

39100 SPARK PLUG REMOVAL TOOL

THESE INSTRUCTIONS INVOLVE THE FOLLOWING MODELS:

ALL 3 VALVE TRITON ENGINES, 2004 TO PRESENT

CAUTION:

- DO NOT REMOVE PLUGS WHEN THE ENGINE IS EXTREMELY HOT OR COLD.
- BE SURE TO ALWAYS WEAR SAFETY GLASSES.

Some of the above mentioned engines may experience difficulty with spark plug removal which may cause damage to the spark plug and leave part of the spark plug in the cylinder head.

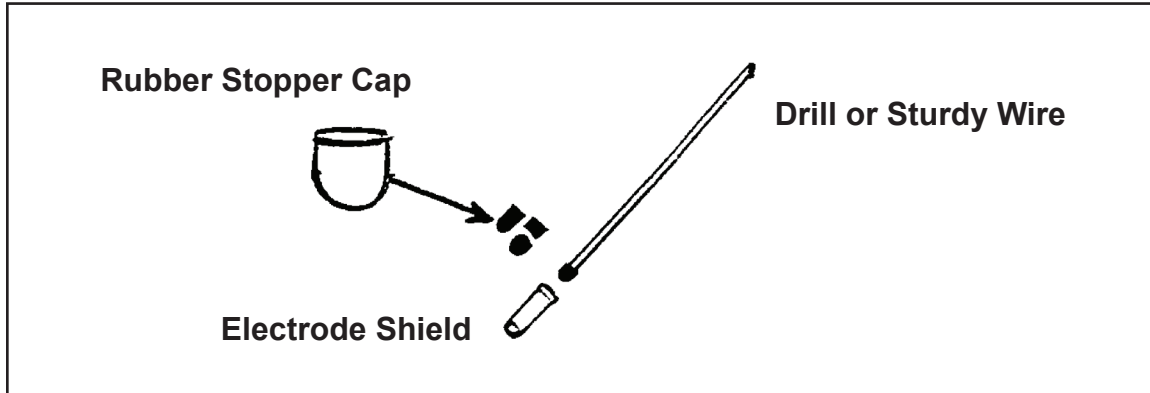
The spark plug will break in 1 of 2 modes:

Mode 1: The ground electrode shield is left behind as an empty shell.

Mode 2: The porcelain center and ground electrode shield is left behind. In this case, soak with penetrating oil and use long reach needle nose pliers to firmly grasp and remove the porcelain center from the ground electrode shield.

REMOVAL INSTRUCTIONS

1. Seat the stopper cap using a long drill bit or suitable wire sized for the internal diameter of the cap. Make sure the cap is bottomed out against the electrode strap. This will prevent thread chips from entering cylinder bore.



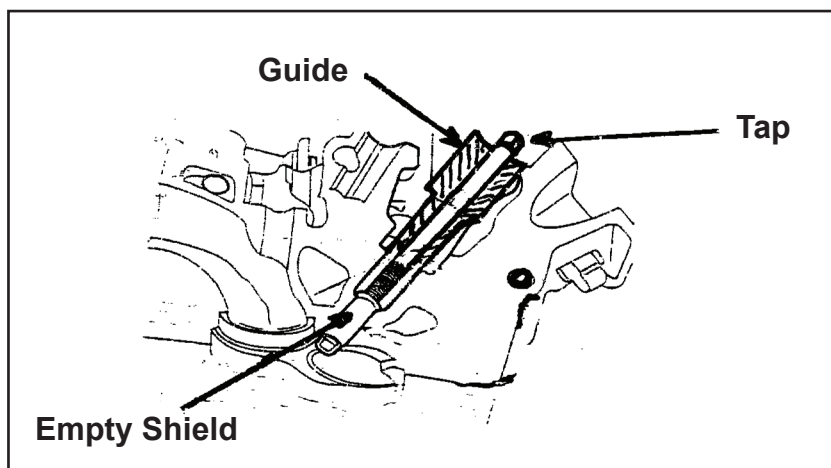
2. Place the guide into the spark plug well.

