

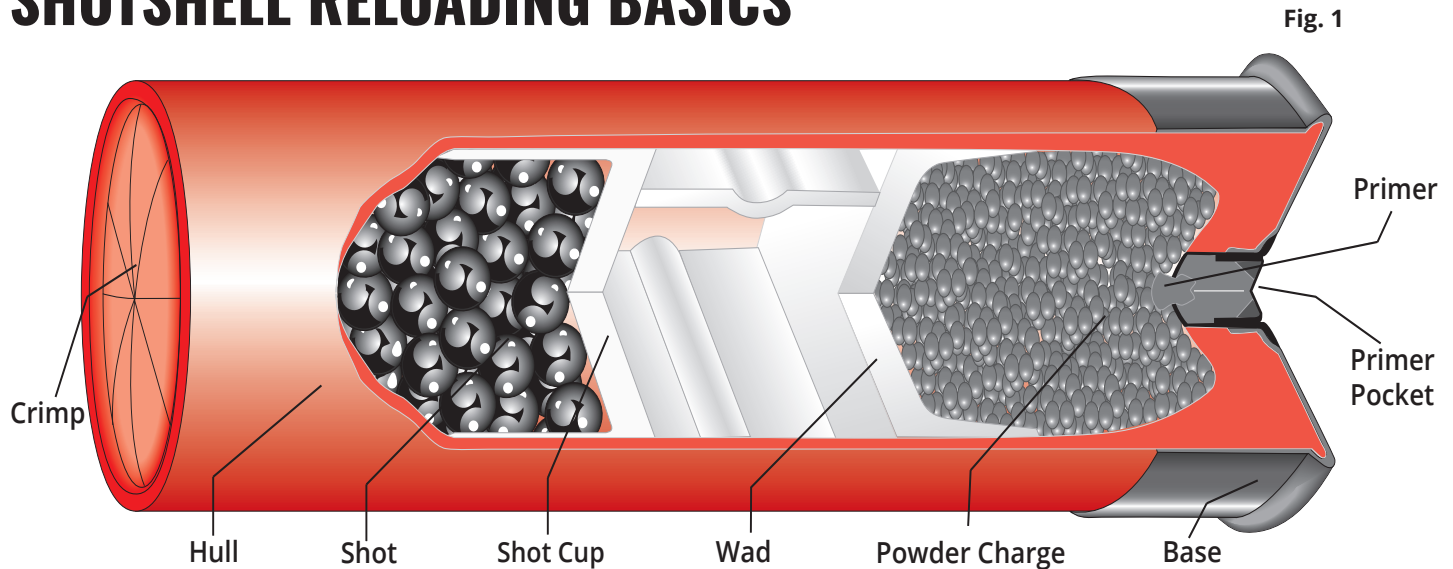


OUTDOORS

600 JR. MARK V

Single Stage Shotshell Reloader

SHOTSHELL RELOADING BASICS



SHOTSHELL COMPONENTS

A shotshell is made up of several different components and there are many different variations of each component. For example, a study of shotshell reloading will show you numerous combinations of primer, powder charge, wad and the shot you should use in each empty hull, for water-fowl, small game, trap or skeet. Each combination of components has been carefully tested by ballistics experts for maximum effectiveness and safety.

Experimenting with combinations not recommended by a component manufacturer is dangerous!

THE HULL

The proper choice in the empty hulls you use is one of the most important choices you must make to keep your reloading simple. You will encounter many problems by trying to use any and all hulls you may find, which can be quite discouraging. It is important to know that not all hulls have the same capacity or the same crimp. Each time you use a hull with a different capacity (usually caused by different base wad height) you must assemble a different set of components to properly fill this case.

We are not recommending you throw away all the non-standard hulls you have but are advising you to keep it simple until you have gained the experience necessary to assemble the different components.

WADS

The wad is the part of the shotshell between the powder and the shot. A tight seal permits the expanding gas from the burning powder to push the shot column out of the gun barrel with maximum velocity. Modern "wad columns" combine both the shot cup and the wad in one piece. These one-piece wad columns are the easiest to use, and therefore are the most popular -- especially with beginning reloaders. There are many different kinds of wads. Use only the specific wad column recommended for the other components you are using.

SHOT

There are many types of shot. The most common are lead and steel. ***Lead and steel shot are not interchangeable.*** Reloading with steel shot requires special wads. Using improper wads will not only ruin your gun, but could cause high pressures that could burst the gun causing injury or death to the shooter or bystander. When reloading with steel shot, it is imperative that the steel shot components are used and the instructions for those components are followed exactly. MEC does not design, manufacture or approve any reloading components. It is the responsibility of the individual to select components they feel are suited for steel shot reloading. As the size of the shot increases, fewer pellets can be loaded in the hull. The smaller sizes are used for trap and skeet, doves, varmints, small game, etc. The larger shot sizes are for heavier game such as: ducks, geese, turkeys, etc.

SHOT SIZES

Fig. 2

Lead Shot			Buckshot		
No.		Dia.	No.		Dia.
9	●	.08"	4	●	.24"
8½	●	.085"			
8	●	.09"	3	●	.25"
7½	●	.095"			
7	●	.10"	1	●	.30"
6	●	.11"			
5	●	.12"	0	●	.32"
4	●	.13"			
2	●	.15"	00	●	.33"
Air Rifle	●	.175"			
BB	●	.18"			

POWDER

Different powders have different burning speeds, which make them useful for different jobs. The heavier the shot load, the slower the powder must burn. It takes longer to accelerate a heavy shot load than it does a light one.

