

Dusty Strings

HAMMERED
DULCIMER
OWNER'S
GUIDEBOOK



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Dusty Strings Company

Founded in 1978, Dusty Strings is a company of dedicated instrument builders whose love of wood, fine craftsmanship, and music results in some of the finest hammered dulcimers and harps available. We invite you to write or call us any time with questions you may have, or simply to let us know about yourself and your dulcimer. We hope your Dusty Strings hammered dulcimer will provide you with many years of musical enjoyment.

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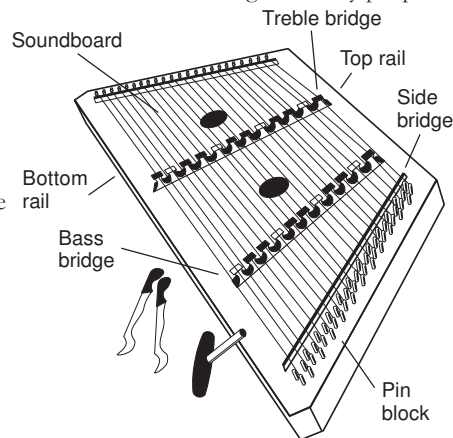
Introduction and History

As a new owner of a Dusty Strings hammered dulcimer, you might want to take a few minutes to read through this booklet. We have written it assuming that you have little prior knowledge of the hammered dulcimer and of our instruments. The intent of this booklet is to help familiarize you with the history, tuning, care, and basic playing techniques of the hammered dulcimer. We hope it will answer many of your questions and help you get to know your instrument and its terminology.

First, a few words about the history of the hammered dulcimer. Some people are surprised to learn that the hammered dulcimer is not a new instrument. In fact, it's been around longer than most modern instruments, and is thought to have originated in the Near East thousands of years ago. Its descendants include the harpsichord and piano. Nearly every culture throughout the world has some form of this instrument, ranging from the large Hungarian cimbalom to the fragile Chinese yang chin.

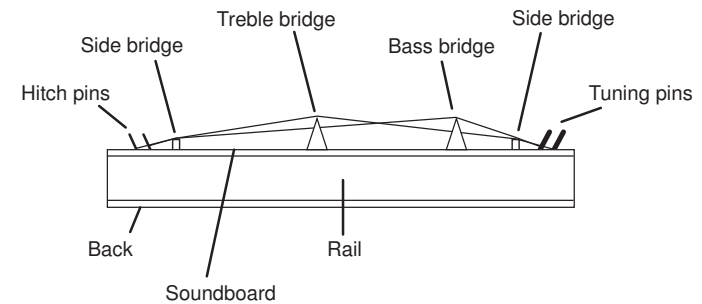
The hammered dulcimer was probably brought to America by early settlers from Europe. It was a popular instrument at square dances, and its easy portability earned it the name "lumberjack's piano" in logging camps. In the late 1800s and early 1900s factories were producing hammered dulcimers in quantity, and their popularity had reached a zenith. Use of the instrument declined after the turn of the century, and the hammered dulcimer became a rarity until the 1970s, when a revival of interest in folk music focused attention on it once again. Today people are rediscovering the unique and pleasant sound of this instrument and the relative ease of learning to play.

The term "dulcimer" comes from the Latin and Greek roots "dulce" and "melos", which combine to mean "sweet tune." The hammered dulcimer is completely unrelated to the "Appalachian" or "mountain" dulcimer, which has three or four strings and is strummed.



Maintenance and Care of Your Dulcimer

STRING MAINTENANCE



Each set of strings is called a course and is tuned to the same note (unison).

One advantage of the hammered dulcimer is that it is virtually maintenance-free. With a minimum of periodic attention, your instrument will remain healthy and sound beautiful for many years to come. While the strings of guitars and other stringed instruments must be replaced often due to the corrosive effects of salt and perspiration from the player's fingers, the hammered dulcimer's strings can last many years with a little care. When tuning up, use a guitar pick instead of your bare fingers to sound each string. If your dulcimer resides in a humid atmosphere, you may notice a small amount of black corrosion or tarnish on the strings after a while. Commercially available string wiping cloths work well for removing this discoloration.

STRING TYPES

We use three types of strings on our dulcimers. Depending on the model, your dulcimer will have strings that are common steel music wire, phosphor-bronze, or wound. The string gauges and types used on each of our instrument models are listed in the Strings and Tunings section (page 18).

The steel strings seldom break under normal conditions and will sound good for years. If you need to replace one, you can find a loop-end guitar or banjo string of a matching gauge at most music stores, or you can purchase one from your dealer or order one directly from us.

Phosphor-bronze strings are not as readily available. If you should require replacements, your best bet would be to order them through your dealer or directly from us. This type of wire has different physical properties than steel, and in some situations provides a superior tone (as on some of the lower courses of the D35 model). However, there is a trade-off: phosphor-bronze has a lower tensile strength than steel and "work hardens" (i.e., becomes brittle) with use, so it is subject to more breakage than steel. If you like, you can try replacing a phosphor-bronze string with a steel string of the same gauge, or perhaps one gauge thicker, and see if you find the resulting tone acceptable.

Several of our models use wound strings on some of the bass courses. As time goes by their tone will begin to dull, as with guitar strings, and they should be replaced. It's hard to notice the change because it is so gradual, so we recommend choosing an easily remembered date on which to note whether a year has gone by with the same wound strings. If so, you should treat yourself to some new ones. All of these strings can be ordered individually or in spare string kits that contain at least two of each size of string on your dulcimer (to cover most string breakage situations).

REPLACING BROKEN STRINGS

To replace a broken string, turn the string's tuning pin counter-clockwise for three or four complete revolutions and remove the broken sections of string. This is important because the tuning pins have fine threads that cause them to descend further into the pinblock with each turn. Place the loop of the new string over the string's hitch pin on the other side of the instrument and stretch it across to the tuning pin, making sure it is sitting in position on top of its main bridge and is passing through the appropriate hole in the opposite bridge. It is helpful to have someone hold the loop end down on the hitch pin while positioning and stretching the new string, but in a pinch you can devise something else to secure it yourself—try a bulldog-type clip or rubber band.

Before you go any further, take a moment to look closely at an adjacent tuning pin to see how the string coils neatly down the pin, with no excess wire sticking out of the hole. This is what you're going to imitate. The neat, tight coils look good and ensure proper string positioning. Hiding the sharp end of the wire inside the pin keeps it from puncturing your fingers.

Cut the string with wire snips (or sacrifice a pair of nail clippers), leaving two inches of extra length past the tuning pin. Put the end of the string inside the hole in the pin. Hold it there and turn the pin clockwise to form a sharp right-angle bend. Keep tension on the string as it wraps onto the pin, so that it forms tight coils down and away from the small starting hole. *Make sure the whole string is sitting in its correct position and is not caught up on any other pins, strings, or bridge pedestals.* The pin should rotate about three times before the string becomes taut. Tune it slowly up to proper pitch. The whole process will seem awkward at first, but becomes smooth with practice.

