

# vApply™

**vApply Service and Maintenance**

Precision Planting®

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## vApplyHD Service and Repair

Exterior Overview	
List Number	Part Description
1	3/8" PTC Inlet
2	3/8" PTC Outlet
3	6 Pin Deutsch Row CAN Socket
4	LED Indicator (See Operator's Manual)
5	3/8" mounting holes (QTY—2)
6	Flow Direction Arrow



Serviceable Parts Overview		
List Number	Part Description	Part Number
1	Ball Valve Assembly (Entire Top)	724149
2	12v Motor (Internal)	724159
3	Low Flow Turbine (Internal)	724158
4	Total Flow Turbine (Internal)	724297



## DISASSEMBLY

### 1. High Flow Encoder

- High Flow Encoder Rebuild Kit—724297

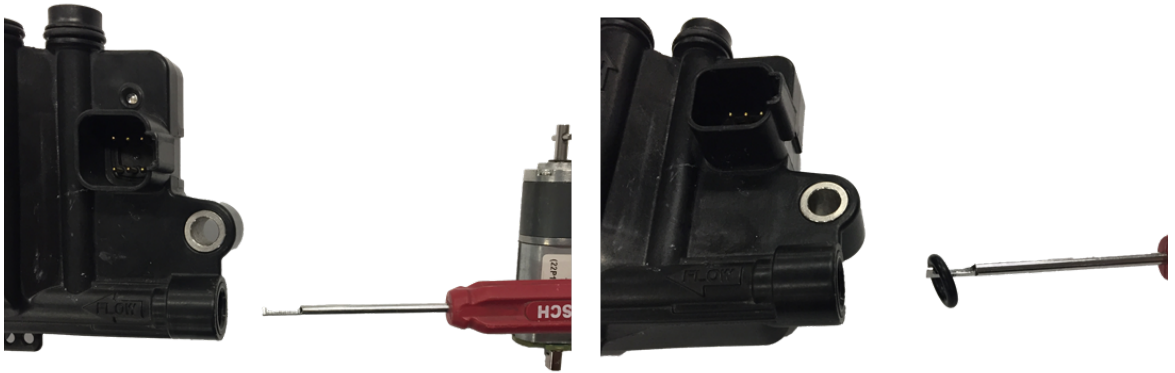


- a. Remove PTC fitting on the INLET side of the module by gently prying the coupling off.





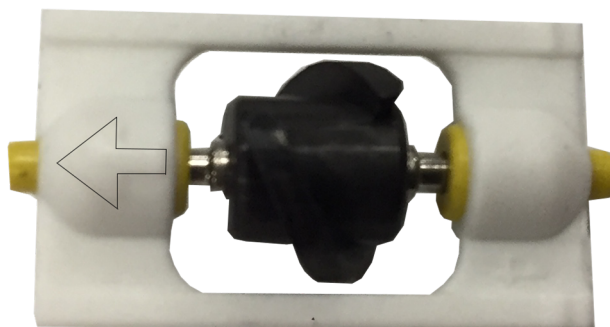
- b. Use a Deustch removal tool to reach into the inlet and pull out the PTC o-ring.



- c. Use the Deustch removal tool to reach back into the inlet and hook the High Flow Encoder out. This may be slightly caught but will come out with littler effort.



- d. Inspect the High Flow Encoder. The turbine consists of a plastic framing with impeller on a central axle. The impeller is a magnet molded inside the plastic form. In proper functionality, you should be able to pass a ferrous item (like a screwdriver) past the impeller and it should spin freely.



**Note** Cleaning—The impeller may be rinsed and cleaned with warm soapy water. **DO NOT USE COMPRESSED AIR.** This will over speed the impeller causing permanent damage.

## 2. Ball Valve Assembly

- vApplyHD Valve Assembly—724149



**Note** Make sure to disconnect the product input line from the module to prevent spilling product on the module.

- To remove the Ball Valve Assembly, remove the 4 screws on top of the module. Once the screws are removed, gently pull the entire valve off of the top of the module. This will be a firm fit but should come off without the need for tools or prying.



b. By removing the valve, you now have access to the 12v Motor and the Low Flow Encoder if necessary. These are covered further in this document.

### 3. Low Flow Encoder

- Low Flow Turbine Kit—724158



a. Start by removing the Ball Valve Assembly as shown in the previous section. Use the needle nose pliers included in your vApply Base Kit or FlowSense Essentials Kit to reach into the Low Flow Sensor and firmly pull the sensor straight out.



