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Operation & Maintenance Manual

For Commercial Use Only



20" & 24" Floorkeeper "EZ"

MODEL NOS.
99125A, 99125B
99126 & 99130

NOTES

This illustrated parts book covers:

MODEL	20"	20"	20"	20"	24"
CAT. NO.	99125**	99125A**	99125B**	* 99126	99130**
VOLTS	36VDC	36VDC	36VDC	36VDC	36VDC
SERIES	L	L	L	L	L

* 32" Squeegee

**



All specifications are subject to change without notice.

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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 services 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 Years: <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 pro-rated.</i></p>

* Effective January 1st, 2001. Terms subject to change without notice.

1) Windshear™ Blower-Dryer, Insulation Blowers, 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 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 1000 hours of operation, whichever comes first.

3) All non-wear item parts purchased after warranty expiration are warranted for 90 days.

4) Warranty starts from date of sale to the consumer or, at Tornado's discretion, 6 months after dealer purchased the unit from Tornado, whichever comes first.

5) See limited 2-year pressure washer warranty.

**IMPORTANT SAFETY INSTRUCTIONS
FOR COMMERCIAL USE
WHEN USING AN ELECTRICAL APPLIANCE, BASIC PRECAUTIONS SHOULD ALWAYS BE
FOLLOWED INCLUDING THE FOLLOWING:**

READ ALL INSTRUCTIONS BEFORE USING THIS MACHINE



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

Do not leave machine when plugged in. Unplug from outlet when not in use and before servicing.

Use indoors only. Do not use outdoors, do not expose to rain.

Do not allow to be used as a toy. Use caution when operating near children.

Use only as described in this manual. Use only manufacturer's recommended accessories.

Do not use with damaged cord or plug. If charger is not working as it should, has been dropped, damaged, left outdoors, or dropped into water, return it to a Tornado Service Center.

Do not pull or carry by cord, use cord as a handle, close a door on cord, or pull cord around sharp edges or corners. Do not run machine over cord. Keep cord away from heated surfaces.

Do not unplug by pulling on cord. To unplug, grasp the plug not the cord.

Do not handle plug or machine with wet hands.

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

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

Turn off all controls before unplugging.

Also:

This machine is also suitable for commercial use, for example in hotels, schools, hospitals, factories, shops and offices for other than normal housekeeping purposes.



CAUTION: This machine is not suitable for picking up health endangering dust.

If foam/liquid comes out, switch off immediately.

Instructions for the water level limiting device to be regularly cleaned and examined for signs of damage.

Save These Instructions

This manual describes procedures for preparation, operation and maintenance of the following Breuer/Tornado® product:

- EZ 20"BD Floorkeeper (brush drive model)
- EZ 20" Floorkeeper (traction drive model)
- EZ 24" Floorkeeper (traction drive model)

BEFORE OPERATING MACHINE



WARNING: Failure to adhere to these instructions could result in serious bodily injury or property damage.

Read this manual completely before attempting to operate the machine. This manual has important safety information. This machine will provide years of satisfactory service if operated and maintained according to recommendations in this manual. If additional information is needed, please contact your local distributor or:

TORNADO INDUSTRIES	(708) 867-5100
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CHICAGO, IL 60656-3489	Fax: (708) 867-6968
	http://www.tornadovac.com

Important Safety Information

SAFETY FIRST!



WARNING: Charge batteries in a ventilated room. Gases given off during charging could ignite in a confined space. To avoid explosion, top cover should be open and battery caps installed when charging.



WARNING: Disconnect all positive and negative battery terminals before attempting any adjustment or maintenance. Brush, traction drive and vacuum motors and components can cause injury if accidentally started.



WARNING: Battery acid can cause injury to the eyes or burn skin. Wear protective goggles, face shield, gloves and clothing **BEFORE** filling or charging batteries.



WARNING: Make certain the main power switch is OFF before removing or installing pad or brushes.



CAUTION: NEVER operate the machine if you are tired, or under the influence of drugs and/or alcohol.



CAUTION: ALWAYS operate the machine while standing behind it.



CAUTION: Use care when working on electrical terminals. Short circuits can cause burns.



CAUTION: Back the machine down inclines or ramps. Do not store machine on inclines.



CAUTION: Use indoors only. Do not use outdoors.



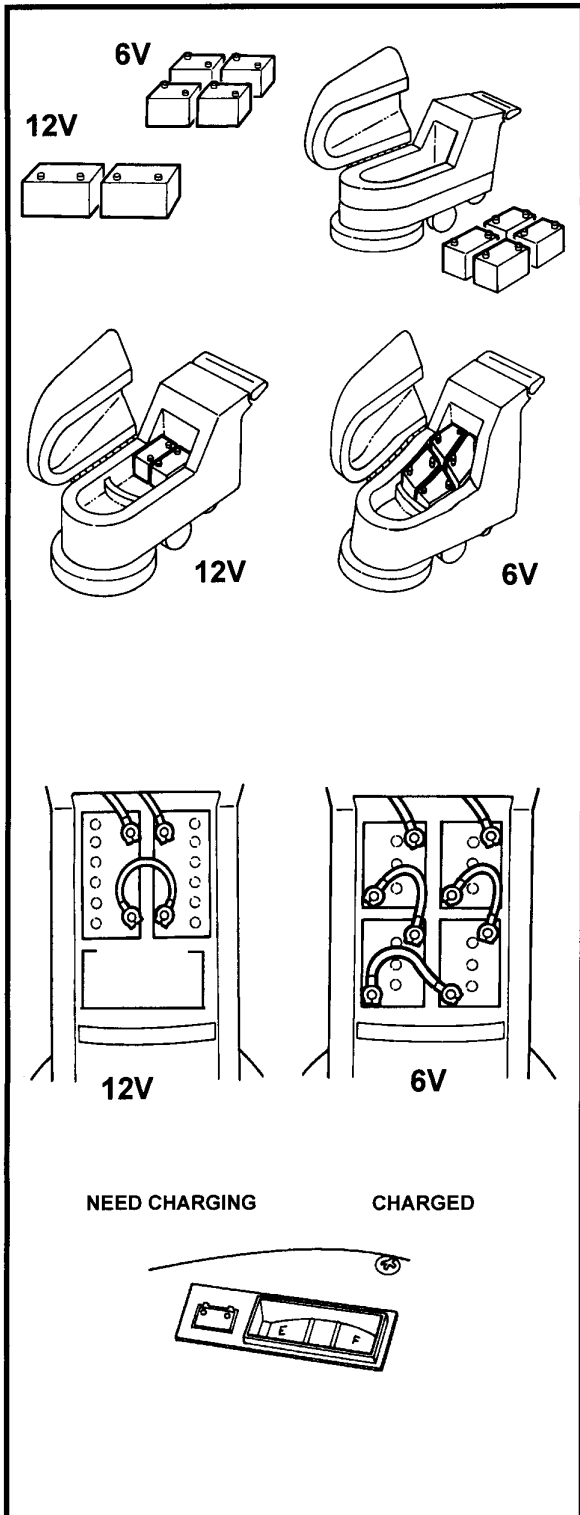
CAUTION: Do not allow to be used as a toy. Use extra caution when operating near children.



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

Machine Set-up

How To Install Batteries



CAUTION: Batteries are heavy. Use 2 people and lift them to avoid injury.

Install (2) 12-volt or (4) 6-volt batteries. New batteries should be given a full charge before first use. Limit use of new batteries during first 5 cycles.

- 1 Place batteries alongside machine.
- 2 Recovery tank should be empty. Lift the top cover to the open position.
- 3 Place batteries in tray. If you use (2) 12-volt batteries, position on rear of tray. Use the bracket to secure them.
- 4 Position them correctly.



CAUTION: Make sure you connect RED (+) cable terminals to positive (+) posts and BLACK (-) cable terminals to negative (-) posts. Machine will not operate if not connected properly. Failure to do so will result in damage to batteries and possible explosion.

- 5 Follow the diagram inside the top cover and connect all cables.
- 6 Spray each post with a protective lubricant. Place battery terminal protectors over all posts.

How To Charge Batteries



WARNING: Battery acid can cause severe burns. Wear protective goggles, face shield, gloves and clothing BEFORE filling or charging batteries.



CAUTION: Fill batteries with distilled or purified water only (1/4" to 1-1/2" above the lead plates). DO NOT use any other type of water or fluid in the battery.



CAUTION: DO NOT use metal containers to fill battery cells.



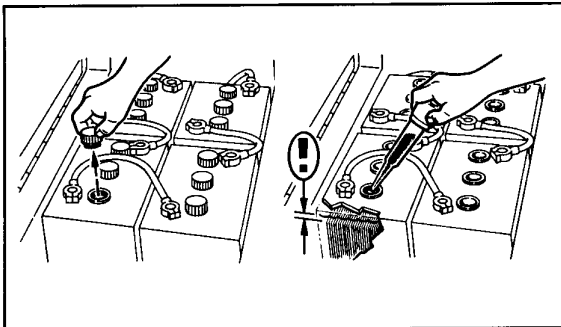
CAUTION: BEFORE charging batteries, put machine in a ventilated area and always leave machine top open.

NOTE: Give all new batteries a full charge before they are used.

NOTE: Limit extended use of new batteries during the first 5 operating cycles.

NOTE: Do not excessively discharge batteries. Excessive discharge can cause polarity reversal and complete failure of battery.

NOTE: Make sure the recovery tank is empty before charging batteries.




- 1 Open machine top.
- 2 BEFORE charging, remove all battery caps and inspect each cell. The lead plates should be completely covered with 1/4" to 1/2" of battery fluid.
- 3 If the plates are not covered with the proper amount of fluid, use a battery filling device and carefully add distilled or purified water. DO NOT overfill the cells. If you overfill, remove the excess fluid. Discard excess in accordance to local and state rules.
- 4 Check each cell for proper fluid level.
- 5 Replace all battery caps and tighten.
- 6 Use ammoniated window cleaner and spray top of batteries. Use a cloth and wipe the battery tops to remove and clean up spills.

