



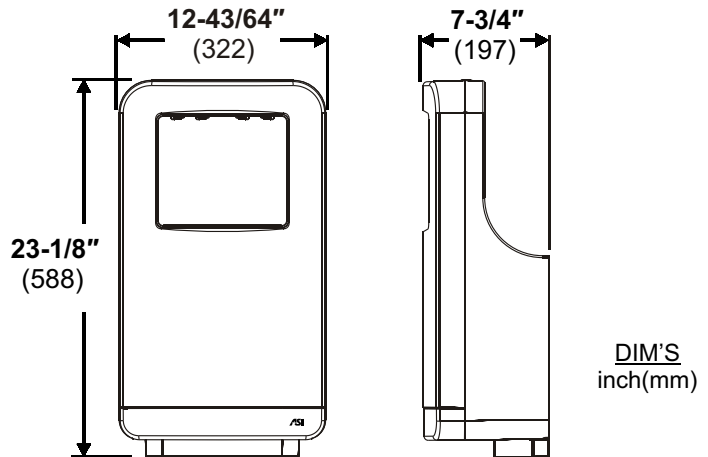
Hand Dryer **Operating Instructions and Parts Manual** Surface-mounted High-Speed hand dryer

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 # 20200-1 MODEL # 20201-1

MODEL # 20200-2 MODEL # 20201-2

MODEL # 20200-3 MODEL # 20201-3



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TECHNICAL SPECIFICATIONS

ITEM CATEGORY	PERFORMANCE DATA
Operating Voltage, 20200-1,20201-1	120VAC, 50/60Hz, 1.6kW
Operating Voltage, 20200-2,20201-2	240VAC, 50/60Hz, 1.5kW
Operating Voltage, 20200-3,20201-3	277VAC, 60Hz, 1.5kW
Output Warm Air Volume	55 - 88CFM {89 - 144m ³ /h}, Adjustable by Owner
Output Warm Air Temp	140°F {60°C} at ambient T = 77°F {25°C}, MAX, Adjustable by Owner
Output Air Speed	145mph (213ft/s) [65m/s {234km/h}] - 224mph (328ft/s) [100m/s {360km/h}], Adjustable by Owner
Sound Pressure	MIN 62.9dB-A to 67.2dB-A MAX @ 2m
Motor Type	1HP, 11-19k rpm, Adjustable, Brush Type, Dual Ball Bearings
Motor Thermal Protection	120VAC, Auto Resetting Thermostat turns unit off at 275°F {135°C}
	240VAC/ 277VAC, Auto Resetting Thermostat turns unit off at 203°F {95°C}
Heater Element	ON/ OFF Heating options (for 120V only); Range Adjustable by Owner, 400 - 900W
Heater Thermal Protection	Auto Resetting Thermostat turns heater element off at 185°F {85°C}, Resets at 167°F {75°C}, Thermal cut-off at 288°F {142°C}
Drying Time	Less than 12 seconds
Standby Power	Less than 0.5W
LED Color	Standby: color red; Active: color blue
Circuit Operation	Infrared Automatic, self adjusting
Sensor Range	4-23/32" ± 25/32" {120 ± 20}, Adjustable
Timing Protection	60 seconds auto shut off
Timing Duration	1 second delayed turn off after last sensor read
Cover Type	1/8" {3.0} thick molded ABS plastic
Net Weight	23.8lbs {10.8kg}
Shipping Weight	28.2lbs {12.8kg}
Unit Size	12-43/64" W x 23-1/8" H x 7-3/4" D {322 x 588 x 197}
Unit Color	20200 = Sliver/Black 20201 = White

20200/20201 Total

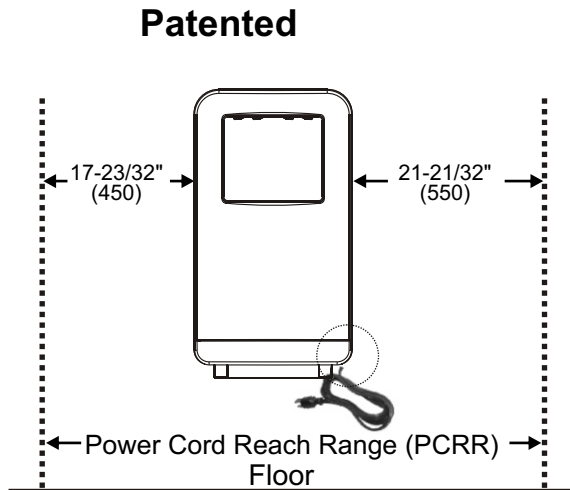
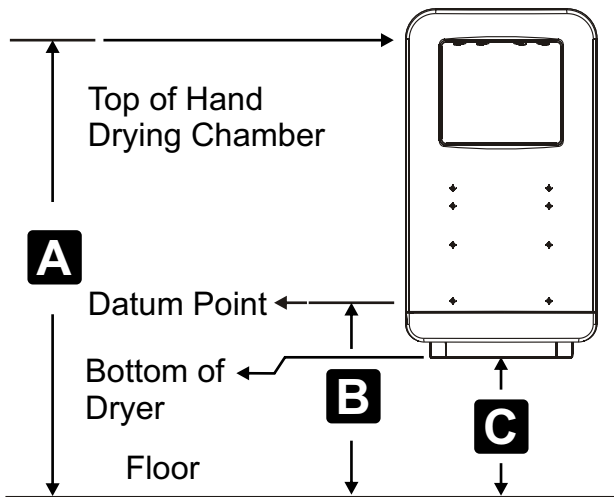
Input	Model	Motor			Heater		Total	
VAC	№	Vac	Inrush A(W)	Operating A (W)	Vac	Inrush / Operating A(W)	Inrush A(W)	Operating A(W)
110	20200(1)-1	110	8.00 (882)	5.34 (588)	110	6.87 (756)	14.87 (1638)	12.2 (1344)
115	20200(1)-1	115	8.38 (964)	5.59 (643)	115	7.19 (827)	15.57 (1791)	12.7 (1469)
120	20200(1)-1	120	8.74 (1050)	5.83 (700)	120	7.50 (900)	16.24 (2025)	13.3 (1600)
208	20200(1)-2	208	3.78 (789)	2.52 (526)	208	2.88 (601)	6.66 (1390)	5.40 (1127)
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)
277	20200(1)-3	277	4.38 (1050)	2.92 (700)	277	3.33 (800)	7.71 (1850)	6.25 (1500)

Recommended Mounting Heights

Above Finished Floor (AFF)

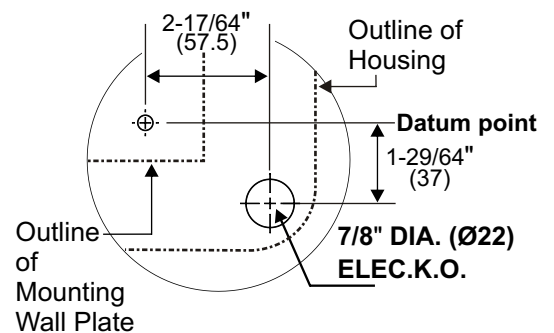
See Mounting Template on Installation Guide 1203270822

