MODEL G0649
Welding Downdraft Table
OPERATOR'S MANUAL

#CR11142 PRINTED IN USA.

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance and service of this machine/equipment.

Failure to read, understand and follow the instructions given in this manual may result in serious personal injury, including amputation, electrocution or death.

The owner of this machine/equipment is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, blade/cutter integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

Table of Contents

INTRODUCTION

Foreword

We are proud to offer the Model G0649 Welding downdraft table. This machine is part of a growing Grizzly family of fine metalworking machinery. When used according to the guidelines set forth in this manual, you can expect years of trouble-free, enjoyable operation and proof of Grizzly's commitment to customer satisfaction.

The specifications, drawings, and photographs illustrated in this manual represent the Model G0649 when the manual was prepared. However, owing to Grizzly's policy of continuous improvement, changes may be made at any time with no obligation on the part of Grizzly.

For your convenience, we always keep current Grizzly manuals available on our website at **www.grizzly.com**. Any updates to your machine will be reflected in these manuals as soon as they are complete. Visit our site often to check for the latest updates to this manual!

Contact Info

We stand behind our machines. If you have any service questions, parts requests or general questions about the machine, please call or write us at the location listed below.

Grizzly Industrial, Inc.
1203 Lycoming Mall Circle
Muncy, PA 17756
Phone: (570) 546-9663
Fax: (800) 438-5901
E-Mail: techsupport@grizzly.com

If you have any comments regarding this manual, please write to us at the address below:

Grizzly Industrial, Inc.
C/O Technical Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

Functional Overview

This welding downdraft table is designed to help collect and recycle shop air that is contaminated with many types of welding dust, oily smoke, and fumes. However, it is not designed as a substitute or "single-solution" for a respirator or fresh-air type respirator. Often metals have coatings that produce poisonous fumes when heated, so make sure that you are familiar with the materials to be welded and you know what types of fumes will be produced. Keep your shop in compliance with OSHA welding safety requirements at all times.

This fume extractor can be permanently connected to a welding workstation downdraft table, or wheeled to various welding locations.

A squirrel-cage type fan located inside of the fume extractor cabinet draws welding sparks, dust, smoke, and fumes through the snorkel. Then the contaminated air passes through a slag drawer that is fitted with two 1mm stainless steel screens that arrest sparks and collect minor welding slag. Periodically the operator must pull this drawer open to remove the collected material.

From the slag drawer, the air now enters the next chamber where a 10-micron paper roller-type filter collects the coarse welding dust and the oily smoke. At an adjustable interval, this paper filter automatically advances to always provide new filtration paper before it becomes caked and CFM is lost.

With the air now vacant of oily smoke and 85% of the welding dust, the air passes through a dual 1-micron pleated paper-type filter where the remainder of the dust is collected. At an adjustable interval, this filter element is vibrated automatically to prevent caking. Any caked material then falls into the removable dust drawer.

At this point, the air passes through the a final filter. This pleated HEPA filter removes the rest of the 1-micron particles and 99.97% of the 0.3-micron particles. The recycled air now reenters the shop.

MACHINE DATA SHEET

Customer Service #: (570) 546-9663 • To Order Call: (800) 523-4777 • Fax #: (800) 438-5901

MODEL G0649
LARGE DOWNDRAFT TABLE

Product Dimensions:

Weight ..... 750 lbs
Width/Depth/Height ..... 54 13/16" x 39 7/16" x 73"
Foot Print (Length/Width) ..... 54 13/16" x 39 7/16"

Shipping Dimensions:

Type ..... Crate
Content ..... Machine
Weight ..... 794 lbs.
Length/Width/Height ..... 57 1/2" x 43 5/16" x 50"

Electrical:

Switch ..... Control Panel
Machine Voltage 220V 3-Phase
Cord Gauge ..... 14 AWG
Minimum Circuit Size ..... 20 amp
Included Plug ..... No

Motors:

Main

Type ..... TEFC Induction
Horsepower ..... 1.5 HP
Voltage 220V
Phase ..... Three
Amps 5A
Speed ..... 1725 RPM
Cycle ..... 60 Hz
Number of Speeds ..... Variable Fan Speed Control

Filter Roller Motor

Power 3W
Voltage 110V
Cycle 50/60Hz
Speeds 1

Filter Vibrating Motor

Power 25W
Voltage 220V
Cycle 60Hz
Speeds 1
RPM 3200

Main Specifications:

Filter Clean/Replace at Manometer Reading	18mm/H_2O
Filtration	1500 CFM
Filter Stage 1 Type	Dual Layer Stainless Steel Mesh/1mm
Filter Stage 1 Dimensions	22" x 25"
Filter Stage 2 Type	Rolling Filter/10 Micron
Filter Stage 2 Dimensions	20" Wide Roll
Filter Stage 3 Type	Pleated Filter w/Vibration, 1 Micron
Filter Stage 3 Dimensions	20" x 23" x 2"
Filter Stage 4 Type	HEPA/99.97% of 0.3 Micron
Filter Stage 4 Dimensions	23" x 26½" x 2"
Impeller Type	FC
Impeller Size	18" Diameter
Rotation	Clockwise

Construction

Body Construction	Steel
Arm Construction	Steel
Paint.	Epoxy and Powder Coat

Other Specifications:

Country Of Origin	Taiwan
Warranty	1 Year
Serial Number Location	ID Label on Front of the Machine

Features:

Manometer flow gauge
4-stage filter system
Stainless steel mesh captures sparks and welding slag
Rolling paper filter with electronic advancement
Pleated filter with vibrating function
Pleated HEPA filter
Heavy duty chrome-plated apex vented work table

Identification

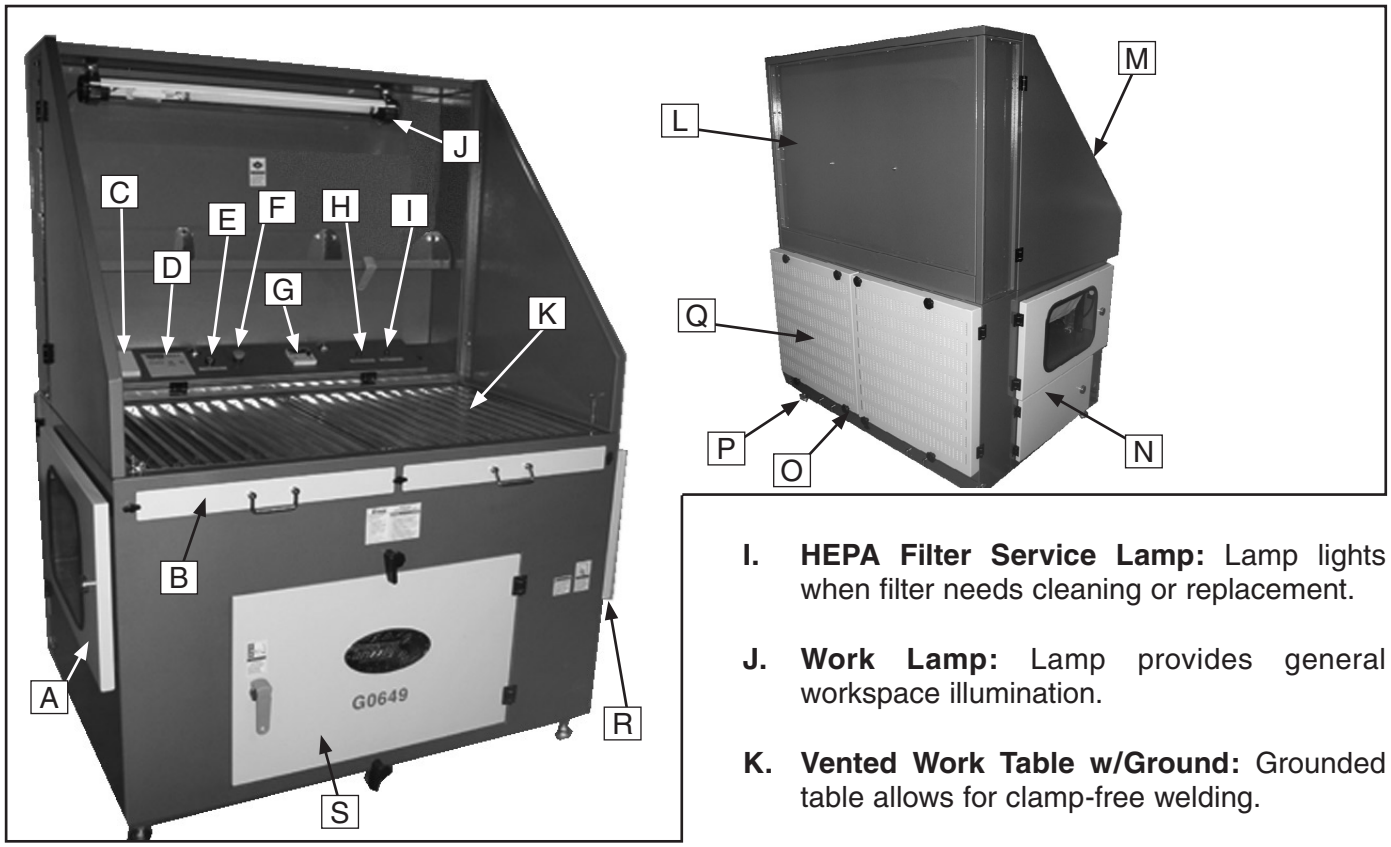


Figure 1. Features.

A. Rolling-Filter Supply Cabinet: Location for the fresh roll of filter paper.

B. Slag Drawer: Location for the removable stainless steel spark arrestor screen.

C. 110V Receptacle: Provides 110V AC power for the work lamp and hand tools.

D. Digital Control Panel: Provides location for machine operations.

E. Out of Filter Lamp: Lights when the roller-type filter has run out and needs changing.

F. EMERGENCY STOP Button: Shuts down the machine in the event of an emergency.

G. Frequency Drive Control Panel: Reduces fan suction CFM when welding with flux gasses.

H. Vibrating Filter Service Lamp: Lamp lights when filter needs cleaning or replacement.

I. HEPA Filter Service Lamp: Lamp lights when filter needs cleaning or replacement.

J. Work Lamp: Lamp provides general workspace illumination.

K. Vented Work Table w/Ground: Grounded table allows for clamp-free welding.

L. Spark Shield: Allows for shelving and lamp support.

M. Side Shield: Both left and right spark shields are hinged to allow for long workpiece clearance.

N. Main Electrical Box: Contains the master electrical system.

O. Vibrating Filter Dust Drawer: Clean out location for the vibrating filter waste material.

P. Caster Wheels: Allows for easy machine relocation and parking.

Q. Vibrating Filter & HEPA Filter Housing: Location for the pleated filters.

R. Rolling-Filter Recovery Cabinet: Allows access to the spent rolling filter material.

S. Motor and Fan Storage Cabinet: Provides access to the fan motor and allows for general storage.

SECTION 1: SAFETY

⚠WARNING

For Your Own Safety, Read Instruction Manual Before Operating this Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.

