

# Air Nozzles & Air Chucks

	<p><b>Air Nozzles</b></p> <p><b>Safety Precautions:</b> Compressed air and gases are dangerous. The nozzle should never be opened and pressed against the skin; this could inject air into your body and cause severe injury or death. Caution should be used in regards to the direction the nozzle is pointed and to the resulting hazardous airborne particulates (HAPS).</p> <p><b>Usage:</b> Air nozzles are used to blow loose contaminants from working surfaces. Air pressures can be adjusted at the regulator on the wall or by installing a cheater valve on the inlet side of the nozzle.</p>
	<p><b>Air Chuck</b></p> <p><b>Safety Precautions:</b> Caution should be used when inflating tires, do not exceed the manufacturers P.S.I. limits.</p> <p><b>Usage:</b> Some air chucks have a built in gauge to monitor tire pressure as it is inflated. Inflate the tire by removing the valve stem cap and engaging the end of the chuck to the valve stem. If an audible sound of rushing air is not heard more pressure on the chuck will be required in order to compress the valve stem to the open position.</p>

# Hammers

	<p><b>Ball Peen Hammer</b> <b>Precautions:</b> Using the wrong type of hammer for a given task will damage the tools or create a hazard. Hardened hammers used on hardened surfaces will shatter and send splinters in all directions. <b>Usage:</b> Ball Peen hammers are heavy and have a lot of mass; they are used to move thick plate etc. They are never used on sheet metal; it would create more damage to the surface.</p>
	<p><b>Rubber Mallet</b> <b>Usage:</b> Rubber mallets are like the brass hammer in that it will not leave surface damage on the metal being worked on. It is great for softer metals.</p>
	<p><b>Nylon Face Hammer</b> <b>Usage:</b> The nylon hammer with brass center offers mass and weight for use on softer metals.</p>
	<p><b>Dead Blow Hammer</b> <b>Usage:</b> Dead Blow hammers have a plastic exterior with lead filler material, or shot, in the center. This gives weight and mass for moving softer metals without damage.</p>

# Hand Sanding Blocks

	<p><b>Hand Sanding Blocks</b> <b>Usage:</b> Hand Blocks come in many different sizes and shapes, like half round, 17 inch long, 9 inch long, they can also be adapted to use sticky backed sandpapers or hook and loop backed papers. Hand Blocks are used in shaping fillers or for the finish-sanding phase of the repair. They also offer the most control of any type of shaping / cutting tool for body fillers and primers.</p>
	<p><b>Rubber Blocks</b> <b>Usage:</b> Rubber sanding blocks are typically used in the finish sanding process (220-1500 grit). Sanding blocks help eliminate waves and level the surface. Rubber blocks can be used with wet or dry sandpapers.</p>

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# Pliers, Snips, & Vice Grips

	<p><b>Pliers and Snips</b> <b>Usage:</b> These electrical pliers have a wire cutting edge and wide jaws. The handle is insulated for shock resistance.</p>
	<p><b>Channel Lock Pliers</b> <b>Usage:</b> Channel lock pliers are easily adjusted to fit all sizes of pipe or bolts.</p>
	<p><b>Needle Nose Pliers</b> <b>Usage:</b> Needle nose pliers are used in hard to reach areas; side cutters are used to cut wire.</p>
	<p><b>Side Cut Pliers</b> <b>Usage:</b> Needle nose pliers are used in hard to reach areas; side cutters are used to cut wire.</p>
	<p><b>Assorted Vise Grips</b> <b>Usage:</b> Vise grips have a locking handle that will grip with out being held, they are used to hold metal pieces together for welding, bolting, or alignment process.</p>
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### Assorted Vise Grips

**Usage:** Vise grips have a locking handle that will grip without being held, they are used to hold metal pieces together for welding, bolting, or alignment process.



### Right / Left Hand Tin Snips and Shears

**Usage:** Red indicates right hand snips, green indicates left hand snip, they are used to cut in the desired direction, left or right. Shears cut a straighter pattern.

# Ratchets

	<p><b>Assorted Ratchets</b></p> <p><b>Usage:</b> These ratchets have different size heads that is the main distinguishing factor, the square head (or drive), is measured on one side which gives a specific distance, thus we have a 1/2 inch drive ratchet on the left, a 3/8 drive ratchet in the middle, and 1/4 inch drive ratchet on the right. Ratchets are used in conjunction with sockets as a twisting device to tighten or loosen bolts and nuts.</p>
	<p><b>Breaker Bar and Cheater</b></p> <p><b>Usage:</b> Breaker bar is normally a 1/2 inch drive or larger. It is used to break loose stubborn bolts and nuts that have rusted tight. The cheater is used as an extension when slipped over the handle to gain more torque. This tool should only be used with impact sockets.</p>

