

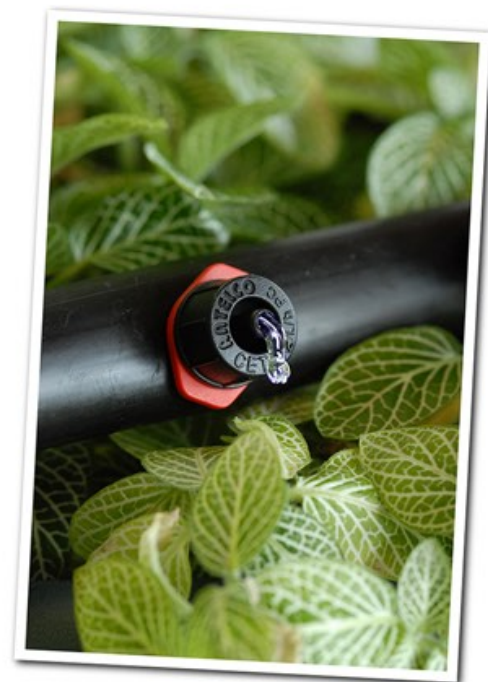
Drip Irrigation Systems for a Beautiful Garden

What is Drip Irrigation?

Drip irrigation systems are the most efficient of the garden watering systems, designed to precisely release water to the rootzones of plants. It works by using a simple network of pipes to carry water around the garden, and then connecting drip emitters (aka outlets) and positioning them close to the base of plants. All of this can be controlled with a water timer, allowing you to automate the daily watering of your garden plants. Ideal for those with busy lives or who travel.

Because the drip emitters release water slowly, you have greater control of the amount of water being delivered, eliminating water waste. It is possible to save up to 80% water compared to using a hose pipe. Drip systems are ideal for borders and flower beds, vegetable patches, greenhouses, hanging baskets and plants in containers.

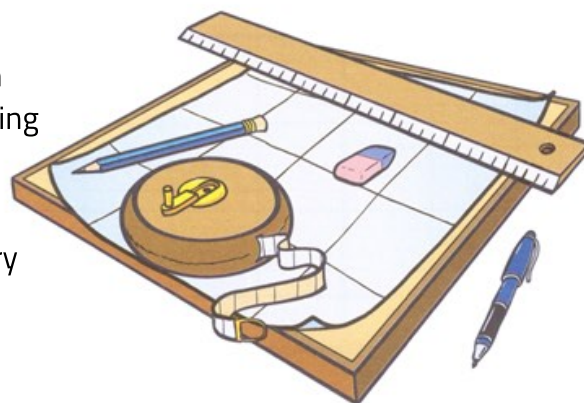
Installing a drip irrigation system is pretty straight forward, and in this guide we will show you how to plan and install one for your garden.



Where to Start

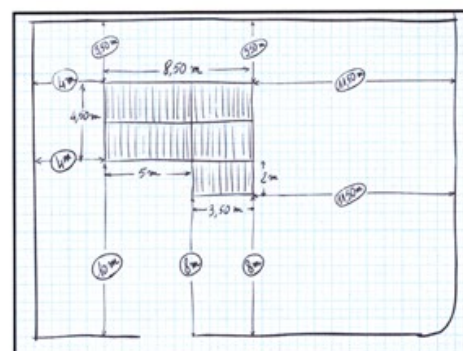
If you haven't already done so, complete the Garden Irrigation Design Pack. This will help you prepare all the required information for planning an irrigation system.

When you have a map of your garden and the locations of all your plants, we can start to plan the network of pipe work required to carry the water.



Planning the Pipe Network

From the tap, draw a path past all the plants that you wish to water. This path can branch off in different directions (using T connectors) and can do 90° turns around obstacles (using elbow connectors). The idea of a watering system is to be hidden, so take into consideration the best route for the pipework to be out of sight. This could be underground (up to 5cm), under mulch, hidden behind bushes, or neatly pinned to a wall or fence. The pipework should ideally be within 1 metre of the plant intended for watering. If you have a large garden, you will have to split this into different zones as there may not be enough water coming from your tap to feed the entire garden all at once. This will mean you have different lengths of pipe running from the garden tap.



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Planning the Pipe Network cont.

The path we have drawn represents the main supply route. The pipe used for this is the 13mm Irrigation Supply Pipe, an LDPE pipe that is UV and weather protected, easy to cut to length and works in conjunction with 13mm irrigation fittings.

From this main supply pipe, we connect 4mm Micro Supply Pipe to run to the plant to be watered. We do this for every plant we have, or if we have multiple plants close together, we can connect to the main supply pipe once, and then use Micro T connectors to branch off to multiple plants. We can also connect certain drippers directly to the main supply pipe if the pipe runs very close to the plant to be watered.



