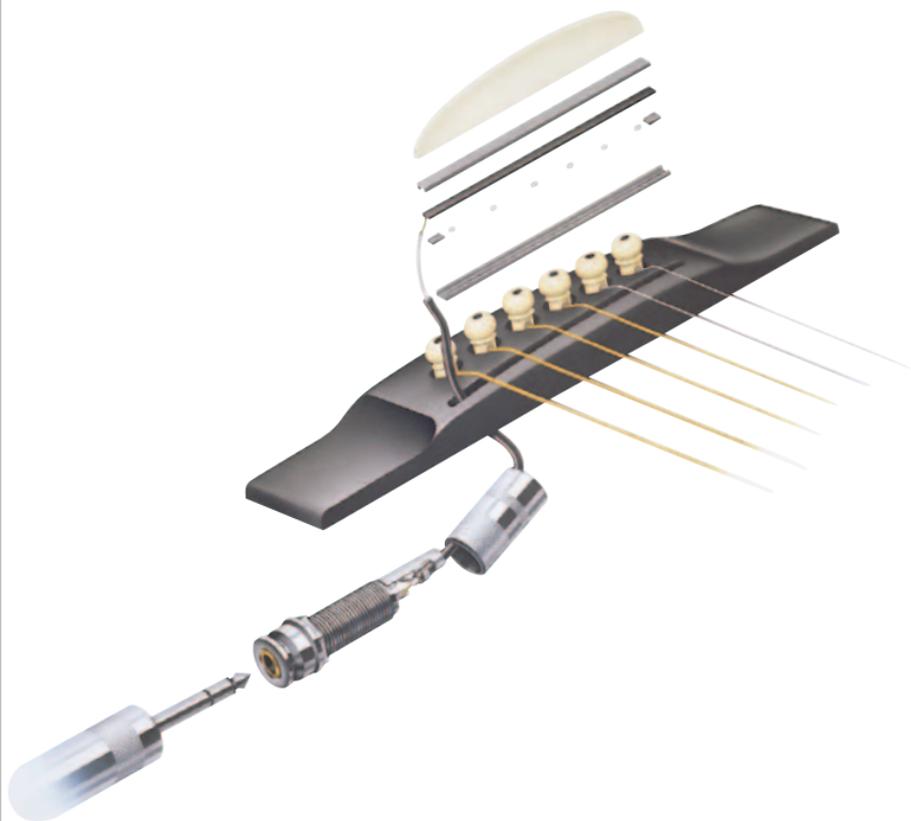


Installation Instructions

Martin Thinline Active Jack® Preamp
Martin Thinline 332+Plus®

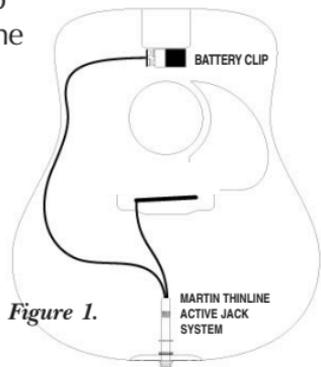
Acoustic Sound Reinforcement System



Martin & Co.
EST. 1833
martinguitar.com

INTRODUCTION

Thank you for choosing the Martin Thinline™ pickup system. We are confident that you will find it to be the finest acoustic guitar pickup available. The Martin Thinline™ system employs state-of-the-art surface-mount technology in its exclusive endpin-mounted, miniaturized preamp. The versatility and ease of installation are unparalleled. The pickup may be plugged into any acoustic or electric guitar amplifier, sound system, recording console or direct box with excellent results.



Parts List (See Figure 1).

- Martin Thinline™ System with mounting hardware
- Battery clip with mounting screws (2)
- 3 adhesive-backed wire guides
- Martin Thinline® pickup (system only) for a maximum 2¹/₈" or 2⁵/₁₆" string spacing
- * Martin Active Jack® system does not include pickup.

All specifications subject to change without notice.

Pickup Dimensions

Width: .094" (2.39mm)

Height: .048" (1.22mm)

Length: 2.625" (66.67mm)

E to e string spacing = 2.125" (54.0mm)

Wire hole location = .234" (5.9mm) from closest outside string

The 332 pickup is suitable for most instruments with string spacings from 2.075" (52.7mm) to 2.175" (55.3mm)

NOTE: The overall length of the Martin Thinline 332+Plus pickup is 2.625" (66.67mm). We recommend a saddle slot length of at least 2.875" (73mm).

