

MOTOR REPLACEMENT

Cool-Space[®] 350 and 400
Big Ass Fans[®] Hornet
Torrent[™]







READ AND SAVE THESE INSTRUCTIONS



Hardware	1
Cool-Space® 350 and 400	2
Big Ass Fans® Hornet.....	11
Torrent™	18

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

-  **WARNING: ELECTRICAL SHOCK HAZARD.** Disconnect the power supply before performing service or maintenance. Failure to do so may result in serious injury or death.
-  **WARNING:** Make sure Cool-Space and Torrent casters are locked before performing service or maintenance.
-  **WARNING:** When service or replacement of a component in the fan requires the removal or disconnection of a safety device, the safety device is to be reinstalled or remounted as previously installed.
-  **CAUTION:** The Big Ass Fans product warranty will not cover equipment damage or failure that is caused by improper installation or use.



Motor is heavy and must be supported during removal and installation. Two people are recommended for all motor replacement procedures. For Hornet, a lift is required to support the weight of the fan while it is temporarily removed from the mounting structure.

HARDWARE

Blade Assembly Hardware and Zip Ties

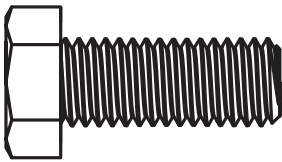


(1) Blade Assembly
Retainer

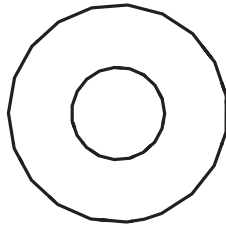


(8) Zip Ties

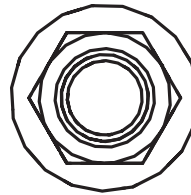
Cool-Space[®] 350/400 and Torrent[™] Hardware



(1) 1/2-13 x 1-1/4" Stainless
Steel Hex Head Cap Screw

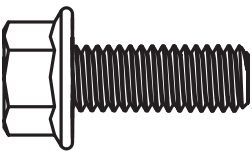


(1) 1/2" Stainless Steel
Flat Washer

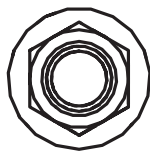


(1) 1/2-13 Stainless Steel
Flange Nylock Nut

Big Ass Fans[®] Hornet Hardware



(1) 3/8-16 x 1" Flange
Hex Head Screw



(1) 3/8-16 Flange
Nylock Nut

COOL-SPACE[®] 350 AND 400

- ⚠ **WARNING:** Ensure casters are locked before performing service or maintenance.
- ⚠ **CAUTION:** The fan guard (cage) is omitted from some images in these instructions for visual clarity. Do NOT remove the guard to replace the motor or other internal components.
- ✍ **NOTE:** The number and location of internal electrical cables and zip ties varies by cooler and controller model. All configurations are not shown in these instructions. Big Ass Fans recommends taking reference pictures of the cooler's internal cable connections and zip tie locations before removing zip ties or disconnecting cables.
- ✍ **NOTE:** Motor and blade appearance, cooler model, and motor position may vary slightly from the images shown in these instructions.

1. Remove cooling media

Refer to the [Cooling Media Replacement Instructions](#) for details on removing and installing cooling media.

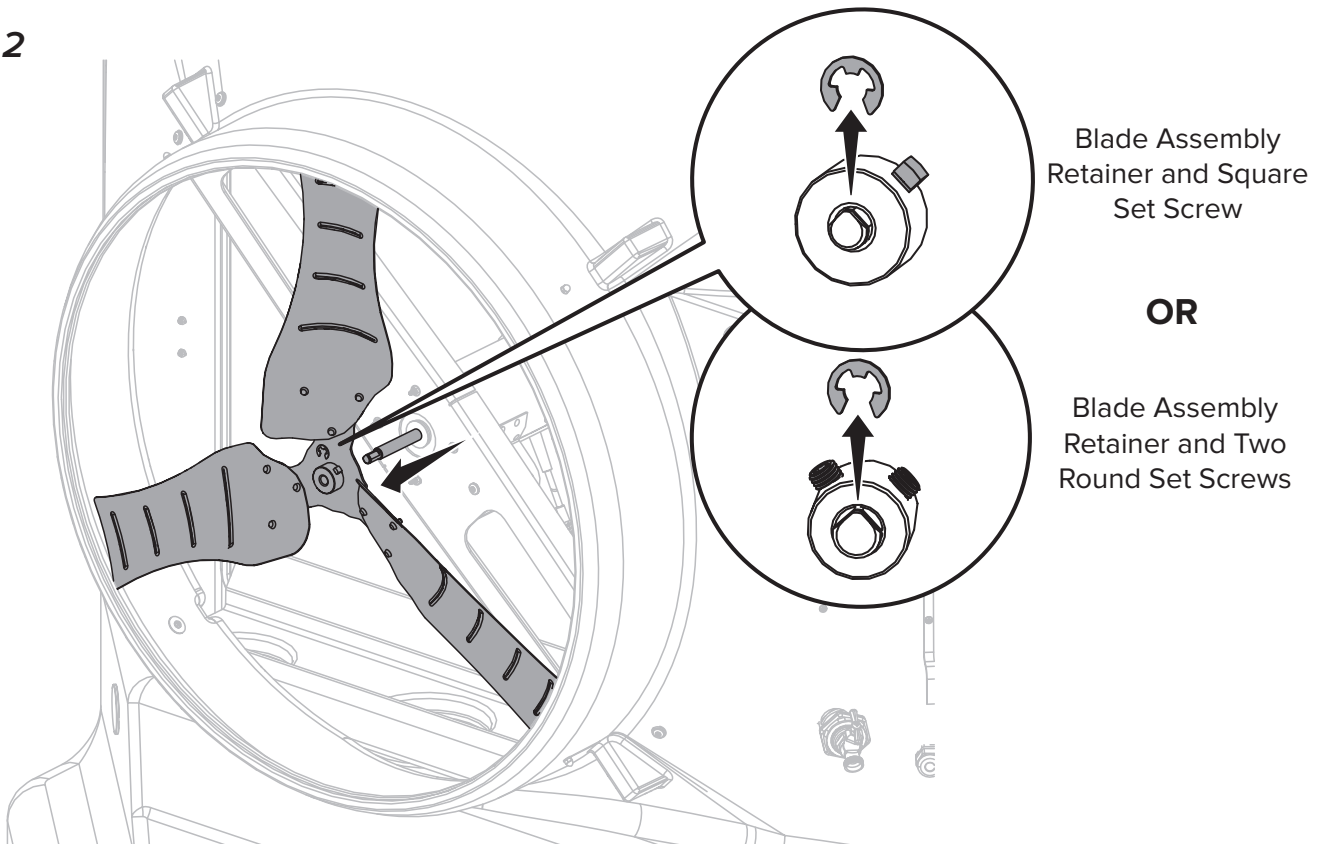
<https://bigassfans.com/docs/evap-coolers/cool-space-media-replacement.pdf>



2. Remove blade assembly

Remove blade assembly retainer from motor shaft and **discard it** (Fig. 2). Loosen the square set screw or the two round set screws in center of blade assembly. Remove blade assembly from motor shaft and temporarily rest it against fan guard (guard not shown) (Fig. 2). **NOTE:** Cool-Space 400 shown. Procedure is the same for Cool-Space 350.

Fig. 2



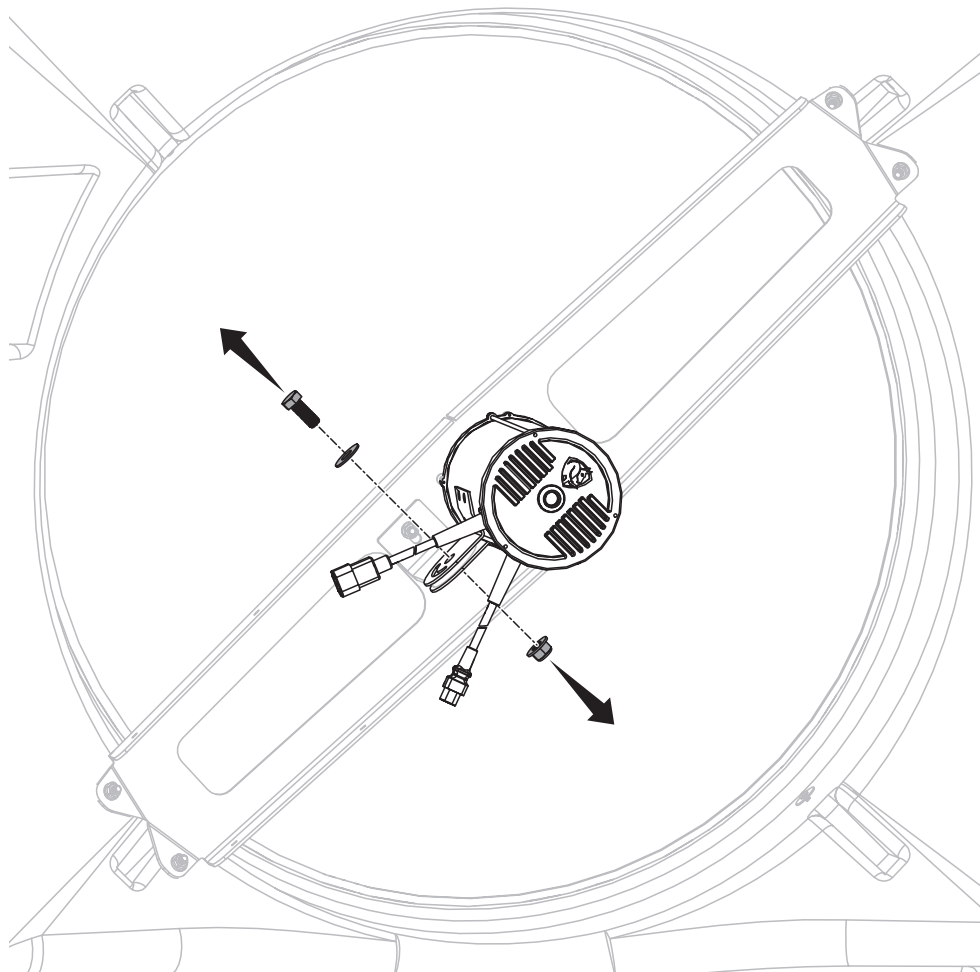
3. Remove motor

 **NOTE:** The number and location of internal electrical cables and zip ties varies by cooler and controller model. All configurations are not shown in these instructions. Big Ass Fans recommends taking reference pictures of the cooler's internal cable connections and zip tie locations before removing zip ties or disconnecting cables.

Remove zip ties (if present) securing the two motor cables to the motor bracket and disconnect the cables. Remove main motor mounting screw, washer, and nut and **discard them** (Fig. 3.1).

NOTE: Cool-Space 400 shown. Procedure is the same for Cool-Space 350.

Fig. 3.1

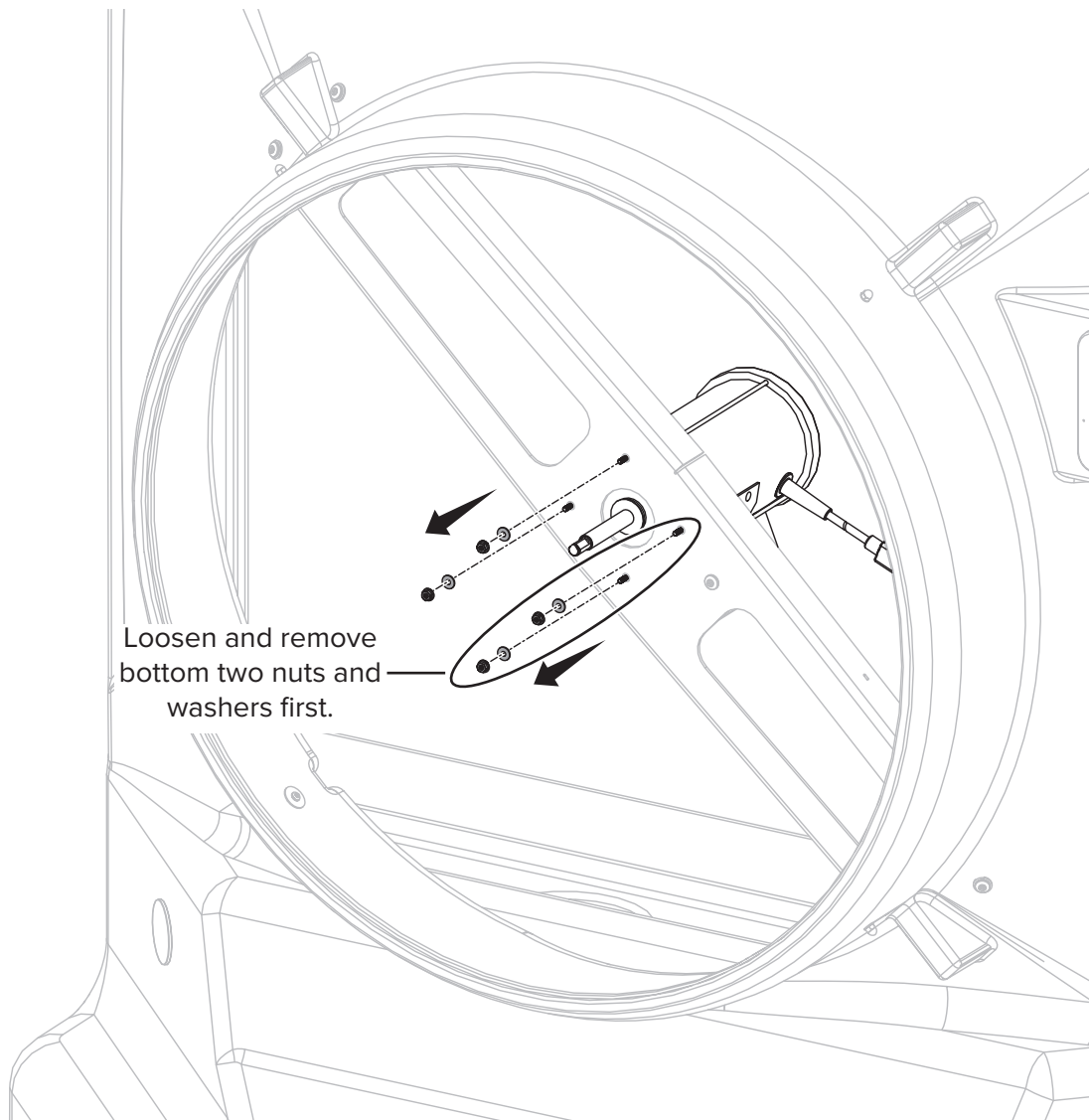


COOL-SPACE® 350 AND 400

While supporting motor (two people recommended), loosen the four nuts securing the motor studs to the motor bracket, starting with the bottom two nuts. Starting with the bottom two nuts and washers, remove the four nuts and washers (Fig. 3.2). **Save the nuts and washers for installing the new motor.**

NOTE: Cool-Space 400 shown. Procedure is the same for Cool-Space 350.

