INDOOR AIR QUALITY SPECIALISTS

TurboJet Max & Max-2 Manual

OPERATING INSTRUCTIONS & PARTS MANUAL

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National Air Duct Cleaners Association	International Sanitary Supply Association	National Air Filter Association	Duct Cleaners Network

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(M2014 M2015 BW)
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Remove the outer box and inspect for damage. Report all damage immediately to your carrier. If special set-up instructions are required, they will be taped to the outside of the Equipment or in the "Operating" section of this manual.
Inspect all of the packing material for small parts before discarding packaging material. Report all damage to Air-Care immediately. Any attempt at repairing damages may void warranty.

Check that all parts are present (See Page 8)

1. TurboJet Max Main Assembly, with Wheels, Motor and Blower. Release the 4 side latches and lift the front of the upper section so it hinges up to check for filters. The HEPA filter will remain in the bottom section, the First Stage, 2" pleated filter will remain in the top section and the ½" electrostatic 2nd stage filter will be between them.
2. First stage, 18" x 24" x 2" Disposable Pleated Filter
3. Second stage, 18" x 24" x 1/2" Electrostatic Air Filter
4. Third stage, 18" x 24" x 6" Certified HEPA Filter
5. 25' Extension Power Cord.
6. The Rotation molded handle is shipped loose in the box.

Safety Precautions

Always use safe and common sense precautions when working with Air-Care equipment. Do not block walkways with equipment, and remove delicate and breakable articles from the immediate work area. The following are precautions that should be reviewed by all persons who will be involved in the cleaning activity:

- Other than the 3 filters, there are no user serviceable components in Air-Care TurboJets. Only trained technicians should attempt to make internal repairs on this equipment.

- Always turn off the main power switch on the TurboJet front Panel, or disconnect the power before opening or removing the doors or filters.

- Inspect AC power plug to be sure the ground pin is in place. DO NOT USE AN EXTENSION CORD. Plug directly into power outlet.

- Never connect power to Air-Care equipment unless all covers and safety shields are in place. Mechanical and electrical parts could activate and cause injury.

- Never allow anyone but a properly trained technician to use the equipment or cleaning products.

- All Air-Care equipment is designed for US standard 115 volt, 60 Hz AC. Most Air-Care equipment can be special ordered to meet other worldwide standards for a reasonable price and delivery schedule. Always check the specifications on the equipment before connecting electrical power to Air-Care equipment.

If you have questions about the safe use of any Air-Care product, call 702-454-5515

Equipment specifications and part numbers are subject to change and improvement without notice.

Operating Instructions

Set-Up and Testing

Air-Care TurboJet Negative air machines are designed to "Pull" loose debris out of the air system to which they are connected and filter out harmful debris such as pollen, dust, mold spores and other debris with its 3 stage HEPA filter system. An agitating device to "Push" debris is required to properly clean an air system. The BrushMaster or Cobra Power Brush System or the Air Whisk and Sidewinder air tools are designed to loosen and agitate debris so the TurboJet can pull it out. See the "Duct Cleaning" section on page 4 of this manual for a summary of proper duct cleaning procedures.

To test the TurboJet, be sure all filters are in place and the Top is closed and latched in place. Attach the 12 gauge x 25-foot power cord to a dedicated outlet (one that has no other devices currently connected). Turn on the circuit breaker/switch on the front panel. The Max 2 has "High" and "Low" speed, so Select either "Low" (13 Amp) or "Hi" (17 AMP) speed then turn on the "Start" switch. The soft start feature will slowly climb to full speed within a few seconds and you should see the pressure gauge reading 1.8 to 4 inches of w.g. with nothing attached to the inlet. If you observe other readings, see the trouble-shooting guide in this manual. The Single Speed TurboJet Max operates in the same manner.

Attaching the TurboJet Hose to the Air System

Effective duct cleaning can be accomplished with the TurboJet connected to one of the following positions in the duct system. The "best" location is determined by the specific configuration of the particular air system. To obtain maximum "pull", always keep the attaching hose as short and as straight as possible. If you have 25-foot hose, it is often useful to purchase an extra set of twist lock collars. Cut the hose into a 7 foot and an 18 foot length pieces to prevent "bunching up" when the TurboJet is near the connecting point of the air system.

