

Dusty Strings

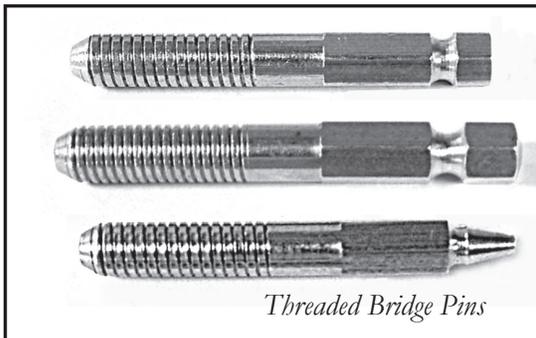
Hardware

Did you know you can buy Dusty Strings quality hardware for use in your own instrument building? Since 1999, our innovative threaded tuning and bridge pins have saved time in production, virtually eliminated loose tuning pins, and provided a greater level of accuracy for both builders and harp players. We also offer a great selection of standard hardware including zither pins, high quality nylon monofilament, tuning wrenches and more. Please see our price list for competitive quantity pricing.

Harp Hardware

Threaded Bridge Pins

If you do a lot of regulations and want to save time without compromising precision, consider using Dusty Strings-designed threaded bridge pins. Machined from hexagonal brass bar stock, our bridge pins are turned to round and threaded with a 32-pitch thread. The exposed hexagonal shanks can be easily turned using nut drivers, giving you



precise control of the bridge pin height for exacting regulations.

Like traditional round bridge pins, our pins are designed to be pressed into their holes. The tops of the threads are flat instead of a sharp V, so they don't ream the holes on the way in. Available in two sizes, our pins fit in the same size holes as round pins and can be used to retrofit a harp if desired. Medium pins are also available in a bevel-headed version for use in the upper range

where regulation requires the lever to be placed extremely close to the bridge pin.

To install and adjust threaded bridge pins you can use standard tools from a hardware shop, or our special set of tools designed to make the process even easier (see price list on back of brochure).

A note about drill bits:

Some of the drill bits listed here and elsewhere in this brochure are commonly available from industrial suppliers. We recommend McMaster Carr Company, 404-629-5000
www.mcmaster.com.

Medium:... 5/32" diameter, 1.25" long

Large:..... 3/16" diameter, 1.5" long

Drill bits:

Medium:

Use 5/32" drill bit on dense woods.

Less dense woods may require drill bit sizes #23 (McMaster Carr part #30585A35) or #24 (part #30585A37).

Use 5/32" nut driver to adjust.

Large:

Use 3/16" drill bit and nut driver.

Threaded Tuning Pins

Dusty Strings threaded tuning pins combine the style and usability of taper pins with the proven reliability of piano tuning mechanics. Unlike tapered tuning pins, threaded pins won't work loose or require resetting. Harp players appreciate the smooth turning and greater control of threaded pins. Harp builders appreciate the easy installation – threaded pins press smoothly and quickly into place with an arbor press, making it easy to achieve uniform alignment (threaded pins should not be spun in with a drill).

Advise harp owners to back out the tuning pin 4 turns when changing strings, just as they would with a zither pin.



Threaded Harp Tuning Pin

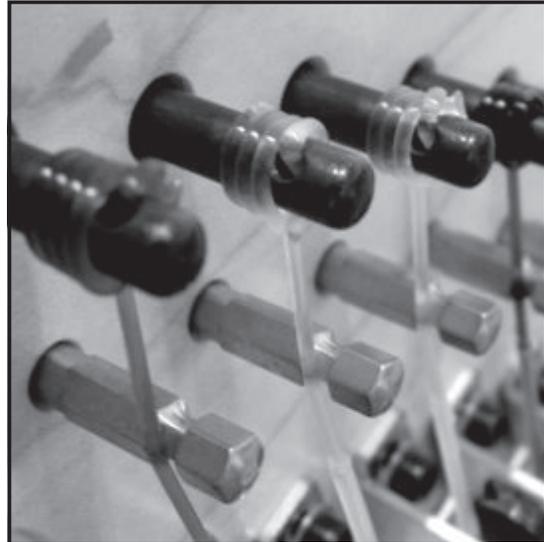
- 3" long
- .250" diameter at threads
- 5/64" through hole
- Square tip .176" across flats
- Black oxide finish

Drill bits:

Threaded tuning pins are .250" in diameter at the threads, so you'll need various undersize drill bits (depending on your wood species).

Before drilling your harp's neck, you'll need to do a sizing test in a scrap piece of wood. The test will determine the best fit with the wood species you are using. The harder the wood, the larger the hole needed. The fit should be firm, but not too tight.

