

Donaldson
Torit®

Torit Porta-Trunk™

PT-1000

Installation and Operation Manual

Installation, Operation, and Service Information



This manual is property of the owner. Leave with the unit when set-up and start-up are complete. Donaldson Company reserves the right to change design and specifications without prior notice.

Illustrations are for reference only as actual product may vary.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

English
Master Language

IOM 4078100 (ENG)
Revision 7



APPLICATION OF DUST CONTROL EQUIPMENT

Combustible materials such as buffing lint, paper, wood, metal dusts, weld fume, or flammable coolants or solvents represent potential fire and/or explosion hazards. Use special care when selecting, installing, and operating all dust, fume, or mist collection equipment when such combustible materials may be present in order to protect workers and property from serious injury or damage due to a fire and/or explosion.

Consult and comply with all National and Local Codes related to fire and/or explosion properties of combustible materials when determining the location and operation of all dust, fume, or mist collection equipment.

When combustible materials are present you must consult with an expert in fire extinguishing and/or explosion protection systems, who is also familiar with the local codes, for support and guidance on the selection and installation of an appropriate fire and/or explosion protection system.

DO NOT allow sparks, cigarettes or other burning objects to enter the hood or duct of any dust, fume, or mist collection equipment as these may initiate a fire or explosion of any combustible materials accumulated in the collector.

Portions of dust, mist, and fume-collection equipment, including the clean- and dirty-air plenums may be considered "OSHA Confined Spaces." Refer to the appropriate OSHA regulations to determine if a specific installation should be considered a confined space and if a permit program is required.

Recirculating filtered air in your facility can be a hazard. Consult with OSHA to ensure compliance with all codes regarding recirculating filtered air.

Improper operation of a dust, fume, or mist control system may contribute to conditions in the work area or facility that could result in severe personal injury and product or property damage. Check that all dust, fume, or mist collection equipment is properly selected, installed, and operated for its intended use.

This manual contains specific precautionary statements relative to worker safety. Read this manual thoroughly and comply as directed. Instruct all personnel on the safe use and maintenance procedures related to this equipment. Discuss any questions on the application, use, or maintenance of this equipment with a Donaldson Torit representative.

For optimum collector performance, use only Donaldson Torit replacement parts.

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DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE is used to address practices not related to personal injury that may result in damage to equipment.

Data Sheet

Model Number _____	Serial Number _____
Ship Date _____	Installation Date _____
Customer Name _____	
Address _____	
Filter Type _____	
Accessories _____	
Other _____	

Description

The Porta-Trunk PT-1000 portable source collector collects dust, smoke and welding fumes before they reach the breathing zone. A halogen lamp lights the work area. When the light is positioned to illuminate the workspace, the intake hood is also properly positioned.

The Porta-Trunk collector operates with a conventional 120 volt, 20 amp minimum wall receptacle.

NOTICE

Do not use extension cords. Excessive voltage drop may cause premature equipment failure.

The Porta-Trunk collector is mounted on wheels so it is easy to move to different work areas. It passes through a standard doorway. The handles can be retracted out of the way during use.

The Ultra-Web® II FR (Flame Retardant) element has a proprietary surface coating on the filter medium. This special barrier filters submicron size fume particles and retains them on the surface.

Purpose and Intended Use



Misuse or modification of this equipment may result in personal injury.

Do not misuse or modify.

Porta-Trunk collectors are portable filter systems designed for light duty or infrequent plant operations. Porta-Trunk collectors are commonly used for dust and welding fumes.

Porta-Trunk collectors are not intended for use with explosive dusts. Contact Donaldson Torit for collector selection assistance.

