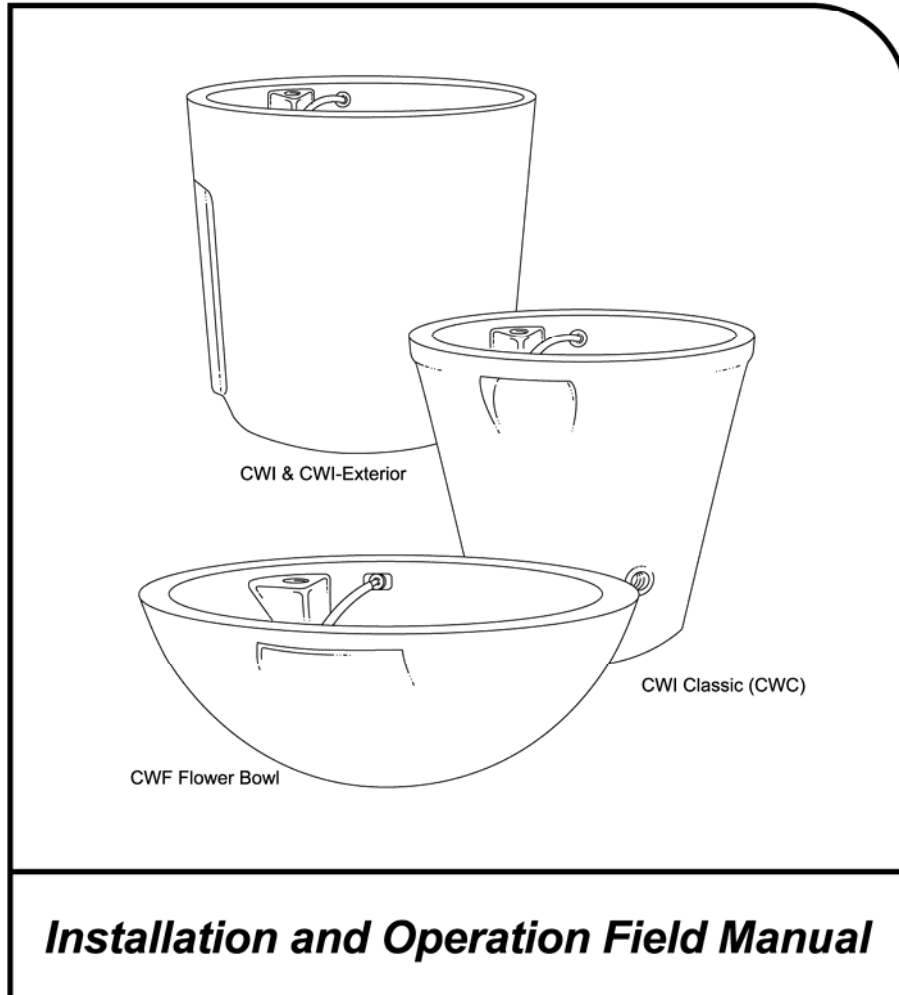


# Container Irrigation Systems **Insert-Type**

CWI & CWI-Exterior | CWI Classic (CWC) | CWF Flower Bowl



Tournesol Siteworks, LLC  
800.542.2282  
[www.tournesolsiteworks.com](http://www.tournesolsiteworks.com)

# Insert-Style Container Irrigation Systems

## *Installation & Operation Field Manual*

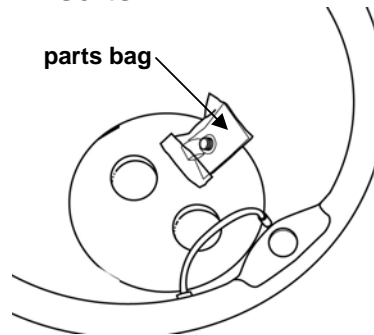
### Table of Contents

|                                |    |
|--------------------------------|----|
| System Contents                | 3  |
| The Container Irrigation Cycle | 4  |
| Preparation                    | 5  |
| Planting                       | 7  |
| Maintenance                    | 11 |
| Warranty                       | 16 |

Should you have specific comments, or recommendations on ways we can meet your needs better in this Installation & Operation Manual, please contact us at 800.542.2282, or email us at [info@tournesolsiteworks.com](mailto:info@tournesolsiteworks.com).

