



Watering Solution Provider

Tank Injection Solutions



Goals & Objectives

- **Advantages of injection over other methods of application?**
- **Barriers to Injection Systems**
- **Typical Injection solutions**
- **The Underhill Advantage**
- **How does it work?**
- **Features and Benefits**
- **Installation Steps**
- **Need Technical Support?**



Advantage of Injection vs. Other Methods of Application?

- **Material Costs** — Generally speaking liquid solutions tend to be less expensive than granular materials
- **Accuracy** — Less likelihood of too little or too much as once the feed rate is set its maintained throughout the application
- **Less Interruption** — less disruption to play or membership as application is completed at night
- **Labor Costs** — No need to tie up personnel for several days because it can be accomplished during the night
- **Equipment Cost** — No need to tie-up a spreader and/or a tractor or cart with on-going maintenance and fuel costs
- **Better Use of Available Resources** — Use your available resources for other higher priority tasks



Advantages of Injection Systems

Inject virtually any product

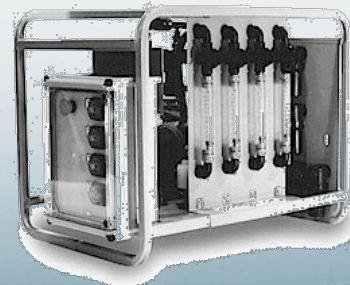
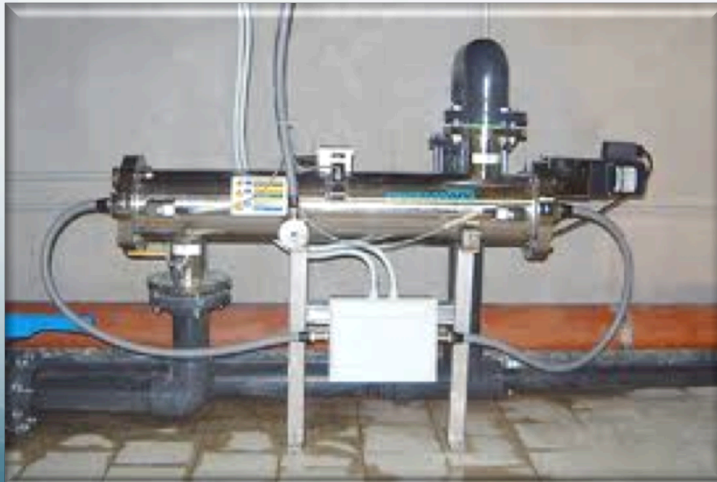
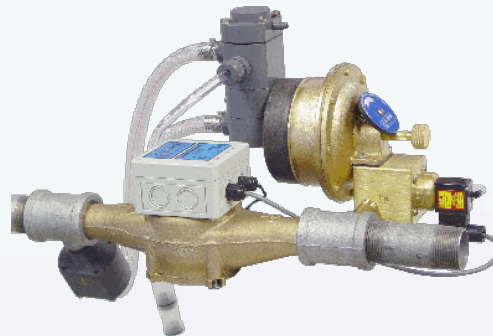
- Bio-Stimulants
- Wetting Agents
- Sulfuric Acid
- N pHuric Acid
- Phosphoric Acid
- Surfactants
- Controls
- Pesticides
- Iron



Barriers to Injection Systems

- Proximity to existing or installation of new existing power
- The cost of an additional pump to maintain and manage
- May require integration with existing control systems
- Possible conflicts with flow requirements of the irrigation pump system
- Uneven dilution of material

Typical Injection Systems



Underhill®

Introducing the Underhill Advantage

- No moving parts
- No electricity required
- No more pump heads to fail
- No more injection limits
- No maximum flow requirements
- Lowest cost in the market
- Metering adjustability
- Varying sizes of tanks or hose-end applicators depending on your needs
- Consistent dilution from start to finish w/ patented mixing capabilities

