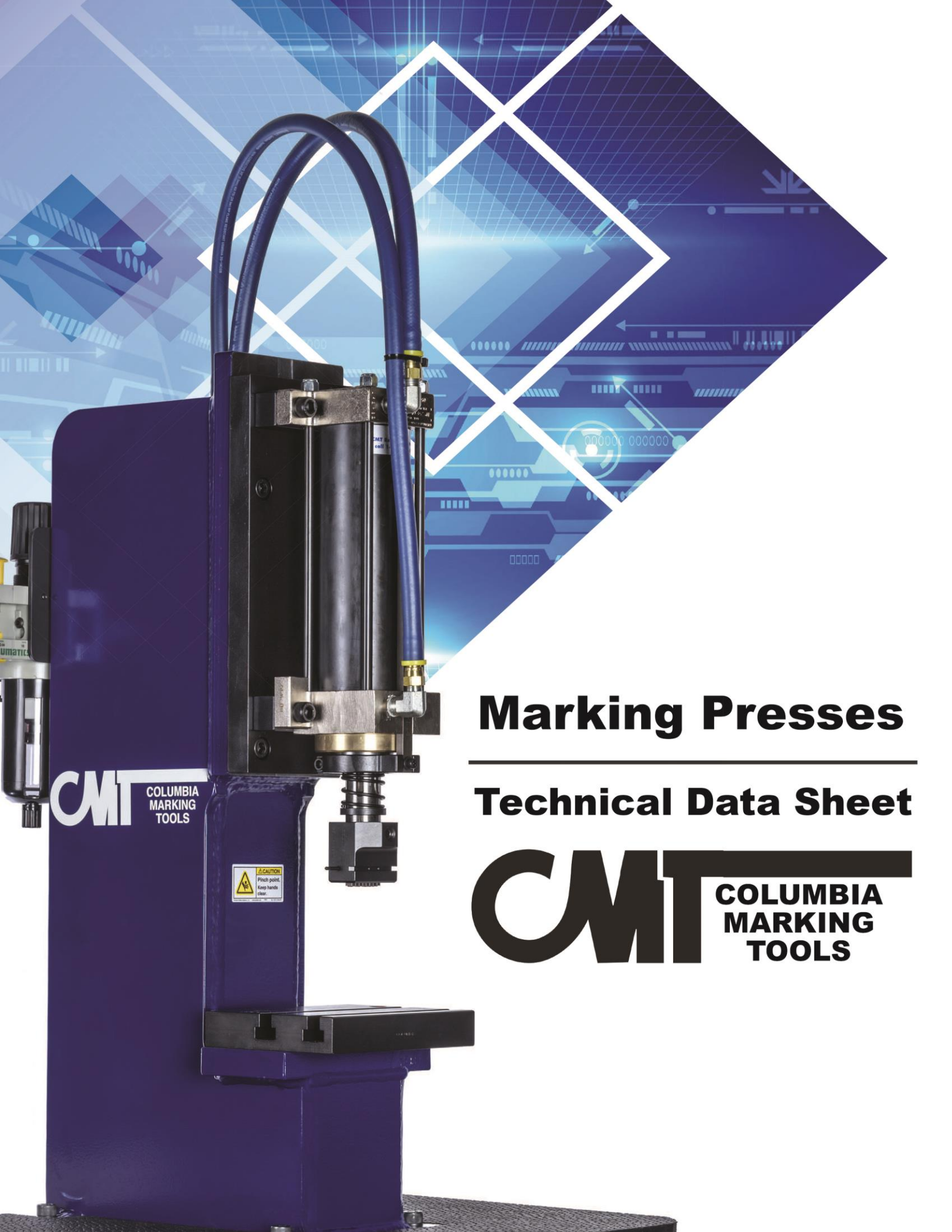

Marking Presses

Technical Data Sheet

COLUMBIA
MARKING
TOOLS

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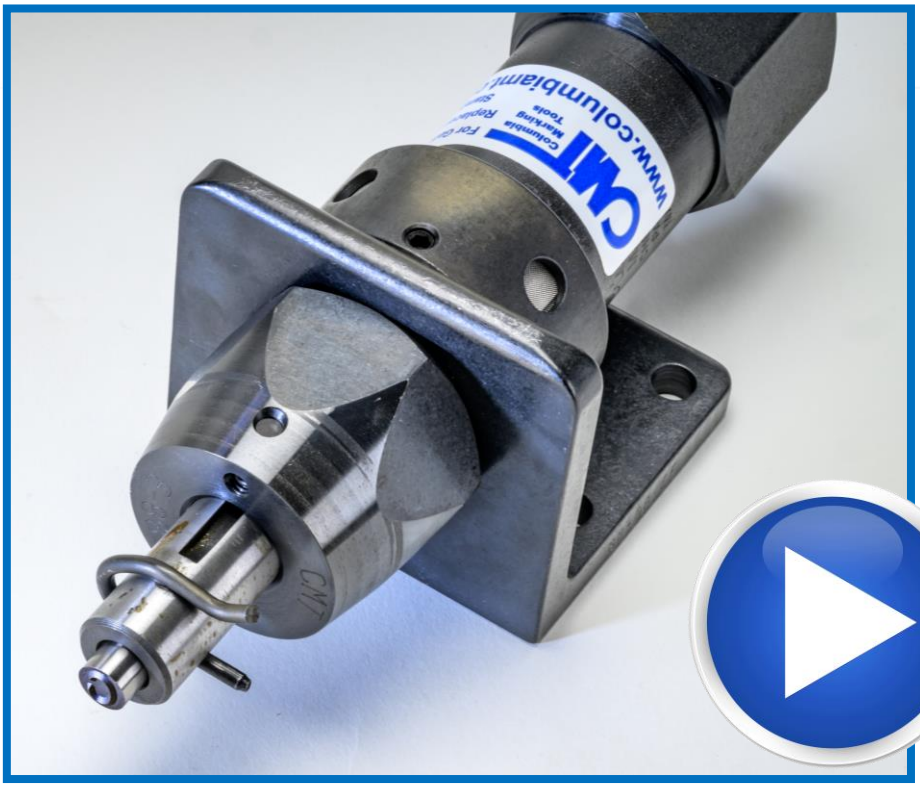
Air Impact Marker Presses

Air impact marker presses are engineered as a **turnkey solution** for industrial marking applications. These versatile systems can be manually or robotically loaded, providing flexibility for various production environments. Designed for quick and easy installation, they offer an efficient way to handle tasks such as part numbering and quality control, making them an essential tool for streamlining operations and ensuring consistent marking results.

- Rugged, industrial
- High volume, fast cycle time
- Made in USA, high quality
- Clear, deep marks

What is an air impact marker?



An air impact marker is a type of industrial marking tool that utilizes compressed air to create high-impact forces, allowing for quick and durable marking on various materials. Here are some key features and advantages of CMT air impact markers.

1. **Simple Design:** Air impact markers typically have a straightforward and compact design, making them easy to use and integrate into different industrial settings. The simplicity of their design often translates to reliability and ease of maintenance.

2. **Durable Marking:** The high-impact forces generated by these markers result in durable and long-lasting markings on surfaces. This is particularly important in industrial applications where parts may undergo various stresses, including exposure to harsh environmental conditions.

3. **Speed and Efficiency:** Air impact markers are known for their speed and efficiency in marking parts. This is crucial in industrial production processes where rapid and accurate marking is essential for maintaining a smooth workflow and high productivity.

4. **Versatility:** These markers can be used on a wide range of materials, including metals, plastics, and composites. This versatility makes them suitable for diverse industrial applications.

5. **Integration with Automation:** The compact design of air impact markers allows for easy integration into both manual and automated production processes. This adaptability is valuable for industries seeking efficient and automated solutions to streamline their production lines.

6. **Low Maintenance:** The robust and simple design of air impact markers often results in low maintenance requirements. This can contribute to cost savings and reduce downtime in industrial settings.

