



SCHSM

Southern California Home Shop Machinists

December 5, 2020

OFFICERS

President	Doug Walker
Vice President	John Miller
Secretary	Ron Gerlach
Treasurer	Jim Endsley

COMING EVENTS

December 5 Virtual Meeting
Sat, 2 January 2021, 2:00p.m.
via Zoom

PREFACE -

The virtual December meeting of the Southern California Home Shop Machinists was called to order at 2:00 p.m. on Saturday, December 5, 2020. We met in the cloud from our individual homes via Zoom. There were 31 members in attendance.

CLUB BUSINESS –

Vise President John Milller called the meeting to order and handled a few business matters before Doug logged in and took over. During this short Miller era, a new member was introduced. His name was Wil Heitritter and lives in Pasadena. He had intended to join the on-site El Camino meetings years ago but never found the time to make the drive so the Zoom virtual setting provided a more convenient opportunity. He has a variety of tools in his shop including a mini lathe, a mill, a pantograph, die filer and a collection of jeweler's lathes. Jim Endsley reported that there was no new activity regarding the club treasury.

After assuming the reins of the meeting, Doug reminded everyone about the Gunther's Yard event the following day on Dec 6th and that there would be soda available to attendees.

SHOW and TELL

Eldon conducted a discussion about the finger brake fingers he fabricated for Larry's 24" Diacro brake as well as the sheet metal project that motivated this whole process. He needed to neatly seal the gap between a couple of acoustic ceiling tile panels. This required a couple of back-to-back custom U-channel shapes spot welded together. Bending the U-channel sections was the job de jour requiring the brake.

To fabricate the missing fingers for Larry's brake, Eldon used some ½" and 1" thick sections of 1018 CRS. He cut these to size with his old band saw and then milled the sloped portion in the front to the correct angle. He power tapped the threaded hole which is used to secure the fingers into place on the brake. He used his surface gauge to compare the new fingers to the old ones but found, during this process, that the back edges of the old fingers were not flat. To get consistent readings he placed some shims at the back side of the old fingers so the finger would stay flush to his reference plane. He pointed out the use of the vertical pins found on many surface gauges to rest up against the front edge of his surface plate. After determining the correct amount to remove from each finger, he returned to the mill to make the corrections. The result was a very close match to the original fingers. After machining the slope, he knocked off the sharp leading edge and formed a radius with a file.

After finishing the finger fabrication, he returned all the fingers to Larry and finished his sheet metal fabrication job at Larry's shop. Next up we heard from Larry where he showed a variety of things but one in particular was the cold black oxide finish, he applied to the freshly made brake fingers fabricated by Eldon.

Larry McDavid started out his presentation with a discussion of the safety measures he took to keep himself safe as he goes up on his two-story home roof to service various antennas and instruments mounted there. He started with a ladder brace that he mounted to the roof, close to the edge and above the metal rain gutters. This consisted of a 2X6 pressure treated board mounted to a custom welded steel bracket that was welded by fellow



club member Bernie Wasinger. This was actually built some years ago. With the brace in place an extension ladder can be safely and securely laid in place without concern for crushing the rain gutters. Once at the top of the ladder, he added a grab bar to the closest facial board. This was one those chrome plated U-shaped steel handles typically used in bathrooms for older folks. This gave him a firm handle to grip at the top of the ladder as he transitioned to and from the roof.

He next discussed the change he made to his Rotex rotary punch. He added knobs to the sides of the rotating turret to facilitate indexing between the various size punches around the perimeter of the turret. He had seen a photo of another such machine with these knobs installed. There were already some 7mm ID holes in the steel turret. He bought some 7mm diameter aluminum rod stock from McMaster-Carr and cut these to size. He then used Loctite to bond the knobs to the rods and the rods to the turret.



He next showed a picture of the precision ground Norton combination India stones that he recently purchased. He got these from Lance Baltzley (www.26acremaker.com). There are numerous Youtube videos about the use and making of these stones.





He showed a quick photo of the ink brayer he bought on Amazon for spreading the die used for spotting and scraping.