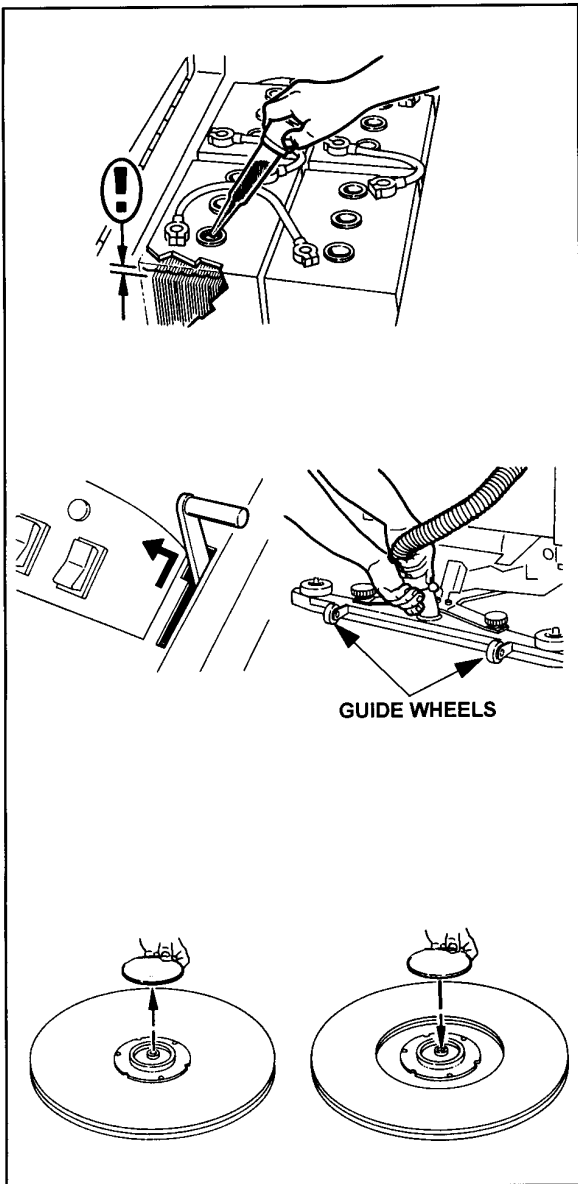


CAUTION: Only use a battery charger designed for the machine. Failure to do so can result in damage to the batteries.

- 7 Connect the charger Anderson Clip to the terminal located at the back of the battery compartment.

- 8 Plug the charger AC cord into a grounded wall outlet. The charger will automatically begin to charge the batteries.
- 9 Check to see if charger is working by looking at the charger amp meter. Batteries that need charging will show approximately 20 amps on the meter. Allow approximately 2-3 hours of charging for each hour you use the machine. Batteries that are charged will show approximately 7 amps on the meter, and will turn off automatically.
- 10 If the charger is still **ON** unplug the charger AC line from the wall. If the charger is OFF disconnect the Anderson plug from the unit.

	<p>CAUTION: If the charger is on unplug the charger from the wall outlet BEFORE you disconnect it from the machine. Failure to do so may result in damage to the machine and charger.</p>
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- 11 After batteries are charged unplug the charger from the wall outlet.
- 12 Disconnect the Anderson Clip from the machine.
- 13 Let the batteries cool down for at least 30 minutes.
- 14 Remove all battery caps and check the fluid level of all the cells. If necessary fill again. Make sure all plates are covered with at least 1/4" to 1/2" of distilled water.
- 15 Replace and tighten all battery caps.
- 16 Close top cover of the machine.

How To Install the Squeegee

- 1 Put squeegee position lever in the UP and locked position.
- 2 Position the squeegee blade assembly on the swing arm. Make sure the guide wheels face the **rear** of the squeegee.
- 3 Tighten the 2 thumb screws.
- 4 Place the solution recovery hose over the nozzle. Make sure it fits tight.

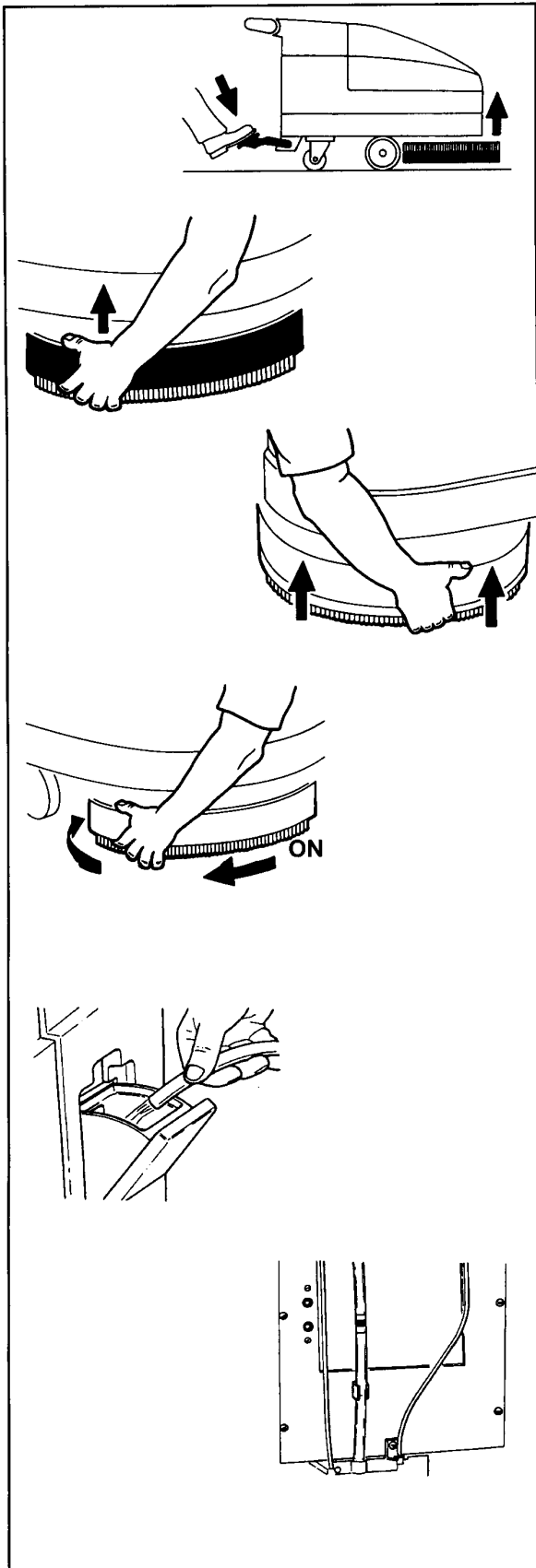
How To Install Pad Holder and Brush

The EZ uses 1 pad holder or 3 types of brushes.

	<p>CAUTION: Always use Breuer/Tornado plastic clutch plate in the center of the pad holder. Aluminum clutch plates are not recommended for use with EZ machines.</p>
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Installing the pad

- 1 Remove the center locking device located on the underside of pad holder/brush.



- Center the pad brush on top of the holder and replace the locking device. The locking device should be tight.

NOTE: The installation steps are the same for both pad holder or brush.

- Raise the brush pad by stepping on the round foot pedal at the rear of machine. You will hear a click when the deck is up and locked.
- Pull the splash guard up (black splash bumper).
- Kneel in front of the machine. Slide the pad holder/brush under the machine and hold the pad/brush with your hands in the 3:00 and 9:00 positions.
- Lift the pad holder/brush up and turn slowly clockwise until the pad/brush clutch engages the motor mount.
- If the pad/brush is installed correctly it will remain on the machine. If it drops after you have turned it, it is not installed correctly.
- To lower the brush/pad, step down completely on BOTH the round foot pedal and the square pedal next to it. When fully depressed, slide your foot to the inside to release the square pedal and SLOWLY let the round pedal raise to the UP position.
- Slide splash guard down around the entire brush housing. It should be slightly above the floor.

How To Fill the Solution Tank



CAUTION: DO NOT overfill. To prevent overfilling refer the clear tube located at the back of the machine. Never fill above the red line. Fill with water to the BLUE and GREEN line and then add your cleaning solution.

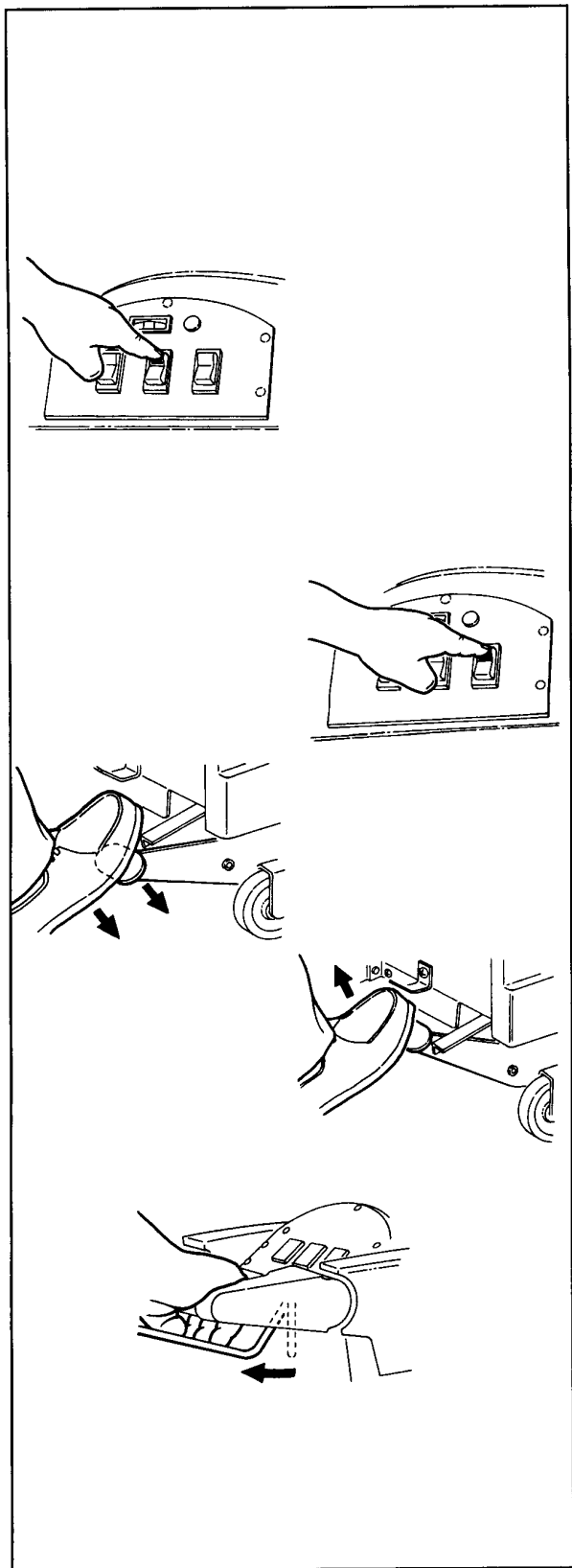
The EZ machine has a capacity of 13 gallons (50 liters).

- Open the solution fill chute.
- Fill the tank to the desired level with clean water.
- Add cleaning chemical.
- Check the level at the back of machine.

Final Installation and Set-up Checklist

- Batteries installed and charged
- Pad or brush installed
- Squeegee assembly installed
- Solution tank filled

How To Operate The Machine



How To Turn the Machine ON and OFF

- 1 Push the top half of the left switch down. This turns the main power switch ON. A red light indicates machine is ON.
- 2 To turn the main power switch OFF push the lower half of the left switch down. The red light is not lit when machine main power is OFF.

How to Turn the Brush Drive Motor ON and OFF

- 1 Push the top half of the middle switch down. This turns the brush drive motor ON.
- 2 To turn the brush drive motor OFF push the lower half of the middle switch down.



CAUTION: Turn off the brush motor when the brush deck is in the UP position.

