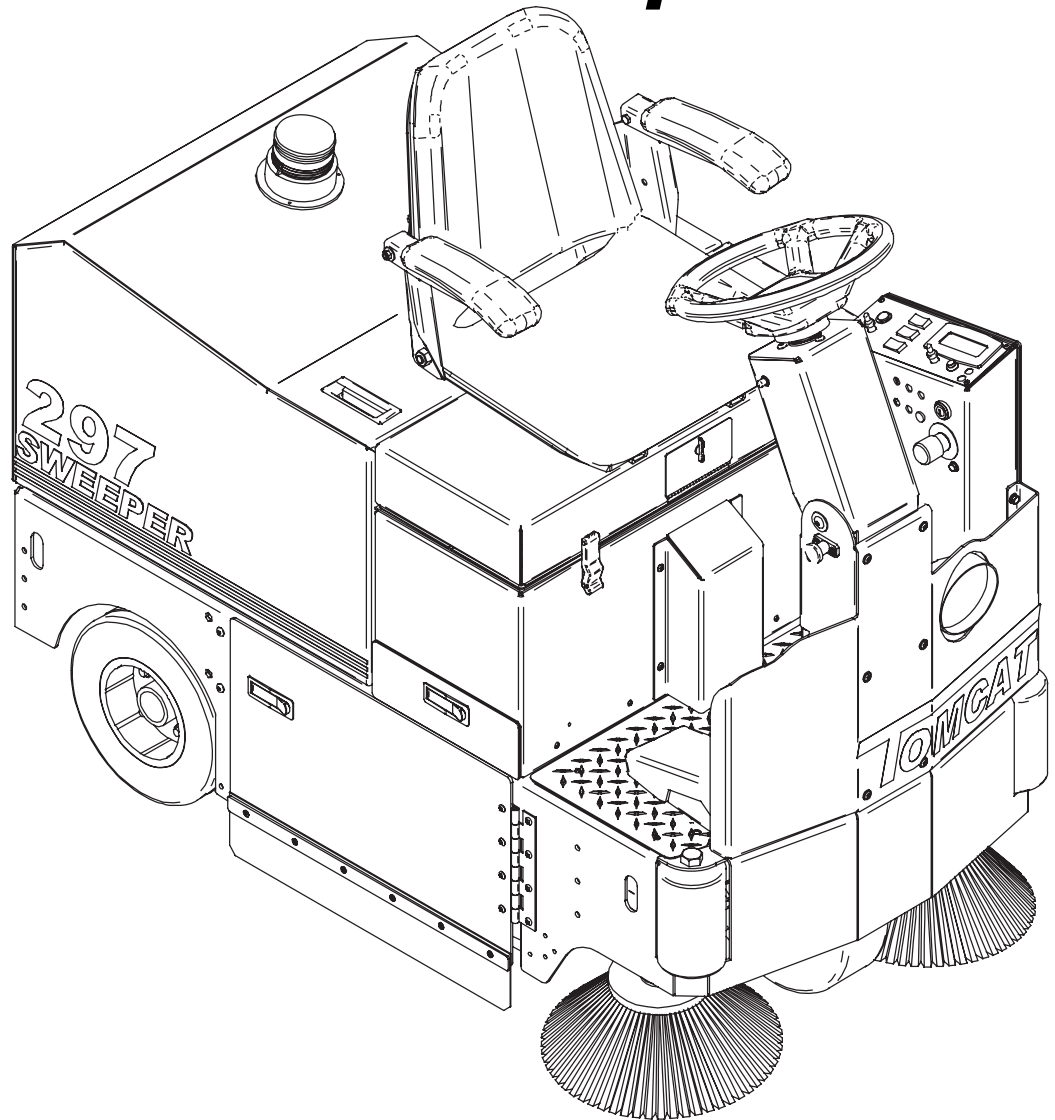


Factory Cat

297 SERIES

Operator and Parts Manual 297 Rider Sweeper



**Mid-Central Corporation
P.O. Box 241
Racine, Wisconsin 53401**

**Phone: 1-800-450-9824
Fax: 1-866-632-6961**

FACTORY CAT

297 RIDER SWEEPER

THE FACTORY CAT 297 RIDER SWEEPER IS COMPACT, BUT BUILT TOUGH, SO IT SHOULD BE WORKING YEARS FROM NOW, EVEN IN ABUSIVE ENVIRONMENTS. WITH A WIDTH OF ONLY 29" IT EASILY PASSES THROUGH 32" DOORS, AND ELEVATORS ARE NOT A PROBLEM DUE TO ITS 59" LENGTH.

DEBRIS ON THE FLOOR LIKE WOOD CHIPS, CARPETING LINT, POPCORN, LEAVES, METAL PIECES, BROKEN GLASS, SAND, AND FINE CONCRETE DUST ARE PICKED UP IN A SINGLE PASS. THE MATERIAL IS SWEEPED UP BY THE POWERFUL MAIN BROOM, AND THROWN INTO THE RUGGED HOPPER. THE HOPPER SLIDES OUT THE SIDE OF THE MACHINE FOR EASY DISPOSAL OF DEBRIS WHEN ITS FULL.

OUR "ONE TOUCH SWEEPING" AND CENTRAL COMMAND II KEEP THE MAIN BROOM'S PRESSURE AT ONE OF FIVE SETTINGS, SO YOU WILL NOT HAVE TO ADJUST OR REVERSE IT, AND THE BROOM AUTOMATICALLY ADJUSTS TO IRREGULAR FLOORS.

THE DUST CONTROL ON THE FACTORY CAT 297 IS THE INDUSTRIES BEST. OUR EXCLUSIVE "BAGHOUSE" STYLE FILTER ENABLES THE MACHINE TO SWEEP THROUGH AN 80 POUND BAG OF CEMENT POWDER AND NOT BLOW DUST. THE FILTER'S HIGH CAPACITY DESIGN IS SIMILAR TO THE DUST COLLECTION SYSTEM ON STREETSWEEPERS, NOT VACUUM CLEANERS.

OUR 250 CFM FAN MOVES HIGH VOLUMES OF AIR, BUT AT A LOWER VELOCITY. THIS ALLOWS EXCELLENT DUST CONTROL, EVEN WITH A "DIRTY FILTER". THE LINT FROM CARPETING OR TENNIS COURTS IS EASILY CONTAINED IN THE LONG LIFE FILTER. THE FILTER IS CLEANED AT THE TOUCH OF A BUTTON, AND THE DUST IS EASILY REMOVED IN A SEPARATE SLIDING DRAWER.

THE FACTORY CAT 297 HAS A POWERFUL 2.0 HP SEALED DRIVE MOTOR FOR CLIMBING STEEP RAMPS, AND THE AVAILABLE NON-MARKING TIRES PROTECT EXPENSIVE FLOORS. THE OPERATOR'S HIGH BACK SEAT INCLUDES ARMREST, IS ADJUSTABLE, AND THE PARKING BRAKE SETS AUTOMATICALLY.

THE UNIT IS BATTERY POWERED, AND WILL RUN UP TO A FULL SHIFT ON A CHARGE. THE CHARGER IS FULLY AUTOMATIC, AND PLUGS INTO 110 VOLT OUTLET (USA).

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MACHINE INFORMATION

PLEASE FILL THIS AREA OUT AT THE TIME OF INSTALLATION FOR FUTURE REFERENCE.

MODEL NUMBER _____

SERIAL NUMBER: _____

INSTALLATION DATE: _____

INSTALLING DEALER: _____

DEALER CONTACT: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE NUMBER: _____

THIS OPERATOR'S AND PARTS MANUAL SHOULD BE CONSIDERED A PERMANENT PART OF THE UNIT AND SHOULD REMAIN WITH THE UNIT AT ALL TIMES. THIS OPERATORS AND PARTS MANUAL COVERS ALL THE TOMCAT 297 SERIES SNEEPERS. YOU MAY FIND DESCRIPTIONS AND FEATURES THAT ARE NOT ON YOUR PARTICULAR MODEL. THE INFORMATION AND SPECIFICATION INCLUDED IN THIS PUBLICATION WERE IN EFFECT AT THE TIME OF PRINTING. MID-CENTRAL RESERVES THE RIGHT TO MAKE CHANGES WITHOUT NOTICE INCURRING ANY OBLIGATION.

TO REGISTER FOR WARRANTY, FAX YOUR DELIVERY FORM TODAY!

Tomcat

MACHINE DELIVERY FORM

MID-CENTRAL CORPORATION
P.O. BOX 241
RACINE, WI 53401
PHONE: 800-450-9824
FAX 866-632-6961
WWW.FACTORYCAT.COM

DEALER: _____

LOCATION (CITY, STATE): _____

CUSTOMER: _____

CONTACT: _____

ADDRESS: _____

CITY: _____ STATE _____ ZIP _____

PHONE: _____ FAX: _____

SERIAL NUMBER: _____

INSTALL DATE: _____

HOURLY METER: _____

INSTALLED BY: _____

TOMCAT MODEL NUMBER: _____

OPTIONS: 1. _____

4. _____

2. _____

5. _____

3. _____

6. _____

MAIN BROOMS: _____

SIDE BROOMS: _____

BUYER'S REPRESENTATIVE HAS:

1. RECEIVED INSTRUCTION IN PROPER OPERATION OF THIS MACHINE.
2. RECEIVED OPERATOR'S MANUAL FOR THIS MACHINE.
3. BEEN MADE AWARE THAT ANY OPERATOR SHOULD READ THE MANUAL BEFORE OPERATING THIS MACHINE.

DEALER REP. PRINT: _____

SIGN: _____

CUSTOMER PRINT: _____

SIGN: _____

MODEL

297

BODY CONSTRUCTION/DIMENSIONS

CHASSIS CONSTRUCTION:

REAR WHEELS:

FRONT WHEEL:

SIZE (L X W X H):

WEIGHT (WITHOUT BATTERIES):

WEIGHT (WITH BATTERIES):

3/16" STEEL

12" X 5"

12" X 4"

61 X 29 X H

932 LBS.

1,412 LBS

SWEEPING SYSTEM

BROOM DIAMETER:

BROOM LENGTH:

MAIN BROOM POWER:

MAIN BROOM SPEED:

MAIN BROOM SUSPENSION:

SIDE BROOM SIZE:

SIDE BROOM POWER:

SIDE BROOM SPEED:

HOPPER CAPACITY:

10 INCHES

25 INCHES

1.0 HP

400 RPM

TRAILING ARM

(2) 11 INCHES

(2) 0.3 HP

95 RPM

2.0 CUBIC FEET

FILTERING SYSTEM

FILTER MATERIAL:

FILTER RATING:

SIZE:

VACUUM RATING:

DUST HOPPER CAPACITY:

POLYMER FELT

1 MICRON

3,528 SQ. INCHES

250 CFM

280 CUBIC INCHES

BATTERY SYSTEM

SYSTEM VOLTAGE

BATTERY AH RATING:

BATTERY RUN TIME:

CHARGER (AUTOMATIC):

24 VOLT

(4) 305 AH

UP TO 6 HRS.

24 AMP, 110 VOLT

DRIVE SYSTEM

TRANSAXLE DESCRIPTION:

SPEED CONTROL:

NOISE LEVEL:

2.0 HP, SEALED

VARIABLE 0-320 FT.

70 dBA

PRODUCTIVITY

CLEANING WIDTH:

CLEANING RATE/HOUR (MAX):

CLEANING RATE/HOUR (NORMAL):

36 INCHES

55,000 SQ. FT/HR

39,586 SQ. FT/HR

WARRANTY

PARTS:

LABOR:

3 YEARS

1 YEAR

COMMON WEAR PARTS

ITEM

MODEL 297

MAIN BROOM

UNION	290-401 U
NYLON	290-401 N
POLY	290-401
CARPET	290-401NN
WIRE	290-401W
UNION STEEL	290-401US
POLY AND STEEL	290-401S

SIDE BROOM

QUANTITY REQUIRED (2) 14 INCH BROOMS

POLY	4-402
NYLON	4-402 N
POLY AND STEEL	4-402 S

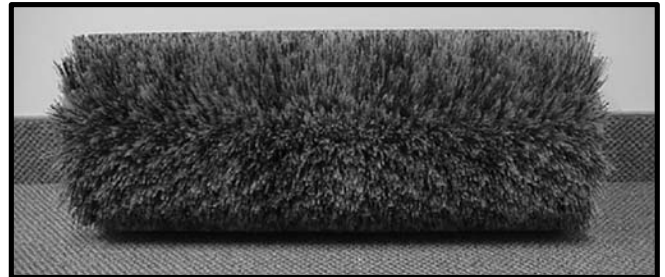
FLAPS KITS

290-5502

HOPPER FLAP

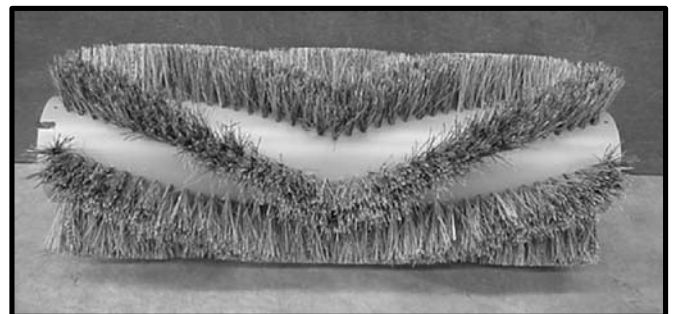
1/8 INCH	290-571 H
1/16 INCH	290-571
1/32 INCH	290-571 L

WE RECOMMEND YOU USE OUR BROOMS. THEY ARE MADE FOR YOUR MACHINE. OUR BRAND OF BROOMS HAS A PRECISION PLASTIC CORE THAT IS CAREFULLY BALANCED AND HAS MACHINED INSERT POINTS SO THE BROOM FITS TIGHTLY ON THE MACHINE'S HUBS. BROOMS MADE BY "WILL FIT" COMPANIES TO FIT OUR MACHINES ARE OFTEN MADE WITH ROUGH DRAIN-PIPE CORES. THEY OFTEN BOUNCE EVEN WHEN NEW. BOUNCING BROOMS DO NOT SWEEP.

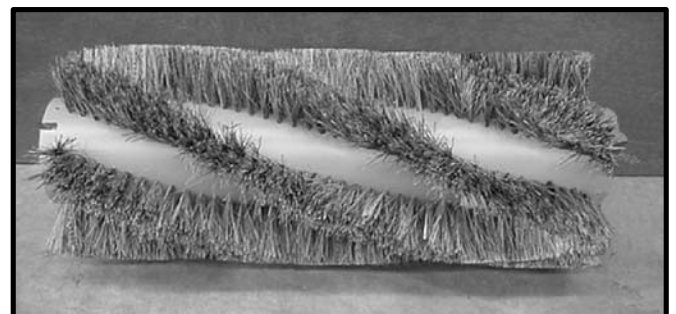


DOUBLE FIBER VEE-BROOM.

USED MORE FOR CARPETED FLOORS



VEE-BROOM. PREFERRED STYLE



SPIRAL-BROOM. DOES NOT SWEEP AS WELL AS VEE BROOM.

KIT INCLUDES: (1) HOPPER FLAP, (1) RIGHT SIDE, (1) LEFT SIDE AND (1) REAR FLAP

NOTE: CHECK YOUR HOPPER FLAP FOR THICKNESS. THE THIN (1/32 INCH) FLAP WORKS BEST ON LIGHT DEBRIS, BUT IT CAN BE MORE EASILY DAMAGED. THE STANDARD SIZES ARE (1/16 INSH)

SAFETY MESSAGES

YOUR SAFETY, AND THE SAFETY OF OTHERS, IS VERY IMPORTANT, AND OPERATING THIS UNIT SAFELY IS AN IMPORTANT RESPONSIBILITY.

TO HELP YOU MAKE INFORMED DECISIONS ABOUT SAFETY, WE HAVE PROVIDED OPERATING PROCEDURES AND OTHER SAFETY INFORMATION IN THE MANUAL. THIS INFORMATION INFORMS YOU OF POTENTIAL HAZARDS THAT COULD HURT YOU OR OTHERS.

IT IS NOT PRACTICAL OR POSSIBLE TO WARN YOU OF ALL THE HAZARDS ASSOCIATED WITH OPERATING THIS UNIT. YOU MUST USE YOUR OWN GOOD JUDGEMENT.