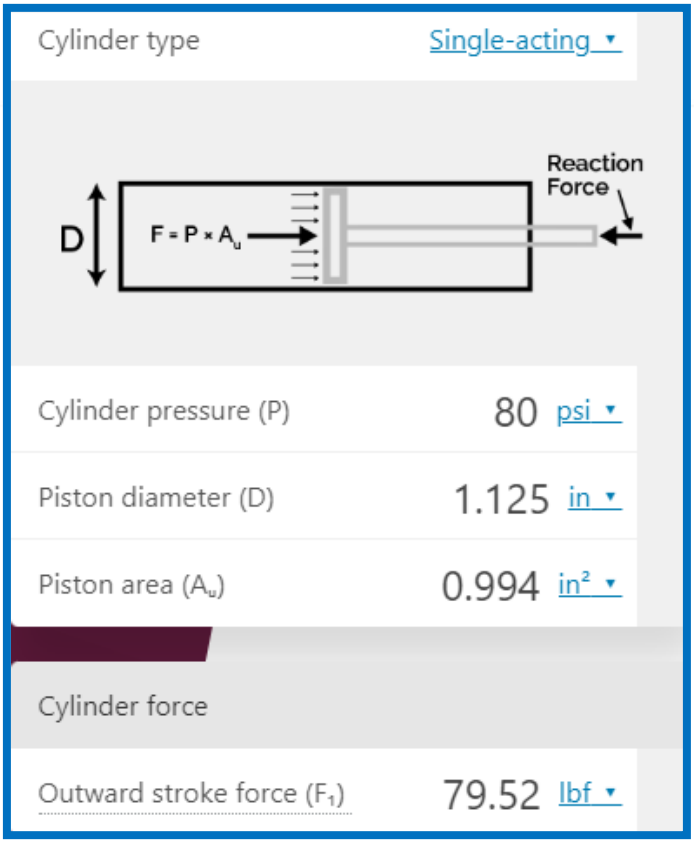
7. **Consistent Marking Quality:** Air impact markers provide consistent marking quality, ensuring uniformity in the marked information on parts. This is important for traceability, quality control, and compliance with industry standards.

8. **Adjustable Settings:** Many air impact markers come with adjustable settings, allowing users to control the force and depth of the marking. This flexibility is useful when working with different materials and applications.

Is an air impact marker an air cylinder?

No.

An air impact marker and an air cylinder serve different purposes, and their design and functionality vary.



An air cylinder is a pneumatic device that uses compressed air to generate linear motion. The force it produces is determined by the air pressure and the piston area, as described by the equation F = P × A. The calculation of air cylinder "force" based on the model 88 parameters is 80 lbs (calculation shown in image)

On the other hand, an air impact marker, like the model 88, operates on the principle of force equals mass times acceleration (F=MA). In this case, the acceleration of the rod/stamp holder contributes to the high force output, even though the air pressure may be relatively low. The impact force of 6000 lbs by the Model 88 is generated by 80 psi.

In summary, an air impact marker is not the same as an air cylinder. The force calculation for an air impact marker involves the acceleration of the moving parts, leading to a high force output compared to what would be expected based solely on air pressure and piston area as in a traditional air cylinder.

<u>Force Comparison</u>

Model 88

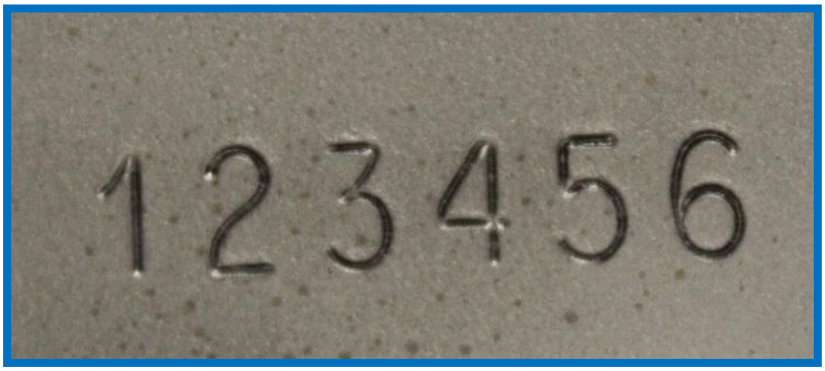
Bore Size: 1.25"

Air Cylinder Pressure: 80 lbs

Air Impact Pressure; 6,000 lbs

Slide-A-Mark Marking Press

The Slide-A-Mark press offers a turnkey solution featuring Columbia Marking Tools' unique telescoping air impact marker. This innovative marking unit is integrated with a C-frame and control system, providing a compact and efficient marking solution.



