

2017-18 Edition



# Irrigation Design for Landscapers



We do hope that this pocket guide is of assistance to you, it is designed to be a 'half-way house' between the components catalogue and a full-scale bespoke irrigation design.

For many smaller projects, design and installation is simple, provided you know what components you need. This is where our pocket guides come in, giving detailed layout drawings and component lists for common projects – and all parts reference back to our main components catalogue.

If you need any help or advice, please do not hesitate to give us a call.

Regards

A handwritten signature in blue ink that reads 'M. Briley'.

Mike Briley  
Sales Director



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## Water Regulations

The use of mains water for irrigation is governed by Water Regulations, which describe what backflow prevention is required for a particular system. To make it easy, we have given each system a protection rating.

[A] Double check valve must be fitted

[B] Double check valve and 'DB' valve must be fitted (see page 27). The 'DB' valve must always be fitted after the control valve. It may also weep slightly.

[C] Air gap required. This is normally achieved by a break tank. As the water in the break tank loses all of the mains water pressure, a pump is also needed (see pages 33-35).

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# i. Border Watering - Mini-sprinklers

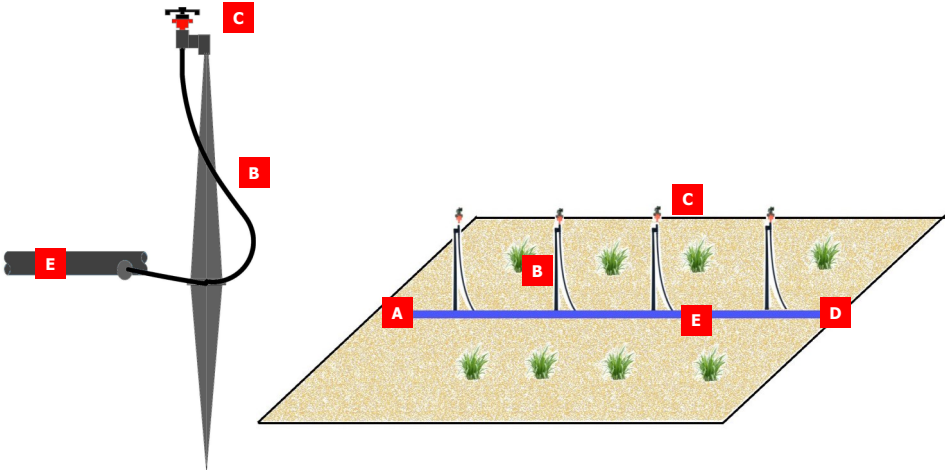
## Brief Description

Mini-sprinklers are the easiest way to water a border, especially if it has already been planted.

Discreet black plastic risers are fitted approx. 2m apart down the border. 1m long small bore pipe leads fit to a larger polythene supply pipe (E). Different sized nozzles (C) are available to cover different border widths.

Fittings at the start of the run (D) can either be designed to connect to a hose pipe, or to a permanent underground supply pipe (see sections x –xi)

**A border watering kit is available on page 19 of our catalogue.**



Key	Description	Part Code	Pack Qty	Cat. page
A	Fold over stop end	TJ20-T	10	41
B	Bedding spike set	KRBS-T	10	11
C	Sprinkler nozzle	KES040 or KES070	10	10
D	Entry fittings	This guide pg x-xi		
E	20mm poly pipe	PA20-100M	100m	40
	Punch	DPB3	1	3

N.B. Pipes are coloured blue for reference only

## Tips!

A punch is needed to put the small bore fittings into the side of the main pipe.

Page 10 lists various sprinklers, for each sprinkler there is information on its output and how far it will cover.

## ii. Border Watering - Drip lines

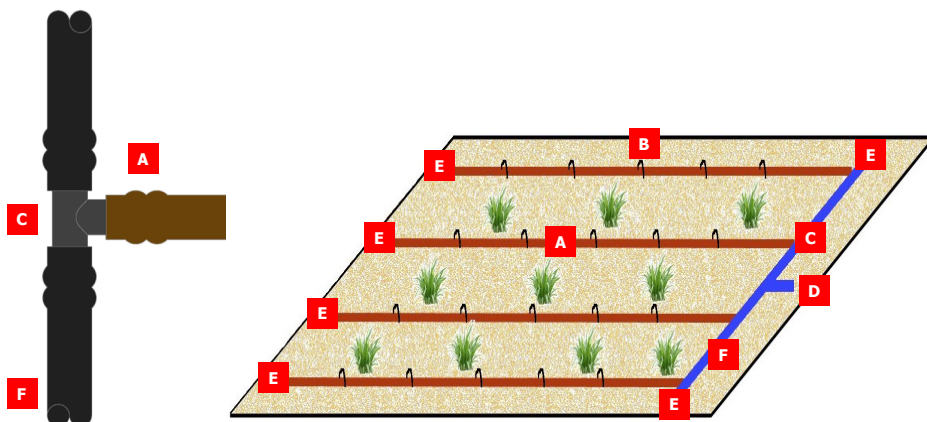
### Brief Description

This consists of a dark brown pipe with drippers inserted. This has the advantage that it works almost invisibly (ideal for public areas) and relatively large areas can be watered at once.