A new string will stretch a bit before stabilizing, so you may need to tune it a few times in its first hour of service.

RESTRINGING THE WHOLE DULCIMER

Depending on atmospheric conditions, a string set can last a long time, sometimes even years if there are no wound strings. Wound strings typically get dull-sounding within a year or so and need periodic replacement (see **String Types**, page 4). It is really an issue of personal preference when (or if) you replace the whole set of strings on your instrument. If they get dark and corroded-looking, and seem to have lost their “singing” quality, it may be time. You can go to your local dealer and inquire about re-stringing, or dig into it yourself. It is really very straightforward, though time-consuming.

The only important thing to know about this process is that *it is best to take off and replace only one course (two strings) at a time.* This allows you to maintain tension on the instrument, and you can get it back to holding pitch more quickly. Also, you maintain bridge placement, which protects you from having to fiddle around with re-setting the treble bridge in its precise fifth-interval tuning placement (see **Tuning Hints** on page 14). You can follow the instructions above for how to take off the old strings and put on the new ones.

If, however, you want to give the soundboard a thorough cleaning as well as changing the strings, you may want to remove all the strings at once, as well as the bridges. *Make sure you carefully mark the placement of the bridges (we suggest using tape for this purpose) before you remove all the strings. The bridges are not glued down and will need to be replaced exactly if the instrument is to be tunable.* Before cleaning the soundboard, please read the section below on your instrument's finish.

STRING BUZZES

If you hear a raspy, buzzing sound when you play your instrument, a string is probably resting too lightly on a side bridge so that it vibrates against the bridge when it is struck. If you suspect that this is happening with one of your strings, press down on the string right next to the tuning pin and strike the string. If the buzz is gone, you've found the culprit, and you can permanently silence it by lowering the string so that it makes solid contact with the side bridge. Do this by loosening the tuning pin about half turn while pushing the string down toward the pinblock. Hold this position as you re-tighten the tuning pin. This same remedy may apply to string buzzes on the hitch pin side. In the case of some of the higher, right-side bass bridge strings, the opposite solution may be required: you might find places where it seems easier to raise the string on the tuning pin and completely eliminate contact with the side bridge. This works only because the string sections to the right of the bass bridge are not used for playing.

FINISH

Depending on which model you've chosen, your instrument is finished with either black or clear semi-gloss lacquer. In both cases, caring for the finish requires nothing more than a gentle wipe-down with a soft cloth, lightly dampened with glass cleaner to remove fingerprints. Using instrument or furniture polish or oils is not necessary or recommended. They are hard to wipe off adequately, tend to attract and hold dust and grime, and can interfere with lacquer bonding if you ever want finish repair work done in the future. It is better to just keep your hammered dulcimer dust-free using a feather duster and a 2" or 3" soft-bristle paintbrush, which works especially well for getting dust out from between the hitch and tuning pins.

The soundboard can be cleaned with a sock stuck over the end of a yardstick. Compressed air is also effective if the dust is loosened first with one of these other tools. If your instrument is out of its case for long periods, a dust cover made of soft fabric will help keep it clean. For long-lasting beauty, the best thing you can do is keep the instrument dusted. Accumulated dust attracts and holds moisture and oils and eventually becomes very hard to remove.

GENERAL CARE

Be sure to guard your hammered dulcimer from extreme changes in humidity and temperature. Keep it out of direct sunlight, hot cars, freezing attics, etc. Many people do not know the speed with which a car interior becomes dangerous to instruments. Because pets are vulnerable to the same dangers, the Humane Society publishes the following, somewhat surprising, details: on an 80 degree day, a car parked in the sun *or the shade* with the windows cracked will reach 102 degrees in 10 minutes and 120-160 degrees in 30 minutes.

Many instrument glues begin softening and melting at around 130 degrees. Once softened, glue loses its holding power, and any instrument under string tension is at risk of pulling apart. You could conceivably open the car door to find your instrument in pieces. More likely, you would have unknowingly softened the glue to the point where a slow and gradual disintegration of your instrument begins, the results of which won't show until much later. Basically, expect that your instrument will be comfortable anywhere you are, and not where you're not. So, take it into the restaurant with you! It's also smart to travel with your dulcimer in a case that offers insulation (such as our cordura and foam cases) to protect it from quick changes in temperature.

IF YOU LIVE IN A DRY OR COLD CLIMATE

If your weather gets dry or cold, and your instrument has a solid wood soundboard, you should take steps to safeguard your instrument from cracking. Damage caused by excessive dryness is not covered by your warranty, because it is something over which we, as a manufacturer, have no control.

Here is a brief description of what happens to your instrument when the relative (or atmospheric) humidity changes. Within a week, the moisture content of the wood will change to match that of its surroundings. If the humidity increases, the wood will take on moisture and swell. If it swells too much, it can warp. If the humidity drops, the wood will lose moisture in a matter of days and shrink. If it shrinks too much, it will crack. Instruments with large soundboards, including hammered dulcimers, are more vulnerable to the dangers of swelling and shrinking than those with small soundboards (such as guitars or violins). So don't assume that because your guitar has done fine in your climate, your hammered dulcimer will too!

The challenge for the instrument builder is to make a soundboard that can accommodate the widest possible variation in humidity without problems. Before we glue up a hammered dulcimer, we equilibrate the soundboard and back in a controlled environment to a relative humidity of 43% to 45%. Our years of building these instruments and recording humidity data have shown that this approach accommodates the widest range of real-world humidity conditions without problems. As is true with most wooden musical instruments, your instrument will be happiest in a relative humidity range between 40% and 50%. It may do all right outside that range, but the farther you go in either direction, the greater your risk of damage.

So if you live in a dry climate, or are experiencing a cold spell, you should

humidify your instrument, either by keeping it in a humidified room or by using an instrument humidifier.

If you humidify the room, or your house, the only way to be certain your humidifier is maintaining a safe range is to place a hygrometer (a device that measures relative humidity) near your instrument and monitor the readings. Inexpensive hygrometers can be purchased in many music stores. Give us a call if you need help finding one.

If you do not have a hygrometer, or if your room humidifier is not sufficient, you should store your instrument in its case with an instrument humidifier. These are also available in most music stores. Put your dulcimer back in the case with the humidifier when you're not playing. Check that the humidifier is still moist. Rapid swings from dry to moist are hard on any instrument. Once the ambient humidity reaches a safe range, around 40%, take the humidifier out. Too much moisture will cause swelling and warping.

