

Hand Dryer

Operating Instructions and Parts Manual

Surface-mounted High-Speed hand dryer

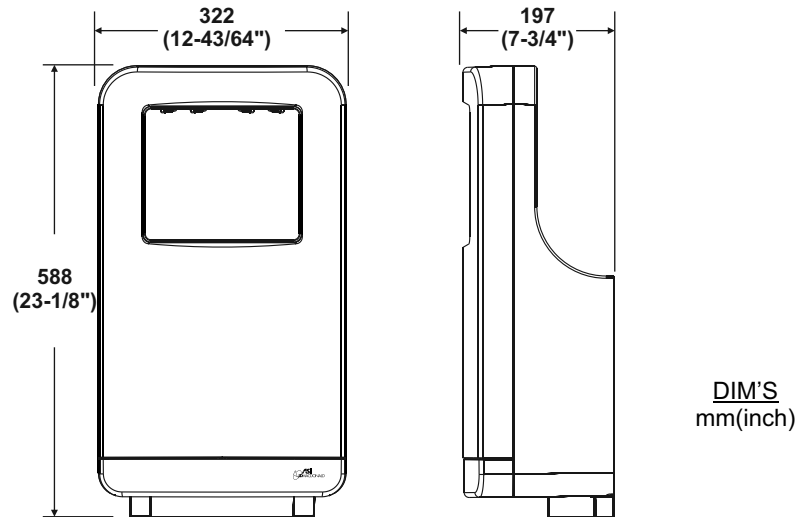
PLEASE CAREFULLY READ THROUGH THIS MANUAL BEFORE USING THE PRODUCT. OBSERVING ALL SAFETY INFORMATION, WARNINGS AND CAUTIONS WILL PROTECT YOURSELF AND OTHERS. PLEASE KEEP INSTRUCTIONS FOR FUTURE REFERENCE.



MODEL # 10-20200-2

MODEL # 10-20201-2

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TECHNICAL SPECIFICATIONS

ITEM CATEGORY	PERFORMANCE DATA
Operating Voltage	220-240VAC, 50/60Hz, 6.25A, 1.5KW
Output Warm Air Volume	93-136m ³ /h [55-80CFM], adjustable by owner
Output Warm Air Temp	60°C when ambient Temp = 25°C. MAX adjustable by owner
Output Air Speed	144mph (212ft/s) [64.5m/s {234km/h}] - 213.4mph (313ft/s) [95.4m/s {343km/h}], adjustable by Owner
Motor Type	700W, 14000-18000rpm, adjustable, brush Type, dual ball bearings
Motor Thermal Protection	Auto resetting thermostat turns unit off at 135°C
Heater Element	ON/ OFF Heating options; range adjustable by owner, 400-800W
Heater Thermal Protection	Auto resetting thermostat turns heater element off at 85°C, resets at 75°C, thermal cut-off at 142°C
Drying Time	Less than 12 seconds
Standby Power	Less than 0.5W
LED Color	Standby colour: red; Active colour: blue
Circuit Operation	Infrared automatic, self adjusting
Sensor Range	100mm to 170mm, adjustable; standard 150mm ± 20mm
Timing Protection	60 seconds auto shut off
Timing Duration	1 second delayed turn off after last sensor read
Sound Level	MIN 63.3dB-A to 69.2dB-A MAX @ 2m, adjustable by owner
Drip Proof	IP21
Cover Type	3.0mm [1/8"] thick molded ABS plastic
Net Weight	10.8kg
Shipping Weight	12.8kg
Unit Size	322mm W x 588mm H x 197mm D [12-43/64" x 23-1/8" x 7-3/4"]

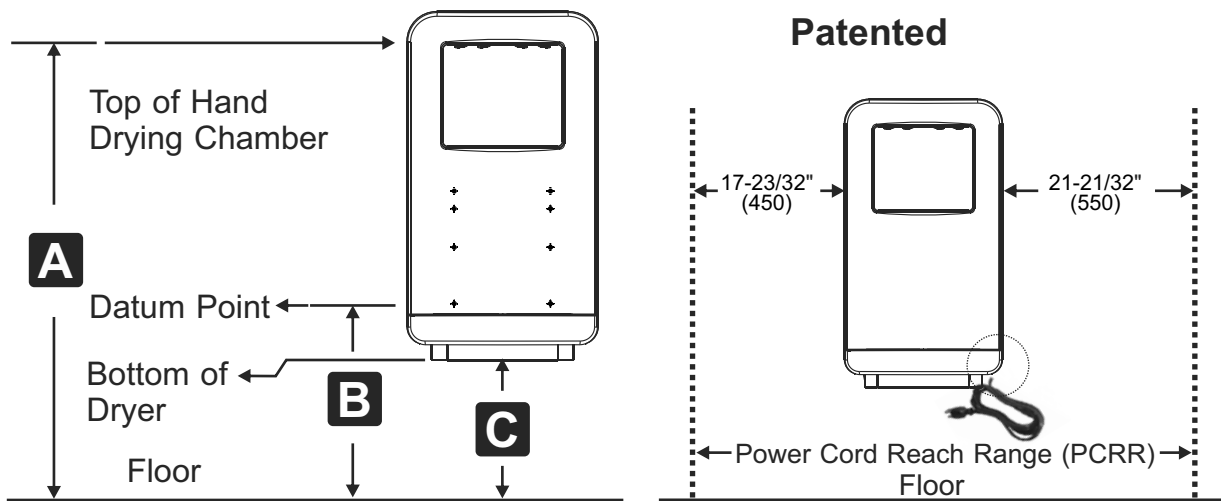
Input		Model		Motor		Heater		Total	
VAC	№	Vac	Inrush A(W)	Operating A(W)	Vac	Operating A(W)	Inrush A(W)	Operating A(W)	
220	20200(1)-2	220	4.00 (882)	2.67 (588)	220	3.05 (672)	7.05 (1554)	5.72 (1260)	
230	20200(1)-2	230	4.19 (964)	2.79 (643)	230	3.19 (735)	7.38 (1699)	5.98 (1378)	
240	20200(1)-2	240	4.38 (1050)	2.92 (700)	240	3.33 (800)	7.71 (1850)	6.25 (1500)	

Recommended Mounting Heights

Above Finished Floor (AFF)

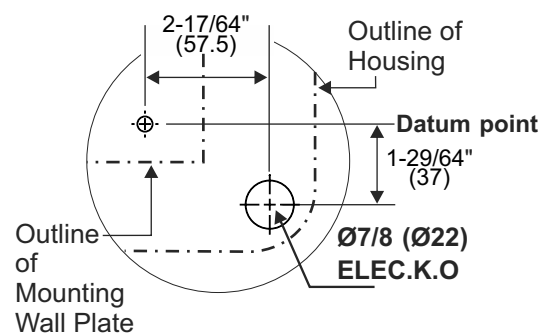
See Mounting Template on Installation Guide 1203270822

DIM'S inch(mm)	A From Top of Hand Drying Chamber	B From Datum Point	C From Bottom of Dryer
Men	45-9/32" (1150)	27-61/64" (710)	24-31/64" (622)
Women	42-33/64" (1080)	25-13/64" (640)	21-47/64" (552)
Children 4-7 years	30-45/64" (780)	13-25/64" (340)	9-59/64" (252)
Children 8-10 years	34-41/64" (880)	17-21/64" (440)	13-55/64" (352)
Children 11-13 years	37-63/64" (965)	20-43/64" (525)	17-13/64" (437)
Children 14-16 years	42-33/64" (1080)	25-13/64" (640)	21-47/64" (552)



Socket Location

The dryer is supplied with a power cord. The power cord entry position is in the rear, right side bottom of dryer. The length of the power cord is 39-3/8" (1M). The power cord can reach to the right side within the distance of 21-21/32" (550) and reach to the left side within the distance of 17-23/32" (450). Alternatively the unit may be hard wired to a terminal block through a rear panel KO.



