DANGER

**THIS TOOL FOR USE BY LICENSED OPERATORS ONLY.
READ AND OBEY ALL SAFETY AND OPERATING
INSTRUCTIONS BEFORE OPERATING TOOL.**

Ramset®

VIPER TOOL

OPERATOR'S
SAFETY & OPERATING
INSTRUCTION MANUAL

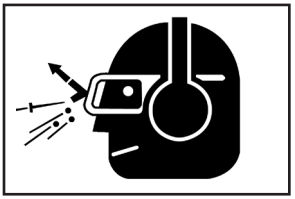
**SEMI-AUTOMATIC, LOW VELOCITY
PISTON TYPE FASTENING TOOL**

DANGER

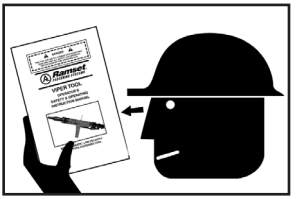
THIS TOOL IS TO BE USED ONLY BY PROPERLY TRAINED AND LICENSED OPERATORS.

YOU MUST SUCCESSFULLY COMPLETE THE RAMSET TRAINING PROGRAM FOR THE TOOL AND OBTAIN A CERTIFIED OPERATOR'S LICENSE BEFORE HANDLING, LOADING OR OPERATING THIS TOOL.

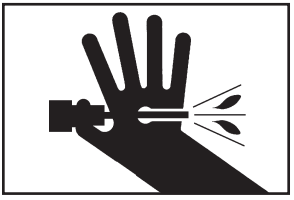
ATTEMPTING TO HANDLE OR OPERATE THIS TOOL WITHOUT PROPER TRAINING AND LICENSING CAN RESULT IN SERIOUS INJURY TO THE OPERATOR OR BYSTANDERS.

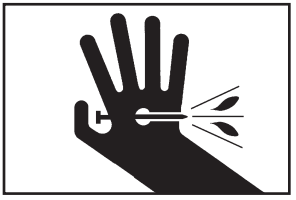


Operator's and bystanders must wear eye and hearing protection.



Read manual before operating tool.





Never close tool with hand over fastener loading end of the tool. A serious hand injury from penetration by the piston or a discharged fastener could result.

DANGER

Just as no one can merely read a book about driving an automobile and then hope to drive one safely, no one should attempt to use any Ramset tool without adequate, competent personal instruction. And just as one must be licensed to drive an automobile, one must also be licensed to use a powder actuated tool. No automobile instruction book or instructor can forewarn a learner against all possibilities and emergencies, nor can Ramset instructors and printed material detail all possible conditions surrounding the use of Ramset tools and products.

Responsibility for the safe and proper use of this tool rests with the tool user and the employer.

Preparation

Acceptable Base Materials

Powder actuated fastening is suitable for use in the following base materials only:

- **Poured Concrete**
- **Structural Steel**
- **Masonry Joints (see page 8)**

Never attempt to fasten into any other type of material. *Fastening into other materials can cause blindness or other serious injury.*

Unacceptable Base Materials

Never attempt to fasten into very hard or brittle materials such as cast iron, tile, glass, or rock of any type. *These materials can shatter, causing the fastener and/or base material fragments to fly free and cause serious injury to the tool operator and others.*

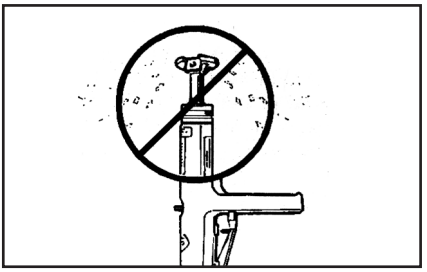
Never fasten into soft base materials, such as drywall or lumber products. *These materials may allow the fastener to travel completely through and out the other side, endangering those in the path of the fastener.*

Never fasten into any base material that does not pass the Center Punch test. *Failure to assure the suitability of the base material can result in serious injury to the eyes or other body parts.*

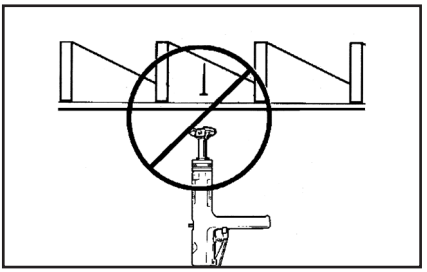
Center Punch Test

ALWAYS WEAR SAFETY GOGGLES WHEN PERFORMING THIS TEST.

