TECHNICAL MANUAL

OPERATION AND MAINTENANCE INSTRUCTIONS

FOR THE

ACE MODEL VACUUM SANDING SYSTEMS

(Including ACE-300, ACE-400, ACE-500, ACE-1000)

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This manual is intended as a complete operators manual for owners and users of the Clayton ACE-300, ACE-400, ACE-500, ACE-1000, and other systems which incorporate the Clayton Hornet HEPA Vacuum. Although this manual details maintenance and operation of Clayton pneumatic tools in conjunction with the vacuum, these tools may be sold separately or as part of a kit. Purchasers of the ACE vacuum systems, or other vacuum systems may choose to purchase pneumatic tools, hoses, or accessories from Clayton Associates, Inc.

WARNINGS APPLICABLE TO HAZARDOUS MATERIALS

DUSTMASTER™ VACUUM SANDING SYSTEM
Part Number ACE-500/1000

1. Warnings for hazardous materials listed in this manual are designed to warn personnel of hazards associated with such items when they come in contact with them by actual use. Additional information related to hazardous materials is provided in OPNA VINST 5100.23, Navy Occupational Safety and Health (NAVOSH) Program Manual, NAVSUPINTST 5100.27, Navy Hazardous Material Control Program, and the DOD 6050.5 Hazardous Materials Information System (HMIS) series publications. For each hazardous material used within the Navy, a material safety data sheet (MSDS) is required to be provided and available for review by users. Consult your local safety and health staff concerning any questions on hazardous chemicals, MSDS's, personal protective equipment requirements and appropriate handling and emergency procedures and disposal guidance.

2. Complete warnings for hazardous materials referenced in this manual are identified by use of an icon, nomenclature and specification and a numeric identifier. The numeric identifiers have been assigned to the hazardous materials in the order of their appearance in the manual. Each hazardous material is assigned only one numeric identifier. Repeated use of a specific hazardous material references the numeric identifier assigned at its initial appearance. The approved icons and their application are in Figure 1, Icons for Hazardous Materials.

3. In the text of the manual, the caption "WARNING" will not be used for hazardous materials. Such warnings will be identified by an icon and numeric identifier. The material nomenclature will also be provided. The user is directed to refer to the corresponding numeric identifier listed below for the complete warning applicable to the hazardous materials. Refer to Hazardous Materials Warning System (HMWS-3) for information on hazardous materials which are used throughout this manual.

Explanation of Hazard Symbols

The symbol of a person wearing goggles shows that flying debris or dust may injure the eyes.

The symbol of a person wearing breathing protection shows that airborne dust may be present.

The rapidly expanding symbol indicates that there is a danger of explosion if equipment is misused or safety precautions are not followed.

The caution symbol indicates that caution should be used to avoid damage to equipment.

The lifting strain symbol indicates that lifting certain equipment unassisted could cause back injury or strain.

The shock symbol indicates that danger of electrical shock is present. Take precautions to avoid potential risks.

HMWS-3/(HMWS-4 Blank)

HAZARDOUS MATERIALS WARNINGS

There are no inherently hazardous materials in the Clayton ACE-500/1000 Vacuum Sanding System. However, use of the system can generate hazardous materials, depending on the media being sanded. When removing coatings such as lead paint, or other hazardous paints and primers, the resultant dust is hazardous and can cause serious health problems. Check with environmental or safety officers to determine the level of protection required when performing surface coatings removal.

Proper breathing protection should be worn whenever sanding surfaces with potentially harmful surface coatings. Paints and primers may contain lead, chromium, or other hazardous substances which can cause respiratory damage when inhaled as an airborne particle. Sanding fiberglass and other composite materials can generate a fine dust which has the ability to cause harm to the lungs. When in doubt, always take proper precautions.

Proper eye protection should always be worn when using the Clayton ACE-500/1000 Vacuum Sanding System or any other pneumatic tool. The mechanical interaction between the tool and the work surface can generate flying particles which can cause severe damage to the eyes.

