

## Customer Tools Required: (Fig. 1)

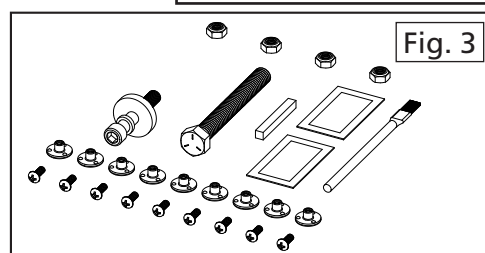
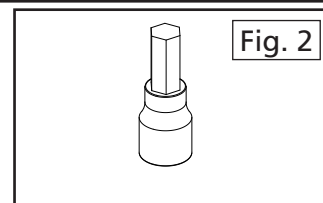
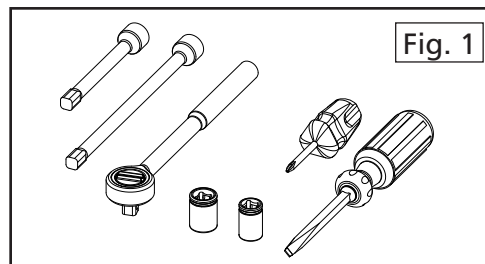
- A socket wrench (3/8 drive), with a 6-inch and 3-inch extension bar
- 3/4 inch socket
- 1/2 inch socket
- A small flat blade screwdriver (3/16 or 1/4 inch blade width)
- A Phillips head screwdriver
- A wooden board, about 3 to 4 inches wide and about 2 feet long, or a 2 foot length of 2 x 4 lumber

## Tools provided: (Fig. 2)

- 5/16 inch hex-bit socket

## Parts Supplied: (Fig. 3)

- Impeller bolt with lock washer and heavy washer
- 1/2-13 x 4-inch full threaded bolt (for use as an impeller puller, if needed)
- Shaft key for engine
- Packet of anti-seize grease (for engine shaft) and applicator brush
- Packet of thread locker
- 4 rear cover nylon locknuts
- 9 special cover nuts and screws

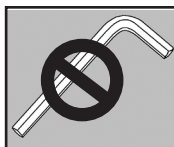
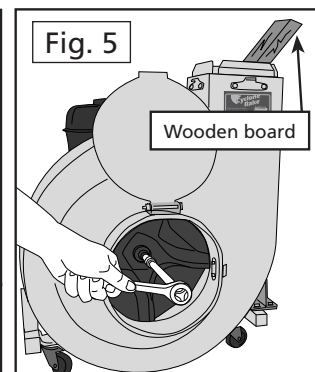
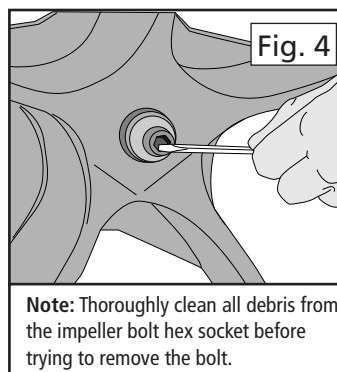


## Disassemble the Blower Unit from the Engine:

### Step 1. Remove the Impeller Bolt:

- **Disconnect the spark plug wire on the engine.**
- **Clean the impeller bolt hex socket thoroughly**, using the small blade screwdriver. You must remove **all dirt and debris** so that the hex-bit socket seats all the way to the bottom of the bolt head. See Fig. 4.
- Place the wooden board or 2x4 inside the blower exit chute to prevent impeller rotation.
- Use the hex-bit socket and extension bar to remove the impeller bolt. See Fig. 5.

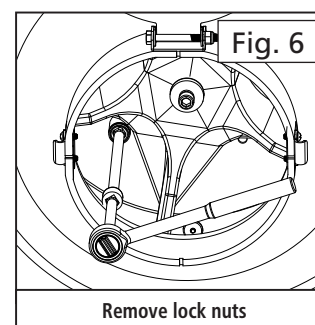
**TIP:** Because the motor frame is on wheels, it is helpful to clamp one or two short lengths of 2x4 to your work bench so the frame does not roll around. This is especially helpful if you are doing a one-person job.



**WARNING:** Never use an L-shaped hex wrench to remove the impeller bolt. You will not get enough torque and risk stripping the bolt head. If you strip the bolt head, you will not be able to remove the engine.

### Step 2. Remove the Four Nylon Lock Nuts that Hold the Rear Cover on to the Engine Mounting Plate:

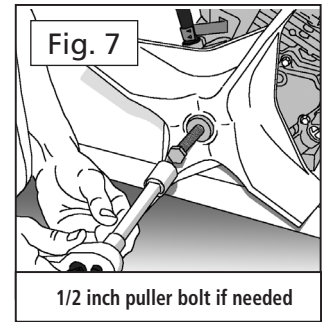
- You'll need the 1/2 inch socket and both extension bars to reach the nuts. See Fig. 6
- You'll have to rotate the impeller to reach the nuts (you did disconnect the spark plug, right?)



