

# **Dohrmann** *Applicators*

Owners Manual  
for

## **Dohrect Enject** *System*



### **DE-1000**



Manufactured By: **Dohrmann Enterprises, Inc.**  
316 33rd Ave S • Waite Park, MN 56387 • (320) 252-8999  
[www.DohrmannEnterprises.com](http://www.DohrmannEnterprises.com)

REV 04.2011



# WARRANTY

*Dohrmann Enterprises, Inc.* will replace or repair any applicator parts that are found to be defective within 1 year from the original date of purchase with the exception of “wear parts” (Pumping Tubes). Defective parts must be returned to *Dohrmann Enterprises, Inc.* within 30 days of failure with shipping and handling fees prepaid.

**NOTE:** Failure to follow proper installation and maintenance instructions found in the Owner’s Manual will **VOID** all warranty.

Defective parts caused by freight damage must be reported to the freight company by the receiver.

**NOTE:** No warranty will be valid without the “Warranty Request Form” accompanied by proof of purchase and the defective parts or equipment. See bottom of page for “Warranty Request Form”.

This warranty shall not be interpreted to render *Dohrmann Enterprises, Inc.* liable for injury or damages of any kind, direct consequential or contingent, to person or property. Furthermore, this warranty does not extend to loss of crop, losses caused by delays or any expense prospective profits or any other reason. *Dohrmann Enterprises, Inc.* shall not be liable for any recovery greater in amount than the cost of repair of defects in workmanship.

*Dohrmann Enterprises, Inc.* reserves the right to change parts as it deems necessary.

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## Warranty Request Form

Customer Name \_\_\_\_\_ Phone \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Dealer Purchased From \_\_\_\_\_

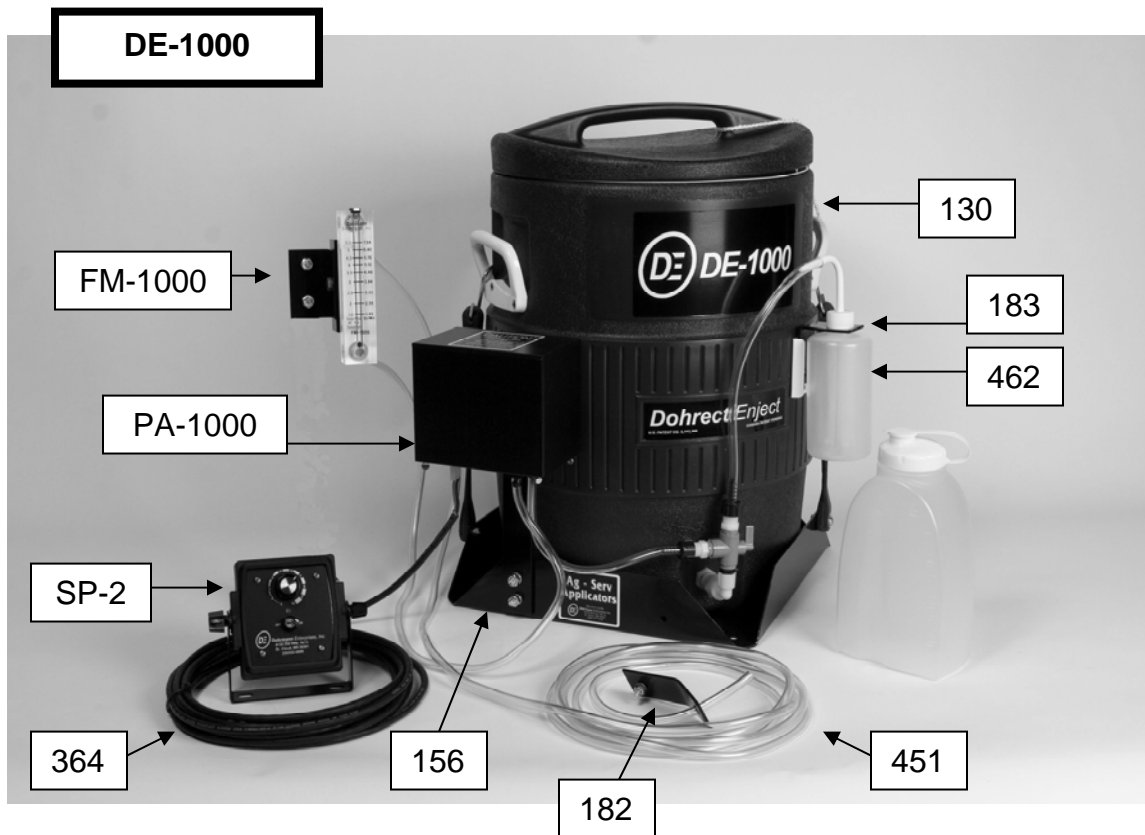
Model Number \_\_\_\_\_ Date of Purchase \_\_\_\_\_