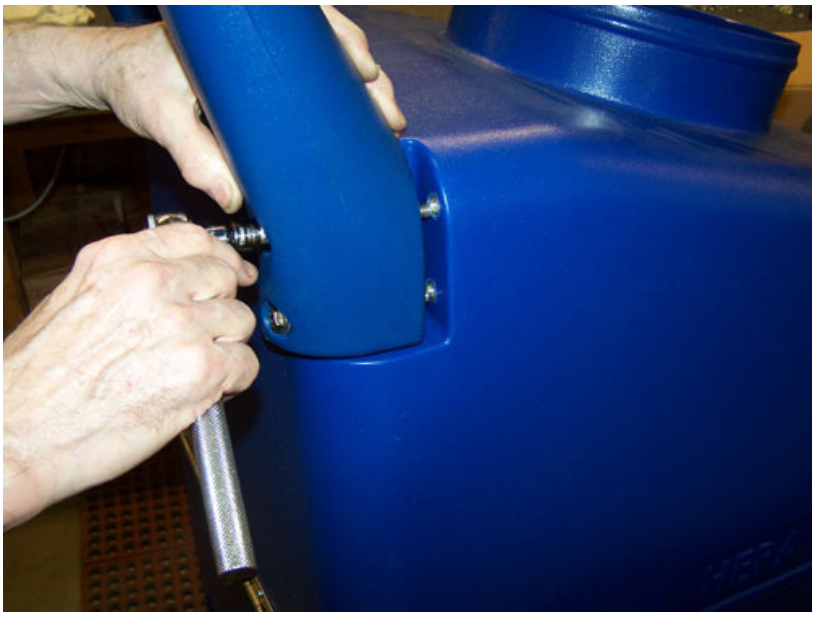
- With a basement or crawlspace air conditioner/furnace, cutting an access hole in the side of the supply side main trunk line is very effective. Be sure that no airflows through the furnace. To stop air from coming through the furnace, block the duct openings with foam register plugs or cardboard and duct tape. An alternate way to block the airflow would be to slip the customers existing furnace filter in a plastic trash bag and reinstall. If there are returns in each room, you will also need to connect to the return trunk line at the furnace and block it off while cleaning the return ducts. Some Air-Care dealers use 2 TurboJets at the same time, one on the supply and one on the return.

- With a garage, interior closet or roof mounted up-flow air conditioner/furnace, just remove the diffuser grill from a large ceiling or wall mounted supply duct and use the Pogo Pole hose adapter to connect the TurboJet inlet hose to the system. Connecting to a large supply duct is very effective. Gravity will help "pull" dust and debris into the Turbojet.

In some cases, it may be best to attach the TurboJet to each Supply or return duct and insert the agitation device into that same duct opening to disturb debris as far up stream and down stream as possible.

Handle Installation

Handle is bubble wrapped and packed near the bottom, front of TurboJet. It must be installed with the 4 bolts provided and your ½" socket wrench or nut driver.



Duct Cleaning Procedures

1. Bring TurboJet into close proximity to the planned connection.

2. Connect 12 gauge electrical power cord directly to a suitable electrical outlet (110V, 15AMP or more)

3. Connect a 12” hose to the 12” TurboJet inlet; then connect the other end to the most effective supply duct location using the optional Pogo Pole hose adapter or adapter plate.

4. Close off the return side of air handler by putting a filter in a plastic bag and reinstalling it into its holder.

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5. Turn on the power switch located on the control panel then turn on the start switch and the power light will go on and the blower motor will start providing strong suction. If a 20 amp Power outlet is used, the TurboJet Max 2 can be set to “High” speed. The TurboJet Max will run on 15 amp or 20 amp circuits.

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6. Follow recommended procedure to clean each supply, beginning at the most distant one, using the BrushMaster Power Brush System, Sidewinder or Air Whisk (sold separately).

