

Olympia® Millennium "Eco" Specifications



A. General

It is the intent of these specifications to describe an Olympia Millennium "Eco" Battery Ice Resurfacer, manufactured by Resurfice Corp, which will be used by the ice arena personnel. The resurfacer unit will be used to plane the ice surface, pick up and store snow, wash and squeegee the ice surfaces, distribute water for freezing the sheets of ice, and dumping snow from the storage tanks. This Ice Resurfacer is constructed primarily with a painted mild steel chassis, galvanized rear conditioner and stainless steel water tanks. The water tanks have an optional automatic fill shut off system to help save on overall water usage. The optional speed related ice making water system (Automatically controls water flow based on vehicle speed). The Wash Water System has a one button operation and automatic shut off when water tank is empty.

B. Machine Power System

The Olympia Millennium "Eco" Battery ice resurfacer incorporates the newest technologies in lead acid batteries and electronic control systems. The AC drive motors are used to eliminate the use of brushes found inside standard DC motors that require yearly servicing. The use of AC drive motors provides for longer and more efficient motor life.

- 25+ Ice Resurfacings per charge, no opportunity charging required (Standard charge time is about 8 hour)
- Independent SBS 2.5Kw AC Drive Motors on all 4 wheels
- Independent SBS 1.9Kw AC Horizontal Auger Motor
- Independent SBS 1.9Kw AC Vertical Auger Motor
- Independent SBS 1.9Kw AC Hydraulic Pump Motor
- Total driving and operating power is 16Kw
- All motor controllers have Self Diagnostic (with trouble codes)
- 80 volt negative ground main electrical system
- 24 volt negative ground control circuit electrical system

C. Batteries

The Battery Package is a lead acid 770 AMP Hour 80 volts DC system from EnerSys with square tube technology. The batteries are filled using an EnerSys watering cart with an integrated stealth watering system. The charger is a digital microprocessor controlled unit with 80 volts DC output.

- Lead Acid batteries with EnerSys 2 year service agreement (EnerSys service technician inspection every 4 months)
- Ironclad "square tube" positive plate design provides greater surface area for holding active material and exposing it to electrolyte. The result is a chemical reaction that provides more power over longer periods of time and higher voltages under load.
- Battery Charger with automatic battery equalizing system
- Battery Voltage: 80V 770 amp hour maximum battery package
- Integrated Battery Watering System
- Six Year Battery Warranty: The batteries are provided with a Six (6) year pro-rata battery warranty. The first five (5) years is a full replacement. The sixth year is pro-rata.









D. Electric Controls

The main electrical components are located inside a sealed locking easy access cabinet on the passenger rear side of the resurfacer. Located inside are the 4 drive motor controllers, horizontal and vertical auger controllers and the main hydraulic pump controller. Also located inside the cabinet are the fuses, contactors, relays and timers.

- 80 volt negative ground main electrical system
- 24 volt negative ground control circuit electrical system
- All Motor Controller are self diagnostic with flashing codes
- All Motor Controllers have a programming port allowing for technicians to full adjust all parameters such as motor speeds.

E. Chassis

The chassis and snow bin is manufactured primarily of Mild Steel and equipped with four (4) wheel drive and front wheel power steering. Steering control is an automobile-type steering wheel.

F. Drive Train

Independent gear boxes with internal wet disc brakes located at each wheel, fully approved by the original equipment manufacturer for the application. Combined rating: Front 11,026 lbs Rear 11,026 lbs.

G. Brakes

The Millennium "Eco" Battery is equipped with front and rear internal wet disc brakes and a hand operated parking brake.

H. Hydraulic Systems

The Millennium "Eco" Battery includes an auxiliary hydraulic pump that powers the machine's hydraulic system. The pump is driven by a separate AC motor, with an independent motor controller. The main hydraulic block is fully adjustable and controls the pressures and flow rates for all hydraulically controlled components such as the conditioner, snow tank lift and board brush speeds.

