Free Installation Guide

The best way to water plants, trees, shrubs, hanging baskets, and gardens

Up to 70% Water Savings
What is Drip-Irrigation?

A Drip-Irrigation system is a watering system designed to apply water to designated areas, such as gardens, flower beds, container plants, trees, and ground cover.

Why Install A Drip-Irrigation System?

- Saves Water—Water is delivered directly to the roots
- Saves Money—Up to a 70% reduction in water waste, resulting in lower water bills
- Saves Time—Replaces hand watering
- Healthier Plants—Plants flourish when receiving the precise amount of water
- Less Yard Maintenance—Delivers water to the plants, not to weeds

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IDENTIFY PLANTS WITH SIMILAR WATERING REQUIREMENTS

1–TREES & SHRUBS

2–GARDEN

3–GROUND COVER

4–POTTED PLANTS

WATER SOURCE AND PRESSURE

Water Source—Drip-Irrigation Systems can be connected to any of the following water sources. Select the best option for you.

1. Outside Hose Faucet
2. Existing Underground Sprinkler System
3. Direct Connection to an Irrigation Valve

Water Pressure—Obtain a water pressure gauge (available at most home improvement stores) and attach it to your source of water. Drip-Irrigation systems are designed to operate between 15–35 PSI (high water pressure may cause system failure).

PROCEED TO THE APPROPRIATE SECTION

1. For Hose Faucet Connection—proceed to the next page.
2. For Connection to Existing Underground Sprinkler System (Retrofit)—proceed to page 14.
3. For Connection to a Designated Irrigation Valve—proceed to page 22.
Connecting To A Hose Faucet

Connecting To An Outside Hose Faucet

An outside hose faucet is one of the simplest ways to connect your Drip-Irrigation system.

TIP—For complete hands-free watering, install an Orbit Electronic Hose Timer to the hose faucet prior to connecting your Drip-Irrigation system.

The following items are recommended for your hose faucet Drip-Irrigation system:

1. Anti-Siphon
   Prevents contaminants from entering your drinking water supply. (Required in most areas).
   (part # 61256D or 67750)

2. 3-in-1 Drip Faucet Connection
   A Pressure Regulator (25 PSI), Filter, and 1/2" Drip Tubing Adapter in one.
   (part # 66739 or 67739)

3. Distribution/Supply Tube
   The main supply line that feeds water to the Drip-Irrigation system. Distribution Tube may be installed either above or below ground. (part # 61080D, 67345 or 67346)
   TIP—To make installation easier, allow the 1/2" Distribution/Supply Tube to sit in the sun and soften prior to installation.

4. Tube End Cap
   Plugs the end of the 1/2" Distribution/Supply Tube and serves as a drain for the Drip-Watering system. (part # 67462, 66444, or 67444)

Important: Check local code requirements prior to installing any watering system.

Common Uses for Drip-Irrigation

1. Potted/Hanging plants—page 8
2. Ground Cover and Flower Beds—page 10
3. Large Plants, Small Trees & Shrubs—page 12

Select the application that best matches your needs.
COMMON HOSE FAUCET PROJECTS

SECTION 4

POTTED / HANGING PLANTS

Note: Steps 1–3 apply to both potted & hanging plants

1 Distribution/Supply Line—Place the ½” Distribution/Supply Line close to your Potted or Hanging Plants. Use ½” Tube Straps to secure the Tube and install a ½” End Cap.

2 Hole Punch—Punch holes in the ½” Distribution/Supply Line for each container or hanging basket. Next, insert ¼” Barbed Couplers into each hole.

3 Connect ¼” Distribution/Supply Line to each exposed Barbed Coupler and run the Distribution/Supply Line to each container/basket. Use ¼” Tube Straps to hold in place.

IMPORTANT: A single ¼” Distribution/Supply Line should not exceed 30’.

