

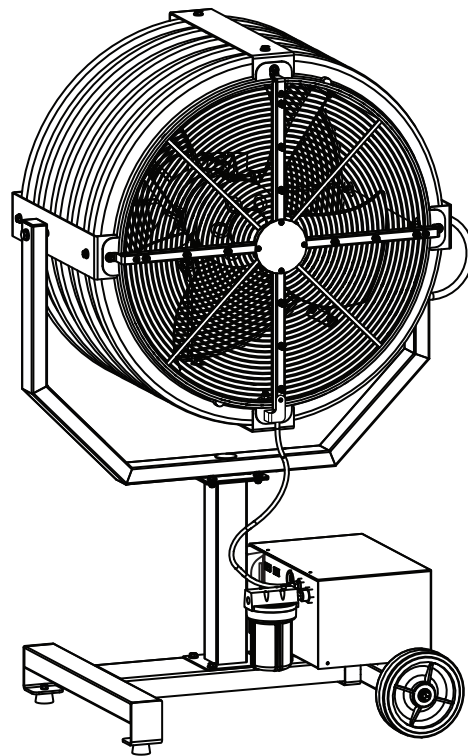
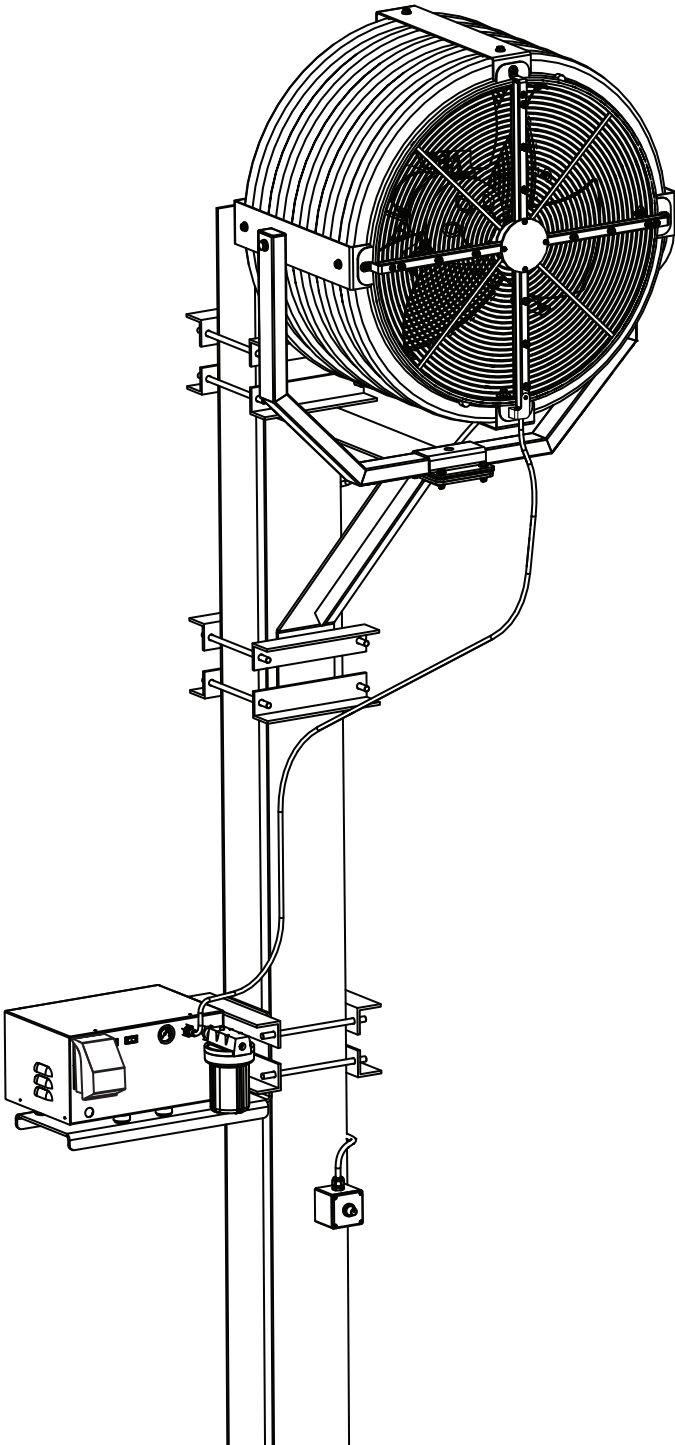


BIGASS[®]
FANS

No Equal[™]

INSTALLATION GUIDE

Yellow Jacket[®]
Misting System



For help, call 1-877-BIG-FANS
or visit www.bigassfans.com

READ AND SAVE THESE INSTRUCTIONS



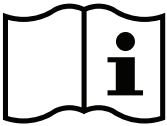
WARNING AND CAUTION SYMBOL

Indicates a hazard with a medium level of risk that could result in injury or death or damage to property if not avoided.



ELECTRICAL WARNING SYMBOL

Indicates an electrical hazard with a medium level of risk that could result in death or serious injury if not avoided.



Installation Guide
July 2017
Rev. G

Original English Instructions

Big Ass Fans
2348 Innovation Drive
Lexington, KY 40511
1-877-BIG-FANS
www.bigassfans.com

This product was manufactured in a plant whose Management System is certified as being in conformity with ISO 9001.

Legal

Improper installation, delivery, or maintenance, including, but not limited to, any of the following actions by the customer or agent of the customer will constitute a breach of and will void all warranties:

- Failure to follow the required installation procedures specified in this Installation Guide and in all other documentation supplied with the fans and related equipment including documentation provided by the manufacturers of the individual fan and control components;
- Failure to follow all relevant codes and ordinances, including, but not limited to, the National Electric Code (United States), applicable national and local electrical codes, and state and local building codes;
- Failure to follow electrical engineering industry standards regarding the approved method of installing solid-state electrical equipment having the characteristics of the fans, the fan controls, and their related components, even if such standards are not specifically referenced in any instructions or literature supplied by Big Ass Solutions or provided by manufacturers.

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www.bigasssolutions.com/patents ▪ www.bigasssolutions.com/warranties

CONTENTS

Introduction	Safety Instructions.....	ii
Portable Base	Parts and Hardware.....	1
Installing the Misting System	1. Assemble Fan.....	2
	2. Install Lower Misting Rail Bracket.....	2
	3. Remove Bolts and Washers (from Front Fan Cage).....	2
	4. Install Misting Rail Assembly.....	3
	5. Remove Oil Plug.....	4
	6. Install Filter.....	4
	7. Install Misting Pump.....	4
	8. Install High Pressure Hose.....	5
	9. Connect Water Supply.....	5
Column Mount	Parts and Hardware.....	6
Installing the Misting System	1. Mount Fan and Complete Electrical Installation.....	7
	2. Prepare Angle Irons.....	7
	3. Attach Misting Pump Mounting Bracket (to Column).....	8
	4. Replace Misting Pump Feet.....	9
	5. Remove Oil Plug.....	10
	6. Install Filter.....	10
	7. Install Misting Pump.....	10
	8. Install Lower Misting Rail Bracket.....	11
	9. Remove Bolts and Washers (from Front Fan Cage).....	11
	10. Install Misting Rail Assembly.....	12
	11. Install High Pressure Hose.....	13
	12. Connect Water Supply.....	14
Operating the Misting System	Starting and Stopping.....	15
	Misting Pump Diagram.....	15
Maintenance	Service Schedule.....	16
	Draining and Storing.....	16
	Cleaning the Misting Nozzles.....	17
	Troubleshooting.....	17
	Internal Pump Parts Diagram and Parts List.....	18
Service Procedures	Changing the Oil.....	19
	Servicing the Regulator.....	19
	Servicing the Plunger.....	20
	Servicing the Crankcase.....	21
	Servicing the Inlet/Discharge Valve.....	21
	Servicing the Seal Kit.....	22

IMPORTANT SAFETY INSTRUCTIONS

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

WARNING: The fan must be installed with hardware that is marked to indicate suitability with this model. Other hardware cannot be substituted.

CAUTION: Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards.

CAUTION: Use this fan only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.

CAUTION: The installation of a Big Ass Fan must be in accordance with the requirements specified in this installation manual and with any additional requirements set forth by the National Electric Code (NEC), ANSI/NFPA 70-2011, and all local codes. Code compliance is ultimately YOUR responsibility! Failure to comply with these codes could result in personal injury or property damage.

CAUTION: Exercise caution and common sense when powering the fan. Do not connect the fan to a damaged or hazardous power source. Do not attempt to resolve electrical malfunctions or failures on your own. Contact Big Ass Fans if you have any questions regarding the use of this fan.

CAUTION: 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.

WARNING: Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

WARNING: Risk of fire, electric shock, or injury to persons during cleaning and user-maintenance! Disconnect the fan from the power supply before servicing.

CAUTION: Do not bend the blades when installing, adjusting, or cleaning the fan. Do not insert foreign objects between rotating fan blades.

WARNING: Stay alert, watch what you are doing, and use common sense when installing fans. Do not assemble fans if tired or under the influence of drugs, alcohol, or medication. A moment of inattention while installing fans may result in serious personal injury.

CAUTION: Do not operate fan with a damaged cord or plug. Return fan to an authorized service facility for examination or repair.

CAUTION: Do not run cord under carpeting. Do not cover cord with throw rugs, runners, or similar coverings. Do not route cord under furniture or appliances. Arrange cord away from traffic area where it will not be tripped over.

CAUTION: The Big Ass Fans product warranty will not cover equipment damage or failure caused by improper installation.

CAUTION: The fan and misting system must operate on a dedicated 15 A circuit.

WARNING: Remove the oil plug on the motor before operating the misting pump!

WARNING: Do not operate the misting pump without the filter!

CAUTION: If you purchased the oscillator accessory, be sure to install the oscillator before installing the misting system!

PORTABLE BASE MISTING SYSTEM INSTALLATION

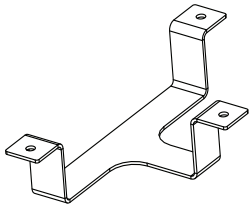
The following instructions are for installing the Yellow Jacket® Misting System on a fan that is mounted to a portable base. Consult the complete Yellow Jacket Installation Guide for all other aspects of fan installation, operation, and safety information.

⚠ CAUTION: If you purchased the oscillator accessory, be sure to install the oscillator before installing the misting system!

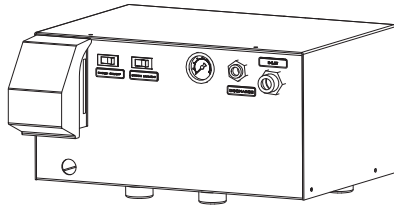
Parts and hardware

The parts and hardware listed below are only for installing the misting system on a Yellow Jacket with a portable base mount. For a list of column mount parts and hardware, see p. 6. For a complete list of fan parts and hardware, see the Yellow Jacket Installation Guide. If you are missing any parts or hardware required for installation, contact Customer Service.

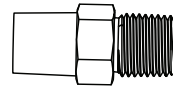
Note: The illustrations below are not to scale.



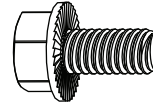
Misting Pump Mounting Bracket



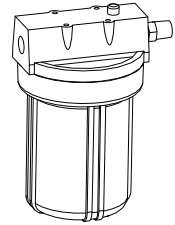
Misting Pump



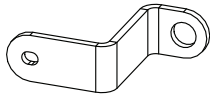
Push-to-Connect Fitting



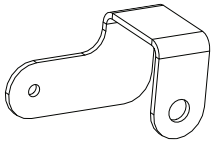
(3) 5/16-18 x 5/8"
Serrated Flange Hex
Head Cap Screw



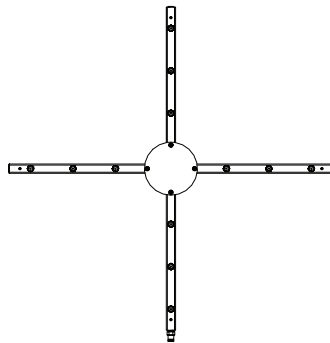
Filter¹



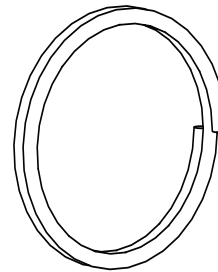
(3) Misting Rail
Bracket



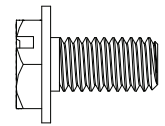
Lower Misting Rail
Bracket



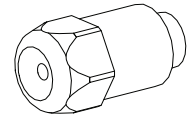
Misting Rail Assembly



High Pressure Hose



(4) 10-32 x 3/8"
Flange Hex Head
Screw



(2) Misting Nozzle²

1. The filter must be installed on the misting pump enclosure. **Do not operate the misting pump without the filter!**
2. Twelve (12) misting nozzles are pre-installed on the misting rail assembly. The two (2) additional provided nozzles are spare parts.

