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P.O. Box 202

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The Pipe Heater

by Dudley Giberson

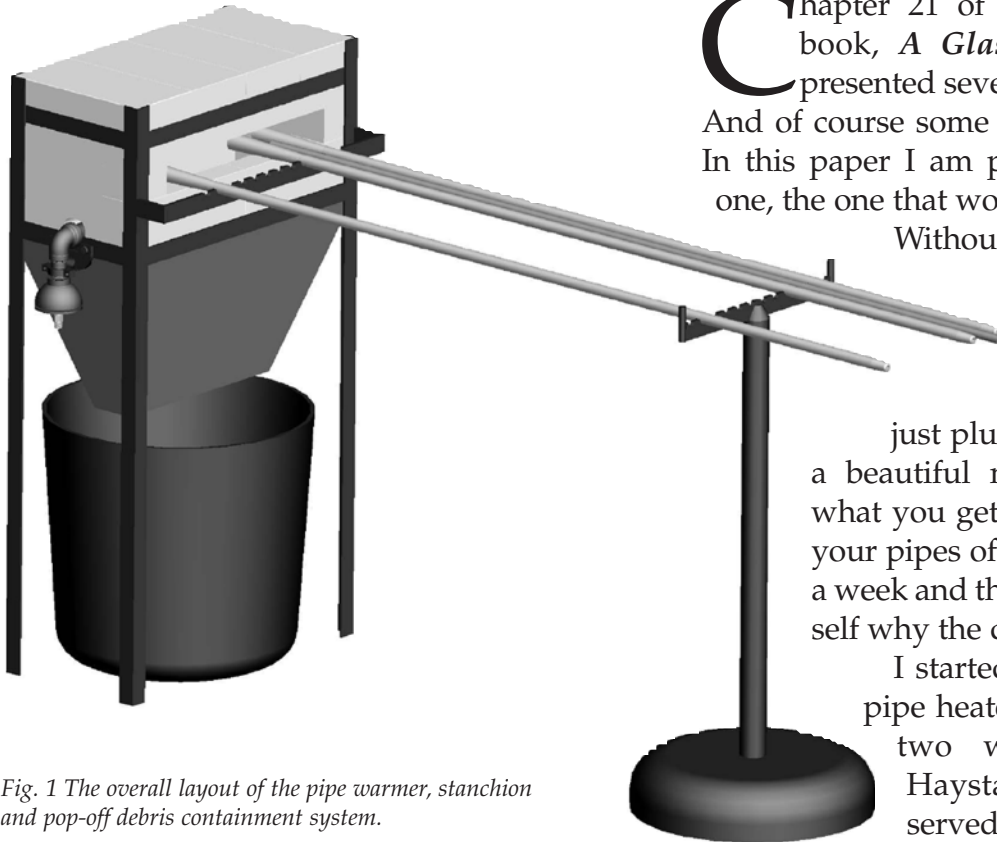


Fig. 1 The overall layout of the pipe warmer, stanchion and pop-off debris containment system.

Chapter 21 of the first edition of my book, *A Glassblower's Companion*, presented several types of pipe heaters. And of course some work better than others. In this paper I am presenting you with just one, the one that works the best.

Without going into a long explanation as to why you would want a pipe pop-off area and pre-heater for your pipes, just plunge a nice cold pipe into a beautiful melt of crystal and see what you get. Or of equal merit blow your pipes off into your new glory for a week and then try to explain to yourself why the doors won't open.

I started making this version of pipe heater around 1981. The first two were installed in the Haystack School Studio and served us well for many years.

This versatile ribbon burner works with all gasses: Natural Gas, Butane, Propane, low pressure or high pressure.

Pipe Warmer Orifice Chart		6,000 to 20,000 Btu's
Low Pressure Natural Gas	6" WC	#48 Orifice
Low Pressure Propane	8"-11" WC	#54 Orifice
High Pressure Propane	1-2 psi	#65 Orifice
You will not need much pressure. Use needle valve to modulate gas flow.		