The press can be loaded manually or through robotic automation, making it adaptable to a variety of production setups. Designed for high-volume marking applications, the Slide-A-Mark press excels in applying part numbers, serial numbers, quality control (QC) marks, and more with precision and reliability.

Components

The PR751/PR851 Slide-A-Mark impact press is composed of the following key components:

- **Air-Powered Keyed Ram**: Provides the driving force for marking operations.
- **Controls**: Includes operator interfaces for starting and managing the marking cycle.
- **Stamp Holder and Stamps**: Designed to securely hold and position the marking stamps. Upgrades include numbering heads for serial numbering.
- **Frame Options**: Mounted on either a bench frame or a floor-style base, depending on application requirements.
- **Safety**: OSHA required palm buttons or guarding with a part present cycle start.

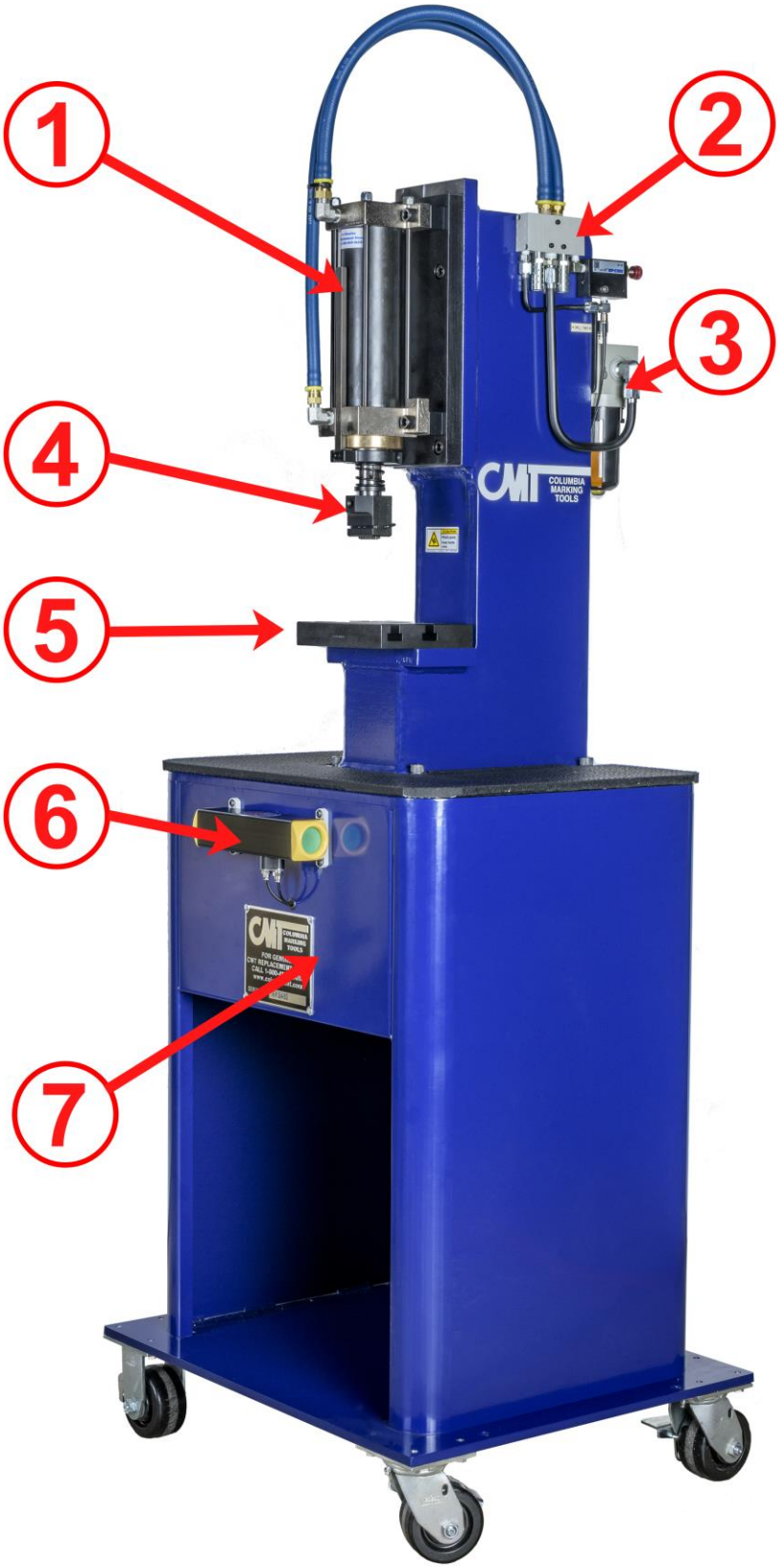
The marker is available in various standard rod styles to suit different marking needs. Additionally, numbering heads can be mounted on the PR751 for specialized numbering applications. A system of air valve devices precisely controls the impact to ensure consistent and accurate marking results.

