



## **For Safe Operation of the Olympia 3500**

The Olympia is intended for use, only by people who have a basic knowledge of motorized equipment operation and maintenance. Resurface Corp. cannot accept responsibility for any accidents that occur as a result of operation or maintenance of the machine by personnel who lack this basic knowledge or sufficient training.

Operating conditions vary widely and Resurface Corp. cannot predict these varying conditions, and it is therefore the user's responsibility to determine the appropriate settings in the operation of the Olympia.

Each Olympia is shipped with a variety of built-in safety devices. To prevent the occurrence of such accidents, all operators and maintenance personnel that deal with the machine must carefully read the manuals supplied by Resurface Corp., the power train manufacturer and the fuel supplier, before attempting to operate and maintain the Olympia.

Because there are so many "things that cannot be done" and "things that must not be done" when using the Olympia, it is impossible to cover it all in the Olympia Manual. Assume that something is impossible or unsuitable unless the manual specifically states that it can be done.

The following manual is customized for this particular Olympia. It provides detailed information regarding the following:

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Please make use of this material when operating and maintaining the Olympia. Fundamental safety information is highlighted throughout the manual.

All cautions on operation must be strictly observed when operating the machine, carrying out maintenance work, and storing the equipment. Failure to observe the fundamental safety information can cause accidents in which the operator or other personnel that deal with the Olympia are seriously injured, or the machine is damaged. All personnel that deal with the machine must carefully read and thoroughly understand the information in the following pages before attempting to operate or maintain the Olympia.

## Unloading & Parts Check

The Olympia is delivered with the various parts of the conditioner stored inside the snow bin. After unloading the Olympia from the transportation vehicle, drive it to your maintenance area.

Come to a complete stop and shift into park.

The Olympia has one forward gear and one reverse gear.

Shifting gears from Park, Reverse and Drive is a simple matter of pushing the gear knob down. Push the lever forward or back to the desired position and release. The knob will pop up when the gears are properly engaged.

*Safety Note: Make sure you come to a complete stop before trying to change gears.*

The speed of the Olympia is controlled directly by the accelerator.

The tachometer on the dash will display the engine's RPM's, which is useful to maintain a constant speed while flooding the ice and to prevent over-revving the engine. At no time should the engine exceed 3,000 RPM.

The hydraulic power steering system combined with the studded tires give you optimum control and manoeuvrability.

The power assisted, self adjusting brakes require only a moderate pressure to activate.

After parking the Olympia, push the snow bin control knob on the dash upward and hold until the snow bin cover reaches a fully opened position.

Remove the parts from inside the snow bin. Please do an immediate check.

- |  |  |
|--|--|
| 1. Blades sheathed in wooden holders<br>(retain wooden holders for future use) | 9. Tube of Grease  |
| 2. Towel Bar Assembly  | 10. Jack   |
| 3. Two Blade Hooks   | 11. Wheel Wrench and Socket                                    |
| 4. Blade Bolts & Nuts (15)   | 12. Conditioner Cover Plates (5)                               |
| 5. Spare Tire  | 13. Magnetic Blade Protector                                   |
| 6. Combination Wrench Set  | 14. Olympia Room Sign  |
| 7. Allen Wrench Set  | 15. Squeegee   |
| 8. Grease Gun  | 16. 3/8" x 1 1/4" Hex Head Cap Screws (20)<br>& Lock Nuts (20) |
|  | 17. Touch up Paint   |

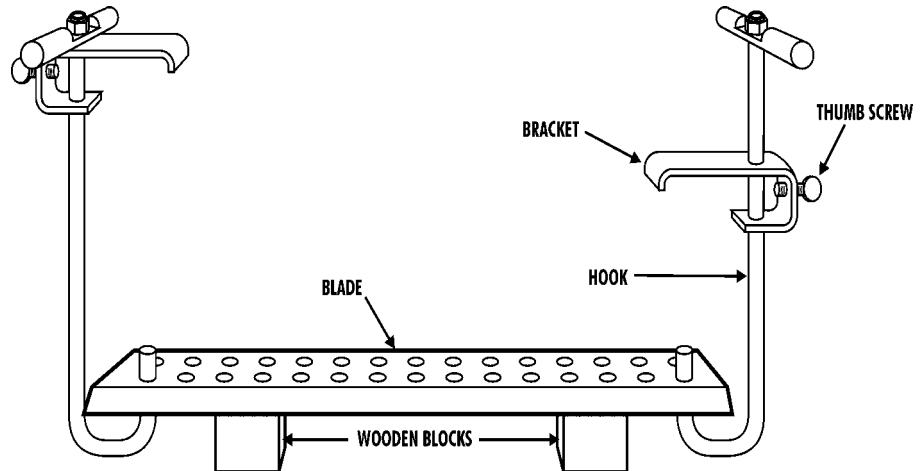
Unpack the blade and put the magnetic protector guard on the sharp edge. For shipping and storage, blades should be bolted into wooden sheaths.

*Safety-Note: For operator safety and to protect the edge of the blade, always use the magnetic blade protector when handling the blade, as it is extremely sharp.*

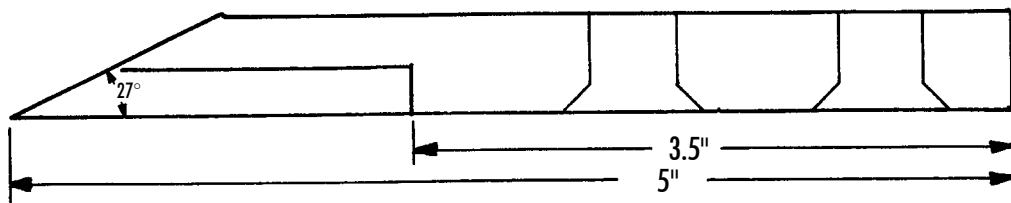
## Blade Installation

Before installing a blade, make sure the blade holder surface is clean and lightly coated with oil to prevent rust. The blade should also be clean where it attaches to the blade holder and coated with oil. Place it on blocks at the rear of the conditioner.

Using the blade hook lift and slide the blade underneath the conditioner until the attachment holes line up. Tighten the blade hooks onto the conditioner.



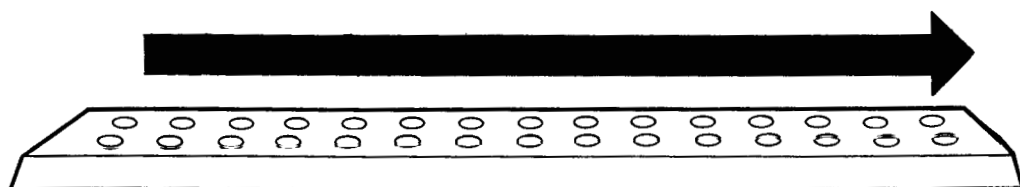
When installing a blade use the row of holes closest to the cutting edge. The second row of holes should be used when the blade has been ground down to 4" overall width.



Following the diagrams below, begin to install the blade bolts. Finger tighten the bolts. **DO NOT** use lockwashers as they will damage the blade holder. There are two ways of properly tightening the blade bolts:

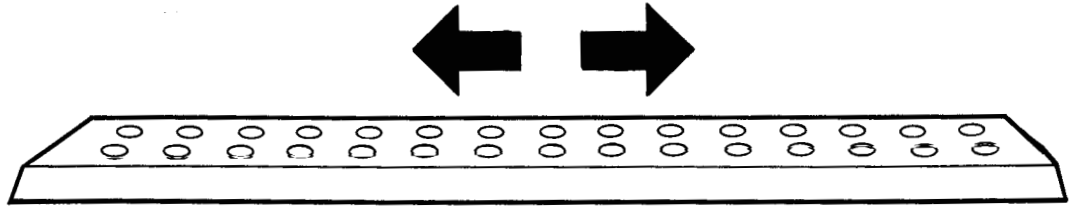
## Blade Bolt Sequence "A"

Sequence "A" - starting at one end of the blade, tighten the bolts consecutively across the blade to the opposite end. Remove the blade hooks and insert the remaining two blade bolts and tighten.



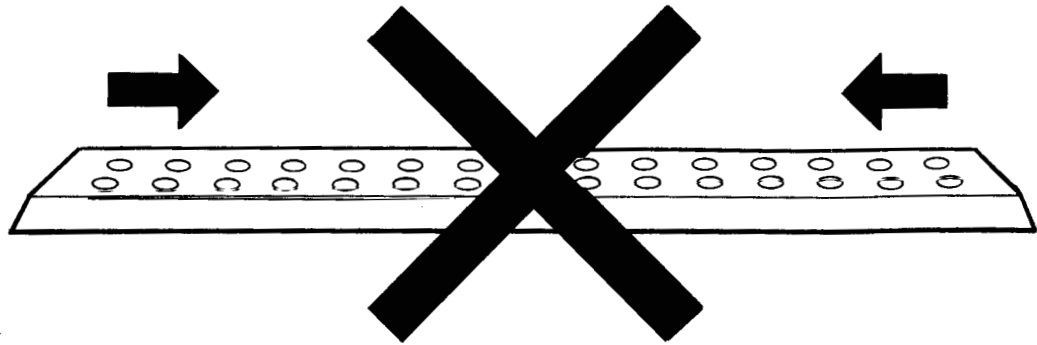
## Blade Bolt Sequence "B"

Sequence "B" - Starting at the center tighten the bolts to one end of the blade and then return to the center bolt and tighten the bolts to the other end. Remove the blade hooks, then insert and tighten the remaining two bolts.

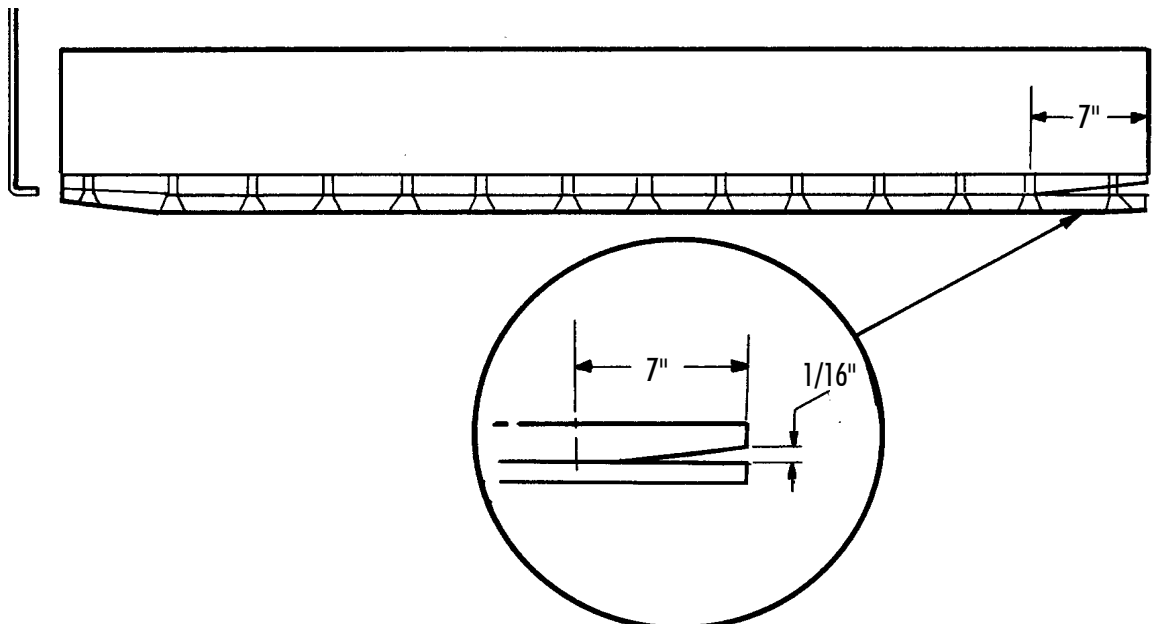


## Wrong Sequence

Please note: Tightening the bolts in any other order, such as from the ends to the middle or at random will result in a



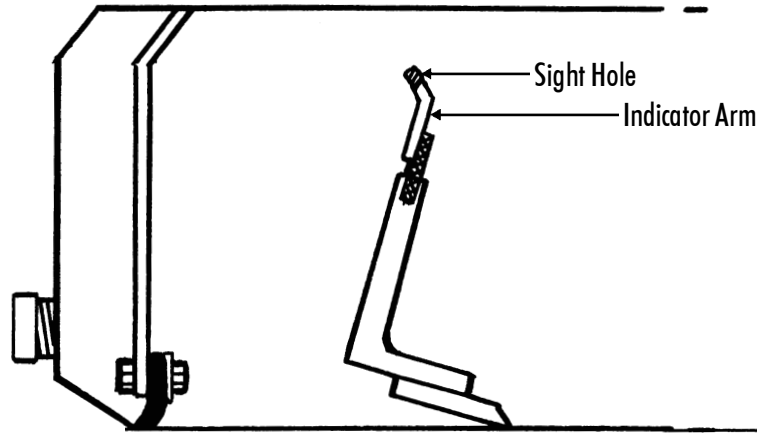
The blade holder is feathered 1/16" over the last 7" on each end. This prevents ridges forming on the ice during the resurfacing operation.



## Blade Level Adjustment

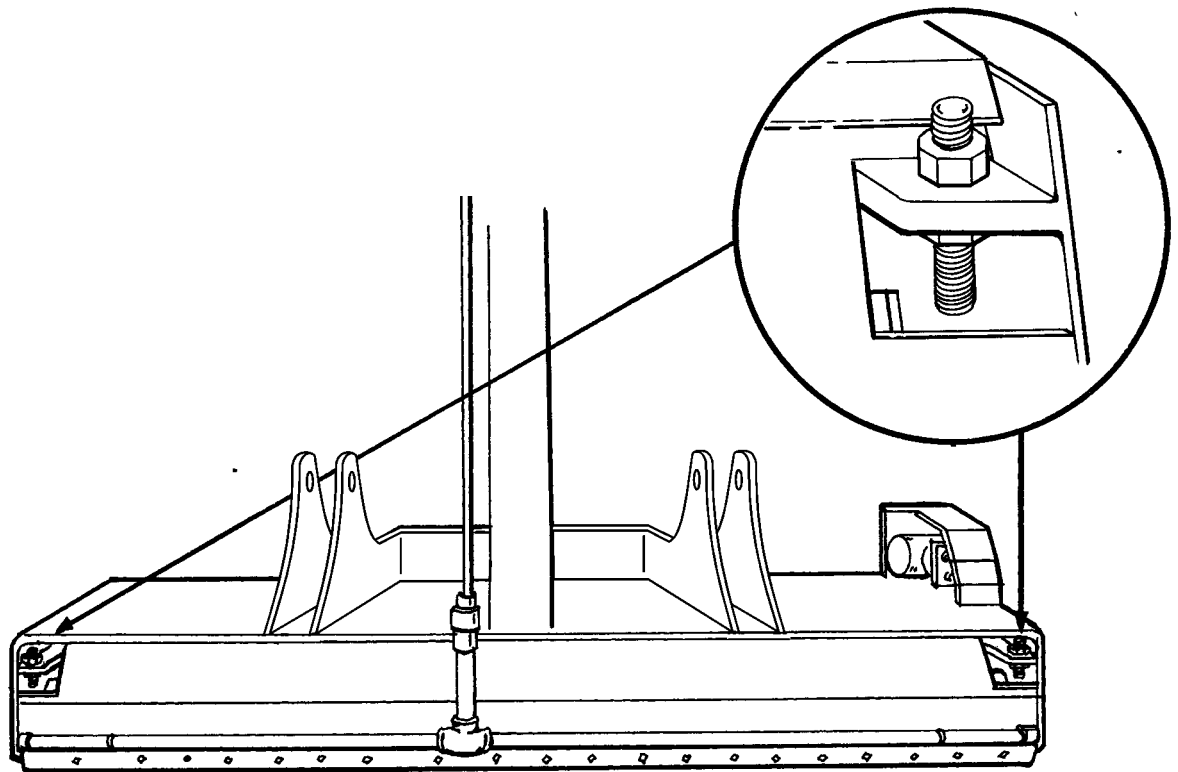
The next step is to adjust the level of the blade. The blade adjustment crank, located on the tower to the right of the operator, raises and lowers the blade. The adjustment crank is turned until the indicator arm completely fills the sight hole at the side of the conditioner as shown below.

## Blade Sight Hole



If the sight hole is filled but the blade is too high or low, go to the rear of the conditioner and using a 1 1/8" wrench, first loosen the top nut of the blade level adjusters located on each side of the rear of the conditioner shown below.

## Blade Level Adjusters



**Blade/Coin Check**

To check the level of the blade, slide a large coin along the runners of the conditioner, from back to front, until you feel it pass over the edge of the blade.

*Safety Note: Be careful when doing the coin check. Make sure you are wearing gloves and that you move the coin from back to front as the blades are extremely sharp.*

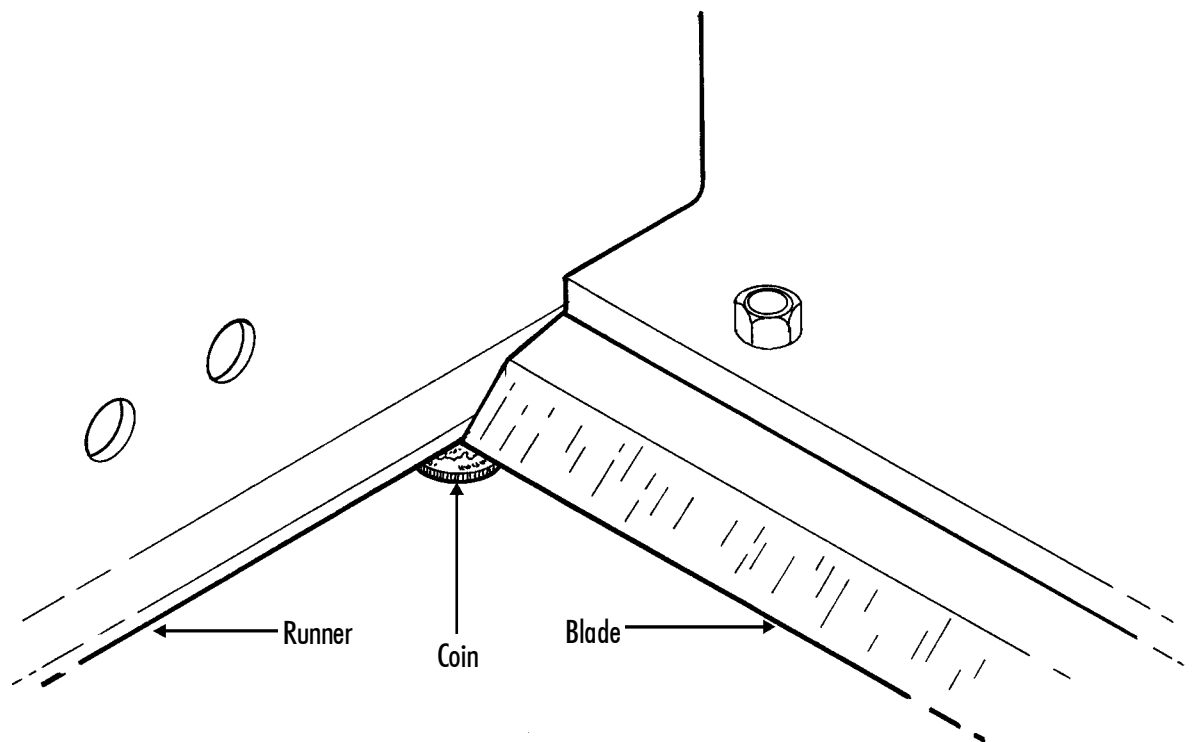
The sharp tip of the blade should be flush with the runners on both sides. Adjust the top nut to raise or lower the blade at each end, into the proper position. Once the blade is at the proper level on both sides, tighten both bottom nuts on the blade adjusters.

When the ends of the blade are flush with the runners, the majority of the blade will extend  $1/16$ " below the runners, which is an excessive amount unless the intent is ice maintenance. The blade is now set for a specific blade width.

To raise the blade, turn the blade adjustment crank counter clockwise.

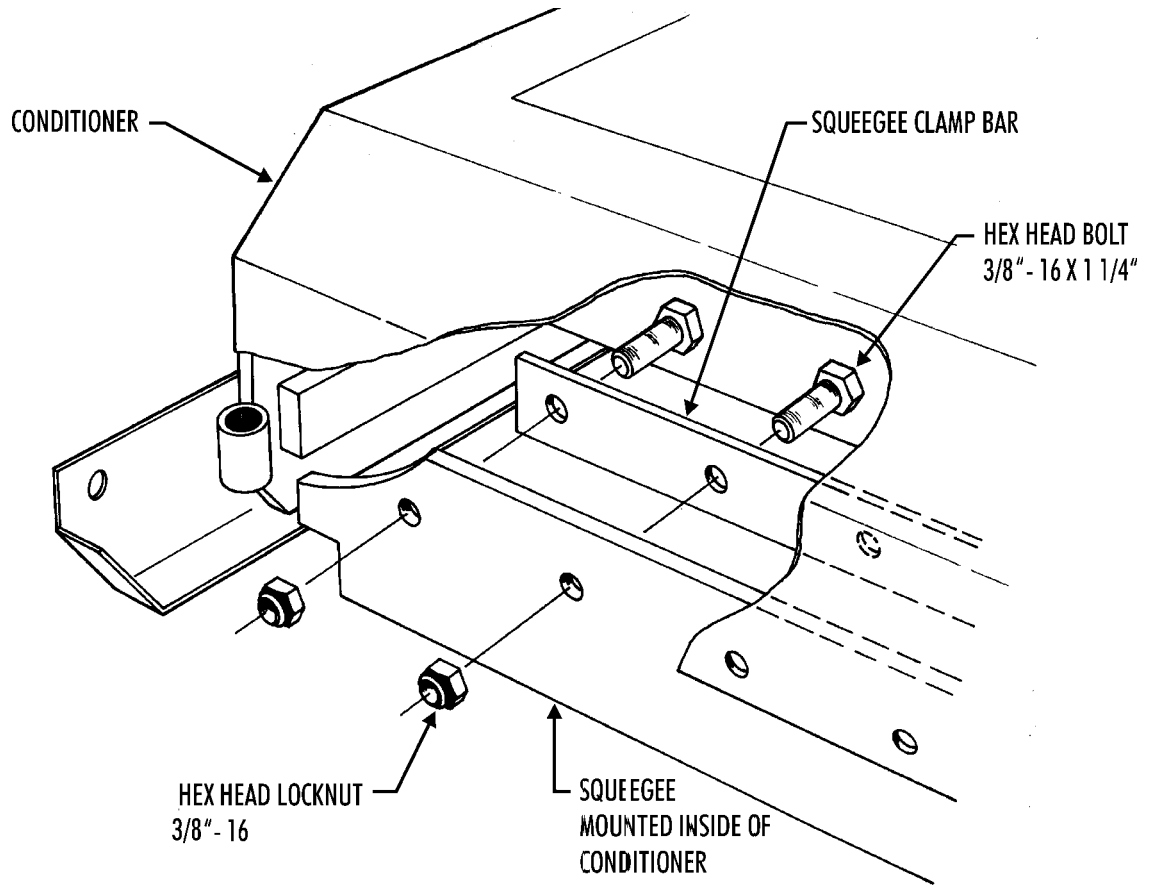
After the blade angle and level are set, any change in the cutting depth will alter the indicator arm position in the sight hole, but blade angle tolerances will accommodate such adjustment and further adjustment of the blade angle will not be necessary.

*Please Note: It is important that the blade holder and blade surface be free of foreign material and lightly coated with oil to prevent rust.*



## Squeegee Installation

To install the squeegee, mount it on the inside of the conditioner, using 3/8" x 1-1/4" hex head cap screws and lock nuts. Trim the squeegee ends to fit tight against the side plates of the conditioner. Snow which is pushed by the squeegee will be trapped between the squeegee and runners and must not be able to escape and form a ridge on the ice.



## Horizontal & Vertical Augers

The horizontal auger in the conditioner carries the snow scraped off the ice by the blade into the centre of the conditioner where a vertical auger picks it up and transports it to the snow bin in the front of the Olympia.

The horizontal auger should be barely above the ice level to maximize snow pick up while at the same time preventing any marking of the ice surface.

Both the vertical and horizontal augers will begin turning when the elevator control lever is pushed down until it locks into the On position.

To reverse the auger movement push the elevator control lever up and hold as the auger reverses. Upon release the control lever will return to the neutral position and the auger movement will stop. Reversing the auger is used to back out anything that may have become plugged in the auger tube.

## Horizontal Auger Adjustment

The horizontal auger is adjusted by loosening the four outer bolts on the bearing adjustment plate on each end of the auger and the four bolts for the auger motor mount. The lowest point of the auger should be between 1/16" and 1/8" above the bottom of the runners. This can be checked by running a piece of string between the runners at the lowest point of the auger.

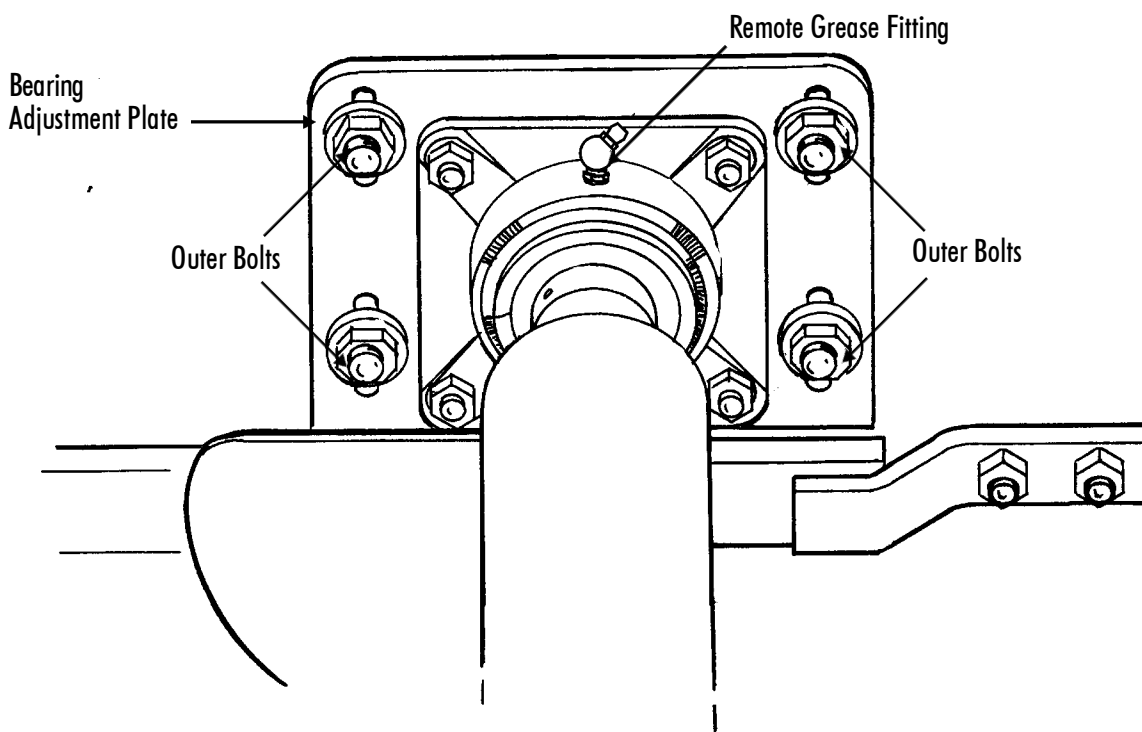
Pry the auger to the proper position.

After the adjustment has been completed, re-tighten the four outer bolts on the bearing adjustment plate.

If the auger is set too low, diagonal lines may be found where the auger touches the ice.

If the auger is set too high, excessive amounts of snow will be left on the ice surface at the end of the flood.

## Auger Height Adjustment

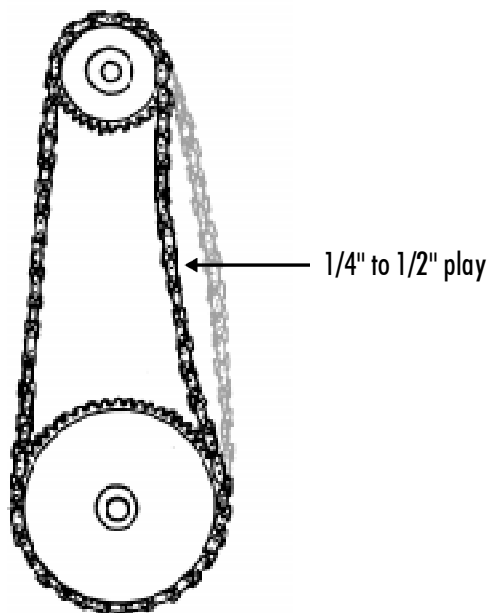




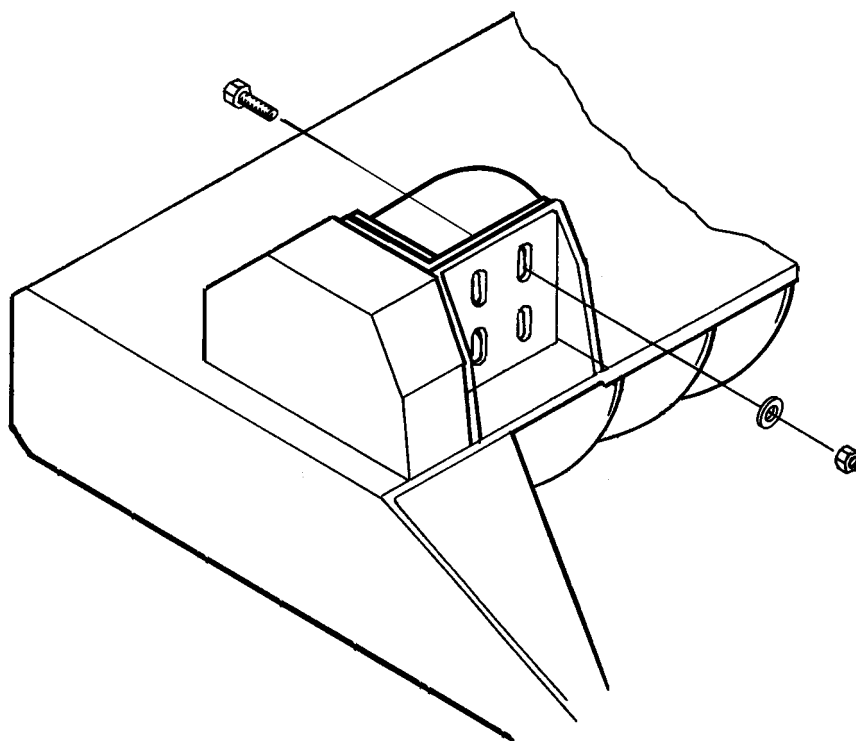
## Auger Drive Chain Adjustment

The horizontal auger drive chain should be kept at a reasonable tension at all times. If too loose, the sprockets and chain will wear out prematurely.

