

N E T A F I M U S A

GREENHOUSE CULTIVATION SOLUTIONS

**PRECISION IRRIGATION AND NUTRIGATION
SOLUTIONS FROM THE GLOBAL LEADER IN
DRIP IRRIGATION**



ABOUT NETAFIM

FROM DRIPS OF WATER, A PROMISING TECHNOLOGY

Netafim was founded in 1965 by farmers and agronomists in Israel to pioneer an exciting new irrigation method. Based on supplying plants with small steady drops of water, this method held great promise for coping with the problems faced when irrigating crops in a harsh climate with intensely hot summers, low rainfall, lack of water resources and highly saline, dry desert soil conditions that made traditional irrigation methods ineffective.

Simcha Blass, an Israeli water engineer, discovered the essence of drip irrigation virtually by chance. One day in the late 1930s, he was passing a residence and noticed that one tree was much taller than the others growing along the fence line. Seeking the reason for its remarkable growth, he saw water dripping from the leaky connection of a nearby water pipe. This simple observation inspired Blass to invent an irrigation method that would emit drops continuously, on schedule, without clogging. In 1959, when affordable, small diameter plastic piping was introduced, he began developing "drip irrigation". After years of experimentation, during which the advantages of drip irrigation were clearly demonstrated in all types of climates, Blass turned over the manufacture and distribution of "dripperline" to Kibbutz Hatzerim and Netafim's production facility - the first of its kind worldwide - was established.

As Netafim's drip irrigation solutions rapidly spread worldwide, one innovative product followed another. Each decade brought with it new developments and today Netafim offers a diverse array of smart irrigation solutions for the agriculture, landscape and turf, greenhouse and nursery, mining and wastewater industries.



NETAFIM USA

Netafim USA, a subsidiary of the Netafim Ltd., was established in 1981 and is headquartered in Fresno, California. We provide innovative irrigation solutions to customers in the United States, Canada and the Caribbean. The company maintains state-of-the-art, ISO certified manufacturing and distribution facilities and we are one of the first manufacturers to be recognized by this global organization for the rigorous quality processes that ensure our products consistently meet the highest standards in the industry.

Billions of Netafim drippers and millions of miles of dripline have been installed since the company's formation, and the technology has only gotten better with time, making drip irrigation less about water delivery and more about total crop management.



GREENHOUSE CULTIVATION SOLUTIONS

Leveraging our leadership in drip irrigation, Netafim is pleased to offer products and solutions for commercial crop production. With precision irrigation products, precision nutrient injection and monitoring tools, you'll get efficient use of water, fertilizers and energy. You can maximize your investment by operating and monitoring schedules and system performance. We are committed to providing simple to operate, high quality, reliable and durable solutions.

Whether your operation is small or large, Netafim has the right products to deliver a uniform, top quality crop.

NETAFIM SOLUTIONS

- ✓ EFFICIENT USE OF WATER
- ✓ EFFICIENT USE OF FERTILIZERS
- ✓ EFFICIENT USE OF ENERGY
- ✓ IMPROVED QUALITY
- ✓ MAXIMUM YIELDS

HOME GROWERS AND SMALL INDOOR OPERATIONS

2-Way and 4-Way Multi-Outlet Drinker (MOD) Assemblies

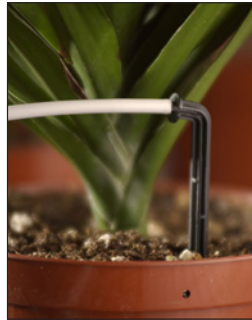
- For precise delivery of irrigation water and nutrients, regardless of the position or elevation of the growing area
- For 0.25 - 25 gallon containers
- One stake every 8" to all sides in soilless substrates
- Quick and simple installation



