NDS®

We put water in its place™

Dura Flo™ Dripline Guide

Featuring Dura Flo CV, Dura Flo PC & Dura Flo JR

The smart landscape dripline solution that's easier and faster to install compared to other systems on the market.

Industry-best run lengths with fewer valves and less work.

Superior performance and minimal maintenance with fittings that provide leak-free connections.

ndspro.com

NDS is your knowledgeable and trusted partner for the best in water management solutions

We care about your success and provide industry-leading products, expert guidance, and dedicated support you won't find anywhere else.

We provide proven products

Our products are engineered and manufactured for perfomance, durability, and ease of installation to address your water management needs and preserve our environment for the future.

We focus on your success

It's not just about providing industry-leading products, we're your partner for success – sharing our unparalleled knowledge, wealth of tools and resources, and professional support to help you get the job done right.

We've been the industry leader for over 50 years

As a global innovator of stormwater management solutions, we've been the professionals' no. 1 preferred brand since 1972.

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Dura Flo™ Dripline Benefits

NDS Professional Irrigation offers a full line of drip irrigation products to handle a wide range of irrigation-related situations. From control zone components, fittings, and emission devices to spray-to-drip conversion kits and virtually all accessories required to install a professional drip irrigation system, we've got you covered.

While point source drip irrigation is still popular in many areas of the country, the fastest growing segment of the drip irrigation market is inline emitter tubing such as Dura Flo dripline, where the emitters are pre-installed during the manufacturing process.

Dura Flo dripline is ideal for watering plants, trees, shrubs, and groundcover. It can be used for both commercial and residential landscaping. Dripline systems are more efficient and effective than conventional sprinklers; especially in hard-to-irrigate areas, such as slopes and small spaces where overspray from sprinklers could cause damage or be a safety hazard.

With its precise watering capability, ease of installation and ability to be concealed, it is easy to understand why architects, designers, and contractors are using dripline for a variety of projects.

Key Benefits of Dripline Products:

- Low application rate
- Ideal for problem soils
- Conserves water
- Prevents overspray liability
- Precise watering
- Uniform application
- Increased plant growth
- Better quality of plants

NDS Dura Flo™ Products

This Dura Flo dripline design guide covers the basics of design, product selection, installation, and maintenance for NDS Dura Flo dripline products, which consists of:

Dura Flo JR

Perfect for small planter beds, hanging baskets, and many other irrigation needs.

Dura Flo PC

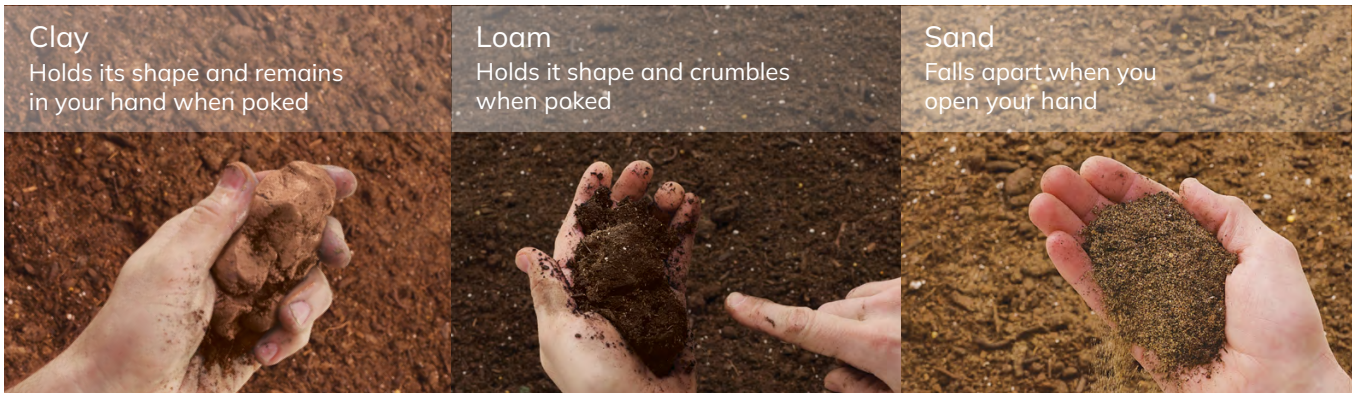
Pressure compensating dripline for above ground applications where consistent flow is important.

Dura Flo CV

Pressure compensating dripline with a built-in check valve in each emitter for consistent flow and no low emitter drainage.

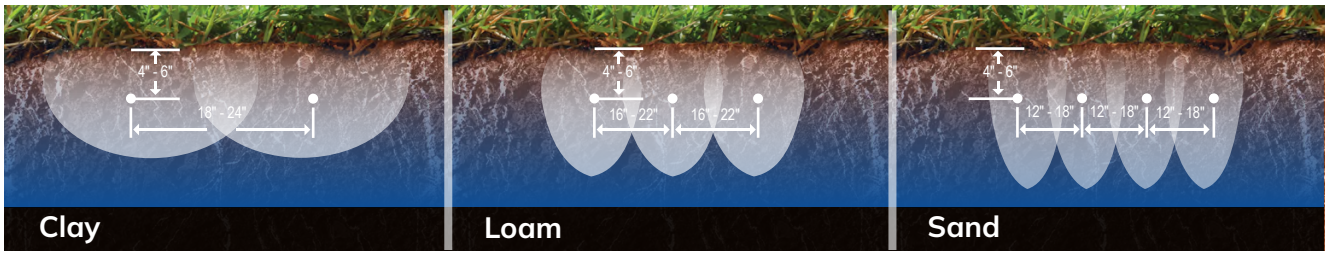
How to Identify Soil Type

Different soil types have different water filtration rates. Clay, loam, and sand are the three most common soil types. Grab a handful of moist soil (not wet) and squeeze it firmly, then give it a light poke. The way it reacts will help you determine your soil type.



Soil Infiltration Rates (Inches per Hour)			
Percent of Slope	Clay	Loam	Sand
0% - 4%	0.13 - 0.44	0.44 - 0.88	0.88 - 1.25
5% - 8%	0.1 - 0.35	0.35 - 0.7	0.7 - 1

As the slope increases, infiltration rates will continue to decrease. These values are derived from USDA information.



The following are cross-section views of a dripline row. These illustrations show water movement in a subsurface application. These guidelines apply to on-surface as well as subsurface installations.

Soil Jar Test

Step 1

Fill a jar about 1/3 full of the soil to be tested.

Step 2

Add 1 tablespoon of water softener or powered dishwashing detergent to allow the soil particles to separate.

Step 3

Fill the jar with water to about 2 in. from the top.

Step 4

Shake the jar for about 10 minutes.

Step 5

Place the jar in a safe place and leave it undisturbed for three days.

Step 6

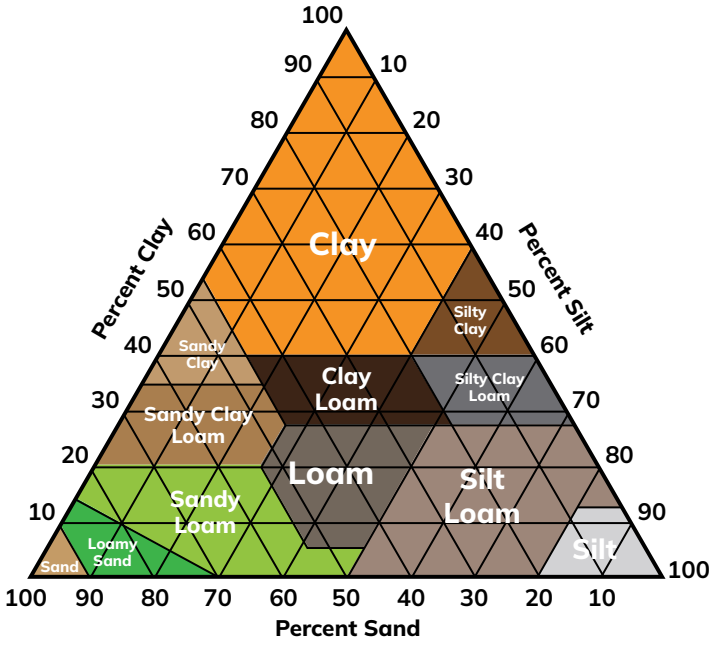
After the soil settles, there should be layers of sand (bottom), silt (middle) and clay (top). Measure the depth of each layer, then the total depth of settled soil.

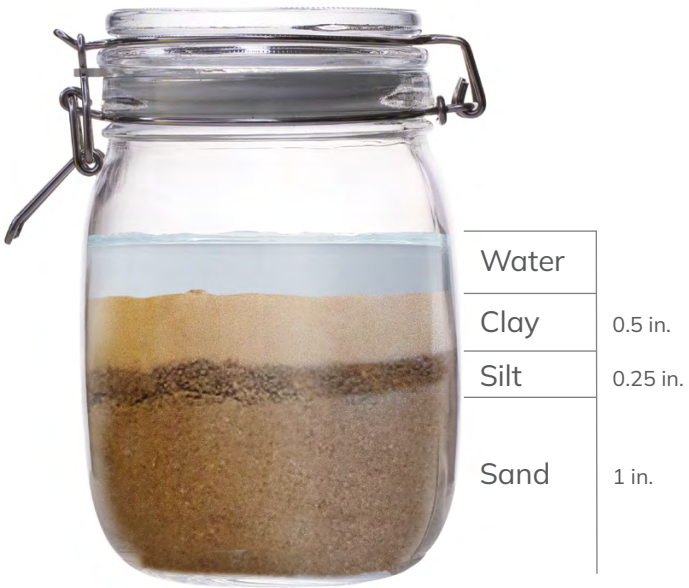
Step 7

Calculate the percentage of each soil by dividing the depth of each layer by the total depth and multiplying by 100.

Step 8

Analyze and locate on soil triangle.





Dura Flo™ Dripline Typical Applications

Trees and Shrubs

Tree rings made of Dura Flo PC or Dura Flo CV make a great drip solution for trees and shrubs.

Hillsides and Slopes

A 2 PSI check valve in each emitter prevents low emitter drainage on hillsides and slopes.

Flowers

Hanging baskets, pots, and narrow flower beds are perfect applications for Dura Flo JR ¼ in. dripline.

Foundation Planting

Dura Flo dripline is an ideal product for foundation planting.

* Follow your local specified guidelines for mulching layer depth and material recommendations.

Raised Planters

Without any overspray or runoff, Dura Flo CV is a smart solution for raised planter applications.

Landscapes and Shrubs

Because water is delivered directly to the root zone, Dura Flo CV is an efficient way to water landscapes.

