

Portamark Powder Actuated Marking Tool

Equipment Operation and Maintenance Manual

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FOREWORD/SAFETY PROCEDURES

This manual contains specifications, drawings and procedures for the Portamark Powder Actuated Marking Tool. The furnishing of this document does not constitute or imply a grant of any license under any patent, patent applications, trademarks, copyrights, or other rights of Seller or of any third party.

Every attempt has been made to make this manual accurate and correct at time of issuance. Future revisions/modifications performed on the equipment by MECCO Marking & Traceability or error corrections to this document will be supplied in addendum packages.

SAFETY SUMMARY

The following is mandatory reading for all personnel who find themselves involved in operating and maintaining the Portamark Powder Actuated Marking Tool provided by MECCO Marking & Traceability. Forward the enclosed information and instructions to the Plant Safety Director, Plant Manager, and all Operators of this equipment.

It is the employer's responsibility to provide proper safety devices and equipment to safeguard the operator from harm and to safeguard this equipment at all times to meet all current safety codes and standards.

Failure to comply with this manual and subsequent warnings can result in **SERIOUS INJURY** to personnel and/or **MAJOR DAMAGE** to the marking tool.

- I. There are two levels of special notation used in this manual. In descending order of importance, they are:

-WARNING-

Used to signify that when the statement is not complied with, **SERIOUS INJURY** can occur to personnel and/or **MAJOR DAMAGE** will be inflicted to the marking tool.

-NOTE-

Used to give supplementary information or to emphasize a point, procedure, functional check, etc.

Always comply with the following DO'S:

-WARNING-

1. DO always wear eye and ear protection while operating this equipment.
2. DO keep a neat and clean environment in the area that marking is done.
3. DO log all maintenance performed in a logbook.
4. DO periodically clean critical components to remove any foreign matter.
5. DO report any damage or premature wear noticed in the equipment so it can be repaired.
6. DO periodically inspect marking tool for premature wear.
7. DO familiarize yourself with this complete manual before attempting to operate and/or maintain this tool.
8. DO perform all maintenance listed in this operating manual to ensure maximum tool life.
9. This tool is to be used only by properly trained and licensed operators. You must successfully complete ITW Ramset training program for the tool and obtain a certified operator's license before handling, loading or operating this tool.
10. DO unload the powder cartridges from the tool before changing type.
11. DO hold the tool perpendicular to the work surface while marking.
12. DO use only Portamark powder cartridges and replacement parts.

Always comply with the following DO NOT'S:

-WARNING-

1. DO NOT operate this equipment without using eye and ear protection.
2. DO NOT operate the system under any circumstance with safeties removed or defeated.

-Warning- Removal or disabling tool safeties can result in serious operator injury. DO NOT modify or defeat the safety features in any manner from the as shipped documented condition.

3. DO NOT leave a Portamark unattended with powder cartridges in the tool.
4. DO NOT use the Portamark in an explosive or flammable atmosphere.
5. DO NOT allow anyone but authorized personnel to operate or maintain the equipment.
6. DO NOT fire the Portamark without having the type against the surface to be marked.
7. DO NOT alter or modify the Portamark from the as shipped documented condition.

1.0 Equipment General Description and Assembly

The equipment described in this manual was designed and built to produce permanent characters directly onto parts. The general equipment layout can be seen on the drawings for this equipment. (See Drawing Section of this manual) As with any piece of equipment, no one can merely read the instruction manual and then hope to operate that equipment safely and efficiently. Contact your local ITW Ramset dealer for operator training and certification.

1.1 Ramset D45A General Description

The model D45A is a semi-automatic, low velocity, powder actuated tool that uses .25 caliber, 10-shot disc loads. The disk loads, which are available in five power levels, automatically feeds into position when the tool is operated. The D45A is ideal for permanently marking a variety of materials. When the tool is in position to mark, pulling the trigger releases a firing pin, which strikes the powder load. This causes the powder in the load to ignite and burn, providing a powerful release of expanding gases which drives the piston down the barrel of the tool, striking the anvil of the Portamark. The resulting impact drives the marking characters into the work surface. Reference the manual that is provided with the Ramset D45A for additional information and instructions.

