

## Jiffy Plant Stand from 3/4 " PVC Pipe

If you could build a basic PVC pipe plant stand for \$35, and then add inexpensive shop lights and trays, wouldn't it be worth it? Commercial vendors sell comparable stands made out of metal with sophisticated lighting for as much as \$600. With a little bit of time spent following these instructions, a substantial 3/4 inch PVC pipe plant stand could be yours.

### MATERIAL LIST

PVC FRAME - All the following parts are commonly available at hardware/home building stores:

- 8 Ten foot 3/4" White PVC Pipes
- 34 PVC 3/4" Tee Connectors (make sure you get the small tee's measuring 2 1/2" across the top of the tee)
- 4 PVC 3/4" 90 Degree Elbow Connectors (make sure these elbows are the small size too)
- 1 Can of PVC Adhesive
- 6 1 5/8" Diameter White Wheels (OPTIONAL)
- 6 3/4" Wheels Sockets (OPTIONAL)

### ELECTRICAL

#### *Lighting*

- 4 48" double shop lights (costing about \$20 at hardware/home building stores) or
- 4 48" double Fluorescent Plant Lite Fixtures with 2 wide-spectrum lights and chains (IGS Model # PL42WS-C costing \$99 each from Indoor Gardening Supplies 1.800.823.5740 or on-line at [www.indoorgardensupplies.com](http://www.indoorgardensupplies.com):) (OPTIONAL)

#### *Timer*

- 1 Heavy Duty 3 prong light timer

### SHELF OPTIONS

#### *Stand alone wicking system*

- 5 2' x 4' White Plastic Ceiling Fluorescent Light Covers I paint black

#### *Common wicking system*

- 4 2' x 4' Ceiling Fluorescent Light Egg Crates
- 4 2' x 4' White Plastic Ceiling Fluorescent Light Covers
- 16 Standard 11" x 22" x 2-1/2" Perma-Nest Plant Trays (costing \$7.25 each from Indoor Gardening Supplies 1.800.823.5740 or on-line at [www.indoorgardensupplies.com](http://www.indoorgardensupplies.com))

### SHELVES

I use two different approaches on holding the African violets. My *stand alone wicking system* uses a 2' x 4' white translucent plastic ceiling fluorescent fixture cover I spray paint black on each shelf level. This arrangement is shown in the picture on page 4. The black reflects less light than leaving them white so my leaves don't tend to hug the pots by growing down to the shelf. I use this arrangement to hold individual plant reservoirs made from plastic containers such as margarine containers. The lights are hung so that the top

of the light fixture is at the same level as the PVC side bars to support the plastic 2' x 4' sheets. My *common wicking system* use four standard 11" x 22" x 2-1/2" Perma-Nest Plant Trays per shelf covered by a 2' x 4' white egg crate that you use on top of Perma-Nest Plant Trays - - I do community wick watering in this arrangement. For this approach, the lights are hung lower so that the top of the light fixture is at the level of the bottom on the trays. I also put white plastic 2' x 4' sheet under the trays to catch water if I spill it. *In both cases, I use the hanging fluorescent light fixtures under the shelves to support the individual watering containers or the trays with water.*

## LIGHTS

To make this plant stand financially practical, buy 48" double shop lights at Home Depot or Lowes with cool white bulbs, but remember the bulbs are very close together. I prefer professionally built 48 inch two (2) light units such as those sold by Indoor Gardening Supplies of Detroit, Michigan. The Sylvania Wide Spectrum lamps are 11 inches apart, and the light fixtures can be daisy-chained together by plugging them into one another. Four bulb units are also available (and more expensive), but I find they produce too much light for my African violets. After the last light, plug the string into a heavy duty 24 hour timer. If you spend \$99 for professional light unit, the overall cost of this project starts to approach the cost of a complete professionally build plant stand.

## CONSTRUCTION

Cut the ten foot lengths of 3/4" PVC pipe into to the following lengths:

Item 1	8	48 1/4 "	(for the longer part of the shelves)
Item 2	10	21 1/16 "	(for the sides of the shelves)
Item 3	8	12 3/4 "	(for top 2 levels to provide closer spacing for minis/semiminis)
Item 4	8	15 1/2 "	(for bottom 2 levels for standards)
Item 5	16	1 3/8 "	(Connectors for the shelf members)

