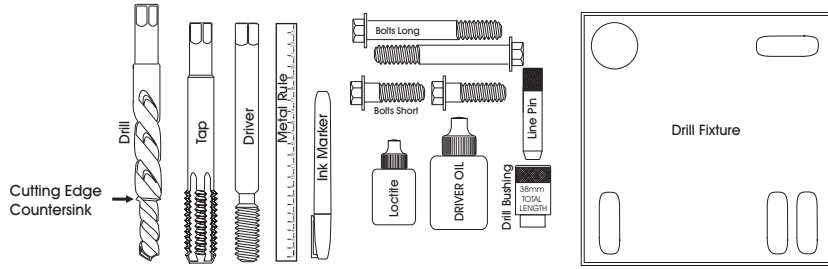


# TIME-SERT®

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## UNIVERSAL HEAD BOLT REPAIR KIT



Tools needed:  
Drill fixture  
Drill bushing  
Alignment pin  
Core drill  
Tap  
Insert driver  
Bolts Short (2)  
Bolts Long (2)  
Ink Marker  
Metal Rule  
Inserts (Qty 10)  
loctite  
Driver oil

**- 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 drilling and tapping. (WD40)

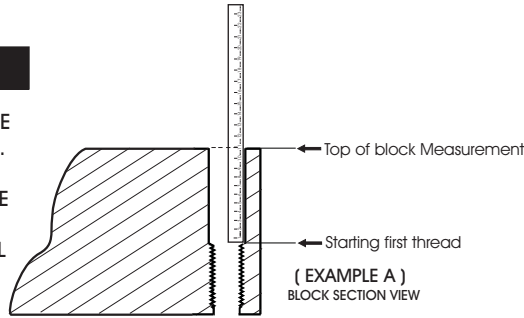
**DRILL MOTOR**  
The use of a half inch drill motor is recommended for drilling.

### PREPARING TOOLS

#### (A) MEASURING THREAD DEPTH

YOU ARE GOING TO BE MARKING CORE DRILL FOR THE CORRECT COUNTERSINK DEPTH OF THE INSERT FLANGE.

USE THE METAL RULE TO MEASURE FROM THE TOP OF THE BLOCK DOWN, UNTIL IT TOUCHES THE FIRST THREAD. YOU WILL USE THIS MEASUREMENT TO MARK CORE DRILL SEE EXAMPLE A.



NOTE:

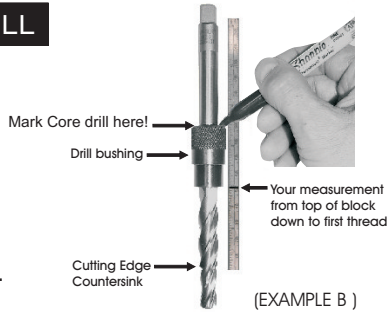
Some engines can have 2 different depths of holes. Check measurement for each hole to ensure accurate depths. Set tools accordingly.

The Starting first thread is where the flange of the insert will seat. This will insure that the insert will start where the original threads started.

#### (B) MARKING CORE DRILL

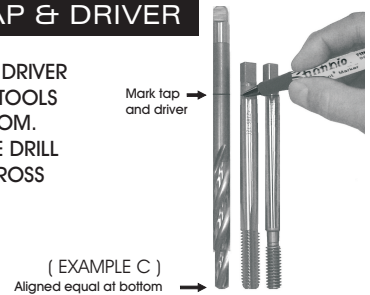
USE YOUR MEASUREMENT FROM THE METAL RULE PLUS THE LENGTH OF DRILL BUSHING 38mm, ADD THE 2 MEASUREMENTS THEN MARK DRILL.

MARK CORE DRILL STARTING FROM THE CUTTING EDGE COUNTERSINK UP TO TOP OF DRILL BUSHING FOR YOUR TOTAL CORE DRILL COUNTERSINK DEPTH. EXAMPLE B:



#### (C) MARKING TAP & DRIVER

PLACE CORE DRILL, TAP AND DRIVER LEVEL ON TABLE SO THAT ALL TOOLS ARE ALIGNED EQUAL AT BOTTOM. USE YOUR MARK FROM CORE DRILL AND MARK TAP & DRIVER ACROSS WITH INK MARKER INCLUDED. SEE EXAMPLE C:



### STEP 1 FIXTURE PLATE

## INSTRUCTIONS

PLACE LARGEST HOLE IN DRILL FIXTURE OVER THE HOLE TO BE REPAIRED. PLACE BUSHING IN FIXTURE, THEN PLACE LINE PIN IN BUSHING TO PICK UP HOLE. DO NOT FORCE PIN INTO HOLE. USE BOLTS AND TIGHTEN TO SECURE FIXTURE IN PLACE. REMOVE LINE PIN.

### STEP 2 DRILL

USE A SUITABLE DRILL MOTOR AND DRILL THE HOLE UNTIL YOUR MARK ON THE CORE DRILL LINES UP WITH THE TOP OF THE DRILL BUSHING. THIS WILL REQUIRE REMOVING DRILL AND BUSHING SEVERAL TIMES TO CLEAR CHIPS. CLEAN OUT ALL CHIPS. WATCH CAREFULLY THAT THE CORE DRILL IS GOING STRAIGHT! THIS IS VERY IMPORTANT.

**NOTE:** If drill bushing turns while drilling hole, Remove drill and drill bushing, Clean out all chips. We recommend using a long air nozzle 6" or longer to blow out all chips.

### STEP 3 TAP (USE WD40 for tapping)

TAP THROUGH THE DRILL BUSHING UNTIL YOUR MARK ON THE TAP LINES UP WITH THE TOP OF THE DRILL BUSHING. THIS WILL REQUIRE REMOVING THE TAP AND BUSHING SEVERAL TIMES TO CLEAR CHIPS. CLEAN ALL CHIPS USING BRAKE OR CONTACT CLEANER THAT WILL NOT LEAVE AN OILY RESIDUE, THE HOLE MUST BE CLEAN AND DRY. USE A FLASHLIGHT TO INSPECT THE HOLE FOR CHIPS AND CLEANLINESS. NOTE: Do not force tap to line. If the tap comes within a 1/8 of an inch or 3mm there will be enough tapped thread to accept insert.

### STEP 4 DRIVER

LEAVE DRILL FIXTURE AND BUSHING ON FOR THE FINAL STEP OF UNIVERSAL KITS!

USE INSERT DRIVER OIL (DO NOT USE Wd40.)

**OIL THE THREADS OF THE INSERT DRIVER.** SCREW AN INSERT ONTO THE DRIVER, APPLY A SMALL AMOUNT OF LOCTITE ON THE BOTTOM OUTSIDE THREADS OF THE INSERT AND SCREW THE INSERT INTO THE PREPARED HOLE. WHEN THE HEAD OF THE INSERT IS SEATED THE DRIVER WILL TIGHTEN UP, USE A LITTLE MORE POWER TO SCREW THE DRIVER THROUGH THE INSERT, UNTIL YOUR MARK ON THE DRIVER LINES UP WITH THE TOP OF THE BUSHING. REMOVE INSERT DRIVER, REPAIR IS COMPLETE.

NOTE: Do not force Driver to line. If the driver comes within a 1/8 of an inch or 3mm the driver should have expanded the insert..

Check for the latest torque specifications before assembling the engine. Improper torque of the head can lead to thread failure.