INSTALLING THE MISTING SYSTEM

⚠ CAUTION: At least two (2) installation personnel are required during installation!

⚠ CAUTION: If you purchased the oscillator accessory, be sure to install the oscillator before installing the misting system!

ATTENTION

The misting rail assembly must be installed on the front of the fan. If you are facing the front of the fan, the handle on the fan yoke should be on your right as shown in the following illustrations.

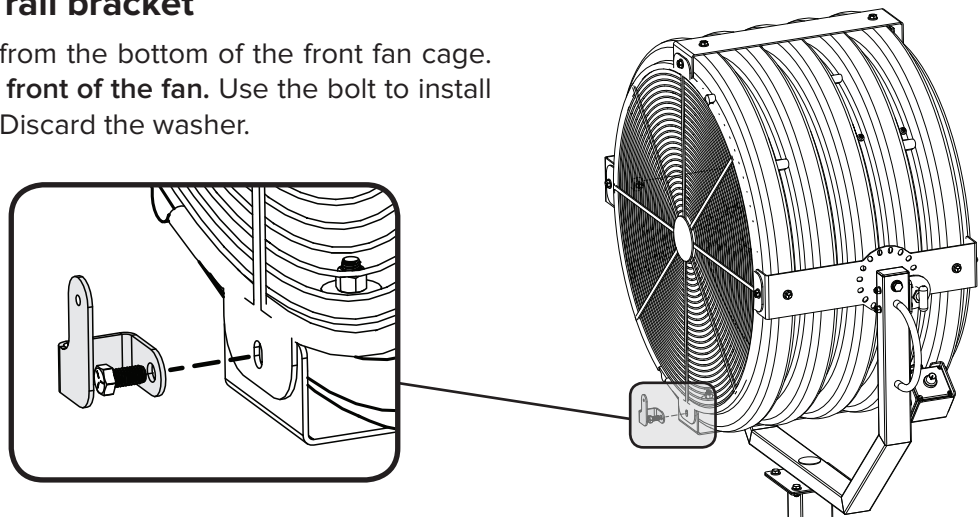
1. Assemble fan

In the complete Yellow Jacket Installation Guide, follow the steps under “Mounting Method: Portable Base” to assemble the portable fan base. Ensure all bolts are secure before proceeding.

Note: The misting system can be installed on a fan mounted to a portable base with one or two pedestals. The following illustrations show one pedestal. The installation procedure is the same for fans with two pedestals.

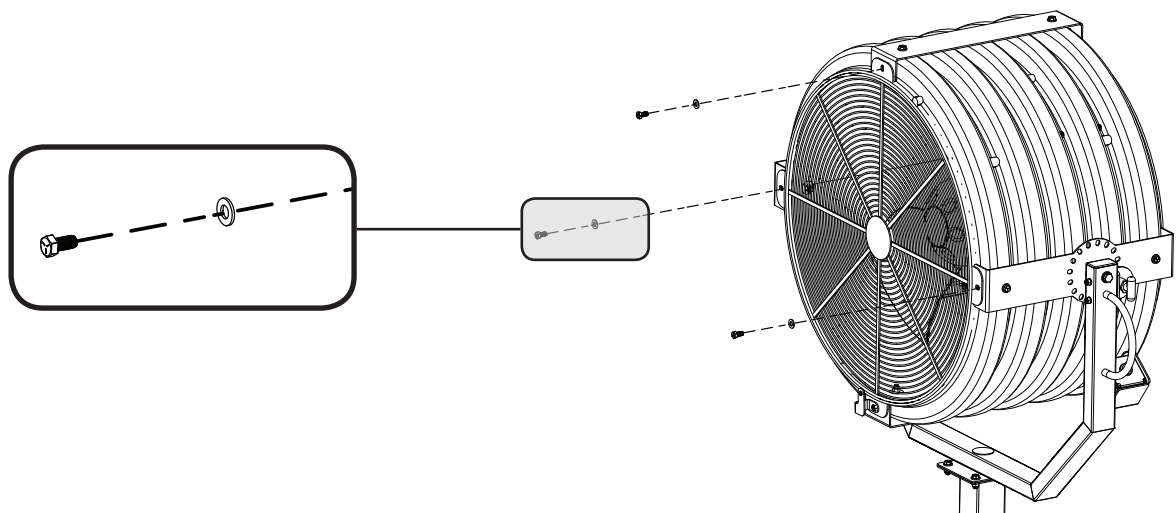
2. Install lower misting rail bracket

Remove the bolt and washer from the bottom of the front fan cage. **Make sure you are facing the front of the fan.** Use the bolt to install the lower misting rail bracket. Discard the washer.



3. Remove bolts and washers (from front fan cage)

Remove the three (3) bolts and three (3) washers from the top and sides of the front fan cage. Set the bolts and washers aside in a safe location. You will use them to install the misting rail assembly.

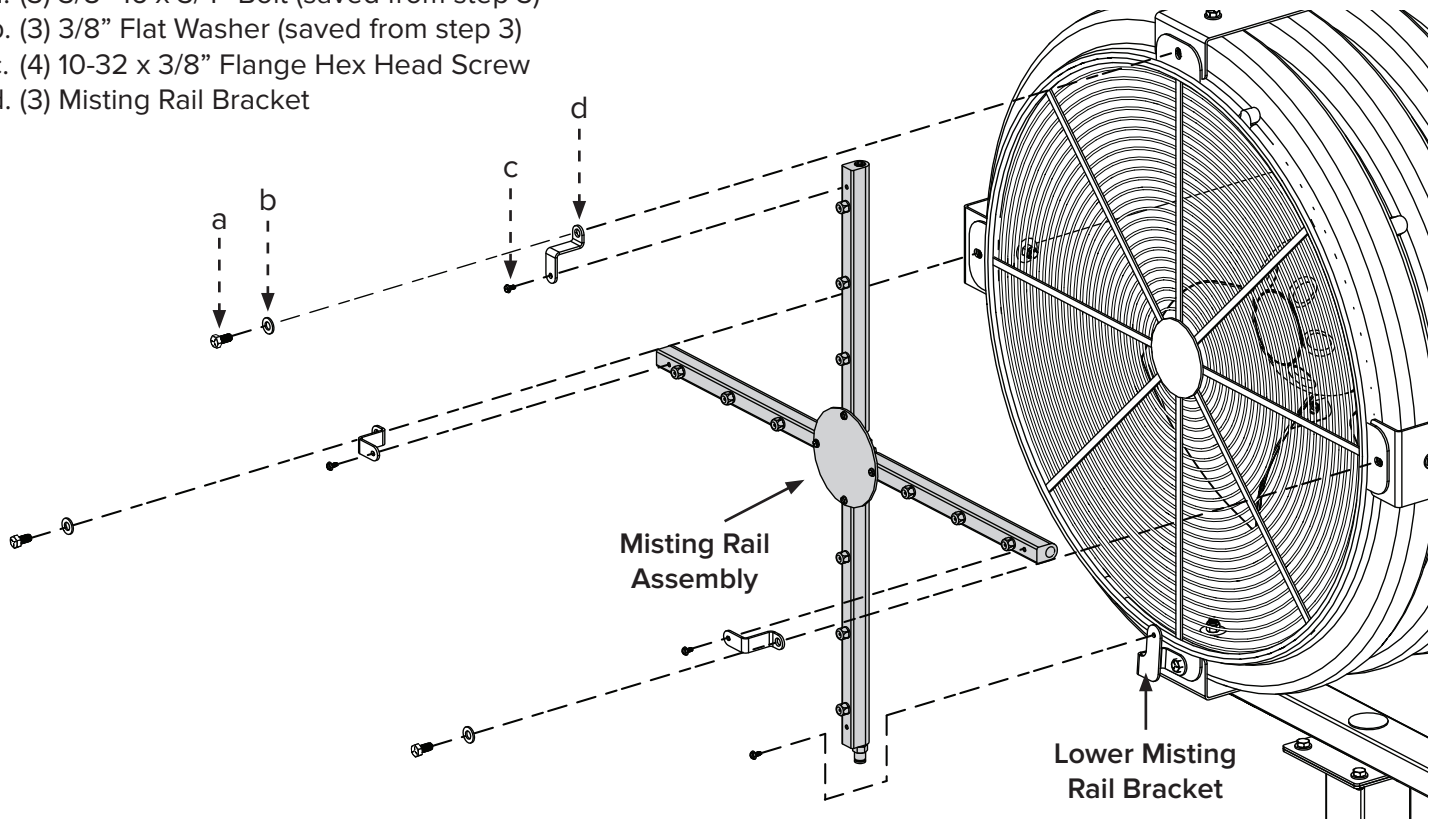


4. Install misting rail assembly

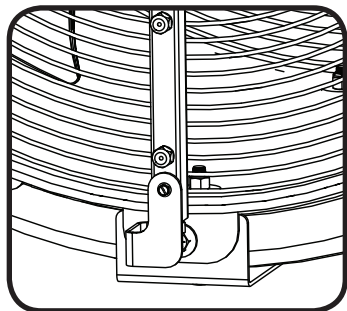
Install the misting rail assembly on the front fan cage as shown. Position the lower misting rail behind the lower misting rail bracket. Refer to the complete view below. *Note: Big Ass Fans recommends applying Loctite® Threadlocker Blue 242® (customer-supplied) to the 10-32 x 3/8" screws (c).*

Misting Rail Assembly Hardware:

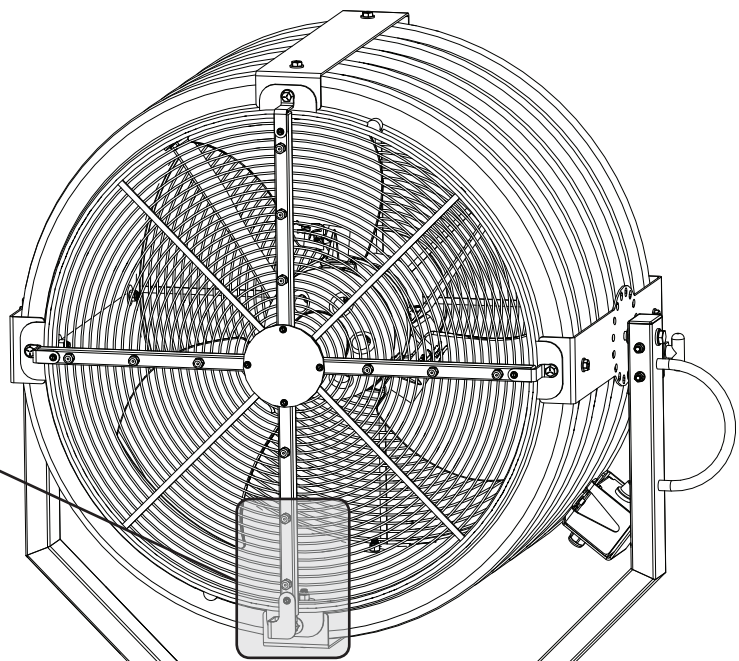
- a. (3) 3/8"-16 x 3/4" Bolt (saved from step 3)
- b. (3) 3/8" Flat Washer (saved from step 3)
- c. (4) 10-32 x 3/8" Flange Hex Head Screw
- d. (3) Misting Rail Bracket



Complete View

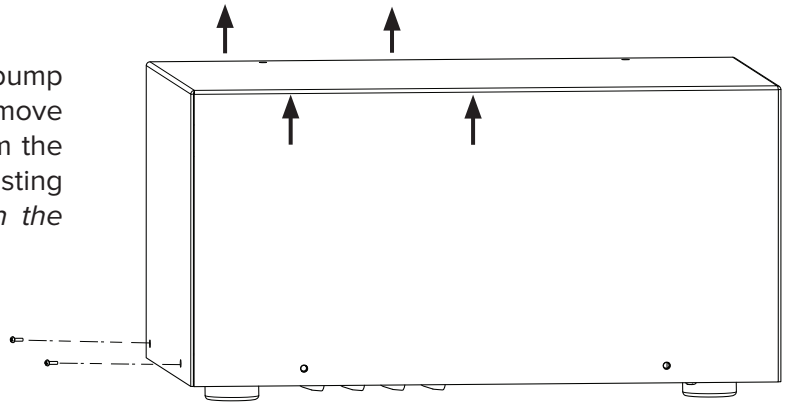


Position the lower misting rail behind the lower misting rail bracket.



