LEE COMPLETE INSTRUCTIONS

CHALLENGER

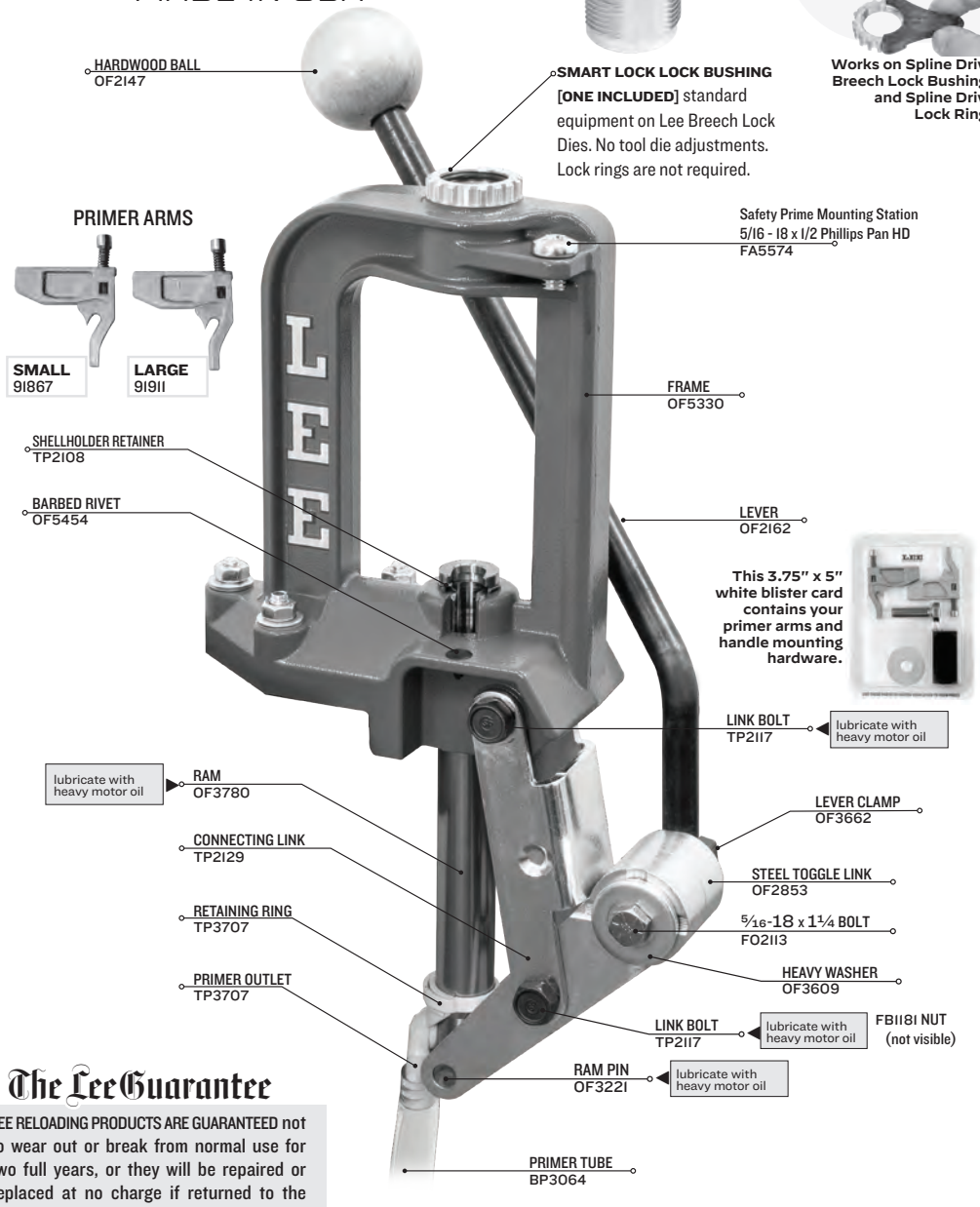
MADE IN USA

New

SMART LOCK LOCK BUSHING [ONE INCLUDED] standard equipment on Lee Breech Lock Dies. No tool die adjustments. Lock rings are not required.

