

Thank you for purchasing a Planter Valve kit. By following this installation, use and maintenance guide carefully, your kit will provide years of reliable service.

Richway Industries Ltd. makes a continued effort to improve its products. As such, we reserve the right to make design changes without obligations to add them to kits already in the field.

Planter Valve kits aid in precision fertilizer application by providing complete, positive control of planter rows. Planter Valve housings are precision molded for long life and high strength. The internal sleeve is molded of EPDM rubber to perform reliably with most agricultural liquid fertilizers.

Please take a moment to fill out the following for future reference:

**Kit #:** \_\_\_\_\_

**Date of Purchase:** \_\_\_\_\_

**Purchased From:** \_\_\_\_\_

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As of March 1, 2011 Richway Planter Valve kits are sold with MEV's ( Minitaure Exhaust Valve) rather than the previous QEV. Also the 1/4" Shut Off Valve will be sold with our new 1/4 turn design rather than screw on caps unless ordered otherwise. These are progressive changes and we hope to continue making more improvements to our systems to accomidate to your liquid control needs.

Note: The new components of the system are for a more compact design and better fit within the whole kit. All components are interchangeable from old to new and previous sytle replacement parts will still be offered.

## SAFETY FIRST



### Important

**Do not operate without reading and understanding this owners manual**



**Caution: Agricultural chemical mist or liquid can cause permanent eye or lung damage or death. Planter Valve SLEEVE FAILURE CAN OCCUR AT ANY TIME. If sleeve failure is suspected or liquid fertilizer is detected in the air line, STOP THE TRACTOR AT ONCE, SHUT OFF THE FERTILIZER control and follow these instructions.**

**During Planter Valve maintenance, wear protective clothing (gloves, goggles, etc.) according to chemical manufacturer's recommendation.**

1. Locate valve(s) with failed sleeve(s). Replace failed sleeve(s) immediately. Early detection and replacement of failed sleeve may help prevent chemicals from entering the air line. When replacing rubber sleeves, contact your local authorized Planter Valve distributor to purchase genuine Planter Valve replacement parts.
2. Clean air line system of all traces of liquid that may have entered at time of sleeve failure
3. Inspect all exhaust valves for damage to the diaphragm and check valve element. A damaged diaphragm or element will be soft and "floppy" and **MUST BE REPLACED** to ensure proper function.
4. Clean all exhaust valves that have been reached by fertilizer to remove all traces of liquid that may have entered system at the time of sleeve failure.
5. Read and follow detailed instructions provided in this Planter Valve owners manual.

### **Additional Safety Notes**

1. Shut off all main valves during stops of any length, travel, fills, or other operations. Loss of air pressure will allow the Planter Valve to open, releasing all liquid fertilizer in the tank.
2. **DO NOT** perform any maintenance work on the planter or Planter valves before shutting off the pump and releasing all liquid and air pressure.
3. **DO NOT** use oil or petroleum based materials (such as WD-40) to lubricate sleeves during insertion into valve bodies. These materials attack the EPDM rubber sleeve and seriously shorten sleeve life. Use a foaming agent or detergent solution to lubricate sleeves.

4. **DO NOT** leave Planter Valve kit pressurized when not in use. This will greatly shorten sleeve life. In addition, unexpected loss of pressure will open the Planter Valve sleeve and result in liquid loss. The valves are a 'fail open' design and prolonged closure will affect the valve life and reliability.

## **VALVE SPECIFICATIONS**

Each Planter Valve body and exhaust valve body is molded for long life, high strength, and to resist corrosion without adding excessive weight to the planter. The normal operating air pressure required is 60-90 PSI. Higher pressures are not recommended and may cause excessive and unnecessary wear on the internal sleeve or diaphragm, resulting in early sleeve or diaphragm failures.

Planter valves can be ordered in a variety of different configurations. Your valve may not be the same as someone else's depending on the body size or cap type. Richway offers 1/4" and 3/8" valves with both quick connect fittings or NPT threaded fittings. Richway also offers larger size valves as large as 2".

The 1/4" Shut off valve is supplied in the 1/4" kits and is capable of being an orifice plate holder as well. The cap on the valve is specifically designed to hold a stainless steel orifice disk underneath, thus taking the place of an orifice plate holder. Its twist lock design makes it easy to change as needed and is fully serviceable as well.

The 1/4" valve comes with quick connect fittings in all three ports or may be ordered with 1/4" or 3/8" NPT fittings in the caps on either end with the actuation port having a 1/4" quick connect fitting.

The 3/8" valve comes with 1/4" or 3/8" threaded caps but has the 1/4" quick connect fitting in the air actuation port. It can also be ordered with 3/8" quick connects on the end caps.

