PERISTALTIC PUMPS FOR USE IN THE FIELD

You will return to the contents of
P2 WATER by clicking the pictogram

The peristaltic pumps presented here, are very reliable sampling apparatus for fluids and gasses, for application in very diverse field circumstances.

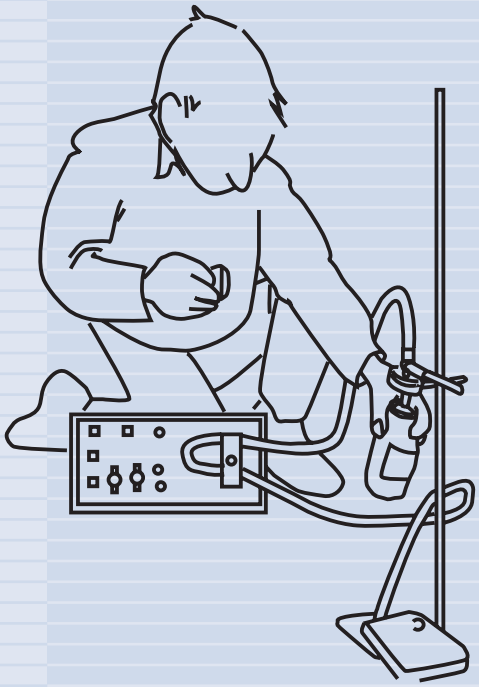
Specifically where it concerns research for groundwater, errors are introduced easily by not using the equipment properly or the application of less suitable equipment.
The concentrations of the pollutants present in the sample, often are very small. Turbulence, large pressure fluctuations, abrasive particles of the sampling equipment, etc. therefore can not be tolerated. In a peristaltic pump however the fluid (or gas) that is pumped, only is in contact with the inside of a piece of non-toxic silicon rubber tube (the so called pump tube). For this reason there is no risk of abrasive particles from shafts, sealing, piston rings or impellers. Cross-contamination can be avoided by replacing the pump tube, as well as the transport tube before every single sampling.
An electronic- as well as a hand-operated-peristaltic pump (for field use) have been developed.

The pump used, is a simple but very durable peristaltic pump, with three pressure rollers. The bearings of the drive shaft and the pressure rollers are water resistant.
The pump is suitable for elastic pump tubes of which the thickness of wall may vary between 1.9 and 2.1 mm. The rigidity of the flexible tube should be about 55 degrees Shore.
The pump can deliver a pump pressure of 3 bar (thus also suitable for use with in-line filters) and an underpressure maximum of 1 bar. It is a self-priming pump.

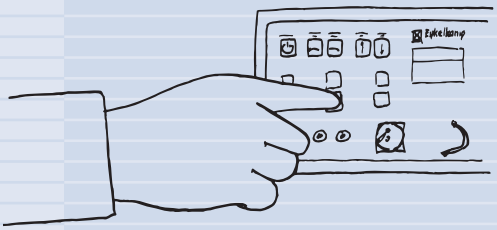
Even when the pump is out of use the pump tube is completely pressed to a close by at least one roller. Fluid and gas can not flow back. The pump can for instance be used for anaerobe sampling of groundwater.

For groundwater sampling the 6 x 10 mm silicon tube is most suitable.

Using the peristaltic pump 12 Vdc the (ground-) water sample is filtered in-line.



The well-ordered control panel has been fitted with a tactile membrane keypad.

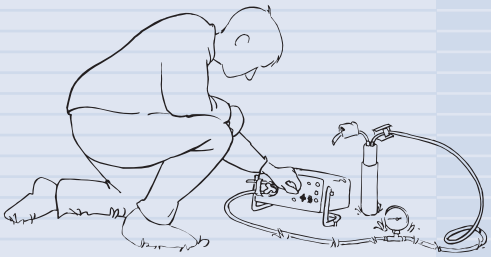


Peristaltic pump 12 Vdc

Eijkelkamp Agrisearch Equipment
www.eijkelkamp.com

PERISTALTIC PUMPS FOR USE IN THE FIELD

Pumping soil gas with the peristaltic pump 12 Vdc.



The stronger its ability to regain its old round shape, the stronger the suction. For this reason the thinnest pump tube (3 x 7 mm), has the strongest suction (perfect vacuum).