⚠DANGER **Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**

⚠WARNING **Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

⚠CAUTION **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.**

NOTICE **This symbol is used to alert the user to useful information about proper operation of the machine.**

⚠WARNING

Safety Instructions for Machinery

1. **READ THE ENTIRE MANUAL BEFORE STARTING MACHINERY.** Machinery presents serious injury hazards to untrained users.
2. **ALWAYS USE ANSI APPROVED SAFETY GLASSES WHEN OPERATING MACHINERY.** Everyday eyeglasses only have impact resistant lenses—they are NOT safety glasses.
3. **ALWAYS WEAR A NIOSH APPROVED RESPIRATOR WHEN OPERATING MACHINERY THAT PRODUCES DUST.** Most types of dust (wood, metal, etc.) can cause severe respiratory illnesses.
4. **ALWAYS USE HEARING PROTECTION WHEN OPERATING MACHINERY.** Machinery noise can cause permanent hearing loss.
5. **WEAR PROPER APPAREL.** DO NOT wear loose clothing, gloves, neckties, rings, or jewelry that can catch in moving parts. Wear protective hair covering to contain long hair and wear non-slip footwear.
6. **NEVER OPERATE MACHINERY WHEN TIRED OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Be mentally alert at all times when running machinery.

⚠WARNING
Safety Instructions for Machinery

7. **ONLY ALLOW TRAINED AND PROPERLY SUPERVISED PERSONNEL TO OPERATE MACHINERY.** Make sure operation instructions are safe and clearly understood.

8. **KEEP CHILDREN AND VISITORS AWAY.** Keep all children and visitors a safe distance from the work area.

9. **MAKE WORKSHOP CHILDPROOF.** Use padlocks, master switches, and remove start switch keys.

10. **NEVER LEAVE WHEN MACHINE IS RUNNING.** Turn power ***OFF*** and allow all moving parts to come to a complete stop before leaving machine unattended.

11. **DO NOT USE IN DANGEROUS ENVIRONMENTS.** DO NOT use machinery in damp, wet locations, or where any flammable or noxious fumes may exist.

12. **KEEP WORK AREA CLEAN AND WELL LIGHTED.** Clutter and dark shadows may cause accidents.

13. **USE A GROUNDED EXTENSION CORD RATED FOR THE MACHINE AMPERAGE.** Grounded cords minimize shock hazards. Undersized cords create excessive heat. Always replace damaged extension cords.

14. **ALWAYS DISCONNECT FROM POWER SOURCE BEFORE SERVICING MACHINERY**. Make sure switch is in OFF position before reconnecting.

15. **MAINTAIN MACHINERY WITH CARE.** Keep blades sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

16. **MAKE SURE GUARDS ARE IN PLACE AND WORK CORRECTLY BEFORE USING MACHINERY.**

17. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make a habit of checking for keys and adjusting wrenches before turning machinery ***ON***.

18. **CHECK FOR DAMAGED PARTS BEFORE USING MACHINERY.** Check for binding or misaligned parts, broken parts, loose bolts, and any other conditions that may impair machine operation. Repair or replace damaged parts before operation.

19. **USE RECOMMENDED ACCESSORIES.** Refer to the instruction manual for recommended accessories. Improper accessories increase risk of injury.

20. **DO NOT FORCE MACHINERY.** Work at the speed for which the machine or accessory was designed.

21. **SECURE WORKPIECE.** Use clamps or a vise to hold the workpiece when practical. A secured workpiece protects your hands and frees both hands to operate the machine.

22. **DO NOT OVERREACH.** Maintain stability and balance at all times.

23. **MANY MACHINES CAN EJECT WORKPIECES TOWARD OPERATOR.** Know and avoid conditions that cause the workpiece to "kickback."

24. **ALWAYS LOCK MOBILE BASES (IF USED) BEFORE OPERATING MACHINERY**.

25. **CERTAIN DUST MAY BE HAZARDOUS** to the respiratory systems of people and animals, especially fine dust. Be aware of the type of dust you are exposed to and always wear a respirator designed to filter that type of dust.

⚠WARNING
Additional Safety Instructions for Welding downdraft tables

1. **WELDING FUMES.** Welding fumes are hazardous and can cause lung damage without warning. Keep your head out of welding fumes. Use adequate ventilation at the arc to safely remove the fumes from your breathing zone and the general area. Use ANSI approved respirators for the type of welding operation. Protect others from these fumes.

2. **PROTECT BODY FROM ARC BURNS, SPARKS, AND SPATTER.** Wear correct and approved eye and body protection. DO NOT wear jewelry or frayed clothing. Use a welding helmet with the correct shade of filter for the operation.

3. **EQUIPMENT MAINTENANCE.** Make sure equipment inspections and maintenance are performed by a qualified person and keep all seals and gaskets leak free. Stop the welding operation and disconnect the welder from power if the fume extractor is leaking or malfunctions.

4. **WORKING AREA.** Keep working area clear of any material not involved in the welding operation. Keep all equipment, workpieces, and work surfaces clean, dry, and free of entanglements. Keep lead cables organized and away from your body.

5. **WELDING IN A CONFINED SPACE CAN BE HAZARDOUS.** Always open all covers, sustain forced ventilation, remove toxic and hazardous materials, and provide a power disconnect to the welder inside the work space. Always work with someone who can give you help from outside the space. Welding can displace oxygen. Always check for safe breathing atmosphere and provide air-supplied respirators if necessary. Keep in mind that all normal welding hazards are intensified in a confined space.

6. **PREVENT FIRES.** Welding work zones must be kept clear of flammable liquids, such as gasoline and solvents; combustible solids, such as paper and wood; and flammable gases, such as acetylene and hydrogen. Provide approved fire barriers and fire extinguishing equipment for the welding zone. Stay alert for sparks and spatter thrown into cracks and crevices that can start a smoldering fire. Inspect the work area again one hour after welding for any potential fire hazards.

7. **EXPERIENCING DIFFICULTIES.** If you are experiencing difficulties performing the intended operation, stop using the equipment. Contact our Technical Support Department at (570) 546-9663.

⚠WARNING

Like all machinery there is potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.

Meeting Welding Fume Extraction Codes and Standards

Welding, cutting, brazing, or soldering of metals can give off poisonous fumes containing zinc, lead, beryllium, cadmium, mercury, fluorine, and hexavalent chromium and others. These fumes typically originate from fluxes, solders, anti-corrosion coatings, pigments, metal fillers, and residual chemicals on the workpiece. This machine is designed to help meet the new welding shop clean air requirements mandated by OSHA beginning in 2006. The Model G0649 Welding Downdraft Table is designed to be a part of an overall fume control system. It is NOT designed to serve as a "single-solution" for keeping workers safe from all welding fumes. You must contact OSHA to find out how to design and maintain the best overall welding fume control system for your work station or shop. Often, depending on the workspace size, volume of work, type of material to be welded, or other special circumstances, you must use additional safety equipment such as personal air line respirators, hoods, masks, and complete body protection.

Contact the organizations below to help you meet welding fume extraction requirements:

Occupational Safety and Health Administration (OSHA).

—Code of Federal Regulations, Title 29 Labor, Parts 1910.1 to 1910.1450, available from the U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 (telephone: 800-321-6742; web site: www.osha.gov).

American Welding Society (AWS).

—Fumes and Gases in the Welding Environment, available from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112-5776 (800-854-7179; web site: www.global.ihs.com).

American National Standards Institute (ANSI).

—Safety in Welding, Cutting, and Allied Processes (ANSI Z49.1), available from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112-5776 (telephone: 800-854-7179; web site: www.global.ihs.com).

National Institute for Occupational Safety and Health (NIOSH).

—Safety and Health in Arc Welding and Gas Welding and Cutting, NIOSH Publication No. 78-138. Cincinnati,OH (telephone: 800-356-4674; web site: http://www.cdc.gov/niosh).

International Agency For Research On Cancer (IARC).

—Monographs on the Evaluation of Carcinogenic Risks to Humans, Chromium, Nickel, and Welding, Vol. 49 (1990), Oxford University Press, New York, NY 10016 (telephone: 212-726-6000; web site: www.oup-usa.org).

National Fire Protection Association (NFPA), P. O. Box 9101, 1 Battery March Park, Quincy, MA 02269-9101, (617) 770-3000, Website: *www.nfpa.org* and *www.sparky.org*.

—National Electrical Code, NFPA Standard 70

—Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B

American Conference of Governmental Industrial Hygienists (ACGIH).

—Documentation of the Threshold Limit Values and Biological Exposure Indices, available from ACGIH, 1330 Kemper Meadow Drive, Cincinnati, OH 45240-1634 (telephone: 513-742-2020; web site: www.acgih.org).

SECTION 2: CIRCUIT REQUIREMENTS

220V 3-Phase Operation

⚠WARNING

Serious personal injury could occur if you connect the machine to power before completing the setup process. DO NOT connect the machine to the power until instructed later in this manual.

⚠WARNING

Electrocution or fire could result if machine is not grounded and installed in compliance with electrical codes. Compliance MUST be verified by a qualified electrician!

Full Load Amperage Draw

Amp Draw at 220V 3-Phase..... 5 Amps

Power Supply Circuit Requirements

You MUST connect your machine to a grounded circuit that is rated for the amperage given below. Never replace a circuit breaker on an existing circuit with one of higher amperage without consulting a qualified electrician to ensure compliance with wiring codes. **If you are unsure about the wiring codes in your area or you plan to connect your machine to a shared circuit, consult a qualified electrician.**

Minimum Circuit Size (220V 3-Phase) .. 15 Amps

Power Connection

The power connection device depends on the type of installed or planned service. We recommend using a NEMA 15-15 plug and receptacle shown in **Figure 2**.

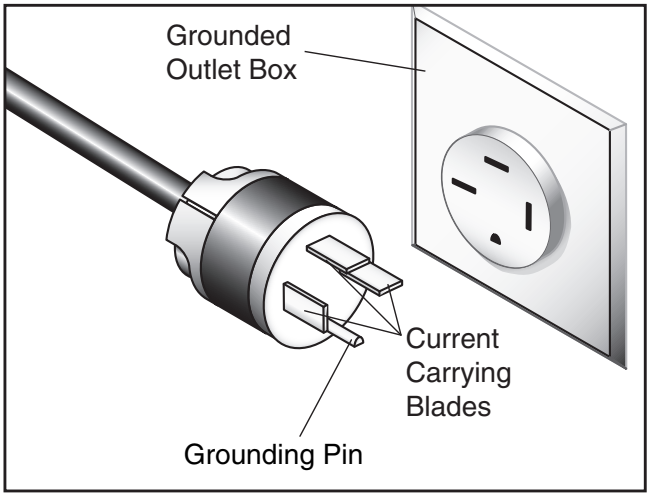


Figure 2. NEMA 15-15 plug and receptacle.

