

Powr-Flite[®]

COMMERCIAL FLOOR CARE EQUIPMENT

Operator's Manual



Standard and High Speed Floor Machines

Standard Speed, 175 RPM

M201-3, M171-3, P131-3

Standard Speed Heavy Duty, 175 RPM

M201HD-3, M171HD-3

Dual Speed, 175/320 RPM

M202-3, M172-3

Sander, 175 RPM

M171SD-3

Powr-Flite[®]
COMMERCIAL FLOOR CARE EQUIPMENT

A Tacony Company

Fort Worth, Texas 76140-1710
Call Toll-Free (800) 880-2913

U.S. Patent Number 4,756,042
U.S. Patent Number 296,251

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

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.

- Only replace the supply cord with the type specified in the instructions.
- Regularly examine the supply cord for damage, such as cracking or ageing - if damage is found, replace the cord for further use.
- A large diameter brush or dry buffing may not be used for general polishing.
- The appliance is designated for use with brushes as specified by the manufacturer - fitting of other brushes may impair appliance safety.

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 (MODELS M201-3, M171-3, M201HD-3, M171HD-3 and P131-3) 175 RPM ONLY

The *Powr-Flite* 175 RPM floor machine will operate in a wide variety of applications. 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.

APPLICATION OF POWR-FLITE HEAVY DUTY 175 RPM FLOOR MACHINES (MODELS M201HD-3 and M171HD-3)

The heavy duty standard speed floor machine may 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 M201HD-3 & M171HD-3 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.

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.*

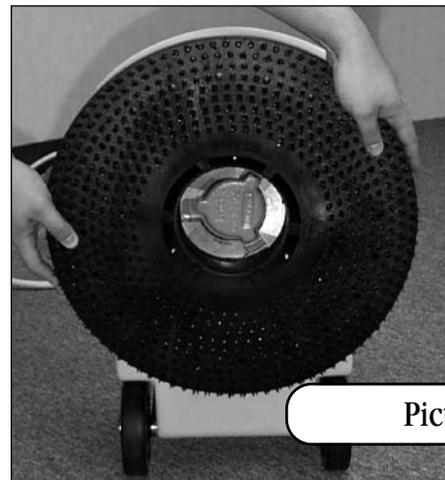
TO GUIDE YOUR FLOOR MACHINE

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.

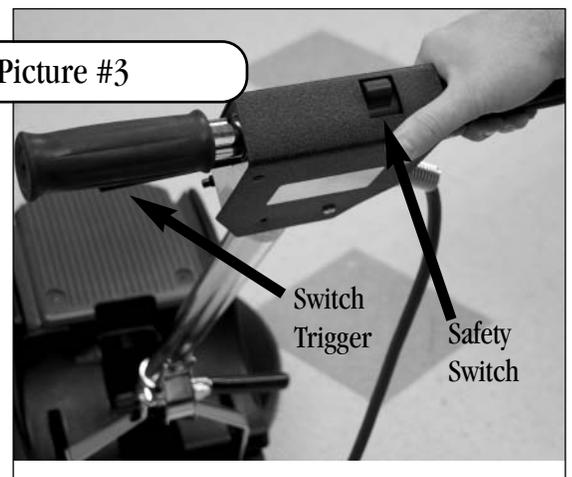
Picture #1



Picture #2



Picture #3



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.

APPLICATION OF THE DUAL SPEED 175/320 RPM MACHINES (MODELS M202-3 and M172-3)

The *Powr-Flite* dual speed machines will operate in a broad range of applications. These machines perform all the applications of the 175 RPM standard speed machines and the 300 RPM high speed machines except the specialized applications.

Do not use dual speed machines for sanding, grinding or scraping.

The dual speed machines are specially designed for spray cleaning of heavy traffic areas.

OPERATION OF THE DUAL SPEED MACHINES

Follow the operation procedures described for 175 RPM machines.

The proper speed selection is important to properly operate these machines. Speed selection Low (175 RPM) or High (320 RPM) is made with the switch located on the base and motor housing.

