



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?

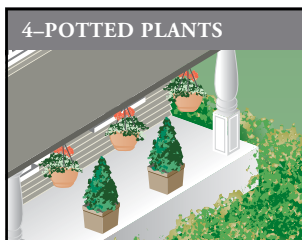
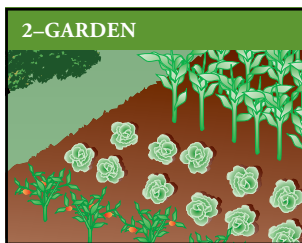
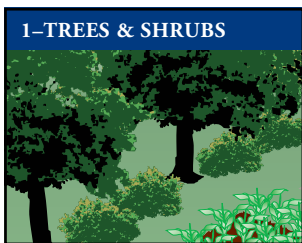
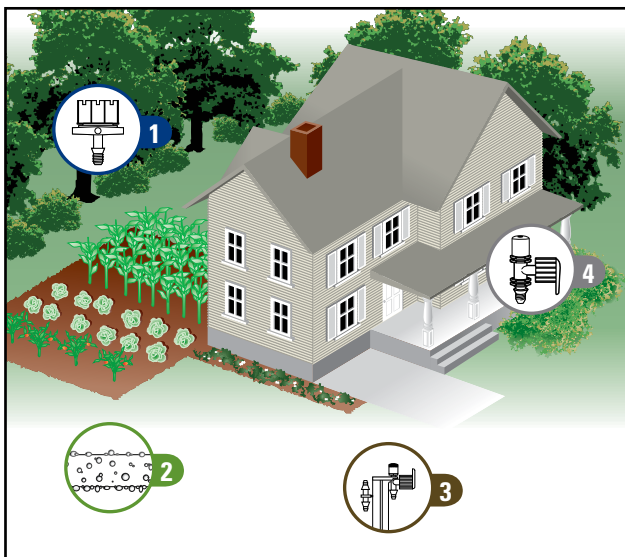
- Saves Water—Water is delivered directly to the roots
- Saves Money—Up to a 70% reduction in water waste, resulting in lower water bills
- Saves Time—Replaces hand watering
- Healthier Plants—Plants flourish when receiving the precise amount of water
- Less Yard Maintenance—Delivers water to the plants,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



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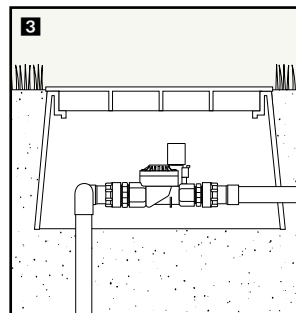
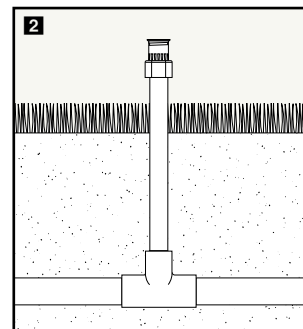
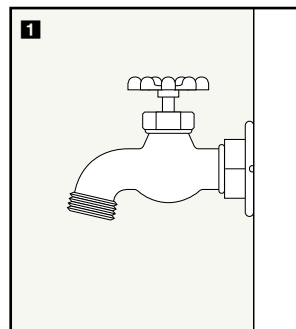
IDENTIFY PLANTS WITH SIMILAR WATERING REQUIREMENTS



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**

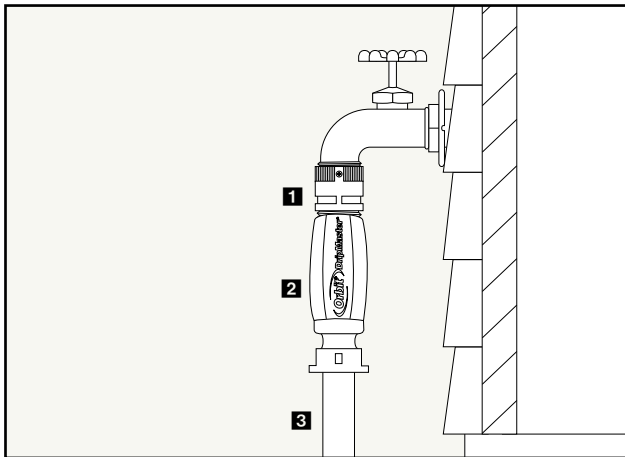


Water Pressure—Obtain a water pressure gauge (available at most home improvement stores) and attach it to your source of water. Drip-Irrigation systems are designed to operate between 15–35 PSI (high water pressure may cause system failure).

PROCEED TO THE APPROPRIATE SECTION

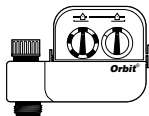
1. **For Hose Faucet Connection**—proceed to the next page.
2. **For Connection to Existing Underground Sprinkler System (Retrofit)**—proceed to page 14.
3. **For Connection to a Designated Irrigation Valve**—proceed to page 22.