Detail A Unit Rear

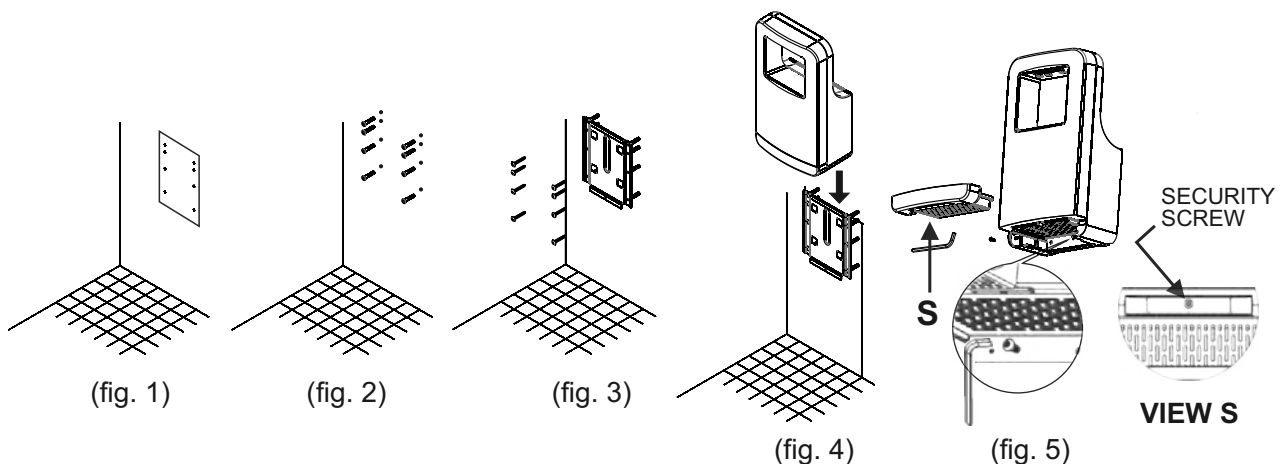
Installation

See Installation Guide 1203270822

1. Make sure power supply breaker is switched off. Installation must be carried out in accordance with the current edition of the local wiring regulations code having jurisdiction. Installation requiring hard wiring should be performed only by a qualified electrician.
2. Place template against wall at desired height (see mounting height recommendations) and mark locations of eight (8) mounting holes and wire service entry at knockout (KO) location.
Note: For two or more dryers, dryers should be no closer than 24 inches (610 mm) on center.
3. Use L-Key (supplied) to unlock security hex socket screw and withdraw filter access drawer.
4. a. Drill eight (8) holes at locations marked of $\varnothing 9/32"$ ($\varnothing 7$) x 1-3/8" (35) deep if using wall anchors supplied with unit (fig.1)
b. Remove template and Insert eight (8) plastic anchors (supplied) into drilled holes (fig. 2). Install supplied anchors flush with wall face, or install other fastening system suitable for wall conditions (not supplied).
c. Attach base plate to wall by inserting eight (8) screws (supplied) to fix backplate into plastic anchors (fig. 3). For wood wall/studs use $\varnothing 1/4$ inch (M6) screws at length that will ensure 1 inch (25) min. stud penetration. For masonry walls use expansion bolts or anchors for $\varnothing 1/4$ inch (M6) screws to ensure penetration 1/4 inch (6) deeper than anchor. Shim if necessary to ensure base plate is flat against wall.
5. a. Hang the dryer on the base plate (fig. 4).
b. **For in-wall (concealed) power supply -**
Provide supply wire to KO location according to local code and attach securely to chassis at KO with strain relief connector (supplied).
c. **For Surface Mounted Conduit (exposed) power supply or using power cord (supplied) -**
Provide appropriate conduit to entry location according to local code and attach securely to chassis with correct strain relief connector (not supplied) or install unit on wall within PCRR to duplex outlet.
d. Install locking screw (supplied) into wall plate through the hole at backplate center bottom. (fig. 5)
6. a. Connect hard wired power provided at KO location to terminal block behind cover panel (RH-bottom) behind filter drawer. Turn on circuit breaker to initiate 'stand by- ready to operate' status.

Connections:

- A. Connect the live wire (colored Brown, Red or Black) to the terminal block marked "L".
 - B. Connect the neutral wire (colored Black, Blue, White or Grey) or connect the second live wire (colored Red or Orange) to the terminal block marked "N".
 - C. Connect the ground wire to the terminal block marked " \oplus ". Bare grounding (earth) wires should be sleeved with green and yellow or green tubing. Colors of live and neutral wires depend on voltage of supply service and requirements of Building and Electrical Code having jurisdiction.
- b. Connect power cord to initiate 'stand by- ready to operate' status.
 7. Replace the filter access drawer, being careful to not over-tighten the security screw.
 8. See separate sections for owner options on heater operation and air speed adjustment.



General safety information

⚠ WARNING This product is intended for installation by a qualified service person. Select wire ga to suit unit model ratings.

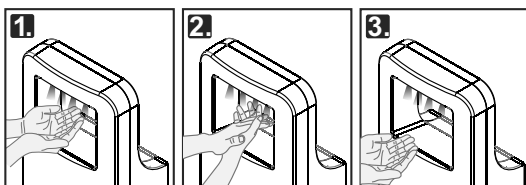
⚠ DANGER Failure to properly ground unit could result in severe electrical shock and/or death.

⚠ WARNING Disconnect power at the service breaker before installing or servicing.

⚠ WARNING All units must be supplied with a 3-wire service. The ground wire must be connected to the dryer's ground terminal.

Operation

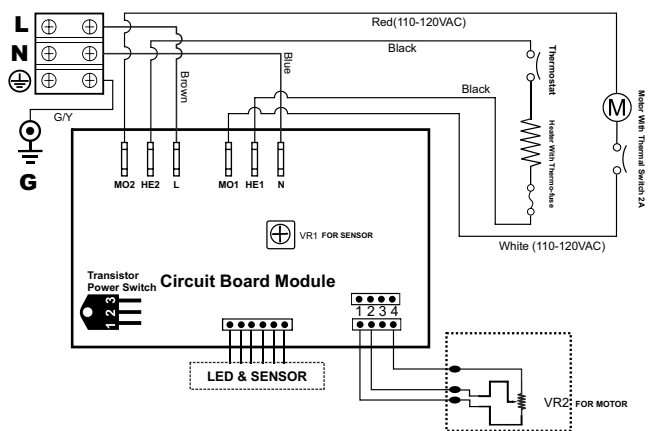
1. Put your hands into the opening.
2. Rub hands together to speed dry.
3. Remove hands and dryer will stop automatically.
4. Dryer maintains operation for 1 second after last sensor activation to evaporate droplets.



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Circuit Diagram

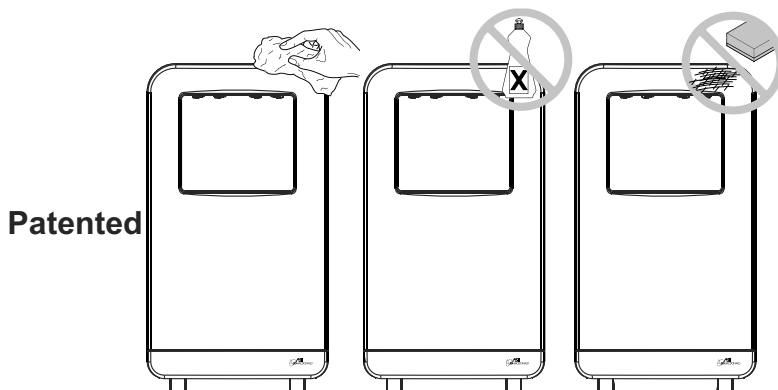
Supply: 220-240VAC, 50/60Hz



Cleaning and Maintenance

Periodic cleaning of the unit is recommended to ensure optimum performance.

