



QUIK-jet Micro-Injection System

Training Manual



Revision Date: 04/27/15

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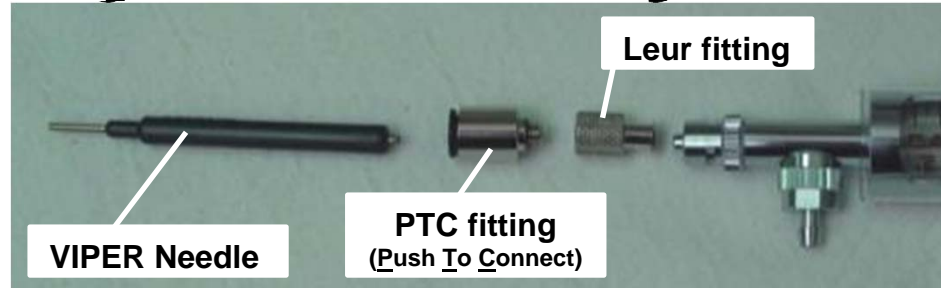
Introduction to Arborjet's QUIK-jet Micro-Injection

QUIK-jet's speedy delivery in fast uptake trees allows the applicator to work effectively and profitably in a variety of situations. Low volume injections with the QUIK-jet are a breeze on ring porous oaks and diffuse porous maples.



For customer assistance, call from 8AM - 4:30PM EST Monday - Friday at 781-935-9070 or visit the website at www.arborjet.com. Arborjet welcomes your comments, questions, and suggestions concerning the QUIK-jet and injectable products.

QUIK-jet Assembly and Setup



1 Connect Leur to PTC fitting



2 Connect Leur and PTC fitting to QUIK-jet device



3 Push VIPER Needle into PTC



PTC fittings use a 5/16" hex tool for installation and removal.



4 Attach Supply Line to QUIK-jet device

QUIK-jet Assembly and Setup



Attach Bottle Clip to QUIK-jet bottle



The Bottle Clip is used with Holster, belt, or belt loop.



Clip the QUIK-jet Hook to Holster, Belt, or Pants



Use plastic guard to protect Glass Barrel

Prepare the QUIK-jet for Micro-Injection



1. Measure tree DBH (Diameter at Breast Height) in inches by using a diameter tape, or measure circumference and divide by Pi (3.1415)
2. Read product label and use DBH" to determine total injection volume for entire treatment application.
3. Measure volume in graduated cylinder.
4. Pour into QUIK-jet bottle using screw-on funnel.
5. Fasten QUIK-jet bottle-top