1. **Always check the material being fastened into for hardness before attempting any fastening operation.**
2. **Using a fastener as a center punch, strike the fastener against the work surface using an average hammer blow and check the results.**



NEVER FASTEN INTO VERY HARD OR BRITTLE MATERIALS



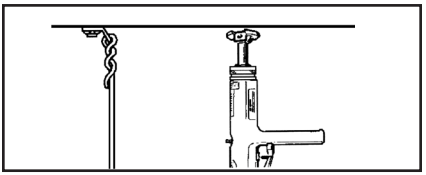
NEVER FASTEN INTO SOFT MATERIALS SUCH AS DRYWALL

Center Punch Test Results

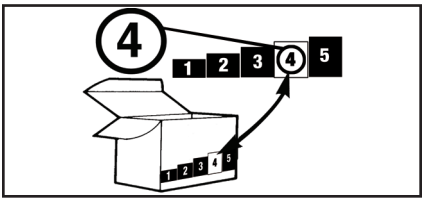
1. **If the fastener point is flattened, the material is too hard for a powder actuated fastening.**
2. **If the fastener penetrates the material easily, the material is too soft.**
3. **If the material cracks or shatters, the material is too brittle.**
4. **If the fastener makes a small indentation into the material, the material is suitable for fastening.**

Loads & Load Selection Safety

1. **Always make a test fastening after being sure that the base material is suitable for powder actuated fastening.** *Failure to determine the correct power level to be used may result in the use of excessive power, allowing the fastener to pass completely through the work material, causing serious or fatal injuries to others who may be in the path of the fastener.*
2. **Color-blind operators must always select loads by number to prevent use of an incorrect load for the same reasons as in #1 above.**



ALWAYS MAKE A TEST FASTENING



COLOR-BLIND OPERATORS MUST ALWAYS SELECT LOADS BY NUMBER

Workplace Safety

1. **Operators and bystanders must always wear approved eye protection and approved hearing protection.** *Failure to do so may result in blindness or serious eye injury from flying debris and loss of hearing from constant or repeated unprotected exposure to fastening noise.*
2. **Always keep the work area clear of bystanders and unnecessary materials that could interfere with safe tool operation.** *Operating the tool in a congested or cluttered area may affect your ability to operate the tool safely.*
3. **Never operate tool if flammable or explosive materials are nearby.** *Powder loads burn and create sparks when fired and could ignite these materials or fumes.*
4. **Always post warning signs within 50 ft. of the area where fastening is to be done. Sign must state: "WARNING - Powder Actuated Tool In Use".** *Failure to warn others may result in serious injury to them. Contact Ramset at 1-800-241-5640 to obtain this sign.*

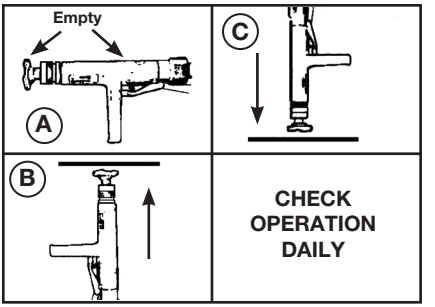
KEEP WORK AREA CLEAR OF BYSTANDERS AND CLUTTER

NEVER OPERATE THE TOOL AROUND FLAMMABLE OR EXPLOSIVE MATERIALS

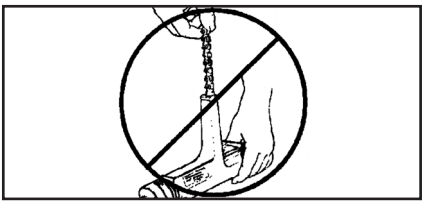
ALWAYS POST WARNING SIGNS

Tool Handling Safety

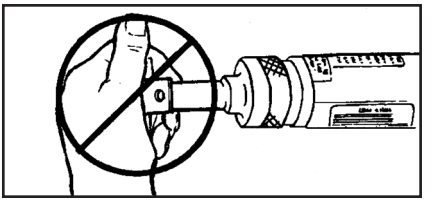
1. **Always be sure tool is operating properly before attempting to use it. Follow the "Daily Function Test" shown to the right and described on page 9.**
2. **Always load tool using a strip load selected directly from a box indicating the power load type and number. Never attempt to use loose strip loads that could be mis-identified.**
3. **Never carry loose loads in pockets with pins or other hard objects.**
4. **Never load a tool unless you intend to immediately make a fastening.** *Loading a tool and leaving it unattended in the work area can result in the tool being accidentally discharged by others.*
5. **Never place your hand or any other body part over the fastener loading end of the tool.** *Serious hand injury could result from being struck by either a fastener or the tool piston should the tool be accidentally fired.*
6. **Always store the tool unloaded and keep the tool and the loads securely locked in a tool box. Keep keys away from children and unlicensed persons.**
7. **Always keep the tool pointed away from yourself and others.**
8. **Never carry a loaded tool around the work area.**
9. **Never allow anyone not trained to use the tool.**
10. **Never engage in horseplay with the tool.**
11. **Using the tool in poorly ventilated areas, cleaning tool or handling loads may result in exposure to lead or other substances known to cause birth defects, and other physical harm. Have adequate ventilation at all times and wash thoroughly after exposure.**



