California Agricultural Mechanics Tool Identification Manual

2005

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Tool list adapted from the "Modern Illistrated Hand and Power Tool Manual" (1991). Tool list revised by Steve Amador, Rick Cotta, Troy Gravett, Matt Actis, and Michael Spiess. Adpation, research and editing by Michael Spiess, Debi Batini, Tim Arnett, Charie Shook, and Katy Harrison.

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Common Tools

Axes

Hand Axe

Used for sharpening stakes, cutting small limbs or brush. Also used to drive in small stakes, grade stakes, and corner stakes. The hand axe is similar to the single bit axe but smaller. The handle is 16 to 18 inches long.

Single Bit Axe

Used for building fences, cutting small trees and construction work. This very versatile tool should not be used as a sledge hammer on wedges or iron stakes. Handles are usually of hickory, 36 inches long, oval in cross section and shaped for good balance.

Double Bit Axe

Used to cut small trees, trim logs and tops. Its two cutting edges should not be left in a vertical position because of the safety hazard. The 36 inch handle is oval and straight.

Pliers

Battery Pliers

Used for removing battery terminals. The end clearance prevents cell-cover damage.

Diagonal Cutting Pliers

It has curved handles, lap joined; and diagonal cutting jaws.

Fence Pliers

Grips between the handles hold the wire tightly while leverage is exerted against the fence post to stretch the wire fairly tight.

Locking Pliers

Locks with a toggle action that holds until the lever is opened. Commonly called Vise-Grip pliers.

Retaining Ring Pliers

User for remove and install internal and external retaining (snap) rings.

Common Tools

Slip Joint Combination Pliers

Used for general purpose work, for holding flat or round stock, and for cutting soft wires.

Water Pump Pliers

The jaws are adjustable to 2 inches.

Punches

Center Punch

It is manufactured in various sizes and lengths.

Drift Punch

The shank is tapered.

Hole Punch

These punches are used to make holes in gaskets and other materials. Also called a belt punch.

Leather Punch

The handles are similar to pliers. Used to punch holes in soft materials like leather and rubber.

Pin Punch

This punch has a long, straight shank, the diameter of which designates the size. Used to remove bolts and pins.

Prick Punch

The punch should be sharp and ground to 30 degrees.

Screwdrivers

Clutch Driver

This is a specialty drive that fits screws used in mobile homes, boats, recreational vehicles, and electric motors.

Common Tools

Nut Drivers

This is a very popular tool in the electrical and sheet metal industry.

Screwdriver Bits

Available in slotted, Phillips, square, and torx drives for power screwdrivers. Shank is hexagonal.

Stubby Screwdriver

It comes in slotted and Phillips, and has a blade length of 1 1/4 to 1 1/2 inches long.

Offset Screwdriver

Used where it is difficult to reach the screw head with a common or standard screwdriver.

Slotted Screwdriver

Used mostly in woodworking applications.

Torx Head Screwdriver

Also used on appliances, lawn and garden, and electronic equipment.

Phillips Screwdriver

Always select the correct size for the correct application.

Square Recess Screwdriver

Each screwdriver is color coded for easy size identification.

Wrenches

Box End Wrench

Wrench is available in 12 and 6 point ends.

Common Tools

Combination End Wrench

The reason for the popularity of this wrench is that it has the advantage of having both open and box ends.

Deep Socket

The deep socket is made in standard, thin, and extra thin walls, with 6 or 12 point openings and with 3/8, 1/2 or ¾ inch drive.

Six Point Socket

The socket has 6 points inside to fit over hexagonal nuts.

Open End Wrench

Both ends of the wrench are open but are of different sizes.

Eight Point Socket

Has 8 points and is used on square nuts found on farm machinery.

Twelve Point Socket

The socket has thin walls to fit in tight places.

Tubing Wrench

The box at each end of the wrench is 6 point only. Also called a flare nut wrench.

Flex Socket

This permits working at various angles.

Extension Bar

Used to connect, the socket wrench to the ratchet handle to give working clearance, and are 3 to 20 inches long.

Common Tools

Flex Handle

The end that fits into the socket is swivel hinged, and the other end has a hole with a sliding cross bar to permit use of the wrench at an angle.

Ratchet Handle

The ratchet speeds up the work. Common drive sizes 1-4”-3/4”.

Slide Bar Handle

Used as a “T” or “L” handle and is normally used with the extension.

Speed Handle

Used to rapidly remove a nut or bolt. Common drive sizes 1-4”-3/4”.

Socket Adaptor

Allows the use of larger drive sockets with smaller socket drives; i.e., 1/2 inch drive socket and 3/8 inch drive ratchet.

Universal Joint

It makes work possible in restricted places where the wrnech cannot be aligned with the bolt.

Adjustable Wrench

Size is designated by inches in length.

Chain Wrench

It is made in several sizes ranging from 13 ¾ to 87 inches long, and will handle pipe from 1/8 to 18 inches in diameter.

Hex Key

This wrench is made of hexagon stock with one end bent to a 90 degree angle.

Common Tools

Strap Wrench

The adjustable strap is useful in rotating large diameter objects like filters.

Pry or Fitting Bar

It has a long round taper at one end and a curved pry hook at the other.

Parts Brush

Metal handle is usually sealed at both ends to enable brush to float in solvent to prevent losing brush in solvent tank.

Bars

Crow Bar

It is normally four or five feet long with one end tapered round and the other end with a chisel point.

Ripping Bar

Usually it is of octagon tempered steel. Used for demolition and pulling large nails. Also called a Wrecking Bar.

Push Broom

Handles are 7/8 inch in diameter 4 to 5 feet long and are threaded into broom body or bolted on.

Flat Pry Bar

Contoured flat bar, with beveled nail slots at each end. Also called a Wonder Bar (Stanley brand name).

Brushes

Bench Brush

The overall length is 16 inches.

Wire Brush

Used for cleaning metal parts to be welding, cleaning machinery parts and removing slag and rust.

Vises

Common Tools

Drill Press Vise

Drilling is safe and more accurate when a vise is used, and fewer drill bits are broken.

Machinist's Vise

A bench mounted vise for metal with a swivel base and replacable jaws. It should not be used for hammering or bending metal. Also called a Bench Vise.

Woodworker's Vise

The flat smooth jaws open up to 12 inches. Jaws may be lined with wood.

Pipe Clamp

A clamp made with a steel pipe.

"C" Clamp

The screw has a sliding bar or a thumb screw at one end and usually a ball and socket pad at the other Sizes range from 2 to 12 inches.

"C" Clamp Locking Pliers

Used for clamping irregular shapes quickly and firmly when welding or fastening.

Bar Clamp

Bar type clamp has quick non- slip adjustment to approximate size; then screws tight to apply pressure.

Corner Clamp

Jaws are at 90 degree angles. Used to clamp items like cabinet frames.

Locking Welding Clamp

Works well when clamping two pieces adjacent to each other or at 90 degree angles.

Clamps

Common Tools

Spring Clamp

Jaws are specially formed to hold flat or round objects.

Strap Clamp

Uses a fabric strap that tightens around large or irregular projects.

Shovels, Rakes, Picks, and Posthole Diggers

Irrigating Shovel

The same as the round point except the blade is almost straight with the handle.

Round Point Shovel

A shovel used for digging. Typical handle length approximately 50 inches.

Scoop Shovel

The handle can be a short capped ferrule “0” type or 54 inch long handle.

Square Point Shovel

Used for scooping materials such as sand and gravel. Typically the handle about 50 inches long.

Bow Rake

Has 15, 2 1/2 inch pointed teeth attached at 90 degrees to a 5 foot ferruled handle.

Clay Picks

The handles for all picks are 32 inches long and are larger at the head or blade end.

Cutter Mattocks

The blades ends are rotated 90 degrees and oval hole is in the center for the handle which is sold separate.

Common Tools

Pick Mattocks

Similar to the cutter mattocks except one end of the blade comes to a sharp point for breaking or digging in hardpan or very hard soil.

Face Shield

Eye protection that covers the entire face. Often used with safety galsses when full protection of the face is required.

Air Compressor

Used for supplying compressed air for spray painting and for operating air tools at low pressures (less than 100 psi).

Posthole Auger

It is operated by rotating the handle.

Safety Glasses

Eye protection that covers eyes only. Safety glasses have side shields. The California State Educational Code states that all students, teachers, and visitors in a school shop must wear eye protection.

Anvil

Sizes range in weight from 20 to 200 pounds. Used to shape cold and hot metal.

Posthole Digger

It is operated by thrusting the points into the soil and spreading the handles to remove the soil. Also called a Clam Shell.

Bolt Cutter

The toggle and lever joints develop great mechanical advantage. Commonly used to cut bolts, chain, and reinforcing bar.

Safety Goggles

Eye protection that covers eye glasses.

Miscellaneous

Common Tools

Chain Saw

Most chain saws are gasoline powered, but smaller pruning saws can be electric or hydraulically powered.

Hog Ringer

It is some what like a pair of pliers except the jaws of the ringer has special slots for holding the ring.

