

## Keeping It All Together: Meet the Hardware in Your Schacht Products

Many Schacht looms, spinning wheels, and accessories come fully or partially disassembled to protect the item during shipping. The box or package includes all the necessary hardware and an illustrated assembly manual. We endeavor to make the manual as clear as possible; for many products, you can also find assembly videos on Schacht’s Youtube channel. But even with these resources, the hardware holding everything in place—called fasteners—can be confusing. This cheat sheet explains how fasteners work and how they’re listed in Schacht assembly manuals. We provide complete details about the fasteners included with every product so that you can easily identify which part to use in each assembly step and, if necessary, find an exact match at your local hardware store.

### Screws & Bolts

The Parts List in any Schacht manual will describe screws and bolts as follows:

diameter x length OR diameter-threadsize x length	drive-type	head-shape	fastener-name
#10 x 3"	slotted	truss head	sheet metal screw
1/4-20 x 3-1/2"	Phillips	flat head	machine screw
3/8" x 3-1/2"		hex	bolt
3/16" x 1-1/4"		carriage	bolt
M5-0.8 x 30 mm	hex socket		bolt
10-24 x 2"	hex socket		bolt

Screws and bolts go into or through holes in wood, so their diameter and length matter—if you try to force a screw into a hole that’s not wide enough or long enough, you’ll damage the wood. **Diameter** will be expressed by standard screw sizes (#6, #8, #10) or by measurements in imperial or metric units. For **length**, Schacht manuals always use imperial units. **Thread size** is a number; it’s provided when the screw or bolt attaches to a nut (see below).

The head of a screw or bolt allows you to fully attach it with a tool; screws require a screwdriver and bolts require a wrench. Manuals will indicate the **drive type** when it’s applicable. If you see “slotted,” grab your slotted screwdriver (also known as a straight or flat screwdriver); for “Phillips” drive types, you’ll need a #2 Phillips screwdriver. Hex socket bolts need a hex wrench (also called an Allen wrench or a hex key) of the appropriate size; these tools are often supplied with Schacht products. If there’s no drive type listed, you’ll need a wrench or two of the appropriate size.



Install screws with a screwdriver, either Phillips (left) or slotted (right).

Install hex socket bolts with a hex wrench.

Install bolts with a wrench.

Manuals identify **head shape** for screws and bolts with words such as hex, carriage, truss head, pan, round head, or flat. Match the head shape to one of the pictures below, and you can easily tell them apart. A fastener’s head shape greatly affects how your assembled Schacht product will function—NEVER substitute head shapes.



hex: head sits on top of the wood

carriage: square part digs into wood

truss: head sits on top of the wood

pan: head sits on top of the wood

round: head sits on top of the wood

flat: head sits in a countersunk hole, flush with the wood

Finally, the **fastener name** tells you that the screw/bolt will have a pointy or blunt shaft, depending on the hole it will fill.

- When the hole goes all the way through the wood piece, it accepts a blunt fastener held in place by a nut.
- When the hole doesn’t go all the way through the wood piece, either it accepts a pointy-ended fastener or the hole will contain a barrel nut that holds a blunt fastener in place.

Sheet metal screws and wood screws have pointy ends, while machine screws and bolts have blunt ends.

pointy end: no washer or nut needed  
This is a sheet metal screw or a wood screw.



blunt end: will have a matching nut, may have a matching washer  
This is a machine screw or a bolt.



Nuts & Washers

The Parts List in any Schacht manual will describe nuts and washers as follows:

diameter-threadsizes (for nuts) diameter (for washers)	fastener-name
1/4"	USS washer
3/8-20	lock nut
#8	SAE washer
1/4-20	barrel nut
3/8-16	cap nut

The **diameter** for nuts and washers (given in standard screw sizes, imperial units of measure, or metric units of measure) refers to the size of the hole, because nuts and washers fit onto a screw or bolt. The **thread size** is a number. *If the diameter of a washer, and the diameter and thread of a nut doesn't match the screw/bolt, the fastener won't fully attach and cannot do its job of securely holding things together.*

Nuts can serve different functions, so they come in several varieties.

- Barrel nuts live inside of holes, so they are not removed or adjusted once the screw/bolt has been fastened into place. They do not require a washer. Insert the barrel nut into its hole and hold it in place with a slotted screwdriver. Then use the appropriate tool to fasten the screw or bolt into it.
- Hex nuts, lock nuts (hex nuts with a nylon insert), and slim lock nuts aren't usually removed or adjusted. They require a washer. Hold the screw/bolt stationary with a tool or your finger while you attach the nut with a wrench.
- Cap nuts (also called acorn nuts) simultaneously attach to and cover the blunt end of a fastener. Once they're in place, they aren't usually removed or adjusted. Hold the screw/bolt stationary with a tool or your finger while you attach the cap nut with a wrench.
- Wing nuts look like a hex nut with winglike things on top for your fingers. They require a washer unless they've got a wide flange at the bottom. Wing nuts are easily removed and adjusted, because they require no tools to attach. In fact, if you need to fasten a bolt or screw more than finger-tight, use a different kind of nut.



barrel nut



hex nut



lock nut



slim lock nut



cap nut  
(acorn nut)



wing nut



washer wing nut  
(has a flange)

Washers made of metal or plastic help nuts hold bolts and screws in place. Some Schacht products use split lock washers (also called spring lock washers) or conical (Belleville) washers.



split lock washer



conical washer

Nearly all Schacht products use flat washers, made either of nylon or of metal in SAE, USS, or fender varieties. You can distinguish the metal varieties by comparing the amount of metal around the hole: SAE washers have the *least* amount of metal, fender washers have the *most* amount of metal, and USS washers are right in the middle. In other words, if you compared 1/4" washers in each of these styles, their outside diameters would be different—SAE would be smallest, fender would be biggest, and USS would be in the middle.



1/4" flat washers NOT TO SCALE: SAE, USS, fender



1/4" flat washers TO SCALE: SAE, USS, fender

Measuring Hardware

You can identify the hardware packed with your Schacht product from its drive type, head shape, and length. If you need to measure the length of a nut or bolt, measure its shaft only (there are different guidelines for measuring different head shapes, but you can usually figure out what's what from the shaft length). For nuts and washers, measure the hole diameter.