SCHSM

Southern California Home Shop Machinists April 6, 2019

OFFICERS

President	Charlie Angelis
Vice President	Michael Vulpillat
Secretary	Ron Gerlach
Treasurer	Jim Endsley

COMING EVENTS

May Meeting
Sat,May 4, 2019, 2:00 p.m.
El Camino College

June Meeting
Sat, June 1, 2019, 2:00 p.m.
El Camino College

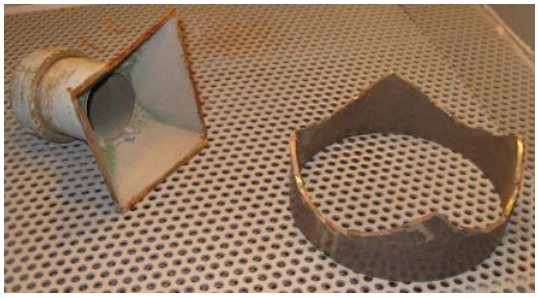
Picnic
Sat June 8, 2019
Alondra Park
Torrance

PREFACE -
The April meeting of the Southern California Home Shop Machinists was called to order at 2:00 p.m. on Saturday, April 6, 2019. We met in classroom AJ115 on the first floor of the Industry and Technology Building at El Camino College in Torrance, California. There were 27 members in attendance. There were no visitors.

CLUB BUSINESS –
Charlie called the meeting to order and checked for new members.

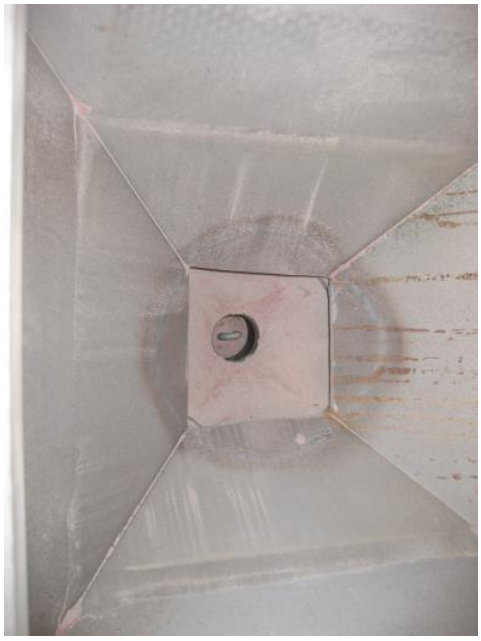
PRESENTATIONS –
Lewis Sullivan Sandblast Cabinet Modifications

Lewis continued his sandblast cabinet presentation that he started at the February meeting. This time he had many more pictures of the modifications as they progressed. Last time he talked about modifying his gravity/siphon fed cabinet so that it would operate as pressure fed machine. He had a smaller pressure fed blaster but it required frequent pauses in the action to reload the abrasive media back into the pressure pot. He wanted to combine his industrial style gravity fed cabinet with his pressure fed system. The next image below shows



where he joined the two systems. The image below that shows the discarded remains of the gravity fed hopper and the top of the pressure chamber. By carefully cutting the two parts he was able to weld up a clean transition between the two. The cutting patterns were obtained from a book on HVAC ducting fabrication that has served Lewis well for many such builds and modifications. The image shown on the next page is the view looking down into the gravity fed hopper . Note the heat effected areas where he joined the

two sections. With the two



View down into Hopper after Modifications

systems tied together he then added a foot operated lever at the bottom that released the

Foot lever Pressure Release

pressure in the vessel and allowed the blast media in the hopper to be fed by gravity down into the pressure vessel. Note the foot lever in the image above that extends from under the pressure vessel.

The drawer extended out on the lower right side is a clean out for the fine media that is extracted from the recovery system and is too fine to be of any use.