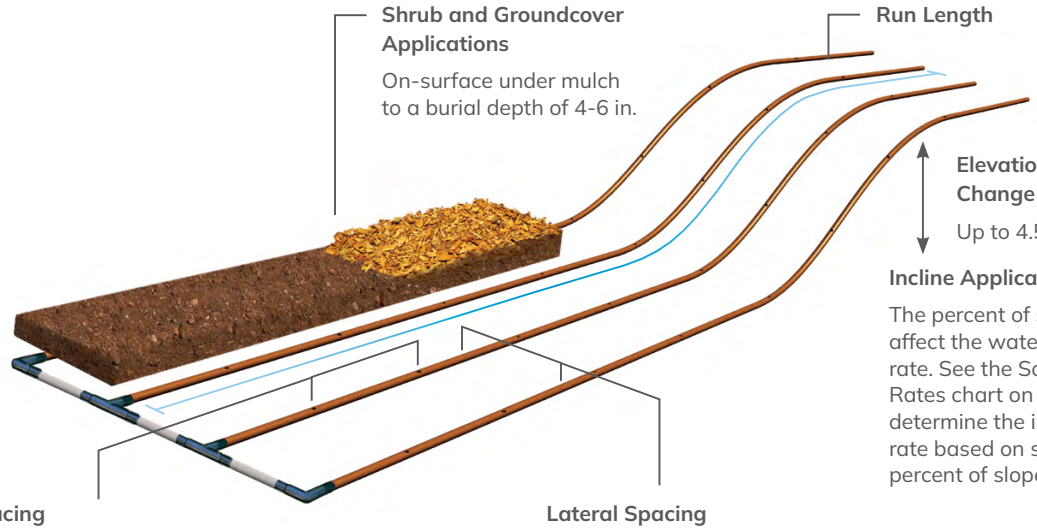
Medians and Roadways

Dura Flo CV limits liability in high-traffic areas by preventing overspray and eliminating runoff from emitter drainage.

Emitter Flow Rate and Spacing

Now that you've identified your soil type, use the chart below to determine the ideal distance to space your lateral rows and your emitters.

Dura Flo™ CV – Dripline Recommendations			
Planting Type	Landscape Plantings		
Soil Type	Clay	Loam	Sand
Emitter Flow Rate (gallons per hour)	0.4	0.6	0.9
Emitter Spacing	18 in.	18 in.	12 in.
Dura Flo CV Dripline Lateral Spacing	14- 24 in.	14 - 20 in.	12 - 22 in.



Incline Applications

The percent of slope will affect the water infiltration rate. See the Soil Infiltration Rates chart on pg. 6 to determine the infiltration rate based on soil type and percent of slope.

Emitter Spacing

This is the distance between individual emitters. Dura Flo CV dripline is offered in different flow rates, lengths, and 12 in., 18 in., and 24 in. emitter spacing.

Lateral Spacing

This is the distance between lateral rows. Note, it is recommended that rows be placed no closer than 2 in. to any hardscape surface and 2-4 in. away from other planting areas.

Watch detailed installation videos.

NOTE: These are general guidelines. Actual conditions may require modifications to emitter flow rate, emitter spacing, and lateral row spacing.

Dura Flo™ Dripline Selection Guide

Which Dura Flo products do you need?	Dura Flo Check Valve SFCV	Dura Flo PC SFPC	Dura Flo JR 1/4 in. SFJR
Turbulent flow non-pressure compensating			✔
Works well in ideal flat conditions	✔	✔	✔
Delivers stated GPH (gallons per hour) in each emitter even with pressure of 10-60 PSI pressure compensating		✔	
Delivers stated GPH (gallons per hour) in each emitter even with pressure of 7.5-60 PSI pressure compensating	✔		
Self-cleaning to prevent clogging of emitters	✔	✔	
Works well with elevation changes	✔	✔	
Works well with elevation changes – holding back 4 .5 ft. of head pressure saving 1.39 gallons of water for every 100 ft.	✔		
Seals water in the line preventing any drainage or erosion, and water waste (water conservation) check valve	✔		
Each emitter opens and closes at same pressure along the line providing exceptional uniformity, saving thousands of gallons annually	✔		
Built-in anti-siphon mechanism prevents any suction of debris into the emitter	✔		
No air/vacuum relief valve is required, saving on installations and additional valve boxes	✔		

NDS Fittings Selection Guide

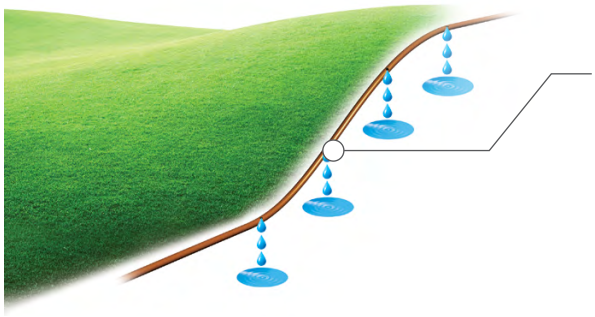
Dripline	17mm Insert Fittings	Compression Fittings	Smart Loc™ Fittings	1/4 in. Micro Fittings
Dura Flo CV 17mm 0.560 in. ID x 0.0660 in. OD	Yes	No	Yes	No
Dura Flo CV 18mm 0.600 in. ID x 0.700 in. OD	No	700/710 Series Black/Blue	Yes	No
Dura Flo PC 16mm 0.550 in. ID x 0.640 in. OD	No	600 Series Green	Yes	No
Dura Flo PC 17mm 0.560 in. ID x 0.0660 in. OD	Yes	No	Yes	No
Dura Flo PC 18mm 0.600 in. ID x 0.700 in. OD	No	700/710 Series Black/Blue	Yes	No
Dura Flo JR 1/4 in.	No	No	No	Yes

Dura Flo™ CV 17mm

All-in-one Solution

Featuring a check valve with anti-siphon capabilities, NDS Dura Flo CV™ dripline takes water conservation to the next level on your irrigation project. The check valve prevents low emitter drainage on shut down and the anti-siphon feature eliminates back-siphonage at each emitter.

This all-in-one dripline solution offers the ultimate in efficiency and protection by minimizing water loss and protecting each emitter from clogging and root intrusion.



Check Valve (Hillside Application)

Emitters open at 7.5 PSI for longer run lengths, which reduces material and labor costs.

2 PSI check valves hold back up to 4.5 ft. of elevation if needed:

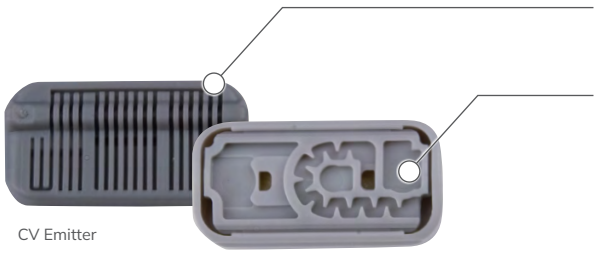
- Prevents low head drainage
- Keeps line full between irrigation intervals for instant watering at turn on
- Reduces water waste, saving up to 1.39 gallons per 100 ft. of tubing

Anti-siphon

Each emitter is designed with an anti-siphon feature:

- Prevents the suction of debris into the emitter
- Eliminates the need for an air/vacuum relief valve

Key Specifications



CV Emitter

Emitter

- With its unique built-in filtration slits and self-cleaning design, clogging is minimized
- Pressure-compensating anti-siphon emitter maintains uniform flow rates at a wide range of working pressures and various topographies
- Operating range: 7.5 - 60 PSI
- Flow rates: 0.4 GPH, 0.6 GPH, and 0.9 GPH
- Emitter spacing: 12 in., 18 in., or 24 in.

Pressure Compensation

- Conserves up to 70% of water compared to a conventional sprinkler irrigation system
- Distributes water evenly regardless of pressure fluctuations
- Self-flushing capability prevents debris from clogging the system during operation

Tubing

- Shrink wrapped for easy handling and to insure the roll stays together as product is dispensed
- Tubing can be easily unwound from center of coil while shrink wrap keeps the remaining coil in place
- 17mm (.560 in. ID x .660 in. OD)
- 18mm (.600 in. ID x .700 in. OD)
- Colors: Brown, Black*, Purple*, Brown with Purple Stripe*

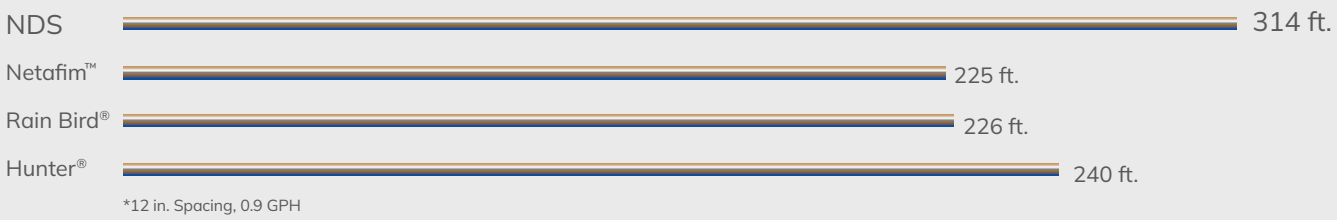
*Made to order

Dura Flo™ CV 17mm

The Competition Doesn't Measure Up

NDS 17mm Dura Flo CV dripline utilizes a highly engineered check valve design that allows for lower opening pressures. That means you can install in larger sections before you need to install a valve. Installation is faster, saving you time and money.

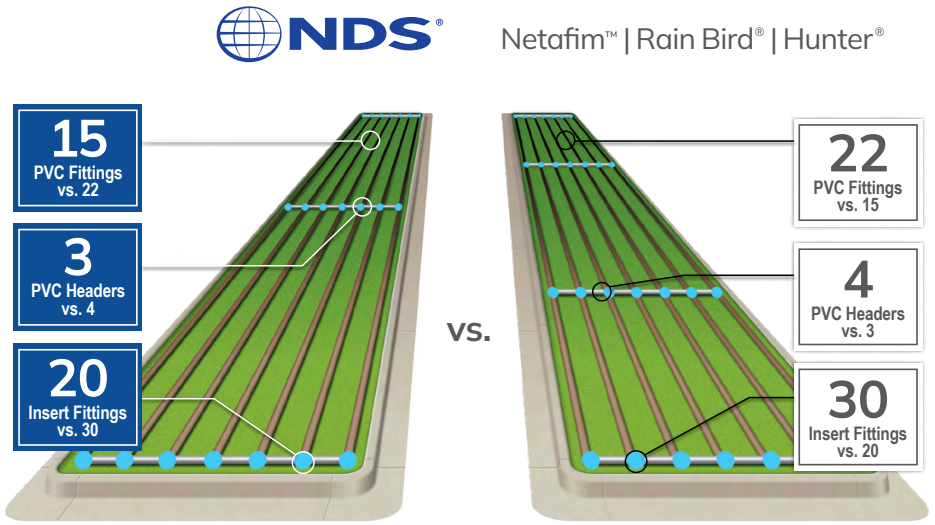
NDS Dripline Offers 30% Longer Run Length at 35 PSI



*12 in. Spacing, 0.9 GPH

Material and Labor Savings

NDS's run length advantage delivers a 30% reduction in header materials and a 20% savings in installation labor. Longer run lengths also mean there are 30% fewer connections, creating less opportunities for leaks and lowering overall maintenance costs.



This is an aerial view of a 600 ft. x 5 ft. (3,000 sf) median using Dura Flo CV dripline products.

This is an aerial view of a 600 ft. x 5 ft. (3,000 sf) median using Netafim™, Rain Bird® and Hunter® products.

Rain Bird® is a registered trademark of Rain Bird Corporation, Inc. Netafim™ is a trademark of Netafim™. Hunter® is a trademark of Hunter Industries.

Applications

NDS Dura Flo CV dripline works with all applications: foundation planting, raised planters, landscape, medians, roadways, slopes, subsurface turf, and sports fields.