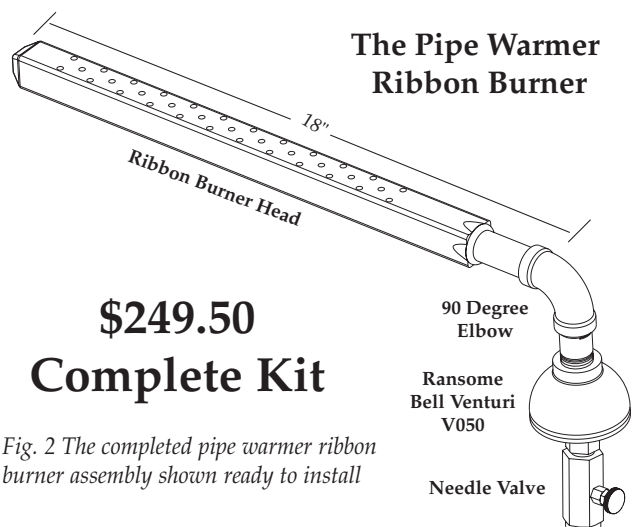
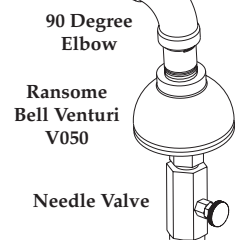


Fig. 2 The completed pipe warmer ribbon burner assembly shown ready to install

The Pipe Warmer Ribbon Burner

\$249.50

Complete Kit



The Kit Parts: The kit parts are shown in detail below. The ribbon burner head has 35 holes that are 3/16" in diameter. The head is an overall length of 18 inches. The head can be purchased separately (\$150.00).

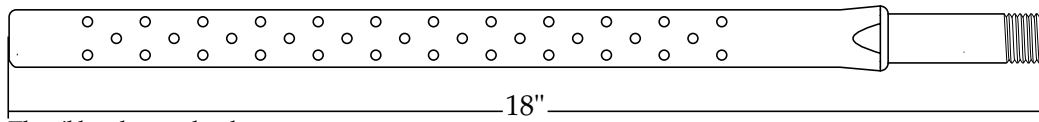


fig.3 The ribbon burner head

The image to the right depicts the mixer assembly: the V-050B venturi mixer (\$87.50) with needle valve (\$20.00). Also included are the 1/2" nipple, 90 degree elbow, the reducer bushing (1/4" to 1/8") to attach needle valve to spud as shown. The overall value of these parts is \$262.50, so we provide you with a modest savings for purchasing the kit at \$249.50.



fig.4 The mixer assembly

The Pipe Warmer Body

The overall brick pattern of the pipe warmer is based on the standard insulated soft brick (IFB) "straight brick" which measures 2.5" x 4.5" x 9". The frame is made using 1" x 3/16" angle iron or comparable strength dimension steel.

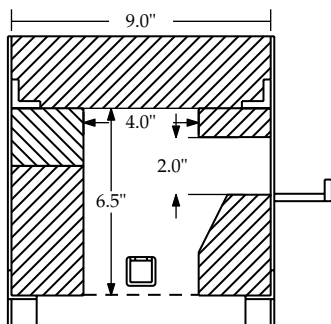


fig.5 Cross section showing door opening and burner position

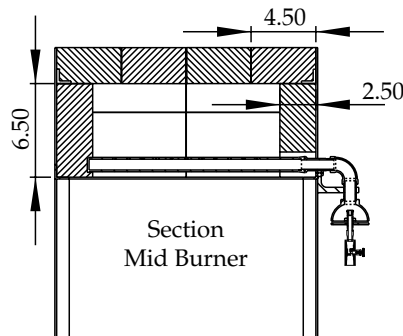


fig.6 Section through length of burner

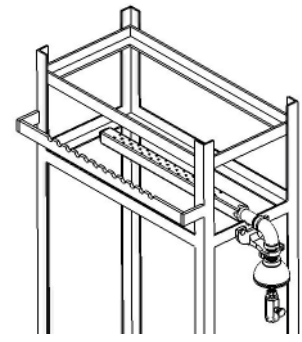


fig.7 View of frame with burner in place

This design is a good match for a one or two man shop in that the burner produces just what is needed to make this specific sized unit get to temperature. Notice in figure 5 there is a pocket of heated air in the roof. It is trapped by the 1" thick brick section over the door. This pocket helps keep the heat in the pipe warmer and lets it function with a lot less fuel use. Another item of interest—keep the door to the absolute minimum, especially in height. A two inch door is about the maximum I would recommend.

All in all this is a great piece of equipment, an absolute necessity for any serious glass studio.

Note: for information on the exact shape of each brick go to this link on the web:

http://www.joppaglass.com/pop_off/brick_seq.html

If you need a larger pipe warmer call Dudley at 603.456.3569.

