



SOLAR
POWERED



WATERS EVERY
3 HRS



MORE SUN =
MORE WATER



USE WITH A
WATER TANK
OR TAP

Solar Automatic Watering System

Instructions: Irrigatia Tank Series

EN CZ FR DE NL SE



irrigatia.com/tank-series

 **Designed
in Britain**



Contents



Tank series controller with main pump and secondary feed pump



Water level sensor



Solar Panel with 5m lead (model shown is the C120)



1 x inline filter +
2 x 13mm adaptors



1 x foot strainer +
2 x 13mm adaptors &
1 x 13mm end cap



1 x 25m roll of
13mm tube



1 x 2.5m 3.5mm tube
and inlet filter



1 x 4mm punch



12 x 4mm joiners



2 x 13mm T-piece



4 x 13mm end plug



4 x 13mm elbow



10 x 13mm stakes



6 x 13mm clamps



2 x 13mm valves



12 x 4mm valves



Submersible pump



Battery pack containing 10 x AA
rechargeable batteries C60/C120:
Battery Pack 2200mAh



Battery pack containing 20 x AA
rechargeable batteries C180:
Battery Pack 4400mAh

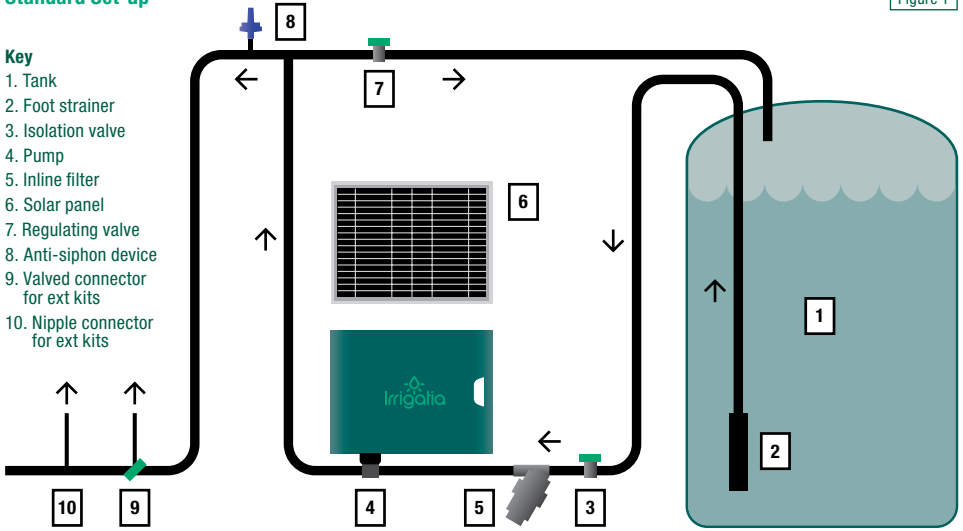
User Instructions for Irrigatia Tank Series

Standard Set-up

Figure 1

Key

1. Tank
2. Foot strainer
3. Isolation valve
4. Pump
5. Inline filter
6. Solar panel
7. Regulating valve
8. Anti-siphon device
9. Valved connector for ext kits
10. Nipple connector for ext kits

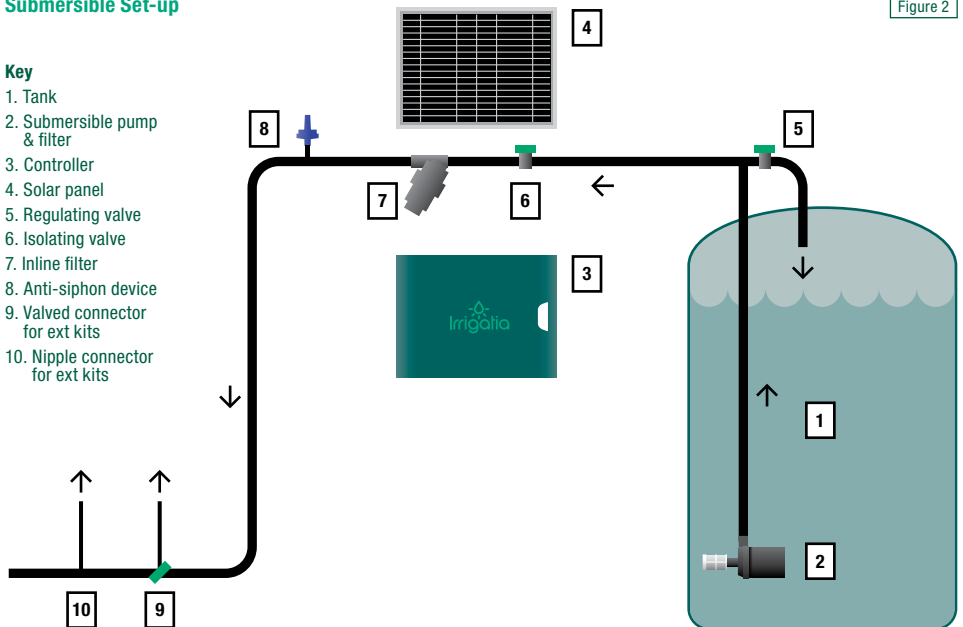


Submersible Set-up

Figure 2

Key

1. Tank
2. Submersible pump & filter
3. Controller
4. Solar panel
5. Regulating valve
6. Isolating valve
7. Inline filter
8. Anti-siphon device
9. Valved connector for ext kits
10. Nipple connector for ext kits



The kit is supplied with a choice of water pumps.