(See **Picture #4**) Stripping, scrubbing, bonnet cleaning and shampooing should be performed at 175 RPM Low Speed. Spray buffing and dry buffing should be performed at 320 RPM, High Speed. Spray cleaning is a two speed maintenance operation. Apply a spray buff chemical to the floor ahead of the machine. Make the first passes through the spray buff at low speed with an open weave blue cleaner pad or the brown hoghair blend spray cleaner pad. Remove the spray cleaning pad and place a buffing pad on the machine, yellow, beige or natural hoghair blend pads. Switch the speed to High 320 RPM and buff the dulled finish to a high gloss. Unplug the power cord and wrap it under the cord hook and over the right handle grip. Clean the cord off to prevent heavy soiling and cleaning residues from building up on the cord. This is a good time to inspect the cord for cuts, gashes and loose prongs. Tip the machine back and remove the pad and the drive block or brush. The condition of the floor pad or brush has a direct affect on the performance of your floor machine. When the pad becomes dirty, turn it over and use the other side. When finished, wash the pad or brush and allow it to dry com-

pletely before using it again. Stand the wet brush on the bristles until dry, then hang up the brush.

Do not store the machine with the drive block, pad or brush on the machine.

Wipe off the machine housing and wheels to prevent build-up of unnecessary residue.

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 FOR THE M201-3, , M171-3, P131-3, M201HD-3, M171HD-3, M202-3 and M172-3

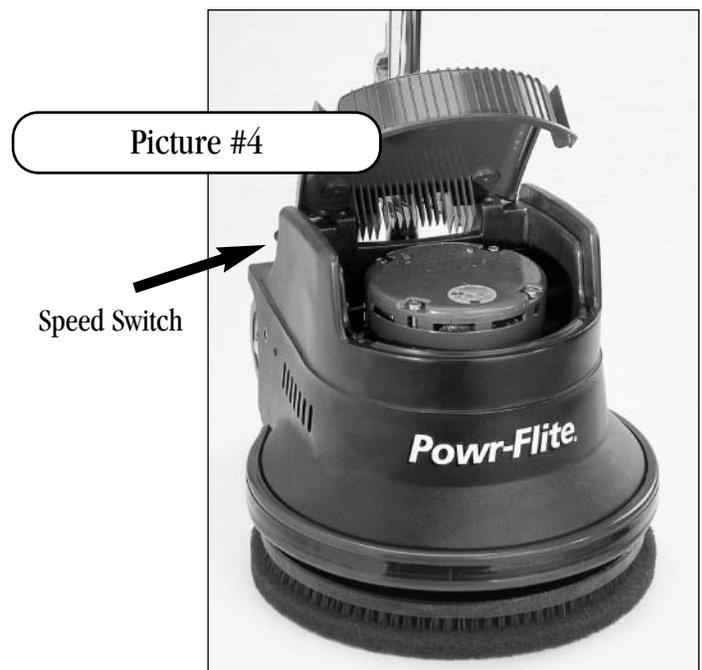
Once a month remove the motor cover and vacuum out any dust or debris which has accumulated on the motor. Replace the motor cover by setting it over the holes in the housing and replace all of the screws. Check and maintain the tightness of all the fasteners.

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.

For M202-3 & M172-3 only: The length of the carbon brushes should be inspected annually. If they are no longer extended past the holder window, they should be replaced. Replacement of the carbon brushes should only be done by a qualified service technician.



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.
Rectifier is defective. Replace rectifier (M202-3 and M172-3 only).

Machine will not reach operating speed.