If too tight, the sprockets, chain and auger bearings will also wear out prematurely.



To adjust the chain tension, loosen the motor mount plate bolts and slide the motor mount until you get the proper tension, then re-tighten the motor mount plate bolts.



**Conditioner Control**

Raise the blade to above the runners by turning the adjustment crank counter clockwise.

With the conditioner in the Up position, drive the Olympia out onto the ice surface.

Lower the conditioner to the ice surface by holding the conditioner lever in the Down position, until the lift arms are against the down pressure stops. Before operating the Olympia, you should check to see if the runners are sitting level on the ice surface.

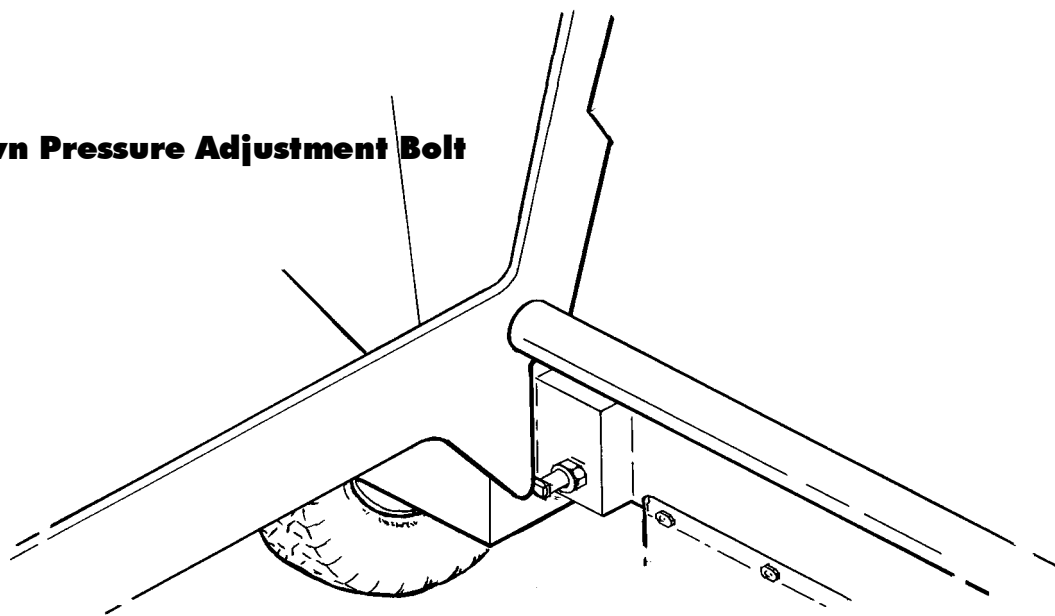
We recommend that you drive around the ice surface with the conditioner down for 2 or 3 laps to cool the runners.

To do this, the conditioner should be lowered so the runners are sitting on the ice surface and the conditioner lift arms are against the down pressure stops.

For proper traction and control the rear tires of the Olympia should be in full contact ( the entire width and 3 inches of the length of the tire) with the ice surface.

**Down Pressure Adjustment**

To adjust the down pressure, raise the conditioner and loosen the jam nuts. Turn the bolt in (clockwise) .Set the desired down pressure with the conditioner level on the Ice.

**Down Pressure Adjustment Bolt**

Tighten the bolts against the lift arm and lock with the jam nuts.

Too much down pressure will lift the rear wheels off the ice resulting in a loss of control.

Too little down pressure will result in rippled ice and gouging in the corners.

## Top Link Adjustment

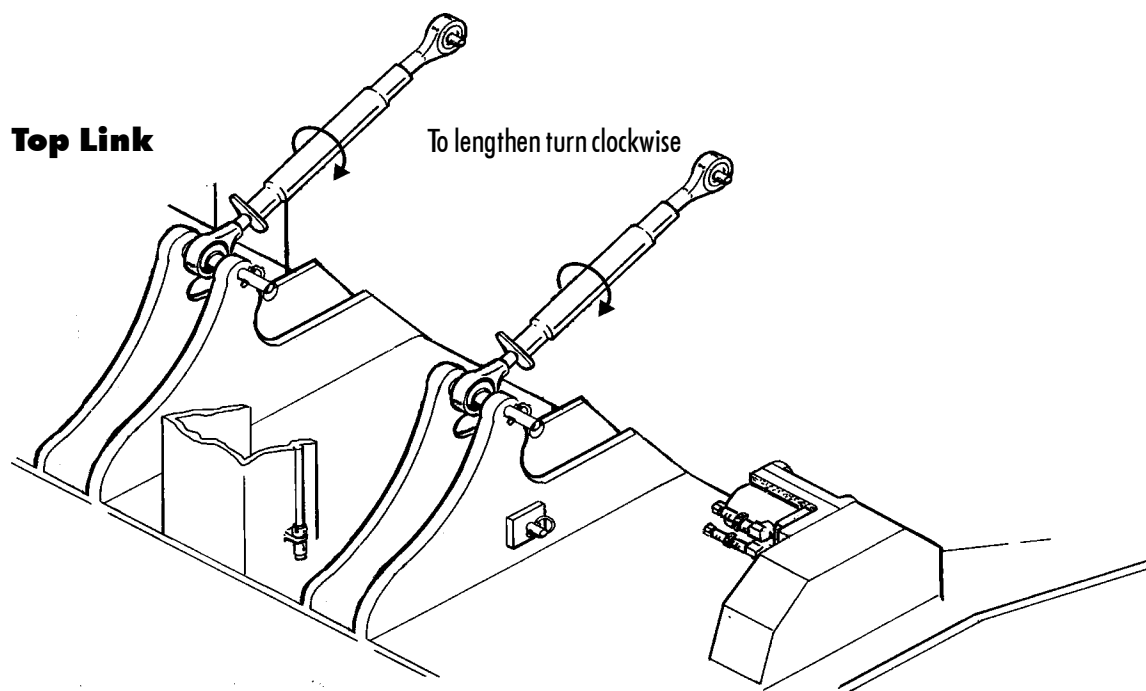
Check to make sure the front of the runners are still on the ice surface.

Drive the Olympia once around the rink.

When the Top link is adjusted properly the rear tires should leave a full tread pattern on the ice.

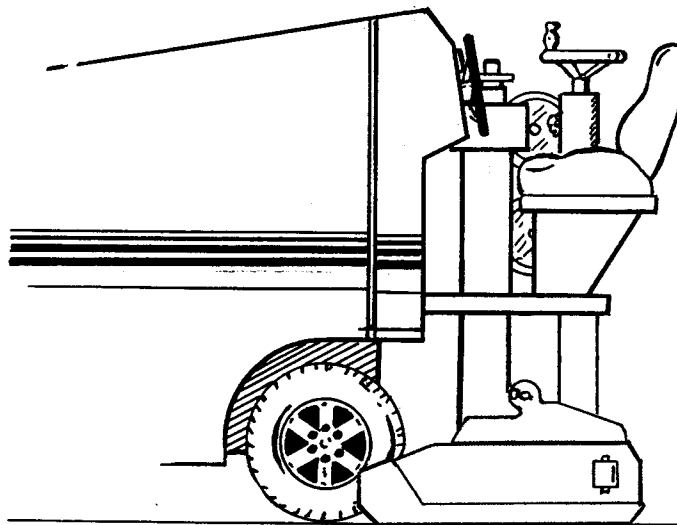
*Please Note: It is essential for proper operation that the tire pressure be maintained at 65 psi.*

To adjust the top linkage, loosen the jam nuts on both top links. Turn the body of both top links counter clockwise until there is play. Turn the jam nut 'lightly' against the top link body. Now adjust both top link bodies away (clockwise) from the jam nuts until they are hand tight only. When properly adjusted the runners will not leave any marks on the ice surface.

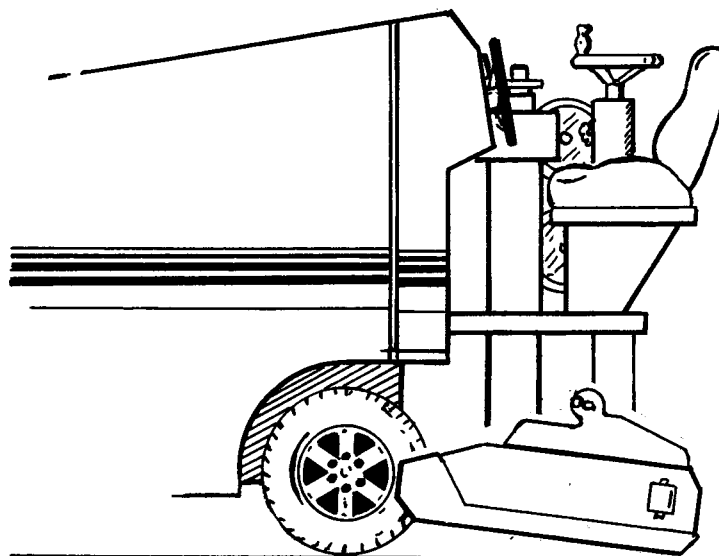


*Please Note: It is essential that you adjust both top links at the same time.*

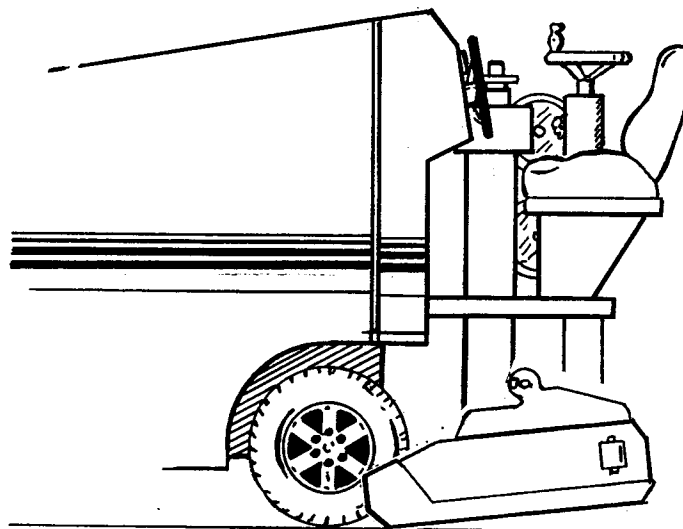
## Proper Top Link Adjustment



## Top Link too long



## Top Link too short





## Daily Pre-Start Check List

The Olympia is designed to make your job easier, faster and trouble free.

Prior to starting the Olympia it is recommended that you carry out these basic pre-start checks:

1. Make sure the fuel tanks are full.
2. Turn on the fuel.
3. Check couplings and connections with soap & water solution, check for bubbles.
4. Fill water tank.
5. Connect towel bar.
6. Remove water hose from tank.
7. If using a natural gas powered unit make sure the gas fill line has been disconnected.

*Safety Note: These pre-start checks should be made every time prior to operating the unit.*

## Standard Safety Procedures

To assure safety, the operator should take the following safety precautions:

1. Drive defensively at all times.
2. No unauthorized personnel on the ice during resurfacing operations.
3. No passengers allowed on the Olympia while in use.
4. Keep feet and hands away from moving parts.
5. Use the bin safety bar if working under the bin.
6. Never have the augers turning with the conditioner cover plates removed.
7. The dumping area should be kept free of people and obstructions.
8. Do not handle blades without safety gloves and the blade guard in place.
9. Do not operate the Olympia while under the influence of alcohol or drugs.
10. Refuel the Olympia outdoors.
11. Wear proper protective equipment while refuelling, including gloves, goggles and safety shoes.
12. Never operate the hydraulic system above 3000 rpm, as it will cause serious damage to the entire hydraulic system.

## Water Problems

If you notice a residue forming in your water tanks, it is likely the result of minerals such as calcium and lime in your water supply. This type of residue will eventually block the flood pipe holes. This will be apparent when your water flow is restricted or the ice appears streaked after flooding. The solution is to remove the flood pipe and clear the holes. A more permanent solution is to demineralize the flood water supply before filling the tanks.

### Flood Water Handling Procedure

*Safety Note: Do not leave the Olympia unattended during the water filling procedure.*

With the conditioner properly adjusted, you are ready to fill the flood water tanks, in preparation for resurfacing the ice. Both tanks are filled through a common pipe located beside the driver's platform. If the extra water option is installed on your machine, all three water tanks are filled through the filler cap on the extra water tank.

Flood water flow is regulated by the water tap, which is mounted on the sled tower beside the blade adjustment wheel.

For best resurfacing results, use flood water at 85-95° C ( 180-200° F). Hot water flows into cracks in the ice before cooling and freezing. It also melts some of the ice surface before freezing thus getting the best possible bond with the existing ice. Hot water also holds less oxygen than cold water and therefore produces a denser, harder ice.

Hard ice does not get damaged as easily and therefore does not require resurfacing as often nor as deeply, resulting in minimal ice buildup. This means less time spent on ice maintenance and saves wear and tear on the ice resurfacing equipment.

### Wash Water Handling Procedure

To attain best results the wash water system should be used. Fill the tank with Cold Water only.

The wash water system sprays water from the sides of the conditioner into the centre in front of the squeegee creating slush. Excess water is then vacuumed up, taking with it any dirt or debris from the ice.

In addition to removing small debris from the ice surface, any snow left behind the blade is turned into slush by the wash water and is pushed into cracks in the ice by the squeegee.

The water is filtered and then returned to the wash water tank.

Once you have taken on sufficient water, drive back onto the ice and carry out the normal flood procedure as follows: lower the conditioner to the ice surface by holding the conditioner lever in the Down position, until the conditioner arms are against the stops. Engage the horizontal and vertical augers by pushing the elevator lever on the dash to the Down position. During resurfacing drive at a slow steady speed, between 1600-1800 RPM.

To operate the wash water system during the resurfacing operation, first turn on the water valve on the tower and then go the distance between two lines before turning on the wash water pump switch on the dash.

While the pump is operating, the orange indicator light on the dashboard will be lit.

It is very important that the pump not be turned on until the wash water tap is open as the pump impeller will wear out if there is no water passing through it.

### Building Ice Procedure

When building a layer of initial ice at the beginning of the season, the water tanks, as well as the optional tank, can be filled full with hot water.

Once a layer of ice 3/4 " to 1 1/2 " ( 2-4 cm) thick has been formed, the amount of ice removed during the resurfacing should equal the amount of water used. This will prevent further ice buildup.

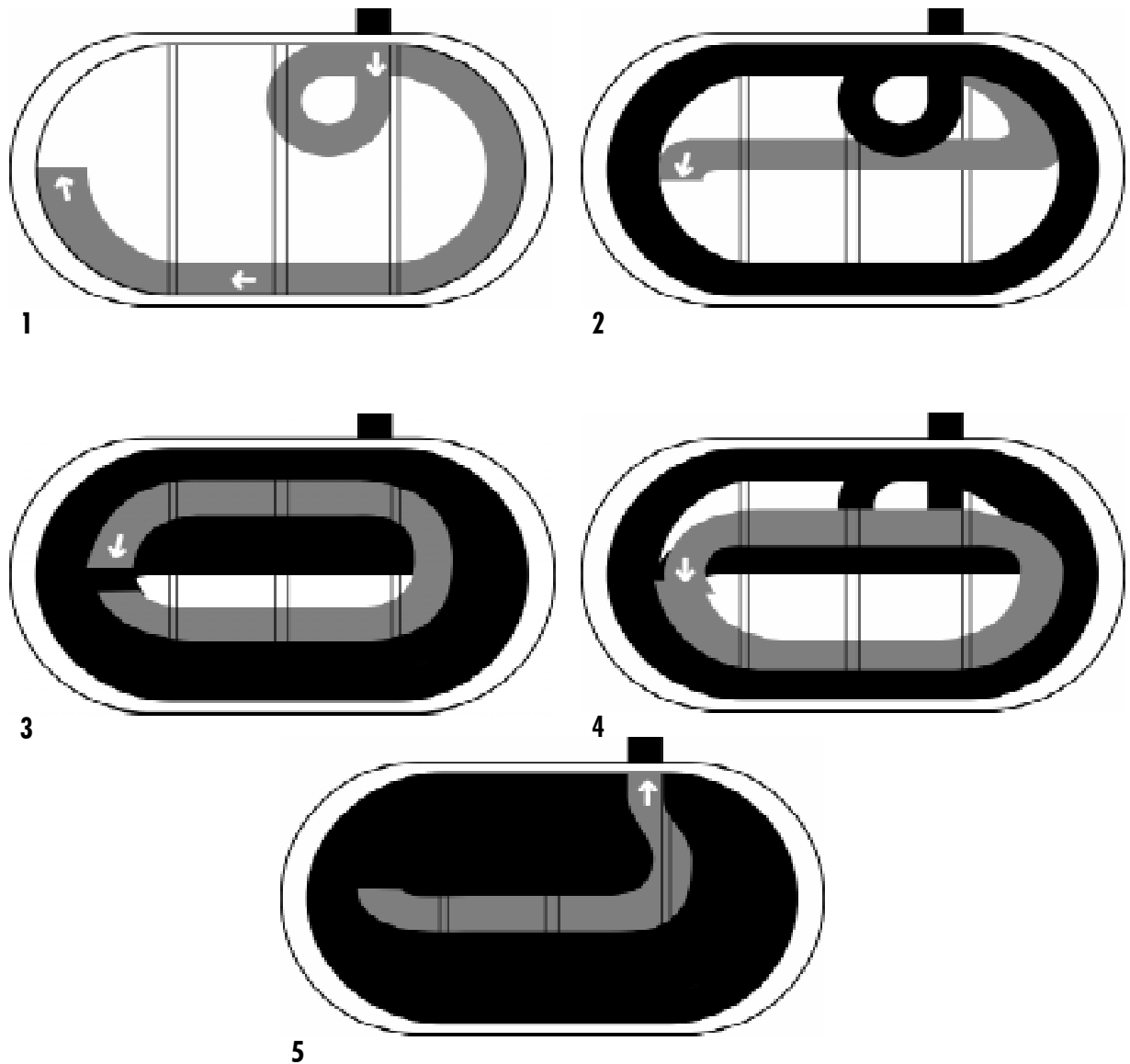
Fill water tanks with sufficient water to do one resurfacing at a time.

Extra water after resurfacing should be drained from the water tanks.

Once you have completed resurfacing the ice, turn off the augers by pushing the elevator lever up to the Off position, and raise the conditioner off the ice surface by holding the conditioner lever in the Up position.

Drive to the snow dumping area, check for overhead clearance and then raise the snow bin by holding the snow bin lever in the Up position. By releasing the snow bin control lever to the neutral position the bin will be held in place by the hydraulic pressure.

## Typical Resurfacing Pattern



Upon completion of the flood, first turn off the wash water valve on the tower and then turn off the wash water switch on the dash. Turn off the flood water valve on the tower. Stop the auger by placing the elevator lever in the neutral position. Then raise the conditioner to the maximum position by pushing the conditioner lever to the Up position, before leaving the ice surface.

*Please Note: After each ice resurfacing operation, drain the water from both the flood water and the wash water tanks.*

Drain the water tanks through the flood pipes by leaving the water control valve open, or through the water tank drainage valves. By following this procedure, the hot water added for the next resurfacing will not be mixed with any cold water left in the tanks from the previous flood, and will be as hot as possible for flooding. If these procedures are not followed the result will be a poor ice surface which will require more maintenance than usual.

**Board Brush**

During the first circuit of the ice surface, lower the conditioner until the arms are against the stops. Push the board brush lever to the down position. The board brush will come down and fully extend. Once the brush is fully extended, only the front edge of the brush should touch the ice surface.

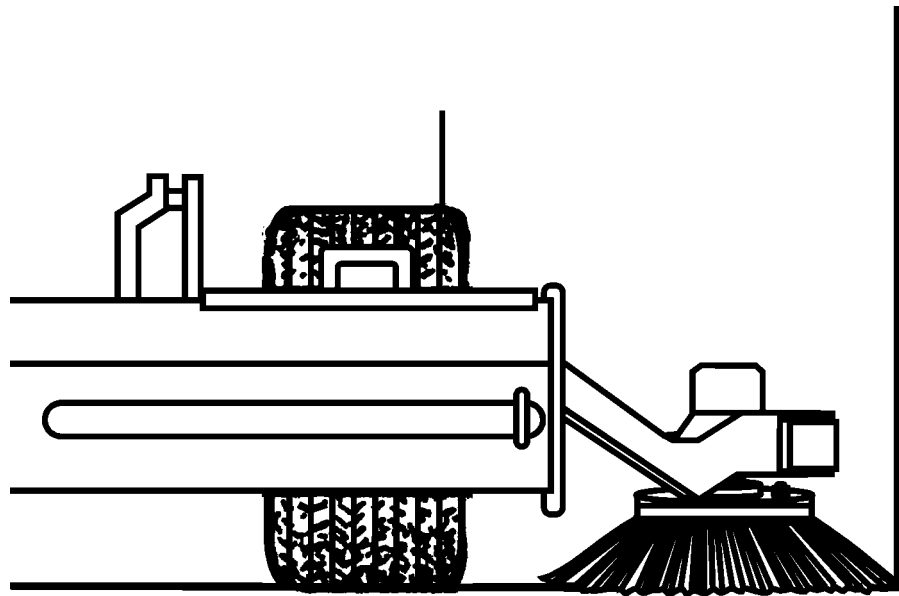
Drive ahead slowly keeping the board brush close to the rink board.

This will clean the snow on the edges of the ice surface into the conditioner.

Upon completion of a full circuit of the rink, retract the board brush by pushing the board brush lever to the Up position and hold it there until the brush is fully retracted.

If necessary to adjust the board brush, first loosen the jam nut and then adjust the square head nut, turn in to increase the pressure and out to reduce the pressure. Make sure to tighten the jam nut once the board brush is properly set, then retract the board brush.

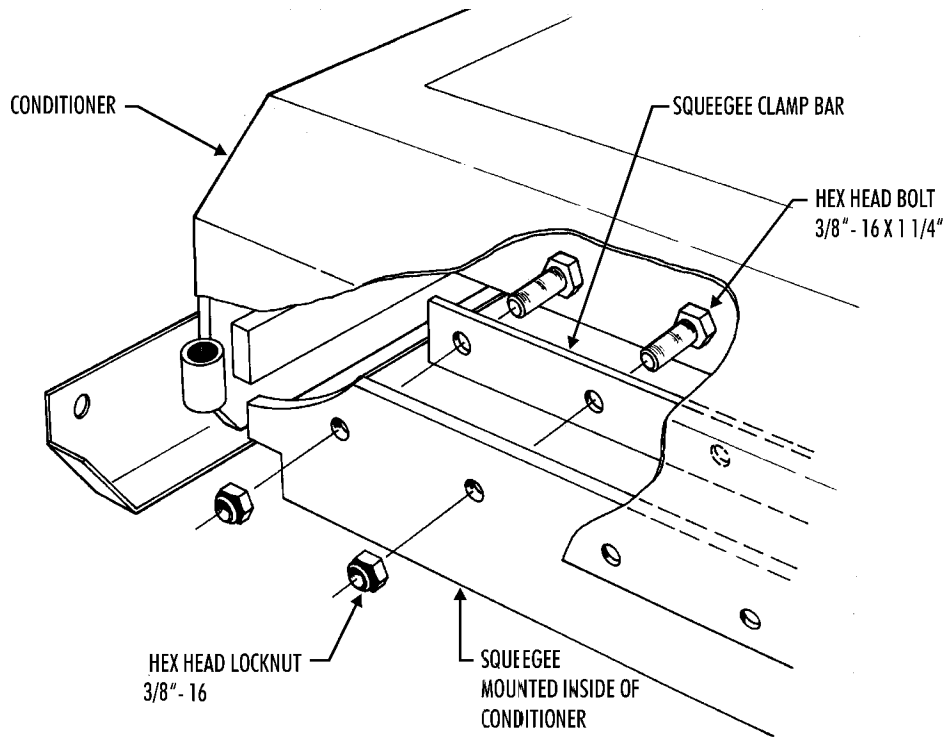
*Safety Note: Do not leave the board brush running while adjusting, as it will melt the ice.*





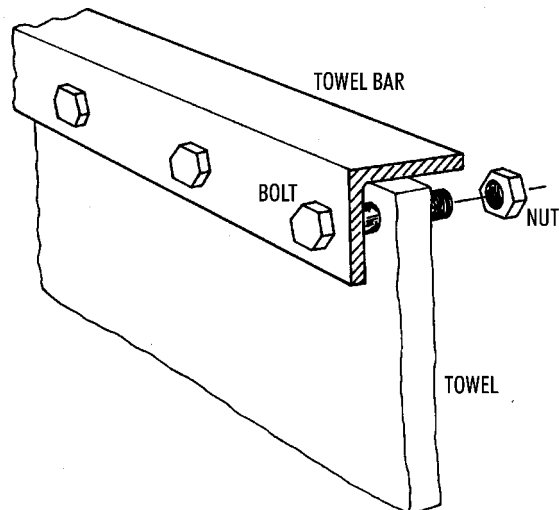
## Squeegee Replacement

If the squeegee needs replacing, it should be mounted on the inside of the conditioner, using  $3/8"$  x  $1-1/4"$  hex head cap screws and lock nuts. Trim the squeegee ends to fit tight against the side plates of the conditioner. Snow which is pushed by the squeegee will be trapped between the squeegee and runners and must not be able to escape and form a ridge on the ice.



## Towel Replacement

Inspect and replace if necessary. Install the towel on the backside of the auger with  $3/8"$  x  $1"$  hex head bolts locknuts, making sure the nuts are on the towel side of the auger.



### Official Procedure for Changing Propane Fuel Cylinders on Ice Resurfacing Equipment

#### Responsibility:

The supervisor is responsible for issuing all the necessary equipment, training the employee in its use and ensuring that this procedure is adhered to.

The Employee is responsible to follow the tasks as outlined by this procedure.

#### Equipment:

Personal protective equipment required but not limited to the following shall be used:

- A. Gloves
- B. Safety Goggles
- C. Safety Shoes
- D. Correct hand tools

#### General:

A. The ice resurfer shall be moved to the designated area outside. The area must be in a location so as to prevent any source ignition.

B. The operator will close the fuel valve at the cylinder, leaving the machine running until it quits as a result of no fuel being available to support combustion.

C. The ignition shall be turned off. *Do not use any tool to loosen the coupling.*

D. The propane fuel hose may now be disconnected from the propane fuel cylinder.

E. Remove the near-empty propane cylinder.

F. A correctly filled propane cylinder may now be mounted.

*Note: At this stage it is important to ensure that the propane fuel cylinder is mounted with the pressure relief valve in the correct position ( 12 o'clock if mounted horizontally and to the right hand side if mounted vertically) and check the sealing gasket on the coupling, for placement and foreign materials.*

G. The propane fuel hose may now be connected to the propane fuel cylinder. *Hand tighten only.*

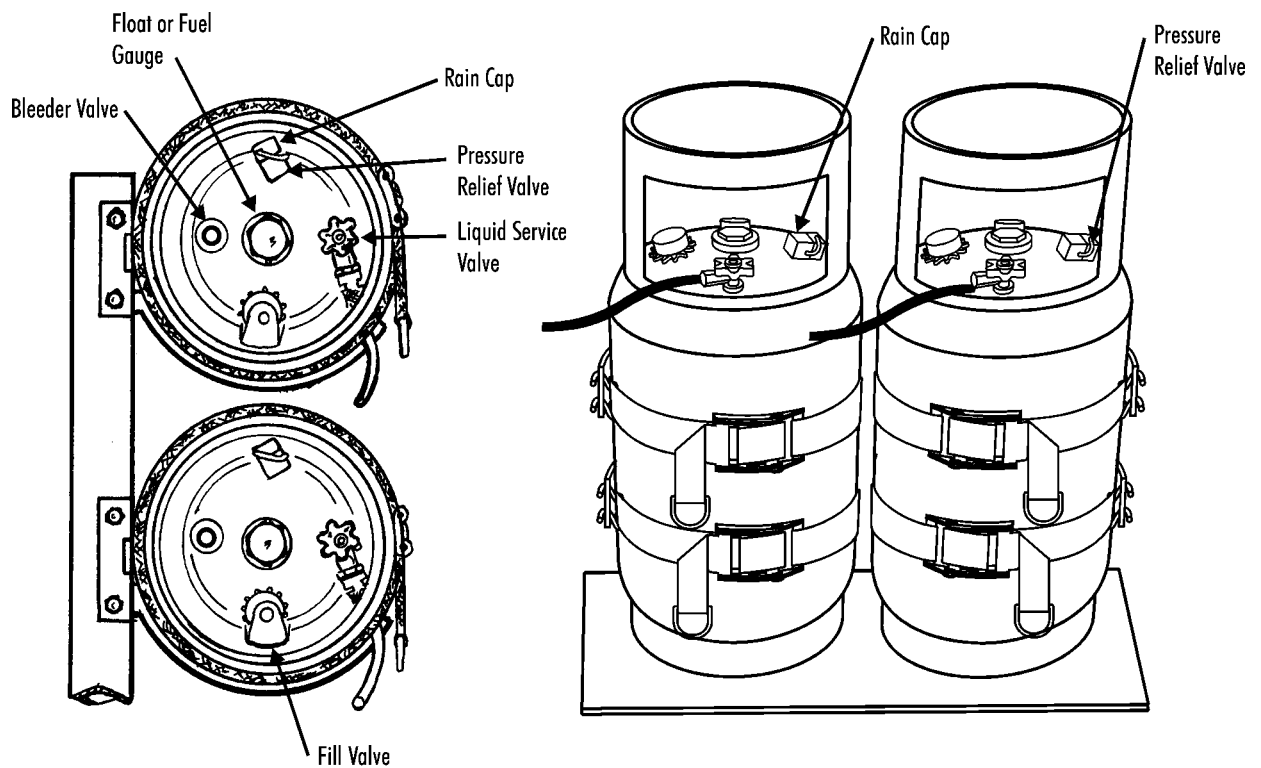
H. The valve on the propane fuel may be opened slowly and a final check for leaks made using soapy water and checking for bubbles.

