



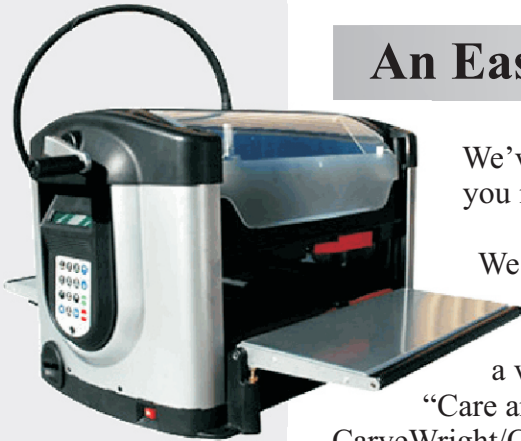
# CARVEWRIGHT™

## WOODWORKING SYSTEM

# TIPS & TRICKS

January 2008

### An Easy Project Tutorial & Article This Month!



We've got a little extra treat for you in this issue!

We have two topics this month...a simple Memo Board project tutorial and a very useful article on the "Care and Feeding of Your CarveWright/CompuCarve Machine"!

Please join us as we welcome Jeff Birt as a co-author for this month's newsletter! He has put together a terrific guide that outlines the practical steps you can take to keep your carving machine in tip-top condition.

Jeff is one of the Moderators at the CarveWright User Forum, and is a long-time contributor. He is well-known for offering sound advice and assistance for the forum users.

If you're not already a member of the CarveWright User Forum, please join (it's free!). You'll find helpful tips, answers to your questions, and a host of other

features that will make your experience with your CarveWright/CompuCarve machine more productive and enjoyable! The web address to the forum is: <http://forum.carvewright.com/index.php> Don't miss out on this valuable resource, and be sure to check in daily for the latest news and tips!

### Easy Memo Board Project Tutorial

by Michael Tyler of [www.CarveBuddy.com](http://www.CarveBuddy.com)

I made a simple Memo Board as a house-warming gift for some friends of mine. They have a country-style "rooster" theme in their kitchen and I borrowed a quilted hot pad that had the colors of their kitchen decor to guide me for the final painting.

I used the line drawing tools in Designer to create the shapes for both the memo board and the shelf.

The text was done within Designer as well. For the Rooster detail carving, I used one of our commercial patterns from the CarveBuddy website (Rooster6x65\_1), but you can use whatever pattern you want or none at, if you wish.

Everything was carved and cutout from a pine board that measured:

**28" Long x 11.25" Wide x 0.75" thick**

These dimensions allow for the extra 7" added to the layout so that the board will be kept captive by the rollers during the entire carving and cutout procedures. This is very important. See the Dec. '07 issue of TIPS & TRICKS for details on the recommended project setup procedures. You can download a copy here: [http://www.carvebuddy.com/PDFs/CW\\_TipsandTricks\\_Newsletters/CarveWrightTips&Tricks\\_Dec07.pdf](http://www.carvebuddy.com/PDFs/CW_TipsandTricks_Newsletters/CarveWrightTips&Tricks_Dec07.pdf)



To learn about the CompuCarve and CarveWright machines, please visit the manufacturer's website at: [www.carvewright.com](http://www.carvewright.com)

For Patterns you can add to your Designer software library, please visit: [www.carvebuddy.com](http://www.carvebuddy.com)

# Memo Board Project (cont.)

## STEP 1

Start the Designer software and create a new “virtual” project board with these dimensions: 21” x 11.25” x 0.75” thick... or change the dimensions/thickness according to the stock you use (remember - make your “virtual board” 7 inches SHORTER than your “carving board” will be!). Now, use the “Line Segment Tool” to draw whatever shape you desire for your Memo Board. I selected the “Snap to Grid” feature for help in laying out the outline and also used the line utility, “Change Form Tool” (make the “Utility” Toolbar visible from the selection in the View Menu) to convert the memo board’s top straight line to a curve, so I could create the arched top. I then turned off the “snap” feature and “tweaked” the arch to my liking.

