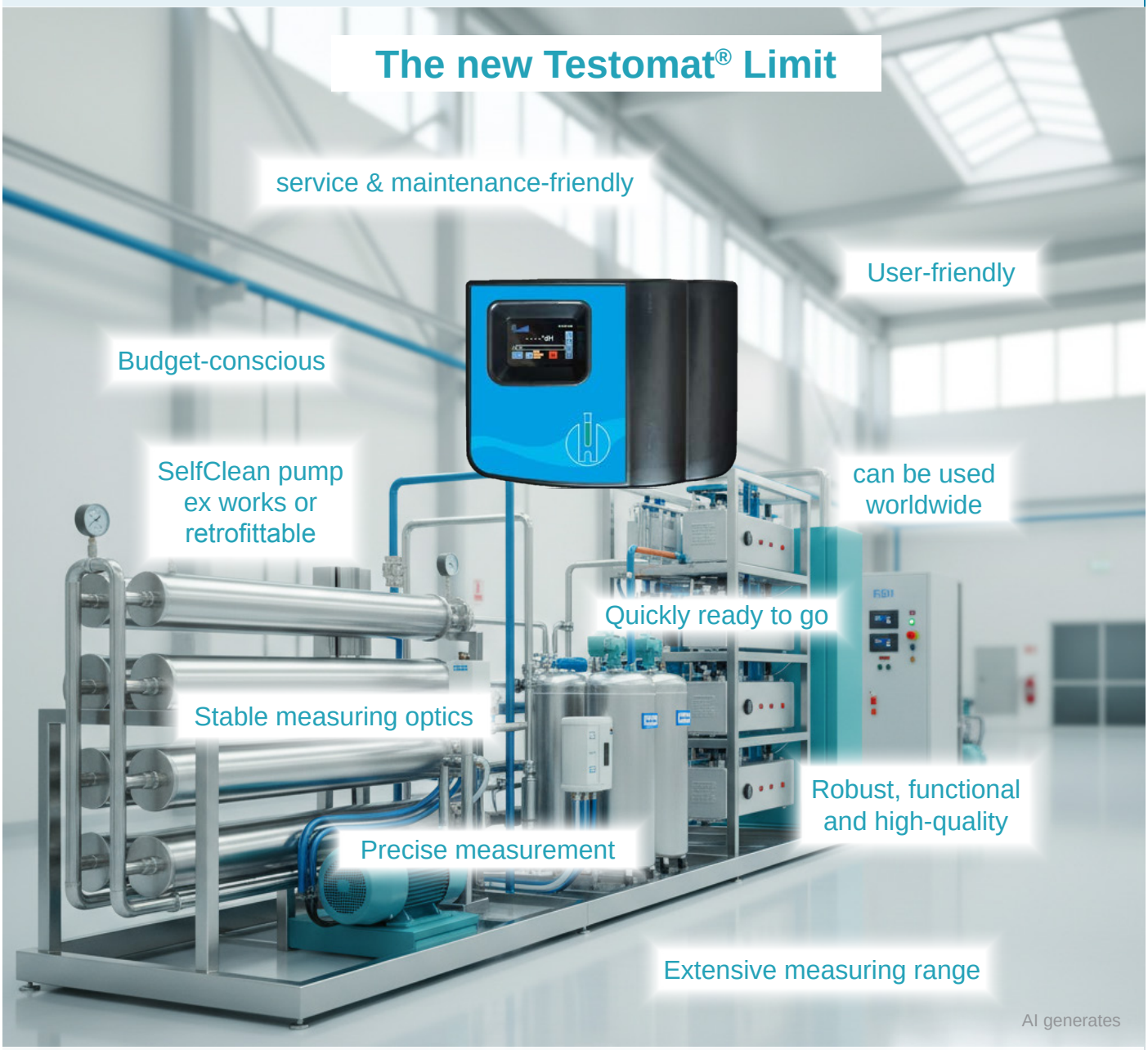
Gebrüder Heyl
Analysentechnik
GmbH & Co. KG

PRODUCT CATALOG 2026



Analysis Instruments, Indicators, Analysis Kits and Test Kits

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To make it easy for you to find our products quickly, we‘ve marked off our product sectors with different colors. This shows you at a glance what product area you‘re in.

Selection help

Since our selection of Testomat devices has gotten quite large, we offer your our selection help table on page 50 as a special overview which will tell you what device is especially appropriate for what application

Gebrüder Heyl process photometers and titration instruments have been putting their reliability and practicality to the test since 1958.

With improved accuracy and resolution, in combination with analysis functions that have undergone consistent further development, the current generation of instruments helps water treatment system operators reduce costs and guarantee optimal water quality.

Improve your water treatment process with online analysis instruments

Plant operators and plant technicians can increase the efficiency of the water softening process with constant water quality monitoring.

This enables operators to recognize whether the regeneration process is running correctly, the resin quality is still sufficient, and sufficient regeneration conditioning agents are present in the right consistency.

The use of an online analysis device such as **Testomat 2000®**, **Testomat® EVO TH** or **Testomat® 808** leads to less waste water, low conditioning agents use, and cost savings thanks to low energy requirements.

Which companies can benefit from online analytical devices?

Every company that has to monitor its process water cycle. We offer analytical devices for 14 different parameters including water and carbonate hardness, phosphate, sulphite, chromium VI, chlorine and chlorine dioxide.

Each of these parameters can be monitored continuously with one device. The data is then stored to provide documented evidence of the monitoring.

- bakeries
- meat processing plants
- steam generation sterilization
- laundry companies
- food and beverage industry (breweries, dairies)
- pulp and paper industry
- chemical industry
- pharmaceutical industry
- construction materials industry

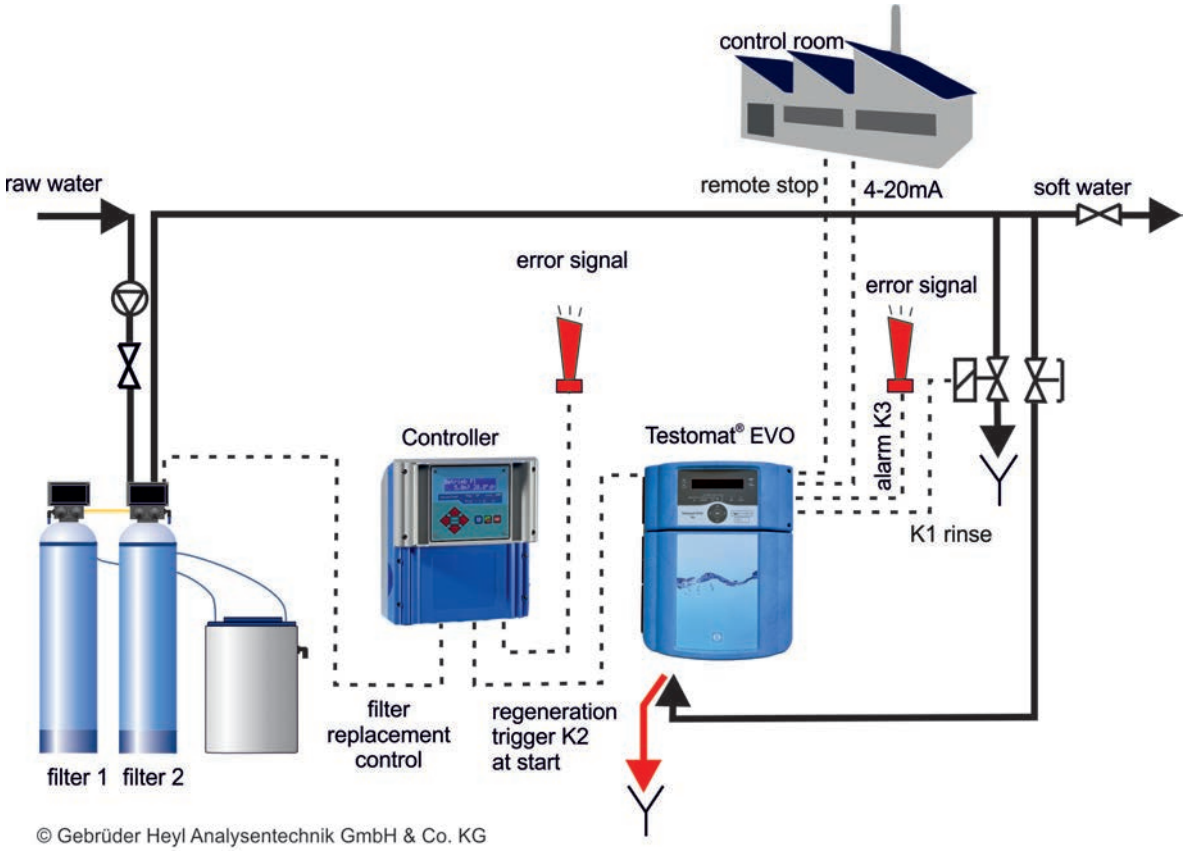
For plant operators who want to comply with increasingly stringent process and effluent limit values, continuous online monitoring of their water treatment process is the safest solution.

Technical information:

Energy cost reduction through online water quality monitoring

This technical information concerns the effect of calcium and other deposits in steam boiler plants and cooling towers. Problems are that arise from deposits and possible solutions are highlighted.
The complete technical information can be found under Applications on our homepage, www.heylanalysis.de.

Online monitoring of water quality with Gebrüder Heyl instruments



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Conceptual solution for treatment plant

When is it necessary to measure phosphate levels?

The measurement of the phosphate content in the wastewater of industrial processes becomes more and more important, because the phosphate values must be lower than the legally permitted values if the wastewater is discharged into the sewer system.

In accordance with § 11 of the German drinking water ordinance of 2001, the limits are 2,2 mg / l phosphorus (6.75 mg / l PO_4) for phosphates added to the drinking water.

Where do phosphates come from?

Phosphates are mainly found in fertilizers and detergents. They are released into the groundwater by agricultural fertilizers in the soil or by domestic wastewater with phosphate detergents. In industrial plants, orthophosphates (PO_4) are directly fed into the processing water to prevent corrosion in their piping systems.

Industrial and agricultural discharges in rivers and lakes lead to a nutrient surplus in the waters. This results in undesirable algae growth and a falling oxygen content in the water. The ecological balance suffers sustained damage.

Through the water cycle, high amounts of phosphates and nitrates also enter the ground water.

In order to prevent this environmental hazard, policies for the concentration of phosphates and nitrates in water have been established.

Phosphates in Sewage Treatment Plants

In waste water treatment plants, phosphate concentration must be measured in order to ensure effective wastewater treatment. Phosphates are removed either by chemical precipitation or biological elimination from wastewater.

By feeding in dissolved iron salts (ferrous chloride), most of the phosphorus from wastewater is precipitated and deposited along with the contaminants from the primary settlement tank to the bottom of the basin.

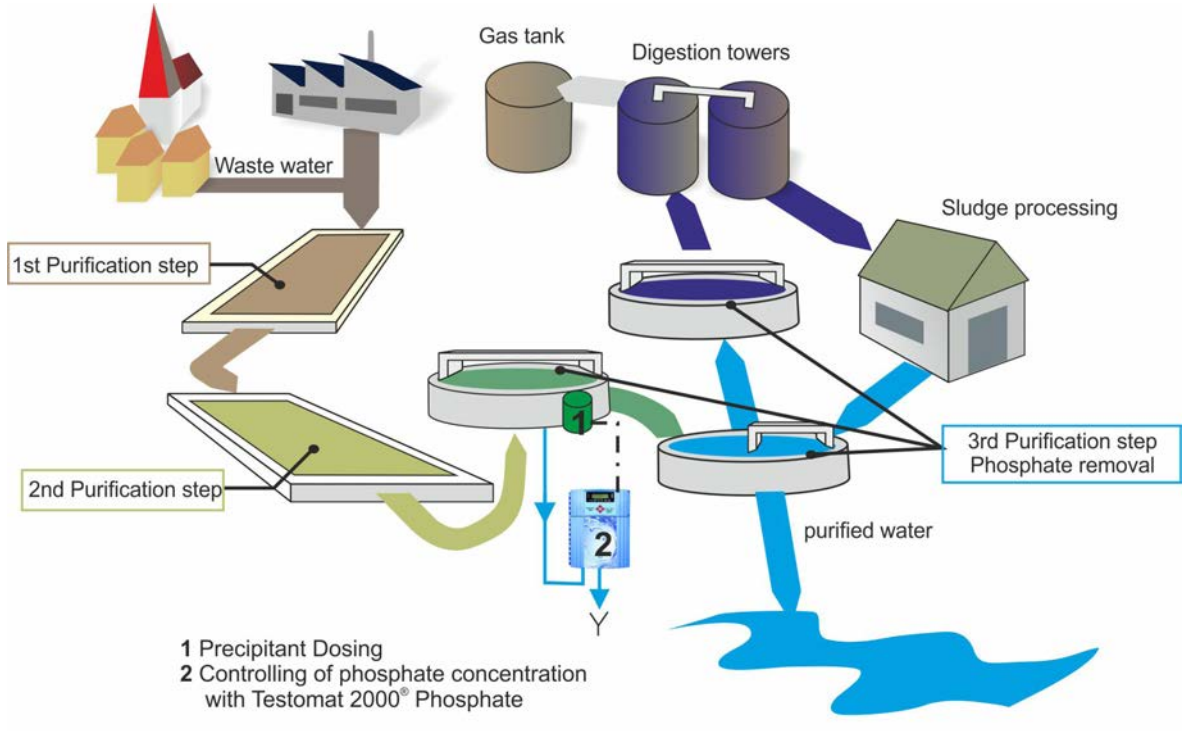
Increasingly important in wastewater treatment plants is the phosphate recovery from wastewater and sludge, since phosphorus is an important and finite raw material.

All these processes require an inspection of the phosphate content, which must be either conducted manually or continuously.

The **Testomat 2000® PO4** was developed for the online analysis of orthophosphate and operates within a measuring range of 0 - 10 mg/l PO_4.

Find the complete technical information on phosphate measurement with the **Testomat 2000® PO4** in the download section of our website www.heylanalysis.de.

Phosphate measurement at the water treatment plant with the Gebr. Heyl phosphate measuring instrument



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During galvanic processes such as copper plating, chromium plating or nickel plating or during surface treatment before painting (phosphating), large amounts of rinsing water are required after each process step.

