



Diamapro[®]
SYSTEMS

OWNER'S MANUAL

AS-1000

AIR SCRUBBER



USER & MAINTENANCE BOOK

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

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 any reason.
- 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 lumberYour 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.
- This machine is not insulated against electric shock.
- Keep hands, loose clothing, long hair and jewelry away from the machines blower assembly and "Air Intake."
- To avoid accidental starting – ensure machine is on the "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 use damaged or malfunctioning machines.
- Do not modify the machine, safety devices, or accessories.
- Do not use this machine for purpose other than those recommended.
- Only use accessories recommended by DiamaPro Systems.
- Whenever applicable, wear safety shoes, hard hat, safety goggles, gloves, dust mask and any other appropriate protective clothing in the work area.
- Do not 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 NOT clean machine or any parts with diesel fuel or any other petroleum distillates.
- Do not operate the machine with broken or damaged parts.
- This tool is not designed for working in explosive atmospheres.

SAFETY

DiamaPro Systems - Negative Air Machines are highly efficient systems designed to reduce airborne particulates. To insure proper operation, the following safety precautions should be strictly adhered to:

- 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.
- 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 DiamaPro Systems parts. Failure to comply could result in equipment failure and will void warranty.

- Remove any loose clothing and adornments prior to operation.
- Keep outer surfaces free of dirt and debris. Be sure all controls clean and functioning properly
- Turn off power prior to any filter inspection and replacement
- Do not operate unit with flammable or combustible liquids or gases present
- Do not operate the machine in wet conditions. Failure to do so could result in electrical shock or death.
- Never operate the unit if there is any possibility of contact with the blower wheel.
- It is the responsibility of the unit owner to ensure that all equipment is maintained in safe and efficient operating condition.
- 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.)

DUST WARNING

Cutting, especially when DRY cutting, generates dust that comes from the material being cut, which frequently contains silica. When dry cutting, be sure to use a HEPA filtered dust collector.

Silica is a basic component of sand, quartz, brick clay, granite and numerous other minerals and rocks. Exposure to excessive amount of such dust can cause:

- Respiratory diseases (affecting your ability to breath), including chronic bronchitis, silicosis and pulmonary fibrosis from exposure to silica. These diseases may be fatal;
 - Skin irritation and rash; and
 - Cancer according to NTP* and IARC*
- *National Toxicology Program, International Agency for Research on Cancer

Take precautionary steps

- Avoid inhalation of and skin contact with dust, mist and fumes;
- Wet cut when feasible, to minimize dust;
- Wear and ensure that all bystanders wear appropriate respiratory protection such as dust masks designed to filter out microscopic particles. (See OSHA 29 CFR Part 1910.1200)

1. INTRODUCTION

Thank you for purchasing a DIAMAPRO® SYSTEMS product. This manual provides information and procedures to safely operate and maintain the AS-1000. For your own safety and protection from injury, carefully read, understand, and observe the safety instructions described in this manual.

Keep this manual or a copy of it with the machine. If you lose this manual or need an additional copy, please contact DiamoPro Systems®. This machine is designed and built with user safety in mind; however, it can present hazards if improperly operated and serviced. Please follow the operating instructions carefully. If there are any questions regarding operating or servicing of this machine, please contact DiamoPro Systems®.

Disclaimer: DiamoPro Systems® and its affiliates take no responsibility for any damage, injury or death resulting from the incorrect or unsafe use of this product. Use of this product should be undertaken by competent persons only. It is the operator's responsibility to ensure that the following safety procedures are followed. If you are unsure, do not operate this product.

2. GENERAL DESCRIPTION

The AS-1000 is a portable, electrically powered Air Filtration machine, designed and manufactured by DIAMAPRO SYSTEMS®. The machine's 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 AS-1000 requires a 110/115V - 10 Amp, single phase power source.



DO NOT USE CIRCUITS EXCEEDING SPECIFIED VOLTAGE. HIGHER VOLTAGE WILL DAMAGE CONTROLS AND COULD CAUSE SHOCK OR FIRE HAZARD.

3. 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!

- 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.
- Periodic checks should be made of the filter brackets to ensure thumbscrews and knobs are secure.
- Filters should be checked daily and replaced if needed. This will help ensure proper air flow and extend motor life.
- 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.
- 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 AS-1000. 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.

