



Surprise that special person or occasion with a song played on a set of chimes you've built. For about \$30, materials are available from your local home improvement store.

Keep the chime set for the next party/occasion or convert them into a set of hanging wind chimes.

For example, gather nine people together at your next birthday party with each person holding one of the chimes and a wood striker. As the conductor, you orchestrate this unique performance. Stand behind or in front of the row of players as you cue each note of the song according the chart on the next page. Now you're ready for an exciting Happy Birthday Performance!

Or, instead of the birthday song select a tune of your choosing for that special occasion. Use this procedure as a general guide for your DIY tune. Download the Excel calculator from www.leehite.org/chimes.htm and design your own special performance.

See an example for a Happy Birthday performance titled: ["The World Famous Human Xylophone by Keith Fields"](#)

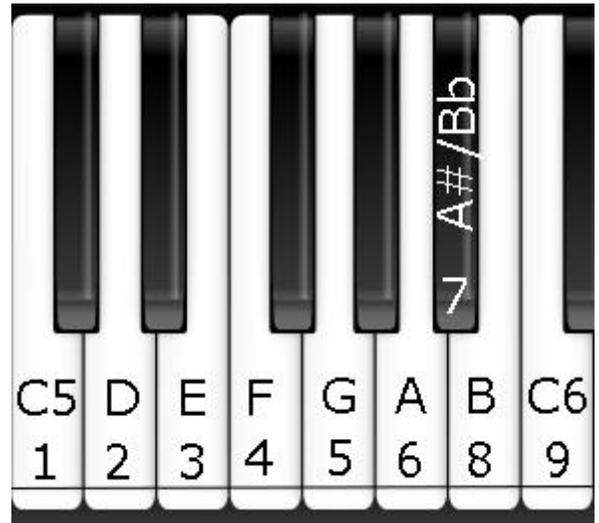
HAPPY BIRTHDAY

1 1 2 1 4 3
 C5 C5 D C5 F E
 Happy birthday to you

1 1 2 1 5 4
 C5 C5 D C5 G F
 Happy birthday to you

1 1 8 6 4 3 2
 C5 C5 C6 A F E D
 Happy Birthday dear Name Here

7 7 6 4 5 4
 A# A# A F G F
 Happy birthday to you



1 = C5, 2 = D, 3 = E, 4 = F, 5 = G, 6 = A, 7 = A#/Bb, 8 = B, 9 = C6

1 * 1	2 * *	1 * *	4 * *	3 * *	* * *
1 * 1	2 * *	1 * *	5 * *	4 * *	* * *
1 * 1	8 * *	6 * *	4 * *	3 * *	2 * *
7 * 7	6 * *	4 * *	5 * *	4 * *	

C5, C5, D, C5, F, E
 C5, C5, D, C5, G, F
 C5, C5, C6, A, F, E, D
 A#, A#, A, F, G, F

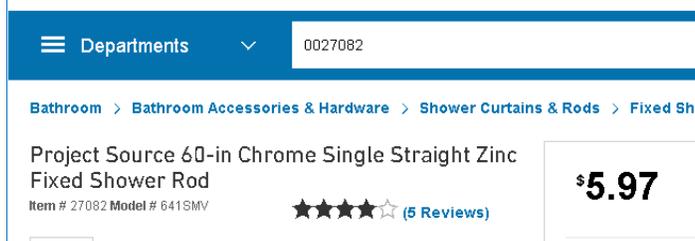
Construction of the Birthday Chime Set

Purchase three 60 inch sections of one inch outside diameter aluminum chromed shower rod tubing at your local home improvement store such as Home Depot or Lowe's. The cost is about \$6- each. Both sources have an outside diameter of one inch but the wall thickness is slight thicker from Home Depot.

