

Rees Lever Installation Instructions

Tools required

#1 philips screwdriver
Hand drill
1/16" (1.5mm) drill bit
Masking tape

(optional) 1/8" (3mm) drill bit
(optional) Pliers

1. Preparation

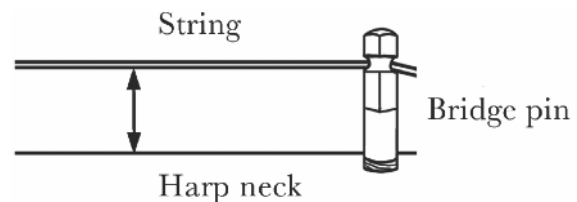
Use a soft cloth or towel to pad your work surface/table. Lay the harp on it's side with the bridge pin side up. If you are adding levers to a harp that already has partial Rees Levers installed then you can skip steps 2 - 3 and proceed to step 4.

2. Set bridge pin starting height

You will need to set all of the bridge pins so that they are at the starting height of **5/8" (16mm)**. You can do this by hammering them in and if your bridge pins are threaded you can screw them in as well. For best results use a bridge pin with threads. Later you will regulate the string height by turning the bridge pin clockwise to lower or counterclockwise to raise.

3. Set string height

String height is measured from the harp to the bottom of the string. To set string height raise or lower the bridge pins to obtain the following string heights. These measurements are only starting points and may need to be adjusted later.



Strings 1 - 2 (shortest strings) have a height of 1/2" (18mm).

Strings 3 - 10 have a height of 7/16" (11mm).

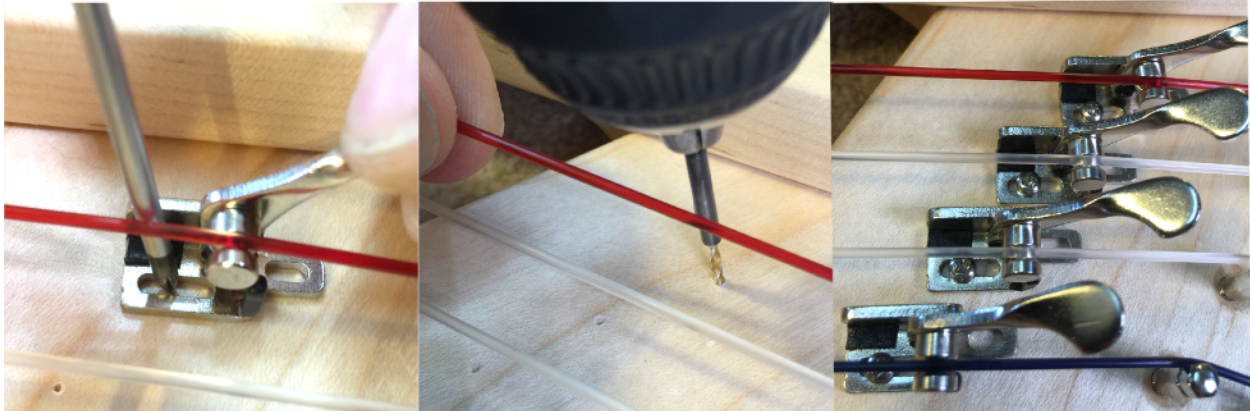
Strings 11 - and up have a height of 3/8" (9mm)

4. Locate Lever Placement

You will need to find the correct positioning of each lever along the string in order to achieve the correct half step note when the lever is engaged. First tune the harp up to pitch. Keep it up to pitch during the process. Start with the lowest (longest) string, since the longer strings are the easiest to locate the position of the lever. Using a chromatic tuner, pluck the open string. Place the lever in the up position under the string and slide it along the string until the plucked note registers on the chromatic tuner at a half step above the starting (open string) note. Example: Open string is C. Levered string is C#. Double or triple check the position to make sure it is correct, then mark the position of the lever with a piece of masking tape. Continue with the other strings working your way up the strings. Each consecutive lever will be placed gradually closer to the bridge pins as you continue placing levers. The levers on strings 1-6 will be touching the bridge pins.

5. Mount levers

After locating the proper placement for each lever, you will **mount each lever with two #2 x 1/2" panhead screws**. Make a mark in the center of the longest screw slot with a sharp pointed object or the tip of your screw driver. This will mark the location for your pilot hole. **Remove the lever and drill a pilot hole using a 1/16" (1.5mm) Drill bit to a depth of 3/8" (9mm)**. It is helpful to mark the depth on the drill bit with a piece of masking tape. Position the lever back into place and **insert the screw using a #1 philips screwdriver**. Tighten the screw until it is snug. **Do not over tighten the screws**. If you happen to over tighten the screw it will no longer be firm and the screw hole will be stripped.



Make sure that your lever is properly aligned with the string and install the second screw in the shorter slot. Install the screw in the same manner but this time you will not need to remove the lever to drill the pilot hole.

