The Modern Rose

A Bolt-On Accessory Which Turns An Existing Wood Lathe Into A Fully Functioning Rose Engine Lathe In About An Hour
Definition:
“A rose engine lathe is a specialized kind of ornamental lathe. The headstock rocks back and forth, controlled by a rubber moving against a rosette or cam-like pattern mounted on the spindle, while the lathe spindle rotates. Rose engine work can make flower patterns, as well as convoluted, symmetrical, multi-lobed organic patterns. The patterns it produces are similar to that of a Spirograph, in metal. No other ornamental lathe can produce these 'rose’ patterns. “
# Table of Contents

A FEW EXAMPLES OF ROSE ENGINE LATHE WORK 5
HISTORIC ROSE ENGINES 9
MODERN DAY ROSE ENGINE LATHES 11
LINDOW-WHITE ROSE ENGINE 12
NOVA ORNAMENTAL TURNER 14
ONE-OF-A-KIND ROSE ENGINE LATHE 14
GENERAL INTEREST IN ROSE ENGINE LATHES 15
BRIEF OVERVIEW OF THE MODERN ROSE CONVERSION KIT 16
ADVANTAGES TO THE BOLT-ON KIT APPROACH 17
THE PRODUCT DESCRIPTION (FROM OUR WEB SITE) 18
KEY FEATURES 18
ADD ON SALES AND ACCESSORIES ERROR! BOOKMARK NOT DEFINED.
FUTURE ACCESSORIES 19
PRICE SHEET (FROM OUR WEB SITE) 20
MARKET POTENTIAL 22
MARKETING APPROACH 23
MARKET TIMING 25
PRINCIPLES 26
CONTACT INFORMATION ERROR! BOOKMARK NOT DEFINED.
A few examples of Rose Engine Lathe Work
Historic Rose Engines

The Granddaddy of Rose Engines, The Holtzaffel circa 1850
Modern Day Rose Engine Lathes

Other than one-of-a-kind shop built Rose Engine Lathes, there are only two we know of besides The Modern Rose kit.

Jon McGill Design Medium Density Fiberboard Design

MDF Do-It-Yourself Rose Engine promoted by Jon McGill. This design was published in the American Association of Woodturners Magazine and demonstrated at one of the national symposiums in approximately 2007. The reception was very enthusiastic and several dozens have been built and are currently in operation all across America, the UK and Australia.

Plans are offered free of charge on the AAW official web site. Cost to build is approximately $1,200 and takes at least one month of labor to build.

The builder must obtain (or make) a suitable headstock spindle assembly, a cross slide vice holding system, and a suitable cutting frame. This explains why many sets of plans purchased will never result in a machine actually being constructed.

For more information, please see Appendix B
Lindow-White Rose Engine

This is a very good well designed machine. It is the dominate machine in this market at present. I've heard there is another manufacturer planning to offer something, but have not seen anything concrete yet. Lindow-White supplies many of the cutting frames and cams for the MDF builders. They have built and sold less than 25 machines total.

The machine performs well and is a good perceived value at around $3,000 by the time you are ready to make saw dust. The purchaser has to build his own base and acquire a cross slide vice in order to use the Lindow-White unit.
Lindow-White supplies various accessories to the Rose Engine Building community and is highly respected in this field. Lindow is a watch maker and White is a machinist-engineer. Here are some of the accessories they offer:

**Oval Rosettes**
- 1/4” Plexiglass
- Set of 5 Ovals and 5 Spacers
- $125.00

**Various Rosettes**
- 1/4” Plexiglass
- Set of 20 Various and 8 Spacers
- $300.00

**Cutting Frame**
- $350.00

Ron and Mike have met both principals and have had extensive conversations with them. Ironically, they told us they had originally considered our approach, but ultimately decided it would be easier to make their own stand alone unit.
Nova Ornamental Turner

We include this machine in passing only. It is more of simple accessory than a rose engine and it is reported not to work very well. Sales are very sparse and we have yet to speak with an actual owner of this device.

One-Of-A-Kind Rose Engine Lathe

A shop built rose engine mounted on the bed of an existing lathe. Similar to the Lindow-White machine. The fabricator simply used the ways of an existing lathe bed, with extension attached, to attach a stand alone machine. He did not modify the lathe in any way.
General Interest in Rose Engine Lathes

Due in large part to the efforts of Jon McGill, Steve White and David Lindow and Gorst Duplisse there is a significant resurgence of interest in Rose Engine Lathes in general. There is a chapter of the American Association of Woodturners devoted strictly to Ornamental Turning. They have members from all over the world and meet once every two years in a different city.