DO NOT trim the end of the pickup's length, as ground hum will be introduced. Custom pickup lengths are available from your Martin dealer.

Tools

- Plunge Router with $\frac{3}{32}$ " (2.4mm) cutter
- Caliper
- 400 Grit Sandpaper or Scraper
- Soldering Iron (30 watt max)
- Rosin Core Solder
- Wire Strippers
- $\frac{1}{2}$ " Open End Wrench
- $\frac{3}{32}$ " (2mm) Allen Wrench
- $\frac{15}{32}$ " (11.9mm) Tapered Reamer
- Variable Speed Drill
- X-Acto[®] Saw
- Center Punch
- $\frac{1}{8}$ " (3.15mm) Twist Drill
- $\frac{15}{32}$ " (11.9mm) Spade Drill Bit

IMPORTANT

1. Both the pickup and preamp are integral components of the Martin Thinline™ system. Neither the pickup nor the preamp is meant to be used separately or in conjunction with other pickups or endpin preamps. Degraded performance will result from using the pickup or preamp with other systems.
2. Particular attention must be paid to the flatness and squareness of both the saddle and the saddle slot. Pickup performance and balance will be greatly enhanced by a properly fit saddle. If you are new to undersaddle pickup installation, The Finer Points of Piezo Installation by Ken Parker is available at www.fishman.com.
3. Handle the pickup carefully! Mishandling may result in ground hum or intermittent signal. C. F. Martin & Co., Inc. will be in no way responsible for any damages to the pickup that occur due to misuse or poor installation.

INSTALLATION BY A QUALIFIED PROFESSIONAL REPAIRMAN IS STRONGLY RECOMMENDED. C. F. MARTIN & CO., INC. WILL NOT BE RESPONSIBLE FOR ANY DAMAGES THAT MAY RESULT FROM IMPROPER INSTALLATION.

PART I –INSTALLING THE PICKUP**The Pickup**

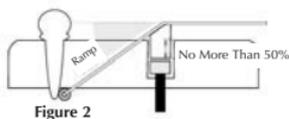
The Martin Thinline 332 Plus is a string-sensitive, piezo-ceramic under-saddle pickup. It senses individual string vibrations via six fully-shielded piezo elements. The pickup includes a Fishman designed Switchjack™ endpin jack and can be used without a preamp. The Thinline 332 Plus system delivers a natural, acoustic sound with plenty of attack for percussive playing styles.

Mechanical Factors Affecting Pickup Performance

Before you install the pickup, make sure the bridge and saddle are within our recommended "safe zone" of usable parameters.

Break Angle

For the pickup to perform optimally, there should be a 20° (minimum) string break angle across the back of the saddle. An adequate break angle can often be realized by "ramping" the string slots. In extreme cases, where the break angle is much less than 20° and the saddle is so low that it is nearly flush to the top of the bridge, the instrument probably requires a neck reset. In these cases, resetting the neck to a higher angle will restore the saddle height and the string break angle required for good pickup performance.

**50/50 Rule**

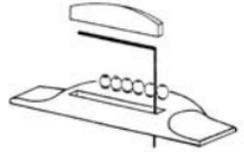
We have found that there is a critical relationship between the overall saddle height and the bridge slot depth. For adequate mechanical coupling and pickup balance, we recommend that the saddle slot depth (with pickup installed) measures no more than 50% of the total height of the saddle (see figure 2). If the slot measures more than 50% of the total height of the saddle, balance and/or output level of the pickup may suffer. In these cases, add a hardwood shim under the pickup. To determine the shim's thickness, subtract 1/2 of the total saddle height from the slot depth. Then remove an equal amount of material from the bottom of the saddle.

Exception to the 50/50 Rule:

Many Martin guitars will have adequate down-bearing on the saddle, even when there is less than 50% of the saddle height appearing above the slot. This is due to the close proximity of the bridge pins to the saddle slot. These guitars will generally perform very well and you may disregard the 50/50 rule.

Prepare the Saddle Slot

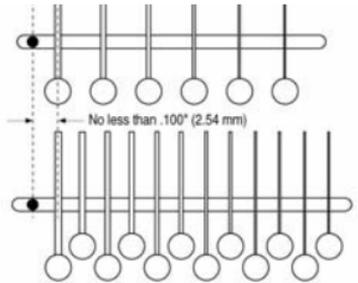
A large percentage of string balance problems with undersaddle pickups can be traced to an unevenly cut or warped saddle slot. Irregularities on the bottom or sides of the slot can often prevent the saddle from uniformly pressurizing the pickup. For this reason, we strongly recommend that before you install any undersaddle pickup, re-mill an existing slot with a plunge router, jigged up in an appropriate slot cutting fixture.