Staple Gun

Heavy duty and light utility models are available driving 3/16 to 1/2 inch staples.

Contractors Wheelbarrow

Used widely in the construction industry. Typical capacity 1/5 cubic yard. Wheel is pneumatic.

Rotary Hammer

Used for drilling holes in concrete and with chisel attachments. Special carbide tipped bits must be used with this unit.

Cut Off Saw

Cutting wheels are disposable. Used for cutting steel bar and pipe.

Hammer Tacker

A stapler that operates like a hammer. Used to install insulation, builder's paper, roofing felt, etc.

Measuring, Layout, and Surveying

Measuring And Marking Tools

Fiberglass Tape

Lengths of 50', 100', 200, and 300' common. Tape maybe graduated in feet and inches, feet and 1/100', or metric.

Measuring Wheel

Used to measure long distances such as field boundaries or road length where high accuracy is not required.

Micrometer

Sizes range from 0 to 1 inch up to 12 inches.

Steel Tape

It should be cleaned after using and kept free from rust.

Combination Square

A level and a scribe are contained in the beam.

Framing Square

Rafter framing squares are marked in 12ths of an inch on the back side. Also called a Carpenter's or steel square. Many of these squares are inscribed with rafter tables.

Rafter Square

An aluminum square marked for cutting rafters and angles. Also can be used as a guide for cross cutting with a circular saw. Small size will fit in a nail pouch.

Try Square

It is marked in 8ths and 16ths of an inch.

Depth Gauge

Usually graduated in 32nds and 64ths.

Measuring, Layout, and Surveying

Sliding "T" Bevel

After it is set at the correct angle, it is much the same as a square.

Inside Calipers

The calipers are adjusted to the diameter of the object and then laid on a rule where the reading is taken.

Line Level

It consists of a bubble tube housed in a metal or plastic case which has hooks for attaching to the line.

Dial Caliper

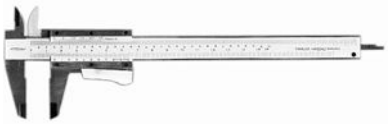
Capacity is from 0 to 6 inches.

Outside Calipers

The calipers are adjusted to the outside diameter of the object and then laid on a rule where the reading is taken.

Dividers

Used for marking out circles or parts of circles, for transferring or duplicating short measurements, and for dividing distances into a number of equal parts.

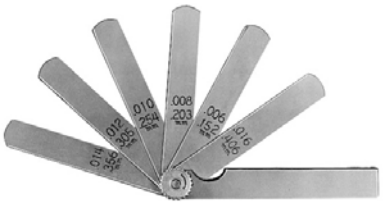


Fractional Vernier Caliper

Direct reading of 16ths and 32nds of an inch on the handle, and vernier readings of 1/128 inch.

Carpenter's Level

Used for marking level lines and for checking surfaces for level and plumb. Typical length 24-48 inches. Longer levels are often called masonary levels since they are commonly used to lay brick.



Feeler Gauge

Used for gauging the clearance or spacing of valve tappets and other jobs where accurate measurements of .001 to .032 may be desired.

Measuring, Layout, and Surveying

Protractor

It is graduated from 0 to 180 degrees.

Chalk Line

A special container contains the chalk powder and line which is on a winding spool.

Marking Gauge

It is marked in 8ths and 16ths of an inch and is 8 inches long.

Plumb Bob

It can also be used to establish a plumb line in laying brick or concrete blocks. Also used to establish a survey instrument (like a transit) above a specific point.

Scratch Awls

Also used as a punch for making small holes in light gauge sheet metal for the insertion of sheet metal screws.

Scribe

The tip is brittle and will snap off if dropped on the point or used as center punch.

Soapstone

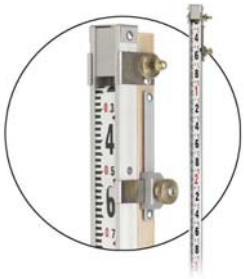
Unlike chalk, it is hard enough not to mark hands or clothing and can be used in holders that resemble pencils.

Surveying Tools

Builder's Level

A telescope instrument used to check level of forms or field grades. Builders' levels are designed to be used for short distances. Farm or dumpy levels are similar to builder's levels, but have more powerful telescopes. Farm levels are used for longer distances. Both instruments are leveled manually using adjusting screws. An “auto” level requires less manual leveling and has only three leveling screws.

Measuring, Layout, and Surveying



Direct Elevation Rod

Rod reads elevations directly (without subtraction from the HI) by used a sliding tape. Some rods have a cut/fill scale for use in grading.

Laser Level

A level that used a rotating laser beam to establish a level plane. Leveling can be done with a single person.

Range pole

A simple pole used in lieu of a rod where elevation measurement is not needed.

Global Position System receivers

Commonly called GPS receivers, they used satellites to establish the user ’s position (e.g., latitude and longitude). Recreational receivers have an accuracy of 13 m and survey grade receivers have an accuracy of 2 cm. Differential GPS receivers (accuracy 2cm – 1 m) are commonly used in agriculture to map field boundaries, scout fields, and provide tractor guidance.

Laser Level Receiver

The receiver that detects the laser beam of the laser level. Can be fitted to a Philadelphia or Direct Elevation rod.

Philadelphia Rod

Reads like a tape measure. An adjustable target is available to allow readings up to 700 feet in distance.

Rod Target

Used with the surveyor’s rod to allow readings at a greater distance.

Surveying Tripod

Used to hold a level or other survey instrument. To protect threads, keep cap on when not in use.

Measuring, Layout, and Surveying

Surveyor's Steel Tape

Quite often called a "chain." These may be stored on a reel or coiled.

Hand Level

The hand level is held in the hand thus providing little accuracy.

Surveyors Arrows

Sizes range from 10 to 14 inches in length. Used to mark distances when "chaining" or measuring distance.

Transit

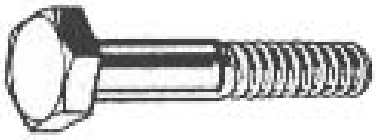
Similar to a level, but a transit telescope can be tilted vertically to measure vertical angles. Surveyor's have generally replaced these with "Total Stations", but transits are still used to measure vertical angles in construction.

Fasteners

Bolts

Cap Screws

It resembles a short bolt with a hexagon head with either coarse, fine, or metric thread. Term describes machine bolts and machine screws.



Grade 2 Bolt

Soft bolt commonly used for landscape applications and other applications where strength is not important.

Machine Screw

The head is slotted for a screwdriver and may be either round of flat. Typical sizes 4-12.

Carriage Bolts

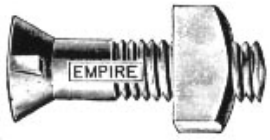
Never use a washer under the head. Use to bolt wood.

Eye Bolt

It has an eye on one end and coarse or fine threads on the other.

Lag Bolt

The bolt has a square or hex head with a tapered wood screw on the other end. Common sizes 1/4 to 1/2 in diameter, 2" to 12" long. Also called a Lag Screw.



Plow Bolt

No wrench is necessary to hold the bolt head.

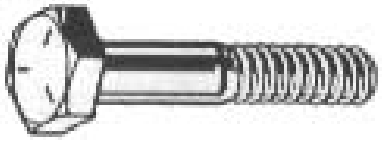
Machine Bolt

The head and nut may be square or hexagon shaped.

Toggle Bolt

When the screw is tightened a firm anchorage is made.

Fasteners

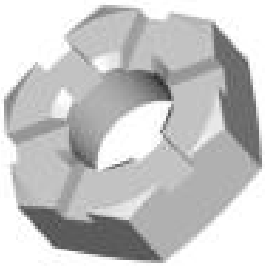


Grade 5 Bolt

Mildly hardened bolt used commonly in machinery and equipment applications. Three markings on the head.

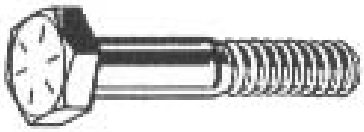
Castellated Hex Nut

Used with a cotter pin to prevent loosening or tightening. Top the nut is smaller in diamter than the base.



Slotted Hex Nut

It differs from the castellated nut in that there is no stepped-in castle-like top.



Grade 8 Bolt

Hardened bolt used where high tensile strength is required. 6 markings on the head.

Hex Nut

It may have NC, NF, or metric threads.

Square Nut

Used on farm implements with carriage bolts, machine bolts, stoves bolts and plow bolts.

Nuts

Cap Nut

A nut closed on one side to cover an exposed bolt.

Self-Locking Nuts

When tightened on a bolt the scored threads bite into the threads of the bolt preventing it from backing off.

Wing Nuts

Used where hand tightening (no wrench) is desired such as inspection covers.

Washers

Fasteners

Fender Washers

The large holes are used for aligning or adjusting for proper fit.

Lock Washer

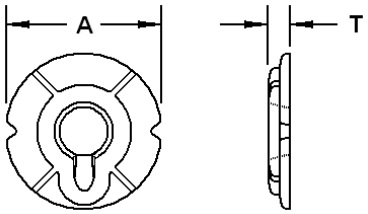
It should not be used on wood.

