The NEMES Gazette

Vol 3 No 27
July, 1998

The Newsletter of the New England Model Engineering Society,
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Our Next Meeting is at 7:00 PM July 2, 1998 at the Museum, 154 Moody Street, Waltham Ma.

Annual dues is $20.00 - Please make checks payable to"NEMES" and send to the NEMES Treasurer: Kay R. Fisher 80 Fryeville Road Orange, MA 01364

This Months Contents

From the Editor's Desk:

I just got a nice letter from Dave Robie. He asked me to let you all know that "The Original Yankee Steam-up" is going to be Saturday, September 19, 1998, rain or shine. They are especially trying to get more folks to come and bring Steam and Hot air models to run and have added a new "clean compressed air" table to enhance their ability to show these models. Gas engines are also welcome. The museum doesn't have tables for the gas engines, but there is plenty of space available.

Bob "Mac" MacIlvane gave me a printout of some simple shop measurements that he worked up on the computer for those late night sessions when you should be in bed but still need to to figure out what your edge finder is telling you. See Page 7.

I've always like shapers, and even bought a shaper before I bought a lathe, and was never really all that happy with the results I got from it. Then a few months ago Tony Moss from England posted something to the modelengineering email list about shaper tools and how to set them up in the shaper. I followed his advice and the result on my shaper was the best finish I had ever gotten. See page 5 and 6

See you next Thursday night, scl.

President's Corner
by Ron Ginger

July Meeting

Since this is the night before a holiday we will not have an outside speaker- instead we will all be the speakers, as we do another of the 'Poster Sessions'. We encourage EVERYONE to bring in something- a finished project, parts of a project, plans, photos, anything to show and talk about. We just spread the stuff around the round tables and have an evening to just look and talk with everyone.

Would be a nice night for our refreshment committee to swing into action, if we had a refreshemnt committee!

Note the meeting is the first Thursday, July 2.

Museum Topics

There has been quite a series of e-mail messages on our club list over the past couple weeks about Museum memberships. As a summary, for those that don't get to read e-mail, we all seem to agree that supporting the museum is a good thing to do. We hope to eventualy get our club budget up enough to safely cover our newsletter expenses, then to have a bit extra to make a club donation to the museum.

But we still encourage everyone that can afford it to support the museum by joining it as an individual member. Museums depend on these memberships and contributions from individuals to help keep them in operation. If you agree that the museum is important, consider a membership.

Library

There were some discussions at the last meeting, and on the e-mail list, about the possibilities of having a club library, maybe buying some books, and even videos. We do seem to agree that a circulating video tape library would be to hard to manage, but there was some intrest in creating a small video library that would be kept at the museum, for club members to use there. This still needs some more discussion, and we will need to wait for the museums new space to be completed, but it sounds like a good idea.

Future meetings.

I'm short of topics for the next couple meetings- I need ideas- anyone want to volunteer to talk? Know of an interesting person that might make a good speaker? Know a topic that you want to hear about. Let me know, at the meeting, or call me some evening- 508/877-8217

Dues

Our dues collection is running along well. This newsletter is mailed to everyone that was on the list last year, as well as our new members. We will mail

one more letter to those that have NOT renewed, but then we cut off anyone not paid. Next month the labels will show if we think you are paid. (I would have put it on this month, but printed them before I remembered)

If you have not yet paid your dues, see Kay Fisher at the July meeting, or get a check in the mail to him.

--Ron

June -1998 Treasurers Report

Previous balance ---------- $1273.19
Newsletter postage (2 months) --- -191.05
Service Charge ---------- -.20
Interest ---------- .66
Book Deposits ---------- 242.00
Book Withdrawal ---------- -242.00
Dues Deposit ---------- 1300.00
Donations (Roland's End Mills) -- 2.50
Incorporation Filing Fee -------- -35.00
Dues Deposit ---------- 80.00
New balance ---------- $2430.10
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Of the 171 members on our current list 73 have paid leaving 98 still owing dues. Dues goes from June to June. If you haven't paid yet please bring checks for $20 made out to NEMES to the next meeting or mail them to me at the address at the top of the newsletter.