CONNECTING TO 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)



1

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)

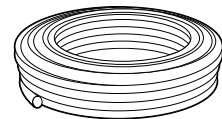


2

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.

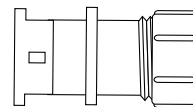


3

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

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)

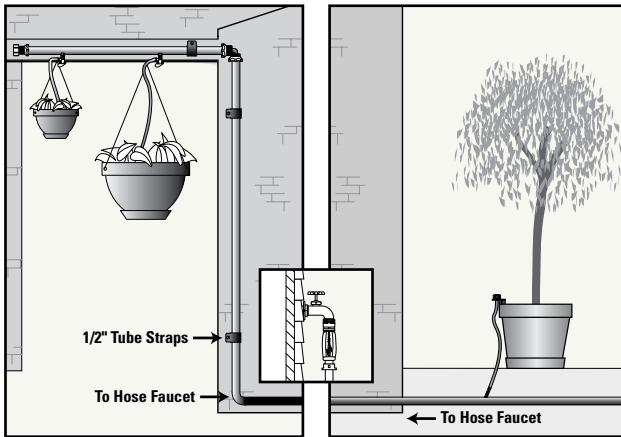


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COMMON USES FOR DRIP-IRRIGATION

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.

POTTED / HANGING PLANTS



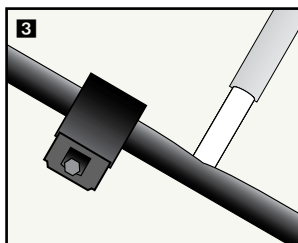
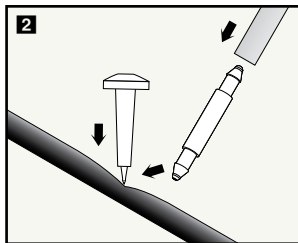
Note: Steps 1–3 apply to both potted & hanging plants

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.

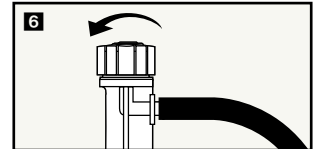
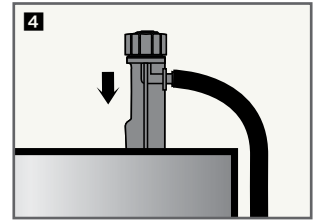
3 Connect ¼" Distribution/Supply Line to each exposed Barbed Coupler and run the Distribution/Supply Line to each container/basket. Use ¼" Tube Straps to hold in place.

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



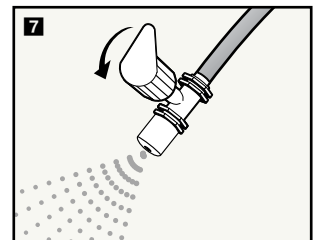
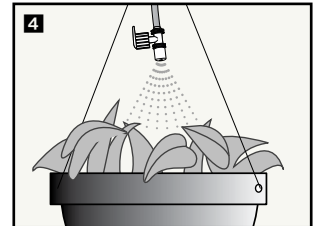
FOR POTTED PLANTS

- 4** Attach Multi-Stream Drippers to each ¼" Distribution/Supply Line and insert stake next to each plant.
- 5** Remove the ½" 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 ½" 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.

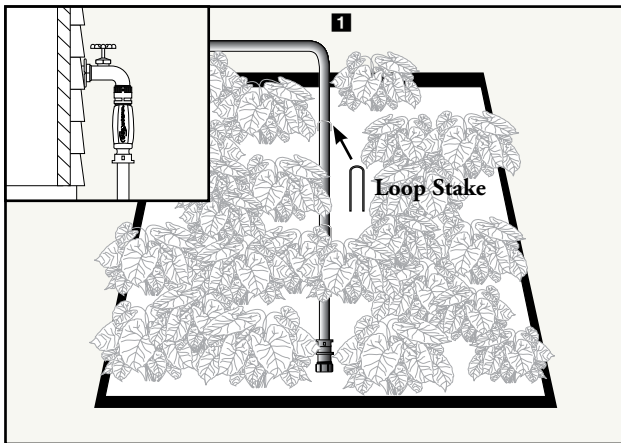


IMPORTANT: The maximum recommended number of Multi-Stream Drippers and Mist Sprayers per ½" supply line is 15.

Supplies needed

- ½" Tube Straps (part # 65716 or 66716)
- ¼" 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)

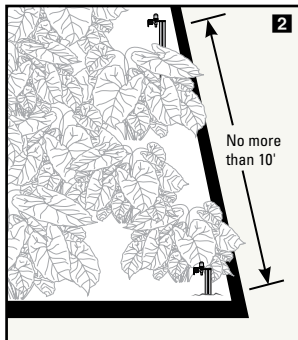
GROUND COVER & FLOWER BEDS



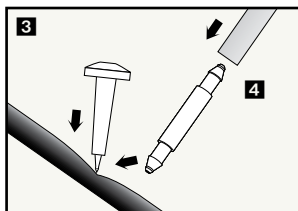
1 Distribution/Supply Line—Lay the ½" Distribution/Supply Line down the center of the Flower Bed or Ground Cover and install a ½" End Cap. Use Loop Stakes to hold in place.