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)
Handicapped	35-7/16" (900)	18-7/64" (460)	14-41/64" (372)



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

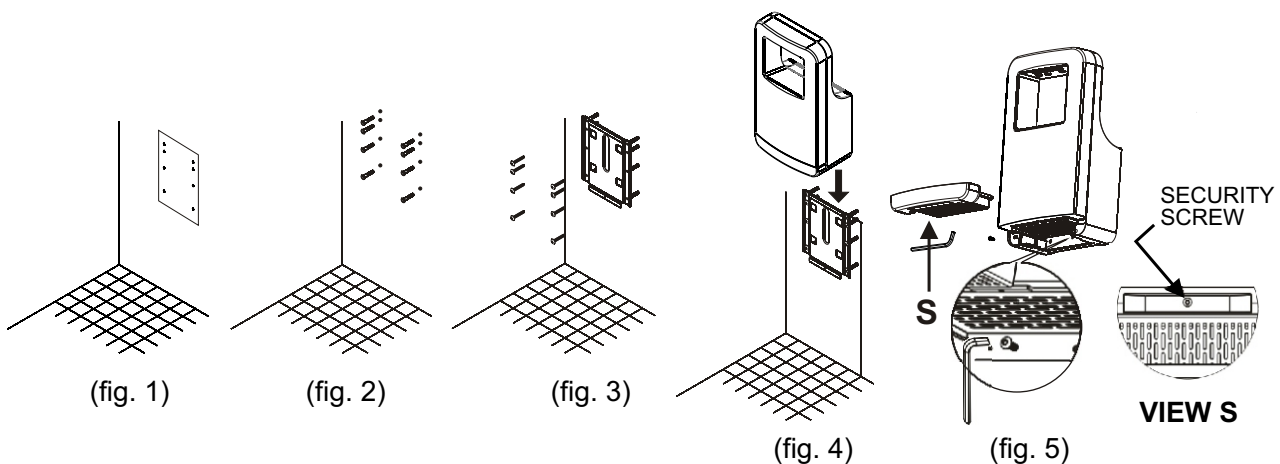
Installation

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" (610) 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 9/32" diameter ($\varnothing 7$) 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 1/4" dia. (M6) screws at length that will ensure 1" (25) min. stud penetration. For masonry walls use expansion bolts or anchors for 1/4" dia. (M6) screws to ensure penetration 1/4" (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 "⊕". 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.



20200/20201

General safety information

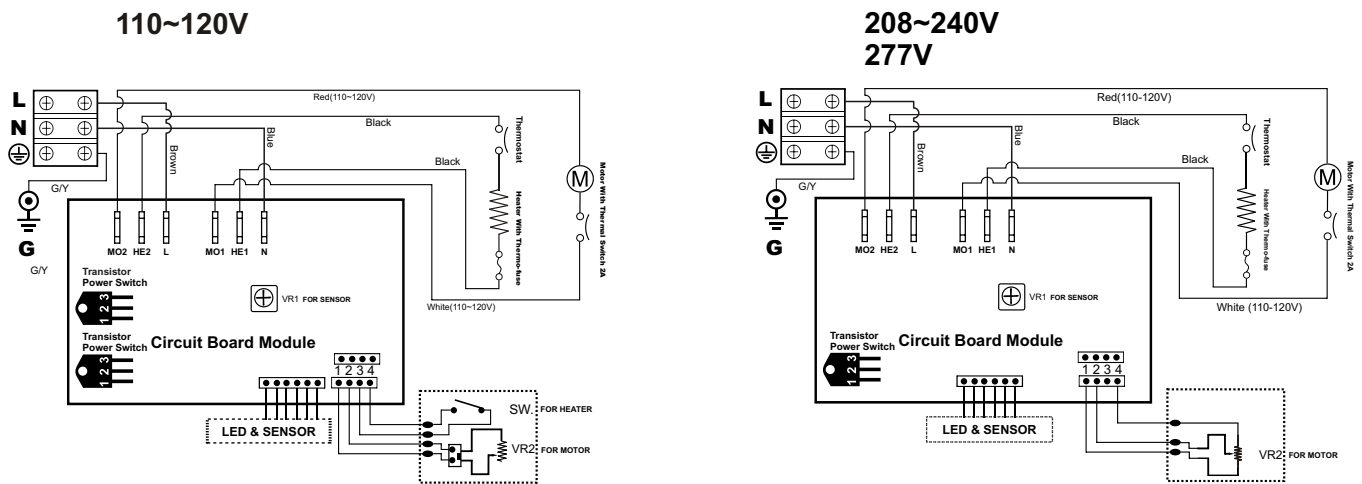
⚠ WARNING This product is intended for installation by a qualified service person. Select wire ga to suit unit model ratings.

⚠ 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.

Circuit Diagram



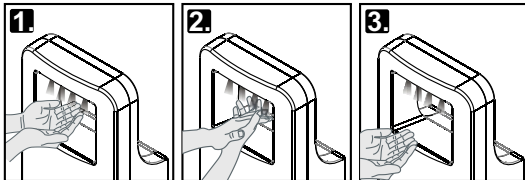
Warranty

All of our dryers are designed and manufactured to provide years of dependable performance. Component parts are guaranteed to be free of defects in material and workmanship for a period of **Five (5) years**. This guarantee will be honored provided that the dryer is installed and maintained in accordance with the instructions. Parts damaged during the Installation are the purchaser's responsibility. **ASI's** warranty covers defects exclusively, and only liability for the replacement of defective parts will be accepted. This warranty does not cover wear and tear, or misuse and abuse. Transportation, freight costs and labor are also excluded. Defective parts must be returned prepaid, accompanied by the unit serial number, to the point of purchase. This warranty is granted solely to the original purchaser of the unit and is subject to registration.

20200/20201

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.

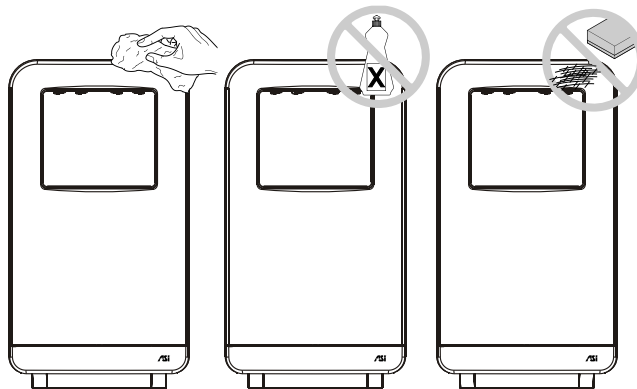


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Cleaning and Maintenance

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)

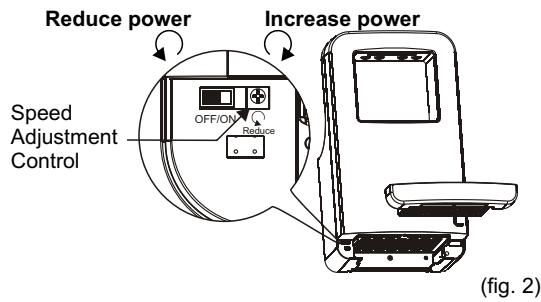
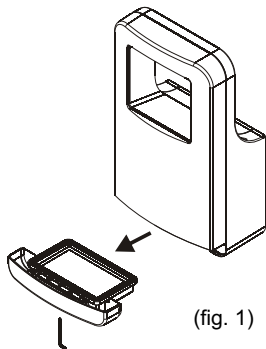
- L-Key Security hex driver 4 mm x 1 pc (5/32" pin-hex will work if tool is lost)
- Deep C-socket Wrench (for Cord Strain Relief Nut)

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 L-Key (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.



