



Geopump Peristaltic Pump

Installation and Operation Manual



Rev. 4 9/14/09 Part # 81350020

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DOCUMENTATION CONVENTIONS

This uses the following conventions to present information:



An exclamation point icon indicates a **WARNING** of a situation or condition that could lead to personal injury or death. You should not proceed until you read and thoroughly understand the **WARNING** message.



A raised hand icon indicates **CAUTION** information that relates to a situation or condition that could lead to equipment malfunction or damage. You should not proceed until you read and thoroughly understand the **CAUTION** message.



A note icon indicates **NOTE** information. Notes provide additional or supplementary information about an activity or concept.

NOTICES



In order to ensure that your Controller has a long service life and operates properly, adhere to the cautions below and read this manual before use.

Disconnect from power source when not in use.

Controller power input source must not exceed maximum ratings

Controller must be wired to a negative ground system

Controller may not operate properly with excess wiring not supplied by manufacturer

Avoid spraying fluid directly at equipment

Never submerge equipment

Avoid pulling on wires to unplug equipment wiring

Avoid using equipment with obvious physical damage

To prevent equipment damage, avoid dropping it



The Geotech Geopump Peristaltic Pump cannot be made dangerous or unsafe as a result of failure due to EMC interference.



WARNING

Do not operate this equipment if it has visible signs of significant physical damage other than normal wear and tear.



Notice for consumers in Europe:

This symbol indicates that this product is to be collected separately.

The following apply only to users in European countries:

- This product is designated for separate collection at an appropriate collection point. Do not dispose of as household waste.
- For more information, contact the seller or the local authorities in charge of waste management.

Chapter 1: System Description

Function and Theory

The Geotech Series I and II Peristaltic Pumps are designed for single and multi-stage pressure or vacuum pumping of liquids for field or laboratory use. Since they operate to a depth of 27 feet at sea level, they are ideally suited for sample removal from shallow wells and all surface water sources. They operate by mechanical peristalsis, therefore the sample comes in contact only with the tubing. This allows for sample integrity as well as easy cleaning and tubing replacement. Tubing can be lowered to a specific depth without curling or floating on the surface of the water with use of optional stainless steel tubing weight. Differences between the two models affect the number of pump heads which may be used with the Geopump at one time, and the speed(s) at which the pump heads operate. Therefore, the instructions for general operations will be covered only once.

System Components

SERIES I Peristaltic Pumps are available in AC only, DC only, or an AC/DC combination. These units have one pumping station which can also be piggy-backed for multi-station pumping. They are variable speed from 60 RPM to 350 RPM.

SERIES II Peristaltic Pumps are available in AC only, DC only, or an AC/DC combination. They have two pumping stations which can also be piggy-backed. The first pumping station is rated at 30 RPM to 300 RPM and the second station at 60 RPM to 600 RPM. Each pumping station works in conjunction with the other.

Chapter 2: System Installation

Standard Pump Head Instructions

1. Separate pump halves. Hold the pump head as shown with the rollers in the 2, 6, and 10 o'clock positions and the rotor shaft facing down.



2. Place the tubing around the rollers.



3. Turn rotor counterclockwise until tubing has completely surrounded the rotor.
4. The tubing is now in place. Next, position other pump half onto the motor shaft and snap shut. Be careful not to pinch tubing between plastic halves.



Chapter 3: System Operation

The pump kit arrives packed in a hard shelled peristaltic pump carry case with the pump head properly attached to the pump (purchased separately). See section on pump parts.

To put into service:

1. Remove the pump from the case and be sure pump is turned "OFF" (red, open circle)
2. For AC/DC combination units, plug in the appropriate power cord into the outlet in the back of the pump & other end of the power cord into the power source.
3. Insert the tubing into the pump head.
4. Put one end of the tubing into the sample source (well, river, ditch, lagoon, etc.) and the other end into the sample container.
5. Determine the desired direction of flow and turn the direction toggle switch in that direction.
6. Turn the pump "ON" (the black filled circle).
7. Once pumping has begun, the speed dial can be adjusted to increase or reduce the fluid pumping speed, as desired.

Chapter 4: System Maintenance

Peristaltic Pump: Maintenance Tips

The Geotech Peristaltic Pump has a strong reputation for durability and being virtually maintenance free. These simple maintenance steps will assure your pump's long term reliability:

Pump Tubing:



Geotech recommends regular tubing replacement for optimum performance, using the proper size and type of tubing for the pump head is essential. If you are unsure of tubing type for your application, please call Geotech. Depending on the pump head design, different sizes of tubing may be used. Use of the incorrect tubing, size or type, will cause damage to the pump and/or the pump head and void the warranty.