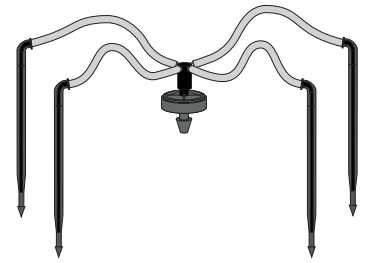
2-WAY MOD



4-WAY MOD

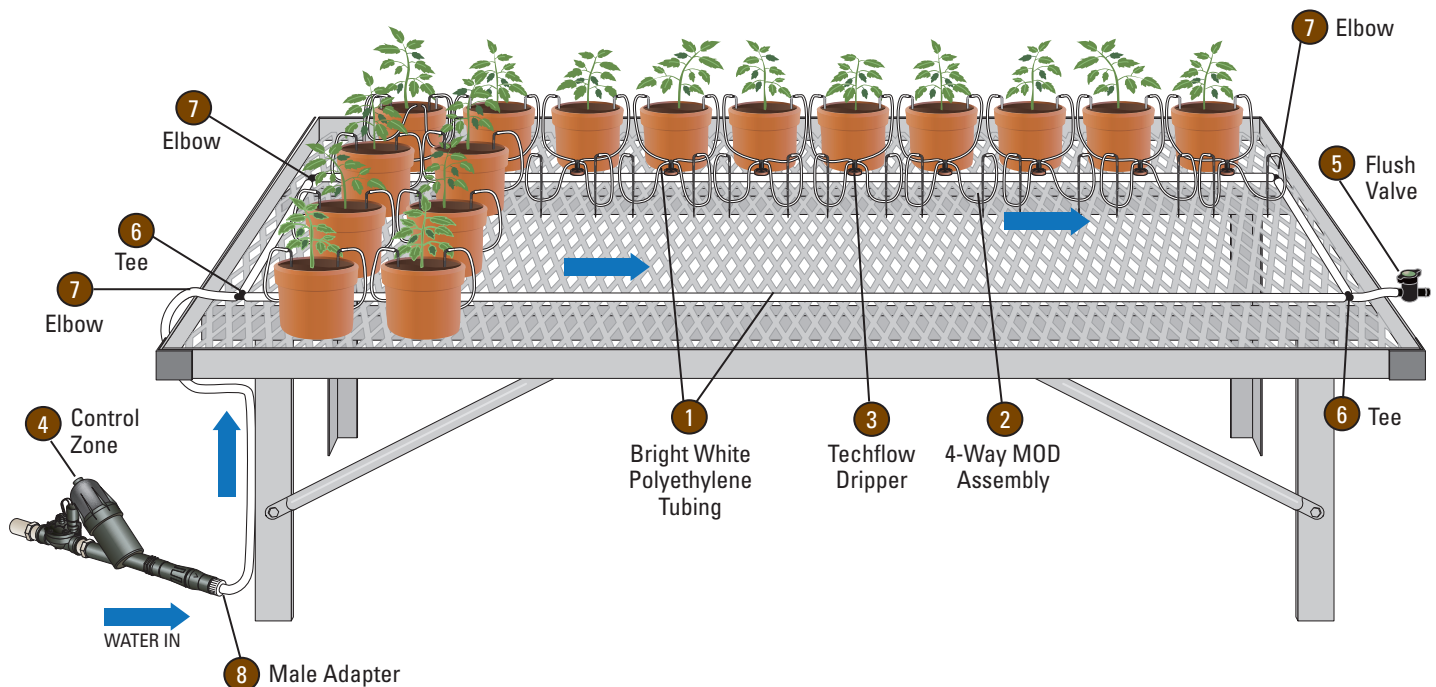


ARROW DRIPPER



Sample Layout for Small to Medium Size Containers with 4-Way Multi-Outlet Drinker (MOD) Assemblies

- 1 gallon or smaller containers, 1 stake per pot
- 3 gallon containers, 2 stakes per container (as shown in sample layout)
- 5 to 7 gallon containers, 4 stakes per container
- 10 to 25 gallon containers, 4 to 6 stakes per container depending on container diameter



Netafim also offers a full line of system components - polyethylene tubing, valves, disc filters and water meters.

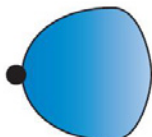
To complete the system, a pump of the correct size is needed which can provide at least 22 psi at the necessary total flow rate (total flow rate determined by adding up all drippers that will run at one time and multiplying by the dripper flow rate). Using a simple pump timer and premixed reservoir of nutrient solution, a very effective, efficient and yield-boosting solution can be assembled.