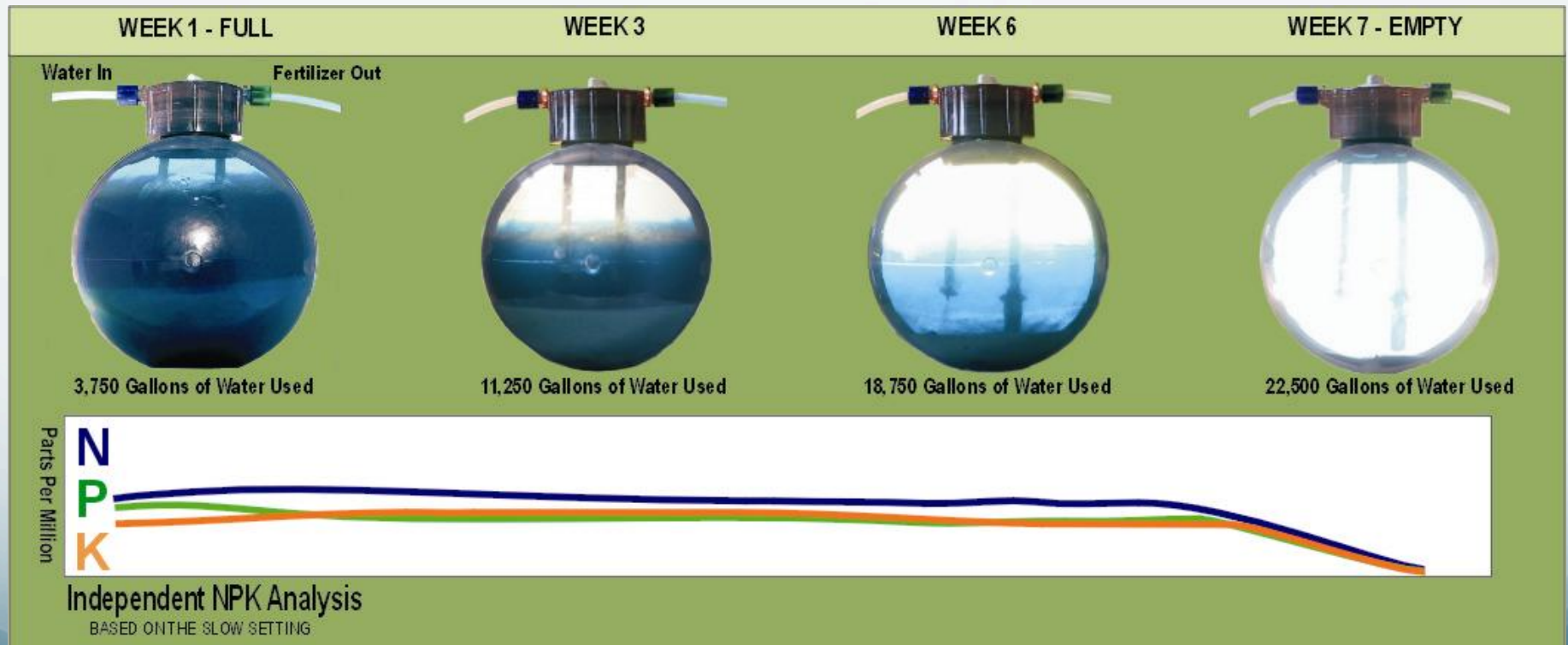


How does it Work?

- An injector-feeder is installed in the mainline for above ground tank reservoirs.
- It uses the principle of “pressure-differential” to pull water into the reservoir, to dilute material for distribution thru the a hose or irrigation system
- Rate of dilution is easily metered

How Does it Work?

See how the the patented layering technology ensures uniform dilution of injector material. This provides consistent delivery from start to finish



Setting the Metering Rate

1 to 10 GPH (3.78-37.85 LPM)

2 to 20 GPH (7.75-75.71 LPM)

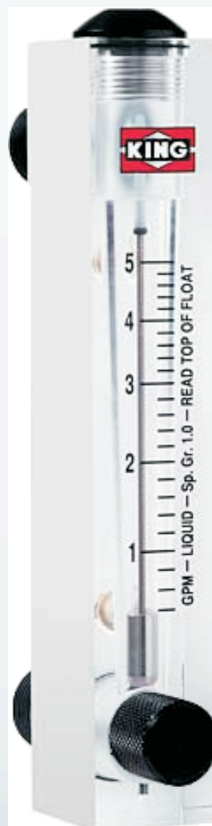
4 to 40 GPH (15.14-151.4 LPM)

.1 to 1 GPM (.38-3.78 LPM)

10 to 100 GPH (37.85-378.5 LPM)

.2 to 2 GPM (.757-7.57 LPM)

.5 to 5 GPM (1.89- -18.9 LPM)



Set the metering
gauge for tank
applicators
applicators

You determine how
fast the product is
applied

Underhill Advantage Tank Solutions

1. **Locate the tank-** *any point after the pump and filter on the mainline but before the first zone you want to feed. (Typically at the pump station)*
2. **Install the feeder injectors-** in the mainline up to 20' away. Specify the length of hose needed when your order is placed.
3. **Add Material** – fill in granular or liquid material as needed
4. **Set Feed Rate** – Set feed rate and allow scheduled irrigation to finish the rest.