Drywall Screws

All Are Phillips Except the Hex Wafer Head. Used to fasten drywall. Bugle shaped flat head.

Finishing Washer

This is a chrome plated countersunk washer used with oval head wood or metal screws.



Malleable Iron Washer

Used where excess pressure or stress is exerted on wooden structures.

Screw Eye

It may be described as a screw with an eye or ring head.

Screws

Flat Washers

Used to prevent the nut from rubbing and becoming imbedded in the bolted material. Also called a Cut Washer.

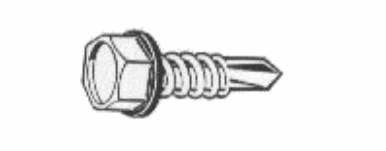
Deck Screws

A straight shank wood screw with a bugle head. Commonly made with a Phillips or square drive 2 1/2" of longer. Coated to prevent rusting.

Screw Hook

Can be screw into wood walls or concrete or masonry when pre-drilled and a plastic or lead anchor is used.

Fasteners



Self Drilling Screws

No pre-drilling is necessary when using a self drilling screw.

Self Tapping Screws

Screw has a sharp point with coarse threads that make their own threads when screwed into a pre-drilled hole that is smaller than the diameter of the screw.

Set Screw

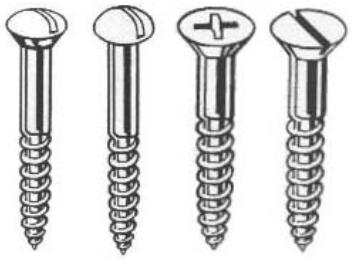
When screwed into a set collar the cup point makes an indentation in the shaft preventing the collar from vibrating loose.

Sheet Metal Screws

Head types are flat, round, pan, oval and binding.

Torx Head Screws

The head is similar to the Phillips but having a six point star shaped opening in the center of the head rather than a four point star.



Wood Screws

A tapered screw with a round, oval, or flat head. The threaded portion of the screw is tapered with a very coarse thread and cuts its own thread as it is turned into the wood. Shown L-R oval head, round head, flat head Phillips, and flat head slotted.

Nails

Box Nail

Roughly speaking, d equals 1/4 inch in length, but this is not constant. The shank is smaller in diameter than the common nail to prevent splitting of the wood. Common sizes 2d to 16d

Duplex-Head Nail

The point is sharp, and there are two heads, one above the other, to make removal easy. Common sizes 6d, 8d, 16d.

Fasteners

Common Nail

Roughly speaking, d equals 1/4 inch in length, but this is not constant. The shank is larger in diameter than the box nail making the nail less likely to bend. Common sizes 2d – 20d. Sizes larger then 20s are often called spikes.

Finish Nail

The sizes range from 2d to 20d. The nail is designed to be counter sunk and the hole filled.

Galvanized Nail

Common, box, and finish nails are available for exterior use with a galvanized coating. The coating may be hot dipped (thicker) or electro-plated (EG).

Spiral Shank Nails

Designed for the construction and repair of wood pallets. These spiral shank nails are also good for re-nailing wagon beds, trailers.

Wire Brad

The size is expressed in wire gauge and ranges from 1/4 to 1 1/2 inches long.

Cement Coated Nails

Sizes range from 2d to 16d. Commonly found in a green coating in 8d and 16d ("sinkers").

Blue Plaster Board Nail

The range in size is 1 to 1 1/2 inches.

Aluminum Roofing Nails

Sizes range from 1 to 1 1/2 inches long.

Fasteners

Lead-Head Nails

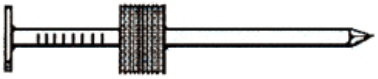
Lead washer is to prevent oxidation between the head of the nail and the galvanized roofing and also prevents leakage.

Galvanized Shingle Nail

The 3d is generally used for shingling.

Galvanized Roofing Nail

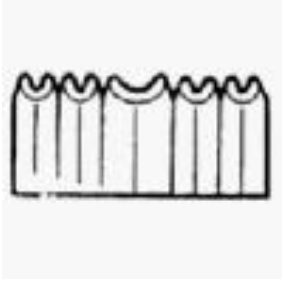
The head is about 1/2 inch in diameter, and the length ranges from ¾ to 2 inches.



Furring Nail

This allows the wire to become a reinforcing agent and the nails hold the plaster to the wall.

Miscellaneous Fasteners



Corrugated Fastener

The size is 1/4 to 1 inch in depth and 2 to 7 corrugations. Used to fasten wood.

Cotter Pin

This prevents the nut from working loose. Also called a Cotter Key.

Rivets

Pop Rivet

A pop rivet tool is required to set the rivet.

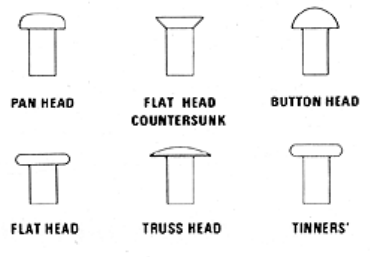
Pop Rivet Tool

Tool is adjustable to use the various sizes (diameter) of rivets available.

Rivet Set

A rivet set is a small bar of steel with a hole drilled in the end to receive the rivet, and with a cup-like depression for forming a round head on the rivet.

Fasteners



Soft Iron Rivet

The size is based on length and diameter.

Hardware

Hinges

"T" Hinge

Size is measured from hinge pin to the end of the strap. Commonly use for gates ("T" fastens to post).

Continous Hinge

Same as the butt hinge except it comes in 8" to 8' lengths and is cut to length with a hacksaw. Also called a Piano hinge

Strap Hinge

The size is measured from the hinge pin to the end of one strap.

Barrel Bolt

The other end, a separate piece is an eye which the bolt slides into when locking.

Gate Latch

The hook is inserted into the eye screw to latch.

Fencing And Supplies

Barbed Wire

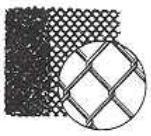
A spool of wire is 80 rods long.

Butt Hinge

This hinge is available with fast pin or loose pin and is plain brass or steel or primed with paint.

Hinge Hasp

One end is like a strap hinge with a slot which folds over an eye or staple to accommodate a padlock.



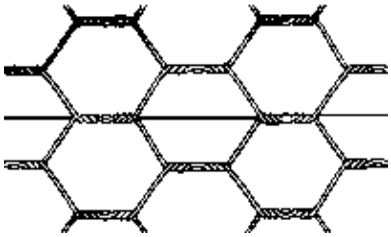
Chain Link Fencing

Comes in 36 to 60 inch widths and 50 to 100 foot lengths. Also called Diamond Mesh.

Hardware

Come-A-Long

By working the ratchet handle the cable is tightened and moves the sheave block closer to the ratchet spool.



Poultry Wire Netting

The rolls are 50 to 150 feet long and from 1 1/4 to 4 feet wide.

Steel Fence Posts

Round sttel post with an anchor plate 12 inches from the bottom and comes in 3 to 6 foot lengths.

Electric Fence Gate Handle

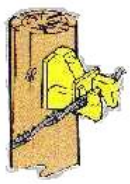
By pulling on the handle, tension can be released on the fence and it can be disconnected allowing entry.

Smooth Galvanized Wire

It is made of smooth galvanized steel and is available in a variety of gauges.

T Post

A steel post with an attached plate to help anchor the post. Commonly 5'-8' long.



Nail On Electric Fence Insulator

Commonly a plastic insulator that nails to a wood post. Insulators hold electric fence conductors about 1" from the post.

Staples

The length is stated in inches and fractions.

T-Post Insulator

The insulator is clipped to the steel post and the wire inserted into the plastic clip, thus preventing grounding of the electrical system.

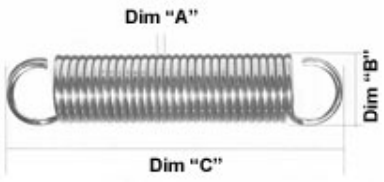
Hardware

Turn Buckle

Turning the body tightens or loosens both at the same time.

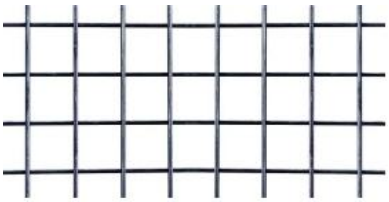
Wire Stretcher

It consists of two double sheave blocks specifically designed with hooks, holding lock, wire clamp and a rope.



Tension Spring

This spring can be extended, but exerts force by extending to pull back to its original length.



Welded Wire Fence

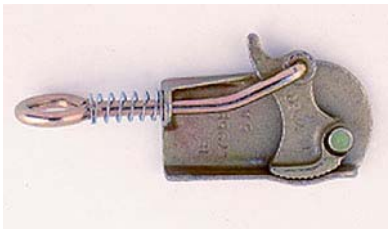
Consists of 16 gauge galvanized wire spot welded rather than woven, and has 2 inch by 3 inch mesh.