CULTIVATION SOLUTIONS

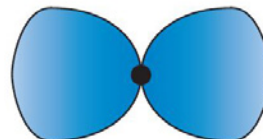
HOME GROWERS AND SMALL INDOOR OPERATIONS

Pressure Compensating (PC) Spray Stakes

- Uniform water and nutrient distribution over a broader surface area
- For larger pots/containers over 25 gallons and/or with a wide diameter and grow bags
- One spray stake for every 1.5 sq. ft. of container surface area
- Extremely effective in larger pots with loose, soilless media



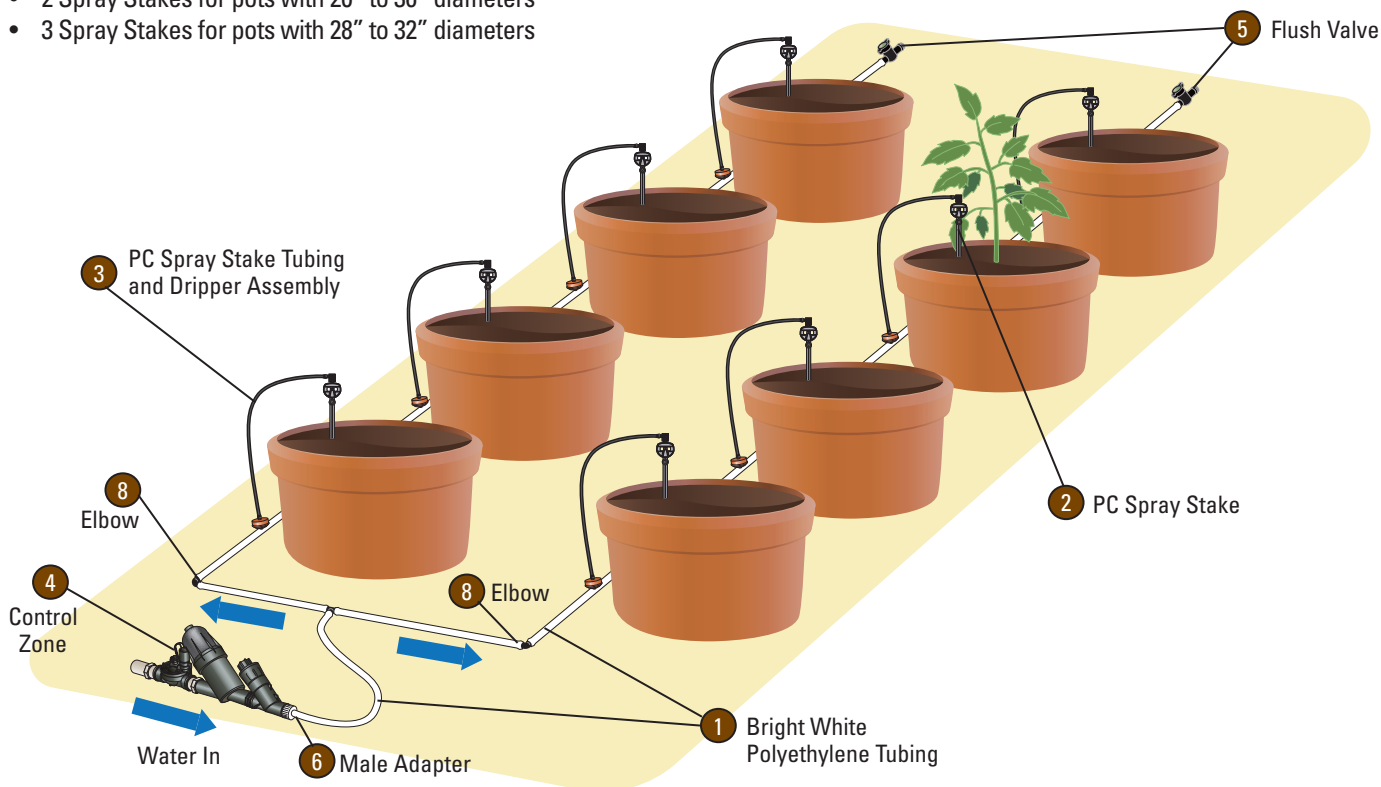
SINGLE SPRAY PATTERN
Best choice for placing near edge of container



DOUBLE SPRAY PATTERN
Used when stake is placed closer to plant

Sample Layout for Large Containers with PC Spray Stakes

- 1 Spray Stake for pots with 15" to 18" diameters
- 2 Spray Stakes for pots with 20" to 36" diameters
- 3 Spray Stakes for pots with 28" to 32" diameters