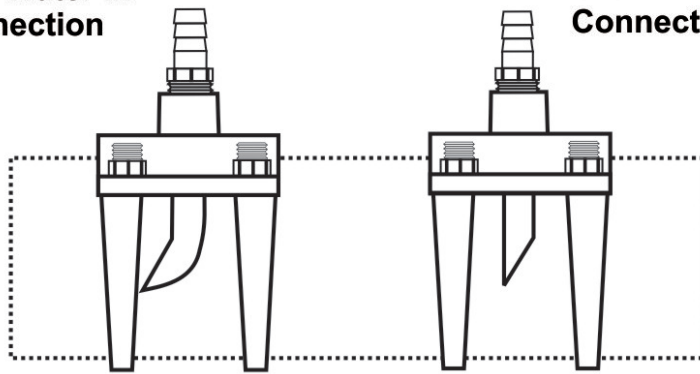


Feeder Injectors Tank Solutions

Typical Installation

Blue Water In
Connection

Green Fertilizer Out
Connection



Flow Direction

For Mainlines 2" – 12"



Patented Stainless Steel Venturi
Fittings to meet your specific
installation requirements

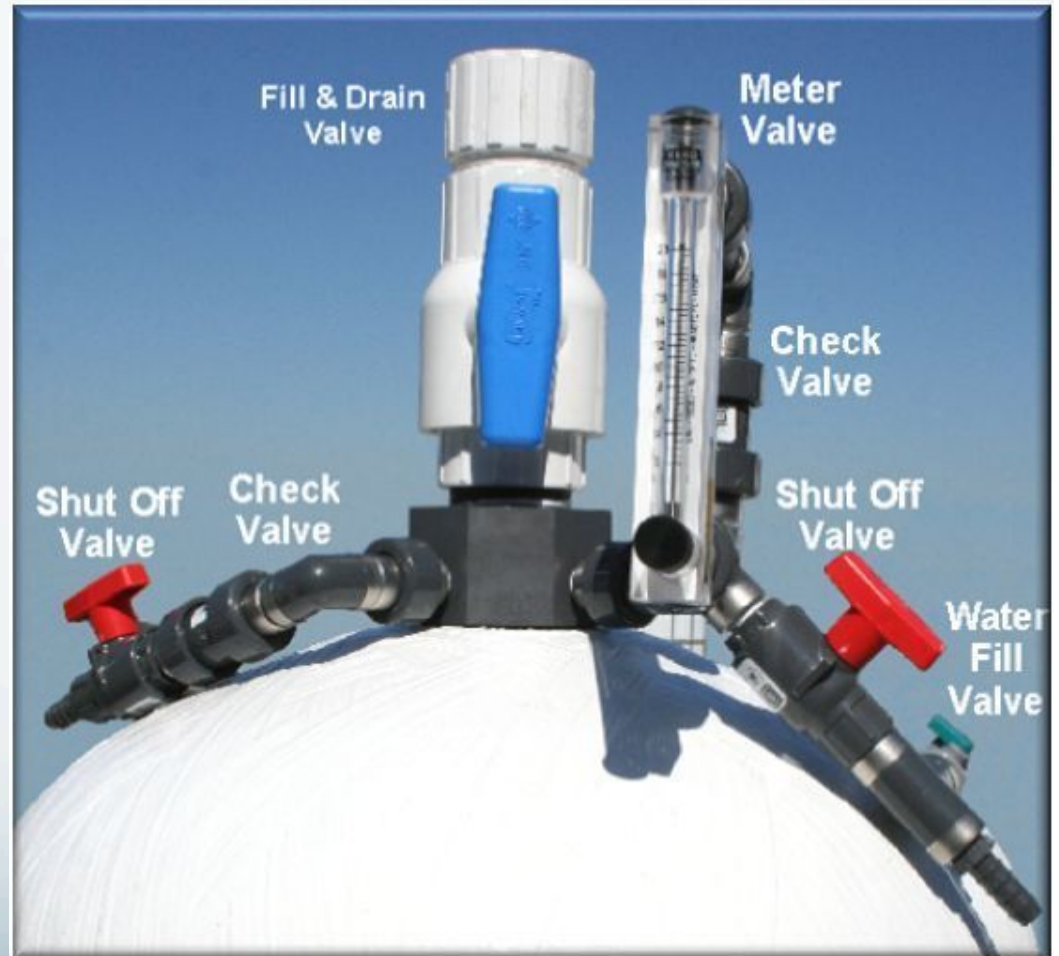


Other Advantages

Alternate between liquids and water-soluble products in minutes.

