The Nova Comet Lathe Review

by Fred Holder

When I was in Provo, Utah this last May, I picked up a close out special Nova Comet Lathe manufactured by Teknatool International at Craft Supplies USA. At the time, I purchased it, there was some question in my mind as to what kind of problems I was buying. When a lathe is reduced to almost 1/2 price, there is generally something wrong with it. But I felt that I could fix it and have a matching small lathe to go with my Nova 3000.

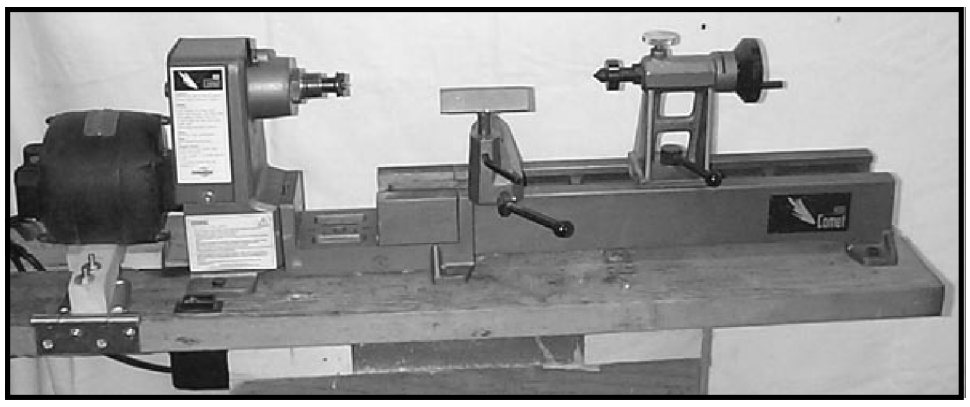
The pulley and belt were missing and were on back order from the factory. It was expected in soon they said. I wanted to get the lathe operational and have a review in this issue of More Woodturning. So, I was a bit concerned about the delivery date of the missing pieces.

When I got home with the lathe, I immediately found out why the lathe was on closeout. The spindle thread, which was supposed to be 1-1/4" 8 tpi, was the Metric version sold in New Zealand, Australia, and England and elsewhere and the tailstock center was higher than headstock, it appeared that this lathe had been the "steal from" in their inventory to make other lathes work. I did not consider this lathe to be in warranty, but I did want to fix it up and I did want to do a review on it. (At this point, I recommend that you not buy a closeout piece of equipment, even if it is half price.)

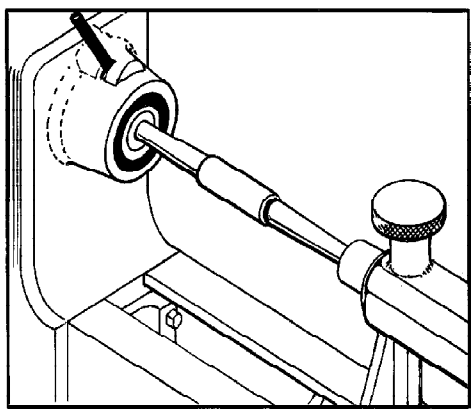
I contacted the factory to see if I could buy a replacement spindle for the lathe and to check to see if there was anything that I could do to correct the tailstock to headstock alignment. They fixed me up with the spindle size problem and sent one of the gap bed inserts to enable me to correct the headstock/tailstock alignment problem. They also sent along one of the double ended Morse Taper tools called the "Acruline" alignment method. You insert this into the tailstock and the headstock snugly and tighten down the tailstock to the lathe bed. Then you tighten the headstock bolts to give perfect alignment between headstock and tailstock. This tools should be excellent for any lathe with a swivel head feature for realigning after swivelling.

The lathe was now ready to run, but no motor pulley and belt from Craft Supplies as yet. It turned out that Craft Supplies order from Teknatool wasn't going to be in for another six weeks, too late for the article. So, again I had to turn to the factory who sent me a belt and pulley, so this review could go forward.

For a motor, I used an old motor that I've had around my shop for years. This motor had two angled holes for mounting to a curved surface of the same diameter as the motor housing. I cut a piece of 2" x 6" material to fit the couture of the motor housing and drilled holes at an angle to match the holes in the housing. Then bolted the wood to the bottom of the motor. A heavy duty door hinge bolted to the piece of wood and the lathe stand gave me a hinged mounting for my motor for belt adjustment. A block of wood slipped under the other end of the piece of wood allows me to set the belt tension. I'm not exceptionally happy with this mounting and may spring for a new



The Author's Nova Comet Mini-Lathe with gap-bed extension provides a small lathe with a 14 inch swing over the bed and 23 inches between centers. The Author installed a 1/4 horsepower ac electric motor on a hinged mount. A wooden wedge is used under the motor to set belt tension.



This drawing shows how the double ended Morse Taper tools called the "Acruline" alignment method is done on the Nova Comet.

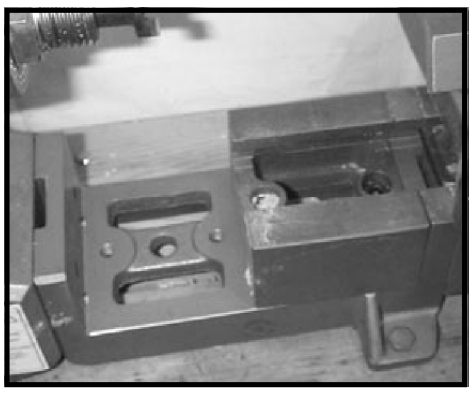
motor with a proper mounting to make things a bit easier to use at some time in the future. I have, however, been using a similar mounting for the motor on my metal lathe for years and it is still working ok. Personally, if you are going to buy one of these lathes, I would recommend that you buy it supplied with a motor that fits the lathe. Mine works ok, but that narrow mounting bothers me.

