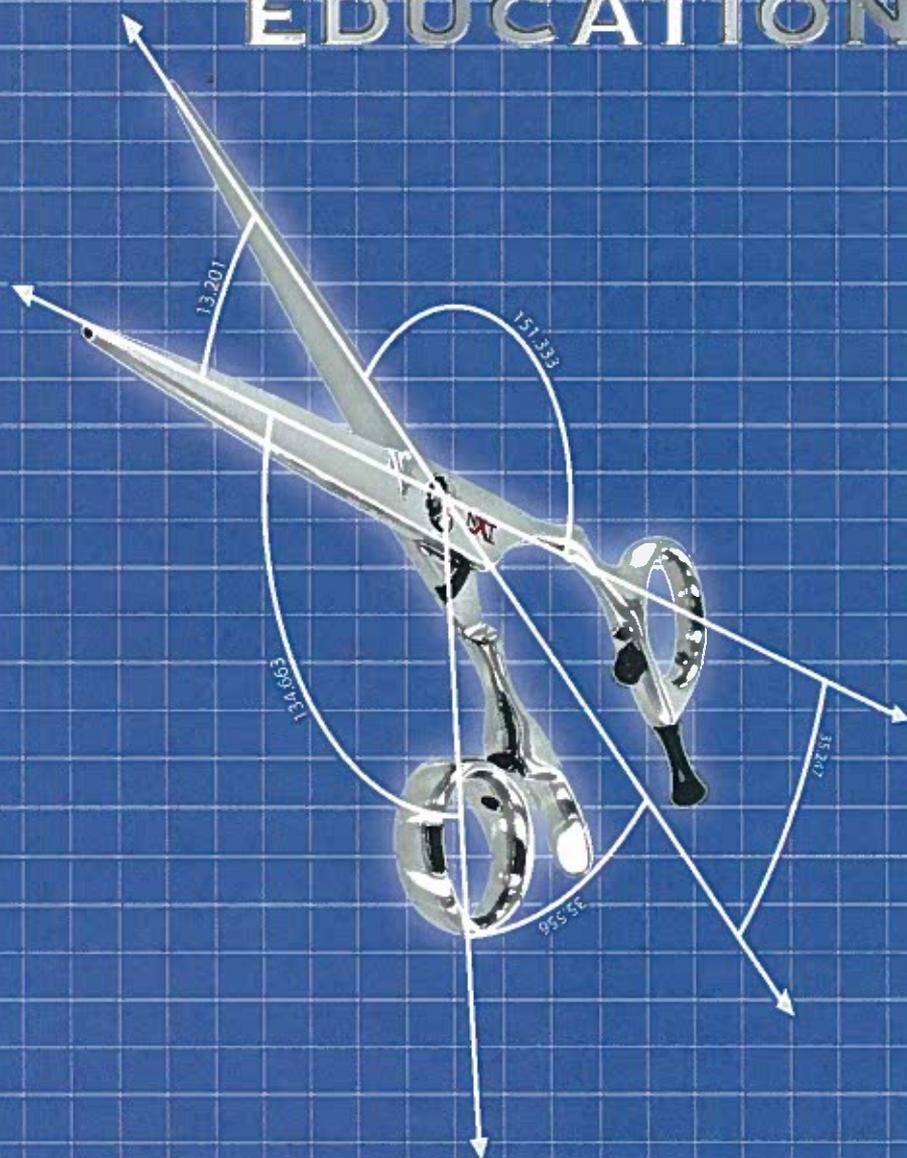


SHEAR EDUCATION



THE DEFINITIVE GUIDE TO
MAKING AN EDUCATED SHEAR PURCHASE

Section 1: A Brief Overview

Choosing the shears that are perfect for you can be a complicated and difficult decision with thousands of shears to choose from. In order to make this choice easier and less complex there are three determining factors to consider when selecting your ideal shears, these are:

- Choosing a shear blade type that will give you the performance you need, this includes taking into consideration edge type and material.
- Selecting a shear handle that is ergonomic and will provide maximum comfort in your preferred style of cutting.
- Choosing a length or texture type and evaluating other features.

This educational and informative style booklet has been compiled and created by shear design expert Mark Wright. I have over 30 years experience in the hair and beauty industry. Using that knowledge and experience combined with the latest technological and innovative advancements from the scissor industry, we have created a comprehensive and complete guide to help you navigate your way through the over-saturated scissor market and find your perfect shears.

