



P2.50

GROUNDWATER PUMPS

Groundwater pumps are usually applied for developing and purging monitoring wells before executing a sampling procedure. Applying submersible pumps 12.27 and 12.12 sampling can be executed too.

12.27 Submersible pump sets MP1, suitable for purging and sampling monitoring wells

Various standard sets are available for purging and sampling monitoring wells to a depth of 20 to 90 m.

The submersible pump MP1, included in these sets, has been specially designed for purging and sampling of monitoring wells with a diameter from 50 mm. The pump motor is controlled by an adjustable frequency-converter. Due to the continuously variable setting of the frequency, the capacity of the pump can be adjusted from 0 to 2 m³/hour. This results in a steady flow of anaerobe water. A new measuring point has to be purged before sampling. The high capacity of this pump

allows for quick purging of the measuring point. By setting a low pumping capacity the same pump can be used for sampling. Built-in safeguards protect the MP1 and the convertor against overload. The actual frequency as well as possible failure can be read from a display.

Among other items the standard sets contain: an MP1 submersible pump, a cooling jacket, a service kit, a frequency-converter, a badweather protection (IP23), a suspension cable, teflon tube with connection, a hose reel cart, a generator and insulation guard.

Advantages

- High top capacity for purging, smooth flow for sampling.
- Compact and easy to install; mobile.
- Resistant against corrosive fluids.
- The pumped medium only has contact with stainless steel and teflon.
- Anaerobe sampling.
- Simple cleaning procedures.



Submersible pump set, complete set



Submersible pump MP1



Frequency-converter

GROUNDWATER PUMPS

12.12.SA Submersible pump set, low cost

This low cost submersible pump set is suitable for use in monitoring wells with a diameter of minimal 40 mm. The set includes three submersible pumps "Gigant", three booster pumps, a roll of extension cable, sealed crimp splices (to make a waterproof cable extension), a roll of polyethylene sampling tube and a battery with battery charger.

Both pumps are small centrifugal pumps with small but powerful motors. This allows them to fit in narrow monitoring wells.

The Gigant pump can push water to a height of 10 meter. The Booster pumps have the same capacity and can be applied as boosters.

By fitting one or more Booster pumps directly over a Gigant pump the pressure can be raised to 20, 30 or more meter. The pumps can be used for purging a new sampling filter. Connecting the pumps to the regulator of the peristaltic pump 12 Vdc allows for setting a relaxed speed. This allows the pumps to be used also for taking samples (the regulator can

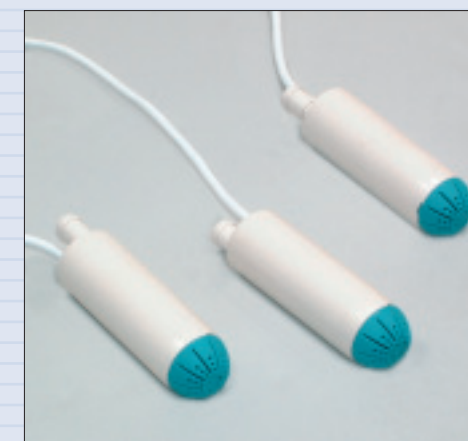
power a maximum of two pumps with a maximum sampling depth of approx. 12 meter). The low price of the pumps makes it possible to use them only once. This prevents the risk of cross-contamination. The pumps are made from non-toxic ABS plastic and are fitted with a stainless steel impeller.

12.08 Water pump with combustion engine

This self-priming (up to a depth of 6 meter) centrifugal pump is used primarily for (fast) purging or emptying of monitoring wells and bore holes. Other applications are pumping water for irrigation, drinking water for cattle, etc. The pump has a quiet, reliable starting, economical fourstroke engine running on ordinary or unleaded petrol. The pump is not sensitive to polluted water and the maintenance is minimal and easily executed.