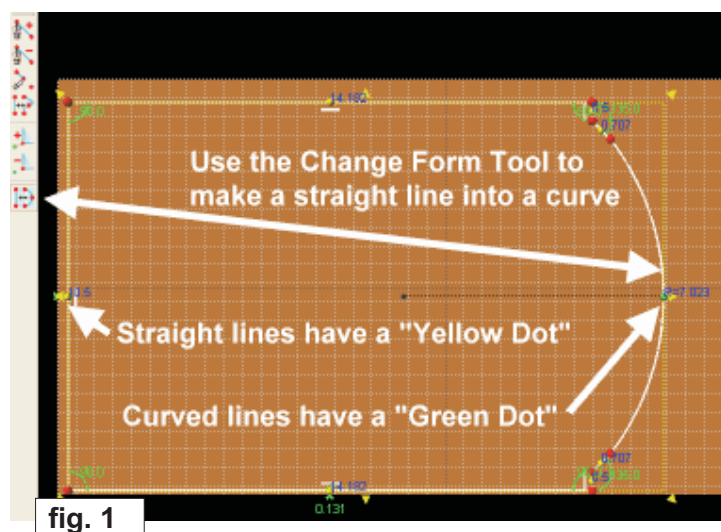


fig. 1

I created the recessed curved-top area the same way, made it a carve region, then typed the text and rotated/positioned the words. For the shelf, I just copied and pasted the board outline then repositioned the lines to make the shelf profile. I also drew a narrow rectangle on the shelf and assigned a recessed “Horizontal Dome” to it so a pencil wouldn’t roll off the shelf. I created a recessed carve region rectangle for the insertion of some cork shelving sheeting. The cork sheet is about 1/16” thick, but I made the recess 1/8” deep (0.125”) so I could apply two layers of cork in it. You can download the completed version of the Memo Board outlines and text to see how each component is laid out/assigned. Download the “MemoBoard\_Blank\_Layout.mpc” at:

[http://www.carvebuddy.com/FreePatterns/MemoBoard\\_Blank\\_Layout.zip](http://www.carvebuddy.com/FreePatterns/MemoBoard_Blank_Layout.zip)

(The file is zipped, so you’ll need to save it to your hard drive, then unzip it before you can open the mpc.)

## STEP 2

I added my CarveBuddy rooster pattern between the text and adjusted the Depth and Height (depth0.3” / height 999), and assigned cutpaths to the perimeter of the shelf and memo board shape. (Flipped the cut so that it will cutout on the outside of the lines.)



fig. 2

## STEP 3

When done, save your project, then upload it to your memory card. NOTE: If a project has a cutpath very close to the ends of the “virtual” Designer board, you will get a false error message, warning you about possible interference with the aux roller and asking if you want to Manual Jig or Auto-Jig when you are uploading the project to your memory card. You should click “Ignore” and DO NOT select Manual nor Auto-Jig. A **minimum** 1/2” clearance on the top of the board is the only area you need clearance on for a cutpath. You do NOT need any cutpath clearance at the bottom or sides of the board at all. The bit cannot hit anything at those edges when performing a cutout, so you are perfectly safe. This assumes your actual board will have the extra 7” length and that you select “center on length” when you do the project setup at the machine. Here’s what the “false error” message looks like...

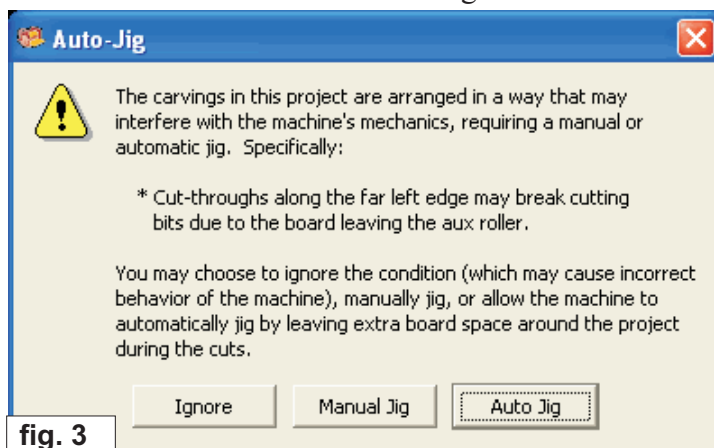


fig. 3



## Memo Board Project (cont.)

### STEP 4

After carving, your board will look something like this.



