

DIY ELECTRIC GUITAR ASSEMBLY MANUAL



DESIGNED BY AKLOT FOR ALL SKILL LEVELS



UNFLASH YOUR DREAM

ASSEMBLE. EXPRESS. PLAY YOUR SOUND

VLR Series by AKLOT
Build & Play

DIY
GUITAR
ELECTRIC

ST ELECTRIC GUITAR
Your
First build
Your own voice

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Safety Notice

ALWAYS FOLLOW SAFETY INSTRUCTIONS



DANGER!

- **Risk to Children**

- Keep plastic bags, packaging materials, etc. properly disposed of and away from babies and young children. Suffocation hazard!
- Ensure children do not remove any small parts from the product (e.g., knobs). Swallowing these parts may cause choking!



WARNING!

- **Finger Cut Hazard**

- Beware of sharp edges on tools, screws, and components during assembly.
- Wear gloves if necessary to avoid injury during handling.



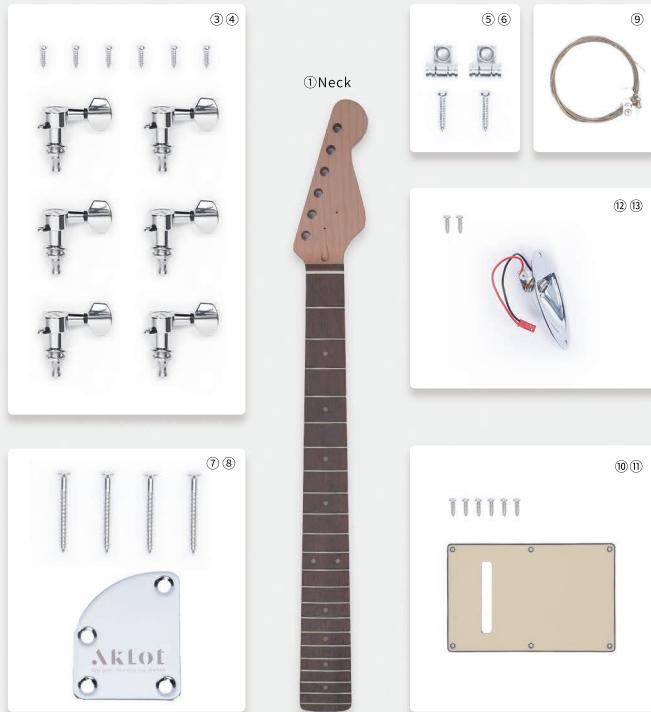
WARNING!

- **Flammable Material Risk**

- Keep paints, glues, and solvents away from open flames or heat sources.
- Store all chemicals properly when not in use.

1.Pre-Work Preparation

1.1 ST-Style Guitar Parts List



ITEM NO.	ITEM NAME	QUANTITY	UNIT
③	Tuning Machine	6	PCS
④	Tuning Machine screws	6	PCS
⑤	String Retainers	2	PCS
⑥	String Retainer Screws	2	PCS
⑦	Neck Plate	1	PCS
⑧	Neck Plate Screws	4	PCS
⑨	Guitar Strings	1	SET
⑩	Tremolo Backplate	1	PCS
⑪	Backplate Screws	6	PCS
⑫	Output Jack Plat	1	PCS
⑬	Jack Plate Screws	2	PCS

1.Pre-Work Preparation



ITEM NO.	ITEM NAME	QUANTITY	UNIT
⑭	Tremolo Bridge	1	PCS
⑮	Tremolo Arm	1	PCS
⑯	Bridge Mounting Screws	6	PCS
⑰	Tremolo Springs	3	PCS
⑱	Tremolo Spring Claw	1	PCS
⑲	Tremolo Claw Screws	2	PCS
⑳	Pickguard Assembly	1	SET
㉑	Pickguard Screws	11	PCS
㉒	Strap Button	2	PCS
㉓	Strap Button Washer	2	PCS
㉔	Strap Button Screw	2	PCS

1. Pre-Work Preparation

1.2 Recommended Tools & Materials



● To make your DIY guitar build easier and more enjoyable, we recommend having the following tools and supplies ready. Not all are strictly required, but they can help streamline the process and improve your overall experience.