Tip: A common remedy for misaligned or stripped screw holes is a wooden toothpick. Insert the toothpick into the hole and break off the remainder protruding from the hole. With the hole now plugged, you can either reinsert your screw or relocate your screw hole.

6. Make fine tuning adjustments

After mounting the levers, you will need to check the regulation to make sure that the levers produce the perfect half step when engaged in the up position. You will most likely need to make some fine tuning adjustments. There are two methods for doing this. With the lever engaged you can loosen the screws and slide the lever up or down in the screw slots to adjustment the pitch of the lever or the easiest and preferred method is to **raise or lower the bridge pin height until the regulation is correct. Raising the bridge pin will lower the pitch and lowering the bridge pin will raise the pitch**. You can also use a combination of the two methods if needed.

7. Hold down screws

As a general rule, if your harp has wrapped nylon strings and wrapped metal strings, the lowest two wrapped nylon and two lowest metal strings will require a "hold down" to prevent a harpist, who is playing loudly or hard, from pulling the string out of the groove on the lever. These bass strings can have more slack that may cause them to vibrate in the lever groove which can cause a faint buzz. Installation of the hold down screw will apply downward pressure on the string to eliminate this.

Play your harp with some vigor with the levers engaged. If the lower wrapped and metal strings don't buzz or pop out of the groove then you don't need "hold downs" and you can skip step 8.

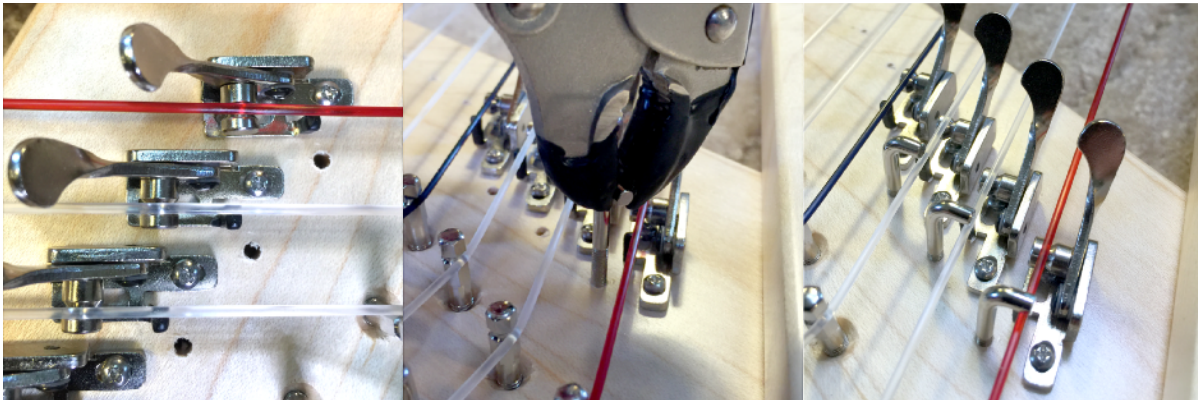
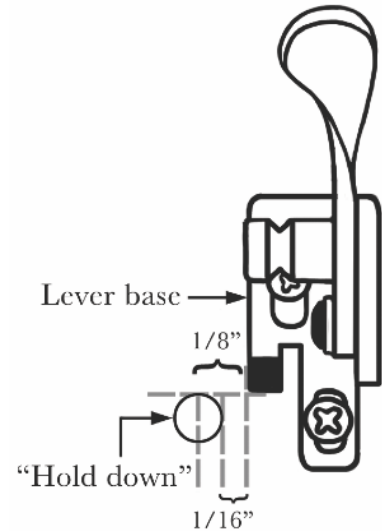
8. Installing hold down screws

Drill 1/8" (3mm) hole to a depth of 9/16" (1.4cm), slightly deeper than a 1/2" at the location shown on the drawing.

The 1/16" (2mm) location away from the base is important so that the vibrating string doesn't hit the "hold down".

Screw "hold down" in with your hand. Eventually it will get too hard for your hand and you'll have to continue screwing it in using pliers. Use a strip of masking tape on the jaws of the pliers so it doesn't make marks on the "hold down".

To get the right height of the "hold down", engage the lever in the up position. This will raise the string on the lever. Carefully turn the "hold down" until it barely touches the top of the string. Test the position by lifting up the string. If the string doesn't lift up in the groove or slightly moves in the groove, then the "hold down" is at the right height. Having the "hold down" too low can make it hard to engage the lever and can cause extra wear on the string.



9. Final check

With the harp tuned to pitch, go over all the levers again checking and regulating them to a half step on the chromatic tuner by raising or lowering the bridge.

10. Metal Strings

Sometimes a metal string may have a rasping sound when the lever is being engaged. This sound can be eliminated by applying a little bit of wax/car wax to the string where it comes in contact with the lever.

Need more information or have a question? We are happy to help.
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