



Microstamping

*A Tool to Identify Crime Guns, Solve Shootings,
& Hold Gun Traffickers Accountable*

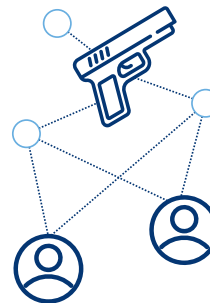
Overview

Microstamping adds unique codes on the inside of a gun which are stamped onto the cartridge casing each time the gun is fired. When police officers respond to a shooting and recover expended casings, they can quickly link the microstamped code on the cartridge casings to the serial number of the crime gun. Gun dealers are currently required to keep records of the serial numbers of each gun they sell, so microstamping would allow law enforcement to identify that serial number and trace a gun to the original gun dealer and gun buyer without having to recover the crime gun itself.

This stamp can provide law enforcement vital real time intelligence to help solve shootings and identify the gun traffickers and dealers that supply crime guns.

Though research shows microstamping is reliable and has no impact on the functionality of the firearm, the gun industry has refused to incorporate this tool into their guns.¹ They have boycotted a microstamping law in California by refusing to sell new models of firearms in the state.

To address the industry's resistance, California, New Jersey, and New York recently passed new legislation to push the gun industry to incorporate microstamping into guns distributed in their states.



Microstamped cartridge cases are collected at the scene of a shooting

Police officers use a microscope to read the microstamped code

Codes are entered into a computer and linked to the serial number of the gun used

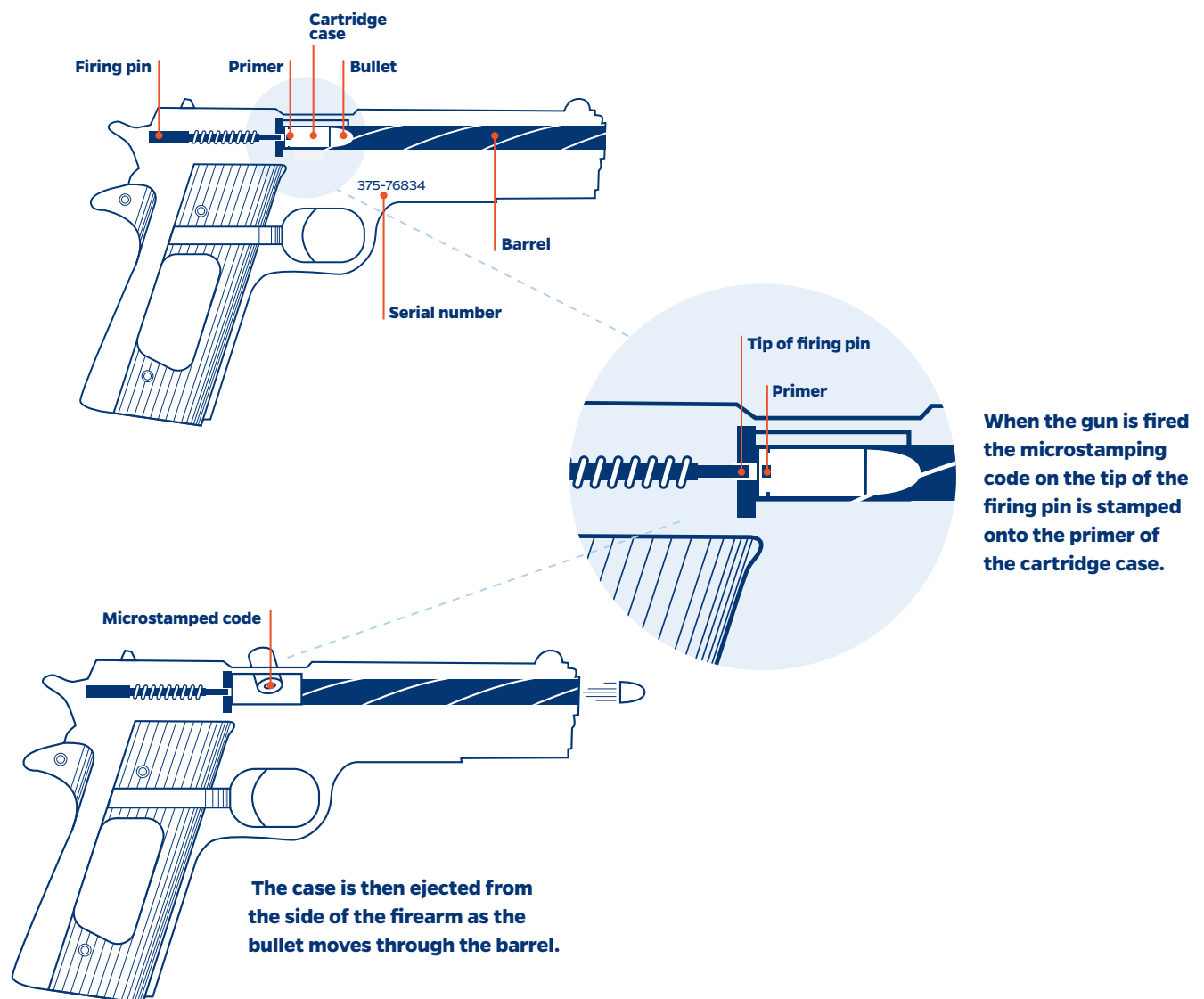
Other shootings carried out with the same gun are identified and linked