There is an international association for ornamental turners OTI based in the UK. The AAW publication has featured articles on ornamental turning in the last 6 issues. Practically every AAW chapter in America has at least one member who either has built or is in the process of building a McGill MDF rose engine. There are Ornamental Turning forums on the internet so the buzz is constant. When we deliver our first production kits later this month, that will be the dominant topic of conversation with photos posted immediately. Most major turning symposiums try to feature at least one rotation (class session) featuring some aspect of ornamental turning featuring a rose engine.

One simply has to Google the term “Rose Engine” on the web to discover the popularity of this craft. There are even videos on YouTube.

The Modern Rose exhibited a working prototype at the National Turning Symposium in Richmond, Virginia in June of 2008 and another regional symposium in Georgia in September. The response was overwhelmingly positive and resulted in several sales on the spot. That's saying something in view of the 6+ month delivery date and the fact that no production machine had actually ever been built!
Brief Overview of The Modern Rose Conversion Kit

1) Name: Modern Rose (MR)
2) What is it? An accessory for an existing lathe.
3) What does it Do? MR imparts most Rose Engine Capabilities to an existing lathe. It further preserves the original lathe’s ability to function as originally intended, i.e. conventional high speed lathe operation. (See: Rose Engine Capabilities Section)
4) How does it do it? When installed, MR allows the existing headstock and sometimes the existing tailstock to rock back and forth perpendicular to the bed ways of the lathe along a predictable path. A future upgrade will give it the capability to plunge the headstock and sometimes the tailstock parallel to the bed ways. Both actions require either cams or rosettes.
5) What makes the Modern Rose device unique?
   The MR is not a stand alone machine unlike all other rose engines. It is a bolt on attachment for an existing lathe. It adds almost all “Rose Engine Lathe Capabilities” to an existing lathe not originally designed to have those capabilities. These capabilities include, but are not limited to:
   i) Rocking headstock and sometimes rocking tailstock perpendicular to the bed ways.
   ii) Plunging headstock and sometimes rocking tailstock parallel to the bed ways.
   iii) The lathe may still be used as intended at high speeds without rocking or plunging when in “Conventional Mode”.
   iv) No modifications are necessary to the existing lathe such as drilling holes, welding pieces or cutting anything off, etc. The Modern Rose parts simply bolt onto an existing lathe.

These capabilities are not unique. Stand alone machines have been around since the 1600s and several different machines are still available today. The various parts of the Modern Rose device which allow an existing lathe to be used in this manner are unique.
Advantages To The Bolt-On Kit Approach

Ubiquitous platform. Everybody has one. According to Mr. Patrick Curry, Director Product Management for WMH Tool Group/Jet Wood, there are in excess of 125,000 Jet Model 1014 mini lathes already in use in the woodworking community. Sales have been averaging over 10,000 units per year for the last 12+ years. The Jet mini lathe has been one of the best selling tools they have ever produced. We spoke with him extensively at the National symposium in Richmond, Virginia in the summer of 2008.

It’s Simple. Open the box. Bolt the unit to your existing lathe. Make saw dust in about an hour.

It’s Quick. A typical installation can be done in about an hour, mostly with Allen wrenches.

It’s Easy. Uses existing mounting holes. No drilling, threading or tapping, no electrical work. Use mostly Allen wrenches to assemble.

It Costs Less. If someone else has built most of your machine, your part doesn’t cost as much to produce or to purchase.

It’s Complete. The customer doesn’t have to buy or build anything else to make saw dust.

It’s Reversible. Should the customer choose to move The Modern Rose accessory to another lathe or wishes to sell it altogether, he can simply unbolt the unit and reassemble his mini lathe to factory original. No one need ever know it once held a Rose Engine Conversion Kit.

It’s Still a Lathe. Our kit allows the user to turn items in regular high speed conventional lathe mode. They can quickly change the mode from High-Speed to Rose Engine in about a minute.