- Phillips screwdriver
- Soldering iron
- Steel ruler
- Rubber Mallet
- Socket Wrench Set
- Pliers
- Needle File
- Nut Slotting Saw
- Workbench Mat
- Paint & Accessories
- Hard sanding block
- Neck Straightedge Ruler



If you plan to spray paint your guitar before assembly, always wear safety goggles and an N95 (or higher) mask to avoid inhaling hazardous fumes.

● You can also customize the shape of the guitar headstock using a suitable saw. Start by sketching your design on paper, cutting it out, and attaching it to a veneer sheet or directly onto the headstock. Use this template as your cutting guide.

● Be sure to leave at least 3mm of space around tuner screw holes and the outer edges to ensure proper installation of hardware. If you're new to woodworking, we recommend sticking with the default shape to avoid weakening the structure. After cutting, carefully sand all surfaces and edges to achieve a smooth, consistent finish.



1.Pre-Work Preparation

1.3 Before You Assemble



- **Precision Manufacturing Note:**

- All screw holes on this product are pre-drilled and precisely positioned, eliminating the need for additional drilling.

- **After opening the package, first remove the pickups. Under proper lighting, carefully inspect the guitar body for:**

- Major dents requiring filler
- Deep scratches needing sanding
- Residual adhesive on surfaces

1. Pre-Work Preparation



- **After identifying issues, begin sanding:**

- Use 180-240 grit sandpaper for initial leveling (critical for stain absorption)
- Optional: Refine with 400+ grit, but over-sanding may reduce stain penetration

- **Post-sanding, wipe the body with:**

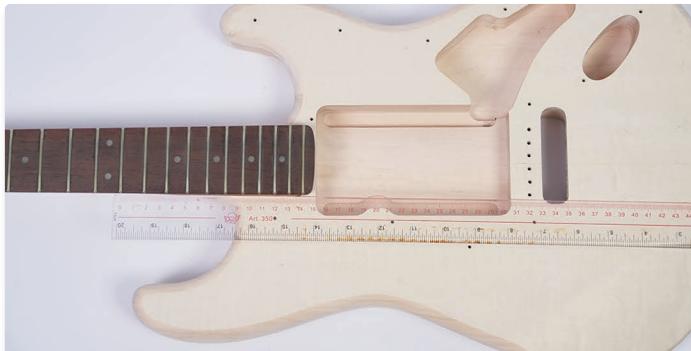
- Damp cloth (may raise wood grain – lightly re-sand if needed)
- Denatured alcohol (recommended for faster evaporation)

- **Before final assembly, verify:**

- Neck pocket alignment
- Installation orientation
- Neck angle (use included gauge)
- String spacing consistency

2. Assembly Instructions

2.1 Guitar Neck Installation



• Neck Placement & Fitment

- Place both the neck and the body face-down on a padded workbench to prevent surface damage.
- Gently slide the neck heel into the neck pocket of the body, pressing it flat to minimize the risk of damaging the fragile edges of the neck cavity.
- If the neck pocket is too narrow, carefully widen it using a chisel or sandpaper.
- If the pocket is too wide, you may insert thin shim strips or wood filler to ensure a snug fit.

• Scale Length Verification

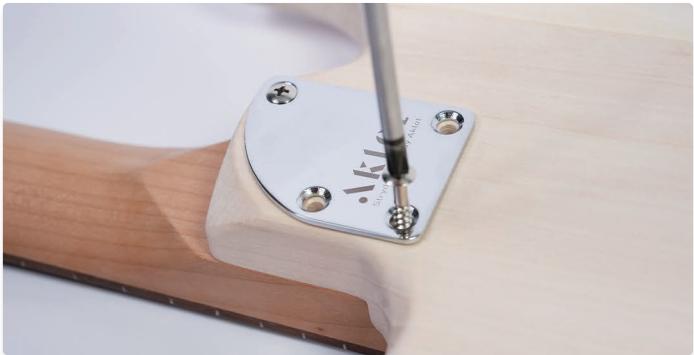
- Check the scale length. Lightly place the bridge on the guitar top and measure from the edge of the nut (closest to the fretboard) to the center of the 12th fret. Double that measurement to confirm the bridge's position relative to the correct scale length.
- The standard scale length for the ST-style guitar kit is 25.5 inches (650 mm). If the measured string length is off by a few millimeters, remember that each saddle on the bridge can be moved forward or backward using the intonation screws for final adjustment.

