

HydroCourt Maintenance Manual

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1.0 COURT EVALUATION

Evaluate tennis court conditions in terms of preventive maintenance. Identifying and correcting potential problems before the playing season begins. Inspect fencing, curbing, court surfacing and court equipment as described below.

A. FENCING

1. Bottom, Intermediate and Top Rails secured at the proper height above the court surface and evenly parallel around the court.
2. Line, Corner and Terminal Posts are plumb and vertical with End Caps in place and secure.
3. Fencing Fabric evenly stretched and secured to the upright posts. Height of fence bottom approximately $\frac{3}{4}$ " above the court surface.
4. Bottom Tension Wire should be tied to fence bottom with "hog rings" spaced every 24 inches.
5. Gate Frame tension bars, Post Hinges and Latching Devices inspected and secured.
6. Court numbers in place.

B. PERIMETER CURBING

1. Remove obstructions along court perimeter that may affect surface drainage.
2. Remove build-up of surface material from top of curbing.
3. Repair curbing where necessary.

C. COURT SURFACING

1. Check average surface depth in several areas across the court. Identify and correct thin areas and minor grade changes. The following chart illustrates HydroBlend required for reconditioning and maintaining a surface thickness of 1".

<u>Average Depth</u>	<u>Surfacing required per court</u>
1"	2 tons
$\frac{3}{4}$ "	10 tons
$\frac{1}{2}$ "	20 tons
$\frac{1}{4}$ "	30 tons

When average depth equals $\frac{3}{4}$ " to 1 inch, up to 5 tons, in 1 ton applications, can be made each spring and fall until the average depth equals 1 inch. When the average depth equals less than $\frac{1}{2}$ ", a laser lift will provide the most precise method available for resurfacing the HydroCourt.

D. COURT EQUIPMENT

<u>Equipment</u>	<u>Condition</u>
Aussie Clean Sweep	
Center Strap Anchors	
Center Strap and Hooks	
Court Numbers	
Court Rake	
Drag Brush	
Line Scrub	
Line Sweepers	
Line Tapes	
Lute Scarifiers	
Nails	
Nets	
Net Posts	
Net Posts Reels	
Roller	
Roller Brushes	
Roller Scrapers	
Tennie Two-Step	
Tidi-Court	
Windscreens	
Fasteners	
Ty-wraps	
Plastic Snaps	

2.0 ACTIVATE HYDROCOURT IRRIGATION SYSTEM

Activating the HydroCourt irrigation system is a two step process; inspection of the main feed lines and inspection of valve boxes.

1. Determine if any breaks exist in the irrigation lines leading to the tennis courts by activating the main supply line while keeping the water control valve boxes to the HydroCourts turned off. If a leak does exist, the water will be forced to the surface in a very short time and a repair can be made.
2. Remove foreign debris from the water control boxes.
3. Secure water control valve box overflow pipes.
4. Reinstall fill-valves in the appropriate boxes.
5. Secure water level stickers in the water control boxes.
6. Inspect and secure water hose connections.
7. If irrigation system is connected to any system that utilizes a water pressure booster pump, ensure that a pressure relief valve is properly installed near the HydroCourt and is in good working order.
8. Water meter readings should be recorded before filling the HydroCourt cells.
9. Ensure each HydroCourt cell drain plug is in place to prevent water from entering the cells during the water control valve box/irrigation system test in the following (3.0).
10. The HydroCourt irrigation system is now ready to be tested.

3.0 TEST HYDROCOURT IRRIGATION SYSTEM

1. Turn the water on allowing the water control valve boxes to fill. Watch each float valve carefully to ensure it will shut off when the predetermined water level is reached.
2. Re-adjust fill valves if necessary.
3. Drain each control box by removing the overflow pipe.
4. Re-install the overflow pipe and repeat filling procedure again to ensure that each water control box fill valve works properly.
5. Check all pipe fittings and secure if necessary.
6. Keep each HydroCourt cell drain plug in place to prevent the cells from filling until the court surface has been reconditioned. Reconditioning will be accomplished more efficiently on a surface that is dry; which is explained in detail in the following section (4.0).