A faster-burning powder ignited behind a heavy shot load could cause excessive “breech pressure” which might cause damage to the gun and even injury to the shooter or bystander. (Breech pressure is the pressure of the gas which is created by the burning powder. It is the breech pressure which forces the shot through the barrel).

On the other hand, using a slow-burning powder to propel a light load of shot will not work effectively. Without the proper pressure buildup, many powders will not burn uniformly and impart sufficient velocity to the shot. Never interchange powders for reloading steel shot. A powder that generates acceptable pressures on 1½ oz of lead shot cannot be used to propel 1½ oz of steel shot. The pressures will raise to dangerous levels.

PRIMERS

The primer ignites the powder. When you pull the trigger, the hammer falls on the firing pin, denting the primer cup. This causes the component in the primer to detonate, igniting the main powder charge. Different primers have different characteristics depending on their purpose. Use only the primer that is recommended by the component manufacturer for the hull, powder, wad, and shot load you are using.



600 JR. MARK V

Single Stage Shotgun Reloader

The 600 JR. Mark V is remarkable in that it performs each of the basic reloading steps with a mere pull on the handle; depriming, priming, resizing the brass base, measuring the correct amount of powder, firmly seating the wad column, measuring the precise amount of shot and forming a tightly sealed crimp. No transfer die is required, and resizing dies at reconditioning and crimping stations gives your shell its proper form.

Several features make the MEC 600 JR. Mark V today's best buy, such as the cam-actuated reconditioning station with positive ejection; the Adjusta-Guide wad feed device with vertical adjustment to permit rapid wad insertion; and the new one piece original shell creases can be changed from 6-8pt. in seconds. A standard feature on the Mark V is the "Pro-Check" which keeps the charge bar in proper sequence to prevent spilled powder or shot.

A WORD ABOUT SAFETY

To make reloading safe, all it takes is common sense and the ability to read and follow the directions of the various component manufacturers.

When you purchase your powder, get a copy of the "SAAMI" (Sporting Arms and Manufacturers Institute) pamphlet on the properties and storage of smokeless powder. Read this literature and abide by it. Generally speaking, powder is safer than gasoline, because unlike gasoline, it does not give off explosive fumes. If ignited, powder will burn until it consumes itself. Modern smokeless powders must be confined to cause an explosion. The containers that the powder is purchased in are designed to burst without causing an explosion if the powder is accidentally ignited. Your powder should be kept in these containers until it is used up. It is unsafe to put powder in a glass jar or bottle or any other container which could cause pressure buildup. Store your powder where there is no chance of sparks, fire or flame, where it is cool and dry, and where children cannot reach it.

Primers also require care in handling. Never take primers out from the container they were purchased in until ready for use. Storage of primers in anything but the container that they were purchased in is unsafe. Exposing a primer to excessive heat, or to fire, flame or rough handling will cause it to explode. Do not store primers near your powder or where children can get at them.

When a manufacturer tells you to use a particular set of components in a shell it means precisely that. You cannot indiscriminately experiment with or substitute components without experiencing problems. At best, you will get a shell which fails to give the performance you expect. At worst, you may inflict serious injury upon yourself or someone else who fires your reloaded shells. The manufacturer has extensively tested recommended loads and knows how they perform. Always follow these recommendations exactly.

It is also highly recommended that safety glasses be worn when reloading. When finished reloading, remove the containers from your machine and seal them with caps and put them in a safe place. Also return all primers to their original container and store them in a safe place. It is important that these materials are kept out of the reach of children and other unauthorized persons.

600 JR. MARK V

Before you try to assemble your reloader and attempt reloading, we recommend that you look over your reloader and compare it with the picture, identifying all the major components you'll be using.

A - Charge Bar: Located under the powder container. Moving the bar to the left charges the powder. Make sure powder containers are placed correctly.

B - Wad Height Indicator: Used to disclose improper wadding.

C - Wad Pressure Indicator: Gives the exact amount of pressure actually being applied to wad column at bottom of handle stroke.

D - Reconditioning Die: The spent primer ejected, the shell mouth is ironed and the brass base is resized with one stroke of the handle.

E - Reprime Punch: Seats new primer into shell Primer Seating Assembly (K).

F - Rammer Tube: Through which powder and shot are dropped into the shell. This tube is used also to seat the wad column.

G - Adjusta-Guide Wad Feed: Permits quick and accurate seating of wad column.

H - Crimp Starter: 8-point, 6-point, (smooth cone optional for paper shells).

I - Crimping Station: Containing the exclusive cam-operated two-stage crimping apparatus. Die is completely adjustable for depth of crimp.

