Spectra Field Pro Professional Grade Peristaltic Pump

Operation Manual

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Product Introduction

The Spectra Field Pro Professional Grade Peristaltic Pump is a rugged portable peristaltic pump designed to be used for environmental, lab, medical and industrial purposes. The Spectra Field Pro has served as the go-to peristaltic pump for professionals seeking a reliable product for over 20 years. Built upon famed hand-crafted manufacturing methods the Field Pro is a lifetime companion designed to easily outlive competition.

With over 20 years of service the Spectra Field Pro is used in countries all over the world for a variety of applications, making it one of the most popular peristaltic pumps to date. With a variety of applications and uses the Field Pro is a versatile pump able to operate in labs, on the field, industrial settings and more.

Through the Spectra Engineering Division the legacy of the Spectra Field Pro lives on and continues to evolve, guided by our principles and the feedback of our customers.

Functional Design Theory

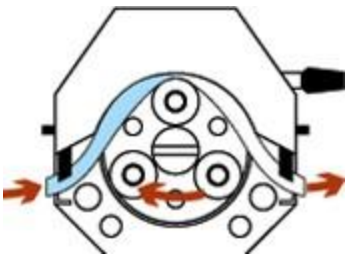
The Spectra Field Pro operates on mechanical peristalsis created through suction generated by a Pump Head and Flexible Tubing. This allows for contactless fluid sampling in a variety of applications. The Field Pro is limited by the ability to generate lift through vacuum and is only able to lift 27ft or 11m (at sea level).

What is a Peristaltic Pump?

A peristaltic pump is a type of positive displacement pump used for pumping a variety of fluids. Peristaltic pumps operate on a simple principle. The alternating pattern of squeezing and releasing the tubing moves the fluid through the pump.

The fluid is contained within a flexible tube fitted inside a circular pump casing (though linear peristaltic pumps have been made). A rotor with a number of 'rollers' attached to the external circumference compresses the flexible tube.

As the roller moves faster, vacuum pockets are created more quickly and the fluid moving through the system picks up speed. The rollers act as check valves to prevent siphoning or loss of prime.



System and Components

System Components

Peristaltic Pump Head

The Spectra Field Pro utilizes a Masterflex (Model # 7700-52) pump head.

Peristaltic Pump Body

Built within a vented Powder Aluminum Casing, with 3 vial holders as well as 4300cm^3 of toolbox space.

Peristaltic Pump Alligator Clips

Built in alligator clips (Field Pro III), attachable alligator clips (Field Pro I & II).

Optional Additional Accessories

C Flo™ Down Well Pump

12V Down Well Pump operable with the Spectra Field Pro III and external battery.

Spectra Scientific Silicone Tubing

Size 15 and Size 24 Silicone Tubing for use with the Spectra Field Pro, tested to produce best results and longevity depending on applications.

LDPE/HDPE Tubing

PE tubing in a variety of sizes.

System Operation

The Spectra Field Pro is a fully assembled and operable Peristaltic Pump with no additional assembly required.

System Setup

1. To operate the Spectra Field Pro attach and secure flexible tubing to the MasterFlex Pump Head and turn the unit ON by flipping the switch

2. Attach Polyethylene tubing on both ends of the flexible tubing and lower into sample once ready to begin sampling.

3. Begin sampling, using the flow control to adjust the flow rate

Operating the Spectra Field Pro as a Controller

1. Using Alligator Clips connect the Field Pro to an external battery

2. Flip the Switch to 12V Down Well Pump

3. Attach and secure 12V Down Well Pump to rear connection and lower into well or container

4. Adjust Flow Control to achieve selected flow rates

System Specifications

	Spectra Field Pro III
Pump Material	Powdered Aluminum
Pump Weight	24 lbs
Pump Dimensions	16.5’ x 10.5’ x 9.0’
Power Source	12V DC or 240V AC
Pump Head	Masterflex Easy Load II
Pump Head Tubing	Size 15, 24, 35, 36
IP Rating	IP65
Flow Rate	25 – 650 ml/min
Motor RPM	0-300 RPM
Battery Life	8 Hours
Toolbox Space	4300 cm^3 + 3 Vial Holders
Pumping Depth	10m (33ft) – at Sea Level

System Troubleshooting

Problem	Unit does not turn ON
Cause	Internal Disconnect
Solution	Contact Spectra Technician

Problem	Unit does not turn ON
Cause	Popping of Circuit Breaker
Solution	Press the Circuit breaker inside the Vial Compartment

Problem	Unit does not turn ON
Cause	Battery Depleted
Solution	Inquire as to whether the Pump was left uncharged for a prolonged period – If yes, replace battery

Problem	The Battery Voltage is low, but I still need to finish sampling
Cause	Low Internal Battery
Solution	Connect the Alligators clips to external battery source to run the pump

Problem	The flow rate control is variating
Cause	Potentiometer issue
Solution	Contact Spectra Technician for replacement

Problem	Pump only flows in one direction
Cause	Flow direction Toggle switch issue
Solution	Contact Spectra Technician for replacement

Problem	The Pump head rollers are spinning but the silicone tubing is dragged out of pump head
Cause	One of the rollers must be stuck due to corrosion
Solution	Contact Spectra Technician for Pump head maintenance

Problem	The Motor is running but the Pump head rollers are not spinning
Cause	Coupling Displacement
Solution	Contact Spectra Technician

Problem	The pump does not draw water
Cause	Water level too deep
Solution	Check for Water levels - Max at 25 Feet (7 m)

Problem	The pump does not draw water
Cause	Check for Silicone Tubing
Solution	Make sure it matches the pump head specifications - LS 15, 24, 35, 36

Problem	It does not have much drawing power
Cause	Check for Battery Voltage
Solution	Charge the Battery

Problem	Unit does not turn ON
Cause	Popping of Circuit Breaker
Solution	Press the Circuit breaker inside the Vial Compartment

Trademarks and Patents

Spectra Field Pro, C Flo, Sil 15 and Sil 24 are all trademarks of Spectra Scientific Inc.

Warranty

Spectra Scientific Inc warrants this product for failures due to manufacturer's workmanship or material defect for 12 months from the date of purchase for delivery (or delivery whichever is later) by the user. In the event of any failure during this warranty period, simply return the unit to Spectra Scientific, nothing else is required. We stand behind our products. Spectra Scientific Inc will either repair or replace the unit, free of charge.

The warranty is void if the product has been abused, misused, or repairs attempted by unauthorized persons. If Spectra Scientific determines that a failure is the result of misuse a repair estimate will be provided to the customer.

This warranty described above is exclusive, nontransferable, and in lieu of all other warranties expressed or implied, including but not limited to any implied warrant of fitness for a particular purpose and all warranties arising from the course of dealing or usage of trade. The buyer's soles exclusive remedy is for repair or replacement of the non-conforming product. In no event shall Spectra Scientific Inc be liable to the buyer, or any person for any special, indirect, incidental or consequential damages whether the claims are based in contract, tort (including negligence) or otherwise in respect to or arising out of the product purchase. The extent of liability is a full refund of the purchase price upon the return of the non-conforming unit.