



Range Boss

INSTALLATION AND OPERATION MANUAL

Range Boss

Includes Installation, Operation, and Service Instructions



CAUTION

Read complete instructions before operating.
Please file for future reference.

MODEL Range Boss SPECIFICATIONS

Input volts: 120/208-230/460/575v, 60Hz

Max current: 20 Amps (at 120V, 1 ½ HP, single phase)
 5.2 Amps (at 208-230V, 1 ½ HP, 3 phase)
 2.6 Amps (at 460V, 1 ½ HP, 3 phase)
 6.8 Amps (at 208-230V 2 HP, 3 phase)
 3.4 Amps (at 460V, 2 HP,3 phase)
 8.4 Amps (at 230V, 3 HP, 3 phase)
 4.2 Amps (at 460V,3 HP, 3 phase)
 3.9 Amps (at 575V, 3 HP,3 phase)

Motor: 1 ½ HP TEFC
 2 HP TEFC
 3 HP TEFC

Dimensions: 26" h X 26"w X 69"l

Shipping Wt: 300lbs

Actual Wt: 268lb*
 * Add 35lbs. per charcoal module as option

PACKAGE CONTENTS

- 1 Ea Range Boss Unit
- 1 Ea. Owners Manual
- 4 Ea. 5/16" X 18" Eye Bolt
- 4 Ea. 5/16" Hex Nut

PRE-OPERATING INSTRUCTIONS

1. After removing the cardboard packing and plastic wrap from the unit, lay the unit down in a horizontal position.
2. Unbolt the skid from the unit. Discard skid and hardware.

HANGING INSTRUCTIONS

1. Remove the hanger kit from the owners Manual envelope which contains four (4) threaded eyebolts and hex nuts.
2. Thread a nut onto each eyebolt and thread an eyebolt into each of the four (4) threaded holes in the cabinet. Tighten nuts against the cabinet. The unit is now ready to be hung in an appropriate location.

NOTE: If hanging Range Boss upside down is required, remove the four (4) 5/16" hex bolts from the bottom of cabinet and relocate to top four corners. Then place the four (4) eye bolts into bottom panel of cabinet.

2. Once eye bolts are secured, the Range Boss is ready to be hung in an appropriate location. (See FIG. 1)

CAUTION: Use strong braided wire or chain to support the aircleaner. Hang from structural supports.

NOTE: If a unit is to be installed on brackets against a wall, use brackets strong enough to hold the unit. Install brackets securely into the wall.

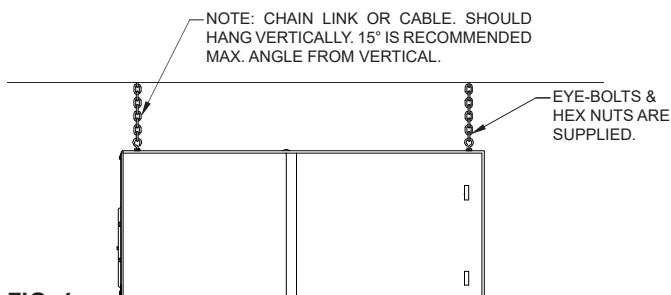


FIG. 1

ELECTRICAL CONNECTIONS

1. Conduit electrical connections should be made by a qualified electrician, and must comply with local electrical codes.

CAUTION: Be sure that the designated circuit breaker is off until all wiring has been completed.

NOTE: It is recommended that a properly sized motor starter / protector be used in the supply circuit for 208-240V/460V/575V units. 120V units have thermally protected motors with on/off switches.

2. Make electrical connections as shown in wiring diagram to the wires protruding from the conduit on the side of the unit.
3. Check blower for proper rotation direction. Blower should rotate clockwise when viewed from the pulley end. If the blower rotates backwards, interchange two of the motor supply connections.
4. Check current draw of motor. Do not exceed Amps specified.

PRE-OPERATION CHECKLIST

Before placing unit in service, check the following items:

- Check blower drive belt for proper tension. (Belt should deflect approximately ¾" when firm pressure is applied midway between the pulleys.)
- Check that motor, blower, and drive pulleys are mounted securely.
- Make sure that both corners of every pocket in the filter bag is supported by the filter support rods and that filter support rods are fully engaged in their support brackets.
- Air flow direction arrows on the pre-filters must point toward the blower.
- Make sure that all access panels, removed during installation, are replaced and the filter access door is closed.

Unit is now ready to be placed in service.

AIR FLOW ADJUSTMENT

The Range Boss equipped with variable diameter pulleys on the motor and blower to allow the air flow to be adjusted to the installation requirements. The pulleys are set for maximum air flow at the factory. The air flow rate can be reduced as follows:

1. Remove motor compartment access cover. Be careful to avoid tearing gasket material between door and cabinet.
2. Remove belt.
3. Loosen pulley adjustment set screw on motor pulley and screw adjustable shive out away from fixed shive. Tighten set screw onto flat of fixed screw (See FIG. 2).