## Propane Tank Handling

The standard fuel supply is liquid propane under pressure. Your local propane distributor will be able to arrange a fuel supply program as well as trouble shoot any problems you might experience. If your local licensed propane professional office is not equipped to deal with automotive fuel systems, they can recommend a licensed propane professional who will be authorized to complete service work on their behalf.

*Safety Note: When liquid propane is released from a tank, it rapidly returns to its vapour state which is accompanied by extreme cold. To avoid frostbite, protective gloves and glasses must be worn while working with connections on propane tanks.*

Tanks should always be handled carefully. Undo the straps which hold the tanks in place and move the straps clear of the tank brackets and hoops. Install tanks with the relief valve pointing to the right of the driver in the vertically installed tanks. Install tanks with the relief valve in the 12:00 o'clock position for tanks mounted in a horizontal fashion. Reconnect straps and check hoses for leaks using soapy water, and check for bubbles.



Open the service valve on both tanks and make the appropriate tank selection.

The service valve should be opened slowly or the excess flow valve will close automatically. If this should occur, close the service valve. The valve will reset itself momentarily and then can be reopened slowly.

When reopening the service valves, the operator's attention will also be drawn to the quantity of fuel shown on each tank's fuel gauge.

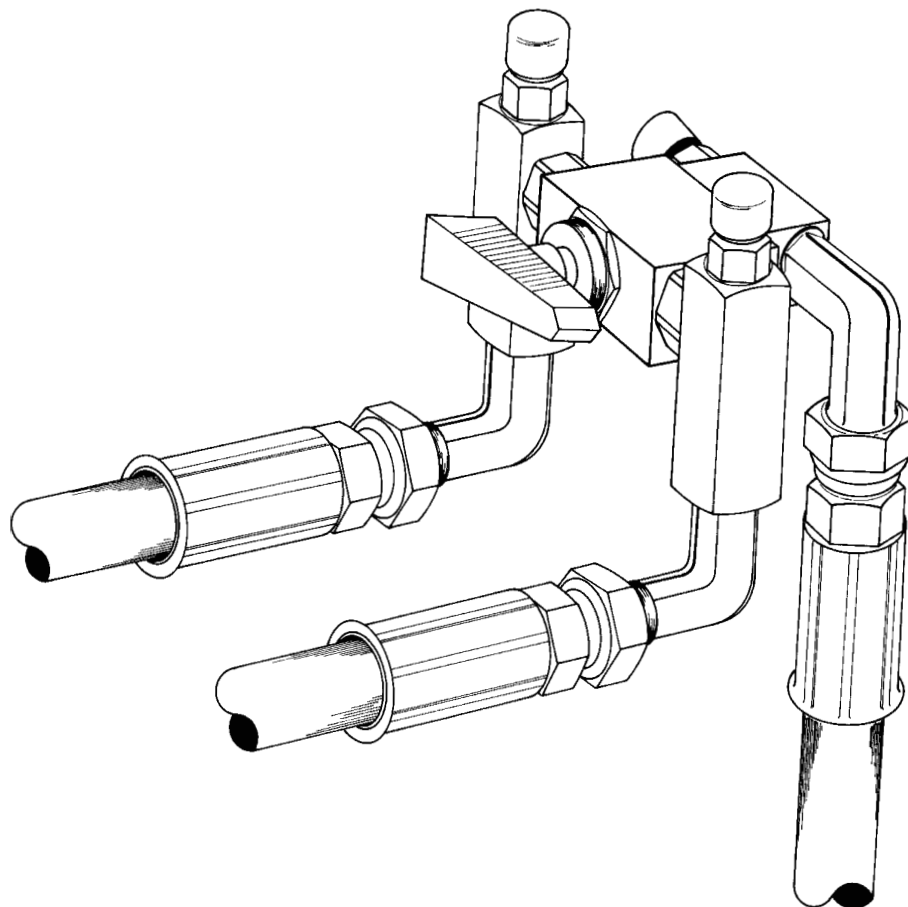
When operating the machine, fuel tanks can be selected by the selector switch mounted on the vertical auger housing.

When parking the machine, we recommend that both tanks be shut off to avoid the possibility of a slow leak. Hoses and connections should be checked for leaks using soapy water as a detector.

*Safety Note: Never use an open flame to detect a leak. Do not expose to excessive heat.*

### Recommended Fuel Management

Some operators find the easiest way to manage their propane fuel is to always run on the left tank. When the left tank is empty, the right tank is used to finish the flood, dump and park the machine. The right tank is then moved to the left position on the rack and a full tank is placed on the right rack. Using this method, the machine should never run out of fuel unexpectedly.



## Storage Procedures

Propane is a liquid which is stored under pressure and requires special storage and handling procedures to assure safety. Tanks should be stored outdoors, in an upright position, according to Propane Code requirements.. To further ensure safety, tanks should be changed outdoors with the engine shut off and away from open flames.

*Safety Note: Due to the flammability of propane vapour, precautions should be taken to ensure safety by prohibiting smoking around the Olympia and particularly while changing tanks.*

## Pressure Relief Valve

The pressure relief valves on propane tanks are set to release if internal pressure increases past safety limits. If a relief valve releases, it will automatically reset when pressure inside the tank returns to normal. The relief valve should always be protected.

*Safety Note: Since propane is poisonous to breathe, it has an odorizing agent added to it to allow operators to notice a leak. If a leak occurs, it will be first noticeable in low areas such as dump pits since propane is heavier than air. If a leak is detected, close the service valve on each tank, making sure to have on your protective gloves and break the hose connections.*

## Deisel Safety

If your Olympia is Diesel powered, accepted safety practices must be observed while refuelling and while in enclosed areas. It is not advisable to park the machine with full tanks as the fuel may expand if the temperature increases, causing a potentially dangerous spill.

## Catalytic Exhaust Purifier

Some municipalities require that the exhaust of vehicles operating in enclosed spaces meet certain emission standards. The optional catalytic exhaust purifier is available on either fuel system and will oxidize most harmful carbon monoxide, hydrocarbons and odour causing agents from engine exhaust.

## Battery

Your Olympia has a negative ground electrical system and is equipped with a 12 volt Delco Freedom battery which requires no maintenance. The test indicator (hydrometer) on top of the battery indicates by colour whether the battery is sufficiently charged for testing (green) or if it requires charging (blue).

## Hydraulic Pump

A tandem pump is driven off the engine by a set of two drive belts. The hydraulic system is a complex series of pilot check valves and motion control valves that regulate the flow of hydraulic fluid to various components as required and should only be serviced by qualified personnel. Operation of the hydraulic pump should never exceed 3000 RPM, as serious damage to the hydraulic system will occur.

### Blade Handling

To ensure operator safety, to protect the edge of the blade, and to provide consistent ice resurfacing, the following section should be read carefully.

It describes the installation and adjustment of the blade, as well as sharpening and storage.

It is essential that the blade be sharp at all times for proper shaving of the ice surface. Blades require sharpening after approximately 100 resurfaces.

### Blade Removal Procedure

To safely remove the blade from the Olympia, raise the conditioner and place blocks under it for safety.

Wearing protective gloves, install the magnetic blade protector, then remove each end bolt from the blade.

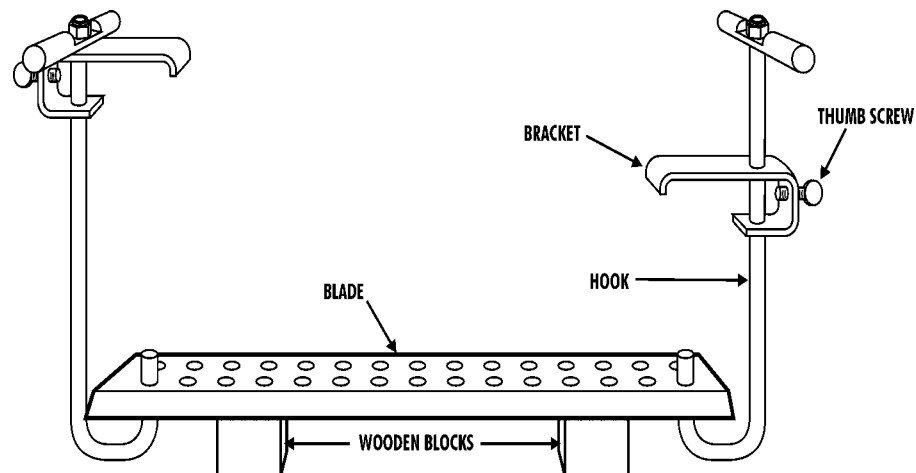
Insert the blade hooks.

Use the locking thumb screw to secure the blade in position.

Remove the remainder of the bolts from the blade.

Carefully lower the blade away from the blade holder on the conditioner onto wooden blocks.

Lightly coat the entire blade with oil to prevent rust.



### Blade Specifications

Blades supplied by Resurface Corp. are high quality alloy steel with a tempered cutting edge which is 58 to 62 Rockwell hard.

If purchasing replacement blades from a source other than Resurface Corp., specify the above mentioned hardness in order to get the best results from your Olympia.

Resurface recommends that your blade be held in the grinding machine with the back edge of the blade against two stops (rather than a continuous).

Blades should be ground at a 27 degree angle with one bevel.

Too much angle will result in rippled ice, while a smaller angle will not shave the ice properly.

The blade holder is ground down so that each lap of shaving will be feathered into the next without forming ridges in the ice.

To check whether your blades have been sharpened straight, lay two sharpened blades on a flat surface with two cutting edges together.

If the blades have been sharpened straight, the cutting edges will touch the full length of the blades.

The blades for your Olympia need to be replaced when more than 1 1/2" has been removed by having them sharpened.



## **Daily Maintenance**

The power train maintenance program should be set up and followed with your local General Motors dealer.

In addition, the basic Olympia maintenance procedure should be carried out according to the following schedule:

To begin the maintenance program, first park the Olympia leaving the conditioner in the Up position and the gear lever in Park. Raise the snow bin. Engage the safety bars on each side of the snow bin, remembering to put in the safety pin once the bars are properly positioned. On the side dumping model, after raising the snowbin make sure it is mechanically secured. Turn off the machine. Remove the key from the ignition before proceeding with any maintenance.

## **Fluid Checks**

On a daily basis carry out these basic fluid checks:

Check the engine oil and top up with a multi-grade oil.

Check the transmission fluid, topping up when required with Dextron III.

While the hydraulic fluid levels usually remain constant, regular level checks and topping off the levels with Dextron III can avoid a lot of problems down the road.

Finally, check the engine coolant levels and top up with recommended high quality coolant.

When you notice changes in any of the fluid levels you should determine and correct what is causing the loss of fluids.

## **Belt Checks**

Next, the alternator belt should be checked for cracks and wear.

Similarly, the hydraulic belt tension should be maintained at suitable tension factor.

Should it require adjustment, loosen off the two bolts on the pump mount.

Now loosen the jam nut on the tension bolt.

Adjust the tension bolt to the proper tension, then retighten the jam nut.

Finally, retighten the two bolts on the pump mount.

### Regular Maintenance

Check the blade holder surface on the conditioner and lightly oil the blade holder.

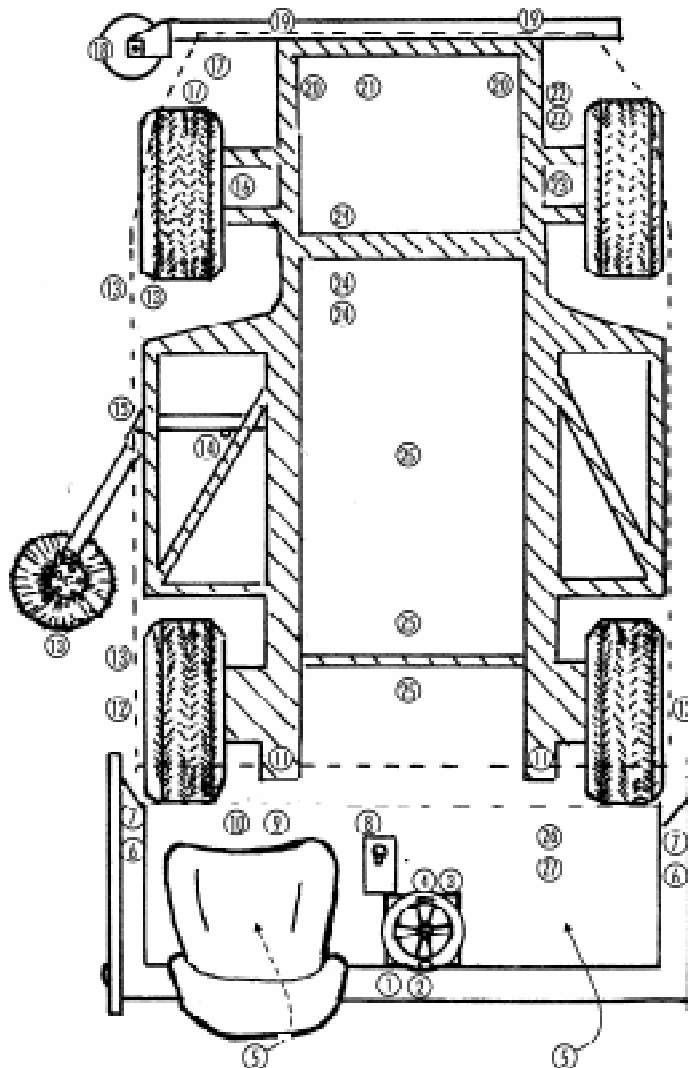
Because of the humid conditions the Olympia operates in, all of the lube points must be greased on a regular basis.

*Please Note: Failure to carry out this basic maintenance can lead to damage and down time.*

A little bit of grease goes a long way and makes sure the Olympia will do the same.

Every 100 scrapes you should carry out a full lubrication routine and change the ice shaving blade.

*Please Note: On the front dumping units raise the snow bin cover approximately one foot. To complete greasing of the snow bin, move the snow bin lever to the Up position until the bin is fully opened. Engage the safety bars on each side remembering to put in the safety pin. On the side dumping machine after raising the snow bin, make sure the snow bin is mechanically secured before proceeding with any maintenance.*







Using the drawing on the adjacent page as a guide. Make sure you grease all 25 lube points as follows:

1. The blade adjust screw.
2. The 3/4 inch flange bearing at the top of the blade adjustment crank.
3. The 3/4 inch flange bearing where the blade crank goes through the conditioner.
4. The 3/4 inch universal at the base of the blade adjustment crank.
5. Both ends of the conditioner lift arms.
6. The two blade holder pivots on the blade adjustment arms.
7. Both bottom auger flange bearings - Fill until water is completely flushed.
8. The snow breaker pivot.
9. The accelerator pedal pivot.
10. Brake Pedal
11. The two blocks where the sled arms pivot to raise and lower the conditioner.
12. The two bin cover pivots.
13. On the side dumping units, lube the two lower bin pivots on the driver's side of the Olympia and the two upper door pivots
14. The board brush shaft under the driver's side water tank.
15. The board brush swing arm at the pivot point.
16. Grease the upper and lower ball joints on the drivers side.
17. Grease both ends of the tie rod on the drivers side.
18. Grease the front bumper wheel shaft.
19. Grease the two front bin pivots.
20. Grease the top end and knuckle joint on both of the drop links.
21. The steering cylinder on both ends.
22. Grease both ends of the ties rod on the right hand side of the Olympia.
23. The right hand side upper and lower ball joints.
24. Front drive shaft slide and U-joints
25. Rear drive shaft and U-joints.

## Lubrication Procedure

On a monthly basis or after 120 hours of operation you should:

1. Spray grease on the top link threads.
2. Check the tension of the conditioner motor drive chain making sure it has no more than a half inch play.
3. Spray grease on the motor drive chain of the conditioner.
4. Now check the brake fluid level, topping up if needed.
5. Check the tire pressure to ensure the pressure is at 65 PSI.
6. Change the oil and replace the oil filter every 150 hours to avoid costly engine repairs.

### Annual Maintenance Hydraulic Fluid

Before the Olympia goes into long term storage or on a yearly basis, the following maintenance should be carried out:

First, the entire unit must be greased and then the hydraulic fluid changed.

This is done by raising and mechanically securing the snow bin. Then:

1. Remove the drain plug at the bottom of the tank.
2. Remove the two screen filters and flush them clean with a solvent.
3. Upon completion, reinstall the drain plug.
4. Now unscrew the canister of the high pressure oil filter.
5. Remove filter and replace with a new one.
6. Reinstall the canister and fill the tank 3/4 full of ATF Dextron III automatic transmission fluid.
7. Always refill the tank through the filler cap to filter out any impurities that might be in the new oil you are adding.

### Differential Oil Change

To change the front differential oil simply:

1. Remove the drain plug and drain the oil.
2. Replace the drain plug.
3. Fill with proper oil (80-90 wt.) to the fill plug level.

Changing the rear differential oil however, is more complicated:

1. First remove the bolts from the cover plate.
2. Drain out the oil.
3. Check the teeth on the gear for excessive wear.
4. Replace the gasket with a new one, and
5. Reinstall the cover plate.
6. Fill the differential with 80-90 wt. gear oil to the fill plug level.

The next major procedure is to change the transfer case oil. This is done by removing the lower drain plug. Now replace the drain plug and refill the transfer case to the top of the plug hole with Dextron III.

*To complete the annual maintenance schedule, carry out the combined weekly and 120-150 hours maintenance schedule.*

The Olympia should be washed with lukewarm water and a mild soap.

Be sure to immediately rinse off the soap with cold water before it can dry and streak the surface of the Olympia. A high grade automotive wax should be used to preserve the high gloss finish of the Olympia.

### Transfer Case Oil Change

### Washing Procedure

# 5 Long Term Storage Procedures



## Storage Procedure

Carry out the annual maintenance procedure as follows.

1. Spray all the metal surfaces of the conditioner with a light coating of penetrating oil, and
2. Grease all the lube points in the Olympia to remove all moisture.
3. Make sure the horizontal and vertical augers and all moving parts of the conditioner are covered with a film of oil.
4. To prevent corrosion in the water system remove the end caps of the flood pipes and flush with water.
5. Drain and flush the water tanks.
6. Leave all the drains and valves open for storage.
7. During the off season the blade should be removed and carefully cleaned with oil.
8. Store blade in the wooden sheath.
9. Check to make sure the blade edge is sharp and there are no nicks.
10. If required, have the blade sharpened before storing for the off season.
11. Don't forget to oil the blade holder on the conditioner as well.

Throughout the storage period, start the engine periodically and let run until the normal operating temperatures are reached.

If the battery runs down over the long storage period, have it charged by a battery specialist and checked for load capacity before reinstalling it in the Olympia.

To put the Olympia back into action at the start of the season, simply follow the weekly maintenance procedure and enjoy another year of trouble-free operation.

<b>Power train</b>	-Chevrolet four-wheel drive
<b>Engine</b>	-305 cu.. in. (5.0 litre) displacement, 8 cylinders, 130 horsepower @ 2000 RPM
<b>Transmission</b>	-modified Chevrolet automatic transmission -One forward gear (Low) -Speed varied by accelerator pedal. -Automatic ( P, R, N, D)
<b>Transfer Case</b>	-Full time four-wheel drive; 2.72:1 ratio
<b>Differentials</b>	-3.73:1 ratio
<b>Alternator</b>	-85 amp rating (Delcotron System)
<b>Battery</b>	-12 volt maintenance-free Delco Freedom -630 amp cold crank rating @ 0° F (17.8° C)
<b>Electrical</b>	-Negative ground system
<b>Brakes</b>	-Power assisted self-adjusting drum and disc
<b>Steering</b>	-Power (hydraulic)
<b>Tires</b>	-225-75 R16 black wall snow tires load range D -Tungsten tipped studs (including on spare) -Rust-resistant low maintenance magnesium alloy wheels -Spare wheel rim is steel-painted black -Recommended pressure - 65 psi
<b>Fuel</b>	-Liquid Propane under pressure, Natural Gas or Diesel.

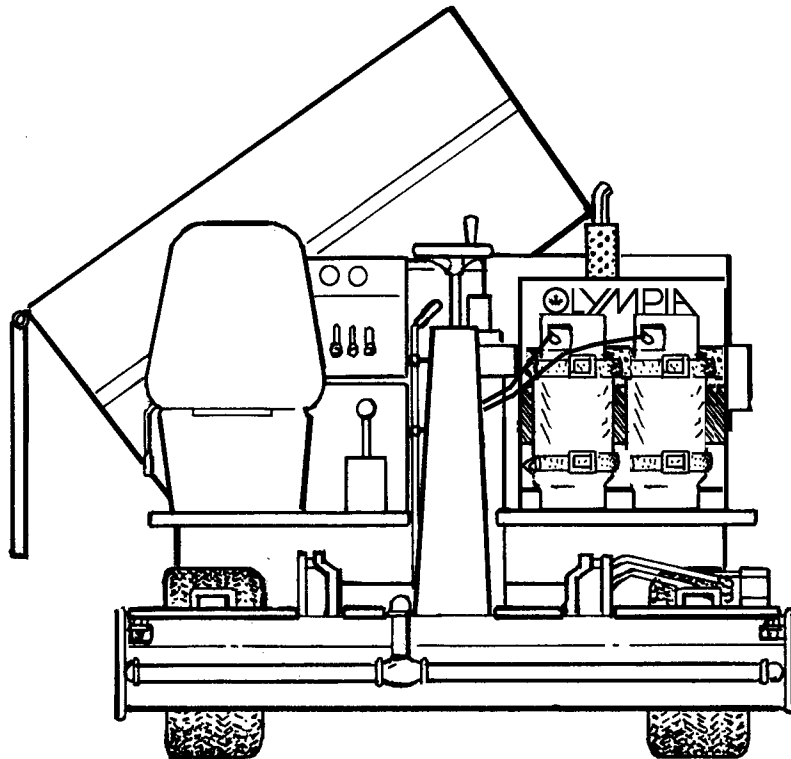
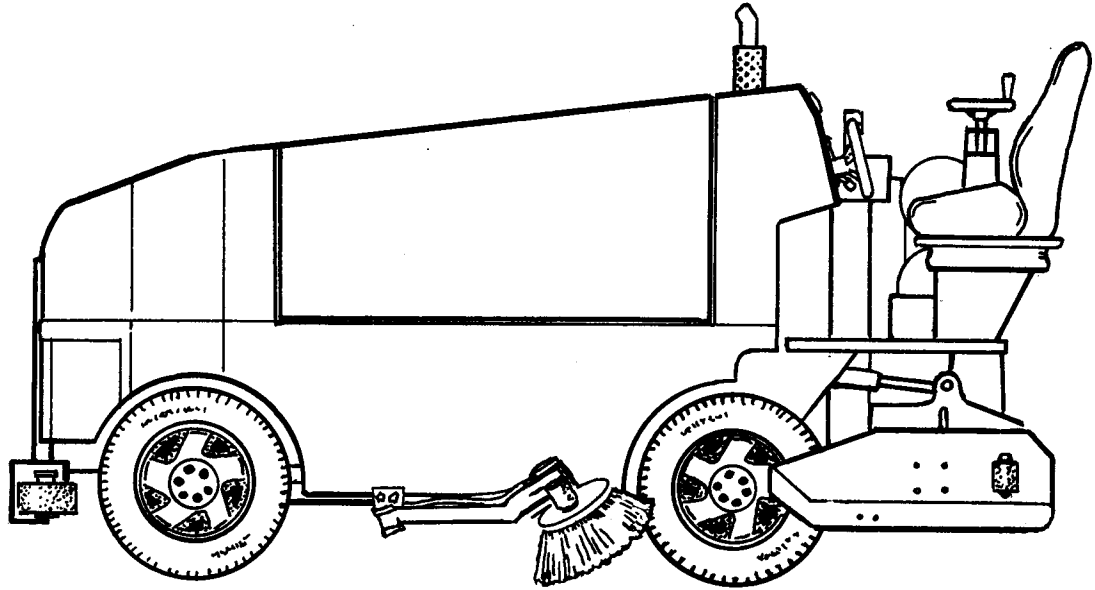
<b>Instrument Panel</b>	<ul style="list-style-type: none"> <li>-Tachometer</li> <li>-Voltmeter (ammeter)</li> <li>-Oil pressure gauge</li> <li>-Water Temperature gauge</li> <li>-Hour meter</li> <li>-Light switch</li> <li>-Audio/visual warning system for Oil/High Temperature</li> <li>-Fuel gauge (on diesel powered)</li> <li>-Low Fuel Warning Light (on propane powered)</li> <li>-Service Engine Soon warning light (with Fuel Management System)</li> <li>-Wash Water switch and light (with Wash Water option)</li> <li>-Tire Wash switch and light (with Tire Wash option)</li> </ul>
<b>Controls</b>	<ul style="list-style-type: none"> <li>-snow dump</li> <li>-conditioner</li> <li>-elevator</li> <li>-board brush</li> <li>-flood water control valve</li> <li>-wash water (optional)</li> <li>-snow breaker</li> </ul>
<b>Hydraulics</b>	<ul style="list-style-type: none"> <li>-14 Imp. Gallon (63 litre) aluminium tank with fluid level gauge</li> <li>-Strainer - UCC - 125 micron</li> <li>-Filter - Hycon - 20 micron</li> <li>-Pump - Tandem double - 10.9 GPM front, 5.68 GPM rear at 1800 RPM (pump speed)</li> </ul>
<b>Motors</b>	<ul style="list-style-type: none"> <li>-Danfoss (horizontal auger)</li> <li>-4.5 cu. in. (74 ml) displacement/Rev</li> <li>-Danfoss (vertical auger) (board brush) (wash water)</li> <li>-3.0 cu. in. (49ml) displacement/Rev</li> </ul>
<b>Directional Control Valves</b>	<ul style="list-style-type: none"> <li>-Kontak</li> </ul>
<b>Other Components</b>	<ul style="list-style-type: none"> <li>-Danfoss and Compact controls</li> <li>-emergency hand pump to raise conditioner (side dump)</li> <li>-emergency hand pumps to raise conditioner and bin cover and snow-bin (front dump)</li> </ul>

<b>Exhaust System</b>	<ul style="list-style-type: none"> <li>-chrome-plated stack and protective heat-guard, vented 84 inches (213 cm.) above ice surface at rear of machine, opposite driver station (heat shield not included with Wash Water or Extra Water option)</li> <li>-muffler</li> <li>-Stainless Steel Exhaust System (optional)</li> <li>-3-Way Catalytic Purifier (optional)</li> </ul>
<b>Blade</b>	-80 inch (203 cm.) or 84 inch (213 cm.) shaving width (both available on all models)
<b>Conditioner</b>	<ul style="list-style-type: none"> <li>-9 inch (22.9 cm.) clearance under conditioner in Up position</li> <li>-84 inch (213 cm.) conditioner with 80 inch (203 cm.) blade available on all models</li> <li>-88 inch (224 cm.) conditioner with 84 inch (213 cm.) blade available on all models</li> </ul>
<b>Tools</b>	<ul style="list-style-type: none"> <li>-14 piece Open and Box end wrenches, 3/8 to 1-1/4 in.</li> <li>- 9 piece Allen wrench set, 5/64 to 3/8"</li> <li>- jack and wheel wrench and socket</li> <li>-grease gun and cartridge of grease</li> <li>-blade hooks</li> </ul>
<b>Bumper Wheels</b>	<ul style="list-style-type: none"> <li>-front: non-marking urethane</li> <li>-conditioner: non-marking urethane</li> <li>-board brush non marking urethane (with Board Brush Option)</li> </ul>
<b>Tanks</b>	<ul style="list-style-type: none"> <li>-Flood Water: Aluminum or stainless steel tanks with water drain valve and water level gauge</li> <li>-Hydraulic Fluid: Aluminum tanks with fluid level gauge</li> </ul>
<b>Snow Bin</b>	<ul style="list-style-type: none"> <li>-Steel bin</li> <li>-interior coating, epoxy primer, Urethane Enamel</li> <li>-exterior coating, epoxy primer, undercoating</li> </ul>
<b>Noise Levels</b>	<ul style="list-style-type: none"> <li>-1000 RPM engine: 70 DBA</li> <li>-1500 to 1800 RPM: 82 to 85 DBA</li> </ul>



<b>Tachometer</b>	This instrument provides an immediate, accurate indication of the engine RPM.
<b>Voltmeter</b>	The Voltmeter indicates the voltage being produced by the engine's electrical system.
<b>Oil Pressure Gauge</b>	This gauge indicates the pressure under which the engine oil is being distributed to parts which require lubrication.
<b>Water Temperature Gauge</b>	This gauge indicates the temperature of the engine coolant which will vary with air temperature and operating conditions.
<b>Hour Meter</b>	The meter records the number of hours of engine operation.
<b>Key Start</b>	
<b>Horn</b>	
<b>Light Switch</b>	
<b>A/V Warning System</b>	A light and sound alarm activated by too low oil pressure, or by water temperature over 225° F.
<b>Low Fuel Warning Light</b>	
<b>Hydraulic Controls</b>	The hydraulic controls for the snow dump, conditioner, elevator and (optional) board brush are located on the dash and are marked accordingly.
<b>Emergency Hand Pump</b>	Located at the left hand side of lower dash panel.
<b>Accelerator Control</b>	
<b>Brake Control</b>	
<b>Flood Water Control Valve</b>	Mounted on tower of conditioner beneath blade crank.
<b>Snow Breaker Handle</b>	Mounted on back of vertical auger. (not included on the optional automatic snow breaker)

**3500 Side Dump**







## 3500 Side Dump

Description	Imperial	Metric
Conditioner Clearance	8.5"	21.6 cm.
Wheelbase	85"	215.9 cm.
Length Dump Down	184"	467.4 cm.
Length Dump Up	184"	467.4 cm.
Width Dump Down	84"	213.3 cm.
	(80" blade)	(203 cm. blade)
Width Dump Down	88"	223.5 cm.
	(84" blade)	(213.3 cm. blade)
Width Dump Up	101"	256.5 cm.
	(80" blade)	(203 cm. blade)
Width Dump Up	101"	256.5 cm.
	(84" blade)	(213.3 cm. blade)
Height Dump Down	77"	195.6 cm.
Height Dump Up	110"	279.4 cm.
Height of Exhaust Stack	84"	213.3 cm.
Water Tanks	206.4 US / 172 imp. gal	781.9 l.
Snow Tanks	116 cubic ft.	3.085 cubic m.
Hydraulic Oil Tank	16.8 US / 14 imp. gal	63.6 l.
Diesel Fuel Tank	18 US / 15 imp. gal	68.2 l.
Weight - Empty	6425 lbs.	2914.4 kg
Weight - Full of Water	8025 lbs.	3671.9 kg

### OPTIONS

Extra Water Tank	57.6 US / 48 imp. gal	218.2 l.
Wash Water Tank	57.6 US / 48 imp. gal	218.2 l.
Over Sized Water tank	227.4 US / 189.5 imp. gal	861.5 l.

