



SnoWizard[®]

SnoBall Machine[™]

OPERATING MANUAL

COPYRIGHT 1983-2010
ALL RIGHTS RESERVED
SNOWIZARD, INC.
NEW ORLEANS, LA 70121
800-366-9766
www.snowizard.com

TABLE OF CONTENTS

WARRANTY.....	3
PRECAUTIONS & INSTRUCTIONS.....	4 - 5
ASSEMBLY & INSTALLATION	6 - 7
OPERATION OF SNOBALL MACHINE.....	8 - 9
TIPS ON ICE.....	10-12
MAINTENANCE.....	13-15
Removing the blades.	
Sharpening the blades.	
Resetting the blades.	
ASSEMBLY OF THE CUTTERHEAD.....	16
ANNUAL MAINTENANCE.....	17
SERVICE & REPAIR.....	17
ELECTRICAL & TECHNICAL SPECIFICATIONS	18
TROUBLE SHOOTING.....	19
INSTRUCTIONS FOR REPLACING A SHAFT	20
SCHEMATIC OF CUTTER HEAD ASSEMBLY	21

The SnoWizard® SnoBall Machine™ is protected by
U.S. Patents No. 7,543,459 and 7,536,871

The
SnoWizard[®]
Lifetime Warranty

SnoWizard warrants that the SnoWizard[®] SnoBall Machine[™] will be free from defects in workmanship and materials and that SnoWizard will repair or replace all defective parts, excluding blades, to include labor and return shipping charges, for the life of the machine to the original retail purchaser.

This warranty does not cover damages resulting from accident, misuse or abuse, lack of reasonable care and maintenance, the affixing of any attachment not provided with the product, loss of parts, or subjecting the unit to any but the specified voltage.



This warranty provides for the repair or replacement of any defective parts, at our option, free of charge. If warranty service is required, a Returned Goods Authorization will be issued, and the unit must be sent prepaid and properly crated to the factory. Proof of purchase is required. SnoWizard will not be responsible for any damages that might occur during shipping. Shipping charges will be reimbursed if any parts are found to be defective.

SnoWizard extends the manufacturer's warranty on the motor from 1 year to a period of five (5) years.

This warranty gives you specific legal rights, and you may also have other rights, which may vary from State to State. No other warranty or express warranty is given.

IMPORTANT SAFETY INSTRUCTIONS



WARNING

To reduce the risk of fire, electrical shock, injury to persons, or damage when using the SnoBall Machine™, follow basic precautions, including the following:

- Read all instructions before using machine.
- Install or locate the machine only in accordance with the provided installation instructions.
- This machine is not for use by children.
- Close supervision is necessary when this machine is used near children.
- Do not leave children alone or unattended in area where the machine is in use. They should never be allowed to sit or stand on any part of the machine.
- Do not operate the machine if it is damaged or not working properly.
- Do not operate with a damaged plug or cord or if machine malfunctions.
- Use the machine only for its intended use as described in this manual.
- Do not wear loose or hanging garments when operating the machine as they could get caught in the moving parts.
- To reduce the risk of electrical shock, do not immerse the machine, cord or plug in water or other liquids.
- Never leave the machine running unattended.
- The use of accessory attachments may cause injuries.
- Do not use outdoors in rain or while standing in a damp area.
- Unplug from outlet when not in use. Unplug before cleaning. Unplug before servicing.
- Do not repair or replace any part of the machine unless specifically recommended in this manual. All other servicing should be referred to the manufacturer.
- Do not operate without the belt guard properly and securely attached.
- Do not operate with the door open.
- Do not insert fingers or any other objects in ice chute while the machine is operating.

CAUTION: A short power supply cord is provided to reduce the risk of personal injury resulting from becoming entangled in or tripping over a longer cord. Extension cords may be used if care is exercised in their use. If an extension cord is required, special care and caution is necessary. Also, the cord must be (1) marked with an electrical rating of at least 13 A., 125V., 1625 W., and (2) the longer cord should be arranged so that it will not drape over the countertop or tabletop where it can be pulled on by children or tripped over accidentally.

READ ALL INSTRUCTIONS BEFORE OPERATING THE MACHINE

The SnoWizard® SnoBall Machine™ is a commercial ice-shaving machine designed and built for commercial or institutional operation. **It is important that you read ALL the instructions before you operate the SnoWizard® machine.** You must understand the principles of operation of this machine if you are to operate it properly. Even if you are familiar with the operation of the SnoWizard® machine, we emphasize that you take a few minutes and read these instructions thoroughly. They contain information you need to know to avoid problems that you will encounter if you do not read them.

Employees who are to operate the machine should also read the manual as well as be personally instructed on the proper operation of the machine.

THE MACHINE IS A COMMERCIAL FOOD PROCESSOR DESIGNED FOR OPERATION BY COMPETENT AND KNOWLEDGEABLE EMPLOYEES. IMPROPER OPERATION OF THE MACHINE BY PLACING FINGERS OR HANDS IN THE SNOW CHUTE OR IN THE INTERIOR OF THE MACHINE BY THE CUTTING HEAD, WHILE THE MACHINE IS IN OPERATION, WILL RESULT IN INJURY.

CHILDREN SHOULD NOT BE ALLOWED TO OPERATE THE MACHINE. CAUTION SHOULD BE EXERCISED BY SNOBALL SHOPPE OWNERS OR OPERATORS IF THEY ALLOW CHILDREN ACCESS TO THEIR BUSINESS EVEN WHEN CLOSED. AS A SAFETY PRECAUTION, WE RECOMMEND THAT THE SNOWIZARD MACHINE, AS WELL AS ANY OTHER EQUIPMENT, BE UNPLUGGED WHILE CHILDREN ARE PRESENT.