Features

- Pressure compensating emitters provide uniform coverage and consistent flow
  - Each emitter opens at 7.5 PSI, which allows longer run lengths and reduced material and labor costs
  - Feature 2 PSI check valve that holds back up to 4.5 ft. of elevation, which prevents low head drainage and keeps the line full between intervals for instant watering when the system cycles back on
  - Self-flushing to keep emitters free of debris and reduce system maintenance
- Anti-siphon feature is integrated into each check valve to prevent the suction of debris into the emitter, eliminating the need for an air/vacuum relief valve
- Shrink wrapped coils allow for easy handling and installation
- Easy-to-use fittings are compatible with NDS 17mm insert fittings and Smart Loc™ multidiameter fittings

Operating Range

- Recommended system pressure: 20-60 PSI
- Emitter opening pressure: 7.5 PSI
- Flow rates: 0.4, 0.6, and 0.9 GPH
- Filtration requirement: 120 mesh

Dura Flo™ CV 17mm

Specifications

- Outside diameter (OD): 0.660 in.
- Inside diameter (ID): 0.560 in.
- Wall thickness: 0.050 in.
- Coil lengths: 100 ft., 250 ft., 500 ft., 1,000 ft.*
- Emitter spacing: 12 in., 18 in., and 24 in.
- Coil colors: Brown, Purple Stripe

Warranty

NDS Dura Flo CV dripline offers five (5) years on product workmanship and seven (7) years on environmental stress cracking.

Dura Flo CV 17mm Dripline (0.560 in. ID x 0.660 in. OD, Wall 0.050 in.)									
Part Number	**Flow GPH**	**Emitter Spacing**	**Size**	**ID**	**OD**	**PC**	**CV**	**Color**	**Coil Size**
SFCV-BR-6112-01S*	0.4	12 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	100 ft. Wrapped
SFCV-BR-6212-01S	0.6	12 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	100 ft. Wrapped
SFCV-BR-6212-025S	0.6	12 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	250 ft. Wrapped
SFCV-BR-6212-05S	0.6	12 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	500 ft. Wrapped
SFCV-BR-6218-025S	0.6	18 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	250 ft. Wrapped
SFCV-BR-6218-05S	0.6	18 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	500 ft. Wrapped
SFCV-BR-6218-10*	0.6	18 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	1,000 ft. Wrapped
SFCV-BR-6412-01S	0.9	12 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	100 ft. Wrapped
SFCV-BR-6412-025S	0.9	12 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	250 ft. Wrapped
SFCV-BR-6412-05S	0.9	12 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	500 ft. Wrapped
SFCV-BR-6418-01S	0.9	18 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	100 ft. Wrapped
SFCV-BR-6418-025S	0.9	18 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	250 ft. Wrapped
SFCV-BR-6418-05S	0.9	18 in.	17mm	.560 in.	.660 in.	Yes	Yes	Brown	500 ft. Wrapped

Glossary

Flow: Flow per emitter (GPH)	**Emitter Spacing:** Spacing between emitters	**Size:** Industry reference
ID: Inside diameter of tubing	**OD:** Outside diameter of tubing	**PC:** Pressure compensating
CV: Check valve	**Color:** Color of tubing	**Coil Size:** Number of feet in coil

*Made to order

NDS Dura Flo CV Maximum Length of Run (Feet) 17mm Series - (0.560 in. ID x 0.660 in. OD)

Initial Pressure	12 in. Spacing			18 in. Spacing			24 in. Spacing		
	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
20 PSI	357 ft.	300 ft.	221 ft.	477 ft.	399 ft.	294 ft.	576 ft.	488 ft.	358 ft.
30 PSI	471 ft.	395 ft.	289 ft.	629 ft.	526 ft.	385 ft.	765 ft.	642 ft.	471 ft.
40 PSI	550 ft.	460 ft.	336 ft.	735 ft.	618 ft.	449 ft.	893 ft.	748 ft.	549 ft.
50 PSI	610 ft.	508 ft.	372 ft.	818 ft.	677 ft.	493 ft.	995 ft.	830 ft.	610 ft.
60 PSI	652 ft.	548 ft.	403 ft.	873 ft.	714 ft.	525 ft.	1054 ft.	884 ft.	652 ft.

NDS Dura Flo CV 17mm Dripline Flow (Per 100 Feet)

Emitter Spacing	0.4 GPH Emitter		0.6 GPH Emitter		0.9 GPH Emitter	
	0.4 GPH	0.6 GPH	0.4 GPH	0.6 GPH	0.4 GPH	0.6 GPH
12 in.	40.00	0.67	60.00	1.00	90.00	1.50
18 in.	26.67	0.44	40.00	0.67	60.00	1.00
24 in.	20.00	0.33	30.00	0.50	45.00	0.75

Water Application Rates (Inches per Hour)

Emitter Spacing	Distance Between Laterals										
	12 in.	13 in.	14 in.	15 in.	16 in.	17 in.	18 in.	19 in.	20 in.	22 in.	24 in.
0.4 GPH Emitter Flow Rate											
12 in.	0.64	0.59	0.55	0.51	0.48	0.45	0.43	0.41	0.39	0.35	0.32
18 in.	0.43	0.40	0.37	0.34	0.32	0.30	0.29	0.27	0.26	0.23	0.21
24 in.	0.32	0.30	0.28	0.26	0.24	0.23	0.21	0.20	0.19	0.18	0.16
0.6 GPH Emitter Flow Rate											
12 in.	0.96	0.89	0.83	0.77	0.72	0.68	0.64	0.61	0.58	0.53	0.48
18 in.	0.64	0.59	0.55	0.51	0.48	0.45	0.43	0.40	0.39	0.35	0.32
24 in.	0.48	0.44	0.41	0.39	0.36	0.34	0.32	0.30	0.29	0.26	0.24
0.9 GPH Emitter Flow Rate											
12 in.	1.44	1.33	1.24	1.16	1.08	1.02	0.96	0.91	0.87	0.79	0.72
18 in.	0.96	0.89	0.83	0.77	0.72	0.68	0.64	0.61	0.58	0.53	0.48
24 in.	0.72	0.67	0.62	0.58	0.54	0.51	0.48	0.46	0.43	0.39	0.36

Dura Flo™ CV 18mm

Applications

NDS Dura Flo CV 18mm dripline works with all applications: foundation planting, raised planters, landscape, medians, roadways, slopes, subsurface turf, and sports fields.

Features

- Pressure compensating emitters provide uniform coverage and consistent flow
  - Each emitter opens at 7.5 PSI, which allows longer run lengths and reduced material and labor costs
  - Feature 2 PSI check valve that holds back up to 4.5 ft. of elevation, which prevents low head drainage and keeps the line full between intervals for instant watering when the system cycles back on
  - Self-flushing to keep emitters free of debris and reduce system maintenance
- Anti-siphon feature is integrated into each check valve to prevent the suction of debris into the emitter, eliminating the need for an air/vacuum relief valve
- Shrink wrapped coils allow for easy handling and installation
- Easy-to-use fittings are compatible with 700 series insert fittings and Smart Loc™ multidiameter fittings

Operating Range

- Recommended system pressure: 20-60 PSI
- Emitter opening pressure: 7.5 PSI
- Flow rates: 0.6 and 0.9 GPH
- Filtration requirement: 120 mesh

Specifications

- Outside diameter (OD): 0.700 in.
- Inside diameter (ID): 0.600 in.
- Wall thickness: 0.050 in.
- Coil lengths: 100 ft., 250 ft., 1,000 ft.*
- Emitter spacing: 12 in. and 24 in.
- Coil colors: Brown

Dura Flo CV 18mm Dripline (0.600 in. ID x 0.700 in. OD, Wall 0.050 in.)

Part Number	Flow GPH	Emitter Spacing	Size	ID	OD	PC	CV	Color	Coil Size
SFCV-BR-7212-01	0.6	12 in.	18mm	.600 in.	.700 in.	Yes	Yes	Brown	100 ft. Wrapped
SFCV-BR-7212-025	0.6	12 in.	18mm	.600 in.	.700 in.	Yes	Yes	Brown	250 ft. Wrapped
SFCV-BR-7212-10	0.6	12 in.	18mm	.600 in.	.700 in.	Yes	Yes	Brown	1,000 ft. Wrapped
SFCV-BR-7224-10*	0.9	24 in.	18mm	.600 in.	.700 in.	Yes	Yes	Brown	1,000 ft. Wrapped
SFCV-BR-7412-01	0.9	12 in.	18mm	.600 in.	.700 in.	Yes	Yes	Brown	100 ft. Wrapped
SFCV-BR-7412-025	0.9	12 in.	18mm	.600 in.	.700 in.	Yes	Yes	Brown	250 ft. Wrapped

Glossary

Flow: Flow per emitter (GPH)	**Emitter Spacing:** Spacing between emitters	**Size:** Industry reference
ID: Inside diameter of tubing	**OD:** Outside diameter of tubing	**PC:** Pressure compensating
CV: Check valve	**Color:** Color of tubing	**Coil Size:** Number of feet in coil

*Made to order

Dura Flo™ CV 18mm

NDS Dura Flo CV Maximum Length of Run (Feet) 18mm Series - (0.600 in. ID x 0.700 in. OD)				
Inlet Pressure	12 in. Spacing		18 in. Spacing	
	0.6 GPH	0.9 GPH	0.6 GPH	0.9 GPH
15 PSI	233	174	305	233
20 PSI	344	259	453	341
30 PSI	453	341	597	453
40 PSI	525	397	695	528
50 PSI	577	436	768	577
60 PSI	626	472	833	630

Dura Flo CV 18mm Dripline Flow (Per 100 Feet)				
Emitter Spacing	0.6 GPH Emitter		0.9 GPH Emitter	
	GPH	GPM	GPH	GPM
12 in.	60.00	1.00	90.00	1.50
24 in.	30.00	0.50	45.00	0.75

Water Application Rates (Inches per Hour) Based on Nominal Flow Rates											
Emitter Spacing	Distance Between Laterals										
	12 in.	13 in.	14 in.	15 in.	16 in.	17 in.	18 in.	19 in.	20 in.	22 in.	24 in.
0.6 GPH Emitter Flow Rate											
12 in.	0.96	0.89	0.83	0.77	0.72	0.68	0.64	0.61	0.58	0.53	0.48
24 in.	0.48	0.44	0.41	0.39	0.36	0.34	0.32	0.30	0.29	0.26	0.24
0.9 GPH Emitter Flow Rate											
12 in.	1.44	1.33	1.24	1.16	1.08	1.02	0.96	0.91	0.87	0.79	0.72
24 in.	0.72	0.67	0.62	0.58	0.54	0.51	0.48	0.46	0.43	0.39	0.36

Dura Flo™ PC 16mm

Applications

NDS Dura Flo PC 16mm dripline is the ideal product for watering plants, trees, shrubs, and ground covers. This product is more efficient and effective than sprinklers in hard-to-irrigate areas, including slopes and locations where overspray from sprinklers could cause damage or be a safety hazard.

Features

- Pressure compensating emitters are pre-inserted into 16mm tubing at consistent spacing to provide uniform coverage and flow rate
- Silicone diaphragm offers extra durability and longevity
- Self-flushing emitter eliminates debris from clogging the system during operation
- Each Dura Flo PC coil is banded for easy handling and installation
- Compatible with 600 series compression fittings and Smart Loc™ multidiameter fittings

Operating Range

- Recommended system pressure: 15-60 PSI
- Flow rates: 0.5 and 1.0 GPH
- Filtration requirement: 120 mesh

Dura Flo™ PC 16mm

Specifications

- Outside diameter (OD): 0.640 in.
- Inside diameter (ID): 0.550 in.
- Wall thickness: 0.045 in.
- Coil lengths: 100 ft., 250 ft., 500 ft.
- Emitter spacing: 12 in. and 18 in.
- Coil colors: Brown, Black
- Bending radius: 7 in.