**Standard  
Equipment**

2 Year Warranty  
Chevrolet Power Train  
Automatic Transmission  
4 Wheel Drive  
Magnesium Aluminum Alloy Wheels  
Propane/Natural gas  
Front Dump  
Easily Accessible Hydraulic System  
Reversible Auger System  
Precision Conditioner Control System  
2" & 6" Offset Conditioner  
Replaceable Runners on Conditioner  
Front & Rear Guide Wheels  
Full Instrumentation  
Full Lighting Package  
Snow Tank Safety Bars  
Safety Labels  
Two Tone paint Scheme (6 standard colour selection)  
Silver and Teal  
Silver and Blue  
Silver and Maroon  
Silver and Charcoal  
White and Teal  
White and Blue  
White and Maroon  
White and Charcoal



## Optional Equipment

Three-way Catalytic Purifier  
Fuel Management System  
Board Brush  
Wash Water System  
Tire Wash  
Automatic Snow Breaker  
Automatic Towel Lift  
Rear Mounted Power edger  
Stainless Steel Tanks  
Oversized Water Tanks  
Backup Alarm  
Seat belt  
Deadman Switch  
Parking Brake  
Heated Cab  
Special Paint Colours and Customized Paint Scheme  
Six-way Snowplow  
V-6 Chevrolet engine

*Additional options and custom modifications are available.*

**Auger Jam**

During normal ice resurfacing operations, be sure the ice surface is free of debris. If debris, such as a puck, is picked up by the vertical auger it could eventually jam the auger, thus blocking the path of the scrapings into the snow bin.

If this does happen, the first thing you have to do is determine if the obstruction is in the horizontal or vertical auger.

The fastest way of checking this is to disconnect the two hoses from the horizontal auger motor and connect the hoses together, thus bypassing the horizontal auger motor.

Turn the elevator on and the vertical auger should spin. If it does, then the jam has occurred in the horizontal auger.

**Horizontal Auger Jam**

If a jam occurs in the horizontal auger, you first have to make sure the two quick couplers are attached to the horizontal auger motor.

First turn off the augers. Then remove the cover plate on the driver's side. Using a pipe wrench, turn the auger back by pushing the wrench towards the back of the conditioner. Whatever is jamming the auger will turn back out. Replace the cover plate, restart the engine and make sure the auger turns freely.

**Vertical Auger Jam**

If the vertical auger doesn't spin, then the blockage has likely occurred in the vertical auger.

To un-jam the auger, hold the elevator lever in the Up position and try to reverse the auger. If it reverses, the jammed object will be dislodged. If it doesn't reverse, shut the engine Off.

Remove the cover plate at the top of the blower head and the five bolts around the blower head using a half inch wrench.

Lift the blower head from the unit making sure the gear ring doesn't drop inside the vertical auger tube.

Usually the debris is at the top of the auger but in case there is more debris inside, lift the auger straight out and flush out any ice or debris that is causing the jam.

Once cleared, replace the auger in its original position on top of the stub shaft. Then install the gear ring onto the drive coupling, set the blower head back down on top of the vertical auger tube and reinstall the five bolts in the bottom of the blower head. Reinstall the cover plate and try it again.

If the vertical auger spins freely, stop the auger and then reconnect the two quick couplers to the horizontal auger motor and resume normal operations.

**Snow Ridge**

If you have a ridge of snow forming as the Olympia moves around the ice, check the squeegee on the conditioner. If the fitting on the squeegee against the side of the conditioner is not tight, it will allow snow to escape and form a ridge on the ice. The solution is to remove the squeegee and replace it with a new one making sure the squeegee is trimmed to fit tightly against the side of the conditioner.



## **Rippled Ice**

Too little down pressure, or an incorrect blade angle, or excessive wear on the blade adjustment screw/nut will result in rippled ice. Other causes could be a worn bearing in the snow tower, a worn blade holder swivel or the pins could be worn.

## **Emergency Hand Pump**

To activate the hand pump, the conditioner lever on the control panel must be held in the Up position. The emergency hand pump handle is stored under the driver's seat.

On front dump models, a second hand pump is provided which lifts the bin cover to allow engine access, again only while holding the bin dump lever in the Up position.

The hand pumps will not lower the conditioner or bin cover even if these procedures are reversed and will not operate any other aspect of the hydraulic system.

*Safety Note: make sure you engage the emergency hand pump once a week to insure it is in proper working order.*

## **Driving Control Problems**

If there is too much down pressure, the rear wheels will lift off the ice resulting in a loss of control. You can correct the problem by adjusting the down pressure.

## **Voltmeter Variants**

A consistently high or low reading indicates an electrical system problem, which should be assessed and repaired.

## **Oil Pressure Problems**

Pressures indicated may vary with outside temperature and weight of oil being used. Oil pressure in a cold engine may be somewhat higher than normal until the oil reaches operating temperature. If the pressure does not stabilize, or remains either high or low, a problem in the lubrication system may exist and should be investigated immediately to prevent damage to the engine. If an overheating situation occurs, do not operate the engine until the cause is determined to avoid damaging the engine.

## **Audio/Visual Alarm**

The function of this alarm is to assist you in setting up and following a maintenance schedule suitable to your needs and operating conditions. When the alarm is activated, check gauges and return resurfacer to storage room. Shut off engine. If the oil pressure is low, check oil, and fill as necessary. If the water temperature is high, check radiator coolant level, and fill as necessary. Consult with your GMC dealer if further problems persist.

## **Service Engine Soon**

Alerts Olympia operator to the possibility of a malfunction in the fuel or ignition systems, which can create improper exhaust emissions. (Fuel Management System Option)

## **Back up Alarm**

Automatically engages when the gear lever placed in "R" (reverse) position to alert anyone behind the Olympia.

## TIRE WASH SYSTEM

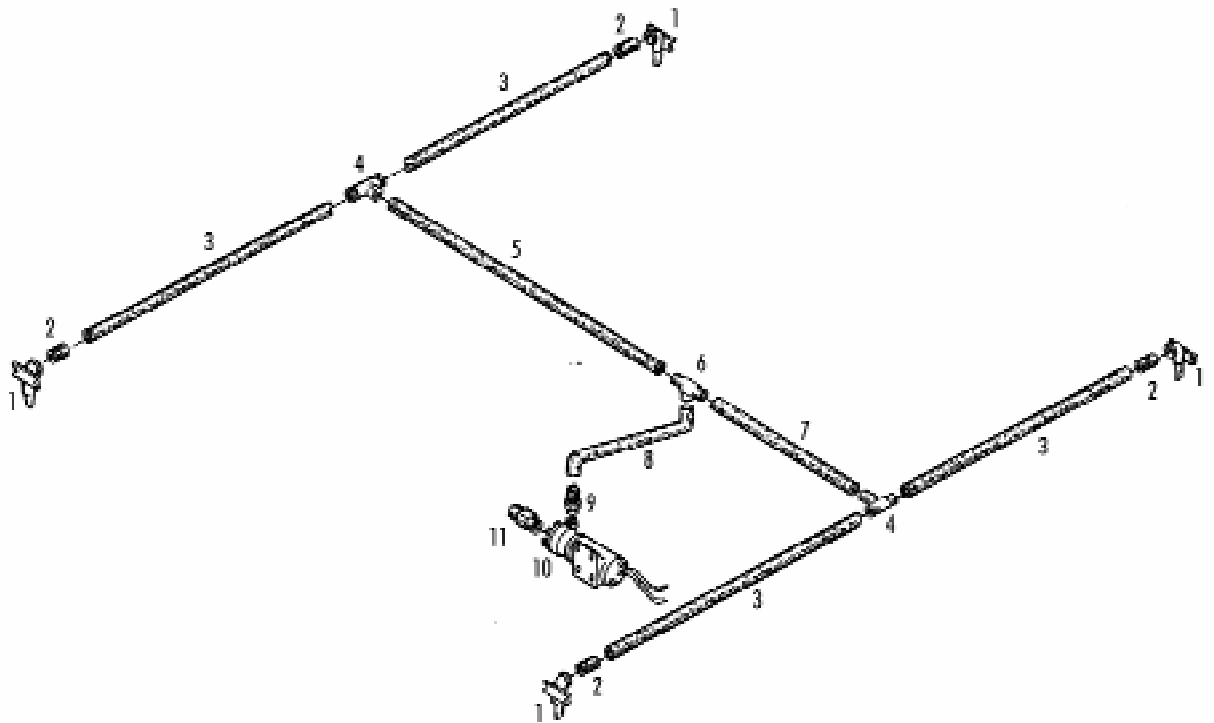
The Olympia Tire Wash system is designed to prevent dirt and debris from outside from being tracked onto the ice surface when the vehicle re-enters the building.

To activate the tire wash system switch the tire wash lever to the "on" position. Excess water from the wash water system will be sprayed onto the tires. Drive the Olympia forward, making sure the tires make at least a full revolution or more, to insure complete coverage of the tires.

The water should remove the loose dirt and debris from the tire.

Upon completion of the tire wash, check the tire treads for debris that may have become jammed in the treads. Remove the debris prior to driving onto the ice surface.

*Please Note: Always clean the floor surface before and after the tire wash procedure.*





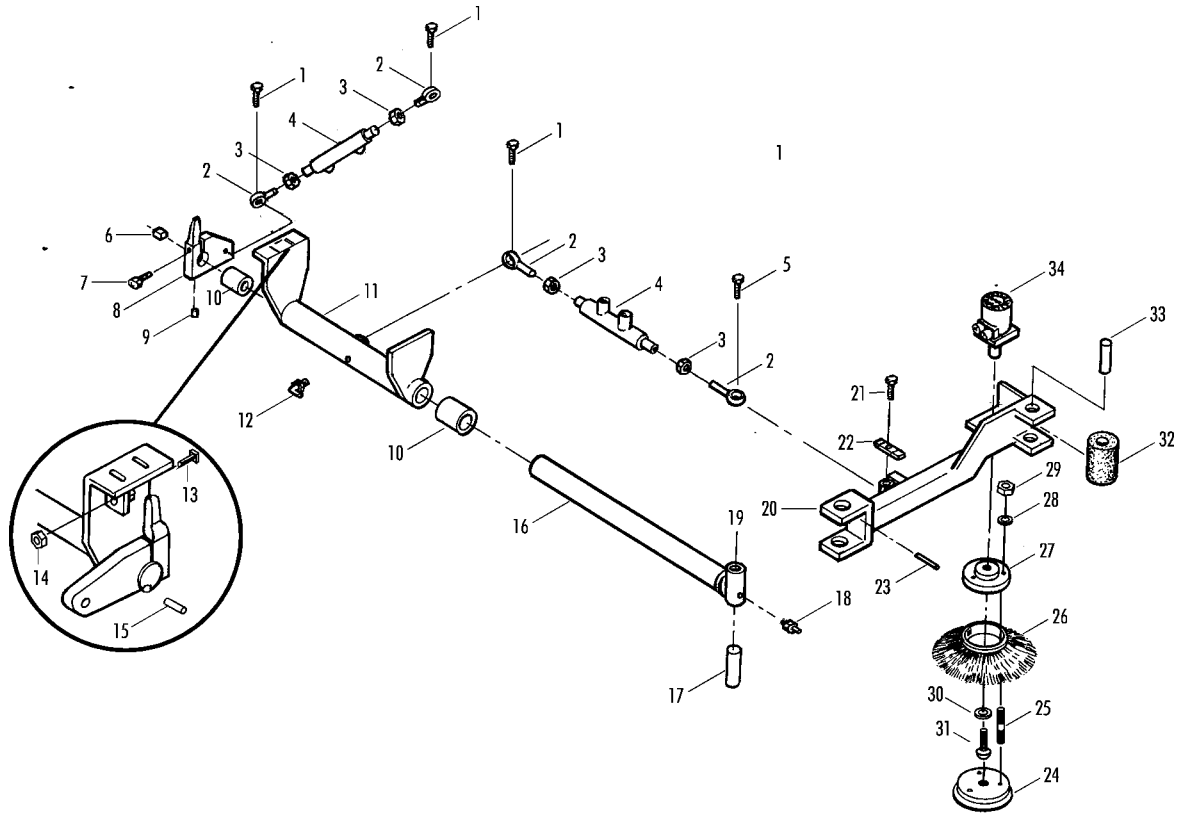
## 2000 series

Ref #	Part #	Description	OEM #
1	73-1050	Nozzle Assembly	
2	73-1030	Male Adapter	
3	73-3320	Clear Braid Hose 1/2" X 30"	
4	73-1010	Bullhead Tee 1/2"	
5	73-3530	Clear Braid Hose 3/4" X 39"	
6	73-1020	Bullhead Tee 3/4"	
7	73-3510	Clear Braid Hose 3/4" X 28"	
8	73-3500	Clear Braid Hose 3/4" X 15"	
9	73-1040	Male Adapter 3/4" Poly	
10	73-1000	Tire Wash Pump	18510 0000
11	43-15410	Hex Nipple 3/4"	C3069 x 12

## 3000 series

Ref #	Part #	Description	OEM #
1	73-1050	Nozzle Assembly	
2	73-1030	Male Adapter	
3	73-3320	Clear Braid Hose 1/2" x 30"	
4	73-1010	Bullhead Tee 1/2"	
5	73-3530	Clear Braid Hose 3/4" x 39"	
6	73-1020	Bullhead Tee 3/4"	
7	73-3540	Clear Braid Hose 3/4" x 46"	
8	73-3500	Clear Braid Hose 3/4" X 15"	
9	73-1040	Male Adapter 3/4" Poly	
10	73-1000	Tire Wash Pump	18510 0000
11	43-15410	Hex Nipple 3/4"	C3069 x 12

**BOARD BRUSH**



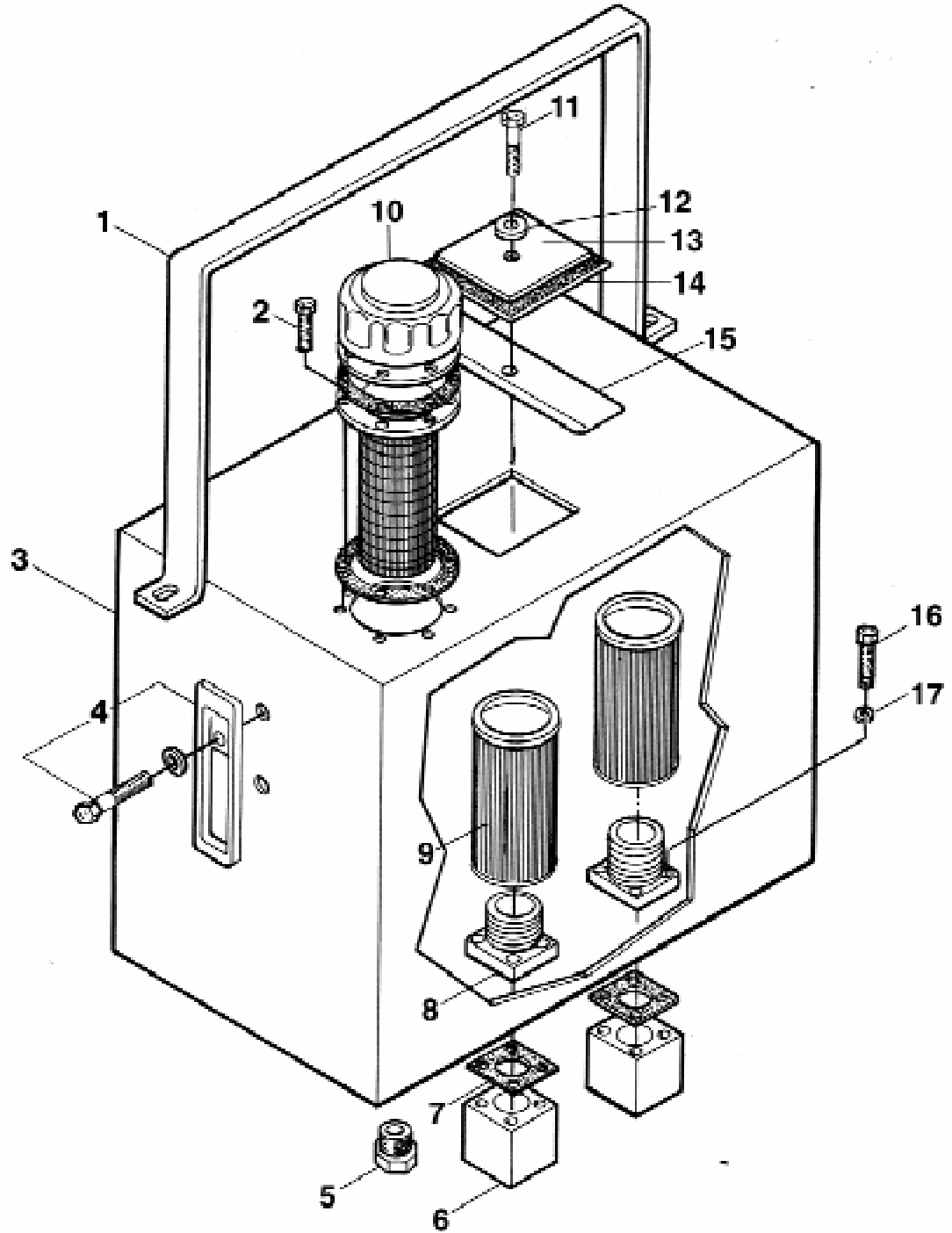




## BOARD BRUSH

Ref. #	Part #	Description	OEM #
1	49-30995-1	Hex Head Bolt 1/2" x 2" Grade 8 Modified	
2	35-17280	Rod End	VCM8
3	49-33920	Hex Head Jam Nut 1/2"-20	
4	35-20055	Board Brush Cylinder	BX 1997
5	49-30995	Hex head Bolt 1/2" x 2" Grade 8	
6	49-35100	Key 1/4" x 1"	
7	49-30585	Hex head Bolt 3/8" x 2" Grade 8	
8	35-23605	Adjustment Block	
9	49-36990	Socket Set Screw 3/8" x 1/2"	
10	35-25460	Bushing	
11	35-23655	Mounting Bracket	
12	49-19010	Grease fitting 1/8" - 27 90 Degree	1613
13	49-36959	Square Head Set Screw 1/2" x 2"	
14	49-33915	Locknut 1/2"-13	
15	49-37800	Split Pin 1/4" x 1 1/2"	
16	35-23705	Shaft	
17	35-23750	Pivot Pin	
18	49-19030	Grease Fitting 1/8"- 27 Straight	1610
19	35-23740	Shaft Pivot Sleeve	12DU16 GBR
20	35-23975	Swing Arm	
21	49-30230	Hex head Bolt 1/4"-20 x 1"	
22	35-23950	Hose Clamp	
23	49-37800	Split Pin 1/4" x 1 1/2"	
24	35-23800	Bottom Hub	
25	49-37930	Studs 3/8" x 2"	
26	35-17360	Brush	
27	35-23850	Top Hub	
28	49-36250	Flat Washer 3/8 "	
29	49-33500	Locknut Nylon 3/8"-16	
30	35-23860	Bottom Hub Washer	
31	49-30190	Socket Cap Screw 1/4"-20 x 3/4"	
32	35-9270	Roller	
33	35-23900	Roller Pin	
34	25-4000	Hydraulic Motor	151-7021

## OIL TANK 2500 &amp; 3500

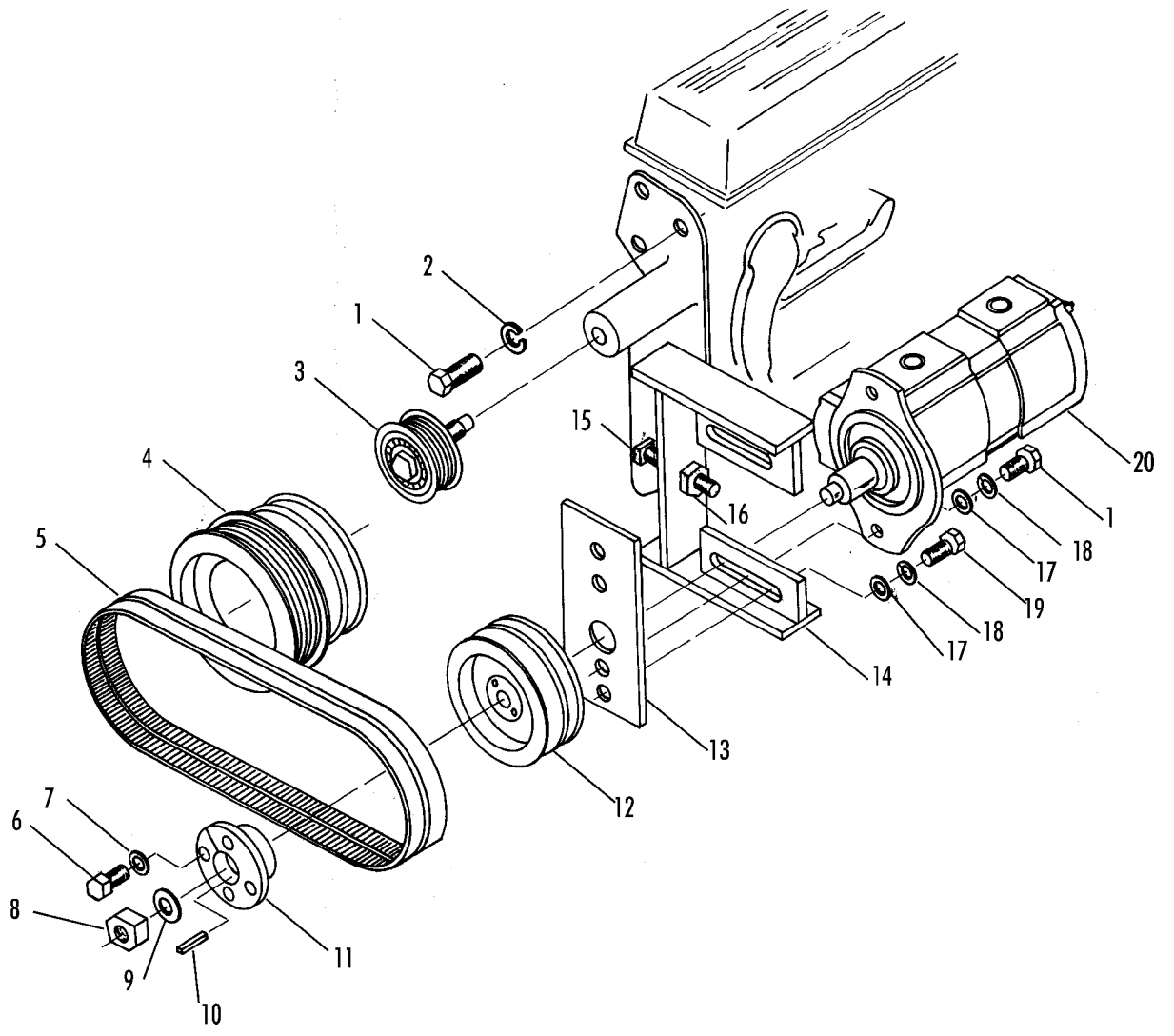




## OIL TANK 2500 & 3500

Ref. #	Part #	Description	OEM #
1	41-9500	Oil Tank Hold Down	
2	49-30110	Rd. Socket Machine Screw 10/24" x 1/2"	
3	41-9490	Oil Tank	
4	40-3700	Sight Gauge	SNA 2B/S/0
5	43-15360	Hex Head Plug	C3159 x 12
6	41-25820	Oil Tank Outlet block	
7	41-25840	Strainer Mount Gasket	
8	41-25830	Strainer Mount	
9	40-3830	Strainer	HZ UCSE1323
10	30-3710	Air Breather	ABB40 N
11	49-30320	Hex Head Bolt 5/16"-18 x 1 1/2"	
12	49-36200	Flat Washer 5/16"	
13	41-9572	Oil Tank Lid	
14	41-9585	Oil Tank Lid Gasket	
15	41-9575	Oil Tank Lid Bracket	
16	49-30310	Socket Cap Screw 5/16"-18 x 1 1/4"	
17	49-36265	Lockwasher 5/16"	

