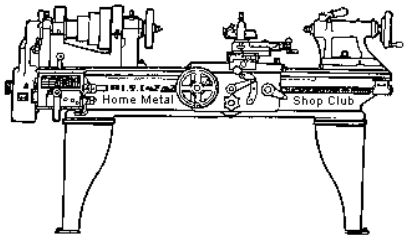
Home Metal Shop Club

**May 2010**
Newsletter

Volume 15 - Number 5




http://www.homemetalshopclub.org/

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

Our members' interests include Model Engineering, Casting, Blacksmithing, Gunsmithing, Sheet Metal Fabrication, Robotics, CNC, Welding, Metal Art, and others. Members always like to talk 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 a presentation with Q&A, followed by ***show and tell*** where the members can share their work and experiences.

| President | Vice President | Treasurer | Secretary | Librarian |
|---|---|---|---|---|
| *Vance Burns* | *John Hoff* | *Emmett Carstens* | *Dick Kostelnicek* | *Dan Harper* |
| **Webmaster** | **Photographer** | **CNC SIG** | **Casting SIG** | **Novice SIG** |
| *Dick Kostelnicek* | *Jan Rowland* | *Dennis Cranston* | *Tom Moore* | *Rich Pichler* |

## About the Upcoming June 12 Meeting

The June general meeting will be held on the second Saturday of the month at 1:00 p.m. in the Parker Williams County Library 10851 Scarsdale Boulevard Houston, TX 77089. Visit the web link http://www.homemetalshopclub.org/events.html for up-to-the-minute details.

The presentation will be on Robotic Welding by Dan Allford, President of ARC Specialties Co. of Houston TX. http://www.arcspecialties.com

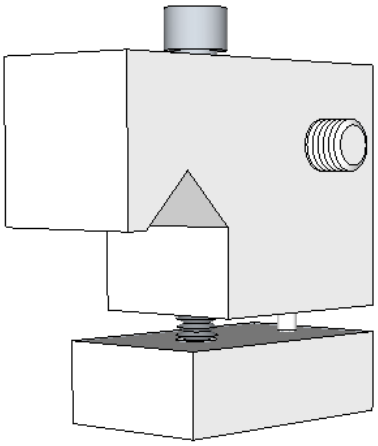
## Recap of the May 8 Regular Meeting

Thirty-four members and one guest, Mike Schroeder, attended the 1:00 p.m. meeting at the Parker Williams County Library. President Vance Burns presided.

This was our first meeting at this library. The room is adjacent to, *not within*, the Library. It was a nice facility and we had the building all to ourselves. Parking was spacious. A large projection screen and WIFI were available. We have a *drop-dead* 4:30 exit time, but that probably a good thing. The next two meetings have been scheduled for this facility.

## Presentation

Using Google SketchUp to Design a Lathe Carriage Stop



*Dick Kostelnicek* presented a tutorial on using Google SketchUp as a **C**omputer **A**ided **D**esign **CAD** program. He discussed the merits of SketchUp, passed around the carriage stop that he machined using his drawing, and preceded to make the drawing as the audience watched the carriage stop's development was projected on screen. The slides for this presentation are available at: http://homemetalshopclub.org/news/10/lathe-carriage-stop.pdf .

Dick indicated the program is offered as a free web download at http://sketchup.google.com/download/gsu.html and does all the standard 3D CAD procedures, while providing an easy to learn computer interface. Google also provides numerous online video tutorials at http://sketchup.google.com/training/videos.html .

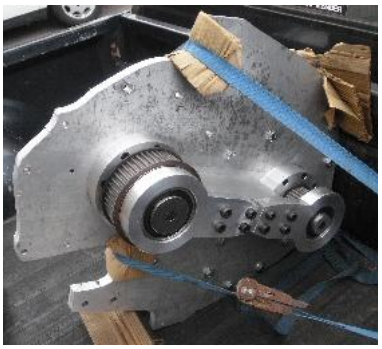
## Show & Tell

*Martin Kennedy* showed a video about making a subsea pipe connection to a wellhead using a **Remote O**perated **V**ehicle or **ROV**. He passed around a pipe seal (left photo) that is used in securing the subsea connection.

*Dean* Henning gave a PowerPoint presentation showing the Overhead Rack that he welded together for his truck. See Dean's article below in this newsletter.

