

Complete Fender Guitar Setup Measurement Guide

Stratocaster - Telecaster - Jaguar - Jazzmaster - Mustang - Duo-Sonic - Musicmaster - Starcaster - Fender solidbody electrics, all eras

Built as a shop bench reference: factory starting numbers first, then the dirty human reality of old Fenders, reissues, import hardware, worn frets, mystery saddles, and whatever hellspawn bridge someone “upgraded” in 1997.

Scope: Fender-branded electric guitars only. No Squier specs, no basses, no acoustics, no Gibson tourists wandering into the wrong aisle. Use model-specific owner manuals when available, but this guide normalizes the measurements into one shop workflow.

Core rule: Fender factory numbers are minimum starting specs, not sacred law. Adjust for string gauge, tuning, fret condition, neck angle, player attack, slide use, and whether the player treats the strings like a court-ordered anger exercise.

Fast Bench Targets

Neck radius	Relief at 8th fret	Action at 17th fret - bass	Action at 17th fret - treble	Typical Fender eras/models
7.25 in	.012 in / 0.30 mm	5/64 in / 2.0 mm	4/64 in / 1.6 mm	Most vintage-style Fender necks: 1950s-1970s Tele, Strat, Jazzmaster, Jaguar, Mustang; many AVRI/Vintera/vintage reissue models
9.5-12 in	.010 in / 0.25 mm	4/64 in / 1.6 mm	4/64 in / 1.6 mm	Most modern Fender production: Player, American Standard/Professional, many Deluxe/Ultra; many modern offsets
15-17 in	.008 in / 0.20 mm	4/64 in / 1.6 mm	3/64 in / 1.2 mm	Flatter specialty/compound radius instruments; shred-adjacent Fender variants, because apparently even Fender had to answer the 1980s

Measurement method: capo first fret, fret last fret, measure relief at 8th fret. Measure action from top of 17th fret to bottom of string. [S1]

Shop Setup Order

Do the work in this order or enjoy chasing your own tail like a caffeinated raccoon: inspect, strings, relief, action/neck angle, nut, trem/bridge, pickup height, intonation, play test, final clean.

Step	Action	Shop note
1	Intake inspection	Document finish damage, neck pocket cracks, fret wear, nut condition, electronics, hardware, trem arm, missing screws. Photograph anything expensive-looking or suspicious.
2	Baseline play test	Tune to pitch and record current action, relief, fret buzz zones, dead bends, pickup balance, scratchy controls.
3	Clean / restring	Install requested gauge before final setup. Fender factory specs assume standard factory string gauges; changing gauge changes the math.

Step	Action	Shop note
4	Neck relief	Capo 1st, fret last, measure at 8th fret. Adjust truss rod in small moves, retune between checks. Stop if resistance gets ugly.
5	Action / bridge / neck angle	Set radius-matched saddles. If saddles bottom out or tower too high, diagnose neck angle before blaming Leo Fender personally.
6	Nut slots	Check first-fret clearance and open-string buzz. Cut slowly. You can always remove more nut; replacing it is the idiot tax.
7	Vibrato / bridge behavior	Set Strat float or deck. For offsets, center/seat rocking bridge before intonation. For Mustang/Duo-Sonic hardtails, verify saddle screws do not rattle.
8	Pickup height	Fret last fret, measure bottom of string to pole piece/top cover. Balance by ear after using factory start points.
9	Intonation	Final intonation after relief, action, nut, trem balance, and pickup height are stable. Tune, check 12th-fret harmonic vs fretted note.
10	Final play test	Open strings, every fret, half-step/whole-step bends, heavy attack, low-volume electronics, pickup switching, vibrato return.