Drip line is laid in a grid pattern 0.6m (2') between runs (as shown) or snaked down a narrow bed. Plastic pegs hold the pipe down and barbed fittings connect runs together.

Fittings at the start of the bed (D) can either be designed to connect to a hose pipe, or a permanent underground supply (see sections x-xi)

**A complete drip-line kit is available on page 23**



Key	Description	Part Code	Pack Qty	Cat. page
A	16mm dripline	TNT0.5-H	100m	22
B	Anchorage Pegs	ESS16-Q	25	23
C	16mm barbed tee	FBT16-T	10	41
D	Entry fittings	This guide pg x-xi		
E	Fold over stop end	TJ16-T	10	41
F	16mm poly pipe	PA16-100M	100m	40

N.B. Pipes are coloured blue for reference only

### Tips!

Item (C) is a barbed tee piece, also available are 90°elbows and straight connectors, or a mixed pack of fittings.

The drip line can be buried under a bark mulch to hide it completely. It can also be buried underground, but this requires a special filter and better backflow protection.

For general beds use 0.5m spaced drip line. 0.3m spacing can be used on hedges. 0.15m spaced drip line is available to go around trees.

The Drip-line Starter Pack (FBSP16) contains a hose entry fitting (D), stop-end (E), and a straight barbed connector (FBK16 - pg 41)

Level of skill:



Basic DIY

Backflow protection:

**B**

### iii. Hanging Basket (small systems)

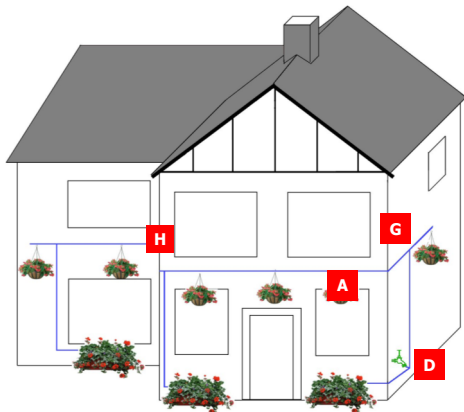
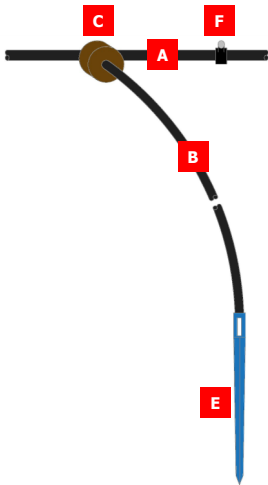
#### Brief Description

An adaptor with built-in filter fits onto the outdoor tap (D). From this small bore (6mm diameter) flexible supply pipe (A) is clipped above the baskets.

At each basket, the supply pipe is cut with a pair of scissors and a drip tee (C) inserted. A dripper pipe (B) then goes down into the basket, where a stake (E) holds the pipe in place.

Branching tees (H) allow the supply pipe to be divided.

**Complete dripper kits are available on page 26 and Contractor packs on page 27**



Key	Description	Part Code	Pack Qty	Cat. page
A	Supply pipe	P14-100M	100m	27
B	Dripper pipe	P13-20M	20m	27
C	Dripper in tee	D2PCT-H	100	27
D	Tap fittings	DWTF-T	10	27
E	Dripper stakes	DAS-H	100	27
F	Hammer clips	FPCN6-H	100	27
G	End stops	PA12=1-T	10	27
H	Branching Tee	FBT6-T	10	27

#### Tips!

Page 26 indicates how many drippers you can run on a given pipe length.

Hammer clips have a built-in nail to make fitting easier. For very hard walls, we also supply pin plugs—these are like rawl plugs, but for nails.

The dripper pipe is very flexible and can be curved round corners.

Ideally the system should be automated, as baskets require watering 'little and often'.

N.B. Pipes are coloured blue for reference only

Level of skill:



Basic DIY

Backflow protection:

**B**

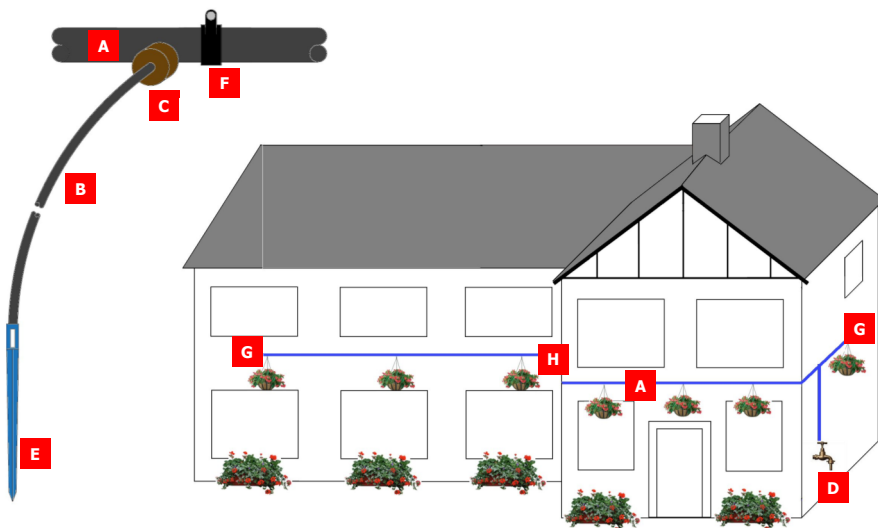
## iv. Hanging Basket (larger systems)

### Brief Description

An adaptor and filter (D) fits onto the outdoor tap. To cope with the increased flows, 16mm diameter supply pipe (A) is clipped to the wall above the baskets.