*Joe Williams* brought his Holdridge lathe ball turning attachment to contrast it with the recent ball turners shown by Martin Kennedy and Dick Kostelnicek.

*Rich Pichler* discussed his attempt and asked for suggestions on how to put floor-like flanges on very thin wall tubing.



*Kevin Douglass* brought the motor shaft–to–flywheel drive train for his electric car conversion. Several club members are helping with the machining.

*Dick Kostelnicek* showed a lathe attachment, a Quick In and Out Drilling Actuator that began life as a project to learn the SketchUp program. See the article below for a description of its use and the drawings. A video of the actuator in use on a lathe can be viewed at this web link .

## Novice SIG Activities

SIG Coordinator *Rich Pichler* demonstrated spotting a drill hole with an optical scope. A single point drill was ground to shape and flame hardened with MAPP gas. The drill's point turned out to be too brittle and broke before the hole was completed. Our token blacksmith, Club President *Vance Burns*, supervised the drill's hardening operation.

## Articles

### Overhead Truck Rack

By *Dean Henning*

I fabricated an overhead rack for my 1998 Dodge ¾-ton truck. It consists of two sections: the rear bed mounted frame and a front support for carrying long material like pipes and the tubing used to built this project.

The 0.094-inch wall square tubes were welded using a MIG wire feed welder. Rubber pieces were glued to the contact points on the truck to prevent damage to the paint. The bottom pieces of the front support are ½ by 1-½ inch channel, while the bed section is 1x2-inch rectangular tubing.

The front support attaches to a square trailer receiver mounted to the front of the truck, while ropes are used to tie the frame to eyebolts in the rear bed.

The front assembly is installed after I get to the load site when I'm hauling long material. After the long pieces are secured to both the front and rear sections, they become part of the rack. To

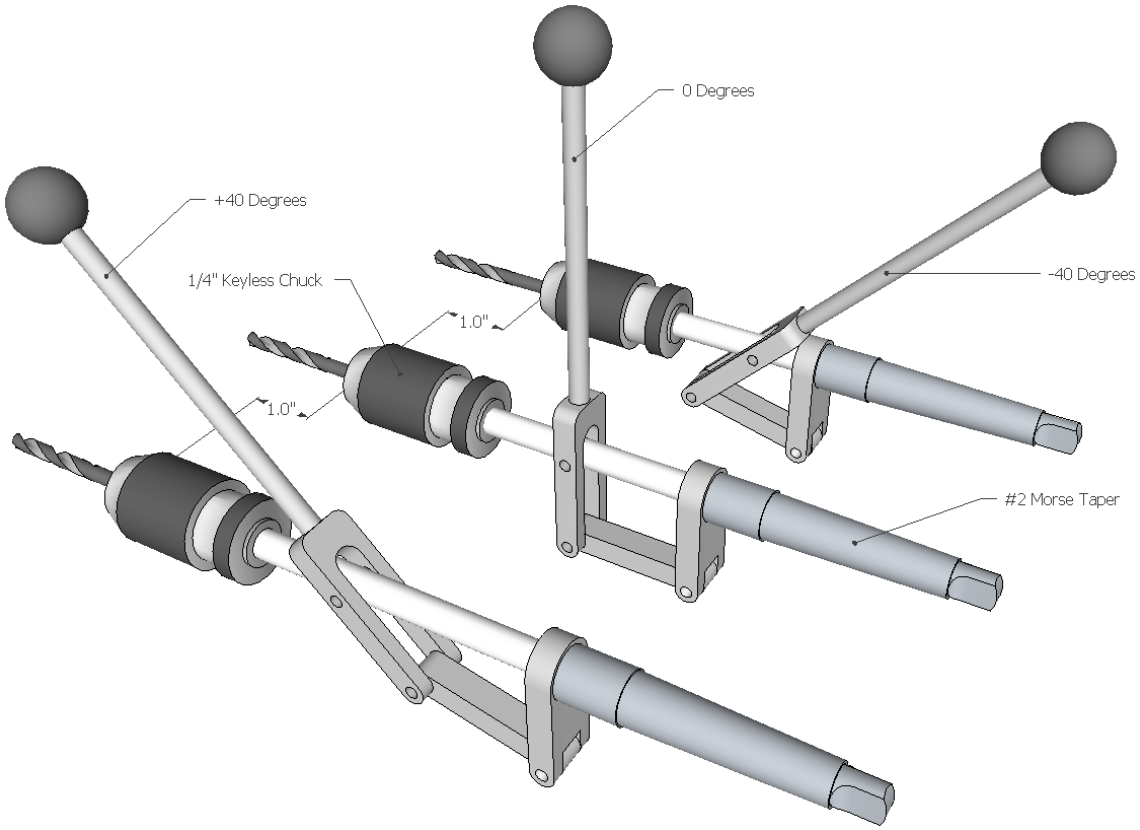
prevent racking while driving, use horizontal cross rigging with stout wire or polyester belts with ratchet clamps. As extra protection, place a mesh net across the front of the hauled material, and tie it back to the low point on the rear rack. This keeps your load from lurching forward in the event of a panic stop.