fig. 4a

Now, separate the parts, and sand to prepare the wood surfaces for final finishing.



fig. 4b

Glue/fasten the shelf onto the board.

### STEP 5

I painted parts of the design to match a kitchen decor, applied a light pine stain overall to "antique" it, and finished with two coats of wipe-on satin poly. I then cut two cork shelf sheets to fit into the large recess. It has a "sticky-back" making installation simple. Lastly, I put a loop hanger on the top arch and gave it to my friends!

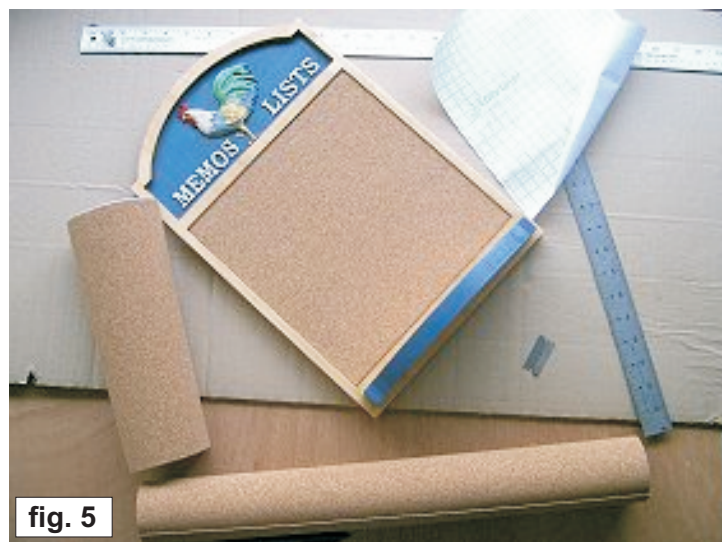


fig. 5

## The Care and Feeding of your CarveWright/CompuCarve!

by Jeff Birt of [www.ALLCW.com](http://www.ALLCW.com)

It has been said the cleanliness is next to godliness, and while I don't know about that, I do know that keeping your CarveWright clean and properly maintained is the key to ensuring proper, reliable operation and superior carvings. As with any job, there are certain tools that are essential, other tools that make the job easier and of course you always need a few supplies to get the job done. This article will present some basic maintenance tips to help you keep your machine running and carving like new.

### The Tools of the Trade

Before delving into the nitty-gritty (a little cleaning humor there) let's take a look at some of the tools that we might employ in task. The following tables encompass the 'gotta have' tools, some tools that make the job easier and the proper lubricants to use on your machine. You are likely to have most of the items on the essential list already, while the items listed under 'Nice to have' are perfect wish list material. **TIP:** I have listed lubricants that have been suggested by CarveWright or that I have found to work well. Not all lubricants are created equal; some can soften plastic and others can encourage metals to oxidize. Be careful when choosing substitutes. I would strongly discourage the use of any type of oil on the machine as oil and saw dust don't mix well!

