NOVATEK™ CORPORATION

...IN IT FOR THE LONG HAUL

# Novair 1000

## Negative Air Machine

## Operations & Maintenance

F1000
F1002
F1005

www.Novatekco.com

BUILT IN USA
FROM GLOBAL MATERIALS

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**Specifications subject to changes without notice!**

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# OPERATION AND MAINTENANCE MANUAL FOR

## F1000-F1002-F1005

**NOTICE**

**FOR PROFESSIONAL USE ONLY**

**WARNING**

**IMPORTANT SAFETY INFORMATION ENCLOSED.**
**READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING THIS PRODUCT.**

**IT IS YOUR RESPONSIBILITY TO MAKE THIS SAFETY INFORMATION AVAILABLE TO OTHERS THAT WILL OPERATE THIS PRODUCT.**

**FAILURE TO OBSERVE THE FOLLOWING WARNING COULD RESULT IN INJURY.**

## PLACING MACHINE IN SERVICE

- Always install, operate, inspect and maintain this product in accordance with all applicable standards and regulations (local, state, country, federal, etc.).
- Always use proper gauge cord with correct connections.
- Be sure all cords are securely connected to the recessed male plug.
- Ensure an accessible emergency shutoff when your machine is connected to power. Make others aware of its location.
- Do not use damaged, frayed, or deteriorated electrical cords or connections.
- Do not leave machines in operation unattended for over 4 hours without inspection.
- Keep all electrical connections clear of water or other liquid hazards.
- Always turn off and unplug your machine before performing any maintenance.
- Do not operate the machine while flammable or volatile liquids such as gasoline, diesel or jet fuel are present. Failure to do so can result in explosion.
- Keep work area clean, uncluttered and illuminated.
- Do not remove any labels. Replace any damaged labels.

## USING THE MACHINE

- Always wear protection when operating or performing maintenance.
- Always use Personal Protective Equipment appropriate to the work being performed. This may include dust mask or other breathing apparatus, safety glasses, ear plugs, gloves, apron, safety shoes, hard hat and other equipment,
- If applicable, prevent exposure and breathing of harmful dust and particles:
  Some dust created by power sanding, sawing, and grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
  - Lead from lead based paints,
  - Crystalline silica from bricks and cement and other masonry products, and
  - Arsenic and chromium from chemically treated lumber

  Your risk from these exposures varies, depending on how often you do this type of work.
- Keep others a safe distance from your work area, or ensure they use appropriate Personal Protective Equipment.
- This machine is not designed for working in explosive environments, including those caused by fumes and dust, or near flammable materials.
- Keep hands, loose clothing, long hair and jewelry away from the machines blower assembly and "Air Intake."
- To avoid accidental starting – ensure machine in "off" position before connecting to power.
- Do not carry or drag the machine by the cord.
- Do not operate or maintain the machine under the influence of medication, drugs, or alcohol.
- Never us a damaged or malfunctioning machines,
- Do not modify the machine, safety devices, or accessories.
- Do not use this machine for purposed other than those recommended.
- Only use accessories recommended by Novatek Corp.
- Whenever applicable, wear safety shoes, hard hat, safety goggles, gloves, dust mask and any other appropriate protective clothing in the work area.
- Do no indulge in horseplay. Distraction can cause accidents.
- Use only proper cleaning solvents to clean parts. Use only cleaning solvents which meet current safety and health standards. Use cleaning solvents in a well ventilated area.
- Do clean machine any parts with diesel fuel or any other petroleum distillates.
- Do not operate the tool with broken or damaged parts.
- This tool is not designed for working in explosive atmospheres.

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## SECTION I

**INTRODUCTION**

This operation and maintenance manual is furnished with each **NOVAIR 1000**. It outlines the general use and maintenance requirements for efficient and safe operation.