How to Turn the Vacuum Motor ON and OFF

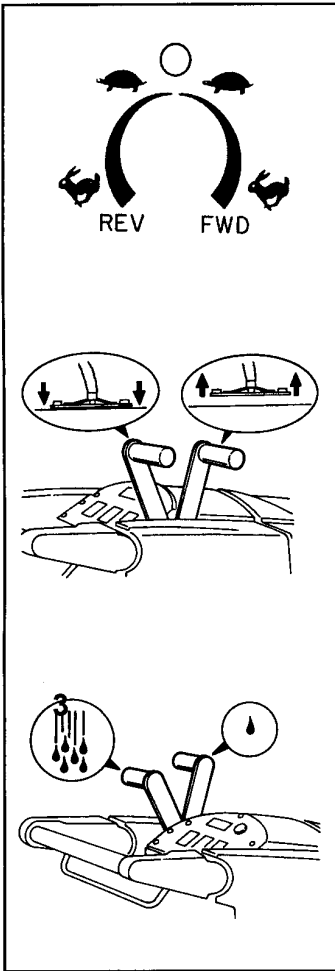
- 1 Push the top half of the right switch down. This turns the vacuum motor ON.
- 2 To turn the vacuum motor OFF push the lower half of the right switch down.

How to Lower/Raise the Brush/Pad

- 1 Hold the drive handle with both hands.
- 2 To raise the brush/pad, step down on the round foot pedal until you feel it lock.
- 3 To lower the brush/pad, step down completely on BOTH the round foot pedal and the square pedal next to it.
- 4 When fully depressed, slide your foot to the inside to release the square pedal and SLOWLY let the round pedal raise to the UP position.
- 5 With the brush head lowered, slide the splash guard down around the entire brush housing. It should be slightly above the floor.

How to Engage the Brush Drive (20" EZ BD)

- 1 Hold the drive handle with both hands.
- 2 Pull up on the Control Bar under the drive handle. This activates the brush motor and makes the machine go forward or reverse depending on the dial setting.



How to Engage the Brush Drive (20" & 24" EZ Traction Drive)

- 1 Hold the drive handle with both hands.
- 2 Turn the pot on the control panel clockwise (forward) or counter-clockwise (reverse).

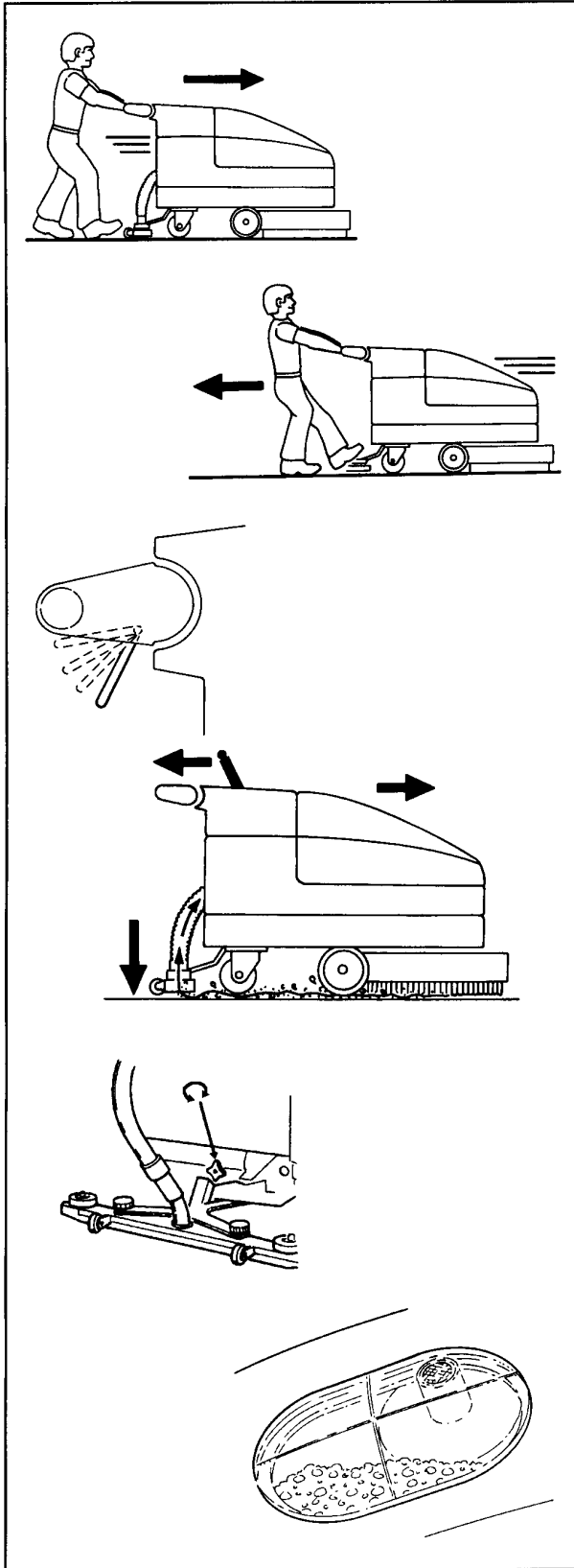
How to Lower/Raise the Squeegee

- 1 Pull the handle towards you to lower the squeegee.
- 2 To raise it, push the handle forward until it locks.

How to Set the Solution Flow

- 1 Pull the lever halfway to begin dispensing solution.
- 2 Adjust the solution flow. Use different settings of solution flow for different jobs.

What To Do When You're Operating Machine



How To Go Forward and Backward

(20" EZ BD)

- 1 Stand behind the machine.
- 2 Make sure the brush drive motor switch is ON.
- 3 Lower the brush head as described.

The machine will start to move forward in a straight line. To go backward, just pull the machine back.

(20 & 24" EZ Traction Drive)

- 1 Stand behind the machine.
- 2 Make sure the brush drive motor switch is ON.
- 3 Lower the brush deck as described.
- 4 Pull up on the Control bar under the drive handle. The Control Bar has 3 positions; The first position turns brush and vacuum motor on. The second and third positions are Low and High forward speeds.

The machine will start to move forward in a straight line. To go backward with only the brush/pad holder spinning just pull the machine back.

How To Steer the Machine

The machine is very easy to steer. Just point the machine in the direction you want to go. At the end of a long hallway or aisle, go slow and stand a bit to the side of machine as you turn it around. NEVER let go of the machine.

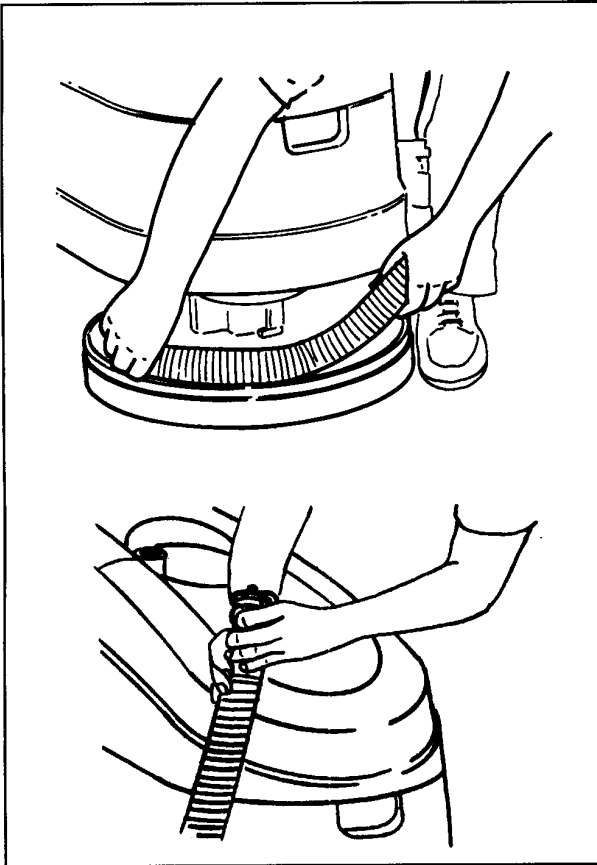
Vacuumping Up Solution

- 1 Make sure the squeegee is in the down position.
- 2 As the machine moves forward and solution is dispensed, the squeegee will vacuum it up into the recovery tank.
- 3 If necessary adjust squeegee pressure by turning knob.

If solution is missed, reduce the amount of solution flow and pull the machine back over the missed area. You can go forward or backward and pick up solution.

How To Control Excess Foam in Recovery Tank

Watch the liquid as it accumulates in the recovery tank. If you notice excess foaming, stop the machine. Add a small amount of chemical defoamer in the recovery tank.



How To Empty the Recovery Tank

The machine will automatically shut the vacuum motor OFF when the recovery tank is full of dirty water.

A red light comes on at the control panel.

- 1 Stop the machine by releasing the Control Bar and raising the brush drive housing.
- 2 Stop the solution flow.
- 3 Turn OFF all 3 power switches (brush motor, vacuum motor, main power).
- 4 Move the machine to an area that will allow you to empty the recovery tank into a floor drain or basin.
- 5 Lower the brush deck.
- 6 Remove the recovery tank drain hose from the front of the machine.
- 7 Raise the hose above the solution tank and remove the plug.
- 8 Put the hose over a drain or in a basin and remove the plug.
- 9 Empty the tank.
- 10 Replace the plug and tighten it.
- 11 Replace the hose and secure it with the clips.

Remember to fill the solution tank with fresh water before operating the machine.

Maintenance

Preventative Maintenance Schedule

Daily-

- 1 Empty and rinse the recovery tank with clean water. Leave the tank cover open on top to air dry.
- 2 Remove and clean pad or brush.



CAUTION: Avoid getting water into the vacuum intake with filter screen in the recovery tank.

- 3 Clean the filter screen located at the top of the vacuum inlet.
- 4 Remove the squeegee assembly, rinse and wipe clean. Check the squeegee inlet for clogs or debris.
- 5 Clean and wipe the tops of batteries with an ammoniated window cleaner.
- 6 Charge the batteries as described in this manual.

Weekly-



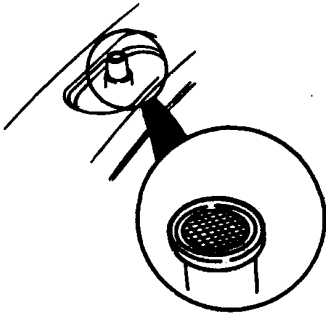
CAUTION: Never test the strength of the battery unless it is fully charged and cool.

Check the battery cells with a hydrometer.

- 1 Insert the end of the hydrometer into the cell fluid.
 - If the reading is green, the cell is good.
 - If the reading is white, the battery needs more charge time.
 - If the reading is red, the cell and battery is weak or discharged.