THIS IS INTENDED FOR COMMERCIAL USE. IT IS DESIGNED TO BE USED ON HARD FLOORS IN AN INDOOR ENVIRONMENT, WITH THE RECOMMENDED BRUSHES.

1. DO NOT OPERATE UNIT:

UNLESS TRAINED AND AUTHORIZED.
UNLESS OPERATOR MANUAL IS READ AND UNDERSTOOD.
IF UNIT IS NOT PROPER CONDITION.

2. WHEN OPERATING UNIT:

KEEP HANDS AND FEET AWAY FROM REVOLVING SIDE BROOMS.
DO NOT OPERATE MACHINE WHERE FLAMMABLE LIQUIDS ARE PRESENT.
USE EXTREME CAUTION WHEN MANUEVERING.

3. BEFORE LEAVING:

MAKE SURE MACHINE IS TURNED OFF.
STOP ON LEVEL SURFACES.
DISCONNECT BATTERIES.

4. BEFORE SERVICING:

STOP ON LEVEL SURFACE, AND SECURE MACHINE.
DISCONNECT BATTERIES.

!! SAFETY PRECAUTIONS!!

WARNING: HAZARDOUS VOLTAGE. SHOCK, BURNS OR ELECTROCUTION CAN RESULT. ALWAYS DISCONNECT THE BATTERIES BEFORE SERVICING MACHINE.

WARNING: BATTERIES EMIT HYDROGEN GASES, EXPLOSION OR FIRE CAN RESULT. KEEP SPARKS AND OPEN FLAMES AWAY.

WARNING: CHARGE UNIT IN A WELL VENTILATED AREA, AND KEEP BATTERY COMPARTMENT OPEN WHEN CHARGING. EXPLOSION OR FIRE COULD RESULT.

WARNING: BATTERY ACID CAN CAUSE BURNS. WEAR PROTECTIVE EYE WEAR AND GLOVES WHEN SERVICING BATTERIES.

WARNING: DO NOT STORE OUTDOORS OR PRESSURE WASH. PREVENT FROM GETTING ELECTRONIC COMPONENTS WET.

WARNING: THE USE OF PARTS AND SOLUTIONS OTHER THAN RECOMMENDED BY THE MANUFACTURER MAY CAUSE DAMAGE OR ENDANGER PEOPLE.

WARNING: DRESS SAFELY. DO NOT WEAR RINGS OR METAL WRIST WATCHES WHILE WORKING ON THIS MACHINE. THEY CAN CAUSE AN ELECTRICAL SHORT, WHICH, CAN CAUSE SERIOUS BURNS. DO NOT WORK ON THIS MACHINE WHILE WEARING A TIE, SCARF OR OTHER LOOSE, DANGLING NECKWARE OR CLOTHING. THESE LOOSE ITEMS CAN TANGLE IN THE ROTATING PARTS AND CAUSE SERIOUS INJURY OR EVEN DEATH.

WARNING: DO NOT USE THE MACHINE AS A STEP LADDER OR CHAIR.

WARNING: ONLY OPERATE THIS MACHINE FROM THE OPERATORS SEAT. IT WAS NOT DESIGNED TO CARRY PASSENGERS.

WARNING: DO NOT OPERATE THIS MACHINE ON RAMPS OR UNEVEN SURFACES. WHEN CLIMBING A RAMP, ALWAYS DRIVE THE MACHINE IN FORWARD STRAIGHT UP OR DOWN THE RAMP. NEVER DRIVE ACROSS THE INCLINE. DO NOT BACK DOWN OR TURN ON RAMPS!

WARNING: ALWAYS USE THE CHARGER PROVIDED BY THE MANUFACTURER TO CHARGE THE MACHINE. IT IS AN AUTOMATIC CHARGER, SPECIFICALLY DESIGNED TO CHARGE AT THE APPROPRIATE RATE. IF YOU MUST USE A DIFFERENT CHARGER, DISCONNECT THE BATTERIES BEFORE CHARGING. THIS WILL PREVENT DAMAGE TO THE ELECTRONIC SPEED CONTROLLER.

WARNING: UNDERSTAND THE DYNAMIC BRAKING SYSTEM BEFORE YOU OPERATE THE MACHINE ON RAMPS. MACHINE DOES NOT COAST. RELEASING THE FOOTPEDAL WILL AUTOMATICALLY APPLY BRAKING FORCE, AND STOP THE MACHINE.

WARNING: DO NOT PARK THE MACHINE ON RAMPS OR SLOPES. THE MACHINE HAS A PARKING BRAKE, BUT IT IS RECOMMENDED THAT IT ALWAYS BE PARKED ON LEVEL GROUND.

WARNING: DO NOT OPERATE THE MACHINE IF ANY PARTS HAVE BEEN REMOVED OR DAMAGED.

WARNING: DO NOT REMOVE, PAINT OVER, OR DESTROY WARNING DECALS. IF WARNING DECALS BECOME DAMAGED, THEY MUST BE REPLACED.

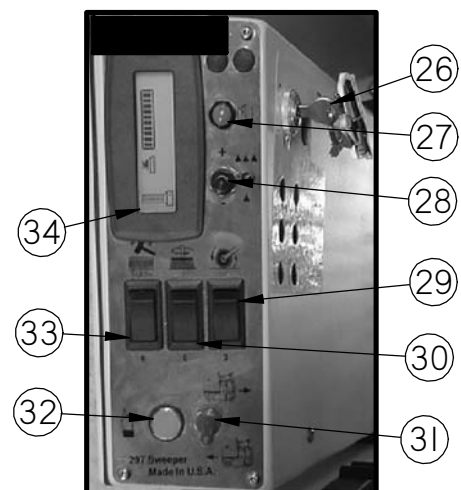
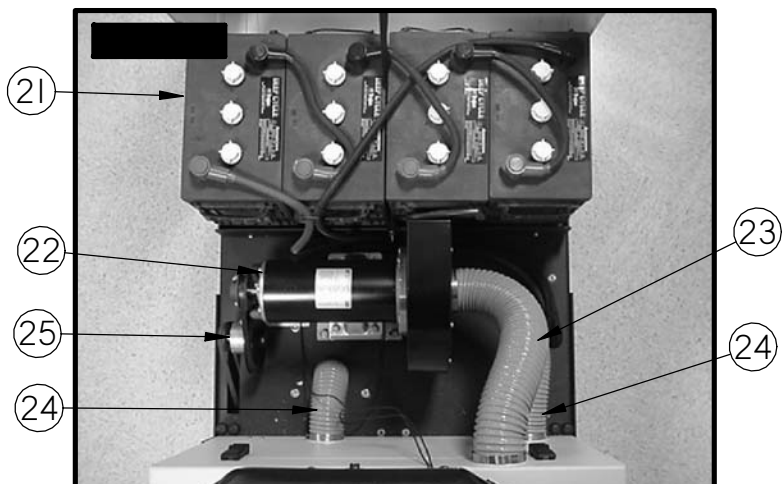
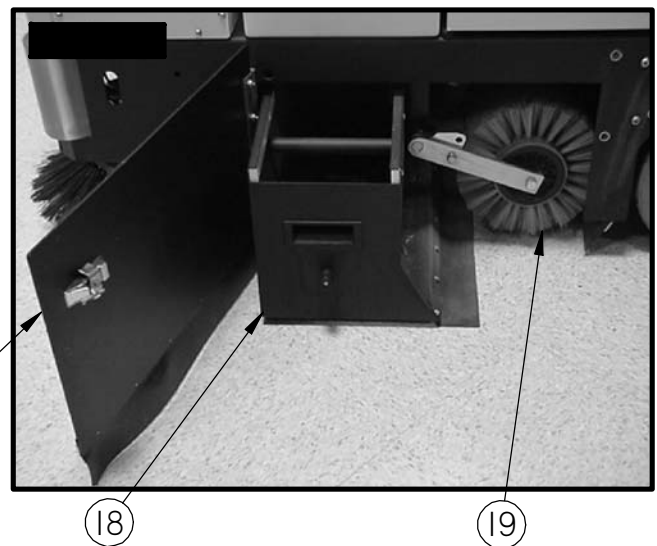
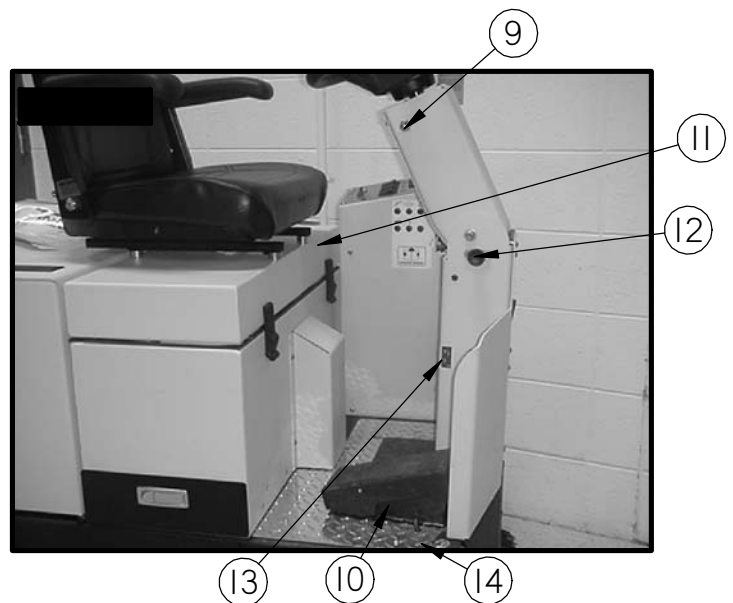
WARNING: DO NOT OPERATE MACHINE IN UNSAFE CONDITION. IF THE MACHINE IS IN NEED OF REPAIR OR IS IN ANY WAY UNSAFE TO OPERATE, THE MATTER SHOULD BE REPORTED IMMEDIATELY TO THE SHIFT SUPERVISOR. DO NOT OPERATE THE MACHINE UNTIL IT IS RETURNED TO PROPER OPERATING CONDITION.

WARNING: THIS MACHINE MUST ONLY BE OPERATED BY TRAINED OPERATOR. AS PART OF HIS OR HER TRAINING, THEY MUST READ THIS MANUAL THOROUGHLY. IF EXTRA COPIES ARE NEEDED, CONTACT YOUR LOCAL DEALER.

WARNING: ALWAYS TURN OFF THE MACHINE, BEFORE LEAVING IT UNATTENDED.

WARNING: DO NOT SWEEP OVER ELECTRICAL FLOOR OUTLETS. MAY RESULTS IN SERIOUS INJURY.

MACHINE CONTROLS AND FEATURES



CONTROLS AND FUNCTIONS

SEE FIG. (1-6) ON PAGE 7

FIGURE 1.

1. **DUST TRAY LATCH:** KEEPS DUST TRAY IN PLACE.
2. **IDLER ARM ACCESS DOOR LATCH:** KEEPS ACCESS DOOR LOCKED.
3. **FRONT WHEEL:** STEERS AND PROPELS MACHINE.
4. **HEADLIGHT:** HELPS YOU SEE IN LOW LIGHT AREAS AND TO WARN ONCOMING TRAFFIC.
5. **SEAT:** ADJUSTABLE SEAT FOR OPERATOR COMFORT AND EASE OF ENTRY.
6. **STEERING WHEEL:** USED TO STEER THE MACHINE.
7. **STROBE LIGHT:** SAFETY LIGHT. (OPTIONAL)
8. **SIDE BROOMS:** HELPS CLEAN AGAINST WALLS AND OBJECTS.

FIGURE 2.

9. **HORN BUTTON:** SOUNDS HORN.
10. **FOOT PEDAL:** MAKES MACHINE GO AND RELEASE PEDAL TO STOP.
11. **WET SWEEP BY-PASS:** YOU SWEEP OVER WATER WITHOUT SUCKING THE WATER UP INTO THE FILTER.
12. **ADJUSTABLE STERING:** ADJUSTABLE STERING WHEEL FOR COMFORT AND EASE OF ENTRY.
13. **CHARGE PORT:** RED 50 USED TO RECEIVE CHARGER INPUT. (NOTE: ONLY USE CHARGER PROVIDED)
14. **NON SLIP FLOOR PLATE:** HELPS PREVENT SLIPING WHEN GETTING ON AND OFF OF MACHINE.

FIGURE 3.

15. **IDLER ARM ACCESS DOOR:** GIVES YOU EASY ACCESS TO IDLER ARM AND BELTS.
16. **DUST TRAY:** FILTER SHAKER DROPS DUST FROM THE FILTER ON TO THE DUST TRAY.
17. **REAR TIRES:** NON-MARKING AND EXTRA WIDE FOR STABILITY

FIGURE 4.

18. **HOPPER:** HOLDS DEBRIS AND IS REMOVABLE FOR EASY DISPOSAL.
19. **MAIN BROOM:** SWEEPS DEBRIS INTO HOPPER.
20. **MAIN BROOM/HOPPER ACCESS DOOR:** PROVIDES EASY ACCESS TO MAIN BROOM AND HOPPER.

FIGURE 5.

21. **BATTERIES:** PROVIDE POWER TO RUN MACHINE.
22. **MAIN BROOM/VACUUM FAN MOTOR:** PROVIDES POWER TO MAIN BROOM AND VACUUM SYSTEM.
23. **MAIN FAN HOSE:** VACUUM FAN PULLS CLEAN AIR FROM THE FILTER BOX THROUGH THE MAIN FAN HOSE.
24. **LEFT AND RIGHT VACCUM HOSES:** THESE HOSES PULL DUST FROM THE MAIN BROOM TO THE FILTER BOX.
25. **JACK SHAFT:** ALLOWS THE VACUUM FAN MOTOR TO ALSO POWER THE MAIN BROOM.

FIGURE 6.

26. **KEY SWITCH:** TURNS POWER TO MACHINE ON AND OFF.
27. **MENU CONTROL:** SCROLLS THROUGH DIFFERENT OPTIONS ON THE LCD DISPLAY.
28. **BROOM PRESSURE ADJUSTMENT TOGGLE SWITCH:** SETTINGS #1 (MINIMUM) - #5 (MAXIMUM).
29. **MAIN BROOM SWITCH:** RAISES AND LOWERS THE MAIN BROOM.
30. **SIDE BROOM SWITCH:** RAISES AND LOWERS SIDE BROOMS.
31. **FORWARD/REVERSE SWITCH:** CONTROLS THE DIRECTION OF THE TRACTION MOTOR.
32. **ONE TOUCH BUTTON:** ACTIVATES THE MAIN BROOM, DUST CONTROL SYSTEM, AND THE SIDE BROOMS SIMULTANEOUSLY.
33. **FILTER SHAKER SWITCH:** SHAKES DEBRIS FROM FILTER AND DROPS THEM INTO HOPPER.
34. **LCD SCREEN DISPLAY:** LISTS FUNCTIONS AND SETTINGS OF THE MACHINE.

MACHINE PREP

UNCRATING MACHINE

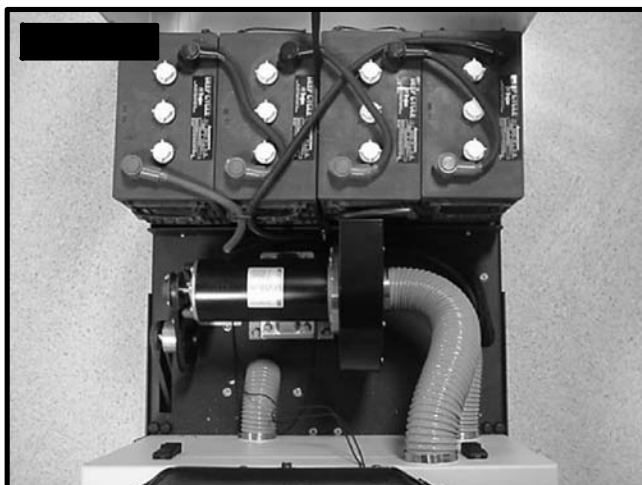
CAREFULLY CHECK THE CRATE FOR ANY SIGNS OF DAMAGE. BATTERIES ARE IN THE UNIT.

TO UNCRATE THE MACHINE, REMOVE BANDING FROM AROUND THE CRATE. TAKE OFF THE TOP AND SIDES AND DISPOSE OF PROPERLY. REMOVE BANDING FROM MACHINE. REMOVE THE CHOCKS AROUND THE DRIVE WHEELS. FOLD DOWN RAMP, AND ROLL MACHINE OFF OF THE BASE. NOTIFY THE CARRIER IMMEDIATELY IF CONCEALED DAMAGE IS DISCOVERED.