Woven Wire Fencing

The roll contains 20 rods of wire ranging from 32 to 47 inches wide.

Torsion Spring

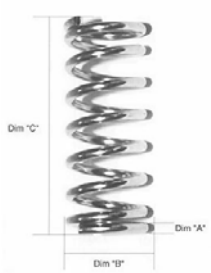
When the spring is wound up it exerts a twisting force.



Wire Grip

Made of steel or malleable iron. Used to grip fencing wire when tightening

Springs



Compression Spring

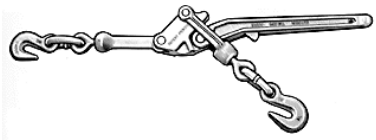
A compression spring is one that exerts pressure when it is compressed.

Rope and Chain

Chains, Lashing Straps, and Accessories

Proof Coil Chain

A welded link chain. Chain size is designated by the diameter of the steel used in making the links (e.g.. 3/16"-3/4"). Made from low carbon steel, proof coil is a general utility chain for such uses as tie-down, log chain and assembly tow and switch chain. Available in plain, hot galvanized, and bright zinc finishes.



Load or Chain Binder

This devise consists of a handle, two offset links and grab hooks which, when connected to a section of the load-binding chain and the handle pulled, tightens the chain.

Sash Chain

Sash Chain is sold by the foot. Used to hang light fixtures, etc.

Twist Link Chain

Used where the chain must travel easily over something (links don't get caught).

Double Loop Chain

Used for tether chains, swings and hammocks and wherever a light inexpensive chain is needed.

Repair Link

Used to repair a broken chain and for attaching rings and hooks. Also called a Lap Link

Slip Hook

A round hook used on one end of a log chain to permit it to slip along the chain.

Grab Hook

Grab hooks are designed to hook over a chain link and will hold fast when the chain is tightened.

Rope and Chain

Swivel

It consists of two chain links connected by a riveted pin.

Clevis or Shackle

Used for fastening an implement to a draw bar for pulling, fastening a tow cable, and for purposes requiring the fastening or securing of machines or materials.

Winch

A ratcheting device used to tighten a rope or lashing strap.

Lashing Straps

Used for securing loads. Not used for securing heavy equipment. Typical polyester or nylon strap strength is 10,000-20,000 pounds. Smaller straps are available with a built-in winch. Larger straps are designed to be used with winches mounted on the truck bed.

Chain Hoist

Sizes are available from 1/2 to 5 ton capacity.

Rope

Cotton Rope

Cotton ropes are soft but the weakest of the natural fiber ropes.

Manila Rope

This is a laid (twisted) and comes in three and four strands. A natural fiber, manila is stronger than cotton, but weaker than the synthetic ropes.

Nylon Rope

Maybe manufactured as a laid (twisted) rope or a braided rope. Stronger and more expensive then poly rope. Braided rope does not have individual strands therefore it is not suited for hand braiding.

Rope Thimble

Used to protect the eye in a rope or cable.

Rope and Chain

Twisted Polypropylene Rope

Keep away from flames and hot metal, it will melt or solidify and break easily. Also called trucker's rope which is generally black with an orange stripe.

Wire Rope

To coil or uncoil, roll the rope like a steel hoop.

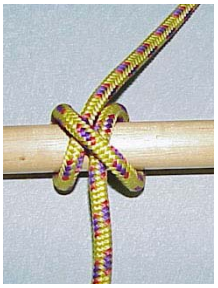
Wire Rope Clamps

There are two types, the “U” bolt with cleat and the bolt clamp.

Knots, Hitches, and Splices

Bowline

A knot for making a loop



Clove Hitch

A hitch used to secure a rope to a hook.

Eye Splice

Used to make a permanent loop in a laid (twisted) rope.

Sheet Bend

A knot for joining ropes of different diameters

Square Knot

A common knot for joining two ropes

Trucker's Hitch

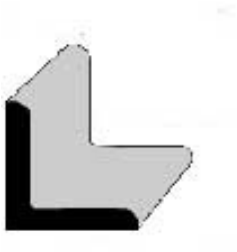
A hitch used for securing a load

Metal Working

Metals

Aluminum

It is sold by the square foot, by the piece or by the pound.



Angle Iron

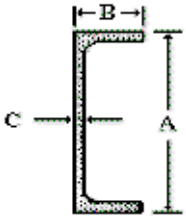
It is sold by the pound. Sized by the length of the legs and thickness. Ex. 2”x2 ”x1/4”.

Brass

It is sold by the piece or by the pound.

Cast Iron

Used to make castings for cylinder blocks, plow bottoms, housings for tractor differentials, transmission cases, sprockets wheels, pulleys, pipe fittings and gears.



Channel Iron

The common sizes range from 1/2” X 1 inch to 4 X 12 inches.

Copper

It is sold by the piece, running foot or pound.

Galvanized Steel

The coating varies from 0.0002 inch for the lightest coating to 0.002 inch for water pipe.

Stainless Steel

An alloy steel that resists oxidation. Commonly a chrome or nickel alloy of iron.

Cold Rolled Steel

It is commonly used for making bolts and shafting. Shaped cold the metal is bright and shiny.

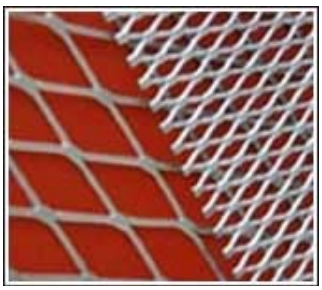
Metal Working

Hot Rolled

Available in many shapes. Formed hot the finsh is rough and dark.

Diamond Plate

Sizes range from 1/8 to 1/4 inch thick, 4 to 5 feet in width and 8 to 12 feet in length.

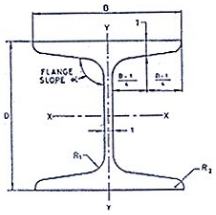


Expanded Metal

Come in gauge thickness and usually 4 to 5 foot width and 8 to 12 foot lengths.

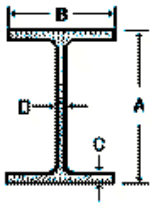
Flat Bar

Size is 3/16 inch thick and greater and comes in a variety of widths.



H Beam

A 4 inch H beam is 4 inches wide and 4 inches high.

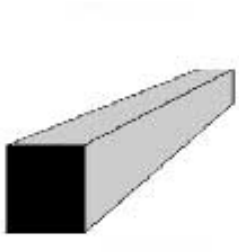


I Beam

Used to support structures (placed horizontally). Typical lengths 20-40 feet.

Rectangular Tubing

Unequal dimensions (ex. 2"x4") steel tubing. Wall thickness varies from very light (ex. .080") to thick in larger sizes (ex. 1/2"). Also see square tubing.



Square Bar

Ranges in size from 1/8 inch and greater.

Square Tubing

Wall thickness varies from very light (ex. .080") to thick in larger sizes (ex. 1/2"). Heavier wall tubing is excellent for cultivator tool bars because of its smooth exterior finish and ability to with stand heavy loads.

Metal Working

Strip Iron

It is 1/8 inch or less in thickness and comes in various widths.

Chuck Key

Used in keyed chuck to tighten or loosen the chuck

Morse Taper Sleeve

Used as an adaptor to insert different number taper shank twist drills into the drill press.

Tool Steel

It can be tempered to various degrees of hardness.

Countersink

The shank is 1/4 inch in diameter and can be used in hand or power drills.

Reduced Shank Drills

The shank of the drill comes in three sizes, 1/4, 1/2, and ¾ inch.

Boring Tools (Metal)

Chuck

Used to hold a drill in a drill press or drill motor. May portable drill motors are using keyless chucks that are tightened by hand.

Drill Drift

Used for removing morse taper sleeves and tapered shank twist drills from a drill press. Also called a Center Key.

Straight Shank Twist Drill

If used on hard steel and at high speeds, it should be made of high speed steel.

Metal Working

Taper Reamer

Used to ream holes for tapered pins used on farm machinery and equipment.

Cold Chisel

Size is determined by the width of the cutting edge.

Ball Pein Hammer

This hammer is constructed with a ball at one end and a round crowned hammering face at the other. Also called a Machinist's Hammer

Tapered Shank Twist Drill

It should never be used in a chuck.

Chisels

Diamond Chisel

Use for cutting keyways and groves. Useful for tight places where a cold chisel is too large. Sized by the width of the cutting edge.

Blacksmith's Hammer

The hammering surface is crowned. Designed for use in forming hot metal.

Cape Chisel

Use for cutting keyways and groves. Useful for tight places where a cold chisel is too large. Sized by the width of the cutting edge.

Round Nose Chisel

The sides of the shank are flattened and the width at the cutting edge determines the size.

Hammers (Metal)

Dead Blow Hammer

It does not absorb liquids or produce sparks when striking steel objects. Some models are weighted with lead shot.

Metal Working

Engineer's Hammer

Sizes are form 2 1/2 to 4 pound with handle length of 16 inches.

Tinner's Hammer

The hammer head is beveled on one end and has a square face on the other.