The uploaded setup checklists emphasize baseline inspection, cleaning, restringing, relief, action, nut height, pickup height, intonation, and final play testing; this guide adapts that workflow to Fender-specific measurements. [U1/U2/U3]

Fender Model Family Coverage

Family	First production era	Scale	Common radius	Setup consequence
Telecaster / Esquire / Broadcaster / Nocaster	1950-1951 onward	25.5 in	7.25 vintage; 9.5 modern	3-barrel bridges need compromise intonation unless compensated saddles are fitted; modern 6-saddle Teles intonate individually.
Stratocaster	1954 onward	25.5 in	7.25 vintage; 9.5 modern; compound on some	Synchronized tremolo setup drives tuning stability; bridge float/deck choice comes before final action and intonation.
Jazzmaster	1958 onward	25.5 in	7.25 vintage; 9.5 modern	Floating bridge and long behind-bridge length need adequate break angle, centered bridge, and clean saddle contact.
Jaguar	1962 onward	24 in	7.25 vintage; 9.5 modern	Short scale exaggerates slinkiness; bridge/trem setup and string gauge matter more than customers want to admit.
Mustang / Musicmaster / Duo-Sonic	1956/1964 onward	22.5 or 24 in, model/year dependent	7.25 vintage; 9.5 modern	Short scale often benefits from slightly heavier strings. Vibrato Mustangs need bridge and tailpiece checked as a system.
Starcaster / Coronado / other Fender electrics	1960s-1970s onward	Usually 25.5 in	varies	Use radius-based Fender electric specs unless the model manual says otherwise. Hollow/semi-hollow neck angle limits may matter.

Do not assume vintage specs because the headstock looks old. Confirm radius, scale, fret size, bridge type, nut width, and pickup type. Fender has reused names across radically different hardware. Humanity survives by labels, then immediately ruins labels.

Universal Fender Electric Measurements

Use these as the shop default starting point for all Fender electric guitars when model-specific manual data is absent.

Measurement	How to measure	Starting spec	Adjustment logic
Relief	Capo 1st, fret last, measure gap at 8th fret under low E	7.25: .012; 9.5-12: .010; 15-17: .008	More relief for heavier attack or buzz in lower positions; less relief for low action/light touch.
Action	Top of 17th fret to bottom of string	See radius table	Raise for buzz or slide; lower until buzz/bend choke appears, then back off.
Nut slot clearance	Top of 1st fret to bottom of open string	Low E/A about .020; D/G about .018; B/high E about .016 as conservative shop targets	Lower if first-position intonation feels sharp or action stiff; replace/fill if open buzz occurs.
Pickup height	Last fret depressed, bottom of string to pole/top cover	Use pickup table below	Too high can cause warble, poor sustain, false overtones; too low sounds weak/thin.

Measurement	How to measure	Starting spec	Adjustment logic
Intonation	12th harmonic vs fretted 12th	Fretted sharp: move saddle back. Fretted flat: move saddle forward.	For vintage 3-saddle Tele, split the error musically unless compensated saddles are fitted.
Trem float - Strat	Rear of bridge plate to body	Fender starting point: 1/8 in / 3.2 mm gap at rear when floating	Deck for hardtail feel/bend stability; float for up/down vibrato. Retune after every claw change.

Fender states these are minimum guide specifications and that changes in strings/player application require compensation. [S1/S2/S3]

Pickup Height Reference - Fender Electrics

Pickup type	Bass side	Treble side	Notes
Texas Special / Noiseless style high-pull single coils	8/64 in / 3.2 mm	6/64 in / 2.4 mm	Start lower, especially neck pickup. Raise by ear only after checking sustain and warble.
Vintage style Fender single coil	6/64 in / 2.4 mm	5/64 in / 2.0 mm	Common starting point for vintage Strat, Tele, Jazzmaster/Jaguar style output balancing.
Standard single coil / American-Mexican standard	5/64 in / 2.0 mm	4/64 in / 1.6 mm	Modern production starting point. Balance switch positions after measuring.
Humbucker / Wide Range / Shawbucker style	4/64 in / 1.6 mm	4/64 in / 1.6 mm	Adjust whole pickup, then pole pieces if available for string balance.
Lace Sensor	As close as desired	As close as desired	Allow string vibration; magnetic pull is lower, but ears still get a vote.

