ARBORjet®
Revolutionary Plant Health Solutions

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For customer service, call 781-935-9070
or visit us online at www.arborjet.com.

QUIK-jet AIR®

Micro-Injection System

ARBORjet®
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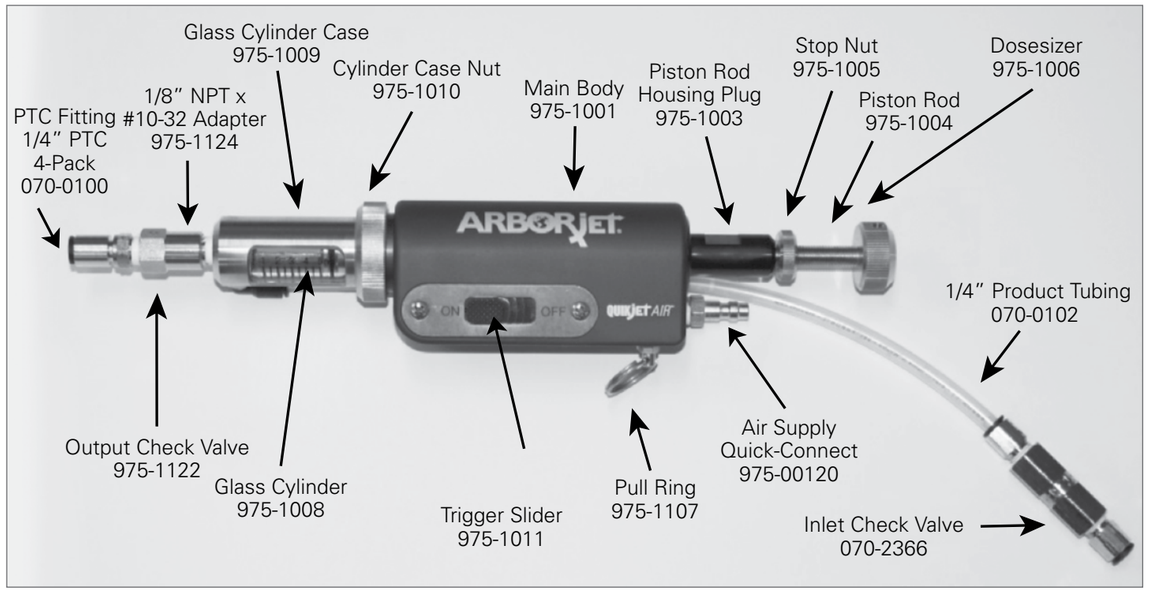
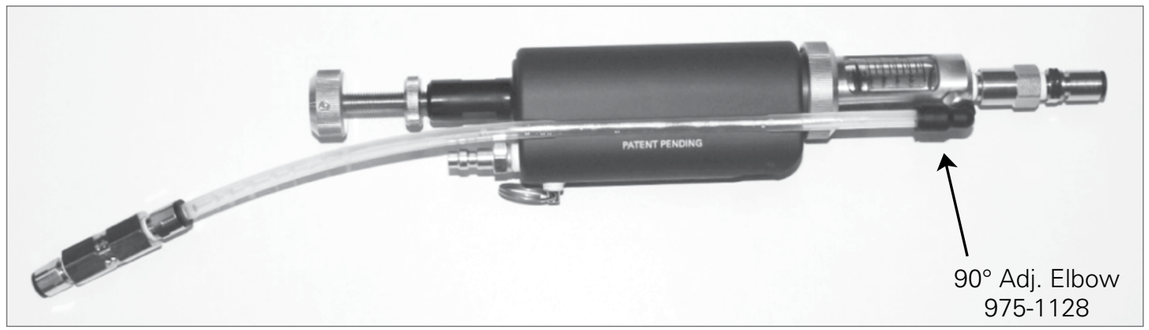




SAFETY REMINDER

Always wear safety glasses and protective gloves (e.g. disposable nitrile) when setting up, operating or maintaining the Arborjet QUIK-jet Air System. Read label of injectable product for further precautions and warnings.

PARTS OF THE QUIK-JET AIR KIT

Kit Includes:

- 1 QUIK-jet Air device (070-2355)
- 1 Liter supply bottle (010-9022)
- 1 Air tank (975-00183)
- 1 Carrying bag with shoulder strap (975-1123)
- 1 Arborplug setter (070-0120 sold in 2-pack)
- 2 Drill bits (3/8" and 9/32") (010-4040)
- 1 Needle cleanout tool (070-0130 sold in 2-pack)
- 1 Graduated cylinder (070-0104 sold in mixing & measuring kit)
- 1 Pair of safety glasses (975-00084)
- 1 Funnel (070-0104 sold in mixing & measuring kit)
- ½ Liter of CLEAN-jet (030-2030 1 liter for reordering)
- 1 Training Manual (available online for reference)
- Low Pressure Regulator with coil (070-2370)
- 2 Viper Needles (070-0501 sold in 4-pack)
- Allen Wrench - 5/64" (989-00008)

AIR TANK ASSEMBLY

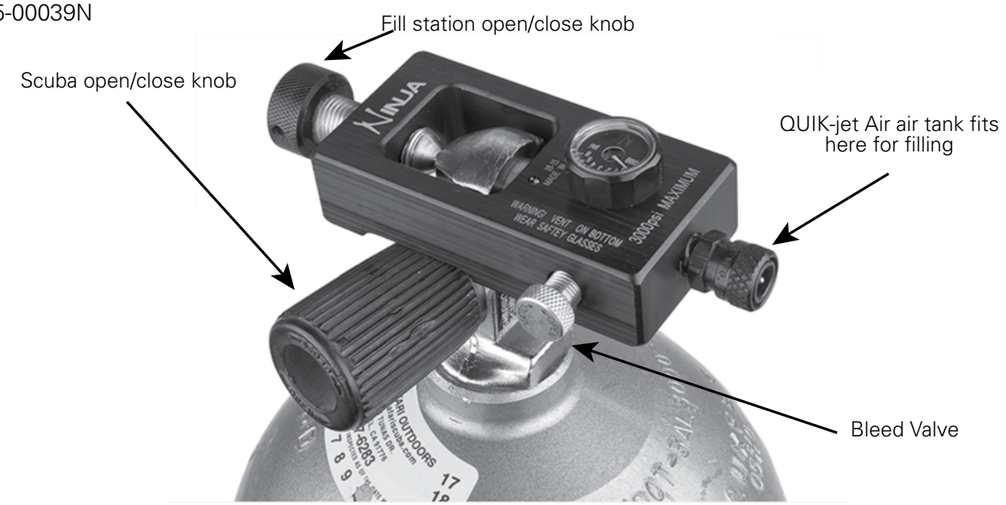
Holding regulator assembly still, twist air tank clockwise to tighten.