Serial Number \_\_\_\_\_

**Note:** Proof of purchase must accompany this form along with a letter stating the problem with the defective part or equipment.

**RETURN TO:** *Dohrmann Enterprises, Inc.*  
316 33<sup>rd</sup> Ave S  
Waite Park, MN 56387





130 – 10 Gallon Dohrect Enject Cooler Assembly  
(Includes Valve & Fittings)

156 – Dohrect Enject Baseplate with Straps

182 – Dohrect Enject Discharge Bracket

183 – DE-1000 Flush Bottle Bracket

364 – 35' DE-1000 Power Cord Assembly

364 Breakdown

364A – 15' Power Cord (Power Supply to SP-2 Control)

364B – 20' Power Cord (SP-2 Control to Pump)

451 – ¼" Clear Hose (X20)

462 – DE-1000 Flush Bottle Assembly

FM-1000 – DE-1000 Flowmeter Assembly

PA-1000 – DE-1000 Pump Assembly (No Hose or Power Cord)

SP-2 – DE-1000 Speed Control

## DE-1000 Assembly & Installation Directions

Your **Dohrect Enject** Applicator requires minimal assembly. Your **DE-1000** Applicator comes in 2 separate assemblies.

1. Remove the tank and baseplate assembly from the box (Assembly 1).
2. Remove the cover and lift out the pump assembly (Assembly 2). This is the black box with the power cord assembly and hoses attached.
3. Using the two 5/16" X 1" bolts provided, attach the pump assembly to the baseplate (**See Figure 1**). Be sure to mount the pump assembly on the set of holes on the left of the baseplate as shown in **Figure 1**. Connect the input hose using the attached swivel nut to the side output on the 3-Way Valve.
4. Remove the flush bottle assembly and slide the flush bottle mount into the holder on the right side of the tank. Connect the flush bottle hose using the attached swivel nut to the top input on the 3-Way Valve (**see Figure 2**).