Method

This unique marking system operates based on a two-stage impact mechanism developed and patented by CMT. The process follows these steps:

1. **Approach**: The marker moves toward the workpiece.
2. **Squeeze**: The marker applies a controlled squeeze to the workpiece to stabilize it.
3. **Mark**: Using an internally actuated soft impact, the marker imprints the desired mark onto the workpiece.
4. **Retract**: The marker retracts to its starting position, ready for the next marking operation.

The sequence is initiated either by operator palm buttons or a part-present cycle switch, ensuring safety and precision in automated or semi-automated setups.



1. Air powered ram
2. 4-way valve and air controls
3. FRL – Filter Regulator Lock out (OSHA required)
4. Holder (or numbering head)
5. Fixture mounting plate
6. Operator palm buttons (mounting on optional machine base)
7. Machine base with caster wheels for mobility

8-Ton Air Impact Marker Press – PR98

The 8-Ton Air Impact Marker, Model PR98, is a compact and powerful marking press designed for industrial marking operations. This versatile machine features an air-powered ram capable of delivering consistent, high-quality impressions. Engineered with OSHA-compliant safety elements, it ensures safe and efficient operation in demanding industrial environments. Ideal for applications requiring precision and reliability, this marker is a robust solution for various marking needs.

Components

The PR98 impact press is composed of the following key components:

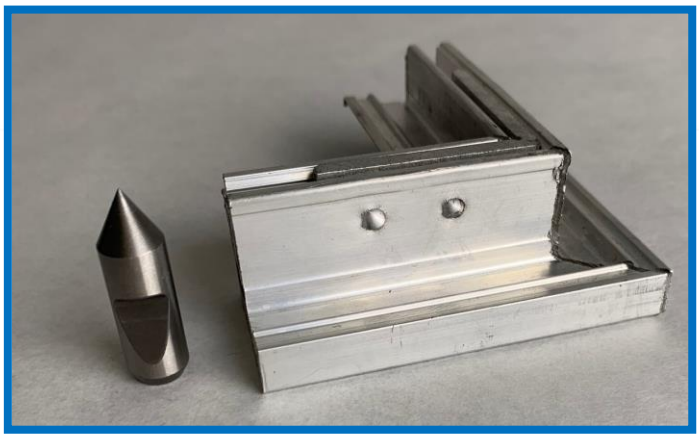
- **Air-Powered Keyed Ram**: Provides the driving force for marking operations.
- **Controls**: Includes operator interfaces for starting and managing the marking cycle.
- **Stamp Pocket and Stamps**: Designed to securely hold and position the marking stamps.
- **Frame Options**: Mounted on either a bench frame or a floor-style base, depending on application requirements.
- **Safety**: OSHA required palm buttons or guarding with a part present cycle start.