Based on the three essential determining factors previously mentioned above this guide will be laid out in the following structure:

- **Shear Education (Section 1)**
 - 1) A brief overview.
- **Shear Blades (Sections 2-3)**
 - 2) Which blade type is for you
 - 3) Choosing your blade material.
- **Shear Handles (Section 4)**
 - 4) Selecting your perfect handle.
- **Other Aspects of Choosing Shears (Section 5-7)**
 - 5) Choosing the tension system for you.
 - 6) The ideal blade length.
 - 7) Choosing a Texture Shear?
- **Maintaining Your Shear (Section 8)**
- **Scissor Diagram**

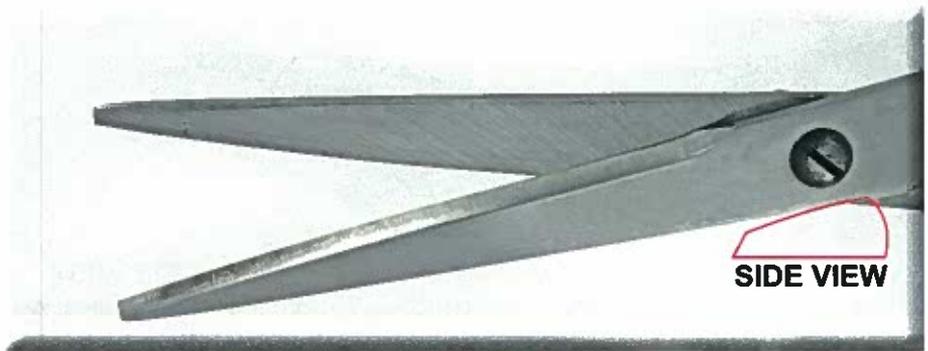
Section 2: Which Blade Type is for You?

A critical factor to take into consideration is blade type. A shears' blade type will have a direct effect on its performance and cutting ability. Often thought of as one of the most important factors to consider when purchasing haircutting shears — this decision should not be taken lightly.

Scissor manufacturing techniques have evolved tremendously over the last few decades. Innovative new forging and crafting techniques have been developed leading to a variety of scissor blade types being released into the market.

Below we explain the blade types that you are most likely to encounter when purchasing a new pair of shears.

Beveled Edged Blades

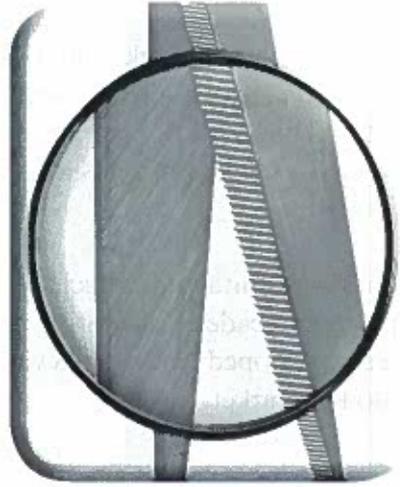


The beveled edge blade design is one of the oldest and most commonly used in production today. This blade type can cut well but requires considerably more force and pressure than convex blades currently on the market. Although predominantly the least expensive blade type, a major drawback of the beveled edge is that it can't be used for advanced cutting techniques such as "slide cutting".

Serrated or Corrugated Beveled Edges

This type of blades has fine lines or grooves cut into the surface of the beveled edge. The purpose is to hold the hair from slipping on the edge. This is typically done on inexpensive shears to help otherwise blunt edges cut straight.

Serrated edges tear the hair off against the serration as it meets the opposite blade. The edge will cut straight for a long time but it requires much more force to cut and it can be damaging to the hair ends.



Convex Edged Blades



A Convex blade design is extremely powerful and facilitates smooth and sharp cutting. As the outer face of the blade is curved this blade type is especially suitable for 'slide cutting' and allows for more advanced cutting techniques to be used. The sharper angle of the cutting edge on a convex shear makes them cut smoother and stay sharp longer. Due to these attributes this blade type is harder to make than others and so shears with convex edges are usually more expensive than a comparable beveled shear.

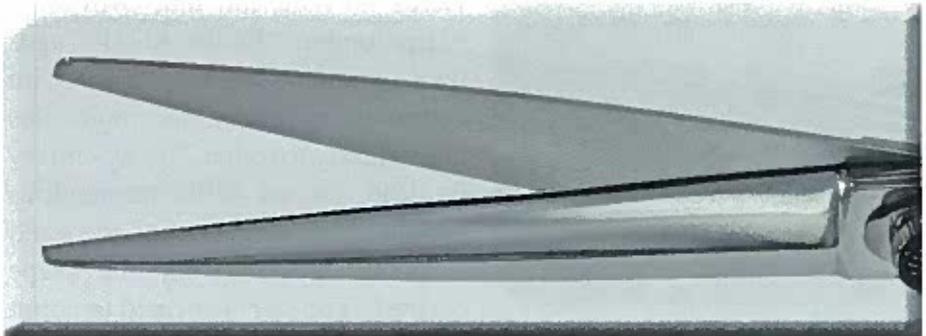
Other Terms Associated with Blades:

Hollow Ground - You may hear blades referred to as hollow ground. This refers to the inside of the blade. Nearly all higher quality shears are hollow ground meaning the inside of the blade is concave. In other words, lower in the center of the blade and getting higher as it moves to the edge or to the back of the blade. This allows the edges to contact but then the edge is not forced to drag against the inside of the blade as it closes.

Honed Edge is a term that is used by some to describe a smooth finish beveled edge. In reality all high quality edges are honed which is a sharpening methodology.

Semi-Convex Edge is a term used to describe a narrow beveled edge but it is not the same as a true convex edge.