Complete drawings for the Overhead Truck Rack are available at the web link http://www.homemetalshopclub.org/projects/hennings_overhead_truck_rack.pdf .

## Quick In&Out Drilling Actuator

By *Dick Kostelnicek*

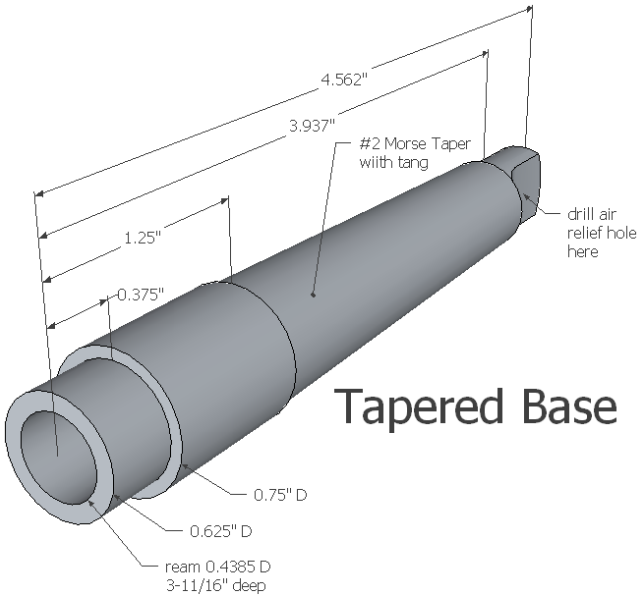
Drill down more than five times the diameter with a helical bit and you'll encounter problems associated with deep holes. Cuttings are reluctant to spiral up the flutes and often get impacted just above the cutting edges. Over heating at the tip can destroy the bit's cutting ability. Finally, maintaining lubrication becomes a chore. We deal with such problem by *pecking*. That's where you drill a short distance, withdraw entirely from the hole, brush cuttings from the flutes, cool the tip, and re-lube the bit. Then, it's down for another bite.



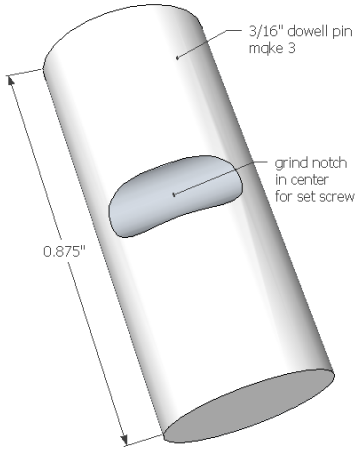

*Pecking* can be a long arduous process. Recently, I drilled a 4-inch deep D-size (0.246-inch D) hole from my lathe's tailstock ram. Eventually, each peck advanced just 1/10-inch. As my lathe's ram travel is short of 4 inches, I eventually had to unlock the tailstock's hold down and slide it back to clear the chips after each peck. Once again I promised to build a Quick In&Out Drilling Actuator for my lathe. This time, however, I turned promise into product.

I've had the plans, really a photo and a sketchy drawing, for many years. I've forgotten who put me on to it. So, if you recognize this tool and know its designer, give me a shout so I can give him / her full credit. I designed it to have a 2-inch throw and fitted it with a 1/4-inch keyless chuck. It works better than I could have imagined. If you're familiar with this *pecking* problem, you'll immediately see the merits of this tool.

