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Newsletter

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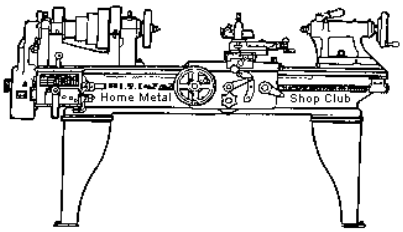

http://www.homemetalshopclub.org/

The Home Metal Shop Club has brought together metal workers from all over the Southeast Texas area since its founding by John Korman in 1996.

Our members' interests include Model Engineering, Casting, Blacksmithing, Gunsmithing, Sheet Metal Fabrication, Robotics, CNC, Welding, Metal Art, and others. Members enjoy getting together and talking about their craft and shops. Shops range from full machine shops to those limited to a bench vise and hacksaw.

If you like to make things, run metal working machines, or just talk about tools, this is your place. Meetings generally consist of ***general announcements***, an ***extended presentation*** with Q&A, a ***safety moment***, ***show and tell*** where attendees share their work and experiences, and ***problems and solutions*** where attendees can get answers to their questions or describe how they approached a problem. The meeting ends with ***free discussion*** and a ***novice group*** activity, where metal working techniques are demonstrated on a small lathe, grinders, and other metal shop equipment.

President	Vice President	Secretary	Treasurer	Librarian
Dean Eicher	*Vacant*	*Joe Sybille*	*Joe Sybille*	*Dean Eicher*
Webmaster/Editor	**Audio/Visual**	**CNC SIG**	**Casting SIG**	**Novice SIG**
Dick Kostelnicek	*Mark Heidorn*	*Martin Kennedy*	*Vacant*	*John Cooper*

This newsletter is available as an electronic subscription from the front page of our website. There are over 1027 subscribers located around the world.

About the Upcoming 11 July 2026 Meeting

The next general meeting will be held 11 July 2026 at 12:00 P.M. (Noon - Central Daylight Time) at TxRxLabs, 6501 Navigation Blvd., Houston, Texas 77011 **and** on-line at Zoom.us. Log-in credentials are as follows: Meeting ID = 899 6651 5331 Passcode = 726312. Click for a link to the meeting

General Announcements

The HMSC has a large library of metal shop related books and videos available for members to check out at each meeting. These books can be quite costly and are not usually available at local public libraries. Access to the library is one of the many benefits of club membership. The club has funds to purchase new books for the library. If you have suggestions, contact the Librarian *Dean Eicher*.

We need more articles for the monthly newsletter! If you would like to write an article, or would like to discuss writing an article, please contact the Webmaster Dick Kostelnicek. Think about your last project. Was it a success, with perhaps a few 'uh ohs' along the way? If so, others would like to read about it. And, as a reward for providing an article, you'll receive a free year's membership the next renewal cycle!

Ideas for programs at our monthly meeting are always welcomed. If you have an idea for a meeting topic, or if you know someone that could make a presentation, please contact Secretary Joe Sybille.

Members are requested to submit to the club secretary the name, address, telephone number, and website address, if any, of any metal or other material stock supplier with whom the member has had any favorable dealings. A listing of the suppliers will appear on the homepage of the club website. Suppliers will be added from time to time as appropriate.

The club is looking for a member to serve as webmaster. After over twenty years of service, our current webmaster would like to pass the webmaster torch to a successor. Positions still vacant are vice-president and casting special interest group leader.

For those wishing to join the Tinkering user group please visit https://groups.io/g/tinkering and follow the prompts.

Recap of the 13 June 2026 General Meeting

By *Joe Sybille*

Ten participants attended the meeting. Seven participants were in-person; three were on-line. Dean Eicher led the meeting (standing in left photo below). Present at the meeting were newcomers Jorge Milanese and John Cook. Welcome Jorge and John. We hope that you become regular participants at our meetings.

Presentation

The presentation today was a video by Keith Rucker of Vintage Machinery. In the video, Rucker describes and demonstrates the milling of large bronze connecting rod bearings for a vintage steam locomotive. View the presentation at this: https://www.youtube.com/watch?v=dgQty7dNRAE

Show and Tell

Tom Pelkey displayed a repaired steering column ignition switch lock for a vintage 190 SL Mercedes automobile. Also, he displayed a General Motors (GM) ignition lock that was part of the vehicle anti-theft system (VATS). GM used this system from the mid 1980s throught the early 2000s. See photos below.

John Cook showed parts of a ring tower that he would like to replace because of accumulated wear from years of weather exposure. A ring tower is used by gymnist to perform various acrobatics by holding in each hand a ring suspended from cables fixed from above. See photo at left.

John Cooper displayed photos of a fixture he fashioned to measure the end play of the bearings in a brake drum. Recently, he replaced one of the tandem axles on his travel trailer. See photos at right.

Safety Moment

Participants viewed a short video on the safety aspects of pouring babbitt bearings. The video may be viewed at this: https://www.youtube.com/watch?v=02L5z3kflDU.

A participant showed photos of a process used to grind away rust from a well-used lawnmower blade. Safety equipment included safety glasses, face shield, and long sleeves. Another participant recommended the addition of a dust mask to filter the airborne rust particles.

Problems and Solutions

A participant wanted to know the best way to reproduce a casting. Suggestions included making a scaled 3D drawing of the part and using one of the 3D printing processes to make the part.

Articles

Drilling Holes in Exactly the Right Place

By *Martin Kennedy*

I'm nearly finished with a project to replace the Z drive train on my CNC mill. The Z axis, or quill, had unacceptable backlash for CNC – almost 1/16". The new drive train replaced one with a stepper motor, timing belt, a worm gear, a friction slip assembly (for when it was a drill press), and a rack and pinion driving the quill. The new drive train would have a stepper motor and a planetary gear directly driving the rack and pinion on the quill. I used the planetary gear in the design because I could get a 10:1 reduction with one device. I looked at using timing belts, but it would have taken two and would have had very large timing gears.

I had to drill new holes on the side of my mill to mount the planetary gear. I needed the holes to be precisely located, so I 3D printed a guide. I used the guide to center punch the four holes. It located on the pinion center shaft so I could get the holes in exactly the right locations. I then used a hand-held drill to drill the holes in the cast iron head of the mill. Once they were drilled, I checked them with the guide. Not good. Three of the four holes had drifted during drilling. One was about ¼" off where it needed to be. This would not work at all.
To fix this, I 3D printed another drill guide. This one had two 4140 steel bushings for two of the adjacent holes. I sized it so that a ¼" end mill just fit through the holes. The holes ere originally drilled for a #10, so drilling the holes slightly larger removed all of the eccentricity. For the hole that was the most off, I made a small rod that friction fit into the bad hole so I could put the new hole where it was supposed to be.

I centered the guide on the shaft, and clamped it into place. I then slowly drilled through the bushings with the ¼" end mill clamped into my hand held drill.

I finished up by using heli-coils. Heli-coils use a special tap that allows a spring-like threaded hole insert to be used. Once I installed them, I was able to mount the planetary gear assembly! All four of the holes were essentially exactly where I wanted them. Using the new planetary gear, my Z backlash is on the order of 0.003". If I had this to do again, I'd start with the 3D printed drill guide with steel bushings and a drill or end mill, so that the holes would be in the correct places the first time!