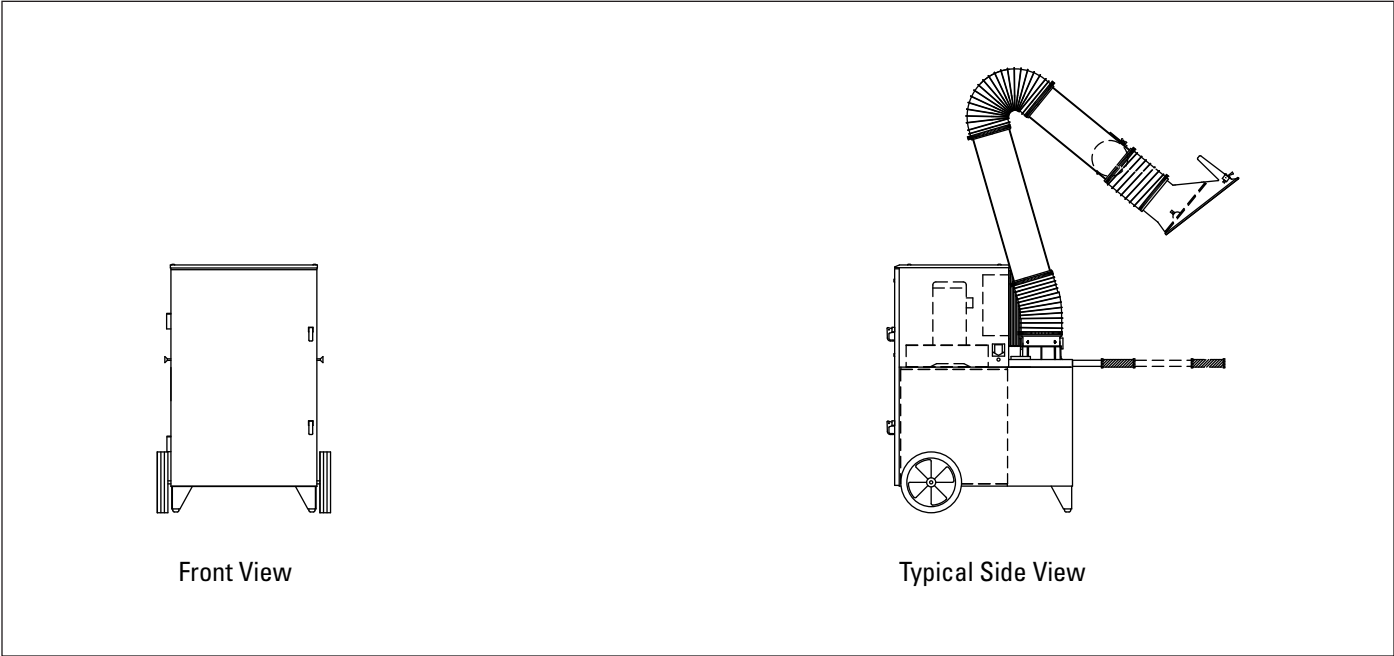


Combustible materials such as buffing lint, paper, wood, metal dusts, weld fume, or flammable coolants or solvents represent potential fire and/or explosion hazards. Use special care when selecting, installing, and operating all dust, fume, or mist collection equipment when such combustible materials may be present in order to protect workers and property from serious injury or damage due to a fire and/or explosion.

Consult and comply with all National and Local Codes related to fire and/or explosion properties of combustible materials when determining the location and operation of all dust, fume, or mist collection equipment.

Standard Donaldson Torit equipment is not equipped with fire extinguishing or explosion protection systems.

Rating and Specification Information



Front View

Typical Side View

Power and controls 115V/60Hz/single phase (USA)

*If unit was supplied with a Record Drawing, the specifications on the drawing will supersede the standard specifications above.

Operation

NOTICE

The Porta-Trunk collector is intended for intermittent duty, not continuous duty.

To start the Porta-Trunk, turn the on-off switch mounted in the handle of the extraction arm intake hood. The on/off switch also controls the 65-watt halogen worklight mounted in the extraction arm intake hood.

Fume or dust enters the extraction arm intake hood and then is carried onto the filter element, where it is collected on the outside surfaces of the pleated filter element. Clean air flows up through the center of the pleated filter element into the blower fan, through the silencer section of the cabinet, and exits through the top clean air outlet.

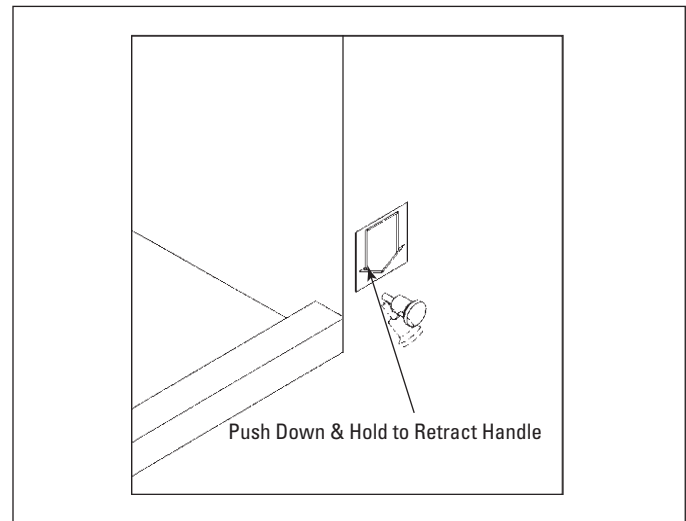
The intake hood of the extraction arm should be located 12 to 18 inches above the arc zone in welding applications. The distance may vary slightly depending upon the type of welding. With the intake hood in this general location, the position of the lamp at the end of

the trunk should light the work area. The air intake hood is now in a good position to collect fumes and smoke being generated by the welding operation.