At each basket, the supply pipe is punched and a dripper inserted (C). A small bore dripper lead (B) then goes down into the basket, where an anchorage stake (E) holds the pipe in place.

Branching tees allow the supply pipe to be divided. To water troughs, pipe is clipped immediately above or below, drippers are inserted into the pipe and leads taken to the compost, where a stake holds it in place.



Key	Description	Part Code	Pack Qty	Cat. page
A	16mm supply pipe	PA16-100M	100m	40
B	Dripper pipe	P13-20M	20m	27
C	Dripper	D2PCJ-H	100	5
D	Entry fittings	FBK16-3F	1	41
	Filter	P67	1	48
E	Dripper stakes	DAS-H	100	5
F	Hammer clips	FPCN16-H	100	40
G	End stops	FBSE16-T	10	41
H	Barbed Tee	FBT16-T	10	41
	Punch	DPB3	1	5

N.B. Pipes are coloured blue for reference only

### Tips!

16mm pipe systems can cope with up to 500 drippers on them. Where possible, hide the pipe beneath the eaves.

Hammer clips have a built-in nail to make fitting easier. For very hard walls, we also supply pin plugs—these are like rawl plugs, but for nails.

Right angle elbow joints allow the pipe to go around corners and straight connectors join pipe - see page 41.

Ideally the system should be automated, as baskets require watering 'little and often'. With a multi-zone controller, different areas can be provided with separate watering regimes.

Level of skill:  Intermediate DIY

Backflow protection: **B**



# v. Patio Tubs (small systems)

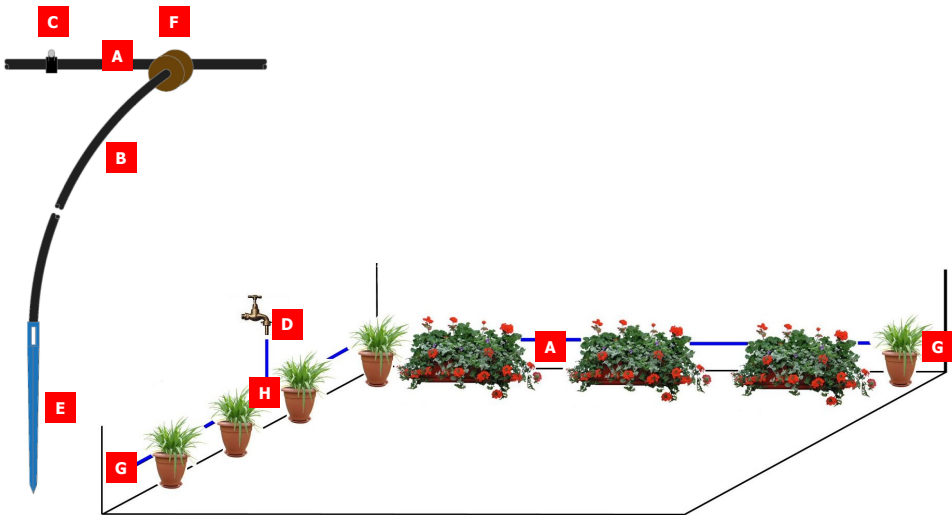
## Brief Description

An adaptor with built-in filter (D) fits onto the outdoor tap. From this small bore (6mm diameter) flexible supply pipe (A) is clipped along the wall above the tubs, or down at ground level.

At each tub, the supply pipe is cut with a pair of scissors and a drip tee (C) inserted. A dripper pipe (B) then goes into the tub, where an anchorage stake (E) holds the pipe in place.

Branching tees (H) allow the supply pipe to be divided.

**Complete dripper kits are available on page 26 and Contractor packs on page 27**



Key	Description	Part Code	Pack Qty	Cat. page
A	Supply pipe	P14-100M	100m	27
B	Dripper pipe	P13-20M	20m	27
C	Dripper in tee	D2PCT-H	100	27
D	Tap fittings	DWTF-T	10	27
E	Dripper stakes	DAS-H	100	27
F	Hammer clips	FPCN6-H	100	27
G	End stops	PA12=1-T	10	27
H	Branching Tee	FBT6-T	10	27

## Tips!

Page 26 indicates how many drippers you can run on a given pipe length.

Often it is easier to just lay the pipe on the ground behind the tubs. For wall fixing, pipe clips are available. The dripper pipe is very flexible and can be curved round corners. Ideally the system should be automated, as tubs require watering 'little and often'.

The small 'hanging basket' system and 'patio tub' systems use identical parts.

