PERISTALTIC PUMP
OPERATING MANUAL

MODEL: VSH SERIES
Variable Speed High Flow
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**NOTICE** Every precaution for accuracy has been taken in the preparation of this manual, however, ANKO PRODUCTS, INC. neither assumes responsibility for any omissions or errors that may appear nor assumes liability for any damages that result from the use of the products in accordance with the information contained in this manual.

**WARNING**: POTENTIAL RISK OF ELECTRIC SHOCK

- **DO NOT** use pump with a damaged or altered power cord or power supply. Contact the factory or an authorized service facility for repair.
- Disconnect power cord before removing motor cover for service.
- This pump has been evaluated for use with water only.
- Before installing or servicing the pump, read the pump manual for all safety information and complete instructions. Installation and Product must adhere to all regulatory and compliance codes applicable to the area.
SPECIFICATIONS

Model Number Nomenclature:
420-205-90XXX-YY Where: XXX = RPM, YY = Configuration

- Electrical
  a. 115 VAC / 60 Hz
- Drive Speed Range
  a. 13 to 127 rpm
- Flow Range
  a. Maximum flow 2000 ml/min (68 oz./min)
  b. Minimum flow 400 ml/min (13.5 oz./min)

**NOTICE** The information within this chart is solely intended for use as a guide. The output data is an approximation based on pumping water at zero psi under a controlled testing environment. Many variables can affect the output of the pump.

- Weight
  a. 6.8 LBS
- Dimensions
  a. 6.2” W X 7.3” H X 10.3” D
- Peristaltic Tubing
  a. Food Grade Thermoplastic Elastomer

INSTALLATION

**NOTICE**

- Read all safety hazards before installing or servicing the pump.
- Use all required personal protective equipment when working on or near pump.
- Inspect tube frequently for leakage, deterioration, or wear. Schedule a regular pump tube maintenance change to prevent damage to pump and/or spillage.
- Pump is not recommended for installation in areas where leakage can cause personal injury or property damage.
INSTALLATION INSTRUCTIONS

1. Voltage and frequency of power supply must be the same as shown on unit specification label.
2. Pump must be connected to a Grounded Power Outlet (Grounded-Fault Circuit Interrupter GFCI). DO NOT run operate pump on an un-grounded circuit.
3. WIRING CONNECTIONS: All wiring and electrical connections must comply with local and national electrical codes.
4. 4200 Case enclosed model should be placed on a dry flat surface assuring space is provided at the back of the case for air circulation through ventilation holes. The ambient temperature should not exceed 35° C.

⚠️ CAUTION: To prevent pump damage in the event of a tube leak, pump should not be run in a vertical plane.

⚠️ CAUTION: Pump designed to be run on a dry horizontal surface.

⚠️ CAUTION: This unit should not be used in outdoor or hazardous locations.

⚠️ CAUTION: Motor life will be drastically reduced if left in the stalled position for extended periods.

⚠️ CAUTION: To reduce the risk of electric shock, pull plug before servicing this pump.

⚠️ CAUTION: This Pump Is To Be Used In A Circuit Protected By A Ground Fault Circuit Interrupter.

⚠️ WARNING: To reduce the risk of electrical shock, connect only to a properly grounded, grounding type receptacle, or equivalent.

⚠️ WARNING: Risk of electrical shock - This pump has not been investigated for use in swimming pool or marine area.
Control Panel Guide

1. **Directional Control:**
   a. Push switch up for clockwise rotation
   b. Push switch down for counterclockwise rotation
   c. Center switch position is OFF

2. **Speed Control:**
   a. Rotate speed control knob CW to turn pump ON
   b. Rotate speed control knob CW to increase pump speed between zero and 100% (0 to 127 rpm)
   c. Rotate speed control knob CCW to decrease pump speed and to turn pump OFF.
PUMP HEAD ASSEMBLY/ TUBING INSTALLATION

Exploded View of Pump housing and roller bracket assembly

A) Cover Ring
B) Roller Bracket
C) Tubing
D) Pump Housing
E) Pump Housing Screws

PUMP HEAD ASSEMBLY

1. Slide the Roller Bracket assembly (B) onto the gearbox assembly output shaft.

2. Place the Tubing Cover Ring (A) against the motor Enclosure. The Tube Cover Ring is free floating until the Pump Housing is replaced.
3. Place the pump housing (D) over the roller bracket assembly, aligning the 4 mounting tab holes with the 4 threaded inserts on the enclosure.

4. Hand tighten the pump housing with 4 screws.

PUMP HEAD DISASSEMBLY

⚠️ Always wear safety glasses and protective clothing when working with chemicals. (See Illustrations on page 6).

1. Disconnect power to the pump.
2. Disconnect the suction and discharge tubing from the pump tubing.
3. Remove (4) screws to release pump head assembly.
4. Remove pump housing (D) by twisting housing side to side while pulling off. (In most cases roller bracket should stay on shaft. In the event that it is removed with the housing, line up flat on shaft with flat on inside on roller bracket and push back into place. There is also a free-floating tubing cover ring (A) that mounts up against the motor case.).
5. Remove tubing from roller bracket.
6. Clean roller race inside of tubing housing, removing and particles that could damage tubing. Be sure all cleaning solvents are removed prior to installing new tube.

7. To reassemble, follow the above pump head assembly instructions.

**TUBING INSTALLATION**

**NOTICE** Inspect all tubing regularly and replace if any sign of deterioration occurs. Always wear safety glasses. Pump can run dry without damage.

1. Connect power to the pump.

2. Rotate speed control knob CCW to the off position.

3. Set the pump direction switch to the CW rotation position.

4. Turn speed control knob to the 100% speed position.

5. Load and gently push the tubing into the inlet port of the pump housing. Allow the roller bracket assembly rollers to grab and pull tubing through the housing. When the tubing is all the way through the pump and exiting the outlet pump housing port, turn pump OFF. Tube is fully loaded.