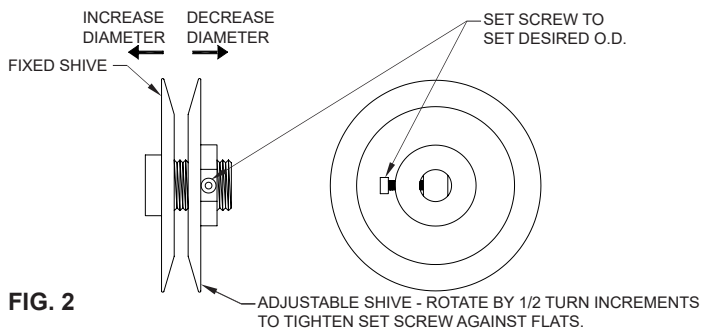


FIG. 2

- Adjusting the motor pulley may require a size larger or smaller belt, depending on the application.
- Replace belt and check belt tension. Proper tension should be between $\frac{1}{2}$ " and $\frac{3}{4}$ " deflection when belt is squeezed with normal pressure between fingers.
- Replace motor compartment access cover. Recheck for correct current draw of motor.

CHANGING FILTERS

⚠ CAUTION: Always make sure that the unit is turned off before changing filters or servicing the unit.

- The **Range Boss** equipped with a filter change light or optional Magnehelic Gauge. If the differential pressure has been set properly, the light or gauge signals the need for examination of the filters.
- When the light comes on, or gauge reads high differential pressure, turn the unit off and remove the **pre-filter only**. Replace with a new pre-filter, making sure that the air flow directional arrow is pointed toward the outlet end. Turn the unit back on. If the filter change light is off, or gauge reads low differential pressure, then the unit is operating properly.
- If the filter change light fails to go out, or the gauge continues to read high differential pressure after replacing the pre-filter, then the media filter also needs to be replaced.
- To install a new bag filter, turn the unit off. Remove the filter from the channel and insert a new filter.
- Start the unit. The filter change light should be off, or gauge reads low differential pressure and the unit operating properly.

INSTRUCTIONS FOR SIDE DISCHARGE BLOWER EXHAUST ON Range Boss

⚠ CAUTION: Read instructions completely before making changes.

- The **Range Boss** motor/blower module can be rotated so that exhaust air exits from the side of the unit. Before rotating motor/blower module be sure that all input power is disconnected and unit is turned off.
- Remove motor access door and exhaust grille.

NOTE: Care is required when removing the panel to protect the blower outlet gasket.

- Remove $\frac{15}{16}$ " hex bolts and washers that secure motor/blower module to filter module.
- Rotate motor/blower module 90° as shown in **FIG. 3**.

- Using $\frac{15}{16}$ " hex bolts and washers re-secure motor/blower module with filter module.

⚠ CAUTION: Due to relocation of internal components, some wiring may be loose. Be sure to retain wires so they will not become loose in air stream of blower inlet.

- Reinstall motor access door and exhaust grille.

NOTE: Care is required to protect blower outlet gasket.

- Reconnect input power and turn unit on. Check for proper air flow and blower rotations

PRESSURE SWITCH ADJUSTMENT INSTRUCTIONS

- The pressure switch which turns the light on with a differential pressure increase, should be wired to poles L1 (red) and L2 (blue) at the time of installation with 208/230/460 volt source. **(See Wiring Diagram.)**
- The pressure switch is preset at the factory to indicate (light on) dirty filters, but may need readjustment due to a desire for earlier or later filter changes, a different combination of filters, or because the set point shifted during shipping. The pressure switch is also orientation sensitive. To readjust the switch, remove the hole plug in the side of the unit for access to the adjustment screw. Make sure filters and pre-filters are installed in unit. Turn the unit on and place a piece of cardboard over the intake covering about 80 to 85% of the intake area. With a standard screwdriver, turn the adjustment screw clockwise until the light goes off, or counterclockwise until the light comes on.
- For more time between filter changes (less air flow), cover slightly more of the opening, and for less time between filter changes (more air flow), cover less of the opening.

GENERAL MAINTENANCE

- Occasionally check the condition of the drive belt for tightness and wear.
- Check the blower bearings for unusual war and the blower wheel for debris and dirt. Clean when necessary.
- Check the wiring for loose connections or cracked insulation.
- No lubrication is required for the motor because it is a permanent pre-lube design. Excessive dirt and or oil should be removed periodically.

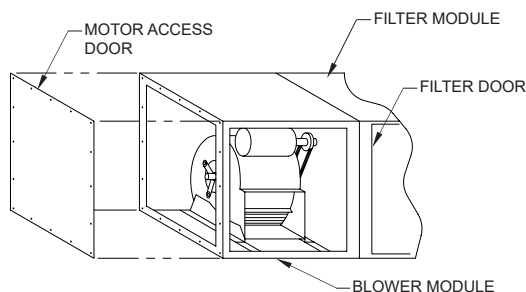


FIG. 3

UNITS WITH HEPA OR CHARCOAL OPTIONS FOR RB3500

1. On units with optional HEPA or charcoal filters, an adjustable filter track kit is used to complete the seal of these filters to the filter stop (See FIG. 4 & 5). If the unit was ordered with either a HEPA or charcoal filter, this adjustable filter track kit was included with the unit. If a HEPA or charcoal filter is ordered as an after-market item, the adjustable filter track kit should be ordered as well. Order Part No. 38036-01.

Each filter track kit is supplied with:

- ① 1pc. Filter track
- ② 2pc. Supports
- ③ 1pc. Handle
- ④ 4pc. Retaining brackets
- ⑤ 1pc. Door stop bracket
- ⑥ 3pc. Horizontal support
- ⑦ 16pc. #8-32 self tapping hex screws.