**Figure 1**



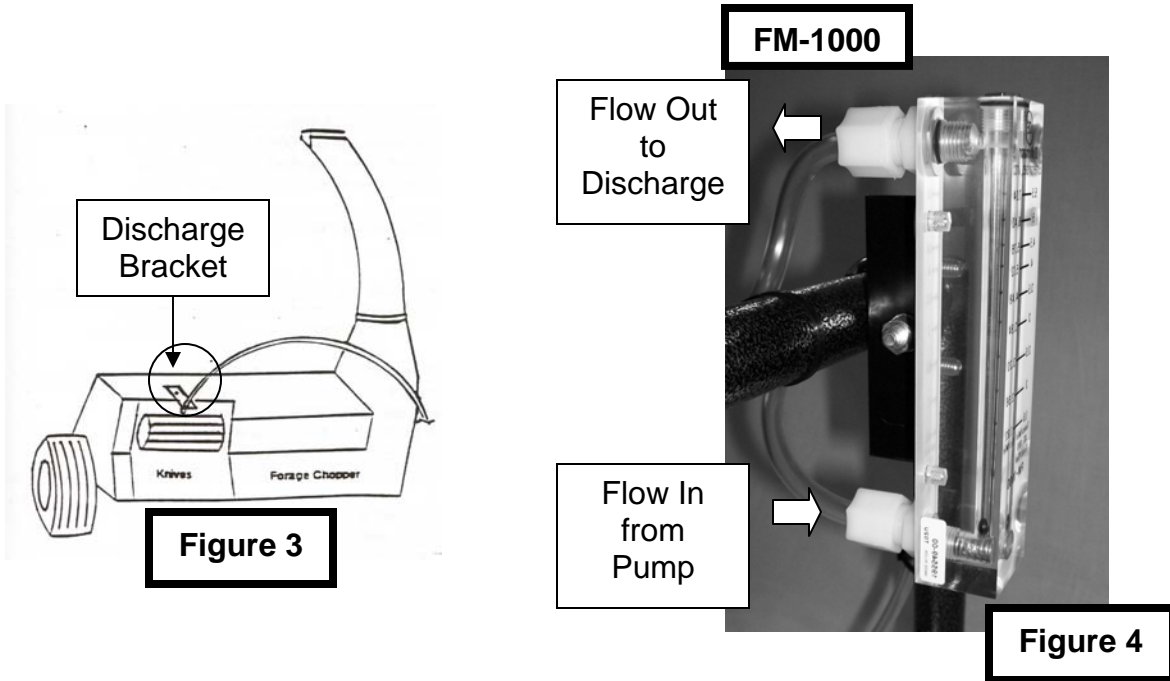
**Figure 2**

5. Mount the frame assembly on a flat surface that can be easily accessed, we usually recommend the right fender on self-propelled choppers. For mounting a DE-1000 on a pull-type chopper, use the CM-2 Chopper Mounting Kit. Follow the installation instructions that are included with the CM-2 Chopper Mounting Kit.

6. The FM-1000 Flowmeter should be mounted in a location that is easy to view for the operator. Find a desired location to mount the FM-1000 Flowmeter and attach the flowmeter with the U-Bolt if mounting to a railing. If mounting to a flat surface, use the self-tapping screws, or the 1/4" nuts and bolts provided. If using the self-tapping screws, drill a 3/16" hole. For most accurate readings, the flowmeter needs to be mounted vertically. To make adjustments assuring proper vertical installation you can loosen the bolts on the swivel bracket, make the adjustments and then tighten the bolts.

## DE-1000 Assembly & Installation Directions

- Attach the discharge bracket so that the discharge tube will be mounted to apply the product directly into the feed flow (knives and feed roll area). (See figure 3).



- Run the discharge tube from the pump, past the flowmeter on the way to the discharge bracket. Cut the hose at the flowmeter. Loosen the fittings on the back of the flowmeter. The hose **from the pump unit** should be inserted into the bottom flowmeter fitting and the hose **to the discharge bracket** should be inserted into the top of the flowmeter, tighten the fittings to secure the hose, (See **Figure 4**). Run the rest of the hose from the top of the flowmeter to the discharge bracket.
- Find a mounting location for the SP-2 Control Unit. It is recommended that this be in a location which is within easy reach of the operator. Mount the controller using the self-tapping screws; drill a 3/16" hole.
- Connect the power cord to a 12 volt power supply. The **RED** lead should be connected to positive (+) and the **BLACK** should be connected to negative (-). We suggest taking power direct from the battery or from a 12 volt in-cab connection. After everything is wired, if the control does not work, it has been wired in reverse; change the red and black wires at the power source to correct this problem.  
**NOTE:** Be sure you have good, clean terminals and a good connection. This system must be connected to a 12 volt system; 6 or 24 volts **WILL NOT** work.
- Put water into the tank and run system to make any final adjustments.