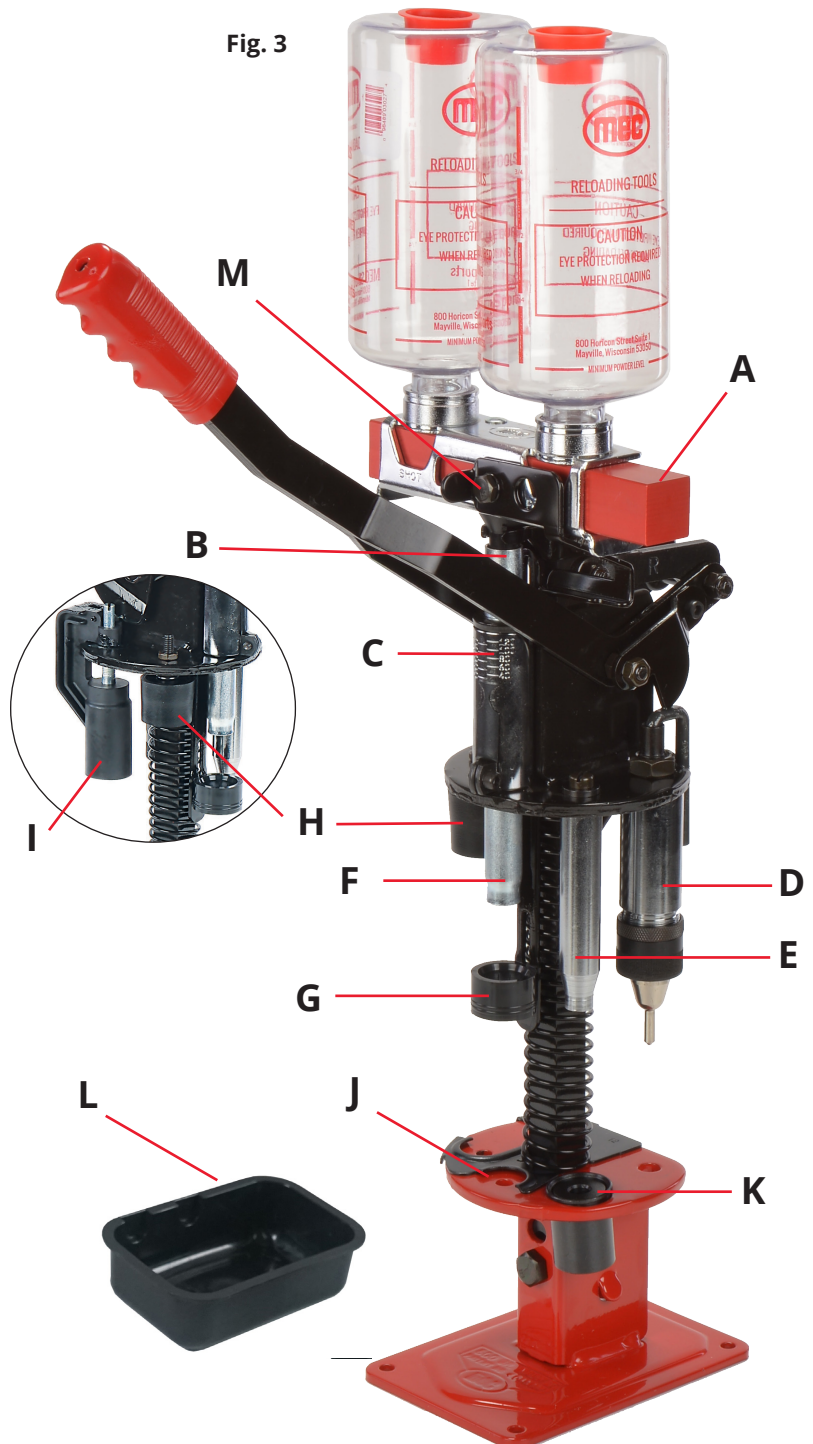
J - Shell Holder: Holds shell down on handle upstroke.

K - Primer Seating Assembly

L - Spent Primer Catcher: Secure in position by tilting so that notched edge slips under the tab provided in the base.

M - Pro-Check: Automatically programs the charge bar and prevents spilling of powder and shot.

Fig. 3



NOTE: This reloader will reload steel shot shells. To convert to steel shot, kit #1008433 is necessary. Do not use components designed for use with lead shot when loading steel shot shells. A special steel shot charge bar must be used when reloading steel shot. Do not use charge bars designed for lead shot when reloading steel shot shells.

CONTENTS OF PARTS BAG

Fig. 4



A - (4) Wing Nuts # 713D

B - (4) 1/4 20 Counter Screws #313C

C - Star Crimp 6 Pt. (12-16-20 gauge only)

D - Primer Catcher

E - Brass Washer

F - Hex Wrench

G - Rubber Grommet

H - Primer Pad #331

I - Primer Seating Spring

J - Primer Cup

**K - Ring Spacer (#8111)
(3" only 12, 20 & 28 gauge)**

L - Powder Bushings

(H, I, J) Assemble as shown. (E) Brass washer is used on fine grained powders (Winchester) to prevent leaking. Install on the powder side of the measure by removing the grommet Figure 7. Place the smooth side of this washer on the charge bar and replace grommet.

Common sense precautions are advised. Careless handling of flammables and explosives can result in serious injury. We endorse checking charges with a reliable scale which will disclose variations in powder weights. Adhering to loads recommended by the powder manufacturer is a must and the use of safety glasses is strongly encouraged. We disclaim any liability for damage or injury resulting from reloading shot shells. We disclaim any liability resulting from the use of any parts or accessories not manufactured or recommended by MEC Outdoors.

