Clever Irrigation – The Perfect Relaxation

Automatic Irrigation Systems

GARDENA®

gardena.com

GARDENA irrigation systems

Water your plants the leisurely way.

Watering can be so easy with a GARDENA watering system. Once installed your plants will receive the ideal water supply, meaning you can relax. What a great feeling! You decide when, how and for how long your plants are watered: The best time to water your plants is at night? No problem! Going on holiday? Pack your bags! You'd rather play with your children than water your plants? Now you can. You don't even need to be at home.

Hands-off watering

The GARDENA watering system takes control of watering your plants for you, ensuring that your garden gets just the right amount. You save water and enjoy more time for yourself.

Reliable watering

On holiday? Do you have something else on? Gone are the days of not knowing if your plants will have enough water. Now your garden is always given the ideal quantity of water, precisely when needed.

Optimised watering

You can find help with planning your garden's irrigation schedule from page 36. Enjoy reading and planning!

GARDENA irrigation systems at a glance

GARDENA smart system

The whole garden in the palm of your hand
Mowing the lawn can be exhausting and daily watering a chore, but these are now a thing of the past. The new GARDENA smart system means that you can sit back, relax and enjoy your free time. Easy to install and start with the touch of a finger on the smartphone app. The intelligent garden of today.

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More on page 6

GARDENA Pipeline

Water like electricity from the mains
You can now forget about carrying heavy watering cans full of water and pulling metres of garden hose around the garden: Lines laid underground deliver water on demand to every nook and cranny in your garden. Simply pump the water from the water connectors.

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More on page 8

GARDENA Sprinklersystem

Comfortable lawn sprinkling
Say goodbye to time spent installing, moving around and tidying up sprinklers: Pop-up Sprinklers installed below ground ensure the perfect lawn and disappear again back into the ground when their work is done. Use the GARDENA Planning Aid to carefully plan every detail of your watering system right down to your shopping list.

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More on page 12
More planning information on page 36

GARDENA Micro-Drip-System

Water-saving drip irrigation
Reclaim some of the time you spend watering your hedges, beds and containers: The discretely installed drip watering system can be continually extended and waters your plants as required and on demand, while also saving you water.
Use the GARDENA Planning Aid to carefully plan every detail of your watering system right down to your shopping list.

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More on page 18
More planning information on page 48

NatureUp! The vertical gardening system

More nature: Plant and water walls
Now gardens in the city can grow upwards. With NatureUp, empty walls become lush and green. Not much space? Love nature? Enjoy gardening on your balcony? Then you should find out more about this new garden system. Find out how you can easily create and water your own verdant vertical wall gardens.

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More on page 24

GARDENA Watering Controls

Automatic garden irrigation
You never have to worry about watering again: Modern irrigation control systems water your garden automatically while conserving your water supply. Even when you are on holiday, relaxing or sleeping.

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More on page 28

Frequently asked customer questions

about GARDENA Irrigation Systems – and our answers.

A modern irrigation system turns the time you spend watering into leisure time and – if you want – can control the irrigation of your entire garden. You will have an even more spectacular garden and finally the time to enjoy it. Enjoy more freedom with Irrigation Systems from GARDENA.

DOES THE SYSTEM WATER AUTOMATICALLY?

Your garden will water itself with an automatic irrigation system.
This makes you more flexible and independent when you want to go
out or travel..

HOW CAN I PROFIT FROM AN AUTOMATIC IRRIGATION SYSTEM?

You are relieved of the tedious task of watering and have more free time on your hands. You no longer have to install sprinklers and carry around hoses or watering cans.
What used to take hours is now done automatically giving you the chance to sit back and relax: The system ensures regular, metered and reliable irrigation. It promotes a greener lawn, less moss as well as healthy and nutritious plants.

IS IT WORTH THE INVESTMENT?

If expensive plants, lawns and flowerbeds are not watered correctly, it takes both time and expense to replace them. Good irrigation helps to create and sustain value in your garden. According to a study by GARDENA, every euro you invest in your garden will increase the price of your property by approximately € 2.60. A well-maintained and well-watered garden can increase the value of your property.

CAN AN IRRIGATION SYSTEM ALSO BE USED IN A FINISHED GARDEN?

Once the GARDENA Sprinklersystem has been installed underground, it soon becomes invisible. The sprinklers only pop up to water the garden and disappear back into the ground when their work is done. Even the over ground GARDENA Micro-Drip-System, ideal for hedges, flowerbeds and single plants, does not obstruct and can be integrated into a garden at any time.

WHAT IS THE PRICE OF A GARDENA IRRIGATION SYSTEM?

Many people overestimate the price of a permanently installed irrigation system. A pop-up sprinkler system can cost just one euro per square metre if you plan and install it yourself.**

WHAT SHOULD BE DONE BEFORE THE ONSET OF WINTER?

A GARDENA Irrigation System does not have to be removed or specially protected in winter. The Sprinklersystem is easy to maintain thanks to drain valves that automatically protect the system against frost. Over the winter, you only need to dismantle the watering computer and a few components of the system that can be easily removed and stored (e. g. in the cellar) to protect from frost.

WHAT IMPRESSES IRRIGATION SYSTEM OWNERS THE MOST?

Whoever has witnessed a garden watering itself without having to lift a finger will see the benefits of a modern irrigation system. All you have to do is enter the watering times and the GARDENA Irrigation Control Systems will ensure that the sprinklers start watering to-the-minute exactly. Sprinklers pop up out of the ground and water your lawn, while drip systems supply water to your hedges, beds and individual plants.

DOES AN IRRIGATION SYSTEM NOT CONSUME TOO MUCH WATER?

An automatic irrigation system starts when you want – either early morning or at night. This is the ideal time for watering as evaporation levels are at their lowest. Automatic irrigation is controlled by rain and soil moisture sensors. They ensure that your garden is only watered when it needs it. **Micro-Drip-System** irrigation uses significantly less water* as the water is delivered straight to the root area of the plants and is soaked into the soil before much of it has a chance to evaporate or trickle away. Use rain water as an alternative to tap water in your **Sprinklersystem** to protect the environment as well as your wallet.

* Results from professional use: comparison of drip irrigation with sprinkler irrigation.
** e.g. set with OS 140 for 140 m²

Gardening the smart way

smart

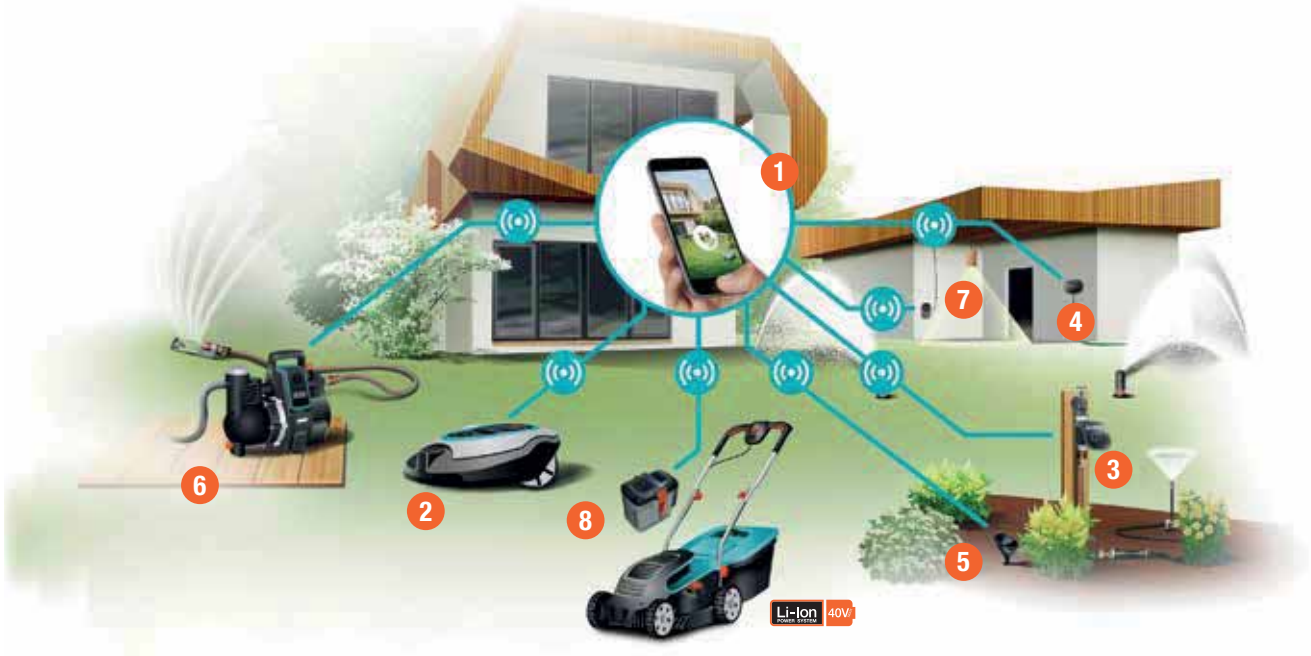
Professional garden care with heart, mind and great technology. GARDENA smart system.

Hands-free & convenient
Coming and going, taking a trip, out and about, relaxing:
all while organising your gardening effortlessly via smartphone.

Managed & controlled
No matter where you are. No matter what happens. No matter what the weather:
You can oversee and control your garden using a smartphone.

Beautiful & cared for
Achieving such beautiful results couldn't be easier: The garden is always cultivated and cared for the smart way.

The GARDENA smart system at a glance



Intelligence

1 GARDENA smart App
For iOS, Android and web. Control, information and know how for the garden.

Download on the App Store

Google play

Mowing

2 smart SILENO
Robotic lawnmowers for lawn care available for small, medium and large gardens.

Watering

3 smart Water Control
Water Computer for the area of the garden to be irrigated.

4 smart Irrigation Control
Watering control for up to six different areas of the garden.

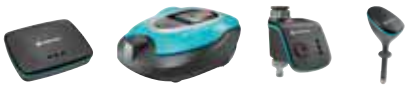
5 smart Sensor
Sensor supplies status data about current soil moisture, temperature and light intensity.

6 smart Pressure Pump
Electronic pressure pump for domestic water supply and mobile use for garden irrigation.

Power

7 smart Power Adapter
Adapters for integrating further electrical devices into the GARDENA smart system.

8 smart 40 V Battery
System battery for all devices powered by a 40-V Li-Ion battery, including trimmers, hedge trimmers and leaf vacs.



smart system Set Set

Contents:
smart Gateway, smart SILENO, smart Sensor, smart Water Contol

Art. No. 19100

smart Sensor Control Set Set

Contents:
smart Gateway, smart Sensor, smart Water Control

Art. No. 19102

smart Pressure Pump Set Set

Contents:
smart Gateway, smart Pressure Pump

Art. No. 19106

The entire GARDENA smart system product range is available at www.gardena.com/smart

* Suggested retail price including VAT

GARDENA Pipeline

Watering cans are history.
Water wherever and whenever you need it.

The GARDENA Pipeline can deliver water to every corner of your garden. A convenient supply of water is guaranteed with GARDENA Water Connectors. Stop valves prevent the water from spilling out if the hose is removed. You can see no trace of the GARDENA Pipeline as all the pipes are fitted underground.

Simple and convenient

Water connecting points located everywhere in the garden.

The connecting point connects the tap to the underground fitted GARDENA Pipeline. The water is then supplied from underground. A practical feature is the cover that disappears inside the connecting point when opened and is then closed to prevent an obstruction when mowing the lawn.

This means that water for the garden is not only available from your house, but everywhere that you want and need water. Just click your hose to a Water Connector or Water Plug in the garden and you've got water fast.

Easy

The GARDENA Water Connectors for the convenient supply of water anywhere in the garden. Also suitable for combination with a GARDENA Micro-Drip-System.

Art. No.	8250

Practical

The GARDENA Spiral Hose Box includes everything you need for watering.

Art. No.	8253

Comfortable

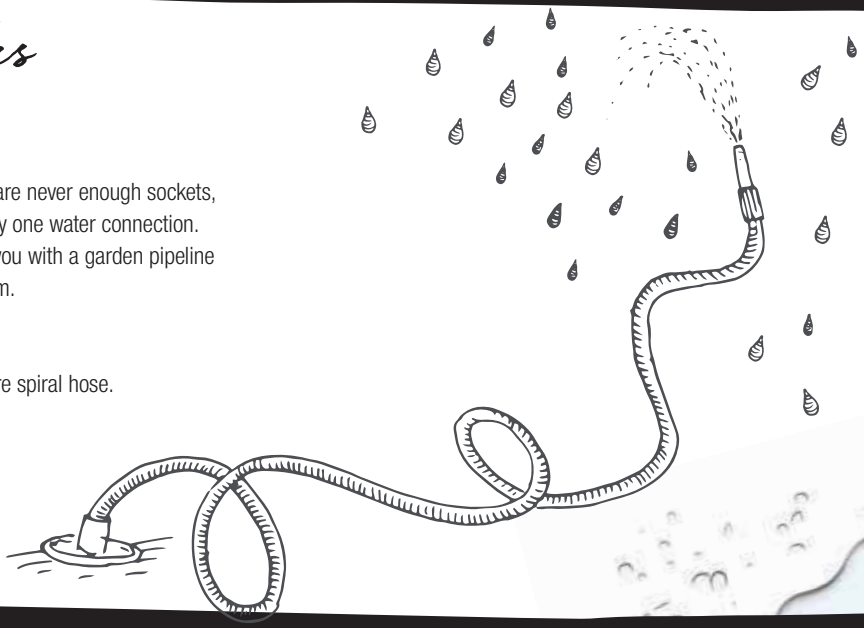
GARDENA Water Plugs for the convenient extraction of water from the wall or ground.

Art. No.	8254

Tips and tricks

Water sockets for the garden
Similar to the situation in the house when there are never enough sockets, we often experience the same in the garden: only one water connection. Thankfully, we can easily solve this problem for you with a garden pipeline and water sockets wherever you want to put them.

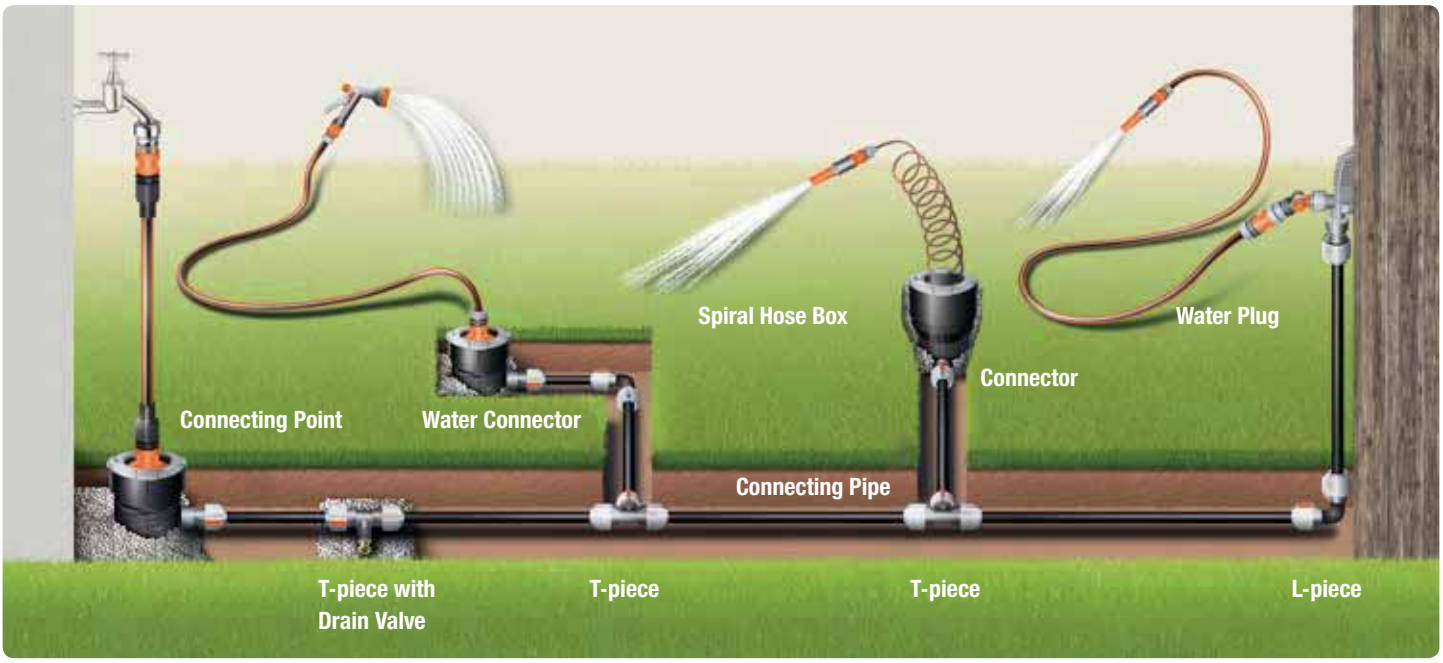
The clever part is
That the spiral hose box even includes a 10 metre spiral hose.



GARDENA Pipeline

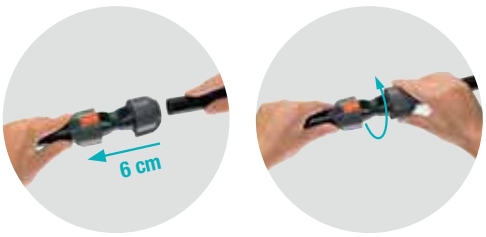
Invisible, underground installation.

GARDENA Pipelines are installed below ground to transport water to parts of the garden that require water. A Water Connector is installed at important watering points in the garden. Connect the hose and devices such as a spray lance, spray gun, sprinkler, garden shower or Micro-Drip-System to the socket and draw water.
No metres of hose lying around, no obstructions and no pressure marks in the lawn. It's like taking electricity from the mains, but it's water! There is soon no trace of the pipeline in your garden.



Frost protection

Winter frost? No problem! The automatic drain valves protect the system against frost.



Quick & Easy

The patented "Quick & Easy" Simple Connection Technology enables you to connect GARDENA Pipelines securely together in no time at all. All GARDENA Pipelines and connecting parts can also be used for the GARDENA Sprinklersystem. You can find all the products and more detailed information from page onwards (for the Sprinklersystem).

Complete

The GARDENA Garden Pipeline Starter Set includes all the important components to efficiently supply water all around your house and garden. You can take water just like you use electricity from the mains. The Starter Set includes material for two water tapping points and can be extended as you require. A connecting point is used to deliver the water from the tap into the pipelines installed underground. The GARDENA Connecting Pipes (not included) supply water to the permanently installed Water Connectors.

Set

Starter Set with 2 Water Connectors

Art. No.	8255

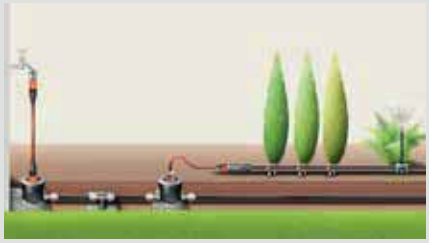
Like water from the tap

Without rain and with just a flick of the wrist.

As the name suggests, the “Quick & Easy” Simple Connection Technology can be built up in no time whatsoever.
Your garden is then ready to install the ideal irrigation solution and the right GARDENA System to meet all your watering needs.