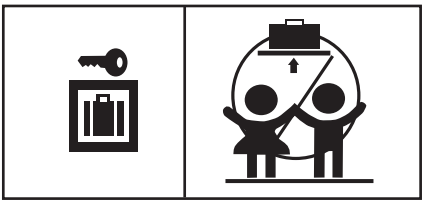
ALWAYS DO A DAILY FUNCTION TEST BEFORE LOADING TOOL



NEVER LOAD THE TOOL UNLESS IT IS TO BE USED IMMEDIATELY



NEVER PLACE HANDS OR BODY OVER MUZZLE OPENING



KEEP TOOL LOCKED & OUT OF THE REACH OF CHILDREN

FAILURE TO FOLLOW INSTRUCTIONS CAN CAUSE INJURY TO THE TOOL OPERATOR OR TO BYSTANDERS.

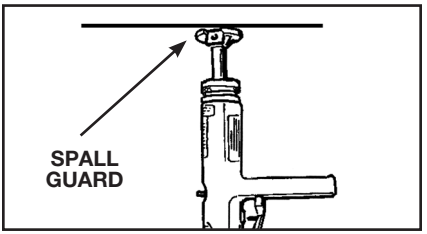
Fastener Driving Safety

1. **Only use the tool for fastening into a suitable base material.**
2. **Never fire the tool without a fastener.** *Firing a tool without a fastener will cause the piston to strike the work surface, and may cause serious injury to you and others in the work area.*
3. **Always use the spall guard whenever possible to minimize flying particles or debris.**
4. **Always hold the tool perpendicular to and firmly against the work surface when making a fastening.** *Failure to do so could allow a fastener to ricochet.*
5. **Never attempt to drive a fastener close to an edge or to another fastener.** *See page 8 for guidelines.*

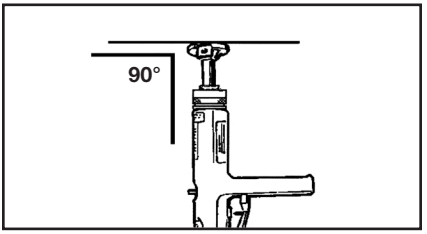
ALWAYS FOLLOW THE MISFIRE PROCEDURE.

If the tool does not fire after the normal firing sequence, continue to hold the depressed tool against the work surface for at least 30 seconds. Then carefully lower the tool, remove the strip load, and put it in a can of water or other non-flammable liquid. Never carelessly discard a strip with live loads into a trash container.

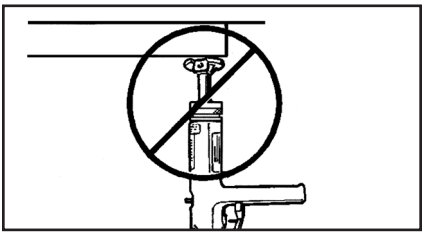
If the tool becomes stuck or jammed with a live powder load, keep the tool pointed in a safe direction, and immediately tag it, **"Danger- defective - do not use".** Lock the tool in a tool box and call your local Ramset distributor for assistance.

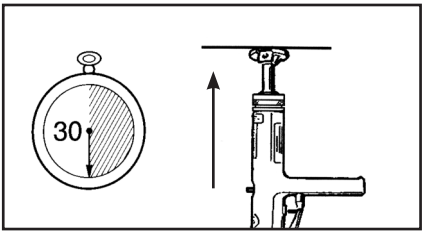


USE SPALL GUARD WHENEVER POSSIBLE



ALWAYS HOLD THE TOOL PERPENDICULAR TO THE WORK SURFACE


NEVER DRIVE A FASTENER CLOSE TO AN EDGE



HOLD THE TOOL FIRMLY AGAINST THE WORK SURFACE FOR AT LEAST 30 SECONDS

Your Ramset Viper Tool uses only the Ramset fasteners and loads shown below or listed for the tool in the Product Catalog.

DANGER

Never use any other types of fasteners or strip loads in the Viper Tool. Use of other types of fasteners or loads may cause unintentional load discharge, damage the tool, cause poor fastening performance, or create a risk of serious injury to the operator or bystanders.

FASTENERS AND FASTENER ASSEMBLIES

CEILING CLIP ASSEMBLIES - .300 HEAD DIA.