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.



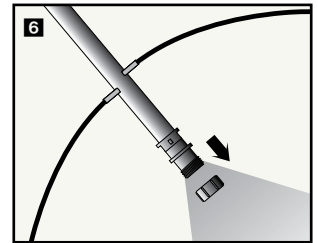
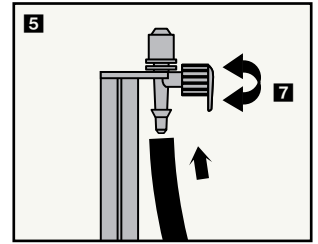
4 Connect the ¼" Distribution/Supply Line to each of the exposed Barbed Couplers and run the Distribution/Supply Line to each sprinkler location. Cut tubing to desired length.

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

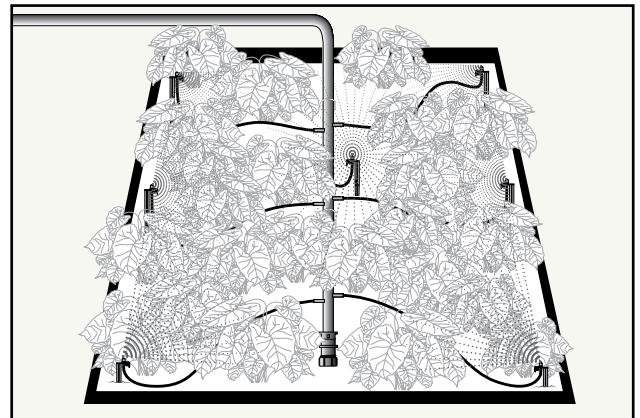
5 Attach the On-Stake Low-Volume Sprinkler to each ¼" Distribution/Supply Line.

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.



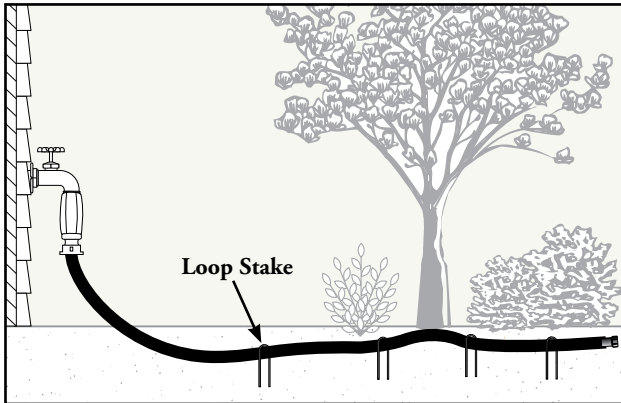
IMPORTANT: The maximum recommended number of Low-Volume Sprinklers per ½" supply line is 16 at medium flow setting (8 at the maximum setting)



Supplies needed

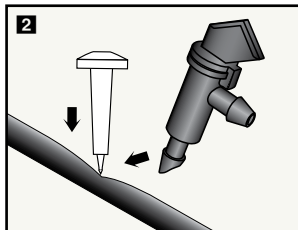
- ½" Distribution/Supply Tube (part # 67300, 67301 or 67303)
- ¼" Barbed Couplers (part # 66402 or 67402) or the ¼" Barbed Assortment Pack (part # 66431 or 67431)
- Low-Volume Sprinkler on Stake (part # 67135, 67136, 67137 or 67138)
- ½" Loop Stake (part # 61442P, 65731 or 66731)
- Punch Tool (part #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

SMALL TREES & SHRUBS

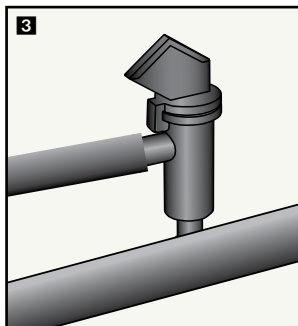


1 Distribution/Supply Line—Lay the ½" Distribution/Supply Line next to the base of your plants, shrubs, and trees. Install a ½" End Cap at the end of the tubing. Use Loop Stakes to hold in place.

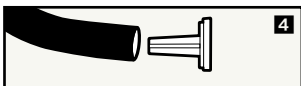
2 Hole Punch—Punch holes on top of the ½" Distribution/Supply Line next to the base of each plant, shrub or tree. Insert the barbed end of a 4 GPH Flag Dripper into the hole.



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.