LOCK RING WRENCH INCLUDED

Works on Spline Drive Breech Lock Bushings and Spline Drive Lock Rings



The Lee Guarantee

LEE RELOADING PRODUCTS ARE GUARANTEED not to wear out or break from normal use for two full years, or they will be repaired or replaced at no charge if returned to the factory. Any Lee product of current manufacture—regardless of age or condition—will be reconditioned to new, including a new guarantee, if returned to the factory with payment equal to half the current retail price.

CAUTION **Ammunition reloading can be dangerous if done improperly and should not be attempted by persons not willing and able to read and follow instructions exactly. Children should not be permitted to reload ammunition without strict parental supervision. Always wear safety glasses and hearing protection when reloading and shooting. Ammunition loaded with these tools and data should only be used in modern guns in good condition. We do not accept responsibility for ammunition loaded with these tools or data as we have no control over the manufacture and storage of components or the loading procedure and techniques. Primers and gun powders, like gasoline and matches, can be dangerous if improperly handled or misused.**

LEE PRECISION, INC.
4275 Hwy U · Hartford WI 53027
www.leeprecision.com

OF3338

SETTING UP YOUR LEE BREECH LOCK CHALLENGER PRESS

LEE BENCH PLATE #90251

1 **MOUNT YOUR PRESS**. The most convenient way to mount your press is with our **Lee Bench Plate System # 90251**. This system includes all of the mounting hardware and allows for quick press removal without unbolting from bench.

OR — purchase [qty. 3] 1/4" or 5/16" bolts and nuts and prepare your workbench for use with this press using drill template available: **leeprecision.com/files/instruct/TMPBLC.pdf**

SCAN ME

FOR THOSE WITHOUT A BENCH, CONSIDER OUR
LEE RELOADING STAND
#90688

Both the #90688 Reloading Stand and #90251 Bench Plate include a steel mounting plate.

2 LOCATE PARTS BLISTER PACK

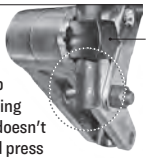
FIG 1 Assemble bolt, heavy washer & lever clamp

CLAMP ASSEMBLY

FIG 2

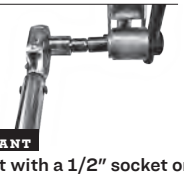
Slide lever clamp assembly into toggle and position hole in lever clamp with radius in toggle

FIG 3



Slide the black lever into the lever clamp assembly; making sure the lever doesn't contact the red press frame and passes completely through lever clamp.

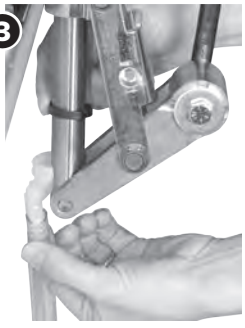
FIG 4



IMPORTANT

Snug bolt with a 1/2" socket or wrench; tighten securely to 25 ft/lbs. minimum

3



Raise the retaining ring and slide the primer collection tube assembly into the ram.

4

Slide retaining ring on to assembly.

The toggle linkage operates on special aircraft type full body bolts and is retained with a crown lock nut. You can adjust the lock nut to eliminate any side play in the linkage.

YOUR PRESS FEATURES THE LEE SMART LOCK BUSHINGS

▼**Thread your die into a Smart Lock bushing. Set it and forget it!** Once dies are set, you can instantly remove them and replace them to the exact same position. Lock rings are not required when using bushing.

If cost is more important than convenience, you can leave the quick lock bushing permanently installed. Remove the o-ring, and your dies will freely thread in and out as in any conventional press. Be sure to use a lock ring on your die to maintain setting.

Insert the bushing into the press. Adjust your die in or out for proper operation.

Lightly tighten die with included lock ring wrench.

Lee Breech Lock Die Set

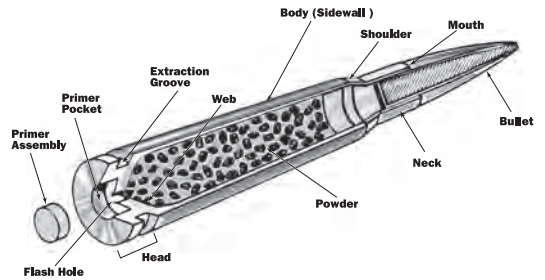
Lee Breech Lock Die set includes Smart Lock bushings. Color coded for easy identification. Storage is easy with Lee die box.

