

Top Drip

Heavy-Wall Emitterline

More
Crop
per
Drop[™]

 **JAIN**[®]
www.JAINSUSA.com

Top Drip Emitterline



Innovative, cost effective, heavy duty pressure-compensating (PC) and anti-syphon (PC AS) heavy-walled dripline models based on the cascade labyrinth.

Product Features

- Accurate pressure compensating dripper
- Low CV: < 3.0%
- Cascade labyrinth incorporated for maximum clog resistance
- Protection from root intrusion
- Unique double self-cleaning mechanism
- Allows longer laterals and maximum uniformity
- Large water passages for optimal durability at low flow rates
- Multiple channel water inlet for operation under heavy dirt load
- Close dripper spacing creates a continuous wetted strip

Applications

- Row crops like Sugarcane, vegetables, etc
- Subsurface Drip Irrigation (SDI)
- For orchards and other multi-seasonal applications
- Variable topography
- Irrigation of long rows with high uniformity.

Technical Data

- Flow rate: 0.26, 0.42, 0.53, 0.61 gph
- Wall Thickness: 30-50 mil, 0.33 - 0.63 mm
- Recommended filtration: 130 micron (120 mesh)



The Cascade Labyrinth

The Cascade Labyrinth signifies a breakthrough in low-volume dripline systems. The unique structure of the dripper facilitates intensified self-cleaning, preventing clogging and vastly improving durability.

Advantages

- Reliable use of low-volume drippers
- Unique self-cleaning operation
- Wide flow passages
- Very high resistance to clogging
- Long-term flow accuracy and uniformity
- Longer laterals
- Lower costs per area
- Extended product life



Double Flow System

The Cascade Labyrinth teeth create a double-flow regime that combines rapid central flow with cyclone turbulence, facilitating constant cleaning and flushing. This prevents clogging and improves dripper durability.

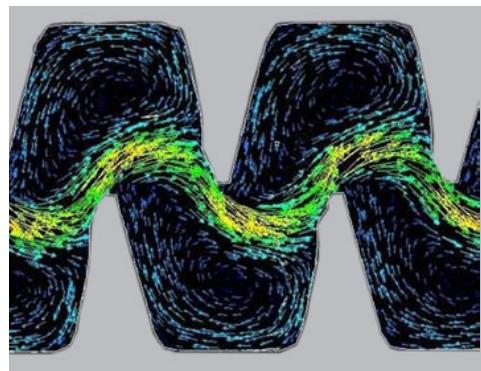
Efficient Self-Cleaning

During the self-cleaning process, dirt and sand particles that penetrate the filtration system are washed away, preventing sedimentation and clogging.

Hydraulic Characteristic of the Labyrinth

The regulating ratio of the Cascade Labyrinth is 1:2.2 - while the pressure is doubled, the flow rate changes by only 45%.

Velocity Vectors in the Cascade Labyrinth



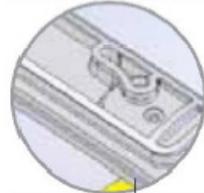
Top Drip Emitterline

Top View

Shallow profile reduces head losses
Raised water inlet reduces clogging

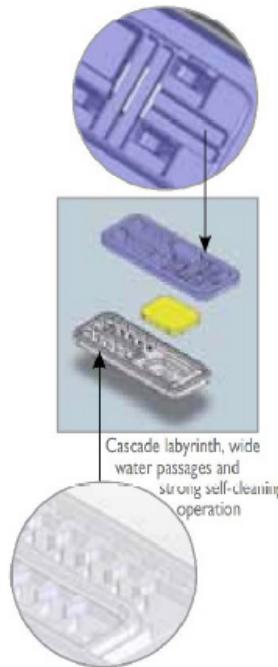


VWeir design prevents root intrusion and sand suction



Bottom View

Multi-channel: three-dimensional water inlets and eleven independent entrances



Cascade labyrinth, wide water passages and strong self-cleaning operation

Options Guide

Size	Wall	Flow	Spacing**	Indicator	Length
mm	inches	gph	inches	emitter	feet
TD17 0.650" O.D. x 0.570" I.D.	35	0.26	12 18		
TD18 0.700" O.D. x 0.620" I.D.	40*	0.42	24 30	PC	1000
TD20 0.770" O.D. x 0.690" I.D.	45	0.53	36 42		
TD22 0.920" O.D. x 0.820" I.D.	50	0.61	48	AS	

* Standard Wall Thickness

** Other emitter spacings are available upon request. Please contact Jain Customer Service for further details.



Packaging Data

	17mm	18mm	20mm	22mm
Roll Length (feet)	1000	1000	1000	1000
Roll I.D. (inch)	16	16	16	16
Roll O.D. (inch)	32	32	32	36
Roll Width (inch)	9	10	18	13
Rolls/Pallet	24	24	20	20
Pallet Size	60x60	60x60	60x60	60x60
Rolls/Truck (Hand Stacked)	711	645	351	227