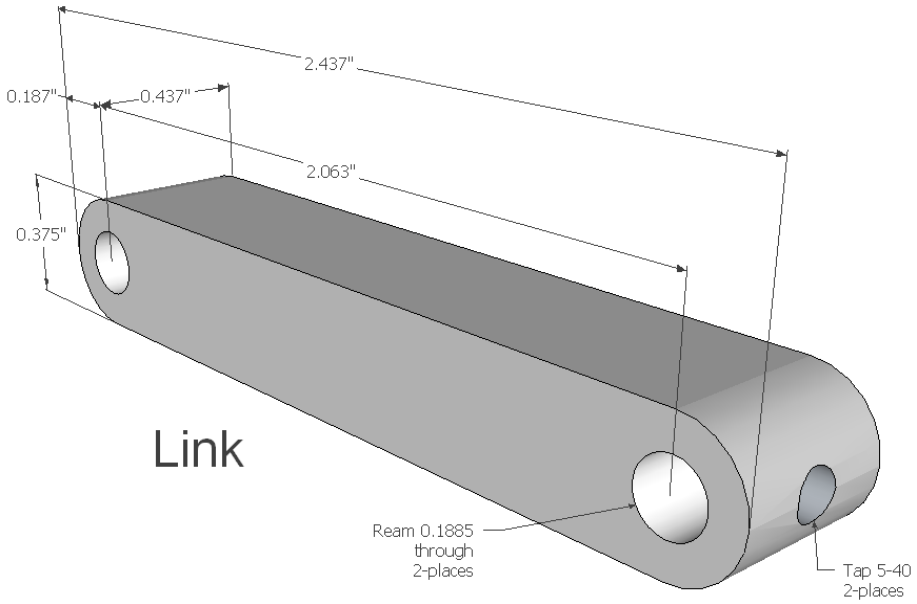
The Tapered Base fits my lathe's Morse tapered tailstock socket and is made from a reworked #2MT-to-#3JT drill chuck arbor. Don't forget to drill a trapped air relief hole in the tang of the arbor. Short #5-40 set screws secure the three Pivot Dowels. Use Locktite adhesive to fasten the Back Support to the Tapered Base. I made the Fulcrum, Link, Back Support, and Ball atop the Handle Rod from aluminum. The rest is steel.