**READ ALL INSTRUCTIONS AND DATA IN THIS OPERATION AND MAINTENANCE MANUAL PRIOR TO OPERATION OF THIS EQUIPMENT.**

These instructions are for your protection and convenience. Please read them carefully. Failure to follow these precautions could result in injury or death. Whenever using electric powered equipment, basic safety precautions should be followed.

If after reading this manual you still have questions, contact a **NOVATEK** authorized distributor or **NOVATEK** directly by dialing 1-866-563-7800.

## SECTION II

**GENERAL DESCRIPTION**

The **NOVAIR 1000** is a portable, electrically powered Air Filtration machine, designed and manufactured by Novatek Corp. The machines function is to filter air and remove suspended airborne particulates.

This unit has a three stage filtering system. The Pre-Filter stage captures the bulk of the dust and debris. The second stage utilizes a two-ply Ring Filter that captures any dust and dirt able to penetrate the Pre-Filter. The final stage is the 99.97% - 0.3 micron HEPA Filter or the 5 micron general purpose filter. The HEPA filter is utilized in abatement work or areas where an extremely high level of filtration is desired. The general purpose filter is utilized when trying to reduce visible air born particulates that are deemed non hazardous.

The **NOVAIR 1000** requires a 110/115V - 10 Amp, single phase power source.

**WARNING Do not use circuits exceeding specified voltage. Higher voltage will damage controls and could cause shock or fire hazard.**

## SECTION III

**ROUTINE MAINTENANCE**

Inspect the unit for any loose or damaged parts prior to use.

**CAUTION: Be sure power supply is in the OFF position prior to inspection!**

A. Clean the surfaces of the unit to remove accumulated dust or dirt. Do not use petroleum distillates, solvents, or thinners as cleaning agents. Remove any accumulated dust and dirt from control panel.
B. Periodic checks should be made of the filter brackets to ensure thumbscrews and knobs are secure.
C. Filters should be checked daily and replaced if needed. This will help ensure proper air flow and extend motor life.
D. Inspect ALL power connection. Be sure that the recessed plug is secure to the panel. If recessed plug is not secured, electrical shock or shortage may occur.
E. Inspect your power cords connections for breaks, scorched areas, melting, oxidation, or signs of wear. If cord shows **ANY** of these signs, replace.

**CAUTION: Do not tamper with or modify the blower housing, control panel, drive motor, or wiring scheme. Tampering or modifications could result in premature wear or failure and will void factory warranty.**

## CONTROL DESCRIPTIONS

1. **Power Switch**

   Switch used to turn on your Novair. Select either high or low settings depending on the desired volume of air to be filtered.

2. **Circuit Breaker**

   This is attached to the units main power supply to assist in protecting the blower motor from power surges. The circuit breaker also helps protect the operator against electrical shock or hazards.

3. **Differential Pressure Gauge**

   This is used to determine filter efficiency. The DPG measures negative pressure on the clean side of the filters. As the Filters load with dust and debris, the negative pressure will increase and move the needle of the DPG. A new filter will register 1.0" - 1.2" of water column. A fully loaded filter will register approximately 1.6" - 1.8" of water column.

4. **Barbed Fitting**

   Inlet used to measure pressure of surrounding ambient air.

5. **Male Recessed Plug**

   Firmly insert the female end of a proper gauge extension cord to power the machine.

   **CAUTION: A loose, corroded, ill fitted or damaged extension cord can cause pre-mature failure and void your warranty.**