MOUNTING YOUR RELOADER

Although it is desirable to have your reloader mounted permanently to a bench, it is not a necessity. If you cannot mount your reloader permanently to a bench, we recommend placing your reloader on a piece of 3/4 x 12 x 18" plywood. (Fig.5) shows the ideal location for your reloader on a piece of plywood. Install your reloader by placing it in the proper location, marking through the holes with a pencil, then remove your reloader and drill a 9/32 hole at the locations. Put the reloader back in position and fasten securely with the 1/4 x 20 x 2" counter sunk stove bolts with wing nuts. Place the bolts in from the bottom up and draw them up tight enough so the heads are slightly depressed so that they will not scratch the bench or table.

By this time you should have made your choice of components. The image (Fig.6) shows how these components should be placed for the most efficient operation of your 600 Jr. Mark 5.

As you face the reloader you will see the measure labeled (shot) on the left and (powder) on the right. Remove charge bar to the right and remove the disk covering the powder bushing hole (Fig.9). Now place the proper bushing into the charge bar, move the bar to the left and replace the Pro Check and bolt #A. After making sure that the rubber grommets (part #304G) are in place in the measure (Fig.7) you may turn a plastic container into each of the threaded cups. Now move the charging bar to the extreme right and after removing the cap plug in each bottle, fill with the proper powder and shot. Replace the cap plugs and you are ready to reload. You will note that the measure will tilt to the rear for easy removal of your shot and powder (Fig.8)

NOTE: The 5/32 allen head screw on which the measure pivots should be kept tight enough so that some resistance is felt when tilting the measure. Over tightening will crush the bracket.



Fig. 5



Fig. 6

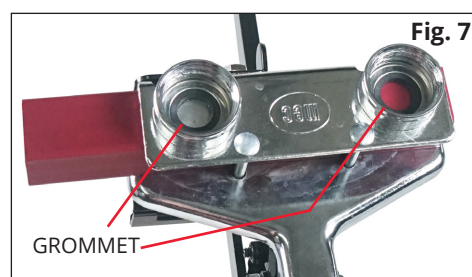


Fig. 7

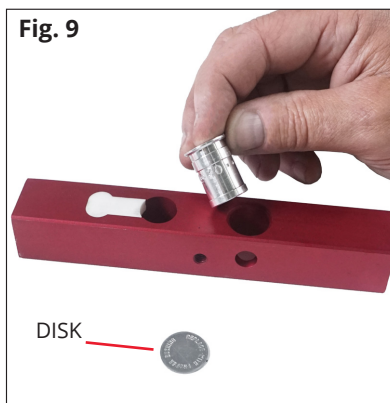


Fig. 9



Fig. 8

The shells are processed in a clockwise rotation starting at the resize deprime station #1, moving to the reprime station #2, to the powder wad and shot station #3, the crimp start station #4, and the final crimp in station #5 (Fig.10).

RELOADING PROCESS

Step 1 - Place an empty shell into the deprime re-size station #1 (Fig.11). Depress the handle to the bottom of its stroke. You will feel resistance as the resize ring starts resizing the brass, also you may feel the primer being ejected. Make sure that the handle is depressed to the full bottom of its stroke or you will not remove the primer or completely resize the shell. Now lift the handle to the full top of its stroke. As you come up you will feel resistance as the shell is pushed from the resize ring. Remove the shell from the resize station and place the shell onto the reprime punch (Fig.12).

Step 2 - Take a primer and place it into the reprime pocket (Fig.13). Depress the handle until the primer is firmly seated. Use no more pressure than is needed to seat the primer level with the bottom of the shell.

While raising the handle, remove the reprimed shell from the reprime punch and place it into the shell holder at station #3 (Fig.14).

Step 3 - Depress the handle. It is only necessary to depress the handle until the rammer tube enters the shell. Hold the handle in this position and move the charging bar to the left thus charging with powder (Fig. 15).



Step 4 - Now lift the handle to the top of its stroke. Place a wad on the rammer tube and again depress the handle to the bottom of its stroke (Fig.16).

Step 5 - At this point, lift the handle so the rammer tube is in the shell. Move the charging bar to its full right position, thus charging the shot (Fig.17).

Step 6 - Now lift the handle to the top of its stroke and place the shell into the crimp start station #4 (Fig.18). Depress the handle to its full bottom position starting the crimp. Note that this crimp starter may be adjusted up or down loosening the nut on the stud that retains the spindex and turning these up (to get less crimp start) or down (to get more crimp start). To remove or change the spindex, simply pull down to remove and snap the new one in place. A properly started crimp should look like (Fig.19). The adjustment as it came from the factory should be correct for most shells. Most skeet and trap loads except for 28 gauge and .410 are 8 point crimp. Many field loads may be 6 point. It is important that shells are crimped with the same crimp as the original. A smooth cone is available for crimping paper shells.

Step 7 - Raise the handle until the shell can be moved to the crimp station #5 (Fig.20). With a smooth motion, bring the handle down to the bottom of its stroke closing the shell. Raise the handle to remove the shell.

By following these instructions you will develop the correct hand movement and with practice should load 4 to 5 boxes of shells per hour. A properly crimped shell should look like the shell in (Fig.21).