Monthly-

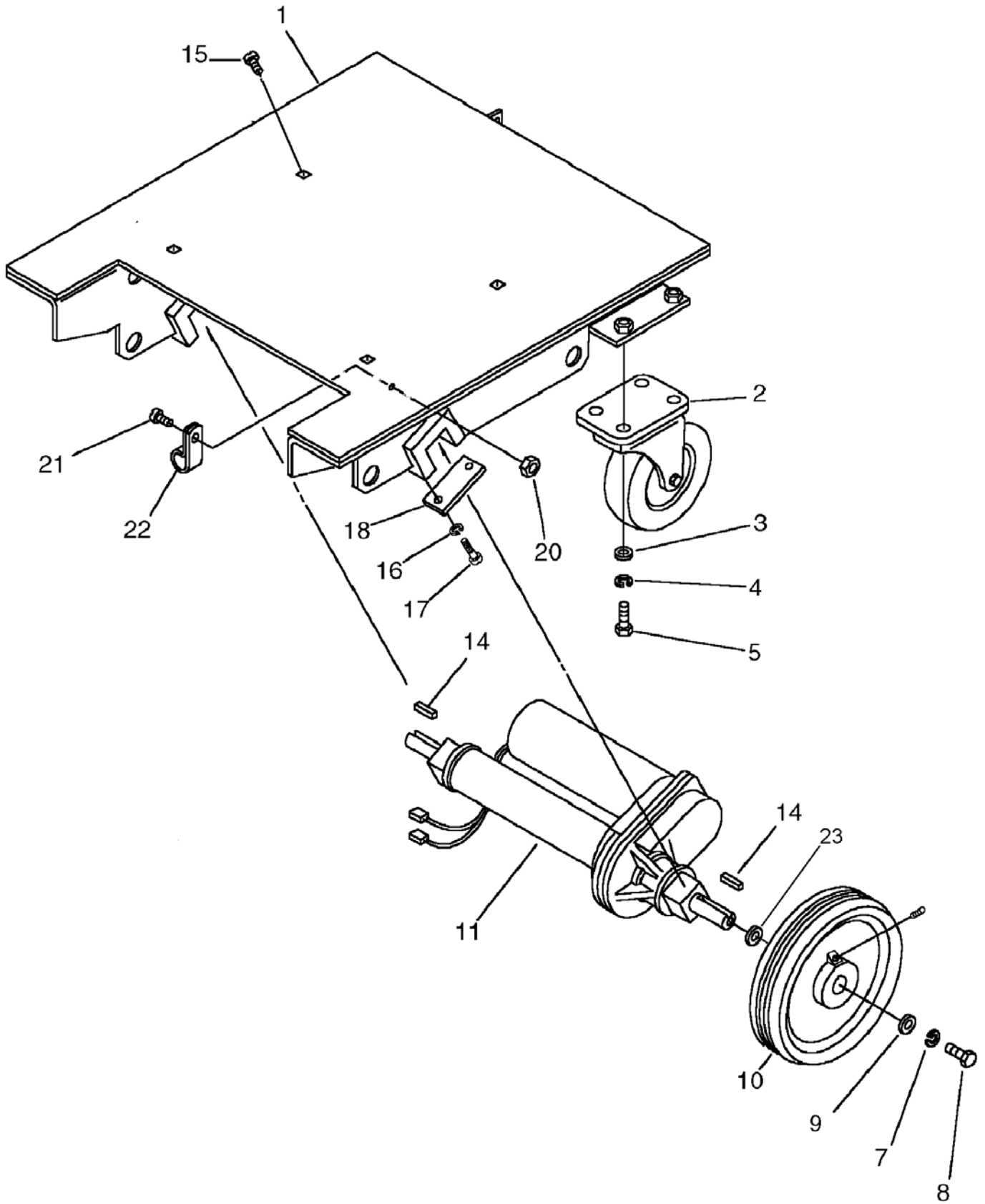
- 1 Lubricate brush and squeegee lift mechanisms with light oil.
- 2 Check for wear or damage of clutch plate, brushes, pads, or squeegee blades.
- 3 Clean all battery terminals.
- 4 Check all electrical connections and tighten if any are loose.
- 5 Clean the entire machine with all purpose cleaner.



Problems During Operation

<p>Problem: Solution is not being picked up</p>	<p>Possible Cause: Vacuum motor is not running Vacuum filter is clogged Recovery tank is full Squeegee or vacuum hose is clogged, broken or disconnected Bad seal at tank cover, vacuum motor or squeegee Worn or misaligned squeegee blades Incorrect squeegee pressure Squeegee swing arm mechanism not functioning properly</p>
<p>Problem: Squeegee is leaving streaks</p>	<p>Possible Cause: Debris is on blade Blades are torn or damaged Floors not properly swept before cleaning</p>
<p>Problem: Solution is not feeding or turning off properly</p> <p>Problem: Batteries are not holding a charge</p>	<p>Possible Cause: Clogging of hose or valve</p> <p>Possible Cause: Batteries need to be replaced High current draw from high brush pressure Charger needs servicing Battery is run down</p>
<p>Problem: Floors are not being scrubbed, stripped or buffed properly</p>	<p>Possible Cause: Brush motor not working Excessive pad or brush wear Going too fast over dirty spots Inadequate solution feed Inadequate cleaning procedure</p>

TRACTION DRIVE ASSEMBLY

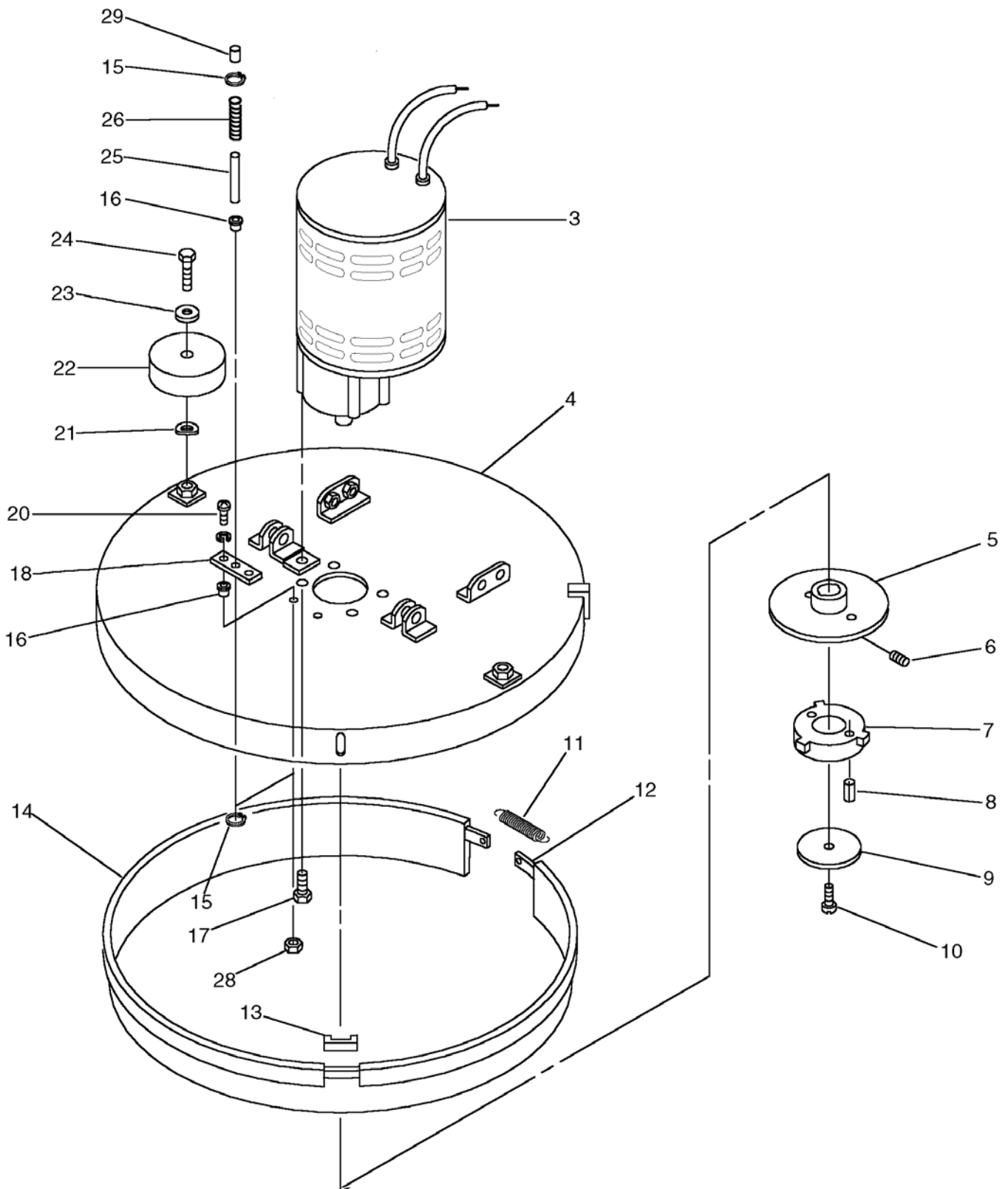


TRACTION DRIVE ASSEMBLY

Item No.	Qty.	Part No.	Description
1	1	19283	Weldment, Chassis Frame
2	2	18079	Caster
3	8	03301	Washer, Plain 5/16"
4	8	01577	Lockwasher 5/16"
5	8	18111	Screw
7	2	03536	Lock washer 3/8"
8	2	18104	Screw
9	2	03321	Washer, Plain 3/8"
10	2	18509	Wheel w/Set Screw
11	1	19258	Transaxle
14	2	18115	Key
15	4	16031	SCREW-HEX HD CAP 5/16-18 X 1-1/2 (ZP)
16	4	01574	Lock washer, 1/4" (H/S)
17	4	05427	Screw, Rd. Hd. 1/4" 20 x 5/8"
18	2	19294	Retainer, EZ Transaxle
20	4	02956	#8 - 32 Lock Nut
21	4	10892	#8 - 1/2" Lock Screw
22	4	18309	5/8" Dia. Cable Clamp
23	2	03960	Washer-Plain 25/32 ID (ZP)
*	2	24422	Brush, Carbon (Transaxle)
*	2	24423	Cap, Brush (Transaxle)

* Not Shown (Service Only Items)