As I suspected, the lathe is a very solid small lathe. In many aspects it is a miniature Nova 3000 except for the swivelling headstock. Here the headstock is permanent and does not swivel.

The Comet has 10 inches swing over the bed and approximately 14 inches between centers as shipped from the factory. With the Gap Bed insert, the swing increases to 14" swing over the bed for 7-1/2" out from the headstock and 23 inches between centers. This makes it a bit more than a mini-lathe. Both headstock and tailstock have a No. 2 Morse Taper bore. Spindle thread on this lathe for the US and Canada is either 1-1/4" 8 tpi, like mine, or 1" 8 tpi. For New Zealand, Australia, United Kingdom, Europe, and South Africa a metric M30x3.5 spindle size is used. They recommend a 1/2 hp motor, which is not supplied as standard equipment. I put a 1/4 hp motor on mine and so far it is performing fine. The lathe is equipped with a spindle lock and 24 division indexing. The pulleys provide for six speeds as follows: 540, 684, 1020, 1440, 2400, and 3600 when a 1725 rpm, 60 cycle, ac motor is used.

The lathe comes with the following standard accessories:

- 2 MT Spur Centre
- 2 MT Live Center
- 150mm (6") Tool Rest (250 mm toolrest supplied with comet Gap Bed and Extension Bed Models)



This photo shows a close-up of the gap bed insert on the Author's lathe. The section on the right hand side of the gap bed is held in with two bolts and can be removed if necessary to meet the length of the rotating piece.

- 80 mm (3.2") faceplate
- Motor Pulley
- Drive Belt
- Manual

The manual that came with my unit was a skimpy four or five page thing with little information; however, there is a new manual available by download from the Teknatool web site that is a first class manual containing 25 pages and providing lots of information. I suspect that the unit I bought was early production. Incidentally, for people with Internet Access, the Teknatool International web site is: http://www.teknatool.com. They have lots of information at their web site and detailed information on all of their products, plus downloadable manuals on the Nova Comet and the Nova 3000.

There are a number of options available as follows:

- Motor (I recommend you spring for the extra bucks and buy a unit with a motor that fits the lathe mounting hardware.)
- Gap Bed (makes this lathe into a larger lathe with 14" swing and 23 inches between centers. The Gap Bed comes with an insert that allows you to fully access the extra bed length with the tool rest. With the Gap Bed, you can swing bowl and platter blanks up to 14 inches in diameter. It has a heavy enough spindle to handle such stock, too.)
- Bed Extensions (same 20" bed extension used on the Nova 3000. With one bed extension, the Comet can turn spindles 35 inches long, making it a respectable spindle lathe.)
- Nova Scroll Chuck, a nice accessory for any lathe.
- Collet Drill Accessory. (Each Comet has a threaded tailstock quill. This is able to take an optional Collet Quill accessory for holding drills. The basic unit comes with two collet sizes and there are a range available from 3mm (1/8") up to 12.5mm (½"). There are two big advantages in using the Collet system over normal drill chucks. First the overhang of a drill chuck and arbor reduces center accuracy at the drill point - where you need it! Drills tend to wander. The collet quill enables you to lock up the drill point as close as convenient to the tailstock. This leads to the second big advantage: reduced overhang means that there is increased drilling capacity between centres - this is an important consideration with mini lathes where bed lengths are short.)
- Nova Live Centre System
- Hiturn Sharpening Centre.

It is nice to have a small lathe with the same spindle size as my large lathe again. Changing out the spindle adapter inserts is a bit of a pain to change chucks from the big lathe to the small one.

As mentioned above, the bed extensions for the Nova Comet are the same as those used on the Nova 3000. Actually, the Nova Comet is a headstock assembly with a bed extension attached and a tool rest and tailstock assembly added.

I believe, the Nova Comet is the only mini lathe on the market with a fully adjustable center alignment. Precise alignment really matters in any lathe used for thin walled work, where very accurate drilling is required. (One example of the type of work that I do would be the Chinese Balls which require precise drilling for 12 major holes and also for 20 secondary holes.) The factory tells me that each Comet lathe is factory set using Teknatool's unique "Acruline" alignment method (this involves a double Morse taper which fits into the spindle and tailstock). The headstock and bed are adjusted and locked in place while the centres are held in perfect alignment. This method ensures perfect accuracy. The big bonus also is that it is also adjustable in the field by the user if necessary.

I had hoped to have a month or so to play with this lathe before doing the review for the September issue. Unfortunately, my month or two came down to a day or two. So, I ran it through its paces as much as I could in the time available. Everything I tried worked great!

Although the Comet has a feel of being a solid lathe like the Nova 3000, it is still light enough that it could be transported to a craft show for demonstrations or to the club meeting for a demonstration. This is especially true if the mounting bench for it is made portable and not too heavy.

Like I said the Comet is a nice solid little lathe, a hate to call it a mini lathe, but I did include it in the chart with the other mini-lathes. By the time I had added the Gap Bed to my lathe, it had become a nice small lathe. In this configuration, the Comet will do the work that most hobbyist turners will be doing and will keep their investment reasonable.