### **Unpacking CWC and CWF Inserts-**

Both types of units can be adapted for either exterior or interior use. A bag glued to the bottom of the insert contains a rubber stopper and an interior use plug. Additionally, the CWF will have an overflow adapter. Make sure these are removed before planting.



## System Contents

Check system contents prior to beginning assembly. Frequently accessories are packaged separately—check all boxes before starting.

### CWI Container Irrigation



CWI Insert



Black #3 size stopper

### CWI Exterior



CWI Insert with exterior drain



Black #3 size stopper

### CWI Classic (CWC)



CWC Insert



Black #6.5 size stopper



Interior Plug

### CWF Flower Bowl



CWF Insert



Overflow Adapter



Interior Plug

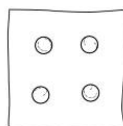


Black #6.5 size stopper

### Optional Accessories

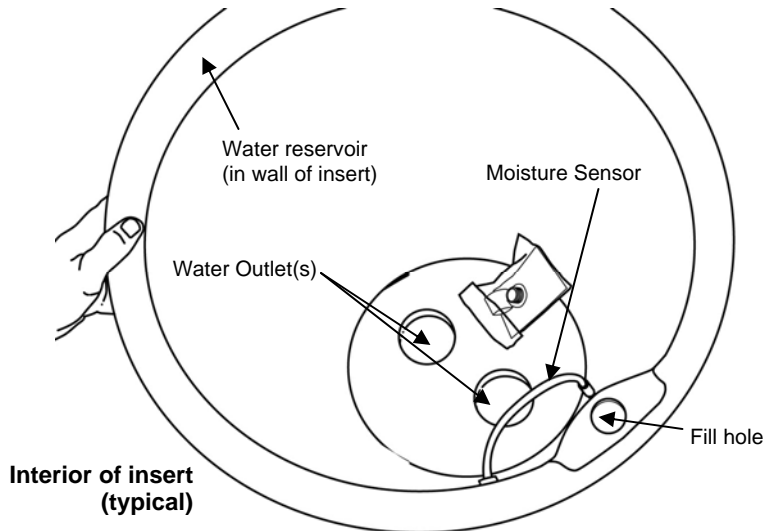


**Tamper-resistant Stopper and 5/32" hex wrench**  
Provides locking closure for CWC and CWF container irrigation inserts. Highly recommended for high-traffic locations



**BioGuard Square**  
Placed over water inlet points. Integrated Trifluraline herbicide prevents roots from growing into reservoir and clogging system.

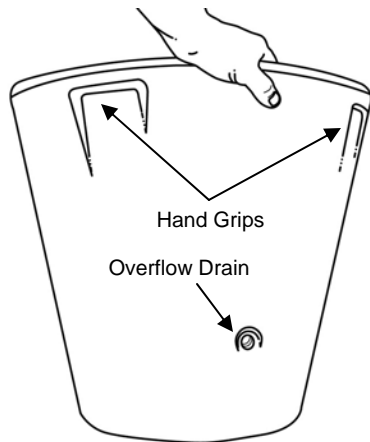
## The Container Irrigation Cycle



The Tournesol Siteworks container irrigation insert is made up of a hollow, airtight double-wall reservoir. The reservoir is filled, until full, through a hole at the top of the wall. A stopper is placed in the hole, which creates an airtight seal.

Water flows into the soil through small holes at the bottom of each water outlet. The larger the insert, the more water outlets there are. The water wicks its way up through the soil until it reaches the moisture sensor, planted 1/3 to 1/2-way down the container.

When moisture reaches the sensor, it closes like a valve. This prevents air from passing through the tube, and a vacuum is created above the reservoir, preventing water from flowing into the soil.



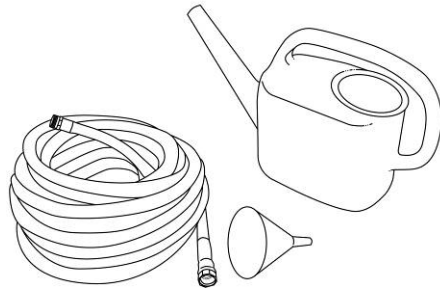
As the plants and flowers use the moisture and the soil starts to dry, the sensor tip dries and allows air to pass through the tube. The vacuum above the water is broken, and water can flow to the soil.

The process forms a cycle, interrupted only by the removal of the stopper and the filling of the reservoir.