Keeping your instrument properly humidified is an excellent way to ensure longevity, and is really the only type of maintenance that your hammered dulcimer requires beyond tuning, cleaning, and replacing an occasional string.

TRANSPORTING YOUR DULCIMER

We have padded, zippered, cordura cases with shoulder straps to fit all our hammered dulcimers. These work quite well for protecting your instrument from dents and dings in most transport situations. In car travel, just be sure to load the dulcimer on top of your other gear, bridge side up, where it won't shift; or stand it on its top rail (with case handle up), braced so it can't fall over. If you're driving for a distance with the sun beating down through the windows, throw a space blanket over your dulcimer to reflect the sun. The temperature under the blanket will stay 10-20% cooler. Please be sure to read about the danger of leaving your instrument in a parked car under General Care (page 7).

Flying with your dulcimer can be a challenging proposition. We've carried smaller dulcimers in their cases onboard aircraft and stowed them in the coat closet, but if the flight is crowded you might be turned away at the gate. Some people who fly with their hammered dulcimers a great deal have custom flight cases made, but we've found these to be quite expensive and very heavy. One resource is the Colorado Case Company at 800-340-0809 or on the web at www.coloradocase.com. They make a sturdy and lightweight rigid foam case that works well.

You may find that the easiest way to protect your dulcimer for the occasional air trip is to pack it up as though you were going to ship it via UPS, and check it with your other luggage. This entails finding a box big enough to fit the dulcimer in its case, with a few inches of extra padding all around. Use soft foam or starch packing beans, and pack it snugly so the instrument can't shift around. For a smaller dulcimer, sometimes a left-over guitar shipping box from your local music store will work. For larger instruments, you may need to find a box at a packing service.

WARRANTY REPAIR

Our instruments carry a five-year warranty to the original purchaser. Be sure to send in the warranty card to register your purchase. If we don't have that on file, you may need to provide proof of purchase for warranty service. If you have any warranty questions, please contact the store where you bought your instrument if possible. They may be able to help you assess whether the problem is covered under warranty, and/or whether it might be repaired locally, thereby avoiding shipping costs and minimizing the time you spend without your instrument. If you need to return your instrument to us for evaluation and repair, call us first for approval (if your dealer hasn't already done so). Then package your instrument as described in the previous section and ship it pre-paid and insured. Enclose a description of the problem and any circumstances that may be linked to the problem (e.g. falls, accidents, weather conditions, etc.). If you did not send in your warranty card to register your purchase, you must also enclose a copy of your purchase receipt.

Scales, Bridges, and Tuning Schemes

A knowledge of the dulcimer's tuning scheme and of major scales, as well as a general understanding of treble bridge placement, will be of great help in the playing (and tuning!) of your instrument. This section applies to the traditional fifth-interval tuning. If you have a piano dulcimer (our models PD30 and PD40), some of this information will not be relevant, and some will need to be adapted to your instrument.

SCALES

Quite simply, a major scale is any series of eight notes which sound like the familiar "Do Re Mi Fa Sol La Ti Do." Such a series has a special relationship between all the notes in the scale. The important concept is that a major scale can begin on any note, and as long as the intervals between the notes are maintained, it will still sound like "Do Re Mi...." The note on which a major scale begins is called the "root" or "tonic," and names the key you are playing in.

TREBLE BRIDGE PLACEMENT

The interval between the first note of a major scale (Do) and the fifth note of the scale (Sol) is called a "fifth". The treble bridge of a dulcimer is precisely positioned to divide the strings that pass over it into two sections that sound notes one fifth interval apart. This means that if a string sounds "Do" on the right side of the bridge, then that same string will sound "Sol" on the left side. This fifth-interval relationship is clearly illustrated by singing the first two words of *Twinkle, Little Star*.

THE DULCIMER TUNING SCHEME

The hammered dulcimer is laid out in simple patterns of major scales. It is designed to provide easy access to the scales, or keys, most commonly used in playing traditional music: D, G, C, F, and A. The diagram to the right illustrates the tuning scheme for our basic 12-treble/11-bass course instruments (the D10,

Apprentice, and Prelude). Complete tuning schemes for all of our instrument models are illustrated in the Strings and Tunings section starting on page 18.

The large dots in the diagrams show where major scales begin, or would begin if the notes continued on in their established patterns. These positions should be clearly marked on your instrument by the white

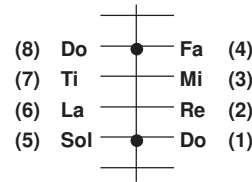
bridge cap pieces.

To play a major scale, start on a white position

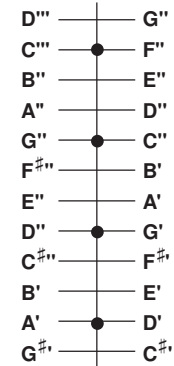
marker on either the bass or treble bridge, and sound the rest of the notes in order as listed in the chart to the right.

Become familiar with these patterns and then find all of the scales listed earlier. Because the dulcimer is made up of a series of scales built one on top of the other, there are many notes that are repeated. This allows greater freedom of choice with playing patterns, and can help speed the tuning process.

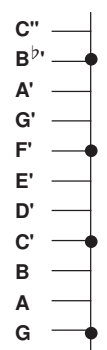
Treble Bridge



Treble Bridge



Bass Bridge

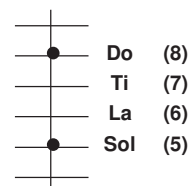


Tuning the Hammered Dulcimer

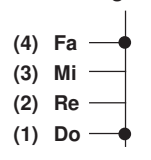
As with any stringed instrument, learning to tune the hammered dulcimer is an important part of learning to play. The more critical you become of the tuning, the more you will appreciate a finely tuned instrument. It may take a while to develop the techniques that speed the process up, but don't get discouraged and let tuning become a burden. You owe yourself the pleasure of playing on a properly tuned instrument, and your satisfaction in owning and playing your hammered dulcimer will be greatly enhanced if you allow yourself the time to keep it in proper tune.

The following discussion of tuning is fairly detailed and assumes *no* prior experience. If you do have some experience with tuning, you may want to skim through this section, keeping your eye out for idiosyncrasies peculiar to the hammered dulcimer.

Treble Bridge



Bass Bridge



USING ELECTRONIC TUNERS

Electronic tuners are by far the most popular, accurate, and easy-to-use tuning aids. These small, battery powered devices "listen" to the pitch of the string and tell you with a meter or light just how sharp or flat the string is. All you have to do is adjust the

D Major: D E F# G A B C# D
G Major: G A B C D E F# G
C Major: C D E F G A B C
F Major: F G A B^b C D E F

string until the tuner tells you its pitch is correct. We recommend getting an electronic tuner as soon as your budget allows. With a little practice you will be able to quickly put your dulcimer in tune, and can spend your time playing music!