1. Rout a .094" (2.38 mm) wide slot.
2. Be certain that the bottom of the slot is flat. Deepen an existing slot only enough to obtain a clean, flat surface.

Locate the Wire Hole

1. Locate the center of the wire hole .234" from the center of the closest string or (for twelve string) the center of the closest pair of strings.
2. Mark the location where the wire will enter the saddle slot. Center the mark between the walls (width) of the slot.
3. Drill a .094" hole.
4. Clear wood chips and foreign materials from the saddle slot.
5. Carefully insert (do not bend) the pickup. The fit must be loose in the slot, without binding on the sides or the ends of the pickup. If the ends of the pick-up come in contact with the saddle slot, pickup failure could result.



Prepare the Saddle

We highly recommend the use of a genuine Martin Micarta™ saddle.

1. Prepare a .094" or 2.38mm wide saddle. For adequate pickup performance, the bottom and sides of the saddle must be absolutely FLAT.
2. Remove only enough material from the width of the saddle to provide a sliding fit in the slot. To test the fit, the saddle should slide easily in the slot, but should not fall out when overturned. To maintain your current action, the new saddle must be .048" shorter in height than your current saddle.

PART II – INSTALLING THE ACTIVE JACK®

INSTALLATION BY A QUALIFIED PROFESSIONAL REPAIRMAN IS STRONGLY RECOMMENDED. C. F. Martin & Co., Inc. WILL NOT BE RESPONSIBLE FOR ANY DAMAGES THAT MAY RESULT FROM IMPROPER INSTALLATION.

The Active Jack Preamp

The Martin Active Jack preamp is a fully-buffered, miniaturized circuit; housed in an elongated shielding cap. The design features discrete transistors for low noise and incredibly long battery life. The preamp's extremely low current consumption allows years of use between battery changes. An onboard microphone or a second active pickup may be wired (stereo) directly to the Martin Active Jack preamp, thanks to Fishman's integral Switchjack™ switching endpin jack (for use with the Fishman Blender® System).

PREPARE THE ENDPIN HOLE FOR THE JACK

There are two ways to widen the endpin hole to accept the preamp.

Slow and Safe

If you have the time, this is the preferred method. Remove the endpin and widen the hole to size with a 15/32" (11.9 mm) Two-step endpin jack reamer which may be obtained in the U.S. and Canada through Stewart MacDonald at 1-800-848-2273 Part#4323

OR ...Quick & Clean

The objective here is to quickly drill out the endpin jack hole, with the endpin or other suitable plug in place. You may remove a loose endpin and refasten it in the endblock with cyanoacrylate glue before starting the procedure.

Note: We do not recommend this method for instruments with brittle ornamental veneers (ex: abalone) around the endblock.

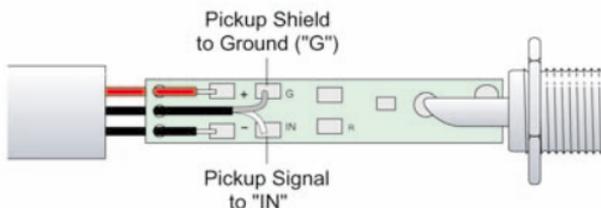
1. Apply masking tape around the endblock area to protect the instrument.
2. Locate an X-Acto[®] saw blade 1/16" (1.6mm) away from the body and saw off the endpin.
3. Centerpunch a guide hole in the center of the trimmed endpin.
4. Drill a 1/8" (3.2mm) pilot hole through the endpin.
5. Line up a 15/32" (11.9mm) Spade bit in the pilot hole and begin drilling. Maintain a perpendicular plunge in relation to the instrument. Use steady (but not heavy) pressure, especially as the drill exits inside the guitar.
6. To avoid damage to the instrument, let the drill come to a complete stop before removing it from the hole.
7. Remove masking tape immediately to avoid damaging the finish.

Thinline 332® & Active Jack®

Solder the Wire Connections Figure 3

1. Unscrew the shielding cap to access the preamp circuit board.
2. Strip 1/4" off the outside jacket of the pickup wire. Tin both the inner conductor and the ground wire.
3. Thread the pickup wire through the shielding cap.
4. Thread the pickup wire through the center strain relief hole, then solder the signal wire from the pickup (hot wire) to the pad marked "IN" on the preamp circuit board. Solder the ground wire from the pickup (shield) to the adjacent pad marked "G" on the preamp circuit board. (See Fig 3) Do not over heat the solder pads! Doing so may lift the pads from the circuit board.
5. Fasten the shielding cap to the jack. Be careful not to allow the shielding cap to come in contact with the end of the circuit board.
6. Lock the shielding cap to the first large hex nut.