File Card

The card is a small fine wire brush.

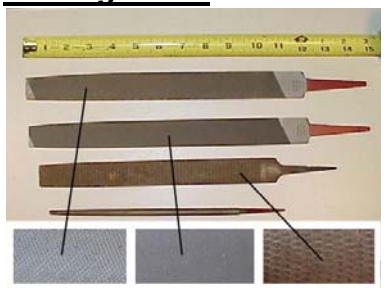
Hand Drilling Hammer

The head is made in three different sizes, 2, 3, and 4 pound. It has a short handle and can be used in tight places to drive punches and chisels.

Sledge Hammer

Looks like engineers hammer but much larger. 6-12 pounds in weight.

Files, Threading, and Cutting Tools



Metal File

Common Shapes: flat, mill, square, half round, round and three square (triangular). Common Coarseness Cuts (rough to smooth): bastard, second cut, smooth. Kinds of Teeth: Single Cut and Double Cut.

Tap Wrench

"T" type tap wrenches have an adjustable chuck.

Bottoming Tap

Widely used in machine operations to complete a thread in a bottom of a hole.

Plug Tap

Used to cut threads in machine operations.

Metal Working

SAE Tap

Used to cut Society of Automotive Engineers or National Fine threads in bored holes and nuts.

Die Stock

Used as a handle for dies.

Hack Saw

The handle normally has a pistol type grip.

Taper Tap

Also used to start threads in a blind hole.

SAE Dies

Used to cut Society of Automotive Engineers of National Fine (NF) Threads on bolts.

Screw Extractor

A hole is drilled in the center of the broken stud, and the extractor screwed into the hole in a counter clockwise direction. Also called an easy out.

USS Tap

Used to cut United States Standard or National Coarse threads in drilled holes or nuts.

USS Die

The die cuts the male thread of a bolt or rod. USS also called National Course (NC) thread.

Whet Stone

Used for sharpening tools such as wood chisels and other tools to a fine edge.

Metal Working

Round File

It is available 4 to 16 inches long and 3/16 to ¾ inches in diameter.

Aviation Snips

Available in straight, left, or right. Compound action makes cutting easier and the jaws are usually serrated. Also called Compound snips.

Sheet Metal Layout Rule

It also has circumference measurements on the back side.

Single Cut File

It has a single series of teeth and is made in bastard cut, second cut and smooth type teeth.

Flat Leg Pattern Dividers

Used For Precision Transferring Of Segments From Pattern To Pattern.

Tin Snip

There are four types available; regular straight snip, curved (left and right) snip, and duckbill snip.

Sheet Metal Tools

Adjustable Trammel Points

The trammel points can be adjusted to any point on the bar.

Shear

A powered hand tool used for cutting sheet metal up to 12 gauge.

Wing Dividers

Divider Tips Are Adjustable By Loosening A Set Screw And Spreading The Tips Apart.

Power and Stationary Tools

Metal Working

Angle Grinder

Available in sizes from 2 to 9 inch. May be used with a grinding, sanding, or wire brush wheel.

Hydraulic Shear

Powered by a hydraulic pump and cylinder these shears commonly can cut flat stock, angle iron, and punch holes.

Brake

Used for bending sheet metal.

Sheet Metal Shear

Foot operated shear

Grinder

Used for sharpening and removing material. Stones are classified by diameter, width, and coarseness (i.e. 1" x 6" 80 grit).

Woodworking

Wood

Cedar

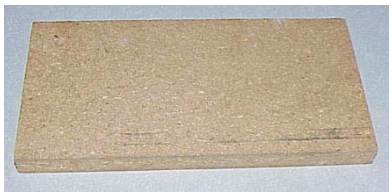
Known for its resistance to decay. Used for fencing.

Douglass Fir

Used primarily for structural framing. Very strong.

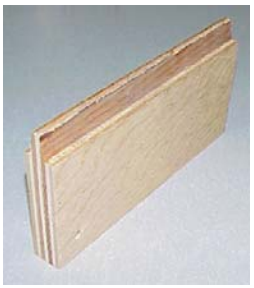
Oriented Strand Board (OSB)

Primarily made from wood chips. Used for shear walls and roof sheeting



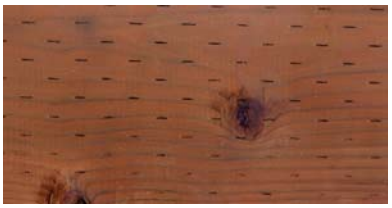
Particle Board

Primarily made from sawdust. Used for subfloor where shear strength is not needed.



Plywood

Composed of layers of wood sheets with the grain of each sheet glued at right angles. Very strong. Used for flooring, roof sheeting, and shear walls. Comes in various grades denoted by letters. A=best, D=worst. For example AC would be A on one side and C on the other. Plywood can be designated as interior or exterior depending on the type of glue used in its manufacture.



Pressure Treated Lumber

Generally fir species that is treated to resist decay. Green in color.

Redwood

Known for its resistance to decay. Used for landscaping, decking, etc.

Oak

A hardwood used for cabinets and similar applications. The grain is very distinctive. May be used as a solid wood or as a veneer on plywood or particle board.

Woodworking

Birch

A hardwood used for cabinets, door veneer, and similar applications. May be used as a solid wood or as a veneer on plywood or particle board.

Hammers (Wood)

Curved Claw Hammer

Used for driving and puling nails. Face is commonly rounded for finish work. Weight 13-16 oz.

Mallet

Heads are made of wood, plastic, rawhide and rubber. Also called a Soft Headed Hammer.

Shingler's Hatchet

It has a gauge that can be adjusted for the desired shingle exposure and has a nail pulling slot in the back and above the cutting edge.

Straight Claw Hammer

The hammer head is the same as a curved claw hammer, but the claw is nearly straight. Weight 16-28 oz. Head may be smooth or serrated. Also called a Ripping hammer.

Tack Hammer

One side of the head is magnetic and used for starting short tacks.

Saws And Accessories

Back Saw

This saw should be used in a horizontal position.

Coping Saw

The blade is installed to cut on the pull stroke.

Hand Cross Cut Saw

The standard length is 26 inches. Typically 8-12 teeth/inch.

Woodworking

Hand Rip Saw

The edges of the teeth are not beveled, but are shaped like chisels. Typically 4-7 teeth/inch.

Keyhole or Compass Saw

Used for sawing curves, especially where the cut must be started from a hole bored with an auger bit.

Power Tools

Belt Sander

Sands or cuts using a sanding belt. Used for course sanding of large surfaces.

Circular Saw

Primarily used for cutting wood, however many blades types are available for cutting sheet metal, metal, stone, and various other products. Available as a direct drive or worm drive.

Circular Saw Blade

The size is determined by the diameter of the blade.

Electric Drill

Many models are variable speed.

Finishing Sander

Sands by a vibrating action.

Jig Saw

Many variations of blades are available for cutting wood, plastics, and other soft materials. Also called a Saber Saw

Miter Saw

The saw pivots on the miter box for various angles.

Woodworking

Nail Gun

Nails are fed automatically from a loading chamber and are dispensed by pulling the trigger.

Router

Depth of cut is adjustable. Used to shape wood (ex. round the edge of a board).

Jack Plane

Planing should be done with the grain of the wood. Note tail behind the handle.

Planer

Used for planing wood surfaces. A portable power version of a hand plane.

Screwdriver

Comes in many shapes and sizes. These power tools are battery or AC powered, reversible, and variable speed. They are commonly used for dry wall or decking installation. Many models also have a high speed range for drilling.

Block Plane

Sizes range form 5 1/2 to 7 inches long and 1 3/8 to 1 5/8 inches wide. Used to plane the end of a board.

Reciprocating Saw

Similar to the jig saw but much larger and used for heavy duty work.

Smooth Plane

Sizes range from 5 1/2 to 10 inches long and 1 1/4 to 2 3/8 inches wide.

Disc Sander

A stationary power tool with a 6-12 inch sanding disc.

Boring Tools (Wood)

Woodworking

Forstner Bit

A power bit for drilling flat bottomed holes in wood. Commonly found in sizes 3/8-2 inch.

Hole Saw

Hole saws come in sizes from ¾ to 2 1/2 inches and one mandrel fits all.

Hand Screw Clamp

The wooden handles are mounted on opposite sides of the jaws.

Auger Bit

The straight round shank adapted for power drills.

Spade Bit

A wood boring bit with a hex shaft to be used in a power hand drill or drill press.

Nail Puller

A pair of jaws is driven into the wood below the nail head by impact action of the handle.

Expansive Bit

The shank is a square taper, adapted for the bit brace.

Woodworking Tools

Cat's Paw

A tool used to pull nails

Nail Set

The point has a slight hollow at the end.

Woodworking

Surform Tool

A tool like a wood rasp with a replaceable cutter. Available in flat, round, and half round shapes.

Wood Chisel

It is sharpened only on one side to a 25 or 30 degree angle and may be used with or across the grain.

Wood Rasp

Other rasps are 4-in-hand and horse rasps.