CAT. NO.	SHANK DIA.	LENGTH
SDC100	.145	1”
SDC125	.145	1-1/4”
SPC78*	.150 PowerPoint	7/8”
SPC114*	.150 / .180 PowerPoint	1-1/4”

Note: * For Hard Concrete

LOADS

Ramset RS 27 strip loads are specially made for use in the Viper Tool.

RS 27 10 SHOT STRIP LOAD

POWER LEVEL	CATALOG NUMBER	LOAD COLOR	CASE COLOR
2	2RS27	Brown	Brass
3	3RS27	Green	Brass
4	4RS27	Yellow	Brass
5	5RS27	Red	Brass

The power level of the load is indicated by the number marked on each box, the color of the box, and the color on the tip of each load. As the number increases, the power level also increases.

Always perform the center punch test described on page 3 to test the base material.

Always make a test fastening using the lowest power level first. If more power is required to set the fastener, use the next higher power level until the power level necessary to drive the fastener is reached.

FASTENING APPLICATIONS

Your Ramset tool can be used for a wide range of fastening needs in a variety of base materials. Reading and follow these important fastening guidelines will help you get the best results from your tool, fasteners, and powder loads, as well as help you perform these fastening operations safely and effectively.

Powder actuated fastenings are permanent fastening so attempting to remove a fastener from concrete or steel may result in serious injury.

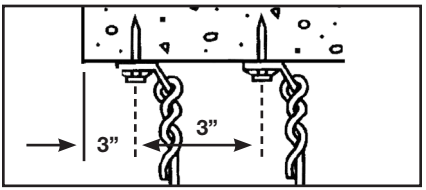
Fastening to Concrete

When fastening into concrete, always maintain a minimum spacing of 3" between fastenings and 3" from any free edge. Concrete thickness should be at least three times the intended penetration depth into the concrete.

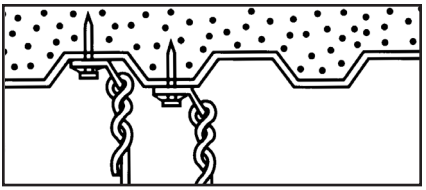
Driving fasteners too close to an edge or too close to each other can cause the concrete edge to fail or fasteners to fly free.

Fastening to Steel

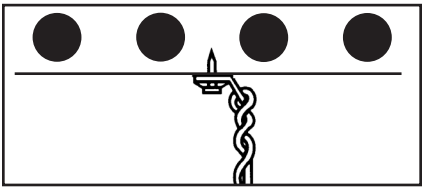
Your Ramset tool can be used for fastening on the flat surfaces of structural steel. When fastening into steel, always maintain a minimum spacing of 1-1/2" between fastenings and 1/2" from any edge.



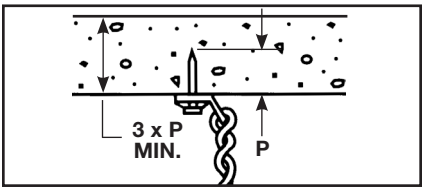
SPACING — FASTENING INTO CONCRETE



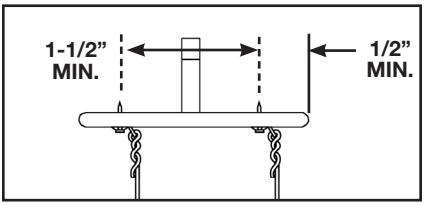
FASTENER LOCATIONS IN LIGHTWEIGHT PAN DECK



FASTENER LOCATION IN PRECAST CONCRETE



PENETRATION INTO CONCRETE



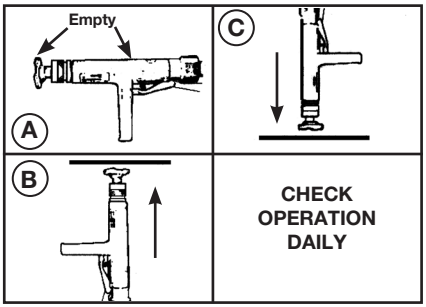
SPACING IN STEEL

TOOL OPERATION

DAILY FUNCTION TEST

Always check the tool first to make sure that it does not contain a load strip or fastener. Test the tool overhead several times by completely depressing it on a hard surface. You should hear an audible click as the firing pin releases. Let up on the tool and check to be sure that the barrel assembly has opened to the starting position.

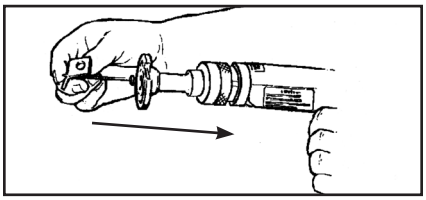
Next, place the tool, pointing downward, on a hard surface and firmly, completely depress the tool. You must not hear the firing pin release! If the firing pin releases. **STOP, DO NOT TRY TO USE THE TOOL UNTIL THE PROPER REPAIRS HAVE BEEN MADE.** Contact your Ramset Distributor for repairs.