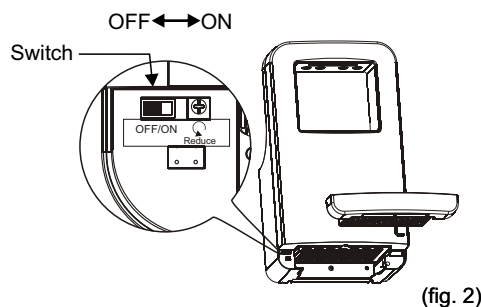
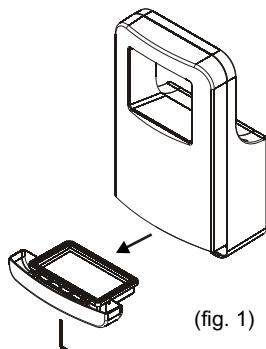
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Heater Element Switch ON / OFF (for 120V only)

Dryer has a switch that can turn the heater ON or OFF. The heater switch doesn't affect the drying time. In cold climates, it may be more comfortable if it is on when drying hands. However, it will save half of the energy if it is off. This function can be adjusted depending on the needs of the owner. The factory setting for the heater is ON.

To turn the heater ON/OFF:

1. Use L-Key (supplied) to unlock and withdraw the filter access drawer. (fig. 1).
2. Switch it to the right to turn ON the heater. Switch it to the left to turn OFF the heater (fig. 2).
3. Replace the filter access drawer and lock the security screw, being careful to not over tighten screw.

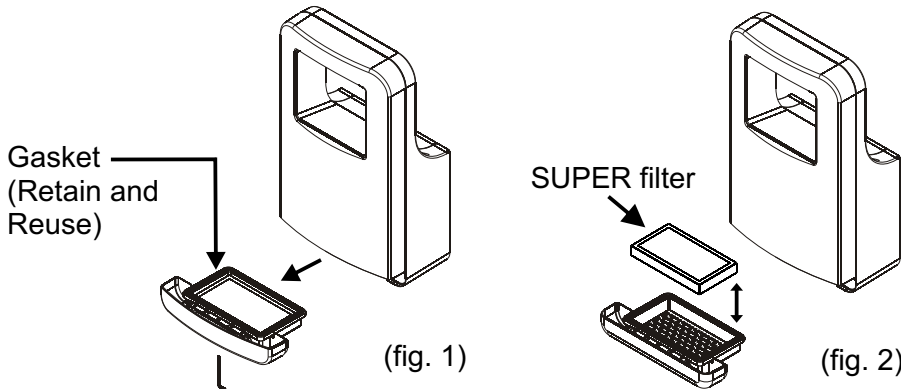


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20200/20201

How to Change the SUPER Filter

1. Use L-Key (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.

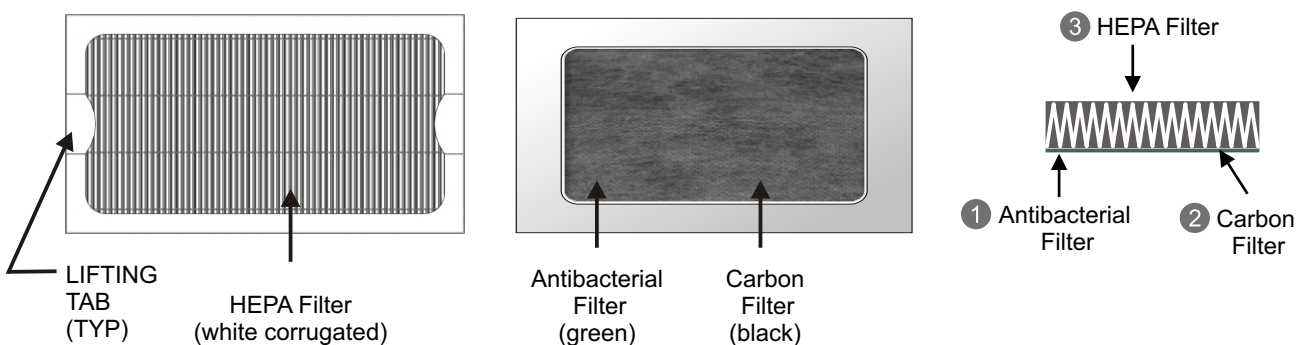


Recommended Period for Changing the SUPER filter

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

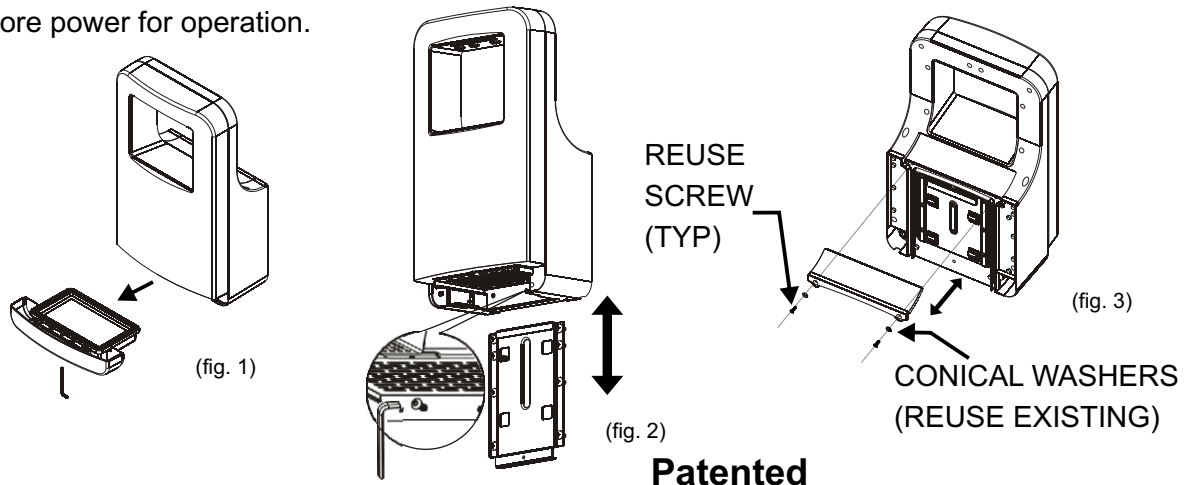
The absorbent ceramic can absorb 70g of water, and has the capacity to take a full load approximately 280 times per day. The ceramic also can evaporate water. During normal use, water will be evaporated continuously and maintain the absorbent function.