- b. Inspect the Low Flow Encoder. The turbine consists of a plastic framing with impeller on a central axle. The impeller is a magnet molded inside the plastic form. In proper functionality, you should be able to pass a ferrous item (like a screwdriver) past the impeller and it should spin freely.



**Note** Cleaning—The impeller may be rinsed and cleaned with warm soapy water. **DO NOT USE COMPRESSED AIR.** This will over speed the impeller causing permanent damage. Most times, the Low Flow Encoder cannot be cleaned and will need to be replaced.

#### 4. **Motor (12v)**

- vApplyHD/Flex Motor Replacement—724159

- a. Start by removing the Ball Valve Assembly as shown above. Do not use pliers to pull out the motor as you may break the motor drive stem. Instead, grasp the entire module firmly and tap it on a solid, soft, clean surface (like a gauge wheel, truck tire, or the bottom of your boot).



- b. The above process will release the motor connections from the module. You will now be able to remove the motor out by hand.



**Note** Keep the motor cavity clean of moisture and debris while changing motors.

## 5. Complete Module Disassembled

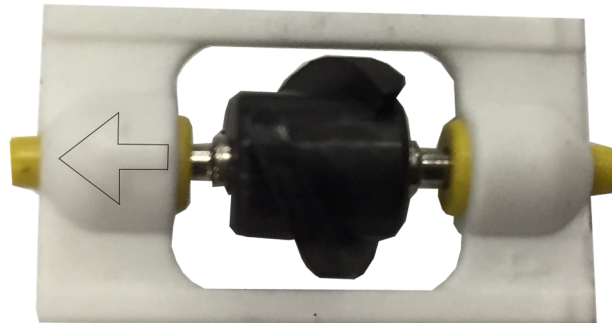




## Reassembly

### 1. Total Flow Turbine

- a. Reinstall in the reverse of disassembly. The High Flow Encoder has a small arrow indicating the direction in which to slide the sensor into the module.



**Note**The sensor will slide in firmly but should not need to be forced.

- b. Once the sensor is back in the module, gently install the o-ring and push it all the way in so that it is squarely against the sensor.



c. Next, push the PTC cowling into the inlet to complete the High Flow Encoder installation.

## 2. Low Flow Turbine

a. Reinstall in the reverse of disassembly. Take note of the flat side on the turbine housing—this will be aligned toward and parallel with the back surface of the HD module. Make sure to install the new o-ring on the sensor prior to inserting back into the module.

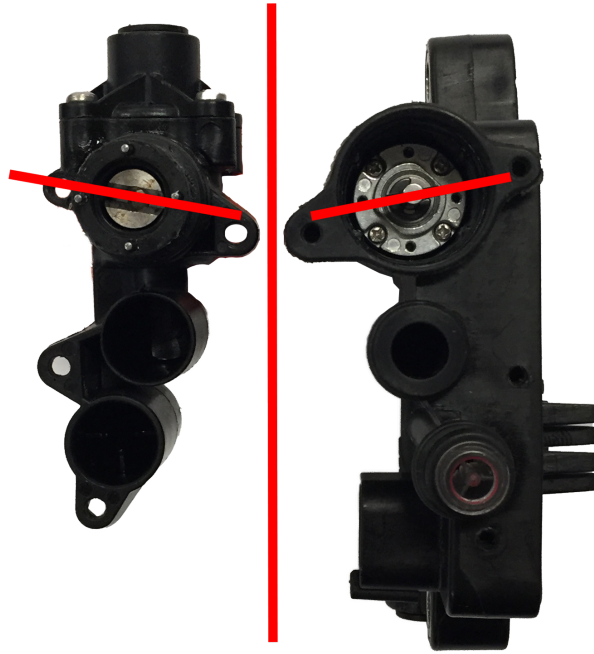


b. Push the sensor firmly down into the module. It will not need to be forced.

