MDF Rose Engine Construction Instructions

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v6 – 2/27/07

This article is aimed at those people who have been initially intrigued with ornamental turning and want to give it a try but found the barriers to getting started too intimidating. If you have watched a demo at a past symposium, or perhaps read an old article with interest, but quickly lost enthusiasm after digging a little deeper and realizing how difficult or expensive it is to find, purchase and restore an antique ornamental lathe, then this may be the project for you. This article presents a very simple design for a rose engine lathe which is capable of doing high quality work, yet is easy to build in a home workshop.

The Design

There have been countless designs for rose engine lathes and there are many ways to make a rose engine. Likewise, there are an almost infinite number of possibilities for features that can be included when designing or building a rose engine. For the purpose of this article, the focus is on a simple design, a beginner's lathe to gain experience on. That is not to say that this lathe is limited in capabilities. This design is simple yet very capable. It has also been designed to allow adding optional features to it. A future article will describe some advanced features to add on to the lathe and ideas for where to go once you have gained some experience using your first rose engine.

Paul Fletcher, an accomplished and ingenious ornamental turner from England, shared his basic design for an MDF rose engine lathe. His design was based on being able to get all the pieces cut out of a half-sheet of 3/4" MDF. His lathe used parts from around his shop to complete it. The original design was elegant, simple, very functional, inexpensive and portable.

Paul's design has been updated to use as many off-the-shelf parts as possible. Drawings have also been included so that anyone with access to a metal lathe and mill should be able to make the few parts that need to be machined.

Alternatively a complete parts kit is available with everything you need to build the lathe (see last page).

There are very few critical dimensions in the design of this lathe. Almost anything can be changed to suit your own needs, or for experimental purposes. But before you start experimenting, because the lathe is so easy to build, you should build one as close to these plans as possible before attempting to branch out. Once you have used the lathe and understand how it works, there is plenty of opportunity to experiment.

Instructions for Building the MDF Rose Engine

Note: These plans are designed around assembly techniques using biscuits or dowels and Gorilla Glue. The plans also make extensive use of tapped holes in the MDF. One advantage of using MDF is that holes can be drilled and tapped, then with a little thin CA glue added to the threads to harden them, they can be re-tapped and used for many light-use applications. This technique was used extensively on this lathe project for components that needed to be assembled and disassembled during prototyping. Many places where screws are called out, you can use this technique with 1/4"-20 bolts or screws.

Tools required: Forstner bits, brad point bits, drill press, router & bits, saber saw & blades, table saw with regular and dado blades, lathe, biscuit joiner or doweling jig, taps for 1/4"-20 and 3/8"-16, screw driver, Allen wrenches

Supplies required: biscuits or dowels, Gorilla glue, thin CA glue, finish and finishing supplies

1. Cutting Main Pieces for Lathe

- From half sheet of 3/4” MDF, follow the Rough Shape Cutting Plan sequence of 9 cuts to cut out all 10 parts. It will be helpful to mark the good cut edges lightly with a pencil so that you can reference those against the saw fence for the next cuts.

- Mark each piece as you cut it with the letter designation on the drawing (A – J). This will help minimize confusion as you proceed.

- Now using the Final Sizes Cutting Plan, rip and cut each of the pieces to their final widths and then lengths, except H5 & H6, whose lengths should be cut to fit. Again, you should label the pieces as you go to avoid confusion (H1, B1, etc.). Try to cut all of the same-dimension pieces at one time so as not to change the saw fence position when trying to make matching parts. E.g. rip all of the 6” wide base parts as one operation so that they are all exactly the same width, then cut them to length.

- Rip H3, H4, H5 & H6 to width at the same time, but wait and cut H5 & H6 to length by dry-fitting and marking for the cut. This will make it easier to get the edges flush all the way around the headstock box.

2. Drilling Holes in the Base and Headstock

- Drill the headstock holes on the vertical centerline of the two end pieces, H3 & H4. For best accuracy, set up a fence on the drill press, mark one edge of each piece, and reference that against the fence.