Technical Data

Flow rates	0.26 gph	0.42 gph	0.53 gph	0.61 gph
Cv	<3%	<3%	<3%	<3%
K	0.26	0.42	0.53	0.6
x	0	0	0	0
Filtration	120-140 Mesh			
Pressure	6 - 44 PSI			

Filtration Requirements

Minimum filtration: 120 mesh (Disc) and 140 mesh (Screen). In addition to filtration, control of algae and bacterial slime growth and control of chemical precipitates should be taken into consideration.

Tubing Specifications

Nominal diameter :	17mm	18 mm	20 mm	22 mm
Outside diameter :	0.650 in	0.700 in	0.770 in	0.920 in
Inside diameter :	0.570 in	0.620 in	0.690 in	0.820 in
Wall thickness:	0.040 in	0.040 in	0.040 in	0.050 in
Barb Factor (Kd)	0.48	0.4	0.35	0.3
Roll Lengths	1000	1000	1000	1000
Available flow rates :	0.26 gph (1.0 lph)			
	0.42 gph (1.6 lph)			
	0.53 gph (2.0 lph)			
	0.61 gph (2.3 lph)			



Top Drip Maximum Lateral Lengths (0% Slope)
17 mm (0.650 x 0.570)

GPH	PSI Inlet	Emitter Spacing (inches)							
		12	18	24	30	36	42	48	60
0.26	25	625	840	1035	1210	1370	1520	1665	1935
	35	750	1015	1245	1455	1650	1835	2005	2330
	45	850	1145	1405	1645	1865	2070	2270	2635
	55	930	1255	1540	1800	2045	2270	2485	2885
0.42	25	460	620	760	890	1010	1120	1230	1425
	35	555	745	915	1070	1215	1350	1480	1720
	45	625	845	1035	1210	1375	1525	1670	1940
	55	685	925	1135	1330	1505	1675	1830	2130
0.53	25	395	535	655	770	870	970	1060	1230
	35	475	645	790	925	1050	1165	1275	1480
	45	540	725	895	1045	1185	1315	1440	1675
	55	590	795	980	1145	1300	1445	1580	1835
0.61	25	360	490	600	700	795	885	970	1125
	35	435	590	725	845	960	1065	1165	1355
	45	495	665	815	955	1085	1205	1320	1530
	55	540	730	895	1045	1185	1320	1445	1680

Top Drip Maximum Lateral Lengths (0% Slope)
18 mm (0.700 x 0.620)

GPH	PSI Inlet	Emitter Spacing (inches)							
		12	18	24	30	36	42	48	60
0.26	25	735	985	1210	1410	1600	1775	1940	2250
	35	885	1190	1455	1700	1925	2135	2335	2710
	45	1000	1345	1645	1920	2175	2415	2640	3065
	55	1095	1470	1805	2105	2385	2645	2890	3355
0.42	25	540	730	890	1040	1180	1305	1430	1660
	35	655	875	1075	1250	1420	1575	1720	1995
	45	740	990	1215	1415	1600	1780	1945	2255
	55	810	1085	1330	1550	1755	1950	2130	2475
0.53	25	465	630	770	895	1015	1125	1235	1430
	35	565	755	925	1080	1225	1355	1485	1720
	45	635	855	1045	1220	1380	1535	1680	1945
	55	695	935	1145	1335	1515	1680	1840	2135
0.61	25	425	575	705	820	930	1030	1125	1310
	35	515	690	845	985	1120	1240	1360	1575
	45	580	780	955	1115	1265	1405	1535	1780
	55	635	855	1050	1225	1385	1535	1680	1950

*Minimum of 10 psi at the end of the lateral

For more Run Length Options, please use our Run Length Calculator at www.jainsusa.com



Top Drip Maximum Lateral Lengths (0% Slope) 20 mm (0.770 x 0.690)

GPH	PSI Inlet	Emitter Spacing (inches)							
		12	18	24	30	36	42	48	60
0.26	25	895	1200	1465	1710	1930	2145	2345	2715
	35	1080	1445	1765	2055	2325	2580	2820	3270
	45	1220	1630	1995	2325	2630	2915	3190	3695
	55	1335	1790	2185	2545	2880	3195	3495	4050
0.42	25	660	885	1080	1260	1425	1580	1725	2000
	35	795	1065	1300	1515	1715	1900	2080	2410
	45	900	1205	1470	1715	1940	2150	2350	2725
	55	985	1320	1610	1875	2125	2355	2575	2985
0.53	25	570	760	930	1085	1230	1360	1490	1725
	35	685	920	1120	1305	1480	1640	1795	2080
	45	775	1035	1270	1475	1670	1855	2025	2350
	55	850	1135	1390	1620	1830	2030	2220	2575
0.61	25	520	695	850	995	1125	1245	1360	1580
	35	625	840	1025	1195	1350	1500	1640	1900
	45	710	950	1160	1350	1530	1695	1855	2150
	55	775	1040	1270	1480	1675	1860	2030	2355