- Fill air tank with compressed air only.
- Most dive/paintball shops can fill air tanks. If the shop does not have the proper filling station, item #975-00039 will be needed.

CAUTION: Do not fill with CO_2

CAUTION: Fill to maximum of 3000 psi.

You can fill your air tank if you have a personal compressed air tank of your own, all you'll need is part #975-00039N

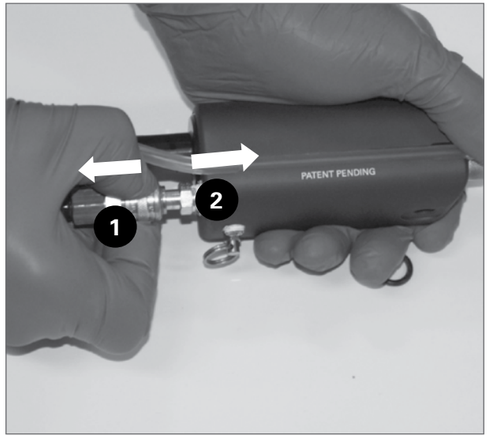


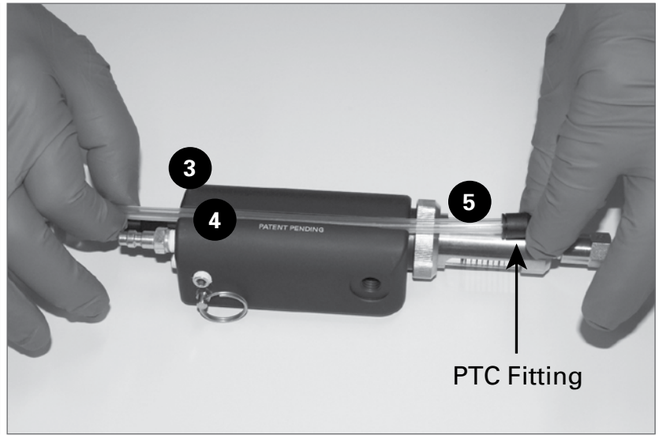
IMPORTANT

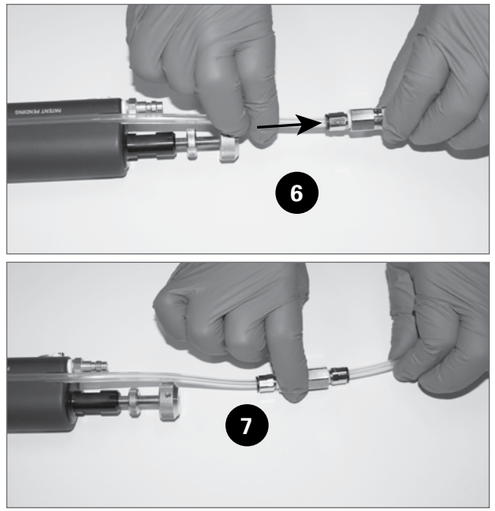
- Make sure bleed valve is closed when filling air to the tank
- Be sure to bleed all air from scuba fill station before removing from air tank

Be sure to follow full instructions included with item #975-00039N

CONNECTING THE DEVICE



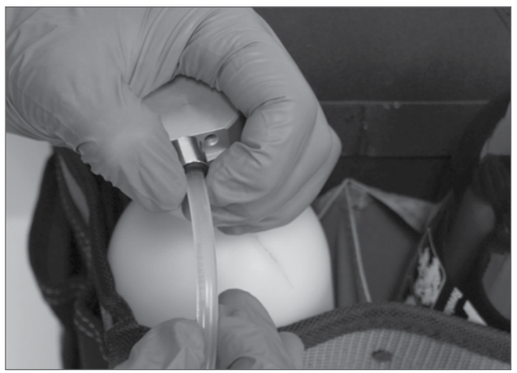




Attach pressure supply line and product tubing:

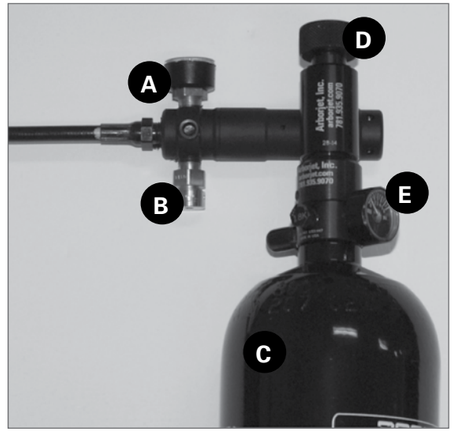
1. Pull back outer sleeve.
2. Push to connect.
3. Flip device body over so on/off switch faces down.
4. Feed product tubing through channel in body until it passes the front of the body.
5. Push product tubing into PTC fitting.
6. Push the other end of tubing into the inlet check valve. Ensure that the arrow on check valve points towards the device.
7. Connect the tubing from product supply bottle into the other end of check valve.