The SnoWizard® SnoBall Machine™ carries the ETL approval to meet National Sanitation Foundation (NSF) and Underwriters Laboratories (UL) standards for sanitary and safety standards. In order for the machine to be in compliance with these standards, it is necessary for a “machine nut” to be installed on one of the four threaded studs that holds the belt guard in place.

A spare “wing nut” has been enclosed, in the event that you wish to replace the machine nut for easier removal of the cutter assembly when servicing the cutter and changing of the blades. If you chose to substitute the wing nut in place of the machine nut, the SnoWizard® SnoBall Machine™ will not longer be in compliance with the ETL standards.

ASSEMBLY AND INSTALLATION OF SNOWIZARD® SNOBALL MACHIN

1. Attach the motor plate assembly to the cabinet. To do this, remove the 2 nuts and bolts from the motor brackets located on the top right side of the machine. See Figure 1.





Figure 2.

2. Position the motor & plate over the 2 angle brackets and align the holes. Replace the nuts and bolts and tighten with a flat head screwdriver and a 7/16 wrench until snug See Figure 2.



Figure 1.

3. Attach the motor belt by placing the belt over the small pulley first, and then slip it over the large pulley while turning the large pulley until the belt is fully on. Remove the 3 wing nuts and the single hex nut that hold the cutter assembly in place. See Figure 3.



Figure 3.



Figure 4.

4. Install the belt guard over the belt and pulleys by aligning the holes in the tabs of the guard over the threaded studs on the cabinet. Replace the nuts and finger tighten only. See Figure 4.

Do not use pliers or any tools to tighten the wing nuts.

5. Place the drip pan on a table or counter where the machine is to be operated. The SnoWizard® logo should face the front with the drain hole positioned to the rear on the right side. The table should be large enough to accommodate the entire drip pan. See Figure 5.



Figure 5.

Mark with a pencil through the drain hole in the drip pan where the hole is to be cut for the drain. With a 1-1/2" diameter drill bit, drill through the table. Place the drip pan in position with the drain through the hole in the table.

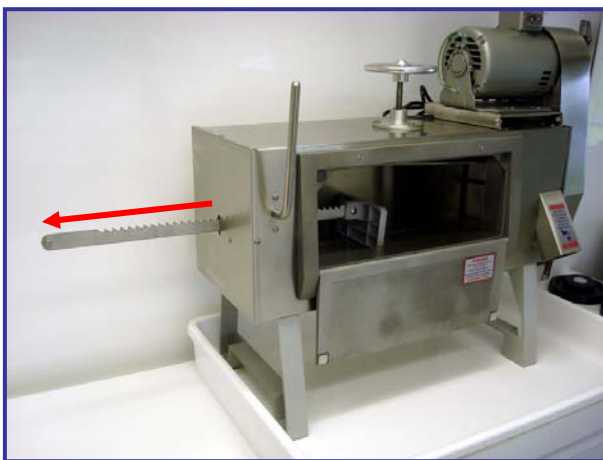


Figure 6.

6. The machine should be positioned where there is a 15 inch open space to the left of the drip pan for the extension of the ratchet/push-bar which extends out of the left side of the SnoWizard® SnoBall Machine™. See Figure 6.

The drain may be hooked up directly to an existing drain line or a hose may be attached to drain into a bucket. The drain connection is a standard 3/4" garden-hose thread fitting.

Wash the interior of the SnoWizard® machine with a mild detergent to thoroughly clean the interior before use. Rinse thoroughly with water. Make certain that the motor switch is in the off position. Plug the power cord into a 115 volt outlet. **This outlet should be on a separate 20 ampere circuit without any other electrical devices operating on the same circuit.**

Warning! If other electrical devices are on the same circuit as the motor, the motor may not run properly and may overheat. This is due to lack of amperage caused by the other electrical devices in use on the same circuit.

OPERATION OF THE SNO

1. Open the door and raise the feeder



2. Pull the ratchet bar out from the left end of the machine.



3. Turn the hand wheel on top of the machine counter-clockwise until the pressure plate has risen fully.

Place a block of ice into machine with the smoothest sides facing the top and bottom. Push the ice up against the cutter and push the ratchet bar up against the ice. Turn the hand wheel clockwise until moderate pressure is applied to the ice. Close the door. The SnoWizard machine is ready to make snow.

Turn the motor on and position a cup below the dispensing chute. Lift the pusher handle to no more than an 8 o'clock position. Apply light pressure to push the block into the cutter. Snow will dispense into the cup. Once the cup is filled, release pressure on the handle and the snow flow will stop.

Pressure will need to be adjusted on the pressure plate throughout the shaving of a block of ice. If the pusher handle is hard to operate, pressure may need to be decreased and if the block of ice bounces or chatters, pressure may need to be increased. The ice should be fed as to get a steady flow of snow at all times.

When the block of ice has expired, the push bar will stop automatically. **TURN THE MOTOR OFF AND WAIT FOR THE MOTOR TO COME TO A COMPLETE STOP. DO NOT REMOVE THE LEFT OVER PIECE OF ICE WHILE THE MACHINE IS ON OR BEFORE THE MOTOR HAS COME TO A FULL STOP.** To remove the ice, turn the hand wheel counter-clockwise to raise the pressure plate. Grasp the end of the ratchet bar and pull it out of the left side of the machine. Hands should be clear of all internal parts of the machine.

A piece of ice approximately $\frac{3}{4}$ " will be left over from each block. This piece must be removed before inserting a new block of ice into the cabinet.

Do not place a fresh block of ice in front of the remaining piece. This remaining piece will shatter into small pieces once you restart the machine.

When removing the remaining piece of ice after a block has been fully exhausted, it may often be stuck to the blades. To free the ice from the blades, turn the motor ON and then OFF. Wait for the motor and cutter to come to a full stop. This should free the ice from the blades. Carefully remove the remaining piece of ice.