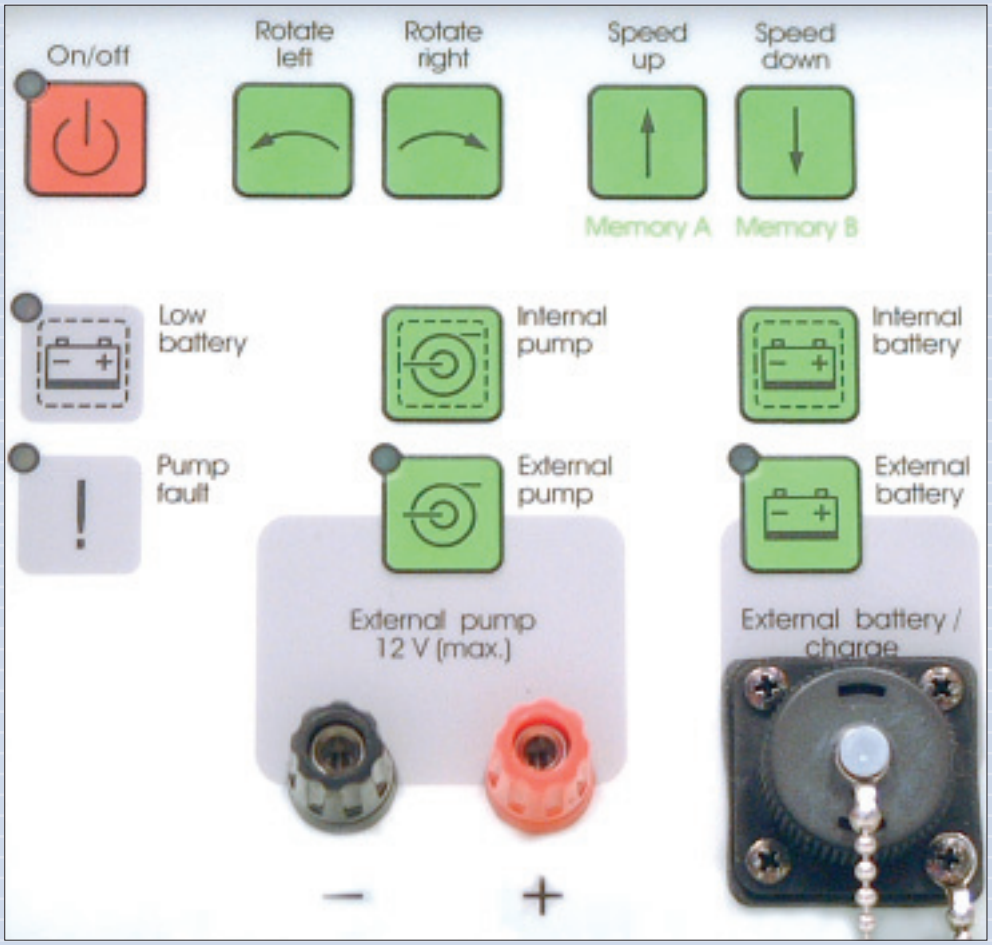
12.25 Peristaltic pump 12 Vdc

This peristaltic pump, specially designed for use in the field, is battery powered and microprocessor controlled. The microprocessor enables an adjustable constant number of revolutions (which can be stored in memory), protection against overload and various modes of external control. Controlling the peristaltic pump can be executed via the key-pad on the front panel.

A built-in maintenance free 12 Volt battery enables you to use the pump 2 to 5 hours continuously (depending on load). The pump, with CE certification, is splashproof (IP 64) and can be used in the field without problems. The apparatus can be used in all positions. The pump is designed for long-term professional use in unfavourable circumstances.

Advantages

- Light weight, impact resistant plastic, splash-proof housing.
- Microprocessor controlled.
- Immediate deployment.
- Powerful engine and reduction gear unit.
- Reliable and universal peristaltic pump that can create perfect vacuum.
- Large variation in speed and flow. Flow from 0 to up to 2.3 liter per minute.
- Membrane key-pad on a wellordered control panel.
- Two pumps 12 Vdc can replace one petrol driven pump: No petrol vapors and exhaust gasses.
- Protected against overload.