Vacuum equipment should always be grounded. The friction caused by dust and air moving through the vacuum system causes a remarkable amount of static electricity. If the vacuum is not grounded at all times, the static charge will build rapidly, and may arc to the nearest ground. In environments where flammable fumes are present, this sudden spark can cause an explosion.

TECHNICAL MANUAL

OPERATION AND MAINTENANCE

VACUUM SANDING SYSTEM

Part Number ACE-500/1000

Reference Material

Abbreviations for Use on Drawings, and in Specification, Standards, and Technical Documents……MIL-STD-12

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1. Introduction

1.1. Fabrication and surface preparation of sheet metal, composites, fiberglass, wood, and other materials frequently requires a technician to use pneumatic tools. These tools, whether sanders, drills, needle scalers, or trimmers, all generate dust and debris, which can be hazardous to the technician and to the environment. Use of a HEPA or ULPA Filtered vacuum along with vacuum capable tools can practically eliminate all exposure to airborne dust. The procedures herein provide a method for performing surface preparation operations while minimizing the particulate contamination of hazardous dust into the air, ground, and water.

2. Purpose

2.1. This technical manual presented in work package (WP) format, describes the Clayton ACE-500/1000, and how it shall be used to perform surface preparation operations on all types of equipment.

3. Description

3.1. The ACE-500/1000 system integrates a high efficiency filter vacuum cleaner with vacuum-capable sanders and tools for eliminating airborne toxins including lead, chromium, and dust during sanding/grinding operations from metallic and nonmetallic aircraft structures, marine vessels, ground support equipment, and other surfaces requiring maintenance.

3.2. The Clayton Hornet HEPA Filter Vacuum consists of a painted aluminum enclosure powered by a pneumatic motor. When supplied with compressed air, the vacuum generates a minimum 50 c.f.m. of airflow, adequate to collect dust and debris from 1 vacuum tool. The vacuum can be hand carried. It can also be transported and used as a backpack vacuum using the carry straps.

3.3. The vacuum utilizes a two-stage replaceable filter system, and provides exceptional filtration of 99.97% of airborne particles 0.3 micron in size or larger. The first stage is a disposable filter bag, which captures the larger particles. This bag can be reused several times before disposal. After the filter bag, air passes through a HEPA filter, which captures any remaining particles. The bag filter can be changed using the patented Safe-Filter-Change. Using this method, filters are changed while the vacuum is running, eliminating the risk of contaminating the operator or the environment.

4. Warnings and Cautions

4.1. When operating air-powered appliances, or while working nearby one, safety precautions should be exercised to avoid personal injury and property damage. The following safety precautions should be followed by and communicated to all personnel working with or around Clayton DustMaster™ Vacuums and pneumatic tools:

4.2. Before using this cleaning equipment, please check to see that a disposable filter bag is positioned properly in the vacuum, and that a Clayton HEPA Filter is threaded into place. All machines should have these filters in place when shipped. Follow Safe-Filter-Change™ procedures to open filter compartment after initial use (see Paragraph 12).

4.3. Never open cover to filter compartment without first opening

main intake valve partly. The constant suction will prevent recontamination of the work area and personal exposure to hazardous dust.

4.4. This vacuum collection system is intended to collect dry or damp, not wet matter. Free flowing liquids may damage the HEPA filter, and will void the warranty.

4.5. Always store equipment in dry area.

4.6. Use caution when connecting and disconnecting compressed air lines. When static air pressure is suddenly released, it can cause the airline to whip.

4.7. When operating Clayton pneumatic tools, always comply with: *General Industry Safety & Health Regulations 29 CFR, part 1910* available from: Superintendent of Documents, Government Printing Office, Washington, DC 20402 and with the *Safety Code For Portable Air Tools - ANSI B186.1, B7.1 and Z87.1* available from : American National Standards Institute, Inc.1430 Broadway, New York, NY 10018

4.8. Backup pads supplied with the sanders are specifically designed for these tools. Before using backup pads from another manufacturer, the operator must be sure that they have a speed rating which is higher than the free speed rating of the sander. Free speed ratings are based on 90 P.S.I.G. (6 bar, G) at the air inlet of the tool with the tool operating at free speed.

