H3659 – FORD™ TRITON SPARK PLUG PORCELAIN EXTRACTOR KIT INSTRUCTIONS

THE FOLLOWING INSTRUCTIONS ARE FOR THE FOLLOWING MODELS:
All 3 valve triton engines, 2004 to present.

CAUTION: DO NOT REMOVE PLUGS WHEN THE ENGINE IS EXTREMELY HOT OR COLD. DO NOT USE AIR OR POWERED TOOLS FOR PLUG REMOVAL OR EXTRACTING. 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. For this issue refer to JET Product No. H3661 – Ford Triton Spark Plug Shield Extractor Kit.

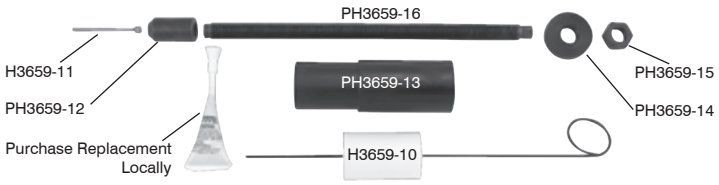
Mode 2: The porcelain center and ground electrode breaks off in the stainless steel shield and both parts are left behind. In this case refer to the following instructions for proper removal.

CAUTION: DO NOT DRIVE PORCELAIN DOWN INTO THE GROUND ELECTRODE SHIELD AS FRAGMENTS MAY ENTER THE COMBUSTION CHAMBER. ENGINE AND BONDING ADHESIVE MUST BE AT AN ABIENT TEMPERATURE OF 70°F (21°C) OR HIGHER FOR PROPER CURE AND BOND STRENGTH. DO NOT REUSE THE ONE TIME USE EPOXY PINS. THIS ENSURES SURFACE CHARACTERISTICS FOR BONDING.

The H3659 kit is used to extract the broken PORCELAIN from the broken spark plug. When this breakage occurs (mode 2) remove the broken porcelain first in order for the H3661 Ford Triton Spark Plug Shield Extractor Kit to function effectively.

Unlike other tools that instruct the user to push the porcelain through the sleeve (Ford specifically does NOT recommend this); this tool adheres to the porcelain using a high strength bonding material that will allow the user to extract the broken porcelain.

The advantage to this method of extraction is that there will be no crushed or broken pieces of porcelain falling into the combustion chamber, resulting in the removal of the cylinder head to retrieve the broken pieces.

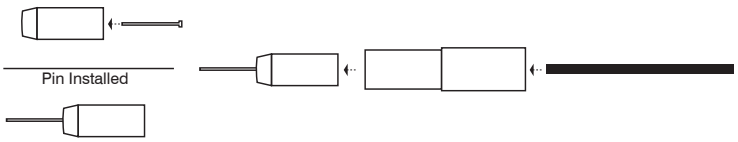


Kit contains: 1-Epoxy Applicator with Guide, 1-Epoxy Electrode Applicator and Extractor Assembly (one time use electrode applicator pin, end nut, threaded shaft, guide, washer and jam nut), 1-sampler tube of bonding material (Loctite® #680). Optional replacement adhesive use Loctite No. 638 or Loctite No. 426.

PRE-BONDING SETUP AND CLEANING INSTRUCTIONS

NOTE: DO NOT APPLY ANY BONDING MATERIAL DURING THIS INITIAL STEP

1. Remove any remaining electrode material from broken porcelain using long nose pliers.
2. Spray a quality parts cleaner fluid into porcelain hole for 2 to 4 seconds.
3. Insert the H3659-11 Epoxy Pin into the H3659-12 End Nut onto bottom end of H3659-16 Center Screw and tighten to lock in Epoxy Pin. Be sure to keep the Epoxy Pin as centered as possible when tightening. Insert complete assembly into H3659-13 Guide. See illustration.



4. Retract the adapter and pin completely into the guide to protect the Epoxy Pin.

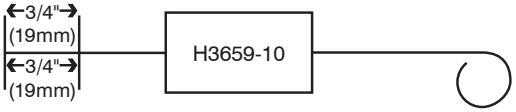
NOTE: A DAMAGED OR BENT PIN WILL PREVENT INSERTION INTO THE PORCELAIN.

5. Insert the assembly into the spark plug well and insert the pin into the porcelain hole.
6. Spray metal parts cleaner for 2 to 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 porcelain.
8. Repeat process 6 and 7.
9. Remove Extractor 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.

BONDING PROCESS – PORCELAIN REMOVAL INSTRUCTIONS

NOTE: DO NOT ALLOW THE BONDING MATERIAL TO CONTACT THE SPARK PLUG THREADS IN THE CYLINDER HEAD

1. Working time limit of the bonding agent is short, no more then 10 minutes. (This is not the cure time.)
2. Apply the bonding material to the H3659-10 Epoxy Applicator, approximately 3/4" (19mm) long. Do not apply excessive amount of epoxy that can drip off the applicator. See illustration.



3. Insert the H3659-10 applicator into the porcelain and move up and down approximately 1/2" (12mm). Twist the applicator to completely cover the inside of the porcelain.
4. Remove and apply additional epoxy to H3659-10 applicator and repeat steps 2 and 3.
5. Clean the H3659-10 applicator with metal cleaner before epoxy starts to bond to the shaft.
6. Reassemble the main porcelain extractor tool with a new H3659-11 pin assembly.
7. Apply a generous amount of epoxy 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 attempting to remove.
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 shield.

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.

You can now use the H3661 Electrode Shield Extractor Kit to complete the process of removing the remaining broken spark plug pieces.

If the broken porcelain cannot be extracted with the H3659 Extractor Kit, the recommended repair is to remove the cylinder head to extract the broken spark plug by other means.