Versatile

A GARDENA Pipeline with water tapping points makes you and your garden more flexible. Watering your garden now becomes easy. Whether you want to use a garden shower or spray lance, sprinkler or the GARDENA Micro-Drip-System drip irrigation: You can connect everything you need without having to bother with watering cans or metres and metres of hose.



Did you know...

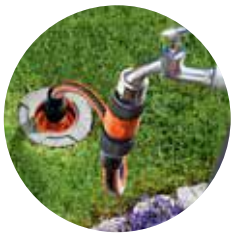
that you should still water your plants or your soil even after a rain shower? Rainfall is usually insufficient to provide plants with enough water. Even if the ground surface appears wet, the roots deep down in the soil may not receive any water.

GARDENA Sprinklersystem

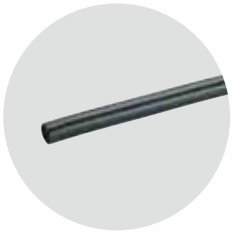
The invisible watering professionals.

The pop-up sprinklers installed below ground pop up from the ground.

Pop-up Sprinkler
Lifts up automatically from out of the ground.



Connecting point on water tap
For the underground supply of water



Connecting Pipe
For the safe transport of water underground.

Pop-up Sprinkler
Lifts up automatically from out of the ground.

An underground success

Sprinkling out of the ground.

Unnoticeable pop-up sprinklers from below the ground ensure an efficient, even sprinkling of your lawn. They disappear back into the ground once they have done their work. The GARDENA Sprinklersystem can be customised to suit individual needs.

The irrigation system comprises high-performance pop-up sprinklers available for differently sized lawns and lawn shapes. They are fitted below ground where they cannot be seen and water your garden perfectly and evenly. An automatic GARDENA Control System turns the Sprinklersystem on and off as you require even when you're not at home

Above ground

The permanently installed pop-up sprinklers only become visible when they pop up out of the ground to water the garden. Say goodbye to metres and metres of hose lying around and to connecting up your sprinkler every time you want to water your garden.

Below ground

GARDENA Pop-up Sprinklers are flush with the ground when they are not in use. They do not present an obstruction and you can mow your lawn as usual.

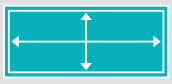
Tips and tricks

If you only water your lawn at "surface level" over an extended period, you restrict root growth to the upper centimetres of the turf-bearing layer and therefore prevent deeper roots from growing. However, this top layer of soil dries out during hot spells in the summer. The outcome: Your lawn will inevitably be damaged by drought. In summer, expect to use 20 litres of water per square metre every week. Water can only penetrate the deeper roots – approximately 15 cm deep – when applied in this high a volume.

If you soak your lawn well to at least 15 cm deep, you only need to water it every three to four days as it can store the water. So, it is better to give the lawn a good soaking, but to water less frequently, thereby allowing deeper and stronger plant roots to develop.

Circular Sprinkler

Circular Sprinklers are suitable for watering most areas as they can be easily combined with other sprinklers. Connect T sprinklers together or several S sprinklers to water smaller areas.

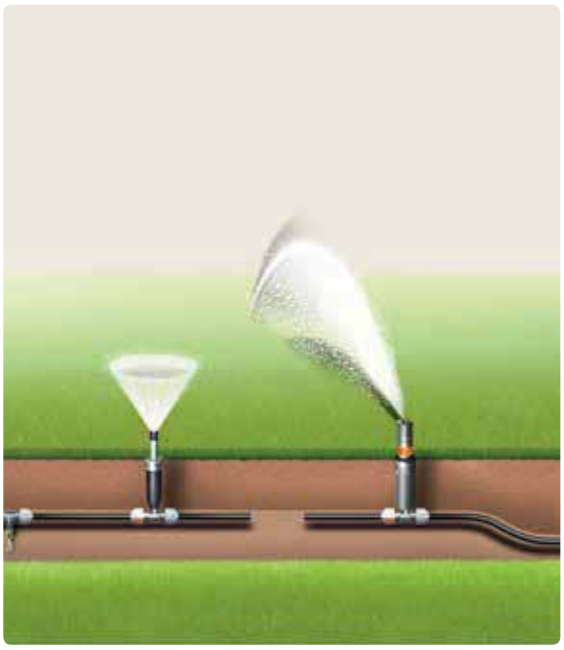


Pop-up Oscillating Sprinkler
Ideal for watering square and rectangular areas.

Large-Area Pop-up Irrigation
Suitable for watering individual lawn shapes.

Connection socket

For underground water supply to the GARDENA sprinkler system.



Pop-up Sprinkler S 80 (S Sprinkler)

Recommended for areas up to 150 m².

The S 80/300 model is also available for watering over the top of taller plants.

Adjustable range between 2.5–5 m.*
Infinitely variable sector setting between 5–360 °.

Turbo-driven Pop-up Sprinkler (T Sprinkler)

Recommended for areas up to 150 m².

Various models.

Adjustable range between 4–11 m depending on the model.* Infinitely variable sector setting between 25° and 360° depending on the model.

With memory function.**

OS 140

For areas up to 140 m².* Adjustable spray width, range and water flow. Swivelling sprinkler head.

Turbo-driven Pop-up Sprinklers and Oscillating Pop-up Sprinklers can be used together in one irrigation line because they distribute a similar amount of water – for easy system planning and installation.

AquaContour automatic

For areas up to 350 m².*

Up to 50 key contour points can be stored.

With memory function.**

* The performance data given was obtained with an operating pressure of 2 bar at the sprinkler.
** Memory function: Sprinkler (T 200/T 380, AquaContour automatic) automatically returns to the set sector position if the sprinkler head is turned accidentally or intentionally.

Your GARDENA Sprinklersystem

Permanent, flexible and convenient.

A pop-up sprinkler system is easy to plan and can be installed without any difficulty.
Complete sets make it even easier to plan and get your system started.
The traces left by the installation will quickly disappear. You will have an even more spectacular garden and finally the time to enjoy it.

Complete Set with Pop-up Oscillating Sprinkler OS 140

Set

For 140 m² lawn area
With the turnkey Complete Set, you can easily install a compact irrigation system for rectangular lawns up to 140 m².
The Pop-up Sprinkler is installed below ground. It pops up from the ground when the water starts to flow, reliably waters the lawn and, once it has finished its work, disappears back into the ground until you can hardly notice it.

Art. No.	8221

Complete Set with Large-Area Pop-up Irrigation AquaContour automatic

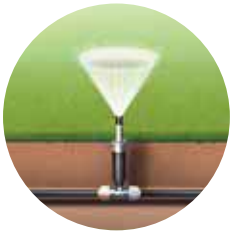
Set

For up to 350 m² lawn area
Do you have a square or round-shaped garden and are looking for a comfortable and efficient way to water it? The revolution in pop-up sprinklers is now available as a complete turnkey set: The GARDENA Large-Area Pop-up Irrigation AquaContour automatic ensures a permanent and reliable watering of the pre-programmed garden contour with an area up to 350 m²

Art. No.	2708

Less expensive than you think

A GARDENA Pop-up Sprinkler System can cost just **one euro per square metre** if you plan and install it yourself.



Installation depth

The pop-up sprinklers and connecting points etc. must be fitted flush with the ground surface, this means the system must be installed at a depth of just approx. 20 – 25 cm.

Frost protection

Winter frost? No problem! The automatic drain valves protect the system against frost.

* Suggested retail price including VAT

Tips and tricks

The four biggest disadvantages of watering in the midday heat

1. High level of evaporation
Up to 90% of the water is lost.

2. High cost factor
Using mains water is expensive.

3. Plant damage
Plants transpire more water in the heat and therefore wilt.

4. Burning
Water droplets have the same effect as a magnifying glass, resulting in burnt spots.

This means that it is better to water your plants early in the morning between 3 and 4 am.
The temperature is mild at this time and water is able to penetrate to the roots with ease. Obviously, it would be pretty unusual to get up and water the plants at this time of day. But you don't have to – your irrigation system takes on this job for you.

GARDENA Simple Connection Technology

The patented "Quick & Easy" Simple Connection Technology allows you to install the GARDENA Sprinklersystem in a matter of no time. A wide range of components is available for you to adapt the Sprinklersystem to your garden's needs. It is incredibly easy to assemble and disassemble the pipes: Connect the pipe and connector together – turn – and it is ready.

Automatic Timers and Computers

If you want to optimise your irrigation system even further, you can also install automatic timers and computers.
Page 28 offers information on automatic system control and management.

Custom irrigation planning made easy

You can find out how to design and install the GARDENA Sprinklersystem and/or alternative irrigation options precisely according to your garden's specifications in the second part of this brochure from page 36 onwards. Advice on step-by-step planning and installation can be found there. Your plants will soon be watering themselves while you can sit back and enjoy them.

Alternative Drip Irrigation Line

The convenient, invisible lawn irrigation system is also possible with an underground Drip Irrigation Line (see page 55).

GARDENA Micro-Drip-System

Carefree and water-saving irrigation.

From now on, the Micro-Drip-System can water your plants! The system is a modular, extendible system for water-saving, targeted irrigation of your garden. Ideal for flower pots, troughs, vegetable patches and flower beds, as well as hedges and shrubs.

Rows of plants
(hedges/shrubs)

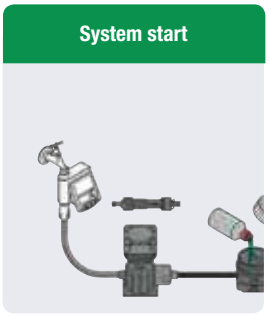
Flower pots
(patios/balcony)

Planted areas
(flower beds/vegetable patches)

System overview

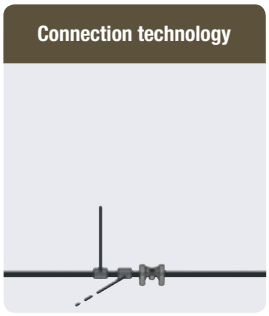
Dispensers for different applications

System start



System start
Pressure-reducing basic unit and centralised fertiliser addition

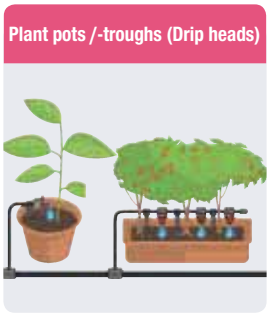
Connection technology



Connection technology
Individual design encompassing patented Quick & Easy connection technology

Terrace/balcony

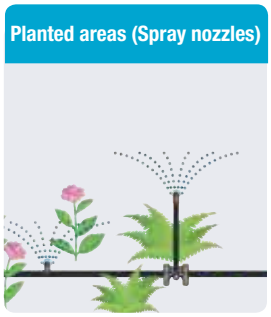
Plant pots
Terrace/balcony



Drip heads
Precise drip irrigation at the roots

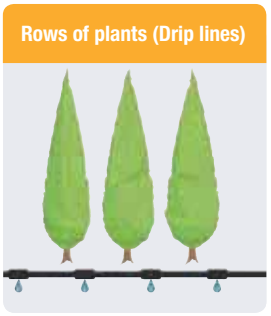
Beds

Planted areas
Flowers/kitchen garden beds



Spray nozzles
Soft, fine-spray irrigation

Rows of plants
Hedges/sensitive edible crops



Drip lines
Precise root irrigation for hedges and sensitive plants

Patented Quick & Easy connection technology

The patented Quick & Easy connection technology ensures a durable, water-tight connection and enables the Micro-Drip-System to be quickly and easily installed and converted. The Micro-Drip system can therefore be tailored to any garden or balcony. For drip heads, drip lines and spray nozzles, the Micro-Drip-System connection technology means that you can combine all system components (planning ideas can be found from page 48.

Automatic control

The GARDENA Micro-Drip-System can be operated automatically using a GARDENA water controller (see page 28), also in combination with the GARDENA sprinkler system or the GARDENA smart system (see page 6).

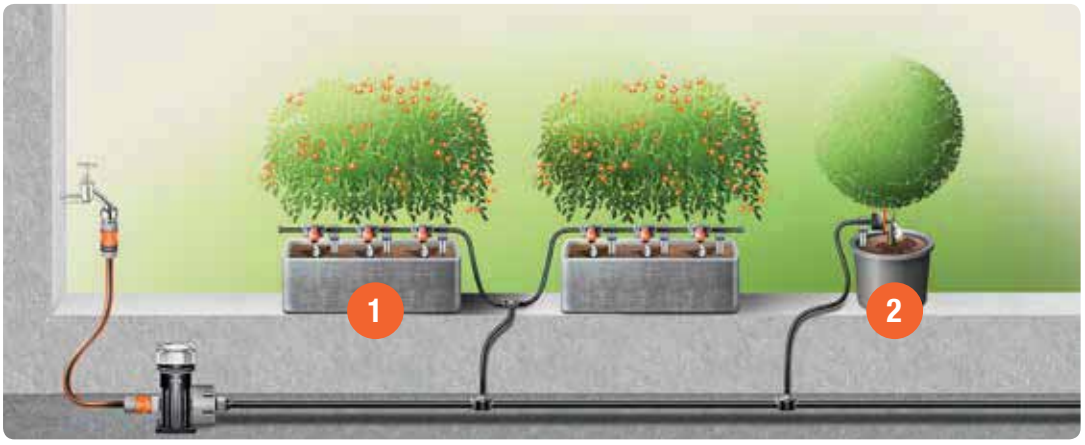
Tips and tricks

The most common watering mistake that people make is watering plants – lawn plants as well as bedding plants – "just a little bit now and again". Instead, you should water your plants less often and more thoroughly.

Drip irrigation has numerous benefits:
Water is able to penetrate the soil with pinpoint accuracy and seep into the ground with ease, there will be no fluctuations in your water costs, you will save water and your plants will be kept well-tended..

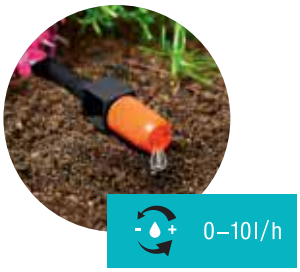
Plant pots on patios and balconies

Patio and balcony plants can be ideally watered using drip heads. Depending on the size of the pot, endline drip heads are used for plant pots, and rows of inline drip heads for troughs. The plant is watered directly at the roots, which promotes the fertility and attractiveness of the plant.

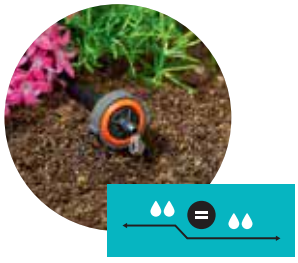


1 Troughs
Inline drip heads for troughs and flower boxes

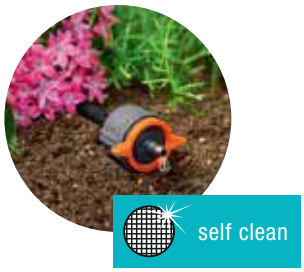
2 Flower pots
Endline drip heads for irrigation of individual plants



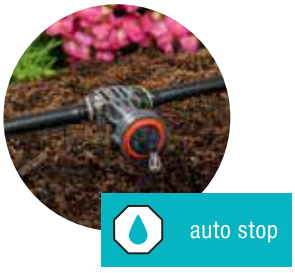
Flexibility for different water requirements is guaranteed by drip heads with a constant or adjustable delivery amount.



The consistent delivery of water over the whole system is enabled by a special pressure-equalizing membrane in the drip head.



Self cleaning – a labyrinth technology in the drip head prevents limescale.



More precise dosing of the water volume is enabled by the self-closing drip head, which prevents drips and overflows when the system is switched off.

Tips and tricks

Because the soil in pot plants is loose, the water quickly drains away.
You should therefore check the soil quality, and rather water for a shorter time but more frequently.

Set

Starter set Plant pots S

For 5 plant pots

Art. No. 13000

Set

Starter set Plant pots M

For 7 plant pots and 3 plant troughs

Art. No. 13001

Set

Starter set Plant pots M, automatic

For 7 plant pots and 3 plant troughs

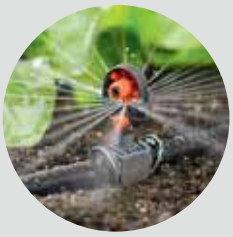
Art. No. 13002

* Suggested retail price including VAT

Planted areas Vegetable patches and flower beds

Vegetable patches and flower beds are ideally watered with gentle, fine spraying nozzles, or square patches can be watered with a sprinkler. Especially for plants in vegetable patches with short vegetation times, spray nozzles offer the necessary flexibility.

Spray nozzles can be used flexibly for the most diverse areas



Demand-based regulation of flow and range, and greater coverage of higher plants are enabled by accessories such as the extension hose and control valve

Further application areas

For sensitive seedlings in the greenhouse
Micro mist nozzle

For watering limited areas such as shrubs, bushes or tree beds
Small area spray nozzle

Starter set Planted areas Set

For 40 m² flower/ kitchen garden beds

Art. No. 13015

Alternative for watering beds and raised beds
The flexible 4.6 mm (3/16") drip line is particularly suitable for beds with sensitive plants such as tomatoes. The drip heads are installed in the pipe at fixed 30 cm intervals; 1.5 l/hr is delivered per drip head.

* Suggested retail price including VAT

Rows of plants in beds

Drip lines are used for rows of plants. The pipes with fixed integrated drip heads at 30 cm intervals provide finely-tuned doses of water to the plants and save water. You benefit from the easy set-up of the system, and you need almost no planning.

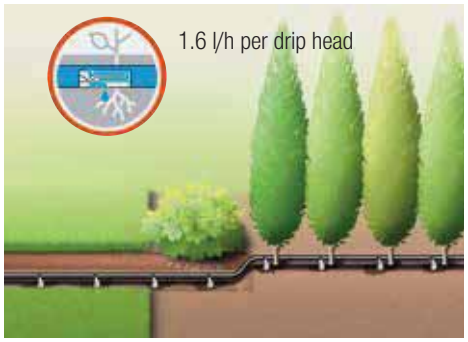
Above Ground Drip Irrigation Line for hedges

With 13 mm (1/2") diameter, an easy-to-install solution for e. g. hedges and plants at the edge of the garden. The max. pipe length is 100 m – when the Master Unit is fitted in the middle of the line. Channelling and extensions are possible with the Micro-Drip-System components.**

Above-ground drip irrigation line for small hedges

If you need a small solution for smaller hedges, the Micro-Drip-System at just 4.6 mm (3/16") might be exactly what you need. The maximum pipe length is 30 m. You can add extra branches and extensions using the Micro-Drip-System connection technology.**

Underground drip line for hedges or borders



The 13.7 mm drip line can be invisibly installed underground, e. g. in planted borders. Pressure-equalizing drip heads ensure a constant delivery volume along the whole pipe, which is ideal if your planted bed is on a slope. Self-closing drip heads prevent contamination of the drip head. The integrated root barrier prevents roots from penetrating the drip line. Max. pipe length up to 200 m. Laid depth in planting area approx. 20 cm. Can also be used above ground.***

Set

Starter set
Rows of Plants M
With master unit
and pipe pegs

Art. No.	13011

25 m Extension Pipe

Art. No.	13131

Set

Starter set
Rows of Plants S
With master unit
and pipe pegs

Art. No.	13010

15 m Extension Pipe

Art. No.	1362

Set

Starter set
Underground drip line, 50 m
with Master Unit

Art. No.	1395

Alternative for watering rows of plants
Endline drip heads installed along the pipe can be used for the irrigation of hedges and beds. Simply use a pipe with a base unit and install the required endline drip head in the pipe using. the installation tool.

