



## Prime 1.65 HP Variable Speed Pump



Installation And User Guide  
Model PL2705

# READ AND FOLLOW ALL INSTRUCTIONS

**ATTENTION INSTALLER:** This manual contains essential information about the installation, operation, and safe use of this pool pump. Please remember to furnish this manual and all other instructional documents to the end-user of this product.

The Pureline Prime Variable Speed Pump is specifically engineered for today's inground swimming pools and spas. The Prime is a self-priming pump that incorporates the industry's toughest and most reliable motors.

**Failure to read and follow instructions can result in serious injury.**

To prevent potential injury to self or product and to avoid unnecessary service calls, please read the manual carefully. Look for the following symbols and signal words and be alert to potential injury.



This is a safety alert symbol. Whenever you see this symbol in this manual or on the pump itself, look for the following signal words to alert potential dangers.



**WARNING-** The product should **ONLY** be installed and serviced by a qualified professional.



**DANGER-** A licensed electrician **MUST** complete, in full, all electrical installation.

## IMPORTANT SAFETY INSTRUCTIONS

- Never open the inside of the drive motor enclosure
- The pump is not submersible
- Code requirements for the electrical connection differ from state to state. Install equipment according to the National Electrical Code.
- Switch pump to OFF by disconnecting the main circuit to pump BEFORE servicing pump



**WARNING-** Do not permit children to use this product.



**WARNING-** Risk of electrical shock. Only connect to a circuit branch protected by a ground-fault circuit interrupter (GFCI). Contact a qualified technician if you cannot verify if the circuit is protected by a GFCI. The pump must be permanently connected to a GFCI.



**WARNING-** The pump is intended for use on permanently installed swimming pools and may also be used with hot tubs and spas if so marked. Failure to bond the pump to a pool structure increases the risk for electrocution and could result in injury or death. To reduce the risk of electric shock, the electrician must comply with installation instructions and must bond the pump accordingly. The electrician must also conform to electrical codes for bonding requirements.



**WARNING-** The pump can produce high levels of suction within the suction side of the plumbing system. These high levels of suction can pose a risk if a person comes within close proximity of the suction openings. A person can also be seriously injured by the high level of vacuum or may become trapped and drown. It is critical that the suction plumbing is installed in accordance with the latest national and local codes for swimming.



**WARNING- For hot tub and spa pumps-** Do not install within an outer enclosure or beneath the skirt of a hot tub or spa.



## **DANGER- SUCTION ENTRAPMENT HAZARD**

This pump produces high levels of suction, thus creating a strong vacuum at the main drain at the bottom of your swimming pool/spa. This suction is so strong that it can trap adults and children underwater if they come in close proximity to the drain.

The use of unapproved drain covers, or allowing the use of your pool or spa when drain covers are either missing or broken, can result in body or limb entrapment, hair entanglement, body entrapment, evisceration, and/or death.

**Hair Entrapment-** When the hair tangles or knots in the drain cover, trapping the swimmer underwater. This is typically associated when the flow rating of the cover is too small for the pump(s).

**Limb Entrapment-** A limb can be sucked or inserted into an opening in the drain causing a mechanical bind or swelling of the limbs. This is typically caused when a drain cover is missing, broken, cracked, or not secured properly.

**Body Suction Entrapment-** A portion of the body is held against the drain cover, trapping the swimmer underwater. This typically presents itself when the drain cover is missing, broken, or the cover flow rating is not high enough for the pump(s).

**Evisceration/Disembowelment-** Negative pressure that is applied directly to the intestines through an unprotected suction outlet or suction outlet cover that is damaged, broken, cracked, missing, or unsecured.

**Mechanical Entrapment-** Jewelry, clothes, hair decorations, fingers, toes, or knuckles can get caught in an opening of a suction outlet cover.



**WARNING- Hazardous Pressure-** During startup, normal operation, and after the pump shuts off, the pool and spa water circulation system operate under hazardous pressure. Please stand clear of the circulation system during pump start-up. Before servicing your pool equipment, make sure all systems and pump controls are in the off position and the filter manual air relief valve is open. Also, make sure all system valves are set in a position that allows water to return to the pool. Do not change the filter valve position while the system pump is running. All suction and discharge valves must be open when starting the circulation system. Failure to follow safety and operational instructions could result in damage, severe personal injury, or death.



**WARNING- Separation Hazard-** Please ensure the strainer cover is properly secured to the pump housing. Do not operate the pool and spa circulation system if a system component is not assembled properly, damaged, or missing. All suction and discharge valves must be open when starting the circulation system. Failure to follow safety and operational instructions could result in damage, severe personal injury, or death.

