

Customer Tools Required: (Fig. 1)

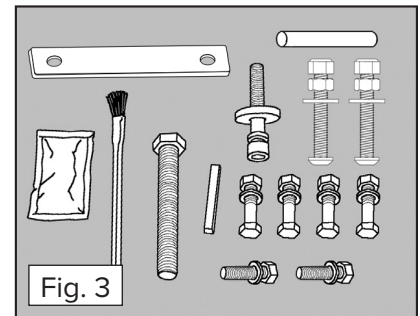
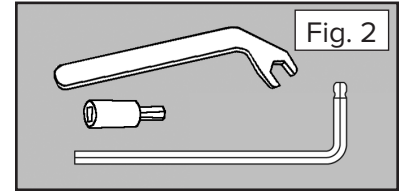
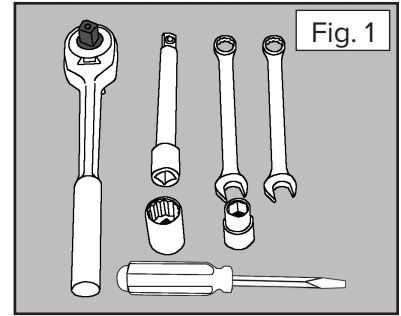
- A socket wrench (3/8 inch drive), with a 6-inch or longer extension bar
- 7/16, 1/2 and 3/4 inch sockets
- 1/2 inch box wrench. If you have a 8HP, 9HP or 10HP engine, you will need a second 1/2 inch wrench, either box or open-end type
- A 7/16 inch box or open wrench
- A small flat blade screwdriver (3/16 or 1/4 inch blade width)
- 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 (depending on engine type): (Fig. 2)

- Special curved wrench (if you have a Tecumseh engine)
- 5/16 inch hex-bit socket (if replacing 5HP, 5.5HP, 6HP, 6.5HP or 7HP engines)
- 3/8 inch hex-bit socket (if replacing 8HP, 9HP or 10HP engine)
- 3/16 inch ball-end hex wrench

Parts Supplied (depending on engine type): (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)
- Engine mounting bolts, set of 4 (5/16 inch) with nuts and lock washers
- Shaft key for engine
- Packet of anti-seize grease (for engine shaft) and applicator brush
- 3/8 inch steel pin (used for removing impeller from engine shaft) for 8HP, 9HP or 10HP engine
- Button-head screws set of 2 with lock nuts and washers
- Threaded plate
- Two 5/16-24 fine threaded bolts
- Two 5/16 lock washers

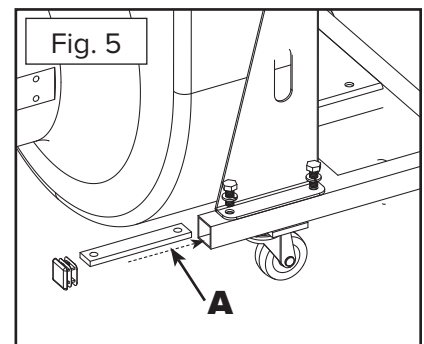
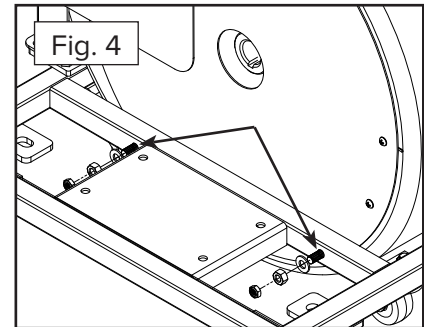


Assemble The New Blower Unit

For 5HP through 7HP Engines

Step 1. Mate the engine frame and blower housing

- Fig. 4: Roll the Engine Frame up to the Blower housing. Reach inside the blower housing and push two button-head screws thru the blower housing and into the engine frame holes.
- Install two 5/16 inch washers over the screws and attach with two 5/16 nylon lock nuts. Leave the nylon lock nuts finger-tight for now. **Do not tighten the screws or use a wrench now.** You will tighten these later.
- Fig. 5: Attach the support bracket directly to the leg of the engine frame. Pop off the small end cap, remove the threaded plate from the inside of the engine frame. Locate threaded plate (A) and two 5/16-24 (fine thread) bolts and lock washers. Hold the threaded plate (A) inside the tube with your finger while starting the bolts. Then tighten the bolts firmly.
- Tap the white plastic tube plug into the open end of the engine frame using a small hammer.



