AMP I.V.™

USER MANUAL

#070-2600 – AMP I.V. 9 Gallon Kit
#070-2650 – AMP I.V. Adaptor Kit

ARBORJET | Ecologel®
PARTNERS IN PLANT CARE

Table of Contents

Part 1: Getting Started

AMP I.V.™ Equipment Overview 3

Warranty and Device Registration 4

What's Included in your AMP I.V. Kit 5

Unboxing: Initial Assembly Steps 6

Connecting the HEX PDS 7

Part 2: Using Your AMP I.V.

Before Your First Injection 8

How to Operate the System 9

Part 3: Maintenance, Parts, Troubleshooting, Cleaning and Storage

Routine Maintenance 10

Replacement Parts and Accessories 11

Troubleshooting Guide 13

Cleaning the AMP I.V. System 14

Storing the AMP I.V. System 15

Appendix: Tree Injection Tips and Techniques

Calculating Dosage of Injection Sites 17

Selecting Arborplug® Injection Sites 18

Tree Drilling Techniques 19

Setting the Arborplugs 20

Conifers vs Deciduous Trees 21

Contact Information 22

Overview:

Engineered for efficiency, the AMP I.V. system is a high-capacity tree injection kit designed to streamline large-scale treatments. The AMP I.V. 9-Gallon Kit (#070-2600) is built on a 9-gallon rolling trolley for easy transport between trees, making it ideal for high-volume tree care operations.

With adjustable pressure settings ranging from 7 to 115 PSI, the AMP I.V. can deliver tailored applications across tree species and treatments. Its closed delivery system minimizes the risk of external contamination.

AMP I.V. incorporates the innovative Hex PDS® (Parallel Distribution System) and includes three extension kits for a total of 18 lines. The AMP I.V. is designed to work with Arborplugs for faster, higher-pressure treatments, with fewer injection sites and no root excavation required.

Existing FlowZone units can be upgraded to the AMP I.V. configuration with the AMP I.V. Adaptor Kit (# 070-2650).

KEY FEATURES:

- 9 Gallon Tank Capacity (included with kit #070-2600)
- Battery-Powered
- Easy to Move Between Trees
- Utilizes Arborplugs
- Closed System to Avoid External Contamination
- Includes 3 Set of FSeries® Extension Kits for up to 18 Injection Points per Application

ARBORJET | Ecologel
PARTNERS IN PLANT CARE

Standard Warranty & Device Registration

Our Equipment is warranted for 90 days against defects in workmanship and materials. Register your device to activate your warranty and receive a FREE Bag of Arborplugs. Warranty is only guaranteed to the initial purchasing party from an authorized Arborjet distributor.

To Register Your Device: Fill out the online form at arborjet.com/registerequipment
OR fill out, tear off, and mail in the registration post card included in your device packaging to receive:

- A 90-day warranty against defects in workmanship
- A free bag of Arborplugs
- Your company listed as a Service Provider on our website at arborjet.com

Warranty Process: Contact Arborjet directly for all warranty claims by emailing RMA@arborjet.com. Please do not contact your original point of purchase.

1. Locate original invoice and contact our customer service team for a Return Merchandise Authorization (RMA)
2. Once your RMA has been approved, package the item(s) appropriately, including sales receipt or invoice, write the RMA # legibly on the box, and ship to the address below:

Arborjet, Inc. 99
Blueberry Hill Rd
Woburn, MA 01801

NOTE: USAGE OUTSIDE OF THE SCOPE OF INTENDED USE OR DAMAGE CAUSED BY NON-ARBORJET APPROVED FORMULATIONS WILL NOT BE COVERED UNDER THE STANDARD WARRANTY.

