



# Misting, Propagation System



Item Code

MISTBAC

The Redpath "balance arm" watering / misting controller is designed for automatic watering on an "evaporative rate" of your propagated plants & seedlings. This system will water more often in warm conditions (higher evaporation) & less often in cooler conditions. This makes it superior to timer based misting systems that do not differentiate between climatic conditions.

This system consists of the Balance arm unit with gauze steel pad & mercury tilt switch, A solenoid valve, power pack transformer (plugs into 240volt), + three misting nozzles.

## HOW IT WORKS:

When in operation the balance arm gauze pad "catches" the water droplets from the watering nozzles & when enough weight of water settles upon the pad it tilts down & activates the mercury switch - which in turn switches off the solenoid valve & stops the watering. As the water on the gauze pad evaporates the balance arm lifts & the mercury switch turns the water valve back on again. This process repeats indefinitely & repeats more frequently in warm dry conditions & less often in cool damp conditions.

The balance arm system is ideal for the busy individual who is unable to always tend to their plants during the daytime or when away on holiday and for small nurseries.

12 month warranty applies to all parts, set up instructions are supplied. Pipework & some assembly + mains power supply to be supplied by the customer.

## The Balance Arm Mist Controller

Your Balance Arm Controller is a delicate instrument and with reasonable care will provide many years of trouble free service.

### Principle...

As you are well aware, traumatic moisture stress can occur on new cuttings before the new rooting system has been established and mist has been used to assist the plants during this difficult period.

By maintaining a thin film of moisture over the foliage surface, moisture stress through transpire-evaporation is minimized allowing young cuttings to strike their delicate new rooting systems and become self sustaining.

Your controller comprises a delicate balance mechanism which measures precisely the amount of mist landing in a sample area.

Once the predetermined amount has landed, the balance trips and the controller switches off the solenoid valve supplying the water. After a period of time, depending upon the evaporative conditions, the balance is restored and the misting commences again.

This cycle is maintained continuously, fluctuating according to the plant requirements which are determined by the environment heat and light intensity.

The period between misting can vary from a few minutes up to several hours plus the amount of mist may be easily adjusted to suit.

The moisture must definitely not saturate the root media and to this end the finest misting nozzles are included.

## Installation...

From the nearest mains pressure water source run a 15mm PVC pipe to below your proposed propagation bench and install the solenoid valve. It is suggested you fit a simple ball valve upstream of the solenoid which will enable you to isolate the water supply if necessary. The solenoid is 20mm faucet sockets bushed down to 15mm to suit the plain pipe. Make sure the water flow through the solenoid is the correct direction before attaching the fitting. The solenoid valve should be in an upright and protect position. Dry connect all pipe work and nozzles up to and along the bench with the nozzles up to and along the bench with the nozzles on the top of tall rises. These should be 300mm above the proposed foliage height. Ensure the nozzles are all level to ensure water will not drain back or out through the lowest point. This will ensure instant misting the moment the solenoid is activated. Hanging the nozzles from an overhead pipe is not to be recommended if at all possible due to the constant drips onto the plants below.

Once the pipework and nozzles are in place to your satisfaction then proceed back through all the joints to glue them up with solvent. Only undo one joint at a time and make sure the pipework remains straight and true as the solvent cannot be undone. Leave solvent to dry for several hours before applying water pressure.

## Electrical...

Place the transformer alongside the 230 volt power source but do not plug it in. Run the 24v outlet cable to where the Balance Arm Controller is to sit. It is recommended you fit a RCD earth leakage detection device to the 230v power source before the transformer.

The controller should be alongside a mist nozzle where it will receive a good mist sample and clear from any winds or draughts.

1. Run the extra two meter piece of cable from the transformer to the solenoid valve and then up to the Balance Arm Controller.
2. Connect the transformer to the connectors at one end of the cable. (It does not matter which way around the wires are connected.)
3. Connect the two solenoid valve wires to the connector in the middle of the two meter twin cable using the connector supplied.
4. At the Balance Arm Controller carefully push both spade terminals onto the two spade connectors attached to the controller.

Carefully check your connections are correct! Remember... if you look carefully, you will notice you are only interrupting one of the wires from the transformer to the solenoid valve via the mercury switch. The other wire is permanently connected.

**Do Not Connect Both Of The Wires From The Transformer Through The Mercury Switch!** This is a dead short!

## Tuning...

Once the water is connected but not turned on, you should check the Balance Arm Controller is tuned correctly. They are checked before dispatch but can become mis-aligned. Ensure the controller is placed in a level operating position. When the mesh is in the low position and released, it will slowly and only just return to the upper position. If it appears sticky then check the axle pivot screws...The arm should be able to be wobbled slightly when holding the counterweight. This ensures there is no excessive end pressure on the pivot points.

First check that the pivot point is in the socket at the end of each bearing point.

If it is in place and you deal there is too much pressure, carefully unwind one of the screws with an Allen key until the arm can be wobbled slightly.

Again check the counterweigh position so that the wand just rises to the upper position. This slow ability to rise ensures that minimal mist is required to overbalance the wand. Normally about 2- 4 seconds misting will trip the balance, however this will depend on the mist droplets size.

Once satisfied the Controller is tuned, turn on the water supply and check for leaks up to the solenoid. The solenoid should not be operating as the power is not turned on yet! If satisfied when switch on the transformer. The solenoid will instantly open and misting occurs once the pipework is full up. Check the time span of operation before the Balance Arm turns off. While it is operating, check for leaks.

**Enjoy many seasons growing with your Balance Arm Mist Controller.**