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

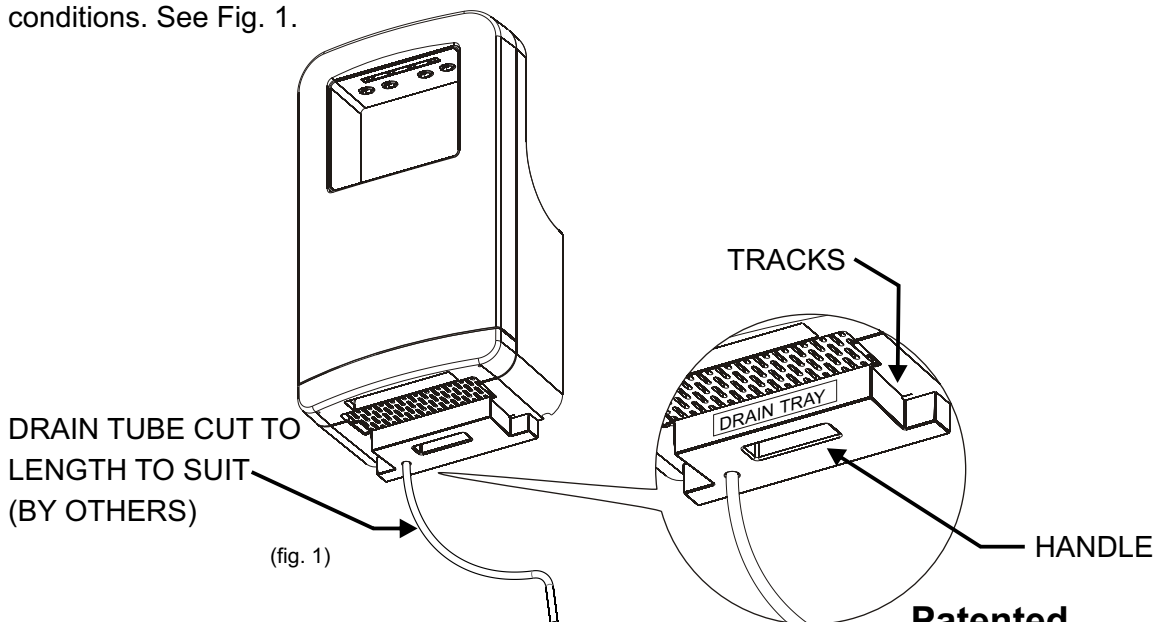
20200/20201

1. Use the L-Key to loosen the security screw and remove the filter access drawer. (Fig. 1)
2. Use the L-Key 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.



20200/20201

Diagnostics and Remedies

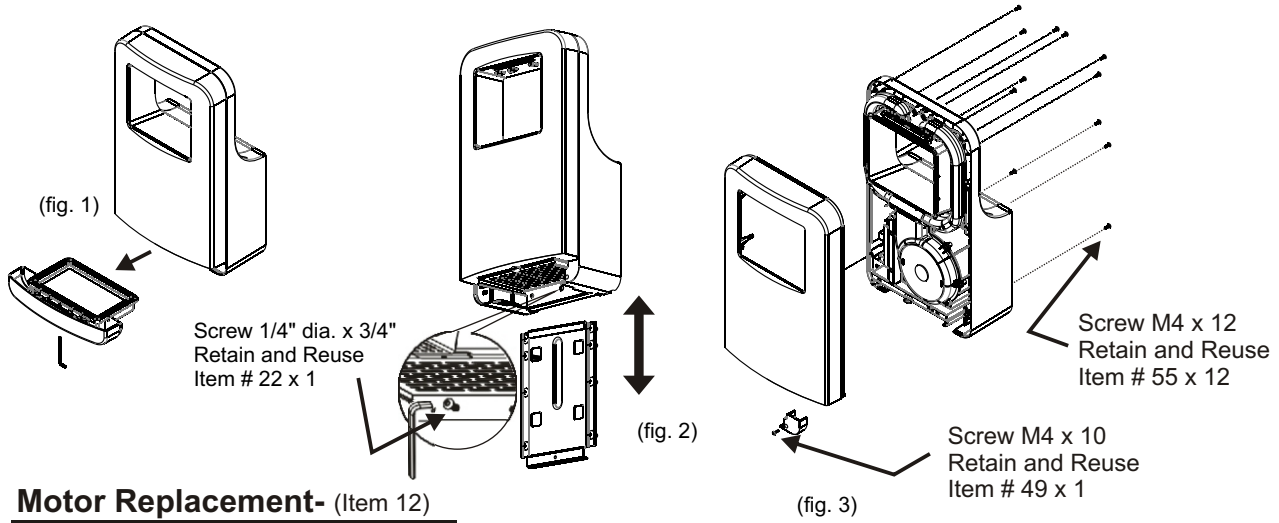
Symptom	Corrective Actions for Initial Installation Failures
If the dryer will not run	First ensure that the breaker supplying the dryer is operational. If it is, disconnect the power and remove the dryer cover. Taking suitable precautions to avoid shock hazard, reconnect the power and check for Voltage 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. Make sure the SW-1(on item 34) to "ON" (for 120V only).
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. Decrease the sensing range. 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.
Sensor only "sees" objects close to top of hand chamber	Check VR1 on CBM and adjust as required to improve sensitivity in complete chamber space. CAUTION: Do not adjust range to "see" the bottom of the housing! See instructions on Page 11 of this OM.

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. Taking suitable precautions to avoid shock hazard, reconnect the power and check for Voltage at the terminal block. For 208~240 V and 277 V: Disconnect power from unit; 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 $\leq 25/64$ " [10]. If after reassembly and testing there is still no motor function then replace motor.
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. If problem persists, replace sensor.
The heater gets hot but no air stream is produced	Disconnect the power. Remove the dryer cover and disassemble the blower-motor/fan housing. Replace the fan motor.
The dryer only blows cold air during a full cycle	Disconnect the power. Remove the dryer cover and disassemble the blower-motor/fan housing. Test the thermostat for open circuit. Check the heater element for signs of burning or breakage. Damaged element must be replaced.
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. Disassemble the blower-motor/fan housing. Check the motor brushes for worn condition ($\leq 25/64$ " [10] graphite remains) and replace them, if necessary.