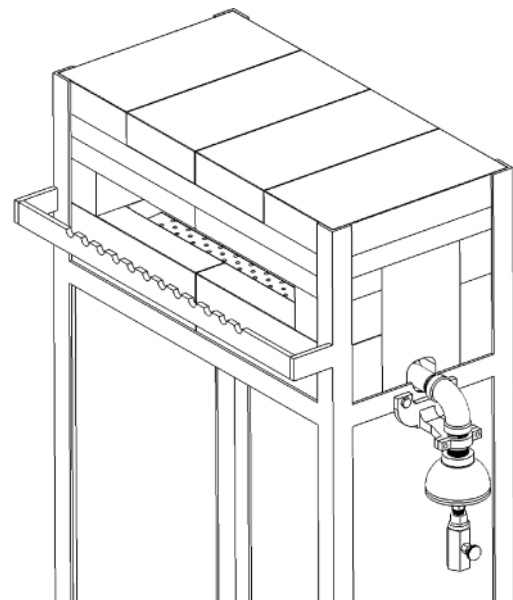
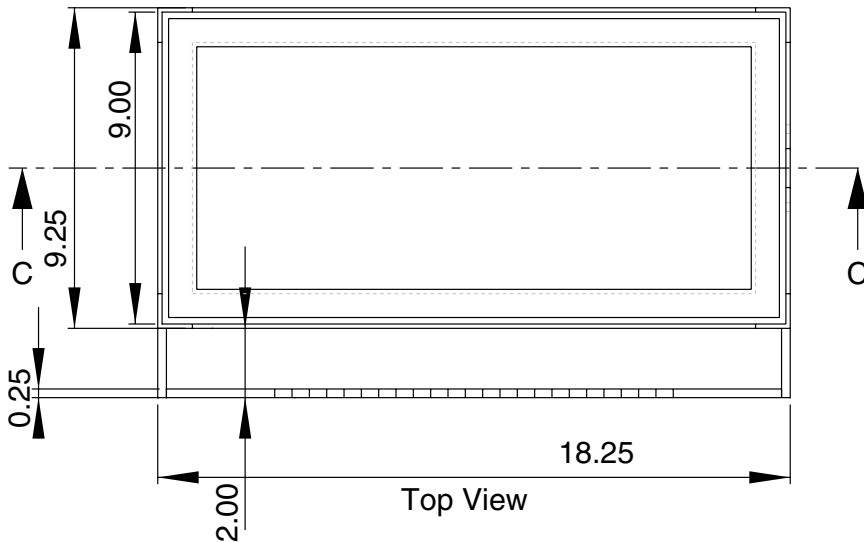