WARNING! Never attempt to free the ice with your fingers if it is stuck to the blades as this may result in a severe cut to one's fingers if the ice breaks loose and fingers come in contact with the blades.

Do not use an ice pick and **chip or poke at the ice** to free it as the pick will make small pits and dimples on the surface of the aluminum cutter. These dimples will make it impossible to properly place the blade gauge on the cutter to set the blades after they have been sharpened.

If the chute becomes clogged with snow during operation, turn the motor off and wait for it to come to a complete stop. Spray water up the chute to clear out the clog. If water is not available, use a flexible rubber spatula to clean out the chute.

DO NOT USE AN ICE PICK OR YOUR FINGERS. DO NOT PLACE ANYTHING IN THE CHUTE WHILE THE MACHINE IS IN OPERATION. DAMAGE AND/OR INJURY WILL RESULT. PLEASE INSTRUCT YOUR EMPLOYEES.

BEFORE DAILY USE OF THE MACHINE

At the start of the business day during daily set-up, we recommend that a left-over, small piece of ice be placed in the machine and shaved daily for about 10 seconds. Leave the ice in the machine until you are ready to serve the first customer of the day, then remove the ice and put in a fresh, hard block from the freezer. This will cool the cabinet and the cutter so when snow is prepared for the first customer, snow will dispense instead of slush and water.

SNOW CLOGGING

Due to the nature of the product, snow will accumulate on the sides of the chute after continued use and this will result in the chute becoming fully clogged if it is not removed. The temperature of the ice will have a big effect on the frequency of this. Ice stored below 0° Fahrenheit will result in more frequent clogging. For convenience and ease of removal of clogs, [we highly recommend the installation of a spray nozzle](#), the same as used with a household kitchen sink. The sprayer should be mounted to the right side of the drip pan. We recommend that it be connected to a hot water line with a separate shut off valve. When snow begins to form on the sides of the chute, simply spray a short burst of water up the chute to dissolve it. The spray nozzle can also be used for dissolving snow which accumulates in the drip pan as well as for cleaning of the interior of the machine.



TIPS ON ICE

The SnoWizard® machine uses block ice approximately 5" x 5" x 15" in size; about 12 to 14 pounds each. The maximum size block that will fit into the machine is 6" x 6" x 15". Some ice manufactures or suppliers may sell ice in ready-to-use ten to fifteen pound blocks. Other ice houses may manufacture ice in large 300 pound blocks, which they then cut to smaller blocks for easier handling or specific use. If purchasing ice from a supplier that makes 300 pound blocks,

ask them to cut it into fifty pound blocks for you. Some will cut blocks of ice to size for you for a nominal charge. Check with your supplier.

Refer to the next page for proper instructions for cutting the proper size to fit the SnoWizard® SnoBall Machine™.

Ice should be rinsed with water before putting into machine to remove any impurities from the surface.

If you have a SnoWizard® block ice-maker, the blocks will be the proper size for use in the SnoWizard® machine. Ice should be frozen between 5 and 15 degrees Fahrenheit. When storing ice in a chest or upright freezer, you should use a freezer that has a thermostat control for adjusting the temperature.

Check the temperature of your freezer using a refrigerator/freezer thermometer. Most health departments require that a thermometer be kept in all refrigeration equipment at all times. Thermometers can be purchased at many supermarket and hardware stores at a nominal price.



Many freezers are factory set to freeze from 0 to -30 degrees F. This temperature is far too cold for making snow. Ice frozen below 0 degrees is extremely hard and also rough on the blades. **It shaves into snow which is too fine and dry and when syrup is poured atop, it will dissolve to almost nothing.**

Some freezers do not have a thermostat to adjust the temperature. If yours does not and the temperature is too cold; below zero, the blocks can be tempered and brought to the recommended temperature for use in the SnoWizard machine. Blocks can be tempered by removing them from the freezer and allowing them to rest for about 15 minutes before use. Multiple blocks can be placed in an ice chest where they can be kept for tempering and use throughout the day.

“Pressed” block ice is a type sold by some ice suppliers that offer block ice. Pressed block ice is manufactured by compressing crushed and/or cracked ice in a mold while injecting water into it. The water fills the space between the crystals and the block is frozen solid. However, some air remains in the block; therefore it is not as solid as is true block ice made from water. Pressed ice will also not give as much yield or result in a fine and fluffy texture as does block ice. This is because of the increased air and also because of the inconsistent hardness of the block which is comprised of crush and broken ice, water and air.

Commercial block ice is manufactured by ice companies in large blocks, generally 300 pounds each. The 300 pound blocks are then cut into 100 and 50 pound blocks for easier handling and transporting.