SAFETY REMINDER



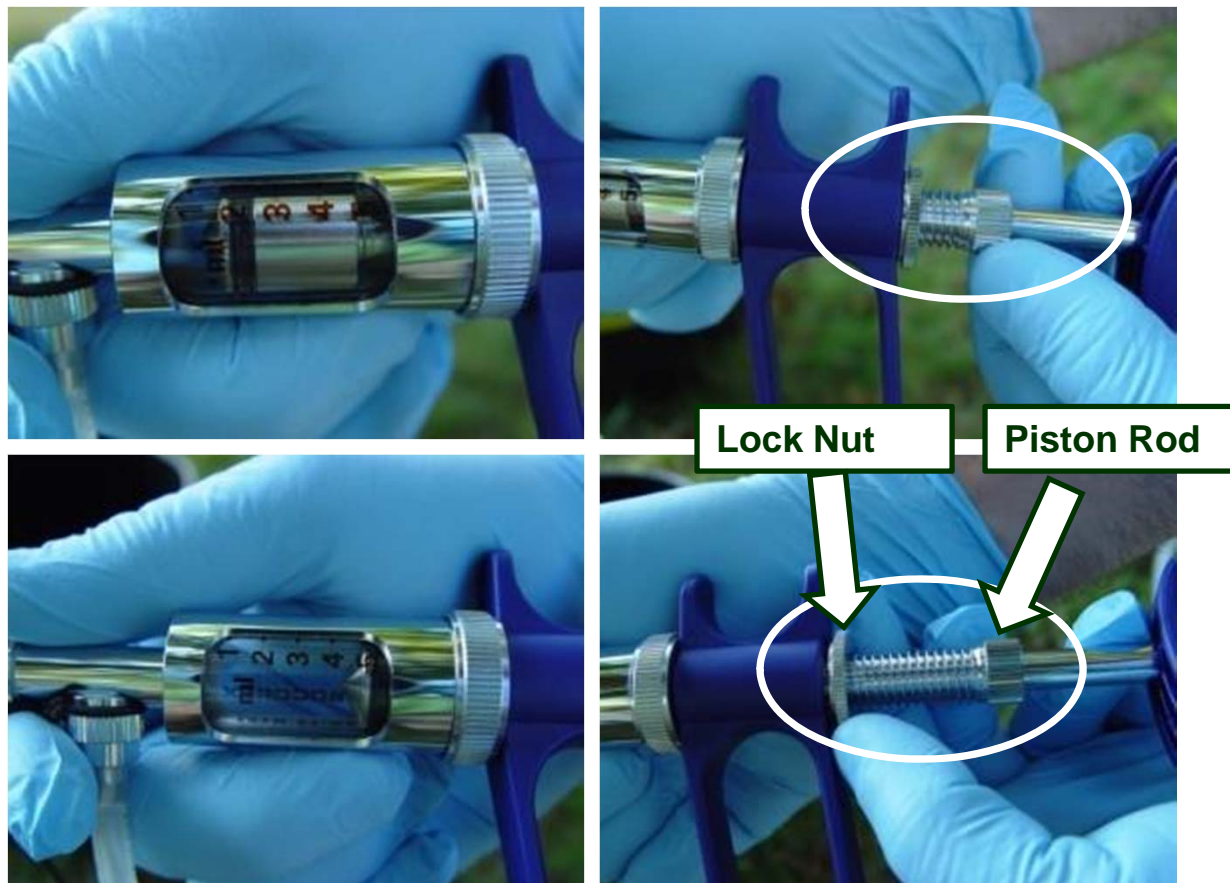
Always wear safety glasses and gloves when handling equipment and products.

WARRANTY VOID WITH USE OF NON-ARBORJET APPROVED FORMULATIONS

Adjust the QUIK-jet Dose Chamber

Adjust the dose chamber to desired mL dose size. (1-5mL per trigger push)

Spin the piston rod to adjust the dose chamber, and use the lock nut to secure in place.



Prime the QUIK-jet Dose Chamber



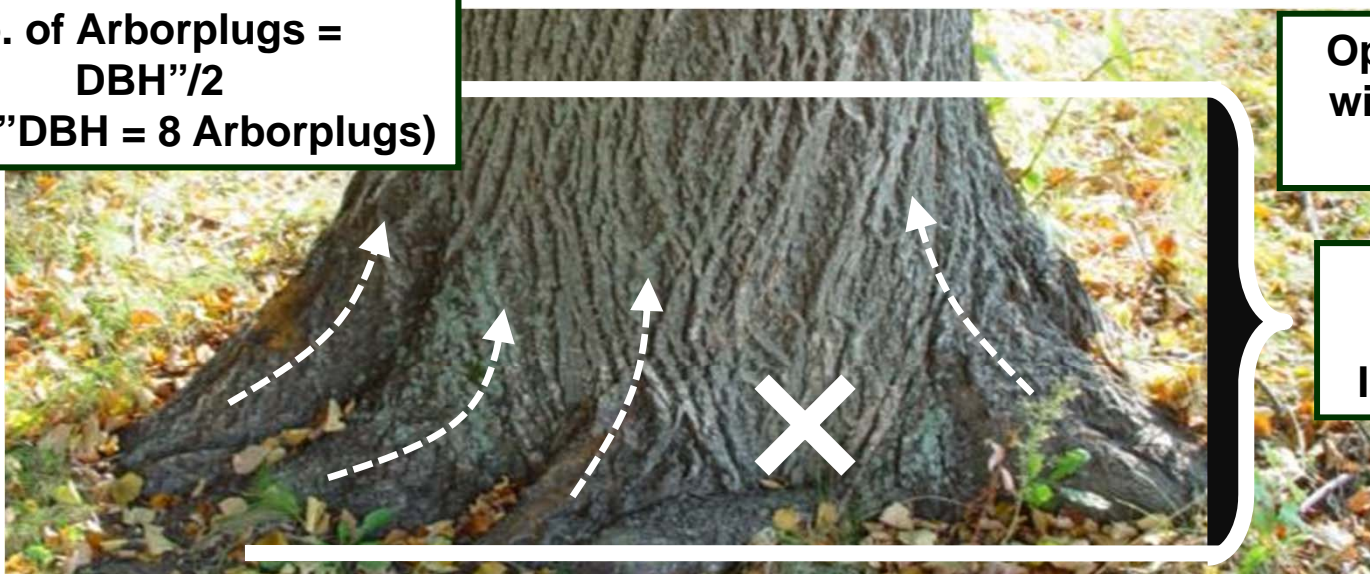
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NOW QUIK-jet is
PRIMED AND READY.