N.B. Pipes are coloured blue for reference only

Level of skill:  Basic DIY

Backflow protection:  B

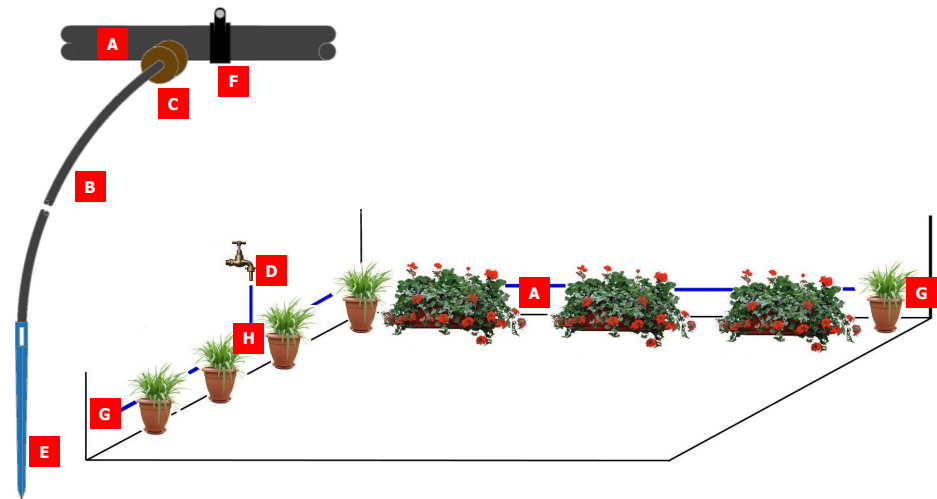
# vi. Patio Tubs (larger systems)

## Brief Description

An adaptor and filter (D) fits onto the outdoor tap. To cope with the increased water flows, 16mm diameter supply pipe (A) is clipped along the wall above the tubs, or laid on the ground behind the tubs.

At each tub, the supply pipe is punched and a dripper (C) inserted. A small bore dripper lead then goes down into the basket, where an anchorage stake (E) holds the pipe in place.

Barbed tees (H) allow the supply pipe to be divided, elbow joints (I) allow the pipe to go round bends.



Key	Description	Part Code	Pack Qty	Cat. page
A	16mm supply pipe	PA16-100M	100m	40
B	Dripper pipe	P13-20M	20m	27
C	Dripper	D2PCJ-H	100	5
D	Entry fittings	FBK16-3F	1	41
	Filter	P67	1	48
E	Dripper stakes	DAS-H	100	27
F	Hammer clips	FPCN16-H	100	40
G	End stops	FBSE16-T	10	41
H	Barbed Tee	FBT16-T	10	41
I	Barbed elbow	FBE16-T	10	41
	Punch	DPB3	1	5

N.B. Pipes are coloured blue for reference only

## Tips!

16mm pipe systems can cope with up to 500 drippers on them. Where possible, hide the pipe behind the tubs.

Often it is easier to just lay the pipe on the ground behind the tubs. For wall fixing, hammer clips are available. For very hard walls, we also supply pin plugs—these are like rawl plugs, but for nails.

Ideally the system should be automated, as tubs require watering 'little and often'. With a multi-zone controller, different areas can be provided with separate watering regimes.

The large 'hanging basket' system and 'patio tub' system use identical parts.

Level of skill:  Basic DIY

Backflow protection:  B



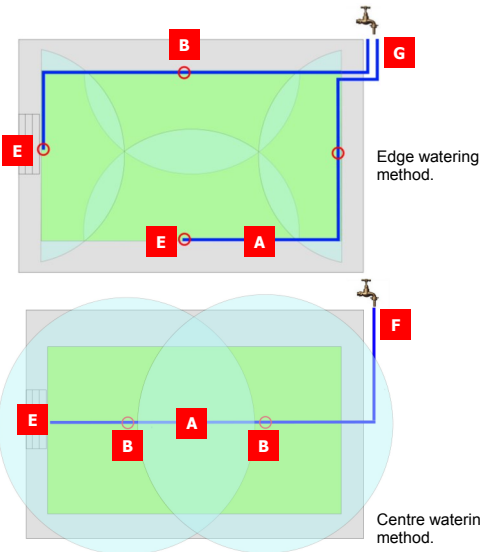
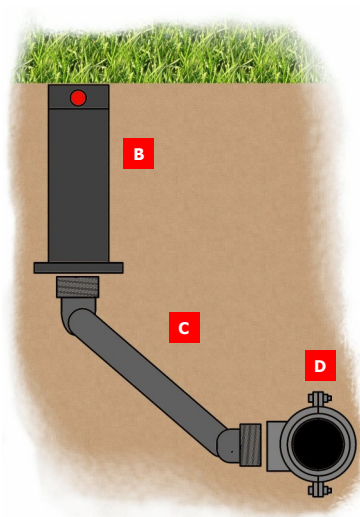
# vii. Lawn watering (pop-up sprinklers)

## Brief Description

An automated pop-up sprinkler system is the ultimate accessory for any garden!

Pop-up sprinklers (B) are buried with their tops level with the lawn. When operating, the water pressure causes the sprinkler to 'pop-up' approx 10cm (4"). Sprinklers can be adjusted to spray an arc between 40° and 360° and they throw water between 2m and 21m.