IT IS YOUR RESPONSIBILITY TO ENSURE THE SAFETY OF YOUR LOADS

THE FOLLOWING ARE FACTORS THAT WILL INCREASE PRESSURES. SOME WILL BE DANGEROUS.

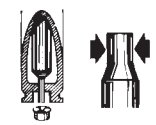
- **DO NOT USE more powder than recommended**
- **DO NOT USE a heavier bullet than recommended**
- **DO NOT SEAT the bullet deeper than normal**
- **DO NOT USE magnum primers unless using a slow burning ball powder**
- **Greatly oversize bullets, excessively hard bullets or cases that are too long will cause higher pressures**
- **High temperatures, or cartridges that were stored in a hot car or car trunk will produce higher pressures**

CROSS SECTION OF A TYPICAL CARTRIDGE



RELOADING IS QUITE A SIMPLE PROCESS

1. Case is sized to original dimensions and the spent primer is removed
2. Install a new primer
3. Add a charge of powder
4. Seat a new bullet and crimp if desired



Remove spent primer and size case

Install new primer

RELOADING SAFETY

Keep powder away from heat and open flames — Don't smoke

Store powder and primers in their original containers in a cool, dry place

Read and follow instructions exactly

Be sure you have the correct powder, measure and bullet of the correct weight. Any mixup can be dangerous

Exercise care and common sense at all times

WEAR SAFETY GLASSES & HEARING PROTECTION WHEN RELOADING OR SHOOTING

Add powder

Seat a new bullet

CASES

The easiest and best way of getting cases is to simply save those from your factory loaded rounds. New and used cases can also be purchased. Cases must be clean and safe. Do not use cases that have cracks or splits. If they have been used more than twice, they should be checked to see that none of them have become too long for safe use. The easiest way is to trim them with a **Lee Case Length Gauge & Cutter**. This automatically cuts them to the correct length and no gauging or measuring is needed. After trimming, be sure to chamfer both the inside and outside of the case. A **Lee Chamfer Tool** works best, but it can be done with a pocket knife.

Straight sided cases, such as those used by most handguns, are loaded with a 3–die set.

MILITARY CASES

Used military cases are readily available at low cost. Usually, these have primers that are crimped in place. This is to prevent the primer from coming loose in automatic weapons and jamming the action at an inopportune time. The crimp must be removed before re-priming. The best tool for the job is the Lee Ram Swage, 91617.

POWDER

Powder is usually classified as smokeless and black powder. There is also **Pyrodex**, which is a substitute for black powder. We will be using only smokeless powder for reloading.

Each set of Lee Dies is supplied with powder measure and charge table with a generous selection of loads. Additional load data is available from all the powder manufacturers and bullet makers. This is excellent information and should be followed exactly.

Different powders are available to do different jobs. Bullets having a high sectional density (long length in relation to their diameter) require a slow burning powder. This permits sustained peak pressure to gain maximum acceleration within working pressure limits. Short, light bullets use quicker burning powder for complete combustion within the barrel. A wide selection of powder is readily available. Powders should always be stored in their original containers. While smokeless powder is not an explosive and not as dangerous to handle as gasoline, it would be foolish to handle it carelessly and store excessive amounts. Follow the powder manufacturers' recommendations for storage and use.

PRIMERS

Rifle and pistol cartridges require different primers. Rifle primers have a thick and stronger cup to withstand the higher pressure. Pistol primers have a thinner cup for easy detonation with a lighter hammer blow. Both rifle and pistol primers are available in regular and magnum. Use regular for all loads except if the load data specifies magnum primers.

Primers must always be stored in their original containers. It is always a wise idea to wear safety or shooting glasses and hearing protection when shooting or reloading.

BULLETS

Commercial rifle bullets usually have a soft lead core with a copper jacket. Point shapes come in a variety of styles, but usually have some soft lead exposed to properly mushroom on impact.

