

About the Artist:

David C. Roy

Mechanics and motion have always fascinated me. During college I studied physics, engineering and chemistry to further my understanding of how things worked. I graduated with a degree in physics from Boston University in 1974. This intuitive understanding of motion and mechanics combined with the artistic influences of my wife, Marji, led me to the creation of kinetic sculptures. In 1975 we started “Wood That Works” and I became a full time sculptor. Since then I have designed and handcrafted over 150 different limited edition and one-of-a-kind kinetic sculptures. I have exhibited in numerous juried, invitational and group events. My work is displayed in galleries and private collections around the world. I currently maintain a studio in rural northeastern Connecticut.

Wood 
that Works

Thunderbird • Directions

Kinetic Sculpture by David C. Roy
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To the Owner...

Hello,

Welcome to the world of Wood That Works. This Thunderbird is a one-of-a-kind sculpture made by me in 2016. It has been part of my collection since then but it is time to make space for other designs.

I build, test and pack each sculpture myself, doing about 4 pieces per month. Designing and building kinetic sculptures like Thunderbird has been my full time occupation since 1975. I hope Thunderbird brings you and other viewers as much enjoyment as I've found in making it.

Thunderbird has been mounted on a wall in my shop and running for at least 2 complete windings (many hours in this case days) before I pack it. I make every effort in design, construction and packing to make sure the piece will perform problem free for years to come. I use only the finest materials. Of course, problems can still occur no matter how hard I try to prevent them. My answer to this is a warranty to the original owner against defects in materials and workmanship for three years. See the guarantee section of this booklet for details.

It leaves me happy and satisfied to find that my work has made its way into new lives. I hope it brings you years of enjoyment.

David C. Roy

Directions (continued):

To Start:

- If the sculpture does not start by itself after winding, **gently** push both patterning wheels in a clockwise direction.

To Stop:

- Slow the motion of the patterning wheels with your hand and let them come to rest.
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Before Moving Sculpture:

- Always tape the spring-belts in place before moving the sculpture. This will save a lot of aggravation when it is time to set the piece up again.
 - See the diagram for the best tape locations. They are shown as gray rectangles.
 - Never lay the sculpture on a horizontal surface for a long period of time without supporting the patterning wheels. I use crumpled newspaper to support and separate the wheels when packing the sculpture.
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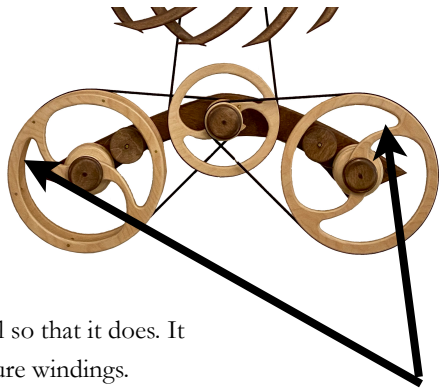
Guarantee:

- My kinetic sculptures are guaranteed to the original owner for a period of three years. All warranties expire with transfer of ownership from the original owner. Damage of the sculpture from exposure to extremes of high or low humidity, or to adverse hot or cold temperatures, or damage caused by normal wear and tear, accidents, misuse, or modification will not be covered by the warranty. Shipping and insurance to and from Wood That Works is the responsibility of the purchaser.
- I will charge a reasonable repair fee if the sculpture was damaged by misuse or needs refurbishment from normal wear and tear.

Directions (continued):

To Wind: Important First Time winding instructions:

- The first time you wind up this sculpture after unpacking requires special attention. Shipping may have caused parts to move unexpectedly.
- First look for obvious things that might have come out of alignment in shipping like belts out of pulleys or spring bands out of spools.
- Only wind each winding wheel
TWO turns in a clockwise direction for the first run. Make sure the metal band is winding inside the larger spool walls. If it isn't, shift the small spool so that it does. It should be fine for all future windings. A short run will show you if parts slid out of alignment during shipping.



Wind in these 2 locations

- If it doesn't run as expected email David at david@woodthatworks.com.

Subsequent windings:

- Turn each winding wheel (there are 2) clockwise 23 turns if completely unwound. Less if not.
- Pay close attention to the top of the light colored wood spool directly behind the winding wheel. Stop winding as soon as you see the red tape appear on the metal band. This is placed about 2 turns from the end. Winding beyond this point may damage the sculpture.
- The ratchet pawl at the top of the mechanism keeps the spring from unwinding rapidly. NEVER touch the ratchet pawl after the sculpture is wound. the spring will release and damage will probably result.

