

# BIG-SERT®

## SPARK PLUG REPAIR KIT P/N 5141S

### - WARNING -

Cutting tools may shatter if broken.  
The wearing of safety glasses is required in the vicinity of their use.

### - CUTTING FLUID -

A Cutting Fluid is necessary for reaming and tapping. (WD40)

### - AIR RATCHET -

Use of an air ratchet at slow speed will help speed up operations on counterbore and reamer.



1	55511	Wrench
1	51489	Reamer
1	51483	Tap
1	51490	Driver
1	51484	Setting tool
1	55516	hex key 1/8
1	51487	Hex key 3/16
1	6020	Sealer

### Stop: Check that the valves are not open!

One way to check the valves are not open is to remove the valve cover and inspect the cam, making sure that it is not depressing the valves on the damaged sparkplug hole.

This kit is **not recommended** for use on holes larger than .660 inches or 16.8mm.

### An optional way to check that the valves are closed.

#### This is a 2 man job.

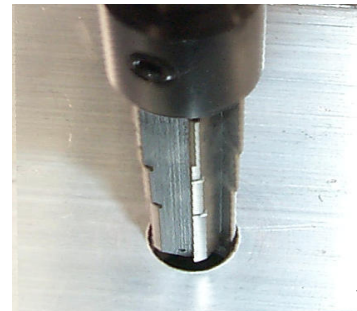
Have someone turn the engine over by hand with a socket from the front of the engine. Turn the engine over until it is going up on the compression stroke. Place your thumb at the top of the sparkplug hole at the same time to block off the air. When you feel the engine compression stop pushing air against your thumb the piston will be top dead center. Turn the engine a little more to be on the down stroke, both valves should be closed at this point, and the piston should be out of the way. Read here: <http://www.timesert.com/html/4stroke.html>

Instructions are using a block of aluminum, which makes for better viewing. This repair can be done without removing the heads.

### 1) Place the Reamer into the square of the wrench and tighten the setscrew to secure the reamer in place. Picture A:

Ream the hole picture B: until black "Stop collar" touches head. This will create the 45 degree countersink seen in the below picture C:

Tip: Packing the flutes with grease will help to catch chips.



A:

B:

When you start getting close to the stop collar coming in contact with the head, you will want to clean the chips from the reamer so you have a positive stop on the head without having any chips interfering. The reamer should spin freely when the collar touches the head.



C:

### 2) Tap the hole.

Tap the hole with the wrench provided. There is a pilot at the front of the tap to help guide it straight into the hole.

Use contact or brake cleaner to thoroughly clean out any remaining chips and oil.



**Mechanics Tip 1:** Packing the flutes with grease will help to catch any stray chip from going into the cylinder.

**Mechanics Tip 2:** Using a shop-vac with a thin hose taped to the nozzle is helpful removing any remaining chips in the cylinder.

### 3) Setting tool.

**A:** Screw the setting tool into the insert.

**B:** Then lightly tighten the socket cap screw.



A:



B:

**C:** Using the wrench provided place the setting tool into the wrench.

**D:** Place Lock-tite around the middle of the insert. and into the clean prepared hole.

Screw the insert into the hole until the flange of the insert is seated to the head. This is approximately 20 foot pounds.



C:



D:

**E:** Hold the wrench, and in a counter-clockwise rotation, untighten the cap screw with the allen key provided, This will allow the setting tool to release itself from the insert.

**F:** You can now unscrew the setting tool from the insert.



E:



F:

### 4) Install driver tool

Using the wrench provided, place the driver tool into the square and tighten the setscrew to secure the driver in place.

Oil the bottom threads of the install driver with a few drops of driver oil or 30wt motor oil.



Screw the driver into the insert. The driver will cold roll the last few threads of the insert.

While screwing the driver into the insert you will feel the driver start to tighten up, with a little more power continue through the insert until it loosens up.

Remove driver, repair is complete.