It’s Expandable. We have designed and built the mounting plates with future upgrades in mind. There is plenty of room to add vastly more capability through other accessories as they become available. Such as: threading, barley twist, template following, between center rocking (the tailstock will be synchronized to rock with the headstock – pen turners will love this!) pulsing where the headstock moves toward the tailstock (rather than rocking only), electric drive (using a gear motor rather than a hand crank) for the main drive assembly.

It’s Portable. Still relatively heavy while fully assembled, many of the parts slip off in seconds for transport. This will reduce the weight sufficiently for a vacationing wood turner to load his mini lathe into the trunk and head off to vacation land. It will be light enough for a demonstrator to carry it to a club demonstration location or woodturning symposium with little difficulty.
The Product Description (From our web site)

The Modern Rose is a bolt-on conversion kit that turns your existing Jet 1014 mini lathe into a full blown rose engine in about an hour. It imparts full rose engine capabilities to an existing tried and proven platform while preserving conventional fixed high-speed wood lathe operation.

This is brand new. You have never seen it before - no one has. Imagine a bolt-on accessory that will impart the ability for your existing lathe to do all of the things a Rose Engine is known for. With various accessories and cams, it will also turn ovals, cut threads, turn a barley twist, and follow a template. Another option is to have the tailstock rock in synchronization with the headstock. Fun for penturners. But wait! Your lathe still functions in the conventional high-speed fixed mode as well. What's even better, you open the box and bolt The Modern Rose onto your lathe in about an hour. Nothing else to make, build or buy before you begin cutting wood! We even use the existing mounting holes so you don't have to cut, drill, thread or tap anything. There is not even any electrical work to do. This is a modular based system so when we develop accessories from time to time, they will easily bolt onto your existing setup. We will never stop innovating and improving The Modern Rose. Who knows what all it will do by the time we are finished. Should you ever wish to remove The Modern Rose (to move it to another lathe or to sell it); you just unbolt it and reassemble your Jet Mini like it came from the factory.

Key Features

- Everything needed to bolt on your Modern Rose conversion kit in about an hour
- Retains high speed conventional lathe mode capability
- Lathe headstock pivots
- Cams included. The exact number has not been determined yet, but currently we think between 20-25 cams
- At least two rubbers will be included. One single point ball bearing and one double point ball bearing. We will supply various sized bearings for the rubbers.
- Motorized cutting frame included
- Various fly cutters included
- Various carbide triangle or diamond insert tooling and mounting wheel included.
- 1" tool post and mounting system allows use of cutting frame with fly cutter and carbide insert tooling. (Future upgrades include tool post holders for a Dremel™ tool and laminate trimmer motor to utilize 1/4" shank router bits.)
- Cutting frame is adjustable from horizontal to vertical and any position between
In high speed conventional lathe mode, you mount a 1” tool rest in the tool post mounting system

Riser for tailstock for conventional high speed lathe operation

Timing belt drive technology is used to rotate the work piece and operate the cams which completely eliminates slippage

Instruction manual and DVD

Allen wrenches for assembly

Owner supplies

Jet model 1014 mini lathe, manual or electronic variable speed

Work holding device; scroll chuck or small face plate

### Pricing

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**Future Accessories**

Threading accessory – allows threading of lidded boxes, etc.

Pulsing Capability – allows headstock to pulse toward tailstock instead of only rock perpendicular to the lathe bed.

Barley Twist Capability – allows geared synchronized movement similar to a Legacy Ornamental Mill for small work pieces for traditional barley twist designs on pens or other spindles.

Oval Capability – allows user to make and decorate oval work pieces both inside and outside.

Tailstock Rocks – allows tailstock to rock in synchronization with headstock. Ideal for pen turners or for decorating long thin spindles.

Off Center Turning – allows cutting frame to shape work piece as though it were made with off center chucking.

Additional Cams – New patterns will be a constant offering. Many designs will come at the request or suggestion of our customers.

Cutting Frame Tool Holders – Some customers will want to mount a small laminate trimmer or router or Dremel tool to their Modern Rose. We will offer adapters for that purpose.
## Price Sheet (from our web site)

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<th>Modern Rose Price Sheet</th>
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### Notes:

1. The tailstock will ship with a fixed riser block to allow conventional high speed lathe operation. In order to sync it to the movement of the headstock, we will supply a pivoting tailstock mount and a method to tie it to the headstock. **Pen turners** will be especially interested since they can utilize a pen turning mandrel with the tailstock and add rose engine decoration. Spindle turners will be able to work on long narrow spindles, like candle sticks or bobbins.
2. Threading and Barley Twist capabilities will employ the acme lead screws supplied with every Modern Rose Conversion Kit. It will tie the rotation of the headstock spindle to the X axis lead screw. Various gears will determine the pitch. There may be a way to accomplish both threading and barley twist in the same accessory. If so, it would result in a large cost saving for you.