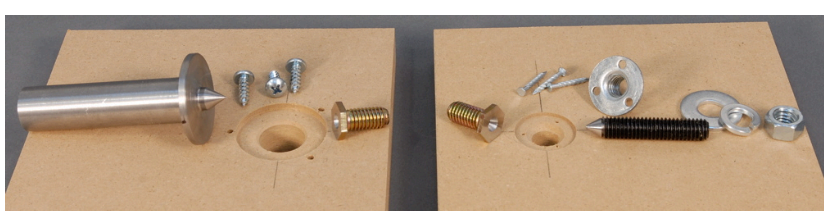
- Drill the spindle bushing holes — Measure your bushings and drill a hole in each of the headstock end pieces, H3 & H4. A typical bushing for a 1” shaft will need a 1-3/8” Forstner bit. Drill the holes 2-1/8” down from the top edge on the vertical centerline.

- Drill the pivot bolt holes — Use a 5/16” brad point drill bit to drill a hole in each of the headstock end pieces, H3 & H4. The pivot holes are 3/8” up from the bottom edge and also on the vertical centerline of the pieces. Measure across the head of your pivot bolts and counter-bore a hole about 1/8” deep to allow installing the pivot bolts nearly flush. It may be more convenient to counter-bore after gluing.

- Drill the holes for the pivots in base — The pivot hole centers are located 1-3/4” up from the bottom edges and 3” in from the back edges of B3 & B4. Orient and mark the two faces that will be towards the headstock after gluing and drill from those faces as follows:

  - First counter-bore from what will be the inside face of B3 for the shoulder of the fixed pivot/pulley shaft, 1-1/2” diameter x 1/8” deep. Then drill through with a 3/4” Forstner bit.

  - Use a 7/64” drill to drill three equally spaced holes, 5/8” deep, just outside the counter-bore for the fixed pivot to later secure the pivot in place with three #10x5/8” screws.

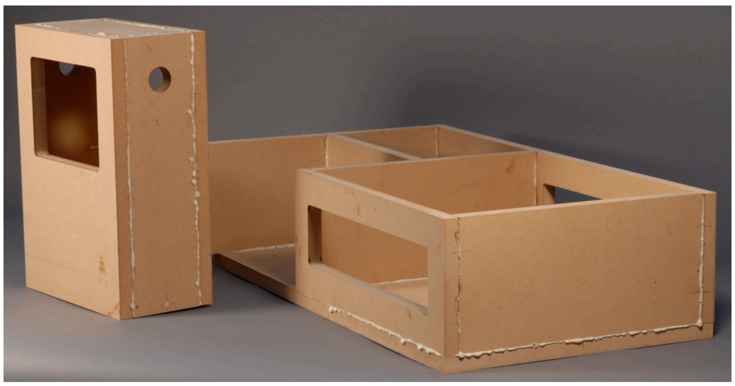


  - Next counter-bore for the T-nut that will hold the adjustable pivot in B4. The goal is to set the T-nut flush with the MDF. Measure the OD of your T-nut and the flange thickness, then counter-bore B4 from face that will be facing towards the headstock. A typical 3/8”-16 T-nut will have an OD of 1” and a flange about 1/16” thick. Also measure the body of the T-nut and counter-bore for that next. Typical T-nuts will need a 29/64” drill for the body, about 1/2” deep. Finally drill through with a 25/64” drill for the 3/8” pivot screw to pass through.

3. Cutting Windows in Headstock and Base Pieces

- Before assembly it is much easier to cut the “windows” in the side pieces of the headstock, H1 & H2, and the base pieces B6 & B8. Mark and drill the corners with 1/2” drill then cut from hole to hole with a saber saw and/or use a router to clean up the edges.
  - Headstock windows are 6-1/2” wide and 5” high. They are 1-1/2” from the sides and down 1-1/2” from the top edge.
  - Base windows are 12-1/4” wide and 3” high. Centered on B8 and 1-1/2” from one end of B6.

4. Glue-Up of Headstock and Base



Tip: When using Gorilla Glue, it is helpful to have a wet sponge or spray bottle to lightly moisten one side of the joint. Apply glue to the other side of the joint. Allow plenty of time to dry.

•This is the time to trim H5 & H6 to length for an exact fit. Dry-fit all parts, then when satisfied with the fit, mark and cut biscuit slots to allow assembly of the headstock. Gorilla (polyurethane) Glue is ideal for gluing MDF, especially on end-grain butt joints. Apply the glue, assemble and clamp.