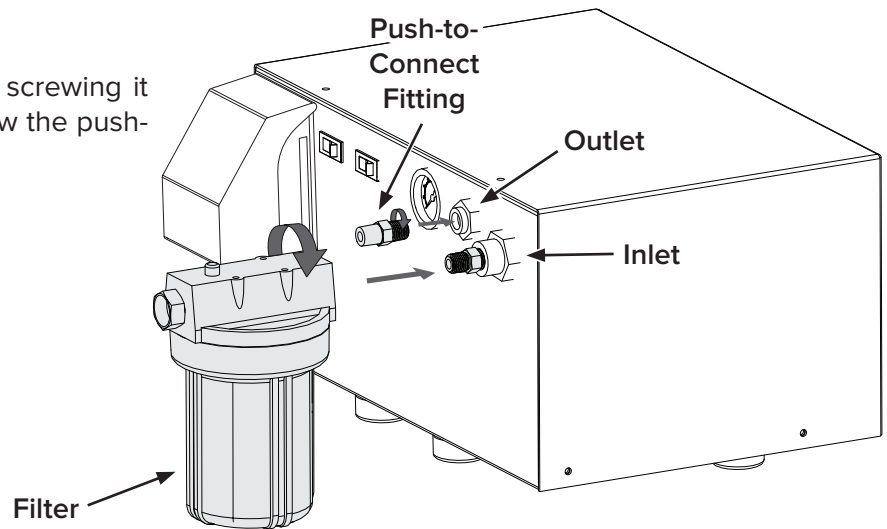
5. Remove oil plug

Remove all screws from the sides of the misting pump enclosure. Lift the enclosure to reveal the motor. Remove the oil plug (item #24 in the diagram on p. 18) from the motor, and then reinstall the enclosure on the misting pump. *Note: Remove only item #24 as shown in the diagram on p. 18.*



6. Install filter

Install the filter on the pump enclosure by screwing it into the inlet. Once the filter is secure, screw the push-to-connect fitting into the outlet.



7. Install misting pump

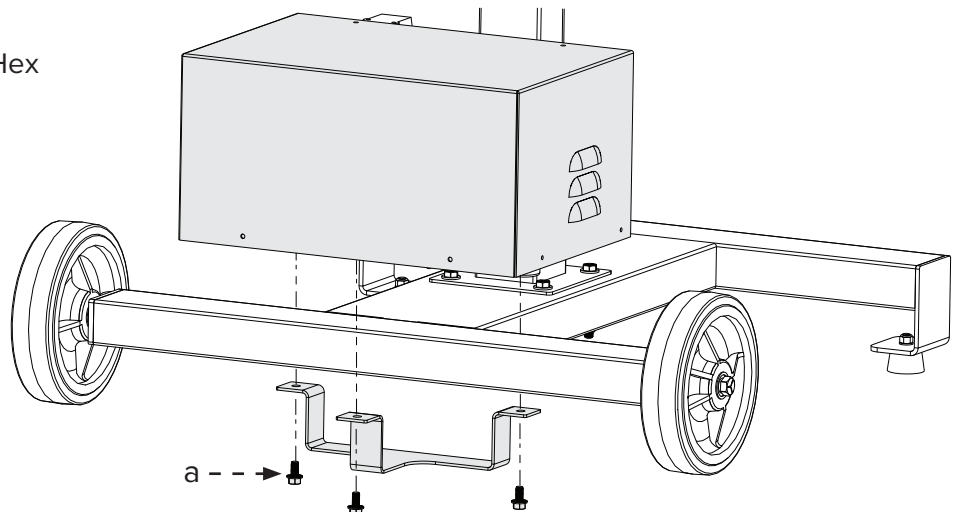
ATTENTION

The misting pump must be installed on the wheel side of the portable base.

Rest the misting pump on the fan base so that the four (4) pump feet line up with the bars of the base. Secure the misting pump mounting bracket to the misting pump with the Pump Hardware as shown.

Pump Hardware:

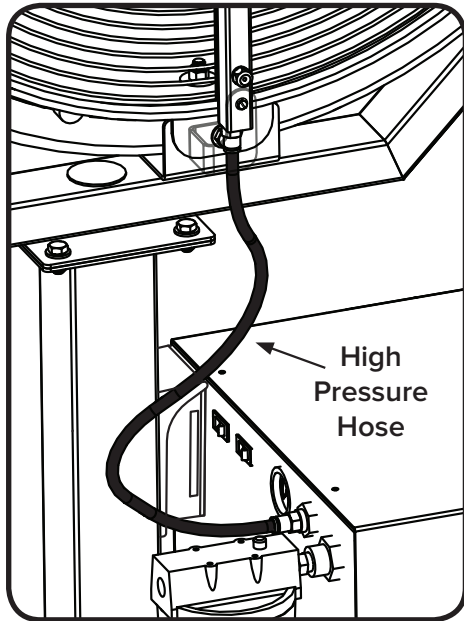
- (3) 5/16-18 x 5/8" Serrated Flange Hex Head Cap Screw



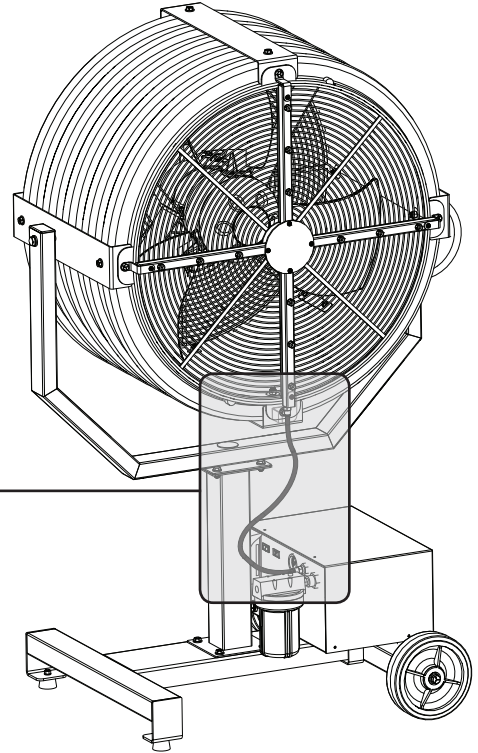
8. Install high pressure hose

Push one end of the high pressure hose into the push-to-connect fitting on the back of the misting pump as shown. Push the hose into the fitting until you feel it snap into place, and then pull back on the hose to secure it.

Push the other end of the hose into the push-to-connect fitting at the bottom of the misting rail assembly. Push the hose into the fitting until you feel it snap into place, and then pull back on the hose to secure it.



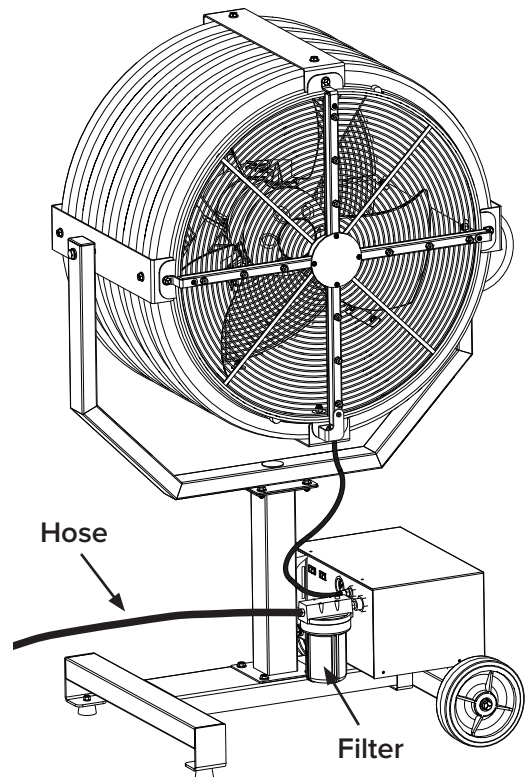
Note: The lower misting rail bracket is transparent in the illustration above to make the end of the high pressure hose visible.



9. Connect water supply

The inlet connector on the misting pump filter accepts a standard garden hose. Screw the hose's male outlet connector to the filter's female inlet connector.

Proceed to "Operating the Misting System" (p. 15).



COLUMN MOUNT MISTING SYSTEM INSTALLATION

The following instructions are for installing the Yellow Jacket® Misting System on a fan that is mounted to a column. Consult the complete Yellow Jacket Installation Guide for all other aspects of fan installation, operation, and safety information. The following instructions are merely a recommendation for mounting the misting system on a column. Consult a structural engineer to determine the best method for mounting the misting system.

⚠ WARNING: The fan and misting pump should not be installed unless the column on which they are to be mounted is of sound construction, undamaged, and capable of supporting the loads of the fan, the misting pump, and their methods of attachment. Verifying the stability of the mounting structure is the sole responsibility of the customer and/or end user, and Big Ass Fans hereby expressly disclaims any liability arising therefrom, or arising from the use of any materials or hardware other than those supplied by Big Ass Fans or otherwise specified in these installation instructions.

⚠ CAUTION: It is your responsibility to comply with all local and national codes and regulations regarding mounting procedures and installation height!

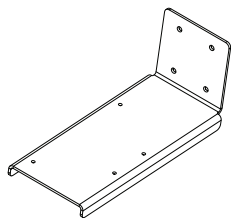
⚠ CAUTION: The misting pump weighs at least 50 lbs (23 kg). Use caution when lifting and installing it.

⚠ CAUTION: If you purchased the oscillator accessory, be sure to install the oscillator before installing the misting system!

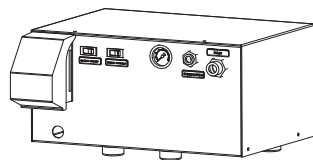
Parts and hardware

The parts and hardware listed below are only for installing the misting system on a Yellow Jacket with a column mount. For a list of portable base mount parts and hardware, see p. 1. For a complete list of fan parts and hardware, see the Yellow Jacket Installation Guide. If you are missing any parts or hardware required for installation, contact Customer Service.

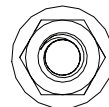
Note: The illustrations below are not to scale.



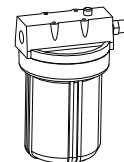
Misting Pump Mounting Bracket



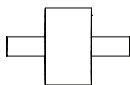
Misting Pump



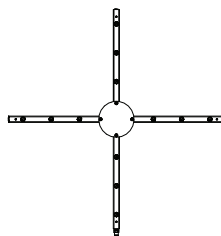
(4) 5/16-18 Nylock Nut



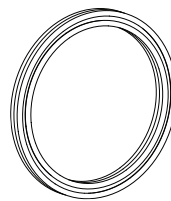
Filter¹



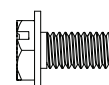
(4) Misting Pump Foot



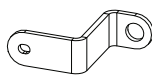
Misting Rail Assembly



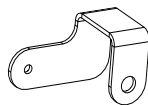
High Pressure Hose



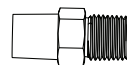
(4) 10-32 x 3/8"
Flange Hex Head Screw



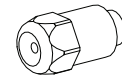
(3) Misting Rail Bracket



Lower Misting Rail Bracket



Push-to-Connect
Fitting



(2) Misting Nozzle²

1. The filter must be installed on the misting pump enclosure. **Do not operate the misting pump without the filter!**

2. Twelve (12) misting nozzles are pre-installed on the misting rail assembly. The two (2) additional provided nozzles are spare parts.

INSTALLING THE MISTING SYSTEM

⚠ CAUTION: At least two (2) installation personnel are required during installation!

⚠ CAUTION: If you purchased the oscillator accessory, be sure to install the oscillator before installing the misting system!

ATTENTION

The misting rail assembly must be installed on the front of the fan. If you are facing the front of the fan, the handle on the fan yoke should be on your right as shown in the following illustrations.