* Suggested retail price including VAT
** Max. length when Master Unit is connected in the middle of the pipe, branching with a T-joint.
*** Required additional parts may be obtained from GARDENA Customer Service.

Drip irrigation without a tap

Takes care of your plants even without a water connection.

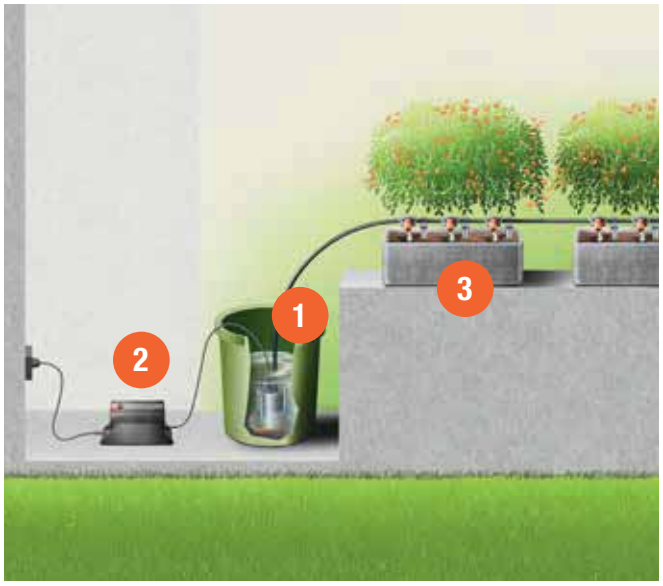
Not all balconies and patios have access to a tap or a tap connection is not wanted. In such cases, you will love the intelligent GARDENA Complete Sets for automatic irrigation of your plants. You can water your plants precisely how you need – even when you are on holiday.

Fully Automatic Flower Box Watering

For watering up to 5 – 6 m of flower boxes. The water is supplied independently of a tap using a water container with **Pump** 1. The 2 **Pump Transformer** features 13 pre-set watering programmes for fully automatic irrigation.

3 **Inline Drip Heads** supply water to your plants accurately and help to conserve water (2 l/hour).

You can also connect the GARDENA Rain Sensor electronic, Art. No. 1189 or Soil Moisture Sensor, Art. No. 1188 to the transformer to help conserve even more water. You can enhance your initial setup with further products from the Micro-Drip-System.



Complete Set Set

Without water container. Fully automatic flower box watering

Art. No.	1407

Automatic irrigation while you are away on holiday

For up to 36 pot plants and house plants. Irrigation is activated for one minute each day via a 1 **pump.** 2 **3 drip heads** ensure precisely dosed irrigation.

The accompanying 3 **hose brackets** allow up to three drip lines to be fixed per pot.

Additional parts are available on request from GARDENA Customer Service.

Complete Set Set

with 9 l water container

Art. No.	1266

Without water container

Art. No.	1265

NatureUp! The vertical gardening system

For nature aficionados who are pushed for space.

So beautiful! Now you can always have a green view! With NatureUp!, empty walls can finally be made lush and green. For effortless gardening. Even if you only have a few square meters at your disposal, for example a balcony, roof terrace or courtyard, you can use these areas to grow your own flowers, herbs or vegetables. Just go upwards as well!
Vertical gardening is great fun for both young and old. You can watch your plants growing every day to create your own green oasis in the middle of the city.

More nature in the smallest space: Plant and water walls

Space-saving and decorative

- Transforms the smallest of spaces into an oasis of wellbeing with flowers, herbs and vegetables
- Offers new options for the garden and impresses with its clear design
- Weatherproof

Clever irrigation

- Can be watered automatically
- With and without a water supply

Simple assembly and modular design

- Tool-free and simple assembly; easy to put together
- Can be flexibly extended to the right, left, above and around corners
- As simple to hang on the wall as a picture

NatureUp! Basic Set Vertical and Corner

On the walls, get set, go!

MADE IN GERMANY

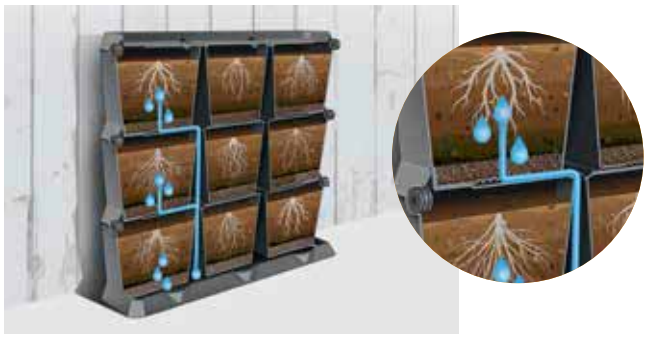
INDIVIDUAL PLOT
of fresh herbs, aromatic strawberries or colourful summer flowers

EASY ASSEMBLY
with simple slot system

ROBUST AND WEATHER-PROOF
elements made from high-quality, weatherresistant plastic

PERFECT SOLUTION FOR CORNERS
or as a lateral attachment

NO WATERLOGGING
thanks to the catchment basin in the base plate. Walls and floor stay clean

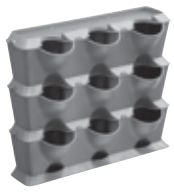


Intelligent water supply

Each module is watered individually. Excess water is fed into a separate drainage system and supplied directly into the catchment basin in the base plate. This prevents germs and pathogens being transferred to other plants by the irrigation water.

MADE IN GERMANY

FROST UV

	 **NatureUp! Vertical Basic Set**	 **NatureUp! Corner Basic Set**	 **NatureUp! Wandhalterung Vertikal**	 **NatureUp! Corner Wall Bracket**	 **NatureUp! Connection Clip**	 **NatureUp! Fastener**
Contents	3 vertical planters, 3 covers, 1 base plate, 12 clips	3 corner planters, 3 covers, 1 base plate, 6 clips	1 wall bracket, 2 screws, 2 wall plugs, 4 fasteners, 16 hardened steel nails	2 special base plates, 3 clips, 8 fasteners, 32 hardened steel nails	8 clips	4 fasteners with premium double-sided tape, 16 hardened steel nails
Art. No.	13150	13153	13162	13163	13164	13166

* Suggested retail price including VAT

NatureUp! Watering Sets

Bye bye, watering can

More than half of all balcony owners would like automatic watering so they can go on holiday without worries.
Would that be something for you too? Automatic watering is the ideal watering solution for a plant wall. NatureUp! also offers the perfect set for the countless balconies and terraces without a water supply: even then there is the right set.

With water supply

Vertical or corner watering set. For watering up to 27 plants or 9 vertical planters with a water supply.

Without water supply

Extension set with pump and transformer for watering without a water supply. Water reservoir not included with delivery.

	 **NatureUp! Vertical Watering Set Tap**	 **NatureUp! Corner Watering Set Tap**	 **NatureUp! Extension Watering Set Water Container**
Contents	1 Master Unit 1000, 1 Shut-Off Valve 4.6 mm (3/16"), 6 Connectors 4.6 mm (3/16"), 7 T-Pieces 4.6 mm (3/16"), 1 Cross Fitting 4.6 mm (3/16"), 2 L-Pieces 4.6 mm (3/16"), 10 Plugs 4.6 mm (3/16"), 9 Drip Irrigation Lines 65 cm, 8 Supply Pipes 16.5 cm, 3 Supply Pipes 4 cm, 1 x Supply Pipe 150 cm (all Pipes 4.6 mm (3/16")	1 Master Unit 1000, 1 Shut-Off Valve 4.6 mm (3/16"), 12 Connectors 4.6 mm (3/16"), 10 T-Pieces 4.6 mm (3/16"), 1 Cross Fitting 4.6 mm (3/16"), 13 L-Pieces 4.6 mm (3/16"), 13 Plugs 4.6 mm (3/16"), 12 Drip Irrigation Lines 14 cm, 11 Supply Pipes 16.5 cm, 9 Supply Pipes 8.5 cm, 1 x Supply Pipe 150 cm (all Pipes 4.6 mm (3/16")	Transformer with time switch and 13 set programs, 14 V low voltage pump with dirt filter
Number of plants	For up to 27 plants	For up to 12 plants	–
Art. No.	13156	13157	13158

Set

NatureUp! Offer set

Contents:
5 vertical planters
(5 covers and 20 clips),
1 base plate, 4 fasteners,
1 NatureUp! Vertical Watering Set Tap (13156)

Art. No.	13151

* Suggested retail price including VAT

Outdoor Cooling Mist Set

Cool and refreshing on hot days

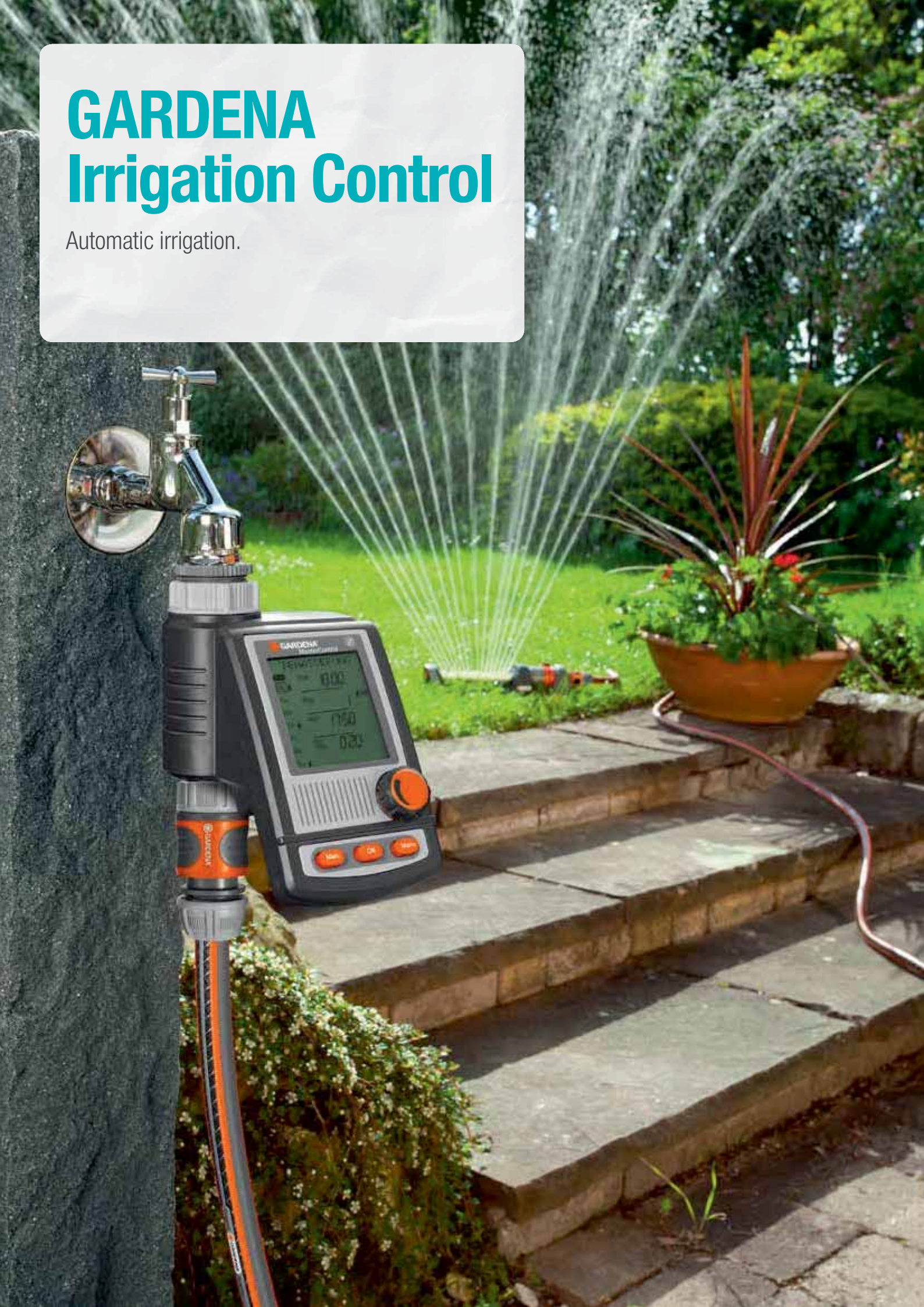
The Micro Mist Nozzles spray the extremely fine spray mist, ensuring perfect cooling. With a water supply nearby, the system can be used flexibly anywhere.

- **Broad range of applications** can be used on balconies, terraces, under parasols, in tents and much more
- **Simple suspension/ attachment** using fixing clamps
- **Water does not leak** thanks to Micro Mist Nozzle with water stopper
- **Maximum comfort with refreshing and cooling** water mist on hot summer days, cooling the temperature by up to 6°C
- **Water is conveniently supplied** by a direct connection to the tap using the OGS hose connector
- **Discreet design** blends into different environments thanks to the light-grey colour

	 Set **city gardening Cooling Mist Set**	 **city gardening Micro Mist Nozzle**
Contents	10 m hose, 3.5 mm internal diameter, 7 Micro Mist Nozzles (incl. 1 Micro Mist Nozzle with water stop), 13 fixing clamps and hose connector 1 Control Valve	3 replacement Micro Mist Nozzles
Art. No.	13135	13136

GARDENA Irrigation Control

Automatic irrigation.



Convenient watering with Water Timers and Computers

For one or two areas of the garden.

Water Timer
on the tap

Sprinkler

Convenient watering with Multi-Channel Control

For individually watering separate areas of the garden.

Multi-Channel Control

Controlled by irrigation
valves

Sprinkler System and/or
Micro-Drip-System

Convenient watering with Water Timers and Computers

For example during your holiday, or at night.

Your garden still needs water when you are away or asleep. Even then your plants are perfectly irrigated thanks to the GARDENA Water Computers that are directly connected to the tap.
You simply have to decide where, when, how long and how often you want to water your garden. Then the watering computer takes over control for you. The Water Computer can be used to controlsprinklers, a Micro-Drip-System or a smallsprinkler system.
–
You can find more information on page 32

Easy to operate
You can simply detach the control panel, enter when and where you want to water and then attach it again. You can decide on the start time, duration and frequency of watering. Just set all the required data using the rotary button or the large user guide display.

Battery operation
Water Timers and Computers are simply attached to the water tap. As they are battery operated, they work independent of the mains power. They offer approx. a 1-year operating life, a weak battery is indicated on
the display.

smart Water Control
With smart Water Control, you can set the watering times flexibly in the GARDENA smart app and adjust them as and when required.

smart

Sensor-powered to save water

Rain and Soil Moisture Sensors decide whether your Irrigation Control should activate sprinkling or whether watering is not required because the soil is moist enough or it has started raining.
This simple aid will prevent you from using more water than is necessary.

The sensors can be connected to all GARDENA Timers and Computers (except the Water Timer, Art. No. 1169).

The smart sensor can be used in conjunction with the smart Water Control or smart Irrigation Control to provide information on temperature, light intensity and soil moisture.

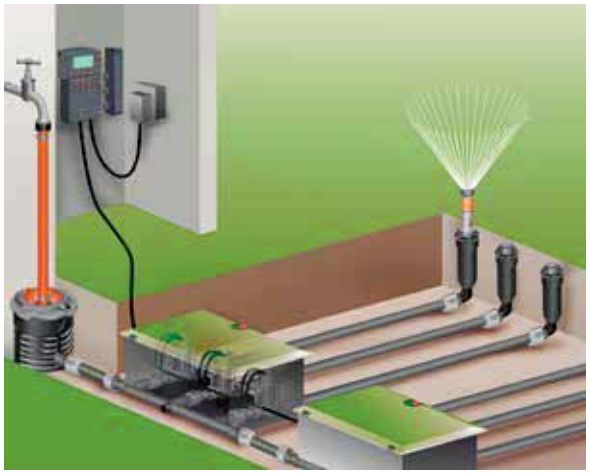
Flexible irrigation in different garden areas with multi-channel controller

Automatic control of individual watering requirements everywhere in the garden.

You can water different areas of your garden separately, for example the lawn, flower boxes on the patio or flowerbeds. ent to operate the entire irrigation system at once, you should divide the system into multiple irrigation channels. A Multi-Channel Control System ensures that each separate area of your garden is supplied with the correct amount of water at the right time. Sit back, relax and let the multichannel controller do the thinking and watering for you.

–

You can find more information on page 34



Valves ensure the right amount of water at the right place

Valves are connected to the individual irrigation channels. They open and close in response to the GARDENA Irrigation Control at pre-programmed times.

With or without electricity supply

GARDENA Multi-Channel Control Systems are available for a 9 Volt battery operation or 230 Volt mains operation.

Rain Sensor

Soil Moisture Sensor

smart Sensor

smart

smart Irrigation Control

With GARDENA smart Irrigation Control, up to six completely independent watering zones can be controlled flexibly via the smart app.

smart

GARDENA Water Computer

The simple way to a garden that waters itself.

Connect your water computer directly to the tap and control the irrigation of your lawn with sprinklers or the Sprinklersystem. Or you can simply arrange for your flower beds, patio plants or hedge to be watered automatically with the Micro-Drip-System – whatever your needs, the GARDENA range offers the right solution for you. All watering computers are easy to use and adjust.

CLASSIC – FOR THE BEGINNER

With standard programming options.

	Water Timer	**EasyControl**	**FlexControl**	**SelectControl**
Short description	Practical feature: switches off automatically after the set watering period	Entry model with basic programming options. Easy programming of irrigation data	Flexible programming options. Watering days freely selectable	Easy to operate thanks to its useful irrigation suggestions for the five typical garden areas: lawns, crops, hedges, pot plants and flower beds. Can be adjusted to your specifications or based on experience
Auto on/off	Auto off	Yes	Yes	Yes
Watering duration	5–120 min.	2–60 min.	1 min.–1 hrs. 59 min.	1 min.–2 hrs. 59 min.
Watering frequency	–	Every day, every 2nd/3rd/7th day, once, twice or three times a day	Week days freely selectable or every 2nd/3rd/7th day, once, twice or three times a day	Every day, every 2nd/3rd/7th day once, twice or three times
Start watering	When activated	djustable in two-hour increments	Freely selectable	Freely selectable
Can a rain or soil moisture sensor be connected	–	Yes	Yes	Yes
Miscellaneous		With “low battery” display	With “low battery” display	“Weak battery” display, at night, exclusive sensor operation at night is possible: watering when soil moisture is too low
Art. No.	1169	1881	1883	1885

Irrigate with even greater efficiency

Supplement multi-channel controls and Water Computers.

Soil moisture sensor

Interrupts or prevents automatic irrigation once the soil contains sufficient moisture. A series of Water Computers also provide automatic irrigation, controlled purely by sensors and not subject to preset times.

Art. No.	1188

Regensensor electronic

Interrupts or prevents automatic irrigation in the event of rain.