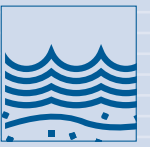
Submersible pump set



Submersible pumps "Gigant"

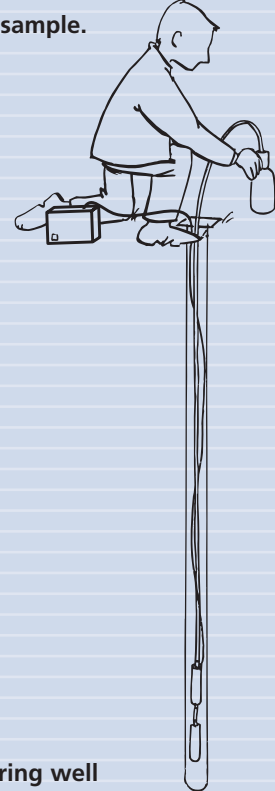


Water pump with combustion engine



P2.50

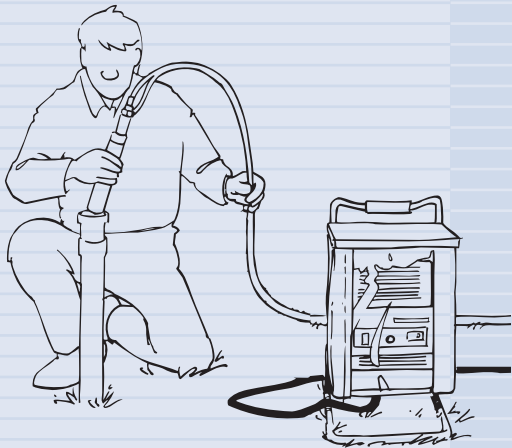
Two submersible pumps have been connected to the battery to take a sample.



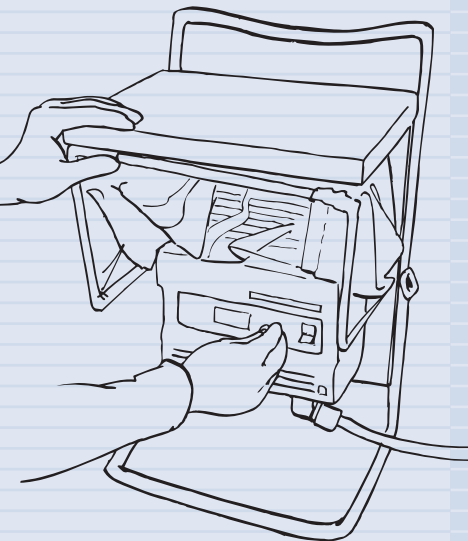
A monitoring well is purged using the water pump with combustion engine.



Lowering the submersible pump MP1 into a monitoring well.



The speed is set on the frequency-converter.





