

Safety – Operation – Maintenance

Keep this document in a safe place

Read and understand this manual before operating your air tool



BACKPACK™ HEPA VACUUM SYSTEMS

Model: BP-125-0



Scan this QR code for
online instructions and
documentation, or visit
www.ClaytonHowTo.com



⚠ WARNING

SAFETY LEGEND



⚠ WARNING

Read and understand operator's manual before using this equipment.



⚠ WARNING

Eye protection is required when operating this equipment.



⚠ WARNING

Hearing protection is required when applicable PEL (permissible exposure limit) is exceeded.



⚠ WARNING

Respiratory protection is required when applicable PEL (permissible exposure limit) is exceeded.

This manual is intended as a complete operations manual for owners and users of the Clayton Backpack™ Series HEPA Vacuums and equipment packages which incorporate the Clayton Backpack™ Series HEPA Vacuums. 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. Pneumatic tools, hoses, or accessories are available directly from Clayton Associates, Inc.

October 2019

TABLE OF CONTENTS

Table of Contents.....	2
Important Safety Instructions.....	3
Save These Instructions	3
• Grounding Instructions	3
• Warnings Applicable To Hazardous Materials Clayton Vacuum Systems	4
• Explanation of Hazardous Warning Symbols	4
• Hazardous Materials Warning	5
• Introduction.....	5
• Description.....	5
• Warnings and Cautions	5
• Preparation for Use	6
• Preparation for Storage	6
• Preparation for Shipping.....	6
• Electric Vacuum Operational Procedures.....	6
• When to Change Vacuum Filters.....	6
• Using the Filter Timer Card.....	6
• Recommended Filter Change Procedure (using only one vacuum).....	6
• Recommended Filter Change Procedure (using a support vacuum).....	6
Maintenance	7
• HEPA Filter	7
• Vacuum Maintenance	7
• Troubleshooting Guide for Electric Vacuums.....	7
Warranty	8
Illustrated Parts Breakdown.....	9

IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING THIS APPLIANCE

When using an electrical appliance, basic precautions should always be followed, including the following:

WARNING

To reduce the risk of fire, electric shock, or injury:

- Do not leave appliance when plugged in. Unplug from outlet when not in use and before servicing.
- This unit is to be used only indoors and in a dry location.
- Use only as described in this manual. Use only manufacturer's recommended attachments.
- Do not use with damaged cord or plug. If appliance is not working as it should, has been dropped, damaged, left outdoors, or dropped into water, return it to a service center.
- Handle provided on power head is used only for removal of power head during maintenance.
- Before separation of power head from tank, users must disengage draw latches on tank.
- Do not pull or carry by cord, use cord as a handle, close a door on cord, or pull cord around sharp edges or corners. Do not run appliance over cord. Keep cord away from heated surfaces.
- Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
- Do not handle plug or appliance with wet hands.
- Do not put any object into openings. Do not use with any opening blocked; keep free of dust, lint, hair, and anything that may reduce air flow.
- Keep hair, loose clothing, fingers, and all parts of body away from openings and moving parts.
- Turn off all controls before unplugging.
- Do not use to pick up flammable or combustible liquids, such as gasoline, or use in areas where they may be present.
- Connect to a properly grounded outlet only. See Grounding Instructions.
- Do not pick up anything that is burning or smoking, such as cigarettes, matches, or hot ashes.
- Do not use without all filters in place.
- Do not allow to be used as a toy. Close attention necessary when used by or near children.

SAVE THESE INSTRUCTIONS

GROUNDING INSTRUCTIONS

This appliance must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be inserted into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

WARNING

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the appliance – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

This appliance is for use on a nominal 120-volt circuit and has a grounding attachment plug that looks like the plug illustrated in Figure 1. Make sure that the appliance is connected to an outlet having the same configuration as the plug. No adaptor should be used with this appliance.

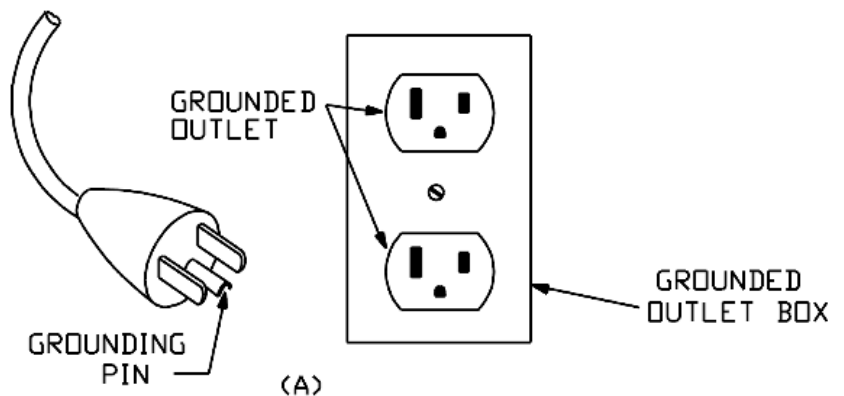


Figure 1: Grounded Outlet and Plug

SAVE THESE INSTRUCTIONS

WARNINGS APPLICABLE TO HAZARDOUS MATERIALS CLAYTON VACUUM SYSTEMS

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, NAVSUPINST 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, 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 Hazardous Warning 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.