Respectfully
Kay R. Fisher

Calendar of Events

Thursday July 2, 1998 -- 7 PM, NEMES MEETING at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

Thursday August 6, 1998 -- 7 PM, NEMES MEETING at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

Thursday September 3, 1998 -- 7 PM, NEMES MEETING at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

Sunday September 13, 1998 -- NEMES Exhibit at the Northshore Old Car Club Show at Topsfield Fair Grounds.

Thursday October 1, 1998 -- 7 PM, NEMES MEETING at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

The Meeting, 4 June, 1998

Things started off with Mike Boucher giving us a rundown on the status of the NEMES incorporation effort. The form has been filed with the State along with the $35.00 fee, so NEMES is now a corporation. We should get a certificate in the mail from the State, and will now owe the state an annual report of some sort along with a fee of $15.00 or so.

June is the business meeting when we elect officers. In May a slate had been nominated for the next year, There were no new nominations proposed, so the slate was: Ron Ginger, President, Steve Cushman Vice President, Stephen Lovely Secretary, Kay Fisher Treasurer, Mike Boucher Director at Large. It was moved and seconded that the whole slate be voted on together. The entire slate was then voted in unanimously.

The subject of the NEMES Library came up and there was quite a bit of discussion about buying books, buying videos, how to handle circulation, and whether things should be allowed to circulate at all. Not a whole lot got decided, but by October the Museum reorganisation will be complete and NEMES will have some space for a Library. At that time we can decide how we will handle the issue of the NEMES library. The primary problem that seemed to keep coming up was how to make it possible for all to benefit from a library since we only meet once a month so a book or tape could only be used by 12 members a month a the most.

The issue of what NEMES should, or could, do to help with the handling of the machineshop and modelengineering aspects of peoples estates was brought up again. This is an issue that the club needs to address, but so far none of us has come up with an approach that the club should take to address the issue. If you can think of a way that NEMES can help keep valuable model engineering equipment, supplies, and models from being lost to the junkman or whomever without looking like a flock of circling vultures please bring it up at a meeting.

Dues are due, so get them in to Kay. We won't drop anyone from the mailing list before September or so, but please get them to Kay as soon as you can.

Max ben-Aaron let us know that Rick Sobel, who's been bringing ledloy and brass offcuts to sell before the meetings won't be able to make another meeting till September. So, Max will be organizing a group buy of hot rolled steel plate.

Earle Rich brought in some saphire handouts for us again, from Saphikon in Milford NH. They're rejects for various reasons for their commercial use but have many potential uses for model engineering projects.

Errol Groff has talked to his friend at Boston Digital about a tour of their facility in Milford Mass. They make CNC machinery and the tour is tentatively scheduled for the last Sunday in September. More details as they become available.

Karen LeBlanc, Directory of the Museum, spoke to us about the plan to remodel the current storage area in the museum. Everything has to be out within two weeks of the meeting so that new floors can be poured. After the meeting a bunch of us went downstairs and then lined up to pay for our goodies so we could haul them off that night or the next Saturday. Then on the following Wednesday it was come take it before the scrap dealer comes for it.

The main topic for the meeting was digital readouts for shop machinery. Ron had spent considerable time talking with the Shooting Star Technology people at the NAMES show in Wyandotte and had arranged to have their demo unit present at our meeting. Bob Barrett ran a wire from the phone in the museum office to the meeting area, and set up a speaker phone so that after Ron had shown us the Shooting Star unit we could get Mr.Chernoff (I hope came close on his name I called him Mr. because I didn't get his first name and don't want to get it wrong.) on the line and ask him some questions about it.