7. After all ducts are cleaned, the ducts can be fogged with an EPA registered Deodorizer and Soot Set Sealer.

8. Before fogging the supplies, turn off the power switch. (fogger and fogging supplies sold separately)

9. Remove hose from the top of the TurboJet.

10. Place a piece of pellon, 20” X 22” over the 12” inlet.

11. Re-install hose, and turn on the power switch.

12. Fog the supplies, beginning with the most distant supply.

13. When the fogging is complete, turn off the power; remove the hose from the TurboJet and the supply duct.

14. Remove and discard pellon.

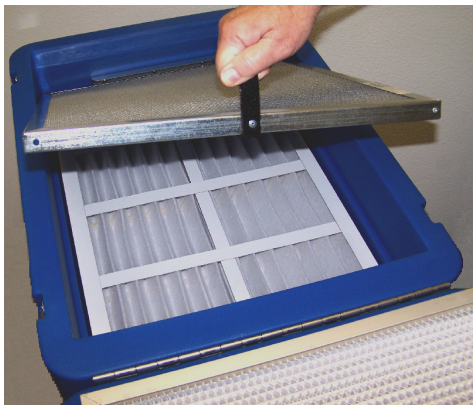
15. Inspect first stage filter, if loaded with debris, clean and reinstall.

16. Inspect electrostatic filters and wash if soiled.

17. Unplug power cord, put TurboJet back into the vehicle, and complete the job.

Maintenance

The TurboJet requires a minimum amount of maintenance, normally limited to cleaning or replacing filters as they become filled with dirt and debris. Cleaning the 1st and 2nd stage filters daily will extend the life of the 3rd stage HEPA canister filter.



1st and 2nd Stage Filter Replacement

1. The 1st stage disposable Pleated filter and 2nd stage Electrostatic air filter are mounted in the top section of the TurboMax and held in place with a metal bracket at one end and a Velcro strip in the center of the other end. They should be cleaned when visibly dirty and at the end of each workday. The duct debris captured in the upper section and first stage filter can be collected in a trash bag placed over the 12" Hose inlet and secured with the Velcro strap. Unlatch the top section and tip it back on its hinge so the debris falls into the bag from the upper section of the TurboJet and its first stage filter. Follow all local regulations on disposing of material removed from the ducts. In critical areas, such as hospitals, it is required to cover the inlet with 6-mil plastic when the job is completed to prevent the collected debris from escaping and contaminating the area while it is removed from the building to be emptied in a non-critical area where the trash bag can be disposed of safely. The first stage filter can be put into the same trash bag for disposal.

2. When necessary, wash the 2nd stage filters with a garden hose and nozzle at full force. First rinse in the opposite direction of the airflow, then rinse both sides. Occasionally, a degreaser such as Air-Care Zap electrostatic filter cleaner may be required to restore this filter to its' peak performance. Let the filter air dry before reinstalling into the unit.

   Note: When there is not sufficient time to allow filters to dry before using the TurboJet, simply dry vacuum the loose debris off of the filters' surfaces or use compressed air in an appropriate outdoor area.

When the control panel pressure gauge reads 4 1/4" or more and the 1st and 2nd stage filters are clean, the 3rd stage HEPA filter should be replaced (approximately once or twice per year, if other filters are cleaned regularly). There is no safe way to clean the HEPA filter without a risk of damaging it.

NOTE: Never wash the Pleated or HEPA filter with water.

HEPA Replacement

1. Open the upper section of the TurboJet to gain access to the filters. The first and second stage filters will be held in the upper section of the TurboMax.

2. Use care when removing the 3rd stage HEPA filter mounted in the bottom half of the cabinet. When the airflow through the inlet is noticeably reduced and the 1st & 2nd stage filters are clean, it is time to replace the 3rd stage HEPA filter.

