

TORNADO INDUSTRIES, LLC
3101 WICHITA COURT
FORT WORTH, TX 76140
PHONE 800-VACUUMS
FAX 817-551-0719
WWW.TORNADOVAC.COM



Operations Manual
For Commercial Use Only



QUAD AIR EXTERNAL FILTER
JUMBO VACUUM
MODEL NO: 98451

Form No. L8451AA 05/17 ©Tornado Industries, LLC. All rights reserved



Long Term Buyer Protection Limited Warranty

Tornado Industries, LLC. (Tornado) warrants to the end/user customer that the Tornado product(s) will be free from defects in material and workmanship for the duration(s) described below. This limited warranty DOES NOT cover machines and/or components subject to normal wear and tear, damage that occurs in shipping, failures resulting from modification, accident, unsuitable operating environment, misuse, abuse, neglect, or improper maintenance by you. For full details, contact your Authorized Tornado Distributor, Service Center, or the Tornado Technical Service Department. Tornado sales and service representatives are not authorized to waive or alter the terms of this warranty, or to increase the obligations of Tornado under the warranty.

10 Years*

Plastic water tanks and Rotationally-molded bodies

2 Years*

Parts on all Tornado cleaning equipment

1 Year*

Labor on all Tornado cleaning equipment

1 Year*

Warranty on batteries, one year prorated

All battery warranties are handled directly by the battery manufacturer, on a one year prorated basis

Terms subject to change without notice

1. Except all Windshears™ Blowers, Storm, TV2SS, Side and Downdraft, Insulation Blowers, CV 30, CV 38, CK14/1 PRO, CK 14/2 PRO, SWM 31/9, CK LW13/1, CK LW 13/1 ROAM, CV 38/48 Dual, PV6, PV10, PV6 ROAM, Wall Mount Vacuum and all chargers are warranted for 1 (one) year for both parts and labor.
2. All non-wear item parts purchased after warranty expiration are warranted for 90 days.
3. Warranty starts from the date of sale to the consumer or, at Tornado's discretion, 6 months after the dealer purchased the unit from Tornado, whichever comes first.
4. The EB 30 is warranted for a period of 90 days for both parts and labor.
5. The warranty on engines used on propane powered equipment is limited to motor manufacturer's warranty.
6. Ride-on Scrubbers are warranted for 24 months, parts, 6 months labor or 1,000 hours, whichever occurs first.

Note: Tornado, The Latest Dirt, Floorkeeper, Carpetkeeper, Carpetrinser, Carpetrinser/Dryer, Headmaster, Taskforce, PAC-VAC, T-Lite, Glazer, Windshear, Max-Vac and Trot-Mop are trademarks of Tornado Industries

Website: www.tornadovac.com
Phone 1-800-VACUUMS
Fax 817-551-0719
Address 3101 Wichita Court
Fort Worth, TX 76140



NOTES

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.

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.



WARNING: Failure to read and understand these instructions could result in serious bodily injury or property damage

SAFETY INSTRUCTIONS

When using this unit, basic precautions should always be followed. Read all instructions before using this unit.



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

Do not leave machine unattended when running. Turn off when not in use.

Before attempting any maintenance or adjustment, disconnect air lines.

Do not expose to rain.

Do not allow to be used as a toy.

Close attention is necessary when used near children.

Use only as described in this manual.

Use only manufacture's recommended attachments.

If machine is not working as it should, has been dropped, damaged, left outdoors, or dropped into water, return it to a service center.

Keep hair, loose clothing, fingers, and all parts of the body away from openings and moving parts.

Turn off all controls before disconnecting air lines.

Do not put any object into openings. Do not use with any opening blocked. Keep openings free of dust, lint, hair, and anything that may reduce air flow.

Do not pick up anything that is burning or smoking, such as cigarettes, matches, or hot ashes.

Do not pick up flammable or combustible liquids, such as gasoline, or use machine where they may be present.

Do not use without filters in place.

Use extra care when cleaning on stairs.

Always replace worn or torn external filters immediately. This will prevent possible injury due to flying objects.

Never operate with intake unguarded. Strong suction will pull fingers and/or clothing into hose and other parts.

Always point exhaust port in a safe direction. Air exits venturi at very high velocity.

Always wear safety glasses when in vicinity of this unit.

Never operate above 100 p.s.i. (8 BAR) pressure.

Always turn off your air line supply at the drop before disconnecting the air line.

Features:

- Capable of simultaneous wet/dry pickup when using external filters.
- This unit is constructed for recovering water or other solutions without any adjustments.
- Liquid shutoffs are included.
- Ideal for materials from powder to oily metal chips grindings and shavings.
- Recovers fluids from water to heavy weight oils.
- External filters collect lighter particles and resist clogging.
- 55-gallon drum collects heavier waste (approximately 95% of all pickup); light particles collect in large external filters.
- 1/4" (6mm) jets installed. 3/16" (5mm) jets and 7/32" (5.5mm) jets are included.