1. Mount fan and complete electrical installation

In the complete Yellow Jacket® Installation Guide, follow the steps under “Mounting Method: Column” to mount the fan, and then complete all necessary steps under “Electrical Installation.” Ensure all bolts are secure before proceeding.

2. Prepare angle irons

Note: All hardware (including angle irons) used to secure the misting pump mounting bracket is customer-supplied. Big Ass Fans cannot provide specific installation details because of the wide variability of mounting surfaces, conditions, and fastening methods. Consult a structural engineer to determine the required hardware.

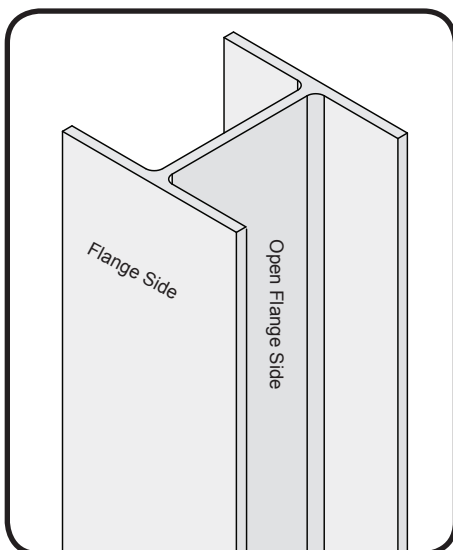
Cut each angle iron to the appropriate length using the width of the column, round or flanged (flange or open flange side), as a reference.

Drill a $\varnothing 9/16$ " hole on each end of the angle iron $3/4$ " (1.9 cm) from the edge of the column. Refer to the table and illustrations below. Repeat the above process on all angle irons.

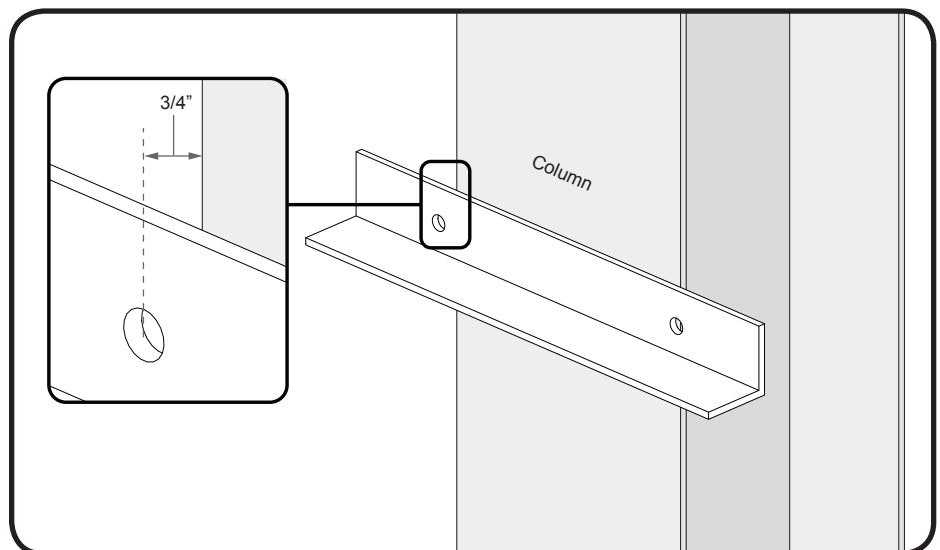
Column mounting application	Minimum angle iron dimensions (W x H x T)	Number of angle irons needed
Flanged Column (Flange Side)*	2.5 x 2.5 x 0.25	4
Flanged Column (Open Flange Side)*	2.5 x 2.5 x 0.25	4
Round Column	2.5 x 2.5 x 0.25	2

*Refer to the diagram below.

Flanged Column Diagram



Angle Iron Diagram



Note: Column and exact installation may differ from the illustrations above.

3. Attach misting pump mounting bracket (to column)

ATTENTION

Consult a structural engineer to determine the required hardware, which should be of sufficient strength and quantity to support the weight of the misting pump and its method of attachment. It is the installer's responsibility to verify the adequacy of the mounting hardware.

- ⚠ **CAUTION:** It is your responsibility to comply with all local and national codes and regulations regarding mounting procedures and installation height!
- ⚠ **CAUTION:** The column on which the misting pump will be mounted must be verified as sufficient to support the weight of the fan and misting system.

Secure the misting pump mounting bracket to the column below the fan with the customer-supplied hardware listed below. Refer to the appropriate illustration on the following page for your column mounting application.

Note: All hardware used to secure the mounting bracket is customer-supplied. Big Ass Fans cannot provide specific installation details because of the wide variability of mounting surfaces, conditions, and fastening methods. Consult a structural engineer to determine the required hardware. The table below provides a general description of the hardware recommended for suggested column mounting applications.

Recommended Mounting Hardware

Column mounting application	Required hardware
Flanged Column (Flange Side)*	(4) 1/2" All-thread (8) Grade 5 1/2" Washer (8) Grade 5 1/2-13 Nylock Nut
Flanged Column (Open Flange Side)*	(4) 1/2" All-thread (16) Grade 5 1/2" Washer (12) Grade 5 1/2-13 Nylock Nut (4) 1/2-13 x 1-1/2" Grade 5 Bolt
Round Column**	(2) U-bolt (4) Washer (4) Nylock Nut

*Refer to the Flanged Column Diagram on the previous page.

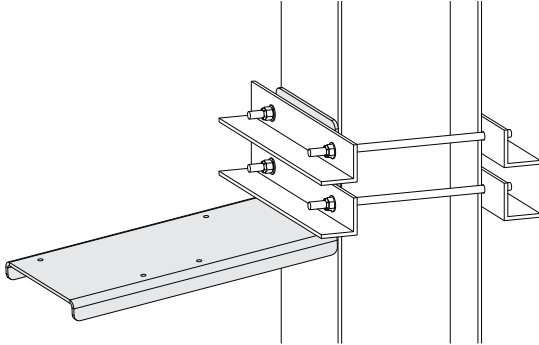
**Hardware sizes for round column applications are the responsibility of the installer.

Tighten the hardware to a torque sufficient to support the weight of the misting pump, being careful not to deform the column. *Note: The torque of the hardware depends on the grade of hardware and the size of the fastener. The torque of the nuts on the U-bolt is the responsibility of the installer, as this will vary by U-bolt size.*

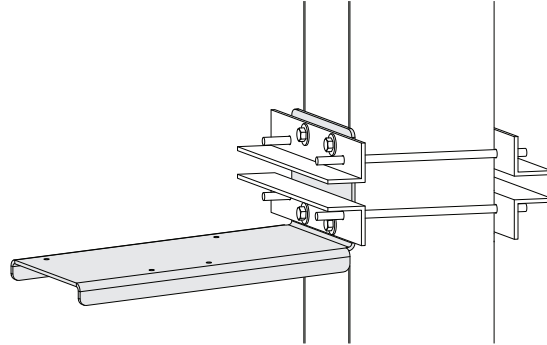
⚠ CAUTION: It is your responsibility to comply with all local and national codes and regulations regarding mounting procedures and installation height!

⚠ CAUTION: The column on which the misting pump will be mounted must be verified as sufficient to support the weight of the fan and misting system.

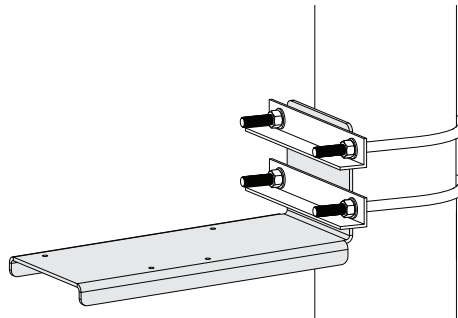
Flange Side Installation



Open Flange Side Installation

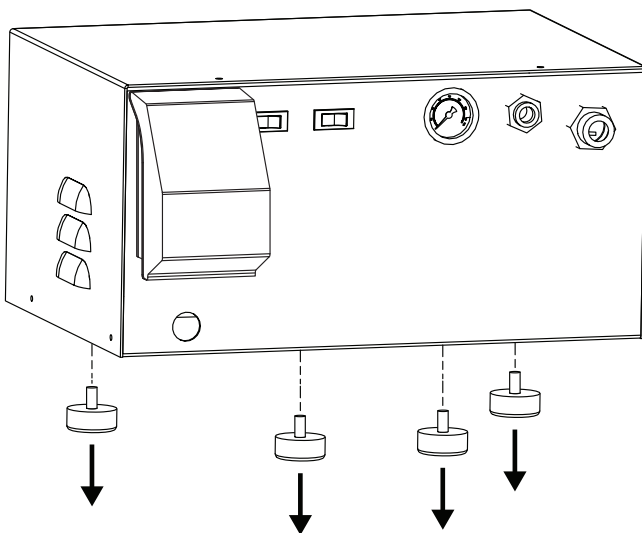


Round Column Installation

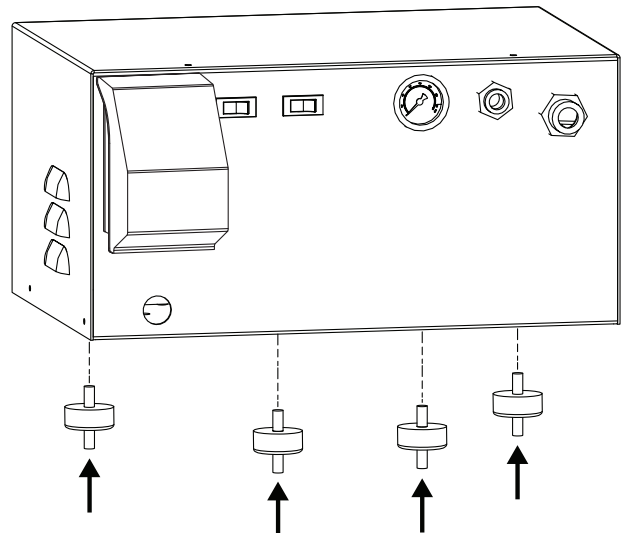


4. Replace misting pump feet

Unscrew and remove the four (4) feet from the underside of the misting pump, and then discard them. Screw the four provided pump feet into the holes where the original feet were attached.



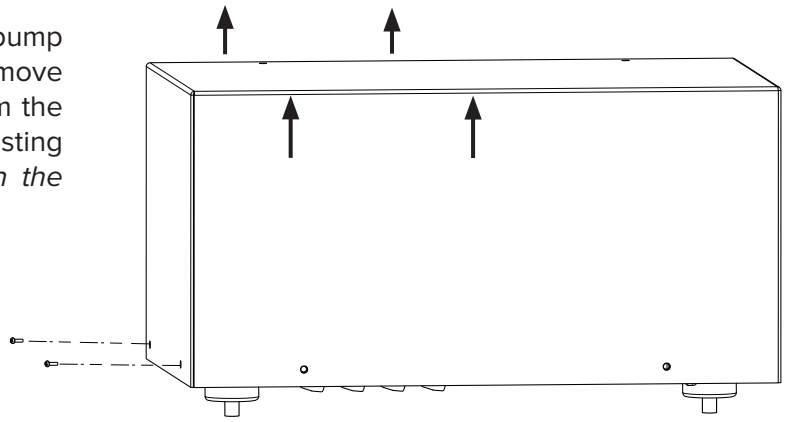
Remove Original Feet



Attach Provided Feet

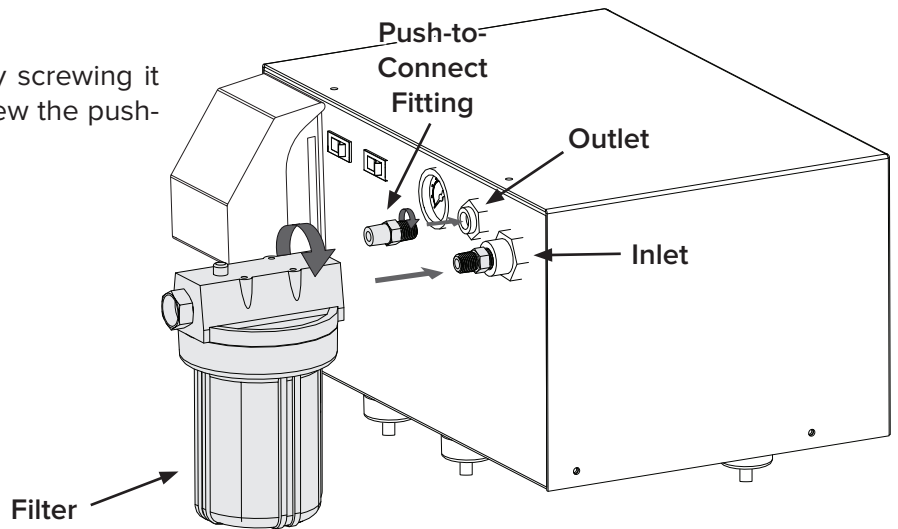
5. Remove oil plug

Remove all screws from the sides of the misting pump enclosure. Lift the enclosure to reveal the motor. Remove the oil plug (item #24 in the diagram on p. 18) from the motor, and then reinstall the enclosure on the misting pump. *Note: Remove only item #24 as shown in the diagram on p. 18.*



6. Install filter

Install the filter on the pump enclosure by screwing it into the inlet. Once the filter is secure, screw the push-to-connect fitting into the outlet.