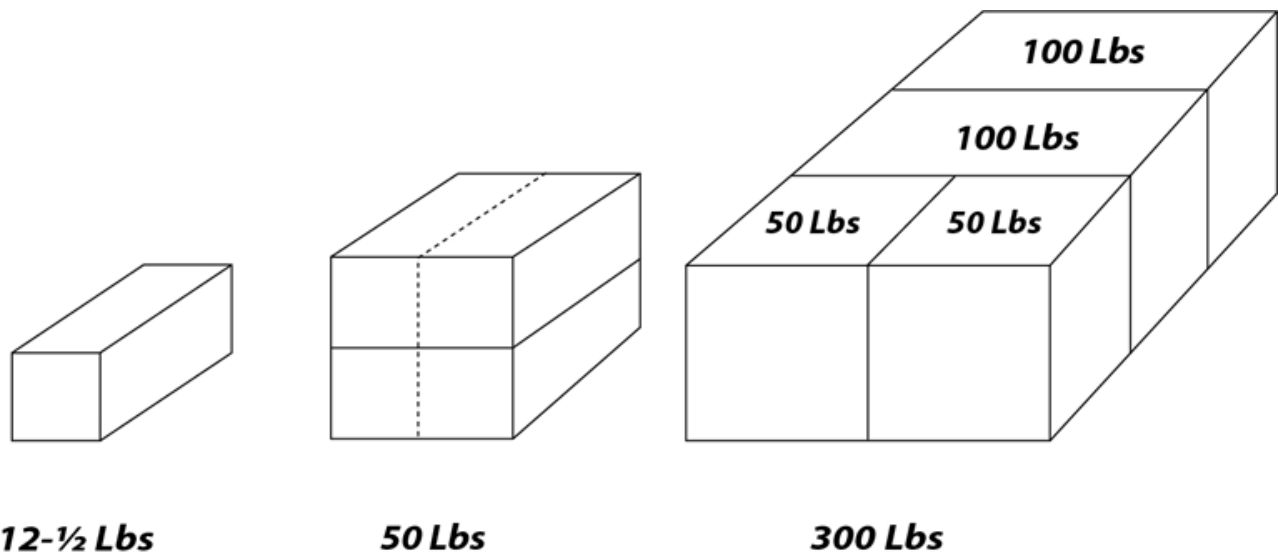
If you purchase ice from an ice company, you will need to split or cut the ice into the proper size to fit into the SnoWizard® SnoBall Machine™.

Starting with a 50 pound block:

1. With an ice pick, scribe a line, lengthwise, into the ice around three sides. The line should be scribed to a depth of approximately 1/4 to 1/2 inch.
2. Starting at on end of the block, insert the point of the ice pick into the scribe line and press it in approximately 1 inch. The ice will gradually begin to split. Move the ice pick forward about 5 or 6 inches and repeat until you complete the block.
3. Return to the front of the block, and repeat the process, pushing the ice pick further into the ice each time, until the block splits in half.

Each piece of ice will be approximately 50 pounds each. Repeat the entire process on each of the 50 pound pieces to yield 4 blocks approximately 12-1/2 pounds each.

Hint! A quick way to cut large commercial blocks in 12 ½ pound blocks is to use a battery-powered circular saw.



If the block splits unevenly, and needs trimming to fit into the SnoWizard machine, use a 6-point ice pick to quickly plane the block to even the sides.

Some ice companies may charge a nominal fee for cutting your ice, or provide it as a free service. If there is no charge for the service, it is customary to tip the delivery person if he cuts the ice for you at your business. Ice companies may also offer you an ice merchandiser (freezer), for storage of your ice, at no charge, as long as you are purchasing ice from their company.

WARNING!!!

On occasion, you may experience the motor stalling when the switch is turned on. This is caused by the block of ice sitting in the machine for an extended period of time, melting, and sinking into the blades preventing the cutter from rotating when the motor is turned on. If this occurs, **TURN THE MOTOR OFF IMMEDIATELY**. Release pressure on the pressure plate and pull the ice away from the cutter. Reposition the ice and restart the motor.

If the above occurs and the motor **is not turned off immediately**, damage may occur and the motor warranty will be voided. Failure to turn off the motor immediately can result in a burn out of the starting coil; a secondary coil designed to bring the motor up to operating speed quickly, before the regular coil engages. If this occurs, the motor may energize when turned on but may not rotate. This can be checked by using ones fingers to spin the motor shaft. If the motor begins to rotate then the starting coil has failed and can no longer engage to get the motor up to speed.

MOTOR WARRANTY

The motor carries a 1 year *manufacturer's warranty* from the date of purchase of the SnoWizard machine. SnoWizard cannot perform any service or repair on the motor during this period as this would void the manufacturer's warranty. Please contact the manufacture for all service, repair or replacement matters. SnoWizard can furnish you with contact information for the manufacturer's service center nearest to you.

SnoWizard extends the manufacturer's warranty for a period of 4 years, after the expiration of the manufacturer's warranty. If service or repair is required during this period of time, please contact SnoWizard directly.

MAINTENANCE

REMOVING THE BLADES

UNPLUG THE ELECTRICAL CORD TO THE MOTOR. Remove the four wing nuts and the belt guard. Slip the belt off of the large pulley. See Figure 3 above. Remove the entire cutter assembly from the machine and place it on a table surface with the blades facing downward. Loosen the set screw on the pulley with the 5/32" allen wrench. Remove the square key from shaft and then remove the pulley from the shaft. Lift the cylinder up and cutter will slip out.

CAUTION!!! If the pulley does not slip off easily, push on the shaft with your thumb, at the same time pulling up on the pulley. **UNDER NO CIRCUMSTANCES SHOULD YOU USE A HAMMER.** Use of a lubricant such as WD-40 to lubricate the shaft and bearings and carefully work the pieces until they come apart.

Loosen all of the blade screws using a #2 Phillips head screwdriver. Use of a smaller screwdriver may strip the screws. Next, remove the outer screws from each of the blade slots of the cutter; the inside screws do not need to be removed. All three blades can now be removed.

INSTRUCTIONS FOR SHARPENING BLADES FOR THE SNOWIZARD® SNOBALL MACHINE™

Blades for the SnoWizard SnoBall Machine™ must be sharpened on a regular basis for the machine to produce consistent, fine and fluffy snow. **It is recommended that the blades be sharpened every 4000 to 5000 pounds of ice, or approximately 300 to 400 blocks of ice.** This is the time to sharpen the blades; before they become dull.

