

THE SMART-VALVE

The Smart-valve is the heart of the Auto-pot Systems. This valve controls the supply of water to the plant in accordance to the plants needs. It is a simple mechanical device which is small enough to fit on the palm of your hand. Being simple enables it to be a low cost item making it practical to have one valve for each individual container and this is the very crux of the system's versatility. The Smart-valve is very different from the conventional ballcock type of float valve in that it allows total reduction of fluid level before it refills. It does not require any electricity or battery to operate automatically which is the major advantage over current traditional hydroponic systems.

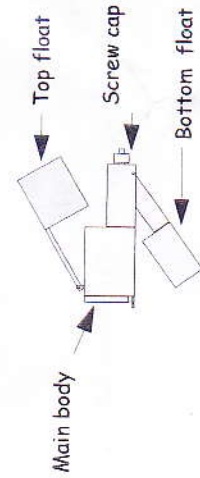
THE NEW SMART-VALVE MK 2:-

- A. **Appearance** - Mk2 looks completely different from Mk1 valves.
- B. **Make up** - Mk2 has 3 parts and Mk1 has 14.
- C. **Innovation** - Mk2 is in fact a new invention on its own right. New patents have been filed worldwide.
- D. **Watering cycles** - Mk2 watering principles (wet & dry) are similar to Mk1.
- E. **Working pressure** - Mk2 has a higher working pressure than Mk1.
- F. **Size** - Mk2 is about the same size as Mk1.
- G. **Price** - Mk2 is similar in price to Mk1.
- H. **Installation** - In most instances, growing trays have to be modified to accommodate and hold the Mk2 valves in position. We are in the process of making the necessary modifications to all our existing Auto-Pot trays.
- I. **Policy** - Mk2 valves will not completely replace Mk1 valves. There is no plan to phase out Mk1 at least for the next few years. There are other applications where Mk1 are more suited than Mk2 valves.
- J. **Mk1 valves** - Mk1 valve has undergone substantial improvement over the last three years. It is now very reliable.
- K. **Maintenance** - Mk2 has been designed to make it easier to clean.

Smart-valve Mk1



Smart-valve Mk2



Smart-valve Mk2

Significance of the Smart-valve working principle

The implications of this unique wet and drying out cycle are considerable and are the key working principle of the Auto-Pot Systems. The idea of having a separate valve in each growing container is to allow the plant or plants in that container to dictate the watering cycle. This is unlike the way that traditional hydroponic systems supply the needs of average plant. Changes such as temperature, wind, sunlight and humidity allow the valve to immediately respond to the needs of the plant. In other words, **THE PLANT IS IN CONTROL**.

Caring for the Smart-valve Mk2

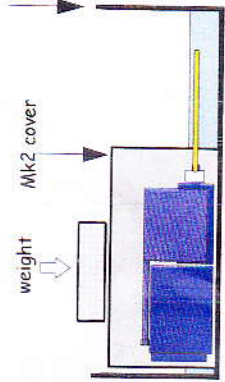
Very little can go wrong with new Smart-valve Mk2. However, it is important to note that the valve is a sensitive mechanical device. With careful and correct usage will give reliable and trouble-free results for years. The valve should not be totally submerged in water. Total immersion may cause a failure of the valve to close due to the possibility of water entering the top float.

If in doubt about the working conditions of the Smart-valve Mk2, carry out a simple test to determine if it is working properly.

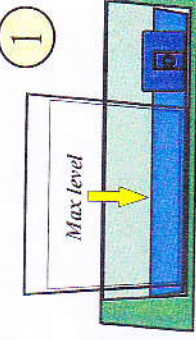
TESTING THE SMART-VALVE

1. Disconnect the tube from the tank then place the valve in a dish (e.g. an ice cream container) with a weight on top of the valve cover and re-connect to the water supply.
2. If the fluid in the dish gradually rises to about 30 mm and stops, then the valve is working correctly (see diagram on the left).

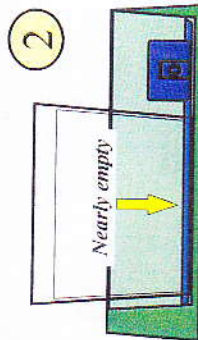
Saucer must be at least 40mm deep



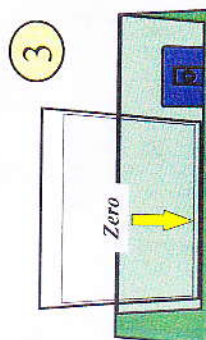
How it works



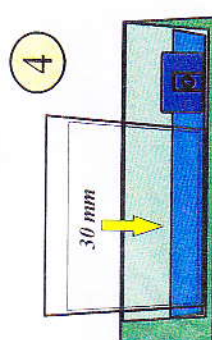
The tray starts to empty and the Smart-valve opens to let water into the tray to a pre-set level of about 30mm.



The water level in the tray drops as water is consumed by the plant. It is now nearly empty but the Smart-valve still remains closed.



The tray is now completely empty and will need some time (+/- 30 minutes) before the Smart-valve re-opens to let in more water.



The Smart-valve will close again once the pre-set water level of about 30 mm is reached and this completes one watering cycle.