Pop-ups are linked together with underground pipe (A). Pipe saddles (D) clamp over the pipe adjacent to the sprinkler, and a swing joint (C) brings water to the pop-up while allowing easy adjustment of the sprinkler height.



Key	Description	Part Code	Pack Qty	Cat. page
A	25mm supply pipe	PEB25-50M	50m	40
B	Pop-up sprinkler	KHPGJ	1	25
C	Swing joint	KHSJ12-2	1	25
D	Pipe Saddle	FS25-3	1	42
E	Stop end	FLM25-4	1	42
		FMC4	1	42
F	1 zone controller	EPAGT	1	28
		FLF25-4	1	42
		FPTR4-3	1	39
G	2 zone controller	EPAG02	1	28
		FLM25-4 x 2	1	42

## Tips!

Before installing pop-ups, it is vital to have designed the system properly, as they cannot easily be moved! Sprinklers are also quite thirsty, so ensure you do not exceed your water supply.

Allow a reasonable overlap of sprinkler arcs, to get even coverage. Windy conditions will affect sprinkler coverage.

Over-spray from the lawn sprinklers can be used to water the borders, but do not put large sprinklers too close to delicate plants.

Only use thick walled MDPE pipe underground with compression fittings. Pipe can be radiused around corners, or elbows (p42) can be used.

N.B. Pipes are coloured blue for reference only

# viii. Standpipe - underground

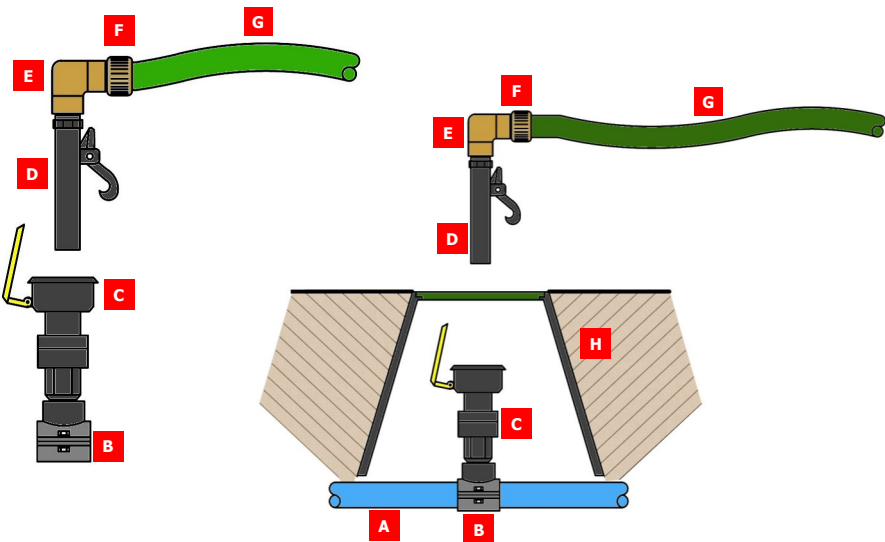
## Brief Description

To provide discreet but useable water supplies into landscaped areas, underground hydrants are best.

Pipe work (A) runs underground to the hydrant box (H), with a quick take off valve (E) located under the green cover.

MDPE polythene pipe would bring water to the hydrant, connected via a saddle (B) and quick coupling fitting and take off (C) & (D).

To operate, the hydrant cover is removed and the take off valve (F) plugged in - this automatically turns on the water supply.



Key	Description	Part Code	Pack Qty	Cat. page
A	25mm supply pipe	PEB25-50M	50m	40
B	Pipe Saddle	FS25-3	1	42
C	Quick coupling valve	EVQC	1	45
D	Take off	EVQCTO	1	45
E	Threaded elbow	FPTE3MF	1	39
F	Brass quick coupling	FQCBT3 FQCBH2	1 1	18 18
G	½" Tricoflex hose	PHT2-25M	25m	16
H	10" hydrant box	KHB10	1	48

## Tips!

Only use thick walled MDPE pipe underground with compression fittings. Pipe can be radiused around corners, or elbows (p42) can be used.

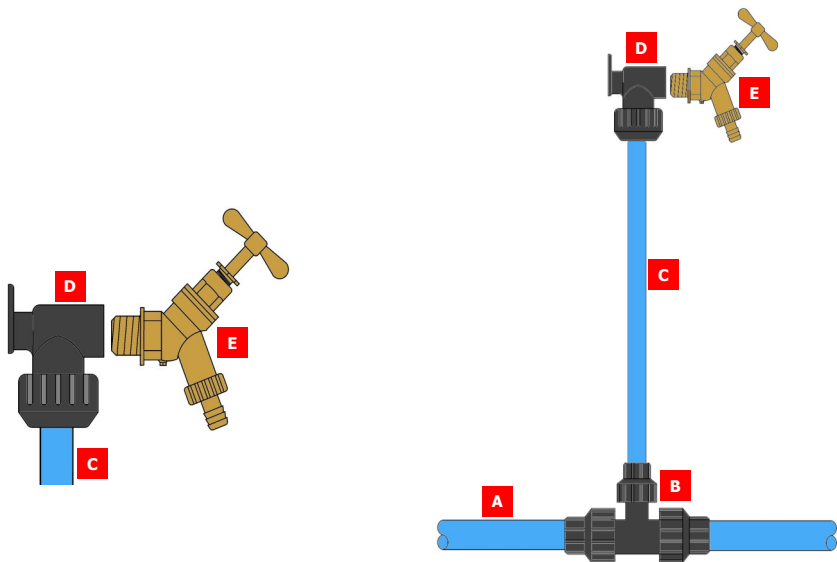
On very long pipe runs, or if several take-off points are to be used at once, use 32mm MDPE pipe.