1.2 Portamark-Marking Attachment General Description

The Portamark marking attachment is designed to work specifically with the Ramset model D45A powder actuated tool. The Portamark can be supplied in either urethane for cold marking, or steel for hot marking applications. The Portamark is attached to the D45A tool with a threaded shank and locking ring. When fired, the piston strikes the anvil, positioned behind the type, and the mark is achieved. The Portamark will accommodate five pieces of 1/2" type, six pieces of 3/8" type, eight pieces of 5/16" type, or ten pieces of 1/4" type.

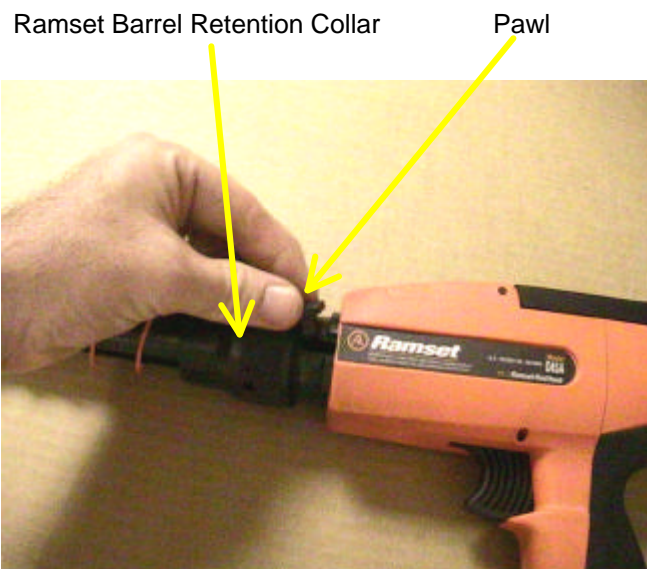
1.3 Assembly of Ramset D45A and Portamark Attachment

To install the Portamark Marking Attachment perform the following:

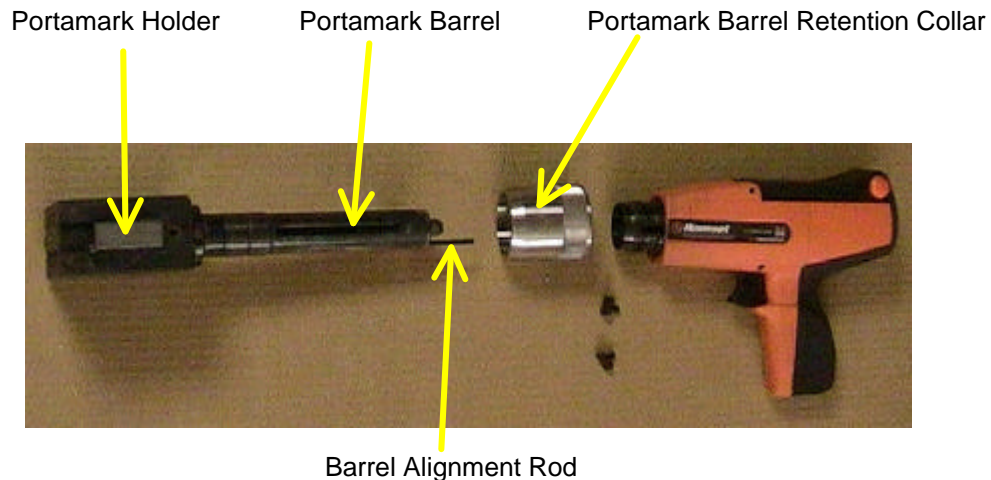
-Warning- Only certified operators familiar with the Ramset tool should be performing assembly and/or operation.

-Warning- Insure the powder load disk is removed from the Ramset D45A tool prior to performing any work on the tool.

