

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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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. 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.

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.

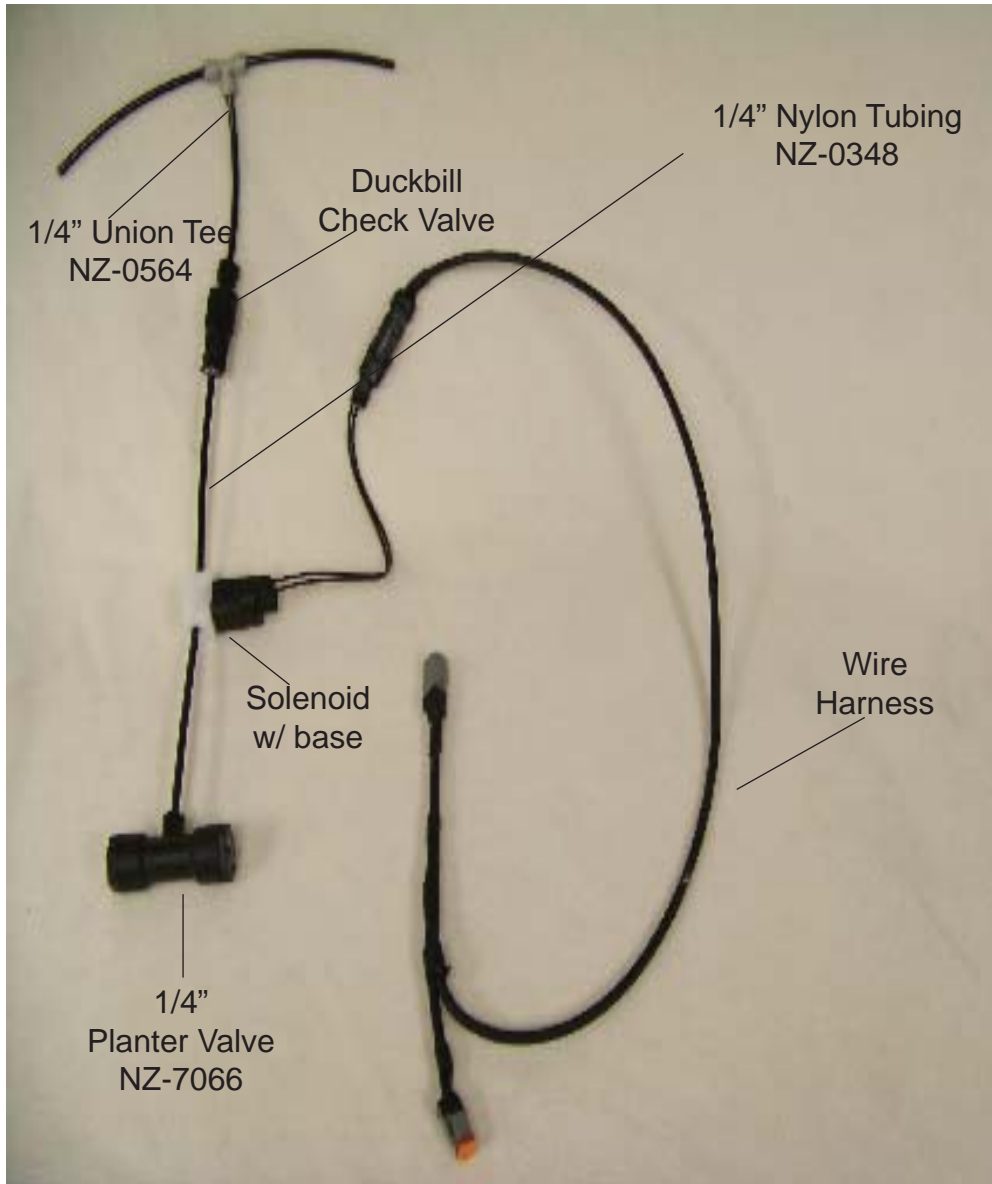


FIGURE 1 - Planter Valve Kit NZPVK-02E

1. Make sure all pumps are shut off, and main shut off valves are closed before beginning installation.
2. First, disconnect the wire to the seed clutch and install the supplied adapter wire harness into the electric clutch and incoming seed clutch wire with the appropriate connectors. The harness tee's into the seed signal for this application. The wire harness is connected to the Richway electric solenoid and base and should be mounted away from moving parts. The solenoid uses the clutches electric signal to actuate the air using an electric over air system to control the valve directly with the seed clutch.
3. To tee into the air supply line, cut the supply line with an appropriate tool, and insert the 1/4" Union Tee into the air supply line as shown in Figure 1. Using the quick connect fittings on the 1/4" Union Tee, push the 1/4" tubing firmly into the 1/4" Union Tee. This system requires an air source for the function of the planter valve. If no air is available on the planter, and external compressor may be necessary.
4. Insert the duckbill check valve in the air line coming from the 1/4" Union Tee. Using the quick connect fittings on the duckbill check valve. Push the air line firmly into the 1/4" check valve. THE CHECK VALVE HAS AN ARROW THAT SHOULD POINT IN THE DIRECTION OF THE AIR FLOW. In this application the arrow should be pointed towards the solenoid and planter valve.
5. To install the electric solenoid with white base, run the supplied 1/4" air line from the duckbill check valve to **Port 2 of the white solenoid base. Use the quick connect fittings to secure the air line. The solenoid base is designated with either one or 2 small marks on each side.
6. Install the Planter Valve on the row unit in a safe and secure position away from moving parts, then run the remaining 1/4" air line from *Port 1 in the white solenoid base to the actuation port in the middle of the Planter Valve. Use quick connect fittings to secure air line.
7. The air source used for the Planter Valves should be regulated down to less than 90 PSI to comply with the operating guidelines set forth by Richway Industries.
8. Double check all quick connect air and fertilizer fittings to make sure the lines are completely pushed in and sealed before turning the system on.

Solenoid White Base Designations

*Port 1 is identified with a single small drill hole

**Port 2 is identified with two small drill holes

VALVE SPECIFICATIONS

Each Planter 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, resulting in early sleeve failure.

The electric over air application also uses a 3-way solenoid and a custom Richway adapter wire harness. The wire harness is made with 18-2 wire and includes one weather pack connector at the solenoid side and either a 2 pin Deutsch or Weather Pack connector at the tee side to connect to your seed clutch.

The solenoid base is machined to accommodate high pressure air and is made with quick connect ports for the air line on both sides. The solenoid has an O-ring that goes into the base to help create an air tight seal and should not be over tightened. See the maintenance section on cleaning the electric solenoid and base assembly.

