AMNON EMITTERLINE

World Leader in Irrigation Technology

JAIN

"A manufacturer's warranty is extremely important to our operation, we expect the product to last the life of the crop."

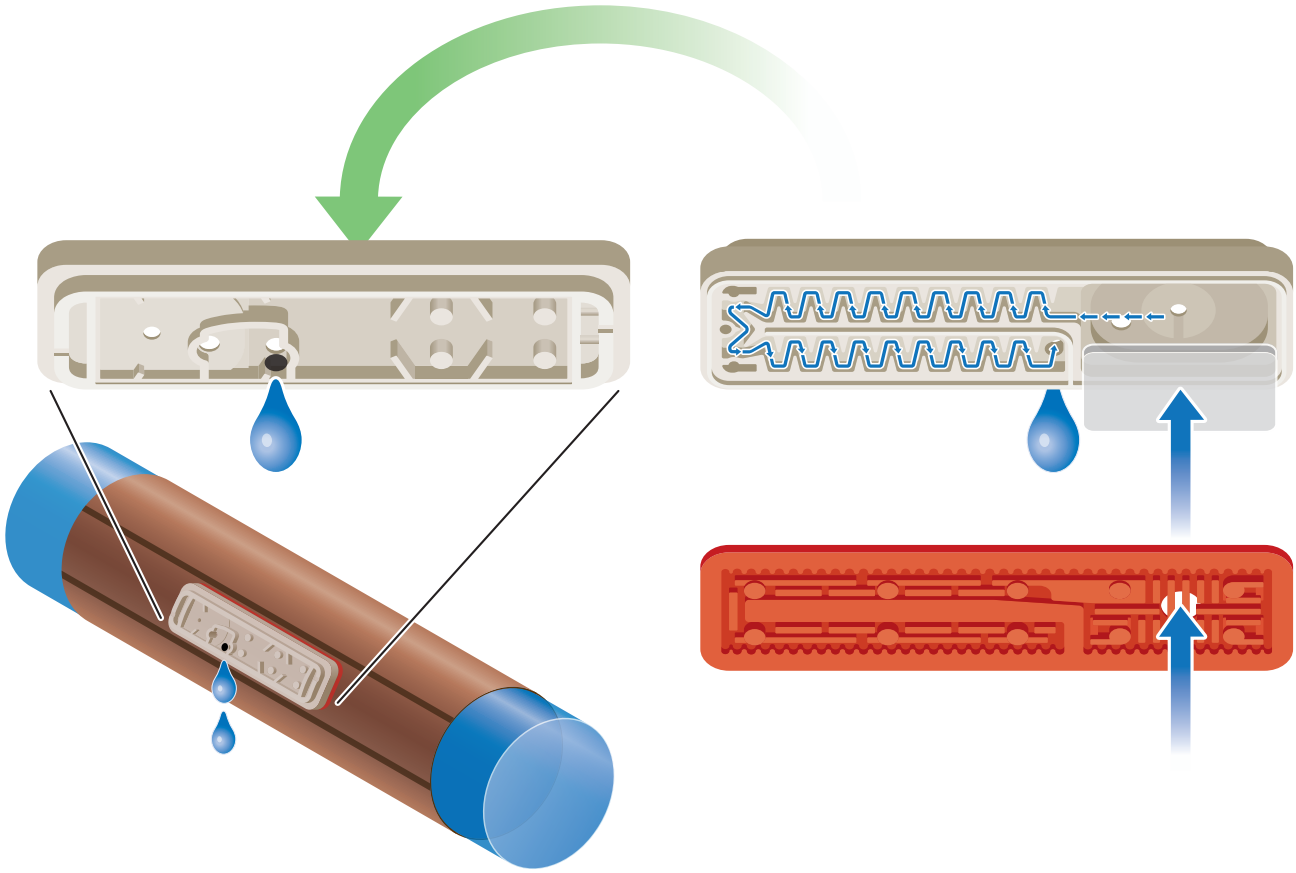
-On JAIN's 12-Year Warranty

Austin Hubbell, Ranch Manager
Marthedal Enterprises, Easton CA

Amnon Emitterline

Product Features

- Industry leading 12-year warranty.
- Pressure-Compensating (PC) for maximum accuracy in variable topography and long laterals
- Produced only with the highest quality virgin resin materials
- Cascade Labyrinth provides strong self-cleaning turbulence
- Hydrodynamic dripper design ensures continuous flushing of sediments and small dirt particles
- Industry leading low Cv for maximum uniformity
- Side water inlet structure improves clog resistance
- High-quality, chemical resistant diaphragm
- Dual stripes indicate emitter location on tubing
- 3D inlet filter prevents clogging
- Large, double-purpose diaphragm



The JAIN Amnon emitter is an innovative, pressure compensating solution that combines our patented Cascade Labyrinth filtering technology with an anti-siphon and non-leak option.

