Air/Hydraulic Micro-Injection System Training Manual - Part 2

Part 2 - Clean-Out & Maintenance
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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 Tree IV System. Read label of injectable product for further precautions and warnings.
Three Step Clean-Out

**IMPORTANT:** Prior to switching to another product, or storing the Air/Hydraulic System, it is essential to clean and rinse out the device and supply lines to maintain proper function and to avoid clogging the internal components of the system.

Cleaning out the system involves a 3-step process:

**Triple A** = AIR – ALCOHOL – AIR

1. Empty lines of medicament (Fill with AIR)
2. Rinse away residue with an ALCOHOL solvent (ex: CLEAN-jet, or Isopropyl alcohol)
3. Empty lines 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 supply lines 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.
STOP!!

Be Sure the System is Completely Depressurized and the Med Bottle is Upright Before Attempting to Remove the Medicament Bottle(s)!
Cleaning Out The System

1. Disconnect med supply line 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 regulators: (two methods)
   - Press and release trigger several times to bleed all air out of system.
   - Or pull sleeve on pressure inlet and press on and off device. (2)

5. Leave pressure line disconnected, and set injection device aside.
Cleaning Out The System

1. Depressurize the left med bottle, Keep bottle upright and slowly unscrew left adaptor just enough to break seal—CAUTION: contents might be under slight pressure.

2. Fill clean-out syringe with air by pulling plunger back.

3. Connect syringe to male-fitting of med supply line.

4. Open med supply line.

5. Push plunger into syringe to push air through lines. Push all medicament back to bottle.
Cleaning Out The System

1. Label a “WASTE” container to capture residue as it is rinsed out of the device.
2. Remove adaptor from med bottle and replace cap.
3. Store unused chemical in supply bottle, or return it to original supply container.
4. Add at least 30-40 mL of isopropyl alcohol or CLEAN-jet to a clean, medicament supply bottle, and attach to left-side bottle adaptor.
5. Reconnect pressure and med supply lines.
6. Turn pressure supply ON to repressurize the system.
Cleaning Out The System

1. Make sure med supply switch is ON.
2. Slowly pull the knob back to fill the DoseSizer with rinse solution.
3. Shoot CLEAN-jet fluid through the device, and into the WASTE container. Repeat several times.
4. Disconnect med supply line from the device.
5. Pull trigger several times to empty CLEAN-jet fluid into the WASTE container. NOTE: DoseSizer may need to be slightly pulled out during rinsing.
Cleaning Out The System

6. Turn OFF compressed air.

7. Bleed remaining air out of device and regulators: (two methods)
   - Press and release trigger several times to bleed all air out of system.
   - Or pull sleeve on pressure inlet and press on and off device. (2)

8. Leave pressure line disconnected, and set injection device aside.
Cleaning Out The System

1. Push back rinse fluid through medicament lines with clean-out syringe as previously done with product.

2. Disconnect left bottle from adaptor and empty any small amount of left over rinse fluid into waste container (it may contain some residue). Dispose of waste according to local and state regulations.

3. Observe all requirements listed on product label for proper handling and storage of systemic injection products.

4. 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 Air/Hydraulic System
Lubricating The Device

1. Add a few drops of 3-in-1 oil to the device pressure inlet on the injector.
2. Press the trigger to lubricate the trigger valve.
3. Apply Oil to the DoseSizer rod.
4. Apply 3-in-1 oil to the pressure supply line quick-disconnect, then pull the metal sleeve back and release.
Lubricating The Device

- Apply grease to o-ring on device medicament supply intake fitting.

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

DAILY MAINTENANCE IS COMPLETE!
Important: Prior to performing maintenance procedures or storing the system after use, it is essential to clean out the device and supply lines to maintain proper function and to avoid clogging. See first section of Part 2 of the Training Manual for Clean-out Procedures.

Reminder: Before proceeding to Weekly Maintenance, be sure...

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

- Remove DoseSizer plunger by unscrewing end cap counterclockwise.
The DoseSizer

- Inspect & clean all internal components of residue or debris.
- Apply lubricating grease to u-cup seal.

- SLOWLY and CAREFULLY replace plunger assembly.
- Screw end cap back on, hand-tight.
Shot Piston

- Remove Med Supply line from device.
- After nose is loose you can loosen it by hand or use the assist handle to spin it completely off.
- Spin and loosen nose counter-clockwise and remove.
- Apply grease to the tip of the shot piston.
- Replace the nose to the device.
Shot Head Check Valve

- Loosen tree gauge base—turn counterclockwise
- Carefully remove tip assembly—look for a small spring & check valve.
- Remove check valve spring and inspect for damage.
- Clean spring by flicking with finger tip—wear safety glasses!
Remove & inspect check valve—replace o-ring if it is swollen (i.e., wider than check valve).
Weekly Maintenance

Shot Head Washer

- Inspect tree gauge base washer for damage or any swelling.
Tip Assembly

- Replace spring into check valve seat and carefully replace tree gauge assembly—there should be no pressure on spring when starting the threads.
- Tighten with adjustable wrenches.
Tip Assembly

- Lastly, reconnect med supply line by pushing into nut at valve body.