## Pump Overview

This manual contains essential information about the installation, operation, and safe use of this pool pump. **Failure to install according to the defined instructions will void your warranty.**

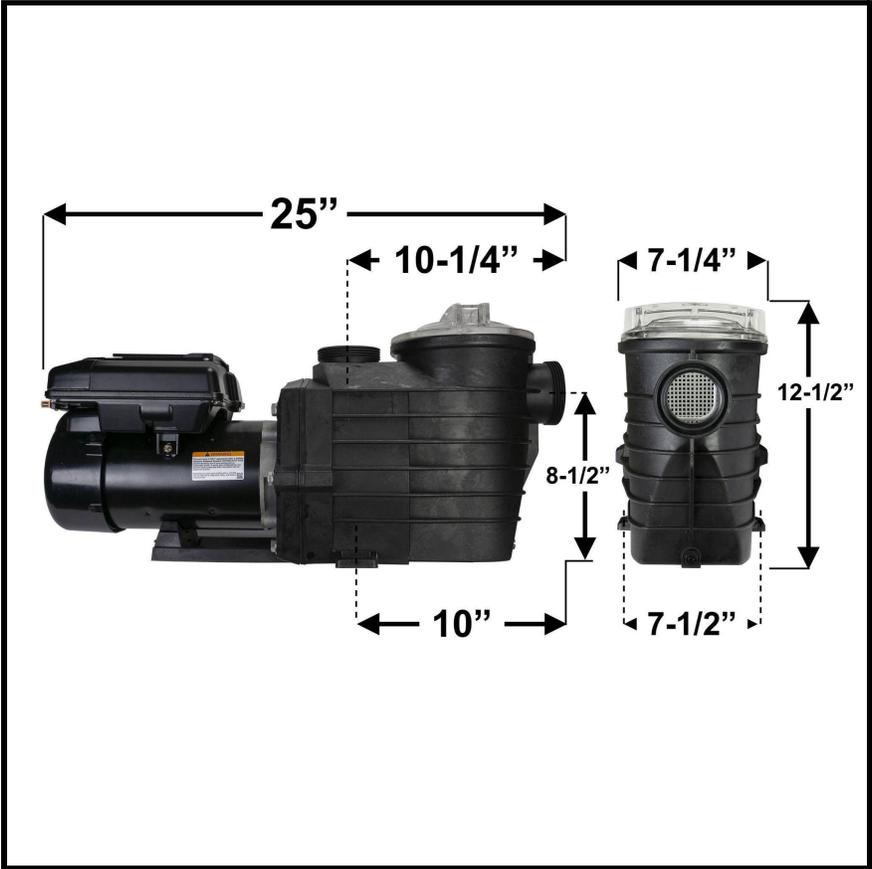
The PureLine Prime Pump is our newest, premiere pump that rivals the top brands. The PureLine Prime is paired with the industry's leading Century motors. They are also equipped with extra-large 2" plumbing ports that result in higher flow rates and longer motor life.

### Prime VS Benefits

- Paired with Century's V-Green motor- the most reliable pool motor in the world
- Large 2" ports
- Quick disconnect unions included
- 1-year warranty
- Self-priming (The pump can be placed up to 10' above water level)
- Quick and easy basket removal with lid tool
- Clear Lexan cover makes it easy to see when the basket needs cleaning
- Large capacity basket
- Basket design ensures free flow of water
- All components made of corrosion-proof plastic
- Heavy-duty, high-performance motor for quieter, cooler operation
- Easy access to all internal parts for servicing



**Product Dimensions**



**Pump Performance Charts**

# Installation Instructions



**WARNING-** This product should only be installed and serviced by a qualified professional. Please refer to “General Warnings” for additional safety information.

## Pump Location

Before installing the pump, selecting a proper location for your pump is essential to prolong the overall lifespan of your pump. Be sure the pump’s location meets the following requirements:

1. Install the pump as close to the pool or spa as possible. Using short, direct suction piping returns will reduce friction loss and improve efficiency.
2. Do NOT install the pump more than 10 feet above the water level.
3. Select a well-drained area, one that will not flood during the rain.
4. Do NOT install the pump in a damp or non-ventilated location
5. Install the pump with a rear clearance of at least 3 inches so that the motor can be easily removed for maintenance and repair.