- Wipe the cover with a damp cloth and mild cleaning solution.
- Do not Soak, Do not hose down.
- Never use abrasives to clean the cover. Caustic chemicals may damage unit finish.
- No internal parts need any regular cleaning.



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See Separate Sections for Filter, Ceramic Water Evaporator and Drain Tray Maintenance

Installation Kit Included (find in carton)

Please unpack the unit and check the quantity of the tools and kit.

1. Self-Threading pan head screws №10 x 1-1/4" (M5 x 32) x 8 pcs
2. Plastic expansion anchor Ø9/32" x 1-3/8" (Ø7 x 35) x 8 pcs

Service Tools Included (with installation kit)

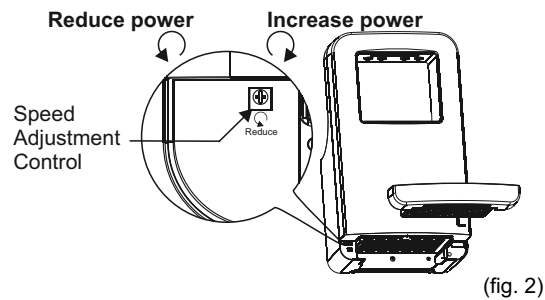
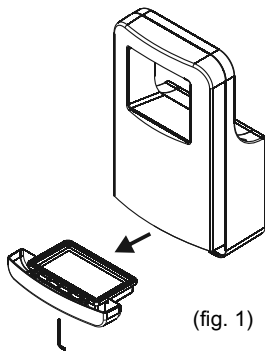
- Security hex wrench 4 mm x 1 pc (5/32" pin-hex will work if tool is lost)
- Deep C-socket Wrench (for Cord Strain Relief Nut)

Air Speed Adjustment

Sound volume during operation may be modified by adjusting the motor speed. When lowering the motor speed, the drying time will increase. The factory setting for dryer motor speed is high.

To adjust the dryer motor speed:

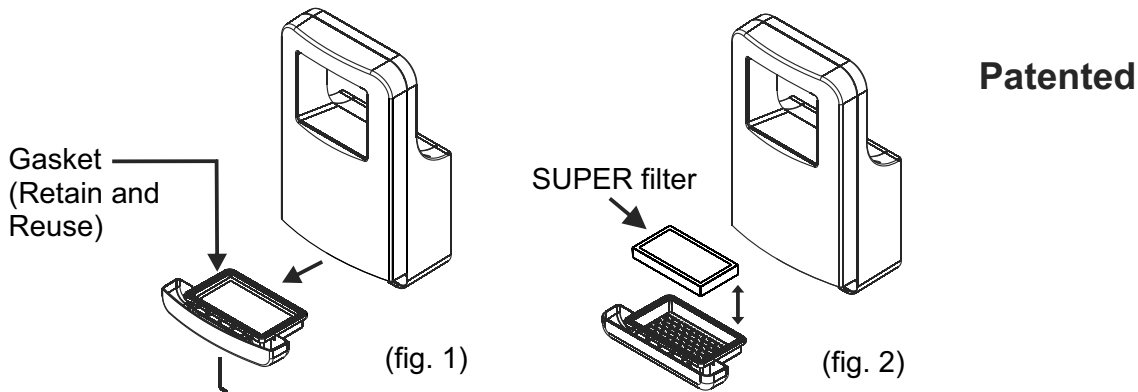
1. Use security hex wrench (supplied) to unlock and withdraw filter access drawer. (fig. 1).
2. Use small flat blade screwdriver, gently turn adjustment control (fig. 2) shaft clock-wise [CW] to increase power to maximum (shaft will hard stop; DO NOT OVERTURN!). Turn tool gently CCW to reduce power as required (shaft will hard stop; DO NOT OVERTURN!). Note that at minimum power the unit may not start if low line Voltage condition exists.
3. Replace the filter access drawer and lock the security screw, being careful to not over tighten screw.



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How to Change the SUPER Filter

1. Use security hex wrench (supplied) to unlock and withdraw the filter access drawer. (fig. 1).
2. Change the SUPER filter (fig. 2) by lifting up out of the drawer by lifting tabs. Dispose of the old filter appropriately and replace with a new filter, HEPA side (white) up. See P/L for replacement P/N.
3. Replace the filter access drawer and lock the security screw, being careful to not over tighten screw.

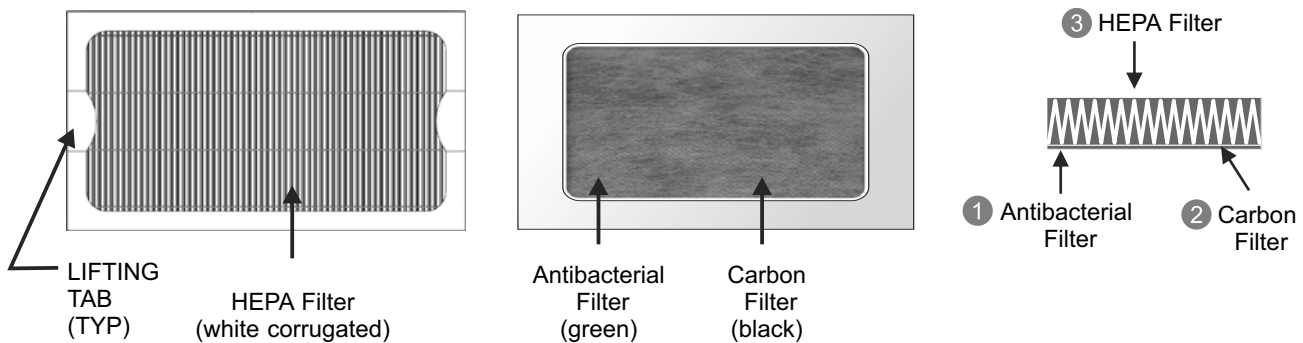


Recommended Period for Changing the SUPER filter

SUPER Filter-

- In general use (normal indoor washrooms), it's recommended to change the SUPER filter every six (6) months.
- In dusty environments (factories, outdoor washrooms), it's recommended to change it every three (3) months.

SUPER filter Assembly Information



Instructions for use, maintenance and changing the absorbent ceramic water evaporator

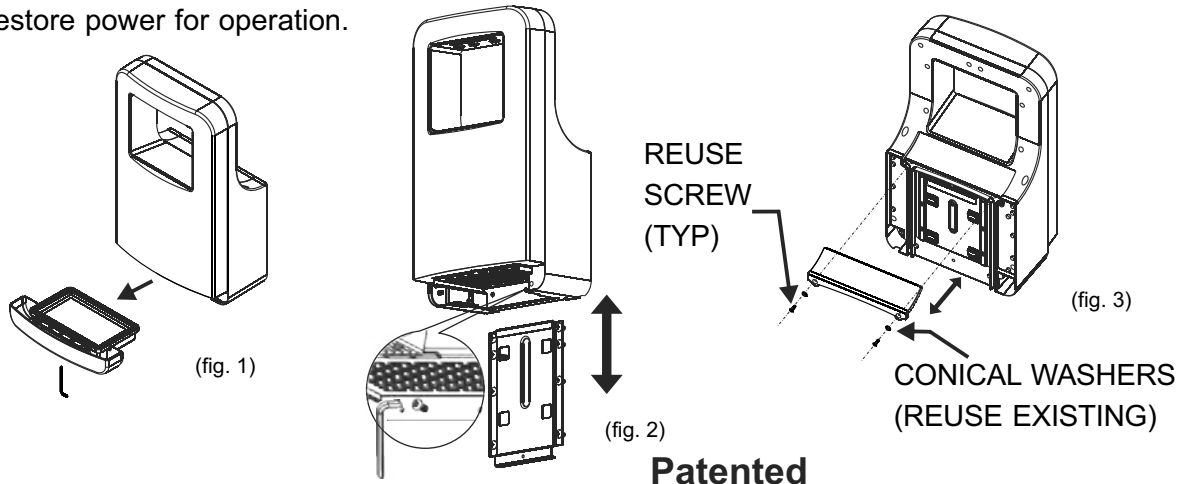
The absorbent ceramic can absorb 70g of water, and has the capacity to take a full load approximately 280 times per day. The ceramic also can evaporate water. During normal use, water will be evaporated continuously and maintain the absorbent function.