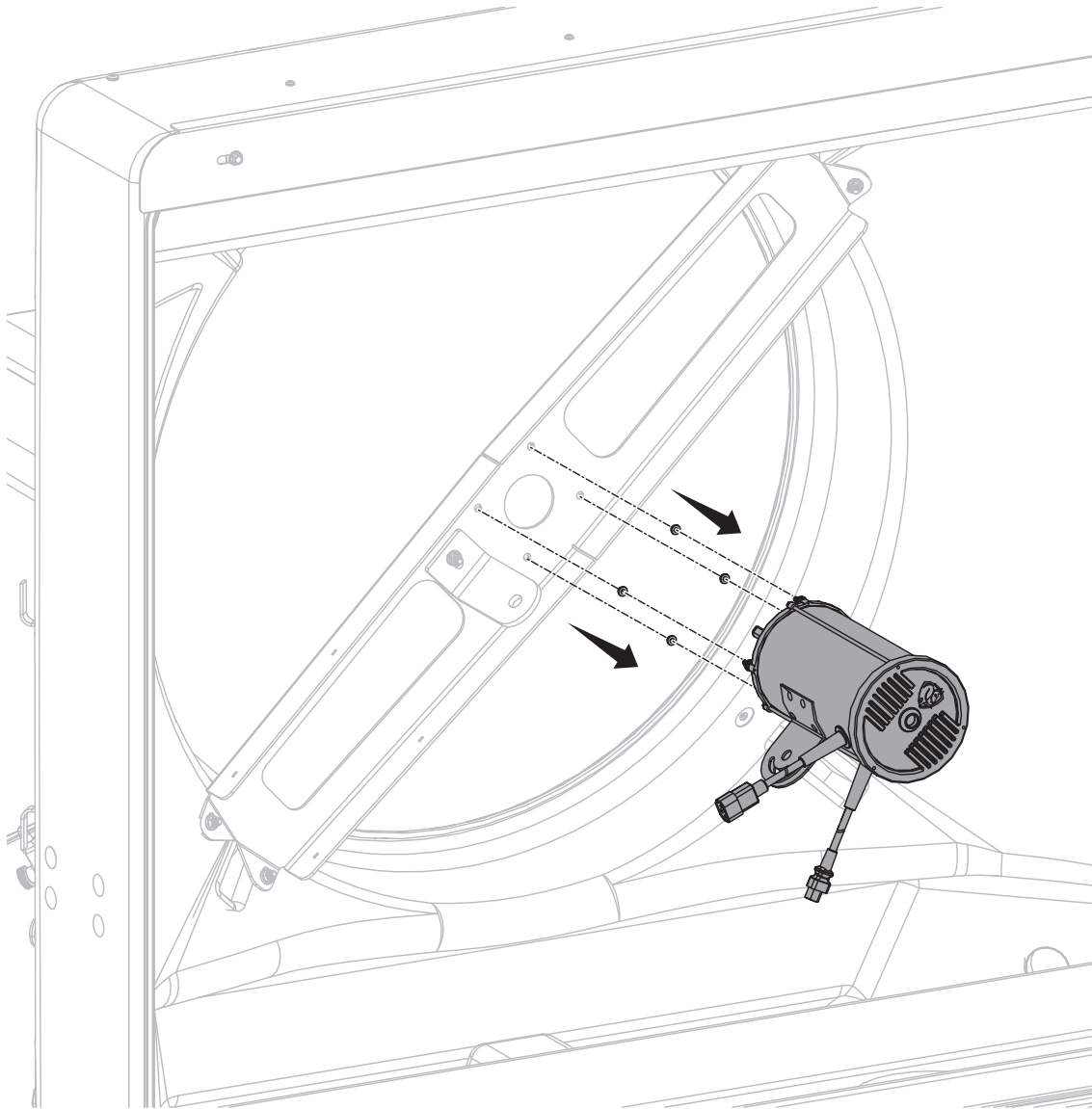
Fig. 3.2



Remove the motor and the four flange washers from the back of the motor bracket (Fig. 3.3). **Save the flange washers for installing the new motor.**

NOTE: Cool-Space 400 shown. Procedure is the same for Cool-Space 350.

Fig. 3.3

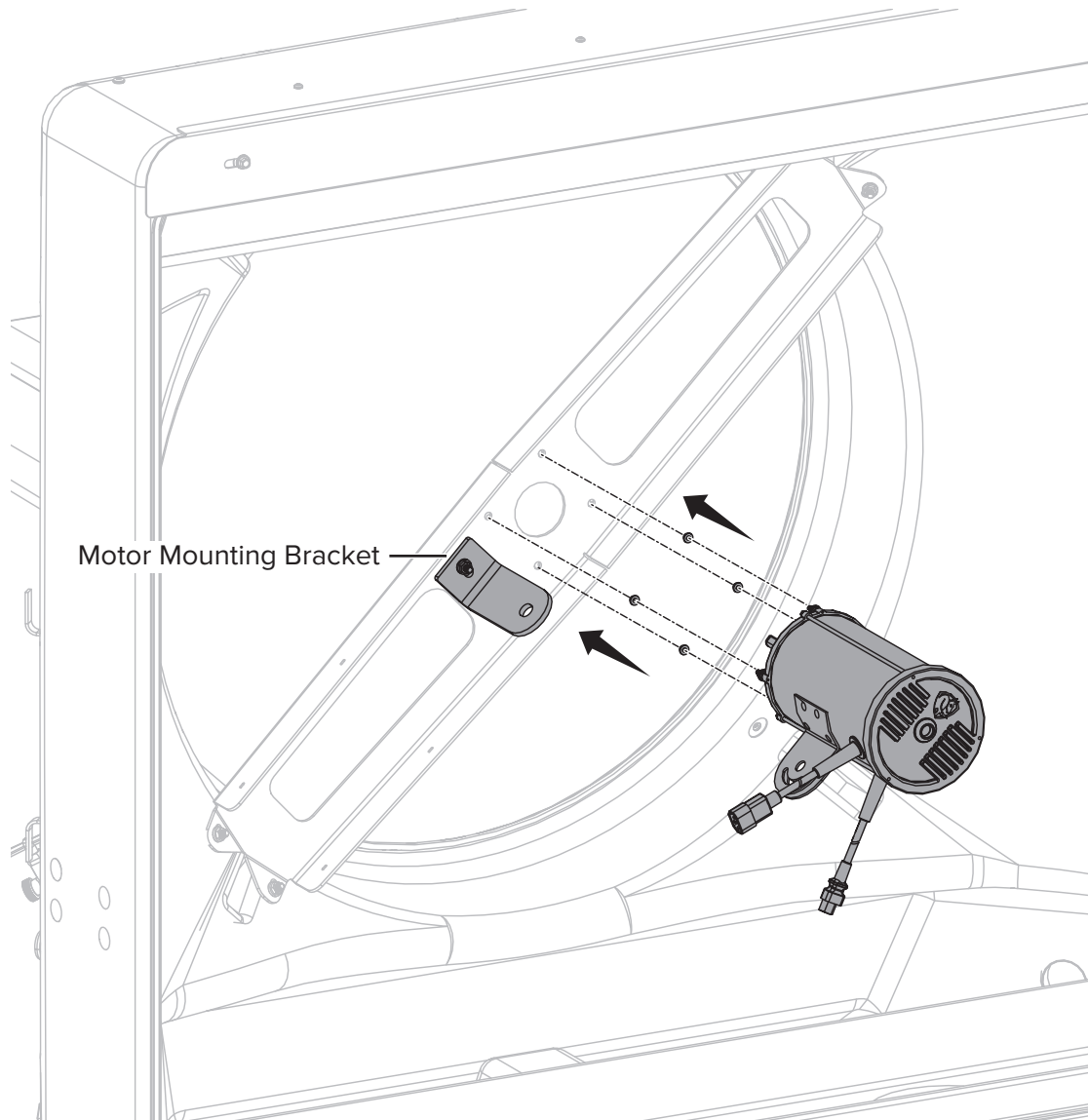


4. Install new motor

Thread the flange washers from the old motor onto the new motor studs. Position motor on motor mounting bracket and insert motor studs into mounting holes (Fig. 4.1).

NOTE: Cool-Space 400 shown. Procedure is the same for Cool-Space 350.

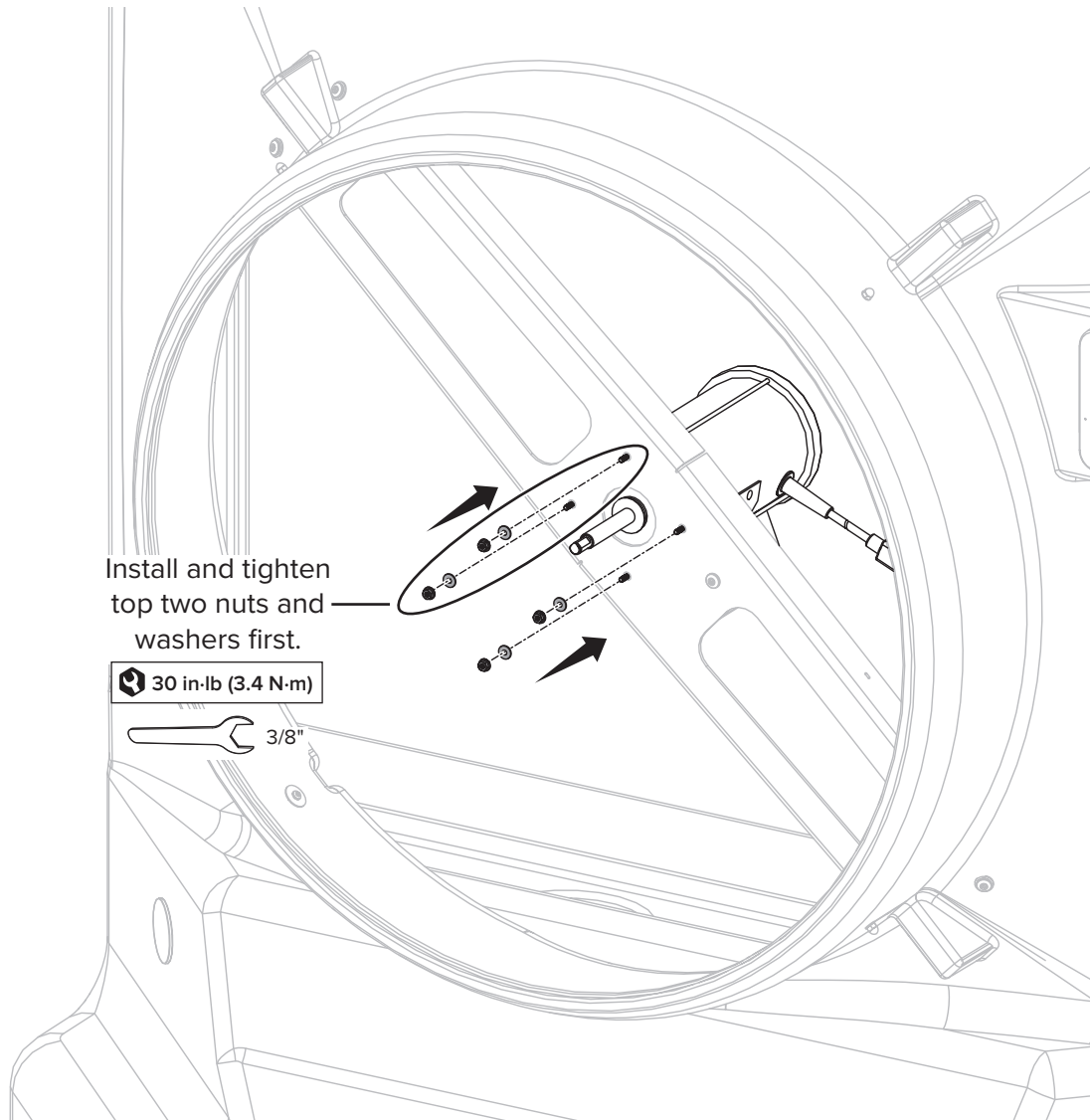
Fig. 4.1



While supporting motor (two people recommended), thread the four nuts and washers from the old motor onto the motor studs, starting with the top two nuts and washers. Starting with the top two nuts, tighten to **30 in·lb (3.4 N·m)** (Fig. 4.2).