Sword Blade



Sword Blade describes a blade that has its peak or highest point, in the center. This blade's slopes in both directions from that ridge line, toward the back of the blade and toward the edge. It makes the blade stiffer and some argue better for cutting thicker sections. The cut from a sword blade is not quite as soft or effortless as a convex edge because the angle of the edge is more blunt.

Section 3: Choosing Your Blade Material

The material your shear is made from will determine how long it can go without sharpening and how fine the edge can be. Of course, how you care for your shears has an impact on their lifespan, so unless you are prepared to care for them carefully, you may not want to invest in the highest quality material.

Due to years of innovation and development, today's shears can be crafted from a dazzling variety of different materials, the most common of which are explained below.

Forged vs Cast Blades:



Forging:

For centuries, cutlery makers have known that forging, or using compressive force to shape metal, yields a material that will stay sharp longer. In the middle ages they would pound the sword with hammers to drive the molecules more tightly together. Today cutlery is drop forged with tremendous weight being dropped onto the mold to pound the steel into the shape desired. The steel is heated to about 1200F prior to the forging process,

so it can be formed by the mold. After forging, the steel is put into a cold oil bath to crystalize and harden the steel (see ICE TEMPERING). This will leave the steel compressed and strong and able to hold an edge well or stay sharp for a long time.

Casting:

The other method to give a blade its shape, is to cast the metal. This involves heating the metal to a liquid form or around 2500F. The liquid metal is poured into a mold. The problem with this method is that when the metal cools in the mold, it expands. This leaves the molecules much more widely separated. As a result, cast shears do not stay sharp as long as forged shears. The second problem with casting shears, is that they often become brittle. Not only will they chip or nick more easily, but service technicians can not make adjustments to the arch of the blade without it breaking. Therefore, cast shears have an overall shorter life span than forged shears.



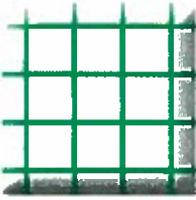
Note: It is almost impossible to tell cast from forged shears by sight. Unfortunately it may also be difficult to get a reliable answer by asking the sales person since they often do not know the true answer to that question. Most shears from Taiwan and many from China are cast. Again the problem is many shears are not marked with a true country of origin. In this regard, it is often best to deal with reliable manufacturers with enough of a history to back up their warranty.



Alloy

Most shears are made using an alloy of some sort. Alloys are made by combining two or more metallic elements to give greater strength or resistance to corrosion. The life of a shears' sharpness and resistance to damage can be increased depending on the base metal used in the alloy and those it is combined with.

Health Note: *Nickel is added to almost all the alloys, mostly to make the material shiny and to improve corrosion resistance. Some people are allergic to nickel which can cause skin irritations. The best solution is to dip the handles in a rubber tool handle dip you can buy on line or in some hardware stores. If you do this, you'll need to remove the dip where the handles contact to keep the tips crossed properly.*



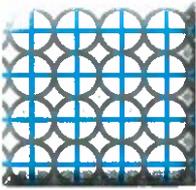
Stainless Steel Alloy

One of the most popular and common alloys used in scissor manufacturing is Stainless Steel. It is very easy to care for and holds a cutting edge well if it is properly heat treated. The two main types of stainless steel used in haircutting shears are 420A and 440C. The best stainless materials are those that come from Japan and Germany. Both countries have long histories of cutlery making and both have focused on making very refined steel for this purpose. The 440C material holds the edge best because it has a higher carbon content and can be tempered to a higher hardness.



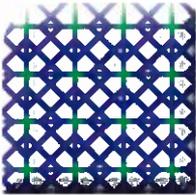
Cobalt Base Alloy

Cobalt Base Alloy is another extremely popular material used in today's scissor manufacturing. Cobalt has superb rust and chemical resistance. The problem is it can chip and nick easily and the blades cannot be adjusted after multiple sharpening. True cobalt alloy shears tend to wear out sooner than their Stainless counterparts and yet they cost more than Stainless alloy shears.



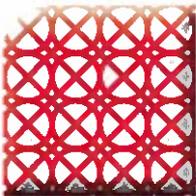
Molybdenum Alloy

This is an ideal material as a step up from Stainless or Cobalt alloy. It can be hardened to a high level without becoming brittle because molybdenum is flexible. This material can accept a very fine or sharp edge and will hold up quite well compared to either stainless or cobalt alloy.



Cobalt Molybdenum Base Alloy

In order to overcome the brittleness and fragility of shears forged from a Cobalt Base Alloy, Molybdenum is added to the alloy, creating a tough, high strength, durable material which retains the chemical and rust resistance of a Cobalt Base Alloy without its fragility.



Sintered Steel, Carbide Steel

There are other exotic materials being used in some of today's most expensive shears. Sintered or powdered steel can have extreme hardness but can be brittle and hard to sharpen. Carbide steel can be extremely good at edge retention. Because it is very difficult to manufacture shears from these materials, you will find the prices tend to be quite high. Only stylists who can afford these and also who are prepared to care for them carefully should consider these exotic materials.

