

Motorized Electric Ball Valve

Specifications

Power	24Vdc, 5W typ. (20W max.)
Trade Size	BV100: 1 Inch, Schedule 80 BV125: 1-1/4 Inch, Schedule 80 BV150: 1-1/2 Inch, Schedule 80
Valve Body, Ball & Fittings	Gray PVC
Type	Full Port
Valve Seat	PTFE
O-Ring Seals	EPDM
Max Pressure	150psi @ 73°F
Temperature Range	40°F - 140°F
90° Turn Time	4 Seconds
IP Rating	IP54, Dust & Splash
Valve Approvals	ANSI B1.20.1, ASTM F1970
Duty Cycle	50%
Tested Cycles	100,000
Fittings	NPTF & Solvent Weld (Slip)



Contents

Features	2
Dimensions	2
Warnings & Notices	3
Installation Instructions	4
Plumbing Connections	4
Electrical Connection	4
Operation Instructions	5
Manual Operation	5
Connection to VX8i Valve Controller	6
Connection to RD8i Dry Contacts	7
Maintenance & Service	8
Cleaning	8
Storage and Disposal	8
Warranty	8

KEEP THESE INSTRUCTIONS

REV 11/24

This product is intended for commercial use only.

Features

This rugged, motor-actuated PVC ball valve is designed and assembled in the USA for demanding agricultural applications requiring irrigation control and facility water management. BV series valves combine high-quality components for reliability that your crop can depend on.

Tru-Union Ball Valve

The full-port PVC ball valve is a tru-union type with interchangeable flanges for either NPT threaded pipe, or solvent weld sockets.

Electric Actuator

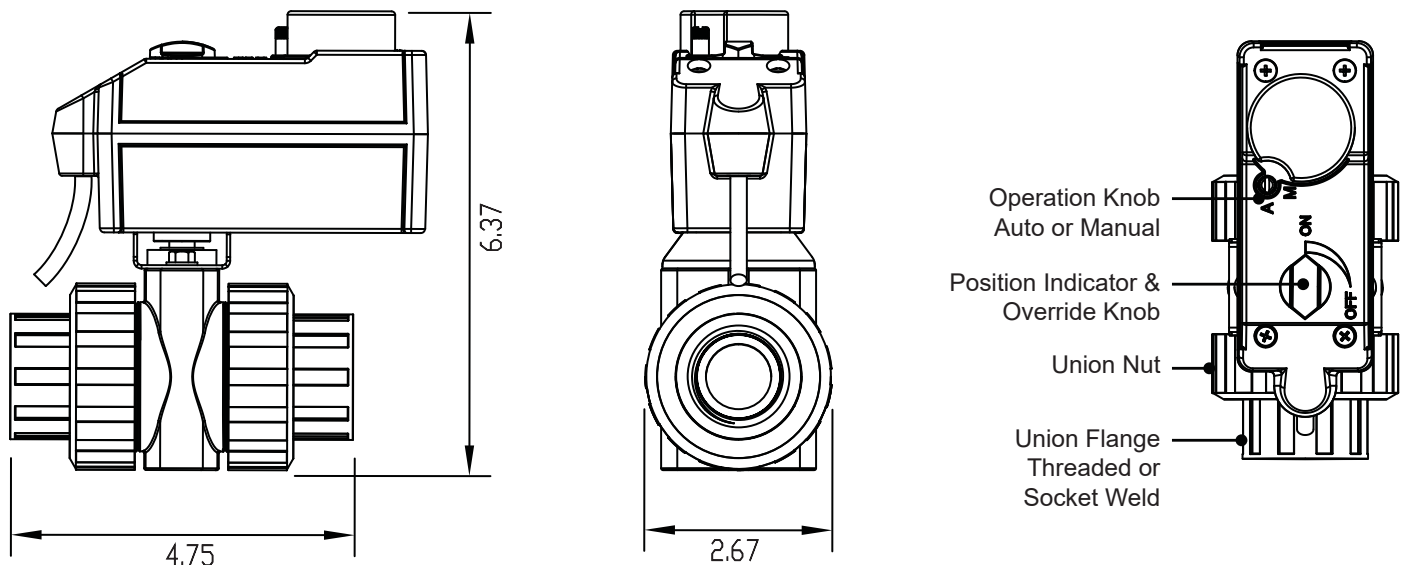
High-torque Italian-made actuator from one of the largest actuator manufacturers in the world features an oversized motor and heavy steel gearing for a long service life. Manual override knob allows operation even in the event of a power or equipment failure.