Art. No.	1189

smart Sensor

Detects soil moisture, outside temperature and light intensity and transmits this information to the smart app. Can be used with all smart system sets.

Art. No.	19030

COMFORT – FOR THE DEMANDING USER

Variable programming options.
Large, clearly presented LCD display.

MultiControl

Easy to operate thanks to its useful irrigation suggestions for the five typical garden areas: lawns, crops, hedges, pot plants and flower beds. Can be adjusted to your specifications or based on experience

Yes	
1 min. – 7 hrs. 59 min.	
Every 8/12/24 hr. every 2nd/3rd/7th day or free selection of watering days	
Freely selectable	
Yes	
Battery level display, use as sensor only is possible: watering when soil moisture is too low	
1862	

MultiControl duo

Flexible thanks to free programming options. Fully automatic operation with soil moisture sensor

Yes	
1 min. – 3 hrs. 59 min.	
Every 8/12/24 hr. every 2nd/3rd/7th day or free selection of watering days	
Freely selectable	
Yes, can be connected for both outputs or separately for each output	
Battery level display, outlets can be programmed independently of each other, exclusive sensor operation at night is possible: watering when soil moisture too low	
1874	

PREMIUM – for experienced users

Highly individual programming options through 6 watering programmes. On-screen instructions with selectable languages explain programming steps.

MasterControl

With ticker, on-screen instructions, menu guidance and large LCD for highly individual programming options. Incl. special sensor control programs and for operation with a Water Distributor automatic

Yes	
1 min. – 9 hrs. 59 min.	
Every 24 hr., every 2nd/3rd/4th/5th/6th/7th day or free selection of watering days	
6 freely selectable start times	
Yes	
Battery level display, 6 independent programs, sensor operation possible, operation of up to 6 irrigation lines with the Water Distributor automatic (Art. No. 1197)	
1864	

Water Distributor automatic

In combination with a GARDENA MasterControl – you can use this to automatically control 2 to 6 supply lines. Ideal for plant areas with varying requirements or when the water pressure is too low for simultaneous irrigation.

1197	

SMART

smart Water Control

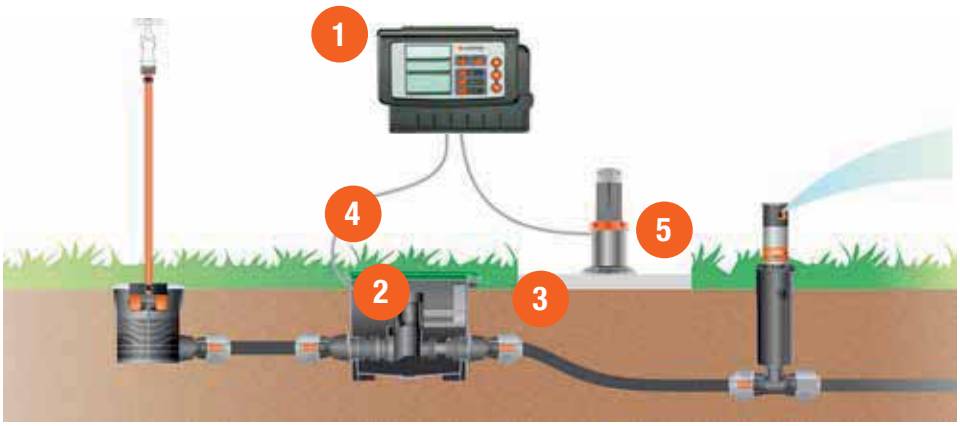
Irrigation times can be flexibly set and adjusted as required at any time using the GARDENA smart app

Yes	
1 min. – 9 hrs. 59 min.	
Freely selectable by day of the week	
Freely selectable (via smart app)	
Yes (smart sensor)	
Requirements: smart gateway, Wi-Fi router and Internet access, smartphone, tablet or PC. Generates a frost warning in the smart app when the temperature falls below 5°C	
19031	

Multi-Channel Control with and without electricity supply

For the automatic irrigation of larger areas.

Multi-Channel Control Systems are ideal if the tap water supply is not sufficient to operate the whole irrigation system at once or if different areas of the garden have different water requirements.



Electricity supply available

This is how you control your entire irrigation system from a central location: The **24 V Irrigation Valves** 2 in the **Valve Box** 3 are sent signals over the **Connection Cables** 4 to open and close the water flow from the GARDENA **Irrigation Control System** 1. You can control up to 12 Irrigation Valves and the corresponding number of channels fully automatically. A **Rain or Soil Moisture Sensor** 5 can be connected as an option.

1

Classic Irrigation Control Systems 4030/6030

For use indoors or in rain-protected areas for control of up to 4 or 6 Irrigation Valves 24 V. 3 programmes per valve are possible

Art. No. 1283/1284

1

smart Irrigation Control Irrigation Control System

For use in outdoor areas to control up to 6 24-V irrigation valves, individually customisable via smart app. Can be used with all smart system sets.

Art. No. 19032

2

24 V Irrigation Valve

Connection to a GARDENA Irrigation Control System via cable

Art. No. 1278

4

24 V Connection Cable 24 V Cable Clip

For connection of up to 6 Irrigation Valves to the Irrigation Control System. Cable Clip for watertight connection of the Connection Cable to the Irrigation Valves for using the Valve Box V1.

Art. No. 1280/1282

24 V Pump Control System

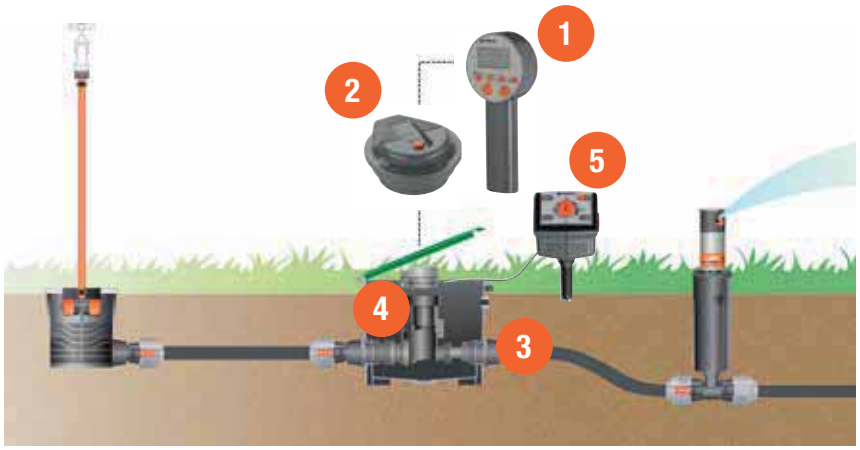
For operating a pump in combination with the Irrigation Control System 4040 modular. Complete with 10 m cable.

Art. No. 1273

Did you know...

that with all Multi-Channel Controls you can use an individual master channel? This enables you to control a pump without the automatic function as an alternative method for drawing water – for example, from a cistern or well.

In this case, the Irrigation Valves are installed below ground and open and close the flow of water. These open and close signals are sent over one or two possible controller options – depending on whether there is a power supply close to the Irrigation Valves or not.



Valve Boxes

Can be used for all control systems (with/without electricity supply).

No electricity supply available

Thus you can control any number of irrigation channels fully automatically and cable-free: Just enter the data into the **Programming Unit** 1 and press the button to transfer it to the **Controller** 2. Now fit the Controller to the **9 V Irrigation Valve** 4 in the **Valve Box** 3. A Rain or Soil **Moisture Sensor** 5 can be connected to the Controller as an option. Battery operation renders GARDENA Irrigation Valves independent from the power supply.

3

Valve Box V1

For underground instalment of 1 Irrigation Valve.

3

Ventilbox V3

For underground instalment of up to 3 Irrigation Valves. Water supply can be from any of 3 sides.

For 9 V or 24 V Irrigation Valves, telescopic screw fixing for easy valve assembly or dismantling.

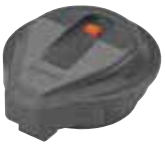
Art. No.	1254	Art. No.	1255

1

Programming Unit

To program the 9 V Controllers. Watering duration: 1 min – 9 h 59 min. Watering frequency: up to 6 times daily per Irrigation Valve. Once connected, the data is transferred to the Controller by the push of a button.

Art. No.	1242



2

Controller 9 V

The actual brain of the irrigation system. Can be connected to the Soil Moisture Sensor and Rain Sensor.

Art. No.	1250

4

Irrigation Valve 9 V

Opens and closes an irrigation channel at the command of the Controller.

Energy-saving electromagnetic valve system.

Art. No.	1251

Planning the Sprinklersystem

The GARDENA Irrigation Planner.

Why a little planning helps – and how it works

A shopping list that you can tear out and keep can be found on page 65.

How would you like to plan your system?
The water requirements for your irrigation system can be higher than the volume of water that your water connection can supply. Before you can install and start your system, you first need to draw up an irrigation plan that takes into account your garden's requirements. There are three different planning options available:

A Plan it yourself

You create your own irrigation plan with the help of the instructions on the following pages (and some simple aids). We will show you how to step by step.

B Online planning

You can plan your own irrigation system with the help of the GARDENA Irrigation Planner "My Garden" on the GARDENA homepage:
www.gardena.com/mygarden

C Use the GARDENA customer service

No time or energy to plan your watering system? Not a problem. Our GARDENA customer service team is happy to help.
Costs for creating a watering plan are available on demand.

D Competent planning service

Would you rather leave the planning and installation to someone else?*
On request, we will provide you with a qualified partner to plan and install your GARDENA watering system. Find a GARDENA Competence Partner near you at:
www.gardena.com

* If you want to install the system yourself, please be aware that we cannot accept any liability for any costs and damage that could occur as a result.

Self-planning – 1. Draw a sketch of your garden

This is how you can draw a sketch of your land and mark the water connection and the areas that have to be watered.

> Self-planning: Create your irrigation plan in five separate steps.

Let's get started

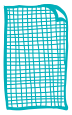
Draw a plan of your land – ideally on graph paper with mm squares – on a scale of 1:100 (1 cm = 1 m) or 1:200 (1 cm = 2 m).

What you need

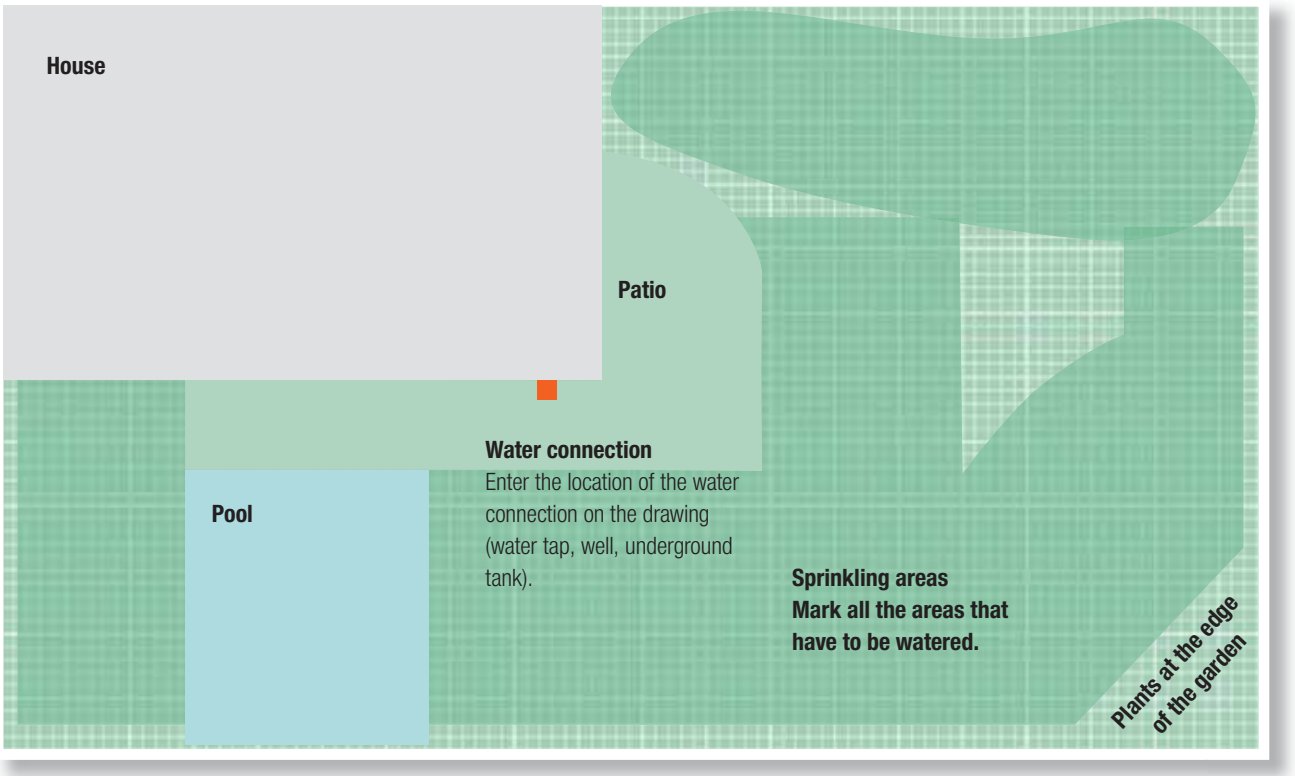
Set of compasses

Pencils and coloured pens

Ruler



Graph paper

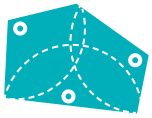


2. Find the right sprinklers

This is how to select the right sprinklers for the areas that require watering.

Use Large-area Pop-up Irrigation AquaContour automatic to water individually (round) shaped areas.

Use Pop-up Oscillating Sprinklers OS 140 for square and rectangular areas.



Cover all other areas with Circular Sprinklers (T or S models). Use a pair of compasses to draw the Circular Sprinklers on your plan.

- Draw 90° or 270° sprinklers in the corner areas (with sprinklers that start directly at the house).
- Plan 180° or other partial sectors for the edges of your garden.
- Cover the remaining areas in the centre with 360° sprinklers.

Tips and tricks

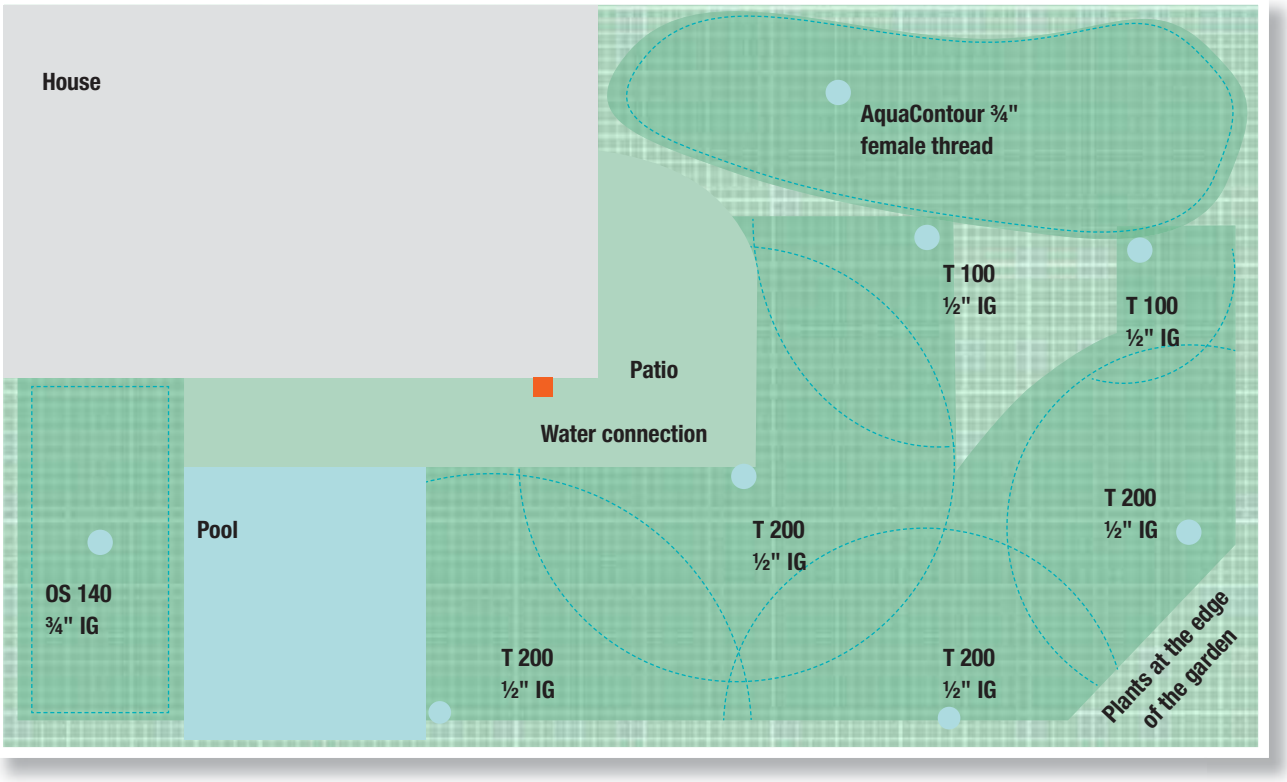
Always plan different lines for T and S models.

- Turbo-driven pop-up sprinklers (T models) and pop-up oscillating sprinklers (OS 140) can be connected to the same irrigation channel.
- The Pop-up Sprinklers (S models) require a separate line because they distribute a different amount of water.

The coverage area of circular sprinklers may and should overlap each other to ensure the best distribution of water over the entire surface.

In windy areas, reduce the space between sprinklers to allow for drifting.

Select the correct sprinkler on the right and draw it on your plan. Add the sprinkler description and the sprinkler thread.



Select the right sprinklers. Enter the number of sprinklers needed in the summary on this page first and then in your shopping list on page 65.

Type		Designation	Planning range	Sector	Art. No.	Number
Individually shaped areas		**AquaContour automatic** Connecting: ¾" female thread	2.5–9 m	25–360°	**1559**	
Rectangular areas		**Pop-up Oscillating Sprinkler OS 140** Connecting: ¾" female thread	Range 2–15 m	Width of spray 1–9.5 m	**8220**	
Other areas		**Turbo-driven Pop-up Sprinkler T 100** Connecting: ½" female thread	Radius 4–5.5 m	70–360° Distance between sprinklers 5–8 m	**8201**	
		**Turbo-driven Pop-up Sprinkler T 200** Connecting: ½" female thread	Radius 5–7.5 m	25–360° Distance between sprinklers 7.5–10 m	**8203**	
		**Turbo-driven Pop-up Sprinkler T 380** Connecting: ¾" female thread	Radius 6–10.5 m	25–360° Distance between sprinklers 9–15 m	**8205**	
Other areas up to 150 m²		**Pop-up Sprinkler S 80** Pop-up height 100 mm Connecting: ½" female thread	Radius 2.5–4.5 m	5–360° Distance between sprinklers 4–7 m	**1569**	
For higher plants		**Pop-up Sprinkler S 80/300** Pop-up height 300 mm Connecting: ¾" male thread	Radius 2.5–4.5 m	70–360° Distance between sprinklers 4–7 m	**1566**	

T models Turbo-driven Pop-up Sprinkler

S models Pop-up Sprinkler

3. Calculating the supply lines

This is how you find out the number and length of supply lines you require.