Fender and Seymour Duncan both measure pickup height with the last fret depressed. Seymour Duncan recommends 3/32 in as a general ballpark and warns that pickups too high can reduce sustain or create wolf tones. [S1/S4]

Model-specific pickup handling:

Model	Pickup adjustment notes
Stratocaster	Height screws on each side. Staggered poles mean height is not the same as string balance; listen through all 5 switch positions.
Telecaster	Bridge pickup hangs from bridge plate with 3 screws. Neck pickup may be pickguard-mounted or body-mounted; body-mounted requires pickguard removal.
Jazzmaster	Many pickups rely on foam underneath; mounting screws may not act like Strat height screws. Replace collapsed foam before inventing a conspiracy.
Jaguar	Similar to Jazzmaster but with claws/covers. Some techs add springs around mounting screws for easier adjustment.
Mustang / Duo-Sonic	Pickup height depends on version: direct-mounted, pickguard-mounted, or covered. Use last-fret measurement and balance by ear.
Wide Range humbuckers	Modern/reissue units vary. Start at humbucker spec, then adjust pole pieces or covers according to actual construction.

Nut Slot Targets

String	Conservative Fender shop target over 1st fret	Low-action inspection range	Notes
Low E	.020 in / 0.50 mm	.018-.024 in / 0.46-0.61 mm	Leave room for heavy pickers and vintage frets.
A	.020 in / 0.50 mm	.018-.022 in / 0.46-0.56 mm	Watch slot angle toward tuner.
D	.018 in / 0.45 mm	.014-.020 in / 0.36-0.50 mm	Middle slots should stair-step, not form a ski jump.
G	.018 in / 0.45 mm	.014-.018 in / 0.36-0.45 mm	Plain G can ping badly; polish and lube.
B	.016 in / 0.41 mm	.010-.016 in / 0.25-0.41 mm	Common source of first-position sharpness.
High E	.016 in / 0.41 mm	.008-.014 in / 0.20-0.35 mm	Too low = open buzz; too high = customer thinks the guitar hates them.

The uploaded reference guide and checklist use .020/.018/.016 electric nut-height targets; Fender factory pages focus on radius/action/relief and defer model specifics to manuals. [U1/U2/S1]

Stratocaster Setup Page

Applies to vintage 6-screw tremolo, modern 2-point tremolo, hardtail, and locking/Floyd-style Fender Stratocaster variants. Use exact owner manual when hardware is nonstandard.

Area	Spec / procedure	Bench note
Relief	Use radius table at 8th fret: .012 / .010 / .008	Vintage 7.25 boards need more relief and action to avoid choking bends.
Action	Measure at 17th fret. 7.25: 5/64 bass, 4/64 treble. 9.5-12: 4/64 both. 15-17: 4/64 bass, 3/64 treble.	Set outside E strings first, then match saddle arc to fretboard radius.
6-screw trem	Pull bridge flush; raise six screws about 1/16 above bridge plate, then tighten two outside screws flush as pivots.	Middle four stabilize, outer two pivot. If screws bind, tuning returns like trash.
2-point trem	Set pivot screws so plate sits flush at front when pulled back; claw controls rear float.	Do not use pivot posts like a bottle jack under full tension. Loosen tension first.
Floating trem	Fender start: 1/8 in gap at rear of bridge.	Retune constantly while balancing spring claw and string tension.
Decked trem	Tighten claw until bridge rests on body; add about 1/2 turn for bend stability.	Good for players who never use up-pull and do not want double-stop bends sagging.
Pickup height	Use pickup table; common Strat single-coil start: vintage 6/64 bass, 5/64 treble; standard 5/64 bass, 4/64 treble.	Lower neck pickup first if you hear Stratitis/warble above 12th fret.
Intonation	Fine tune after trem balance. Sharp = saddle back; flat = saddle forward.	Middle pickup position, volume/tone full per Fender procedure.