FOR POTTED PLANTS

4 Attach Multi-Stream Drippers to each ¼” Distribution/Supply Line and insert stake next to each plant.

5 Remove the ¼” End Cap and turn on water to flush system; replace cap.

6 Adjust water flow by twisting the top of the Multi-Stream Dripper.

FOR HANGING PLANTS

4 Attach Adjustable Flow Mist Sprayers to each ¼” Distribution/Supply Line and aim sprayer into the hanging basket.

5 Continue running lines to each hanging basket until the system is completed.

6 Remove the ¼” End Cap and turn on water to flush system; replace cap.

7 Rotate the flow control knob on the Mist Sprayer to adjust flow rate.

IMPORTANT: The maximum recommended number of Multi-Stream Drippers and Mist Sprayers per ½” supply line is 15.

Supplies needed

- ¼” Tube Straps (part # 65716 or 66716)
- ½” Tube Straps (part # 65715 or 66715)
- ¼” Distribution/Supply Tube (part # 67300, 67301, or 67303)
- ¼” Barbed Couplers (part # 66402 or 67402) or the ¼” Barbed Assortment Pack (part # 66431 or 67431)
- Stake with Multi-Stream Dripper (part # 66105, 67105 or 68105)
- Adjustable Flow Mist Sprayer (part # 66190 or 67191)
- Punch Tool (part # 61285 or 67756)
**Section 4**

**Common Hose Faucet Projects**

**Ground Cover & Flower Beds**

1. **Distribution/Supply Line**—Lay the ½” Distribution/Supply Line down the center of the Flower Bed or Ground Cover and install a ½” End Cap. Use Loop Stakes to hold in place.

2. **Low-Volume Sprinkler**—Following the illustrated example, place Quarter-Spray-Pattern Sprinkler Heads in the corners, Half-Spray-Pattern Sprinkler Heads along the sides, and Full-Spray-Pattern Sprinkler Heads in the center of your ground cover.

   *IMPORTANT: Spacing should be no more than 10’ from one sprinkler to the next.*

3. **Hole Punch**—Punch a hole on top of the ½” Distribution/Supply line for each Low-Volume Sprinkler. Next insert a ¼” Barbed Coupler into each hole.

4. **Connect the ¼” Distribution/Supply Line** to each of the exposed Barbed Couplers and run the Distribution/Supply Line to each sprinkler location. Cut tubing to desired length.

   *IMPORTANT: Keep Drip-Tubing lengths to less than 30’.*

5. **Attach the On-Stake Low-Volume Sprinkler** to each ¼” Distribution/Supply Line.

6. **Remove the ½” End Cap** and turn on water to flush system; replace cap.

7. **Rotate the flow control knob** to adjust flow rate.

   *IMPORTANT: The maximum recommended number of Low-Volume Sprinklers per ½” supply line is 16 at medium flow setting (8 at the maximum setting).*

**Supplies needed**

- ¼” Distribution/Supply Tube (part # 67300, 67301 or 67303)
- ¼” Barbed Couplers (part # 66402 or 67402) or the ¼” Barbed Assortment Pack (part # 66431 or 67431)
- Low-Volume Sprinkler on Stake (part # 67135, 67136, 67137 or 67138)
- ½” Loop Stake (part # 61442P, 65731 or 66731)
- Punch Tool (part # 61285 or 67756)
**COMMON HOSE FAUCET PROJECTS**  
**SECTION 4**

## SMALL TREES & SHRUBS

1. **Distribution/Supply Line**—Lay the ½” Distribution/Supply Line next to the base of your plants, shrubs, and trees. Install a ½” End Cap at the end of the tubing. Use Loop Stakes to hold in place.

2. **Hole Punch**—Punch holes on top of the ½” Distribution/Supply Line next to the base of each plant, shrub or tree. Insert the barbed end of a 4 GPH Flag Dripper into the hole.

3. If needed, attach ¼” Distribution/Supply Line to the end of the Flag Dripper and run the ¼” Distribution/Supply Line to the plant location.

