

Minuteman[®]

PowerBoss[®]

3800

Rider Scrubber

MC380000

MC380001

MC380002

MC380003

MC380000QP

MC380001QP

MC380002QP

MC380003QP

OPERATION

SERVICE

PARTS

CARE



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IMPORTANT SAFETY INSTRUCTIONS

CAUTION:

Operators must read and understand this manual before operating or maintaining this machine.

All covers and doors must be closed before use.

Keep hands and feet clear of moving parts while machine is in operation.

Disconnect the power to the machine by pressing the red Emergency Disconnect Button when charging batteries or during installation or removal of pads.

During operation, loose objects on the floor can become dangerous projectiles if struck by the high-speed pad. Special attention should be paid in removing or avoiding loose floor tile, electrical cables, telephone connection boxes.

During operation, attention should be paid to other persons in the work area, especially small children.

Electrical motors and components can cause an explosion when operated near explosive materials or vapors. Do not operate this machine near flammable materials such as solvents, thinners, fuels, grain dust, etc..

Make sure the red Emergency Disconnect Button is pressed and the battery connector is unplugged from the machine before performing any service or maintenance procedures.

Store or park this machine on a level surface only, with parking brake engaged.

To prevent unauthorized use, machine should be stored with key removed.

These machines are designed for level floor operation only. *Do not operate on ramps or inclines.*

This machine is not suitable for picking up hazardous dusts.

Use caution when moving this machine into areas that are below freezing. Any water in the tanks or hoses can cause damage.

Do not clean machine with a pressure washer.

Battery acid can cause burns. When working on or around batteries, wear protective clothing and safety glasses. Remove metal jewelry. Do not lay tools or metal objects on top of batteries.

Charging batteries generates explosive gases. **DO NOT CHARGE BATTERIES WHEN OPEN FLAMES OR SPARKS ARE PRESENT. DO NOT SMOKE.** Make sure the charger is turned off before disconnecting it from the machine. Charge the batteries in a well-ventilated area with the battery cover removed completely.

Maintenance and repairs must be performed by authorized personnel.

SAVE THESE INSTRUCTIONS

OPERATING INSTRUCTIONS

INSPECTION:

Carefully unpack and inspect your 3800 Rider Scrubber for shipping damage. Each unit is tested and thoroughly inspected before shipment; any damage is the responsibility of the delivery carrier who should be notified immediately.

ELECTRICAL:

This machine is battery operated and designed to operate on (6) 36-volt DC 6-volt batteries.

BATTERIES:

The recommended batteries are 370Ah (Minuteman P/N 956715).

We do not recommend mixing AMP hour capacities. Any alternate battery sets can be used if they equal physical size and capacity. See page 18 for service and installation.

OPERATION:

Before starting, familiarize yourself with the machine and its controls (see "Machine Overview, Front", "Machine Overview, Rear", "Operator Compartment", "Main Keyboard" and "Chemical Mixing Keyboard" diagrams).

MAIN KEYBOARD:

The main keyboard is divided into four sections: on/off, machine operation, pump and brush pressure settings, and tank status. The middle section is the machine operation section. There are four choices for machine operation: "full function", "double scrub", "vacuum only" and "transport".

FULL FUNCTION MODE: When this mode is chosen a green indicator light will illuminate within the full function icon. When the machine is running in this mode, all machine functions will be on. When the operator presses the accelerator forward, the solution pump will turn on, the brushes will turn on and be lowered to the floor, and the squeegee will be lowered to the floor as the vacuum motor turns on. While operating in this mode the solution will be dispensed above the brushes which will scrub the floor allowing the chemical in the solution to break down the dirt on the floor. As the machine continues to move forward, the vacuum motor will pull the dirty solution water from the squeegee to the recovery tank. If the operator stops moving forward and begins to move backward, the squeegee will raise up (protecting it from damage) and the vacuum motor will turn off after a few seconds. If the operator quits moving in either direction, the machine will automatically raise the squeegee, and turn off and raise the brushes. Some of the functions take a little while longer to turn off than others.

DOUBLE SCRUB MODE: When this mode is chosen a green indicator light will illuminate within the double scrub icon. When the machine is running in this mode, the machine will perform all operations except dirty solution recovery. This mode can be used if the floor is heavily soiled and the chemical will need additional time to emulsify grease and oils that are on the floor. When the operator presses the accelerator forward, the solution pump will turn on, and the brushes will turn on and be lowered to the floor. While operating in this mode the solution is dispensed above the brushes which will scrub the floor allowing the chemical in the solution to break down the dirt on the floor. As the machine continues to move forward, the squeegee and vacuum system are not on, which will allow the solution to stay on the floor emulsifying the grease and oil. If the operator stops moving in either direction, the machine will automatically turn off and raise the brushes. After double scrubbing, the operator should use the vacuum only mode to recover the dirty solution water from the floor.

VACUUM ONLY MODE: When this mode is chosen a green indicator light will illuminate within the vacuum only icon. When the machine is running in this mode, the machine will only lower the squeegee and turn on the vacuum system to recover the dirty solution from the floor. This mode is usually used after double scrubbing to recover the dirty solution but it also can be used to pick up spills. When the operator presses the accelerator forward the squeegee will be lowered to the floor as the vacuum motor turns on, pulling the dirty solution water from the squeegee to the recovery tank. If the operator stops moving forward and begins to move backward, the squeegee will retract (protecting it from damage) and the vacuum motor will turn off after a few seconds. If the operator quits moving in either direction, the machine will automatically raise the squeegee, and turn off the vacuum motor after a couple of seconds.

TRANSPORT MODE: When this mode is chosen a green indicator light will illuminate within the transport icon. When the machine is running in this mode, none of the cleaning functions of the machine will operate. This mode is only used to transport the machine from one location to another at a higher rate of speed.

ON/OFF BUTTONS: Depressing the “I” button will turn the machine on and depressing the “O” button will turn the machine off. If the machine does not turn on when “I” is depressed, check the following: keyswitch, emergency disconnect switch, and the recharge port interlock.

PUMP FLOW ADJUSTMENT: These buttons are used to adjust the flow of solution to the brushes. The buttons can be used to select one of four solution flow rates: .3, .7, 1.1, or 1.5 gal/min. The volume is adjusted by either pressing the increase or decrease flow rate buttons. The number of lights that are illuminated under the pump icon represent the flow rate setting. Adjustments can be made in the full function and double scrub modes.

BRUSH PRESSURE ADJUSTMENT: These buttons are used to adjust the brush pressure. The buttons can be used to select one of three brush pressures: heavy, medium or light. The pressure is adjusted by either pressing the increase or decrease brush pressure buttons. The number of lights that are illuminated inside the weight icon represent the brush pressure setting. Adjustments can be made in the full function and double scrub modes.

RECOVERY TANK FULL INDICATOR LIGHT: The light inside this icon will be illuminated when the recovery tank is full. After the recovery tank is full for 10 seconds, the machine will automatically go into transport mode. This will turn off the vacuum motors, protecting them from being filled with water.

SOLUTION TANK EMPTY INDICATOR LIGHT: The light inside this icon will be illuminated when the solution tank is close to empty. When the light is on there is approximately 10 gallons left of solution. This is to give the operator advance warning that the solution is about to run out.

LEFT SIDE CONTROL PANEL:

The control panel to the immediate left of the operator contains the following controls: emergency disconnect, hour meter/ battery fuel gauge, and the horn button.

EMERGENCY DISCONNECT: When the large red button is pressed the battery will be electrically isolated from the rest of the machine. Use this button in case of a machine emergency. The large red knob needs to be raised in order to run the machine.

HORN BUTTON: Depressing the horn button will activate the horn.

HOURLY METER/BATTERY FUEL GAUGE: This meter has two functions: it tells the operator the number of hours that the machine has been running and it indicates the state of charge on the batteries. The hour meter will track time whenever the machine moves. This information is useful for maintenance purposes.

The battery fuel gauge shows the actual amount of charge left in the batteries. When the battery is completely charged the green light segment all the way to the right will be illuminated. As the battery begins to discharge the light segment that is illuminated will slowly move to the left. When the battery gets below half charge the light segment that is illuminated will be yellow in color. When the battery gets to be significantly discharged the light segment will be red in color and flash.

When the fuel gauge is yellow the operator should begin to prepare to recharge. When the fuel gauge is red the battery is dangerously low and needs to be recharged IMMEDIATELY. Permanent battery damage can happen from deep discharge.

CIRCUIT BREAKER PANEL:

The circuit breaker panel, located under the main keyboard, contains the circuit breakers for the entire machine. The following circuits are protected: vacuum motors (50 amp), brush motors (70 amp), drive motor (70 amp), control circuits (18 amp), computer (30 amp), and the presweep (30 amp). The computer circuit breaker also protects the pumps and the actuators.

RIGHT SIDE CONTROL PANEL:

The right side control panel contains four switches: keyswitch, optional headlights switch, optional recycle switch, and the optional presweep switch.

KEYSWITCH: Turning the keyswitch on will allow the operator to turn on the machine at the main keyboard. To turn the keyswitch on rotate the key clockwise 30 degrees. To turn the keyswitch off turn the key counter-clockwise 30 degrees.

OPTIONAL HEADLIGHTS SWITCH: If the machine has headlights installed, turning this switch on will turn on the headlights.

OPTIONAL RECYCLE SWITCH: If the machine has the recycling system installed, turning this switch on will turn on the recycle system. Turning this switch on will not turn on recycle, however, if there is no water in the recovery tank.

OPTIONAL PRESWEEP SWITCH: If the machine has a presweep installed, turning this switch on will turn on the presweep system. When the presweep system is turned on the main broom and the side broom will turn on together.

OPTIONAL CHEMICAL MIXING KEYBOARD:

If the machine has the optional chemical metering system installed, the controlling keyboard will be installed directly above the right side control panel. To turn on the chemical mixing system press the “|” button on the chemical mixing keyboard. To turn the chemical mixing system off press the “O” button.

The system will automatically meter and inject pure chemical into the water coming from the solution tank. The dilution ratio has three settings: 1 oz/gal, 2 oz/gal or 4 oz/gal. By pressing the “+” button the dilution ratio will increase and by pressing the “-” button the dilution ratio will decrease. The current setting is shown by which soap drop has a light illuminated under it. The large soap drop is 4 oz/gal, the medium soap drop is 2 oz/gal and the small soap drop is 1 oz/gal.

Adjustments can only be made to the system in the full function and double scrub modes.

The chemical metering system will not inject chemical into the high pressure off aisle cleaning attachments

CHEMICAL SYSTEM PRIMING BUTTON: By depressing the “+” button continuously for 10 seconds the chemical system will go into the prime mode. The chemical system will stay in the prime mode until the “+” button is released.

While in the prime mode the chemical pump is run continuously to prime the plumbing with the pure chemical from the chemical tank.

RECHARGE PORT:

Located on the left side of the machine is the recharge port. Simply lift the waterproof cover to access the recharge port. Under the cover is a gray Anderson-type connector that is designed to accept the gray Anderson-type connector from the battery charger.

The recharge port is interlocked so that when the charger is plugged in, the machine cannot turn on. This system is designed to protect the operator and the equipment.

ACCELERATOR PEDAL:

Located on the right side of the operator compartment on the floor is the accelerator. When the top part of the pedal is pushed forward the machine will move forward. The further the pedal is pushed the faster the machine will move. When the bottom part of the pedal is pushed down the machine will move backwards. The further the pedal is pushed down the faster the machine will move backwards. The accelerator pedal is interlocked with the seat switch, making machine propulsion not possible without the operator sitting on the seat.

SEAT:

The ergonomically designed seat is located on top of the auxiliary solution tank. There is a handle under the seat that will allow for forward or backward adjustment of the seat for operator comfort.

There is an interlock switch located inside of the seat. This switch makes it impossible to engage the traction drive circuitry without the operator on the seat. If the operator were to fall off of the machine the traction drive circuitry would turn off.

STEERING WHEEL:

The steering wheel is adjustable for operator comfort by pulling the adjustment handle forward and raising the wheel up or down. There are four possible positions.

BRUSH ACCESS DOORS:

Located on either side of the machine under the operator compartment. Pressing the button on the release handle opens the doors. This disengages the locking mechanism. The door can then be swung open for brush replacement and inspection. If the brushes are not all the way up, press the transport mode button on the main keyboard.

Do not stand or lean on the brush access doors while they are open. To close the doors return the door to the closed position and press in on the release handle until it snaps shut.

Behind the left brush access door is the solution tank drain assembly. Remove the hose from the hose clip and turn the ball valve to the open position. The fitting at the end of the hose will connect to a standard garden hose if remote draining is necessary.

Be sure to close the ball valve before refilling the solution tank.

The battery compartment is located on the rear of the machine under the solution/ recovery tank. Raising the solution/recovery tank easily accesses the batteries (be sure to drain both tanks before raising). The battery compartment contains six 6-volt batteries connected in series. Connect the batteries according to the battery connection diagram. The recommended batteries are 370Ah (Minuteman P/N 956715).

OFF-AISLE CLEANING ATTACHMENT:

The wand for the off aisle cleaning attachment is stored behind the operators left shoulder when sitting on the seat. Remove the wand by pulling it from the retaining strap. One side of the recovery hose should be inserted into the recovery tank intake port and the other into the wand. The high-pressure solution hose should be connected into the high-pressure hose on the wand and to the high-pressure attachment port on the back of the machine.

To energize the system, press the switch adjacent to the high-pressure attachment port on the back of the machine. This will turn the pump on to full pressure and turn on the vacuum system. To dispense the solution squeeze the trigger, which will dispense the cleaning solution from the spray jet on the nozzle to the floor. Use the scrub brush on the nozzle to scrub the solution into the floor and break down the dirt. Then turn the nozzle over to the squeegee and vacuum the dirty solution into the recovery tank.

To turn the system off, press the switch adjacent to the high-pressure attachment port.

OPTIONAL CHEMICAL STORAGE TANK:

If the machine has the optional chemical metering system installed, there will be a 2½-gallon tank located to the right side of the auxiliary solution tank. This tank is designed to hold non diluted chemical. The chemical metering system will inject and mix with the water in the solution tank at the proper dilution ratio. To fill the tank remove the cap, fill the chemical storage tank, and replace the cap.

If the hose that is routed from the chemical storage tank to the chemical metering pump is empty, it will need to be primed. To prime the chemical line press and hold the “+” button on the chemical metering keyboard for at least 10 seconds. The chemical pump will begin to run at full speed. When the line has been primed then release the “+” button.

SOLUTION TANKS:

There are two solution tanks that are on the machine. The primary solution tank is located above the batteries on the right side of the solution/recovery tank. The auxiliary solution tank is located under the seat. The capacity of the two tanks together is 66 gallons.

When the tanks are being filled, the auxiliary tank will fill first. On the raised portion of the auxiliary tank (on the left side, behind the operator's left shoulder) is the auxiliary tank ventilation port. This port allows air that is trapped in the auxiliary tank to escape and thus allows the tank to fill with water. After the auxiliary tank fills, the primary tank will begin to fill. As the primary tank fills, the bladder will fill and expand into the recovery tank. When the bladder is completely full and the bladder is completely pushed in to the recovery tank, the solution tank is full.

The auxiliary solution tank has a float switch located near the bottom. This float switch will turn on a light on the main keyboard when there is approximately 10 gallons of solution remaining. This should warn the operator that it is about time to get more solution.

RECOVERY TANK:

There is one large recovery tank located above the batteries on the left side of the solution/recovery tank. The capacity of the recovery tank is 66 gallons.

The vacuum system recovers the dirty solution from the floor through the squeegee and deposits it in the recovery tank. As the recovery tank fills, the solution tank will simultaneously be draining. The dirty water in the recovery tank will eventually turn the bladder "inside out" and it will begin to protrude into the solution tank. When all of the solution in the primary solution tank has been used, the recovered water in the recovery tank will push the bladder completely into the primary solution tank.

Inside the top of the recovery tank there is a float switch. This switch will turn on a light on the main keyboard to indicate that the recovery tank is full. After the light has been illuminated for about 10 seconds the vacuum system will turn off and the machine will be placed into transport mode. This is designed to protect the vacuum motor from being filled with water.

On the back of the recovery tank is a 6 inch clean out door. This door can be opened to clean out large debris and sludge that collects on the bottom of the tank. It is important to replace the lid securely to prevent leaks. A specially designed wrench is available to tighten it securely (Minuteman P/N 383434).

DUMP HOSE:

Under the recovery tank on the left side is the dump hose. This is used for dumping of the recovery tank. To dump the recovery tank extend the hose from the machine and open the dump valve. The dump valve is opened by flipping up the tab that is on the end of the valve. The hose might need to be squeezed in the middle to allow the waste water to flow.

When the recovery tank is empty it is important to replace the valve on the end of the hose.

SQUEEGEE ADJUSTMENT:

The squeegee set-up is pre-adjusted at the factory. Adjustments may be required to get optimum performance for different floors and conditions.

Pitch Control Adjustment:

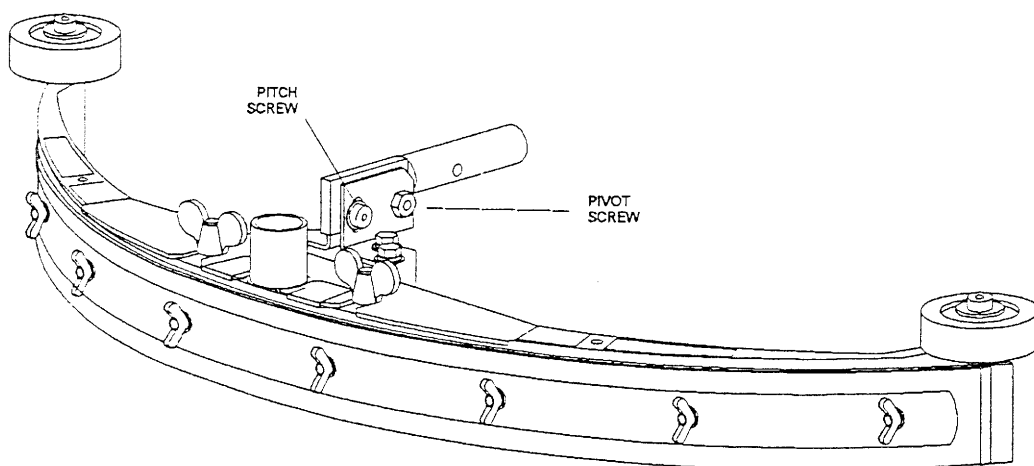
Ensure that the scrubber is on a relatively flat surface. Turn on the main power switch and select "Vacuum Only" mode.

Move the scrubber forward slowly while someone behind the machine checks the squeegee blade for uniform deflection.

If uneven deflection or lay is evident, minor adjustments may be necessary to avoid streaking and uneven wear on the blade.

To correct this, pitch adjustment is necessary. Loosen the pivot screw and the pitch screw. Move the machine forward and allow the squeegee to level itself or adjust the angular position accordingly to achieve a uniform blade deflection. Re-tighten the screws.

In certain applications where a different blade setup is required, the reinforcement blade may be turned upside-down. The notch, which is normally on the bottom, will now be located on the top. This adjustment allows the rear squeegee blade a larger deflection than normal.



CONTROL SETTINGS ADJUSTMENT AND MAINTENANCE MODE:

The machine settings are easily adjusted with any Windows computer equipped with Hyperterminal. (Hyperterminal is Windows 95/98 Accessory). The program can be accessed through the "Start" bar, scroll to "Programs" then scroll to "Accessories". It is possible that it might be under "Communication" under "Accessories". Depending on the specific configuration of the computer, the "hyperterm" icon might then need to be clicked to run the program.

Once the program is running the "New connection" menu will be open. Type in "3800 Rider" at the connection name, then hit OK. The "Connect To" menu will then be open. The "Connect Using" line must be changed to either "Direct to com1", "Direct to com2", "Direct to com3" or "Direct to com4". Be sure to choose the same com port that your serial input card is plugged into.

Then open the "Configure" menu (It might also be called "Properties" depending on which version is running). The following are the correct settings.

Bits per second	4800
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

Adjust all of the above to match, then hit "OK". If the "Configure" window closes it can be opened by clicking "Properties" under the "File" pull down window. Next, press the "Settings" tab. Under the "Emulation" line, change it to "VT100". Then click "OK". The windows computer is now configured correctly.

To connect to the 3800 rider, remove the front cover of the computer. This is located on the steering column. Insert the communication cable (Minuteman P/N 742764) into the 3800 rider's computer port that is labeled "laptop". Insert the other end of the cable into the computer interface box (Minuteman P/N 742737). Finally, insert the computer interface box into the serial port that the computer was configured for under "Connect to" above.

In order for the computer to communicate, the 3800 rider must be turned on. Once the machine is turned on, the setting screen shown should appear on the computer. It is possible that "Control-L" might need to be pressed to reset the screen.