SAVE THESE INSTRUCTIONS

Hazardous Materials Warning

There are no inherently hazardous materials in the Clayton Backpack™ Vacuum Systems. However, use of the system can generate hazardous materials, depending on the media being sanded. When removing coatings such as lead paint, chromated primers, 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 any Vacuum Sanding System or 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.

Introduction

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 (High Efficiency Particulate Air) 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.

This technical manual describes the Clayton Vacuum System, and provides operating instructions, troubleshooting, and an illustrated parts breakdown (IPB).

Description

Clayton Vacuum Systems integrate a high efficiency filter vacuum cleaner with powerful electric motors 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.

The Clayton Backpack HEPA Filtered Vacuums consist of a polyethylene tank and a base enclosure with an electric motor. The vacuums are mounted to an ergonomic backpack harness and can be used as a backpack vacuum or placed on a dry surface during use.

The vacuum utilizes a three-stage replaceable filter system, and provides exceptional HEPA 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. After the filter bag, air passes through a cloth prefilter and finally a HEPA filter which captures any remaining particles.

Warnings and Cautions

When operating electric or 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 Vacuums and pneumatic tools:



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 in place. Follow approved safety procedures to open filter compartment after initial use, and use proper PPE to prevent personal exposure to hazardous dust.

This vacuum collection system is intended to collect dry matter. Free flowing liquids may damage the HEPA filter and motor, and will void the warranty.

This equipment should always be stored in a dry area.

SAVE THESE INSTRUCTIONS

Preparation for Use

System is shipped complete. Remove packaging material from around system. Unlatch powerhead from tank and remove accessories from inside the tank. Unthread the top cap on the vacuum. Ensure that one filter bag is in place inside of the grey cloth prefilter.

The HEPA filter is positioned beneath the prefilter, and is factory installed.

Preparation for Storage

The Clayton Backpack™ systems require no special preparation for short term storage.

When long term storage is required, Clayton recommends that the operator perform a filter change to remove any dust or residue from the system.

Preparation for Shipping

Place the vacuum into an appropriately sized container, and liberally pack protective cushioning around the vacuum.

Electric Vacuum Operational Procedures



Ensure that all electrical supplies are grounded. If you are unsure, check with a supervisor or building engineer.

WARNING: FAILURE TO USE GROUNDED ELECTRICAL SUPPLY CAN RESULT IN ELECTRICAL SHOCK, INJURY, OR DEATH. If you do not have access to a grounded electrical supply, do not use the vacuum.

Consult with a supervisor or electrician.

Backpack™ Vacuums are equipped with a short whip and an extension cord. Do not use additional extension cords with these vacuums. Use of extension cords will decrease vacuum performance. Reduced performance will result in higher levels of exposure to hazardous dust. If an extension cord must be used, ensure that the cord is UL Listed, CSA Certified, 12AWG minimum, and approved for indoor/outdoor usage.

Backpack vacs are designed for use with a 1.5" Clayton cleanup hose. One end of the hose has a rubber cuff. Push this end over the vacuum inlet tube on the top of the vacuum tank.

Plug the short electrical whip into the end of the three pronged extension cord included with the vacuum. Never use a smaller gauge cord than the factory cord. Ensure that the plug is pressed into the recessed plug holder on the side of the vacuum.

On the side of the vacuum head is a power switch, with two positions. With the vacuum connected to power, turn this switch to the ON position to activate the vacuum motor. Turn the switch to the OFF position to deactivate the vacuum.

The vacuum will now be operational, and the hose can be connected to either vacuum-shrouded grinders or tools, or to cleaning tools for general cleanup.

When to Change Vacuum Filters

Vacuum filter bags should be changed at regular intervals to prevent loss of suction or damage to the vacuum. Check the condition of the filter bags before each use. Bags should be changed when $\frac{3}{4}$ full. Always leave the vacuum running when checking the filter bag. The airflow into the vacuum will prevent dust from escaping and will reduce exposure.

The HEPA filter should be changed once per year or if the vacuum bag is breached.