Extension Cords

Using extension cords may reduce the life of the motor. Instead, place the machine near a power source. If you must use an extension cord:

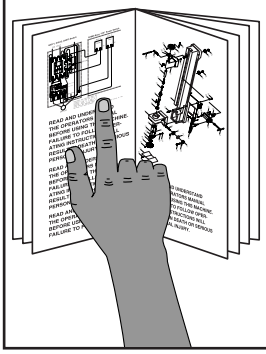
- Use at least a 14 gauge cord that does not exceed 4 meters in length.
- Ensure that the extension cord contains a ground wire and plug pin.

NOTICE

This machine uses sensitive electronics that rely on stable current on all power supply legs. We do not recommend connecting this machine to a phase converter. Ignoring this notice may void warranty.

SECTION 3: SETUP

Setup Safety



⚠WARNING

This machine presents serious injury hazards to untrained users. Read through this entire manual to become familiar with the controls and operations before starting the machine!

⚠WARNING

Wear safety glasses during the entire setup process!

⚠WARNING

This machine and its components are very heavy. Get lifting help or use power lifting equipment such as a forklift to move heavy items.

Items Needed for Setup

The following items are needed to complete the setup process, but are not included with your machine:

Description	Qty
• NEMA 15-15 Plug and Receptacle	1

Unpacking

Your machine was carefully packaged for safe transportation. Remove the packaging materials from around your machine and inspect it. If you discover the machine is damaged, *please immediately call Customer Service at (570) 546-9663 for advice.*

Save the containers and all packing materials for possible inspection by the carrier or its agent. *Otherwise, filing a freight claim can be difficult.*

When you are completely satisfied with the condition of your shipment, inventory the contents.

Inventory

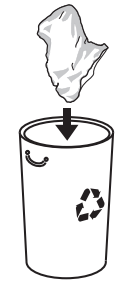
The following is a description of the main components shipped with your machine.

Note: *If you can't find an item on this list, check the mounting location on the machine or examine the packaging materials carefully. Occasionally we pre-install certain components for shipping purposes.*

Crate 1 & 2: (Figures 3 & 4) **Qty**

A. Welding Downdraft Table Unit 1
B. Rear Panel 1
C. Hinged Left & Right Side Panels ..... 1 EA
D. Lamp Assembly 1
E. Shelf Assembly 1
F. Lamp Hanger 2
G. Door Handle 2
H. Top Panel 1
I. Bolt Bag 1
—Hex Bolts $^{5}/_{16}$-18 x $^{3}/_{4}$" (Panels) 29
—Flat Washers $^{5}/_{16}$" (Panels) 29

If any nonproprietary parts are missing (e.g. a nut or a washer), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local hardware store.



⚠WARNING

SUFFOCATION HAZARD!
Immediately discard all plastic bags and packing materials to eliminate choking/suffocation hazards for children and animals.

Figure 3. Welding downdraft table unit.

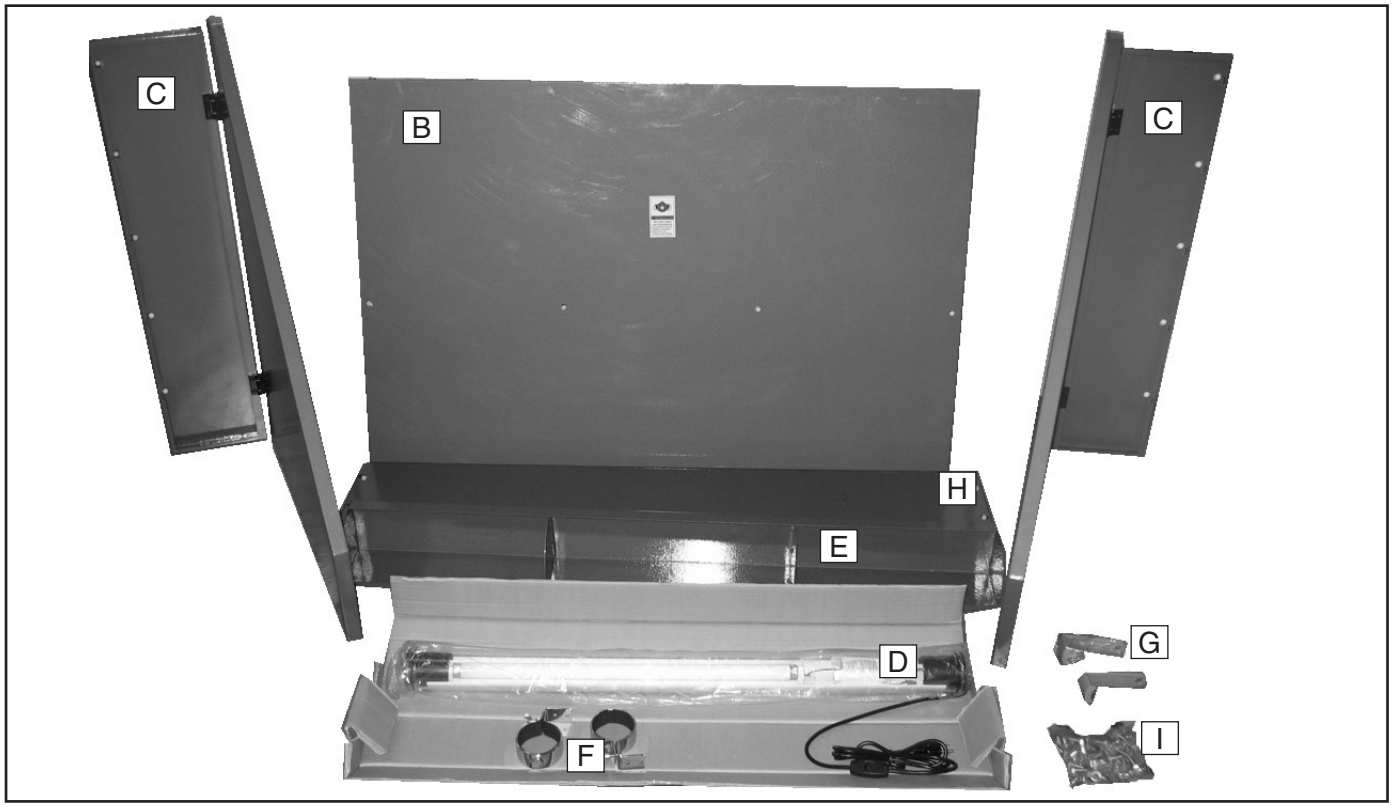
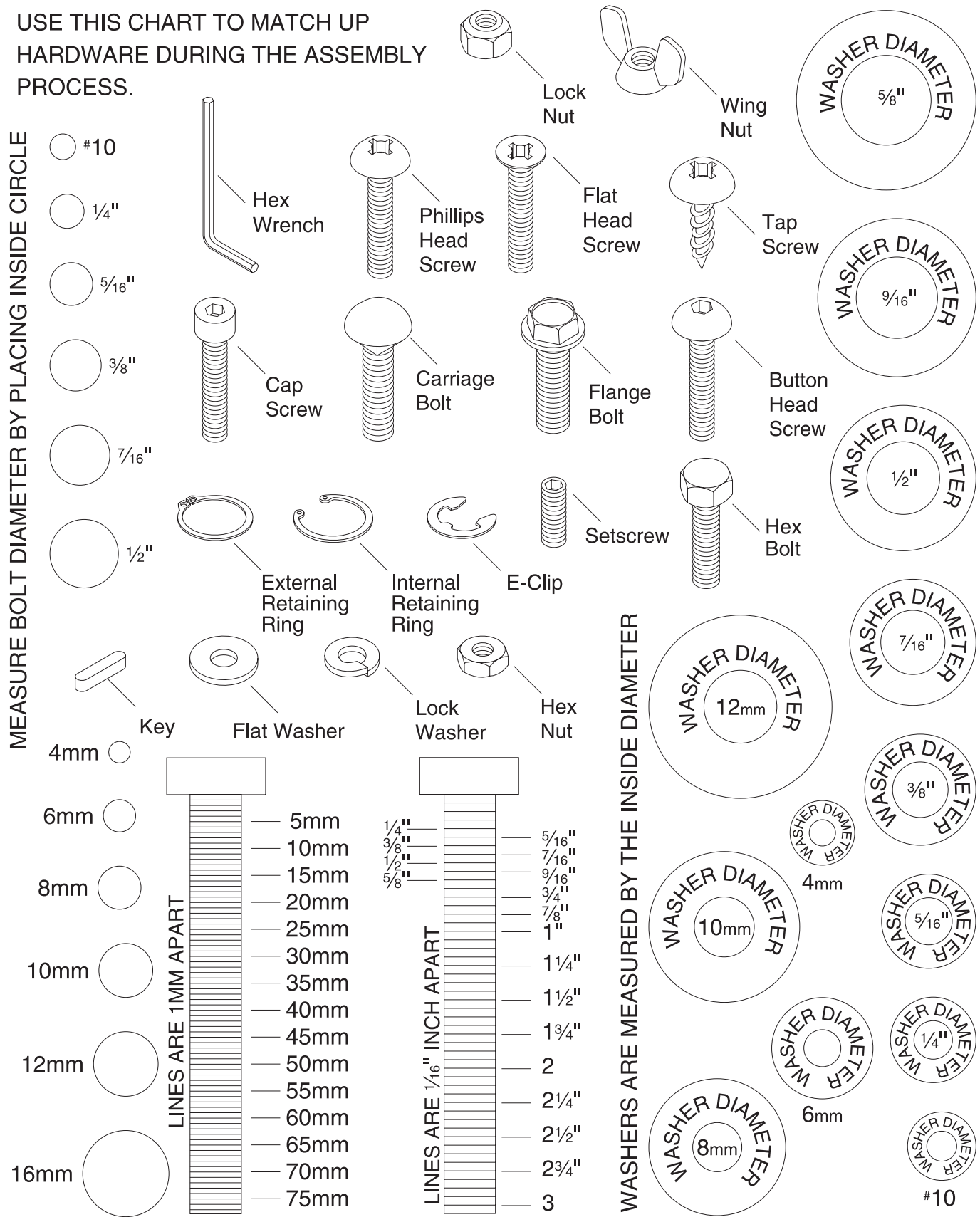


Figure 4. Accessories.

Hardware Recognition Chart



Site Considerations

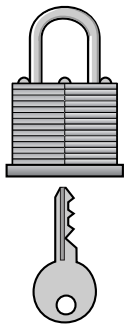
Floor Load

Refer to the **Machine Data Sheet** for the weight and footprint specifications of your machine. Some floors may require additional reinforcement to support both the machine and operator.

Placement Location

This machine is designed to operate when the environment temperature is between 41°F to 122°F, and when the humidity is between 30% to 95%. However, if the machine is only to be use in cycles that are less than 24-hour runs and allowed to cool between the runs, the maximum ambient temperature range for operation can be raised to 133°F.

Consider existing and anticipated needs, size of material to be welded, and space for auxiliary stands, work tables or other machinery when establishing a location for your new machine.