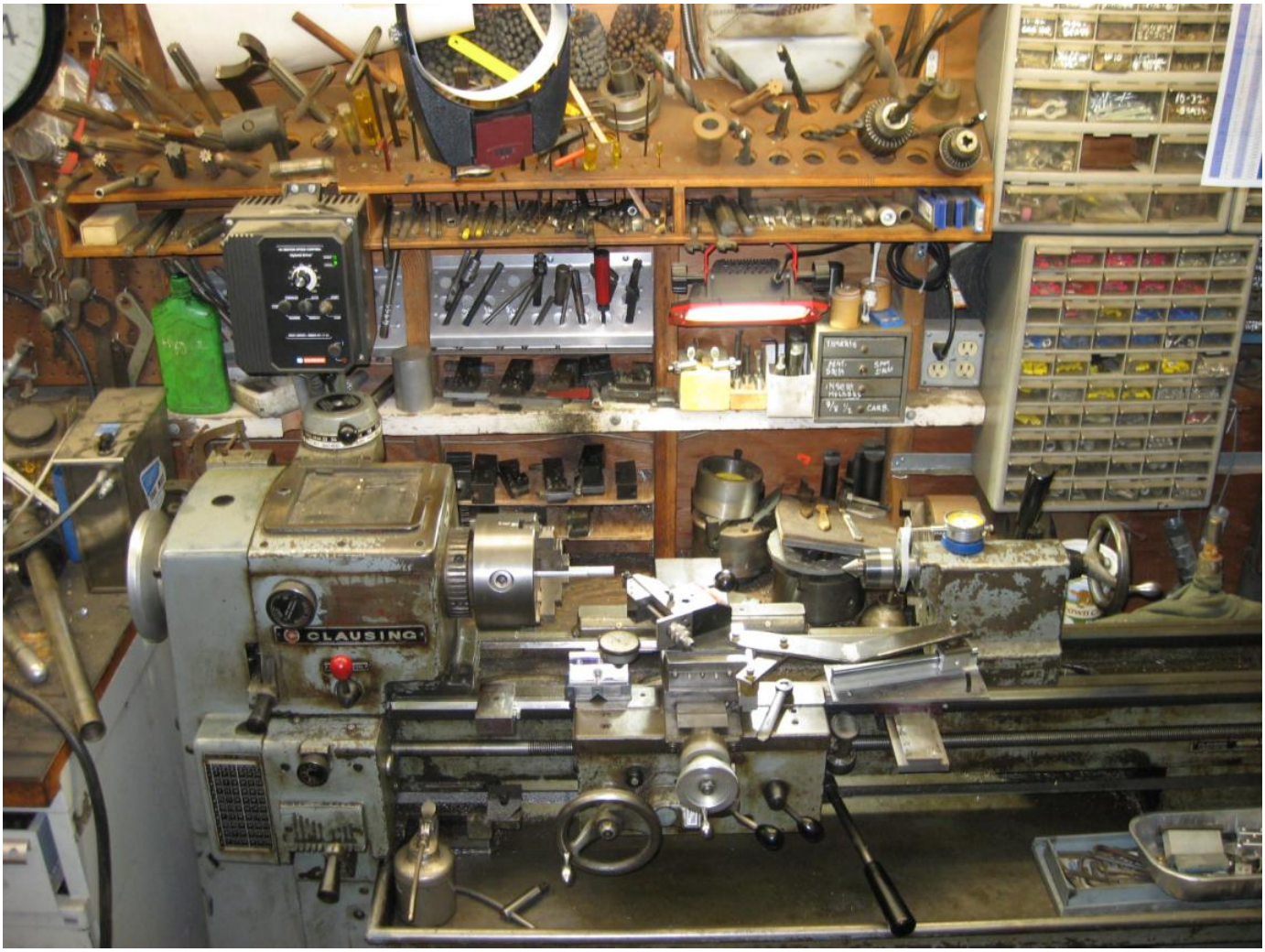
Base of Sand Blast Cabinet

Lewis Sullivan - Metric Threading on his Clausing Lathe

Lewis's next presentation was on the results of his project to build the universal threading adapter from Home Shop Machinist that will allow him to thread any given pitch. This will allow him to cut metric threads on his imperial threading lathe. Also included with this project was a dedicated 29degree tool holder to simplify the single point thread cutting process. This was another Home Shop Machinist project.
The new slide for his Clausing lathe replaces the

