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Operation & Maintenance Manual

For Commercial Use Only



SERIES PV 6 PAC-VAC

MODELS
93028 & 93029

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Tornado® Standard Warranty Program *	
<p>Warranties do not cover components subject to normal wear or abuse and misuse, and have other limitations not specified here. For full details, contact your Authorized Tornado Distributor, Service Center, or the Tornado Technical Service Department.</p> <p>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.</p>	<p>10 Years: <i>All plastic tanks and rotationally-molded bodies</i> ^{1) 5)}</p>
	<p>2 Year: <i>Parts on all Tornado and Tornado/Karcher cleaning equipment</i> ^{1) 2) 3) 5)}</p>
	<p>1 Year: <i>Labor on all Tornado and Tornado/Karcher cleaning equipment</i> ^{2) 5)}</p>
	<p>1 Year: <i>Warranty on batteries and chargers, one year.</i> All battery warranties are handled by the battery manufacturer, please call customer service for information.</p>

* Effective January 1st, 2005. Terms are subject to change without notice.

1. Windshear™ Blower-Dryer, Insulation Blowers, CK LW 13/1, CK 14/1, CV 30, CV 38, T191, T201, CV 30, CV 38, CW 50, CW 100, Pro PAC Vacs, Duo-Upright Carpetkeepers™, and all chargers are warranted for 1 (one) year for both parts and labor.
2. Warranties on the EB30 are 90 days (batteries, chargers, parts, accessories).
3. Warranties on all riding sweepers including the ICC1, KM 100/100 R, KMR 1250, and KMR 1700 are 24 months parts/6 months labor OR 1000 hours of operation, whichever comes first. Warranties on the 75/140 & 90/140 are 24 months parts/12 months' labor OR 1,000 hours of operation whichever comes first.
4. All-non wear item parts purchased after warranty expiration are warranted for 90 days.
5. Warranty starts from the date of sale to the consumer 6 months after dealer purchased the unit from Tornado, whichever comes first.

Note: Tornado, The Latest Dirt, Floorkeeper, Carpetkeeper, Carpetrinser, Carpetrinser/Dryer, Headmaster, Taskforce, PAC-VAC, T-Lite, Glazer, Windshear, Max-Vac, CV 30, CV 38, and Trot-Mop are trademarks of Tornado Industries.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

*When using an electrical backpack vacuum cleaner, basic precautions should be followed.

*Read all instructions before using vacuum cleaner.

WARNING

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

- Do not use outdoors or on wet surfaces.
- Do not leave vacuum cleaner unattended when plugged in. Turn off the switch and unplug the electrical cord when not in use and before servicing.
- Do not allow to be used as a toy. Close attention is necessary when used by or near children.
- Use only as described in this manual. Use manufacturer's recommended attachments.
- Do not use with damaged cord or plug. If vacuum cleaner is not working as it should, has been dropped, damaged, left outdoors, or dropped into water, return it to a service center before using.
- Do not pull or carry by cord, use cord as a handle, close a door on cord, or pull a cord around sharp edges or corners. Do not run vacuum cleaner over cord. Keep cord away from heated surfaces.
- Do not use extension cords or outlets with inadequate current carrying capacity.
- Turn off all controls before unplugging.
- Do not handle plug or vacuum cleaner with wet hands.
- Do not put any objects into openings. Do not use with any opening blocked, keep free of dust, lint, hair, and anything that may reduce airflow.
- This vacuum cleaner creates suction. Keep hair, loose clothing, fingers, and all parts of body away from openings.
- Do not pick up anything that is burning or smoking, such as cigarettes, matches or hot ashes. Do not use without dust bag in place. Use extra care when cleaning on stairs. Do not use to pick up flammable or combustible liquids such as gasoline, or use in areas where they may be present.
- Store your cleaner indoors in a cool, dry area.
- Do not unplug by pulling on cord. To unplug, grasp the plug, NOT THE CORD.

THESE MODELS ARE GROUNDED, CONNECT TO A PROPERLY GROUNDED OUTLET ONLY - SEE GROUNDING INSTRUCTIONS.