Construction

Drywall Saw

A tapered hand saw for cutting drywall.

Drywall Trowel

A flexible trowel for applying drywall compound and tapping.

Utility Knife

A sharp knife for cutting drywall, roofing felt, etc.

Stationary Power Tools

Band Saw

Used for making curved cuts in wood or metal.

Drill Press

A stationary drill.

Radial Arm Saw

A saw designed to cross cut and rip with the ability or cut compound angles.

Woodworking

Table Saw

A stationary saw used primarily for ripping lumber and sheet materials.

Concrete

Concrete Tools And Supplies

Bull Float

A large float with a long detachable handle. Made from wood or magnesium. Common sizes are 8 inches wide by 36 or 48 inches long.

Concrete Edger

The ends may be curved up slightly. Used to finish the edges of concrete.

Concrete Tampers

A tubular steel frame handle is attached to the top which allows a person to operate the tamper while walking in the concrete. Also called a Jitterbug.

Corner Trowel

Size is 2 1/2 by 2 1/2 wide and 6 inches long. Used to finish corner in curbs, steps, etc. The handle placement determines if the trowel is outside or inside. Outside corner trowel is also called a step trowel.

Finishing Trowel

The finishing trowel is made of steel and is 4 inches wide by 14 inches long.

Fresno Trowel

This large finish trowel also has a long detachable handle.

Groover

It is 2 7/8 inches wide and 6 inches long with the ridge being 1/2 inch deep and 1/2 inch wide. Use to place groves in concrete slabs.

Hand Float

It is 4 to 5 inches wide and 13 inches long. Floats are used for rough finishing.

Hawks

The size is 13 x 13 inches square. Use to cary morter.

Concrete

Masonry Bit

Used to drill in brick, block, and concrete. The tip is treated with tungsten carbide to resist heat and wear.

Reinforcing Bar

Available in 20, 30, and 40 foot lengths. Common sizes (diameter) of 3/8" to 1" are use in small construction projects.

Brick Chisel

Blade is 3 1/2 inches wide, overall length is 7 inches.

Mortar Hoe

It also has a 5 1/2 foot handle and holes in the hoe to aid mixing.

Sponge Rubber Float

Must be dipped continuously in water when working plaster to keep the plaster from adhering to the rubber.

Brick Jointer

The jointer is bent at each end at about 20 degrees to allow the mason to use one end as a handle and the other as a jointer. The tool is used to finish the joints between bricks.

Mud Pan

Used mostly with small trowels or putty knifes.

Star Drill

It is operated by striking with a hammer while rotating by hand.

Brick Layer's Hammer

The wedge shaped end is for scoring and cutting brick, and the other end is for tapping bricks into place when leveling.

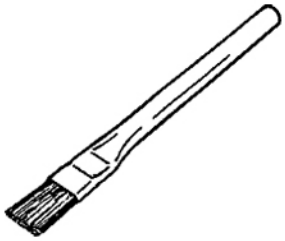
Concrete

Brick Trowel

It is pointed and measures 4 ¾ inches by 11 inches.

Plumbing Tools And Supplies

Plumbing Tools



Acid Brush

Used for applying pipe joint compound on threaded pipe and tinner's fluid (acid) or flux on copper pipe for soldering. The handle is tubular sheet metal 3/8 inch in diameter and 6 inches long.

Flaring Tool

Used to make flared ends for soft tempered tubing.

Pipe Cutter

Too much pressure on the handle may cause the cutting wheel to break.

Pipe Die

Pipe dies should not be used for bolt threading as they are tapered.

Pipe Die Stock

Operates as a ratchet in both directions. Hold the pipe die.

Pipe or Burring Reamer

This type of reamer is made with bit brace shank, round shank, or "T" handle.

Pipe Tap

Used to cut internal threads in pipe fittings.

Pipe Vise

Used for holding pipe while cutting and threading.

Pipe Wrench

Adjustable and is used to turn pipe or conduit or round stock. Sizes 6" – 18" in length are common, but can be much larger.

Plumbing Tools And Supplies

Propane Torch

A propane/air torch that developes temperatures suitable for soldering.

Teflon Tape

Used for sealing threads on metal and PVC pipe and on valves.

PVC Primer

User to clean and soften PVC pipe before applying cement. Generally recommended for pipe 1" and larger.

PVC Pipe Cutter

This cutter makes smooth clean cuts.

Tubing Cutter

Used to cut copper and aluminum tubing.

Compression Coupling

Can be used on steel or PVC pipe. Usually used for repair or temporary connections.

Solder

It is available in I or 5 pound spools. Lead free solder is used for plumbing of domestic copper pipe.

Wire Brush

Used to clean metal parts to be soldered or welded and for cleaning pipe threads.

PVC Pipe And Fittings

Female Adaptor

Used to connect PVC pipe to threaded pipe, has female ends.

Plumbing Tools And Supplies

Male Adaptor

The PVC slip end is female and the threaded end is male thread.

S Cap

Used to stop the flow on PVC pipe.

SxS Reducer Bushing

Used to connect PVC pipes of different diameters.

PVC Glue

When gluing, apply glue to both the fitting and the pipe, slide the two pieces together and rotate 1/4 turn for good adhesion.

SxS Coupling

Used to connect two pieces of pipe together in a straight line.

SxS Street Ell

Used to connect two pieces of PVC pipe at an angle.

PVC Pipe

For domestic purposes, sizes range from 1/2 to 2 inch and it comes in 20 foot lengths.

SxS Elbow

Comes in 45 and 90 degree angles.

SxSxS Tee

Used to connect three pieces of PVC pipe together.

Plumbing Tools And Supplies

SxSxT Tee

Used to connect a straight length of PVC pipe to a threaded pipe at an intersection.

SxT Elbow

Used to connect PVC pipe to threaded pipe at a 45 or 90 degree angle.

SxT Reducer Bushing

Used to connect PVC pipe to a smaller diameter threaded pipe.

SxT Street Ell.

Used to connect PVC pipe to threaded pipe at an angle.

Threaded Cap

Used to stop the flow on threaded pipe.

Copper Pipe and Fittings

Copper Pipe

Rigid pipe used for water supply plumbing. Sizes commonly 1/2" - 2". Connections are soldered. Copper pipe is available in three basic types: Type M is thin-walled, Type L is medium-walled and Type K is thick-walled.

Copper Tubing

Flexible tubing used for water applications. Sizes commonly 1/4"-2" O.D. Connections are soldered, flared, or compression type.

CxC Street Ell

A street ellbow for use the copper fittings. Often used with a C x C Ell to make a odd angle.

C Cap

Used to stop the flow of liquid or gas in a copper pipe.

Plumbing Tools And Supplies

CxC Coupling

Used to connect two copper pipes together.

CxC Union

Used to connect two copper pipes together when neither can be moved.

CxT Adaptor or Male Adapter

Used to connect copper pipe to threaded pipe.

CxC Elbow

Comes in 45 and 90 degree angles.

CxCxC Tee

Used to connect three pieces of copper pipe together.

CxT Female Adapter

Used to adapt to female threads

CxC Reducing Coupling

Used to connect copper pipes of different diameters.

CxCxT Tee

Used to connect two copper pipes to a threaded pipe.

Steel Pipe and Fittings

45 Degree Elbow

A elbow that changes direction by 45 degrees. Both ends are female threads.

Plumbing Tools And Supplies

90 Degree Elbow

A elbow that changes direction by 90 degrees. Both ends are female threads.

Bushing

One end is hex shaped to receive a wrench.

Coupling

It is used to connect two pieces of pipe in a straight line.

Bell Reducer

Similar to a coupling, but changes pipe sizes.

Cap

Used to screw over the threaded end of a pipe to stop the opening.

Cross

It is shaped like a cross and is threaded inside at the four ends.

Black Pipe

Pipe lines may be constructed with threaded fittings or may be welded.

Close Nipple

A nipple that is as short as possible (threads touch).

Floor Flange

It is a steel flange with female threads in the center and holes drilled on the edge of the flange for bolts or screws.

Plumbing Tools And Supplies

Galvanized Pipe

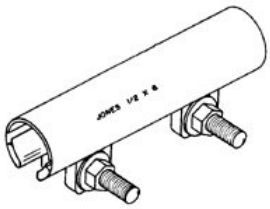
Steel pipe with a galvanized coating to prevent corrosion. It Should Not Be Used In Hydraulic Systems.

Hose Clamp

It consists of a circular steel collar with a tightening screw to secure the hose in place.

Nipple

Short pieces of threaded pipe, nipples are classified as close, short and medium, or are measured in inches of length.



Pipe Clamp

For 1/2 to 2 inch pipe.

Pipe Plug

The end is square to accommodate a wrench.

Street Ell

An elbow with male thread on one end and female threads on the other. Available in 90 and 45 degree angles.

Tee

Used to connect lateral branches of a pipe.