NOTE: Applying compressed air pressure or using a vacuum brush on filter surface will damage the filter. If you have any questions, please call Air-Care at 800-322-9919

Parts and Accessories

Ref#	Description	Part#
	TurboJet Max COMPLETE ASSEMBLY (Single Speed) **TurboJet Max 2 COMPLETE ASSEMLY (Two Speed)**	**CE2014** **CE2015**
	Owners Manual For TuboJet Max and Max II	MM0193
1	TurboJet Max Main Assembly, with Wheels, Motor and Blower in tact	Call
2	First stage, 18" x 24" x 2" Disposable Pleated Filter	F1686
3	Second stage, 19" x 25" x 1" 82% Electrostatic Air Filter	F1826
4	Third stage, 18" x 24" x 6" HEPA Filter	F1952A
5	25' Extension Power Cord	1306
6	Latches and keeper to hold upper and lower sections together	1316/1292
7	Upper Handle (Part of Cabinet p/n 1904)	Call
8	12" Non-Marking Wheels	AC1578
9	Front Swivel Casters	1582
Not Shown	Bottom Carrying Handle, Spring Loaded	1310
10	Gauge, W.C. (Max 2 ONLY)	1317
11	Power Receptacle	1251
12	Light, Panel	3062
13	Switch, DPST Start	1913A
14	Switch, Hi/Low Speed (Max 2 ONLY)	3064
15	Circuit Breaker/Power Switch, Dual 20 amp.	3058
16	Pogo Pole Hose Adapter 12" (Optional)	CE1630E
17	Cap Plug, 4" Red (for Pogo Pole Assembly)	4267
Not Shown	12" x 12.5' Heavy Duty Hose with Velcro Straps	CE1946A
18	12" x 12.5' Light Duty Mylar Hose with Velcro Straps	CE1341A
Not Shown	12" x 12.5' Light Duty Mylar Hose Assembly Includes: (2) 12" x 12.5' Hoses, (4) Velcro Straps (1) Hose Coupler	CE1339A
Not Shown	12" x 25' Light Duty Mylar Hose with Velcro Straps	CE1340A
19	12" x 12". 26 gauge, galvanized steel duct patches, 10/pkg.	AC3002
20	Foam Register Plugs, 14pc./pkg.	CE1695
21	Pre-Filter, Pellon Moisture Barrier Sheets, 12/pkg.	F1682
23	12" Adapter Plate	CE1513C
24	Air-Care Fogger Model 2600 120 Volt(for 220 Volt Call)	CE1242
25	BrushMaster Power Brush System	CE3050A
25A	Cobra Power Brush System (Not shown)	CE2011C
26	Forward and Reverse Air Whisk System	CE1448A
27	Sidewinder Hose Assembly	CE1542A
28	HEPA Back Pack Vacuum 120 Volt (for 220 V Call)	CE2297C
29	Panel with all Components for Single Speed TurboJet Max	CE4211A
30	Panel with all parts for Two Speed TurboJet Max-2	CE4210
Not Shown	Motor, 230 Volt, 3 Phase (For Max 2 ONLY)	3066
Not Shown	Inverter for 3 Phase Motor (for Max 2 ONLY)	3052B
Not Shown	Motor, 1.5 HP, 3450 RPM single phase	1718
Not Shown	Inlet Cone	1917
Not Shown	Blower Wheel, Backward Inclined	1916

Included Parts and Accessories

(Ref#7) Molded Handle

12” Dia. Hose Inlet

(Ref#6) Locking Latch

(Ref#2) 1st Stage
18” x 24” x 2”
Disposable Pleated Filter

(Ref#3) 2nd Stage
19” x 25” x 1” 82%
Electrostatic Air Filter

Exhaust Grills

(Ref#4) 3rd Stage
18” x 24” x 6”
HEPA Filter

(Ref#9) Front Swivel
Casters

(Ref#8) 12” Non-Marking
Wheels

(Ref#5) 25’ 12 ga
Power Cord

(Ref # 30) Max II Complete Panel
(Ref #29 Not Shown) Max Panel

(Ref#10) Gauge, W.C.
Max II ONLY

(Ref#11) Power
Receptacle

(Ref#15) Circuit
Breaker/Power Switch,
Dual 20 amp.