FILLING AND ATTACHING PRODUCT SUPPLY BOTTLE

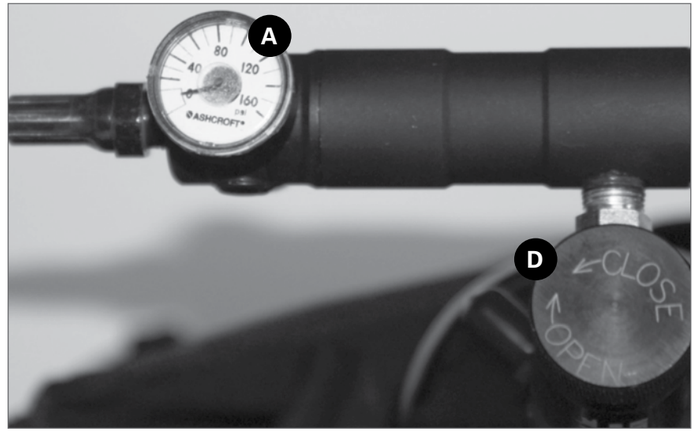


1. Load formulation into product supply bottle.
   - Do not load more than 1000 mL of product.
2. Holding product suppply bottle upright, screw bottle clockwise into product bottle top assembly.
   - Ensure product tubing is snugly connected in PTC fitting.

REGULATOR COMPONENTS



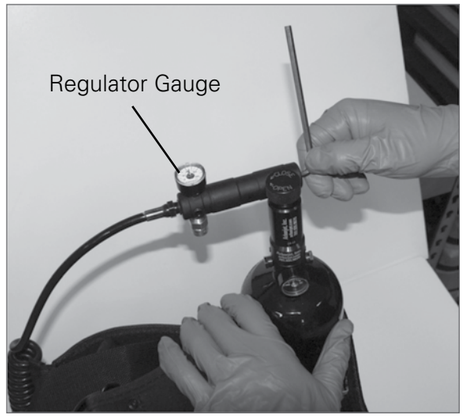
Side View

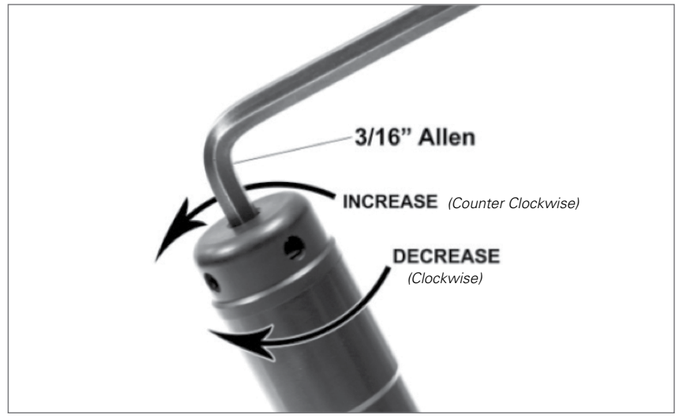


Top View

A. Primary Regulator & Gauge
B. Pressure Release Valve
C. Air Tank
D. Open/Close Valve
E. Pressure Supply Gauge

REGULATOR

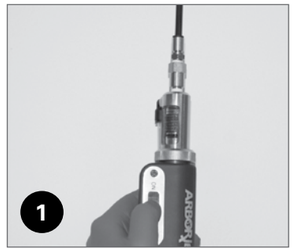


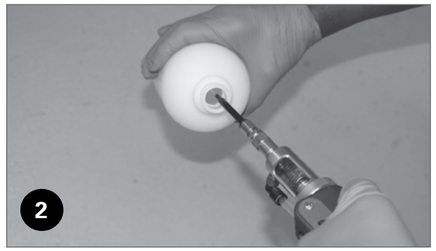


To adjust the air pressure, insert a 3/16" Allen wrench into end of primary regulator. Turn counter-clockwise slowly to increase pressure to system. Turn clockwise to decrease pressure. Set pressure between 60 – 100 psi depending on tree.

CAUTION: Do not exceed 110 psi

PRIME THE QUIK-JET AIR DOSE CHAMBER





QUIK-jet Air is now primed and ready to use!

1. Press the ON/OFF switch several times until formulation reaches the dose chamber.
2. Dispense product back into original product bottle or extra supply bottle until you get a full dose inside the chamber.

NOTE: Be careful when pointing the needle; some air bubbles may occur.

READY FOR MICRO-INJECTION

System is assembled, pressurized, primed, and ready for micro-injection.

NOW YOU ARE FULLY ASSEMBLED!

WHEN TO MICRO-INJECT

Seasonal and environmental conditions that favor uptake of injectable material
Time of Year: Active growth—tree in full leaf
Weather Conditions: Sunny, warm (ideally 60-80°F), breezy, low humidity
Soil Conditions: Moist soil conditions, soil temperatures above 40°F

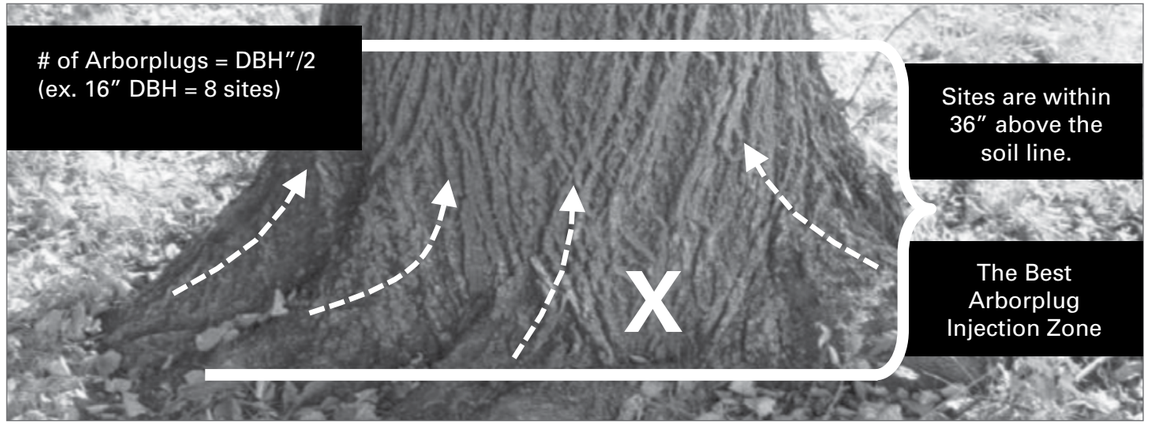
SELECTING ARBORPLUGS AND DRILL BITS

Select Arborplugs based on tress size and type:

- For trees of small to medium size and density use #3 (9/32″) Arborplugs.
- For large or dense-wooded trees and conifers use #4 (3/8″) Arborplugs.

