

Traditional Industrial Part Marking



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Durable Technologies

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Toll Free: 866-344-7721

Traditional Industrial Part Marking

Direct part marking has a long, rich history. Used in nearly every industry, on almost every type of surface, there are almost as many ways to mark a product as there are reasons to do so. Industrial part marking, however, is typically achieved with one of a handful of marking methods and most often serves a purpose above and beyond the aesthetic.

Traditional industrial marking often needs to be accomplished quickly, cleanly, and permanently with a minimum of fuss. These requirements have led to the development of high-quality marking methods and tools designed specifically for industrial applications.

This guide seeks to provide the reader with general information about some of the most common industrial marking methods. In each section you'll also find detailed information about the marking method or marking tool, as well as common applications, industries, and uses.

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Character Styles

There are a number of character styles available when marking. Choosing one versus another is often determined by application requirements. Low stress characters, for example, are typically used in certain industries where maintaining the part's integrity throughout the marking process is critical.

The 4 Most Common Styles

Sharp face - Sharp face characters leave a sunk impression or indent when stamped and is the most popular character style for marking metals.

Low stress - Low stress marks are created using either round characters or dot characters. This style reduces the amount of stress placed on the part during the stamping process which serves to maintain the integrity of the part. There are a number of industries (aerospace, oil and gas, piping) that specify low stress marking for all of their components.

Reverse - Typically used for stamping molds and forging dies, reverse characters read "right" on the blank, while standard characters appear backward.

Flat face - Flat face characters creates a bold impression and is typically used in forging, branding applications, and hot stamping with foil.



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Hand Stamps

For the purpose of this white paper we will define hand stamps as steel hand-held tools with the mark copy engraved on the end of the stamp body; the marking force is delivered manually with a hammer while someone holds the stamp.



Hand stamps are extremely versatile, offering a large variety of options in style and size.

Typically, stamps are made with standard characters (A-Z, 0-9, and punctuation) but custom designs can be made-to-order. Custom hand stamps offer a wide range of options from simple text to complex designs and logos.

Additionally, hand stamps can be found in all sizes. From tiny hand stamps used by jewelers to mark their rings and earrings to larger

stamps used to mark steel slabs. Typically, a hand stamp copy can be as small as 1mm or as large as 1" or bigger. Anything smaller than that is difficult to read and anything larger is too difficult to hit hard enough to produce a good impression.

There are a wide variety of standard hand stamps manufactured by Durable Technologies.

Hevi-bevl - Sharp face character, heavy duty hand stamps are ideal for marking metals (high-volume, harder materials) and are made from shock-resistant steel.

Stress less full character - Low stress round face (full) character for low stress marking requirements like aerospace.

Stress less dot character - Low stress dot characters for low stress marking requirements.

Border - Typically sharp faced text, one or two alphanumeric characters contained within a border. Available borders include circle, square, triangle, hexagon, octagon, oval and diamond.

APIQ - APIQ stamps are used by companies that are certified by the American Petroleum Institute. They're available in a variety of character styles including sharp face, low stress round and low stress dot.



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Buttress - 3/8" high equilateral triangle stamp is available in low stress full character or low stress dot character for marking pipes. The triangle points are used to line up the pipe connections during the assembly process.

452-style font - All of the characters have unique shapes so they can be easily identified from only a partially stamped impression (top or bottom of character only, for example).

Reverse character - Steel hand stamps with characters reading right on blank (industry standard is read wrong); typically used when stamping molds to produce a reversed character impression when stamped.

Inspection symbol - Standard inspection and date code symbols available to uniquely identify a part as being marked by a particular employee.

Line stamps - Sharp face characters on a single line of text. Custom fonts, character styles and multi-line stamps are also available.

Letter-number series - Two- and three-character stamps, typically sold in sequence.

Custom - Custom-made steel hand stamps can include simple or complex text or logos. The design is custom made-to-order and not returnable. Text is typically sharp face when stamping metal but low stress characters are also available.



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Hand Stamp Holders

We always encourage our customers to consider the operator's safety throughout the stamping process. In an attempt to promote both safety and increased productivity, Durable Technologies offers a variety of handstamp holders designed specifically with these goals in mind.



Safety First - Durable Technologies' Safety First stamp grip provides improved hand protection and allows the operator to mark with confidence. It is made from a durable, urethane material and features a 4" diameter hand shield that protects the operator's hand during the stamping process. Pocket sizes range from 1/4" to 1" square to accommodate a variety of stamp shank sizes. Ideal for high-volume hand stamping requirements.

Adjustable - A simple clamping device holds the stamp and removes the operator's hand from the striking area. Holds stamps from 1/4" up to 3/4" square. Ideal for low- to medium-volume hand stamping requirements.

Strap-style - Hand stamps are secured into place with an adjustable nylon strap. A rubberized non-slip handle assures safety and precision while stamping. Holds stamps from 1/4" up to 7/8" square. Ideal for low- to medium-volume hand stamping requirements.

Plate marking - Plate marking holders are great for consistent alignment when marking multiple stamps at a time. These holders can be designed for single or multiple line arrangements to suit common stamp blank sizes. They are great for marking steel plates, tubes, pipes and large fabrication. Our double-ended marking hammer is designed specifically with this holder in mind.