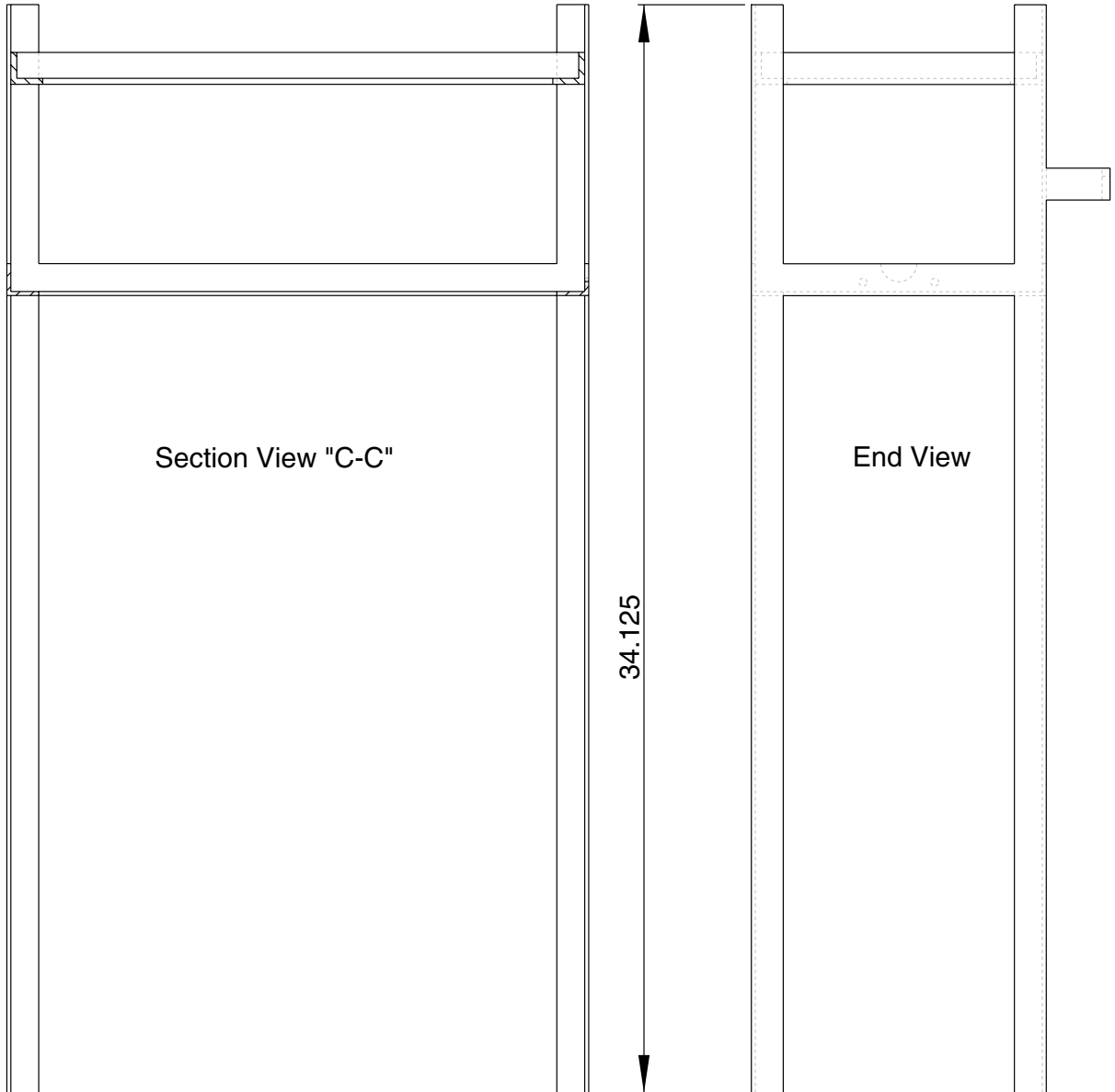