(Ref#12) Light, Panel

(Ref#14) Switch,
Hi/Low Speed
Max II ONLY

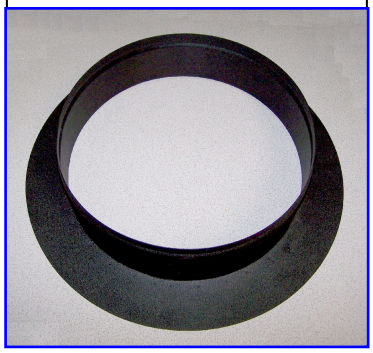
(Ref#13) Switch,
DPST Start

(Ref#) Listed on page 7

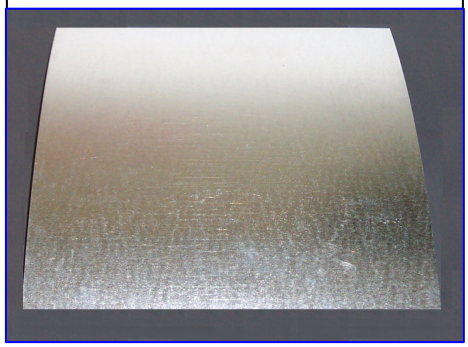
Optional Parts and Accessories

(Ref#16) 12” Pogo Pole Hose Adapter (Complete Assembly comes with Pole, Fork, 20 X 20 X 2 Foam attached to 12” Steel Pogo Plate & (Ref#18) 4” Red Cap Plug)

(Ref#23) 12” Adapter Plate

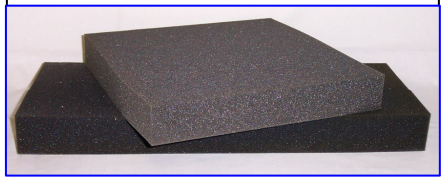


(Ref#19) 12” x 12”, 26 gauge, Galvanized Steel Duct Patches



(Ref#21) Pre-Filter, Pellon Moisture Barrier Sheets (12/pkg)

(Ref#20) Foam Register Plugs (14/pkg)



(Ref#) Listed on page 7

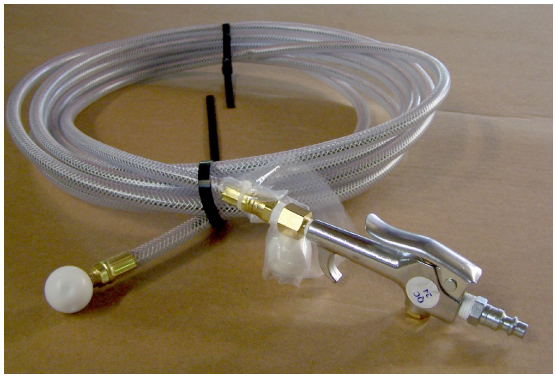
Optional Parts and Accessories (Continued)

(Ref#25) Cobra 5 Air Duct Cleaning Machine

(Ref#18) 12” x 12.5” Light Duty Mylar Hose with Velcro Straps

(Ref#27) Sidewinder Hose Assembly

(Ref#26) Forward and Reverse Air Whisk System



(Ref#28) HEPA Back Pack Vacuum

(Ref#24) Air Care Fogger Model CE1242

Troubleshooting Guide

The TurboJet Max 2 has an internal inverter which displays diagnostic codes for up to30 seconds after a failure. The codes are in the form of a 2 LED's that blink fast or slow in various colors..

Symptom	Check	If	Corrective Action
Motor does not start when power switch is turned on.	"Power" light on?	**Yes**	Check connections to motor and control panel.
		Yes	Test motor and replace if bad.
		Yes	Check for manual reset button on motor.
		No	Check and reset circuit breaker and verify electrical outlet has power. If inverter has a slowly blinking green light call Air-Care. (The inverter is located behind the control panel inside the TurboJet Max 2 ONLY).
No vacuum with motor running.	Is blower turning?	**Yes**	Tighten shaft adapter bolts and align wheel & inlet cone. (Call Air-Care)
		No	Replace blower wheel and inlet cone.
W.G. 4.0" vacuum, with motor running	Are the 1st stage pleated filter and 2nd stage Electrostatic filters clean?	**Yes**	Replace HEPA filters as required.
		No	Clean 1st and 2nd stage air filters.
Insufficient "pull" at duct.	Is the W.G. gauge meter reading 2.0" or more?	**Yes**	Clean or replace filters as required.
		No	Check for disconnected, collapsed or broken system ducts.
		No	Inspect 12" hose for cracks or holes.
Circuit breaker trips when TurboJet is turned on.	Is the TurboJet connected to a dedicated 115-volt, 15 or 20-amp line?	**Yes**	Be sure TurboJet is connected directly to the power outlet. DO NOT use an extension cord.
		Yes	Be sure that only the original 12 gauge (or heavier) 25 ft. power cord is used on the TurboJet Max.
		Yes	Call Air-Care
		No	Find an outlet on a line that does not have other devices connected to it.