Pump:

Keep your Geopump clean and dry. In the event that the Geopump is subjected to significant splashing or immersion, discontinue use and wipe the unit down immediately with a clean dry cloth.

- To keep your Geopump reliable follow these simple guidelines:
- Do not drop your Geopump
- Do not immerse your Geopump
- Do not subject your Geopump to poor power supplies
- Do not subject your Geopump to extreme heat or cold when in use

Power Cords:

Always replace any kinked or damaged power cord. Units with hard-wired power cords should be sent back to Geotech for proper repair (see pg. 12). However, replacement power cords are available for AD/DC combination units.

Pump Head:

Your Geopump pump-head needs to be periodically cleaned with a Phosphate - free cleaning detergent and water solution.

Chapter 5: System Troubleshooting

Problem: Unit will not turn on

Solution:

1. No power to unit:(rollers not moving)
 - Check power source and compatibility
 - Check connections
2. Speed control not set fast enough to overcome tubing resistance:
 - check speed setting; if too low turn it up
3. Check tubing size and type. Make sure it is the correct size and type for the pump head
4. Check circuit breaker; if tripped press it in to reset.

Problem: Unit turns on, but not pumping...(Pump head rollers are moving)

Solution:

1. Verify fluid level in well (max suction lift unit can pump from is 27' below ground at sea level).
2. Water level is below down well tubing intake-Increase tubing length.
3. If using a combination of flexible and rigid tubing check connection, between tubing. A poor connection may cause a vacuum leak. Secure tubing connection.
4. Flexible tubing in pump head compromised or worn out:
 - Replace flexible tubing regularly
5. Obstruction in tubing:
 - Check for clogs and kinks
 - Clear any obstructions
6. Using incorrect tubing type for pump head:
 - Tubing may be collapsed.
 - Replace with proper tubing type

Problem: Pump head rollers are not moving

Solution:

1. Pump head is loose from the pump housing:
 - Tighten pump head screws to engage pump head to gear.
 - Possible internal damage - call Geotech for consultation.