4.9. Safe and efficient operation of sanders can be best attained by observing proper operating, inspection and maintenance procedures. The operator must be carefully instructed in the safe operation and use of the tool. Ear, eye, face and body protection should be worn at all times when operating sanders. Use of a respirator is recommended until air monitoring confirms that a respirator is no longer needed.

4.10. Always disconnect the compressed air supply line before installing or removing abrasive discs, backup pads or otherwise performing service or maintenance to the sanders.

4.11. If the tool produces an unusual sound or vibrates more than is customary, discontinue its use and repair it immediately.

4.12. Tool speed check: Tools should be checked at least once every twenty hours of use, or once weekly, whichever is more frequent. Several readings should be taken. Do not use the tool if the speed exceeds the rating of the tool.

5. Specifications

5.1.	Weight of complete system:	Approx. 40lbs (depending on accessories)
5.2.	Weight of vacuum only:	10lbs
5.3.	Vacuum Dimensions:	6.25 x 5 x 18
5.4.	HEPA filter efficiency:	99.97% @ 0.3 micron
5.5.	DustMaster™ filter bag efficiency:	95% @ 0.5 micron
5.6.	Air Consumption (vacuum):	15 S.C.F.M. @ 80 P.S.I.
5.7.	Air Consumption (sander):	17 S.C.F.M. @ 90 P.S.I.
5.8.	Recommended Supply:	110 P.S.I
5.9.	Air intake:	¼"
5.10.	Hose Length:	10' combination Air/Vacuum Hose
5.11.	Vacuum Performance	50 C.F.M., 100" H_2O (water column)

6. Principles of Operation

6.1. With grounded air supply connected, pressurized air is supplied to both the vacuum system and the pneumatic tool system.

6.2. Pressurized air enters the vacuum system and provides power to the air motor.

6.3. The suction created by the motor draws dust and debris from the pneumatic tools, along an air/vacuum hose, and into the DustMaster™ Filter Bag. Particles small enough to pass through the bag's filter media are captured by either the prefilter or the ULPA filter.

6.4. As pressurized air enters the pneumatic tool system, it is directed to the air coupler, where the pneumatic tool hose may be connected.

6.5. Connected to the vacuum through the main vacuum port is the air/vacuum hose, which delivers pressurized air to the pneumatic tools, and allows the flow of dust and debris back to the vacuum.

6.6. At the end of each hose is the pneumatic tool. Clayton pneumatic tools are designed to operate using either Clayton DustMaster™ Supreme Abrasives or conventional abrasives.

6.7. Clayton DustMaster™ Supreme Abrasives are screen-style abrasives which are able to extract dust from the work surface directly through the surface of the abrasive. Each abrasive disc or sheet has up to 40,000 perforations.

6.8. Clayton DustMaster™ Backup Pads have up to 40 perforations in each pad, and are designed specifically for dustless sanding. They allow dust from the work surface to be extracted through the pad, and exhausted into the vacuum hose.

7. Preparation for Use

7.1. System is shipped complete. Remove packaging material from around system.

7.2. Open the case, and inspect the vacuum and tools. Any tools shipped with the system will be shadowboxed into the foam or located in the storage area under the foam. The vacuum hose will be in the bag affixed to the lid.

7.3. Some equipment packages are shipped with a 30' supply airline, but depending on the system purchased, an airline may not be included. In this case, the vacuum is normally shipped without an air fitting for the main intake. You will need to supply a ¼" air fitting to connect to your shop air supply. Use Teflon tape or thread sealant to ensure a leak-free connection. The vacuum is designed to operate on a 3/8" or larger grounded airline. Failure to use an adequate air supply can cause a decrease in performance of the pneumatic tools. Smaller air lines will not supply an adequate air supply to run the vacuum and tools. If you are unable to obtain a 3/8" airline, you may need to operate the tools from separate airlines. If your shop air pressure is not high enough, you may need to operate the tools from separate airlines.

