

Please read and save these instructions. Read through this owner's manual carefully before using product. Protect yourself and others by observing all safety information, warnings, and cautions. Failure to comply with instructions could result in personal injury and/or damage to product or property. Please retain instructions for future reference.



## MANUAL BUSHING INSTALLATION AND REMOVAL TOOL SET

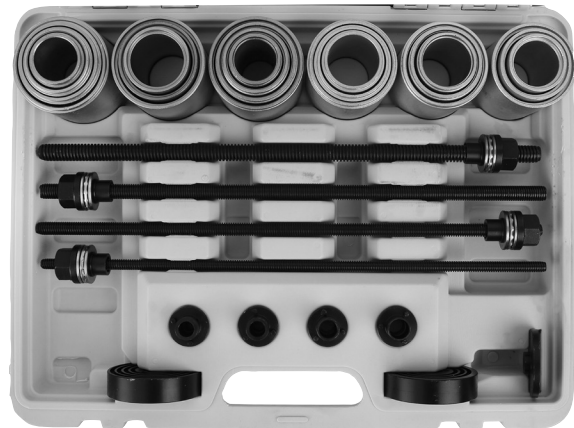
### FOR CUSTOMER SERVICE

Technical Question?

**CALL 1-866-458-2472**  
**customerservice@oem-tools.com**

### UNPACKING

After unpacking the unit, inspect carefully for any damage that may have occurred during transit. Check for loose, missing, or damaged parts. If any damage is observed, a shipping damage claim must be filed with the carrier. DO NOT use the OEMTOOLS® 27212 Manual Bushing Installation and Removal Tool Set if broken, bent, cracked or damaged parts (including labels) are noted. Any Manual Bushing Installation and Removal Tool Set that appears damaged in any way, operates abnormally or is missing parts should be removed from service immediately. If you suspect that the Manual Bushing Installation and Removal Tool Set was subjected to shock load (a load that was dropped suddenly, unexpectedly, etc.) Immediately discontinue use until it has been checked by a factory authorized service center.



### ⚠ WARNING

The following safety information is provided as a guideline to help you operate your Manual Bushing Installation and Removal Tool Set under the safest possible conditions. Any tool or piece of equipment can be potentially dangerous to use when safety or safe handling instructions are not known or not followed. The following safety instructions are to provide the user with the information necessary for safe use and operation. Please read and retain these instructions for the continued safe use of your Manual Bushing Installation and Removal Tool Set. Failure to follow instructions listed below may result in serious injury. In addition, make sure that anyone who uses the equipment understands and follows these safety instructions as well.

### Explanation of Safety Signal Words

**⚠ WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**⚠ CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

**CAUTION:** Used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

**NOTES:** Provide clarity and helpful information.

Thank you very much for choosing an OEMTOOLS® Product!

For future reference, please register your new tool at [www.oem-tools.com](http://www.oem-tools.com) and complete the owner's record below:

**Model:** \_\_\_\_\_ **Purchase Date:** \_\_\_\_\_

Save the receipt, warranty and these instructions. It is important that you read the entire manual to become familiar with this product before you begin using it. This product is designed for certain applications only. OEMTOOLS® cannot be responsible for issues arising from modification. We strongly recommend that this product is not modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the product until you have first contacted customer service to determine if it can or should be performed on the product.