The jackets serve a dual purpose: to control the bullet expansion and act as a bearing surface for its high speed travel down the bore. Some bullets have a crimping groove called a cannelure. This groove must be seated almost entirely in the case when crimping the case. The very end of the case mouth is turned into this groove by the bullet seating die used in a tubular magazine gun and most revolver ammunition.

Cast bullets are very popular with the handloader. They are very economical to use and can be as accurate as jacketed bullets. They do not normally expand as well as soft lead jacketed bullets on game. Therefore, it is poor economy to use them for hunting.

CRIMPING

Ammunition loaded for hunting should always have the bullets crimped in place, as should ammunition used in tubular magazine and auto-loading rifles. It could ruin your hunt if a bullet wedged in the chamber or pushed back into the case. Best accuracy is usually obtained with crimped ammo as the crimp has an effect on ignition, velocity, pressure and ballistic consistency. No die does a better job crimping than the Lee Factory Crimp Die.

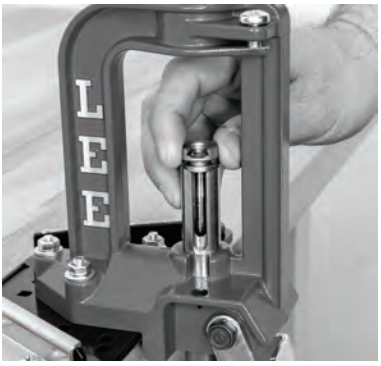
YOU CAN NOW BEGIN RELOADING

Be sure to lube the inside of the case neck with a cotton swab.

1 **PREPARE YOUR CASES** Inspect your cases. Discard all cases with split necks, indications of head separation or other defects. Rifle reloaders, wipe on a thin film of Lee Case Resizing Lubricant with your fingers. Fingers are the best way of lubing a case as any grit that could damage the die is wiped away. The case may be immediately sized or you can let the lube dry.

CAUTION

If for any reason you do not use Lee Resizing Lubricant, be very careful not to contaminate the powder or primers. All other brands are oil based and have serious, detrimental effects on powder and primers. Because of the stickiness, they also attract grit that can damage the die. Lee Resizing Lubricant costs less and is so superior that it is worth the effort to insist upon it or order direct from the factory.



2 **INSTALL UNIVERSAL SHELL HOLDER** into the press ram. Lee reloading die sets include this necessary component FREE.

3 **INSTALL SIZING DIE** while holding the handle against the stop, screw the die in until it touches the top of the shell holder. Lower the ram, screw in the die an additional ¼ turn.

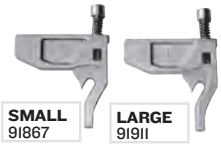
Note using a 1/2″ (13mm) wrench on the decapper clamp makes adjustment even easier.

4 **PLACE** the lubricated case in the shell holder and raise the ram until the handle comes to a stop. Proceed to the priming operation.

Carbide dies need no lubrication




5 **PRIME YOUR CASE** using the Lever prime system or off the press using the Lee Auto Prime (product 90230) or Auto Bench Prime (product 90700). Install the correct primer arm (large or small) by simply sliding the primer arm onto the ram. Place the proper type of primer in the primer guide. Using the Safety Prime greatly speeds this operation. See panel on reverse for details on the Safety Prime System product 90997.



Lower the ram to install the primer. Push hard enough to seat the primer flush with the end of the case. Primers can be seated slightly below flush, but never protruding. The cases should not rock when placed on a smooth surface.

6 THIS STEP IS OMITTED WITH MOST RIFLE DIE SETS

Handgun Reloader's only

FLARE CASE MOUTH for ease of bullet installation. Place US nickel or equivalent 2mm thick on shell holder. Thread die in until it touches the nickel, then remove nickel. Insert a case into shell holder and raise case into powder through expanding die to flare case mouth. Lower ram to check flare, use bullet as a gauge. Flare enough so the bullet easily starts into case. Increase flare by turning die clockwise. Continue short cycling press lever until you've achieved desired flare.

Powder Funnel

product 90190

7 **CHARGE THE CASE**

Regardless of how you charge the case, be absolutely certain you have the correct amount and type of powder for the bullet you have selected. Lee Precision makes it really easy to select the appropriate bullet type and load data. This information is included FREE with Lee reloading die sets. It is sorted in velocity descending order, and tells you required Lee dipper.