Building a Shopping List

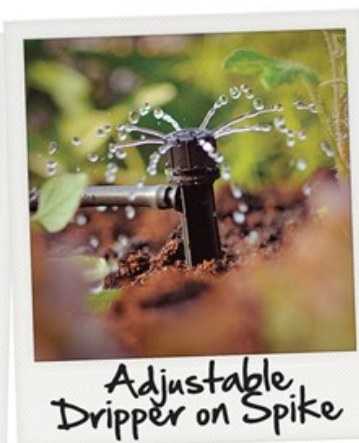
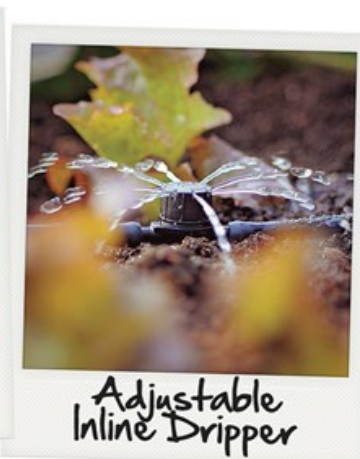
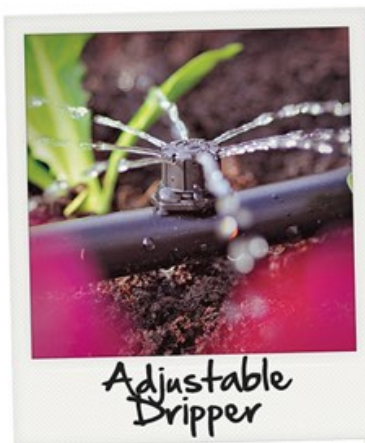
When we have planned the pipe network, we next want to create the shopping list of components required to build your drip irrigation system. An example shopping list will feature later in the guide.

Which Drippers to use

There are several different types of drippers to use with differing flow rates. Take a look at the different types available and pick the type you think will work best for your drip system.

Adjustable Drippers

The range of adjustable drippers has a variable flow and coverage. Simply screw the cap to increase/decrease flow. Adjustment from 0-40 litres per hour and a spread of up to 30cm radius. Available in barb and spike versions, inline and end of line. Because of their large coverage, these are great for large containers and sharing between plants grouped closely together.



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Which Drippers to use cont.

Pressure Compensating Drippers

With a choice of different fixed flow rates, the pressure compensating drippers are great for large systems and for precise watering applications. Choose from 2, 4 and 8 litre per hour models in either a spike or barb version. Use the barb version either in the end of 4mm micro pipe, or insert directly into 13mm supply pipe.

Determine what is needed

When you have a plan of the pipe network and you know what type of drippers are required, we can start to calculate everything needed to complete the installation.

Measure the length of Supply Pipe required

Measure the pipe path you drew on your plan. Because this is to scale, it will be easy to calculate how much is needed. Take into consideration any vertical climbs you may wish to have (don't forget the pipe running from the tap to the ground). For the Micro Supply Pipe a rule of thumb of 50cm per plant is a good measure, this can vary depending on your plan

Count how many drippers are required

A good rule of thumb for determining how many drippers you require is quite simply to count how many plants you have to water. If you are using the Adjustable Drippers then you can use these to cover multiple plants that are grouped closely together. The fixed flow Pressure Compensating Drippers are best used individually for each plant.

Count up everything else

Count up the outlets, fixings and connectors required based on your plan. For instance, count how many times you branch the pipe of in different directions to determine how many T connectors you require, or how many 90° turns you make to determine how many elbow connectors you require, or how many dead ends you have to determine how many stop end connectors you require. Later in the guide we have a full list of recommended parts for garden watering systems, and their uses.

It's always worth buying a few more than planned as this way you can make sure there are no nasty surprises when completing the install and you won't be left short of any components. We find that we are always short of elbows, wall clips and pipe stakes.



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A Typical Shopping List for Drip Irrigation Systems

Patio pots and containers

Scenario - We have a patio with 20 pots placed on it, and we want to water them whilst away on holiday. Each pot contains just one plant each, and they are all roughly the same size and have roughly the same watering requirement. The garden tap is right next to the patio as well. We follow the plan and determine that we need 15 metres of supply pipe to run from the tap, past all of the containers and to the last plant pot. Here is what we would be looking to buy to complete a full garden watering system.

