



RUSHMORE HOCKEY ASSOCIATION
Home of Rushmore Thunder Youth Hockey

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OLYMPIA ICE RESURFACING AND FACILITY MANAGEMENT INFORMATION

OLYMPIA ICE RESURFACER TRAINING CONTACTS:

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SAFETY AND CRITICAL ITEMS:

- Only authorized, trained, and approved drivers are to operate the OLYMPIA.
- Always keep the gear lever in the park "P" position when the OLYMPIA is not in use. Do not park on the ice.
- Do NOT stop on the ice for any reason. If you have a problem hand pump up the conditioner and push it off immediately.
- Make sure the conditioner is in the raised position prior to moving the OLYMPIA.
- Operate the OLYMPIA at 1300-1500 RPM.
- Never exceed 1700 RPM on ice. Never rev engine past 3000 RPM.
- Blade is SHARP! Do not run your fingers along the blade.
- Do not go onto the ice if there are any pucks/hazards/goals on ice.
- Do not move the Olympia in the garage until the doors are up 100%.
- DO NOT GO ONTO THE ICE UNTIL ALL SKATERS HAVE LEFT THE ICE.
- Do not ride the boards. If you are going to hit the boards: Stop! Shut off Water! Raise Conditioner! Back up. Turn and proceed. Make a pass over the snow/flooded area to clean up.
- Do not zam with the doors open.
- Turn off water on the last blue line NOT at gate.
- Raise the conditioner before the gate and stop.
- Check propane before going on ice by lifting tank. Do not leave an empty cylinder on the OLYMPIA! SMOKING is not allowed.
- Shut off Bleacher Heat throughout the day to keep rink temps in the 30's and low 40's. Once the rink temp is between 45-48 Degrees F it will the ice will not freeze within the 15 minute zam time. Shut down switch in Concession Stand behind the printer.
- Change blade weekly. Ice edging weekly. Typically Friday morning.



PRE ICE OPERATIONS – Preparation

Conduct machine walk-a-bout checking for obvious damage or issues.
Check propane tanks. Lift tank. Change if low.

Filling Water Tanks – Watch sight glass level indicators.

- Close Valves on right side of machine.
- Fill main tank with hot water; turn water on and off slowly
- Fill wash water with cold water if needed. Cold fills quickly.

Place cover plates on auger.

PRE ICE OPERATIONS- Start up

Prefer 2-3 people to assist with doors and goals and snow removal operations

- Open rink gates to the ice completely
- Open inside garage door
- Climb aboard
- Depress brake
- Start engine
- Allow gauges to settle into normal operating position. (never exceed 3000 rpm)
- With brake depressed, place into Reverse
- Carefully back out of stall to gates.

DO NOT GO ONTO THE ICE UNTIL:

- ALL YOUTH SKATERS HAVE LEFT THE ICE
- Nets have been pulled.
- There are no pucks/hazards on the ice.
- All walk doors are closed.

ON THE ICE – Set up

- Back onto the ice.
- Depress the brake and place into Drive
- Close the inside garage door.
- Proceed to the far end of the ice.
- Follow the established resurfacing pattern. Starting against the bleachers.
- Maintain constant speed 1300-1500 RPM. Never exceed 1700 RPM on ice.



ON THE ICE – Resurfacing

While the Olympia is moving the sequence for operation is:

- Put the conditioner down. Hold the button until ALL the way down.
- Turn the elevator on.
- Turn on the hot water.
- Extend the board brush.
- Add cold water if deep cuts from older skaters.
- Maintain constant speed 1300-1500 RPM. Same speed to apply water evenly.
- 1300-1400 RPM optimum for 1st year drivers. Experienced 1500-1600 RPM.
- Start turning just before the goal lines. Beginners earlier.
- Drive in straight lines. Pick a point, line up, and stay straight.
- Overlapping is ok.
- Do not slow down turning unless you are going to reduce water.
- Approach the boards at a mild angle. Do NOT ride the boards with the machine.
- Keep the edge of the conditioner parallel to the boards.
- This is done by watching your front guide wheel and the conditioner guide wheel.
- In the turns, try to keep the front guide wheel 1-2” from the boards.
- As you begin your second lap, retract the board brush. (The board brush draws the hydraulic system down and you will temporarily slow down.)
- Complete your pattern.

LEAVING THE ICE

- As you head for the gates, open the inside garage door.
- Turn the water off at the last blue line.
- Approach the gates slowly with the conditioner down.
- As the back wheels pass over the exterior wall sill, stop, lift the conditioner, and turn off the conditioner and elevator.
- Pull into the stall.
- Turn off the Olympia
- Dismount
- Clean snow off the ice.
- Close the gates.
- Gates must be completely closed and locked prior to any on ice action.