Common First Disassembly Steps

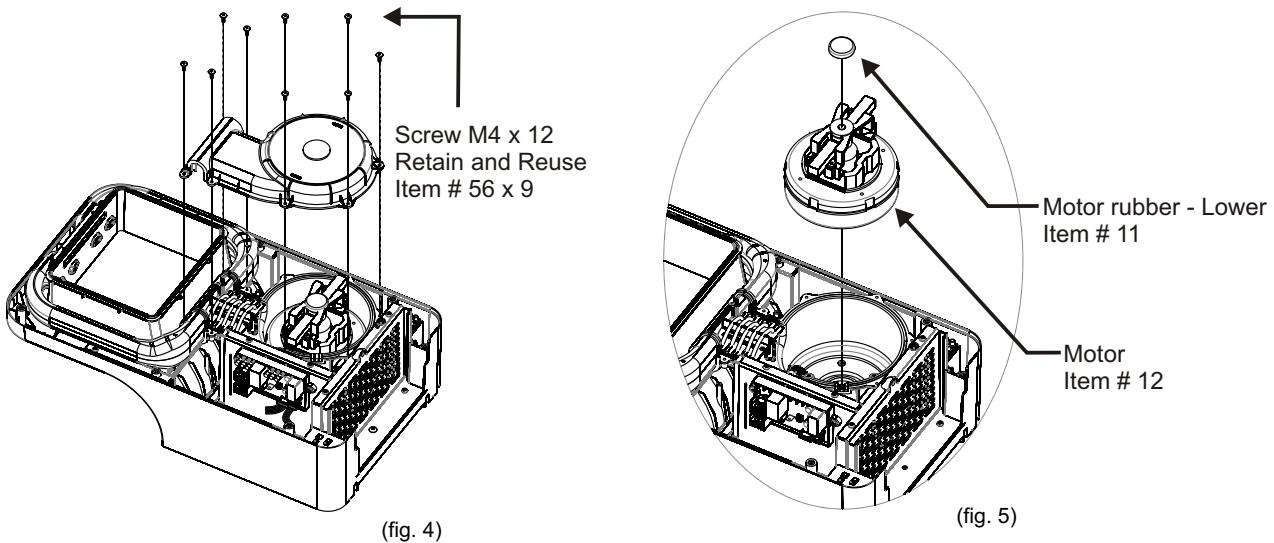
20200/20201

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

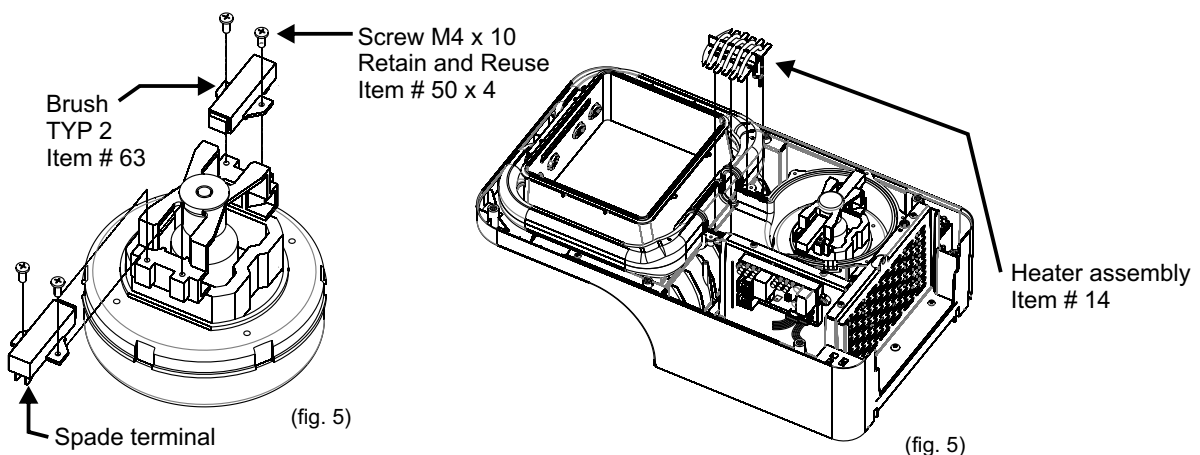


Brush Replacement- (Item 63)

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

Heater Replacement- (Item 14)

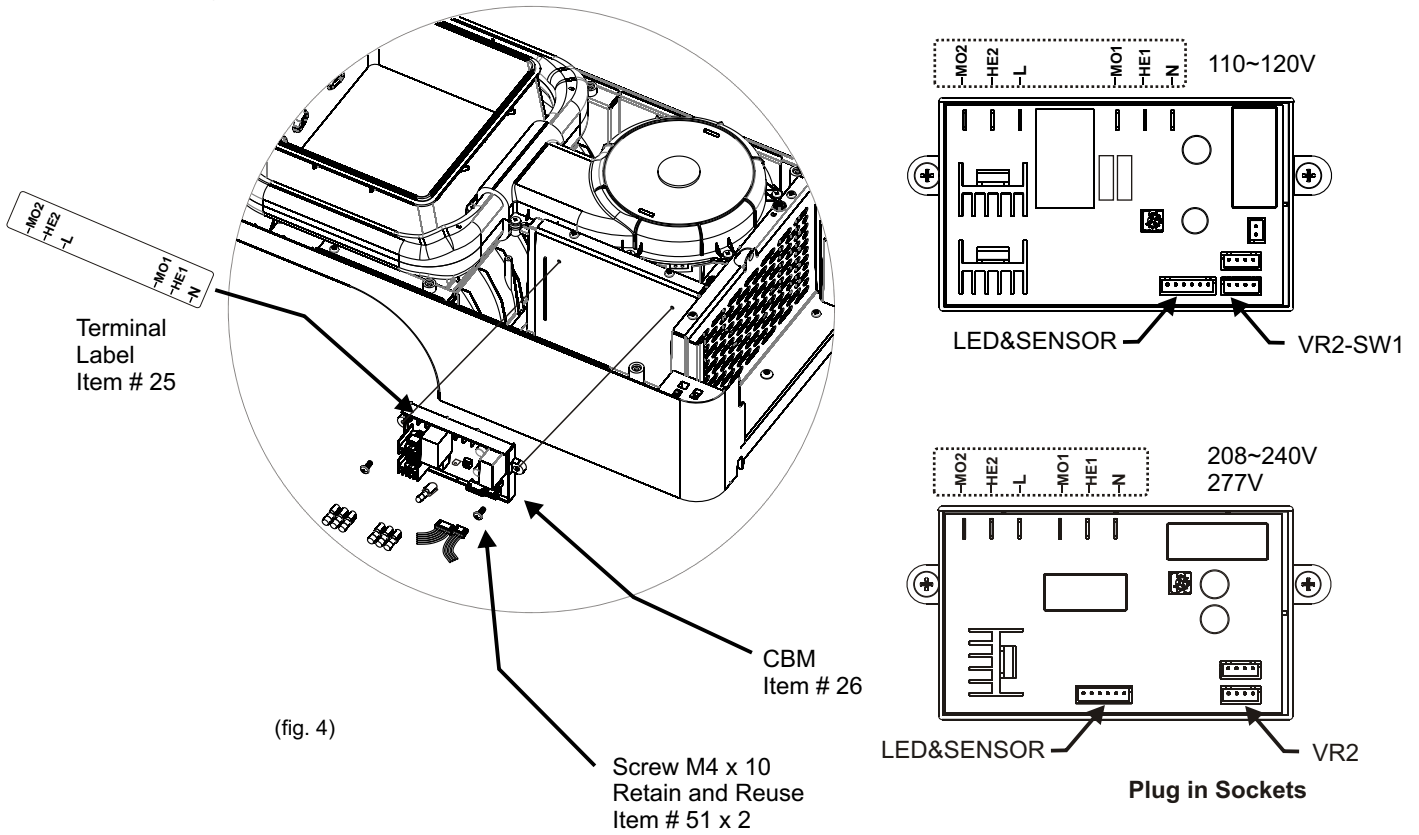
Start with steps fig's 1-3. Remove blower housing upper (Item 9) see step fig. 4 under motor replacement.