General Specifications

The Quad Air External Filter Jumbo Vacuum is a heavy duty wet/dry industrial vacuum. It will pick up wet and dry waste simultaneously without the need to change any filters. This compressed air vacuum has no moving parts and tremendous suction for a portable unit. It comes with a 55-gallon rolled top steel drum (Tornado part number 95944) for volume pick-up with maximum efficiency. Virtually all dry and liquid recovered products go into the drum, therefore maintaining peak performance. It handles a wide variety of waste, ranging from fine powders to heavy-grade viscosity products. Designed to perform at maximum efficiency with 1.5" to 2" hoses and attachments.

Unit Specifications

98451 INCLUDES	
95993	Venturi Powerhead (External Filter) (4)
90488	Large Poly External Filter (2)
98049	Support Rod for Large Filter (2)
95944	55-Galon Drum
98088	4-Wheel Dolly
90332	2" Adaptor
90569	Liquid Shut-Off Float (4)

EXTERNAL FILTER AREA	1874 sq. in. (Per Head)
HORIZONTAL REACH	100 ft.
VERTICAL LIFT	50 ft.
REQUIRED COMPRESSOR	50 h.p.
AIR LINE COUPLINGS	1" (Minimum)
HOSE ADAPTOR	2" included
SHIPPING WEIGHT	190 lbs.

3/16" Jet (Installed) w/ 1.5" Hose	185CFM/154" Static Waterlift
3/16" Jet w/2" Hose	238 CFM/154" Static Waterlift
Compressor CFM	90@90 p.s.i.
7/32" Jet (Included) w/1.5" Hose	210CFM/170" Static Waterlift
7/32" Jet w/2" Hose	244 CFM/170" Static Waterlift
Compressor CFM	122@90 p.s.i.
1/4" Jet (Included) w/1.5" Hose	231 CFM/200" Static Waterlift
1/4" Jet w/2" Hose	258 CFM/200" Static Waterlift
Compressor CFM	180@90 p.s.i.

ASSEMBLY OF THE UNIT

1. Remove all components from packaging
2. The venturi powerheads come already attached to the Jumbo cover adaptors. To detach, remove the external filters from the venturi powerheads, then turn powerheads counterclockwise and they will unlock from the Jumbo cover adaptor. When attached, Make sure exhaust nozzles face outward.
3. Install external filter support rods by placing them in access holes located in the Jumbo cover.
4. Attach external filters by attaching to filter support rods and installing inlet collars onto exhaust nozzles. Turn collars clockwise to lock. Do not twist filter.
5. Install hose adaptor into Jumbo housing. Lock in place by lining up adaptor indent with lock screw and tightening lock screw.
6. Place Jumbo cover assembly onto drum. The weight and suction power of the Jumbo cover assembly will form a seal onto the drum

STARTING/STOPPING OF MACHINE

1. Connect air supply line to head line connector.
2. Start Vacuum by turning air valve located on line connector to the ON position.
3. Stop vacuum by turning air valve located on line connector to the OFF position.

OPERATING RULES

Use 1.5" or 2" I.D. hoses and attachments
Use 1" air line hose and flow thru connectors (do not use ball style fittings).
Use 90 p.s.i. (7 BAR) at gauge (valve open) for maximum pickup power, 60 p.s.i. (5 BAR) at gauge (valve open) for lighter debris
Never operate over 100 p.s.i. (8 BAR).
Use to recover water, heavy oils, powder, gringings, and metal shavings.
Hearing protection must be worn when operating this unit.
Grounding and static discharge are required when recovering powders. Use Tornado static conductive hoses (Urethane or Neoprene), and aluminum tools. Ground vacuum head and tank assembly to an earth ground.