3. Although not what you normally think of as an accessory, a separate set of cams will give you the ability to do really beautiful oval work.

4. TBD = To Be Determined
Market Potential

A chicken in every pot! Every current and future owner of a Jet 1014 mini lathe (and later, all wood lathes) is sure to want a Modern Rose Conversion Kit for their lathe. That is literally hundreds of thousands of potential customers. The only thing stopping them will be money to acquire it, the time to learn to use it, information as to where to purchase their kit and an understanding spouse.

We already know there are in excess of 125,000 Jet model 1014 lathes in the woodworking community. Our first effort is aimed at that existing customer base and at those willing to purchase a Jet 1014 specifically to utilize The Modern Rose Conversion Kit in its current form.

There are other brands of mini lathes (some are called midi lathes), Delta, Rikon, Grizzly, Penn State and a host of offshore no-name imports. That allows room for future expansion and other product offerings. A yet to be developed universal mounting plate system along with other adaptations may double the size of the potential customer base.

There is always the possibility that some machinery companies would wish to offer the kit already installed on a brand new lathe or that they would wish to offer it directly to their customer base. Jet, Delta and Penn State come immediately to mind.

Retailers will want to have this available. Logical customers include Woodcraft, Rockler and Sears along with other larger independent tool retailers. Some larger Ace Hardware retailers such as Highland Woodworking in Atlanta and 7 Corners Ace Hardware in Minneapolis/St. Paul. Jet wholesale distributors may wish to carry units for their smaller tool dealers.

This market may be ever expanding as education teaches users the finer points of ornamental turning. This “Kit” brings a heretofore unthinkable technology to the average turner or group of woodworkers with amazing ease. As the kit is exposed via woodworking trade shows, turning symposiums and turning club demonstrations, sales will tend to increase for many years to come.

And that’s just in the USA. Then there is Canada. We already have a relationship with a reputable Canadian company who may wish to introduce the product to the Canadian market for us. Europe and Australia are logical markets as well.
Marketing Approach

1) Direct Sales
   a) Using existing customer referrals and the internet, we will sell direct to the end user.
   b) Turning Club presentations by The Modern Rose personnel will result in direct end user sales.
   c) Woodworking show presentations will result in direct end user sales
   d) Woodworking Symposium Vendor Booths and Class Rotation demonstrations will result in direct end user sales.
   e) Print media advertising will result in direct end user sales.

2) Retailers will result in indirect sales
   a) Various retail tool stores will carry The Modern Rose conversion kits for sales to their customers.
      i) Woodcraft
      ii) Rockler
      iii) Sears
      iv) Larger Ace Hardware Stores
      v) Larger True Value Retail Stores
      vi) Larger independent tool retailers
      vii) Northern Tool
   b) Internet Marketers will participate in a drop ship program.
      i) Amazon
      ii) Craft Supplies US
      iii) Packard Woodworks
      iv) Penn State Industries
      v) Steebar
      vi) Augums Pen Works LLC
      vii) WoodWrite Ltd.
      viii) Hut Products
      ix) Eagle America
      x) MLCS

3) Member Marketing
   Special member discount programs and bonuses will be made available to various organizations such as:
   a) AAW American Association of Woodturners
   b) Various Woodworking Clubs and Guilds
   c) Home Handyman Club

4) Monthly Modern Rose Email News Letter by subscription
   a) Periodic Specials and Discount codes
   b) Featured Accessory specials

5) Grand Opening Demonstrations for Certain Retailers

6) Tool Manufacturers Cooperative Programs
   a) Jet, Powermatic WMH Group
   b) Delta Porter Cable
   c) Rikon
   d) Grizzly
   e) Robert Sorby Turning Tools
   f) One Way Manufacturing

7) Purchase Financing
   a) We will offer financing through banks, a branded credit card program, finance
companies and possibly Sears Credit in order to accommodate customers wishing to pay over time.
Market Timing