CONNECTING BATTERIES

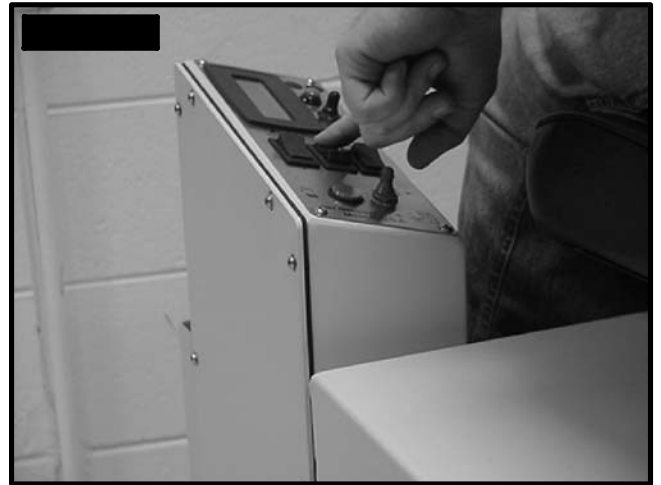
YOUR MACHINE IS EQUIPPED WITH (FOUR) 6 VOLT, DEEP CYCLE, 305 OR 395 AMP HOURS BATTERIES, WHICH FORM A 24 VOLT SYSTEM. MAXIMUM BATTERY DIMENSIONS ARE 7"W X 15"L X 15"H.

1. TURN ALL SWITCHES TO THE OFF POSITION AND REMOVE KEY.
2. HINGE OPEN THE BATTERY ACCESS LID TO ACCESS THE BATTERY COMPARTMENT.
3. ALL FOUR OF THE BATTERY CABLES ARE CONNECTED TO THE BATTERIES. LOCATE ANY LOOSE ONES AND TIGHTEN WITH 9/16" WRENCH. (SEE FIG. 7)
4. TURN ON MAIN POWER SWITCH AND CHECK THE BATTERY CONDITION METER TO ENSURE CORRECT INSTALLATION. CHARGE BATTERIES IF NEEDED. (SEE: BATTERY CHARGING)



ATTACHING SIDE BROOMS

1. LOWER THE SIDE BROOM LINKAGE BY PRESSING THE TOP HALF OF THE SIDE BROOM SWITCH. (SEE FIGURE 8.)



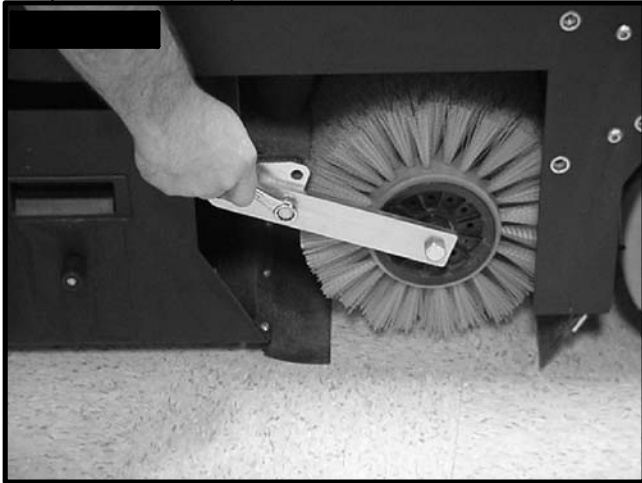
2. REMOVE THE SIDE BROOMS FROM THE SHIPPING BOX.
3. INSTALL THE SIDE BROOMS ONTO THE MOTOR SHAFT, BY SLIDING THEM UPWARDS. LINE UP THE HOLES AND INSTALL THE CLEVIS PIN WITH SAETY CLIP (SEE FIGURE 9.)
4. YOU MAY NEED TO ADJUST THE SIDE BROOM HEIGHT, BY USING THE ADJUSTMENT SCREW.



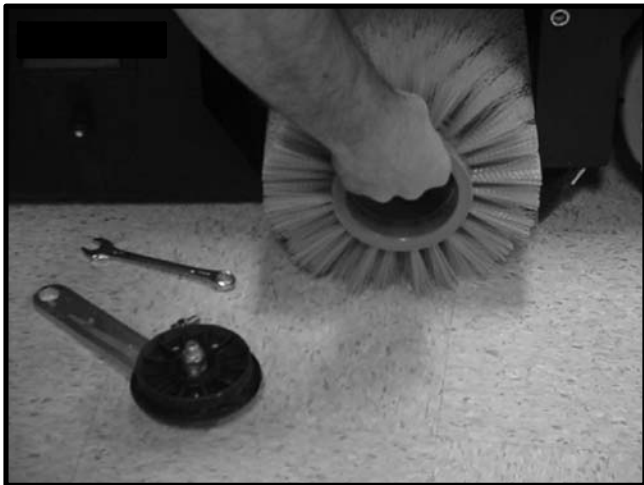
MACHINE SETUP

REPLACING MAIN BROOM

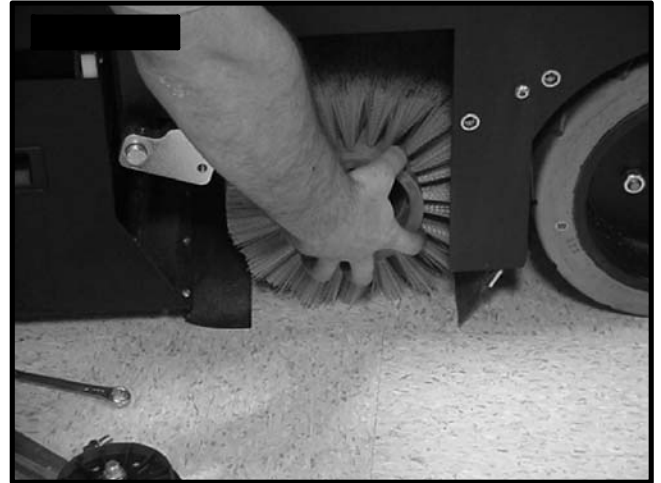
1. TURN THE MACHINE OFF. USE A 9/16 INCH WRENCH TO REMOVE THE 3/8-16 HCS BOLT IN THE CENTER OF ARM AND REMOVE THE IDLER ARM ASSEMBLY. (SEE FIGURE 10.)



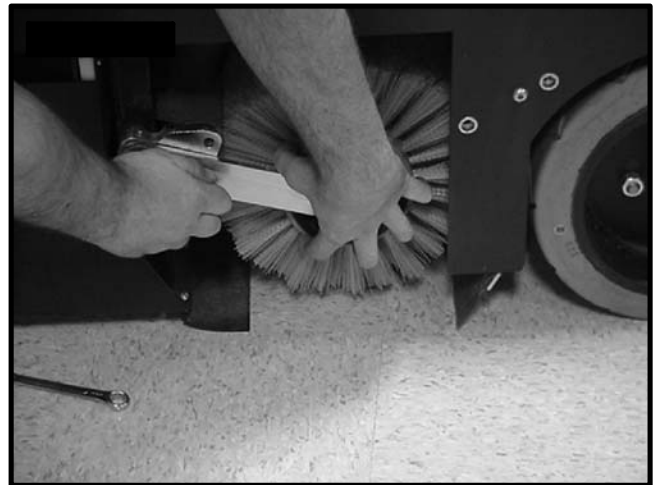
2. THE MAIN BROOM SHOULD SLIDE OUT THE SIDE OF THE MACHINE EASILY. (SEE FIGURE 12.)



3. SLIDE THE NEW BROOM IN. WHEN YOU GET THE BRUSH ON THE DRIVER SPIN IT WITH YOUR HAND UNTIL YOU FEEL IT CATCH ON THE DRIVER AND THEN PRESS IT COMPLETELY ON. (SEE FIGURE 12.)



4. WITH THE MAIN BROOM COMPLETELY INSTALLED, REPLACE THE IDLER ARM AND THE FASTENERS. THE ARM SHOULD GO ON EASILY, AND METAL TO METAL. IF THERE IS ANY GAPS LEFT BEFORE TIGHTENING, IT HAS NOT BEEN INSTALLED PROPERLY. (SEE FIGURE 13.)



WARNING: IF THE BROOM IS NOT FULLY ENGAGED WITH THE DRIVERS, THE BRUSHES WILL BE DAMAGED. DO NOT FORCE THE IDLER ARM BACK ON. THIS USUALLY INDICATES IMPROPER INSTALLATION

NOTE: SELECT THE BROOM FIBER THAT BEST MEETS YOUR CLEANING APPLICATION CONSULT YOUR LOCAL CEALER FOR ASSISTANCE. (SEE BRUSH TYPES ON PAGE 4.)

PRE- SWEEPING CHECK LIST

**READ AND UNDERSTAND SAFETY INSTRUCTIONS ON PAGE 5 AND 6
BEFOR OPERATING THIS MACHINE**

1. CHECK BATTERY CONDITION ON BATTERY CONDITION METER. MAKE SURE BATTERIES ARE FULLY CHARGED BEFORE USING. (SEE FIGURE 14.)



2. CHECK CONDITION OF MAIN BROOM AND MAKE SURE IT IS SECURELY IN PLACE.
3. REMOVE ALL STRING BANDING, OR ANYTHING WOUND AROUND THE IDLER PULLEY AND BEARING. (SEE FIGURE 15.)



4. CHECK CONDITION OF SIDE BROOMS AND MAKE SURE THEY LIFT AND LOWER CORRECTLY.
5. CHECK THE SIDE BROOMS TO SEE IF THEY ARE AT THE CORRECT SETTING FOR SWEEPING. (SEE FIGURE 16.)



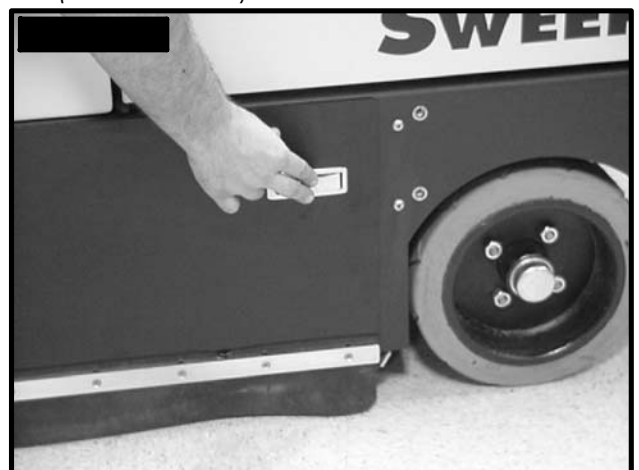
6. CLEAN THE FILTER BY PRESSING THE SHAKER SWITCH FOR ABOUT 10 SECONDS. (SEE FIGURE 17.)



7. PRESS THE DOOR LATCH, AND OPEN DOOR ON THE SIDE OF THE MACHINE. SLIDE OUT HOPPER FROM THE MACHINE. (SEE FIGURE 18.)



8. EMPTY THE HOPPER INTO A TRASH RECEPTACLE.
9. INSTALL THE HOPPER BACK INTO THE MACHINE AND DEPRESS THE DOOR LATCH. (SEE FIGURE 19.)



OPERATION

ONE PASS SWEEPING

1. TURN MACHINE ON WITH THE KEYSWITCH.
2. TURN ON THE FILTER BEATER FOR ABOUT TEN SECONDS TO CLEAR THE FILTER.
3. PUSH THE GREEN ONE TOUCH BUTTON.
(SEE FIGURE 20.)



4. BEGIN SWEEPING BY DEPRESSING THE FOOT PEDAL SLOWLY AND THEN TO THE SPEED REQUIRED.
5. ONCE THE MAIN BROOM BEGINS TO MOVE, CHECK THE PRESSURE GAUGE. (SEE FIGURE 21.)



6. TO OPERATE MACHINE IN REVERSE, SIMPLY SWITCH THE REVERSE SWITCH TO THE REVERSE POSITION. (SEE FIGURE 22.)



7. TO STOP THE MACHINE, LET OFF OF THE FOOT PEDAL, AND THE MACHINE WILL STOP AUTOMATICALLY.

OPERATING HINTS

1. OBSERVE THE SPEED OF THE MACHINE AND ADJUST TO THE DESIRED RATE. TO INCREASE THE SPEED, DEPRESS THE FOOTPEDAL MORE. TO STOP THE MACHINE, LET OFF THE FOOTPEDAL AND THE BRAKE WILL AUTOMATICALLY BE APPLIED.
2. KEEP AN EYE ON THE VACUUM MOTOR TO MAKE SURE THERE IS NO DUST BLOW-THRU. IF DUST BEGINS TO DEVELOP, THE FILTER SHOULD BE CLEANED. PRESS THE FILTER SHAKER SWITCH TO CLEAN THE FILTER.
3. ALWAYS OPERATE AT LOWER SPEEDS WHEN SWEEPING AROUND WALLS AND OBJECTS. YOU SHOULD REDUCE THE SPEED, TO MAINTAIN CONTROL WHEN TURNING.
4. IF THE MACHINE STARTS TO TRAIL, STOP AND EMPTY THE HOPPER. IF THE TRAILING DEBRIS CONTINUES, YOU MAY NEED TO REPLACE THE SKIRTS THAT SURROUND THE SWEEPING CHAMBER.
5. CHANGE THE BRUSHES WHEN WORN TO A FIBER LENGTH OF 1 INCH.
6. STAY CLEAR OF OBJECTS PROTRUDING FROM THE FLOOR, SUCH AS ELECTRICAL SOCKETS, AND PIPES, FOR THEY CAN DAMAGE THE LOWER SKIRTS AND BE DANGEROUS.
7. YOU SHOULD TRY TO AVOID WATER, OIL AND, OTHER LIQUIDS SPILLED ON THE FLOOR. BE SURE TO USE THE WET SWEEP BY-PASS WHEN SMALL AMOUNTS OF MOISTURE ARE ENCOUNTERED.
8. ALWAYS KEEP AN EYE ON YOUR GAUGES. THEY ARE THERE TO HELP YOU CLEAN MORE EFFICIENTLY, BY LETTING YOU KNOW THE STATUS OF THAT PARTICULAR SYSTEM AT A GLANCE. IF YOUR BATTERY GAUGE IS READING LOW, YOU MUST STOP IMMEDIATELY, AND RECHARGE. RUNNING THE BATTERY DEAD, WILL RESULT IN DAMAGE TO THE BATTERIES.
9. KEEPING THE EXTERIOR APPEARANCE OF THE MACHINE IN GOOD CONDITION, WILL GENERALLY ENCOURAGE OTHERS TO TREAT THE MACHINE WITH MORE CARE.
10. WHEN YOU ARE READY TO STOP, PICK UP THE BROOMS, DRIVE THE MACHINE BACK TO THE CHARGING AREA AND BE SURE TO TURN OFF THE POWER SWITCH. BE SURE TO EMPTY THE HOPPER AND CLEAN THE FILTER BEFORE STORING.

BATTERY CHARGING

CAUTION: THE FOLLOWING INSTRUCTIONS ARE INTENDED FOR THE 24V CHARGER SUPPLIED WITH THE MACHINE. DO NOT USE ANY OTHER CHARGER WITH THIS MACHINE.

CHARGER SPECIFICATIONS

OUTPUT VOLTAGE OF 24 VOLTS.

OUTPUT CURRENT OF 36 AMPS MAX.

INPUT VOLTAGE OF 110 VOLTS/60 Hz.

AUTOMATIC SHUT OFF CIRCUIT.

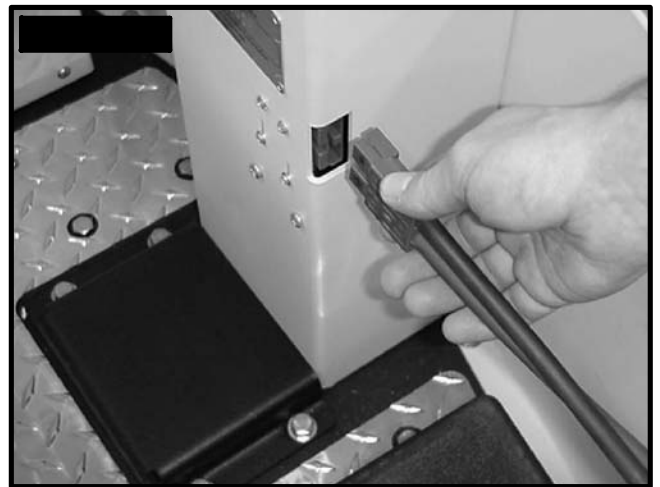
MADE FOR DEEP CYCLE BATTERIES.