- · Minimized hydraulic hoses with the use of stainless steel tubing.
- Bosch Rexroth Hydraulic Controls Electrically operated surface-mounted valves and compact cartridges in a large integrated main control manifold
- Hydraulic Oil Tank 6 U.S Gallon (easy accessible pump strainers and return filter in tank)
- Easily Accessible Hydraulic System with Emergency Hand Pump
- Precision Conditioner Control System
- Push Button Finger Tip Control System









I. Shaving and Conditioning Unit

The Millennium "Eco" is equipped with an 84" shaving blade with a 6" driver offset to better reach into the corners. The conditioner housing is galvanized mild steel and equipped with replaceable runner system and adjustable auger height. The blade holding apparatus will secure the blade so that the ends are tapered upward about 1/16" to ensure a feather edge effect under normal shaving conditions. The shaving apparatus will include an adjustable solid locking down pressure system. The blade height and angle adjustment will be made from outside of the shaving unit manually or with our optional LVR Laser Blade Control System. Greasing is performed by means of a remote greasing system. We also provide 4 cutting blades, blade installation hooks and a magnetic blade guard for added safety while changing the cutting blade.

J. Snow Conveyer

Snow is collected and carried from the ice surface by means of an auger conveyor system. The ice is first shaved by an 84" wide cutting blade which is then collected by the horizontal auger conveyor. The horizontal auger then transfers the snow to the high capacity 8" diameter vertical auger which lifts the snow and delivers it to the snow dump tank. Each auger is driven by an independent 1.9 Kw AC Drive electric motor for improved snow compaction in the storage tank. A dash operated switch allows the operator to reverse the auger system from the driver's station if something becomes lodged in auger system.

K. Snow Dump Tank

The snow bin collection tank is constructed of mild steel with a fiberglass surrounding body that dumps forward. The snow bin is also equipped with a light and easy access viewing panels. The dump tank is enclosed with a capacity of 103 cubic feet.

L. Flood Water Systems

- The ice making water tank has a 253 gallon capacity and is constructed of Stainless Steel, and is filled from the left side
- · Speed related ice making water system (Automatically controls water flow based on vehicle speed)
- · Automatic water filling system with built in shut off

M. Wash Water Systems

- Wash Water System with one button operation
- Automatic water filling system with built in shut off
- The wash water tank has a 54 gallons capacity and is constructed Stainless Steel, and is filled from the right side of the machine. Automatic float shut-off when the system is empty







N. Body

Non Rusting Fiberglass body with Two-tone Paint Scheme (6 standard color, optional Custom Colors available)

O. Paint

The Ice resurfacer shall be painted with a base coat, clear coat system. The owner will chose one solid color or a two tone color scheme.

Standard Colors are: White, Red, Green (teal), Maroon, Blue, Silver and Black Special colors are available.

P. Tires and Wheels

The tires are LT225/75 R16 steel belted radial tires with double shoulder tungsten tip studs for traction with Aluminum Alloy Wheels.

Q. Guide Wheel

Three guide wheels are provided to protect both the machine and the dasher board system in the rink.

- The front 8" roller is attached to the left front bumper of the machine
- The board brush swing arm roller located on the left middle of the machine
- The ice making condoner roller located at the left rear of the machine conditioner

R. Labels

All equipment is labeled with the intent to meet the American National Standards and National Safety Council recommendation practices for signs and warnings.

S. Delivery and Training

Supplier will provide onsite delivery, training and instruction with support videos on safe operation of the machine. Videos include Circle safety check, basic maintenance and operations. The video collection and manuals will become property of the buyer.

T. General Warranty

The Millennium carries a two year warranty on all parts, labor and travel. The supplier shall hold the purchaser free and harmless from any patent infringement suits arising out of the purchase of this resurfacing unit.







U. Standard Safety Equipment

Horn

Driving Lights

Brake Lights

Blade Installation and Removal Hooks

Magnetic Blade Cover

Safety and Warning Labels

Snow Bin Locking Safety Supports

Light Weight Aluminum Conditioner Access Covers with Security Locking Pins

Circle Safety Check Inspection Video

V. Standard Equipment

Wash Water System

Tire Wash System

Automatic Snow Breaker

Automatic Towel Lift

Board Brush

Snow Bin and Engine Compartment Light

Steering Wheel Spinner Knob

Battery Charger

Battery Watering System

W. Standard Additional Items

One Spare Tire and Wheel

One Hydraulic Bottle Jack

One Set of Tools

Four Shaving Blades

One Pint Touch Up Paint for each Color and Clear Coat

Blade Hooks

Magnetic Blade Guard

Grease Gun and Grease Tube

Owner's Manual

Operational Video

X. Optional Equipment Upgrades (additional cost listed below)

Speed related ice making water system (Automatically controls water flow based on vehicle speed)

Automatic Water Fill with Auto Shut Off

LVR Laser Blade Control System (Automatically controls the ice cutting blade.)