Also, purchase 3-One inch Round Dowel Rods, 48 inch long



From Lowe's the tubing is: Fixed Shower Rod, Store Item # 27082, Model # 641SMV, 60 inch, polished chrome aluminum tubing.
OD= 1.00" ID= .930" Wall = .035"



From Home Depot the tubing is: Glacier Bay Model # HD14016, Internet # 205699635, Store SKU # 1001227499, 60 in. Aluminum Builders Shower Rod in Chrome

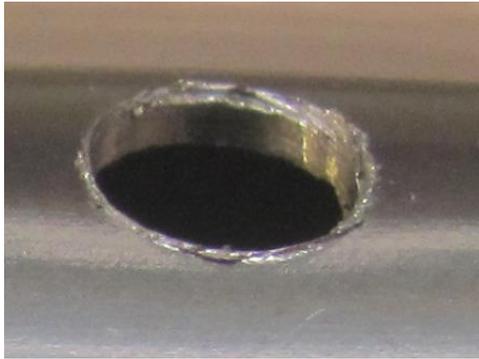
OD= 1.00" ID= .902" Wall = .049"



Glacier Bay | Model # HD14016 | Internet # 205699635 | Store SKU # 1001227499
60 in. Aluminum Builders Shower Rod in Chrome

1. Cut the tubing to length using the chart on page 6 for wall thickness .035 (Lowe's) or for wall thickness .049 (Home Depot). Use care to establish the correct length. Cut slightly long, about 1/8 inch, and file or grind to the final dimension. Deburr the ends to remove all sharp edges.
2. Drill two 1/8 inch or 3/16 inch holes (size determined by support line) at the hang points using the hang-point measurement in the chart on page 6. The hang point distance is measured from each end.

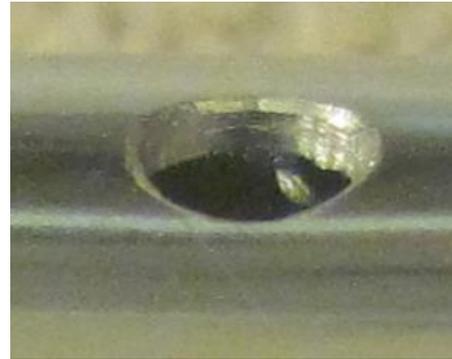
3. Using a drill bit larger than the hole, place the bit on the outside of the hole and lightly rotate by hand. This is generally enough to deburr the outside hole.



Outside Before

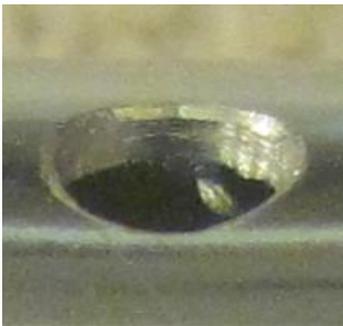


Deburr

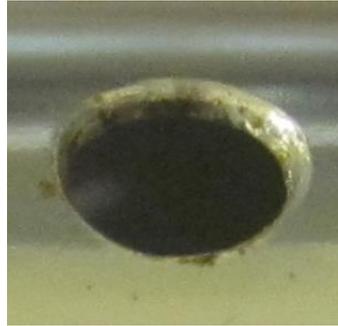


Outside After

4. Deburr the inside support hole. First, using a round or half-round file, remove the burr from inside the tube. Finish the task by using a section of coat hanger wire with a small bend at the far end. Place the wire in a drill and insert the bent end thru the hole. As you rotate the wire, lightly pull back on the drill and the bent wire will bend over any inside burr. See picture below