The overflow drain (where present) allows excess water (typically rainwater) to escape without disrupting the cycle.

## Preparation

### What You'll Need



Hose, or watering can and funnel



Trowel or shovel



#### Soil

Tournesol Siteworks recommends use of a good grade of soil-less potting mix when using the CWM Modular system. We typically recommend a blend of approx. 1/3 peat, 1/3 composted organics, and 1/3 sand or expanded slate or shale. The mix needs to have good capillary action, but still have enough structure so it doesn't compact and still drains. *Do not use field soil with any pot or container planting!*

# Preparation

## Exterior Use

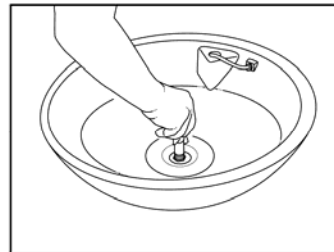
The CWI Exterior and CWI Classic (CWC) are both delivered with an overflow drain, covered inside with drainage fabric. Don't remove the fabric before planting.



An overflow adapter is included with the CWF Flower Bowl. Thread it into the aluminum base, being careful not to cross thread



Overflow Adapter

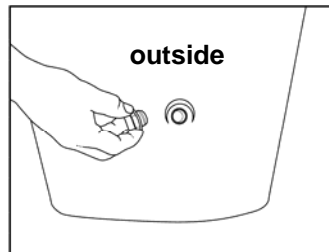


## Indoor Use

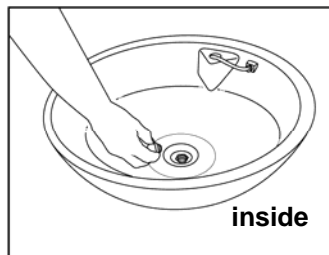
Interior Plug



The CWI Classic (CWC) and CWF Flower Bowl are delivered with an interior plug. Handtighten the plug into the outside thread on the CWC, and into the inside of the CWF.



The CWI is delivered without holes, so may be used indoors without concern for drainage.



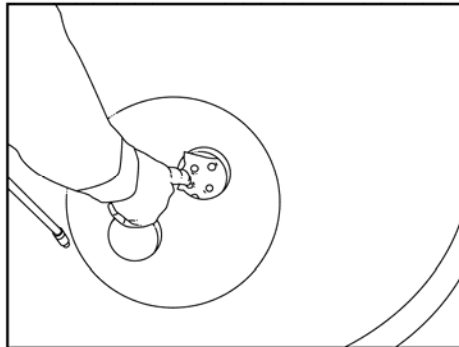
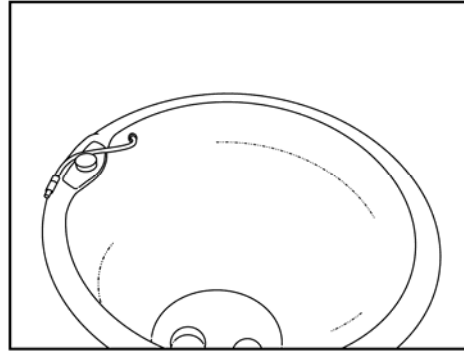
## Planting

Tuck sensor,  
place bioguard

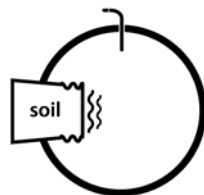
Keep the sensor out of the way during planting by tucking it behind the stopper.

If using BioGuard, insert it into the bottom of each water outlet hole. The edges will fold up the sides.

It doesn't matter which side of the BioGuard goes up.

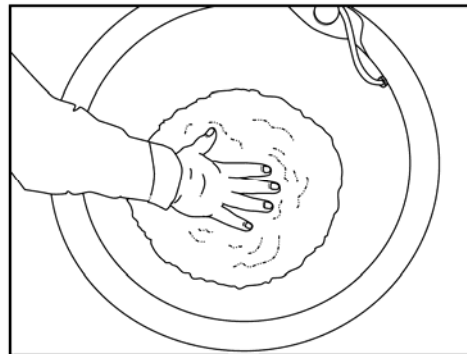


Fill bottom with soil and pack



Fill the insert with soil, up to where the bottom of the plant will sit.

Pack the soil firmly with your fist.