PARTS LIST

Art.no.	Description	Qty. in set	Art.no.	Description	Qty. in set
Groundwater pumps (P2.50)					
	Groundwater pumps are supplied in various designs, e.g.:		**12.27.18	MP1 to monitoring wells with a Ø larger than 75 mm Hose reel cart small, to transport tube, cable and pump. Capacity till 60 m tube. Incl. holder for submersible pump, 5 leather straps to fix tube on reel and mounting instructions	1
	- submersible pump MP1 (230 V)		**99.13	Generator, max. power 3700 W, continuous power: 3300 W, 230V 50 Hz, tank capacity 17 l, run duration 8.8 hrs. Dimensions: 580x477x508 mm. Incl. oil level guard	1
	- submersible pumps (12 V)		**99.13.03	Collector box, synthetic, to place generator when working in the field (to prevent petrol- and oil leakage). Dimensions: 80x60x12 cm	1
	- water pump with combustion engine		**99.13.01	Insulation guard to protect electrical apparatus which are connected to a generator. Obligated acc. to NEN1010 for generator 2000 VA or more. Not suitable for mains voltage with rim earthing. Incl. adapter cable with euro-plug (DIN49441/CEE7)	1
12.27	Submersible pump set, MP1 Depending on sampling depth a choice can be made out of the following sets (for 20, 40, 60, 80 and 90 m depth)		12.27.SB	Submersible pump set, for purging/sampling monitoring wells to a depth of 40 m and inside Ø from 50 mm, pressure head lift 86 m. Set with pump MP1, converter generator, insulation control, teflon tube, cables, cooling jacket, hoose reel cart + service kit	
12.27.SA	Submersible pump set, for purging/sampling monitoring wells to a depth of 20 m and inside Ø from 50 mm, pressure head lift 86 m. Set with pump MP1, converter,generator, insulation control, Teflon tube, cables, cooling jacket, hoose reel cart + service kit		**12.27.02	Submersible pump MP1, centrifugal type f. purging/ sampling monitoring wells, stainless steel 316, pressure head lift max. 86 m, adjust. cap. Till max. 1.8 m ³ /h, 220 V 1.1 kW, for connection to frequency converter, pump Ø 45 mm, 287 mm long. Teflon cable 20 m	1
			**12.27.11	Service kit for submersible pump MP1 (impellers with pump chambers), incl. assembly instructions	1
			**12.27.40	Frequency converter to control submersible pump MP1, frequency adjustment between 46-405 Hz. Connection to 230 Volt 50 Hz 2.2 kVA minimal. Maximum load 1.5 kW, IP21 protection (drip-proof), incl. cable/plug	1
			**12.27.41	Stand with bad weather protection for frequency converter. Protection IP23 (rainwater tight)	1
			**12.27.22	Suspension cable, stainless steel, for submersible pump, incl. 2 cable clamps, length 20 m	1
			**12.27.12	Flange stainless steel, for connection of suspension cable to pump	1
			**12.27.32	Tube, teflon, Ø 18x13 mm, roll of 20 m	1
			**12.27.13	Tube connection, stainless steel, for connection of tube with Ø 18x13 mm to submersible pump MP1	1
			**10.01.13	Strap for e.g. tightening filter gauze, bag of 100 pcs.	1
			**12.27.14	Cooling jacket, for adaption of submersible pump	1