DANGER: ALWAYS CHARGE BATTERIES IN A WELL VENTILATED AREA. BATTERIES EMIT HYDROGEN GAS. EXPLOSION OR FIRE CAN RESULT. KEEP SPARKS AND FLAME AWAY. SHIELD EYES WHEN SERVICING BATTERIES AND AVOID CONTACT WITH BATTERY ACID. **LEAVE BATTERY HOOD OPEN!**

1. TRANSPORT MACHINE TO A WELL VENTILATED AREA FOR CHARGING.
2. TURN THE MACHINE OFF.
3. HINGE OPEN THE BATTERY ACCESS HOOD TO EXPOSE THE BATTERIES. (SEE FIG. 23)
(CAUTION ALWAYS WEAR EYE PROTECTION WHEN BATTERIES ARE EXPOSED)



4. CHECK THE WATER LEVEL IN EACH BATTERY. DO NOT CHARGE THE MACHINE UNLESS THE WATER IS SLIGHTLY HIGHER THAN THE PLATES. IF NEEDED, ADD ENOUGH **DISTILLED** WATER TO JUST SLIGHTLY COVER THE PLATES. DO NOT OVER FILL. BATTERIES CAN OVERFLOW DURING CHARGING. REPLACE CAPS BEFORE CHARGING.
5. WITH THE RED CHARGER PLUG DISCONNECTED FROM THE MACHINE, PLUG THE CHARGER POWER CORD INTO A GROUNDED 110 VOLT STANDARD WALL OUTLET.
(SEE FIGURE 24)
6. CONNECT THE RED CHARGER PLUG INTO THE BATTERY CHARGING PORT LOCATED ON THE LOWER PORTION OF THE STEERING TOWER.



7. THE CHARGER WILL AUTOMATICALLY BEGIN CHARGING, AND AUTOMATICALLY SHUT OFF WHEN FULLY CHARGED (CHECK GAUGE)
8. AFTER THE CHARGER HAS TURNED OFF, UNPLUG THE RED CHARGER PLUG FROM THE MACHINE AND DISCONNECT THE CHARGER FROM THE WALL OUTLET.
9. RECHECK THE CELL LEVEL AFTER CHARGING. IF NEEDED, ADD DISTILED WATER UP TO THE CORRECT LEVEL. BE CERTAIN TO REPLACE THE CAPS SECURELY AND TO WIPE OFF THE TOP OF THE BATTERIES WITH A CLEAN CLOTH.

MAINTENANCE

DAILY MAINTENANCE

1. CLEAN THE FILTER WITH THE SHAKER SWITCH FOR 20 SECONDS.
2. REMOVE AND CLEAN DEBRIS FROM THE HOPPER AND RINSE OUT IF NECESSARY.
3. CHARGE THE MACHINE WITH THE HOOD OPEN TO ALLOW THE BATTERIES TO VENTILATE PROPERLY.
4. REPORT ANY DAMAGE TO A SUPERVISOR.
5. WIPE DOWN MACHINE IF NEEDED. USE A NONABRASIVE, NON SOLVENT CLEANER, OR A CLEAN DAMP CLOTH.
6. RECHARGE THE BATTERIES IF NEEDED.

WEEKLY MAINTENANCE

1. CHECK BATTERY WATER LEVEL.
2. CHECK CONDITION OF ALL THREE TIRES.
3. CHECK CONDITION OF DUST CURTAINS ON SHROUD.
4. CHECK CONDITION OF DUST CURTAIN ON WALLS.
5. CHECK TO SEE IF VACUUM EXHAUST IS CLEAR.

MONTHLY MAINTENANCE

1. CHECK MACHINE FOR VACUUM LEAKS AND LOOSE NUTS AND BOLTS

YEARLY MAINTENANCE

1. CALL YOUR LOCAL DEALER FOR YEARLY MAINTENANCE.

STORING MACHINE

1. BE SURE TO CLEAN FILTER
2. EMPTY HOPPER INTO TRASH RECEPTACLE.
3. RAISE MAIN BROOM AND SIDE BROOMS.

NOTE: IF YOU LEAVE BROOMS DOWN ON FLOOR FOR EXTENDED PERIOD WHILE MACHINE IS NOT IN USE THEY WILL DEVELOP FLAT SPOTS. THIS WILL CAUSE "BROOM BOUNCE" AND BAD SWEEPING, AND CAN WEAR OUT THE BELT TENSIONING MECHANISM.

PREVENTATIVE MAINTENANCE RECORDS

USE THIS FORM TO MAKE COPIES FOR YOUR INTERNAL RECORDS

<u>PREVENTATIVE MAINTENANCE</u>	<u>CHECKED</u>	<u>NOTE</u>
CHECK MAIN BROOM	_____	_____
CHECK FILTER	_____	_____
CHECK VACUUM HOSE (ALL THREE)	_____	_____
CHECK SHROUD CURTAIN	_____	_____
CHECK DOOR CURTAIN	_____	_____
CHECK FRONT AND REAR CURTAINS	_____	_____
CHECK BATTERY WATER LEVEL	_____	_____
CHECK BATTERY VOLTAGE	_____	_____
CHECK CHARGER CONDITION	_____	_____
CHECK MACHINE PERFORMANCE	_____	_____
SWEEPING POWER	_____	_____
VACUUM POWER	_____	_____
CONTROLS	_____	_____
GAUGES	_____	_____
CHECK WHEEL TRACTION	_____	_____
OTHER: _____	_____	_____
OTHER: _____	_____	_____
PAST HOUR METER READING:		_____
CURRENT HOUR METER READING:		_____
AVERAGE WEEKLY USAGE:		_____
TECHNICIAN PRINT: _____		
TECHNICIAN SIGNATURE: _____		DATE: _____
MANAGER SIGNATURE: _____		DATE: _____

PREVENTATIVE MAINTENANCE RECORDS

USE THIS FORM TO MAKE COPIES FOR YOUR INTERNAL RECORDS

<u>PREVENTATIVE MAINTENANCE</u>	<u>CHECKED</u>	<u>NOTE</u>
CHECK MAIN BROOM	_____	_____
CHECK FILTER	_____	_____
CHECK VACUUM HOSE (ALL THREE)	_____	_____
CHECK SHROUD CURTAIN	_____	_____
CHECK DOOR CURTAIN	_____	_____
CHECK FRONT AND REAR CURTAINS	_____	_____
CHECK BATTERY WATER LEVEL	_____	_____
CHECK BATTERY VOLTAGE	_____	_____
CHECK CHARGER CONDITION	_____	_____
CHECK MACHINE PERFORMANCE	_____	_____
SWEEPING POWER	_____	_____
VACUUM POWER	_____	_____
CONTROLS	_____	_____
GAUGES	_____	_____
CHECK WHEEL TRACTION	_____	_____
OTHER: _____	_____	_____
OTHER: _____	_____	_____
PAST HOUR METER READING:		_____
CURRENT HOUR METER READING:		_____
AVERAGE WEEKLY USAGE:		_____
TECHNICIAN PRINT: _____		
TECHNICIAN SIGNATURE: _____		DATE: _____
MANAGER SIGNATURE: _____		DATE: _____

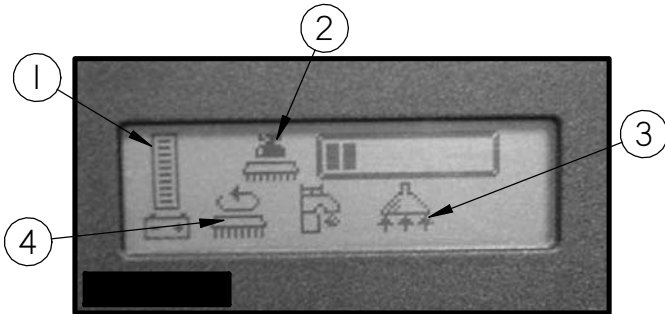
PREVENTATIVE MAINTENANCE RECORDS

USE THIS FORM TO MAKE COPIES FOR YOUR INTERNAL RECORDS

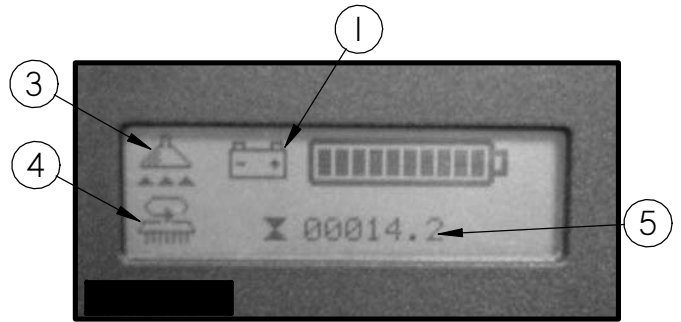
<u>PREVENTATIVE MAINTENANCE</u>	<u>CHECKED</u>	<u>NOTE</u>
CHECK MAIN BROOM	_____	_____
CHECK FILTER	_____	_____
CHECK VACUUM HOSE (ALL THREE)	_____	_____
CHECK SHROUD CURTAIN	_____	_____
CHECK DOOR CURTAIN	_____	_____
CHECK FRONT AND REAR CURTAINS	_____	_____
CHECK BATTERY WATER LEVEL	_____	_____
CHECK BATTERY VOLTAGE	_____	_____
CHECK CHARGER CONDITION	_____	_____
CHECK MACHINE PERFORMANCE	_____	_____
SWEEPING POWER	_____	_____
VACUUM POWER	_____	_____
CONTROLS	_____	_____
GAUGES	_____	_____
CHECK WHEEL TRACTION	_____	_____
OTHER: _____	_____	_____
OTHER: _____	_____	_____
PAST HOUR METER READING:		_____
CURRENT HOUR METER READING:		_____
AVERAGE WEEKLY USAGE:		_____
TECHNICIAN PRINT: _____		
TECHNICIAN SIGNATURE: _____		DATE: _____
MANAGER SIGNATURE: _____		DATE: _____

LCD SCREEN MENU DISPLAYS

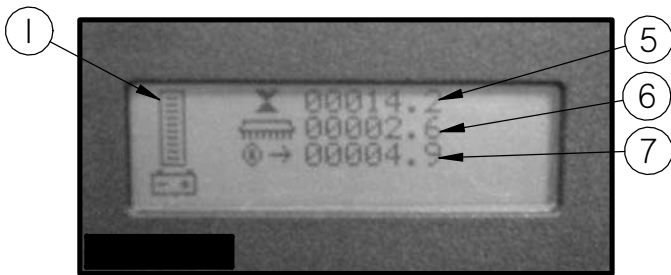
SCREEN # 1



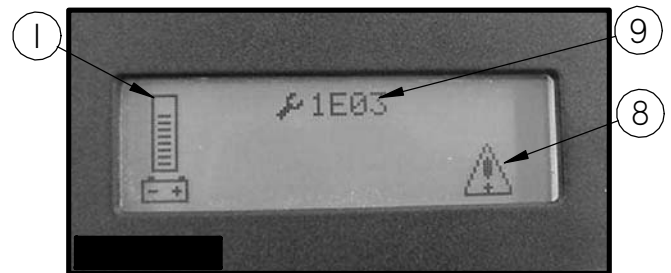
SCREEN # 2



SCREEN #3



SCREEN #1 W/ERROR CODE



***** USE GREEN MENU SELECTION BUTTON ON CONTROL PANEL TO CHANGE SCREENS*****

FIGURES 13-14.

1. **BATTERY LEVEL INDICATOR** - INDICATES THE ENERGY LEVEL REMAINING IN THE BATTERIES.
(SHOWN ON ALL MENU DISPLAYS)
2. **MAIN BROOM DOWN PRESSURE GAUGE** - SETS THE DOWN PRESSURE ON THE MAIN BROOM. (SEE FIGURE 13.)
3. **VACCUM/FAN ON** - TELLS YOU WHEN THE VACUUM FAN IS ON. (SEE FIGURES 25. AND 26.)
4. **BROOM MOTOR ON** - TELLS YOU WHEN THE MAIN BROOM IS RUNNING. (SEE FIGURES 25. AND 26.)
5. **KEY SWITCH HOUR METER** - TELLS YOU THE TOTAL HOURS THE MACHINE HAS BEEN ON. (SEE FIGURES 26. AND 27.)
6. **MAIN BROOM HOUR METER** - TELLS YOU THE TOTAL HOURS THE MAIN BROOM MOTOR HAS BEEN USED.
(SEE FIGURE 27.)
7. **TRANSPORT HOUR METER** - TELLS YOU THE TOTAL HOURS THE DRIVE SYSTEM HAS BEEN USED. (SEE FIGURE 27.)
8. **ERROR WARNING SYMBOL** - INDICATES WHEN THERE HAS BEEN A DIAGNOSTIC CODE ERROR. (SEE FIGURE 28.)
9. **DIAGNOSTIC CODE** - WHEN THE MACHINE HAS DETECTED AN ERROR IT WILL DISPLAY THE WARNING SYMBOL AND A DIAGNOSTIC CODE WHICH TELL YOU WHATS WRONG. (SEE FIGURE 28.)

(FOR COMMAN ERROR CODES AND DISCRIPTIONS SEE PAGE 19)

TROUBLESHOOTING CENTRAL COMMAND

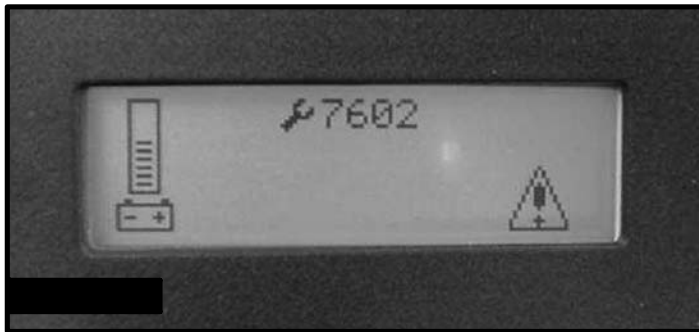
NOTE: THIS MACHINE IS OPERATED BY A SOPHYSTICATED ELECTRONIC "BRAIN" THAT HAS MANY FAIL-SAFES WITHIN IT. THE BRAIN SELF-ANALYZES PROBLEMS AND FLASHES A FOUR-DIGIT NUMERIC CODE OF WHAT IS WRONG IN THE **LCD** WINDOW.

MOST OF THESE CODES REQUIRE A TECHNICIAN'S ATTENTION. YOU SHOULD NOT ATTEMPT REPAIRS YOU ARE UNCOMFORTABLE WITH, ESPECIALLY IF YOU ARE NOT USED TO WORKING ON ELECTRONICS.

THE COMPLETE LIST OF CODES IS PUBLISHED IN THE **SIMPLIFIED ELECTRONIC TROUBLESHOOTING MANUAL**, WHICH IS AVAILABLE TO TECNICAL PEOPLE. HOWEVER, WE HAVE INCLUDED THE BASIC CODES THAT YOU CAN USUALLY RESOLVE YOURSELF.



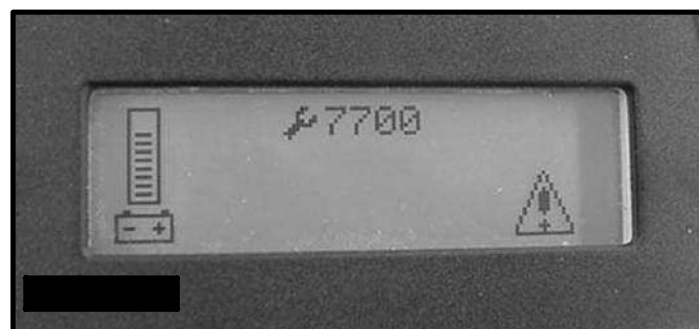
1. 1E03 AND 1E04 ERROR. CHECK THE SMALL SAFETY SWITCH NEXT TO THE RED PLUG BELOW THE DASHBOARD. THIS SWITCH WILL TURN OFF THE TRACTION DRIVE AND BRUSHES AS A SAFETY FEATURE WHILE THE CHARGER IS PLUGGED IN. THE SWITCH MAY BE STUCK, OR THE PLUG TWISTED AT AN ANGLE, ENGAGING THE SWITCH. THIS CODE WILL ALSO FLASH IF THE WIRING BECOMES VERY WET. IN THIS CASE, ETHER WAIT UNTIL THE WIRING DRIES OUT, OR CALL A TECHNICIAN.