- Mark and cut biscuit slots (or drill for dowels) to assemble the base. Dry-fit and when satisfied apply glue, assemble and clamp.
- Do not glue the top, B1 onto the base. It will be secured with screws later.
- From the leftover MDF scraps, rip two pieces 10-1/2” long by 2-1/2” wide to glue onto B3 to support the hand crank. Align the two pieces flush with the top and front edges of B3. Trim to fit then glue and clamp.
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5. Making Other Components

There are seven machined components that either need to be made or purchased with the parts kit. The attached drawings give the dimensions and materials to make all the parts:

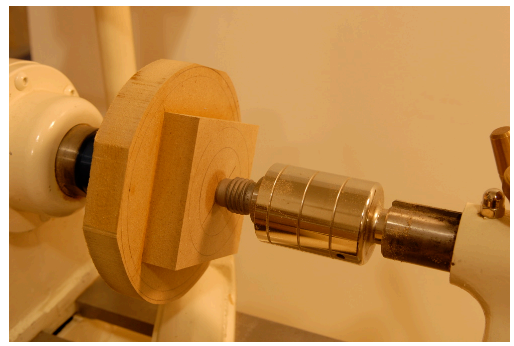
1. Main spindle shaft
2. Main pulley/rosette flange
3. Main pulley (made from 3/4” MDF)
4. Fixed pivot and pulley shaft
5. Hand crank shaft
6. Two pivot bolts
7. Pivot screw

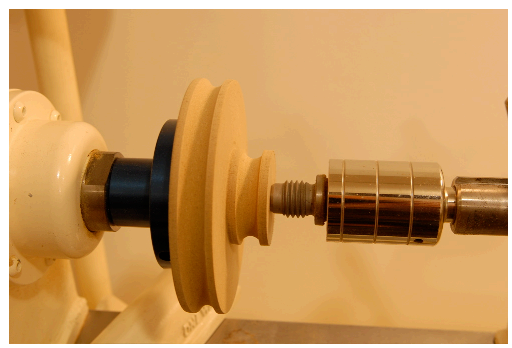
[Note: Many parts have been simplified since photos were taken. Make all parts per the current drawings.]

There are also parts that need to be made out of wood or plastic, either the leftover MDF remnants or other scrap wood and materials from your shop:

1. Step-up pulley (and groove in main pulley)
2. Hand crank pulley
3. Centering block and fading wedge or threaded fading stop
4. Bungee block
5. Bungee button
6. Rubber support
7. Rosette rubber
8. Rosettes

Step-up Pulley — Cut a 3" square and a 5" square block out of scrap MDF. Center the two blocks on top of each other and glue with yellow glue. Clamp and allow to dry overnight. Draw diagonal lines to find the center of the blocks and center-punch the smaller block. Mount by centering your tailstock live center in the center-punched hole on the small side of the pulley, then press up against a faceplate mounted on the headstock. If additional friction is needed to drive the pulley, add a layer of sandpaper or use double-stick tape on the faceplate side. Once mounted on the lathe, turn OD's of 4-1/2" and 1-3/4" from the two squares. Once the OD's are right, turn round-bottomed grooves to 4-1/4" diameter in the large part and 1-1/2" diameter in the small one. These will serve as the belt grooves for the 1/4" round belting. While still on the lathe, flood the two belt grooves with thin CA glue to harden them. Wipe away excess glue and let dry. Finally, remove from lathe and using the drill press, drill a 3/4" through hole, centered on the center-punched hole.

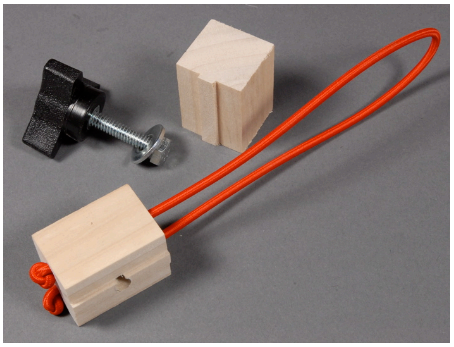




Turn groove in Main Pulley edge — Mount the main pulley on your lathe and turn a groove for the round belting as above. When done turning, flood the groove with thin CA glue. While working on the main pulley, wet the 8 tapped holes with a small amount of thin CA glue to harden the threaded holes on the main pulley. When thoroughly dry, re-tap by hand with a 1/4"-20 tap.