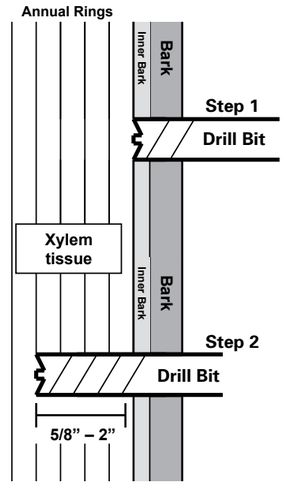
Arborplug Size	Drill Bit Size
#3	9/32″
#4	3/8″

SELECTING ARBORPLUG SITES



Root flares show best uptake and formulation distribution to the canopy. Choosing good Arborplug sites result in faster injections.

DRILLING SITES FOR ARBORPLUGS



Use sharp, high-helix brad-point drill bits (included in kit).

Drilling in 2 Steps:

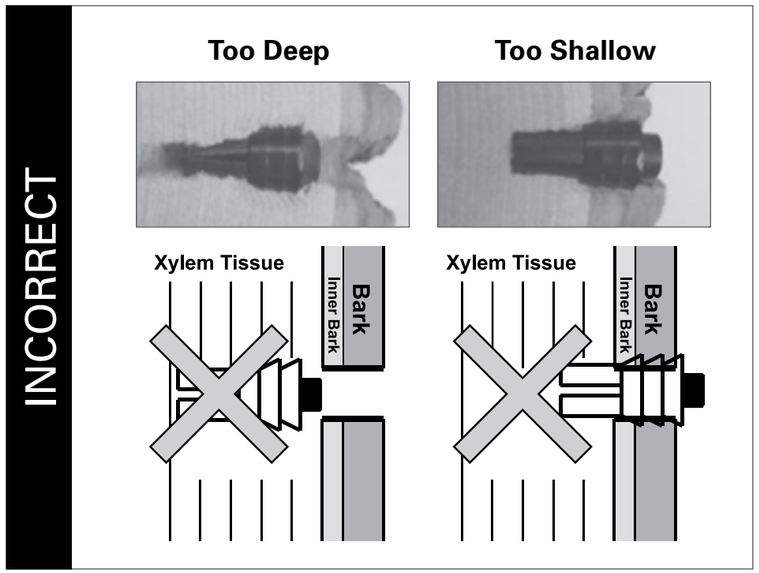
1. Use very light pressure to drill through outer bark and inner bark. The drill bit will stop at the xylem. You can remove drill bit to note the bark thickness.
2. Use quick heavy pressure to drill into the xylem.

Try to keep drill steady to ensure properly-set Arborplugs.

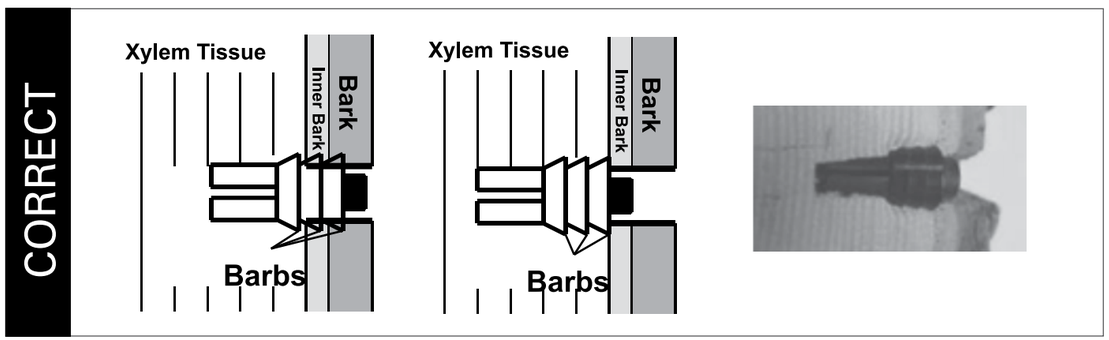
Estimated drill depth into xylem:
Hardwood: 5/8″ – 1 5/8″ deep
Conifers:1 5/8″ – 2″ deep

SETTING THE ARBORPLUGS

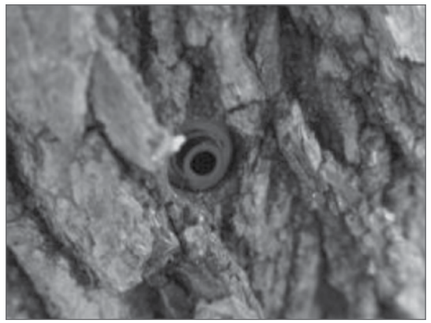
1. Set Arborplugs into drilled holes using Set Tool (from kit) and hammer.

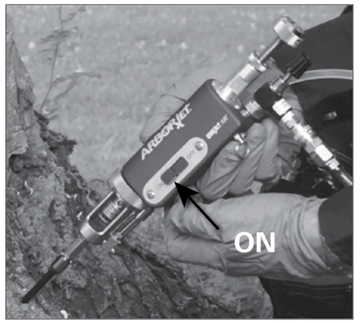


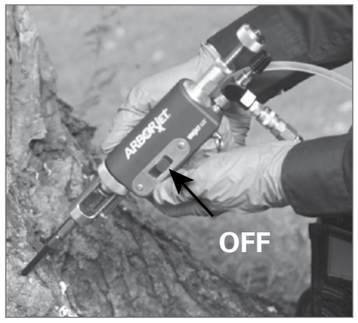
2. Make sure the barbs on the Arborplug make a seal between the xylem and the inner bark as illustrated.