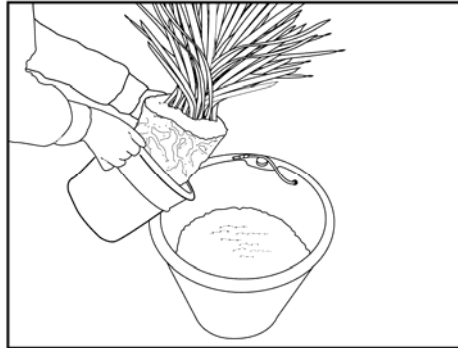


# Planting

## Set the Primary Plant

Remove the primary plant from its grower container, and rough up the rootball slightly.

Set the plant into the insert. Make sure that the crown of the root ball is above the final soil level, and that the plant is oriented so the fill hole is at the back of the plant.

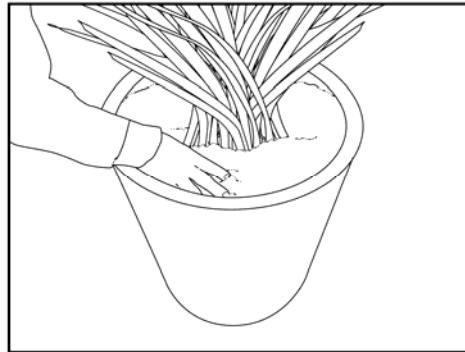


Note: For Hawaiian grown foliage plants (typically interior), shake off as much of the "lava rock" from the rootball as possible at this point. Replacing this with soil will ensure efficient capillary action.

## Backfill with soil, pack well



Backfill around the main rootball with soil so there are no voids or soil gaps in the insert.



Most plant rootballs are somewhat tapered, so packing the soil down the sides of the insert is critically important!

Test the packing by inserting your straightened fingers into the soil. If you can push past the second knuckle, it needs to be packed better.



# Planting

## Set underplantings

Determine the location for underplantings in the insert, should there be any.

For best results, start with larger (4" or 1 gal.) plants, rather than liners or flats.



Using a trowel, dig out a hole, then place the plant. Repack the soil firmly.

Underplantings may need to be watered in order to encourage root growth into the moisture zone. A small amount of water top-applied to each plant for the first 1-2 months of the installation should be plenty.



## Sensor Height

The moisture level in the planter is controlled by the depth to which the sensor is planted. The deeper the sensor, the faster the vacuum and the water flow stops, and the drier the system.

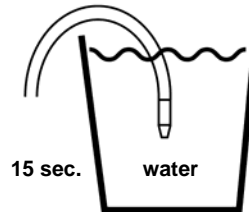
The higher the sensor, the longer it takes to shut down the water flow, and the more water is in the system.

The moisture sensor can be adjusted after planting (once the system is in use) in order to alter the average moisture level in the container.

# Planting

## Placing the Sensor

Make sure the white tip is on the end of the moisture sensor. Dip the sensor into a cup of water for 15 seconds prior to planting.



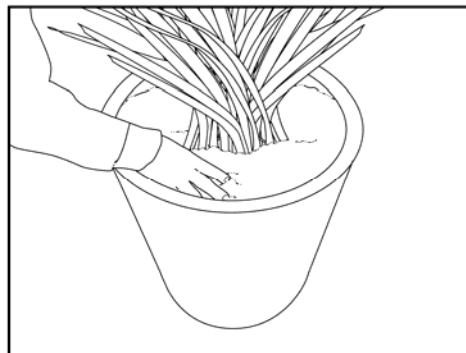
Using a trowel or a sharp dowel, dig a trough or hole into the soil for the sensor.

The location of the sensor in the insert is less important than the height. It should be 1/3 to 1/2-way down the main rootball of the plant.



Push the sensor into the hole or trough, making sure that the tube is not kinked or bent. The white tip must be in good contact with the soil.

If the main plant is in coarse lava rock, the sensor area should be dug out and replaced with soil. Good soil/sensor contact is critical for long-term success.



Repack the soil around the sensor, making sure that there aren't voids and air gaps around the sensor area.

# Maintenance

## Setting the Insert

The insert can now be set into its decorative container. It will be significantly heavier once it is filled with water.

Ideally an insert will sit 1" below the lip of the planter. If need be, stage the area below the insert with expanded polystyrene foam, gravel, or other clean fill material. The CWF Flower Bowl units in exterior application will need to drain from the bottom, so make sure that the drain hole is clear, and the staging material is porous.