⚠CAUTION

Children and visitors may be seriously injured if unsupervised around this machine. Lock entrances to the shop or disable start switch or power connection to prevent unsupervised use.

Test Run

Once you have assembled this machine completely, test run your machine to make sure it runs properly.

If, during the test run, if you cannot easily locate the source of an unusual noise or vibration, stop using the machine immediately, then review the **Troubleshooting** on **Page 29**.

If you still cannot remedy a problem, contact our Tech Support at (570) 546-9663 for assistance.

To test run the machine:

1. Make sure that all filters are properly positioned. Refer to the **Maintenance** section on **Page 22** if required.

2. Push in and then rotate the emergency stop button clockwise (**Figure 5**), so it pops out to so it is positioned in the run position.

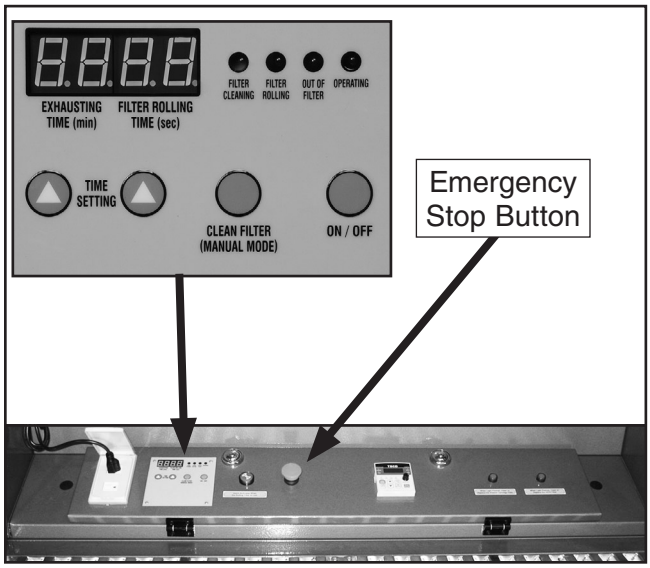


Figure 5. Control panel.

3. Connect the machine to the power source. The EXHAUSTING TIME and FILTER ROLLING TIME digital displays (**Figure 6**) will be now lit. The values shown on the displays are the initial factory settings.

4. Make sure you have read the safety instructions at the beginning of the manual and that the machine is setup properly.

5. Push and hold the CLEAN FILTER (MANUAL MODE) button momentarily. The vibrating filter motor will agitate the filter and the FILTER CLEANING lamp will light. You will hear and feel a substantial vibration.

6. Push the ON/OFF button, the OPERATING LED will illuminate, and after a moment the fan will start.

7. Let the machine run for at least 1 minute while you evaluate the machine for the following:

   —Listen for any whistling sounds coming from doors, windows, and panels which indicate a poor seal or gasket.

   —If a fan is not working, or you hear any strange or unusual metallic noise or feel a harmonic vibration, shut the machine down and correct the problem before operating the machine again. Always disconnect the machine from power when investigating or correcting potential problems.

8. Push the ON/OFF button. The OPERATING LAMP will go out and the FILTER CLEANING lamp will light. The lamp indicates that as soon as the fan completely stops, the vibrating filter is set to operate in three short durations for approximately 3 seconds each.

9. When the vibrating filter is finished, push the ON/OFF button and restart the machine.

10. On the control panel, push the ON/OFF button.

    —If the machine starts, turn the machine ***OFF*** and disconnect it from power. The emergency stop button is at fault. Do not put the machine into operation until the problem is corrected.

    —If the machine does not start, the emergency stop button is operational. Proceed to the next **Step**.

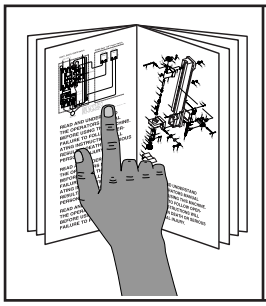
11. Push in and then rotate the emergency stop button clockwise (**Figure 6**), so it pops out and resets.

NOTICE

This machine uses sensitive electronics that rely on a good ground. Never unplug the machine while it is running or machine damage can occur. Always use the ON/OFF button or the EMERGENCY STOP button to shut the machine down. When the machine is completely stopped, it then can be unplugged from the power supply. Ignoring this notice will void the warranty.

SECTION 4: OPERATIONS

Operation Safety

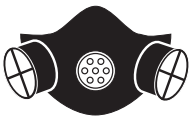


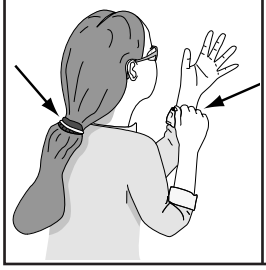
⚠WARNING

To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.

⚠WARNING

Damage to your eyes and lungs could result from using this machine without proper protective gear. Always wear the appropriate respirator and welding helmet fitted with the correct type of eye protection when welding and operating this machine.





⚠WARNING

Loose hair, clothing, or jewelry could get caught in machinery and cause serious personal injury. Keep these items away from moving parts at all times to reduce this risk.

NOTICE

If you have never used this type of machine or equipment before, WE STRONGLY RECOMMEND that you read books, trade magazines, or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

General Operation

This welding downdraft table is not designed as a substitute for a respirator or fresh-air type respirator. Make sure that you are familiar with the materials to be welded and know what types of fumes are produced. Often common metals are coated with coatings that produce poisonous fumes when heated. Before welding or cutting, make sure to strip coatings off at least four inches away from the area of heat application.

During your welding job, periodically pay attention to the CFM and manometer and clean out the slag drawer. Should the type of welding you do change drastically or if heavy smoking of paint, rubberized undercoating, or coatings of unknown material cause excessive smoke, you may have to readjust the EXHAUSTING TIME and FILTER ROLLING TIME so an adequate CFM can be maintained.

It is always better to follow good welding practices and remove coatings that will smoke and possibly contaminate the weld. This machine does not save you from the task of proper workpiece preparation.

This machine is not designed to collect smoke that contains burning slag or liquefied metal from a cutting torch or a plasma cutter. In these circumstances, you must use the appropriate welding downdraft table that will arrest the molten metal and slag.

To use the machine:

1. Refer to **Control Panels** on **Page 17** for detailed control panel functions.

2. Connect the machine to power.

3. Position your workpiece, and use the lock levers to hold it in place.

4. Connect welding ground cable to the ground stud on the left-hand corner of the table and make sure the ground strap is connecting both left and right work tables (**Figure 6**).

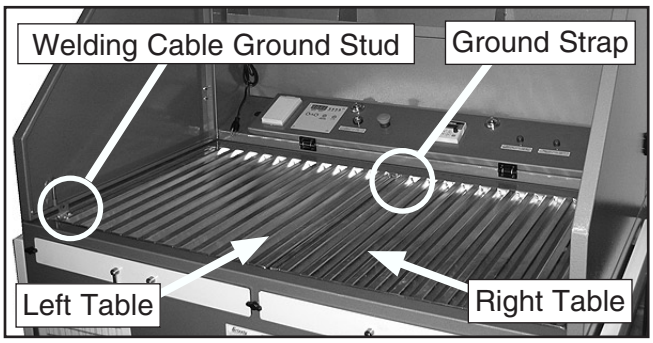


Figure 6. Grounded welding work tables.

Note: *Under both work tables exists a plastic frame that insulates the machine digital circuitry from welding current fluctuations. The ground strap shown above must connect both left and right tables. If this ground strap is missing, loose, or is disconnected, and the welding cable ground is connected to the welding ground stud, the right table will be poorly grounded and be an insufficient ground required for quality welding results.*

Control Panels

A. EXHAUSTING TIME (min): Displays in minutes, how much welding time is allotted before new filter paper is exposed.

B. FILTER ROLLING TIME (sec): Displays in seconds, the duration of roller-filter advance.

C. FILTER CLEANING: Lamp lights when the vibrating-type filter is being de-caked.

D. FILTER ROLLING: Lamp lights when the roller-type filter is advancing.

E. OUT OF FILTER: Lamp lights when the roller-type filter has run out and needs changing.

F. OPERATING: Lamp lights indicating that the machine is running.

G. SETTING TIME (Left Button): Allows for changing the **EXHAUSTING TIME**.

H. SETTING TIME (Right Button): Allows for changing the **FILTER ROLLING TIME**.

I. CLEANING FILTER (MANUAL MODE) Button: When the machine is *OFF*, press this button to de-cake vibrating filter.

J. ON/OFF Button: Toggles machine operation *ON* and *OFF*.

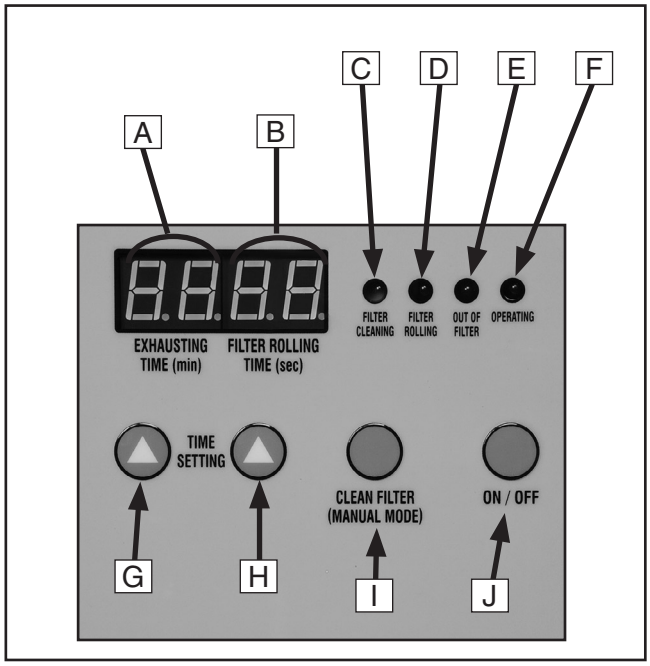


Figure 7. Digital control panel.

K. FREQUENCY DRIVE CONTROL PANEL: Allows you to adjust the fan motor supply voltage frequency which in turn changes the suction CFM. This is an important adjustment if you want to maintain the flux gas atmosphere around the point of welding.

Figure 8. Frequency drive control panel.

Changing Rolling-Filter Timing

As the rolling-type filter becomes clogged, the EXHAUSTING TIME and ROLLING TIME should be set to advance the rolling type filter as to expose just enough filter paper so that a good working CFM is maintained. This is accomplished by unrolling just enough filter paper to maintain adequate suction at the point of welding. The general idea is to initially find the point at which the filter paper begins to clog and suction begins to drop off. When you determine that point, both (or either) the EXHAUSTING TIME or FILTER ROLLING TIME settings should be adjusted to restore acceptable suction.

Exhausting Time: This is the time interval between the filter advance events. The time intervals can be set at 30, 45, 60, 120, 180, and 240 minutes. For example, if 45 minutes is selected, the filter will advance every 45 minutes for the duration you have selected below under FILTER ROLLING TIME.