# ix. Standpipe - above ground

## Brief Description

The ideal standpipe for garden or greenhouse use, this would normally be mounted on a post or wall.

The check valve tap (E) screws back to a wall plate (D). 20mm polythene pipe (C) is taken from an underground 25mm supply (A) using compression fittings (B).



Key	Description	Part Code	Pack Qty	Cat. page
A	25mm supply pipe	PE25-50M	50m	40
B	Compression tee	FLT25-20	1	42
C	20mm pipe	PEB20-25M	25m	40
D	Wall plate	ELWP20-2	1	45
E	½" check valve tap	ETBC2	1	45

N.B. Pipes are coloured blue for reference only

## Tips!

If the water is to be taken direct from the mains, then blue pipe must be used for the underground pipe work. This must be buried 750mm deep. If the water comes from a break tank, then black pipe should be used.

Protect the bib tap from frost, or drain down in winter to prevent frost damage.

Only use thick walled MDPE pipe underground with compression fittings. Pipe can be radiused around corners, or elbows (p42) can be used.

On very long pipe runs, or if several standpipes are to be used at once, use 32mm MDPE pipe.

Level of skill:  Basic DIY

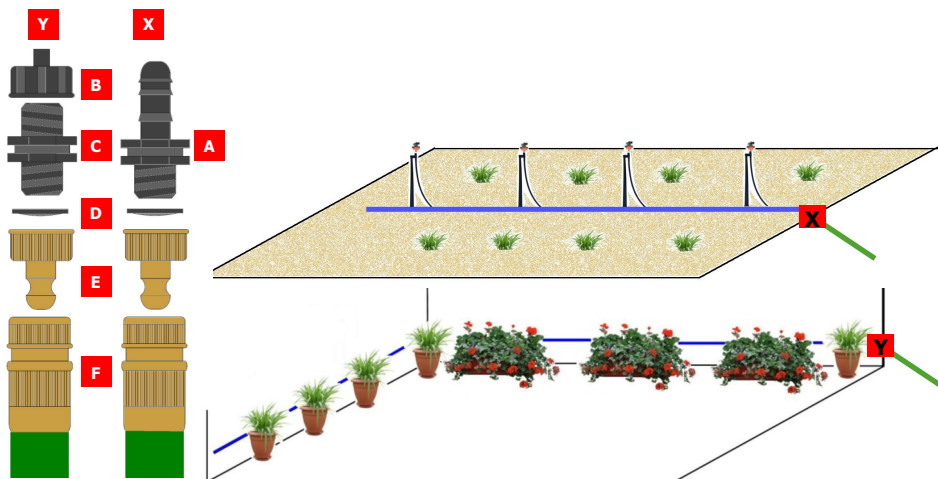
Backflow protection: **B**

## x. Connecting beds together - hose

### Brief Description

Most of the watering kits include fittings to connect on to an outdoor tap. Sometimes it is not convenient to connect directly to a tap, or there may be several beds that need connecting. Provided there is enough water flow, several beds can be linked together.

The hose option allows a garden hose to be brought to the bed.



Key	Description	Part Code	Pack Qty	Cat. page
A	Barbed connector for 16mm or 20mm pipe	FBK16-3-T or FBK20-3-T	10	41
B	Threaded cap	KECP3-T	10	38
C	Threaded nipple	FPTN3	1	39
D	Filter	P67	1	48
E	Brass tap connector	FQCBT3	1	18
F	Brass quick coupling	FQCBH2	1	18

N.B. Pipes are coloured blue for reference only

### Tips!

If you purchased a complete kit, the fittings (A) or (B) would generally have been included.

If you have designed the system yourself, rather than using a kit, make sure you select the correct threaded fitting (A) or (B) to fit the pipe you are using.

