



Tool Tip...

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Gummed Tape Pasting Station



Figure 1: Removable dowel rod to hold the tape rolls.



Figure 2: Tape passing over the bottom sponge.

Introduction:

The gummed tape dispensing station shown here consists of two components: the tape dispenser and a holding fixture for the ball shell being pasted. The tape dispenser holds a roll of gummed tape so that it can be spooled off onto the shell being taped, and also wets the tape as it is being applied. The tape runs through a plastic container full of water, which also holds two sponges between which the tape passes through. This effectively wets the gummed side of the tape in order to activate the binder prior to being applied to your shell.

This type of dispenser is very common and is optimal for taping techniques that use one continuous piece of tape when covering the shell. For taping methods that require placing a pattern of many small strips to cover the shell, having to continually tear or cut off strips would tend to gum up your fingers or your scissors. There are actually commercial tape dispensers that allow you to dial in a length of tape and hit a button to automatically dispense a wetted strip of tape of a desired length, which is a better setup for using multi-strip taping methods.

The optional shell rolling fixture is really only useful for shells larger than 6" diameter, which can be heavy and tiresome to manipulate by hand. The fixture supports the weight of the shell on three equally spaced roller bearings, and can accommodate shells from 8" all the way up to 16". This fixture not only takes the weight of the shell off your hands, it allows the shell to be easily rotated in any direction while rolling on strips of gummed tape.

Building the Dispenser

The tape dispenser is very simple to make and the dimensions are not all that critical. It might be best to first obtain the rolls of gummed tape that you plan to use, then dimension your holding fixture to accommodate the size of your rolls.



Figure 3: Top sponge put in place.



Figure 4: Dispenser is filled with water and ready to use.

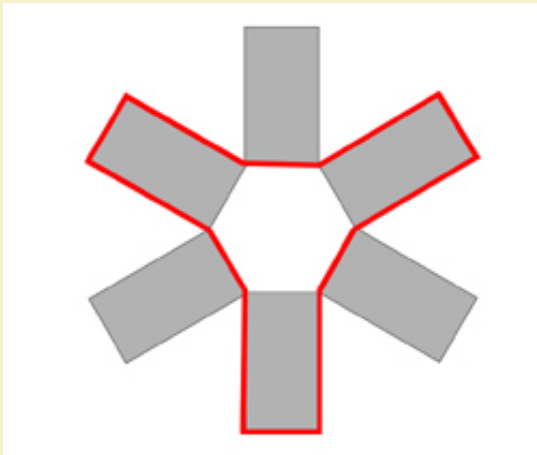


Figure 5: Creating the base plate layout.

The dispenser shown here uses a base plate that is 5" wide and 12" long, made from 3/4" thick plywood. Two pieces of wood measuring 7" long by 1.5" wide are used for holding the spool, each of which has a 3/4" diameter hole drilled one inch down from one end. The holding arms are screwed to the sides of the base board flush with one end, as seen in Figure 1. A piece of 3/4" dowel rod is passed through the holes in order to hold the tape spools. There is no need for using roller bearings unless your tape spools are unusually large, which is not likely. A simple unsecured dowel rod with a relatively close fit in the holes will work just fine for holding the tape rolls as they spin.

The opposite end of the base plate needs to have a plastic container attached to it for holding water and the sponges. The size of this container will determine how often it has to be refilled with water. The container shown here is a typical zip-lock disposable type container, although anything will work fine. I used hot glue to secure the container to the base board, which is quick and dirty but doesn't always hold the best. Running small screws through the bottom of the container in order to attach it to the base plate would be much more secure, although you would have to be sure and put silicone over the screws to prevent the water from leaking out around them.

A set of sponges is used to sandwich the tape as it passes through the container, which serves to transfer the water onto the tape without concern for the water level in the dish. The water level in the container can only be filled level to the top of the bottom sponge, so the bottom sponge should be much thicker than the top sponge. The top sponge only serves to hold pressure against the tape so that it makes good contact with the main sponge, so it should be cut to a thickness that allows it to stick up just above the top of the container when placed on top of the bottom sponge. This way there will be some compression when the lid is placed on the container. You do not want too much compression however, otherwise the tape can become too hard to pull through and it will frequently rip.