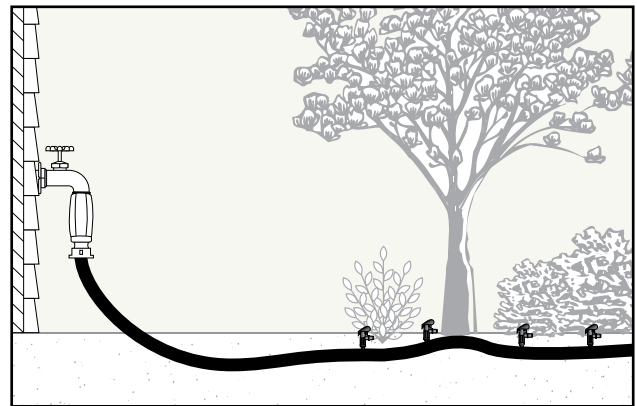
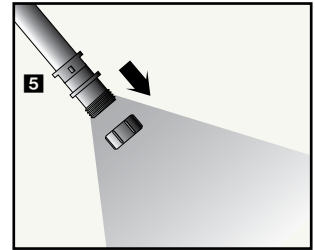


4 Install an insect plug into the end of the ¼" Distribution/Supply Line.



5 Remove the ½" 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 Drillers with 1 or 2 GPH Pressure Compensating Drillers to ensure consistent water flow across the entire system.



IMPORTANT: The total number of 4 GPH (Gallons per Hour) Flag Drillers attached to a single ½" Supply Line should not exceed 45.

Supplies needed:

- Flag Drillers (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)

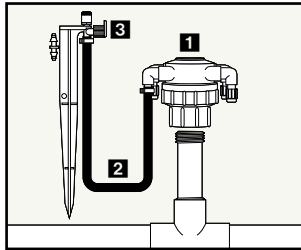
RETROFIT
SECTION 5

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

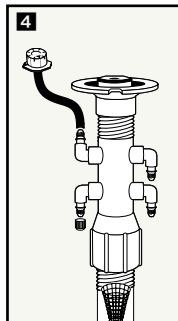
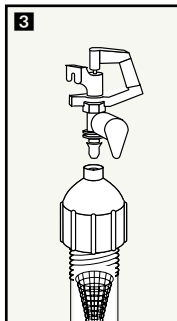
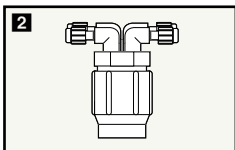
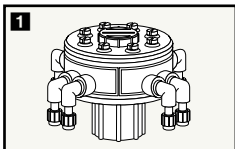


MANIFOLDS

The main function of a Manifold is to distribute water through ¼" outlets.

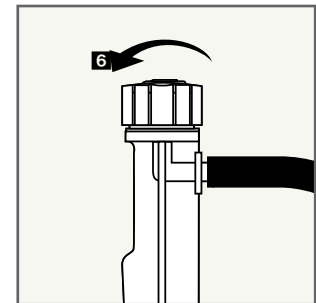
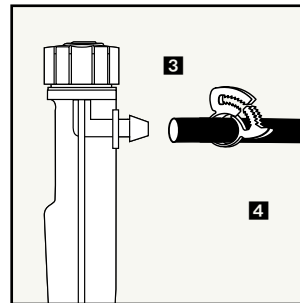
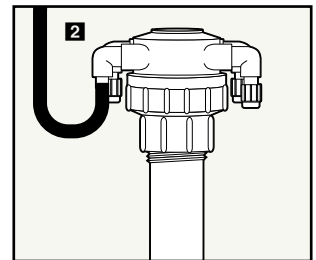
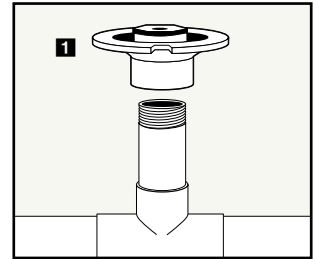
There are 4 types of Manifolds

- 1 Adjustable Flow Manifolds**—Ideal when water system pressures exceeds 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

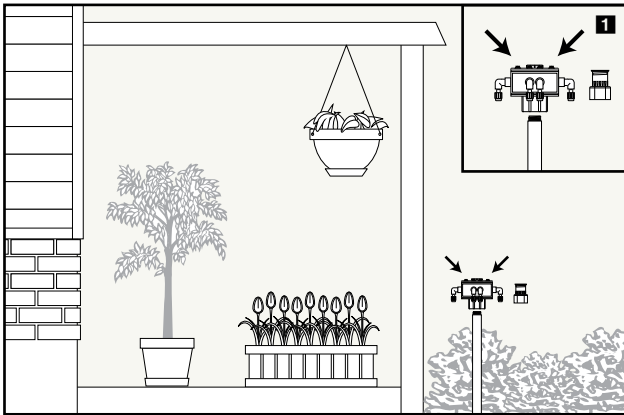
- 1. **Container Plants and Shrubs**—page 16
- 2. **Shrubs and Large Plants**—page 19

CONTAINER PLANTS AND SHRUBS

Replacing hand watering with Drip-Irrigation

1 Connect an 8-Port or 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.

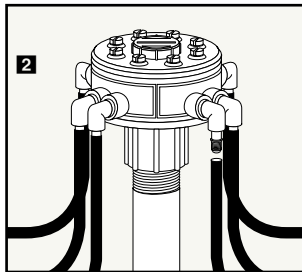


3 Run each ¼" Distribution/Supply Line to each container. Use ¼" Tube Straps to hold tube in place. (Window boxes and large containers may require more than one line.)