The final portion of Larry's presentation was the processing he performed on the brake fingers made by Eldon. He had four new 1" wide fingers and five new 1/2" fingers to add to his brake to fill out the complete 24" wide span. He first tapped the holes all the way through that Eldon had tapped. This apparently was not necessary, but Larry felt it was a good touch and this would be the best time to do it. He used a nut tap which is a tap that has a shank slightly smaller than the minor diameter of the tap. This allows the tap to pass all the way into the threaded hole without interference from the shank. This also allows multiple finish threaded nuts to be accumulated on the shank before stopping to remove them. He applied a black oxide finish to the fingers that came out with a nice dark finish. He used his Caswell Black Oxide kit. He first carefully cleaned the parts to remove any oil residues. Then soaked them for 5 minutes in the oxide solution. They were then dried and the catalyzed oil solution was spread over the surface. This adds to the dark finish by penetrating into the pores left by the oxide solution. The oil adds to the corrosion resistance. To further protect the fingers, he added a coating of



Boeshield T9. They looked very professional. As Larry disassembled his machine to install the new fingers, he discovered why the entire top finger assembly was not lifting clear of the bottom table. The two large springs at each end had broken into multiple pieces as can be seen below.



Larry then found some replacement springs which were of the correct dimensions other than the total length. He cut them to length with his small cutoff saw and slipped them into place. As can be seen in the next picture there was enough protruding above the plate that when tightened they would give sufficient lifting force. Sure enough, once he assembled everything along with the new springs and additional fingers, the upper assembly remained elevated above the table until moved down with the lever.



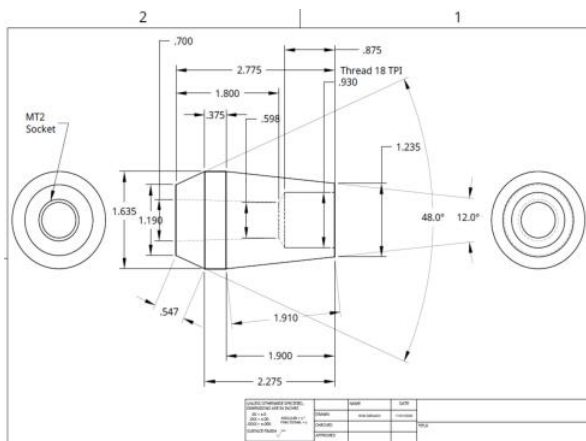


During the discussion it was mentioned by Matt Rulla that one can put a section of angle iron with a radius across the front of the fingers to get a softer large radius bend.

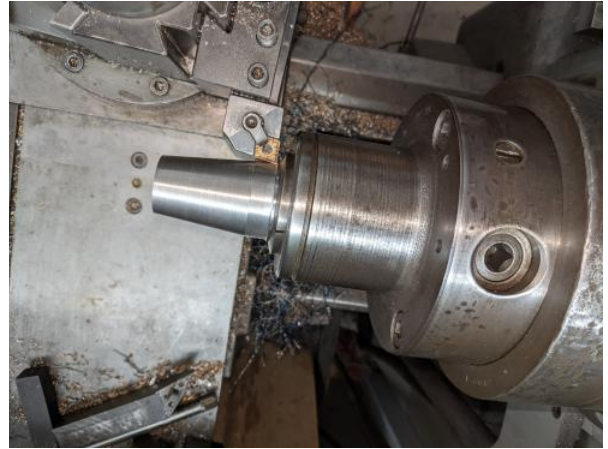
Ron Gerlach talked about the fabrication of a special sleeve for his Myford OD/ID grinder



workhead and a batch of accessories he later bought on eBay for it. The Myford workheads (similar to a headstock on a lathe) have a special 12 degree included angle socket. He needed to make an adapter to convert from this 12-degree opening to a standard 2MT socket for inserting dead centers. Myford calls this adapter a Centering Sleeve. He presented a pdf drawing of



the part he created in Onshape based on images of the sleeve he found online. He then proceeded to turn the rough dimensions from a piece of 1-3/4" pre-hardened 4140 which has a Rockwell hardness of C25. The turning operations were all carried out on the lathe including the internal threading using carbide inset tooling.



Once the basic shape was in place, he transferred the sleeve to the OD/ID grinder to first clean up and accurately grind the 12 degree outside taper.



