





The Right Tool



Many clinicians go through their workweek without touching a tool. They see something that needs doing on a chair, issue a decree, and magically the work is done. There are others who can't wait to get their hands dirty; they feel there is not a chair on the face of the earth that wouldn't benefit from their attention. Between the two, lays the technician's nightmare, the ones they fear, the ones who know enough to do damage - and not enough to realize it.

This information will help you understand tools commonly used on wheelchairs and perhaps endear yourself to the technicians you work with, as a therapist who is kind to chairs.


A question I am routinely asked is "What tools do I need to make the most common adjustments The answer is constantly changing depending on the vagaries of the market. Here is my best estimate.

Tool	Appearance	Fastener	Imperial	Metric	Comment
Wrench			7/16" 1/2" 3/4"	10mm 11mm 12mm 13mm 19mm	(11mm and 19mm are the same as 7/16" and 3/4")
Sockets			7/16" 1/2" 3/4"	10mm 11mm 12mm 13mm 19mm	(11mm and 19mm are the same as 7/16" and 3/4")

Wrenches and sockets are the basic tool for chair maintenance. Often you need to have two of each size, one to hold the bolt head and the other to turn the nut (or vice versa). If you have a socket and ratchet of the appropriate size you can use it instead of one of the wrenches. Make sure you use the proper size wrench Only use adjustable wrenches when you don't have a real one in the proper size.

Adjustable wrench			0-1 1/4"		Seem like a great idea but should only be used when a proper size wrench or socket is unavailable. If the wrench is not used properly the bolts or nuts will round off.
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Slide wrench all the way on to nut, (unlike photo) so there is full contact at the back of the jaws. Then tighten the wrench thumbscrew so there's no play at all in the jaws. Always turn the wrench handle toward the lower (or fixed) jaw, never away from it.

Allen Keys			1/8" 5/32" 3/16"	2mm to 8mm	Metric and Imperial are hard to distinguish. Ensure a really good fit between wrench and bolt to prevent rounding.
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Allen bolts are popular fasteners with wheelchair manufacturers and a set of metric and imperial keys will help in making adjustments. The most common Allen keys are "L" shaped and both ends fit the same size bolt. Stick the short end in and you have added leverage for loosening stuck bolts. Sticking the long end in will allow you to remove loose bolts quickly. If you don't mind carrying quite a few tools "T" handle Allen keys are nice to use. To condense your tool bag get some Allen bits to fit your multi bit screwdriver. Or get a hand tool with keys arrayed like blades in a Swiss Army knife. The ball ended ones are very versatile, since they can be inserted from an angle rather than just straight on.

Screw driver			Slotted Phillips #2 Pozi drive Robertson #2 Torx - T15, T20, and T30	Phillips and Pozi drive look very similar but are not interchangeable. Phillips are the most difficult to ensure proper fit.
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A multi bit screwdriver is a compact way of lugging around various screwdrivers. As with all fasteners ensure the bit is the same type and size as the screw. When using a screwdriver always push the screw hard into the material it penetrates even when unscrewing.

Tire pump and gauge			A hand pump with a gauge will allow you to fix slipping wheel locks more often than a wrench. You can also make the chair easier to push and the tire less likely to puncture by keeping pressures at the value marked on the sidewall. A separate gauge can be used but some people lose half the air when using it
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A foot pump, compressor, or special high-pressure hand pump is needed to inflate tires to values over about 50 psi. Gas stations have airlines that will fit Schraeder valves but not the skinnier Presta valve, which needs an adapter to be used. I do not recommend Presta valves for any wheelchairs - other than racing ones.

Other useful tools

Pliers	Utility knife	Nylon ties	Duct Tape	Sticky Velcro	Gloves	Hand wash
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- Needle nose pliers don't have a primary use on a chair but are useful tools that can perform a number of tasks on a wheelchair; including pulling stubborn upholstery, lining up holes, cutting tie wraps etc.
- A utility knife is also handy to have; some types have snap off blades and are easy to keep sharp.
- Nylon ties allow semi permanent fixes and help tidy loose cables.
- I don't think duct tape needs its praises sung here. However, don't use it as a long-term solution since the tape deteriorates quickly and makes a mess.
- Saran wrap (not shown) around the push handle part of a cane back facilitates upholstery removal.
- Self-adhesive Velcro™ is also useful for mounting switches and securing seating elements.
- Don't forget to keep your hands clean, some chairs can get pretty disgusting.