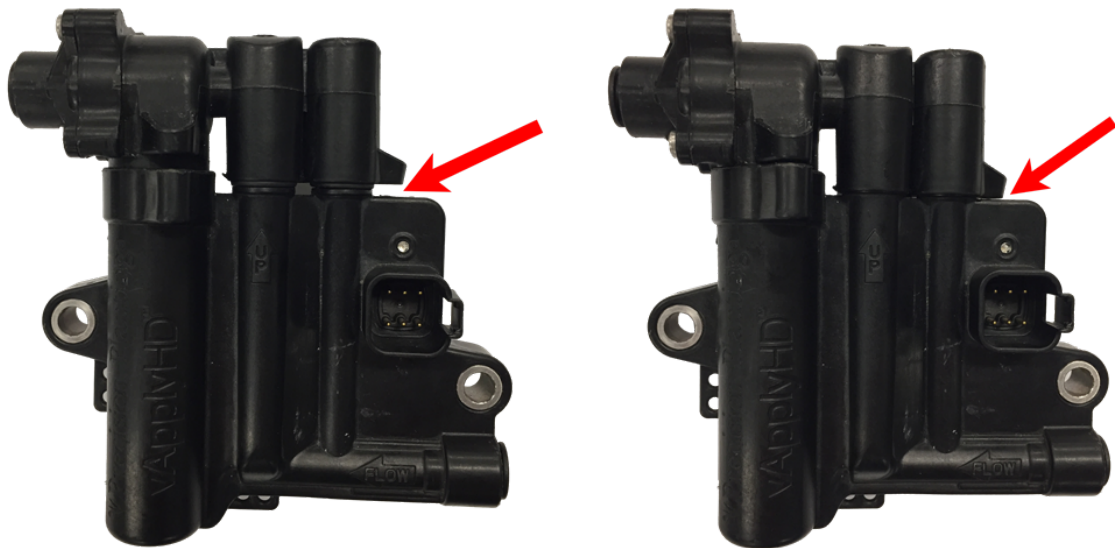
## 3. Motor (12v)







- b. Push the valve assembly down onto the module. This will be a tight but smooth seal and can be done by hand. The valve assembly should sit all the way down onto the module so that no gap shows between the two pieces (see images below). **Do not** use the screws or vise to press the valve onto the module.



- c. Use a screw drive to put the screws back into the module. **DO NOT** use an impact drill. The screws are only used to hold the valve in place and should not be used to tighten down the assembly. **NO TORQUE IS NEEDED.**



## vApplyHD Winterization Process

To protect your vApplyHD system from freezing temperatures and to keep the system clean until next season, follow this process. **READ THE ENTIRE PROCESS BEFORE STARTING.**

### Requirements

- RV Antifreeze (recommended) or other comparable product
- Two people

**Note: Do NOT use diesel fuel** or any other product that will react negatively to contact with vApplyHD materials. The vApplyHD is composed of EPDM, Polypropylene, and Stainless Steel. If you use any product other than Antifreeze to winterize, follow the same procedures below.

### Step 1:

Put Rv Antifreeze in your product tank. Make sure there is enough to fill the entire plumbing supply system with antifreeze as well as about ½ a gallon per row to be flushed through the system.

### Step 2:

Flip the Master Plant switch off (and keep it off until the next step). Navigate to the vApply Manual Test health check. The pump will turn on and will flush the water from both the pump supply and pressure return line back into the tank. Make sure that this small amount of water does not dilute your antifreeze mixture to a point where it could cause freezing issues. All water from the section manifold to the rows will be flushed out and will not dilute the antifreeze any further.

**Step 3:**

Set the manual values at 5 gpa and 5 mph; then turn the Master Plant switch ON. Have a second person at the planter to watch as the vApplyHDs turn on. The remaining water in the lines will begin to flush out of the system as antifreeze is pumped to the vApplyHDs. As soon as ALL rows have started dispensing the antifreeze, move immediately to Step 4.

**Note:** During Step 3, check all rows for encoder readings. If any rows have a failed encoder (either low flow or total flow), the test will not perform properly, and you run the risk of not winterizing that row well enough to prevent damage.

**Step 4:**

Now that all rows are dispensing antifreeze, slowly increase the GPA rate on the Manual Test until all vApplyHD ball valve positions have hit 40 degrees. As soon as the indicated ball valve positions are at **40 degrees\***, you may finish the test by pressing "Abort Test" on the right hand side.

\*If running a smaller pump that cannot hit 40 degrees on all rows, it will be necessary to flush the system in 6 row sections by selecting the Active Rows under your Planter Profile. (Rows 1-6 are active first, run Step 4 successfully, then make rows 7-12 active and run Step 4 again, then continue in six row increments until all rows have been winterized).

**Completing the Process:** Your system is now flushed completely and each vApplyHD is full of antifreeze. Do not unplug the tubing from your vApplyHD as this will cause the antifreeze to drain and allow air into the vApplyHD chambers. If you have any further questions, please contact your Precision Planting Dealer about vApply winterization recommendations