

# Dusty Strings

## Replacing Harp Strings

Harp strings do not have a predetermined lifespan—an individual string can last anywhere from a few weeks to a few years or even longer. You can help your harp strings last longer by keeping your harp out of direct sunlight (UV rays can damage nylon). Even so, it isn't unusual to break a string from time to time.

These instructions explain step-by-step how to replace the different types of strings we use. We've included some photos and drawings to help clarify certain steps, and some useful background information about the two different types of tuning pins that your Dusty Strings harp might have.

Strings are an important part of your harp, and need to be replaced when they break. The wound strings on your harp are custom-made, so please contact your harp dealer or Dusty Strings for replacement strings. We include a string chart with each harp showing the string number, string gauge and note name for that harp. We also mount another small string chart discreetly inside the soundbox as a permanent record of the string set.

**Caution:** Use of gut, wire, or other types of nonrecommended strings may increase the tension on your harp and put its integrity at extreme risk, voiding the warranty.

In addition to replacing the occasional broken string, replace your string(s)

- If a string is old and sounds dull.
- If a wound string begins to unwrap.
- If the nylon wrap on a wound string stretches over the bridge pin (*figure 1*). The wire wrap on the bass strings of the Ravenna 34 *does* go over the bridge pin and through the tuning pin.
- If you notice an overall loss in tone.

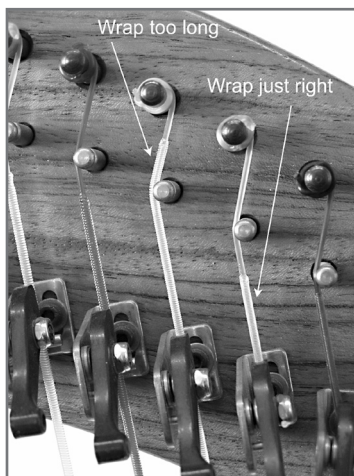


Figure 1: Wrap length

In order to maximize the tuning stability of your harp, we recommend that you remove and replace a few strings at a time rather than taking them all off at once. On a number of our models, the string tension alone is what holds the neck and pillar onto the soundbox. If all the strings are removed at once, the two major sections of the harp will come apart.

Dusty Strings makes four kinds of strings. Please use the instructions that correspond with the type of string you are replacing.

### String composition

- Mid and upper ranges: nylon monofilament
- Lower mid range: nylon core with nylon wrap
- Bass strings on 32- and 36-string harps: phosphor bronze wire core with nylon wrap.
- Bass strings on 34-string harps: steel core with wire wrap
- The gut string option has gut from the upper bass range to the lower treble range.

### About Tuning Pins

Your Dusty Strings harp will have one of the following types of tuning pins:

**Tapered friction pins:** Harps have traditionally used tapered friction pins for tuning. These pins work by being tightly pressed into a tapered hole in the harp neck, much like a violin peg. These pins can work loose due to changes in temperature or humidity, from getting bumped in transport, or from general day-to-day use. If a tuning pin becomes loose, you'll know it because it won't hold pitch like its neighbors. It can be re-seated using the following technique: Down-tune the string by half a turn and then tune it back up to pitch, adding a slight back and forth wiggle, all the while pressing inward as hard as you can. This will set the pin farther into the neck, providing the friction needed to hold pitch against the tension of the string. If you can't get the needed tightness, enlist the help of someone who has greater arm strength. If a pin gets pressed in too tightly, and is consequently hard to tune, it

can be loosened by pushing in on the string end of the pin while tuning the string down (counterclockwise).

**Threaded tuning pins:** In late 1998, Dusty Strings began using threaded tuning pins instead of tapered friction pins. These pins do not depend upon a tight set in a tapered hole to hold the string, thus eliminating the occasional need to re-set the pins. These pins are grooved with a very fine screw thread inside the neck, and while they look very much like traditional taper pins, they do need to be treated slightly differently. When replacing strings, you need to back the pin out, as if you are “unscrewing” it, by about three or four turns before putting the new string on. Since every clockwise turn of the pin will advance it by .010”

### Tapered Tuning Pin



- Traditional pin used in harp building
- Held in place with friction – tapered pin into a tapered hole
- Can work loose due to environmental changes, requires occasional reseating
- To reseat: down-tune string 1/2 turn, as you tune it back up to pitch add a slight back and forth wiggle while pressing inward with force
- Conversely, if pin is too tight, loosen by pushing in on string end of pin while down tuning
- **Does not need to be backed out** prior to restringing

### Threaded Tuning Pin



- Invented in late 1998
- Grooved with a fine screw thread
- Eliminates the occasional need to re-seat pins (occurs with tapered pins)
- Each turn advances the pin .010” into the wood
- Before restringing: **back out** the pin by 3 or 4 turns to maintain an even line of pins

into the wood, this step needs to be taken in order to maintain an even line of pins.