Level of skill:  Basic DIY

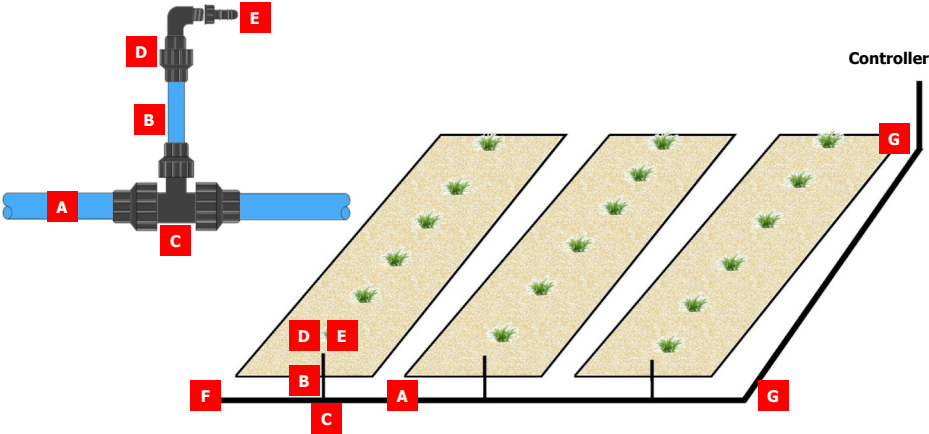
Backflow protection: ☐

# xi. Connecting beds together - underground

## Brief Description

Most of the watering kits include fittings to connect on to an outdoor tap. Sometimes it is not convenient to connect directly to a tap, or there may be several beds that need connecting. Provided there is enough water flow, several beds can be linked together.

The underground system links beds back to the tap or a controller.



Key	Description	Part Code	Pack Qty	Cat. page
A	25mm supply pipe	PEB25-50M	50m	40
B	20mm supply pipe	PEB20-25M	25m	40
C	Compression tee	FLT25-20	1	42
D	Compression elbow	FLE20-3M	1	42
E	Barbed connector for 16mm or 20mm pipe	FBK16-3F or FBK20-3F	1	41
F	Stop end	FLM25-4 FMC4	1	42
G	Compression elbow	FLE25	1	42

## Tips!

If you purchased a complete kit, the fitting (E) would generally have been included.

If you have designed the system yourself, rather than using a kit, make sure you select the correct threaded fitting (E) to fit the pipe you are using.

This method of connecting beds is suitable for medium traffic environments if the pipe is buried 300mm deep. For heavy traffic environments bury the pipe 500mm deep.

N.B. Pipes are coloured blue for reference only

# xii. Automation - simple systems

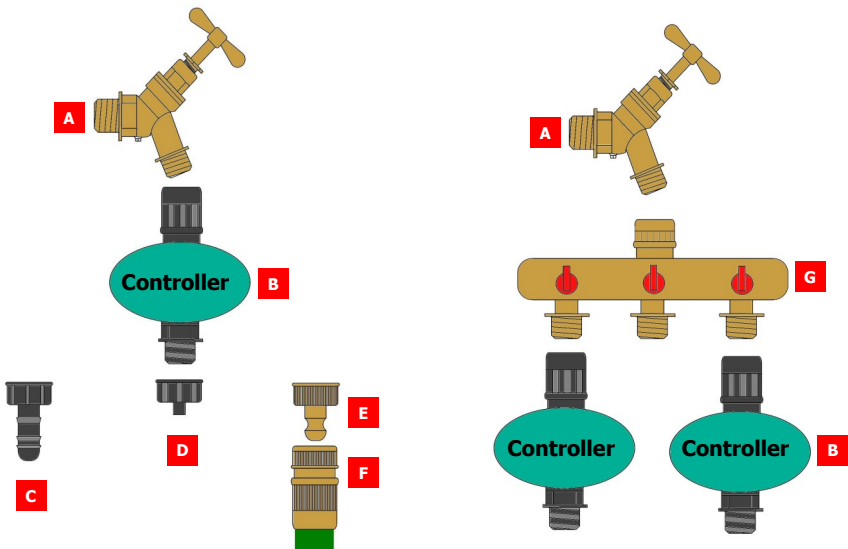
## Brief Description

For simple systems, a tap mounted controller is the simplest to install.

Choose the fitting beneath the controller (C) (D) or (E) to suit your watering system.

Fittings E and F allow a hosepipe to be used to take water to more distant beds—see option (X) in section x

If two watering zones are needed, then the 3 way manifold (G) can be used.



Key	Description	Part Code	Pack Qty	Cat. page
A	½" check valve tap	ETBC2	1	45
B	Galconette controller	EPAGT or EPAGD	1	28
C	Barbed connector for 16mm or 20mm pipe	FBK16-3F or FBK20-3F	1	41
D	Small bore connector	DWTF-T	10	27
E	Brass tap connector	FQCBT3	1	18
F	Brass quick coupling	FGCBH2	1	18
G	3 way manifold	ET3M3	1	18

## Tips!

If you purchased a complete kit, the fitting (C) or (D) would generally have been included.

If you have designed the system yourself, rather than using a kit, make sure you select the correct threaded fitting to fit the pipe you are using.

The tap (A) has a double check valve built in. This makes it ideal for replacing existing outdoor taps that do not comply with the Water Regulations.

