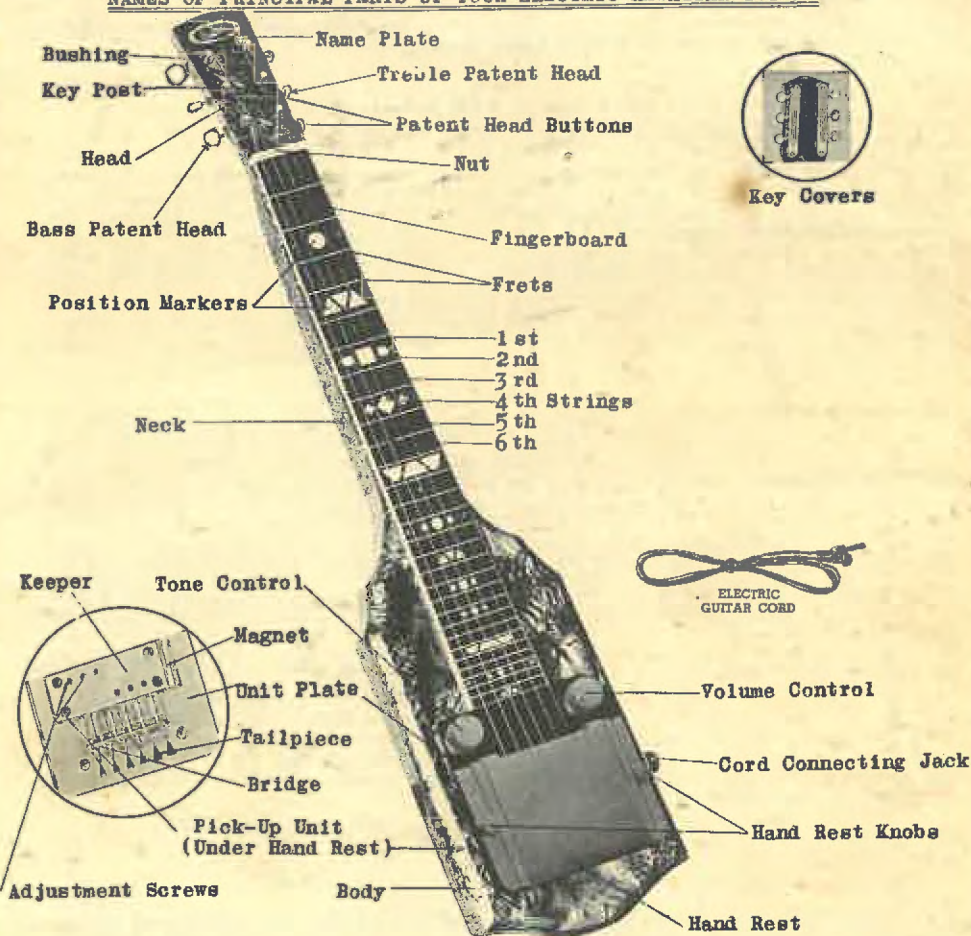


THINGS YOU SHOULD KNOW ABOUT YOUR

Electric Guitar

NAMES OF PRINCIPAL PARTS OF YOUR ELECTRIC HAWAIIAN GUITAR



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The Makers of Fine
NATIONAL and SUPRO ELECTRIC GUITARS

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YOUR ELECTRIC GUITAR

Your Electric Guitar is a modern musical instrument designed to give you extraordinary and beautiful tone unknown before the advancement of electronics into the field of music. Your instrument's fine tone quality should be preserved, however, by using it with an electric amplifier that is designed especially for the reproduction of music. Even the finest electric guitar will perform poorly through an inadequate, improper, or cheaply constructed amplifier.

Although the design and construction of your electric guitar is a technical undertaking, there are many simple and non-technical pointers that should prove helpful and valuable to you, the owner.

To insure maximum pleasure in using your instrument in the years ahead, a careful reading of the following data is suggested.



A WORD ON THE CARE OF YOUR ELECTRIC GUITAR

All the material in your instrument has been carefully selected, seasoned, and joined together with skill and care. It is impossible to guarantee it against warping, cracking, opening up at the joints, and shorting, if it is exposed to dampness and moisture, extreme heat or cold, or if it is roughly handled, dropped, or severely jarred.

Should your instrument become damp, dry it thoroughly before putting it away in a carrying case or bag. Never leave your guitar out-of-doors or in an unheated building, or near a heated stove or radiator. If the instrument is cold, warm it gradually, and do not play it until it is at room temperature.

If you should ever store your guitar for any length of time, loosen the string tension to preserve the strings and relieve neck strain.