Assorted Parts For Threading Attachment

compound and is set up so that the tool holder moves in a path that is parallel to the lathe bed ways. The sine bar based mechanism then moves this new sliding platform at a predetermined rate that is a function of the carriage movement. By adding this new degree of freedom for the tool holder his thread cutting options are no longer limited by Quick Change Gear Box or external change gears. The above image illustrates the assorted components that went into this modification. The following page provides a large view of the Clausing Lathe with the attachment in place.

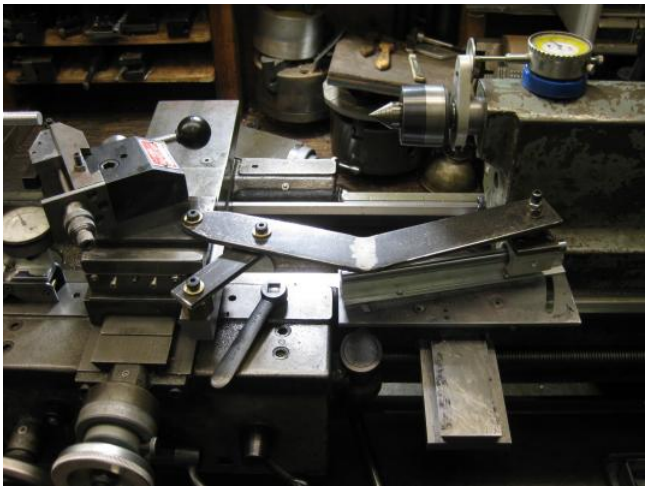


Clausing Lathe w/ Treading Attachment Installed

This is a very busy picture with a lot going on with the lathe, its attachment, storage bins and various tools. So to zoom in a bit on the actual threading attachment we need to focus on the images below.

Headstock End of Attachment

The first image focuses on the head stock end which shows a work piece in the chuck, the dial indicator in place to measure tool movement and the cutting tool poised to begin threading. The sine bar mechanism is shown in the lower right corner of the picture. The next picture below shows the



Tailstock End of Attachment

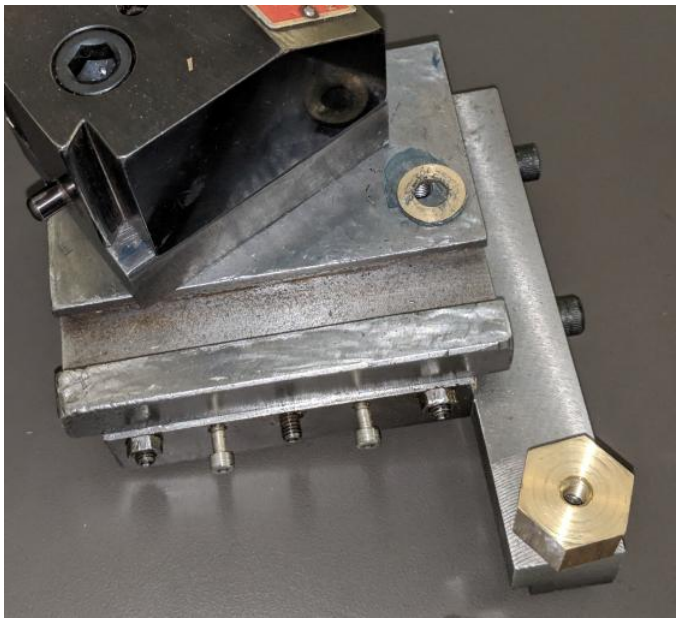
tailstock end of things. Here we can see the business end of the sine bar mechanism that allows

the continuously adjustable feature of this mechanism. The unique lever is shown below.