Other terms related to the materials shears are made from:

Titan or Titanium Coating:

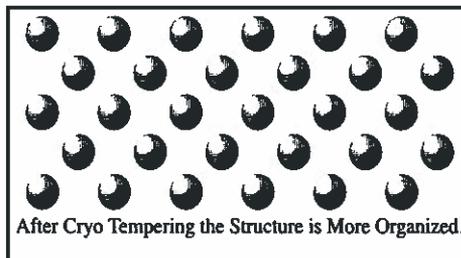
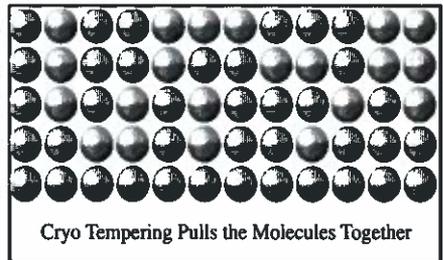
This is a way to add color to shears. It has no positive impact on the edge retention since it is not on the edge of the shear. It is usually done to inexpensive shears to make them appear more attractive. It can be good for those with nickel allergies. It can flake off, damaging the edge

ICE Tempering Process

Most hair shears are made with a process called ICE tempering. This method involves the steel being heated and then quenched in an ice oil bath. The quenching process crystalizes the metal making it harder and better able to hold a sharp edge.

Cryogenic Deep Cold Tempering Process

This method is used by several manufactures and it expands on ICE tempering by bringing the material down to approximately -300f. This pulls the molecules of the steel tightly together. Then the steel is slowly returned to room temperature. The molecules drift apart but now they separate according to physics in a controlled way. The result is a more organized structure to the steel that has been shown to improve edge retention by as much as 40%.



Section 4: Selecting Your Perfect Handle

By now if you've been following this guide correctly you should have decided on the edge style and material of your blade, leaving you ready to make the next big decision — your scissor handle.

When choosing the handle type of your shears there are two things that you will need to consider:

- **Overall Hand Position**
- **Thumb Interface**

It is important that you find a combination of the two attributes above that will provide you with maximum comfort, maximum ease of use and most importantly maximum effectiveness. Below is a brief guide explaining the basics of the most common scissor handle characteristics in the industry to date:

Handle Position

The first and most important decision you will have to make regarding your scissor handle is its position and style, the most common of which are below:

Symmetric Handle or Opposing Grip



This style of handle is the oldest and least ergonomic and features handles of the same length that are symmetrical to the center screw. These shears force a stylist to raise their elbow to a horizontal position for many techniques. They might be suited for those who cut with the thumb and middle finger. They are however the most likely style to cause RSI (Repetitive Strain Injury) and CTS (Carpel Tunnel Syndrome).

Offset Handle



An offset handle pair of shears feature a short thumb handle and a longer finger handle. They were the first attempt to make shears more comfortable and healthy for hairstylists. By having a shorter thumb handle, they put less stress on the thumb tendon and therefore can help reduce the risk of CTS. They still however, require a raised elbow position for many techniques.

Crane Handle



The crane handle is also offset but it has one significant difference. If you hold the blades of crane shear horizontally, the handle will angle downward instead of being centered on the blades. This dramatically improves the ergonomics because it relieves and prevents stress on the thumb, arm and shoulder by allowing the hairdresser to cut with their elbow in a lower position. The same angle of the handle also moves the stylists hand away from the body when cutting on the skin allowing for a freer more open cut. For most stylists, a crane handle shear is recommended to relieve stress and minimize risk of RSI.

Extended Crane or Neutral Grip



This describes recently designed shears where the thumb handle is much shorter and the thumb hole is farther offset from the finger hole. In the case of Neutral Grip shears the thumb hole is actually in a neutral position for the thumb, across from the index finger position like a resting hand. The hand remains in an open configuration minimizing stress on the tendons of the hand. These designs can go a long way to reducing the risk of RSI.



Handle Thumb Treatments

Now you've chosen your handle its time to decide which thumb treatment will be right for you and your style of cutting. Since your thumb is doing most of the work of cutting, a lot of thought has gone into designs to make the thumb more comfortable and reduce the work the thumb has to do.



Standard Flat Thumb

The standard flat thumb ring has been around for many years. Some lefties who use right handed shears will prefer a flat thumb because they can use it in the left hand easily. If they use true left handed shears there is no need to be forced to use the standard thumb ring. No special ergonomic benefit.



Cut Away Thumb Handle

This style of thumb grip has an indentation cut out at the back of the ring. It also allows the side of the thumb to be used to open the shear, affording the option of lowering the elbow when cutting the length.



Anatomic Thumb

Shears designed with an anatomic thumb grip allow for even greater radial movement which translates into more freedom of motion for the stylist. It also allows the side of the thumb to be used to open the shear to lower the elbow when cutting the length.