### Eyelets

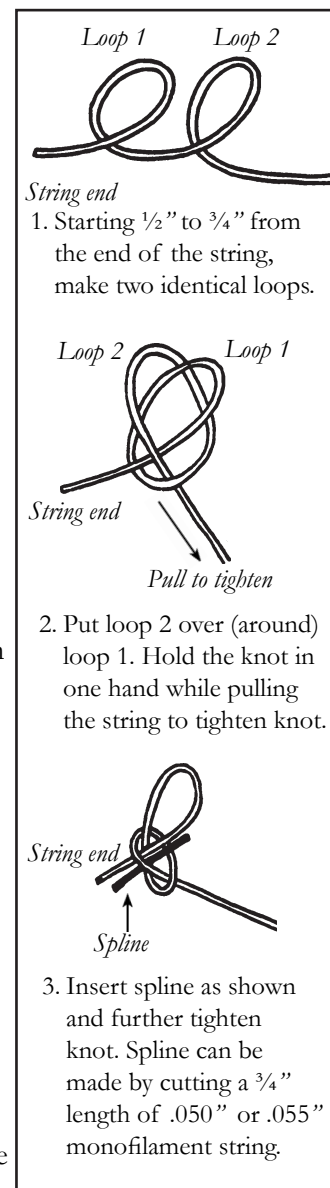
Eyelets are the little brass collars in the soundboard that the string passes through. They are under a lot of tension and will sometimes crack or bend. Whenever you change a string, it is a good idea to inspect the eyelet to make sure

it is in good condition. If not, give us a call with the harp model and string number and we'll get you a replacement. Every string has an eyelet, so if a string is missing one, take the tension off that string immediately. Without the eyelet, or if the eyelet is badly cracked, the string will start to dig into the wood of the soundboard. If you see any of that kind of damage, give us a call. It can be fixed, but it should be attended to sooner rather than later.

### To Replace Nylon Monofilament or Gut Strings:

1. Wear eye protection. If your harp has threaded tuning pins, remember to back the pin out by 4 turns (refer to Tuning Pins section for more information). If you skip this step, the pins will advance too far into the neck, which could result in repeat broken strings.
2. Remove any remnants of the old string from the soundboard, inside the soundbox, and the tuning pin. Using your tuning wrench, align the hole in the tuning pin vertically.
3. Insert the new string through the string hole in the soundboard, from front to back. Reach around through one of the soundholes and pull it out a bit so you can work on it outside the soundbox.
4. Tie a harper's knot and insert a spline in the bottom of the string (*figure 2*). Reuse the splines from the original strings, or make a spline by snipping 1” off of a .050” or .055” gauge string. For .050” and .055” strings, tie a harper's knot and use a leather washer instead of a spline. Be sure to save the washer from the original string and reuse it. For .025” and .028” gauge string, tie an extra loop around the finished loop. Grasp the free end of the string and pull the knot snugly against the inside of the soundbox.
5. Pull the string straight up until it is taut, and then pull the free end of the string toward the back of the harp,

Figure 2: Tying the harper's knot

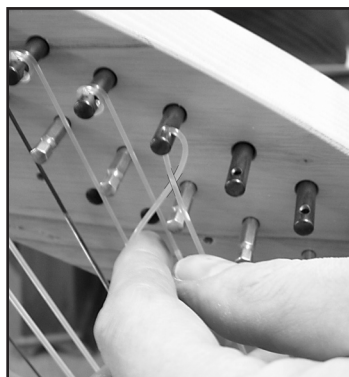


half way around the tuning pin, and pass it between the neck of the harp and the vertical part of the string below the tuning pin (*figure 3*).