Control panel with membrane key-pad of peristaltic pump 12 Vdc

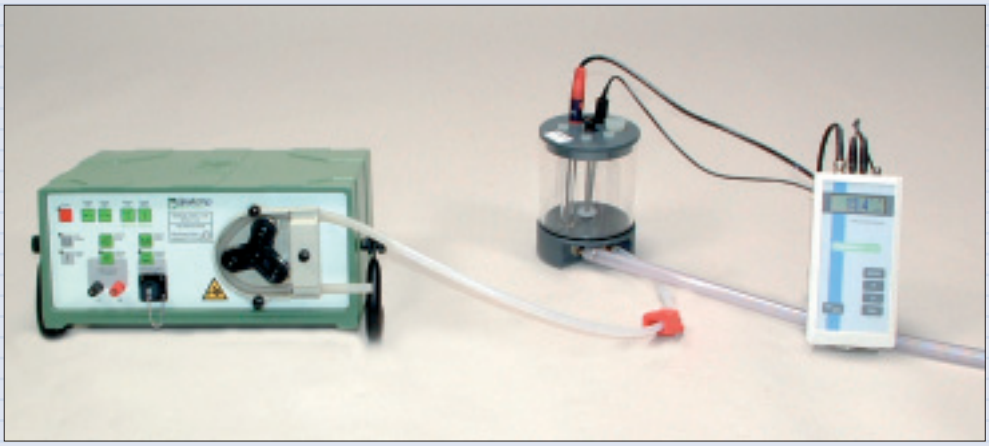
PERISTALTIC PUMPS FOR USE IN THE FIELD

P2.52

Applications

- Suitable for purging monitoring wells for several hours continuously (by using more than one peristaltic pump time can be saved).
- In-line filtration for sampling of groundwater using the filter holder or 0.45 micron disposable filters for removal of soil particles from water samples.
- Impeller pumps can be connected to the peristaltic pump to be able to pump large quantities of water out of monitoring wells, for instance during well development after they have just been placed.
- Pumping up soil gas or taking dust samples from the (outdoor) air.
- The precision and process of in-line measurement can be improved by connecting a flow-through cell, in which for instance pH-, conductivity-, O_2 or Redox electrodes have been placed, to the peristaltic pump.

Two submersible impeller pumps connected to the peristaltic pump 12 Vdc.



Peristaltic pump with flow-through cell and multimeter

Peristaltic pump with in-line filters

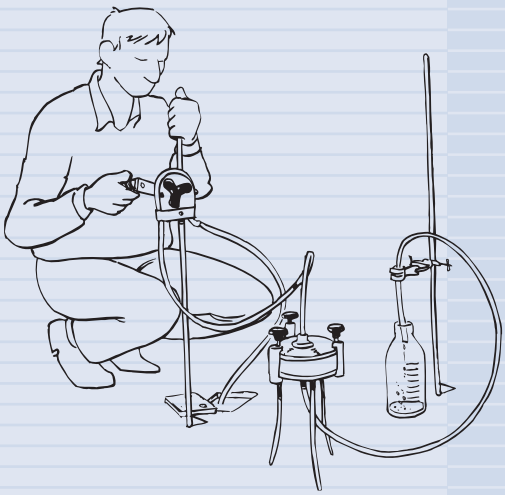
Peristaltic pump with impeller pumps

Eijkelkamp Agrisearch Equipment

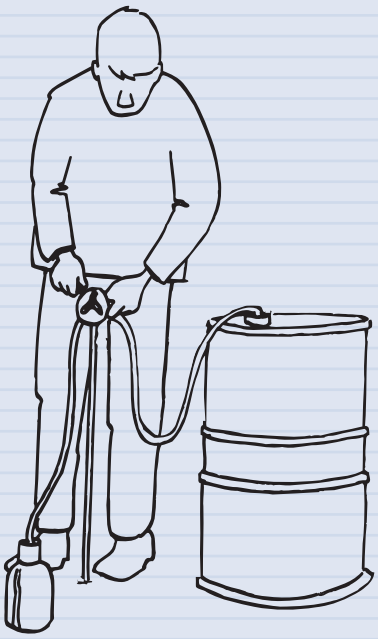
www.eijkelkamp.com

PERISTALTIC PUMPS FOR USE IN THE FIELD

Using the hand-operated peristaltic pump the groundwater is pumped up and filtered.



The reservoir is sampled using the hand-operated peristaltic pump.



12.23 Hand-operated peristaltic pump

The hand-operated peristaltic pump is a very reliable apparatus that is used for pumping of gasses and fluids. The pump used is a simple, but very durable, peristaltic pump with three pressure rollers.

The bearings of the drive shaft and the pressure rollers are waterresistant.