Figure 3



Optional Stereo Wiring Figures 4-6

The Fishman Switchjack™ switching endpin jack is integrated into the Martin Gold Plus. A variety of stereo wiring options are available for pickup+microphone or pickup+pickup:

Figure 4 Two Pickups

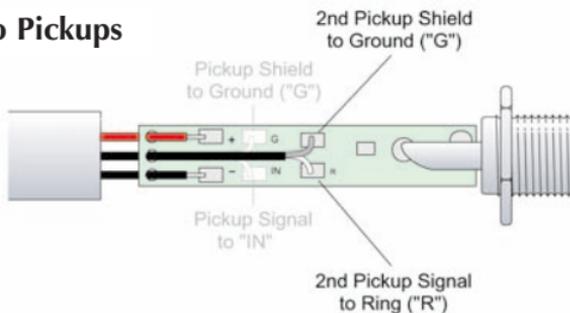
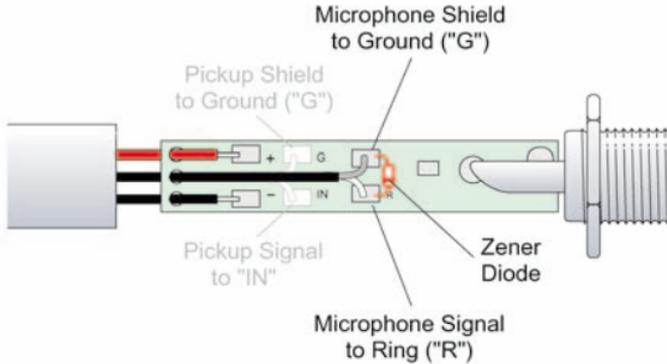


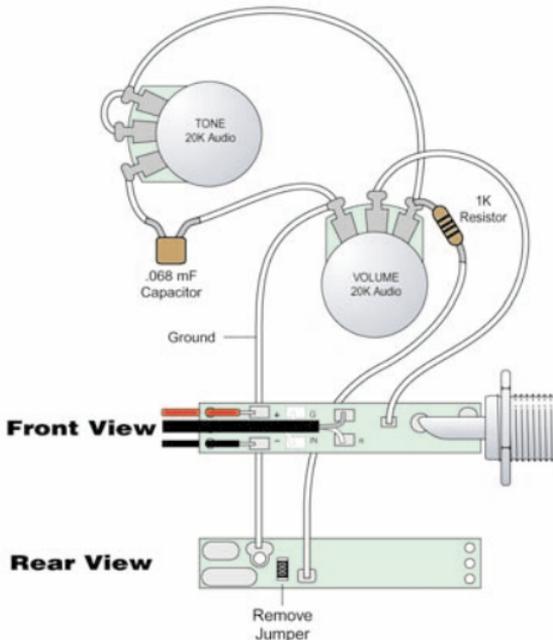
Figure 5 Pickup & Electret Microphone

(Use with the Fishman Blender System)

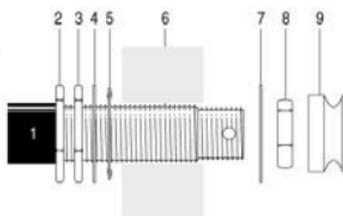


Note: Before you install a microphone, check the Manufacturer's specific wiring instructions (color coding).

Figure 6 Additional Tone & Volume Controls



- 1 - Preamp/Shielding Cap
- 2 - 1st Large Hex Nut
- 3 - 2nd Large Hex Nut
- 4 - Large Dress Washer
- 5 - Star Washer
- 6 - Guitar End Block
- 7 - Small Dress Washer
- 8 - Small Dress Nut
- 9 - Strap Button



Fasten the Jack in the Endpin Hole

Follow the above sequence when installing the endpin jack:

The jack should protrude at least $\frac{5}{16}$ " (7.9 mm) and no more than $\frac{11}{32}$ " (8.7mm) outside the guitar's body for proper fit.

Fit the small dress washer and nut over the end of the jack, then insert a $\frac{3}{32}$ " Allen wrench through the small hole on the end of the jack. Tighten the nut with a $\frac{1}{2}$ " open-end wrench while holding the jack in place with the Allen wrench. Thread and hand tighten the strap button.