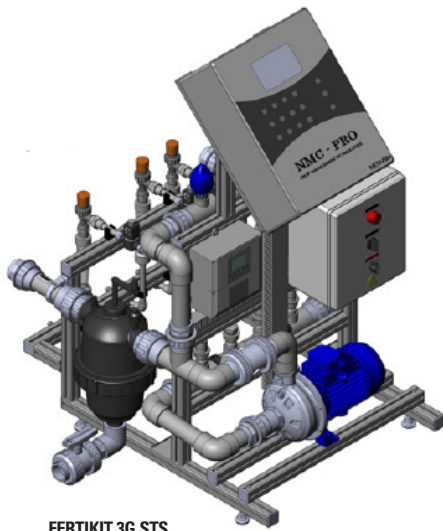
Netafim also offers a full line of system components - polyethylene tubing, valves, disc filters and water meters.

To complete the system, a pump of the correct size is needed which can provide at least 30 psi at the necessary total flow rate (total flow rate determined by adding up all drippers that will run at one time and multiplying by the dripper flow rate). Using a simple pump timer and premixed reservoir of nutrient solution, a very effective, efficient and yield-boosting solution can be assembled.

COMMERCIAL OPERATIONS 10,000 - 43,560 Sq. Ft. Outdoor/Hoop House Kit

Kit Component #1: FertiKit 3G STS and Head Control

- Complete head control and fertigation solution
- Includes main system pump and filter
- Includes main controller capable of vast expansion
- Two fertilizer dosing channels (more available)
- One acid/alkali channel for pH regulation
- EC and pH sensors for automatic, precise injection and monitoring of fertilizers and pH control solution
- Optional Climate Station and remote access to controller is available through NMC Air



FERTIKIT 3G STS

Kit Component #2: Zone Control

- Fast-acting Series 80 zone control valves
- Disc filters of various sizes, chosen based on flow rate of the largest zone
- Direct acting pressure regulators for each zone, chosen by flow rate



SERIES 80 VALVE



MANUAL DISC FILTER

Kit Component #3: Water Application/Emission

Chose one of the three available options based on your specific method of growing.

Option 1: Raised or Trenched Soil Beds or Planted in Native Soil with Subsurface Drip Irrigation

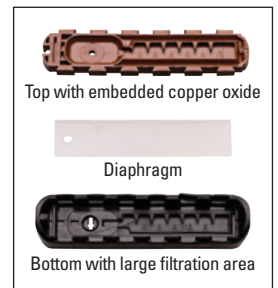
- 17mm Techline® HCVXR Dripline, 0.33 GPH with 12" emitter spacing
- Barbed 17mm shut-off/flush valves
- Techline HCVXR has several features that prevent root intrusion during intentional water stress (e.g. promoting root growth in young plants)



TECHLINE HCVXR DRIPLINE



SHUT-OFF/FLUSH VALVE



Top with embedded copper oxide

Diaphragm

Bottom with large filtration area

TECHLINE HCVXR EMITTER

Option 2: Hydroponic, using Rockwool, Coco Coir, Slabs or Small Containers

- 17mm (0.560" inside diameter) UV Bright White Polyethylene PE tubing
- CNL Pressure Compensating Barbed Emitters, 0.3 GPH (1.2 L/H) pre-assembled with 12" to 60" of white micro-tubing and angle barb stakes
- Barbed 17mm shut-off/flush valves



ANGLE BARB STAKE ASSEMBLY

Option 3: Larger Containers with Greater than 1.5 Sq. Ft. Surface Area on Top, or Hydroton

- 3/4" (0.820" inside diameter) UV Bright White Polyethylene PE tubing
- Pre-assembled Pressure Compensating (PC) Spray Stake Assemblies, double spray pattern
- Barbed 3/4" shut-off/flush valves
- Distributes water over a larger surface area ensuring even wetting in large containers



CULTIVATION SOLUTIONS

COMMERCIAL INDOOR OPERATIONS 10,000 + Sq. Ft.