Filter Rolling Time: This is the time duration the filter is allowed to advance, which exposes new filter paper. The advance time can be set at 10, 15, 20, 25, 30 or 40 seconds. For example, the greater the filter rolling time, the more fresh filter paper is exposed.

To change the rolling-filter timing:

1. Stop the machine.
2. Refer to the **Rolling Filter Consumption Chart** on **Page 19** to select your needed time values.
3. Open the control panel door (**Figure 9**).
4. Slide the NOR/SET switch (**Figure 9**) to the SET position.

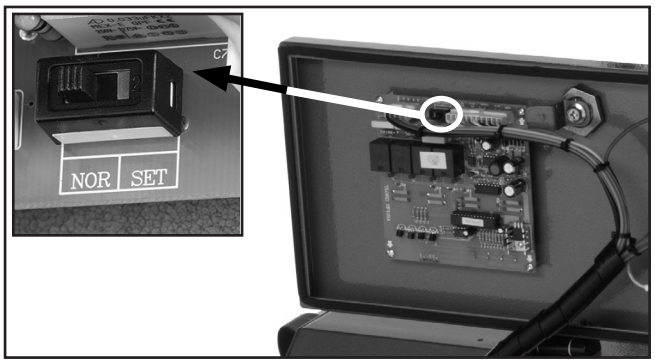


Figure 9. NOR/SET control.

5. Press the Time Setting buttons on the control panel to your new time settings**.**
6. Slide the NOR/SET switch to the NOR position.
7. Close the control panel door.

MODEL G0649
ROLLING FILTER CONSUMPTION CHART
(FOR 20" x 200' ROLLING FILTER)

Rolling Frequency		Rolling Duration		Filtration Cycle		Cycles per Roll		Filter Life Span (Approx.)		Filter Life Span at 8 Hours/Day (Approx.)
Minutes		Seconds		Hours:Min:Sec		Cycles		Hours		Days
30	+	10	=	0:30:10	x	250	=	126	=	15.7
30	+	15	=	0:30:15	x	167	=	84	=	10.5
30	+	20	=	0:30:20	x	125	=	63	=	7.9
30	+	25	=	0:30:25	x	100	=	51	=	6.3
30	+	30	=	0:30:30	x	83	=	42	=	5.3
30	+	40	=	0:30:40	x	63	=	32	=	4
Minutes		Seconds		Hours:Min:Sec		Cycles		Hours		Days
45	+	10	=	0:45:10	x	250	=	188	=	23.5
45	+	15	=	0:45:15	x	167	=	126	=	15.7
45	+	20	=	0:45:20	x	125	=	94	=	11.8
45	+	25	=	0:45:25	x	100	=	76	=	9.5
45	+	30	=	0:45:30	x	83	=	63	=	7.9
45	+	40	=	0:45:40	x	63	=	48	=	6
Minutes		Seconds		Hours:Min:Sec		Cycles		Hours		Days
60	+	10	=	1:00:10	x	250	=	251	=	31.3
60	+	15	=	1:00:15	x	167	=	168	=	21
60	+	20	=	1:00:20	x	125	=	126	=	15.7
60	+	25	=	1:00:25	x	100	=	101	=	12.6
60	+	30	=	1:00:30	x	83	=	84	=	10.5
60	+	40	=	1:00:40	x	63	=	64	=	8

Rolling Frequency		Rolling Duration		Filtration Cycle		Cycles per Roll		Filter Life Span (Approx.)		Filter Life Span at 8 Hours/Day (Approx.)
Minutes		Seconds		Hours:Min:Sec		Cycles		Hours		Days
120	+	10	=	2:00:10	x	250	=	501	=	62.6
120	+	15	=	2:00:15	x	167	=	335	=	41.8
120	+	20	=	2:00:20	x	125	=	251	=	31.3
120	+	25	=	2:00:25	x	100	=	201	=	25
120	+	30	=	2:00:30	x	83	=	167	=	20.8
120	+	40	=	2:00:40	x	63	=	127	=	15.8
Minutes		Seconds		Hours:Min:Sec		Cycles		Hours		Days
180	+	10	=	3:00:10	x	250	=	751	=	93.8
180	+	15	=	3:00:15	x	167	=	502	=	62.7
180	+	20	=	3:00:20	x	125	=	376	=	47
180	+	25	=	3:00:25	x	100	=	301	=	37.6
180	+	30	=	3:00:30	x	83	=	250	=	31.2
180	+	40	=	3:00:40	x	63	=	190	=	23.7
Minutes		Seconds		Hours:Min:Sec		Cycles		Hours		Days
240	+	10	=	4:00:10	x	250	=	1001	=	125
240	+	15	=	4:00:15	x	167	=	669	=	83.6
240	+	20	=	4:00:20	x	125	=	501	=	62.6
240	+	25	=	4:00:25	x	100	=	401	=	50
240	+	30	=	4:00:30	x	83	=	333	=	41.6
240	+	40	=	4:00:40	x	63	=	253	=	31.6

Rolling Duration (Seconds)		Length Rolled (Approx.)		Total Paper Length		Number of Cycles Per Roll
10	=	9-7/16"	/	200'	=	250
15	=	14-3/16"	/	200'	=	167
20	=	18-7/8"	/	200'	=	125
25	=	23-5/8"	/	200'	=	100
30	=	28-3/8"	/	200'	=	83
40	=	37-3/4"	/	200'	=	63

To reduce excessive fume production during related operations and minimize filter consumption, strip all workpiece coatings (paint, varnish, rust, etc.) at least 4" from the location of heat application.

To minimize filter waste, do not allow the machine to run when fumes are not being produced.

When the rolling filter begins to run low, an alarm will sound, indicating that the filter will soon need to be replaced.

SECTION 5: ACCESSORIES

P0649001—First Layer Stainless Screen
Made of high-quality stainless steel, this 1mm removable mesh arrests sparks and stops hot slag from entering the machine.

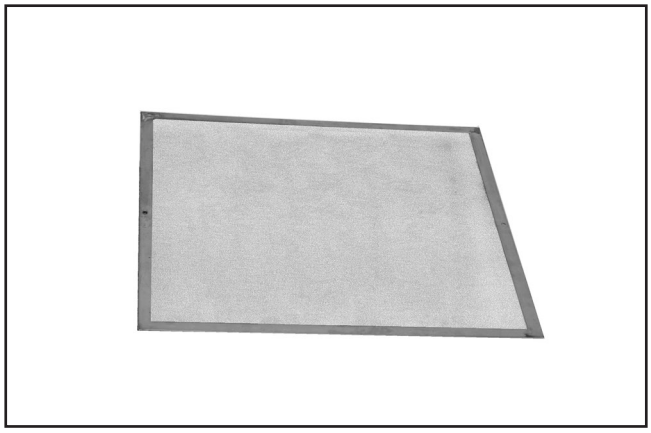


Figure 10. Replacement screen for G0647.

P0649002—Second Layer Paper Filter Roll
This rolling-type paper filter is the consumable workhorse filter of your machine. It removes most all of the 10-micron and larger grit, dust, and oily smoke.

Figure 11. Replacement filter paper for G0647.

P0649003—Third Layer Filter
This vibrating filter, collects 85% of the 1-micron particles.

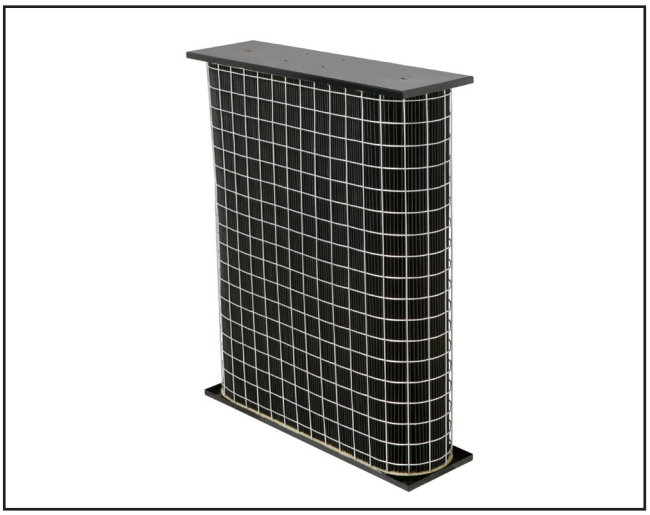


Figure 12. Replacement vibrating filters for G0647.

P0649004—Fourth Layer HEPA Filter
This HEPA filter, removes 99.97% of the 0.3-micron particles.

Figure 13. Replacement HEPA filter for G0647.

H7786—Auto Darkening Welding Helmet
Automatic UV and IR filters protect eyes from harmful visible and invisible light during welding. Switching time is less than or equal to 2 milliseconds, so there's no need to flip the helmet up to see your work under normal light conditions. Full face protection features adjustable head suspension and adjustable delay time, sensitivity and dark shade protection. Viewing area is 3½" x 1½". Includes 2 AAA batteries.

Figure 14. Model H7786 welding helmet.

T20505—Welding Respirator with Valve
Added flame retardants help reduce the filter shell flammability, making these N99 Premium Particulate Respirators ideal for welding applications. NIOSH certified to a 99% efficiency for particulates free of oil.

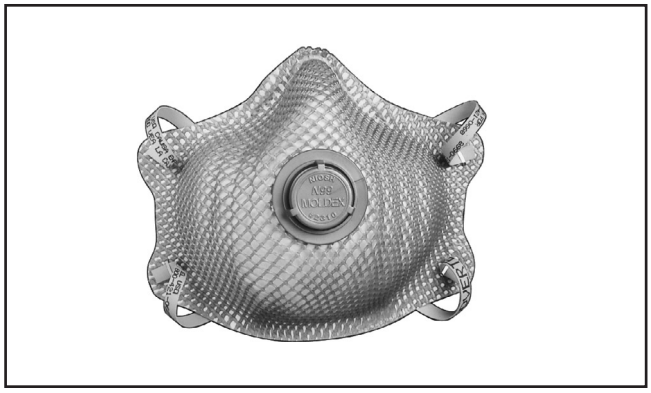


Figure 15. Model T20505 welding respirator.

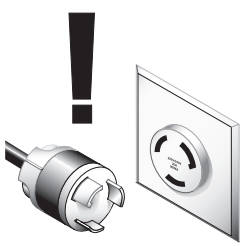
H9748—Leather Jacket Medium (40–42)
H9887—Leather Jacket Large (44–46)
H9888—Leather Jacket X-Large (48–52)
H9746—Leather Knee Pads
H9745—Leather Shoe Covers
These leather jackets, knee pads, and shoe covers provide full protection from welding sparks and spatter. Gloves not included.

Figure 16. Models H9748/H9746/H9745 leather welding protection.

H3157—Deluxe Welding Gloves
Top grain, leather gloves protect against welding hazards. Extra long to protect wrists and forearms. One size fits all.