Position Sensing

For high reliability and other custom applications, position sensing switches can be integrated for monitoring valve open or closed status.

24" pigtail cable lead for electrical connections.

Dimensions



Warnings & Notices

This is a precision electronic instrument which requires proper installation and care to maintain reliability.

 **READ & UNDERSTAND ENTIRE MANUAL PRIOR TO INSTALLATION OR OPERATION.**

Failure to read, understand and comply with warnings and installation requirements may result in property damage, personal injury or death.

 **WARNING**

NEVER place your finger or other body parts into the ball valve. The valve's gear box has enough torque to severely injure or amputate a finger.

 **WARNING**

Do not use a power supply other than the intended or included power supply. Do not exceed the maximum ratings on the product serial label or specifications listed in this manual. Any power supply with energy levels exceeding the specifications must be current limited or fused to prevent overcurrent to the device.

 **INDOOR LOCATIONS ONLY**

This product is designed for indoor mounting only and must be protected from weather and direct sunlight.

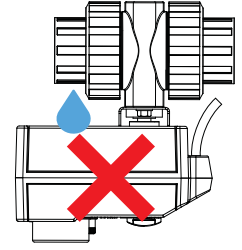
 **WARNING**

This product may contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Installation Instructions

BV100 ball valves can be mounted in any orientation except beneath the valve.

Liquid may flow in either direction through the valve.



Avoid mounting actuator below the valve to prevent leaks from entering the actuator.

Plumbing Connections

The BV100 valve includes union fittings for either NPT threaded connections or solvent-weld socket connections to PVC pipe. Change the fitting by removing the union nut and replacing the desired fitting. Union nuts are intended to be hand tightened; do not use tools or damage to the valve may occur.

Solvent Weld Fittings

Use primer and solvent glue when making connections. Ensure pipe is fully seated on the fitting.

NPT Thread

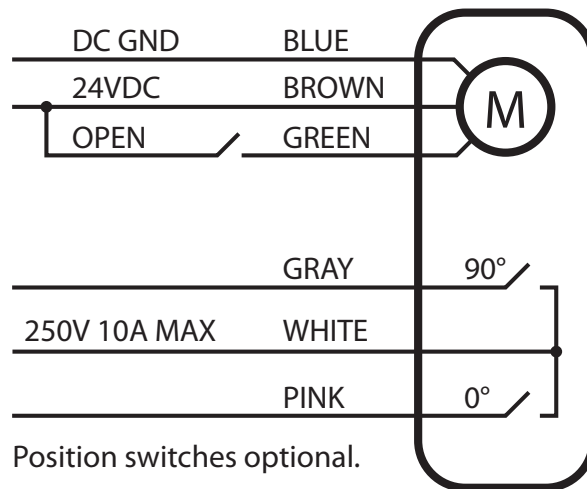
Use teflon tape or liquid pipe thread sealant for threaded connections.



DO NOT allow PVC cement, primer or sealants to enter the valve or damage to the ball or seal may occur.

Electrical Connection

BV100 valves require 24 VDC power to operate and use a 3-wire configuration. Two wires are required for 24VDC power supply while a third wire opens the valve when energized with 24VDC. The valve automatically returns when 24VDC is removed from the control wire. Three additional wire are available for use with the position sensing limit switches for monitoring the open and closed positions.



Do not connect directly to 24VAC irrigation controllers or damage to motor may result.

Operation Instructions

When connected to a suitable valve controller, the BV series valve will open any time the OPEN lead is energized and the valve has power supplied. If the OPEN lead is not energized, the valve will return to the closed position and stop if the valve has power. If the valve does not have power, it will not move.