Tuning Sequence. When using an electronic tuner, it really doesn't matter what note you start with. A common practice is to start on the lowest bass course and work up the bass bridge to the top, then go to the lowest treble course and work up to the top of that side of the bridge. The notes on the other side of the treble bridge will come into tune automatically. With this methodical approach, it's easy to keep track of where you are.

PRIMARY CONCERNS

Difficulty of tuning. The dulcimer is no more difficult to tune than other stringed instruments. The basic goal of matching the pitch of a string to a certain note is exactly the same. The difference, of course, is that the dulcimer has more strings than most. However, there are a number of special procedures and shortcuts that make the task much easier than it may initially seem. Learning to tune the instrument is something that comes with practice. Despite initial fears, *anyone* can learn to adequately tune this instrument.

How long will it stay in tune? There is great variation in the length of time an individual instrument will hold its tune. Generally, what makes an instrument go out of tune is temperature change. Heat expands the metal strings, causing their pitch to drop or go flat, and cold can cause the opposite problem. Wood compression, settling of the instrument, and the strings stretching over time can also cause a hammered dulcimer to go flat. This is why a new instrument, or one that is newly strung, will go out of tune more quickly than a seasoned instrument.

Your dulcimer should stay in tune fairly well if the environment is relatively stable. And, fortunately, instruments tend to drop in pitch uniformly across their range, meaning that they may remain in tune with themselves and playable for a longer period, as long as you aren't trying to play with someone else!

How to best keep it in tune. Any action that minimizes temperature variation will help. Don't keep your instrument near a wood stove, heating duct, or large window. Put it in a well-insulated case when moving from one environment to another, and give it time to adjust slowly to the new temperature before removing it from the case. Avoid or minimize playing in the hot sun. Basically, keep in mind that temperature change, and the rate of change, will have an effect.

Do not, however, feel that you have to keep your dulcimer in its case when not in use. We believe that the more accessible your dulcimer is, the more you will play. We suggest you get a playing stand so your dulcimer will be out in your home where you can enjoy it.

Dealing with a new or very out-of-tune instrument. The large number of strings on a dulcimer exert a tremendous amount of tension. If an instrument is new or far out of tune, the additional tension needed to bring it up to pitch will cause a slight compression of the whole instrument. This may be significant enough that by the time you tune all the strings, the ones you started with will be flat again. In this situation you may have to tune the entire instrument two or three

times. To save time, do an approximate job the first time or two, and save fine-tuning for the last time around. This is seldom necessary with seasoned instruments that have been kept in tune.

PITCH

When a string is struck it vibrates, creating waves in the air, much like ocean waves. These waves strike your ear and are translated into what you hear as the tone. The pitch of that tone depends on the frequency with which the sound waves reach your ear (i.e., how many waves per second). Each note has a certain frequency which is measurable and recognized. It is generally accepted that the A above Middle C has a frequency of 440 waves or cycles per second. All other notes are based relative to this frequency. "Concert" or "absolute" pitch is based on this A440 standard. Remember, though, that an instrument will still sound "in tune" when all of its notes are pitched in the correct relationships to one another, even though the entire range may be sharp or flat relative to concert pitch.

TUNING BY EAR

Tuning standards. A tuning standard is whatever you use to match your pitch. It can be an outside source or simply another string on your instrument. Perhaps the most basic standard is the tuning fork, a metal device that vibrates at a certain pitch when struck. Touching your soundboard with the non-forked end of a vibrating tuning fork will amplify the fork's sound considerably.

Chromatic pitch pipes are inexpensive tuning devices that look like round harmonicas and have all the notes — including accidentals (sharps and flats) — for one complete octave. They come in different ranges, the most useful being the "C-to-C" model. If you can, get one with a note selector, a device that enables you to blow a single note while holding the pipe with your lips, thus freeing both hands for tuning.

Tuning to another instrument is another option. In fact, matching pitches on your hammered dulcimer with another stringed instrument, such as a piano, is sometimes easier than using a tuning fork or pitch pipe.

Matching pitches. The whole discussion of tuning really comes down to matching pitches. You hear a note from your standard and tighten or loosen a string to match it. This can be quite simple, and it can also be frustrating. The environment has a lot to do with it, both physically and psychologically. Tuning alone in a quiet room is certainly easier than tuning on stage in a noisy tavern.

Many people fear tuning, and others think themselves incapable of it. Both of these beliefs are usually unfounded. Nearly everyone can learn to match pitches. Sometimes it takes a great deal of practice, but it is definitely a skill that can be learned rather than an inherited gift. One thought to keep in mind: in addition to tuning in order to practice, *practice tuning*.

When attempting to match pitches, you should be able to hear the standard note while changing and sounding your string. Keep blowing the pitch pipe while tuning — it is much easier than trying to remember the note. Once you hear the standard note, there are only three possible conditions that exist: 1) your string is flat (too loose), 2) your string is sharp (too tight), or 3) your string is in tune (just

right). The object of ear training is to learn to tell the difference between these three conditions.

With your standard note droning in the background, change the pitch of your string. Tighten it to make it obviously sharp, then slowly loosen it and listen as the pitch gets lower, goes into unison with the standard, then drops into the obviously flat range. Reverse the process, and try other notes. Learn to tell the qualitative difference between sharp and flat. Learn to recognize the two notes coming together into unison. Some find it easier to hear two notes coming together when they start flat and raise the string up to pitch. Get feedback from others. Pretty soon, you'll get the hang of it.

As you experiment, you may hear a curious kind of pulsation, or “wow-wow-wow”, occurring as the notes get closer together. You can learn to use this phenomenon to aid your tuning. The “beats” will slow down as the two notes get closer and closer to the same pitch, and will finally stop altogether when they're in unison.

A musical interval is the distance between any two notes. The interval between Middle C and the next higher C is an octave. This is an easy interval to hear and match. If your standard note is one octave lower than the note you want, you can still tune in just about the same manner as if it were the same (unison) note. Other intervals, particularly the one between Do and Sol on a major scale, are also easy to hear, and with practice you can use these intervals to speed up the process of tuning.

Tuning Sequence. Now for the actual tuning. If you are using a pitch pipe, the most direct method of tuning is to match all of the notes on the dulcimer that are available on the pipe. Once you have gone through the single octave of notes on the pipe, your knowledge of the tuning scheme will allow you to tune the remaining notes. For instance, by tuning the G on the right of the treble bridge you have also tuned the D on the left side. So now you can use this D to tune the D you need at the upper right of the treble bridge. Similarly, you can get the next note, E, by matching it to the E on the left side of the treble. You may have to use octave intervals to get some notes. In fact, once you can hear octave intervals well, you can simply use the pitch pipe to tune all of the notes on the instrument.