Note: With the strap button in place, the end of the jack should protrude slightly, so that when a plug is inserted, it will snap securely in place.



Attach the Battery Clip

We recommend that you attach the battery clip to a small piece of hardwood approximately $1 \frac{1}{2}$ " x $1 \frac{1}{2}$ " x $\frac{1}{2}$ " (4cm x 4cm x 1.1cm) thick. Mark the screw hole locations on the block using the battery holder as a template. Drill the screw holes using the $\frac{5}{64}$ " (2mm) drill. Attach the battery holder using the two supplied $\frac{1}{4}$ " screws. Attach this assembly to the inside front block (neck block) using either wood glue or a gap filling cyanoacrylate such as Loctite® Black Max™.

Important! Although the supplied battery holder should provide adequate capacity to grip the battery at all times, we strongly recommend that you remove the battery when shipping your instrument. FAILURE TO REMOVE BATTERY COULD RESULT IN DAMAGE TO YOUR INSTRUMENT. C. F. Martin & Co., Inc. will not be held responsible for any damage incurred to instruments from a loose battery. A set of adhesive backed clips has been provided to secure the pickup cable and battery leads inside the guitar once the endpin jack has been installed. Remove the plastic film from the back of each clip to expose the adhesive. Secure the cable/clips to the kerfed lining of the guitar.

TROUBLESHOOTING

Symptom	Cause	Solution
Weak string or strings	Saddle is not completely seated.	Push the saddle down over the weak strings.
	Bottom of saddle is uneven or out of square with its sides.	Check bottom of saddle for flatness and squareness.
	Debris in the saddle slot.	Remove debris from saddle slot
	Improper saddle fit (too tight or loose).	Make sure that the saddle has a sliding fit in the slot
	Not enough downbearing pressure on saddle.	Follow the 50/50 rule.
	Uneven or belly up saddle slot.	Sculpt the bottom of the saddle to compensate for depth differences in the saddle slot or re-rout the saddle slot.
	Wire hole too tight.	The wire hole must be .094" diameter.
Pickup binding in saddle slot.	The saddle slot must be .094" .	Rout the slot to the correct width.
Thin or weak signal	Weak downbearing pressure due to low string break angle.	Observe the 50/50 rule. Ramp the string slots if necessary.
Hum	Improper saddle fit (too tight, resulting in poor s/n ratio).	Check saddle for sliding fit in the slot.
	Tom pickup shield. Examine the pickup.	Replace pickup if the material is torn.
	Unshielded jack.	Fasten the Shielding Cap to the jack.
Pickup intermittent or dead	Pickup binding in wire hole (wire hole too small or misaligned).	Align or widen pickup wire hole.
	Pickup binding in saddle slot.	Widen or lengthen pickup saddle slot to accommodate the pickup.

Specifications

Power Supply:	9 Volt Alkaline battery
Battery Life:	12,000 hours
Maximum Output Voltage:	4V peak to peak
Input Overload	.7dBV
Input Impedance	10 Mega Ohms
Output Impedance:	Less than 5kOhm
System Gain	3dB
Signal-to-Noise Ratio:	94 dB
Discrete Component Design:	FET low noise class A input stage, bipolar class AB output stage
All specifications subject to change without notice.	

LIMITED WARRANTY

The Martin thinline 332+plus® and Martin Thinline Active Jack® systems are designed and manufactured by Fishman Transducers, Inc. to exact specifications of C.F. Martin & Co. and are subjected to 100% testing in an acoustic guitar environment. Should you experience any difficulty, contact C.F. Martin & Co. for assistance. These devices are warranted to function properly for a period of 90 days from date of purchase. If this pickup fails to function properly within the warranty period, the option of replacement or refund are C.F. Martin & Co.'s only obligations. This warranty does not cover consequential damages, damage to the instrument, or to the pickup due to misuse, mishandling (i.e. bending, twisting or unauthorized modification), incorrect installation, accident, or neglect. C.F. Martin & Co. retains the right to make such determination on the basis of factory inspection. Products returned to C.F. Martin & Co. must be shipped prepaid. This warranty remains valid only if repairs are facilitated by C.F. Martin & Co. This warranty gives you specific legal rights which vary from state to state. It is suggested that you retain the dealer's bill of sale as evidence of date of purchase.

**Please read the instructions carefully.
For technical assistance, contact C. F. Martin & Co.
customer service at 1 (800) 633-2060.**

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