What's Included in your AMP I.V. Kit:

AMP I.V. 9 Gallon Kit (# 070-2600)

- FlowZone® 9-Gallon Roller Tank with Spray Wand, Battery & Batter Charger
- AMP I.V. Adaptor Assembly
- 3 Sets of FSeries Expansion Kits Each Including:
  - 1 x Hex PDS
  - 1 x PTC Stop Fitting with Check Valve 1/8" NPT to 1/4" QD
  - 6 x 5/32" Tubing to 1/8" Elbow Fittings
  - 1 x FS Hex Plug
  - 4 ft of ¼" Tubing
  - 22 ft of 5/32" Tubing
  - 1 x ¼ QD to 1/8 NPT Male Connector
  - 6 x VIPER Needles
  - 6 x 10/32" to ¼" PTC
  - 4 x Elbow Ball Valve
  - 2 x Straight Ball Valve
  - 2 x 5/32" Plug
- 250 ml Graduated Cylinder
- Adjustable Wrench
- 5/64" Allen Wrench
- 1/16" Allen Wrench
- Plug Setter
- Drill Bits (3/8 and 9/32)
- Clean out Tools
- 500 ml Bottle of Clean-jet
- Safety Glasses

AMP. I.V. Adaptor Kit (# 070-2650) – use to upgrade an existing FlowZone 4- or 9-Gallon Sprayer to the AMP I.V. System. Comes with all the above except the FlowZone® 9 Gallon Roller Tank with Spray Wand, Battery & Battery Charger.

Unboxing the AMP I.V. Kit: Initial Assembly Steps

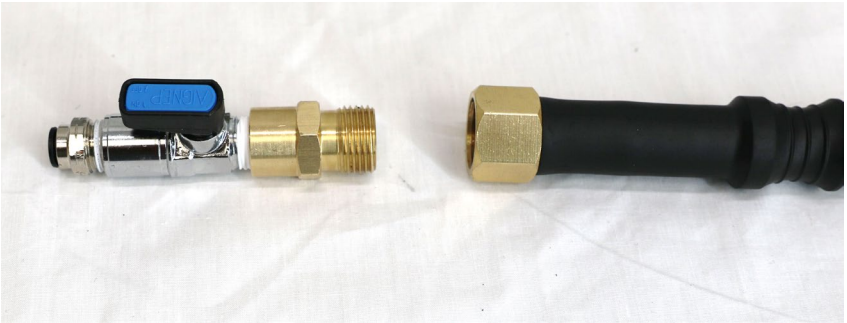
When receiving and unboxing your AMP I.V., please review all components to check for damage or missing parts. If parts are damaged or missing, please contact your distributor to initiate support.

Follow the steps below to assemble and begin using your AMP I.V.:

1. See the Operation Guide for your FlowZone unit for initial sprayer set-up.
2. Fully charge the battery prior to the first operation
3. Connect the battery to the FlowZone unit
4. Using water in the tank, test the FlowZone sprayer to confirm it is fully operational prior to conversion to the AMP I.V. System.
5. To convert the spray unit to the AMP I.V. System, disconnect the Spray Gun and Spray Wand from the hose and connect the hose to the AMP I.V. Adaptor Assembly
6. Connect the other end of the AMP I.V Adaptor Assembly to the ¼” tubing
7. See next page for Connecting the HEX PDS®

2.

5.

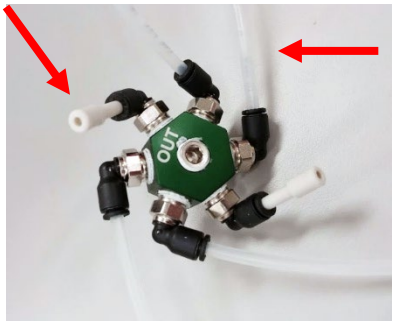


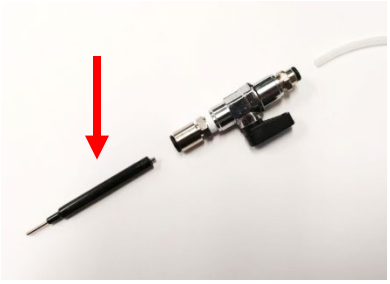
6.

ARBORJET | Ecologel
PARTNERS IN PLANT CARE

Connecting the HEX PDS®

Each AMP I.V. Kit comes with three FSeries® Expansion Kits (070-0077), which includes one HEX PDS® manifold with 6 valve assemblies and 6 VIPER Needles (18 total lines).





Step 1: Determine how many injection sites are needed. You may connect up to 4 HEX PDS manifolds together for a total of 24 lines.

Step 2: Depending on the DBH of the tree, you may not need all lines of tubing coming from the Hex PDS. Insert plugs into elbow fittings if not needed. For each line-in-use, connect 5/32” tubing to the elbow fitting.