Maintenance simply requires clearing its surface. Normally, its lifetime will be the same as the machine. Improper use or maintenance could result in breakage; see below for replacement instructions.

SEE PAGE 9.

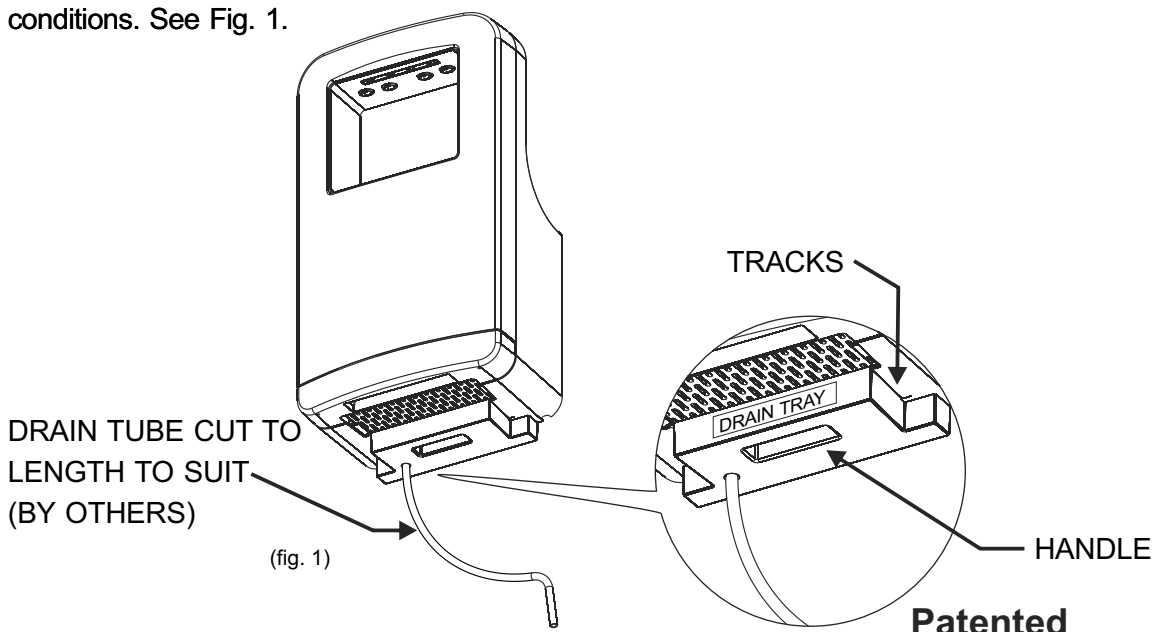
MAKE SURE POWER IS OFF PRIOR TO STEP Fig. 2

1. Use the security hex wrench to loosen the security screw and remove the filter access drawer. (fig. 1)
2. Use the security hex wrench to remove and retain the security screw from the base plate and remove the dryer. (fig. 2)
3. Use a Philips screwdriver to loosen the two (2) screws on the ceramic, and replace it with a new one, making sure to use the washers and being careful to not over tighten the screws. (fig. 3)
4. Rehang the dryer back on the wall plate and secure the security screw into the base plate.
5. Reconnect in-wall power cord, if so equipped. Replace terminal cover.
6. Replace the filter drawer and lock the security screw, being careful to not over tighten the screw.
7. Restore power for operation.



Instructions for use of the drain tray

Generally, the remaining water following usage will evaporate from the absorbent ceramic plate. During high usage frequency events excessive water will flow automatically to the drain tray. The capacity of the drain tray is 8 oz (240 ml). It is recommended that the drain tray be cleaned every three (3) months under heavy usage conditions and every four to six (4 ~ 6) months under light usage conditions in indoor washrooms. The drain tray is retained on tracks molded into the bottom opening of the filter access drawer. It is important that the wide end of the drain tray be inserted first and be positioned fully at the back of the track. The bottom center recess is to be used as a finger grip handle to assist in removing and reinstalling the drain tray. Water will flow through the overflow drain port if the drain tray is full. A drain tube (not included) may be added as required by owner preference. The size of the drain tubing (by others) is I.D. 15/64" (Ø6), O.D. 25/64" (Ø10), length is determined per installation to suit conditions. See Fig. 1.