Calculating the connection capacity

If the water requirements for your irrigation system are higher than the volume of water that your water connection can supply or if different areas of your garden have different water requirements, you will have to install several pipes that water in succession.

You must determine the connection value of your tap so that you know how many irrigation channels you can connect. To do this, you first have to calculate the filling time: *

- Turn your tap on full and fill a 10-litre bucket.
- Measure the time in seconds it takes to fill the bucket.

Calculating the additional time to add for distance

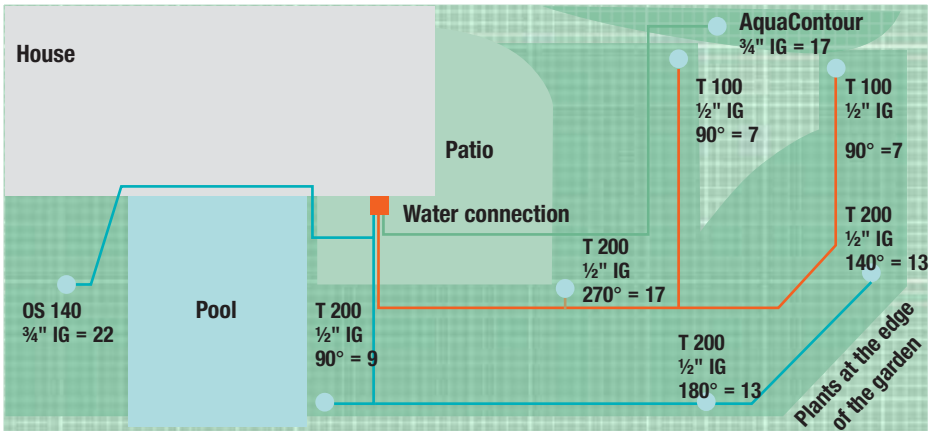
- Measure the distance between the tap/pump and the sprinkler that is furthest from the tap/pump. Add 1 second to the filling time for each 25 m or part thereof.
- **With a filling time of under 14 seconds and the use of a Water Computer, a Water Distributor automatic or a Twin-Tap Connector or Four Channel Water Distributor (see pages 28–31), an additional 3 seconds are to be added to the filling time.**
- Find the correct filling time in the table (on the right) and enter your connection value in the table at the bottom of the opposite page.

An example of how to calculate the connection value (without Water Computer) can be found in the table at the bottom on the right.

Calculating the number of supply lines (irrigation channels)

- First of all mark the individual sprinklers in your planning sketch using the sprinkler consumption values on page 41.
- Then draw the pipelines (starting at the water supply). Do not connect more sprinklers to an irrigation channel than add up to the connection value (see above) you calculated before. To do this, enter the sprinkler consumption values in the table on page 37 and make sure that the connection value is not exceeded.
- Calculate (measure) the pipe lengths and enter in the “Pipe length per line” table (page 37).

Enter the sprinkler consumption values from page 41 and draw the irrigation channels.



* If you are planning to operate your irrigation system using a pump, connect a piece of 19 mm (¾") hose approximately 1 m in length to the pump using a GARDENA “Profi” Maxi-Flow System Connector Set (Art. No. 1505) to measure the filling time.

Example

Filling time in seconds:	10
Distance e. g. 20 m:	+ 1
Total value	11

Seconds	Connection value
to 9	100
10–13	80
14–19	60
20–24	40
25–30	20
Connection value	80

Calculate your own connection value on the right-hand second and make sure that the sprinkler consumption values do not exceed this sum.

Important information

Always plan different lines for T and S models

Turbo-driven Pop-up Sprinklers (T models) and Pop-up Oscillating Sprinklers (OS 140) can be connected to the same line. The Pop-up Sprinklers (S models) require a separate line because they distribute a different amount of water.

AquaContour automatic

With the AquaContour automatic, not more than one sprinkler can be connected to a supply pipe. Reason: As the pressure conditions in the pipe fluctuate with changes to the watering range, only a max. of one sprinkler can be accurately programmed for each supply pipe.

Sprinkler consumption values

	**T 100**	70–90° **= 7**	91–180° **= 10**	181–270° **= 14**	271–360° **= 17**
	**T 200**	25–90° **= 9**	91–180° **= 13**	181–270° **= 17**	271–360° **= 20**
	**T 380**	25–90° **= 15**	91–180° **= 20**	181–270° **= 25**	271–360° **= 30**
	**S 80**	5–90° **= 9**	91–180° **= 17**	181–270° **= 25**	271–360° **= 32**
	S 80/300	5–90° **= 13**	91–180° **= 21**	181–270° **= 29**	271–360° **= 35**
	**OS 140**	= **22**			
	**AquaContour automatic**	= **17**			

Copy the number of supply lines to the shopping list on page 65.

Connection value result

Calculate your own connection value on the right-hand side and make sure that the sprinkler consumption values do not exceed this sum!

= 80

Calculate the supply lines based on the sprinkler consumption values

Example

Channel 1	22 + 9 + 13 + 13 = 57
Channel 2	17 + 7 + 7 = 31
Channel 3	17 = 17

Pipe length per channel

Channel 1 = 42 m
Channel 2 = 32 m
Channel 3 = 22 m

Your connection value

Your values

	=
	=
	=
	=

Your values

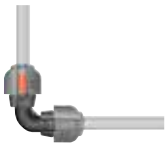
	=
	=
	=
	=

4. Connecting pipes and sprinklers

This is how to plan your pipe connections, sprinkler connections and drain valves.

Possible pipe connections

Decide on the connectors for the pipe connections and enter the quantities calculated in the shopping list.

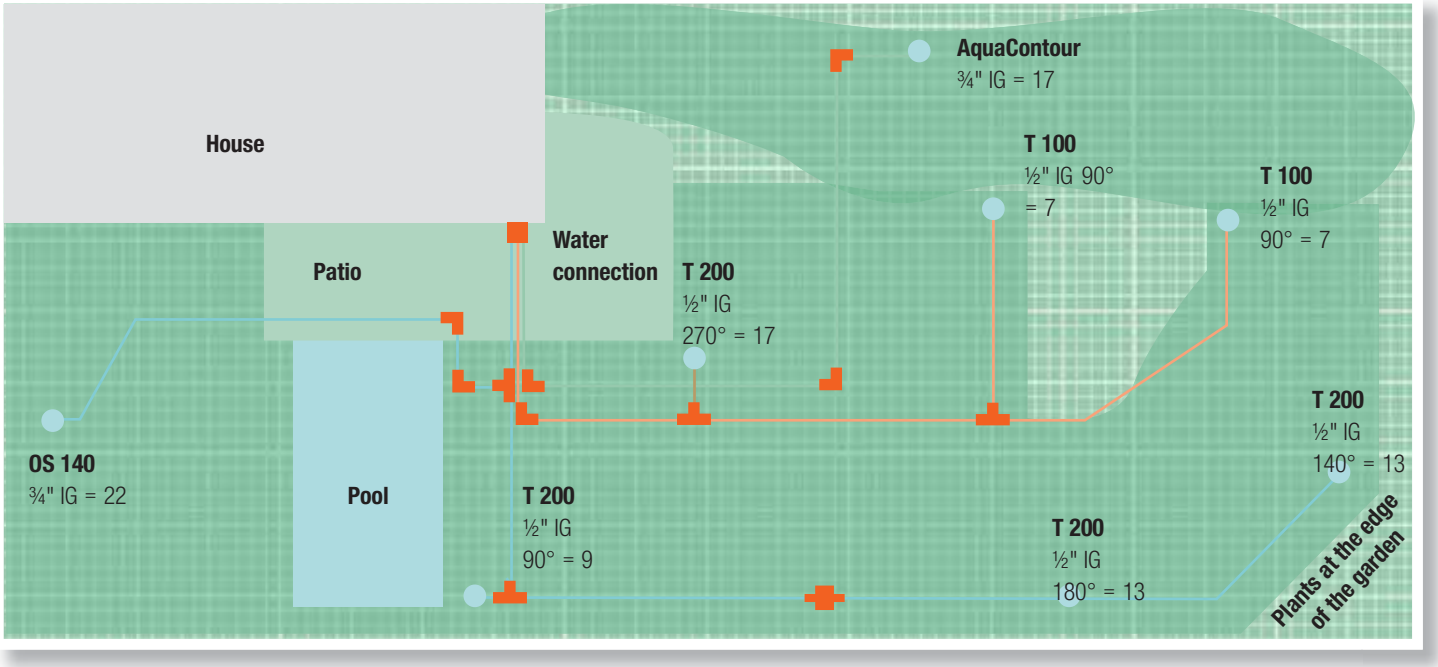
To extend	To change direction		At the end of the pipe
			
Connector 25 mm Art. No. 2775	**L-piece** 25 mm Art. No. 2773	**T-piece** 25 mm Art. No. 2771	**End-piece** 25 mm Art. No. 2778

Also plan the drain valves to ensure protection against frost

Frost protection

To protect the system from frost damage, place drain valves at the lowest points of the individual pipelines (one drain valve must be used for every pipe). The drain valves open automatically once watering has finished (as soon as the water pressure is below 0.2 bar) and thus drain each line. Please consult the installation instructions on page 47.

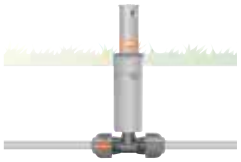
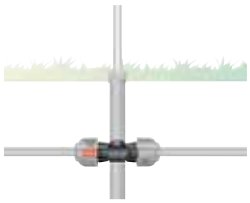
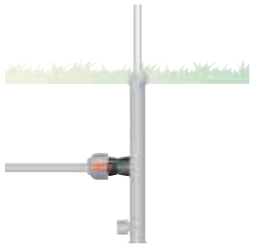
	
T-piece 25 mm ¾" female thread Art. No. 2790	**Connector 25 mm** ¾" female thread Art. No. 2761
With Irrigation Valve Art. No. 2760	With Irrigation Valve Art. No. 2760



Scale 1:200 (1 cm = 2 m) IG = female thread

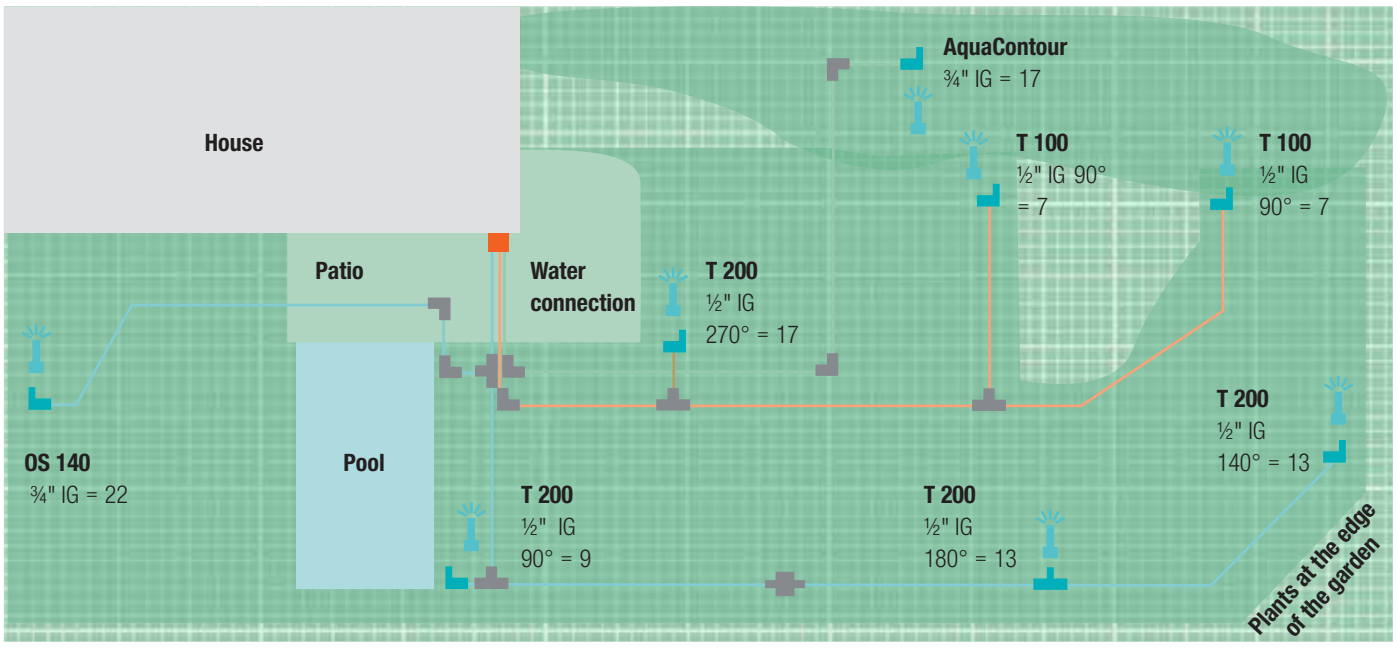
Planning the connection parts for the sprinkler connections
Now decide on the connecting components for the sprinkler connections and enter them in the shopping list.

Possible sprinkler connections

In the pipeline		In the corner area	At the end of the pipe	
				
T-piece 25 mm ½" male thread Art. No. 2786 or ¾" male thread Art. No. 2787	**Connection for Pop-up Sprinkler S 80/300** T-piece 25 mm ¾" female thread Art. No. 2790	**Angle Piece 25 mm** ½" male thread Art. No. 2782 or ¾" male thread Art. No. 2783	**L-piece 25 mm** ½" male thread Art. No. 2780 or ¾" male thread Art. No. 2781	**Connection for Pop-up Sprinkler S 80/300** Connector 25 mm ¾" female thread Art. No. 2761

Important information

Ensure when you select the sprinkler connection components that the thread sizes match the sprinkler threads shown on your plan. In this example (see AquaContour with ¾" female thread) it would be an L-piece (25 mm, Art. No. 2781) with ¾" male thread.



Scale 1:200 (1 cm = 2 m) IG = female thread

5. Connection and control options

And last but not least plan how you want to control your irrigation system.

How you connect the tap or water source to the irrigation system depends on the size of system and the type of control you use. Irrigation systems are divided into two types, single or multi-channel systems.

Once you have successfully planned your irrigation system (Micro-Drip-System and Sprinklersystem), you know how many irrigation channels your own individual system requires and so you can then decide which type of control and connections best suit your needs. We particularly recommend using automatic control for multi-channel systems. This page can help you choose the right control.

One connection with one channel

Single-channel systems are operated via one irrigation channel, which means, all sprinklers are connected to one pipeline. The following control options are available:

Manual control

Basic installation

The tap and Connecting Point (2722) are connected to the underground installed Sprinklersystem with a Connection Set (2713) and Connector (2761).

Automatic control

The water connection is the same as the basic installation. Water Computers (e.g. 1862) can be used to control irrigation systems with one line.

You can find more information on the individual Water Timers and Computers on pages 32 – 33.

One connection with two channels

Dual-channel systems operate sprinklers on two irrigation channels. The following control options are available:

Manual control

The water connection is the same as the basic installation. Two irrigation channels are connected to a Twin-Tap Connector (8193).

Alternatively, the individual supply lines can be activated by turns via several Regulator and Shut-off Valves.

Automatic control

The water connection is the same as the basic installation. Irrigation systems with two lines can be optimally controlled with the Water Computer MultiControl duo (1874). You can find more information on the individual Water Computers on pages 32 – 33.

More information on the control options and the relevant products can be found on pages 28 – 35.

Connection to more than two channels

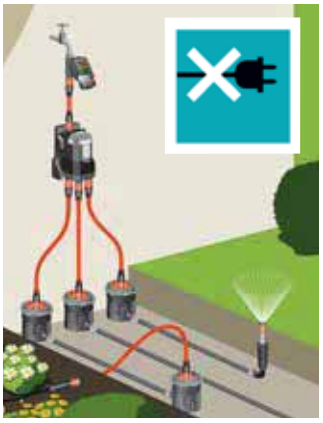
Multi-channel systems with two or more irrigation channels, this means the pop-up sprinklers or the drip irrigation systems are connected to multiple channels.
The following control options are available:

Manual control

Irrigation system with up to 4 irrigation channels

They can be connected to a 4-Way Distributor (8194). The water connection is the same as the basic installation.

Automatic control

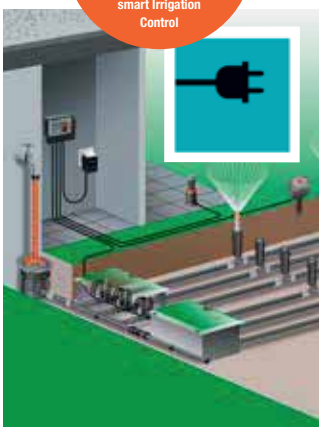


Automatic control of up to 6 irrigation channels

Up to 6 irrigation channels can be controlled by means of an automatic Water Distributor (1197) combined with a MasterControl (1864).

smart

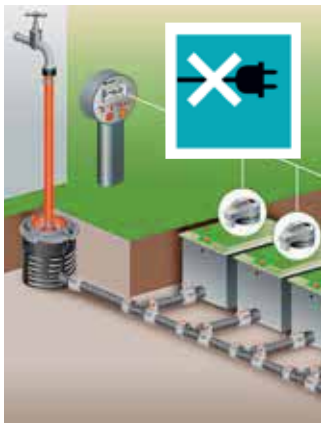
Also available within the smart system as smart Irrigation Control



Up to 6 irrigation channels

A 24 V Irrigation Valve (1278) is connected before every irrigation channel. The GARDENA Irrigation Control System sends signals to the Irrigation Valves to open and close up to 6 irrigation channels via the Connection Cable (1280).

You can find more information about Multi-Channel Control systems on page 34.



Any number of irrigation channels, no power supply required

A 9 V Irrigation Valve (1251) is connected before every irrigation channel. Control data is sent to a battery-operated Controller (1250) via a battery-operated Programming Unit (1242). The valves are opened and closed via controllers that are connected directly.

You can find more information about Multi-Channel Control systems on page 35.

The tap is connected to the Connecting Point (2722) with a ¾" hose with Adapter Piece (1513) and a Connector (2761) for a permanently stable pressure connection.

Control components and additional parts

Connection parts

Connecting Point
For supplying water to the underground irrigation system.
Art. No. 2722

Adapter
Art. No. 1513

Profi System Connection Set
2 m Garden Hose 19 mm (3/4") with professional system parts
Art. No. 2713

Distribution components

Twin-Tap Connector
For connecting two supply lines.
Art. No. 8193

Four Channel Water Distributor
For connecting up to four supply lines.
Art. No. 8194

Regulator and Shut-Off Valve
Art. No. 2724

Connector 25 mm
Art. No. 2761
3/4" female thread
Art. No. 2762
1" female thread
Art. No. 2763
1" male thread

Valve boxes

Ventilbox V 1
(without valve)
Art. No. 1254

Ventilbox V 3
(without valve)
Art. No. 1255

9 V Watering controller

Programming Unit
Art. No. 1242

Controller 9 V
Art. No. 1250

Irrigation Valve 9 V
Art. No. 1251

24 V Watering controller

Irrigation Control System 4030
Art. No. 1283

Irrigation Control System 6030
Art. No. 1284

smart Water Control Irrigation Control
For 6 Irrigation Valve 24 V.
Art. No. 19032

Irrigation Control 24V
Art. No. 1278

Cable Clip
(6 in a pack)
Art. No. 1282

Connection Cable 15 m
Art. No. 1280

24 V Pump Control System
Art. No. 1273

Water Computers (Selection)

smart Water Control
Automatic irrigation via smart App
Art. No. 19031

Water Computer Master Control
Automatic irrigation control with up to six individually configurable programmes.
Art. No. 1864

Water Computer MultiControl duo
Automatic irrigation of two garden areas
Art. No. 1874

Water Distributors automatic

Water Distributors automatic
In combination with Water Computer MasterControl
Art. No. 1197

Alternative to valves
As an alternative to valve control, you can control between 2 and 6 watering areas in sequence using the automatic water distributor (1197) and a MasterControl (1864).