TIPS



- Test-fit the neck before making any modifications to ensure you're not over-sanding.
- Mark the centerlines on both the neck and body to help align them accurately during installation.

2. Assembly Instructions



• Reinforcement Plate & Screw Installation

- Once the neck is seated properly, flip the guitar over and place the metal neck plate over the four holes on the back of the body.
- Insert all four neck screws loosely at first. Start tightening the screws in a diagonal pattern—first the top-left, then the bottom-right.
- Once all screws are in position, fully tighten them and double-check that the neck is properly aligned with the body centerline.

CAUTION:



- Never force the neck into the pocket—doing so can crack the body or chip the finish.
- When tightening neck screws, overtightening can strip the wood or misalign the neck angle.

2. Assembly Instructions

2.2 Headstock Tuner Installation



● Tuner Mounting

- The tuning pegs are not left/right specific.
- From the back of the headstock, insert each tuning peg into its corresponding hole. Align the tuning post so that it stands perpendicular to the top edge of the headstock.
- You may use a metal ruler to ensure proper alignment. Once aligned, tighten the screws to secure the peg in place.



● Nut & Washer Installation

- Flip the headstock over to the front side. Place a washer and a hex nut onto each tuning post.
- Use an appropriate wrench to tighten the nut securely without over-tightening.

TIPS



- Before inserting tuning pegs, make sure the holes are clean and free from splinters to prevent misalignment.
- Do not overtighten the hex nuts on the front of the headstock. Excessive force may crack the finish or damage the wood.

2. Assembly Instructions



• String Tree Configuration

- Install the two string retainers into the pre-drilled pilot holes beside the tuning posts.
- The higher string retainer should be installed closer to the nut.
- Ensure the retainers are lightly fastened and still able to pivot slightly. The tension of the strings will hold them firmly in place once the strings are installed.

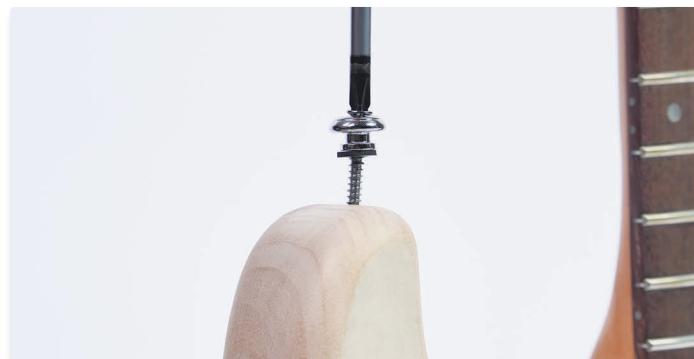
CAUTION:



- Use a straightedge (like a metal ruler) to visually check that all tuning posts are in line—this not only ensures tuning stability but also looks professional.
- Ensure the string retainers are installed in the correct holes; placing them too far from the nut may cause poor string angle and tuning instability.

2. Assembly Instructions

2.3 Strap Button Installation



• Hardware Positioning

- Install the strap buttons and endpin into the pre-drilled holes on the body, as shown in the reference image.

• Installation Sequence

- Make sure to place the washer first, followed by the strap button or endpin, and finally insert and tighten the screw.

• Torque Criticals

- Tighten the screw firmly, but avoid applying excessive force to prevent cracking the body wood.

TIPS



- If you're unsure about the screw alignment, pre-thread the screw slightly before final tightening.
- You may apply a small amount of wax or soap on the screw tip to reduce insertion resistance.

CAUTION:



- Do not over-tighten the screws—this may strip the pilot hole or cause damage to the guitar body.
- Always insert washers to protect the finish and ensure a flush fit.

2. Assembly Instructions

2.4.1 Installing the Tremolo Bridge



● Bridge Mounting

- Position the tremolo bridge into the pre-routed cavity on the guitar body. Make sure it is centered properly within the cavity and aligned with the screw holes.
- Use the screws provided in the hardware kit to fasten the bridge securely.

TIPS



- Use a magnetic screwdriver when installing the bridge to prevent screws from slipping into the body cavity.
- Do not overtighten the spring claw screws at this stage -doing so may limit bridge movement and affect future tremolo setup.

2. Assembly Instructions

2.4.2 Installing Spring Claw



• Tremolo Claw Installation

- Install the spring claw into the routed cavity on the back of the body.
- Use the provided screws to attach the claw, but do not drive the screws all the way in—leave about 1 cm of clearance. This allows for future adjustment of spring tension.