The Shooting Star unit has a rotary encoder on a gear that moves along a rack to measure the distance that it moves. It comes with a 4 ft and a 16 inch rack normally. The original software would lose count if the head moved more than 2 1/2 inches per second. The new software won't lose count unless the head moves faster than 12 1/2 inches per second. Software Upgrades are distributed in a chip. You unplug the old one and plug in the new one. There have only been 2-3 upgrades in the history of the product.

The program that is currently in the unit takes up about 96% of the available space, so a computer interface is not something that can be added, although a third axis and a serial port for talking to a computer are both on the wish list for the future.

They have a CNC machine that they use to cut the racks for their units and the racks are accurate to 1 thou in one foot. Overall accuracy worst case is 2 thou per foot. They have not actually purchased Sony or Mitutoyo low end units to measure the accuracy of them, but the Shooting Star unit is within their specs.

Along with the 3rd axis and computer interface, a centering feature where you could pick up two sides and have it 0 in the center, a bolt circle calculator and a linear hole program are on the wish list for future additions to the capabilities of the unit.

The plastic cover for the rack is to keep crud out. An angle iron or something is recommended to provide mechanical protection for it.

The basic price is $595. If 1-4 people call up in the next two weeks to order units and say they are from NEMES they will get the NAMES show deal, $50 off. If more than 4 order, all will get $75 off.

Ron Bought a Mitutoyo for his mill a while back, but now that he's seen the Shooting Star unit up close the thinks it's an excellent unit for home shop use and is toying with buying one for his lathe.

Norm Jones bought an Ortec unit for his mill drill. That's the one that Dan Purcell had on display at the club show. Norm looked at Dan's and bought it. It was $525 and comes without a power supply. To reverse the readings, reverse the scale on the machine. 18 inches is the maximum length on the scale, and it reads in .001 inch increments. Norm would have bought a Shooting Star unit if they'd had one available at NAMES when he was there, but has had it a year and is satisfied with it. Hal Robinson says that he cut the scales down on his without problems. If you want the brochures for the Ortec unit call Dan Purcell. The guy in England that makes them is a friend of his.

Sony and Mitutoyo also make low end digital readout units. The Sony unit is in the $1000-1100 range, and the Mitutoyo lists for $840 but at the time of the meeting Penn Tool had it for $798.

Dave Piper has plans for the Atlas 10" follow rest he showed us at a past meeting available now if anyone wants them, along with info on installation and use of it. If you want a copy send him an 8.5 by 11 SASE with 3 stamps on it or give him a phone call and he'll bring a set to the next meeting for you.

The Charles River Museum of Industry

The Sale of the surplus materials from the storage area in the Museum has stirred up quite a bit of discussion about the Museum and how NEMES and NEMES members might support it. The obvious way to support it is to become a member. Not everyone will want to join, and no one should feel that they are being pressured to join, but if you want to and you can afford to, heres how.

Individual memberships come in three catagories, Individual, $25, Family, $40. Seniors and Students can join for $15.

Corporate Memberships start at $100.

It's easy to join, just send your name and address, along with your check, to:

Charles River Museum of Industry
154 Moody Street
Waltham, Massachusetts 02453

If you want to join the Museum there are pamphlets in the rack at the bottom of the stairs as you

come in the door to the meeting. One of these pamphlets is where I got this information.

TIPS AND TECHNIQUES
by Ed Kingsley

THE AGONY OF da' FEET (Warning: yabpgs *)

I was making a laboratory thingy, last week, which consisted mainly of a flat slab of 1" black Delrin, 4" wide and 11" long; onto the bottom of which I needed to attach two chunks of the same material, (one at either end) in order to raise it up off the table, about 2 1/2". Feet.

I drilled and counterbored a pair of holes, vertically, through each 'foot'. Then, I tried to figure out how to hold them on the slab, so I could insert a transfer punch, whack in center marks, and drill & tap two retaining holes, in the bottom, at either end of the slab.

I determined that each foot wanted to be 3/4" from the end, and equally spaced from each edge of the slab. Finding something 3/4", to position the foot from the end, was easy. However, the foot was 3.455" wide, and finding two .2725" wide objects to position it, equidistant from both edges of a 4" wide slab, was another matter.

