

# TOP 12-Outlet Drip Zone



Color coded converter barb allows the use of 1/4" distribution tubing

1/4" elbow converter allows the use of 1/4" distribution tubing

## Features:

- 12-outlet emitter
- 12 individually pressure compensating, self flushing emitters to minimize clogging
- Flow rates .6, 1, 2.2 and 3.3 gph (2.2, 4, 8.3, 12.5 l/h)
- Interchangeable emitters to combine flow rates in a single head
- Color coded emitters and barbs easily identify flow rate at each zone
- Each emitter individually filtered (approximately 80 mesh)
- Backup mini-disk filter
- Rugged materials to withstand the most adverse conditions
- Install above grade or place below grade in a 6" emitter box
- 1/4" elbow and barb allow the use of 1/4" distribution tubing
- Inlet plugs provide closure options of up to eight emitters

## Specifications:

- Emitter Dimensions: 3" W x 2" H (7.6 cm W x 5 cm H)
- TOP Flow Rates:
  - .6 gph per zone (2.2 LH) Color Code – Black
  - 1 gph per zone (4 LH) Color Code – Red
  - 2.2 gph per zone (8.3 LH) Color Code – Green
  - 3.3 gph per zone (12.5 LH) Color Code – Purple
- Recommended Working Pressure: 15-50 PSI (1-3.5 bar)
- Use with 1/8" (.187 OD) or 1/4" (.156 ID) distribution tubing
- Operating Pressure: 8-80 PSI
- TOP Kits contain 100' 1/8" distribution tubing, accessories and stakes
- 1/2" female NPT thread
- Filter mesh requirement: 155 mesh