2. 7601 AND 7602 ERROR. PAD CURRENT OVER LOAD. THIS CAN CAN OCCUR WHEN THE MAIN BROOM HIT A BUMP IN THE FLOOR. TO RESTART THE BROOM, TURN OFF THE KEY AND TURN IT ON AGAIN. TO AVOID THIS ERROR, EITHER SLOW DOWN ON BUMPY PARTS OF THE FLOOR, OR REDUCE DOWNPRESSURE ON THE BROOM.



3. 1600 ERROR. VOLTAGE EXCEEDS THE MAXIMUM. EITHER THE BATTERIES ARE MIS-WIRED, OR THE CHARGER IS STILL PLUGGED INTO THE MACHINE.

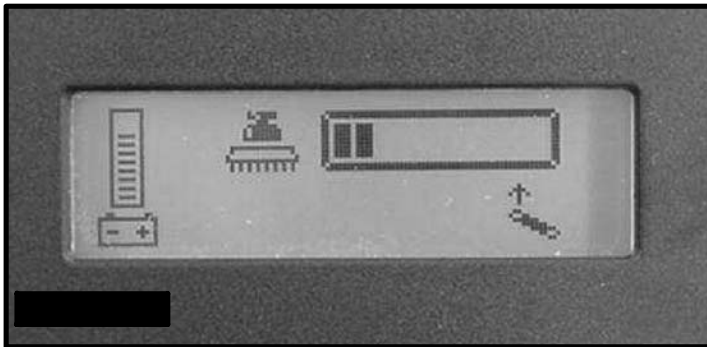


4. 7700, 7701, 7702, AND 7703 ERROR. THE VACUUM MOTOR HAS EXCEEDED THEIR AUTHORIZED POWER LIMITS. TURN OFF KEY AND TURN ON AGAIN TO CLEEAR.

TROUBLESHOOTING CENTRAL COMMAND



5. 7900 AND 7901 ERROR. THE EMERGENCY STOP BUTTON IS OUT



6. 2FO1 ERROR. YOU PRESSED THE FOOT PEDAL BEFORE TURNING ON THE KEY. TURN OFF THE KEY AND TRY AGAIN, LEAVING FOOT OFF OF THE PEDAL.



7. 2C00 AND 2C01 ERROR. LOW VOLTAGE WARNING. VOLTAGE HAS DROPPED DOWN BELOW THE MINIMUM REQUIRED TO OPERATE THE MACHINE. IF YOU WAIT A FEW MINUTES, THE BATTERIES MAY COAST UP A BIT IN VOLTAGE, ALLOWING YOU TO DRIVE VERY SLOWLY TO THE RECHARGE STATION. IF NOT, YOU WILL HAVE TO RELEASE THE PARKING BRAKE (ON THE FRONT WHEEL, PULL LEVER TOWARD THE FRONT OF THE MACHINE TO RELEASE) AND PUSH THE MACHINE TO RECHARGEING STATION.



8. 7802 ERROR. THE TRACTION MOTOR WAS USED TO CLIMB A RAMP, AND WAS RUNNING UP THE RAMP FOR MORE THAN THE 60 SECONDS ALLOWED FOR THIS. TURN OFF THE KEY, TURN ON AGAIN, AND CONTINUE. YOU SHOULD NOT USE THIS MACHINE TO CLIMB RAMPS SO STEEP AND SO LONG THAT THIS CODE COMES UP REPEATEDLY, OR YOU COULD OVERHEAT THE TRACTION MOTOR.

9. ALL OTHER ERROR CODES. TURN OFF THE KEY, AND DISCONNECT THE POSITIVE BATTERY CABLE FROM THE BATTERIES FOR MORE THAN ONE MINUTE (THE TIME IS NEEDED TO DRAIN THE BRAIN'S ON-BOARD CAPACITOR). RECONNECT CABLES, BEING SURE THAT IT IS TIGHT. **TOO LOOSE AND YOU WILL BURN BATTERY. IF YOU OVERTIGHTEN THE CABLES YOU CAN DAMAGE THE BATTERY'S LEAD TERMINAL.** TRY AGAIN.

10. IF THE PROBLEMS CANNOT BE SOLVED BY ANY OF THESE SOLUTION CALL YOUR LOCAL DEALER'S SERVICE DEPARTMENT.

TROUBLE SHOOTING

PROBLEM

CAUSE

SOLUTION

NO POWER, NOTHING OPERATES

FAULTY KEY SWITCH
BATTERIES NEED CHARGING
FAULTY BATTERY
LOOSE BATTERY CABLE
MAIN CIRCUIT BREAKER TRIPPED

CONTACT LOCAL SERVICING DEALER
SEE CHARGING BATTERIES
REPLACE BATTERY
TIGHTEN LOOSE CABLE
WAIT 5 MINUTES FOR AUTO RESET
DETERMINE CAUSE AND CORRECT

MAIN BROOM DOES NOT OPERATE

MAIN BROOM IS NOT DOWN
FOOT PEDAL IS NOT DEPRESSED
MAIN BROOM CIRCUIT BREAKER
TRIPPED
CARBON BRUSHES WORN
FAULTY MOTOR OR WIRES

PUT MAIN BROOM DOWN
ENGAGE FOOT PEDAL
WAIT 5 MINUTS FOR AUTO RESET
DETERMINE CAUSE AND CORRECT
CONTACT LOCAL SERVICING DEALER
CONTACT LOCAL SERVICING DEALER

DRIVE MOTOR DOES NOT OPERATE

RECHARGE SWITCH MISADJUSTED
FAULTY SPEED CONTROLLER OR WIRES
FAULTY DRIVE MOTOR
FAULTY WIRING
CARBON BRUSHES WORN

CONTACT LOCAL SERVICING DEALER
CONTACT LOCAL SERVICING DEALER
CONTACT LOCAL SERVICING DEALER
CONTACT LOCAL SERVICING DEALER
CONTACT LOCAL SERVICING DEALER

DUST CONTROL FAN DOES NOT OPERATE

FAULTY VACUUM SWITCH
VACUUM CIRCUIT BREAKER TRIPPED

FAULTY VACCUM MOTOR
CARBON BRUSHES WORN

TRY OPERATING "WHITE " TOGGLE
WAIT 5 MINUTES FOR AUTO RESET
DETERMINE CAUSE AND CORRECT
CONTACT LOCAL SERVICING DEALER
CONTACT LOCAL SERVICING DEALER

DRIVE MOTOR RUNS INCORRECTLY

FAULTY SPEED CONTROLLER OR WIRES
FAULTY POTENTIOMETER
LOOSE WIRES

CONTACT LOCAL SERVICING DEALER
CONTACT LOCAL SERVICING DEALER
CONTACT LOCAL SERVICING DEALER

TROUBLE SHOOTING

PROBLEM

CAUSE

SOLUTION

POOR DUST CONTROL

MAIN VACUUM HOSE DISCONNECTED
MAIN BROOM HOSE DISCONNECTED
MAIN BROOM HOSE CLOGGED
DAMAGED MAIN VACUUM HOSE
DAMAGED BROOM GUARD HOSE
FILTER CLOGGED
HOPPER NOT CLOSED TIGHTLY

HOPPER GASKET FAULTY
HOPPER FULL
FAULTY VACUUM FAN
BATTERY CHARGE IS LOW

RECONNECT HOSE
RECONNECT HOSE
REMOVE DEBRIS
CONTACT LOCAL SERVICING DEALER
CONTACT LOCAL SERVICING DEALER
TURN ON FILTER BEATER
ADJUST SCREW ON HOPPER CLAMP
TO TIGHTEN SEAL
CONTACT LOCAL SERVICING DEALER
REMOVE DEBRIS
CONTACT LOCAL SERVICING DEALER
CHARGE BATTERIES OVERNIGHT

POOR SWEEPING QUALITY

MAIN BROOM WORN OUT
DEBRIS STUCK TO MAIN BROOM
BROKEN MAIN BROOM BELT
BROKEN MOTOR TO JACKSHAFT BELT
MAIN BROOM BELT FELL OFF
MOTOR TO JACK SHAFT BELT FELL OFF
BATTERY CHARGE IS LOW

REPLACE MAIN BROOM
REMOVE DEBRIS
REPLACE BELT
REPLACE BELT
PUT BELT BACK ON
PUT BELT BACK ON
CHARGE BATTERIES OVERNIGHT

MAIN BROOM NOISY

DEBRIS STUCK IN MAIN BROOM
MAIN BROOM OUT OF ROUND
DEBRI STUCK IN MAIN BROOM BELT

REMOVE DEBRIS
REPLACE MAIN BROOM
REMOVE DEBRIS

REAR TIRES NOISY

BEARINGS DRY
FAULTY HUBS

GREASE BEARINGS
CONTACT LOCAL SERVICING DEALER

POOR TRACTION

EXCESSIVE MAIN BROOM PRESSURE
WORN DRIVE TIRE

REDUCE PRESSURE WITH SWITCH
CONTACT LOCAL SERVICING DEALER

SHORT RUN TIME

BATTERIES RUN DOWN
BATTERIES STILL DOWN
BATTERIES LOW ON WATER

BATTERIES OVER CYCLED

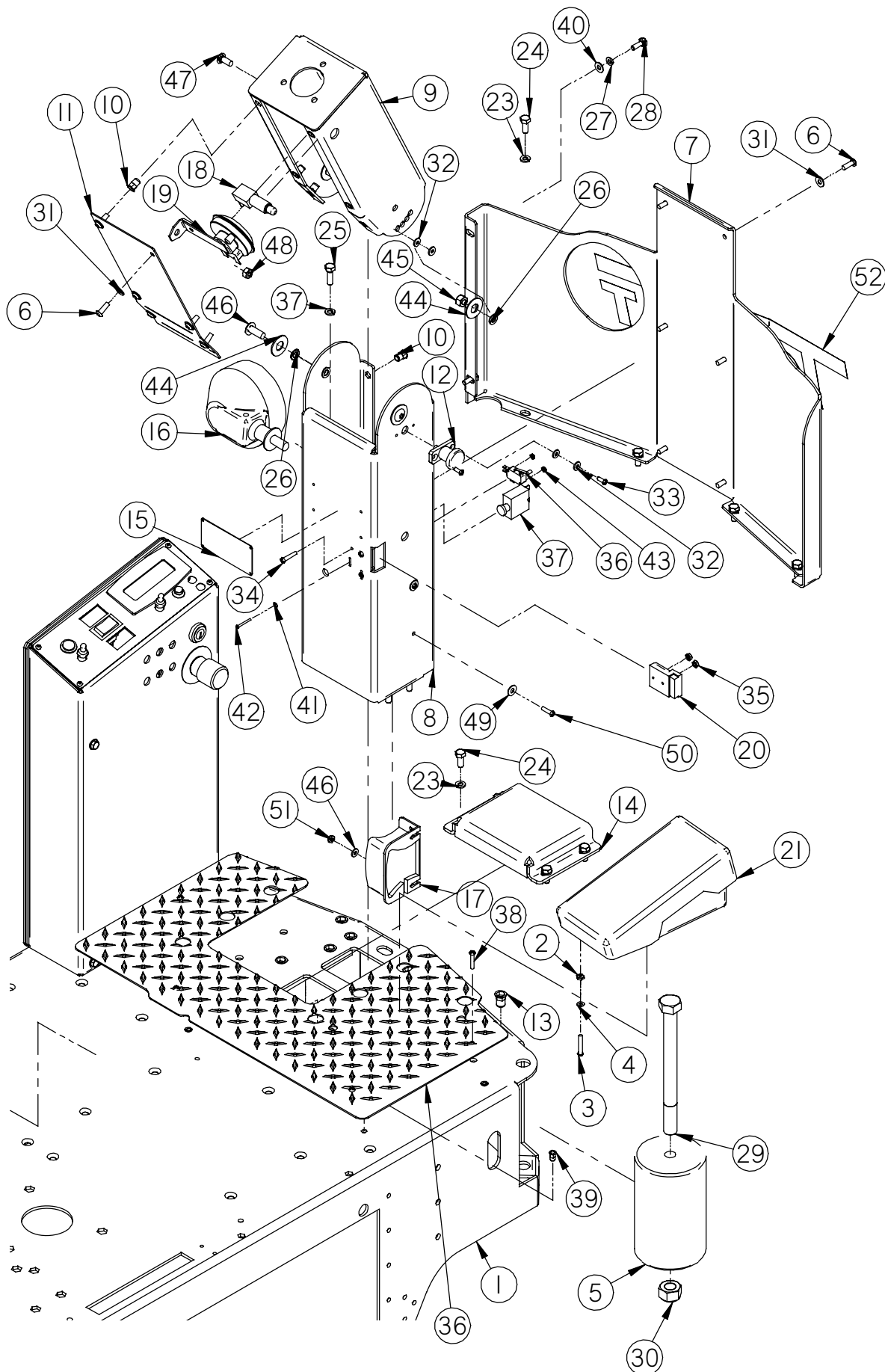
CHARGE BATTERIES TWICE
CONTACT LOCAL SERVICING DEALER
FILL WITH DISTILLED WATER TO 3/4"
ABOVE THE LEAD PLATES
CONTACT LOCAL SERVICING DEALER

MODEL 297

MACHINE PARTS SECTION

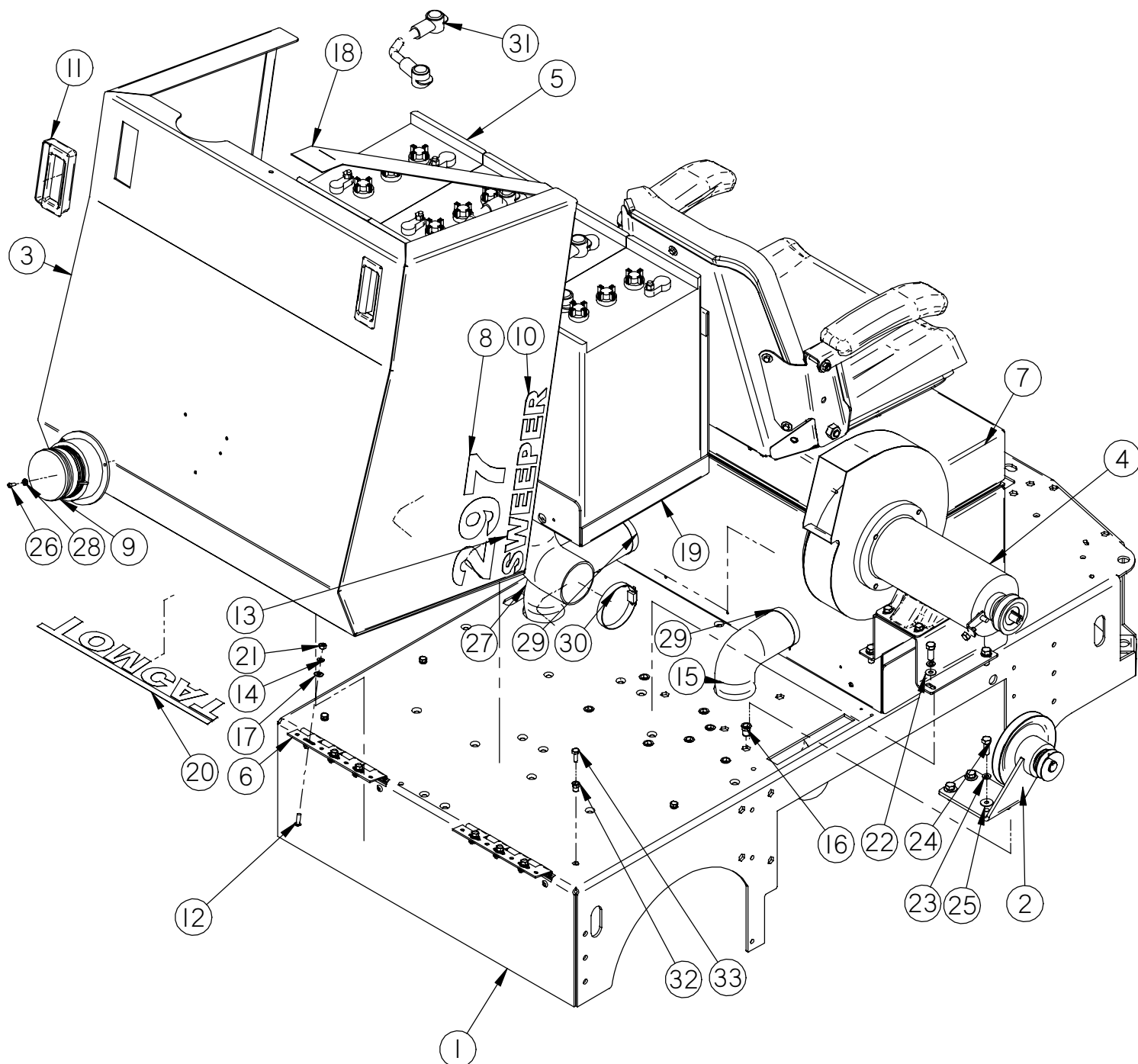
SOME PARTS ARE MADE IN RED AND YELLOW. IF YOU NEED YELLOW PARTS USE THE ALTERNATE PART NUMBER WHICH WILL START WITH (291-XXXX). IF YOU NEED RED PARTS, USE THE NORMAL PART NUMBER THAT WILL START WITH (290-XXXX). IF THERE IS ONLY ONE PART NUMBER, THAT IS THE ONLY COLOR THAT PART COMES IN.