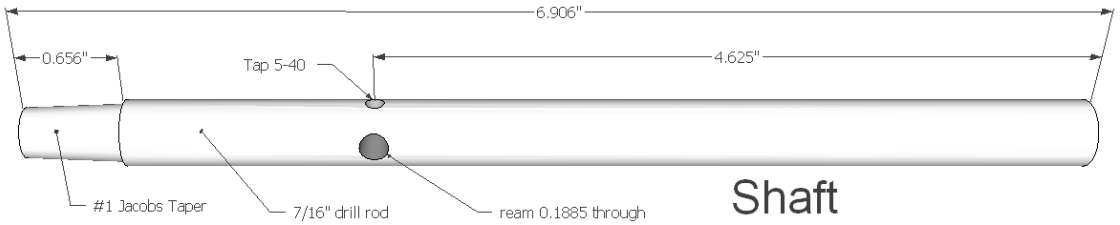

Tapered Base



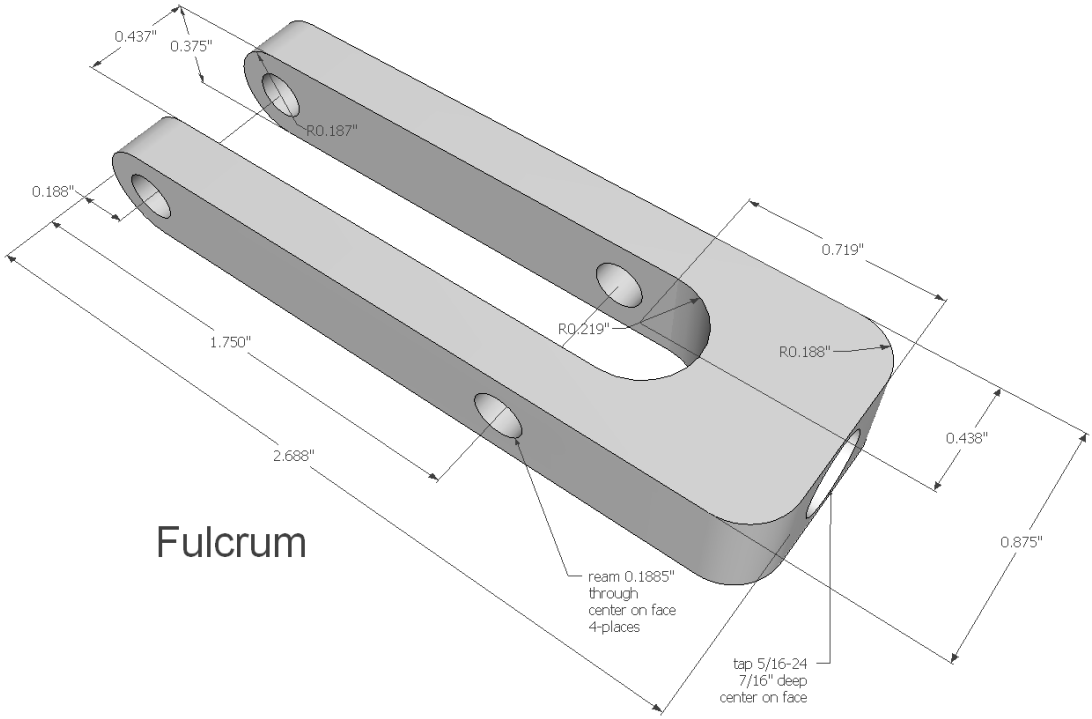

Pivot Dowel



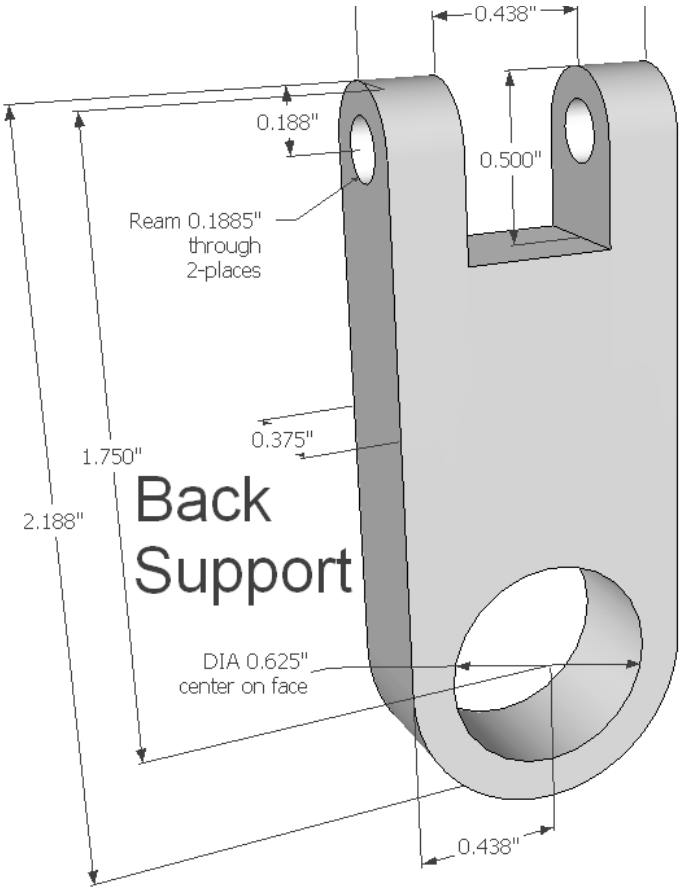

Link



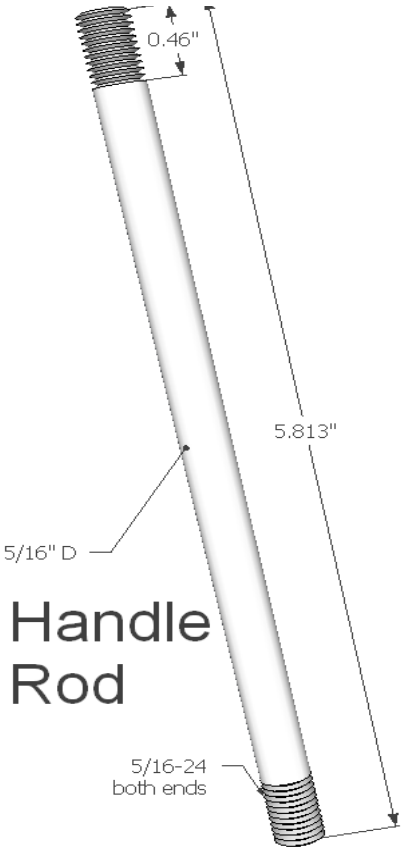

## Shaft




## Fulcrum




## Back Support




## Handle Rod