**HYDRAULIC PUMP MOUNT**

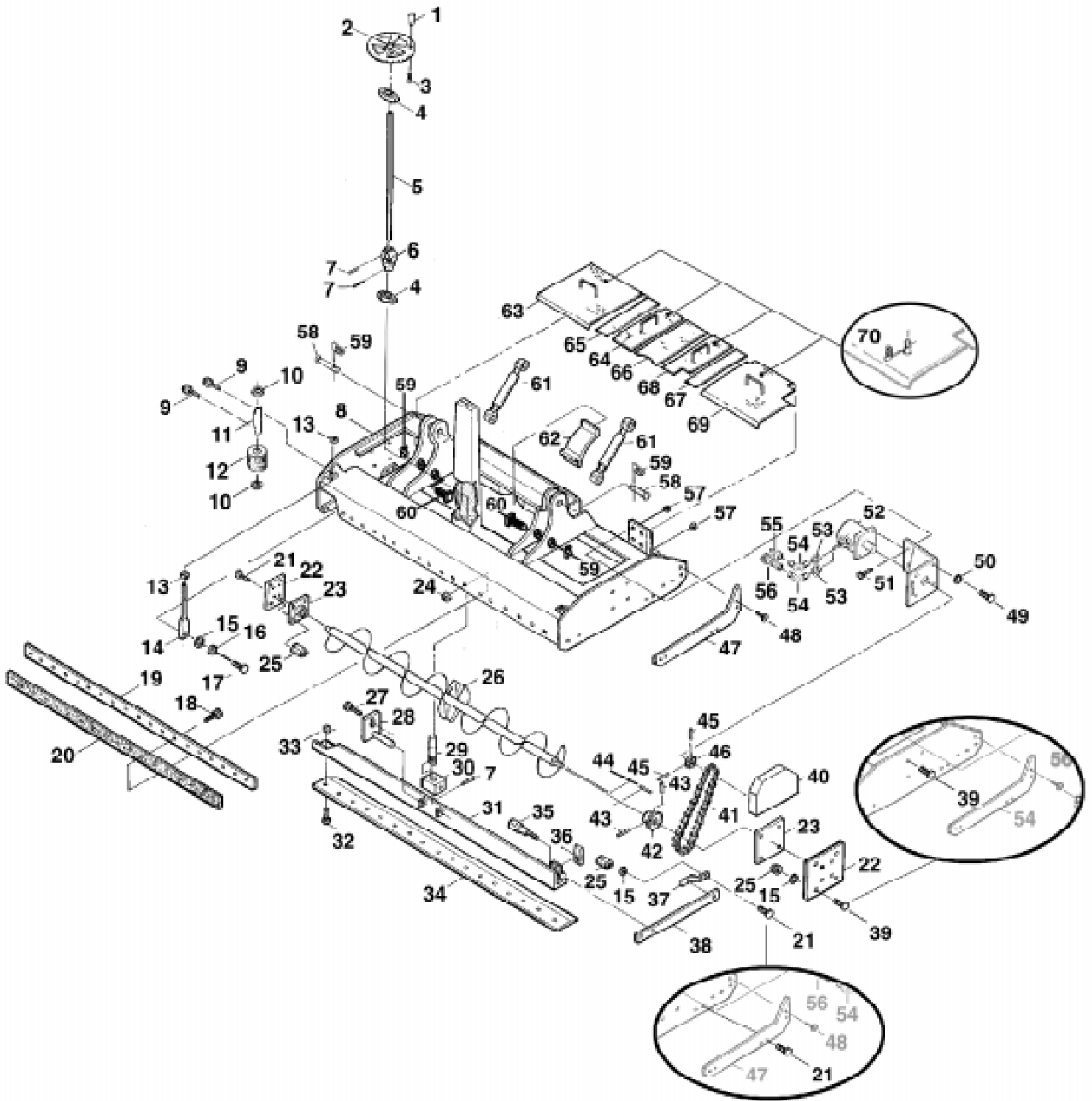




## HYDRAULIC PUMP MOUNT

Ref. #	Part #	Description	OEM Part #
1	49-30500	Hex Head Bolt 3/8" x 1"	
2	49-36260	Lockwasher 3/8"	
3	10-1672	Pulley	10239930
4	41-21604	Three Groove Pulley	
5	41-716	V-Belt 46" Tri-Power	9013 2046
6	49-30240	Hex Head Bolt 1/4"-20 x 1-1/4"	
7	49-36170	Lockwasher 1/4"	
8	49-33805	Hex Head Nut 7/16"-20	
9	49-36255	Flat Washer 3/8" (Thick)	
10	49-35085	Key 3/16" x 3/4"	
11	41-732	QT Bushing 11/16"	
12	41-733	Two Groove Pulley	
13	41-25611	Pump Mount	
14	41-25798	Engine Bracket-Pump	
15	49-36965	Square Head Set Screw 1/2" x 3"	
16	49-33900	Hex Head Nut 1/2"-13	
17	49-36250	Flatwasher 3/8"	
18	49-36800	Lockwasher 3/4"	
19	49-30550	Hex Head Bolt 3/8"-16 x 1-1/4"	
20	40-3932	Hydraulic Pump-Tandem Double	1PX230120CPSJJB

**CONDITIONER - 80" With Wash Water**

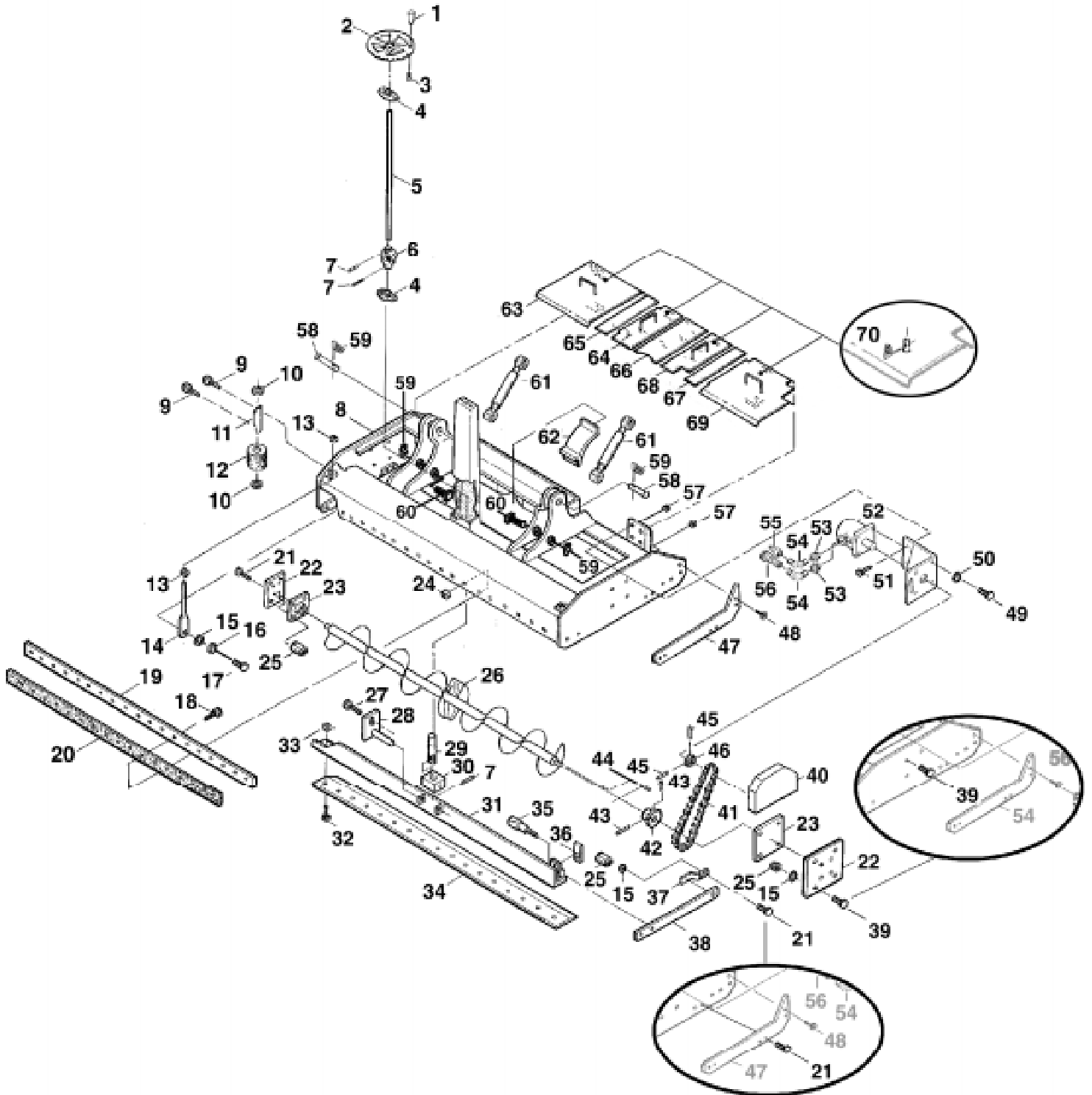




## CONDITIONER - 80" With Wash Water

Ref.#	Part #	Description	OEM #	Ref.#	Part #	Description	OEM #
1	20-25700	Handle-Blade Adjustment Wheel		40	20-21781	Chain Guard	
2	20-25750	Blade Adjustment Wheel		41	20-1360	Drive Chain 32	
3	49-30307	Socket Cap Screw 5/16"-18 x 1"		42	20-1281	25 Tooth Auger Sprocket	50B25F 1 1/2
4	20-1240	2 Hole Flange Bearing 3/4"	SCJT 3/4	43	49-36990	Socket Set Screw 3/8"-16 x 1/2"	
5	20-21685	Blade Adjustment Crank		44	49-35140	Key 3/8" x 1 1/4"	
6	20-3560	Universal 3/4"	102424SF	45	49--36980	Socket Set Screw 5/16"-18 x 1/2"	
7	49-37800	Split Pin 1/4" x 1 1/2"		46	20-1300	19 Tooth Motor Sprocket	50B19F1
8	20-20000	Conditioner Frame		47	20-20065	Runner-Right (20-20055 Runner left)	
9	49-30500	Hex Head Bolt 3/8"-16 x 1"		48	49-30530	Flat Socket Screw 3/8"-16 x 1"	
10	49-36900	Washer-Bumper Wheel		49	49-30500	Hex Head Bolt 3/8"-16 x 1"	
11	20-25640	Shaft-Bumper Wheel		50	49-36260	Lock Washer 3/8"	
12	20-9270	Bumper Wheel Conditioner		51	49-30550	Hex Head Bolt 3/8"-16 x 1 1/4"	
13	49-33970	Hex head Nut 3/4" -10		52	20-3760	Hydraulic Motor	151-7022
14	20-25800	Level Adjustment Rod		53	43-15390	Bushing	C3109 x 8 x 6
15	49-36300	Flat Washer 1/2"		54	43-15307	Male 90 Elbow	C3529 x 6
16	49-36320	Lock Washer 1/2"		55	40-11452	Quick Coupler-Nipple	PY H3 63 3/8 MAL
17	49-31000	Hex Head Bolt 1/2"-13 x 2"		56	40-11451	Quick Coupler-Coupler	PY H3 62 3/8 FEM
18	49-30550	Hex Head Bolt 3/8" - 16 x 1-1/4"		57	49-33500	Locknut-Nylon 3/8"-16	
19	20-21150	Squeegee Clamp Bar 79 1/2"		58	20-11470	Short Link Pin	02 68404
20	20-21140	Squeegee		59	20-11490	Linch Pin 3/8"	02 68789
21	49-30930	Flat Socket Screw 1/2"-13 x 1 1/2"		60	20-11481	Long Link Pin	
22	20-21330	Auger Bearing Adjuster Plate		61	20-11461	Top Link	02 67830
23	20-1250	4 Hole Flange Bearing 1 1/2"	SF 1 1/2	62	20-25850	Snow Chute	
24	49-33500	Locknut-Nylon 3/8"-16		63	20-21870	Conditioner Cover Plate 21 3/4" X 25 3/4"	
25	49-33915	Locknut-Nylon 1/2"-13		64	20-21871	Conditioner Cover Plate 5 5/8" X 17 3/4"	
26	20-21400	Bottom Auger		65	20-21875	Conditioner Cover Plate 2 1/4" X 17 3/4"	
27	49-30290	Hex Head Bolt 5/16"-18 x 3/4"		66	20-21879	Conditioner Cover Plate 7 7/8" X 15 3/8"	
28	20-21235	Blade Holder Pivot Pin		67	27-1416	Conditioner Cover Plate 2 1/4" X 17 3/4"	
29	20-21225	Blade Adjustment Screw		68	27-1415	Conditioner Cover Plate 7 3/4" X 17 3/4"	
30	20-21230	Blade Adjustment Nut		69	20-21876	Conditioner Cover Plate 21 3/4" X 23 5/8"	
31	20-21300	Blade Holder		70	20-11495	Linch Pin 1/4"	02 69167
32	49-30700	Flat Socket Screw 7/16"-14 x 1 3/4"					
33	49-33800	Hex Head Nut 7/16"-14					
34	20-9548	Blade 80" x 5" x 1/2"					
35	49-21315	Blade Holder Pivot Bolt					
36	20-25650	Blade Angle Sight Bar					
37	20-21271	Arm Pivot Clamp Bracket					
38	20-21282	Blade Level Adjustment Arm					
39	49-30915	Button Sockcap Screw 1/2"-13 x 1 1/4"					

**CONDITIONER - 84" WITH WASH WATER**



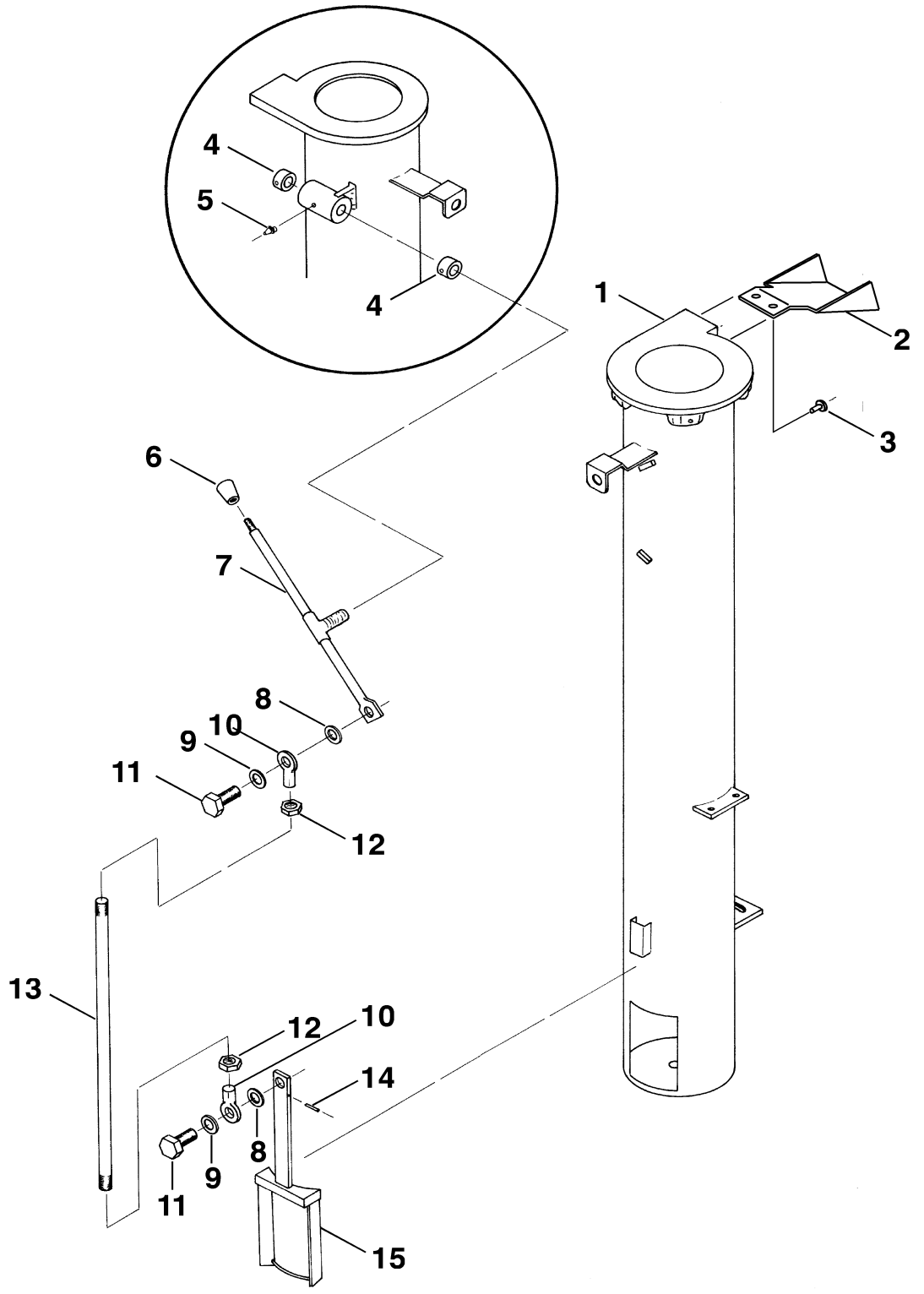




## CONDITIONER - 84" WITH WASH WATER

Ref.#	Part #	Description	OEM #	Ref.#	Part #	Description	OEM #
1	20-25700	Handle-Blade Adjustment Wheel		40	20-21781	Chain Guard	
2	20-25750	Blade Adjustment Wheel		41	20-1360	Drive Chain 32"	
3	49-30307	Socket Cap Screw 5/16"-18 x 1"		42	20-1281	25 Tooth Auger Sprocket	50B25F 1 1/2
4	20-1240	2 Hole Flange Bearing 3/4"	SCJT 3/4	43	49-36990	Socket Set Screw 3/8"-16 x 1/2"	
5	20-21685	Blade Adjustment Crank		44	49-35140	Key 3/8" x 1 1/4"	
6	20-3560	Universal 3/4"	102424SF	45	49-36980	Socket Set Screw 5/16"-18 x 1/2"	
7	49-37800	Split Pin 1/4" x 1 1/2"		46	20-1300	19 Tooth Motor Sprocket	50B19F1
8	20-20001	Conditioner Frame		47	20-20065	Runner-Right (20-20055 Runner left)	
9	49-30500	Hex Head Bolt 3/8"-16 x 1"		48	49-30530	Flat Socket Screw 3/8"-16 x 1"	
10	49-36900	Washer-Bumper Wheel		49	49-30500	Hex Head Bolt 3/8"-16 x 1"	
11	20-25640	Shaft-Bumper Wheel		50	49-36260	Lock Washer 3/8"	
12	20-9270	Bumper Wheel Conditioner		51	49-30550	Hex Head Bolt 3/8"-16 x 1 1/4"	
13	49-33970	Hex head Nut 3/4" -10		52	20-3760	Hydraulic Motor	151-7022
14	20-25800	Level Adjustment Rod		53	43-15390	Bushing	C3109 x 8 x 6
15	49-36300	Flat Washer 1/2"		54	43-15307	Male 90 Elbow	C3529 x 6
16	49-36320	Lock Washer 1/2"		55	40-11452	Quick Coupler-Nipple	PY H3 63 3/8 MAL
17	49-31000	Hex Head Bolt 1/2"-13 x 2"		56	40-11451	Quick Coupler-Coupler	PY H3 62 3/8 FEM
18	49-30550	Hex Head Bolt 3/8" - 16 x 1-1/4"		57	49-33500	Locknut-Nylon 3/8"-16	
19	20-21152	Squeegee Clamp Bar 83"		58	20-11470	Short Link Pin	02 68404
20	20-21140	Squeegee		59	20-11490	Linch Pin 3/8"	02 68789
21	49-30930	Flat Socket Screw 1/2"-13 x 1 1/2"		60	20-11481	Long Link Pin	
22	20-21330	Auger Bearing Adjuster Plate		61	20-11461	Top Link	02 67830
23	20-1250	4 Hole Flange Bearing 1 1/2"	SF 1 1/2	62	20-25850	Snow Chute	
24	49-33500	Locknut-Nylon 3/8"-16		63	20-21869	Conditioner Cover Plate 21 3/4" X 29 3/4"	
25	49-33915	Locknut-Nylon 1/2"-13		64	20-21871	Conditioner Cover Plate 5 5/8" X 17 3/4"	
26	20-21402	Bottom Auger		65	20-21875	Conditioner Cover Plate 2 1/4" X 17 3/4"	
27	49-30290	Hex Head Bolt 5/16"-18 x 3/4"		66	20-21879	Conditioner Cover Plate 7 7/8" X 15 3/8"	
28	20-21235	Blade Holder Pivot Pin		67	27-1416	Conditioner Cover Plate 2 1/4" X 17 3/4"	
29	20-21225	Blade Adjustment Screw		68	27-1415	Conditioner Cover Plate 7 3/4" X 17 3/4"	
30	20-21230	Blade Adjustment Nut		69	20-21876	Conditioner Cover Plate 21 3/4" X 23 5/8"	
31	20-21302	Blade Holder		70	20-11495	Linch Pin 1/4"	02 69167
32	49-30700	Flat Socket Screw 7/16"-14 x 1 3/4"					
33	49-33800	Hex Head Nut 7/16"-14					
34	20-9547	Blade 84" x 5" x 1/2"					
35	49-21315	Blade Holder Pivot Bolt					
36	20-25650	Blade Angle Sight Bar					
37	20-21271	Arm Pivot Clamp Bracket					
38	20-21282	Blade Level Adjustment Arm					
39	49-30915	Button Soccap Screw 1/2"-13 x 1 1/4"					

**SNOW BREAKER- Manual**

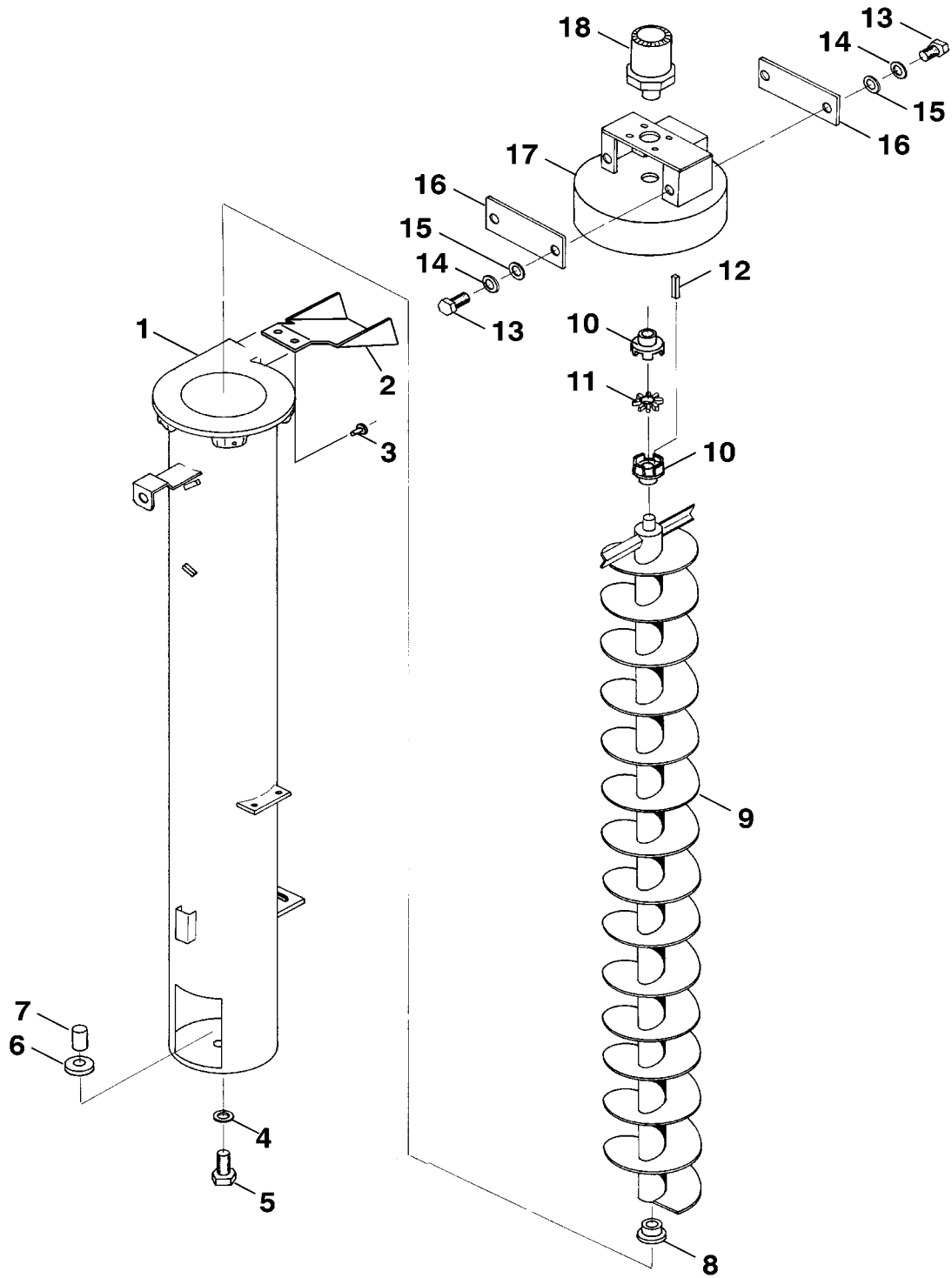




## SNOW BREAKER- Manual

Ref. #	Part #	Description	OEM #
1	25-24150	Elevator Tube	
2	25-24552	Snow Shield	
3	49-30110	Round Socket Machine Screw 10/24" x 1/2"	
4	25-17010	Zinc Shaft Collar 1/2"	A0500
5	49-19030	Grease Fitting 1/8-27 Str.	1610
6	25-25595	Knob	
7	25-24110	Snow Breaker Arm	
8	49-36250	Flat Washer 3/8"	
9	49-36260	Lockwasher 3/8"	
10	25-51855	Rod End 3/8"	VCW6
11	49-30505	Hex Head Bolt 3/8"-16 x 1 Grade 8	
12	49-33600	Hex Head Nut 3/8"-24	
13	25-24060	Snow Breaker Rod	
14	49-37780	Split Pin 3/16" x 1 1/2"	
15	25-24210	Snow Breaker	

**VERTICAL AUGER - Manual**

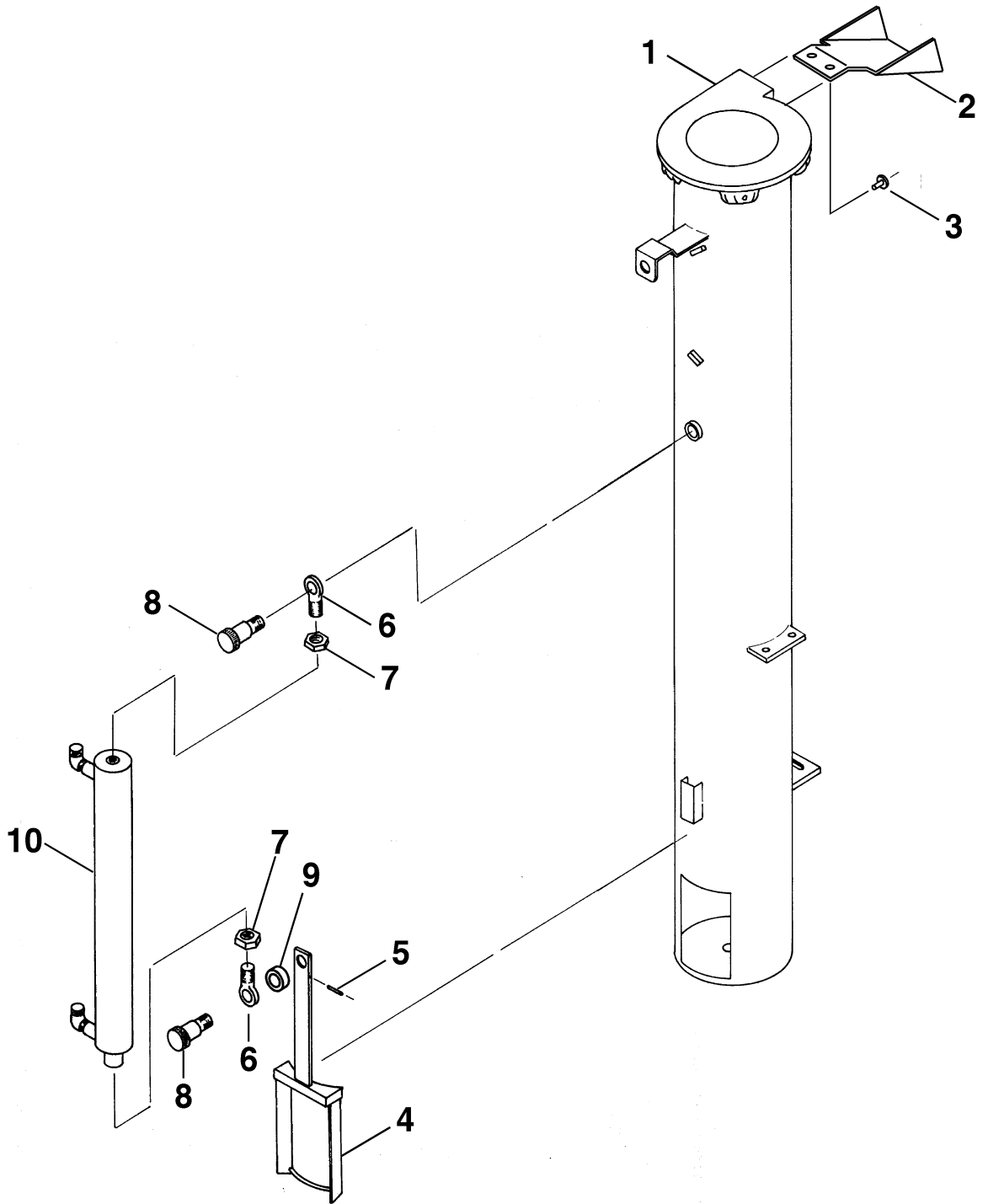




## VERTICAL AUGER - Manual

Ref. #	Part #	Description	OEM #
1	25-24150	Elevator Tube	
2	25-24552	Snow Shield	
3	49-30110	Round Socket Machine Screw 10/24" x 1/2"	
4	49-36320	Lockwasher 1/2"	
5	49-30920	Hex Head Bolt 1/2"-13 x 1-1/2"	
6 & 7	25-24250	Stub Shaft ( Washer & Shaft)	
8	25-695	Bushing	
9	25-24300	Vertical Auger	
10	25-24350	Coupling Half	Rotex Hub 28 Alum
11	25-24400	Gear Ring	Rotex Insert 28STD
12	49-35100	Key 1/4" x 1"	
13	49-30300	Hex Head Bolt 5/16" x 1"	
14	49-36265	Lockwasher 5/16"	
15	49-36200	Flat Washer 5/16"	
16	25-24450	Cover Plate	
17	25-24500	Blower Housing	
18	25-4000	Hydraulic Motor	151-7021