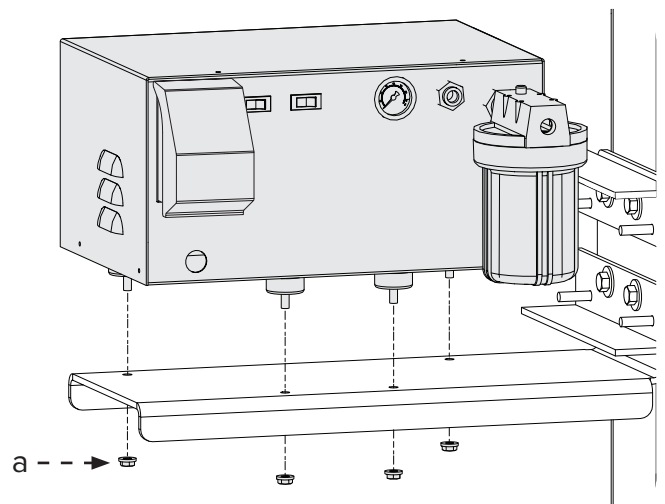
7. Install misting pump

⚠ CAUTION: The misting pump weighs at least 50 lb (23 kg). Use caution when lifting and installing it.

Position the misting pump above the misting pump mounting bracket so that the studs on the four (4) pump feet line up with the four holes in the bracket. Insert the studs into the holes, and then secure the pump feet to the bracket with the Pump Hardware.

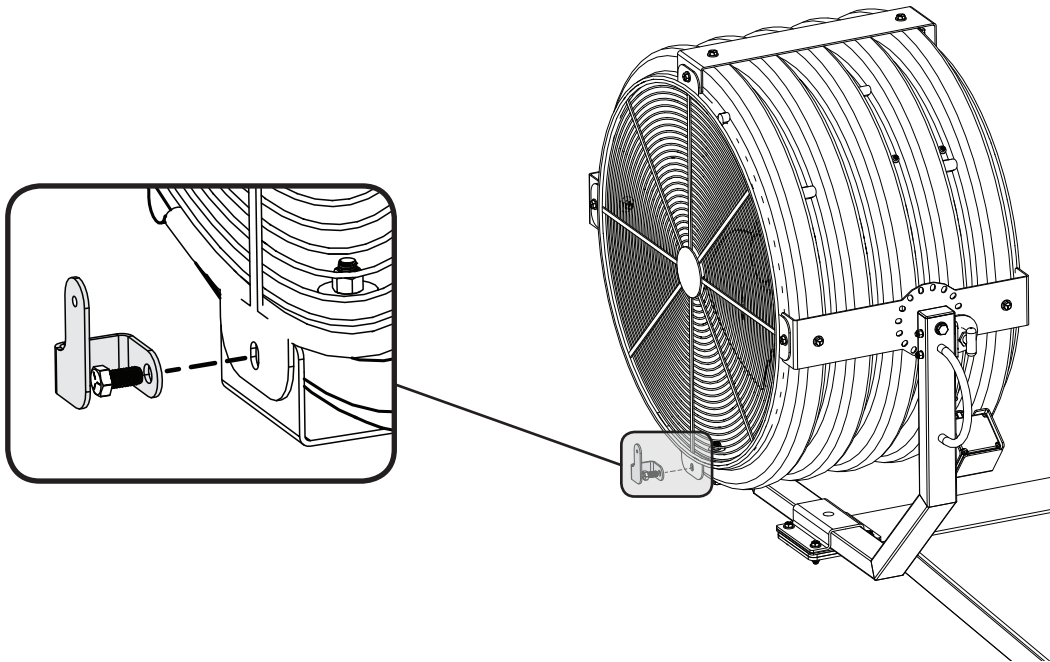
Pump Hardware:

- a. (4) 5/16-18 Nylock Nut



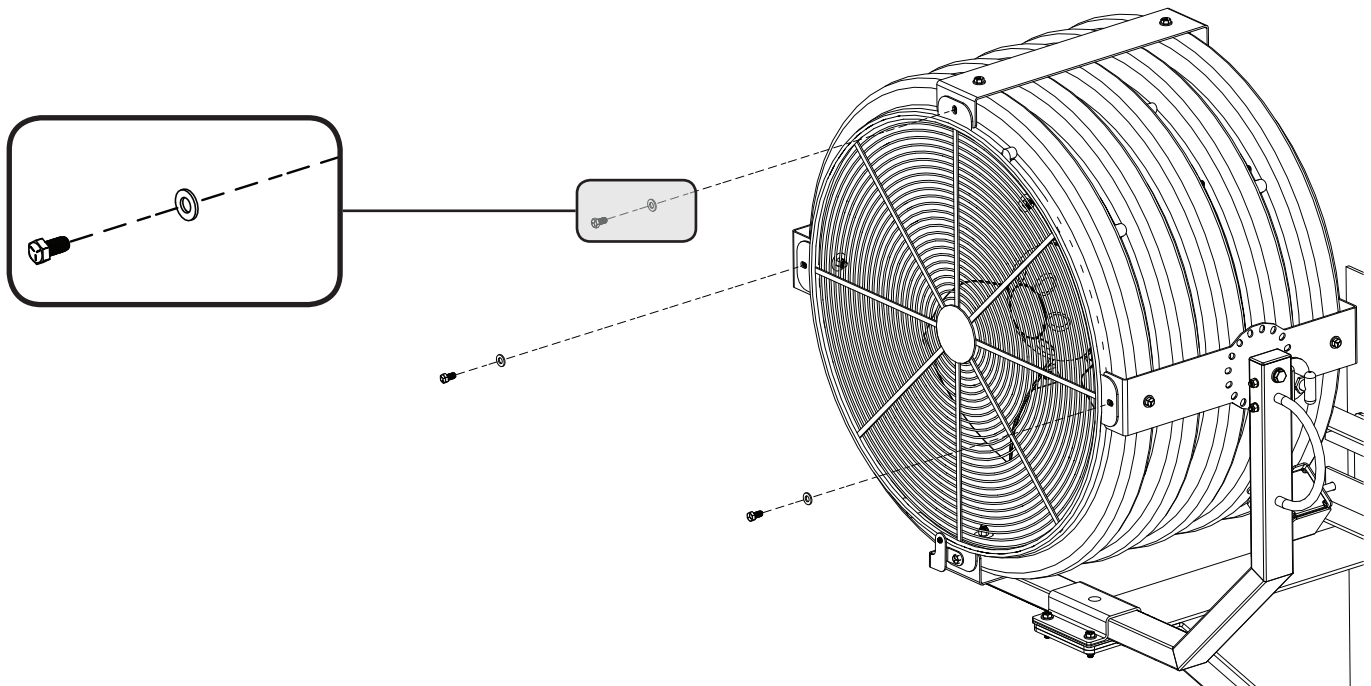
8. Install lower misting rail bracket

Remove the bolt and washer from the bottom of the front fan cage. **Make sure you are facing the front of the fan.** Use the bolt to install the lower misting rail bracket. Discard the washer.



9. Remove bolts and washers (from front fan cage)

Remove the three (3) bolts and three (3) washers from the top and sides of the front fan cage. Set the bolts and washers aside in a safe location. You will use them to install the misting rail assembly.

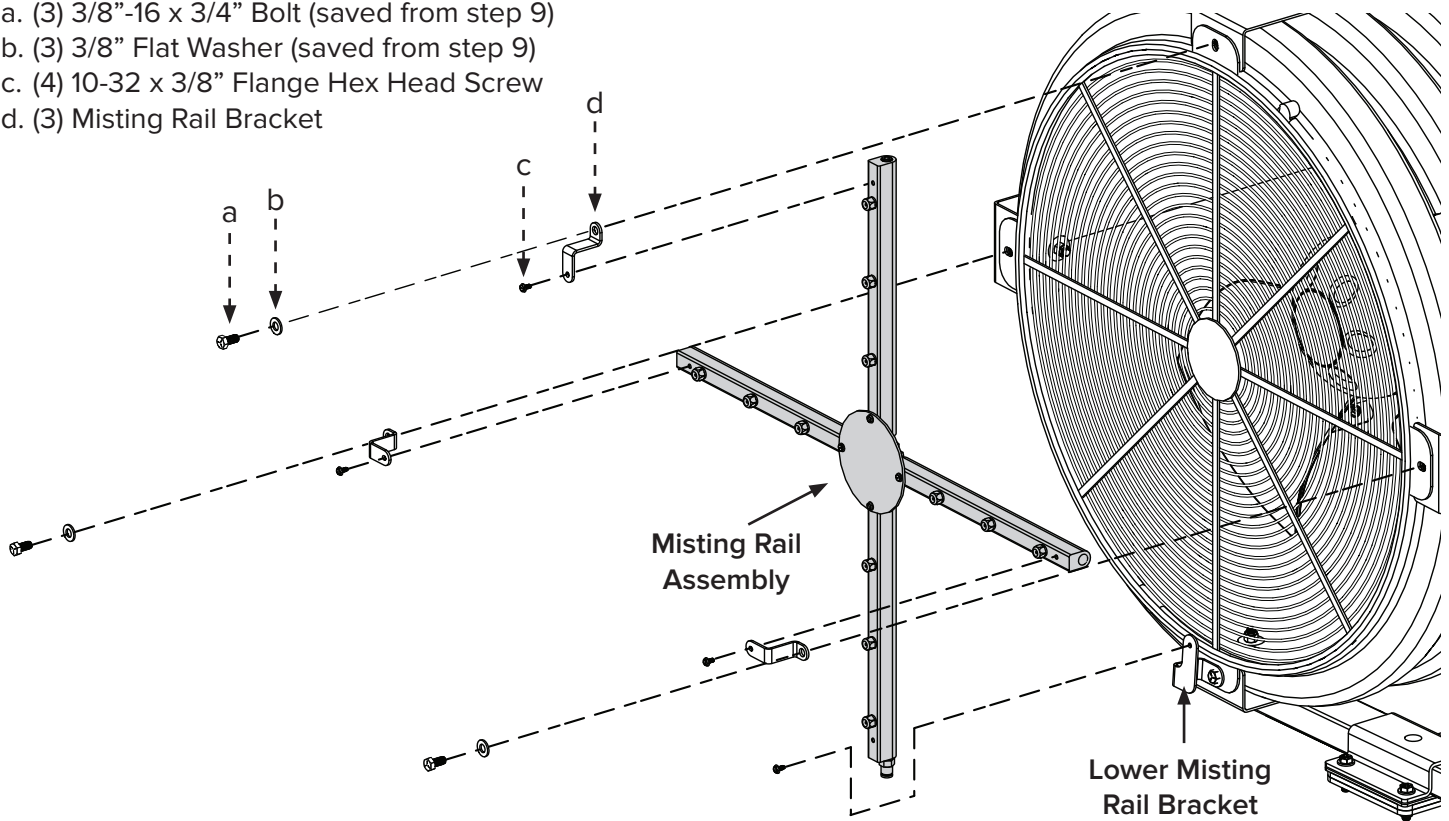


10. Install misting rail assembly

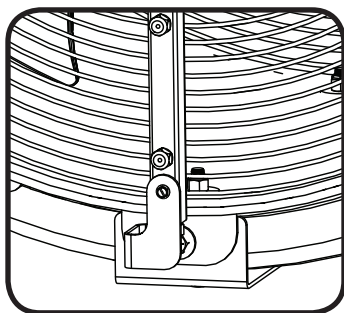
Install the misting rail assembly on the front fan cage as shown. Position the lower misting rail behind the lower misting rail bracket. Refer to the complete view below. *Note: Big Ass Fans recommends applying Loctite® Threadlocker Blue 242® (customer-supplied) to the 10-32 x 3/8" screws (c).*