Since the disposal of these process waters is very expensive, it makes sense for a company to process and reuse the process waters. The amount of waste water and fresh water can thus be limited.

Heavy metals and toxic constituents are removed during the on-site treatment.

In many cases, a chemical-physical process is used, e.g. ion exchangers. Regeneration of ion exchangers produces solutions with a high concentration of heavy metal salts, from which the metals are either deposited electrolytically or, in some cases, recycled directly to the galvanising baths.

The process water is neutralised with the help of acid or lye. Auxiliary substances and additional reaction steps eliminate any existing critical constituents such as cyanides or chromic acid.

Afterwards, sludge is produced with a flocculant, which removes oils, fats and heavy metals from the water.

The resulting clear phase can then be discharged into the sewer in consideration of the legal limit values.

Limit values for chromium

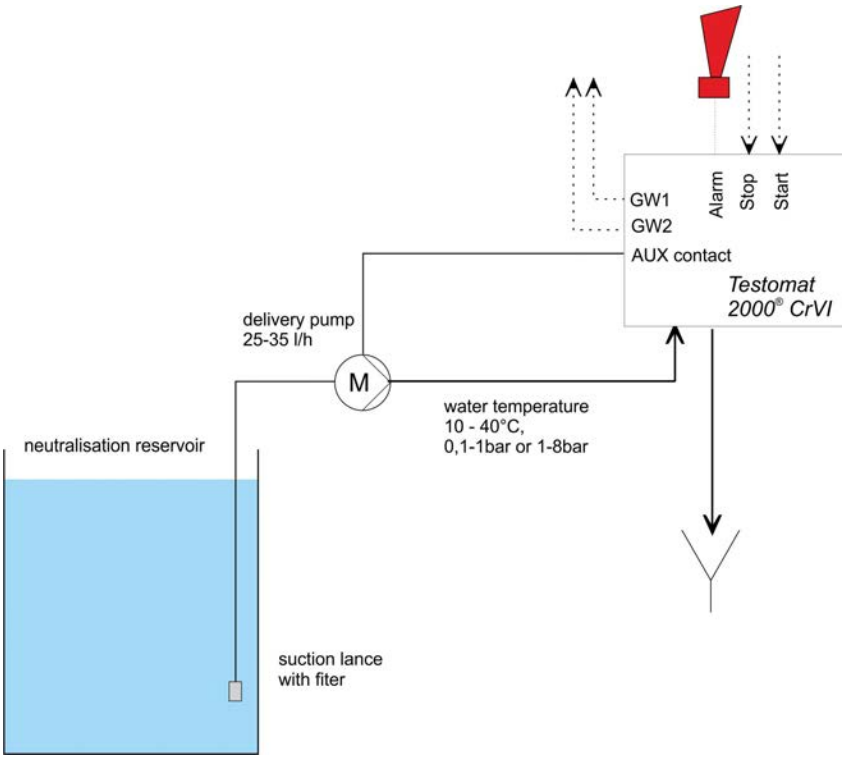
The Drinking Water Ordinance (TrinkwV 2001/amendment November 2011) prescribes a limit value of 0.05 mg/l chromium in drinking water.

The Waste Water Ordinance (AbwV) sets a limit of 0.05 mg/l chromium in the waste water of chemical industrial companies and a limit value of 0.25 g/t chromium for the iron, steel and malleable-iron foundry.

With a measuring range of 0.0-2.0 mg/l (chromate) and 0-1.0 mg/l (chromium VI), the **Testomat 2000® CrVI** is ideally suited for the required monitoring of these limit values.

Since the monitoring of limit values by the Testomat device takes place automatically online, the level of supervision required by personnel is low and the legal requirements are reliably and demonstrably adhered to and documented through data storage via SD card data loggers.

The analytical result is displayed after a reaction time of approx. 2 minutes. The **Testomat 2000® CrVI 0-5 ppm** can also be used for a broader monitoring range. The measuring range is 0.0-5.0 ppm (chromium VI) and 0.0-11.15 ppm (chromate).



Mobile monitoring system for cooling towers with integrated Testomat 2000® Polymer for monitoring the conditioning agent.

Control and monitoring of recooling plants

Today, cooling water controlling and monitoring are indispensable components of advanced energetic and hygiene-compliant operation of cooling towers according to VDI 2047-2 and VDI 3803-3.4.

A wide variety of recooling plants exists worldwide:

- Closed cooling systems
- Semi-open cooling systems
- Continuous flow cooling systems

More than 100,000 recooling plants of the above categories are installd in Germany.

What is the responsibility of the plant operator according to the new VDI 2047-2 directive?

Recooling plants and cooling towers are required in the industry and with large buildings to allow for the quick dissipation of excess heat in production processes or buildings.

Although measures have been employed over the past few years to operate these systems more economically and more safely in terms of hygiene, malfunctions and downtime still often occur due to deposits, corrosion or even legionella. Because of the design, they consequently spread quickly.

Operators of evaporative cooling systems must therefore still act promptly to avoid mineral-based, corrosive and biological accumulations (such as legionella and pseudomonads).

The legislator has therefore issued a new hygiene directive, VDI 2047 Sheet 2 “Recooling plants - Ensuring the hygiene-compliant operation of evaporative cooling plants”. This directive is also referred to as the VDI cooling tower rule.

The duties of the operating company for the prevention of legionella are specifically regulated by this directive.
All plant operators are advised familiarise themselves with the new VDI 2047-2 directive and take the required measures – disregarding the operator‘s duties may be punishable by law.

To be able to continually ensure the economic, troublefree and – according to the new VDI 2047-2 directive – hygiene-compliant operation of a cooling tower, system conditioning and continuous monitoring of the water are absolutely essential.

What are the main focuses of monitoring?

Part of the cooling water regularly evaporates in open, semi-open and also closed cooling systems. As a result, the salt concentration in the circulating water rises constantly.

However, the increased salt and mineral content in the circulating water causes limescale buildup, corrosion and mineral deposits in the cooling tower and circulating water system. Drip collectors, trickling filters and distribution channels as well as the heat exchangers in the system are especially affected by this.

This is compounded by biological problems, such as from the formation of algae and biofilms introduced from the supply water and the ambient air.

VDI 3803 stipulates in section 3.4 for evaporative recooling plants that the water condition of the circulating water must be adapted to the building materials of the cooling circuit.

This means that the cooling water should be conditioned without fail to prevent corrosion, inorganic deposits (calcium and magnesium carbonates) as well as organic deposits (algae and bacteria strains) – also calld biofilms – from causing major damage in the cooling circuits.

Biofilms, however, can not only cause blockages of fittings and pumps but also constitute the germ cell for legionella or pseudomonas bacteria, which

are very dangerous for humans.

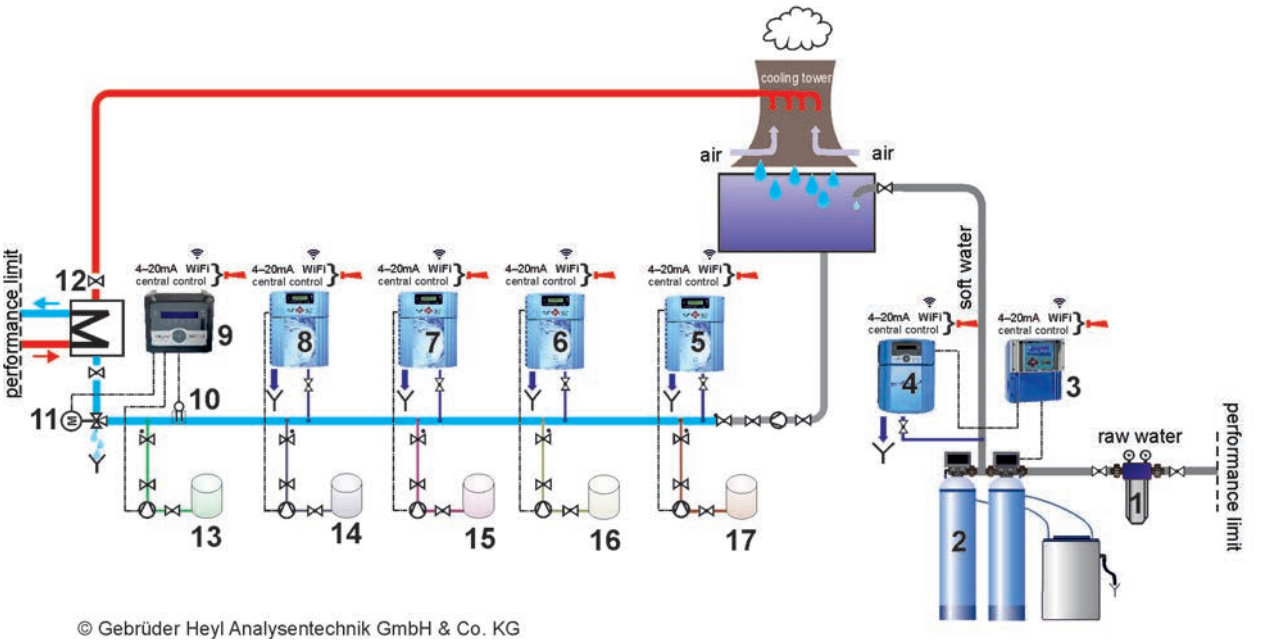
Biofilms are also energetically equivalent to mineral deposits such as calcium or silicate deposits. A layer of only 1 mm thickness can cause a loss of efficiency up to 30% with both types of deposits. This, in turn, results in additional energy costs of up to 12%.

Conclusion:
A controlled cooling tower system monitored online works in a hygienically compliant manner (according to VDI 2047-2), economically and without malfunctions (according to VDI 3803).

A cooling circuit concept, featuring Heyl analyzers and control devices

Many parameters can be measured in the cooling circuit. Our example shows some of them that you can measure with our measuring instruments. It depends on the application and the parameters to be monitored.

1 pre-filter
2 softening system
3 control
4 hardness monitoring Testomat 2000®/ECO/EVO
5 chlorine monitoring Testomat 2000® CLT/F
6 bromine monitoring Testomat 2000® Br
7 phosphate monitoring Testomat 2000® PO4
8 polymer monitoring Testomat 2000® Polymer
9 control of biocide dosing
10 conductivity probe
11 motor valve
12 plate heat exchanger
13 biocide
14 polymer
15 phosphate
16 bromine
17 chlorine



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The sterilisation of surgical instruments now plays a central role when it comes to quality assurance in hospitals.

The treatment process is subject to the requirements of the standard DIN EN 285 for steam sterilisation, among others. The steam or water used must not exceed the specified limit values, otherwise deposits and corrosion can occur on the metal surfaces of the instruments.

Demineralised water is therefore generally used for the sterilisation process. This process water (demineralised water) is produced in a water treatment system in the hospital.

DIN EN 285 stipulates the following limit values for contamination in the condensate of a steam supply for sterilisers:

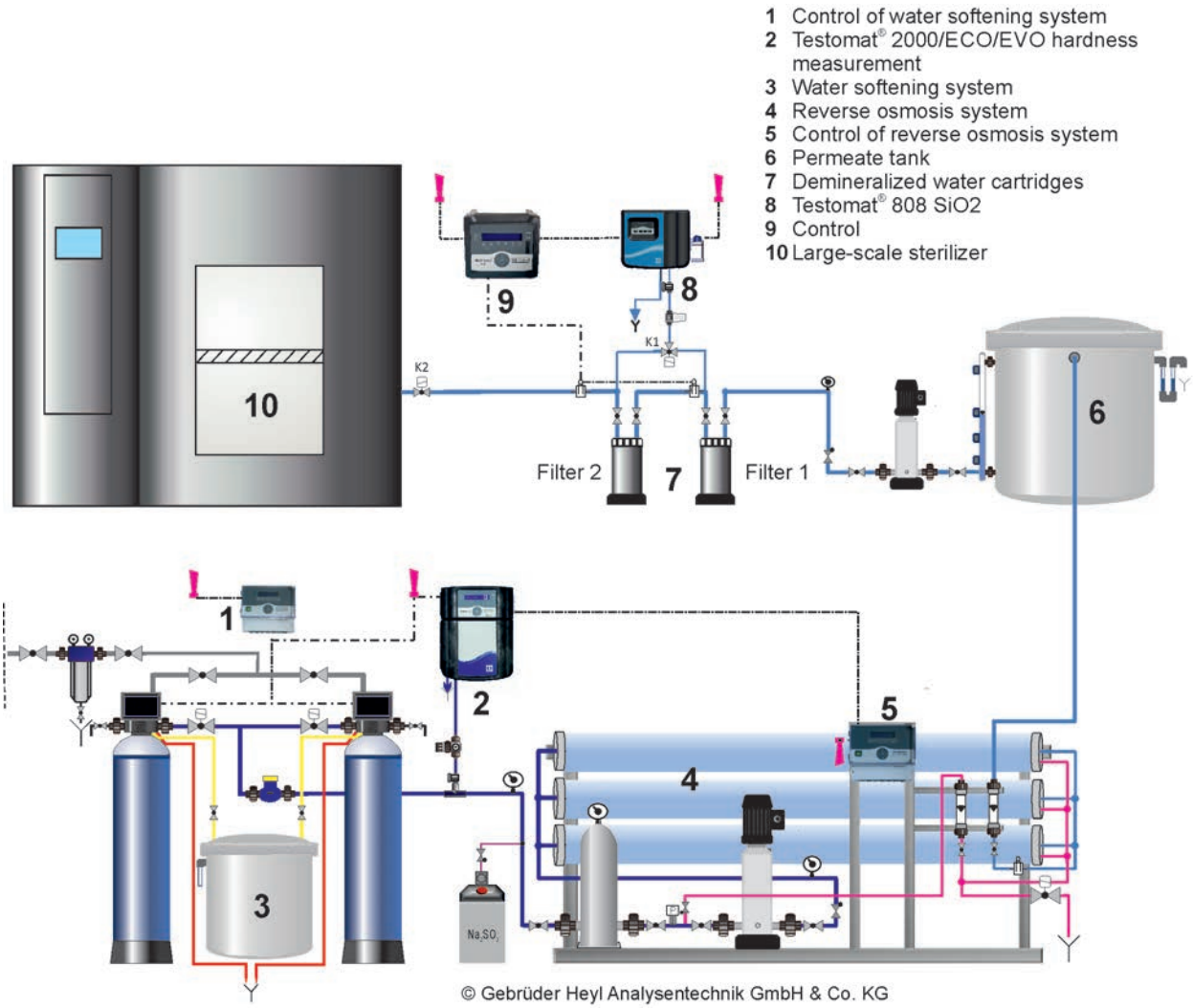
Silicate (SiO_2):	≤ 0.1 mg/l
Iron	≤ 0,1 mg/l
Cadmium	≤ 0,005 mg/l
Lead	≤ 0,05 mg/l
Heavy metal residues except iron, cadmium, lead	≤ 0,1 mg/l
Chloride:	≤ 0,1 mg/l
Phosphate:	≤ 0,1 mg/l
Conductivity:	< 3 µS/cm
pH-value:	5 – 7
Total hardness:	< 0,02 mmol/l

To meet the need of hospitals for a simple, reliable silicate measuring device, Gebr. Heyl Analysentechnik has developed the **Testomat® 808 SiO2**.