Step 3: Connect ¼” tubing attached to the AMP I.V. Adaptor Assembly to the ¼” Push-To-Connect (PTC) “IN” fitting on the HEX PDS.

Step 4: To connect multiple HEX PDS Manifolds, remove ¼” (National Pipe Thread) NPT plug from the “OUT” side of the first HEX PDS. Connect HEX PDS Manifolds with 4-foot ¼” tubing from the “OUT” side of the first HEX PDS to the “IN” fitting on the next one.

Step 5: Connect needles and valves: Insert the VIPER needles firmly into ¼” PTC Fittings on the Valves.

Step 6: Connect the needles and valves to each of the 5/32” lines extending from the HEX PDS by pushing the line firmly into the either the elbow or straight ball valve fitting on the valve. Each of the FSeries Expansion Kits comes with four Elbow Ball Valves and two Straight Ball Valves.

Before Your First Application

We strongly recommend testing your equipment with water or CLEAN-jet™ before attempting to inject any of our approved formulations.

If the box your kit came packaged in does not have security tape, or appears to have been opened or tampered with, do not use the equipment, and contact your Arborjet Distributor for replacement instructions.

Our quality control procedures include a checklist to perform an audit of contents for every kit that ships out of our facility. The checklist is initialed by the assembler and supervisor and included with your completed kit for your reference.

We understand that no measure of quality control can mitigate every potential issue that might arise during assembly and shipment, so a final “dry” run with water or CLEAN-jet™ will confirm fittings are sealed and eliminates the potential of losing valuable product if a leak or failure is detected.

- Arborjet | Ecologel Production Team

How to Operate the System

Step 1: Determine the Appropriate Device Set-up for Your Injection. Based on the tree size and application type, calculate the required number of injection sites and attach the appropriate number of HEX PDS and injection lines to the outbound ¼" line extending from the hose adaptor.

To reduce the risk of accidentally starting the sprayer, it is recommended to remove the battery prior to making any adjustments, changing accessories or storing the sprayer.

Step 2: Set Plugs. Drill and set plugs for the each of the injection sites calculated in Step 1. See the appendix for proper drilling and plugging techniques. See page 21 for step adjustments for injecting conifer trees.

Step 3: Fill Tank with Injection Solution. Follow label rates to determine the appropriate volume of solution necessary for the tree injection(s). Fill tank with calculated volume of solution.

Step 4: Connect the Battery. Confirm battery charge status and connect the battery to the battery housing on the back of the FlowZone unit.

Step 5: Turn on System / Set Pressure Dial. Close the ball valve on the AMP I.V. Adaptor Assembly and close all needle valves. Activate the tank pump and set the pressure (psi) by turning the Variable Speed Dial on the FlowZone unit.

Step 6: Prime System / Bleed Lines. First open the ball valve on the AMP I.V. Adaptor Assembly. Next, open each VIPER valve briefly, bleeding a small amount of fluid into a waste bucket, then close the valve and insert into an Arborplug. Repeat for all remaining VIPER valves.

Step 7: Begin Injection Once all VIPER Valves have been bled and inserted into Arborplugs, close the AMP I.V. Adaptor Assembly valve. Then open each needle valve. Once all needle valves are open, re-open the Adaptor valve to allow product to flow into the tree with even distribution.

IMPORTANT: Before inserting VIPER Needles into the Arborplugs, you must prime and bleed the lines to prevent air from being injected into the tree.

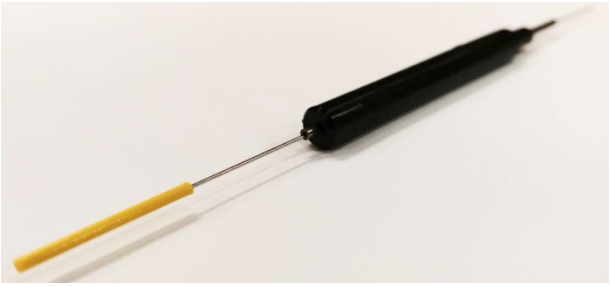
OPEN

CLOSED

Routine Maintenance

Cleaning VIPER Needles

Remove clogged VIPER Needle from Valve Assembly then insert a VIPER Needle clean-out tool in and out of the Needle to free any obstructions.



Trimming Supply Line Tubing

Occasionally you may need to trim the ends of the Supply Line Tubing to ensure a snug fit when inserting into PTC's.