**SNOW BREAKER - Automatic**

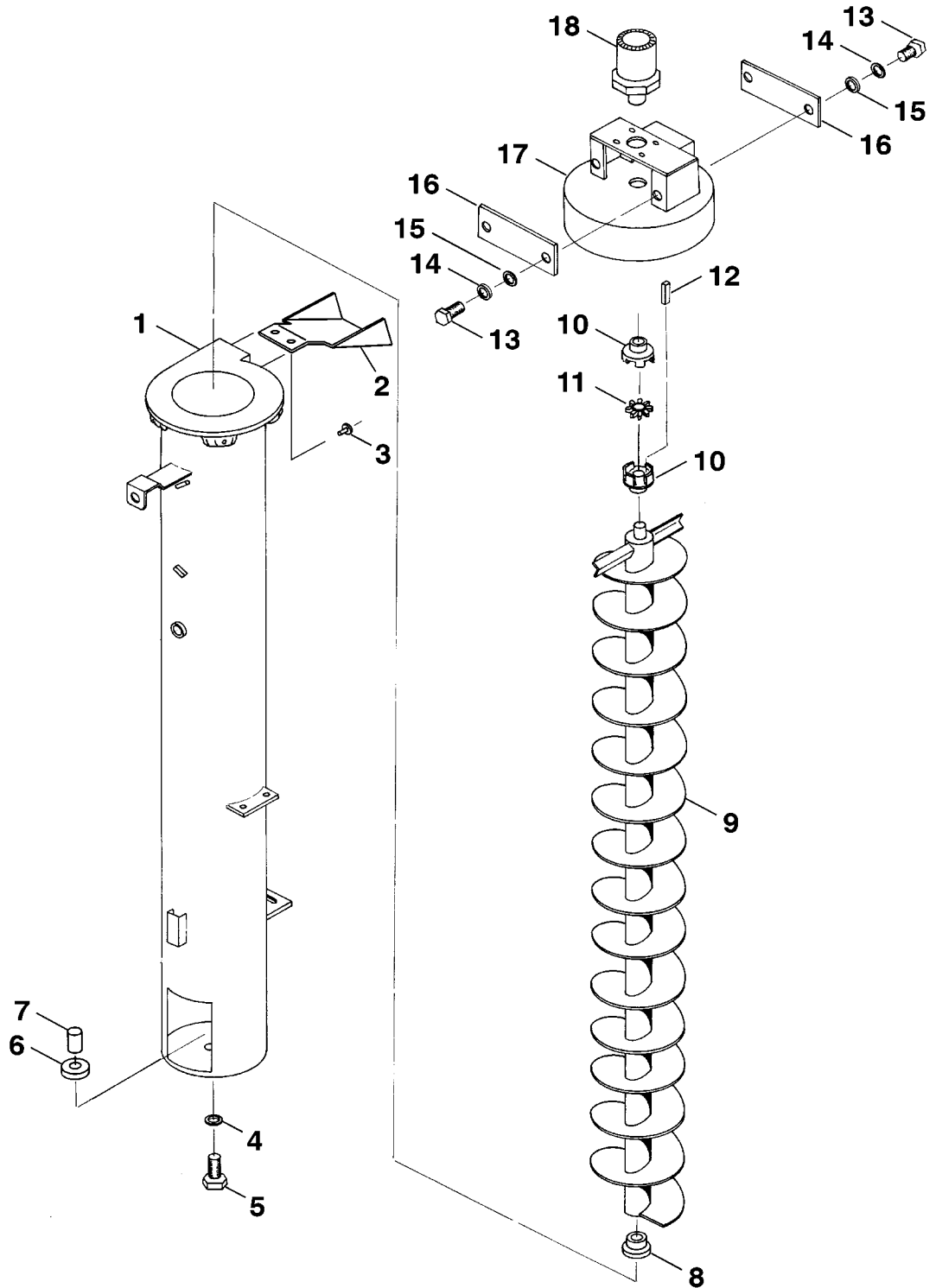




## SNOW BREAKER - Automatic

Ref. #	Part #	Description	OEM #
1	25-24165	Elevator Tube-Automatic	
2	25-24552	Snow Shield	
3	49-30110	Round Socket Machine Screw 10/24" x 1/2"	
4	25-24210	Snow Breaker	
5	49-37780	Split Pin 3/16 " x 1 1/2"	
6	35-17280	Rod End 1/2"	VCM8
7	49-33920	Hex Jam Nut 1/2" -20	
8	49-30055	Stripper Bolt 1/2" x 5/8"	
9	25-24142	Automatic Snow Breaker Spacer	
10	25-24144	Snow Breaker Cylinder	SX 1997

**VERTICAL AUGER - Automatic**



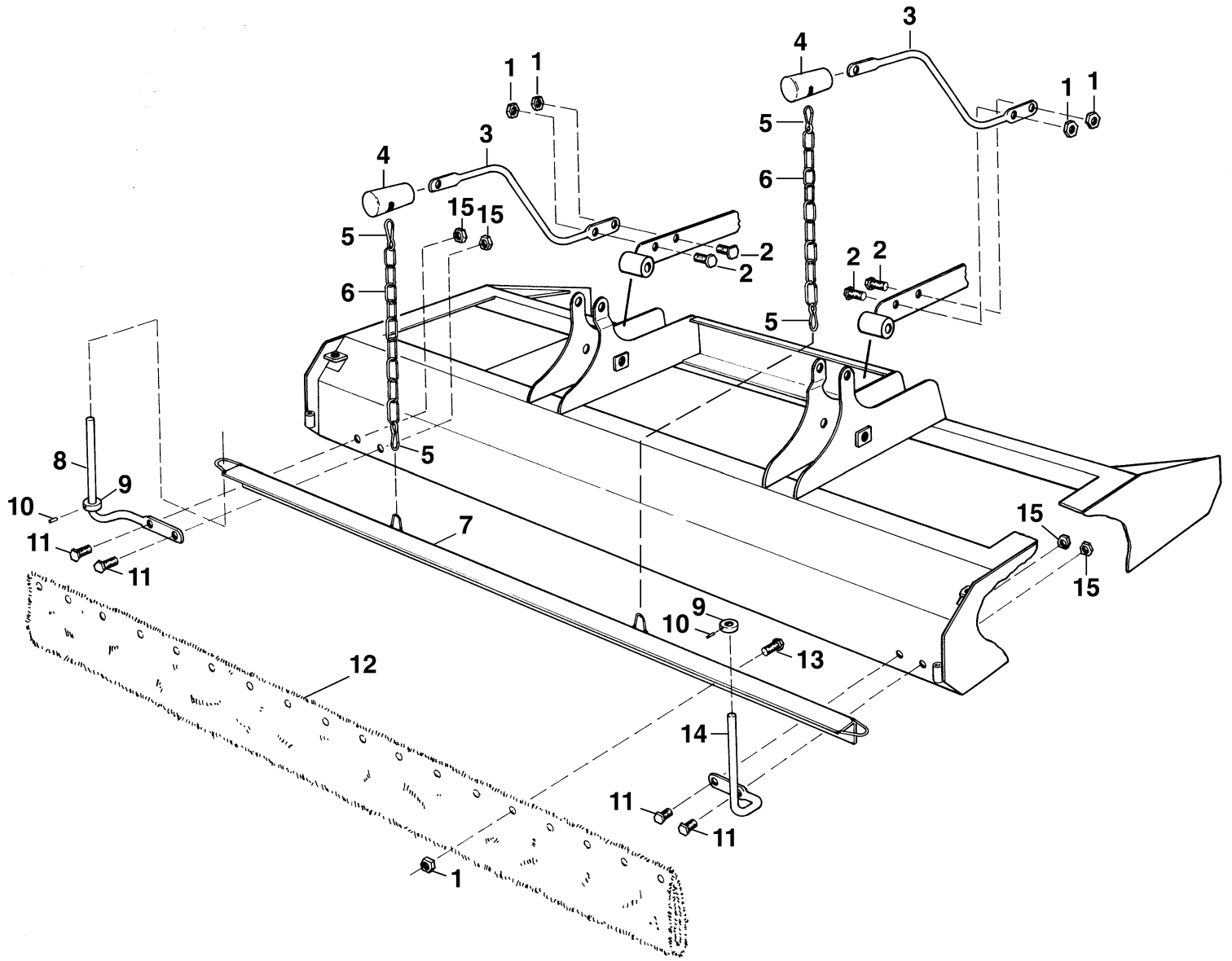




## VERTICAL AUGER - Automatic

Ref. #	Part #	Description	OEM #
1	25-24165	Elevator Tube - Automatic	
2	25-24552	Snow Shield	
3	49-30110	Round Socket Machine Screw 10/24" x 1/2"	
4	49-36320	Lockwasher 1/2"	
5	49-30920	Hex Head Bolt 1/2"-13 x 1-1/2"	
6 & 7	25-24250	Stub Shaft ( Washer & Shaft)	
8	25-695	Bushing	
9	25-24300	Vertical Auger	
10	25-24350	Coupling Half	Rotex Hub 28 ALUM
11	25-24400	Gear Ring	Rotex Insert 28 STD
12	49-35100	Key 1/4" x 1"	
13	49-30300	Hex Head Bolt 5/16" x 1"	
14	49-36265	Lockwasher 5/16"	
15	49-36200	Flat Washer 5/16"	
16	25-24450	Cover Plate	
17	25-24500	Blower Housing	
18	25-4000	Hydraulic Motor	151-7021

TOWEL BAR LIFT

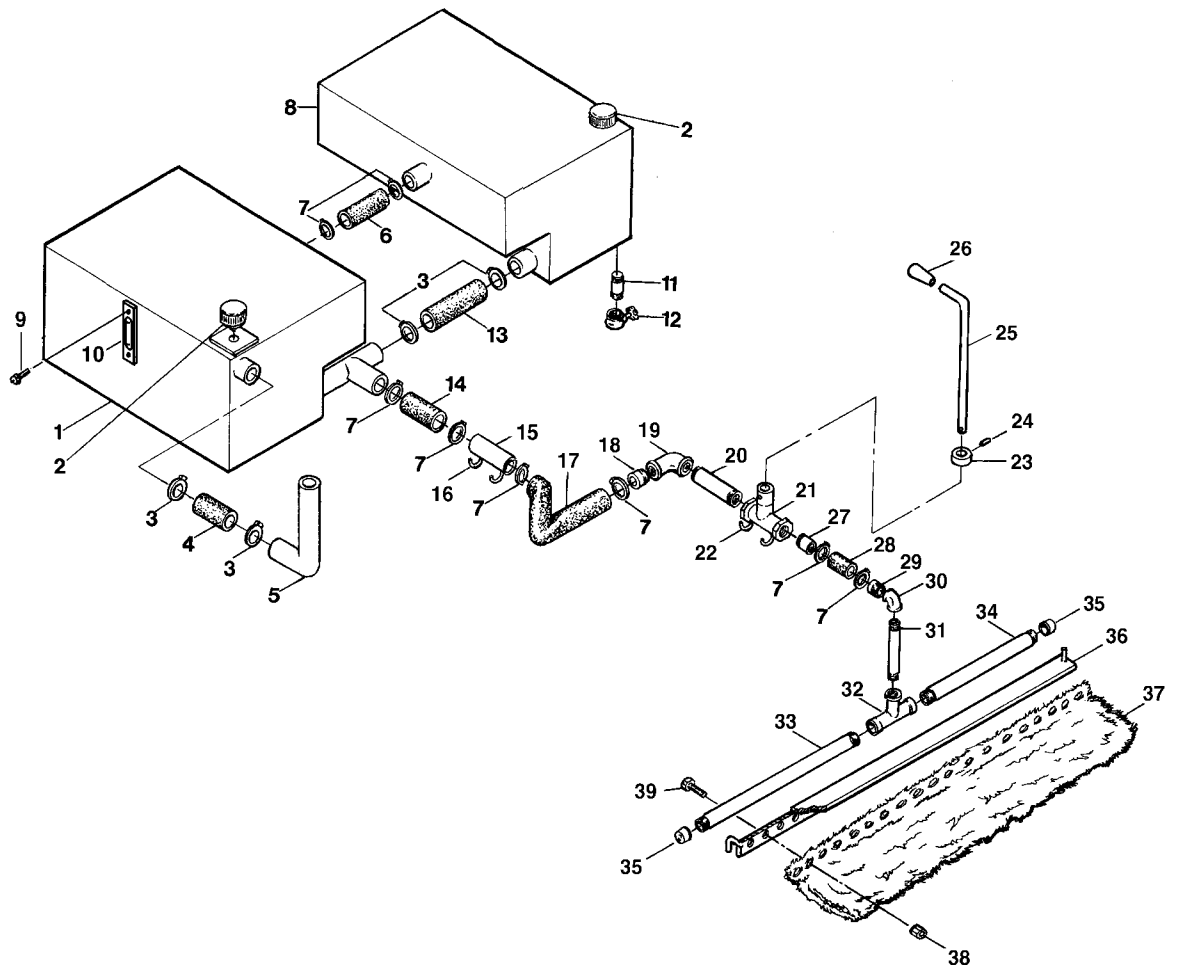




## TOWEL BAR LIFT

1	49-33500	Locknut 3/8"-16	
2	49-30575	Hex Head Bolt 3/8"-16 x 1 3/4"	
3	30-22010	Towel Lift Arm Rod	
4	30-22015	Towel Bar Arm Bumper	
5	49-38100	Wire Snaps 2 1/4"	7340-3/8"
6	30-22100	Plated Chain	
7	30-21180	Towel Bar Lift holder (80" Conditioner)	
	30-21181	Towel Bar Lift holder (84" Conditioner)	
8	30-22000	Towel Lift Guide (Left)	
9	25-17010	Shaft Collar 1/2" Zinc	A0500 ( 1/2")
10	49-36970	Socket Set Screw 1/4"-20 x 1/4"	
11	49-30300	Hex Head Bolt 5/16" x 1"	
12	30-21160	Spreader Cloth (80" conditioner)	
	30-21161	Spreader Cloth (84" conditioner)	
13	49-30500	Hex Head Bolt 3/8"-16 x 1"	
14	30-22001	Towel Lift Guide (Right)	
15	49-33220	Locknut 5/16"-18	

**WATER SYSTEM - 80"**

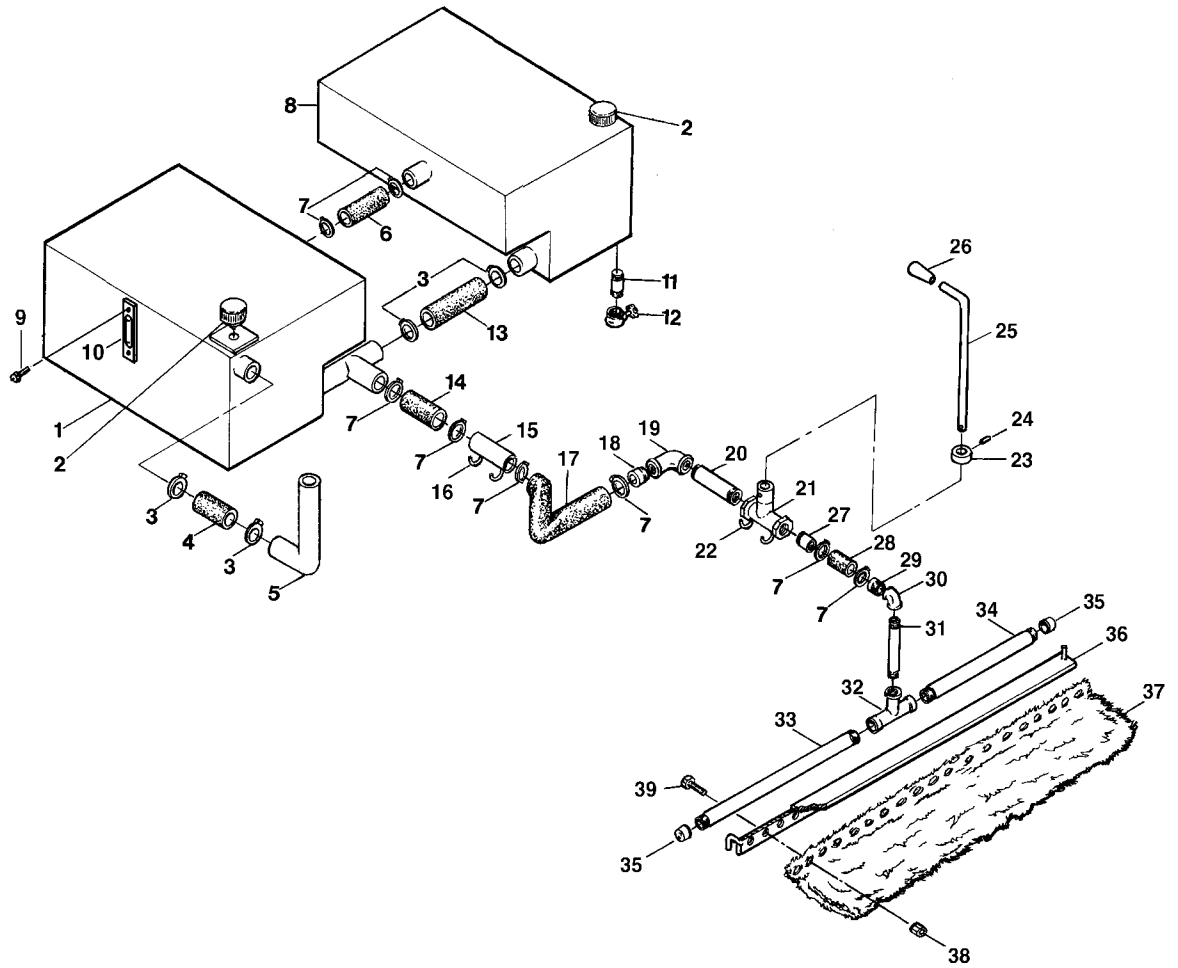




## WATER SYSTEM - 80" CONDITIONER

Ref. #	Part #	Description	OEM #
1	30-9400	Water Tank Left 2000 (30-9420 - 3000, 30-9410-2000 S/S, 30-9430-3000 S/S)	
2	30-3713	Air Breather, Water Tank	BPS40 N12
3	30-3340	Gear Clamp 2 1/2"	HF 40
4	30-3305	Hose Pipe-Tank 2 1/2" x 21" -2000 (30-3294 2 1/2" x 28" 3000)	
5	30-25572	Platform & Water Fill Pipe	
6	30-3310	Hose Tank - Tank 1 3/4" x 16"	
7	30-3350	Gear Clamp 1-3/4"	HF 32
8	30-9405	Water Tank Right 2000 (30-9425-3000, 30-9415-2000 S/S, 30-9435-3000 S/S)	
9	30-3722	Sight Gauge Bolt	
10	30-3721	Sight Gauge - Water Tank	SNA 3B/S/O
11	30-5266	Nipple 3/4" x 3" Galv..	
12	60-1062	Water Tap Ball Valve	3/4 Neo Ball Valve 1PT
13	30-3285	Hose Tank - Tank 2 1/2" x 20"	
14	30-3327	Hose Tank - Pipe 1 3/4" x 23" 2000 (30-3335 1 3/4" x 36" 3000)	
15	30-25562	Water Pipe 1 1/4" x 17" 2000 (30-25563 1 1/4" x 21" 3000)	
16	30-17040	U-Bolt 1 1/4" Pipe	5123
17	30-3194	Hose To Sled 17"	
18	30-5278	Water Pipe 1 1/4" x 3"	
19	30-5350	90° Elbow 1 1/4" Galv	
20	30-5290	Water Pipe 1 1/4" x 16"	
21	30-5255	Water Tap	
22	30-17050	U-Bolt 1 1/2" Pipe	2124X-B
23	49-37880	Shaft Collar 5/8"	A0620
24	49-37800	Split Pin 1/4" x 1 1/2"	
25	30-25625	Water Tap Rod 45	
26	30-25620	Grip-Water tap Rod	
27	30-5275	Water Pipe 1 1/4" x 2"	
28	70-3330	Water Hose 1 3/4" x 3 1/2"	
29	30-5275	Water Pipe 1 1/4" x 2"	
30	30-5330	90° Elbow 1 1/4" x 1" Galv	
31	30-5381	Water Pipe 1" x 8"	
32	30-5320	Tee 1" Galv	
33	30-5371	Flood Pipe 34 1/2"	
34	30-5361	Flood Pipe 43 1/2"	
35	30-5310	End Cap 1" Galv	
36	30-21170	Towel Bar Holder	
37	30-21160	Spreader Cloth	
38	49-33500	Locknut - Nylon 3/8"-16	
39	49-30500	Hex Head Bolt 3/8"-16 x 1"	

**WATER SYSTEM - 84"**

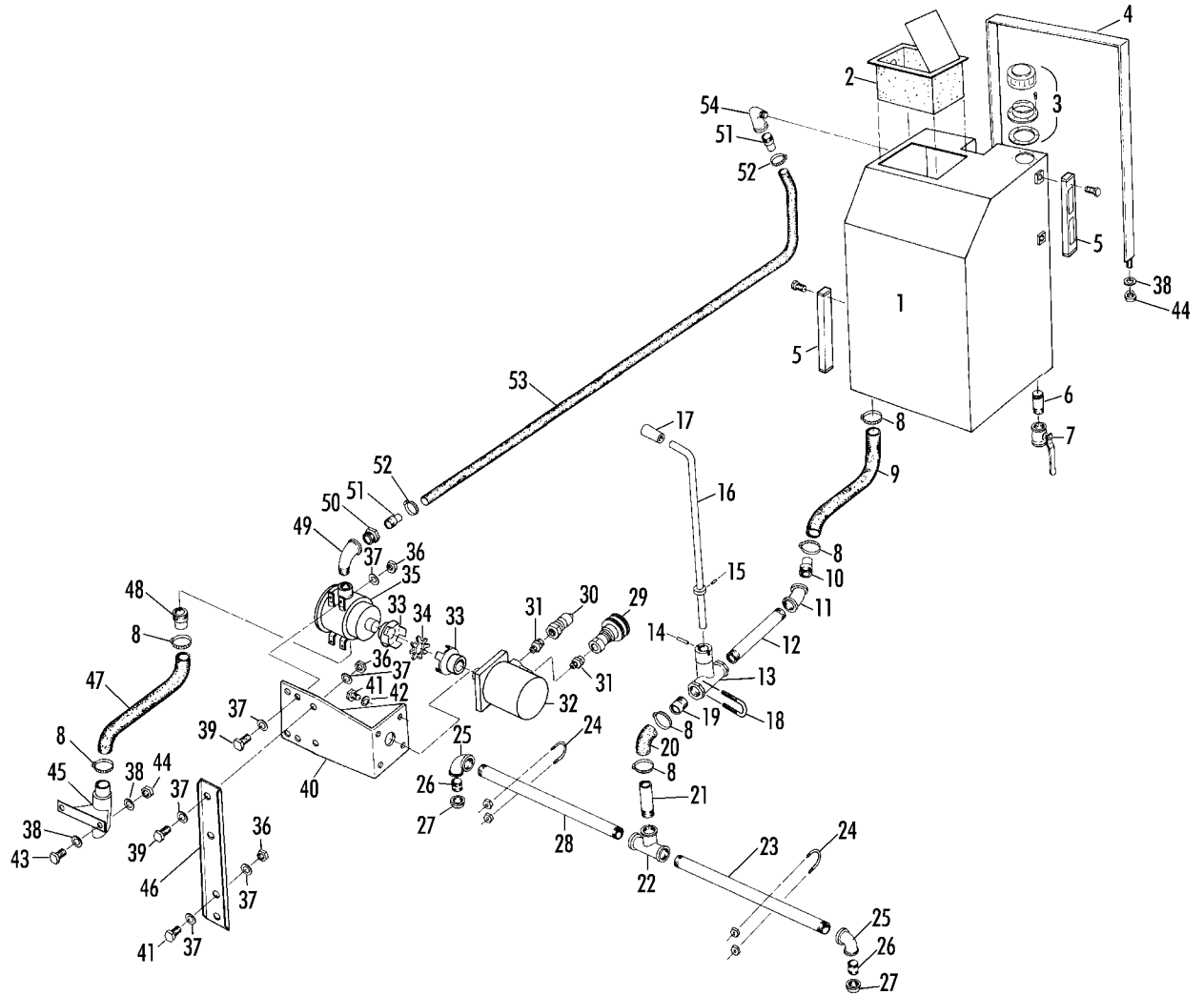




## WATER SYSTEM - 84" CONDITIONER

Ref. #	Part #	Description	OEM #
1	30-9400	Water Tank Left 2000 (30-9420 - 3000, 30-9410-2000 S/S, 30-9430-3000 S/S)	
2	30-3713	Air Breather, Water Tank	BPS40 N12
3	30-3340	Gear Clamp 2 1/2"	HF 40
4	30-3305	Hose Pipe-Tank 2 1/2" x 21" -2000 (30-3294 2 1/2" x 28" 3000)	
5	30-25572	Platform & Water Fill Pipe	
6	30-3310	Hose Tank - Tank 1 3/4" x 16"	
7	30-3350	Gear Clamp 1-3/4"	HF 32
8	30-9405	Water Tank Right 2000 (30-9425-3000, 30-9415-2000 S/S, 30-9435-3000 S/S)	
9	30-3722	Sight Gauge Bolt	
10	30-3721	Sight Gauge - Water Tank	SNA 3B/S/O
11	30-5266	Nipple 3/4" x 3" Galv.	
12	60-1062	Water Tap Ball Valve	3/4 Neo Ball Valve 1PT
13	30-3285	Hose Tank - Tank 2 1/2" x 20"	
14	30-3327	Hose Tank - Pipe 1 3/4" x 23" 2000 (30-3335 1 3/4" x 36" 3000)	
15	30-25562	Water Pipe 1 1/4" x 17" 2000 (30-25563 1 1/4" x 21" 3000)	
16	30-17040	U-Bolt 1 1/4" Pipe	5123
17	30-3194	Hose To Sled 17	
18	30-5278	Water Pipe 1 1/4" x 3"	
19	30-5350	90° Elbow 1 1/4" Galv.	
20	30-5290	Water Pipe 1 1/4" x 16"	
21	30-5255	Water Tap	
22	30-17050	U-Bolt 1 1/2" Pipe	2124X-B
23	49-37880	Shaft Collar 5/8"	A0620
24	49-37800	Split Pin 1/4" x 1 1/2"	
25	30-25625	Water Tap Rod 45	
26	30-25620	Grip-Water tap Rod	
27	30-5275	Water Pipe 1 1/4" x 2"	
28	70-3330	Water Hose 1 3/4" x 3 1/2"	
29	30-5275	Water Pipe 1 1/4" x 2"	
30	30-5330	90° Elbow 1 1/4" x 1" Galv.	
31	30-5381	Water Pipe 1" x 8"	
32	30-5320	Tee 1" Galv.	
33	30-5372	Flood Pipe 38 1/2"	
34	30-5361	Flood Pipe 43 1/2"	
35	30-5310	End Cap 1" Galv.	
36	30-21171	Towel Bar Holder	
37	30-21161	Spreader Cloth	
38	49-33500	Locknut - Nylon 3/8"-16	
39	49-30500	Hex Head Bolt 3/8"-16 x 1"	

WASH WATER SYSTEM SCHEMATIC



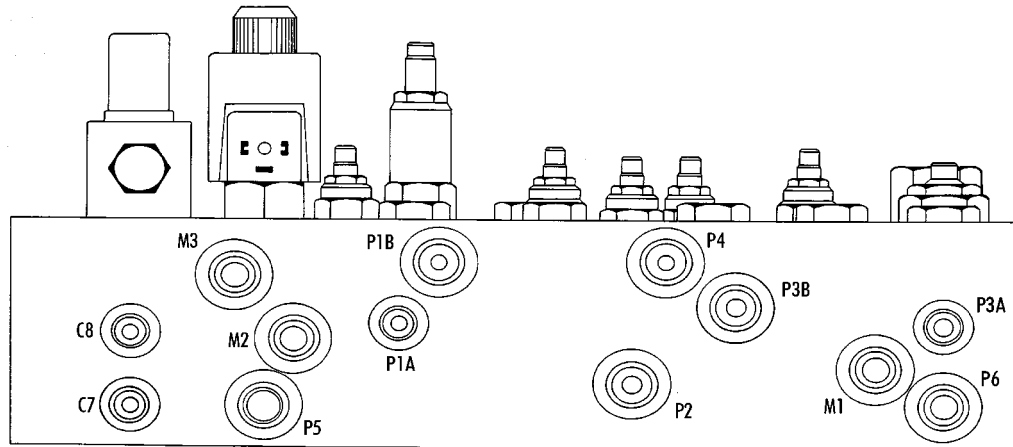




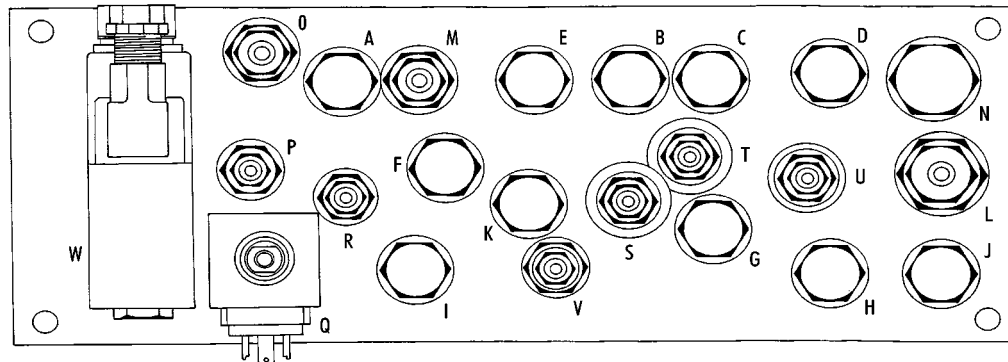
## WASH WATER SYSTEM

Ref.#	Part #	Description	OEM #	Ref.#	Part #	Description	OEM #
1	27-1546	Wash Water tank		40	27-1530	Wash water Pump Mount	
2	27-1398	Strainer Basket Assembly		41	49-30500	Hex head Bolt 3/8"-16 x 1"	
3	30-3710	Air Breather	ABB40 N	42	49-36260	Lock Washer 3/8"	
4	27-1355	Tank Hold Down Bracket		43	49-30300	Hex head Bolt 5/16" x 1"	
5	30-3721	Sight Gauge	SNA 3B/S/0	44	49-33220	Locknut Nylon 5/16"-18	
6	30-5266	Nipple 3/4" x 3" Galv.		45	27-1370	Suction Tube	
7	60-1062	Water Tap	3/4" NEO Ball Valve 1PT	46	27-1560	Plate Motor Mount	
8	49-3360	Gear Clamp	HF24	47	27-1358	Water Hose Sled 11" Vac	
9	27-1357	Hose To Sled 26 " Vac		48	30-5278	Water Pipe 1 1/4" x 3"	
10	27-1550	Water Pipe 1 1/4" x 2 1/2"		49	27-1450	Street Elbow 1 1/4" Galv.	
11	27-1480	45° Elbow 1 1/4" Galv.		50	27-1435	Bushing 1 1/4" x 3/4" Galv.	
12	27-1445	Nipple 1 1/4" x 5 " Galv.		51	27-1430	Hose End 3/4" Male	
13	30-5255	Water Tap		52	27-1250	Gear Clamp 5/8"	HF10
14	49-37800	Split Pin 1/4" x 1 1/2"		53	27-1406	Clear braid Hose 3/4" x 70"	
15	49-37880	Shaft Collar 5/8"	A0620	54	27-1460	Street Elbow 3/4" Galv.	
16	30-25625	Water tap Rod 45"					
17	30-25620	Grip - Water tap Rod					
18	30-17050	U-Bolt 1 1/2" Pipe	2124X-13				
19	30-5275	Water Pipe 1 1/4" x 2"					
20	27-1373	Water Hose 1 1/2"-90 x 7"	4261-0267				
21	27-1553	Water Pipe 1 1/4" x 4"					
22	27-1495	Tee 1" x 1" x 1 1/4"					
23	27-1512	Water Pipe 1" x 31 1/2"					
24	30-17030	U-Bolt 1" Pipe	2122X-B				
25	27-1465	90° Elbow 1" x 3/4" Galv.					
26	27-1500	Nipple 3/4" x 1 1/2" Galv.					
27	27-1510	Pipe Cap 3/4" Galv.					
28	27-1513	Pipe 1" x 40 1/2" (80" Conditioner) Pipe 1" x 44 1/2" (84" Conditioner)					
29	40-11451	Quick Coupler Coupler	PY H3 62 3/8" FEM				
30	40-11452	Quick Coupler Nipple	PY H3 63 3/8" MAI				
31	43-15430	Hex Nipple	C3069X8X6				
32	25-4000	Hydraulic Motor	151-7021				
33	25-24350	Coupling Half	Rotex Hub 28 ALUM				
34	25-24400	Gear ring	Rotex Insert 28 STD				
35	27-1540	Wash Water Pump	6400-0008				
36	49-33500	Locknut Nylon 3/8"-16					
37	49-36250	Flat Washer 3/8"					
38	49-36200	Flat Washer 5/16"					
39	49-30550	Hex Head Bolt 3/8"-16 x 1 1/4"					

