

# Ratchet and Sockets

This is the tool of choice when being a mechanic. Some of you will have a drill or impact gun to tighten and loosen bolts, but for most work a ratchet will make you work fast and not damage your nuts.

[image of ratchet and socket]

Ratchets usually have a switch that changes the direction it is going. Ratchets also have an internal mechanism, which is the typically engineer speak for a ratchet.

[show internal image for ratchet]

Ratchets have an internal pawl, which hops on the gear in the free spinning direction, and pushes on the gear in the other direction. This allows it to spin the socket only 1 way. This pawl can break if you put too much force on it. For this reason, never use a cheater bar on a ratchet. If you need a longer lever arm, get a breaker bar, or get a tiny breaker bar and put a cheater bar on that.

## Types of Sockets

Besides having metric and standard sockets. You have different sized drives, and different patterns.

[Image of sockets]

Standard size for drives are 1/4", 1/2", and 3/4" drives. All sockets you buy in america will have standard sized drives, even if the socket itself is metric.

Sockets generally come in 6 point and 12 point sockets. 6 points form better to the nut/bolt, but 12 point can more easily grab onto the head. This allows smaller rotations for really hard to reach areas.

## Adapters

You can have drive reducers, u joints, and extensions. Be careful with putting a larger drive adapter onto a small ratchet, you can break the ratchet. U-joints are great, they all you to tighten around corners. Extensions are a total necessity. Sometimes the ratchet handle would hit on your machine but with the extension you can get the socket on the head and ratchet from a more comfortable position.

## Safety

Read the wrench article. Its the same thing. The only caveat is that you have to be careful when using a ratchet with an extension and make sure you are rotating in the correct direction. With an extension, you can push into the bolt instead of pushing around it, either causing the ratchet to slip off or rotating it at a skewed angle and rounding the head. For this reason, when using the extension, I try to put one hand on the extension or on the base of the ratchet pushing it in, then other at the end of the ratchet for leverage.

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