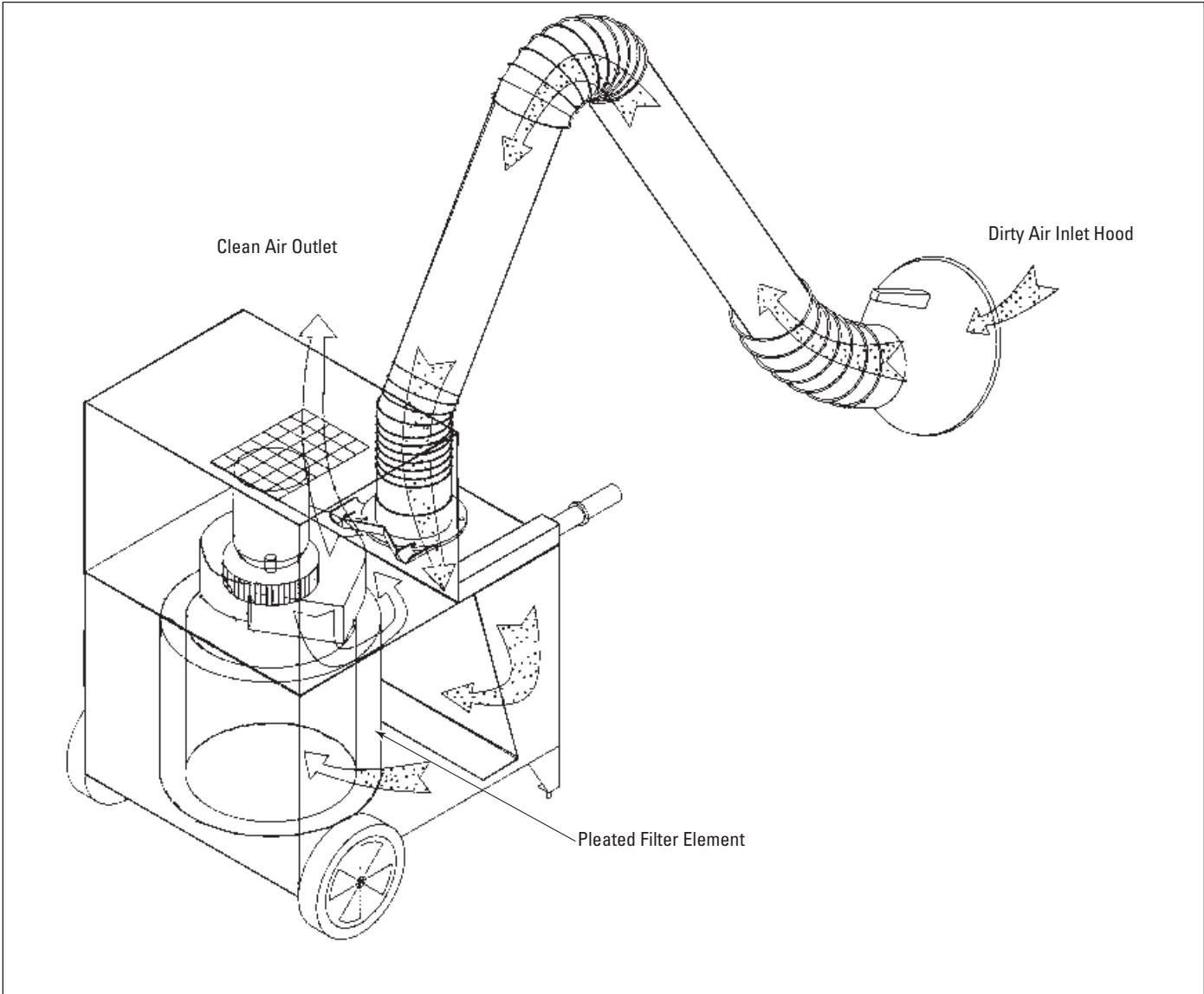
The extraction arm can be rotated and has three flexible joints for optimal positioning of the intake hood. Friction devices are located in each flexible joint to hold the intake hood where it is needed.

The Porta-Trunk can easily be rolled to where it is needed by pulling out on the two handles until the stop on each side is engaged. The handles are retracted into the cabinet by pressing down on the release button while sliding the handle back into the cabinet (see Retractable Handle Release).

The blower motor is protected from overloading and overheating by an automatic thermal protection built into the motor.



Retractable Handle Release



Unit Operation

Inspection on Arrival

1. Inspect unit on delivery.
2. Report any damage to the delivery carrier.
3. Request a written inspection report from the Claims Inspector to substantiate claim.
4. File claims with the delivery carrier.
5. Compare unit received with description of product ordered.
6. Report incomplete shipments to the delivery carrier and your Donaldson representative.
7. Remove crates and shipping straps. Remove loose components and accessory packages before lifting unit from truck.
8. Check for hardware that may have loosened during shipping.
9. Use caution removing temporary covers.