HEPA OR CHARCOAL AS SECOND MAIN FILTER

1. Place supports ② in cabinet at a dimension of 13 ¼" and secure with self tapping screw.
2. Place track ① in cabinet so it rests upon supports and ½" diameter pin is located behind brackets on supports.
3. Place handle ③ on supports so that it rests in notches.
4. Lock ½" diameter rods on handle and track in place with brackets ④ and self tapping screws.
5. Place handle stop bracket ⑤ at a dimension of 15 ½" and secure with self tapping screws. This is to keep handle from rotating past 90° and allowing filter to loosen.
6. Place horizontal supports ⑥ in 2 places. One piece at a dimension of 5" on bottom of cabinet and one piece at a dimension of 10" on rear of cabinet with self tapping screws.

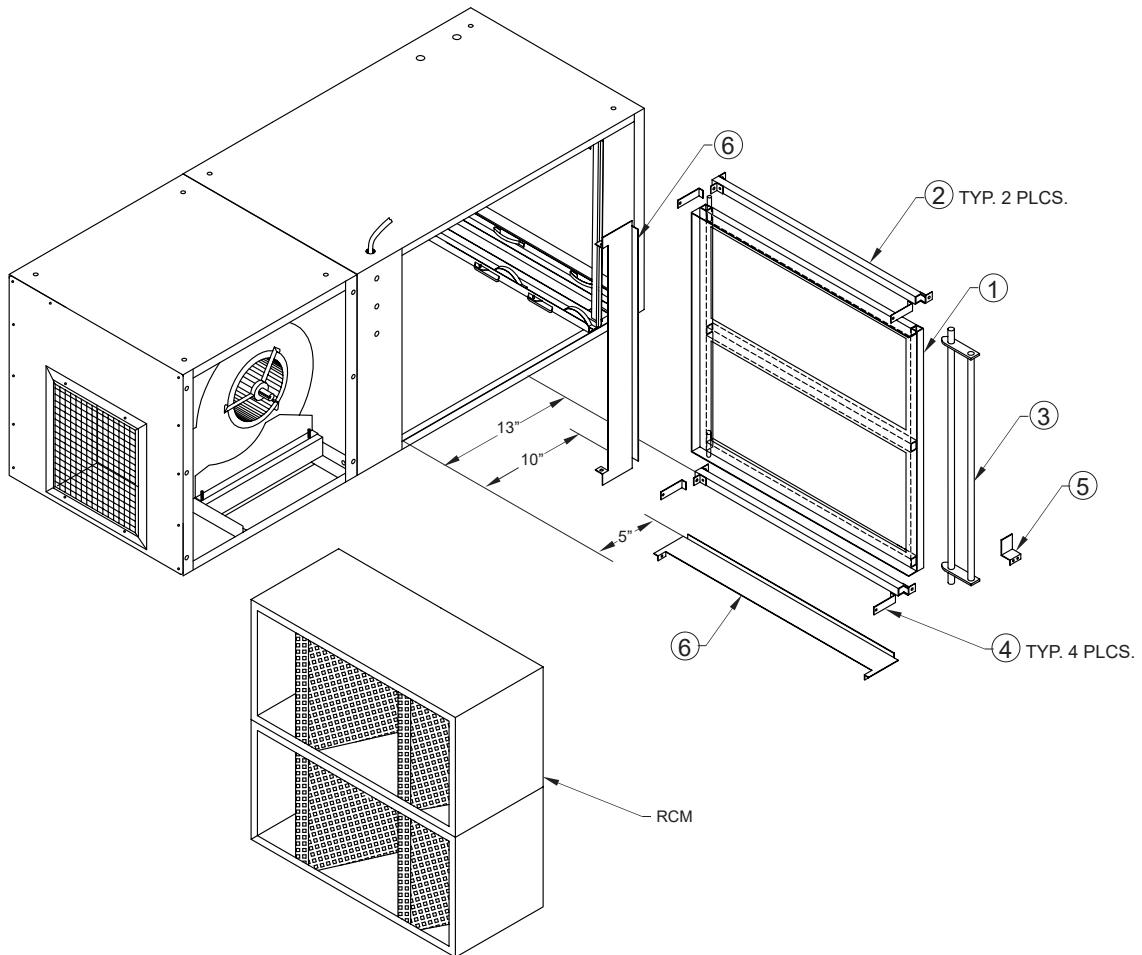


FIG. 4

HEPA OR CHARCOAL AS FIRST AND SECOND MAIN FILTERS

1. Place supports ② in cabinet at a dimension of $24 \frac{15}{16}$ " and secure with self tapping screws.
2. Place track ① in cabinet so it rests upon supports and $\frac{1}{2}$ " diameter pin is located behind brackets on supports.
3. Place handle ③ on supports so that it rests in notches.
4. Lock $\frac{1}{2}$ " diameter rods on handle and track in place with brackets ④ and self tapping screws.
5. Place handle stop bracket ⑤ at dimension of 27" and secure with self tapping screws. This is to keep handle from rotating past 90° and allowing filter to loosen.
6. Place Horizontal supports ⑥ 1pc. on rear of cabinet at a dimension of 9", ⑥ 1pc. on bottom of cabinet at 5" and ⑥ 1pc. on bottom of cabinet at $12 \frac{3}{4}$ " and secure with self tapping screws.