#### Essential tools:

- 1) Shop-Vac ©
- 2) Soft rags or paper towels
- 3) Small brass brush
- 4) Small rubber tubing to protect your bits and fingers
- 5) Small paint brush, 1/2" or so
- 6) CarveWright® Bit Adapter Wrench,  
<http://carviewright.com/store/product.php?productid=16137&cat=250&page=1>

#### Nice to have tools:

- 1) Air compressor w/air gun
- 2) Dust collection system
- 3) Small accessories for your vacuum

#### Lubricants:

- 1) Gunk (Liquid Wrench) © Industrial Chain Lube with Moly, #L716
- 2) Gunk (Liquid Wrench) © Dry Lubricant with CERFLON, #L512
- 3) Gunk (Liquid Wrench) © Silicone Spray, #M914  
[http://www.gunk.com/menu\\_LP.asp](http://www.gunk.com/menu_LP.asp)
- 4) White lithium grease
- 5) Bicycle chain wax

# The Care and Feeding of your CarveWright/CompuCarve! (cont.)

## The Preflight Checklist:

It may sound strange but the best time to start maintaining your machine is before you actually start a carving session. If you get in the habit of performing this quick pre-flight check list each time you use your machine you can head off many potential problems before they cause a failure.

1) First and foremost you should inspect the bits/adapters that you are going to use for the project. Give each bit a quick visual inspection making sure the bits are not chipped and that there is no pitch build up. If needed, clean the bit with a small brass brush.

2) Next, make sure that your bit adapters are up to snuff. Are the bits properly positioned and the adapters' set screws tight? The 1/2" adapters should also be checked to ensure their collate nuts are tight.

3) Are there excessive dents in the adapter? The dents are good wear indicators, if they are very deep they can make the adapter hard to remove. If a new adapter dents quickly it can be a sign of a bad or clogged up chuck. (We'll cover chuck cleaning a bit later.)

4) Lastly, spray a bit of the dry-lube on each adapter before installing it into the machine.

This sounds like a large list but it goes pretty quickly.

## The Quick Release Chuck & Bit Adaptors

I normally check each bit/adapter as I load them into the machine during its homing phase at the beginning of the project, since you are waiting on the machine to home each bit it really does not take any extra time.

The quick release chuck has been the source of frustration for many users. Most chuck problems can be traced back to a bit adapter set screw coming loose, sawdust impaction of the chuck or improper bit/adapter insertion.

We'll cover chuck cleaning later, for now let's cover some tips for proper usage...

## Chuck & Adapter Checklist

1) Before starting a carving session it is a good idea to spray some dry-lube on a rag and wipe the inside of the chuck. This will help remove any surface oxidation or sawdust that has settled inside.

2) Raise the chuck collar fully and then release it in a sudden motion. You should hear a crisp 'snap' indicating that it is reasonably clean. If you see some sawdust falling out after the snap then you should clean the chuck before proceeding. See the cleaning section below.

3) I prefer a 'two-handed' approach to installing the bit/adapter; this is accomplished by holding the adapter collar up with the left hand and inserting the bit/adapter fully up into the chuck with the right hand. Hold the bit in place while lowering the collar and then attempt to gently wiggle the bit. There should be no noticeable wiggle of the bit/adapter in the chuck. If you are unsure of how well the bit/adapter is seated at this point take it out and try again

4) Also check the Y/Z truck assembly by attempting to gently wiggle it. There should be no free play.

Another source of concern for many users is the Bit Tip Locator Plate, commonly called the 'Bit plate' on the CarveWright Forum.

When the Y/Z truck assembly moves to the rear of the machine during the homing process; the Y-truck presses on the bit plate causing it to pivot out. The bit then touches down on the bit plate to gauge its height.

The pivot area of this plate can become impacted with sawdust and cause it to stick. It only takes a second at the start of each carving session to flip it out by hand to ensure that it moves freely.

In the maintenance section we'll cover some ways to keep it functioning properly.

# The Care and Feeding of your CarveWright/CompuCarve! (cont.)

The final set of checks involves the board you will be carving. Having a properly sized and fitting piece of stock is essential. The board should move freely though the machine without sticking.

1) The board to be carved should not be warped or cupped

2) The sides should be parallel to within 1/32"

3) The rear sliding guide should not be too tight against the board. A piece of paper folded double works as a spacing gauge; slip it between the board and rear fence as you adjust the fence.

4) You should also slide the board through by hand to ensure that it does not bind. Board binding can cause ripped traction belts, 'stair stepping' on cut outs, and broken gears.