Tuning to a piano is a little easier. Just start matching pitches and keep going until you get them all.

Some players can start with a single note from a tuning fork or pitch pipe, and just “hear” when the rest of the notes are correct. This is usually done in scales, starting with the “DO” and singing the notes in order. As your ear training progresses this may become a possibility for you.

One more option to consider is cross-tuning the instrument to itself. Explore the possibilities that arise from the treble bridge placement, as discussed above: when you tune the right-hand D you get an A on the left side. Use this A to tune the A back on the right side, which in turn will give you an E on the left side. Use this E to tune the E on the right side, and so on. It is possible to tune nearly the entire instrument in this manner.

In conclusion, keep this thought in mind: if you can hear that it is out of tune,

you have the ability to learn to put it into tune!

TUNING HINTS

Use a guitar pick to pluck the strings. It will make a crisp, loud sound, and allow you to isolate and tune one string at a time.

After tuning all, or part, of one side of the treble bridge, play the major scale(s) over that bridge. If the scales don't play true on both sides, the string(s) may be held up by friction where they pass over the bridge cap, preventing equalization of tension on both sides of the bridge. The simplest solution is to lift the strings up off the bridge to break any friction, then re-tune the left side of the bridge first, checking the right side after. Some players will tune first the side of the treble bridge that is farthest away from the tuning pins. Then they can often fine-tune any out-of-tune notes on the side of the bridge nearest the tuning pins without affecting the notes already tuned on the other side. This technique acknowledges the friction between string and bridge, and works with it. Learning to deal with string friction is just a matter of experience and fooling around with your particular instrument. It shouldn't present a problem, but you can expect to encounter it occasionally.

If these techniques don't cure an apparent imbalance between the right and left sides of the treble bridge, it's possible that the bridge, which is not glued down, may have been knocked slightly out of position. Correct positioning is critical for accurate tuning. To test for this, try the tuning/equalization of tension procedure on the very top string over the treble bridge. If the left side remains sharp when the right side is in tune, tap the top end of the bridge lightly toward the right, and try the tune-up and test procedure again. If the left side is flat when the right side is in tune, tap the end of the bridge to the left. You won't need to move it far to have an effect—a very small fraction of an inch will make the difference between “in balance” and “out”. Do the same testing and re-setting procedure for the bottom-most string on the treble bridge, and your bridge should be back in position.

It is most important that the bridge be perfectly straight. Be careful not to introduce a bow in the bridge by moving only its top and bottom sections. Check for straightness by laying a straight edge, such as a ruler, along the bridge. If you detect a bow or curve after carrying out the steps above, you will have to tap the center of the bridge in the appropriate direction to straighten it out. If you are unsure about this procedure, see your dealer or call Dusty Strings for assistance.

Playing Your Dulcimer

One of the nicest elements of the hammered dulcimer is its ability to turn even the simplest melody into beautiful, full-sounding music. The inherently satisfying tone of the instrument combines with its resonance to produce an illusion of sound — there seems to be more music coming out than the sum of the individual notes. This is one of the appeals of the dulcimer and serves the beginner well, providing instant satisfaction with even the simplest tunes.

Of all the advice you're likely to be given on playing the hammered dulcimer,

there is really only one important thing to remember: the dulcimer is a folk instrument, and the essence of folk music is not technique, but personal enjoyment. We'll give you some specific instructions so you can get started playing right away, but feel free to develop other styles. In folk music there are no absolutes — any way you can get music out of the instrument is a good way to play.

POSITIONING THE INSTRUMENT

Most players put the long side of the instrument toward them when playing. It doesn't make much difference if you sit or stand while playing, as long as you can easily reach all the notes. If you set the instrument on the floor or on a table, you will notice that tone and volume are expanded if the top edge of the dulcimer is propped up so the back is free to resonate. Also, the dulcimer is more comfortable to play when it's tilted toward you. Your instrument has a threaded insert built into its back that allows you to attach a playing leg. A short leg props the dulcimer up off a table-top at a comfortable slant. A long leg lets you play while sitting in a chair, with the leg supporting the instrument in front of you and the bottom (long) edge of the instrument resting on your knees. This is a very portable and inexpensive way of supporting the instrument while you play. Setting it on a stand so the back vibrates freely gives maximum volume and provides a consistent height no matter where you play. It also allows you to keep your instrument out on display where it's more likely to invite you to play. Short and long playing legs are available, as are folding wooden stands and fully adjustable leg systems. Check with your dealer or with us for more information.

HAMMERS

You will probably encounter all sorts of different hammers. The single-sided hammers provided with most of our instruments are a good, well-balanced design and construction, suited to all styles of playing. They are made of bare hardwood and will give the loudest sound. We also make a leather-padded version, which gives a softer tone that is nice for mood and variety. Double-sided hammers, included with our chromatic models, have both bare wood and leather covered playing surfaces on one hammer. You'll find that hammer preferences are a very individual thing. Variations include double vs. single sided, padded vs. unpadded, types of padding, length of hammer, type of wood, shape of handle and hammering surface, weight, and balance. Try out as many as you can to see what suits you best. We make two styles of single-sided hammers, both in bare wood and leather covered, and two shapes of double-sided hammers. We also make double padded hammers, with thin leather on one side and felt on the other.

PLAYING

You may initially have a problem focusing your eyes on the strings as you play. Practice eases this fairly quickly. Tilting the top of the instrument toward you can improve your perspective somewhat, the angle being purely a matter of preference. It is helpful to focus on the black and white bridge caps where the strings cross the bridge, rather than on the strings themselves. The bridge caps are easier to see and provide location markers.

Hammers are generally held between the thumb and forefinger, and the strings are struck about one inch from the bridge. Rock the hammers in your hands a few times to get their feel, then strike a sharp blow to a note, stopping the action as the hammer rebounds off the string. The striking motion should come from your wrist, not your elbow. Keep this up until you can easily get a single, well-pronounced note. If you hold the hammers a bit more loosely, put a little more pressure down with your thumbs, and don't stop the action after the first rebound, you will find that they bounce off the strings in a sort of roll. This is a trill, a common embellishment.

A good way to start playing is to run through the major scales. You can refer back to Scales, Bridges, and Tuning Schemes (page 9) for information on their location and layout. Play with authority — use enough force to get the best tone from the instrument. Timid playing may make your instrument sound brash, thin, or indistinct. As you gain confidence, your accuracy and tone production will improve.