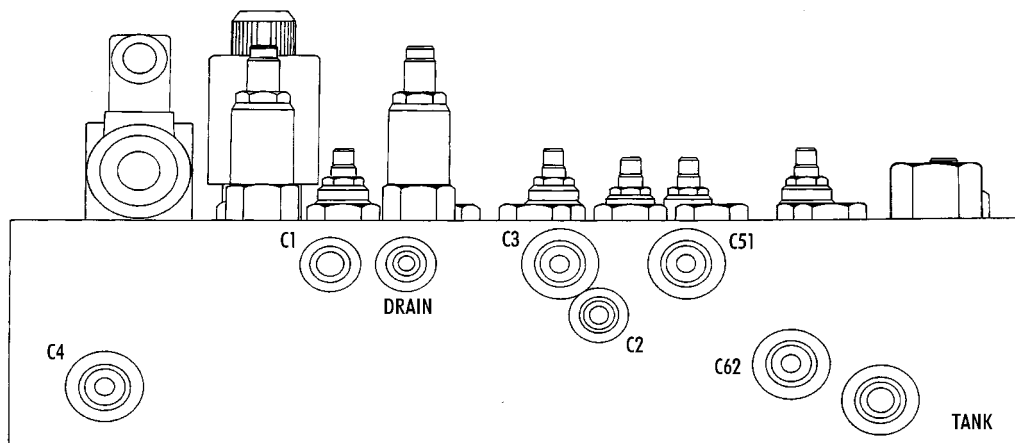
**MANIFOLD BLOCK**



**BACK MAIN MANIFOLD BLOCK**



**MAIN MANIFOLD BLOCK**



**FRONT MAIN MANIFOLD BLOCK**



## MANIFOLD BLOCK

Hydraulic Hose to Connector Sequence On the back of the Main Manifold Bloc

Connector #	2000 Hose #	2500 Hose #	3000 Hose #	3500 Hose #
C4	58	43	58	42
C1	60	45	60	44
DRAIN	57	52	57	52
C3	59	44	59	43
C2	60	45	60	44
C51	61	46	61	45
C51	63	32	63	47
C62	62	47	62	46
C62	64	48	64	48
TANK	56	47	56	46

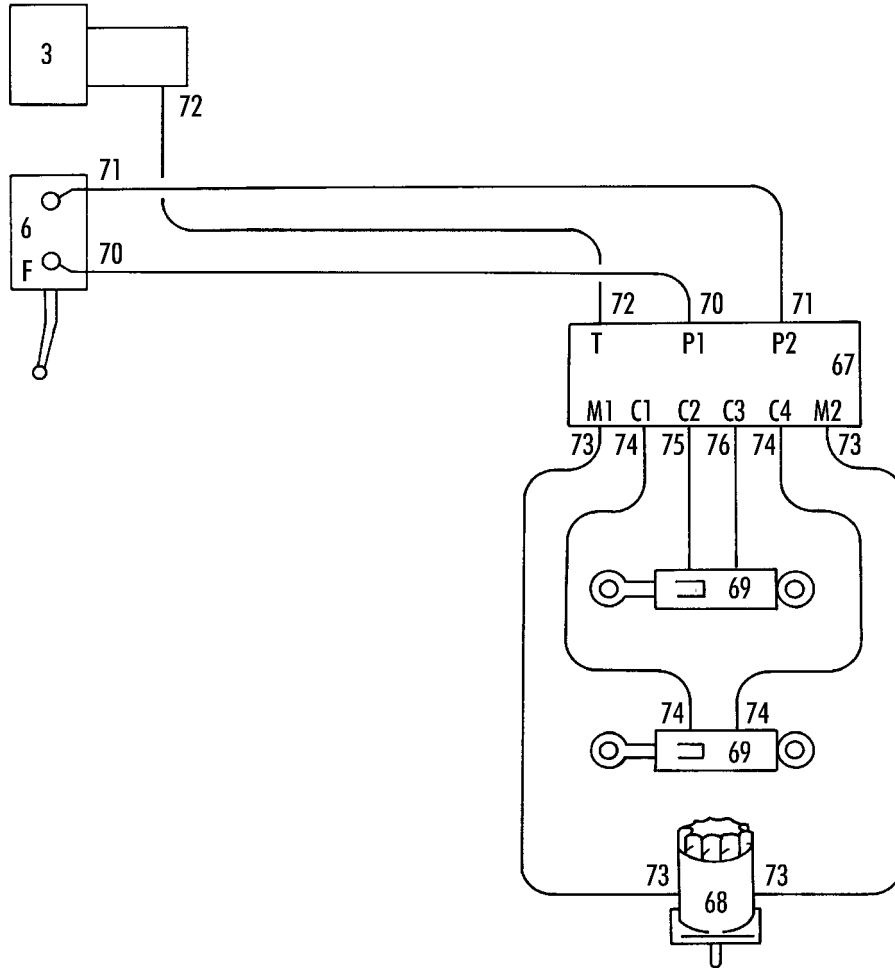
Main Manifold Block Components Overhead view

Adjuster	Function	Supplier Part No.	Description
A	Bin Cover Up By Pass	CP100-1-B-0-005	Check Valve
B	Bin Cover Down By Pass	CP100-1-B-0-005	Check Valve
C	Sled Up By Pass	CP100-1-B-0-005	Check Valve
D	Sled Down By Pass	CP100-1-B-0-005	Check Valve
E	Dump Up By Pass	CP100-1-B-0-005	Check Valve
F	Bin Hold Up	CP450-2L-B-0-030-S	Pilot Operated Check
G	Sled Hold Up	CP450-2L-B-0-030-S	Pilot Operated Check
H	Sled Hold Down	CP450-2L-B-0-030-S	Pilot Operated Check
I	Dump Hand Pump By Pass	CP100-1-B-0-005	Check Valve
J	Sled Hand Pump By Pass	CP100-1-B-0-005	Check Valve
K	Sequence Valve By Pass	CP100-1-B-0-005	Check Valve
L	Elevator Speed Control	CP611-2-B-0-E	Needle Valve
M	Sequence Valve Bin Cover	CP240-BL-B-0-E-C-050	Sequence Valve
N	Elevator Over Speed OPressure Relief Valve	CP701-1-B-0-E CP240-BL-B-0-E-A-015	Differential Sensing Valve Relief Valve
P	Automatic Snow Breaker Speed Control	CP618-6-B-0-E	Flow Control Valve
Q	Wash Water Valve	CP521-1-B-0-12D-H	Solenoid Valve
R	Bin Cover Speed Down	CP618-6-B-0-E	Flow Control Valve
S	Bin Cover Speed Up	CP618-6-B-0-E	Flow Control Valve
T	Conditioner Speed Down	CP618-6-B-0-E	Flow Control Valve
U	Conditioner Speed Up	CP618-6-B-0-E	Flow Control Valve
V	Bin Speed Down	CP618-6-B-0-E	Flow Control Valve
W	Automatic Snow Breaker Valve	CP618-6-B-0-E	Snow Breaker Valve

Hydraulic Hose to Connector Sequence On the front of the Main Manifold Block

Input Connector on Main Manifold Block	2000 Hose #	2500 Hose #	3000 Hose #	3500 Hose #
P1A	65	34	66	33
P1B	68	55	68	54
P2	67	54	67	53
P4	67	54	67	53
P3B	69	56	69	55
M1	70	57	70	56
P3A	66	49	65	49
P6	70	57	70	56

## BOARD BRUSH HYDRAULIC SCHEMATIC

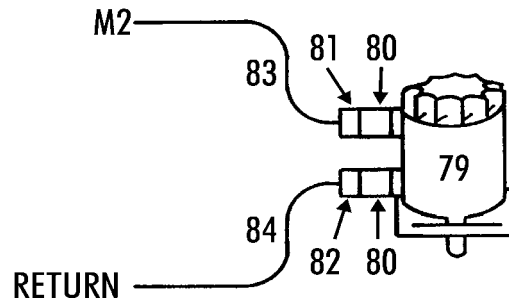
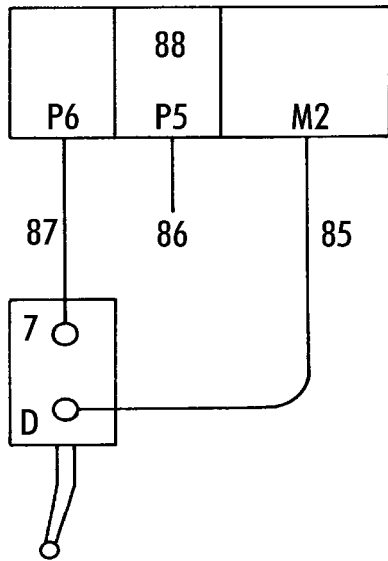
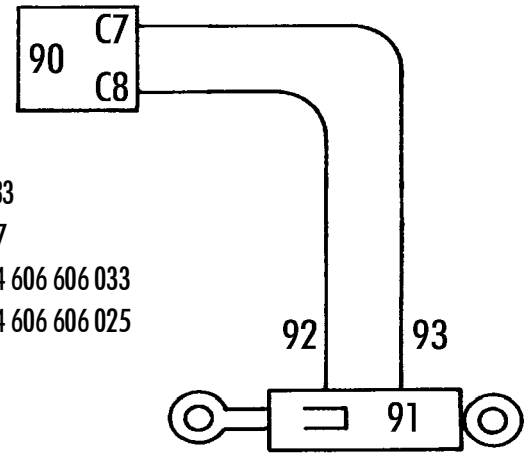


### 3500 Board Brush

3	40-3980	Hycon High Pressure Filter	LFBN/HC110620A1.0/5-BYP
6	40-5200	5 Section Valve Bank	3459204134
67	35-3500	Board Brush Manifold Block	CP11516
68	25-4000	Hydraulic Motor	151-7021
69	35-20055	Board Brush Cylinder	BX 1997
70	42-14259	3/8 Hydraulic Hose 60	H14504 608 608 060
71	42-14236	3/8 Hydraulic Hose 56	H14504 608 608 056
72	42-14018	1/4 Hydraulic Hose 26	H14504 606 606 026
73	42-14054	1/4 Hydraulic Hose 74	H14504 606 606 074
74	42-14054	1/4 Hydraulic Hose 51	H14504 606 606 051
75	42-14207	1/4 Hydraulic Hose 28	H14504 608 608 028
76	42-14215	1/4 Hydraulic Hose 25	H14504 608 608 025

## Snow Breaker

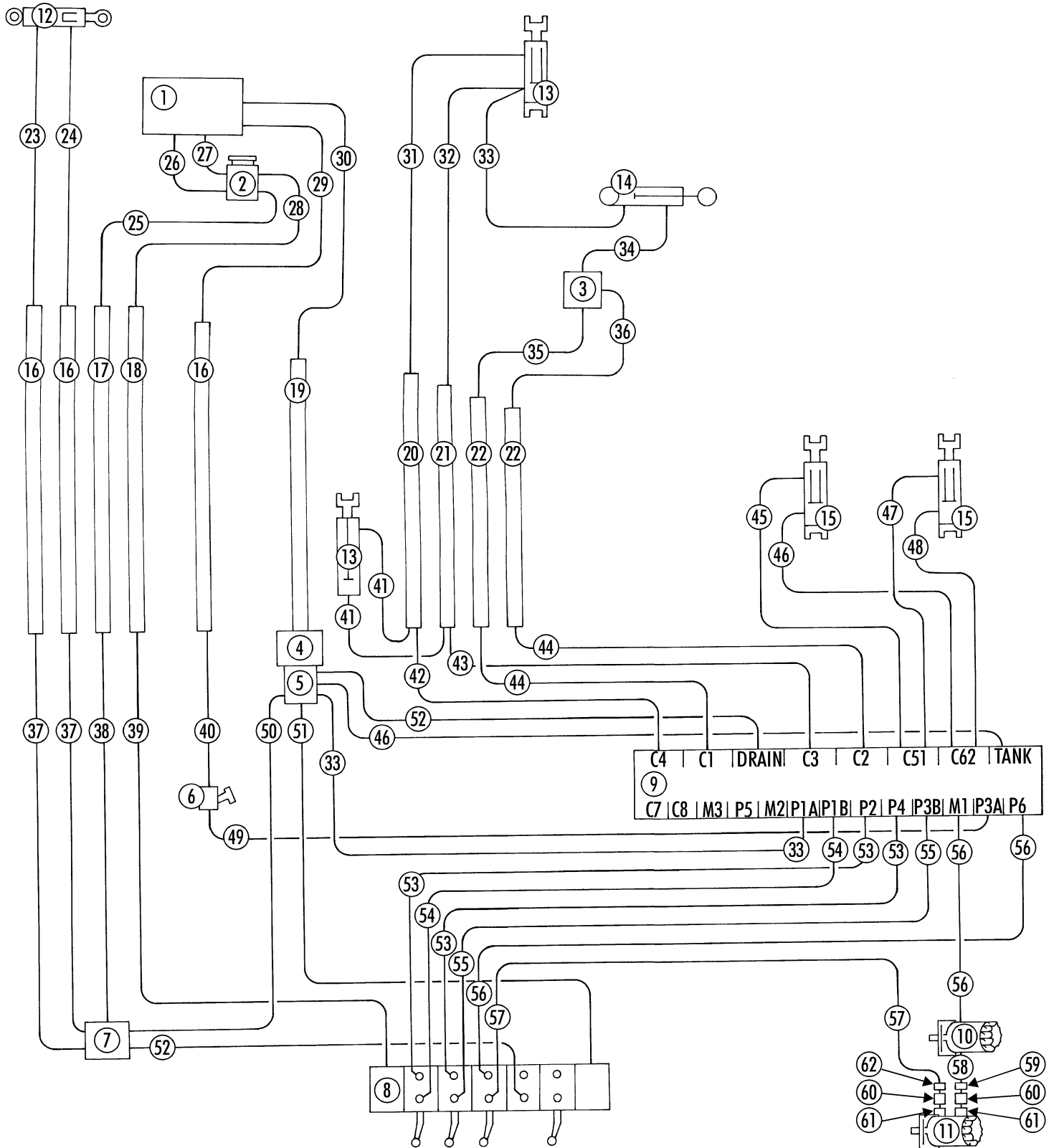
90	40-2000	Main Manifold Block with w/sb	CP11483
91	25-24144	Snow Breaker Cylinder	SX 1997
92	42-14023	Hydraulic Hose 1/4" x 33"	H14504 606 606 033
93	42-14021	Hydraulic Hose 1/4" x 25"	H14504 606 606 025



## Wash Water

6	40-5200	Valve bank 5 sections	3459204134
79	25-4000	Hydraulic Motor	151-7021
80	43-15430	Hex Nipple	C3069x8x6
81	40-11452	Quick Coupler Nipple	PY H3 63 3/8 MAL
82	40-11451	Quick Coupler Coupler	PY H3 62 3/8 FEM
83	42-14270	Hydraulic Hose 3/8" x 45"	H14506 608 106 045
84	42-14277	Hydraulic Hose 3/8" x 62"	H14506 608 106 062
85	42-14209	Hydraulic Hose 3/8" x 49"	H14506 608 608 049
86	42-14272	Hydraulic Hose 3/8" x 48"	H14506 608 106 048
87	42-14221	Hydraulic Hose 3/8" x 48"	H14506 608 608 053
88	40-2000	Main Manifold Block with w/w	CP11483

## HYDRAULIC COMPONENTS SCHEMATIC 3500





## HYDRAULIC COMPONENTS 3500

1	41-9490	Oil Tank		40	42-14040	Hydraulic Hose 1/4" x 45"	H14504 606 606 045
2	40-3932	Hydraulic Pump Tandem Double	1PX230120CPSJJB	41	42-14150	Hydraulic Hose 3/8" x 21"	H14506 608 608 021
3	40-2010	Manifold Body		42	42-14105	Hydraulic Hose 3/8" x 14 1/2"	H14506 608 608 015
	40-2015	Manifold Pilot Operated Check	CP450-2L-B-0-030-S	43	42-14080	Hydraulic Hose 3/8" x 12"	H14506 608 608 012
4	40-3980	Hycon High pressure Filter	LFBN/HC110G20A1.0/5BYP	44	42-14004	Hydraulic Hose 1/4" x 13"	H14504 606 606 013
5	41-25735	Tee Off Block		45	42-14192	Hydraulic Hose 3/8" x 33"	H14506 608 608 033
6	41-9700	Emergency Hand Pump		46	42-14175	Hydraulic Hose 3/8" x 29"	H14506 608 608 029
7	40-3801	Steering Unit	30235 94	47	42-14074	Hydraulic Hose 3/8" x 11"	H14506 608 608 011
8	40-5200	5 Section Valve Bank	3459204134	48	42-14055	Hydraulic Hose 1/4" x 43"	H14504 606 606 043
9	40-2001	Main Manifold Block	CP11483-1	49	42-14261	Hydraulic Hose 3/8" x 62"	H14506 608 608 062
10	25-4000	Hydraulic Motor	151-7021	50	42-14345	Hydraulic Hose 3/4" x 50 SB	H14512 612 612 050
11	20-3760	Hydraulic Motor	151-7022	51	42-14007	Hydraulic Hose 1/4" x 17"	H14506 608 608 017
12	40-20046	Power Steering Cylinder		52	42-14289	Hydraulic Hose 1/2" x 18" DB	H14508 608 608 018
13	40.20020	Dump Cylinder		53	42-14209	Hydraulic Hose 3/8" x 49"	H14506 608 106 049
14	40-20060	Door Cylinder	DLX 97	54	42-14204	Hydraulic Hose 3/8" x 47"	H14506 608 608 047
15	40-20030	Sled Cylinder		55	42-14215	Hydraulic Hose 3/8" x 50"	H14506 608 608 050
16	41-27023	Oil Pipe 1/4" x 73"		56	42-14221	Hydraulic Hose 3/8" x 53"	H14506 608 608 053
17	41-27038	Oil Pipe 3/4" x 51"		57	42-14281	Hydraulic Hose 3/8" x 91"	H14506 608 106 091
18	41-25785	Oil Pipe 3/4" x 75"		58	42-14285	Hydraulic Hose 3/8" x 78"	H14506 608 106 078
19	41-27001	Oil Pipe 3/4" x 64"		59	40-11451	Quick Coupler-coupler	PY H3 62 3/8" FEM
20	41-27026	Oil Pipe 3/8" x 64"		60	43-15307	Male 90 Elbow	C3529 x 6
21	41-25756	Oil Pipe 3/8" x 62"		61	43-15390	Bushing	C3109 x 8 x 6
22	41-27067	Oil Pipe 1/4" x 76"		62	40-11452	Quick Coupler- Nipple	PY H3 63 3/8" MAL
23	42-14053	Hydraulic Hose 1/4" x 62"	H14504 606 606 062				
24	42-14054	Hydraulic Hose 1/4" x 64"	H14504 606 606 064				
25	42-14315	Hydraulic Hose 3/4" x 41" DB	H14512U 612 612 041				
26	42-14333	Hydraulic Hose 3/4" x 18 SB	H14512 612 612 018				
27	42-14334	Hydraulic Hose 1" x 17 1/2" SB	H14512 612 616 018				
28	42-14316	Hydraulic Hose 3/4" x 45" DB	H14512 612 612 045				
29	42-14019	Hydraulic Hose 1/4" x 28"	H14504 606 606 028				
30	42-14313	Hydraulic Hose 3/4" x 23 1/2"	H14512 612 612 024				
31	42-14120	Hydraulic Hose 3/8" x 17"	H14506 608 608 017				
32	42-14110	Hydraulic Hose 3/8" x 15 1/2"	H14506 608 608 015.5				
33	42-14029	Hydraulic Hose 1/4" x 35"	H14504 606 606 035				
34	42-14018	Hydraulic Hose 1/4" x 26"	H14504 606 606 026				
35	42-14004	Hydraulic Hose 1/4" x 13"	H14504 606 606 013				
36	42-14003	Hydraulic Hose 1/4" x 11"	H14504 606 606 011				
37	42-14045	Hydraulic Hose 1/4" x 55"	H14514 606 606 055				
38	42-14298	Hydraulic Hose 1/2" x 77" DB	H14508 608 612 077				
39	42-14317	Hydraulic Hose 3/4" x 53" DB	H14512 612 612 053				



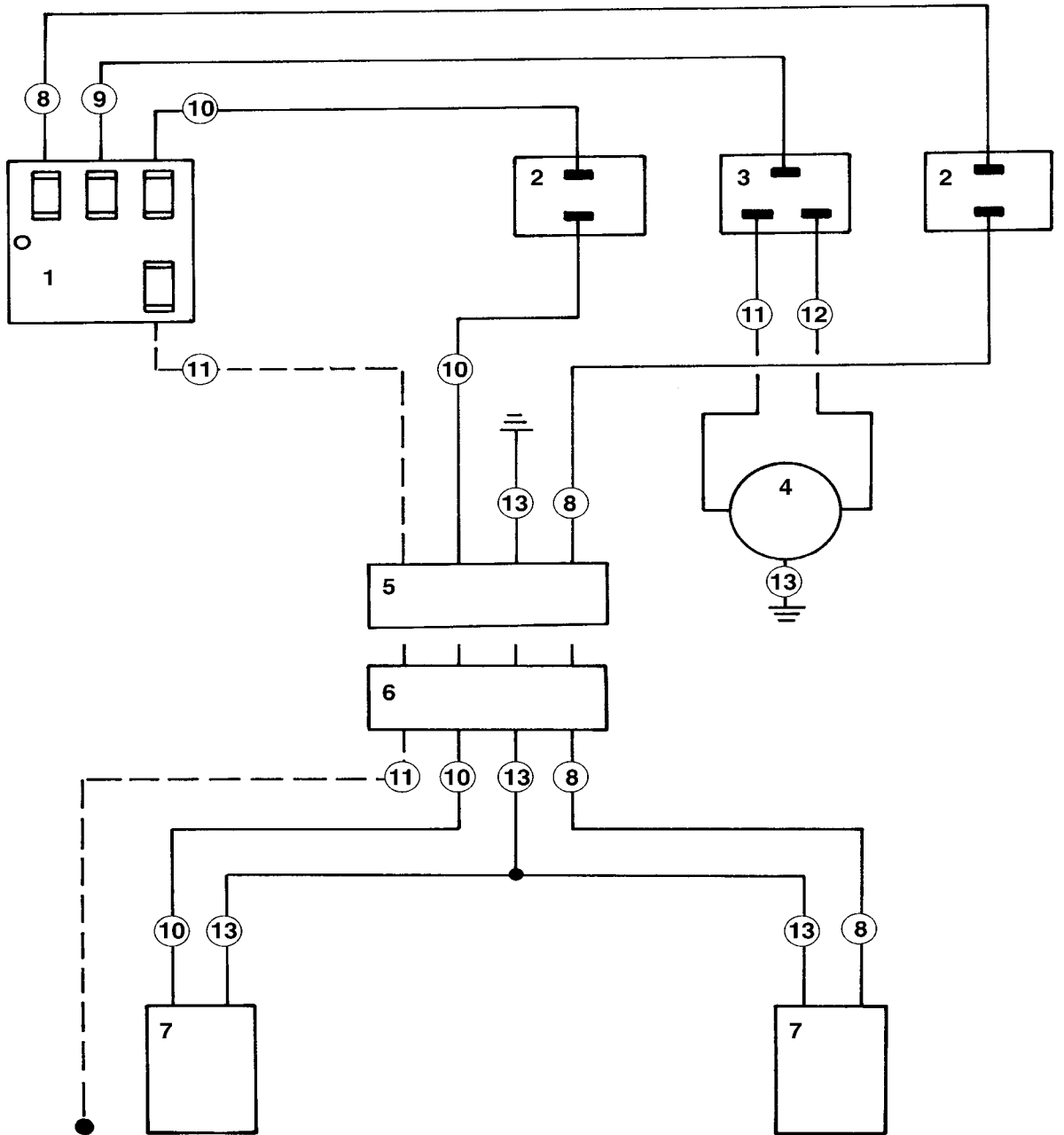




## 3000 Series

1	37-12023	Tail light	70 6064	41	14 ga Red 92"
2	37-266	Hour Meter	VDO 331-502	42	14 ga Brown 40"
3	37-249	Engine Temperature Gauge	VDO 310-502 B	43	14 ga Yellow 112"
4	37-287	Oil Pressure Gauge	VDO 350-5165B	44	12 ga White 172" (190")
5	37-275	Voltmeter	VDO 332-502B	45	12 ga Yellow 180" (198")
6	37-366	Tachometer	VDO 333-504B	46	10 ga Black 206" (224")
7	37-29023	Light & Buzzer Audio Visual	VDO 4112-RC	47	14 ga Green 22"
8	37-12750	Horn Button	HB6	48	14 ga Green 160" (178")
9	37-12030	Horn	67-7039	49	Black Battery Cable
10	37-12015	Head Light Switch	76-5002	50	Red Battery Cable
11	37-9980	Brake Light Switch	1261219	51	10 ga Red 38"
12	37-9900	Ignition Switch	12356033	52	10 ga Blue 8"
13	37-9979	Fuse Block 10 Gang	76-6045	53	12 ga Yellow 79"
14	37-9960	Neutral Switch	9790771	54	18 ga White (From Plug)
15	37-295	Sender - Oil Pressure	VDO 360-009B	55	14 ga White 33"
16	10-2424	Ignition Plug to Distributor	12146121	56	14 ga Black 16"
17	37-10500	Coil Plug	D16 PT169		
18	37-353	Sender-Engine Temp. Gauge	VDO 323-100B		
19		Starter (From Truck)			
20		Alternator ( From truck)			
21	10-2422	Alternator Plug	12085537		
22	37-242	Rectifier	391507		
23	10-153	Battery	74-60		
24	37-12000	Headlight	72-6500		
25		14 ga Red 92"			
26		14 ga Brown 52"			
27		14 ga Black 18"			
28		14 ga Black 10"			
29		14 ga Green 10"			
30		14 ga White 10"			
31		14 ga Red 187" (205")			
32		14 ga Purple 151" ( 169")			
33		14 ga White 20"			
34		14 ga Orange 158" (176")			
35		14 ga Green 12"			
36		14 ga White 146 (164")			
37		14 ga Yellow 18"			
38		14 ga Black 22"			
39		14 ga Brown 78"			
40		14 ga Black 236" (254")			

CAB

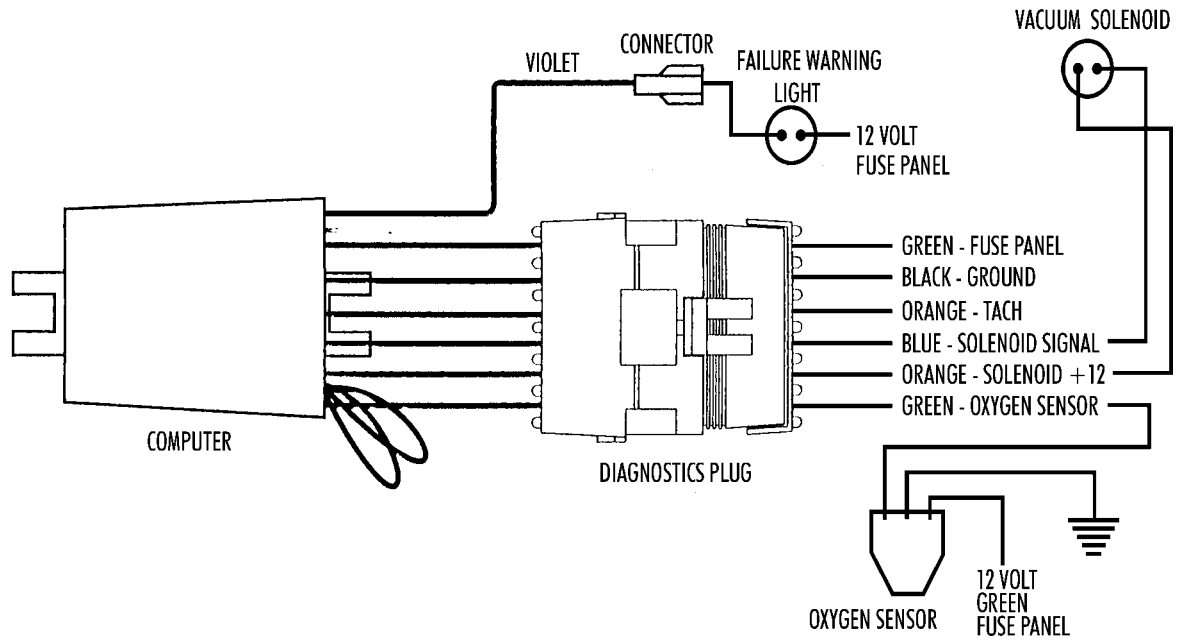


## CAB

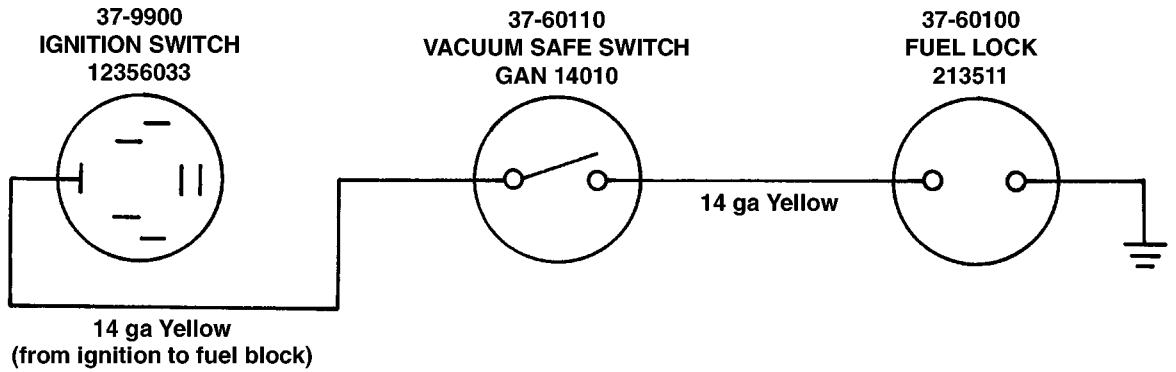
Ref. #	Part #	Description	OEM #
1	37-9979	Fuse Block 10 gang	76-6045
2	71-4000	2-way Toggle Switch	5582
3	71-4100	3-way Toggle Switch	5586
4	71-1100	Heater	541300
5	37-141	Weather Pack Female Plug	762176
6	37-140	Weather Pack Male Plug	762177
7	71-1200	Windshield Wiper Motor	72276776
8		14 gauge Grey	
9		14 gauge Yellow	
10		14 gauge Purple	
11		14 gauge Red	
12		14 gauge Orange	
13		14 gauge Black	

\* All wires are cut to fit.