4. Install an insect plug into the end of the ¼” Distribution/Supply Line.

5. Remove the ¼” End Cap and turn on water to flush system; replace cap.

Note: If your Drip-irrigation system is being installed on non-level ground, replace all 4 GPH Flag Drippers with 1 or 2 GPH Pressure Compensating Drippers to ensure consistent water flow across the entire system.

### Supplies needed:
- Flag Drippers (part # 65201, 66201 or 68201)
- ½” Loop Stake (part # 61442P, 65731 or 66731)
- ¼” Insect Plug (part # 66405 or 67405)
- Punch Tool (part # 61285 or 67756)

**IMPORTANT:** The total number of 4 GPH (Gallons per Hour) Flag Drippers attached to a single ½” Supply Line should not exceed 45.
CONNECTING TO AN EXISTING UNDERGROUND SPRINKLER SYSTEM

Connecting to an existing underground sprinkler system (or Retrofit) is a simple way to supply water to your Drip-Irrigation system. Retrofits are commonly used to conserve water by replacing inefficient shrub sprinklers and bubblers.

**Retrofit Drip-Irrigation systems consist mainly of**

1. Manifold—Attaches to a ½” riser and consists of 1 to 8 outlets.
2. ¼” Distribution/Supply Line
3. Low-Volume Sprinkler, Dripper, or Soaker Tube

**MANIFOLDS**

The main function of a Manifold is to distribute water through ¼” outlets. There are 4 types of Manifolds

1. **Adjustable Flow Manifolds**—Ideal when water system pressures exceed 40 PSI and where flow control is desired.
2. **Full Flow Manifolds**—Ideal for replacing inefficient shrub heads and bubblers.
3. **Shrub Adapter**—Ideal for micro-sprinklers.
4. **Riser Adapter Manifolds**—Permits Drip-Irrigation without eliminating a sprinkler head.

**INSTALLATION FOR ADJUSTABLE-FLOW, FULL-FLOW, AND RISER ADAPTER MANIFOLDS**

1. Remove sprinkler head from a ½” Riser and attach the manifold. (For Riser Adapter Manifold, reattach sprinkler head).
2. Remove Cap(s) from the ¼” Barb(s) and insert ¼” Distribution/Supply Line.
3. Attach a Low-Volume Sprinkler or Drip-Irrigation Dripper to the end of the Distribution/Supply Line.
4. To avoid high water pressure failure, install a ¼” High Pressure Clamp on all tube connections.
5. Position Drip-Irrigation Dripper next to plant.
6. If applicable, adjust flow-control knob for desired flow rate.

**COMMON RETROFIT PROJECTS**

1. **Container Plants and Shrubs**—page 16
2. **Shrubs and Large Plants**—page 19
CONTAINER PLANTS AND SHRUBS

Replacing hand watering with Drip-Irrigation

1. Connect an 8-Port or a 4-Port Adjustable Manifold to an exposed shrub riser. If a vacant riser is not available, use a Saddle Adapter to connect to the sprinkler line.

2. Remove Caps and attach ¼" Distribution/Supply Line to each ¼" Barb.

3. Run each ¼" Distribution/Supply Line to each container. Use ¼" Tube Straps to hold tube in place. (Window boxes and large containers may require more than one line.)

   IMPORTANT: A single ¼" Distribution/Supply Line should not exceed 30'.

4. Flush lines to clear any debris.

5. Select the appropriate Drip-Irrigation Dripper for each container and plant.

HANGING BASKETS AND WINDOW BOXES

Use Orbit’s FlexMist® (part # 66190) or Adjustable Mist Sprayer (part # 66191 or 67191).

POTTED PLANTS

Use Orbit’s Multi-Stream on a Stake (part # 66105, 67105 or 68105) or a Micro-Bubbler on a Stake (part # 67110).