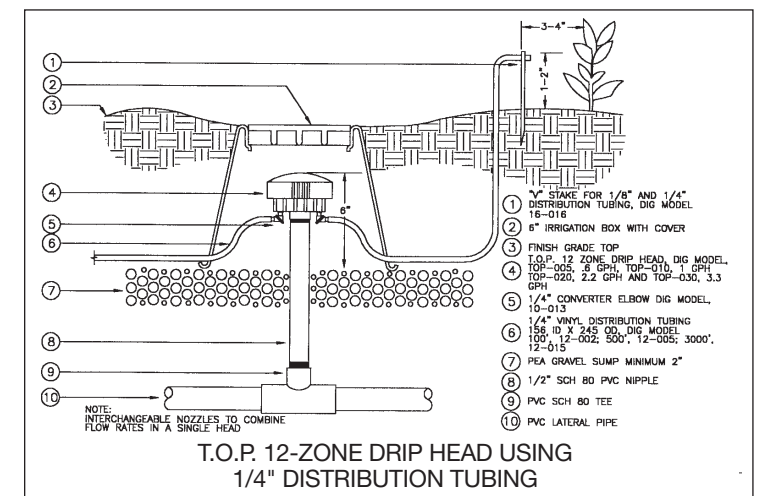
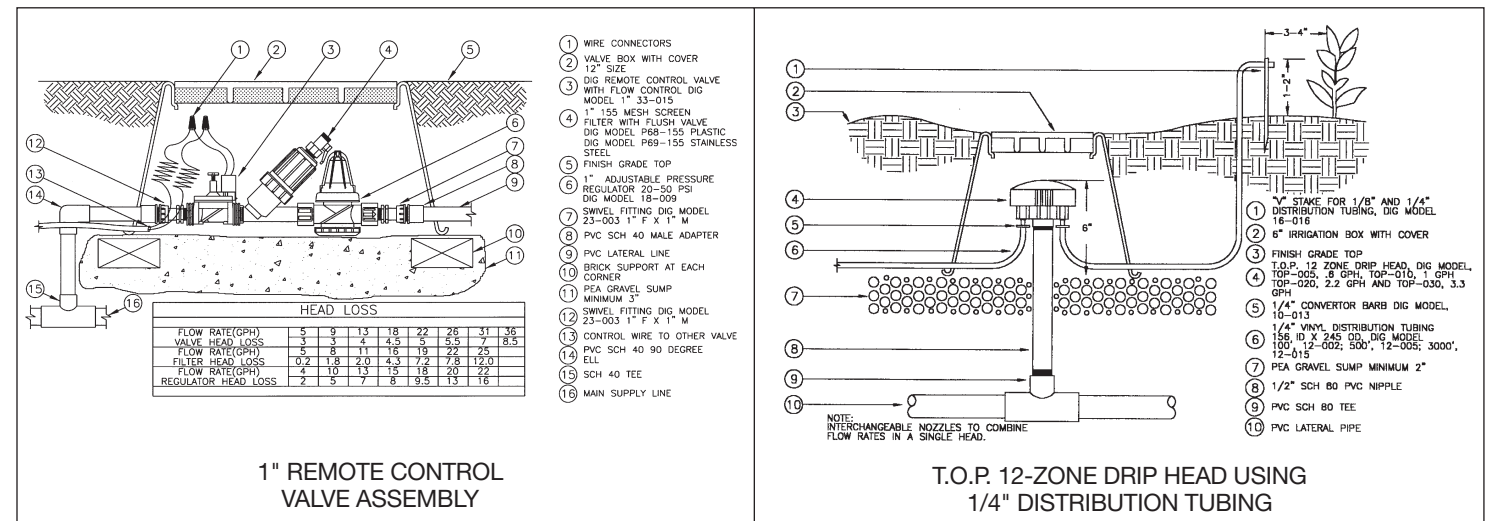
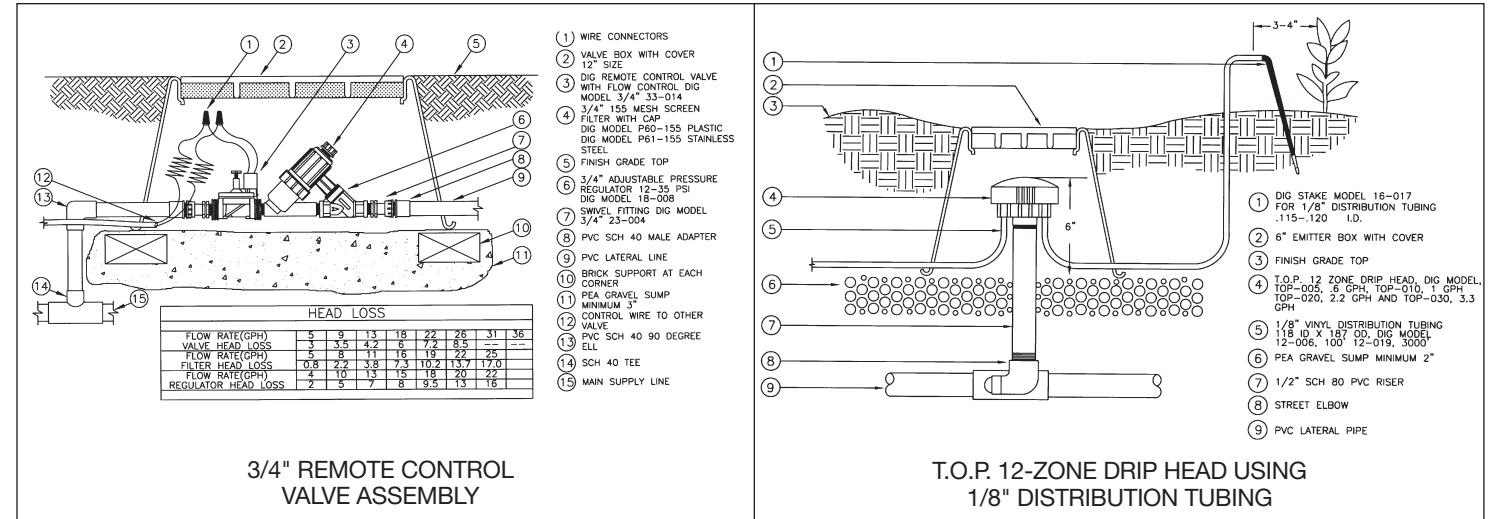
## Ordering Information

Model	Description
TOP-005	.6 GPH per zone
TOP-010	1 GPH per zone
TOP-020	2.2 GPH per zone
TOP-030	3.3 GPH per zone
TOP-100	KIT with 1 GPH per zone
TOP-300	KIT with 3.3 GPH per zone