This limit value measuring device can determine silicates in the measurement range from 0.3 to 1.2 ppm and thus corresponds to the specifications of the DIN standard EN 285 for a silicate monitoring device.

Find the complete technical information on **water treatment in hospitals** in the download section of our website www.heylanalysis.de.

Water treatment for the central sterilization with Gebr. Heyl measuring and control devices



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The effect of a too low acid capacity on the water treatment facility and water quality is often underestimated.

Low acid capacity makes it difficult for the pH value in the swimming pool water to stabilize. The pH value in turn effects the filtration effect and therefore the disinfecting potential.

Acid capacity also strongly influences the occurrence of corrosion in parts of the facility that are in contact with water. The water is more aggressive the lower the acid capacity is.

This leads to corrosion on metal components such as pump drives and fiber backstops, untreated concrete water tanks and on gaps between tiles.

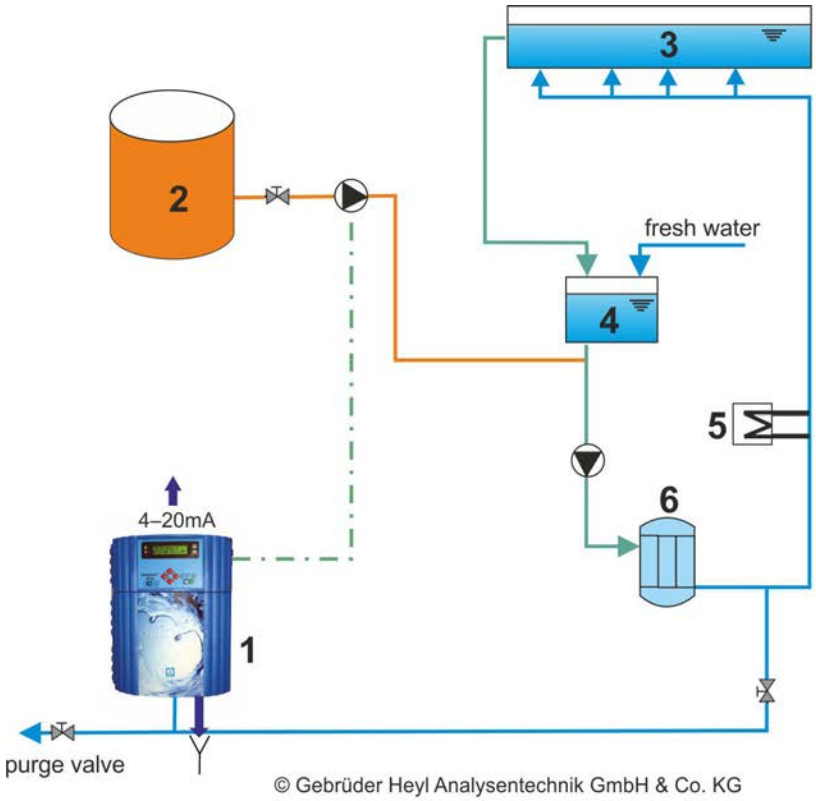
DIN 19643 recommends a weekly inspection of acid capacity in order to be able to permanently control the water quality and the state of the surfaces that are in contact with water.

It also recommends a maximum lower limit value of 0.3 mmol for the acid capacity in Jacuzzis and 0.7 mmol in swimmer‘s pools.

Through online analysis with the **Testomat ECO® C** the acid capacity can be stabilized automatically

Regular inspection also helps to reduce consumables such as disinfectants and stabilizers and thus helps to save costs.

Monitoring carbonate hardness in a swimming pool‘s water cycle with Gebr. Heyl measuring devices



1 Monitoring carbonate hardness Testomat ECO® C
2 Hardness increase sodium bicarbonate
3 Swimmer's pool
4 Gushing water container
5 Heat exchangers
6 Filters

Groundwater is the most important form of water used for drinking, irrigation and industrial purposes.

As groundwater often seeps through ferrous soils and rocks, iron is dissolved in the water.

As a result, the iron concentration is often above the maximum permitted level (0.2 mg/l).

Groundwater contains:

- metallic iron (Fe),
- iron(II) ions (Fe^{2+}) and
- iron(III) oxide-hydroxide (Fe^{3+}).

Iron II is generally soluble in an anoxic (oxygen-free) environment and is colourless. If groundwater is pumped to the surface, iron II forms iron III with oxygen, which is insoluble and has a rusty colour.

Areas of application

Deferrisation systems are generally used for well water, as it often has a high iron and manganese content.

Both substances lead to deposits in pipework and industrial systems, which can significantly impair the water quality and service life of the systems.

In addition, larger amounts of iron in the water cause an unpleasant odour and taste, which is undesirable in food production.

Some bacteria also need iron in order to grow. They then form a rusty, gelatinous sludge with the iron, which can block water pipes.

The presence of iron in process water can also lead to contamination of equipment, sanitary facilities and laundries.

Advantages of deferrisation

Using a deferrisation system and monitoring the iron content in the water helps to extend the service life of industrial plant and machinery and reduce maintenance costs.

Monitoring of the iron content of drinking water is mandatory (see Legal limits for iron).

Legal limits for iron

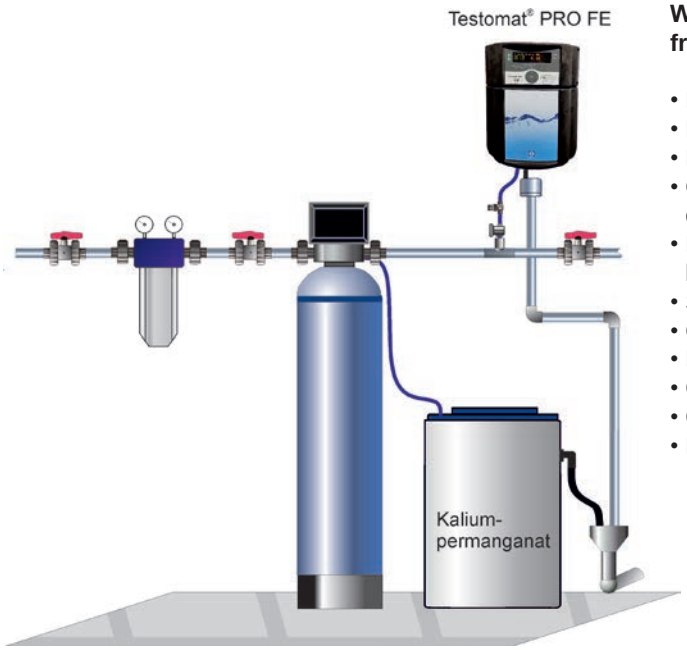
In accordance with legal regulations, drinking water may contain only very small quantities of iron, if any at all. Limit values for drinking water (WHO guidelines):

- Iron 0,2 mg/l

For drinking water in Germany, the legal requirements of the German Drinking Water Ordinance (DIN 2000) must be met. These correspond to the limits specified by the WHO.

In addition to drinking water, process water is also usually treated before use so that it does not have high levels of iron.
The limit values for boilers are between 0.02 and 0.03 mg/l.

Testomat® PRO Fe monitors the deferrisation system



Which industrial sectors benefit from deferrisation systems?

- Laundries
- Mineral water industry
- Breweries
- Generation of steam using the electrode evaporation principle
- Hot water generation for bathrooms and hotels
- Swimming pool water
- Car washes
- Laser cutting machines
- Catering dishwashers
- Catering coffee machines
- Bottle washers

Around 96% of all global water is the salt water in the oceans. In an age of increasing scarcity of fresh water, utilisation of seawater is becoming ever more important.

With the use of suitable treatment methods such as desalination technologies, the water can be used as drinking water and process water, e.g. in the food or manufacturing industries, and in steam generation.

Desalination of seawater by reverse osmosis (RO) through membrane filtration is generally associated with a number of familiar problems.

One of these problems is scale formation, which is caused by the alkalinity (calcium hardness) of the seawater. The deposits mostly consist of insoluble calcium salts such as calcium sulphate ($CaSO_4$) and calcium carbonate ($CaCO_3$).

These can
- reduce the flow rate of the feed water through pipes,
- reduce the heat transfer efficiency of heat exchangers and
- reduce the productivity of membranes and thermal processes.

Currently, the three most important commercially available desalination technologies for large-scale applications are multi-stage flash distillation (MSF), multiple-effect distillation (MED) and reverse osmosis (RO).

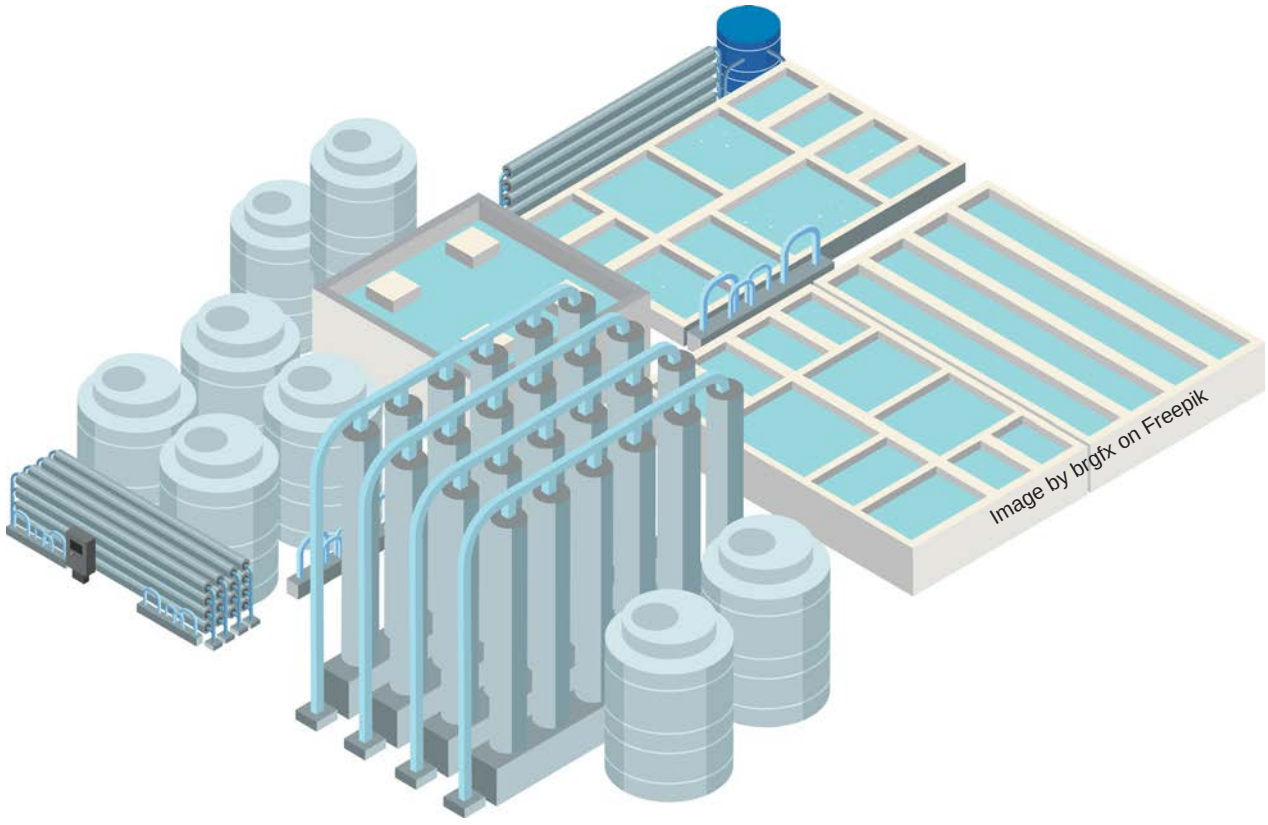
However, these desalination technologies generally only offer a water recovery rate of 40-55%, mainly due to the problems with scale formation mentioned above.

In order to make this process as efficient as possible, precise monitoring and reduction of the calcium hardness (alkalinity) is crucial. The **Testomat® Pro Ca self clean** is the ideal monitoring device for this purpose.

Calcium hardness of seawater
The overall alkalinity of seawater varies between 100 and 130 mg/l of $CaCO_3$, with an average of 116 mg/l.

Calcium hardness as $CaCO_3$ (mg/l)
- Soft: 0-20
- Moderately soft: 20-40
- Moderately hard: 40-80
- Hard: 80-120
- Very hard: >120

Diagram of a seawater desalination plant



11

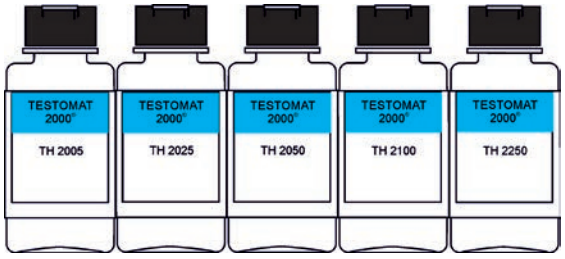
The new Testomat® Limit

Testomat® Limit is a new generation limit value measuring device.

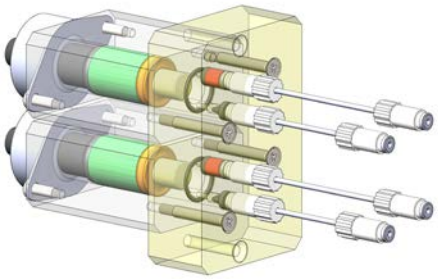
The device was originally designed as an improvement on the Testomat® 808 for hardness measurement.