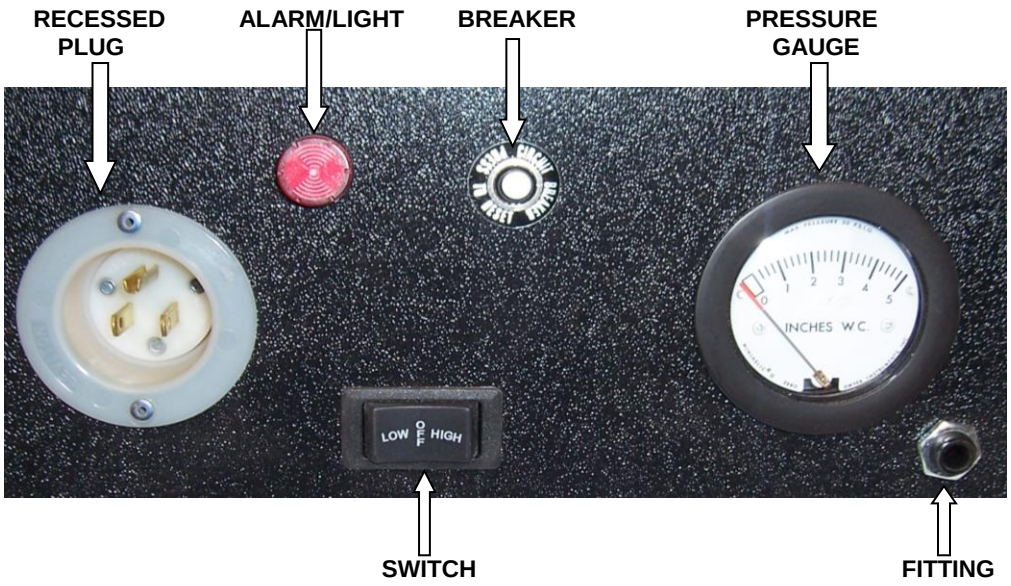
6. **Audible Alarm - (Optional Feature)**

   Audibly alerts the operator when filters are loaded or when air flow is greatly decreased. The alarm will sound once the pressure gauge reaches 1.6" – 1.8" of water column.

7. **Visual Light - (Optional Feature)**

   Visually alerts the operator when filters are loaded or when air flow is greatly decreased. The alarm will light once the pressure gauge reaches 1.6" – 1.8" of water column.

**F1002 Control Panel**



## SECTION IV

**PRIOR TO USE**

A. Remove any excess dust/dirt from exterior housing and control panel.
B. Be sure the HEPA Filter and Pre-Filters are installed properly with a positive seal.
C. Insure the unit is connected to a dedicated 10Amp, 110/115 volt circuit.
D. Make sure unit is safely positioned as not to impede any entrances or exits of the work area.
E. If applicable, check exhaust port connections for tight seal.

**CAUTION: Insure your power cord is securely attached to the male recessed plug. If any movement or play is detected, change power cord immediately! If connection remains loose, immediately replace the male recessed plug.**

**OPERATION**

A. When utilized in containment, the Novair should be positioned a minimum distance away from the entrance and located towards the center of the containment.
B. When using a HEPA filter, insure the filter is correctly installed and sealed. Anchor and secure the filter utilizing the supplied retaining brackets.
C. Install the Ring Filter and Pre-Filter pad into unit.

D. Insert the female end of your 10 amp rated, UL listed cord, into the male recessed plug on control panel.
E. To begin operation, depress the power switch to either the low or high position. Locate the differential pressure gauge located on the control panel. The gauge will register between 1.0" – 1.2" of water column. This is the initial reading when filters are new and unused. This reading will incrementally increase as filters become loaded with dust and debris. When the gauge reaches 1.6" – 1.8" of water column; either one or all of the filters are loaded and in need of replacement.
F. Pressing the power switch to the left will operate the unit in "Low" mode equivalent to 500 CFM.
G. Pressing the power switch to the right will operate the unit in "High" mode equivalent to 1000 CFM.

## SECTION V

**REPLACEMENT OF FILTERS**

The work atmosphere will impact the frequency of filter replacements. As filters begin to load, the reading of the pressure gauge will increase incrementally. When the Pressure gauge reads 1.6" – 1.8" or when airflow is greatly reduced, check the condition of filters.