Union

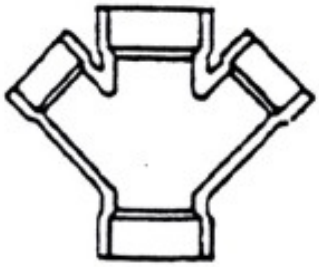
A three piece fitting. The center piece is hex shaped to accommodate a wrench and tighten the two outter pieces. Used to join two pipes so they can be easily disconnected or join threaded pipe in the middle of a piping run.

ABS Pipe and Fittings

Plumbing Tools And Supplies

ABS Pipe

Acrylonitrile-Butadiene-Styrene (ABS) pipe used for sewer applications. Pipe is black plastic. ABS fittings are glued like other platic pipe systems. Male and female ends are designated as "spigot" and "hub" respectively. Elbows are not desugnated by degrees, but ratrher by the part of the circle (ex. 1/4 bend = 90 degrees). Pipe commonly is found in sizes from 1 1/4" to 6" and 20 foot lengths.



Double Wye Hub

Used for connecting two lines at a 45 degree angle to a straight ABS pipe.

Male Adaptor-Hub X Male Pipe

Used to connect ABS pipe to female pipe threads.

Female Adaptor-Hub X Female

Used to connect ABS pipe to threaded pipe.

P Trap Hub With Union

Liquid is held in the base of the P Trap to prevent the passage of air or gasses.

Adaptor-Spigot X Female Pipe

Used to connect female ABS pipe fitting to male pipe thread. Often used for cleanouts.

Long Sweep 1/4 Bend Hub

Used to connect ABS pipe at a 90 degree angle and allows for easy clean out when using a drain auger or plumbers snake to clean out lines.

Wye Hub

Used for attaching a line at a 45 degree angle to a straight line.

Valves

Plumbing Tools And Supplies

Ball Valve

By rotating the ball with the handle the valve closes or opens.

Gate Valve

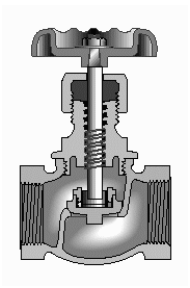
The flow is stopped when the wedge or gate is lowered into the seat.

Drain Auger

By rotating the auger while feeding it into the line the auger bit tip cuts away the obstruction in the line.

Check Valve

Once liquid has passed through the valve it cannot flow back.



Globe Valve

The flow is stopped when the handle is screwed in, forcing the disk over the vent.

Pipe Joint Compound

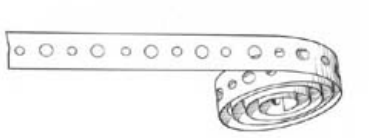
Used to seal threaded fittings. May be formulated for use with plastic pipe or steel pipe only.

Cock Valve

Used to stop the flow of liquid or gas through a pipe. Also called a Stop Cock

Hose Bib

It has standard pipe threads on one end and hose coupling threads on the other.



Plumbers Tape

A galvanized flexible steel tape with holes for screws or nails used to secure plumbing. It is cut to length on the job, wrapped around the pipe and secured with a nail or screw.

Misc Plumbing

Electrical

Electrical Tools

Continuity Tester

A device used to the continuity of a circuit.

Multi-Testers or Volt-Ohm Meter

An analog or digital meter that commonly will measure AC volts, DC volts, Ohms, and milli-amps.

Voltage Tester

Used for testing voltage on electrical outlets, fuse clips, and circuit breakers will test voltage from 120 to 600 volts.

Conduit Bender

This enables an electrician to make accurate 45 and 90 degree bends. Bender may be designated for EMT or rigid conduit.

Electric Soldering Iron

It has a replaceable copper tip. Soldering irons are sized from very light duty for soldering fine wires to heavy duty for soldering sheet metal.

Fish Tape

Fish tapes come in 25, 50 and 100 foot lengths.

Fuse Puller

Made of plastic to prevent electrician from being shocked while installing or removing fuses.

Hickey

The Hickey or bender is used for short radius bends.

Knockout Punch

Sizes range from 1/2 to 2 1/2 inches. Used to create a hole in panel for connecting conduit.

Electrical

Lineman's Pliers

They are used on both bare and insulated wire. Note: These tools are also used for fence work and tying concrete rebar.

Long Nose Pliers

Also used for stripping wire, making eyes in wire and holding wire in place while inserting screws.

NM Cable Cutter

A cutter for cutting Type NM cable.

Non-Metallic Cable Ripper

Made of a thin “U” shaped metal piece.

Soldering Gun

It is fitted with a replaceable tip and operates on 115-volt AC. Used primarily for soldering wires.

Wire Stripper

Used to strip plastic coating from solid electrical wires without damaging the wire .Can be adjusted to be used on various wire sizes.

Wire Stripper And Crimping Tool

Used for stripping wire, cutting wire and crimping wire terminals on stripped wire ends.

Electrical Supplies

Armored Cable

This cable must run from box to box without splices.

Circuit Breaker

Used to protect the wire in a circuit. Rated in amps.

Electrical

Knife Fuse

The knife fuse is made in several sizes for service of 60 to 600 amps and is not interchangeable with cartridge fuses or knife fuses of different capacities.

Core Solder

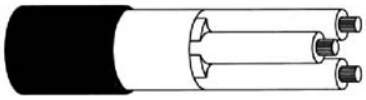
It is available in spools. Rosin core is used to solder wires and acid core to solder sheet metal.

Ground Rod

It is connected to the electrical service box or meter can by a shielded ground wire and a ground clamp.

Cartridge Fuse

It is a cylinder shaped like a cartridge case and has metal ferrules at each end and a soft fusible element inside.



Electric Cord

A flexible cable used for extension cords and connecting power tools. May be plastic (e.g. Type xx) or rubber covered (e.g.. Type SJ)

Ground Rod Clamp

Connects a ground wire to a grounding rod, reinforcing bar, or metal water pipe. This provides for a good ground in the event of a power spike or lightning strike.

Conduit Straps

Conduit is placed in the curved portion and strap is secured by nails or screws. Single foot and double foot styles. Sized for EMT and rigid/PVC conduit.

Friction Tape

Used over rubber insulating tape on wire Splices and is used to replace the outer braid.

Electrical

Insulated Staple

Commonly used for low voltage wire used in applications such as door bells or sprinkler controllers. It should not be used 120-volt lines.

Solderless Connector

Used where a permanent connection is desired. Connectors can be insulated or un-insulated. Commonly used for wiring on mobile equipment.

Non-Metallic Clamp

The cable is secured by means of a bracket tightened with screws. Used to secure a NM cable to a box.

Plastic Covered Electric Wire

The larger the number the smaller the wire.

Wire Nut

Used to connect AC wires. Color coded to denote capacity.

Strap Nail Drive

Made of die cast zinc, it is driven into wood with a hammer with conduit resting in curved end.

Plastic Tape

It is used alone without friction tape.

Non-matelic Cable Staples

Staples used to secure type NM cable to wood.

Non-Metallic Cable

A cable with a plastic cover used for residential indoor wiring. Commonly found with 3 and 4 conductor in sizes 14-6.

Electrical

Single Conductor

A single conductor with thermal plastic insulation. Wire may be solid or stranded. Typical types are TW and THHN. Common sizes 14-0

Service Panel

Used to distribute power in a building. Contains a main disconnect and circuit breakers.

Electrical Metalic Tubing

A thin walled conduit. Commonly abbreviated as EMT. It is coupled with special fittings and is smooth inside. Manufactured in 10 foot lengths. Common sizes 1/2"-2". Approved for indoor use.

EMT & Flex Conduit

Flexible Conduit

It consists of a heavily zinc coated steel strip wound spiraling, with interlocked construction permitting greater flexibility.

UF Cable

A solid plastic covering is used on this cable making it suitable for direct burial of the cable.

EMT Connectorox

Used to connect EMT conduit to a box, panel, or other threaded fitting.

Rubber Tape

Used on high voltage connections. It is covered with friction tape or plastic tape.

EMT Coupling

A compression fitting used to join EMT conduit.

Electrical

EMT Sweep

The difference being, it is made of thin wall conduit and has no threads.

Ridged Elbow or Sweep

Sizes range from 1/2 to 2 inch.

Service Entrance Cap

Made of cast aluminum or PVC.

Rigid Conduit

Ridged Conduit

It is available in galvanized and enamel finishes.

Ridged Coupling

Made of galvanized steel.

Ridged Entrance Ell

Has female thread on each end and has removable cap for access to wire for splicing or pulling.

Raintite Hub

Made of cast aluminum and has a flange with pre-drilled holes for mounting to panel, and threaded inlet for conduit.

PCV Conduit

PVC Conduit

PVC conduit is used inside, outside or underground. Gray in color. Glued connections make it waterproof.

PVC Coupling

Used to connect PVC conduit, must be glued and once connected cannot be removed.

Electrical

PVC Elbow or Sweep

It has a long radius and is connected by gluing couplings on elbow and pipe.

Cord Cap

It is some times called a male plug. Used on extension cords and power tool cords.

Junction Box

Usually made of metal in square or octagon shaped boxes.