An operator using the machine on a daily basis typically does not recognize the slow, constant dulling of the blades over a period of weeks. While it may seem that the blades are cutting fine, daily usage will take its toll on the edges. The first sign of dulling can be recognized when more effort is required to push the handle that advances the ice into the cutter to shave it. **THIS IS A SURE SIGN THAT THE BLADES HAVE BEGUN TO DULL.**

Day after day as the blades dull more, the machine may start to vibrate and shake a little more. In turn, the operator typically rotates the hand wheel, applying more pressure with the pressure plate in an attempt to stop the ice from shaking back and forth. The machine and ice are shaking because the ice is being forced into the dull blades. It's like trying to cut the ice with a butter knife and the block wants to "chatter" as it bounces off of the dull blade edges. Continued use of the machine with the blades in the dull condition will result in more force needed by the operator to advance the ice, more vibration and more turning of the hand wheel to apply pressure to stop the vibration. This condition will worsen until such time that the blades are sharpened. The blades should never be allowed to dull to this condition. The simple remedy to eliminate all these conditions is to replace the dull blades with sharp blades.

Blades for the SnoWizard SnoBall Machine™ should be sharpened by a skilled individual or blade sharpening shop. The blades must be flat ground on a sharpening machine and then hand honed on a stone to produce a razor sharp edge. **THEY CANNOT BE SHARPENED BY HAND ON A GRINDING WHEEL.** We recommend that you look in the YELLOW PAGES directory in your area under "Blade Sharpening Service" for qualified sharpeners.

If a qualified blade sharpening service is not available in your area, your blades can be returned to the factory for sharpening. Be certain to include your customer number, name, address, telephone number and any special instructions. Blades should be sent to:

SnoWizard, Inc.
101 River Road
New Orleans, LA 70121

Blades should be packaged in a box or padded envelope. Postal stamping machines may crack your blades if they are not well protected. Please include your customer number, return address and telephone number. If there are any special instructions, please include them on a note.

Individuals who are skilled in the use of a honing stone can sharpen their own blades several times before they need to be machine sharpened. We recommend the use of a clean relatively fine grit stone or a medium/ fine diamond sharpening stone. Lay the blade edge on the stone so that only the beveled surface rests on the stone. Draw the blade across the stone edge towards you. Hone the beveled edge several strokes then turn the blade over and hone the flat side flat. Alternate the blade from side to side after several strokes on each side. The angle of the blade should be kept constant on the beveled side for best results. The blade must be rotated from side to side to remove the fine burr that forms on the edges. If using a natural stone, your stone should be oiled and dipped regularly in your honing solution to float away particles during sharpening. Mineral spirits may be used in place of honing oil. If using a diamond or ceramic stone, soap and water is all that is needed to wash away the particles. After the blades are honed they should be rinsed with soap and water, and then coated with a thin film of foodservice grease. After several honings by hand the blades should be ground on a machine to insure that the straight edge has been retained. Blades should be ground at the same 30-degree factory bevel and evenly from end to end.

Important!

Blades should be sharpened every two to six weeks depending on your volume of business, or no less than every 4000 pounds, approximately 320 blocks of ice to insure fine, fluffy snow.

Resetting the Blades

Setting of the blades is easier to perform when using a vise to hold the cutter. This allows one to use both hands to hold the blade gauge and screwdriver when setting the blades.

Spread a *very thin film* of grease on the cutter surface of each blade slot and the back side of each blade. **DO NOT OVERGREASE!** This will reduce or prevent oxidation from occurring between the blades and the cutter.

Place the cutter in a vise and position it so that one of the blade slots is in a horizontal position. See dotted red line. Insert a blade into the slot and tighten the screws only until snug, just enough to lightly hold the blade in place. Place the blade gauge on the flat side of the cutter



under the edge of the blade. Adjustments are made by tapping the blades in or out with the handle of the screwdriver. Make certain that the screwdriver has a wooden or plastic handle. Set the blade so that it extends over the edge of the blade gauge just enough for the edge to be felt by stroking your finger over the gauge in an upward movement. Check the setting for accuracy by stroking upward against the blade gauge and over the edge of the blade. Check the accuracy of the setting at the point where the screws hold the blade in place.

The finer the feel or the less that the edge of the blade can be felt, the more exact the blade setting will be. If the blade cannot be felt when stroking across the gauge with the finger, use the butt of the screwdriver to tap the blade out from the shaft side of the cutter until it can be barely felt when stroking the finger over the blade gauge. When the feel of the blade edge is the same on both ends of the blade, snug up on the screws. Check to see that the blade remains in position after tightening. Turn the cutter to the next slot and repeat the operation for the remaining two blades. When all three blades are set, remove the cutter from the vise and place it on a rubber mat or solid surface for final tightening. Turn the screws slowly with firm pressure until tight. Be careful not to strip the screw heads. Recheck the blade setting with the blade gauge.



Insert a blade into the blade slot and hook the slot of the blade onto the screw closest to the center of the cutter. Swing the blade down into position and insert the 2nd screw and washer.



Place the gauge under the edge of the blade. Extend the blade out until the edge can barely be felt when stroking a finger over the blade. Tighten the screws **only until snug**, just enough to lightly hold the blade in place.



Tap the blade out toward the gauge if the edge cannot be felt when stroking across the gauge.



Tap the blade in if too much of the blade edge can be felt. Be certain to use a wooden or plastic handle screwdriver.

Are Your Blades Tips Touching?

If you're re-sharpened blades touch at the center of the cutter when setting, please read.