HOW TO CONNECT YOUR ELECTRIC GUITAR

STEP 1. If the guitar is packed in the factory shipping carton, remove carefully, taking special precautions not to damage the keys, knobs, bridge, hand-rests, or pick guard, which often project beyond the guitar body.

STEP 2. Wipe off any dust or dirt that the instrument may have picked up from the packing.

STEP 3. Get your amplifier set up and ready to use. Plug connecting cord phone plug into one of the amplifier input jacks. (If you choose, you can now test cord and amplifier separately before attaching the guitar. Just short the two contact terminals of the free cord plug with your bare hand. If audible hum level of the amplifier is noticeably increased when cord plug is shorted in manner described, the cord and amplifier are working correctly.) The hum present when cord is open should disappear when guitar is properly connected.

STEP 4. Attach other end of cord to the instrument. (On some guitar models the cord is not detachable, but comes directly from the guitar with only one phone plug for attaching the cord to the amplifier.)

STEP 5. Set controls to desired position on the guitar, tune, and play.

NOTE: New guitars are strung carefully and adjusted to perfect playing condition before leaving the factory. When you first try your new instrument it will seldom need any attention except tuning. New strings tend to stretch a bit before they are properly conditioned and therefore tuning may need minor adjustments in the beginning.



A WORD ABOUT THE PARTS OF YOUR ELECTRIC GUITAR

PATENT HEADS OR KEYS

The gears of the keys should always be snugly in mesh to insure accurate tuning. An occasional drop of oil or light grease between worm and gear and on other moving parts of the keys will insure free movement and long life.



STRINGS

Electric Guitar owners should always give special attention to the strings used on their instruments. Brass, bronze, copper and other non-magnetic metals are often used in the manufacture of regular guitar strings. Such non-magnetic strings, however, are not recommended for best results on electric guitars with standard magnetic units. Most standard electric guitars have units designed to operate on a magnetic principle and it is therefore essential to use only strings of the finest magnetic metals to obtain maximum power and tone.

To prevent corrosion, the strings should always be wiped dry of moisture after playing. This is important as perspiration is very harmful and eats away and corrodes metal parts of the instrument. Always keep strings free of dirt and grease accumulations or they will not vibrate true and will not give a pure tone.

Diameters of the strings used are very important. When making string replacements be sure they are of proper dimensions. Variation of diameter along a single string of even a few thousandths of an inch can also be a troublesome source of inaccurate tonation. This problem often occurs on polished strings that have been polished unevenly along the string length. (For proper diameters of the strings to use for various tunings, write for free VALCO String Chart.)

Make certain when replacing strings that they are securely fastened at the key posts. Any slipping will cause the string to be out of tune. See that string has several turns around the post and is tied properly.



PICK-UP UNIT

The pick-up unit on your instrument, if given proper care, should give years of trouble-free service without attention. Never tamper with, or disassemble the unit, as the tiny wires on the coils inside are easily broken when exposed. Damaged coils are almost impossible to repair and should be replaced with new ones.

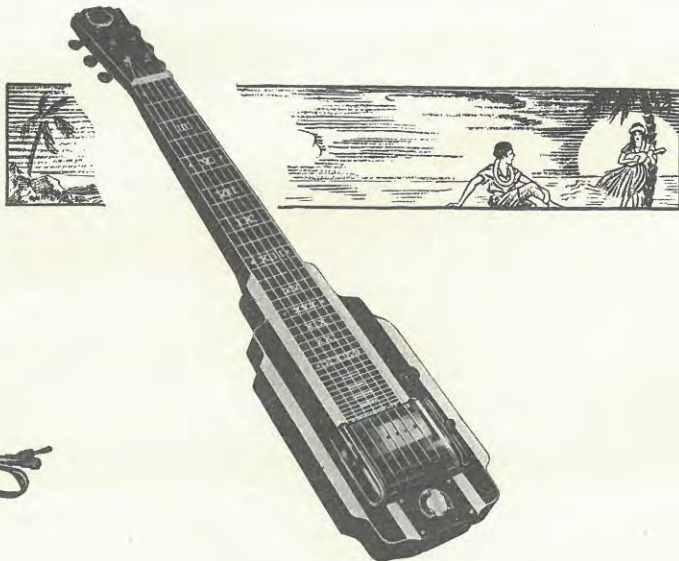
Magnets are often incorrectly reversed by inexperienced persons who may attempt repairs. The unit will never operate properly thereafter. Loss of power is a common result of this condition.

If service ever becomes necessary, always return to the factory under the terms of the guarantee.

BODY

Guitars usually have fine lacquer or plastic finishes. These finishes can be protected with furniture or automobile polishes that are prepared for use on fine lacquer or plastic surfaces. (Do not use a varnish polish.) Always dust and polish your instrument with a soft, clean cloth.