PERFORM FUNCTION TEST WITH EMPTY, UNLOADED TOOL

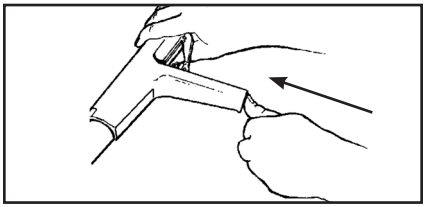
OPERATING THE VIPER TOOL

1. Insert a fastener assembly into the muzzle bushing end of the tool until it is fully seated. If a clip assembly is being used, be sure it is positioned in the cutout section of the spall guard.



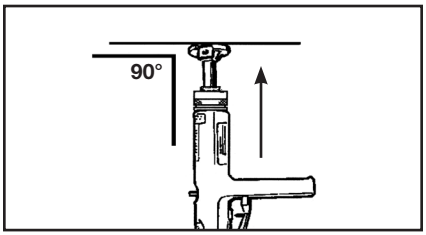
INSERT FASTENER INTO THE MUZZLE END OF THE TOOL

2. Insert a load strip into the bottom of the handle and push it in until your finger is in firm contact with the handle recess. **Never try to insert a load strip into the tool from the top of the receiver.**



INSERT LOAD STRIP INTO THE OPENING IN THE BOTTOM OF THE HANDLE

3. Carefully raise the tool to the ceiling and depress the barrel assembly where the fastening is to be made. Hold the tool perpendicular and forcibly push upwards on the pole handle to compress the firing pin spring and release the sear to fire the tool. **If the tool does not fire, continue to hold it in place for at least 30 seconds and then follow the misfire procedure on page 6.** Always point the tool in a safe direction and use care when raising it to the ceiling to avoid bumping objects that could cause the tool to fire.



RAISE TOOL TO THE CEILING AND DEPRESS THE BARREL ASSEMBLY. THEN PUSH UP FORCIBLY AGAINST THE WORK SURFACE TO FIRE THE TOOL

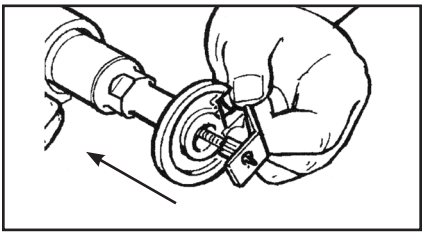
4. Lower the tool, keeping it pointed in a safe direction, and insert the next fastener or fastener assembly. **Note:** While the Viper tool is being closed and fired, the advance lever cam has caused the load advance lever to be indexed downward to pick up the next load. When the tool is lowered and opens up, the next unfired load is indexed upward to the firing position. At the same time, as the tool is lowered, the piston is automatically reset for the next fastening.

   NEVER PLACE YOUR HAND OR FINGERS OVER THE MUZZLE BUSING WHILE AN UNFIRED LOAD IS IN POSITION TO BE FIRED.

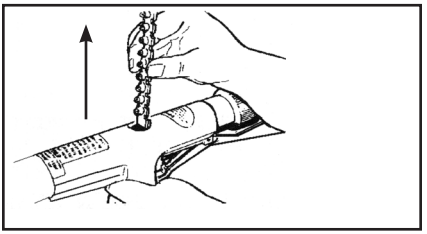
5. After all 10 loads in the strip have been fired, pull the used load strip from the top of the tool. NEVER try to pull a load strip from the bottom of the tool.
6. If you are working in an area where dirt or debris can fall onto the tool while making fastenings, check the tool frequently to be sure the muzzle bushing and loads strip track are clear.

NOTE: Use of partially used load strips.

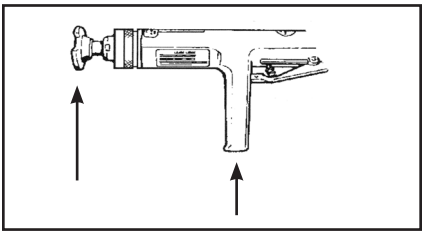
The design of the Viper tool is such that the next load to be fired is automatically indexed into the firing position during the tool closing, firing and tool opening sequence of operation. If it is necessary to use a partially used load strip, the end of the strip containing the live loads should be placed into the bottom of the tool handle just as if it were a new strip. By counting the number of unfired loads in the strip before inserting it and keeping count as the fastenings are being made, one can easily determine when all of the loads have been used.