Perfect industrial marking solution for:

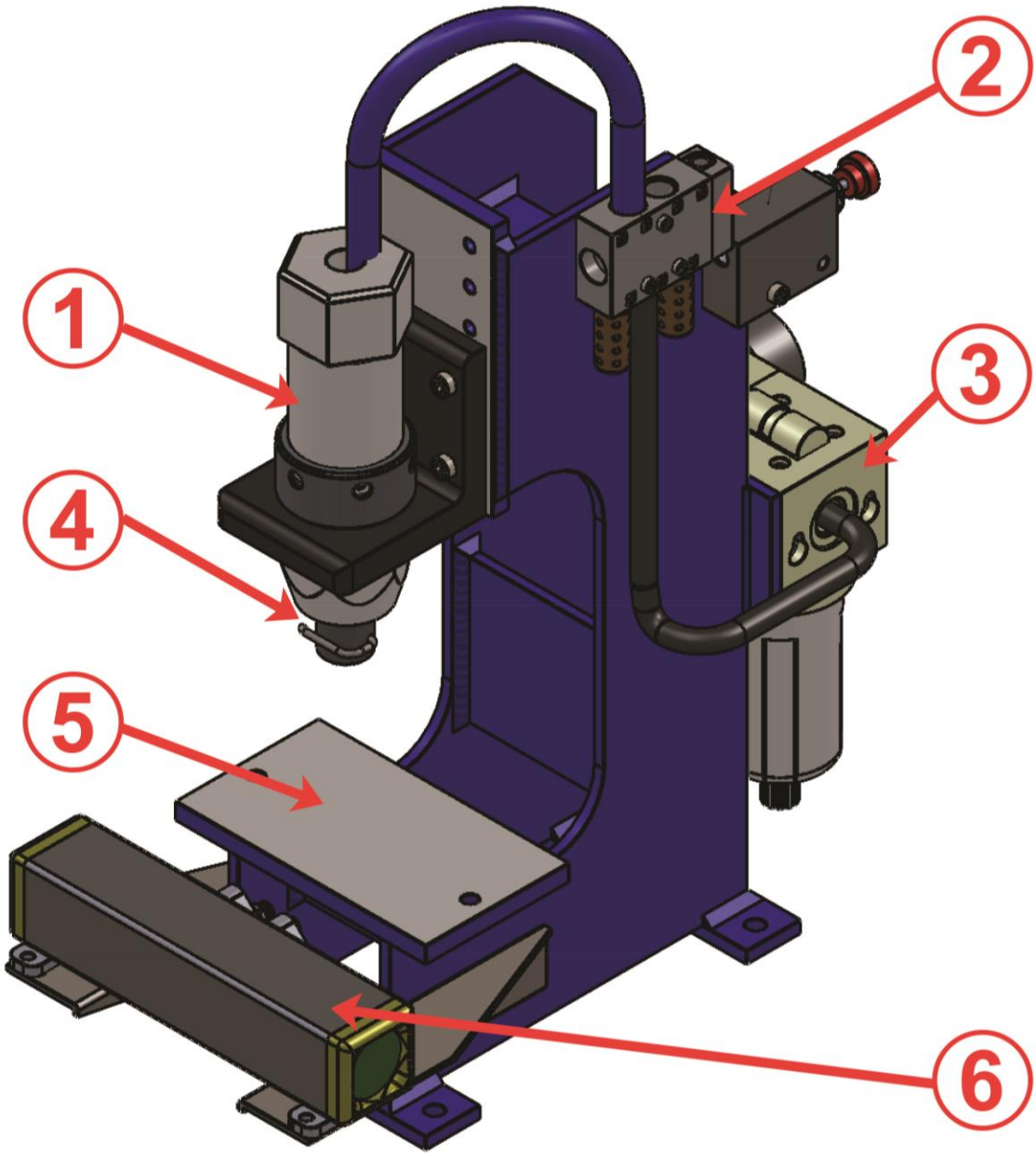
- Date coding
- Part numbers
- Lot Numbers
- QC marking

The marker is available in various standard rod styles to suit different marking needs. A system of air valve devices precisely controls the impact to ensure consistent and accurate marking results.

1. Air powered ram
2. 4-way valve and air controls
3. FRL – Filter Regulator Lock out (OSHA required)
4. Integrated Stamp holder
5. Fixture mounting plate
6. Operator palm buttons (mounting on optional machine base)



PR98 Air impact press is used for non-marking applications. These include seating, staking, removing flashing and more. The design of the impact marker allows for a more compact solution than regular air cylinders. In effect, the staking or other non-marking operation may be achieved with a small and more economical solution.