NOTE: Cool-Space 400 shown. Procedure is the same for Cool-Space 350.

Fig. 4.2

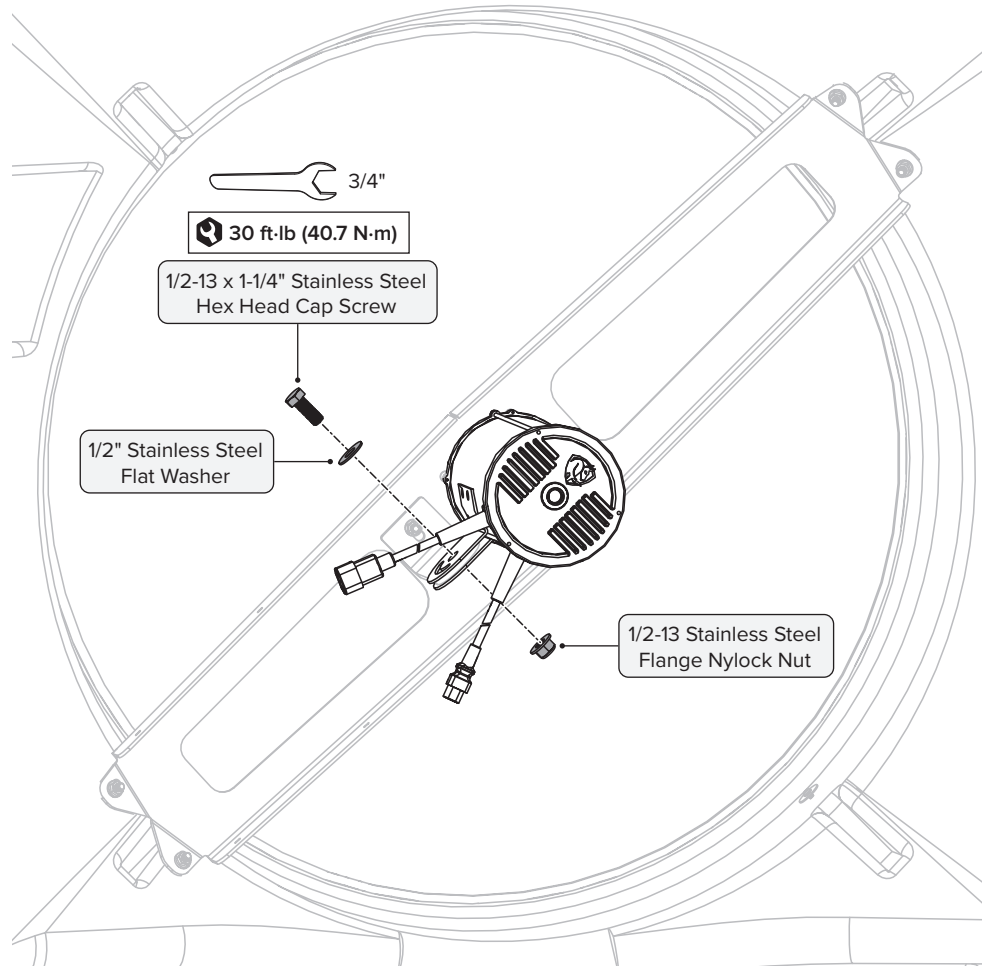


COOL-SPACE® 350 AND 400

Install the **new** main motor mounting screw, washer, and nut provided with this motor kit. Make sure washer is on the screw side. Tighten hardware to **30 ft-lb (40.7 N-m)** (Fig. 4.3).

NOTE: Cool-Space 400 shown. Procedure is the same for Cool-Space 350.

Fig. 4.3



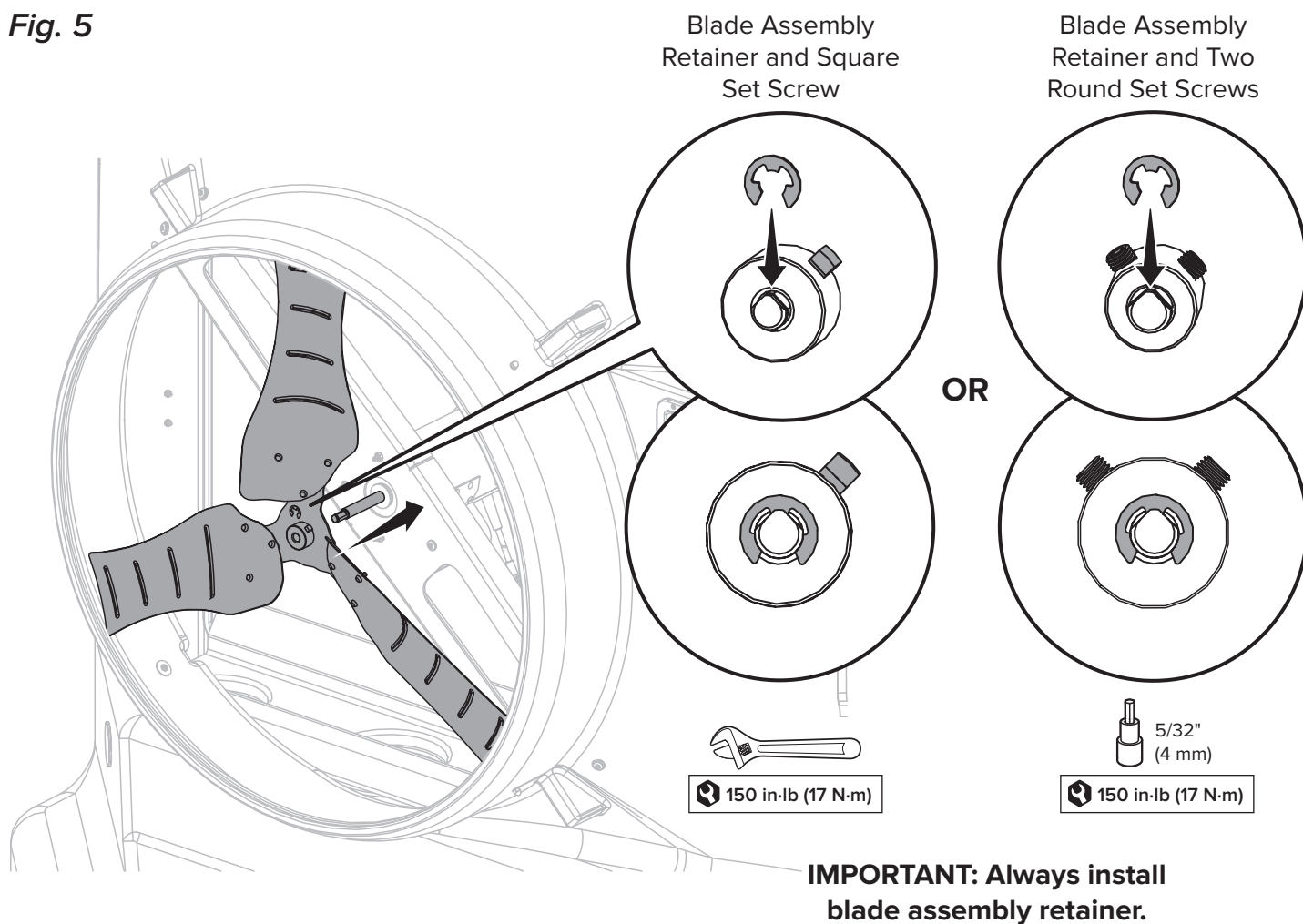
5. Reinstall blade assembly

Reinstall blade assembly onto motor shaft. Make sure blade assembly is oriented as shown with one square set screw aligned with one flat area of the shaft or two round set screws aligned with the two flat areas of the shaft (Fig. 5).

Install the **new** blade assembly retainer provided with this motor kit onto motor shaft. Make sure retainer is oriented as shown and is **not** resting against the flat areas of the shaft (Fig. 5). Tighten set screw(s) to **150 in-lb (17 N-m)**.

NOTE: Cool-Space 400 shown. Procedure is the same for Cool-Space 350.

Fig. 5



6. Plug in cables and reinstall cooling media

Plug in the two motor cables and secure cables to motor bracket with the provided zip ties (only if you removed zip ties when disconnecting the original motor cables).

Reinstall the cooling media according to the [Cooling Media Replacement Instructions](https://bigassfans.com/docs/evap-coolers/cool-space-media-replacement.pdf).



<https://bigassfans.com/docs/evap-coolers/cool-space-media-replacement.pdf>

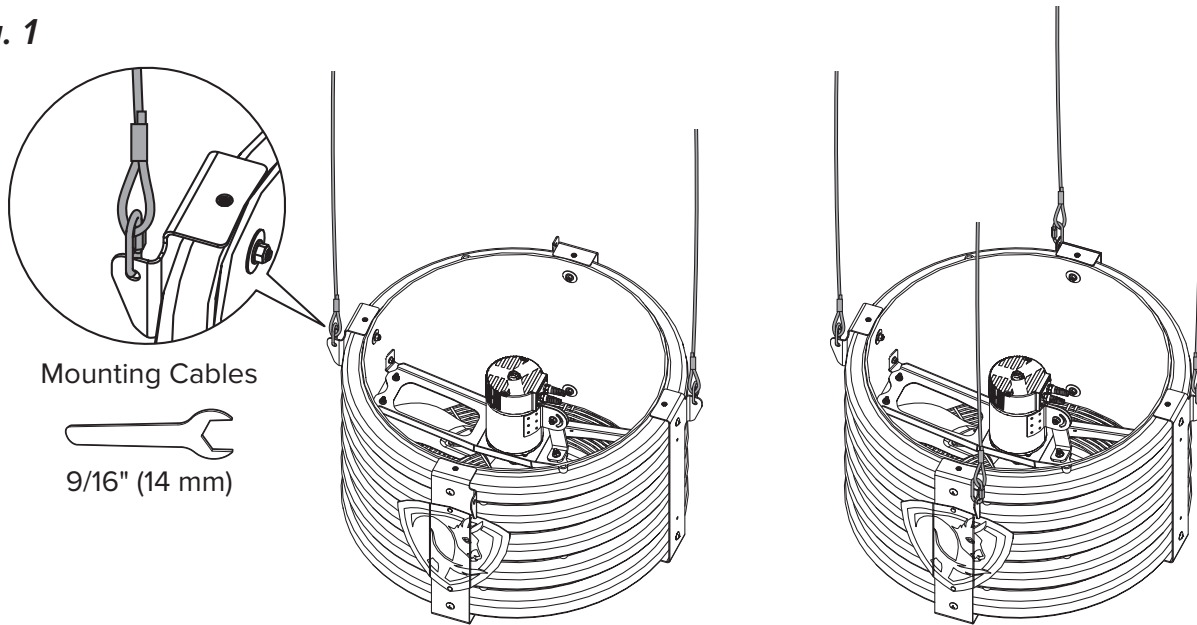
BIG ASS FANS® HORNET

1. Remove fan from ceiling

⚠ CAUTION: Disconnect fan power cable from supply power and controller cable from controller before detaching mounting cables from fan. This ensures the fan is not suspended from the power cable or controller cable.

Disconnect fan power cable and controller cable from supply power and controller. While supporting fan on lift, detach mounting cables (two or four) from carabiners on fan housing (Fig. 1). Move fan to lift or to the ground for motor replacement work. *NOTE: Electrical cables not shown.*

Fig. 1



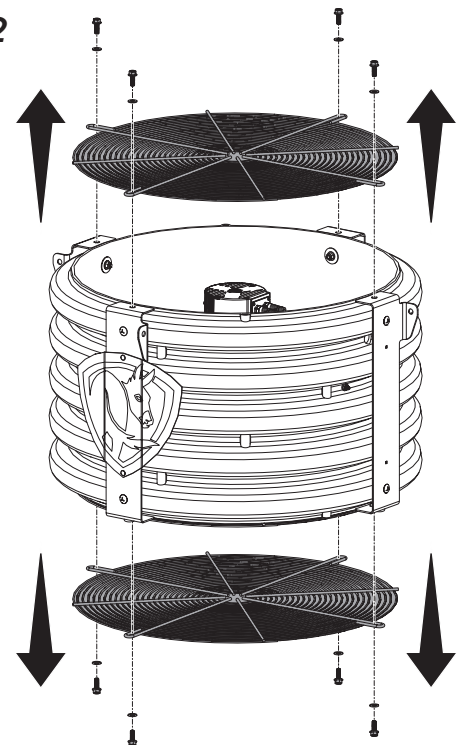
2. Remove guard(s)

Remove bottom guard and (if installed) top guard from fan housing (Fig. 2).