BRUSH MOTOR & COVER

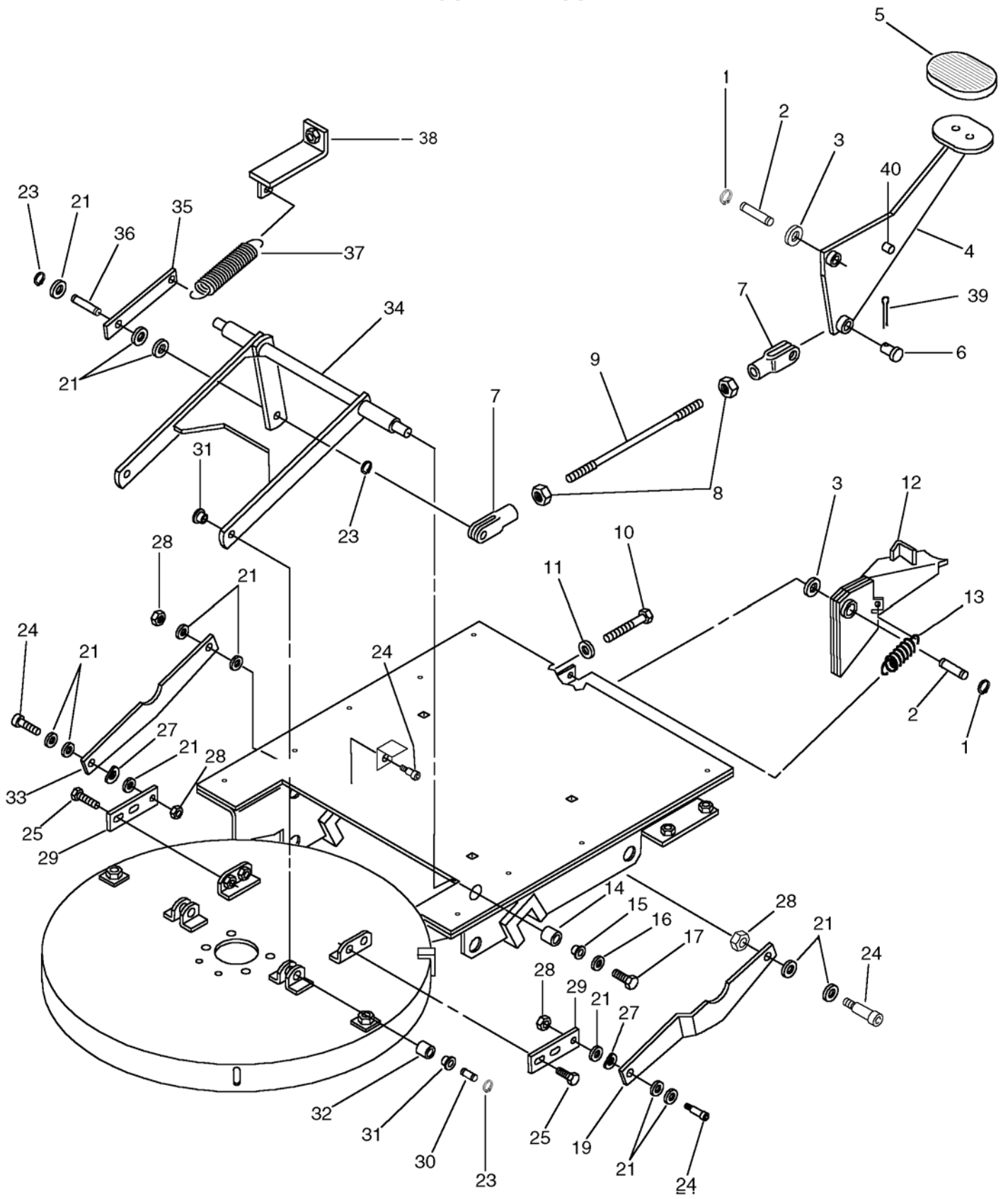


BRUSH MOTOR & COVER ASSEMBLY

Item No.	Qty.	Part No.	Description
3	1	18076	Motor, 1 HP
4	1	18148	Brush Cover, 20" (Model 99125 & 99126 Only)
*4	1	18149	Brush Cover, 24" (Model 99130 Only)
5	1	18388	Plate, Brush Retainer
6	1	14241	Set Screw
7	1	18389	Plate, Brush Retainer
8	2	18390	Pin
9	1	18640	Plate, Clutch Retaining
10	1	18391	Screw
11	1	16472	Spring
12	1	18159	Bumper Strap, 20" (Model 99125 & 99126 Only)
*12	1	18160	Bumper Strap, 24" (Model 99130 Only)
13	2	17733	Keeper
14	1	18161	Bumper, Brush Cover 20" (Model 99125 & 99126 Only)
*14	1	16162	Bumper, Brush Cover 24" (Model 99130 Only)
15	2	03947	Retaining Ring
16	2	16347	Bearing, Flanged
17	4	16671	Screw
18	1	18558	Plate, Bearing Retaining
20	2	00600	Screw
21	2	07132	Washer, Wave
22	2	03264	Wheel
23	2	03736	Washer
24	2	18130	Screw
25	1	18165	Pin
26	1	06838	Spring, Compression
28	2	02956	Nut
29	1	18593	Cap

*Not Shown

BRUSH LIFT ASSEMBLY

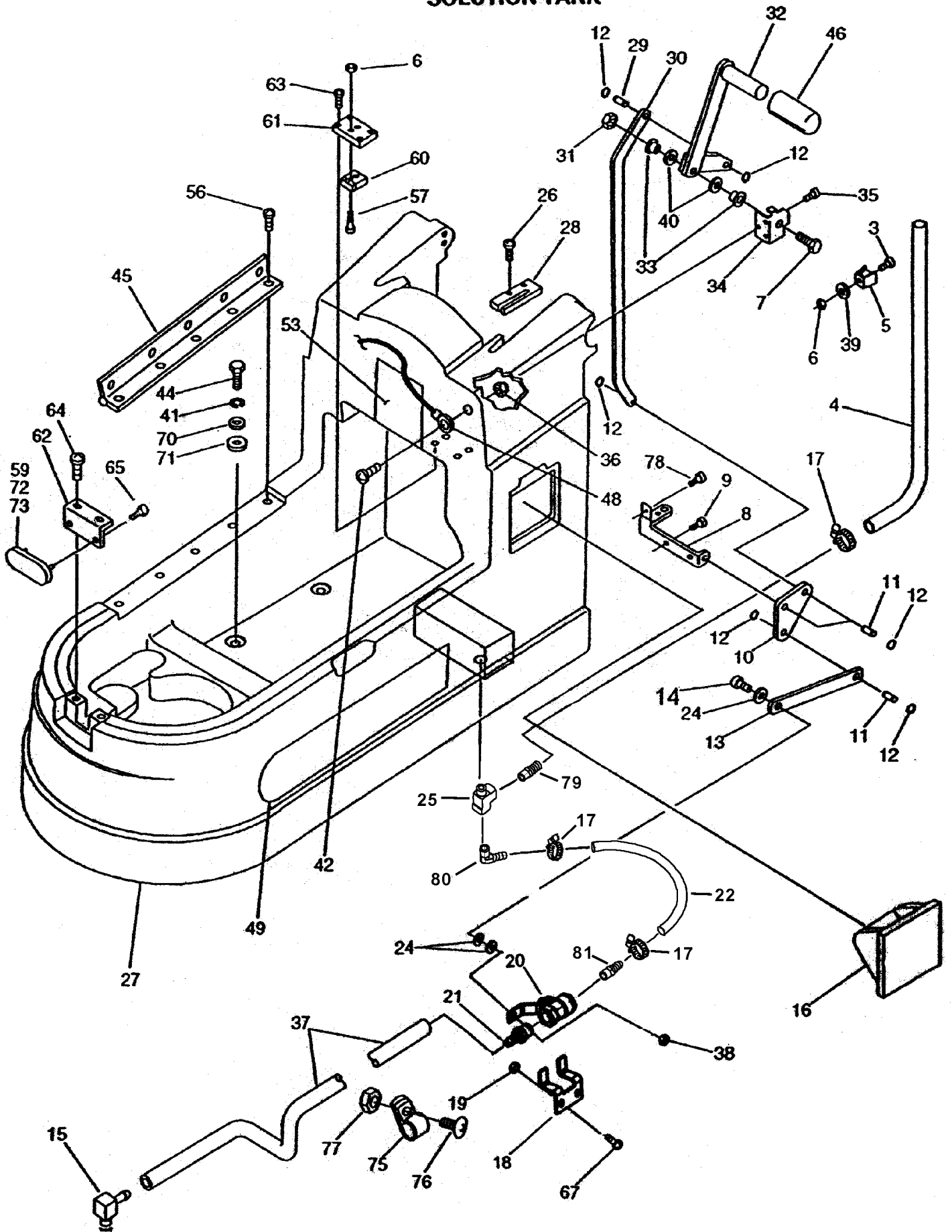


BRUSH LIFT ASSEMBLY

Item No.	Qty.	Part No.	Description
1	4	02663	Retaining Ring
2	2	18122	Pin
3	4	16581	Washer-Plain ½" ID (ZP)
4	1	18196	Weldment, Brush Lift Pedal
5	1	18203	Pedal Mat
6	1	18083	Clevis Pin
7	2	18081	Clevis
8	2	18093	Nut
9	1	18191	Oft Rod
10	1	18399	Screw – (20" Models 99125 & 99126 Only)
11	1	02568	Washer – (20" Models 99125 & 99126 Only)
12	1	18758	Weldment Brush Release Latch
13	1	18126	Spring
14	2	18179	Bearing
15	2	03955	Bushing
16	2	03321	Washer
17	2	16671	Screw
18	2	12554	Washer, Nylon
19	1	18185	Arm, Left Hand – (20" Models 99125 & 99126 Only)
*19	1	18186	Arm, Left Hand – (24" Model 99130 Only)
20	1	18107	Spacer
21	13	03736	Washer – (20" Models 99125 & 99126 Only)
*21	10	03736	Washer – (24" Model 99130 Only)
22	1	18165	Pin
23	8	03947	Retaining Ring – (20" Models 99125 & 99126 Only)
*23	6	03947	Retaining Ring – (24" Model 99130 Only)
24	3	15677	Screw, Shoulder
25	4	18872	Screw
27	2	07132	Washer, Wave
28	3	01589	Nut
29	2	18164	Plate, Adjustment
30	2	18163	Pin
31	4	16347	Bearing, Flange
32	2	18195	Bearing, Sleeve
33	1	18166	Arm, Right Hand – (20" Models 99125 & 99126 Only)
*33	1	18167	Arm, Right Hand – (24" Model 99130 Only)
34	1	18184	Weldment, Brush Eddied – (20" Models 99125 & 99126 Only)
*34	1	18193	Weldment, Brush Lift – (24" Model 99130 Only)
35	1	18403	Link - (20" Models 99125 & 99126 Only)
36	1	18405	Pin - (20" Models 99125 & 99126 Only)
*36	1	18083 & 03395	Pin – (24" Model 99130 Only)
37	1	18398	Spring - (20" Models 99125 & 99126 Only)
38	1	18397	Weldment, Adjustment - (20" Models 99125 & 99126 Only)
39	1	03395	Cotter Pin
40	1	19078	Pin-Spring