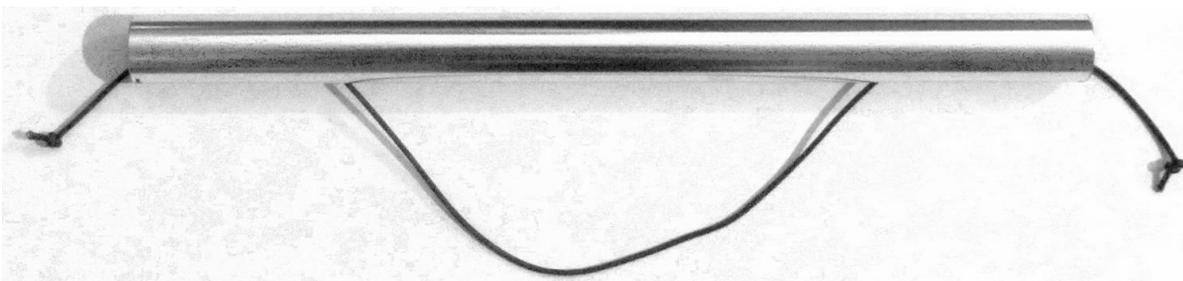
Inside Before



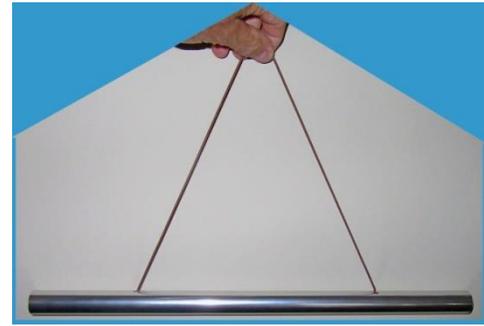
Inside After



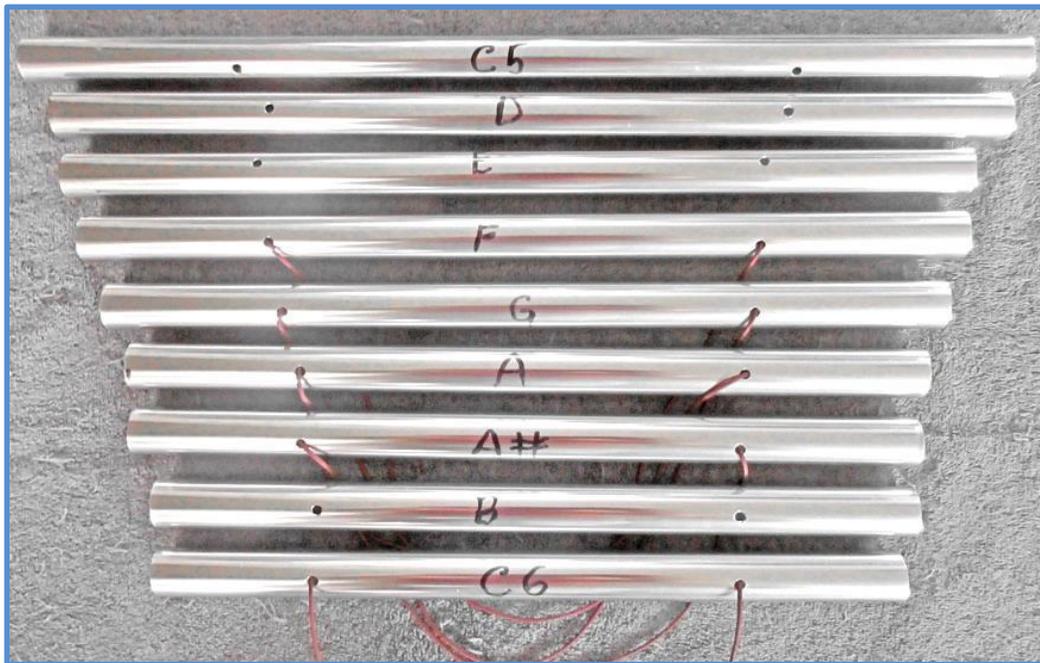
5. Using shoe string or other suitable line, thread the ends into each hole and out their respective end. Tie a knot in both ends and pull the line back into the tube.



6. The finished chime, with support line attached, should look like the picture to the right. This will provide the best overall sound. For an alternate method to string the chime, see step 11. This top loop method makes it easy to switch between a performance set and a wind chime set.



Shown below is the finished happy birthday chime set from C5 to C6. Now, with a little practice, you can add an exciting performance to your next birthday celebration.



7. Cut the 48 inch long one inch diameter dowel rods into nine inch sections to be used as chime strikers. You might consider painting the dowel rod a decorative color or decorate to look like a magic wand. You can also use wood spoons.