PARTS LIST

Art.no.	Description	Qty. in set	Art.no.	Description	Qty. in set
**12.27.12	Flange stainless steel, for connection of suspension cable to pump	1	**12.27.41	Stand with bad weather protection for frequency converter. Protection IP23 (rainwater tight)	1
**12.27.34	Tube, teflon, Ø 18x13 mm, roll of 40 m	1	**12.27.26	Suspension cable, stainless steel, for submersible pump, incl. 2 cable clamps, length 60 m	1
**12.27.13	Tube connection, stainless steel, for connection of tube with Ø 18x13 mm to submersible pump MP1	1	**12.27.12	Flange stainless steel, for connection of suspension cable to pump	1
**10.01.13	Strap for e.g. tightening filter gauze, bag of 100 pcs.	1	**12.27.36	Tube, teflon, Ø 18x13 mm, roll of 60 m	1
**12.27.14	Cooling jacket, for adaption of submersible pump MP1 to monitoring wells with a Ø larger than 75 mm	1	**12.27.13	Tube connection, stainless steel, for connection of tube with Ø 18x13 mm to submersible pump MP1	1
**12.27.18	Hose reel cart small, to transport tube, cable and pump. Capacity till 60 m tube. Incl. holder for submersible pump, 5 l leather straps to fix tube on reel and mounting instructions.	1	**10.01.13	Strap for e.g. tightening filter gauze, bag of 100 pcs.	1
**99.13	Generator, max. power 3700 W, continuous power: 3300 W, 230V 50 Hz, tank capacity 17 l, run duration 8.8 hrs. Dimensions 580x477x508 mm. Incl. oil level guard	1	**12.27.14	Cooling jacket, for adaption of submersible pump MP1 to monitoring wells with a Ø larger than 75 mm	1
**99.13.03	Collector box, synthetic, to place generator when working in the field (to prevent petrol- and oil leakage). Dimensions: 80x60x12 cm	1	**12.27.19	Hose reel cart large, to transport tube, cable and pump. Capacity 60 - 200 m tube. Incl. holder for submersible pump, 5 leather straps to fix tube on reel and mounting instructions	1
**99.13.01	Insulation guard to protect electrical apparatus which are connected to a generator. Obligated acc. to NEN1010 for generator 2000 VA or more. Not suitable for mains voltage with rim earthing. Incl. adapter cable with euro-plug (DIN49441/CEE7)	1	**99.13	Generator, max. power 3700 W, continuous power: 3300 W, 230V 50 Hz, tank capacity 17 l, run duration 8.8 hrs. Dimensions 580x477x 508 mm. Incl. oil level guard	1
**12.27.04	Submersible pump MP1, centrifugal type f. purging/ sampling monitoring wells, stainless steel 316, pressure head lift max. 86 m, adjust. cap. Till max. 1.8 m ³ /h, 220 V 1.1 kW, for connection to frequency converter, pump Ø 45 mm, 287 mm long. Teflon cable 40 m	1	**99.13.03	Collector box, synthetic, to place generator when working in the field (to prevent petrol- and oil leakage). Dimensions: 80x60x12 cm	1
**12.27.11	Service kit for submersible pump MP1 (impellers with pump chambers), incl. assembly instructions	1	**99.13.01	Insulation guard to protect electrical apparatus which are connected to a generator. Obligated acc. to NEN1010 for generator 2000 VA or more. Not suitable for mains voltage with rim earthing. Incl. adapter cable with euro-plug (DIN49441/CEE7)	1
**12.27.40	Frequency converter to control submersible pump MP1, frequency adjustment between 46-405 Hz. Connection to 230 Volt 50 Hz 2.2 kVA minimal. Maximum load 1.5 kW, IP21 protection (drip-proof), incl. cable/plug	1	12.27.SC	Submersible pump set, for purging/sampling monitoring wells to a depth of 60 m and inside Ø from 50 mm, pressure head lift 86 m. Set with pump MP1, converter,generator, insulation control, Teflon tube, cables, cooling jacket, hoose reel cart + service kit	
**12.27.41	Stand with bad weather protection for frequency converter. Protection IP23 (rainwater tight)	1	**12.27.06	Submersible pump MP1, centrifugal type for purging/ sampling monitoring wells, stainless steel 316, pressure head lift max. 86m, adjust. cap. till max. 1.8 m ³ /h, 220V 1.1 kW, for connection to frequency converter, pump Ø 45 mm, 287 mm long. Teflon cable 60 m	1
**12.27.24	Suspension cable, stainless steel, for submersible pump, incl. 2 cable clamps, length 40 m	1	**12.27.11	Service kit for submersible pump MP1 (impellers with pump chambers), incl. assembly instructions	1
			**12.27.40	Frequency converter to control submersible pump MP1, frequency adjustment between 46-405 Hz. Connection to 230 Volt 50 Hz 2.2 kVA minimal. Maximum load	1
			**12.27.08	Submersible pump MP1, centrifugal type f. purging/ sampling monitoring wells, stainless steel 316, pressure head lift ax. 86 m, adjust. cap. Till max. 1.8 m ³ /h, 220 V 1.1 kW, for connection to frequency converter, pump Ø 45 mm,	1