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).

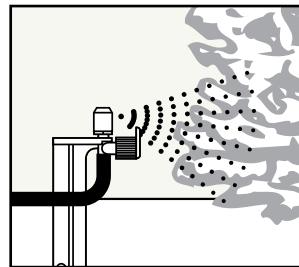
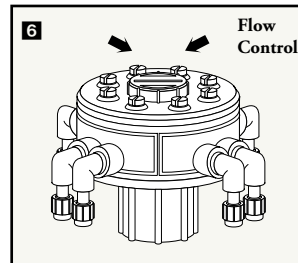
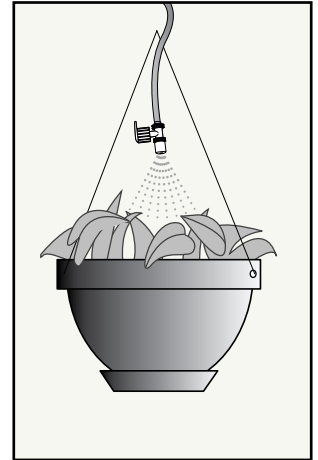
POTTED PLANTS

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

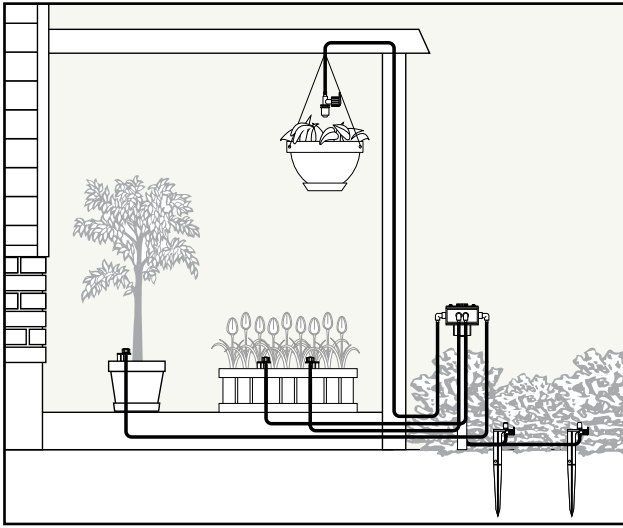
SHRUBS

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.



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Supplies Needed

- 8-Port Adjustable Manifold (part # 61008P or 67000)

Or

- 4-Port Adjustable Manifold (part # 66005 or 67005)

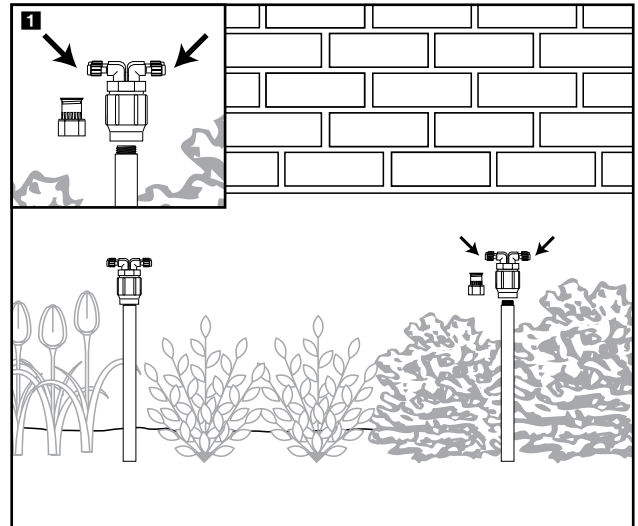
- The appropriate Drip-Irrigation Sprinkler listed above