SHRUBS

Use Orbit’s Low-Volume Sprinkler Head on 12" Stake. (See Parts List at end of manual for spray pattern options)

6. Adjust the flow rate by turning the flow control screw.
**Common Retrofit Projects**

**SECTION 6**

**Supplies Needed**
- 8-Port Adjustable Manifold (part # 61008P or 67000)
- Or
- 4-Port Adjustable Manifold (part # 66005 or 67005)
- The appropriate Drip-Irrigation Sprinkler listed above
- ¼” Tube Straps (part # 65715 or 66715)
- ¼” Distribution/Supply Tube (part # 67300, 67301 or 67303)

**FLOWER BEDS, GROUND COVER, SHRUBS AND LARGE PLANTS**

Replacing inefficient shrub heads with Drip-Irrigation

1. Remove shrub heads from risers and replace with "Full-Flow 4-Port Manifolds."
2. Remove Barb Caps from the manifolds and attach ¼” Distribution/Supply Lines to each exposed ¼” Barb. Run individual ¼” Distribution/Supply Line to each Low-Volume Sprinkler Head. Flush lines to clear any debris.

*IMPORTANT:* Full-Flow Manifolds do not have an internal pressure regulator. To avoid high pressure failures install ¼” High Pressure Clamps on all ¼” connections.

*IMPORTANT:* A single ¼” Distribution/Supply Line should not exceed 30’.

*Continued on next page*
FLOWER BEDS AND GROUND COVER

Attach a Low-Volume Sprinkler Head on 12” Stake, spaced no more than 10’ apart. (See Parts List for spray pattern options)

or

Multi-Stream Dripper on a stake, spaced no more than 3’ apart. (part # 66105, 67105 or 68105)

Note: Adjust the flow rate by turning the flow control on each Drip-Irrigation Sprinkler Head.

SHRUBS AND LARGE PLANTS

Use Orbit’s Multi-Stream Dripper on a Stake next to each shrub or large plant. (part # 66105, 67105 or 68105)

Supplies needed:

- Full-Flow 4-Port Manifold (part # 61004, 66025 or 67025)
- The appropriate Drip-Irrigation sprinkler head listed above
- ¼” Distribution/Supply Tube (part # 67300, 67301 or 67303)
- ¼” High Pressure Clamps (part # 66710 or 67710)
SECTION 7

DIRECT CONNECTION TO AN IRRIGATION VALVE

CONNECTION TO A DESIGNATED IRRIGATION VALVE

Direct connection to an underground irrigation valve is ideal for medium to large Drip-Irrigation projects. This application is most commonly used for gardens, large flower beds, shrubs, trees, and desert landscaping.

IMPORTANT:
- Contact the local water district for code requirements.
- Before digging, contact utility companies to mark utility lines.

Connection to a designated valve consists of
1. ¾” Irrigation Valve (manual or automatic)
2. Y-Filter (model 67736)

Note: Using a filter not designed for Drip-irrigation, may cause damage.
3. ½” Distribution/Supply Tubing (part 67345 or 67346) or ¾” PVC Pipe

SECTION 8

COMMON APPLICATIONS

1. Gardens—page 23
2. Desert Landscaping—page 25

GARDENS

1. Water Supply—Connect ¾” PVC to the end of the Y-Filter and run the PVC pipe down the center of the garden. Attach a ¾” Slip x ½” Threaded Tee for each row. Use an Automatic Drain Valve on the end of the pipe and on any low sections of the PVC pipe.

2. Screw in ½” Risers on each Tee (extending 6” to 8” above ground). Attach an Orbit® 4-Port Adjustable Manifold on each riser.