Using the Filter Timer Card



Backpack vacuums ship with a Filter Timer Card (part number 627-12T) attached to the handle. When the vacuum is prepared for its first use, activate the timer card by pressing firmly on the silver button on the back of the card. Within a few minutes, a red line will appear on the timer's front meter. When the timer meter is completely red, 12 months have elapsed and the filter should be replaced. Replacement HEPA filters are packaged with a new Filter Timer Card, which should be attached to the vacuum after filter installation.

Recommended Filter Change Procedure



WARNING: It is recommended that the operator use appropriate PPE when changing any filters contaminated with hazardous dust. If you are unsure of what precautions to take, check with a supervisor or your Industrial Hygienist/Safety Representative.

Bag and Prefilter

To change the bag filter or prefilter, first connect the vacuum to power and turn the unit on. Keeping the vacuum upright, unthread the top inlet cap and set aside. Place a poly disposal bag around your hands like a large mitten. Grasp the edge of the filter bag and gently raise it up, keeping the dirty filter bag over the mouth of the vacuum. The downdraft will prevent the escape of dust from the bag during a filter change. Draw the filter bag into the disposal bag, keeping the disposal bag between you and the filter bag. Once the filter bag is inside the disposal bag, seal the disposal bag and place it in an appropriate waste container.

Dispose of the used bag in accordance with all local, state, and federal regulations. Use **ONLY** Clayton Filter Bags.

MAINTENANCE

HEPA Filter

Changing the HEPA Filter can expose the operator and the environment to hazardous dust. Be sure to wear appropriate personal protective equipment when performing filter changes. If possible, perform HEPA filter change in a controlled environment. The Backpack should not be operating during the HEPA Filter Change – disconnect all electric before changing the filter. Always perform a filter bag change before beginning a HEPA Filter change.

Remove the inlet cover, then remove and set aside the bag filter and prefilter. The HEPA filter is located at the bottom of the filter compartment. Reach into the compartment and grasp the HEPA filter. It is friction-mounted on the vacuum motor with a rubber gasket. Rock the filter back and forth to loosen it from the motor, then pull it straight out of the vacuum. Place it into a disposal bag and seal it before placing it into an appropriate waste container.

Dispose of the used bag in accordance with all local, state, and federal regulations. Use ONLY Clayton Filter Bags.

Vacuum Maintenance

Check the primary filter bag at regular intervals. The frequency with which this filter will need to be changed will depend upon the amount of sanding, grinding, and cleaning that you perform, and the type of material collected. Filter bag should be changed when the bag is 1/2-3/4 full.

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

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

Troubleshooting Guide for Electric Vacuums

Symptom	Probable Cause	Remedy
Vacuum will not start	Electrical connection has not been made.	Ensure that the power cord has been plugged into a properly grounded 120 Volt circuit.
	Motor brushes are worn.	Replace brushes.
Vacuum performance is low	Electrical source has low voltage.	Ensure that outlet is supplying proper voltage. Multiple appliances plugged into a single electrical outlet may cause a voltage drop.
	Extension cords are being used to extend the reach of the electric vacuum.	Discontinue use of extension cords. Find an electrical outlet closer to the work location.
	Filter bag is full or HEPA filter requires replacement.	Replace filter bag. If performance is still low, replace HEPA filter.
	Hose is clogged.	Check each hose for obstruction, and remove any debris.
Excessive dust is visible at work surface.	Filter bag is full.	Replace filter bag.
	Fine dust has coated surface of filter bag.	Disconnect air supply from Backpack™, and bump the vacuum gently to dislodge dust from the filter bag.
	HEPA filter is clogged.	Replace HEPA filter.
Motor makes excessive or harsh noise.	Motor brushes worn.	Replace motor brushes with Clayton PN 600-118B
Motor stops suddenly during use.	Vacuum is operating above maximum temperature.	Leave vacuum off for several minutes to cool, then turn back on.

LIMITED LIFETIME 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.