## Plumbing

1. For improved pool plumbing, it is recommended to use a larger pipe size.
2. Piping on the suction side of the pump should be the same or larger than the return line.
3. All plastic fittings must be new or thoroughly cleaned before use.
4. Do NOT attempt to force the hose connector fitting past thread stops molded into the inlet and outlet ports.
5. Do NOT over-tighten fittings or you may cause damage

## Fittings and Valves

1. Fittings restrict flow so for better efficiency, use the fewest possible fittings (but at least 2 suction outlets).
2. Pool and spa fittings MUST conform to the International Association of Plumbing and Mechanical Officials (IAPMO) standards.
3. Use non-entrapping suction fittings or double suction (skimmer and main drain).
4. Install check valves when plumbing parallel with another pump to prevent reverse rotation of the impeller and motor

## Electrical Wiring



**WARNING**- All wiring must be done by a licensed electrician and must conform to all local and national codes and regulations. A solid copper bonding conductor, not smaller than 8 AWG (8.4 mm) shall be connected from the accessible wire connector on the motor to all metal parts of the swimming pool, spa, or hot tub structure and to all electrical equipment, metal conduit, and metal piping within 5 feet (1.5 m) of the inside walls of a swimming pool, spa, or hot tub, when the motor is installed within 5 feet of the inside walls of the swimming pool, spa, or hot tub.



**WARNING**- The V-Green 165 controller must be wired according to the locally adopted version of the NEC. A licensed, qualified electrician should complete the wiring for this product. Failure to comply with this may result in death, serious personal injury, or property damage.

The controller is designed to operate with 230V rms, single-phase power. The V-Green 165 is designed to handle either a bare wire connection or a quick disconnect connection. The quick disconnect tab is 0.250" and will handle any commonly available mating connectors. The wire insulation should be stripped to a length of approximately 0.33". The terminal block is capable of handling solid or stranded wire up to 12 AWG in size.

### Main Connection

Pin #	Wire Color	Description
L1	Black	Hot 1
L2	Red or White	Hot 2
Green Screw	Green	Earth/Ground

### Communication Connection

Pin #	Wire Color	Description
J201-1	Red	+12 V
J201-2	Black	A
J201-3	Yellow	B

J201-4	Green	COM
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## Voltage

The voltage at the motor cannot exceed more than 10% above or below the rating listed on the motor label. Improper voltage can cause your motor to overheat, causing overload tripping and reduced component life. If the voltage is running at less than 90% or more than 110% of rated voltage when the motor is running at full load, please consult your local power company.

## Grounding and Bonding

Install, ground, bond, and wire motor per local or national electrical code requirements. Also, use the correct size and type of wiring that is required by code.

Permanently ground the motor. Connect the motor ground terminal to the electrical service ground. Bond motor to pool structure. Bonding will connect all metal parts within and around the pool with a continuous wire. Bonding also reduces the risk of a current passing between bonded metal objects, which could potentially cause electrical shock if shorted.

Reference NEC codes for all wiring standards including, but not limited to, grounding, bonding, and general wiring procedures.

# The V- Green Motor

## Introduction

The V-Green 165 is a premium efficiency variable speed motor that provides program flexibility in terms of motor speed and settings. The variable speed V-Green 165 is intended to enable running at the lowest speeds needed to maintain a sanitary environment, which in turn maximizes energy consumption. Pool size, water features, and environmental factors will affect the optimal programming necessary to maximize energy conservation.



**WARNING-** The V-Green 165 is for use with 208-230 V and in pool pump applications ONLY. Connection to the wrong voltage, or use in other applications other than its intended use may cause damage to equipment or personal injury.

The integrated electronics control the speed settings and the run durations. The V-Green 165 can run at speeds ranging from 600 and 345- RPMs and is rated for 208-230V at an input frequency of 60 Hz.

## V-Green 165 Features

- Simple user interface
- Digital inputs for compatibility with pool automation systems
- Motor design reduces noise emissions
- UV and rain-proof enclosure
- Freeze protection
- Manual override
- Compatibility with V-Green 270 user interface (sold as a separate accessory)
- High-efficiency electromechanical motor and control design

## Benefits of adding an optional V-Green 270 user interface

- Ability to conduct field troubleshooting (i.e., view fault codes and real-time operating parameters)
- Ability to set the pump's running schedule based on a real clock setting (i.e., must input the actual time which determines when the pump will start and stop)
- Ability to remotely mount the V-Green 270 user interface (provides easy access of user interface depending on your pump's location)
- Ability to configure prime speed and prime duration.
- Ability to configure freeze protection temperature
- Ability to view actual speed and power of the V-Green 165 in real time
- Ability to adjust the V-Green 165 motor speed in 25 RPM increments • Battery backup to store time setting

## Startup and Operation

Never operate the pump without water. Water acts as a coolant and lubricant for the mechanical shaft seal.

Fill the strainer housing with water to suction pipe level



**WARNING-** Never run the pump dry. Running the pump dry may damage seals,

causing leakage and flooding. The warranty will not cover any damage caused by running the pump dry. Fill strainer housing with water prior to starting the motor.



**WARNING-** Do **NOT** add chemicals to the pool/spa directly in front of pump suction. Adding chemicals may damage the pump and void your warranty.