Internal diaphragm pump. (fig 1) This pump delivers about 1.5lpm at 3 bar pressure and is ideal for use where the outlets are 2 – 5m higher than the water source. However, it is not very good at self priming so needs to be situated low down where natural flow from the tank will avoid the problem.

Submersible pump. (fig 2) This delivers more water at a lower pressure, the volume delivered varies with the lift required to reach the outlets but up to 2m will be higher

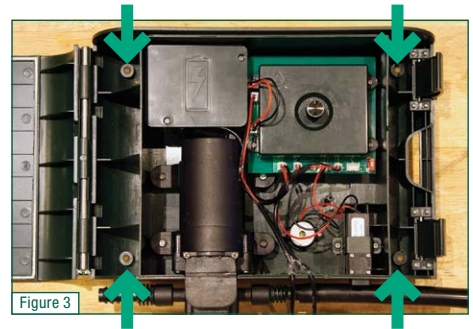
than the diaphragm pump. As it is submerged it does not require priming. In a typical situation it will deliver 50% more water per week from the same amount of solar power, but it will be at a lower pressure which reduces the risks associated with over-pressurisation, especially with micro-porous hose. It is also very quiet.

If the submersible pump is required, leave the diaphragm pump in place, but unplug it from the circuit board. The submersible can be plugged in, in its place and the moulded in grommet used to fit it into its designated slot in the case.

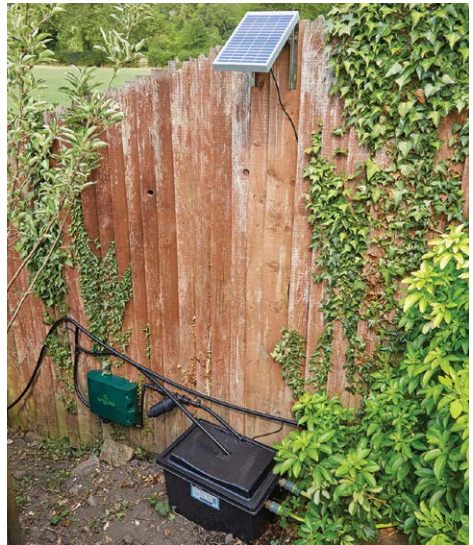
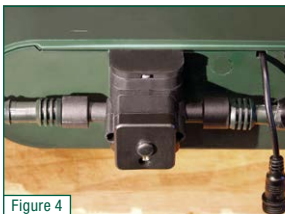
Positioning

Using the fixing holes indicated by the green arrows, mount the controller close to the water source and low down so that the pump inlet (for standard pump) is below the water line in the tank – for the submersible pump it can be mounted at a convenient height. The controller case is weather resistant but can be mounted inside if desired.

The solar panel should be mounted, facing the midday sun and has a 5m cable, a 5m extension can be added if required. The panel can be connected and screwed tight to the socket hanging from the base of the controller.



- ▲ Small tank gravity fed from main tank
- ▶ If using the standard pump screw in the hose connectors to the pump.



Foot Strainer

Standard Pump

Top entry

Vertical

Resting on tank bottom (see fig 5)

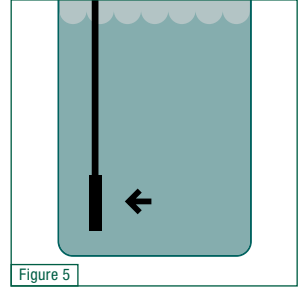


Figure 5

Water Level Sensor

The water level sensor should be secured so that the higher probe is at least 3cm higher than the water inlet. Secure it using cable ties.

During operation, if one of the sensors is out of the water the pump will stop and the beeper will sound. If the beeper

is a nuisance it can be silenced by unplugging it from the circuit board.

The water level sensor comes with a 5m cable – this can be extended by purchasing an extension lead.

Water Outlet Tube & Filter

To protect the drippers from debris, there is a fine mesh filter. This can be fitted on either side of the pump, (fig 3) but a valve must be fitted between it and the tank to turn off the water flow while cleaning. (Valve 3 in fig 1).