Thanks to The American Association of Woodturners, AAW, and its 15,000+ members, forums are readily available to get the word out. These very enthusiastic folks will eagerly demonstrate the modern rose totally without our assistance. We need but sell kits to the members, provide instructional DVD’s and they will do the rest. There are already active forums and internet discussion boards in place. They are generating lots of interest in both the McGill home built version and the Lindow-White Rose Engine at present. Beginning in a couple of weeks, The Modern Rose will quickly take over the first position as the machine of choice.
Principles
Patents

A professional patent agent has been retained to obtain the necessary patents. The process has been initiated and is ongoing. Final patents have not been obtained and will take the normal amount of time.
Appendix A: The Holtzapffel Rose Engine Lathe

An excerpt found at: [http://ourworld.compuserve.com/homepages/jeharr/history.htm#h4e](http://ourworld.compuserve.com/homepages/jeharr/history.htm#h4e).

“A beautiful example of the finest work put out by the Holtzapffel is in this Rose Engine Lathe, one of only 8 ever made. These were a specialized type of ornamental lathe in which the headstock rocked back and forth as controlled by a rubber moving against a rosette or cam-like pattern mounted on the spindle at the same time as the lathe spindle rotated. Rose engine work often reveals flower patterns and convoluted, symmetrical, multi-lobed organic patterns. It has the potential to be very complex and to produce beautiful and unique patterns unlike any other on the ornamental lathe. Excellent engraved plates of ornamental turning and an extensive depiction of various OT apparatus can be found in Holtzapffel Vol. V (see Bibliography). Much of the historic ornamental turning machinery that has survived is now held by collectors or is in museums. Only a small number of machines are still being used for their intended purpose. Most of this machinery bespeaks an era of unbounded optimism and is beautifully made and a joy to view and use. They represent a time in history when quality still meant "excellence." To my view, the makers and users of this machinery were obviously on a quest to participate in the experience of beauty and "a thing done well," and from our own perspective in time, succeeded admirably.”
Appendix B: MDF Rose Engine Overview

Jon Magill
v2 – 2/28/07

This document is intended as an overview to the MDF Rose Engine project published in the Spring 2007 issue of the American Woodturner. This article is meant to complement the MDF Rose Engine Construction Instructions document posted on the AAW website.

A Little Background on Ornamental Turning

Ornamental turning is many-faceted branch of turning which uses specialized lathes and cutting tools. There are a number of highly specialized forms of lathe work commonly grouped together under the name of ornamental turning, or OT for short. Historically it has been known as “complex” or “eccentric” turning, only to distinguish it from “plain” turning which can be accomplished between centers. At the risk of greatly over-simplifying it, the two main areas of ornamental turning are generally referred to as “indexed work” and “engine turning”.

Indexed work is typically done by rotating the headstock of the lathe to an indexed position, making a precise cut, then moving the headstock to the next indexed location and repeating the process. Indexed type of ornamental turning can be done on almost any lathe—you may be turning on a lathe that has this capability today. All that is required is a division plate of some sort, a slide rest to manipulate the tool accurately, and a rotary cutter of some type.

Engine turning by contrast, produces characteristic “wave” patterns on the work by mechanically moving the work or the tool. Most people will be familiar with engine turning in the form of the ornate geometric metal engravings found on old watch cases. Engine turning encompasses rose engine work. A rose engine differs from other lathes in many ways, but the biggest difference is that the headstock is not stationary. The headstock is hinged, allowing it to pivot back and forth, called rocking.