The board must maintain a good contact with the board tracking sensor (little brass wheel in front). Any nicks or other defects can cause problems. Al, a.k.a. 'DigitalWoodshop' came up with the idea of placing a strip of painters tape on the bottom front of the board to ensure a good contact with the tracking sensor. I have found that this works especially well when using stock that has a slick or rough surface. And as Al says, "A foot of tape is cheaper than a board foot of wood".

## The party ain't over 'til...

Keeping your machine clean, really clean is the best thing you can do for it. You should clean your machine after each and every use. Sawdust that is allowed to accumulate will attract moisture and cake up and cause all sorts of problems. A good cleaning only takes 15-20 minutes and will save you a lot of time and frustration.

1) The first step in a good cleaning is to vacuum the saw dust out of the machine. A good Shop-Vac® is the tool of choice here, having small vacuum attachments can really help to get in the all the nooks and crannies. As you may know, vacuuming up sawdust can cause a quite a nasty static shock; older Shop-Vacs® tend to be worse in this respect. There are a few things you can do to eliminate this when cleaning your machine. First and foremost is to ensure that your vacuum (or dust collection system) is properly grounded. You should also keep the carver plugged in while vacuuming. While vacuuming keep one hand on the metal frame of the carver; this keeps the electrical potential of the vacuum hose, your body and the machine at the

same level so the static charge does not have the chance to build up. **TIP:** leave the last bit in the machine until you are almost done cleaning. This helps to limit the amount of sawdust that gets inside the chuck.

2) When you have vacuumed out all you can then it's time to blow out what is remaining. An air compressor comes in handy here or you can switch your vacuum's hose to the exhaust and use it as a blower (just make sure the hose is clear). If you are using an air compressor you do not need a lot of pressure for this job; turning your regulator down to #40 or so is recommended, too much pressure can do more harm than good. The areas to be sure and clear out include the Y-axis belt track(1), front and rear cavities(2), Y/Z truck assembly(3), cut motor(4), above the pressure rollers(5) and the 'bit-plate' (6). *See PHOTO 1* Sometimes after blowing out the machine I find I need to do a bit more vacuuming and then blow it out again.

3) Now that the worst of the saw dust is out you can go ahead and remove the last bit/adaptor and set it aside for cleaning. Your chucks biggest enemy is sawdust. So we want to keep it clean and lubricated. The first step is to blow the chuck out with some compressed air, or do the best you can at cleaning it with a small brush. Lift up on the chuck's collar and let it snap down a few times will to dislodge any stubborn sawdust clumps. An automotive inspection mirror can come in handy here to look up inside the chuck and make sure it is clean. Next it's time for a bit of lubrication. Lay a rag or piece of cardboard inside the machine to catch any drips and then wipe the inside of the chuck with a rag sprayed with the dry-plate lubricant. If your rag comes out 'rusty' looking, repeat the process with a clean section of rag until it comes out clean. This removes any oxidation and provides a bit of protection.

4) Now it's a good time to wipe down the pressure rollers. They tend to pick up all kinds of sawdust when carving. This prevents a buildup of sawdust on the rollers and it keeps sawdust from falling on an object while scanning. To clean the pressure rollers, take a clean rag and wipe down the roller, rotate it a bit and wipe again until you have the whole roller clean. Do not use any alcohol or solvent to clean the rollers as it will only dry the rubber out and ruin the roller.



# The Care and Feeding of your CarveWright/CompuCarve! (cont.)

5) Double check the bit plate area for sawdust and brush it out if needed.

6) Each bit/adaptor should also be cleaned after each carving session. Wipe of any sawdust, clean the cutting surfaces of any pitch build up with a small brass brush and then spray the adaptor, not the bit, with the dry plate lubricant. This will help protect the adaptor from oxidation. **TIP:** Another great suggestion from the user's forum is to use a small piece of rubber tubing to protect the bits while they are not in use. It not only protects the bits from damage it also serves to protect your fingers while handling the bits during installation and removal.