Although a great deal of instructional material is available for the hammered dulcimer, probably the most common means of learning a song is by ear. You don't have to read music; just take a song whose melody is familiar and translate it into a hammering pattern. The easiest playing method is to alternate notes between the left and right hands, though you may want to deviate from this once in a while to keep your hands from getting in each other's way. Start by taking a very familiar song, such as *Oh Susannah* and learn your way around the strings by picking out the melody with one hand. Simple tunes like these usually start on the tonic, or first note of the scale, of the key in which you are playing (D for D major, G for G major, etc.). If the first note is not the tonic, then try the third ("mi") note of the scale. Next, play the tune while alternating hands. Try to develop coordination in both hands so that you can use either hand as well as the other. Experiment with putting in a few trills as you play.

With practice your reflexes will adjust to the distances between courses, the hammers will become comfortable extensions of your hands, and your music will gain rhythm and continuity. Here are a few more embellishments you'll want to incorporate in your playing:

Chords — hitting two notes simultaneously. The easiest combinations to find involve the thirds, fifths, and octaves (DO, MI, SOL, DO).

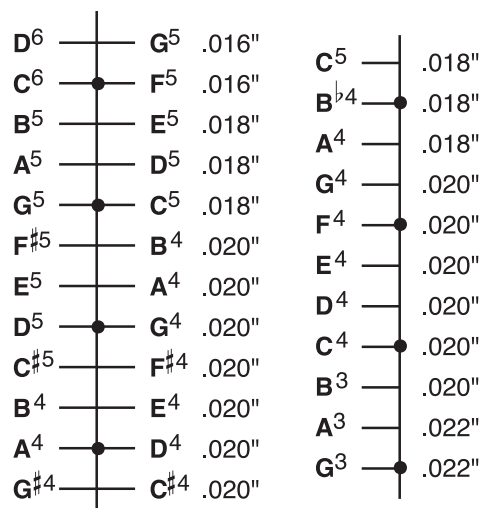
Arpeggios — hitting in rapid succession the notes DO, MI, SOL, DO of any scale, producing a nice full chord.

Drones — inserting between melody notes the "tonic" (DO) of the key you're playing in. This is like the bagpipe, which drones a constant note while playing the melody. The mountain dulcimer also uses a drone note.

You can listen to live or recorded music for inspiration. There are many recordings of hammered dulcimer music available. There is also an abundance of good self-instruction methods, including books, book and CD sets, videos, and DVDs. See your dealer or contact Dusty Strings for instructional materials. You can also subscribe to Dulcimer Players News for quarterly information and articles about players, festivals, tunes, techniques, recordings, and lots of other dulcimer-related things (P.O. Box 2164, Winchester VA 22604 or www.dpnews.com).

Strings and Tunings

D10, APPRENTICE & PRELUDE

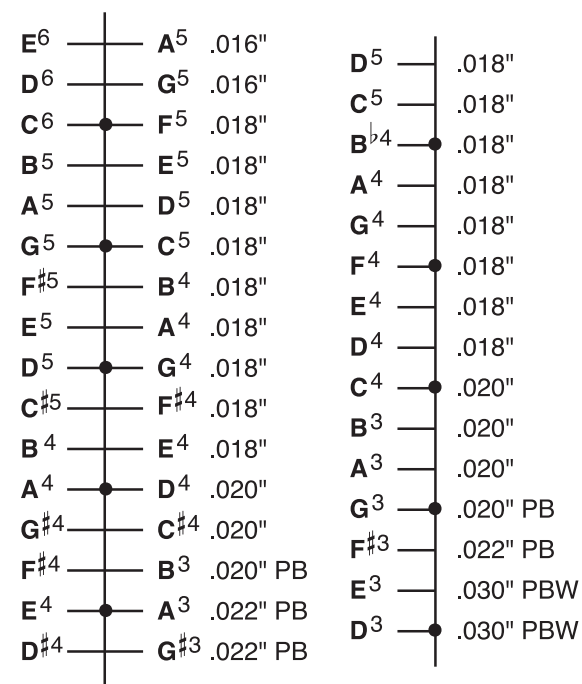


Range: 2½ octaves (G³ – D⁶)

● = marked courses

All strings are plain steel loop end. Wire gauges are shown in inches.
Small numbers indicate octaves (C⁴ is middle C).

OVERTURE



Range: 3 octaves (D³ – E⁶)

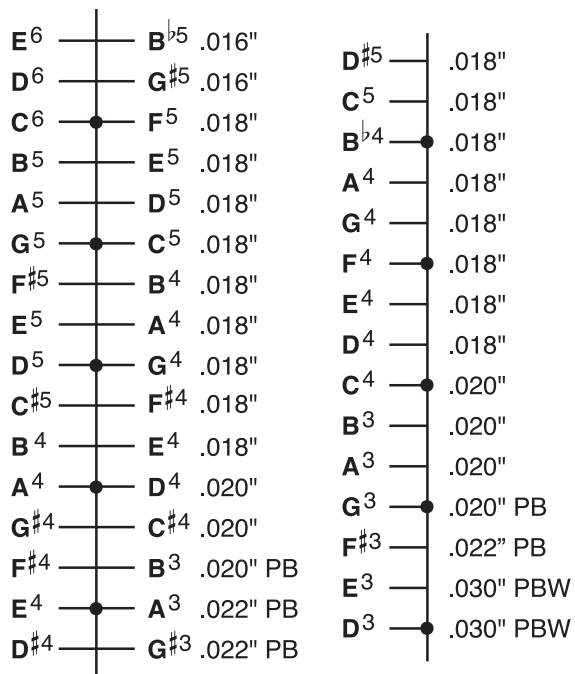
● = marked courses

PB = phosphor bronze wire

PBW = phosphor bronze wound

All strings are loop end. Wire gauges are shown in inches.
Unspecified strings are plain steel wire.
Small numbers indicate octaves (C⁴ is middle C).

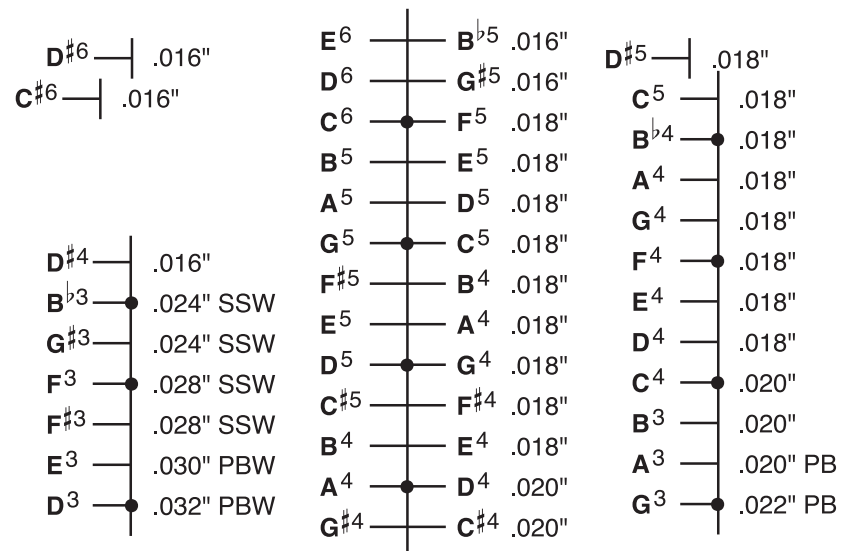
D35 & D45



Range: 3 octaves (D³ – E⁶)
 ● = marked courses
 PB = phosphor bronze wire
 PBW = phosphor bronze wound

All strings are loop end. Wire gauges are shown in inches.
 Unspecified strings are plain steel wire.
 Small numbers indicate octaves (C⁴ is middle C).