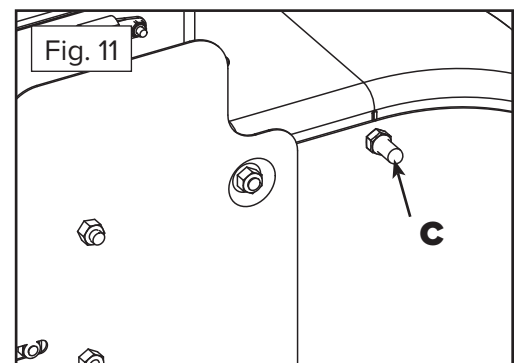
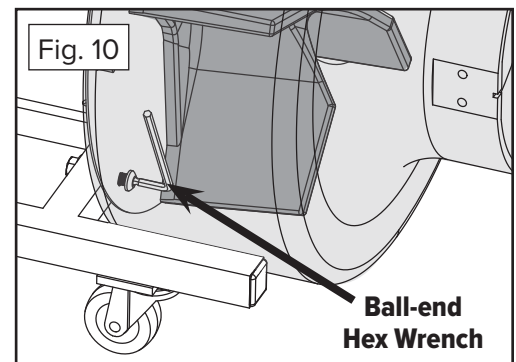
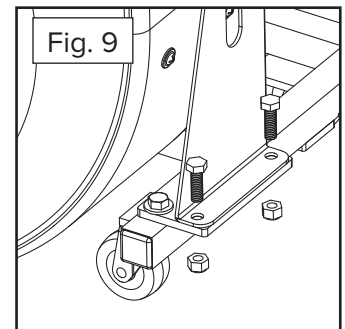
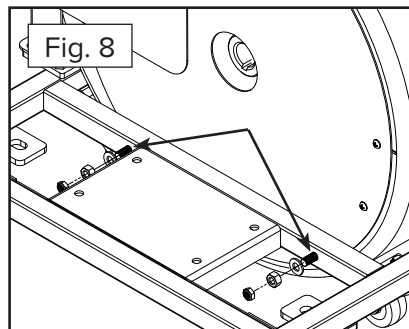
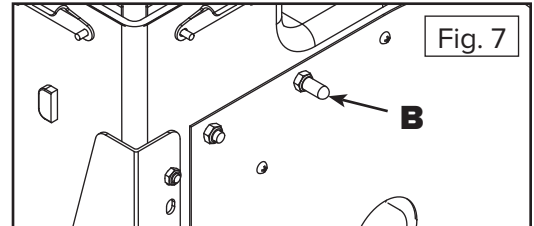
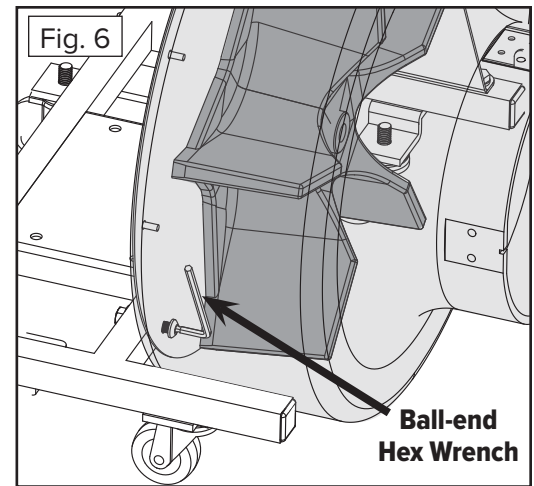
- Fig. 6: Using the ball-end hex wrench, reach inside the blower housing and insert the ball end into the button-head screws. Hold the screw heads fixed and tighten the nylon lock nuts on the outside. Tighten firmly.
- Fig. 7: Remove the vinyl protective cap from stud (B) and unscrew the nylon lock nut completely, to remove it from the stud. Save this nut for later on, when you mount the engine to the frame.
- Go to “Mount the Engine” on the next page