INSERT THE NEXT FASTENER OR FASTENER ASSEMBLY INTO THE MUZZLE BUSHING



REMOVE THE LOAD STRIP FROM THE TOP OF THE TOOL

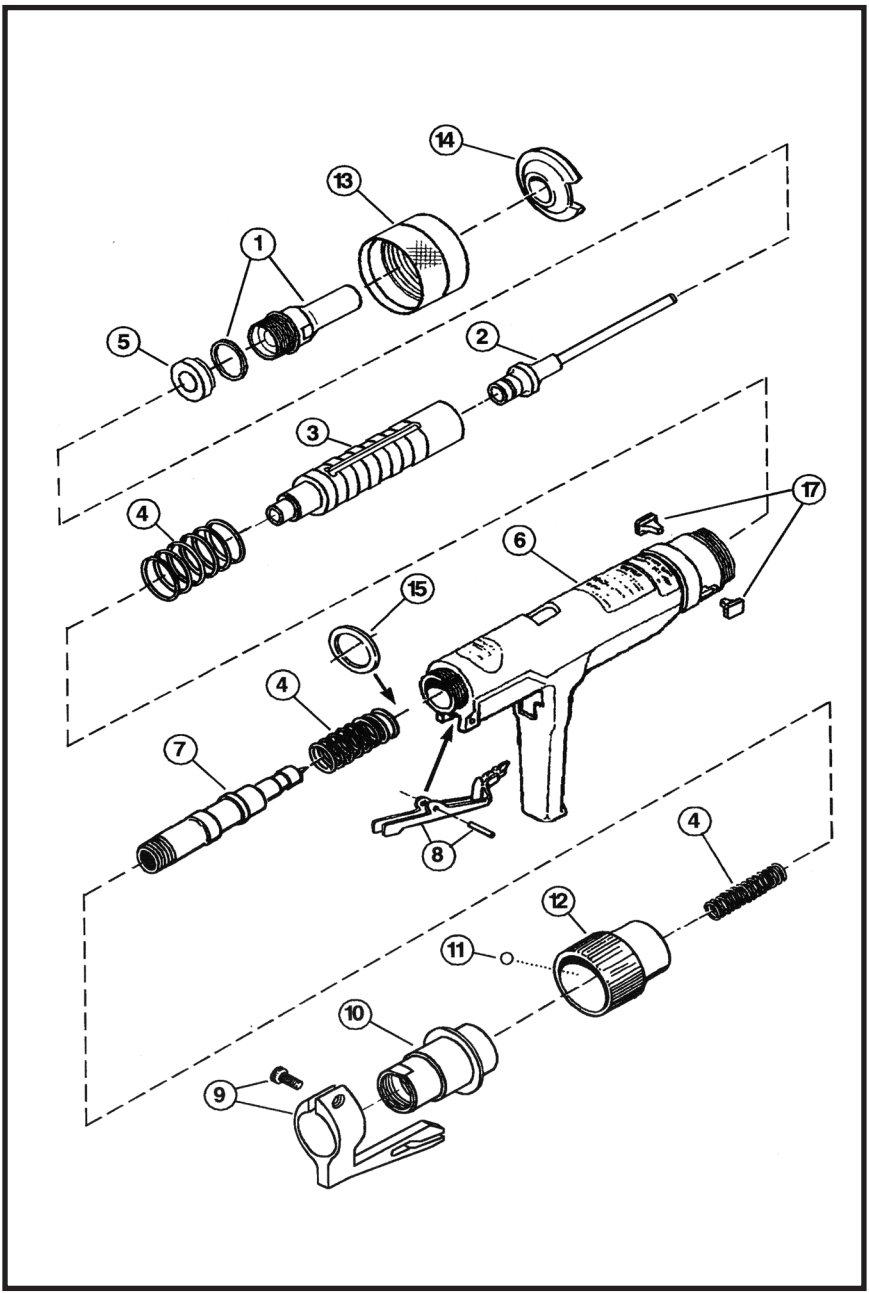


CHECK THE MUZZLE BUSHING AND LOAD STRIP TRACK FOR DEBRIS

SHOULD YOU DECIDE NOT TO MAKE A FASTENING AFTER THE TOOL HAS BEEN LOADED, ALWAYS REMOVE THE POWDER LOAD FIRST, THEN THE FASTENER. THIS WILL PREVENT ACCIDENTAL DISCHARGING OF THE FASTENER OR PISTON INTO THE OPERATORS HAND.