Warranty

NDS Dura Flo PC dripline offers five (5) years on product workmanship and seven (7) years on environmental stress cracking.

Dura Flo PC 16mm Dripline (0.550 in. ID x 0.640 in. OD, Wall 0.045 in.)

Part Number	Flow GPH	Emitter Spacing	Size	ID	OD	PC	CV	Color	Coil Size
SFPC-BR-6212-025	0.5	12 in.	16mm	.550 in.	.640 in.	Yes	No	Brown	250 ft. Wrapped
SFPC-BL-6412-01	1.0	12 in.	16mm	.550 in.	.640 in.	Yes	No	Black	100 ft. Wrapped
SFPC-BR-6412-01	1.0	12 in.	16mm	.550 in.	.640 in.	Yes	No	Brown	100 ft. Wrapped
SFPC-BR-6412-025	1.0	12 in.	16mm	.550 in.	.640 in.	Yes	No	Brown	250 ft. Wrapped
SFPC-BR-6412-05	1.0	12 in.	16mm	.550 in.	.640 in.	Yes	No	Brown	500 ft. Wrapped
SFPC-BL-6412-05	1.0	12 in.	16mm	.550 in.	.640 in.	Yes	No	Black	500 ft. Wrapped
SFPC-BR-6418-01	1.0	18 in.	16mm	.550 in.	.640 in.	Yes	No	Brown	100 ft. Wrapped
SFPC-BR-6418-025	1.0	18 in.	16mm	.550 in.	.640 in.	Yes	No	Brown	250 ft. Wrapped
SFPC-BR-6418-05	1.0	18 in.	16mm	.550 in.	.640 in.	Yes	No	Brown	500 ft. Wrapped
SFPC-BL-6418-05	1.0	18 in.	16mm	.550 in.	.640 in.	Yes	No	Black	500 ft. Wrapped

Glossary

Flow: Flow per emitter (GPH)	**Emitter Spacing:** Spacing between emitters	**Size:** Industry reference
ID: Inside diameter of tubing	**OD:** Outside diameter of tubing	**PC:** Pressure compensating
CV: Check valve	**Color:** Color of tubing	**Coil Size:** Number of feet in coil

Dura Flo PC Maximum Length of Run (Feet) 16mm Series - (0.550 in. ID x 0.640 in. OD)

Inlet Pressure	12 in. Spacing		18 in. Spacing	
	0.5 GPH	1.0 GPH	0.5 GPH	1.0 GPH
15 PSI	203 ft.	148 ft.	264 ft.	192 ft.
25 PSI	265 ft.	195 ft.	380 ft.	280 ft.
35 PSI	325 ft.	240 ft.	460 ft.	335 ft.
45 PSI	365 ft.	265 ft.	520 ft.	380 ft.

Dura Flo PC 16mm Dripline Flow (Per 100 Feet)

Emitter Spacing	0.5 GPH Emitter		1.0 GPH Emitter	
	GPH	GPM	GPH	GPM
12 in.	50.00	0.83	100.00	1.67
18 in.	33.00	0.55	67.00	1.12

Water Application Rates (Inches per Hour) Based on Nominal Flow Rates

Emitter Spacing	Distance Between Laterals										
	12 in.	13 in.	14 in.	15 in.	16 in.	17 in.	18 in.	19 in.	20 in.	22 in.	24 in.
0.5 GPH Emitter Flow Rate											
12 in.	0.80	0.74	0.69	0.64	0.60	0.57	0.53	0.51	0.48	0.44	0.40
18 in.	0.53	0.49	0.46	0.43	0.40	0.38	0.36	0.34	0.32	0.29	0.27
1.0 GPH Emitter Flow Rate											
12 in.	1.60	1.48	1.38	1.28	1.20	1.14	1.06	1.02	0.96	0.88	0.80
18 in.	1.07	0.99	0.92	0.86	0.80	0.75	0.71	0.68	0.64	0.58	0.53

Dura Flo™ PC 17mm

Applications

NDS Dura Flo PC 17mm dripline is the ideal product for watering plants, trees, shrubs, and ground covers. This product is more efficient and effective than sprinklers in hard to irrigate areas, including slopes and locations where overspray from sprinklers could cause damage or be a safety hazard.

Features

- Pressure compensating emitters are pre-inserted into 17mm tubing at consistent spacing to provide uniform coverage and flow rate
- Silicone diaphragm offers extra durability and longevity
- Self-flushing emitter eliminates debris from clogging the system during operation
- Each Dura Flo PC coil is banded for easy handling and installation
- Compatible with NDS 17mm series insert fittings and Smart Loc™ multidiameter fittings

Operating Range

- Recommended system pressure: 15-60 PSI
- Flow rates: 0.5 and 1.0 GPH
- Filtration requirement: 120 mesh

Specifications

- Outside diameter (OD): 0.660 in.
- Inside diameter (ID): 0.560 in.
- Wall thickness: 0.050 in.
- Coil lengths: 100 ft., 250 ft., 500 ft.*
- Emitter spacing: 12 in. and 18 in.
- Coil color: Brown
- Bending radius: 7 in.

Warranty

NDS Dura Flo PC dripline offers five (5) years on product workmanship and seven (7) years on environmental stress cracking

Dura Flo™ PC 17mm Dripline (0.560 in. ID x 0.660 in. OD, Wall 0.050 in.)

Part Number	Flow GPH	Emitter Spacing	Size	ID	OD	PC	CV	Color	Coil Size
SFPC-BR-17212-025S*	0.5	12 in.	17mm	.560 in.	.660 in.	Yes	No	Brown	250 ft. Wrapped
SFPC-BR-17212-05S*	0.5	12 in.	17mm	.560 in.	.660 in.	Yes	No	Brown	500 ft. Wrapped
SFPC-BR-17218-025S*	0.5	18 in.	17mm	.560 in.	.660 in.	Yes	No	Brown	250 ft. Wrapped
SFPC-BR-17224-05S*	0.5	24 in.	17mm	.560 in.	.660 in.	Yes	No	Brown	500 ft. Wrapped
SFPC-BR-17412-01S	1.0	12 in.	17mm	.560 in.	.660 in.	Yes	No	Brown	100 ft. Wrapped
SFPC-BR-17412-025S*	1.0	12 in.	17mm	.560 in.	.660 in.	Yes	No	Brown	250 ft. Wrapped
SFPC-BR-17412-05S	1.0	12 in.	17mm	.560 in.	.660 in.	Yes	No	Brown	500 ft. Wrapped
SFPC-BR-17418-025S*	1.0	18 in.	17mm	.560 in.	.660 in.	Yes	No	Brown	250 ft. Wrapped

Glossary

Flow: Flow per emitter (GPH)	**Emitter Spacing:** Spacing between emitters	**Size:** Industry reference
ID: Inside diameter of tubing	**OD:** Outside diameter of tubing	**PC:** Pressure compensating
CV: Check valve	**Color:** Color of tubing	**Coil Size:** Number of feet in coil

*Made to order

Dura Flo™ PC 17mm

NDS Dura Flo PC Maximum Length of Run (Feet) 17mm Series - (0.560 in. ID x 0.660 in. OD)				
Inlet Pressure	12 in. Spacing		18 in. Spacing	
	0.5 GPH	1.0 GPH	0.5 GPH	1.0 GPH
15 PSI	203 ft.	148 ft.	264 ft.	192 ft.
20 PSI	260 ft.	195 ft.	375 ft.	275 ft.
30 PSI	345 ft.	255 ft.	495 ft.	360 ft.
40 PSI	405 ft.	300 ft.	575 ft.	420 ft.
50 PSI	433 ft.	271 ft.	614 ft.	401 ft.
60 PSI	440 ft.	282 ft.	623 ft.	407 ft.

Dura Flo PC 17mm Dripline Flow (Per 100 Feet)				
Emitter Spacing	0.5 GPH Emitter		1.0 GPH Emitter	
	GPH	GPM	GPH	GPM
12 in.	50.00	0.83	100.00	1.67
18 in.	33.00	0.55	67.00	1.12

Water Application Rates (Inches per Hour) Based on Nominal Flow Rates											
Emitter Spacing	Distance Between Laterals										
	12 in.	13 in.	14 in.	15 in.	16 in.	17 in.	18 in.	19 in.	20 in.	22 in.	24 in.
0.5 GPH Emitter Flow Rate											
12 in.	0.80	0.74	0.69	0.64	0.60	0.57	0.53	0.51	0.48	0.44	0.40
18 in.	0.53	0.49	0.46	0.43	0.40	0.38	0.36	0.34	0.32	0.29	0.27
1.0 GPH Emitter Flow Rate											
12 in.	1.60	1.48	1.38	1.28	1.20	1.14	1.06	1.02	0.96	0.88	0.80
18 in.	1.07	0.99	0.92	0.86	0.80	0.75	0.71	0.68	0.64	0.58	0.53

Dura Flo™ PC 18mm

Applications

NDS Dura Flo PC 18mm dripline is the ideal product for watering plants, trees, shrubs, and ground covers. This product is more efficient and effective than sprinklers in hard-to-irrigate areas including slopes and locations where overspray from sprinklers could cause damage or be a safety hazard.

Features

- Pressure compensating emitters are pre-inserted into 18mm tubing at consistent spacing to provide uniform coverage and flow rate
- Silicone diaphragm for extra durability and longevity
- Self-flushing emitter eliminates debris from clogging the system during operation
- Each Dura Flo PC coil is banded for easy handling and installation
- Compatible with 700 series compression fittings and Smart Loc™ multidiameter fittings

Operating Range

- Recommended system pressure: 15-60 PSI
- Flow rates: 0.5 and 1.0 GPH
- Filtration requirement: 120 mesh

Dura Flo™ PC 18mm

Specifications

- Outside diameter (OD): 0.700 in.
- Inside diameter (ID): 0.600 in.
- Wall thickness: 0.050 in.
- Coil lengths: 100 ft., 500 ft.
- Emitter spacing: 12 in. and 18 in.
- Coil colors: Brown, Black
- Bending radius: 7 in.

Warranty

NDS Dura Flo PC dripline offers five (5) years on product workmanship and seven (7) years on environmental stress cracking

Dura Flo PC 18mm Dripline (0.600 in. ID x 0.700 in. OD, Wall 0.050 in.)									
Part Number	**Flow GPH**	**Emitter Spacing**	**Size**	**ID**	**OD**	**PC**	**CV**	**Color**	**Coil Size**
SFPC-BL-7212-01	0.5	12 in.	18mm	.600 in.	.700 in.	Yes	No	Black	100 ft. Coil
SFPC-BR-7212-01	0.5	12 in.	18mm	.600 in.	.700 in.	Yes	No	Brown	100 ft. Coil
SFPC-BL-7212-05	0.5	12 in.	18mm	.600 in.	.700 in.	Yes	No	Black	500 ft. Coil
SFPC-BL-7412-01	1.0	12 in.	18mm	.600 in.	.700 in.	Yes	No	Black	100 ft. Coil
SFPC-BR-7412-01	1.0	12 in.	18mm	.600 in.	.700 in.	Yes	No	Brown	100 ft. Coil
SFPC-BL-7412-05	1.0	12 in.	18mm	.600 in.	.700 in.	Yes	No	Black	500 ft. Coil
SFPC-BR-7412-05	1.0	12 in.	18mm	.600 in.	.700 in.	Yes	No	Brown	500 ft. Coil
SFPC-BL-7418-05	1.0	18 in.	18mm	.600 in.	.700 in.	Yes	No	Black	500 ft. Coil
SFPC-BR-7418-05	1.0	18 in.	18mm	.600 in.	.700 in.	Yes	No	Brown	500 ft. Coil

Glossary		
Flow: Flow per emitter (GPH)	**Emitter Spacing:** Spacing between emitters	**Size:** Industry reference
ID: Inside diameter of tubing	**OD:** Outside diameter of tubing	**PC:** Pressure compensating
CV: Check valve	**Color:** Color of tubing	**Coil Size:** Number of feet in coil

NDS Dura Flo PC Maximum Length of Run (Feet) 18mm Series - (0.600 in. ID x 0.700 in. OD)

Inlet Pressure	12 in. Spacing		18 in. Spacing	
	0.5 GPH	1.0 GPH	0.5 GPH	1.0 GPH
15 PSI	-----	-----	-----	-----
25 PSI	315 ft.	230 ft.	450 ft.	330 ft.
35 PSI	380 ft.	280 ft.	540 ft.	395 ft.
45 PSI	430 ft.	315 ft.	610 ft.	450 ft.

