

The Wing Thing



Have you ever tried to repair a wingonly to end up with more damage because the wing has been punctured by something on your work bench? Applying patches or working out wrinkles usually takes two handshow do you keep the wing steady with both hands committed to applying the heat gun and the covering? Are you limited for space to work on your models? Enter the “**Wing Thing**” This version is mounted on a Stanley portable work bench purchased from Home Depot. (About \$30). If you already have a bench, the Wing Thing can be mounted by drilling holes for the vertical supports. Alternately, Both halves of the Wing Thing could be joined using additional PVC and fittings

The Wing Thing is constructed from ½ inch schedule 40 PVC pipe. The support and retaining arms are covered with black foam insulation. The black foam has a very smooth soft surface. Fortunately, the surface has a high friction coefficient which holds the wing secure with very little pressure. Rubber bands or Velcro straps can be added if additional pressure is necessary.



The Wing Thing is designed to hold the wing in either a horizontal or vertical plane. Mounted on the Stanley work bench, the wing is held a comfortable working level. You can rotate the bench 360 degrees to provide any angle of access you desire.

MATERIALS:

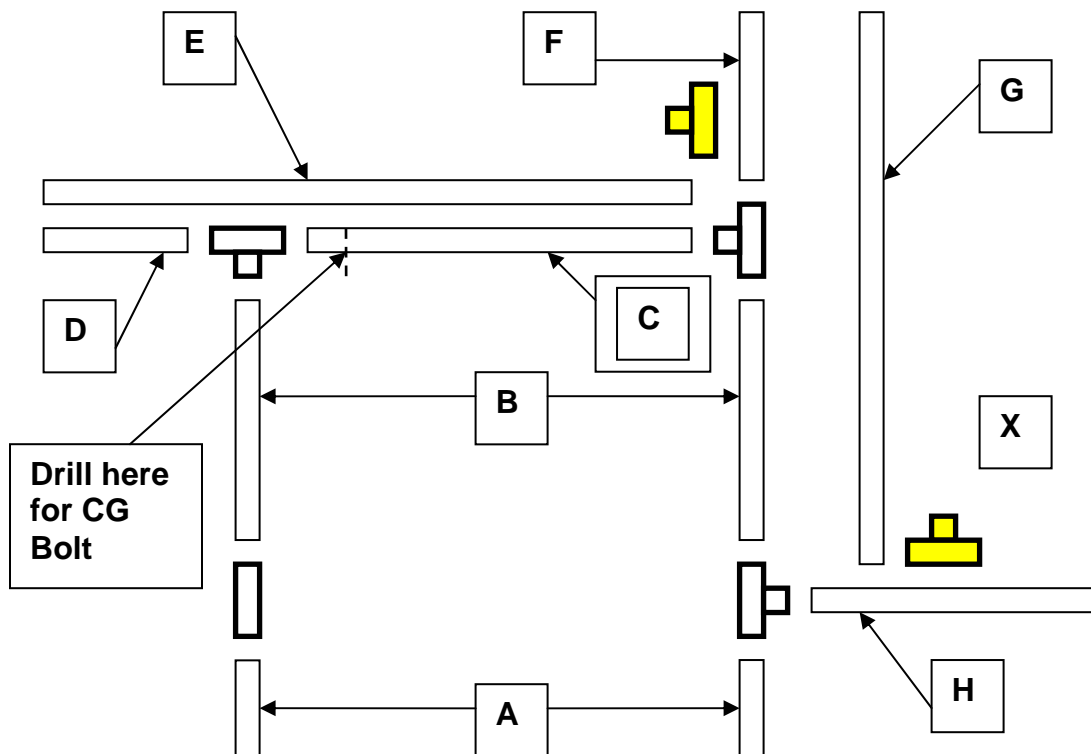
2 each	10 Ft x ½ Inch Schedule 40 PVC pipe
10 each	½ Inch Slp/Slp/Slp T fitting
10 each	½ Inch Cap
2 each	½ Inch Union
2 each	Black Foam Rubber Insulation Tubes for ¾ copper- ½ iron
20 each	Cable Ties
1 each	Small can PVC Cement
1 each	Spray paint (Optional)
1 each	PVC pipe cutter (Optional – makes cutting the pieces very easy)



The picture above is only half of the Wing Thing. You will need two identical assemblies. This is the first iterations of the Wing Thing. The dimensions listed below seem to work with any wing type. You may have a need to increase one or more dimensions; if so, be sure to make identical changes to both halves of the Wing Thing.