Fig. 16



Fig. 17



Fig. 18



Fig. 19



Fig. 21

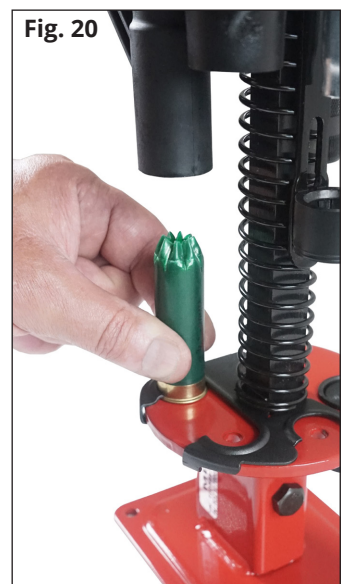


Fig. 20

RELOADER ADJUSTMENTS

Station 1 - There are two adjustments at this station.

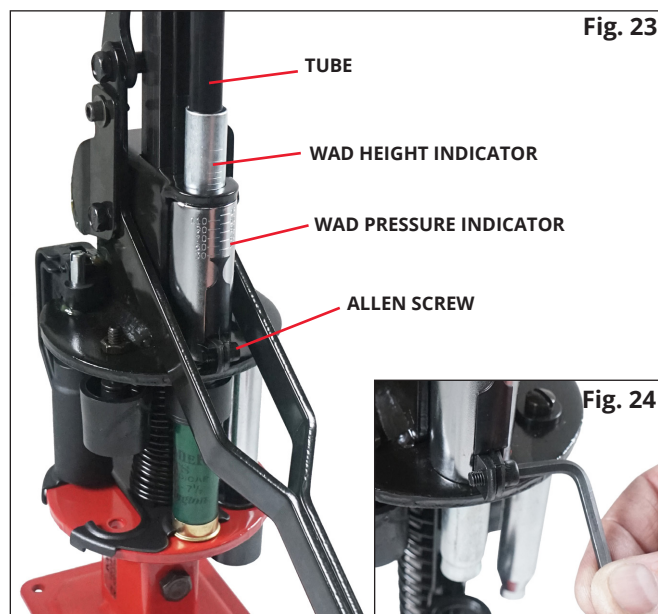
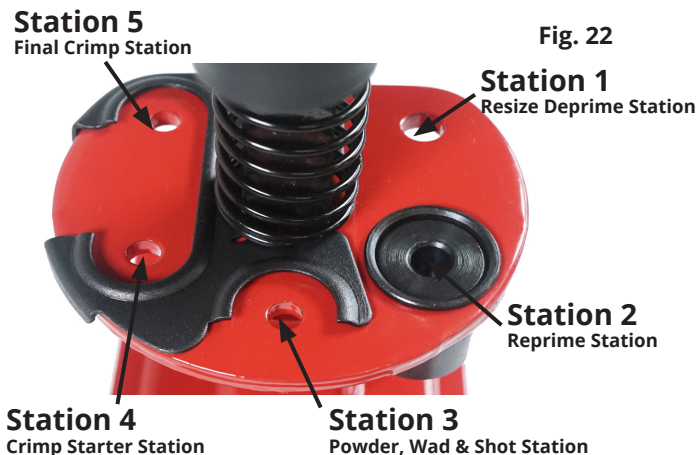
Adjustment 1: The deprime punch (Fig.30) should be adjusted so when the handle is in the down position, holding the punch as high as it will go - it enters the hole in the base about 1/16 of an inch.

Adjustment 2: The resize ring adjustment, which with the handle down should come to 1/16 of an inch from touching the base. If adjusted down too far, it will crush the rim of the shell. This will also enlarge the rim, which will prevent the shells from entering the magazine in some pumps or automatics.

Station 2 - There are no adjustments on this station. A word of caution however: If too much pressure is used after the primer is seated, it is possible to bulge the case.

Station 3 - There is one important adjustment to be made at this station and that is the wad height or pressure adjustment. (Fig.24) shows wad the pressure indicator, the adjusting screw, and the wad height indicator. With the modern plastic wads, it has become unnecessary to put pressure on the wad. All that is required is that the wad is seated firmly against the powder. It is not necessary for the pressure indicator (Fig.23) to move when seating the wad. The wad height indicator marks (Fig.23) are for reference only. This adjustment is used to compensate for different shot loads and different wad pressure when needed. To make the adjustment, loosen the allen screw (Fig.24). Now the tube in (Fig.23) is free to move up or down.

In all cases the adjustment should be placed so that the correct wad height or pressure is obtained at the full bottom of the handle stroke. Moving the tube down decreases wad height and increases wad pressure. Many times a poor crimp (caused by the wad being too high or too low) can be improved by raising or lowering the wad height indicator. If damaged, the wad guide is changed by forcing it up in the slot which supports it. Put a new one in the slot and force it down (Fig.25).



Station 4 - The spindex on your reloader, when properly used will almost never misfold. The spindex may be removed by pulling down and then replace by pushing up. The nuts on the stud are for adjusting the spindex up or down to give more or less of a crimp start (Fig.26). Changing the crimp start more or less will sometimes improve a final crimp. It is necessary to put the same crimp on a shell that it originally had. If you wish to crimp paper shells, a smooth cone crimp starter is available.

Station 5 - Since your reloader comes from the factory, the adjustment should be correct for most shells. There are two adjustments that can be made in the final crimp station. They are the cam and the punch adjustments (Fig.27).

