How to Make
The Duderstadt Bench

Materials:

2 x 4s (Kilm dried is preferable. $2.18 each for 8 ft'ers at Home Depot)
6 pcs 6 ft long (or whatever length you what the bench to be up to 7 ft max) + 1/8" (inspect for straightness as it does make for better sitting)

2 pcs 15"
2 pcs 23-7/8"
2 pcs 26-5/8"
2 pcs 30-1/4"
2 pcs 3-1/2"
+ 1/16"

If you use 8 ft pieces and make the bench 6' long you will need 8 pieces.

5/16" Carriage Bolts
8 at 3-1/2"
2 at 5"
10 5/16-18 nuts and flat washers
#10 deck screws x 2-1/2” long, 24 pcs.

Needed Tools:

Jigsaw
Power Drill
6" screw clamps (two)
5/16" Dia Drill Bit
5/32" Dia. Drill Bit
Bench Template pieces (see page 3)
Fabrication:

With the pieces cut to length (+ 1/16") place the templates on the pieces and clamp together. As the actual dimensions of 2 x 4" varies widely from the 1.5" x 3.5" spec, line up the template and wood to the indicated reference corners as noted on the template drawing.

1. Drill through the 5/16" holes (PLEASE let the drill stop rotating before placing the drill bit fully into the holes in the template, you will destroy the template otherwise)

2. Take a ball point pen and mark the contours and angles.

3. Unclamp the templates and using the jigsaw, cut along the contours and angles just removing the ink marks. This is a critical part of the process so be sure you have lots of light and take your time. The cuts should be perfectly vertical.

4. Using the jig with side stops and two small holes, hold this on the ends of the long pieces and drill through the long boards with a 5/32" drill. Clamping is not necessary for these.
ASSEMBLY:

1. Using the carriage bolts assembly the two supports:
   (symmetry is not essential on these for function)
2. Stand the supports up, using chairs or friends to lean them against, about 5 ft apart. Place the first long 2 x 4 on the front of the “seat”, line it up with the front of the bench, the holes lined up in the center of the seat, and clamp. Leave one hole exposed. Do the same at both ends and check that the board is perpendicular to the supports and drive the two deck screws home.

3. Once your sure all is square, drive home the next two screws.

4. Place the next board, leaving a ¾” gap between the boards. Use the thin side of the provided shims. Clamp the board in place at both ends and attach with deck screws.

5. The third “seat” board should be 7/8” from the middle board. Use the shims in the wide direction.

6. For the seat back, the top board should extend above the support by ¼”. Clamp and make sure the holes line up in the center of the support.

7. The two lower seat back boards should be separated by ¾” using the provided shims.
Sit down and relax with a friend!