Amnon CNL (Pressure Compensated Non-Leak) is ideal for pulse irrigation and systems that prefer not to drain during irrigation cycles.

Amnon AS (Pressure Compensated Anti-Siphon) is ideal for on-ground or buried applications.

Amnon emitterline is the contractors choice for all emitterline applications.

Amnon Emitterline

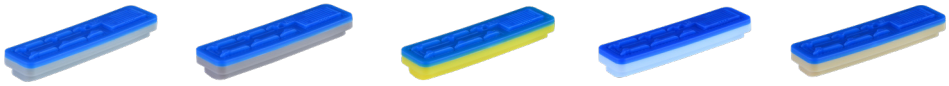
Applications

- Versatile, all-purpose dripline for greenhouses, vegetables, vineyards and orchards
- Pulse irrigation
- Subsurface Drip Irrigation (SDI)
- Variable Topography

Available Models

- **CNL** Pressure Compensated Check Non-Leak design reduces lateral filling time and facilitates pulse irrigation.
- **AS** Pressure Compensated Anti-Siphon design prevents suction during system shutdown. Suitable for subsurface drip irrigation.

Color Codes

Flow Rate (GPH)	.27	.38	.50	.58	1.00
CNL - Red					
Flow Rate (GPH)	.29	.42	.53	.61	1.06
AS - Blue					

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.

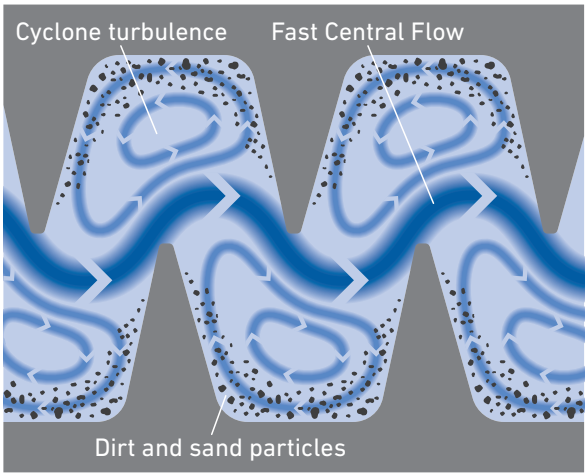
Advantages

- 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.