The first screen of the programming menu looks like this:

A	BRUSH UP SPEED	40	40
B	BRUSH DOWN SPEED	40	40
C	BRUSH HYSTERESIS	8	8
D	PARTIAL RAISE TIME	5	5
E	PUMP START UP TIME	3	3
F	(NOT USED)		
G	SCRUB TO RAISE BRUSH TIME	35	35
H	RAISE TO BRUSH OFF TIME	5	5
I	VAC TO RAISE SQUEEGEE TIME	70	70
J	RAISE TO VAC OFF TIME	120	120
K	(NOT USED)		
L	CLEAN TO FAST TRAVEL TIME	70	70
M	CALIB VALUE	30	30
N	MEDIUM ADDER	12	12
O	HIGH ADDER	25	25

^L REDRAW SCREEN, TAB MORE PARAMS, ^P MAINTENCE

These parameters can be adjusted by pressing the letter next to the parameter that is to be adjusted. The number that is in the left column is the current setting, the number in the right column is the “factory” setting.

The following is an explanation of the above parameters.

A. Brush up speed An indication of how fast the brush deck will be raised when it is being adjusted for proper brush pressure. The higher the number the faster the brush deck will go up, the lower the number, the slower the deck will go up.

B. Brush down speed An indication of how fast the brush deck will be lowered when it is being adjusted for proper brush pressure. The higher the number, the faster the brush deck will go down, the lower the number, the slower the deck will go down.

C. Brush hysteresis An indication of how sensitive the controller will be to changing floor conditions. The higher the number the more sensitive, the lower the number the less sensitive. If the controller is too sensitive, it will constantly be changing the position of the scrub deck every time that a high or low spot is encountered on the floor.

D. Partial raise time While operating in the full function or double scrub modes, the brush deck is raised slightly after the machine is no longer moving. The amount of time that the brush deck is raised is called the partial raise time. The larger the number the higher the scrub deck will be raised, the lower the number the less it will be raised.

E. Pump start up time Whenever any of the pumps are turned on to any speed from being completely off, they are first run at full speed. The length of time that the pumps are run at full speed is called the pump start up time. The larger the number the longer the pumps will be run at full speed, the shorter the number the shorter they will be run.

F. Not used

G. Scrub to raise brush time While operating in the full function or double scrub modes the brush deck is raised slightly after the machine is no longer moving. The amount of time delay between no longer moving and the brush deck raising is called the scrub to raise brush time. The larger the number the longer the time delay will be, the smaller the number the shorter the number will be.

H. Raise to brush off time After the brush deck has been raised there is a delay in turning off the brushes. This is called the raise to brush off time. The larger the number the longer the brush motors will stay on after they are raised.

I. Vac to raise squeegee time While operating in the full function or vacuum only modes, the squeegee is raised after the machine is no longer moving. The amount of time delay between no longer moving and the squeegee raising is called the vac to raise squeegee time. The larger the number, the longer the delay will be, the smaller the number, the shorter the delay will be.

J. Raise to vac off time After the squeegee is raised there is a time delay before the vacuum motors turn off. This amount of time is called the raise to vac off time. The larger the number the longer the delay will be, the shorter the number, the shorter the delay will be.

K. Not used

L. Clean to fast travel time When going from full function, double scrub, or vacuum only to transport mode, there is a time delay before the machine will transport at a higher speed. This amount of time is called the clean to fast travel time. The larger the number the greater the amount of time before the machine will go into high speed, the smaller the number, the less the amount of time will be.

M. Calib value The value in amps that the brush motors will draw in the light brush pressure setting is called the calib value. This value is the total amps that the motors draw. The higher the value, the greater the scrubbing pressure will be in light brush pressure. **THE VALUE IN SETTING M PLUS SETTING N CANNOT EXCEED 55. THE VALUE IN SETTING M PLUS THE VALUE IN SETTING O CANNOT EXCEED 55. PERMANENT MOTOR DAMAGE WILL OCCUR!**

N. Medium Adder. The additional amps that the brush motors draw in medium brush pressure is called the medium adder. This value is added to the calib value in setting M. The higher the value, the greater the scrubbing pressure will be in medium brush pressure. THE VALUE IN SETTING M PLUS SETTING N CANNOT EXCEED 55. THE VALUE IN SETTING M PLUS THE VALUE IN SETTING O CANNONT EXCEED 55. PERMANENT MOTOR DAMAGE WILL OCCUR!

O. High Adder. The additional amps that the brush motors draw in high brush pressure is called the high adder. This value is added to the calib value in setting M. The higher the value, the greater the scrubbing pressure will be in high brush pressure. THE VALUE IN SETTING M PLUS SETTING N CANNOT EXCEED 55. THE VALUE IN SETTING M PLUS THE VALUE IN SETTING O CANNONT EXCEED 55. PERMANENT MOTOR DAMAGE WILL OCCUR!

To redraw the screen press ^L.

Press TAB to get to the second programming screen. The second screen of the programming menu looks like this:

PUMP:	MIN	LOW	HIGH	MAX
WATER(IF NORM)	A 46 46	F 89 89	K 147 147	P 204 204
WATER (RECYCLE)	B 33 33	G 54 54	L 83 83	Q 113 113
SOAP (IF LOW)	C 13 13	H 28 28	M 46 46	R 64 64
SOAP (IF MED)	D 25 25	I 59 59	N 91 91	S 120 120
SOAP (IF HIGH)	E 50 50	J 114 114	O 176 176	T 255 255

^L REDRAW SCREEN, TAB MORE PARAMS, ^P MAINTENCE

These parameters can be adjusted by pressing the letter next to the parameter that is to adjusted. The number that is in the left column is the current setting, the number in the right column is the “factory” setting.

This table is a table of all of the water flow rates. It is not recommended that adjustments are made since chemical metering will no longer be calibrated.

The numbers represent a speed value for the pumps: 1 is off and 255 is full speed. The first column is the pump description, the second column is the pump speed at one light segment on the main keyboard, the third column is the pump speed at two light segments on the main keyboard, the fourth column is the pump speed at three light segments on the main keyboard, the fifth column is the pump speed at four light segments on the main keyboard.

The first row is the “water (if norm)” row. This is the speed of the solution pump for the various flow rate settings. The factory settings are .3, .7, 1.1, or 1.5 gal/min.

The second row is the “water (recycle)” row. This is the speed that the solution pump and the recycle pump will run at if the machine is in recycle mode. The factory settings are .15, .35, .55 or .75 gal/min.

The third row is the “soap (if low)” row. This is the speed that the chemical metering pump will run at while the machine is running in the low dilution ratio mode. This mode mixes chemical at 1oz/gal of solution. The factory settings are .3, .7, 1.1 or 1.5 oz/gal.

The fourth row is the “soap (if med)” row. This is the speed that the chemical metering pump will run at while the machine is running in the medium dilution ratio mode. This mode mixes chemical at 2 oz/gal of solution. The factory settings are .6, .14, 2.2 or 3.0 oz/gal.

The fifth row is the “soap(if high)” row. This is the speed that the chemical metering pump will run at while the machine is running in the high dilution ratio. This mode mixes chemical at 4oz/gal of solution. The factory settings are 1.2, 2.8, 4.4 or 6.0 oz/gal.

To enter into the maintenance mode, press ^P. This mode allows maintenance personnel to control the outputs of the controller and view the state of the inputs to the controller. The maintenance screen looks like this:

```
MAINT MODE      V=OVERRRIDE
a b = d e f g h i      j k l m n o -- r = 0
      I Chms          R SolE
      H Syst
      G Brsh
      F VacM          O Recy
      E Wtrs          N TkFI
      D Multi          M OffA
                      L Rev
      B Sq-           K Fwd
      A Sq+           J SysR
```

While in this screen, the state of the output relays are shown (a,b,d,e,f,g,h,i) and the state of the inputs are shown (j,k,l,m,n,r). The output is “ON” if the letter is capital and the output is “OFF” if the letter is lower case. “ON” means that an input as +36V coming in or it means that an output has +36V coming from it.

The description of the inputs and the outputs are as follows:

Outputs

- A Squeegee raise output relay
- B Squeegee lower output relay
- D Multimode output relay (Connects to speed control board to engage high speed)
- E Solution water solenoid output relay
- F Vacuum motor output relay
- G Brush motor output relay
- H System start output relay
- I Chemical solenoid output relay

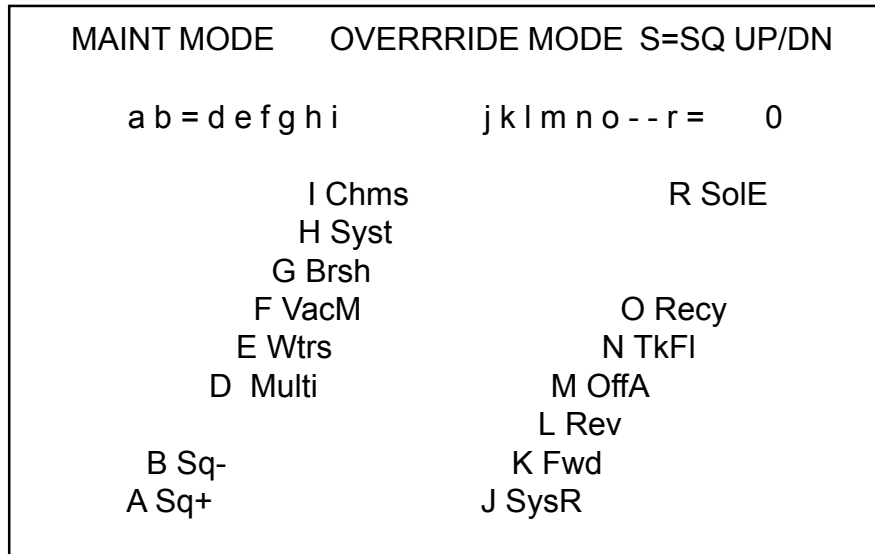
Inputs

- J System ready input
- K Forward input
- L Reverse input
- M Off aisle cleaning input
- N Recovery tank full input
- O Recycle on input
- R Solution empty input

The inputs/outputs are self explanatory aside from the system start and system ready. When the operator presses "1" on the main keyboard the system start output will energize for 1 second. This will send +36V through the recharge switch and through the keyswitch. If both of these switches are closed then the main control relay will turn on. When the main control relay turns on it sends +36V back to the board to the system ready input. If the board does not get +36V to the system ready input within 1 second then the system start output will deenergize. The only reason the system ready input would not turn on would be the recharge switch or the keyswitch being open.

As input changes from 0V to +36V the letter on the first line will change from lower case to a capital letter. Conversely, as input changes from +36V to 0V the letter on the first line will change from a capital letter to a lower case letter.

When this screen is active the outputs cannot be changed. By pressing “V”, the controller will go into “Override” mode. The screen will then look like this:



When this screen is active, pressing A,B,D,E,F,G,H,I will change the state of the output relays. To raise/lower the squeegee both the A and B outputs must change. As indicated on the first line, pressing “S” will raise/lower the squeegee (This actually is changing A and B simultaneously).

Finally, there is a number to the right of the equal sign as shown here:

a b = d e f g h i j k l m n o -- r = **0**

This number is the number of amps that the brush motors are actually drawing in real time. The line below would be 52 amps being drawn by the brush motors.

a b = d e f g h i j k l m n o -- r = **52**

AFTER USE:

Turn machine off by pressing the “O” button on the control panel. Machine can be cleaned with a mild detergent and a damp cloth. Batteries should be charged after each use or when the battery condition meter shows a low charge. To recharge the batteries, plug the 36V charger into the recharge port located at the left front side of the machine. The recharge port has an interlock switch so the machine can not be turned on when the batteries are being recharged. Once the meter on the battery charger reads 0 amps, the batteries are recharged. This should take approximately 6-8 hours if the batteries are completely discharged.

BATTERY SERVICE AND INSTALLATION:**WARNING**

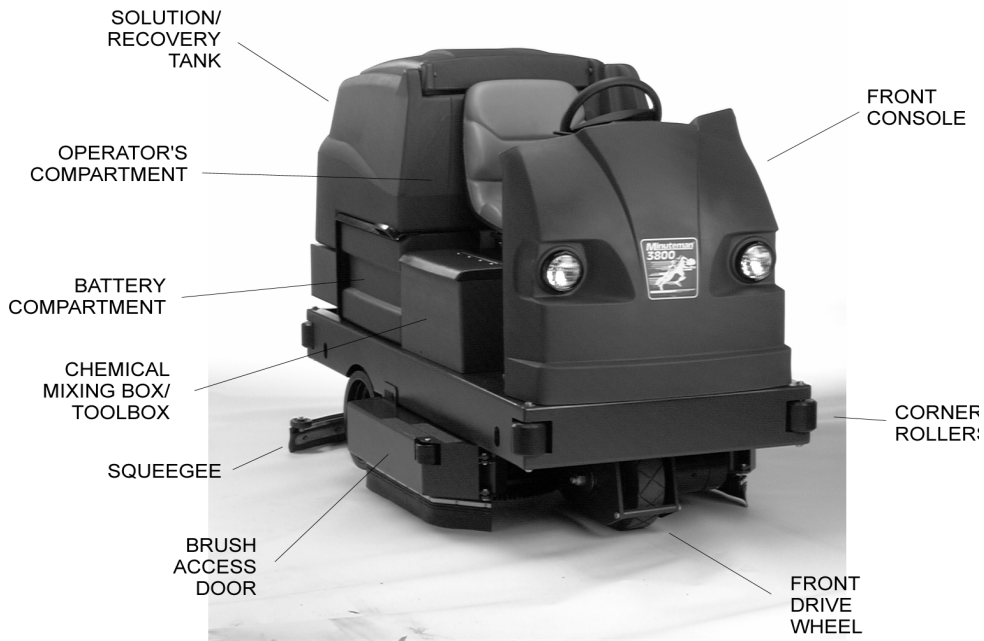
Battery acid can cause burns. When working on or around batteries, wear protective clothing and safety glasses. Remove metal jewelry. Do not lay tools or metal objects on top of batteries.

CHARGING OF BATTERIES:

Charging batteries generates explosive gasses. **DO NOT CHARGE BATTERIES WHEN OPEN FLAMES OR SPARKS ARE PRESENT. DO NOT SMOKE.** Make sure the charger is turned off before disconnecting it from the batteries. Charge the batteries in a well-ventilated area. Fluid levels should be checked before and after charging and maintained at the proper levels. If low, add water until the metal plates are covered. If the machine is not used for extended periods of time, batteries should be kept fully charged with a boost charge once a week.

CARBON BRUSH REPLACEMENT:

Design life of carbon brushes is between 1800-2000 hours. Replace brushes if worn to 3/8" or less, broken, or chipped. All carbon brushes should be replaced when motor is serviced.

