

**TORNADO INDUSTRIES**  
7401 W. LAWRENCE AVENUE  
CHICAGO, IL 60706  
(708) 867-5100 FAX (708) 867-6968  
www.tornadovac.com



## Operations & Maintenance Manual

For Commercial Use Only



### Models P Series 17" and 20"

MODEL NO.

97562 (115v) & 97563 (230v)

97564 (115v) & 97565 (230v)

### ***ONE LAST REMINDER! READ ALL INSTRUCTIONS, WARNINGS AND CAUTIONS BEFORE USING EQUIPMENT.***

These guidelines are presented for your protection and convenience. Please read them carefully, since a failure to heed these precautions could result in discomfort or injury. When using an electrical appliance, basic safety precautions should always be followed.

### ***WARNING***

***TO AVOID FIRE, DO NOT USE WITH A FLAMMABLE  
OR COMBUSTIBLE LIQUID TO CLEAN FLOOR.***

NOTES

NOTES

## TROUBLESHOOTING

### **Machine does not run.**

The circuit breaker has tripped. Allow the circuit breaker 2 minutes to cool before resetting. Plug is broken or has loose contact. Replace.

### **Prevent circuit overload.**

Check the pad and change it if it is rough or dirty. Spray buffing or spray cleaning is not a substitute for scrubbing or mopping a floor. Prepare the floor surface before spray buffing. Eliminate any extension cord that is smaller than 12/3 wire or greater than 25 feet in length. Unplug anything other than the machine from the circuit or locate another circuit.

### **Machine will not start.**

Circuit breaker is not reset. Reset breaker.  
Plug is broken or has a loose contact. Replace.  
Circuit breaker is defective or weak. Replace.  
Switch is defective. Replace switch.

### **Machine will not reach operating speed.**

Unplug anything else other than the machine from the circuit or locate another circuit.

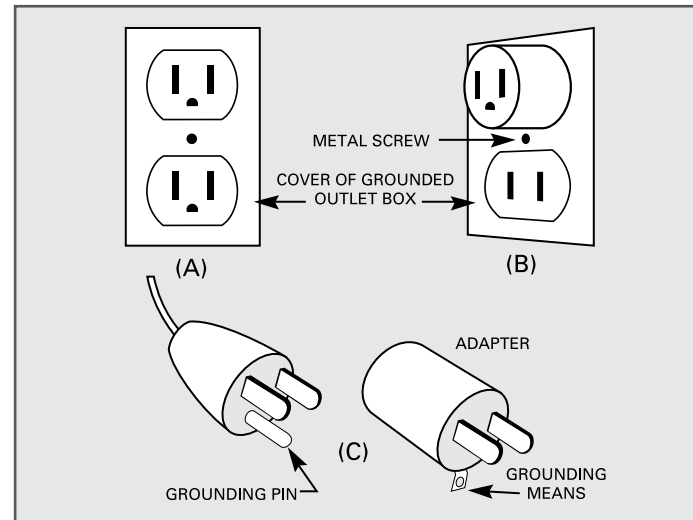
### **Motor runs but pad or brush does not turn.**

Coupling is broken. Replace. Coupling is not covered under warranty. Do not attempt to place a running machine over a block or brush. Always place and remove the block or brush by hand.

## SAFETY INSTRUCTIONS

This Floor Machine should be grounded while in use to protect the operator from electric shock. This machine is equipped with a 3-conductor cord and a 3-prong grounded type attachment cap plug to fit the proper grounding type receptacle. The green (or green and yellow) conductor in the cord is the grounding wire. Never connect this wire to anything other than the grounding blade. The Floor Machine is provided with an attachment cap plug, as shown in Sketch A, and is intended for use on a nominal 120 volt circuit. If a properly grounded receptacle, as shown in Sketch A, is unavailable, an adaptor, as shown in Sketch C, is available and should be installed, as shown in Sketch B, if the outlet box that houses the receptacle is grounded. Be sure to fasten the grounding tap to the faceplate screw.