- **Water Timer** - Pick an easy to program water timer for automatic daily watering. Our favourites are the **Claber Water Timers**.
- **Nut and Tail Tap Adaptor** - This fits to the outlet of the water timer and allows the main supply pipe to be connected.
- **15 Metres of 13mm Irrigation Supply Pipe** - This is the main carrier of water (doesn't release water) and runs past all the plant pots and containers.
- **13mm Elbow connectors, T connectors, stop end connectors etc.** - Based on the plan's requirements, choose 13mm connectors to guide the pipe around the garden and terminate runs.
- **Pipe Stakes and Wall Clips** - Available for both 13mm and 4mm pipe, this secures the pipe in place. Use the stakes to secure the pipe to soil or wall clips to secure the pipe to walls and fences.
- **Irrigation hole punch** - This is used to punch holes in the Irrigation Supply Pipe to then insert tube adaptors into (we'll discuss more in installation later).
- **20 x 4mm Tube Adaptors** - Used to make the connection between 13mm and 4mm pipe via a punched hole.
- **10 Metres of 4mm Micro Supply Pipe** - This takes the water from the 13mm pipe to the drippers in each plant pot.
- **20 x Pressure Compensating Drippers** - We use Pressure Compensating Drippers to ensure an even amount of water is released to every plant, so the same amount of water is released to the first plant in the run as the last.

We may also consider purchasing a **Pressure Reducer** and an **Irrigation Filter** as well to help protect the system.



Drip Irrigation Systems for a Beautiful Garden

A Typical Shopping List for Drip Irrigation Systems cont.

Hanging Baskets

Scenario - We have a house/pub with 10 hanging baskets around the perimeter, and we want to water them automatically. The garden tap is at the rear of the property. We follow the plan and determine that we need 20 metres of supply pipe to run from the tap, past all of the hanging baskets and to the last plant pot. Here is what we would be looking to buy to complete a full watering system for hanging baskets.

- **Water Timer** - Pick an easy to program water timer for automatic daily watering. Our favourites are the **Claber Water Timers**.
- **Nut and Tail Tap Adaptor** - This fits to the outlet of the water timer and allows the main supply pipe to be connected.
- **13mm Irrigation Supply Pipe** - This is the main carrier of water (doesn't release water) and runs past all the hanging baskets. We would want to run this up once to the height of the hanging baskets (or higher if it is easier to hide), then we would run it past all the baskets.
- **13mm Elbow connectors, T connectors, stop end connectors etc.** - Based on the plans requirements, choose 13mm connectors to guide the pipe around the house and terminate runs.
- **Wall Clips** - Available for both 13mm and 4mm pipe, this secures the pipe in place. Use the wall clips to secure the pipe to walls and fences.
- **Irrigation hole punch** - This is used to punch holes in the Irrigation Supply Pipe to then insert tube adaptors into (we'll discuss more in installation later).
- **10 x 4mm Tube Adaptors** - Used to make the connection between 13mm and 4mm pipe via a punched hole.
- **4mm Micro Supply Pipe** - This takes the water from the 13mm pipe to the drippers in each hanging basket.
- **10 x Pressure Compensating Drippers** - We use Pressure Compensating Drippers to ensure an even amount of water is released to every plant, so the same amount of water is released to the first plant in the run as the last.

We may also consider purchasing a **Pressure Reducer** and an **Irrigation Filter** as well to help protect the system.



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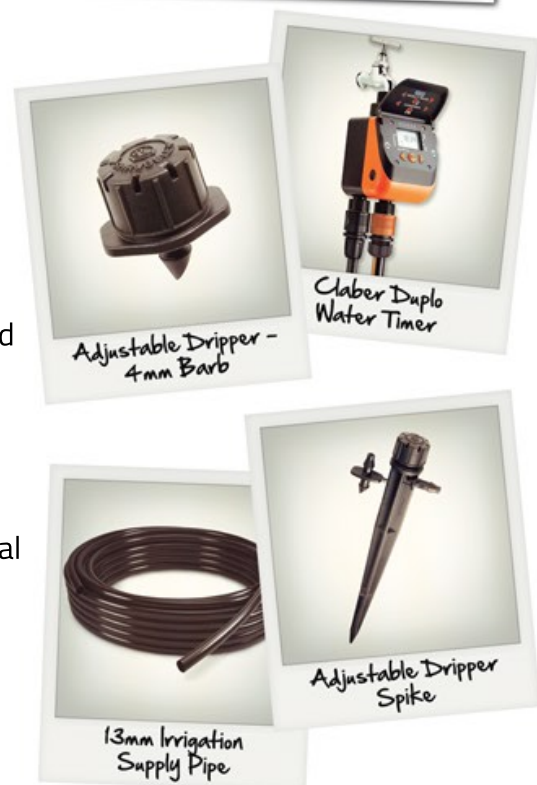
A Typical Shopping List for Drip Irrigation Systems cont.