Custom Paint Colors

Seat Belt

Back Up Alarm

Flashing amber light (for bad whether outdoor dumping operation)













Length with Snow Bin open	228" inches	19'.0" feet
Length Snow Bin down	162" inches	13'.5" feet
Height Snow Bin fully open	**150" inches	**12'.5" feet
Height Snow Bin down	77" inches	6'.42" feet
Overall Width	88" inches	7'.33" feet
Overall Height top of vertical auger motor	89" inches	7'.5" feet
Resurfacing Blade	½"x5"x 84"	½″x5″x 7′
Conditioner Clearance	9" inches	
Wheel Base	80" inches	6'.67" feet
Turning Radius	180" inches	15'.0" feet
Water Tanks		*253 gallons
Wash Water Tank		*54 gallons
Snow Bin		103 cubic feet
Hydraulic Oil Tank		*6 gallons
Net Weight (empty)		10,406 pounds
Gross Weight-(full of water)		12,410 pounds





^{*} US gallons ** Maximum overall height of Ice Resurfacer







At the heart of every EnerSys Ironclad® battery is our exclusive technology, called the Ironclad Effect. When compared to conventional flat plate or round tube batteries, the Ironclad "square tube" positive plate design provides greater surface area for holding active material and exposing it to electrolyte. The result is a chemical reaction that provides more power over longer periods of time and higher voltages under load. This unique construction delivers the power you need to maximize production on every shift...every day.

> Manufacture Enersys Class **Ironclad** Technology Square Tube Type Lead Acid Voltage 80 volts DC Individual Cell Voltage 2 volts DC Number of Cells 40 2 with 20 cells each Number of Battery Packs Amp Hour up to 770 Watering *Integrated Number of Resurfacings per charge **25 plus ***8 hours Typical charge time

*Integrated Stealth watering system with quick disconnect and electric pump.

**Resurfacings per charge will very depending on loads the average is usually between 25 and 30.

*** Typical charge time is around 8 hour on a fully drained battery. Up to 12 hours during a commissioning charge. Commissioning charges occur between every 4th to 6th charge. (fully drained means 20% remaining in the battery pack)











The EnForcer SCR charger uses an intelligent microprocessor to control charge current and voltage during the charge cycle. This precise control allows the EnForcer SCR to charge a range of battery technologies including high gravity and VRLA. And they will effectively charge under a wide range of temperature environments and variations in AC line voltage. The charger includes a selectable Opportunity Charge profile, which may reduce or eliminate battery changes during a shift or workday.

Manufacture Enersys
Class EnForcer
Technology Digital Microprocessor
Type Lead Acid
Output Voltage 80 volts DC
Input Voltage 208 /240/480v
Input Amps 50
Typical charge time ***8 hours

*Integrated Stealth watering system with quick disconnect and electric pump.

