Buy the saws you want (but first, get the saws you need!)

Mark Harrell reveals the three backsaws you really need in your tool kit

The longer carcase saw

Acquire a hybrid-filed, longer carcase saw first. Why? Because you can dovetail with it and rip small tenon cheeks as well, along as long as you stay away from a dedicated crosscut file. Stay away from dedicated crosscut in God’s name, why? Because dedicated crosscut serves only to slow down a cut; it invites slop and error, and the edge dulls rapidly. We here at Bad Axe promote hybrid-filing, because it offers phenomenal versatility, and prevents one from collecting multiple saws on one’s bench (which generally does not end well, as the pantheon of broken saw horns will testify).

The case for hybrid-cut

We very rarely file saws dedicated crosscut anymore, unless our customers specify that’s what they want. You’d be surprised how only a modest amount of flam (aka harel) will clean up end grain quite nicely, particularly if you stone the toothline after sharpening. Even a rip-filed saw with a stoned toothline promotes clean end grain with little blowout on the far side of the cut. So optimising a toothline is pretty straightforward: hammer-set the teeth to a combined set that complements the pitch (ppi) and gauge of metal for your saw, then sharpen to joint. De-burr the set by stoneing the toothline, and voila – you will sever wood fibres like a pro and be AMAZED at how clean the end grain presents without going flame-crazy (or harel with harel). As for ripping efficiency, for every 20 strokes in rip mode, you’ll make 23–24 in hybrid. Crosscut compared to hybrid? For every 25 strokes in dedicated crosscut, you’ll be done in 18–20 with hybrid, and the end grain/blowout factor is just as clean. Frankly, after nine years of making saws, I’ve come to believe that dedicated crosscut is just a waste of time for a backsaw. Hybrid excels in the thin-plate world of backsaws, ranging from .015 up to .032, with the most predominant thicknesses between .018 and .025. At the end of the day, it’s all about dialling in a consistent set on average about .0075 more than the gauge of metal you’re filing, sharpening to joint, then stoneing the toothline that will deliver a cut as if it’s on rails. And finally, speaking as a woodworker myself, I prefer having one versatile saw on the bench with which to make the majority if not all of my cuts for a given project; so I don’t have to break my concentration looking for another saw, or risk knocking one off the bench. And the star of the show is...

The Bad Axe 14in Precision Carcase Saw, aka ‘The Bayonet’

This saw presents a 14in-long toothline with a .018 plate filed 14 ppi hybrid cut, with usable plate depth at the heel measuring 2in, canting to 2in in the toe. Of course, Bad Axe isn’t the only game in town when it comes to a longer, low-slung carcase saw finely honed with a thin plate and an expertly sharpened toothline, but ours along with a few others making similar saws all have those characteristics in common: a .018-gauge plate filed 14 ppi, a longer, 14in toothline compared to the traditional 12in carcase saw and a low-hung handle that gets your hand behind the toothline, rather than making it ride bent-wristed above the cutting axis. Our Bayonet is the one saw I’ve used for the majority of my last few projects, such as the plant stand I made for Yvonne on the right, which involves a range of quartersawn white oak (Quercus alba) measuring % up to % stock in thickness, with typical tenon cheeks spanning up to 3in across and 2in in depth. I can use the same saw to make dovetails in % up to % and even the occasional % thick stock, dadoes and rabbets up to 2in across, mitred off-cuts and sliding dovetail joints. Whether rippering or crosscutting stock, this saw does it all quite well.

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Prepared for 1899 by Bennett H. Arnold

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Choosing between a 14in, 16in or 18in tenon saw
Which size of saw best suits your most typical scale and species of stock, and the kind of joinery you most commonly employ in the kind of projects you gravitate toward?

- 14in saw: modest requirements, where the span and depth of your tenon cheeks hover around 3in/4in. These saws are generally best filed 12 ppi hybrid (or 13 ppi rip) on a .025-thick plate. This choice finds a home in a shop where a woodworker primarily focuses on small-scale projects like boxes, smaller furniture pieces and the occasional need to sink a tenon 3in deep and 3in across.

- 16in saw: handles more robust requirements, where the span and depth of your tenon cheeks hover between 3in and 3½in. I like filing these at 12 ppi hybrid on the .025-thick plate, or 11 ppi for dedicated rip. This is a great saw that can handle any cut the 14in saw can make, and can also be employed for a modest bench build.

- 18in saw: Our longer, 18in tenon saw is the most versatile of the mix and my personal favourite, speaking as a woodworker. I generally recommend filing this saw 11 ppi hybrid on the .025 plate. Those of you working predominantly in softwoods should consider 10 ppi hybrid or dedicated rip on the .0315 plate. Our hybrid-filing at 11 ppi on the .025 plate delivers the most versatility for working in hardwoods. For instance, the last 6ft long Trade Show Roubo workbench I made all involved working with dense white oak in dimensions between 2½in up to 5in in timber width and thickness, with tenons ranging from 3in in span and depth, up to 5in in span and 4in in depth. I made every single cut on that bench with the 11 ppi toothcount filed on the .025 plate.

The dovetail saw
You’re already going to make a dovetail saw as you rise to the challenge of hand-cut drawer joinery and other dovetail missions. There’s no real science here, just pick one up when you’re ready. I would suggest a plate gauge of .018 filed 15 ppi rip; this configuration presents a thin plate for elegant pins and tails, but with enough of a heat sink that can take the occasional hard workout without flopping the plate into an s-roll cut friction with hard use generates heat, which can quite easily overwhelm a .015 plate (which is best filed 17 ppi and reserved for half-blind dovetail missions, where finesse and carefully slotted cuts count the most).

But honestly, if you’re on a budget, you’d be best served to pick up a tenon saw before the dovetail, since you can dovetail with your carcass saw in a pinch (just make sure you get it hybrid-filed).

The tenon saw
Which brings us to the tenon saw. This is where your own personal style of woodworking comes into play; your individual approach to the species of wood, alloys and finishes for your chosen tool all formulate a resonant cocktail of personal choice that reflects the style, make and type of tools in your shop reflect your personality: Woodworking, after all, is a solitary craft. The size of tenon saw you choose has everything to do with your woodworking style comes into play; your individual approach to

Which order to buy?
Brand-new to hand tools in general and hand saws in particular – and on a budget? Select your saws one at a time. Start off with the 14in carcass saw, then as your choice of projects reveal better fidelity in scale, buy your tenon saw. Finally, go for the dedicated dovetail saw. These are your needs. Everything else is a want, which may manifest in one of our 20in mitre saws, or perhaps a half-blind dovetail saw once you discover that elegant form of joinery. Maybe you’ll develop an interest in timber-framing scale joinery, and our Beastmaster fits the bill for 5in-deep tenons and a rugged .032 plate that can handle it. Or perhaps you’re a budding luthier or boat-builder, where one of the specially shaped saws in our lineup will scratch that itch. But make no doubt about it: about 90% of your work will be derived from three saws: a hybrid-filed longer carcass saw, a tenon saw and a dovetail saw (ideally dedicated). Those three workhorses will carry the yeoman’s share of any cordless workshop when it comes to severing wood fibre.