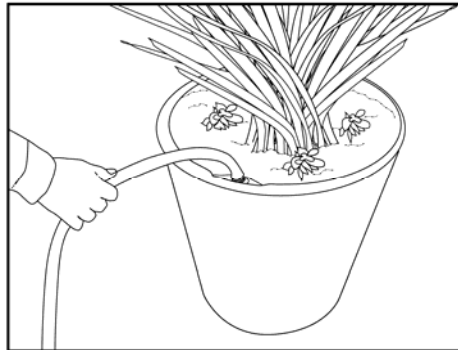
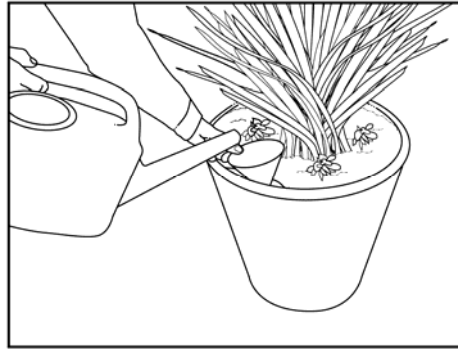
Inserts in exterior locations will drain, so staging material that doesn't absorb water works best.

## Filling the Reservoir for the First Time

Half-fill the reservoir for the first time. This will allow a confirmation that the insert is properly planted, and that the vacuum is functioning.

Fill the reservoir using a bucket and funnel, or a garden hose with the CWC and CWF units.

Plug the fill hole with the rubber stopper, turning it with a slight twist. Make sure that plant material does not get in between the insert and the stopper. See next page for the use of tamper resistant stoppers.



## Maintenance

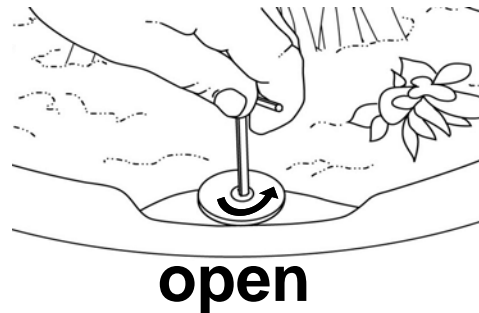
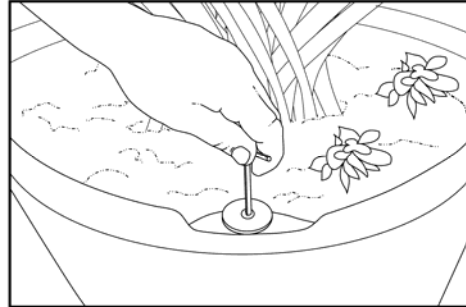
### Using the Tamper Resistant Stopper

The CWI Classic (CWC) and CWF Flower Bowl inserts feature a fill hole that will accept a garden hose. They are both delivered with a standard #6.5 black rubber stopper to plug the hole.

For high-traffic locations, a tamper resistant stopper is recommended. This stopper expands and contracts by turning the hex head bolt in the middle of the stainless washer with a 5/32" hex wrench.

To loosen, use the hex wrench and turn the bolt counterclockwise 3 turns. The stopper can then be pulled from the fill hole.

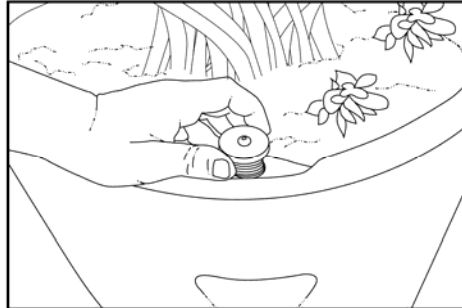
Stick the head of the hose deep down the fill hole for best results. Having a shutoff near the end can prevent messy overspill.



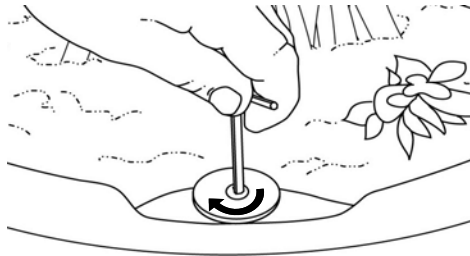
## Maintenance

### Filling the reservoir

It is important, especially with interior plants, not to break the vacuum by pulling the stopper more frequently than necessary. Most systems are filled on a schedule—that is, once a week, once every two weeks, etc. You can also check the soil moisture to determine whether the reservoir needs to be filled.