**⚠ WARNING:** This product can expose you to chemicals which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



## MANUAL BUSHING INSTALLATION AND REMOVAL TOOL SET

### IMPORTANT INSTRUCTIONS AND SAFETY RULES

1. Know your product. Read this manual carefully. Learn the product's applications and limitations, as well as potential hazards specific to it. The use of this product is simple and straightforward if you follow the instructions. When operating this product, use common sense and only use this product for its intended purpose.
2. Maintain labels and nameplates on this product. These carry important information. If unreadable or missing, contact OEMTOOLS® for a replacement.
3. Maintain this product with care. Keep it dry and clean – and free from brake fluid, oil, and grease (if applicable).
4. Check for damage. Check your product regularly. If part of the product is damaged, it should be carefully inspected to make sure that it can perform its intended function correctly. If in doubt, the part should be repaired. Refer all servicing to a qualified technician. Consult your dealer for advice.
5. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the product's operation.
6. DO NOT use a damaged product. Tag damaged products "DO NOT USE" until repaired. If damaged, have the product serviced before using. Many accidents are caused by poorly maintained products.
7. Service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could create a risk of injury.
8. When servicing a product, use only identical replacement parts. Use of unauthorized parts or failure to follow maintenance instructions could create a risk of injury.
9. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one product may become hazardous when used on another product.
10. Keep work area clean and well lit. Cluttered or dark work areas invite accidents.
11. Maintain a safe working environment. Keep the work area well lit. Make sure there is adequate surrounding workspace. Keep the work area free of obstructions, grease, oil, trash, and other debris. DO NOT use this product in a damp or wet location.
12. Keep children away from the work area. Never let a child handle this product without strict adult supervision.
13. Store this product out of the reach of children and untrained persons. This product may be dangerous in the hands of untrained users.
14. DO NOT operate this product if under the influence of alcohol or drugs. Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, DO NOT attempt to operate.
15. Use safety equipment. Eye protection should be worn at all times when operating this product. Use ANSI approved safety glasses. Everyday eyeglasses are NOT safety glasses. Dust mask, non-skid safety shoes, hard hat or hearing protection should be used in appropriate conditions.
16. Wear proper apparel. Loose clothing, gloves, neck-ties, rings, bracelets or other jewelry may present a potential hazard when operating this product. Keep all apparel clear of the product.
17. DO NOT overreach. Keep proper footing and balance at all times when operating this product.
18. Keep away from flammables. DO NOT attempt to operate this product near flammable materials or combustibles. Failure to comply may cause serious injury or death.
19. Avoid accidental fire and/or explosion. DO NOT smoke near engine fuel and battery components.
20. We believe the information contained herein to be reliable. However, general technical information is given by us without charge and the user shall employ such information at their own discretion and risk. We assume no responsibility for results or damages incurred from the use of such information in whole or in part. Always refer to specific instructions and technical information supplied by vehicle manufacturer.
21. The manufacturer declines any and all responsibility for property damage or injury if said damage is the result of unskillful handling by the operator or of failure to observe the basic safety rules set forth in the instruction manual.
22. The warnings, precautions, and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. The operator must understand that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

### PRODUCT DESCRIPTION

The OEMTOOLS® 27212 Manual Bushing Installation and Removal Tool Set is a comprehensive set used for fast and effective removal/installation of wheel bearings/suspension bushings and seals. It reduces the possibility of damaging the bearing/suspension housings. It includes (2) stepped end plates, (4) forcing screws and (20) sleeves in a blow mold case. A shop press plate is also included so the plates and sleeves can be used with a shop press when on car access isn't possible.

### SPECIFIC SAFETY INSTRUCTIONS AND WARNINGS

Study, understand, and follow all instructions before operating this device.

#### WARNING:

1. Always keep forcing screw well lubricated. Use a high-quality, anti-seize compound.
2. DO NOT use air tools.
3. DO NOT exceed the maximum recommended torque for each forcing screw.

**NOTE:** Exceeding these torque values may shorten the life of the forcing screws. The forcing screws are considered to be consumable items and are NOT covered under warranty.



## MANUAL BUSHING INSTALLATION AND REMOVAL TOOL SET

### OPERATION INSTRUCTIONS

#### A. BUSHING/BEARING REMOVAL (FIG. 1)

**NOTE:** Before starting, mark the place where the existing bushing is installed to ensure accurate positioning of the replacement bushing.

1. Select a sleeve that will sit square on the bushing/bearing housing and will allow the bushing/bearing to be extracted without interference. Ensure that only the force end of the sleeve with the U-shape inspection slot is used to sit on the bushing/bearing housing. The stepped end of the sleeve should be used to locate in the end plate.
2. Select a second sleeve that will sit square on the outer ring of the bushing/bearing and will pass through the bushing/bearing housing without interference. Ensure that only the force end of the sleeve with the U-shape inspection slot is used to sit on the outer ring of the bushing/bearing. The stepped end of the sleeve should be used to locate in the end plate.
3. Remove the nuts and thrust washers and pass the forcing screw halfway through the bushing/bearing center hole.

**NOTE:** Lubricate the forcing screw before use.

**NOTE:** Always use the largest diameter forcing screw available that will fit through the center of the bushing/bearing.