MICRO-INJECTION WITH THE QUIK-JET AIR







1. Determine mL dose per injection site (per Arborplug).
2. Insert needle and push switch forward to ON position to apply dose (up to 5 mL).
3. Hold until piston has stopped moving forward; push switch back to OFF position so piston retracts.
4. Repeat dose / injection site until entire dose is in the tree.

PROCEDURE: CONIFERS VS. DECIDUOUS

Important Note For Conifer Injections:

Sap flows out of conifers as a protective response to drilling.

For best results, make sure the QUIK-jet Air is inserted and the micro-injection occurs immediatly after the Arborplug is set. Drill, plug, and inject one site at a time. If too much time has passed between Arborplug setting and QUIK-jet Air application, sap may flow into your injection site and make your uptake slower.

Important Note for Deciduous Injections:

No sap flows from deciduous trees after drilling. QUIK-jet Air micro-injection can occur after each Arborplug is set, or after all Arborplugs are set in the tree.

THREE STEP CLEAN-OUT

IMPORTANT: Prior to switching to another product, or storing the QUIK-jet Air, it is essential to clean and rinse out the device and product tubing to maintain proper function and to avoid clogging the internal components of the system.

Cleaning out the system involves a 3-step process:

1. Empty product tubing of product (Fill with AIR)

2. Rinse away residue with CLEAN-jet

3. Empty product tubing of rinse solution (Fill with AIR)

IMPORTANT: Water is not recommended as a rinse solution for imidacloprid-based products as these are not compatible with water. All product tubing must be free of both product and rinse solution before re-introducing a new product to the device. Water-based products such as non-mixable fertilizers may be rinsed with water.

CLEANING OUT THE SYSTEM: 1) GET EVERYTHING OUT

1. Disconnect product tubing from device.
2. Pull trigger to discharge remaining product from device (about 10mL) into final injection site in tree, or into original product bottle.
3. Turn OFF compressed air.
4. Bleed remaining air out of device and regulator (two methods):
   A. Slide ON/OFF switch back and forth several times to bleed all air out of system.
   B. Pull sleeve on Pressure Inlet and press on and off device.

   Leave Pressure Line disconnected, and set injection device aside.

CLEANING OUT THE SYSTEM: 2) CLEAN-JET RINSE

1. Label a "WASTE" container to capture residue as it is rinsed out of the device.
2. Store unused chemical in separate bottle or return it to original container.
3. Add at least 30-40 mL of CLEAN-jet to a clean product supply bottle and attach to device.
5. Reconnect air tank and product tubing.
6. Turn Pressure Supply ON to re-pressurize the system.
7. Shoot CLEAN-jet fluid through the device and into the WASTE container. Repeat several times.
8. Disconnect product tubing from product supply bottle.
9. Switch on/off switch several times to empty CLEAN-jet fluid into the WASTE container.

CLEANING OUT THE SYSTEM: 3) LAST STEPS AND DISPOSAL

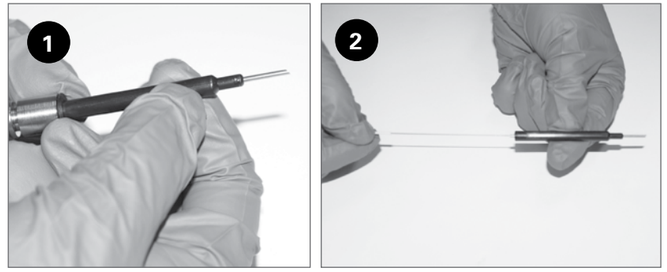
1. Turn OFF compressed air.
2. Bleed remaining air out of device and regulators:
   A. Switch ON/OFF Switch several times to bleed all air out of system.
   B. Pull sleeve on Pressure Inlet and press on and off device.
3. Leave pressure line disconnected and set injection device aside.
4. Dispose of waste according to local and state regulations.
5. System is now ready to be loaded with another product or may now be lubricated and stored.

IMPORTANT: Always follow Daily Maintenance before storing the QUIK-jet Air System.

REGULAR MAINTENANCE

To clean out any debris in VIPER Needles:

1. Remove VIPER needle by pushing the Compression Fitting in and pulling on the needle.
2. Push the VIPER Needle Cleanout Tool through the VIPER needle.



WEEKLY MAINTENANCE

REMINDER: Before proceeding to Weekly Maintenance, be sure…

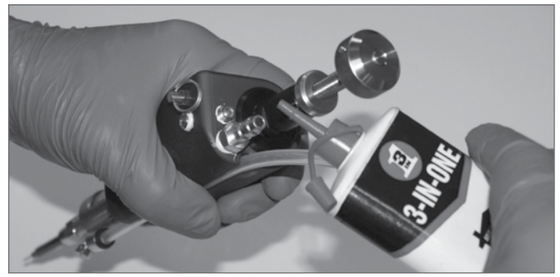
- To wear safety protection.
- That pressure supply is OFF.
- System is depressurized.
- Product supply bottle is depressurized.
- Product supply line switch is closed (OFF).
- That Daily Maintenance is completed.

IMPORTANT: Prior to performing maintenance procedures or storing the system after use, it is essential to clean out the device and product tubing to maintain proper function and to avoid clogging.

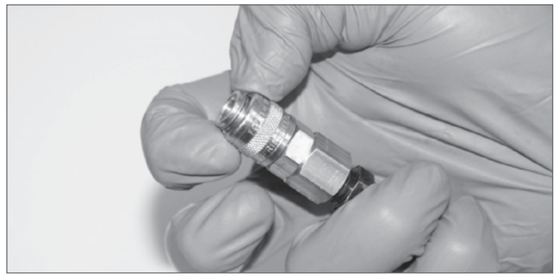
Please Follow these steps when storing the QUIK-jet Air for a prolonged period of time to prevent corrosion to the QUIK-jet Air body, manifold and tools:

- Store clean and dry equipment.
- Clean bottles and product tubing using CLEAN-jet.
- Store bottles empty.
- Oil metal components, especially Quick Disconnect on manifold and male Quick Disconnect on gun – use 3 in 1 oil or WD-40.
- Spray tools with WD-40 or coat with 3 in 1 oil.