Misting Rail Assembly Hardware:

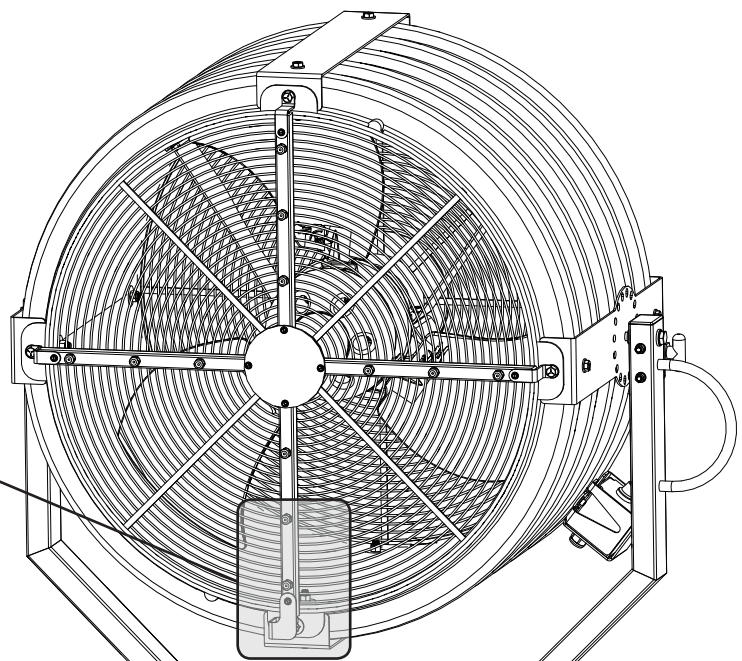
- a. (3) 3/8"-16 x 3/4" Bolt (saved from step 9)
- b. (3) 3/8" Flat Washer (saved from step 9)
- c. (4) 10-32 x 3/8" Flange Hex Head Screw
- d. (3) Misting Rail Bracket



Complete View



Position the lower misting rail behind the lower misting rail bracket.

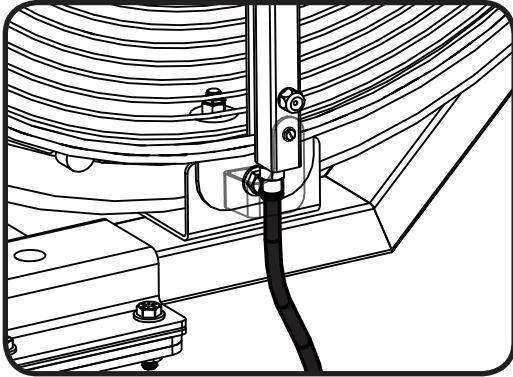


11. Install high pressure hose

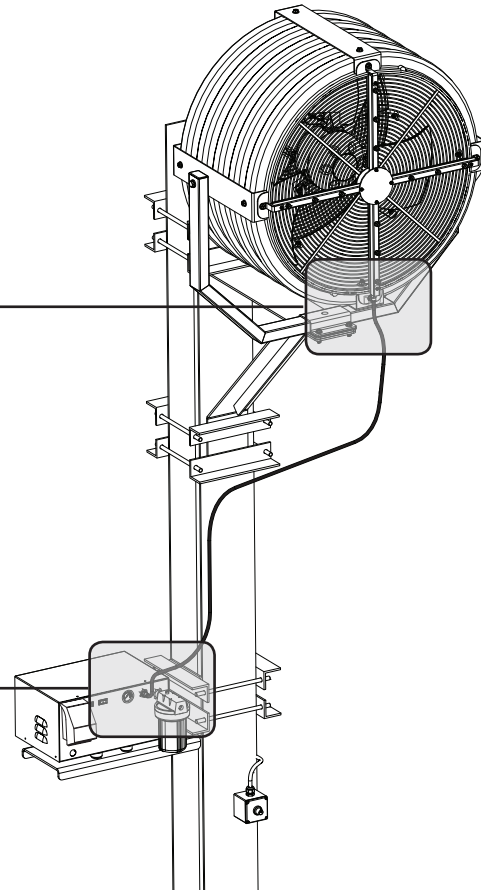
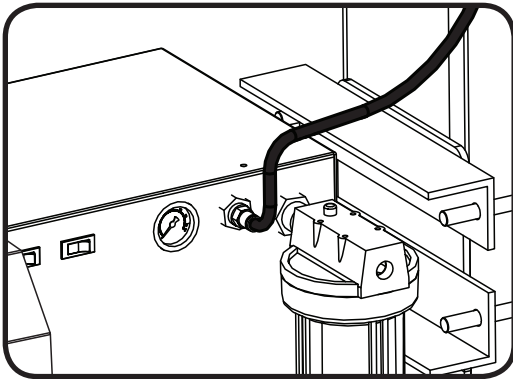
Push one end of the high pressure hose into the push-to-connect fitting on the back of the misting pump as shown. Push the hose into the fitting until you feel it snap into place, and then pull back on the hose to secure it.

Push the other end of the hose into the push-to-connect fitting at the bottom of the misting rail assembly as shown. Push the hose into the fitting until you feel it snap into place, and then pull back on the hose to secure it.

Secure the hose to the column and the fan support bracket with appropriate hardware (customer-supplied). *Note: Column and exact installation may differ from the illustration.*



Note: The lower misting rail bracket is transparent in the illustration above to make the end of the high pressure hose visible.

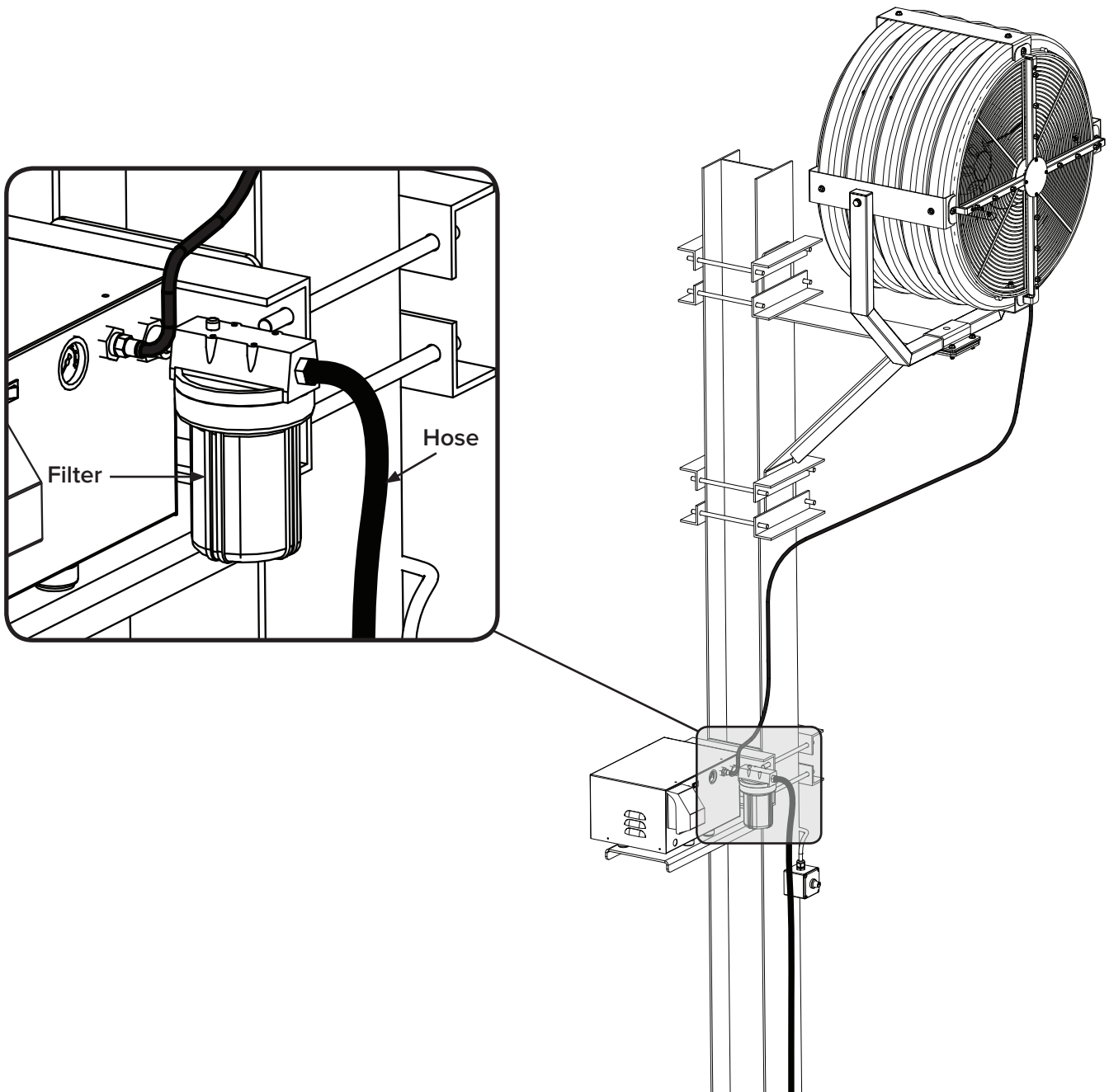


12. Connect water supply

The inlet connector on the misting pump filter accepts a standard garden hose. Screw the hose's male outlet connector to the filter's female inlet connector.

Secure the hose to the column with appropriate hardware (customer-supplied). *Note: Column and exact installation may differ from the illustration below.*

Proceed to "Operating the Misting System" (p. 15).



OPERATING THE MISTING SYSTEM

- ⚠ **CAUTION:** The fan and misting system must operate on a dedicated 15A circuit.
- ⚠ **WARNING:** Remove the oil plug on the motor before operating the misting pump!
- ⚠ **WARNING:** Do not operate the misting pump without the filter!

Starting and stopping

ATTENTION

The inlet water supply pressure must be between 15 and 60 PSI (60 PSI maximum). The inlet water supply temperature must be below 140° F (60° C). Damage to the misting pump can occur if the supply pressure is higher than 60 PSI or if the supply temperature is higher than 140° F (60° C). If your water supply pressure is higher than 60 PSI, you will need to install a pressure regulator.

Refer to the diagram below for identification of the parts of the misting pump.

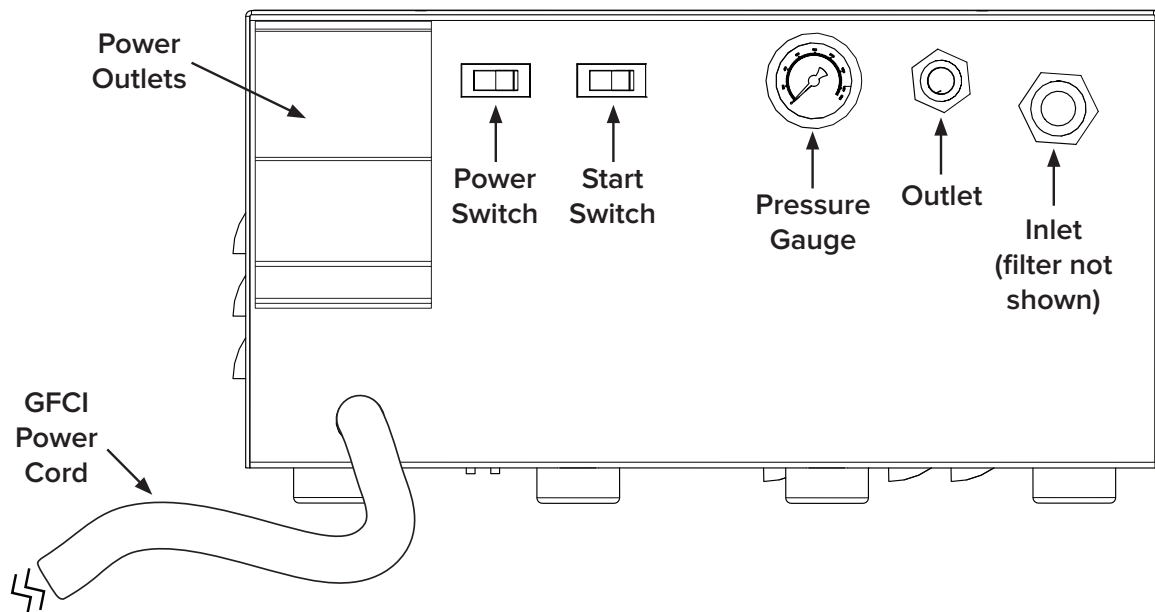
To operate the Yellow Jacket Misting System:

1. Plug the fan's power cord into an outlet on the back of the misting pump. Plug the misting pump's power cord into an outlet (15A circuit).
2. Turn on the fan, and then turn on the water source.
3. Press the red button on the misting pump filter to purge the air out of the filter.
4. Flip the Power switch on the misting pump to the ON position.
5. Press the Start switch on the misting pump. The fan should begin misting.