3-Ton Air Impact Marker Press – PR88

The 3-Ton Air Impact Marker, Model PR88, is a compact and powerful marking press designed for industrial marking operations. This versatile machine features an air-powered ram capable of delivering consistent, high-quality impressions. Engineered with OSHA-compliant safety elements, it ensures safe and efficient operation in demanding industrial environments. Ideal for applications requiring precision and reliability, this marker is a robust solution for various marking needs.

Components

The PR88 impact press is composed of the following key components:

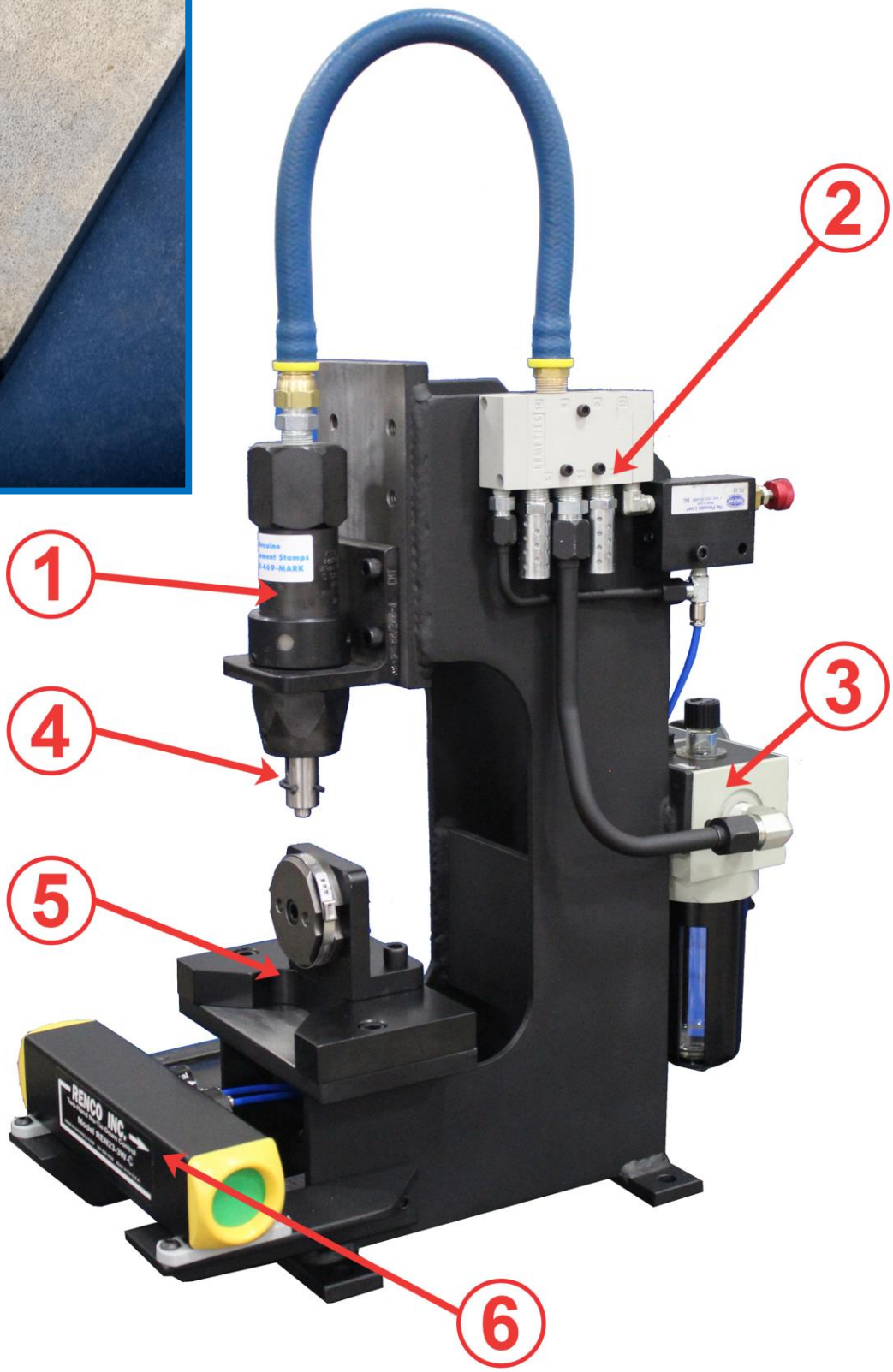
- **Air-Powered Keyed Ram**: Provides the driving force for marking operations.
- **Controls**: Includes operator interfaces for starting and managing the marking cycle.
- **Stamp Pocket and Stamps**: Designed to securely hold and position the marking stamps.
- **Frame Options**: Mounted on either a bench frame or a floor-style base, depending on application requirements.
- **Safety**: OSHA required palm buttons or guarding with a part present cycle start.