Installation Codes and Procedures



Codes may regulate recirculating filtered air in your facility.

Consult with the appropriate authorities having jurisdiction to ensure compliance with all national and local codes regarding recirculating filtered air.

Safe and efficient operation of the unit depends on proper installation.

Authorities with jurisdiction should be consulted before installing to verify local codes and installation procedures. In the absence of such codes, install unit according to the National Electric Code, NFPA No. 70-latest edition and NFPA 91.

A qualified installation and service agent must complete installation and service of this equipment.

All shipping materials, including shipping covers, must be removed from the unit prior to, or during unit installation.

NOTICE

Failure to remove shipping materials from the unit will compromise unit performance.

Inspect unit to ensure all hardware is properly installed and tight prior to operating collector.

Installation



Site selection must account for wind, seismic zone, and other live-load conditions when selecting the location for all units.

Codes may regulate acceptable locations for installing dust collectors. Consult with the appropriate authorities having jurisdiction to ensure compliance with all national and local codes regarding dust collector installation.

Site Selection

1. The unit can be suspended or hung from overhead supports. The supports must be adequate to carry the live load of the unit and installation performed to reduce sway or vibration to the unit.
2. Provide clearance from heat sources and interference with utilities when selecting the location for suspended units. Reference the Specification Control Drawing shipped with the unit.

Unit Location



Donaldson Torit equipment is not designed to support site-installed

ducts, interconnecting piping, or electrical services. All ducts, piping, or electrical services supplied by others must be adequately supported to prevent severe personal injury and/or property damage.

When hazardous conditions or materials are present, consult with local authorities for the proper location of the collector.

Locate the collector to ensure easy access to electrical connections, and routine maintenance.

Electrical Wiring



WARNING

Electrical work must be performed by a qualified electrician and comply with all applicable national and local codes.

Turn power off and lock out electrical power sources before performing service or maintenance work.

Do not install in classified hazardous atmospheres without an enclosure rated for the application.

All electrical wiring and connections, including electrical grounding, should be made in accordance with the National Electric Code and NFPA No. 70-latest edition.

Check local ordinances for additional requirements that apply.

The appropriate wiring schematic and electrical rating must be used. See unit's rating plate for required voltage.

If the unit is not furnished with a factory-mounted disconnect, an electric disconnect switch having adequate amp capacity shall be installed in accordance with Part IX, Article 430 of the National Electrical Code and NFPA No. 70-latest edition. Check unit's rating plate for voltage and amperage ratings.

Refer to the wiring diagram for the number of wires required for main power wiring and remote wiring.

Standard Equipment



WARNING

Improper mounting of an extraction arm may result in personal injury. Follow all installation directions carefully.