2. Assembly Instructions

2.4.3 Installing Tremolo Springs



• Spring Configuration

- Hook one end of each tremolo spring onto the spring claw, leaving one empty space between each spring.
- Use pliers to stretch and hook the other end of the springs onto the small holes located on the rear of the tremolo bridge.
- The three springs should form an inverted “V” shape when installed correctly.



CAUTION:

- When installing the springs, work slowly and use needle-nose pliers for better control and safety.
- Springs are under tension-always keep your fingers away from the path of the spring when stretching.

2. Assembly Instructions

2.5 Installing the Pickguard Assembly and Output Jack



• Harness Routing

- The potentiometers, pickup selector switch, tone and volume knobs, and pickups are pre-assembled onto the control panel. You only need to connect them to the output jack and the ground wire.
- As shown in the diagram, route the wire connector through the control cavity and cable channel until it reaches the mounting recess for the output jack.



TIPS

- When routing the cables through the channel, use a hook or pull wire if the space is tight.
- Avoid over-bending or pinching the wires during installation; it may cause signal loss or internal shorting.

2. Assembly Instructions



• Output Jack Installation

- Connect the output jack's terminals to the designated connectors from the pickups and potentiometers.
- Then insert the output jack into the predrilled cavity on the front side of the guitar body and secure it using the provided screws.

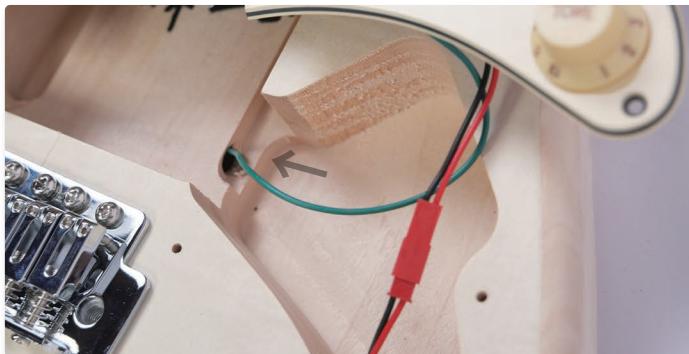
CAUTION:



- Double-check wire polarity (hot vs. ground) before connecting the jack to avoid reversed output.
- Do not overtighten the jack screws; over-tightening may strip the wood or damage the panel.

2. Assembly Instructions

2.6 Securing the Control Panel and Soldering the Ground Wire



- Route the ground wire through the tremolo spring channel to exit at the claw cavity.

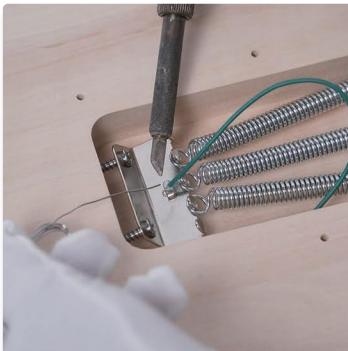
- **Control Plate Securing**

- Use the screws provided in the accessory kit to firmly secure the control panel and boat-style output jack to the guitar body.

**TIPS:**

Handle cable connectors with minimal contact pressure to prevent solder joint failure.

2. Assembly Instructions



• Grounding Implementation

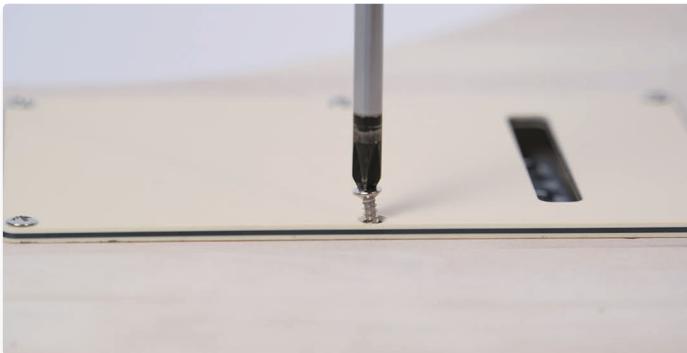
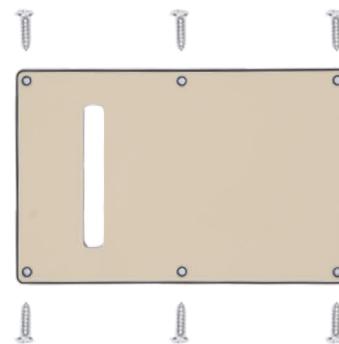
- Flip the guitar over and use a soldering iron to solder the ground wire to the center soldering tab of the tremolo spring claw.
- Do not move the cable immediately after soldering—allow the joint to cool and solidify fully before adjusting the wire.