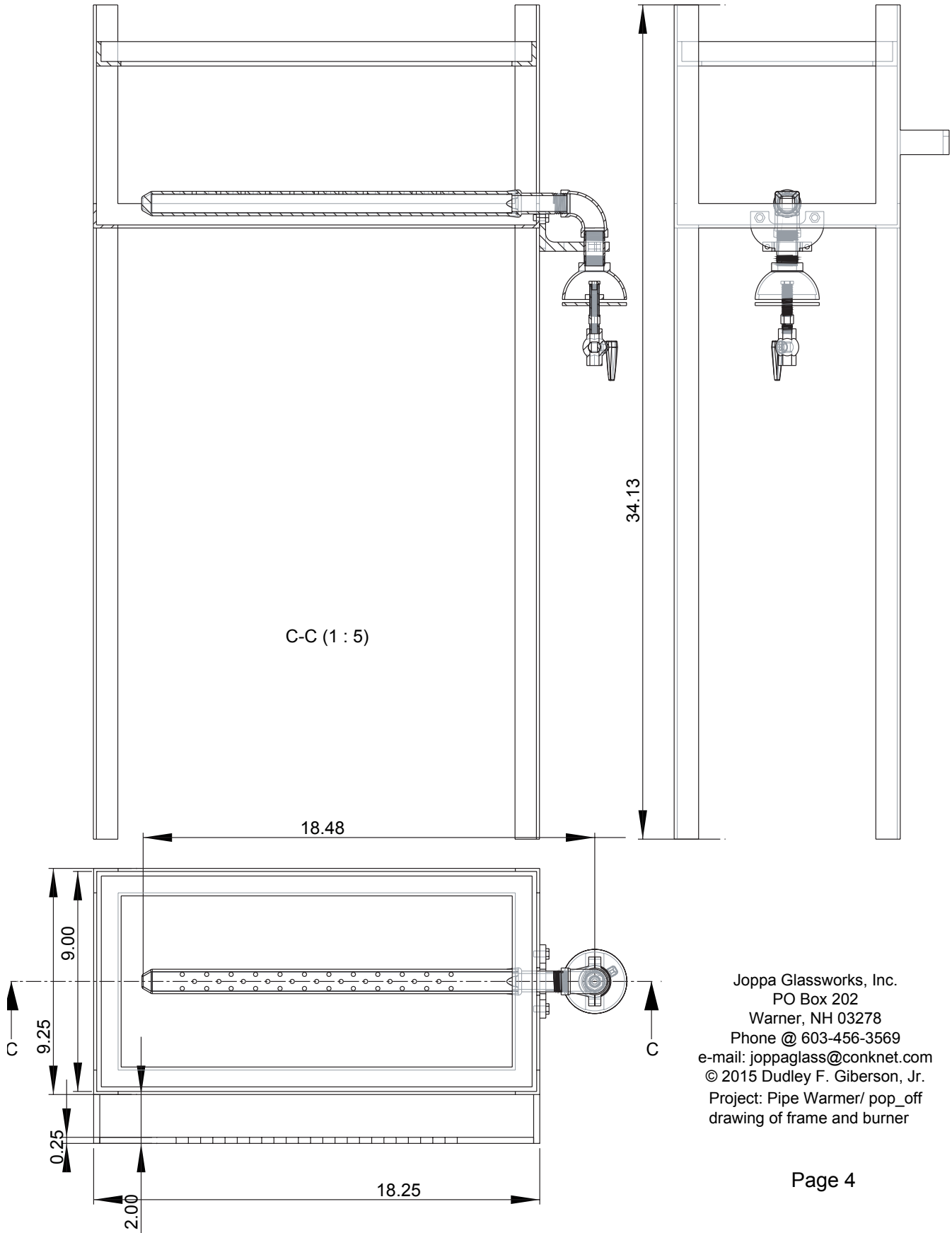
fig.8 View of bricks mortared in place with AP Green "Sairset."