Guard against exposing your guitar to extreme heat or cold and never leave or store your instrument in a damp place.



CORD

Aside from worn connecting cords and controls, electric guitars are practically fool-proof. The connecting cord is probably the weakest part of your electric guitar system. Cords should never be jerked, knotted, kinked, twisted, stepped on, or otherwise abused. Such continuous poor treatment will eventually result in breakdown of the cord. To insure long connecting cord life, grasp plugs firmly when removing cord from instrument or amplifier, instead of jerking on the cable.

Fortunately, cord replacement is a simple and inexpensive matter.

VOLUME & TONE CONTROLS

The Volume Control regulates the power output of the guitar. The Tone Control changes the tone color of the instrument. Experiment will locate the best positions for your individual preference.

After considerable use, volume and tone controls wear out, as do automobile tires, and need to be replaced. If your own serviceman replaces them, be sure replacements used are of the same type and rating. Worn controls cause scratching and sputtering sounds when turned.



OPERATION HINTS FOR ELECTRIC GUITARS

Should you have questions about the operation of your electric guitar, the following list of non-technical hints may prove helpful:

POOR TONE

As an electrical instrument reproduces only the vibrations of the strings, poorly constructed, dead, worn, improper, or imperfectly sized strings can be a common source of poor tone.

The design and construction of the pick-up unit also has a great deal to do with the tone of your instrument. The mounting location of the pick-up unit has a bearing on tone too. Experienced manufacturers study this problem carefully and construct and install their units where results have been proven to be best. Some models are designed to reproduce bass, some to reproduce treble, and some to reproduce both (Dual units, etc.). (The safest solution to this part of the problem is to buy instruments made by established manufacturers who have carefully engineered their units for wide-range tone reproduction in the classification you desire.)

Poor amplifiers are a major source of tone difficulties. An excellent guitar will produce poor tone when operated through inferior amplification units. Some amplifiers do not reproduce a satisfactory tone range. Since the amplifier is the only audible part of the electric guitar system, your guitar tone will be no better than the reproduction quality of your sound amplifier. The best solution to this problem is to buy an amplifier designed specifically to reproduce the musical tone range produced by your guitar.

Defective and worn parts in amplifiers (Tubes, for example), are a common source of tone trouble. (Write for free Amplifier Instruction Sheet.)

Poor picking technique or "hammering" of the strings will kill tone. Too much volume on the amplifier often induces distortion.

NOT ENOUGH POWER

Too small an amplifier is a common cause of this problem. If your amplifier has a microphone input, plugging your instrument into this channel may prove to be a satisfactory temporary solution. Defective parts in the unit, cord, or amplifier are also a possible source of power loss difficulties.

Check to see if the unit is in proper relation to the strings. The unit should be as close to the strings as is practical, as best power reproduction is obtained with a minimum of air gap between strings and the pick-up unit. Be sure, however, that strings do not hit or strike against the unit or its adjustment screws.

On guitars of the Spanish electric type, the "pulling-up" of the neck occasionally lifts strings too far above the unit to produce good results. If adjustable bridge cannot be lowered enough to correct the problem without disturbing the proper playing action of the strings, return the instrument to the factory for resetting of the neck, under the terms of the guarantee.

INSTRUMENT WILL NOT STAY IN TUNE

If your guitar will not stay in tune, there are several common causes that should be checked:

- (1) The strings may be worn and dead, or the strings may be imperfect.
- (2) The strings may be loaded with an accumulation of dirt and grease.
- (3) The strings may be insecurely tied at key posts, and may be slipping.
- (4) The strings may be new and are not yet through stretching. This condition is only temporary.
- (5) The keys may be badly worn or defective and are allowing tension to release.
- (6) The neck of the instrument may be warping forward, making the fret locations inaccurate.
- (7) The bridge may not be perfectly upright, or not located properly.

PICK-UP ADJUSTMENTS

Many pick-up units are designed with individual string power adjustment. To reach the adjustment screws on Hawaiian guitars, it is often necessary to remove the hand-rest covering the unit.

The screw-type pole-piece is easy to adjust. There is a slotted screw under each string. If any string is too loud or too weak, apply a small screw driver to the slot of the screw directly under that string and turn. Turn the screw clockwise, or away from the string, to make the string power weaker. Turn the screw counterclockwise, or closer to the string, to make the string louder. In this manner the power output of each string can be properly balanced with the others. In raising adjustment screws, be sure they do not touch the string as this will cause undesirable noise and distortion of the tone. (Usually no adjustment will be needed on a new guitar, as correct settings are made at the factory, and probably no change will become necessary until original string sizes or types are changed.)

Dirt, steel particles, or any other distorting foreign matter that may accumulate on the magnetic unit or its parts, can be removed with a piece of adhesive or friction tape. Particles will cling to the gummed surface of the tape and may then be pulled away.