Note:



- Use a helping hand tool or clip to hold the ground wire in position while soldering.
- Do not overheat the soldering point—excessive heat may damage the wire insulation or nearby components.
- Abrasive-polish contact points with sandpaper to ensure optimal conductivity prior to soldering.

2. Assembly Instructions



- **Rear Cavity Sealing**

After soldering is complete, place the tremolo cavity backplate over the pre-drilled holes and use the provided screws to secure it in place.

2. Assembly Instructions

2.7 Installing and Securing the Strings



• String Routing & Initial Tension

- Install the strings by feeding them through the holes on the tremolo back-plate, from the rear of the guitar toward the front.
- Guide each string through its corresponding saddle on the bridge. Wrap the end of the string around the tuning post several times, and hand-tighten each string one by one.
- Ensure every string is seated properly in its tuning post slot and aligned correctly in the string trees.

• String Installation Protocol

- Cut strings with pliers
- Insert into post hole and rotate tuning key
- Leave 2-3 wraps on each tuning post
- Apply tension while tuning
- Stretch strings repeatedly during tuning process
- Allow strings to stabilize progressively

2. Assembly Instructions



● String Tree Configuration

- Use the string trees near the nut to hold down the D and G strings with one tree, and the B and high E strings with the other.
- These retainers help maintain proper string angle and tuning stability.

CAUTION:

- Be cautious when tuning up new strings—tightening too fast or too far can cause string breakage.
- Do not skip using string retainers; skipping them may result in string buzz or poor sustain.



3. Tuning & Setup

The final setup stage is essential for achieving ideal playability and tone. It involves four key adjustments:

- **Neck Relief**

- Prevents fret buzz by accommodating string vibration arc.
- Enables lower action without compromising playability.
- Ensures consistent feel across all fret positions.

- **String Action**

- Balances playing comfort against clear note articulation.
- Prevents premature note decay (choking) in bends.
- Reduces hand fatigue during extended play.

- **Intonation**

- Guarantees accurate pitch at every fret position.
- Eliminates harmonic dissonance in chords.
- Makes the guitar usable in professional recording contexts.

- **Pickup Height**

- Maximizes output while preventing magnetic string damping.
- Balances volume across all strings.
- Shapes tonal character and dynamic responsiveness.

The following content will provide a basic overview of each adjustment. Please remember to keep the guitar tuned to concert pitch (A440) throughout the process, and check regularly to ensure the neck maintains proper tension during adjustments.

3.Tuning & Setup

3.1 Floating Tremolo String Setup



● Baseline Establishment

- Once the strings are fully installed, the next step is to adjust the floating tremolo system.
- The goal is to allow the tremolo bridge to move slightly up and down when resting level with the guitar body, enabling smooth pitch variation -typically up to a half step.

● Spring Tension Equilibrium

- The amount of tremolo movement depends on the balance between string tension and spring tension.

TIPS:



- Use a tuner to monitor pitch changes while adjusting spring tension.
- Most players prefer a rear bridge lift of 1–2 mm to allow slight upward bends.

3.Tuning & Setup



- **Step:**

- Make sure the guitar is tuned to standard concert pitch (EADGBE).
- Loosen the tremolo mounting screws on the bridge by about 1/4 turn. Then slightly tighten the two outer screws. This provides freedom of movement while maintaining stability.
- Flip the guitar over and gradually tighten the spring claw screws to increase spring tension.
- Re-tune the guitar after each adjustment and check if the bridge plate returns to a flat, parallel position with the guitar body.
- Once the bridge is level, test pitch shift using the tremolo arm. Continue fine-tuning until the movement range and tuning stability meet your preference.

CAUTION:



- Do not overtighten the spring claw screws—this will flatten the bridge and prevent upward tremolo action.
- Avoid using the tremolo arm aggressively before tension is balanced, as it may de-tune the guitar severely.