1. Remove the threaded barrel retention collar from the Ramset D45A tool. Use care while removing retention collar and **note the location and use of the two pawls that retain the barrel.**



2. Slide the Portamark barrel retention collar (shown below) onto the barrel. Note that the tapered end of the collar faces the Portamark holder and away from the Ramset tool.



3. Slide the barrel into the Ramset D45A tool. The barrel alignment rod that protrudes from the barrel must align with a hole inside the Ramset tool. (If you have a "D45" instead of the "D45A" – you must remove the barrel alignment rod by sawing it off flush.) Install the two barrel retention pawls. While holding the barrel in the tool, thread the barrel retention collar onto tool.

Reinstalling The Pawls



The Assembled Tool



4. Insert type into the Portamark, filling the type pocket completely, with spacers if necessary. Insert the type retention rod.
5. Insure that there are no powder loads in he Ramset. Depress the marking end of the Portamark squarely against a typical marking surface and note if the safety pawls spread to allow the tool to be completely depressed. If the safety pawls spread, the assembly was completed successfully.

Pawls are not spread, preventing the tool from firing. The type is not squarely aligned on the part.



Pawls are spread. This allows the tool to be completely depressed, and firing can occur.



-Note- Reference drawing D-6651-K for a cross section of this assembly.

2.0 Operation and Maintenance

2.1 General Operating Instructions

-Warning- Only certified operators familiar with the Ramset tool should be performing assembly and/or operation.

1. Confirm that no powder load disk is in the Ramset D45A tool. Set up the type for the required mark. Pull out the retaining pin and install the required type. Reinstall the retaining pin to hold type in holder.

-Warning- Always wear proper eye and hearing protection when operating this tool.

2. Install a powder load disk in the Ramset D45A tool.
3. Slide the Portamark attachment fully out of the Ramset D45A tool so that the piston is cocked and in the firing position.



Barrel in extended position. This cocks the tool.

4. Press the Portamark attachment firmly against the marking surface. This should cause the safety pawls to spread, allowing the trigger to be pulled and the mark to be generated.

Pawls are not spread, preventing the tool from firing. The type is not squarely aligned on the part.



Pawls are spread. This allows the tool to be completely depressed, and firing can occur.



-Note- MECCO Marking & Traceability recommends a detailed safety procedure be established for the operation and storage of the tool and powder loads. MECCO Marking & Traceability accepts no responsibility for the improper use of the tool.

5. To mark additional pieces, let the Portamark attachment slide fully out of the Ramset tool so that the piston cocks. Press the Portamark attachment firmly against the marking surface and pull the trigger.
6. When marking is complete, remove the powder load disk from the Ramset D45A tool and follow the tool cleaning instructions. Store tool and loads in a proper place.

2.2 Maintenance / Service

2.2.1 Periodic Tool Maintenance

-Warning- Improperly maintained tools can cause serious injuries to tool operators and bystanders.

Normal Cleaning

Normal cleaning of the tool must be performed daily. Always check the tool before performing any disassembly, cleaning, or service to make sure the tool is not loaded. All front-end parts, including piston, barrel, and Portamark attachment, should be thoroughly cleaned with a good quality detergent oil using the wire brush supplied with the tool kit. Remove all dirt and carbon build-up, and wipe parts dry with a clean, lint-free rag to prevent surface oil from collecting dust and dirt.

All front-end parts should be carefully inspected for wear or damage before reassembly to the tool. Any cracked, worn, or damaged parts should be replaced.

The piston should be checked for uneven tip wear or other deformities, and ground flat if required. The tip must be ground flat at a 90-degree angle to the shank of the piston. The length of the piston cannot be ground shorter than 5 11/16".

-Note- Piston grinding should only be attempted by trained personnel.

Complete Cleaning

Heavy use or constant exposure to dirt and debris may require that the tool be cleaned more extensively. Complete disassembly and cleaning of all parts may be necessary to restore the tool to normal operation.

Cleaning Schedule

Front-end parts must be cleaned daily. Front-end parts include, piston, barrel, and Portamark attachment.