Top Drip Maximum Lateral Lengths (0% Slope) 22 mm (0.920 x 0.820)

GPH	PSI Inlet	Emitter Spacing (inches)							
		12	18	24	30	36	42	48	60
0.26	25	1515	2010	2445	2845	3210	3555	3885	4495
	35	1825	2420	2945	3425	3865	4285	4675	5415
	45	2060	2735	3330	3870	4370	4840	5285	6120
	55	2260	3000	3650	4240	4790	5305	5790	6705
0.42	25	1115	1480	1805	2095	2365	2620	2865	3315
	35	1345	1785	2170	2525	2850	3155	3445	3990
	45	1520	2015	2455	2850	3220	3565	3895	4510
	55	1665	2210	2690	3125	3530	3910	4270	4940
0.53	25	965	1280	1555	1805	2040	2260	2470	2860
	35	1160	1540	1875	2175	2460	2720	2970	3440
	45	1310	1740	2115	2460	2780	3075	3360	3890
	55	1435	1905	2320	2695	3045	3370	3680	4260
0.61	25	880	1170	1420	1655	1865	2065	2260	2615
	35	1060	1410	1715	1990	2250	2490	2720	3145
	45	1200	1590	1935	2250	2540	2815	3070	3555
	55	1315	1745	2120	2465	2785	3080	3365	3895

*Minimum of 10 psi at the end of the lateral

For more Run Length Options, please use our Run Length Calculator at www.jainsusa.com



Installation

Maintenance & Troubleshooting Guide

Water quality is a factor in maintaining micro-irrigation systems. A water quality test will measure silt or sand; algae; bacteria; dissolved solids such as iron, sulphur, salts, and calcium; and the pH of the water. For more information on micro-irrigation system maintenance, contact your extension agent or micro-irrigation manufacturer.

Maintenance Tasks

- Annually treat system with acid to neutralize calcium carbonates if the water is "hard." Consult equipment manufacturer for type of acid and treatment interval.

At Season Shutdown

- Treat entire system with 40 ppm residual chlorine concentration for at least four hours, and completely flush the system.
- Drain water from all pipelines. The system may have to be blown out lateral by lateral with an air compressor to accomplish this. Don't exceed 15 to 20 psi of air pressure, or you'll blow off the emitters. Polyethylene pipes can withstand some freezing without breaking, so it isn't critical that all water be removed. In cases where remaining water may be a problem, however, add a gallon of non-toxic antifreeze (type used in RV's) to the piping system and distribute it throughout with compressed air. More antifreeze may be necessary for larger systems.

* Referenced from the "Washington Irrigators Pocket Guide"*

Regularly

- Irrigation system evaluation by trained professional is highly recommended
- Check for leaks, rodent damage, and mechanical damage
- Inspect pressure-regulating valves and pressure gauges for correct operation and pressure readings. Liquid-filled pressure gauges are recommended.
- Flush lateral lines. Depending on water quality and filtration system, flushing should be done bi-weekly after fertilizer or chemical injection or chlorination.
- Regularly check for and clean or replace clogged emitters
- Check emitters for correct flow. Take precise measurements at least twice each year by catching the flow from several emitters in a calibrated cylinder (such as rain gauge) during carefully timed intervals.
- Backwash filters either manually or using automatic cycle, depending on system design and type of filter
- Replace cartridge filters
- If media (such as sand) cakes, replace media. For sand filters, periodically supplement with additional media.
- Chlorinate system with 10 ppm if water has high organic load
- If clogging due to organic matter continues to be problem, inject 50-100 ppm of chlorine and allow to sit for 24 hours
- If clogging due to precipitates (such as calcium carbonate) persists, inject system with acid to lower pH to about 5.0, allow to sit for 24 hours. Contact equipment manufacturer before undertaking this task to determine the minimum pH allowable for system type.



jainsusa



@jainsusa

2851 E. Florence Ave.
Fresno, CA 93721
Ph 559-485-7171
Fx 559-485-7623

P.O. Box 3760
Ontario, CA 91761
Ph 909-395-5200
Fx 909-395-5202

740 Water St.
Watertown, NY 13601
Ph 315-755-4400
Fx 315-755-4401

3777 State Road 544 East
Haines City, FL 33844
Ph 863-422-4000
Fx 863-422-6400