**WARNING-** **BEFORE** removing strainer cover

**STOP** pump

**CLOSE** valves in suction and outlet

**RELEASE** pressure from pump and piping systems using the filter manual air relief valve.

## Priming Pump



**WARNING-** Keep all suction and discharge valves **OPEN**, as well as the filter air relief valve on the filter when starting your pump. Failure to do so can result in severe personal injury.

- Release all the pressure from the filter, pump, and piping system.
- If the water source is higher than the pump, the pump will prime itself when the suction and outlet valves are open. If the water is lower than the pump, unscrew and remove the strainer cover. Then, fill it with water.
- Inspect, clean, and lubricate the strainer O-ring each time you remove it
- Replace the strainer cover on the housing by turning it clockwise to tighten

Turn on the pump and wait for the pump to prime. This typically can take up to five minutes. The vertical length of the suction lift and the horizontal length of the suction pipe affects the overall priming time. If the pump does not prime in five minutes, stop the motor and troubleshoot the unit. Make sure all suction and discharge valves are open when the pump is running.

## V-Green 165 Quick Start Guide (Default Schedule)

The V-Green quick start-up uses the factory default schedule. The following table describes the factory settings for DURATION and SPEED orders.

Button	Duration (in Hours)	Speed (in RPMs)
Step 1	4	3100
Step 2	4	2600
Step 3	8	1850
OVERRIDE	2	3450

Pressing the START key will start the V-Green 165 motor based on the factory default schedule.

**NOTE:** If power is cycled to V-Green 165 motor and the user does not press the STOP key, the V-Green 165 motor will automatically start and run the programmed default schedule shown in the chart above. This feature ensures that the V-Green motor will restart in the event of a power outage.

### **V-Green 165 Quick Start Guide (Custom Schedule)**

If the User prefers their own scheduling over the default schedule defined by Century, the user has the option to set the program DURATION and SPEED for STEP 1, STEP 2, STEP 3, and the OVERRIDE keys.

**NOTE:** The V-Green motor must be stopped (Press STOP key) for programming DURATION and SPEED of the STEP 1, STEP 2, and STEP 3 keys. OVERRIDE DURATION and SPEED can be programmed when the V-Green 165 is either stopped or running.

Press STEP 1 key. The STEP 1 button and the DURATION setting LEDs will light up. The bar graph will show the default DURATION for STEP 1.

1. Press the UP (+) or DOWN (-) arrows to change the DURATION
2. Press the STEP 1 key again to change the SPEED setting. The SPEED setting LED will light up. The bar graph will show default SPEED for STEP 1.
3. Press UP (+) or DOWN (-) to change the SPEED.
4. Press and STEP or OVERRIDE key to save the DURATION and SPEED settings for STEP 1. If you decide not to save the settings, press the STOP key will revert back to the previously stored setting.
5. Press STEP 2, STEP 3, or OVERRIDE key. Repeat Steps 1-4 to program the corresponding DURATION and SPEED for each button.
6. Press START to run the V-Green 165 motor based on the programmed 24 hour schedule.
7. Pressing the STOP button will stop the V-Green 165 motor.

NOTE: The V-Green 165 motor can only be set to operate on a 24-hour schedule. If a user attempts to program a schedule with a combined duration for all three steps greater than 24 hours, the V-Green 165 motor software will retain the current STEP time duration only and zero out the other two STEP time settings.

### **V-Green Start-Up**

To access the V-Green Start-Up Guide and User Interface Instructions, please visit this link:

<http://images.inyopools.com/cloud/documents/v-green165-usermanual.pdf>

\*\* An additional V-Green User Manual is included with this manual, as well.

## **Statement of Warranty Policy**

The pump was inspected before shipment from the warehouse. To original purchasers of this pump, Pureline Products warrants its products free from defects in materials and workmanship for a period of **(12)** months from the date of purchase.

Parts which fail or become defective during the warranty period, except as a result of freezing, negligence, improper installation, use, or care, shall be repaired or replaced, at our option, without charge, within 90 days of receipt of the defective product. In the event of a breach of warranty within the applicable warranty period, Pureline Products shall have the option of (1) repairing, (2) supplying an identical or similar replacement, or (3) refunding for the purchase price.

Pureline Products warrants the Century V Green 165 motor for a period of **(18)** months from the date of purchase or **(24)** months from the manufacture date, whichever comes first.

In order to proceed with any warranty claim, all parts and components must be returned to the place of purchase. The original purchaser is responsible for all shipping fees past 90 days. No returns may be made directly to the warehouse without the authorization of Pureline Products.

Additionally, we reserve the right to inspect all products before honoring warranty claims.