LUBRICATING THE DEVICE



Add a few drops of 3-in-1 oil to the device Pressure Inlet on the injector.

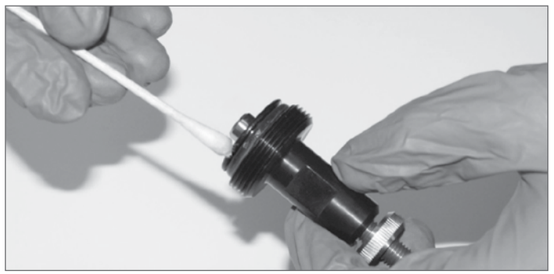


Apply 3-in-1 oil to the Pressure Supply Line Quick-Disconnect, then pull the metal sleeve back and release.

Apply grease to o-ring on Piston.

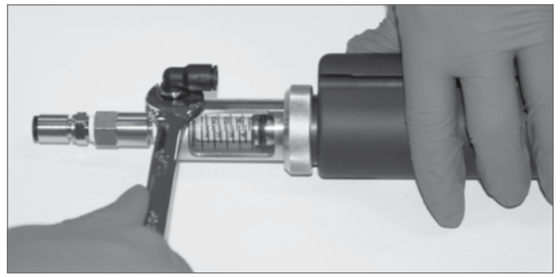
Whenever changing pressure supply tanks, apply grease to o-ring on supply bottle's neck.

Apply grease to Internal Piston Sleeve

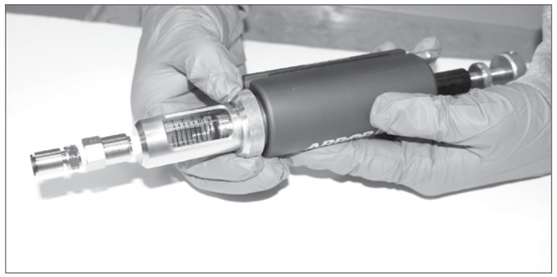


Apply grease to Back Housing Plug Seal.

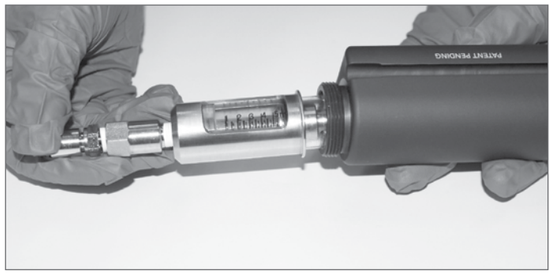
BREAKING IT DOWN



Remove Input Valve by taking a 7/16 wrench and turn the screw counter-clockwise.

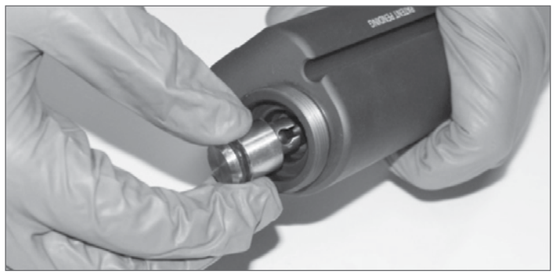


Unscrew case ring by turning it counter-clockwise to free Glass Barrel Case from main body.

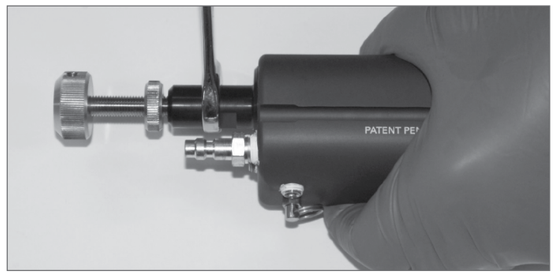


Remove the Glass Barrel case to reveal the Glass Barrel and Piston.

Pull Glass Barrel away from Piston.



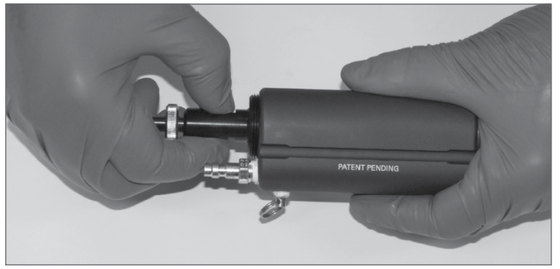
Turn the Piston at an angle to remove it from the Piston Rod.



Using a ½" wrench, unscrew the black housing plug from body by turning it counter-clockwise.

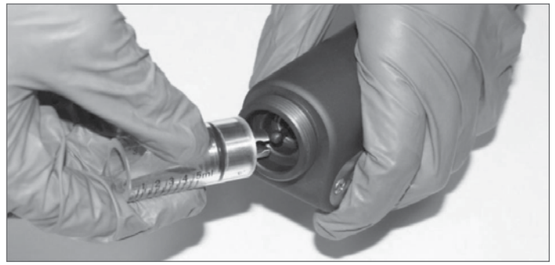
PUTTING IT BACK TOGETHER

Piston O-ring may need replacement over time.
See troubleshooting section. If device gets stuck, replace.

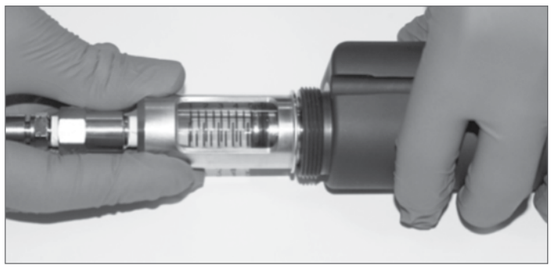


Push against the Internal Piston Sleeve with Housing Plug. While having the Piston Rod lined up through the hole, engage the threads and turn clockwise. Use a ½" wrench to tighten.

