



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

Operations & Maintenance Manual
For Commercial Use Only



**9 GALLON SELF-CONTAINED CARPET EXTRACTOR
MODEL NO: 98170**

Form No. X1688 09/20 ©Tornado Industries, LLC. All rights reserved

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.

IMPORTANT SAFETY INSTRUCTIONS

READ AND UNDERSTAND ALL INSTRUCTIONS BEFORE USING THIS UNIT

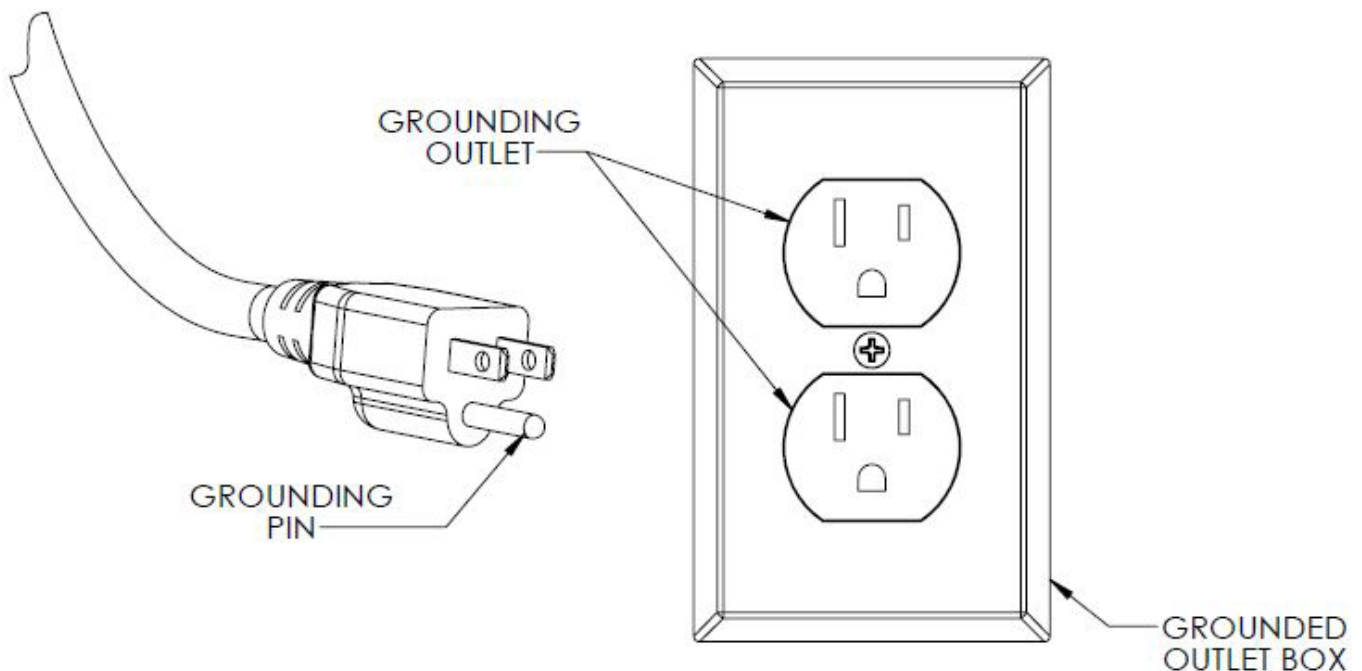
Read and understand this owner's manual and all labels on the unit before operating. Safety is a combination of common sense, staying alert and knowing how your unit works. Use this unit only as described in this manual. Use only manufacturer's recommended attachments. To reduce the risk of personal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

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

Treat this unit as you would any other high grade precision made product. Dropping, unreasonable bumping across thresholds and other misuses may result in a damaged unit which will not be covered by warranty. When not in use, power cord should be wrapped around handle for storage.

Read this manual completely before operating this extractor. It is important to follow instructions in this manual to prevent the possibility of injury or damage to the user and/or machine.

When using this self contained extractor, basic precautions should always be followed, including the following:

- 1) DO NOT leave unit when plugged in. Unplug from outlet when not in use and before servicing.
- 2) DO NOT allow unit to be used as a toy. Close attention is necessary when used around or near children.
- 3) Use only as described in this manual. Use only manufacturer's recommended attachments.
- 4) DO NOT use with damaged cord or plug. If unit is not working properly because it has been dropped, dropped into water, left outdoors, or damaged in any way, contact a service center.
- 5) DO NOT pull or carry by cord, use cord as a handle, close door on cord, or pull cord around sharp edges or corners. DO NOT run unit over cord. Keep cord away from heated surfaces.
- 6) DO NOT unplug by pulling on cord. To unplug, grasp the plug, not the cord.
- 7) DO NOT handle plug or appliance with wet hands.
- 8) DO NOT put any objects into openings. DO NOT use with any opening blocked: keep free of dust, lint, hair, or anything that may reduce air flow.
- 9) Keep hair, loose clothing, fingers, and all parts of body away from openings and moving parts.
- 10) DO NOT pick up anything that is smoking or burning such as cigarettes, matches, or hot ashes.
- 11) DO NOT use to pick up hazardous chemicals.
- 12) Turn off all controls before unplugging.
- 13) Turn unit off immediately if foam or liquid comes from machine exhaust. Empty and clean out recovery (dirty) tank and use defoamer to correct the problem.
- 14) DO NOT use to pick up flammable or combustible liquids such as gasoline or use in areas where they may be present.
- 15) DO NOT use where oxygen or anesthetics are used.
- 16) Extension cord must be a three-wire type, 14 gauge or larger, to ensure grounding protection.
- 17) Replace damaged or worn parts immediately with genuine original equipment parts to maintain safety.
- 18) This unit must be connected to a properly grounded outlet only. See grounding instruction.