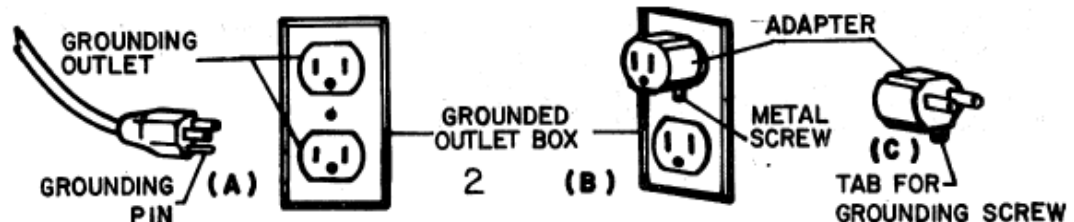
GROUNDING INSTRUCTIONS

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 of shock. This appliance 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

*This applies only to North America. Most other countries use a 230v circuit.

The 230v model is designed to operate on a 230/50 Hz electrical connection. Make sure the electrical outlet is grounded and all safety precautions are taken.



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 normal 120 volt circuit, and has a grounded plug that looks like the plug illustrated in sketch A. A temporary adapter that looks like the adapter illustrated in fig B and C may be used to connect this plug to a 2-pole receptacle as shown in fig B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet (fig A) can be installed by a qualified electrician. The green colored rigid ear, lug, or the like extending for the adapter must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adapter is used, it must be held in place by a metal screw.

Note: In Canada, the use of a temporary adapter is not permitted by the Canadian Electrical Code.

SAFETY PRECAUTIONS

- Do not vacuum water or liquids.
- Do not vacuum up hard or sharp objects, as they may damage the hose, vacuum bag or the vacuum motor.
- Do not drop the vacuum on the floor.
- Do not operate the vacuum while it is standing on high-pile carpet. It is essential that the exhaust airflow is not restricted.
- Do not wash or launder the cloth vacuum bag. It would destroy the filtration capacity of the fabric.
- Do not kink or twist the power cord.
- Do not attempt to service the vacuum yourself. Repair by anyone other than an authorized repair service center may void the warranty.

MAINTENANCE

- Clean the cloth vacuum bag regularly. After emptying the vacuum bag, turn it inside out and shake as much dust out of the fabric as possible. Optimum performance is achieved by using a paper vacuum bag with the cloth bag.
- Check the power cord for damage. Always unwind the cable completely.
- Ensure that the vacuum hose, the extension wand and the vacuuming accessories are not blocked.
- Ensure that the electrical outlet and the plug are securely connected. Incorrect connections may cause sparking and damage to the cable socket.
- Have your Backpack Vacuum served by an authorized repair service center if you suspect any potential problems.
- Use only approved paper vacuum bags.
- Ensure that the flexible vacuum bag ring provides a proper seal before vacuuming.

OPERATION INSTRUCTIONS

Please read the following operating instructions carefully. They will help you to get the best performance from this professional quality vacuum cleaner and to maintain it in optimum condition.

Follow these simple steps for easy and effective operation of the Backpack vacuum.

Open the lid and ensure that the cloth bag is correctly located and the flexible ring provides a proper seal when the lid is closed. For optimum filtration and maximum hygiene, it is advisable to use a paper vacuum bag in addition to the standard cloth bag.

If you use a paper vacuum bag, simply insert it into the cloth bag, making sure that the cardboard disk is centered on the flexible sealing ring. When you replace the lid, the short nozzle in the center of the lid will be forced into the central hole of the cardboard disk of the paper vacuum bag thus providing a tight seal. Make sure the paper vacuum bag is tightly secured over the short nozzle before vacuuming.

Lock the lid down with the two latches. Always ensure that the vacuum bag is empty before vacuuming. Your Backpack vacuum has been fitted with a thermal overload switch to protect the motor against damage should the airflow be blocked for extended periods. This may occur if the vacuum bag is overfull or if the vacuum hose is blocked. The vacuum motor will stop before it can get too hot. If this happens, empty and thoroughly clean the vacuum bag and HEPA filter or free any blockage and ensure that adequate airflow is restored. The motor will automatically restart after it has cooled to a safe operating temperature.

1. The vacuum hose is fitted into the cuff in the lid. It should not be necessary to remove the hose in normal operation.
2. Place the Backpack vacuum on your back, adjust the shoulder straps until you feel comfortable and then tighten the waist belt. The Backpack vacuum is designed to ride higher on your back for maximum comfort.
3. Plug the cord into a 110 volt, grounded outlet. Always unwind the cord completely before vacuuming. It is important to maintain the power cord in good condition. This unit ships with a 50' 16AWG x 3 conductor SJT extension cord. Always use a 16x3 SJT extension cord when operation this unit. Use care when pulling the cord around sharp edges and through doorways

Never operate the Backpack vacuum if the power cord is damaged in any way.