Perfect industrial marking solution for:

- Station ID
- Operator Symbol
- Lot Numbers
- QC marking

The marker is available in various standard rod styles to suit different marking needs. A system of air valve devices precisely controls the impact to ensure consistent and accurate marking results.

1. Air powered ram
2. 4-way valve and air controls
3. FRL – Filter Regulator Lock out (OSHA required)
4. Integrated Stamp holder
5. Fixture mounting plate, shown with optional part fixture
6. Operator palm buttons (mounting on optional machine base)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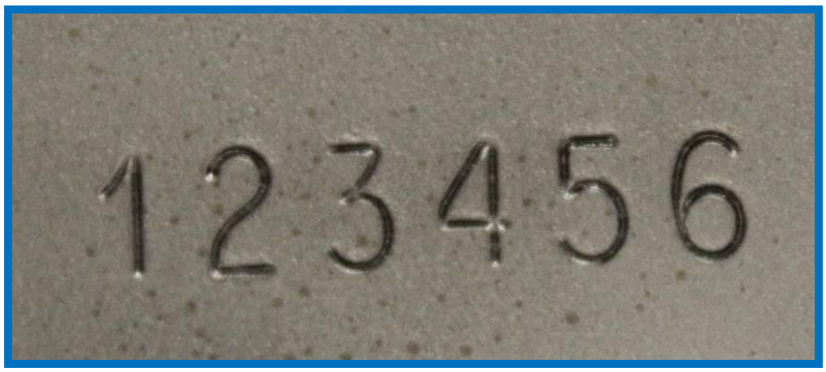
RENCO INC.

Slide-A-Mark Robotic Marking Station

The Slide-A-Mark robotic marking station offers a turnkey solution featuring Columbia Marking Tools' unique telescoping air impact marker. This innovative marking unit is integrated with a C-frame, floor pedestal, and control system, providing a compact and fully automated marking solution.



The station is loaded through robotic automation, and may be purchased in a variety of configurations making it adaptable to a variety of production setups. Designed for high-volume marking applications, the Slide-A-Mark robotic station excels in applying part numbers, quality control (QC) marks, and more with precision and reliability.

Components

The R751/R851 Slide-A-Mark Robotic marking station is composed of the following key components:

- **Air-Powered Keyed Ram**: Provides the driving force for marking operations.
- **Controls**: Includes operator interfaces for starting and managing the marking cycle.
- **Stamp Holder and Stamps**: Designed to securely hold and position the marking stamps. Upgrades include numbering heads for serial numbering.
- **Frame Options**: C Frame with floor pedestal. Different orientations available.
- **Sound Abatement**: OSHA approved sound reduction shield.

The marker is available in various standard rod styles and type holders to suit different marking needs. A system of air valve devices precisely controls the impact to ensure consistent and accurate marking results.

Method

This unique marking system operates based on a two-stage impact mechanism developed and patented by CMT. The process follows these steps:

1. **Approach**: The marker moves toward the workpiece.
2. **Squeeze**: The marker applies a controlled squeeze to the workpiece to stabilize it.
3. **Mark**: Using an internally actuated soft impact, the marker imprints the desired mark onto the workpiece.
4. **Retract**: The marker retracts to its starting position, ready for the next marking operation.

The sequence is initiated either by operator palm buttons or a part-present cycle switch, ensuring safety and precision in automated or semi-automated setups.

1. Air powered ram
2. 4-way valve and air controls
3. FRL – Filter Regulator Lock out (OSHA required)
4. Holder (or numbering head)
5. Sound Abatement
6. Part Rest, backup
7. Floor Pedestal