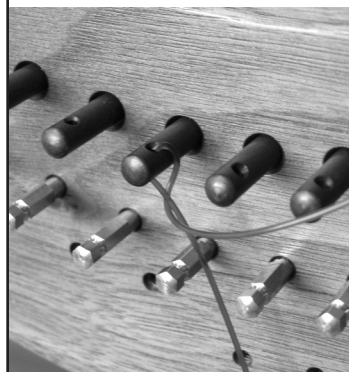
**Exceptions:** In order to have enough loose string to get three or four wraps around the tuning pin, the .025", .028", and .032" strings need to be slack before being wound onto the tuning pin. For .025 and .028 strings, leave enough slack so that you can pull the string 1.5" - 2" from its vertical line (*figure 3.5*). For .032 strings, leave about a third of that.

6. Pull the string end toward the back of the harp and then straight up. Hold it firmly in this position.
7. Begin to tighten the string, making sure the wraps wind on toward the harp neck (*figure 4*). The first turn should pass over and secure the string end. You can let go of the string end, as you have now locked it in place.
8. Cut off the free end as close to the wrap as possible with nail clippers or wire cutters. Extra length is not only unnecessary but may scratch you or your harp.
9. Before the string is taut, make sure it is passing around the correct side of the bridge pin and through the sharpening lever (*figure 5*).

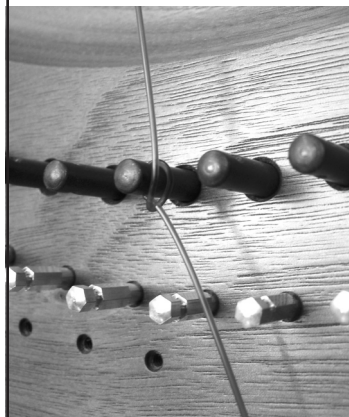
*Figure 3: Starting a nylon string*



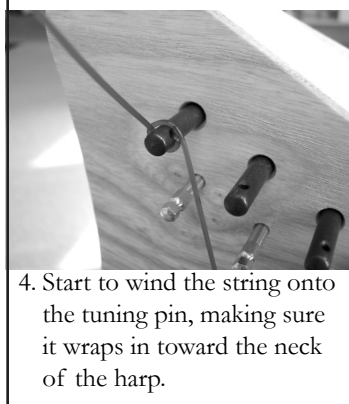
1. Pass the loose end of the string behind the vertical portion.



2. Pull the loose end toward the back of the harp . . .



3. . . . and then straight up.



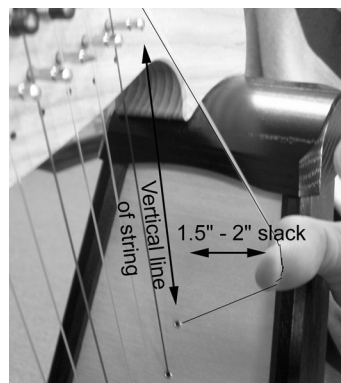
4. Start to wind the string onto the tuning pin, making sure it wraps in toward the neck of the harp.

10. Continue turning the pin until the string is up to pitch. The monofilament strings stretch quite a bit, so they need to be tuned every day for a week or two until they hold pitch. You can hasten the stretching process if you want by tuning a new monofilament string slightly over pitch during this initial tuning period (up to 20 cents sharp).

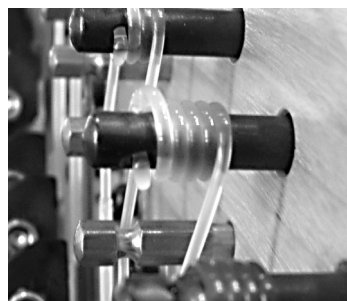
### To Replace Nylon Core/ Nylon Wrap Strings:

1. Wear eye protection. If your harp has threaded tuning pins, remember to back the pin out by 4 turns (refer to Tuning Pins section for more information). If you skip this step, the pins will advance too far into the neck, which could result in repeat broken strings.
2. Remove any remnants of the old string from the soundboard, inside the soundbox, and the tuning pin. Using your tuning wrench, align the hole in the tuning pin vertically.
3. Insert the new string through the string hole in the soundboard, from back to front. Pull the leather washer snugly up against the inside of the soundbox.
4. Thread the free end of the string through the tuning pin.
5. Pull the string straight up until it is taut, and then pull the free end of the string toward the back of the harp (toward the soundbox), half way around the tuning pin, and pass it between the neck of the harp and the vertical part of the string below the tuning pin (*figure 3*).
6. Pull the string end toward the back of the harp and