Threading Attachment Sine Bar

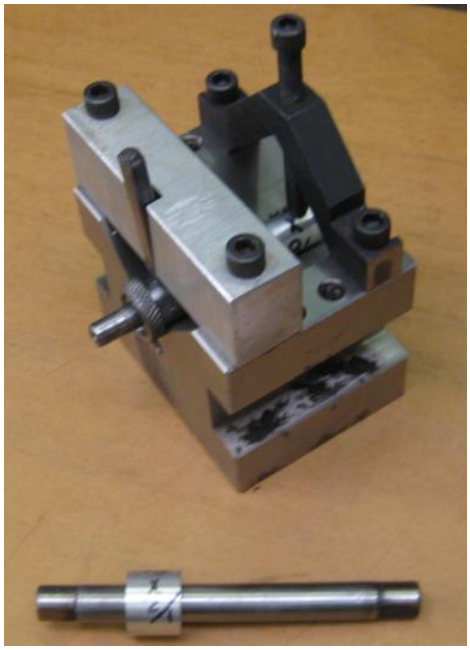
Though this mechanism was detailed in the HSM article it had to be customized for his particular lathe. He accomplished this with wood prototypes which made fabrication and modification simple. With the angles and dimensioned worked out in wood, he fabricated the final parts in metal. One variation he used was to weld two of his pieces together rather than using the screw attachment method shown in the magazine article.

As part of the modification he had to first remove the compound and then build the new platform with sliding dovetails. Significant care was required so that the dovetailed slide would move freely without binding and have no significant slop. He showed photos of the various machining steps required to build this assembly. His execution was excellent.



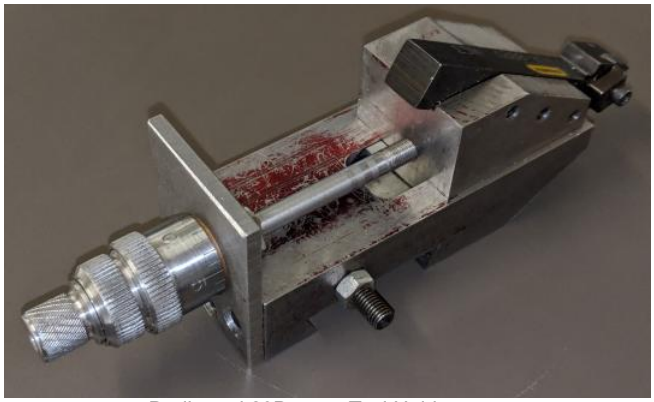
New Slide to Replace Compound

One part of the build process required the fabrication of a graduated and numbered knob. He stamped the numbers into the periphery of the knob using another fixture of his making that utilized a large V-Block that centered the work and a securely mounted channel that held the individual number stamps. He turned a small spacer the same OD as the knob so the knob and shaft would be held flat and parallel to the axis of the V-Block. The finished 29degree tool holder is shown below. This was built to fit onto his KDK tool post as shown to the left. The finished knob can also be seen this image below. The results were, again excellent.

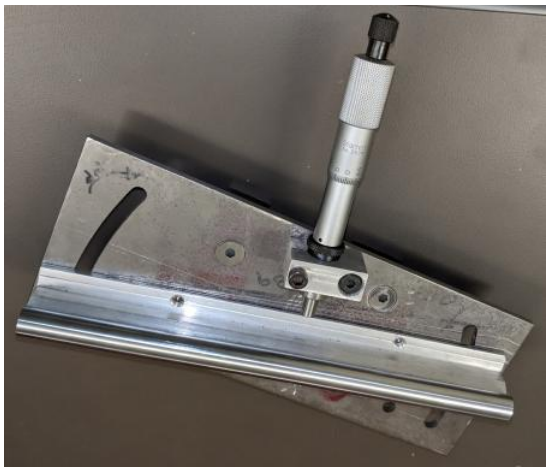


Number Stamping Jig and Spacer on Shaft

Lewis showed a chart of settings for the QCGB and for his new adapter vs various Metric thread pitches. He worked out a system to simplify the settings for the adapter. There were many repetitions in the chart since the series of common metric threads are mostly multiples of .25mm. To assist in setting up for various threads he added a