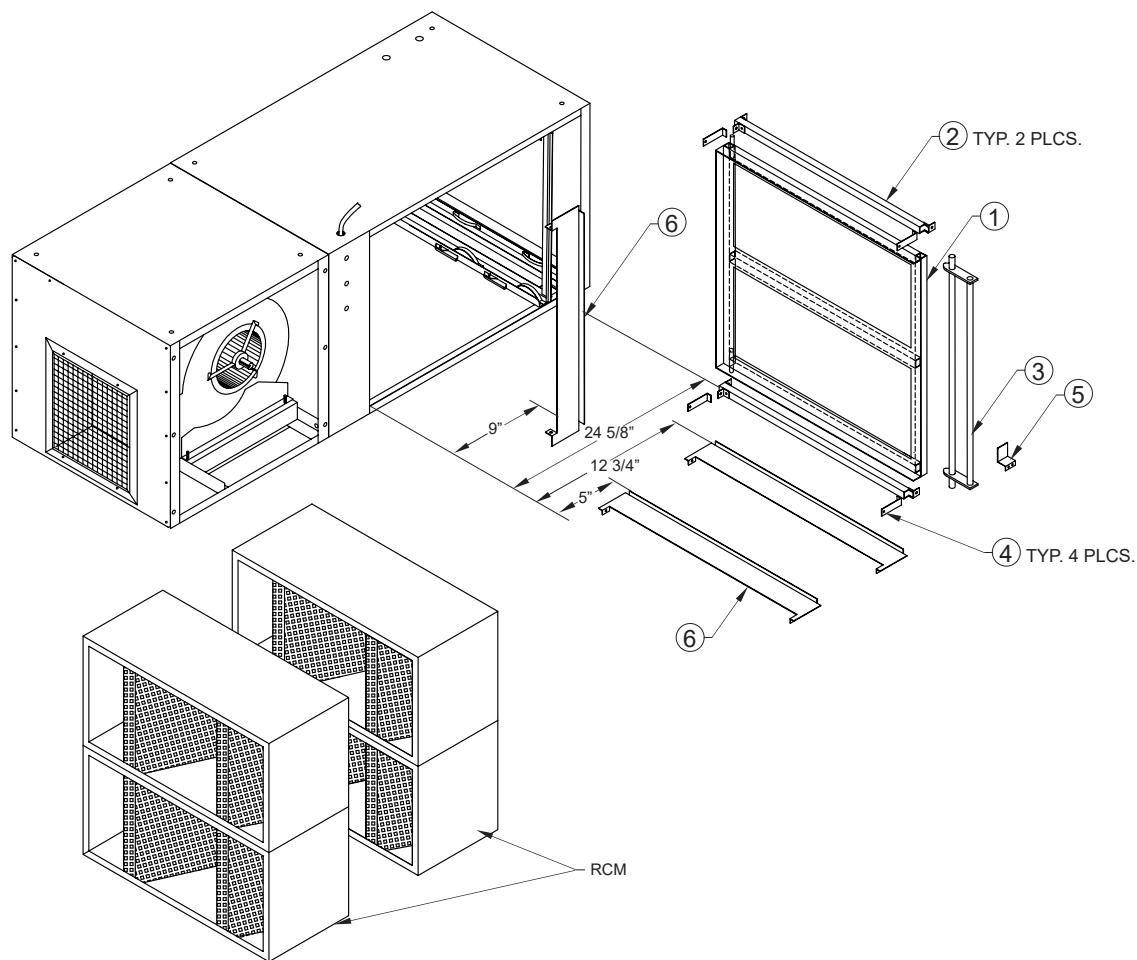


FIG. 5

FILLING OF RCM MODULES

1. Remove bulk charcoal or purasorb from shipping carton by removing plastic bags within carton.
2. set module on level surface. Remove fill cover by removing six 10-32 phillip head screws, that secure cover. Set cover aside (See **FIG. 6**).
3. Open the plastic bag by removing the tape, holding close. Pour the material from the plastic bag into the module through the slots. It may be necessary to slightly shake the module to assure an even fill. Excess material may be saved by resealing the plastic bag.

NOTE: Slow pouring will minimize dust that will be present during pouring.

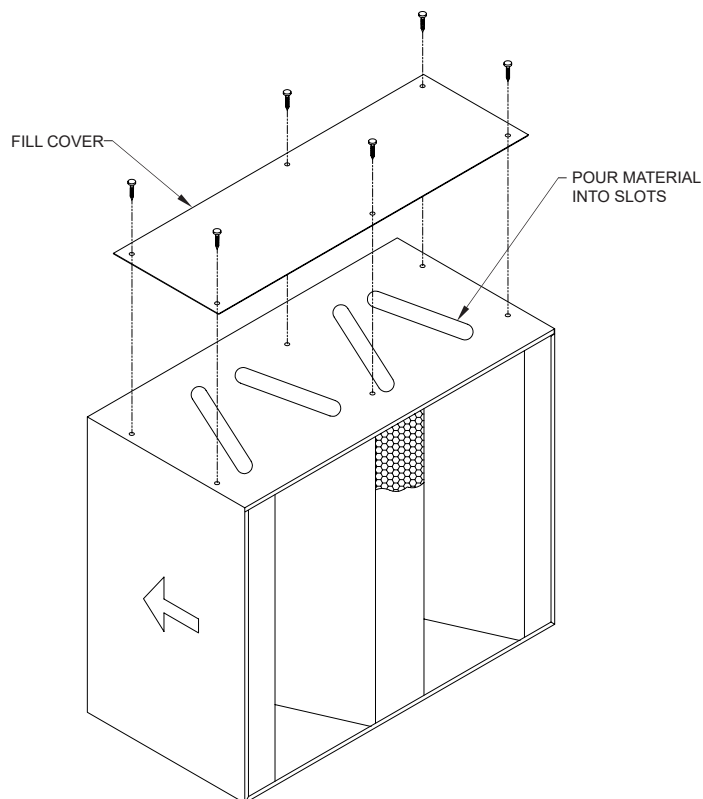
4. After filling module, discard plastic bag and reinstall fill cover removed in step 2.

