

# Automotive Service Tools

Part 1

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The following document shows the tools that I use to keep my vehicle on the road. You don't have to buy all these tools at once – I've been collecting them for about fifteen years now. All tools are not needed for all jobs. Some newer cars require tools that older cars don't, and vice versa.

Unless you have a garage, a lift, and a fair amount of money, you won't be mounting and balancing tires or doing computerized four wheel alignment at home.

Note: You are responsible for safe use of tools and for safe repairs.

# SAFETY Equipment



Ear protection and eye/face protection.

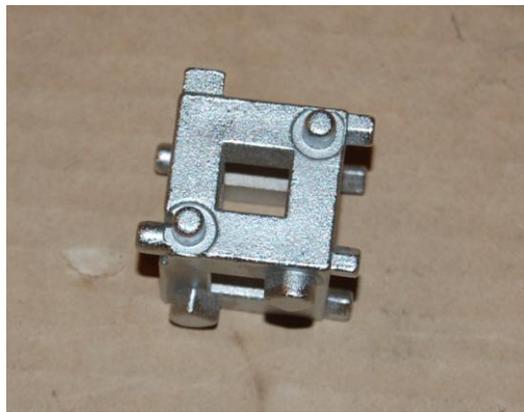


Jack stands so you're not placing your life at the mercy of a hydraulic floor jack internal seal. These should be rated for more than your vehicle weighs.

# Brake Tools



A C-Clamp and flat metal bar for pushing caliper pistons back in. Size of C-clamp varies with vehicle.



Some vehicles require a special tool to turn the pistons back in.



Lower left: Tools for turning adjusters on vehicles with drum brakes. Note that some vehicles are self-adjusting and do not use these.

Top middle: Tools for round brake pad hold-down springs for vehicles with drum brakes. There are a couple sizes of these. The red and clear handle tool has both sizes, but can bite into your palm if you push on the end.

Lower right: Brake return spring tool for vehicles with drum brakes. One end is for putting springs on, and the other for taking them off. Results may vary...



A tool box (fishing tackle box) for storage and transportation.

1/4" drive sockets



Top left: A 1/4" screwdriver bit ratchet, two cheap ratchets, a Craftsman ratchet, a Craftsman breaker bar, two cheap breaker bars.

Bottom left: Three spinner handles – the two with black handles allow you to place a ratchet or breaker bar in the end of the handle for added torque. Beside them is a round palm driver. Below it are 4 adapters that allow you to use 3/8" drive sockets with a 1/4" driver.

Right side: At the top are u-joints that allow you to reach odd angles. Below that are extensions – you don't have to have that many. On the far right is a flex extension.

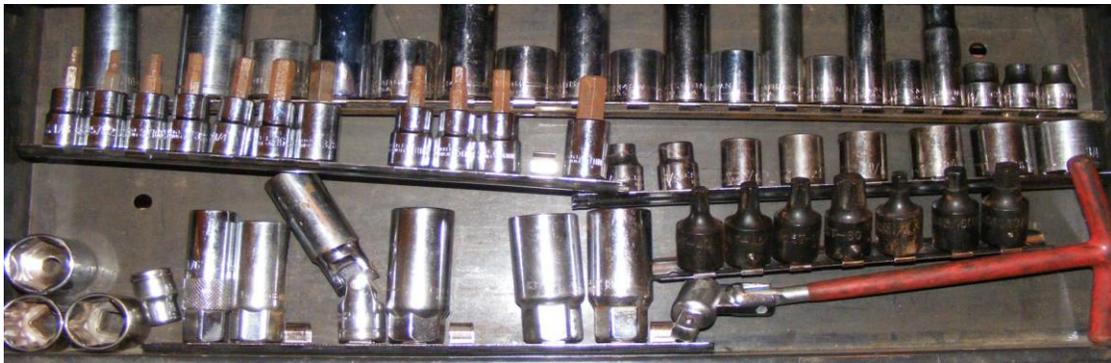


Sockets: You need both regular and deep well sockets in standard and metric. I bought a cheap set and then I have Craftsman sockets. The cheap set doesn't get used much – I haven't found something requiring a 15/32" socket yet. The Craftsman sockets get used more. You should have a name brand socket for 1/4", 5/16", 3/8", 7/16", 1/2", and possibly 11/32" in standard, and 8, 9, 10, 11, 12, and 13mm in metric.

