

TORNADO INDUSTRIES  
7401 W. LAWRENCE AVENUE  
CHICAGO, IL 60706  
(708) 867-5100 FAX (708) 867-6968  
[www.tornadovac.com](http://www.tornadovac.com)



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## Operations & Maintenance Manual



**MODEL NO.**  
**96160 32" Sweeper**

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# IMPORTANT

## BEFORE USE READ THESE INSTRUCTIONS AND RETAIN FOR FUTURE REFERENCE

### 1. General information

The Tornado 32" sweeper is designed exclusively for operation on solid, level and dry surfaces. It has been designed for the professional user to ensure long service life and safe operation.

These instructions only cover the operation of the machine and do not include information on the basics of sweeping. Any user not familiar with basic sweeping methods should contact their supervisor or Tornado Industries before proceeding.

This machine must only be used for the manufacturer's approved application. This sweeper is intended exclusively for operation on solid, level and dry surfaces. **Do not use** on a surface with a slope exceeding 2%. **Do not use** the machine where it is suspected that the surface contains health endangering dust or debris such as asbestos or chemical waste. If this is suspected **do not proceed**, contact your supervisor or Tornado Industries for advice.

The following instructions contain important information about the machine and safety advice for 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.**

#### 1.1 Important Safety Advice

When using the Tornado 32" sweeper, basic safety precautions should be followed including the following.

- Read all instructions carefully before use.
- Use only as described in this manual.
- Keep children and unauthorised persons away from the machine when in use.
- **Do not** use where hazardous dust is present.
- **Do not** use in an explosive atmosphere.
- **Do not** pick up oil or other flammable material with the machine.
- **Do not** use on a surface with an inclination exceeding 2%.
- Take care when using a machine near the top of stairs to avoid overbalancing.
- **CAUTION:** This sweeper must not be used for collecting hazardous materials.
- Use only on surfaces indicated in the operating instructions.
- **CAUTION:** Only replace damaged or worn parts with genuine original equipment parts in order to maintain safety and to protect your warranty.
- **CAUTION:** Never sweep over surfaces that are wet.

- **CAUTION:** Do not store outdoors. Store in a clean and dry location.
- **CAUTION:** Do not reach into or under the machine under any circumstances when running.
- **CAUTION:** Use only accessories and spare parts that have been approved by the manufacturer.
- **CAUTION:** Do not use a pressure washer to clean the unit.
- **CAUTION:** Repairs may only be carried out by authorised customer service centres.

#### 1.2 Guidelines for the operator

- Operators must be fully trained in the use of the machine in accordance with these instructions, able to perform user maintenance and the correct selection of accessories.
- Operators should be physically capable to manoeuvre, transport and operate the machine.
- Operators should be able to recognise unusual operation of the machine and report any problems.
- Wear suitable footwear to avoid slipping.
- Wear suitable clothing to keep dry and warm.
- Where possible implement job rotation and adequate rest periods to avoid continuous use of the same muscles.
- **Do not** smoke when using the machine.
- **CAUTION:** Keep hair, loose clothing, fingers, and all parts of body away from openings and moving parts.

#### 1.3 Transporting the machine

When transporting the machine ensure that all components and removable parts are securely fastened.

**Do not** lift or transport the machine whilst containing dirt as this will add considerably to the weight.

Take extreme care when moving the machine up or down steps or stairs.

**CAUTION** – Incorrect lifting techniques may result in personal injury. We advise that the manual handling regulations are followed.

## 2 Preparing the Machine

- Remove the machine from the box.
- Check that all the parts are in good condition.
- Assemble the handle in the upright position by attaching it to the brackets above the rear wheels. Tighten with the two thumbscrews. (Fig. 1)

Fig 1



- To install the side brushes, apply light pressure, twisting the brushes upwards on the snap device until you feel them lock into place. (Fig 2)

Fig 2



- Height adjustment of the main brush is achieved by rotating the knob located on each side of the machine (Fig. 3)

Fig 3



- To adjust the side brushes, turn the adjustment knob above the brush to raise or lower the brushes. (Fig. 4)

Fig 4



## 3 Operation

### 3.1 Using the machine

- To use the Tornado 32" sweeper, simply push it at a normal walking speed.
- When the machine is pulled backwards, the side brushes and main brush automatically lift slightly from the floor. This prevents the creation of unnecessary dust. The brushes are all automatically lowered to the pre-selected working position when the sweeper is moved in a forward motion.