D300*

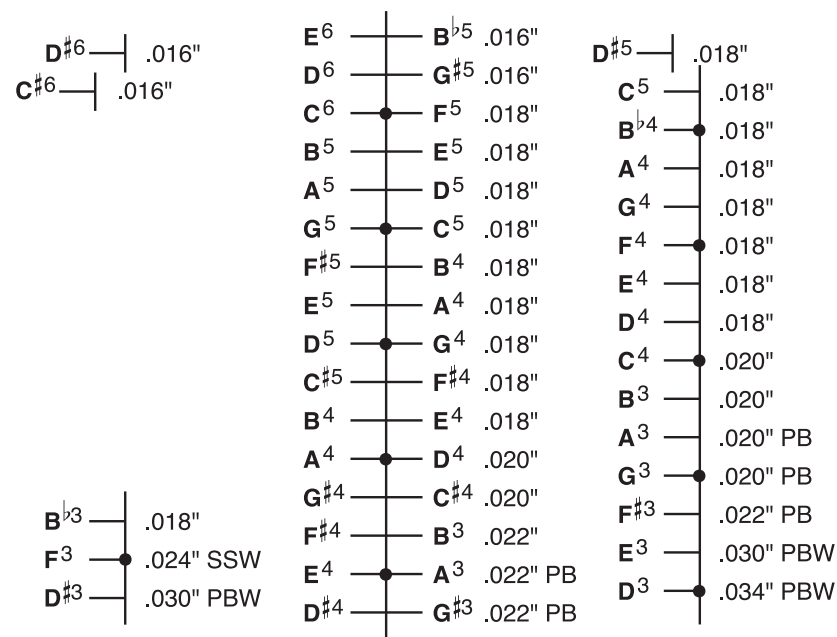


Range: 3 octaves (D³ – E⁶)
 ● = marked courses
 PB = phosphor bronze wire
 PBW = phosphor bronze wound

All strings are loop end. Wire gauges are shown in inches.
 Unspecified strings are plain steel wire.
 Small numbers indicate octaves (C⁴ is middle C).

* For instruments after serial #13377. The serial number can be found on a tag inside the sound hole.

D500*

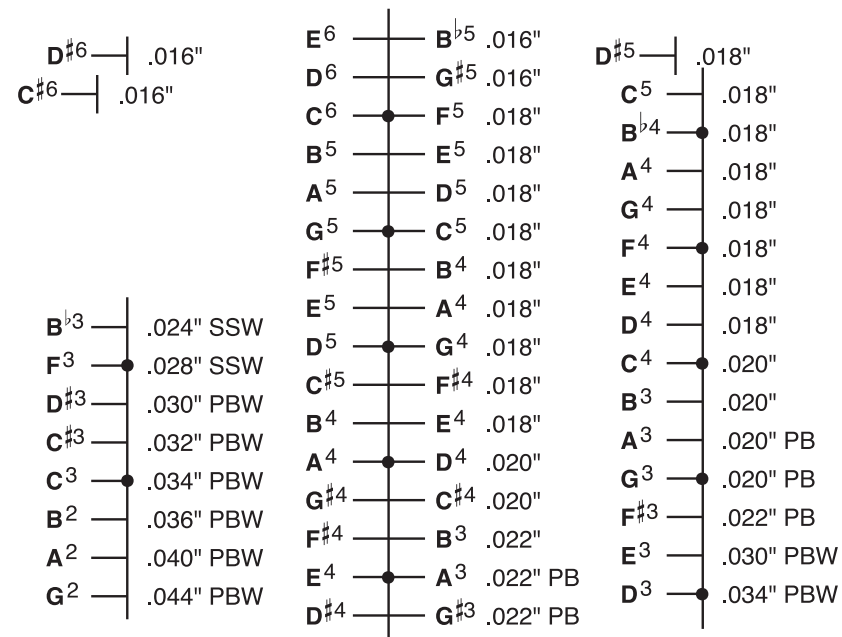


* For instruments after serial #13168. The serial number can be found on a tag inside the sound hole.

- Range:** 3 octaves (D³ – E⁶)
- = marked courses
 - PB** = phosphor bronze wire
 - SSW** = stainless steel wire
 - PBW** = phosphor bronze wound

All strings are loop end. Wire gauges are shown in inches.
 Unspecified strings are plain steel wire.
 Small numbers indicate octaves (C⁴ is middle C).

D550*

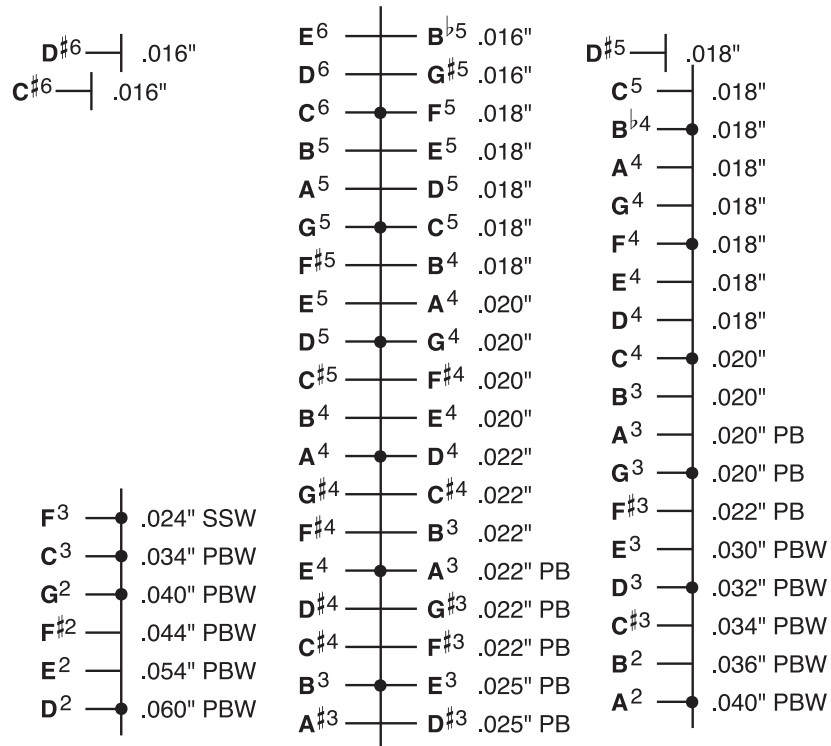


* For instruments after serial #13168. The serial number can be found on a tag inside the sound hole.