Turn hand crank pulley — Select a piece of very dense wood or other material that will resist splitting when drilled and tapped for a set screw. Finished size is 1-1/2" long by 1-5/8" diameter, with a groove that has a 1-1/2" diameter at its bottom. The groove should be centered centered 1-1/4" from the end. Tap a hole in the side of the pulley for a 1/4"-20 set screw. Apply thin CA glue to the threads and then re-tap by hand when the glue has dried.

Centering block/Fading Wedge — For many operations you will need to be able to lock the headstock in a vertically-centered position. In order to do this most easily, make a block that can be dropped into the space between the far side of the headstock and the base. With the block in place behind the headstock, when a wedge-shaped block is dropped in the space on the operator side of the headstock, it will be locked in place. The rear block can be an "L" shaped block whose thickness matches your gap, probably 3/8" thick. The other leg of the "L" serves as a handle to pull out the block and to keep it from falling into the slot. If you make the wedge for the front with a slot along its length, and attach it to the headstock with a thumbscrew, that will provide the simplest form of a "fading stop," allowing the wedge to slide up and down and be secured in place by the thumbscrew. Alternatively, a threaded fading stop can be made with an angle block attached to the rubber support. A 1/4”-20 x 3” or 4” bolt threaded through the angle block will serve to limit the headstock motion and produce the fading effect.



Bungee block — The bungee cord serves to pull the headstock towards the rubber that is rubbing on the rosette, the rubber in turn pushes the headstock away when it hits a bump on the rosette. In order to secure the bungee and adjust its tension, it is attached to the T-track with a block. Make a block about 1-1/2” long, an 1” wide and an 1” thick. A rib on the bottom of the block, the width of the gap in the T-track, will keep the block aligned. Drill a clearance hole for the 1/4”-20 x 1-1/2” bolt through the block for the T-track bolt. Drill two 3/16” holes through the block parallel to the T-track to pass the bungee cord through. Tie a knot in the end of the bungee cord, pass it through one of the holes, loop it back through the other hole and tie a knot in that end. This makes a loop that will loop around the bungee button.

Bungee button — Turn a bungee button about 3/4” in diameter by 1/2” tall with a 1/4” hole through its center. Cut a small groove in the center of the edge to match the diameter of the bungee cord (1/8”). Attach the bungee button to the outboard end of the headstock, on the vertical centerline and about 1/2” down from the top edge, above the spindle.

Rubber support — Cut B9 to its final size and cut two 3/4” wide dados to mount the two pieces of T-track per the drawing, one on each side of the support.

Rosette rubber — You need to make a rubber to rub on the rosette. If you made or bought rosettes made of plastic, you can make a simple friction rubber. If you want to get fancier, or if you opted to make your rosettes out of MDF, then you should make a rubber with a 3/8” bearing to run against the rosette. Either way, you need to allow for a rib on the underside of the rubber to run in the slot of the T-track to maintain alignment. Drill a clearance hole through the rubber for the 1/4”-20 x 1-1/2” bolt to hold it in the T-track and allow adjustment.

Rosettes — You will need at least one rosette. Drawings have been provided for two shapes that will produce thousands of different patterns. You can make the rosettes on a router table by making a sled that will hold the rosette blank, allow indexing of the blank, and has a provision for stops (in the table slot or against the fence) to limit the depth of cut. The “Plain 4” rosette (and similar designs) can be made with a sled that has an adjustable pivot point that can be set (to 4.57” radius for the Plain 4) and then swung past the router bit. Start by making your blank with a 1” bore in the center and using a template to cut the curved adjustment slots on a 5” circle with a 1/4” router bit. Your blanks can now be held and indexed on the sled if it has the same hole pattern as the main pulley (see drawing). If the above is too daunting, an alternate method to make a rosette is by laying out and drilling holes around the edge of a blank to create a series of concave features resembling a chain sprocket. Be careful not to make your features too deep. Shallow recesses are sufficient for the scale of turnings you will produce on the lathe. If you used MDF for your rosettes, flood the edges of the rosette with thin CA glue to harden them.

Final Assembly — Putting it all Together

Install pivot bolts in headstock — Re-drill pivot bolt holes (they are probably filled with the expanded glue) in headstock deeper and tap for 3/8”-16 bolts. Counter-bore with a large enough bit to allow use of a socket to install the bolts. Drill deep enough to allow bolts to be installed as close to flush as possible.