Chapter 6: System Specifications

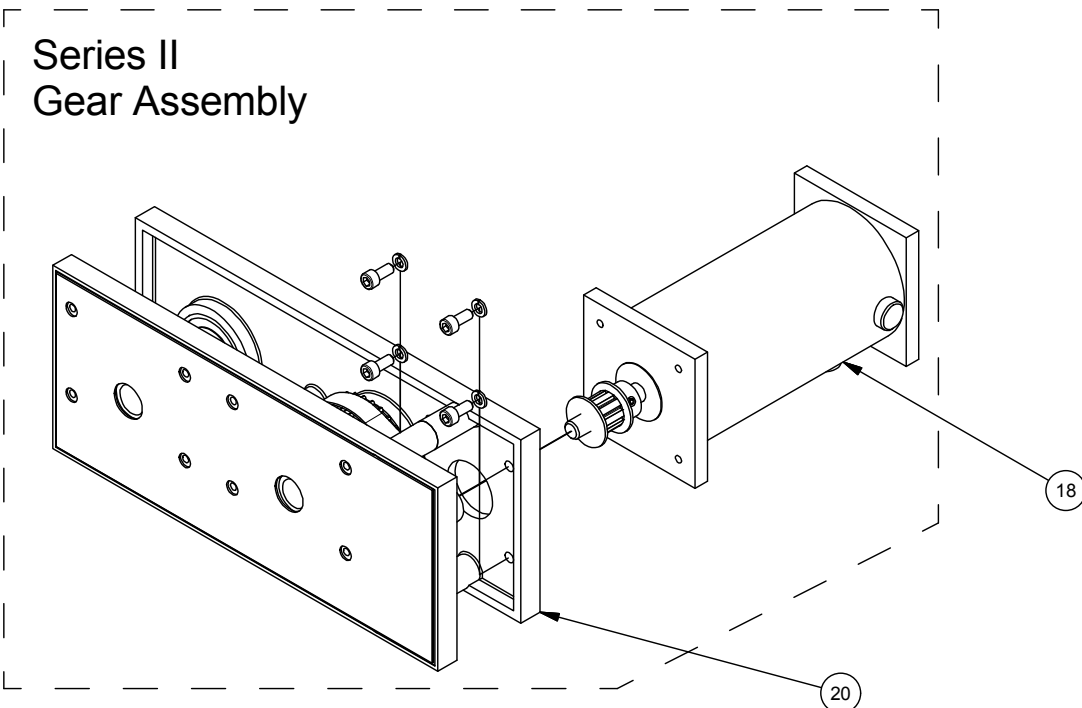
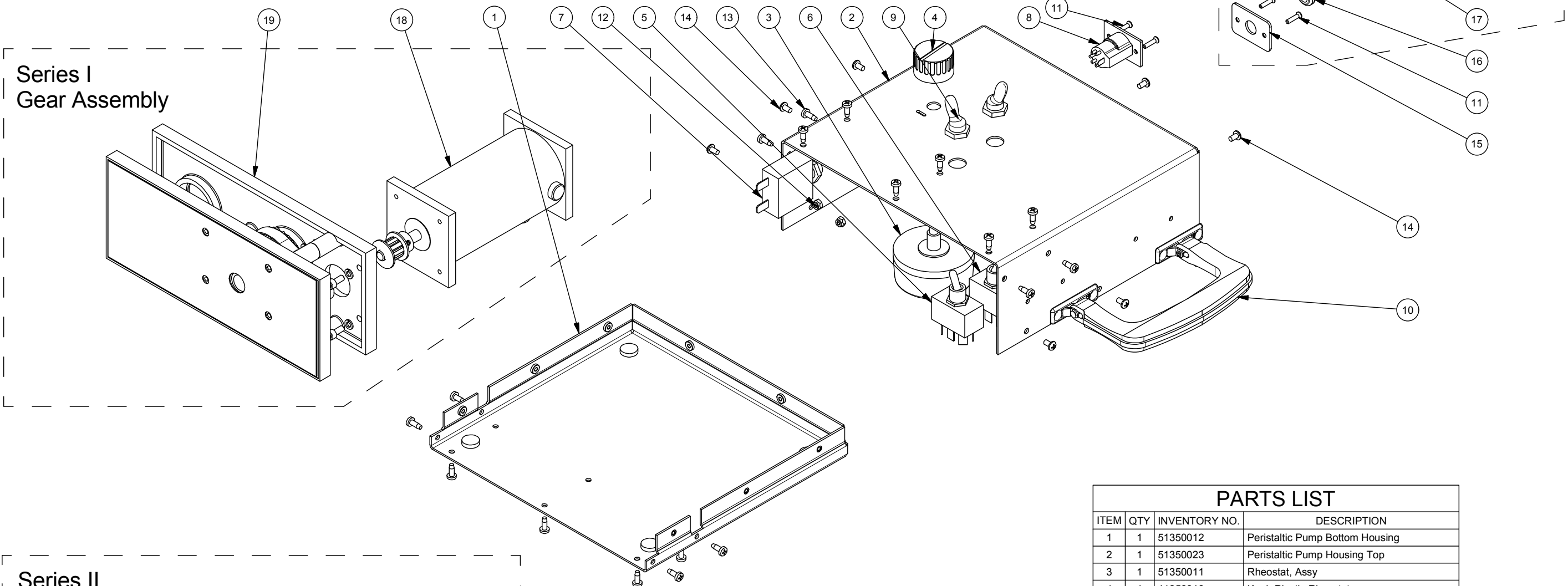
Operating range	27 feet at sea level
Principle of Operation	Mechanical peristalsis
Dimensions	3.5 x 8 x 8 inches
Power source	Any rated external 12-18 VDC @ 70 Watts
Nominal operating current	3 amps DC
Over current Protection	5 amps DC
Power cord	12 VDC cord.
Range of speed: Series I	60 to 350 RPM
Range of speed: Series II	First pumping station 30 to 300 RPM Second pumping station 60 to 600 RPM
Speed control	Stepless variable speed control
Liquid delivery rate	1.67 ml per revolution (for size 15 tubing)
Pumping options	Pressure or vacuum (reversible flow)
Pump head rotor	Cold rolled steel

OPTIONS

Models:	Geopump 1, Geopump 2
Tubing:	Silicone, Tygon, Viton, C-Flex
Pump Heads:	Standard, Easyload, Quickload