Law enforcement trace the gun to the original gun dealer and gun buyer

Trafficking channels are identified, leads are generated

How Does Microstamping Technology Work?

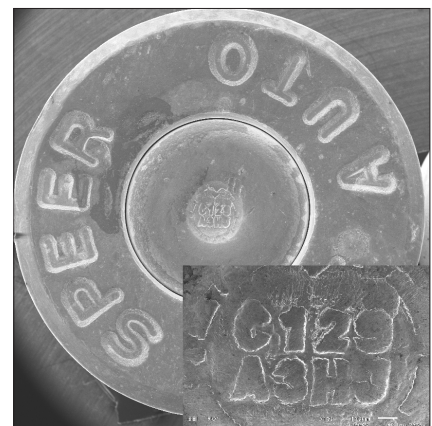
1. Unique codes, consisting of numbers and letters, and geometric shapes as backup, are engraved onto the tip of the firing pin of a gun. These codes correspond with the gun's serial number. The microstamping engravement process can take place as the gun is manufactured, or be done by a third party after the gun is made, but before it is distributed to a gun dealer.
2. Currently, when a gun is fired, the firing pin hits the primer of the cartridge (the back end of the bullet's cartridge casing) and leaves unintentional microscopic markings (such as scratches and dings) on the cartridge casing. Microstamping uses these same forces to intentionally imprint a specific code on the cartridge casing.
3. Cartridge casings are often found at the scene of a shooting because they are ejected from a semi-automatic handgun, which are now the most common type of firearm used in crime. Law enforcement officers currently use recovered cartridge casings as evidence by attempting to match the unintentional markings left on the cartridge casing to test cartridges fired from the same gun. This process requires the crime gun to be recovered for testing, which occurs far too infrequently. Microstamping would simplify this process by allowing law enforcement to identify the serial number of the gun used in a crime without having to match unintentional markings or recover the gun itself.



Why is Microstamping Needed?

The United States is experiencing a crisis of gun violence and unsolved shootings. Gun homicides increased 34% from 2019 to 2020 to the highest rate in 15 years, and provisional data from the CDC found that gun homicides increased an additional 8% from 2020 to 2021.² The majority of shootings and homicides in cities across America are unsolved. In 2020, only around half of all homicides reported to the FBI were solved, the lowest clearance rate on record. In many cities, the clearance rates for gun homicides and nonfatal shootings are far lower than 50%.³ This is especially true in divested Black and Hispanic/Latino communities that are disproportionately impacted by gun violence. One analysis of major U.S. cities found that law enforcement makes an arrest in only 35% of firearm homicides and 21% of firearm assaults when the victim was Black or Hispanic/Latino compared to 53% and 37% respectively when the victim was white.⁴

A large portion of these unsolved shootings are perpetrated by guns that were recently trafficked and diverted into the illegal market. For example, an analysis of five years of data from the ATF found that more than 40% (528,855) of crime guns recovered by police and traced were used in a crime within three years of their initial retail sale at a licensed dealer.⁵ Surveys of individuals incarcerated for crimes involving guns report heavy reliance on the underground market (43%) and friends or family (25%) who sell, give, or loan their firearms.⁶ Microstamping should deter gun dealers and owners from selling or transferring their gun to someone who might commit a crime because microstamping evidence should lead law enforcement to the person who initially purchased the gun from a retail seller.



Top to bottom: A firing pin equipped with microstamping codes. Image of microstamped cartridge case discharged from a firearm equipped with microstamping. Photos provided by TACLABS, Inc (2020).