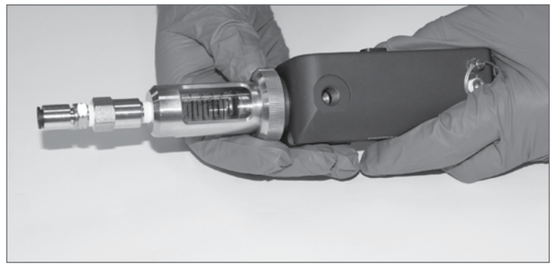
Push the Glass Barrel back onto the Piston. Ensure that grease is applied to Piston after each use.



Tilt and line up Piston with Piston Rod.

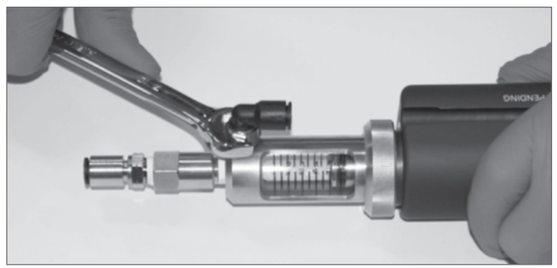


Slide the Glass Barrel Case back onto the Glass Barrel.



Put the Case ring back over Glass Barrel Case and turn clockwise. Do not tighten yet.

Turn the Glass Barrel until all of the measurement readings are lined up and centered.

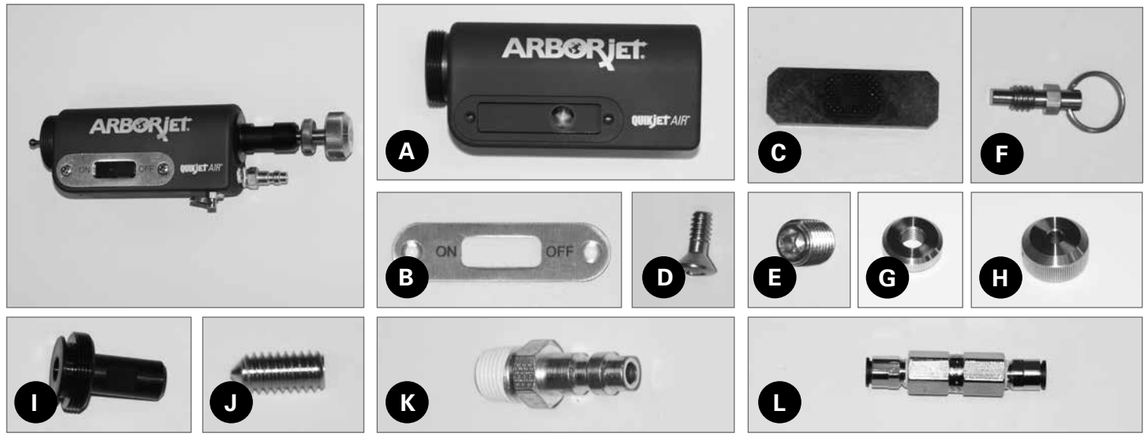


Using a 7/16 wrench, tighten the input valve back onto the Glass Barrel Case. Once the PTC fitting is lined up with the Tubing feed, tighten the Case Ring.

Slide tubing through main body and push it in the Push-to-Connect (PTC) fitting.

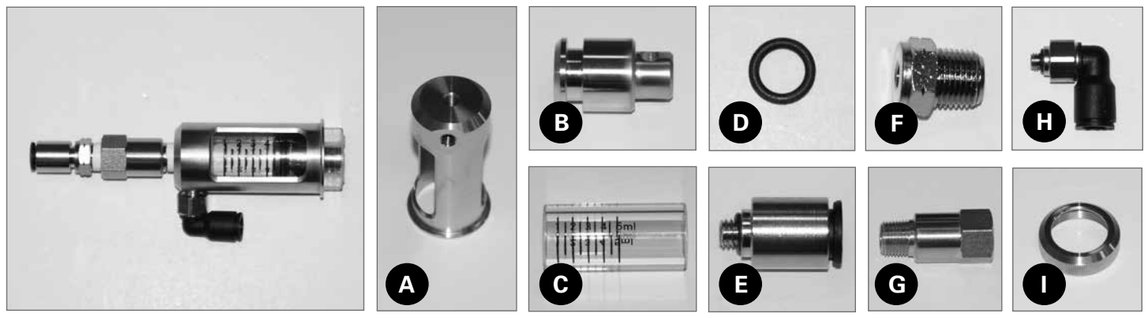
REPLACEMENT PARTS

A. Main Body (975-1001)
B. Trigger Bezel (975-1012)
C. Trigger Slider (975-1011)
D. Trigger Plate Screws (975-1114)
E. Plug (975-1109)
F. Pull Ring (975-1107)
G. Stop Nut (975-1005)
H. Adjustable Knob Dosesizer (975-1006)
I. Housing Plug (975-1003)
J. Set Screw (sold with adjustable knob)
K. 1/8" MPT QD Male Plug (975-00120)
L. Inlet Check Valve (070-2366)



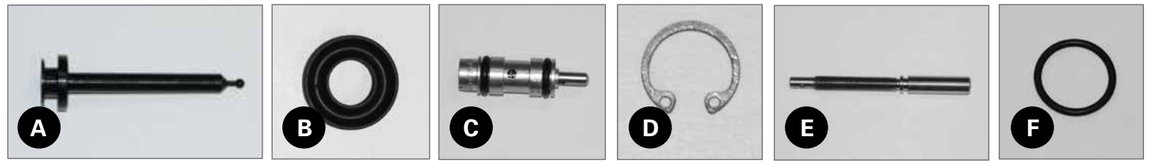
REPLACEMENT PARTS

A. Cylinder Case (975-1009)
B. Fluid Piston (975-1007)
C. Glass Cylinder (975-1008)
D. #111 Tightness O-Ring (070-2283)
E. 10-32 to ¼" PTC (070-0100)
F. 1/8" Male NPT x 10-32 Female Bushing (975-1124)
G. Output Check Valve (975-1122)
H. Adj. Threaded Elbow (975-1128)
I. Cylinder Case Nut (975-1010)