Spindle — Insert spindle bushings and spindle in headstock. Sand or file the holes slightly as needed. Glue the bushings in place with Gorilla Glue using the spindle shaft to ensure alignment. Use caution to not get glue on the spindle itself.

Install pivots in base — Install the fixed pivot from the inside of B3 and secure it in place with three

#10x5/8” screws around its edge. Press the T-nut into B5 and nail in place if you have used a flange type T-nut that accepts 3 nails or screws. Thread the pivot screw into B5 from the back side, add washers and the nut.

Attach the top — Clamp the top B1 in place then drill and counter-sink to attach it to the base. The design allows for a 1” overhang on the front, right and back edges of top. Align the left edge with the outside of B3.

Cut openings in top — Measure and layout on the top B1 to allow cutting out the opening for the head-stock and the notched area around the hand crank. Once located, mark and drill the corners, cut from corner to corner with a saber saw, then rout out the headstock opening and the notched area with a 1/2” diameter flush trim, bottom bearing-type router bit.

Apply finish — Optionally, now is a good time to sand and finish as desired. Shellac, wipe-on polyure-thane and paint are all simple finishes for MDF. You may want to apply a layer of laminate to the top of the lathe to reduce friction later when using the lathe.

Install the headstock — First, fully retract the adjustable pivot screw. Next, lower the headstock into its opening, leaning it towards the outboard end. Engage the point of the fixed pivot into the outboard pivot bolt, then lower the other end into place while threading the adjustable pivot into its pivot bolt. Do not over-tighten, apply enough pressure to allow rocking without any play.

Mount the hand crank — Using a 3/4” Forstner bit, drill a hole through B3 and the two added blocks for the hand crank. Locate the hole 1-1/4” from the outer end and 1-1/4” down from the top edge of B3. Install the hand crank on the shaft using a small amount of medium-strength threadlock compound (e.g. Lock-tite). Install the hand crank with a shim washer on each side and then attach the hand crank pulley with its set screw onto the shaft.

Rubber support assembly — Attach the two pieces of T-track to rubber support, one on each side, with three #4 screws in each. Clamp the rubber support to the base making sure that there is enough clear-ance for the headstock to rock through its full motion (approximately 1-3/8” back from the headstock opening). Once you are sure of the location, attach the support to the base with 4 screws.

Main pulley flange — Attach the main pulley flange to the spindle. Make sure you have added a shim washer between the shoulder of the spindle nose and one on the outboard end. Tighten the set screw making sure it is on the flat of the spindle shaft.

Main pulley — Attach main pulley to main flange with four 1/4”-20 x 1” flat head screws.

Step-up pulley — Install the step-up pulley on the fixed pivot with a shim washer on each side. Make sure the small diameter side is toward the headstock. Install the 3/4” shaft collar.

Make the belts — Wrap a piece of 1/4” round urethane belting around the main pulley and the small pul-ley of the step-up pulley. Mark across the belt where the two parts meet and overlap. Carefully measure and make a mark 1-1/4” shorter and cleanly cut the belt with a razor knife. Clamp a razor knife blade up-right in a vise, then using a propane torch, heat the blade evenly until it is red hot. Hold the ends of the belting on each side of the blade, and then bring them into contact with the hot blade to soften an melt the ends, when soft and melted, slide the two ends off the blade such that they are aligned and pushed to-gether when they come off the blade. Hold this joint tightly together until cool. Once cooled, sand the bulging portion of the joint flush and smooth. Light touches on a stationary sander make this easy. Repeat the process for the second belt. Mount the belts and test for correct tension. If you can hold the belt while turning the hand crank and it slips, you will need to repeat the process and remove a 1/4” from the belt. If you have to do this, cut an equal amount off the belt on each side of your joint.

Cutting Frames and Driving Them

You are almost done, but you need to have a cutter to do the work. In ornamental turning the cutter is called a “cutting frame”. There exist a wide range of specialized cutting frames to achieve highly specialized cuts and techniques. As you are getting started, especially using a rose engine, the most common cutting frame, and the one you will use most is called a “horizontal cutting frame”. It has a cutter which spins around horizontally on a vertical spindle.