Replacing A Bench Mount Extraction Arm

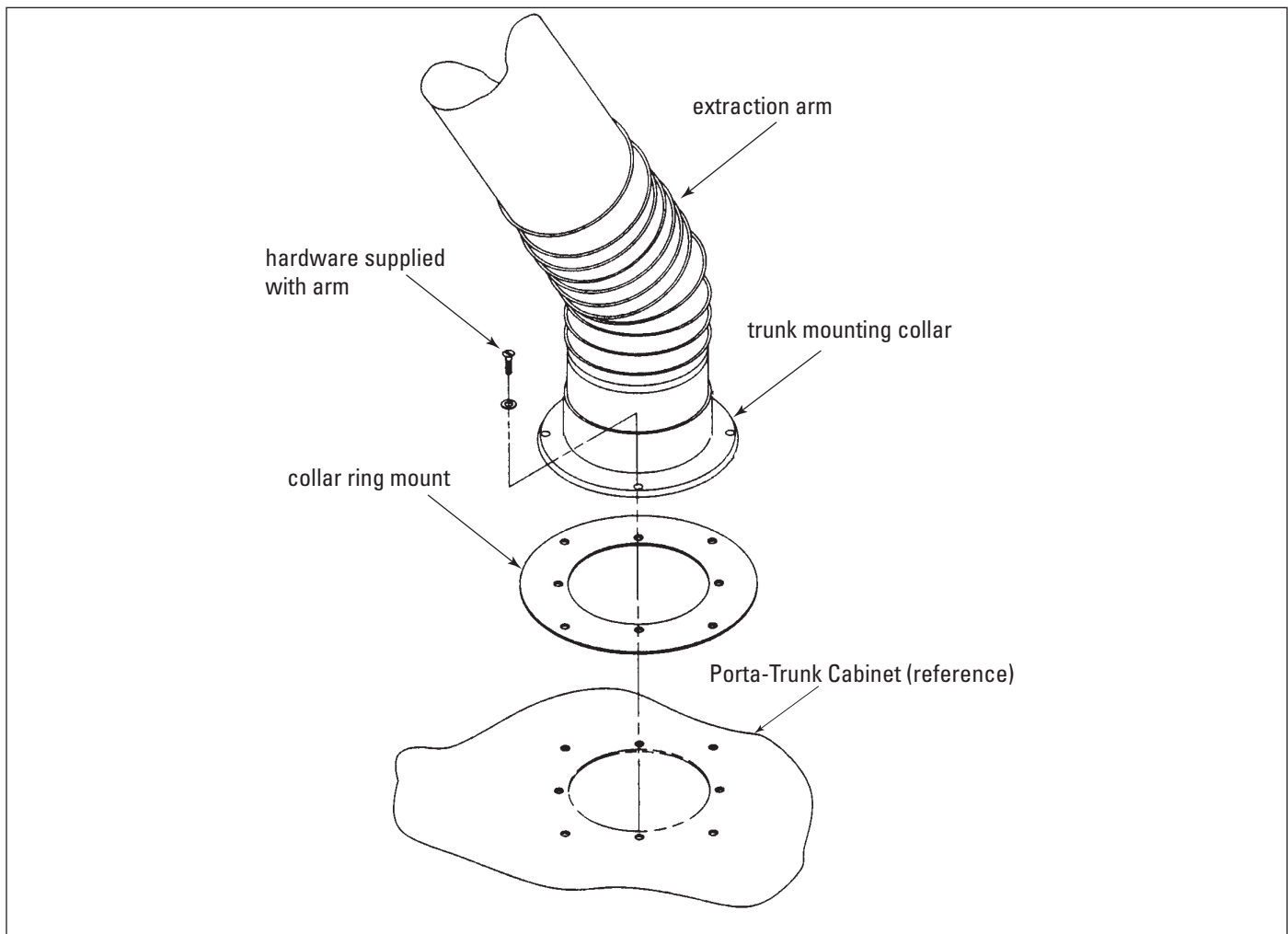
Units Built Before 6/1/92

1. The Extraction Arm requires a collar ring mount adapter that allows you to fit the onto a larger bolt hole circle - 9.12-in diameter.
2. Locate collar ring mount onto the Porta-Trunk and fasten down with four (4) 5/16-in - 18 x 1-in long slotted screws on the 9.12-in diameter bolt hole circle.
3. Using a 5/16-in diameter drill bit and drill, bore out holes on the inside 7.6-in diameter bolt hole circle.
4. Remove the flexible ducting from the swivel base casting joint by following the instructions in the Ex-Arm Installation and Operation Manual.

5. Locate the extraction arm onto the collar ring mount adapter by aligning the holes and fasten in place using the supplied bolts, lock washers, and nuts through the opening in the swivel base joint.
6. Install flexible ducting back onto the joint by following the instructions in the Ex-Arm Installation and Operation Manual.

Units Built After 6/1/92

Follow instructions found in the Extraction Arm Installation and Operation Manual.



Extraction Arm Mounting - Units Built Before 6/1/92
(Extraction arm and bolt pattern may differ from picture)

Electrical Installation for Extraction Arm

⚠ WARNING

Electrical work must be performed by a qualified electrician and comply with all applicable national and local codes.

Turn power off and lock out electrical power sources before performing service or maintenance work.

Do not install in classified hazardous atmospheres without an enclosure rated for the application.