Use this chart for tubing purchased at Lowe's



Fixed Shower Rod
 Lowe's Item # 27082 Model # 641SMV
 60 inch, polished chrome aluminum tubing,



Departments

Bathroom > Bathroom Accessories & Hardware > Shower Curtains & Rods > Fixed Sh

Project Source 60-in Chrome Single Straight Zinc Fixed Shower Rod
 Item # 27082 Model # 641SMV ★★★★★ (5 Reviews) **\$5.97**

OD= 1.00" ID= .930" Wall = .035"

Happy Birthday notes for the above tubing from Lowe's

Note	Freq Hz	Length inches	Hang Point	Length mm	Hang Point
C5	523.30	21 1/2	4 13/16	545.7	122.3
D	587.30	20 1/4	4 9/16	513.9	115.2
E	659.30	19 1/8	4 5/16	485.4	108.8
F	698.50	18 9/16	4 3/16	471.1	105.6
G	784.00	17 9/16	3 15/16	445.7	99.9
A	880.00	16 9/16	3 11/16	420.4	94.2
A [#] /B ^D	932.30	16 1/16	3 5/8	407.7	91.4
B	987.80	15 5/8	3 1/2	396.6	88.9
C6	1,046.50	15 3/16	3 3/8	385.5	86.4

Use this chart for tubing purchased at Home Depot



Glacier Bay Model # HD14016
 Internet # 205699635
 Store SKU # 1001227499
 60 in. Aluminum Builders Shower Rod in Chrome



Glacier Bay | Model # HD14016 | Internet # 205699635 | Store SKU # 1001227499

60 in. Aluminum Builders Shower Rod in Chrome

Happy Birthday notes for Glacier Bay Model # HD14016 tubing

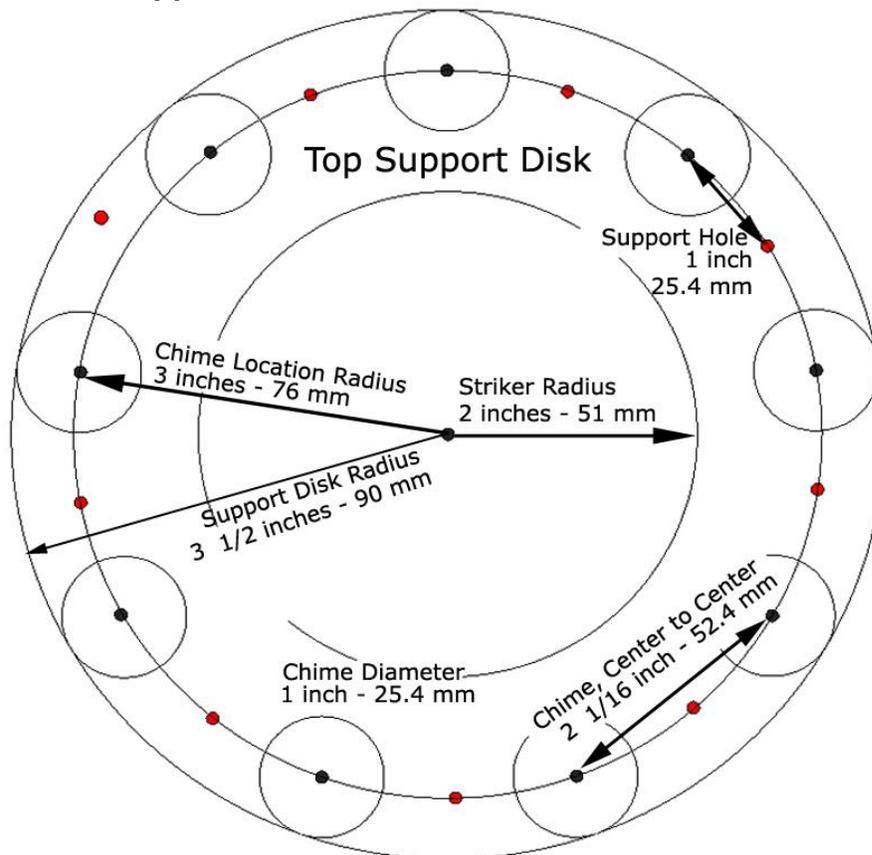
OD= 1.00" ID= .902" Wall = .049"