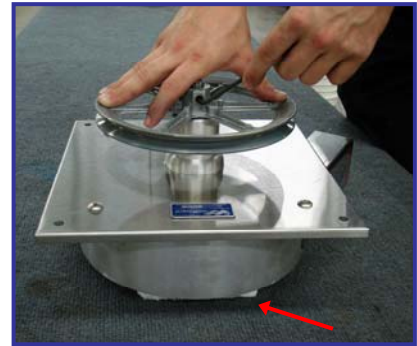
When blades are re-sharpened, metal is ground off of the *bevel edge* of the blade. Repeated sharpenings removes additional metal, thus the height of the blade is reduced with each sharpening. When the blades are being set on the cutter, each blade has to be brought out a little more than the previous setting, (since the blade is shorter) to align with the edge of the blade gauge. It is also brought "in" a little, toward the center of the cutter. This happens because the blade screw slots are at an angle and this angle forces the blade toward the center of the cutter. As the blades advance toward the center of the cutter, they may touch each other. When this happens, the blades are unable to be set. **TO SET THE BLADES, GRIND OFF A VERY LITTLE AMOUNT OF THE TIP OF EACH BLADE ON A BENCH GRINDER.** We stress "very little" because the action is tripled when a little metal is taken off of each of the three blades. An amount of 1/32 to 1/64 of an inch is all that is needed. If any more than this is removed, then

a gap or space will be present in the center of the cutter between the blade tips. If the gap is too large, then a small circle of ice, the diameter of the gap between the blades, will not be shaved and can buffer the ice, preventing it from advancing into the cutter.

Re-Assembly of the Cutter

Wipe the shaft and each of the bearings with a clean rag or paper towel to remove any dirt or grit. Spread a *thin film* of grease on the shaft and also on each of the sealed bearings. This is the Petro Gel foodservice grease that is supplied with the SnoWizard SnoBall Machine™. Grease can be purchased from SnoWizard or from any local supplier of soft-serve ice cream machines in your area. With both hands, hold the cylinder over the shaft and carefully slide the bearings over the end of the shaft. This will be a snug fit so be careful not to force the shaft through the two sets of sealed bearings. If the shaft does not slip through the bearings easily, do not use a hammer or attempt to force it through. Check to see if the shaft has been scratched or marred. If so, use 400-grit sandpaper in a fast back and forth shoe-shining motion to polish off the burr or scratch. If polishing is required, the shaft must be again wiped clean of all grit and re-greased before installation.

Fold a rag into a 5 or 6-inch rectangle and place it on a counter. Grasp the entire cutter assembly, being careful of the blades, and set it on top of the folded rag with the blades resting on the rag. (See the red arrow). This will keep the cutter recessed, up against the inside of the cylinder and against the bearings. Place the pulley on the end of the shaft and align the key slots. Insert the square key into the slot. We recommend that you first wipe the key clean, and insert it so that the score mark from the setscrew will be in the same position as when it was removed. Press down on the pulley firmly with one hand, while tightening the setscrew with the allen wrench with the other. Do not over tighten or you may strip the threads of the pulley. Stand the assembly upright and grasp the pulley, pushing and pulling on it to check to see that the assembly is snug and that there is no “play” between the cutter and the bearings. If all is snug, grasp the pulley with one hand while holding the assembly with the other and spin the pulley to rotate the cutter. Listen and look to check that everything is in order. Assembly is complete.



ANNUAL MAINTENANCE

The following maintenance should be done at least once every year and also at the close of your season if the machine is to be stored for any period of time.

Check all screws and nuts for tightness. Wash the interior cabinet with a mild detergent. Remove the blades and six blade screws from the cutter. If calcium deposits have built up on the cutter, they should be removed. If so, we recommend that the screws that attach the three fins also be removed for cleaning of the threads. Lime and calcium deposit removers can be purchased from your local hardware store. Follow the instructions on the product. After all parts have been cleaned and washed, allow them to dry thoroughly. A hair drier can be used to thoroughly dry the cutter and the threaded screw holes before assembly.

Place a small dab of grease in each of the blade and fin screw holes. This is essential to prevent calcium deposits from forming in the threads. Sharpen blades, grease, and reassemble cutter according to instructions. Grease the threaded rod that controls the pressure plate both inside and out, with the grease provided. Grease the ball joint of the threaded rod where it attaches to the pressure plate.

WARNING - The quality of water can vary greatly among municipalities. If your ice leaves a heavy buildup of mineral deposits, the interior of your machine, the cutter and cylinder may need to be cleaned on a regular basis with calcium or lime deposit remover. **If calcium deposits are allowed to build up on the cutter surface where the blades and fins are attached, and the machine is stored for a long period of time, these deposits will grow and expand on the underside of the blades. The pressure of the deposits pushing against the blades will cause them to crack at the screw slots.**

We recommend that you thoroughly clean your entire machine at the end of each season. Remove the blades and clean the entire cutter assembly and allow it to thoroughly dry. Do not leave the blades in the machine as moisture will be trapped between the blade surface and the cutter surface and may cause your blades to crack. Install a sharp set of blades, re-assemble the cutter head so the machine will be ready to go for the next season.

SERVICE

If your cutter ever requires repair or service, we recommend that the entire cutter assembly be returned to the factory. There is no other way to ensure that the work will be done properly. Charges are very reasonable being based on the cost of the parts plus a labor charge for the time expended on the job. A labor charge of thirty minutes to an hour is usually sufficient to cover all but very extensive overhaul jobs due to neglect. A letter of instructions should be enclosed with the cutter assembly and shipping charges must be prepaid. Adherence to these suggestions will prevent loss of time in handling at the factory. When your cutter arrives for service, it will be carefully inspected, together with your letter of instructions. Next, a quotation covering total cost of the work to be performed will be presented to you. If time is of importance, you should enclose your telephone number and cost of repairs will be telephoned to you. No actual work will be performed before receiving approval of your quotation unless you specifically authorize us to do so.

ELECTRICAL REQUIREMENTS

The motor is 1/2 horsepower and plugs into a 115/120 volt outlet. It draws 8.5 amperes on start-up. The motor must be operated on a separate, grounded circuit using 12 gauge wire. Check your electrical line. Use of any gauge wire thinner than this may cause the motor to run warmer than usual and overheat. **DO NOT USE EXTENSION CORDS.**

MOTOR ROTATION: The rotation of the motor is Counter-Clockwise. **In the event that you ever change or replace the motor, the rotation must be set to run Counter-Clockwise.** Motors operated by a generator will be covered under THE MANUFACTURER'S WARRANTY ONLY, AND ARE NOT COVERED UNDER THE SNOWIZARD EXTENDED WARRANTY.