PARTS LIST

Art.no.	Description	Qty. in set	Art.no.	Description	Qty. in set
**12.27.11	287 mm long. Teflon cable 80 m Service kit for submersible pump MP1 (impellers with pump chambers), incl. assembly instructions	1	**12.27.09	Submersible pump MP1, centrifugal type f. purging/ sampling monitoring wells, stainless steel 316, pressure head lift max. 86 m, adjust. cap. Till max. 1.8 m ³ /h, 220 V 1.1 kW, for connection to frequency converter, pump Ø 45 mm, 287 mm long. Teflon cable 90 m.	1
**12.27.40	Frequency converter to control submersible pump MP1, frequency adjustment between 46-405 Hz. Connection to 230 Volt 50 Hz 2.2 kVA minimal. Maximum load 1.5 kW, IP21 protection (drip-proof), incl. cable/plug	1	**12.27.11	Service kit for submersible pump MP1 (impellers with pump chambers), incl. assembly instructions	1
**12.27.41	Stand with bad weather protection for frequency converter. Protection IP23 (rainwater tight)	1	**12.27.40	Frequency converter to control submersible pump MP1, frequency adjustment between 46-405 Hz. Connection to 230 Volt 50 Hz 2.2 kVA minimal. Maximum load 1.5 kW, IP21 protection (drip-proof), incl. cable/plug	1
**12.27.28	Suspension cable, stainless steel, for submersible pump, incl. 2 cable clamps, length 80 m	1	**12.27.41	Stand with bad weather protection for frequency converter. Protection IP23 (rainwater tight)	1
**12.27.12	Flange stainless steel, for connection of suspension cable to pump	1	**12.27.29	Suspension cable, stainless steel, for submersible pump, incl. 2 cable clamps, length 90 m	1
**12.27.38	Tube, teflon, Ø 18x13 mm, roll of 80 m	1	**12.27.12	Flange stainless steel, for connection of suspension cable to pump	1
**12.27.13	Tube connection, stainless steel, for connection of tube with Ø 18x13 mm to submersible pump MP1	1	**12.27.39	Tube, teflon, Ø 18x13 mm, roll of 90 m	1
**10.01.13	Strap for e.g. tightening filter gauze, bag of 100 pcs.	1	**12.27.13	Tube connection, stainless steel, for connection of tube with Ø 18x13 mm to submersible pump MP1	1
**12.27.14	Cooling jacket, for adaption of submersible pump MP1 to monitoring wells with a Ø larger than 75 mm	1	**10.01.13	Strap for e.g. tightening filter gauze, bag of 100 pcs.	1
**12.27.19	Hose reel cart large, to transport tube, cable and pump. Capacity 60 - 200 m tube. Incl. holder for submersible pump, 5 leather straps to fix tube on reel and mounting instructions	1	**12.27.14	ooling jacket, for adaption of submersible pump MP1 to monitoring wells with a Ø larger than 75 mm	1
**99.13	Generator, max. power 3700 W, continuous power: 3300 W, 230V 50 Hz, tank capacity 17 l, run duration 8.8 hrs. Dimensions 580x477x508 mm. Incl. oil level guard	1	**12.27.19	Hose reel cart large, to transport tube, cable and pump. Capacity 60 - 200 m tube. Incl. holder for submersible pump, 5 leather straps to fix tube on reel and mounting instructions	1
**99.13.03	Collector box, synthetic, to place generator when working in the field (to prevent petrol- and oil leakage). Dimensions: 80x60x12 cm	1	**99.13	Generator, max. power 3700 W, continuous power: 3300 W, 230V 50 Hz, tank capacity 17 l, run duration 8.8 hrs. Dimensions 580x477x508 mm. Incl. oil level guard	1
**99.13.01	Insulation guard to protect electrical apparatus which are connected to a generator. Obligated acc. to NEN1010 for generator 2000 VA or more. Not suitable for mains voltage with rim earthing. Incl. adapter cable with euro-plug (DIN49441/CEE7)	1	**99.13.03	Collector box, synthetic, to place generator when working in the field (to prevent petrol- and oil leakage). Dimensions: 80x60x12 cm	1
12.27.SE	Submersible pump set, for purging/sampling monitoring wells to a depth of 90 m and inside Ø from 50 mm, pressure head lift 86 m. Set with pump MP1, converter, generator, insulation control, Teflon tube,		**99.13.01	Insulation guard to protect electrical apparatus which are connected to a generator. Obligated acc. to NEN1010 for generator 2000 VA or more. Not suitable for mains voltage	1