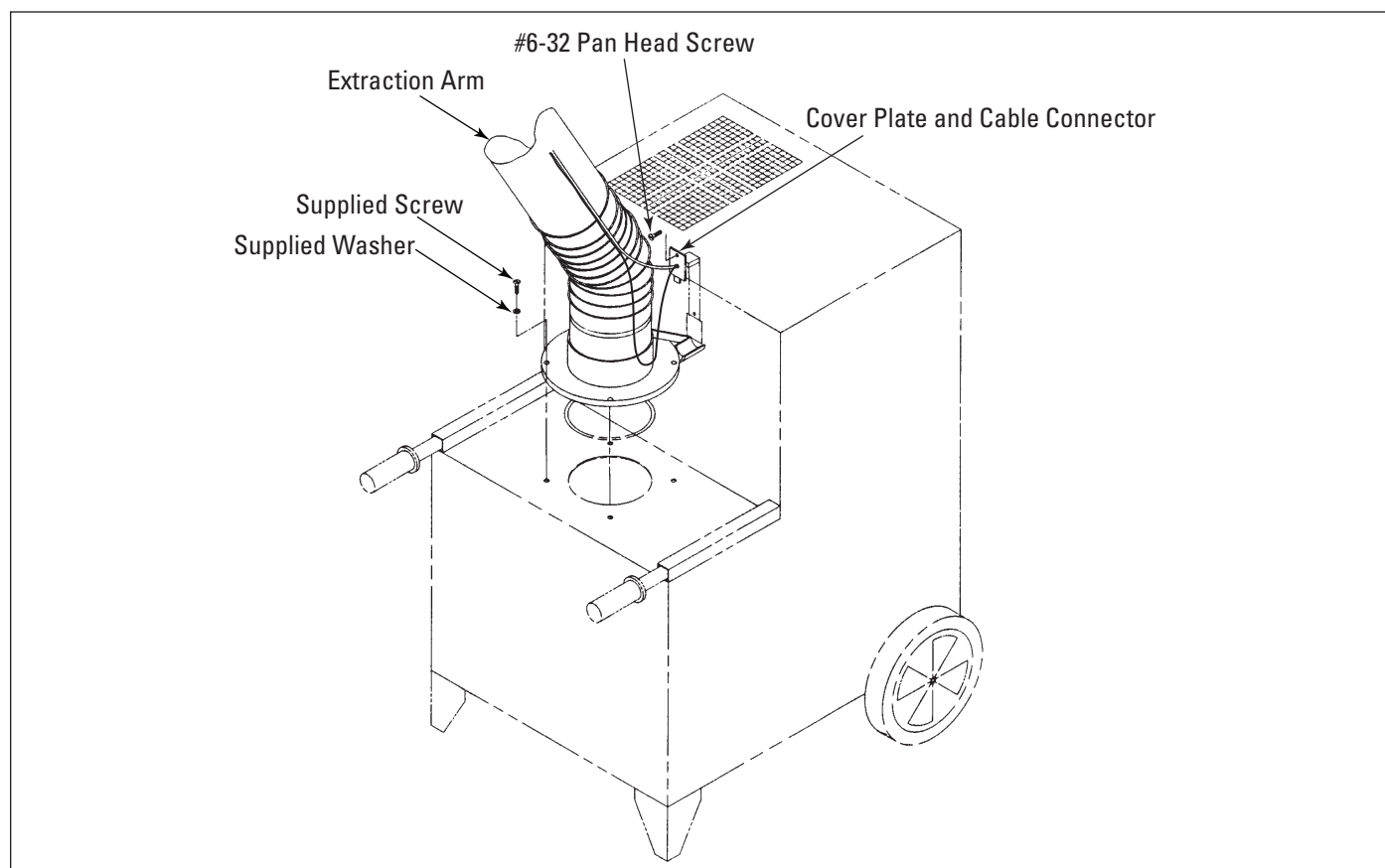
Connecting the extraction arm (bench mount) to the Porta-Trunk requires only a screwdriver.

Apply a coating of white lithium grease to the extraction arm mounting surface on the Porta-Trunk to create a seal.

Secure the extraction arm to the Porta-Trunk using the supplied screws.

Once the extraction arm is installed onto the cabinet, the next step is the electrical connection between the trunk and the cabinet electrical control box.

1. Follow Hood Light Switch Installation instructions found in the Extraction Arm Installation and Operation Manual.
2. Locate the cabinet electrical control box cable and cover plate taped to the back of the cabinet above the extraction arm base swivel joint assembly and remove the tape.
3. Wire the cable from the extraction arm to the cabinet electrical control box cable.
4. Install receptacle cover plate tab into the cabinet (the tab end into cabinet surface hole).
5. Tip up the receptacle cover onto the cabinet surface and fasten into place using the #6 - 32 x 1/2-in long screws provided.



Extraction Arm Electrical Mounting
(Extraction arm may differ from drawing)

Electrical Operation

USA

The Porta-Trunk requires only a 120V single phase 15 amp circuit to operate. The 65-watt Halogen light and the on/off switch operate on a 12V circuit. The 1-1/2 hp motor is rated at 14 amps or less at 120V and is also supplied with an automatic thermal overload protection.

Japan

The Porta-Trunk operates at a standard 200/50/60/3 VAC electrical power source.

China

The Porta-Trunk operates at a standard 220/50/1 VAC electrical power source.

NOTICE

Use of any other type of motor may cause the unit not to start or experience electrical component damage.

Fuses are provided in the electrical control box to protect both the 120V and 12V circuits.

Preliminary Start-Up

Instruct all personnel on safe use and maintenance procedures.

WARNING

Electrical work during installation must be performed by a qualified electrician and comply with all applicable national and local codes.

Turn power off and lock out electrical power sources before performing service or maintenance work.

Check that the collector is clear and free of all debris before starting.

Do not install in classified hazardous atmospheres without an enclosure rated for the application.

1. Check all electrical connections for tightness and contact.

2. Motor and fan should be wired for clockwise rotation when viewed from the back of the motor.

To reverse rotation, single-phase power supply:
Follow manufacturer's instructions on the motor's nameplate.

To reverse rotation, three-phase power supply:
Turn electrical power OFF at source and switch any two leads on the motor junction box.

WARNING

Do not interchange a power lead with the ground wire. Severe damage or personal injury may result.