However, it has become a completely new device with innovative technologies and advanced measurement technology that has far surpassed its predecessor.

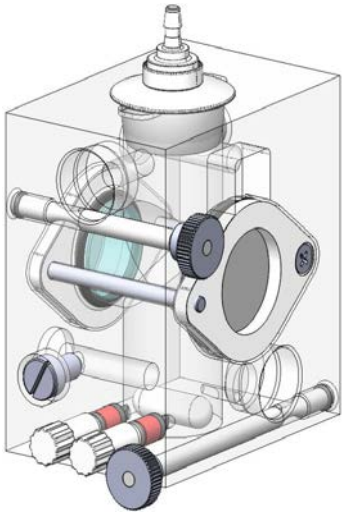
- 24V device
- New TFT panel (touchscreen) with USB interface for updating the panel firmware
- Built-in loudspeaker for acknowledging touchscreen inputs
- RS232 interface
- External start/stop
- 4-20mA
- Cleaning function
- Easy to service thanks to quick coupling system
- Use of all hardness indicators from the proven Testomat 2000® series
- Limit values for residual hardness from 0.05 - 25.0°dH can be determined by selecting indicators
- SD card for measurement data logging and for updating the device firmware
- Serial RS232 interface for transferring measurement data and messages/alarms
- Analysis triggering:
  - Automatic interval operation (Interval pause adjustable from 0 - 60 minutes)
  - External control
  - Manual start



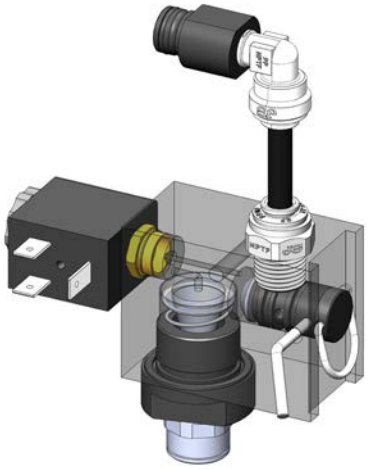
Uses the hardness indicators from the proven Testomat 2000® series



Newly developed precision pump



Newly developed measuring chamber with mirror technology



Newly developed inlet system with integrated pressure regulator and filter

Product	Testomat® Limit TH	
Description	limit value monitoring instrument for water hardness	
Parameters	water hardness	
Monitoring range	0,05 to 25,0°dH	
Indicators Limit values on page 51	TH 2005, TH 2025, TH 2050, TH 2100, TH 2250,	
Performance profile	• the same advantages as the Testomat® Limit Serie (page 12) optional: • automatic self-cleaning of the measuring chamber (Retrofit kit for SelfClean function Item no. 040681 – page 38)	
Application	applications of continuous residual hardness monitoring, e.g.: • reverse osmosis plants • soft water for commercial purposes • pure water production plants • galvanization	
Protection type/class	IP44 / I	
Supply voltage	24 VDC	
Current interface	Output of defined values (5, 8, 11, 14, 17, 20 mA) for displaying status and error messages, max. load 500 Ohms	
Power consumption without external load	max.16VA	
Dimensions	approx. 424 x323 x 138 mm (W x H x D)	
Weight	approx. 4,5 kg	
Operating pressure	1 to 8 bar / $1x10^5$ to $8x10^5$ Pa	
Order numbers	100900	

The new Testomat® PRO series at a glance

The newly developed platform Testomat® PRO will replace our proven Testomat 2000® family in the coming years. The first devices with the parameters iron and carbonate hardness are now ready for use and other parameters such as chlorine and THCL will follow.

PRO series advantages

- Simplified menu-driven operation and programming via OLED
- Free selection of hardness units in ppm and mgl/l
- Analysis trigger:
  - Automatic interval operation
  - Depending on quantity
  - External analysis stop and analysis start
- Firmware update via SD card
- Built-in self-test with ongoing monitoring
- Monitoring of 1 or 2 measuring points
- Logging on SD card for measurement data and notifications/alarms
- Ethernet – network connection with web server for graphic display of measured values and messages/alarms
- Notification by e-mail of new measured values, alarms/messages and limit value violations

Product	Testomat® PRO CLT	Testomat® PRO CLF
	New	Preview
Description	automatic online analysis units for determining chlorine content	automatic online analysis units for determining chlorine content
Parameters	total chlorine	free chlorine
Monitoring range	0 to 2,5 ppm	0 to 2,5 ppm
Indicators Limit values on page 52	chlorine reagent set T (total)	chlorine reagent set F (free)
Performance profile	• The same advantages as the Testomat® PRO series (page 14) Optional: • Automatic programming of self-cleaning of the measuring chamber (Retrofit kit for SelfClean function Item no. 040248 – page 38)	• The same advantages as the Testomat® PRO series (page 14) Optional: • Automatic programming of self-cleaning of the measuring chamber (Retrofit kit for SelfClean function Item no. 040248 – page 38)
Application	• monitoring of chlorination systems for drinking water/swimming pool water • protection for reverse osmosis membranes • monitoring of biocides and conditioning agents containing chlorine	• monitoring of chlorination systems for drinking water/swimming pool water • protection for reverse osmosis membranes • monitoring of biocides and conditioning agents containing chlorine
Protection type/class	IP44 / I	IP44 / I
Supply voltage	100 - 240 VAC 50/60 Hz	100 - 240 VAC 50/60 Hz
Power consumption without external load	max. 230 V (100-240 V)/4 A, 230 V (100-240 V)/1 A	max. 230 V (100-240 V)/4 A, 230 V (100-240 V)/1 A
Dimensions	approx. 380 x 480 x 280 mm W x H x D	approx. 380 x 480 x 280 mm W x H x D
Weight	approx. 9.5 kg	approx. 9.5 kg
Operating pressure	1 to 8 bar / $1x10^5$ to $8x10^5$ Pa or 0,3 to 1 bar / $0,3x10^5$ to $1x10^5$ Pa	1 to 8 bar / $1x10^5$ to $8x10^5$ Pa or 0,3 to 1 bar / $0,3x10^5$ to $1x10^5$ Pa
Menu languages	German, English, French, Dutch (more upon request)	German, English, French, Dutch (more upon request)

Order numbers

	24V	100-240 VAC
housing black	upon request	100760
housing blue	upon request	100761

Product	Testomat® PRO FE	Testomat® PRO CA self clean
Description	automatic online analysis units for determining iron content	automatic online analysis units for determining calcium hardness
Parameters	Iron (Fe (I I), Fe (I I I))	$CaCO_3$
Monitoring range	0 to 1,0 ppm	0 - 33 °dH or 0-60 °f
Indicators Limit values on page 52	FE 2005 A, FE 2005 B	Testomat Calcium reagent A, B, C cleaning solution
Performance profile	• The same advantages as the Testomat® PRO series (page 13) Optional: • Automatic programming of self-cleaning of the measuring chamber (Retrofit kit for SelfClean function Item no. 040248 – page 38)	• The same advantages as the Testomat® PRO series (page 13) Additionally: • Automatic programming of self-cleaning of the measuring chamber as standard
Application	• Monitoring of deferrisation systems • Control of operating and drinking water flows	• Blending of drinking water from multiple sources • Cooling tower monitoring • Boiler houses • Food industry
Protection type/class	IP44 / I	IP44 / I
Supply voltage	100 – 240 VAC ± 10%, 50/60 Hz	100 – 240 VAC ± 10%, 50/60 Hz
Power consumption without external load	max. 230 V (100-240 V)/4 A, 230 V (100-240 V)/1 A	max. 230 V (100-240 V)/4 A, 230 V (100-240 V)/1 A
Dimensions	approx. 480 x 480 x 280 mm W x H x D	approx. 480 x 480 x 280 mm W x H x D
Weight	approx. 9,5 kg	approx. 12,0 kg
Operating pressure	1 to 8 bar / 1x10^5 to 8x10^5 Pa or 0,3 to 1 bar / 0,3x10^5 to 1x10^5 Pa	1 to 8 bar / 1x10^5 to 8x10^5 Pa or 0,3 to 1 bar / 0,3x10^5 to 1x10^5 Pa
Menu languages	German, English, French, Dutch (more upon request)	German, English, French, Dutch (more upon request)

Order numbers

	Testomat® PRO FE		Testomat® PRO CA self clean	
	24V	**100-240 VAC**	**24V**	**100-240 VAC**
housing black	upon request	100755	upon request	100750
housing blue	upon request	100756	upon request	100751

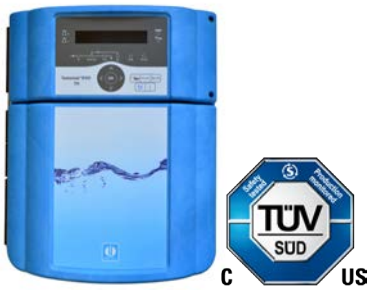
Product	Testomat® Modul TH	Testomat® Modul TH-R
Description	measuring converter for residual total hardness	measuring converter for residual total hardness
Parameters	water hardness	water hardness
Measuring range	0,05-25 °dH	0,05-25 °dH
Indicators Limit values on page 51	TH 2005, TH 2025, TH 2050, TH 2100, TH 2250	TH 2005, TH 2025, TH 2050, TH 2100, TH 2250
Performance profile	• device can be connected to an overriding control system • operation via function keys, which also serve as display elements • parameterisation with the Service Monitor program • output of measurement values via a 4-20 mA interface and a RS232 interface • 3 types of analysis triggers • shared output for the alarm • logging of error and maintenance messages with the SD card • firmware update with the SD card • USB connection for service purposes	• Offering all the benefits of the Testomat® Modul TH • The RS232 interface can also be used to set the parameters of the device. It receives defined commands from a higher-level control system for this purpose. Please note that it is not possible subsequently to change a Testomat® Modul TH into a Testomat® Modul TH-R.
Application	Monitoring and checking of water quality e.g.: • water treatment facilities • industrial boilers • process water monitoring	Monitoring and checking of water quality e.g.: • water treatment facilities • industrial boilers • process water monitoring
Protection type/class	IP43/40 (with/without cover) / I	IP43/40 (with/without cover) / I
Supply voltage	24 VDC	24 VDC
Power consumption	max. 1 A	max. 1 A
Dimensions	approx. 10.6” x 13.8” x 5.8” 270 x 350 x 147 mm W x H x D	approx. 10.6” x 13.8” x 5.8” 270 x 350 x 147 mm W x H x D
Weight	approx. 11.7 lbs (5.3 kg)	approx. 11.7 lbs (5.3 kg)
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Relay contact load	max. 35 VAC / 60 VDC; max. 4 A	max. 35 VAC / 60 VDC; max. 4 A
Order numbers	**24 V**	**24 V**
with cover	116101	116111
without cover	116102	116112

Product	Testomat® Modul NH2CL-R	Testomat® Modul CL-R
Description	measuring converter for monochloramine	measuring converter for total chlorine
Parameters	monochloramine	total chlorine or free chlorine
Measuring range	0 - 5 ppm (resolution 0,1)	0 - 5 ppm (resolution 0,1)
Indicators Limit values on page 52	Testomat Chlorine Reagent Kit M (Monochloramine)	Chlorine reagent set F (free) or Chlorine reagent set T (total)
Performance profile	• Offering all the benefits of the Testomat® Modul NH2CL • The RS232 interface can also be used to set the parameters of the device. It receives defined commands from a higher-level control system for this purpose. Please note that it is not possible subsequently to change a Testomat® Modul NH2CL into a Testomat® Modul NH2CL-R.	• Offering all the benefits of the Testomat® Modul CL • The RS232 interface can also be used to set the parameters of the device. It receives defined commands from a higher-level control system for this purpose. Please note that it is not possible subsequently to change a Testomat® Modul CL into a Testomat® Modul CL-R.
Application	Monitoring the decay behaviour in cooling towers after shock chlorination	Monitoring the decay behaviour in cooling towers after shock chlorination
Protection type/class	IP43/40 (with/without cover) / I	IP43/40 (with/without cover) / I
Supply voltage	24 VDC	24 VDC
Power consumption	max. 1 A	max. 1 A
Dimensions	approx. 10.6” x 13.8” x 5.8” 270 x 350 x 147 mm W x H x D	approx. 10.6” x 13.8” x 5.8” 270 x 350 x 147 mm W x H x D
Weight	approx. 11.7 lbs (5.3 kg)	approx. 11.7 lbs (5.3 kg)
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Relay contact load	max. 35 VAC / 60 VDC; max. 4 A	max. 35 VAC / 60 VDC; max. 4 A
Order numbers	**24 V**	**24 V**
with cover	116118	116115
without cover	116119	116116

Product	Testomat® Modul NH2CL	Testomat® Modul CL
Description	measuring converter for monochloramine	measuring converter for total chlorine
Parameters	monochloramine	total chlorine or free chlorine
Measuring range	0 - 5 ppm (resolution 0,1)	0 - 5 ppm (resolution 0,1)
Indicators Limit values on page 52	Testomat Chlorine Reagent Kit M (Monochloramine)	Chlorine reagent set F (free) or Chlorine reagent set T (total)
Performance profile	• Offering all the benefits of the Testomat® Modul TH	• Offering all the benefits of the Testomat® Modul TH
Application	Monitoring the decay behaviour in cooling towers after shock chlorination	Monitoring the decay behaviour in cooling towers after shock chlorination
Protection type/class	IP43/40 (with/without cover) / I	IP43/40 (with/without cover) / I
Supply voltage	24 VDC	24 VDC
Power consumption	max. 1 A	max. 1 A
Dimensions	approx. 10.6” x 13.8” x 5.8” 270 x 350 x 147 mm W x H x D	approx. 10.6” x 13.8” x 5.8” 270 x 350 x 147 mm W x H x D
Weight	approx. 11.7 lbs (5.3 kg)	approx. 11.7 lbs (5.3 kg)
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Relay contact load	max. 35 VAC / 60 VDC; max. 4 A	max. 35 VAC / 60 VDC; max. 4 A
Order numbers	**24 V**	**24 V**
with cover	116108	116105
without cover	116109	116106