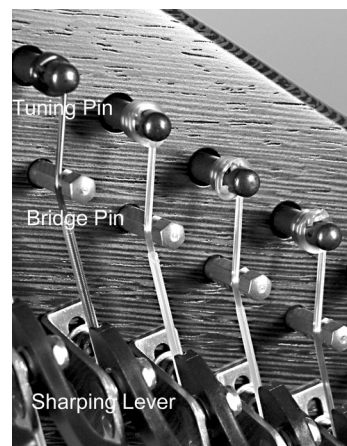
*Figure 3.5: Leave some slack*



*Figure 4: Wind the string toward the neck.*



*Figure 5: Tuning pin, bridge pin, and sharpening lever*





then straight up. Hold it firmly in this position.

7. Begin to tighten the string, making sure the wraps wind on toward the harp neck (*figure 4*). The first turn should pass over and secure the string end.
8. You can let go of the string end, as you have now locked it in place.
9. Before the string is taut, make sure it is passing around the correct side of the bridge pin and through the sharpening lever (*figure 5*).
10. Cut off the free end as close to the wrap as possible with nail clippers or wire cutters. Extra length is not only unnecessary but can scratch you or your harp.
11. Continue turning the pin until the string is up to pitch.

### To Replace Bronze Core/Nylon Wrap Strings:

**Caution:** Phosphor bronze tends to be brittle. You can unwind and rewind nylon strings if necessary to get the coils on the tuning pin just right, but phosphor bronze strings are likely to break at the tuning pin hole if you attempt to correct a sloppy winding job. Be careful, take your time, and don't tune bronze strings over pitch.

1. Wear eye protection. If your harp has threaded tuning pins, remember to back the pin out by 4 turns (refer to Tuning Pins section for more information). If you skip this step, the pins will advance too far into the neck, which could result in repeat broken strings.
2. Remove any remnants of the old string from the soundboard, inside the soundbox, and the tuning pin. Be careful when removing the razor-sharp pieces of phosphor bronze core. Use fine-nose pliers if necessary. To remove a string from inside the soundbox: twist and wiggle the ball-end of the string while pulling firmly until the string comes free. You can use blunt-nose pliers to grab the ball, but avoid scratching the inside of your harp with the pliers.
3. Using your tuning wrench, align the hole in the tuning pin vertically.

- Note:** Uncoil the new string a safe distance away from your harp, so that if it springs open it won't strike and scratch your harp.
4. From the inside of the soundbox, carefully feed the string through the hole in the soundboard until the leather washer rests firmly against the inside of the soundboard.
  5. Thread the free end of the string up through the tuning pin.

bend so that the end points away from the harp.

**Exception:** For string #36 (low C) on the FH36S or FH36B, there is not enough length to put the bend in the string. Thread it through the tuning pin until the tip of the string just pokes out and then start to wind it.

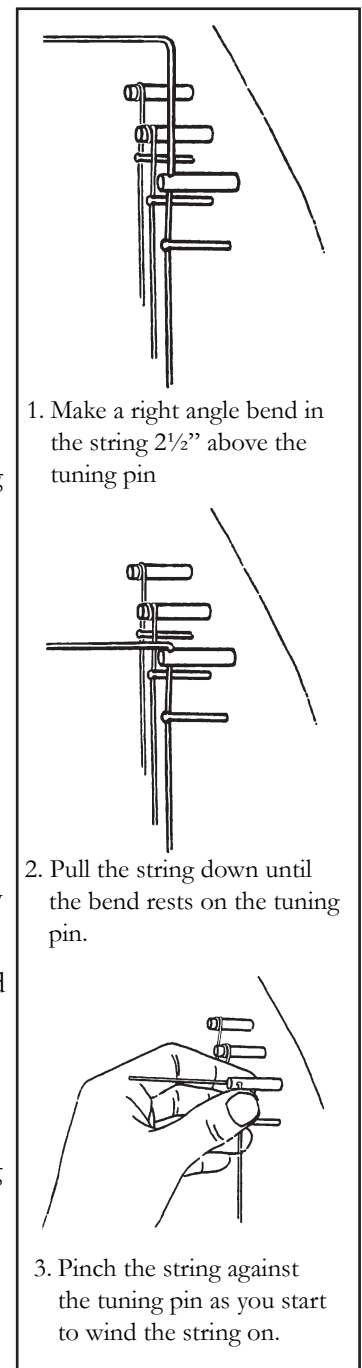
7. Pull the string back down through the tuning pin until the bend rests against the tuning pin (*figure 6*).
8. Pinch the string against the tuning pin as the string is being wound on (*figure 6*). This puts some tension on the string and gives it tight, even coiling. You want the coils to lay evenly side by side (*figure 7*).