Replacement sleeves, caps, bodies, QEV's, MEV's and other parts are available through your local authorized Richway Planter Valve distributor or through Richway Industries.

**Please note which valves you have ordered in this manual for future reference**

## **OPERATION**

Planter valves require a minimum air pressure of 60 PSI to assure quick response and complete shut-off against liquid pressures. For liquid pressures exceeding 45 PSI, increased air pressure is required for complete closure and desired response time. Using the lowest air pressure necessary will promote maximum sleeve life. Excessive air pressure will shorten sleeve life.

**NOTE: Maximum system air pressure should not exceed 90 PSI.**

Inspect all MEV's or QEV's and shut off valves daily, before, during and after planter operation for evidence of fertilizer liquid. If liquid is detected, stop planter operation immediately. Replace failed sleeve or component, and follow maintenance procedures to ensure proper cleaning and reassembly.

## INSTALLATION

To install Planter Valve kits, several components must be connected. Every application may be slightly different. The following is a guide to help you choose the best locations for installing components.



FIGURE 1 - Planter Valve Kit NZPVK-02A

1. Make sure all pumps are shut off, and main shut off valves are closed, and air lines have been bled out before beginning installation.
2. To tee into the air clutch supply line, cut the air supply line with an appropriate tool, and insert the 1/4" Union Tee into the air clutch supply line as shown above. Using the quick connect fittings on the 1/4" Union Tee, push the 1/4" tubing firmly into the 1/4" Union Tee.
3. Next, for single product shut off kits, install the MEV into middle (actuation port) of the Shut off valve. If dual products per row are being shut off with 2 valves, place the MEV into a union tee fitting with the air from the clutch coming into the quick connect fitting on the MEV valve and run 2 airlines from the Tee fitting to the 2 shut off valves. (See Appendix 1)
4. Then, Install the Planter Valve and MEV on the row unit in a safe and secure position away from moving parts and attach the fertilizer lines to the shut off valve. The valve can be placed in either direction when installing but should be away from the danger of ground hazards.
5. Make sure all air line and fertilizer tubes are safely secured and fully pushed into the quick connect fittings or tightened completely before turning system on.

## **MAINTENANCE**

Planter Valves are designed to perform reliably with many commonly used liquid fertilizers.

Valves should be flushed out with water to remove any unwanted fertilizer after use. Cleaning the valves also aids in the life cycle and reliability of the planter valve. See storage section on winterizing.



**CAUTION:**

**Sleeve failure may occur at any time.**

When replacing rubber sleeves, diaphragms, valves, or MEV's, contact your local authorized Richway Planter Valve distributor to purchase genuine Richway Planter Valve replacement parts.



**CAUTION:**

**Sleeve replacement with other than genuine Planter Valve sleeves may lead to rapid sleeve failure, and will void warranty.**

The following pages are to assist you in the replacement of the valve sleeve and the QEV and MEV components. Please follow the Safety First page of this manual before servicing the valve or exhaust valve. Further maintenance and replacement information can be attained through Richway Industries' contact information located on the last page of this manual.

## Sleeve Replacement

Replace damaged sleeves as follows:

1. Shut off the pump and close the main valve. Be certain all pressure is exhausted from the Planter Valve system.
2. Disconnect the air line which enters the Planter Valve.
3. Remove the threaded or twist lock end caps from the Planter Valve body.  
(Depending on purchase date)
4. Remove the damaged sleeve from the body.
5. Lubricate the body and new sleeve with a detergent or foaming agent solution.  
DO NOT USE A PETROLEUM BASED PRODUCT (such as WD-40).
6. Pinch the flanges of the new sleeve together and start it into the body. You may use a blunt tool or the Sleeve Replacement Tool (AP-6177) available from Richway Industries or a local authorized planter valve distributor. DO NOT use anything sharp such as a screwdriver.
7. Make certain the new sleeve is properly seated.
8. Lubricate the ends of the sleeve and end caps using a detergent or foam solution, and reassemble the valve. Be certain the sleeve is not twisted before reinserting the end caps.
9. The best way to double check if the valve is properly seated and in working order is to apply 50-60 psi of regulated air pressure to the valve in the actuation port and hold it under water to check for air leaks. If no leak the valve is fixed, if there are small leaks the sleeve could have a hole in it or the sleeve might not be seated correctly. Disassemble and reseal the new sleeve and repeat testing. Also make sure the end caps are on tight and correct.

