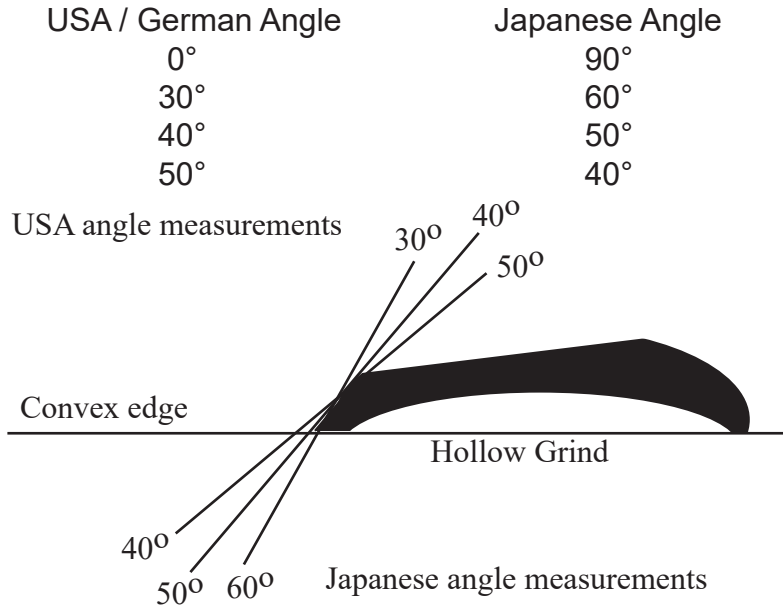


Scissors and Shears Terms

Angle: USA / German angle measurements are different than Japanese angle measurements.
A paper shears or kids scissors 0° is the flattest angle you can go without putting a negative grind on the scissors blade.



Balance: The final adjustment steps of scissors and shears are referred to as balancing or finishing.

- Lubricate and clean the shears.
- Free fall: set the tightness of the pivot.
- Sizing: make the tips overlap.
- Match the tips: make both blades the same length.
- Adjust the set (if needed).

Bamboo: see EDGE STYLES.

Bearing: Any material between the screw and the blade it pivots on is a bearing. This may be a nylon washer or a tiny ball bearing.

Bow: see SET.

Bumper: Between the handles (at the point they touch) of fine barber and beauty shears, there is often a small rubber or plastic shock absorber, called a silencer or bumper. This serves as a stop for the shears and keeps them quiet as the handles come together.



Sharpening Note: These are replaceable parts. Instant gel adhesive (cyanoacrylate) works well for sealing bumpers in place. You may also use a soldering iron to melt and flow the end.

Carbide: Carbide is fine particles of metal combined with carbon. It is harder and more brittle than hardened steel. Because of its hardness, it is used for masonry drill bits and metal cutting saws.

Sharpening Note: Some medical scissors are made out of carbide, these need to be sharpened with a diamond wheel and the burr flapped off with a cotton wheel.

Carbon Steel: Carbon steel is iron (fe) with about .5% - .8% carbon added for hardening. A carbon content that is too high causes extreme brittleness. Carbon steel scissors are susceptible to rusting.

Cast: Casting is metal poured into molds while heated to a liquid state. This is not commonly used, except for cast iron shears which are very brittle. There are some quality cast stainless steel scissors from Taiwan.

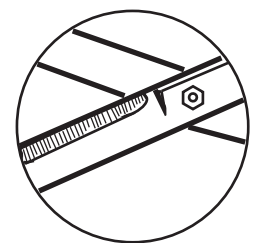
Ceramic: Ceramic is a porcelain like material, (usually with a high alumina content), pressed from a powder and fused at high temperature. Ceramics are very hard and have a long wear life, but are also brittle and subject to breakage and chipping. Ceramic shears are best returned to the importer for sharpening.

Clamshell: see CONVEX

Convex Blade: The outside of a convex blade flows (rounded) into the cutting edge without an obvious bevel. This adds strength to the blade and cutting edge. A convex edge is found on higher quality beauty and grooming shears.

Sharpening Note: It is not easy to determine the angle of the convex edge sharpened blade. Start at 40° and adjust as necessary.

Corrugation: Corrugations are small teeth on the scissors cutting edge (one or both blades) that provide holding power to keep the material (hair, fabric..etc) from sliding. Shears designed to cut balastic materials like Kevlar®, Dynema®, Spectra®, fiberglass and carbon fibers may have corrugations to keep the material spread out as you cut. Corrugations are also found on pet grooming, barber, and beauty shears.