The Head Unit does not need to be removed and the gauge does not need to be reset unless injection window changes (2-3 days).

Set it once and forget, just add products whenever needed



Underhill®

Easy to Fill or Refill

- No premixing or dilution required
- Pour in concentrated product into the tank and system will dilute automatically
- Set the injection rate based on the amount of product you want to apply
- Let scheduled irrigation do the rest



Different Sizes to Choose From

HF 045 will hold up to 450 lbs. (204 kg) of water soluble or 45 gals. (170 l) of concentrated liquid

HF 086 will hold up to 850 lbs. (386 kg) of water soluble or 86 gals. (326 l) of concentrated liquid

Heavy Duty PVC, UV stabilized tanks



Sizing the Tank

Size is based on how often you want to refill the tank or how much product you need to dispense in a single application.

Size may also depend on the concentration of the product to be delivered. Multiple applications/refills of a system will allow for a smaller tank.

The HI-FLO systems will hold up to 10 lbs. (1.19 k) of dry, water soluble product for each gallon of capacity.



Tank Enclosures

There are multiple enclosures available through you local distributor to protect your investment



Tank Enclosure



Clamshell type enclosure shown protecting an HF 025

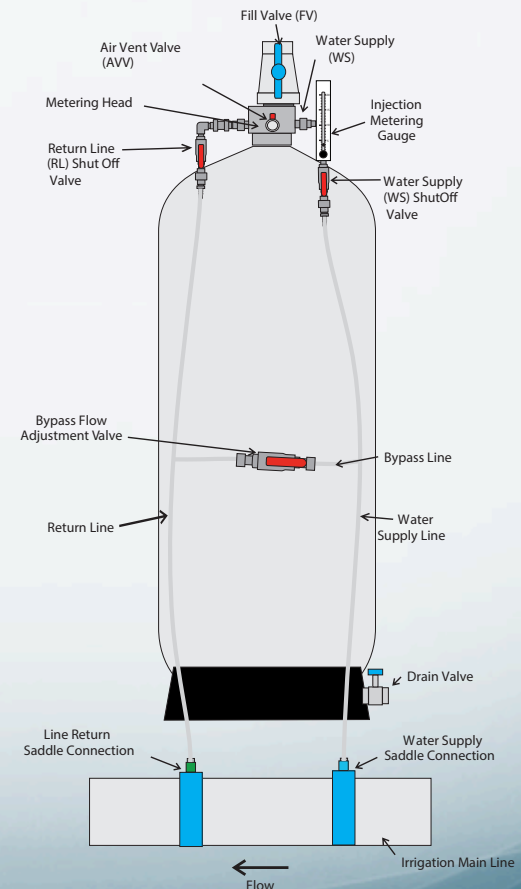


Installing a Flo-Pro™ Tank Injector

Flo-Pro tank kit includes:

- Tank
- 2 (qty) 10' (3.05 m) each Water Supply and Return Line hoses
- Mainline saddle connectors & injectors

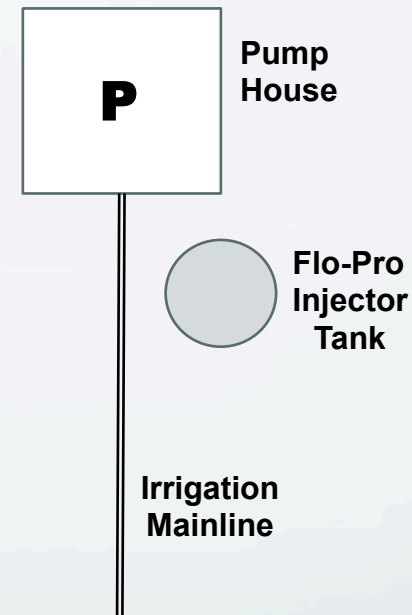
Follow the next 6 steps install and operate the system