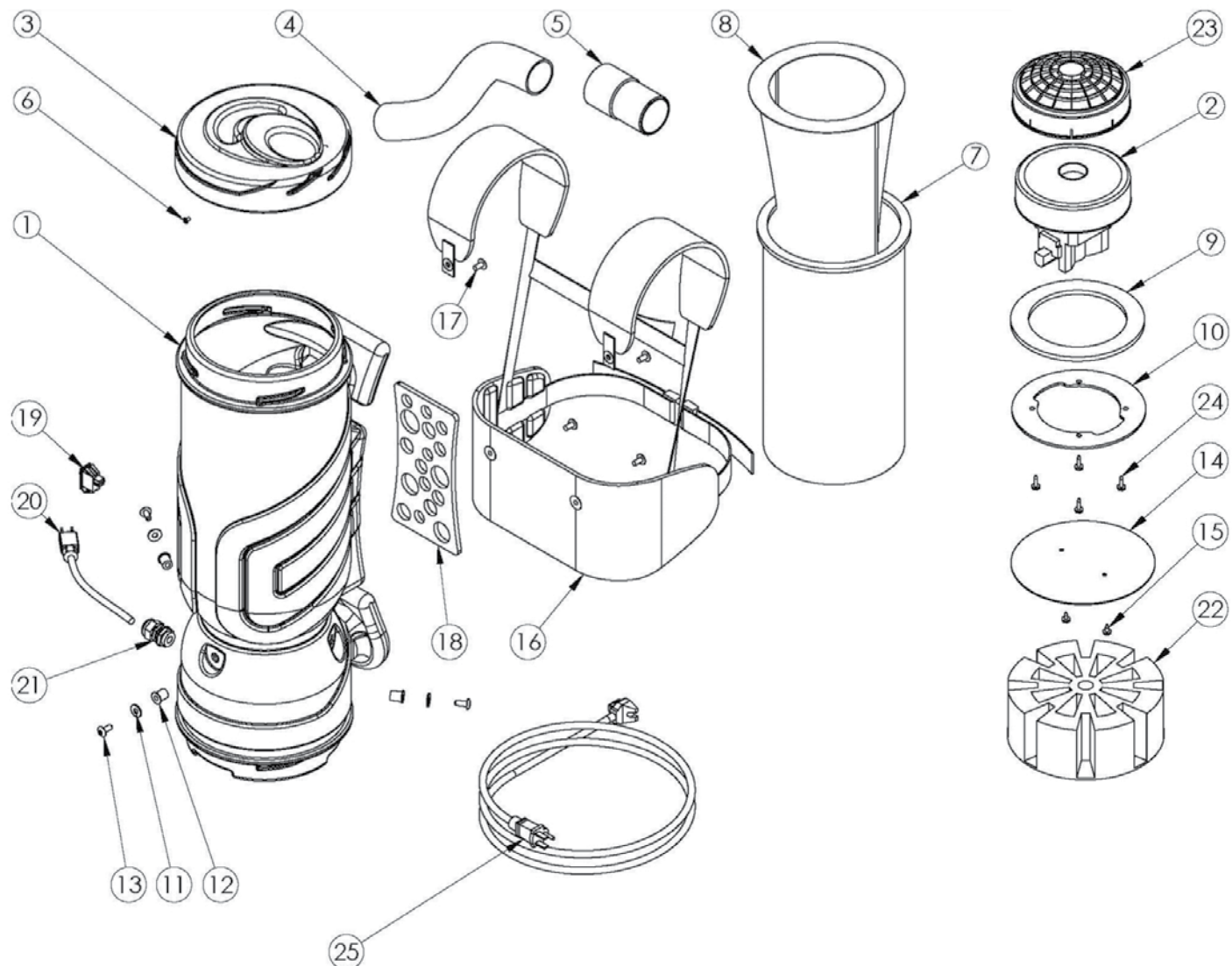
Within the continental U.S.: During the first 90 days of the warranty period, Clayton will at no charge to the customer, provide parts and labor at the customer's site. From day 91 onward, Clayton will provide parts to the customer's site at no charge and will perform labor at no charge for products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

ILLUSTRATED PARTS BREAKDOWN



Schematic Breakdown Parts

1	Housing – Backpack (for 6 quart vacuum add -6 after part number)
2.a	Vacuum Motor Super (119347-00)
2.b	Vacuum Motor Construction (115923 duel stage)
3	10-Quart Lid (for 6 quart add -6 after part number)
4	Vacuum Hose 4'
5.a	Hose Cuff Swivel
5.b	Hose Cuff Non-Swivel
6	Rivet – Hose To Lid
7	10 Quart Cloth Bag (for 6 quart add -6 after part number)
8	Micro Lined Filter Bag (for 6 quart add -6 after part number)
9	Gasket – Motor To Housing
10	Aluminum Mounting Ring – Motor
11	Plastic Washer For Well Nut

12	Well Nut
13	Screw (for well nut)
14	Aluminum Finger Guard – Motor
15	Screw – Motor Finger Guard
16	Shoulder and Waist Belt
17	Screw – Shoulder & Waist Belt
18	Backrest Pad With 3/M Adhesive
19	On/Off Rocker Switch
20	9" Pigtail Power Cord (50 ft. 16-3 SJTW 125V)
21	Strain Relief with Nut (Heyco 1/2in dia)
22	Noise Filter (exhaust noise filter)
23	HEPA Dome Filter (motor)
24	Screw – Motor To Mounting Plate
25	Extension Cord Yellow Illuminated (50 ft. 16-3 SJTW 125V)



Clayton products are proudly made in the USA

