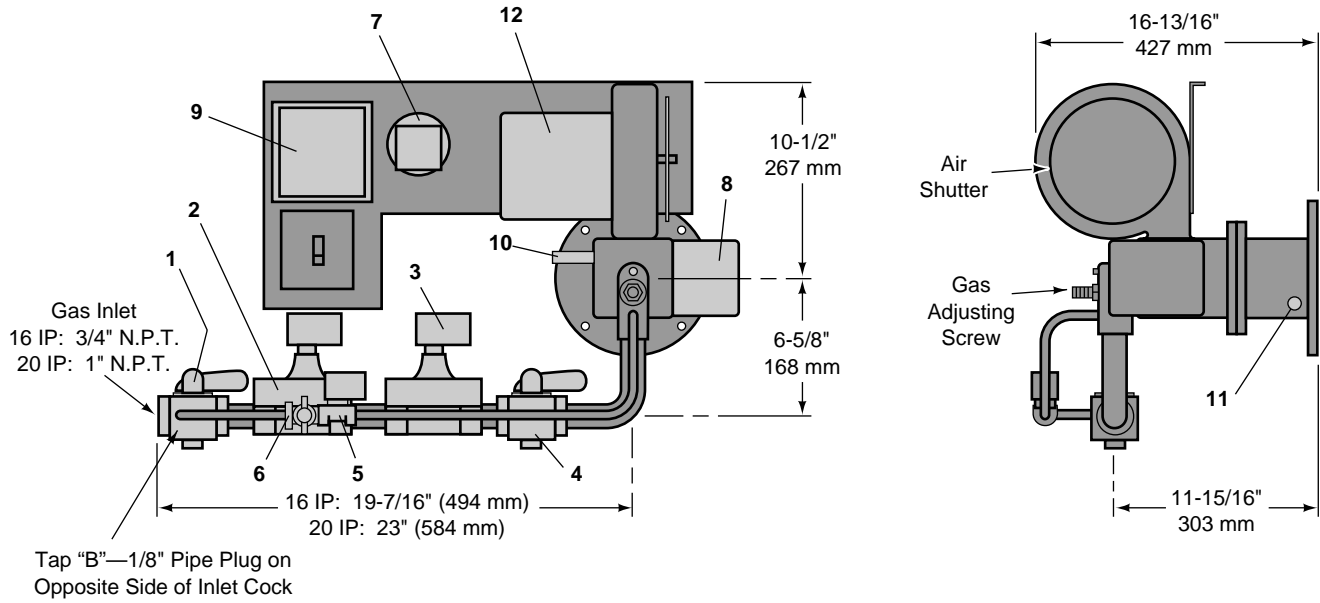
<b>Models</b>	<b>Burner</b>	<b>Assembly</b>	<b>Flame Monitor</b>	<b>Sensor</b>	<b>Sensor #</b>
	16 IP	112256-00	None <sup>1</sup>	Flame rod	13312
	16 IP	112256-33	Eclipse 5605-33	Flame rod	13312
	16 IP	112256-01	Honeywell RA-890F	Flame rod	13312
	16 IP	112256-32	Eclipse 5605-32	UV scanner	10939
	16 IP	112256-02	Honeywell RA-890G	UV scanner	16281
	20 IP	112267-00	None <sup>1</sup>	Flame rod	13312
	20 IP	112267-33	Eclipse 5605-33	Flame rod	13312
	20 IP	112267-01	Honeywell RA-890F	Flame rod	13312
	20 IP	112267-32	Eclipse 5605-32	UV scanner	10939
	20 IP	112267-02	Honeywell RA-890G	UV scanner	16281

<sup>1</sup> Burners ordered less relay include a flame rod, ignition plug, ignition transformer, and ignition cable. The customer must supply and install a suitable flame monitoring relay and base meeting local and/or insurance requirements.

