STEPHEN CHRISTENA

Stephen Christena has a degree in fine art with a focus in metal sculpture. In addition to experience in fabrication shops, he's been a photographer for national websites and worked in corporate sales and image licensing. In 2008, Christena launched custom metal fabrication company Midwest Metalworks. In 2015 he started Arc Academy, where he teaches basic welding and metal fabrication. The Michigan native lives and works in Chicago.

Follow Steve and Arc Academy on Instagram @ArcAcademy.

SKILL LEVEL: Beginner+
TIME COMMITMENT: One day or less

TOOLS AND MATERIALS

Multimatic® 215
(or other MIG or flux-cored welder, minimum 140 volts)

MIG or flux-cored wire

Spectrum® 625 X-TREME™
(or other plasma cutter, minimum 15 amps)

4.5-inch angle grinder
(with 40-grit flap disk)

16 gauge — **Hot rolled steel sheet**
4 (4'x8')

½ inch — **Hot rolled square bar**
(minimum 18')

Steel expanded grate
1 (2'x2')

Optional Equipment/Tools

Metal brake
Hammer
Pliers
Clamps
Magnets

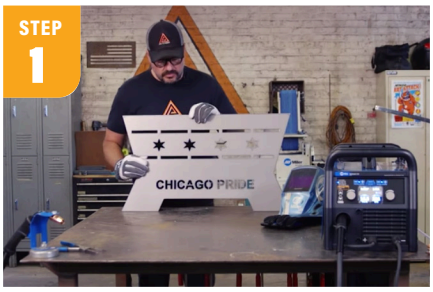
WARNING: READ AND FOLLOW ALL LABELS AND THE OWNER'S MANUAL.

FIRE PIT

The perfect addition to any backyard, a fire pit invites festive gatherings all year long. You'll be proud to host the next get-together and show off a metal creation that you built to last.

STEP BY STEP

STEP 1

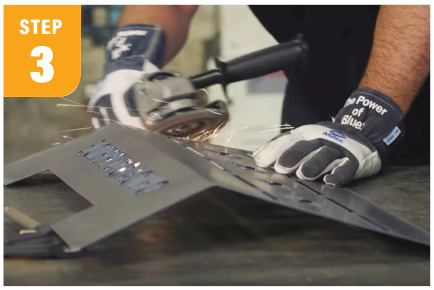


Create and cut out the design for your fire pit. A CNC table was used to cut out the pattern shown but you can easily use a plasma cutter. Mark cut lines and cut each piece of hot rolled steel sheet to size.

STEP 2

Bend each steel sheet to the desired angle. Although a metal brake is ideal for this step, you can also make the required bends by hand: First, mark a bend line on each steel sheet. Using a cutting disc attachment on a 4.5" angle grinder, score each metal sheet along the bend line, being careful not to cut through the metal. Finally, pull the metal toward the scored line to achieve the desired angle. Afterward, fill the score line with a weld bead to restore the metal's strength.

STEP 3



Prepare the edges of the steel sheets for welding: Clamp each sheet to a solid work surface. Clean weld areas with a 40-grit flap disc mounted in an angle grinder. Remove all dross that may be left over from the plasma cutting.

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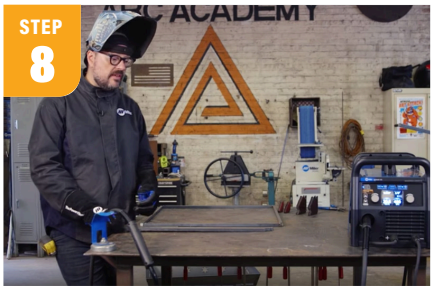
Connect two sides together on a flat surface. Use magnets or clamps in order to make sure the sheets are as square as possible. Then begin tacking them together from the bottom, then the midpoint, then, come back to tack between the two tacks. This staggered pattern will help to evenly spread heat input.

After completing the tacking for the bottom section move to the top. Use pliers or clamps to butt steel together when tacking to ensure the tightest joint. Use the same staggered pattern as before.

Continue tack welding all four sheets to each other, working from the bottom to the top and using a staggered weld pattern to limit heat input. Adjust fitment as necessary as you move up each joint; a hammer or pliers may be needed to ensure proper surface mating.

Measure the midsection of the interior where the bed of the pit will be welded in: These dimensions will be used to measure and cut the hot rolled square bars that will serve as the frame that supports the logs placed in the bottom of the fire pit.



Cut the four sections of square bar that will serve as the frame's perimeter.

Prepare the square bars for welding by cleaning and beveling each piece where they will be welded together.

Clamp and then tack the square bar frame together.

Tack and weld the three cross support bars into the frame to add structural rigidity.

Place the expanded steel grate over the square bar frame. Tack weld the grate to the bars to ensure proper fitment, then finalize welds at every contact point to ensure strength.

Tack the grate into the fire pit frame. Place the entire piece in a position comfortable for welding. Weld in horizontal downhill one inch at a time. Spread out each one and weld from corner to corner to control heat input.

Enjoy your new fire pit!