### Replacement Part Numbers

1/4" Valve w/ Quick Connect Fittings	NZ-7066
1/4" Valve w/ NPT Fittings	NZ-6012
1/4" Replacement Sleeve (EPDM)	NZ-6155
1/4" Sleeve Replacement Tool	AP-6177
3/8" Valve w/ NPT Fittings	NZ-7103
3/8" Replacement Sleeve (EPDM)	NZ-6158
3/8" Sleeve Replacement Tool	AP-6178

(See Appendix 2 for Drawings)

## QEV Replacement

When a sleeve fails, quick exhaust valves (QEV) can get liquid into them and be damaged. After sleeve failure, replace damaged sleeve and inspect all QEVs in the system.

1. Shut off the pump and close the main valve. Be certain all pressure is exhausted from the Planter Valve system.
2. Remove the hose clamp from the QEV body.
3. Remove the body from the bracket. Inside you will find two loose parts: a check valve element and a flat rubber diaphragm.
4. If there is evidence of liquid in the QEV, wash it thoroughly in a detergent or foaming agent and proceed with steps 5 through 9 below.
5. If the internal diaphragm or check valve element appears soft, floppy, or damaged in any way, it must be replaced with a new diaphragm and element. Install only an EPDM rubber diaphragm which is available through your local Planter Valve distributor or Richway Industries. A damaged diaphragm will not perform properly and **MUST BE REPLACED**.
6. If liquid has entered the system air line at any point, **INSPECT AND CLEAN THE ENTIRE SYSTEM**, not just the row section which had a damaged sleeve.
7. Inspect, clean, and replace defective diaphragms for all QEVs in the system. Remove air lines for each QEV where they connect to the air clutch line.
8. Turn on the air to blow out each line, then reconnect the air line to the QEV.
9. Inspect each Planter Valve for evidence of liquid in the valve body. This can usually be done by removing the outer end cap from the body and looking for liquid draining between the sleeve and body. If in doubt, further disassemble the valve and inspect more carefully. All valves which have liquid in them must be fully disassembled and washed in a mild detergent or foaming agent solution.
10. Reassemble the entire Planter Valve system.

Follow the same steps with the MEV replacement. The MEV is a twist lock design with a diaphragm and built in check valve inside of it rather than clamp style.

### Replacement Part Numbers

Quick Exhaust Valve with Bracket	NZ-7081
Mini Exhaust Valve	NZ-7120
Replacement Diaphragm (QEV)	NZ-2368
Replacement 1/4" Check Valve Element	AP-6192
Replacement Diaphragm (MEV)	NZ-7121

(See Appendix 2 for Drawings)



## Storage

When storing a planter equipped with Planter Valves **DO NOT** use petroleum products, such as diesel fuel to prevent freezing. Petroleum products attack the EPDM rubber sleeves, which dramatically reduces their life. Contact with petroleum products will swell the sleeves rendering them unusable.

Using 28% Nitrogen based solution or anti-freeze mixture will normally yield satisfactory results.

Planter Valve sleeves generally have an expected operating life of 10,000 to 15,000 acres. Long term closure will reduce sleeve life, store system with Planter Valves in open position.

Before operating system after storage, inspect and replace sleeves as necessary.

## TROUBLE-SHOOTING

Problem	Solution
Planter Valve will not open	<ul style="list-style-type: none"> <li>• Twisted sleeve</li> </ul>
Low flow through valve	<ul style="list-style-type: none"> <li>• Twisted sleeve</li> </ul>
Liquid leaking from MEV or QEV	<ul style="list-style-type: none"> <li>• Replace damaged sleeve immediately</li> </ul>
Air leak at MEV or QEV  Liquid present  No liquid present	<ul style="list-style-type: none"> <li>• Replace damaged Shut Off Valve sleeve.</li> <li>• Clean and repair exhaust valve as necessary</li> <li>• Faulty diaphragm, replace as necessary</li> </ul>
Planter Valves opens slowly	<ul style="list-style-type: none"> <li>• Large number of valves</li> <li>• Pinched air line</li> <li>• Twisted Sleeve</li> </ul> -Lack of Liquid Pressure -Dirty Exhaust Valve
Planter Valves close slowly	<ul style="list-style-type: none"> <li>• Large number of valves</li> <li>• Pinched air line</li> <li>• Low air pressure</li> </ul> - Too high liquid pressure
Rapid sleeve failure	<ul style="list-style-type: none"> <li>• Petroleum lubricant used during sleeve replacement</li> <li>• Twisted sleeve</li> <li>• Chemical attack</li> <li>• Excessive air pressure</li> <li>• Cracked end caps</li> <li>• Non-genuine Planter Valve sleeves.</li> </ul>