4. Attach the extension wand to the hose and fit the floor tool or any of the other vacuuming accessories on the wand.
5. Turn the vacuum on. The toggle switch is located on the switch box. You may clip the switch box to the waist belt.

*(*Front panel removed for illustration of HEPA filter removal only. Housing removal is not necessary for filter inspection/replacement.)*



Turn off main power switch and unplug unit from wall outlet.



Remove vacuum hose from top of unit.



Release the two latches and lift off lid.



Separate lid from paper bag insert and dispose of paper bag.



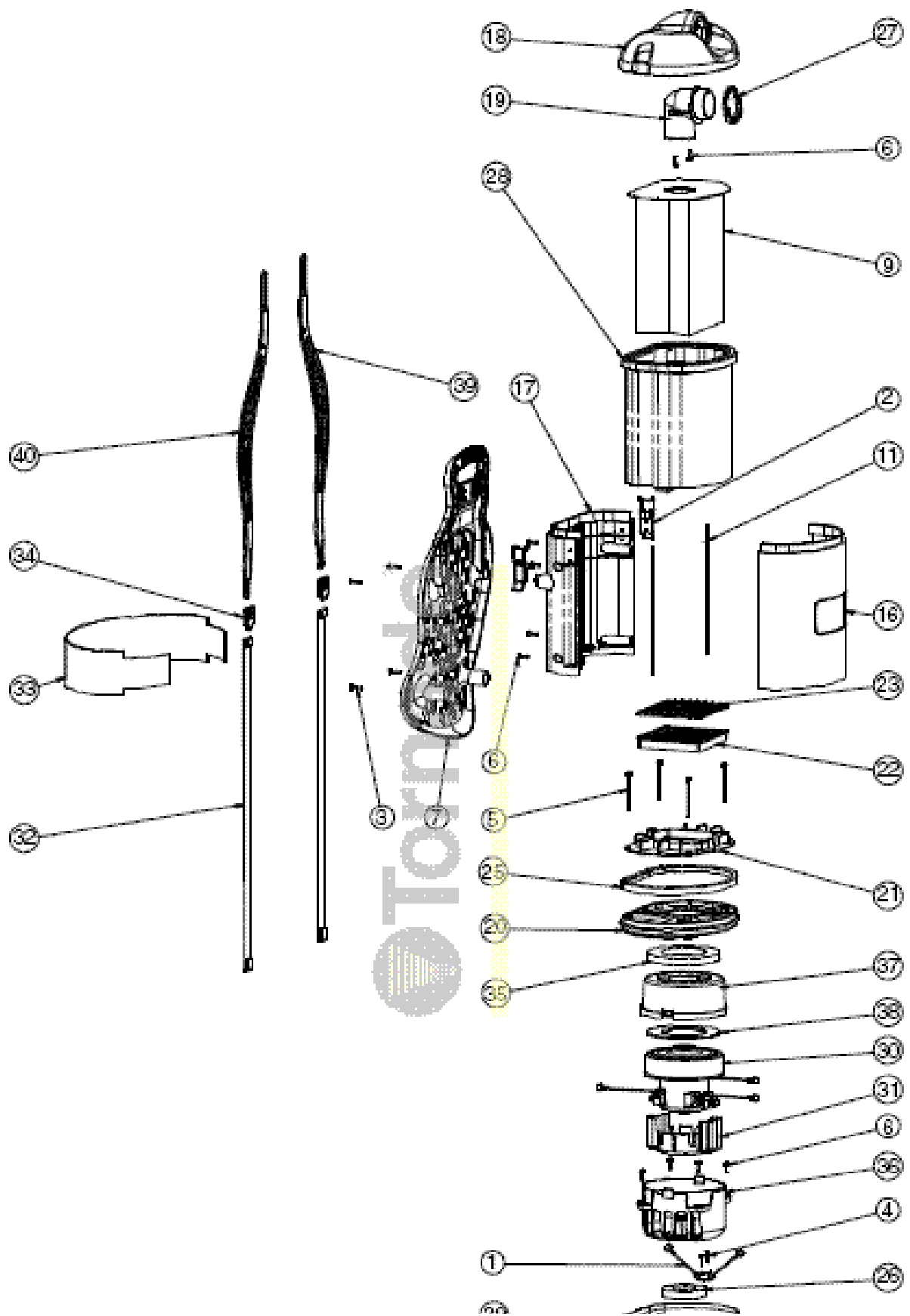
Remove cloth filter bag, clean, dust and replace.