FRAME TOP FRONT



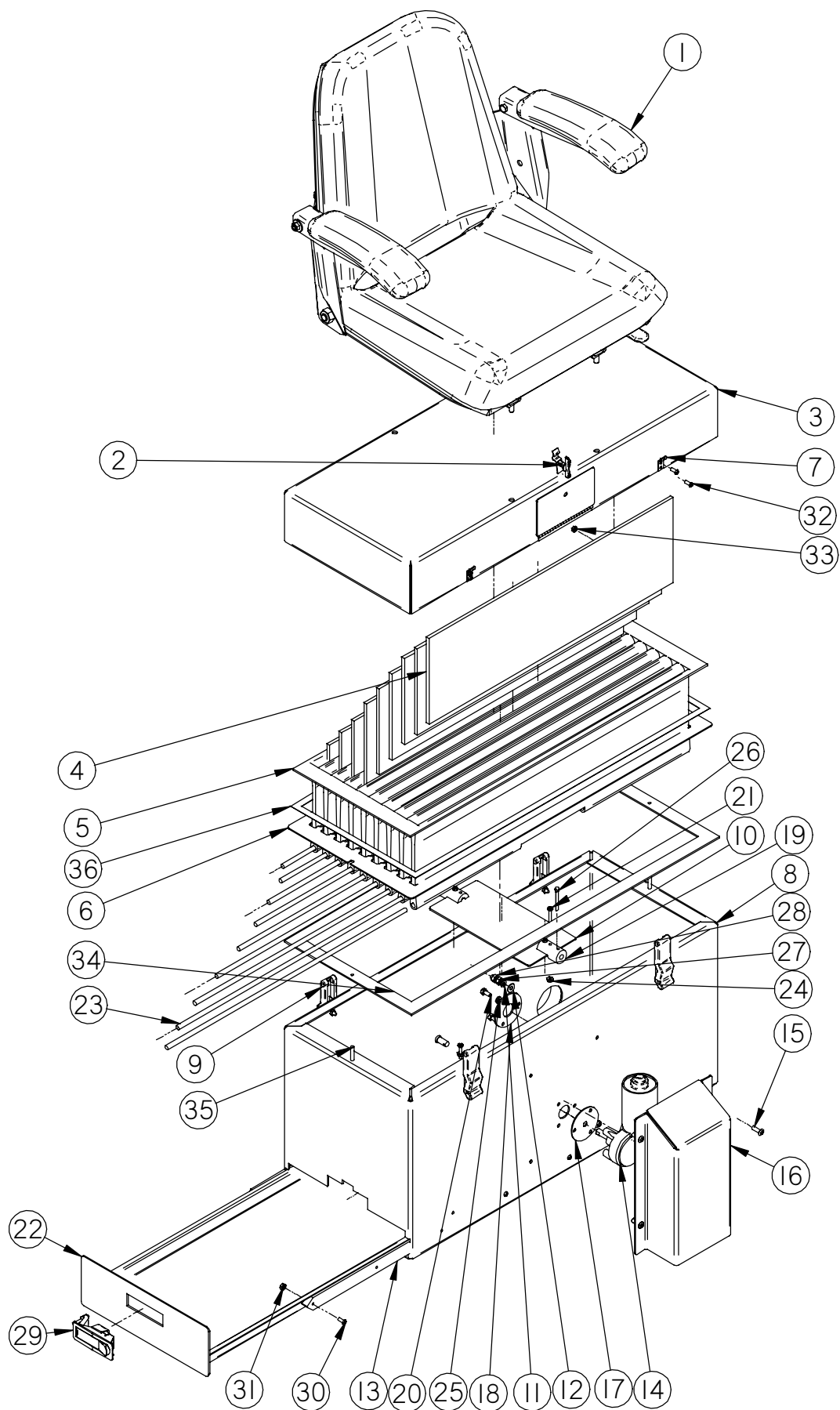
Item	Part No.	Alt. Part No.	Part Description	Qty
1	290-9502		FRAME WELDMENT	1
2	H-70858		NYLOK #10-32 SS	2
3	H-73747		RPH #10-32 X 1 1/4" SS	2
4	H-78009		FW 3/16" X 7/16" SS	2
5	7-125A		ROLLER	2
6	H-73754		BHSCS 1/4 - 20 X 3/4 SS	13
7	290-1180	291-1180	FRONT APRON	1
8	290-1170	291-1170	LOWER STEERING TOWER	1
9	290-1171	291-1171	UPPER STEERING TOWER	1
10	H-250HCN		HCN 1/4"-20	12
11	290-1172	291-1172	COVER	1
12	290-7050		INDEX PLUNGER	1
13	H-312HCN		HCN 5/16"-18	17
14	290-1173		DRIVE COVER	1
15	21-0101		SERIAL NO. PL. (TOMCAT)	1
16	8-291		HEADLIGHT	1
17	8-292		BACKUP ALARM	1
18	8-294B		PUSH BUTTON SWITCH, SILVER	1
19	8-294		HORN	1
20	4-257		CONNECTOR, RED 50	1
21	5-275		FOOT PEDAL	1
22	21-2230		MICRO SWITCH	1
23	H-33620		LW 5/16"	12
24	H-13053		HCS 5/16"-18 X 3/4"	8
25	H-13055		HCS 5/16"-18 X 1"	4
26	H-76063		FW 3/8" NYLON	5
27	H-71063		LW 1/4" SS	2
28	H-70003		HCS 1/4"- 20 X 3/4" SS	2
29	H-11380		HCS 3/4-10 X 8-1/2	2
30	H-37039		NYLOK 3/4"- 10	2
31	H-76061		FW 1/4" NYLON	12
32	H-33074		FW #10 SAE	6
33	H-29048		RPH #10-32 X 1/2"	2
34	H-28902		RPH #8-32 X 1"	2
35	H-37406		KN #8-32	2
36	290-1610		NON SKID FLOOR PLATE	1
37	7-837		FUSE RESETTABLE 2 AMP	1
38	H-29072		RPH #10-32 X 1"	4
39	H-1032HCN		HCN #10-32	4
40	H-71013		FW 1/4" X 5/8" SS	2
41	H-33066		FW #4 SAE	2
42	H-28678		RPH #4-40 X 1"	2
43	H-37006		NYLOK #4-40	2
44	H-71021		FW 3/8" X 7/8" SS	4
45	H-37024		NYLOK 3/8"-16	2
46	H-73815		BHSCS 3/8"- 16 X 1" SS	2
47	H-21253		CB 5/16"- 18 X 3/4"	1
48	H-36104		HN 5/16"-18	1
49	H-71009		FW #10 SS	2
50	H-29060		RPH #10-32 X 3/4"	2
51	H-37015		NYLOK #10-32	2
52	21-1530		FRONT TOMCAT STICKER	1

FRAME TOP REAR



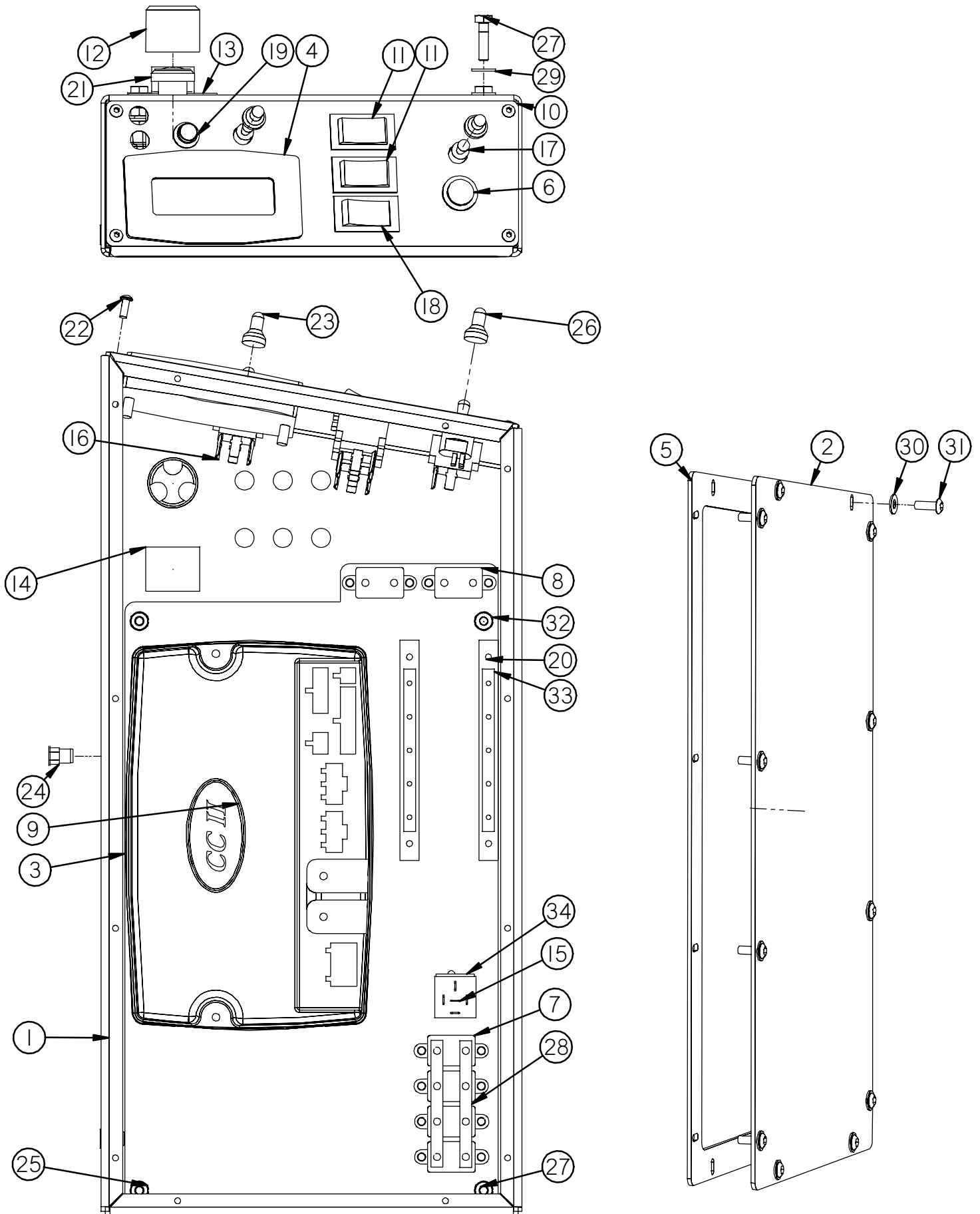
Item	Part No.	Alt. Part No.	Part Description	Qty
1	290-9502		FRAME WELDMENT	1
2	SEE PAGES 37 AND 38		JACK SHAFT	1
3	290-9512	291-9512	HOOD	1
4	SEE PAGES 37 AND 38		MOTOR MOUNT AND FAN	1
5	290-2110		BATTERY 6 VOLT 395 AH	4
6	5-122		HINGE 8" SS	2
7	SEE PAGES 29 AND 30		DUST CONTROL SYSTEM	1
8	290-9553		297 STICKER	2
9	8-293		STROBE LIGHT	1
10	290-9554		SWEEPER STICKER	2
11	5-849		RECESSED HANDLE	2
12	H-73754		BHSCS 1/4 - 20 X 3/4 SS	14
13	290-9525		(3") MAIN VACUUM HOSE	1
14	H-71063		LW 1/4" SS	6
15	290-9505		(2.5") RIGHT HOSE	1
16	H-312HCN		HCN 5/16"-18	8
17	H-71013		FW 1/4" X 5/8" SS	6
18	290-9589		ACCESS LID STRAP	1
19	290-9545		BATTERY BOX	1
20	290-9504		BACK TOMCAT STICKER	1
21	H-70710		HN 1/4"- 20 SS	8
22	H-78015		FW 5/16" X 3/4" SS	3
23	H-71065		LW 5/16" SS	6
24	H-70055		HB 5/16"- 18 X 1" SS	7
25	H-71016		FW 5/16" X 7/8" USS	3
26	H-72563		RPH #10-32 X 1/2" SS	3
27	209-9505		(2.5") LEFT HOSE	1
28	H-37408		KN #10-32	1
29	H-62091		CLAMP 1 9/16 - 2 1/2 " SS	2
30	H-62091		CLAMP 1 9/16 - 2 1/2 " SS	1
31	290-9588		BATTERY CABLE KIT	3
32	H-250HCN		HCN 1/4"-20	4
33	H-70003		HCS 1/4"- 20 X 3/4" SS	4