Details of the frame



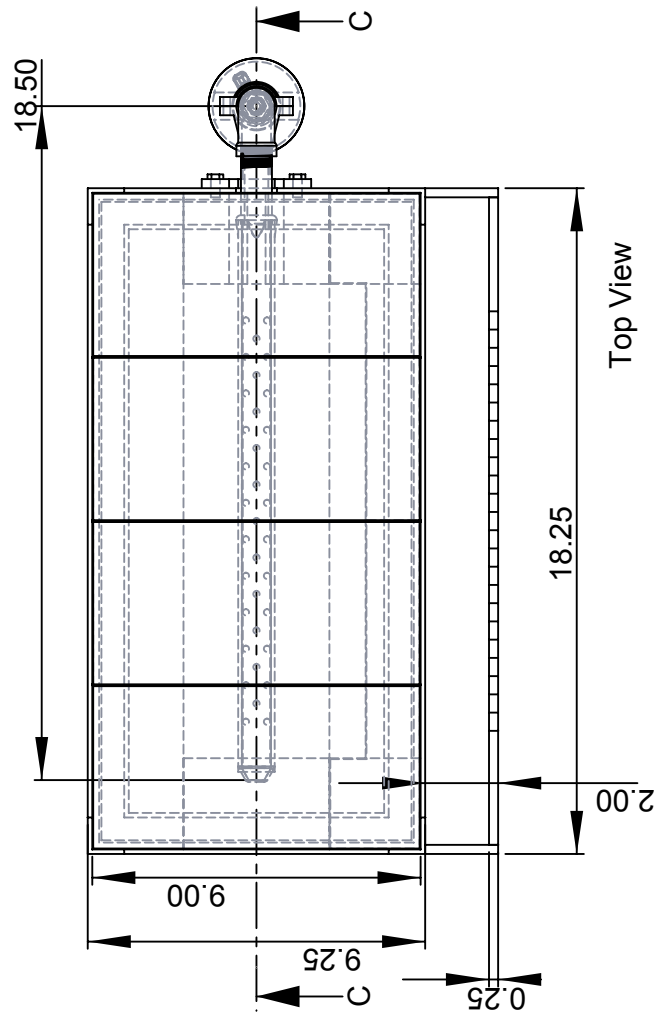
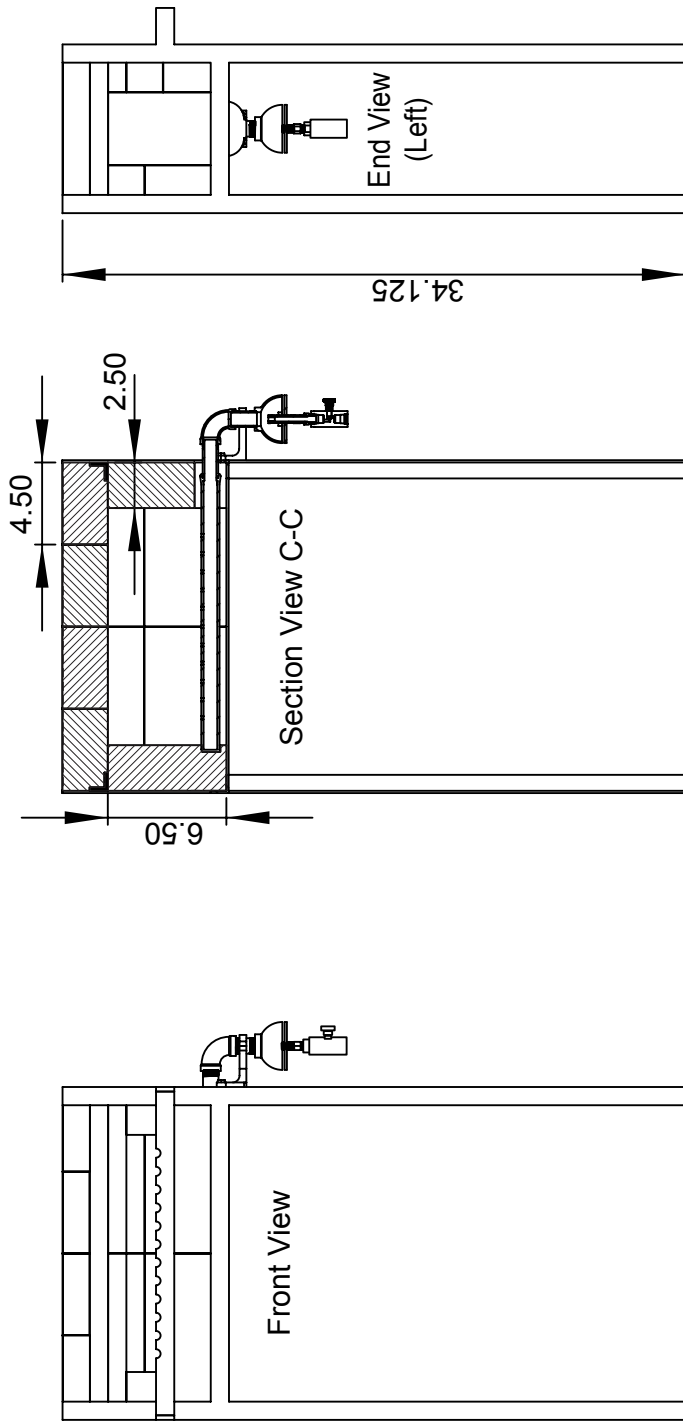
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Project: Pipe Warmer/ pop_off
drawing of frame only