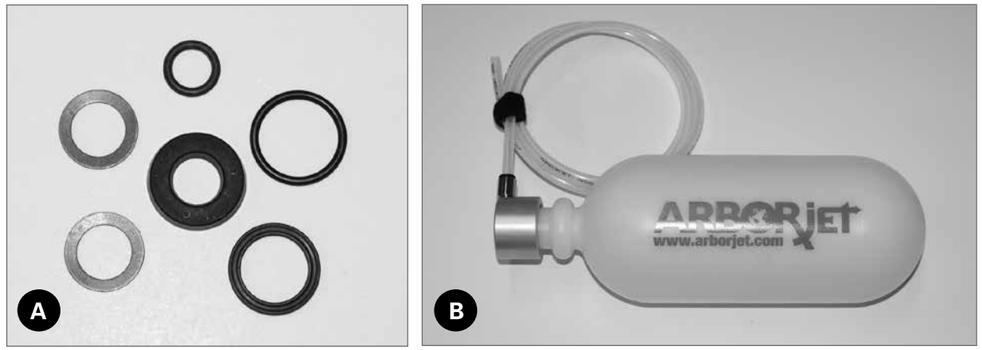
INTERNAL PARTS

A. Air Piston (975-1002)
B. U-Cup Seal (Air Piston) (975-1103)
C. Trigger Valve (998-00048)
D. Snap Ring (998-00045)
E. Stud Stopper (975-1004)
F. Housing Plug Seal (975-1104)



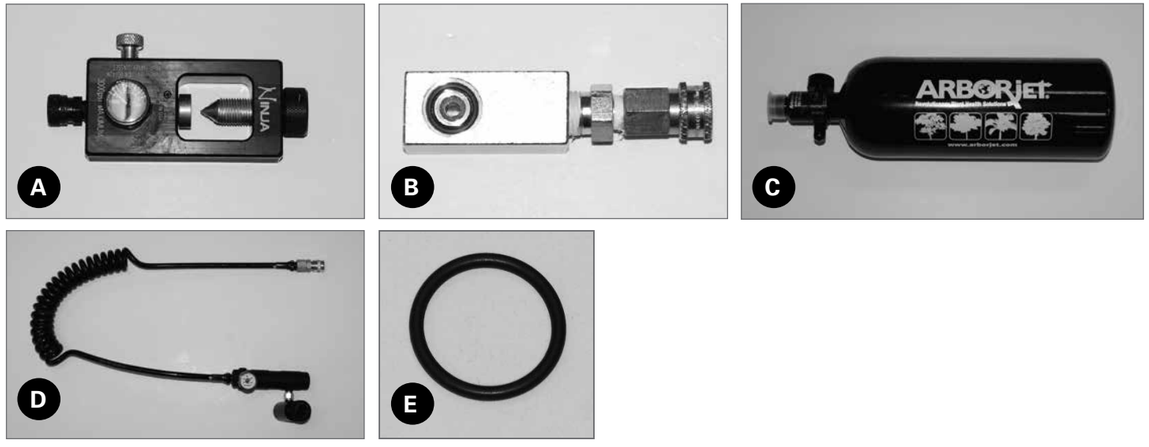
ADDITIONAL PARTS

A. QUIK-jet Air Rebuild Kit (070-2360)
B. Bottle Assembly (070-2200)



PARTS FOR AIR TANK

A. Scuba Fill Station (975-00039N)
B. Tank Filling Adaptor - Dive Shop (975-00039)
C. Air Tank 62" cu 3000 PSI (975-00183)
D. Low Pressure Regulator Assembly w/ coil (070-2370)
E. Air Tank O-Ring (994-20015)



PROBLEM: DEVICE WON'T FIRE

- Is there compressed gas (air or nitrogen) pressure indicated on the supply gauge? If not, refill bottle (maximum 3000 psi).
- Is pressure Supply Line attached to the Device Pressure Inlet? Connect by pulling back Quick-Disconnect Sleeve and push onto Device Inlet.
- Is the Flow Control completely closed? Open the Flow Control by turning the knob counter-clockwise.

PROBLEM: DEVICE WON'T DELIVER PRODUCT

- Is there product in the Product Bottle?
- Check Product Supply Line.
- Is the Product Supply Line connected to the device?
    - If not, push Quick-Disconnect Fitting onto Device Product Inlet.
- Is the delivery pressure (Primary Gauge) at least 35 psi?
    - If not, then device pressure is insufficient to move the shot piston, which delivers product.
- Overtime the Internal Piston Sleeve may wear down with use and need replacing.

PROBLEM: DEVICE LEAKING FROM NEEDLE

- Leaking from PTC?
    - Make sure needle is seated properly.
- Leaking from tip of needle?
    - Replace Check Valve before PTC fitting at front of device.

PROBLEM: PRODUCT LEAKING FROM PRODUCT SUPPLY BOTTLE

- Is Product Bottle Adapter screwed on tightly?
    - If no, tighten bottle into adapter by turning clockwise (screw on carefully, making sure threads don't cross!)
- Is gasket in Bottle Adapter worn or damaged?
    - If yes, replace rubber gasket.

PROBLEM: PRODUCT LEAKING FROM ARBORPLUG

- Arborplug set at incorrect depth.

Too shallow - leaks from around injection site

- Tap Arborplug further into injection site so barbs catch xylem tissue and not bark.

Too deep - injection site over-pressurizes and membrane ruptures.

- Drill, plug, and inject a new site.

PROBLEM: TROUBLESHOOTING CHECK VALVES

The Arborjet QUIK-jet Air System device utilizes 2 check valves:

- Inlet check valve
- Exit check valve

If there is a problem with flow of product, replace check valves. Note which valve seems to have problems– the two check valves on the QUIK-jet Air are not interchangeable.