

# Installing Your Micro-Tube System

Thank you for purchasing Micro-Tube, one of the industries most accurate and trouble free liquid delivery systems. These written instructions are designed to help with the installation of your new system. If you encounter questions as you install your system these instructions should answer your questions. If you come upon something that still isn't clear please call your closest Agri-Inject dealer or call Agri-Inject and one of our skilled personnel will be happy to help you.

**\*\*\*Before beginning installation, unfold implement to its full width. Installation can begin either at the hitch or with mounting the manifolds.**

## Step 1

**Unload your Micro-Tube System.** Your system will include the necessary parts to install the system custom configured for your particular machine and use. Double check to make sure all the parts on the packing list are included. If not call your dealer immediately. The system will include:

- A diagram of your system and the flow chart designed for your particular system.
- A Packing List that will include:

Either a ¾" X 1/2" X ½" Hose Barb Tee or a three, four or five outlet flow divider depending on your needs

Micro-Tube

½" flexible hose and/or poly tubing

Quad flow manifolds in either .156 (5/32") or .250 (1/4") o.d. depending on the Micro-Tube sizing

John Guest fittings

The particular pump for your system. This will be either 12 volt electric or hydraulic driven.

Whatever type of controller you chose for your system from the basic rheostat controller, Auto Trol, (our single rate controller that adjusts with speed), the 3405F for hydraulic driven pumps, or our 3405D dual-rate controller that controls two separate rates for two systems. (In your controller box will be an operators manual with instructions for that particular installation.)

GPS speed sensor, or the interface cable designed to work with your particular system controller.

Various hose barbs, John Guest fittings, cable ties, hose clamps, and hose fittings necessary for your particular system.

## 2. Layout-Concepts of Micro-Tube

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The technology behind Agri-Inject's Micro-Tube System involves the laws of Physics, principles of fluid dynamics, and careful mathematical calculation. It operates without a lot of work and worry about adjustments, row after row. From your tractor cab you control the flow of fluid.

- Micro-Tube is calculated using 10-34-0 which weighs 11.65 lbs/gal and our figures are based on that weight of product. Fluids that weigh less per gallon, i.e. water (8.34 lbs/gal) will flow faster and have higher than stated output. *Remember your Micro-Tube system is designed for 8' tubing per row.*
- Each tube or hose in a given level, as shown in the diagram, must be cut to equal lengths. Failure to do so will result in uneven flow across the system.

**3. Installing Manifolds, Flow-Dividers and Micro-Tube** following the schematic included with the packing list.

**\*\*\*Remember, Micro-Tube flow rates are calculated with fluid flow dynamics and each tube or hose in a given level must be cut to equal lengths. Failure to do so will result in uneven flow across the system.**

- Lay out the parts to your Micro-Tube system and make your plan for installation.

Chose the location desired for your flow dividers and quad-flow manifolds, either using manifold brackets from Agri-Inject or ones created by you.

- Micro-Tube fittings utilize quick connect fittings. Push the tube in for a snug fit. To release, press the collet. Plug-in type elbows are used to prevent kinking of the tubes. As the tube bends the elbow will swirl in the manifold.
- Mount the quad flow manifolds on support bars, either in front to be seen from the cab or in back for proximity to placement point.
- As you are routing the tubing or hose, pay attention to potential places the hose could kink or pinch and allow extra length for these areas or follow hydraulic hoses and tie the hose to them with wire ties. **Do not over tighten the nylon ties**, they can restrict the flow of the hoses and/or tubing.
- Hose clamps included in your Micro-Tube system will allow you to attach hoses to the various hose barbs. Any John Guest fittings are simple to attach; just push in until you feel the tubing slide all the way in. If you need to release tubing from John Guest fittings push the collet in and the tubing will release and pull out. (show diagram on quick connect fittings.)

- The final step in your installation should be the Micro-Tube that goes to the individual row. Remember, Micro-Tube flow rates are calculated on 8' length per row. Varying lengths from row to row or changing the length of your Micro-Tube will not produce stated results.

#### 4. Installing Pumps, Filters, Flow meters, and Electronic Controllers

- Most **pumps** are designed to efficiently push fluid and are best located close to the liquid source (your tank). The farther away you place pump the less effective it is. Example, if the tank is mounted on the front of your tractor mount the pump on front, not on the implement. If your tank is mounted on the implement, mount the pump close to the tank.
- **Filters** need to be located before your pump and flow meter. This way any fluid that goes through your pump will easily flow through Micro-Tube.
- **Flow meters** accurately measure the flow of liquid in the Micro-Tube system. Our flow meters are designed to operate in a vertical position. It is essential to have six (6) inches of hose or poly tubing before the flow meter to ensure the flow meter is full of fluid for the highest accuracy reading.
- **Electronic Rate Controllers** enable you to get the highest rate of accuracy available. Enclosed in the box with your console are various parts and cables essential to its operation. Again, in the box with your controller there will be a list of what should be included with each controller. If, for some reason something is missing please call your Agri-Inject dealer or Agri-Inject immediately so we can make sure you have everything needed for your installation. Take the time to preview the operators manual, it has vital information necessary for the best operation. Pay particular attention to the **calibration** part of the manual. Making sure the inputs are correct in the calibration mode will provide you with the best use of the rate controller.
- **Following the schematic** in your controller manual will assure the connections you make will produce the desired results. Simple plug ins are designed to only connect to certain outlets, an audible click will tell you that you have made the proper connection.

#### 5. Enjoy your Micro-Tube System