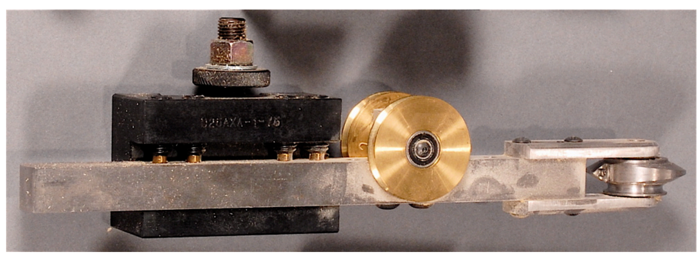
Many cutting frames accommodate profiled cutters, but again, because you are working with a rose engine, this option is simplified for you. Almost all work done on a rose engine uses a cutter with a 60° pointed cutter.

You can make your own cutting frames, buy one from the sources below, or start experimenting with something as simple as a flex-shaft-type rotary tool.

Cutting frames are typically driven by one of two means; 1) an overhead drive or 2) individually motorized. In traditional ornamental turning, where you would be likely to employ a range of cutters, cutting frames and drilling spindles, the overhead drive allows switching between cutting frames while having only one driving power source. Today, most people using overhead drives have one motor mounted on an overhead crane-arm like arrangement. The motor is typically mounted vertically, shaft pointed up, at the back end of the arm. In this position it acts as a weight to supply belt tension. The motor usually has a pulley (or step pulley for speed variations) on its shaft. A small round belt (1/8” or 3 mm diameter) runs from the motor, along the crane-arm, over two pulleys at the end, and down to the cutting frame on the lathe. Obviously a motorized cutting frame has a motor directly attached to it. There are advantages and disadvantages to each arrangement, but that topic is beyond the scope of these instructions.

If you prefer to buy a cutting frame, here are three sources:

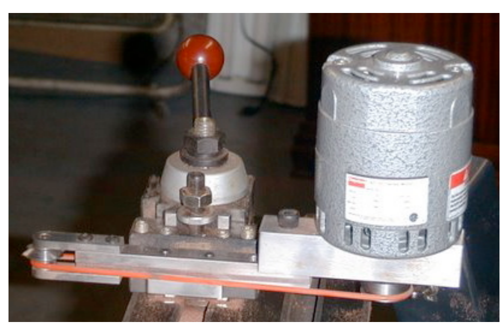
Fred Armbruster
Ornamental Turning Works, Inc.
#1 Fieldstone Estates Road
York, ME 03909
(207) 363-2524
farmbrus@maine.rr.com



Fred makes a variety of belt-driven cutting frames. Most use indexable carbide inserts. They are available in a range of cutting diameters from 3/4” up. He also offers a model that uses a single 1/8” round carbide cutter for larger diameter cuts. Prices start at $450.

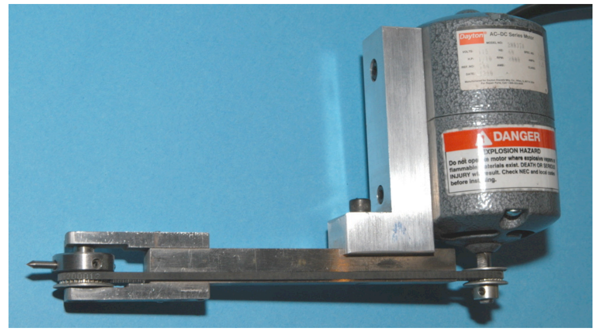
David Lindow
527 Gravity Rd.
Lake Ariel, PA 18436
(570) 937-3301
dlindow@socantel.net

Steve White
1041 Cambridge Way Dr.
Chesterfield, MO 63017
(636) 532-6096
swhitefrog@aol.com



David and Steve make a motorized cutting frame with a 1/5 HP, 10,000 RPM motor. The cutting frame uses two carbide inserts and has a cutting diameter of 1 3/32”. Price is $350. David and Steve also make and sell a rose engine lathe. Contact them for additional details and pricing.