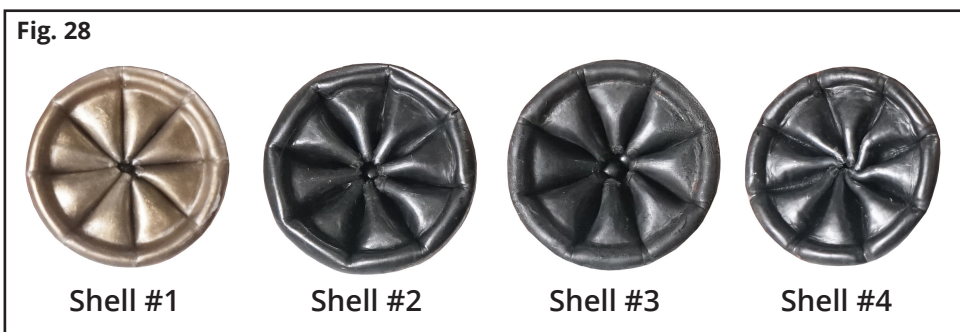
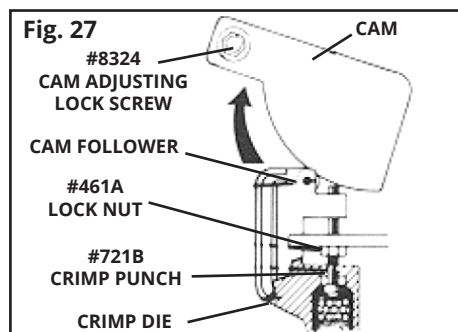
Four of the common problems which can be corrected by crimp station adjustments are:

Shell #1: The crimp punch is not deep enough. Correct by loosening the lock nut #100461A and turn punch deeper. Correct crimp depth is 0.050" deep.

Shell #2: The Crimp punch is too deep. Correct by loosening the lock nut #100461A and raise the crimp punch.

Shell #3: There is an opening in the center of the shell. Correct by loosening cam adjustment screw #1008324 and moving cam down about 1/32 of an inch and try again.

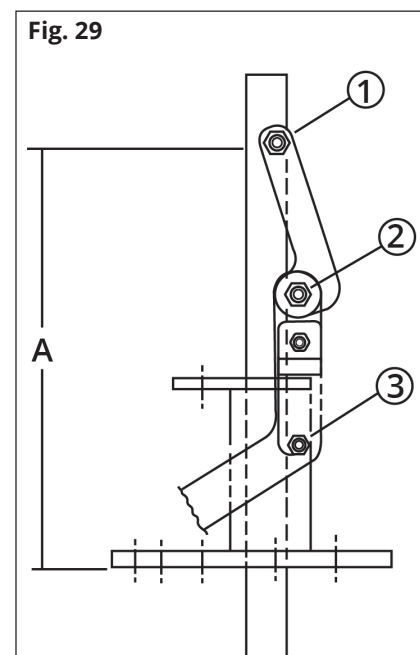
Shell #4: The shell had a swirl in the crimp. Adjust by loosening the cam and adjust screw #1008324 and move the cam up or clockwise. Move about 1/32 of an inch and try again.



LUBRICATION /CARE

Pivot points (1 - 2 - 3) of the scissor linkage are to be oiled periodically on both sides, our choice is EP90 or its equivalent (heavy oil). The column, in the area that the turret slides must be kept lubricated (Heavy oil "A"). We DO NOT recommend spray lubricants used on the reloader. These sprays cause a build up of residue over the entire reloader. The roller on the cam crimp die and the head of the eject bolt where the cam comes in contact (Fig.29) should be kept lightly greased. Occasionally feel the inside of your cam crimp die, if you should notice any buildup of dirt or residue, it can be removed using a swab with any household cleaner.

Cleanliness is not a virtue, it's a necessity for efficiency. Powder residue is abrasive and inflammable, don't allow an accumulation. Shot should only be in the container or a shell. A little care for a lot of service.





600 JR. MARK V

Single Stage Shotshell Reloader

3 INCH SHELLS (for 12, 20 & 28 gauge only)

Note:

For 410 instructions, use the instructions found in the parts bag only.

Start by removing the column bolt in (Fig.30). Now raise the column 1/4 inch. Replace the bolt. It should now be in the top hole in the base and top hole in the column. Be sure the column is square with the base and re-tighten. Now remove the support tube from the knock-out bushing (Fig.31). Loosen the lock nut 460A and with the handle at the full bottom of its stroke while holding the punch as high as it will go, adjust the punch down to where it enters the hole in the base about 1/16 of an inch. Re-tighten lock nut 460A.

After the column has been raised to accommodate 3" shells remove the primer seating assembly from the base and slip primer seating ring spacer (Item K, Part #8111 pg. 6) onto the primer seating cup and replace. This has now raised the primer seating assembly 1/4" to accommodate 3" shells.

Now replace the support tube and tighten with a pliers. Loosen the lock ring on top of the resize ring and with the handle fully depressed, adjust the ring down to within 1/16 of an inch of the base top plate. Re-tighten by holding the lock ring and turning the resize ring counterclockwise to lock. Replace the spindex with the proper one for the shells you are loading (6 or 8 point). Check for proper charge bar and bushing and you are ready to load.



