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Operations & Maintenance Manual
For Commercial Use Only



BR 460 ESC ESCALATOR CLEANER
MODEL NO: 96180 96181

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Save These Instructions

NOTES



PROTECT THE ENVIROMENT
Please dispose of packaging materials in an enviromentally safe way according to local waste disposal regulations.

Always remember to recycle.

Within 30 days, to activate the warranty, go to;
<https://tornadovac.com/services/warranty-registration-form.aspx>

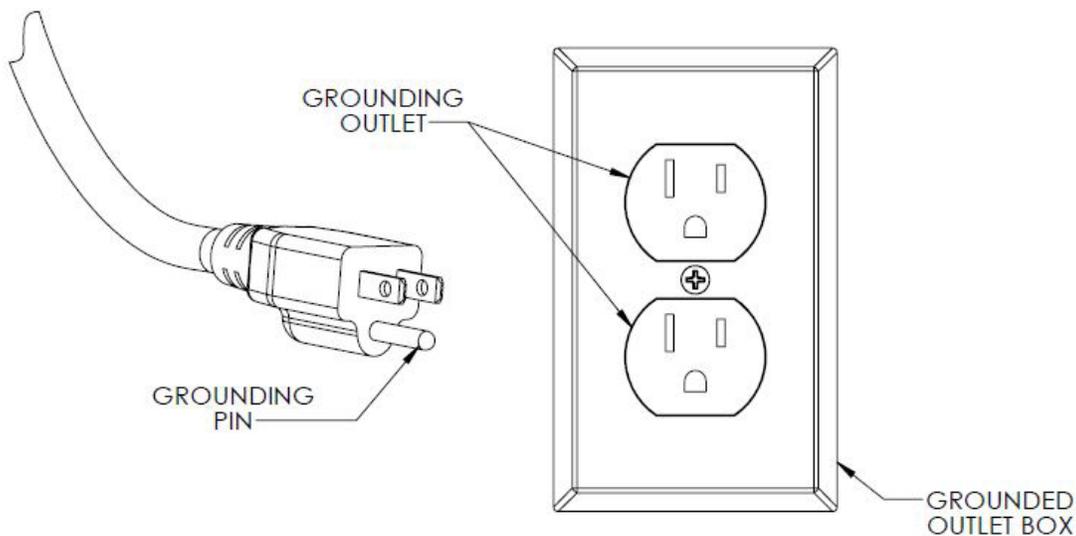
For warranty information go to www.tornadovac.com

Your new Tornado unit is a high quality, precision-made product. All parts used in the manufacturing of this unit have passed rigid quality control standards prior to assembly. Please safeguard the original receipt / invoice. If you experience any problems with your unit during the warranty period, the original receipt / invoice will act as proof of purchase. Contact Tornado for any warranty inquiries.

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

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

This appliance is for use on a nominal 115-volt circuit, and has a grounding plug that looks like the plug illustrated in sketch A.



A

IMPORTANT SAFETY INSTRUCTIONS

READ AND UNDERSTAND ALL INSTRUCTIONS BEFORE USING THIS UNIT

Read and understand this owner's manual and all labels on the unit before operating. Safety is a combination of common sense, staying alert and knowing how your unit works. Use this unit only as described in this manual. Use only manufacturer's recommended attachments. To reduce the risk of personal injury or damage to your unit use only Tornado recommended accessories.

Product Information

This commercial escalator cleaning machine is designed to clean all types of escalators, an is ideally suited for use in airports, shopping centers, railway stations, hotels and underground railway stations.

The following instructions contain important information about the machine and safety to the operator.

Equipment must be operated, serviced and maintained in accordance with the manufacturer's instructions. If in doubt, contact the supplier of your machine.

Important Safety Instructions

When using electrical equipment, basic safety precautions should be followed including the following.

- Read all instructions carefully before use
- Keep children and unauthorized persons away from the machine when in use
- Do not leave the machine connected to the electrical supply when not in use, always remove the plug from the outlet
- Turn off the machine before removing the plug
- When unplugging pull the plug, not the supply cord
- Keep the power supply cord clear of moving parts. During operation, damage may occur when running the machine over the power supply cord
- Do not operate the machine with a damaged supply cord or plug, or after the machine malfunctions or is damaged in any way. Contact an authorized service agent for repair or adjustment.
- The plug of the power supply cord must be removed from the outlet before cleaning, repairing, and the user maintenance of the machine
- The power supply cord is to be regularly inspected for signs of damage. If the power supply cord is damaged, it has to be replaced.
- Do not use where hazardous dust is present
- Do not use in an explosive atmosphere

Guidelines for the Operator

- Operator must be fully trained in the use of the machine in accordance with these instructions, able to perform user maintenance and correct selections of brushes
- Operators should be physically capable to maneuver, transport and operate the machine
- Operators should be able to recognize unusual operation of the machine and report any problems
- Keep hands and feet clear of rotating brushes
- Wear suitable footwear to avoid slipping
- Do not smoke when using the machine
- **CAUTION** – This machine is for dry use only and should not be used or stored outdoors in wet conditions

Transporting the Machine

CAUTION – THIS MACHINE IS HEAVY

Do not attempt to lift the machine without assistance. Incorrect lifting techniques may result in personal injury. To move the machine around, pull the handle backward to bring the wheels into contact with the floor enabling the machine to be moved easily.