**CAUTION: If applicable, wear personal protective equipment during filter replacement. Please observe all Federal, State, and Local regulations regarding the handling and disposal of hazardous materials.**

**PRE-FILTER REPLACEMENT**

A. Set the power switch (diagram #20.1, item #3) to the off position. Disconnect power supply.
B. Remove Black Filter door (diagram #20.1, item #22) to expose the filters.
C. Reach in and remove the Pre-Filter (diagram #20.1, item #18). Dispose of Pre-Filter accordingly.
D. Replace the discarded Pre-Filter with a new Pre-Filter**.**
E. Reinsert the Black Filter door (diagram #20.1, item #22).
F. Insert the female end of your power cord into the Male recessed plug (diagram #20.1, item #1), and set the power switch to the "High" position. If the reading on the pressure gauge exceeds 1.6" – 1.8"" of water column, the Ring Filter #17 should be inspected.

**RING FILTER REPLACEMENT**

A. Follow steps **A-D** listed above referencing Pre-Filter replacement.
B. Reach in and remove the Ring Filter #17. Dispose of Ring Filter accordingly.
C. Replace the discarded filter with a new unused Ring Filter.
D. Reinstall the Pre-Filter #18.
E. Reinsert the Black Filter door #22.

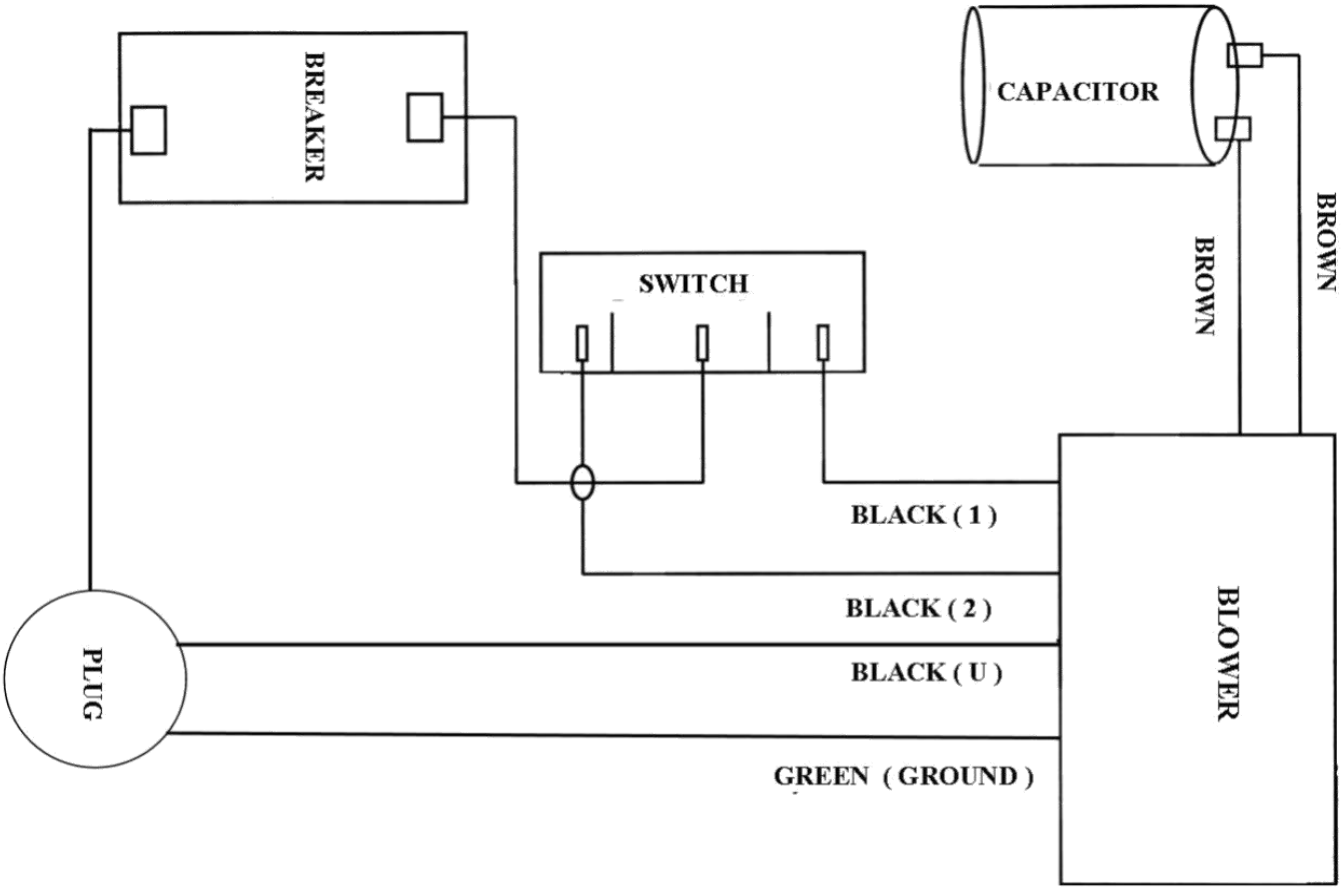
F. Insert the female end of your power cord into the male recessed plug (diagram #20.1, item #1), and set the power switch to the “High” position. If the reading on the pressure gauge exceeds 1.6” – 1.8” of water column, the Ring Filter #17 should be inspected.