The pump can deliver a pump pressure of 3 bar (thus also suitable for use with in-line filters) and an underpressure maximum of 1 bar. It is a self-priming pump.

Even when the pump is out of use the pump tube is completely pressed by at least one roller. Fluid and gas can not flow back.

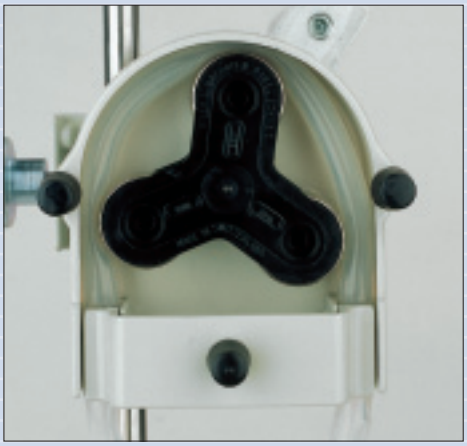
Using the hand-operated peristaltic pump water can be pumped from a depth of up to 9.5 meter.

The hand-operated peristaltic pump is fitted with a handle with bearings that operates very light. The stainless steel monopod stand has been fitted with a press-down rim that allows you to press the stand into the soil easily for support.

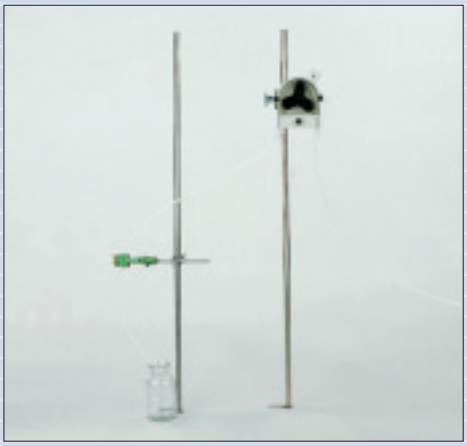
A 6 x 10 mm silicon tube is most suitable for groundwater sampling.

Advantages

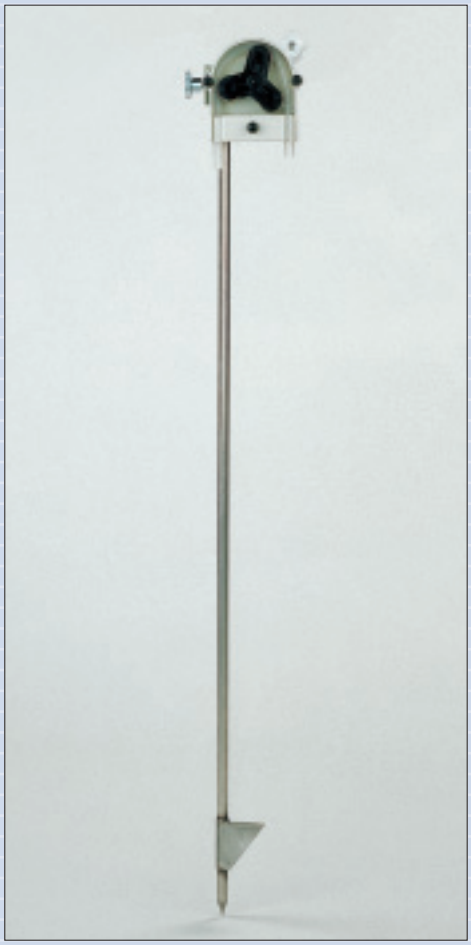
- The fluid (or gas) that has been pumped is only in contact with the inside of a piece of non-toxic silicon rubber tube (the so called pump tube). No mechanical wear and tear of sealings, bearings or membranes is possible. For this reason there is no risk of the medium to be pumped to get in touch with abrasive particles from shafts, sealing or impellers.
- As long as the pump tube used and the other tubes connected are chemically reliable, the integrity of the sampling is guaranteed.
- The pump tube can easily be replaced to avoid any risk of cross-contamination.