REFER TO PARTS SCHEMATIC FOR PROPER ASSEMBLY OF PARTS

– Overdriving of fasteners	– Excessive power	– Change to the next lower power level load color and number.
	– Soft base material	– Check base material (see page 3)
– Tool fails to fire	– Failure to depress completely	– See “Tool does not completely depress”
	– Excessive dirt buildup on breech face not allowing proper penetration of firing pin	– After following misfire procedure, check firing pin indentation on load. Clean breech face.
	– Firing pin and/or firing pin assembly damaged	– Replace damaged parts
– Tool does not completely depress	– Misassembled or damaged parts	– Check all parts in the receiver for damage or improper assembly.
– Reduction or loss of power	– Piston not being returned to the full rear position	– Disassemble and clean barrel, piston and nosepiece
	– Worn or damaged piston	– Replace damaged piston
– Failure to index strip	– Strip not inserted in tool correctly or is damaged	– Check load strip. Properly dispose of damaged strip. (See page 6)
	– Damaged indexing mechanism	– Contact your Ramset Distributor for assistance
– Tool fails the Daily Function Test		– Contact your Ramset Distributor for assistance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VIPER TOOL PARTS LIST

KEY	PART NO.	DESCRIPTION
1	MVP100A	MUZZLE BUSHING ASSEMBLY
2	MVP140	PISTON
3	MVP150	BARREL
4	MVP21A	SPRINGS (barrel, firing pin & firing pin assembly)
5	MVP110A	BUFFER (PKG of 3)
6	MVP101	HOUSING
7	2VP18	FIRING PIN ASSEMBLY
8	MVP500AP	ADVANCE LEVER AND PIN
9	MVP600A	ADVANCE LEVER CAM AND SCREW
10	MVP028	POLE CONNECTOR
11	2VP11	LOCKOUT BALL (PKG. OF 3)
12	2VP29	HANDLE CONNECTOR
13	MVP130	RETAINING COLLAR
14	MVP30	SPALL GUARD
15	2VP33	WAVE WASHER
16	MVP001A	LINER BALLS AND SPRINGS (not shown)
17	316540	PAWLS (PKG of 2)

MAINTENANCE

IMPROPERLY MAINTAINED TOOLS CAN CAUSE SERIOUS INJURIES TO TOOL OPERATOR AND BYSTANDERS
CLEAN TOOL DAILY

Always make sure the tool is not loaded before performing any service or repair and always wear safety goggles when cleaning or servicing the tool.

DAILY CLEANING

All front end parts shown in the disassembly section are to be cleaned daily with a good detergent oil and wire brush. Remove all dirt and carbon buildup and wipe parts dry with a clean rag. Check all parts for wear or damage before reassembly and replace or repair any worn or damaged parts.

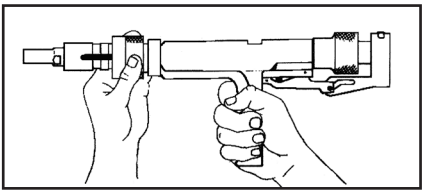
PERIODIC COMPLETE CLEANING / GENERAL MAINTENANCE

Heavy 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. General maintenance should be performed every six months or more often if the tool is subjected to heavy use. General maintenance/complete cleaning should be done by a qualified repair person.

ALWAYS FUNCTION TEST THE TOOL AFTER PERFORMING ANY SERVICE. SEE PAGE 9 FOR DETAILS ON THE FUNCTION TEST.

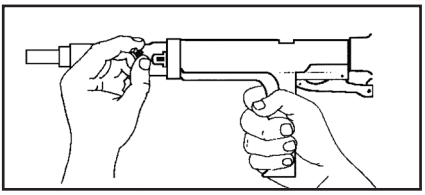
TOOL DISASSEMBLY

1. Unscrew and remove the barrel retention collar. Handle the tool carefully after the collar is unscrewed to prevent the two barrel pawls from falling out.



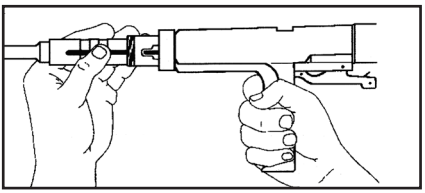
UNSCREW THE BARREL RETAINING COLLAR

2. Remove the two pawls from the slots on either side of the tool housing.



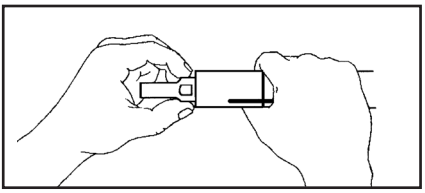
REMOVE BOTH PAWLS

3. Slide the barrel assembly and the barrel spring out of the tool body. Note the position of the slots on the sides of the barrel since the tip ends of the pawls are inserted into the barrel slots through the tool housing in re-assembly.