ADDITIONAL NOTES .

Lubricating grease used in the machine is U.S.D.A. approved food service grease. Use of any other type grease is not recommended.

All hardware used in the machine is stainless steel. In the event that you lose any nuts, bolts, or screws, they should be replaced with stainless steel hardware only.

SPECIFICATIONS:

MOTOR:	1725 RPM, 115V, 1/2 Horsepower, 60HZ, CCW
BELT:	FHP V-BELT 38" Outside Length. Model 4L380
LARGE PULLEY:	OD: 8" 5/8" Bore with special raised section on the hub
SMALL PULLEY:	OD: 2-1/2" 5/8" Bore
GREASE:	U.S.D.A. Food service Grease
MACHINE WEIGHT:	100 lbs.
DRIP PAN:	Dimensions - 24" x 36" x 6"

ACCESSORIES INCLUDED

OPERATOR'S MANUAL
BLADE GAUGE
4 OUNCE TUBE U.S.D.A. FOOD SERVICE GREASE
5/32" ALLEN WRENCH

ETL & UL LISTED

The SnoWizard® SnoBall Machine™ is ETL approved for sanitation and UL approved for use in all 50 states and Canada.

INSTRUCTIONS FOR REMOVING AND REPLACING THE SHAFT ON A SNOWIZARD® CUTTER

A 5/32" allen wrench is needed to remove or attach a shaft to the cutter on a SnoWizard® machine. **NO OTHER TOOLS ARE NEEDED OR SHOULD BE USED.** Use of pliers, vise grip pliers or other tools on the shaft may scratch, gouge or damage the shaft and ruin the machined surface.

Two people are needed to perform the change properly.

Place the cutter on a flat, non-slip surface, preferably on a towel, rug or piece of carpet. This will protect the blades if they have not been removed from the cutter. It will also provide friction in preventing the cutter from moving while changing the shaft.



Place the large 8" pulley on the end of the shaft and turn to align the key holes. Insert the square key and tighten the set screw on the pulley to lock the pulley onto the shaft. **See Figure 1.**

Figure 1.



Figure 2.

Next, have one person grasp the cutter firmly by the fins while pressing downward. The second person then needs to grasp the pulley using both hands. **See Figure 2.**

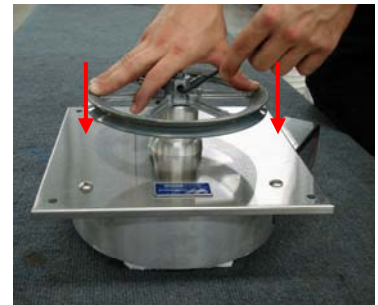
Turn the pulley **CLOCKWISE** to unscrew it from the cutter. Please note that the shaft has a **LEFT HAND THREAD**, therefore it must be turned clockwise (opposite of the normal way) to unscrew it from the cutter. A significant amount of force will be needed to unlock the shaft from the cutter. Once the shaft begins to turn, loosen the set screw and remove the pulley. The shaft can then be fully unscrewed by hand.

Before attaching a new shaft, wipe the threaded hub surface of the cutter clean. Apply foodservice grease to the threads of the shaft and smear into the threads to lubricate all groves. By hand, attach the new shaft to the cutter by screwing it **COUNTER-CLOCKWISE** into the cutter. When the threads begin to tighten, attach the large pulley to the shaft, insert the square key, and tighten the set screw to lock the pulley in place.

Place the cutter back on the flat non-slip surface. Have one person grasp the cutter firmly by the fins while pressing downward. The second person then needs to grasp the pulley using both hands. Turn the pulley **COUNTER-CLOCKWISE** and begin screwing it into the cutter. As the threads tighten, alternate turning the pulley clockwise and counter-clockwise while screwing it into the cutter. This back and forth motion will lubricate the threads in the cutter as the shaft is being screwed into it.

When the bronze collar of the shaft meets the flat surface of the cutter, apply additional turning force to the pulley to seat and lock the shaft in place. Loosen the set screw on the pulley and remove it from the shaft. Check the shaft for any mars or surface scratches. If any are present, use a 220 grit sandpaper or finer, and polish the surface to remove.

Wipe the surface of the shaft and bearings clean using a clean rag or paper towel. Lubricate the shaft and bearings by spreading a thin film of foodservice grease on the surfaces. When inserted into the bearings of the cylinder, the cutter/shaft should go in smoothly without needing any force. If the shaft does not insert fully through the bearings, **DO NOT FORCE IT THROUGH**. Carefully remove the cutter/shaft and inspect the shaft and bearings for any mars, scratches, grit or foreign matter. Polish, clean, re-lubricate and try again.