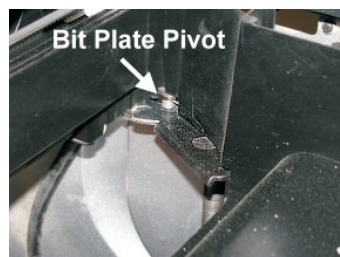
7) When you're finished, wipe down the rails for the Y and Z trucks with a rag to remove any dirt or sawdust accumulation. And give everything a quick glance just in case a step was missed. I know that checking all of these item sounds like a lot of work, but it really does not take very long. And it will save you a lot of time and frustration later on.

## Monthly Cleaning and Checks

There are a few other items that need a quick once over on a less frequent basis, about once a month works well and I typically do these checks following a normal "after carving" cleaning.

1) Wipe down the rails (a) that the Y and Z axis travel on as well as the vertical guide rods (b) that the head moves on with some silicone spray sprayed on a rag. The Y/Z rails really don't need lubrication but it helps to clean and protect them from oxidation. *See Photo 1*

2) Check that the bit plate is moving freely and give the pivot a shot of dry-plate lubricant if needed. Also inspect the contact area between the bit plate and Y-truck. The bottom right hand side of the Y-truck pushes on the bit plate to pivot it out. Check this contact surface for burrs and smooth them with some 400 grit or finer sandpaper only if needed. A single drop of bicycle chain wax placed on the index finger and rubbed onto the contact surfaces will keep it working smoothly.



3) The leadscrews that raise and lower the head tend to collect a low of dust and dirt. Wipe them down with a rag to remove any accumulated grime and re-lubricate them. CarveWright recommends white lithium grease and while I cringe at its tendency to attract sawdust I have not found a better alternative.

## The Flex Shaft

You should periodically place your hand on the flex shaft while the machine is running to gauge its temperature. You could also use an infrared thermometer if so inclined. The shaft should feel warm while in use but not hot. CarveWright recommends only lubricating the flex shaft when needed, that is when it starts to run hot. The flex shaft can be over lubricated resulting in the excess lubrication running into the cut motor and/or spindle bearings. I have ruined a spindle bearing myself by not paying close attention to the procedure recommended by CW, so be warned, do not over lubricate your flex-shaft. I've copied the official guidelines for flexshaft from CarveWright below. I follow these same guidelines but coil the flexshaft up and place it in a gallon size Zip-Loc bag. Then I spray the lubricant on the shaft inside the bag and let it set for an hour or so. This method is just a bit cleaner and perhaps uses a bit less lube. Let me stress again that you need to remove all the excess lubricant before reinstalling the shaft in the machine. I like to let mine hang for a while and then wipe it down before installing it.

1) Remove the flexshaft from the machine making sure that you look to see if your shaft has any brass spacers. These spacers will need to be orientated on the cutting head side when you are ready to reassemble the flexshaft.

2) Use extreme caution when using this lubricant. It is an irritant and is toxic. Lay out a plastic bag or sheet long enough to lay the flexshaft on. Using gloves and eye protection spray down the entire length of the flexshaft. Rotate the flexshaft and spray again. It is important that you let the oil penetrate the core.

3) Let the flexshaft dry for a few minutes and try to let excess oil run off before placing it back into the sheath. You may want to wipe the excess off with a lint free cloth or strong paper towel. You do not want excess lubricant to run into the bearings of the spindle.

## The Care and Feeding of your CarveWright/CompuCarve! (cont.)

4) Push the core back into the sheath and make sure that it slips into, and engages, the cutting motor. Turn the core with your fingers and feel for resistance of the motor. If the shaft spins without resistance push the core in as you slowly rotate it. You should feel it engage in the square slot in the motor. It should drop into the hole about 1/4".

5) Monitor the flexshaft while running your next project. Normally the entire length of the flexshaft sheath will be the same temperature and slightly warm.

That's about it. Maintaining a clean and lubed machine will certainly make your projects run more smoothly!