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# Safety Items

	<p><b>Safety Glasses</b></p>
	<p><b>Face Shield</b> <b>Usage:</b> While in the lab area students and instructors should always wear protective clothing and eye protection. Students will not be allowed to be in the lab without safety glasses!</p>
	<p><b>Latex Gloves</b></p>
	<p><b>Leather Gloves</b></p>
	<p><b>Ear Plugs</b> <b>Usage:</b> Because of the wide variety of tools used in the labs, there will be high decibel levels at times, it is advisable to protect your hearing by using ear plugs during those times.</p>

## Scrapers & Chisels

	<p><b>1 Inch Scraper</b> <b>Usage:</b> Scrapers are useful in cleaning body filler spreaders and mixing boards, removal of double-sided tape from moldings, and removal of undercoating.</p>
	<p><b>Air Chisel Bits</b></p>
	<p><b>Air Chisel</b> <b>Safety Precautions:</b> Remember to always have this tool engaged with the work piece before turning it on, if you pull the trigger before it is engaged the chisel bit will shoot out like a bullet. <b>Usage:</b> Air chisels with corresponding bits are used to cut metal, and help separate spot welds.</p>
	<p><b>Wide Face Chisels</b> <b>Usage:</b> Wide face chisels are used to reshape body contours, and bodylines that have been altered after a collision. They are used in conjunction with sledgehammers.</p>

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# Screwdrivers



## Flat Screwdrivers

**Safety Precautions:** Do not direct working forces toward your body when using these tools, they can easily slip off the screw head and puncture anything in its path.

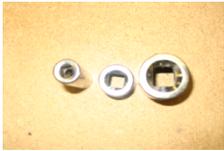
**Usage:** Flat head screwdrivers are used with flat head screws only. Don't use screwdrivers as pry bars they will break.



## Philips Screwdrivers

**Usage:** Philips head screwdrivers are shaped like a "+" on the head, and should only be used with corresponding size screws.

# Sockets

	<p><b>Socket Set</b> <b>Usage:</b> This socket set has a variety of sockets, deep wall, regular wall, 6 point, 12 point, 1/2 drive, 3/8 drive, and 1/4 drive. The technician chooses the best tool for the job.</p>
	<p><b>1/4, 3/8, 1/2 Inch Drive Sockets</b> <b>Safety Precautions:</b> The socket drive size must match the ratchet or damage will occur to the socket. <b>Usage:</b> This example shows the drive side of a socket, the other side of the socket is designed to go over the bolt or nut.</p>
	<p><b>6 Point vs. 12 Point Sockets</b> <b>Usage:</b> 6 and 12 point sockets are distinguished by the corresponding number of sides on the inside wall of the socket. Note the thickness of the wall of a 6-point socket. It is stronger than a 12-point socket, so it should be used for very tight bolts. It is possible to break the wall of a socket if too much torque is used.</p>
	<p><b>Deep vs. Regular Wall Sockets</b> <b>Usage:</b> This image shows the height differences. A deep wall ( the taller) socket is used to reach over a long threaded bolt to the nut for removal.</p>
	<p><b>Impact vs. Regular Sockets</b> <b>Usage:</b> The impact socket is nearly twice the thickness of a regular socket. It is used in conjunction with an Air Impact Driver. Never use a regular socket with impact drivers; they will break the wall of the socket.</p>
	<p><b>Wobbly Adapters</b> <b>Usage:</b> Wobbly adaptors can be made in any drive size, they are used as an universal joint to loosen bolts from a slight angle.</p>



#### **Assorted Extensions**

**Usage:** Extensions allow the removal of deep hard to reach bolts and nuts. They come in all drive sizes; some will reduce or increase in drive size from one end to the other.

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# Tool Boxes



## Tool Boxes

**Usage:** Once you start buying tools you will need a way to lock them up and keep an inventory of them; a toolbox is the answer. This is an example of an upper and lower box. You will want to start with a small upper box, and as you acquire more tools you can trade up in size and quality of toolboxes.



## Upper Tool Box

**Usage:** Upper boxes are great for starters.

# Wrenches

	<p><b>Combination Wrench</b> <b>Usage:</b> This wrench is open ended on one side and boxed on the other, also known as a combination end wrench. The boxed end is much stronger than the open end and will not flex apart when applying a lot of torque. Box ends can be 12 or 6 point, remember the 6-point is much stronger and will not allow the wrench to slip off or around the nut or bolt.</p>
	<p><b>Open End Angle Wrench</b> <b>Usage:</b> The angle to this wrench allows access to hard to reach bolts and nuts.</p>
	<p><b>Adjustable / Crescent Wrench</b></p>
	<p><b>Pipe Wrench</b> <b>Usage:</b> Adjustable wrenches are used when availability of an end wrench is limited or not available. Pipe wrenches are used on pipes and other round objects that need to be tightened or loosened.</p>