

Instructions and practical uses for TOUGHNUTZ™

A SIMPLE SOLUTION TO A MAJOR PROBLEM™

The use of the new TOUGHNUTZ™ products is a simple solution to a major problem™. We use the term "Think-Nutz" because before you force and possibly break the bolt or stud, we prefer you to always "Think-Nutz". We encourage you to then cut off the bolt head or nut to expose as many useable threads as possible. Repair or replace the part. Then, attach one of our TOUGHNUTZ™ products to the shortened bolt or stud to complete the repair. Our simple "Think-Nutz" solution prevents the major problem of broken bolts. Like all of our products they are a simple solution to a major problem™.

ALWAYS WEAR SAFETY GLASSES AND PROPER SAFETY EQUIPMENT (gloves, etc.) WHEN WORKING WITH OUR PRODUCTS AND TOOLS.

We designed these products so you can do the complex jobs that you could not do before, to perform repairs with more confidence and be more profitable. We want to make all repairs as simple as possible while maintaining the strength that is needed for that repair. Our products have been tested in our laboratory and have been field tested on various vehicles with a variety of problems before they were marketed to you. If you find new uses for our products please contact us at our website at www.toughnutz.com. We would like to hear about them.

Before we begin the basic instructions let us explain the letters and numbers on the barrels of your TOUGHNUTZ™ products. The "TNZ" is a trademark product and it indicates that the product is authentic and not a copy or imitation. If TNZ is not on the product please call or e-mail us immediately, it is probably an imitation that you do not want to use. The number which is next to the TNZ is the stock number for reordering purposes and if, there is a space with another number, that number is the foot-pounds the TOUGHNUTZ™ can be torqued to. The nuts will have torque specs on them and stud extenders will not. If any of these numbers are missing let your representative know immediately so we can correct the problem.

STEP 1: Cut the old nuts, studs, or bolt heads off with a grinding wheel, hacksaw, torch, mini-grinder, etc. Choose the easiest method that will not put stress on the remaining attachment device. **ALWAYS WEAR SAFETY GLASSES AND PROPER SAFETY EQUIPMENT (gloves, etc.) WHEN WORKING WITH OUR PRODUCTS AND TOOLS.**

STEP 2: Remove the item or part to be repaired or replaced such as a manifold, starter, alternator or other such part.

STEP 3: CLEAN AND DEBURRING PROCESS:

Grind the slag off the bolt or stud if you used a torch, otherwise just grind the ends straight so they will accept TOUGHNUTZ™. The use of a mini-grinder is preferred, but you can use a file, etc. We supply a Chamfer tool TNZ 221 (3/8 inch maximum deburring tool). Other sizes are available at an extra cost. Call for a quote from your sales representative or distributor. This tool can be used to debur the end of the stud or bolt for easy acceptance of the TOUGHNUTZ™ product to be used for reassembly. Make sure before reassembly that you try a TOUGHNUTZ™ on each and every stud or bolt to assure easy reassembly. NOTE: If you have damaged any threads, run a thread chaser so that the threads will be as pristine as possible. If you need to cut threads on the bolt, do it while it is exposed for easy access with a die. You may grind the bolt down to the threads in some cases, if it is not threaded all the way, but that is not the preferred repair. **ALWAYS WEAR SAFETY GLASSES AND PROPER SAFETY EQUIPMENT (gloves, etc.) WHEN WORKING WITH OUR PRODUCTS AND TOOLS.**

The Chamfer tool TNZ 221 supplied with all kits is designed to wobble for work in tight spaces. Larger deburring tools do not wobble unless special ordered to do so. Average time to debur a bolt or stud is 10 seconds using a quarter drive air ratchet.

STEP 4: If necessary, clean the gasket area and/or drill and open holes that need to be expanded slightly to accept a TOUGHNUTZ™ product. You will now have a fast and clean reinstallation of your part or parts. We supply drill bits with our master kit which drill both cast iron and cast aluminum. They come in two sizes 7/16" and 1/2". Other sizes are available from your sales representative or distributor. We also include in your master kit a 1/2" mill, also called a rotary file, to help with opening holes and cleaning up any burred edges when necessary. This mill also works well on brake caliper slider holes, and is available in other sizes. Ask your sales representative or distributor for sizes and prices.

NOTE: Please remember to use cutting oil (not motor oil) when using any drill. ALWAYS WEAR SAFETY GLASSES AND PROPER SAFETY EQUIPMENT (gloves, etc.) WHEN WORKING WITH OUR PRODUCTS AND TOOLS.

STEP 5: When installing your new or used parts, torque the nuts to manufacturer's recommended specifications. You now have a completed job that you can be proud of. TOUGHNUTZ™ are rust resistant zinc coated products.

STEP 6: For reusing old manifolds, TNZ 9 sleeves may need to be welded onto some manifolds to reattach the Y-pipes. These TNZ 9 sleeves are not coated and can be welded to steel and cast iron. To attach them to cast iron you must use nickel welding rod. **ALWAYS FOLLOW PROPER SAFETY PROCEDURES WHEN WELDING.** The weldable extender will accept 3/8" coarse threaded rod that may be purchased at any local parts store, or a 3/8" coarse threaded bolt can be used as long as it won't "bottom out".

HINTS: Remember to "Think-Nutz"!

If a transmission mount attachment bolt is broken flush in an aluminum bell housing, it may be possible to carefully cut away the aluminum surrounding the bolt or stud with a hole saw. Expose 3 or 4 threads that will accept a TOUGHNUTZ™ extender of the proper thread. Use a threaded rod or bolt to make a reattachment of the bell housing to the engine.

Often starter bolts are corroded and will break off when removed. Example: 1997 Ford 4.6 L Expeditions have the bolts into the aluminum bell housing and will often break upon removal. "Think-Nutz"! Cut off the starter bolts without breaking them. The starter holes where the bolts have been cut will need to be opened enough to accept the barrel of the TOUGHNUTZ™ product. These bolts are threaded all the way to the head that was removed. Follow the CLEAN AND DEBURRING PROCESS on the cut bolts.

To avoid starter replacement due to severe corrosion of the power feed wire, do not attempt to twist off the nut because the bolt to which it is attached will more than likely break. Instead, cut the wire at the copper terminal end, clean the existing stud threads for good electrical connection then attach a TOUGHNUTZ™ stud extender onto the exposed solenoid stud, and attach a new copper terminal end to repair the connection. Finally, attach the repaired terminal end to the extender by using a bolt and washer of matching thread and proper length. If you tried to twist off the nut and broke the stud, when you remove the wire there will probably be threads left that were under the terminal end and washer. In most cases there are enough good threads to attach a TOUGHNUTZ™ stud extender to make the repair as described above. Most automotive starter studs are TNZ 10 (1/4-20) or TNZ 15(8mm 1.25 pitch). **ALWAYS WEAR SAFETY GLASSES AND PROPER SAFETY EQUIPMENT (gloves, etc.) WHEN WORKING WITH OUR PRODUCTS AND TOOLS.**

Our automotive specialists have followed this rule. They are required to "Think-Nutz".

Let your imagination be your guide and never tell your boss again that you broke a bolt or a stud. Make your repairs more profitable and less frustrating to you and your customers.

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