NOTE: The **Range Boss** requires two modules when used as a second main filter and four modules when used as a first and second main filter.

5. With Filter track in place and handle pulled out away from cabinet load RCM / HEPA modules into track.

NOTE: Make sure modules are seated properly into track and stacked evenly.

6. With filters in place rotate handle 90° and lock filter modules in place.

**FIG. 6**

OPTIONAL SILENCER INSTALLATION

1. Remove Exhaust Grille from unit as shown in FIG. 7.
2. Slide Silencer over Blower Assembly.
3. Align holes from Silencer with those located on sides of the Blower Assembly.
4. Attach Silencer to Blower Assembly using $\frac{3}{8}$ " bolt, lockwasher, & flat washer.
5. Center Exhaust Grille over hole in Silencer & attach using 8-32 self tapping machine screws.

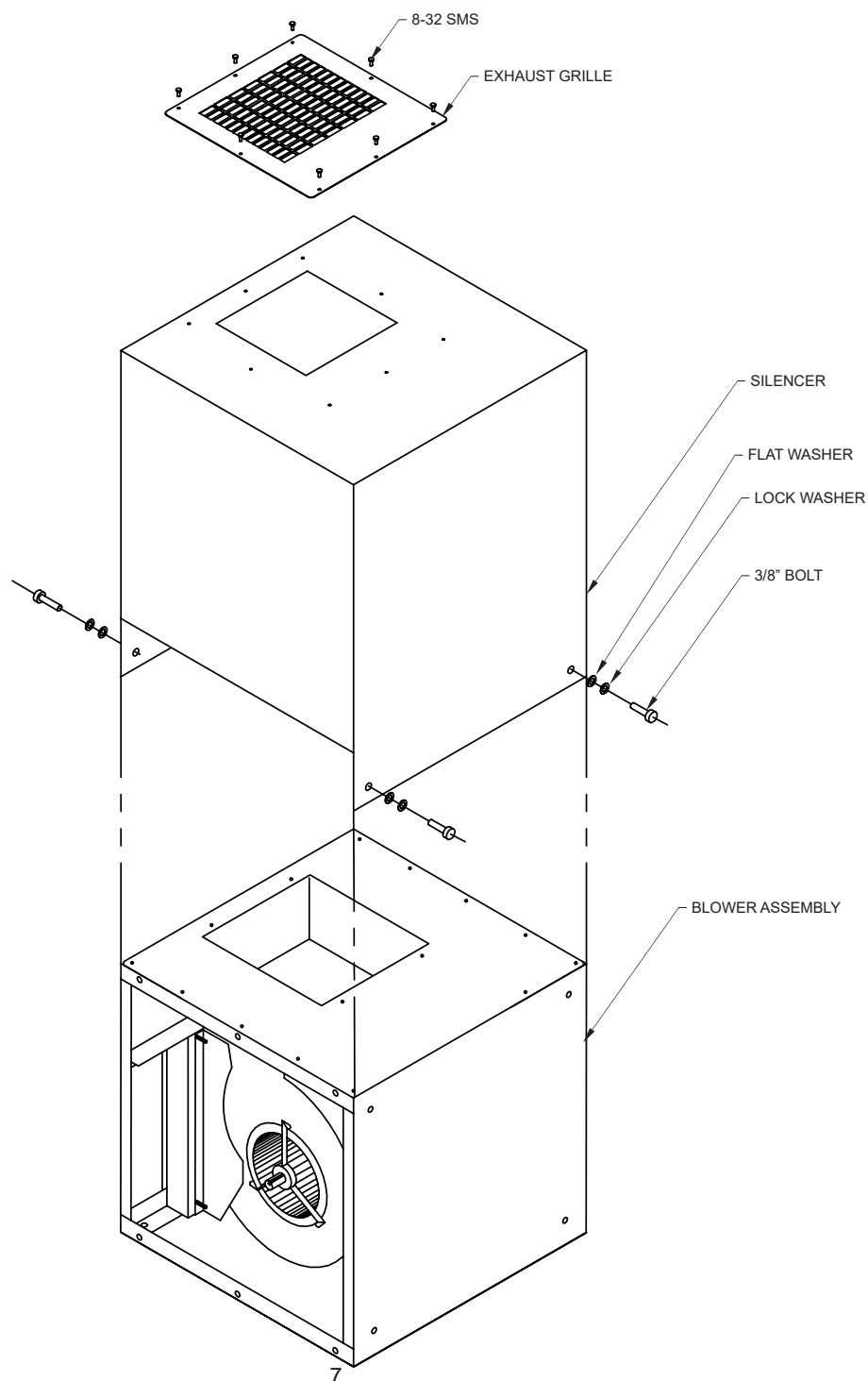


FIG. 7

Wrap Around Pre-filter

INSTALLATION

This Kit Includes:

- | | | |
|--------|--------------------------------|---------------------------------------|
| 1 Each | 38086-01 | WAP Pre-filter Assembly |
| 1 Each | Hardware Package - Containing: | |
| 6 Each | P114 | $\frac{15}{16}$ " -18 X 0.75 Hex Bolt |
| 6 Each | P222 | $\frac{15}{16}$ " -18 Hex Nut |
| 6 Each | P233 | $\frac{15}{16}$ " Flat Washer |

INSTALLATION:

1. Align six (6) holes from WAP with holes located on bottom of Air Filter Unit.
2. Attach **Wrap Around Pre-filter** with six (6) ea. $\frac{15}{16}$ "-18 hex bolt, $\frac{15}{16}$ "-18 hex nut, and $\frac{15}{16}$ " flat washer.