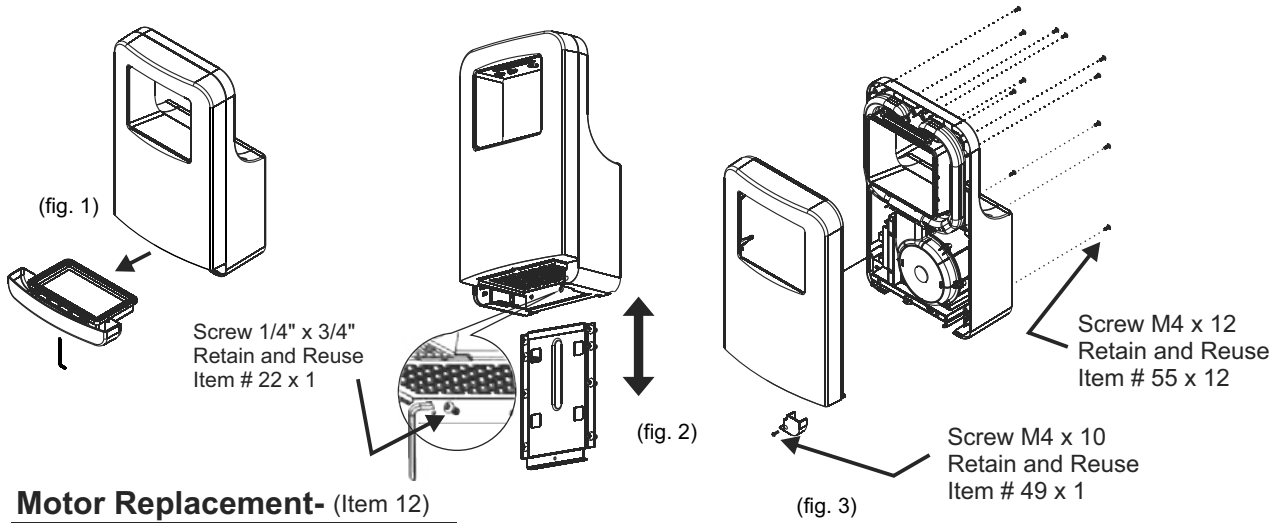


Diagnostics and Remedies

Symptom	Corrective Actions for Initial Installation Failures
If the dryer will not run	First ensure that the breaker supplying the dryer is operational. If it is, disconnect the power and remove the dryer cover. Taking suitable precautions to avoid shock hazard, reconnect the power and check for Voltage at the terminal block. Verify that connections are made correctly. Adjust the VR-2 (on item 34) to make sure it is not set too low.
The dryer cycles by itself or runs constantly	Ensure that there is no obstruction on or in front of the IR sensor. Clean any dirt or debris off the sensor lens. If problem persists, replace sensor. If symptom continues after sensor replacement, then replace CBM.
The dryer makes a loud noise and does not run for a complete cycle	Ensure that the supply Voltage is correct. Dryer will make a loud humming noise if the input Voltage is too high. Verify Voltage requirement on unit rating label and correct supply as required. If CBM has been damaged, replace CBM, IR sensor-LED module, VR-2/ SW-1 and CBM wire harnesses.
The dryer runs but air stream is low pressure and/or low velocity	Ensure that the supply Voltage is correct. Dryer will run weakly if the input Voltage is too low. Verify Voltage requirement on unit rating label and correct supply as required.
Symptom	Corrective Actions for In-Service Failures
If the dryer will not run	First ensure that the breaker supplying the dryer is operational. If it is, disconnect the power and remove the dryer cover. Replace the CBM and IR sensor module or disconnect heater element from circuit; check resistance (Ω) of element with multimeter. If Ω is off-scale infinitely large then replace element. If Ω is between 15 and 20 then check motor brushes for wear and replace them if remaining graphite is $\leq 25/64$ " [10mm]. If after reassembly and testing there is still no motor function then replace motor. Taking suitable precautions to avoid shock hazard, reconnect the power and check for Voltage at the terminal block.
The IR sensor only "sees" close range objects	Ensure that there is no obstruction on or in front of the IR sensor. Clean any dirt or debris off the sensor lens. Check VR for sensor range setting. If problem persists, disconnect the power and remove the dryer cover and replace CBM, IR sensor module.
The air stream is low pressure and velocity	Check the output nozzle for obstructions. If none are present, disconnect the power. Remove the dryer cover. Remove any dust/lint buildup from intake vent slots. Check VR for speed setting. Disassemble the blower-motor/fan housing. Check the motor brushes for worn condition ($\leq 25/64$ " [10 mm] graphite remains) and replace them, if necessary.

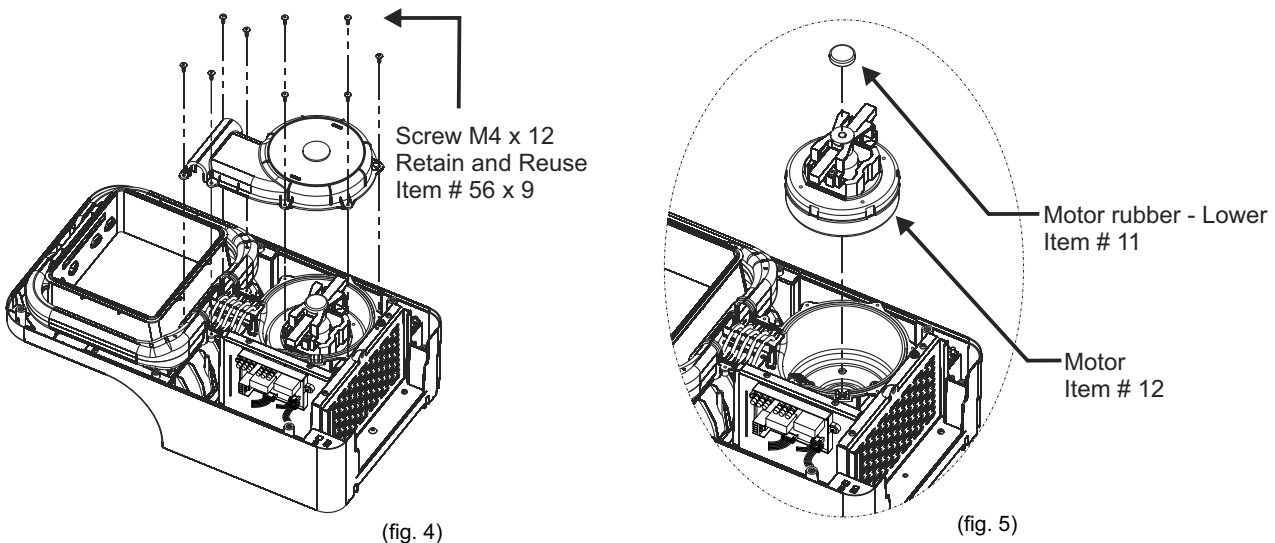
Common First Disassembly Steps

First, Make sure power is OFF before starting step fig. 2. **Second**, Either unplug power cord or disconnect in-wall power connections behind terminal cover (item 6) prior to starting step fig. 2.



Motor Replacement- (Item 12)

Start with steps fig's 1-3

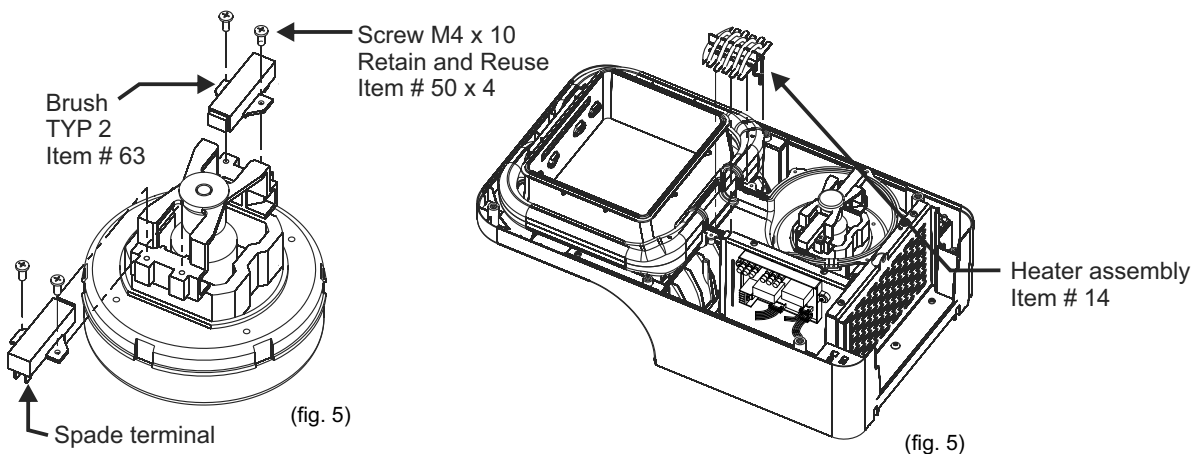


Brush Replacement- (Item 63)

Start with steps fig's 1-3. Remove blower housing upper (Item 9) see step fig. 4 under motor replacement.

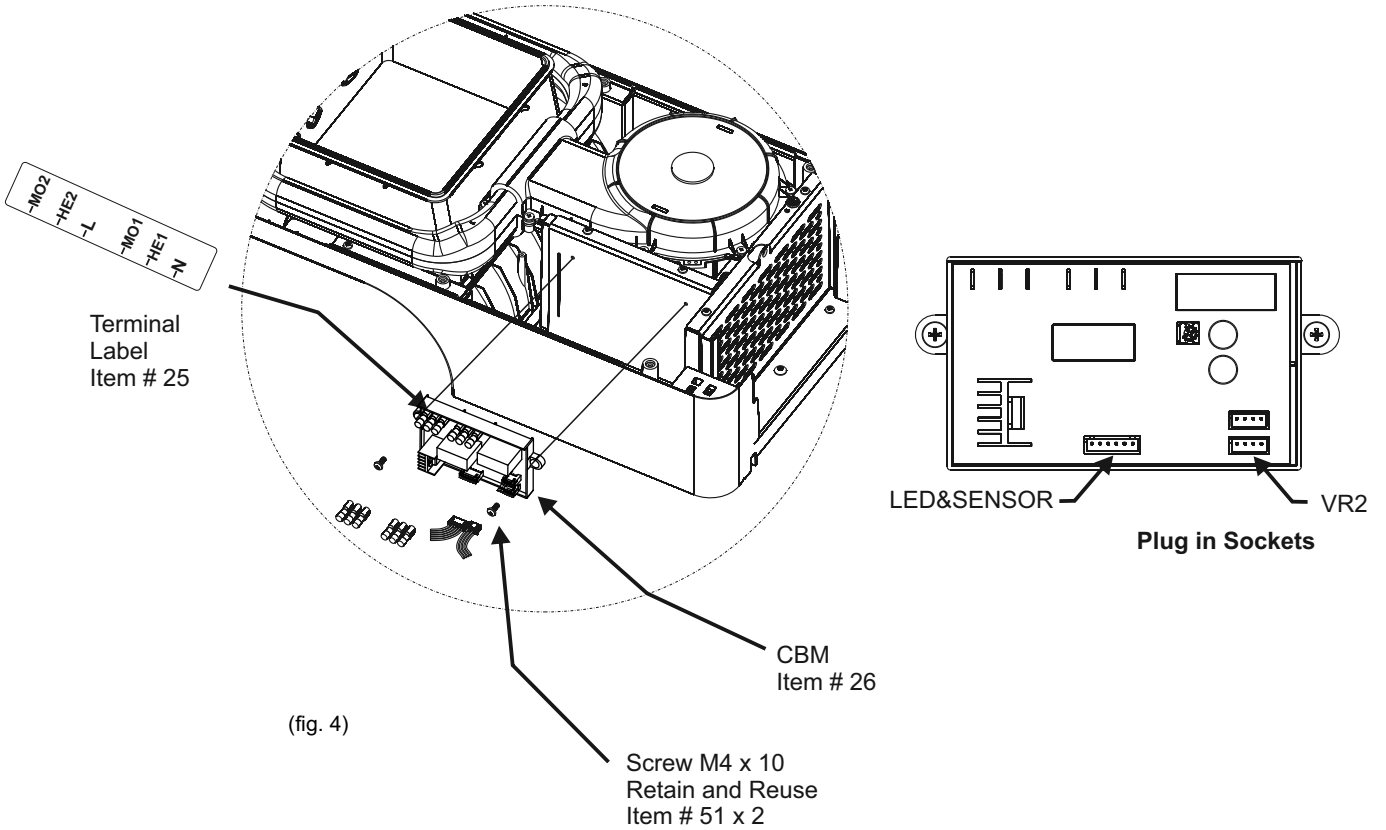
Heater Replacement- (Item 14)