Paul Cler
206 Wilson Ave.
Villa Grove IL 61956
(217) 832-4021
paul.cler@netcare-il.com



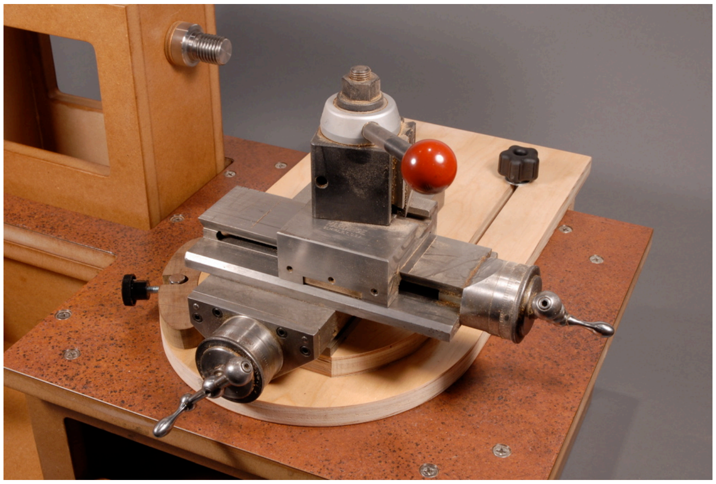
Paul also offers a motorized horizontal cutting frame with a 1/10 HP, 8,000 RPM ball bearing motor. His cutting frame uses a 1/8” round carbide cutter which can be extended to a range of cutting diameters. Price is $750. Paul also makes a modern ornamental lathe which is capable of both traditional ornamental turning as well as rose engine turning. Paul’s lathe includes the ability to cut spirals, do reciprocated work, curvilinear work as well as normal indexed work and rose engine capabilities. Price is about $13,750.

Sliderest and Tool Holder

Last but not least you will need to find, build or adapt some type of slide rest or compound for your lathe. What you are looking for is a way to hold, and accurately manipulate your cutting frame.

The least expensive and simplest option is to buy an X-Y drill press vise. A 3” jaw import model should be able to be found for $80 or less. This approach lets you grip your cutting frame in the vise jaws, and provides X-Y travels to move it around the work. You will need to make some provision for adjusting your cutter to the exact center height of the spindle, and this is easily done on this type of vise by adding two tapered wedges under the cutting frame to fine tune the height.

The next alternative is to buy one of the many types of imported X-Y tables available. These have the advantage that they have greater range of travels on the X and Y axes, but they typically cost more, and you will need to adapt some type of tool holder to hold your cutting frame. Many of them may also be too tall to allow them to work with the lathe (6” is the maximum height from the top of the lathe to the centerline of the spindle if you follow the design dimensions). You can make some changes to the basic lathe design to allow using taller X-Y tables, but that may not be worth the required effort.



The third alternative is to scrounge for a used sliderest or compound from an old metal lathe. This obviously will require some degree of adaptation, but may be the least expensive option. If you plan to use a tool holder like those used in metal-working, chances are one will fit onto a used compound because that was what they were designed for. This is the approach taken for the lathe pictured in this article. An old compound was bought on eBay and an import quick-change type tool post was added to that.

Regardless of which approach you take for your sliderest or compound, you will need to build some sort of plate to allow you to move it around the lathe and secure it in place to make your cuts. A simple plywood or MDF plate to attach the compound to, with slots and a clamping arrangement is a simple solution. You will have to devise your own solution based on your sliderest choice.

Building Options

The final thing you may want to consider are some options like adding the electrical pre-wire if you opt for a motorized cutting frame. Likewise you may want to incorporate an upright, at the left-rear corner of the lathe, made of a 3/4" dowel or pipe, if you want to use a more traditional overhead drive.

Parts List

A complete parts kit, with all the machined parts, two rosettes and all the parts and fasteners, including everything you need to build the lathe except for the MDF, biscuits and glue is available for $299. See last page for information and contact.

If you prefer to buy the parts needed to build your lathe from scratch, here is the complete parts list. Be sure to download the complete drawings for the dimensions, materials and specifications for the machined parts as well as the assembly drawings.