FILTER BOX ASSEMBLY



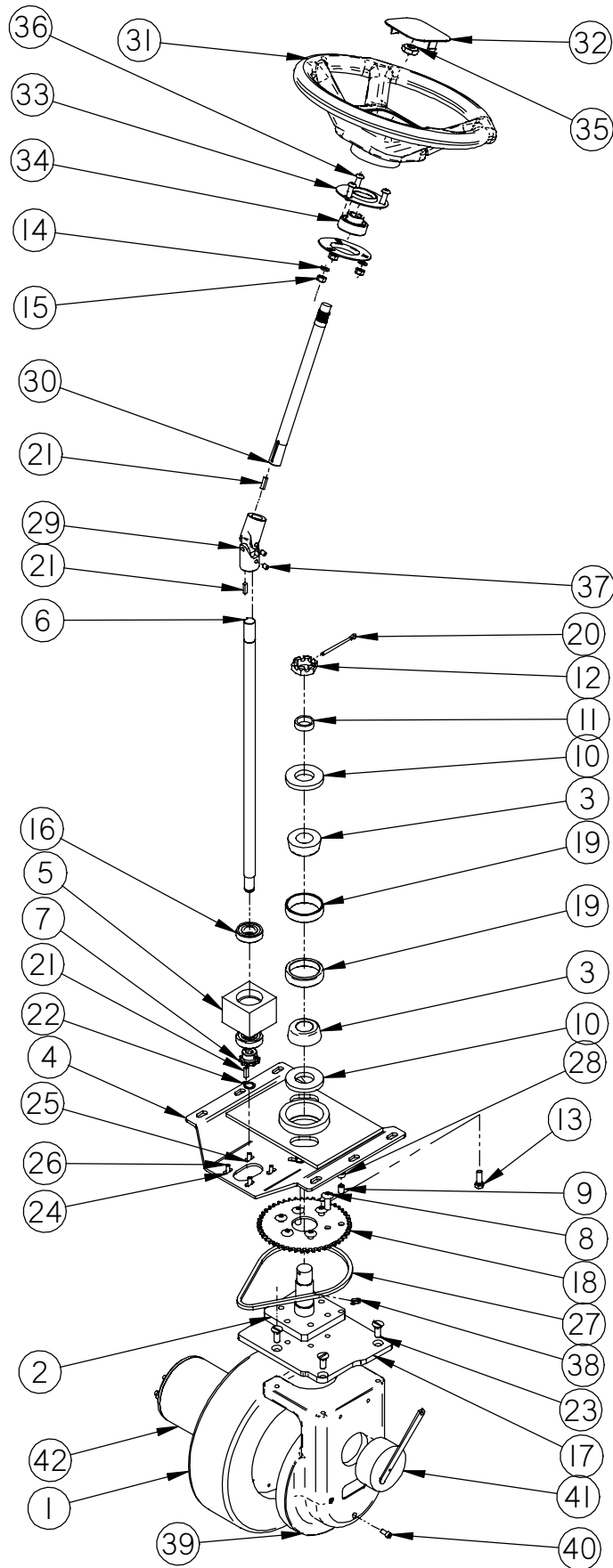
Item	Part No.	Alt. Part Number	Part Description	Qty.
1	8-143		SEAT WITH ARM RESTS	1
2	4-522		DOOR LATCH	1
3	290-9524	291-9524	FILTER HOOD	1
4	290-9520		FILTER SEPARATOR	9
5	290-9522		FILTER ELEMENT	1
6	290-9535		FILTER GRILL	1
7	4-124-01		CLIP	4
8	290-9518	291-9518	FILTER CHAMBER	1
9	4-124		HOOD LATCH	4
10	290-9549		FILTER BEATER BAR PLATE	1
11	H-71063		LW 1/4" SS	5
12	H-71013		FW 1/4" X 5/8" SS	5
13	290-9529		HDPE SLIDE RAIL	2
14	8-221		24 VOLT/100 RPM MOTOR	1
15	H-73754		BHSCS 1/4 - 20 X 3/4 SS	5
16	290-9519	291-9519	FILTER CLEANER MOTOR COVER	1
17	8-222		MOTOR GASKET	1
18	8-223		GASKET BACKING PLATE	1
19	8-561		FILTER CLEANER MOTOR COUPLER	2
20	H-38558		HCS M6-1.0 X 14	3
21	H-29073		PPH #10-32 X 1"	4
22	290-9517	291-9517	DUST TRAY	1
23	4-503A		FILTER WEIGHT ROD	9
24	H-37015		NYLOK #10-32	4
25	H-33618		LW 1/4"	3
26	H-65105		1/4" X 1 1/5" COTTER PIN	1
27	H-70710		HN 1/4"- 20 SS	5
28	H-37708		1/4-20 LC ACORN NUT	5
29	5-130		DOOR LATCH	1
30	H-72563		RPH #10-32 X 1/2" SS	10
31			KN #10-32 SS	10
32	H-72516		RPH #6-32 X 1/2" SS	16
33	H-70705		HN # 6-32 SS	16
34	290-9550		GASKET	1
35			THREADED TAPER PIN	2
36	4-502K		.50 DBL SIDED TAPE	1

CENTRAL COMMAND



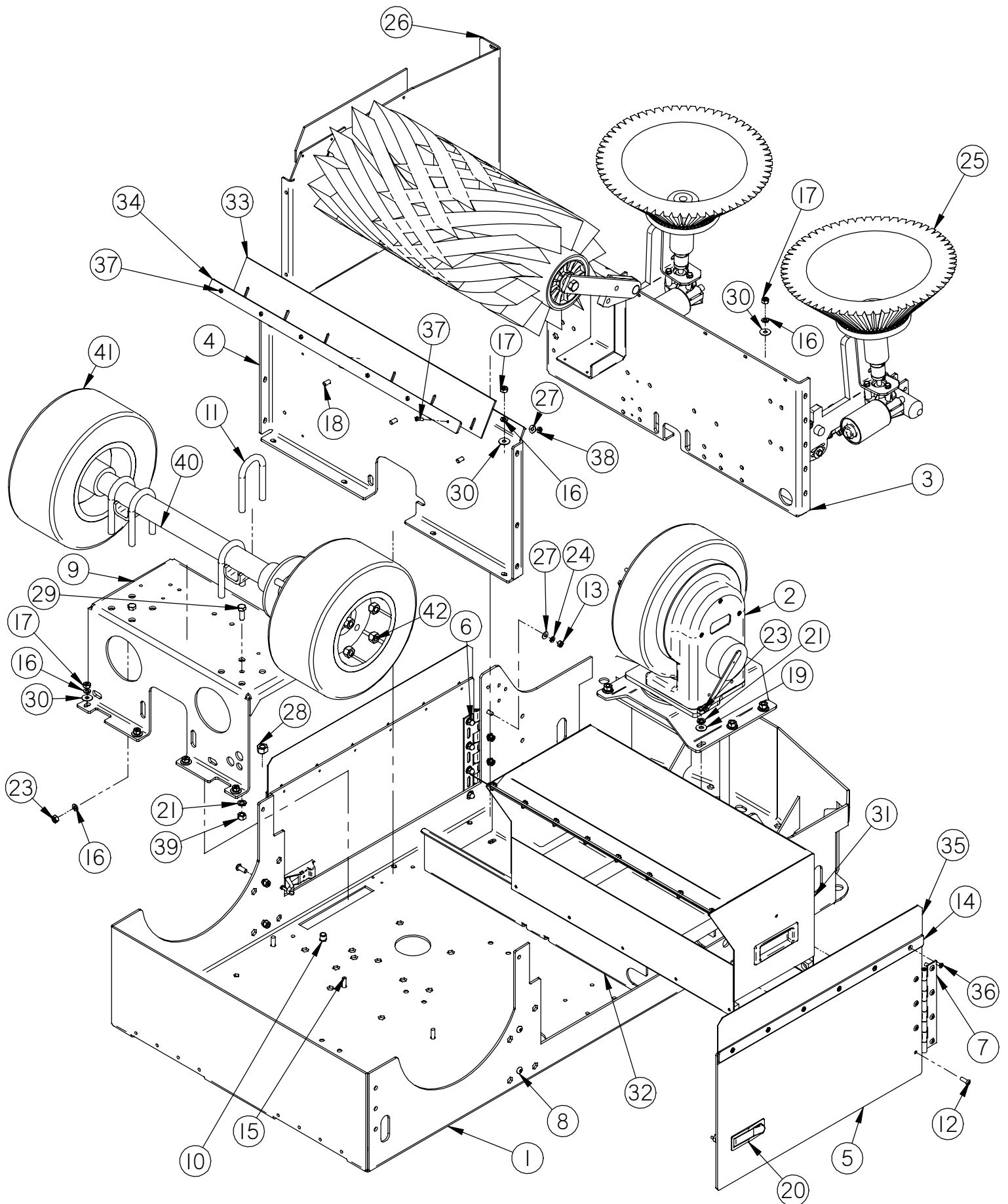
Item	Part No.	Alt. Part No.	Part Description	Qty
1	290-2010	291-2010	CONTROL PANEL	1
2	290-2001	291-2001	ACCESS COVER	1
3	290-2006		HARDWARE PANEL	1
4	290-2891		LCD SCREEN	1
5	290-2004		ACCESS COVER GASKET	1
6	290-2015		ONE TOUCH BUTTON	1
7	5-289		CIR BREAKER 24V 50A	4
8	290-2815		CIR. BREAKER - 15A, 24V	2
9	290-2890		COMPUTER CONTROL	1
10	290-2013		CONT PANEL TOP PLATE	1
11	5-234		SWITCH, ROCKER, DPDT, ON/ON	2
12	5-300		EMERGENCY SHUT OFF (OPT)	1
13	5-301		EMERG LEGEND PLATE (OPT)	1
14	5-302		EMERG CONTACT BLK (OPT)	1
15	5-293		15 AMP RELAY	1
16	7-283		SWITCH, TOGGLE, MOM/OFF/MOM (DPDT)	1
17	5-892		TOGGLE, ON-OFF SPST	1
18	8-233		OFF-MOM SPST	1
19	7-229		PUSH BUTTON SWITCH	1
20	7-287		BUSS BAR UHMW	2
21	4-234		KEY SWITCH	1
22	H-73743		BHSCS 10-32 X 1/2" SS	4
23	H-01200		PROTECTIVE BOOT, TOGGLE SWITCH, (BLACK)	1
24	H-250HCN		HCN 1/4"-20	2
25	H-36102		HN 1/4"-20	12
26	H-01196		PROTECTIVE BOOT, TOGGLE SWITCH, (RED)	1
27	H-13005		HCS 1/4"-20 X 1"	4
28	E-4HBB		4 HOLE BUSS BAR	2
29	H-33078		FW 1/4" SAE	4
30	H-71013		FW 1/4" X 5/8" SS	12
31	H-73754		BHSCS 1/4 - 20 X 3/4 SS	12
32	H-33618		LW 1/4"	4
33	E-5HBB		5 HOLE BUSS BAR	2
34	290-2020		BRACKET	1

STEERING AND TRACTION



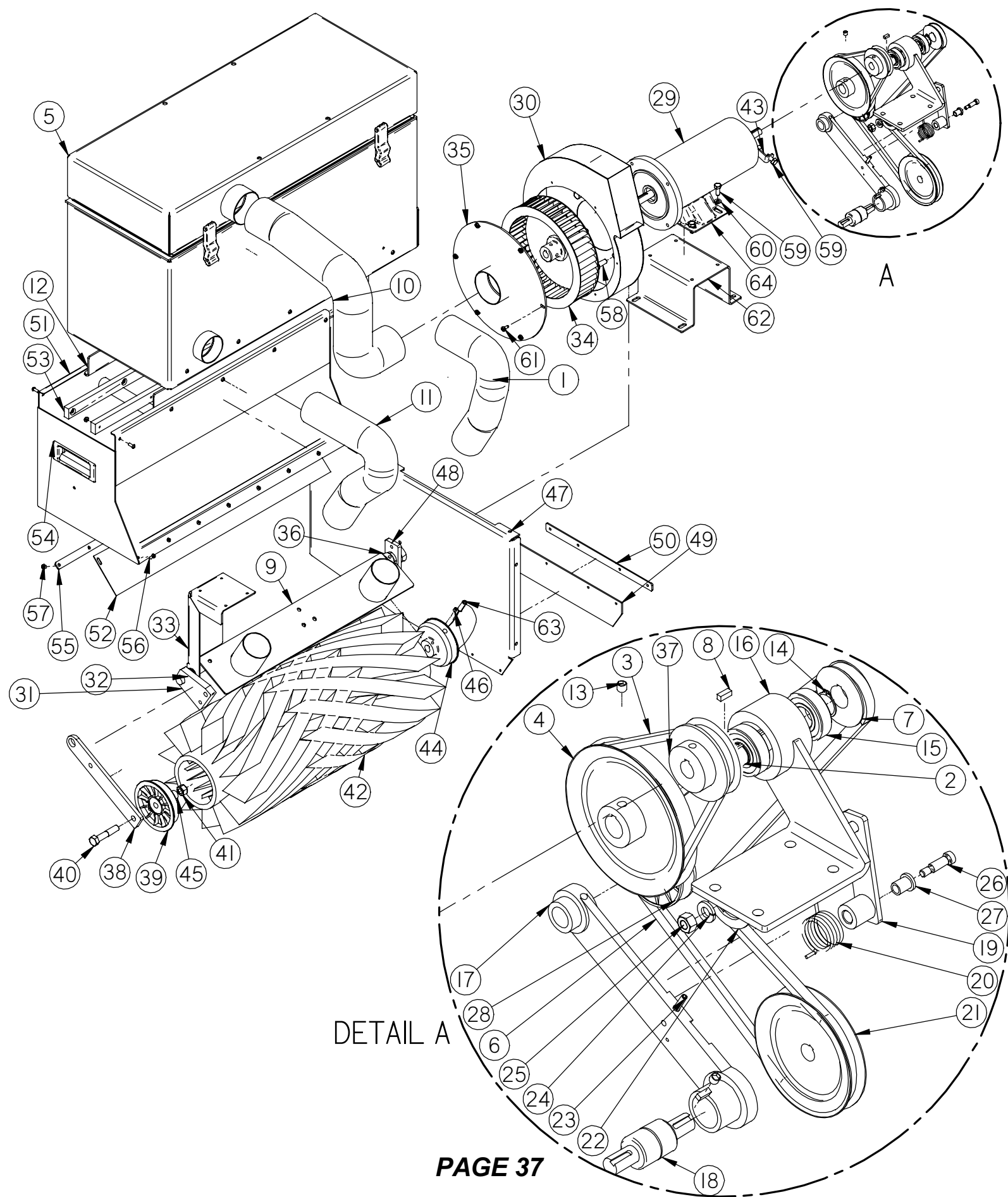
Item	Part No.	Part Description	Qty
1	290-7331	SMOOTH GREY TIRE	1
2	37-7316	PIVOT SHAFT	1
3	37-7317	TAPERED ROLLER BEARING	2
4	37-7315	DROP PLATE	1
5	8-723	BEARING BLOCK	1
6	290-7120	STEERING SHAFT, LOWER	1
7	5-826	10 TOOTH SPROCKET	1
8	H-24103	BHSCS 3/8"- 24 X 1"	6
9	H-25595	SS CP 3/8"- 24 X 1/2"	1
10	37-7319	STEERING SHAFT SEAL	2
11	37-7320	PRE LOAD SLEEVE	1
12	37-7321	SLOTTED NUT, 2.0 - 12	1
13	H-13055	HCS 5/16"-18 X 1"	2
14	H-33620	LW 5/16"	5
15	H-36104	HN 5/16"-18	9
16	8-723B	BEARING	2
17	290-7326	PIVOT PLATE	1
18	37-7314	LARGE STEERING SPROCKET	1
19	37-7318	BEARING CAP	2
20	H-65129	3/16" X 2-1/2" COTTER PIN	1
21	H-00270	3/16" X 3/4" KEY	3
22	H-68013	SNAPRING 5/8"	1
23	H-28121	FHS 3/8-16 X 1"	4
24	H-33618	LW 1/4"	2
25	H-24617	SHCS, LOW HEAD, 1/4- 20 X 5/8"	2
26	H-13003	HCS 1/4"-20 X 3/4"	2
27	290-7327	STEERING CHAIN	1
28	H-05233	PVC TUBING	1
29	290-7110	U-JOINT	1
30	290-7090	STEERING SHAFT, UPPER	1
31	8-703	STEERING WHEEL	1
32	8-701A	STEERING COVER	1
33	4-364A	FLANGE, 1.75" ID	2
34	4-352	BEARING	1
35	H-37038	JNYL 5/8"- 11	1
36	H-94071	BHSCS 5/16-18 X 1	3
37	H-25328	SSS CP 1/4"-20 X 3/8"	2
38	5-831	MASTER LINK	1
39	5-2225	END HOUSING	1
40	H-79041	SHCS 1/4-20 X 1/2 SS	3
41	290-7323	24 VOLT ELECTRIC BRAKE	1
42	290-7313	24V, 2HP, MOTOR	1

FRAME BOTTOM



Item	Part No.	Part Description	Qty
1	290-9502	FRAME WELDMENT	1
2	SEE PAGES 33 AND 34	CHASSISDRIVE SYSTEM	1
3	290-9536	FRONT PANEL	1
4	290-9551	REAR PANEL	1
5	290-9507	DOOR	2
6	H-37708	1/4-20 LC ACORN NUT	4
7	5-122	8" SS HINGE	2
8	H-73779	BHSCS 5/16-18 X 1	4
9	290-5000	AXLE MOUNT	1
10	H-312HCN	HCN 5/16"-18	1
11	290-6186	1/2-13 X 1-1/4 " U BOLT	4
12	H-73754	BHSCS 1/4 - 20 X 3/4 SS	16
13	H-36102	HN 1/4"-20	3
14	290-9516	DOOR CURTAIN BAND	2
15	H-29598	FPH 5/16"- 18 X 1"	6
16	H-33620	LW 5/16"	19
17	H-70861	NYLOK 5/16" - 18 SS	16
18	H-13053	HCS 5/16"-18 X 3/4"	3
19	H-71017	FW 3/8" SS	6
20	5-130	SIDE DOOR LATCH	2
21	H-71067	LW 3/8" SS	8
22	H-70732	HN 3/8"- 24 SS	6
23	H-36104	HN 5/16"-18	3
24	H-71063	LW 1/4" SS	11
25	SEE PAGES 41 AND 42	SIDE BROOMS	1
26	SEE PAGES 37 AND 38	MAIN BROOM ASM.	1
27	H-71013	FW 1/4" X 5/8" SS	18
28	H-37130	NYLOK NUT, 1/2"- 20	8
29	H-70105	HCS 3/8"- 16 X 1" SS	2
30	H-71016	FW 5/16" X 7/8" USS	12
31	SEE PAGES 37 AND 38	HOPPER	1
32	290-9543	HOPPER GUIDE	1
33	290-9513	LATERAL CURTAIN	1
34	290-9514	REAR CURTAIN MTG. STRIP	1
35	290-9511	SIDE CURTAIN	2
36	H-72682	FHP #10-32 X 1/2" SS	12
37	H-72565	RPH #10-32 X 3/4" SS	6
38	H-70858	NYLOK #10-32 SS	6
39	H-70712	HN 3/8"-16 SS	2
40	290-6040	REAR AXLE	1
41	290-6181	SMOOTH REAR WHEEL	2
42	290-6187	LUG NUT, 1/2"- 20	8

