Building the Side Blast Forge
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This article is based upon the modified drawings supplied by Mark Aspery as used in his school of blacksmithing. The side blast forge works well with either coal or coke, but is particularly suited to burning coke as the clinker formed solidifies below the air blast.

The side blast forge can be fabricated by any blacksmith with the tools to cut and weld steel plate and pipe.

3/16 Hot rolled plate material was used in the building of this traditionally British “Side Blast” forge, however they have been built out of 1/8. All pipe is Schedule 40 Black pipe.

The method of working the side blast is that the Tuyure is a pipe that feeds directly into the side of the fire. There is no fire pot as such, but the pan is filled with dirt and a hollow dug out as the use dictates. If this pipe was not cooled somehow, it would burn up. So, it is jacketed and water-cooled.

Mark states that this fab. job should last about 7 - 10 years depending upon use and abuse. It will rust out before it burns up.

The tank is called the “Boss”. Let’s start there. It needs to be about 15 gallons capacity to prevent boiling over.

2 pieces of 18 inches x 24 inches are used as the front and back. If you look at the drawings, you will see a mark indicated at the 4 1/2 inch/center line. Each plate will have a different sized hole cut in it.

The front plate will have a 5-inch hole and the rear a 3-inch hole. Both of these have to accommodate pipe so they need to be fairly accurate.

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Heat the pipe, bend and weld it.
If you intend to use an electric blower stay with
the 1 1/4 inch ID pipe for the air blast pipe. If you
are intending to use a hand wound blower, there
is too much friction in the small pipe and you will
need to replace it with a bigger pipe for most of
the way inside the water jacket.
I used 2 1/2 inch pipe and tapered it down to 1
1/4 at the end to match the 5 inch pipe. The pie
slices to be taken out are 1”x 5”.

Onto this end will fit the donut (3 1/4 OD) that
need to be cut from the drop of the 5 inch hole cut
in the front plate.
Fit the donut onto the tapered end of the 2 1/2
inch pipe and weld inside and out.
Taking the front plate, weld on the the 5 inch pipe.
If instead of passing the 5 inch pipe fully through
the hole you pull back an 1/8 of an inch, you will
have a good “V” to weld in on the backside! Tack
it first then weld inside and out.

Tack on the sides. Again touch the inside corner
to inside corner and give yourself a nice “V” to
weld in.
After the sides are tacked on to the front plate,
tack on the back plate, again leave the “V”.
Fully weld the sides and back.
Now slide in the 2 1/2 inch pipe and donut combo.
If all is aligned well, weld it on.
The only weld that cannot be done on the inside and out is the donut onto the tapered 5-inch pipe weld. When all has been welded fully, weld on the bottom plate. The forge pan should be 9 1/2 to 10-inches deep. Mark does not recommend using the front of the boss as the back of the pan. He prefers to double skin this area to facilitate easy removal of the boss and tue iron and to prevent heat transfer from the forge to the boss other than by the water jacketed pipe.
2 off
9 inches

24 inches
18 inches
center line
4 1/2 inches
1 off
9 inches

5 inch pipe x 14 inches

26 inches 1 1/4 ID pipe
welded to plate “A” above