– Jeff Birt

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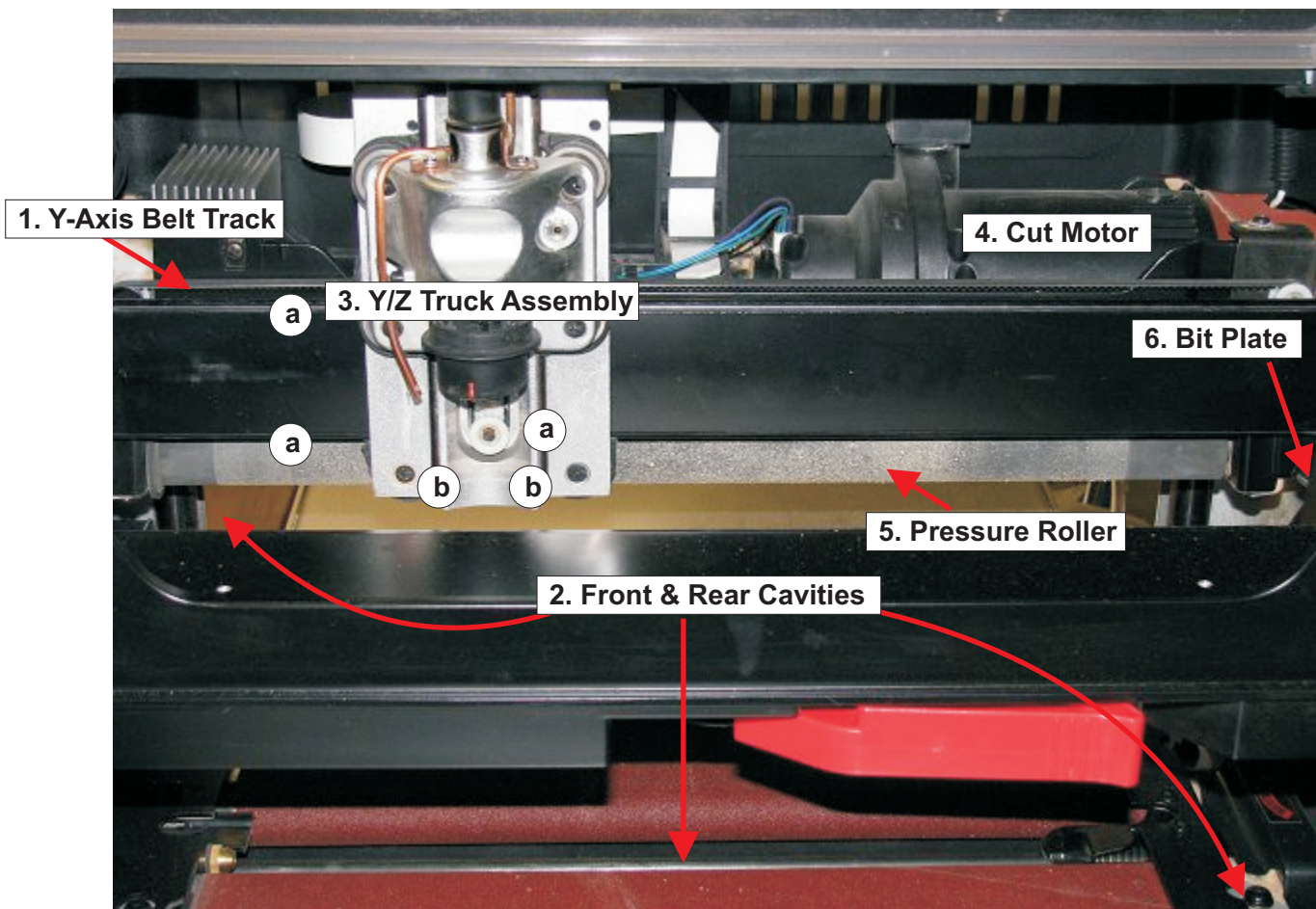


PHOTO 1