



# Owner-Users Manual



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## DESCRIPTION

The HydroCourt watering system beneath your tennis court is the most trouble-free and efficient system for irrigating your Har-Tru courts. However, until you are familiar with the system and its functions, you cannot take complete advantage of your new HydroCourt. This guide will help you understand the system and how to make it work for you.

HydroCourt is a unique subsurface irrigation system which creates an artificial water table beneath a Har-Tru tennis court. By controlling the level of this water table, optimum moisture in the court surface can be maintained.

The court is constructed with six water retaining cells, each approximately 20' x 60'. These cells are constructed using a high density polyethylene liner. They can be independently controlled to allow for optimum moisture control in shady areas and areas of heavy play such as behind the baseline.

Water is fed directly into the stone base of each cell. Through capillary action, the Har-Tru surface pulls moisture through the stone screening layer replacing the moisture lost to evaporation. The key to the system is to establish the water level that will maintain the optimum moisture content in the playing surface. Each cell has its own water control box which establishes and controls the water level in the cell.

The following pages illustrate two types of court construction and cell layout. This is to help you better understand the HydroCourt system. Your HydroCourt may vary somewhat from the following diagrams due to slope requirements unique to your court or courts.

## WATER LEVEL CONTROL BOX

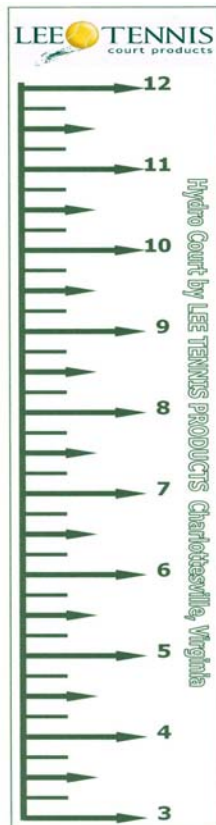
The water level in each cell is regulated by the control box for that cell. The control boxes are located adjacent to the court. The elevation of the water in each control box will reflect the elevation of the water in each corresponding cell. Each control box should have a mark on the ruler in the box. This mark indicates the top of the center pipe for that particular cell. Usually, the optimum water level is very close to this mark. However, this may vary depending on seasonal, geographical, and climate conditions.

Each control box has an overflow pipe. This overflow pipe is free to rotate in varying positions. The pipe should be tilted downward with the opening just above optimum water level. This allows any excess water to overflow and exit the system thus, preventing a build-up of unwanted water in the court cells. This pipe may also be removed for seasonal installations to prevent cell damage in the winter.

## WATER LEVEL CONTROL FLOAT VALVE

The water level control float valve is simple to operate and adjust. The present valve being used by HydroCourt has a 3" adjustment range. This range is more than adequate if the valve is installed correctly. Once the optimum water level is established there is no need to further adjust the water level.

To adjust the water level, install the threaded plug in the pipe going to the cell. This isolates the water adjustment to the control box only. Next, note the height of the water in the box using the ruler. Remove the overflow pipe to drain the box until the valve actuates and water is flowing. Then, replace the pipe and wait for the box to refill. Once the float valve shuts off and water is no longer flowing, record the depth as indicated on the ruler in the box. To raise the water level turn the white adjustment screw (located near the top of the float valve) clockwise or in the (+) direction. To lower the water level, turn the screw counter-clockwise or in the (-) direction. Repeat these steps as necessary until desired water level is achieved. If you still have questions, contact your installer or a Lee Tennis representative at 1-877-4-HAR-TRU.





## ADJUSTING THE WATER LEVEL

The objective in watering your HydroCourt is to maintain the lowest possible water level which will keep the entire court uniformly moist. The standard procedure for determining this level must be carried out over a period of time by the person who maintains the court. This water level may vary due to seasonal conditions, temperature, and humidity.