Microstamping could improve law enforcement's ability to address gun violence by:

- **Quickly identifying the gun** used in a shooting without having to recover a gun, test fire it, and match the scratches and dents on cartridge casings.
- **Providing intelligence about multiple shootings** carried out with the same gun and identifying common suspects.
- **Allowing for more crime guns to be easily traced**, providing intel on how guns are diverted into the illegal market and used in crimes.
- **Helping identify leads**, solve shootings and bring closure to survivors and their families.
- **Removing bias** from the current firearms identification process used in prosecutions by providing clear evidence—a code on a cartridge—rather than the subjective analysis of scratches and dents by firearms examiners. This has the potential to reduce racial inequities within the criminal legal system.
- **Reducing the diversion of guns** into the underground gun market where they are prone to be used in violent crime that disproportionately harms Black and Hispanic/Latino communities.

What is the policy landscape for microstamping?

In 2007, the California State legislature passed a microstamping law that required all *new models* of semi-automatic pistols sold or manufactured in California be equipped with microstamping.⁷ For over a decade, the firearms industry had avoided this requirement by only selling old, less safe, models of handguns in California.

Since 2020, three states have passed new microstamping laws to incentivize the firearms industry to adopt this crime-solving technology. These laws are aimed at pushing the gun industry to adopt microstamping with penalties for gun sellers who do not comply with the law.



CALIFORNIA

In 2020, the state revised the microstamping requirement making it more appealing for the gun industry to adopt the technology.⁸ The legislation:

- Revised microstamping requirement to align with what the firearms industry admitted in court documents that they can do by allowing for the microstamping code to be transferred in one place on the cartridge, rather than two.⁹
- Requires that for every new microstamping-equipped firearm model introduced within the state, three old firearm models will be removed from the roster of approved handguns for sale within the state.



NEW JERSEY

In 2022, the state passed legislation to ensure that consumers have access to microstamping once it is deemed to be commercially available.¹⁰ The legislation:

- Requires that the state Attorney General investigate if microstamping is technologically viable, and if so, requires the state to establish performance standards and qualifying criteria for a firearm to be designated a microstamping-enabled firearm.
- If the state designates a commercially available firearm model as a microstamping-enabled model, all gun dealers in the state must offer a microstamping-enabled firearm model for sale and display information about microstamping in their store.
- Offers state rebates of up to \$30 for purchasers who buy a microstamped gun.



NEW YORK

In 2022, the state passed a microstamping requirement that all new semi-automatic pistols sold in the state be equipped with microstamping technology. For the requirement to take effect, the state must:¹¹

- Certify that microstamping is technologically viable within 180 days of law's enactment.
- Set up the performance standards, procedures, and regulations for microstamping within two years of the certification of microstamping's technological viability.
- Create or designate an entity to engrave pistols with microstamping technology in the case that gun manufacturers do not incorporate microstamping technology themselves.
- If these criteria are met, the microstamping requirement takes effect four years after the state certifies that the technology is viable.

Endnotes

- 1 Lizotte TE, & Ohar O. (2008). [Forensic firearm identification of semiautomatic handguns using laser formed microstamping elements](#). *SPIE*.
- 2 Underlying Cause of Death. (2021). [CDC WONDER](#). *Centers for Disease Control and Prevention*.
- 3 Lowery W, Kelly K, Mellnik T, & Rich S. (2018). [Murder with impunity: Where killing go unsolved](#). *The Washington Post*.
- 4 Ryley S, Singer-vine J, & Campbell S. (2019). [Shoot someone in a major U.S. city and odds are you'll get away with it](#). *The Trace and BuzzFeed News*.
- 5 Everytown Research & Policy. (2022). [Five Things to Know About Crime Guns, Gun Trafficking, and Background Checks](#). *Everytown for Gun Safety Support Fund*.
- 6 Alpher M, & Glaze L. (2019). [Source and Use of Firearms Involved in Crimes: Survey of Prison Inmates, 2016](#). *Department of Justice*.
- 7 Crime Gun Identification Act of 2007. CA AB 1471. (2007).
- 8 AB 2847 2019-2020 Reg. Sess. (Ca. 2020). (enacted).
- 9 See *Pena v. Lindley*, 898 F.3d 969, 991 (9th Cir. 2018), noting how the “[the plaintiffs] assert[ed] that, while a handgun’s firing pin can sometimes successfully imprint a casing, the other internal surfaces—e.g., the breech face, extractor, ejector—are incapable of ever imprinting legible characters.”
- 10 A 4368 2022-2023 Reg. Sess. (NJ. 2022). (enacted).
- 11 SB 4116 2021-2022 Reg. Sess. (NY. 2022). (enacted).