Details of frame and burner



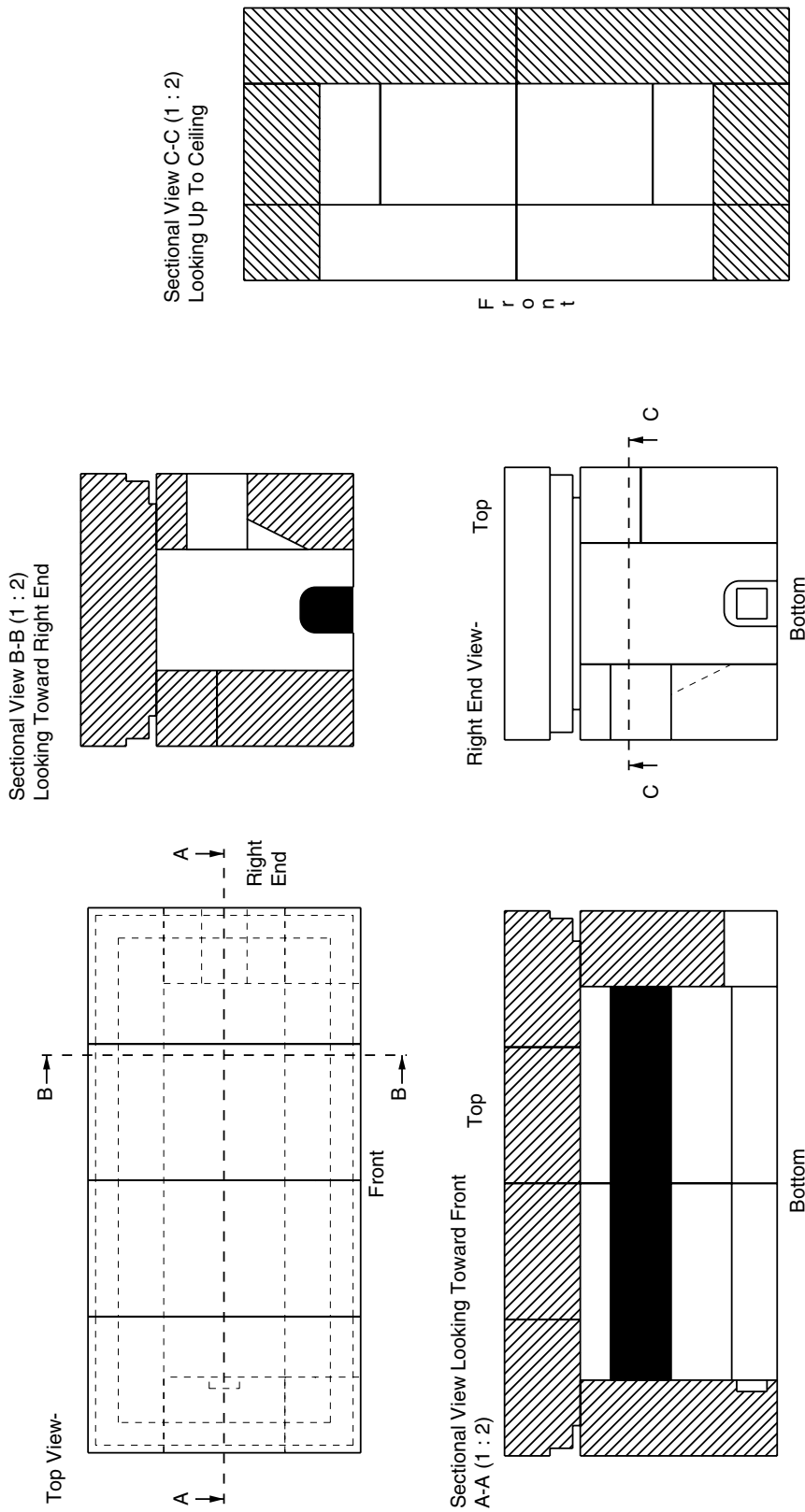
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Project: Pipe Warmer/ pop_off
drawing of frame and burner

Drawing of frame, bricks and burner placement.

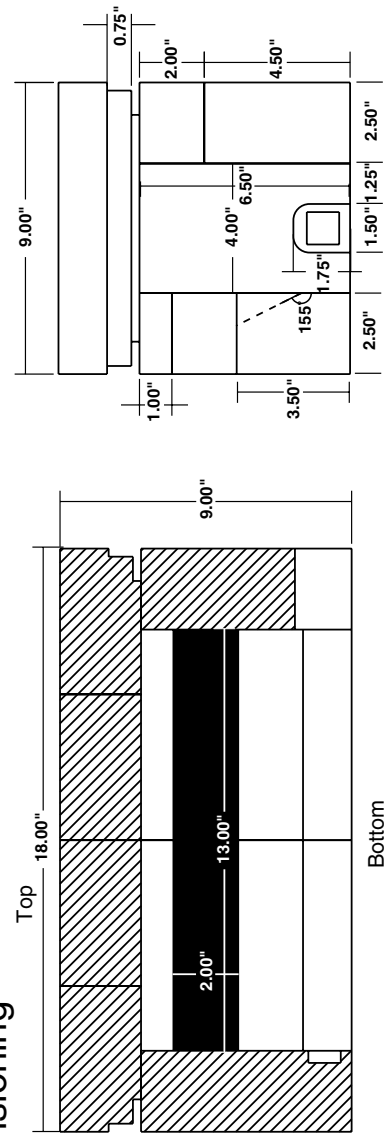


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 drawing of frame, bricks and burner