## 4 When Cleaning is Finished

### 4.1 Emptying the machine

- To empty the dirt collector, simply lift out and empty into a suitable waste disposal bin.

### 4.2 Storage

- Adjust the side brushes upwards after use to protect the bristles during storage. (Fig. 4)
- To store the Tornado 32" sweeper in the upright position, loosen the thumbscrews slightly and fold handle bar down. The handle can now be folded down either to the front or to the rear. Park in an upright position with the wheels towards the wall. (Fig. 6)

Fig 6

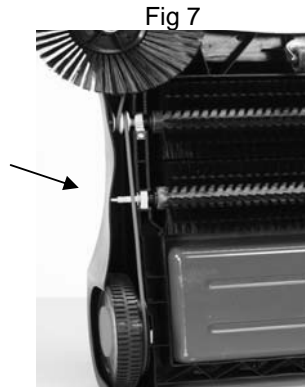


### 4.3 Maintenance

- The Tornado 32" sweeper is designed to be maintenance free. All bearings are dust proof and all parts are weatherproof. To clean the machine wipe off with a dry or damp cloth. It is not recommended to clean the machine with a pressure washer.

#### 4.4 Main Brush Replacement

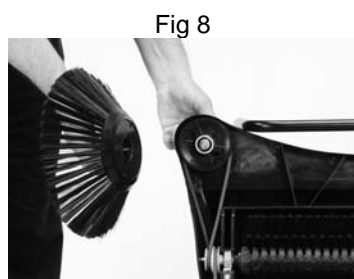
- The brushes are designed so that only one of the two brush rollers is in contact with the surface area and thus exposed to wear and tear. The front roller brush within the machine can be used as a replacement brush for the rear roller.
- To replace the brush, turn the machine upside down and support.
- Unscrew the two height-adjustment knobs and remove them. (Fig. 7)



- Withdraw the two bearings, brush roller and driving pieces at the side and place them on the new roller, making sure to use the right driving piece for the right side of the roller and the left on the left. The two driving pieces are not interchangeable.
- Replace the brush and adjust to the required working height on both sides.

#### 4.5 Side Brush Replacement

- To replace the brush, turn the machine upside down and support.
- Use two fingers to press the brush retaining clips in the centre of the brush. The center axle does not need to be unscrewed – no tools are required to replace the side brushes.
- Pull off the brush and press a new brush into the retainer (Fig. 8)



#### 5 After Sales Service

Should you require after sales service please contact the supplier from whom you purchased the machine, who will arrange service. Repairs and servicing of Tornado products should only be performed by trained staff. Improper repairs can cause considerable dangers to the user.

## 6 Warranty

The warranty for your product is one year on parts, excluding wear items, tools and attachments and one year labor, from the date of original purchase, or hire purchase, against defects in materials or workmanship during manufacture. Within the warranty period we undertake at our discretion, to repair or replace free of charge to the purchaser, any part found to be defective, subject to the following conditions.

Conditions:

1. Claims made under the terms of the warranty must be supported by the original invoice/bill of sale issued at the time of sale, or the machine Serial Number.
2. For claims under this warranty contract the supplier from whom you purchased the product who will arrange the appropriate action. Do not initially return the product as this could result in transit damage.
3. Neither Tornado nor its distributors shall be liable for any incidental or consequential loss.
4. This warranty does not cover any of the following:
  - Periodic maintenance, and repair or replacement of parts due to normal wear and tear.
  - Damage caused by accident, misuse or neglect, or the fitting of non-genuine Tornado parts.
  - Defects in non-genuine Tornado parts, or repairs, modifications or adjustments performed by other than a Tornado Service Engineer or Authorized Service Agent.
  - Cost or risk of transports relating directly or indirectly to the guarantee of this product.
  - Consumable items and wear parts such as hoses, tools and attachments.

This warranty does not affect your statutory rights, or your rights against the supplier arising from their sales or purchase contact.

