



GENERAL: These kits are designed to be used between pairs of holes, so that the studs can provide "mutual support" for each other and end up being nice and straight, even though the threads in the block might be completely gone. Before proceeding with the first step, please read the instructions on the tube of JB Weld so that you won't be blindsided by its set time as you proceed with the repair process. Also note that it's a good idea to tie a thin string around the backing plate so that you can retrieve it if you drop the plate into the cooling jacket. After the studs are started into the backing plate, the string can be removed, or even left in place if it's very thin string.

1) Holding the back plate in place behind the two holes to be repaired, make a dry-run by inserting the two studs through the holes in the block and then finger-tighten them into the back plate. If for any reason the studs do not line up with the holes in the back plate, the back plate will have to be cut in half and installed behind each of the two holes separately.

NOTE: Ideally, the outside of the tapered collet should end up being flush with the surface of the block. If the diameter of the original hole is so small that the outside of the collet would interfere with the seating of the side plate, you can bevel the hole in the block slightly using the corner of a common flat file.

2) Remove the studs and back plate and prepare one of the studs by tightening the two 5/16" nuts provided in the kit against each other, near the outside end the stud using two 1/2" wrenches. This technique is called "double-nutting", and will enable you to tighten the studs into the back plate in steps 3 through 5, using a 1/2" wrench on the outer nut.

3) Mix the J.B. Weld provided in the kit, and apply a generous amount behind and between the two holes into which the kit will be installed, and on one side of the stainless back plate.

CAUTION: Check the instructions on the back of the JB Weld package and be aware of the product drying time.

4) Hold the stainless backing plate in place behind the defective bolt hole(s) and carefully start the first stud (the double-nutted stud) into the threads of the backing plate.

5) After the first stud is seated, finger tighten the second stud into the second hole. Then use two 1/2" wrenches to break the nuts free from the first stud and use them to seat the other stud in similar fashion.

NOTE: A good alternate technique is to use a second pair of regular steel 5/16" nuts (not provided in the kit) to prepare the second stud so that time will not have to be spent removing the nuts from the first stud. Be sure to use the stainless nuts in step 7.

6) Tighten both studs until the back plate "squoshes" well into the J.B. Weld, and the small tapered collets in the middle of the studs are drawn securely in against the outside of the block. While care should be taken to tighten the studs as evenly as possible, it is not necessary to tighten them excessively hard. The J.B. Weld provides a strong even surface for the stainless back plate to pull against when installing the water jacket side plate in the next step, and the studs get their strength from the stainless back plate.

7) After the J.B. Weld has had a chance to set (ideally several hours), install the side plate. Use the two stainless nuts and brass flat washers from the kit on the two studs. Use lots of sealer on both sides of the gasket, and around the threads of all side plate bolts (and studs). Any of the Permatex line of sealers will work, although we still have a small preference for the somewhat dated Permatex Aviation Brand sealer.