Flower Beds and Borders

Scenario - We have a front and rear garden with flower borders with a width of 1m around the perimeter of each, and we want to water them automatically. All the flowers are bunched closely together within the borders. The garden tap is at the rear of the property. We follow the plan and determine that we need 50 metres of supply pipe to run from the tap and through all of the flower borders. We decide to divide the system into two zones, one for the front and one for the rear..

- **Dual Outlet Water Timer** - Because we are dividing the system into two zones, we require two timers, or to keep it simple, a timer with two outlets. The **Claber Duplo Water Timer** is the best to pick for this situation.
- **2 x Nut and Tail Tap Adaptor** - This fits to the outlets of the water timer and allows the main supply pipe to be connected. One for each outlet.
- **13mm Irrigation Supply Pipe** - This is the main carrier of water (doesn't release water) and runs through all the flower borders.
- **13mm Elbow connectors, T connectors, stop end connectors etc.** - Based on the plans requirements, choose 13mm connectors to guide the pipe around the house and terminate runs.
- **Pipe Stakes and Wall Clips** - Available for both 13mm and 4mm pipe, this secures the pipe in place. Use the stakes to secure the pipe to soil or wall clips to secure the pipe to walls and fences.
- **Irrigation hole punch** - This is used to punch holes in the Irrigation Supply Pipe to then insert tube adaptors into (we'll discuss more in installation later).
- **4mm Tube Adaptors** - Used to make the connection between 13mm and 4mm pipe via a punched hole.
- **4mm Micro Supply Pipe** - This takes the water from the 13mm pipe to the drippers in each hanging basket.
- **Adjustable Drippers** - Because the adjustable drippers have a greater coverage than the Pressure Compensating drippers, it makes them an ideal choice for densely populated flower borders. Instead of installing one for every plant, we can have multiple plants covered by just one dripper. We would use approximately 3 drippers for every metre of flower border.

We may also consider purchasing a **Pressure Reducer** and an **Irrigation Filter** as well to help protect the system.



Adjustable Dripper -
4mm Barb

Claber Duplo
Water Timer

13mm Irrigation
Supply Pipe

Adjustable Dripper
Spike

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Installation of a Drip Irrigation System

Connect to the Tap:

If using a water timer, screw this directly on to the outside tap, then later we will connect the 13mm supply pipe to the outlet of the water timer via the nut and tail tap adaptor. If using a pressure reducer, we add this to the outlet of the water timer first, then attach the nut and tail tap adaptor.

Create the Network of Pipe Work:

- a) Lay out the 13mm supply pipe around the area to be watered. The pipe will be more manageable if warmed in sunshine prior to use. Initially position it with weights until it relaxes.
- b) Cut the 13mm supply pipe using scissors and create the network using the required fittings (elbows, T pieces, stop ends etc.). Micro supply pipe can then be cut to reach from the 13mm pipe to the required positions of the drippers.
- c) Connect Micro Supply Pipe to 13mm supply pipe by punching a hole in the 13mm pipe with an irrigation hole punch, then inserting a Tube Adaptor into said hole. This will allow for the connection to the Micro Supply Pipe. Occasional slight leakage can occur from the supply pipe/micro pipe connection point. This usually seals over time. Ensure the fittings is correctly inserted at a 90° angle.
- d) Anchor and fix the supply pipe and micro supply pipe in place using stakes and wall clips. Ideal placement of stakes for the 13mm pipe is one every metre, and with the micro supply pipe, using the micro stake close to the dripper.

Connect the Drippers

- a) If using the drippers in conjunction with micro supply pipe, push the micro supply pipe on to the barb inlet of the dripper. Fix in place using a micro tube stake.
- b) You can also insert barb drippers directly into 13mm irrigation supply pipe by simply punching a hole using an irrigation hole punch, then inserting the barb inlet of the dripper into the punched hole.
- c) Ensure the dripper is positioned close enough to the plant to provide it with water. If using adjustable drippers, you can share this between multiple plants grouped closely together.

Finish the installation

Connect the system to the tap and test. Be sure to look out for any parts of the network that are releasing water not via the drippers. Allow between 2-5 mins for the system to build up and start releasing water. Once you have tested the system for any leaks, program the water timer. Depending on the water timer chosen, set it to turn on twice a day for roughly 5-10mins during cooler times of the year and 10-20mins for warmer periods of the year.

Maintenance

At the end of the season, remove all stop ends. Flush with water to clean out any major debris, and then drain to avoid frost damage. Remove the water timer and any other tap accessories you may be using and store them away from frost. All drippers may be dismantled for cleaning. Soak in vinegar and water to remove any residues.