Figure 17. Model H3157 deluxe welding gloves.

SECTION 6: MAINTENANCE



⚠WARNING

Always disconnect power to the machine before performing maintenance. Failure to do this may result in serious personal injury.

Schedule

For optimum performance from your machine, follow this maintenance schedule and refer to any specific instructions given in this section.

Daily Check/Maintenance:
- Leaking seals or ducting.
- Worn or damaged power cord.
- Worn or missing plastic work table insulators on the table support ledges (**Figure 18**).
- Clean slag screens, and empty dust drawer.
- Correct for any other unsafe condition.

Weekly Check/Maintenance:.
- Carefully wipe off any dust caked on the electronic eye lens (see **Figure 18** for location).

Monthly Check/Maintenance:
- Disconnect from power and vacuum and wipe out any dust buildup from the inside of the control box and filter cabinets. Do not use compressed air close to the filters or electrical components.

- Once a month, lubricate the drive chains.

Cleaning

Cleaning the Model G0649 is relatively easy. Put on an OSHA approved respirator and vacuum excess dust, and wipe off the remaining dust with a damp cloth. Do not use harsh detergents or solvent on the cabinet, and never spray compressed air close to filters or electrical components.

Lubrication

Use a dry rag to wipe all drive chains and sprockets clean; then brush the chain links with a thin coat of light machine oil. Refer to **Figures 18**–**20** for locations.

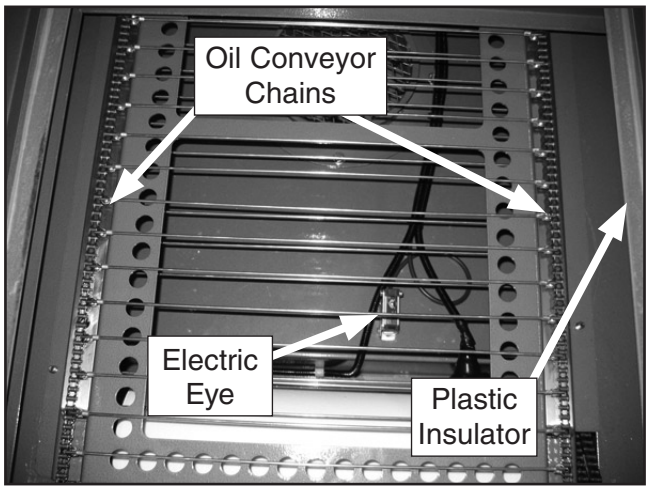


Figure 18. Conveyor system.

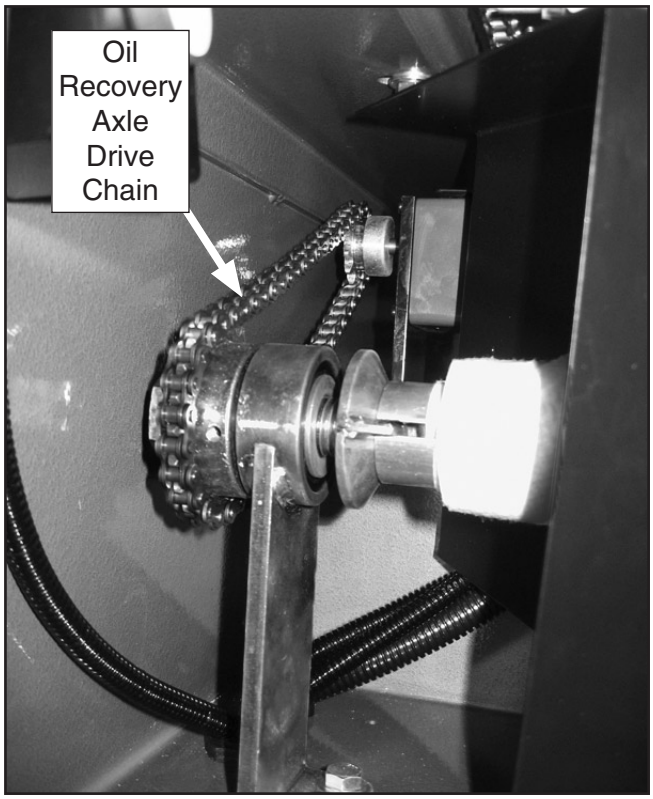


Figure 19. Recovery axle drive chain.

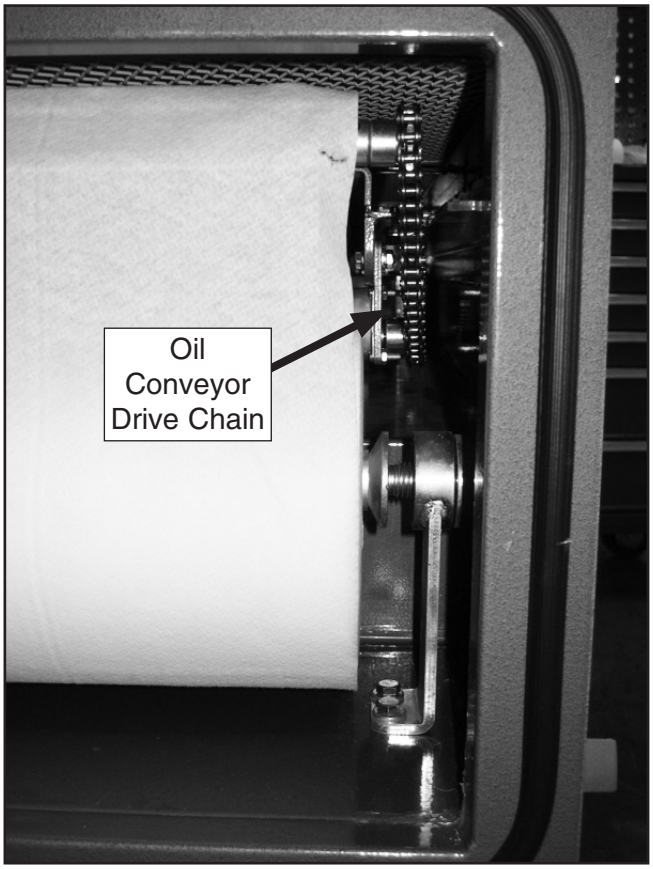


Figure 20. Conveyor drive chain.

Long-Term Storage

If this machine needs to be stored for a long period of time, make sure that the following conditions are met:

- Remove and manually clean the vibrating filters and the HEPA filter.
- Clean and lubricate the drive chains.
- Place the machine in a dry area where the humidity range will not vary beyond 30% to 95% and the storage temperature will not vary beyond -13° to 158°F.
- Place a moisture-absorbing desiccant bag in the control panel box with a note to remove when the machine is put back in operation.
- Cover the machine to protect it from dust and moisture.

Slag-Screen Cleaning

Make sure that you clean the slag screen often and inspect for holes or damage. Under correct use, this screen should last for years.

Tools Needed	Qty
Soft Brass Wire Brush	1
OSHA Approved Respirator	1
Shop Vacuum	1

To perform this procedure:

1. UNPLUG THE MACHINE!
2. Put on your respirator, unlock and remove the slag drawer, and then the screen (**Figure 21**).

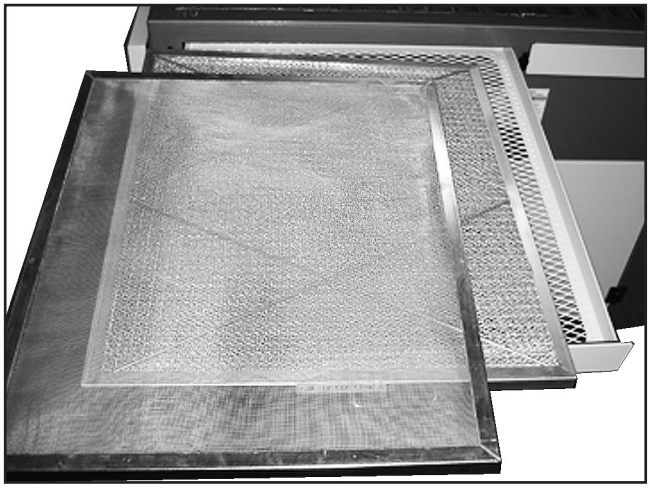


Figure 21. Slag-screen.

3. Inspect the drawer face seal for evidence of leaks or tears. Reseal as required.
4. Carefully use a wire brush and tap the screen to remove the built up dust and slag. If a piece of solder or slag has welded to the screen, do not pry it off or you may tear a hole in the screen.
5. Vacuum up the loose dust and reinstall the screen and the slag drawer.

Rolling-Filter Replacement

This rolling-type paper filter is the consumable workhorse filter of your machine. It removes most of the 10-micron and larger grit, dust, and oily smoke.

Tools Needed **Qty**
OSHA Approved Respirator 1

To perform this procedure:

1. Put on your respirator and open the rolling-filter supply cabinet door (**Figure 22**).

Figure 22. Rolling-filter supply cabinet.

2. Open the rolling-filter recovery cabinet door (**Figure 23**).

Figure 23. Rolling-filter recovery cabinet.

3. While holding the axle, push on the spring-loaded spindle and swing the axle out and away from the spindle cone (**Figure 24**).

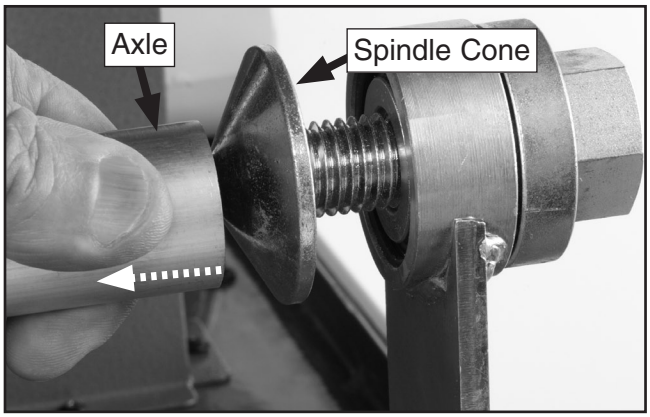


Figure 24. Removing supply axle.

4. Remove the spent filter tube, and slide the axle into the center of the new filter roll.

5. Orient the rolling-filter so when you look through the window and the filter paper is pulled up by the conveyor, the filter paper is next to the glass window. The filter paper should block the view of the roll as seen in **Figure 22**.

6. Install the axle and paper roll onto the spring loaded spindle.

7. Depress the spring-loaded spindle, swing the recovery axle out and away from the spindle cone, remove and discard the used filter roll (**Figure 25**).

Figure 25. Removing recovery axle.

8. Unwind approximately 15" of filter paper and fold approximately 6" over one of the conveyor ribs so when you push the manual feed button (**Figure 26**), the conveyor will draw the paper through the machine and into the recovery cabinet.

   Note: *For assistance, you can use a couple pieces of tape to hold the filter paper on the conveyor.*

Figure 26. Supply cabinet manual feed button.