Fig. 30

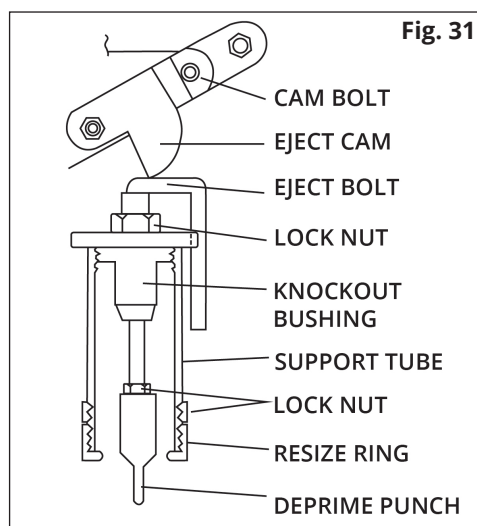


Fig. 31

STEEL SHOT

This reloader will load steel shot.

You must purchase kit # 1008433 to convert your reloader to steel shot.

Lead and steel are not interchangeable.

Do not use components designed for lead shot.

Do not use charge bars designed for lead shot.

You must purchase a special charge bar specifically for steel shot.

If you have questions, contact :

MEC Outdoors Reloader Customer Service

Call: 800-797-4632 press 1

Email: reloadersales@mecoutdoors.com

TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
Shell goes into your gun hard	Overfilling when using plastic shells *	<ol style="list-style-type: none"> 1. A case with more capacity 2. Use a shorter wad. 3. Use less shot. 4. Use a denser powder
Shell goes into your gun hard and comes out hard.	Oversized brass	<ol style="list-style-type: none"> 1. Make sure the sizing ring is resizing down to the rim of the shell. 2. Replace resize ring because of wear 3. Make sure your gun chamber does not have a buildup of dirt & rust.
Shell will not go into the magazine tube on a pump or automatic	<ol style="list-style-type: none"> 1.Excessive resizing 2. resize adjustments 	<ol style="list-style-type: none"> 1. Resizing shells often that have been fired in a gun with a large chamber tends to push material into the rum of the shell, causing it to be oversized 2. Adjusting the resize ring down to where it flattens the rim of the shell will cause the rim to be oversize.
Case bulges above the brass	Overfilling the case	<ol style="list-style-type: none"> 1. Use a case with more capacity. 2. Use a shorter wad. 3. Use less shot. 4. Use a denser powder.
Poor crimp	Hole in the crimp.	Refer to the punch and cam adjustments page 11
Poor crimp	Misfolded crimps	Using the wrong crimp starter 6 or 8 point.
Poor crimp	Swirl in crimp	Cam adjustments are too low (refer to page 11)
Measure sticks when dropping shot	Using large shot size (large than #6)	Remove the grommet from the shot side of the measure. Moving the bar gently and reversing the action when resistance is noted usually works.
Measure sticks when dropping shot	Grommets are worn	Replace the grommets with new ones.
Measure sticks when dropping shot	Using reclaimed shot	Purchase new shot as reclaimed shot contain small stones and no graphite lube.
Shot will not drop into the shell	Shot is lodged in the tubes	Raise the handle to the point where the rammer tube is just in the shell and moving the charge bar across very slowly so the shot does not all drop at one time.
Powder leaks from the measure	Brass washer is not in place when using small flake or ball powder	Install per instructions page 7 (Fig.7). Make sure the wash is placed with the smooth side down under the grommet.