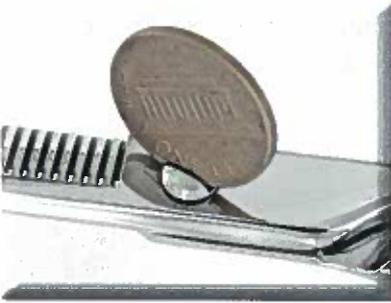
Rotating Thumb Handle

This style of thumb grip is a recent innovative advancement to the hair industry. When properly used, a rotating thumb handle will allow an entire cut to be done with the elbow down. At the same time, the open grip keeps the hand relaxed as it would be in the previously mentioned extended and neutral grips. Rotating handles have been shown to

reduce repetitive stress injuries and are even recommended by doctors and hand therapists.

Section 5: Choosing a Tension System

So, now you've arrived at the final important determining factor that you as a stylist must decide on when selecting the ideal shears. Thanks to incredible engineering and technical innovations in the industry, many shears now have adjustable settings to suit personal preferences and techniques. This section has been specially created to cover this valuable area.



Adjustment Screw

The oldest tension system is the adjustable screw. Some are wide slotted and can be adjusted by a coin. Others require a screwdriver. Although some stylist like the streamline design of a regular screw, most miss the ease of adjustment provided by the newer more sophisticated systems.



Direct Adjustment Knob

In an effort to make adjustment easy for the user, manufacturers have developed adjustment knobs or dials. These allow the user to simply turn the adjuster with their fingers to increase or decrease tension.

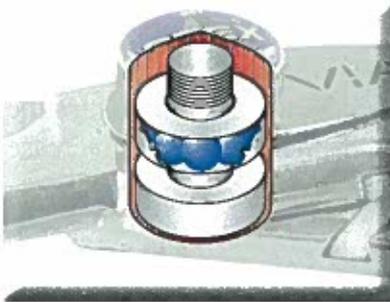


Leaf Spring Tension System

This system is found on many shears. It adds a leaf spring below the tension dial, which spreads the tension out lengthwise in the pivot of the shear. This system can extend the life of the edge by stabilizing the blades causing a more evenly distributed wear pattern.

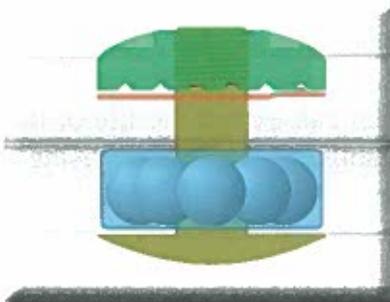
Reversible Leaf Spring Tension System

Some shears have a tension system that can be reversed for left handed stylists. Right handed shears with tension knobs are not easy to use for left handed stylists since the knob will be in their way when cutting scissor over comb or cutting hair held between their fingers. On a reversible shear, the stylist can remove the knob and plate, push out the screw (making sure the washer comes out with it) and then reinsert the screw from the opposite side of the shear and reattach the plate and knob. Now the knob will face their hand when they cut left handed, and will not be in the way for the techniques mentioned above. This is ideal for left handed stylists, who use right handed shears.



Ball Bearing Leaf Spring Tension

Some tension systems include ball bearings which act to further stabilize the blades. The bearing is tightly fitted in the center of the shear and the blades rotate on the bearing instead of the typical nylon or teflon™ washer.



Flat Bearing Tension Systems

It is also possible to find shears with internal ball bearings or teflon discs between the blades. There are also some flat screws with locking detents that click when turned. These tend to hold tension well and can provide a stabilized flat pivot of the shear for those who prefer a streamlined look.

Section 6: The Ideal Blade Length

Many new haircutters and even some experienced stylists are under the common misconception that the length of their shears should be determined by the size of their hand. In reality this is simply not the case. Instead, stylists must consider the variety of different styling techniques they will employ in order to carry out their skilled work. Haircutting shears are still measured in inches with the entire length of the shears calculated from the 'point end' all the way to the back of the finger ring.

As mentioned previously, different sized shears are used to perform different styling techniques. For example a short scissor is much better suited for detailed precision cutting. While a longer scissor is preferred for powerful cutting. The standard size most hairdressers use is between 5" and 6". This falls neatly into the middle ground between the shortest scissor at 4.5" and the longest at 7".

Ideally, if you can afford it, it is best to have a shorter shear 5" or 5.5", for precision cutting between your fingers and a longer shear 6" or 7" for the techniques listed below.

Below is a brief list of common haircutting techniques which require a longer blade to complete:

Bob-Line Cutting



When cutting a "bob-line" the hair is combed down against the neckline. Here a longer blade will allow the stylist to make fewer cuts to connect the line all the way across. This allows for a 'cleaner' bob and will significantly reduce the time this effect will take you to create.

Cutting on the Skin



As with 'bob line' cutting, when cutting on the skin, longer shears will allow a stylist to cut longer sections and get a clean look easily. It is also worth mentioning that a 'crane style' handle (covered in Section 4) also helps when cutting on the skin as it lifts the hand away from the body due to its innovative design.

Scissor Over Comb



Here the comb will pick up a wider section of hair than your fingers. By using a longer blade you will be able to cut the hair cleanly without it falling out of the comb. This benefits the stylist as it requires less effort and most importantly less time.