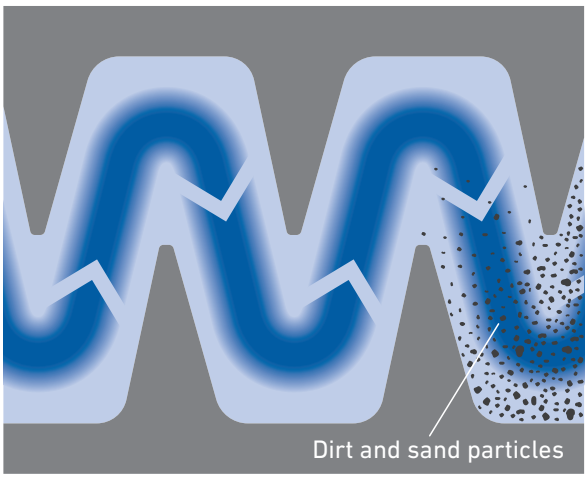
Double Flow System



Efficient Self Cleaning

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

Self cleaning process

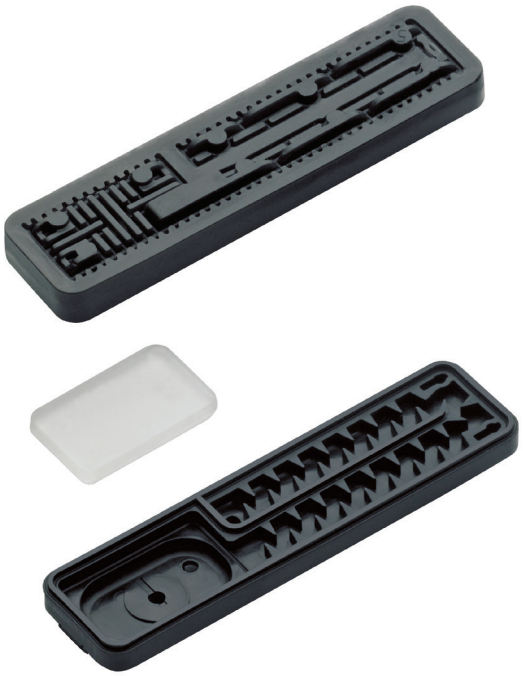


Hydraulic Characteristic of the Labyrinth

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

Amnon Emitterline

Emitter Top View



Emitter Bottom View

Amnon Emitterline Ordering Guide

Product Model	Size (mm)	Wall (in)	Flow (GPH)	Spacing (in)	Indicator Emitter	Length (ft)
AP	17 (.660" O.D. x .570" I.D.) 18 (.710" O.D. x .620" I.D.) 20 (.800" O.D. x .710" I.D.) 22 (.920 OD x .820 I.D.)	35 40 45* 50	*AS* 0.29 0.42 0.53 0.58 1.06 *CNL* 0.27 0.38 0.50 0.55 1.00	12 18 24 30 36 42 48 60	AS CNL	100 250 500 1000
Example: AP	18	45	42	30	AS	1000

Model: AP 18 45 42 30 AS-1000

Description: 18mm tubing, 45" wall, .42 GPH Amnon AS Emitter, 30" spacing on emitters, 1000' Coil

* Standard wall thickness

Tubing Specifications

Nominal Diameter	17mm	18mm	20mm	22mm
Outside Diameter	0.660 in	0.710 in	0.800 in	0.920 in
Inside Diameter	0.570 in	0.620 in	0.710 in	0.820in
Wall Thickness	0.045 in	0.045 in	0.045 in	0.050 in
Barb Factor (Kd)	1.2	0.85	0.4	0.3
Coil Lengths	100', 250', 500', 1000'	500', 1000', 30,000'	500', 1000', 24,000'	500', 1000'
Available Flow Rates	(CNL) .27 , .38 , .5 , .55 , 1 GPH (AS) .29 , .42 , .53 , .58 , 1.06 GPH			

Technical Data

Flow Rate GPH (CNL)	.27	.38	.5	.55	1
Flow Rate GPH (AS)	.29	.42	.53	.58	1.06
Cv	>5%	>5%	>5%	>5%	>5%
x	0	0	0	0	0
Filtration	120 Mesh				
Anti-Siphon	7 - 58 PSI				
CNL Operating Pressure	14 - 58 PSI				
CNL Opening	14 PSI				
CNL Closing	3.6 PSI				

Packaging Data

	17mm	18mm	20mm	22mm
Roll I.D	16"	16"	16"	16"
Roll O.D	32"	32"	32"	36"
Roll Width	9"	9"	18"	20"
Pallet Size*	60" x 60"	60" x 60"	60" x 60"	60" x 60"

* Subject to change based on freight carrier and/or quantities ordered.