Special unit types will have separate instructions for their adjustment.

SOUND GOES INTERMITTENTLY OFF & ON

Usually accompanied by loud intermittent noises. Look first for loose connecting cord contacts at guitar and amplifier. Check cord for loose connections inside the cord plugs, and along the cord cable. This weakness can usually be detected by shaking or moving the cable while the instrument and amplifier are attached. (Problem rarely occurs with new cords, but frequently with those that have been in use for some time.)

Shorts and loose connections elsewhere in the guitar and amplifier can also cause this trouble. These should be promptly located and corrected.

EXCESSIVE HUM

Common sources of hum are: poorly shielded, defective, or improperly wired connecting cord; worn volume and tone controls; and poorly shielded, and improperly constructed pick-up unit. However, if you can test your guitar and cord on another good amplifier with success, you can be sure the trouble lies in your amplifier.

Often reversing the amplifier A.C. line plug in the wall outlet will reduce hum. Always be certain connecting cord is making positive contact at both instrument and amplifier.

BODY STATIC & SHOCK

There is no voltage or current applied to the instrument, so there is no danger of being shocked by the guitar if the amplifier is of a safe design. (All VALCO amplifiers are constructed with your safety in mind.) There are some inexpensive and AC-DC amplifiers on the market which are not so designed, and for that reason we make the following safety reminder for your protection. NOTE: Ordinary care is always advisable with electric instruments. Do not touch water pipes or other grounded metal objects, and your instrument at the same time. Do take ordinary precautions as you would with any other electrical household appliance. If you should ever receive a slight shock from your instrument, by touching a grounded object, or standing on a damp surface, such shocks can be prevented by reversing the A.C. line plug of the amplifier in the wall outlet.

Occasionally a person who has been moving about a well-carpeted room will build up a charge of static electricity. This build-up will discharge when he touches his instrument or any other grounded object, often leading him to believe the charge came from the guitar. Such tiny shocks are harmless and are in no way caused by current in the instrument.

BUZZES, RATTLES, & DISTORTING NOISES

The main causes of these disturbances to be checked and corrected are as follows: Worn key shafts and loose key buttons; loose screws, nuts, and bolts; adjustment screws touching strings; string slots too large and loose in the bone nut; improper picking technique; holding the playing steel too loosely against the strings; uneven heights on the strings; strings striking the frets due to: uneven frets, string action too low, and picking the strings too hard; worn tone and volume controls; vibrating strings hitting the hand rests; and loose wrappings on wound strings or any other loose part on the instrument that is free to vibrate and cause mechanical noise.

Most other causes will be found to be in the amplifier and not the instrument. (See Amplifier Instruction sheet.)

GUITAR, AMPLIFIER, OR CORD?

Whenever trouble of any kind should occur, the main problem is to determine whether the difficulty is in the instrument, the cord, or the amplifier.

To determine which is at fault, first check the amplifier with another guitar and cord known to be in good working condition. Next check the cord with another guitar and amplifier, or in the manner described in Step 3, on HOW TO CONNECT YOUR ELECTRIC GUITAR. Then check your guitar with a good cord and amplifier.

In this manner you will not attempt to service or return to the factory a perfectly good instrument or part and will thereby save unnecessary time, trouble and expense.

A WORD ON SERVICE AND GUARANTEES

Instruments made by reliable manufacturers are usually guaranteed in writing against defective material and workmanship. Save your contract of guarantee and promptly return the registration part directly to the manufacturer for entry on his records.

If ever service becomes necessary, read the guarantee instructions carefully, and return the instrument or part to the factory as instructed. Remember, the factory cannot be responsible for damages received in transit due to poor packing. If you do not have the facilities for proper packing, perhaps the dealer from whom you purchased the instrument will be glad to help.

Shipping by Express or Truck is suggested whenever possible, as handling is usually better and safer than Parcel Post. When shipping by Express, you will receive a written and numbered receipt that can easily be traced and conveniently given proper insurance coverage for your protection.

Send a letter with each return, giving full details of your problem, together with your full name and mailing address, and note model and serial number.

When buying or seeking service for your guitar or amplifier, be sure to select only reliable and established firms. Buy known Brands that have a tested reputation for dependable quality and faithful service. You are entitled to receive excellent service and lasting pleasure, and it is to assist you in receiving that maximum of satisfaction from the guitar you buy, that we have prepared these suggestions for you.

If you will only give your guitar the care a fine musical instrument should receive, normal wear on strings, controls, and cord will probably be your only concern during its lifetime.

NAMES AND PRINCIPAL PARTS OF YOUR ELECTRIC SPANISH GUITAR