12 DIAGNOSTIC LEDS

The drive contains two diagnostic LEDs to display the drive's operational status. See Figure 4, on page 20, for the location of the "PWR" and "ST" LEDs.

12.1 Power On (PWR) – The "PWR" LED will illuminate green when the AC line is applied to the drive.

12.2 Status LED (ST) – The "ST" LED is a tricolor LED which provides indication of a fault or abnormal condition. The information provided can be used to diagnose an installation problem such as incorrect input voltage, overload condition, and drive output miswiring. It also provides a signal which informs the user that all drive and microcontroller operating parameters are normal. Table 4, on page 38, summarizes the "ST" LED functions.

TABLE 4 – DRIVE OPERATING CONDITION & STATUS LED INDICATOR

Drive Operating Condition	Flash Rate[1] and LED Color
Normal Operation	Slow Flash Green
Overload (120% – 160% Full Load)	Steady Red[2]
I^2t (Drive Timed Out)	Quick Flash Red
Short Circuit	Slow Flash Red
Undervoltage	Quick Flash Red / Yellow[3]
Overvoltage	Slow Flash Red / Yellow[3]
Stop	Steady Yellow

Specifications

Specification	Description
Size	19.5” W x 29” D x 55 ½” H
Weight	125 lbs.
Power required	120 V, 60 Hz, 13 to 17 amps.
Power Cord	25’ Extension Cord
Filtration	4 stages when Pellon pre-filter used
Pre-Filter	Pellon Moisture Barrier
1st Stage	18” x 24” x 2” Disposable Pleated Filter
2nd Stage	18” x 24” x 1/2” Electrostatic Air Filter
3rd Stage	18” x 24” x 6” Certified HEPA Filter
Attachment	12” Dia. Inlet
Operating Environment	25 to 125 Deg. F (-4 to 50 Deg. C)
Construction	Rotation Molded Poly
Operating Controls	Single Plug-able Panel with all Gauges, Indicators, Switches, & Meters
Air Flow	Max 2: 3000 CFM Free Air/ 2700 CFM Filtered Max: 2500 CFM 2000 Filtered
Static Pressure	5.0” W.G.
Motor	Max 2 – 1.5 HP 3 Phase Motor and One – Single Phase Inverter with Soft Start and Dual Speeds. Max – 1.5 HP, single phase, single speed, 120 volt motor.
Blower	One - Backward Inclined
Wheels	Two - 12” Fixed Rear and Two - 4” Front Swivel Non-Marking Wheels