Note	Freq Hz	Length inches	Hang Point	Length mm	Hang Point
C5	523.30	21 5/16	4 3/4	540.9	121.3
D	587.30	20 1/8	4 1/2	510.8	114.5
E	659.30	19	4 1/4	482.2	108.1
F	698.50	18 7/16	4 1/8	467.9	104.9
G	784.00	17 7/16	3 15/16	442.6	99.2
A	880.00	16 7/16	3 11/16	417.2	93.5
A [#] /B ^D	932.30	16	3 9/16	406.1	91.0
B	987.80	15 1/2	3 1/2	393.4	88.2
C6	1,046.50	15 1/16	3 3/8	382.3	85.7

Convert this set of nine chimes into a set of wind chimes.

1. Using the diagram example below, build the top support disk and striker. Begin by drawing a circle with a $3\frac{1}{2}$ inch radius on your selected material, wood, plastic, etc. This will be the outside diameter for the top support disk.
2. Draw a second circle on the support disk with a radius of 3 inches. This is the chime location circle
3. Adjust a compass to exactly $2\frac{1}{16}$ inch. Beginning at any random point on the second circle (3 inch radius circle) walk the compass in both directions and make a mark every $2\frac{1}{16}$ inch. Moving the compass in both directions from the start helps to reduce measurement error. This will identify the center location for each of the 9 chimes.
4. Adjust a compass to 1 inch (or half the distance between chime centers) and using the chime center location, mark a spot on both sides of center. This mark will be the support hole for the two support lines from adjacent chimes.

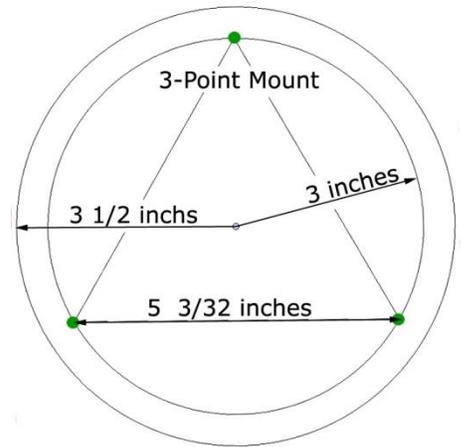
Top support disk radius = $3\frac{1}{2}$ inches – 76 mm
Striker radius = 2 inches – 51 mm
Chime location radius = 3 inches – 76 mm
Chime, Center to Center = $2\frac{1}{16}$ inch – 52.4 mm
Chime support hole location = 1 inch – 25.4 mm from chime center



Measurement diagram for building the top support disk and striker

8. The top support disk can be hung using a single point mount or a 3-point mount. The single point mount uses an aluminum turnbuckle or steel screw eye as shown below.

To locate the marks for a 3-point mount, draw a circle with a radius of 3 inches (76 mm). Adjust a compass to exactly $5 \frac{3}{32}$ inches (129 mm). Beginning at any random point on the 3 inch radius circle, walk the compass around the circle making a mark at all three locations (Green Dots). Insert small screw eyes at each location.