**HEPA FILTER**

A. Follow steps **A-D** listed above for Ring Filter replacement.
B. Locate the bracket thumbscrews (diagram #20.1, item #11). Loosen the four bracket thumbscrews by turning them counter clockwise.
C. With all four thumbscrews loose, push the top of the Filter brackets (diagram #20.1, item #10) inward, towards each other, and remove from the top of the unit.
D. Firmly grasp the right and left sides of the HEPA Filter, (diagram #20.1, item #16), and pull the Filter upward. Remove the used HEPA Filter and dispose of accordingly
E. Carefully Inspect the HEPA Filters gasket for cracks, gaps or defects. Any defective gaskets must be replaced.
F. The HEPA filter has two sides. One side has a gasket, the other is not. Insert the side with the gasket of the HEPA Filter first and press firmly against the housings internal rib.
G. Reinstall the filter brackets. Once the brackets are installed, turn the thumbscrews clockwise until tight. This will secure the HEPA Filter.
H. Reinstall Ring Filter and Pre-Filter. (Reference Pre-Filter and Ring Filter Replacement).
I. Insert the Black Filter door #22.

## SECTION VI

**WIRING DIAGRAM**



## SECTION VII

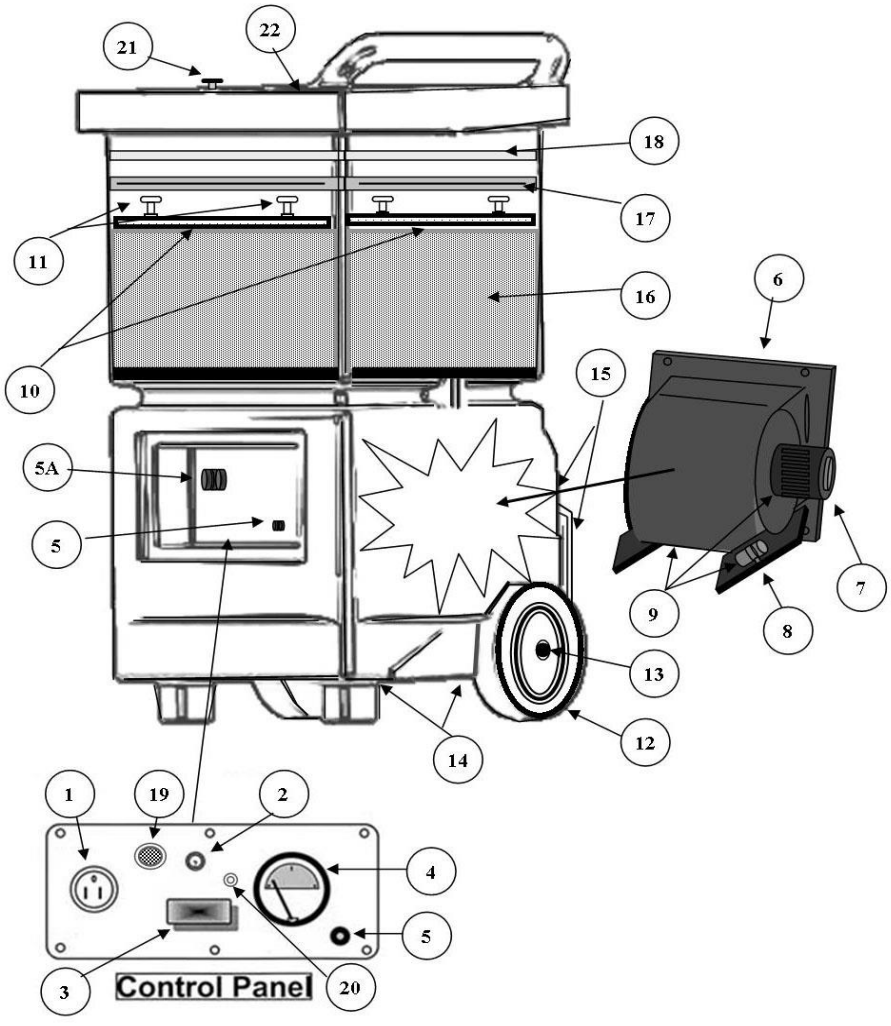
### PARTS BREAKDOWN

| Ref. | Part No. | Description |
|---|---|---|
| 1 | F2030 | MALE RECESSED PLUG |
| 2 | F2055 | BREAKER |
| 3 | F2050 | POWER SWITCH |
| 4 | F3001 | PRESSURE GAUGE |
| 5 | F9001 | BARBED PRESSURE FITTING |
| 5A | H2525 | DOME WIRE NUT |