## System Troubleshooting

**Problem:** The red light on the SP-2 Control will not come on so the system will not run.

**Solution:**

1. Unplug the control from the wiring harness and connect the wiring harness together. If the pump does not run, either you do not have a good connection or are wired to a switched power source and need to turn on the switch.
2. Unplug the control from the wiring harness and connect the wiring harness ends together. If the pump runs, but does not pump, check to see if the pump is blowing bubbles back into the tank. If you see bubbles in the tank, the system was wired incorrectly at the power source. Switch the red and black wires around.

**Problem:** The system has worked for a while and does not pump any longer.

**Solution:**

1. Follow the instructions on pages 12 and 13 to replace the pumping tube. Use the spare tube included in the manual bag. If replacing the pumping tube, it is recommended to order a spare tube to have on hand for the next replacement.
2. If you replaced the pumping tube and the pump still does not pump, you may have to adjust the tension on the Pressure Yoke. For instructions on how to do this, **see page 13**.



## Operation & Calibration Instructions

1. When starting up your applicator for the first time, you may notice that after 15-20 minutes of run time, the volume may increase; this is normal. During the first 15-20 minutes, your pumping tube is being broke in. Your system does not need to go through a break in period before use. If you notice the volume increase, simply use the SP-2 Control to adjust back to the desired rate.
2. Calibrate your applicator against the charts found on pages 10 & 11. If you are using your product mixed at the full concentrate rate of 100 tons per gallon, simply float the ball on the line of the amount of tonnage you desire to treat per minute. If you are using one of the other mix rates, refer to the chart on page 10 to find out the ounces per minute for your tonnage and float the ball on the line for the desired ounces per minute found on the right side of the flowmeter.
3. Use the 2 quart mixing bottle for pre-mixing your product. Mix between 200-250 tons per mix. Mix the total amount of product you desire.  
**NOTE:** The applicator is designed to mix up to 100 treatable ton of product per gallon (see the calibration charts on the following page to find your desired mixing rate based on your harvest rate).

**Example 1:** If you wish to mix for 400 treatable ton of product, you would mix 2 batches of 200 ton in the mixing jug. Then dump the solution into the tank. Fill the tank up to 4 gallons. This mix will allow for an application rate of 1.28 oz/ton (100 ton per gallon mix).

**Example 2:** If you wish to mix for 400 treatable ton of product, you would mix 2 batches of 200 ton in the mixing jug. Then dump the solution into the tank. Fill the tank to 8 gallons. This mix will allow for an application rate of 2.56 oz/ton (50 ton per gallon mix).

4. Add frozen plastic bottles (20 oz. soda bottle) of water to assist with providing a cool environment for the product. At the days end, or during any prolonged interruption of chopping (weather, breakdown, etc.), ice packs or frozen bottles of water may be added to keep the product cool. (Ice packs or bottles not included with the applicator.)
5. Your applicator should be flushed at the end of each day. To do this, turn the 3-way valve handle up toward the flush bottle input. This will allow the pump to draw clean water from the flush bottle and flush out the entire product line.  
**NOTE:** 4 ft. of product line will contain enough product for 1 ton of forage. It is recommended to flush out the product onto the last batch of forage harvested.  
**COLD WEATHER FLUSHING:** During cold weather when there is a possibility of the product lines freezing overnight, it is recommended to fill the flush bottle with RV Waterline Antifreeze and flush the system. This will prevent the lines and the flowmeter from freezing and cracking.
6. It is recommended to flush out the tank between batch mixes to remove any product settlings. To do this, remove the tank and rotate the swivel connection to expose the filter screen and rinse out with clean water. This will clean out the tank and filter.

## Calibration Charts

The Calibration Charts below are to provide you with the amount of total solution that you need to apply based upon your mix rate and tonnage per minute harvested. Please note that you may need to change your mix rate if your harvest rate drops below the lowest output of the pump.