Preparing for Use

1. Carefully remove the machine and brushes from their respective packaging.
2. Check machine for transit damage. Do not use machine if damaged.
3. Raise handle to working position.

Fitting the Brushes

WARNING – This appliance has been designed for use with the brushes specified by the manufacturer. The use of other brushes may impair safety or cause damage.

Always ensure the machine is unplugged before fitting or removing parts.

- Release the two locking pins securing the top cover and raise the cover to rest against the handle.
- Disconnect the two hoses from the brush cowl
- Tip the cowl forward to reveal the brush spindles
- Remove the brush retaining clips from the spindle ends, and slide the brush onto the spindle engaging the narrow slot with the drive nib and refit the retaining clips.
- **NOTE:** Each brush is marked with (L)eft & (R)ight to indicate correct placement from operators position. If brushes are installed incorrectly, the debris will be pushed to the outside of the machine
- Close the brush cowl and reconnect the two hoses
- Close the top cover and re-engage the locking pins.

Electrical Connection

Before connecting the machine to the power supply, check that your supply voltage corresponds with that marked on the rating label on the machine.

IMPORTANT – If the supply cord is damaged, it must only be replaced by a special cord available from the manufacturer or an authorized service agent.

WARNING – This appliance must be grounded

We recommend the use of an RCD (Residual Current Device) or an ECLB (Earth Leakage Circuit Breaker) between the mains socket and the supply cord plug to protect against electric shock.

Controls

The operating switches are located on the top of the machine.

1. Switch, vacuum motor

Used to switch vacuum motor ON and OFF

2. Switch, brush motor

Used to switch brush motor ON and OFF

NOTE – Both switches contain current overload cutouts. If tripped they will reset automatically after a few moments. If tripping repeatedly, refer to fault diagnosis section.

Operation

The BR 460 ESC machine is designed to clean varying widths of escalator and will therefore only clean part of the width at a time. After each complete pass, move the machine across the escalator

to overlap previously cleaned area until the full width has been cleaned.

Cleaning the Escalator

- Wheel the machine to the bottom of the escalator

WARNING – Never attempt to use the machine at the top of an escalator

- Fully unwind the supply cord and plug into a convenient outlet
- Ensure that the escalator is moving away from the machine, reverse the direction of the escalator if necessary
- Position the machine on the escalator such that the rest bar is situated just in front of the wheels and sits on the non-moving comb of the escalator
- Switch on the vacuum motor, followed by the brush motor
- **WARNING** – Never start the machine without the brushes fitted

Stain and Spot Removal

For degreasing and stain removal the escalator may be lightly hand sprayed with proper cleaning chemical. **IMPORTANT** – Do not soak the escalator.

Dust Bag Replacement

- Release the two locking pins and raise the top cover
- Push the top edge of the cardboard collar of the bag towards the rear of the machine until the bag is released from the vacuum tubes, and carefully remove the bag for disposal.
- Insert new bag pushing the rubber seals firmly over the tube ends until the cardboard collar is flat against the machine wall.
- Close the top cover and locking pins.

The dust bag should be regularly replaced, and the hoses checked for blockages. If a bag bursts ensure that the filter is removed and cleaned before fitting a new bag.

IMPORTANT – The filter must be dry before refitting.

Storage

After use, always wipe down and dry the machine. Remove the brushes and clean them under running water and allow drying.

IMPORTANT – Never store the machine with the brushes fitted as this will damage the brushes. Check dust bag conditions and clean filter as required.

Wrap supply cord around the handle ensuring that the plug is not trailing on the floor. Store the machine in a dry indoor area only.

Maintenance

WARNING – Before undertaking maintenance operations or adjustments, switch off machine and unplug from the electricity supply.

The machine requires minimum maintenance apart from the following checks by a trained operator

- Supply cord – regularly inspect sheath, plug and cord anchorage for damage or loose connection. Only replace the supply cord with the type specified in these instructions
- Dust filter – Check filter condition when changing a bag and clean or replace as necessary.

After Sales Service

Should you require after sales service please contact the dealer from whom you purchased the machine, who will arrange service. Repairs and servicing of Tornado products should only be performed by a trained technician.

Common Replacement Items

Paper Collection Bag (10 Pack)	02-4372-0000
Tynex Brush Set	05-4097-0000
Nylon Brush Set	05-4096-0000

Technical Specification

Machine is of Class I construction. Enclosure to IP30

Model – 115V ~ 50Hz.,fitted with supply cord type H05VVF, 3 x 2.5mm² (25A), and plug.

Model	96180	96181
Voltage	110 V	230V
Brush Motor	0.25 HP	0.25 HP
Vacuum Motor (Twin)	2 x 1 HP	2 x 1 HP
Brush Speed	290 rpm	290 rpm
Brush Diameter	6"	6"
Working Width	18"	18"
Length	35"	35"
Height	9"	9"
Weight	97 lbs.	97 lbs.
Sound Pressure Level	79dB(A)	79db(A)
Supply Cord Length	50'	50'

Sound pressure level measured at a distance of 1 meter from machine and 1.6 meters above floor. Measurements recorded using a hand held meter. For prolonged operation the wearing of ear defenders is recommended.