ASSEMBLY:

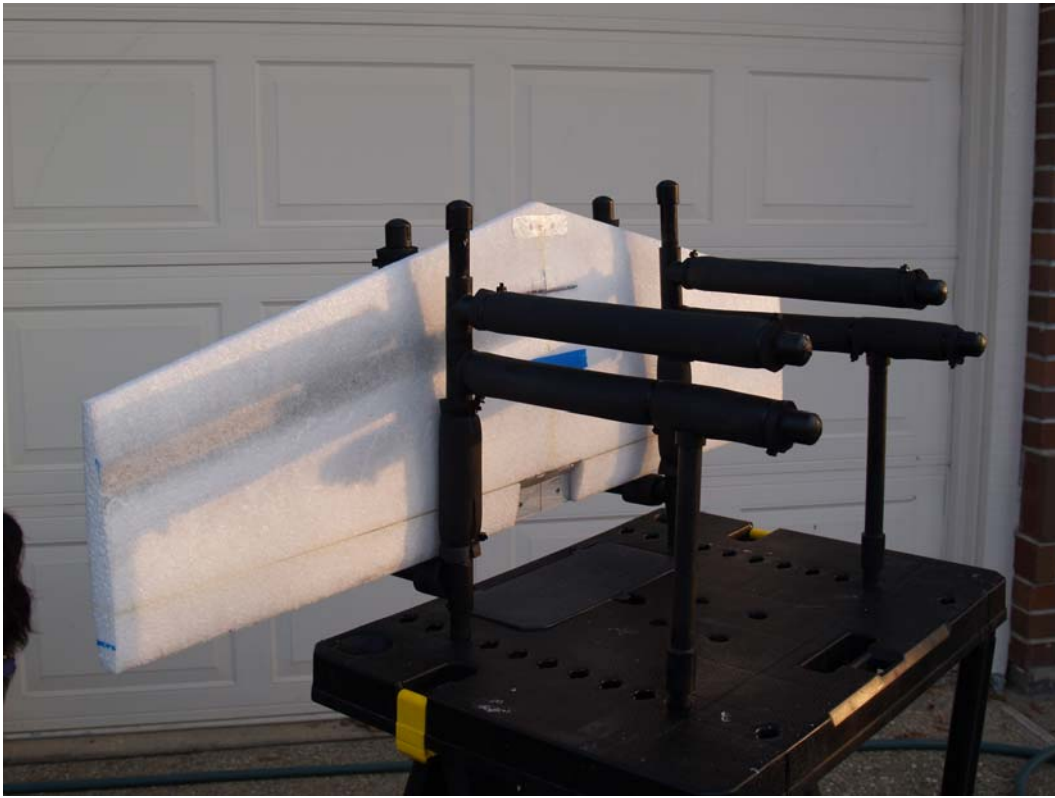
1. Vertical support assembly **A** (below) can be tapered to fit the bench top before gluing to the T and union
2. Glue Ts and PVC pipe being careful to keep them all aligned in the same plane
3. Use Dremel sanding drum to shape the inside of the yellow (grey) Ts. Remove plastic until the Ts can slide onto the ½ inch pipe with only slight resistance. These Ts slide up and down on part **F** or in and out on part **H** as necessary to accommodate different wing thickness. If you take out too much plastic, they will not stay in place; just add some set screws as necessary. If the joint is too tight, just add a small bit of Vaseline.
4. Glue **E** & **G** to the yellow (grey) Ts. Slide **E** /T assembly onto **F** vertical. Slide **G**/T assembly onto **H**.
5. Install Caps and Foam Insulation. (Caps may be pressed on or glued). Use cable ties to secure foam tubing.



Note: Yellow Ts (Grey in black & white) are glued to E and G, they **are not** glued to F and H.