Anti-Siphon Device

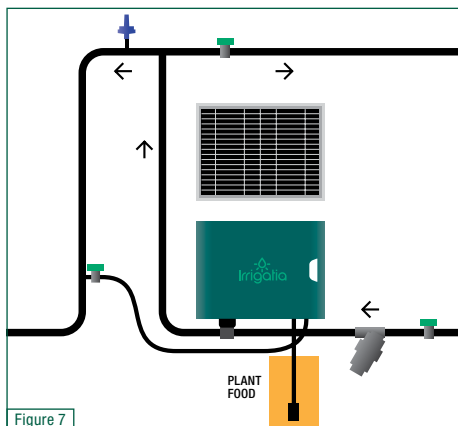
The anti-siphon is needed to stop the water flow when the pump has stopped if the first emitter is lower than top of the water source. It should be fitted in the delivery tube to the emitters, (it is number 8 in fig1). It can be fitted by making a hole with the punch provided and pushing the blue part of the anti-siphon directly into the tube, threaded end first. Anti-siphon device must be fitted higher than the water source.



Figure 6

Supplement Feed Pump

The C120 has 2 pumps. As well as the water pump there is a small supplement pump which runs intermittently to dose at a rate of about 1:100. (Your feed concentrate needs to be 100x the strength you wish to apply to your plants). This can be used to dose your water only with 100% soluble supplements. Connect a piece of small bore tube with the filter on the end to the pump inlet and connect the outlet tube to the delivery line before the first off take (see fig 7). Use a valve for this connection. If not needed supplement pump can be unplugged from the circuit board (pump 2) and close valve. The feed container must keep all light out.



Irrigation Kits

The Tank Series can be used with up to 180 drippers. The C180 will deliver up to 1 irrigation unit (equivalent to a large tomato plant) per dripper, the C60 1/3 and C120 2/3 of that.

Use 13mm tees, elbows and end plugs with the 13mm tube to make the distribution main. Use either 4mm joiners or 4mm valves to connect the irrigation kits.

Dripper kits (12 or 20 each of drippers, tees and stakes, and 15m of small bore tube.) Cut and join the pipe using the tees to make a network which reaches all of the plants. Remember the rules for even watering apply especially where there are more than 12 drippers per outlet, see: irrigatia.com/how-it-works/principles-of-good-installation

Seep hose can be plugged onto individual drippers with a stopper at the other end in lengths of up to 1.2m, 2.4m where connected to a dripper at both ends. They will not change the water output, but they spread it out more which is useful for seedlings and small plants. Works best slightly buried.

Micro-porous hose emits water along its whole length, but unlike seep hose is best used in long lengths. Follow the kit instructions and use the punch and a connector nipple to connect with the distribution pipe.

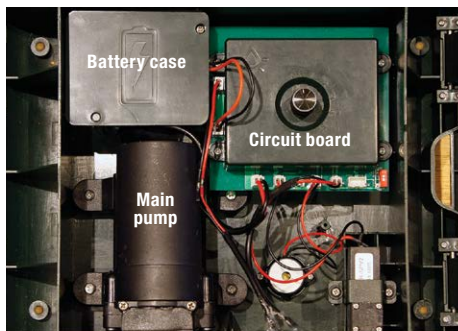


Starting up

Open regulating and isolation valves (3&7 in drawings) fully – handle in line with tube. Ensure there is water flow to the pump.

Open the case.

- Unplug the feed pump from the circuit board – marked as pump 2 on the board.
- Make sure the switch is in the off position.
- Remove 2 screws, open the battery case, install battery, replace lid and plug in connector to terminal marked 'bat' on the circuit board.
- Attach the solar panel in the socket on the bottom of the case.
- Switch on to position 3. If it is reasonable daylight and the water sensors are in water the pump should start.
- As the bypass valve (Valve 7 in fig 1) is wide open most of the water pumped should return to the tank. Wait until all the air has cleared from the system before VERY SLOWLY starting to close the bypass valve. This will push more water towards the drippers. The valve should be gradually closed until the drippers are dripping about once per second, or the microporous hose is full of water but soft, like a soft bicycle tyre. If you are using micro-porous tube, check the adjustment every few days after installation as when it is wetted up it will emit less water than when newly installed.
- Check whole system is working properly and for leaks.
- The duration of the first watering is likely to be long, the pump will not switch off until the batteries fall to 10v, this may take several hours, but after that proper control should be established. If the excess watering is likely to be a problem the bypass valve can be opened until this has happened.



- The switch on the circuit board controls the solar panel. This is charging the battery on a 5 minute cycle. On switch positions 1,2,3,4,5, the solar panel is turned on for 1,2,3,4,5 minutes respectively. Changing the switch position will not affect the current run time or flow rate, but will control the amount of charge available for the subsequent watering cycle, thereby affecting the pumping duration. The application can be fine-tuned with small adjustments to the bypass valve.

Supplementary pump – if the main pump is running, this should run intermittently to dose the water with feed.

After 24-48 hours the unit should have settled down. Monitor the water application, turn the switch up or down accordingly. Once it is set up it will adjust itself for light intensity but you will need to readjust it for your plants as they grow.

Detailed instructions can be found at: irrigatia.com/how-it-works/setuptank-series



SOL-C60



SOL-C120



SOL-C180



For further information on this or any of the other products in our range, please visit:

www.irrigatia.com

