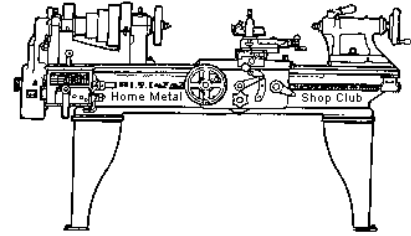




April 2020
Newsletter

Volume 25 - Number 04



<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 <i>Brian Alley</i>	Vice President <i>Ray Thompson</i>	Secretary <i>Joe Sybille</i>	Treasurer <i>Gary Toll</i>	Librarian <i>Ray Thompson</i>
Webmaster/Editor <i>Dick Kostelnicek</i>	Photographer <i>Jan Rowland</i>	CNC SIG <i>Martin Kennedy</i>	Casting SIG <i>Tom Moore</i>	Novice SIG <i>John Cooper</i>

This newsletter is available as an electronic subscription from the front page of our [website](#). We currently have over 1027 subscribers located all over the world.

About the Upcoming May 2020 Meeting

Due to the social distancing requirement brought on by the Covid 19 virus pandemic, the May meeting is canceled.

Visit our [website](#) for up-to-the-minute details, date, location maps, and presentation topic for the next meeting.

General Announcements

[Videos of recent meetings](#) can be viewed on the HMSC website.

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 Ray Thompson](#).

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 Vice-President Ray Thompson.

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.

Some thoughts from the newsletter editor.

By Dick Kostelnicek

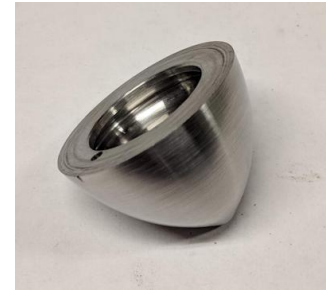
Another month stuck in the house and there will be no May HMSC monthly meeting. Fortunately, having a home shop means that I am used to social distancing and working alone. Over the past few months I've really got my money's worth from my high speed internet connection. It is streaming videos sometimes 10 hours a day. I watch the medical updates on the virus along with the myriad of machining how-to videos. I hope you are well and using this time to continue your avocational awareness and education. We still have some articles that have been submitted and with all the time on your hands I hope you will email yours to me for future inclusion in this newsletter. webmaster@homemetalshopclub.org.

Articles

Holding Difficult Parts in the Lathe

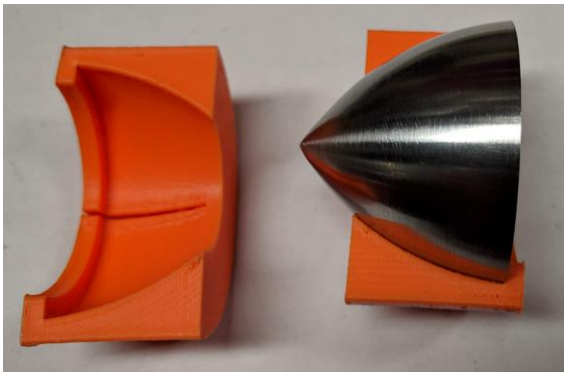
By Martin Kennedy

Most of the parts I make on the lathe can be held fairly easily in my collet chuck or in a three or four jaw chuck. If the part has an unusual external shape, it can be held by planning cuts such that there's always a stub to hold on to until the final cut. But, sometimes there is no easy way to hold something.



I made a puzzle that has an internal ball bearing race. I made the outside in the shape of a [Reuleaux triangle](#), mostly because it's an interesting shape. The part was made out of round stock. I made all the inside cuts, then I cut the outside shape as the final operation on the lathe. The final cut dropped the part from the round stock held in the chuck. In this way, even though the part had a complex shape, it was easy to hold.

I measured the internal diameter of the bearing race as accurately as I could when I made the part. Everything looked OK. When I assembled the puzzle, the bearings fit inside, but they were a bit tight, and it was hard to work the puzzle. To make it work better, I needed to take a light cut on both halves of the race. The other half (not shown) was easy to hold, but this piece presented a problem, since there was no easy way to accurately chuck the part on the lathe without damaging the finish.



To hold the part, I made a fixture on my 3D printer. It exactly fit the outside of the shape. I had cut the Reuleaux shape using CNC, so I already had a CAD model of the puzzle. This made it fairly easy to design the mating 3D part.

I made it in two halves. Each half had a split nearly all

the way through, so I could clamp it in the four jaw chuck and squeeze the part.

This worked great! It was easy to get the part centered within a few tenths and make another cut on the bearing race.

So, if you have a part that's difficult to hold in the lathe, consider making a fixture with a 3D printer. 3D printed fixtures are cheap and fast to make, compared to machining. Just watch the heat! Plastic will melt.