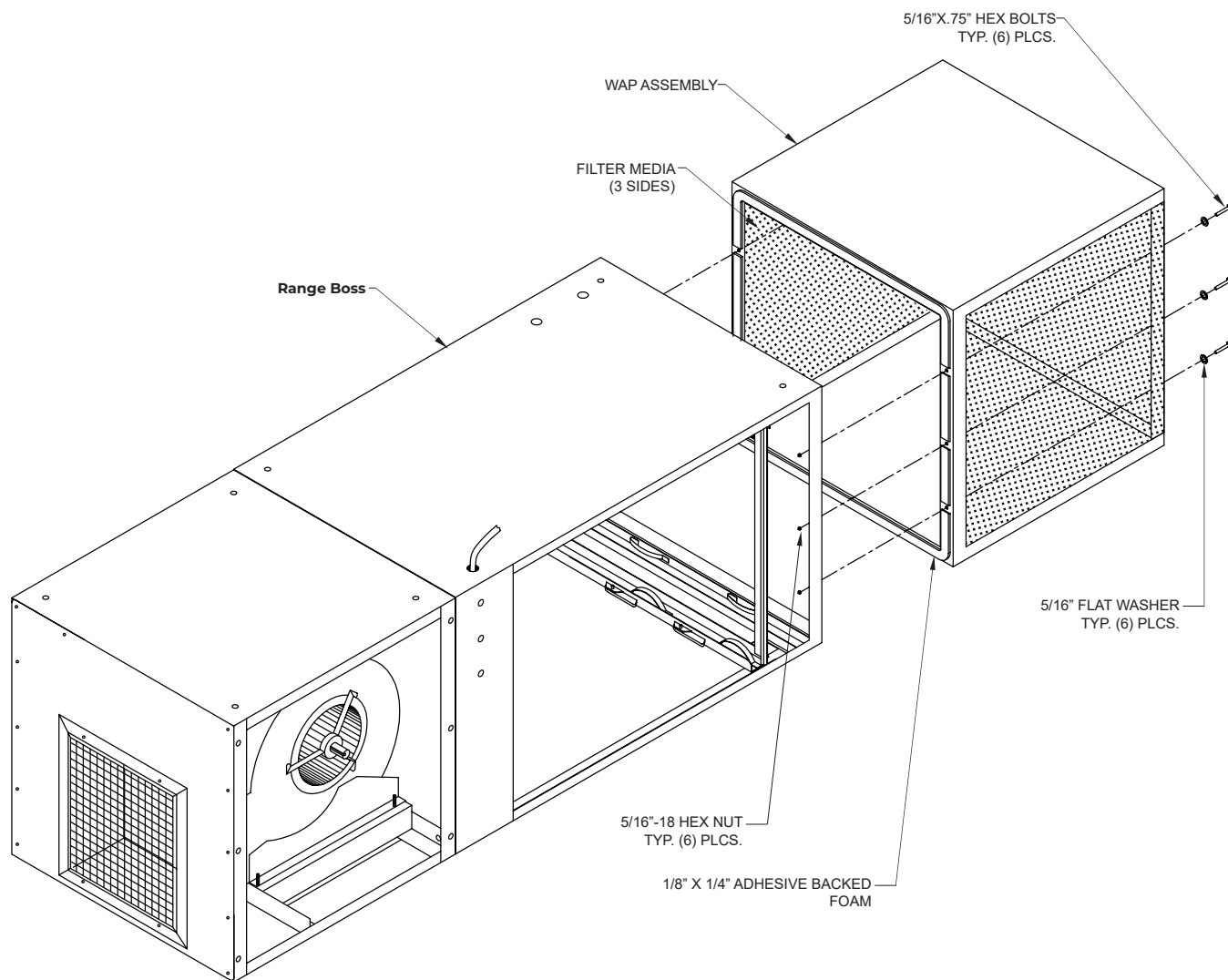


FIG. 8

Range Boss WIRING DIAGRAM

