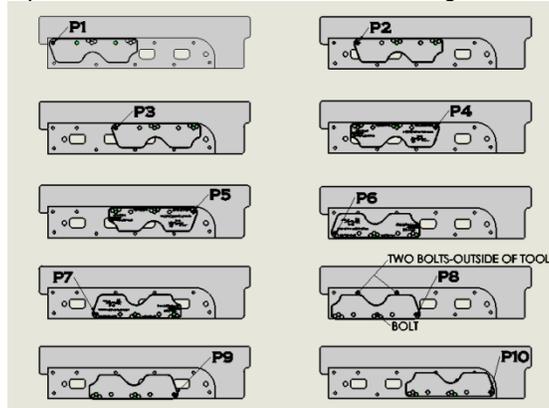




The ProMaxx® ProPlate™ included in this kit was designed to assist in the fast removal of broken exhaust manifold mounting studs in the GM Ecotec 2.2L and 2.4L four cylinder engines commonly found in the Chevrolet Impala®, Colbalt®, Cavalier®, and Malibu®, Buick Equinox®, LaCrosse®, Saturn Vue®, and others. Used properly, the device can significantly reduce repair times and risk associated with removal and subsequent replacement of exhaust manifold mounting studs.



Before use, it is recommended that the cylinder head be free from debris or carbon prior to mounting the ProPlate™. Once cleaned, attach the ProMaxx® ProPlate™ to the cylinder head in any one of the positions shown above using the included ProFast™ precision stainless steel fasteners. Insert a ProDrill™ SSSC125 precision machined tooling bit into an electric or air powered drill and use the drill depth gauge machined into the ProPlate™ to set the proper depth of the bit. This will significantly reduce the possibility of damage to the cylinder head. Dip the tooling bit into a cap full of automatic transmission fluid (ATF) prior to drilling. The use of penetrating spray or other lubricants is not recommended. Insert the mounted ProDrill™ into the hardened steel drill bushing pressed into the ProPlate™ first by slowly and manually turning the chuck until the ProDrill™ slips into the bushing and contacts the surface of the damaged stud. While applying light pressure, activate your drill both on and off in one second intervals for approximately five to six seconds. This initial process is critical in that it creates a “seat” for the bit to rest and ensures that the bit will stay on the stud center and not follow the angular surface of the damaged stud. This reduces the probability of tooling bit breakage and drilling off center of the damaged stud as well. retract the bit and clean the debris from the bit with a shop towel. This removes steel fragments that have been case hardened and extends the life and cutting action of the tooling bit. Dip the mounted tooling bit once again into ATF and reinsert the bit into the ProPlate™ manually as described previously above. While continuously running your drill, building pressure for five to six second intervals and while the bit is turning, slowly extract the bit maintaining it in the bushing to allow the bit to “clean” cutting debris from this operation. Repeat this step for approximately every five to six seconds progressively exerting more pressure until the drill chuck rests on the bushing mounted in the ProPlate™. Once the machining operation is complete, remove the ProPlate™ and replace the ProDrill™ with the optional ProCutter™. Dip the ProCutter™ into a cap full of ATF and insert the projecting pin from the ProCutter™ into the hole in the damaged stud remnant created from the ProDrill™. Apply moderate pressure, once again, toggling your drill on and off for five to six one second intervals. This operation will remove the burr and corrosion that often restrict removal of the damaged stud thereby increasing your immediate success of extracting the damaged remnant. ProMaxx® recommends applying heat via cutting torch tip installed in an acetylene and oxygen cutting torch in a circular pattern approximately 1/2” radius about the diameter of the tapped hole housing the broken stud. Continue to apply heat for a minimum of at least three to four minutes. Following these instructions softens the locktite® used when the engine is assembled, but will not expand the damaged stud if done properly as instructed. Using a high quality commercial grade screw extractor, or the optional ProTractor™ included with your kit, place a mark with a marking crayon or similar instrument approximately 1/4” from the end of the extractor. Tap the ProTractor™ in to the depth of the line. If utilizing the splined ProTractor™, place the included slip-nut over the PPT125 or PPT188 ProTractor™ and slide it up against the cylinder head. USE A GOOD QUALITY AND CALIBRATED TORQUE WRENCH AND DO NOT EXCEED 85 IN-LBS FOR THE PPT125 (SPLINED), 125 IN-LBS FOR THE PPT020 (HEX), AND/OR 185 IN-LBS FOR PPT188 (SPLINED) OF TORQUE OR FAILURE MAY RESULT. Follow the manufacturer’s recommendation for torque specifications/limits for all other types of stud extractors. Slowly apply torque first, in the clockwise direction, and then in the counter clockwise direction. Repeat this motion several times slowly increasing applied torque being careful not to exceed safe torque limitations stated above. If the damaged stud fails to release, **STOP** and remove the extractor. In these cases, ProMaxx® offers and recommends using a larger ProDrill™ SSSC188 machine tooling bit followed by the ProMaxx® PPT188 ProTractor™ to complete the extraction process. In extreme cases, utilize the ProMaxx® SSSC266 machine tooling bit to follow the SSSC188. This machining operation will leave only the steel threaded portion of the stud. Simply blow the debris free and follow with a high quality thread chaser or bottom tap. In the unlikely event an extractor fails, contact technical support at [www.promaxxtool.com](http://www.promaxxtool.com), or dial 412-347-4041 for recommendations and procedures.

Recommended minimum cutting speed: 350 RPM. Optimum cutting speed 700-900 RPM. Use pneumatic ratchet only where access is restricted and where necessary. Some air ratchets may not generate sufficient RPM under load to be effective.

Tools required: Pneumatic or electric drill, hammer, 3/8” box wrench, 1/4” box wrench, torque wrench, marker, blow gun, safety glasses. Use optional ProPin™ where one tapped hole is available. Mount ProPlate™ with one ProFast™ fastener in center.

**SAFETY PROCEDURE: ALWAYS USE APPROPRIATE SAFETY EQUIPMENT INCLUDING OSHA APPROVED SAFETY GLASSES/GOGGLE AND PROTECTIVE GLOVES WHILE USING THIS DEVICE AND PERFORMING THIS OPERATION.**

# User Guide



[www.promaxxtool.com](http://www.promaxxtool.com)



**Made in the USA**

## LIMITED LIFETIME WARRANTY

The ProMaxx® ProPlate™ included in this repair kit is a quality precision tool designed and manufactured in the USA and is backed by a LIMITED LIFETIME warranty. ProMaxx® warrants this product to the original purchaser for its useful life against deficiencies in material and workmanship. This LIMITED LIFETIME WARRANTY does not cover normal wear and tear, and if it is used incorrectly, abused, altered or repaired. Deficient products will be replaced or repaired. For more information about ProMaxx® and our line of precision machine tools and tooling, visit [www.promaxxtool.com](http://www.promaxxtool.com).