- 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

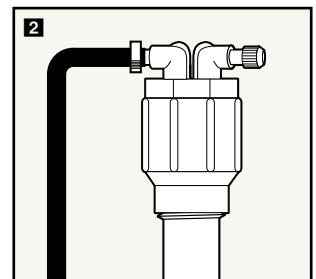


1 Remove shrub heads from risers and replace with "Full-Flow 4-Port Manifolds."

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

COMMON RETROFIT PROJECTS

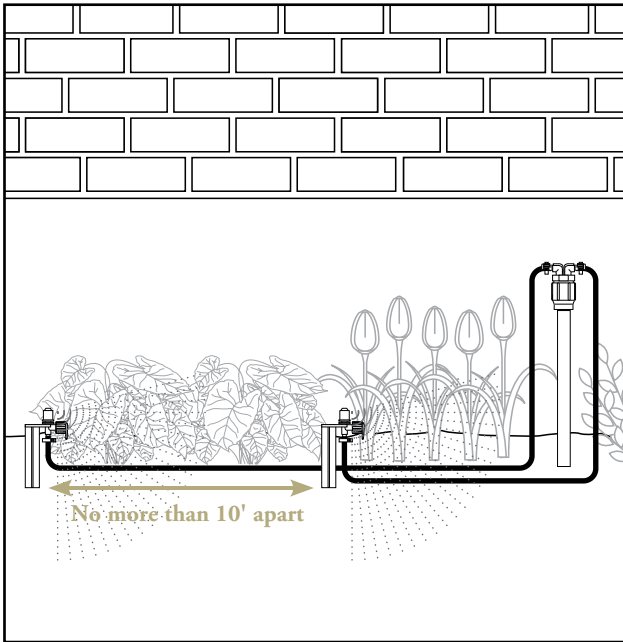
SECTION 6

FLOWER BEDS AND GROUND COVER

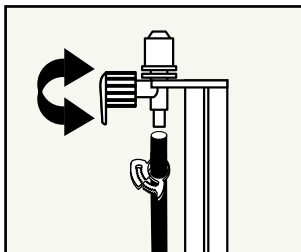
Attach a Low-Volume Sprinkler Head on 12" Stake, spaced no more than 10' apart. (See Parts List for spray pattern options)

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.

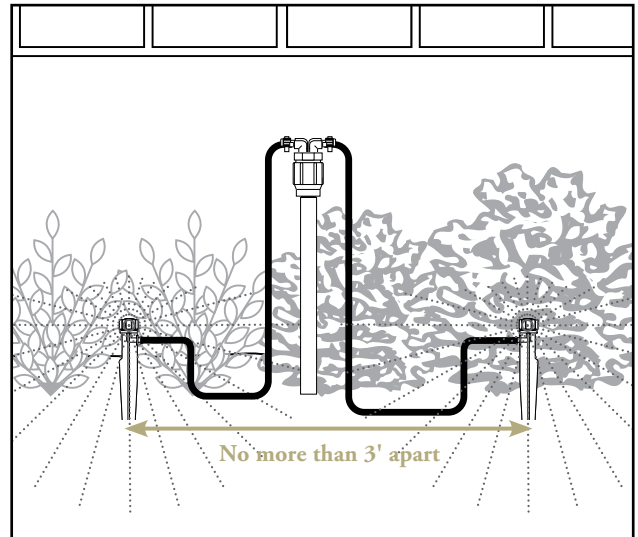


COMMON RETROFIT PROJECTS

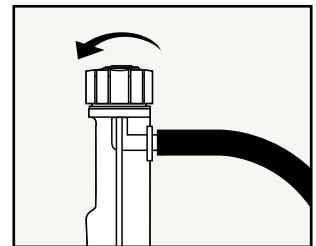
SECTION 6

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)



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



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)

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:

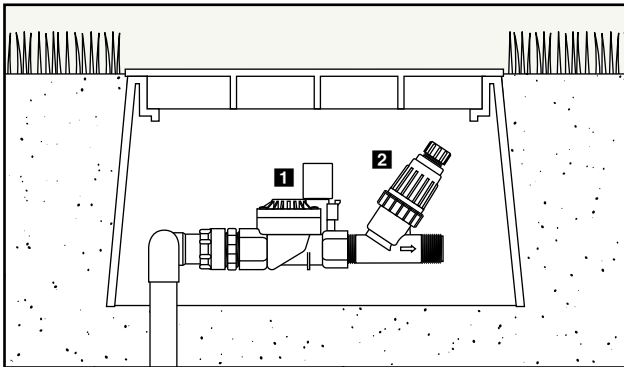
- Contact the local water district for code requirements.
- Before digging, contact utility companies to mark utility lines.