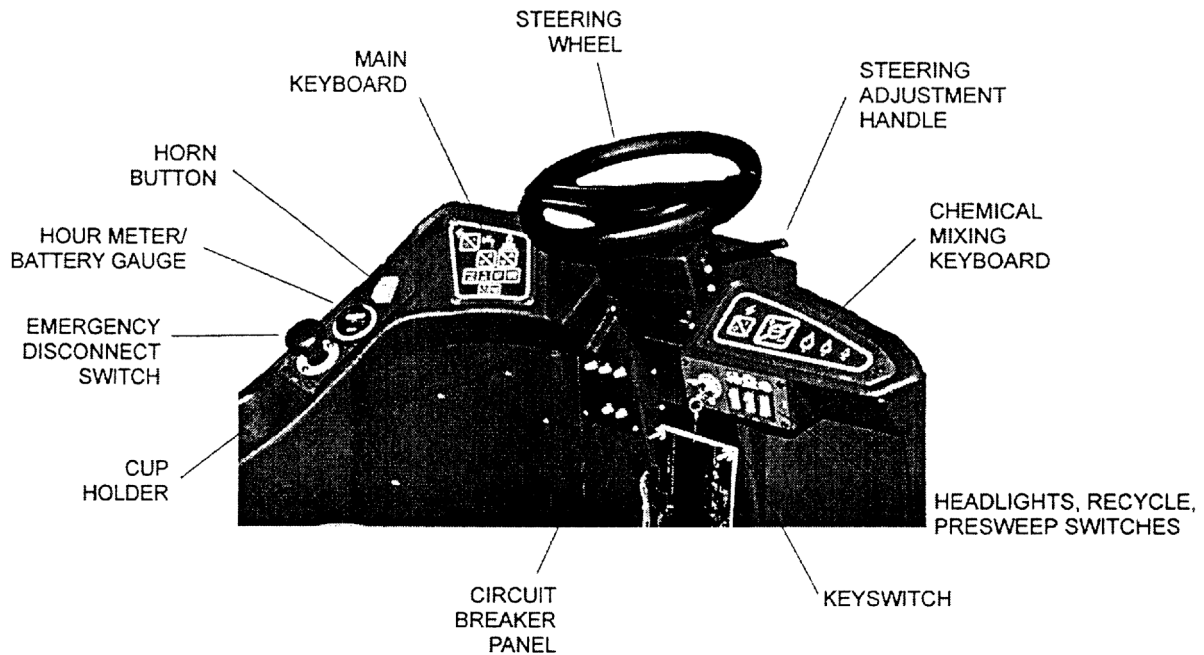


MACHINE OVERVIEW, FRONT

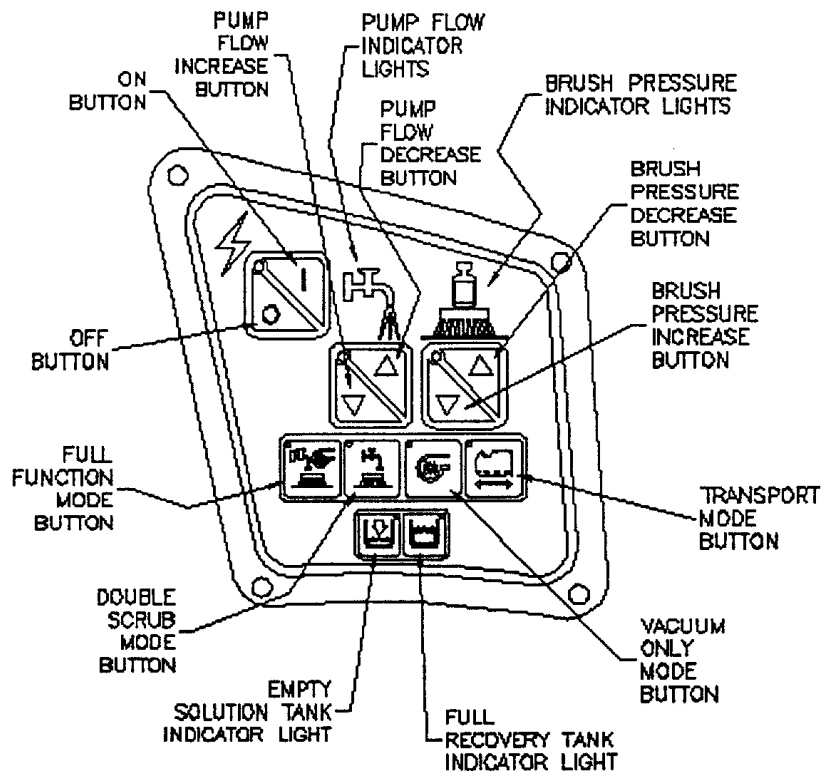


MACHINE OVERVIEW, REAR

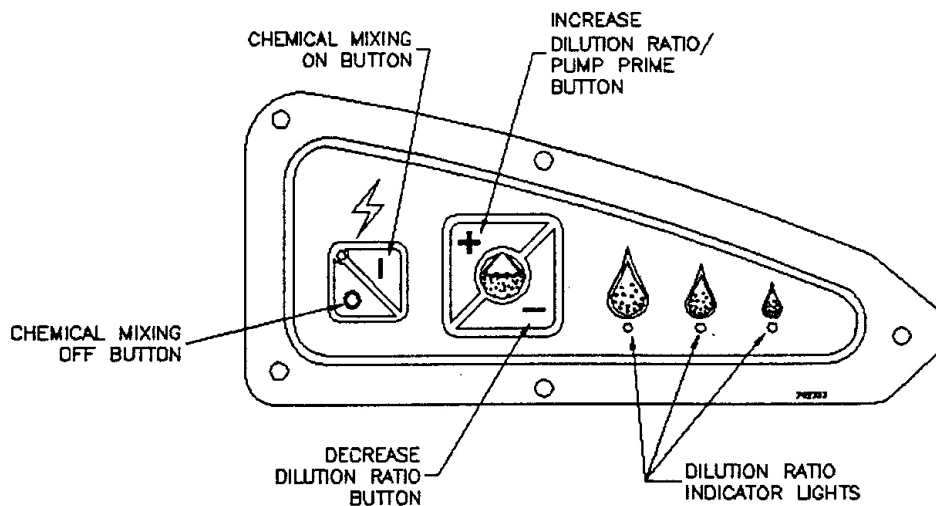
OPERATOR COMPARTMENT



MAIN KEYBOARD



CHEMICAL MIXING KEYBOARD





ACCELERATOR AND BRAKE



OFF-AISLE PANEL



**SIDE DOOR AND BRUSH,
RIGHT HAND SIDE**

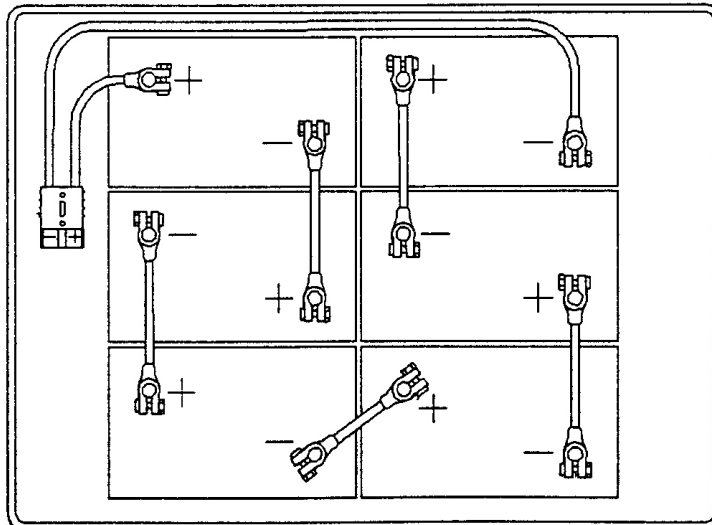


**BRUSH AND SOLUTION
DUMP HOSE, LEFT HAND SIDE**

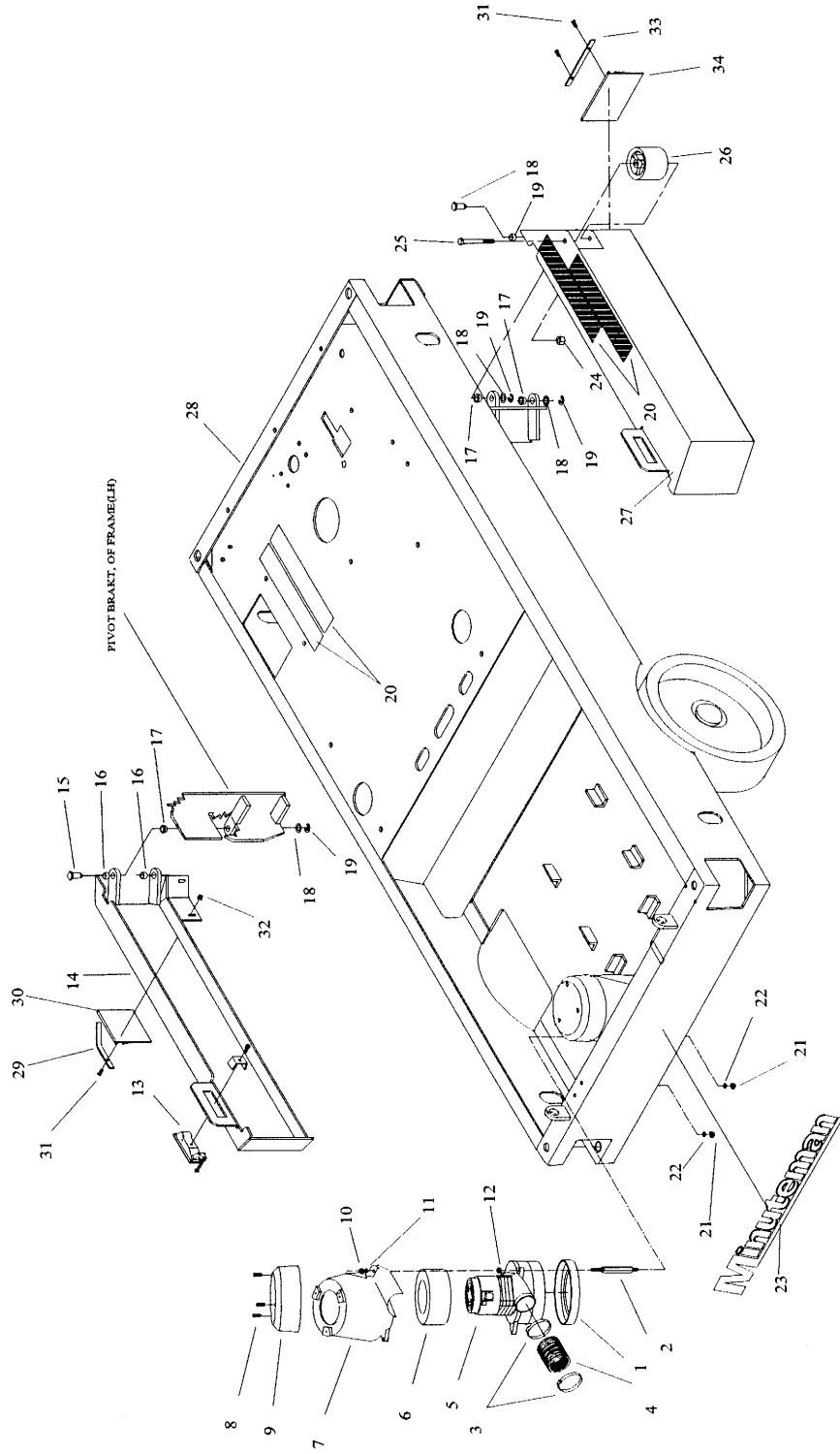
BATTERY COMPARTMENT



BATTERY CABLE ROUTING



MAIN ASSEMBLY PART I

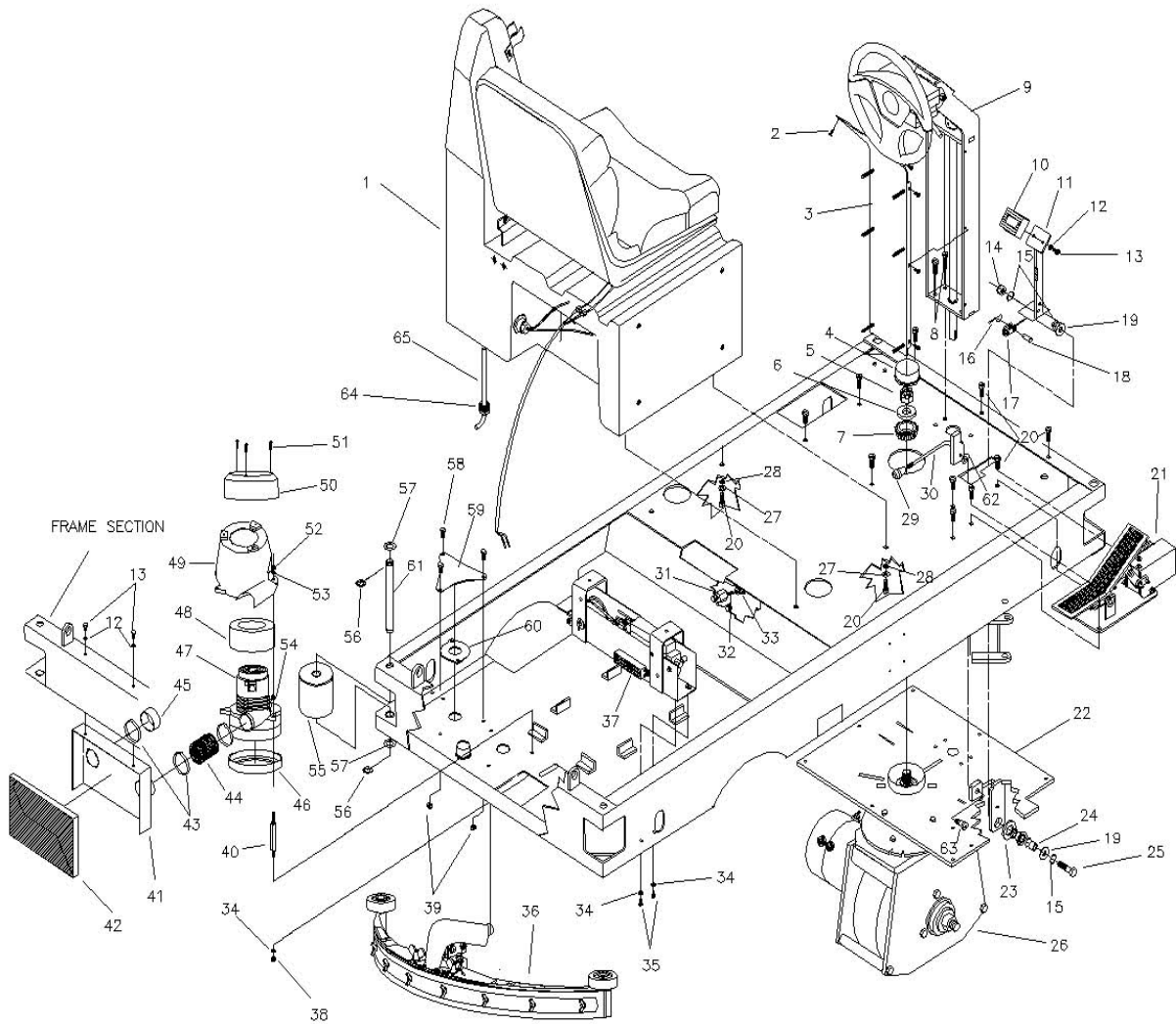


Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
1	290017	1	Vac Motor Gasket
2	383143	3	Vac Motor Stand-off
3	829067	2	Hose Clamps
4	383375	1	Short Vac Motor Hose
5	742772	1	Vac Motor Assy.
6	380064	1	Foam Ring
7	840012	1	Vac Motor Cover Bottom
8	711160	3	SCR-Hi/Lo #10 x 5/8
9	840011	1	Vac Motor Cover Top
10	711373	3	Nut-Nyloc 1/4-20
11	711505	3	WSR-Flat 1/4
12	832015	3	Spacer .38 x .50 x .14
13	383256	2	Latch
14	383765	1	Skirt Support Weldment LH
15	260036	4	Pin, Retainer
16	260030	4	Oilite Bushing
17	260041	4	Oilite Flange Bushing
18	711594	4	WSR-Flat .56 x .88 x .03
19	711713	4	Retaining Ring
20	383196	4	Anti-Skid Strips
21	712667	3	Nut-Hex 1/4-20 SS Nyloc
22	711504	3	WSR-Flat 1/4 SS
23	715387	1	Decal, Minuteman
24	711380	1	Nut-Hex 3/8-16 Nyloc
25	711280	1	BLT-HH 3/8-16 x 3.5
26	76-56-A	1	Roller
27	383764	1	Skirt Support Weldment RH
28	383001	1	Mainframe
29	383758	1	Skirt Retainer LH
30	383763	1	Skirt LH
31	712536	4	SCR 10-24 x .62
32	712638	4	Nut Hex 10-24 SS
33	383761	1	Skirt Retainer RH
34	383762	1	Skirt RH

Items 1-12 are optional.

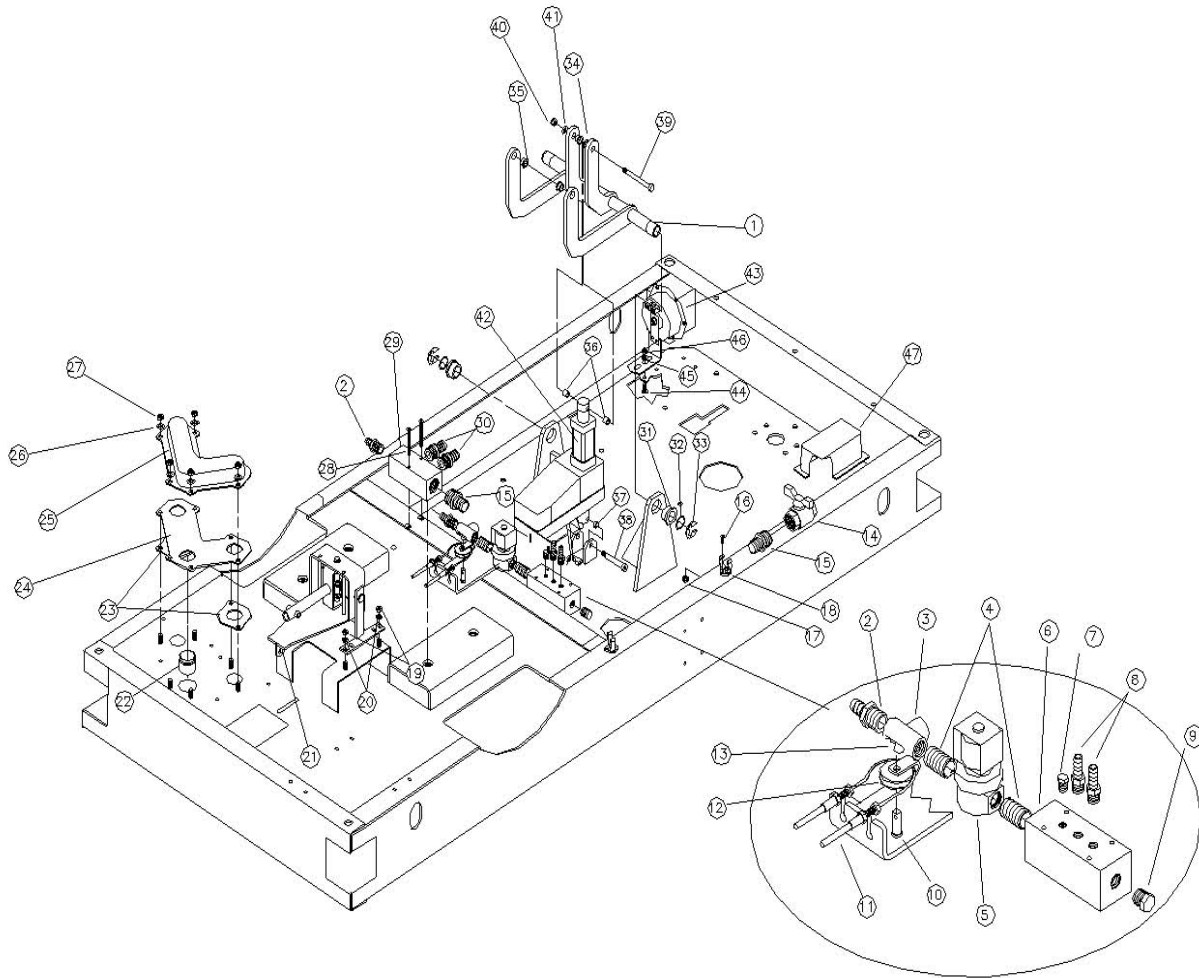
MAIN ASSEMBLY PART II



Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
1	383363	1	Aux. Tank Assy.
2	710329	10	SCR-MC 8-32 x .5
3	383296	1	Steering Cover
4	383250	1	Grease Cap
5	712113	1	Slotted Nut
6	383364	1	Spacer, Front Drive
7	383077	1	Roller Bearing
8	713043	4	BLT-HH 3/8-16 x 1.25
9	383200	1	Steering Assy.
10	762294MCH	1	Brake Pad
11	383064	1	Brake Pad
12	711544	4	WSR-Helical ¼
13	711202	4	BLT-HH ¼-20 x .5
14	711376	1	Nut-Nyloc ½-13
15	711524	5	WSR-Wave .52 x .87 x .01
16	809311	1	Cotter Pin 7/64
17	383230	1	Brake Pedal Cable
18	711668	1	Clevis Pin
19	711510	2	WSR-Flat .50 x 1.37 x .10
20	713042	14	BLT-HH 3/8-16 x 1 #5
21	383197	1	Accelerator Assy.
22	383225	1	Steering Mount Assy.
23	711514	1	WSR-Flat 1.06 x 2 x .15
24	807885	1	Spacer .5 x .75 x .602
25	712074	1	BLT-HH ½-13 x 2.00
26	76-58-A	1	Front Drive Assy.
27	712301	4	WSR-Flat .37 x .87 x .06
28	711546	4	WSR-Helical 3/8
29	760592	1	Oval Tapered Knob
30	383067	1	Emergency Brake Weldment
31	740132	2	Glastic Insulator
32	833638	2	Brass Stud
33	711368	2	Nut-Wing ¼-20
34	711504	7	WSR-Flat ¼ SS
35	712101	4	SCR-Hwsr. 10-24 x .50
36	383794	1	Squeegee Assy.
37	383128	1	Squeegee Actuator Assy.
38	712667	3	Nut-Nyloc 1/4-20 SS
39	712683	3	Nut-Nyloc 5/16-18 SS
40	383143	3	Vac Motor Mount
41	383153	1	Muffler, Motor
42	383374	1	Exhaust Sound Dampener
43	829067	3	Hose Clamp
44	383375	1	Short Vac Motor Hose
45	383392	1	Cap Plug
46	290017	1	Vac Motor Gasket
47	742772	1	Vac Motor Assy.
48	380064	1	Foam Ring
49	840012	1	Vac Motor Cover Bottom
50	840011	1	Vac Motor Cover Top
51	711160	3	SCR-Hi/Lo #10 x 5/8
52	711373	3	Nut-Nyloc ¼-20
53	711505	3	WSR-Flat ¼
54	832015	3	Spacer, .38 x .50 x .14
55	66-436-A	4	Corner Roller
56	809148	8	E-Ring .75
57	711517	8	WSR-Flat .77 x 1.37 x .03
58	712575	3	BLT-HH 5/16-18 x .75 SS
59	383142	1	Vac Cover Plate
60	383068	1	Gasket, Air Manifold
61	383145	4	Roller Pin
62	210033	1	Oilite Thrust Washer
63	712099PLT	1	Shoulder-Bolt 3/8 x ½
64	383469MCH	1	3/8 Compression Fitting
65	383473	1	Tubing, Copper

MAIN ASSEMBLY PART III

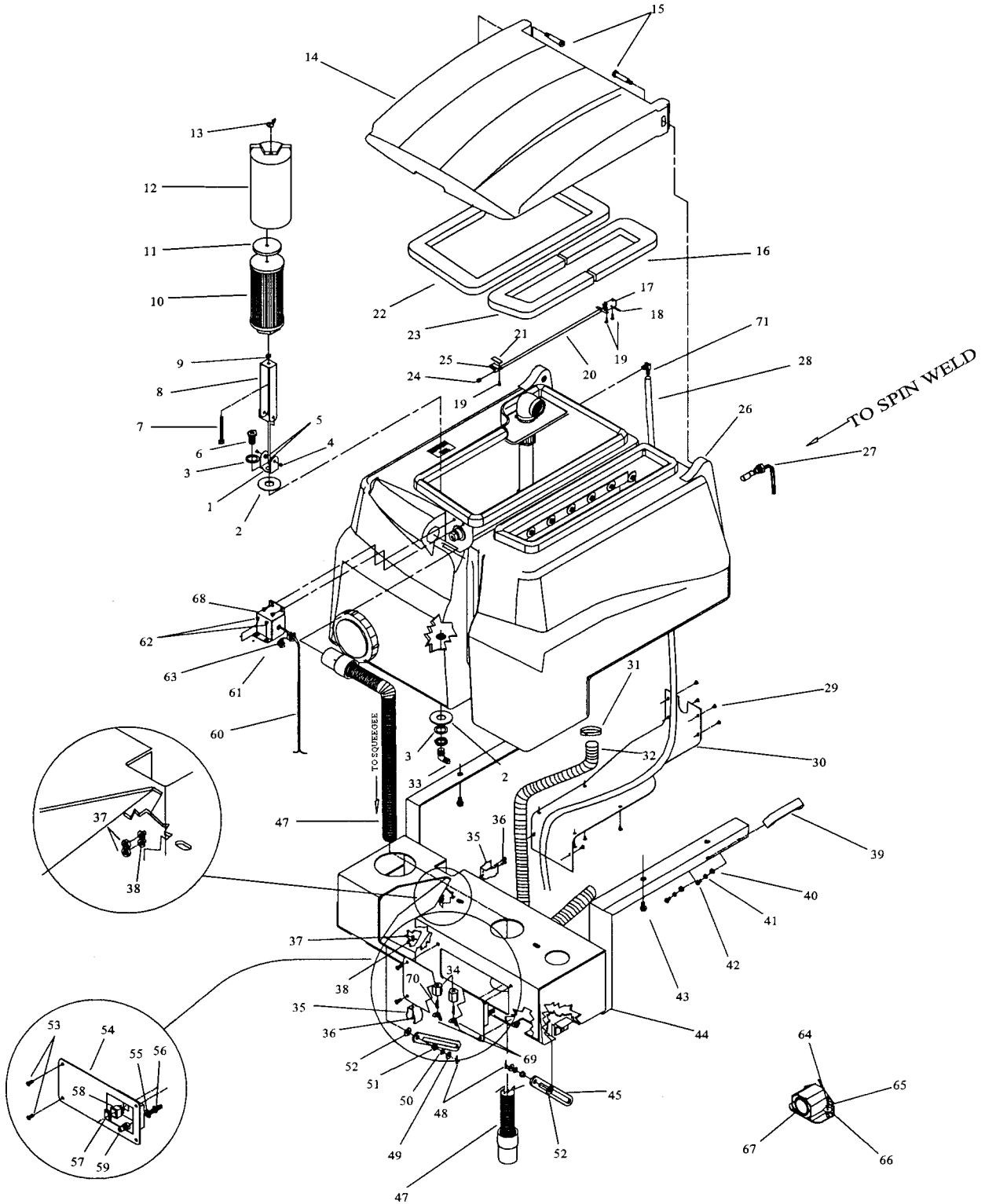


BASIC PLUMBING, FOR MORE DETAIL SEE PG. 52

Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
1	383127	1	Lever Arm Weldment
2	383467	2	Fitting Brass 1/2 x 1/2
3	383325	1	Fitting Brass Tee 1/2 FPT
4	383465	2	Fitting Brass Nipple 1/2 MPT
5	742718	1	Water Solenoid 36V
6	383457	1	Hydraulic Manifold, Upper
7	383480	1	Fitting Brass 1/8 MPT Plug
8	3400261	2	Fitting Brass 1/4 MPT x 3/8 Barb
9	383479	1	Fitting Brass 3/8 MPT Plug
10	711668	1	Clevis Pin
11	383229	1	Brake Cable (from 3838350)
12	81-44-A	1	Nylon Pulley
13	711808	1	Spring Cup
14	383461	1	1" Ball Valve
15	383471	2	Fitting Brass 1" MPT x 1"
16	710230	4	SCR 8-32 x .62
17	711426	4	8-32 Wizz Nut
18	383474	2	Clip, 1" Hose
19	712680	4	Nut Hex 5/16-18 Ss
20	711545	4	WSR Helical 5/16
21	383226	1	Squeegee mechanism
22	260064	1	Flanged Tube
23	383068	1	Gasket, Air Manifold
24	383238	1	Air Manifold, Bottom
25	383237	1	Air Manifold, Top
26	712767	6	WSR-Flat .406 x .75
27	712683	6	Nut-Hex 5/16-18
28	712547	6	SCR 10-24 x 2.5" SS
29	383458	1	Hydraulic Manifold, Lower
30	383468	2	Fitting Brass 3/4 x 3/4
31	809236	2	Oilite Flanged Bushing
32	711526	4	WSR-Wave 1.01 x 1.20 x .01
33	809237	2	Retaining Ring
34	260066	2	Oilite Flange Bushing
35	260041	2	Oilite Flange Bushing
36	383368	2	Spacer .384 x .500 x .437
37	383369	2	Spacer .384 x .500 x .219
38	712100	1	Shld-Blt 3/8 x 2.25
39	712119	1	Shld-Blt 3/8 x 3
40	711374	2	Nut-Nyloc 5/16-18
42	742712-1	1	Actuator 36V
43	742711	1	Horn
44	710180	1	SCR 1/4-20 x .75
45	711505	1	WSR-Flat 1/4
46	711373	1	Nut-Nyloc 1/4-20
47	383414	1	Cover, Electrical Cable