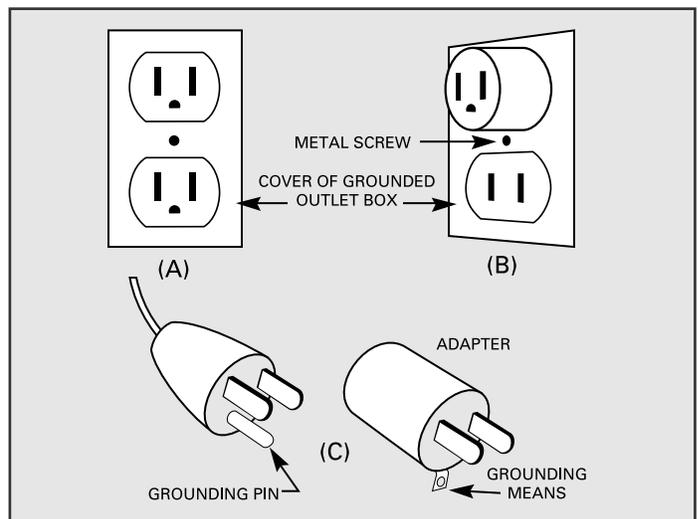
Unplug anything else other than the machine from the circuit or locate another circuit.

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.

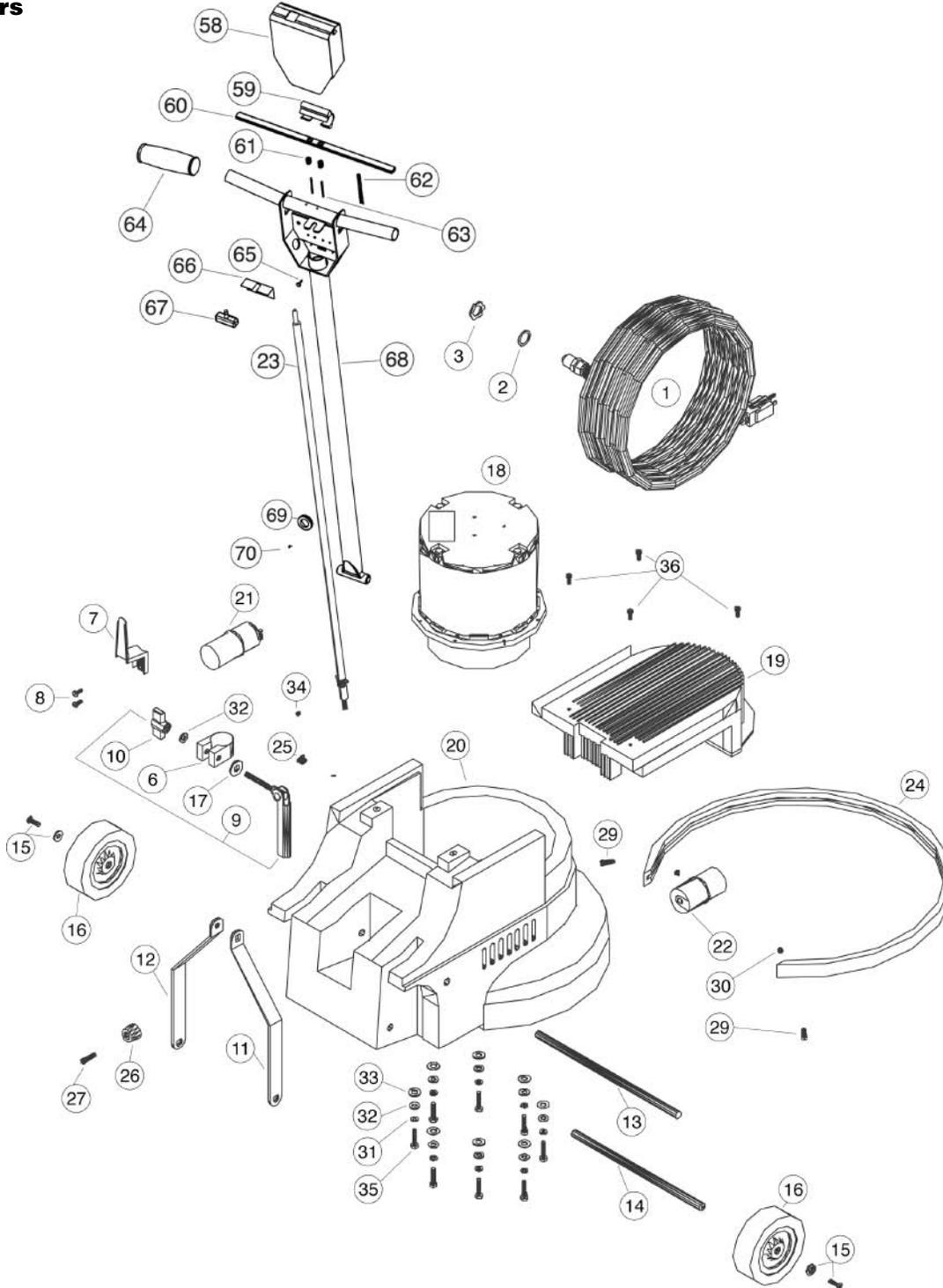


ONE LAST REMINDER! READ ALL INSTRUCTIONS, WARNINGS AND CAUTIONS BEFORE USING EQUIPMENT.

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.

**Models M171-3, M171HD-3,
M171SD-3, M172-3, M201-3,
M201HD-3, M202-3, and 2003
Polishers**



ref	order	description
1	M1369GS	14/3 stwa, 50' gray cord with strain relief
2	SR36	strain relief washer
3	X8008N	nut, lock, 1/2" steel conduit
6	X8012	clamp, collar, handle
7	X8013	cord hook, plated
8	X8207	screw, 10-24 x 1/2", phph, type "f"
9	X8012A	handle tube clamp lever assembly (excludes clamp collar)
10	X8016	knob, plastic, handle release
11	X8807R	handle brace, right
12	X8807L	handle brace, left
13	X8809	pivot shaft, 1/2" x 12-7/8"
14	X8019	axle wheel

ref	order	description
15	X8020	washer for axle
	X8265	bolt for axle
16	X8024	wheel 5" x 1 1/4"