### Step 3. Remove the Blower Unit:

- Slide the Blower Unit (blower housing and impeller) away from the engine.

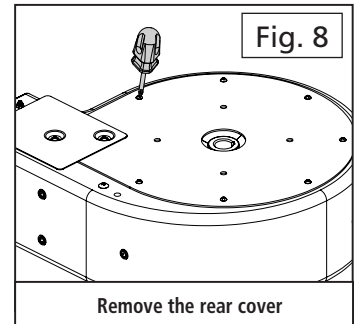
**NOTE:** If the impeller doesn't pull out easily by hand, thread the 1/2-13 bolt into the fan hub and tighten it with a 3/4 socket. This will act as a puller to remove the impeller. See Fig. 7.



### Step 4. Remove the Rear Cover and Remove the Impeller:

- Lay the old blower housing flat on the workbench with the back facing up.
- Using a Phillips head screwdriver, remove the 9 screws holding the rear cover (and heat shield if equipped) to the blower housing. See Fig. 8.
- Remove the impeller with the impeller spacer from the old blower housing.

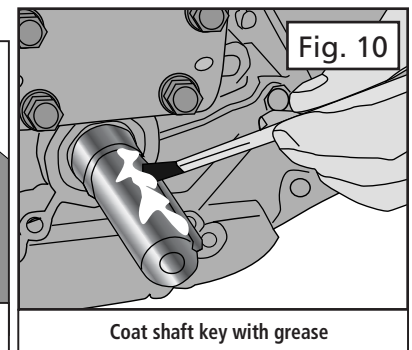
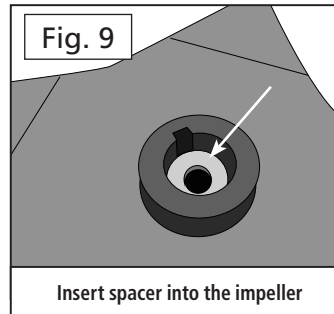
**NOTE:** Make sure you do not lose the impeller spacer located inside the impeller hub.



## Reassemble the Blower Unit & Engine

### Step 1. Install the Impeller and Rear Plate onto the New Blower Housing:

- Lay the new blower housing flat on the workbench with the back opening facing up.
- Place the Impeller into the new blower housing.
- **Important:** Insert the 1/4 inch impeller spacer into the impeller hub if it has fallen out. See Fig 9.
- Push the 9 new special nuts inside and up through the holes inside the blower housing.
- Replace the rear cover (and heat shield if equipped), and loosely install the new 9 screws. Then, go around and tighten all 9 securely. See Fig. 8.

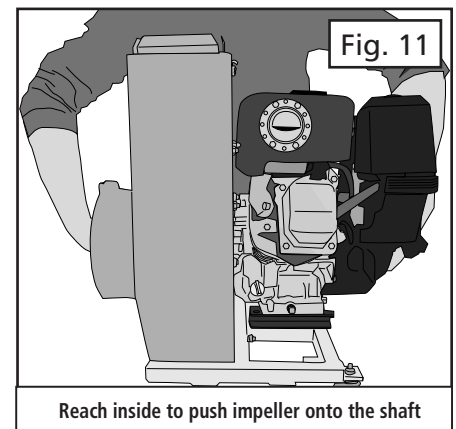


### Step 2. Prepare the Engine Shaft:

- Orient the engine shaft so the keyway is on top. Gently pull the starter cord to rotate the shaft into position.
- Clean the keyway with an old toothbrush or clean rag to remove all dust or grit from the keyway.
- Press the new shaft key into the keyway to seat it completely. You can tap it in with a soft object, such as a screwdriver handle, if needed. **Do not tap it in with a hammer!** If you nick the key it will not fit the impeller hub.
- Open the pack of anti-seize grease and squeeze it onto the applicator brush. Coat the shaft and key completely with the grease. See Fig. 10.

### Step 3. Mate the Engine with the Blower Unit:

- Reach through the front of the blower housing and grasp the impeller. Hold the impeller so that the steel hub passes through the rear cover. Orient the slot in the impeller hub with the engine shaft key. Push the impeller and engine together gently so the engine shaft slides into the impeller. See Fig. 11.
- Once the impeller starts onto the engine shaft, line up the four threaded studs on the engine bracket with holes in the rear cover.
- Secure the rear cover to the engine bracket with the 4 new nylon lock nuts using a 1/2 inch socket and extension. You will have to rotate the impeller to get to all four nuts. See Fig. 6.



### Step 4. Install the Impeller Bolt:

- Place the wooden board back into the blower housing to prevent impeller rotation.
- Add a drop of thread locker on to the new impeller bolt (socket head cap screw).
- Assemble the new fan bolt with the new lock washer and the new heavy washer into the impeller hub. Tighten firmly (approx. 40 ft. lbs. of torque) with socket wrench, extension bar and hex-bit socket. See Fig. 12.

