

Make Your Own Replacement Parts

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head end of the center post shaft, he welded a crank made out of 1/4 in. steel rod, bent with a handle on it.

Halsey uses the lathe frequently for all types of projects. He's also made a horizontal milling machine, a roller to form rolled steel and several other shop tools. "I have only a couple hundred dollars invested in this lathe,



Halsey also built this roller to form rolled steel.

including motor and chuck," he says. He has some ideas on how it could be made differently and would be glad to advise anyone wanting to make something similar.

Alvin Jacobson, Williston, North Dakota: Metal working was a not too serious hobby for Alvin until he retired 15 years ago. When he retired, he had only a handful of shop tools, a couple of drill presses and an



Jacobson made this mini-lathe to handle smaller projects. "I made three of these before I got it right," he says.

old pedal metalworking lathe that had belonged to his father.

Besides metalworking, Jacobson also a new hobby - combing through junkyards for old engines, parts and scraps.

One of his prized possessions is a big industrial lathe he "rescued" from a creek. "It hadn't been used for some time and had been set on a creek bank. The bank caved in and the lathe tumbled in. I traded some parts to the guy who owned it," he says.

Several parts were missing on the lathe, including the tailstock and the carriage that holds the tools. He milled his own tailstock from a piece of cast iron. He made a new tool carriage, making a mold out of oak and lining it with asbestos. Then he melted down five 4-in. aluminum pistons. Once the casting was made, he milled it down to fit. He also made gears and screws for the carriage.

Some of the lathe work Jacobson does doesn't require the big lathe, prompting him to make a smaller lathe, using a 3-ft. length of 4-in. I-beam. The lathe swings about 4 in. The tailstock is a piece of pipe welded to a



These two drill presses were made from various electrical fittings and pieces of scrap pipe.

T-shaped piece of steel. The face plate is about 6 in. in diameter, made from a piece of scrap iron. He milled a chuck out of a steel shaft. "I made three of them before I got it right," he says.

Jacobsen has also made three drill presses, using various components, including pipe fittings and a starter off a Ford Model T.

He also has a radial arm drill press that he fashioned out of a radial arm sawmill saw.

In addition, he made a boring machine to recut babbits for main bearings in engine blocks. That is made from steel pipe, a couple of cream separator bases put together for legs, and a reduction gear he found on one of his junkyard trips. It's also self feeding, like his



Here's one of Jacobson's metal-working projects - a scale model Fairbanks-Morse engine that he made from memory.

lathes.

"I only have three machines that don't have their roots in a junkyard," he says. One is his father's pedal lathe, one is a vertical mill, and one is a horizontal milling machine his wife purchased for him as a gift.

He keeps his tools busy rebuilding old engines. He's rebuilt several Model A and Model T Ford engines he found in junkyards. He recently finished a complete rebuild of a Model S Ford, a rare antique car, which belonged to a friend.

He also used his shop tools and junkyard scraps to turn out a full-scale replica of a Fairbanks-Morse gasoline engine. "We used these when I was growing up on the farm," he says

New-Style Drill Bit Sharpener

"I am a metal worker by trade so I always need sharp drill bits. But I've never been able to find an inexpensive bit sharpener that really worked," says Stan McDonald, Foxboro, Ont., who finally decided to see if he could design his own sharpener.

The result is an attachment for benchtop grinders that he says does a near-perfect job. "It compares favorably with sharpeners that cost thousands of dollars. It's easy to use and built to last. Features all-metal construction - no plastic," says McDonald.

"When I set out to design it, I started thinking that the textbook method for sharpening bits does work, it's just difficult to

More Resources For Metal Workers

There are many great resources for do-it-yourself metal workers including magazines, books and web sites.

MAGAZINES
Home Shop Machinist
2779 Aero Park Drive
Traverse City, Mi 49686
(231)946-3712

Gear Technology Magazine
<http://www.geartechology.com/index.htm>

Canadian Machinery & Metalworking
Rogers Media, Publishing
777 Bay Street, 6th Floor
Toronto, Ontario, Canada M5W 1A7

BOOKS
Fundamentals of Machine Tools
Publication # TC9-524
Department of the Army
<http://www.adtdl.army.mil/cgi-bin/atdl.dll/tc/9-524/toc.htm>

Tabletop Machining
By Joe Martin

Machining Fundamentals
By John R. Walker

WEB SITES
Varmint Al's Mini Lathe page
www.cctrap.com/~varmint/alath.htm

Nick Carter's Taig Lathe Pages
www.pioneer.net/~felice/taig.html

Harbor Freight 7 x 10-In. Mini Lathe
www.cybercamp.net/~mike/ml/minilathe.htm

Frank Hoose's Mini Lathe Page
<http://www.mini-lathe.com>
www.metalworking.com
www.metalwebnews.com

Turn Your Drill Press Into A Mini Wood Lathe

You can turn just about any drill press into a mini wood lathe using the new Vertilathe attachment.

The unit's slotted aluminum base plate mounts to the drill press with carriage bolts. The base is then aligned with the drill axis. There's a bearing in the center of the base plate that serves as the tail stock center.

The drill head serves as the headstock for the vertical lathe. It comes with two drive centers: a screw center for small diameter work and a spur center for work pieces 3/4 in. in diameter and larger.

Vertilathe comes with two stainless steel tool rests, one 3-in. and one 6-in., which mount on either side of the base plate. These are adjustable to turn pieces up to 4-in. in dia. and 3 to 6-in. long. If you flip the workpiece over, you can work on pieces up to 12 in. in length.

While it doesn't have all the versatility of a normal woodturning lathe, it's a rugged, precision-built tool that's great for making small spindles, wood pens and pencils, Shaker pegs, toys and the like. And its \$54.95 price tag makes it only a fraction of the cost of a mini wood lathe. (Canadians and U.K. residents, add an extra \$3.95 U.S. for shipping).



Vertilathe can be used to work on pieces up to 3 in. dia. Comes with two stainless steel tool rests.

Contact: FARM SHOW Followup, G.H. Devine, Inc., 306 Albany Avenue Kingston, N.Y. 12401 (ph 800 728-7751).



Drill sharpener attaches to side of standard bench grinder. It's built to last out of metal - no plastic, says inventor Stan MacDonald.