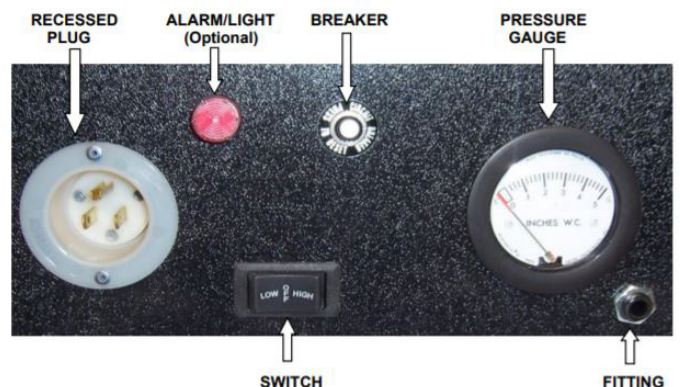
6. Audible Alarm - (Optional Feature)

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

AS-1000 CONTROL PANEL



4. 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 AS-1000 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.

5. 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.

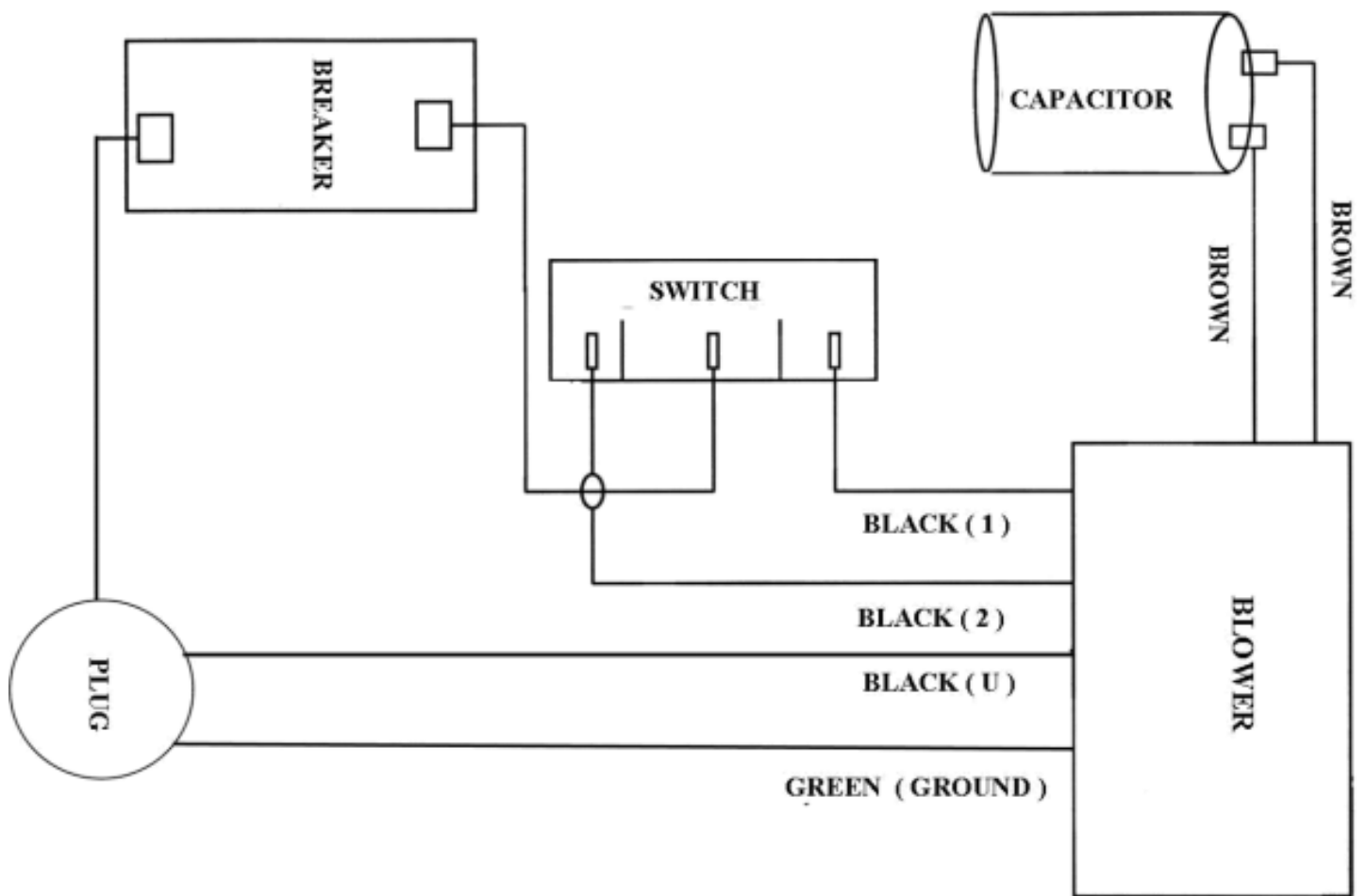
RING FILTER REPLACEMENT

- 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.