These charts are to be used along with the FM-1000 Flowmeter Assembly for calibration of your system. For pull-type choppers, you may not be able to have your flowmeter in easy view. In this case, you can find your desired output using the flowmeter and mark the dial setting of the SP-2 Control in the Dial Number location.

To find out how much tonnage per minute you are harvesting, use the example found below.

**Example:** If you are filling a 12-ton wagon/truck in 4 minutes = 3 tons per minute. To find this out, take the forage weight and divide by the time in minutes to chop.

### 100 Ton Per Gallon Mix

<u>Tons/Min</u>	<u>Ounces/Min</u>	<u>Dial #</u>
1.50	1.92	
2.00	2.56	
2.50	3.20	
3.00	3.84	
3.50	4.48	
4.00	5.12	
4.50	5.76	
5.00	6.40	

### 50 Ton Per Gallon Mix

<u>Tons/Min</u>	<u>Ounces/Min</u>	<u>Dial #</u>
0.75	1.92	
1.00	2.56	
1.25	3.20	
1.50	3.84	
1.75	4.48	
2.00	5.12	
2.25	5.76	
2.50	6.40	

### 25 Ton Per Gallon Mix

<u>Tons/Min</u>	<u>Ounces/Min</u>	<u>Dial #</u>
0.50	2.56	
0.75	3.84	
1.00	5.12	
1.25	6.40	

## Determining your Harvest Rate

1. Find the chart for your application.
  - a. Silage is located on this side.
  - b. Balers will be found on the reverse.
  
2. By reading across, find the weight of your bale or load.
  - a. If the weight of your bale or load is not listed, please round up to the next weight listed.
  
3. By reading down, find the time to make a bale or load/unload.
  - a. If the exact time to make your bale or load/unload is not listed, please round up to the faster time listed.
  
4. After locating your Harvest Rate, multiply this by your product application rate per ton. This will provide you with your overall application rate. The result will help determine your nozzle selection (Please See our Nozzle Chart for further information on nozzle selections or for calculating finer accuracy).