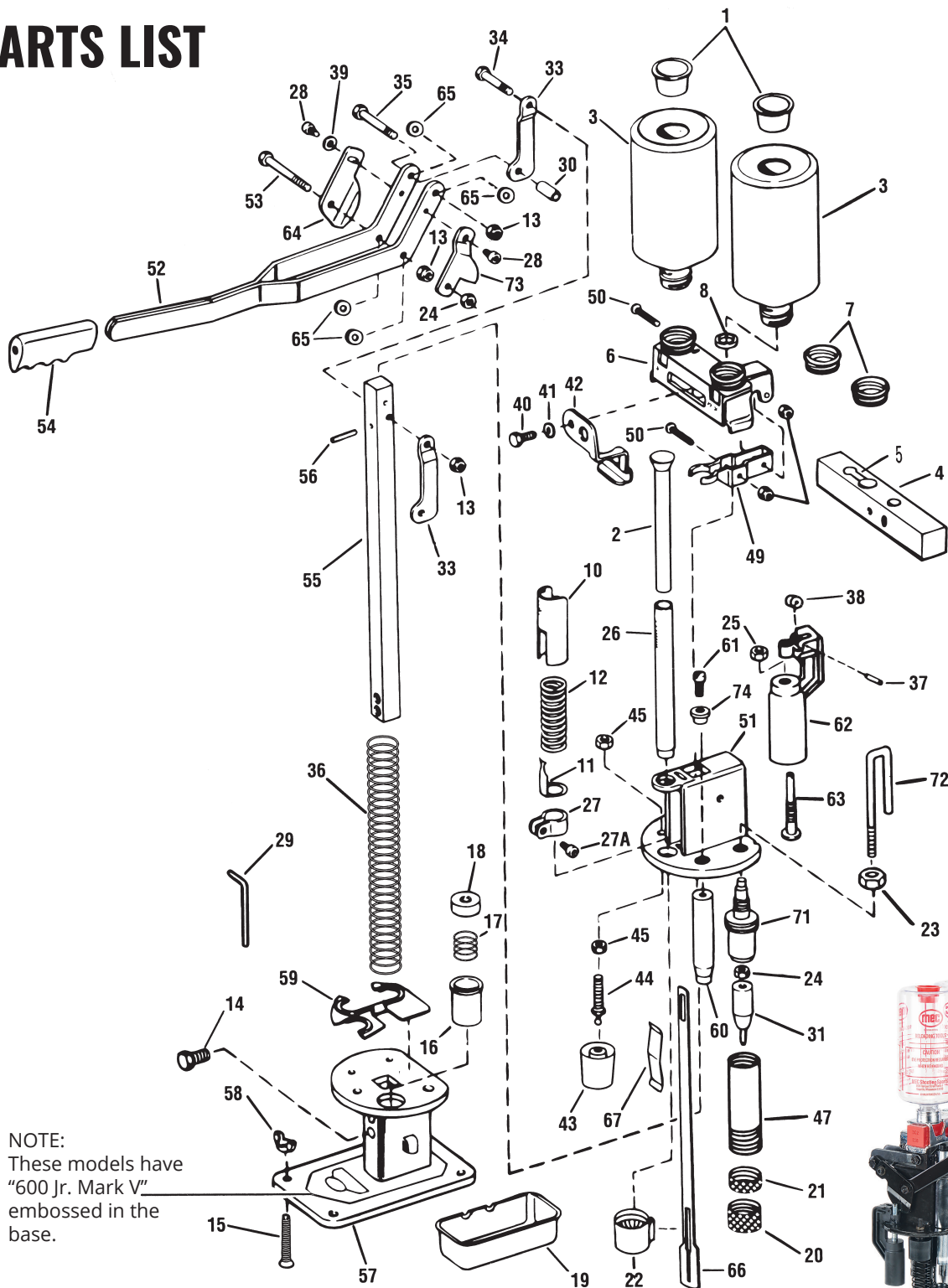
** If using paper shells, follow the solution. However the most common cause with paper shells is that they swell up by absorbing moisture. The only way to remedy this is to dry the cases before reloading. Never attempt to dry loaded cases. Putting them in the oven at about 200 degrees for 30 minutes will usually dry them out. Never attempt to load paper cases during hot and humid weather.*



600 JR. MARK V

Single Stage Shotshell Reloader

PARTS LIST



NOTE:
These models have
"600 Jr. Mark V"
embossed in the
base.



Available in 10, 12,
16, 20, 28 gauge or
.410 bore.

REF. NO.	NAME OF PART	PART NO.
1.	Cap Plug	13X
2.	Drop Tube	205*
3.	Small Cont. W/Cap	301L-13X
4.	Bar	302
5.	Rubber Insert	8440
6.	Measure Only	8098CA
7.	Cap	304C
8.	Grommet	304G
9.	Nut	304J
10.	Pressure Ind. Face	306F
11.	Pointer	306P
12.	Pressure Spring	306T
13.	Stop Nut 1/4-20	309E
14.	Column Bolt	8024
15.	Base Mtg. Bolt	313C
16.	Primer Cup	326
17.	Spring, Primer	330
18.	Spring, Pad	331
19.	Primer Catcher	351
20.	Resize Ring	8465*
21.	Lock Ring	435A
22.	Wad Guide Fingers	8300*
23.	Lock Nut	459A
24.	Lock Nut	460A
25.	Lock Nut	461A
26.	Rammer Tube	505B*
27.	Adjusting Clamp	507
27A.	Adjusting Clamp Screw	507A
28.	Screw	(2) 8324
29.	Hex Wrench	507B
30.	Link Spacer	510B
31.	Deprime Punch	519*
33.	LH & RH Link	610
34.	Link Bolt	610A
35.	Bolt – Handle	610C
36.	Column Spring	612

REF. NO.	NAME OF PART	PART NO.
37.	Cam Roller Pin	613D
38.	Cam Roller	8312
39.	Washer	623C
40.	Screw	685F
41.	Lock Washer	751W
42.	Pro Check	8101
43.	Spindex Star Crimp	8439*
44.	Ball Pivot Pin	8419
45.	Nut	8476
47.	Support Tube	8316
49.	Measure MTG Brkt.	704C
50.	Measure Pvt. Screw	304D
51.	Turret Frame Assy.	8319
52.	Handle	709
53.	Handle Bolt	709B
54.	Handle Grip	709C
55.	Column	711
56.	Roll Pin	8096
57.	Base Assy.	8448
58.	Wing Nut	713D
59.	Shell Holder	715*
60.	Reprime Punch	720*
61.	Screw	634K
62.	Cam Crimp Assembly	721CAP*
63.	Cam Crimp Punch	721B*
64.	Crimp Die Cam	723
65.	Washer	609F
66.	Wad Guide Bracket	8313
67.	Wad Guide Spring	751D
71.	Knockout Bushing	8320*
72.	Eject Bolt	760
73.	Eject Cam	764
	Die Set 12, 16, 20, 28, 410 (Specify Gauge)	8452*
	Die Set – 10 Ga.	845210
74.	Bushing	703

Kit
751E