PARTS LIST

Art.no.	Description	Qty. in set	Art.no.	Description	Qty. in set
	with rim earthing. Incl. adapter cable with euro-plug (DIN49441/CEE7)		12.27.24	2 cable clamps, length 20 m Suspension cable, stainless steel, for submersible pump, incl. 2 cable clamps, length 40 m	
	To compose customer specific submersible pumps set MP1, a choice can be made out of the following components:		12.27.26	Suspension cable, stainless steel, for submersible pump, incl. 2 cable clamps, length 80 m	
	Pumps with electricity cable (different lengths):		12.27.29	Suspension cable, stainless steel, for submersible pump, incl. 2 cable clamps, length 90 m	
12.27.02	Submersible pump MP1, centrifugal type f. purging/ sampling monitoring wells, stainless steel 316, pressure head lift max. 86 m, adjust. cap. Till max. 1.8 m ³ /h, 220 V 1.1 kW, for connection to frequency converter, pump Ø 45 mm, 287 mm long. Teflon cable 20 m			Teflon tube with accessories:	
12.27.04	Submersible pump MP1, centrifugal type f. purging/ sampling monitoring wells, stainless steel 316, pressure head lift max. 86 m, adjust. cap. Till max. 1.8 m ³ /h, 220 V 1.1 kW, for connection to frequency converter, pump Ø 45 mm, 287 mm long. Teflon cable 40 m		12.27.13	Tube connection, stainless steel, for connection of tube with Ø 18x13 mm to submersible pump MP1	
12.27.06	Submersible pump MP1, centrifugal type for purging/ sampling monitoring wells, stainless steel 316, pressure head lift max. 86m, adjust. cap. till max. 1.8 m ³ /h, 220V 1.1 kW, for connection to frequency converter, pump Ø 45 mm, 287 mm long. Teflon cable 60 m		12.27.32	Tube, teflon, Ø 18x13 mm, roll of 20 m	
12.27.08	Submersible pump MP1, centrifugal type f. purging/ sampling monitoring wells, stainless steel 316, pressure head lift max. 86 m, adjust. cap. Till max. 1.8 m ³ /h, 220 V 1.1 kW, for connection to frequency converter, pump Ø 45 mm, 287 mm long. Teflon cable 90 m		12.27.34	Tube, teflon, Ø 18x13 mm, roll of 40 m	
	Installation cables with accessories (different lengths):		12.27.36	Tube, teflon, Ø 18x13 mm, roll of 60 m	
12.27.12	Flange stainless steel, for connection of suspension cable to pump		12.27.38	Tube, teflon, Ø 18x13 mm, roll of 80 m	
12.27.22	Suspension cable, stainless steel, for submersible pump, incl.		12.27.39	Tube, teflon, Ø 18x13 mm, roll of 90 m	
				PE tube with accessories:	
			12.27.16	Tube connection, stainless steel, for connection of tube with Ø 10x12 mm to submersible pump MP1	
			12.20.13	Polyethylene tube, Ø 10x12 mm, roll of 75 m, with ETU-hallmark	
			12.27.17	Tube connection, stainless steel, for connection of tube with Ø 12x16 mm to submersible pump MP1	
			12.20.16	Polyethylene tube, Ø 12x16 mm, roll of 50 m, with ETU-hallmark	
			12.20.17	Polyethylene tube, Ø 12x16 mm, roll of 100 m, with ETU-hallmark	
			12.27.15	Tube connection, stainless steel, for connection of tube with Ø 16x20 mm to submersible pump MP1	
			12.20.20	Polyethylene tube, Ø 16x20 mm, roll of 50 m, with ETU-hallmark	
				Other requirements:	
			12.27.40	Frequency converter to control submersible pump MP1, frequency adjustment between 46-405 Hz. Connection to 230 Volt 50 Hz 2.2 kVA minimal. Maximum load 1.5 kW, IP21 protection (drip-proof), incl. cable/plug	
			12.27.41	Stand with bad weather protection for frequency	