Step 1

Locate the Tank

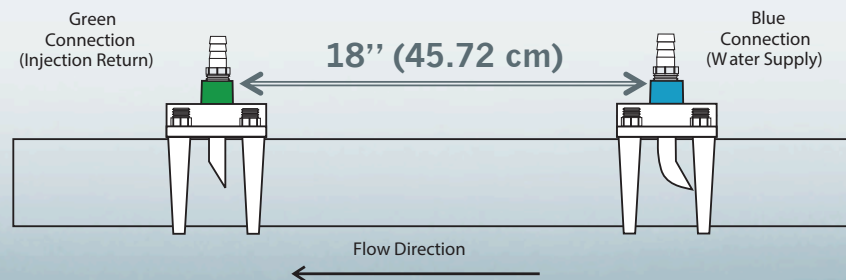
- Generally the tank is located in or just outside of the pump house.
- The tank should be located in close proximity to the mainline and before the first sprinkler head



Step 2

Install the Saddle Connectors

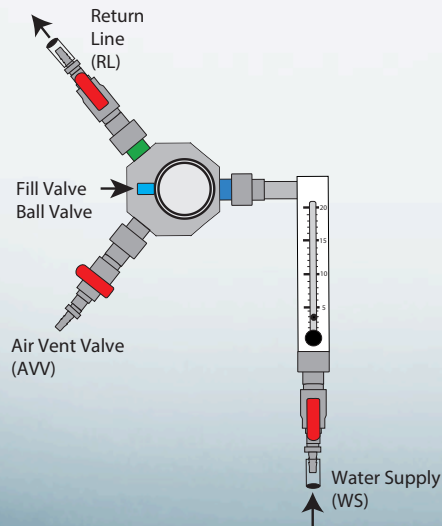
- Saddle connections are made for 3-4" (80– 100 mm) and 6-12" (150-300 mm) mainline pipe diameters.
- Drill 2 (qty) 1-1/4" (2.54 cm) diameter holes top-dead-center
- Install injectors as shown, then connect the Water Supply (WS) and Return Line (RL) hose to tank



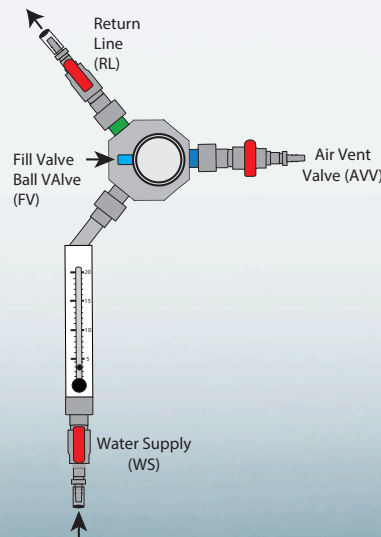
Step 3

Setup Metering Head

- Metering Head configuration depending on the material to be injected – liquid or dry, water-soluble product
- Unions on product make this change-out easy.



Liquid Products
Metering Head Setup

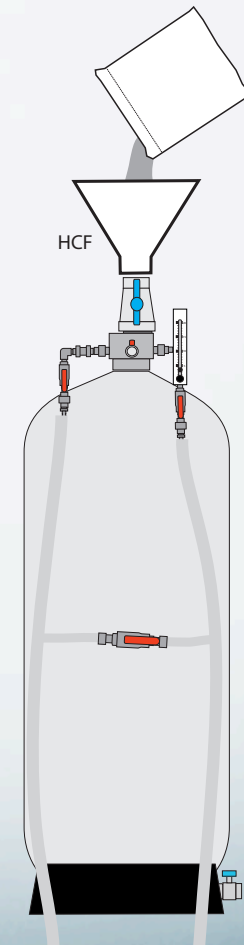


Dry Water-Soluble Products
Metering Head Setup

Step 4

Fill the Tank w/ Dye

- Fill the tank with 2-4 oz. of dye
- Vent off any excess air that is displaced by water
- Operate a program to visually confirming material is leaving the tank
- Calibrate the feed rate



Step 5

Setup Feed Rate

- Collect following data
 - How many acres are to be injected w/ product?
 - What is the recommended application rate of the product to be injected?
 - How many hours does a night's water window represent?
 - How many days would you prefer to inject material (2-3 days is recommended)



Step 6

Fill the Tank

- Once the right amount of product is determined, fill the tank
- If the tank is partially filled with product, fill the remainder with water
- Confirm the Water Supply (WS) and Return Line (RL) balls valves are open
- Confirm scheduled irrigation is setup
- The irrigation system will apply the injected material



Need Technical Assistance?

**Contact Mark Faris
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