**Resurfacings per charge will vary depending on loads the average is usually between 25 and 30.

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EnForcer Advantages

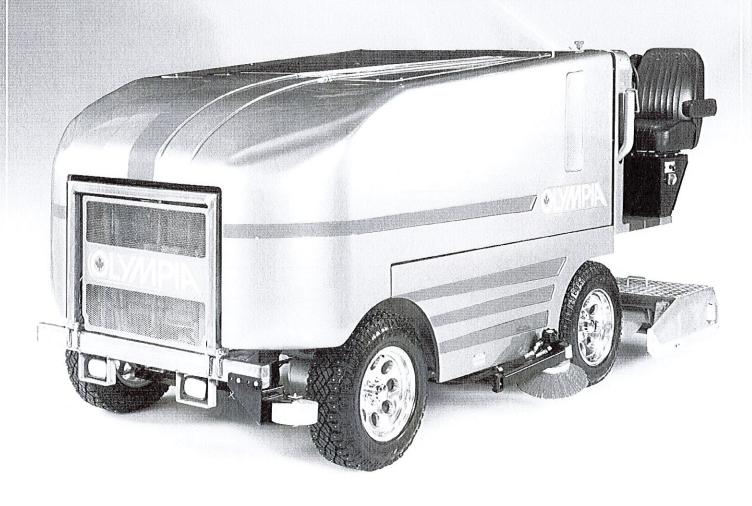
- Three-high stackable cabinets
- Designed for 8 hour or less recharge time
- Programmable or manual equalize function
- Delayed start or Blockout Charging Options for Off-Peak Charging
- LED charge status indicators
- Battery state of charge "fuel gauge" indicator
- Data logging
- Auto cell select
- Manual capacity select
- Quick Tap option for AC Voltage flexibility: 208/240/480 voltage "outlets"







Müllenmünn = E



The Ultimate Ice Resurfacer
Non Polluting Top Performing And Economical

Clean Air Clean Ice And Saves You Money

The OLYMPIA® Millennium - E is all that and more. It's driven by four AC electric wheel motors. The cost of operating an OLYMPIA® Millennium - E is one tenth of the cost of a standard propane or natural gas ice resurfacer. Its stainless steel chassis and conditioner lasts twice as long. You get over twice the number of ice resurfacings per charge as the nearest competitor using the same amount of charging time and energy cost.

No matter how you look at the OLYMPIA® Millennium-E you save time, money, and combined with the OLYMPIA® LVR Laser levelling system, you will achieve perfectly level ice every time you resurface. The OLYMPIA® Millennium-E is the Ultimate ice resurfacer.

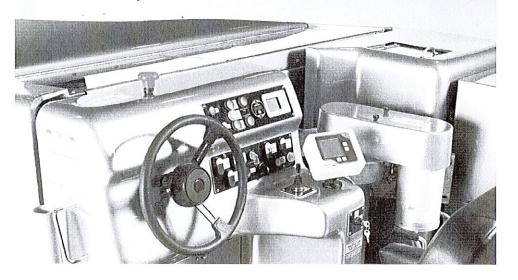
SPECIFICATIONS AND CAPACITIES

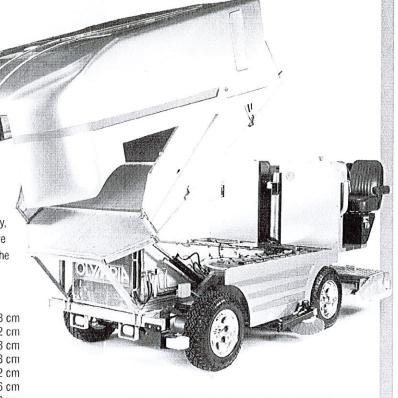
Overall Length	162"	411.48 cm
Length Bin Open	228"	579.12 cm
Height Bin Closed	77"	195.58 cm
Height Bin Open	142"	360.68 cm
Overall Width	88"	223.52 cm
Blade Width	84"	213.36 cm
Turning Radius	180"	457.20 cm
Net Weight	10,406 lbs	4,720 kg
Gross Weight	12,410 lbs	5.629 kg
Snow Bin Capacity	103 cu ft	2.91 m ³
Ice Making Water Capacity	211 imp gal	960.051
Wash Water Tank Capacity	45 imp gal	204.751
Hydraulic Oil Tank	5 imp gal	22.75
Battery Voltage	80 volts	
Battery Capacity	770 amp hours	
Total Driving & Operating Power	16 kilowatts	

Building Requirements: Hot Water Supply Cold Water Supply 480/550/600 Volt 3 phase Service

1" npt male fitting on Drivers' Side 1" npt male fitting on Right Side







OLYMPIA MILLENNIUM E FEATURES:

- · Over 30 Years Proven Technology
- · Front Dump
- · AC Electric Motors on all 4 wheels
- · Stainless Steel Construction
- Aluminium Alloy Wheels
- · Safety Seat with 8 Second delay shut off
- · Board Brush
- · Automatic Snow Breaker
- · Automatic Towel Bar Lift
- · 6" Offset Conditioner
- · Replaceable Conditioner Runners
- · Front & Rear Guide Wheels
- · Full Instrumentation
- · Complete Lighting Package includes Bin Light
- · Parking Brake
- · Reversible Auger System
- · Adjustable Traction Control
- · Power Steering
- · 4 Wheel Hydraulic Disk Brakes
- · Tire Wash
- · Wash Water with Auto Shut Off
- · Speed Related Ice Making Water System
- · Ice Making Water Fill System with Auto Shut Off
- · Proven Battery Technology
- · Integrated Battery Watering System
- · Warranty on machine 2 full Years
- · Warranty on Chassis 25 Years Corrosion
- Warranty on Batteries 5 Full Years 100% plus 1 Year Prorated
- Includes a 2 Year service plan on batteries and charger supplied by Enersys – includes Set up, Training and Quarterly Service and Maintenance



TERMS AND CONDITIONS

This Contract is governed by Minnesota Law

These terms and conditions of sale supersede all previous communications, quotes or listings, whether made orally or in writing. The Seller, CTM Services, Inc. will be bound by no other terms, including purchase orders submitted by Buyer, unless agreed to in a writing signed by Seller's duly authorized officer. The machinery and equipment described on the first page of this Agreement (the "Goods") are tendered or delivered, and warranty work (if applicable, in the case of new Goods) is undertaken in every case only upon and subject to these Terms and Conditions.

Delivery Terms: Seller will arrange for shipment with commercially reasonable promptness after payment terms are met. All risks of loss of or damage to the Goods shift to Buyer, and delivery is complete, upon loading onto the common carrier at Seller's point of shipment. Seller shall not be in default of performance due to a delay of reasonable duration resulting from any cause.

Purchase Terms: A twenty percent (20%) down payment is required along with the signed purchase agreement. Unpaid balance is due upon delivery. Payment of any unpaid balance is due upon and is a condition precedent to delivery of the Goods, unless otherwise agreed in writing. Failure by the Buyer to make punctual payment shall entitle Seller to suspend further deliveries or to cancel this Agreement, at its option, without prejudice to Seller's right to claim for Goods supplied and services provided at the date of cancellation and for all loss and injury occasioned thereby.

Inspection and Acceptance: Buyer must inspect delivered Goods and report claims for damages in writing within five (5) days of delivery or the Goods shall be deemed irrevocably accepted and such claims shall be deemed waived. Claims against the Transportation Company or insurer are the Buyer's responsibility.

Security Interest: Buyer hereby grants to Seller a purchase money security interest in any and all Goods delivered pursuant to this Agreement to secure all amounts payable by, and all obligations of, Buyer/Debtor pursuant to this Agreement. Buyer hereby authorizes Seller/Secured Party, or its agent or assigns, to sign on its behalf and file where appropriate this Agreement and any and all necessary UCC and other forms to perfect the purchase money security interest herein granted to Seller/Secured Party.

Specifications: Specifications and detail dimensions are subject to change without notice. Cancellation Only by Written Agreement: An order may only be cancelled by the Buyer upon receipt of written agreement from the Seller. Seller is entitled to charge a cancellation fee.

Intellectual Property: No right in any of the manufacturer's trademarks, trade names, patents, know-how, copyright, designs, or other intellectual property regarding any Goods covered by this Agreement shall pass to the Buyer.

Force Majeure: Seller shall not be liable for any delay or default in performance due to any cause arising or attributable to any event or omission beyond its reasonable control.

Exclusion of Express or Implied Warranties: Except as specifically provided for in the Limited Warranty below which relates only to new Goods, SELLER MAKES NO WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, ABOUT THE GOODS, INCLUDED BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILTY OR FITNESS FOR A GENERAL OR SPECIFIC PURPOSE. IN ADDITION.