Save the screws and washers for reinstalling guard(s).

NOTE: Electrical cables not shown.

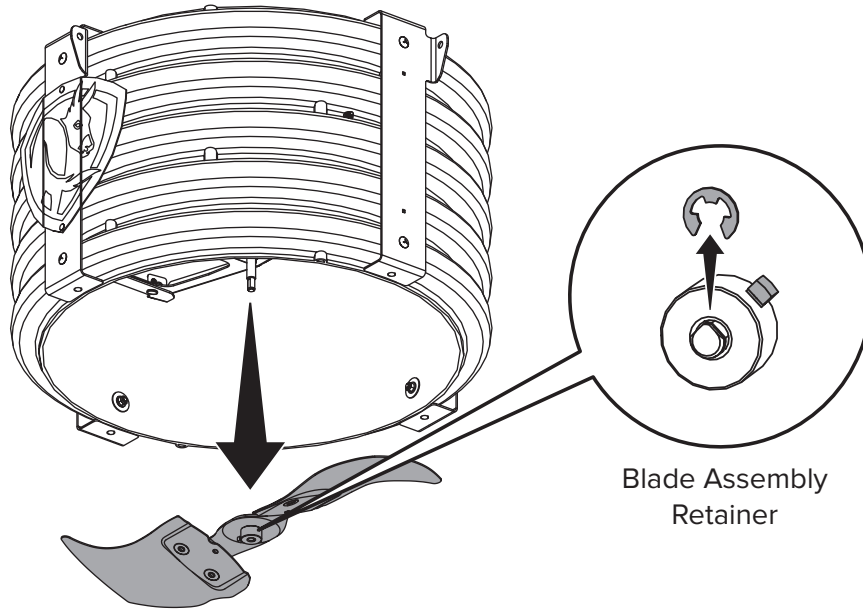
Fig. 2



3. Remove blade assembly

Remove blade assembly retainer from motor shaft and **discard it** (Fig. 3). Loosen square set screw in center of blade assembly. Remove blade assembly from motor shaft (Fig. 3). *NOTE: Electrical cables not shown.*

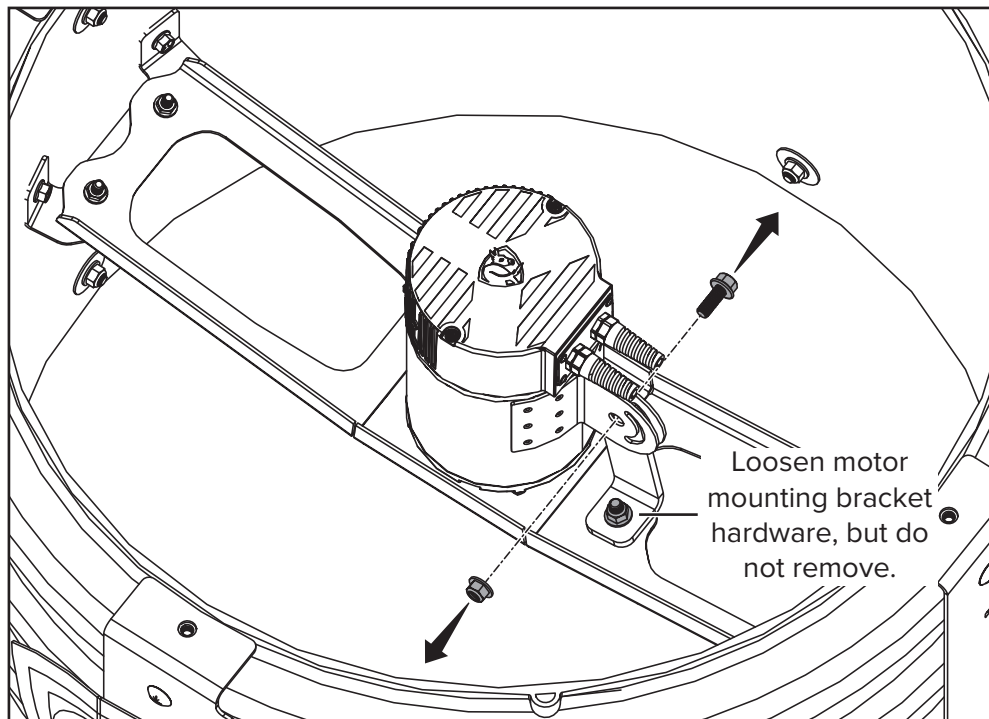
Fig. 3



4. Remove motor

Remove main motor mounting screw and nut and **discard them** (Fig. 4.1). Loosen nut on motor mounting bracket, but do not remove bracket hardware (Fig. 4.1). *NOTE: Electrical cables not shown.*

Fig. 4.1



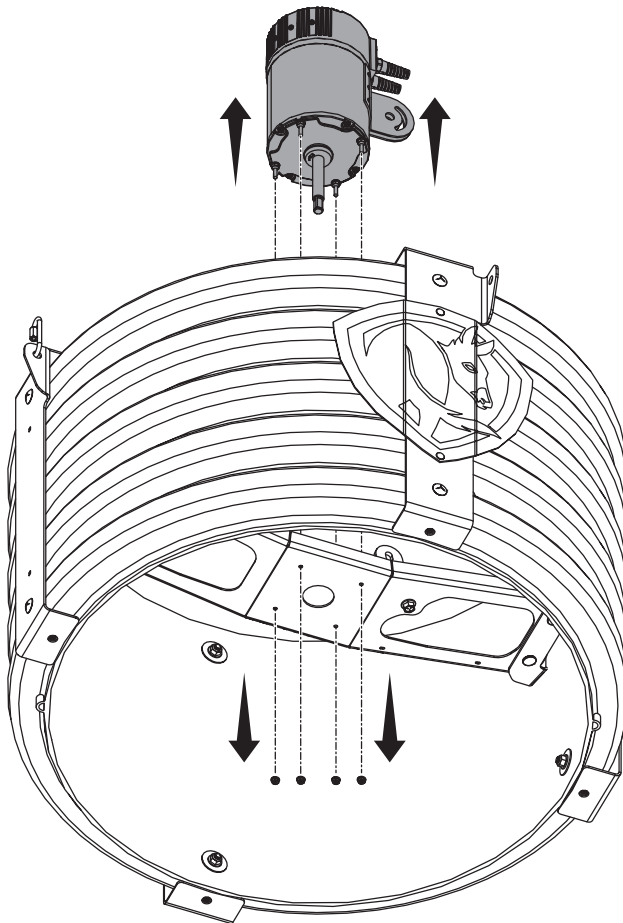
Remove zip ties securing motor cables to motor bracket and disconnect the cables (Fig. 4.2).

Remove the four nuts securing the motor studs to the motor bracket (Fig. 4.3). **Save the nuts for installing the new motor.** Remove motor from motor bracket (Fig. 4.3). *NOTE: Electrical cables not shown.*

Fig. 4.2



Fig. 4.3



5. Install new motor

Position new motor on motor mounting bracket and insert motor studs into mounting holes (Fig. 5.1).

Thread the four nuts from the old motor onto the motor studs. Tighten to **35 in·lb (4 N·m)** (Fig. 5.2).

NOTE: Electrical cables not shown.

Fig. 5.1

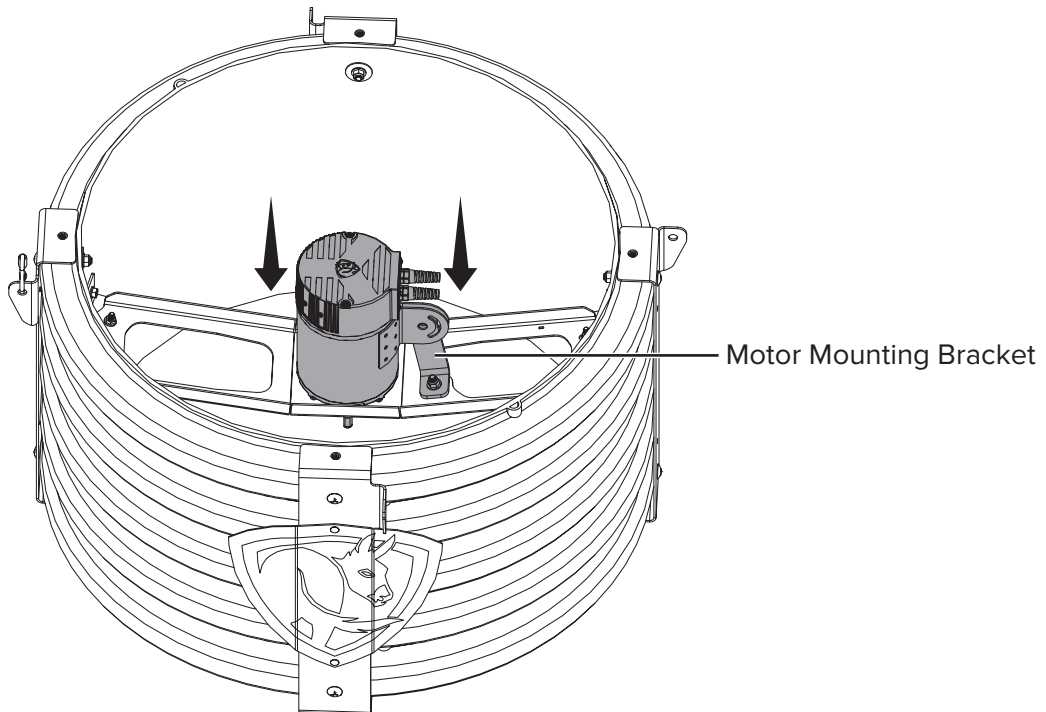
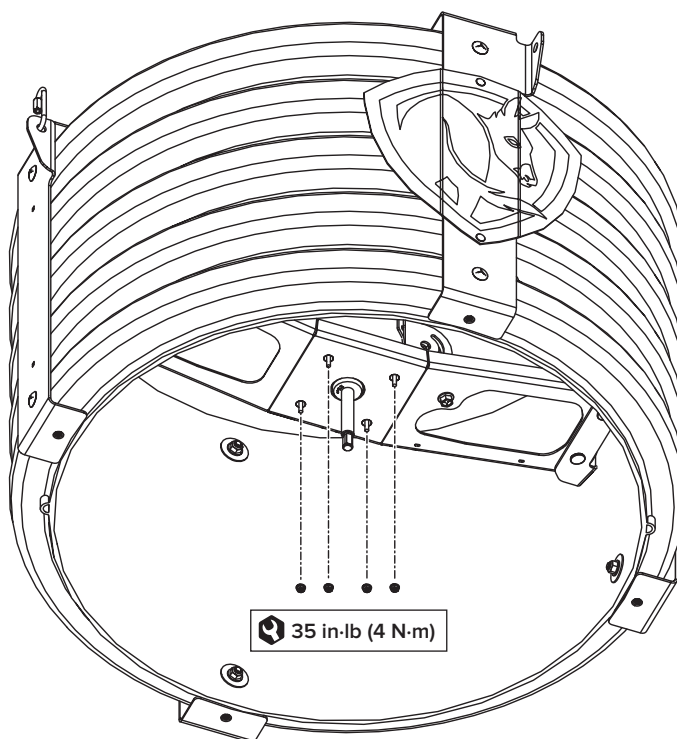


Fig. 5.2



Install the **new** main motor mounting screw and nut provided with this motor kit and **hand tighten** (Fig. 5.3). Tighten loosened motor mounting bracket hardware to **20 ft·lb (27.1 N·m)**, and then tighten main motor mounting hardware to **20 ft·lb (27.1 N·m)** (Fig. 5.3). *NOTE: Electrical cables not shown.*

Plug in the two motor cables and secure cables to motor bracket with two provided zip ties (Fig. 5.4). Route zip ties through the two small slots in the motor bracket (slots not shown below). Trim zip ties.