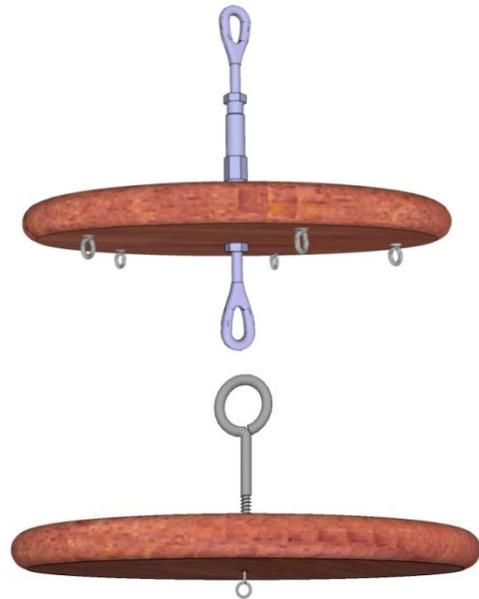


Top Support Disk Layout

3-Point Mount



Single Point Mount using a turnbuckle or screw eyes



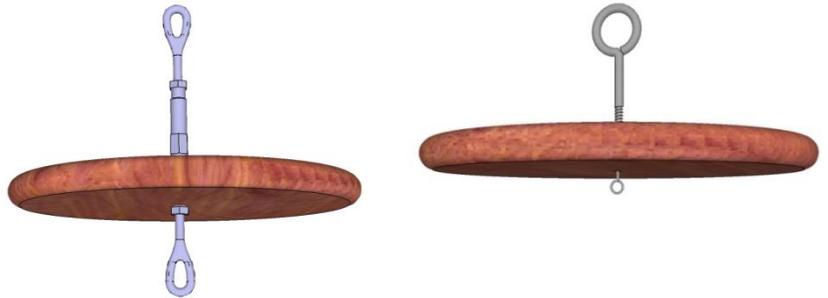
9. Construct a striker with a radius of 2 inches (51 mm) from $\frac{1}{2}$ to $\frac{3}{4}$ inch (12 to 16 mm) thick material. If possible, shape the edge into a bullet nose curve.

It is important that the striker hang horizontally and that can be accomplished using a $\frac{3}{16}$ " or $\frac{1}{4}$ " aluminum turnbuckle as its axis. Locate the turnbuckle on the top side of the striker with the lower hook on the bottom



side, as shown below.

The bottom hook connects to the wind sail. This arrangement also works well to hang the top support plate. Use a locking nut at the top to prevent the bolt from loosening as the chime set twists in the wind. This same arrangement can be accomplished using screw eyes.



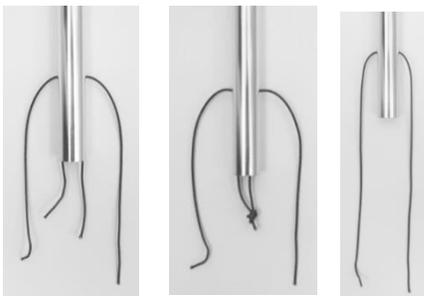
10. Make a wind sail about 4 to 6 inches in size from thin material about 1/8 inch thick or less. Drill a small hole at the edge to connect the striker line. A few creative [examples are here.](#)
11. String the chime in preparation for attachment to the top support disk using Method 1, 2 or 3, as follows:

Method 1 (outside support lines)

Picture A: Begin by holding the tube vertically and threading the support line into the hole from the outside, allowing it to fall out the bottom of the cylinder. Repeat this with a second section of line so you have two separate lines dangling from the bottom.

Picture B: Tie the two inside lines together at their ends.

Picture C: Pull the knot back inside the tube using the outside lines.



A

B

C

Method 2 (outside support lines)

With a little practice, you may be able to thread the line directly through both holes as shown in picture E.



E

Method 3 (center support line, picture F thru J)

After threading the line using either method 1 or 2 above, tie a knot at the ends of the two lines on the outside of the chime. Pull the line from the center of the tube until the ends are tight against the outside of the tube.

Tie a knot in the loop at the opening of the chime as shown in picture F, H and J. It's very important to tie this knot as close to the inside of the tube as you can. This knot will center the line in the tube and prevent it from touching the end of the tube, which would deaden or kill the chime sound.