7.4. All vacuum filters are in place and ready for use when the vacuum ships.

8. Preparation for Storage

8.1. The Clayton DustMaster™ systems requires no special preparation for short term storage.

8.2. When long term storage is required, Clayton recommends that the operator perform a Safe-Filter-Change to remove any dust or residue from the system.

8.3. Pneumatic tools should be oiled and operated briefly prior to long-term storage.

9. Preparation for Shipping

9.1. Place the vacuum into the storage case. Place all accessories into their proper locations in the case.

9.2. The ACE-500/1000 cases are sturdy enough for shipping. Use a plastic cable tie or wire to secure the lid shut using the padlock eyes in the lid.

10. Operational Procedures

10.1. Ensure that all shop airlines are grounded. If you are unsure, check with a supervisor or building engineer. WARNING: FAILURE TO USE GROUNDED AIR LINES CAN CAUSE STATIC ELECTRICITY BUILDUP AND MAY CAUSE AN EXPLOSION IF FLAMMABLE FUMES ARE PRESENT. If you do not have access to a grounded airline, you will need to ground the vacuum by connecting a grounding strap to a metallic portion of the vacuum.

10.2. Connect one end of a 1/4" supply line to shop air supply.

10.3. Remove the vacuum/air hose from the lid pouch.

10.4. One end of the hose has a metal sleeve – insert this end into the vacuum port. Connect the end of the airline to the air coupler located beside the vacuum port. This connection can be made by pushing the airline plug directly into the coupler.

10.5. Choose a pneumatic tool. Pick a tool whose shape and size best meets the needs of the job. Connect the vacuum exhaust cuff of the tool to the end of the adapter hose by threading the cuff onto the hose. Note that this is a reverse-thread. Turning the cuff counter-clockwise will tighten the fitting. Connect the air fitting on the tool to the airline coupler of the adapter hose.

10.6. Protect the backup pad by affixing a protector pad to the hook surface before attaching abrasives.

Failure to use protector pads on the tools will shorten the lifespan of the pads.

10.7. Choose the proper size of abrasive for the pneumatic tool. Choose a grit that meets the requirements of the work surface. If you are unsure of the proper grit abrasive, check with a supervisor. **CAUTION: ALWAYS USE A HIGHER-NUMBERED (FINER) GRIT IF UNSURE. LOWER NUMBERED (ROUGHER) GRITS CAN DAMAGE THE SKIN OF SOME AIRCRAFT.** Press the throttle lever of the tool to ensure that the tool is not pressurized. **WARNING: NEVER REPLACE ABRASIVES OR PERFORM MAINTENANCE ON ANY PNEUMATIC TOOL WHILE IT IS CONNECTED TO AN AIR SUPPLY.** Lay the DustMaster™ Supreme Abrasive onto the backup pad, with the abrasive side facing away from the tool. Ensure that the abrasive sheet covers the backup pad completely, and that the abrasive is oriented properly. Press the tool against a flat surface with the abrasive down, to affix the abrasive to the backup pad.

11. Operating as a Backpack Vacuum

11.1. Tote handle of vacuum has a joining strap which is held in place with hook and loop fasteners.

11.2. Unfasten the joining strap and allow the tote handle to fall as two separate straps.

11.3. Loosen the straps by lifting the tab on the buckle portion of the straps.

11.4. Place arms through loops, keeping the vacuum oriented with the vacuum hose up and the air supply side down.

11.5. Pull down on strap ends to snug the vacuum against the back.

12. Using the Cooling Wand

12.1. Some of the equipment packages include a blue and orange cooling wand with an integrated valve. This wand is located in the case.

12.2. Plug this wand directly into the black air coupling beneath the filter compartment lid.

12.3. Cool air will begin flowing from this tube when the system is pressurized. Adjust the valve to control the amount of air.