1. Press trigger several times until formulation reaches the dose chamber.
2. Point VIPER needle upward to bring air bubble upward, and slowly press trigger until air bubble leaves the chamber.

Select Arborplug™ Sites

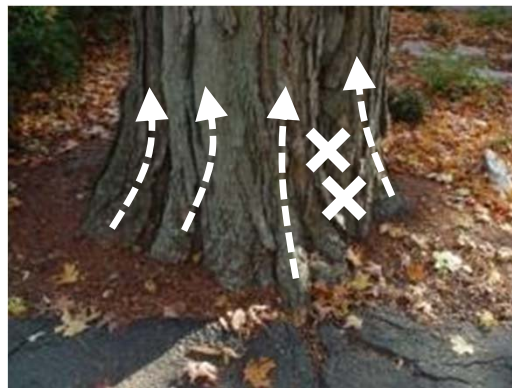
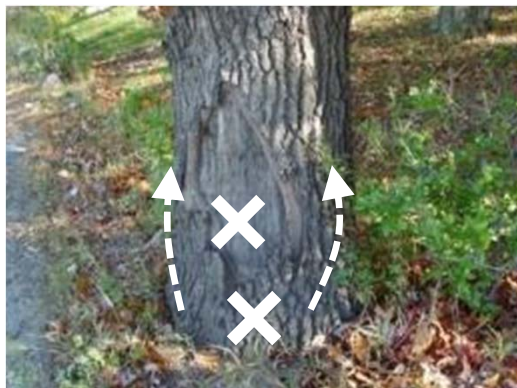
No. of Arborplugs =
DBH"/2
(ex. 16"DBH = 8 Arborplugs)



Optimal sites are
within 36" above
the soil line.

The Best
Arborplug
Injection Zone

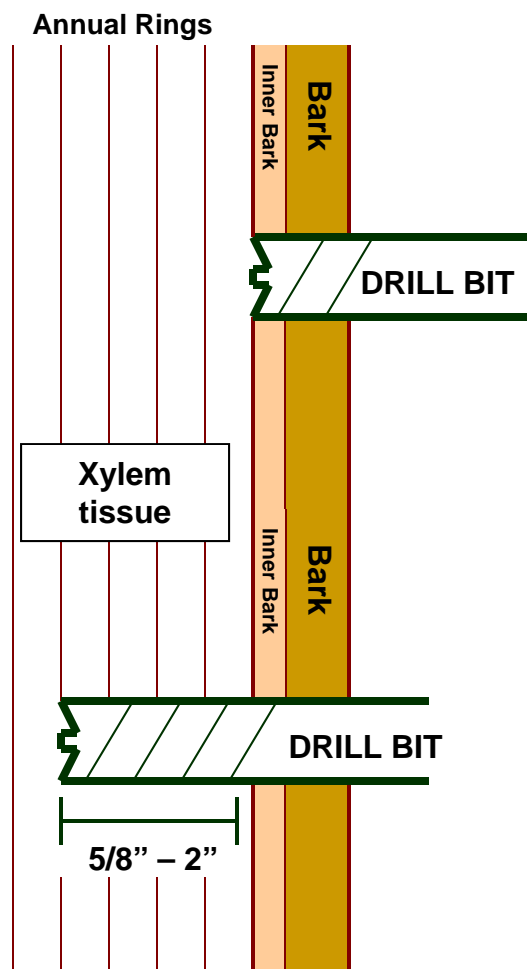
Root Flares show best uptake and formulation distribution to the canopy. Choosing good Arborplug sites result in faster injections.