Slide Cutting



If you attempt a slide cut with a shorter blade, your hand will move through the section you just cut due to it being in close proximity to the blades. Because of this it is necessary to comb it again to see what you have accomplished. This hassle and time consuming practice can easily be eliminated with longer blades as it will allow you to slide your blades into the hair without having to move the hair with your hand.

Cutting Around the Face

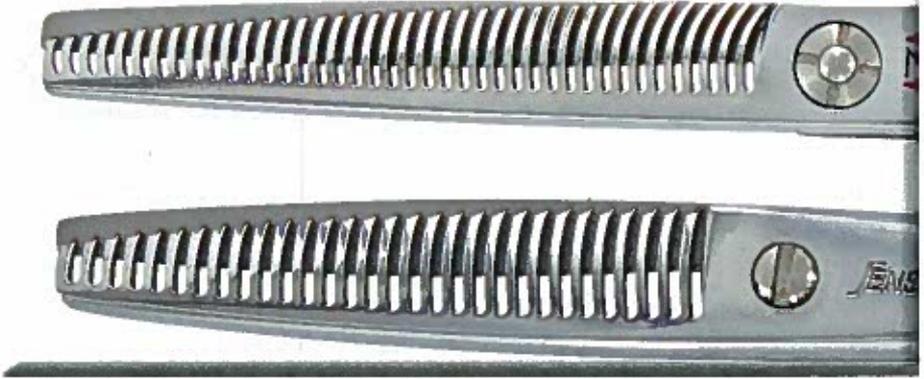


With short scissor blades your hand will no doubt be in your clients face and in some cases can leave the finger rest of some shears dangerously close to the individual's eye. A longer blade here will allow you to cut your clients hair with your hand a comfortable distance back from their face. The benefits of this are that you can see what you are doing better and the client has a much more comfortable experience.

Section 7: Choosing a Texture Shear

There is a dazzling array of texture shears available today. There is also a lot of confusion among hairstylists as to which texture shears they need.

Thinning or Blending Shears

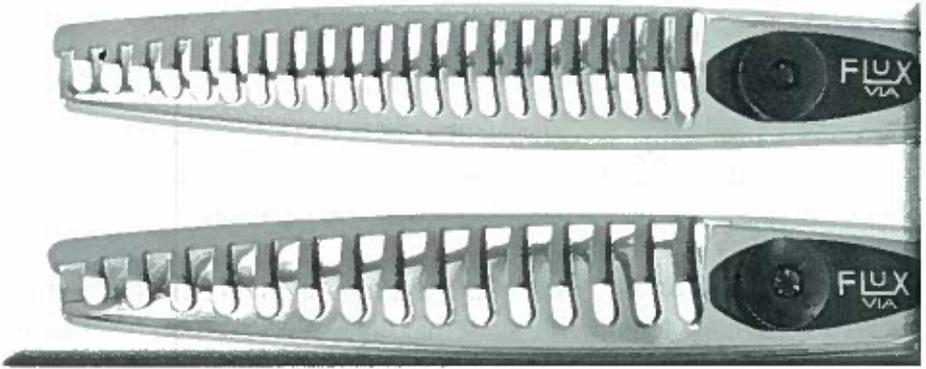


A shear which has narrow teeth and narrow spaces between the teeth will remove weight in a way that does not create visible texture or volume. The cut and uncut hair will tend to blend together. They usually have between 30–45 teeth depending on the length of the blade. The thinning shear is ideal for blending away scissor marks in the hair and removing weight without creating more volume. It can also be used to soften and remove bluntness from a cut.

NOTE: For most stylists it makes sense to start by getting a good quality thinning/blending shear so you can easily soften and remove marks from your hair cuts. You can apply visible texture to your hair cuts manually by point cutting and slide cutting.

Then as you become busy and need to save more time, investing in texture shears can really make sense. You can save wear and tear on the tips of your shears by using an aggressive texture shear to replace much of your point cutting. You can create subtle texture in your styles by using less aggressive texture shears. Both of those types of tools are designed to speed up work that can otherwise be done manually.

Subtle Texture Shears



These are shears with slightly wider teeth and slightly wider spaces between the teeth. They will typically have anywhere from 14-22 teeth. The slightly wider teeth cut a more substantial piece of hair than a blending shear. This wider piece of short hair will be more visible compared to the uncut piece of longer hair. The short hair will lay under and support the uncut hair creating visible texture and potentially volume. This type of shear can be used on most clients since the results are subtle but noticeable in terms of an increase in volume and decrease in bluntness.

Aggressive Texture Shears



These shears have wider teeth and wider spaces. They typically have from 5 to 9 teeth and cut a significant notch into the hair section. The uncut hair is also in wider pieces so the texture is obvious between the cut and uncut hair. These can be used on many clients but you must expect aggressive texture from these shears.

Other Texture Terms:

Razor Texturing Shears are texture shears that are capable of slide-cutting the hair between the teeth as you draw them out. They require a convex edge on the straight blade side.