Product	Testomat ECO®	Testomat ECO® C
Description	automatic online analysis units for water hardness	automatic online analysis units for carbonate hardness
Parameters	Water hardness	Carbonate hardness Acid capacity
Measuring range	0,05-25 °dH	0,18-3,58 mmol/l / 0,36-7,16 mmol/l 0,5-10,0 °dH / 1,0-20,0°dH
Indicators Limit values on page51/52	TH 2005, TH 2025, TH 2100, TH 2250	TC 2050, TC 2100
Performance profile	• freely selectable hardness unit: °dH, °f, ppm $CaCO_3$ or mmol/l • high measurement accuracy thanks to precise piston dosing pump • two independent limit values (choice of 1, 2, or 3 bad analyses before the limit value relay switches) and adjustable switching functions • reliable, low-maintenance operation • very simple menu-driven operation and programming via plain-text display • two neutral changeover contacts • error message output (neutral changeover) • current output 0/4–20 mA • BOB function	• Offering all the benefits of the Testomat ECO® deviating from this: • determinable measuring of carbonate hardness/acid capacity in mmol/l via indicator selection • no BOB function
Application	monitoring and control of water quality, e.g.: • water treatment plants • drinking water plants	monitoring and control of water quality, e.g.: • water treatment plants • drinking water plants • Swimming pool water automatic hardness increase of swimming pool water via online analysis (application page 9)
Protection type/class	IP65 / I	IP65 / I
Supply voltage	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
Power consumption	max. 30 VA	max. 30 VA
Dimensions	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Weight	approx. 19.8 lbs (9.0 kg)	approx. 20.9 lbs (9.5 kg)
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Menu languages	German, English, French, Italian, Polish, Dutch, Spanish	German, English, French, Dutch

Order numbers	**24V**	**115 V**	**230 V**	**24V**	**115 V**	**230 V**
	100112	100117	100122	100115	100116	100121
without front sticker	100430	100431	100432			

	Testomat® EVO TH	Testomat® EVO TH CAL
		
Description	automatic online analysis units for water hardness	Online-Analysenautomat für Wasserhärte mit Kalibrierfunktion
Parameters	Water hardness	Water hardness
Measuring range	0,05-25 °dH	0,05-25 °dH
Indicators Limit values on page 51	TH 2005, TH 2025, TH 2100, TH 2250	TH 2005, TH 2025, TH 2100, TH 2250
Performance profile	• Offering all the benefits of the Testomat ECO® in addition: • built-in SD card for – recording data, alarm, errors – firmware updates – importing and exporting settings • transfer of measurement data and status via the RS232 port • there is also scope to connect a field bus converter or a converter for telecommunication networks • Operation <0.3 bar with MepuClip®	• Offering all the benefits of the Testomat® EVO TH in addition: • with calibation function
Application	Monitoring and checking of water quality e.g.: • water treatment facilities • industrial boilers • process water monitoring • drinking water systems	Monitoring and checking of water quality e.g.: • water treatment facilities • industrial boilers • process water monitoring • drinking water systems
Protection type/class	IP44 / I	IP44 / I
Supply voltage	100-240 VAC/ 100-353 VDC 24 VAC	100-240 VAC/ 100-353 VDC 24 VAC
Power consumption	max. 30 VA	max. 30 VA
Dimensions	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)
Weight	approx. 19.8 lbs (9,0 kg)	approx. 19.8 lbs (9,0 kg)
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Menu languages	German, English, French, Dutch, Spanish, Czech, Polish, Russian, Mandarin, Portuguese (more upon request)	German, English, French, Dutch, Spanish, Polish, Russian, Mandarin, Portuguese (more upon request)

Order numbers

	24V	100-240 VAC	24V	100-240 VAC
housing black	100705	100701	100713	100715
housing blue	100706	100704	100714	100712

Product	Testomat 2000®
Description	automatic online analysis units for water hardness
Parameters	water hardness, carbonate hardness, p-value, minus m-value
Measuring range	0,05-25 °dH water hardness 0,5-20 °dH carbonate hardness 1-15 mmol/l p-value 0,05-0,5 mmol/l minus m-value
Indicators Limit values on page 51	TH 2005, TH 2025, TH 2100, TH 2250 TC 2050, TC 2100, TM 2005, TP 2100
Performance profile	• freely selectable hardness unit: °dH, °f, ppm $CaCO_3$, or mmol/l • high measurement accuracy thanks to precise piston dosing pump • monitoring of two measuring points (switching via external magnet valves) • reliable, low-maintenance operation • very simple menu-driven operation and programming via plain-text display • BOB function • two independently programmable limit value contacts for monitoring and control tasks • recording of analysis results with optional plug-in card (SK910 current interface) for a point or line recorder (0/4–20 mA), SD card, or printer
Application	• water treatment plants • water blending plants • drinking water plants • water softening plants • decarbonization plants • desalination plants • boiler houses • cooling towers
Protection type/class	IP65 / I
Supply voltage	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
Power consumption	max. 30 VA
Dimensions	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)
Weight	approx. 20.9 lbs (9.5 kg)
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Menu languages	German, English, French, Italian, Polish, Dutch

Order numbers

	24V	115 V	230 V
German	100090	100100	100095
German without front sticker	100420	100421	100422
English	100091	100101	100096
French	100092	100102	100097
Italian	100093	100103	100098
Polish	100094	100104	100099
Dutch	100011	100012	100013
Spanish	100014	100015	100016

	Testomat 2000® Antox	Testomat 2000® CAL
Description	automatic online analysis units for hardness of water with elevated chlorine or H_2O_2 content	automatic online analysis unit for water hardness with additional calibration function
Parameters	water hardness, carbonate hardness, p-value, minus m-value	water hardness, carbonate hardness, p-value, minus m-value
Measuring range	0,05-25 °dH water hardness 0,5-20 °dH carbonate hardness 1-15 mmol/l p-value 0,05-0,5 mmol/l minus m-value	0,05-25 °dH water hardness 0,5-20 °dH carbonate hardness 1-15 mmol/l p-value 0,05-0,5 mmol/l minus m-value
Indicators Limit values on page 51	TH 2005, TH 2025, TH 2100, TH 2250, TC 2050, TC 2100, TM 2005, TP 2100	TH 2005, TH 2025, TH 2100, TH 2250, TC 2050, TC 2100, TM 2005, TP 2100
Performance profile	• Offering all the benefits of the Testomat 2000® in addition: • pump for dosing a reducing agent By adding the Antox solution before determining the hardness, the interference by oxidising agents (for example chlorine) is reliably eliminated up to a concentration of 10 mg/l (Antox solution, see page 52).	• Offering all the benefits of the Testomat 2000® in addition: • with calibration function
Application	• control of water quality in areas where measurement errors can arise due to oxidizing agents	control of water quality for which calibration of the measuring instrument is important, e.g.: • pharmaceutical industry
Protection type/class	IP65 / I	IP65 / I
Supply voltage	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
Power consumption	max. 30 VA	max. 30 VA
Dimensions	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)
Weight	approx. 20.9 lbs (9.5 kg)	approx. 20.9 lbs (9.5 kg)
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Menu languages	German, English	German, English, French, Italian, Dutch

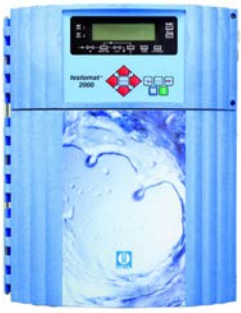
Order numbers

	24V	115 V	230 V	24V	115 V	230 V
German	100440	100450	100460	100210	100215	100220
English	100441	100451	100461	100211	100216	100221
French				100212	100217	100222
Italian				100213	100218	100223
Dutch				100214	100219	100224

Product	Testomat 2000® self clean	Testomat 2000® V
Description	automatic online analysis units for water hardness with cleaning function for difficult water	automatic online analysis unit for water hardness for regulating blending water
Parameters	water hardness, carbonate hardness, p-value, minus m-value	Water hardness, Carbonate hardness
Measuring range	0,05-25 °dH water hardness 0,5-20 °dH carbonate hardness 1-15 mmol/l p-value 0,05-0,5 mmol/l minus m-value	1,0–25,0 °dH water hardness 1,0–20,0 °dH carbonate hardness
Indicators Limit values on page 51	TH 2005, TH 2025, TH 2100, TH 2250, TC 2050, TC 2100, TM 2005, TP 2100	TH 2005, TH 2025, TH 2100, TH 2250, TC 2050, TC 2100,
Performance profile	• Offering all the benefits of the Testomat 2000® in addition: • with dosing pump for dosing our cleaning agent for cleaning the measuring chamber after analysis For the cleaning solution see page 40	Offering all the benefits of the Testomat 2000® in addition: • suitable in connection with a 3/2-way motor valve with 0/4–20 mA interface as a control system for water hardness and carbonate hardness of blending water • the selection of the reagent determines the working range of the controller (= measuring range)
Application	• use for difficult water, e.g. calcium, biofims, various other deposits • extending service life • reducing contamination in the measuring chamber	• regulation of water blending systems (cooling circuits, process water)
Protection type/class	IP65 / I	IP65 / I
Supply voltage	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
Power consumption	max. 30 VA	max. 30 VA
Dimensions	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)
Weight	approx. 20.9 lbs (9.5 kg)	approx. 20.9 lbs (9.5 kg)
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Menu languages	German, English, French	German, English, French, Italian

Order numbers

	24V	115 V	230 V	24V	115 V	230 V
German	100380	100390	100370	100170	100175	100180
German without front sticker	—	—	100365	—	—	—
English	100381	100391	100371	100171	100176	100181
French	100382	100392	100372	100172	100177	100182
Italian				100173	100178	100183

Testomat 2000® DUO	Testomat 2000® DUO CN	Testomat 2000® CN
		
automatic online analysis units for water hardness for monitoring two measuring points	automatic online analysis units for water hardness for monitoring two measuring points for the Chinese market	automatic online analysis unit for water hardness for the Chinese market, with Chinese menu navigation
water hardness, carbonate hardness, p-value, minus m-value	water hardness, carbonate hardness, p-value, minus m-value	water hardness, carbonate hardness, p-value, minus m-value
0,05-25 °dH water hardness 0,5-20 °dH carbonate hardness 1-15 mmol/l p-value 0,05-0,5 mmol/l minus m-value	0,05-25 °dH water hardness 0,5-20 °dH carbonate hardness 1-15 mmol/l p-value 0,05-0,5 mmol/l minus m-value	0,05-25 °dH water hardness 0,5-20 °dH carbonate hardness 1-15 mmol/l p-value 0,05-0,5 mmol/l minus m-value
TH 2005, TH 2025, TH 2100, TH 2250, TC 2050, TC 2100, TM 2005, TP 2100	TH 2005, TH 2025, TH 2100, TH 2250, TC 2050, TC 2100, TM 2005, TP 2100	TH 2005, TH 2025, TH 2100, TH 2250, TC 2050, TC 2100, TM 2005, TP 2100
• Offering all the benefits of the Testomat 2000® in addition: • monitoring of two different measuring points with different indicator types, e.g. water hardness with different measurement ranges or water hardness and carbonate hardness • automatic switching between measuring points • one input available for limiting measuring point 1	• Offering all the benefits of the Testomat 2000® DUO in addition: • Chinese menu navigation for the Asian market	• Offering all the benefits of the Testomat 2000® in addition: • Chinese menu navigation for the Asian market
• use in two circuits with different hardnesses • measurement of inlet and outlet hardness	• use in two circuits with different hardnesses • measurement of inlet and outlet hardness	• the same areas of application such as Testomat 2000®
IP65 / I	IP65 / I	IP65 / I
230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
max. 30 VA	max. 30 VA	max. 30 VA
approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)
approx. 20.9 lbs (9.5 kg)	approx. 20.9 lbs (9.5 kg)	approx. 20.9 lbs (9.5 kg)
14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
German, English, French, Italian, Polish	Mandarin and English	Mandarin and English

	24V	115 V	230 V
German	100290	100295	100300
English	100291	100296	100301
French	100292	100297	100302
Italian	100293	100298	100303
Polish	100294	100299	100304

	24V	115 V	230 V
Mandarin	110219	110220	110221

	230 V
Mandarin incl. SD card data logger	110212
Mandarin without SD card data logger	110215

Product	Testomat 2000® THCL	Testomat 2000® CLO2
Description	automatic online analysis unit for determining total chlorine and water hardness	automatic online analysis unit for determining chlorine dioxide content
Parameters	total chlorine water hardness	chlorine dioxide ClO_2
Measuring range (resolution)	0,00-0,99 mg/l (0,01) 1,0-2,5 mg/l (0,1) } total chlorine 0,25-2,5°dH (0,05) water hardness	0,00-1,88 mg/l (0,02) 1,9-4,7 mg/l (0,2)
Indicators Limit values on page 52	TH 2025, CL 2250 A, CL 2250 B, CL 2250 C	CLO2 reagent set A and B
Performance profile	• Offering all the benefits of the Testomat 2000® in addition: • combination of total chlorine and hardness measuring instrument	• Offering all the benefits of the Testomat 2000® in addition: • the analysis result is displayed after a reaction time of approx. one minute
Application	• medical technology (dialysis) • corrosion protection • protection for reverse osmosis membranes • monitoring of softener and chlorination systems for drinking water or swimming pools	• disinfectant monitoring for drinking water and process water
Protection type/class	IP65 / I	IP65 / I
Supply voltage	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
Power consumption	max. 30 VA	max. 30 VA
Dimensions	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)
Weight	approx. 20.9 lbs (9.5 kg)	approx. 20.9 lbs (9.5 kg)
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Menu languages	German, English, French	German, English, French

Order numbers

	24V	115 V	230 V	24V	115 V	230 V
German	100270	100275	100280	100500	100505	100510
English	100271	100276	100281	100501	100506	100511
French	100272	100277	100282	100502	100507	100512