First, raise the water level in ¼ to ½ inch increments every 24 hours until all dry areas disappear within each cell. A water level set at the top of the center pipe in each cell is a good starting point. It is important to remember that as water flows from the control box to each cell it must travel a long distance through a relatively small pipe. When the water reaches the cell, it must displace any air in the cell. This air may be slow to escape as initial watering occurs. If the court is well compacted, this process may be slowed considerably. Adjustments in the water level should be done in 1/2" increments, allowing 24 hours for the court to react to the new water level.

When the entire area of a cell is moist or "fully charged", this initial charge level may be a higher level than is necessary to maintain the moisture level of the cell. In most courts, the water maintenance level will be within 1/2" of the initial charge level.

Every court's optimum level will be slightly different and even the individual cells may vary from one to the other. However, once this optimum level is found, mark it for reference, as it will remain relatively constant. The procedure to find this optimal level is as follows:

1. Raise the water to charge level so the entire court is watered. **Hint!** This is approximately the top of the center pipe for that particular cell as indicated on the control box ruler, but will vary from court to court. This is done by adjusting the knob on the top of the float valve until the water level is at the desired height. See the water level control float valve section.
2. Reduce the water level in each box in 1/4" increments every 24 hours by removing or rotating the overflow pipe allowing the water level to drop. Re-insert the pipe when the level is approximately 1" - 2" below the previous level. Then adjust the knob on the float valve to stabilize the water at a new lower level.
3. Continue step #2, dropping the water level by 1/4" increments until dry spots begin to appear on the court. It is important that you allow 24 hours between each adjustment for the court to react to the new water level. (This will allow dry spots to appear).
4. Once dry spots begin to appear, adjust the water level up very slightly (1/8" to 1/4") at a time until dry spots disappear. Allow 24 hours between each adjustment for the court to react to the new water level.
5. Mark your desired water level in each box. Fine tuning may still be required later, with the final water level remaining near this reference mark.
6. **NOTE:** Remember that moisture changes occur very slowly, depending on the evaporation rate. Each step of the above step may take hours, even days to stabilize the adjusting level. Be patient knowing that once established, your level and your court will remain stable at the marked spots.

## TROUBLE SHOOTING DRY AREAS

1. Charge the cell by increasing the water level until all areas are moist.
2. Re-adjust the water level in the basin to slightly above your established maintenance level.
3. Check all valves for smooth and proper operation.
4. Allow the court to water.
5. If problems persist, contact your installer or a Lee Tennis representative at 1.877.442.7878.

## OVERFLOW DRAIN

The overflow drain, which is located in each control basin, must be rotated to 1/4" above the maximum water level needed to charge the court. As previously described above, this level must be determined by the maintenance person over a period of time.

## WINTERIZING THE COURT

If it is necessary to close the court for winter, follow the steps listed below:

1. Turn off the main water supply. Remove the overflow pipe from each basin and allow the court to drain.
2. Remove the flexible water line from each control box and remove the level control float valve after recording the maintenance level for each cell. Be sure to label each float valve.
3. Blow or drain the water from pressure lines and valves. Do not exceed 50 psi.
4. Cover water controls.
5. Remove nets and posts.

(Optional) After each court surface is dry, cover the court with a manufactured court cover to prevent rain and snow from reaching the surface. This cover will greatly reduce the work required to open the court in the spring. If you do this, make sure no surface water is allowed access either under or through this cover. If you are interested in learning more about the benefits of covering your courts, please call a Lee Tennis Representative at 1-877-4-HAR-TRU.

## SPRING OPENING

1. Reinstall valves, flexible water lines, and overflow pipes in boxes.
2. Reset water elevation to correct level in each cell and allow court to water.
3. Roll and repair surface as necessary to achieve compaction and a true playing surface.
4. Install nets and posts. If court was not drained and covered for the winter, the playing lines will more then likely need to be reinstalled.