4.0 HYDROCOURT SURFACE RECONDITIONING

1. Ensure that the court surface is firm enough to accommodate foot and light equipment traffic before you begin reconditioning.
2. Remove foreign debris such as branches, leaves and weeds from the court surface.
3. Brush and roll court surface until smooth and firm.
4. Lute into piles and remove the "dead material". The "dead material" is loose HydroBlend material that has fallen out of prescribed gradation as a result of wind, water erosion and tennis play. This portion of the surface material will appear lighter in color and are the larger particle sizes of the mixture.
5. Brush surface repeatedly to redistribute remaining HydroBlend.
6. Identify and patch low areas of court surface. Areas immediately behind and in front of the baseline where most of the play takes place may need particular attention. These areas are identified by stretching a mason's line over the court and marking the perimeter of the low areas. New HydroBlend can be applied and leveled with the use of a straight edge that may range from an aluminum extension ladder or the Lute/Drag Brush.
7. Hand lute alley, center, base and service line areas with new HydroBlend to fill old nail holes and level surface prior to top-dressing.
8. Lightly scarify and top-dress the surface uniformly with HydroBlend using the Tru-Flow Spreader. Follow instructions on the HydroBlend bag. Apply no more than 1 ton per application.
9. Immediately begin brushing new top-dressing before moisture migrates up from beneath the existing surface. Court surface may have an amount of moisture that requires immediate brushing after each pass of the top-dressing spreader. Better results are obtained when working with a surface that is as dry as possible during reconditioning, followed by a light overhead watering and then rolling.
10. Remove each HydroCourt cell drain plug and allow the cells to fill with water.
11. Stay off newly resurfaced court until firm. Allow top-dressing to absorb moisture and become firm.
12. Ensure that after a 24 hour period, the water level in the water control valve boxes remains at the pre-determined levels set up in 3.0.
13. Continue smoothing and leveling the fresh surface.
14. Roll in a back in forth method without turning sharply.
15. Continue alternating steps 13 and 14 until the desired firmness is achieved.

16. The HydroCourt surface should be in playable condition before proceeding with final tennis court preparation.

5.0 FINAL TENNIS COURT PREPARATIONS

1. Remove net post hole caps or protective covers. Remove foreign debris that may have fallen down into net post holes.
2. Re-install net posts.
3. Hang windscreens. Use s-hooks, ty-wraps, plastic snaps and fasteners where necessary.
4. If necessary, remove any surfacing material from inside net center anchor.
5. Measure for line tape layout. If using more than one measuring tape, ensure both tapes have been compared, side by side, for exact synchronization to ensure accurate layout.
6. Install line tapes. Proper use of a speed-winder chalk-line ensures a clean snap and a straight line to layout line tapes. Follow instructions included with the line tapes. Be sure to leave the nail heads ½" above the tape surface. Nailing all the way down to the tape results in "hammer head" depressions, which hold surface material around each nail rendering an unsightly appearance.
7. Roll the nail heads down to the tape surface slowly and carefully. Roller should always travel forward, in a straight line with the direction of the tape and should never make a turn until off the tape surface.
8. Install the tennis net. Attention to details such as correct lacing and the tightness of the net against the net posts makes for a clean fitting net.
9. Measure net and ensure the center strap is straight and not twisted.

6.0 WEED CONTROL

The main objective of herbicide use is to apply the proper chemical in the correct manner to achieve an adequate level of weed control. Weed growth may become a problem on those areas where the least amount of traffic occurs, around the inside perimeters and along the net line.

A basic understanding of herbicides is essential before one makes any decisions involving the purchase, mixing and application of an herbicide. Always contact your local agricultural extension office for the latest regulations and recommendations.

Herbicides used on the tennis court surface fall into 2 general categories, Pre-emergent and Post-emergent.

1. A **Pre-emergent** herbicide provides a measure of weed control by forming a "chemical barrier" that interferes with the germination process of a weed seed. The weed seed actually germinates, absorbs the chemical through the emerging root, and then dies.
2. A **Post-emergent** herbicide provides a measure of weed control if applied properly over the leaf surface. The chemical is absorbed by the leaves and in most cases is trans-located throughout the plant.
3. Post-emergent herbicides are classified as either **SELECTIVE**, meaning that they control only certain weeds or **NON-SELECTIVE**, meaning that they control everything that they are applied to. Roundup is an example of a popular non-selective herbicide.

4. A **combination** of both pre-emergent and post-emergent herbicides can be employed to control existing weeds and weeds that have not yet germinated. **However**, only certain herbicides are compatible, meaning they can be safely mixed together. Roundup and Surflan are examples of compatible herbicides.
5. **Always** read and follow instructions on the herbicide label before use. Always consult with your local county extension agent for advice on any weed problem.
6. The **method** of herbicide application is the key to quality control. Maintain constant pressure, agitation and a constant walking pace. Keep the spray nozzle at a constant height above the ground. This method ensures that an **evenly distributed** band width of chemical has been applied correctly.

7.0 DAILY MAINTENANCE

1. Inspect and repair any surface damage. If baseline areas require divot repair, lute run-off and redress as necessary.
2. Remove weed growth or foreign debris from surface.
3. Inspect tapes and nails.
4. Groom the surface with the Court Rake, Aussie Clean Sweep or Drag Brush. The Aussie Clean Sweep serves a dual purpose, as a smoothing/leveling device (with the teeth in the up position), or as a debris remover (with the teeth in the down position).
5. Sweep the line tapes. Ensure that the area beneath the net has been swept.
6. The Line Scrub may be required to remove any surface material that adheres to the line tapes.
7. For courts having gone through the winter months in freezing climates, roll the surface daily for the first two weeks of the playing season. Once the surface is firm, rolling can be done on an "as needed" basis.
8. (Optional) Sweep line tapes after the surface has been rolled for a cleaner looking line tape.
9. Ensure net and center strap are set correctly.
10. Clean benches, coolers, cooler stands, ect. If these items are kept on-court during the season, move them and groom the surface beneath on a regular basis.
11. Wash out the Tennis Two Step on a regular basis.
12. Inspect windscreens.
13. Ensure that the Line Sweeper, Aussie Clean Sweep and Drag Brush are hanging on the fence properly.
14. Run the above ground irrigation system to lightly dampen the court surface if necessary.