Filtration Requirements

Minimum filtration requirement is 120 Mesh (130 Micron). In addition to filtration; control of algae, bacterial slime growth and control of chemical precipitates should be taken into consideration.

Amnon Maximum Lateral Lengths

Amnon AS Maximum Lateral Lengths (0% Slope)
17mm (0.660 X 0.570)

GPH	PSI Inlet	Emitter Spacing (inches)			
		12	24	36	48
0.29	20	425	800	1050	1300
	25	475	875	1200	1500
	30	525	950	1325	1650
	35	575	1025	1400	1750
	40	600	1075	1500	1850
	50	650	1175	1650	2050
0.42	20	325	600	850	1275
	25	375	675	925	1475
	30	400	750	1025	1625
	35	425	800	1100	1725
	40	450	850	1175	1825
	50	500	925	1275	2025
0.53	20	275	525	725	900
	25	325	575	800	1000
	30	350	625	875	1100
	35	375	675	950	1175
	40	400	725	1000	1250
	50	425	800	1100	1375
0.58	20	275	475	675	850
	25	300	550	750	950
	30	325	600	825	1025
	35	350	650	875	1100
	40	375	675	950	1175
	50	400	750	1025	1300
1.06	20	175	325	450	575
	25	200	375	500	625
	30	225	400	550	700
	35	225	425	600	750
	40	250	450	625	800
	50	275	500	700	875

*Shading indicates Flushing Velocity exceeds Maximum PSI

Amnon AS Maximum Lateral Lengths (0% Slope)
18mm (0.710 X 0.620)

GPH	PSI Inlet	Emitter Spacing (inches)			
		12	24	36	48
0.29	20	500	900	1200	1550
	25	575	1025	1375	1700
	30	625	1125	1525	1900
	35	675	1200	1625	2075
	40	725	1275	1750	2200
	50	775	1400	1925	2400
0.42	20	400	725	975	1200
	25	450	800	1100	1375
	30	500	875	1225	1500
	35	525	950	1300	1625
	40	550	1000	1375	1725
	50	600	1100	1500	1900
0.53	20	350	625	850	1075
	25	400	700	975	1200
	30	425	775	1050	1275
	35	450	825	1125	1375
	40	475	875	1200	1500
	50	525	950	1325	1625
0.58	20	325	600	825	1050
	25	375	675	950	1175
	30	400	750	1025	1250
	35	425	800	1100	1350
	40	450	850	1175	1475
	50	500	925	1300	1600
1.06	20	200	400	550	675
	25	225	450	600	750
	30	250	500	650	825
	35	275	525	700	900
	40	300	550	750	950
	50	325	600	825	1025

*Shading indicates Flushing Velocity exceeds Maximum PSI

*Minimum of 10 PSI at the end of the lateral

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

Amnon CNL Maximum Lateral Lengths (0% Slope)
17mm (0.660 X 0.570)

GPH	PSI Inlet	Emitter Spacing (inches)			
		12	24	36	48
0.27	20	425	800	1050	1300
	25	475	875	1200	1500
	30	525	950	1325	1650
	35	575	1025	1400	1750
	40	600	1075	1500	1850
	50	650	1175	1650	2050
0.38	20	325	600	850	1275
	25	375	675	925	1475
	30	400	750	1025	1625
	35	425	800	1100	1725
	40	450	850	1175	1825
	50	500	925	1275	2025
0.50	20	275	525	725	900
	25	325	575	800	1000
	30	350	625	875	1100
	35	375	675	950	1175
	40	400	725	1000	1250
	50	425	800	1100	1375
0.55	20	275	475	675	850
	25	300	550	750	950
	30	325	600	825	1025
	35	350	650	875	1100
	40	375	675	950	1175
	50	400	750	1025	1300
1.00	20	175	325	450	575
	25	200	375	500	625
	30	225	400	550	700
	35	225	425	600	750
	40	250	450	625	800
	50	275	500	700	875