Fender publishes Strat-specific guidance for strings, tuners, tremolo setup, truss rod, action, pickups, and intonation. [S2]

Telecaster Setup Page

Area	Spec / procedure	Bench note
Relief / action	Same Fender radius table. Measure action at 17th fret.	Tele bridge style does not change neck relief math, despite what the internet will try to sell you.
Vintage 3-saddle bridge	Preset first saddle to scale length; set 2nd/3rd saddle positions using paired string gauges, then fine tune by ear/tuner.	Compensated saddles reduce the compromise; straight brass barrels always involve musical diplomacy.
Modern 6-saddle bridge	Set each saddle individually, matching radius and intonation.	Check saddle screw height so screws do not stab the player. Apparently skin is still considered useful.
String-through / top-loader	Check break angle and saddle witness points.	Top-loading can feel slinkier; setup target may need a hair more action for heavy attack.
Pickup height	Tele bridge plate: 3-screw angle control. Neck pickup may require pickguard removal if body-mounted.	Balance neck/bridge output, not just ruler numbers. Tele bridge can dominate fast.
3-barrel intonation	If one string is sharp and mate is flat, split the error by how the player actually uses the guitar.	Open-position cowboy-chord player gets different priorities than high-neck lead player.

Fender notes both vintage three-section and modern six-section Tele bridges and gives rough intonation methods for each. [S3]

Jazzmaster and Jaguar Setup Page

Offsets are not broken Strats. Treat the bridge, vibrato, neck angle, string gauge, and break angle as one system. If you only lower saddles until the screws rattle, congratulations, you have discovered avoidable suffering.

Area	Jazzmaster	Jaguar	Bench note
Scale	25.5 in	24 in	Jaguar feels slinkier at same gauge; consider .010-.046 minimum, .011 sets for aggressive offset players.
Relief/action	Use radius table	Use radius table	Vintage 7.25 needs more action for bend clearance; modern 9.5 can run lower.
Bridge position	Floating bridge should sit centered/upright before intonation	Same	Set intonation with bridge in the position it will return to during playing.
Bridge height	Set overall bridge height using bridge posts, then individual saddles for radius	Same	Do not set all action only with tiny saddle screws; they loosen and rattle.
Neck angle	Shim when bridge must be too low or break angle is weak	Often more useful on Jaguar due short scale	Full-pocket angled shim preferred over random business-card archaeology.
Vibrato	Check smooth travel, lock button if present, string path, arm tension	Same	Lubricate string contact points and verify bridge can rock or deliberately seat it consistently.
Pickup height	Jazzmaster pickups often need foam support	Jaguar pickups with claws/covers may need spring/foam correction	Foam collapse is common; replace before final height.
Common symptoms	Buzz/rattle, strings jumping saddles, weak break angle	Same plus shorter scale flub	Heavier strings, proper neck angle, and bridge geometry fix more than internet arguments.

Offset bridge intonation should be set with the floating bridge in its proper/resting position; offset bridge height is often adjusted at the bridge posts rather than only individual saddles. [S5/S6]

Mustang, Duo-Sonic, Musicmaster, Jag-Stang Setup Page

Area	Spec / procedure	Bench note
Scale / feel	Many are 24 in; early/student models may be 22.5 in. Confirm before quoting tension feel.	Short scale plus .009s can feel rubbery. Suggest gauge based on tuning and attack.
Relief/action	Use Fender radius table. Vintage radius usually wants 7.25 spec.	Student model does not mean student-level setup, because physics remains smugly indifferent.
Mustang vibrato	Check posts, springs, knife/pivot surfaces, tailpiece height, bridge rocking/return.	Set for stable return before final intonation. Bad pivots or weak springs waste everyone's afternoon.
Hardtail Duo-Sonic/Musicmaster	Set saddle radius, check screw rattle, intonate individually if bridge permits.	Older hardware may have limited travel. Diagnose before promising perfect intonation.
Pickup height	Use Fender pickup type table based on installed pickup, not model name.	Many have changed pickups over decades. Trust the guitar in front of you.