12.4. WARNING: COOLING AIR COMES DIRECTLY FROM COMPRESSED AIR SUPPLY AND IS NOT RESPIRABLE AIR. DO NOT DIRECT THIS AIR INTO BREATHING ZONE OR INTO HOODS OR MASKS. THIS AIR SHOULD BE DIRECTED ONLY TOWARDS AREAS OF THE BODY THAT ARE PROTECTED BY CLOTHING AND ARE NOT NEAR THE NOSE, EYES, OR MOUTH.

13. Replacing Abrasives

13.1. Disconnect pneumatic tool from air supply.

13.2. Grasp abrasive by the edge and peel it away from backup pad. **WARNING: DISPOSE OF ABRASIVES PROPERLY. USED ABRASIVES MAY CONTAIN RESIDUAL HAZARDOUS MATERIALS**. If you are unsure of the preferred method of disposal, check with your supervisor or safety officer.

13.3. Check the wear on th e hooks of the backup pad and pad protector. If significant wear is evident, replace pad and protector. Worn protection pads and backup pads will not

adhere to the abrasive properly, and can cause the abrasives to spin off of the pad.

13.4. Choose the proper size of abrasive for the pneumatic tool. Choose a grit that meets the requirements of the work surface. If you are unsure of the proper grit abrasive, check with a supervisor. Press the throttle lever of the tool to ensure that the tool is not pressurized. **WARNING: NEVER REPLACE ABRASIVES OR PERFORM MAINTENANCE ON A PNEUMATIC TOOL WHILE IT IS CONNECTED TO A COMPRESSED AIR SUPPLY.**

13.5. Lay the DustMaster™ Supreme Abrasive onto the backup pad, with the abrasive side facing away from the tool. Ensure that the abrasive sheet covers the backup pad completely, and that the abrasive is oriented properly.

13.6. Press the tool against a flat surface with the abrasive down, to affix the abrasive to the backup pad.

14. Safe-Filter-Change ™ Procedure

14.1. WARNING: It is imperative that the operator perform the following Safe-Filter-Change procedure in order to ensure that neither the operator nor the environment is exposed to potentially hazardous dust. By performing the Safe-Filter-Change procedure EXACTLY as outlined below, the operator can replace filters containing hazardous dust without protective clothing or a respirator.

14.2. Connect the vacuum to the shop air supply.

14.3. Grasp the vacuum port firmly, and turn counterclockwise to unscrew the port from the vacuum housing. Keep the port pointing upwards during this process to keep the bulk of the dust and debris in the bottom of the filter bag.

14.4. Remove the lid. The downdraft of air into the vacuum will prevent dust from becoming airborne and escaping.

14.5. Turn a DustMaster™ disposal bag (300-043-12) inside out around your hand like a mitten.

14.6. Grasp the rubber edge of the filter, and gently pull it free from the filter holder. Be sure to keep the open mouth of the filter bag in the air stream created by the vacuum. Any dust or debris dislodged from the filter will be drawn into the vacuum and will be captured by the HEPA filter.

14.7. Turn the disposal bag inside out around the DustMaster™ filter bag, and tape or tie the end of the disposal bag shut. Gently shake the sealed end of the disposal bag over the mouth of the Hornet to ensure that residual dust is not clinging to the exterior of the disposal bag.

14.8. Place a new filter into the Hornet, and press the gasket into place. Dispose of the used bag in accordance with all regulations. Use ONLY Clayton DustMaster™ Filter Bags. Reorder part number 500-003-10.

15. HEPA Filter Change

15.1. First, perform the Safe Filter Change detailed above. Changing the HEPA Filter can expose the worker and the environment to hazardous dust. Be sure to wear appropriate PPE and perform filter change in a downdraft booth or a safe location. The Hornet should not be operating during the HEPA Filter Change – disconnect all air lines before changing the filter.

15.2. With the main filter bag removed from the Hornet, reach into the filter compartment and grasp the HEPA filter.

15.3. Turn the filter counter clockwise to unscrew it from its mount. Grasp the knob on top of the filter, and slowly pull the filter out of the Hornet.

15.4. Place HEPA filter into a disposal bag (pn 300-043-12), and seal the bag.

15.5. Replace this filter ONLY with a Clayton HEPA Filter (pn 500-116). Place the new HEPA Filter into the Hornet, and screw it down onto the mount.

