

STUCK LUG BOLT REMOVAL

PURPOSE

The purpose of this guide is to provide insights, guidelines, and Best Practices to support the process of **Stuck Lug Bolt Removal**. By following this guide, you will be able to safely remove stuck lug bolts without damaging the customers vehicle.

SAFETY & QUALITY FIRST



CRITICAL TO SAFETY

- Always use the thread shaker.
- Always wear goggles and gloves when using the thread shaker.
- Never directly hit a socket with a hammer.
- The thread shaker should only be used with the hand guard installed.
- Replace the thread shaker when the head becomes mushroomed as pieces of metal can chip off.
- If DT40 is used, remove all lubrication from the studs, lugs, and lugs seat.



CRITICAL TO QUALITY

Not using the thread shaker can cause wheel damage if the hammer strikes the wheel.

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OVERVIEW AND APPROACH

What is Stuck Lug Bolt Removal?	The Stuck Lug Bolt Removal process covers the steps of how to remove rusted, stuck lug bolts with the thread shaker and ball peen hammer because they cannot be removed with our impact guns using the power sockets.																
Who is Responsible?	The Service Tech is responsible for Stuck Lug Bolt Removal .																
When to Perform?	The Stuck Lug Bolt Removal process is used during the removing the assembly service when it is discovered that lug bolts that have been rusted and are, therefore, unable to be removed with our impact guns using the power sockets.																
Benefits	For Our Customers: - Prevents them from needing to take their vehicle to a full-service shop - Reduces the risk of wheel damage because proper tools are being used	For Our People: Allows safe removal of stuck lug bolts															
Tools	Throughout the Stuck Lug Bolt Removal process, you must use the following tools: <table border="1"> <tr> <td>Personal Protective Equipment (PPE)</td><td></td><td>Goggles and gloves are required when using the thread shaker.</td></tr> <tr> <td>Thread Shaker</td><td></td><td>Used with a socket and the ball peen hammer to weaken the bond between the lug bolt and hub. Should only be used with the hand guard installed.</td></tr> <tr> <td>Socket</td><td></td><td>At the tool stand, select the applicable socket.</td></tr> <tr> <td>Ball Peen Hammer</td><td></td><td>Used to strike the thread shaker.</td></tr> <tr> <td>DT40 Penetrating Oil</td><td></td><td>Used if the thread shaker is not able to remove the lug bolt.</td></tr> </table>		Personal Protective Equipment (PPE)		Goggles and gloves are required when using the thread shaker.	Thread Shaker		Used with a socket and the ball peen hammer to weaken the bond between the lug bolt and hub. Should only be used with the hand guard installed.	Socket		At the tool stand, select the applicable socket.	Ball Peen Hammer		Used to strike the thread shaker.	DT40 Penetrating Oil		Used if the thread shaker is not able to remove the lug bolt.
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ADDITIONAL SUPPORT

Tips from the Trusted Experts

- If DT40 penetrating oil is required to remove a stuck lug, it is likely that you will need to repeat the process to remove additional lug bolts on the vehicle.
- If you use DT40 penetrating oil, remove all lubrication from studs and lugs. Dry torque values are 30% higher than wet torque values.
- If lug bolt backs out partially, re-tighten the lug bolt before using the thread shaker to prevent thread damage.

Additional Resources

Throughout the **Stuck Lug Bolt Removal** process, you may use the following resources:

[Removing the Assembly Best Practice](#)

This Best Practice provides the basic information needed when removing an assembly from the vehicle.

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Employee:	Observer:	Store #:	Date:
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Stuck Lug Bolt Removal	Important Steps (Action/Task)	Key Points (What)	Reasons (Why)	SAFE	AT RISK
	1. Collects tools and equipment	Collects thread shaker, goggles, and ball peen hammer from specialty tool board.	- These tools and equipment should be housed on the specialty tool board. - Goggles and gloves are required for this process.		
	! Always wear goggles and gloves when using the thread shaker.				
	2. Assembles tools and place socket	- Places the proper socket size for the lug bolt on the square end of the thread shaker. - Places the socket with the attached thread shaker onto the stuck lug bolt.	The socket must be installed on the thread shaker and held onto the stuck lug bolt to work properly.		
	3. Strikes thread shaker	While holding the thread shaker firmly in place, strikes the flat surface with the hammer multiple times.	Striking the thread shaker with the hammer is what helps to break the bond between the lug bolt and the hub.		
	! The thread shaker should only be used with the hand guard installed.				
	4. Removes lugs	- Removes the lug bolts using the impact gun with the power sockets if necessary. - If still unable to remove lug bolt, repeats Step 3 and 4 before moving to Step 5.	If the lug bolts are still stuck, the process should be repeated before moving to the next step as it requires less cleanup and time.		
	5. Applies DT40	- If lug bolt is still stuck after using the thread shaker, applies DT40 penetrating oil to lug bolts and contact supervisor. - After allowing some time for the DT40 to take effect, repeats Steps 3 and 4.	- If the thread shaker alone does not work, penetrating oil may be necessary to weaken the bond between the lug bolt and hub. - Supervisor needs to be informed about what is happening so they can work around the delay as appropriate.		
	6. Removes assembly	Removes the assembly from the vehicle.	Removing the assembly allows you to continue servicing the vehicle.		
	7. Removes DT40	Cleans DT40 off all surfaces before reinstalling on the vehicle.	- Dry torque values are 30% higher than wet torque values. - If DT40 penetrating oil is left on the components, it can lead to damage when reinstalling the assembly.		
COMMENTS					