17	X8028	washer, cam, w/slot
18	X8910	1 hp gear motor assembly
	X8953	start capacitor 450 UF 125V
	X8954	run capacitor 50 UF 370V
	X8909	1.5 hp gear motor assembly
	X8955	HD and SD models start capacitor 380 UF 125V
	X8956	HD and SD models run capacitor 60 UF 370V
		HD and SD models

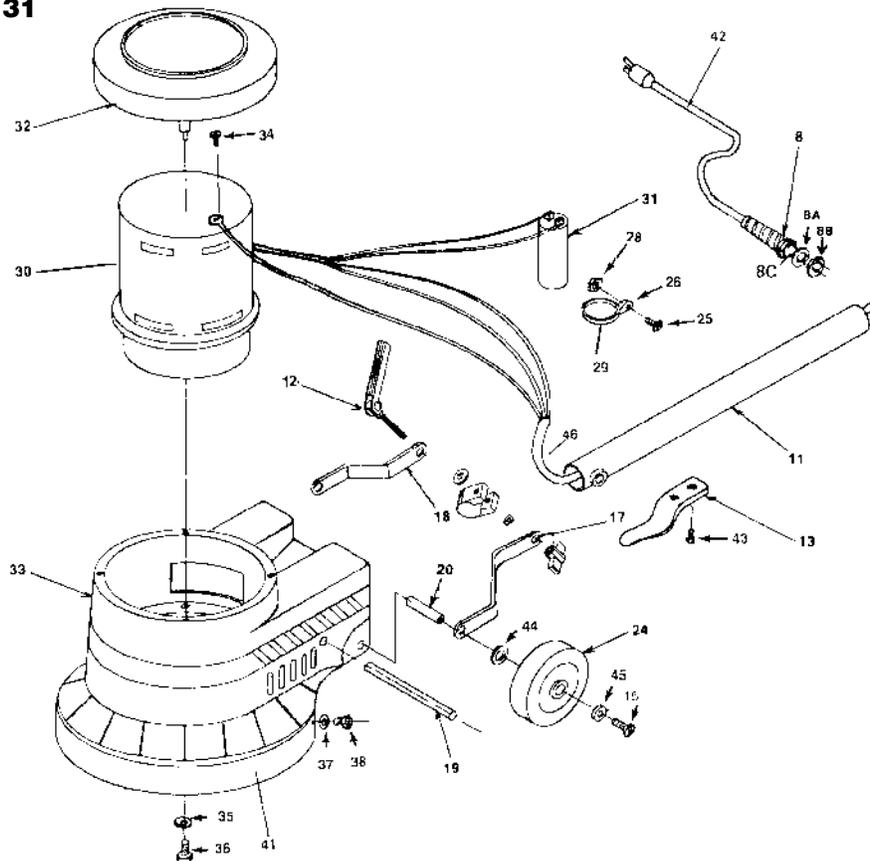
ref #	order	description
19	X8042A	motor cover
21	X8040	590 UF, 125V start capacitor for Doerr 1 HP 175 RPM motor
21	X8046	35 UF 370V run capacitor for Doerr 1-1/2 HP Doerr Model #R07559 & G51400
21	X8056	310 UF 125V start capacitor for 1 1/2 HP Doerr Model #R07559 & G51400
23	X8022	cord, in-line 14/3 sjtwa 49"
24	X8030I	bumper 38.25" blu/blk
25	X8151B	plug, plastic, 7/16" hole
26	X8258A	bumper, blk, 1.13" od x .75" h
27	X8258AS	#8 x 1" phph type "a"
28	X8278	3-32 x 1/2" phph, black oxide
29	X8821	screw, 8-32 x 3/4", thph, blk plated (2)
30	X8822	spacer, plastic blk, #8 x .25 (2)
31	X8212	1/4" spring lock washer
32	X8218	washer, flat, SAE 5/16"
33	X8219	3/8"SAE flat washer
34	X8222	1/4-20 x 3/16" socket set