20200/20201

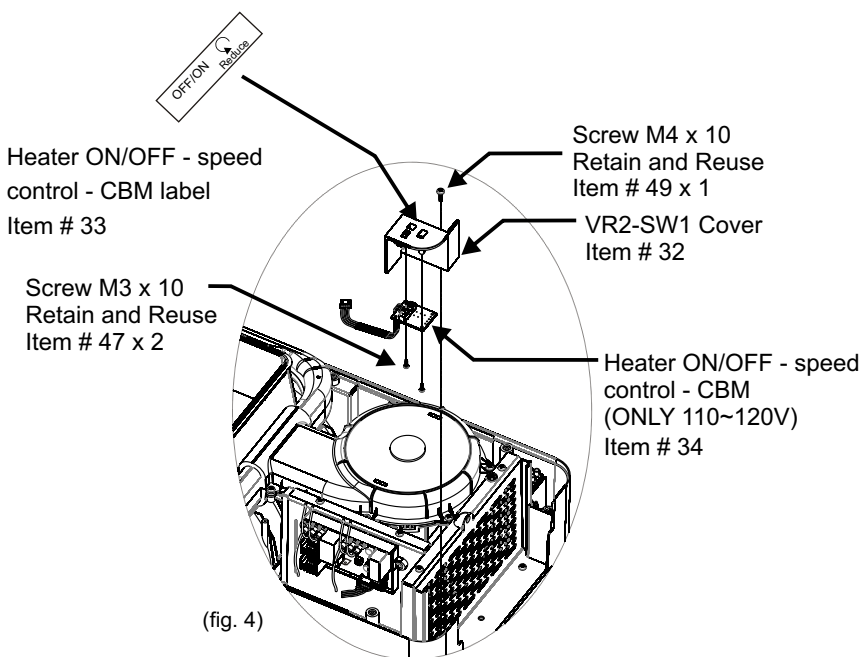
CBM Replacement- (Item 26)

Start with steps fig's 1-3



Heater ON/OFF - Speed Control - CBM Replacement- (Item 34)

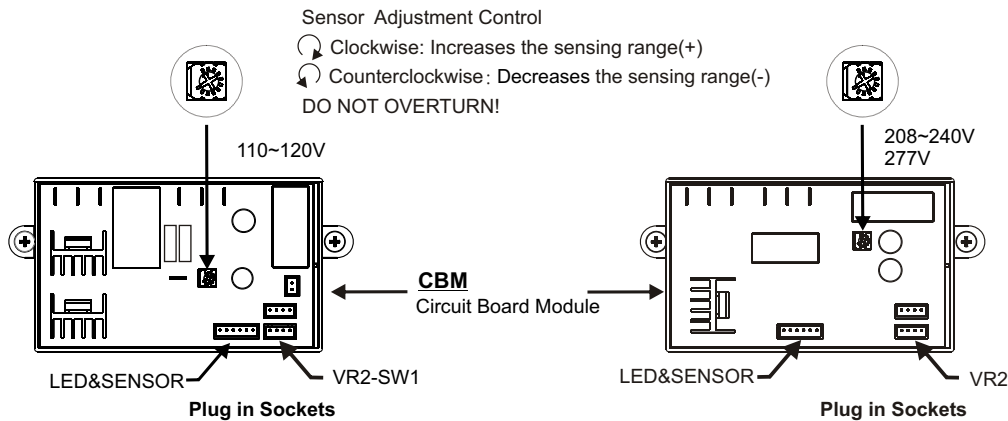
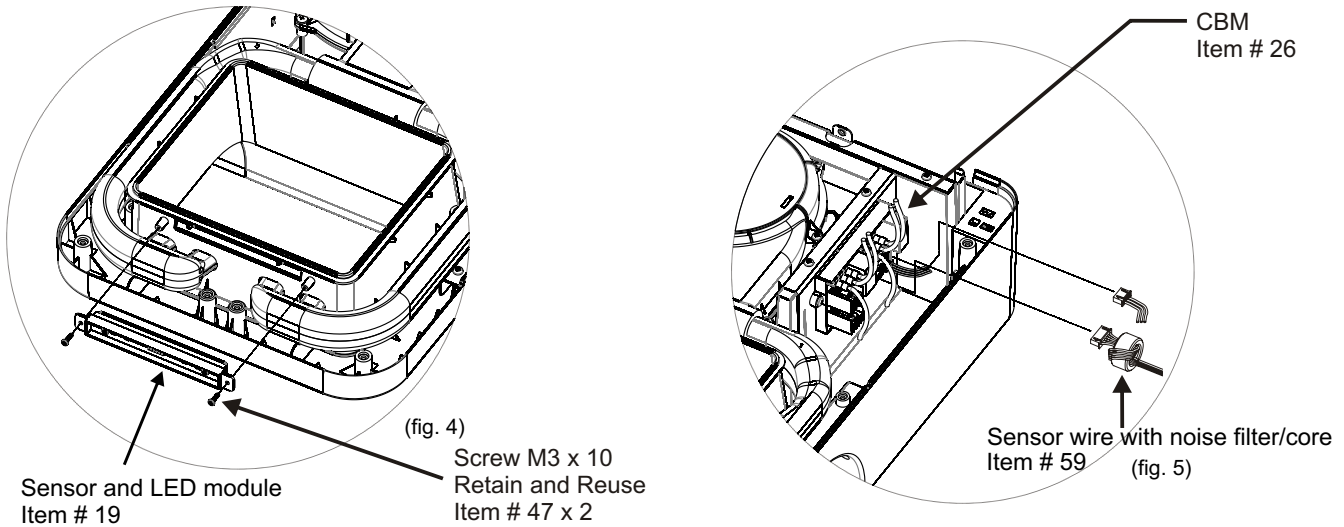
Start with steps fig's 1-3



20200/20201

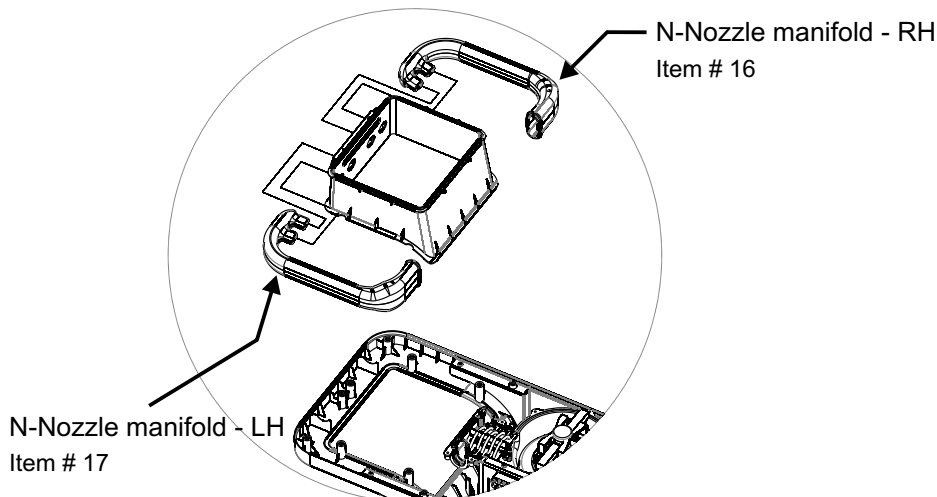
Sensor Module Replacement- (Item 19)

