Home Metal Shop Club

August 2013
Newsletter

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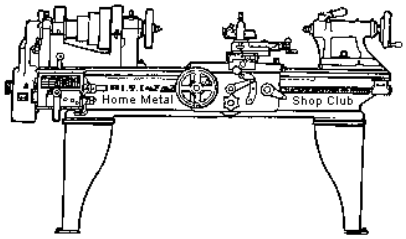


http://www.homemetalshopclub.org/

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
Vance Burns	*Norm Berls*	*Joe Sybille*	*Emmett Carstens*	*Dan Harper*
Webmaster/Editor	**Photographer**	**CNC SIG**	**Casting SIG**	**Novice SIG**
Dick Kostelnicek	*Jan Rowland*	*Dennis Cranston*	*Tom Moore*	*Rich Pichler*

This newsletter is available as an electronic subscription from the front page of our website. We currently have over 456 subscribers located all over the world.

About the Upcoming 14 September Meeting

General meetings are usually held on the second Saturday of each month at noon at the Jungman Library, located at the intersection of Westheimer Road and Augusta Drive (west of the Galleria) in Houston, Texas. Visit our website for up-to-the-minute details, date, location, and presentation topic for the next meeting.

Martin Kennedy will talk about "High Speed Machining on a Low Quality Mill"

General Announcements

Videos of recent meetings can be viewed on the HMSC website. The August meeting video is at this web link .

The HMSC has a large library of metal shop related books and videos available for members to check out at each meeting. The library is maintained by the club librarian, Dan Harper. These books can be quite expensive, and are not usually available at local public libraries. Access to the library is one of the many benefits of club membership.

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. At the September, 2012 HMSC board meeting, the board elected to waive membership fees during the next membership renewal cycle for those providing newsletter articles.

Ideas for programs at our monthly meeting are always welcome. If you have an idea for a meeting topic, or if you know someone that could make a presentation, please contact Vice President, Norm Berls.

Recap of the 10 August General Meeting

By *Joe Sybille*, with photos by *Jan Rowland*

Twenty five (25) members and one guest, Wessley Wilmot, attended the noon meeting at the Jungman Library. President *Vance Burns* led the meeting.

The club has funds to purchase new books for the HMSC library. If you have suggestions, contact the Librarian, Dan Harper.

Presentation

Dick Kostelnicek

Club member *Dick Kostelnicek* explained how one could use commonly available products and a source of low voltage A.C. power to remove the discoloration of welded stainless steel joints. He revealed the so-called secrets used by commercial vendors to remove the discoloration residue. Dick reduced to its basic level the process by which one could, in a home shop, duplicate the techniques of the commercial *shops.*

During his presentation, he demonstrated a procedure for removing the discoloration. See the photograph at right.

Here is the link to Dick's presentation slides.

Safety Moment

Norm Berls urged members to exercise caution when using a milling machine and offered the following suggestions. Install safeguards to avoid direct contact with the cutting bit. Use safety goggles to protect eyes from flying particles. Wear steel toe shoes for foot protection. Lastly, be aware that many accidents occur with milling machines when operators fail to turn off the machine before inspecting it.

Dan Harper shared an account of an accident involving an auto-cross driver experiencing problems with the throttle return on the driver's race car. The driver failed to resolve the throttle return problem, thereby causing him to lose control of his car during a race and subsequently crash into a chain link fence. As a result, the driver suffered serious facial injuries.

Dick Kostelnicek reminded members to be extremely cautious when operating a radial arm saw. He has a 12-inch model, and after noticing how long it took for the blade to stop rotating after he shut off power to the motor, he added an electrical dynamic brake to the saw. The brake reduces the time it takes for the blade to stop rotating after shutting off the power.

Vance Burns remarked that many lathes have screw in chucks. During reversing operations, chucks have a tendency to unscrew from the headstock. He reminded the group to always check to ascertain if the chuck is properly secured.

Rich Pichler warned members about the hazards of sandblasting. He suggested the wearing of a respirator or dust mask to protect lungs from the harmful effects of the sandblasting silica.

Joe Scott recommended to members working at home alone in their shops to have on hand a cell phone to call for help in case a serious injury occurs.

Tom Darragh cautioned members taking prescription drugs to be aware of any side affects which impairs the reflexes. Using machinery with impaired reflexes is an unsafe activity.

Show and Tell

Tom Moore used a pair of snap rings to join a chain for his cylindrical grinder. He misplaced the master link while disassembling the chain, and the snap rings now serve as keepers to hold the chain together.

Joe Scott (right photo) offered a historical prospective of the creativity of United States workers in the arms industry during WWII. In particular, he expressed his admiration for the designers of the Johnson rifle manufactured during 1941 and 1942.

Joe displayed an actual blue print of the rifle receiver and explained how, without Computer Numerical Control - CNC, workers used manual methods to mass produce accurate rifle parts for the war effort.