Installation tips

It is so easy to install your new irrigation system properly.*

* If you want to install the system yourself, please be aware that we cannot accept any liability for any costs and damage that could occur as a result.

Lay out all the parts of your irrigation system according to your plan. Begin by installing the parts at the start of the system.

Cut the pipes to length and connect the components. Push the pipes approx. 6 cm over the O-ring into the connection part to create a non-leaking connection.

Set the spray direction, sectors and the range of the sprinklers.

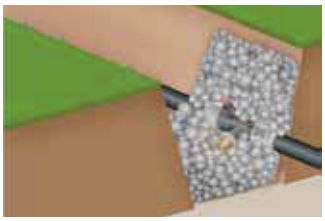
Dig a spade into your lawn to mark out a V-shaped trench approx. 20–25 cm deep. Carefully remove the turf and dig out the trench. Remove any stones from the trench.

Note

Make sure you keep soil out of the ends of the pipes. Deburr pipe, if necessary.

To check the system for leaks, carry out a test run before underground installation.

Mowing and watering your lawn beforehand will make it easier to install your irrigation system.



The drain valves are installed at the lowest points of the system. On slopes, the height difference between the drain valves must not exceed 2 m. Install several drain valves on slopes if necessary. To improve drainage and to protect the drain valve underlay it with a seeping water drain packing (washed, coarse gravel, approx. 20 × 20 × 20 cm).

Lay lines with sprinklers and components connected in the trench. All sprinklers, connecting points, and water connectors must be installed flush with the surface to allow for settlement.

Fill in the trenches with soil, roll out the turf and tread down.

Changing from 19 mm to 25 mm pipe connections

Did you install your GARDENA Sprinklersystem before 2005 and now want to extend or upgrade it? For changing from the 19 mm connecting pipe to the 25 mm pipe, use the Adapter Piece Item. no. 1513 combined with the Connector 25 mm × 1" male thread Item. no. 2763.

Prior to installation of the drain valves, rinse the system to remove any dirt that was brought in during installation.

Watering the trenches and lawn beforehand will help the grass take root more quickly.

Preliminary filter

If the irrigation system receives its water supply via a pump, it can happen that sand enters the pipeline system and impairs the function of the sprinklers. Therefore the pump should always be used in combination with a filter upstream of it.

High water pressure

The sprinklers and pipes are approved for an operating pressure of up to 6 bar. If the water pressure is higher, a pressure reduction unit must be fitted. For questions regarding correct connection to the domestic water supply network, please ask your local sanitary works specialist.

Frost protection

Disconnect your irrigation system from the supply line before the first frost sets in. Observe the notes on frost protection for the individual products.

Planning Micro-Drip-System

The GARDENA Irrigation Planner.

5 steps to the Micro-Drip-System

A shopping list that you can tear out and keep can be found on page 64.

This is how to proceed.

Using a garden as an example, we will show you step by step how to create your own individual drip irrigation plan.Your area of use can be found on pages 50–55. You can choose the ideal products for your system and create a complete shopping list to ensure that your plants are supplied with the right amount of water. The self-created plan will help you when you come to install your system.*

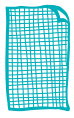
A Do-it-yourself design

You create your own irrigation plan with the help of the instructions on the following pages (and some simple aids). We will show you step by step how to.

What you need

Pencils and coloured pens

Ruler



Graph paper

B Online planen

You can make out your shopping list with the help of the GARDENA Irrigation Planner on the GARDENA website:
www.gardena.com

The online planner helps you with other separate watering tasks such as watering hedges, balcony boxes or potted plants. The Irrigation Planner in this brochure will help you to combine several different watering tasks (pages 50/55).

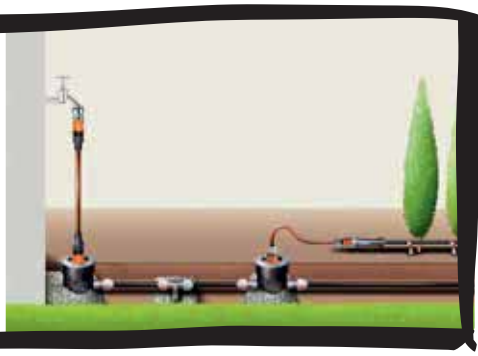
* If you want to install the system yourself, please be aware that we cannot accept any liability for any costs and damage that could occur as a result.

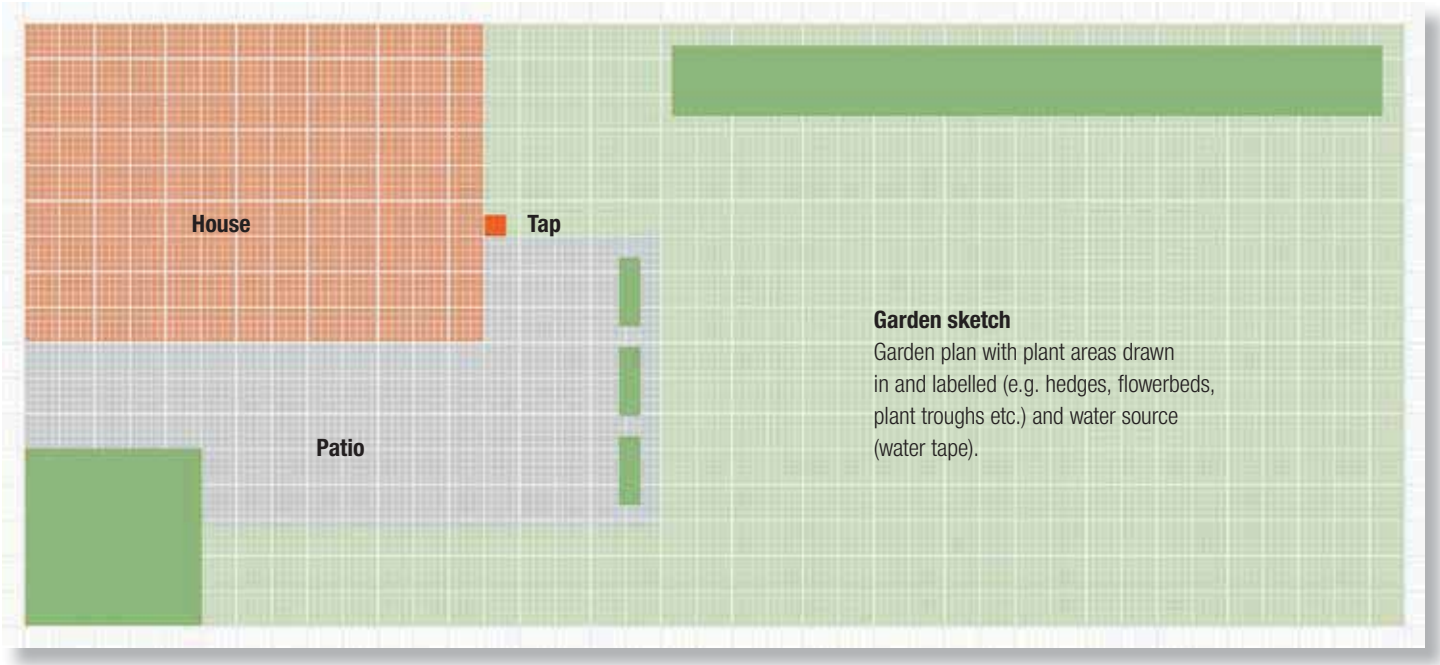
1. Draw a sketch of your garden

This is how you can create a sketch of the areas to be watered and mark the water sources.

Let's get started.
Draw a plan of your land – ideally on graph paper with mm squares – on a scale of 1:100 (1 cm = 1 m) or 1:200 (1 cm = 2 m).

Tap too far away?
If you do not want the system to start from the tap, the areas of the garden can be connected underground with the GARDENA Pipeline (page 8).





Garden sketch
Garden plan with plant areas drawn in and labelled (e.g. hedges, flowerbeds, plant troughs etc.) and water source (water tape).

Water source
Enter the location of the water source on the drawing (water tap, well, underground tank).

Sprinkling areas
Mark all the individual plants and plant areas that have to be watered.

2. Select your delivery devices and add to the plan

Depending on how you want to use them, add the delivery devices you want to include to your garden sketch and enter the products in the shopping list on page 64

Overview of delivery devices

2a. Terrace/balcony

1. **Flower pots**
   Endline drip heads for irrigation of individual pot plants
2. **Troughs**
   Inline drip heads for irrigation of plant troughs or larger pot plants

2b. Planted areas

Spray nozzles / sprinklers
For irrigation of vegetable patches and flower beds of different sizes

2c. Rows of plants

Irrigation line
For watering hedges, bushes and planted borders

2d . Other applications

Sensitive new seedlings
Micro mist nozzle

Lawns
Underground drip line 13.7 mm

Area around a tree
Small area spray nozzle

Large container plants
Ring line with 4.6 mm drip line (3/16")

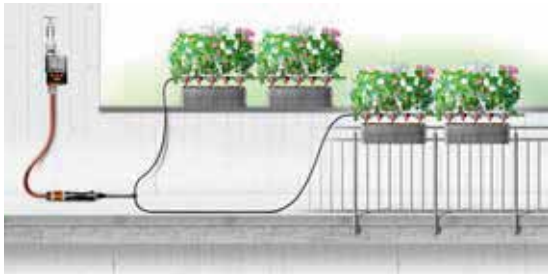
2a. Watering plant pots on patios and balconies

To water containers on your balcony, patio or in the conservatory, endline or inline drip heads are used. Depending on the number of plants to be watered, the 4.6 mm (3/16") supply pipe might be enough – or you may also need the 13 mm (1/2") connecting pipe.

Pot plants

Pot plants are supplied with controllable endline drip heads. These are installed in the end of the supply pipe using the installation tool. The T-joint is used to connect the supply pipe to the connecting pipe. Pipe holders fix the drip heads in place and align them in the plant pot. Controllable endline drip heads are also available in pressure-equalizing and self-cleaning versions.

Plant troughs / flower boxes



Plant troughs or larger containers are supplied using inline drip heads. These are installed along the supply pipe. Depending on the size and plants used, we recommend 3–5 drip heads per meter of plant trough. The pipe is fixed in the trough using 2–3 pipe guides. You can use a maximum of 25 inline drip heads.

For larger installations, you'll need to use the 13 mm (1/2") connecting pipe as the supply pipe. Here you can branch off using the reducing T joint and connect a maximum of 25 drip heads to the 4.6 mm (3/16") supply line. With this configuration you can connect up to 500 inline drip heads, if the base unit is installed in the middle of the system.

Watering without a tap

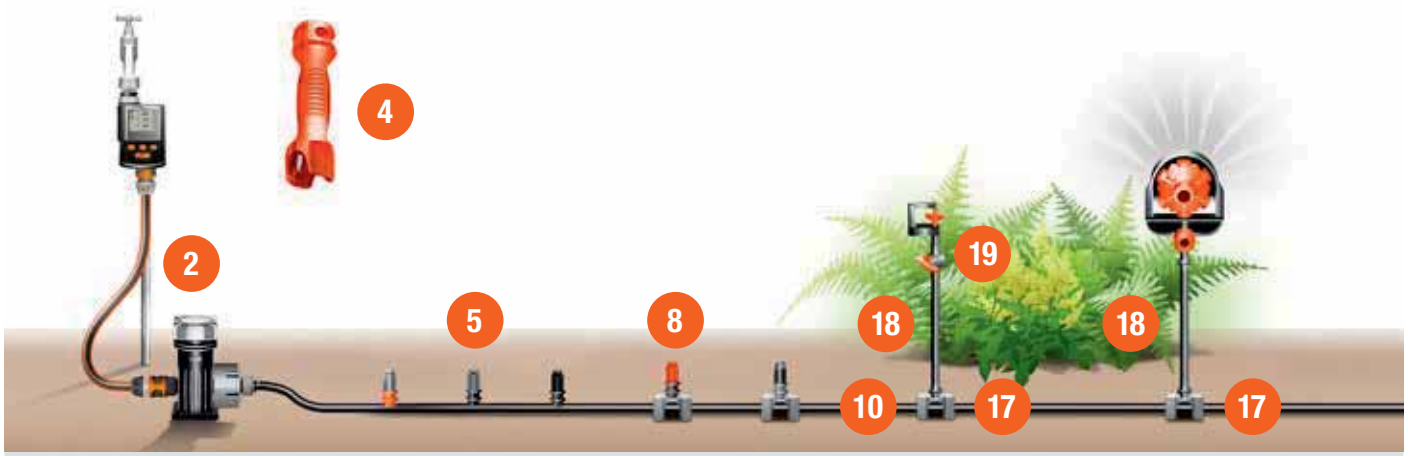
If you do not have a tap on your balcony for example, we recommend using the fully automatic GARDENA Flower Box Watering. You can find more information on page 23.

Tips and Tricks

For pot plants, we recommend short watering times and short watering cycles, e. g. 3 minutes every 8 hours (depending on the size of the pots).

2b. Watering vegetable patches and flower beds

The GARDENA Micro-Drip-System offers a wide range of different spray nozzles to water your flowerbeds and borders.
The suitable nozzle can easily be found to suit a wide variety of plant combinations.



Gentle mist irrigation

Planted borders can be watered below foliage level with **spray nozzles**, which are installed directly in the **pipe** 5 using the **installation tool** 4. If you want the fine spray to fall from above (e.g. in planted borders), you'll need an **extension pipe** 18, in order to reach the required height. To do this, install the **extension pipe** 18 on the **T joint for spray nozzles** 17 and then connect the spray nozzle. T joint 17 is fixed in the ground using the **pipe guides** 10. On solid ground, secure the T joint using **pipe clips** 8. The spray range of the spray nozzles can be adjusted using the **control valve** 19.

Capacity with Master Unit 2000 installed in the middle (direct installation in 1/2" connecting) pipe)

Spray nozzle 360° * – max. 20 pieces
Spray nozzle 180° * – max. 26 pieces
Spray nozzle 90° * – max. 32 pieces

Micro Strip Sprinkler and Endline Micro Strip Sprinkler – max. 30 pieces

Micro Rotor Sprinkler – max. 25 pieces

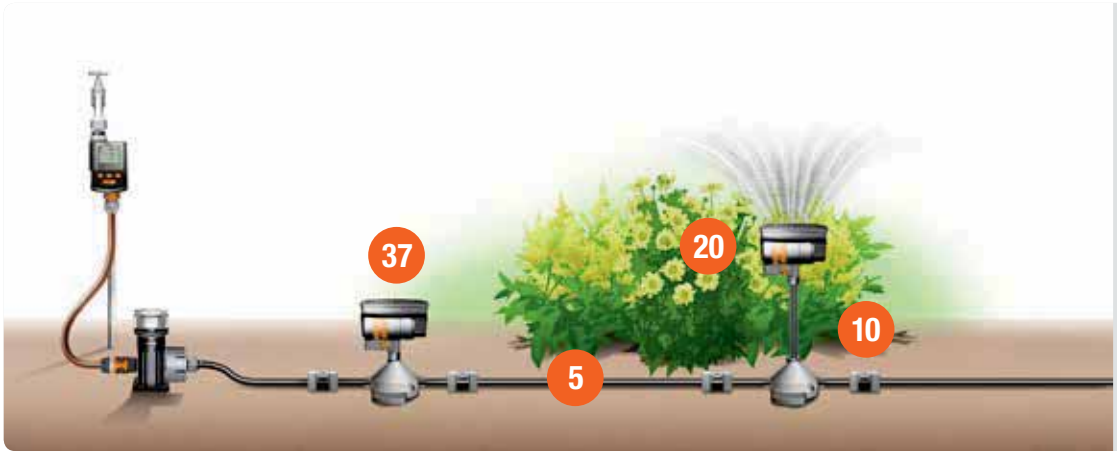
6-Pattern Spray Nozzle – max. 34 pieces

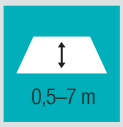
34 Spray Nozzles	30 Micro Strip Sprinklers	29 Endline Micro Strip Sprinklers	32 Micro Rotor Sprinklers	31 6-Pattern Spray Nozzle
90° min. 2 m (3 m²), max. 3 m (7 m²)	↕ max. 0.6 m ⟷ max. 5.5 m	↕ max. 0.6 m ⟷ max. 2.75 m	**360°** min. 1.5 m (7 m²), max. 3.5 m (38 m²)	**90°** max. 2.5 m
180° min. 2 m (6 m²), max. 3 m (14 m²)				**180°** max. 2.5 m
360° min. 1.5 m (7 m²), max. 3 m (28 m²)				**270°** max. 2.5 m
				360° max. 2 m

* The stated capacities refer to the base unit 2000.

Alternative for spraying square areas

This is how to water larger areas in vegetable plots.
The GARDENA Oscillating Sprinkler OS 90 is ideal for the effective and wide-coverage watering of flowerbeds and vegetable plots. The range and width of spray can be adjusted to suit the size of the area to be watered and the plant height.





Precise area irrigation
The best way to water the square and rectangular areas in vegetable plots and flowerbeds is to use the **Oscillating Sprinkler OS 90** 37. The range and width of spray can be adjusted as required. The area covered can be selected from between 1 – 90 m². You can change the height of the sprinkler according to the growth of your plants using the **Extension Pipe** 20. The Oscillating Sprinkler is installed in the **13 mm (1/2") Connecting Pipe** 5 and secured in the ground using **Pipe Guides** 10. You can connect up to 2 sprinklers if they are spaced 10 m apart.

Tips and Tricks

Irrigation
To ensure that water reaches even the deepest root zones in your garden, it is best to water between once and twice a week, every week. Both the oscillating sprinkler OS 90 and a spray nozzle (see left) deliver approximately 5 litres of water per square metre. Depending on the type of ground, this corresponds to a seepage depth of approx. 5 cm in one hour.

Alternative solution
If you have plants that are sensitive to being watered from above, the 15 m drip line 4.6 mm (3/16") is suitable. The flexible pipe is the ideal alternative to the spray nozzles: drip head distance of 30 cm and extendible to a maximum of 30 m if the master unit is installed in the middle.

For an overview of the components of the GARDENA Micro-Drip-System labelled with numbers on this page, see pages 60 – 63.