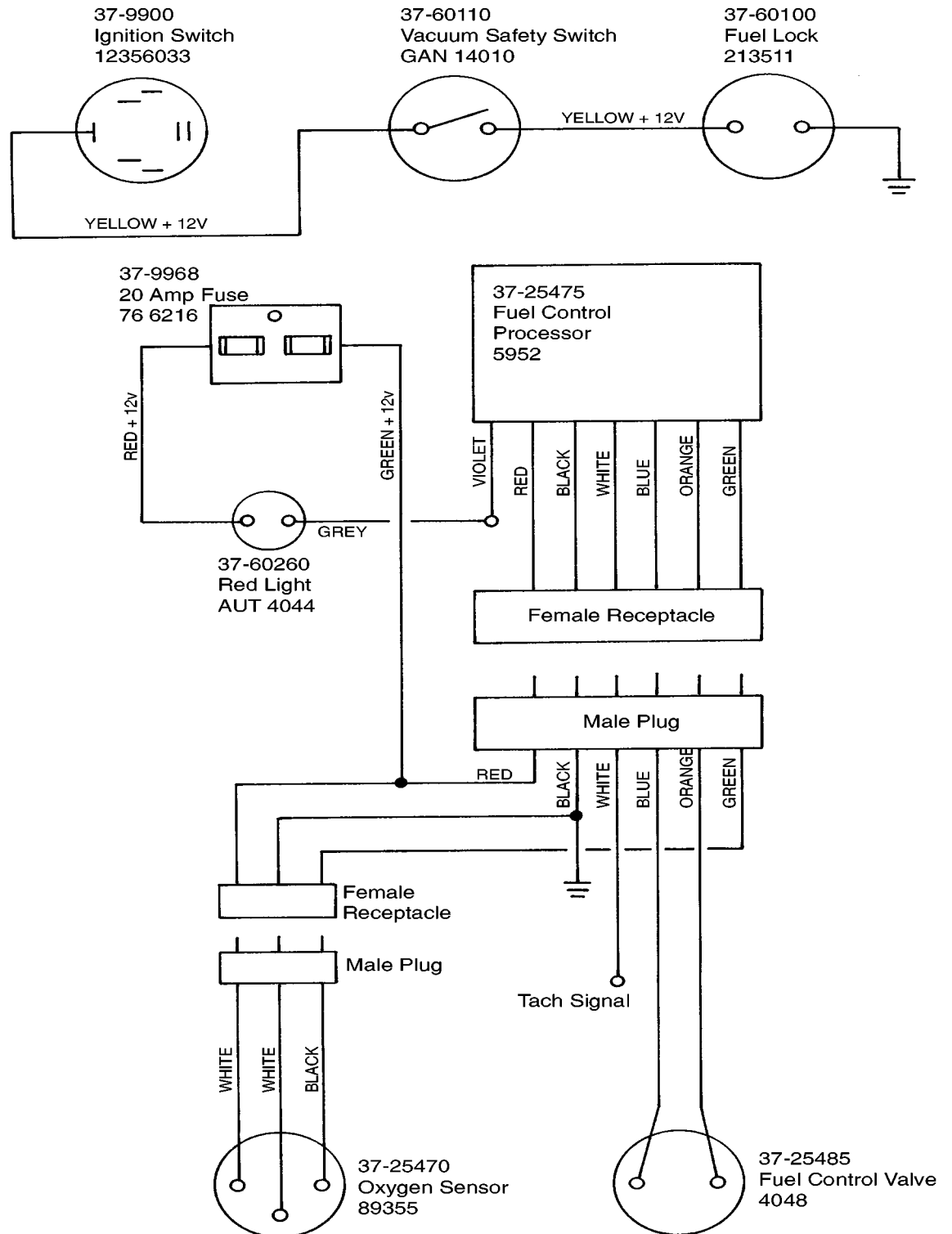
**FUEL MANAGEMENT WIRING SCHEMATIC**



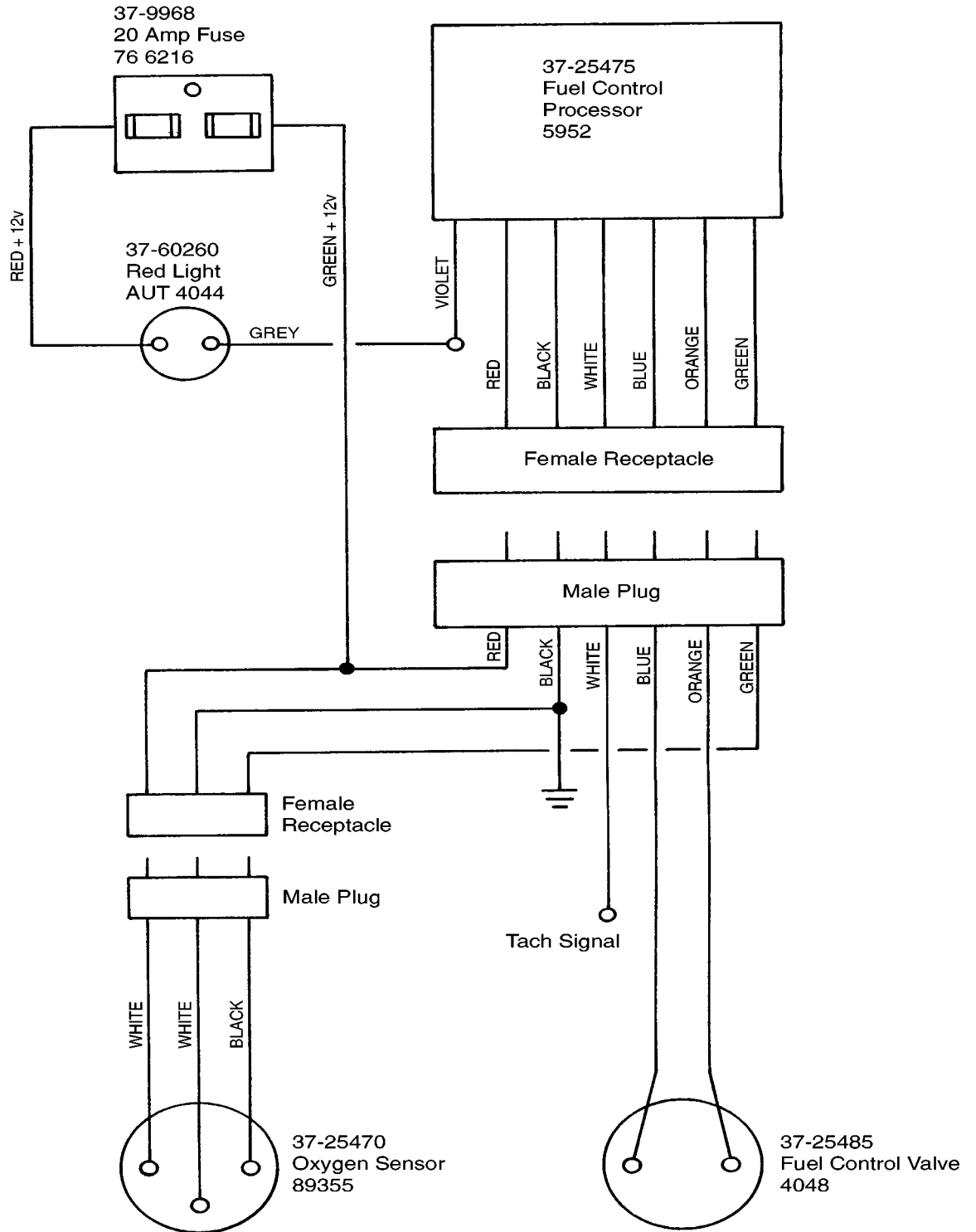
**NATURAL GAS**



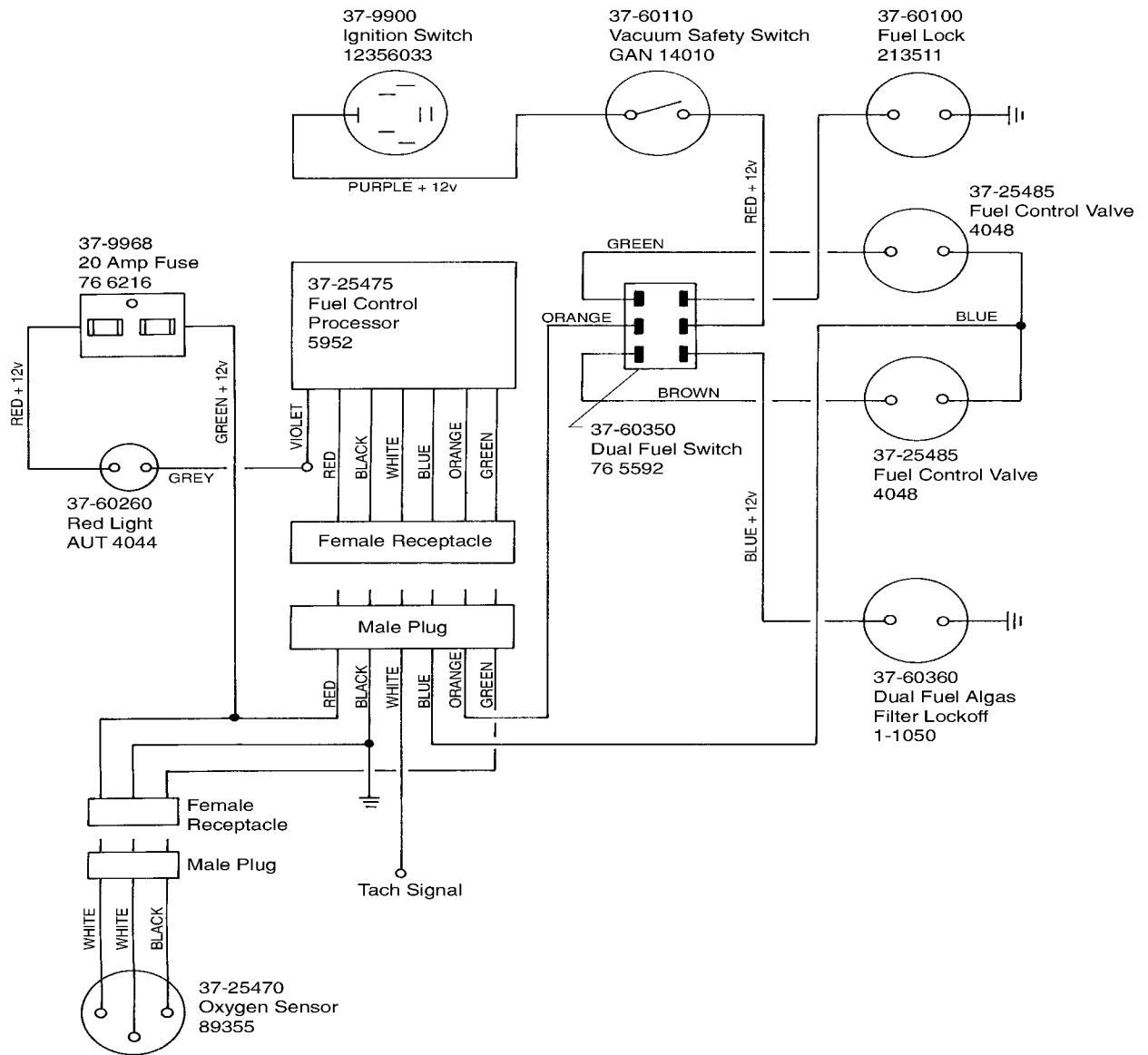
## COMPUTERIZED NATURAL GAS



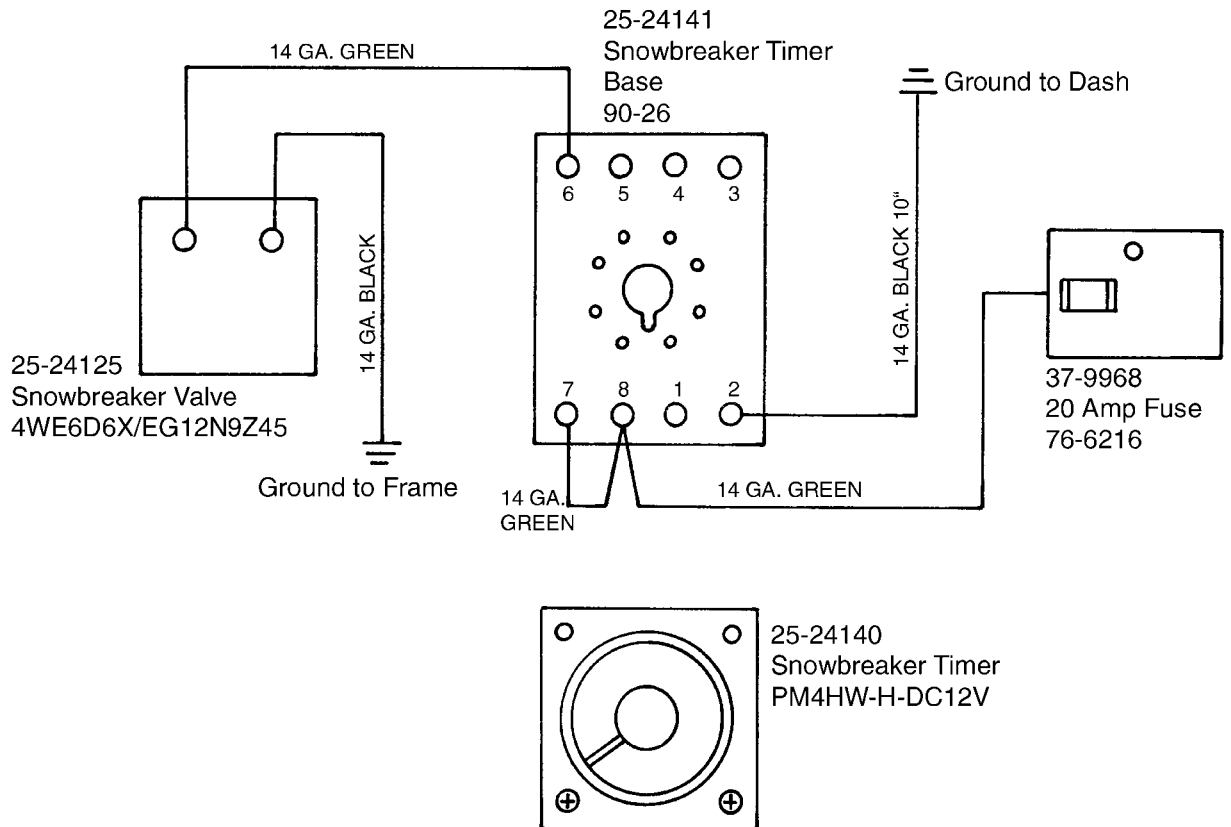
**COMPUTERIZED PROPANE**



## COMPUTERIZED DUAL FUEL

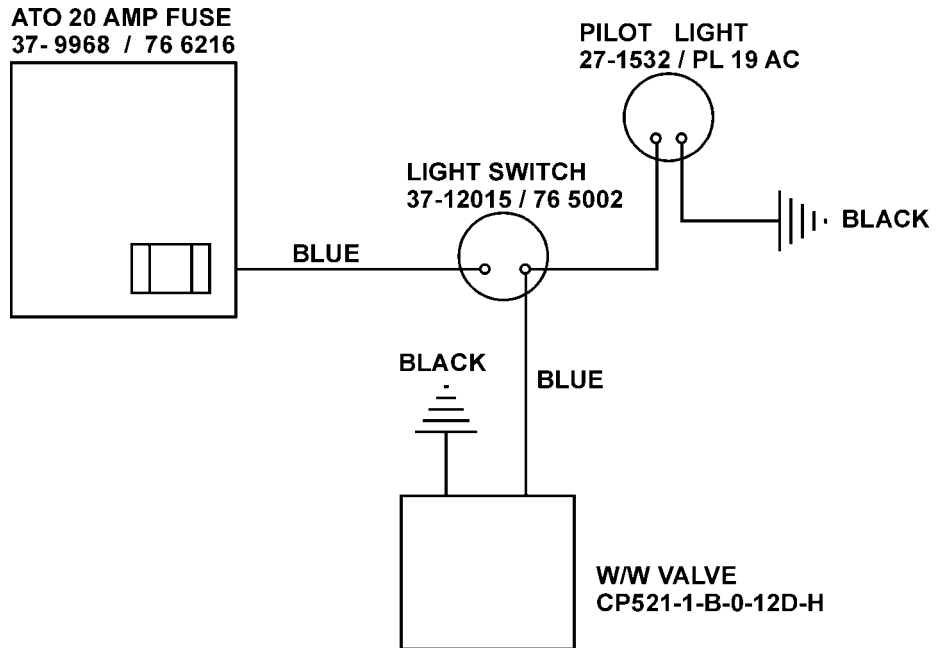


**AUTOMATIC SNOWBREAKER**

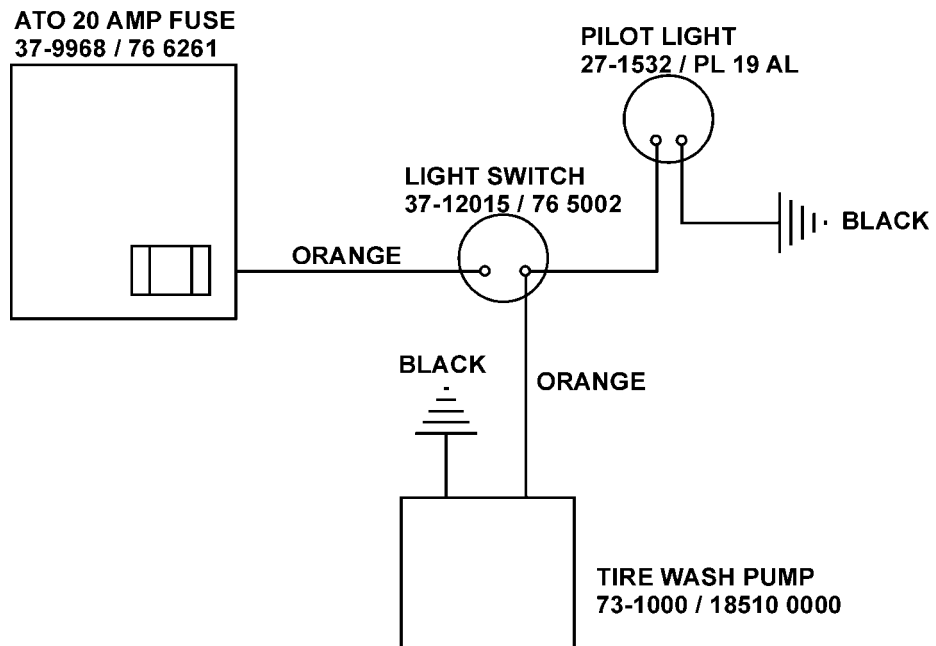




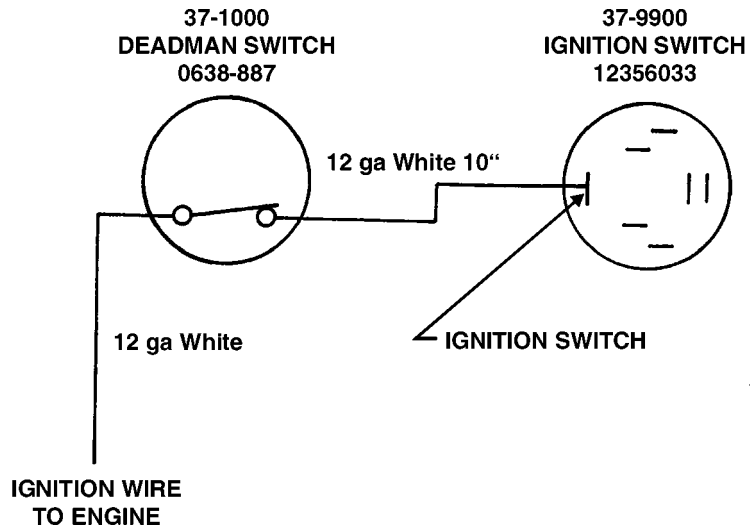
## WASH WATER



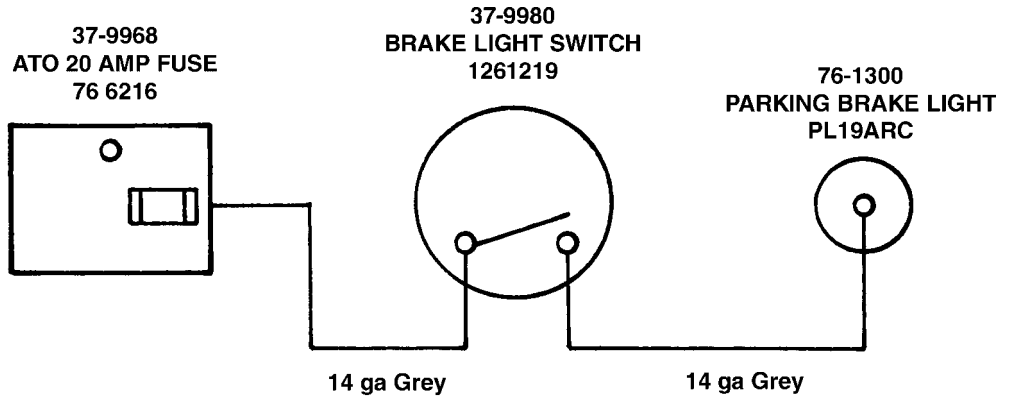
## TIRE WASH



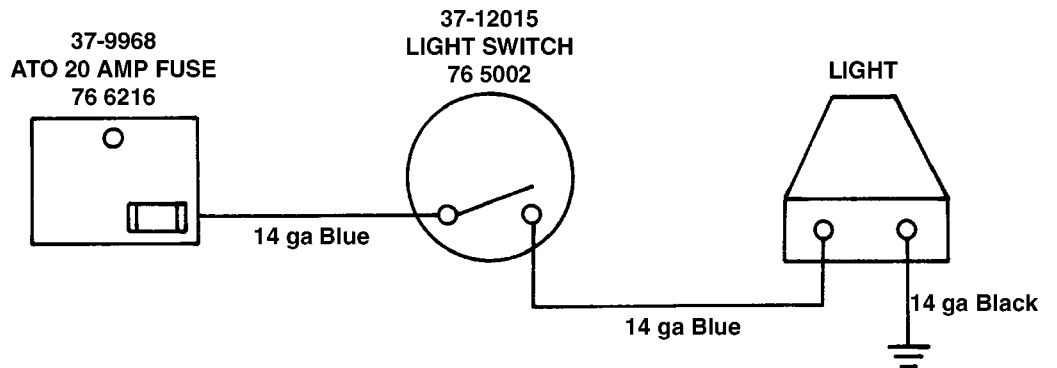
**DEADMAN SWITCH**



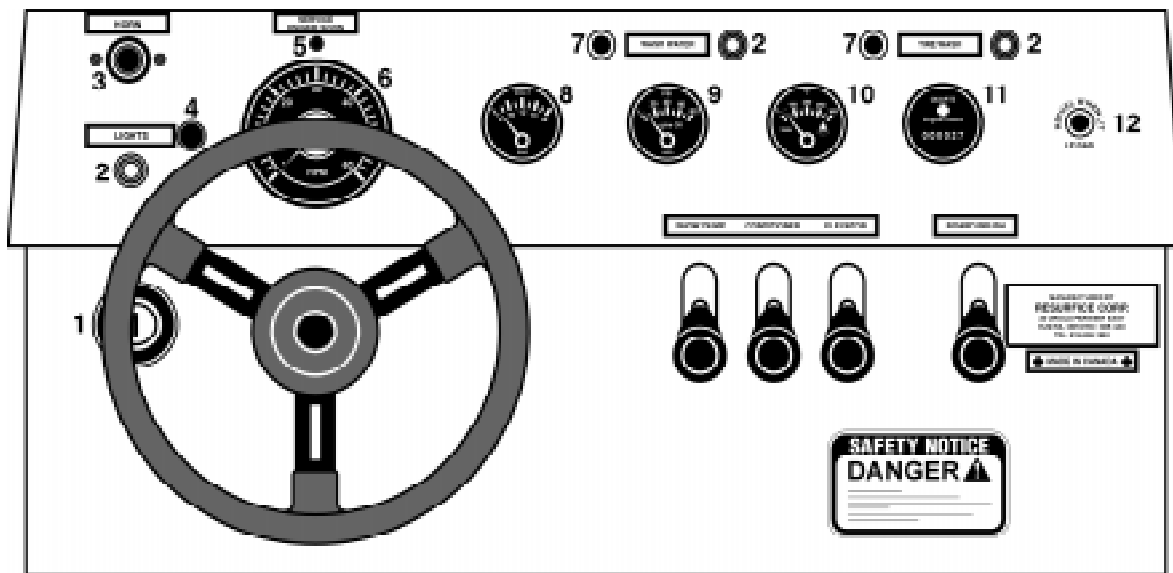
**EMERGENCY BRAKES**



**FLASHING CAUTION LIGHT**



## CONSOLE



Ref. #	Part #	Description	OEM #
1	37-9900	Ignition Switch	12356033
2	37-12015	Head Light Switch	76-5002
3	37-12750	Horn Button	HB6
4	37-29023	Light & Buzzer Audio Visual	VDO 4112-RC
5	37-60260	Red Indicator Light	AUT 4044
6	37-366	Tachometer	VDO 333-504B
7	27-1532	Amber Indicator Light	PL19AC
8	37-275	Voltmeter	VDO 332-502B
9	37-287	Oil Pressure Gauge	VDO 350-5165B
10	37-249	Engine Temperature Gauge	VDO 310-502 B
11	37-266	Hour Meter	VDO 331-502
12	76-1300	Red Indicator Light	PL19AR