| 6 | F1012 | BLOWER HOUSING & WHEEL |
| 7 | F1013 | BLOWER MOTOR |
| 8 | F1014 | CAPACITOR |
| 9 | F1010 | BLOWER ASSEMBLY COMPLETE |
| 10 | F1218 | FILTER BRACKETS |
| 11 | H1236 | THUMBSCREWS |
| 12 | F1030 | WHEELS-8” |
| 13 | F1025 | AXLE |
| 14 | F1026 | AXLE BRACKETS |
| 15 | F1027 | SKID WEAR PAD |
| 16 | F4030 | HEPA FILTER (1000CFM) |
| 16A | F4043 | GENERAL FILTER FRAME |
| 16B | F4045 | GENERAL FILTER |
| 17 | F4035 | RING FILTER (24PK) |
| 18 | F4036 | PRE-FILTER (40PK) |
| 19 | F2036 | AUDIBLE/VISUAL ALARM (Optional Feature) |
| 21 | H1017 | KNOB FOR DOOR |
| 22 | F1022 | BLACK POLY DOOR |
| | F1020 | NEG AIR HOUSING |

### ITEMS NOT SHOWN

| | |
|---|---|
| F1023 | 10” INTAKE BLACK POLY DOOR |
| F4008 | FOAM SEALING STRIPS |
| F3050 | DIFFERENTIAL PRESSURE SWITCH |
| F9002 | TEE CONNECTOR TO DIFF. SWITCH |
| F9003 | REDUCER FITTING TO DIFF. SWITCH |

### 20.1 DIAGRAM OF UNIT AND CONTROL PANEL



## SECTION VIII

**SAFETY**

**Novatek** Negative Air Machines are highly efficient systems designed to reduce air borne particulates. To insure proper operation, the following safety precautions should be strictly adhered to:

A. Do not leave machine unattended when connected to a power source. Turn OFF electric supply and disconnect from power source when not in use and/or before servicing.
B. Do not operate with damaged or malfunctioning parts. If the unit is not working as intended, return to an Authorized Repair and Service Center.