- Range:** 3 1/2 octaves (G² – E⁶)
- = marked courses
 - PB** = phosphor bronze wire
 - SSW** = stainless steel wire
 - PBW** = phosphor bronze wound

All strings are loop end. Wire gauges are shown in inches.
 Unspecified strings are plain steel wire.
 Small numbers indicate octaves (C⁴ is middle C).

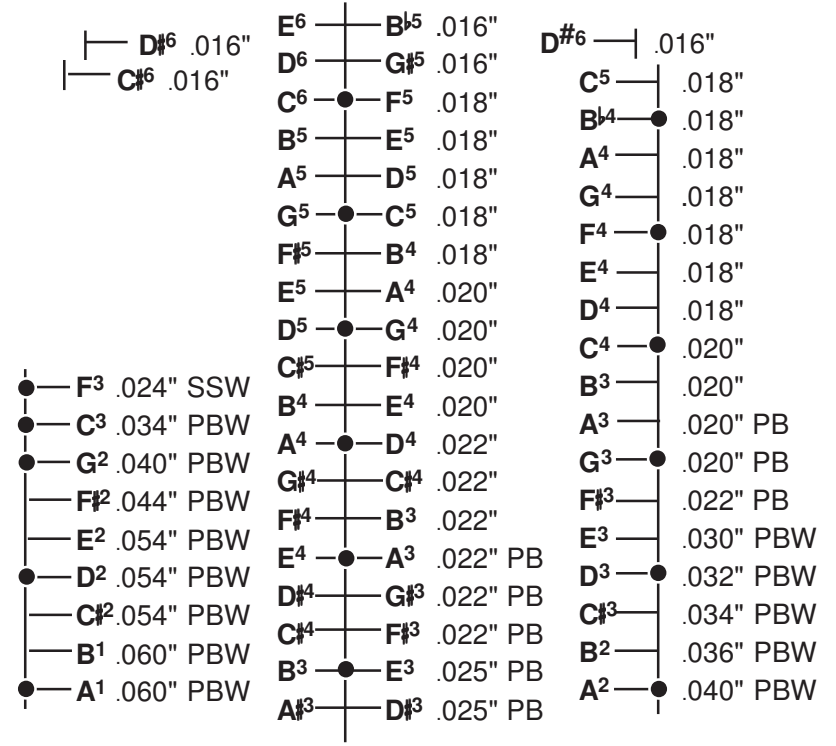
D600



Range: 4+ octaves (D² – E⁶)
 ● = marked courses
 PB = phosphor bronze wire
 SSW = stainless steel wire
 PBW = phosphor bronze wound

All strings are loop end. Wire gauges are shown in inches.
 Unspecified strings are plain steel wire.
 Small numbers indicate octaves (C⁴ is middle C).

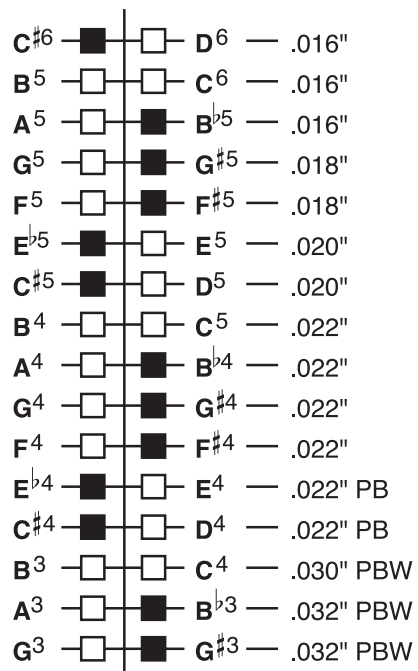
D650



Range: 4½ octaves (A¹ – E⁶)
 ● = marked courses
 PB = phosphor bronze wire
 SSW = stainless steel wire
 PBW = phosphor bronze wound

All strings are loop end. Wire gauges are shown in inches.
 Unspecified strings are plain steel wire.
 Small numbers indicate octaves (C⁴ is middle C).

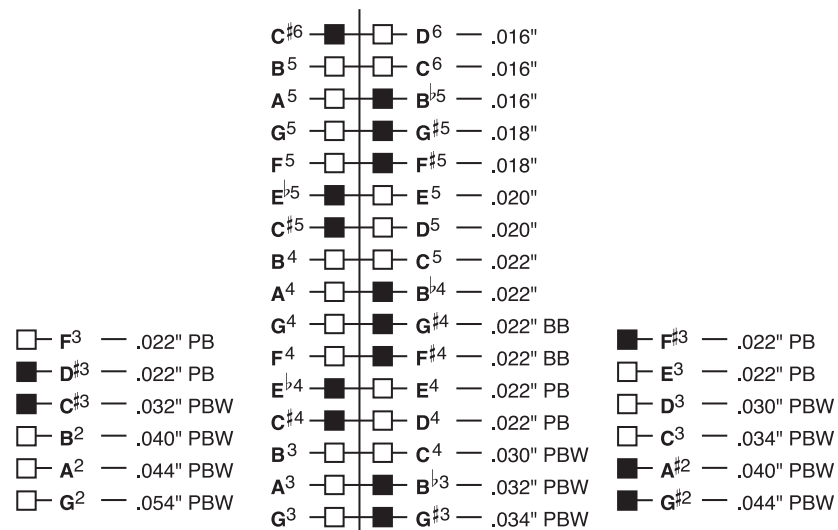
PD30



Range: 2½ octaves (G³ – C^{#6})
 = white and black bridge markers
PB = phosphor bronze wire
PBW = phosphor bronze wound

All strings are loop end. Wire gauges are shown in inches.
 Unspecified strings are plain steel wire.
 Small numbers indicate octaves (C⁴ is middle C).

PD40



F3 — .022" PB
D#3 — .022" PB
C#3 — .032" PBW
B2 — .040" PBW
A2 — .044" PBW
G2 — .054" PBW
F#3 — .022" PB
E3 — .022" PB
D3 — .030" PBW
C3 — .034" PBW
A#2 — .040" PBW
G#2 — .044" PBW

Range: 3½ octaves (G² – D⁶)
 = white and black bridge markers
BB = Brite Bronze wire
PB = phosphor bronze wire
PBW = phosphor bronze wound

All strings are loop end. Wire gauges are shown in inches.
 Unspecified strings are plain steel wire.
 Small numbers indicate octaves (C⁴ is middle C).