*Shading indicates Flushing Velocity exceeds Maximum PSI

Amnon CNL Maximum Lateral Lengths (0% Slope)
18mm (0.710 X 0.620)

GPH	PSI Inlet	Emitter Spacing (inches)			
		12	24	36	48
0.27	20	500	900	1200	1550
	25	575	1025	1375	1700
	30	625	1125	1525	1900
	35	675	1200	1625	2075
	40	725	1275	1750	2200
	50	775	1400	1925	2400
0.38	20	400	725	975	1200
	25	450	800	1100	1375
	30	500	875	1225	1500
	35	525	950	1300	1625
	40	550	1000	1375	1725
	50	600	1100	1500	1900
0.50	20	350	625	850	1075
	25	400	700	975	1200
	30	425	775	1050	1275
	35	450	825	1125	1375
	40	475	875	1200	1500
	50	525	950	1325	1625
0.55	20	325	600	825	1050
	25	375	675	950	1175
	30	400	750	1025	1250
	35	425	800	1100	1350
	40	450	850	1175	1475
	50	500	925	1300	1600
1.00	20	200	400	550	675
	25	225	450	600	750
	30	250	500	650	825
	35	275	525	700	900
	40	300	550	750	950
	50	325	600	825	1025

*Shading indicates Flushing Velocity exceeds Maximum PSI

*Minimum of 10 PSI at the end of the lateral

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

Amnon Maximum Lateral Lengths

Amnon AS Maximum Lateral Lengths (0% Slope)
20mm (0.800 X 0.710)

GPH	PSI Inlet	Emitter Spacing (inches)			
		12	24	36	48
0.29	20	700	1250	1850	2100
	25	800	1400	1925	2300
	30	900	1550	2100	2550
	35	950	1650	2225	2750
	40	1000	1750	2350	2900
	50	1100	1900	2600	3200
0.42	20	550	975	1300	1600
	25	625	1100	1475	1850
	30	700	1200	1625	2000
	35	750	1300	1750	2100
	40	800	1375	1850	2300
	50	875	1500	2000	2500
0.53	20	500	850	1100	1400
	25	550	950	1250	1575
	30	600	1050	1400	1725
	35	650	1100	1500	1850
	40	675	1150	1600	1950
	50	750	1300	1750	2150
0.58	20	450	800	1050	1300
	25	500	900	1200	1425
	30	550	975	1300	1600
	35	600	1050	1400	1725
	40	625	1100	1500	1850
	50	725	1225	1650	2025
1.06	20	300	575	725	875
	25	300	600	800	1000
	30	375	650	875	1075
	35	400	700	950	1175
	40	425	750	1000	1250
	50	475	825	1100	1375

*Shading indicates Flushing Velocity exceeds Maximum PSI

Amnon AS Maximum Lateral Lengths (0% Slope)
22mm (0.920 X 0.820)

GPH	PSI Inlet	Emitter Spacing (inches)			
		12	24	36	48
0.29	20	950	1600	2150	2600
	25	1050	1775	2450	2950
	30	1150	1975	2650	3250
	35	1250	2100	2850	3500
	40	1325	2250	3000	3700
	50	1450	2450	3300	4000
0.42	20	725	1250	1650	2050
	25	825	1425	1900	2350
	30	900	1550	2100	2550
	35	975	1650	2250	2750
	40	1025	1775	2375	2900
	50	1125	1925	2625	3200
0.53	20	625	1050	1450	1750
	25	700	1200	1625	2000
	30	775	1325	1800	2150
	35	825	1425	1925	2300
	40	875	1525	2050	2500
	50	975	1675	2250	2750
0.58	20	575	1000	1350	1650
	25	675	1100	1550	1850
	30	725	1250	1700	2075
	35	775	1325	1825	2200
	40	825	1425	1925	2350
	50	900	1575	2100	2600
1.06	20	400	675	900	1100
	25	450	750	1050	1250
	30	475	850	1150	1375
	35	525	900	1225	1500
	40	550	950	1300	1600
	50	600	1050	1425	1750