   **NOTE: Always replace worn or damaged components with genuine NOVATEK parts. Failure to comply could result in equipment failure and will void warranty.**

C. Remove any loose clothing and adornments prior to operation.
D. Keep outer surfaces free of dirt and debris. Be sure all controls clean and functioning properly.
E. Turn off power prior to any filter inspection and replacement.
F. Do not operate unit with flammable or combustible liquids or gases present.
G. Do not operate the machine in wet conditions. Failure to do so could result in electrical shock or death.
H. Never operate the unit if there is any possibility of contact with the blower wheel.
I. It is the responsibility of the unit owner to ensure that all equipment is maintained in safe and efficient operating condition.
J. Stacking of machines is limited to three units. Do not house stacked machines in areas hotter than 100 degrees Fahrenheit. **(Failure to comply will void warranty.)**

**TROUBLESHOOTING**

A. **The unit is plugged in and turned on, but will not operate.**
   Inspect the circuit breaker located on the front control panel. If the center of the circuit breaker is extended, this indicates the circuit breaker requires re-setting. Reset the circuit breaker by depressing the center of the circuit breaker. If the center fails to remain depressed, replace the circuit breaker immediately

B. **If unit continues not to function.**
   Check the power supply in the work area. Be sure power is being supplied to the unit.

C. **If at this point, unit still will not operate**
   Contact your nearest authorized Novatek service center.



*www.novatekco.com * toll free 866.563.7800 * tele 610.363.7800 * fax 610.935.1945 * sales@novatekco.com*

# NOVATEK CORPORATION LIMITED WARRANTY

**ELECTRICAL COMPONENTS** utilized in the **NOVAIR** product line are warranted to be free from defects in material and workmanship for a period of **180 DAYS** from date of purchase from **Novatek**. The remaining materials in the **NOVAIR** are warranted to be free from defects in material and workmanship for a period of **1 YEAR from the date of purchase from Novatek**. This warranty does not extend to accessories.

This warranty applies only to **UNITS** purchased from the **NOVATEK CORPORATION or authorized retailers**. This warranty does not apply to any **UNIT** which has been abused, misused, modified or repaired by someone other than the **NOVATEK CORPORATION** or its authorized repair center.

If a **UNIT** proves defective in materials or workmanship within one year of purchase, it should be returned to **NOVATEK CORPORATION** via pre-paid transportation. The return must be accompanied by a **RETURN MERCHANDISE AUTHORIZATION NUMBER (R.M.A. #)** obtained from **NOVATEK CORPORATION**. The Return authorization number must be clearly marked on the outside of the package being returned. Any returned merchandise that does not have a return merchandise authorization number clearly marked on the outside of the package will be refused and returned to sender.

Warranty claims will only be considered upon proof of purchase date. **NOVATEK CORPORATION** will, at its discretion, **REPAIR or REPLACE DEFECTIVE PARTS**. Repairs or replacements parts are warranted as above for the remainder of the original warranty period. The sole liability of **NOVATEK CORPORATION** and the user's exclusive remedy under this warranty is limited to the repair or replacement of the defective product.

THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED AND **NOVATEK CORPORATION** SHALL NOT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OR ANY OTHER EXPENSES OR REPAIR OR REPLACEMENT AS DESCRIBED ABOVE.

All warranty claims should be forwarded to:

**NOVATEK CORPORATION**
**254 Welsh Pool Rd**
**Exton, PA 19341**
**ATTENTION: CLAIM AND SERVICE DEPARTMENT**
**R.M.A. # _____**

**CALL Toll Free at 1-866-563-7800 for your RMA number PRIOR TO SHIPPING.**

Also include a brief description of the problem as well as a phone number, contact name and return address in case **NOVATEK CORPORATION** service personnel has to get in contact with you.