Instrument Building Tool List

What You'll Need to Build Instruments

This is a working reference for equipping a lutherie shop — organized by the order you'll typically acquire tools as a build practice grows. Costs are approximate 2026 U.S. market ranges for new tools; quality vintage or secondhand tools can run well below these figures. Ranges reflect entry-level to professional-grade options within each category.

SHOP BUDGET TIERS

STARTER SHOP
Hand tools only — enough to build your first instrument
$1,500 – $3,000

WORKING SHOP
Hand tools + benchtop power tools — comfortable one-builder pace
$5,000 – $10,000

PROFESSIONAL SHOP
Full complement incl. stationary machines & CNC
$18,000 – $45,000+

HOW THIS LIST IS ORGANIZED

- Page 2 — Hand Tools
  The core kit. Shaping, measuring, fretwork, clamping, finishing.
- Page 3 — Power Tools
  Handheld & benchtop machines that speed up repetitive work.
- Page 4 — Larger Machines
  Stationary equipment for milling, dimensioning, and shop systems.
- Page 5 — Jigs & Fixtures
  Shop-made and purchased fixtures that make repeat work accurate.

Hand Tools

TOOL	PRIMARY USE	EST. COST (USD)
SHAPING & CARVING		
Bench chisel set (6–8 pc)	Paring, cleaning joints, inlay work	$80 – $200
Carving gouge set	Rough shaping, bracing, top carving	$150 – $400
Block plane	End grain, chamfers, small trimming	$40 – $150
Smoothing plane (No. 3–4)	Flattening tops, backs, plates	$150 – $350
Finger / thumb planes (set)	Bracing, scalloping, tight spaces	$100 – $250
Compass / circular plane	Arched tops and backs	$150 – $300
Spokeshaves (flat & curved sole)	Neck, heel & concave shaping	$80 – $240
Cabinet scrapers + burnisher	Final surface prep before finish	$35 – $100
Rasps & files, cabinetmaker's	Neck carving, coarse shaping	$60 – $150
MEASURING & LAYOUT		
Dial / digital calipers	Thickness, nut & saddle height	$20 – $80
Precision steel straightedge	Neck relief, fret plane checks	$30 – $80
Engineer's square	Neck angle, joint verification	$25 – $60
Fretboard radius gauge set	Checking board & fret radius	$15 – $30
Marking / cutting gauge	Purfling channels, joint lines	$30 – $90
Winding sticks & scale rule	Neck twist check, fret spacing	$25 – $70
FRETWORK & SETUP		
Fret saw with depth stop	Cutting fret slots by hand	$60 – $150
Fret crowning file	Shaping fret tops after leveling	$30 – $70
Nut & saddle file set (gauged)	Cutting accurate string slots	$60 – $150
Fret bender, hand-crank	Radiusing fretwire to board	$60 – $150
Fret nippers & action gauge	Trimming fretwire, setup checks	$25 – $50
CLAMPING & ASSEMBLY		
Spool clamps (set of 12–24)	Side and rib gluing	$80 – $200
Go-bar deck	Top / back bracing glue-ups	$50 – $150
F-clamps & bar clamps (assorted)	General glue-ups	$100 – $300
Spring clamps (assorted)	Binding, purfling, small parts	$30 – $80
FINISHING & GENERAL		
Glue brushes & palette knives	Glue application & cleanup	$10 – $20
Radiused sanding blocks	Fretboard & top contouring	$20 – $50
Tap-tone mallet & tuning forks	Tone testing, top tuning	$20 – $50
Sharpening stones & strop	Tool maintenance	$60 – $150

Core kit — sufficient to build a first instrument start to finish.