As luck would have it, I had been using my Pin Gages, (remember them?) only days before, and they were still lying on the chair on which I wished to sit to puzzle this (w)hole thing out. I had slid them back into the cabinet and had the door half way closed before the "duh" buzzer went off. "Ask not for whom the duh-buzzer rings, it rings for me." ("Doing it the Heming Way" .... ed)

I put a .272" diameter Pin Gage on one side of the foot, a .273" Gage on the other and - yes, it wasn't 'exactly' in the middle, but it's close enough for medical work. (don't ask, don't tell, remember?) Oh, and I used those 6" Mini Bar Clamps, I talked about a while ago, too. They were just the right size, and 'so' convenient to attach and remove. (Here's where Steve should insert the date of that newsletter, for your reference, but he doesn't read the column, either)

ENCO has Pin Gages on Sale @ GREAT (!) prices - A good time to start, or finish your set. (* yabpgs) - Yet Another Boring Pin Gage Story. Look out for further episodes.

A BALANCED OUTLOOK

I found these very encouraging words of wisdom, by one Harry Wade, in the Model Engineering Email List, and reprint them, here, with his kind permission. Thank you, Harry.

"I make a mistake, of some magnitude, in nearly every trip I make into the workshop. Some years ago, I began keeping a box of "scrappers" for every project. I usually remake a part until get it right, so these were sometimes dishearteningly full."

"However, when I get to the end ..., I weigh the project, and then I weigh the scrap box. If the project weighs more than the scrap box, I'VE WON!" - Harry Wade -

(S)CRAP HAPPENS

I had the opportunity to fill in for a (long) vacationing machinist for a few months, recently, and I gained many invaluable insights. The first, and probably the most important, was that mistakes happen - ALL THE TIME! In accordance with this truism, we ALWAYS made more pieces than were needed because, 90% of the time, we would lose one, or many ones, depending on how complicated the piece was and how many we were actually attempting to make.

Knowing this has been immensely enabling for me. For, now I know: "They screw it up. You screw it up. He, She and It screws it up" ... and, not only 'can' *I* screw it up, I most probably >> WILL << screw it up, and ... THAT'S OK !!!

It's OK to do things without thinking them through. It's OK to forget to tighten the vise, or the chuck or the setscrew. It's OK to assume that the stock is the same thickness, or width, or square its entire length. It's OK to forget to set the depth stop or the length stop or the carriage stop. It's OK to try Vaseline, on the 316 SS, when you can't find the #&)@* TapMagic. And, it's OK to assume that your micrometers, calipers and lead screw dials are all very, very accurate. It's "OK" to do all these things. It's REALLY, REALLY STUPID, but it's, "OK". It's OK, because everybody else does it, too. Feel the power? Go - get some metal, grab the Vaseline, find a really big box, and start making chips. You have nothing to lose but a valuable piece of metal, some irreplaceable time, and odd bits and pieces of your anatomy that you probably didn't need that much, anyway. Goforth, fellow machinists, and weigh in .....

GET THAT CHIP OFF YOUR SHOULDER

Inasmuch as I probably ought to include an actual Tip, or Technique, in this month's column, I offer the following one - or the other, as explained to me by Charles Kelley. When squaring up a piece in the milling machine, you can often get a better surface finish with an endmill 'facing' cut, or by using a shell mill, especially if the width of the piece would require multiple passes of an endmill. (This isn't IT, yet)

One technique for squaring up a block is to mill one side (facing up), turn the piece over (180 degrees) and face the opposite side parallel. Then, lay the piece in the vise with one of those two machined sides against the fixed jaw, and mill the

third edge, sticking out one side of the vise, along the "Y" axis, with the *side* of an endmill. This "ensures" that this edge is 90 degrees to the side against the jaw. (assuming the vise is square and parallel to the table, the mill head is trammed, and not more than 3 of the inner planets are in Triangulum ...)

