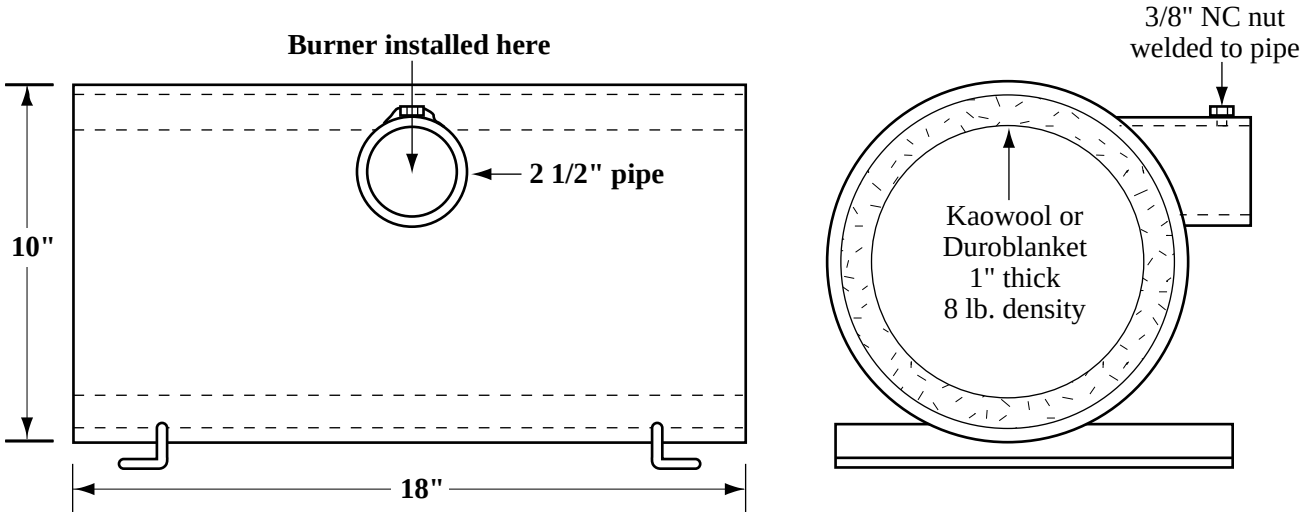
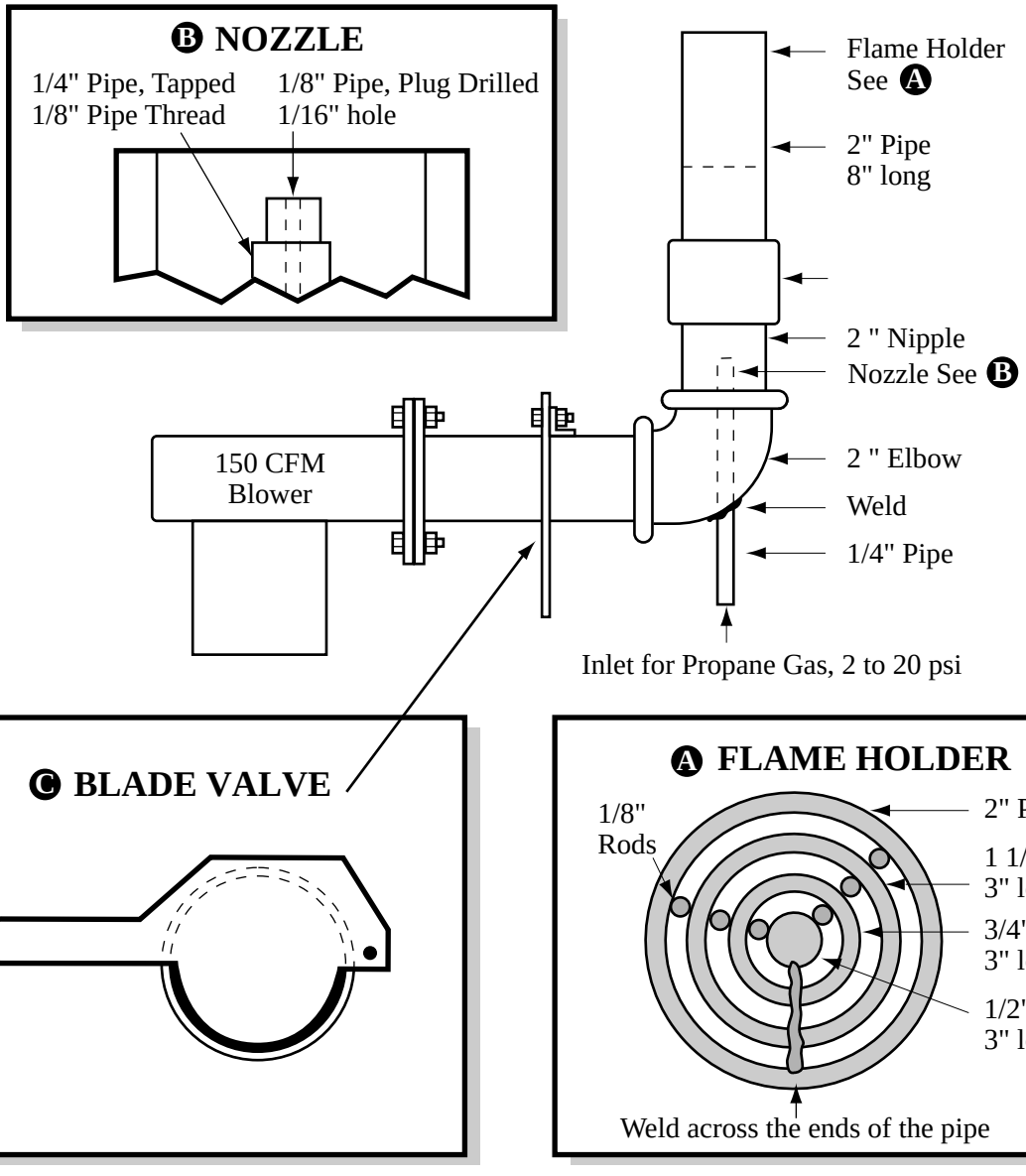
GAS PIPE FORGE
Plan 1