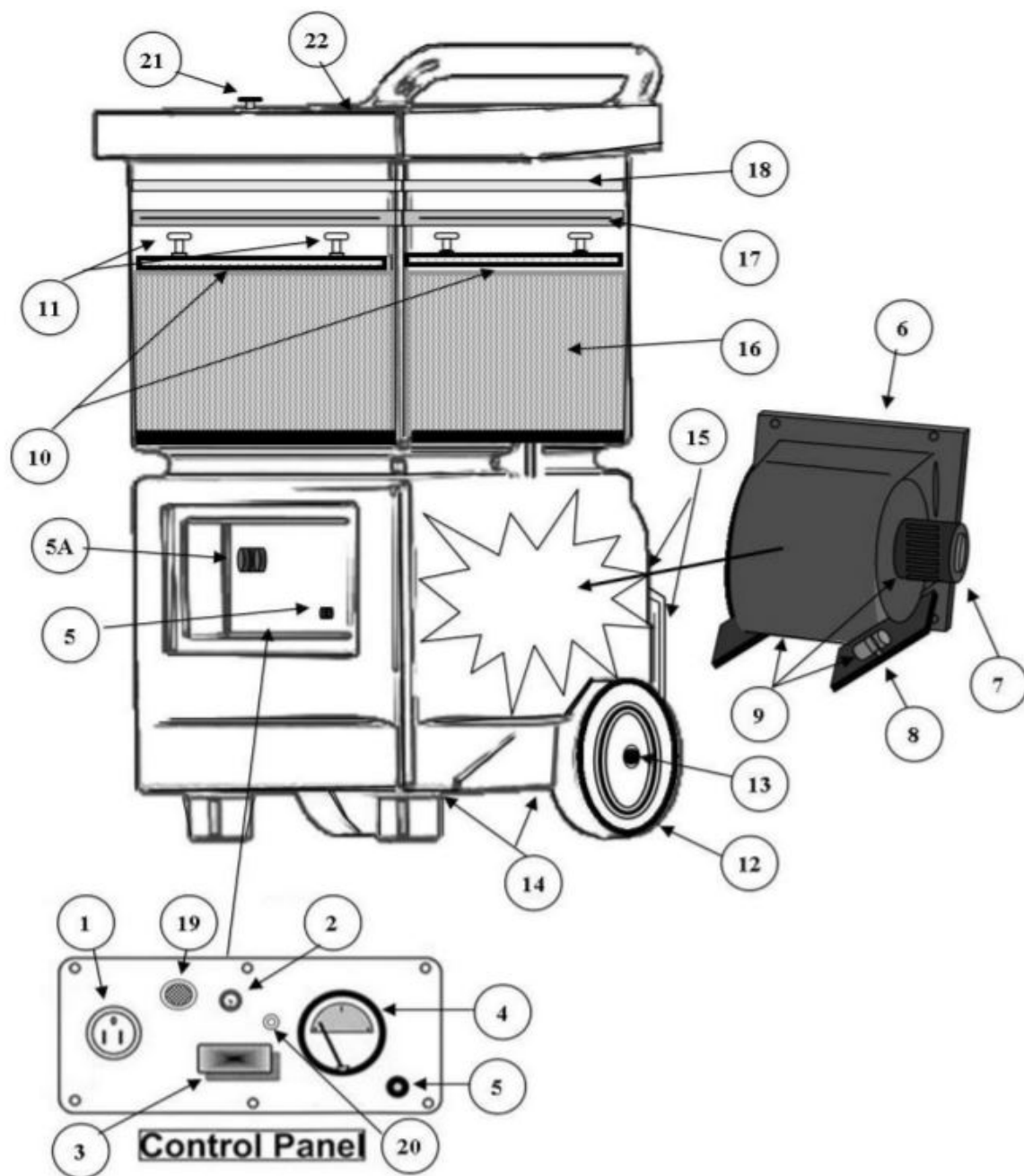
HEPA/GENERAL PURPOSE FILTER

- 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 is 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. Reinsert the Black Filter Door (#22).