Start with steps fig's 1-3. Remove blower housing upper (Item 9) see step fig. 4 under motor replacement.



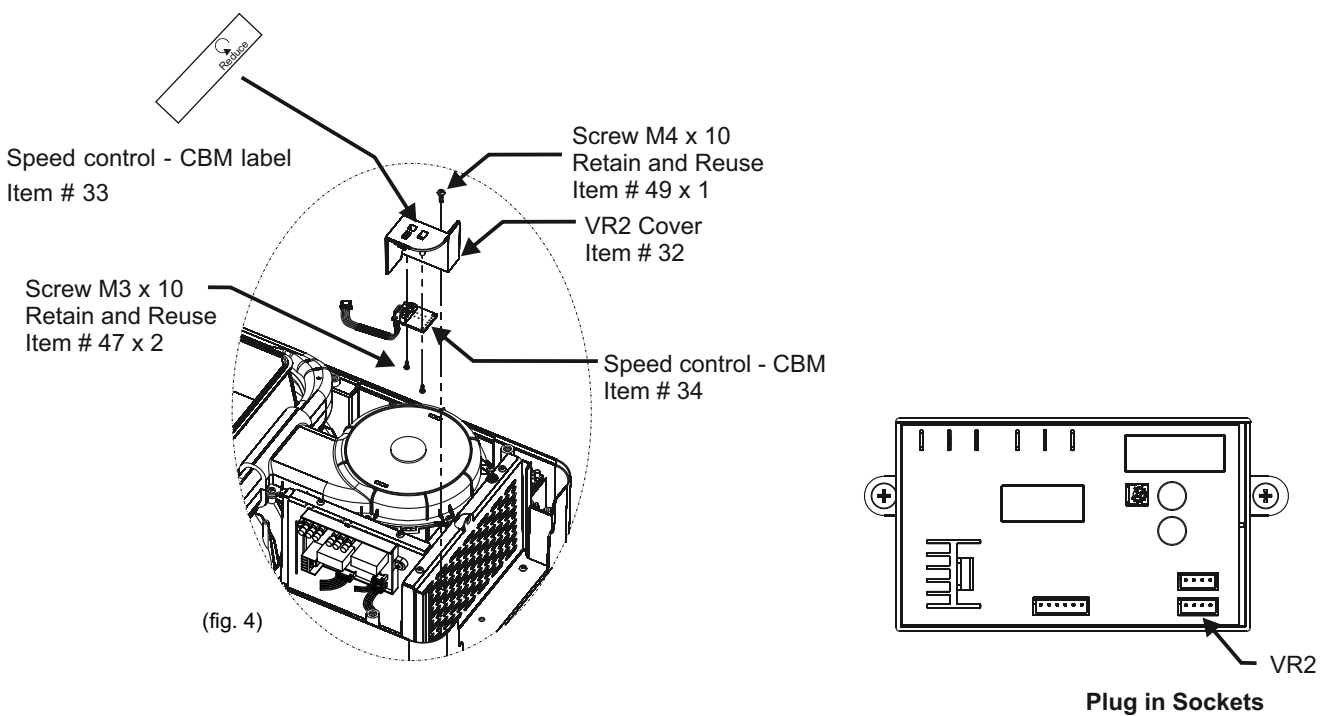
CBM Replacement- (Item 26)

Start with steps fig's 1-3



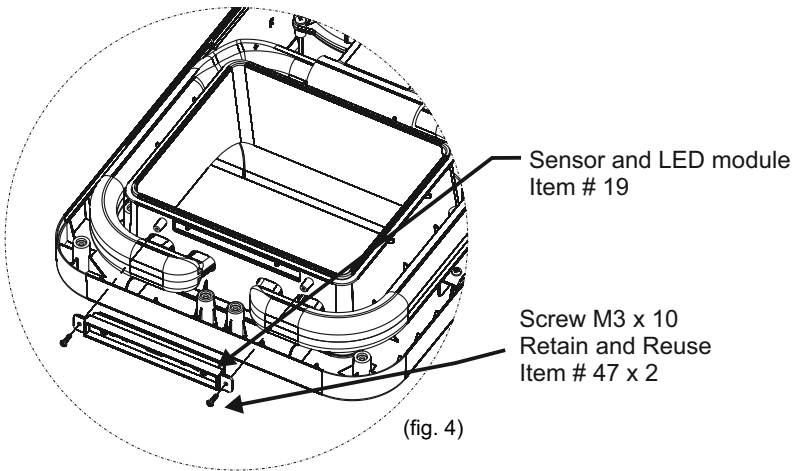
Speed Control - CBM Replacement- (Item 34)

Start with steps fig's 1-3



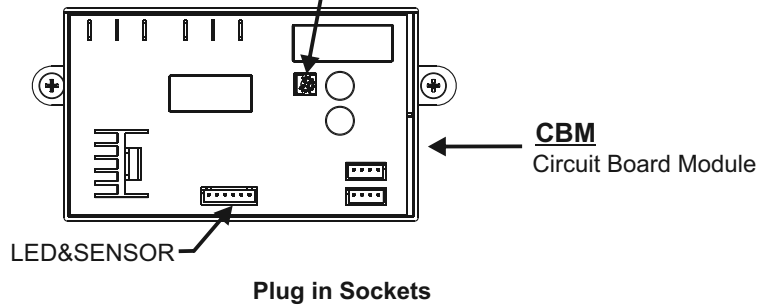
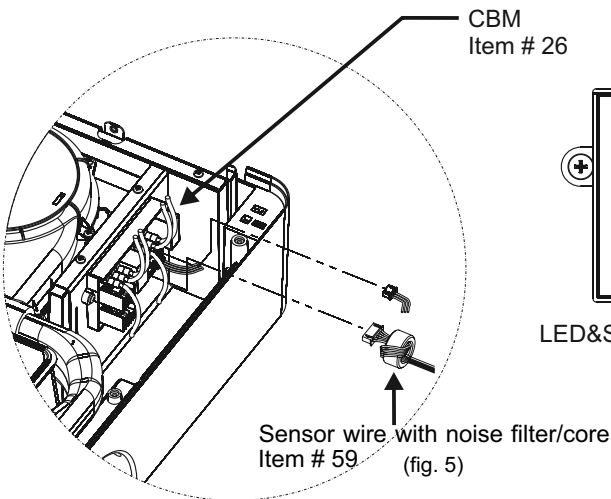
Sensor Module Replacement- (Item 19)