MAIN ASSEMBLY PART V

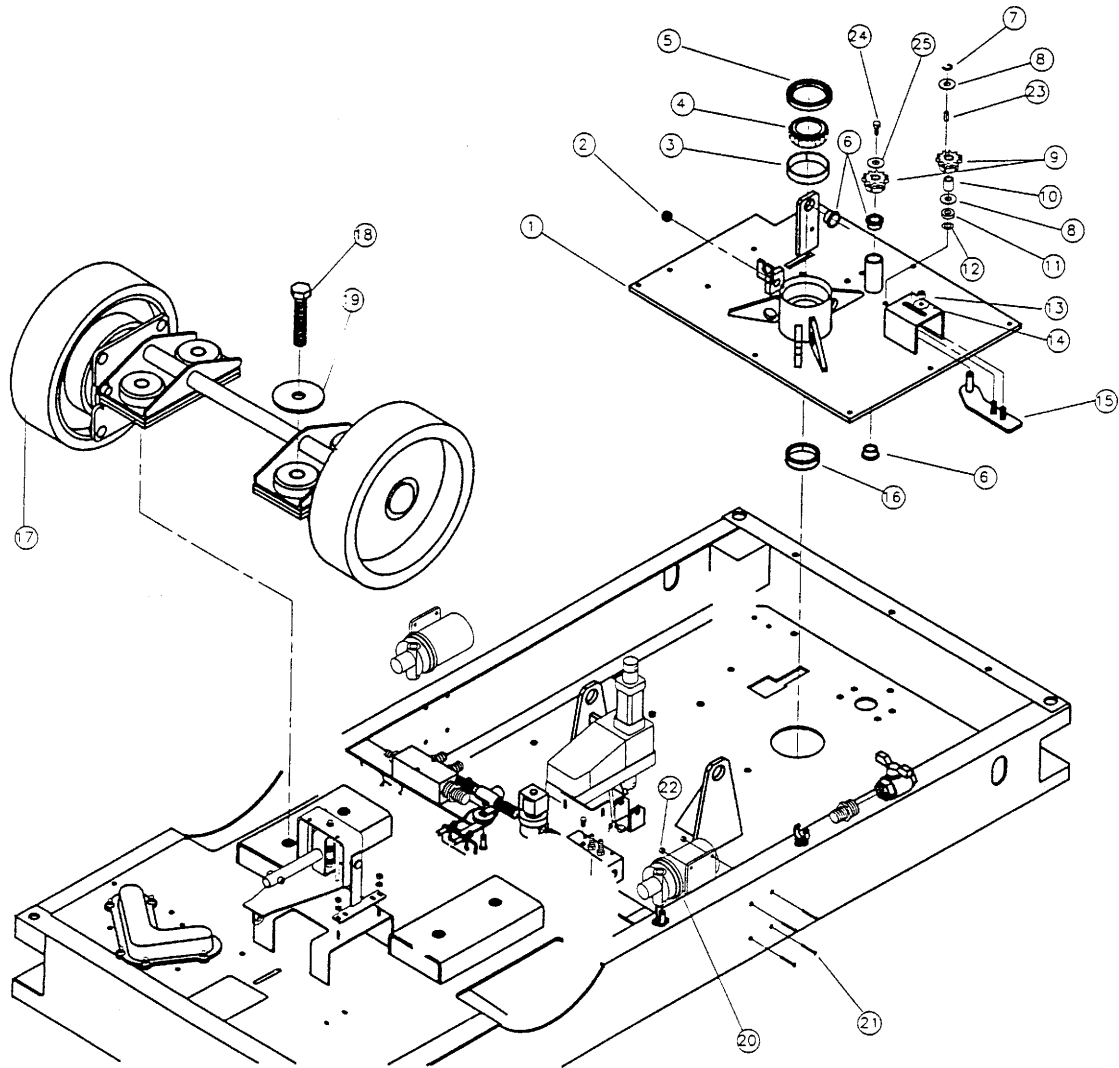


Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
1	383425	1	Filter Bracket, Lower
2	383446	2	Gasket, 1.125 x 2.75 x .125
3	383447	2	Spacer, 1.125 x 1.625 x .125
4	711922	2	Rivet Tube, .19 x .28
5	712764	2	WSR-SS #10
6	383448	1	Anchor Coupling
7	807901	1	Bolt SP, Machined
8	383246	1	Filter Bracket, Upper
9	712680	1	Nut-Hex 5/16-18 SS
10	340071	1	Recycle Filter 340
11	340067	1	Gasket, Recycle Filter
12	340069	1	Cover Recycle Filter
13	711369	1	Nut, Wing 5/16-18 Nylon
14	383303	1	Lid
15	712120	2	Shoulder Bolt, 1/2 x 2 PLT
16	383397	1	Gasket, Solution
17	383297	1	U Channel
18	383264	1	Roll Pin .125 x 1.00
19	711161	3	SCR-Hi/Lo #10 x 3/4
20	383263	1	Prop Rod
21	760263	1	Double Sided Tape
22	383026	1	Gasket Recovery
23	383030	1	Gasket Solution
24	840059	1	Cap, Thread Cover
25	383231	1	Clip, Screw Down
26	383135	1	Solution/Recovery Tank (w/o Recovery)
27	742708-2	1	Float w/Male Term.
28	383454	1	Vacuum Equalizing Tube 9.41 ft.
29	712540	10	SCR-MC 10-24
30	383184	1	Tank Bottom Cover
31	260203	1	Hose Clamp, 102120
32	383273	1	1.5" Vac Hose x 52"
33	383449	1	Fitting Brass 90° 1/2 x 1/2
34	740132	2	Glasic Insulator
35	383270	2	Tool Clip
36	710230	4	SCR-MC 8-32 x .62
37	711372	4	Nut-Nyloc 8-32
38	711502	4	WSR-Flat #8
39	130040PTD	2	Handle
40	711505	4	WSR-Flat 1/4
41	711544	4	WSR-Helical 1/4
42	713002	4	BLT-HH 1/4-20 x 3/4
43	712083	6	BLT-Flange Wizz Loc 3/8-16
44	383165	1	Tank Frame Weldment
45	383291	2	Hinge
46			
47	383272	1	2" Wireloc Hose
48	809311	2	Cotter Pin 7/64 x 1
49	712301	2	WSR-Flat .37 x .87 x .06
50	711523	2	WSR-Wave .37 x .68 x .08
51	260066	2	Oilite Flanged Bushing
52	711592	2	WSR-Nylon .5 x 1.06 x .06
53	710197	4	SCR-MC 5/16-18 x 3/4
54	383235	1	Back Door Weldment
55	711579	1	WSR-Flat .56 x 1.00
56	3400261	1	Fitting Brass 1/4 MPT x 3/8 Barb
57	740811	1	Dreefs Switch Boot
58	740800CE	1	Momentary Dreefs Switch
59	828368	1	BH2-61 Male Coupler
60	742833	1	Cable Assy.
61	383186	1	Hose Hook
62	712534	4	SCR-MC 10-24 x .5
63	380032	1	Strain Relief
64	712812	2	SCR 10-24 x .62 PHL
65	711543	2	WSR-Helical #10
66	711599	2	WSR-Flat .187 x 1.00 x .06
67	742710-1	1	Backup Alarm
68	383185	1	Switch Cover Rear
69	711368	2	Nut-Wing 1/4-20
70	833638	2	Brass Stud
71	220174	1	Fitting Brass 90° 1/4 MPT x 3/8 Barb

Items 1 thru 13 and 27 are included with Model #MC380001 & MC380003.
Items 64 thru 67 are optional.

MAIN ASSEMBLY PART IV

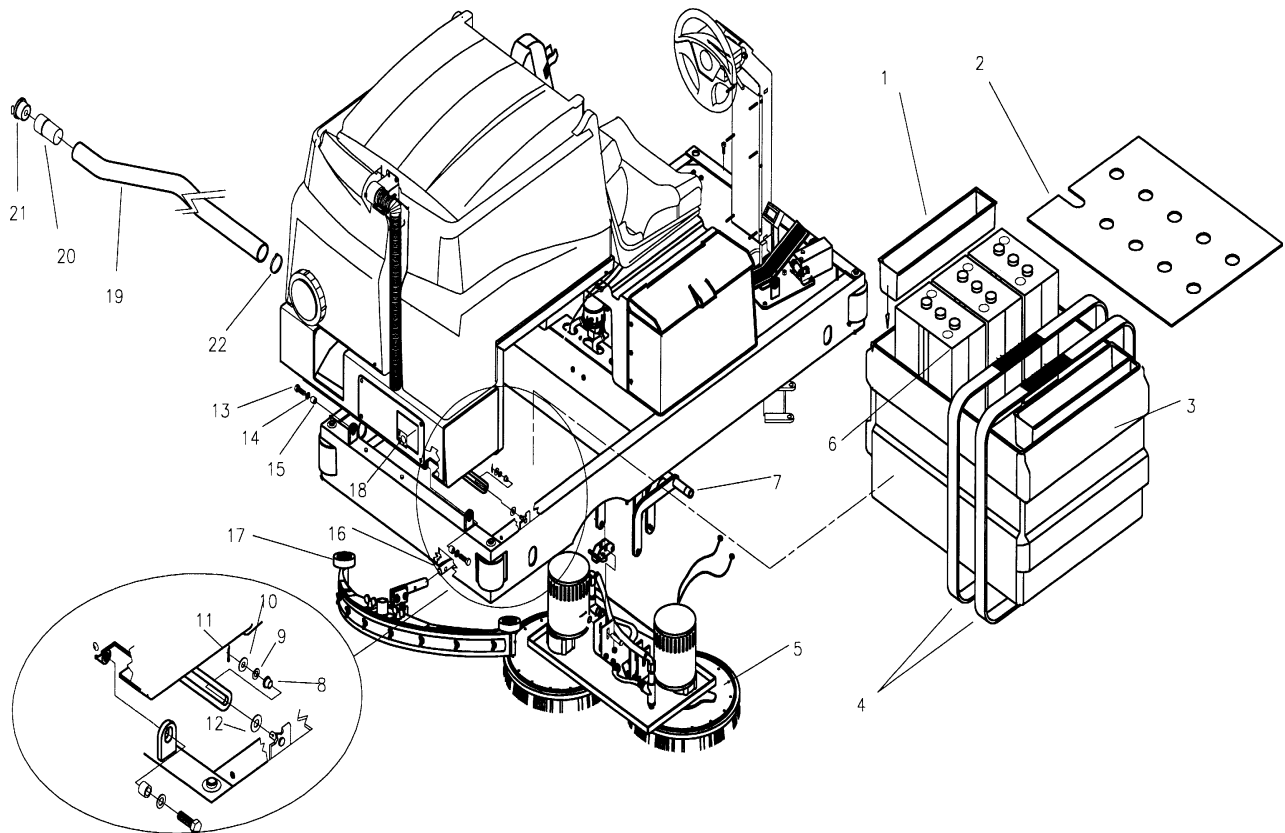


Parts List

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	383225	1	Steering Mount Assy.	14	712301	2	WSR-Flat .37 x .87 x .06
2	260030	1	Oilite Bushing	15	383405	1	Idler Arm Weldment
3	383076	1	Race (large)	16	383078	1	Race, Small
4	383075	1	Roller Bearing	17	383050	1	Rear Axle Weldment
5	383074	1	Lip Seal	18	711171	4	BLT-HH 7/8-9 x 4.5"LG
6	832554	3	Flange Bushing	19	383090	4	Snubbing Washers
7	711713	1	Retaining Ring	20	742709-1	1	Water Pump, 36V
8	711578	2	WSR-Flat 1/2	21	710363	4	SCR 10-32 x 1.5
9	760601	2	Sprocket	22	711426	4	Nut-Hex 10-32
10	807071	1	Spacer, 3/4	23	3330913	1	Key 1/4 x 1/4 x .75
11	430149	1	Bushing .531 x 1 x .25 SS	24	3400930	1	SCR 5/16-18 x .75
12	711524	1	WSR-Wave, .52 x .87 x .01	25	3400233	1	WSR-Fender 5/16
13	711380	2	Nut-Nyloc 3/8-16				

Optional 2nd Pump w/Recycling Package

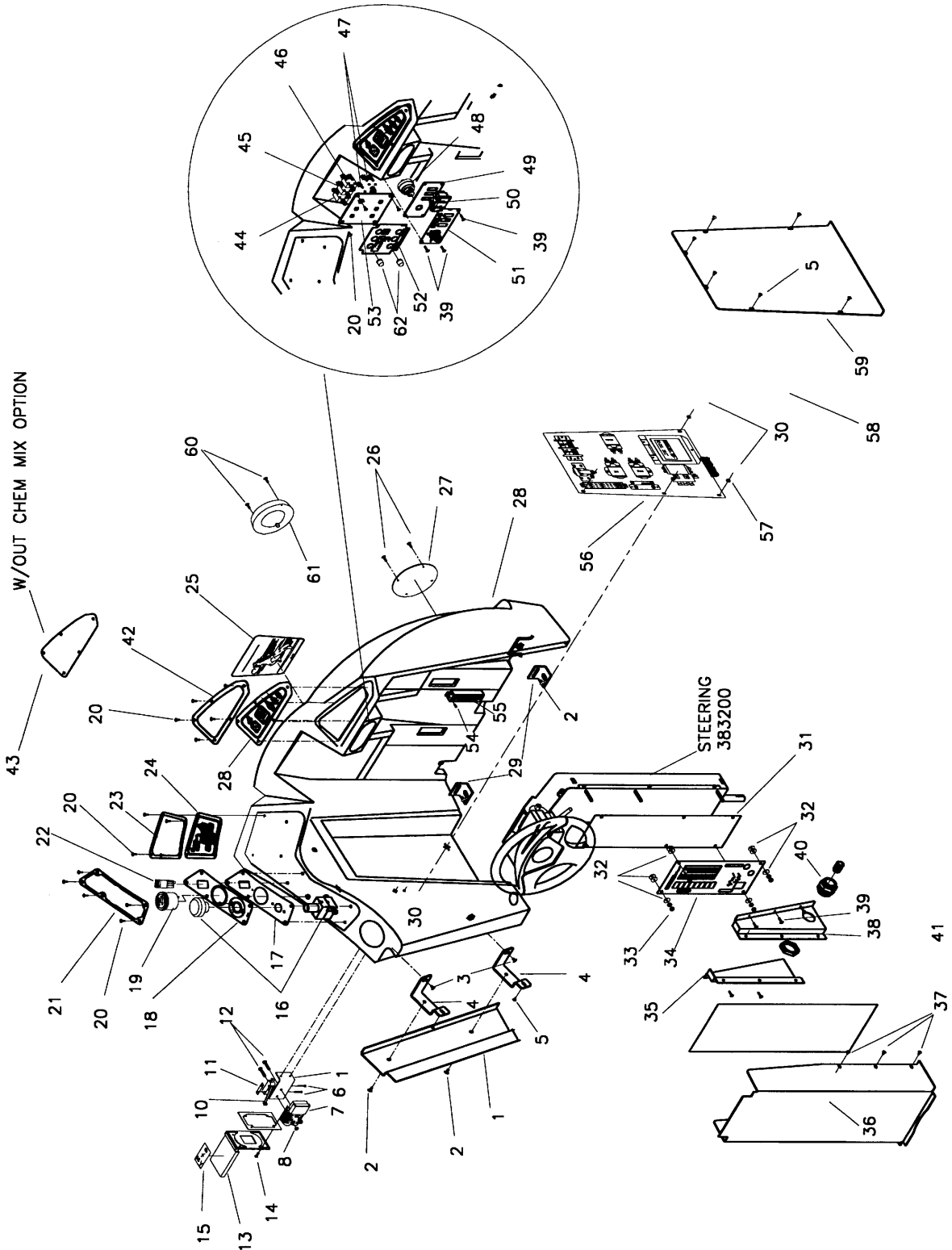
MAIN ASSEMBLY PART VI



Parts List

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	383073	2	Battery Liner Spacers	12	711592	2	WSR-Nylon .5 x 1.06 x .06
2	383095	1	Battery Cover	13	712075	2	BLT-HH 1/2 - 13 x 1.5
3	383096	1	Battery Liner	14	711502	2	WSR-Flat #8
4	383042	2	Battery Straps	15	807885	2	Spacer .50 x .75 x .602
5	383227	1	Scrubhead Assy.	16	383226	1	Squeegee Mach. Assy.
6	956715	6	6 Volt Battery	17	383794	1	Squeegee Assy.
7	383127	1	Lever Weldment	18	383144	1	Auxiliary Out Decal
8	260066	2	Oilite Flange Bushing	19	383259	1	Rec. Tank Drain Hose
9	711523	2	WSR-Wave .37 x .68 x .08	20	383260	1	Discharge Tube
10	712301	2	WSR-Flat .37 x .87 x .06	21	750402	1	Plug Assembly
11	809311	2	Cotter Pin 7/64 Dia.	22	340464	1	Clamp, Hose

