

Paul Siwy - Nov 24, 2002 - Original question

I have a General lathe that turns up to 12" inboard. I have not tried to turn outboard yet but wonder about the vibration factor. I have experienced vibration while turning 10" diameter inboard but am not sure that it is just me not holding my cutting tool solidly enough. I build a heavy solid stand to mount my tool rest onto for turning outboard. I still have to get/make a face plate with a 1"-8 left hand thread. Any thoughts on problems I may encounter or any advice you may like to offer?

Ruth Niles - Nov 24, 2002

Paul - Sounds like we may have the same lathe, is it the 160 General? The faceplate you have should be double threaded and will go on the outboard spindle. The vibration you experienced with a 10" turning; was it just the piece of wood or the whole machine that vibrated? If you weren't holding the cutting tool firmly enough, you would get chatter or a catch; vibration is caused by an off-balance chunk of wood. Or your lathe could be unsteady; it's a heavy lathe, but still might "vibrate" (rock) with out of balance chunks of wood. All of this would apply to the outboard turning as well since the majority of the 400 lb. weight of the lathe is at the headstock and you wouldn't be turning very deep (or long) outboard, I wouldn't think vibration would be any more of a problem than inboard turning. I'd be interested in seeing a picture of your outboard tool reststand.

Randy Hodge - Nov 24, 2002

Paul, does the stand sit on the floor? Or is it mounted to the end of the lathe. The floor types if they aren't heavy enough (and they usually aren't to facilitate being able to move them) would create vibration problems

Eugen Schlaak - Nov 24, 2002

Paul! Welcome to the Family! You are starting out with a loaded Question!

Vibration only occurs at a certain speed... any problems with your machine, tooling.... tool handling will only increase with speed. What General lathe model have you got? A General 260 variable speed (DC) will almost handle anything at a low speed ... of course a 160 is limited by it's size to as what you can put on it and no outboard turning on that one ... (No Bracket).

Most turners ask the question like "how big an item can I turn Inboard or Outboard"? Unless you have a lathe where you can work with very slow (almost zero) RPM, any unbalanced large piece (larger than what fits on the inboard side) will not be suitable for the lathe.

So with other words the low speed range of your machine will determine the size you can safely turn! All other factors come into effect after that and of course those difficulties can only be assessed by physically looking at your setup and what your skills are in manipulating tools , mounting of wood, stability of the lathe itself and many other factors.

Even if you can adjust the rpm of your machine to say 50 Rpm for large above 36" outboard turnings... is there enough torque to overcome the resistance of your turning efforts? I could turn up to 48" outboard on my General at very, very low speed but it stops if I try to cut wood aggressively at the outer diameter... so I am left using a 1/4 " bowl gouge or similar sized scrapers.... so what is the sense even trying such an undertaking?

I have done up to 36" with my Outboard Rigid Turning Bar assembly and it has to be "rigid" because at low speeds you are not able to control a small tool steady enough for proper turning and cutting.

For turning on the outboard end of my 260 I also have a stand with a tool rest weighing more than 150 lbs.... but again to repeat; it is the speed and torque you have to worry about.

Sent us some pictures and I or somebody else might be able to answer your question via e-mail or on this site. Or on my way to a club meeting I am willing to stop by at your shop some time and help you. You are also welcome to visit me here in Niagara Falls any time and "Talk Shop"

Paul Siwy - Nov 25, 2002

Eugene. Thanks for your words of advice. I would be most grateful for you to have a look at my set up on your way into the club when it is convenient for you. I also will take you up on the offer to see your shop. I was most impressed with your demo and jigs at the last meeting. As a tool maker I appreciate jigs that are simple and effective. You put a lot of thought into your work and it shows. I look forward to meeting you again soon.

Herman de Vries - Nov 25, 2002

Paul, I turn on a 26020VD General. If you go to my website at www.hdv.net, at the very bottom of the pages under "2001" I have some photos of the setup I made for my lathe to make the outboard bracket adjustable. Eugen said your model does not have a bracket, but if you do what I did, you could probably use the bracket for the 260 and thus have the tool rest very rigidly bolted right to the lathe. I have never had good luck with self standing tool rests. As a matter of fact, I think they are downright dangerous. Even a small catch will pull the tool rest into the spinning work.

The other thing is to make sure that your faceplate does not unscrew itself. What I did to prevent that was to use a piece of 3/8" threaded rod that is long enough to reach through the spindle. You have to make a hole in the piece big enough to accommodate a nut and washer, but all you do is run the threaded rod through the spindle and put a washer and nut on the inboard end. That way, the faceplate will stay put.

Paul Siwy - Nov 25, 2002

Herman, I went to see your website. Very impressive. It will take me some time to fully view all it has to offer. Lots of pics make it especially enjoyable to wander through.