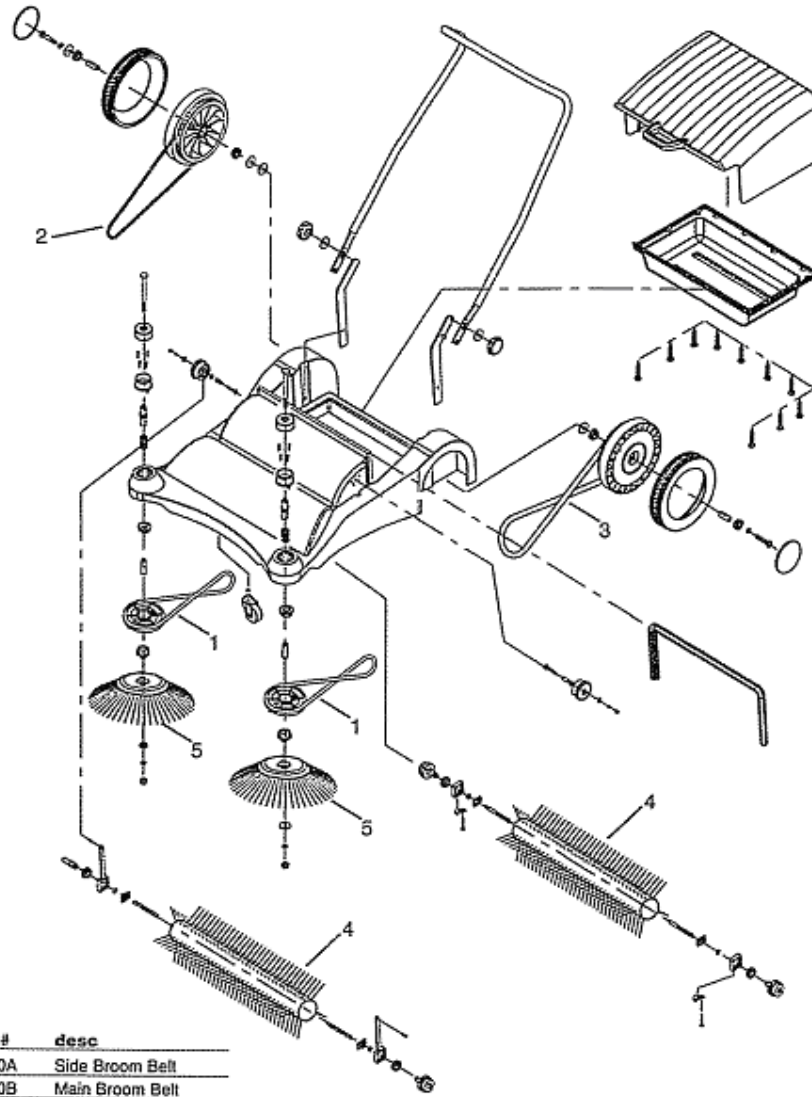
## 7 Technical Specification

Model	32" Sweeper	
Cleaning path	in	32
Dirt collector capacity	gal	10
Size (L x W x H)	in	31 x 24 x 14
Weight empty	lbs	30
Operation	manual	
Brush system	Quad system	
Warranty	1 year	

## 8 Troubleshooting

Problem	Reason	Solution
Cylindrical brush not rotating Side Brushes not rotating	<ul style="list-style-type: none"> <li>• Brush obstruction</li> <li>• Damaged belt</li> </ul>	<ul style="list-style-type: none"> <li>• Remove obstruction.</li> <li>• Check and replace belt as required.</li> </ul>
Excessive vibration	<ul style="list-style-type: none"> <li>• Screws and fittings are loose</li> </ul>	<ul style="list-style-type: none"> <li>• Check and re-tighten as required.</li> </ul>
Main brush height cannot be adjusted	<ul style="list-style-type: none"> <li>• Obstruction in mechanism</li> </ul>	<ul style="list-style-type: none"> <li>• Check height adjustment mechanism and remove obstruction.</li> </ul>

## 9 Replacement Parts



ref#	part #	desc
1	PS320A	Side Broom Belt
2	PS320B	Main Broom Belt
3	PS320C	Drive Belt
4	PS320D	Main Broom
5	PS320E	Side Broom