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

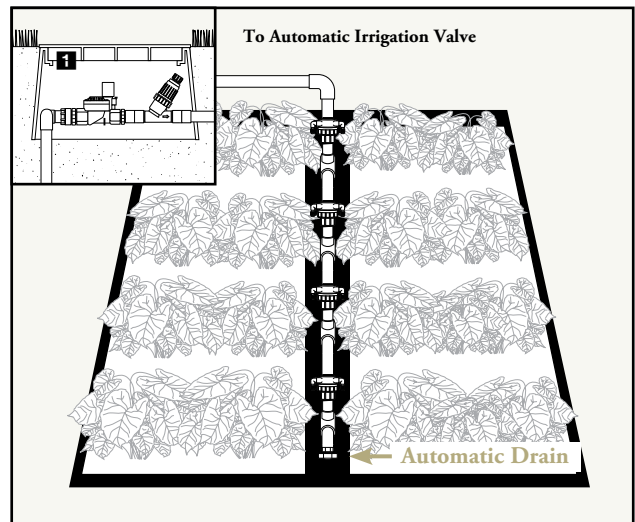


COMMON APPLICATIONS

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

GARDENS

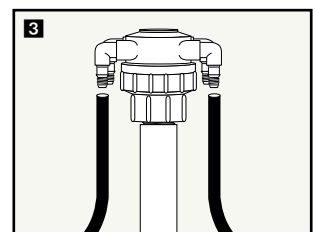
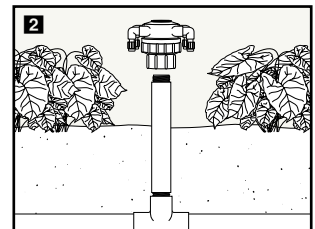
1 Water Supply—Connect ¾" PVC to the end of the Y-Filter and run the PVC pipe down the center of the garden. Attach a ¾" Slip x ½" Threaded Tee for each row. Use an Automatic Drain Valve on the end of the pipe and on any low sections of the PVC pipe.



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

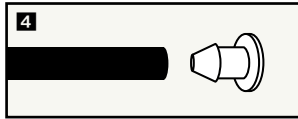
3 Remove manifold caps and attach ¼" Soaker Tube to each ¼" Barb. Run Soaker Tube along the base of each plant.

Tip—Use Metal Loop Stakes to hold the ¼" Soaker Tube in place.



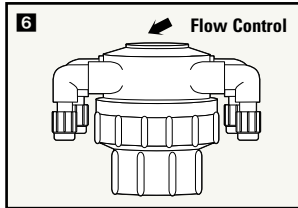
- 4** Cut Soaker Tube to desired length and insert a ¼" End Plug.

Note: Keep each ¼" Soaker Tube length to less than 15'.

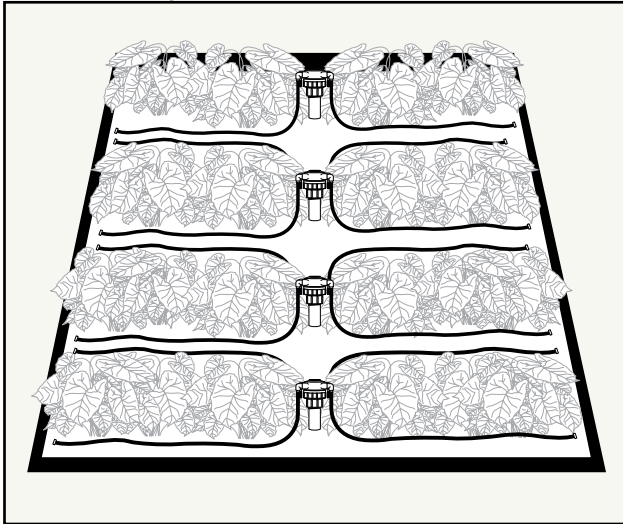


- 5** Remove the Automatic Drain Valve, attached to the end of the PVC pipe and flush the line to remove any debris.

- 6** Adjust the flow rate by turning the Flow Control Screw.



IMPORTANT: Do not attach more than 14 4-Port Manifolds



Supplies Needed

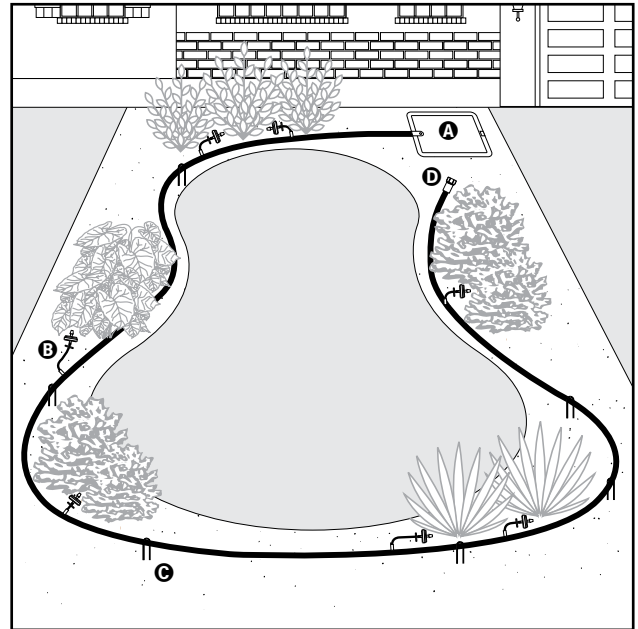
- ¾" Automatic Drain Valve (part # 51041)
- 4-Port Adjustable Manifold (part # 66005 or 67005)
- ¼" Loop Stakes (part # 65730 or 66730)
- ¼" Soaker Tubing (part # 61073, 67321, 67330 or 67331)
- ¼" End Plugs (part # 66403, or 67403 or the ¼" Barbed Assortment Pack (part # 66431 or 67431)
- ¾" Slip x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

