

CRANKSHAFT LOCK AND IMPELLER REMOVAL/INSTALLATION TOOLS

The purpose of this TI document is to instruct on the proper installation and use of these special tools.

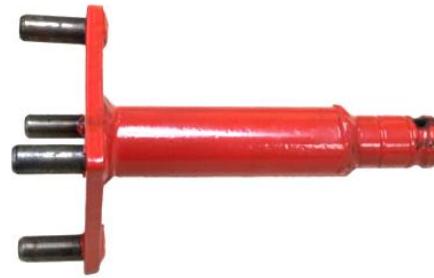
WORK SAFELY!

Only a qualified service technician with proper training should perform this procedure.

- Follow all shop safety rules while performing this procedure
- Disconnect battery prior to any work

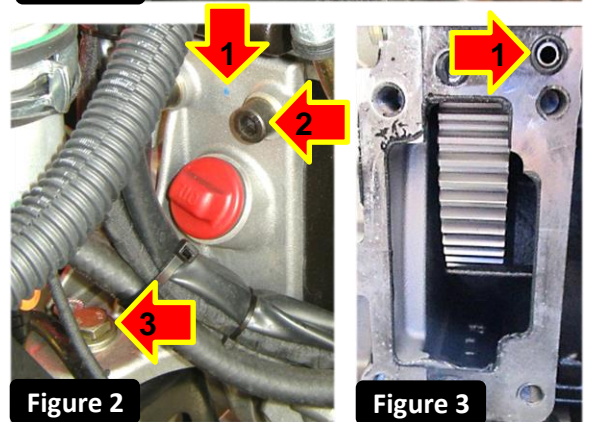


Crankshaft Lock Tool
Part #804988



Impeller Removal/Installation Tool
Part #804990

1. Setup the unit so it's on a flat surface and level, chock a tire on trailer mounted units to prevent any movement.
2. (Ref. fig. 1 & fig. 2-1): Suspend the engine by the engine's lifting eye brackets just enough to ease the removal and installation of the engine's corner support/cover.
3. (Ref. fig. 2-2): Remove all the Allen screws from the engine's corner support/cover.
4. (Ref. fig. 2-3): Remove the hex head screw from the engine's corner support/cover.
5. (Ref. fig. 2-1): Remove the engine's corner support/cover and clean the mating surfaces of all the factory silicone sealant.
6. (Ref. fig. 3-1): Remove, clean and save the 7x2mm O-ring for reuse in installation.



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7. (Ref. fig. 4-1): Orient and mount the crankshaft lock plate so the side that has the slider block with peaks is facing towards the engine.
8. (Ref. fig. 4-2): Secure the crankshaft lock plate with the provided Allen screws and washers.
Note: (Ref. fig. 4-3) If needed, the slider block on the crankshaft lock plate can be adjusted for proper alignment with the cam gear's peaks & valleys by loosening its Allen screws making the adjustment and tightening the screws.

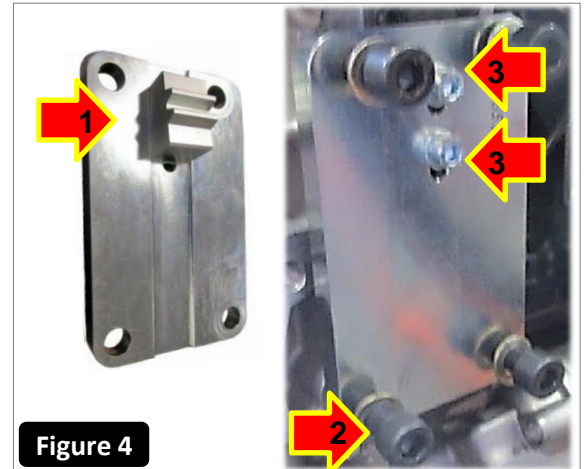


Figure 4

9. (Ref. fig. 5-1): At this point the impeller removal/installation tool can be used as needed for the removal and installation of the impeller.
10. (Ref. fig. 5-2, 3 & 4): Align and insert the tool's 4 pins into the 4 holes on the center face of the impeller, thorough cleaning of the impeller holes may be needed prior application of the tool.
Note: Maintain the impeller removal/installation tool flat/square to the impeller face when applying force. Turn impeller counterclockwise for removal.
11. (Ref. fig. 5-5): **Important** - The impeller must be torqued to 200 ft-lb each time when checking the rear impeller clearance and at final installation. Remove the crankshaft lock plate when done.

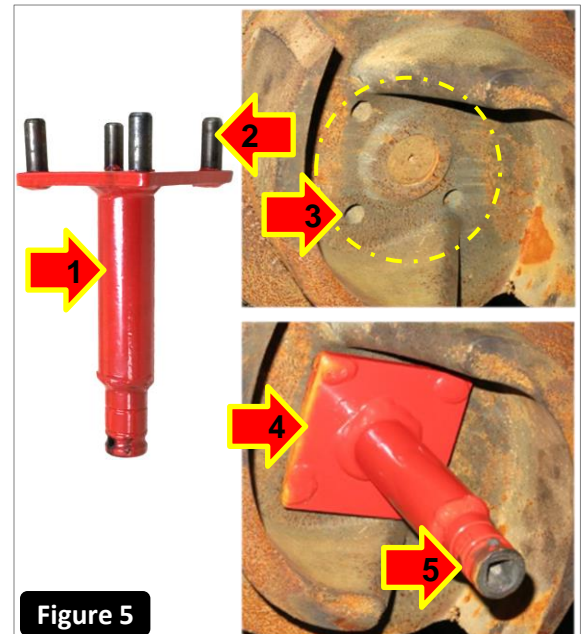


Figure 5

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12. (Ref. fig. 6-1): Apply a 1mm bead of oil & gas resistant silicone sealant all around the engine's mating surface to the engine's corner support/cover.
13. (Ref. fig. 6-2): Install the 7x2mm O-ring that had been removed and saved earlier in step 6, replace if it's no longer pliable or found damaged in any way.
14. (Ref. fig. 6-3 & 4): Carefully install the engine's corner support/cover and secure it with the six original Allen screws and torque them incrementally in a cross pattern to 33.93 ft-lb.
15. (Ref. fig. 6-5): Install the hex head screw and torque it to 37 ft-lb.