***All specifications and prices are subject to change and improvement without notice.**

Glossary & Acronyms

1. ACGIH—American Conference of Government Industrial Hygienists
2. ASHRAE—American Society of Heating, Refrigerating, and Air Conditioning Engineers
3. Air Handler/ AHU—The Furnace or air conditioner that heats, cools and moves the air.
4. Antimicrobial—Agent that kills Bacteria, Molds and viruses. See "Sanitizer
5. Arrestance – An ASHRAE standard procedure to measure air filter efficiency (52.1)
6. Bioaerosols— Molds and bacteria that are found floating in the air.
7. Biological Contaminants— Bacterial, Mold/Fungus, viruses and their waste, byproducts and decomposition materials that can be inhaled and cause many types of health effects.
8. Building Related Illness—Diagnosable illness whose symptoms can be identified and whose cause can be directly attributed to airborne building pollutants (e.g., Legionnaire's disease, and hypersensitivity Pneumonitis).
9. CFM—Cubic Feet per Minute, a measure of how much air is flowing in an air system.
10. CO—Carbon Monoxide, an odorless, toxic gas produced during combustion.
11. CO_2—Carbon Dioxide an odorless, non-toxic gas produced during combustion and exhaled by people.
12. Ceiling Plenum – The area above a suspended ceiling that may be used as a return path to the Air Handler.
13. Conditioned Air – The air that has been filtered, heated or cooled by the air handler.
14. Dampers – Flaps or valves in the air duct that control the amount of airflow in the duct.
15. Diffusers & Grilles & Registers – The covers at the end of supply and return ducts that control the amount and direction of the air-conditioned air entering or leaving a room.
16. Electrostatic Filter – A High Efficiency (95% Arrestance) Air filter that generate static electricity from the air movement through the air handler and captures dust from the air while the clean air move freely through it.
17. EPA—Environmental Protection Agency
18. Duct – A metal, plastic or fiberglass tube that transports air to and from the Air Handler. They can be round, square or rectangular.
19. Duct Board – Compressed fiberglass material used to make air ducts, particularly in the southern U.S.
20. Fiberglass Filter – A disposable, very low efficiency filter (approx. 10% arrestance).
21. Flex duct – Plastic fabric duct with a spiral wire support. It us used extensively in the Western U.S.
22. HEPA—High Efficiency Particulate Air
23. HVAC—Heating, ventilation and air-conditioning
24. IAQ—Indoor Air Quality
25. MSDS—Material Safety Data Sheet
26. Make-up Air – Fresh "outside" air that is brought into a Commercial building.
27. NADCA-- National Air Duct Cleaners Association
28. NAFA – National Air Filter Association
29. NIOSH—National Institute for Occupational Safety and Health
30. Negative building pressure – A condition that allows air to flow into a building when a door is opened.
31. NSC -- Nevada Safety Counsel
32. NSF International – An independent testing laboratory for Air filters
33. OSHA—Occupational Safety and Health Administration
34. Positive building Pressure – A condition when air will come out of a building when a door is opened.
35. Re-entrainment – The flow of dust and debris removed from an air system back into the same building
36. Return/Return Duct
37. Sanitizer – A material designed to kill mold, bacteria, and viruses.
38. Sick Building Syndrome – A group of symptoms such as headache and watery eyes that disappear after the sufferer leaves the building for a few hours.
39. Supply/ Supply Duct—The opening and related ductwork that delivers conditioned air to a room.
40. VAV—Variable air volume system – A system that varies the amount of flow of air to regulate temperature.
41. VOC's—See "Volatile Organic Compounds"
42. Volatile Organic Compounds (VOC's)—Chemicals that release gasses into the air such as solvents.

INDOOR AIR QUALITY SPECIALISTS

LIMITED WARRANTY

TURBOJET MODELS
4200B – TurboJet Max – TurboJet Max II

Air-Care warrants this product to be free from defects in materials and workmanship to the original purchaser for a period of Three (3) years from the date of purchase. Components listed below are excluded from this Three year period and are covered for periods described below:

Blower Motors	1 Year
Power Inverter	1 Year
Wheels & Filters	No Warranty

Warranty covers both parts and labor (labor is to be performed at Air-Care's facility located at 3868 E. Post Road; Las Vegas, Nevada).

Warranty is extended to the original purchaser and is **not** transferrable.

This warranty does not extend to any damage to a product caused by or attributable to freight damage, abuse, misuse, improper or abnormal usage. Warranty is also void if the product has been modified or altered in any way.

The purchaser is responsible for the cost of shipping the equipment to Air-Care's facility for evaluation. If found to be defective and covered by the terms of this warranty, Air-Care will pay FedEx ground shipping charges on the repaired or replaced item back to the purchaser's location. Any additional expedited service charges for quicker shipping shall be born by the purchaser. If the product or component is not found to be a warranty issue, the purchaser will be responsible for return shipping charges.

Air-Care is not responsible or liable for indirect, special, or consequential damages arising out of or in connection with the use of performance of the product; damages with respect to any economic loss, loss of property, loss of revenues or profits, loss of use, or other incidental or consequential damages of whatsoever nature.

The warranty extended hereunder is in lieu of any and all other warranties, and any implied warranties of any type.

This warranty gives you specific rights. These rights and others vary from state to state.

Air-Care is a Division of D.P.L. Enterprises, Inc.
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