Assemble The New Blower Unit

For 8HP through 10HP Engines

Step 1. Mate the engine frame to the blower housing

- Fig. 8: Roll the engine frame up to the blower housing. Reach inside the blower housing and push two button-head screws thru the blower housing and into the holes in the engine frame.
- Install two 5/16 inch washers over the screws and attach with two 5/16 nylon lock nuts. Leave the nylon lock nuts finger-tight for now. **Do not tighten the screws or use a wrench now.** You will tighten these later.
- Fig. 9: Attach the support bracket to the support plate on the engine frame using two 5/16-18 nylon lock nuts. Then tighten the support bracket bolts firmly.
- Fig. 10: Using the ball-end hex wrench, reach inside the blower housing and insert the ball end into the button-head screws. Hold the screw heads fixed and tighten the nylon lock nuts on the outside. Tighten firmly.
- Fig. 11: At the back of the Blower Housing, remove the nylon lock nut completely from the stud (C). **Save this nut for later on,** when you mount the engine to the frame.



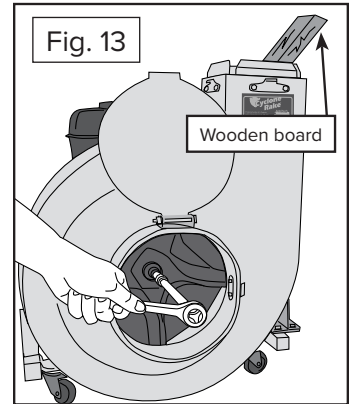
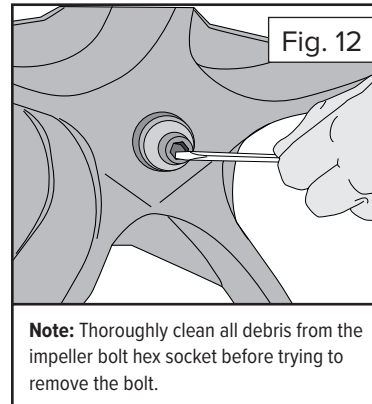
MOUNT THE ENGINE

To mount the engine you must remove it from your old blower unit and mount it on your new blower unit. This is not difficult to do.

Step 1. Remove the impeller bolt:

IMPORTANT: Disconnect the spark plug wire on the engine.

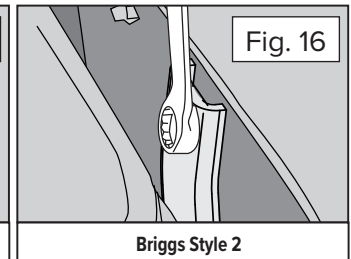
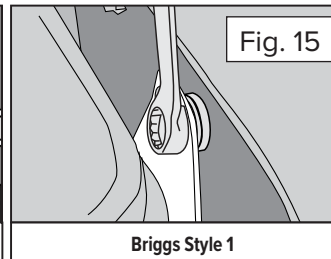
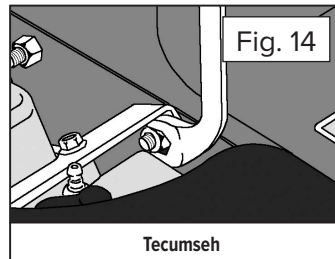
- Fig. 12: **Clean the impeller bolt hex socket thoroughly**, using the small blade screwdriver. You must remove **all dirt and debris** so that the hex-bit socket seats all the way to the bottom of the bolt head.
- Place the wooden board or 2x4 inside the blower exit chute to prevent impeller rotation.
- Fig. 13: Use the hex-bit socket and extension bar to remove the impeller bolt.