Power Tools

TOOL	PRIMARY USE	EST. COST (USD)
SHAPING & CUTTING		
Handheld router + bit set	Binding channels, template work	$150 – $400
Router template guide bushings	Precision routing to a pattern	$30 – $80
Rotary tool with flex shaft	Fine carving, inlay, detail work	$80 – $200
Benchtop scroll / fret saw	Headstock shapes, purfling cuts	$150 – $350
Benchtop drill press	Tuner holes, precise drilling	$200 – $500
Random orbital sander	General surface prep	$60 – $150
Oscillating spindle sander	Curved edge sanding	$150 – $300
FINISHING & FRETWORK		
Electric bending iron / slat bender	Side bending	$150 – $400
Heat gun	Bending assist, finish repair	$30 – $60
Benchtop arbor / fret press	Seating frets evenly	$150 – $350
Buffing motor + wheels	Finish polishing / buffing	$150 – $300
HVLP spray gun + compressor	Lacquer & finish spraying	$300 – $700
DUST & AIR		
Shop vacuum, HEPA-rated	General cleanup, tool dust ports	$150 – $300
Small dust collector (1 HP)	Bench tool dust collection	$250 – $500
Air compressor, pancake style	Spray gun & pneumatic tools	$150 – $350

Larger Machines & Shop Systems

TOOL	PRIMARY USE	EST. COST (USD)
MILLING & DIMENSIONING		
Thickness planer	Dimensioning rough stock	$400 – $1,200
Jointer, 6" or wider	Flattening & squaring stock	$500 – $1,500
Drum / thickness sander	Precise plate & side thicknessing	$800 – $2,500
Table saw	Ripping & crosscutting stock	$500 – $2,000
Bandsaw, 14" or larger	Resawing tonewood, curved cuts	$700 – $2,000
CNC & AUTOMATION		
CNC router, desktop / mid-size	Molds, templates, inlay, repeat parts	$2,500 – $8,000+
CAM / toolpath software license	Programming CNC toolpaths	$0 – $1,000 / yr
SHOP SYSTEMS		
Central dust collection, 2 HP+	Whole-shop chip & dust control	$600 – $1,500
Vacuum press system, large format	Bent tops, laminates, veneering	$600 – $1,500
Finishing / spray booth	Contained lacquer & finish spraying	$1,000 – $5,000+
Humidity-controlled wood storage	Tonewood & instrument stability	$500 – $2,000+

Stationary equipment — highest-cost tier; many builders rent time or outsource milling early on.

Jigs & Fixtures

TOOL	PRIMARY USE	EST. COST (USD)
BODY & ASSEMBLY		
Solera / body assembly form	Holds body flat & true during top/back glue-up	$50 – $150 DIY
Outside body mold (bending form)	Holds sides to shape during bending & assembly	$80 – $250 DIY
Radius dish set (top & back)	Sanding braces & plates to matching dome	$150 – $400
Radiused clamping cauls	Even clamping pressure over a curved surface	$20 – $60 DIY
NECK & FRETBOARD		
Neck angle / neck-reset jig	Setting & verifying neck angle	$40 – $100 DIY
Fretboard slotting jig	Consistent, repeatable fret slot spacing	$60 – $300
Fret press cauls (radiused)	Even fret seating across the board radius	$30 – $80
Truss rod routing jig	Straight, centered channel routing	$40 – $100 DIY
Nut slotting guide	Repeatable string spacing at the nut	$20 – $50
ROUTING & DRILLING TEMPLATES		
Binding / purfling channel jig	Consistent channel depth & width	$60 – $150
Headstock routing template	Repeatable headstock shape, per model	$40 – $100
Bridge placement & drilling template	Accurate, repeatable bridge location	$40 – $100 DIY
Rosette / soundhole routing jig	Precise concentric rings & soundhole	$50 – $150
Center-line & positioning jig	Keeps body/neck aligned through the build	$20 – $60 DIY

BUY VS. BUILD

Most jigs and fixtures started life as shop-made plywood or MDF builds — the cost above reflects either raw materials for a DIY version (marked "DIY") or a commercially made equivalent where one exists. Building your own is standard practice and often preferred, since it can be sized to your exact templates.

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