A	4 ea.	3 inches
B	4 ea	9.5 inches
C	2 ea	9.5 inches
D	2 ea	4 inches
E	2 ea	15 inches
F	2 ea	8 inches or (taller for holding fuselage)
G	2 ea	16.5 inches (not critical)
H	2 ea	7.5 inches

(Note: **E** should be the same length as **D** & **C** and the T. The T or union fittings are 2.5 inches wide with 1 inch recess for the pipe on each side. Thus each joint adds ½ inch to the length. If you want to change the dimensions of the project be sure to account for the joints.)



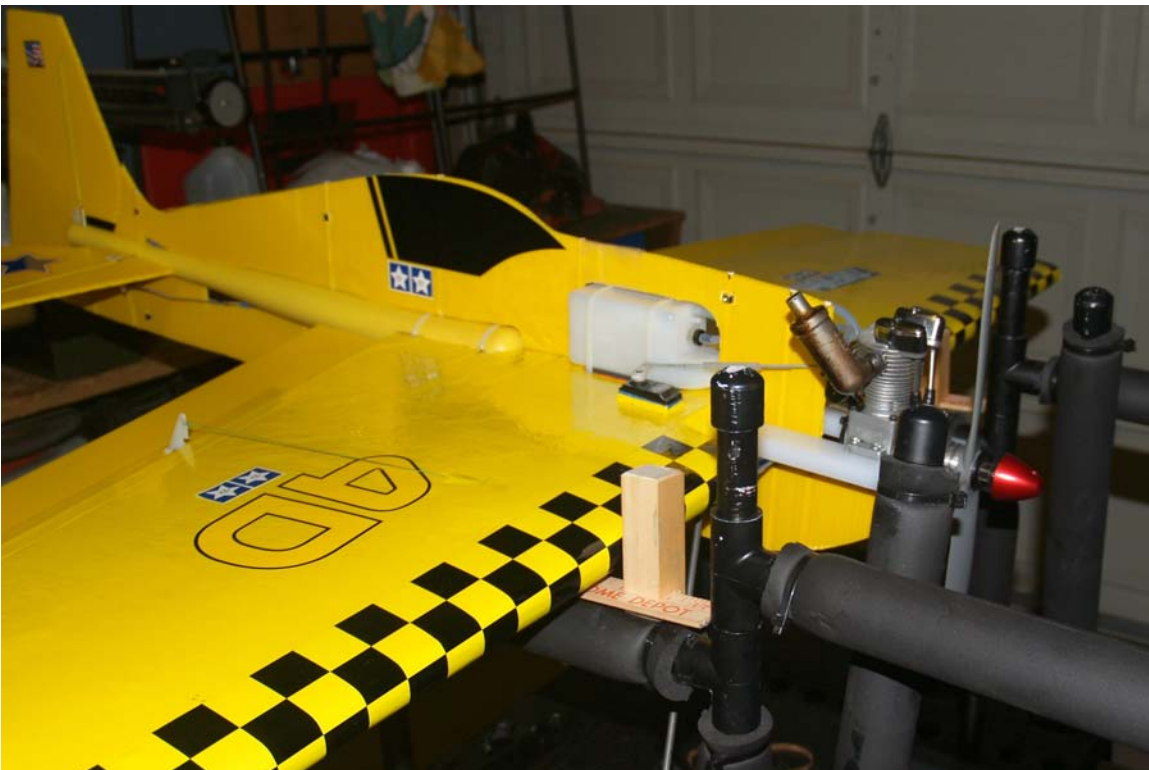


CG Machine Option

While building my new 4D, I decided to move my engines around. Suddenly, I needed to balance 3 airplanes. I looked on the internet for ideas, but did not like any of commercial devices. They were unstable The airplane tended to take a nose/tail dive if the airplane was not centered. Enter the CG Option.....



It is very simple adjust the block to the desired CG position. The 4D calls for a 5" CG from the leading edge of the wing. . Set the airplane on the stove bolts with the leading edge barely touching the blocks.