*Not Shown

SOLUTION TANK



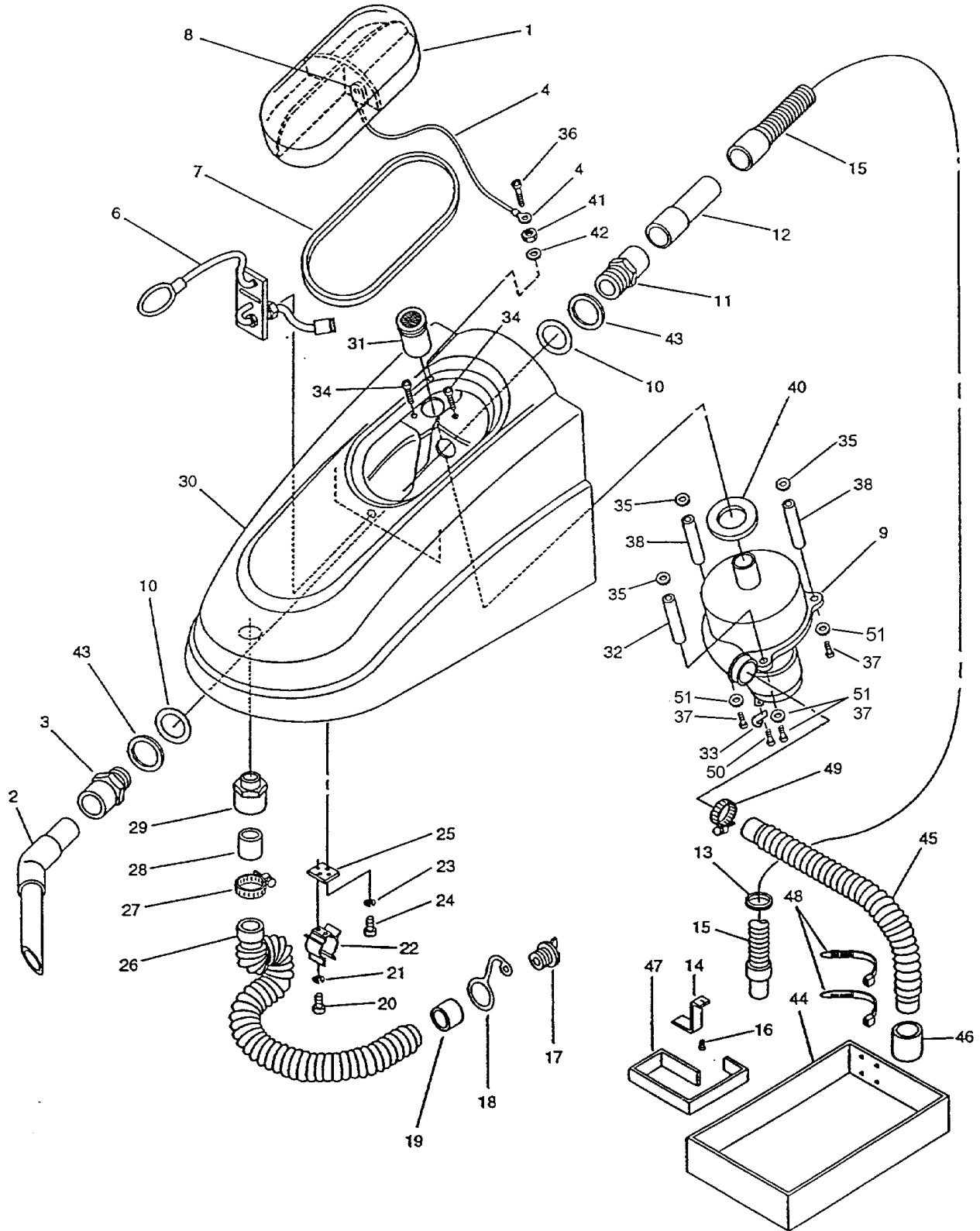
SOLUTION TANK ASSEMBLY

No.	Qty	Part No.	Description	No.	Qty	Part No.	Description
3	3	00128	Screw	59	2	17376	Nut (Included with Item #72)
4	1	32231	Drain Tube	60	1	18237	Charger Connector
5	2	18230	Clip, Sight Tube	61	1	18239	Connector Mtg. Plate
6	3	02956	Nut	62	1	18240	Light Mtg. Bracket (Included with Item #72)
7	1	03320	Screw	63	4	18253	Screw
8	1	18652	Solution Control Bracket	64	2	18309	Screw
9	2	04442	Screw	65	2	18336	Screw (Included with Item #72)
10	1	18328	Plate, Solution Control	67	2	05427	Screw
11	3	18261	Pin	*68	1	18849	Decal-Wiring Diagram
12	8	18316	Retaining Ring	70	4	18642	1/4" Flat Washer
13	1	18329	Bar, Lower Link	71	4	03321	Washer-Plain .391 ID (ZP)
14	1	15677	Screw, Shoulder	72	1	18859	Warning Light Assembly Kit (Includes items 59, 62 & 65)
15	1	18486	Fitting	73	2	15639	Bulb (For Warning Light P/N 18859)
16	1	18457	Fill Door	75	2	18717	5/8" Dia. Cable Clamp
17	3	07626	Clamp	76	2	18309	Screw #10-24
18	1	18684	Bracket Sol. Valve Clamp	77	2	10892	Nut, #10-24
19	2	07533	Nut	78	1	19945	Screw-Truss Head 1/4"-20 x 5/8"
20	1	31253	Valve, Solution Release	79	1	31649	Fitting, 3/8 NPT x 5/8" Barbed Hose
21	1	18485	Fitting	80	1	31647	Elbow Fitting, 3/8 NPT x 1/2" Barbed Hose
22	1	31646	Solution Tube 1/2" ID, 13" long	81	1	31645	Fitting, 3/8 NPT x 1/2" Barbed Hose
24	2	03736	Washer				
25	1	31648	Runtee Fitting, 3/8 NPT				
26	2	18253	Screw				
27	1	18207	Solution Tank				
28	1	18466	Plate, Control Handle Stop				
29	1	18262	Pin				
30	1	18330	Bar, Upper Link				
31	1	03868	Nut				
32	1	18319	Weldment, Solution Control Handle				
33	2	16347	Bearing, Flange				
34	1	18249	Bracket, Handle Pivot				
35	3	16136	Screw				
36	2	10894	Locknut				
37	1	18431	Solution Tube - 20" (Model 99105, 99125 & 99126 Only)				
*37	1	18433	Solution Tube - 24" (Model 99130 Only)				
38	1	01589	Nut				
39	1	01246	Washer				
40	2	16581	Washer				
41	4	01577	Washer				
42	2	18339	Screw				
44	4	16031	Screw				
45	1	18229	Hinge				
46	1	18251	Grip				
*47	1	18308	Access Panel				
48	1	18359	Stop Cable				
49	1	30816	DECAL-TORNADO W/ LOGO				
53	1	18377	Decal, Battery Maintenance				
*54	1	18381	Decal, C.B. Identification				
*55	1	15734	Decal, Level Gauge				
56	10	06192	Screw				
57	2	14544	Screw				
*58	1	30812	Decal Tornado				

*Not Shown

Special service note: All solution drainage tube components (see diagram opposite) between the Solution Tank (item 27) and the forward Solution Tube (item 37) are also available as a Solution Hose Kit #31657. Except for existing hose clamps, this Kit includes all needed drainage components between the Solution Tank and the forward Solution Hose (diagram items 25, 79, 80, 22, 81, 20, 21, & 18). The Kit offers better flow and reliability than any previous subsystem, and is intended as a retrofit for any Series "D" EZ's using an inline filter, as well as all earlier Series machines.