By controlling this rocking motion with a rosette—a cam-like disk—you can cut countless patterns. Rose engine turning has been seen in examples of work dating back to the early 1600’s. Early work was carried out as decoration on drinking vessels, typically made of lignum vitae. It is assumed that this style of work became known as rose engine turning due to the similarity of shapes in that early work to the petals of a rose. Although ornamental turning has been around for centuries, Generally speaking, its popularity peaked in the Victorian era prior to the introduction of the automobile. It was during this heyday that the rotary cutting devices or fly cutters were popularized, largely replacing many of the profiled drilling tools and fixed cutting tools that had been the historical mainstay. Rare and obscure in the woodturning world, few rose engines were ever produced. Today, the number of existing antique rose engines designed for woodturning can probably be counted on two hands, and many of those are in museum collections. A few modern rose engine lathes exist, but as the rose engine lathe can be a complex machine, they are typically rare and expensive. The Holtzapffel lathe is typical of the rare Victorian-era rose engines produced. Contrary to their modest reception in woodturning, the rose engine did find its niche in the jewelry and watchmaking world. An abundance of work was produced on industry-specific rose engines known as “round engines” or “rotary engines”. The round engine term was ostensibly used to differentiate the rotating lathes from their counterpart “straightline engines”. Straightline engines also cut characteristic wave patterns in metal, but they do so off of a “pattern bar” which has bumps, similar to those on a rosette, but on a flat, straight piece of metal. Engine turning by either technique on metal produces characteristic wave patterns on the work.
by mechanically moving the work past a fixed cutter. Round and straightline engines created
the ornate and geometric patterns found on old watch cases, cigarette cases, lighters and fine pens. Engine
turning is also recognizable, under the enamel, in pieces like the world renowned Fabergé eggs. Today many
ornamental turners resort to modifying machines designed and built for the watch and jewelry industry which
were produced into the 1950’s. Notice the differences between the rosettes characteristic of a woodturning
rose engine on the left, and the more subdued and higher-count patterns of those on a typical metal working
rose engine on the right. In contrast to plain turning, the workpiece in ornamental turning is typically either
fixed or rotating slowly (generally under 10 rpm). In ornamental turning, the tool is usually moving, in the form
of either a fly cutter or a drilling-spindle, revolving at speeds similar to a router bit. Profiled cutters are often
employed. For some types of work, a fixed tool is used that merely scratches the surface, to a precisely
controlled depth, which is the technique employed in most metal working techniques like watchmaking.
Regardless of the machines used, most contemporary ornamental turning is decoration applied to partially
hand-turned work, resulting in a combination of hand turning and ornamental work. The ornamentation is
just that—additional decoration added to a piece of work. In contrast, much of the OT work from the
Victorian-era had ornamentation covering every possible surface.

What is a rose engine lathe?

As mentioned above, a rose engine differs from other lathes primarily because of its rocking headstock.
Although there are many different designs, all rose engines have at least one rosette, most have a “barrel”
holding multiple rosettes allowing the user to move easily from one pattern to another.
The way a rose engine functions is that a rubber is placed against the edge of a
rosette and that serves to push the headstock away, while an opposing spring action
pulls the headstock back, keeping the rubber in contact as the rosette rotates
through its pattern of peaks and valleys. Because the rosette is typically mounted
on the spindle, each rotation of the spindle will result in cutting one full version of
the rosette pattern on the workpiece. Another distinction is that unlike regular turning, contemporary rose
engine turning is usually done with a motor-driven fly cutter, known as a cutting frame. The turner
rotates the piece slowly into the cutter by hand-cranking the lathe. The most common
cutting frame, a horizontal cutting frame, is a tool supported on some sort of
sliderest, which has a fly cutter rotating in a horizontal plane. The cutter is spinning
at high speeds—similar to router speeds—and taking light cuts on each pass.
Historical work carried out on rose engines was done with a fixed tool. The tool
would have a profile cut in it, and then be clamped very securely in a horizontal
position. The tool was essentially a very large, profiled scraper. The lathes had to
be very robust for this type of fixed tool work. On each revolution, either the work
would be moved incrementally closer to the tool or vice-versa. Each revolution
would scrape off a small amount until the completed pattern and depth were
achieved. Practitioners of fixed tool rose engine work today are exceedingly rare,
as are the lathes to accomplish this type of work. The photograph at right shows
one of the Coburg Ivories, believed to have been produced mainly by this fixed-tool
technique. The collection of remaining Coburg ivories are on display at the Pitti
Palace Museum (Palazzo Pitti) in Florence, Italy. They were made in the early
1600’s.

If You Would Like to Learn More...

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
Appendix C: Links

Links:

http://www.themodernrose.com
http://www.woodturner.org/
http://www.roseengine1.com/
http://ornamentalturning.net/videos/ (Watch Free Videos on the web)
http://www.turners.org/oti.htm
http://www.ornamentalturners.org/assets/content/RoseEngine.pdf
http://www.valleymetal.org/Rose%20Engine%20Turning/index.htm
http://joshuasalesin.com/news.html
http://ornamentalturning.net/news/calendar.html
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http://www.goldmachinery.com/machinery/5404.htm
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