6. Attach the supplied tube clamps, one on the inlet side of the pump and one on the outlet side of the pump.

**CAUTION:** Do not twist or kink tubing while installing, as this will affect your flow and tubing life.
VFH FUSE INSTALLATION

FUSE INSTALLATION
(See page 11 for fuse ordering information).

1. Disconnect power to pump.
2. The fuse holder is located on the back of the case.

3. Turn the knob counterclockwise.

4. Slide the fuse out.

5. Remove old fuse and replace with part # FU-1127-02-00.

6. Slide back in and push while turning clockwise to lock.
VSH MOTOR BRUSH Check / REPLACEMENT

MOTOR BRUSH REPLACEMENT
(See page 7 for brush ordering information).

**NOTICE**  
*Brushes should be inspected for wear every 6 months or 2000 operating hours*

1. Disconnect power to pump.
2. Remove case cover by removing 6 screws.

3. With a small flat head screwdriver remove the brush caps on both sides of the DC motor.

4. Remove old brush and replace with part # BR-1140-01-00. (Slide in horizontally).
5. Push metal plate on the end of the brush inside and hold it while replacing brush cap.
6. Replace case cover.

**NOTICE**  
*This unit incorporates a DC motor, which has a limited life based on brush wear and is considered perishable - motors with worn out brushes are not considered defective and are not covered under warranty. Continuous operation, particularly at higher speeds, produces quicker brush wear and results in a shorter motor life.*
# TROUBLESHOOTING

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid Leaking</td>
<td>Pump tube worn</td>
<td>Replace Tube</td>
</tr>
<tr>
<td></td>
<td>Excessive back pressure</td>
<td>Ensure system pressure does not exceed pressure rating</td>
</tr>
<tr>
<td></td>
<td>Tube is twisted</td>
<td>Replace tube</td>
</tr>
<tr>
<td></td>
<td>Hole in tube</td>
<td>Replace tube</td>
</tr>
<tr>
<td></td>
<td>Tube connections are not tight</td>
<td>Ensure tubing connections are properly connected</td>
</tr>
<tr>
<td>Tube Life is Shortened</td>
<td>Roller bracket assembly worn out</td>
<td>Replace roller bracket assembly with pump kit</td>
</tr>
<tr>
<td></td>
<td>Fluid is not compatible with tubing</td>
<td>Check fluid-to-tube compatibility</td>
</tr>
<tr>
<td>Pump will not start</td>
<td>Check for blown fuse</td>
<td>Replace Fuse</td>
</tr>
<tr>
<td></td>
<td>Pump is not connected to specified voltage</td>
<td>Ensure that the pump is connected to rated voltage</td>
</tr>
<tr>
<td></td>
<td>Motor brushes worn</td>
<td>Check brush wear, replace if necessary</td>
</tr>
<tr>
<td></td>
<td>Gearbox assembly worn</td>
<td>Replace unit</td>
</tr>
<tr>
<td>Pump runs but does meet rated flow</td>
<td>Tubing is worn</td>
<td>Replace tubing</td>
</tr>
<tr>
<td></td>
<td>Gearbox assembly worn</td>
<td>Replace unit</td>
</tr>
<tr>
<td></td>
<td>Fluid viscosity is too high</td>
<td>Lower viscosity</td>
</tr>
<tr>
<td></td>
<td>Head height is too high</td>
<td>Lower head height</td>
</tr>
<tr>
<td></td>
<td>Pumping distance is too far</td>
<td>Reduce pumping distance</td>
</tr>
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## REPLACEMENT PARTS LIST

Please visit our website at: [www.ankoproducts.com](http://www.ankoproducts.com)
LIMITED WARRANTY

For cased peristaltic metering pumps manufactured after April 16th, 2018, Anko Products, Inc, (“ANKO”) warrants, subject to the conditions and exceptions herein, to replace or repair free of charge, any of its products which fail within three years of the date of manufacture. Any failure must be a result of a defect in material workmanship and not as a result of normal operation as described in the product user manual.

This warranty is limited to repairing or replacing any device or part of any device which is returned, transportation prepaid, to the factory and is proven to be defective upon our examination. The warranty shall not apply to repairs required for normal wear and tear, lack of reasonable and proper maintenance, chemical attack, electrical surge or products that have been misused in our sole judgement. All consumable items such as tubing, and pump head rollers are excluded.

ANKO disclaims all liability for any loss, damage or expense directly or indirectly related to or arising from the use of its products, including damage to other products, machinery or property. ANKO shall not be liable for any consequential damages including, without limitation, loss of profits, loss of product or loss of production. This warranty does not obligate ANKO to bear any costs of removal, installation, transportation or other charges which may arise in connection with a warranty claim.

ANKO makes no warranties, either express or implied, other than those stated above. No representative has authority to change or modify this warranty in any respect. Jurisdiction and venue for enforcement of this warranty may be brought only in the State of Florida. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.
RETURN AND REPAIR

WARRANTY RETURNS:

To return merchandise call ANKO PRODUCTS, at 800-683-2378 for a Return Material Authorization (“RMA”), then, if applicable, Buyer may return the defective Products to ANKO PRODUCTS with all costs prepaid by Buyer. Replacement parts may be new or refurbished, at the election of ANKO PRODUCTS. ANKO PRODUCTS will incur shipping costs for warranty products shipped from our factory. All replaced parts shall become the property of ANKO PRODUCTS. No repair or replacement will extend the original warranty period.

FOR YOUR RECORDS:

Model_______________________________________________________________

Date of Installation_________________________________________________