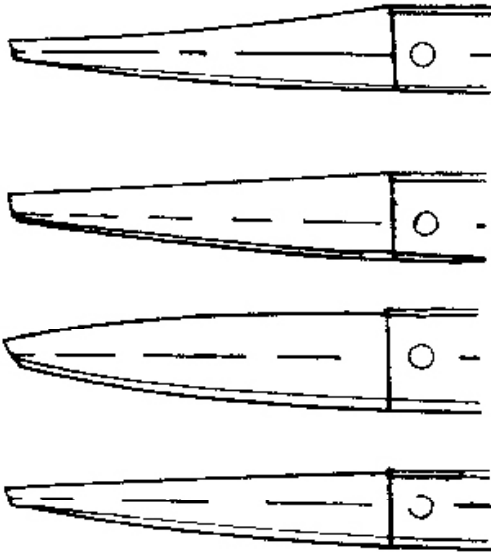


Crescent: see RIDE

Cut Length: The length of cut is measured from the pivot to the tip on scissors and shears.

Cutting Angle: see ANGLE

Edge Styles:



Sickle shaped blade - This shape catches the hair well without slipping, but the hair jumps up at the top portion of the blade where more strength is needed. Suited only for heavy duty shears that cut a volume of hair.

Straight blade - Though not as excessive, similar to the sickle blade.

Bamboo leaf shaped blade - This shape causes hair to slide when cut.

Willow leaf shaped blade - This is the most ideal shaped blade. The cut hair does not slide or jump up.

Finger Rest: see TANG

Forged: Forged shears are stamped to shape while the metal is red hot (soft). This produces high carbon shears that are good to high quality. Most large tailor, industrial shears and beauty grooming shears are made this way.

Free Fall: Free fall is the measurement of how far the scissors close while holding one blade tip pointed up and letting the other handle drop. This may be considered the point where the blades contact each other.

Sharpening Note: *Setting the free fall is an important step in balancing shears. Too loose, and the shears will fold hair between the blades. Too tight, and the hand will become fatigued.*

Half-Moon: see RIDE

Hamaguriba: means "clam-shaped edge" (Convex) in Japanese.

Hardening:

- Martensitic (hardenable) steels are heated to 1550 degrees F for carbon steel and 1950 - 1975 degrees F for Stainless.
- They are then quenched rapidly.
- Carbon steel is usually heat treated in salt pots, by immersing blades to just past the ride. This leaves the handles soft, so that they can be bent to size the tips.
- Stainless steel is often done the same way.
- When stainless is hardened in a vacuum oven, the entire blade and handle are hardened. It is hard to bend these handles without breaking them (brands like NICS and Taiwanese made beauty shears are totally hardened).
- After quenching, blades are cooled to about -100 degrees F. This convert retained austenite (soft) particles to hard martensite.
- The steel is now very hard, but extremely brittle and must be drawn in an oven at 375 - 400 degrees F for about 1 hour to make it flexible (ductile).

Hardness: Metal hardness is measured using the Rockwell C scale.
Shears 54 - 60 (sometimes 61-62)
Files 60 - 62
Drill bits 52 - 55

Haura-Ichban: see LINED INSIDE EDGE

Hira-To®: HIRA-TO® flat hone beauty shears sharpener that sharpens convex edge beauty and grooming shears. Made by the leading manufacturer of commercial scissors sharpeners in the world.

Hineri: see TWIST

Hinzoko: see HOLLOW GRIND

Hollow Grind: The inside of a hollow ground scissors blade, from the cutting edge to the back of the blade, is concave or hollowed-out. This hollowed-out area produces a lined inside edge which gives a smoother feeling cut (less metal to rub). Most finer, high quality, barber and beauty shears are ground this way.

Ice Tempering: This is a metal hardening process. Stainless steel is heated to almost 2000 degrees F and then cooled to about -100 degrees F. All quality shears are ice tempered, even if not marked.

Induction Hardening:

Some lower quality shears are hardened by induction heat treating on the cutting edge. This heat treating is only about 1/8" deep, because of this as the shears are sharpened softer metal is exposed. These shears will not hold a sharp edge very long after the hardened surface has been removed.