3. All access panels should be sealed and secure.
4. Check that the dust container is properly sealed and clamped.
5. Check and remove all loose items in or near the inlet and outlet of the unit.
6. Check that all remote controls and solenoid enclosures (if applicable) are properly wired and all service switches are in the OFF position.
7. Check that all optional accessories are installed properly and secured.
8. Turn power ON at source.
9. Turn blower fan motor ON.

WARNING

Do not look into fan outlet to determine rotation. View the fan rotation through the back of the motor.

Check that the exhaust plenum is free of tools or debris before checking blower/fan rotation.

Stand clear of exhaust to avoid personal injury.

Maintenance Information

Instruct all personnel on safe use and maintenance procedures.

WARNING

Electrical service or maintenance work must be performed by a qualified electrician and comply with all applicable national and local codes.

Turn power off and lock out electrical power sources before performing service or maintenance work.

Do not install in classified hazardous atmospheres.

Operational Checklist

1. Monitor the physical condition of the collector and repair or replace any damaged components.

Routine inspections will minimize downtime and maintain optimum system performance.

2. Monitor pressure drop across filters.

Abnormal changes in pressure drop indicate a change in operating conditions and possibly a fault to be corrected.

3. Monitor exhaust.
4. Monitor dust disposal.

Pleated Filter Removal and Installation

WARNING

Use proper safety and protective equipment when removing contaminants and filters.

Dirty filters may be heavier than they appear.

Use care when removing filters to avoid personal injury.

Filter Removal

1. Turn the two door latches counterclockwise that secure the front door access panel to the cabinet and open the door access panel.

2. Grasp the pleated filter with two hands, twist it, and pull straight toward collector opening to remove it from the cabinet.
3. Place the pleated filter element in a large plastic bag to retain particulate. Dispose of properly.
4. Vacuum or wipe out the dust that has settled in the chamber.
5. Replace the pleated filter element, close and secure the door access panel by turning the door latches clockwise.

Filter Installation

1. Inspect top and bottom of the filter plenum for dust and/or damage. Clean with damp cloth before installing pleated filter element.
2. Insert new pleated filter element, rotating it slightly while sliding it into place. Push pleated filter element back until it is centered against the stops inside cabinet filter plenum.
3. Inspect front access panel gasket and repair or replace if necessary to ensure an airtight seal.
4. Close the front access panel on the cabinet and turn the two door latches clockwise.

NOTICE

Do not use solvents to clean filter seal gaskets inside the

Porta-Trunk.

If front access panel gasket is damaged, leakage may result. Replace gasket if necessary.

Do not operate Porta-Trunk without door closed or electrical overload will occur.

Do not operate Porta-Trunk without filter or electrical overload will occur.

Extraction Arm Maintenance (Bench Mount)

Refer to the Extraction Arm Installation and Operation Manual for instructions.

Troubleshooting

Problem	Probable Cause	Remedy
Blower wheel and motor do not start	Electrical supply circuit down	Check the electrical supply circuit for proper output voltage current, fuse, or circuit breaker fault.
	Fuses have blown in the control box	Disconnect the electrical power to the extraction arm and open access panel. Remove the electrical control box cover to access fuse(s) on the control panel. With a volt ohm electrical meter, check for blown fuses in the electrical control box and disconnect. If fuses are blown, replace fuse(s).
	Transformer has failed - 1 phase system	Using a volt ohm meter, check the input voltage on terminals H ₁ and H ₄ which should be 120 volts AC. Next check output voltage on X ₁ and X ₂ terminals which should be 12 volts AC. If there is no output voltage, replace the transformer.
	Transformer has failed - 3 phase system (special units only)	Using a volt ohm meter, check the input voltage on terminals H ₁ and H ₄ on the primary transformer feedlines. Look at the voltage rating on the transformer that is rated for your input voltage. Check that the proper shorting bars or jumper wires have been installed per your input voltage requirements. Next check the fuse on the X ₁ terminal and if it is blown out, replace with a MDX 3 amp fuse. Then check the output voltage on X ₁ and X ₂ terminals which should be 120 volts AC. If there is no output voltage, replace the transformer.
	Relay 12 volt AC has failed	With the extraction arm hood switch on, check with a volt ohm meter for 12 volts AC input to the relay. Next check for 120 volts AC input and output on the relay socket terminals. If there is not voltage output, replace the 12 volt AC relay.
	Heater motor overload protection has failed	With the extraction arm hood switch on, check with a volt ohm electrical meter for voltage inputs and outputs on contactor through the heater terminals. Be sure before testing that the heater thermal protection has cooled to reset. If there is no voltage output, replace the heater overload relay.
	Starter contactor has failed	With the extraction arm hood switch on, check with a volt ohm meter for 120 volts AC input to starter coil. No input, check the thermal overload protection. Next check for supply voltage input and output out of the contactor terminals. If 120 volt AC input to coil relay is okay on starter contactor and it still does not function, replace the starter contactor.