Fig. 5.3

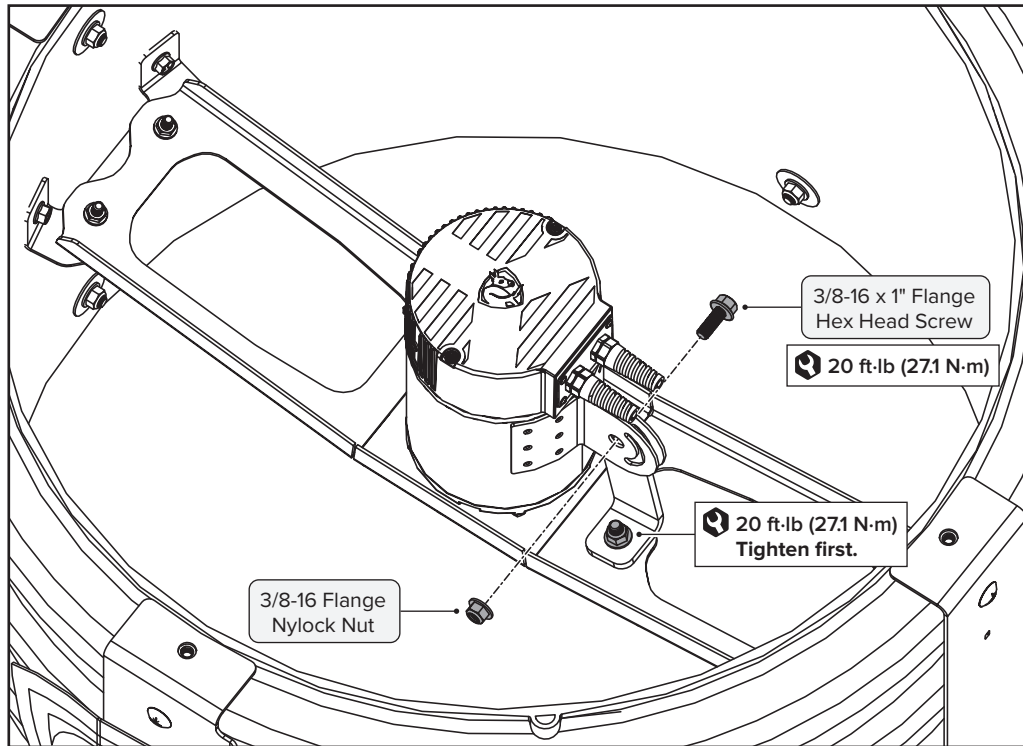


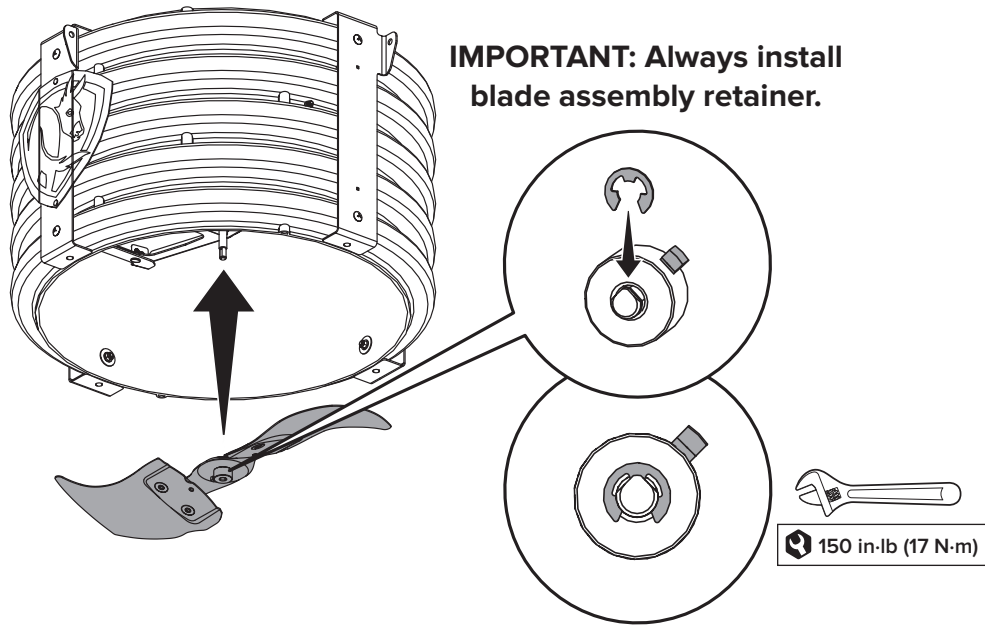
Fig. 5.4



6. Reinstall blade assembly

Reinstall blade assembly onto motor shaft. Make sure blade assembly is oriented as shown with the square set screw aligned with a flat area of the shaft (Fig. 6). Install the **new** blade assembly retainer provided with this motor kit onto motor shaft. Make sure retainer is oriented as shown and is **not** resting against the flat areas of the shaft (Fig. 6). Tighten set screw to **150 in-lb (17 N·m)**. *NOTE: Electrical cables not shown.*

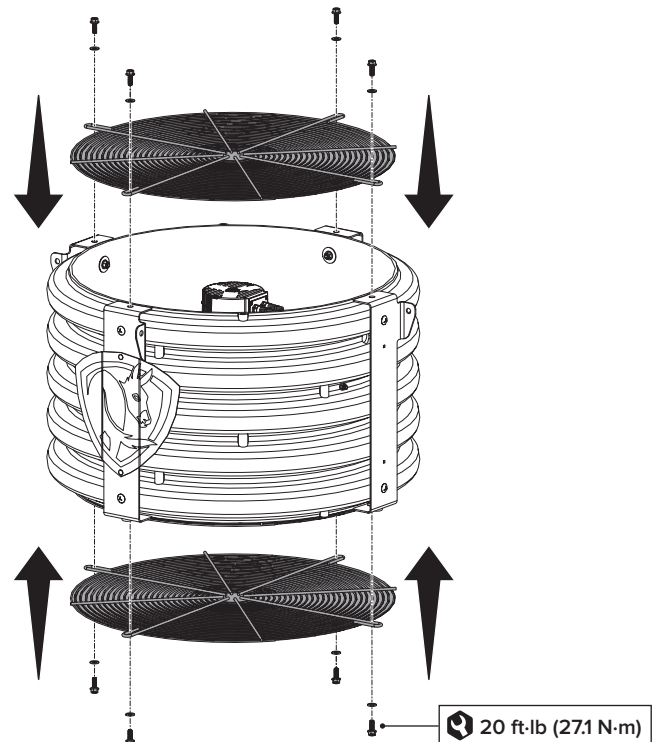
Fig. 6



7. Reinstall guard(s)

Reinstall bottom guard and (if applicable) top guard to fan housing with the original guard screws and washers (Fig. 7). Tighten to **20 ft-lb (27.1 N·m)**. *NOTE: Electrical cables not shown.*

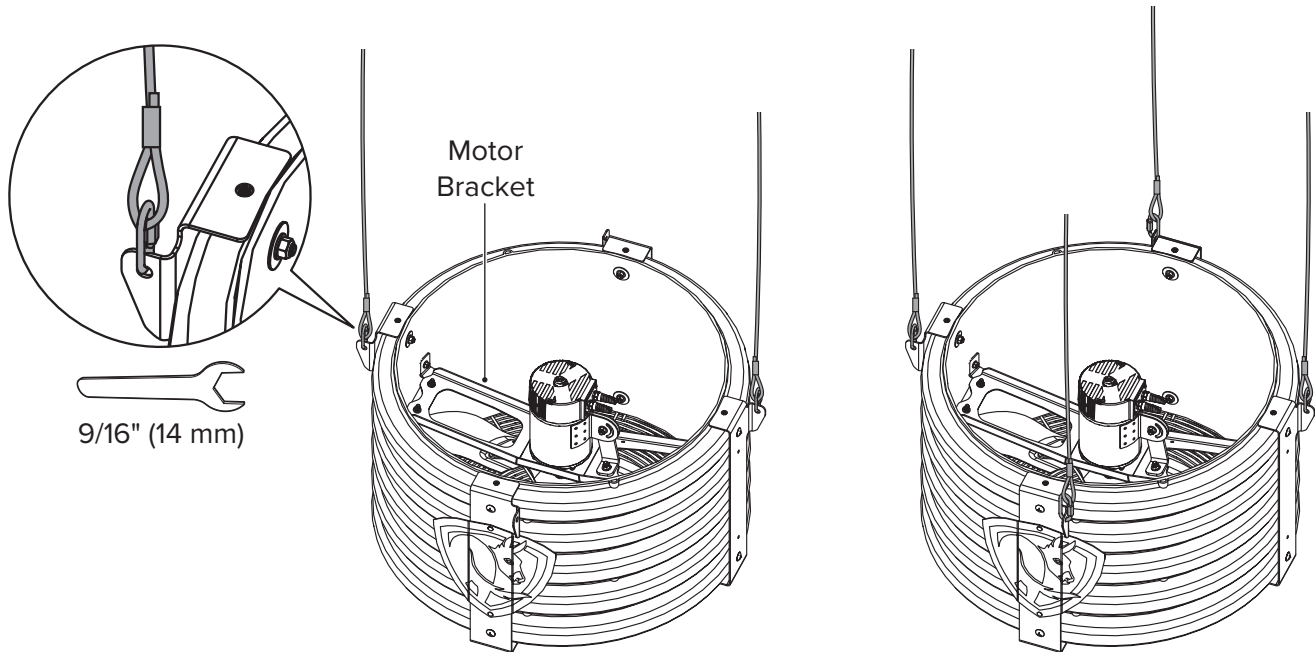
Fig. 7



8. Reattach mounting cables

Support fan on lift and loop mounting cables (two or four) through carabiners on fan housing (Fig. 8). *NOTE: Electrical cables not shown.*

Fig. 8

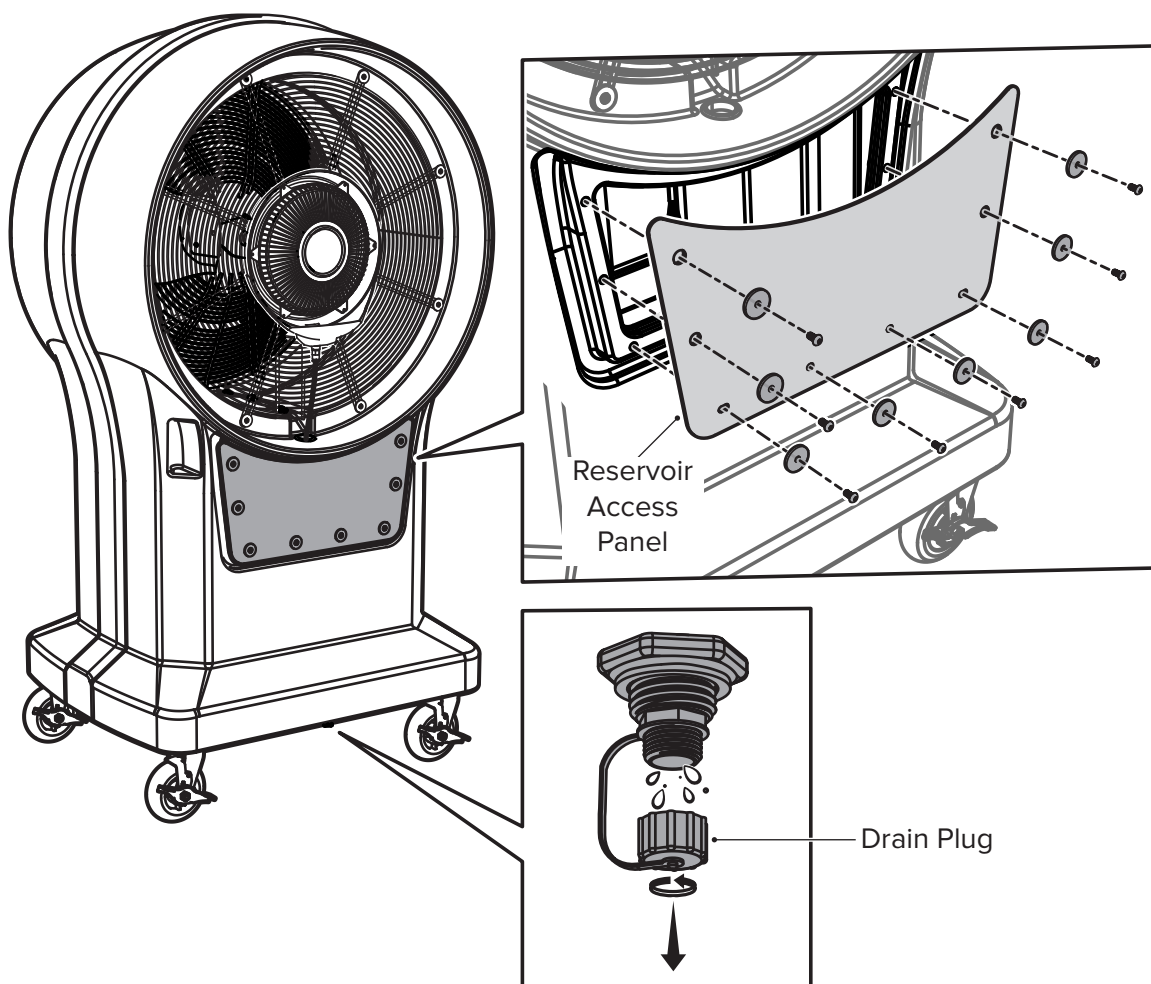


⚠ WARNING: Ensure casters are locked before performing service or maintenance.

1. Drain reservoir and remove access panel

Remove drain plug from bottom of fan (*Fig. 1*). Allow water to drain, and then reinstall drain plug. **Do not tilt fan to remove or reinstall drain plug.** Remove reservoir access panel from front of fan (eight screws and washers, *Fig. 1*). **Save screws and washers for reinstallation.**

Fig. 1



2. Disconnect mister wiring harnesses and water lines

Disconnect four-pin mister wiring harness from four-pin harness inside access panel opening (Fig. 2.1). Locate pump assembly at bottom of reservoir. Note its location and orientation for reinstallation (Fig. 2.2).