If this (3rd) side of the block is too thick, or tough, to get a decent finish that way, (this is IT, now) use the endmill to cut a small shoulder across the top edge of the overhanging side ("Y" direction). Take the block out and put it back in the vise, with the milled face of the shoulder you just cut, on a low parallel. Now, you can face mill the 'up' side, then turn the block over 180 degrees and face mill the opposite side (the one with the 'shoulder') parallel. That gives you 4 peripheral faces, square and parallel. (Maybe ...)

If you missed it, the "Tip" was .. milling the shoulder and putting *that* on the parallel .. I'll try harder, next month.

LIKE A SHOOTING STAR

That's a question, actually. I called up and ordered my unit the day the $50-off offer was supposed to be over, and Bill Chernoff said that he wasn't going to be too strict on that date. So, if you still have a yen (although I believe he prefers US currency) for that DRO we saw last month, give him a call @ (800)794-3364, or Email him at: chernoff@cs.ubc.ca

And, finally:

VIAGRA - The Other Side of the Story

The pharmaceutical company, that produces Viagra, is rumored to be putting all of its profits into the development of a new drug, for women, that will make elderly men desirable.

--Ed

Letters

The Museum of Science needs a volunteer machinist. One of the current machinists is out sick and is not likely to be coming back.

The Museum has a fine machine shop that is used mostly to demonstrate to the public what the machines look like at work. The machinist can use the machines for demonstration (just cutting holes) or could make something.

The day I was there the machinist came out for ~15 minutes about once an hour and cut hole's with a big milling machine.

The Museum of Science depends on volunteer staff. They can use your talent. Please contact the Museum of Science ASAP. Volunteers usually work one day a week. You can also contact Lee Schiff, one of the volunteers, at 1-617-848-1505

Jim Chetwynd

The following is from the modelengineering email list, along with the drawings of shaper tools on page 6. I asked Tony if I could put them in the Gazette and he graciously gave me permission.

Over the years I've often heard people who are new to the shaper complaining about the poor finish they get no matter how well the tool is dressed. On investigation, in pretty well every case, it was found that they had the a HSS insert incorrectly mounted or were using a lathe tool in place of a swan neck shaper tool. In the case of an inserted HSS tool bit this would be on the front of the tool holder instead of behind it. (If you've used a lathe with removable bits, 'out front' seems the natural place to put it!)

For anyone new to this situation the cutting edge *must* be immediately below the face of the clapper box. Use a lathe tool and it moves the cutting edge forward of this point.

Why is this necessary? Because when the cutting load is applied to the tool tip the tool shank flexes backwards and, if it is ahead of the clapper box face it 'rotates' downwards around the point of contact with the clapper box and increases the depth of cut. This causes the cutter to dig in and then begin a sort of springy 'stick-slip' progress across the work.

When properly set below the clapper box contact point the backwards-and-upwards 'rotation' of the tip under load causes the tool tip to be raised slightly reducing the cut rather than digging in as above.

The difference in finish is remarkable.

If this isn't clear in description I can send a GIF (fingers crossed) to anyone who contacts me off list.