4. Fit the end plates to the stepped ends of the selected sleeves. Ensure that side-A is only used for "A" sleeves and side-B is only used for "B" sleeves.
5. Slide the assembled end plates and sleeves over the forcing screw and install the thrust washers and nuts.
6. Progressively tighten the nuts while locating the sleeves squarely on the bushing/bearing housing and the bushing/bearing outer ring.
7. Once the sleeves are square on the housing and outer ring, tighten the nuts and check that the thrust washers are centered in the end plates.
8. Using the appropriate sized wrenches, hold the forcing nut that has the 3 pins and gradually tighten the forcing nut that has the bearing, driving bushing/bearing from the housing.

#### **⚠ WARNING:**

DO NOT use air tools to operate the force screw nuts.  
DO NOT exceed the maximum recommended torque for each forcing screw.

#### B. BUSHING/BEARING INSTALLATION (FIG. 1)

1. Select the appropriate size sleeves for the housing and bushing/bearing as described in the removal section.
2. Prior to installing the bushing/bearing, clean the inside of the housing with an abrasive cloth to ensure that it is free of debris and corrosion.
3. Lightly oil the outer ring of the bushing/bearing to be installed.
4. You may use a hammer to gently tap around the outer ring of the bushing/bearing to locate it into the housing.

**NOTE:** Make sure that the bushing/bearing is square to the housing when installing.

**NOTE:** Always use the largest diameter forcing screw available that will fit through the center of the bushing/bearing.

5. Lubricate the forcing screw and assemble the kit as described in the removal section and shown in Fig. 5.
6. Once the sleeves are square on the housing and outer ring, tighten the nuts and check that the thrust washers are centered in the end plates.
7. Using the appropriate sized wrenches hold the forcing nut that has the 3 pins and gradually tighten the forcing nut that has the bearing, driving bushing/bearing into the housing. Ensure that the bushing/bearing is square to the housing during installation.

#### C. USING WITH A WORKSHOP PRESS

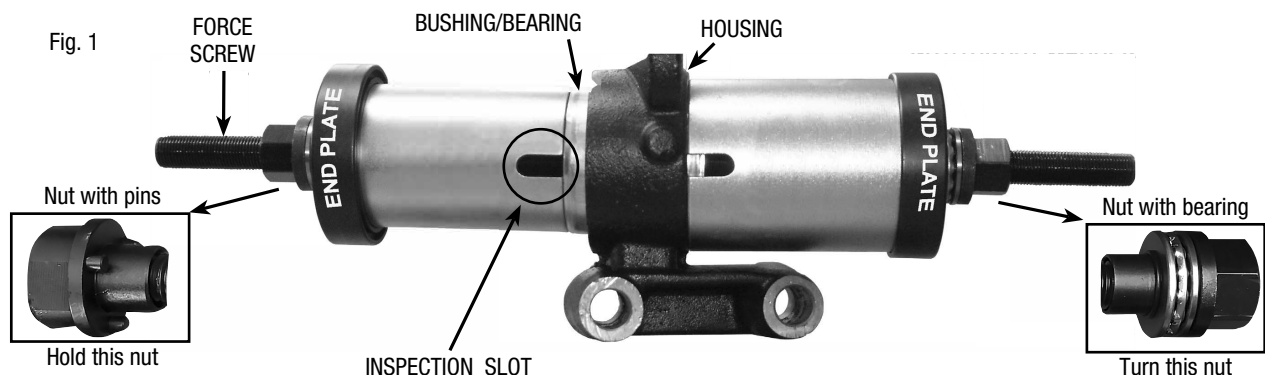
1. Where access is not possible, the end plates and sleeves can be used with a standard workshop press for bushing/bearing removal and installation.
2. To avoid damage to the end plates, use the provided shop press plate between the press and the end plate during workshop press operation.

#### PRODUCT MAINTENANCE

1. Always store the Manual Bushing Installation and Removal Tool Set in a well-protected area where it will not be exposed to inclement weather, corrosive vapors, abrasive dust, or any other harmful elements.
2. Keep the Manual Bushing Installation and Removal Tool Set clean for better and safer performance.