DUMPING THE SNOW

- Return to the Olympia
- Close the inside door
- Open the outside door while stopped.
- Start the Olympia, place into drive and proceed outside
 - As you pass through the outside door turn on the Tire Wash
 - **Do not drive in mud to dump. Stay on concrete or snow trail.**
- Select a spot to dump the snow.
- Stop and place the Olympia in park.
- Push the Snow Dump button upwards and raise the engine RPMs to approximately 2000-2500 RPM.
- The snow should fall out of the bin. If it does not, get the scraper or shovel from inside and remove it. You can also return it to the garage, apply hot water, and then dump again. This will involve shutting down the Olympia.
- After the snow is out of the bin, lower the bin pushing the Snow Dump button downwards.
- You can also run the snow dump reverse button to help clean out snow.
- Once the bin has settled back into position, depress the brake, place into reverse and back into the stall.
- Place in park.
- Turn off the tire wash.
- Turn off the Olympia.
- Close the outside door.

CLEAN UP

- Remove the auger cover panels
- Use the hot water hose to clear any remaining snow on the auger.
- Place the hose into the top of the vertical auger to clear any built up snow.
- Change the fuel tanks if necessary.
- Wash down the towel.
- Open and drain down the both the hot and cold tanks.
- Open the cold and hot water levers on the tower and drain the spray pipe.

WASH WATER (COLD)



Cold wash water is used when the ice has deep cuts from older skates. Mites and Squirts typically do not require wash water. Our wash water tank is 50 gallons. It is applied in combination with hot water to fill voids.

The wash water system sprays water from the sides of the conditioner into the center in front of the squeegee creating slush. Excess water and slush 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.

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 pushing the bottom of the wash water button 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.

Three-quarters of a lap prior to completion of the flood turn off the wash water by pushing the button on the dash and then turn off the wash water valve on the tower and finish the flood. Just prior to finishing the flood near the McDonalds sign turn off the flood water valve on the tower.

SWITCHING FUEL SUPPLY TANKS ON OLYMPIA

If the low fuel light on the upper left hand corner of the dashboard comes on while resurfacing the fuel is low in the selected tank. To change tanks, switch the blue knob to the opposite tank. You do not need to hurry, just be timely.

CHANGING THE FUEL TANKS

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

STEPS TO CHANGE THE FUEL TANKS

- Shut off the Olympia.
- Close the fuel valve at the cylinder.
- Disconnect the fuel line from the propane cylinder.



- Unclip the safety straps on the outside tank.
- Remove the empty propane cylinder.

Retrieve a full cylinder from outside. Key is hanging by the back door.

- Full Cylinders are placed in the rack with the top facing out.
- Empty Cylinders are placed with the top facing in.

Mount the propane cylinder.

Note: At this stage it is important to ensure that the propane fuel cylinder is mounted with the pressure relief valve to the right hand side.

- Re-fasten the safety straps.
- Connect the fuel hose to the propane fuel cylinder taking care not to cross thread the coupling. **Hand tighten only.**
- Open the valve on the propane fuel slowly and observe for leaks.

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

If you smell gas, close the cylinders, ventilate the area, and call for assistance.

OLYMPIA STALLS ON ICE: Emergency Hand Pump

If for some reason the Olympia stalls on the ice it is critical to remove it as quickly as possible.

- Get the conditioner up. This done by using the **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.
- Change the switch under the seat to the manual position.
- PUMP FAST!
- Place the Olympia in Neutral, get help and push the Olympia off the ice. Call for assistance.

Ice Resurfacing Basic Information

The RHA Olympia is a 2004 Millenium Model as is set on a Chevrolet chasis. The ice is resurfaced before the game, between periods, and when the game is over. With one resurfacer, it takes between 8 and 10 minutes with eight full passes up the length of the ice. Zam periods are typically 15 minutes.



The basic driving pattern is a clockwise motion of slightly overlapping ovals. Approximately 100-150 gallons of heated water between periods to resurface the ice. The cutting will scrape about 1/2 to 3/4 of a bucket during each trip.

The Olympia machines have an 84-inch long, 1/2-inch thick blade. **A**). The blade scrapes a 1/16-inch to 1/8-inch layer of ice off the ice surface. The blade runs the width of the machine and looks like a thick razor blade. The amount of ice taken off depends on the ice conditions.

Just above the blade is a horizontal, rotating screw, or auger (**B**). The auger gathers the shaved ice, or *snow*, and rotates it up to a vertical auger (**C**), where a spinning blade picks up the moving snow and throws it into the bucket (**D**). The bucket can hold an amazing 2,600 pounds (or 300 gallons) of snow.

Under the bucket, there are two tanks of water, one for "washing" the ice as it's shaved and one for making ice. As the resurfacing machine moves over the ice, the blade shaves layers of the ice off. Water from the wash-water tank (**E**) is pumped over to a cleaner (**F**) that blasts the water into the deep cuts in the ice and forces out dirt and debris. The excess water left on the ice is squeegeed off with a rubber blade (known as a towel) at the back end of the machine (**G**) and vacuumed up. The hot water loosens the crystal structure of the old ice underneath, so the new ice will form a solid bond with the old ice, instead of a separate layer that chips off easily.

The last step is to resurface the ice. Warm water from the second water tank is pumped over to the squeegee blade and spread evenly over the ice. This softens and fills in the deep cuts in the ice and helps to even out its surface. After the final pass on the ice, the machine to its garage. At this point, the snow bucket is raised and the snow is dumped into the snow dump outside and the machine and auger are washed with hot water.