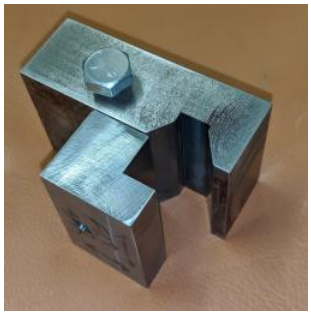
Dedicated 29Degree Tool Holder



Adjustable Slide Platform

micrometer thimble to part of the pivoting assembly for making small adjustments. There were numerous other small parts and sub-assemblies involved in this attachment. Two of these are shown below.

Slide Positioner w/ Way Clamp



Way Clamp for Adj Stop

He topped off his presentation with an example of a metric tread he cut using his new setup.

Lewis's next project will be the retracting tool holder which is a more complex variant of the dedicated threading tool holder he covered in his presentation.

Sample Metric Threading Job

Matt Rulla

Matt discussed a couple of related items. The first was his restoration of a rusty Sellers (Farrel) model 1G-1 drill grinder attachment. These drill grinders are excellent machines because of the way they grasp the drill bit and the geometry of the mechanism which allows it to cut the ideal shape on the drill bit cutting tip. His restoration was for one of the bit

Sellers Drill Grinding Fixture Holderter)

holding mechanisms. This item had been left out in the weather and was quite rusty. He used abrasives to remove the rust and return it to new like appearance.

The second and related part of his presentation was the abrasive pads he used. They are made by

Sandflex Set

Sandflex and come in a Fine, Medium and Coarse grade. They are similar to a Cratex type material and significantly different than the conventional sanding pads found in the big box hardware stores. The characteristic that sets them apart is the fact that the abrasive loaded material extends thru the entire block and not just the surface. As a result, they never actually wear out they just get

smaller and/or break apart. He got his set for around $13.00. The same set is currently available on Amazon for about $15.00. They were quite messy since they are so loaded with abrasive material.

Don Huesman

Don discussed an aluminum adapter he was turning. He was removing a significant amount of material during the boring process and had a very big pile of stringy chips. He was curious about his options to grind a chip breaker into his carbide tool bit to aid in breaking these long chips into manageable curls or chunks. He received a variety of suggestions.

Norm Wells

By popular request, Norm brought in his metal etching kit that he uses to etch various numbers,

Etch-O-Matic Kit

letters, characters etc. into a variety of metals. The kit consisted of a plastic pad for holding the etching stencil, a lead wire, etching solution and some misc items. You have to make up (or have made) a custom stencil containing the pattern of info you want to etch. You apply some etching fluid on the pad and place the stencil over the pad. You then apply a DC source (10 to 24V) to the work and the jumper lead from the etching pad with positive attached to the work. It is a simple system but with a detailed stencil it can provide excellent results. These kits are still available and can be obtained form Amazon starting for around $95.

Another item discussed by Norm was a metric die and handle set that he bought new for $10.50. It was likely just high carbon steel (as opposed to High Speed Steel) and not of the highest quality but for an occasional random metric threading job it was a great bargain.

Budget Metric Die Set

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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 Charlie Angelis to make arrangements to give a presentation.

SCHSM meets 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. The building is near Parking Lot B. Enter the campus from Manhattan Beach Blvd.

If you would like to contribute an article to this newsletter, or make a comment, contact the editor, Fred Bertsche. He can be reached via the SCHSM Yahoo Group, or at fbschsm@yahoo.com.

Find us on the web at www.schsm.org.