OPERATING INSTRUCTIONS

BOLT EXTRACTOR KIT:

STEP 1 - DRILLING:

1. Select the correct size bit.

2. Place hex end of bit in a variable speed 3/8" power drill and tighten in the drill chuck. Note: Impact or high horsepower drills may cause damage to the bit.

3. Thread collet on bit back towards the drill until it contacts the drill chuck.

4. Place tip of bit on the center of the broken bolt, set drill in reverse and begin drilling at suggested RPM's. See Figure 1. Hole must be straight and centered. Do not allow collet to move down toward the bit tip while drilling. Once the hole is started, stop to ensure the bit is centered on broken bolt. TO PROPERLY EXTRACT A BROKEN BOLT, IT IS IMPORTANT TO DRILL THE HOLE ON CENTER AND STRAIGHT.

5. Stop drilling just before the collet reaches the broken bolt. See Figure 2. Do not let the collet touch the end of the bolt.

6. Clean out shavings from hole and apply penetrating oil to help loosen bolt.

STEP 2 - EXTRACTING:

1. Advance collet five turns clockwise, away from drill chuck.

2. While holding drill firmly with two hands, bring drill up to suggested RPM's (See Figure 1) and apply downward pressure. Note: Collet MUST engage top of hole before drill tip bottoms out.

3. The collet will automatically engage and remove the broken bolt. See Figure 2.

4. If drill stalls during extraction, remove bit from drill and use a wrench on the collet head.

5. If resistance to removal continues, remove bit by turning clockwise with wrench. Remove bolt by drilling it out and use a helicoil thread repair kit to repair damaged hole.

6. To remove broken bolt from bit, tighten bolt in vise. Turn collet clockwise with wrench.

FIGURE 1

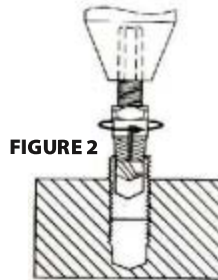| BIT SIZE	3/8" VARIABLE SPEED DRILL
1/4" (M6)	350 RPM - 1/4 Speed
5/16" (M8)	470 RPM - 1/3 Speed
3/8" (M10)	840 RPM - 3/5 Speed
1/2" (M12)	1400 RPM - Full Speed

FIGURE 2

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