Drill Sites for Arborplugs

- Use sharp, high-helix brad-point drill bits (included in kit).
- For Beginners
 - Drilling in 2 Steps:
 - 1. Use light pressure to drill through outer bark. The drill bit will stop after the outer bark. You can remove drill bit to note the bark thickness.
 - 2. Use quick heavy pressure to drill at least 5/8" into the Xylem.

Estimated Drill Depth into Xylem:
Hardwoods: 5/8" – 2" deep
Conifers: 1 5/8" – 2" deep



Drill Bit Sizes:

9/32" for #3 Arborplugs

3/8" for #4 Arborplugs

Set the Arborplugs



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

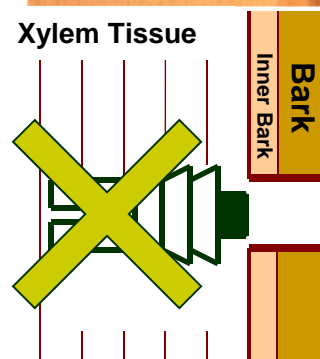
2. Make sure the barbs on the Arborplug make a seal between the xylem and the inner bark as illustrated.

Too Deep



Xylem Tissue

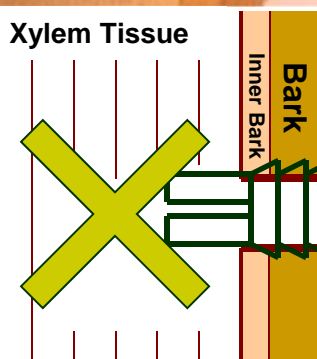
INCORRECT



Too Shallow

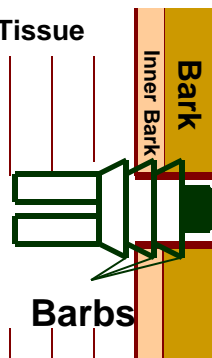


Xylem Tissue

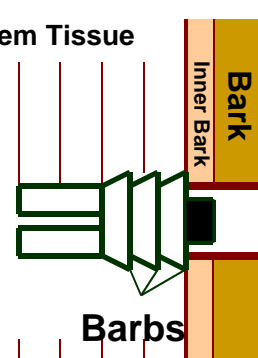


CORRECT

Xylem Tissue



Xylem Tissue



CORRECT

Micro-Injection with the QUIK-jet



1. Determine mL dose per injection site (per Arborplug)
2. Insert VIPER needle and push trigger to apply dose.
3. Keep an even LIGHT pressure when pushing trigger.
4. Repeat even dose per injection site until entire dose is in the tree.

NOTE: Putting excessive pressure on the trigger will NOT advance the dose more quickly. “Forcing” the trigger will likely cause damage to the tree.

3 Easy Steps for QUIK-jet



1. DRILL



2. PLUG



3. INJECT



QUIK-jet in use

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 is inserted and the micro-injection occurs right after the Arborplug is set. Drill, plug, and inject 1 site at a time. If too much time has passed between Arborplug setting and QUIK-jet 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 micro-injection can occur after each Arborplug is set, or after all Arborplugs are set in the tree.

Clean Out QUIK-jet

CLEAN-jet is for rinsing formulation residues, to keep your QUIK-jet operating smoothly.



