

IM-130, Stud Removal Instruction (GF-1549,GF-1557,GF-1558)

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The purpose of these instructions is to assist personnel in the removal of Riverhawk studs in the case where normal tensioning techniques will not suffice. This procedure involves attaching a drill jig to the stud. This jig will guide drills to enlarge the spanner pinholes in the cylindrical nut

Stud removal can be divided into three steps; initial setup, drilling, and removal. The Initial setup involves setting the drill depth to insure that **no material is removed from the coupling**. Drilling is the second step. Since the nut is made from heat treated, alloy steel, drilling is made much easier by gradually increasing the diameter of the drill bit. The drill jig includes interchangeable bushings to accomplish this. Upon completion of the drilling, the nut has been weakened to the extent that it can be split and removed, thereby releasing the tension in the stud. Refer to the drawing supplied with the tooling for pictures, and a list of parts.

In addition to the tools supplied in the kit, you will need the following:

- 1) Heavy duty, variable speed hand drill with a ½” chuck.
- 2) Small hammer (approx. 2 lb).
- 3) 7/16” and 9/16” wrench (or adjustable wrench).
- 4) Hex socket wrench set (Allen wrenches).
- 5) High quality cutting fluid.

INITIAL SETUP

- 1) Mount the drill jig using the long mounting screw.
- 2) Rotate the drill jig to a position where the drill-bushing holes are above a flat surface on the nut. Tighten the long mounting screw.
- 3) Insert a drill bushing and the corresponding drill into the bushing hole. Aligning the notch with the setscrew, rotate the drill bushing to secure it. Push the drill bit in until the drill point is touching the top surface of the nut. Set the stop collar to the position indicated on the drawing, as dimension A using the supplied gauge tube. **IMPORTANT: This is the maximum drill depth. Exceeding this depth may damage the flange.**

- 4) Repeat step 3 for all drills and corresponding bushings.
- 5) Loosen the long mounting screw.
- 6) Rotate the drill jig so that the alignment screws match the setscrew holes in the nut. Install the alignment screws into the setscrew holes in the nut. Tighten all (3) screws. [On the older style nuts without the locking feature, rotate the jig to align the drill-bushing hole with the spanner hole (use a drill and bushing as an alignment tool). Tighten the long mounting screw.]

WARNING: CRUSH HAZARD, Stud will jump when the nut splits. Keep hands away from both ends of the stud during drilling and splitting operations.

DRILLING

- 1) Select the smallest diameter drill bit, with the stop collar attached, and matching drill bushing.
- 2) Insert the bushing into the drill jig; align the notch with the lock screw, turning clockwise to lock.
- 3) Begin drilling. Apply an appropriate cutting fluid as needed, extract the drill to remove the chips often.
- 4) Drill to the stop collar, repeat steps (3) & (4) to drill the second hole
- 5) Repeat steps (1) through (4), increasing in drill bit size, stop collars, and bushings.

REMOVAL

- 1) Remove the alignment screws and center mounting screw, removing the drill jig.
- 2) Attach the safety bar to the stud using the center mounting screw.
- 3) Using a chisel and hammer, split the remaining outer webs of the nut until the nut splits and tension is released from the stud. In some cases, it may be helpful to also use a tapered punch.

IMPORTANT: Do not allow the chisel to contact the inside diameter of the counterbore.

- 4) Remove the nut and stud. Remove all metal chips from drilling.
- 5) The stud and nut assembly can now be replaced with a new assembly, with the proper balance weight, following the standard Riverhawk tensioning procedure.