- "D".246" (part #30595A34), for maple, sapele, and bubinga
- 6.2 mm .244" (part #2958A96), for walnut
- "C".242" (part #30595A33), for mahogany



Threaded tuning pins and threaded bridge pins installed on a harp

Screws for Loveland Levers

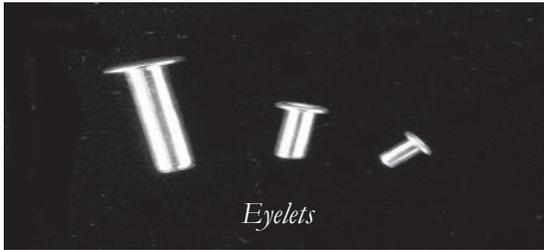
These custom-designed screws are great for Loveland lever installation. They are self-tapping pan head wood screws with a hexagonal head which allows access to the screw from an angle using a ball-end hex driver. The threads stop a short distance from the underside of the head, allowing for some lateral movement within the slot in the lever base, which is very helpful for precisely positioning the lever. The underside of the head is shaped to allow the screw to seat securely in the washer. A brass washer is included with each screw.

Drill bits:

Use a #35 bit on dense woods. Bits for less dense woods may range through #36, 37, or 38.



Screws for Loveland levers



Brass Soundboard Eyelets

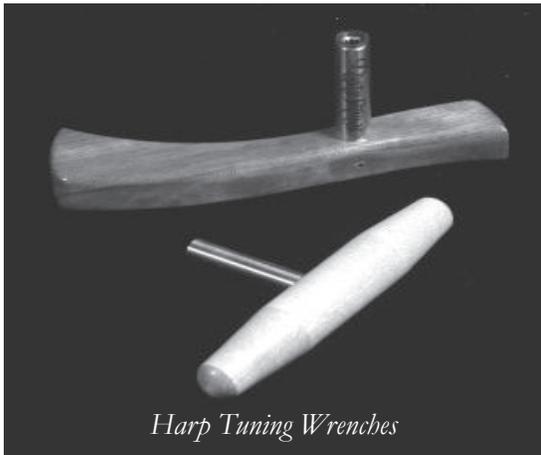
	<i>O.D.</i>	<i>Min. I.D.</i>	<i>Shaft Length</i>
Small.....	.089"	.070"	.156"
Med.....	.120"	.096"	.250"
Large.....	.157"	.120"	.532"

Drill bits:

- Small: #44 (.086", part #30585A58)
- Medium: #32 (.116", part #30585A45)
- Large: #22 (.158", part #30585A34)

Tuning Wrenches

Star-tip tuning wrenches for use on threaded harp tuning pins are available with a T-handle or an ergonomic custom handle. You can also buy just the wrench shafts and insert them in your own handles. The wrench opening is .180" to fit pins with .176" tips.



Universal Harp Tuning Wrench

Dusty Strings developed the Universal Harp Tuning Wrench to be fully adjustable in order to accommodate the full range of tuning pin sizes used on antique and modern pedal and lever harps. It can be sized to fit any square-headed tuning pin, regardless of manufacturer.



Monofilament Nylon Strings

Dusty Strings supplies 52½" long monofilament nylon string material individually packaged, or bulk packaged by the pound or by the hank (4–5 pounds). Individually packaged strings are available in clear, red, or blue. Bulk packaged strings are available only in clear.

<i>Size</i>	<i>Quantity per pound (approx.)</i>
.025"	1150
.028"	915
.032"	700
.036"	550
.040"	450
.045"	320
.050"	260
.055"	215

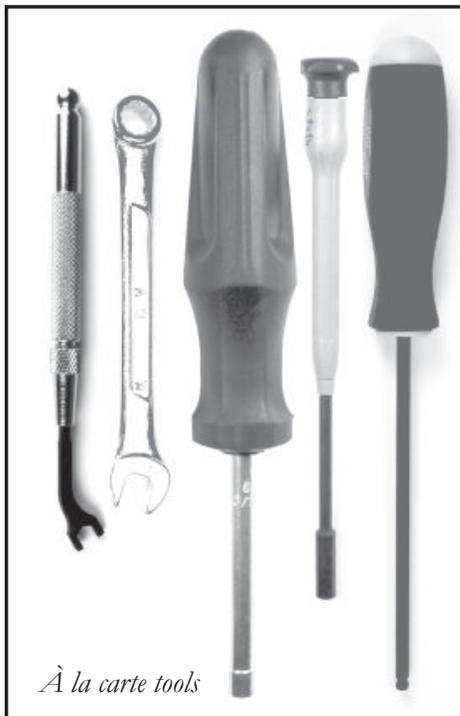
Individually packaged strings are also available in .060".

Harp Technician Tools

Dusty Strings supplies tools for installing and regulating Loveland levers and for adjusting threaded bridge pins. There is a custom-made set that includes a comfortable, beautifully turned wooden handle with a variety of tips that fit into it, as well as a selection of tools available *à la carte*. See price list for details.