ref #	order	description
35	X8226	1/4-20 x 1 1/4 hex head cap
36	X8272	screw, 8-32 x 1/2", truss/ph (4)
58	X8912	switch box cover
59	X8914	thumb actuation release
60	X8917	handle trigger
61	X8916	trigger tension spring (2)
62	X8915	handle trigger thumb actuator spring
63	X8918	handle roll pin (2)
64	X8941	1" handle grip (2)
65	X8207	#10-24 screw (3)
	7CY001	lock washer (3)
66	X8923	insulation sheet
67	F5P	switch
68	X8911	1-1/2" dia. handle tube weldment
69	7BG004	7/16" diameter grommet
70	X8222	1/4-20 x 3/16" set screw

NOT ILLUSTRATED

PX7	Switch for M172-3, M202-3
PX28	Insulation boot for switch

Models P131-3, P131



ref	order	description
8	SR37	strain relief, metal
8A	X8100	counter nut
8B	X8228	spacer
8C	SR37A	brass sleeve strain relief
11	X8011B	handle tube, 1-1/2" w/bushings
12	X8012A	handle clamp assy
13	X8013	cord hook
15	X8210	wheel screw
17	X8027L	left brace
18	X8027R	right brace
19	X8018	pivot shaft
20	X8029	axle
24	X8025	4" wheel
25	X8202	8 - 32 x 1/2" pan bolt
26	X8150M	mount for capacitor strap
28	X8256	keep nut

ref	order	description
29	X8150	capacitor strap
30	X8059	motor and gear unit
31	X8039	340 MFD capacitor
32	X8041	motor cover
33	X8058	base housing, 13"
34	X8207	motor ground screw
35	X8152	D-washer
36	X8229	1/4"-20 x 3/4" phillips head screw
37	X8225	3/16" cut washer (2 req.)
38	X8208	10-24 x 5/8" phillips head machine screw (2 req.)
41	X8030E	30" bumper
42	M1400C	14/3 SJTWA cord, 50'
	M1400CS	14/3 SJTWA 50' cord with metal strain relief and flag terminal

ref	order	description
43	X8207	cord retainer screw (2 req.)
44	X8101	spring washer (2 req.)
45	X8020	axle washer
46	X8022B	handle line cord assembly
NOT ILLUSTRATED		
	X8108	wheel spacer
	X8222	1/4"-20x3/4" socket set screw for X8011 handle
	X8590	upper motor bearing
	F3P	motor coupling
	SW47	stationary switch
	X8210-1	short switch housing screw and nut
	X8220	long, switch housing screw



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