CONSOLE ASSEMBLY

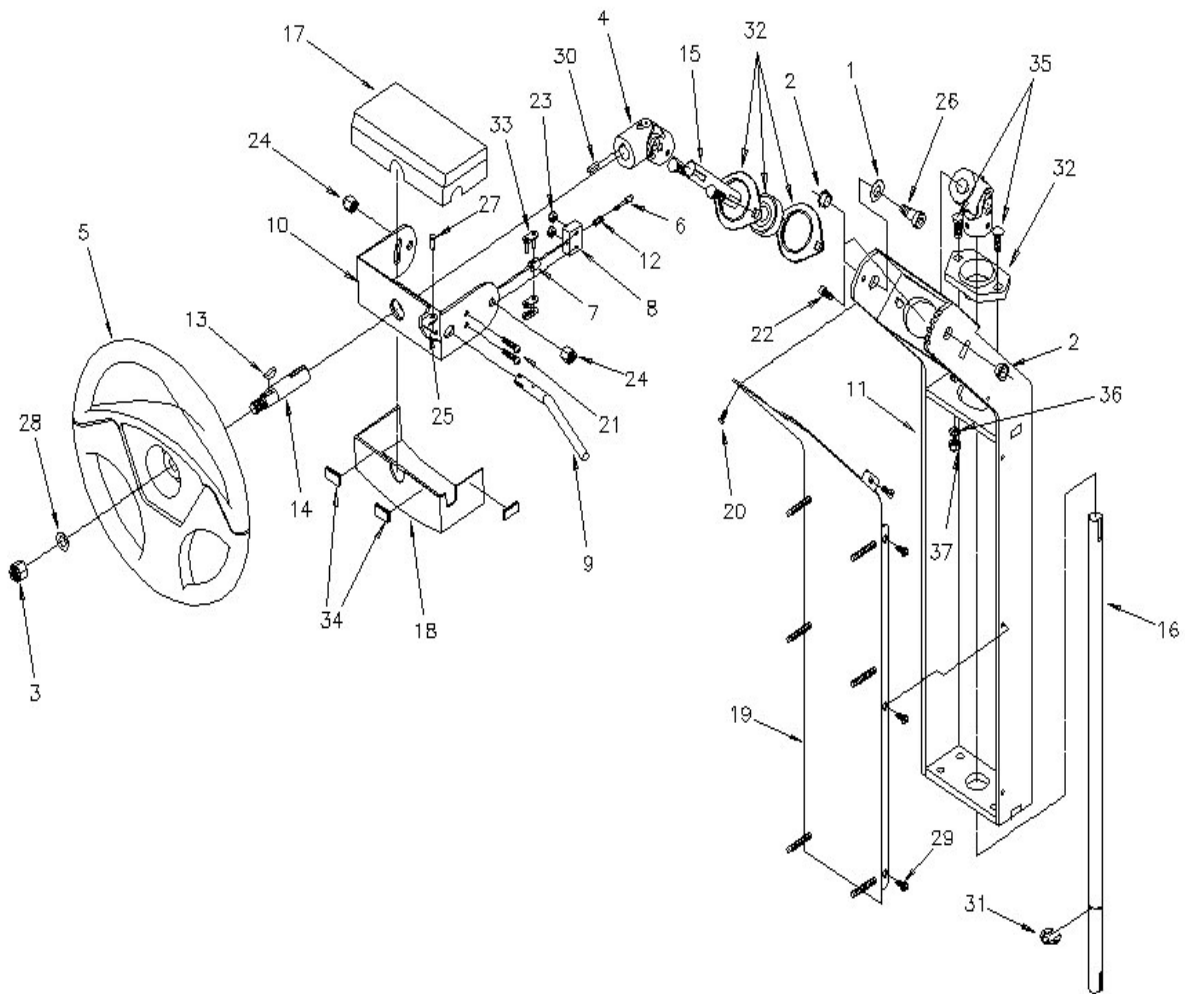


Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
1	383290	1	Cover, Connector
2	710178	4	SCR-MC ¼-20 x .50 STPL
3	710177	2	SCR-MC ¼-20 x .37
4	383289	2	Bracket, Connector
5	712540	8	SCR-MC 10-24 x .37
6	710307	2	SCR-MC 6-32 x 1.00
7	740147	1	Grey Housing
8	711316	2	Nut-Hex ¼-20
9	383310	1	Bracket, Recharge
10	740128	1	Snap Switch
11	711430	1	Tinnerman Nut
12	711209	2	BLT-HH ¼-20 x 1.12
13	724747	1	Cover, Charge Port
14	711157	4	SCR Hi/Lo #7-19 x .50
15	715246	1	Decal, Battery 36V
16	742703	1	Emergency Disconnect
17	383151	1	Dashboard Plate
18	715402	1	Decal, Dashboard Left
19	742310	1	Hour Meter
20	712822	18	SCR-MC 10-24 x .50
21	383378	1	Bezel Dashboard
22	742736	1	Switch, Horn
23	383376	1	Bezel Keyboard
24	742701	1	Keyboard
25	715403	1	Decal, Console
26	711160	8	SCR Hi/Lo #10 x 5/8
27	383213	2	Headlight Cover
28	742733	1	MEM-Switch, Chemical Mix
29	383268	2	Console Bracket
30	710180	8	SCR-MC ¼-20 x .75
31	383394	1	Insulator
32	711550	12	WSR-Nylon .25 X .75 0D
33	712665	8	Nut-Hex ¼-20 SS
34	742700	1	Computer, 3800
35	383305	1	Computer Cover, Left
36	383304	1	Computer Cover, Middle
37	710153	6	SCR-MC 10-32 x .37
38	383306	1	Computer Cover, Right
39	711161	10	SCR Hi/Lo #10 x .75
40	210405	1	Liquid Tight Fitting
41	383393	1	Insulator
42	383377	1	Bezel, Chemical Mix
43	383149	1	Right Side Dash Plate
44	740247	1	Circuit Breaker 30A
45	740238	1	Circuit Breaker 18A
46	740249	1	Circuit Breaker 50A
47	740131	2	Circuit Breaker 70A
48	741005	1	Key Switch
49	383147	1	Key Switch Plate
50	742716	1	Switch, 1 Pole w/Splash
51	715401	1	Decal, Key Switch
52	715276	1	Circuit Breaker
53	383150	1	Circuit Breaker Plate
54	711131	2	SCR-MC Self Tap #8 x .37
55	742728	1	Terminal Block
56	742954	1	Electrical Assy. 3800
57	711544	6	WSR-Helical ¼
58	383395	1	Insulator
59	383267	1	Electrical Panel Cover
60	711162	2	SCR Hi-Lo #10 x 1.50
61	742704	2	Headlight
62	742748	5	Circuit Breaker Boot
63	383300	1	Console, 3800
64	383310	1	Recharge Bracket

Items 28 and 42 are optional with Model #MC380002 and #MC380003.
Item 50 has optional 2nd and 3rd switch.
Items 60 and 61 are optional.

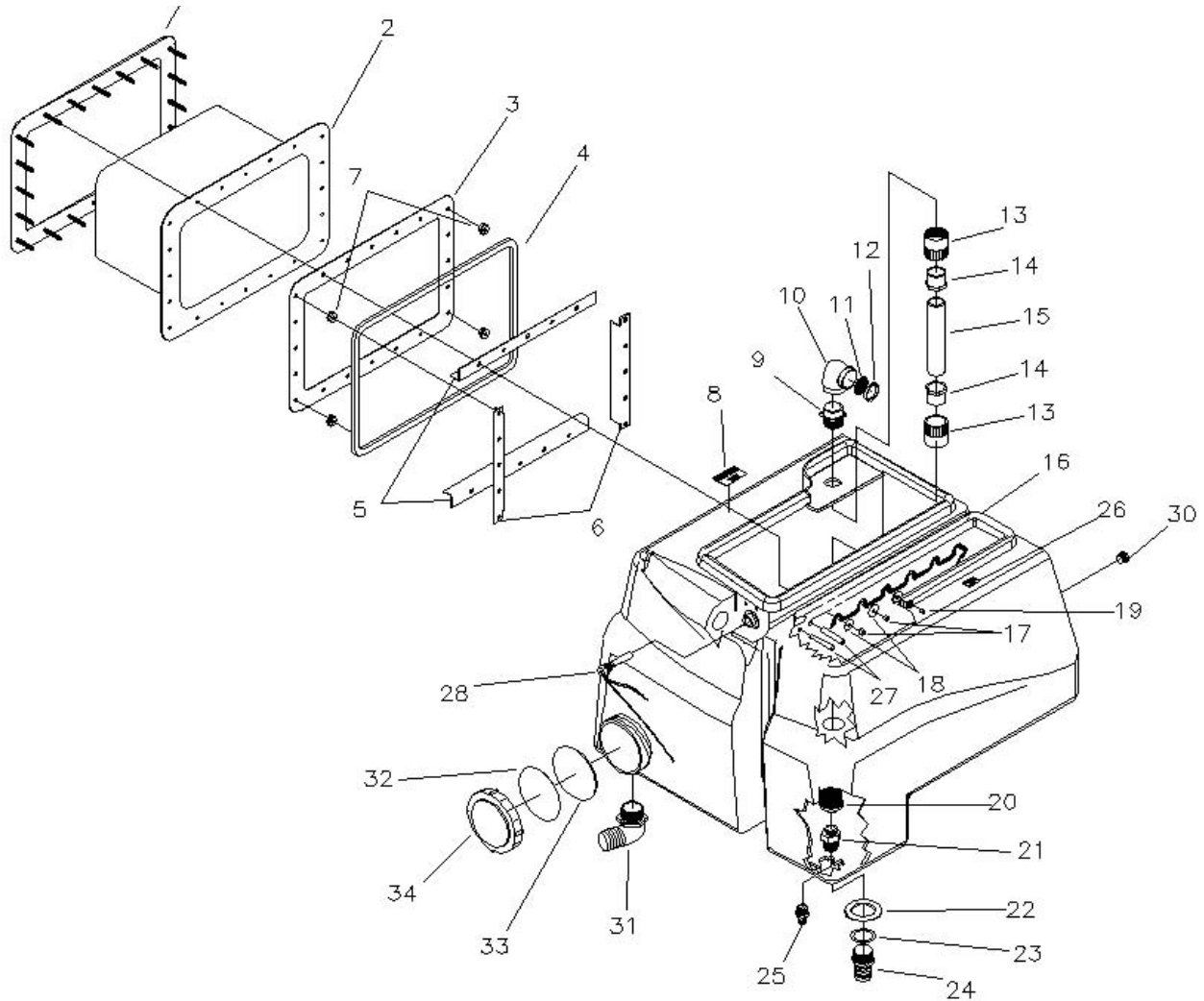
STEERING COLUMN ASSEMBLY



Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
1	210033	2	Oilite Thrust Washer
2	260041	2	Oilite Flange Bushing
3	363-816	1	Nut-Nyloc 1/2-20
4	383098	2	Universal Joint
5	383152	1	Steering Wheel
6	383171	1	Locking Pin Shaft
7	383172	1	Locking Pin Head
8	383211	1	Housing, Compression Spring
9	383214	1	Pivot Arm
10	383215	1	Upper Bracket Weldment
11	383218	1	Steering Weldment
12	383221	1	Spring, Compression
13	383277	1	Woodruff Key, 3/16 x 3/4
14	383278	1	Shaft, Upper Steering
15	383279	1	Shaft, Middle Steering
16	383280	1	Shaft, Lower Steering
17	383284	1	Cover, Steering Top
18	383285	1	Cover, Steering Bottom
19	383296	1	Cover, Steering Weldment
20	3331835	2	SCR-MC 8-32 x .50 STPL
21	710360	2	SCR-MC 10-32 x 1.0 STPL
22	710961	1	SCR-SC 1/4-20 x .37
23	711350	2	Nut Nyloc 10-32
24	711380	2	Nut Nyloc 3/8-16
25	711803	1	Cotter Pin .06 x .75
26	712099PLT	2	BLT-Shoulder 1/2 x 1/2
27	712117	1	Clevis Pin 3/16 x 19/32
28	712310	1	WSR-Flat .52 x .87 x .06
29	712811	8	SCR-MC 10-24 x .5 STPL
30	760043	4	Key .187 Sq. x .675
31	809148	1	E-Ring .75
32	3330940	2	Bearing Flange, 3/4
33	833629	1	Master Chain Link
34	383407	4	Valcro Strips 1" Lg.
35	3400009	4	SCR-CAR 5/16-18 x 1.00
36	3400088	4	WSR-Flat 5/16
37	3400080	4	Nut-Nyloc 5/16-18

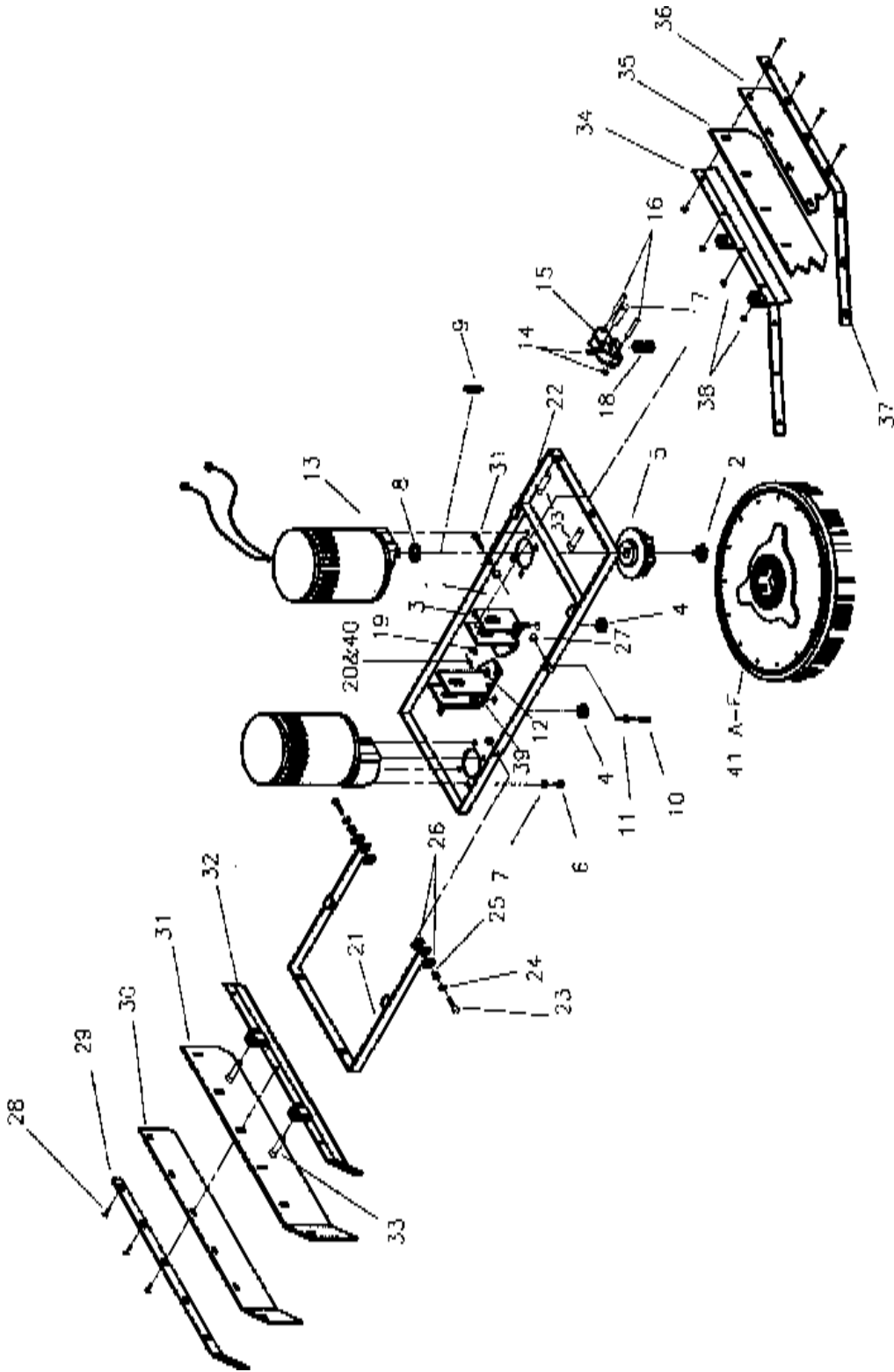
SOLUTION/RECOVERY ASSEMBLY



Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
1	383138	1	Bladder Frame
2	383089	1	Bladder Bag
3	383139	1	Bladder Plate
4	383101	1	Bladder Gasket
5	383141	2	Angle Bladder, Top-Bottom
6	383140	2	Angle Bladder, Side
7	130029	4	Grommet, .75 x .31 x .25
8	715206	1	Decal-Rec., Tank Cover
9	383210	1	1 1/2" Adapter, MPT
10	383379	1	Elbow 1 1/2" PVC
11	840099	1	Filter Screen
12	840102	1	Cap, Filter
13	833160	2	1.5" Pipe Coupling
14	430095	2	PVC Bushing, 1.5 x 1.25
15	383365	1	Stand Pipe, 1.5
16	383302	1	Solution/Recovery Tank
17	712683	22	Nut-Hex 5/16-18
18	712579	22	WSR-Flat .31 x 1.37 x .06
19	840059	22	Cap, Thread Cover
20	383146	1	Solution Strainer
21	383046	1	MPT Reducer, 3/4" x 1/2"
22	828970	1	WSR-Neoprene 1.87 x 2.4 x .125
23	450081	1	WSR-SS 1.908 x 2.41 x .03
24	450083	1	Insert Fit, White
25	340047	1	3/4" Barb Fitting
26	715205	1	Decal, Solution Tank Cover
27	420013	2	Tube 1/2" x 3" Lg.
28	742708-2	1	Float Switch with Male Term
29	742833	1	Cable Assy.
30	383319	1	Fitting Plug, 1/2 MPT
31	383318	1	2" MPT x 2" Barb
32	383401	1	Plate, Gasket Backing
33	383402	1	Gasket, Dump Cover
34	383437	1	Cap, Dump Cover

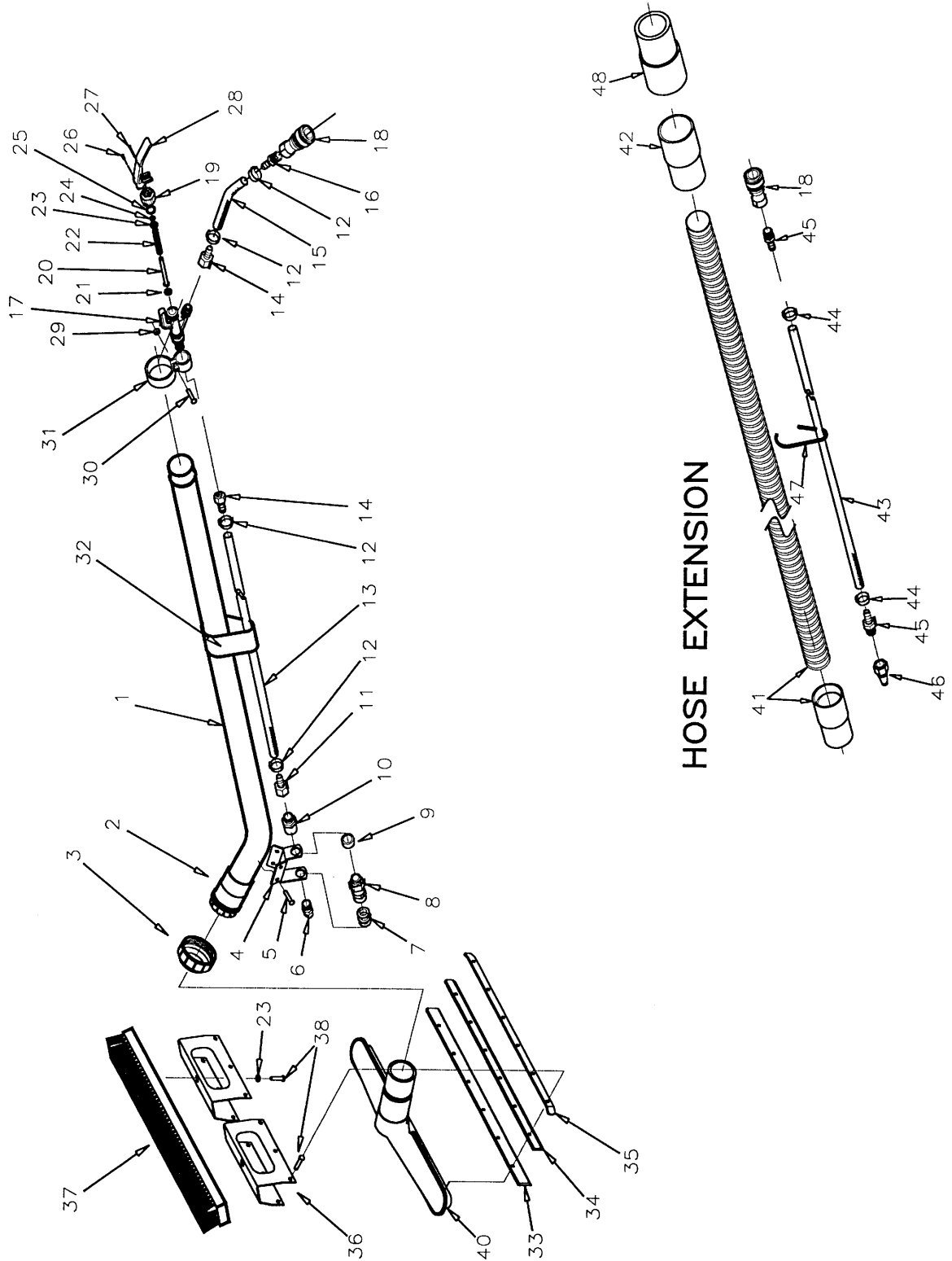
SCRUBHEAD ASSEMBLY



Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
1	383951	1	WB Motor Pan
2	210066	2	Drive Hub Retainer Belt
3	383053	2	Lift Bracket Weldment
4	383228	2	Nylon Nut 3/8 NPT
5	430163	2	Drive Hub w/Steel Insert
6	710986	8	SCR-SC 3/8-16 x 1.00
7	711546	8	WSR-Helical 3/8
8	711517	2	WSR-Flat .77 x 1.37 x .03
9	833621	2	Key 1/4 x 1/4 x 1
10	712575	6	BLT-HH 5/16-18 x .75 SS
11	711545	6	WSR-Helical 5/16
12	712680	6	Nut 5/16-18 SS
13	742714	2	36V Motor (1 hp)
14	711506	4	WSR-Flat 5/16 ST PL
15	320255	2	BRK, Spring Support
16	711671	4	Clevis Pin .31 x 2.13
17	3400755	2	Clevis Pin 1/2 x 2.25
18	260137	2	Compression Spring
19	711594	2	WSR-Flat .56 x .88 x .03
20	3400124	6	5/8 Rue Ring
21	383768	1	Bracket Side Squeegee, LH
22	383780	1	Bracket Side Squeegee, RH
23	3402010	4	SCR-Hex 3/8-16 x 1.25
24	3400336	4	WSR-3/8 Flat
25	3300339	4	Sleeve Bushing
26	711592	8	WSR .5 x 1.06 x .06
27	3400340	4	Nut-Hex 3/8-16 SS
28	3400058	13	SCR-TRS 1/4-20 x 1.00
29	383779	1	Retainer-Side Squeegee LH
30	383778	1	Strip-Backup Side Squeegee LH
31	383777	1	Squeegee, Side LH
32	383771	1	Weld-Squeegee Mnt. LH
33	3400126	4	Pin Hitch 1/2 x 1.50
34	383782	1	Weld-Squeegee Mnt. RH
35	383784	1	Squeegee Side RH
36	383785	1	Strip Backup Side Squeegee RH
37	383786	1	Retainer Side Squeegee RH
38	3400063	13	Nut Flange Lock 1/4-20
39	3400261	2	Fitting Brass 1/4 MPT x 3/8 Barb
40	3400125	4	3/8 Rue Ring
41A	381036	2	Dyna Scrub Brush
41B	381037	2	Power Scrub Brush
41C	381038	2	Pad Holder
41D	381039	2	Nylon Brush
41E	381040	2	Poly-Grit Brush
41F	381041	2	Strata-Grit Brush