PRE-OPERATION INSTRUCTIONS

NOTE: (color fastness) Before using carpet cleaning chemicals, test on an inconspicuous part of the carpet for color fastness. Place the solution on a small piece of clean white material or tissue, then rub the carpet vigorously. Excessive amounts of dye showing on the material would indicate that the colors are not fast, and should not be wet cleaned.

1) Fill the solution tank with 9 gallons of warm water.

WARNING: DO NOT overfill.

2) Measure carpet cleaning solution per manufacturers recommended ratio into the clean water tank. DO NOT use the waste tank to fill the solution tank as debris could damage the pump or block the jet. **WARNING:** DO NOT exceed 150°F (65° C)

3) Add defoamer solution per manufacturer's instructions as needed.



OPERATION

1) Plug main power cable into outlet.

WARNING: This machine must be properly grounded.

2) Press the VACUUM switch to the ON position. Then press the PUMP switch ON and the BRUSH switch to the ON position.

3) Lower carpet brush. Push brush lowering pedal forward to lower brush. Push down and back to raise brush.

4) Press and hold the solution switch to apply the cleaning solution. Pull the machine backwards at the same time to clean the carpet. Stop the solution spray about 12" (30cm) before the end so all of the solution is vacuumed up. Slightly overlap the next cleaning pass to prevent streaking. A two (2) wet pass maximum is recommended to avoid overwetting. After a few passes, check the waste tank to see that no foam is present. Add extra defoamer if necessary.

5) Make sure to empty the recovery (top) tank when it is approximately 3/4 full. Do not refill the solution tank without emptying all the contents of the recovery tank first.



STORAGE

WHEN CLEANING IS FINISHED:

- 1) Connect the drain solution hose (gray hose with brass connector) to the solution fitting at the front of the machine and place the other end into the recovery tank. Turn on the PUMP switch. This will pump the remaining solution into the recovery tank for easy drainage.
- 2) To disconnect the solution hose, push in on the ring of the solution filling. Switch off the machine, remove power plug from the socket, and empty the waste tank. Leave waste tank open when storing.
- 3) Leave brush raised for storage.



Brush Lowering Pedal

Drain Hose

ACCESSORIES / TOOLS (OPTIONAL)

For upholstery cleaning and hard to reach areas.

Attach recovery hose to recovery hose connection of vacuum shoe. Connect the accessory solution hose to the solution hose connection at the front of the machine by pushing back the locking ring to fit. Turn on vacuum and pump.



Recovery Hose Connection

Solution Hose Connection

ROUTINE MAINTENANCE

DAILY

- 1) Check the spray jet for blockage and a uniform spray pattern. Remove jet and blow through to clean. Do not use a pin as this may cause damage to the jet.
- 2) Check and remove any debris or lint build-up from the vacuum head, brush, and brush housing.
- 3) Always wash out the tanks with clean water after use. To do this, pour clean water into the solution tank and spray through spray tip to clear chemical residue from the pump, lines, and spray tip. Allow the vacuum to run for a few minutes after use to aid the machine in drying out and to help prevent bacteria and odors.

WEEKLY

Inspect hoses (unseen blockages sometimes occur), hose cuffs, and the rubber seal on the recovery tank lid. The main cable, plug, and switches should also be examined for damage.

NOTE: It is advisable to store the unit with the recovery tank lid removed.

CAUTION: THIS UNIT MUST BE PROTECTED FROM FREEZING. Damage from freezing could cause machine to malfunction.

MAINTENANCE GUIDE

Motors not running

CAUSE:	SOLUTION:
1) Power not reaching main switch.	1) Check power supply. Check fuses/circuit breaker. Contact service center.
2) Defective power cord.	2) Replace with 14 gauge cord.
3) Faulty switches or wiring.	3) Contact manufacturer or service center.
4) Blown fuse or tripped circuit breaker	4) Reset circuit breaker according to operating instructions or replace fuse if qualified.
5) Problem with brushes, field windings, or armatures. (vacuum or brush motor)	5) Contact manufacturer or service center.

Loss of vacuum

CAUSE:	SOLUTION:
1) Vacuum head blocked.	1) Visually inspect and clear blockage.
2) Hoses blocked.	2) Visually inspect and clear blockage.
3) Recovery tank not sealed properly.	3) Check tank for damage or adjust lid for proper fit.

Brush not functioning properly

CAUSE:	SOLUTION:
1) Belt broken.	1) Replace belt.
2) Brush jammed.	2) Visually inspect and clear blockage.
3) Clutch bearing seized.	3) Contact manufacturer or service center.

Spray jet not functioning properly

CAUSE:	SOLUTION:
1) Jet blocked.	1) Visually inspect and clean according to operating instructions.
2) Solution filter blocked.	2) Visually inspect and clean according to operating instructions.
3) Pump head, valves or diaphragm blocked or damaged.	3) Contact manufacturer or service center.
4) Solenoid valve inoperative	4) Contact manufacturer or service center.