**Note:** The metal core should not be "locked" under the first wrap as on other types of strings. Avoid having the string cross over itself at all as it winds around the tuning pin.

9. After you have turned the pin one full turn, the string will be locked in place and you can clip the excess off with a pair of wire cutters. Clip it as close to the pin as possible.
10. Before the string is all the way taut, make sure it is passing around the correct side of the bridge pin and through the sharpening lever (*figure 5*).

**Caution:** Wind very slowly, plucking the string all the

*Figure 6: Starting the phosphor bronze core string.*



*Figure 7: Phosphor bronze string on pin*



while to make sure you don't go above pitch. Metal core strings don't stretch like nylon and will come up to tension faster than you expect.

### To Replace Steel Core/Wire Wrap:

**Caution:** You can rewind nylon strings if necessary to get the coils on the tuning pin just right, but steel strings are likely to break at the tuning pin hole if you attempt to correct a sloppy winding job. Be careful, take your time, and don't tune steel strings over pitch.

1. Wear eye protection. If your harp has threaded tuning pins, remember to back the pin out by 4 turns (refer to Tuning Pins section for more information). If you skip this step, the pins will advance too far into the neck, which could result in repeat broken strings.
2. Remove any remnants of the old string from the soundboard, inside the soundbox, and the tuning pin. Be careful when removing the razor-sharp pieces of steel core. Use fine-nose pliers if necessary. To remove a string from inside the soundbox: twist and wiggle the ball end of the string while pulling firmly until the string comes free.
3. Using your tuning wrench, align the hole in the tuning pin vertically.

**Caution:** Uncoil the new string a safe distance away from your harp, so that if it springs open it won't strike and scratch your harp.

4. Insert the new string through the string hole in the soundboard, back to front. Pull the leather washer snugly up against the inside of the soundbox.
5. Thread the free end of the string through the tuning pin.
6. Pull the string taut, and snip the string with wire cutters at two fingers' width above the tuning pin (*figure 8*).

**Exception:** For string #34, low C on our 34-string harps, there is not enough length to cut off any above the tuning pin. Just put the top of the string at the top of the hole in the tuning pin.

7. Slide the string back down through the tuning pin until the tip is flush with the top of the tuning pin (*figure 9*). While holding the string in place with one hand and your tuning wrench in the other, begin winding the string onto the tuning pin.
8. Pinch the string against the tuning pin as the string is being wound. This puts some tension on the string and gives it tight, even coiling. You want the coils to lay evenly side by side (*figure 10*).
9. Before the string is all the way taut, make sure it is passing around the correct side of the bridge pin and through the sharpening lever (*figure 5*).

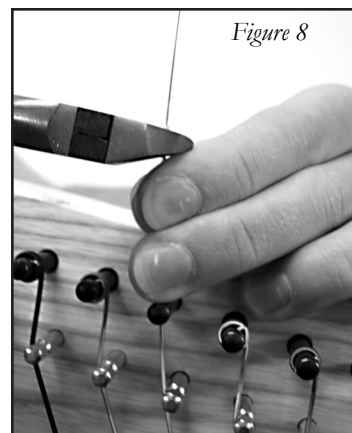


Figure 8



Figure 9

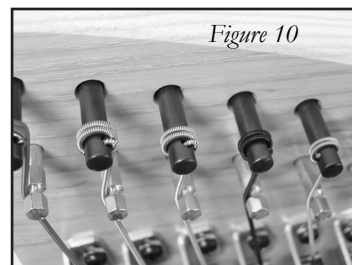


Figure 10

*Be sure to call us with any questions!*

Rev. 6/25/08

---

### Dusty Strings

3450 16th Ave. W., Seattle, WA 98119 • 866-634-1656 • [www.dustystings.com](http://www.dustystings.com)