### Silage - Tons per Minute

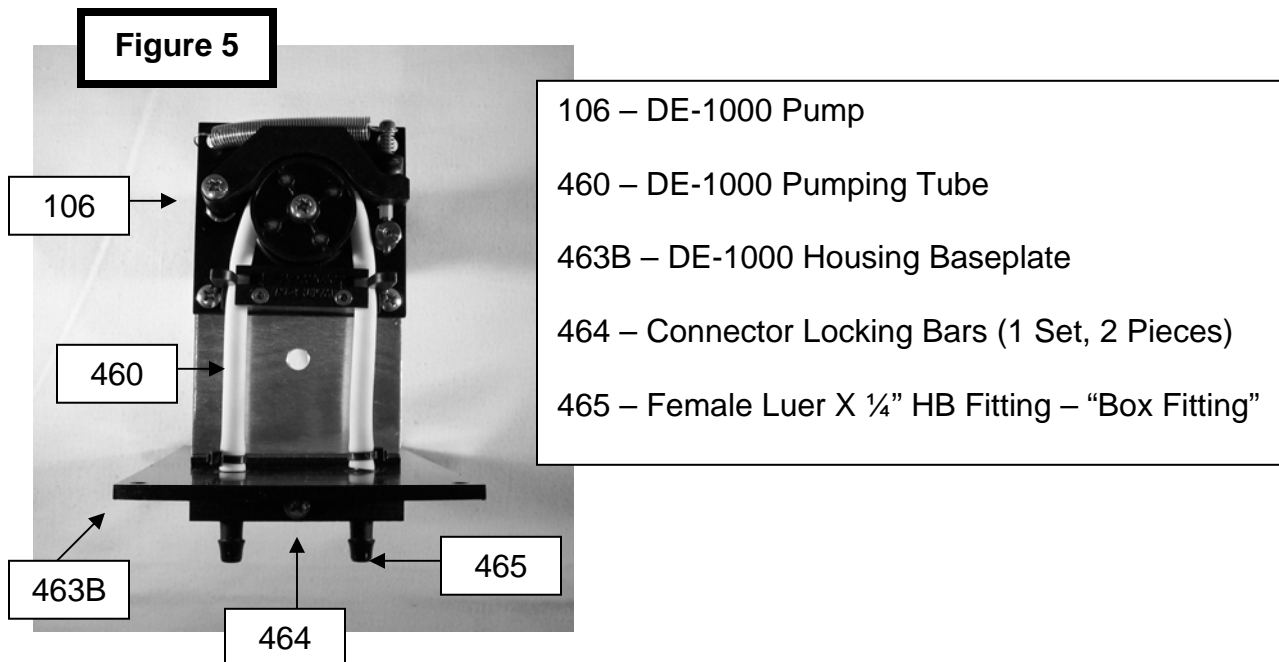
		Tons per Load											
		4	6	8	10	12	14	16	18	20	22	24	26
Minutes to Load/Unload	10	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6
	9	0.4	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.2	2.4	2.7	2.9
	8	0.5	0.8	1.0	1.3	1.5	1.8	2.0	2.3	2.5	2.8	3.0	3.3
	7	0.6	0.9	1.1	1.4	1.7	2.0	2.3	2.6	2.9	3.1	3.4	3.7
	6	0.7	1.0	1.3	1.7	2.0	2.3	2.7	3.0	3.3	3.7	4.0	4.3
	5	0.8	1.2	1.6	2.0	2.4	2.8	3.2	3.6	4.0	4.4	4.8	5.2
	4	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5
	3	1.3	2.0	2.7	3.3	4.0	4.7	5.3	6.0	6.7	7.3	8.0	8.7
	2	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
	1	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0

## Service & Maintenance

The DE-100 Applicator has only one “wear part”. This part is the Pumping Tube. The Pumping Tube needs to be replaced when it wears out (approximately 700-1,000 hours) or at the beginning of every year, whichever comes first. If the Pumping Tube wears out, the motor will still run, but it will not pump any product.

### Replacing the Pumping Tube (See Figures 5 & 6)

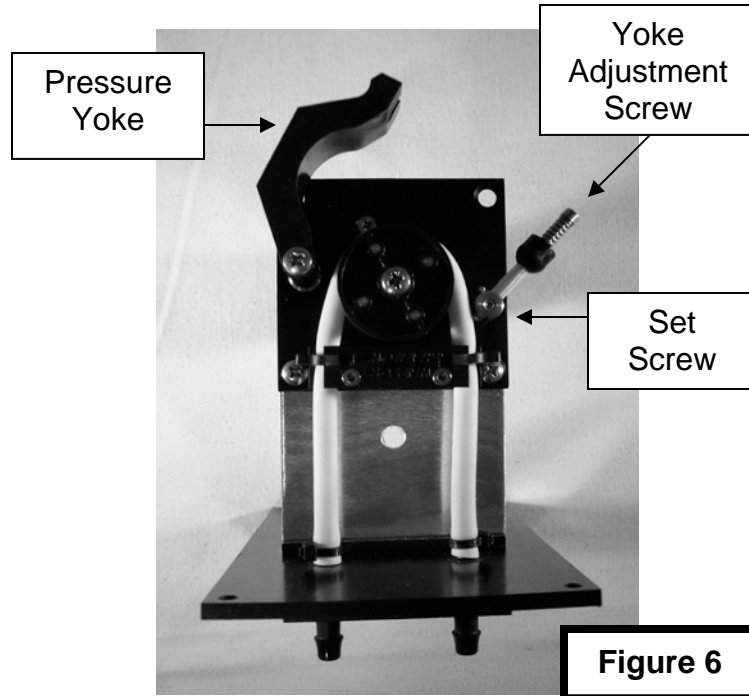
1. Remove the Connector Locking Bar by loosening the screw. Then allow the Connector Locking Bar to slide down over the hoses.
2. Access the pump by removing the 4 plate screws on the bottom of the pump base.
3. Disconnect the Inlet and Outlet Tubing by turning the hose connections (Box Fittings) on the pump inlet and outlet a ¼ turn counter clockwise.
4. Tip the Yoke Adjustment Screw to the right. Lift the Pressure Yoke up to expose the Pumping Tube.
5. The Pumping Tube can now be replaced by reversing the procedure.  
**NOTE:** Be sure that the Pumping Tube is stretched evenly over the roller.