COMMON PROJECTS

SECTION 8

DESERT LANDSCAPING

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

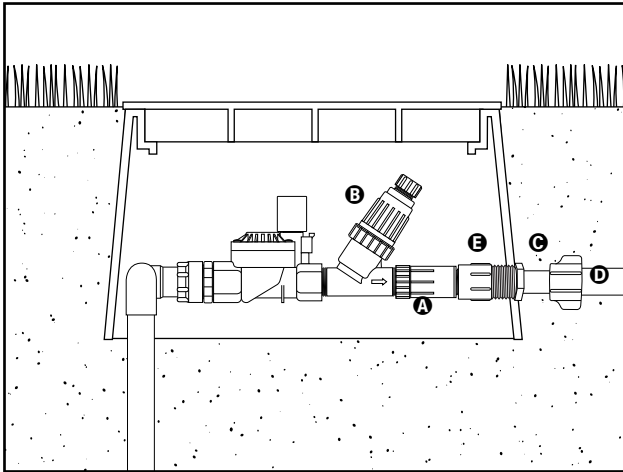


- 1** Water Supply—Connect a Pressure Regulator (part # 67740) to the Y-Filter and attach a Universal Male Adapter (part # 67454 or 67470). Next attach ½" Distribution/Supply line to the exposed end. (See the top of page 26)

IMPORTANT: Use a Pressure Regulator to avoid damage to the Drip-Irrigation system.

COMMON PROJECTS

SECTION 8



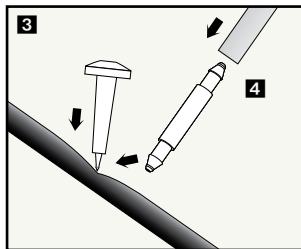
- A** Pressure Regulator
- B** Y-Filter
- C** Universal Male Adapter
- D** ½" Distribution/Supply Line
- E** Threaded Coupler (sold separately)

2 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.

3 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.

4 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'.

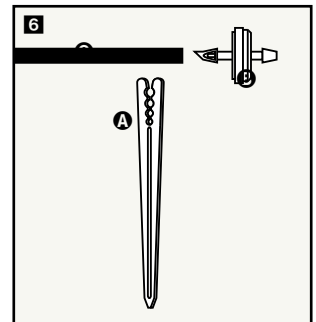
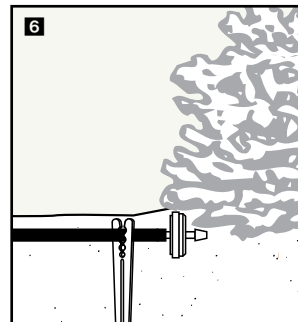
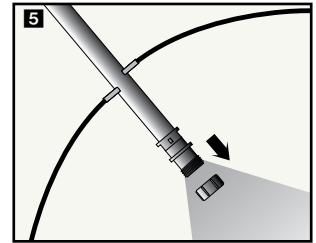


5 Remove the ½" End Cap and turn on water to flush ½" Distribution/Supply Line, then replace cap to flush ¼" Distribution/Supply Lines.

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



- A** Tube Stake
- B** Pressure Compensating Dripper
- C** ¼" Distribution/Supply Line

Supplies needed:

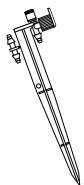
- ½" Universal Male Adapter (part # 67454 or 67470)
- ½" Distribution/Supply Tubing (part #67345 or 67346)
- ½" End Cap (part # 67462, 67444 or 67468)
- ½" Loop Stake (part # 61442P, 65731 or 66731)
- Punch Tool (part # 61285 or 67756)
- ¼" Barbed Couplers (part # 66402 or 67402) or the ¼" Barbed Assortment 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)

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



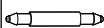
Pressure Compensating Dripper
1 GPH 66205, 67205
2 GPH 66206, 67206, 68206

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
67452



Elbow
67450



End Cap
67462



Shut-Off Valve
67463

1/4" Distribution Tube Connectors

1/2" Distribution Line Connectors fits .690 to .710 drip tubing

Universal 1/2" Distribution/Supply Line Connectors



Hose/Faucet Adapter
67469



Male Pipe Threaded Adapter
67470



Coupler
67467



Elbow
67465



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


Drilled Soaker Tubing 60'
61073, 67321



1/4" Porous Soaker Tube
50' 67330
100' 67331

1/4" SOAKER TUBE


Extension Riser 6"
66760



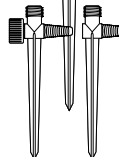
12" Tubing Stake
67722 (with 12" Extension Riser)



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
1/4" 65715, 66715
1/2" 65716, 66716



1/4" High Pressure Clamp
66710, 67710



Tube Punch Tool
61285D, 66756, 67756



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