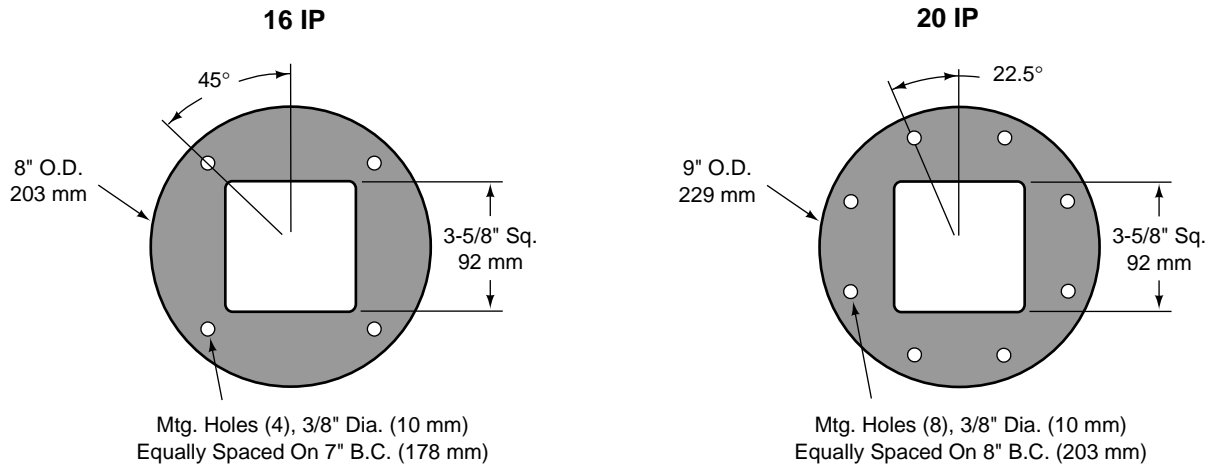
**Flame monitoring equipment supplied with these burners by Eclipse may or may not meet local safety and/or insurance requirements. The owner/user and/or his insurance underwriter must assume responsibility for the acceptance, use, and proper maintenance of flame supervision, limit controls, and other safety devices.**

# Dimensions & Parts List

## 16 & 20 IP Burners



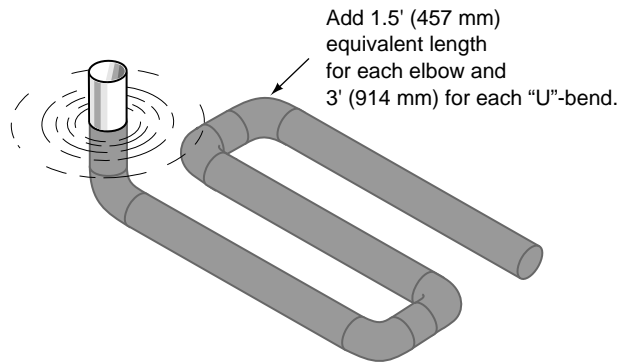
## Mounting Flange Details



Item	Function	Description	16 IP	20 IP
1	Manual Gas Cock	Essex	12961	19122
2	Automatic Gas Shut-Off	Eclipse Solenoid	16728-5	13250
3	Automatic Gas Shut-Off	Eclipse Solenoid	16728-5	13250
4	Manual Gas Cock	Essex	12961	19122
5	Automatic Pilot Valve	Eclipse Solenoid	16728-1	16728-1
6	Adjustable Pilot Cock	---	12659	12659
7	Air Flow Switch	S MDF-12C133	14494	14494
8	Ignition Transformer Burner w/RA-890G All other burners	1/2 Wave Transformer 612-6A020E	13551 12178	13551 12178
9 10	Flame Monitor Flame Sensor	See model under "Specifications."		
11	Spark Plug	---	17071	17071
12	Blower Motor	See "Specifications"	12995	12995

## Immersion Tube Design

1. Use no more than five elbows.
2. Use standard or sweep elbows only; **do not use miter elbows.**
3. The first elbow must be at least ten tube diameters from the burner face.
4. The tube must be long enough to allow complete combustion before flue gases reach the exhaust stack. See the table below for recommended tube lengths.



**Typical Immersion Tube with  
Five Standard Elbows**

### Recommended Tube Lengths for Various Efficiencies

Burner @ Max. Input		16 IP @ 300,000 Btu/hr (87.9 kw)						20 IP @ 500,000 Btu/hr (146.6 kw)					
Tube ID		4" (102 mm)			5" (127 mm)			5" (127 mm)			6" (152 mm)		
Efficiency		50%	60%	70%	50%	60%	70%	50%	60%	70%	50%	60%	70%
Tube Length <sup>1</sup>	feet	11	14	18	9.5	12	15.5	18	21	25	16	18	22.5
	meters	2.35	4.27	5.49	2.90	3.66	4.72	5.49	6.40	7.62	4.88	5.49	6.86
Net Heat Out	1000's Btu/hr.	150	180	210	150	180	210	250	300	350	250	300	350
	kw	44.0	52.8	61.6	44.0	52.8	61.6	73.3	87.9	102.6	73.3	87.9	102.6

<sup>1</sup> Equivalent length based on straight length plus extra for elbows or "U"-bends as shown in the illustration above. Tube lengths are for the listed efficiencies with the corresponding burner and maximum input. If desired, burner input, tube length, and net heat output may be reduced proportionally while maintaining the same efficiency.