Chapter 7: System Schematic

DC Power Only



PARTS LIST			
ITEM	QTY	INVENTORY NO.	DESCRIPTION
1	1	51350012	Peristaltic Pump Bottom Housing
2	1	51350023	Peristaltic Pump Housing Top
3	1	51350011	Rheostat, Assy
4	1	11350010	Knob Plastic Rheostat
5	1	11350020	Switch Toggle DPDT Forward-Reverse
6	1	11350021	Switch Toggle DPST ON-OFF
7	1	11350005	Breaker Thermal 5A Circuit
8	1	51350004	Wiring Harness Assy
9	2	17500037	Boot Rubber Toggle Switch Grey
10	1	11350009	HANDLE, PE, NI
11	2	17200076	4-40 x 1/2 FHMS
12	2	17200046	4-40 Nylock Nut
13	20	17200077	6-32X3/8 SS Self Tapping Machine Screw
14	8	17200078	6-32 X 1/4 SS PHMS
15	1	11350015	Aluminum Plate for DC Only
16	1	11350019	Rubber Grommet
17	1	17500040	DC Power Cable
18	1	51350003	Replacement Motor Assembly
19	1	51350001	Series I - Replacement Gear Assembly
20	1	51350002	Series II - Replacement Gear Assembly

Chapter 8: Replacement Parts List

Parts Number	Part Description
17500035	Adaptor, Cigarette to Clips
51350030	Power Supply AC adapter
57500008	Assy, Power Cord, DC (AC/DC Unit)
51350001	Assy, Gear Housing, Series I
51350002	Assy, Gear Housing, Series II
51350012	Assy, Housing, Bottom, PP
51350003	Assy, Motor, PP
51350011	Assy, Rheostat
51350004	Assy, Wiring Harness, PP
17500037	Boot, RBR, Toggle Switch Grey
11350005	Breaker, Thermal, 5amp, Circuit 250V
51350015	Case, Peristaltic Pump with foam
51350026	Faceplate, Gear Hsng, Series I Aluminum
51350025	Faceplate, Gear Hsng, Series II Aluminum
17500042	Foot, Rubber, 9/32 Hole DIA
17200079	F, Screw, Short, Peristaltic Pump SS8, 8-32X1.25, filter
17200199	F, Screw, Thumb, Peristaltic Pump 8-32X2.5, ZN
71350030	F, Screw, Ezload II Pumphead Long Shaft
11350009	Handle, PE, NI
51350023	Housing, Top, Slk, Scrn
11350010	Knob, Plastic, Rheostat
11350020	Switch, Toggle, Dpdt, Frwd/Rvrs
11350021	Switch, Toggle, Dpst, On/Off

Old Style Non CE parts

Parts Number	Part Description
57500007	Assy, Power Cord, AC
51350007	Assy, Diode, PP
57500009	Assy, Rectifier Bridge, PP-Logic
51350013	Assy, Transformer, PP

The Warranty

For a period of one (1) year from date of first sale, product is warranted to be free from defects in materials and workmanship. Geotech agrees to repair or replace, at Geotech's option, the portion proving defective, or at our option to refund the purchase price thereof. Geotech will have no warranty obligation if the product is subjected to abnormal operating conditions, accident, abuse, misuse, unauthorized modification, alteration, repair, or replacement of wear parts. User assumes all other risk, if any, including the risk of injury, loss, or damage, direct or consequential, arising out of the use, misuse, or inability to use this product. User agrees to use, maintain and install product in accordance with recommendations and instructions. User is responsible for transportation charges connected to the repair or replacement of product under this warranty.

Equipment Return Policy

A Return Material Authorization number (RMA #) is required prior to return of any equipment to our facilities, please call 800 number for appropriate location. An RMA # will be issued upon receipt of your request to return equipment, which should include reasons for the return. Your return shipment to us must have this RMA # clearly marked on the outside of the package. Proof of date of purchase is required for processing of all warranty requests.

This policy applies to both equipment sales and repair orders.

FOR A RETURN MATERIAL AUTHORIZATION, PLEASE CALL OUR SERVICE DEPARTMENT AT 1-800-833-7958 OR 1-800-275-5325.

Model Number: _____

Serial Number: _____

Date: _____

Equipment Decontamination

Prior to return, all equipment must be thoroughly cleaned and decontaminated. Please make note on RMA form, the use of equipment, contaminants equipment was exposed to, and decontamination solutions/methods used. Geotech reserves the right to refuse any equipment not properly decontaminated. Geotech may also choose to decontaminate equipment for a fee, which will be applied to the repair order invoice.

Declaration of Conformity
Geotech Environmental Equipment Inc.
2650 E 40th Avenue
Denver, CO 80205
Following products are covered:
Geotech product
PN

These products comply with the directive 2004/108/EC (EMC),
harmonized standard EN 61010-1 2001-12-07, emissions class A.
These products comply with harmonized standard EN 61326-1 May 2006.

Signatory:

Joe Leonard



Product Development

Year of manufacture:

EMC conformity established 8/14/2009.

This declaration is issued under the sole responsibility of Geotech
Environmental Equipment Inc.

Model _____

Serial number _____



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