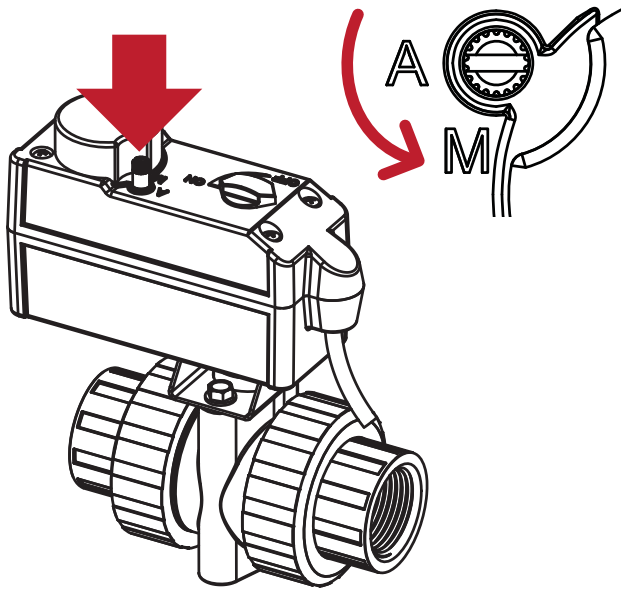
NEVER place fingers or body parts inside of the valve. Serious injury may result.

Manual Operation

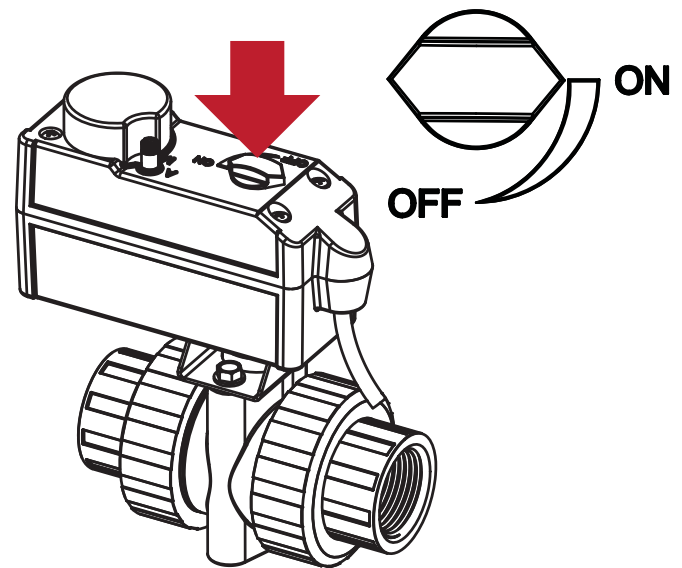
In the even that power has failed, the valve controller is inoperable, or the motor is not functional, then the valve may be operated manually using the procedure below.



NOTICE: Failure to follow operation instructions may result in damage to the valve.