“Cut and Comb Out” is a phrase that refers to a texture shear’s ability to avoid catching or pulling hair as you draw it out of the hair section with the blades closed. This requires a very refined edge.

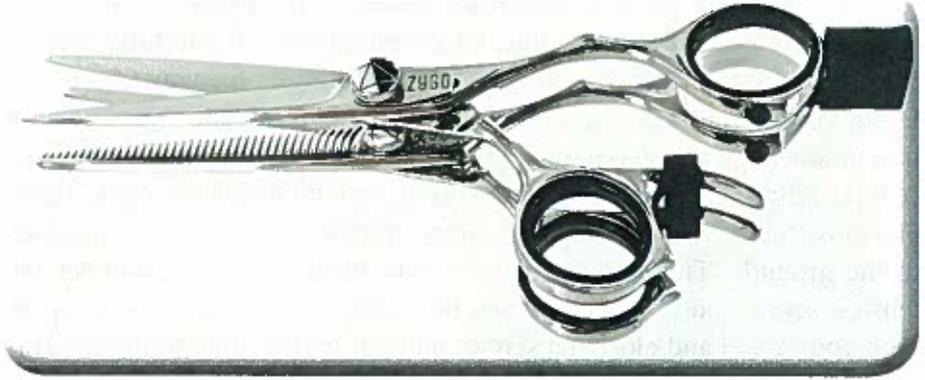
Curved or Radial-Cut Teeth refers to the more sophisticated texture shears being made today with teeth that curve instead running straight and vertical. The curved teeth tend to create a softer less blunt looking texture.



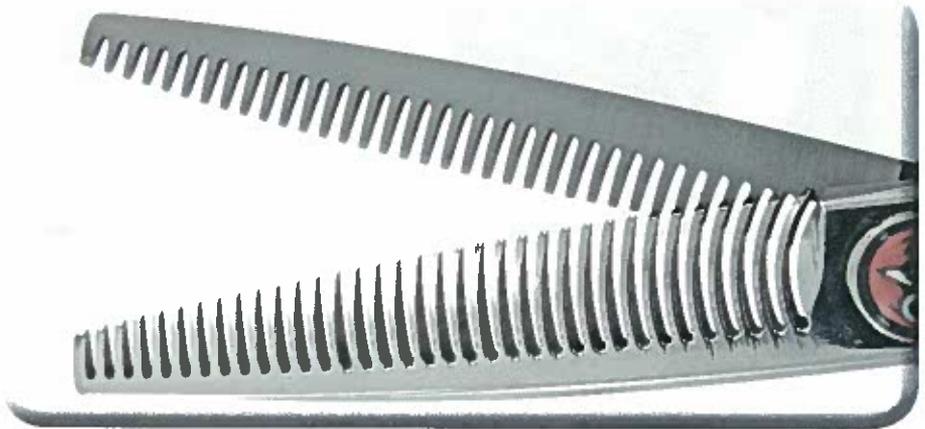
Wee-Teeth or Serrated Teeth refers to fine grooves that are cut into the blade surface on the tip of the teeth of a texture shear. These small teeth hold the hair in place when making a cut.



Soft Shear refers to a shear that is actually two shears, a texture shear and cutting shear, connected together. The concept is to texture the ends at the same time the length is cut. However, if they are permanently connected they can only be used for cutting with this technique. Some manufacturers make matching shears with connecting systems to allow them to be used together or separately.



Double Thinning Shears are shears with teeth on both sides instead of having one straight blade. If they are well made they can cut without leaving a visible line where they were closed. You can comb out with the blades closed in any direction. With a straight edge on one side, if you comb out when the hair is in contact with the straight edge, the hair can pull or be torn against the straight edge. With teeth on both sides, you can turn the shear in any direction on the way out of the section without concern.



Section 8: Maintaining Your Shears

Your scissor is a mechanical tool with moving parts. If you want to get the most out of your shears you need to do some basic maintenance to keep them performing their best.

1. Oil your shears at least once a day, and more often if you prefer. At the end of every day, wipe your shears off carefully using a towel. Be careful to wipe it the opposite directing of the way the edge is facing so you don't cut yourself. This will remove any hair and residue of hair product that may have stuck to your blades. Then apply a drop or two of lightweight oil to the pivot area of the shear with the blades open. Open and close them with your regular cutting motion, with the blades pointed to the ground. This will cause the oil to flush out the area under the tension screw and it will run down the blades. Wipe the excess oil off with your towel and close the scissor and put it away for the night. This way, instead of your shears sitting overnight with moisture and residue from your last haircut on the blades, it will be clean and lubricated and ready for work the next day.