3. Remove manifold caps and attach ¼” Soaker Tube to each ¼” Barb. Run Soaker Tube along the base of each plant.

Tip—Use Metal Loop Stakes to hold the ¼” Soaker Tube in place.
4 Cut Soaker Tube to desired length and insert a ¼” End Plug.
   Note: Keep each ¼” Soaker Tube length to less than 15’.
5 Remove the Automatic Drain Valve, attached to the end of the PVC pipe and flush the line to remove any debris.
6 Adjust the flow rate by turning the Flow Control Screw.
   IMPORTANT: Do not attach more than 14 4-Port Manifolds

Supplies Needed
- ¾” Automatic Drain Valve (part # 51041)
- 4-Port Adjustable Manifold (part # 66005 or 67005)
- ¼” Loop Stakes (part # 65730 or 66730)
- ¼” Soaker Tubing (part # 61073, 67321, 67330 or 67331)
- ¼” End Plugs (part # 66403, or 67403 or the ¼” Barbed Assortment Pack (part # 66431 or 67431)
- ¾” Slip x ½” Threaded Tees
- ½” Risers

Water Supply—Connect a Pressure Regulator (part # 67740) to the Y-Filter and attach a Universal Male Adapter (part # 67454 or 67470). Next attach ½” Distribution/Supply line to the exposed end.
(See the top of page 26)
   IMPORTANT: Use a Pressure Regulator to avoid damage to the Drip-Irrigation system.

Common Projects

DESSERT LANDSCAPING

A Irrigation Valve
B Pressure Compensating Dripper with a Tube Stake
C Loop Stake
D End Cap
**Common Projects**

1. **Pressure Regulator**
2. **Y-Filter**
3. **Universal Male Adapter**
4. **½” Distribution/Supply Line**
5. **Threaded Coupler (sold separately)**
6. **Run Distribution/Supply Line next to plants, shrubs and trees you intend to water.** Next install a ½” End Cap. Use ½” Loop Stakes to hold the line in place.
7. **Hole Punch—Punch a hole in the ½” Distribution/Supply Line for each shrub or tree. Next insert a ¼” Barbed Coupler into each hole.**
8. **Connect the ¼” Distribution/Supply Line to each of the exposed Barbed Couplers and run it to the base of each shrub or tree. Cut tubing to desired length.**

**IMPORTANT:** A single ¼” Distribution/Supply Line should not exceed 30’.

5. **Remove the ½” End Cap and turn on water to flush ½” Distribution/Supply Line, then replace cap to flush ¼” Distribution/Supply Lines.**
6. **Attach a Pressure Compensating Dripper to each ¼” Distribution/Supply Line. To hold dripper in place, next to the base of the shrub or tree, use a Tube Stake.**

**Note:** More than one ¼” Distribution/Supply Line (with Pressure Compensating Dripper) may be required for large trees or shrubs.

**IMPORTANT:** Do not attach more than 57 2-GPH Pressure Compensating Drippers to a single ½” Distribution/Supply Line

**Supplies needed:**
- ½” Universal Male Adapter (part # 67454 or 67470)
- ½” Distribution/Supply Tubing (part #67345 or 67346)
- ½” End Cap (part # 67462, 67444 or 67468)
- ½” Loop Stake (part # 61442P, 65731 or 66731)
- Punch Tool (part # 61285 or 67756)
- ¼” Barbed Couplers (part # 66402 or 67402) or the ¼” Barbed Assortment Pack (part # 66431 or 67431)
- ¼” Distribution/Supply Tube (part # 67300, 67301 or 67303)
- Tube Stakes (part # 65721 or 66721)
- Pressure Compensating Dripper (part # 66205, 67205, 66206, 67206 or 68206)
**NOTES**

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**Orbit DripMaster Parts List**

**MANIFOLDS**
- 8-Port Manifold
  - 61008P, 66000, 67000
- 4-Port Manifold
  - 66005, 67005
- 4-Port Manifold
  - 61004D, 66025, 67025
- 1/2" MPT 2-Port Manifold
  - 67035
- 2-Port Manifold
  - 66030, 67030
- 1/2" Female Pipe Threaded Shrub Adapter with Threaded Outlet
  - 67056
- 1/2" Riser Adapter with 1/4" Barb
  - 66035, 67035
- 4-Port Adapter Manifold
  - 66060, 67060

**PIPE THREAD**
- Y-Filter
  - 3/4" Male Pipe Thread
  - 67736
- Pressure Regulators 25 PSI—3/4" Pipe Threaded
  - 67740
- 1/2" Pipe Thread Adapter
  - 67470, 67454