6. WIRING DIAGRAM



6. PARTS BREAKDOWN



6. PARTS BREAKDOWN

Ref.	Part No.	Description
1	DP-AS-MRPLUG	Male Recessed Plug
2	DP-AS-BREAK	Breaker
3	DP-AS-POWERSWITCH	Power Switch
4	DP-AS-1000-PRESSUREGAUGE	Pressure Gauge
5	DP-AS-PRESSUREFITTING	Barbed Pressure Fitting
5A	DP-AS-DWIRENUT	Dome Wire Nut
6	DP-AS-1000-BLOWERHW	Blower Housing & Wheel
7	DP-AS-1000-BLOWERMOTOR	Blower Motor
8	DP-AS-1000-CAPACITOR	Capacitor
9	DP-AS-1000-BLOWERASSEMBLY	Blower Assembly Complete
10	DP-AS-1000-FILTERBRACKET	Filter Brackets
11	DP-AS-1000-THUMBSCREW	Thumbscrews
12	DP-AS-1000-8WHEEL	Wheels - 8"
13	DP-AS-1000-AXLE	Axle
14	DP-AS-1000-AXLEBRACKETS	Axle Brackets
15	DP-AS-1000-SKIDWEARPAD	Skid Wear Pad
16	DP-AS-1000-HEPA	Hepa Filter (1000CFM)
16A	DP-AS-1000-GENFILTERFRAME	General Filter Frame
16B	DP-AS-1000-GENERALFILTER	General Filter
17	DP-AS-1000-RINGFILTER	Ring Filter
18	DP-AS-1000-PREFILTER	Pre-Filter
19	DP-AS-1000-ALARM	Audible/Visual Alarm (optional)
20	N/A	N/A
21	DP-AS-1000-DOORKNOB	Knob for Door
22	DP-AS-1000-INTAKEPOLYDOOR	10" Intake Black Poly Door

ITEMS NOT PICTURED

Part No.	Description
DP-AS-1000-NEGAIRHOUSING	Negative Air Housing
DP-AS-1000-INTAKEPOLYDOOR	10" Intake Black Poly Door
DP-AS-FOAMSEALING	Foam Sealing Strips
DP-AS-DPSWITCH	Differential Pressure Switch
DP-AS-DPSWITCHCONNECTOR	Tee Connector to Differential Switch
DP-AS-DPSWITCHREDUCER	Reducer Fitting to Differential Switch

7. TROUBLESHOOTING

■ **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.

■ **If unit continues not to function.**

Check the power supply in the work area. Be sure power is being supplied to the unit.

■ **If at this point, unit still will not operate.**

Contact your nearest authorized DiamoPro Systems service center.

Customer Acknowledgment and Assumption of Responsibility for Modification to any Product.

Customer expressly acknowledges that modification of any equipment, machines, or other products purchased from Niagara Machine, Inc. ("Niagara"), including but not limited to DiamaPro Systems Products (collectively, "Products") through the attempted or actual use or misuse, adjustment, alteration, application of additional components, removal of provided components, repairs or attempted repairs by Customer (collectively, "Modifications") can lead to Product malfunction causing serious risks. Such risks include, but are not limited to, Product damage, bodily injury, death, or loss of or damage to property. Customer agrees that Customer is solely responsible for any Modifications Customer performs on any Product purchased from Niagara, and that Niagara is not responsible and will not be held liable for any claims, damages, or injury arising from Modifications by Customer, including Customer's employees, subcontractors, agents, representatives, affiliates, and assigns, to any Product purchased from Niagara. Customer further acknowledges and agrees that any Modification(s) to a Product may, at DiamaPro Systems' and/or Niagara's election, void any warranty applicable to the Product.

Customer agrees that, to the greatest extent permitted by law, Customer shall indemnify, hold harmless and, at Niagara's request, defend (with counsel reasonably approved by Niagara), Niagara, Niagara's parent, subsidiaries, affiliates and the officers, directors, employees and agents of Niagara (individually and collectively "Niagara Indemnitees") from and against, and pay or reimburse them for any and all third-party claims, losses, damages, liabilities, lawsuits and expenses (including reasonable attorneys' fees) relating to bodily injury, death, or loss of or damage to property caused by or arising from any Modification to a Product by Customer, its employees, subcontractors, agents, representatives, affiliates, and assigns (individually and collectively, "Customer Group"), with respect to the Products Customer purchases from Niagara.

Customer acknowledges that Customer has read and understands these terms, and voluntarily assumes full and sole responsibility for any and all effects arising from any Modification to a Product by Customer Group.



DiamaPro[®]
SYSTEMS

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