Tony Moss

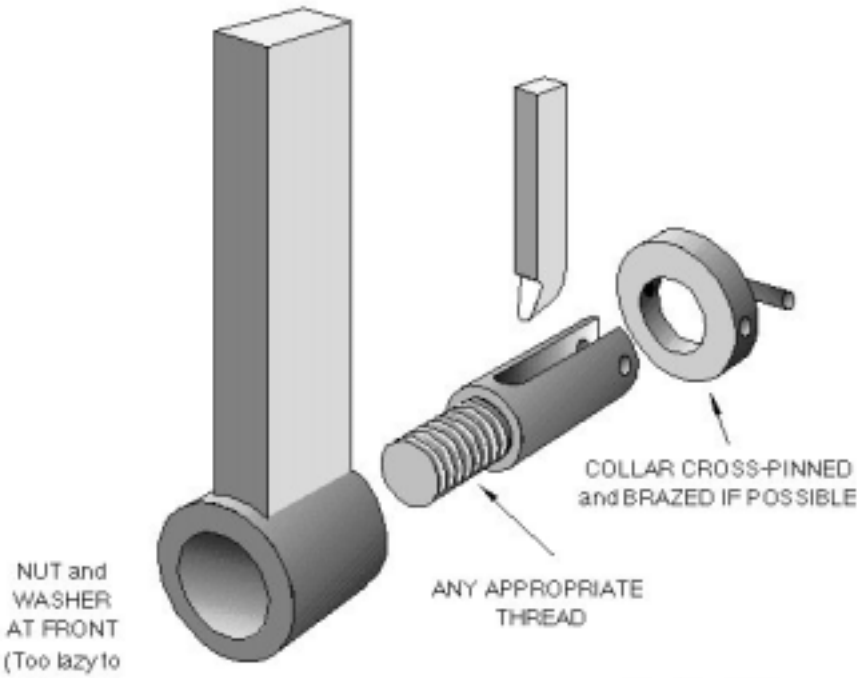
Lindisfarne Sundials

Northumberland, England

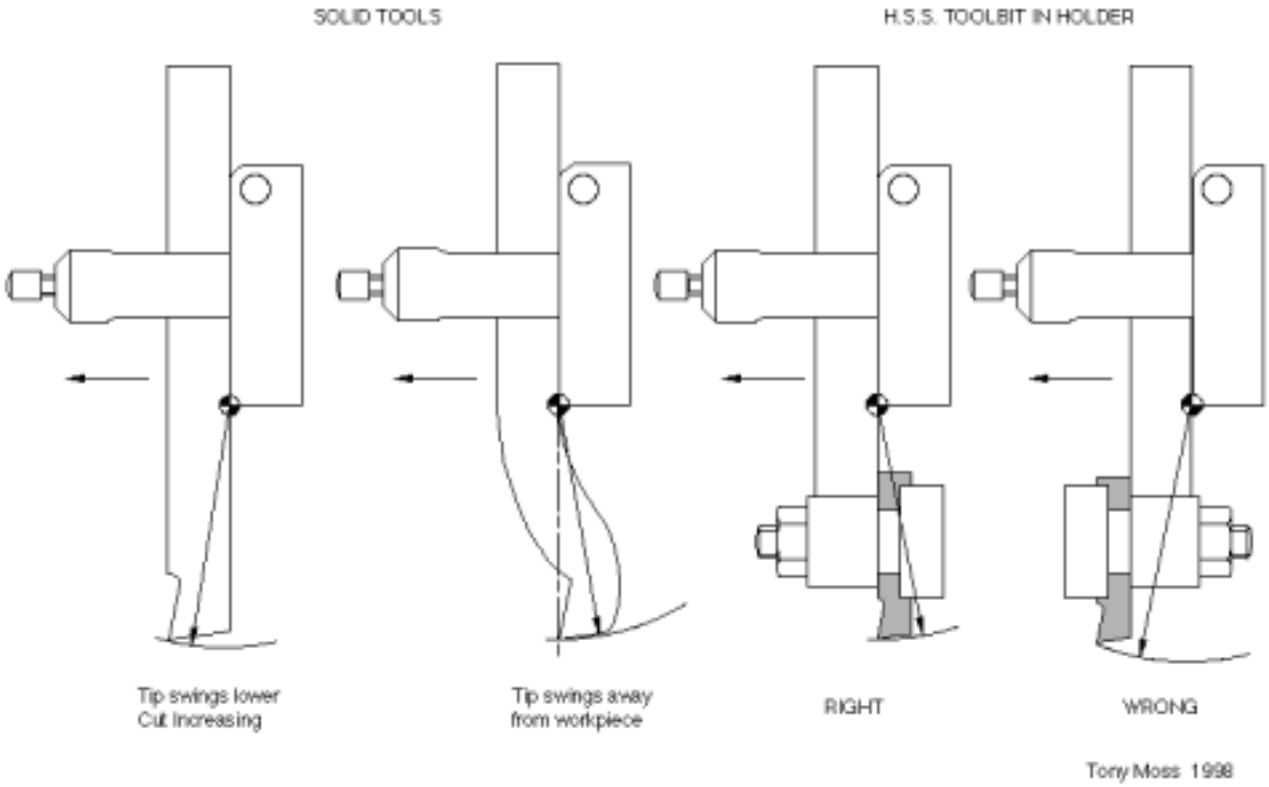
Classified Ads

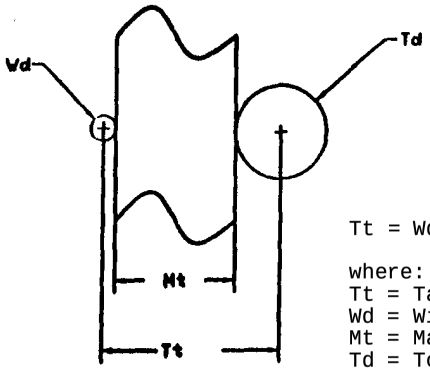
0-1" Unimike, Interchangeable Anvil Micrometer
Purchased from Penn Tool for $64.50 (List $99)
Tenths Reading, Carbide Tipped, with 2 Anvils
Brand New (sealed in plastic bag) Wood Case
Daughter moving back home -will sacrifice -$50
