# Instruction and Installation Manual

**KH001**

**12 Outlet Manifold Kit for Greenhouse and Hydroponics**

# Parts Included in the KH001 Kit

1x D071 12-Outlet Manifold Head, 1 GPH per Outlet 

1x T009 50’ Roll 1/8” Poly Tubing 

1x R206 1/2" x 12” Long PVC Riser 

1x PTR-34-001 3/4" Slip x 1/2" FPT Tee 

1x PT-12-002 1/2" Slip x 1/2" FPT PVC Tee 

1x D075 Strip of 8 Rubber Caps for Manifold Head 

1x A155 3/4" FPT x 3/4" FHT Swivel Adapter 

1x PA-34-003 3/4" MPT x 3/4" Slip PVC Adapter 

1x PRE-34-001 3/4" Spigot x 1/2" Slip PVC Reducer 

2x LF076 3/4" Compression Glue-In Insert 

2x LF015 1/2" (.700 OD) Compression Glue-In Insert 

12x SF005 1/8” Tee 

24x S047 Flow Stabilizer Stake for 1/8” Tubing



# Assembling the KH001 Kit

**1)** Choose how many of the 12 outlets on the D071 manifold head you will be using. Most of the time you will need one outlet per plant. If you have 12 plants then you'll need all 12 outlets. If you only have eight plants then you'll only need eight outlets. If you will not be using all of the outlets then use the D075 soft rubber caps to close off any unwanted outlets. To do this, open the D071 manifold head by unscrewing the cap, removing the clear filter element and placing a single rubber cap over each outlet you wish to close. You do not need to remove the built-in emitter to install the cap. Once you have installed any required caps remember to put the clear filter element back in and screw the cap on until it is hand tight.

**TIP:** The D071 manifold head needs to have at least four operable outlets to work properly. If you have fewer than four plants consider using multiple outlets per plant so you use at least four of them. Do not block off outlets with anything other than the D075 caps.

**2)** Screw the D071 manifold head onto one end of the R206 grey 1/2" riser. Use three wraps of teflon tape on both ends of the riser.

**3)** Install the R206 riser with the D071 manifold head on it into whichever PVC tee you will be using (see "Connecting your Manifold to the Main Line" on the next page).

**4)** Bring the completed manifold assembly to the location you wish to install it. Find the roll of T018 1/8" tubing and remove the tape holding it together. Place the roll of tubing by the manifold head and take the other end to one of your plants, then cut the tubing to the desired length using a pair of scissors or utility knife. Push one end of the cut tubing into the bottom of the manifold, then tug lightly to ensure it is properly connected. Do the same for every port you intend to use.

**TIP:** It's okay to cut the tubing longer than necessary, and it's okay if the tubes are all different lengths. The pressure-compensating emitters in the manifold head will ensure that each plant gets the same amount of water regardless of the length of the tube going to it.

**5)** Take the remaining 1/8" tubing and cut two small pieces of about 3" in length for each outlet you are using. If you are using all 12 ports then you should cut 24 pieces about 3" in length. Insert one of the small pieces of tubing onto each arm of the SF005 1/8" tees. Then take the stakes and insert the long, narrow end of a S047 stake into the open end of each of the small pieces of 1/8" tubing.

**6)** Insert the bottom of each SF005 tee into one of the long lines attached to the D071 manifold head.

**7)** Once the D071 manifold head is attached to your main line and your main line is attached to your water source, take each pair of stakes and put them into one plant so one stake is on each side of the plant.

**TIP**: If you want to give more water to some plants, put a second pair of stakes into that plant. This will give it twice as much water as a plant with only a single pair of stakes in it.