NEVER try to seat the primer deeper after the powder has been added.

8 INSTALL BULLET SEATING DIE
Unscrew adjusting screw until you see the start of the threads.

Handgun:

Loaded round available Place a loaded round that you wish to duplicate in the shell holder. Raise ram to the top of its stroke and hold handle down. Screw bullet seating die in until it stops turning. Turn adjusting screw in until you feel it touch the tip of the bullet. If crimp is desired; lower ram, thread die in an additional ⅛ turn.

Loaded round not available. Insert case into shell holder. Raise ram to the top of its stroke; hold handle down. Screw bullet seating die in until it stops turning. Place a bullet on top of case; raise ram to top of its stroke; screw adjusting screw in until you feel it touch the tip of bullet. Turn adjusting screw in two turns. Lower ram; check progress; continue to turn adjusting screw in ¼ turn increments until you reach desired case overall length. If crimp is desired; lower ram, thread die in an additional ⅛ turn.

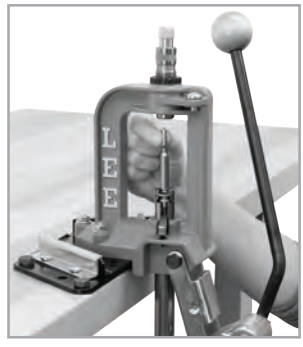
Handgun Bullet Seating Die

Rifle Easy Adjust Dead Length Bullet Seating Die

Rifle:

Raise the ram to top of its stroke. Screw the die in until it touches the shell holder, lower the ram, screw die in an additional ¼ turn. Bullet seating depth is controlled by the adjusting screw. Rotate the adjusting screw clockwise to seat the bullet deeper and counterclockwise for a longer overall length.

Bullets must be seated deep enough to work through the guns action. Lee dies and Modern Reloading list the maximum overall length that will work in all standard actions. Never seat bullets deeper than listed in the load data you are using unless you reduce the charge.



9 SEAT THE BULLET Place a bullet on the case mouth and guide it into the die. Raise the ram to the top and withdraw. The knurled adjusting screw controls the bullet seating depth. Adjust to suit. Usually, seating to the same depth as a factory round works fine. For best utility and accuracy, consider the Lee Factory Crimp Die. You will never crush a case; no crimp groove is required and trim length is not critical.

10 FACTORY CRIMP DIE
For best utility and accuracy, consider the Lee Factory Crimp Die.

Handgun:
Unscrew adjusting screw until you see the start of the threads. Screw the die in until it makes contact with the shell holder. Insert the loaded round into the shell holder. Raise the press ram and insert the loaded round into the die. Turn the adjusting screw in clockwise until you can feel it just touch the case mouth. Lower the ram slightly, screw the adjusting screw in ½ turn for a light crimp and one full turn for a heavy crimp. You can adjust for even greater crimp and never have to worry about buckling the case, as with conventional crimpers.

Rifle:
Install loaded round into shell holder. Raise the ram to the top of its stroke and hold. Screw the factory crimp die in until it makes firm contact with the shell holder, lower the ram slightly, screw the die in ½ turn more. Push firmly on the lever to the stop. Remove case, and look for adequate crimp. Adjust die inward in ⅛ turn increments to increase the amount of crimp being sure to **firmly push on the lever (25 lbs. minimum).**

Pistol Carbide Factory Crimp Die

Rifle Collet Factory Crimp Die

11

IF LOADING maximum loads, it is a good practice to remove all traces of case lubricant with a dry cloth. This will reduce pressure against the bolt.

SAFETY PRIMER FEED INSTRUCTIONS

ALL BRANDS OF PRIMERS ACCEPTED Patent # 7,694,618. Expires October 30, 2027

PRIMERS WILL EXPLODE IF SHOCKED OR CRUSHED
WEAR EYE & EAR PROTECTION AT ALL TIMES WHEN HANDLING PRIMERS

WARNING

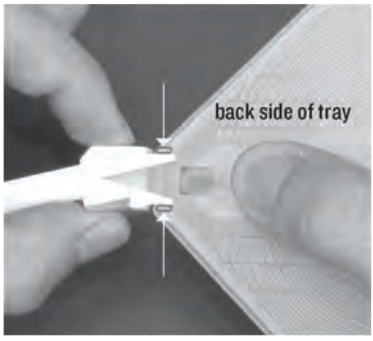
Primer dust accumulation can detonate. Regularly clean tray and tool to prevent accumulation. The dust contains lead; a substance known to cause birth defects, reproduction harn and other serious physical injury. Wash hands after exposure.