2. Check and if need be, adjust your tension at least once a week. To check tension, first clean and oil the shear as described. Then holding the finger side of the shear in your left hand, lift the thumb handle with your right hand until the blades are fully open, and let it go. If it stays open all the way, or does not fall more than 20% of the way closed, the tension is good. If the blade falls more than 20% of the way closed, on a high quality shear, it is too loose. Tighten the tension system by turning the knob or screw slightly to the right or clockwise. On shears with clicking knobs or screws, one or two clicks is usually enough. Test again, and if it does not fall, then test to make sure it is not too tight. Too tight is just when you feel too much resistance as you open them. You don't want to have to fight the tension with your thumb to open and close the blades. On lower quality shears, you may have to adjust them so the blades fall half way shut. This is because the blades are not well balanced against each other, so if you adjust them like a higher quality shear, they will be too hard to open and close.



Note: When shears bend the hair between the blades, or pull as you draw them away from the client, it almost always means they are too loose. New shears also need adjustment, usually after the first few uses. During the first few haircuts with a new shear, the washer between the screw and the shear, will compress and form itself to the shape of the screw hole. This will leave the tension too loose. An initial adjustment of the tension will take up the space left after this compression and the tension should then not need further adjustment for some time. Don't be afraid to adjust the tension on your new shears, it will make them work better.

3. Always close shears completely before setting them down or putting them away. An open shear leaves the fragile edge exposed. Any contact with anything other than hair, can nick or dent the edge. When the shear is closed, the blades protect each other and the edge is covered so it can not be damaged. If your shear falls with the blades closed, most likely nothing will happen except perhaps the screw will be loosed by the impact and you may need to tighten them. If a shear falls with the blades open, you are likely to get a nick or dent in the edge, where the two blades were crossed. If you drop your shear, do not force it shut when you pick it up. Close the blade very slowly, and if you feel any roughness or resistance stop. Push the tips of the blades apart with the finger of your left hand and close the blades to get past the nick. You can then try squeezing the blades together with your left hand, while you slowly open the shear. Then try closing them slowly again. If you feel no resistance or roughness, you may have been able to flatten out the nick. You can then continue to use the shear. If you still feel the rough spot, it is best to use a different shear and send that pair for sharpening service.

4. Sharpen your shears with the manufacturer's recommended service center only. There are many people who will come to salons claiming to know how to sharpen shears. The problem is there is no regulated certification for sharpeners, so anyone can make that claim. The reality is, very few people know how to recreate the edge on a high quality shear. The typical sharpener will use too coarse an abrasive, removing too much metal and leaving the edge cutting rough. They might then over-polish it to make it smooth but this will leave it incapable of cutting cleanly. They will often alter the angle of the edge which will change the way the shear cuts. Some will ruin the shear in ways that even the manufacturer's service center can not repair. Your warranty may also be voided if you use any other service center. So, the safest thing to do is have the company that made the shear, be responsible for keeping it sharp. Then the manufacturer can make no excuses and must stand behind the product.

Who sharpens your shear, determines how long they will last and how much you will enjoy using them. Don't take chances with your expensive tools.

How improper sharpening can damage your shear:

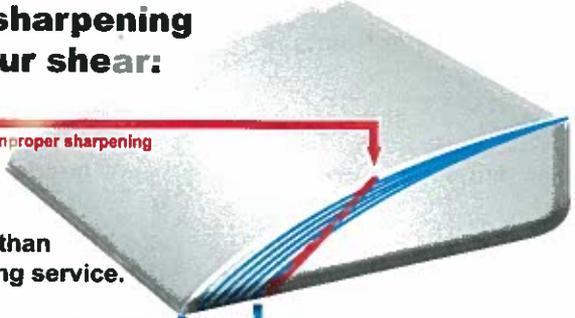
The Red Line

Represents 1 improper sharpening

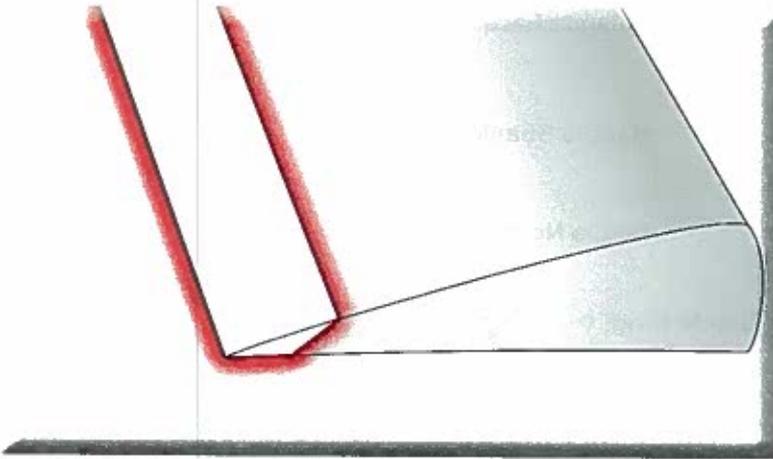
The factory sharpen your shear five times and remove less metal than one improper sharpening service.

The Blue Lines

Represent 5 proper sharpenings by the manufacturer



If each sharpening from the factory lasts 1 year, one bad service can take 5 years or more from the life of your shears.



The heat generated in this type of sharpening can spoil the temper or hardness of the shear, making it need service more and more often.

ANATOMY OF A HAIR CUTTING SHEAR

