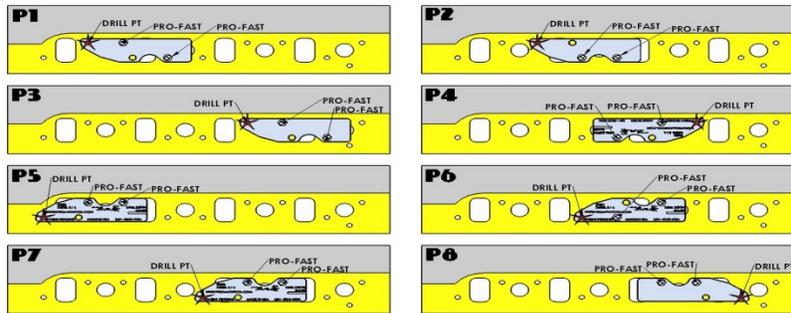




The ProMaxx® ProPlate™ included in this kit was designed to assist in the fast removal of broken exhaust manifold mounting studs in the ISUZU 5.1L Diesel engine commonly found in cab and chassis configurations. Used properly, this device can significantly reduce repair times and risk associated with removal and subsequent replacement of exhaust manifold mounting studs.

#### ISUZU 5.1 LITER DIESEL



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™ PPF010 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. Place two drops of ProLube™ PPL001 on the end of the bit prior to drilling. The use of penetrating spray or other lubricants other than for machining applications are 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 times. This initial process is critical in that it creates a “seat” for the bit to rest and ensures that the bit will stay on 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. 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. Once again, place two drops of ProLube™ PPL001 to the end of the bit and reinsert the bit into the ProPlate™ manually as described previously above. While continuously running your drill at the proper RPM, slowly apply more pressure for eight to ten second intervals and while the bit is turning, slowly extract the bit while maintaining it in the bushing to allow the bit to “clean” cutting debris from this operation. Repeat this step for approximately every eight to ten seconds progressively exerting more pressure until the drill chuck is approximately ¼” from contacting the bushing mounted in the ProPlate™. Once the machining operation is complete, remove the ProPlate™ and replace the SSSC125 ProDrill™ with the optional ProCutter™ PPC007A. Add two drops of ProLube™ PPL001 to the end of the cutter blade and insert the projecting pin of the arbor into the hole 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. Insert an SSSC188 machine tooling bit into your air drill until the bottom of the bit is tight against the inside bottom of the drill chuck. Check the bit in an open tapped hole in the head to ensure you have adequate clearance without interference of the cylinder head or water coolant jacket. If necessary, use a common split collar on the drill bit to ensure the bit will not penetrate the cylinder head. If a split collar is unavailable, simply improvise with a 3/8” hex nut placed over the bit allowing it to spin freely. This will act as a drill depth stop to assist. Once again, check an open tapped manifold mounting hole to ensure there is adequate clearance between the bottom of the manifold tapped hold and the cutting bit so that the bit will not penetrate the cylinder head. Align your drill as perpendicular in both axis as best as possible and proceed by toggling your drill off and on until the bit is fully engaged into the stud. Run continuously at no more than 200 RPM until the bit is through the damaged stud. Utilize the optional splined ProTractor™ PPT188 included in your ProKit by placing a mark approximately ¼” from the end of the extractor. Tap the ProTractor™ in to the depth of the line. Place the included slip-nut over the ProTractor™ PPT188 and slide it up against the cylinder head. Using a high-quality calibrated torque wrench, slowly and carefully apply torque while holding the opposite end of the ProTractor™ to keep it stable. **DO NOT EXCEED 150 IN-LBS OF TORQUE.** Apply torque first in the clockwise direction, and then in the counter-clockwise direction to loosen the damaged stud. Repeat this motion several times slowly increasing applied torque and being careful **NOT TO EXCEED** safe torque limitations stated above. If the damaged stud fails to release, **STOP** and remove the ProTractor™. In more challenging cases, ProMaxx® offers and recommends using a larger ProDrill™ SSSC266 machine tooling bit to follow the SSSC188 which will leave only the steel threaded portion of the stud. Simply blow the debris clean and follow with the optional high-quality ProChaser™ PPC010 included in the ProKit. 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.

**NOTE:** ProMaxx does not recommend a tapered and/or left handed operation screw extractors as they are very fragile and have the potential to expand the remnant into the cylinder head increasing torque require to extract. **USE ONLY PROMAXX RECOMMENDED.**

Tooling cutting speeds (Under load): MIN: SSSC125 @300 RPM, SSSC188@200, SSSC266@150. MAX: SSSC125 @900 RPM, SSSC188@300, SSSC266@250. OPTIMUM: SSSC125 @500 RPM, SSSC188@250, SSSC266@200. **NOTE:** Some air ratchets may not generate sufficient RPM under load to be effective. SEE ProMaxx® ProRatchet #PPR5250, Tasmanian Devil @ 500RPM.

Tools required: Pneumatic or electric drill, hammer, 3/8” box wrench, ¼” box wrench, torque wrench, marker, blow gun, safety glasses. Use optional ProPin™ where only one tapped hole is available, mount the ProPlate™ with one ProFast™ fastener in any open hole.

**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*



**Made in the USA**

### **LIMITED LIFETIME WARRANTY**

The ProMaxx® ProPlate™ included in this repair kit is a high-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).

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