15.6. Replace primary filter bag (pn 500-003-10)

15.7. Screw port back onto Hornet, completing filter change.

16. Vacuum Maintenance

16.1. Check the primary Dustmaster filter bag at regular intervals. The frequency with which this filter will need to be changed will depend upon the amount of sanding you perform, and the type of material collected.

16.2. Keep the unit away from moisture or harsh environments whenever possible. Store unit in a dry location.

16.3. Never use the Clayton Vacuum for wet vacuuming. The Clayton System is designed to extract dry dust, and is not equipped for fluid extraction. Vacuuming wet material can ruin the filter system, and void the warranty.

16.4. No field adjustment or calibration is required on vacuum system air pressure gages.

17. Tool Maintenance

17.1. Always check the condition of a pneumatic tool before use. Ensure that the backup pad is in good condition. Replace the backup pad at the first sign of wear. An old or damaged backup pad can break apart at high speeds, causing personal injury or property damage.

17.2. Oil the tools regularly. Before each use, place a drop of pneumatic tool oil directly into the air intake of each tool. Do not over-oil. Too much oil can cause damage to the pneumatic tool and poor performance.

17.3. Always disconnect the pneumatic tool from the air supply when the tool is not in use. Change abrasives whenever a decrease in sanding performance is noticed. Failure to change abrasives regularly can cause more rapid degradation of backup pads.

17.4. To remove the backup pad from circular random orbital sanders, insert the tool wrench into the sander between the pad and the shroud. Push the wrench to the center of the sander, until you feel it lock onto the shaft. Once the wrench is holding the shaft in place, turn the pad counterclockwise by hand until it spins freely off. Reverse these directions to install a new pad.

17.5. To remove the backup pad from the 3” x 7” rectangular orbital sanders, simply peel the backup pad from the tool. The backup pad is affixed with an adhesive backing. Be sure to remove any old adhesive from the sander. Peel the backing paper from a new pad, line it up to the tool, and press firmly.

17.6. To replace the backup pads on the 3” x 4” rectangular sanders,

unscrew the pad from the tool, and screw new pad in its place.

17.7. Use only Clayton DustMaster™ Supreme backup pads, and only use the proper size for the sander. Each tool is calibrated for a specific size pad. Using an under- or over-sized pad will most likely result in heavy vibration, and a shortened lifespan for the tool and the backup pad. Excess vibration can cause personal injury.

18. Hose Maintenance

18.1. Never use the Clayton Air/Vacuum hose for suctioning liquids.

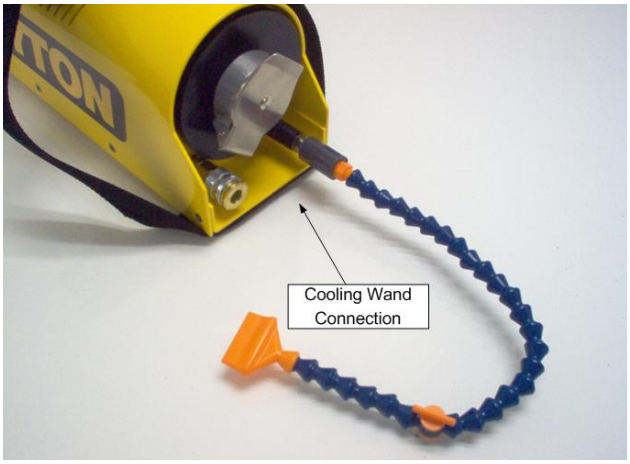
18.2. Always visually examine the air lines and disconnect plugs before using the Clayton Air/Vacuum Hoses. If a leak is detected, discontinue use immediately and discard the hose.