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 blower housing nut which connects the engine to the blower assembly

- Fig. 14: For Tecumseh engines, use the special curved wrench to remove the nut.
- For other engines, use the 1/2 inch box wrench.
- Fig. 15 & Fig. 16: There are several styles of bracket under the nut, depending on the engine being replaced, but the nut is the same for all.

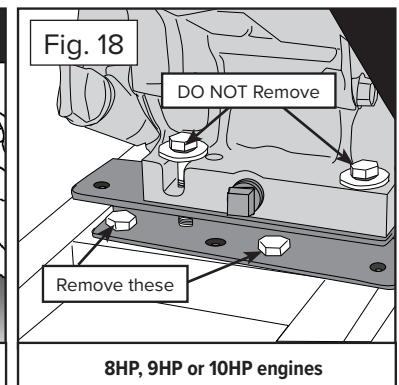
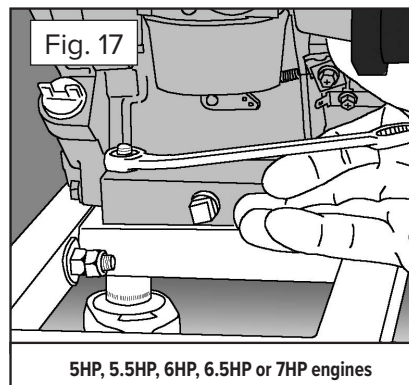


Step 3. Remove the engine bolts

Fig. 17: Use a 1/2 inch socket from below and a 1/2 inch box wrench from above to remove all four bolts.

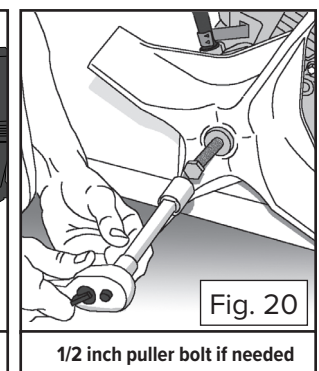
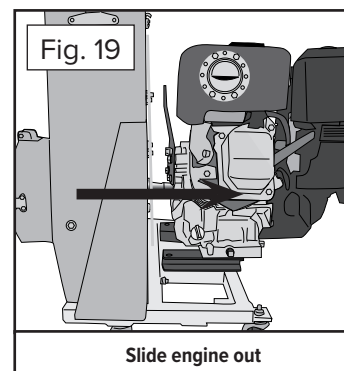
IMPORTANT:

Fig. 18: For 8HP, 9HP and 10HP engines, remove bolts that connect black engine support brackets to the white frame. **Do not remove the bolts which connect the engine to the black support brackets as this will disturb the engine alignment.**



Step 4. Remove the engine

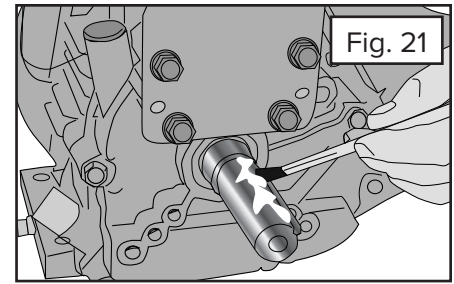
- Fig. 19: Pull the engine away from the blower housing. The engine shaft should pull right out of the impeller. If necessary, reach inside the front of the blower to support the impeller while you pull out the engine. The impeller will stay inside the sealed blower housing.
- If the impeller does not pull out easily by hand:
 - **8, 9 & 10 HP engines** insert the 3/8 inch steel pin into the hole in the impeller hub, then screw in the 1/2-13 bolt.
 - **All other engines** just use the 1/2-13 bolt. Use a 3/4 inch socket to tighten the bolt. It will act as a puller to remove the impeller. See Fig. 20.



TIP: Because the engine 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.