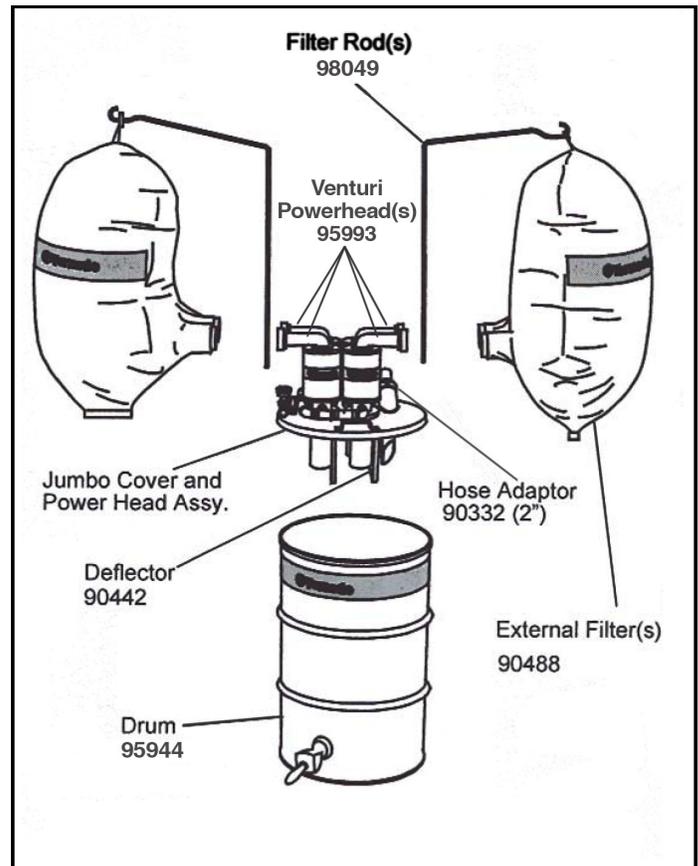
MAINTENANCE

EXTERNAL FILTER

For maximum operating efficiency and to ensure longer wear, remove filters and empty by detaching the bottom clamp after every use

ALL OTHER MAINTENANCE

Empty and clean vacuum filters and attachments after each days use for maximum performance



Problem	Remedy
Machine does operate	Make sure air line valve is in ON position. Inspect air regulators for interference of air flow. Inspect air compressor for adequate size and that proper air pressure is available (60 to 90 p.s.i.). Inspect air line for proper size and/or damage. Always use flow thru connectors.
Machine stops running	Inspect drum level. Inspect air line for damage. Inspect air pressure.
Machine has no suction	Inspect for clogged or collapsed hose Defective drum seal. Material too heavy for unit.
Air pressure drops at gauge	Inspect air compressor for proper free air consumption and resistance in air line size or connections.
Machine has poor recovery	Inspect for correct size hose and attachments. Defective drum seal. Material too heavy for unit. Inspect external filters. Empty and clean if necessary. Ensure external filters are properly locked onto venturi powerheads. Inspect drum cover gasket. Ensure venturi powerheads are properly locked into Jumbo cover. Inspect connection of external filters. Inspect all seals for wear and/or damage.

Warranty Registration Form

Please provide additional information on
Tornado equipment: (Check choices below)

- | | |
|---|---|
| <input type="checkbox"/> Automatic Scrubbers | <input type="checkbox"/> Sweepers |
| <input type="checkbox"/> Propane Floor Machines | <input type="checkbox"/> Rotary Floor Machine |
| <input type="checkbox"/> High Speed Burnishers | <input type="checkbox"/> Carpet Vacuums |
| <input type="checkbox"/> Carpet Extractors & Spotters | <input type="checkbox"/> Wet/Dry Vacs |
| <input type="checkbox"/> Steam Cleaners | <input type="checkbox"/> Jumbo Vacs |
| <input type="checkbox"/> Ride-On Equipment | <input type="checkbox"/> Pressure Washers |

See complete product info at www.tornadovac.com

Selling Dealer: (Required) _____

Please Print Clearly

Company/Institution	
Contact Name	Title
Address	City/State/Zip Code
Phone	Fax
Date of Purchase	Email

See white metal plate or sticker on unit for this information.

MACHINE TYPE/MODEL NUMBER:	MACHINE SERIAL NUMBER:
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____

Facility Description (please circle all that apply)

1. School	9. Hospital	17. U.S. Govt.
2. Retail Store	10. Nursing Home	18. Other Govt.
3. Restaurant	11. Religious Institution	19. Auto Service
4. Office Building	12. Airport	20. Airport
5. Contract Cleaning	13. Warehouse	21. Non-Profit
6. Light Manufacturing	14. Apartment/Condo	22. Other (specify)
7. Heavy Manufacturing	15. Warehouse	
8. College/University	16. Supermarket	

How did you first learn about Tornado cleaning and maintenance equipment?	In square feet (<i>meters</i>)	
	Total Hard Floor Area	Total Carpeted Area Square feet (square meters)
<input type="checkbox"/> Contacted by local dealer <input type="checkbox"/> Previous experience with Tornado products <input type="checkbox"/> Reputation/ Recommendation <input type="checkbox"/> Advertising <input type="checkbox"/> Direct mail <input type="checkbox"/> Internet <input type="checkbox"/> Other	<input type="checkbox"/> 0-10,000 (0-930) <input type="checkbox"/> 10-50,000 (930-4,650) <input type="checkbox"/> 50-250,000 (4,650-23,250) <input type="checkbox"/> Over 250,000 (over 23,260)	<input type="checkbox"/> 0-10,000 (0-930) <input type="checkbox"/> 10-50,000 (930-4,650) <input type="checkbox"/> 50-250,000 (4,650-23,250) <input type="checkbox"/> Over 250,000 (over 23,260)

Damage or defect arising from abuse, neglect or other misuse is excluded from this warranty. Other items may or may not apply based on your specific machine. If any defect occurs, the warranty is voided if service is attempted by non-Authorized Tornado Service Centers.



Return to :
Tornado Industries
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