Start with steps fig's 1-3



Nozzle Manifold Replacement- (Item 16, 17)

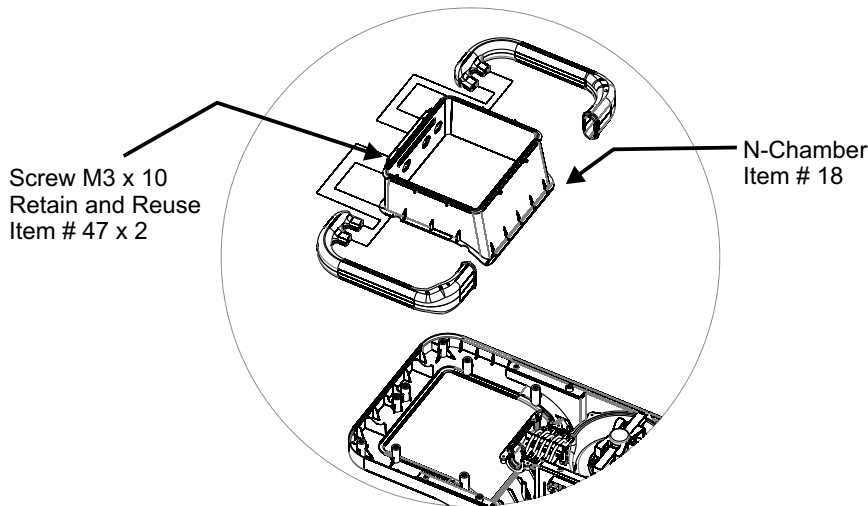
Start with steps fig's 1-3. Remove blower housing' upper (Item 9) see step fig. 4 under motor replacement.



20200/20201

Chamber Replacement- (Item 18)

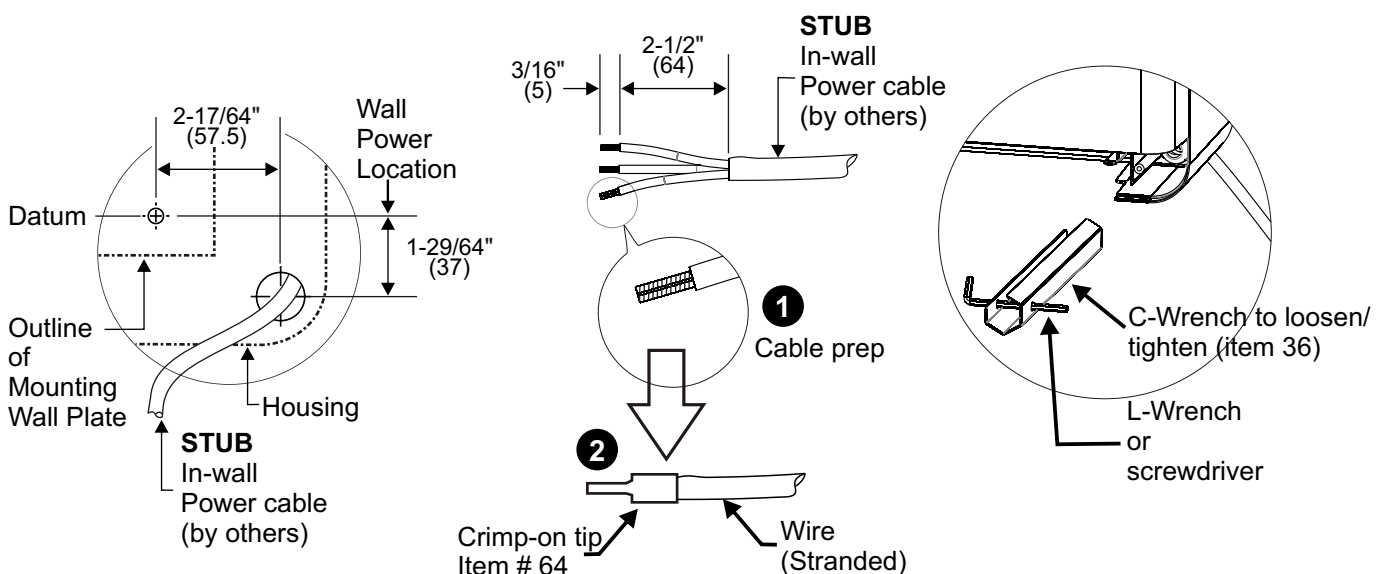
Start with steps fig's 1-3. Remove blower housing' upper (Item 9) see step fig. 4 under motor replacement.