Dura Flo PC 18mm Dripline Flow (Per 100 Feet)

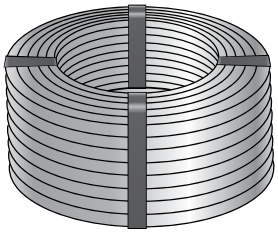
Emitter Spacing	0.5 GPH Emitter		1.0 GPH Emitter	
	GPH	GPM	GPH	GPM
12 in.	50.00	0.83	100.00	1.67
18 in.	33.00	0.55	67.00	1.12

Water Application Rates (Inches per Hour) Based on Nominal Flow Rates

Emitter Spacing	Distance Between Laterals										
	12 in.	13 in.	14 in.	15 in.	16 in.	17 in.	18 in.	19 in.	20 in.	22 in.	24 in.
0.5 GPH Emitter Flow Rate											
12 in.	0.80	0.74	0.69	0.64	0.60	0.57	0.53	0.51	0.48	0.44	0.40
18 in.	0.53	0.49	0.46	0.43	0.40	0.38	0.36	0.34	0.32	0.29	0.27
1.0 GPH Emitter Flow Rate											
12 in.	1.60	1.48	1.38	1.28	1.20	1.14	1.06	1.02	0.96	0.88	0.80
18 in.	1.07	0.99	0.92	0.86	0.80	0.75	0.71	0.68	0.64	0.58	0.53

Dura Flo™ PC HD

Heavy-duty for Commercial Applications



Dura Flo HD dripline is the only ¾ in. heavy-duty solution designed for commercial applications, offering superior durability vs. traditional PVC systems, with the design flexibility and the water efficiency of drip irrigation. Using 900 series compression fittings, Dura Flo HD dripline offers unique spacing configurations and is ideal for sparse uniform planting.

Dura Flo™ PC HD Dripline (0.790 in. ID x 0.940 in. OD, Wall 0.075 in.)									
Part Number	**Flow GPH**	**Emitter Spacing**	**Size**	**ID**	**OD**	**PC**	**CV**	**Color**	**Coil Size**
DFHD-BL-05-116-05*	0.5	6 ft.	3/4 in.	.790 in.	.940 in.	Yes	No	Black	500 ft. Coil
DFHD-BL-10-114-05*	1.0	4 ft.	3/4 in.	.790 in.	.940 in.	Yes	No	Black	500 ft. Coil

Glossary		
Flow: Flow per emitter (GPH)	**Emitter Spacing:** Spacing between emitters	**Size:** Industry reference
ID: Inside diameter of tubing	**OD:** Outside diameter of tubing	**PC:** Pressure compensating
CV: Check valve	**Color:** Color of tubing	**Coil Size:** Number of feet in coil

*Made to order

DURA FLO HD | BLACK | FLOW: 05 = 1/2 GPH | COIL LENGTH: 05 = 500 FT.

DFHD- BL - XX - XXX - 05

EMITTER SPACING:

O–O–O———O–O–O **116** = 3 EMITTERS, 1' BETWEEN EACH EMITTER, 6' BETWEEN CLUSTERS

O–O–O——O–O–O **114** = 3 EMITTERS, 1' BETWEEN EACH EMITTER, 4' BETWEEN CLUSTERS

Dura Flo™ JR ¼ in. Dripline

Applications

The most efficient way to water small, tight spaces, potted plants, vegetable gardens, and any place where overspray is an issue. For larger shrubs, a loop can be made off the 1/4 in. drip supply line.

Features

- Consists of a drip emitter pre-inserted every 6 in. or 12 in. in 1/4 in. tubing
- Dual exit ports 180° apart provide uniform flow and help to minimize clogging
- Self-cleaning emitter with built-in dual filters to reduce clogging
- Highly flexible, fits in tight or narrow spaces

Operating Range

- Recommended system pressure: 10-40 PSI
- Flow rates: 0.56 GPH at 20 PSI
- Maximum distance: 6 in. spacing - 19 ft.
- Maximum distance: 12 in. spacing - 33 ft.
- Filtration requirement: 150 mesh

Specifications

- Outside diameter (OD): 0.250 in.
- Inside diameter (ID): 0.170 in.
- Wall thickness: 0.040 in.
- Coil lengths: 100 ft., 500 ft., and 1,000 ft.
- Emitter spacing: 6 in. and 12 in.
- Coil colors: Brown, Black

Dura Flo™ JR ¼ in. Dripline

Warranty

NDS Dura Flo JR dripline has a limited one-year warranty

Pressure	Discharge of Emitter
10 PSI	0.39 GPH
15 PSI	0.47 GPH
20 PSI	0.56 GPH
25 PSI	0.63 GPH
30 PSI	0.69 GPH
35 PSI	0.75 GPH
40 PSI	0.79 GPH

Dura Flo JR Dripline (0.170 in. ID x 0.250 in. OD, Wall 0.040 in.)									
Part Number	**Flow GPH**	**Emitter Spacing**	**Size**	**ID**	**OD**	**PC**	**CV**	**Color**	**Coil Size**
SFJR-BL-06-01	0.5	6 in.	1/4 in.	.170 in.	.250 in.	No	No	Black	100 ft. Coil
SFJR-BR-06-01	0.5	6 in.	1/4 in.	.170 in.	.250 in.	No	No	Brown	100 ft. Coil
SFJR-BL-06-05*	0.5	6 in.	1/4 in.	.170 in.	.250 in.	No	No	Black	500 ft. Coil
SFJR-BL-06-10	0.5	6 in.	1/4 in.	.170 in.	.250 in.	No	No	Black	1,000 ft. Coil
SFJR-BL-12-01	0.5	12 in.	1/4 in.	.170 in.	.250 in.	No	No	Black	100 ft. Coil
SFJR-BR-12-01	0.5	12 in.	1/4 in.	.170 in.	.250 in.	No	No	Brown	100 ft. Coil
SFJR-BL-12-05*	0.5	12 in.	1/4 in.	.170 in.	.250 in.	No	No	Black	500 ft. Coil
SFJR-BL-12-10*	0.5	18 in.	1/4 in.	.170 in.	.250 in.	No	No	Black	1,000 ft. Coil

Glossary

Flow: Flow per emitter (GPH)	**Emitter Spacing:** Spacing between emitters	**Size:** Industry reference
ID: Inside diameter of tubing	**OD:** Outside diameter of tubing	**PC:** Pressure compensating
CV: Check valve	**Color:** Color of tubing	**Coil Size:** Number. of feet in coil

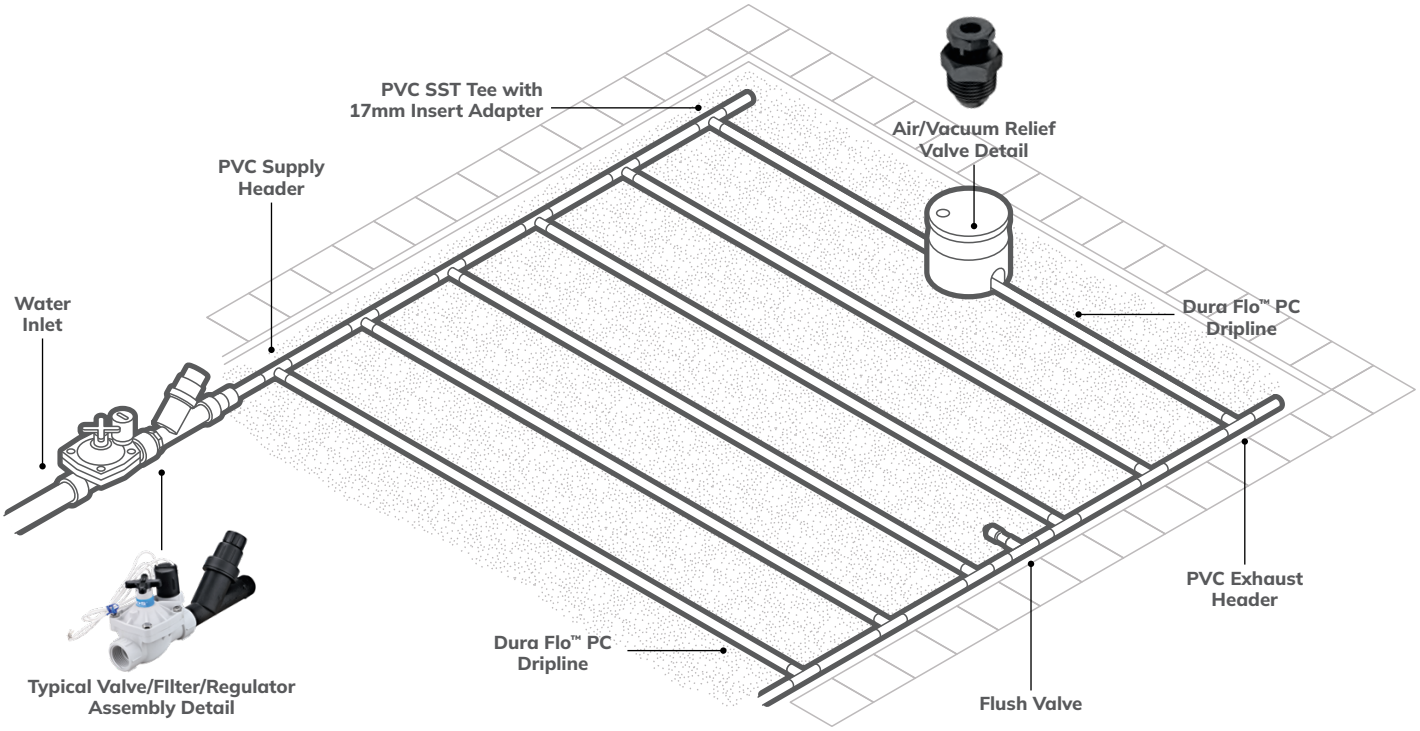
*Made to order

Dripline Zone Calculations

Which Dripline to Use

For most applications, a grid layout of Dura Flo™ dripline is recommended. Essentially this type of layout balances the system hydraulically and allows improved emission uniformity. In addition, in case of a break in the dripline, water would exit from both sides of the break, allowing for flushing once damaged tubing has been removed.

The grid system is comprised of a supply header at the beginning of the system and an exhaust header at the other end. Depending on the size of the dripline system, these headers (or manifolds) are normally made with rigid PVC pipe and fittings, 17mm adapters or compression adapters. The Dura Flo dripline is then attached to these fittings for a watertight seal. It is important to size the supply header properly depending on the flow rate of the entire system.