1 INSTALL primer feed bracket.
Use 5/16" screw installed in press.

SINGLE STAGE PRESS

2 VERIFY appropriate primer arm and trigger assembly are installed.

3 MAKE sure trough fingers are between and completely engaged with tray latch lugs (highlighted)



4 OPEN tray and deposit box of 100 primers.

5 SHAKE tray side to side to upright all the primers. Fold and close cover and slide to ON position. Shake assembly to fill the trough.

Shake side-to-side to upright primers.

Shake side-to-side to fill trough.

6 SLIDE primer feed into primer feed bracket.

SINGLE STAGE PRESS

7 Firmly push trigger on the primer feed to dispense primer.

8 LOWER ram to seat primer. The primer should be flush, to slightly below flush, when properly seated.

LEE

LEE PRECISION, INC. 4275 HWY. U
HARTFORD, WISCONSIN 53027
www.leeprecision.com

Lee Precision offers the most complete die sets

- Free shell holder, others charge nearly $18.00 for this necessary part
- Built-in stuck case remover
- Easy to adjust dies
- Exclusive feature- Pacesetter and Ultimate Die Sets include Factory Crimp Die: this die firmly crimps bullet in place and applies a factory-style crimp.
- Free comprehensive load data- priceless on some cartridges
- Case Resizing Lubricant included with Lee Pacesetter & Ultimate die sets
- Tightest tolerance in the industry
- Storage is easy, packed in a fitted box that allows dies to be returned to the box adjusted with or without the bushings installed.

Breech Lock Die Set offerings

Includes carbide full length sizing die, powder through expanding die, and bullet seating die.

Best for mixed range brass

Includes carbide full length sizing die, powder through expanding die, bullet seating die, and carbide factory crimp die.

Includes full length sizing die, easy adjust dead length bullet seating die, and factory crimp die

Cartridge	Breech Lock Carbide 3- die Set	Breech Lock Carbide 4-die set	Breech Lock Pacesetter 3- die Set
32 S&W Long	91876		
9mm Luger	91882	91934	
38 Super	91879		
380 Auto	91877	91935	
38 SPL & 357 MAG	91878	91936	
40 S&W & 10mm Auto	91880	91937	
44 SPL & 44 MAG	91881	91938	
45 ACP	91883	91940	
45 Colt	91884	91939	
223 REM			91932 (LUBE REQ.)
300 AAC Blackout			91925 (LUBE REQ.)
308 WIN			91953 (LUBE REQ.)
243 WIN			91949 (LUBE REQ.)
270 WIN			91950 (LUBE REQ.)
22/250			91948 (LUBE REQ.)
7mm REM MAG			91951 (LUBE REQ.)
30-30 WIN			91952 (LUBE REQ.)
300 WIN MAG			91954 (LUBE REQ.)
6.5 Creedmoor			91920 (LUBE REQ.)

Breech Lock Die Sets include Smart Lock Bushings. We do offer the quick change bushings separately if you purchase a reloading die set not listed above.

Smart Lock Bushings

91933 4-pack

No tools required. Easy grip splined drive surface allows easy, accurate and fast die installation in your press. Internal o-ring maintains perfect adjustment.

Spline Drive Bushings

90095 4 pack

90063 2 pack

3/32" Hex Key

91634

Breech lock quick change bushing with integral lock collar provides unmatched precision and convenience when adjusting dies.

WARNING Handling live primers and spent primers may expose you to lead or other chemicals, which are known to the State of California to cause reproductive harm and cancer. For more information, go to www.P65Warnings.ca.gov.

WARNING This product may contain steel alloyed with trace amounts of lead and other elements which are known to the State of California to cause reproductive harm and cancer. For more information, go to www.P65Warnings.ca.gov. To prevent exposure, do not alter the product by welding, grinding, etc.