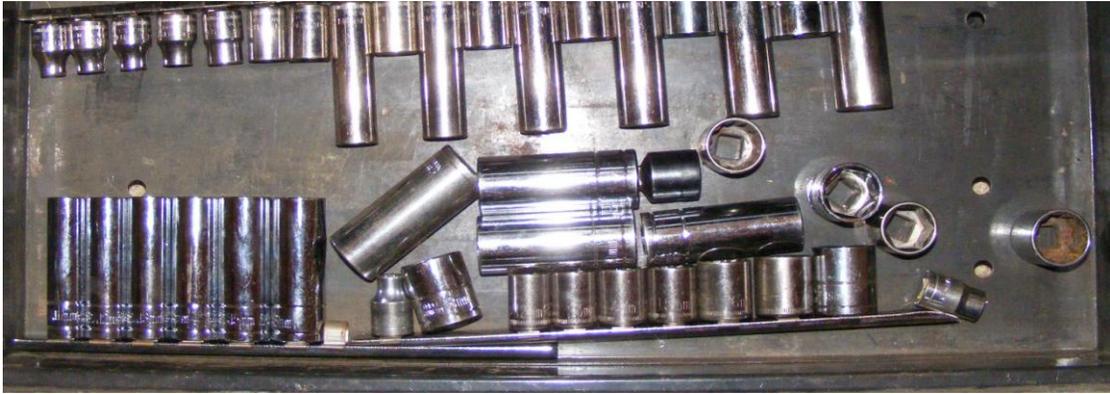
3/8" Drive sockets



Left to right: spark plug socket driver, Craftsman flex-head ratchet, Craftsman ratchet, Craftsman sliding T-handle, Craftsman breaker bar, and an Autozone breaker bar. Top right are u-joints for odd angles, below that are extensions, and below that are a palm driver and adapters to use 1/4" and 1/2" drive sockets with a 3/8" drive tool. You don't have to have this many extensions, but they come in handy for reaching back into tight spaces. I like the Craftsman locking extensions, because the socket won't fall off the end. The little 1.5" extension comes in handy sometimes, too.



At the top are regular and deep well standard sockets. The slightly rusted sockets are SAE and metric hex bits. To the right of those, are SAE 12-point sockets. Below those are Torx sockets. I have a variety of brands, but the most commonly used sockets are name brand.



Then, in the next drawer are metric sockets, both regular and deep-well.

1/2" drive sockets



At the top is the large Craftsman breaker bar. Below that is a sliding t-handle from Tractor Supply. Then, a u-joint and Craftsman ratchet. Bottom left are extensions. To the right of those are: adapter to drive 1/4" sockets, 3/4" sockets, and 3/8" sockets.



In the top of the box, are the 1/2" drive sockets. In the front are SAE regular impact sockets. Next are regular 12-point sockets. Behind that is another set of SAE sockets. The sockets along the back are metric. Also in the top is a 3/4" drive 1 11/16" socket. I also have a deep-well 19mm impact socket for lug nuts. I recommend having both standard and deep well sockets, I just haven't purchased deep well sockets yet. Also available are special deep well sockets for axle nuts. A torque wrench is also needed.

Electrical



These are assorted wire terminals for different sizes of wires.



A variety of alligator clips, switches, jacks, and 9V battery leads.



Another compartment has wire clamps, auto battery terminals, relays, grommets, shrink tubing. The compartment on the right contains spools of shrink tubing, wire strippers, and zip ties.



A few spools of wire are in another bag.

# Hardware



Contains: Roll pins, o-rings, springs, and a few pieces of steel rod and all-thread. Sheet metal and drywall screws also included.

Bolts include: M10x1.5, M8x?, 2-56, 4-40, 6-32, 8-32, 10-24, 1/4-20, 5/16x18, 3/8x16 in various lengths with washers and nuts.

You don't have to have an assortment of hardware like this, but it comes in handy when you are trying to fix something after all the stores are closed.

# Pipe and tubing



At the top are spring tubing benders – you place the tubing inside the spring so it doesn't collapse when you bend it. Below that are tubing cutters. On the left is another tubing bender and a few smaller spring tubing benders. Below that is a miniature tubing cutter. To the right of that is a single flare tool – not for use on brake lines which need double flared or compression fittings.



These are for newer fuel line, transmission and oil cooler lines.

# Body Tools



To the left are body hammers. In the middle are wire wheels for a drill, body filler spreaders, and sanding blocks. To the right are a few dollies to have something to hammer against.

# Electrical Test Equipment



GM OBD 1 scanner, Ford OBD 1 scanner, and an OBD 2 scanner



Multimeters, a battery tester, tach/dwell meter



Other meters, sensor tester, component tester.



Test leads



A meter with temperature and RPM leads.

# Bolt extractors



Various bolt extractors.

May the force be with you, but not too much, or they'll snap off in the bolt and you're situation will be worse than it was to begin with. Apply penetrating oil often and liberally every day for a few days before you start, if possible. These are used with a tap wrench.

# Screwdrivers



These are all the screwdriver bits I have been able to find so far. Flat, Phillips, Tri-wing, hex – SAE, metric, and tamper proof, Torx and Tamper-proof Torx, game system, and others. These are handy to have in addition to regular screwdrivers.

Also needed are regular screwdrivers.

# Wrenches



Flare nut wrenches for tubing. Buy the best you can. The cheap ones flex.



Misc. wrenches. 1" for Rochester Varajet carburetor fuel filter nut.



Combination wrenches. Get the best you can - two of each size to have one to hold a bolt still while you turn the nut with the other one. Deep-well sockets are faster, but sometimes, they don't fit.



Metric ignition wrenches for tight spaces.



S.A.E. ignition wrenches for tight spaces.

# Punches



Pin punches for removing pins. Cold chisels for cutting metal. Tapered punches for aligning holes.

# Chemicals



K&N air filter cleaner. Battery terminal protector. Belt dressing. White lithium grease for hinges. Silicone spray.

PB Blaster – penetrating oil for rusted fasteners.

Brake parts cleaner. Dielectric tune-up grease for wire terminals.

# Power tools



Ryobi impact driver. Craftsman 1/2" chuck drill.

Nice to have: drill press, lathe, milling machine, angle grinder, cordless drill, palm sander, and reciprocating saw.

# Pullers



Tie-rod end puller. 3-jaw puller.



Ball-joint separators.

# Spark Plugs



Spark plug gap tools and sockets.