#### DISPOSAL

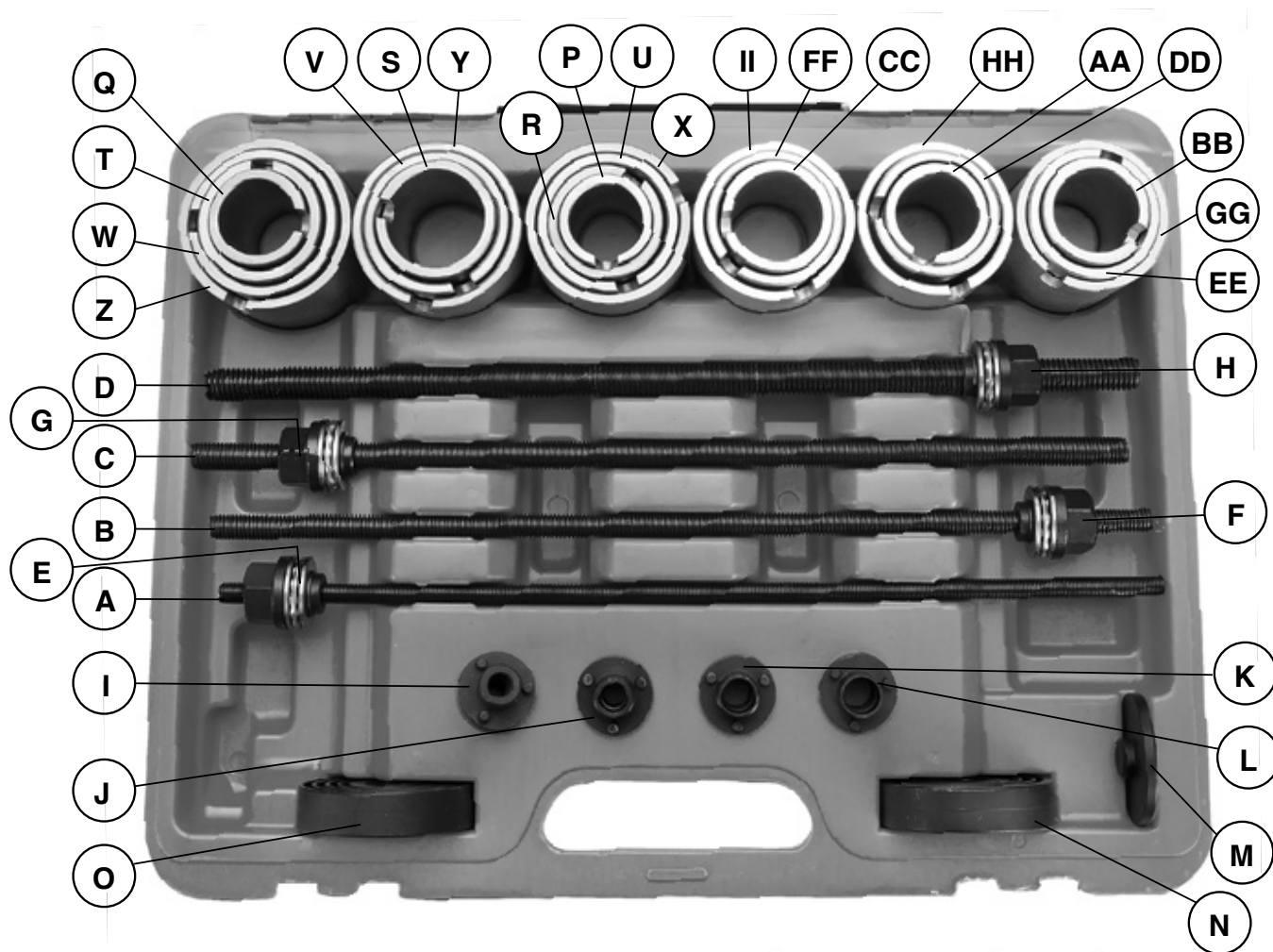
At the end of the useful life of the Manual Bushing Installation and Removal Tool Set, dispose of the components according to all state, federal, and local regulations.