Levering and Regulation Tools



À la carte tools

Dusty Harp Tool Kit

This handy custom kit of tools lets every Dusty harp owner manage all their harp adjusting needs - from replacing strings and lever cams to regulating Loveland sharpening levers. It is designed for Dusty harps built after early 2001, which have hexagonal, threaded bridge pins. There are instructions (but not tools) included for working with the round bridge pins that pre-date 2001. The tool kit, which slips into the pocket of your harp case, includes:

- Turned hardwood handle with magnetic hex tip which holds four custom tools used to adjust hexagonal bridge pins and Loveland lever screws.
- Combination pliers and snips for removing broken strings and cutting string ends.
- 1/4" open end wrench for adjusting and replacing lever cams.
- Soft brush for keeping hardware clean and dust-free.
- Starter supply of string splines, leather washers, and eyelets.
- Zippered microfiber clutch to keep it all organized and secure.
- Booklet on how to install, regulate and adjust Loveland levers.



Dusty Harp Tool Kit

Dulcimer Hardware

Zither Pins

Available in blued or nickel plated steel and in two sizes.

Standard pins:

1.75" long, .198" diameter

Drill bits:

Use #12 or #13 drill bit, depending on wood species.

Oversize zither pins, perfect for replacing loose zither pins:

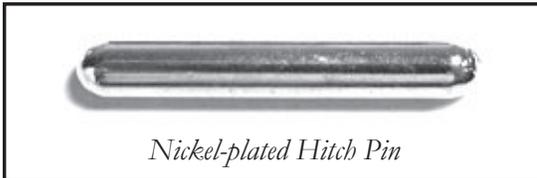
1.75" long, .210" diameter



Hitch Pins

Dulcimer hitch pins are available with nickel or black oxide finish.

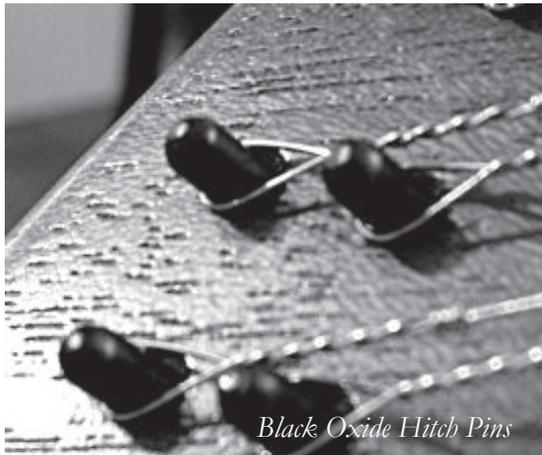
1" long, .146" diameter



Nickel-plated Hitch Pin

Drill bits:

Use 9/64" (.1406") or #27 (31440")

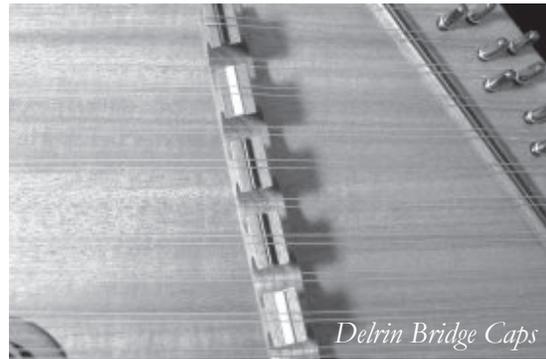


Black Oxide Hitch Pins

Bridge Cap Material

Dusty Strings offers 1/8" diameter Delrin rod in black or white. It is sold by the foot as well as in packages of pre-cut lengths to fit Dusty Strings dulcimer bridges. A package comes with six black and four white 3/4" bridge caps.

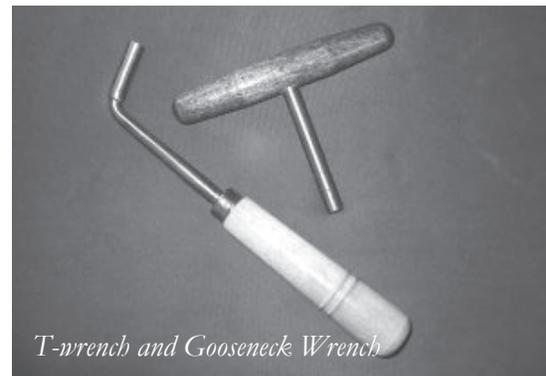
Felt half-circles, which are useful for damping the strings on the right side of the bass bridge, are also available by the dozen in black or white.



Delrin Bridge Caps

Tuning Wrenches

These are high quality star-tip tuning wrenches for excellent, non-wearing fit on the tuning pins. The longer handle of the gooseneck wrench provides extra leverage, making fine tuning adjustments a breeze.