Dripline Zone Calculations

If your system is a grid layout, it is important to size your supply header correctly. First you must calculate the total flow of your grid layout by using the tables below. Once you have your calculations, use Table C to select the proper size PVC or polyethylene tubing.

For example: A grid zone that has 925 ft. of 0.6 GPH at 18 in. emitter spacing; the calculation would be 9.25 (in hundreds) x 0.67 GPM = 6.19 gallons per minute for the zone. Supply lines and headers should then be sized to flow 6.19 without exceeding 5 ft. per second velocity.

Table A: Dura Flo™ CV 17mm & 18mm Dripline Flow (Per 100 Feet)

Emitter Spacing	0.4 GPH Emitter		0.6 GPH Emitter		0.9 GPH Emitter	
	GPH	GPM	GPH	GPM	GPH	GPM
12 in.	40.00	0.67	60.00	1.00	90.00	1.50
18 in.	26.67	0.44	40.00	0.67	60.00	1.00
24 in.	20.00	0.33	30.00	0.50	45.00	0.75

Table B: Dura Flo™ PC 16mm, 17mm & 18mm Dripline Flow (Per 100 Feet)

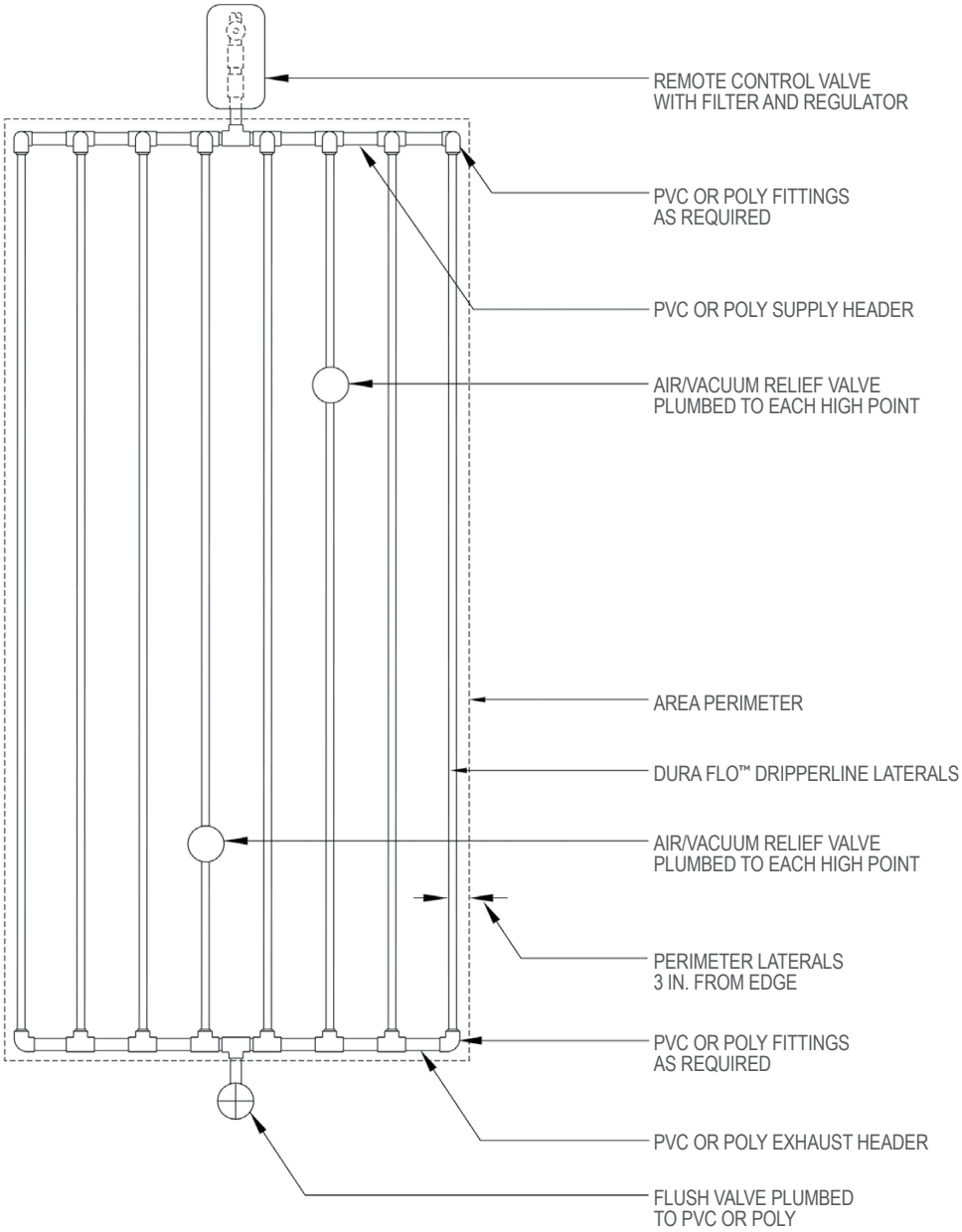
Emitter Spacing	0.5 GPH Emitter		1.0 GPH Emitter	
	GPH	GPM	GPH	GPM
12 in.	50.0	0.83	100.00	1.67
18 in.	33.0	0.55	67.00	1.12

Table C: Supply Header Maximum Flow

Sch 40 PVC Pipe Header	Maximum Flow (GPM)	PSI Loss		Poly Tubing Header	Maximum Flow (GPM)	PSI Loss
1/2 in.	4.8	7.8		1/2 in.	4.8	7.8
3/4 in.	8.3	5.6		3/4 in.	8.3	5.6
1 in.	13.5	4.2		1 in.	13.5	4.2
1 1/4 in.	23.0	3.0		1 1/4 in.	23.0	3.0
1 1/2 in.	34.0	2.8		1 1/2 in.	34.0	2.8
2 in.	52.5	1.9		2 in.	52.5	1.9