Start with steps fig's 1-3



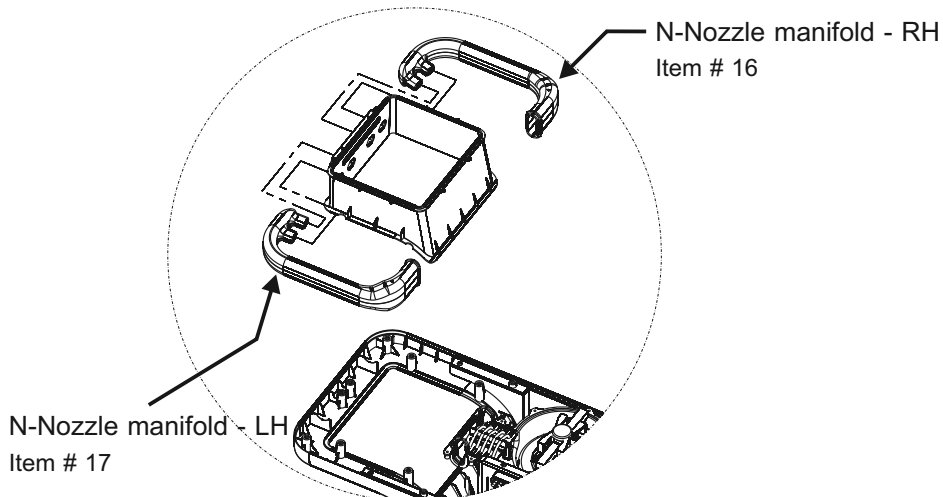
Sensor Adjustment Control

- ⌚ Clockwise: Lengthen the sensing range(+)
 - ⌚ Counterclockwise: Shorten the sensing range(-)
- DO NOT OVERTURN!**



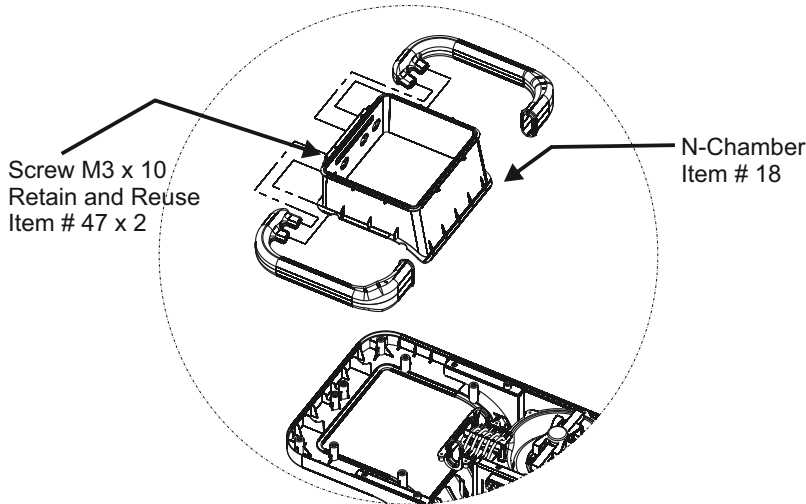
Nozzle Manifold Replacement- (Item 16, 17)

Start with steps fig's 1-3. Remove blower housing' upper (Item 9) see step fig. 4 under motor replacement.



Chamber Replacement- (Item 18)

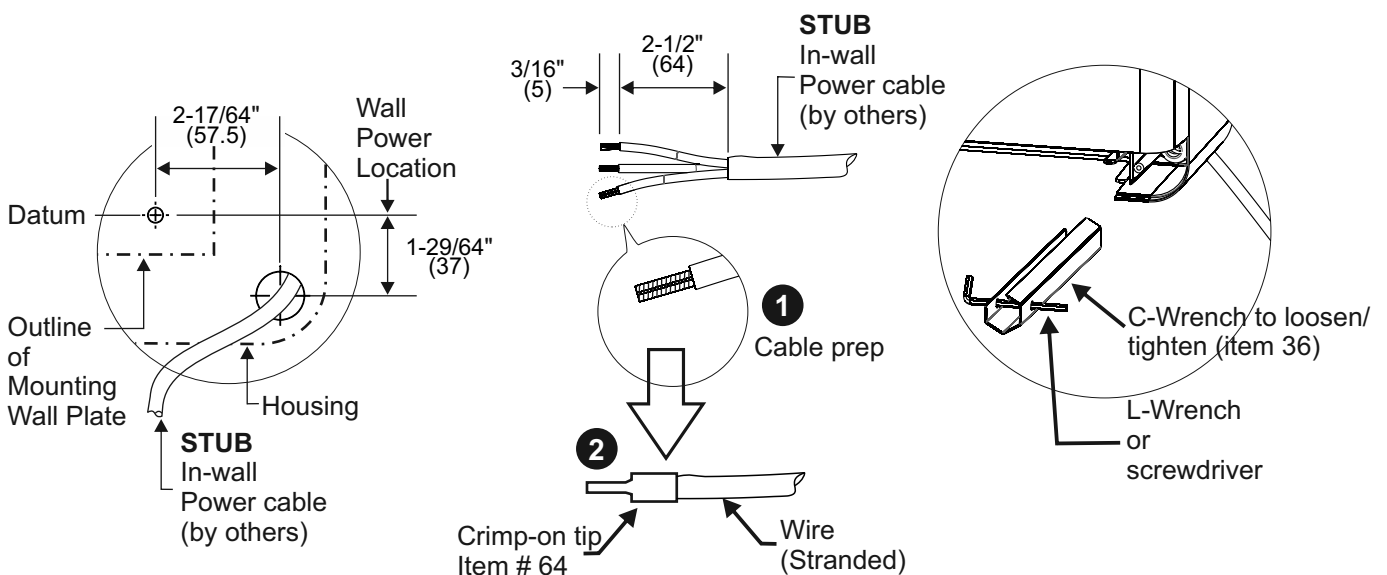
Start with steps fig's 1-3. Remove blower housing' upper (Item 9) see step fig. 4 under motor replacement.



Conversion from power cord (as supplied) to in-wall power supply (by others)- See also installation guide 1203270822.

Start with steps fig's 1-3. Make sure power is OFF before starting.

Remove power cord (item # 60) from terminal block and strain relief using C-socket wrench. Provide power supply (by others) in appropriate voltage for model selected at location per diagram in detail A (pg 2 this manual) and step 5.b. (pg 3 this manual). Feed power cord into cord-grip strain relief (item # 36) and follow step 6.a. Connections A-C (pg 3 this manual). Insertion of 16AWG ~ 14AWG stranded wires into terminal block (item # 35) receptacles will be easier and provide better results if crimp-on wire tips (item # 64) are installed on wire ends prior to feeding cable through cord-grip (item # 36). If solid wire power cable is provided, tips are not required.