## T.O.P. 12-Outlet Drip System Typical Installation

Drawing File No.: TOP.exe



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# PRODUCT SPECIFICATIONS

## Section 02811 – Irrigation Systems

### Part 1 Products

#### 1.1 TOP™ 12 OUTLET PRESSURE-COMPENSATING DRIP HEAD

The TOP 12 outlet pressure compensating drip head shall be a manifold with twelve independent pressure compensating emitter outlets conforming to the following:

The TOP pressure compensating drip/emitter head shall be constructed of heavy-duty plastic with a 1/2" FNPT inlet and twelve outlet ports that will accept 1/8" distribution tubing with .118 ID or with the addition of a color coded converter barb or elbow that may attach to a 1/4" distribution tubing with an inside diameter of .150 " to .160". The TOP drip emitter head shall have a minimum of 12 outlets and shall be able to operate in a pressure range from 8 to 80 PSI. The TOP shall have emitter uniformity of 94% to 97% @ 50 PSI at a constant flow rate, the manufacturer's co-efficient of variation (CV) of .05 for .63 GPH, .07 for 1 GPH, .03 for 2.2 GPH and .01 for 3.3 GPH (CIT Tested). The TOP head shall be ultra-violet-resistant with a unique individual self-flushing, pressure compensating color-coded nozzle. The TOP shall be used for above or below grade installation. Each outlet shall operate by an individual emitter that can have the option to be removed and replaced from the body by unscrewing the threaded cap, lifting the mini disk filter and using the TOP tool or screwdriver to remove the emitters. The primary 80-mesh Mini-Disk™ filter made of plastic shall sit above the emitter and can be serviced and may be removed by hand.

**The individual self-flushing, pressure-compensating emitter shall be constructed of four individual pieces:**

1. The lower part of the nozzle shall have four (4) regulating grooves, which serve as a secondary filter of approximately 80 mesh and have a vortex mechanism with a groove on the side of the lower part to allow the water to pass through.
2. The silicon diaphragm allows excessive pressure to build up within the chamber and flush debris that may not be captured by the filter.
3. Outlet plastic body of the emitter is sonically welded to the bottom half and has one to two water release outlet(s).
4. The black "o" ring assembly to the emitter body shall support the emitter inside the TOP housing.

#### Operation:

1. The nozzle shall have nominal flow rates with black representing 0.6 GPM, red representing 1 GPM, green representing 2.2 GPM and purple representing 3.3 GPM.
2. The recommended working pressure shall range from 15 to 50 PSI.

The minimum pressure on the last head should not drop below 12 PSI to ensure the proper function of the self-flushing mode. The operating sequence should be below 8 PSI, the nozzles are in self-flushing mode and is achieved as follows: at 0-3 PSI the flow is relatively high, the nozzle is in flushing mode and the diaphragm is completely open allowing purge of sediment or other debris that may not have been captured by the mini disc filter. As the pressure increases between 3 to 8 PSI, the diaphragm slowly begins to close, flow is still high but steadily decreasing. The diaphragm is closed between 8 to 80 PSI and the flow is constant.

**During initial system pressure build-up of up to 10 PSI, the flow discharge will increase by up to 15% and bring the TOP system to a flushing mode.**

### 1.2 TOP System Accessories:

#### 1.2.1 AC Control Valve Assembly for Drip System

The AC valve assembly shall be comprised of three components assembled together from the manufacturer. The components shall include a 3/4" or 1" FIPT low flow 24 VAC remote control valve, 3/4" or 1", 155 mesh screen filter and 3/4" or 1" FIPT adjustable pressure regulator (3/4" = 28 to 60 PSI; 1" = 20 to 50 PSI)