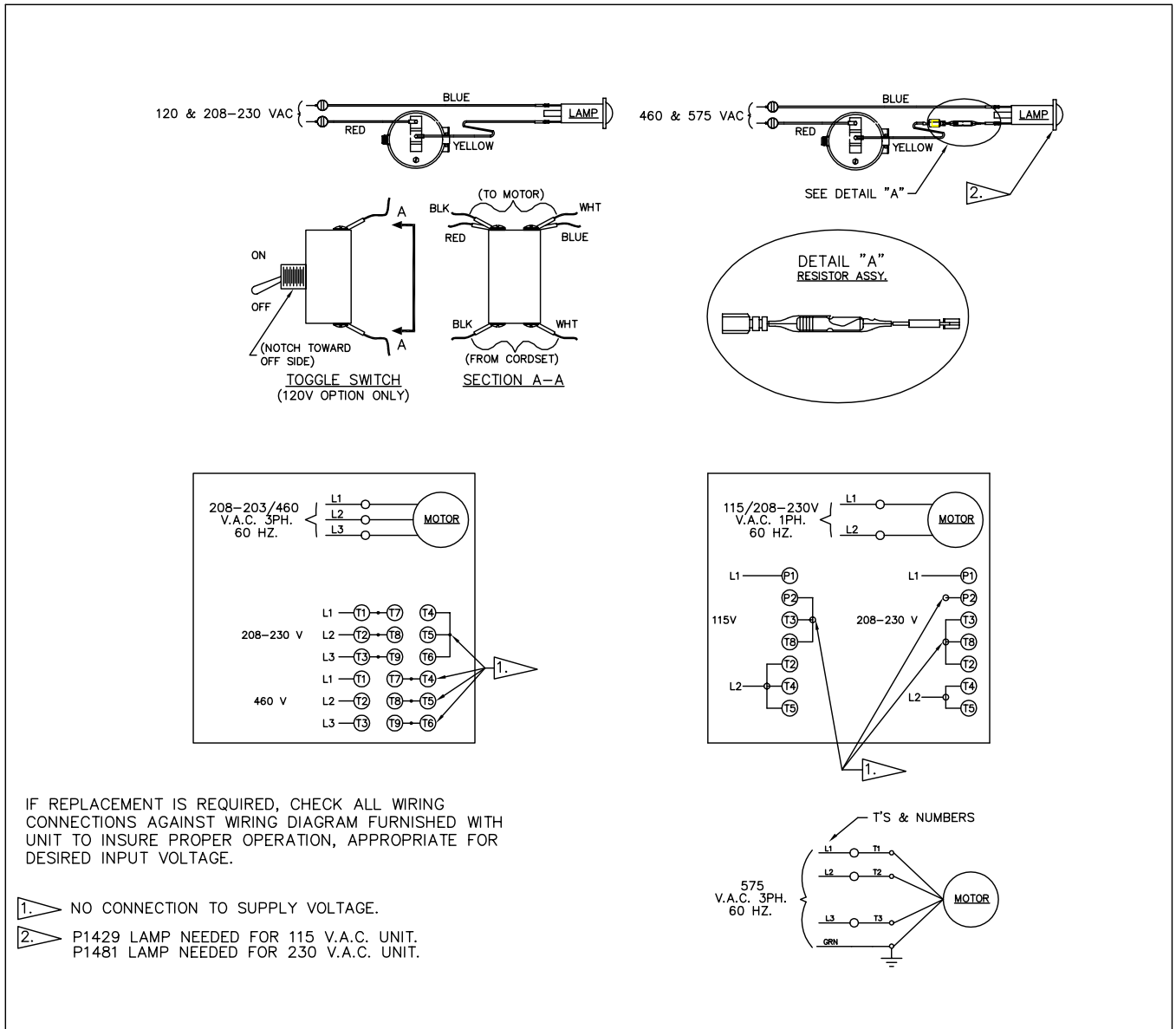
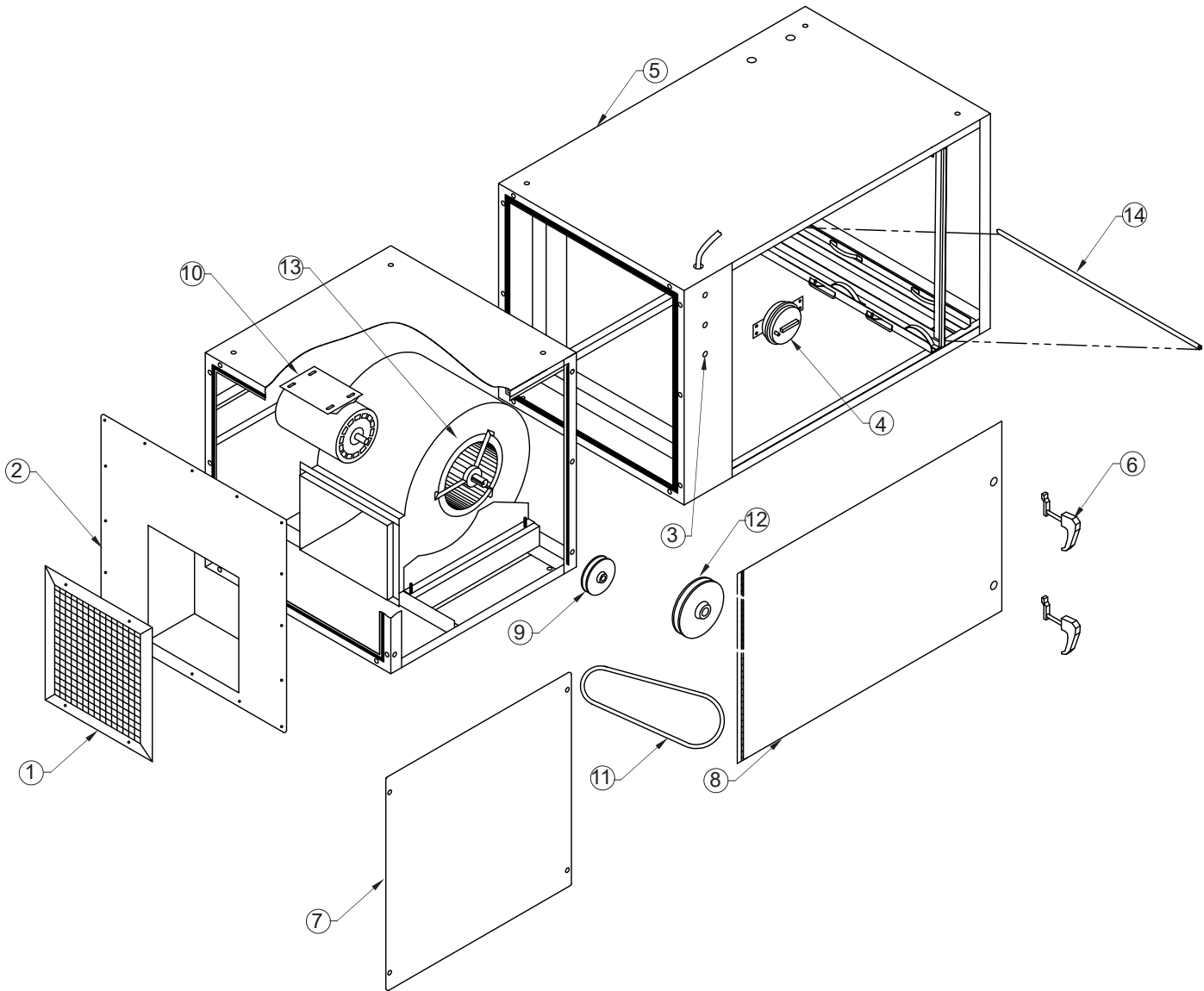