**FAUCET**
- 3-in-1 Faucet
  - Adapter Filter
  - Pressure Reducer
  - 1/2" Tubing Adapter
  - 67339
- Faucet Adapter 1/2" Distribution Tube
  - 67455, 67480
- Faucet Adapter 1/4" Distribution Tubing
  - 61249D, 67432
- Hose Thread Swivel x 1/2" Tubing Tee
  - 67481, 67456
- Hose/Tap Filter
  - 66735, 67735
- Pressure Regulators 25 PSI—Hose Threaded
  - 67741
- Hose Bib Anti-Siphon Valve
  - 61256D, 67750
- Plastic Hose-Y
  - 67745

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**SECTION 9**
Orbit Dripmaster Parts List

SECTION 9

LOW VOLUME SPRINKLER

- Mini Rotating Sprinkler
  66113, 67113
- Low-Volume Sprinkler
  Full 66116, 67116
  1/2 66117, 67117
  1/4 66118, 67118
  Strip 66115, 67115
- Low-Volume Sprinkler Head on 12’ Stake
  Full 67136
  1/2 67137
  1/4 67138
  Strip 67135
- Adjustable Mist Sprayer
  66191, 67191
- Adjustable FlexMist™
  66190

DRIPPERS AND BUBBLERS

- Multi-Stream Dripper
  66100, 67100
- Inline Dripper/Emitter
  66101, 67101
- Multi-Stream on a Stake
  66105, 67105, 68105
- Flag Dripper
  2 GPH 65200, 66200
  4 GPH 65201, 66201, 67201

DISTRIBUTION TUBE FITTINGS

- Barb Elbow
  66400, 67400
- Barb Tee
  66401, 67401
- Barb Coupling
  66402, 67402
- Barb End Plug
  66403, 67403
- Barb Shut-Off Valve
  66404, 67404
- Insect/Water Distribution Plug
  66405, 67405
- Coupler
  67451
- Tee
  67466
- End Cap
  67468

DISTRIBUTION/SUPPLY TUBE

- 1/4” Distribution Tube
  50’ 67300, 67303
  100’ 67301
- 1/2” Distribution Tube
  50’ 67345
  100’ 67346
  500’ 67347

1/4” SOAKER TUBE

- Extension Riser 6”
  66760
- 12” Tubing Stake
  67722 (with 12” Extension Riser)
- 1/4” Inline Stake
  66720, 67720
- 3/4” Female Hose Thread x 1/2” Barbed-Stake
  67727
- 1/2” Barbed Inline x Male Pipe Thread-Stake
  67725
- 1/2” Barb x Male Pipe Thread-Stake
  67726
- Tubing Holder Stake
  65721, 66721
- Loop Stake
  1/2” 61442P, 65731, 66731
  1/4” 65730, 66730
- Tubing Strap
  3/4” 65715, 66715
  ½” 65716, 66716
- 1/4” High Pressure Clamp
  66710, 67710
- Tube Punch Tool
  61285D, 66756, 67756

Hose/Faucet Adapter
67469
Male Pipe Threaded Adapter
67470
Coupler
67467
Elbow
67465
Tee
67466
End Cap
67468

1/4” POROUS SOAKER TUBE

Drilled Soaker Tubing 60’
61073, 67321

1/4” SOAKER TUBE

Drilled Soaker Tube
50’ 67330
100’ 67331

1/4” Porous Soaker Tube
50’ 67330
100’ 67331

1/4” SOAKER TUBE

Drilled Soaker Tubing 60’
61073, 67321

1/4” POROUS SOAKER TUBE

Drilled Soaker Tube
50’ 67330
100’ 67331

1/4” SOAKER TUBE

Drilled Soaker Tubing 60’
61073, 67321

1/4” POROUS SOAKER TUBE

Drilled Soaker Tube
50’ 67330
100’ 67331