Carefully lift pump assembly out of access panel opening and allow to hang out of opening (Fig. 2.3). Cut zip tie securing filter bag around pump assembly. Remove filter bag and **save for reinstallation**. Disconnect water supply line from top of pump assembly by pushing in on line and then pulling line out of pump fitting (Fig. 2.4).

Fig. 2.1: Disconnect wiring harnesses

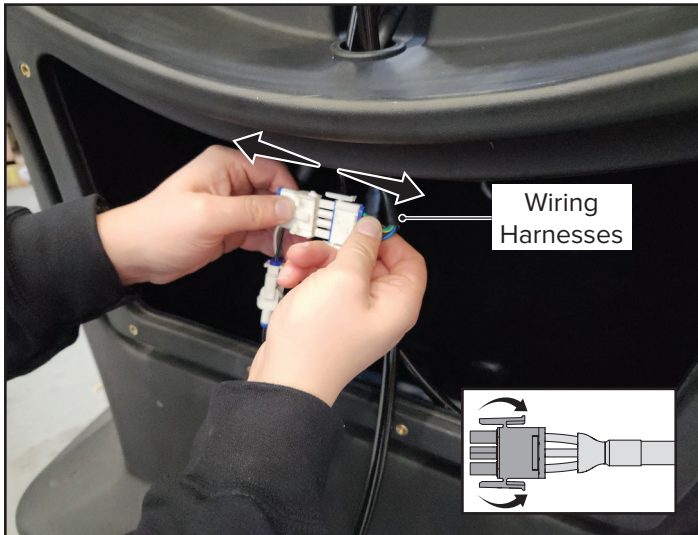


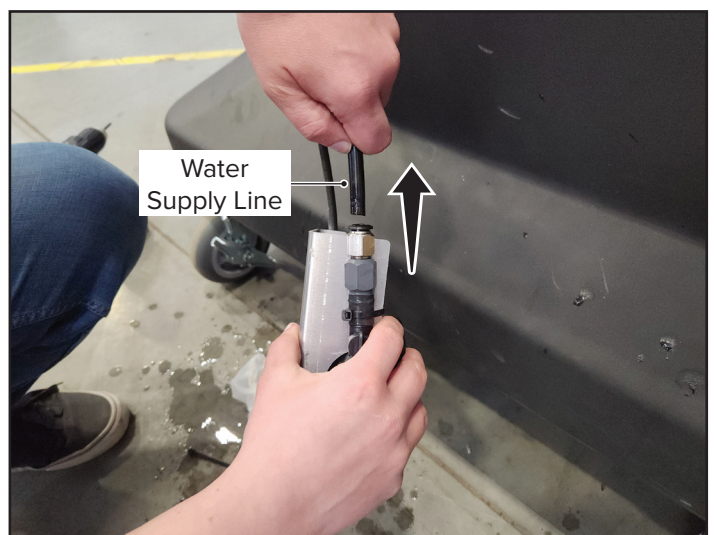
Fig. 2.2: Locate pump assembly



Fig. 2.3: Remove pump assembly



Fig. 2.4: Disconnect supply line



Remove zip tie securing mister drain line to water supply line (Fig. 2.5). Disconnect drain line from bottom of mister by pushing in on line and then pulling line out of fitting (Fig. 2.6). **Save drain line for reinstallation.**

Pull four-pin mister power cable up and out of reservoir through cable hole (Fig. 2.7). Disconnect three-pin pump/mister wiring harness from pump assembly wiring harness inside access panel opening (Fig. 2.8). **Set disconnected pump assembly aside in a safe location for reinstallation.**

Fig. 2.5: Remove drain line zip tie

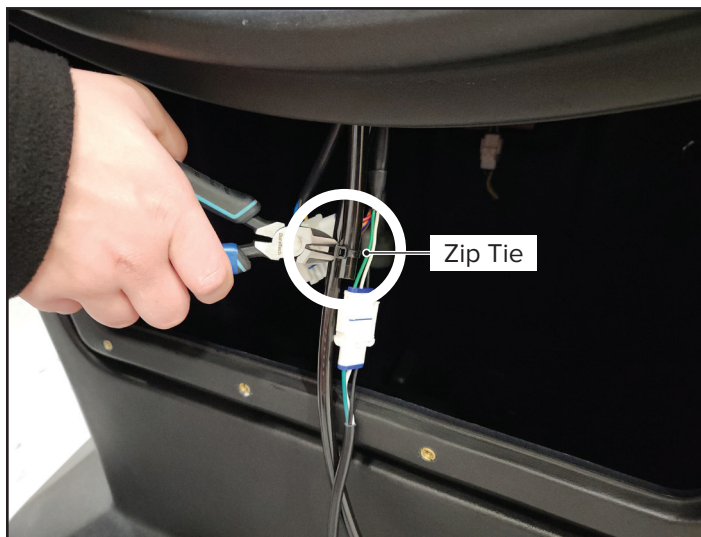


Fig. 2.6 Disconnect and save drain line



Fig. 2.7: Pull mister cable out of reservoir

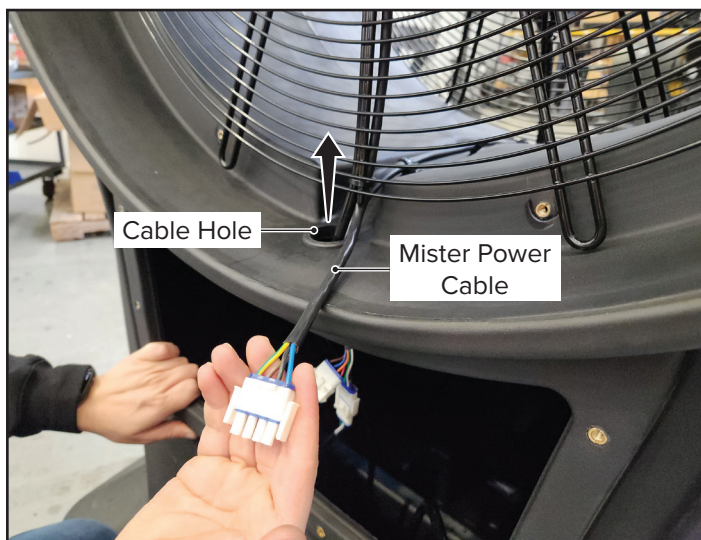
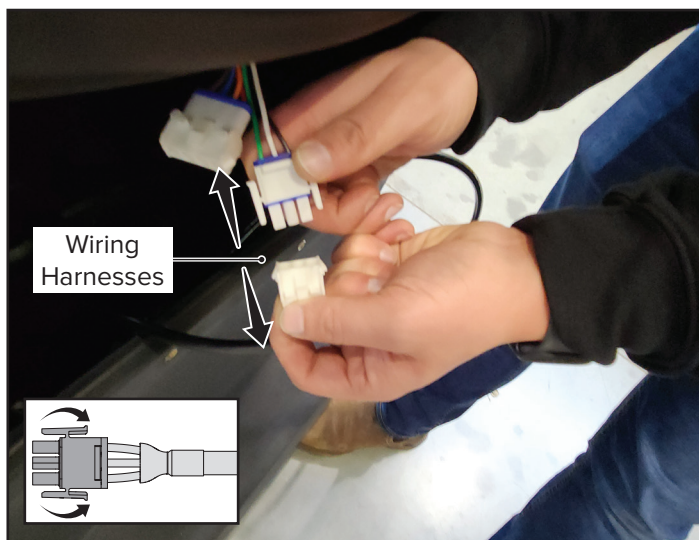


Fig. 2.8: Disconnect wiring harnesses



3. Remove front guard/mister assembly



Front guard/mister assembly is heavy. Two people are recommended for this step.

Remove seven of the eight front guard screws and washers, leaving one top screw and washer loosely in place (Fig. 3.1). **While supporting front guard/mister assembly** (two people recommended), remove remaining screw and washer, and then remove front guard/mister assembly from fan housing (Fig. 3.2). **Save screws and washers for reinstallation.**

Fig. 3.1



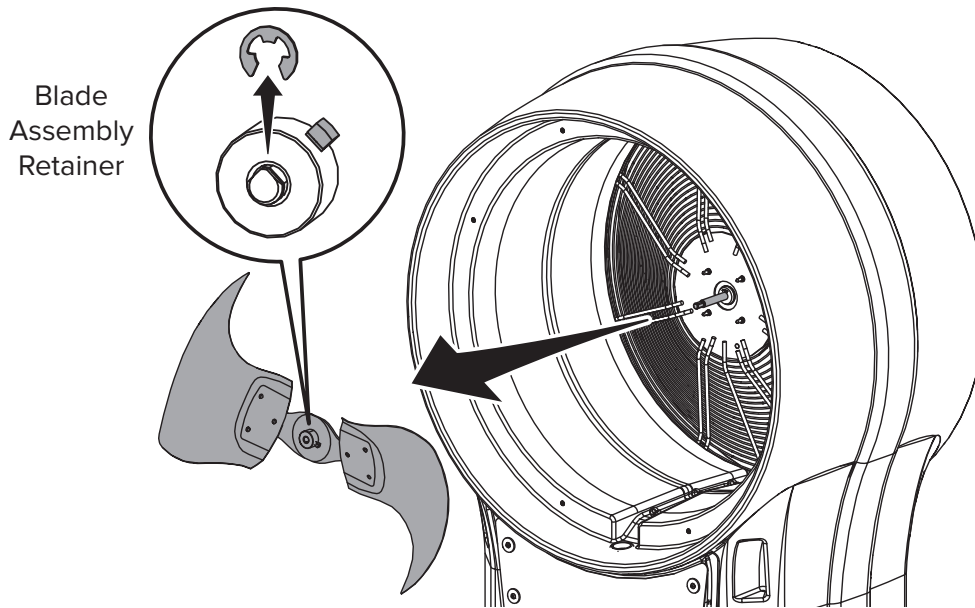
Fig. 3.2



4. Remove blade assembly

Remove blade assembly retainer from motor shaft and **discard it** (Fig. 4). Loosen square set screw in center of blade assembly. Remove blade assembly from motor shaft (Fig. 4). **NOTE: Electrical cables and water lines not shown.**

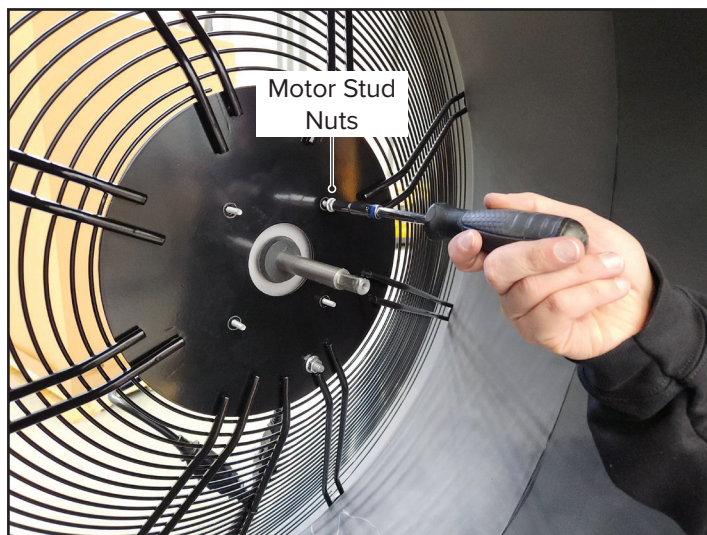
Fig. 4



5. Remove motor stud nuts

Remove the four nuts securing motor studs to inside of rear fan guard (Fig. 5). **Save the nuts for installing the new motor.**

Fig. 5



6. Disconnect motor cables

Remove zip tie securing motor cables to small hole in motor bracket (Fig. 6.1). Disconnect motor cables (Fig. 6.2).