*\*This applies only to North America. 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.*



**Write your machine serial number here:** \_\_\_\_\_

This instruction book covers:

MODEL NO.	97562	97564	97563	97565
VOLTS	115	115	220	220
SERIES	F	F	F	F

**ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.**

## **TABLE OF CONTENTS:**

<b>IMPORTANT SAFEGUARDS</b>	<b>3</b>
<b>APPLICATIONS</b>	<b>3</b>
<b>MAINTENANCE</b>	<b>5</b>
<b>TROUBLESHOOTING</b>	<b>5</b>

Your new Floor Machine will afford you many years of trouble-free operating satisfaction provided it is given proper care. Prior to packaging, your Floor Machine was inspected by a Quality Control Technician.

## UNCRATING

Your Floor Machine was protectively packed to prevent damage in shipment. We suggest that upon removing the unit from its carton, you carefully inspect it for any possible damage in transit. If damage is discovered, immediately notify the transportation company who delivered your machine. As a manufacturer, we are unable to act upon any claim for concealed damage; you must originate the claim.

## IMPORTANT SAFEGUARDS

This machine is designed to be safe when used to perform the functions specified in this Operator's Manual. Should damage occur to electrical or mechanical parts, the machine should be repaired by the manufacturer or competent service station before using in order to avoid further damage to the machine or physical injury to user. Your floor machine is equipped with a safety switch lockout device designed for your safety. Do not attempt to bypass or defeat the safety lockout device. Never use any device to lock the power switch triggers in the ON position.

## WARNINGS

### READ THIS OPERATOR'S MANUAL!

**WARNING:** You must have training in the operation of this machine before using it.

**WARNING:** Machines can burn flammable materials and vapors. Do not use this machine with or near fuels, grain dust, solvents, thinners or other flammable materials.

**WARNING:** Do not operate this machine unless it is completely assembled.

**WARNING:** Do not use this machine as a step or to move furniture.

**WARNING:** When disconnecting power cord from electrical outlet, grasp the plug. Pulling it out by the cord itself can damage cord insulation and internal connection to plug. To prevent electric shock, always remove the electrical plug from the electrical outlet before doing any repairs or maintenance to this machine.

**WARNING:** To prevent injury, always remove the electrical plug from the electrical outlet before changing the polishing pad and before leaving the machine.

**WARNING:** To prevent injury, keep hands, feet and loose clothing away from the rotating pad.

**WARNING:** Maintenance and repairs must be done by authorized personnel only.

**WARNING:** Keep all fasteners tight. Keep adjustments according to specifications.

**WARNING:** Keep the electrical parts of the machine dry. For storage, keep the machine in a building.

**WARNING:** Always use a three-wire electrical system connected to the electrical ground. For maximum protection against electric shock, use a circuit that is protected by a ground fault circuit interrupter. Consult with your electrical contractor.

**WARNING:** To prevent damage to the power cord, do not let the pad, pad driver or wheels touch the power cord when the machine is running. Always lift the power cord over the machine.

**WARNING:** Make sure all labels, decals, warning, cautions and instructions are fastened to the machine.

## APPLICATIONS FOR FLOOR MACHINE

### 175 RPM

The 175 RPM floor machine will operate in a wide variety of applications. and can be used for spray buffing, dry buffing, scrubbing and stripping applications. These heavy duty floor machines are specially recommended for long term aggressive scrubbing and stripping maintenance. The heavy duty floor machines are specially recommended for the following applications:

- Scraping with an attachment tool to remove heavy industrial deposits and residue or to prepare a foundation for installation of carpet.
- Wire brushing of concrete floors.
- Sanding with very aggressive sandpaper or sand screen discs.
- Carpet restoration where shampooing & pile lifting require very stiff brush bristles. The 175 RPM floor machine is the most versatile speed in the floor care industry.