To stop the misting system and resume normal fan operation, flip the Power switch on the misting pump to the OFF position, and then turn off the water source. *Note: If you restart the misting pump within three minutes of turning it off, the fan will begin misting automatically when you flip the Power switch to the ON position. You do not need to press the Start switch.*

Note: The misting system is most effective when the fan is run at higher speeds in hot, dry weather, allowing the mist to evaporate quickly before settling.

Misting pump diagram



MAINTENANCE

Service schedule

⚠ WARNING: Disconnect the fan and misting pump from power before servicing!

To ensure proper performance of the Yellow Jacket® Misting System, Big Ass Fans suggests performing the following procedures according to the schedules listed. The temperature and quality of the supply water affect the wear on pump parts. *Note: In addition to pump maintenance, perform the fan preventive maintenance procedures listed in the complete Yellow Jacket Installation Guide, which is provided with the fan or can be viewed online at www.bigassfans.com.*

Schedule	Procedure
50 hours of operation	Initial oil change
300 hours of operation	Change the oil. <i>If ISO 68 Crankcase Oil Special Formula Premium Grade is used, change the oil after every 500 hours of use. Contact Customer Service to purchase.</i>
1,500 hours of operation	Change the seals. If system performance decreases, check immediately. If no wear is observed, check again after 2,000 hours of operation.
3,000 hours of operation	Change the relief valve. Service the relief valve at every other seal change and check connections before resuming.
Monthly	Check the oil level.
	Check for oil leaks.
	Check for water leaks.
Annually	Clean the misting nozzles. To prevent clogs caused by mineral deposits, clean the misting nozzles annually using a commercial mineral deposit cleaner such as Orbit® Misting Nozzle Cleaner or Lime-A-Way®. Depending on the mineral content of the water, the nozzles may need to be cleaned more frequently. Check the nozzles regularly for clogs. Observe each nozzle to ensure it is producing an even cone of mist. If any nozzles are spraying irregularly, clean the nozzles. See the following page for cleaning instructions.
Seasonally	Winterize the misting pump seasonally if it will be stored in temperatures at or below freezing (32° F/0° C). To winterize the misting pump: <ol style="list-style-type: none">1. Flush the pump with fresh water.2. Press the relief valve to relieve line pressure. Disconnect the water supply hose from the filter and disconnect the high pressure hose from the fan by unscrewing the push-to-connect fitting from the bottom of the misting rail assembly.3. Flush the system by connecting a short hose to the pump inlet. Place the other end of the hose in a container with half water and half antifreeze.4. Operate the pump until antifreeze runs through the high pressure hose.5. Disconnect power from the pump. Cover and store the pump in an appropriate location. To restart the pump, reconnect the water supply hose and power supply. Turn on the pump for 2–3 minutes and check for leaks.

Draining and storing

If the fan and misting system will be unused or stored for more than one (1) week, Big Ass Fans recommends draining the water out of the system.

To drain the misting system:

1. Disconnect the high pressure hose from the misting pump by unscrewing the push-to-connect fitting from the misting pump outlet.
2. Unscrew the filter from the misting pump inlet.
3. Allow the system to drain completely before storing.

ATTENTION

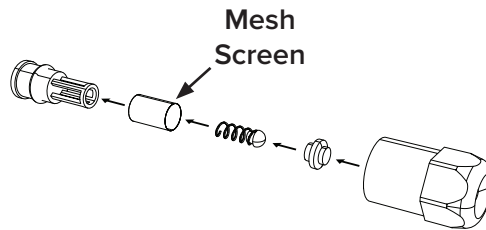
If the misting system has been turned off for more than 24 hours, clear out the system by running it for one (1) minute before using it to cool people. This ensures clean water is flowing through the system before people come into contact with the mist.

Cleaning the misting nozzles

Big Ass Fans recommends cleaning the misting nozzles annually to prevent clogs caused by mineral deposits.

To clean a misting nozzle:

1. Unscrew and remove the nozzle from the misting rail.
2. Disassemble the nozzle as shown below. Clean all parts of the nozzle using a commercial mineral deposit cleaner. Big Ass Fans recommends Orbit® Misting Nozzle Cleaner or Lime-A-Way®. Be sure to clean the nozzle's internal mesh screen. Refer to the illustration below.
3. Reassemble the nozzle as shown below.
4. Apply a commercial thread sealant to the nozzle's threads. The sealant should be approved for 1,000 PSI of water and must work with plastic. Big Ass Fans recommends Loctite® 1537780 No More Leaks™ Plastic Pipe Thread Sealant or Oatey® 31230 Great White® Pipe Joint Compound with PTFE.
5. Screw the nozzle back into the misting rail and tighten to 60 in·lb (6.8 N·m).



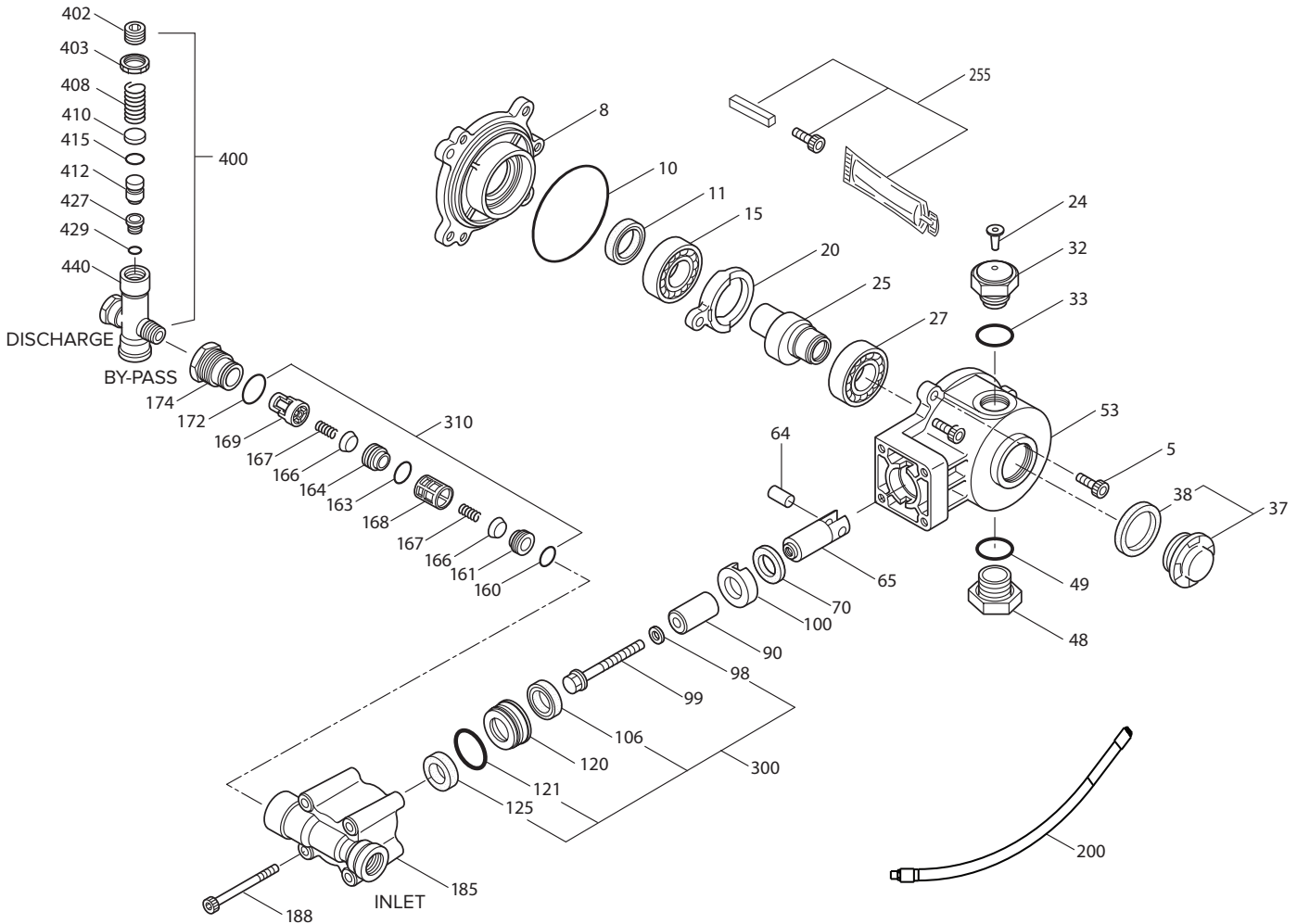
Troubleshooting

⚠ WARNING: Disconnect the fan and misting pump from power before servicing!

For questions about your product or customer service inquiries, please call our toll free number (877-BIG-FANS) or visit www.bigassfans.com/service. Some issues can be resolved before requesting service. Review the troubleshooting tips below before contacting Customer Service for support.

Symptom	Solution(s)
The misting pump stopped working or will not operate. Water pressure or power may not be adequate.	Verify power is applied and is adequate. Check your circuit breaker or fuse for functionality. <i>Note: The fan and misting system require a dedicated 15A circuit.</i> Press and hold the red button on the pump filter until water runs through the system. If water pressure is low or an air bubble occurs, the low pressure switch automatically trips. Ensure the pump's Power switch is in the ON position and power is applied. Check the filter. If it is dirty or clogged, replace it. Contact Customer Service to purchase a replacement filter.
The misting nozzles are not working properly. The nozzles may be clogged or water pressure is inadequate.	Clean the misting nozzles using a commercial mineral deposit cleaner such as Orbit® Misting Nozzle Cleaner or Lime-A-Way®. Big Ass Fans recommends cleaning the nozzles annually to prevent clogs caused by mineral deposits. Depending on the mineral content of the water, the nozzles may need to be cleaned more frequently. See above for cleaning instructions. Check the misting pump's pressure gauge to ensure water pressure is between 800 and 1,000 PSI. If it is less than 800, contact Customer Service.
The water has a bad odor. If the misting system has not been used for a long period of time, water left in the system may produce a bad odor.	Clear out the misting system by running fresh water through it for one (1) minute before resuming normal operation. If the misting system will not be used for a long period of time (more than one (1) week), drain the water out of the system after you are finished using it. See "Draining and Storing" on p. 16 for details.