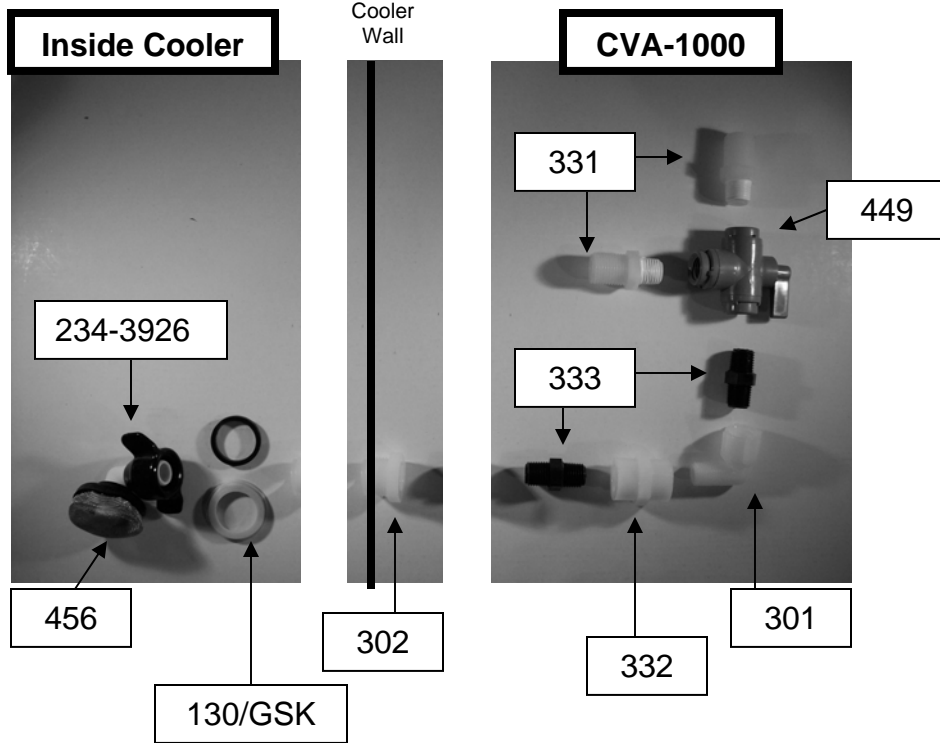


## Replacing the Pumping Tube (Continued)

(See Figures 5 & 6)

**NOTE:** The Yoke Adjustment Screw may at some time need attention. This screw sets the pressure the Pressure Yoke applies to the Pumping Tube. If this ever needs to be done, use the small Hex Head Wrench provided to loosen the set screw (See Figure 6). This is set at the manufacturer and should not need to be changed.





CVA-1000 Breakdown

301 – ¼" Gauge Elbow

331 – ¼" MPT X Nozzle Body Close Nipple

332 – ¼" X ¼" FPT Coupler

333 – ¼" X ¼" Close Nipple

449 – ¼" 3 Way Valve

Not Included as part of the CVA-1000

130/GSK – Cooler Gasket

234-3926 - ½" FPT X ½" Swivel Elbow

302 – ½" X ¼" Reducer Bushing

456 – ¼" Suction Strainer