



Broken Water Pump Bolts

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Hey all;

Just an update of this topic for the archive.

Most often, you will end up with the bolt sheared clean off at the block. Experience has shown that the drilling part of the project is most critical, and if you can get your drill hole centered as perfectly as possible, it greatly eases the situation.

First, an angle drill is tremendously helpful, if not necessary. You will likely notice that the surface of the bolt is not sheared off flush to the block, and that centering the drill is impossible because the bolt end is not square and it walks off center each time you start. The secret is to start with the bolt flush to the block surface, and to use a bit a few sizes larger than the bolt. Use this bit to "surface" the bolt end off and create a hollow point to start your internal drilling. You orient the drill at any angle such that it removes the uneven end of the bolt, gradually straightening the drill up to a perpendicular attitude with the block as the bolt end squares off. You then have created a perfect hollow point for the internal drilling sequence.

Next, you can select a drill size appropriate to your stud extractor. These tools are only marginally successful in terms of percentages, so don't be too surprised if it doesn't work. I would DEFINITELY suggest you use the four cornered, fluted variety -vs- the older spiral type. The latter are MUCH more likely to snap off in the hole, and then you are REALLY screwed. You'll NEVER drill that sucker out. The fluted variety are not so much like a threaded tool, and as such will usually not screw themselves irretrievably into the hole.

When you have decided that the extractor is not going to work, you can then begin selecting progressively larger drill sizes until you push the limit of the hole. I got up to a 3/16 bit, and the bolt then disintegrated and the pieces blew right out of the bolt hole. I was able to chase the threads with a tap and run a new bolt in with no problem.

It is sometimes indeed better to be lucky than good, and I wouldn't imagine anyone would always be as lucky as I on this last attempt. Still, I made some of my own luck by drilling straight, taking my time, not breaking the extractor (or drills) off, and paying close attention to what was happening.

Good luck to all!

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