## CARE OF THE SURFACE

Repair holes and marks by filling in new material (HydroBlend Patching court surface). The new material should be compacted well and then leveled. Roll and brush as necessary. If you are unfamiliar with the care of a Har-Tru court (or HydroCourt), it is highly recommended that you obtain the Lee Tennis Har-Tru Maintenance DVD or Video, or printed manual, which fully describes this process. Both the video and the printed manual may be obtained from Lee Tennis, or your court contractor. You can also download the maintenance manual from our website at [www.hartru.com](http://www.hartru.com).

## TOP DRESSING

Top dressing may be necessary occasionally to maintain a soft granular surface. Using a Tru-Flow spreader, apply 12 - 25 bags of HydroBlend over the entire court surface. Roll and brush as needed. More than one layer may be necessary.

## ROLLING

Courts with a HydroCourt irrigation system will typically require much less rolling than courts with standard above-ground watering systems. (After the initial compaction in Spring, roll the courts only if needed). Additional rolling may be required periodically to ensure the playing lines remain firmly embedded in the court surface.

**Note:** The moisture in your HydroCourt system may create a breeding ground for certain algae, mosses, and lichens. This is true for all soft courts, but even more likely to be a problem with underground irrigated courts. It may be necessary to scarify such areas where this occurs, remove the growth and treat these areas chemically from time to time. We are constantly working on the best treatments for the different areas of the country.

Always remember that your new HydroCourt irrigation system is designed to maintain a constant amount of moisture in your court. Reacting impatiently by manually turning the system on and off will defeat the purpose of the entire system and make it impossible to stabilize. Patience will save hours of frustration and will let the system operate effortlessly year after year.

## CONTROLLING GROWTH ON COURTS

### Moss:



#### Materials Needed:

1. Safer Moss & Algae Killer
2. Lawn Wheelie Sprayer from Lee Tennis

#### Instructions:

1. Follow label directions.
2. Place the jug into the Lawn Wheelie Sprayer.
3. Saturate the moss by making repeated passes over the target area.
4. Do not spray within 24 hours of expected rainfall.

### Algae: HydroCourt Only

#### Materials Needed:

1. Cutrine Plus
2. 32 oz. plastic measuring container

#### Instructions:

1. Turn off HydroCourt water supply for 24 hours
2. Remove HydroCourt water control box lids.
3. Pour 8 oz. of Cutrine Plus into the bottom of each water control box. Do not pour the liquid onto the valves.
4. Replace HydroCourt water control box lids.
5. Turn the HydroCourt water supply back on.
6. Repeat treatment process every 4 months.



### Grasses and Broadleaf Weeds:

#### Materials Needed:

1. Lawn Wheelie Sprayer from Lee Tennis
2. Roundup ProDry 1.5 oz. packet from Lee Tennis

#### Instructions:

1. Follow mixing instructions on package.
2. Push the Lawn Wheelie Sprayer along the inside fence perimeter, spraying a 3 foot wide band-width along the inside perimeter of the entire court.
3. Do not apply within 12 hours of expected rainfall.
4. Make repeat applications as needed.



**Note:** Always read the label directions and follow safety instructions on all chemical packaging prior to use. Contact your local Cooperative Extension Service for laws governing the applications of any chemicals on your site.

The Lawn Wheelie Sprayer from Lee Tennis can be viewed and purchased at <http://www.leetennis.com/catalog/home.php?cat=46>.

## TECHNICAL DATA SHEET

Facility: \_\_\_\_\_ Address: \_\_\_\_\_

Contractor: \_\_\_\_\_ Date of Installation: \_\_\_\_\_ # of Courts: \_\_\_\_\_

### Top of the Center Pipe as Recorded in Control Box

<u>Court</u>	1	2	3	4	5	6	7	8	9	10	11	12
Cell 1	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Cell 2	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Cell 3	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Cell 4	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Cell 5	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Cell 6	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

### Optimum Water Level in Control Box

<u>Court</u>	1	2	3	4	5	6	7	8	9	10	11	12
Cell 1	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Cell 2	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Cell 3	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Cell 4	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Cell 5	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Cell 6	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

*Note: A copy of this form should be returned to the owner and to Lee Tennis.*