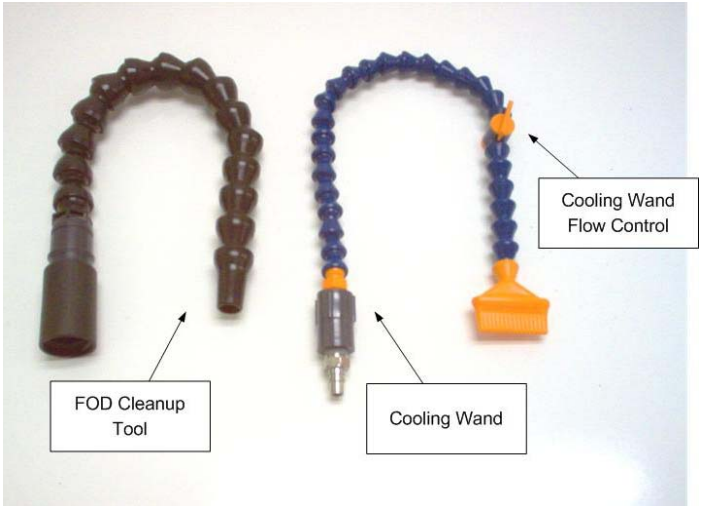
18.3. Always store hoses in the case. Before turning off the vacuum, shake the hose quickly to dislodge debris inside, and allow the vacuum to clear the hose.

19. Troubleshooting

Symptom	Probable Cause	Remedy
Vacuum will not start	Air connection has not been made	Ensure that main air supply is connected
Vacuum performance is low	Shop air pressure is set too low	Ensure that shop air pressure is at least 110-120 PSI
	Filter bag is full or HEPA filter requires replacement	Replace filter bag using the Safe-Filter-Change procedure. Replace HEPA filter following instructions in Section 13
	Hose is clogged	Check each hose for obstruction, and remove any debris
Air tools operating too fast	Tool throttle is set too high	Reduce tool throttle with adjustment knob on tool
	Shop air pressure is too high	Ensure that shop air pressure does not exceed 120 PSI
Air tools operating too slowly	Tool throttle is set too low.	Increase tool throttle with adjustment knob on tool
	Shop air pressure is set too low	Ensure that shop air pressure is at least 110-120 PSI
Air pressure will not allow vacuum to achieve operating levels.	Supply air line is not delivering enough air	Be sure to use a 3/8” or larger air line. Use a gauge to check the pressure of the main supply line. If the pressure on the main line is not adequate, you may need to increase shop capacity
Static electricity is causing sparks or shocking.	System is not properly grounded	Ensure that shop air lines are grounded. Check to be sure that a ground wire has been connected to the vacuum grounding lug
Excessive dust is visible at work surface.	Filter bag is full	Replace filter bag using the Safe-Filter-Change procedure
	Fine dust has coated surface of filter bag	Disconnect air supply from Hornet, and bump the vacuum gently to dislodge dust from the filter bag.
	HEPA filter needs to be replaced	Replace HEPA filter following the instructions in section 13

20. Photos and Parts





21. Warranty

Clayton Associates, Inc. guarantees its products against defects in materials or workmanship and will either repair or replace all parts that prove defective under normal use for a period of one (1) year with the exception of Clayton Associates, Inc. vacuums, for which the period is two (2) years. The warranty period shall commence from the date of invoice.

This warranty does not cover repairs due to normal wear, accident, neglect, misuse, or use other than as indicated in the instruction booklet.

Within the continental U.S.: During the first 90 days of the warranty period, Clayton will at no charge to the customer, provide parts and labor at the customer's site. From day 91 onward, Clayton will provide parts to the customer's site at no charge and will perform labor at no charge for products returned to its factory at the customer's expense.

Outside the continental U.S.: Clayton will provide parts to the customer's site at no charge or for products returned to its factory at the customer's expense, Clayton will provide parts and perform labor at no charge.

Clayton shall not in any event be liable for any damages, loss of production time or profits, whether based on contract, warranty, negligence, strict liability or otherwise, including without limitation any consequential, incidental or special damages, arising with respect to the equipment or its failure to operate.

Clayton Associates, Inc. makes no other warranty or representation of any kind, except that of title, and all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, are hereby expressly disclaimed.