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Hammers and Safety Considerations

Durable Technologies offers a variety of hammers that are specifically designed for use with hand stamps and to promote safety in the work place. All of our hammers come with an impact-resistant fiberglass handle.

O.E. - Striking ends are machined with a large radius for safer stamping; sharp corners are eliminated to reduce chipping. These hammers are specially heat-treated to optimize performance.

Inspection - This hammer has a pocket on the end of the marking head to accommodate interchangeable steel inserts engraved with alphanumeric text or symbols. There are a variety of insert sizes available to accommodate up to ½" tall characters.

Cut letter - An alphanumeric character, symbol, or logo is engraved directly into the hammer head. The cut letter hammer is used independently (you do not strike this hammer with another hammer). One or both ends of the hammer head can be engraved with a 1" tall maximum character height.

Double-end - Tapered on both ends and ideal for striking small stamps.

Safety Considerations

WARNING: Always wear safety goggles when using hand stamps. Strike squarely and try to avoid glancing blows. Never strike a hammer against another hammer. Striking or stamping into a hard surface can cause chipping, possibly resulting in injury. Discard the hammer or stamp immediately if there is visible chipping, mushrooming or any other signs of wear.



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5 Steps to Clear Hand Stamping

There are five easy steps that you should follow for achieving a clear, even mark with steel hand stamps.

- 1) Make sure you mark on a solid, stable bench, ideally over a support or leg to eliminate any bounce or flexing of the bench surface. Use a large, flat piece of soft steel as a base to lay your parts on while marking.
- 2) Choose the proper marking hammer weight based on the following criteria as a starting point: If you're marking a single 1/4" tall character into mild steel you'll need approximately 2 tons of pressure. Choose a 3/4 to 1-1/4 lb. hammer. (Note - a more experienced operator can usually use a lighter marking hammer.) You will need a heavier hammer if you're stamping a harder material like stainless steel, for example.
- 3) The amount of striking force required is dramatically increased when marking multiple characters. Call us at 866-344-7721 if you need help choosing the appropriate hammer.
- 4) Place the hand stamp onto the part to be marked and rock it back and forth to make sure the stamp is laying perfectly flat on the part.
- 5) When hitting the hand stamp with a hammer, only strike the stamp once; hit the stamp and pull the hammer away. If the hammer bounces on the stamp more than one time, you will end up with a double or triple impression. Speed and accuracy of the hammer blow when striking the stamp is very important.

We always recommend using a hand stamp holder to ensure operator safety while marking (see page 6).



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Steel Stamps and Dies



Steel stamps and dies are one of the most durable and cost-effective solutions for making a permanent mark on a variety of materials and parts. Steel stamps and dies are being used today across a wide range of industries, including metal fabrication, automotive, aerospace, firearms, oil and gas, blacksmiths, blade smiths and even jewelers and other hobbyists.

Steel stamps are created from blank dies that are machined to meet the user's specification. Typically used in industrial settings, steel stamps and dies can be used in a variety of marking machines to achieve either a raised or depressed permanent mark. Steel stamps and dies can be produced to mark information such as alphanumeric text and complex logos.



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Roll Dies, Embossing Dies and Inserts



Durable Technologies manufactures a wide range of steel stamping options to meet any and all of your part marking requirements. In addition to steel hand stamps, we also manufacture roll dies, male and female embossing dies, press-style dies and inserts. Every steel stamp and die is carefully and skillfully machined to the end user's specifications and can be designed to mark on a variety of flat, curved, concave or convex surfaces. Our steel stamps and dies can be integrated into a variety of marking machines.

Durable's engineers can produce any type of information our customer's require, including alpha-numeric text, custom symbols, welder or inspector's QC codes, company logos, or even your touch mark. Our stamps can be designed with a raised character if you're looking for a sunk (debossed) impression or a recessed (sunk) character if you prefer an embossed (raised) mark in your product.

Steel Type and Holders



Steel type is an ideal marking solution for any application where interchangeable data is required. Steel type can be used with a shank-style holder for press marking or with a simple hand-held holder to be struck with a hammer.

Steel type generally consists of letters A-Z, numbers 0-9, and punctuation. Custom font styles and logos are also available.

We offer heavy-duty slotted type as well as all-purpose utility type depending on your marking requirements. Our experts can help you choose the best type based on your application details.



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Hot Stamping



Hot stamping is an excellent marking solution for personalization and monogramming, both of which have been growing in popularity in recent years.

Hot stamping uses a metal die combined with a hot stamp printer or branding iron to create a permanent mark on a surface. Dies are typically manufactured from brass, bronze, steel, or magnesium depending on the application requirements. Branding irons are available in two styles depending on your marking volume and preference: hand-held and press-style.

Hot stamping can be used to stamp a wide range of surface materials including leather, wood, plastic, rubber and even food. Some common applications include monogramming, personalization, book binding and restoration, ribbons and greeting cards.

Durable Technologies

At Durable Technologies, we take the time to understand our customer's specific marking requirements and will recommend an appropriate and cost-effective solution based on that information. Our goal is to work together with our customer to find a solution that works for them so we both feel good about the outcome. We pride ourselves on our customer service and reputation and frequently post customer testimonials on our website for all of our visitors to see. We strive to increase the value of our products and services to customers across all industries.

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