9. Remove the five Phillips head screws and the recovery cabinet shroud (**Figure 27**).

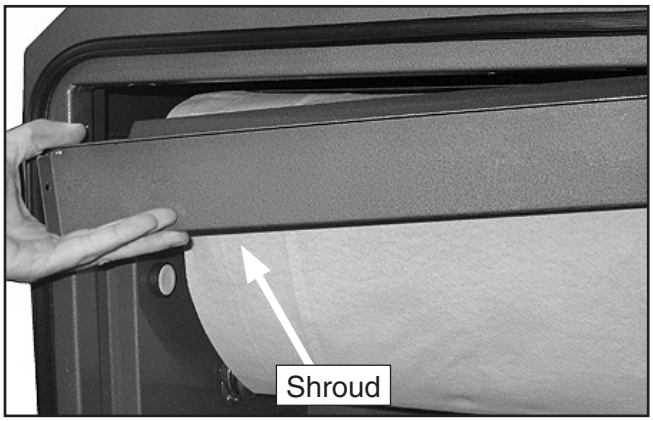


Figure 27. Recovery cabinet shroud.

10. Connect the machine to power, and push and hold the manual feed button while watching the progress of the filter paper as it passes through the machine.

11. When the filter paper just begins to enter at the top of the recovery cabinet, release the manual feed button and walk over to the recovery cabinet.

12. Remove the end of the filter paper from the conveyor, and then carefully pull the filter paper so approximately 15" of paper extends from the machine.

13. Place the end of the filter paper in the slot cut into the axle, and with your fingers, turn the axle toward you so you get a couple of wraps of paper on the roll (**Figure 28**).

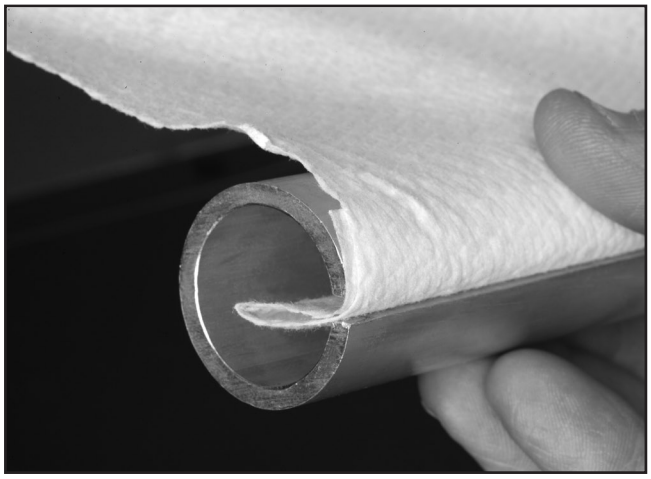


Figure 28. Wrapping the recovery axle.

Make sure that the roll is wrapped in the direction where, when installed, the filter paper blocks the view of the roll, as seen through the window shown in **Figure 23**.

14. Position the recovery axle onto the spring-loaded spindle cone so that the slot in the axle engages with the drive tang on the spindle cone (**Figure 29**).

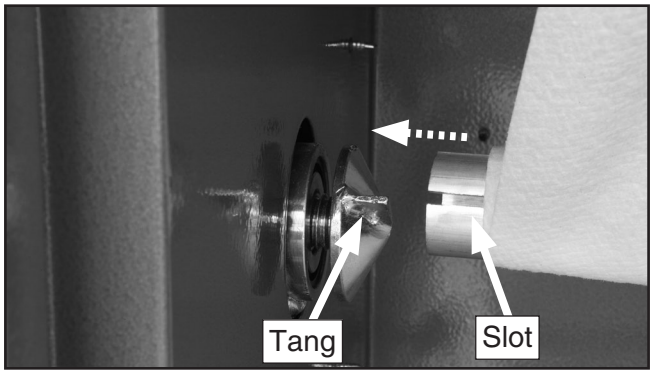


Figure 29. Slot and drive tang alignment.

15. Push the recovery cabinet manual feed button to draw up any slack in the filter paper between the two rolls.

16. Reinstall the recovery cabinet shroud.

Vibrating Filter (Manual Cleaning)

The vibrating filter collects 85% of the 1-micron particles. This filter rarely needs to be replaced if the machine is used properly and the filter is periodically removed and manually cleaned.

Tools Needed	Qty
Wrench 17mm	1
Wrench 14mm	1
OSHA Approved Respirator	1
Safety Goggles	1
Air Compressor	1
Blowgun	1

To perform this procedure:

1. With the machine plugged in, press the manual cleaning mode and hold for a few seconds. The vibrating filter motor will operate, cleaning the vibrating filters.

2. DISCONNECT THE MACHINE FROM POWER, put on your respirator and safety goggles, and empty both dust drawers (**Figure 30**).

Figure 30. HEPA filter housing and dust drawer.

3. Open the HEPA filter housing, and lift the HEPA filter up and out of the housing (**Figure 31**).

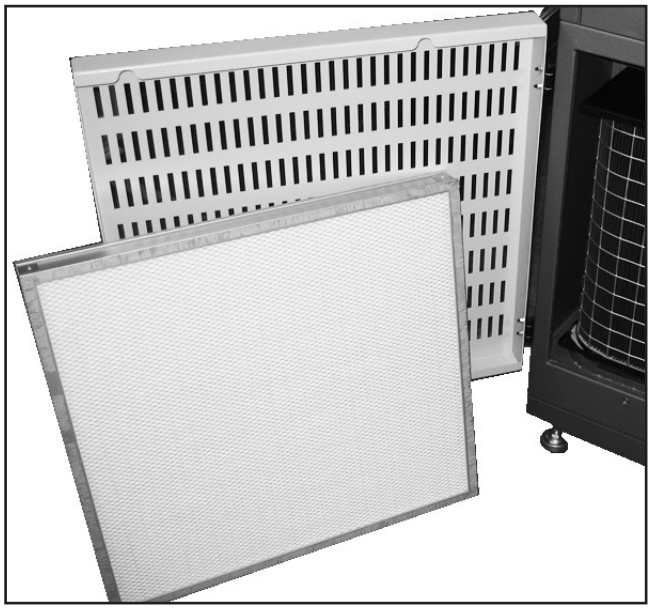


Figure 31. HEPA filter removed.

4. Open the main control panel, remove the plastic dust plugs and caps covering the spring retaining bolts (**Figure 32**).

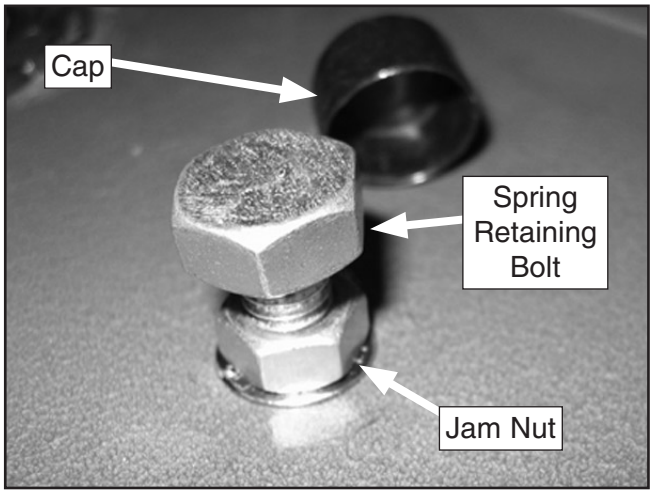


Figure 32. Vibrating filter retainer.

5. Using a 17mm wrench, loosen both jam nuts until they park against the underside of the spring retaining bolt heads (**Figure 32**).

6. Using a 17mm socket wrench with a socket extension, remove all four spring retaining bolts from the cabinet (**Figure 33**).

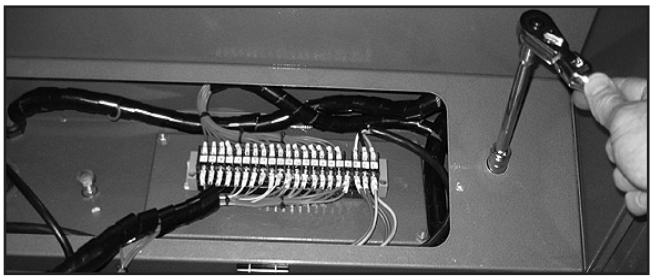


Figure 33. Removing spring retaining bolt.

7. Working from the back side of the machine, reach into the cabinet, firmly grasp the compression spring, and remove the spring (**Figure 34**). The spring is under tension, so make sure you do not lose your grip while you work the spring out of the cabinet.

Figure 34. Removing vibration filter spring.

8. Repeat **Step 6** on the remaining three springs.

9. Unplug the vibration motor, lift the vibrating filter upward and pull the bottom outward (**Figure 35**). Place the unit on the floor.

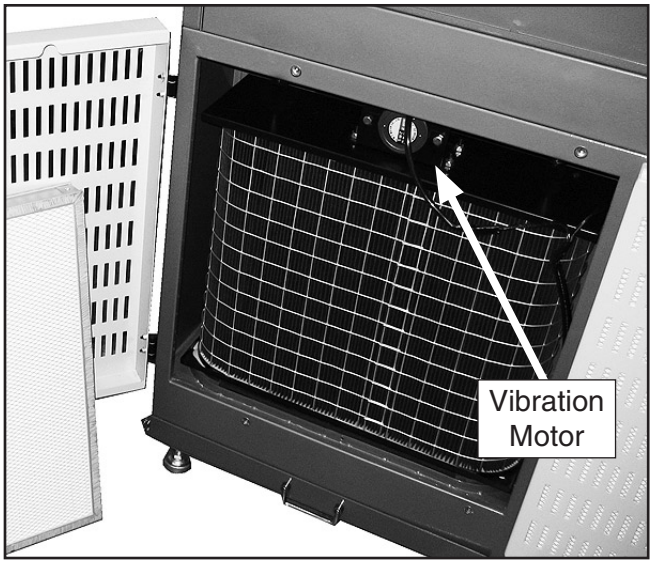


Figure 35. Vibration filter and motor.

10. Using warm soapy water, wash out the filter cabinet and dust drawer, and allow them to air-dry.

11. Inspect for any seal or gasket damage and replace as required.

12. Make sure you are wearing your respirator and safety goggles.

13. Support the filter element and vacuum the input side of the filter with a soft brush-type tip while tapping the outside of the filter with your other hand.

14. When you have removed most of the caked contaminants, support the filter housing so it will not fall over during the next step.

15. Hold a shop air gun or spray nozzle no closer than two to three feet from the filter element, and in a slow and sweeping motion, blow the remaining contaminants back out the direction they came (**Figure 36**). Be careful, however, if you get too close, the air pressure may blow a hole in the filter.