3.Tuning & Setup

3.2 Adjusting Neck Relief



- **Neck Relief Calibration Protocol**

- The ideal guitar neck has a slight forward bow, also known as neck relief. This creates clearance for vibrating strings and helps prevent fret buzz during play.
- If the neck is too straight or back-bowed, the strings may make contact with the frets, resulting in unwanted buzzing.

- **There are two easy ways to check for proper relief:**

- Use a straightedge ruler along the frets to observe whether the neck has a subtle bow.
- Alternatively, press the low E string down at both the 1st fret and the last fret (e.g., 21st or 22nd). Tap the string around the 12th fret—it should have a small gap above the fret. If there's no gap, the neck is too flat; if the gap is excessive, the relief is too great.

3.Tuning & Setup



● How to Adjust Relief:

- To adjust the relief, use the hex wrench provided in your kit to turn the truss rod.
- Turning counterclockwise loosens the truss rod, increasing neck relief.
- Turning clockwise tightens the truss rod, flattening the neck.
- Always turn in 1/4-turn increments, then allow the neck to settle under string tension before proceeding.

TIPS:



- Tune the guitar to concert pitch before and during truss rod adjustments.
- Give the neck 5-10 minutes to settle after each turn before re-checking relief.
- The ideal string-to-fret gap at the 7th to 12th fret (while testing) is typically about 0.25 mm (~0.010").

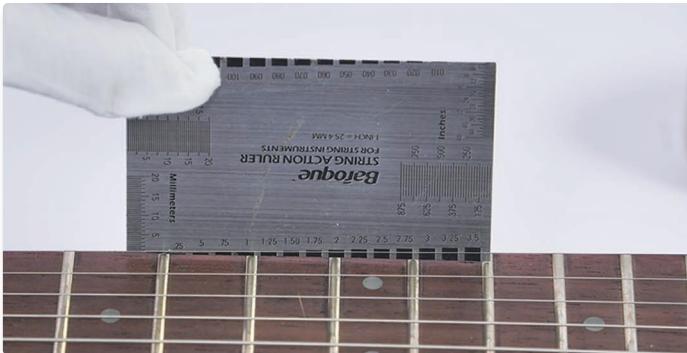
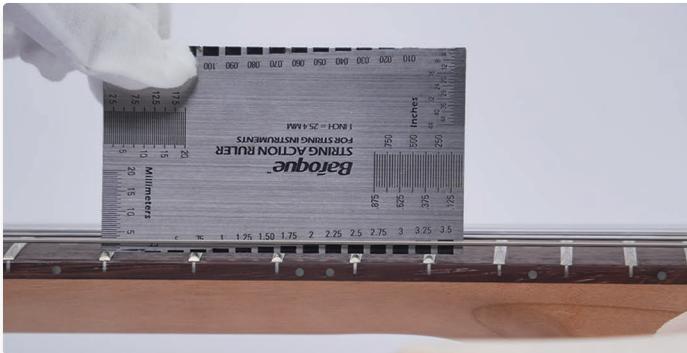
CAUTION:



- Never force the truss rod. If you feel resistance or hear cracking, stop immediately.
- Over-tightening may damage the truss rod channel or warp the neck.
- If unsure, seek help from a qualified guitar technician.

3.Tuning & Setup

3.3 Adjusting Action Height



- **Definition & Measurement**

- String action refers to the distance between the strings and the fretboard, typically measured at the 12th fret.
- A high action can make playing uncomfortable, while a low action may cause fret buzz.

- **As a general starting point:**

- Low E string (6th string): 2.4mm
- High E string (1st string): 1.6mm

Note:

- These values can be slightly adjusted depending on string gauge and playing style.
- Always tune the guitar to concert pitch before checking or adjusting action.



3.Tuning & Setup



- **How to Adjust Relief:**

- Action can be adjusted at the bridge via individual saddle height screws:
 - ① Insert the included hex wrench into the saddle height screws on both sides.
 - ② Turn counterclockwise to lower the saddle, or clockwise to raise it.
 - ③ Ensure both height screws on each saddle are set evenly to keep the saddle balanced and the string stable.

TIPS:



- Use a feeler gauge or action ruler for more accurate measurement at the 12th fret.
- Adjust saddles gradually and re-tune after each change.
- Slightly higher action may be preferred by players who use heavier picks or aggressive strumming.