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.

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 3/8" threaded caps and 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 or 1/4" NPT.

Replacement sleeves, caps, bodies 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 requires 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 components daily, before, during and after planter operation for evidence of fertilizer liquid. If liquid is detected, stop planter operation immediately. Replace failed sleeve, and follow maintenance procedures.

MAINTENANCE

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



CAUTION: Sleeve failure may occur at any time.

When replacing rubber sleeves, contact your local authorized Planter Valve distributor to purchase genuine Planter Valve replacement parts.



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

Servicing Solenoids

Because of the harsh environment of the Planter valve kits, the solenoid and base may need to be serviced regularly. The design of the electric solenoid kit makes it easy to clean the appropriate parts when needed.

1. Follow the Safety First portion of this manual and make sure all pumps, electrical, and air is turned off and the airline has been emptied.
2. Shut off all pumps and the air source and be certain all pressure is exhausted from the planter valve system.
3. Disconnect the solenoid and base from the air line with the quick connect fittings and unplug the solenoid from the Richway adapter wire harness.
4. Carefully unscrew the solenoid from the base. There is a plunger, spring, and O-ring in the solenoid that is loose once it is detached from the base.
5. Rinse out base to remove any contaminants and rinse solenoid and components if they look to have been reached with fertilizer or dust.
6. Once parts are clean, reassemble the solenoid onto the base making sure to reinstall the plunger, spring, and O-ring before tightening.
7. Only tighten the solenoid hand tight onto the base and reinstall in the airline on your planter.

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 end caps from the Planter Valve body.
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 a Sleeve Replacement Tool 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.

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
1/4" Check Valve	AP-1998
Weather Pack Adapter Wire Harness	NZPV-WH-W
Deustch Adapter Wire Harness	NZPV-WH-D

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">• Twisted sleeve
Low flow through valve	<ul style="list-style-type: none">• Twisted sleeve
Planter Valves opens slowly	<ul style="list-style-type: none">• Large number of valves• Pinched air line• Twisted Sleeve
Planter Valves close slowly	<ul style="list-style-type: none">• Large number of valves• Pinched air line• Low air pressure• Remove solenoid from base and clean orifice
Rapid sleeve failure	<ul style="list-style-type: none">• Petroleum lubricant used during sleeve replacement• Twisted sleeve• Chemical attack• Excessive air pressure• Cracked end caps• Non-genuine Planter Valve sleeves
Seed Clutches do not turn off	<ul style="list-style-type: none">• Check all wires on planter for corrosion.• Check Plugs and ground wires for loose or broken connections• At night, lights on planter may cause voltage drop to clutches and fertilizer control solenoids.

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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