AMP I.V. Replacement Parts

Part No.	Item Description
070-3250	FlowZone 9 Gallon Roller Tank (modified)
070-2655	AMP I.V. Adaptor Assembly: Hose to Male NPT Adaptor with On/Off Ball Valve
070-0077	FSeries Expansion Kit
070-0085	Hex PDS Manifold
070-0091	FSeries 90-Degree Swivel 4-pack (5/32" Tubing to 1/8" NPT Elbow Fitting)
070-0084	FSeries Hex Plug 4-pack
070-0102	5' of ¼" Tubing
070-0103	10' of 5/32" Tubing
070-0089	1/8" NPT to ¼ QD 2-pack
070-0501	VIPER Needles 4-pack
070-0165	5/32" Plug 8-pack
070-0094	FSeries Needle and Ball Valve Assembly 2-pack
070-0096	FSeries Needle and Ball Valve Assembly – 90 Degree Elbow 2-pack
070-0100	10/32" to ¼" PTC 4-pack
070-0087	FS Connection Kit
975-2056	18v/2.6Ah Lithium Ion Battery

AMP I.V. Accessories

Part No.	Item Description
010-4018	TREE I.V.™ Tool Kit
070-0120	Arborplug Setter 2-pack
070-0665	Deluxe Drill Bit 3/8 #4 2-pack
070-0670	Deluxe Drill Bit 9/32 #3 2-pack
070-0130	Needle Clean-out Tool 2-Pack
030-2030	CLEAN-jet 1 liter Bottle
070-0104	Mix & Measuring Kit
070-3433	AccuFlo ISD 9 Gallon Roller Tank Convenience Kit
070-3150	AccuFlo ISD 4 Gallon Backpack – Modified

Troubleshooting Guide

In addition to the tips below, our YouTube channel and website are filled with informational videos that can help with issues that may arise while using your AMP I.V.
YouTube Channel: YouTube.com/Arborjet
Website Support Page: https://arborjet.com/equipment-support-registration/

PROBLEM: Device not powering on

- Check battery charge – LED light indictors on battery provide confirmation of battery level
- Check that the battery is correctly aligned with the battery terminals and is securely seated in the battery compartment.

PROBLEM: Losing Prime on the tank pump/Pump continuously pumps but does not build pressure to the device

- Turn the unit off, disconnect supply line, point it back into the tank reservoir and turn it back on. Once the product is flowing again, turn the backpack back on and reconnect.
- When you have almost depleted your product, make sure to keep the tank level so the pump can dispense all of the liquid

For other issues with the FlowZone sprayer, see the FlowZone Operation Guide for troubleshooting support for your specific FlowZone unit.

If after troubleshooting, your device is still not functioning correctly contact your Arborjet | Ecologel Regional Technical Manager (RTM) or the Arborjet office for support.

Cleaning the AMP I.V. System

CLEAN-jet is an all-purpose cleaner and lubricant for all Arborjet injection devices. It may be used to prime or test the AMP I.V. system and is also designed as a short-term storage solution for all Arborjet devices. If storing for more than one day, flush with water before treatment.

Cleaning Process:

1. Before cleaning, make sure all product has been drained from AMP I.V. lines and tank.
2. Remove Tank Lid and add approximately ½ gallon of clean water and 2-3 fl. oz. of CLEAN-jet to the empty tank. Replace tank lid
3. Turn on device and open valves until the system has been purged and cleaned-out, then rinse with water to preserve device.

** CLEAN-jet rinse can be squirted into the soil at the base of the tree unless near ground water or waterways*

** Be sure to rinse all CLEAN-jet out of the bottle, tubing, and device*

** CLEAN-jet should never be mixed with other formulations*

** Dispose of waste according to state and local regulations*

Storing the AMP I.V. and Battery

The AMP I.V. should be operated and stored at temperatures between 32–100°F (0-38 °C).

Please follow these steps when storing the AMP I.V. for a prolonged period of time to prevent corrosion to the AMP I.V. sysyem:

- Clean and dry the device, lines and tank using CLEAN-jet (see page 14 for details)
- Disconnect the AMP I.V. from products and from the battery prior to storage.
- Store the AMP I.V. and battery components in a cool, dry place away from moisture and in temperatures between 32-80°F

WARNING: The AMP I.V. Battery is a Lithium-Ion Battery. Exposure to fire or temperature above 265˚F (130˚C) may cause explosion.