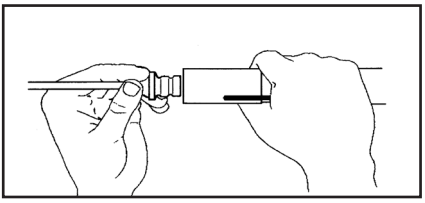
SLIDE THE BARREL ASSEMBLY AND BARREL SPRING OUT OF THE TOOL BODY

4. Unscrew the muzzle bushing assembly from the barrel. If this is difficult to do by hand, grasp the barrel and use a wrench on the flats of the muzzle bushing assembly to loosen it for complete removal.



UNSCREW THE MUZZLE BUSHING FROM THE BARREL

5. Remove the piston from the barrel.



PULL PISTON OUT OF THE BARREL

6. Remove the buffer from the muzzle bushing.

   Inspect all parts for wear or damage and clean or replace as required. Use cleaning solvent and cleaning brushes to remove dirt and powder residues. Wipe all parts dry before reassembly.

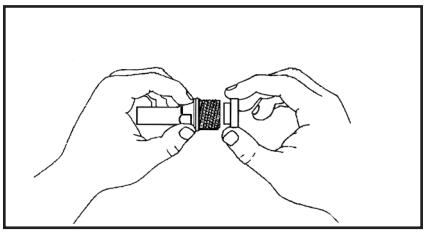
   Wear safety goggles when cleaning tool parts.

7. Check the piston tip for damage and grind flat. The tip of the piston must be 90° to the shank. Grinding should only be done by qualified personnel. The minimum overall length of the piston must not be less than 4" long. When less than 4" long, the piston must be replaced.

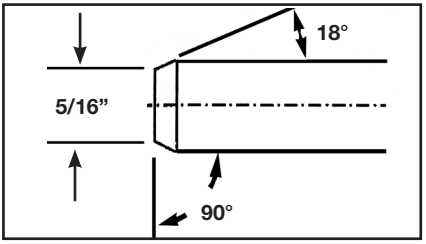
8. Reassemble the tool in the reverse order of disassembly. When sliding the barrel and spring into the housing, align the slot in the barrel with the slot in the tool housing and install both pawls and the retaining collar

9. Always check before using the tool to be sure that the advance lever cam is tightened securely on the end of the pole connection.

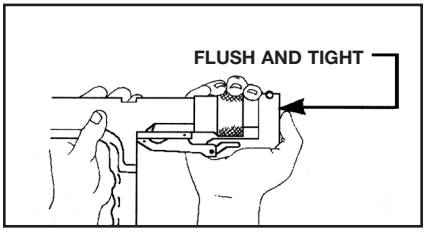
   ALWAYS PERFORM THE DAILY FUNCTION TEST DISCUSSED AND SHOWN ON PAGE 9 BEFORE USING THE TOOL AFTER CLEANING OR SERVICING.



PULL THE BUFFER OUT OF THE MUZZLE BUSHING



GRIND PISTON TIP FLAT AND BEVEL EDGE AT 18°



BE SURE THE ADVANCE CAM IS TIGHTENED SECURELY AND IS FLUSH WITH THE END OF THE POLE CONNECTOR

VIPER WARRANTY AND LIMITATIONS

Ramset warrants that new Viper power fastening tools, parts and accessories will be free from defects in material and workmanship for the period shown below.

THREE-YEAR WARRANTY
A three-year warranty will apply to all parts, except those listed below as normal wearing parts, or parts which are specifically covered by an extended warranty.

The following parts are considered normal wearing parts and are excluded from the warranty:

- Piston
- Buffer
- Spring Clips
- Pawls
- Piston Rings

The warranty period is based off of tool build date, determined from the tool serial number. Ramset may extend the warranty time frame from the date of purchase with a qualifying document proving date of purchase.

WARRANTY STATEMENT
Ramset's sole liability hereunder will be to replace any part or accessory which proves to be defective within the specific time period. Any replacement part or accessory provided in accordance with this warranty will carry a warranty for the balance of the period of warranty applicable to the part it replaces. This warranty does not apply to part replacement required due to normal wear.

This warranty is void as to any tool which has been subjected to misuse, abuse, accidental or intentional damage, use with fasteners, and loads not meeting Ramset specification, size, or quality, improperly maintained, repaired with other than genuine Viper replacement parts, damaged in transit or handling, or which, in Ramset's opinion, has been altered or repaired in a way that affects or detracts from the performance of the tool.

Ramset MAKES NO WARRANTY, EXPRESSED OR IMPLIED, RELATING TO MERCHANTABILITY, FITNESS, OR OTHERWISE, EXCEPT AS STATED ABOVE and the liability AS STATED ABOVE AND AS ASSUMED ABOVE is in lieu of all other warranties arising out of, or in connection with, the use and performance of the tool, except to the extent otherwise provided by applicable law.

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