INTERNAL PUMP PARTS DIAGRAM AND PARTS LIST



#	Description	Qty
5	Screw, Bearing Cover (M6 x 14)	3
8	Cover, Bearing	1
10	O-Ring, Bearing Cover (70D)	1
11	Seal, Oil (70D)	1
15	Bearing, Inner Ball	1
20	Rod, Connecting	1
24	Plug, Oil Cap	1
25	Crankshaft (6.3 mm)	1
	Crankshaft (2 mm)	1
	Crankshaft (3.3 mm)	1
27	Bearing, Outer Ball	1
32	Cap, Oil Filter with O-Ring	1
33	O-Ring, Oil Filler Cap (70D)	1
37	Sight Gauge (80D)	1
38	Gasket, Flat Flex, Oil Gauge (80D)	1
48	Plug, Drain	1
49	O-Ring, Drain Plug (70D)	1
53	Crankcase	1
64	Pin, Crosshead	1

#	Description	Qty
65	Rod, Plunger	1
70	Seal, Oil (70D)	1
90	Plunger (M16 x 27)	1
98	Washer, Seal (90D)	1
99	Retainer, Plunger (M6 x 35)	1
100	Retainer, Seal	1
106	Seal, LPS with S-Spg (85D)	1
120	Case, Seal	1
121	O-Ring, Seal Case (70D)	1
125	Seal, HPS (85D)	1
160	O-Ring, Inlet Seat (70D)	1
161	Seat, Inlet	1
163	O-Ring, Discharge Seat (70D)	1
164	Seat, Discharge	1
166	Valve	2
167	Spring	2
168	Retainer, Inlet Spring	1
169	Retainer, Discharge Spring	1
172	O-Ring, Discharge Fitting (70D)	1

#	Description	Qty
174	Plug, Valve with 1/4" NPTF Port	1
185	Head, Manifold	1
188	Screw, HSH (M6 x 55)	4
200	Hose, Pulse (3/8" x 24")	1
255	Assembly, Bolt Mount	1
300	Kit, Seal (Includes 98, 106, 121, & 125)	1
310	Kit, Valve (Includes 160, 161, 163, 164, 166, 167, 168, 169, & 172)	1
400	Regulator	1
402	Cap, Hex Adjusting	1
403	Nut, Locking	1
408	Spring	1
410	Retainer, Spring	1
412	Stem, Piston	1
415	O-Ring, Piston Stem (70D)	1
427	Seat	1
429	O-Ring, Seat (70D)	1
440	Body	1
468	Kit, O-Ring (Includes 172, 415, & 429)	1

SERVICE PROCEDURES

Perform the following procedures according to the service schedule shown on p. 16.

Changing the oil

 **WARNING: Disconnect the fan and misting pump from power before changing the oil!**

A drain pan and ISO 68 Crankcase Oil Special Formula Premium Grade are required when changing the oil. Refer to the diagram on the previous page for item number identification.

To change the oil on the misting pump:

1. Remove the drain plug (48) on the bottom of the pump. Allow the oil to drain into the drain pan, and then replace the drain plug (48).
2. Remove the oil cap (32) on top of the pump.
3. Pour ISO 68 Crankcase Oil Special Formula Premium Grade oil into the opening until the oil level reaches the red dot on the sight gauge (37).
4. Replace the oil cap (32).

Servicing the regulator

 **WARNING: Disconnect the fan and misting pump from power before servicing the regulator!**

An O-Ring kit, M22 wrench, and an M6 allen wrench are required to service the regulator. Refer to the diagram on the previous page for item number identification.

To disassemble the regulator:

5. Disconnect the discharge and bypass hoses from the pressure regulator (400).
6. Loosen the hex valve plug (174) with an M22 wrench, and then remove the pressure regulator (400) from the manifold head (185). *Note: Do not separate the pressure regulator from the hex valve plug.*
7. Remove the black adjusting cap (402) with an M6 allen wrench by turning it counterclockwise.
8. Remove the exposed coil spring (408) and flat spring retainer (410).
9. Carefully remove the piston stem (412) and o-ring (415).
10. Remove the seat (427) and o-ring (429).

To inspect and reassemble the regulator:

1. Examine the seat (427) and o-ring (429) for pitting or wear. Replace if damaged.
2. Lubricate and install the o-ring (429) on the seat (427), and then press the seat into the regulator chamber with the small diameter down until it is squarely seated.
3. Examine the piston stem (412) and o-ring (415) for grooves, pitting, or wear. Replace if damaged.
4. Lubricate and install the o-ring (415) on the piston stem (412), and then lower the piston stem into the regulator chamber with the tapered end facing downward.
5. Examine the flat spring retainer (410) and coil spring (408) for fatigue or breaks. Replace if damaged.
6. Place the flat spring retainer (410) and spring (408) on top of the piston stem (412).
7. Hold the locking nut (403) on top of the spring (408), and then thread the black adjusting cap (402) into the locking nut (403).
8. Reconnect the bypass and discharge lines to the regulator (400).

Servicing the plunger

⚠ WARNING: Disconnect the fan and misting pump from power before servicing the plunger!

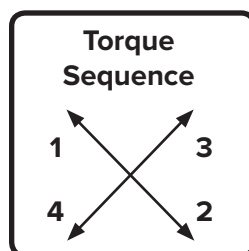
An M10 hex tool and Loctite® Threadlocker Blue 242® are required to service the plunger. Refer to the parts diagram on p. 18 for item number identification.

To disassemble the plunger:

1. Remove the four hex socket head screws (188) from the manifold head (185).
2. Support the manifold head from the underside, and pull the manifold head away from the crankcase (53).
3. Set aside the manifold head (185) with the crankcase side up.
4. Remove the seal retainer (100) from the plunger rod (65).
5. Loosen the plunger retainer (99) on the plunger rod (65) approximately three to four turns with an M10 hex tool.
6. Push the ceramic plunger (90) toward the crankcase (53) to separate it from the plunger retainer (99). Unthread the plunger retainer (99) by hand.
7. Remove the ceramic plunger (90) and seal washer (98) from the plunger retainer (99).

To inspect and reassemble the plunger:

1. Inspect the crankcase oil seal (70) for deterioration or leaks. If damaged, contact Big Ass Fans Customer Service for a replacement, and refer to “Servicing the Crankcase.”
2. Examine the seal washer (98) and the plunger retainer (99) for damage. Replace if damaged.
3. Install the seal washer (98) on the plunger retainer (99).
4. Examine the ceramic plunger (90) for scoring, scale buildup, chips, or cracks. Replace if damaged. *Note: The ceramic plunger does not need to be replaced with every seal servicing.*
5. Slide the plunger retainer (99) with the seal washer (98) into the flat end of the ceramic plunger (90).
6. Apply Loctite® Threadlocker Blue 242® to the exposed, threaded end of the plunger retainer (99).
7. Install the ceramic plunger (90) with the plunger retainer (99) and seal washer (98) on the plunger rod (65) shoulder. Torque to 4.6 ft·lb (6.2 N·m). *Note: The ceramic plunger can only be installed in one direction. The counterbore end of the ceramic plunger fits over the plunger rod shoulder.*
8. Press the Lo-Pressure seal (106) into the seal case (120) with the garter spring down.
9. Examine the ceramic plunger (90) for cracks or scale buildup. Replace if damaged.
10. Slide the seal retainer (100) over the ceramic plunger (90) with the drain slots facing the crankcase (53) and the openings upwards and downwards.
11. Lightly lubricate the ceramic plunger (90). Carefully slide the manifold head (185) over the ceramic plunger, supporting it from the underside to avoid damage. Press the manifold head until it is flush with the crankcase (53).
12. Thread the four hex socket head screws (188) into the manifold head. Torque the screws to 5.2 ft·lb (7 N·m) in the sequence shown below.



Servicing the crankcase

⚠ WARNING: Disconnect the fan and misting pump from power before servicing the crankcase!

An M10 hex tool and Loctite® 242® are required to service the crankcase. Refer to the parts diagram on p. 18 for item number identification.

To service the crankcase:

1. Remove the manifold head (185), plunger (65), and retainer (99). See “Servicing the Plunger” for disassembly instructions.
2. Examine the crankcase oil seal (70) for leaking or damage.
3. Check for signs of leaking around the bearing cover (8), drain plug (48), and sight gauge (37).
4. Check the oil level and for evidence of water in the oil. Ensure the oil is changed regularly. See the service schedule on p. 16.
5. Examine the crankshaft oil seal (11) for drying, cracking, or leaking. If damaged or leaking, contact Big Ass Fans.

Servicing the inlet/discharge valve

⚠ WARNING: Disconnect the fan and misting pump from power before servicing the valve!

An M22 wrench and M8 screw are needed to service the valve. Refer to the parts diagram on p. 18 for item number identification. *Note: The inlet valve seat, o-ring, and inlet spring retainer are different than the discharge valve seat, o-ring, and discharge spring retainer.*

To disassemble the valve:

6. Disconnect the discharge and bypass lines from the pressure regulator (400).
7. Loosen the hex valve plug (174) with an M22 wrench, and then remove the regulator (400) from the manifold head (185). *Note: The pressure regulator does not need to be separated from the hex valve plug.*
8. Remove the stacked valve assembly (310) from the valve chamber.
9. To separate the valve assemblies, thread an M8 screw into the bottom of the seat (161) until the screw contacts the bottom of the valve (166).
If the discharge valve assembly separates from the inlet valve assembly during removal, use pliers to remove the inlet valve assembly from the valve chamber.
If the inlet spring retainer (168) separates from the inlet seat (161), remove the spring (167) and valve (166) from the valve chamber. Thread an M8 screw into the inlet seat (161) and remove it from the valve chamber.
10. Remove the o-rings (172, 163) from the seats (161, 164) and valve plug (174).

To inspect and reassemble the valve assembly:

1. Reassembly can be done using a new, pre-assembled valve assembly (A) or using parts (B).
 - A. Press the pre-assembled valve assembly (310) into the valve chamber until fully seated. Skip to step 10.
 - B. If reassembling using individual parts, proceed to step 2.
2. Examine the springs (167) for fatigue or breaks. Replace if damaged.
3. Examine the valve (166) and seats (161, 164) for grooves, pitting, or wear. Replace if damaged.
4. Examine the valve plug (174) and o-ring (172) for cuts or wear. Replace if damaged.
5. Lubricate and install the o-ring (163) on the outside diameter of the discharge seat (164). Set aside the discharge seat with the small diameter facing downward.
6. Place the valve (166) on the discharge seat (164) with the concave side down, and then place the spring (167) on the valve.
7. Place the discharge spring retainer (169) over the spring (167) and snap it to the discharge seat (164).
8. Assemble the inlet valve assembly in the order as above, and then snap the discharge valve assembly on the inlet valve assembly. Press the entire assembly into the valve chamber until seated.
9. Lubricate and install the discharge fitting o-ring (172) on the valve plug (174).
10. Thread the valve plug (174) into the regulator (400). Torque to 25.8 ft·lbs (35 N·m).

Servicing the seal kit

⚠ WARNING: Disconnect the fan and misting pump from power before servicing the seal kit!

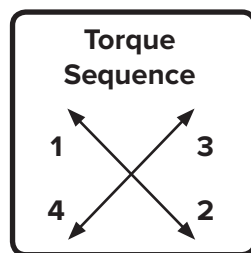
An M5 allen wrench and a new seal kit are required to service the seal kit. Contact Big Ass Fans Customer Service for a replacement seal kit. Refer to the parts diagram on p. 18 for item number identification.

To disassemble the seal kit:

1. Remove the four hex socket head screws (188) from the manifold head (185).
2. Support the manifold head from the underside, and pull the manifold head away from the crankcase (53).
3. Set aside the manifold head (185) with the crankcase side up.
4. Remove the seal retainer (100) from the plunger rod (65).
5. Pry out the Lo-Pressure seal (106) from the seal case (120).
6. Remove the seal case (120) from the seal chamber with pliers.
7. Carefully roll the o-ring (121) off of the seal case (120).
8. Remove the Hi-Pressure seal (125).

To inspect and reassemble the seal kit:

1. Examine the manifold chamber walls (185) for scale buildup or damage.
2. Examine the Hi-Pressure seal (125) for frayed edges or uneven wear. Replace if damaged.
3. Examine the seal case o-ring (121) for cuts or deterioration. Replaced if damaged.
4. Examine the Lo-Pressure seal (106) for wear on the internal ridges and broken springs on the outer surfaces. Replace if damaged.
5. Examine the seal retainer (100) for deformities. Replace if damaged.
6. Lubricate and press the Hi-Pressure seal (125) into the seal chamber with the grooved side facing downward.
7. Lubricate and install the o-ring (121) on the seal case (120).
8. Press the Lo-Pressure seal (106) into the seal case (120) with the garter spring facing downward.
9. Examine the ceramic plunger (90) for cracks or scale buildup. If damaged, see “Servicing the Plunger.”
10. Slide the seal retainer (100) over the ceramic plunger (90) with the drain slots facing the crankcase (53) and the openings upwards and downwards.
11. Lightly lubricate the ceramic plunger (90). Carefully slide the manifold head (185) over the ceramic plunger, supporting it from the underside to avoid damage. Press the manifold head until it is flush with the crankcase (53).
12. Thread the four hex socket head screws (188) into the manifold head. Torque the screws to 5.2 ft·lb (7 N·m) in the sequence shown below.





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