Basic Dripline Layouts

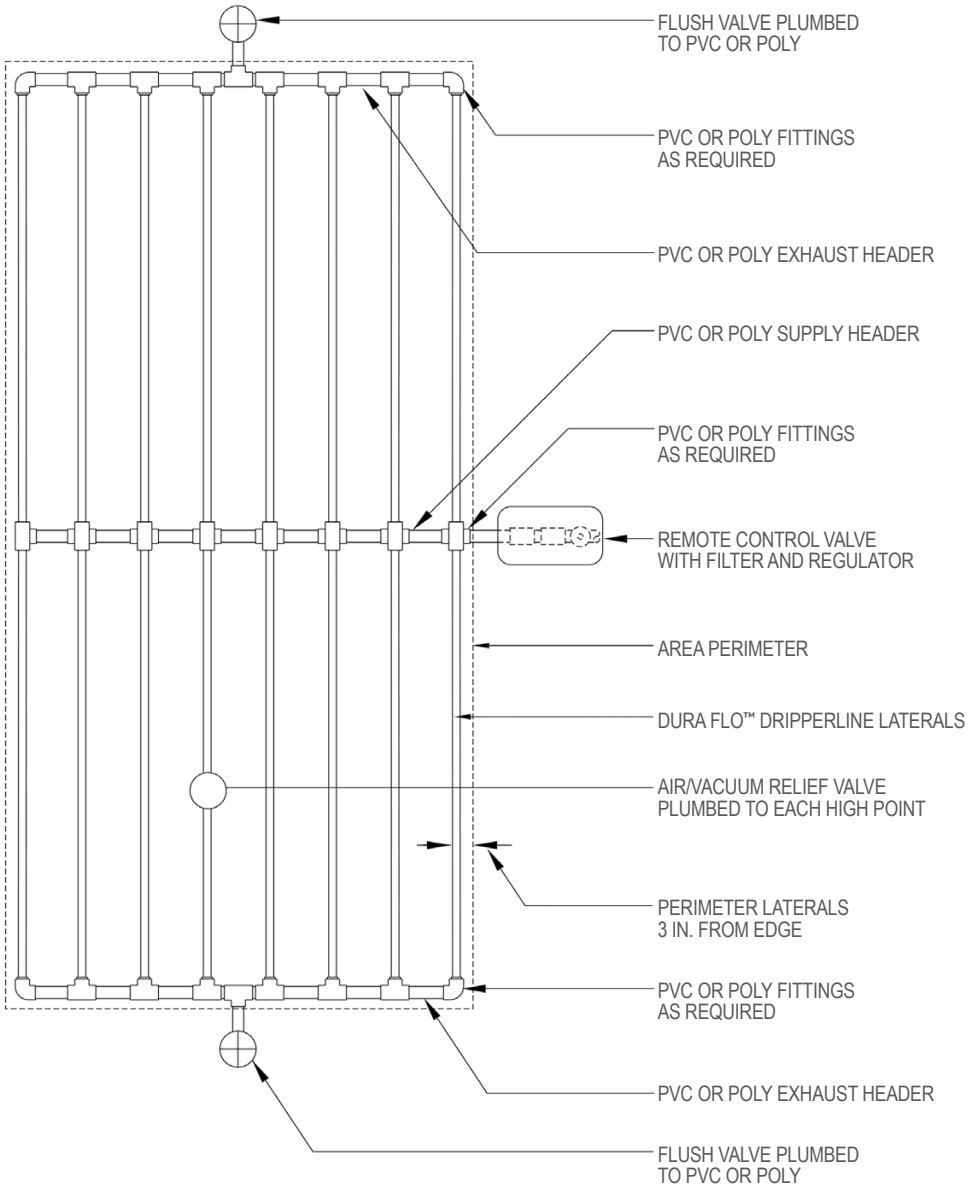
End Feed



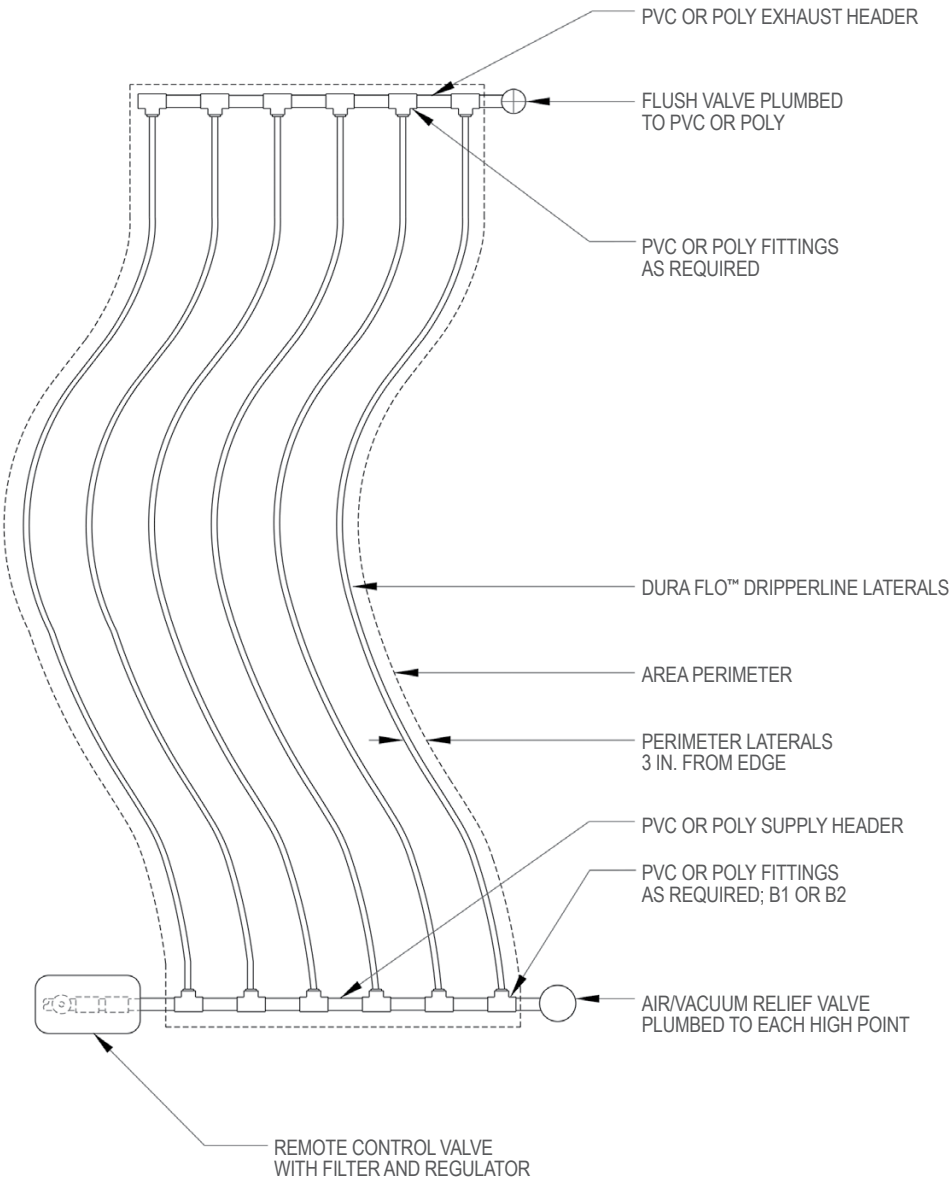
Basic Dripline Layouts

Center Feed

Depending on the maximum length of runs required, the grid system might be an end feed or center feed. In certain cases, such as smaller systems or freezing conditions, these headers can be assembled using polyethylene tubing, blank dripline, and 17mm insert fittings.

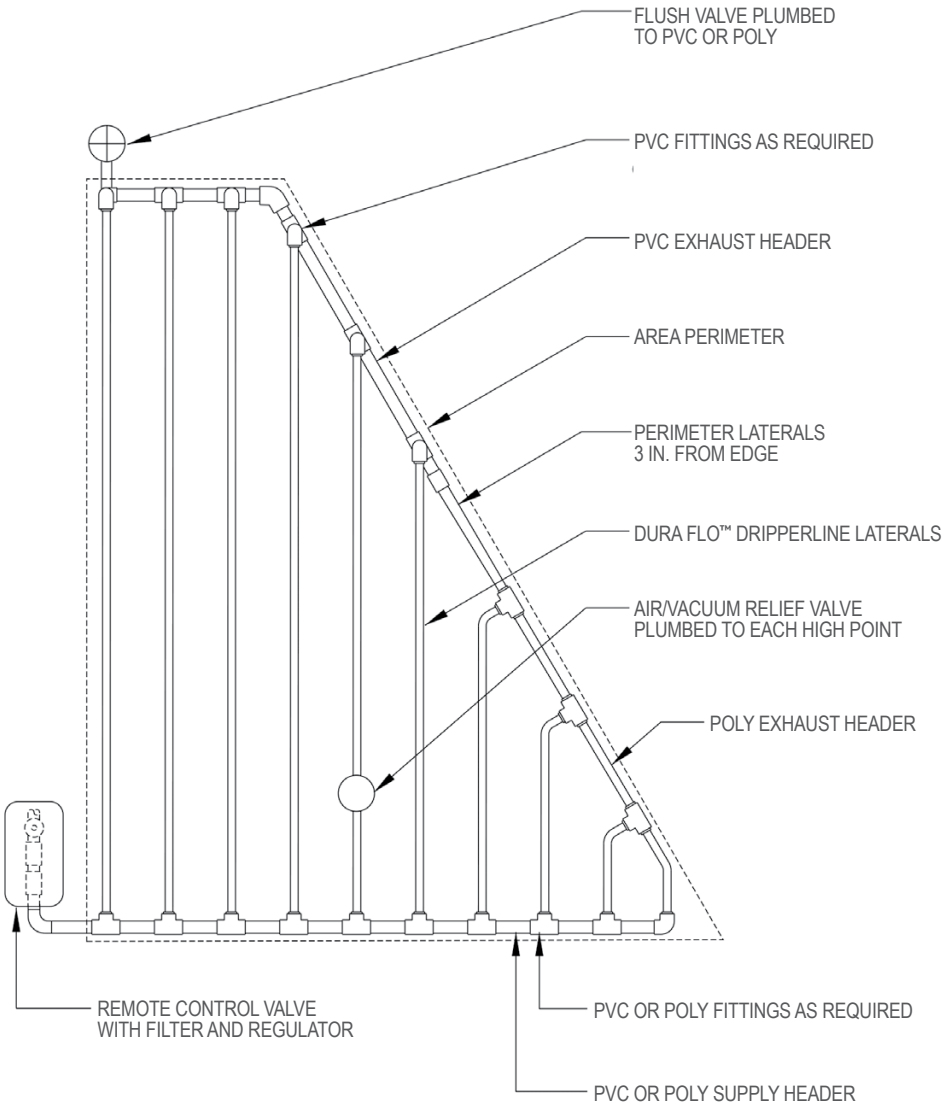


End Feed in a Curved Area

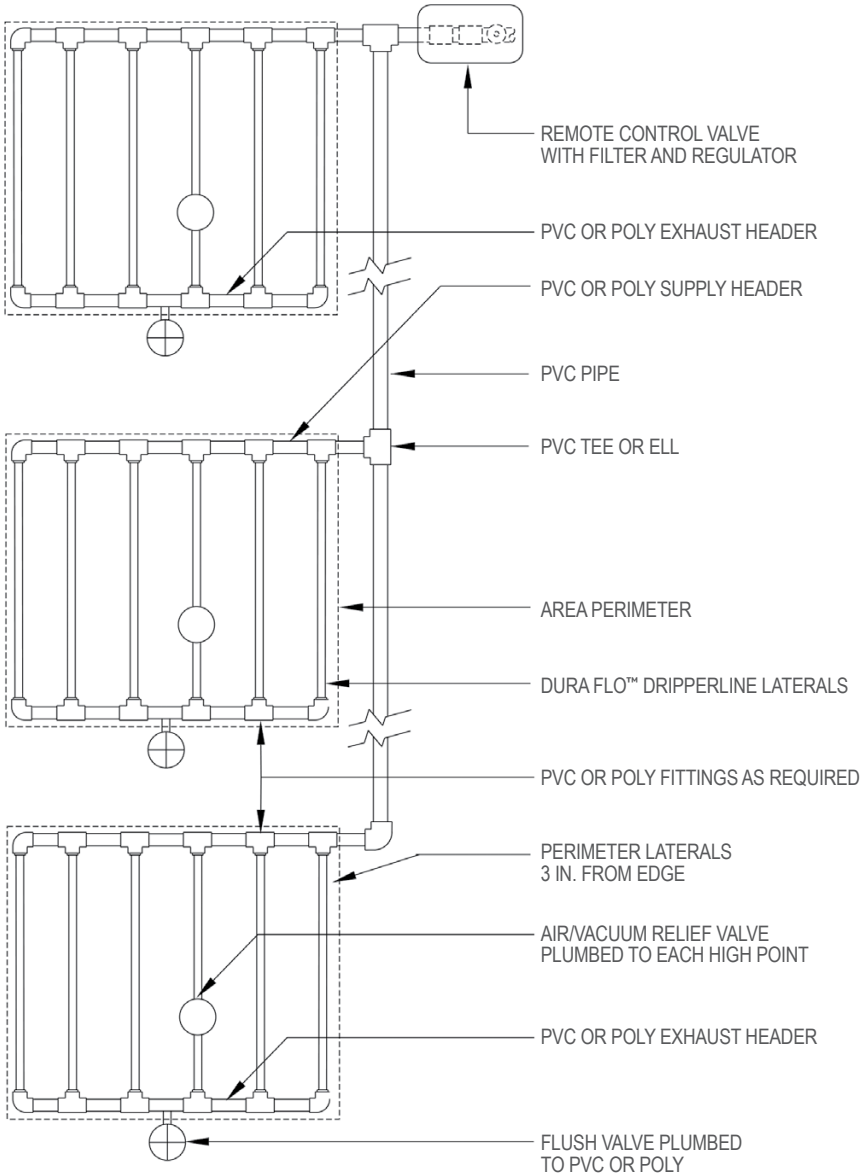


Basic Dripline Layouts

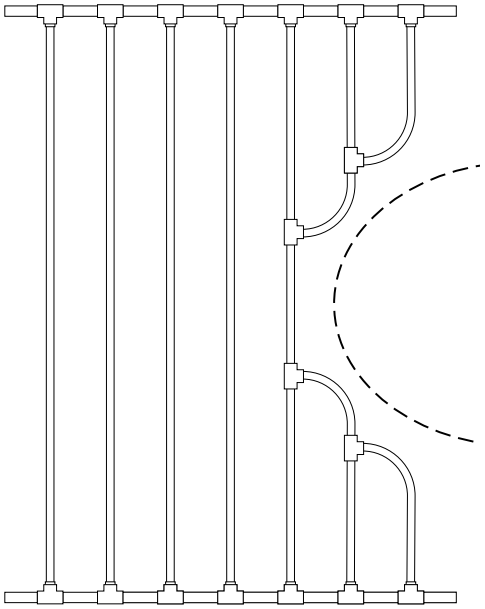
End Feed in a Triangular Area



Multiple Island Layout

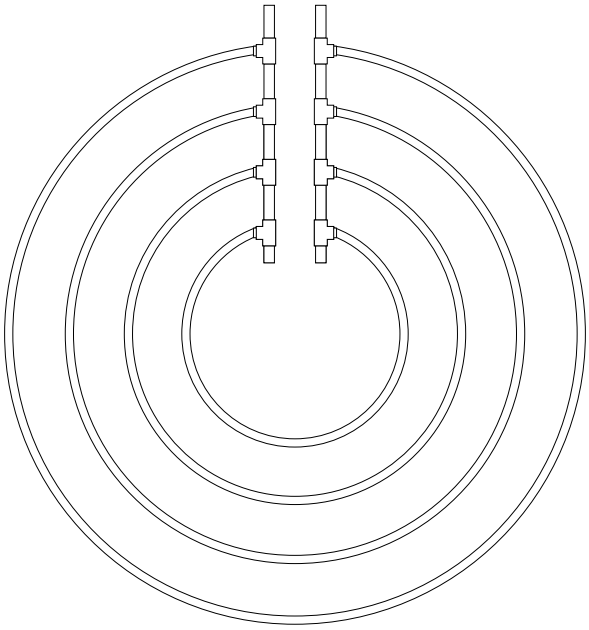


Additional Dripline Layouts



Rectangular area with odd shaped cut-outs

Use this method when adding or subtracting dripline rows from a system.



Round area

Feed area from one side using care to properly size the PVC supply header. Use flush valves and air/vacuum relief valves as necessary.

Irrigating Slopes

Slopes need to be treated differently from flat areas because of the way water moves through the soil, and also because water in the Dura Flo™ dripline, supply, and exhaust headers could drain through the dripline's lowest emitter when the system is shut off.

