

Tube Bending: Butterfly Nets To Fighter Jets

If a bent tube is needed, Tubular Techniques can provide it, no matter what it's for. The company has bent tubes to make butterfly nets for the Ohio State University Department of Entomology and tubes for F-16 fighter jets.

"A lot of our customers are do-it-yourselfers and farmers trying to fix a piece of equipment," says Steve Harman, Tubular Techniques. "We also do frames and tubing for equipment prototypes, as well as crowd control and hand rails, even hand holders for emergency response vehicles. The variety is part of what makes what we do so much fun.

"We don't do engineering," says Harman. "We need a sample (even if it is damaged), a drawing or a model. It can be as simple as a straightened coat hanger with the intentional bends needed and longer than thought needed. Some people can make drawings, but photos usually are not helpful due to distortion from the lens."

A challenging job recently was a one-off for a trade show. The client sold grills and wanted to attract attention. They assembled a model of what they wanted using 2-in. pipe insulation for the model. It was a set of 5 stainless steel exhaust pipes that came out of the grill and twisted around a smoker unit.

"It was near impossible bending with a lot of welding and polishing to make it look like one twisted piece," says Harman.

That kind of exhaust header work for hot rods is what got Harman started in tube bending. A part-time job while in college



Tubular Techniques made this prototype of a Char-Grill for a trade show (above). Photo below shows more samples of their tube bending work.



turned into a unique career.

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Plastic pipe chain holder is suspended about shoulder high along the wall outside Boggs's shop, making it easy to find the right-sized chain.

Simple Wall-Mounted Chain Holder

"Here's a simple chain holder that will make it easy to find the right-sized chain when you need it," says Don Boggs of Pickens, S.C. "A length of 4-in. dia. plastic pipe is suspended horizontally about shoulder high along the wooden wall outside my shop.

"The pipe hangs from a couple of small chains attached to nails in the wall. A couple of boards nailed vertically between the pipe and wall serve as spacers to create room between the pipe and wall. I drape chains over the pipe so that the chains hang down both sides. When I find the chain I need, I

just grab one end and slide it off the pipe.

"I love this idea because it's easy to see the length and size of each chain. I don't have to guess at the chain's length like I would if it was stored inside a pail or dumped in a pile.

"I also tried using a smaller 2-in. dia. pipe, but it didn't work as well because I had to pull too hard on the chain while trying to slide it off the pipe."

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Welder Likes These Products



Pipefitter Jeff Prose likes this industrial welding jacket from Heatshield Products and the company's spark-proof pillow.

"Anyone who's ever braised, welded or soldered likely has a permanent 'metalworking brand' because of flying sparks and slag," says pipefitter Jeff Prose. "I've been a welder for 20 years and have several skin divots to prove it."

Prose uses OSHA-approved protective wear at his job, but notes there are several consumer products that are ideal for small shops and metalworkers. Heatshield Products sells welding and torch blankets, an industrial welding jacket and a welding pillow. The company's five different heavy-duty welding blankets are sized from 18 in. square to 52 in. by 72 in. Some of the blankets have grommets and magnets for easy positioning. Prose says welding blankets are ideal for repair jobs to protect painted materials from flying sparks and weld slag. The blanket protects at up to 1,800 degrees F of continuous heat and 2,000 degrees F intermittent.

Another helpful product for welders is a heavy-duty jacket. Heatshield Products makes one from their weld mat that's abrasion-resistant and impervious to liquid. It protects the front, arms and shoulders of the welder while the open back allows ventilation. They also make a carbon fiber jacket that protects against metal splashes, flames, sparks and UV radiation.



ROGO Fasteners produces Heat Shield Protective Gel that's a heat sink especially designed for brazing. The gel protects valves, controls and surrounding areas from heat damage during welding, brazing or other applications. Heat Shield Gel is sprayed on areas surrounding the working joint or can completely encircle copper tubing to prevent heat transfer. The clear, non-staining gel is odorless, non-toxic and won't harm skin. After use it evaporates without leaving residue.



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Handheld "slitter" uses a pair of overlapping 2-in. dia. cutter wheels to cut through metal up to 24-ga. thick.

Hand-Held Metal, Vinyl "Slitter"

"Our new hand-held 'slitter' cuts through metal up to 24-ga. thick, and also works great on vinyl. Anyone who puts up pole barns should have this tool," says Joseph Schmucker, owner of JTS Sales, Marysville, Ind.

The slitter is CNC-milled from 3/4-in. thick aluminum and measures 6-in. high by 8-in. long, making it small enough to fit in a nail pouch. It weighs just 2.3 lbs. The cutting is done by a pair of overlapping 2-in. dia. cutter wheels made from German quality steel.

The tool is designed to be pushed or pulled lengthwise. You hold the metal with one hand and push or pull the slitter with the other hand.

"Whether it's pushed or pulled, it makes smooth cuts without scratching anything," says Schmucker. "It works great on corrugated metal roofing because it makes a much smoother cut than cordless cutters, which cut more like a scissors going up and down. It also works great to cut trim pieces. The only limitation is that it can't be used to cut sideways over the metal. The wheels can be sent in for sharpening."

The metal and vinyl slitter retails for \$275, with free shipping to the lower 48 states.

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