WARNING: DO NOT USE AIR OR POWERED TOOLS FOR PLUG REMOVAL

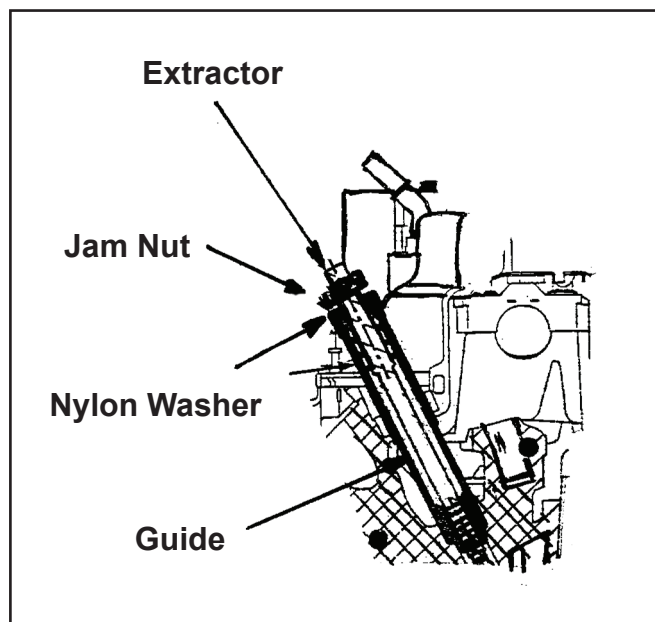
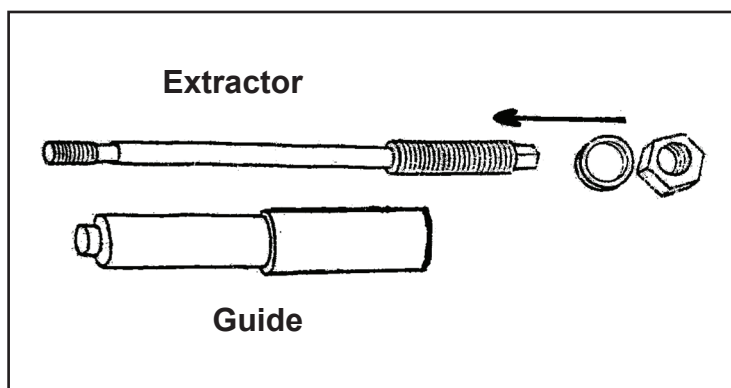
3. Coat the end of the tap with general purpose grease and slowly insert the tap through the guide and carefully tap the ground electrode shield. Turn and tap 3 to 4 threads into the ground electrode shield. Be sure to tap slowly and back up tap frequently to break up chips and prevent cut material from coiling up and jamming inside electrode shield.

39100 SPARK PLUG REMOVAL TOOL

CAUTION: DO NOT ATTEMPT TO REMOVE THE GROUND ELECTRODE SHIELD WITH THE TAP. THE TAP MAY BREAK IF ATTEMPTED.



4. Once the ground electrode is tapped, insert the extractor through the guide and thread into the ground electrode shield. Place nylon washer and jam nut onto threaded shaft.



5. While holding hex end of extractor with wrench, turn jam nut with another wrench to remove ground electrode shield.

39200 SPARK PLUG REMOVAL TOOL

THESE INSTRUCTIONS INVOLVE THE FOLLOWING MODELS:

ALL 3 VALVE TRITON ENGINES, 2004 TO PRESENT

CAUTION:

DO NOT REMOVE PLUGS WHEN THE ENGINE IS EXTREMELY HOT OR COLD.

CAUTION:

BE SURE TO ALWAYS WEAR SAFETY GLASSES.