Limited Warranty (New Goods only): The components in the Goods are warranted to the original Buyer only, against material defects in materials and workmanship by its manufacturer, Resurfice Corp., and Seller, for two (2) full years or 2000 hours of use from the date of delivery, whichever occurs first. The foregoing warranty is subject to the proper operation and maintenance of the Goods in accordance with the operation manual(s) supplied to Buyer. Warranty claims must be made in writing within sixty (60) days of the manifestation of a problem. Seller's or Resurfice Corp.'s sole obligation under the foregoing warranty is, at Seller's option, to repair, replace or correct any such defect that was present at the time of delivery. This limited warranty is void if the Goods are damaged by accident, unreasonable use, improper service, failure to follow instructions provided in the operation manual(s), modifications from their original state, or other causes determined not arising out of defects in materials or parts. This limited warranty is not transferable and does not cover normal wear and tear.

PLEASE NOTE: RESURFICE CORP. OR SELLER MUST FIRST AUTHORIZE ALL WARRANTY REPAIRS OR REPLACEMENTS. ANY REPAIRS UNDER THIS WARRANTY MUST BE CONDUCTED BY AN AUTHORIZED SERVICE REPRESENTATIVE OF SELLER OR RESURFICE CORP.

Limitation of Liability: Regardless of whether any remedy set forth in this Agreement generally or, if applicable, in the limited warranty above with respect to new Goods, fails of its essential purpose or otherwise, the liability of the manufacturer and Seller, whether or not the above limited warranty applies, shall not include any liability for direct, indirect, or consequential damages or damages for loss of profits, revenue, or use incurred by Buyer or any third party, whether in an action in contract, tort or otherwise even if Seller is advised of the possibility of such damages. Seller's liability for damages arising out of or in connection with this Agreement shall in no event exceed the purchase price of the defective Goods. The provisions of this Agreement reflect Seller's pricing based on the allocation of risk between Buyer and Seller and but for this allocation and limitation of liability, Seller would not have entered into this Agreement.

Arbitration: The parties agree that if at any time any question, controversy or difference concerning either party's performance or obligation under this Agreement shall arise that cannot be resolved by the parties, the sole remedy for resolution of any and all disagreements shall be through arbitration proceedings subject to the American Arbitration Association rules, and such arbitration shall take place in Minneapolis, Minnesota, unless both parties agree to a different location for the arbitration.

Costs of Enforcement: In any action or arbitration proceeding brought by either party to enforce the provisions of this Agreement, the prevailing party shall be entitled to recover its costs, disbursements, and reasonable attorney fees incurred by the party.

Indemnity: In no event shall Seller be liable to any third party for injuries alleged to be caused by the Goods provided under this Agreement. Buyer agrees to indemnify and hold Seller harmless from any damages, claims, losses, or expenses, including reasonable attorney's fees, incurred or suffered by Seller because of any claim brought by a user of or any third party arising from the operation or use of the Goods.

Miscellaneous Governing Provisions: This Agreement shall be binding upon and benefit the Buyer and Seller and their respective legal representatives, successors, and assigns. This Agreement shall be construed and interpreted in accordance with the laws of the State of Minnesota. Any dispute arising between the parties related in any way to the subject matter of this Agreement, subject to the arbitration provisions of this Agreement, shall be venued in the State of Minnesota and Buyer hereby waives any objection it may have to the personal jurisdiction of any State or Federal court located in Minnesota over it. The terms of this Agreement have been cooperatively negotiated by and among the parties, and this Agreement shall not be construed against any party as its author. No failure on the part of a party to this Agreement to exercise, and no delay in exercising, any rights contained in this Agreement shall operate as a waiver of such rights, nor shall any single or partial exercise of any rights hereunder preclude any other or further exercise of such rights or the exercise of any other right.

The remedies provided in this Agreement are cumulative and not exclusive of any other remedy provided by law. All of the provisions of this Agreement are separable, so if any provision is held to be ineffective by a court of competent jurisdiction, the remaining provisions of this Agreement shall remain in full force and effect unless the invalidated provision is so fundamental to this Agreement that the remaining provisions do not reflect the parties' intent. This Agreement contains the entire agreement of the parties with respect to the subject matter and supersedes all prior Agreements or understandings between the parties with respect to the same. Only a written instrument executed by both parties may modify this Agreement.