

Assembly Instructions

IWS Flood & Drain Basic



Firstly how does it all work?



The IWS Flood & Drain Basic System is a highly developed hybrid ebb and flow system for beginners and is based upon the same principles as the highly successful IWS Flood and Drain system. It works by flooding from the bottom of each individual pot. The system uses gravity to send water to the pots and only uses pumps to fill and drain the main 25 litre control bucket. This has two magnetic float valves mounted inside to control the power to the pumps. These floats precisely control the flood level in the growing medium to stop any over watering or flooding. As the water is forced through the growing medium it forces out all the stale air in the medium surrounding the root ball and as it drains away replacing it with fresh oxygen.

The system consists of 3 main parts:

1. The Control Unit — this features a Grasslin segmental timer to control the frequency and duration of the flood cycle. .
2. The Tank — This holds the nutrient solution for all your pots.
3. The Pots — which themselves are made up of two parts.
 - i. A base pot which incorporates a patented water tight sealing gland through which the nutrient is delivered to the plant.
 - ii. A separate drain pot which is made of mesh, this allows even and controlled flooding of the growing medium. Also the pots can be removed with the plant intact without damaging the roots.

The following items are also available for your system as optional extras at an additional cost.

- i. A pot stand with a preset height and a 15 degree slope which allows all the water to drain back to the main control tank which will then pump it to either waste or back to your reservoir to be re-circulated.
- ii. A copper mat to put in the bottom of drain pot. This helps to stop the roots from being pulled down the drain hole.

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Congratulations on your purchase! Here's some more good news - setting up your IWS Flood & Drain Basic System is easy! You should be ready to go in well under an hour.

Before you get started, please check that you have all the necessary parts:

- 1 x nutrient tank with lid (please note there are different sizes of tank depending on the number of pots you have)
- Maxi jet pump (connected inside the nutrient tank)
- Integrated brain pot complete with timer, fixed pump inside and lid
- Inner pots (holes in the base) or inner mesh pots
- Outer pots (solid base)
- Pot stands (optional)
- 6 elbow fitting hose connectors (one for each end system pot)
- Tee fitting hose connectors (one for each middle line pot)
- 6 hose connectors (for brain pot)
- Sealing glands for each pot
- Black hosepipe - enough hosepipe is supplied to give you 1 metre for each pot
- There's also a plastic tap attachment to modify your nutrient tank - however this is not required to set up the system.

The quantity of certain items in each kit varies depending on the pot system you have purchased - see table below for the exact number of components in each pot system. If you think something is missing please contact your retailer.

6 POT SYSTEM

- 100 litre tank with pumps
- Control unit with timer
- 6 stands and pots
- 6 elbows
- 10 metres of hosepipe

12 POT SYSTEM

- 220 litre tank with pumps
- Control unit with timer
- 12 stands and pots
- 6 elbows & 6 tees
- 15 metres of hosepipe

24 POT SYSTEM

- 220 litre tank with pumps
- Control unit with timer
- 24 stands and pots
- 6 elbows & 18 tees
- 30 metres of hosepipe

36 POT SYSTEM

- 350 litre tank with pumps
- Control unit with timer
- 36 stands and pots
- 6 elbows & 30 tees
- 45 metres of hosepipe

48 POT SYSTEM

- 350 litre tank with pumps
- Control unit with timer
- 48 stands and pots
- 6 elbows & 42 tees
- 60 metres of hosepipe

IF YOU THINK SOMETHING IS MISSING PLEASE CONTACT YOUR RETAILER.



Nutrient tank



Brain pot with timer



Inner & outer pot



Black hosepipe



Tee connector



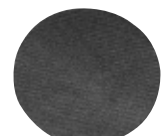
Elbow connector



Sealing gland



Pot stand (optional)



Copper mat (optional)

Before we get started, you may also find the following items useful:

- A sharp knife or a pair of scissors.
- A cup of hot water.
- The spanner supplied in your kit bag is also handy for ensuring all nuts are really tight.

Ok, let's get on with it....