*Clean the vacuum bag and HEPA filter or free any blockage and ensure that adequate airflow is restored.



Insert new paper bag making sure to align lid nozzle with bag hole and replace latches.



No.	Number	Qty	Description	Sell 0	Cost 0
▶ 1	A328-1400	1	THERMAL PROTECTION SWITCH	N/A	N/A
2	A352-3300	1	LATCH	N/A	N/A
3	A352-8100	1	#10 .750 TYPE B PHILIPS PAN HEAD SCREW	N/A	N/A
4	A352-8200	1	#6 X .375 HI-LO PHILIPS PAN HEAD SCREW	N/A	N/A
5	A430-0205	1	#8-16 X 2.500 PHILIPS PAN HEAD SCREW	N/A	N/A
6	A732-8300	1	#8 X .625 HI-LO PHILIPS PAN HEAD SCREW	N/A	N/A
7	C352-9200	1	BACK REST ASSY	N/A	N/A
8	B352-2400	1	POST FILTER	N/A	N/A
9	C352-2500	1	PAPER BAG	\$10.98	\$0.00
10	B352-3200	1	POWER HARNESS	N/A	N/A
11	B352-6100	1	BAG COMPARTMENT SEAL	N/A	N/A
12	B352-6800	1	HEYCO FITTING NUT	N/A	N/A
14	B352-0100	1	MOTOR COMPARTMENT	N/A	N/A
15	B352-0200	1	BUMPER	N/A	N/A
16	B352-0339	1	FRONT PLATE	N/A	N/A
17	B352-0443	1	BACK PLATE	N/A	N/A
18	B352-0500	1	COVER	N/A	N/A
19	B352-0600	1	HOSE INLET	N/A	N/A
20	B352-0700	1	MOTOR COVER	N/A	N/A
21	B352-0800	1	SECONDARY FILTER PLATE	N/A	N/A
22	B352-5200	1	SECONDARY FILTER FRAME	N/A	N/A
23	B352-1000	1	SECONDARY FILTER CAP	N/A	N/A
24	B352-1100	1	POST FILTER FRAME	N/A	N/A
25	B352-1200	1	BODY SEAL	N/A	N/A
26	B352-1900	1	BOTTOM MOTOR MOUNT	N/A	N/A
27	B352-4800	1	INLET SEAL	N/A	N/A
28	C352-1400	1	SHAKE OUT BAG	N/A	N/A
29	C352-2800	1	SWITCH HARNESS	N/A	N/A
30	A113-2600	1	5.1" SINGLE STAGE TEK MOTOR	N/A	N/A
31	B113-0915	1	TEK MOTOR SHROUD PC	N/A	N/A
32	B352-5800	1	SHOULDER HARNESS STRAP	N/A	N/A
33	B352-6600	1	WAIST BELT	N/A	N/A
34	B352-6700B	1	SHOULDER STRAP BUCKLE	N/A	N/A
35	B352-1800	1	TOP MOTOR MOUNT	N/A	N/A
36	B352-5300	1	MOTOR SHROUD BOTTOM 5.1-1 STAGE	N/A	N/A
37	B352-5400	1	MOTOR SHROUD TOP 5.1-1 STAGE	N/A	N/A
38	B352-5500	1	MOTOR SEAL	N/A	N/A
39	B352-5600	1	RIGHT SHOULDER HARNESS	N/A	N/A
40	B352-5700	1	LEFT SHOULDER HARNESS	N/A	N/A
41	B352-3600	1	CERVISE TOOL	N/A	N/A
42	B352-3500	1	UPHOLSTRY TOOL	N/A	N/A
43	B352-3700	1	DUST BRUSH TOOL BODY	N/A	N/A
44	B352-3800	1	DUST BRUSH BRISTLES	N/A	N/A
45	B352-4201	1	CARPET TOOL BODY	N/A	N/A
46	B352-4500	1	BARE FLOOR TOOL BODY	N/A	N/A
47	B352-4600	1	BARE FLOOR TOOL BRUSH	N/A	N/A
48	A352-3400	1	HOSE	N/A	N/A
49	B352-3900	1	TELESCOPE WAND	\$47.90	\$0.00