General Maintenance

General tool maintenance should be performed every six months, or more frequently if subjected to heavy use. General maintenance should only be performed by an authorized ITW Ramset distributor. General tool maintenance includes complete disassembly, inspection, cleaning, repair, and testing.

2.2.2 Service Assistance

Service assistance is available during regular working hours 8:00 a.m. to 4:30 p.m. EST by calling (412) 369-9199 x 240. Please have available the Portamark serial number.

If the equipment needs to be returned to the factory, obtain a Return Material Authorization number PRIOR to shipping. Include the RMA number on shipping labels and all correspondence.

3.0 Warranty Information

3.1 Limited Warranty

MECCO Marking & Traceability strongly recommends that you purchase spare parts (as outlined in the spare parts section) for the Portamark Powder Actuated Marking Tool at the start of the warranty period. These parts are to be placed on the shelf so that they will be available in the event of part failure.

All parts manufactured to MECCO Marking & Traceability design are guaranteed to be interchangeable in accordance with drawings and specifications. If, within 12 months after system acceptance, any parts of the equipment designed and manufactured by MECCO Marking & Traceability and furnished under this contract prove to have been defective in workmanship or material when furnished, MECCO Marking & Traceability agrees to repair or furnish such parts without charge F.O.B. point of shipment. This warranty does not include standard commercial components purchased by MECCO Marking & Traceability for use in the equipment, which is furnished under this contract. MECCO Marking & Traceability will pass on the warranty provided by the manufacturers of such components.

MECCO MARKING & TRACEABILITY SHALL NOT ASSUME ANY EXPENSE OR LIABILITY FOR REPAIRS, ADDITIONS OR MODIFICATIONS MADE UPON MECCO MARKING & TRACEABILITY EQUIPMENT OUTSIDE MECCO MARKING & TRACEABILITY FACILITY WITHOUT PRIOR WRITTEN CONSENT.