Using Dura Flo CV, which has a check valve built into every emitter, can typically keep the water in the dripline and not have it unnecessarily drain out.

To minimize these low emitter drainage issues, follow the tips below:

How to Minimize Drainage Issues

Tip 1

Run the Dura Flo PC, or Dura Flo CV dripline across the slope, not down.

Tip 2

Use smaller zones (separate grids) when there are slopes. As a general rule, design the zones to limit the elevation change to 4.5 ft.

Tip 3

In steep slopes, the use of inline check valves should also be considered.

Tip 4

When Dura Flo dripline is running across the slope and the elevation drop from the top dripline to the bottom dripline in the same zone exceeds 4.5 ft., it is recommended to increase the spacing between dripline rows progressively as they move down the slope.

Dripline Spacings on Slopes

Total Elevation Change	Aggregate Increase in Dripline Spacing
3 ft.	5%
5 ft.	10%
7 ft.	15%
10 ft.	25%

17mm Insert Fittings

Applications

- Designed to securely connect sections of 17mm supply tubing or driplines
- Compatible with NDS or other manufacturers' products

Features

- Unique double-barb design allows for easy installation
- Ideal for both subsurface and on-grade installations
- Treated with UV inhibitors to prevent fading and cracking

Pressure Range

0 to 50 PSI

Specifications

Fits 17mm (0.560 ID X 0.660 OD) supply tubing or dripline

Warranty

Limited one-year warranty

Part Number	Description	Image
C 17	17mm Insert Couplings	
EL 17	17mm Insert Elbows	
T 17	17mm Insert Tees	
CX 17	17mm Insert Crosses	
BTMA 1750	17mm Insert X 1/2 in. MPT Adapters	
BTMA 1775	17mm Insert X 3/4 in. MPT Adapters	
TMA 1750	17mm Insert Tee X 1/2 in. MPT Adapters	
YMA 1775	17mm Insert Y X 3/4 in. MPT Adapters	
BV 17	Insert Ball Valves	

Compression Fittings

600, 700, 710, 900 Series

Applications

- Connects sections of supply tubing or dripline
- Provides unobstructed flow, preventing additional pressure loss to the system

Features

- Designed with an internal barb that compresses and holds supply tubing or driplines in place and creates a watertight connection
- Color-coded ring enables easy identification
- Ideal for both subsurface and on-grade installations
- Made of acrylonitrile butadiene styrene (ABS) treated with UV inhibitors to prevent fading and cracking

Pressure Range

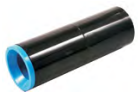
0 to 50 PSI

Specifications

See Compression Fittings Sizing Chart

Warranty

Limited one-year warranty

Compression Fittings	Image
Compression Adapters	
Compression Couplings	
Compression Elbows	
Compression Tees	
Compression End Caps	
Compression Male Adapters	
Compression 3/4 in. Swivel Fittings	

600, 700, 710, 900 Series

Compression Fittings Sizing Chart				
Fitting Series	**Description**	**Color**	**Available Fittings**	**Part Number**
600	Use with NDS A 620 (1/2 in. tubing) Fits .604 in. to .610 in. OD tubing	Green	Tee	CT 600
			Coupling	CC 600
			Elbow	CEL 600
			End Cap	CEP 600
			1/2 in. MPT Adapter	CMAP5-600
			3/4 in. FHT Swivel Tee	CST 600 or CSTW 600
			PVC Adapter	CA 600
700	Use with NDS A 700 (1/2 in. tubing) Fits .680 in. to .704 in. OD tubing	Black	Tee	CT 700
			Coupling	CC 700
			Elbow	CEL 700
			End Cap	CEP 700
			3/4 in. MHT Adapter	CMAH 700
			1/2 in. MPT Adapter	CMAP5-700
			3/4 in. MPT Adapter	CMAP 700
			3/4 in. FHT Adapter	CSA 700 or CSAW 700
			3/4 in. FHT Swivel Tee	CST 700
			3/4 in. FHT Swivel Elbow	CSEL 700 or CSELW 700
			PVC Adapter	CA 700
710	Use with NDS A 710 (1/2 in. tubing) Fits .704 in. to .710 in. OD tubing	Blue	Tee	CT 710
			Coupling	CC 710
			Elbow	CEL 710
			End Cap	CEP 710
			1/2 in. MPT Adapter	CMAP5-710
			3/4 in. MPT Adapter	CMAP 710
			3/4 in. FHT Adapter	CSAW 710
			3/4 in. FHT Swivel Tee	CST 710
			3/4 in. FHT Swivel Elbow	CSEL 710
			PVC Adapter	CA 710
900	Use with NDS A 940 (3/4 in. tubing) Fits .940 in. OD tubing	Grey	Tee	CT 900
			Coupling	CC 900
			Reducing Coupling	RCC 7090
			Elbow	CEL 900
			End Cap	CEP 900
			3/4 in. MPT Adapter	CMAP 900
			3/4 in. FHT Adapter	CSA 900 or CSAW 900
			3/4 in. FHT Swivel Tee	CSTW 900
			PVC Adapter	CA 900

Smart Loc™ Multidiameter Fittings

Applications

- Connects supply tubing or dripline together
- Compatible with 16mm, 17mm, and 18 mm dripline or supply tubing

Features

- Unique nut and insert allows for easier placement and fit
- Reduces inventory by accommodating various tubing sizes
- Reusable design
- Made of acrylonitrile butadiene styrene (ABS) treated with UV inhibitors to prevent fading and cracking

Pressure Range

Up to 60 PSI

Specifications

Works with various sizes of supply tubing or dripline

Warranty

Limited one-year warranty

Part Number	Description	Image
SLC 18	Smart Loc™ Couplings	
CEL 18	Smart Loc™ Elbows	
CT 18	Smart Loc™ Tees	
CEP 18	Smart Loc™ End Caps	
CMAP 5-18	Smart Loc™ 1/2 in. MPT Adapters	
CMAP 75-18	Smart Loc™ 3/4 in. MPT Adapters	
CMAH 18	Smart Loc™ 3/4 in. MHT Adapters	
CSA 18	Smart Loc™ 3/4 in. FHT Swivel Adapter	

Installation Tips

Note: Do not remove nut from fitting.

Tip 1

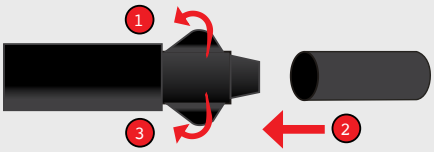
Expose the barbed insert end of the adapter by rotating the nut all the way up the thread

Tip 2

Insert tubing onto the end of the barb

Tip 3

Twist nut over the tubing to secure in place



Micro Fittings and Stakes

For Dura Flo™ JR ¼ in. Tubing

Part Number	Description	Color	Bag Qty/BoxQty.	Image
C 250	Connector (barb x barb) (Fits 0.160 in. ID – 0.170 ID tubing) Use with A 250 1/4 in. tubing & Dura Flo JR	Black	100/10,000	
T 250	Tee (barb x barb) (fits 0.160 in. ID – 0.170 ID tubing) Use with A 250 1/4 in. tubing & Dura Flo JR	Black	100/3,000	
EL 250	Elbow (barb x barb) (fits 0.160 in. ID – 0.170 ID tubing), use with A 250 1/4 in. tubing & Dura Flo JR	Black	100/3,000	
GP	Dual Goof Plug (20/rack)	Black	100/10,000	
ST 250	Adapter for Dura Flo JR and A 250 1/4 in. tubing (1/2 in. FIPT x 1/4 in. barbed swivel tee)	Black	100/300	
SEL 250	Adapter for Dura Flo JR and A 250 1/4 in. tubing (1/2 in. FIPT x 1/4 in. barbed swivel elbow)	Black	100/300	
RA 250	Riser Extension Adapter (1/2 in. FIPT x 1/2 in. MIPT x 1/4 in. barb)	Black	25/100	
MV 25	1/4 in. Flow Controlling Valve (barb x barb) (Fits 0.160 in. ID – 0.170 in. ID tubing)	Black	100/500	
SW6	Stakes	Galvanized	100/1000	

Point of Connection Components

Part Number	Description	Color	Bag Qty/BoxQty.	Image
A 675CT	Battery Operated Analog Hose Bibb Timer. Program for how often, how long, manual watering, rain delay	Blue	1/10	
FR2 17-710	Spray-to-Drip Universal Conversion Kit 17mm-.710. Converts a sprinkler system into a drip system. comes with kit, two adapter fittings and an end cap	Black	1	
CAP POP/5	Universal Pop-Up Sprinkler Cap. Two-piece design is compatible with most manufacturers sprayheads	Black	5	
CAP POP/25	Universal Pop-Up Sprinkler Cap. Two-piece design is compatible with most manufacturers sprayheads	Black	25	
PRYF 30	Pressure Regulating Filter, 3/4 in. MPT, regulator preset at 30 PSI, 200 mesh filter element. (flow range: 0.2-5 GPM) (PSI range: 20-150 PSI)	Black	1/5	
PRYF 40	Pressure Regulating Filter, 1 in. MPT, regulator preset at 40 PSI, 200 mesh filter element. (flow range: 2-15 GPM) (PSI range: 20-150 PSI)	Black	1/5	
Drip Zone Kit	Drip Zone Kit: 150 mesh filter, 30 PSI regulator, 1-8 gpm flow, (fits .680-.710 OD tubing outlet, 1 in. and 3/4 in. MPT inlet)	Black	1/10	
CZK 100-30F	1 in. Control Zone Kit with 30 PSI pressure regulating filter, valve has flow control stem	Black and White	1/10	
CZK 100-40F	1 in. Control Zone Kit with 40 PSI pressure regulating filter, valve has flow control stem	Black and White	1/10	

Dripline System Winterization

If you live in an area that has freezing temperatures and/or hard frosts, it will be necessary to completely drain the dripline system to prevent water from freezing and expanding inside, which can damage the line and other components.

Before the first freeze, open the ends of all your dripline tubing and disconnect the dripline from the water faucet or automatic irrigation valve. The dripline can be left out over the winter, but the system must be drained of all water.

Allow gravity to drain all the water out of the dripline system. You can assist gravity by lifting the dripline to help the water drain out. If gravity does not do a complete job, you may wish to have a professional use low-pressure compressed air (no more than 30 PSI) to blow out the system.

A little water in the driplines is not cause for concern. The dripline is made of polyethylene tubing and is more flexible and forgiving than hard lines such as PVC or metal pipe. When you are satisfied that the driplines have been drained, we suggest that you close off all the open dripline ends. This will keep them free of debris and insects.

Dripline System Formulas

Dripline Calculator

Access our dripline calculator here:
https://www.ndspro.com/us/en/resources/calculators/dripline-calculator

Calculate Dripline Application Rate		
231.1 x Emitter Flow Rate (GPH) / Dripline Row Spacing (inches) x Emitter Spacing (inches)	=	Application Rate in Inches per Hour

System Run Time		
Plant Water Requirement (Inches per Day) / Application Rate x Application Efficiency	=	System Run Time (Hours)

Amount of Dripline That Can Be Installed Based on a Known Flat Rate		
Available Flow in Gallons per Minute / Dripline Flow per 100 Ft. X 100	=	Feet of Dripline

Amount of Dripline Needed Based on Size of Irrigated Area		
Area in Square Ft. x 12 / Lateral Row Spacing in inches	=	Feet of Dripline Needed

Quantity of Dripline Emitters within a Zone		
Total Length of Dripline x 12 / Emitter Spacing	=	Number of Emitters in a Zone

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