8.0 PERIODIC MAINTENANCE

1. Inspect court surface material for any build-up to be removed; particularly along the net-line.
2. Inspect the court surface for weed growth. **Algae Control** is best achieved by following these guidelines:
 - a. Agitate low traffic areas on the tennis court periodically. Use the Court Rake, Lute/Scarifier, or the Lee Tow Scarifier. Do not pull the Tow Scarifier over the line tapes.
 - b. Stay on top of growth problems by regular observation and preventive maintenance practices such as frequent surface agitation.

- c. **Consult** your local county agricultural cooperative extension agent prior to purchase and application of any chemicals.
 - d. **Always** read the entire chemical label and follow any safety precautions prior to application.
3. Periodic leveling/smoothing of the court surface may be required, particularly in areas of heavy play. The best time of the day for smoothing the surface is during the afternoon when the surface is drier, just before turning on the watering cycle. Use a regular or Steel Bristle Drag Brush.
4. Periodic observation of irrigation heads while the irrigation system is running is the best preventive measure to ensure thorough and even water distribution.

9.0 END OF TENNIS SEASON MAINTENANCE

1. Tennis Net: Remove and attach a tag noting any repairs needed.
2. Windscreens: Inspect for needed repairs, label for easy relocation next season. Fold properly for storage in a plastic bag. Wait until the windscreen is dry (afternoon) before removing. Fence maintenance during the "off-season" can be accomplished much easier without the windscreens hanging on the fence.
3. Net Posts: Remove and inspect for repairs.
4. Cover net-post holes to prevent water, surface material and debris from entering during the off season.
5. Remove line tapes and nails. Ensure that all nails have been removed from the court surface.
6. Coolers: Wash inside and out. Repair spouts if necessary.
7. Benches: Wash, repair and paint if necessary.
8. Line Sweepers, Drag Brushes and other accessories: Wash clean, inspect for repairs and hang properly to protect the brush.
9. Roller: Consult owner's manual for proper care and servicing.
10. Aussie Clean Sweep: Wash clean, inspect for repairs and hang to protect the mat.

10.0 END OF SEASON HYDROCOURT SURFACE MAINTENANCE FOR FROST AREAS

1. Brush and roll repeatedly to fill in and compact old nail holes.
2. Maintain a regular schedule for brushing and rolling as late as possible into the post season to protect the surface integrity. The schedule may have to be started during the afternoons, after the morning frost has melted off and migrated back into the surface. Maintaining proper moisture levels in the surface profile as late as possible into the post season prevents the surface from drying out and being vulnerable to wind and water erosion.

11.0 WINTERIZING THE HYDROCOURT

1. Turn off the main water supply.
2. Remove overflow pipes in the valve boxes and allow court to drain.
3. Remove the flexible water lines from valve boxes.
4. **Label** and remove fill-valves.
5. Blow or drain remaining water from pressure lines and valves.
6. Cover valve boxes if necessary.
7. Remove debris from inside the valve boxes.
8. Replace the lids on the valve boxes.
9. (Optional) After the court surface is dry, cover the court with plastic to prevent rain and snow from reaching the surface. Covering the surface for the winter greatly reduces the amount of spring reconditioning required to open the court in the spring and prevents the freeze/thaw cycle.

12.0 CONTINUING EDUCATION

Several educational aids are available for staff training; the General Maintenance Outline for Har-Tru Tennis Courts, the Maintenance Video, the Maintenance DVD and other resources. Visit our web-site at www.leetennis.com for additional information. These products are ideal for keeping your staff informed on a regular basis about the most efficient methods of Har-Tru tennis court maintenance.

TENNIS COURT MAINTENANCE
BUDGET WORKSHEET

Inventory

Cost

Needed

Budget

Aussie Clean Sweep			
Benches			
Center Strap Anchor			
Center Strap/Hook			
Coolers & Stands			
Court Layout Cables			
Court Numbers			
Court Rake			
Drag Brushes			
Line Scrub			
Line Sweepers			
Line Tapes			
Lute Scarifier			
Maintenance Video			
Nails			
NDS Drainage			
Nets			
Net Posts & Reels			
Roller			
Roller Cover			
Scarifier			
Spreader			
Sprinkler Heads			
Squeegee			
Tape Stretcher			
Tennie Two-Step			
Tidi-Court			
Windscreens			
Fasteners			
Ty-Wraps			
Plastic Snaps			
Har-Tru			
MAG/Calcium			
LEE Seminar			

TOTAL:

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