Positions of openings and brick shapes



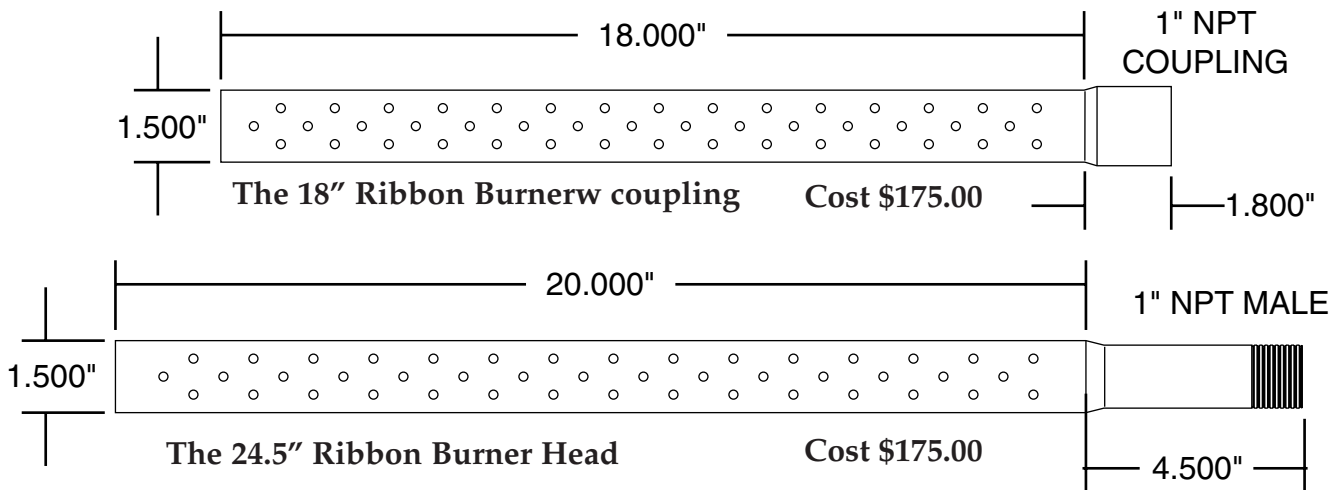
Dimensioning



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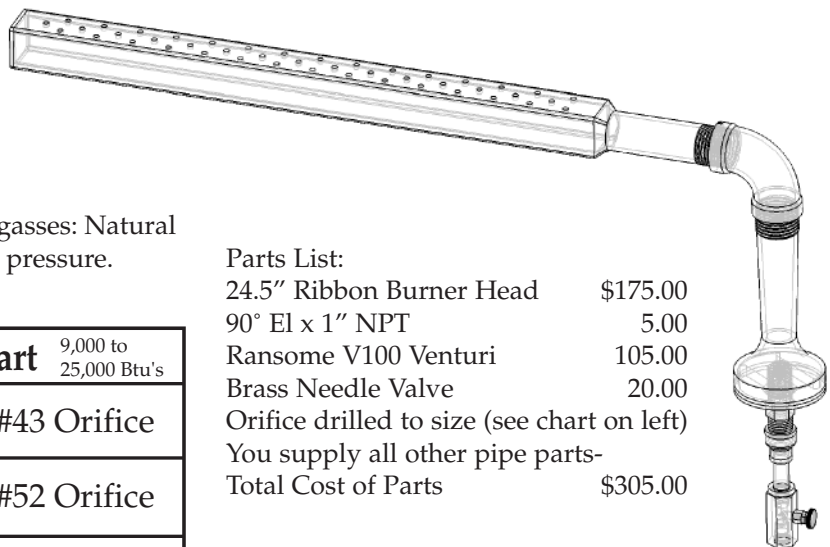
Our Larger Pipe Heaters

On several occasions during the recent past I have received requests for larger than standard sized pipe warmer burners. In response to these requests I have developed a burner made of larger stock which has a terrific burn and is matched to a larger Ransome venturi, the V100. This combination has a great turn down ratio and can support a pipe warmer with a larger rack and size opening. I make two versions of this, both have the same Btu output and mate with the same venturi. Top view drawings are given below of the head size:



The PW-24.5 Pipe Warmer Kit:

This versatile ribbon burner works with all gasses: Natural Gas, Butane, Propane, low pressure or high pressure.



Parts List:

24.5" Ribbon Burner Head	\$175.00
90° El x 1" NPT	5.00
Ransome V100 Venturi	105.00
Brass Needle Valve	20.00
Orifice drilled to size (see chart on left)	
You supply all other pipe parts-	
Total Cost of Parts	\$305.00

Large Pipe Warmer Orifice Chart			9,000 to 25,000 Btu's
Low Pressure Natural Gas	6" WC	#43 Orifice	
Low Pressure Propane	8"-11" WC	#52 Orifice	
High Pressure Propane	1-2 psi	#60-55 Orifice	
You will not need much pressure. Use needle valve to modulate gas flow.			

Your Cost
\$295.00