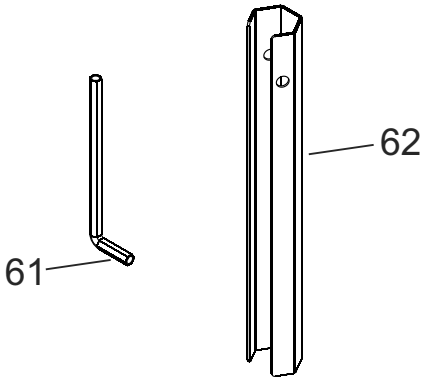


Repair parts list

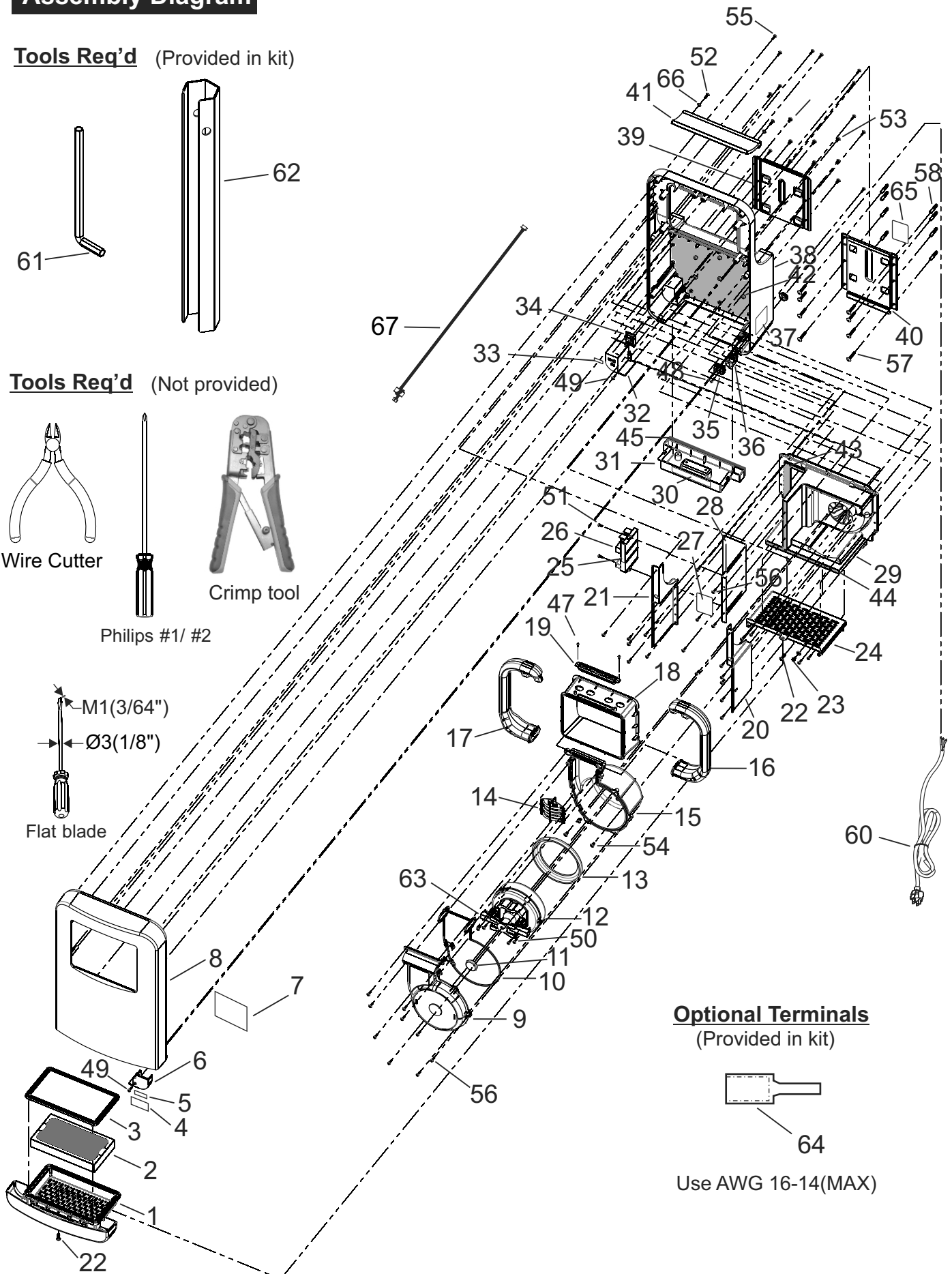
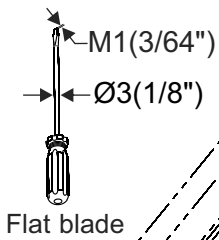
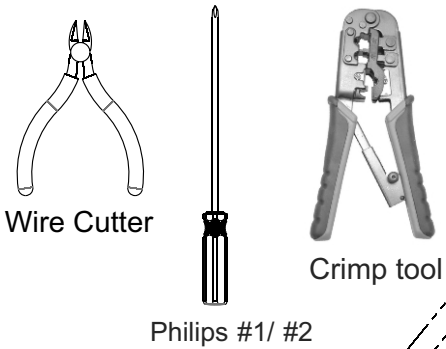
Key	Part #	Description	Qty	Key	Part #	Description	Qty
1	A0194	Drawer assembly	1	35	A0010	Terminal block	1
2	A0278	Super filter	1	36	A0226	Cable holder	1
3	A0195	Filter rubber seal	1	37		Rating label	1
4		CAUTION label	1		A0423	20200-2 220-240VAC	
	A0132	240Vac - 8A			A0424	20201-2 220-240VAC	
5	A0196	LNG label	1	38	A0230	Cover - rear	1
6	A0197	Terminal cover	1	39	A0231	Base plate - cover side	1
7	A0417	240V Label, Circuit Diagram	1	40	A0232	Base plate - wall side	1
8	A0199	Cover - front	1	41	A0233	Absorbent ceramic	1
9	A0200	Blower housing - Upper	1	42	A0234	Foam gasket A (on Cover - rear)	1
10	A0201	Blower housing rubber seal	1	43	A0235	Foam gasket B (on Main bracket -RH)	1
11	A0202	Motor rubber - Lower	1				
12		Motor	1	44	A0236	Foam gasket C (on Main bracket - Bottom)	1
	A0147	700W@120Vac	1				
13	A0362	Motor rubber cup ring	1	45	A0237	Foam gasket D (on Drain tray)	1
14		Heater assembly	1				
	A0419	800W@120Vac,18Ω		46	-	-	
15	A0205	Blower housing - Lower	1				
16	A0307	N-Nozzle manifold - RH	1	47	-	Self threading screw M3x10,philips pan head	7
17	A0308	N-Nozzle manifold - LH	1	48	-	Self threading screw M3x16,philips pan head	2
18	A0309	N-Chamber	1	49	-	Self threading screw M4x10,philips pan head	2
19	A0310	N-Sensor and LED module	1	50	-	Screw M4x10,philips pan head	4
20	A0210	Bracket - RH	1	51	-	Screw M4x10,philips pan head with external tooth lock washer	2
21	A0211	Bracket - LH	1				
22	A0212	Security hex screw	2	52	-	Self threading screw M4x16,philips pan head	2
23	A0011	Grounding screw with cup	1	53	-	Self threading screw M5x10,philips pan head	8
24	A0213	Air intake screen	1	54	-	Self threading screw M5x15,philips pan head	3
25	A0320	Terminal label	1	55	-	Screw M4x12,philips pan head	12
26		Circuit Board Module (CBM)	1	56	-	Self threading screw M4x12,philips pan head	30
	A0420	240Vac		57	-	Self threading screw №10x1-1/4",philips pan head	8
27	A0218	Socket ID label	1				
28	A0219	CBM bracket	1	58	-	Plastic expansion anchor Ø9/32" x 1-3/8" (Ø7 x 35)	8
29	A0220	Main bracket	1				
30	A0221	Drain tray label	1	59	A0193	Wires Harness (Not Shown)	1
31	A0222	Drain tray	1	60	A0335	Power cord 220-240 Vac	1
32	A0223	VR2 cover	1	61	A0124	Security hex wrench	1
33	A0422	Speed control - CBM label	1	62	A0241	C-Wrench	1
34	A0423	Speed control - CBM	1	63	A0279	Motor brush	2
				64	A0242	Crimp-on wire tips for terminal block	3
				65	A0243	Instruction label	1
				66	A0244	Conical washer	2
				67	A0239	Sensor wire with noise filter/core	1

Assembly Diagram

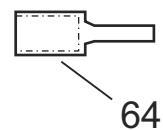
Tools Req'd (Provided in kit)



Tools Req'd (Not provided)



Optional Terminals (Provided in kit)



Use AWG 16-14(MAX)