## APPLICATIONS OF 175 RPM STANDARD SPEED FLOOR MACHINES ON HARD FLOORS

- Spray buffing with red spray buff pad and spray buff chemical.
- Dry buffing a buffable finish with a tan, beige or white pad or brush.
- Scrubbing with green or blue pad or scrubbing brush.
- Stripping with a black pad and a stripping chemical.

## APPLICATIONS OF 175 RPM STANDARD SPEED FLOOR MACHINES ON CARPET

- Bonnet cleaning with a yarn bonnet and carpet maintainer chemical.
- Shampooing using a showerfeed shampoo brush and solution tank mounted to the handle tube containing carpet shampoo.

## WARNING

To prevent injury, always remove the electrical plug from the electrical outlet before changing the polishing pad and before leaving the machine.

## PREPARE THE MACHINE FOR OPERATION

To attach the drive block or brush or other attachment, be sure the handle is "locked" in the upright position (*See picture #1*). Lay the floor machine on its back with the handle lying on the floor, this exposes the driving plate on the underside of the floor machine. Holding the drive block, brush or attachment in both hands and straddling the motor with your back to the handlebox, bend over and fit the three slots of the clutch plate (built into the back of the brush) over the three lugs of the driving plate. Turn the drive block, brush or attachment counter-clockwise as far as it will go until it is seated in the ready-to-use position. (*See picture #2*) **CAUTION:** This is the only proper way to install a drive block, brush or attachment. NEVER put a drive block, brush or attachment on the machine by placing it on the floor and moving the running machine over it, or by placing the machine over the block or attachment and then starting the motor. Return the floor machine to upright position and adjust handle to operating position. Recommended handle position is close to the waist with arms extended down. Lock the cam release lever into position. **NOTE:** *The hardened steel cam release lever does not require extreme tightening to effectively hold the handle in position. Over-tightening will shorten the functional life of the lever. To remove drive block, brush or attachment: Lay the floor machine on its back again and disengage clutch plate slots from driving plate lugs by turning clockwise.*

## HOW TO OPERATE THE MACHINE

First install the pad driver and pad, brush or other attachments to be used. Plug the machine in as directed and lower the handle to the desired operating height and lock in place using the cam lever handle. Push the safety switch forward (*see picture #3*) and squeeze the switch triggers beneath the handle grips. This activates the motor and starts the block, brush or attachment in operation. Each time you release the triggers the safety switch will reset. You will need to follow the direction above to restart the machine. **CAUTION:** *When leaving the machine unattended, disconnect the wall plug and return the handle to the "locked" upright position to prevent accidental starting.*

## TO GUIDE YOUR FLOOR MACHINE

To Right: raise handle slightly. The higher the handle is lifted, the faster the machine will move to the right. To Left: to change direction, lower the handle until the machine travels to the left. The more the handle is lowered, the faster the movement to the left.

## TO INSTALL THE OPTIONAL SOLUTION TANK

Mount the solution tank to the front of the handle and attach with mounting brackets and knobs. Position the solution tank control handle horizontally and below the switch lever of the machine and adjacent to the right handle grip. Remove the plug from the motor housing and insert the (long) extension tube adaptor and secure at bottom of machine with the retainer. The solution tank should be used only with a showerfeed drive block or brush.

## TRANSPORTING THE MACHINE

Place the handle in the upright position. Lock the handle cam release lever. Tip the machine back and transport on the wheels.

## MAINTENANCE

Once a month remove the motor cover and vacuum out any dust or debris which has accumulated on the motor. Replace the motor cover by setting it over the holes in the housing and replace all of the screws. Check and maintain the tightness of all the fasteners.

**WARNING:** Do not over-tighten the switch housing screws.

Keep the machine clean especially at the handle tube and collar so the handle tube will move freely through the collar. Inspect the cord for cuts, gashes, or loose prongs; replace as needed. Disassembly of this motor voids the warranty. Improper disassembly and assembly of this motor can permanently damage the field or rotor.