I am intrigued as to why you feel a bowl would come off the outboard side when turning. The cutting forces should cause the bowl to tighten as it does inboard since the outboard is a left hand thread. I am no stranger to a work piece coming off the lathe. While working in the machine shop years ago I had used the reverse direction to slow down the machine unaware that the chuck was screwed on and not held by a screw and woodruff key. The 40lb steel chuck came off at aprox 400 RPM and sailed over my shoulder without incident except for the stunned look on my face. I now have the possibility of exploding bowls to keep my life interesting. I just have to learn how to jump clear quickly. :-)

Eugen Schlaak - Nov 25, 2002

Herm and Paul! I meant to say the General 160 has no provision for a Bracket and there is none available and the walls are too flexible to add a homemade version. The bracket for the 260 is good and very sturdy but cost a few dollars and if you have the old model of a 260 with 6" swing like I had before Riser Blocks, you have to buy a new Tool rest support to get the extra height. (\$\$\$)

But if you turn outboard to a max what the lathe will do in torque with a fixed tool rest support on the lathe... a banjo (tool rest support) has to suit the diameter you turn above the rest... so it could be mighty big!

So for the large items, Table tops for instance, one HAS to use a portable stand..... but it has to be heavy. For instance the one sold by Delta (Pipe Construction with 3 legs) is useless because it is too light. I will take a picture of the one I made and give dimensions. It works great and the base plate is large enough (with pointed levelling screws) to stand on it and therefore add extra stability.

Paul Siwy - Nov 25, 2002

Thanks very much folks for the information and the welcome. Yes, I do have the 160 model of the General lathe. I wish I had one with variable speed but I was fortunate to acquire this lathe instead of the weenie one I almost bought. I will post a couple of pics of my banjo support I made to be used outboard. It is made entirely of steel and weighs at least 80 lbs. It stands on a three point base which is 18" aprox from point to point. My face plate may not be the original and as such is not double cut thread. It is only a RH thread. I now suspect that the vibration I have experienced is caused by two things one of which I fixed. The base is supported by carriage bolts to allow levelling and I think that there was not even pressure on all bolts. I turned back the two inside bolts leaving only the four bolts on the perimeter of the base supporting all weigh. I do have two bags of sand inside the base but you would never know it until you try to move the machine.

After taking many light cuts I have found the vibration reducing. I think a good part of my problem is that I am still

on the low end of my learning curve. So much to learn. It seems that the cutting (except for the skew) is the easy part. I can easily hog of material with my bowl gouge. The fine cutting without tear out is where I am most challenged. I am a tool and die maker by trade and have lots of experience turning steel. Cutting wood on a lathe is quite a different kettle of fish. Work pieces are not held as securely and cutting tools are only hand held presenting more of a challenge.

I bought a small pulley to fit my motor shaft in the hope it will allow me to turn at an even slower speed for large diameter work. I have yet to try it as it means removing the other pulley and frankly I am a bit on the lazy side so will wait until I am ready to place a large piece on the lathe. When I say large I am only looking to turn up to 18" or so. I want to make a nice large wooden bowl to use for mixing my sushi rice when I prepare sushi. I am the designated cook in my home and am fussy about my tools in the kitchen. A fancy peppermill is in the offing for me as well.

Eugen Schlaak - Nov 25, 2002

Paul! I read your post on your general 160 and also read in between lines about your 18 diameter bowl you want to turn...

I hope you understand what I meant in my post.

The lowest factory speed of that 4 speed lathe (if this is what you have) is 850 RPM... and with that 18" diameter bowl the surface speed of the outside of that bowl is 4003.5 feet per minute! That is a finished diameter of 18"... you have to start a bit larger! That is fast!!!!!!

Now imagine at the start of the bowl this wood is not balanced... I would be very, very careful and would have my hand on the Off- switch if it is not too late to stop.....and watch out for the inertia of this rotating mass when it unwinds from the spindle after the motor stops! To what speed are you gearing the machine down to?

Today I took some pictures of my outboard tool rest and stand which I hope I have time to post tomorrow I just do not want to discourage you in your efforts... all I can say you are trying to do a mighty large bowl on that General 160 lathe. Come and visit me some time!

Paul Siwy - Nov 25, 2002

Eugene. Yes, I am afraid the same concerns have crossed my mind. The large diameter may be just a pipe dream unless I can find a way to drastically reduce the speed. Perhaps I might find a way to include an idler pulley to allow a further step down in speed. I have only just now considered this possibility. There seems to be a good bit of room inside the motor enclosure. I might also introduce more sources of vibration in the attempt. I will keep thinking about it. Ah to have a variable DC motor.

Herman de Vries - Nov 26, 2002

Paul, regardless of which way you turn the piece, there is a risk of it coming off. If you turn forward, you will find yourself using your chisels backward from what you are accustomed to. However, that will keep the piece tight on the lathe. The problem arises when you stop your lathe. The inertia of a large piece can unscrew the faceplate.

With the lathe turning in reverse, you are working on familiar surfaces, but the resistance of the cutting tool may unscrew the faceplate. The 3/8" rod is a very easy and foolproof fix for either problem.

Mike Brazeau - Nov 26, 2002

Paul - and others might be interested. There is a company in Brooklyn, NY that lists as an internet special a 1 HP 3PH motor and VFD controller for \$240 USD plus shipping. With the pulleys you have available, you can slow this sucker down and improve the versatility of your lathe immensely. Check out this link <http://www.dealerelectric.com> A number of turners over at rec.crafts have used them and most seem pleased, including Leif Thorvaldson, who is a member here at WOW.

Paul Siwy - Nov 27, 2002

Thanks Mike. Unfortunately the price tag effectively doubles after taking into account the exchange rate, duty, GST and taxes. I will keep my eyes peeled though for a local source or second hand motor.