Fig. 6.1

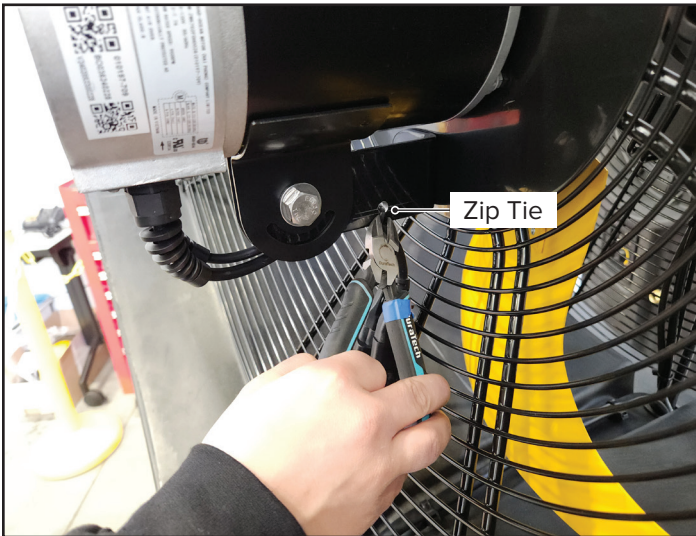


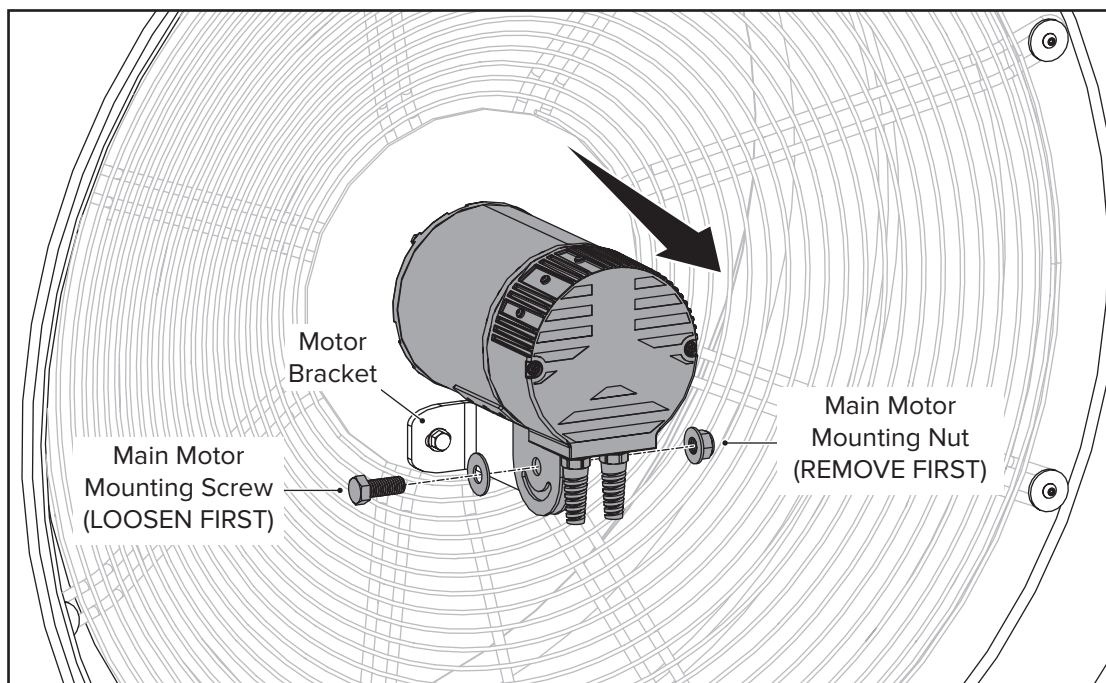
Fig. 6.2



7. Remove motor

Loosen main motor mounting screw enough to remove nut, and then remove nut. **While supporting motor** (two people recommended), remove screw and washer, and then remove motor from motor bracket (Fig. 7). **Discard screw, washer, and nut.** NOTE: Electrical cables not shown.

Fig. 7



8. Install new motor

Position new motor on motor bracket and insert motor studs into mounting holes on rear guard (*Fig. 8.1*). If motor is difficult to align on motor bracket, loosen motor bracket screw (*Fig. 8.1*) and adjust alignment as needed. Install **new** main fan mounting screw, washer, and nut provided with this motor kit (*Fig. 8.1*). Make sure washer is on screw side. **Hand tighten hardware.**

Thread the four stud nuts from old motor onto motor studs. Tighten to **30 in-lb (3.4 N·m)** (*Fig. 8.2*).

Tighten loosened motor bracket screw to **10 ft-lb (13.6 N·m)** (if loosened), and then tighten main motor mounting hardware to **30 ft-lb (40.7 N·m)** (*Fig. 8.1*).

Fig. 8.1

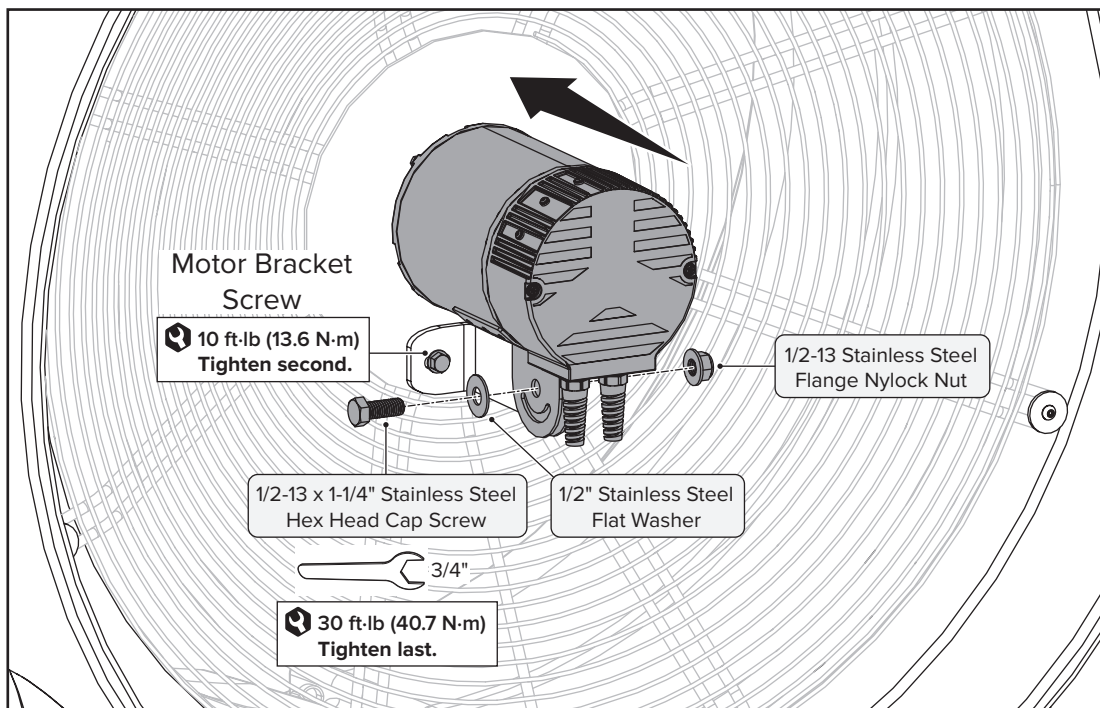
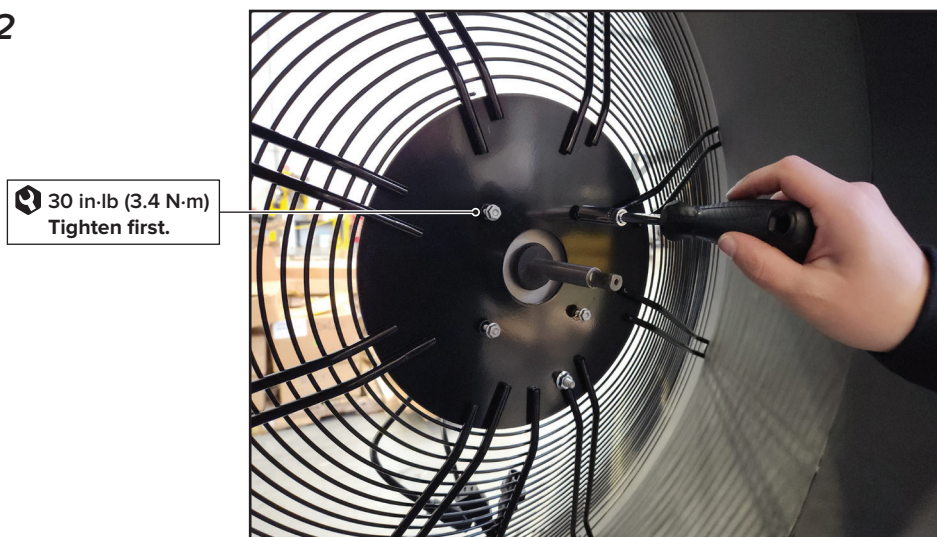


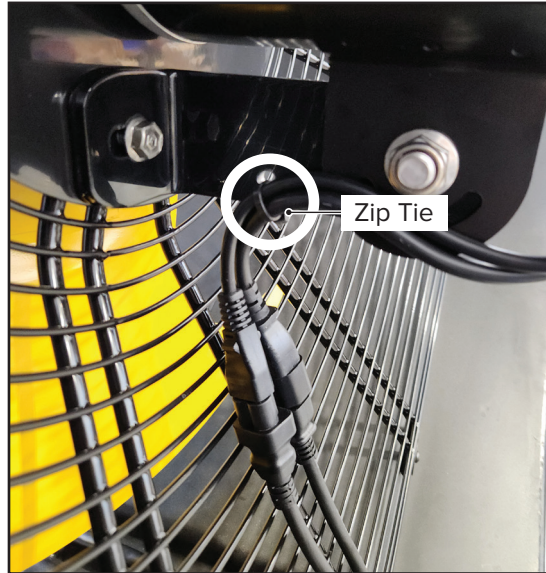
Fig. 8.2



9. Connect motor cables

Connect the two motor cables to cables from fan, and then secure motor cables to small hole in motor bracket with zip tie (Fig. 9). Trim zip tie.

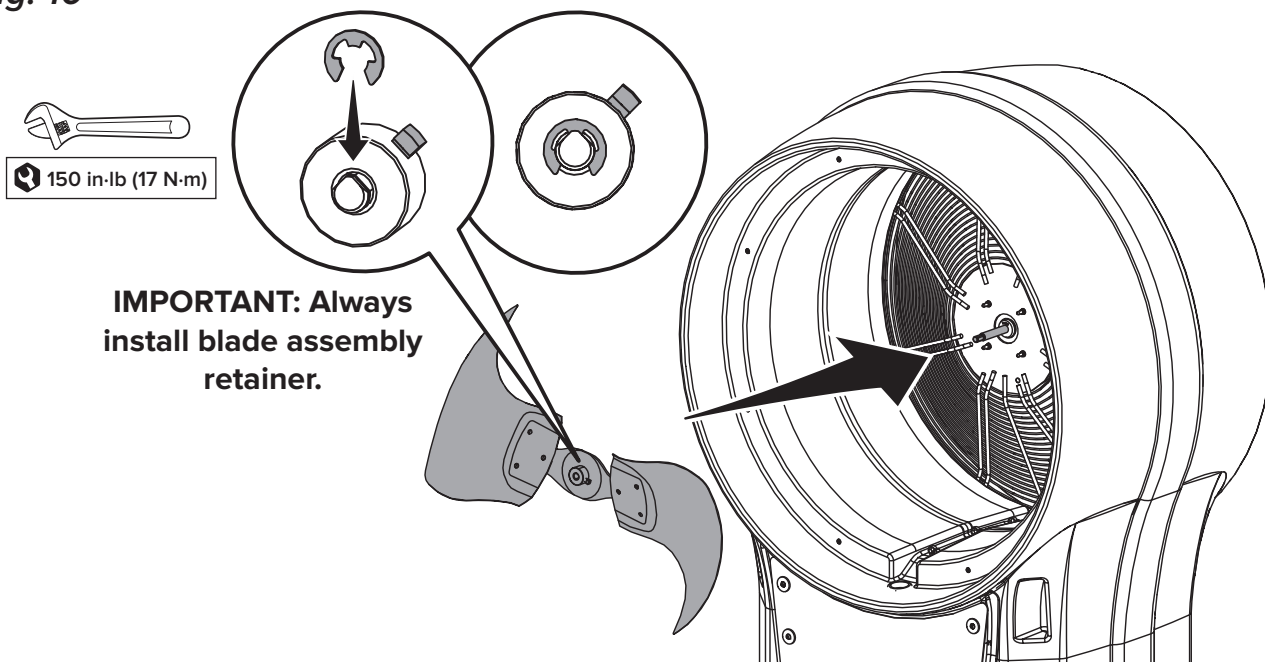
Fig. 9



10. Reinstall blade assembly

Reinstall blade assembly onto motor shaft. Make sure blade assembly is oriented as shown with the square set screw aligned with a flat area of the shaft (Fig. 10). Install **new** blade assembly retainer provided with this motor kit onto motor shaft. Make sure retainer is oriented as shown and is **not** resting against flat areas of shaft (Fig. 10). Tighten set screw to **150 in-lb (17 N-m)**. *NOTE: Electrical cables and water lines not shown.*

Fig. 10



11. Reinstall front guard/mister assembly



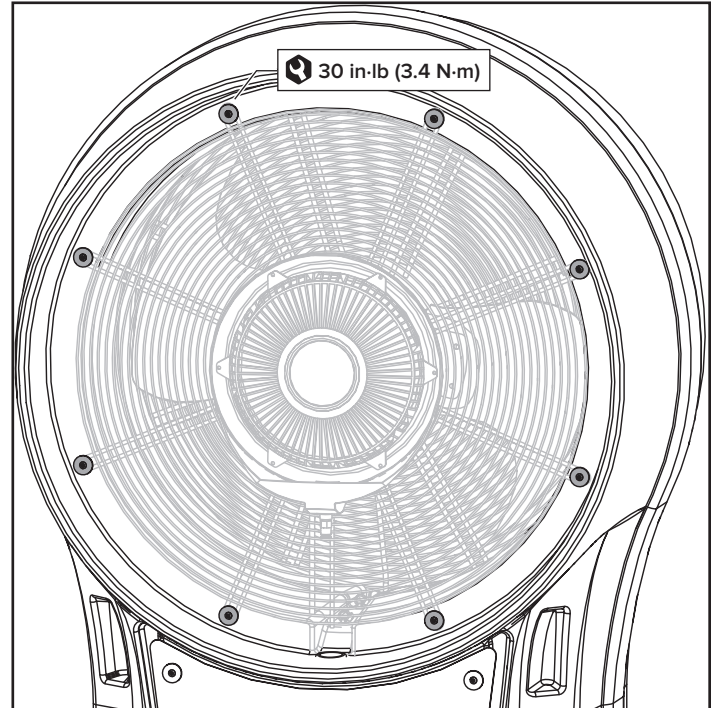
Front guard/mister assembly is heavy. Two people are recommended for this step.