Year/Era Decision Tree

Question	Use this branch
Is it a 1950s-1970s style Fender or vintage reissue with 7.25 radius?	Start .012 relief, 5/64 bass and 4/64 treble action. Expect higher action if bends choke.
Is it modern 9.5 radius?	Start .010 relief and 4/64 both sides. This is the daily-driver Fender setup zone.
Is it compound/flatter 12-17 radius?	Start .008-.010 relief; 4/64 bass, 3/64-4/64 treble depending on fret quality and player attack.
Does the bridge run out of height travel?	Stop. Diagnose neck angle, shim/Micro-Tilt, bridge compatibility, trem plate geometry. Do not simply crank random screws until the guitar files a complaint.
Does it have changed pickups?	Ignore model-year pickup assumptions. Identify pickup type, magnet pull, cover/pole construction, and set height by type and ear.
Does it have old/vintage frets?	Factory low-action specs may not be reachable without fretwork. Document fret wear and high frets before setup.

Shop Measurement Sheet

Customer	Instrument	Serial	Date
String gauge	Tuning	Scale	Radius
Relief before	Relief after	Action before E/e	Action after E/e
Nut clearance E/A/D/G/B/e	Pickup heights	Intonation notes	Fret/buzz notes
Bridge/trem status	Electronics status	Recommended repairs	Tech initials

Final Fender Setup Checklist

Done	Check item	Notes
■	Instrument photographed and damage documented	
■	Old strings/gauge/tuning recorded	
■	Hardware snugged without over-tightening	
■	Fretboard cleaned/conditioned as appropriate	
■	New strings installed, stretched, and tuned	
■	Relief measured at 8th fret and recorded	
■	Action set at 17th fret and radius matched	
■	Nut slots checked for height, binding, and open buzz	
■	String trees/nut/saddles lubricated where appropriate	
■	Strat trem float/deck set or Tele/offset bridge seated correctly	
■	Offset bridge centered/resting position confirmed before intonation	
■	Pickup height measured at last fret and balanced by ear	
■	Intonation set after all mechanical adjustments	
■	Electronics tested: volume, tone, switches, jack, noise	
■	Every fret checked, bends checked, chords checked	
■	Final wipe-down, tune-up, and customer notes completed	

Fraction / Decimal / Metric Quick Conversion

Fraction	Decimal in	Metric mm
3/64	.0469	1.19
4/64 = 1/16	.0625	1.59
5/64	.0781	1.98
6/64 = 3/32	.0938	2.38
7/64	.1094	2.78
8/64 = 1/8	.1250	3.18
.008	.0080	0.20
.010	.0100	0.25
.012	.0120	0.30
.016	.0160	0.41
.018	.0180	0.46
.020	.0200	0.51

Sources and Notes

- [S1] Fender Support, "What are factory setup specs?"
- [S2] Fender Support, "How do I set up my Stratocaster guitar properly?"
- [S3] Fender Support, "How do I set up my Telecaster guitar properly?"
- [S4] Seymour Duncan, "Adjusting Pickup Height" PDF
- [S5] Haze Guitars, "Setting Intonation on a Jaguar, Jazzmaster, or Mustang"
- [S6] Premier Guitar, "DIY: How to Set up Jazzmasters & Jaguars"
- [U1] Uploaded: Guitar Setup Checklist
- [U2] Uploaded: Guitar setup reference guide
- [U3] Uploaded: Guitar Niche 52 Point Guitar Setup Cheat Sheet

Internet sources used: Fender factory setup specifications; Fender Stratocaster setup guide; Fender Telecaster setup guide; Seymour Duncan pickup height guide; Haze Guitars and Premier Guitar offset setup articles. Uploaded shop-reference PDFs were used for checklist structure, nut-height cross-checking, and final workflow structure.

This guide intentionally does not claim that one number is correct for every Fender ever made. That would be adorable and false. It uses Fender factory specs as the starting floor, then adds shop decisions for model family, hardware, radius, scale, fret condition, and player behavior.