1. The remote control valve shall be globe type normally closed using 24 VAC (50-60 cycles). The valve shall be pressure rated up to 150 PSI and have balanced opening and closing. The valve(s) body size shall have a 3/4" FNPT inlet and outlet and constructed of weather resistant, high impact glass reinforced nylon and stainless steel spring (303). The valve(s) one-piece diaphragm shall be of nylon fabric reinforced polyisoprene (NR). The valve(s) shall have a flow control and internal manual bleed located under the solenoid and allowed for manual operation by turning the manual bleed handle 1/2 turn. The valve shall provide easy access for removing all parts from the top of the valve without disturbing normal valve installation.
2. The 3/4" or 1" all purpose WYE filter shall be constructed of UV resistant, non-corrosive material with a pressure rating of up to 150 PSI, the filter screen shall be color coded green and constructed of molded polyester plastic frame with fabric attached to it and shall have a minimum of 155 mesh screen with filtration area of 11 square" (69 cm) and a maximum recommended flow rate of 10 to 12 GPM
3. The adjustable direct acting pressure regulator 3/4" or 1" shall be constructed of UV resistant, non-corrosive material with maximum upstream pressure not to exceed 125 PSI. The unit shall be a DIG type, adjustable pressure regulator with a rolling diaphragm made of neoprene that completely separates the spring assembly from dirt or contaminants in the flow stream and ensures immediate change to inlet pressure variation. The adjustable pressure regulator shall be capable of regulating downstream pressure from 28 to 60 PSI by turning the color-coded red knob on the top (+ -) using a screwdriver to increase or decrease pressure

#### 1.2.2 Distribution Tubing

The standard distribution tubing shall be DIG type 1/8" and it shall be made of ultra-violet-resistant, flexible vinyl with a wall thickness of .118 ID x .187 OD, to be used directly with TOP 12 outlet pressure compensating drip head or with the addition of a 1/4" converter barb or elbow a 1/4" distribution tubing made of ultra-violet-resistant, flexible vinyl or poly with an inside diameter of .156 to .165 ID and .245 OD can be used.

#### 1.2.4 Distribution Tubing 1/4" Barbed or Elbow Converter

The barb or elbow converter shall be DIG type and shall have compression by 1/4" barb to be inserted to the TOP 12 outlet ports and used with a flexible vinyl distribution tubing with an inside diameter of .156 to .165.

#### 1.2.5 Distribution Tubing Holding Stake

The tubing ends shall be secured by using an ultra-violet-resistant 6" long, high durability plastic stake with barb that is specifically designed to hold 1/8" or V stake to hold 1/4" distribution tubing.

#### 1.2.6 Drip Irrigation Box with Cover

The box and box cover (as detailed) shall be constructed of ultra-violet-resistant plastic with narrow slots in the bottom of the box to allow the installation of distribution tubing to the TOP 12 outlet pressure compensating drip head. The removal of the cover will allow for periodic inspection, servicing and maintaining of the TOP 12 outlet.

### Part 2 Submittals

**Fill in the appropriate number of units and submit (qty) with a copy of the catalog and instruction manual.**

- a. The TOP 12 zone emitter head shall be \_\_\_\_\_ each of the [TOP-005] .6 GPH per zone [TOP-010] 1 GPH per zone [TOP-020] 2 GPH per zone [TOP-030] 3.3 GPH per zone.
- b. The 1/8" distribution tubing shall be \_\_\_\_ each of [12-006] 100' with 118 ID x .187 OD vinyl black, be \_\_\_\_ each of [12-036] 1000' with 118 ID x .118 OD vinyl black, be \_\_\_\_ each of [12-019] 3000' with 118 ID x .118 OD vinyl black.
- c. The stake to hold 1/8" or 1/4" distribution tubing shall be \_\_\_\_ each of [16-016] plastic black "V" stake or stake to hold 1/8" only shall be \_\_\_\_ each of 16-017 black stake with barb.
- d. The bag cap shall be attached at the end of the distribution tubing, preventing bugs and dirt from restricting the flow and shall be \_\_\_\_ each of [10-016] strip of 12 with color-coded black.
- e. Converter barb shall be used with a 12 outlet drip head to accept 1/4" vinyl distribution tubing with an inside diameter of .150 ID to .165 ID and shall be \_\_\_\_ each of [10-017] black converter barb to be used with .6 GPH [10-012] red converter barb to be use with 1 GPH, [10-013] green converter barb to be use with 2.2 GPH [10-014] purple converter barb to be use with 3.3 GPH.
- f. The converter elbow shall be used with a 12 outlet drip head to accept 1/4" vinyl or poly distribution tubing with an inside diameter of .150 to .165 and shall be \_\_\_\_ each of [25-007] black converter elbow.
- g. If used with the converter barb or elbow, the 1/4" distribution tubing shall be \_\_\_\_ each of [12-002] 100' 1/4" with 156 ID x .245 OD vinyl black, be \_\_\_\_ each of [12-050] 1/4" 1000' with 156 ID x .245 OD vinyl black, be \_\_\_\_ each of [12-015] 1/4" 3000' with 156 ID x .245 OD vinyl black.
- h. The AC control zone valve assembly shall have 3/4" or 1" plastic in-line valve, filter with (155 mesh) polyester screen and adjustable pressure regulator (12-35 PSI) and shall be \_\_\_\_ each of [P39-075] 3/4" or [P39-100] AC control valve assembly.