Ed Kingsley (781) 233-3571, or EdK4@aol.com

SHAPER TOOLBIT HOLDER



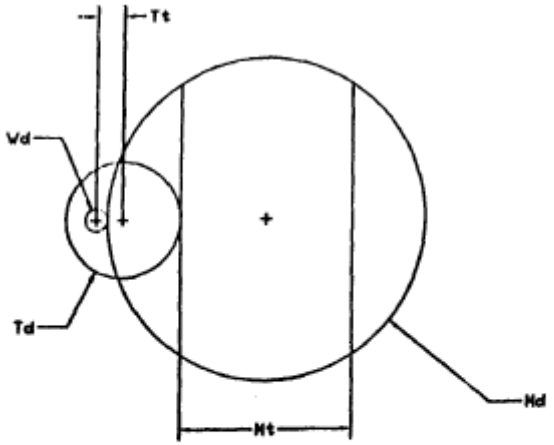
TOOLSETTING ON A SHAPING MACHINE





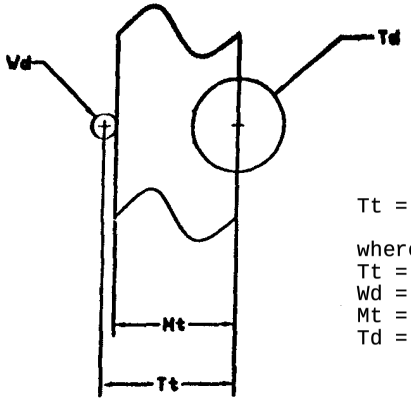
Tt = Wd/2 + Mt + Td/2

where:
Tt = Table travel
Wd = Wiggler diameter
Mt = Material thickness
Td = Tool diameter



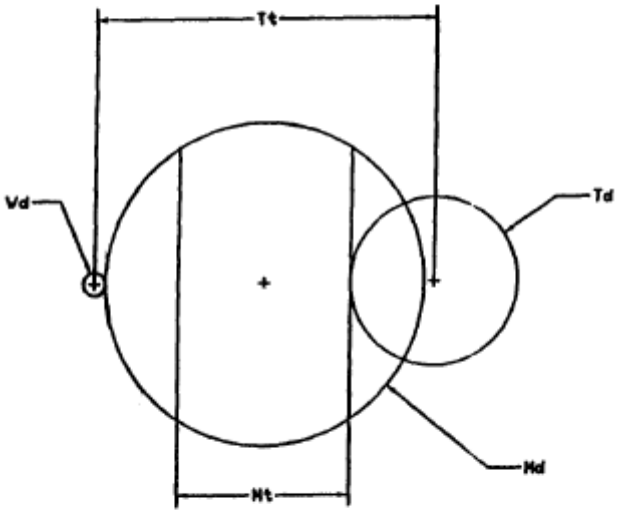
Tt = Md/2 + Wd/2 – Mt/2 - Td/2
= (Md + Wd - Mt - Td)/2