# MANUAL BUSHING INSTALLATION AND REMOVAL TOOL SET

## PRODUCT LAYOUT





## MANUAL BUSHING INSTALLATION AND REMOVAL TOOL SET

### PARTS LIST

Fig.	Description	Qty.
A	M10 x 1.5 Forcing Screw	1
B	M12 x 1.5 Forcing Screw	1
C	M14 x 1.5 Forcing Screw	1
D	M16 x 1.5 Forcing Screw	1
E	M10 Nut with Bearing	1
F	M12 Nut with Bearing	1
G	M14 Nut with Bearing	1
H	M16 Nut with Bearing	1
I	M10 Nut with Pins	1
J	M12 Nut with Pins	1
K	M14 Nut with Pins	1
L	M16 Nut with Pins	1
M	Shop Press Plate	1
N	End Plate (A Sleeves)	1
O	End Plate (B Sleeves)	1
P	Sleeve A – D44 x d34	1
Q	Sleeve A – D46 x d36	1
R	Sleeve A – D54 x d44	1
S	Sleeve A – D56 x d46	1
T	Sleeve A – D58 x d48	1
U	Sleeve A – D66 x d56	1
V	Sleeve A – D68 x d58	1
W	Sleeve A – D70 x d60	1
X	Sleeve A – D78 x d68	1
Y	Sleeve A – D80 x d70	1
Z	Sleeve A – D82 x d72	1
AA	Sleeve B – D48 x d38	1
BB	Sleeve B – D50 x d40	1
CC	Sleeve B – D52 x d42	1
DD	Sleeve B – D60 x d50	1
EE	Sleeve B – D62 x d52	1
FF	Sleeve B – D64 x d54	1
GG	Sleeve B – D72 x d62	1
HH	Sleeve B – D74 x d64	1
II	Sleeve B – D76 x d66	1

Forcing Screws with Nuts and Thrust Washers		
Item#	Sizes	Max. Torque
A	M10 x 1.5	33Nm (24 Ft/Lb.)
B	M12 x 1.5	60Nm (44 Ft/Lb.)
C	M14 x 1.5	99Nm (73 Ft/Lb.)
D	M16 x 1.5	155Nm (114 Ft/Lb.)



Nut with bearing

Nut with pins

**NOTE:** Not all components of the Manual Bushing Installation and Removal Tool are replacement items, but are illustrated as a convenient reference for location and position in the assembly sequence.

The manufacturer and/or distributor have provided the parts list and assembly diagram in this manual as a reference tool only. Neither the manufacturer nor distributor makes any representation or warranty of any kind to the buyer that he or she is qualified to make any repairs to the product, or that he or she is qualified to replace any parts of the product. In fact, the manufacturer and/or distributor expressly states that all repairs and parts replacements should be undertaken by certified and licensed technicians, and not by the buyer. The buyer assumes all risk and liability arising out of his or her repairs to the original product or replacement parts thereto, or arising out of his or her installation of replacement parts thereto.



## MANUAL BUSHING INSTALLATION AND REMOVAL TOOL SET

**NOTES:**

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



# MANUAL BUSHING INSTALLATION AND REMOVAL TOOL SET

**NOTES:**

This image shows a full page of blank, lined paper. It features approximately 28 horizontal blue or grey lines spaced evenly apart, typical of notebook paper. The lines extend across the entire width of the page, leaving small margins at the top and bottom. There are no vertical lines, text, or other markings on the page.



## MANUAL BUSHING INSTALLATION AND REMOVAL TOOL SET

### WE STAND BEHIND OUR TOOLS. OEMTOOLS® LIMITED LIFETIME WARRANTY

For as long as you own this OEMTOOLS® product, if you find any defect in material or workmanship, through normal usage, return it to the place of purchase or to OEMTOOLS® for repair or replacement at our discretion. In order to obtain this service, send your tool and proof of purchase (transportation pre-paid) to:

OEMTOOLS® Q.A. Dept., 3580 E. Raines Road #3, Memphis, TN 38118.

We will not be responsible for lost or damaged goods during transportation; please insure your package. If our inspection verifies the defect, we will repair or replace the product, or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

OEMTOOLS® does not provide warranty for products labeled other than OEM® or OEMTOOLS®. OEMTOOLS® will not provide any warranty for products subjected to abnormal use. Abnormal use includes (but is not limited to) abuse, accident, alteration, neglect, and unauthorized or unreasonable use or repairs. This warranty does not cover bits, blades, files, batteries, or calibration. We recommend that you maintain your tools and sharpen or replace blades, bits, files, and batteries as necessary. OEMTOOLS® reserves the right to make any changes in construction or design at any time without any obligation in incorporating such changes to tools or equipment previously sold.

OEMTOOLS® makes every effort to ensure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship. This warranty does not apply to damage due directly or indirectly to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance.

OEMTOOLS® is not responsible for damaged shipments or shortages resulting from carrier mishandling. Notify your carrier's office immediately to file a claim. Keep damaged goods and containers for inspection until advised by the carrier as to disposal.

We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

Please contact us at [customerservice@oem-tools.com](mailto:customerservice@oem-tools.com) or call us at 901-370-1101 for additional information or questions.

Thank you for your purchase.

## CONTACT US

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