RECOVERY TANK w/VAC MOTOR



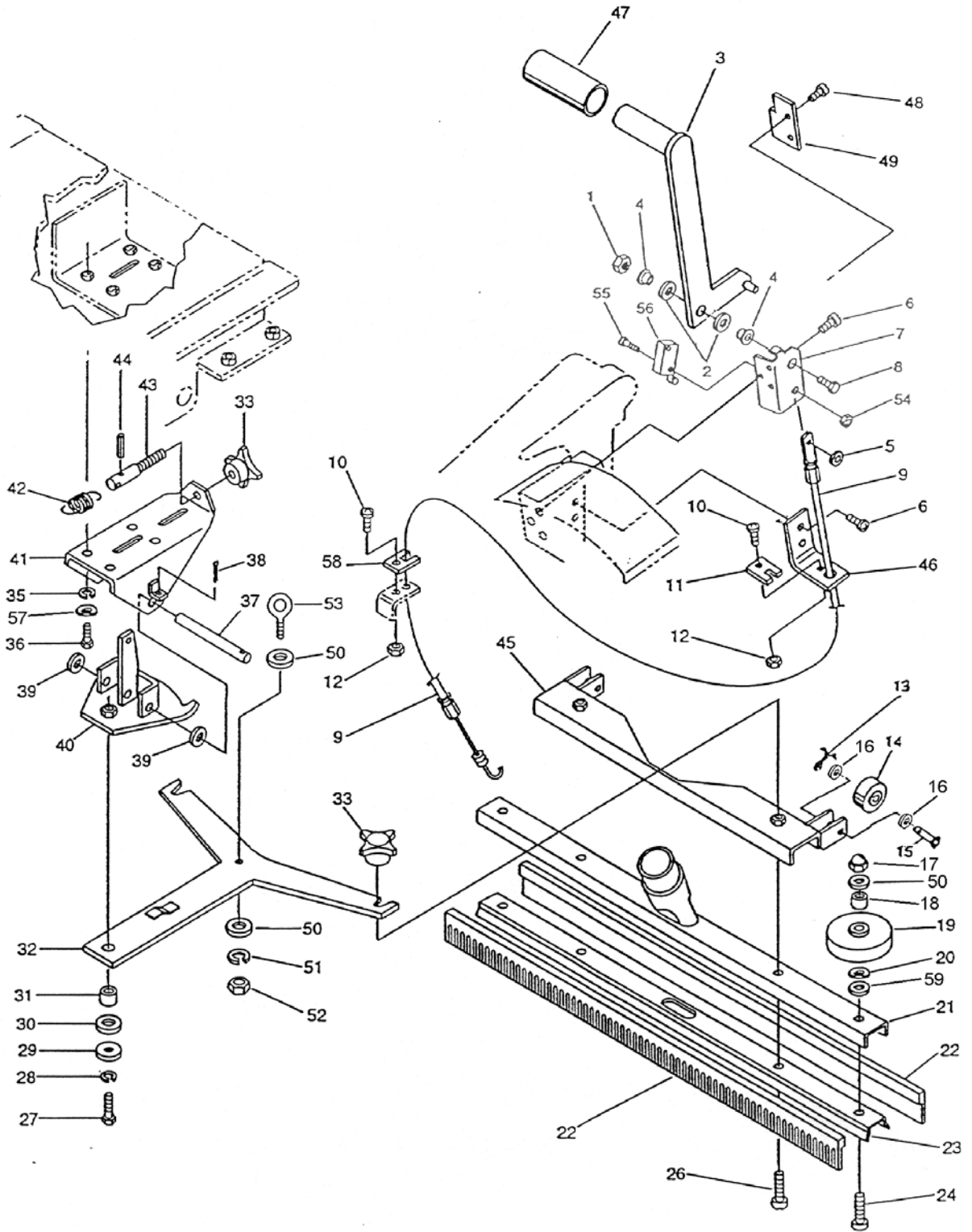
RECOVERY TANK w/VAC MOTOR ASSEMBLY

Item No.	Qty.	Part No.	Description
1	1	18741	Access Cover, Recovery Tank
2	1	18799	Deflector, Intake
3	1	15088	Adaptor Fitting
4	1	18789	Cover Retaining Cable
6	1	18887	Float Assembly
7	1	18742	Gasket
8	1	18790	Cable Clasp
9	1	31235	Assembly-Vac. Motor
10	2	05781	Gasket
11	1	15096	Fitting, Female Adapter
12	1	18259	Sleeve, Hose
13	1	18477	Grommet-Rear Panel
14	1	18241	Bracket Hose Support
15	1	18747	Hose, 1 1/2"
16	2	18253	Screw-T.F.PLT60, Pan Head #8-16 X 3/4"
17	1	18226	Plug
18	1	18358	Strap, Hose Plug Retainer
19	1	18357	Sleeve, Recovery Drain
20	6	01734	Screw
21	6	01246	Lockwasher
22	3	18671	Clip, Drain Hose
23	6	01905	Lockwasher
24	6	01993	Screw
25	3	18439	Plate
26	1	19286	Hose, 1 1/2"
27	1	16091	Clamp, Hose
28	1	18401	Sleeve
29	1	18052	Fitting, Male Adapter
30	1	18740	Tank, Recovery
31	1	19398	Vac Motor Intake Screen
32	1	18846	Housing, Vac Filter Spacer
33	1	17392	Filter Cover Assembly Cable Clamp
34	2	18342	Screw
35	3	14142	Washer
36	1	15183	Screw-Hex.Head Cap 1/4"-20 x 1-1/4"(SS)
37	3	18333	Screw-Phil.Pan 1/4"-20 x 1.00 (ZP)
38	2	18349	Spacer
40	1	18847	Gasket
41	1	17508	Nut
42	1	18885	Washer
43	2	18886	Washer
44	1	18688	Battery Tray
45	1	18687	Vac. Motor Exhaust Hose
46	1	18686	Muffler
47	1	18692	Battery Spacing Bracket (12V Only)
48	2	18706	Tie Wrap
49	1	14858	Hose Clamp
50	1	04651	Screw-TCT(F) Pan Hd. #10-24 x 1/2"
51	3	00851	Washer-Plain 1/4"
*52	2	98799	Battery (99105A & 99125A)
*53	4	99506	Battery (99105B, 99125B & 99130)
*54	1	99510	Battery Charger (99105A & B, 99125A & B, 99130)
*55	1	18692	Bracket – Tray (99105A & 99125A)
*56	2	30725	Cable (99105B, 99125B & 99130)

*Not Shown

Unless indicated otherwise, Part Number applies to all models.

SQUEEGEE ASSEMBLY



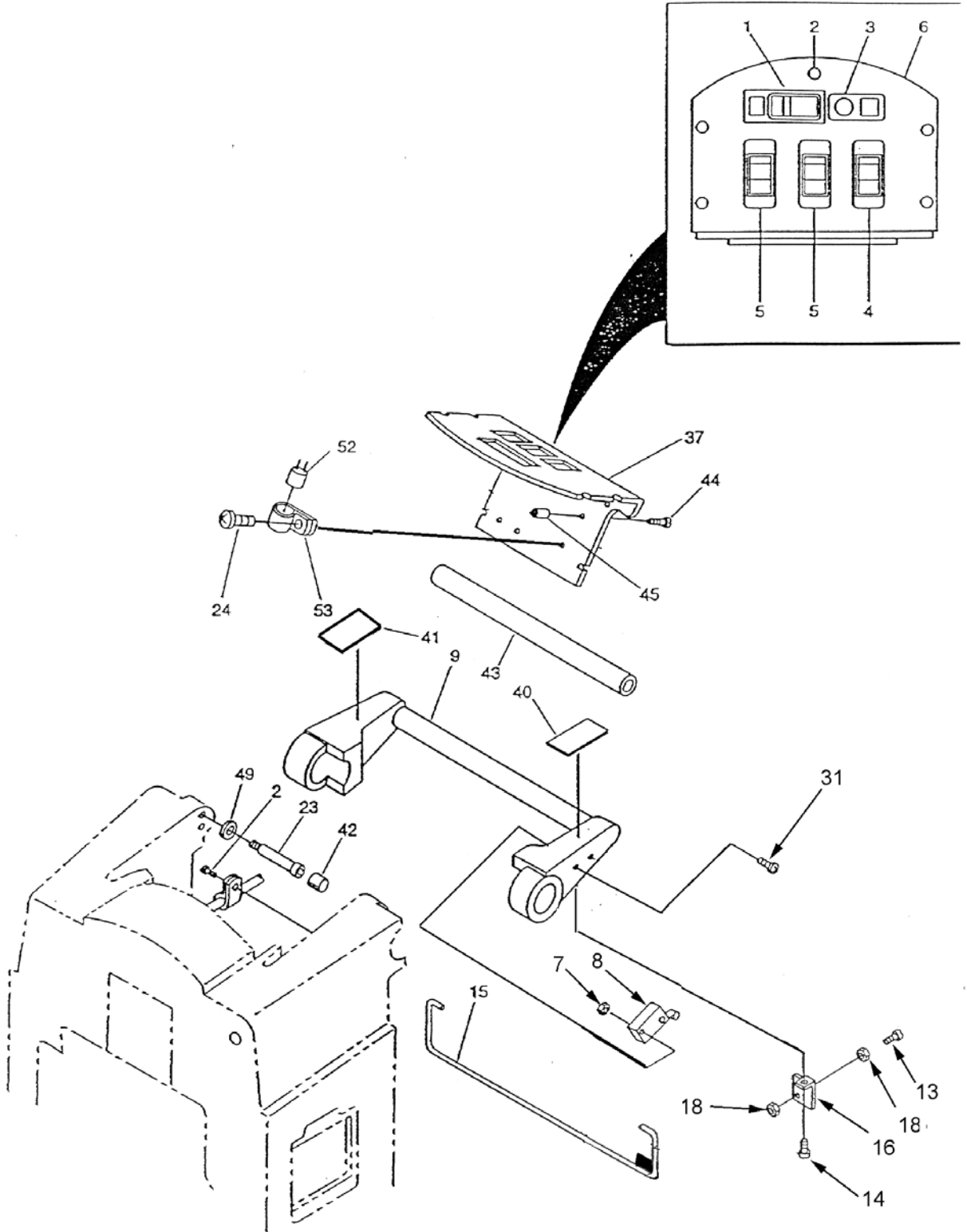
SQUEEGEE ASSEMBLY

Item No.	Qty.	Part No.	Description
1	1	03868	Nut
2	2	16581	Washer
3	1	18314	Handle, Squeegee Control
4	2	16347	Bearing, Flanged
5	1	18655	Push Nut
6	5	16136	Screw
7	1	18817	Bracket, Handle Pivot
8	1	03320	Screw
9	1	19910	Cable Assy-Squeegee
10	2	03660	Screw
11	1	18651	Plate, Control Cable Clasp
12	2	10894	Nut
13	2	30227	Pin - Cotter (Ext. Prong)
14	2	18400	Wheel
15	2	30226	Pin-Clevis .320 DIA / 1-1/4"LG
16	4	00696	Washer-Plain #10 ID (ZP)
17	2	17130	Nut Acorn
18	2	17400	Spacer
19	2	11053	Rub Wheel
20	2	07132	Washer, Wave
21	1	18136	Channel, Outer - 20" (Model 99125 Only)
*21	1	18137	Channel, Outer - 24" (Models 99126 & 99130 Only)
22	1	18709	Squeegee Blade Set - 20" (Model 99125 Only)
*22	1	18710	Squeegee Blade Set - 24" (Models 99126 & 99130 Only)
23	1	18663	Squeegee Blade Retainer - 20" (Model 99125 Only)
*23	1	18664	Squeegee Blade Retainer - 24" (Models 99126 & 99130 Only)
24	2	18680	Screw-Flat Hd. Cap
26	2	18681	Screw
27	1	03320	Screw
28	1	16586	Lockwasher
29	1	03914	Washer
30	1	18145	Bearing
31	1	18146	Pivot
32	1	18141	Weldment, Towing Arm
33	3	18119	Knob
35	4	01577	Lockwasher
36	4	18111	Screw
37	1	18142	Shaft, Pivot
38	1	16254	Cotter Pin
39	2	16347	Bearing
40	1	18114	Weldment, Pivot Frame
41	1	18144	Weldment, Pivot Frame
42	1	18568	Spring
43	1	18138	Spring Adjuster
44	1	18176	Pin
45	1	18206	Weldment, Wheel Support
46	1	18650	Bracket, Control Cable
47	1	18251	Grip
48	3	18253	Screw
49	1	18548	Lever Stop Bracket
50	4	14142	1/4" Flat Washer
51	1	01574	1/4" Lock Washer
52	1	01497	1/4" - 20 Nut
53	1	18695	Eye Bolt
54	2	15560	#4 - 40 Keps Nut
55	2	18323	#4 - 40 x 5/8 Pan Head Screw
56	1	18818	Switch
57	4	03301	Washer-Plain 5/16" ID (ZP)
58	1	19796	Plate-Control Cable Clasp
59	2	00851	Washer-Plain 1/4"

*Not Shown

Unless indicated otherwise, Part Number applies to all models.

