











## ◀ JOSH WELTON

Josh Welton, owner of Brown Dog Welding LLC in Detroit, is a welder, fabricator, artist, writer and content creator. Since 2014, he has contributed to *TheFabricator.com* and *The Welder Magazine* and received the WEMCO/AWS Foundation Excellence in Welding Award. Josh's work includes fabricating military prototype vehicles and welding on battle-damaged tanks in Iraq. His sculptures, known for their automotive and industrial themes, are highly sought after. Josh and his wife, Darla, co-founded the Still Building America initiative to promote skilled trades and host welding workshops in their Detroit shop.







**SKILL LEVEL:** Beginner/Intermediate  
**TIME COMMITMENT:** Around 4 hours

### / TOOLS AND MATERIALS

#### TOOLS

-  Miller® Multimatic® 220 AC/DC multiprocess welder
-  Chop saw
-  Wire cutters
-  Needle nose pliers
-  Vise
-  Pneumatic die grinders (straight and right angle) with cut-off wheel, wire wheel and sanding discs
-  Hammer
-  1/8", 3/32" and 1/16" TIG ER70S-6 rod

#### MATERIALS

-  Short length of 2" diameter, 1/8" wall tubing
-  One 5/16" hex head bolt, any length
-  One 5/8" washer
-  Two 3/8" nuts
-  2" of 1/4" diameter tubing with an inside diameter of more than 1/8"
-  One small piece of 1/4" thick steel, about 1 3/8" long and 1/2" wide. (This will be welded and ground on to create a proper seat shape.)

#### PPE

-  Miller® Digital Infinity™ welding helmet
-  Miller TIG gloves
-  Miller welding jacket
-  Safety glasses

#### TOOLS USED IN BUILDING BUT NOT REQUIRED:

-  Cold chisel

**WARNING: READ AND FOLLOW ALL LABELS AND THE OWNER'S MANUAL.**

# DIY WELDING PROJECT: BICYCLE SCULPTURE



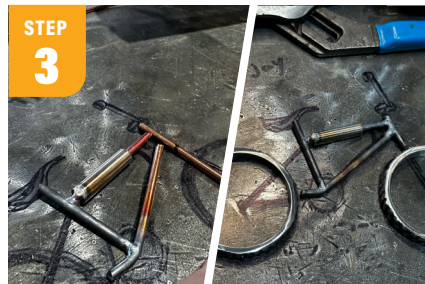
## STEP BY STEP



**STEP 1**  
Find a reference photo in the general scale you're going to be building. Use this scale as a base but adjust parts of the bike as needed to achieve the desired look. Draw the side profile of the bike on the weld table using a Sharpie.



**STEP 2**  
For the wheels/tires, use a chop saw to cut two 0.30-inch pieces from 2-inch tubing. Sand down the rough edges and remove any mill scale with a wire wheel. To create an aggressive tread, weld small bumps in two rows around the outside surface of the tubing. Finish the pieces to ensure there are no sharp edges.



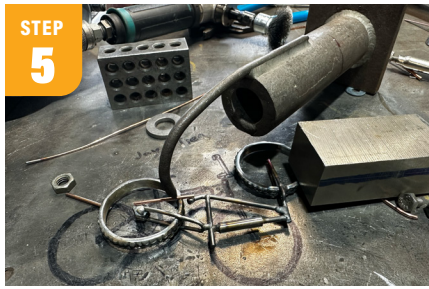
**STEP 3**  
For the main frame and foam cushion, use 1/8-inch filler rod for thicker parts and 3/32-inch rod for thinner parts. Shape the rod using a drawing or picture as a guide. Cut a 1-inch piece off the 1/4-inch tubing, clean the edges and slip it onto the top tube. Weld the frame together, ensuring it captures the top tube.



**STEP 4**  
Use 3/32-inch rod for the rear posts and front forks. Cut 3 1/2-inch lengths and bend them in the middle to form a long U shape to fit around the bike wheels. Trim as needed to fit the bike. Weld these pieces to the main frame and wheels, using weights or scrap metal to balance the bike.

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**STEP 5**  
For the bottom rear posts, cut two 1 1/4-inch pieces of 3/32-inch rod. Add width to the front by welding a 1/2-inch piece of 1/8-inch rod in the middle, then join it to the frame. Weld two 3/8-inch nuts to the inside of the rear wheel to create a hub/sprocket look.



**STEP 6**  
For the main sprocket, use a 5/8-inch steel washer. Use a cold chisel and hammer to shape the edges to resemble a sprocket. Next, weld it to the bottom of the seat tube, ensuring there is enough room in the center of the washer to feed in the 3/32-inch rod that will be bent into the shape of the pedals.



**STEP 7**  
Refer to the photos to shape the 3/32-inch rod for the pedals. Feed the bent rod through the main sprocket and center it before welding it to the frame. Balance the bike upright, place a piece of metal under one side of the pedal and cut two pieces of 3/32-inch rod to the length of the last bend. Weld one piece to each side of the pedal rod.



**STEP 8**  
For the headset/stem, cut the hex head off a 5/16-inch bolt, sand it to resemble a headset, and create a groove for the handlebars. Weld the handlebars to the headset and sand it smooth.



**STEP 9**  
For the front handlebars and cushion, draw the desired form and bend 3/32-inch rod to fit. Cut another piece of 3/32-inch rod to fit between the handlebars. Cut the 1/4-inch tubing into a 7/8-inch piece, clean the sharp edges and insert the 3/32-inch rod. Weld the bar in place so the cushion spins like on old BMX bikes.



**STEP 10**  
For the seat, use a 1/4-inch chunk of steel. Shape it by grinding and welding as needed or use a thicker piece and cut it to shape. Once it resembles a bike seat, weld it to the top of the seat post.



**STEP 11**  
Form the chain using 1/16-inch rod. Shape it into an oval, wider at the main sprocket and narrower at the rear sprocket. Weld it to the bike.



**STEP 12**  
Finish the bike by sanding and cleaning as you build. Once complete, go over it with light sanding and a wire wheel to smooth it out. Decide whether to fasten it to a base, paint it, clear coat it or leave it raw.



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