FIG. 9

RB3500 PARTS LIST



ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	P1977	Grille	10.	P3545	1 1/2 HP, 115V, 1 Phase Motor	12.	P1710	4.95" Blower Pulley
2.	38010-01	Blower Access Panel		P3546	1 1/2 HP, 208-230/460V, 3 Phase Motor		P1974	5.93" Blower Pulley
3.	P1429	Light (120V)		P3495	3 HP, 208-230/460V, 3 Phase Motor		P1711	6.93" Blower Pulley
	P1481	Light (208-230V, 460V, 575V)		P2813	3 HP, 575V, 3 Phase Motor		P3218	7.93" Blower Pulley
4.	P3505	Pressure Switch		30251-01	P3495 Motor Mount Bracket		P3183	9.95" Blower Pulley
5.	38072-01	Cabinet Weldment	11.	P1495	42" Belt		P1504	5.45" Blower Pulley
6.	P1372	Latch (2 ea, required)		P3207	43" Belt		P3270	9.75" Blower Pulley
7.	38011-02	Motor Access Panel		P3213	46" Belt	13.	P3498	Blower (Standard)
8.	38043-01	Filter Door		P3195	47" Belt	14.	P3214	Filter Gasket (Specify Length)
9.	P2105	1 1/2 HP, 5/8" Shaft, Motor Pulley		P3548	48" Belt	NOT SHOWN	38059-01	SCM W/ 3 - 8" Collars
	P3986	3 HP, 7/8" Shaft, Motor Pulley		P3550	49" Belt	NOT SHOWN	38059-02	SCM W/ 2 - 10" Collars
				P7135	51" Belt	NOT SHOWN	38059-03	SCM W/ 1 - 16" Collar
						NOT SHOWN	P2250	Magnahelic Gauge
						NOT SHOWN	38086-01	Wrap Around Pre-Filter
						NOT SHOWN	38050-01	Silencer
						NOT SHOWN	38036-01	Filter Track

TROUBLESHOOTING CHART

⚠ CAUTION:

Before disassembling the unit or doing any inspection of the parts, make certain that the power has been cut off and the blower has come to a complete stop. Never run the unit with the access door open or removed.

Problem	Possible Cause	Remedy
Unit Fails to Start	Dead power line Blown fuse Loose wire in terminal box Burned out motor	Check the Circuit and Switch Replace Fuse Reconnect Wire Replace Motor
Unit Runs Slowly or Inadequate Capture Velocity	Wired for wrong voltage or improper rotation Dirty filters Obstruction in hose/arm assembly Pulleys set for static	Check input voltage Check wiring diagram Service filters (See Changing Filters Section) Reach into hood and Remove obstruction Adjust or change pulleys
Vibration	Loose mounting bolts Foreign objects in blower Dirty disposable filters Obstruction in hose/arm assembly	Tighten bolts Remove access door and remove objects Service filters Reach into hood and remove obstruction
Mist Coming from Exhaust	Dirty disposable filters or torn filters air bypass around filters	Replace filters Check for proper seal against picture frame and seals on door & back wall.

REPLACEMENT FILTER LIST

P1411	24" X 24" X 4"	Pleated Pre-Filter	P1585	24" X 24" X 2"	70% Washable Pre-Filter
P1586	24" X 24" X 2"	96% Washable Pre-Filter	P1475	24" X 24" X 2"	Mesh Oil Impinger
P1799	24" X 24" X 2"	Baffle Oil Impinger	P1461	24" X 24" X 2"	Pleated Pre-Filter
NOTE: 2" Pre-Filters must be used in combinations to fill 4" channel.					
P1439	24" X 24" X 32"	55% Bag Filter	P1442	24" X 24" X 32"	95% Bag Filter
P2179	24" X 24" X 32"	95% Oil Mist Bag with Loops	P2104	24" X 24" X 32"	Duo Cube Bag
P1455	24" X 24" X 12"	95% DOP HEPA	P2101	24" X 24" X 12"	99.97% DOP HEPA
P1456	24" X 24" X 12"	Disposable Charcoal Filter			
P1460	24" X 24" X 15"	Short 95% Bag (For use with HEPA or Charcoal Filters)			

33740-01 Refillable Charcoal Module
33740-02 Refillable Purasorb Module
38086-01 Wrap Around Pre-Filter Module