About Thunderbird:

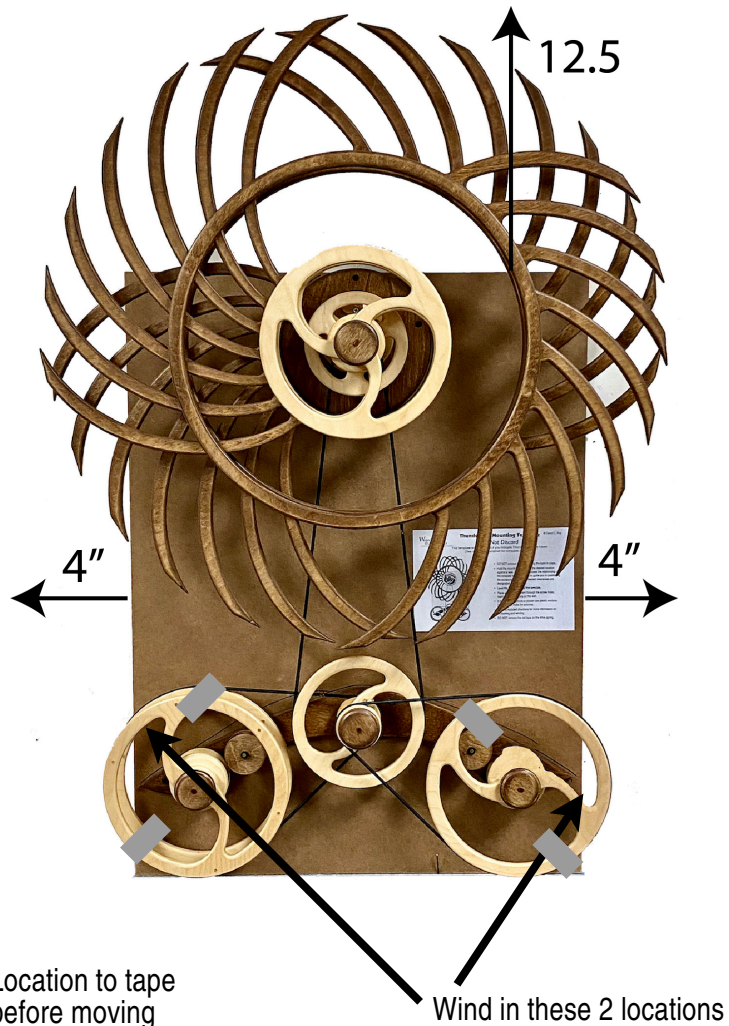
I designed and built this sculpture in 2016. It was partially inspired by my sculpture Infinity but I wanted a pattern that was more complex. Infinity had a pattern that was fairly simple. I designed a chaotic mechanism to drive the pattern in unpredictable ways. I wanted to try the inverse, a more complex patterning wheel with a predictable drive mechanism. To this end I started playing with an inside out wheel where the spokes were asymmetrical. Asymmetrical wheels are harder to design because finding the balance point is not a simple matter of just finding center. The mass of each section of the wheel has to match its opposing section on the opposite side of the wheel, regardless of the shape of that particular section. I love this kind of challenge. It often reveals interesting patterns.

I draw my parts in Adobe Illustrator and then animated them in Adobe After Effects. The calculation of center of mass is accomplished in a program no longer produced for the Mac called Working Model. I use a vintage Mac to run this software and it still preforms admirably.

The result was a new pattern that I really enjoyed. I decided to drive it with a double spring long running mechanism and live with it in our home. I like living with long running sculptures because my workday is filled with winding and I don't need more at home.

The more I watched it the more I wanted to share it. I decided to simplify the wheels a bit using fewer, somewhat thicker spokes and power it with a center drive mechanism. Eventually this became Duality which I introduced in 2017 and it became a collector favorite.

So now it's years later and although I still enjoy my long running Thunderbird it's time to sell it and make room for some new designs. I've been doing a lot of designing since my "retirement" and I need the wall space!



One-Of-a-kind
 Size: 31" w x 43" h x 6.5" d
 Power Source: negator spring
 Approximate Run Time: 35 hours
 Materials: hardwood plywood, bearings,
 Thunderbird ©2016

Directions:

To Mount on Wall:

- DO NOT remove the tape holding the spring-belts in place.
- Hold the mounting template in the desired location against a wall. The diagram on the previous page shows the relationship of the template to the sculpture to guide you in positioning the sculpture on the wall. Minimum clearance distances are noted. The sculpture is centered on the template.
- Attach the template to the wall with 1 screw
- Level the bottom edge of the template. Insert a second screw to mark the location and hold the template in place.
- Insert a screw a couple of turns into each hole to mark their positions on the wall.
- Remove screws, remove and save the template.
- Drill pilot holes in the wall using a 1/8" bit. If the wall is sheet rock or plaster use the plastic anchors provided. Make sure the anchors are set flush to the wall.
- Screw both the upper part and lower part into place.
- Remove all blue tape holding springs in place.
- Thread the included extra spring belt from left to right through the center of the upper part of the sculpture. It should be positioned to rest inside the pulley slot.
- Bring this spring belt down and around the center pulley of the lower portion and hook the two ends of the spring belt together.
- Remove the blue tape.