1. Press the operation selector down then rotate until the slot in the knob is aligned to the M position.

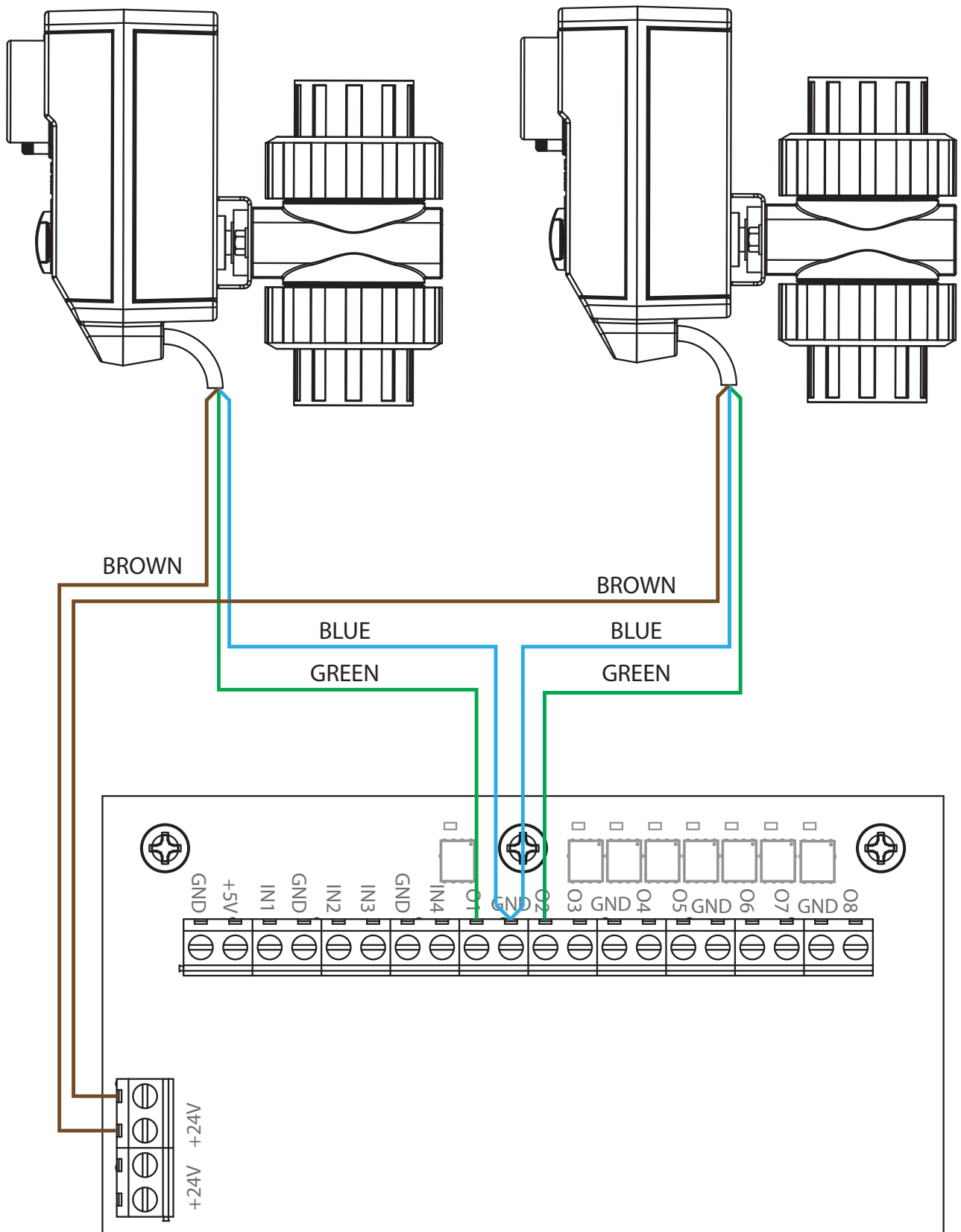


2. Rotate the position knob with a 10mm open end wrench.

3. Rotate the operation selector knob until the slot is aligned to the A position for electric operation.

Connection to VX8i Valve Controller

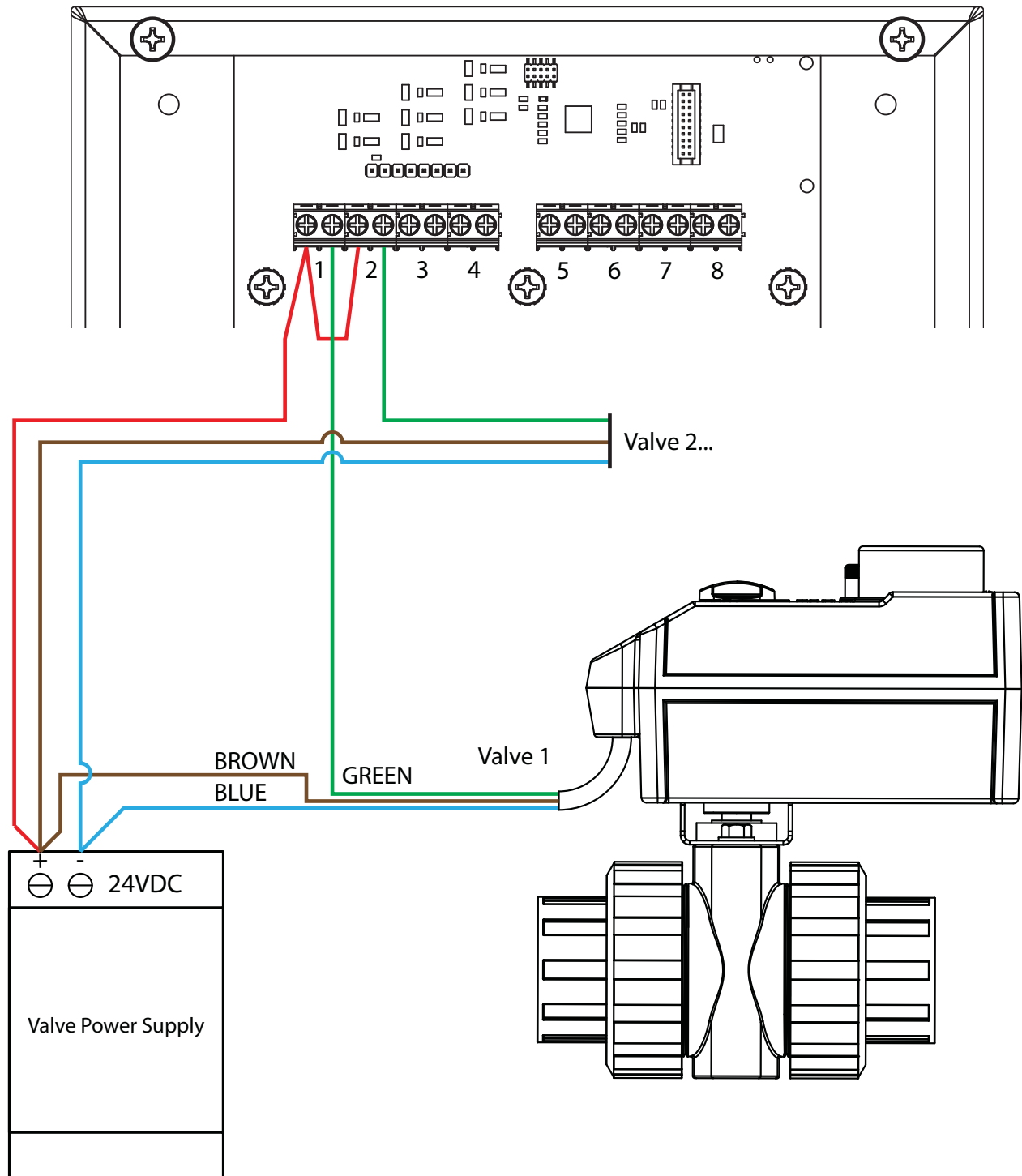
VX8i valve controllers (revision F and newer) feature the necessary connections to directly operate up to eight (8) of the BV100 valves.