- 1) **Choose where to grow!** Find a suitable area in which to install the IWS Flood & Drain System. You are going to need access to one additional nearby electric point.
- 2) **Position the nutrient tank.** Once you have selected a space, place the nutrient tank at one end. Remember that it will need to be easily accessible.
- 3) **Connect the nutrient tank to the brain pot.** Locate the two pipes labelled 'fill' and 'drain' coming out of the nutrient tank and connect them to the corresponding nozzles on the brain pot. You will need to soften the ends of the pipes in a cup of hot water so they slide on easily. Rotate the elbow connected to the 'fill' hose inside the brain pot so that it is pointing sideways as not to flow water over the pump which may cause air blockages. If you get an air blockage, turn the pump sideways while under water - this will release air from the pump.
- 4) **Connect the nutrient tank pump's power lead to the brain pot.** Plug the three pin connector into the side of the control box on the brain pot. Ensure the nutrient tank pump remains positioned at the bottom of the tank.
- 5) **Create a watertight fitting on each outer pot.** Take a sealing gland and unscrew the smaller end nut, then remove one of the two rubber sealing washers. Now, carefully screw the sealing gland through the hole in the outer pot so that the narrower end is on the inside. Replace the washer on the narrow end of the sealing gland. There should now be a rubber sealing washer on the 'inner' and 'outer' sides of the pot. Finally, screw the end nut back on. Tighten on both sides to create a watertight fitting..
- 6) **Position the pots.** Imagine the final desired size of the plants and space the pot stands appropriately. Next, sit the outer pots on the pot stands.
- 7) **Fit the elbow and tee connector to each outer pot.** Loosen the sealing gland outer nut on each of the outer pots. Insert the tube of the elbow or tee through the sealing gland, into the pot, as far as it will go. Remember to use all six lanes from the brain pot where possible to allow quicker floods and drains. E.G a 12 pot system would be 2 pots on each lane using a tee to connect through to the elbow which would act as your stop end. Rotate the elbow and tee connector so that it lies horizontally, facing towards the brain pot. Re-tighten the outer nut.
- 8) **Fit the hose connectors to the brain pot.** (Similar to the last step) Loosen each of the six outer nuts on the brain pot. Insert the tube end of each hosepipe connector as far it will go and re-tighten the outer nut.

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- 9) **Connect the brain pot to each of the outer pot.** You will need to cut the black hosepipe to various lengths depending on the distance between each pot and the brain pot. Leave some slack so that you have a little room for manoeuvre later! Connect each brain pot nozzle to the fitting on the outer pot nearest the brain and work outward to the remaining pots. Remember to first soften the ends of each length of hose in hot water.
- 10) **Fill the inner mesh pots with growing medium and place inside each outer pot, not forgetting the inner copper mat if using pebbles. If using fine fibre medium use a blanking sleeve.**
- 11) **Fill the nutrient tank with water (and nutrients as required).** Be careful not to overfill the nutrient tank. Remember the water level must sit below the anti siphon valve.
- 12) **Now we need to set up the timer on the control unit.**
 - a. **Set the current time.** Set the current time. Rotate the face of the timer so that the small arrow points to the current time.
 - b. **Ensure the small switch on the timer's face is set in the middle.** This causes the timer to turn on/off based on the segments rather than being on constantly (1) or off (0)
 - c. **Set when you want the system to fill / empty.** On a Flood & Drain Basic control unit, segments pushed out, ie closer to the outside than the centre, will cause the system to fill and remain filled. When you want to pump back to the main tank, segments need to be pushed in, ie towards the centre of the clock. Each segment represents 15 minutes.
- 13) **Ok, we're nearly ready to go!** The system is nearly ready for its first use. Plug the control unit into the mains.
- 14) **IMPORTANT NOTE.** Before you start using the system, you need to prime it for its first use. Initiate a feed to fill the system, once filled it can be emptied back to the main tank. You will notice that around a quarter of the water from the tank has been used up filling the voids in the system. Top up with water, add nutrients and your system will then be ready for planting. If planting with an unestablished root mass, it may be necessary to top feed for the first few days in order to encourage the root.

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Great stuff! Now you're ready to get growing!