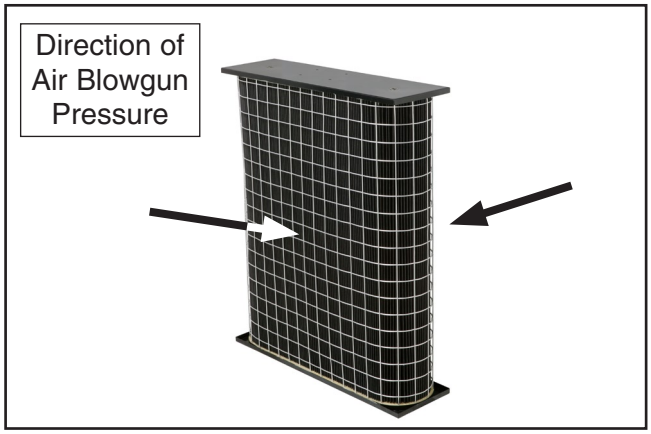


Figure 36. Vibrating filter element.

16. Place the vibrating filter into the cabinet.

17. Reinstall the spring retaining bolt so approximately 1" protrudes into the filter cabinet.

HEPA Filter (Manual Cleaning)

This HEPA filter removes 99.97% of the 0.3-micron particles. This filter rarely needs to be replaced if the machine is properly used and cleaned.

Tools Needed	Qty
OSHA Approved Respirator	1
Safety Goggles	1
Air Compressor	1
Blowgun	1

To clean the HEPA filter:

1. DISCONNECT THE MACHINE FROM POWER, put on your respirator, and empty the dust drawer.

2. Open the HEPA filter housing, and remove the HEPA filter (**Figure 37**).

   —If you are going to reuse the HEPA filter and it is not already marked with an airflow label like the one shown in **Figure 38**, use a permanent marking pen, and mark the top of the filter with an arrow indicating the direction of air flow.

   —If you are installing a new filter, also indicate the replacement date.

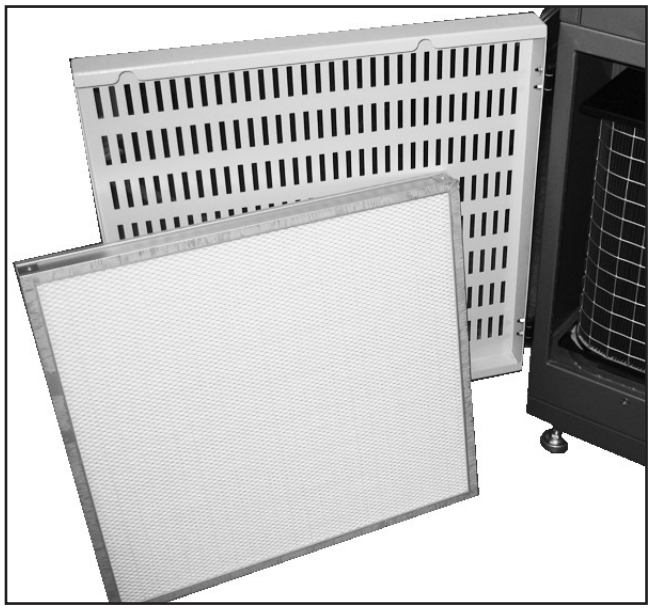


Figure 37. Removing HEPA filter.

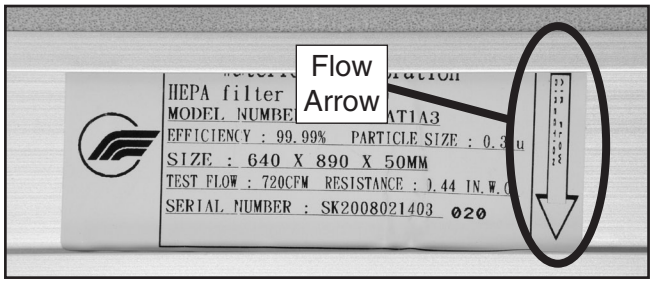


Figure 38. HEPA filter flow arrow.

4. Using warm soapy water, wash out the filter housing and allow it to air dry.

5. Make sure you are wearing your respirator and safety goggles.

6. Support the HEPA filter element and vacuum the input side of the filter with a soft brush-type tip while tapping the filter element.

7. Hold a shop air gun or spray nozzle no closer than two to three feet from the filter element, and in a slow and sweeping motion, blow the remaining contaminants back out the direction they came (against the direction of the arrow you previously marked). Be careful however, If you get too close the jet of air pressure may blow a hole in the filter.

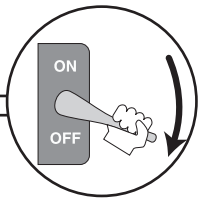
8. After cleaning, return the filter to the marked position in the filter housing.

9. Reassemble and start the machine.

SECTION 7: SERVICE

Review the troubleshooting and procedures in this section to fix or adjust your machine if a problem develops. If you need replacement parts or you are unsure of your repair skills, then feel free to call our Technical Support at (570) 546-9663.

Troubleshooting



Motor and Electrical

Symptom	Possible Cause	Possible Solution
Machine won't start.	1. Emergency stop switch at fault. 2. Problem with 3-phase power supply. 3. Wiring at fault. 4. Circuit breaker/fuse has tripped. 5. Relay at fault. 6. Transformer at fault. 7. Control panel PC board at fault. 8. Frequency drive is at fault. 9. Motor at fault.	1. Reset or replace emergency stop switch. 2. Have electrician correct power supply problem. 3. Have repair for wiring problems. 4. Have electrician correct for short, and reset circuit breaker or replace fuse that has its failure LED illuminated. 5. Inspect and test relay replace as required. 6. Replace transformer. 7. Replace PC board. 8. Turn ***ON*** or adjust frequency drive or troubleshoot and replace. 9. Test and replace motor as required.
Vibrating motor function is inconsistent or inoperative.	1. Machine is not connected to power. 2. Capacitor is at fault. 3. Wiring at fault. 4. Circuit fuse has blown. 5. Transformer at fault. 6. Control panel PC board at fault. 7. Motor at fault.	1. Connect machine to power so the digital display is lights, then push and hold clean filter button. 2. Replace the 4MFD capacitor. 3. Trace down wiring path and repair for damaged wiring or loose plugs. 4. Repair for short, and replace the fuse that has its failure LED illuminated. 5. Replace transformer. 6. Replace control panel PC board. 7. Test and replace motor as required.
Rolling filter or conveyor motor is function inconsistent or inoperative.	1. Machine is not connected to power. 2. Push button switch is at fault. 3. Capacitor is at fault. 4. Wiring at fault. 5. Circuit fuse has blown. 6. Control panel PC board at fault. 7. Transformer at fault. 8. Control panel PC board at fault. 9. Motor/motor PC board at fault.	1. Connect machine to power so the digital display is lights, then push and hold clean filter button. 2. Replace the push button switch for the motor. 3. Replace the 1MFD capacitor. 4. Trace down wiring path and repair for damaged wiring or loose plugs. 5. Repair for short, and replace the fuse that has its failure LED illuminated. 6. Replace transformer. 7. Replace control panel PC board. 8. Replace control panel PC board. 9. Replace motor/motor PC board as required.
Filter warning lamp/ buzzer engages but filter paper has not run out.	1. Infrared sensor is at fault. 2. Infrared sensor is at fault.	1. Replace infrared sensor. 2. Replace control panel PC board.

Operation

Symptom	Possible Cause	Possible Solution
Suction CFM is lower than normal.	1. Door or cabinet is at fault. 2. Motor fan is turning too slow. 3. Slag screen is at fault. 4. Rolling filter is at fault. 5. Vibrating filter is at fault. 6. HEPA filter is at fault. 7. Fan system is at fault.	1. Make sure that all doors are closed, seals do not leak. 2. Use the frequency drive control panel to increase the motor supply voltage to 60hz. 3. Remove slag drawer and clean slag screen. 4. Increase rolling-filter advance intervals to expose new filter paper more often to maintain CFM. 5. Manually clean the vibrating filter or replace. 6. Manually clean the HEPA filter or replace. 7. Fan motor has lost RPM, adjust/troubleshoot frequency drive and replace motor or frequency drive if required.
High rolling-filter usage.	1. Incorrect machine usage at fault. 2. Rolling filter advance timing at fault. 3. Workpiece preparation at fault.	1. Eliminate idle time. Do not let machine run between welding jobs, shift changes, or breaks. 2. Clean all filters. Delay rolling-filter advance timing and/or decrease amount of new filter that is exposed during advance cycles. 3. Reduce smoke and fumes. Grind, scrape, strip or sandblast away workpiece coatings to a minimum of 4" away from location to be heated.

Grizzly Industrial, Inc. WARRANTY CARD

Name _____

Street _____

City _____ State _____ Zip _____

Phone # _____ Email _____ Invoice # _____

Model # _____ Order # _____ Serial # _____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. ***Of course, all information is strictly confidential.***

1. How did you learn about us?

____ Advertisement ____ Friend ____ Catalog
____ Card Deck ____ Website ____ Other:

2. Which of the following magazines do you subscribe to?

____ Cabinet Maker
____ Family Handyman
____ Hand Loader
____ Handy
____ Home Shop Machinist
____ Journal of Light Cont.
____ Live Steam
____ Model Airplane News
____ Modeltec
____ Old House Journal
____ Popular Mechanics
____ Popular Science
____ Popular Woodworking
____ Practical Homeowner
____ Precision Shooter
____ Projects in Metal
____ RC Modeler
____ Rifle
____ Shop Notes
____ Shotgun News
____ Today's Homeowner
____ Wood
____ Wooden Boat
____ Woodshop News
____ Woodsmith
____ Woodwork
____ Woodworker West
____ Woodworker's Journal
____ Other:

3. What is your annual household income?

____ $20,000-$29,000 ____ $30,000-$39,000 ____ $40,000-$49,000
____ $50,000-$59,000 ____ $60,000-$69,000 ____ $70,000+

4. What is your age group?

____ 20-29 ____ 30-39 ____ 40-49
____ 50-59 ____ 60-69 ____ 70+

5. How long have you been a woodworker/metalworker?

____ 0-2 Years ____ 2-8 Years ____ 8-20 Years ____ 20+ Years

6. How many of your machines or tools are Grizzly?

____ 0-2 ____ 3-5 ____ 6-9 ____ 10+

7. Do you think your machine represents a good value? _____ Yes _____ No

8. Would you recommend Grizzly Industrial to a friend? _____ Yes _____ No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?
Note: *We never use names more than 3 times.* _____ Yes _____ No

10. Comments: _____

_____

_____

_____

CUT ALONG DOTTED LINE

FOLD ALONG DOTTED LINE

Place
Stamp
Here

GRIZZLY INDUSTRIAL, INC.
P.O. BOX 2069
BELLINGHAM, WA 98227-2069

FOLD ALONG DOTTED LINE

Send a Grizzly Catalog to a friend:

Name_____

Street_____

City_____State_____Zip_____

TAPE ALONG EDGES--PLEASE DO NOT STAPLE

WARRANTY AND RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number,'' which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.