Connection to RD8i Dry Contacts

RD8i and similar dry-contact output modules can operate the BV100 valve. An external 24VDC power supply is required to operate the valves with a dry-contact output.

When selecting a power supply allow at least 0.25A per BV100 valve. Eight valves would require a power supply sized to approximately 2A. Agrowtek recommends DIN-Rail type industrial power supplies.



Maintenance & Service

Periodically check that actuator is tightly mounted to the bracket and valve body. Tighten any loose screws. The gear box does not require maintenance; the gears are lubricated for the life of the transmission.

Cleaning

Actuator and valve body may be cleaned with a damp cloth and detergent.

Ball port may be cleaned with a nylon or other plastic bristle brush (do not use wire brush.)



DO NOT spray the valve actuator with water or damage to actuator may result.

Storage and Disposal

Storage

Store equipment in a clean, dry environment with ambient temperature between 10-50°C.

Disposal

This industrial control equipment may contain traces of lead or other metals and environmental contaminants and must not be discarded as unsorted municipal waste, but must be collected separately for the purpose of treatment, recovery and environmentally sound disposal. Wash hands after handling internal components or PCB's.

Warranty

Agrowtek Inc. warrants that all manufactured products are, to the best of its knowledge, free of defective material and workmanship and warrants this product for one (1) year from the date of purchase. This warranty is extended to the original purchaser from the date of receipt. This warranty does not cover damages from abuse, accidental breakage, or units that have been modified, altered, or installed in a manner other than that which is specified in the installation instructions. This warranty is applicable only to products that have been properly stored, installed, and maintained per the installation and operation manual and used for their intended purpose. This limited warranty does not cover products installed in or operated under unusual conditions or environments including, but not limited to, excessive humidity or extreme temperature conditions outside of the specified limits. Agrowtek Inc. must be contacted prior to return shipment for a return authorization. No returns will be accepted without a return authorization. Returns not purchased directly from Agrowtek Inc. must include proof of purchase date otherwise purchase date is considered date of manufacture. The products which have been claimed and comply with the aforementioned restrictions shall be replaced or repaired at the sole discretion of the Agrowtek Inc. at no charge. This warranty is provided in lieu of all other warranty provisions, express or implied. It is including but not limited to any implied warranty of fitness or merchantability for a particular purpose and is limited to the Warranty Period. In no event or circumstance shall Agrowtek Inc. be liable to any third party or the claimant for damages in excess of the price paid for the product, or for any loss of use, inconvenience, commercial loss, loss of time, lost profits or savings or any other incidental, consequential or special damages arising out of the use of, or inability to use, the product. This disclaimer is made to the fullest extent allowed by law or regulation and is specifically made to specify that the liability of Agrowtek Inc. under this limited warranty, or any claimed extension thereof, shall be to replace or repair the Product or refund the price paid for the Product.