A good quality sponge should be used here, as some cheaper sponges will rot and crumble if stored in water for very long. The thick sponges sold in hardware stores for doing tile work will work good, although similar quality sponges that are already cut down to a small square can usually be found in the cleaning aisle of any grocery store.

Two narrow slits must be cut through both sides of the plastic container so that the paper tape can pass through it. These slots should be located just above the top of the bottom sponge as seen in Figure 2, such that water will not leak out of the slots when the dish is filled to the top of the sponge. An Exacto blade or carpet knife works good for making these slots.

Using the Dispenser

The best way to setup the tape dispenser is to clamp it to the edge of your work table using a C clamp or bar clamp. This way it won't slide as you pull the tape through it. For smaller shells you would simply hold the shell in your hands to spin it while pulling the tape from the dispenser. For larger shells 8" and beyond it is best to build the roller jig described below for holding the shell while you work.

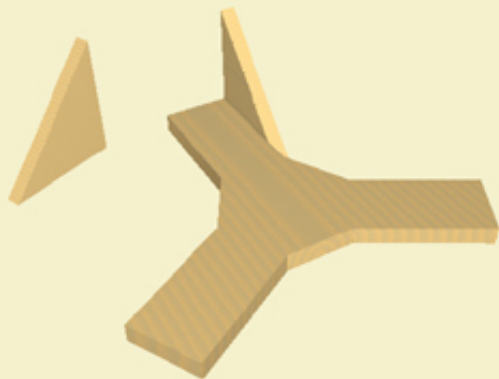


Figure 6: Attaching angle brackets to the base plate.



Figure 7: Hole plates are attached to the angle brackets.



Figure 8: Inserting the roller bearings.

Depending on the size of your water container, you will have to refill it after every 2 or 3 shells. One way to reduce how often you refill the container is to fit it with an inverted water bottle that will maintain a fixed water level in the dish. This is similar to how some of the automatic pet feeders work. You might even be able to modify a pet feeder water dish to use as your sponge container if you will be making a large quantity of shells and don't want to be bothered with refilling the water all the time.

When the tape is allowed to sit between the sponges for too long during a taping session, it will become too saturated and rip easily as it is pulled from the container. Since re-threading a new piece of tape can take a minute or two each time, it is best to keep the tape rolling once you start. Otherwise a soggy piece of tape can still be carefully pulled out and torn off to start a new strip without having to rethread the tape.

Building the Roller

The ball shell roller uses three stud mounted ball roller bearings, which were ordered from McMaster-Carr (part number 6460 K47) for \$10.48 each. So the first step would be to order three of these from the McMaster website at www.mcmaster.com.

The only tricky part to make is the triangular base plate, which is made from 3/4" thick plywood. The best way to layout the cutting lines for this piece is to make six squares of cardboard that measure 5" long x 2-3/4" wide and arrange them in a circle so that all their corners touch. Then use a pencil to trace around the squares so that you create the pattern shown by the red line in Figure 5. A bandsaw or jig saw is then used to cut out this piece.

After making the bottom plate, cut three blocks of 3/4" thick wood that measure 5" square. Draw a diagonal line between the corners of each square and cut on this line to produce six triangular pieces that measure 5" on the short sides. These triangles are then attached to the base plate on all three arms as seen in Figure 6. Nails, screws or glue can be used for this.

The last step is to make three blocks of 3/4" thick wood that measure 5-1/4" long by 4-1/4" wide. You will need to drill four equally spaced 3/8" diameter holes down the center, with a 1" spacing between the center of each hole. The first hole starts 1" down from the top edge of the block. The hole blocks are then attached to the angle brackets as seen in Figure 7.

The roller bearings can now be dropped into the hole plates to handle different size shells. The bottom hole is for 8" shells, while 10", 12" and 16" require the bearings to be moved up to the next size hole respectively.