2c. Irrigation of hedges and planted borders

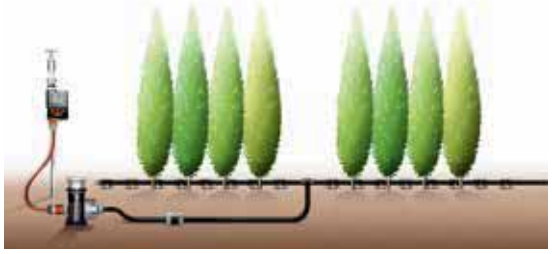
Easy and economical watering of planted borders and hedges

Which pipes you need for the irrigation of planted borders and hedges depends on the length of your hedge. The 13 mm (1/2") drip line is suitable for longer hedges, while you'll need the 4.6 mm (3/16") drip line if your hedge is smaller (up to 15 m). Simply lay the pipe, install the master unit and end plugs, and connect to the tap.

Short hedges

If you need a small solution for smaller hedges, the Micro-Drip-System at just 4.6 mm (3/16") might be exactly what you need. A **drip head** is pre-installed every 30 cm (delivery quantity 1.5 l/hr), the maximum pipe length is 30 m with a centrally installed **master unit**. The Micro-Drip-System connection technology enables you to add branches and extensions.

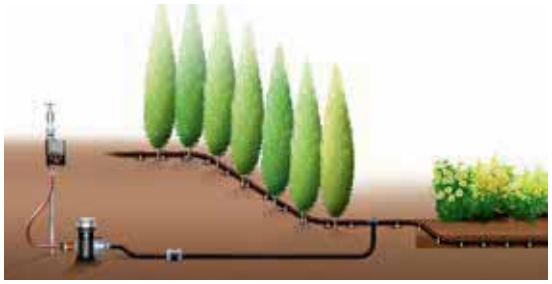
Longer hedges



With a diameter of 13 mm (1/2"), this is an easy solution to lay, e. g. for hedges and planted borders. A **drip head** is pre-installed every 30 cm (delivery quantity 4 l/hr), the maximum pipe length is 100 m with a centrally installed **master unit**. The Micro-Drip-System connection technology enables you to add branches and extensions.

The **pipe guides** 9 are used to fix the pipes in soil. We recommend that you use one pipe guide per metre of drip line.

Hedges on a slope or planted borders



The 13.7 mm drip line can be installed invisibly underground or also above ground. It is ideal if your garden is on a slope

- Pressure-equalizing drip heads ensure a constant delivery volume along the whole length of the pipe.
- The integrated root blocker prevents roots from entering the drip heads.
- The self-closing membrane prevents contamination of the drip heads.

Max. pipe length up to 200 m. Laid depth in planting area approx. 20 cm. Distance between drip heads 30 cm. Caution: the underground drip line cannot be combined with the Micro-Drip-System connection technology (accessories can be purchased from GARDENA customer service).

2d. Other applications

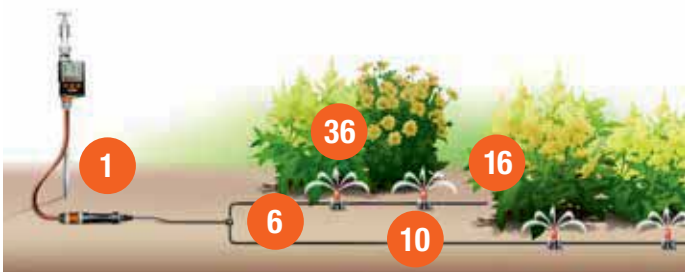
In addition to irrigation of the three main application areas, the Micro-Drip-System can also help you with other, more specialist tasks.

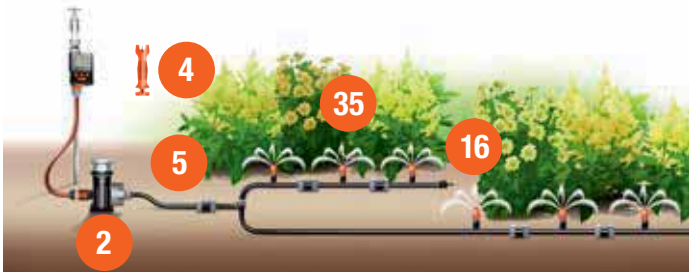
Spraying seedlings with mist nozzles

Use the GARDENA installation tool to install the mist nozzles approximately 50 cm apart in the 13 mm (1/2") pipe, and secure in place above your plants/seedlings using pipe clips and T joints.
Also ideal for irrigation in your greenhouse. You can install a maximum of 50 mist nozzles in this system.

Irrigating tree beds, shrubs and bushes

You can select the irrigation diameter from 10 – 40 cm to set the nozzle according to your irrigation needs.





Up to 15 m pipe length

In irrigation systems up to a maximum of 15 m in length, the **Small Area Spray Nozzles** 36 should be installed along the 4.6 mm (3/16") **Supply Pipe** 6. Up to 4 Small Area Supply Nozzles can be installed with a **Master Unit** 1 when it is connected with a T-piece in the middle of the pipeline. Position the Small Area Spray Nozzles exactly where you need them near the plants using **Pipe Guides** 10. Seal off the end of the pipe using a **Plug** 16.

From 15 m pipe length

If your irrigation system is longer than this, however, use the **Installation Tool** 4 to install the **Small Area Supply Nozzles** 35 directly in the 13 mm (1/2") **Connecting Pipe** 5 instead. You can install a maximum of 30 Small Area Supply Nozzles (when using the **Master Unit 2000** 2). Position the Small Area Spray Nozzles, connected with a T-joint in the middle of the pipeline, exactly where you need them near the plants using **Pipe Guides**. Seal off the end of the pipe using a **Plug** 16.

Irrigating lawns with underground drip lines

Sitting invisibly 10 cm below the surface of your lawn, with a pipe distance of 30 cm, the drip line is installed in the same way as underfloor heating in a house.

- Pressure-equalizing drip heads ensure a constant delivery volume along the whole length of the pipe.
- The integrated root blocker prevents roots from entering the drip heads.
- The self-closing membrane prevents contamination of the drip heads.
- Max. pipe length up to 200 m.

You can also set up your watering system with a combination of drip and mist nozzles. Use shut-off valves to help control the individual water requirements of the planted areas.

Large container plants

The 4.6 mm (3/16") drip line can be used as an alternative for the irrigation of large container plants.
You install a ring pipe around the root of the plant and connect it to the distributor pipe using a T joint.

3. Determining consumption values (for larger/combined systems)

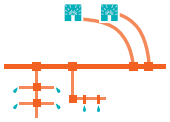
Irrigate several areas of the garden in combination. Combine your different applications.

Basic building block: The base unit

- The master unit defines the connection value and the amount of water available in the system.
- The connection value of the system must be greater than the consumption value.
- There are three possible installation types. The consumption value of the drip heads and nozzles changes depending on the type of installation.

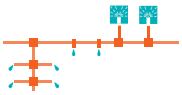
Installation type 1

The delivery device is installed in the 4.6 mm pipe and the supply is enabled via the 13 mm pipe.



Installation type 2

The delivery device is installed in the 4.6 mm pipe, supply via the 4.6 mm pipe.



Installation type 3

The delivery device is installed directly in the 13 mm pipe.

13 mm (½") Verlegerohr — 4,6 mm (3/16") Verteilerrohr

Connection values

		Installation of the base unit at the start of the pipe		Installation of the base unit in the centre of the pipe*	
					
		Master Unit 1000	Master Unit 2000	Master Unit	Master Unit 2000
Installation type 1	Recommended connection value Pipe length**	**500** 13 mm max. 40 m 4.6 mm max. 15 m	**1000** 13 mm max. 40 m 4.6 mm max. 15 m	**1000** 13 mm max. 2 x 30 m 4.6 mm max. 15 m	**2000** 13 mm max. 2 x 30 m 4.6 mm max. 15 m
Installation type 2	Recommended connection value Pipe length**	**50** max. 15 m	**50** max. 15 m	**100** max. 15 m	**100** max. 15 m
Installation type 3	Recommended connection value Pipe length**	**500** max. 40 m	**1000** max. 40 m	**1000** max. 2 x 30 m	**2000** max. 2 x 30 m

Example Calculation

Recommended installation type 1

Determine connection value

1. Determine the number and type of delivery devices (spray nozzles/ drip heads/drip line)
2. Determine the consumption values of the system (delivery device x consumption value in the table)
3. Add the values to obtain the sum total of the consumption values.
   If the consumption value of the system is less than the connection value, the system can be operated smoothly

Consumption values

Art. No.	Designation	Accessory consumption values			Planned number	
Installation		**M1**	**M2**	**M3**		
1340/8310	Endline Drip Head	2	2	5		
1391	Adjustable Endline Drip Head	10	10	25		
8316	Adjustable Endline Drip Head	8	8	20		
8343/8311	Inline Drip Head	4	4	–	12 St.	46
8392	Adjustable Inline Drip Head	20	20	–		
8317	Adjustable Inline Drip Head	16	16	–		
8320	Small Area Spray Nozzle	–	–	70		
8321	Small Area Spray Nozzle	70	25	–		
1365	Spray Nozzle 360°	125	100	100		
1367	Spray Nozzle 180°	110	100	80		
1368	Spray Nozzle 90°	85	50	65		
1370	Micro Strip Sprinkler	70	50	70		
1372	Endline Micro Strip Sprinkler	70	50	70		
1371	Micro Mist Nozzle	40	25	40		
1369	Micro Rotor Sprinkler 360°	110	100	80	1 St.	80
1396	6-Pattern Spray Nozzle	125	50	60		
8361	Oscillating Sprinkler OS 90	–	–	1000		
13010/1362	Drip line 4.6 mm (3/16")***	4	4	–		
13001/13002 13013/13131	Drip line 13 mm (1/2")***	–	–	10	7,5 metre	75
				Total		203

* The connection value of each half of the line is half the connection value when the base unit is installed in a central position

** Specification of the maximum pipe length is used as a guideline value only. It is dependent on the number of connected delivery devices in each case.

*** Consumption value per metre of drip line

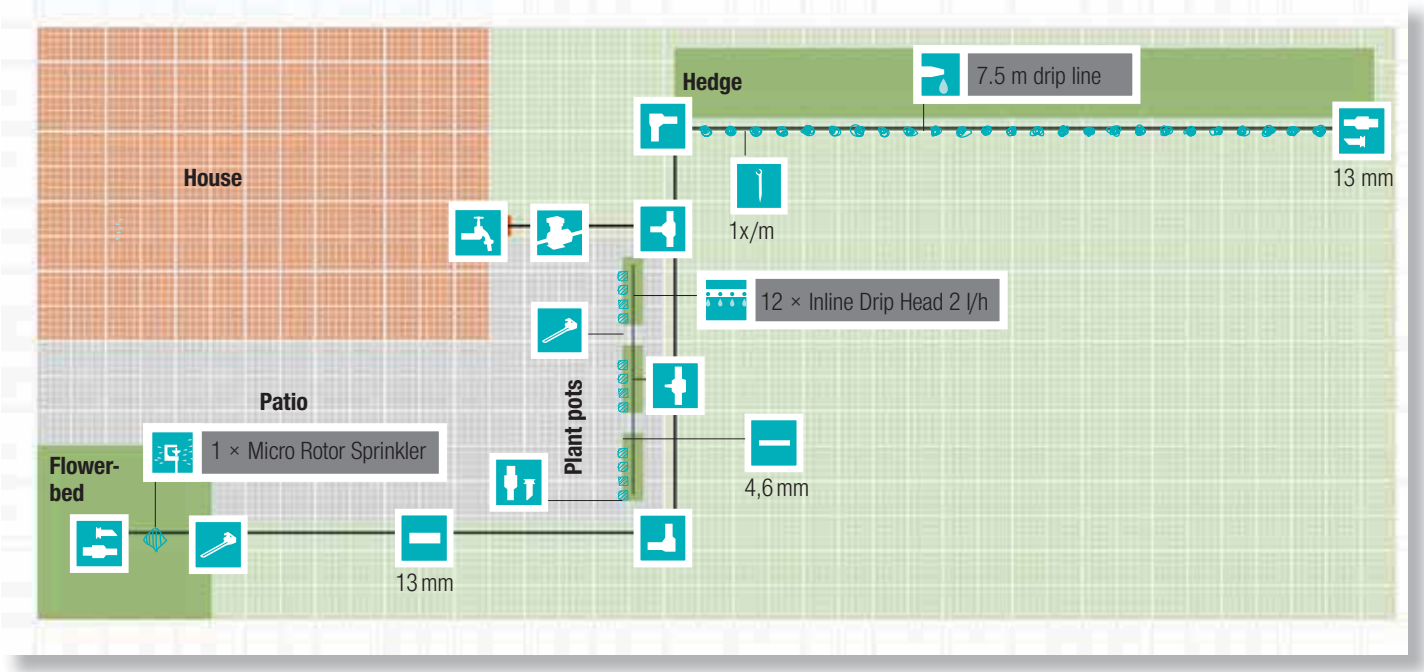
4. Drawing important basic components

Decide on water connection, master unit, pipelines and connectors and draw them on your plan.

You calculated your system's entire consumption value in step 3.
Now continue by:

- Draw the master unit in the middle or at the start of your system (see page 56)
- Use the supply line and distributor line to connect the base unit with your selected delivery devices (see page 50–55)
- Decide which system components you need and then the required connection parts, pipe pegs or pipe guides (see pages 60–63) and draw these components in the garden plan
- Use the connection set to connect the base unit to the tap

Add the delivery devices you want to include to your garden sketch and enter the products in the shopping list on page 64.



Basic components

- Water connection
- Master Unit (2000 l/h)
- Master Unit (1000 l/h)
- Connecting Pipe 13 mm 1/2"
- Supply Pipe 4.6 mm 3/16"

Connection parts available 3/16" for 4.6 mm or 1/2" for 13 mm

- Pipe Clip
- Pipe Guide
- Plug
- Pipe Peg
- Regulator and Shut-Off Valve *
- T-piece
- L-piece
- 4-Way Coupling
- Reducing T-Joint
- Connector

Tips and Tricks

Multifunctional pipe-laying technology

Our pipe guides 10 allow you to position pipes and drip heads exactly in place. To irrigate over taller plants, you can also use the extension pipe for spray nozzles 18 (installed directly on the pipe guide).
If you cant or don't want to fix your pipe in the soil, you can also use pipe clips 8 to fasten the pipe on solid ground (D). For an overview of all components of the GARDENA Micro-Drip-System, see pages 60–63.

* Install shut-off valves in the individual irrigation lines before the drip heads and nozzles so that the individual plant areas are supplied with exactly the right amount of water.

5. Automatic control

Once you've planned your system, you can select the correct type of controller.

GARDENA watering computer

With an automatic irrigation control system, you can let the Micro-Drip-System water your garden fully automatically. You can choose the watering computer that best fits your requirements.

–

For more information, see pages 32 – 33

GARDENA smart system

Any place, any time.

The GARDENA smart system enables you to control the watering and mowing of your garden via an app. The standard equipment includes the app and the GARDENA smart gateway. You also have the option of adding additional components in the form of the smart Sensor, the smart Water Control, the smart SILENO, the smart Pressure Pump and the smart Battery, which are available in sets or as special irrigation sets.

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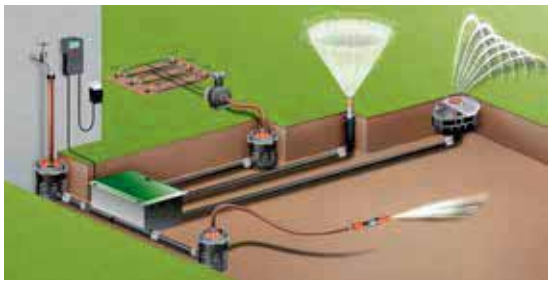
For more information see page 6 onwards and **www.gardena.com**

GARDENA Micro-Drip-System and Sprinklersystem

Combine and control automatically.



The GARDENA Micro-Drip-System and the GARDENA Sprinklersystem can be controlled together using a multichannel controller. This means that your garden can be controlled automatically from a single controller.

Did you know...

that you can program the irrigation control system flexibly?

GARDENA offers three categories depending on the complexity of your watering solution:

Classic – for first-time users

Comfort – for users with more complex demands

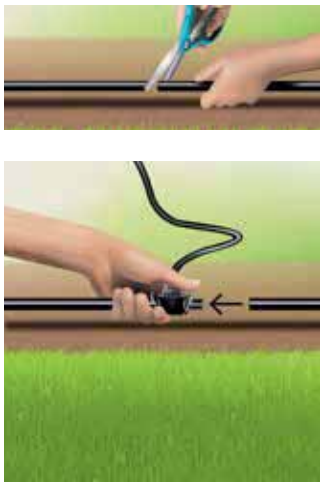
Premium – for experts

Installation instructions

It is so easy to install your new irrigation system*

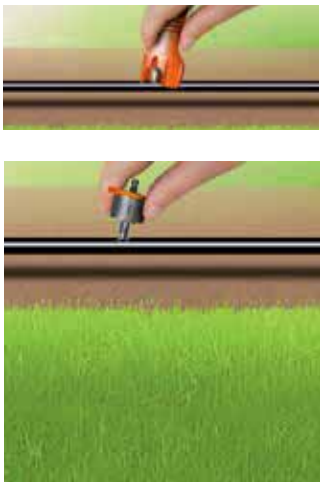
1. Connect Master Unit to the water source

Connect the Master Unit to the water supply (tap, pump, water connector) using GARDENA hose and the Original GARDENA System.



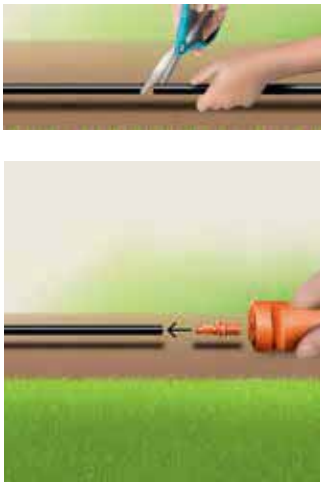
2. Lay the connecting pipes, attach and shorten

Lay the 1/2" connecting pipe, shorten if necessary. After assembling, secure the connectors and drip heads with pipe pegs, pipe clips or pipe guides.



3. Make holes in the connecting pipe and connect accessories

Make holes in the connecting pipe at the positions designated for the accessories and then attach drip heads, nozzles or sprinklers that you have planned on the connecting pipe.



4. Install supply pipes – and you are done!

Shorten the supply pipes to the right lengths, attach the accessories to the supply pipe, fix pipe with pipe pegs, pipe clips or pipe guides and connect to the connecting pipe, if necessary.

* If you want to install the system yourself, please be aware that we cannot accept any liability for any costs and damage that could occur as a result.

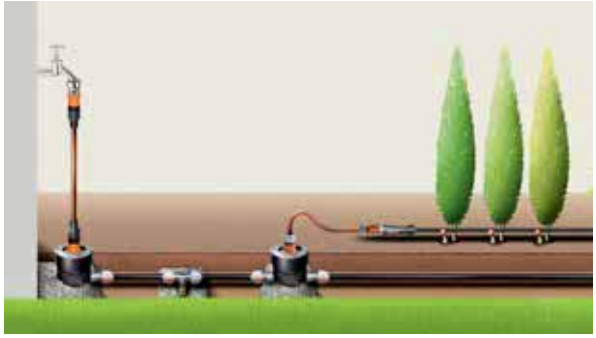
Winter frost? No problem

You can prepare your GARDENA Micro-Drip-System ready for winter in just a few simple steps. All you have to do is store the Master Unit somewhere safe from frost, drain the Fertilizer Dispenser, close off the system with taps and adjust the Control Valve to water flow – and you are finished!