For instructions on the construction of this plan, see page 2.

Based on a design by Hans Peot

CONSTRUCTION OF THE GAS PIPE FORGE PLAN 1

Based on a plan by Hans Peot

This forge is made of a 10” x 18” pipe. It has a hole cut near the top. A 2 1/2” pipe is welded to the hole with a 3/8” NC nut welded to the top, the nut will accept a set screw to hold the burner assembly. This will allow the burner flame to barely touch the top of the Durablanket. The Durablanket is trimed with a long knife to create a hole where the burner is placed. To close the ends of the forge, a simple door can be made with fire bricks placed at the ends. To protect the Durablanket from damage, fire bricks may also be placed on the bottom of the forge. The gas should be controlled with a gas regulator that provides pressure from 2 to 20 psi.

Starting the Gas Pipe Forge

1. Close off one end with fire bricks.
2. With the blade valve closed, turn on the electric blower.
3. Open the blade valve slightly.
4. **Stand away from the open end of the forge.** Light a piece of paper and with tongs, hold it in front of the flame holder.
5. Turn on the gas.
6. When the burner starts, adjust the air flow with the blade valve for minimun noise level.

After the forge has been operating for a few minutes, adjust the air and gas levels for maximum heat. This can be judged by observing the brightness of the Durablanket. An increase in gas pressure will increase the heat level.

AS WITH ALL ASPECTS OF BLACKSMITHING, THERE ARE DANGERS INVOLVED IN BUILDING AND OPERATING A FORGE. IF YOU CHOOSE TO USE THIS INFORMATION YOU DO SO AT YOUR OWN RISK!

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...One improvement that I do is to coat the insides of the wool with a thin shell of refractory. I use Satanite from AP Green. It is a high temp mortar mix and you make a thin batter by mixing with water. Spritz the wool with water from a spray bottle and then paint the refractory on with a brush. Put it on generously or it will roll up the wool. It can be fire wet and forms a thin hard shell. The advantages are that it extends the life of the wool especially at high temps and it holds down the particulate thrown off by the wool.

You can also use a thick layer of castible in the bottom if you do any forge welding.

I do a lot of forge welding and because flux will quickly eat up the wool and most refractories, I use a high alumina castible in the bottom of my welding forge. It holds up well and isn't expensive.

I am currently building propane heat treating forges that run off a digital controller running a solenoid valve on the propane line. It works great and will hold set point quite well and is not that expensive to build. Controller can be bought for $150-$200 and the valve sells for $70. It is very handy for temperature critical applications like heat treating and mokume.

Interestingly, I have been able to simplify my setup and now use a low pressure regulator and very small blower, 50 cfm 2x1.5 in wheel, to run all but my welding forge. The ceramic wool is amazing stuff. Tai Goo in Tucson built a forge from a bean can, heated it with a propane torch and got heats high enough to forge weld a 1/2 in round bar back on itself. Pretty neat. One trick I picked up from Tai is that if you split the wool to 3/8ths thickness and soak it in refractory it will stick to the walls and harden when it is fire. This is very handy if you want to make baffles etc. or flame diverters. You can fire the Satanite wet and it won't spald off.

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