Qty.	Part	Comment or Source	Part #
1	Main spindle	Machined part	
1	Main pulley flange	Machined part	
1	Main pulley, 3/4" MDF, drilled & tapped	Machined part	
4	1/4"-20 x 1" Flat head screws	To attach main pulley to flange	
2	Set screw, 1/4"-20 x 1/4"	1 for main flange, 1 for hand crank	
2	Bronze flange bushing, 1" bore x 1-1/2"L	MSC, For spindle	35402338
2	Shim washers, 1.005" bore, 0.125" thick	MSC, For spindle	05408653
1	Fixed pivot & pulley shaft	Machined part	
3	#10 x 5/8" Round head screws	To secure fixed pivot	

Qty.	Part	Comment or Source	Part #
2	Pivot bolts made from 3/8”-16 x 3/4 bolts	Machined part	
1	Pivot screw from 3/8”-16 x 2” set screw	Machined part	
1	T-nut, 3/8”-16	Round flange-type vs. prong-type	
3	Nails or screws	Size to fit and secure T-nut	
1	3/8” flat washer	For adjustable pivot	
1	3/8” lock washer	For adjustable pivot	
1	3/8”-16 nut	For adjustable pivot	
4	Shim washers, 0.755” bore, 0.125” thick	MSC, 2 ea. step-up pulley & hand crank	05408299
1	Shaft collar, 3/4” bore	For step-up pulley/fixed pivot	
1	Hand crank shaft	Machined part	
1	Hand crank, plastic, 3/8”-16 w/ thread	MSC	64128929
1	Plain 4 rosette	Shop made or from kit	
1	Sin 24 rosette	Shop made or from kit	
2	Thumbscrews, 1/4”-20 x 1”	MSC, To secure rosette	08143281
4	1/4” flat washers	For rosette thumbscrews, rubber & bungee block	
1	Indexing pin, 1/8” dia.	Shop made	
2	T-track for 1/4” bolt, 5” long each	ttrackusa.com — Mini-T-Track	
6	#4 x 1/2” wood screws	3 for each T-track	
1	Rubber for rosette	Shop made	
1	Wood block for bungee cord	Shop made	
16”	1/8” bungee cord	Marine supply	
2	1/4”-20 x 1-1/2” bolts	For rubber & bungee block	
2	Knobs w/ 1/4”-20 threaded inserts	MSC, For rubber & bungee block	07109366
1	Bungee button	Shop made	
1	Screw/bolt for bungee button		
1	Rear centering block	Shop made	
1	Front centering wedge, slotted (-or-)	Shop made	

Qty.	Part	Comment or Source	Part #
	Threaded-style fading stop	See text, 3”-4” bolt, knob & pad	
11	#10 x 2” flat head screws	To attach top to base	
4	#10 x 1-1/2” screws	To attach rubber support to base	
80”	1/4” round urethane belting	MSC, Enough to make 2 belts	1032008

Sources and Suppliers for Rose Engine Parts and Accessories

MSC is a great source for hardware and hard-to-find fasteners: www.mscdirect.com

Enco sells drill press vises and X-Y tables: www.use-enco.com

TtrackUSA sells the T-track used on the lathe. Mini-T-Track is for 1/4” bolts: www.ttrackusa.com

Where to go from here?

Join OTI, Ornamental Turners International. OTI is an AAW chapter which meets once every two years. Meetings alternate between East coast, Central U.S. and West coast. The next meeting will be in the fall of 2008 near St. Louis. A newsletter is sent quarterly. Information on joining is at: http://www.turners.org/oti.htm

Unfortunately there are not many books, and certainly no contemporary books, on rose engine turning. If you join OTI, a CD is available with past articles from the English group, The Society of Ornamental Turners or SOT. More importantly, that CD also has the only publication I know of written specifically on the rose engine; *The Rose Engine Lathe, Its History, Development, and Modern Use*, by Norman Tweddle (August 1950). Other books on ornamental turning barely mention rose engines as they were so rare.

This lathe was designed from the beginning to add on other features. As interest in the lathe demands, further articles will be written describing the future upgrades to the lathe including rubbing multiple rosettes, pumping, accessory chucks, segment stops, curvilinear work and spherical sliderest adaptation.

There is no limit to what can be done in ornamental tuning and this lathe is a platform to begin your explorations and experimentation.

Every effort has been made to be complete and accurate in creating these instructions and drawings. In the event of errors, corrections, omissions, questions, additions or suggestions, please send them to the address below.

As mentioned earlier, a complete parts kit, with all the machined parts, two rosettes and all the parts and fasteners, including everything you need to build the lathe except for the MDF, biscuits and glue is available for $299 from:

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