## Appendix 1

## Appendix 2

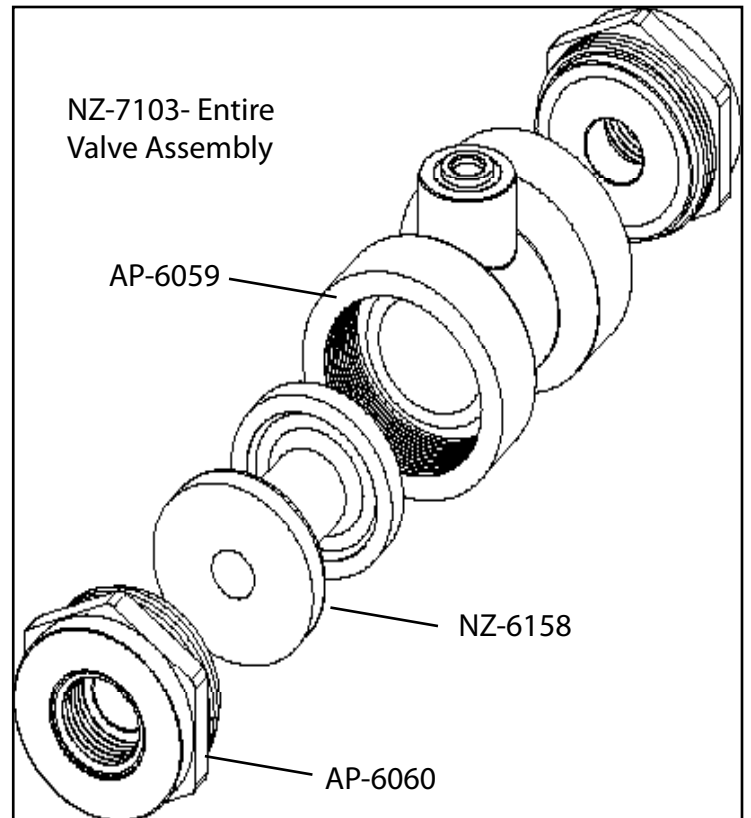
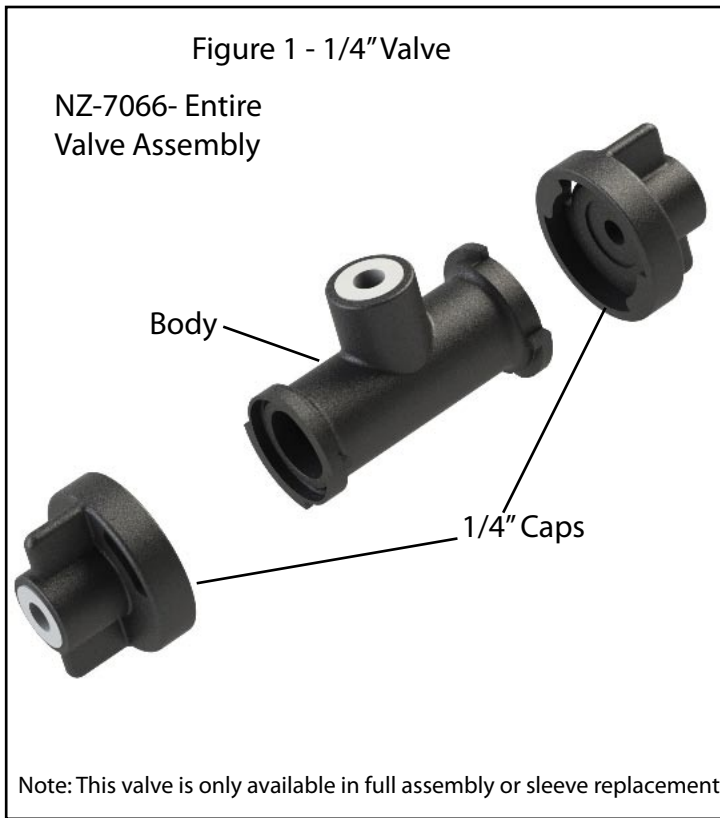


Figure 3- QEV

Figure 4 MEV

## **WARRANTY INFORMATION**

### **Limited Warranty**

Richway Industries, Ltd., Planter Valves and components are warranted against defects in materials and workmanship for a period of 180 days from date of shipment.

During this warranty period, Richway will repair or replace at no charge, those parts or components which upon receipt by Richway, following warranty analysis, prove to be defective.

Further, this warranty does not cover part or component failures or damage due to misapplication, misuse, abuse, breakage, or improper installation, storage or handling, abnormal conditions of temperature, water, dirt, corrosive or other contaminants.

Products covered by this warranty must be used in compliance with all federal, state, and local regulations.

### **Disclaimer of Other Warranties**

The foregoing limited warranty is in lieu of all other warranties, expressed or implied, including merchantability or fitness for a particular purpose. In no event shall Richway Industries, Ltd., be liable for indirect, consequential or special damages of any nature, whatsoever.

## **COMPANY INFORMATION**

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