

Foam target butts



1. Determine what butts you wish to install – we used 4 different types not the best idea as we had to make 2 different size frames
2. Find the wheels you wish to use – I prefer large wheels with solid rubber tyres for durability but for the Nationals we used 8" pneumatic (which are very cheap)
3. Keep the measures standard for cost effectiveness –
 - a. the draw bar for ours is 2.4m x 25mm x 2mm square steel
 - b. the H upright 1.2m x 25mm x 2mm square steel
 - c. the H cross member length determined by the butt size 25mm x 2mm angle
 - d. the handles used scrap left over
 - e. bolts drilled through and welded to the legs of the H, allow for wheel, frame and nut sizes for the length
4. First step was to drill and weld the bolts for the wheels to the uprights of the H frames, also drill the holes for the wooden frame
5. I used a sheet of 17mm ply to make a template for the H frame using tek screws with the heads cut off to hold the 2 uprights and the cross member in place while being welded
6. To make the A frame for the draw bar the cuts when it joins the H frame worked out to 15 degrees and where the 2 sides meet it worked out to 75 degrees (on my drop saw, I used a 45 degree wedge to get the 75 degrees). I used the same method to make the template as above but on the other side of the ply wood. Make sure the draw bar arms are the correct distance apart to match with the H frames.
7. I then set one of the H frames on blocks (correct height for the wheels) and set at the correct angle using bracing (set as it will be when finished)
8. Then move one of the A frames (draw bar) to meet the H Frame uprights with the point of the A on the ground, moving up the H frame until you have a right angle joint (this is now how the finished frame will look). Weld these together.

9. Weld a cross brace between the 'H' frame and the 'A' frame on each side.
10. Remove all the bracing and blocks, now you have I frame to work off. I made a steel template to make the other 49 frames using the one finished frame as a template.
11. The handle is just high enough to fit under the H frame cross member. I think ours is about 450mm high with a short length of thin pipe for the actual handle
12. As we had different size butts and hence different size frames I welded side extensions and risers onto the jig to accommodate the larger frames (see photos)
13. A timber frame of 75x35 F5 pine is made to encase the side of the foam butt. When mounted in the steel frame the sides of the wooden frame extend down past the 'H' cross member to protect the arrows from the steel legs.
14. The wooden frame is screwed to the front of the 'H' frame and the foam butt is jammed in and then secured by straps to and bottom.





Side view of the jig (left) and front view (right) you can see the small extension and 2 up rights for the larger of the 2 frames. NOTE: This jig was used to make 2 different size target frames the frame itself was used for the smaller with the extensions used for the larger frame.



The smaller of the frames fitted to the jig you will notice that the jig extensions are not used for these frames. Most of the butts at the Nationals were made this way (about 34).

NOTE: in the right hand picture the 'H' cross member is welded inside the box steel but proud of the steel for the wood frame to sit on.

Left you can see the cross bracing welded to support the joining of the 'H' frame to the 'A' frame.



The wider frame now fitted, the butts that were fitted to these were just over 100mm larger in both directions. The jig extensions are now being used this made about 16 of the frames.



Left the handle is welded to the apex of the 'A' frame the height is determined to allow it to fit under the 'H' Cross member.

Right the axle (bolt) welded to each leg of the 'H' Frame



Front view and side view



Bottom views



Wooden frame that screws to the front of the steel frame you will notice that the vertical sections extend past the shelf to cover the steel down to the wheels. The shelf sits on the 'H' cross member. The frame is a snug fit around the butt which is strapped into place using seat belt like straps.