Problems and Solutions - *Ask the Blacksmith*

The member with the homemade stump grinder problem gave the group an update. The right angle gear placement on the output shaft appeared to be the reason for the lack of sufficient engagement. He moved the gear forward on the shaft and doing so stabalized the output torque.

One member requested help in determining the correct wiring for an electric motor. The wiring diagram on a cover plate did not appear to match the actual wiring of the motor. Another member offered to help resolve the discrepancy.

The novice SIG leader requested a donation of a number 1 morse taper live center for the club lathe. Several members offered to look in their tool boxes for a spare center.

Another member requested ideas on how to take apart and reassemble a three jaw chuck. Recommendations included searching the web for manufacturer's information on the chuck and searching the HMSC web site for chuck disassembly tips. The major problem in this case: There are no visible identifying markings on the chuck.

Novice SIG Activities

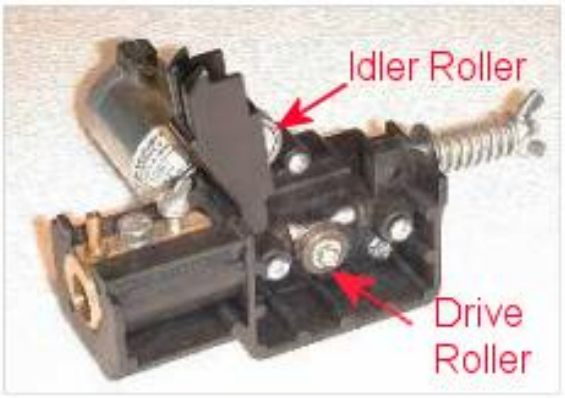
The novice group did not meet today due to an early adjournment of the meeting.

Articles

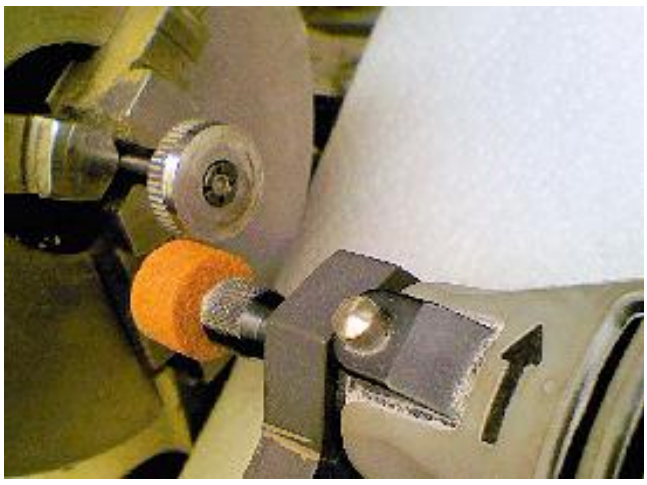
Knurled - Grooved Drive Roller

By *Dick Kostelnicek*

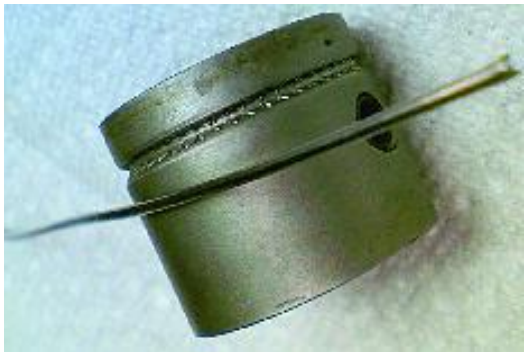
I had to make a replacement drive roller that *went missing* from a Lincoln wire feed welding machine. You can buy such replacement parts, but when you need the welder up and running right now, you often need to resort to *destructive construction*.



The base of a 0.035-inch wide groove on a ¾-inch diameter drive roller had to be knurled since it would be used to deliver crushable hollow steel welding wire to a flux core MIG welding gun. The knurling provides added traction to push the wire through 12-feet of flexible tubular liner that resides inside the welding gun's cable. The motorized drive mechanism, that turns the drive roller, is shown in the above photo. A 0.035 –inch diameter wire is pinched between the driven knurled - grooved roller and a smooth idler or pinch roller (shown folded up and to the left of the drive mechanism in the photo).



An ordinary straight knurling wheel was sacrificed. It was mounted on a ¼-inch expandable arbor and ground in a lathe with a round stone powered by a Dremel motor (left photo). The finished ridged knurl is shown in the right photo. The knurl's ridge is 0.035-inches wide with the remainder of ridge ground off from the face of the knurl.



The drive roller and the welding electrode wire that it drives are shown in the left photo. The roller has a ¼-inch diameter mounting hole and is tapped 6-32 for a set screw that secures it to a flat on drive motor's shaft. The material for the roller was ¾-inch round water hardening drill rod, which was flame hardened as a final step.