	Testomat 2000® CLF	Testomat 2000® CLT	Testomat 2000® CLT self clean
	automatic online analysis unit for determining chlorine content	automatic online analysis unit for determining chlorine content	automatic online analysis unit for determining chlorine content with cleaning function for difficult water
	free chlorine	total chlorine or free chlorine	total chlorine
	0,00-0,99 mg/l (0,01) 1,0-2,5 mg/l (0,1)	total chlorine or 0,00-0,99 mg/l 1,0-2,5 mg/l free chlorine 0,00-0,99 mg/l 1,0-2,5 mg/l	0,00-0,99 mg/l (0,01) 1,0-2,5 mg/l (0,1)
	CL 2250 A, CL 2250 B	CL 2250 A, CL 2250 B, CL 2250 C	CL 2250 A, CL 2250 B, CL 2250 C
	• Offering all the benefits of the Testomat 2000® in addition: • the analysis result is displayed after a reaction time of approx. one minute	• Offering all the benefits of the Testomat 2000® in addition: • the analysis result is displayed after a reaction time of approx. one minute • can be converted for CLF (free chlorine)	• Offering all the benefits of the Testomat 2000® in addition: • the analysis result is displayed after a reaction time of approx. one minute • with dosing pump for dosing our cleaning agent for cleaning the measuring chamber after analysis (see page 52)
	• monitoring of chlorination systems for drinking water/swimming pool water • protection for reverse osmosis membranes • monitoring of biocides and conditioning agents containing chlorine	• monitoring of chlorination systems for drinking water/swimming pool water • protection for reverse osmosis membranes • monitoring of biocides and conditioning agents containing chlorine	• disinfectant monitoring for drinking water and process water • medical technology (dialysis)
	IP65 / I	IP65 / I	IP65 / I
	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
	max. 30 VA	max. 30 VA	max. 30 VA
	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)
	approx. 20.9 lbs (9.5 kg)	approx. 20.9 lbs (9.5 kg)	approx. 20.9 lbs (9.5 kg)
	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
	German, English, French,	German, English, French,	German, English, French

	24V	115 V	230 V	24V	115 V	230 V	24V	115 V	230 V
German	100230	100235	100240	100130	100135	100140	upon request	upon request	100245
English	100231	100236	100241	100131	100136	100141	upon request	100256	100246
French	100232	100237	100242	100132	100137	100142	upon request	upon request	100247

Product	Testomat 2000® Br	Testomat 2000® CrVI Testomat 2000® CrVI 0-5ppm
Description	automatic online analysis unit for determining bromine content	automatic online analysis unit for determining chromate or chromium VI content
Parameters	bromine Br_2	chromate (CrO_4^{2-}) or chromium VI (CrVI)
Measuring range (resolution)	0,00-2.23 mg/l and 2.3-5.6 mg/l	Type / Chromate / Chromium / resol. CrVI: 0,00 - 0,99 / 0,00 - 0,99 / 0,01 1,0-2,0 / 0,1 CrVI 0-5ppm: 0,00 - 11,15 / 0,0-4,0 / 0,1 4,00 - 5,00 / 0,25
Indicators Limit values on page 52	bromine reagent set	CrVI 2100 A, CrVI 2100 B
Performance profile	• Offering all the benefits of the Testomat 2000® in addition: • the analysis result is displayed after a reaction time of approx. one minute	• Offering all the benefits of the Testomat 2000® in addition: • the analysis result is displayed after a reaction time of approx. 2 to 3 minutes
Application	• monitoring the dosing of disinfectant	• monitoring of chromate content waste water in galvanization plants • control of waste water in the metalworking industry Application example on page 11
Protection type/class	IP65 / I	IP65 / I
Supply voltage	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
Power consumption	max. 30 VA	max. 30 VA
Dimensions	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)
Weight	approx. 20.9 lbs (9.5 kg)	approx. 20.9 lbs (9.5 kg)
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Menu languages	German, English, French	German, English, French,

Order numbers

	24V	115 V	230 V
German	100520	100525	100530
English	100521	100526	100531
French	100522	100527	100532

Type		24V	115 V	230 V
CrVI	German	100310	100315	100320
	English	100311	100316	100321
	French	100312	100317	100322
CrVI 0-5ppm	German	request	request	100640
	English	request	request	100641
	French	request	request	request

	Testomat 2000® PO4	Testomat 2000® Polymer
Description	automatic online analysis unit for determining phosphate content	automatic online analysis unit for determining polyacrylate content
Parameters	phosphate PO_4	anionic polyacrylates
Measuring range (resolution)	0,0 - 7,0 mg/l (0,1) 7,0 - 10,0 mg/l (0,25)	customer-specific, e.g. 0,0-50,0 mg/l
Indicators Limit values on page 52	PO4 reagent set 2100	It is neccessary to customize the Testomat 2000® Polymer because of the large amount of polyacrylats, which can be measured with this unit. Either use your existing reagents or use our polymer reagents.
Performance profile	• Offering all the benefits of the Testomat 2000® in addition: • the analysis result is displayed after a reaction time of approx. 10 minutes • choose between the 500 ml bottles or the large reagent containers (20 and 5 litre containers)	• Offering all the benefits of the Testomat 2000® in addition: • the analysis result is displayed after a reaction time of approx. 7 minutes • scaling factor adjustable from 0.01 to 99,99 to accommodate the reagents used
Application	• monitoring of process water • conditioning of production water • treated wastewater (sewage treatment plants, biogas plants) • online – environmental analysis Application example on page 10	• monitoring of conditioning agents in cooling and heating circuits
Protection type/class	IP65 / I	IP65 / I
Supply voltage	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
Power consumption	max. 30 VA	max. 30 VA
Dimensions	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)
Weight	approx. 20.9 lbs (9.5 kg)	approx. 20.9 lbs (9.5 kg)
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Menu languages	German, English, French, Dutch, Spanish	German, English, French

Order numbers

	24V	115 V	230 V	24V	115 V	230 V
German	100560	100565	100570	upon request	upon request	100470
English	100561	100566	100571	upon request	100472	100473
French	100562	100567	100572	upon request	upon request	100471
Italian	—	—	—			
Polish	—	—	—			
Dutch.	100563	upon request	100573			
Spanish	100564	100568	upon request			

	Titromat® M1	Titromat® M2
Description	automatic titration unit for determining carbonate hardness	automatic titration unit for determining carbonate hardness
Parameters	carbonate hardness (m-value)	carbonate hardness (m-value)
Measuring range (resolution)	0,05-1,00 °dH (0,025) 0,09-1,80 °f (0,045)	0,05-2,00 °dH (0,05) 0,09-3,60 °f (0,09)
Indicators Limit values on page 51	TC 2010 reagent A, TC 2010 reagent B	TC 2020 reagent A, TC 2020 reagent B
Performance profile	• Offering all the benefits of the Testomat 2000® • special for low hardness measuring ranges	• Offering all the benefits of the Testomat 2000® • special for low hardness measuring ranges
Application	• corrosion monitoring in boiler feed water, • residual alkalinity after decarbonization (e.g., breweries)	• corrosion monitoring in boiler feed water, • residual alkalinity after decarbonization (e.g., breweries)
Protection type/class	IP65 / I	IP65 / I
Supply voltage	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
Power consumption	max. 30 VA	max. 30 VA
Dimensions	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)
Weight	approx. 9,5 kg	approx. 9,5 kg
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Menu languages	German, English, French	German, English, French

Order numbers

	24V	115 V	230 V	24V	115 V	230 V
German	110150	110155	110160	110130	110135	110140
English	110151	110156	110161	110131	110136	110141
French	110152	110157	110162	110132	110137	110142

Product	Titromat® TH	Titromat® KH
Description	automatic titration unit for determining water hardness	automatic titration unit for determining carbonate hardness
Parameters	water hardness	carbonate hardness
Measuring range (resolution)	2,5-50,0 °dH (2,5)	5-150 °KH (5) 2-60 °KH (2)
Indicators Limit values on page 51	TH 2500 reagent A, TH 2500 reagent B	TC 2150 reagent A, TC 2150 reagent B
Performance profile	• Offering all the benefits of the Testomat 2000®	• Offering all the benefits of the Testomat 2000® • special for high hardness measuring ranges
Application	• drinking water production and supply, • raw water monitoring	• alkalinity of open coolant circuits
Protection type/class	IP65 / I	IP65 / I
Supply voltage	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
Power consumption	max. 30 VA	max. 30 VA
Dimensions	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)	approx. 15” x 18.9” x 11” 380 x 480 x 280 mm (W x H x D)
Weight	approx. 9,5 kg	approx. 9,5 kg
Operating pressure	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 116 psi (1 to 8 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Menu languages	German, English, French	German, English, French

Order numbers

	24V	115 V	230 V	24V	115 V	230 V
German	110110	110115	110120	110190	110195	110200
English	110111	110116	110121	110191	110196	110201
French	110112	110117	110122	110192	110197	110202

Product	Testomat® 808 - 2019	Testomat® 808 SiO2 - 2019
Description	limit value monitoring instrument for water hardness	limit value monitoring instrument for silica
Parameters	water hardness	silica SiO_2
Monitoring range	0,02-5 °dH (0,4….89 ppm $CaCO_3$)	0,3-1,2 ppm
Indicators Limit values on page 53	Type 300, 300 S, 301, 302, 303, 305, 310, 320, 330, 350	Type A + B for Testomat® 808 SiO2
Performance profile	• low water consumption • state-of-the-art electronics • modern indicator pump system • error display • indicator quantity display • external rinsing valve control • limit value evaluation/external control • alarm processing • internal and external rinsing via manual control • 72 hours without supervision possible (in BOB mode) • selector switch for pause interval; selector switch for adjusting the behavior of the relay when the limit value is exceeded	• Offering all the benefits of the Testomat® 808 - 2019 in addition: • 2 selector switches for measuring intervals and evaluating limit values
Application	applications of continuous residual hardness monitoring, e.g.: • reverse osmosis plants • soft water for commercial purposes • pure water production plants • galvanization	• Water treatment of sterilizations in hospitals • Monitoring of silicate content in industrial waters Application example on page 12
Protection type/class	IP44 / I	IP44 / I
Supply voltage	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz	230–240 VAC, 115 VAC, 24 VAC all 50–60Hz
Power consumption	max. 16 VA	max. 16 VA
Dimensions	approx. 14.3” x 12.4” x 5.4” (W x H x D) 364 x 314 x 138 mm	approx. 14.3” x 12.4” x 5.4” (W x H x D) 364 x 314 x 138 mm with side pocket: 17.4” x 12.4” x 5.4” 442 x 314 x 138 mm
Weight	approx. 9.6 lbs (4.35 kg)	approx. 9.6 lbs (4.35 kg)
Operating pressure	14.5 to 58 psi (1 to 4 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)	14.5 to 58 psi (1 to 4 bar) or 4.4 to 14.5 psi (0.3 to 1 bar)
Menu languages	—	—

Order numbers

	24V	115 V	230 V	24V	115 V	230 V
1-4 bar	100652	100651	100650	100662	100661	100660
0,3-1 bar	100655	100654	100653	100665	100664	100663

Accessories Testomat® / Titromat®	Conversion kit for water inlet	Conversion kit for water connection USA	Conversion kit for 100ml-bottle
Is used	for Testomat 2000®, ECO®, EVO, PRO, Modul TH, Titromat®	for Testomat 2000®	for Testomat 2000®, ECO®, EVO, PRO, Modul TH, Titromat®
Order number	040123	40345	040143
Description	conversion kit for the water inlet for connecting a fabric hose	Conversion kit for converting water connections from 6 mm to 1/4”	for using 100 ml / 3.4 oz bottles instead of the 500 ml / 16.9 oz bottles included in the delivery
Technical data	• 1/4“ quick-connect plug • 1/4“ quick-connect coupling to hose with d = 6 mm i • lock on the hose side	• Reducing adaptor from 6 mm to 1/4”	• 100 ml / 3.4 oz bottle • used for screw cap with suction tube for 100 ml / 3.4 oz bottle • screw cap GL32 hole

Accessories Testomat 2000® / 808	small aerator R	Candle filter	Tool kit
Is used	for Testomat 2000®/Testomat ECO®, EVO, 808	for Testomat® 808	for all Testomat and Titromat devices
Order number	130010	candle filter 37583 filter insert 37584	040138
Description	small aerator to reduce CO_2 content	candle filter with filter insert for filtering sample water before analysis	tool kit for maintenance work on Testomat 2000®
Technical data	• max. 12 l/h of water throughput when reducing the free carbon dioxide from max. 200 mg/l to under 20 mg/l • dimensions (W x H x D): 150 x 500 x 100 mm 5.9“ x 19.7“ x 3.9“ • line voltage:230 V/50 Hz • Installation 3 m above device	• max. pressure: 10 bar/145 psi • max. temperature: 50°C/122°F • filter fineness: 100 µm • 1/4“ inlet/outlet	• 1 Torx TX20 20x100 screwdriver • 1 Torx TX10 10x80 screwdriver • 1 Torx TX8 8x60 screwdriver