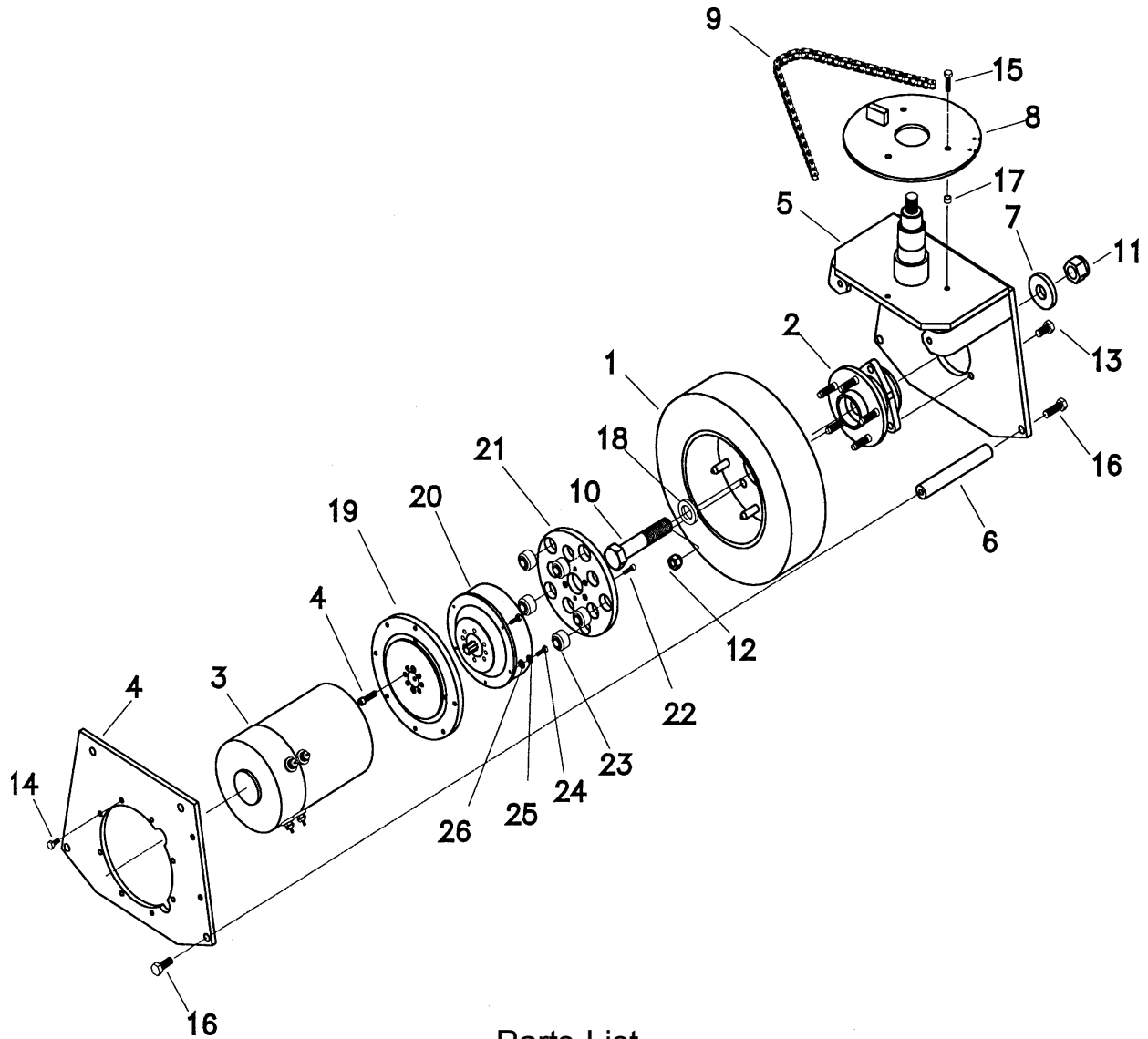
OFF AISLE WAND



Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
1	383411	1	Wand AL, 1 1/4
2	832285	1	1 1/2 End Coupling
3	832284	1	Nut
4	100004	1	Bracket, Spray Jet
5	711903	4	Rivet, Pop .19 x .46
6	829115	1	Vee Jet, 1/4 NPT
7	711594	3	WSR-Flat .56 x .88 x .03
8	833384	1	Check Valve, 1/4
9	832884	1	Spacer
10	828953	1	Flare Connector
11	833488	1	HB Swivel Fl. 14HBLFSV-4-4
12	828490	4	Crimp Clamp
13	828488	3'	Hose
14	831327	2	1/4 MPT x 1/4 Hose Barb
15	828488	.42	Hose
16	829106	1	1/4 MPT Barb
17	390052	1	Body
18	828370	2	Coupler
19	390055	1	Cap
20	390054	1	Valve
21	390062	1	O-Ring
22	390049	1	Spring
23	712320	3	WSR #10
24	390061	1	O-Ring
25	390060	1	O-Ring
26	390063	1	Pin
27	711803	1	Cotter Pin
28	390053	1	Trigger
29	712636	1	Nut-Hex 10-32 SS
30	712545	1	SCR-MC 10-32 .87
31	390056	1	Valve Mount
32	762173	1	Tube, Shrink
33	500295	2	Rubber, Squeegee
34	500296	2	Rubber, Reinforcing
35	800615	2	Retaining Strip
36	833789	2	Bracket Mounting
37	833841	1	Brush
38	711106	14	SCR-ST-A #10 x .75
39	833789	2	Bracket Mounting
40	808648	1	Nozzle, Squeegee
41	801045	1	Hose, CP 1 1/2 x 15 ft.
42	383416	1	Cuff Enlarger, 1 1/2 Hose
43	828488	16'	Hose
44	828490	2	Crimp Clamp
45	828106	2	1/4 MPT Barb
46	828368	1	BH2-51 Male Coupler
47	828062	5	Cable Ties
48	383254	1	Hose Cuff

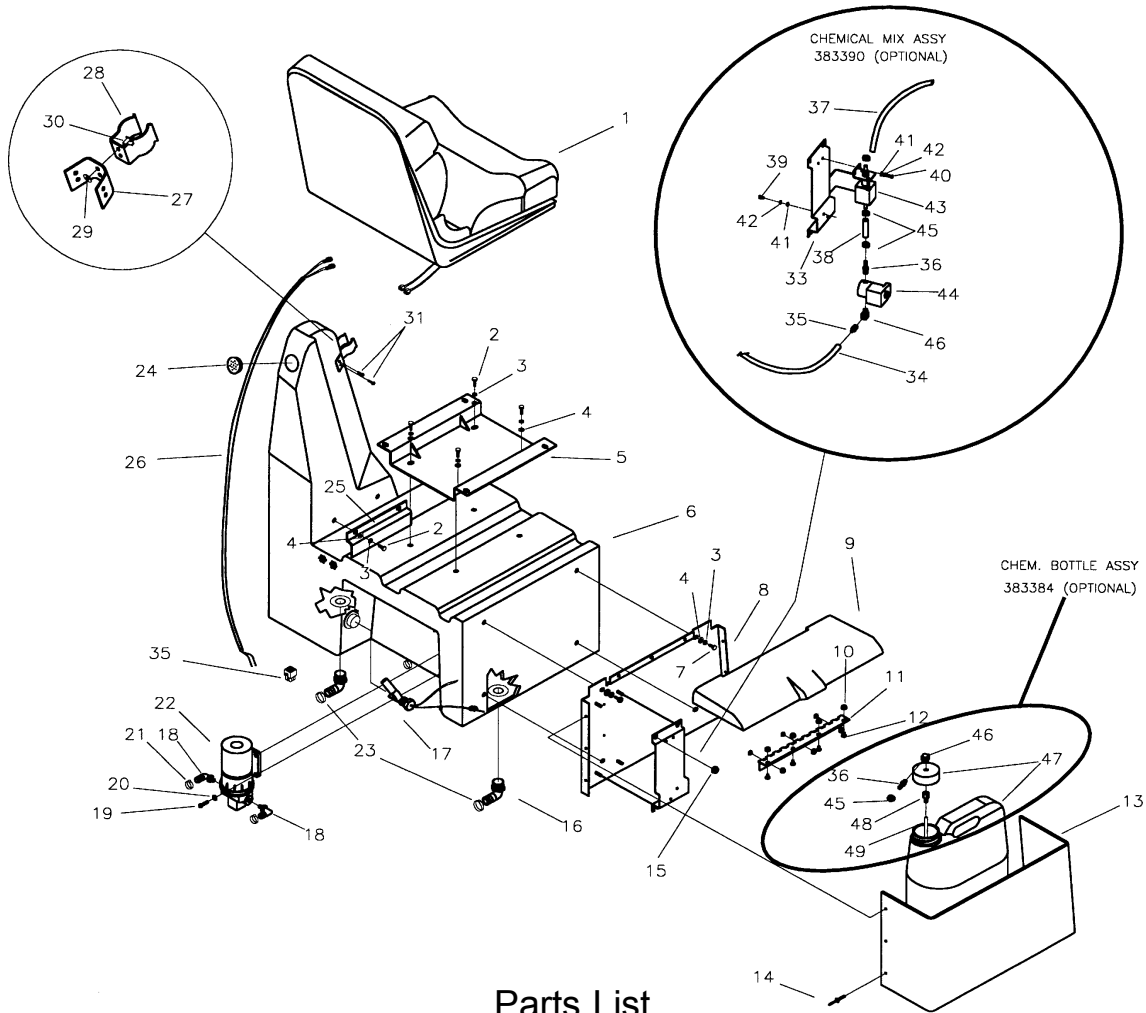
FRONT DRIVE ASSEMBLY



Parts List

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	383108	1	Drive Wheel	14	713027	8	Bolt 5/16-18 x 1 GR5
2	383112	1	Drive Wheel Hub	15	713028	3	Bolt 5/16-18 x 1.25 GR5
3	383113	1	Front Drive Motor Assy.	16	713071	6	Bolt 1/2 -13 x 1.50 GR5
4	400935	6	SCR-SOC Hd. Cap 5/16-24	17	809247	3	Spacer .502 x .38 x .322
5	383115	1	Front Drive Wheel Weldment	18	383433	1	Spacer 1.75 OD x 1.06 ID
6	383118	2	Spacer 1 Dia. x 6.813 Lg.	19	383104	1	End Plate
7	383119	1	Sprayer 2.5 x 1 x .375	20	383103	1	Gear Box
8	383286	1	Chain Disc Weldment	21	383070	1	Drive Plate
9	383373	1	Steering Chain	22	400926	6	SCR-SOC Hd. Cap 5/16-24
10	711164	1	Bolt 1 x 5.0 Lg.	23	383069	5	Isolators
11	711165	1	Nut-1 Nyloc	24	400041	4	BLT-Helical 1/4 SS
12	711166	5	Lug Nut 1/2-20	25	712758	4	WSR-HH 1/4-20 ZP
13	711167	3	Bolt M12-1.75 x 25 MM	26	711504	4	WSR-Flat 1/4 SS

AUXILIARY TANK ASSEMBLY

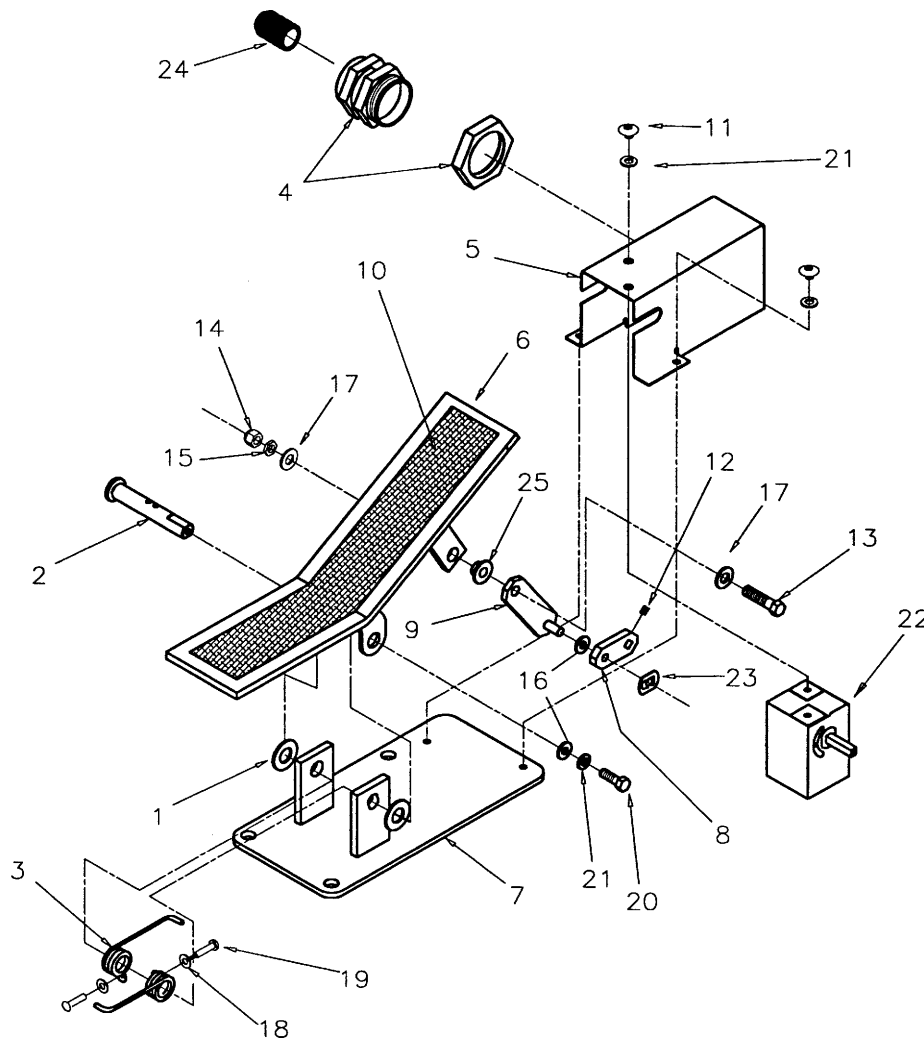


Parts List

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	383154	1	Seat	22	711503	2	WSR-Flat #10
2	713002	4	BLT-HH 1/4-20 x 3/4	23	711915	2	Rivet Tube .19 x .28
3	711544	8	WSR-Helical 1/4	24	711160	4	SCR-Hi/Lo #10 x 5/8
4	711505	8	WSR-Flat 1/4	25	383132	1	Chem. Pump Bracket
5	383155	1	Seat Mount	26	383359	1	Hose, 1/4 x 32.5 Lg.
6	383301	1	Auxiliary Tank	27	383386	1	1/4 Barb x 1/8 MPT Brass
7	711203	4	Bolt-HH 1/4-20 x .62	28	383428	1	Hose 1/4 x 6.75" Lg.
8	383131	1	Mount Plate	29	383429	1	Hose, 1/4 x 2" Lg.
9	383144	1	Cover, Chemical Mix	30	710153	2	SCR-MC 10-32 x .37
10	712908	7	Nut-Flanged Wizz 10-24	31	712822	2	SCR-MC 10-24 x .5
11	450021	1	Hinge	32	711503	4	WSR-Flat #10
12	712816	7	SCR-MC 10-24 x .37	33	711543	4	WSR-Helical #10
13	383129	1	Chem Mix Enclosure	34	742713	1	Pump, Chemical Meter
14	828893	6	Rivet Bap KTR64BX	35	742719	1	Solenoid 36V
15	711379	2	5/16-18 Wizz Nut	36	828490	3	Crimp Clamp 140R
16	383321	1	Fitting PP, 3/4 MPT x 3/4 Barb	37	383472	2	Fitting Brass 90, 1/8 MPT x 1/4 Barb
17	742708-1	1	Float Switch	38	383094MCH	1	Chemical Bottle
18	383346	1	Crimp Clamp 3/4	39	383386	1	Fitting Brass 1/4 Barb x 1/8 FPT
19	383217	1	Battery Cable Cover	40	383388	1	1/4 ID x 10 1/4 PP Tube
20	383269	1	Off-Aisle Bracket	41	3302338	1	Worm Clamp
21	383270	1	Spring Clip				

* 383384 and 383390 included with Models MC380002 & MC380003.

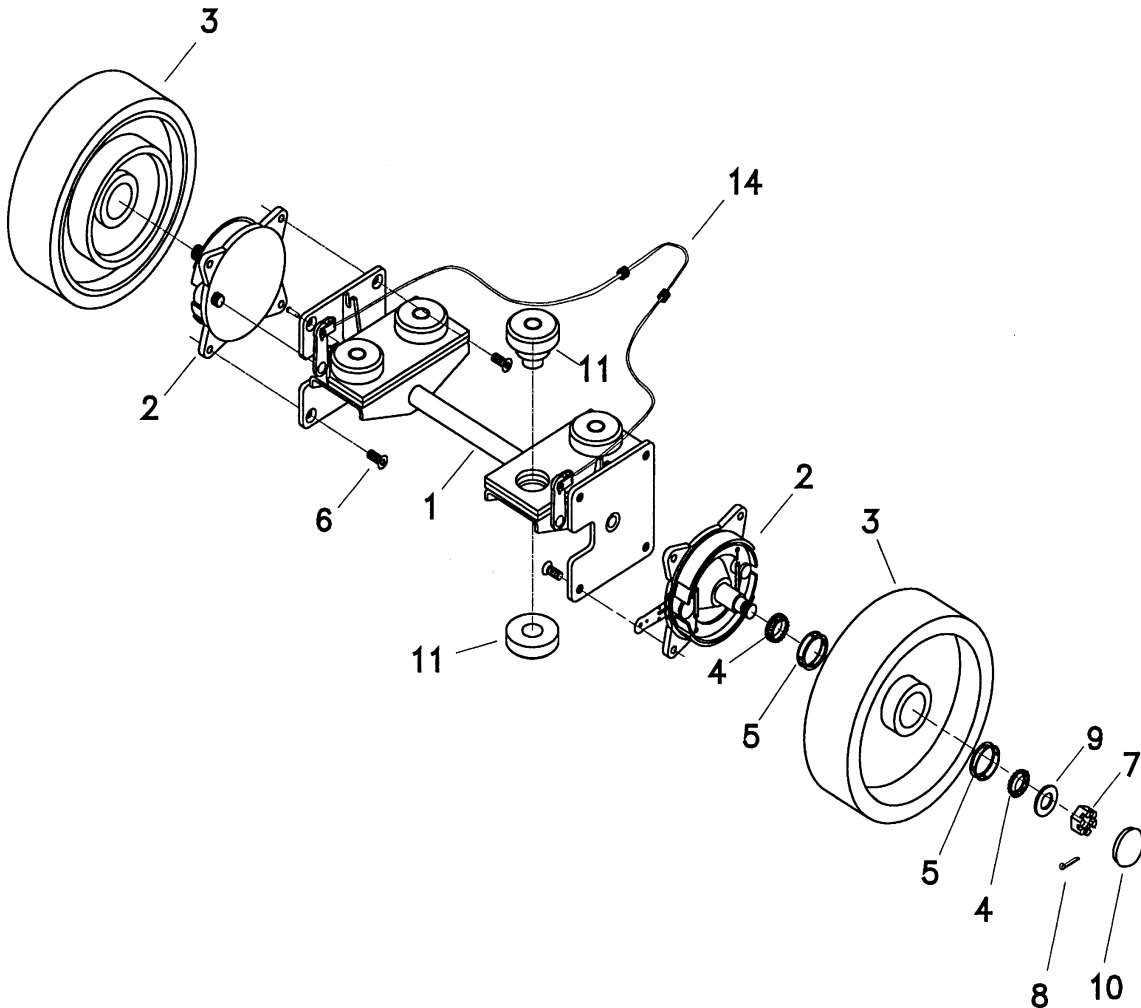
ACCELERATOR ASSEMBLY



Parts List

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	210033	2	Oilite Thrust Washer	14	711374	1	Nut-Nyloc 5/16-18
2	210375	1	Swivel Pin	15	711420	1	Nut-Hex Jam 5/16-18
3	210391	2	Return Spring	16	711504	2	WSR-Flat ¼ ID SS
4	210405	1	Liquid Tight Fitting	17	711506	2	WSR-Flat 5/16 STPL
5	383158	1	Switch Cover	18	712320	2	WSR-Nylon .22 x .45 x .04
6	383188	1	Pedal Weldment	19	712536	2	SCR-MC 10-24 x .62 SS
7	383189	1	Mounting Plate	20	712562	1	BLT-HH ¼-20 x .75 SS
8	383191	1	Throttle Bar	21	712758	5	WSR-Helical ¼ SS
9	383193	1	Accelerator Bar Weldment	22	742913	1	Throttle Assembly
10	383196	1	Anti-Skid Strip	23	75-89-A	1	Speed Nut
11	710252	4	SCR-MC 10-32 x .25	24	828988	1	Heycoflex Conduit
12	711003	1	SCR-SK 10-32 x .25	25	829052	1	Flange Bushing Nylon .312 ID
13	711231	1	BLT-HH 5/16-18 STPL				