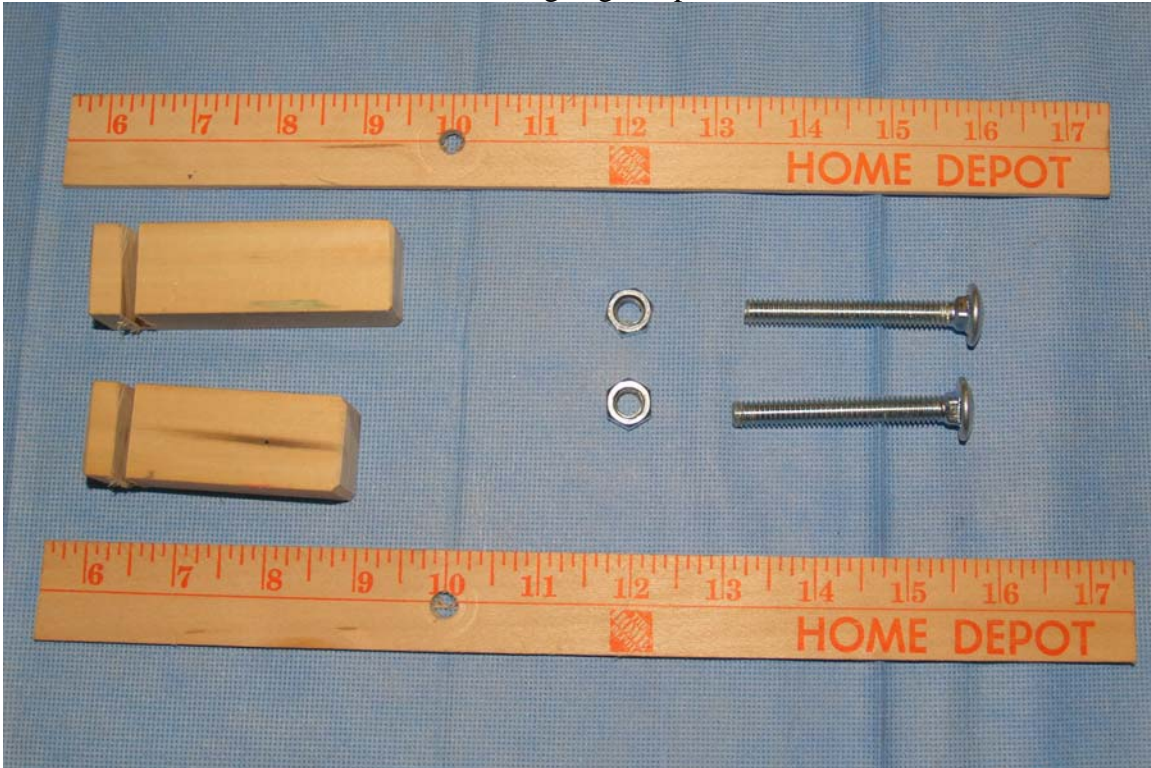


When balanced, the airplane will tip slightly nose down but not touching the surface below. (Note: Make sure the blocks do not interfere with the balance point; move them back from the LE if necessary)



Assembled CG Parts The nut below the ruler provides spacing for the bottom of the block. The height of the stove bolt can be adjusted to meet your specific application.

Parts: 2 ea 2.5" x 5/16 stove bolts with nuts, 1 ea Home Depot (or equivalent) yard stick, and some blocks to make the leading edge stops



Drill a 5/16" hole in the Wing Thing support arm (Part C on previous page) just in front of the T. The cheap yard stick has a scale on both sides; cut it as necessary. I drilled the holes for the bolts at the 10" mark so I do not have to think about math the 15" mark is the 5" mark and so on.

Unlike some other CG devices, your airplane will not take a nose/tail dive The Wing Thing will support the aircraft safely.

(P.S.) The Wing Thing was designed around a very light, portable, Stanley work bench purchased at the Home Depot. If desired, you could build a rectangular base from PVC and secure it to any surface. The link below will take you to the Stanley web page.

<http://www.stanleytools.com/default.asp?CATEGORY=ZAG+SAW+AND+WORK&TYPE=PRODUCT&PARTNUMBER=11020%20%20Eur92-037%20%20USA92-049&SDesc=Folding+Workbench+With+2+Vice+Clamps>

Enjoy!