Some of the above mentioned engines may experience difficulty with spark plug removal which may cause damage to the spark plug and leave part of the spark plug in the cylinder head.

Mode 1: The ground electrode shield is left behind as an empty shell.

Refer to instruction 39100 for proper removal in this situation.

Mode 2: The porcelain center and ground electrode shield is left behind.

In this case, refer to following instructions for proper removal.

CAUTION:

DO NOT DRIVE PORCELAIN DOWN INTO THE GROUND SHIELD AS FRAGMENTS MAY ENTER THE COMBUSTION CHAMBER.

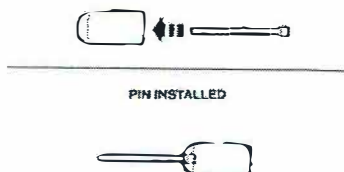
ENGINE AND BONDING ADHESIVE MUST BE AT ROOM TEMPERATURE OF 70 F (21 C) OR HIGHER FOR PROPER CURE AND BOND STRENGTH.

DO NOT REUSE PINS. THIS ENSURES SURFACE CHARACTERISTICS FOR BONDING.

1. Remove any remaining electrode material from broken porcelain using long nose reach pliers.
2. Spray a good quality parts cleaner fluid into the porcelain hole for 2 to 4 seconds.
3. Insert the 392-130 pin into the 392-500 adapter. Thead shaft (392-300) and tighten to lock in pin. Insert complete assembly into 392-400 Guide.

See Illustration 1 and 2.

#1



#2



4. Retract the adapter and pin completely into the Guide therefore protecting the pin.

NOTE: DAMAGED OR BENT PIN WILL PREVENT INSERTION INTO THE PORCELAIN.

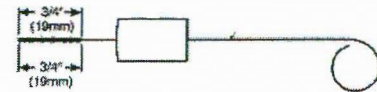
5. Insert the assembly into the spark plug well and insert the pin into the porcelain hole.

6. Spray metal parts cleaner for 2-4 seconds between the spark plug well and the guide. Lift guide slightly to allow fluid to flood plug well.
7. Pull threaded rod up and down, cleaning the inside of the porcelain with the cleaning fluid. Be sure to not disengage the pin and the porcelain.
8. Repeat process 6 and 7.
9. Remove tool assembly and flood spark plug well again with metal parts cleaner, then completely blow out the entire well and porcelain with dry compressed air.
10. It is important to be sure all parts of assembly and spark plug well/porcelain are clean and dry for proper bonding.

Porcelain Removal: Bonding process

NOTE: DO NOT ALLOW LOCTITE TO CONTACT THREADS IN CYLINDER HEAD.

1. Working time limit of Loctite 680 is 10 minutes.
2. Apply Loctite to the applicator approximately $\frac{3}{4}$ inch long. Do not apply excessive amount of Loctite to drip off the applicator. See Illustration.



3. Insert the applicator into the porcelain and move up and down approximately $\frac{1}{2}$ inch. Twist the applicator to completely cover the inside of the porcelain.
4. Add additional Loctite and repeat steps 2 and 3.
5. Clean the applicator with metal cleaner before agent starts to bond.
6. Reassemble a clean and dry adapter and pin assembly.
7. Apply a generous amount of Loctite to the pin (Do not allow to drip off pin) and retract pin assembly into the guide.
8. Insert completed assembly into spark plug well and fully engage the pin into the porcelain with a twisting motion to spread bonding agent.
9. Repeat steps 7 and 8.
10. Leave assembly to set and bond for 1 hour before removal.
11. Install the washer and nut to the end of the threaded rod and finger tighten.
12. Hold the end of the threaded rod with a wrench and tighten the nut until the porcelain is free of the ground electrode.

NOTE: If the pin does not successfully cure and remove the porcelain, repeat the process using a clean pin, dry and clean porcelain and prevent the threaded rod from rotating during removal process.