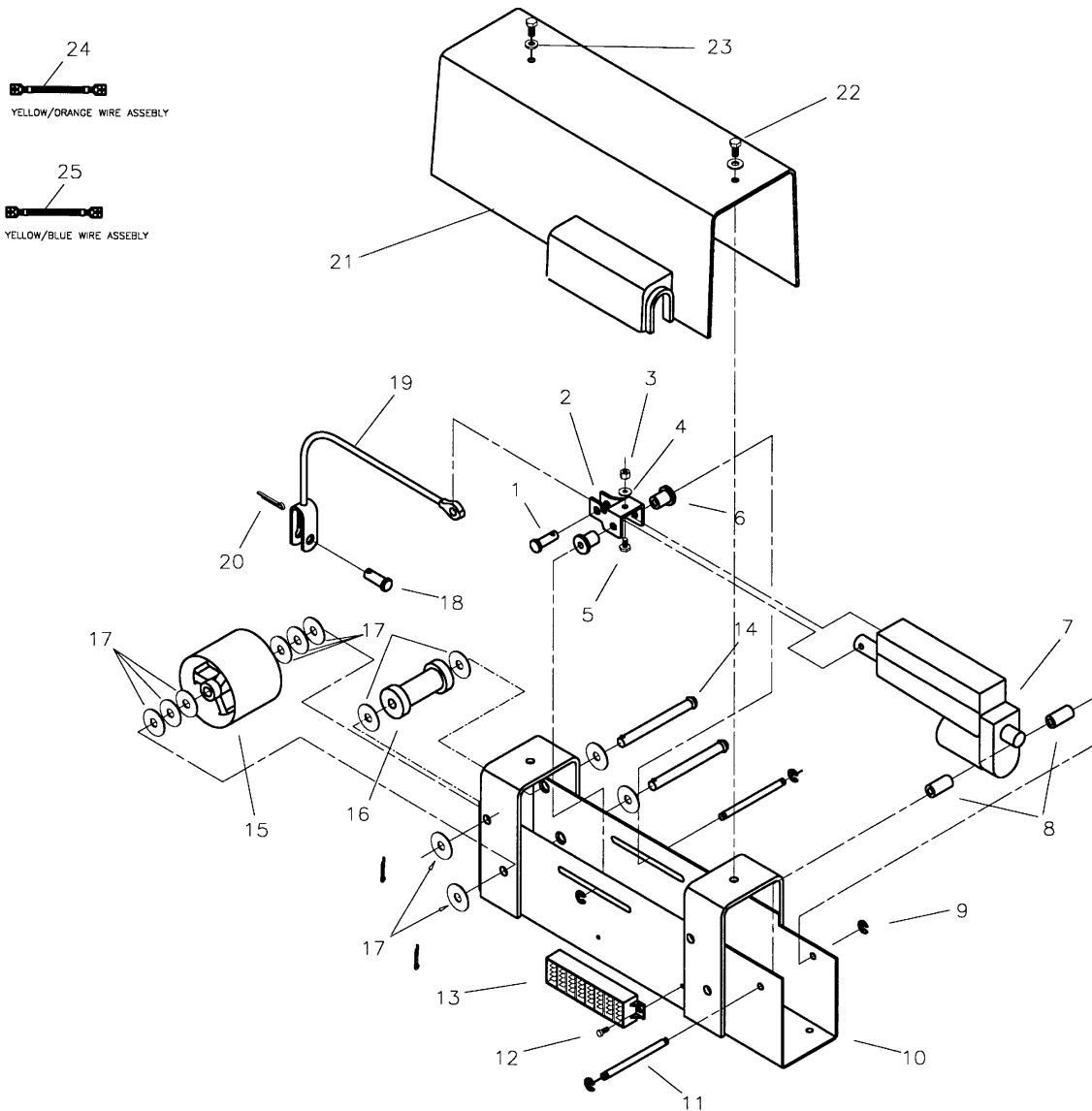
REAR AXLE ASSEMBLY



Parts List

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	383051	1	Rear Axle Weldment	8	380-632-20	2	3/16 Cotter Pin
2	383177	2	Drum Brake (Knott 180x30)	9	711514	2	Washer
3	383111	2	Rear Wheel	10	383241	2	Grease Cap
4	383194	4	Bearing Cone	11	383072	4	Ring & Bushing Isolator
5	383195	4	Bearing Cup	12	383426	2	Clevis Pin 1/4 x .88 Zinc PLT
6	711169	8	1/2-20 UNF FSHS	13	711808	2	Cotter Pin, Hair #13
7	711450	2	1-14 UNS-2A Slotted Nut	14	383229	1	Brake Cable

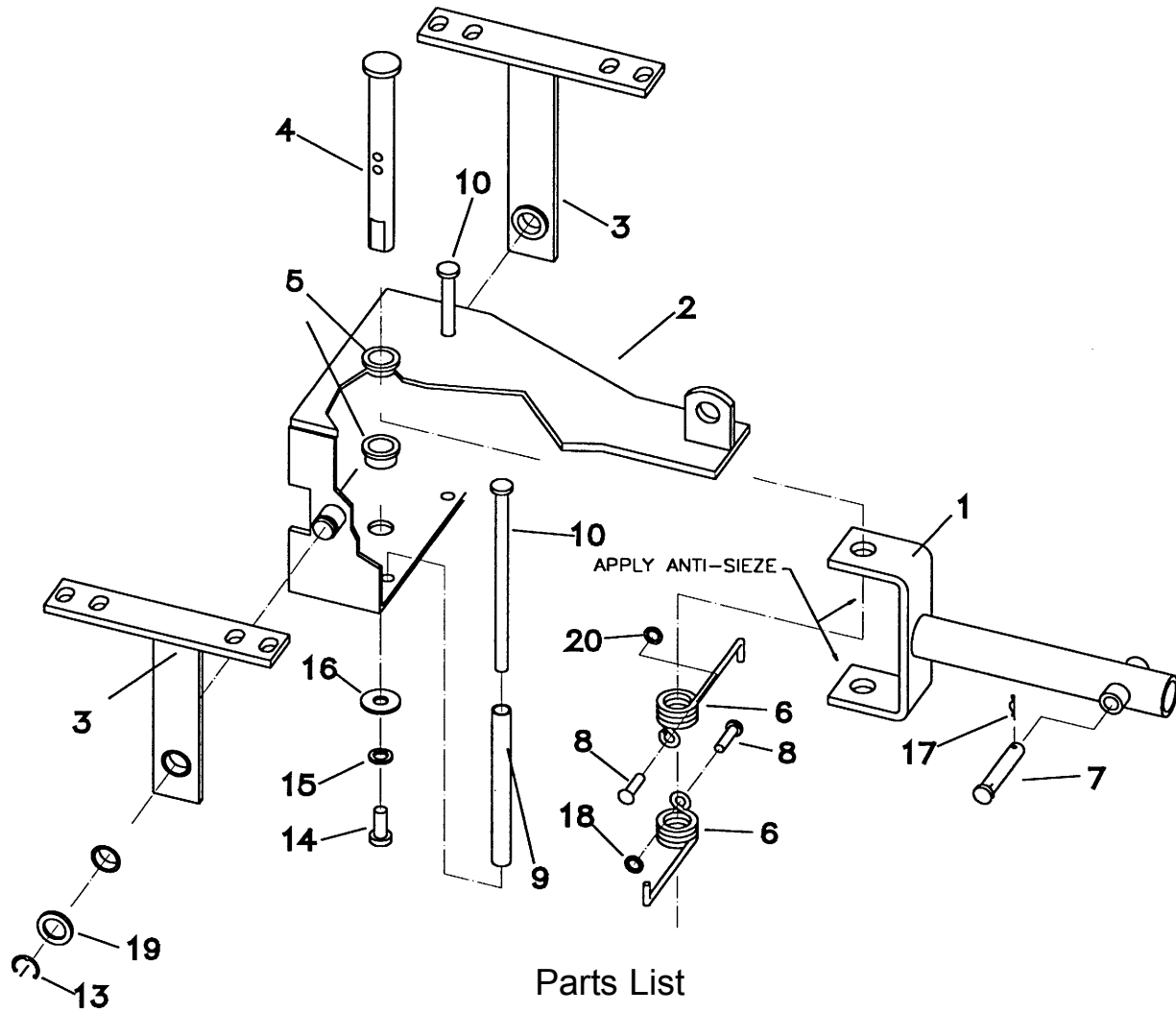
ACTUATOR SUPPORT ASSEMBLY



Parts List

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	881002	1	Clevis Pin 5/16 x .88	12	742728	1	Terminal Block
2	320161	1	Bracket, Squeegee Cable	13	383162	2	Clevis Pin 3/8 x 3 3/4
3	712638	1	Nylon Nut, 10-24 SS	14	383476	1	Roller
4	712764	1	WSR-SS, #10	15	711507	4	Flat Washer 3/8"
5	712540	1	SCR-MC 10-24 x .37	17	711668	1	Clevis Pin 3/8 x 1.0
6	742735	1	Actuator	18	383436	1	Actuator Cable
7	833277PLT	2	Actuator Bushing	19	809311	4	Cotter Pin 7/64" x 1.0
8	711720	2	Retaining Ring-E Ext. .25	20	383430	1	Actuator Cover
9	383123	1	Actuator Support Weldment	21	711202	2	BLT-HH 1/4-20 x .5 STPL
10	833294	1	Actuator Pin	22	711505	2	WSR-Flat 1/4
11	711133	1	Self Tapping Screw #8 x .37				

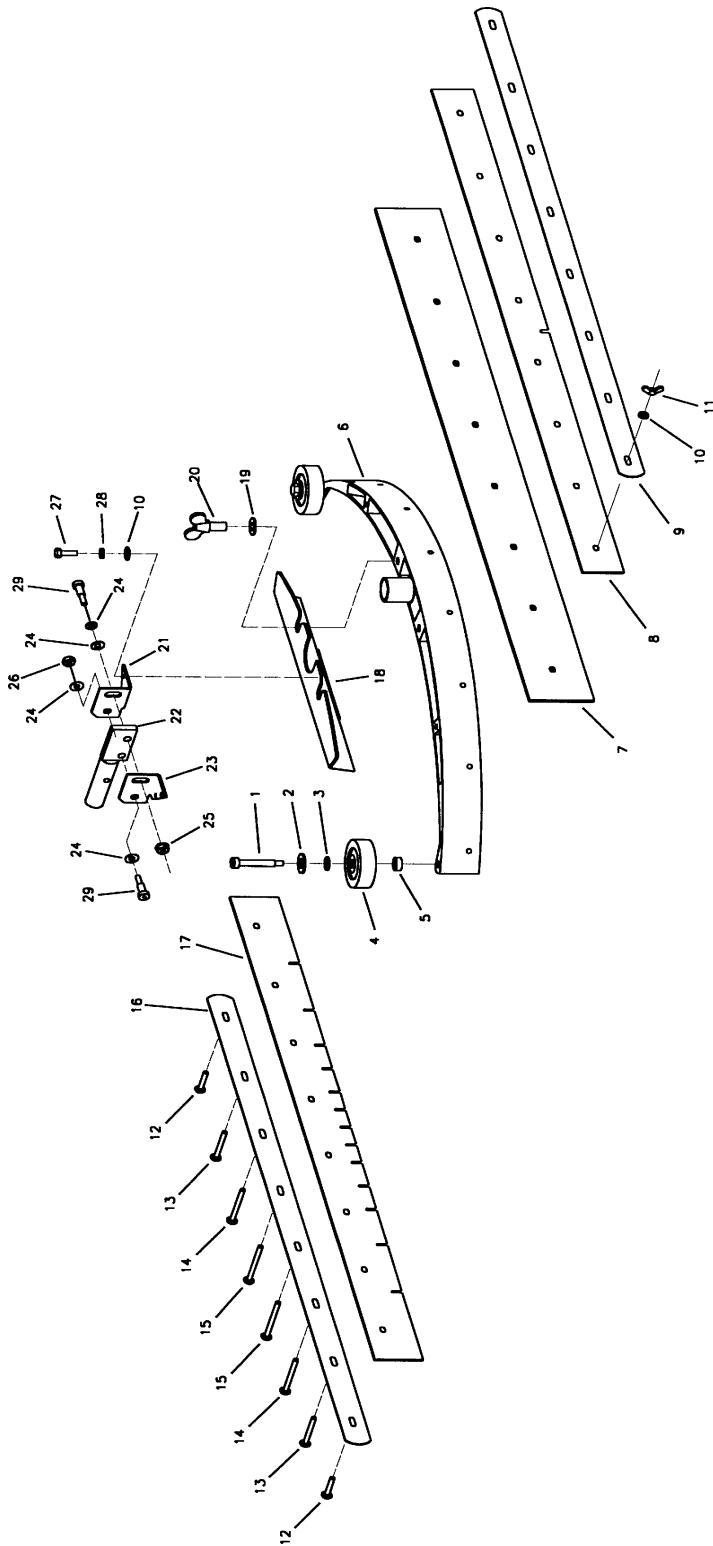
SQUEEGEE MECHANISM



Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
1	383311	1	Yoke Weldment
2	383224	1	Spring Housing Weldment
3	320008	1	Pivot Bracket Weldment
4	383314	1	Swivel Pin
5	260041	2	1/2 Oilite Bushing
6	383287	2	Torsion Spring SS
7	711671	1	Clevis Pin 5/16 x 2.125
8	712565	2	SCR-MC 1/4-20 x .62 SS
9	383315	2	Spacer Tube
10	710392	2	SCR-MC 1/4-20 x 4.50 SLTD
13	711715	2	3/4 Retaining Ring
14	712562	1	Bolt-HH 1/4-20 x .75 SS
15	712758	1	WSR-Helical 1/4 SS
16	711504	1	WSR-Flat .25 ID SS
17	711808	1	Cotter Pin
18	711505	2	WSR-Flat 1/4
19	711517	2	WSR-Flat .75 x 1.375 x .09 SS