Knife Edge Shears:

A knife edge shears has two different angles, the thumb blade - bottom blade is about 20°, this blade is called the "anvil" or flat blade. The finger blade - upper blade, the knife edge is about 50°. A knife edge shears is used to cut through thick materials like upholstery fabric. It is most common to find a knife edge on metal bent trimmers 8" and larger.

Left Hand Shears:

True left hand shears have the blades reversed. The thumb blade is on the right hand side of the finger blade. Some shears claim to be left hand, but are really true right hand shears with handles made to fit the left hand.

Left Handled Shears:

The handle is designed for left hand use but the blades are not reversed. This is a right hand shears with a left hand handle.

Length:

Scissors and shears are measured overall from tip to the end of the handle including any tang or finger rest.

Lined Inside Edge:

The lined inside edge is located on the inside of the blade at the cutting edge. This area is usually very smooth and is found on hollow ground shears see HOLLOW GRIND.

Matching Tips: After sharpening the tips need to completely close, see OVER LAP, see SIZING.

OOKAMI GOLD®:

OOKAMI GOLD® is the perfection of a scissors sharpening method.

Overlap: The blades most cross one another (overlap) all the way to the tip to perform the cutting action (see SIZING).

Pivot: A pivot can be any fastening device that holds the scissors blades together. Common pivots include screw, screw and nut, self adjuster and rivets.

Ride: The ride is the area just behind the pivot and where the two blades come together.

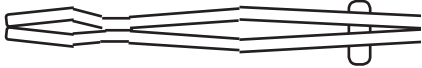
Sharpening Note: *The ride area maybe soft and subject to wear. Use the hone to smooth damaged area.*

Scissors: Scissors are usually smaller than shears and only have room for one finger and the thumb.

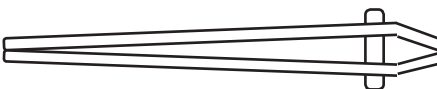
Set: The set of the scissors is the amount of gap between the blades. With the blades closed, only the tips and the ride actually touch. The set provides the spring pressure that causes the blades to stay touching during the cutting action. Too much set and the blades cut into one another or are very tight. Too little, and the material being cut folds between the blades.



NO GOOD - No gap under the pivot, one blade is straight, the other has too much set.



NO GOOD - Blades come together in the middle and leave a gap near the tips that will not cut.



GOOD - Gap under the pivot and proper set to the tips. Gap = .006" - .012" (2-4 sheets of paper)

Shears: Shears are usually larger than scissors and have room for more than one finger and the thumb.

Silencer: see BUMPER

Sintered Metal: Made in powdered form, scissors are pressed to shape, then hot isostatic pressed to form a solid piece of metal.

Sizing: Sizing is setting the overlap of the blades, especially the tips.

Sharpening Note:

- All metal shears, bend the handles/.
- Plastic handle or cast shears grind away the sizing knob - located at the point where the handles come together.
- Bend or grind so that the blades overlap completely to the tip.

Warning:

Before bending all metal shears it is a good idea to file behind the pivot screw and determine if the handles are hardened. If they are do not bend, grind away the sizing knob.

Sori: see SET

Stainless Steel: Stainless steel is made from steel with 11% to 18% chromium added for high quality and hardness. Stainless steel shears have 16% to 18% chromium. Also, the addition of manganese and molybdenum add hardness and toughness. Cobalt may be added for improved feel and toughness.

Stamped: The shears blades are stamped from rolled steel using a formed die. These are the lowest cost shears to produce and are often very durable, but may not be as smooth feeling. Most plastic handle fabric shears are made this way.

Wolff Industries makes our stamped scissors from 420 high carbon stainless steel, about 58 HRC well still being ductile.

Steel: Iron with carbon and other elements added.

Tang: Or finger rest, it is an extension beyond the end of a scissors handle that provides a spot to place your finger during cutting. Some tangs are removable.

Titanium: Titanium is a gold, black or multi-colored microscopic coating added to shears to improve wear life.

Sharpening Note: *This coating will be removed at the cutting edge during the sharpening process. There is no way to avoid this.*

Twice As Sharp®:

Invented by Lee Wolff for sharpening scissors and shears. Honing after sharpening produced scissors that were twice as sharp as Gingher® shears from the factory.

Twist: In some scissors the set of the blades is provided by twisting the blades toward one another. This is common in many European scissors, see SET.

Sharpening Note: *Holding the shears to the light will often show defects in the scissors blade. You cannot correct all defects built in by the manufacturer.*