OR



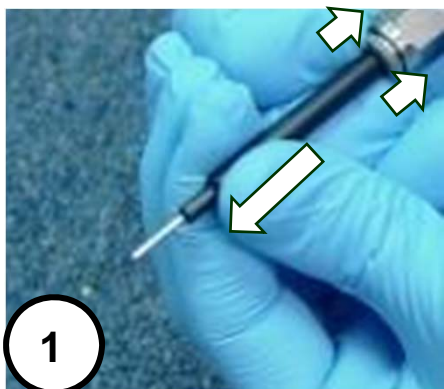
Before Clean-out: Make sure all product is out of QUIK-jet bottle and lines.

1. Remove bottle top and add CLEAN-jet (about 30mL is good)
2. Fasten bottle top and repeatedly press trigger. CLEAN-jet rinse can be squirted in the soil at the base of the tree, unless specified otherwise on the pesticide product label.*
3. Rinse all CLEAN-jet out of the bottle, line, and device.

* Dispose of waste according to local and state regulations.

CLEAN-jet should not be mixed with other formulations.

Maintenance



To Clean out any debris in VIPER Needles:

1. Remove VIPER Needle by pushing the compression fitting in and pulling on the VIPER Needle.
2. Push the VIPER Needle Cleanout Tool into the VIPER Needle.



If ball valves are sticking, add very light oil or silicone, and press trigger several times.

Make sure to keep device clean by using **CLEAN-jet.** (020-2030)



Piston O-ring may need replacement over time. (070-2283)



QUIK-jet Device Parts



**QUIK-jet Kit
070-2250**



**QUIK-jet
Device
070-2230**

**QUIK-jet Bottle
Assembly
070-2200**

- | | |
|-------------------------|----------------------------|
| 1. Piston Rod Assembly | 070-2270 |
| 2. Metal Piston | 975-9447 |
| 3. Glass Barrel | 975-9446 |
| 4. QUIK-jet Rebuild Kit | 070-2281 |
| 5. Valve Housings | A. 975-9914
B. 070-2275 |
| 6. Seal Kit | 070-2280 |
| 7. Quick Connect Kit | 070-2220 |

Trouble Shooting

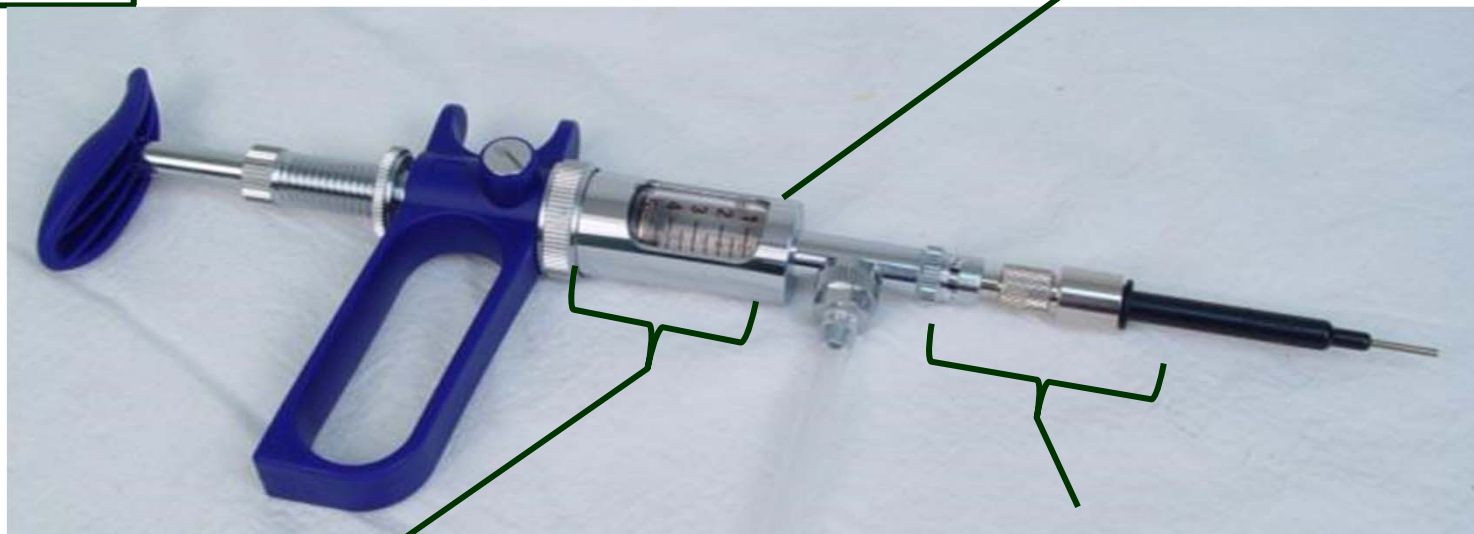
If Trigger Handle is Not Pulling Back:

- O-ring on the piston (QUIK-jet Tightness o-ring 2pk 070-2283) may need to be replaced (also included in QUIK-jet Seal Kit (070-2280))



If Leaking Occurs:

1. Make sure the glass barrel is sitting properly in the glass barrel housing with the proper QUIK-jet Barrel Casing Washer (included in QUIK-jet Seal Kit (070-2280))



If Dose Chamber is Not Filling or Dispensing Formulation

- Ball Valves may need cleaning. (see Troubleshooting: Ball Valve)

If Leaking Occurs:

- VIPER Needle may not be snug – push all the way into PTC.
- Tighten all parts tighter than hand tight.
- If replacement is needed, order QUIK-jet Connect Kit (070-2220).

Trouble Shooting

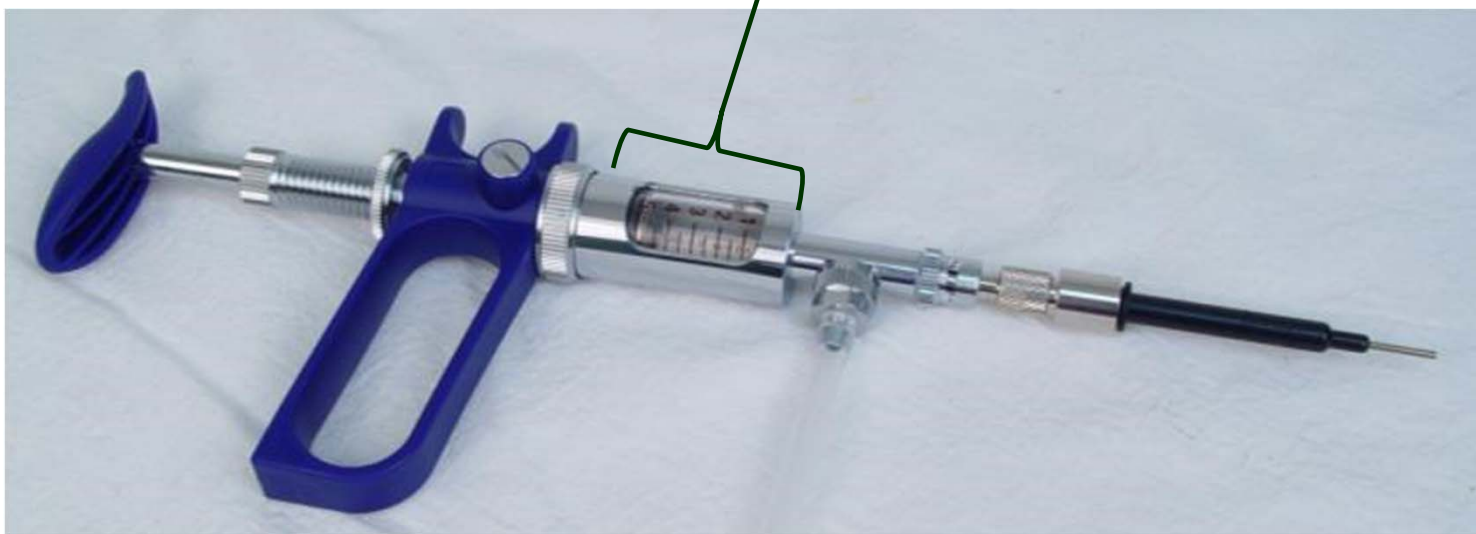


If Blue Trigger Handle Doesn't Line Up with Input Valve Housing:

- Loosen screw and reposition blue handle

If 1-5mL graduations can't be read:

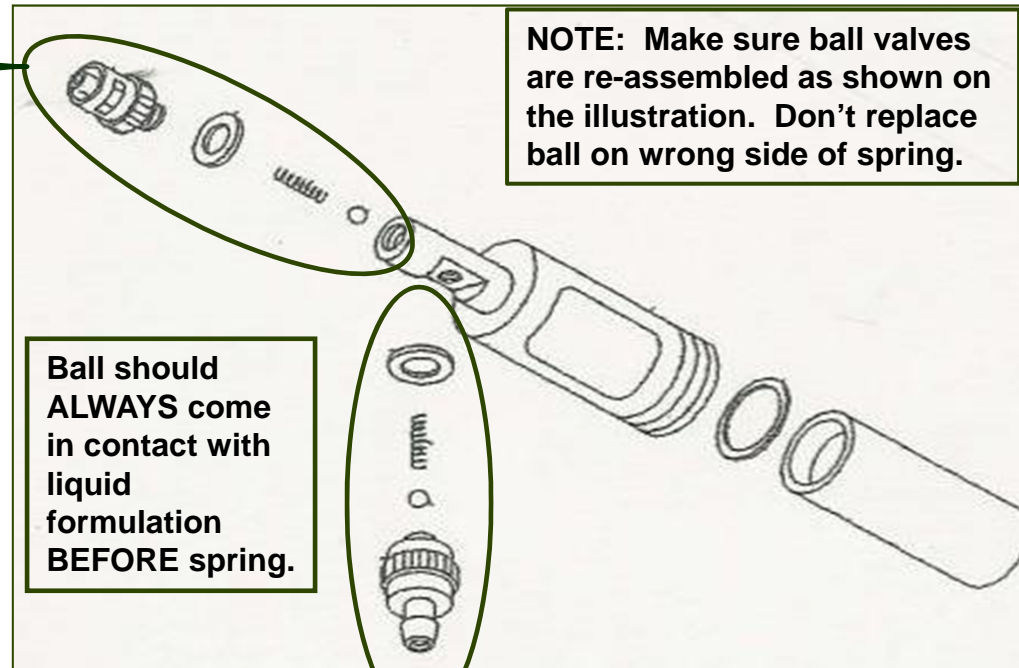
- Loosen steel barrel, adjust glass barrel, and tighten steel barrel.



Troubleshooting: Ball Valve

If QUIK-jet device will not push formulation out, ball may be stuck closed.

If QUIK-jet device will not prime and has a weak draw of formulation, ball may be stuck open.



Ball valves can be lubricated by removing the tubing, and adding a very small amount of oil or silicone to the in-take check valve housing.

CAUTION:
Ball Valve assemblies contain small parts. Disassemble these parts over a bowl or cup so small ball and spring won't be lost.

If QUIK-jet device will not draw formulation up, ball may be stuck closed.

If QUIK-jet device pushes formulation back into bottle, ball may be stuck open.

QUIK-jet Tips and Cautions

- Daily cleaning and regular maintenance are critical for consistent QUIK-jet operation.
- Do not over tighten fittings. Fittings should be just more than hand tight.
- Ball Valve assemblies contain small parts. Disassemble these parts over a bowl or cup so small ball and spring won't be lost. **DO NOT DISASSEMBLE IN THE FIELD.**
- Apply very light oil or grease to ball valve assemblies to keep them working properly.
- Apply light to moderate pressure on the trigger handle QUIK-jet device. **DO NOT** try to force product into the tree.

QUIK-jet Tips and Cautions

- Always follow the formulation label for required personal protective equipment
- Never point the VIPER needle toward yourself or anyone else
- The QUIK-jet contains a Glass Barrel. Use caution when using or storing the device
- Do not store device loaded with formulation. Always follow proper cleaning and disposal instructions