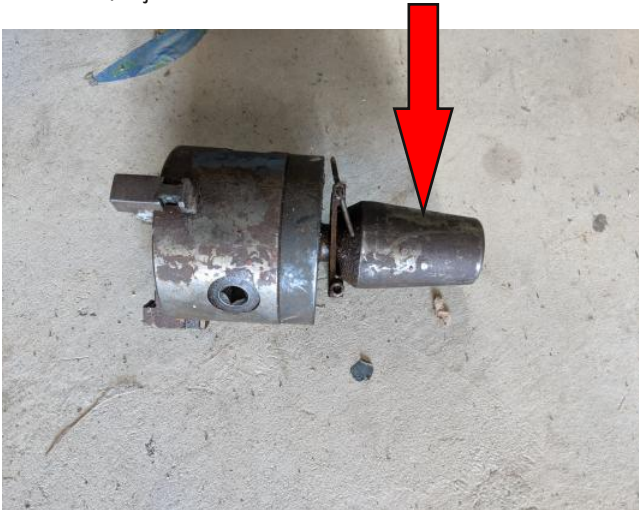
Once this was complete, he removed the four-jaw chuck from the headstock and inserted the new sleeve. At this point he was able to grind the 2MT



socket to final dimensions and grind the face of the sleeve. The image below shows the final part.



After describing this build process, he referred back to the picture of the stash of goodies he picked up on eBay. And sure enough, there was one of these sleeves he had just made. It was an original sleeve with a 2MT/3 jaw chuck inserted.



Bernie Wasinger showed the Jo Block Lapping stone he uses to keep his precision gauge blocks in tip top shape. The one he showed was made by DoAll though he had others made by Starrett (Weber) and Weber. He keeps them well guarded in his shop.



Matt talked about a friend of Pat O'Reilly's who is a prolific model engine builder. He suggested that Pat should try to arrange a video tour of the gentleman's shop.

Bill Heather treated the group to a video brief video tour of his new shop which was in the framing stage at the time of the meeting. He will have nearly 640 sq foot of space and almost 12' high ceilings. His slab and shop walls were surprisingly close to his property line to one neighbor next door and behind. Apparently, the block



wall next to his side neighbor will be torn down so he can finish the exterior surface and then remain down. The neighbor will end up with a little more back yard area with the shop wall serving as his new fence.

Butch Sherrick showed his construction and use of an Open Bottle Casting Ladle. It was something he devised after seeing a larger version in use at a professional casting facility. Basically, it involves a ladle with a valve at the bottom that can be manually opened by the operator so that the molten aluminum exits the ladle from the bottom thus totally eliminating the inclusion of any dross which is normally on the top surface. He made



the ladle out of an old propane bottle and welded up a handle and mechanism to hand operate the valve he made for the bottom opening. He melted up a batch of aluminum scrap and poured the molten metal into a cast iron muffin pan to make a bunch of little ingots. He found that any clogging of the valve was quickly resolved by dipping the ladle back into the molten metal. It was an impressive gadget and should prove to be very useful.



Matt added that he has found that remelting and pouring of the ingots three successive times helps to eliminate gassing and improve the general machinability of the finished poured aluminum. Matt uses his homemade angle iron molds for making the ingots. He finds it easier to add long skinny ingots to an existing melt by passing them through the top vent hole. There was a discussion about potato degassing whereby raw potatoes are tossed into the molten

metal. Apparently, this is a relatively dangerous process for small home casters because the moisture in the potatoes essentially boils off at a very rapid rate resulting in the splattering of molten aluminum around the local area. The bubbling action of the boiling apparently helps to collect and remove small captured gas pockets.

Phil Potter talked about getting a 2MT to 3/8" threaded adapter to mount a small hand drill chuck on his drill press. He found the adapter online at a very decent price.

Don posed a question about measuring the taper of his surface grinder spindle. It was mentioned by several members that the predominant number of spindles out in use have a 3IPF taper. Don was having a hard time getting a consistent measurement using his vernier protractor. It was suggested that he instead, use the two precision ball bearing technique to measure the inside taper of one of his existing adapters.

SCHSM welcomes presentations by members or guest speakers on any subject related to metal working activities. If you have some knowledge or experience you feel may be of interest to our members, or if you know someone that may have something interesting to relate, please consider making a presentation at a meeting. Presentations may be a little longer and more detailed than a show and tell, and may be accompanied by slides, video, or physical displays. Probably every member has some experience they can share, and this is the purpose of SCHSM. Please contact President Doug Walker to make arrangements to give a presentation.

SCHSM met in Classroom AJ115 on the first floor of the Industry and Technology building of El Camino College, 16007 Crenshaw Blvd. Torrance, California, at 2:00 p.m. on the first Saturday of every month until March of this year. Meetings are now held via Zoom. This will continue until at least March of next year.

If you would like to contribute an article to this newsletter, or make a comment, contact the editor, Ron Gerlach. He can be reached via the SCHSM Groups.io Group, or at r7734g@hotmail.com.

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