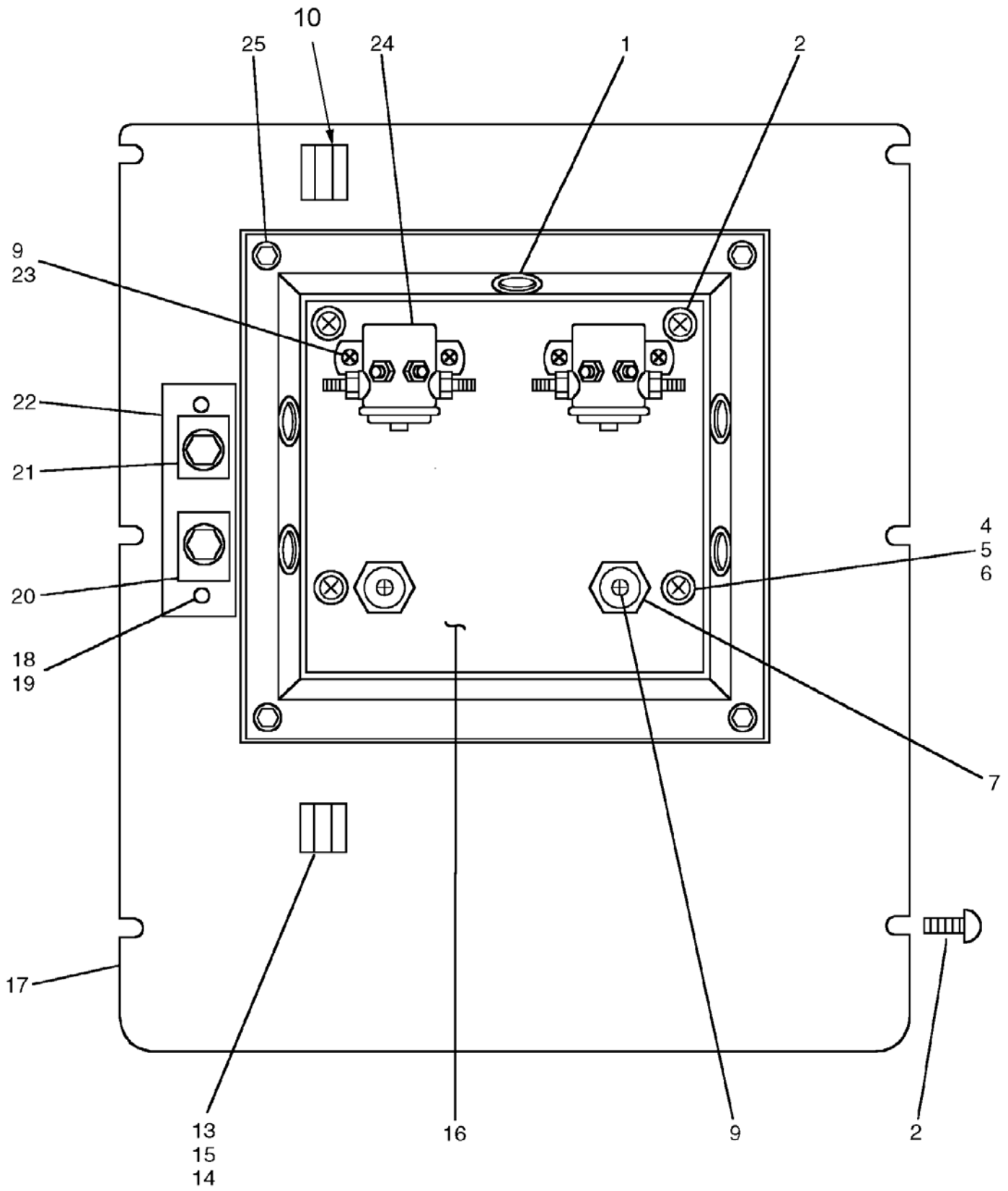
CONTROL / INSTRUMENT SYSTEM



CONTROL/INSTRUMENT SYSTEM

Item No.	Qty.	Part No.	Description
1	1	18221	Gauge, Battery Condition
2	10	18253	Screw
3	1	18218	Indicator Light, Red
4	1	18217	Switch
5	2	18216	Switch
6	1	18212	Panel, Instrument
7	2	15560	Nut-Hex.Lock(Keps) # 4-40
8	1	15542	Switch, Button S.P.D.T. 10 Amps
9	1	18896	Handle Control
13	1	18897	Screw-Phil. Flat Hd. Mach. #8-32 X 1-1/4 (ZP)
14	2	02071	Screw
15	1	18895	Speed Control Handle
16	1	18675	Bracket Dead Man Handle Stop
18	2	02956	Locknut
23	4	08079	Screw, Shoulder Socket Hd. 5/16D X 1-1/2 (zinc-plated)
24	1	16075	Screw-Phil. Pan Hd. #8-32 X 1/2 (ZP)
25	1	18346	Terminal Block
31	2	18323	Screw
37	1	31028	Bracket-Control Panel Support
40	1	18364	Decal, Solution Control
41	1	18376	Decal, Squeegee Control
42	4	18385	Screw Cap
43	1	18402	Grip
44	1	18677	#8 - 32 x 1" Pan Head Screw
45	1	18657	Spacer
49	4	18660	5/16" Flat Washer
52	1	14827	Flasher Relay
53	1	15913	Clamp - Cable 1-1/8" Dia.

REAR ACCESS PANEL w/RELAYS



REAR ACCESS PANEL w/RELAYS

Item No.	Qty.	Part No.	Description
1	4	15330	Grommet
2	8	06192	Screw
4	4	14142	Washer
5	4	05427	Screw
6	4	01574	Lockwasher
7	2	15345	Insulator Bushing
9	8	04442	Screw
10	1	18230	Clip-Retaining (Sight Tube)
13	2	00128	Screw
14	2	02956	Nut
15	1	18468	Clip, Sight Tube
16	1	18255	Relay Mtg. Plate
17	1	31028	Panel, Rear Sol. Tank
18	2	03660	Screw
19	2	10894	Locknut
20	1	18219	Circuit Breaker, 25A
21	1	18220	Circuit Breaker, 45A
22	1	18355	Plate, Cir. Brk. Mtg.
23	4	15545	Retainer Nut
24	2	18213	Relay
25	4	19329	Pin-Retaining Access Panel
*	1	18308	Cover, Panel
*	1	30829	Main Relay 24 V DC
*	1	30830	Speed Control Board

* Item Not Shown

TABLE A						
WIRE NO'S	AWG	TYPE	COLOR	FROM	TO	
1	18	UL1569	RED	I2	V22i	NOM. (WIRE NUMBER) COLOR
2	18	UL1569	RED	I2	V12k	
3	18	UL1569	RED	R1	V12k	
4	18	UL1569	RED	F1	V12k	
5	18	UL1569	RED	F1	M1	
6	18	UL1569	RED	M1	P12i	
7	18	UL1569	RED	PO1	P12i	
8	18	UL1569	WHITE	F2	PA3F	
9	18	UL1569	GREEN	V11	PA2F	
10	18	UL1569	ORANGE	I1	V11	
11	18	UL1569	ORANGE	V11	SDNO	
12	18	UL1569	YELLOW	R3	SDNC	
13	18	UL1569	ORANGE	B11	R2	
14	18	UL1569	YELLOW	V21	R4	
15	18	UL1569	BLACK	B22i	M2	
16	18	UL1569	BLACK	B22i	P22i	
17	18	UL1569	BLACK	M2	PA1F	
18	18	UL1569	WHITE	B12i	PC3M	
19	18	UL1569	BLACK	P22i	PC2M	
20	18	UL1569	BLUE	R5	PC4M	
21	14	UL1569	RED/WHITE	P11	PC1M	
22	18	UL1569	BROWN	SDC	PC6M	
23						
24	18	UL1569	ORANGE	PC5M	PO2	NOM. <WIRE NUMBER> (COLOR)
25	14	UL1569	RED/WHITE	PC1F	BP+	
26	14	UL1569	BLACK	PC2F	BP-	
27	14	UL1569	WHITE	PC3F	C1+	
28	22	UL1569	BLUE	PC4F	MKF-1	
29	22	UL1569	ORANGE	PC5F	MKF-10	
30	14	UL1569	BROWN	PC6F	C2+	
31	22	UL1569	ORANGE	PE1F	MKF-14	
32	22	UL1569	RED	PE2F	BSNO	
33	22	UL1569	YELLOW	PE3F	MKF-13	
34	22	UL1569	BLACK	R6	MFK-2	
35	14	UL1569	RED	TR-1	BP+	
36	14	UL1569	BROWN	TR-2	B+	
37	10	UL1569	BLUE	BR-1	VA-1	
38	10	UL1569	YELLOW	BR-2	K1+	
39	10	UL1569	RED	BP+	VA-1	
40	10	UL1569	BLUE	K2+	VA-2	
41	14	UL1569	BLACK	C2-	C1-	
42	14	UL1569	BLACK	C1-	BP-	
43	10	UL1569	YELLOW	BRUSH	K1-	
44	10	UL1569	WHITE	B-	BRUSH	
45	14	UL1569	BLACK	BP-	B-	
46	18	UL1569	BLACK	PG1M	TE-	
47	18	UL1569	WHITE	PG2M	PA3F	
48	18	UL1569	GREEN	PF2M	PA2F	
49	18	UL1569	BLACK	PF1M	PA1F	
50	10	UL1569	BLACK	BP-	TE-	
51	10	UL1569	RED	BP+	TE+	
52	10	UL1569	BLUE	VAC+	K2-	
53	10	UL1569	BLACK	VAC-	BP-	
54	14	UL1569	BLUE	M+	TRANS+	
55	14	UL1569	BLACK	M-	TRANS-	
56	22	UL1569	BLACK	BSC	MFK-12	

TABLE B		
WIRE NOMENCLATURE (COLOR SYMBOLS)	WIRING HARNESS TORNADO PART #: 18905	(COLOR)
	VACUUM MOTOR TORNADO PART #: 18867	(COLOR)
	BRUSH MOTOR TORNADO PART #: 18076	(COLOR)
	TRACTION DRIVE MOTOR TORNADO PART #: 19258	(COLOR)
	FLOAT SWITCH TORNADO PART #: 18887	(COLOR)
	LAMP ASSEMBLY TORNADO PART #: 18859	(COLOR)
	CHANGER CONNECTOR TORNADO PART #: 19273	(COLOR)

NOTE:
STATIC DISCHARGE WIRE
HARNESSES ARE NOT
IN TABLE FORMAT
WIRE HARNESS PART #'S
ARE 31257 AND 31259

MAINTENANCE PARTS

Item No.	Qty.	Part No.	Description
1	1	03276	Hydrometer
2	1	18555	Grease 930-2 (14-1/2 oz. Cartridge)
3	1	18554	Grease SOG (11 oz. Cartridge)
5	2	98799	12 Volt Battery (Wet)
6	1	18709	20" Squeegee Blade Replacement (Set of 2)
7	1	18710	24" Squeegee Blade Replacement (Set of 2)
8	1	*99506	6 Volt Battery (Wet)
9	1	*99505	6 Volt Battery (Dry)
10	1	10994	Clutch Plate
11	1	90599	Pad Retainer

*Optional

ACCESSORIES

Item No.	Qty.	Part No.	Description
1	1	99262	20" Pad Holder (99125A & B, 99130)
2	1	99260	20" Firm Poly Scrub Brush
3	1	99263	20" Grit Brush
4	1	99272	24" Pad Holder
5	1	99270	24" Firm Poly Scrub Brush
6	1	90676	1-1/2" Wet Attachment Set
7	1	99510	20 Amp, 24 V Battery Charger
8	1	99526	20 Amp, 24V World Charger 100-240V

EC DECLARATION OF CONFORMITY
(89/336/EEC) AND AMENDMENTS 91/C162/08, 92/31/EEC, 93/68/EEC)
(73/23/EEC)

We: **BREUER/TORNADO CORPORATION**
 7401 W LAWRENCE AVE
 CHICAGO, IL 60656
 USA
declare under sole responsibility that the product
EZ Floorkeeper
MODEL 99105, 99125, 99130

to which this declaration relates is in conformity with the following standards or other normative document(s):

- | | |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| EN 60335-1 | Safety of Household and Similar Electrical Appliances Part 1: General Requirements, June 1988 (with Amendments to 1995). |
| IEC 342-1 | Safety Requirements for Electric Fans and Regulators, Part 1: Fans and Regulators for Household and Similar Purposes, 1981 (With Amendments to 1982). |
| EN 55104 | Immunity: This is Category 1 equipment and Does Not Require the Immunity Test. This Equipment Meets the Applicable Standard. |
| EN 50081-1 | Electromagnetic Compatibility Generic Emission Standard - Part 1: Residential, Commercial and light industry. |
| EN 50082-1 | Electromagnetic Compatibility Generic Emission Standard - Part 1: Residential. |
| EN 61000-3-2 | Limits for Harmonic Current Emissions (Equipment Input Current <16A per Phase). |
| EN 61000-3-3 | Limitations of Voltage Fluctuations and Flicker in Low-Voltage Supply systems for Equipment with Rated current <16A. |
| EN 55022 | Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment. |

following the provisions of the Directives:
89/336/EEC AND AMENDMENTS 91/C162/08, 92/31/EEC, 93/68/EEC. 73/23/EEC.

Chicago, May 1, 1997

Linda S. Breuer
Legal Representative