**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.





20200/20201

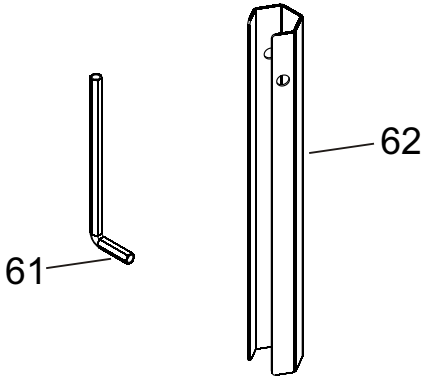
Repair parts list

Key	Part #	Description	Qty	Key	Part #	Description	Qty
1	A0194	Drawer assembly	1	34	A0225	Heater ON/OFF - speed control - CBM (120Vac)	1
	A0300	Drawer assembly white			A0423	Speed control - CBM (240Vac, 277Vac)	
2	A0278	Super filter	1	35	A0010	Terminal block	1
3	A0195	Filter rubber seal	1	36	A0226	Cable holder	1
4		CAUTION label	1	37		Rating label	
	A0234	15A - 120Vac			A0314	20200-1 1.6kW	A0317 20201-1 1.6kW
	A0268	8A - 240Vac, 277Vac			A0426	20200-2 1.5kW	A0428 20201-2 1.5kW
5	A0196	LNG label	1		A0427	20200-3 1.5kW	A0429 20201-3 1.5kW
6	A0197	Terminal cover	1	38	A0230	Cover - rear	1
7		Label, Circuit Diagram	1		A0302	Cover - rear white	
	A0306	120Vac		39	A0231	Base plate - cover side	1
	A0418	240Vac, 277Vac		40	A0232	Base plate - wall side	1
8	A0199	Cover - front	1	41	A0233	Absorbent ceramic	1
	A0301	Cover - front white		42	A0234	Foam gasket A (on Cover - front)	1
9	A0200	Blower housing - Upper	1	43	A0235	Foam gasket B	1
10	A0201	Blower housing rubber seal	1			(on Main bracket -RH)	
11	A0202	Motor rubber - Lower	1	44	A0236	Foam gasket C	1
12	A0147	Motor 1HP@120Vac	1			(on Main bracket - Bottom)	
13	A0029	Motor rubber cup ring	1	45	A0237	Foam gasket D	1
14		Heater assembly	1			(on Drain tray)	
	A0126	900W@120Vac,16Ω (120Vac)		46	A0238	Foam gasket E	1
	A0419	800W@120Vac,18Ω (240Vac, 277Vac)				(on Blower housing - Upper)	
15	A0205	Blower housing - Lower	1	47	-	Self threading screw M3x10,philips pan head	6
16	A0307	N-Nozzle manifold - RH	1	48	-	Self threading screw M3x16,philips pan head	2
17	A0308	N-Nozzle manifold - LH	1	49	-	Self threading screw M4x10,philips pan head	2
18	A0309	N-Chamber	1	50	-	Screw M4x10,philips pan head	4
19	A0310	N-Sensor and LED module	1	51	-	Screw M4x10,philips pan head	2
20	A0210	Bracket - RH	1			with external tooth lock washer	
21	A0211	Bracket - LH	1	52	-	Self threading screw M4x16,philips pan head	2
22	A0212	Security hex screw	2	53	-	Self threading screw M5x10,philips pan head	8
23	A0011	Grounding screw with cup	1	54	-	Self threading screw M5x15,philips pan head	3
24	A0213	Air intake screen	1	55	-	Screw M4x12,philips pan head	12
25	A0320	Terminal label	1	56	-	Self threading screw M4x12,philips pan head	30
26		Circuit Board Module (CBM)	1	57	-	Self threading screw №10x1-1/4",philips pan head	8
	A0311	120Vac					
	A0420	240Vac		58	-	Plastic expansion anchor	8
	A0421	277Vac				Ø9/32" x 1-3/8" (Ø7 x 35)	
27	A0218	Socket ID label	1	59	A0239	Sensor wire with noise filter/core	1
28	A0219	CBM bracket	1	60	A0240	Power cord,120Vac	1
29	A0220	Main bracket	1	61	A0124	L-Wrench	1
30	A0221	Drain tray label	1	62	A0241	C-Wrench	1
31	A0222	Drain tray	1	63	A0279	Motor brush	2
32	A0223	VR2-SW1 cover	1	64	A0242	Crimp-on wire tips for terminal block	3
33	A0224	Heater ON/OFF - speed control - CBM label (120Vac)	1	65	A0243	Instruction label	1
	A0422	Speed control - CBM label (240Vac, 277Vac)	1	66	A0244	Conical washer	2

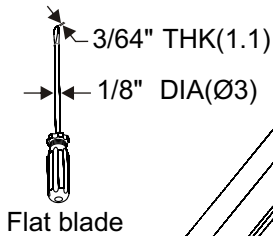
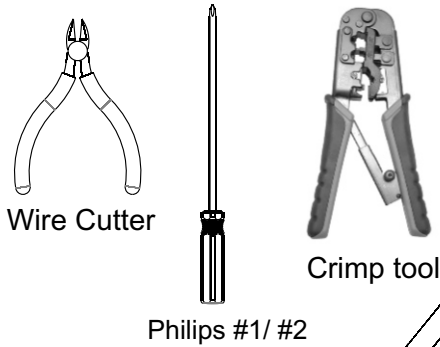
20200/20201

Assembly Diagram

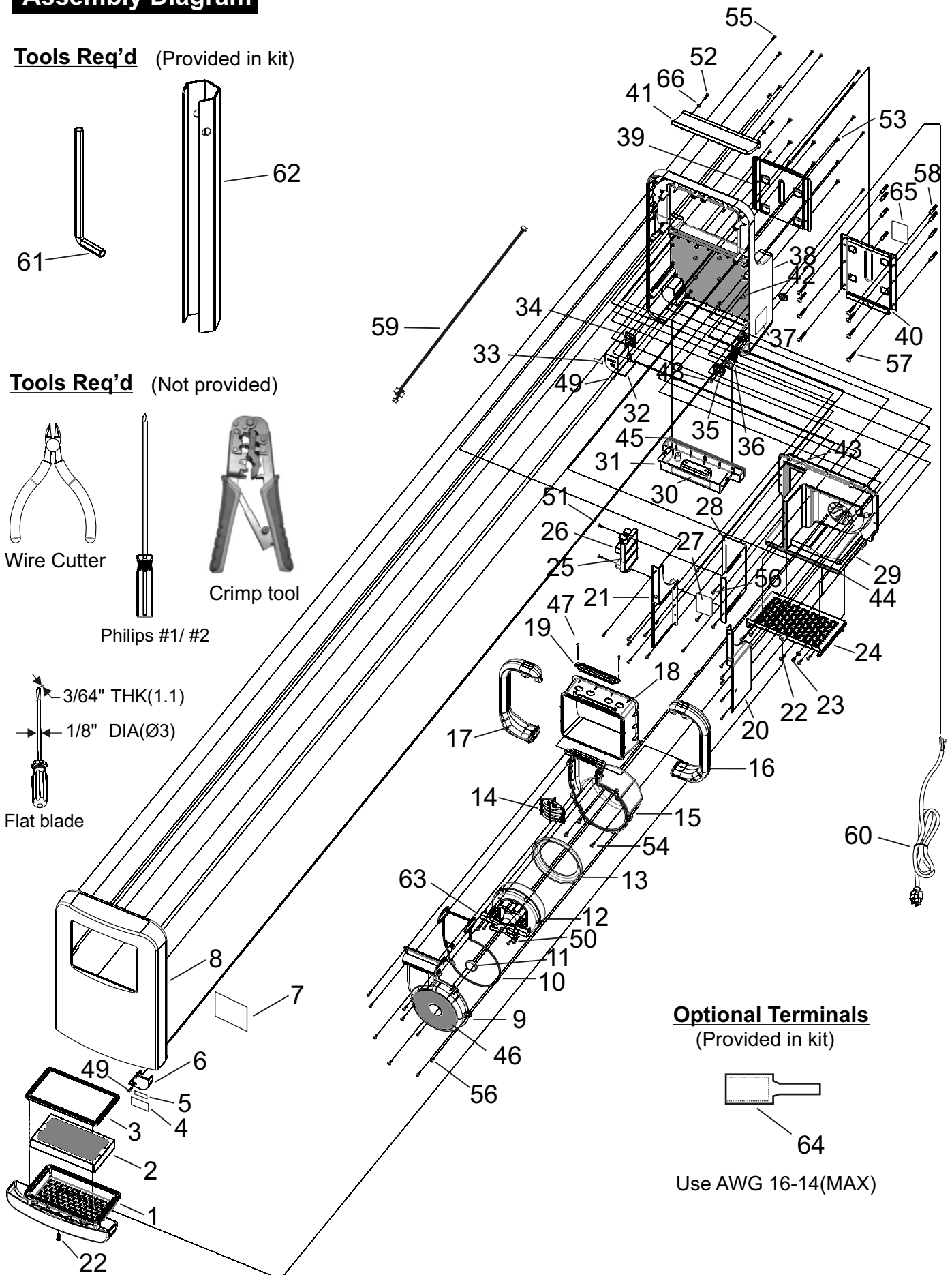
Tools Req'd (Provided in kit)



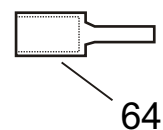
Tools Req'd (Not provided)



Flat blade



Optional Terminals
(Provided in kit)



Use AWG 16-14(MAX)