Appendix: Tree Injection Tips & Techniques

- Calculating Dosage of Injection Sites
- Selecting Arborplug Injection Sites
- Tree Drilling Techniques
- Setting the Arborplugs
- Conifers vs Deciduous Trees

Calculating Dosage of Injection Sites

1. Determine the Diameter at Breast Height (DBH) in Inches

Measure tree diameter in inches, at breast height by using a diameter tape, OR measure circumference and divide by Pi (3.1415).

Arborjet DBH" Measuring Tape

2. Carefully Read Label of Product to be Injected

Use DBH" to determine the application rate, dilution rate, and total injection volume for treatment application.

Note: Arborjet standard warranty coverage is void with use of non-Arborjet approved formulations

3. Add Product Solution to AMP I.V. System Tank

Add approximately half of the dilution water volume to the tank. Then, using the graduated cylinder provided with your Kit, measure the calculated volume of product and pour it into the tank. Add remaining water to reach the appropriate dilution rate based on the product label instructions.

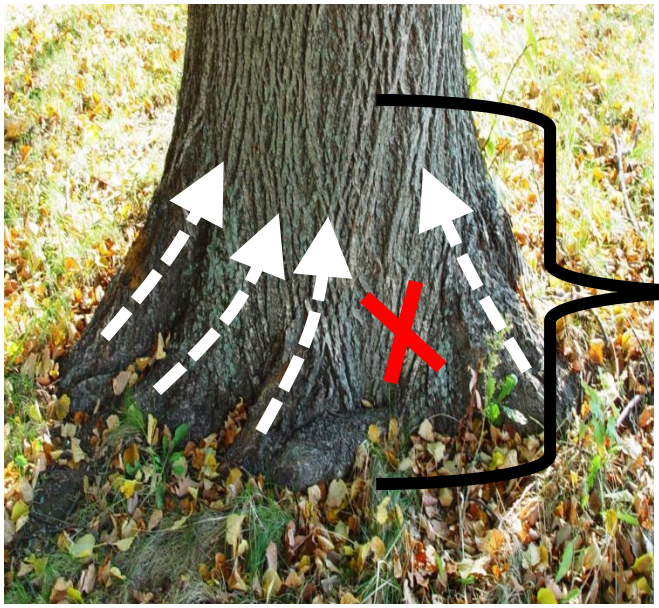
Be sure to wear safety glasses and nitrile gloves when handling product to be injected.

ARBORJET | Ecologel
PARTNERS IN PLANT CARE

Selecting Arborplug Injection Sites

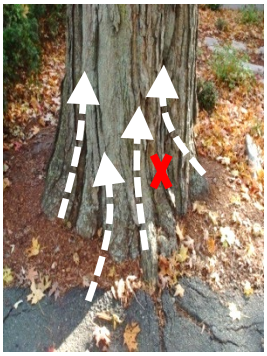
To determine how many Arborplugs will be needed per tree, use the following calculation: DBH" ÷ 3 or less*

ex) 24" DBH / 2 = 12 Plugs → 12 Arborplug sites will be acceptable for this tree



Sites must be plugged within 36" of the soil line. Avoid plugging in between flares, damaged areas, and tree crotches.

Root Flares provide the best uptake and product distribution to the canopy.



*The decision to divide DBH by 1, 2 or 3 for injection site calculations should be determine by the applicator's judgement based on the type of injection, chemistry and equipment used.