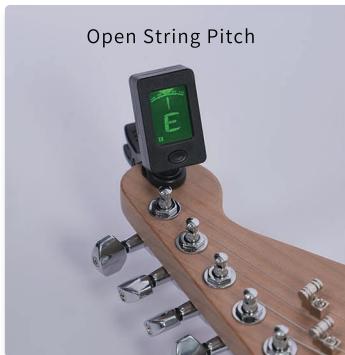
CAUTION:



- Uneven saddle height can cause buzzing, intonation problems, or tuning instability.
- Do not overtighten the saddle screws, as this may strip the threads or damage the bridge.

3.Tuning & Setup

3.4 Adjusting String Length and Intonation



- The goal of intonation adjustment is to ensure that your guitar plays in tune with itself across the entire fretboard.

- The most common method is:**

- Tune the guitar to concert pitch, then compare the pitch of each open string to its fretted note at the 12th fret (one octave higher).
- If the 12th fret note is sharp, the string is too short. You need to lengthen the string.
- If the 12th fret note is flat, the string is too long. You need to shorten the string.

- Explanation:**

- Because wound bass strings are thicker and under more tension, electric guitars are designed with compensated bridges—angled to allow for string length adjustments, especially on lower strings.
- This is why most electric guitar bridges are angled back toward the bass side—they are built to accommodate this variation.



TIPS:

Re-check intonation after any truss rod or action adjustment, as those changes affect pitch.

3.Tuning & Setup



● Adjustment Procedure:

- To lengthen the string, turn the saddle's intonation screw counterclockwise to move the saddle backward.
- To shorten the string, turn the screw clockwise to move the saddle forward.
- Always tune the guitar properly before intonation checks—poor tuning will distort the results.



CAUTION:

- Do not overtighten the intonation screws; excessive force can strip the threads or misalign the saddle.
- Make small adjustments and re-tune between each step to avoid chasing pitch errors.



3.Tuning & Setup

3.5 Adjusting Pickup Height



- Pickup height is the final key adjustment in your guitar setup. Like string action, pickup-to-string distance significantly affects your tone and dynamics.
- Different pickup heights influence output level, clarity, and sustain.
- **While pickup height is largely subjective and depends on your tonal preference, a good starting point is:**
 - Press down the string at the last fret and measure the gap between the bottom of the string and the top of the pickup pole piece.
 - A good baseline is about 2.4 mm (0.094") from the pole piece to the string.

TIPS:



- Start with equal pickup height on both bass and treble sides, then fine-tune by ear.
- Bridge pickups are typically set slightly closer to the strings than neck pickups for increased clarity.
- Listen for “wolf tones” (distorted overtones) caused by pickups too close to the strings.

3.Tuning & Setup



- **Adjustment Procedure:**

- To adjust the pickup height, use a screwdriver to turn the two mounting screws located on either side of the pickup ring:
- Turn the mounting screw clockwise to lower the pickup.
- Turn the screw counterclockwise to raise the pickup closer to the strings.



CAUTION:

- Avoid setting the pickups too high—magnetic pull may interfere with string vibration and intonation.
- Do not overtighten mounting screws, especially if the pickup ring is plastic.

4. Environmental Responsibility



Packaging Materials Disposal:

All packaging materials are recyclable. Please dispose of plastic bags, cushioning foam, and cardboard properly through local recycling channels—do not mix with household waste.



Electronic Equipment Disposal:

This product falls under the EU WEEE Directive. Never discard with regular trash. Use authorized e-waste facilities or municipal collection points. Consult local regulations for proper disposal.

5.Final Summary

- **Congratulations!**

You now have a fully assembled, playable guitar.

As you grow more familiar with it, you may wish to revisit certain setup aspects—particularly the final action and intonation.

- **Electronics Check**

Test all pickup positions, volume/tone knobs, and listen for unwanted noise (indicating grounding issues).

If interference occurs, inspect the control cavity's wiring.

- **Playability Verification**

Fret each note across all strings to detect buzzing or dead spots.

Most issues can be resolved by adjusting string action or neck relief.

- Enjoy your custom-built guitar! Regular maintenance will ensure peak performance.

- For any issues encountered during installation, usage, or disassembly.

Please feel free to contact our customer service team via email cs@aklot.com.

We're committed to providing professional technical support and solutions.

- **Thank you for choosing AKLOT!**

Aklot

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