T-wrench and Gooseneck Wrench

Strings

Individual loop-end strings are available in plain steel, phosphor bronze, brite bronze, steel wound, and phosphor bronze wound. They are 45" long. See price list for diameters.

Harp Hardware Price List

Prices subject to change without notice

	<i>1-99</i>	<i>100-999</i>	<i>1000+</i>
Threaded Bridge Pins			
Medium.....	\$0.65	\$0.50	\$0.47
Large.....	\$0.90	\$0.80	\$0.65
Medium Beveled.....	\$1.05	\$0.90	
Threaded Tuning Pins	\$1.75	\$1.40	\$1.20
Screws for Loveland lever installation	\$0.33	\$0.25	\$0.20
Soundboard Eyelets			<i>each:</i>
Small harp eyelet package (5 small and 5 medium, for 26-string harps)			\$2.25
Large harp eyelet package (5 small, 5 medium, & 5 large, for 32, 34, & 36-string harps)..			\$3.75
<i>Individual eyelets, in quantities of 10 or more:</i>			
Small.....			\$0.20
Medium.....			\$0.25
Large.....			\$0.30
Tuning Wrenches with star tip			
For threaded harp pins, T-handle			\$19.95
Shaft only for harp pins			\$14.00
Custom wrench with ergonomic handle for harp pins			\$42.00
Universal Harp Wrench			\$62.00
Nylon Monofilament Strings			
Individually packaged, specify red, blue, or clear.....			\$2.25
Pound, clear (sold in multiples of 1 lb. only).....			\$46.50
Hank (4–5 lbs.), per pound, clear (sold in full banks only).....			\$29.50
Loveland lever cam (for <i>Dusty Strings</i> harps only)			\$1.50
Technician's Tools for Threaded Bridge Pins and Lever Installation			
Turned wooden handle with 1/4" magnetic socket			\$24.50
<i>Tips with 1/4" hex end:</i>			
5/32" nut driver, for adjusting medium bridge pins.....			\$14.95
3/16" nut driver, for adjusting large bridge pins.....			\$15.95
"Sidewinder", for adjusting bevelled threaded bridge pins			\$15.95
7/64" ball driver, for installing Loveland lever screws.....			\$12.50
À la carte Tools for Threaded Bridge Pins and Lever Installation			
5/32" nut driver with plastic handle, for adjusting medium bridge pins			\$7.30
3/16" nut driver with plastic handle, for adjusting large bridge pins.....			\$7.30
5/32" open end wrench, for adjusting bevelled bridge pins			\$4.20
7/64" ball driver with plastic handle, for installing Loveland lever screws.....			\$5.95
1/4" open end wrench, for Loveland lever cam adjustment.....			\$4.20
Craftsman torque wrench, for assembling Ravenna harps			\$95.00
Dusty Tool Kit			
Zippered clutch with everything you need to change strings and adjust levers, includes complete set of Technician's Tools.....			\$135.00
Loveland Lever Installation, Regulation & Adjustment (<i>booklet</i>)			\$10.00

Dulcimer Hardware Price List

Prices subject to change without notice

	<u>1-99</u>	<u>100-499</u>	<u>500*</u>	<u>1000*</u>	<u>5000*†</u>	<u>10,000*†</u>
Zither Pins	\$0.40	\$0.35	\$0.23	\$0.205	\$0.19	\$0.175

** Sold in multiples of these quantities only.*

† Credit card payment not accepted for 5000 and 10,000 quantities.

	<u>5-24</u>	<u>25-49</u>	<u>50-99</u>	<u>100+</u>
Oversize zither pins	\$2.50	\$2.00	\$1.50	\$1.00

Hitch Pins	<u>1-99</u>	<u>100-499</u>	<u>500</u>	<u>1000</u>	<u>2500+</u>
Nickel plated	\$0.25	\$0.20	\$0.12	\$0.11	\$0.09
Black oxide	\$0.27	\$0.22	\$0.14	\$0.13	\$0.11

Tuning Wrenches with star tip

T-handle.....	\$22.95
Gooseneck.....	\$29.95

Individual Loop-end Strings, 45" long

each:

Plain steel: .014", .016", .018", .020", .022", .024".....	\$1.50
Phosphor bronze: .020", .022", .025"	\$2.50
Brite bronze: .022"	\$2.50
Steel wound: .020", .024", .028"	\$2.50
Phosphor bronze wound: .030", .032", .034", .036", .040", .044", .054", .060".....	\$2.75

Bridge Cap Material

each:

Package of Delrin bridge caps, 3/4" long, six black and four white	\$3.00
1/8" Delrin rod sold by the foot (specify black or white)	\$.75/ft.
1 dozen felt half-circles (specify black or white)	\$3.00

Dusty Strings

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