PVC Male Adaptor

Adapts PVC conduit to a threaded fitting for connecting to a box, panel , etc.

Cord Connectors

This connecting body is designed to accommodate the cord cap and is sometimes called a female plug.

Lampholder

A plastic or porcelain device that holds a lamp.

PVC Pull Elbow

Used to make 90 degree bends and has removable cap for splicing or pulling wire. Glues to PVC conduit. Types denote the location of the cover (e.g. LB, LR)

Duplex Receptacle

Receptacles may be installed in outlet boxes flush with the wall or in surface mounted boxes or junction boxes.

Switch Box

Comes with knockouts for non-metallic sheathed cable or electrical metallic tubing.

Boxes and Devices

Electrical

Three-Way Toggle Switch

Traveler or go between wires connect to lighter colored brass screws; hot wire is connected to the darker colored brass screw.

Toggle Switch

When the toggle switch is pushed up the service is on and off when pushed down.

Power Mechanics

Power Mechanics Tools

Compression Gauge

Ranges from 0 to 300 pounds.

Power Timing Light

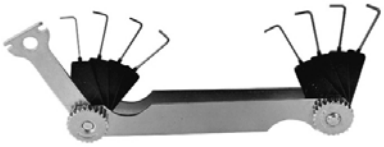
Operates on 6 or 12 volt DC producing a blue-white flash for reading of timing mark.

Torque Wrench

Comes in 1/4, 3/8, 1/2, and ¾ inch drives.

Expansion or Adjustable Reamer

Used for reaming piston pin holes, king pin holes, holes for water pump bushings, valve stem guides and other precision reaming jobs.



Spark Plug Gauge Set

Usually ranges from .020 to .040 thick wire sizes.

Impact Wrenches

Available in 3/8, 1/2 and ¾ inch drive.

Tachometer

Useful for checking speed on tools, machines, and engines.

Grease Guns And Fittings

Air Pressure Type Grease Gun

It is portable but must be attached to an air line.

Lever Type Grease Gun

It is filled by hand, cartridge, or from an air pressure gun.

Power Mechanics

Zerk Grease Fitting

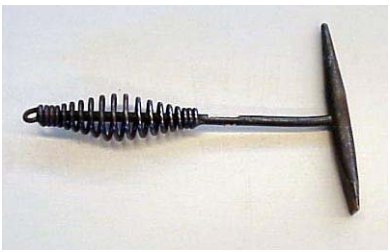
This fitting will withstand high pressure. The grease gun "snaps on" to the fitting.

Welding

Arc Welding Tools

Arc Welder Power Supply

Converts AC power to welding current. SMAW and GTAW processes use constant current power supplies and GMAW processes use constant voltage power supplies.



Chipping Hammer

One end of the head is shaped with a blunt point, and the other end is shaped like a cold chisel. Also called Slag hammer,

Electrode Holder

Connected to the welding cable and holds the electrode for SMAW process welding.

Gas Regulator

Used with GMAW and GTAW to control the flow of shielding gas.

GMAW wire feed

Used with a constant voltage power supply and a gas source (e.g. carbon dioxide, argon) for GMAW process.

Ground Clamp

Used to connect one of the cable leads from the welding machine to the welding table or the material being welded so as to make a complete circuit.

GTAW Torch

Holds a non-consumable electrode and directs shielding gas to the weld.

Leather Gloves

Gauntlet style gloves are recommended.

Plasma Cutter

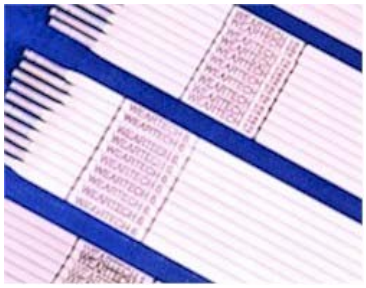
Uses an arc and compressed gas to create a plasma stream for cutting and gouging of ferrous and non-ferrous metals.

Welding

Welding Helmet

A colored lens filters out harmful light rays. Len shades

Arc Welding Electrodes



Hard Facing Electrode

Hard facing rod is not classified by a numbering system. Each manufacturer has their own nomenclature for their particular rod.

SMAW Electrode

Electrode used in the SMAW process for example E-6010. E meaning it is an electrode, 60 means it has a tensile strength of 60,000 PSI, 1 indicates welding in all positions, 0 indicates the coating to be cellulose sodium and the welding current is DCEP or direct current electrode positive

Solid Welding Wire Electrode

Identified in a similar manner as SMAW rod . For example ER-70S-4. Solid wire is classified in a ER means it is an electrode, 70 is tensile strength, S means it is solid wire, 4 is type of shielding gas. Shield Gases: 2. C02A-O,A-C02, 3. C02A-O,A-C02, 4. CO2, 5. CO2, 6. C02A-O, 7. C02A-O,A-C02 and C02=Carbon Dioxide, C02A-O=Carbon Dioxide, Argon and Oxygen, A-CO2 = Argon and CO2

Tublar Wire Electrode

Tubular electrode (e.g. E-70T-L) is flux cored., and the last number is position and usability capabilities, as no gas is required for tubular flux cored rod. See Solid Welding Wire Electrode. Also called innershield wire since the shielding flux is "inside".

Welding

Tungsten Electrode

Non-consumable electrode used for GTAW process welding.

Brazing Rod

Available in1/16 to 3/16 inch diameter and 36 inches long.

Cutting Torch

It consists of valves for mixing oxygen and acetylene, and a valve lever attached to the torch handle to release oxygen which does the cutting.

Oxyacetylene Welding Tools

Heating Tip

A tip with multiple orifices used to for heating metal usually for bending. Also called a rosebud.

Copper Coated Mild Steel

Available in 1/16 to 3/16 inch diameter and 36 inches long.

Flux Coated Brazing Rod

Generally available in 1/8 inch diameter rod.

Acetylene Regulator

The threads on the hose connector are left hand.

Cutting Tip

The larger center hole is for pure oxygen to oxidize or cut the metal.

Oxygen Regulator

The threads on the hose connector are right hand. Commonly a two stage regulator.

Welding

Tip Cleaner

It consists of several needle-like round files of different sizes.

Welding Tip

The tips come in various sizes.

Other Welding Equipment

Torch Handle

Quite often called a torch butt.

Spot Welder

Used for welding sheet metal.

Welding Goggles

Used to protect the eyes from harmful rays and from spatter when using the welding torch.

Painting

Painting And Glazing Equipment

Non-woven Abrasive Pads

A plastic abrasive pad. Non-rusting and washable. Commonly called Scotch-Brite pads (3M brand name).

Drop Cloth

Disposable cloths are made of paper or plastic and permanent cloths are made of canvas or soft cotton cloth.

Glass Cutter

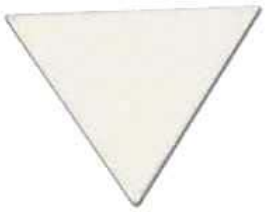
Pressure applied on the glass from beneath the scratch or tapping gently will cause it to break cleanly along the cutter line.

Airless Paint Sprayer

No thinning is required and very little over-spray is developed. Uses a positive displacement pump to pump the paint at high pressure.

Dust Masks

This mask is disposable and should not be reused.

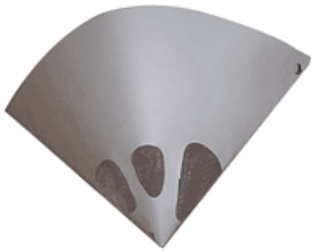


Glazier Points

The glazier points, triangular pieces of zinc coated metal, are driven into the sash about 6 inches apart to hold the glass in place.

Caulking Gun

One to two pound cartridge refills are available in various colors.



Filter

Used to filter foreign material from paints, particularly those used in paint guns.

High Volume Low Pressure Sprayer

Similar in design to an compressed air sprayer, but low pressure produces less fine spray, causes less drift, and air pollution.

Painting

Masking Tape

It will adhere to paper, glass, walls and metal and is easily removed.

Paint Brush

Brushes should be cleaned immediately after painting with a suitable thinner or cleaning agent.

Respirator

This filter system is far superior to the dust mask.

Mixing Paddle

Used in an electric drill to stir paint and other liquids.

Paint Roller And Pan

Special rollers are available for painting corners and trim.

Sandpaper

Comes in various grits from very fine to very coarse.

Paint Brush

Natural bristle brushes are used for oil based paints. Polyester and nylon brushes are used with water based paints. Sizes are commonly found from 1” to 6” widths. Clean immediately after using with solvent appropriate for the type of paint used.

Putty Knife

Sizes range from 1 inch to 12 inches. Used to apply putty to the window sash to seal the glass. A flexible bladed knife for applying putty and spackle. Stiffer knives can be used for scraping

Spray Gun

Should be used in a closed area with proper ventilation and good air filtration. Uses compressed air to spray the paint.

Painting

Steel Wool

Comes is pads or rolls and size is designated by 4/0, 3/0, 2/0, 1/0, 0, 1, 2, 3, 4, with 4/0 being the finest and 4 being very coarse.

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