## ASSEMBLY

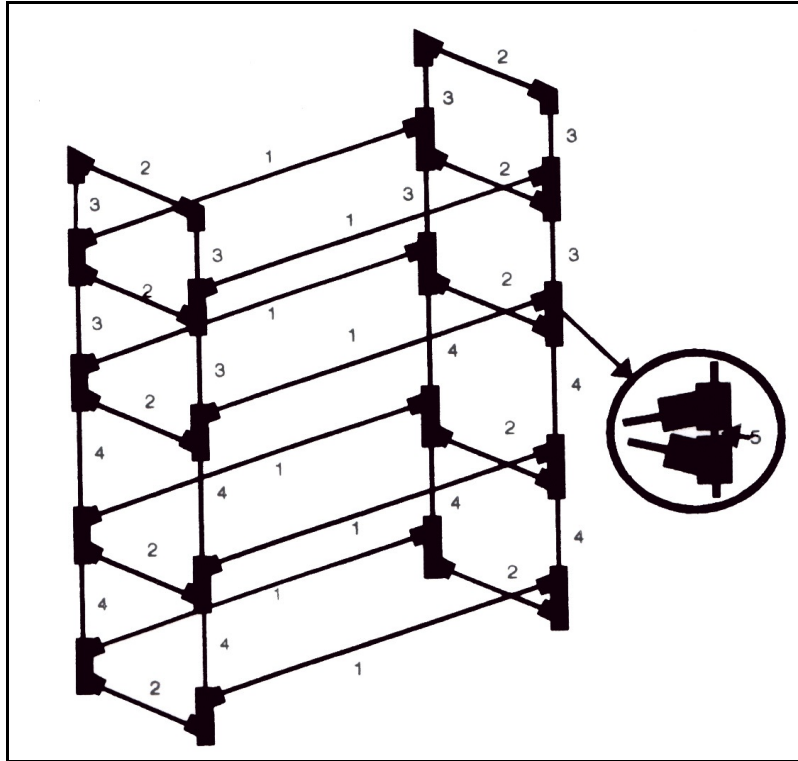
Step 1 - Glue PVC Tee Connectors to both ends of all the Item 1s and eight of the Item 2s. Make sure both the PVC Tee Connectors are parallel to each other.

Step 2 - Using Item 5 connectors, glue the long and short lengths of shelf supports made in Step 1 together to form a rectangular shelf. Suggest doing this job by placing both pieces against a square wall in your house. To the right, (while you can't see the connectors because they are hidden in the tee's) you can see how the elements are connected together.

Step 3 - Glue PVC 90 Degree Elbow Connectors to two of the Item 2s for the top light support. Make sure both the PVC 90 Degree Elbow Connectors are parallel to each other.



Step 2 Corner Detail



Assembly Details

Step 4 - Using eight Item 4s, connect the bottom, second, and third shelf together (these pieces are the top and bottom vertical pipes shown in the picture to the right). DON'T GLUE. I use pressure to keep the shelves together and not glue. In this way, I can take the shelves apart for transport or for making further adjustments on the distances between lights and plants.

Step 5 - Using eight Item 3s, connect the fourth shelf and top light support together. DON'T GLUE. I use pressure to keep the shelves together and not glue. In this way, I can take the shelves apart for transport or for making further adjustments on the distances

between lights and plants.

Step 6 - Using chained light fixtures, support trays or plastic shelves with the light fixtures. Plug them together daisy-chain style and into the timer. Connect to AC.

### **SUPPORTING THE BOTTOM SHELF**

When I use Perma-Nest Trays, I divide the long pipes on the bottom shelf in half and install PVC Tee Connectors (with optional wheels) to support the trays. If I only use a plastic shelf, I support the middle center line of the plastic shelf at both ends and in the middle so that plants on their reservoirs don't bend the shelf.

### **CLEANING THE STAND**

Depending how neat you are, you may want to clean off the black printing on the PVC pipes. This is not as easy as it sounds. You'll need to use lacquer thinner or acetone with a piece of fine steel wool. Work on the marks until they come off. Do this outdoors since the cleaner is very flammable, and wear a face mask such as a 3M No. 7251 Permissible Chemical Cartridge for Organic Vapors which you should be using when you spray pesticides on your African violets. This mask is available in the same hardware/home building stores where you bought the material, paint specialty stores, or in your larger garden stores that sell large quantities of pesticides.



Completed Plant Stand with Individual Watering

### **TOTAL COST**

When you add the cost of the PVC pipes and connectors (apx \$35), the lights (apx \$20 for shop lights x 4=\$100), egg crate (apx \$10 x 4 = \$40), plastic covers or shelves (\$10 x 5=\$50), and Pema-Nest Plant Trays (apx \$8 x 16=\$128), you pay \$353 which is less than a pre-made stand when you add all the extras that don't come with it, and you have a four level stand instead of a 3 level professional one. Doing it yourself allows several unique options regarding the watering system you use, and the distance the plants will be from the lights. Good luck with your project.