Kit Component #1: NetaFlex 3G and Head Control

- Complete head control and fertigation solution
- Includes main system pump (filling pump or municipal supply of equal flow rate required)
- Includes main controller capable of vast expansion
- Up to 5 fertilizer dosing channels (more available)
- One acid/alkali channel for pH regulation
- Two each EC and pH sensors for automatic adjustment of injection rates and the most precise/accurate injection and monitoring available
- 10 fertigation recipes - with recipe selection for each zone valve
- Optional Climate Station and remote access to controller is available through NMC Air



Kit Component #2: Zone Control

- Fast-acting Series 80 zone control valves
- Disc filters of various sizes, chosen based on flow rate of the largest zone
- Direct acting pressure regulators for each zone, chosen by flow rate



SERIES 80 VALVE



MANUAL DISC FILTER

Kit Component #3: Water Application/Emission

Chose one of the three available options based on your specific method of growing.

Option 1: Hydroponic, Using Rockwool, Coco Coir, Slabs or Small Containers

- 17mm (0.560" inside diameter) UV Bright White Polyethylene PE tubing
- CNL Pressure Compensating Barbed Emitters, 0.3 GPH (1.2 L/H) pre-assembled with 12" to 60" of white micro-tubing and angle barb stakes
- Barbed 17mm shut-off/flush valves



PE TUBING



SHUT-OFF/FLUSH VALVE



ANGLE BARB STAKE ASSEMBLY

Option 2: Larger Containers with Greater than 1.5 Sq. Ft. Surface Area on Top

- 3/4" (0.820" inside diameter) UV Bright White Polyethylene PE tubing
- Pre-assembled Pressure Compensating (PC) Spray Stake Assemblies, double spray pattern
- Barbed 3/4" shut-off/flush valves
- Distributes water over a larger surface area ensuring even wetting in large containers



Option 3: Containers up to 25 Gallons, Closely Spaced Pots/Cubes

- 17mm (0.560" inside diameter) UV Bright White Polyethylene PE tubing
- CNL Pressure Compensating Barbed Emitters, 1.0 GPH (4 L/H) with nipple outlet
- Pre-assembled 4-Way Multi-Outlet Dripper (MOD) Assemblies with 4 lengths of 8" to 48" tubing and angle arrow dripper stakes
- Barbed 17mm shut-off/flush valves



4-WAY MOD ASSEMBLY

COMMERCIAL OPEN FIELD

System Head

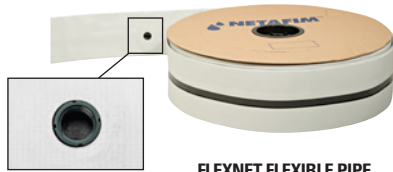
- FertiKit 3G SP NPT for precise, automated injection of multiple fertilizers at high mainline flow rates
- NMC Pro Controller and NMC Air - comprehensive farm automation and management solutions
- Various climate and soil sensors to monitor and adjust irrigation and fertilizer application
- Full line of hydraulic control valves, 3/4" to 12" sizes and 0.1 to 6,000 GPM
- Disc, screen and media filters (manual or automatic self-cleaning) and hydrocyclones for water with heavy sand content
- Water Meters from 1" to 12" sizes and 0.25 to 5,500 GPM flow ranges
- Air/vacuum relief and continuous acting combination air release vents
- FlexNet™ flexible, durable main/submain pipe with pre-installed 1/2" female threaded (FTP) outlets at various spacings for simple and efficient rollout and retrieval (if desired) - it can also be buried as a permanent submain



FERTIKIT 3G SP NPT



AIR VENT



FLEXNET FLEXIBLE PIPE
with 1/2" FTP connectors



CONTROL VALVE



WATER METER



APOLLO DISC FILTER



SAND MEDIA FILTER

Option #1: Techline® HCVXR Dripline

- Pressure compensating emitter with Cupron® copper oxide, high check valve, CNL feature, 15 year limited warranty on root intrusion, 10 year warranty against stress cracks in full sunlight