### Part 3 Execution

#### 3.1 TOP System Installation

##### 3.1.1 AC Control Valve Assembly Installation

Install control valve assemblies with filter and adjustable pressure regulator below grade, inside the irrigation box using PVC a male thread adapter or swivel fitting, flush main line prior to installation of the control valve. When using with swivel adapter, the male thread of the swivel fittings shall be attached to the inlet and outlet side of the valve. The female thread side of the swivel shall be attached to a PVC male adapter without tools, pipe dope or teflon tape and fastened hand tight. Install valve assembly with a minimum of 2 to 4" clearance from the top of the box. The arrow molded on the AC valve shall be pointing in the direction of the water flow. Each control wire shall be coiled separately with a 2" service and shall be laid loosely without stress or stretching. Wires shall be taped together and labeled with station number. Valve wires shall be connected using sealed waterproof splices. Support each corner of the irrigation box with a common red brick. Valve box support and placement shall conform to standard methods used by the irrigation industry. After installation of all pipes and risers for the TOP 12 outlet and before installing the TOP drip heads, the contractor shall operate the control valve assembly manually by turning the manual lever 1/4 turn to open and to close confirming proper operation of valve assembly. The contractor shall then pressurize the system, flush and test the line and install all drip components.

##### 3.1.2 TOP 12 Outlet Pressure Compensating Drip Head Installation

After installation of all control valves PVC pipes, risers and the system has been flushed out, install drip head to the 1/2" riser assembly. Conforming to the manufacturers recommendation or to standard methods used by the irrigation industry and as detailed. Plant all specimens of trees and shrubs. Excavate a narrow path to a depth of 4-10" below finish grade from each plant to the nearest riser and lay out all distribution tubing indicated on the plans (see installation detail). Remove the cover and the Mini-disc™-filter. Attach 1/8" distribution tubing to outlet ports or if used with 1/4" distribution tubing, connect 1/4" converter or elbow barb side to 1/4" distribution tubing and then attach to the drip outlet ports. Use the rubber caps to close off any unused outlets. Install Mini-Disk™ filter and cover to the drip head and tighten cover by hand, Secure 1/8" or 1/4" distribution tubing in plant root zone. If using more than one outlet, space outlets a minimum 6" to 8" apart using the 6" plastic stake and add a bug cap at the end if needed, insert stake into soil, level with distribution tubing. Pressurize the system to verify that all heads are working correctly. Install subterranean drip irrigation box and group all distribution tubing between the two outlets of the irrigation box (see manufacturers specification). The number of drip heads on line shall not exceed specification recommendation.

#### 4.1 Field Quality Control

Final testing prior to trench filling, the contractor shall operate each valve via the controller program. The contractor shall check for proper installation of the drip box and the operation of each TOP drip emitter head with all outlets and make sure it has been installed according to the manufacturers specification. The contractor shall make all the necessary corrections, if any problems occur, and re-test the system before filling excavations and trenches.

**If you have any problems call the manufacturer at 1-800-322-9146**

#### 5.1 Final Inspection

Contractor shall be responsible for all work until inspected. Contractor shall request the presence of the project operator at least two days in advance of final inspection and run each control valve on the system for a minimum of one minute to verify correct control valve and TOP twelve-outlet head operation.

#### 6.1 Completion of Work

Upon job completion and testing of the system, the contractor shall instruct the user on proper operation and maintenance of the system and turn over to the authorized representative:

- Catalog information # 41-008
- TOP instruction manual # 26-002
- 50 replacement emitter: Catalog # 10-019 for .63 GPH, 10-020 for 1 GPH, 10-021 for 2.2 GPH and 10-22 for 3.3 GPH