Level of skill: Basic DIY

Backflow protection: ☐



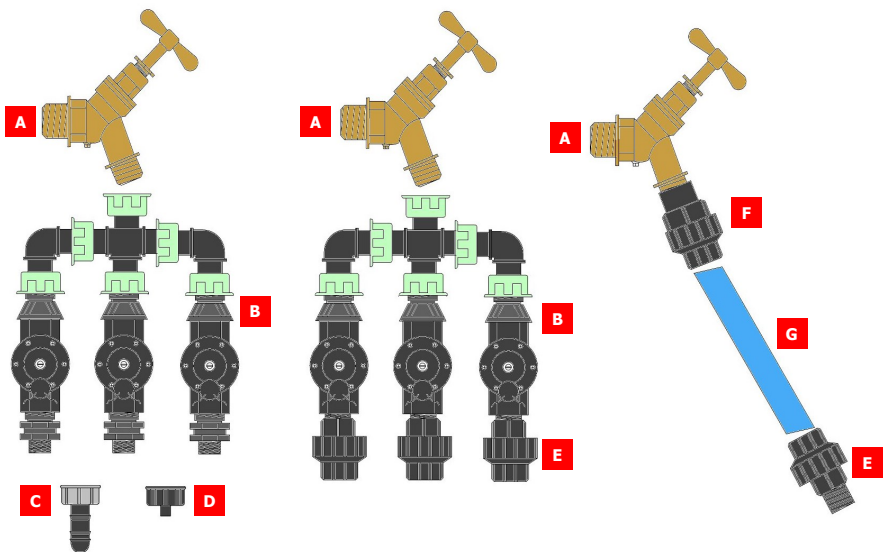
### xiii. Automation - multi-zone systems

#### Brief Description

System [1] is designed so that watering kits can be connected directly to the valves.

System [2] is designed to be used in conjunction with pipe work installed using page xi.

System [3] provides additional pipe and fittings to allow the valves to be located away from the tap. In this system, the valves could be buried in a valve box (page 48/51).



Key	Description	Part Code	Pack Qty	Cat. page
A	½" check valve tap	ETBC2	1	45
B	Multi-zone controller Underground manifold	EPAGDC4 EPAV03	1 1	28 30
C	Barbed connector for 16mm or 20mm pipe	FBK16-3F or FBK20-3F	1	41
D	Small bore connector	DWTF-T	10	27
E	Compression fitting	FLM25-4	1	42
F	Tap connector	FLF25-4 FPTR4-3	1 1	42 39
G	Supply pipe	PEB25-25M	1	40

N.B. Pipes are coloured blue for reference only

#### Tips!

If you purchased a complete kit, the fitting (C) or (D) would generally have been included.

If you have designed the system yourself, rather than using a kit, make sure you select the correct threaded fitting to fit the pipe you are using.

The tap (A) has a double check valve built in. This makes it ideal for replacing existing outdoor taps that do not comply with the Water Regulations.

The control panel for the multi-zone controller can either be mounted on top of one of the valves, or fixed to the wall immediately adjacent to the valves.

## **xiv. Designing a watering system**

### **The first step**

Like all projects, good planning is the key to success. With irrigation, the first step is to draw up a scale plan of the area to be watered. This will allow the accurate placement of any sprinklers and accurate measurement of pipe lengths.

It is also a good idea to start with more simple projects, as this will provide valuable experience of fittings and sprinkler types.

### **Drawing a plan**

Get a sheet of graph paper (preferably A3). Measure the widest and longest lengths of the area to be watered, then work out a suitable scale.

Draw the perimeter of the area first, then draw in the features such as beds and lawns. Lastly mark on tubs and baskets that may need watering. If you are planning to dig trenches, also look for manhole covers etc. as these will hide obstructions.

### **Water Supply**

It may seem obvious, but it is amazing how many people do not think about where the water is going to come from. Normally water is supplied directly from the water mains. Other sources include rivers and rainwater catchment, but these will require expensive pumps to operate.

The mains water supply needs to be measured, as this will set a limit on how much watering can be done in one go. Instructions on how to do this are on page 37 (in this guide all page references refer to the 2017-18 catalogue. Section numbers refer to pages in this guide).

### **How much can I water?**

Once the available water limit is known, this sets the maximum amount that can be watered at any one time. In the catalogue, all drippers and sprinklers have an output shown in litres per hour (l/h).

Simply add together the outputs of all drippers and sprinklers you plan to use to give the total water requirement. Ensure this figure does not exceed the amount available. If it does, then the watering needs to be split into zones. An automatic controller can then be used to water the zones one after the other.

### **Ways of Watering**

Hanging baskets and tubs are normally watered using drippers which bring water directly into the container.

Flower and herbaceous borders can either be watered using mini-sprinklers or drip line laid on the bed. Drip line is more discrete and allows more beds to be watered at once. Mini-sprinklers look good when they operate, and are easier to install in established beds.

Lawns can either be watered using pop-up sprinklers mounted in the lawn, or using temporary sprinklers placed on the lawn when watering is required. Pop-up sprinklers are more discreet, but involve digging up the lawn to get the pipes in. They also require a pumped supply.

### **Designing the system**

Once you have decided how you are going to water the different areas, mark these up on the plan, and mark on each section how much water it will use. If the water requirement is less than you have available, areas can be grouped together. If it is more, then the section will need to be split into more than one zone.

If you are connecting the areas using underground pipe, then also mark on where the pipes will run. They will all need to go back to where the controller is located.

### **Water Regulations**

If the watering system is connected to the mains water supply, then back flow prevention is required. These vary depending on the type of watering system installed, and are explained in more detail on the inside cover.

### **Ordering**

Once you have designed the watering system, list all of the parts you require. Double check the list, adding a few spares, then send it to Access. We will then process your order and send you the parts.

### **Help**

At Access we have over 50 years of experience designing irrigation systems. If you have a question, please do not hesitate to call us.