where:
Tt = Table travel
Wd = Wiggler diameter
Mt = Material thickness
Md = Material diameter
Td = Tool diameter



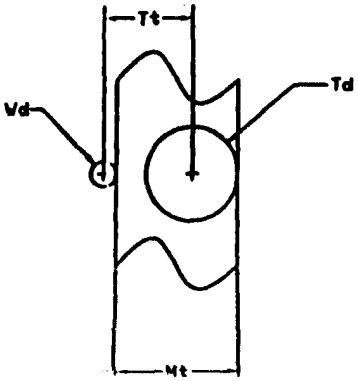
Tt = Wd/2 + Mt

where:
Tt = Table travel
Wd = Wiggler diameter
Mt = Material thickness
Td = Tool diameter



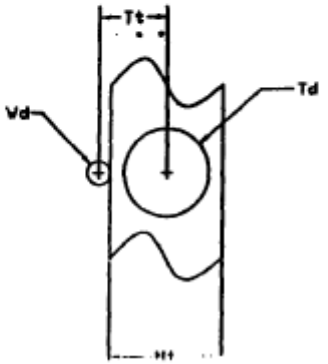
Tt = Wd/2 + Mt/2 + Md/2 + Td/2
= (Wd + Mt + Md + Td)/2

where:
Tt = Table travel
Wd = Wiggler diameter
Mt = Material thickness
Md = Material diameter
Td = Tool diameter



Tt = Wd/2 + Mt – Td/2

where:
Tt = Table travel
Wd = Wiggler diameter
Mt = Material thickness
Td = Tool diameter



Tt = Wd/2 + Mt/2

where:
Tt = Table travel
Wd = Wiggler diameter
Mt = Material thickness

THE ORIGINAL YANKEE STEAM-UP

NEW ENGLAND'S OLDEST ENGINE SHOW

SATURDAY, SEPTEMBER 19, 1998

STEAM ENGINES, OLD GAS ENGINES, ANTIQUE AUTOS & MOTORCYCLES, LAUNCHES WELCOME

THIS SHOW IS DEDICATED TO MODEL ENGINE MAKERS, ENGINEERS, HISTORIANS, STUDENTS, TEACHERS AND ALL WHO CARE ABOUT INGENIOUS MECHANISMS AND THEIR CAPABLE BUILDERS.

THIS YEAR WE HAVE ADDED A COMPRESSED AIR MODEL TABLE. IT WILL BE KEPT CLEAN FOR EXQUISITE MODELS. THE TRADITIONAL STEAM TABLE WILL ALSO BE IN FULL OPERATION.

BIG 12', 14', & 15' FLYWHEEL ENGINES WILL RUN PLUS MANY OTHERS.

THERE IS NO CHARGE FOR EXHIBITORS.

PLEASE CALL TO LET US KNOW WHAT YOU ARE BRINGING.

GENERAL ADMISSION $6.00

RAIN OR SHINE ~ 9AM-4PM ~ FREE PARKING

TO REGISTER EXHIBITS

PLEASE LEAVE NAME & ADDRESS via VOICE MAIL:(401) 885-0545,

or:FAX (401)884-0683, or e mail: newsm@ids.net 1300 FRENCHTOWN ROAD

WEB SITE: http://users.ids.net/~newsm E GREENWICH, RI 02818

The NEMES Gazette

c/o Stephen C. Lovely

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