Tips and Tricks

Is the tap too far away?

If you don't want your system to start immediately next to the tap, it can be connected to the GARDENA pipeline (page 8) underground at any point in your garden.



System parts at a glance

MADE IN GERMANY

For your planning: The basic components of the GARDENA Micro-Drip-System.

System start accessories

1 Master Unit 1000 l/h
To operate the GARDENA Micro-Drip-System.

Starting component for the micro-drip system; reduces pressure and filters water

Durchfluss bis 1000 l/h

Art. No. 1355

2 Master Unit 2000 l/h
To operate the GARDENA Micro-Drip-System.

Starting component for the micro-drip system; reduces pressure and filters water

Durchfluss bis 2000 l/h

Art. No. 1354

3 Fertilizer Dispenser
With level indicator.

Addition of a universal liquid fertiliser

Art. No. 8313

4 Installation Tool
Multi-functional tool for the easy installation of the GARDENA Micro-Drip-System.

Universal tool for installing various items and perforating the connecting pipe

Art. No. 8322

Pipes and accessories

5 Connecting Pipe

Central supply line for the micro-drip system, can be laid above ground or underground

13 mm ½", 15 m

Art. No. 1346

13 mm ½", 50 m

Art. No. 1347

6 Supply Pipe

Feed pipe for drippers and spray nozzles, can be laid above ground or underground

4,6 mm 3/16", 50 m

Art. No. 1348

4,6 mm 3/16", 15 m

Art. No. 1350

7 Shut-Off Valves
The range of the spray nozzles can be infinitely adjusted.

Shut-off device for individual strands of the connecting pipe

13 mm ½"

(For Art. No. 1346/1347)

Art. No. 8358

4,6 mm 3/16",

(For Art. No 1348/1350 and infinitely variable control of the range of the 360° spray nozzle)

Art. No. 8357

Pipe pegs

8 Pipe Clips

For fastening pipes in hard ground; defined spray nozzle fastening in connecting pipes.Adjusts the height of the spray nozzles in connection with a T-piece for spray nozzles and extension pipes

13 mm ½"

(For Art. No 1347/1346, 8331, 1377)

Contents: 2 pieces

Art. No. 8380

4,6 mm 3/16"

(For Art. No1348/1350, 8332, 1377)

Contents: 5 pieces

Art. No. 8379

9 Pipe Pegs
The Pipe Peg is used to route and securely fasten the supply pipe in the ground.

For guiding and fastening the connecting pipe

13 mm ½"

(For Art. No 1347/1346, 8331, 1377)

Contents: 5 pieces

Art. No. 1328

4,6 mm 3/16"

(For Art. No 1348/1350, 8332, 1377)

Contents: 10 pieces

Art. No. 1327

10 Pipe Guide
To fasten the pipes in the ground.

For fastening pipes in soil; defined spray nozzle fastening in the connecting pipe

Adjusts the height of the spray nozzles in connection with a T-piece for spray nozzles and extension pipes

13 mm ½"

(For Art. No 1347/1346, 8331, 1377)

Contents: 3 pieces

Art. No. 8328

4,6 mm 3/16"

(For Art. No 1348/1350, 8332, 1377)

Contents: 3 pieces

Art. No. 8327

Pipe connectors

11 4-Way Couplings

Junction for the connecting pipe

13 mm ½"
Contents: 2 pieces
Art. No. 8339

4,6 mm 3/16"
Contents: 10 pieces
Art. No. 8334

12 Reducing T-Joint

Adapter from the connecting pipe to the supply pipe

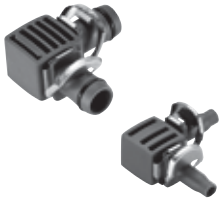
13 mm ½"
Contents: 5 pieces
Art. No. 8333

13 T-pieces

Junction for the connecting pipe

13 mm ½"
Contents: 2 pieces
Art. No. 8329

4,6 mm 3/16"
Contents: 10 pieces
Art. No. 8330

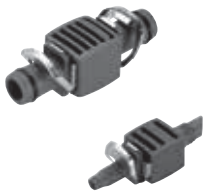


14 L-pieces

For accurately changing the direction of the connecting pipe

13 mm ½"
Contents: 2 pieces
Art. No. 8382

4,6 mm 3/16"
Contents: 10 pieces
Art. No. 8381



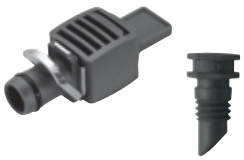
15 Connectors

For extending the connecting pipe

13 mm ½"
Contents: 3 pieces
Art. No. 8356

4,6 mm 3/16"
Contents: 10 pieces
Art. No. 8337

Pipe connectors



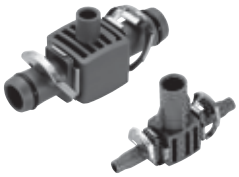
16 Plug

For sealing off the connecting pipe

13 mm ½"
Contents: 5 pieces
Art. No. 8324

4,6 mm 3/16"
Contents: 10 pieces
Art. No. 1323

Accessories for spray nozzles and sprinklers



17 T-Joint for Spray Nozzles

For defined spray nozzle fastening in the connecting pipe

Combined with pipe guides or pipe clips for all spray nozzles, can be used to increase the height of the spray nozzles with an extension pipe

13 mm ½"
Contents: 5 pieces
Art. No. 8331

4,6 mm 3/16"
Contents: 5 pieces
Art. No. 8332

18 Extension Pipe for Spray Nozzles

The height of the spray nozzles can be changed. Several pipes can be screwed together.

Enables the spray nozzles to water taller plants

Length 20 cm
Contents: 5 pieces
Art. No. 1377

19 Control Valve for Spray Nozzles

To control the water flow and range of the spray nozzles.

Regulates water flow and spray nozzle range

Contents: 5 pieces
Art. No. 1374

20 Extension Pipe for OS 90

To raise the height of the Oscillating Sprinkler OS 90.

Enables the OS 90 oscillating sprinkler to water taller plants

Length 20 cm
Contents: 2 pieces
Art. No. 8363

System parts at a glance

For your planning: The basic components of the GARDENA Micro-Drip-System.

Endline drip heads for plant pots

21 Endline Drip Head

2 l/h

Contents: 25 pieces

Art. No. 1340

22 Endline Drip Head

Pressure equalizing, self-cleaning, self-closing

2 l/h

Contents: 10 pieces

Art. No. 8310

23 Adjustable Endline Drip Head

0–10 l/h

Contents: 10 pieces

Art. No. 1391

24 Adjustable Endline Drip Head

Pressure equalizing, with amount indicator, self-cleaning

1–8 l/h

Contents: 5 pieces

Art. No. 8316

Inline drip heads for plant pots

25 Inline Drip Head

2 l/h

Contents: 10 pieces

Art. No. 8343

26 Inline Drip Head

Pressure equalizing, self-cleaning, self-closing

2 l/h

Contents: 10 pieces

Art. No. 8311

27 Adjustable Inline Drip Head

0–10 l/h

Contents: 10 pieces

Art. No. 8392

28 Adjustable Inline Drip Head

Pressure equalizing, with amount indicator, self-cleaning

1–8 l/h

Contents: 5 pieces

Art. No. 8317

Spray nozzles for planted beds

29 Endline Micro Strip Sprinkler

Contents: 5 pieces

Art. No. 1372

30 Micro Strip Sprinkler

Contents: 5 pieces

Art. No. 1370

31 6-Pattern Spray Nozzle

90°, 180°, 360°

Micro Strip, Endline Micro Strip

Contents: 2 pieces

Art. No. 1396

32 Micro Rotor Sprinkler 360°

Ø 3–7 m

Contents: 2 pieces

Art. No. 1369

33 Micro Mist Nozzle

Ø 1 m

Contents: 5 pieces

Art. No. 1371

* Suggested retail price including VAT

Spray nozzles and sprinklers for planted beds

34 Spray Nozzles

Spray Nozzle 90°

Contents: 5 pieces each

Art. No. 1368

Spray Nozzle 180°

Art. No. 1367

Spray Nozzle 360°

Art. No. 1365

35 Small Area Spray Nozzle

Ø 10–40 cm

Contents: 10 pieces

Art. No. 8320

36 Small Area Spray Nozzle

4,6 mm (3⁄16")

Ø 10–40 cm

Contents: 10 pieces

Art. No. 8321

37 Oscillating Sprinkler OS 90

Art. No. 8361

Underground drip lines

Set

Start-Set irrigation line for rows of plants, subterranean, 13.7 mm

For boundary planting of lawn areas

Art. No. 1389

Extension irrigation line for rows of plants, subterranean, 13.7 mm

For the extension of the Below Ground Drip Irrigation Line for boundary plants or lawn areas

Art. No. 1395

Above-ground drip lines for rows of plants

Set

Starter set for plant rows S, Display

15 m row of plants or sensitive vegetables/ornamental plants

Art. No. 13010

Drip line extension for rows of plants above ground 4.6 mm (3/16")

For extending the starter set for plant rows S, art. no. 13010

Art. No. 1362

Set

Starter set for plant rows M, automatic

25 m plant row (e. g. hedges or planted borders)

Art. No. 13011 /13012

Set

Starter set for plant rows L

50 m plant row (e. g. hedges) or planted borders

Art. No. 13013

Above-ground extension drip line for rows of plants, 13 mm (1/2")

For extending the starter set for plant rows M, art. no. 13011/ 13012 and starter set for plant rows L, art. no. 13013

Art. No. 13131

Starter sets

Set

Starter Set Plant Pots S

For 5 plant pots

Art. No. 13000

Set

Starter Set Plant Pots M

For 7 plant pots and 3 plant troughs

Art. No. 13001

Set

Starter Set Plant Pots M automatic

For 7 plant pots and 3 plant troughs

Art. No. 13002

Set

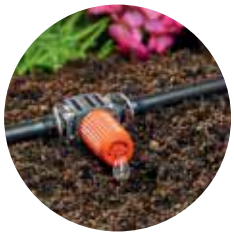
Starter Set for planted beds

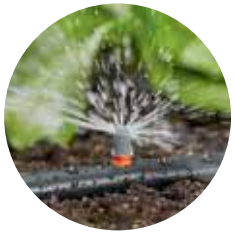
For 40 m² flower/kitchen garden beds

Art. No. 13015

Micro-Drip-System shopping list

To make sure you do not forget anything when you go shopping.





Notes:

	Art. No.	Designation	Quant
		System start accessories	
1	1355	Master Unit (water flow up to 1000 l/h)	
2	1354	Master Unit (water flow up to 2000 l/h)	
3	8313	Fertilizer Dispenser	
4	8322	Installation Tool	
		Supply Lines and Pipe Guides	
5	1346	Connecting Pipe (13 mm, 1/2"), 15 m	
5	1347	Connecting Pipe (13 mm, 1/2"), 50 m	
6	1350	Supply Pipe (4.6 mm, 3/16"), 15 m	
6	1348	Supply Pipe (4.6 mm, 3/16"), 50 m	
7	8358	Shut-Off Valve (13 mm 1/2")	
7	8357	Shut-Off Valve (4.6 mm 3/16"), contents: 2 pieces	
8	8380	Pipe Clip (13 mm 1/2"), contents: 2 pieces	
8	8379	Pipe Clip (4.6 mm 3/16"), contents: 5 pieces	
9	1327	Pipe Pegs (4.6 mm 3/16"), contents: 10 pieces	
9	1328	Pipe Pegs (13 mm 1/2")	
10	8328	Pipe Guide (13 mm 1/2"), contents: 3 pieces	
10	8327	Pipe Guide (4.6 mm 3/16"), contents: 3 pieces	
		Connectors and Accessories	
11	8339	4-Way Coupling (13 mm 1/2"), contents: 2 pieces	
11	8334	4-Way Coupling (4.6 mm 3/16"), contents: 10 pieces	
12	8333	Reducing T-Joint (13 mm 1/2"), contents: 5 pieces	
13	8329	T-Joint (13 mm 1/2"), contents: 2 pieces	
13	8330	T-Joint (4.6 mm 3/16"), contents: 10 pieces	
14	8382	L-Joint (13 mm 1/2"), contents: 2 pieces	
14	8381	L-Joint (4.6 mm 3/16"), contents: 10 pieces	
15	8356	Connector (13 mm 1/2"), contents: 3 pieces	
15	8337	Connector (4.6 mm 3/16"), contents: 10 pieces	
16	8324	Plug (13 mm 1/2"), contents: 5 pieces	
16	1323	Plug (4.6 mm 3/16“) contents: 10 pieces	
17	8331	T-Joint for Spray Nozzles (13 mm 1/2"), contents: 5 pieces	
17	8332	T-Joint for Spray Nozzles (4.6 mm 3/16"), contents: 5 pieces	
18	1377	Extension Pipe for Spray Nozzles, contents: 5 pieces	
19	1374	Control Valve for Spray Nozzles, contents 5 pieces	
20	8363	Extension Pipe for Oscillating Sprinkler OS 90, contents: 2 pieces	
		Endline drip heads for plant pots	
21	1340	Endline Drip Head, 2 l/h, contents: 25 pieces	
22	8310	Endline Drip Head (pressure equalizing), 2 l/h, contents: 10 pieces	
23	1391	Adjustable Endline Drip Head, 0–10 l/h, contents: 10 pieces	
24	8316	Adjustable Endline Drip Head (pressure equalizing), 1–8 l/h contents: 5 pieces	
		Inline drip heads for plant pots	
25	8343	Inline Drip Head, 2 l/h, contents: 10 pieces	
26	8311	Inline Drip Head (pressure equalizing), 2 l/h, contents: 10 pieces	
27	8392	Adjustable Inline Drip Head, 0–10 l/h, contents: 10 pieces	
28	8317	Adjustable Inline Drip Head (pressure equalizing), 1–8 l/h, contents: 5 pieces	
		Nozzles and Sprinklers	
29	1372	Endline Micro Strip Sprinkler, contents 5 pieces	
30	1370	Micro Strip Sprinkler, contents: 5 pieces	
31	1396	6-Pattern Spray Nozzle, contents: 2 pieces	
32	1369	Micro Rotor Sprinkler 360°, contents: 2 pieces	
33	1371	Micro Mist Nozzle, contents: 5 pieces	
34	1365	Spray Nozzle 360°, contents: 5 pieces	
34	1367	Spray Nozzle 180°, contents: 5 pieces	
34	1368	Spray Nozzle 90°, contents: 5 pieces	
35	8320	Small Area Spray Nozzle, contents: 10 pieces	
36	8321	Small Area Spray Nozzle (4.6 mm 3/16"), contents: 10 pieces	
37	8361	Oscillating Sprinkler OS 90	

Shopping list for your Sprinklersystem and Irrigation Control

To make sure you do not forget anything when you go shopping.

!Note

To ensure a permanent connection between the tap and connecting point with a stable pressure, connect the Adapter Piece, Art. No. 1513 after the Irrigation Valve to secure the hose.

Notes:

Art. No.	Designation	Quant
System connection		
2722	Connecting Point	
1505	“Profi” Maxi-Flow System Connector Set	
2713	“Profi” Maxi-Flow System Connection Set	
1513	Adapter Piece 26.5 mm (G3/4") / 33.3 mm (G1")	
8193	Twin-Tap Connector	
8194	Four Channel Water Distributor	
1510	Central Filter	
2724	Regulator and Shut-Off Valve	
8250	Water Connector	
2761	Connector 25 mm × 3/4" female thread	
2762	Connector 25 mm × 1" female thread	
2763	Connector 25 mm × 1" male thread	
2790	T-piece 25 mm × 3/4" female thread	
2760	Drain Valve	
System control accessories		
1189	Rain Sensor electronic	
1188	Soil Moisture Sensor	
1186	Extension Cable for Rain and Soil Moisture Sensor, 10 m	
19030	smart Sensor	
Water Timers and Computers and accessories		
1169	Water Timer	
1881	EasyControl	
1883	FlexControl	
1885	SelectControl	
1862	MultiControl (C 1030 plus)	
1874	MultiControl duo (C 2030 duo plus)	
1864	MasterControl (C 1060 plus)	
19031	smart Water Control	
1197	Water Distributor automatic	
Multi-Channel Control Systems and accessories		
1242	Programming Unit	
1250	Controller 9 V	
1251	Irrigation Valve 9 V	
1283	Irrigation Control System 4030	
1284	Irrigation Control System 6030	
19032	smart Irrigation Control	
1278	24 V Irrigation Valve	
1254	Valve Box V1	
1255	Valve Box V3	
1280	Connection Cable, 15 m	
1282	Cable Clip (contents: 6 pieces)	
1273	24 V Pump Control System	
Supply line		
2718	Connecting Pipe 25 mm, 10 m	
2700	Connecting Pipe 25 mm, 25 m	
2701	Connecting Pipe 25 mm, 50 m	
Sprinkler connection		
2771	T-piece 25 mm	
2773	L-piece 25 mm	
2775	Connector 25 mm	
2778	End-Piece 25 mm	
2780	L-piece 25 mm × 1/2" male thread	
2781	L-piece 25 mm × 3/4" male thread	
2782	Angle Piece 25 mm × 1/2" male thread	
2783	Angle Piece 25 mm × 3/4" male thread	
2786	T-piece 25 mm × 1/2" male thread	
2787	T-piece 25 mm × 3/4" male thread	
Pop-up Sprinkler		
1559	Large-Area Pop-up Irrigation AquaContour automatic (connecting: 3/4" female thread)	
8220	Pop-up Oscillating Sprinkler OS 140 (connecting: 3/4" female thread)	
8201	Turbo-driven Pop-up Sprinkler T100 (connecting: 1/2" female thread)	
8203	Turbo-driven Pop-up Sprinkler T200 (connecting: 1/2" female thread)	
8205	Turbo-driven Pop-up Sprinkler T380 (connecting: 3/4" female thread)	
1569	Pop-up Sprinkler S80 (connecting: 1/2" female thread)	
1566	Pop-up Sprinkler S80/300 (connecting: 3/4" female thread)	

The simple way to your own watering system

Would you like a convenient watering system in your garden?
This brochure provides you with all the information you need to decide which system you require. You will find out which different systems and solutions are available – and which advantages they can offer you. You can also read about how easy it is to plan and install your watering system. Use the integrated planning aids to take you through the planning of your garden irrigation system step by step. Installation tips are also provided to help you install your new system.

We are also pleased to help you with the following options:

- On the GARDENA website you will find the watering planner with which you can arrange your own individual Sprinklersystem or create the shopping list for your Micro-Drip-System right away online.
- The GARDENA Customer Service is also available to answer any questions you may still have regarding the GARDENA watering systems. And the service team can arrange a complete planning and installation service for you.
- You can also find interesting and informative videos about our irrigation solutions on our YouTube channel (youtube.com).

More about GARDENA
Would you like to know more about gardens and GARDENA? Just take a look in our other brochures, visit our website at www.gardena.com or subscribe to our free-of-charge newsletter.

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