While supporting front guard/mister assembly (two people recommended), loosely reinstall assembly to fan housing with one top screw and washer (*Fig. 11.1*), and then loosely install remaining seven screws and washers. After all screws are loosely installed, tighten to **30 in·lb (3.4 N·m)** (*Fig. 11.2*).

Fig. 11.1



Fig. 11.2



12. Connect wiring harnesses and water lines

Route mister power cable (*Fig. 12.1*) and water supply line (*Fig. 12.2*) into reservoir through cable hole.

Connect mister wiring harness to four-pin pump/mister cable harness inside access panel opening (*Fig. 12.3*).

Rest pump assembly on the ground next to unit. Connect three-pin pump/mister wiring harness to pump assembly wiring harness (*Fig. 12.4*).

Connect saved drain line to bottom of mister by pushing line into fitting (*Fig. 12.5*). Route drain line into reservoir through cable hole and secure to water supply line with a zip tie (*Fig. 12.6*).

Fig. 12.1: Route mister cable into reservoir

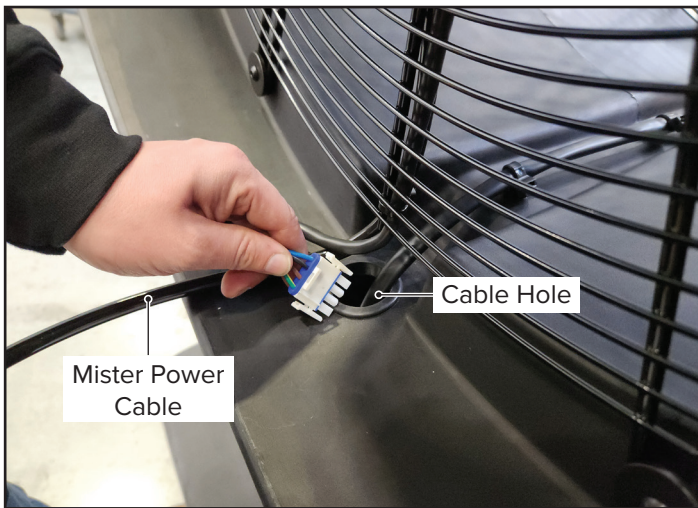


Fig. 12.2: Route supply line into reservoir

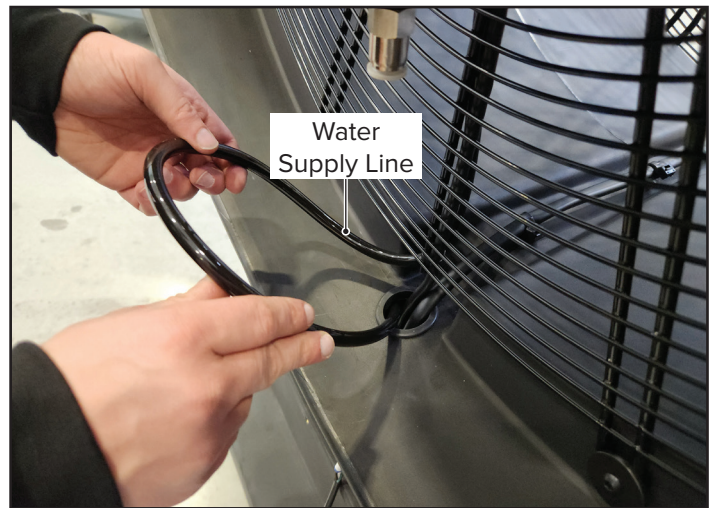


Fig. 12.3: Connect wiring harnesses

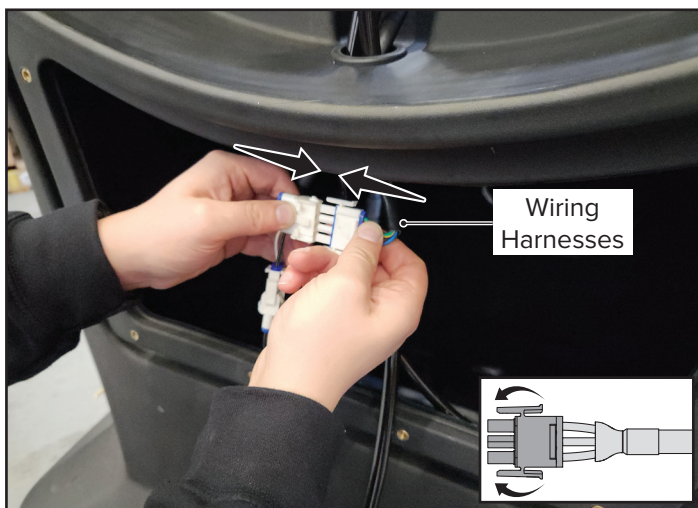


Fig. 12.4: Connect wiring harnesses

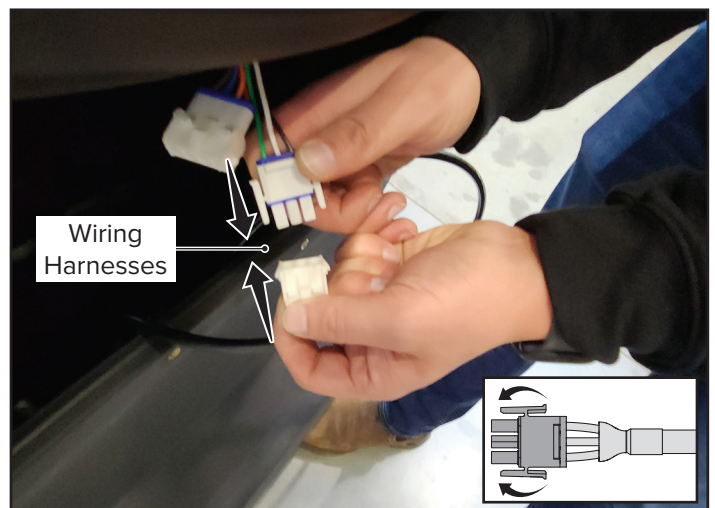
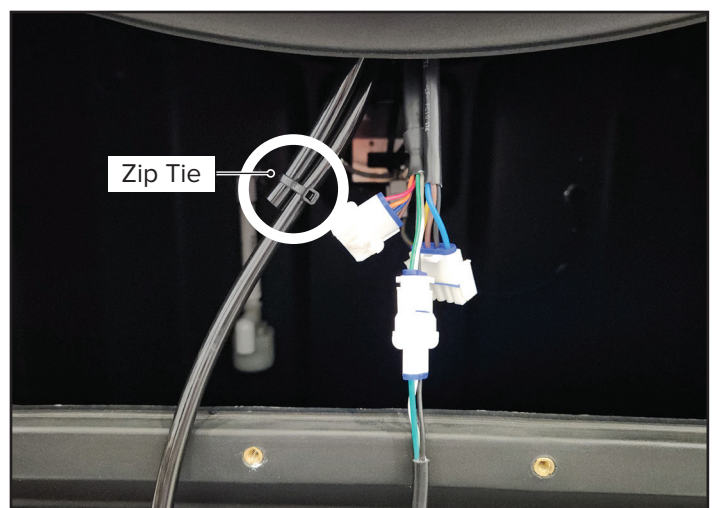


Fig. 12.5: Connect drain line to mister



Fig. 12.6: Secure water lines



13. Reinstall pump assembly and access panel

Connect water supply line to pump assembly by pushing line into fitting on top of pump (Fig. 13.1). Secure filter bag around pump assembly with a zip tie. Place pump assembly into reservoir in the location shown and make sure pump is sitting level (Fig. 13.2).

Reinstall reservoir access panel and torque the eight screws to **30 in-lb (3.4 N·m)** (Fig. 13.3).

Fig. 13.1

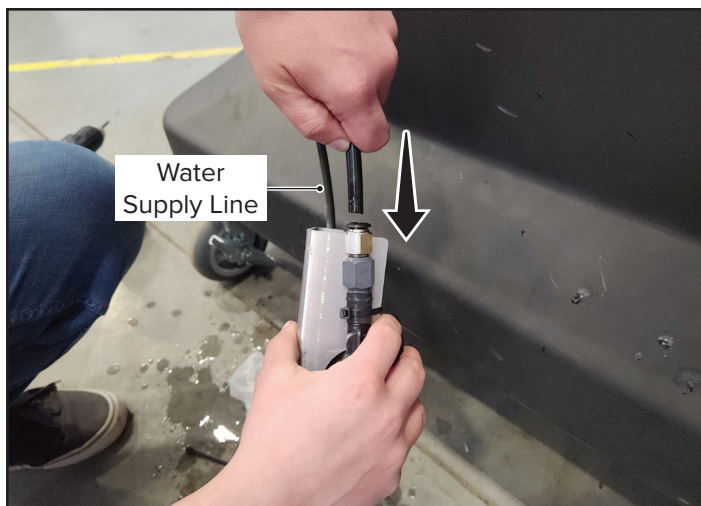
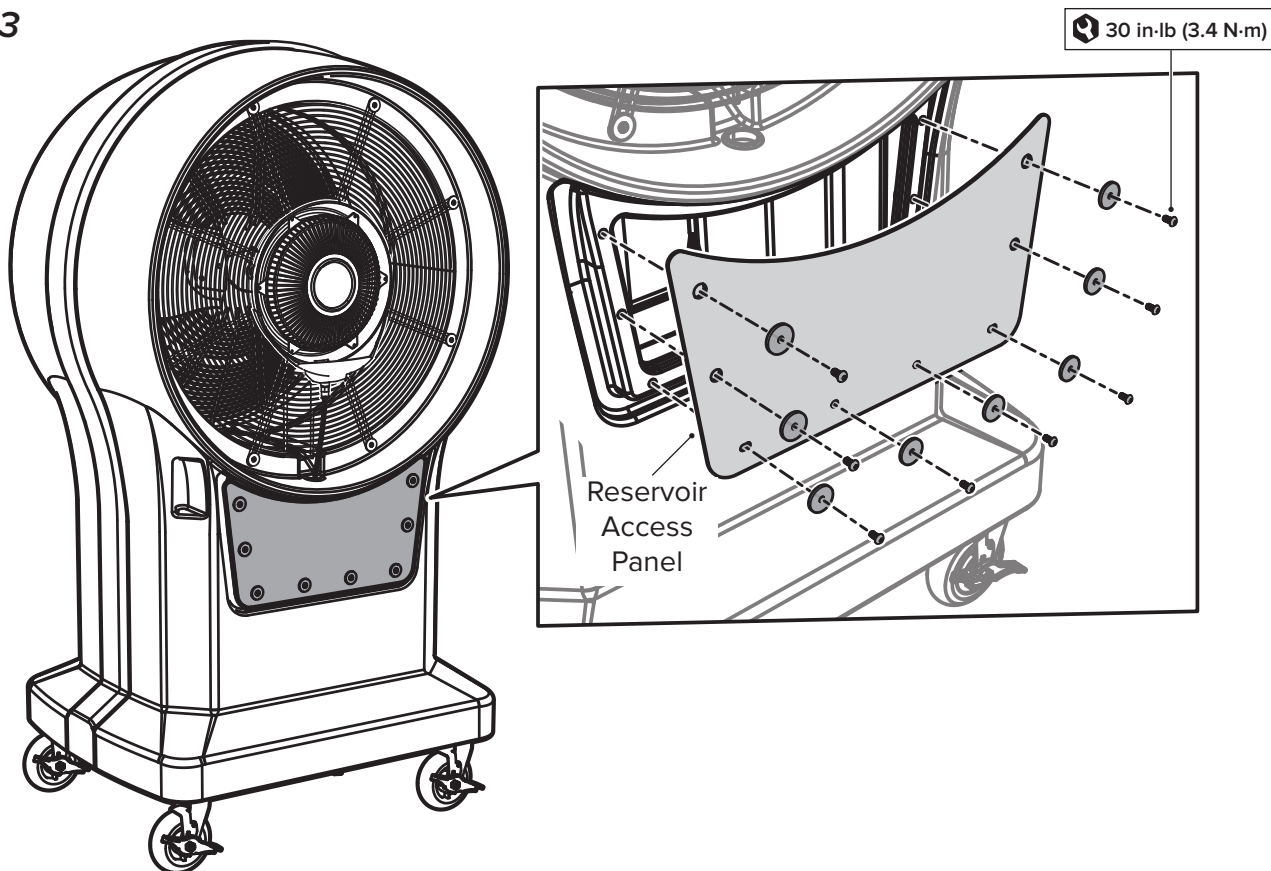


Fig. 13.2



Fig. 13.3





BIG ASS FANS®

bigassfans.com