ARBORJET | Ecologel PARTNERS IN PLANT CARE

Tree Drilling Technique

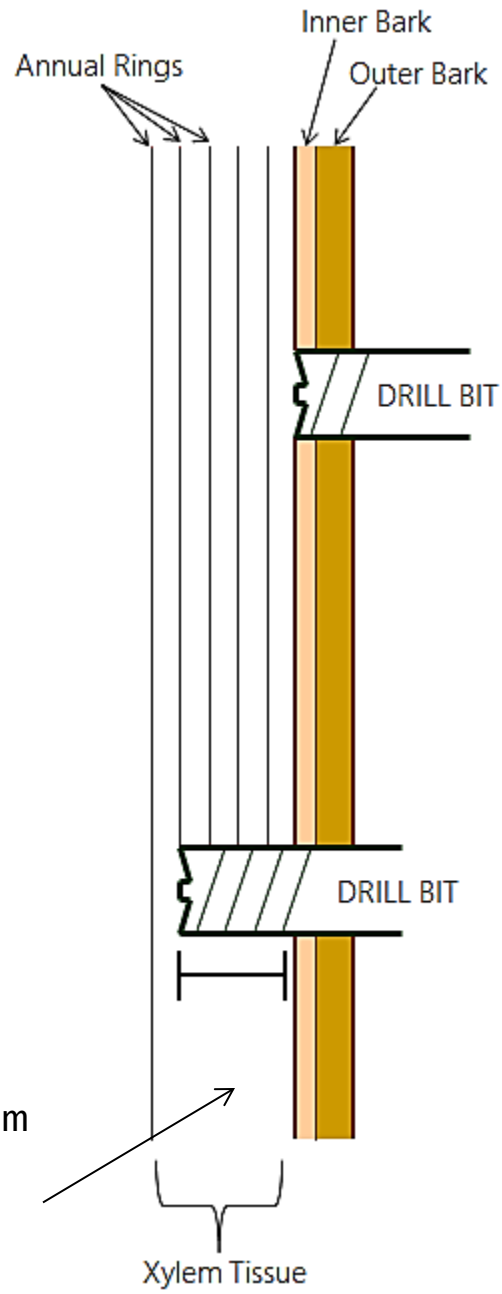
Your AMP I.V. Kit comes with two High Helix Brad Point Auger Drill Bits designed specifically for Arborplug drill sites.

#3 Arborplug - 9/32" Drill Bit

#4 Arborplug - 3/8" Drill Bit

Drilling in Two Steps:

1. Using light pressure, drill through the outer and inner bark. Once you reach the Xylem, you will feel greater resistance on the bit.
2. Remove the bit, noting the thickness of the bark. Re-insert the bit and use heavy pressure to drill into the Xylem Tissue.



ARBORJET | Ecologel
PARTNERS IN PLANT CARE

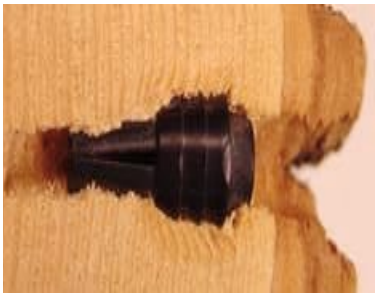
Setting the Arborplugs®

The effectiveness of the AMP I.V. system is dependent upon the user properly setting the Arborplugs into the xylem tissue of the tree to be injected.

Select the correct Arborplug based on the bit used to drill the tree.

Using the Arborplug Setter provided with your kit, hammer the Arborplug until the barbs make a seal between the xylem and inner bark as illustrated below

Too Deep



Results in slower uptake

Too Shallow

Causes damage to the bark and cambium layers

Just Right

Best results with fast uptake and no damage to the tree tissue

AMP I.V. Treatment: Conifers vs. Deciduous Trees

Conifers – Cone bearing trees

Sap will flow out of conifers as a protective response to drilling, therefore if too much time has passed between setting and injection, sap may flow into the injection site. Arborplugs are highly recommended for conifer injections.

1. Prepare the AMP I.V. system and prime the supply line
2. Drill and set one Arborplug at a time
3. Insert VIPER Needle and initiate injection
4. Repeat steps 2 and 3 for the remaining injection sites

Deciduous – Trees that seasonally shed leaves, petals, or fruit

Sap will not flow out of deciduous trees after drilling, therefore you can drill and set all Arborplugs before beginning injection.

When using the HEX PDS with deciduous trees, drill, set and insert the needle into each injection site. Open all needle valves first, then initiate injection. This will ensure that even distribution of product occurs at each injection site.

ARBORJET | Ecologel
PARTNERS IN PLANT CARE

Contacting Arborjet | Ecologel

Arborjet, Inc.
99 Blueberry Hill Rd.
Woburn, MA 01801

Phone: 781-935-9070
Fax: 781-935-9080
info@arborjet.com

@arborjetecologel

ARBORJET | Ecologel
PARTNERS IN PLANT CARE