4.0 Troubleshooting and Parts List

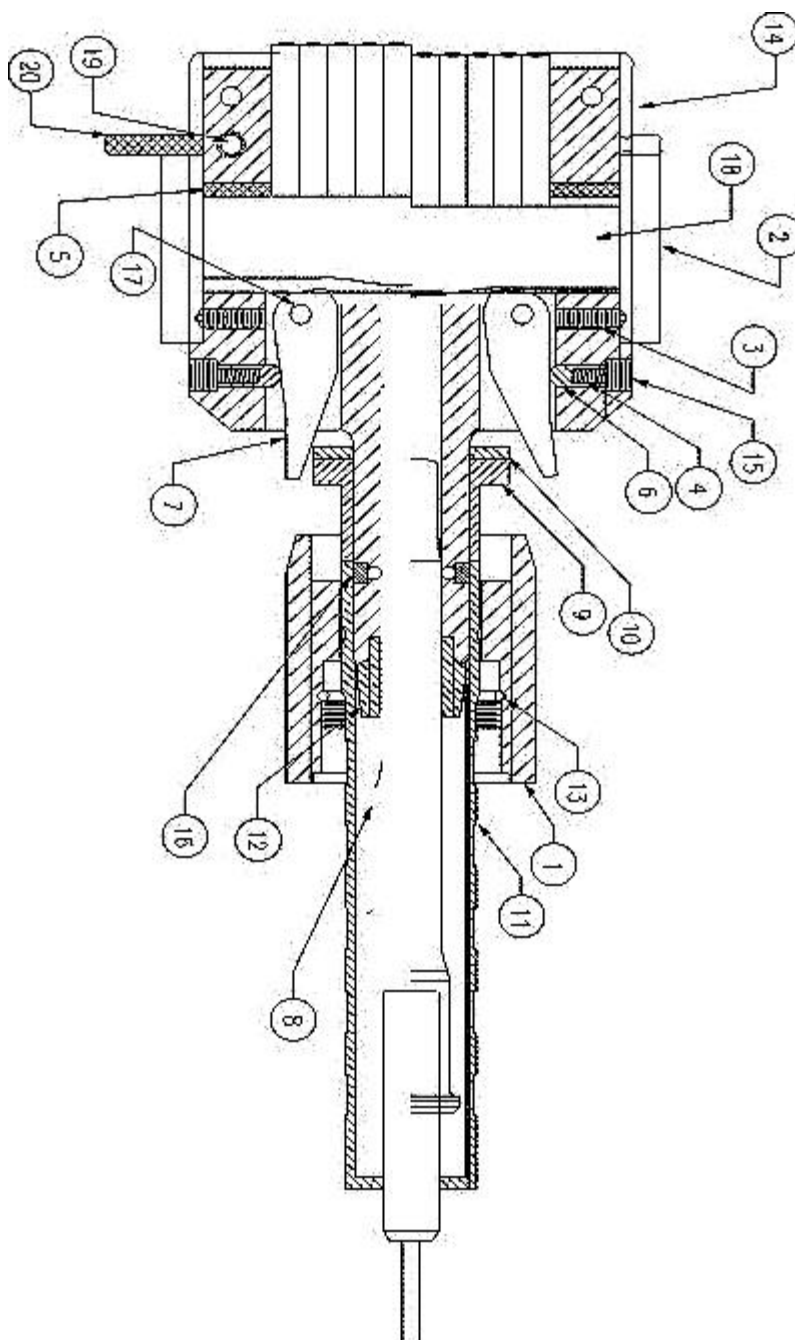
4.1 Troubleshooting

Refer to parts schematic for proper assembly of parts

<ul style="list-style-type: none"> Tool fails to fire 	<ul style="list-style-type: none"> Failure to depress tool completely Excessive dirt buildup on breech face not allowing proper penetration of firing pin. Firing pin and/or breech damaged Failure to open safety pawls. 	<ul style="list-style-type: none"> See "Tool does not completely depress" below After following misfire procedure, check firing pin indentation on load. Clean breech face. Replace damaged parts Safety pawls and/or anvil damaged or broken
<ul style="list-style-type: none"> Tool does not completely depress 	<ul style="list-style-type: none"> Disassembled or damaged parts 	<ul style="list-style-type: none"> Check all parts in the receiver for damaged or improper assembly
<ul style="list-style-type: none"> Reduction or loss of power 	<ul style="list-style-type: none"> Piston not being returned to full rear position Worn or damaged piston Worn or broken pawls Powder load disk is bent (Can result in tool firing, but marking does not occur) 	<ul style="list-style-type: none"> Barrel must be pulled completely open to properly position the piston. Replace damaged or worn parts Replace pawls Replace powder load disk When cocking tool, extend barrel firmly, but not with excessive force
<ul style="list-style-type: none"> Tool cannot be cocked or opened 	<ul style="list-style-type: none"> Excessive dirt buildup Damaged or bent piston Broken or damaged parts 	<ul style="list-style-type: none"> Clean tool thoroughly Replace piston Do not use tool. Contact ITW Ramset for service
<ul style="list-style-type: none"> Failure to index disc 	<ul style="list-style-type: none"> Disc not inserted correctly or damaged Damaged indexing mechanism 	<ul style="list-style-type: none"> Check load disk-Properly discard damaged disks Contact ITW Ramset for service

4.2 Parts List

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	23-1007	Barrel Retention Collar
2	1	23-0023	Retainer
3	1	23-0028	Spring Plunger
4	1	23-0030	Spring
5	1	23-0031	Urethane Pad
6	1	23-0038	Plunger
7	1	23-1004	Safety Pawl
8	1	23-1008	Piston
9	1	23-1010	Locking Nut
10	1	23-1011	Locking Nut
11	1	23-1013	Barrel
12	1	23-1014	Buffer
13	1	23-1015	Retention Collar O-Ring
14	1	23-1001	Type Holder
15	1	23-1018	5/16-18 x 1/4" Set Screw
16	1	23-1064	Spring Plunger
17	1	23-1058	Safety Pawl Pin
18	1	23-0037	Anvil
19	1	23-1062	Spring Plunger
20	1	23-1060	Type Retaining Pin



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