Using the Roller

When using the dispenser with the roller, the dispenser is clamped to the opposite side of your work table so that it faces you, then the roller is set on the table in front of you. Note that this roller can only be used when gum taping ball shells that do not have the time fuse installed yet. Otherwise the time fuse will hit the rollers as you spin

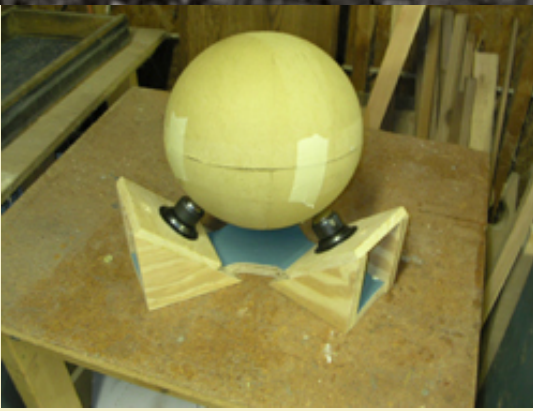


Figure 9: A 10" shell on the roller.

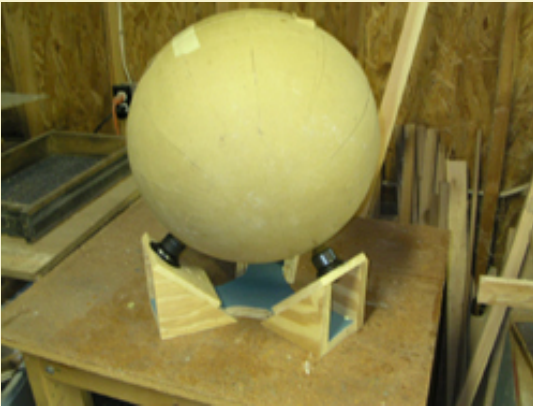


Figure 10: A 16" shell on the roller.

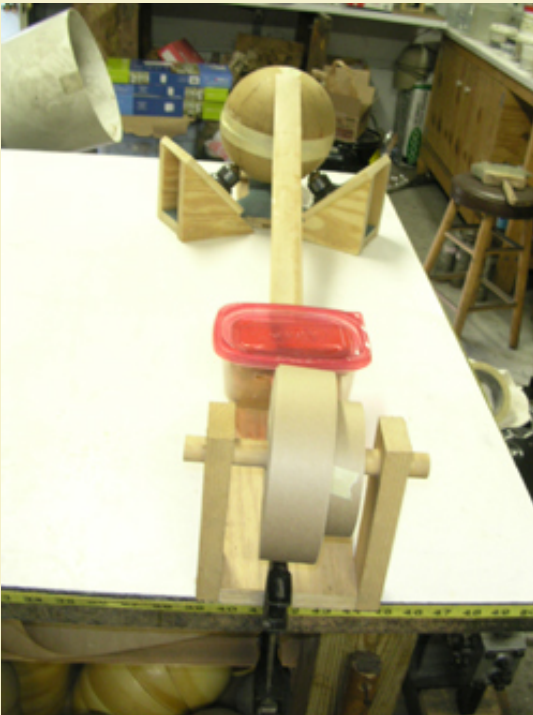


Figure 11: The tape dispenser and shell roller setup for use.

the shell. Because gummed tape is easier to cut through once it dries as compared to traditionally pasted paper, installing the time fuse after the tape is already applied is a viable option that makes the taping go easier. Although the lack of a fixed reference point on the shell can make keeping track of your taping pattern more difficult when you first try learning this technique.

Figures 9 and 10 show just how large of a shell can be handled with this fixture. Even a very heavy 16" shell still rolls with ease!

Note that this roller should not be used when pasting shells in the traditional way, as the paste would get down inside the rollers and rust them out. You might be able to find some corrosion proof rollers (stainless or plastic), but the paste would still dry on the inside and gum them up unless you hosed them off after each use. For people who regularly paste in large 12" and 16" shells it might be worth the trouble of finding suitable rollers and try using this jig with the post-time fuse insertion method, only locate and punch the time fuse hole while the paper is still wet. I have not tried this myself, as I have been sold on the ease and speed of using gummed tape over traditional pasting, but some readers may wish to give it a try. 🔥