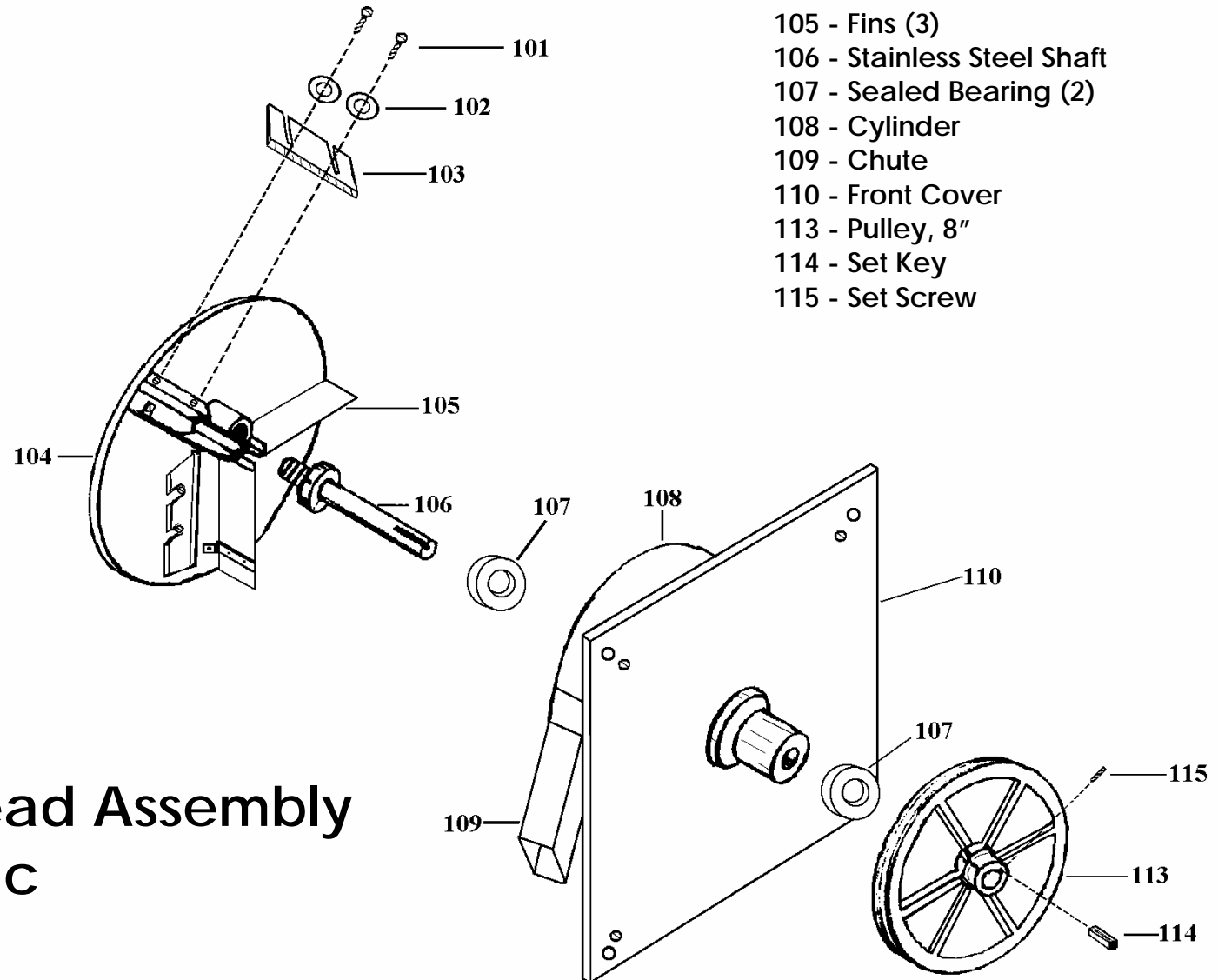


Assemble the cutter, cylinder, pulley and set screw as shown in **Figure 3**. Place the entire cutter head assembly on a flat surface. Fold a rag or small towel and carefully place it under the blades. This will keep the cutter pressed up fully into the cylinder. Press down against the pulley with moderate force while tightening the set screw with the other hand.

TROUBLE SHOOTING

<p>The motor begins to smoke when I turn it on.</p> <p>The motor switch is turned on but the motor is not turning.</p> <p>Nothing happens when I turn the motor switch on.</p>	<p>TURN THE MOTOR OFF IMMEDIATELY. Check to see if the block of ice has melted into the blades, preventing the cutter from turning.</p> <p>Snow may have built up in the chute causing a back up of snow in the cylinder, preventing the cutter from turning.</p> <p>Check to see if the outlet has power. Plug a radio or other device into the outlet to see if it works.</p> <p>Check that the plug has not come loose from the outlet.</p>
--	---

<p>I apply pressure to the handle but the block of ice won't advance.</p>	<p>The handle may be raised too high. Turn the handle around clockwise and raise it to the 8:00 o'clock position, or no higher than the screw that attaches the back cover (left side) of the cabinet.</p> <p>The block of ice may have frozen to the bottom of the cabinet. Release pressure on the pressure plate, pull the ratchet bar back and free the block.</p>
<p>It's really hard to advance the ice when I push on the handle.</p>	<p>The pressure plate may be tightened too much. Turn the hand wheel and loosen up on the plate.</p> <p>The blades may be dull. (This is a common occurrence.) Replace the blades with a sharp set and change your blades more often.</p>
<p>The ice is coming out grainy, and more like crystals than snow.</p>	<p>The ice is being fed too quickly. Shave the ice at a slower pace to produce fine, fluffy snow.</p> <p>The blades may be dull and need sharpening. Replace the blades with a sharp set more frequently, at least every 400 blocks of ice.</p>
<p>The snow keeps clogging the chute almost instantly as I shave the block.</p>	<p>The blocks of ice are too cold. Adjust the temperature of your freezer to a warmer setting, about 5° to 10° degrees above 0°. If your freezer cannot be adjusted, temper your ice by letting it rest at room temperature for about 15 minutes before using.</p> <p>Temper the ice by removing it from the freezer and storing several blocks in an ice chest.</p> <p>You may be holding the cup too close to the chute, causing the snow to back up in the machine. Hold the cup about 4" from the chute when filling with snow.</p>
<p>When I push the handle to shave the block of ice, nothing comes out of the chute.</p>	<p>The chute may be clogged with snow. Remove the clog by spraying water up the chute.</p> <p>The cutter and cylinder housing may be clogged with snow. Remove the block of ice and spray water into the cutter to dissolve the clog.</p>



Cutter Head Assembly Schematic

1983 to present models