*Shading indicates Flushing Velocity exceeds Maximum PSI

*Minimum of 10 PSI at the end of the lateral

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

Amnon CNL Maximum Lateral Lengths (0% Slope)
20mm (0.800 X 0.710)

GPH	PSI Inlet	Emitter Spacing (inches)			
		12	24	36	48
0.27	20	750	1300	1775	2150
	25	850	1475	1950	2400
	30	925	1600	2150	2650
	35	1000	1725	2325	2850
	40	1050	1825	2475	3000
	50	1150	2000	2700	3350
0.38	20	600	1025	1400	1725
	25	675	1175	1575	1950
	30	750	1275	1725	2125
	35	800	1375	1850	2275
	40	850	1450	1975	2425
	50	925	1600	2175	2650
0.50	20	500	850	1150	1400
	25	550	950	1325	1600
	30	625	1050	1450	1775
	35	675	1150	1550	1900
	40	700	1225	1650	2025
	50	775	1350	1800	2225
0.55	20	500	825	1125	1325
	25	550	925	1250	1525
	30	600	1000	1350	1700
	35	625	1100	1475	1800
	40	675	1150	1550	1900
	50	725	1275	1700	2100
1.00	20	325	550	750	900
	25	350	625	850	1000
	30	375	675	925	1100
	35	425	725	1000	1200
	40	450	775	1050	1275
	50	500	850	1150	1400

*Shading indicates Flushing Velocity exceeds Maximum PSI

Amnon CNL Maximum Lateral Lengths (0% Slope)
22mm (0.920 X 0.820)

GPH	PSI Inlet	Emitter Spacing (inches)			
		12	24	36	48
0.27	20	425	800	1050	1300
	25	475	875	1200	1500
	30	525	950	1325	1650
	35	575	1025	1400	1750
	40	600	1075	1500	1850
	50	650	1175	1650	2050
0.38	20	325	600	850	1275
	25	375	675	925	1475
	30	400	750	1025	1625
	35	425	800	1100	1725
	40	450	850	1175	1825
	50	500	925	1275	2025
0.50	20	275	525	725	900
	25	325	575	800	1000
	30	350	625	875	1100
	35	375	675	950	1175
	40	400	725	1000	1250
	50	425	800	1100	1375
0.55	20	275	475	675	850
	25	300	550	750	950
	30	325	600	825	1025
	35	350	650	875	1100
	40	375	675	950	1175
	50	400	750	1025	1300
1.00	20	175	325	450	575
	25	200	375	500	625
	30	225	400	550	700
	35	225	425	600	750
	40	250	450	625	800
	50	275	500	700	875

*Shading indicates Flushing Velocity exceeds Maximum PSI

*Minimum of 10 PSI at the end of the lateral

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

Maintenance and Troubleshooting

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 systemand distribute it throughout with compressed air. More antifreeze may be necessary for larger systems.

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 or 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.

JAIN is a fully integrated global food / plant production company recognized by Harvard Business to be one of five global sustainability champions, the G-20 for lifting people out of poverty, and Fortune magazine for being a "Change the World Company." Our irrigation manufacturing capabilities include everything from the pump discharge to the flush valve at the end of the lateral and everything in between. We lead the industry in manufacturing technology, owning both our extrusion and mold manufacturing equipment providers.

JAIN leads plant science research globally across a variety of food crops and is staffed with some of the world's leading research scientists. With the Gandhi Library, JAIN now houses the leading collection of the world's best plant science knowledge in a single facility. Our agronomic knowledge is integrated from our world class plant tissue culture operations through our food processing businesses. We research, educate, advance, manufacture, finance, propagate plants, and purchase produce for processing all in an effort to fulfill the JAIN mission:

"Leave This World Better Than You Found It"

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