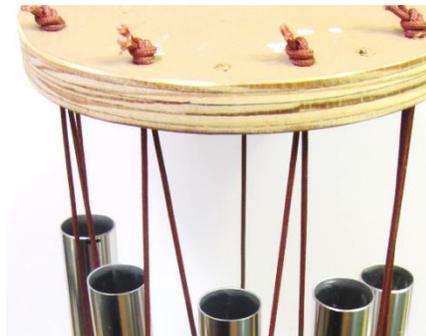


F G H J
Two lines tied together or one continuous line

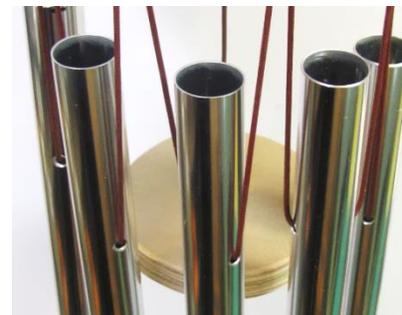
12. Attaching the chime to the top support disk: If you're using the dual line method of support (method one, picture C) thread each line through its respective hole (blue dots, page 5) and tie a knot. See picture K (each line has its own hole) or L & M (two lines share a hole).



K



L



M

Note: the plywood disk shown was for picture taking only and not recommended for outdoor use. The support line is heavier than required and used just for pictures.

Longevity for a chime set is important and careful attention to the support lines and thru holes should be considered. Rapid wind changes and UV light can quickly deteriorate support lines, not to mention the many freeze/thaw cycles.

Nonmetallic support line:

Make sure the line is UV resistant. Choices include fishing line (either 80 pound braided or 30-50 pound monofilament), braided nylon line, braided plumb line, braided Dacron kite line, Venetian blind cord, string trimmer/weed eater line (.065 inch), awning cord, and braided electrical conduit pull line.

Metallic support line:

Thin wire, decorative chain (zinc plated, brass plated, or painted), 1/32 or /16 inch stainless steel cable (rust resistant), small aircraft control line cable.

If you're using the center loop method for support, then attach the line to a small hook on the underside of the support disk as shown right.

Numerous other support methods are available and described in the [DIY Tubular Bell Chime Handbook](#) and shown below.



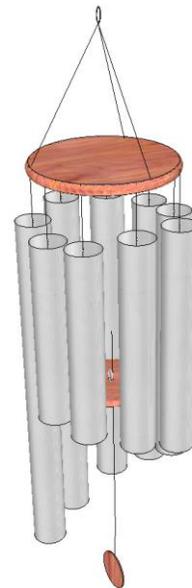
A



B



C



D

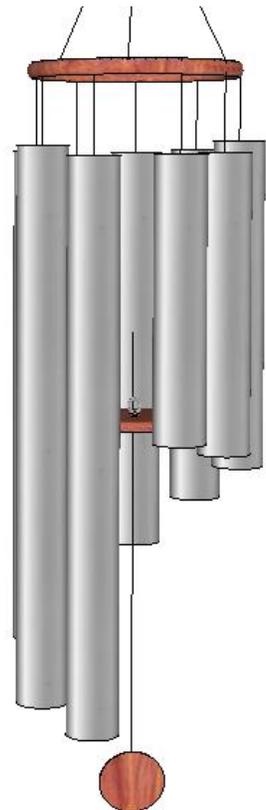
Shown above are a few examples for supporting the wind chime set

13. Connect the striker to the bottom of the support disk, positioning it to rest about an inch or two above the shortest chime, as shown at the right.

14. Connect the wind sail to the bottom of the striker positioning it to hang about six inches below the longest chime.

15. After you hang the chime set in your favorite location and because of your local wind conditions, you may find that you are not completely satisfied with the performance of the set. They may chime too much or too little. Because wind conditions vary from location to location, feel free to modify the size and/or weight of the wind sail to produce the desired sound. I often find that a new design requires some adjustments after the initial design.

If you live in a strong wind area and the chimes are playing too much, and adjusting the size and weight of the sail did not quiet them down as you wanted, try slightly reducing the diameter of the striker to compensate for strong winds.



A few screen shots from:

["The World Famous Human Xylophone by Keith Fields"](http://www.leeHITE.org/Chimes.htm)



Typical hooks and a turnbuckle found in in the hardware section