SQUEEGEE ASSEMBLY

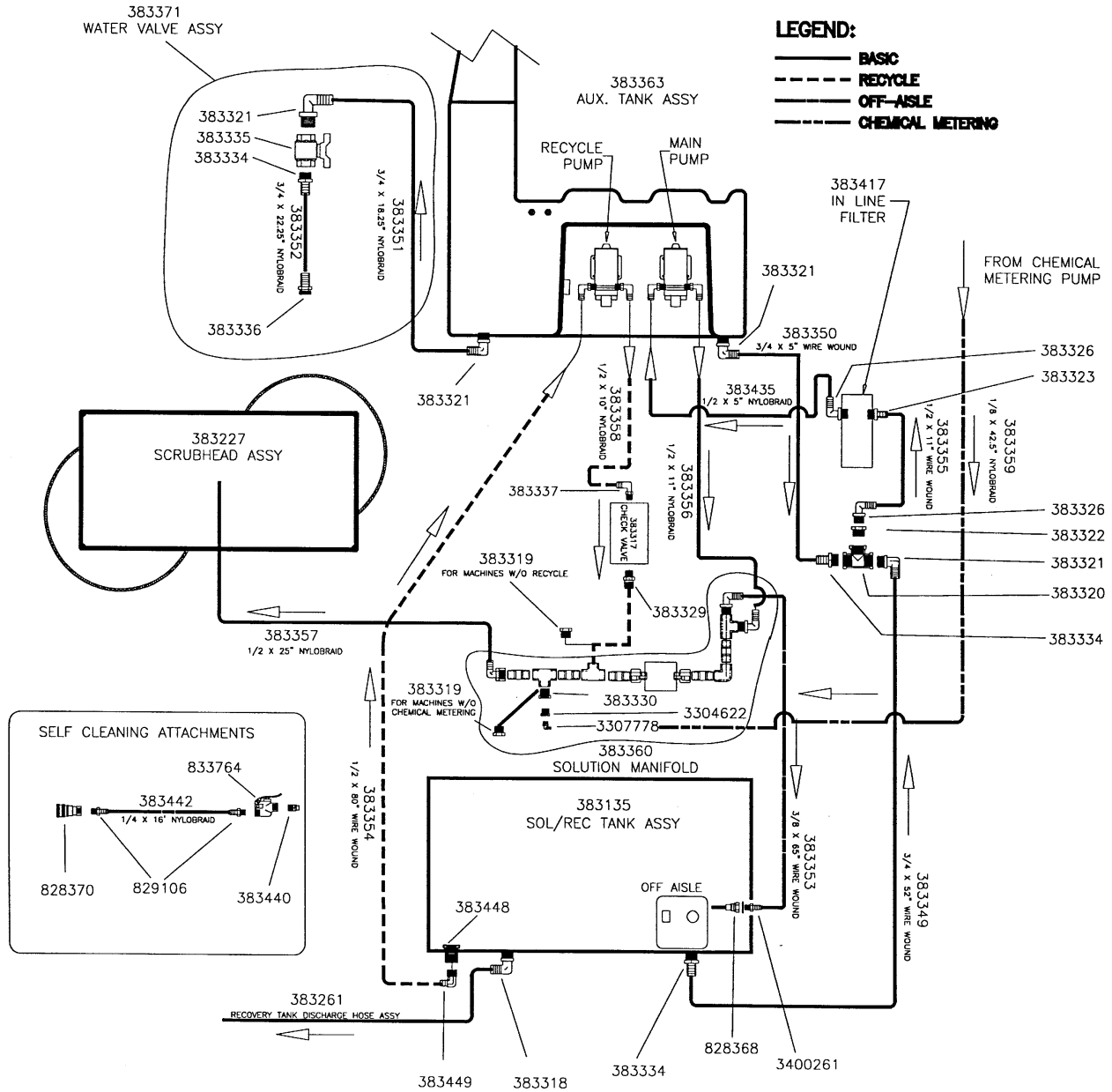


Parts List

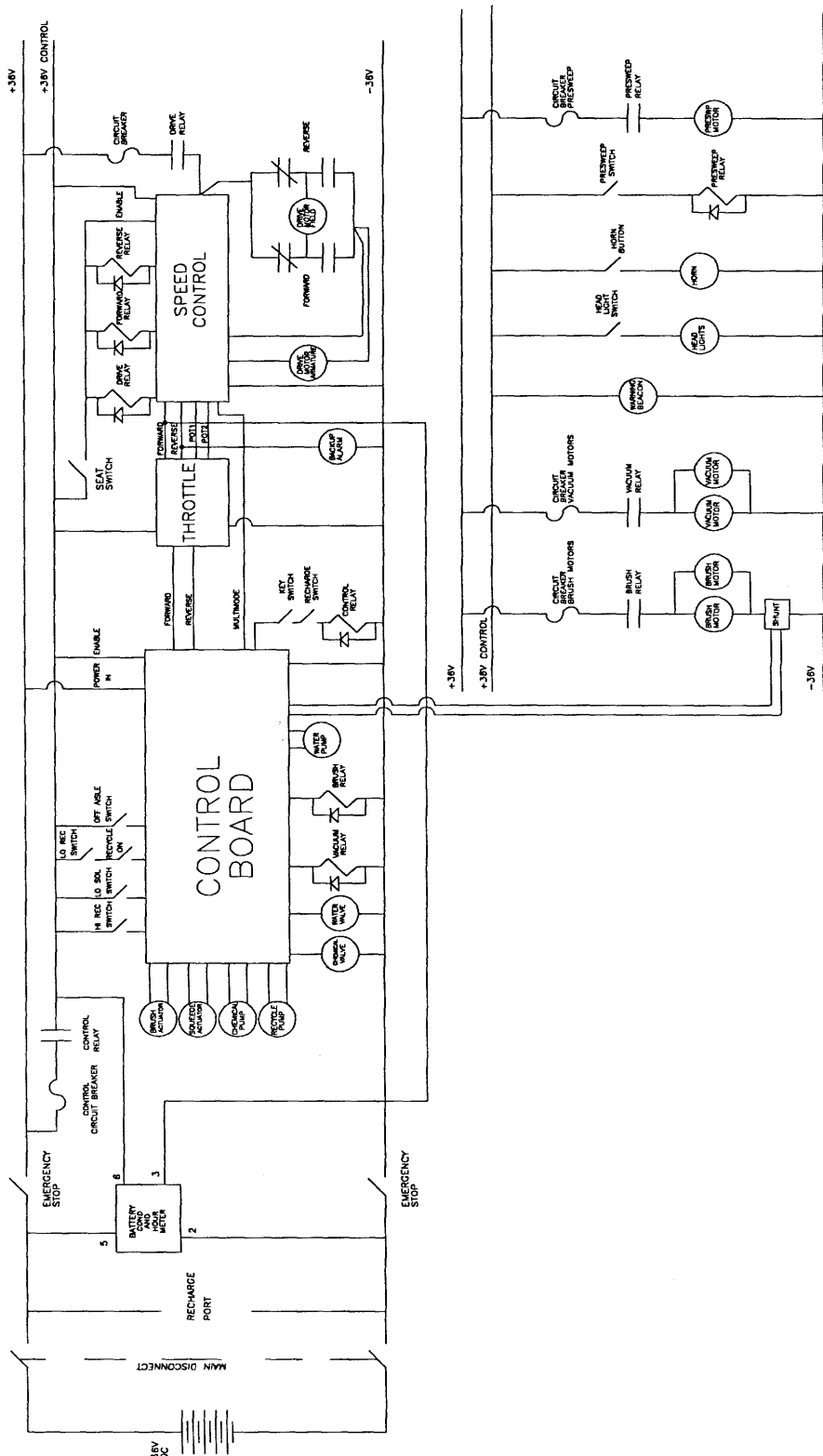
ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	712091	2	Bolt-Shoulder 3/8 x 1.5	17	383754	1	Front Squeegee Blade
2	711507	2	WSR-Flat .37 x 1.12 x .06	18	383789	1	Squeegee Mounting Bracket
3	711592	2	WSR-Nylon .50 x 1.06 x .06	19	711578	2	WSR-Flat 1/2 Brass
4	808829	2	Squeegee Bumper Wheel	20	220249	2	Wing Bolt 1/2-13 x .75
5	832015	2	Spacer	21	383424	1	Mounting Bracket - Right
6	383750MCH	1	Squeegee Machined	22	320154	1	Squeegee Mount Weldment
7	383753	1	Rear Squeegee Blade	23	383425	1	Mounting Bracket - Left
8	383755	1	Reinforcement Blade	24	712301	4	WSR-Flat .37 x .87 x .07
9	383751	1	Rear Blade Strap	25	711379	1	Nut-Flanged Wizz 5/16-18
10	711504	8	Wing Nut 1/4-20 SS	26	711374	1	Nut-Nyloc 5/16-18
12	712571	2	Bolt-SS Carr 1/4-20 x 1.5	27	712562	4	Bolt-HH 1/4-20 x .75 SS
13	712573	2	Bolt-SS Carr 1/4-20 x 2.5	28	712578	4	WSR-Helical 1/4 SS
14	712574	2	Bolt-SS Carr 1/4-20 x 3.00	29	712081	2	Bolt-Shoulder 3/8 x .75
15	712577	2	Bolt-SS Carr 1/4-20 x 3.5	30	383792	1	Gasket, Squeegee Mount Brkt.
16	383752	1	Front Blade Strap				

PLUMBING DIAGRAM

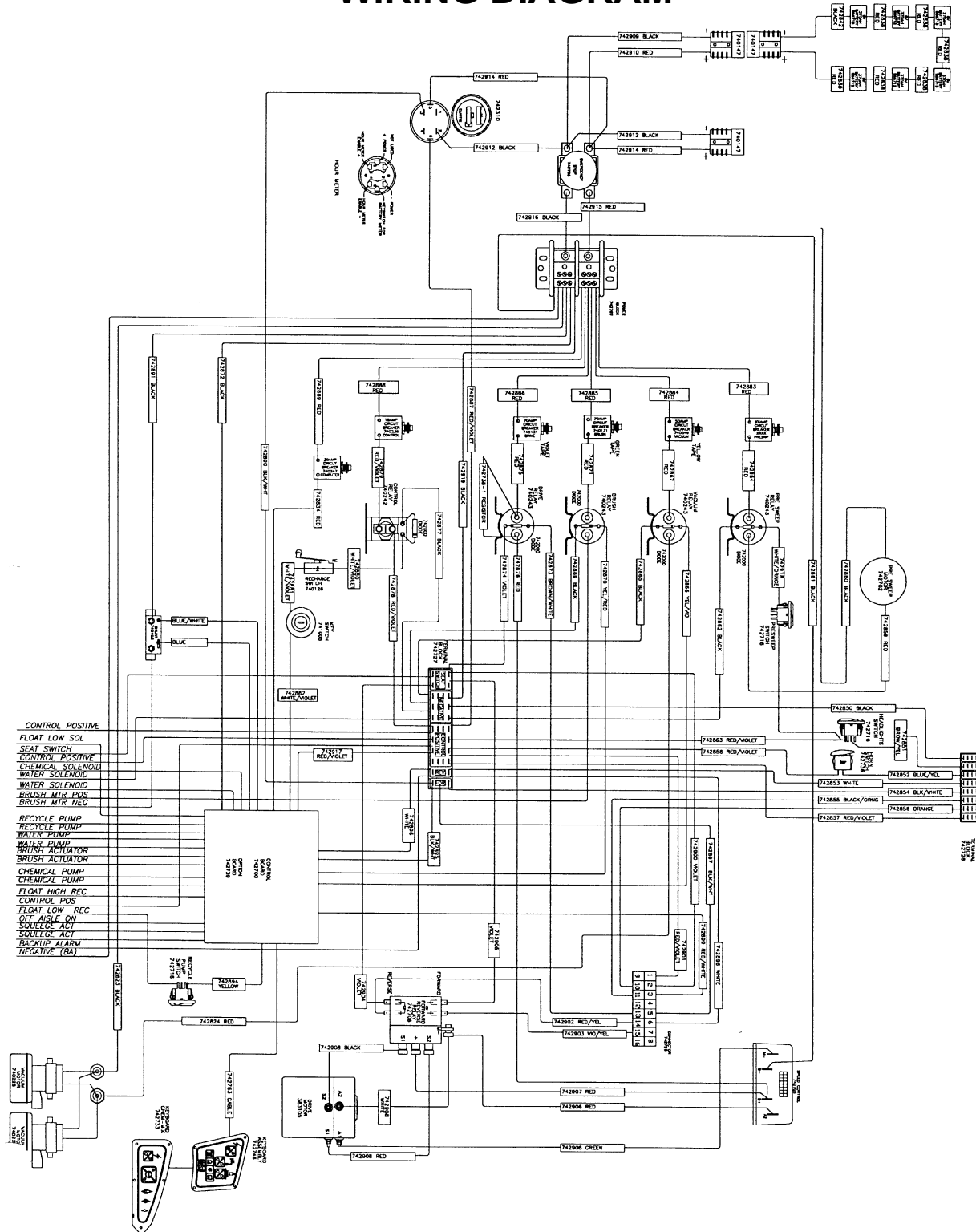
PLUMBING DIAGRAM



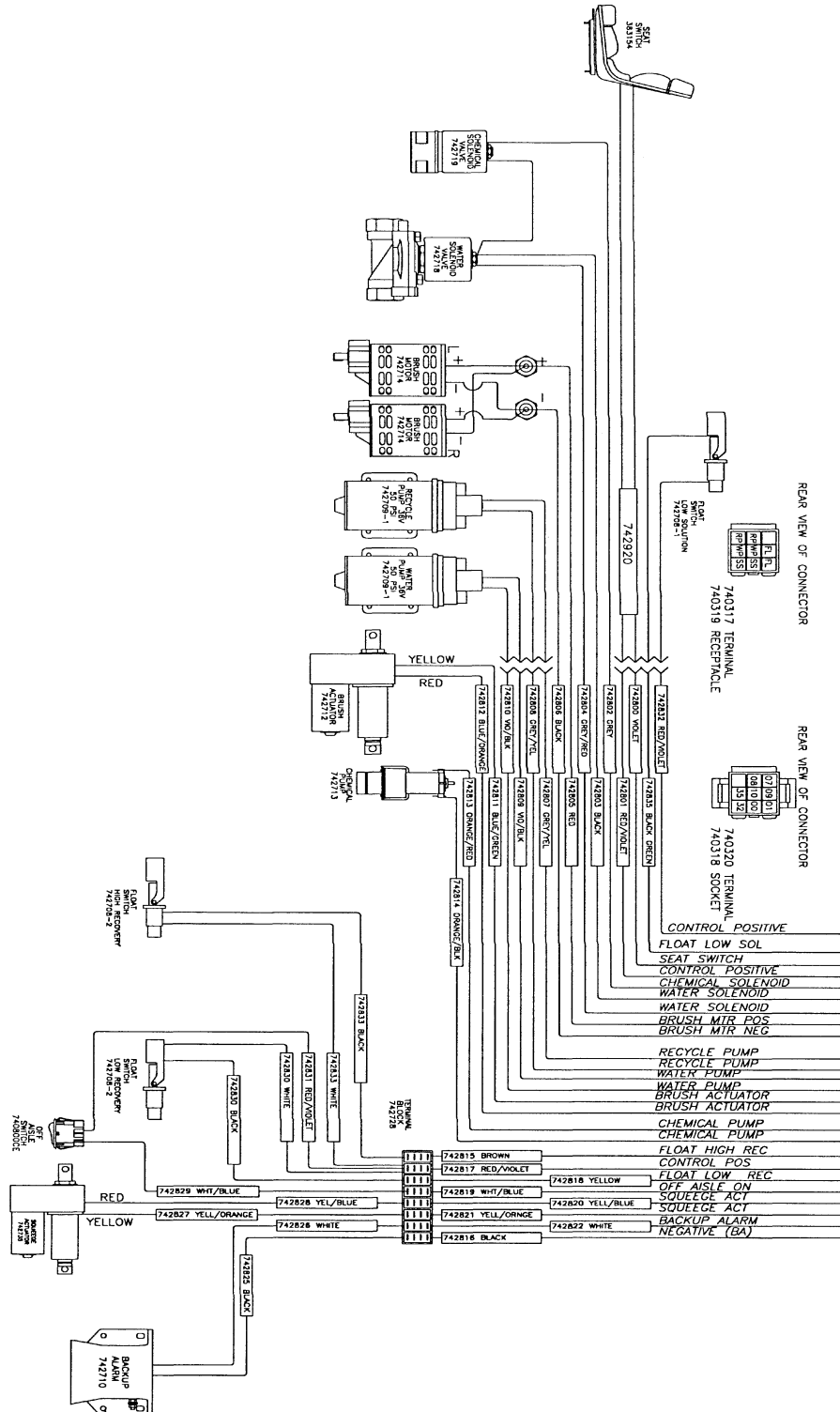
3800 RIDER SCHEMATIC DIAGRAM



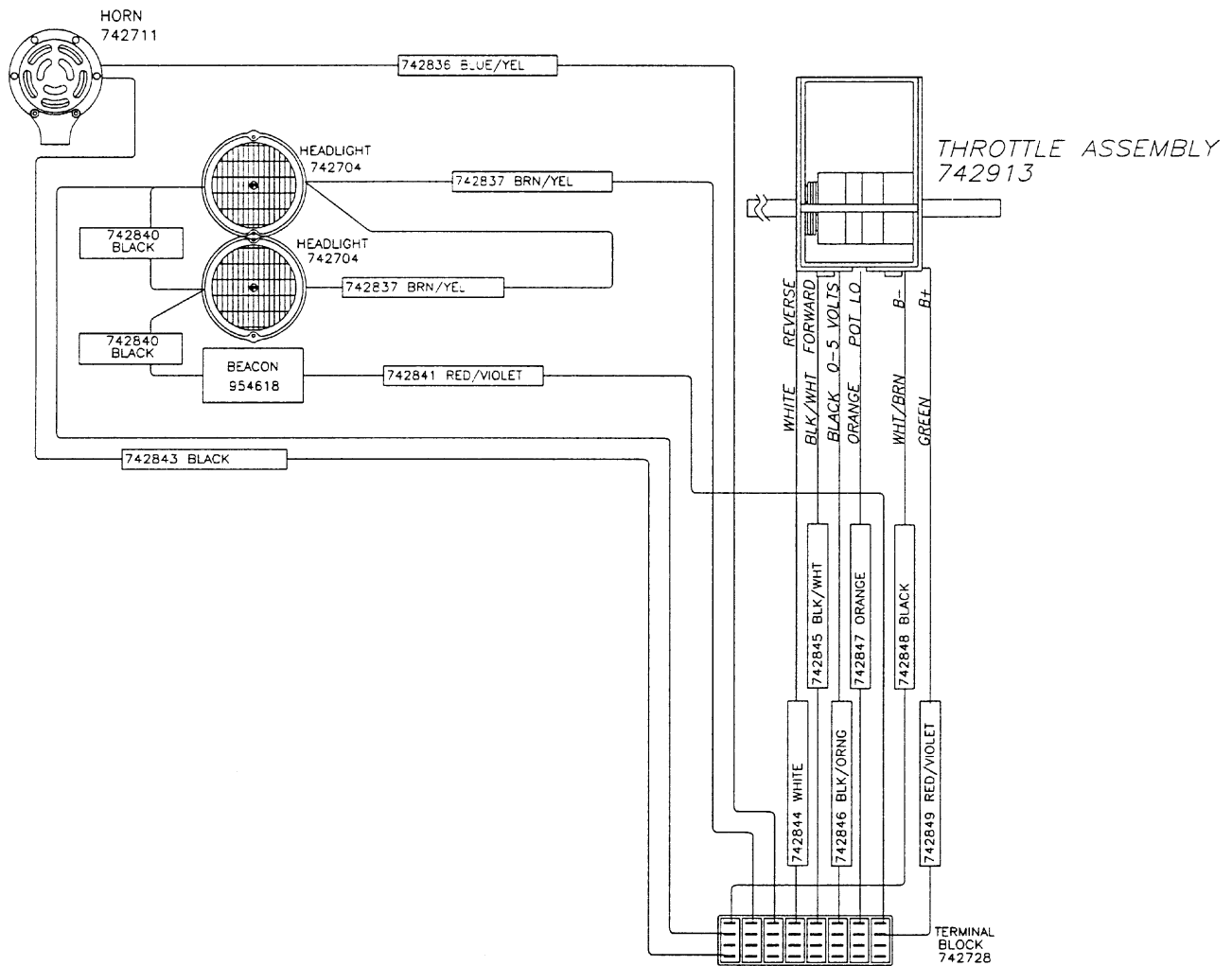
3800 RIDER MAIN ASSEMBLY WIRING DIAGRAM



3800 RIDER UNDER FRAME WIRING DIAGRAM



3800 RIDER FRONT CONSOLE WIRING DIAGRAM





3800 RIDER WIRE COLOR WIRING GUIDE

Black	Negative	Computer Only		
Black/Green	Float Low Solution	Black	Negative	742872
Black/Orange	0-5V Accelerator	Black/Green	Float Low Solution	742816
Black/White	Forward - Accelerator	Black/White	Forward - Accelerator	742895
Blue	Shunt	Blue	Shunt	
Blue/White	Shunt	Blue/White	Shunt	
Blue/Orange	Brush Actuator	Blue/Orange	Brush Actuator	742812
Blue/Green	Brush Actuator	Blue/Green	Brush Actuator	742811
Blue/Yellow	Horn	Brown	Float Hi Rec	742815
Brown	Float Hi Rec	Grey	Chemical Solenoid Valve	742802
Brown/White	Drive Relay Coil	Grey/Red	Water Solenoid Valve	742804
Brown/Yellow	Headlights	Grey/Yellow	Recycle Pump	742807, 742808
Grey	Chemical Solenoid Valve	Orange/Black	Chemical Pump	742814
Grey/Red	Water Solenoid Valve	Orange/Red	Chemical Pump	742813
Grey/Yellow	Recycle Pump	Red	Positive	742889
Orange	Pot Low	Red/Violet	System Ready	742917
Orange/Black	Chemical Pump	Red/White	Multimode	742899
Orange/Red	Chemical Pump	Violet/Black	Water Pump	742809, 742810
Red	Positive	White	Reverse Accelerator	742896
Red/Violet	System Ready	White/Blue	Off Aisle Switch	742819
Red/White	Multimode	White/Violet	System Start	742882
Red/Yellow	Forward Relay Coil	Yellow	Recycle	742894
Violet	Seat Switch	Yellow/Violet	Vacuum Relay Coil	742866
Violet/Black	Water Pump	Yellow/Red	Brush Relay Coil	742870
Violet/Yellow	Reverse Relay Coil	Yellow/Orange	Squeegee Actuator	742821
White	Reverse Accelerator	Yellow/Blue	Squeegee Actuator	742820
White/Blue	Off Aisle Switch			
White/Orange	Presweep			
White/Violet	System Start			
Yellow	Recycle			
Yellow/Violet	Vacuum Relay Coil			
Yellow/Red	Brush Relay Coil			
Yellow/Orange	Squeegee Actuator			
Yellow/Blue	Squeegee Actuator			
Orange/Violet	Presweep Raise			
Black/Yellow	Presweep Actuator			

3800 RIDER COMPUTER WIRING GUIDE

MAIN BOARD

Connector 742745		Side Closest to Input Connector		
		System Start	White/Violet	742882
		Brush On	Yellow/Red	742870
		Vacuum On	Yellow/Violet	742866
		Water Solenoid	Grey/Red	742804
		Multimode	Red/White	742899
		Spare		
		Squeegee Actuator	Yellow/Orange	742821
		Squeegee Actuator	Yellow/Blue	742820
		Water Pump	Violet/Black	742809
		Water Pump	Violet/Black	742810
		Brush Actuator	Blue/Orange	742812
		Brush Actuator	Blue/Green	742811

Connector 742744		Side Closest to RJ11 Plug		
		Shunt+	Blue	
		Shunt-	Blue/White	
		System Ready	Red/Violet	742917
		Forward	Black/White	742895
		Reverse	White	742896
		Off Aisle	White/Blue	742819
		Recovery Tank Full	Brown	742815
		Solution Tank Empty	Black/Green	742835
		Spare		

OPTION BOARD

Connector 742743	Side Closest to Main Board		
	Chemical Pump	Orange/Red	742813
	Chemical Pump	Orange/Black	742814
	Recycle Pump	Grey/Yellow	742807
	Recycle Pump	Grey/Yellow	742808
	Chemical Solenoid	Grey	742802
	Recycle On	Yellow	742894

LIMITED WARRANTY

Minuteman International, Inc. warrants to the original purchaser/user that this product is free from defects in workmanship and materials under normal use and service for a period of three years from date of purchase. In addition, Minuteman International, Inc. will, at its option, honor labor warranty claims for the first 12 months from date of sale, provided such claims are submitted through and approved by factory authorized repair stations. Minuteman International, Inc. will, at its option, repair or replace without charge, except for transportation costs, parts that fail under normal use and service when operated and maintained in accordance with the applicable operation and instruction manuals.

This warranty does not apply to normal wear, or to items whose life is dependent on their use and care, such as belts, cords, switches, hoses, rubber parts, electrical motor components or adjustments. Parts not manufactured by Minuteman International, Inc. such as engines, batteries, battery chargers, hydraulic pumps, and tires are covered by and subject to the warranties and/or guarantees of their manufacturers. Please contact Minuteman International, Inc. for procedures in warranty claims against these manufacturers.

Special warning to purchaser — Use of replacement filters and/or prefilters not manufactured by Minuteman International, Inc. or its designated licensees, will void all warranties expressed or implied.

A potential health hazard exists without exact original equipment replacement.

All warranted items become the sole property of Minuteman International, Inc. or its original manufacturer, whichever the case may be.

Minuteman International, Inc. disclaims any implied warranty, including the warranty of merchantability and the warranty of fitness for a particular purpose. Minuteman International, Inc. assumes no responsibility for any special, incidental or consequential damages.

This limited warranty is applicable only in the U.S.A. and Canada, and is extended only to the original user/purchaser of this product. Customers outside the U.S.A. and Canada should contact their local distributor for export warranty policies. Minuteman International, Inc. is not responsible for costs or repairs performed by persons other than those specifically authorized by Minuteman International, Inc. This warranty does not apply to damage from transportation, alterations by unauthorized persons, misuse or abuse of the equipment, use of non-compatible chemicals, or damage to property, or loss of income due to malfunctions of the product.

If a difficulty develops with this machine, you should contact the dealer from whom it was purchased.

This warranty gives you specific legal rights, and you may have other rights which vary from state to state. Some states do not allow the exclusion or limitation of special, incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you.

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