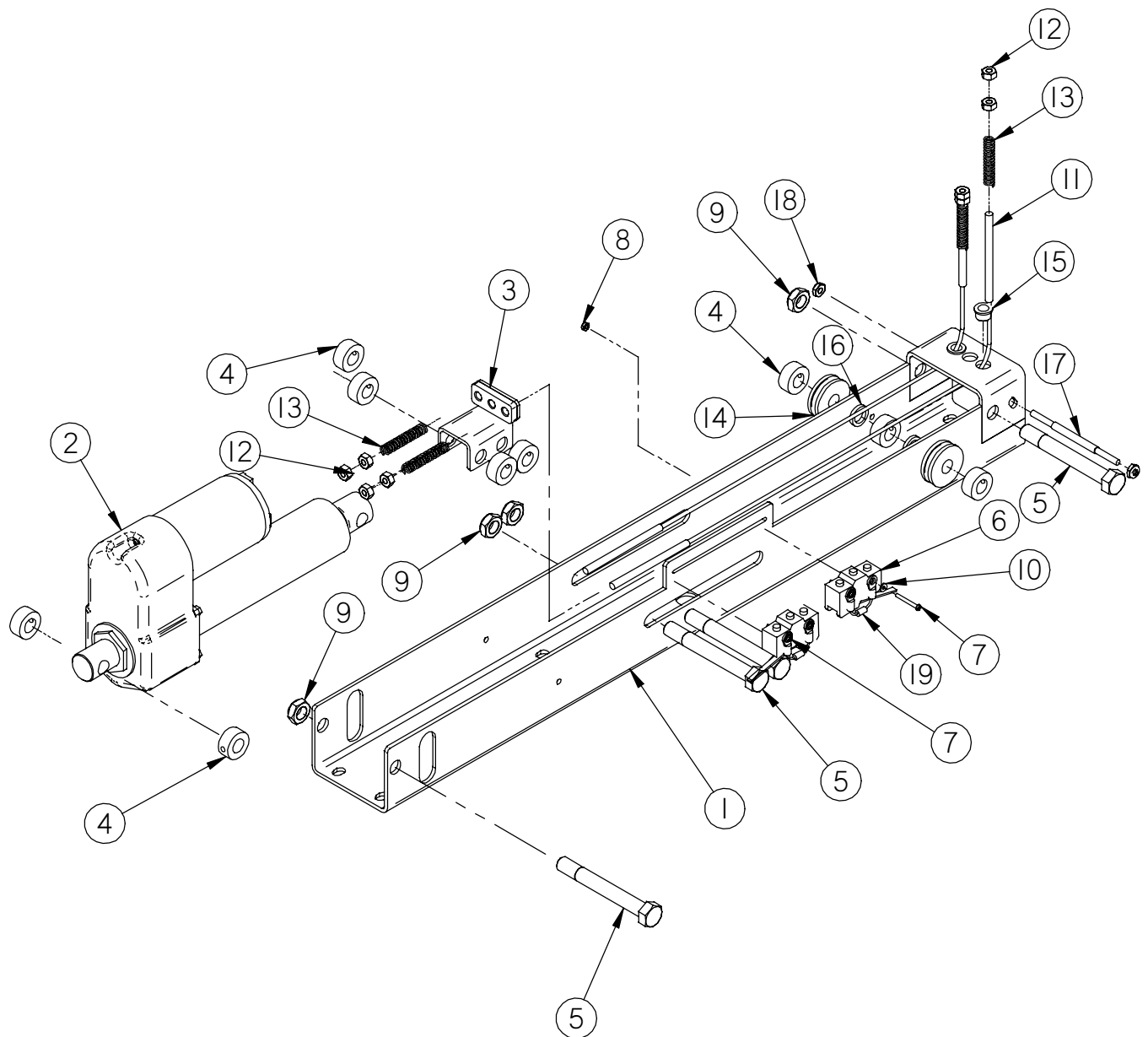
MAIN BROOM WITH MOTOR MOUNT AND FAN



Item	Part No.	Part Description	Qty
1	290-9505	(2.5") RIGHT HOSE	1
2	8-641	JACKSHAFT SHAFT	1
3	8-301	MOTOR TO JACK SHAFT BELT	1
4	4-312	TRANS INPUT PULLEY	1
5	SEE PAGES 29 AND 30	DUST CONTROL SYSTEM	1
6	290-9573	MAIN BROOM BELT	1
7	4-320	BROOM DRIVE PULLEY	1
8	H-K1432	3/16" X 1/2" KEY	3
9	290-9540	BRUSH GUARD	1
10	290-9525	(3") MAIN VACUUM HOSE	1
11	209-9505	(2.5") LEFT HOSE	1
12	290-9543	HOPPER GUIDE	1
13	H-25435	SSS CP 5/16" X 1/4"	2
14	H-68015	SNAPRING 3/4"	2
15	8-723B	BEARING	2
16	8-628	MAIN BROOM JACKSHAFT BRACKET	1
17	4-416	BROOM LATERAL ARM	1
18	4-412	BROOM DRIVE BEARING	1
19	4-360	REVERSE IDLER ARM	1
20	4-319	TENSION SPRING	1
21	4-316	BROOM DRIVE PULLEY	1
22	4-317	IDLER PULLEY	1
23	H-25283	SSS CP #10-32 X 1"	1
24	H-33622	LW 3/8"	1
25	H-36106	HN 3/8"-16	1
26	H-26316	SB 5/16" X 3/4" SS	1
27	4-366	BUSHING, IDLER ARM	1
28	4-318	IDLER PULLEY	1
29	8-201	24V,TWIN SHAFT MOTOR	1
30	4-511	BLOWER HOUSING	1
31	290-9541	MAIN BROOM SUSPENSION ARM	1
32	8-423A	MAIN BROOM BEARING SHELL	1

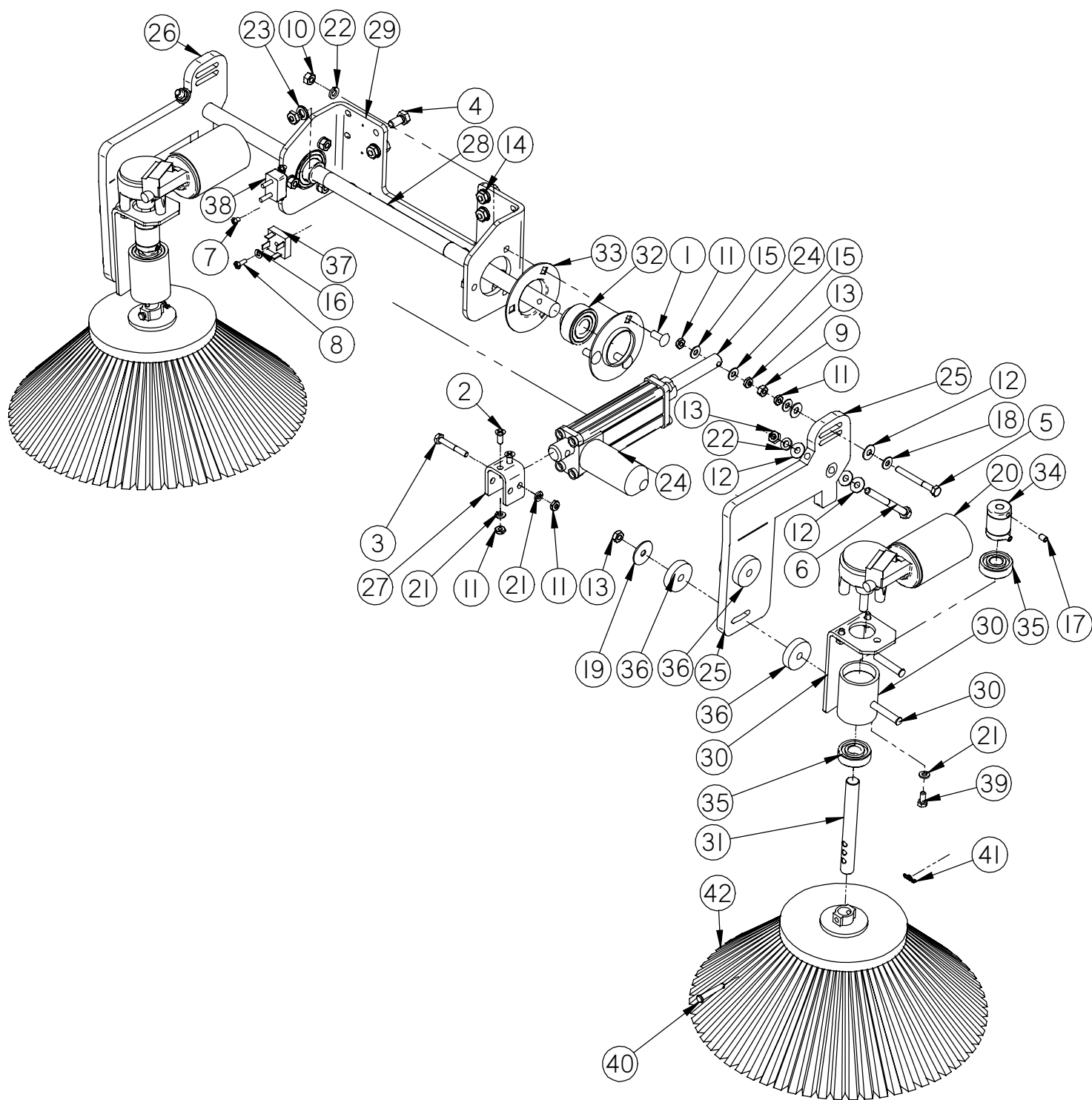
Item	Part No.	Part Description	Qty
33	8-423	LEFT SUPPORT BEARING	1
34	4-512	BLOWER WHEEL	1
35	290-9523	BLOWER DOOR PLATE	1
36	4-410A	SET COLLAR	1
37	4-301	MAIN DRIVE PULLEY	1
38	4-430	IDLER ARM	1
39	4-432	IDLER DRUM	1
40	H-13213	HB 1/2" X 2 1/2"	1
41	H-37030	NYLOK 1/2"-13	1
42	297-401US	MAIN BROOM, UNION STEEL	1
43	4-210	TERMINAL CLIP	1
44	4-420	BROOM DRIVER	1
45	4-432A	IDLER DRUM SPACER	1
46	H-25328	SSS CP 1/4"-20 X 3/8"	2
47	290-9544	BROOM COMPARTMENT INNER PANEL	1
48	4-421	SUPPORT BLOCK	1
49	8-574	FLOOR SEAL, R.	1
50	8-576	RIGHTHAND FLOOR SEAL CLAMP	1
51	290-9537	HOPPER	1
52	290-9539	HOPPER CURTAIN	1
53	290-9529	HDPE SLIDE RAIL	2
54	4-127	HANDLE	2
55	290-9571	HOPPER CURTAIN MTG. STRIP	1
56	H-72563	RPH #10-32 X 1/2" SS	18
57	H-70858	NYLOK #10-32 SS	18
58	H-13105	HCS 3/8"- 16 X 1"	4
59	H-13053	HCS 5/16"-18 X 3/4"	5
60	H-33620	LW 5/16"	4
61	H-31810	HW #10 X 1/2	6
62	8-165	MOTOR SUPPORT BRACKET	1
63	H-10436-0 105	3/8" X 1 1/4" SPRING PIN	2
64	4-201B	MOTOR CRADLE	1

ACTUATOR SLIDE ASSEMBLY



Item	Part No.	Part Description	Qty
1	290-9503	ACTUATOR CHANNEL	1
2	7-221	ACTUATOR; 1000 LB. LOAD (20:1)	1
3	430-7710	CABLE TROLLEY	1
4	H-33374	SHAFT COLLAR, 1/2" ID	9
5	H-11219	HCS 1/2"- 13 X 4.0"	4
6	5-223	LIMIT SWITCH	2
7	H-28679	PPH #4-40 X 1"	4
8	H-37006	NYLOK #4-40	4
9	H-37032	JAM NYLOK NUT, 1/2"- 13	4
10	H-33066	FW #4 SAE	4
11	290-9560	SQUEEGEE LIFT CABLE	2
12	H-36152	HN 1/4"- 28	8
13	290-7712	COMPRESSION SPRING	4
14	5-772	PULLEY, NYLON	2
15	H-6389	FLANGED BUSHING 3/8" ID X 5/8" OD, NYLON	2
16	H-01320	FW 1/2" ID X 1/8" THICK NYLON	2
17	H-01321	DOUBLE ENDED STUD, 1/4-20 X 4" SS	1
18	H-NJ04C	JNYL 1/4" - 20 SS	2
19	5-270	EMF SUPP DIODE	2

SIDE BROOMS



Item	Part No.	Part Description	Qty
1	H-74429	CB 5/16"- 18 X 3/4" SS	6
2	H-72706	FHP 1/4"- 20 X 5/8" SS	2
3	H-77010	HCS 1/4"- 20 X 1.75" SS	1
4	H-70103	HCS 3/8"-16 X 3/4" SS	8
5	H-77013	HCS 1/4"- 20 X 2.5" SS	1
6	H-77067	HCS 5/16"- 18 X 3.5" SS	2
7	H-72501	RPH #6-32 X 1/4" SS	2
8	H-72516	PPH #6-32 X 1/2" SS	1
9	H-70710	HN 1/4"- 20 SS	1
10	H-70711	HN 5/16"- 18 SS	6
11	H-NJ04C	JNYL 1/4" - 20 SS	6
12	H-78015	FW 5/16" X 3/4" SS	8
13	H-NJ05C	JNYL 5/16"- 18 SS	6
14	H-0129158	JNYL 3/8- 16 SS	8
15	H-76061	FW 1/4" NYLON	2
16	H-78009	FW 3/16" X 7/16" SS	1
17	H-25328	SSS CP 1/4"-20 X 3/8"	4
18	H-71013	FW 1/4" X 5/8" SS	2
19	H-71213	FNW 5/16" X 1 1/4" SS	4
20	8-220	SIDE BROOM MOTOR	2
21	H-71063	LW 1/4" SS	9
22	H-71065	LW 5/16" SS	8
23	H-71067	LW 3/8" SS	8
24	290-2220	ACTUATOR	1
25	290-4420	SIDE BROOM LIFT ARM (LH)	1
26	290-4421	SIDE BROOM LIFT ARM (RH)	1
27	290-4435	SIDE BROOM ACTUATOR SUPPT BRKT	1
28	290-4620	SIDE BROOM SUSPENSION AXLE SHAFT	1
29	290-4630	AXLE SUPPORT BRACKET	1
30	290-8750	SIDE BROOM MOTOR MOUNT	2
31	290-4450	SIDE BROOM DRIVE SHAFT	2
32	4-352	BEARING	2
33	4-364A	FLANGE, 1.75" ID	4
34	4-444	BROOM SAFETY DRIVE CPLG	2
35	4-445C	DRIVE TUBE BEARING	4
36	4-446	GROMMET-3/8 ID X 1-1/2 OD X .375	8
37	5-296	DIODE BRIDGE	1
38	8-284	CIR. BREAKER - 6A, 24V	1
39	H-82550	HCS M6-1.0 X 14 SS	6
40	H-ZCP44	1/4" X 1 1/2" CLEVIS PIN	2
41	H-RUE8	RUE RING COTTER	2
42	I-402	SIDE BROOM POLYPROPYLENE	2