

The Tattoo Needle Primer

By Ray Webb

There is some confusion concerning tattoo needle configurations, so don't feel you are alone. At this point, there is no industry standard in the world of tattooing or permanent cosmetics, so the information provided is my simple description of sizes and shapes.

When we discuss tattooing needles we are discussing a group of needles soldered to a needle bar and we describe the tattooing needle by needle **diameter**, needle **taper**, needle **count** and **configuration**.

Diameter

The needle # refers to the diameter of one individual needle in the needle grouping. The #12 needles are the biggest in size at .35mm diameter, then #10 needles at .30mm diameter, then #8 needles at .25mm diameter and #6 is the smallest at .20mm diameter. Some needle manufacturers indicate diameter using the insect pin or "bug pin" numbering system where "0" is equivalent to #12, "00" is equivalent to #10, "000" is equivalent to #8 and "0000" is equivalent to #6.

Hollow bore or piercing needles are sized by wire gauge standards. Tattoo needles are not. The term gauge (ga) as used by many in the industry to describe needle size is confusing. Gauge is used as a size – not the diameter of the needle – so we won't use gauge as a reference here.

Taper

Taper describes the shape of the needle point; where a short taper is a short point and a long taper is a long tapered point, so the taper is the measurement of needle point length. Needle manufacturers grind taper to their own specifications, so there are many variations. The following pictures show the difference from short to long.



Count

Needle count is just as it states, the number of needles grouped or soldered together.



Configuration

The way needles are grouped or soldered together changes the configuration which in turn affects the needle's implantation pattern. Typical configurations are round, flat and magnum. The round configuration is the most common and the way the needles are placed together determines whether it is a **liner** or **shader**.

Liner

Needles may be placed or soldered with the points close together in a tight grouping producing the liner configuration. The degree of needle size and taper determines the tightness of the configuration where smaller diameter needles and longer tapers produce tighter grouping and larger needles and shorter tapers produce the opposite.

Shader

Needles may be placed or soldered with spaces between them in a loose grouping producing the shader configuration. The following pictures show the difference between a liner and a shader.



5 long taper liner



5 short taper shader



Flat

The flat configuration is where the needles are placed or soldered flat and straight together in a single layer and provides space between the needle points.

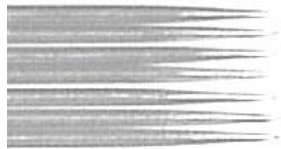


4 Flat



Magnum (Mag)

Magnums are similar to flats but with two layers of needles either stacked close together or overlapped together (weaved magnum.) The needles in stacked magnum configuration are generally closer together than the “weaved” configuration. Some manufacturers identify their needles as stacked (spaced apart like weaved needles) and double stacked (packed closely together.)



7 weaved magnum

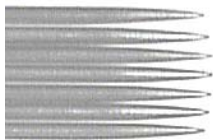


9 stacked magnum



There is a newer third variation of the magnum configuration called the round or rounded magnum.

With round magnums, the needle tips are arranged in a fan shape or arch at the points. In use, the round magnums conform better to the deflecting skin so to give better, more consistent across the width, implantation of ink / pigment and in turn do less damage to the skin.



7 round magnum



The curvy line represents the skin

The curvy line represents the skin deflecting away from the tattoo needles. With a standard flat tipped magnum needle configuration, the outside needles apply more pressure and penetrate the skin deeper than the inside needles.

Special needle types

Some machines, other than the NeoTat, require **proprietary needle** and **cartridge needle** designs be used with their equipment. Generally there are fewer needle variations available and the cost per procedure can be much higher than standard tattooing needles. Some of these designs can let pigment or contaminants flow up into the mechanism of the machine.

Proprietary needle

The proprietary needle style typically uses a plastic rod to hold the soldered needle groupings into place. The needle groupings are similar to tattoo needles in the fashion they are soldered together.

Cartridge needle

Another common approach is the cartridge needle where the needles and tip are one assembly. The needles are molded into a plastic bar and not soldered together. The tip of the cartridge is molded in such a way as to guide and hold the needles into the specific configuration. The back of the rod rides in a seal that is retained in the cartridge so to not allow any pigment or contaminants to flow back into the machine.

Tubes

Use plastic disposable tubes with or without the built on grip. Stainless tubes have been used many years, but it is suggested not using them for implanting colors other than black. Using metal tubes can cause dark color streaking due to the metal migration from the needles rubbing inside the tube.

The disposables are much easier and safer to work with.

Use them....then dispose them.

Some artists prefer using metal grips to improve grip positioning and balance. The type of disposable tube without a built on grip allows the artist to continue using metal grips but with the ease and safety of a disposable tube.

Either round tip or diamond tip are used for the round needle grouping. The diamond tip can be more precise than a round tip because the tip guides the needle better. This point is mostly personal preference.

Magnum and flat needles require magnum and flat tubes.

Some suggestions for permanent cosmetics using the NeoTat Machine

There are many different tattoo needles available for the tattoo artist today and the NeoTat can accept most. It is up to the artist to evaluate and then choose the needles he or she will use for any given application. To evaluate any given needle configuration you must first test each needle and learn how it works for you. There are many variables in tattooing, so there is no simple way to pick a needle for any given task. Needles are the tools used to implant pigment or ink into skin just as the brush is the tool that applies paint to canvas. The artist needs to work with the tool and learn how the tool responds. Patience and practice is the best way to learn.

Examples are given as needle descriptions to aid in purchasing needles.

Eyeliners;

3 count #8 (long taper) round liner needle

5-7 count #10 (medium taper) round liner needle

5-8 count #8 (short taper) round shader needle for a softer look

3-5 count #8 (long taper) round liner needle for fine bottom eyeliners and lash dotting

Brows;

5-8 count #8 (short taper) round shader needle for a softer fill

3 count #8 (long taper) round liner needle for hair strokes added to the fill, giving a more natural look

Lips;

5 count #8 (long taper) round liner for lip liner

5-7 count #10 (medium taper) round liner for lip liner, depending on line size

5-7 count #12 (long taper) round liner for heavier lip liner

7 count #12 (short taper) round liner for heavy lip liner

8 count #8 (long taper) round shader for fill

8 count #12 (short taper) round shader for fill

14 count #8 (medium taper) round shader for fill

7 count #12 (short taper) round magnum for fill

Recommended tubes for needle configurations

Needle	Disposable Grip Diamond Tip	Disposable Tube Diamond Tip
3 liner #8	NDG-3D	NDT-3D
3 liner #10	NDG-3D	NDT-3D
3 liner #12	NDG-3D	NDT-3D
5 liner #8	NDG-3D	NDT-3D
5 liner #10	NDG-5D	NDT-5D
5 liner #12	NDG-5D	NDT-5D
5 shader #8	NDG-3D	NDT-3D
5 shader #12	NDG-5D	NDT-5D
7 liner #8	NDG-5D	NDT-5D
7 liner #10	NDG-7D	NDT-7D
7 liner #12	NDG-7D	NDT-7D
8 shader #8	NDG-5D	NDT-5D
8 shader #12	NDG-7D	NDT-7D
7 magnum	NDG-7M	NDT-7M
14 shader	NDG-14D	NDT-14D