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Art.no.	Description	Qty. in set	Art.no.	Description	Qty. in set
	converter. Protection IP23 (rainwater tight)		**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.	1
12.27.14	Cooling jacket, for adaption of submersible pump MP1 to monitoring wells with a Ø larger than 75 mm		**12.12.11	Sealed crimp splices, polyamid, set of 10pcs for making water-proof cable extension (1.5-2.5 mm ²),	1
12.27.18	Hose reel cart small, to transport tube, cable and pump. Capacity till 60 m tube. Incl. holder for submersible pump, 5 leather straps to fix tube on reel and mounting instructions		**12.12.12	Cable for extension of dip pump cables, 2x1.5 mm ² , pvc coated, roll of 100 m	1
12.27.19	Hose reel cart large, to transport tube, cable and pump. motor- and suspension cable with straps and completely mounting on hose reel cart. No guarantee on cleanness of hose/cable bundle outside and pump		**12.20.13	Polyethylene tube, Ø 10x12 mm, roll of 75 m, with ETU-hallmark	1
	Spare parts + repairs:		**12.25.02	Lead-acid battery, maintenance free	1
12.27.11	Service kit for submersible pump MP1 (impellers with pump chambers), incl. assembly instructions		**12.25.22.01	Battery charger 230V - 50Hz. For 12V lead batteries, max. charging current 1A. Wiplane plugs for connection on battery 12.25.02. For charging peristaltic pump 12.25 (from serial no. 98000300, Jan. '98) in combination with cable 12.25.22.02	1
12.27.43	Submersible pump MP1, centrifugal type f. purging/ sampling monitoring wells, stainless steel 316, pressure head lift max. 86 m, adjust. cap. Till max. 1.8 m ³ /h, 220 V 1.1 kW, for connection to frequency converter, pump Ø 45 mm, 287 mm long. Without cable			Individual pumps:	
12.27.49	Cable fitting parts, set for connection of cable to submersible pump MP1		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.	
12.27.99	Loan frequency converter to control submersible pump MP1, frequency adjustment between 46-405 Hz		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.SA	Submersible pump set, low costs. Complete set for monitoring wells Ø 40 mm, consisting of submersible pump "Gigant" (3x), booster pump (3x), extension cable, sample tube and battery with battery-charger. For sampling till a depth of 14.5 m.			Accessories to extend the electricity cable of the pumps:	
	We supply a complete submersible pump set (standard set):		12.12.11	Sealed crimp splices, polyamid, set of 10pcs for making water-proof cable extension (1.5-2.5 mm ²),	
**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.	1	12.12.12	Cable for extension of dip pump cables, 2x1.5 mm ² , pvc coated, roll of 100 m Sampling tube for the pumps:	
			12.20.13	Polyethylene tube, Ø 10x12 mm, roll of 75 m, with ETU-hallmark	
			12.20.16	Polyethylene tube, Ø 12x16 mm, roll of 50 m, with ETU-hallmark	
				Accessories for the power supply (2 options):	
			12.25	Peristaltic pump 12 Vdc, specially suited for use in the field, micro-processor controlled, with 3 memory	

PARTS LIST

Art.no.	Description	Qty. in set	Art.no.	Description	Qty. in set
	functions for fixed rates of revolution. CE-approved. Strong IP64 housing. Membrane keypads control. Incl. built-in battery 12 V. Excl. charger				
12.25.02	Lead-acid battery, maintenance free, plugs for connection on battery 12.25.02. For charging peristaltic pump 12.25 (from serial no. 98000300, Jan. '98) in combination with cable 12.25.22.02				
12.08	Water pump with combustion engine, type WX-10, 1.64 kW, suction head lift max. 7 m, total head lift 35 m, incl. quick couplings				
	Accessories for sampling:				
12.08.01	Suction/pressure hose, Ø 32x25 mm, length 12.5 m, incl. footvalve and quick couplings				
99.08.07	Sample bottle, brown glass, wide neck, screw cap with teflon insertion, 1000 cc, set of 6 pcs.				