Step 5. Prepare the engine shaft

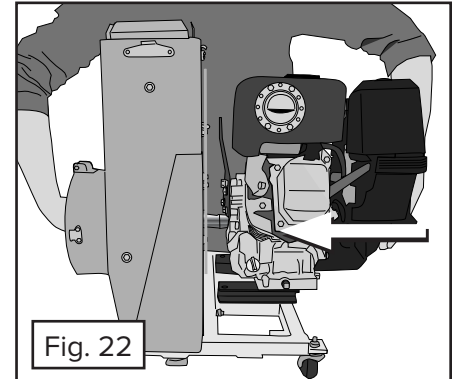
- Orient the new engine shaft so the key-way is on top. Gently pull the starter cord to rotate the shaft into position.
- Clean the shaft key-way with an old toothbrush or clean rag to remove all dust or grit from the key-way.
- Press the shaft key unto the key-way to seat it completely. You can tap it with a soft object, such as a screwdriver handle, if needed. **Do not tap it with a hammer!** If you nick the key, it will not fit the impeller hub.
- Fig. 21: Open the pack of anti-seize grease and squeeze it onto the applicator brush. Coat the shaft and key completely with the grease.



Step 6. Mate the engine and impeller

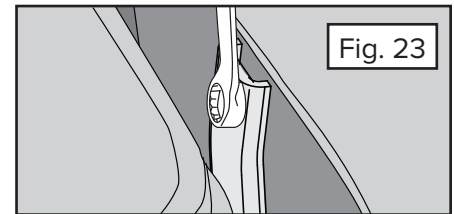
TIP: This can be done by one person. But it's a lot easier if you have a helper. The helper doesn't need any mechanical skill.

- Fig. 22: Place the engine on the engine frame. Using one arm, reach through the front of the blower to grasp the impeller. Hold the impeller so the steel hub passes through the hole in the rear of the blower housing. With the other arm, slide the engine toward the impeller. Orient the slot in the impeller hub with the engine shaft key. Push the engine and impeller together gently so the engine shaft slides into the impeller.
- Be sure the hole in the engine bracket passes over the 5/16 inch threaded stud on the blower housing.



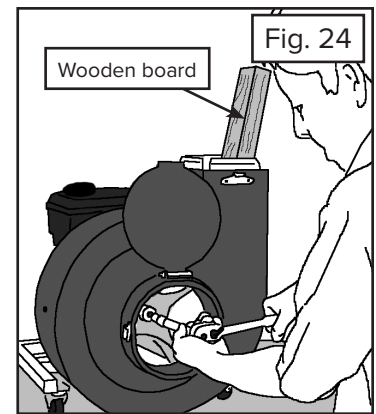
Step 7. Reinstall the engine bolts and engine bracket nut

- Loosely reinstall the four engine bolts, along with the lock washers and nuts. Leave them several turns loose.
- Fig. 23: Install the nylon lock nut onto the 5/16 inch threaded stud which passes through the engine bracket. Tighten the nut.
- Tighten all 4 of the engine bolts.



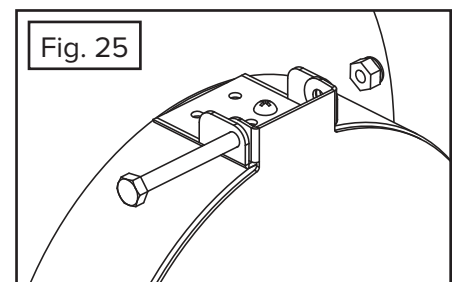
Step 8. Install the Impeller bolt and safety cover

- Fig. 24: Place the wooden board back into the exit chute to prevent impeller rotation. Assemble the impeller bolt with the lock washer and heavy washer into the impeller hub. Tighten firmly with the ratchet wrench, extender bar and hex-bit socket.
- Fig. 25: Install the safety cover on the inlet of the blower using the bolt and nylon lock nut provided.



IMPORTANT:

Do not over-tighten the nut or bend the hinge bracket. The safety cover must swing loosely under its own weight for your protection. The nylon lock nut will never loosen, so there is no need to over-tighten it.



Step 9. Reconnect the spark plug wire.

That's it. Congratulations! You've just replaced you Blower Unit.