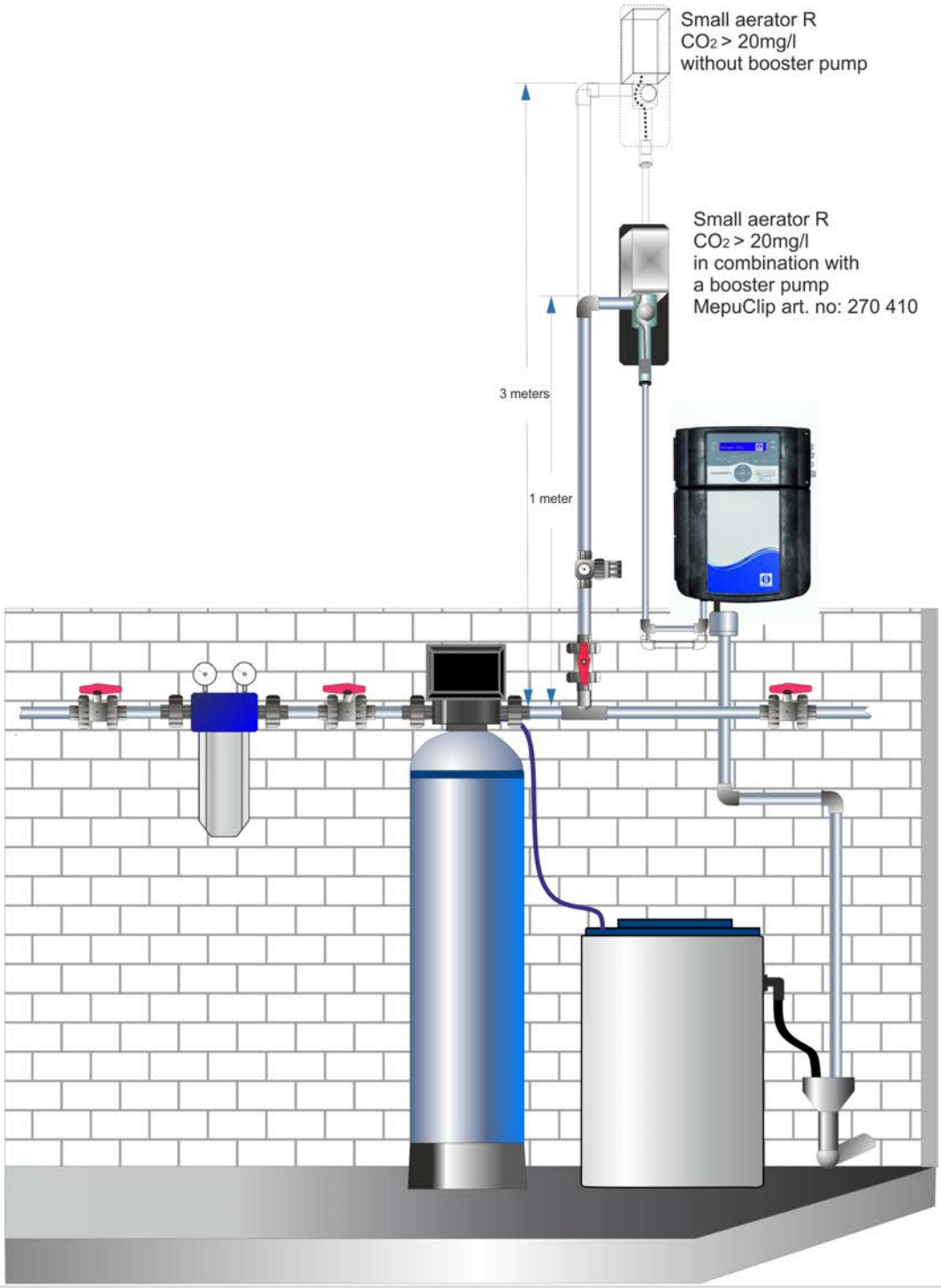
Example for assembly of aerator type R

The water intake connection of the small aerator can withstand a maximum of six bar. The water outlet from the small aerator is unpressurised. Therefore, the small aerator must be slotted in ahead of the Testomat device at least 3 m / 9,8 ft (0.3 bar / 4,35 psi) above the Testomat device.

During operation within a pressure range from 0.3 to 1 bar / 4,35 - 14,5 psi, or when supplied via a booster pump, please remove the valve body from the controller and filter housing of the Testomat device (see operating instructions for the Testomat device).

For installation heights lower than 3 m / 9,8 ft, use our booster pump MepuClip® in the Testomat 2000® or Testomat® EVO TH.

Testomat® ECO and Testomat® 808 cannot be fitted with the MepuClip® booster pump.



Accessories Testomat 808/808 SiO2	Testomat 2000® connection kit	Connection set	Conversion kit for water connection
Is used	for Testomat 2000®, Testomat ECO®, EVO and Titromat®	for Testomat® 808	for Testomat® 808
Order number	040187	37610	37576
Description	connection kit with ball valve, pipes, and reducing pieces for the water connection	for the water connection	conversion kit for converting the water connection from Testomat® to BOB Testomat 808®
Technical data	• 5 m (16.4 ft) pipe, plastic PE 6/4x1, blue • 2 m (6.6 ft) drain hose, d=12 mm i • 1 ball valve, PPSV 011223W • 1 10-6 reducing connector • 1 3/8“-1/2“ reducing nipple	The kit consists of: • plastic hose, 6/4 x 1; length 5 m / 16.4 ft • 10 to 6 mm reducer • 3/8“a to 6 mm stopcock	The kit consists of: • plug connection G1/4“ DN6 • pipe, PE, D=6; length 5 m / 16.4 ft • screw-in connection G1/4“-6

	Conversion kit pump head	Conversion kit double pump head	SiO2 cartridge
Is used	for Testomat® 808 (up to device number 253060)	for Testomat® 808 SiO2	for Testomat® 808 SiO2
Order number	040363	040395	270344
Description	Conversion kit for replacing the old pump head (37578) in the new version (37562)	Conversion kit for replacing the old double pump head (37859) in the new version (37801)	Silicate filter for calibration after changing the double pump head
Technical data	• 1 x pump head Testomat 808 • 1 x shaft extension for pump head • 1 x spacer plate for pump head • 1 x screw M3x20 • 1 x screw M3x25 • 1 x threaded pin M3x3 • 1 x 1,5 mm hexagon socket wrench	• 1 x double pump head Testomat 808 SiO2 • 1 x shaft extension for pump head • 1 x spacer plate for pump head • 1 x screw M3x40 • 1 x screw M3x50 • 1 x threaded pin M3x3 • 1 x 1,5 mm hexagon socket wrench	• Filled with strongly alkaline anion exchanger • Following initial use it can be used for calibration 10 more times within one year • Rinse with 10 litres of demineralised water before each use • Store the cartridge in the dark at temperatures from 5 to 20°C

The current testomat® 808 2019 and Testomat® 808 SiO2 2019 devices do not require the conversion kit, as they are factory equipped with the new pump head.

Accessories Testomat 2000® / 808	T2000 service case Variant 1
Is used	for Testomat® and Titromat® devices
Order number	270337
Description	Service case for regular maintenance of aTestomat 2000® device
Technical data	• 10 20x2 O-rings • 10 10.82x1.78 O-rings • 5 4.47x1.78 O-rings • 5 18x2 EPDM O-rings • 20 24x2 flat gaskets • 5 filter screen for inlet, 19.5dx25 • 5 flow regulator cores • 2 springs for inlet • 10 stoppers for measuring chamber • 6 fuses, T 0.08A • 6 fuses, T 0.1 A • 6 fuses, T0.16 A • 6 fuses, T 0.2 A • 6 fuses, T 0.315 A • 6 fuses, T 1.0 A • 6 fuses, M4A • 20 30x3 sight glasses • 3 screw caps with T2000 insert • 4 M3x40 screws • 1 suction hose • 1 pressure hose • 6 different pipes • 1 cleaning brush set • 2 push-in angle joints • 2 magnetic stirring bars

	Repair and service case	
Is used for	Testomat® 808	Testomat® 808 SiO2
Order number	270342	270343
Description	Case for regular maintenance of a Testomat® 808 / 808 SiO2 and on-site service	
Technical data	• 8 3.68x1.78 O-rings • 8 1.78x1.78 O-rings • 8 4.5x1.5 O-rings • 8 24x2 flat gaskets • 1 pump head • 4 500ml inserts with screw cap • 1 100ml insert with screw cap • 1 cleaning brush set • 4 angle screw connectors • 6 fuses, T 0.1 A • 6 fuses, T 0.2 A • 6 fuses, T 1.0 A • 6 fuses, T4A • 6 30x3 sight glasses • 2 pipes, l = 53 mm • 2 pipes, l = 140 mm 1 SUB-D null modem cable • 1 USB serial adapter • 2 dosing needles • 4 hose adapters • 2 magnetic stirring bars • 8 M3x12 screws • 4 M3x40 screws • 1 magnetic valve • documentation/software (1) Testomat® 808 SiO2 differing: • 1 double pump head • 6 fuses T0.315A • 8 fuses T4A • 2 100ml insert with screw cap	

No longer included:
Optics board + LED holder
The optic set can be found on page 44.

T2000 service case Variant 2

Is used	for Testomat® and Titromat® devices
Order number	270338
Description	Service case for regular maintenance of aTestomat 2000® device

Technical data

- 4 20x2 O-rings
- 4 10.82x1.78 O-rings
- 2 4.47x1.78 O-rings
- 2 18x2 EPDM O-rings
- 4 24x2 flat gaskets
- 2 filter screen for inlet, 19.5dx25
- 2 flow regulator cores
- 2 springs for inlet
- 6 stoppers for measuring chamber
- 1 push-in connector for the drain hose
- 2 fuses, T 0.08A
- 2 fuses, T 0.1 A
- 2 fuses, T0.16 A
- 2 fuses, T 0.2 A
- 2 fuses, T 0.315 A
- 2 fuses, T 1.0 A
- 2 fuses, M4A
- 4 30x3 sight glasses
- 3 screw caps with T2000 insert
- 2 M3x40 screws
- 2 suction hose
- 2 pressure hose
- 6 different pipes
- 1 cleaning brush set
- 2 push-in angle joints
- 2 magnetic stirring bars
- 2 valve set for dosing pump
- 1 inlet connection
- 1 screw-in connector G1/4“-6
- Angled plug-in connector G 1/8“

Repair and service case

New

Is used for	for Testomat® Limit series
Order number	270349
Description	Case for regular maintenance of a Testomat® Limit and on-site service

Technical data

- 2 24x2 EPDM O-rings
- 8 18x2 EPDM O-rings
- 2 11x1 EPDM O-rings
- 6 10x1,5 O-rings
- 2 8x3 O-rings
- 8 1,78x1,78 EPDM O-rings
- 2 7,52x 3,33 EPDM X-rings
- 8 24x2 flat gaskets
- 4 filter screen for inlet 19,5dx25
- 2 flow regulator cores
- 1 springs for inlet
- 2 regulator plug
- 4 fuses, T0,8 A
- 4 fuses, T1,0 A
- 4 button batterye
- 8 spacer sleeve
- 16 beak valve
- 2 30x3 sight glasses
- 2 30x3 mirror glass
- 2 sight glass holder
- 4 M3x40 screws
- 2 outlet hoses
- 2 inlet hoses
- 4 tubes
- 2 adapter for plug connection
- 1 UniTFT USB programming cable
- 1 cleaning brush set
- 4 ø12,7 rubber ball
- 1 magnetic stirring bar
- 2 support sleeve
- 1 setting tool
- 1 M4x40 knurled screw
- 1 screw-in connector G1/4“-1/4"
- 1 screw-in connector G1/4“-6
- 1 screw-in connector G1/4“-1/8"

Accessories Testomat® PRO / Limit	Testomat Pro service case
	New
Is used	for Testomat® Pro and EVO devices
Order number	270334
Description	Service case for regular maintenance of aTestomat® Pro or EVO device
Technical data	• 4 20x2 O-rings • 4 10.82x1.78 O-rings • 2 4.47x1.78 O-rings • 2 18x2 EPDM O-rings • 4 24x2 flat gaskets • 2 filter screen for inlet, 19.5dx25 • 2 flow regulator cores • 2 springs for inlet • 6 stoppers for measuring chamber • 2 fuses, T0.16 A • 2 fuses, T 2 A • 2 fuses, T 0.315 A • 2 fuses, T 1.6 A • 2 fuses, M4A • 4 30x3 sight glasses • 3 screw caps with T2000 insert • 2 M3x40 screws • 2 suction hose • 2 pressure hose • 6 different pipes • 1 cleaning brush set • 1 screw-in connector G1/4“-6 • 2 magnetic stirring bars • 1 valve set for dosing pump • 1 inlet connection

	Retrofit set SelfClean	Retrofit set SelfClean function	Setting tool for assembly
	New	New	New
Is used for	for Testomat® PRO	for Testomat® Limit	for Testomat® Limit
Order number	40248	040681	40316
Description	For retrofitting a FlowClip pump with the SelfClean function	For retrofitting a second pump for the SelfClean function	The setting tool was specially developed for inserting the beak valves when retrofitting the Selfclean pump in the Testomat® Limit.
Technical data	• 1 x FlowClip pump • 1 x bottle insert with screw cap • 1 x Installation instruction	• 1 x SelfClean pump for Limit devices • 1 x bottle insert with screw cap • 1 x Installation instruction	

Accessories Testomat® PRO / Limit	EU plug adapter	UK plug adapter	US plug adapter
	New	New	New
Is used	for Testomat® Limit	for Testomat® Limit	for Testomat® Limit
Order number	30969	30969	30969
Description	Primary adapter EU for plug-in power supply	Primary adapter UK for plug-in power supply	Primary adapter US for plug-in power supply

Accessories Testomat® / Titromat®	Service set Testomat® Modul TH	Service set Testomat 2000® Polymer	Service set Testomat 2000® PO4
Is used	for Testomat® Modul TH/TH-R	for Testomat 2000® Polymer	for Testomat® PO4
Order number	270357	270353	270354
Description	spare part kit for maintenance of Testomat® Modul TH	spare part kit for maintenance of Polymer device and PeriClip pump	spare part kit for maintenance of PO4 device and PeriClip pump
Technical data	• 1 T2000 gasket kit • 2 30x3 sight glass • 1 flow regulator cores • 3 stoppers for measuring chamber • 2 x screw cap with insert for 500 ml bottle • 1 filter screen for intake 19.5 d x 25 • 5 different pipes • 1 cleaning brush set • 1 valve set for pump • 1 suction hose • 1 pressure hose	• 1 T2000 gasket kit • 2 30x3 sight glass • 1 flow regulator cores • 3 stoppers for m . chamber • 2 x pump head • 1 filter screen for intake • 3 different pipes • 1 cleaning brush set • 2 x tube connection • 2 x seal for tube connection • 2 x screw cap with insert	• 1 T2000 gasket kit • 2 30x3 sight glass • 1 flow regulator cores • 3 stoppers for m . chamber • 2 x pump head • 1 filter screen for intake • 3 different pipes • 1 cleaning brush set • 2 x tube connection • 2 x seal for tube connection • 2 x screw cap with insert

	Service set Testomat® Modul CL	Service set Testomat® EVO	Suction lance PO4
Is used	for Testomat® Modul CL and NH2CL	for Testomat® EVO TH and EVO TH CAL	for Testomat 2000®
Order number	270356	270358	suction lance (20 l container) 40535 suction lance (5 l container) 40536
Description	spare part kit for maintenance of Testomat® Modul CL and NH2CL	spare part kit for maintenance of Testomat® EVO TH and EVO TH CAL	long suction lances for large reagent containers
Technical data	• 1 T2000 gasket kit • 2 30x3 sight glass • 1 flow regulator cores • 3 stoppers for measuring chamber • 2 x screw cap with insert for 500 ml bottle • 1 filter screen for intake 19.5 d x 25 • 5 different pipes • 1 cleaning brush set • 1 pump head • 2 hose connection • 2 seal for hose adapter	• 1 T2000 gasket kit • 2 30x3 sight glass • 1 flow regulator cores • 3 stoppers for measuring chamber • 1 valve kit for injection pump • 1 filter screen for intake 19.5 d x 25 • 4 different pipes • 1 cleaning brush set	• suction lances with different lenghts for 20-litre containers and 5-litre containers