TECHLINE HCVXR DRIPLINE



UNIRAM DRIPLINE



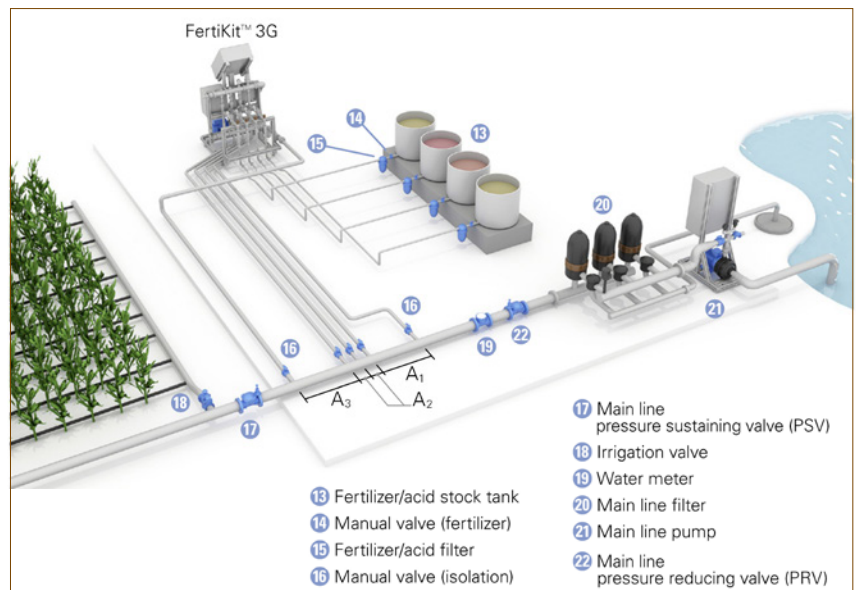
DRIPLINE PC DRIPLINE

Option #2: UniRam™ Anti-Siphon Dripline

- Pressure compensating emitter ensures uniform application of water and nutrients with the industry's widest flow path and highest clog resistance and UV protection with 10 year warranty against stress cracks in full sunlight

Option #3: DripNet™ PC Thinwall Dripline

- Wide regulation pressure range, ideal for undulating terrain and large fields with long rows (up to 50% longer when compared to turbulent drip tape, 2 year warranty against defects)
- Other types of thinwall driplines with non-pressure compensating emitters are available



ADVANCED DOSING SYSTEMS

The most effective way to increase a crop's yield and quality is by feeding the plant according to its specific, ever-changing needs. This means delivering the right amount of nutrients and water at the right time. Giving growers precise control over nutrient and water delivery, Netafim's Nutrigation™ process is comprised of three stages:

1. Dissolving solid fertilizers
2. Mixing and distributing dissolved nutrients according to the desired dosing rates
3. Delivering the precise quantity of nutrients to the plant's root zone

For growers to carry out Nutrigation effectively, they require a full range of automated precision dosing systems. Netafim offers a comprehensive array of dosing systems to meet the specific needs of every grower. Leveraging decades of agronomic know-how and in-field deployment experience, we offer a world-leading portfolio of dosing systems including NetaFlex 3G and FertiKit 3G which are:

- Field proven, easy to install and operate
- Suitable for a variety of geographic and climatic conditions
- Easily integrated with Netafim control and monitoring systems
- Scalable to a wide range of irrigation system flow capacities



GROWER BENEFITS

- ✓ HIGH YIELDS AND CROP QUALITY
- ✓ RELIABLE, HIGHLY-CONTROLLED SYSTEMS
- ✓ COMPREHENSIVE OFFERING TAILORED TO PLOT SIZE AND CROP TYPE
- ✓ LOW WATER, FERTILIZER AND ENERGY CONSUMPTION
- ✓ COST EFFECTIVE WITH RAPID ROI



NetaFlex 3G

Featuring a state-of-the-art open tank dosing system, NetaFlex 3G ensures extremely precise and uniform nutrient dosing. A modular CE-compliant system, it easily integrates with multiple control and monitoring systems.

- Productive: improves crop yields and quality by ensuring precise EC and pH control
- Uniform: delivers a uniform quantity/ratio of nutrients in a homogenous solution
- Comprehensive: works with a wide range of dosing channel units and flow rates from 1 to 158 GPH
- Scalable: scales to system flow rates from 600 to 16,000 GPH
- Cost-effective: offers a rapid ROI
- Flexible: operates in greenhouse soil and soilless media



FertiKit 3G

Featuring a highly versatile and accurate dosing system, the FertiKit 3G requires a minimal investment. It's a CE-compliant system that is suitable for a vast range of irrigation system capacities.

- Productive: improves crop yields and quality by ensuring precise EC and pH control
- Uniform: delivers a uniform quantity/ratio of nutrients by its innovative design
- Comprehensive: works with a wide range of dosing channel units and flow rates from 13 to 264 GPH
- Scalable: scales to system flow rates from 180 to 180,000 GPH
- Cost-effective: offers a rapid ROI
- Flexible: operates in net houses, open fields and orchards



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