Problem	Probable Cause	Remedy
Power pack fan and motor start, but do not stay running (powered PT-1000 only)	Electrical supply circuit is not adequate	Check power supply circuit for proper voltage and amperage to run the extraction arm. Check to see that there is not much other equipment on the supply circuit. Check for fuse or circuit breaker fault. Replace as necessary.
	Access doors are open or not closed tight	Close and tighten access doors. See Filter Replacement.
	Starter kicks out -too much airflow for fan and motor	Check that all the flexible ducting is installed onto the joint assemblies and that it is not torn or damaged. Replace if ducting is damaged.
	Starter kicks out - wire size on the supply circuit is incorrect	Check for proper wire size on electrical supply lines. Too small of a supply wire will cause motor overload. Rewire as specified by national and local codes.
	Starter kicks out - motor not wired incorrectly	Check and correct motor wiring for supply voltage. See motor manufacturer's wiring diagram. Follow wiring diagram and the National Electric Code.
	Extraction Arm (Bench Mount) is not installed onto Porta-Trunk opening	Install the extraction arm and bolt down securely. See Extraction Arm Electrical Mounting.
Insufficient airflow at hood	Motor and fan rotation backwards	Proper fan rotation is clockwise from the top of the unit. The fan can be viewed through the back of the motor. See Preliminary Start-Up.
	Extraction arm damper closed	Locate the damper control handle and move the handle to be in line with the rigid ducting. This will be the wide open setting.
	Obstruction in ducting or hood	Check the hood, ducting, flex duct and exhaust ducting (if used) for blockage. Remove any debris that is blocking airflow. See Extraction Arm Installation and Operation Manual.
	Flexible ducting is torn or collapsed or the rigid ducting is broken or collapsed	Check the flexible ducting and replace any damaged parts. Check the rigid ducting on the Extraction Arm or exhaust ducting (if applied) for cracks or collapsed section(s). See Extraction Arm Installation and Operation Manual.
	Fan exhaust area restricted	Check the fan exhaust area for blockage. Remove debris that is blocking the fan exhaust area. Remove all material that may be stored on top of the unit.
	Filter plugged	Replace filter. See Pleated Filter Element Removal and Installation.
Visual discharge of dust or fume at unit exhaust	Filter is leaking, damaged, gasket damage or holes in media	Replace filter as necessary. Use only genuine Donaldson replacement parts. See Pleated Filter Element Removal and Installation.

The Donaldson Torit Warranty

Donaldson warrants to the original purchaser that the major structural components of the goods will be free from defects in materials and workmanship for ten (10) years from the date of shipment, if properly installed, maintained and operated under normal conditions. Donaldson warrants all other Donaldson built components and accessories including Donaldson Airlocks, TBI Fans, TRB Fans, Fume Collector products, Donaldson built electrical control components and Donaldson built Afterfilter housings for twelve (12) months from date of shipment. Donaldson warrants Donaldson built filter elements to be free from defects in materials and workmanship for eighteen (18) months from date of shipment. Donaldson does not warrant against damages due to corrosion, abrasion, normal wear and tear, product modification, or product misapplication. Donaldson also makes no warranty whatsoever as to any goods manufactured or supplied by others including electric motors, fans and control components. After Donaldson has been given adequate opportunity to remedy any defects in material or workmanship, Donaldson retains the sole option to accept return of the goods, with freight paid by the purchaser, and to refund the purchase price for the goods after confirming the goods are returned undamaged and in usable condition. Such a refund will be in the full extent of Donaldson's liability. Donaldson shall not be liable for any other costs, expenses or damages whether direct, indirect, special, incidental, consequential or otherwise. The terms of this warranty may be modified only by a special warranty document signed by a Director, General Manager or Vice President of Donaldson. Failure to use genuine Donaldson replacement parts may void this warranty. THERE EXIST NO OTHER REPRESENTATIONS, WARRANTIES OR GUARANTEES EXCEPT AS STATED IN THIS PARAGRAPH AND ALL OTHER WARRANTIES INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHETHER EXPRESS OR IMPLIED ARE HEREBY EXPRESSLY EXCLUDED AND DISCLAIMED.



Donaldson
FILTRATION SOLUTIONS

Parts and Service

For genuine Donaldson replacement filters and parts, call the Parts Express Line. For faster service, have unit's model and serial number, quantity, part number, and description available.

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Donaldson Company, Inc. is the leading designer and manufacturer of dust, mist, and fume collection equipment used to control industrial-air pollutants. Our equipment is designed to help reduce occupational hazards, lengthen machine life, reduce in-plant maintenance requirements, and improve product quality.

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