During normal use, fill the reservoir up to the top, like a gas tank. Even if some extra water spills out of the hole, it should end up in the soil.



**close**

When finished filling, insert the rubber stopper back into the fill hole with a firm twist. It is very important to prevent air from getting back into the system.

When replacing a tamper resistant stopper, tighten the hex bolt 3 turns clockwise.

## Maintenance

### Maintaining plants in Inserts

Filling the reservoir should become part of the regular cycle of plant maintenance. In the initial establishment period, the moisture levels in the soil should be monitored carefully. If the soil appears dry, the filling frequency may need to be increased, or the height of the moisture sensor raised. If too wet (or if excess water is leaking from the bottom of the container), the filling frequency should be decreased, or the height of the moisture sensor lowered. Watch the relative health of the main plant for signs of stress. Top water the underplantings as required until their roots have made it to the moisture zone, typically 1-3 weeks.

After several weeks the water needs of the plants and the soil moisture levels should gradually stabilize, and a regular schedule can be established. Remember that the plants' water needs may change with the seasons or weather, and that the refilling interval may need to be changed accordingly.

### Troubleshooting

Like any system, things may go wrong when using container irrigation. Here are series of questions that may help to diagnose problems.

**If the system is too wet:**

***Is someone (something) else watering the plant?*** It sounds funny, but frequently someone is “helping” by top watering the system, rather than filling the reservoir.

***Is the soil dry or wet on top?*** For interior applications, the soil should usually be dry. If it's wet, don't open the stopper!

***How frequently are you opening the stopper?*** - the system only stops watering when the vacuum sets up—opening the stopper too often gives the plant too much water.

***Check the sensor and stopper.*** The sensor should be attached to the reservoir and the stopper must be clean and make a good seal.

***Check the soil.*** Repack down the soil (perhaps lowering the sensor), making sure there are no air gaps in the soil.

# Maintenance

## More Troubleshooting

If the system seems too dry:

**Has the water level changed from the previous visit?** The topsoil will usually be dry with an insert, and if the water is dropping, it's probably working.

**Is it just the underplantings, or the main plant, too?** The smaller plants usually require some top watering to help their roots get down to the moisture layer. Keep giving them a little water.

**If the stopper is left off for an hour or two, does the level drop?** When the vacuum is released, it should. If it doesn't, liberally top water the plant. Sometimes that's enough to re-start the system. If not, the roots may have clogged the water outlet holes, and the plant may need to be root pruned.

## Ongoing Maintenance - Replacing Parts

Keep the insert in good working order by replacing the parts every 3-5 years. The moisture sensor, rubber grommet holding the sensor into the insert, and the stopper are all available from Tournesol Siteworks distributors. The sensor lengths vary by size insert, and the stopper for the CWI product is different than that for the CWC and CWF products.

## Winterizing (Exterior Systems)

The reservoir acts as an insulator for the plants in the insert. However, it needs to be emptied of water before the first hard freeze.

Allow the reservoir to empty by decreasing the refilling frequency as Fall approaches, and stop entirely prior to the first hard frost. Because of the nature of the materials used in the inserts, it isn't necessary to have the reservoir completely empty.



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SITEWORKS

### **Tournesol Siteworks Limited Three-Year Warranty**

Tournesol Siteworks, Inc. warrants to the initial purchaser of its products that they will repair or replace product that contains a defect in material or workmanship for a period of three years from the date it is delivered to the initial purchaser.

This limited warranty does not include those parts which fall under standard regular maintenance of the planter, including but not limited to parts which are subject to periodic replacement. The warranty does not apply to conditions resulting from misuse, abuse, failure to follow directions for use, unauthorized modifications, neglect, accident or other hazard or the like. ***The remedy under this warranty is limited to repair or replacement, at Tournesol Site-works's option, of the defective parts of the warranted product.*** Repair or replacement of a part does not extend the warranty beyond the initial warranty period.

This is the only written warranty applicable to the product. The duration of the implied warranty on the product is limited to the three year duration of this express warranty. ***In no event shall Tournesol Siteworks be liable for any incidental or consequential damages, including but not limited to damage to any plants which may have been planted in the product.*** Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

For service or if you have any questions or problems, please contact:

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