# Connecting your Manifold to the Main Line

## 1/2" or 3/4" Schedule 40 PVC (Recommended)

**1)** There are two white PVC tees included in the kit. Both of these tees have one threaded side and two slip (smooth) sides. The threaded side is the same on both of them, but the slip sides are different. You can use these tees to connect your manifold to either 1/2" or 3/4" PVC. The smaller of the tees (PT-12-002) is for 1/2" PVC and the larger (PTR-34-001) is for 3/4" PVC. Once you have decided which size PVC you'd like to use, screw the appropriate tee onto the bottom of the R206 1/2" riser as described in step three of "Assembling the KH001 Kit."

**2)** Lay out a piece of PVC pipe of the desired diameter and length then cut it where you'd like to install the manifold. Coat the inside of the open ends of the PVC tee and the outside of the pipe with PVC glue and press them together firmly for 30 seconds. Let the glue dry for at least two hours before using the system.

TIP: Use PVC glue sparingly so that extra glue will not seep out of the fitting. If it does, wipe the excess off immediately with a dry cloth or paper towel.

## 3/4" or 1/2" Poly Tube

**1)** Decide whether you'd like to use 1/2" or 3/4" poly tubing as your main line. The kit includes pieces to attach to both. Once you have decided, find the appropriately sized PVC tee.

**2)** There are two sets of glue-in inserts in the kit, one set of black (LF015) and one set of grey (LF076). The black inserts are for 1/2" poly while the grey inserts are for 3/4" poly. Choose the appropriate one for the tee from step one.

**3)** Coat the smaller end of one of the inserts and one of the slip ends of the tee with PVC glue then press them firmly together for 30 seconds. Ensure that the insert has been pressed flush against the tee. Do this with the other insert as well. Let the glue dry for at least two hours.

**4)** Push your poly tubing into either side of the tee to connect it.

# Connecting your Main Line to a Garden Hose

## 3/4" PVC

**1)** Take the end of your PVC main line closest to your garden hose and glue the PA-34-003 adapter onto it. To do this, coat the inside of the slip side of the PA-34-003 and the outside of the pipe with PVC glue and press together firmly for 30 seconds. Allow the glue to dry for at least two hours.

**2)** Screw the blue end of the A155 swivel fitting onto the threaded end of the PA-34-003 adapter until it is hand tight.

**3)** Screw the end of your garden hose into the black end of the A155 swivel fitting until it is hand tight.

## 1/2" PVC

**1)** Take the end of your PVC main line closest to your garden hose and glue the smaller side of the PRE-34-001 adapter onto it. To do this, coat the inside of the smaller side of the PRE-34-001 adapter and the outside of the pipe with PVC glue and press together firmly for 30 seconds. Allow the glue to dry for at least two hours.

**3)** Cut a small piece of 3/4" schedule 40 PVC at least 4” long. Glue one end of it into the open end of the PRE-34-001 adapter and the other into the slip end of the PA-34-003 adapter.

**2)** Screw the blue end of the A155 swivel fitting onto the threaded end of the PA-34-003 adapter until it is hand tight.

**3)** Screw the end of your garden hose into the black end of the A155 swivel fitting until it is hand tight.

## 1/2" or 3/4" Poly Tubing

**1)** Both sizes of poly tubing can be attached to any drip irrigation adapter for a garden hose as long as it is of the appropriate size. Use SKU LF003 to attach 1/2" poly and SKU LF335 to attach 3/4" poly. Neither of those pieces are included in this kit, but both can be found on our website by typing the SKU into the search bar.

## Connecting Your Main Line to a Pump

In order to attach to a pump you'll need to know what type and size the outlet of your pump is. This will usually be either male or female pipe thread, although pumps can have a number of different outlet fittings. Once you know what type and size your pump's outlet is it's just a matter of finding the correct piece or combination of pieces to attach to it. For example, if your pump has a 3/4" female pipe thread outlet, you can use the PA-34-003 adapter to attach to it. This is because the PA-34-003 has a 3/4" male pipe thread side that can screw into the 3/4" female pipe thread outlet of your pump. Please feel free to call us if you're having trouble attaching your kit to a pump, we are happy to help!

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