Pressure rollers and pump tube



Peristaltic pump with "Third hand"



Hand-operated peristaltic pump

Art.no.	Description	Qty. in set
Peristaltic pumps for use in the field (P2.52)		
	For groundwater sampling in the field two types of peristaltic pumps are supplied: - hand-operated peristaltic pump - peristaltic pump 12 Vdc	
12.23	**Hand-operated peristaltic pump with stand**	
12.25	**Peristaltic pump 12 Vdc, specially suited for use in the field, micro-processor controlled, with 3 memory functions for fixed rates of revolution. CE-approved. Strong IP64 housing. Membrane keypads control. Incl. built-in battery 12 V. Excl. charger**	
	Battery charger for electrical pump: (230 V or 115 V) for 12.25 pump	
12.25.21	Battery charger suited for 230V/ 50Hz. For 12V lead batteries, max. charging current 1A. With connector for connection to peristaltic pump 12.25 (from serial no.98000300, jan.'98)	
12.25.23	Battery charger suited for 115V 50/60Hz. For 12V lead batteries, max. charging current 1A. With connector for connection to peristaltic pump 12.25 (from serial no. 98000300, jan. '98)	
	External power supply on car for 12.25 pump	
12.25.25	Cable with connector for connection of peristaltic pump 12.25 to 12V cigarette lighter plug, incl. plugs for connection to separate battery (12.25.02), length 5 m (from serial no. 9800300, jan. '98)	
	Submersible pumps to be used with peristaltic pump 12 Vdc: (12.25)	
12.12.06	Submersible pump "Gigant", ABS/Inox, Ø 36mm, max. capacity 8 l/min, pressure head lift 10 m (at final voltage 12 Volt), with strainer, with 5 m PVC coated cable, set of 3 pcs.	
12.12.08	Boosterpump, in-line, ABS/ stainless steel, Ø 36 mm, max. flow rate 8 l/min, pressure head lift 10 m (at final voltage 12 Volt), with 0.3 m PVC coated cable, set of 3 pcs.	
12.12.11	Sealed crimp splices, polyamid, set of 10pcs for making water-proof cable extension (1.5-2.5 mm^2),	
12.12.12	Cable for extension of dip pump cables, 2x1.5 mm^2, pvc coated, roll of 100 m	

Art.no.	Description	Qty. in set
	Service and repairs for 12.25 pump:	
12.25.02	Lead-acid battery, maintenance free	
12.25.95	Inspection peristaltic pump 12 Vdc, incl. small materials and life test, excl. repairs	
	Tubes for both types peristaltic pumps:	
	The pump tube 4x8 mm has a pressure head lift o f 9.5 m. The pump tube 6x10 mm (standard) has a pressure head lift of 5.5 m. Pump pressure for both tubes is ca. 3.0 bar. (recommended transport tube PE 6x8 mm.)	
12.20.46	Silicone tube, Ø 4x8 mm, pressure head lift 9.5 m, roll of 5 m, with ETU-hallmark	
12.20.48	Silicone tube, complete with polyamid tube clamp, Ø 6x10 mm, pressure head lift 5.5 m, roll of 5 m, with ETU-hallmark, talced	
12.20.04	Polyethylene tube, Ø 6x8 mm, roll of 100 m, with ETU-hallmark	
	Filtration systems for connection to both types peristaltic pumps:	
12.30.01	Disposable filter for in-line filtration, effective filtration area 20 cm^2, pore size 0.45µ, universal hose barb connections, set of 5 pcs.	
12.30.10	Disposable filter for in-line filtration, effective filtration area 300 cm^2, pore size 0.45 micron, universal hose barb connections. Certified quality	
12.30.05	Disposable filter for in-line filtration, effective filtration area 700 cm^2, pore size 0.45 micron, hose barb connection for silicone tube 6x10 mm (with tube clamp) or the PE tube 10x12 mm. Certified quality	
12.31.01	Filterholder for in-line filtration, complete with exchangeable PTFE filtration unit, suitable for filter membranes 142 mm, inclusive spare tube connection. Tube connections for tube outside Ø 8 mm	
12.31.01.02	Filter membranes, Ø 142 mm, pore size 0.45 micron,filter medium polyethersulfon, box of 25 pieces	
	Various accessories for both types peristaltic pumps:	
12.20.95	Clamp with ground pin, for tubes and bottles	

PARTS LIST

Art.no.	Description	Qty. in set	Art.no.	Description	Qty. in set
18.55	Flow-through cell, special design for minimal air contact. For measurements under anaerobic conditions with max. 6 electrodes with various diameters (electrodes and meters not included)				
18.21.SA	pH/mV/EC/T-measuring set, complete with synthetic pH, EC electrodes and T sensor, case, liquids and batteries				
99.08.07	Sample bottle, brown glass, wide neck, screw cap with teflon insertion, 1000 cc, set of 6 pcs.				