Accessories Testomat® / Titromat®	Service set	1-Year service set	Pressure regulator
Is used	for Testomat® Limit	for Testomat® Limit	for Testomat® 808
Order number	270339	270359	37602
Description	large spare part kit for maintenance	small spare part kit for maintenance	the pressure regulator is used for pressures over 4 bar / 58 psi
Technical data	• 1 flow regulator core • 1 30x3 sight glass • 1 30x3 mirror glass • 1 filter screen for intake 19.5 d x 25 • 1 1/4"x160 pipe outlet • 1 1/4"x47 pipe inlet • 1 magnetic stirring bars • 2 3x1 EPDM O-rings • 1 18x2 EPDM O-ring • 2 1,78x1,78 EPDM O-rings • 1 cleaning brush set	• 1 30x3 sight glass • 1 30x3 mirror glass • 1 18x2 EPDM O-rings • 1 24x2 flat gasket • 1 magnetic stirring bars	• max. inlet pressure 8 bar/116 psi • ambient temp. 0–50°C / 32-122°F • manometer connection, G1/8 on both sides • non-reversible • Particularly suitable for permeate and deionised water

	Service set	Service set	1-Year service set
Is used	for Testomat® 808/808 SiO2	for Testomat 2000®, Testomat ECO®, EVO and Titromat®	for Testomat 2000®, Testomat ECO®, EVO, Modul TH and Titromat®
Order number	270351	270352	270360
Description	set for regular maintenance	spare part kit for maintenance	small spare part kit for maintenance
Technical data	• 15 24x2 flat gaskets • 6 sight glasses • 6 4.2x1.9 O-rings • 6 4.5x1.5 O-rings • 6 1.78x1.78 O-rings • 1 pipe, l = 53 mm / 2“ • 1 pipe, l = 140 mm / 5.5“ • 1 cleaning brush set	• 1 T2000 gasket kit • 2 30x3 sight glasses • 1 flow regulator core • 3 stoppers for measuring chamber • 1 valve kit for injection pump • 1 filter screen for intake 19.5 d x 25 • 3 different pipes • 1 cleaning brush set	• 1 T2000 gasket kit 2 30x3 sight glass • 1 flow regulator cores • 3 stoppers for measuring chamber • 1 valve kit for injection pump • 1 filter screen for intake 19.5 d x 25

Spare parts Testomat®	Bottle connection/ suction device	Device spare parts	
Is used	for Testomat 2000®, ECO®, EVO, PRO, Modul TH, Titromat®	for Testomat 2000® /Testomat ECO® and Titromat®	
Order number	screw cap with T2000 insert for 500 ml bottle 040131 consists of: GL32 screw cap — hole 040130 insert for screw cap with suction pipe 040135	cable feedthrough, 5-7 040190 cable feedthrough, 7-10 040191 T2000 mains switch 040197 cover for mains switch 040198 ribbon cable, 10-pole, with ferrite 031713 ribbon cable, 26-pole, with ferrite 040096 loom 2V, complete (for valves) 040060	loom 2P, complete (for max two dosing pumps) 040062 loom for main switch complete 040200 fuse T 0.08 A 031596 fuse T 0.315 A 031585 fuse T 0.1 A 031595 fuse T 0.16 A 031622 fuse T 1.0 A 031592 fuse M4 A 031582 drain funnel T2000 040315

	PMMA sight glasses	Sight glasses for shortened measurement section	Gear motor
Is used	for Testomat® 808	for Testomat 2000® Cr VI 0-5ppm, Testomat 2000® PO4, Testomat® Modul CL/NH2CL	for Testomat® 808 / 808 SiO2
Order number	37653	40244	gear motor 12 V DC for the dosing pump of Testomat® 808 with installation guide 100494 for Testomat 2000® gear motor 12 V DC for the dosing pump PeriClip 39906
Description	PMMA sight glasses are used when the silicate content in the measuring water exceeds 15 mg/l and prevent silicates clogging up the sight glasses. The kit consists of: • 2 24x2 flat gaskets • 2 sight glasses	The sight glasses are designed for use in the measuring chamber with a shortened measurement section.	

	Article no. of the measuring chamber holder									
	DUO 40370	DUO 40371	Trio 40372	Quad 40373	DUO 40375	DUO 40379	DUO 40407	40377	DUO 37856	Quadro 40451
Testomat 2000® Antox	X									
Testomat 2000® Br		X								
Testomat 2000® CLF		X								
Testomat 2000® CLT			X							
Testomat 2000® CLT self clean				X						
Testomat 2000® CLO2		X								
Testomat 2000® CN DUO	X									
Testomat 2000® Cr VI		X								
Testomat 2000® Cr VI 0-5ppm						X				
Testomat 2000® DUO	X									
Testomat 2000® Polymer		X								
Testomat 2000® PO4							X			
Testomat 2000® self clean	X									
Testomat 2000® SO3					X					
Testomat 2000 THCl®				X						
Testomat® ECO-C*								X		
Testomat® Modul CL									X	
Testomat® Modul NH2CL									X	
Testomat® PRO Fe										X
Testomat® PRO CA self clean										X
Testomat® PRO CLT										X
Titromat M1	X									
Titromat M2	X									
Titromat KH	X									
Titromat TH	X									

*Specially for Testomat® ECO-C for the measurement of carbonate hardness.

Spare parts Testomat® 808/808 SIO2

Is used for Testomat® 808 SiO2

Order number

magnet valve	37570
double pump head*	37859
fuse, T1,0A	31592
fuse, T0,315A	31585
fuse, T0,2A	31584
fuse, T0,1A	31595
fuse,GS-T, 5x20, T A4	31666
cable ducting M16 x 1,5	37734
Nut for cable ducting M16 x 1.5	37735
Blanking plug for cable ducting	37736

*New pump heads for the Testomat® 808-2019 and Testomat® 808 SiO2-2019 device generation. For older devices up to serial number 253060, the conversion kit on page 35 must also be used.

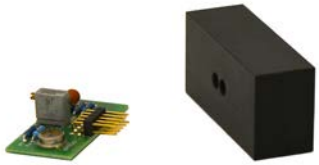
Devices spare parts Testomat® 808 SiO2

Is used for Testomat® 808 SiO2

Order number

magnet valve	37570
double pump head*	37859
fuse, T1,0A	31592
fuse, T0,315A	31585
fuse, T0,2A	31584
fuse, T0,1A	31595
fuse,GS-T, 5x20, T A4	31666
cable ducting M16 x 1,5	37734
Nut for cable ducting M16 x 1.5	37735
Blanking plug for cable ducting	37736

Set optical board + LED socket



Is used for Testomat® 808 / 808 SiO2

Order number

Testomat® 808 - 2019:
Full set with optics board and LED holder, 40393 synchronized by the factory

Testomat® 808 SiO2 - 2019
Full set with optics board and LED holder, 40394 synchronized by the factory

For older instruments:
Testomat® 808:
Full set with optics board and LED holder, 40364 synchronized by the factory

Testomat® 808 SiO2
Full set with optics board and LED holder, 40365 synchronized by the factory

Measuring chamber Testomat® 808 SiO2

Is used for Testomat® 808 / 808 SiO2

Order number

24x2 flat gasket	33777
30x3 sight glass pane	40170
sight glass holde	40176
M3x40 screw, A2, DIN 965	33253
M3x12 screw	33246
T808 SiO2 measuring chamber, complete (1–4 bar/14.5-58 psi)	37784
T808 SiO2 measuring chamber, complete (0.3-1 bar/4.4-14.5 psi)	37785
magnetic rod	40050
G1/8“-6 screw-in angle joint	40157

Devices spare parts Testomat® 808

Is used for Testomat® 808

Order number

magnet valve	37570
pump head*	37562
fuse, T1.0A	31592
fuse, T0.8A	31593
fuse, T0.2A	31594
fuse, T0.1A	31595
fuse, GS-T, 5x20, T A4	31666
cable ducting M16 x 1,5	37734
Nut for cable ducting M16 x 1.5	37735
Blanking plug for cable ducting	37736

Measuring chamber

Is used for Testomat® 808

Order number

24x2 flat gasket	33777
30x3 sight glass pane	40170
sight glass holder	40176
M3x40 screw, A2, DIN 965	33253
T808 measuring chamber, complete (1-4 bar/14.5-58 psi)	37615
T808 measuring chamber, complete (0.3-1 bar/4.4-14.5 psi)	37616
magnetic rod, processed	40050
G1/8“-6 screw-in angle joint	40157

Bottle connection/ suction device

Is used for Testomat® 808 / 808 SiO2

Order number

Testomat® 808:
bottle insert with screw cap and suction tube,
tube connection ø 2.4 mm

500 ml bottle	37579
100 ml bottle	37580
hose adapter ø 2.4 mm	37538

Testomat® 808 SiO2:
bottle insert with screw cap and suction tube,
tube connection ø 3.5 mm

500 ml bottle	37644
100 ml bottle	37645
hose adapter ø 3.5 mm	37643

Spare parts Testomat® / Titromat®	Pressure regulator	Measuring chamber	Measuring chamber holder
Is used	for Testomat 2000®, ECO®, EVO, PRO, Modul TH, Titromat®	for Testomat 2000®, ECO®, EVO, PRO, Modul TH, Titromat®	for Testomat 2000®, Testomat ECO®, EVO, Modul TH, Titromat®
Order number	regulator/filter holder, complete 040125 consists of: regulator/filter holder 040120 regulator stopper T2000, complete 040129 flow regulator core (1–8 bar/14.5-87 psi) 011225 holding pin for regulator stopper 011230 filter screen for inlet 011217 spring for inlet 011218 inlet connector 040121 G ¼“ - 6 screw-in connector 040153	measuring chamber, complete 040022 consists of: 30x3 sight glass pane with gasket 040173 30x3 sight glass pane 040170 sight glass holder 040176 M 3x40 screw 033253 TL 800-7-1 tenterhook 040032 plate stopper 24x2 011210 flat gasket 033777 sight glass holder set with 2 screws 040510 (2 sight glass holders and 2 M3x40 screws)	measuring chamber holder, complete (without valves) 040029 and accessories: magnetic rod 040050 plug connection for drain hose 040186 magnet valve, 2/2-ways 040018 pin for chamber holder, 5x60 mm 040181 *For further article numbers for measuring chamber holders DUO, TRIO, and QUAD as well as for carbonate hardness measurement* *see page 43*

	Measuring chamber with double glazing	Measuring chamber with shortened measurement section	
Is used	for Testomat 2000® and Testomat® 808	for Testomat 2000® Cr VI 0-5ppm, Testomat 2000® PO4, Testomat® Modul CL/NH2CL	
Order number	Measuring chamber for Testomat 2000® 40559 Measuring chamber for Testomat® 808 37863 for both: sight-glass window 30x1,6 37833 sight-glass window holder 37806 seal 37808	40378	
Description	The measuring chamber with double glazing can be used in the event of strong temperature differences between air and test water. Problems caused by steaming up in a humid environment are thus prevented in many applications.	Special measuring chamber for some Testomat devices. Cannot be used in all Testomat® devices	

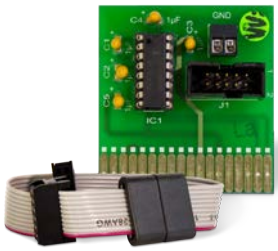
Spare parts Testomat®	Device spare parts Testomat® EVO				Bottle connection/ suction device	
Is used	for Testomat® EVO, EVO CAL and PRO				for Testomat 2000® Polymer/ Testomat 2000® PO4	
Order number	Cable ducting M16x1,5	37734	fuse GS-M 5x20E 4A MT	31582	screw cap with insert for 500 ml bottle	37644
	Nut for cable ducting M16x1,5	37735	fuse T0,315 A fuse T0,16 A fuse T1,6 A fuse T2,0 A fuse T0,5 A fuse T0,8 A fuse T1,25 A	31585 31622 12140 31655 31604 31593 12143	screw cap with insert for 100 ml bottle	37645
	Blanking plug for cable ducting	37736				
	ribbon cable, 10-pole, with ferrite	31713				
	loom 2V, complete (for valves)	40060	standard SD card 2 GB	37319		
	loom 2P, complete (for max two dosing pumps)	40062	Lithium backup battery CR2032	31999		
			drain funnel	32187		

Device spare parts Testomat® Moduls				
Is used	for Testomat® Moduls TH/CL/NH2CL			
Order number	Cable ducting M16x1,5	37734	Pump head PeriClip SP	40362
	Nut for cable ducting M16x1,5	37735	fuse GS-M 5x20E 2A MT	10843
	Blanking plug for cable ducting	37736	standard SD card 2 GB	37319
	Ribbon cable 2 x 7 pole	37832	Lithium backup battery CR2032	31999
	loom 2V, complete (for valves)	40060	Cover	37798
	loom 2P, complete (for max two dosing pumps)	40062		

Spare parts for the Testomat® BOB can only be supplied to a limited extent.
Please contact your distributor if you need spare parts.

Dosing pumps Testomat® / Titromat®	DOSIClip®	MEPUClip®	FLOWClip®
Is used as	dosing pump for Testomat devices	booster pump for Testomat 2000®/EVO/Titromat®	dosing pump for Testomat PRO and 2000® self clean
Order number	270470 as spare part 40001	270410	270440
Description	electromagnetically driven piston dosing pump for dosing aqueous media that are free of suspended matter	installation of the membrane pump is necessary for water inlet pressure under 0.3 bar	membrane pump for dosing cleaning agent into the measuring chamber also possible for other reagents
Technical data	• pump volume: 30 µl/stroke • max. suction height: approx. 0.5 m with water and 0.8 mm hose ID • max. pump pressure: approx. 1 bar /4.5 psi with water and 0.8 mm hose ID (max. 0.5 m length) • ambient temperature: 10–45°C / 50-113°F • mounting: on 35 mm / 1.4“ DIN top-hat rail	• Flow rate at atmospheric pressure : 0.6 l/min • Maximum suction head: 3m H_2O self-priming • ambient temperature: 10–40°C / 50-104°F • medium temperature: 10–45°C / 50-113°F • mounting: on 35 mm / 1.4“ DIN top-hat rail When a „Testomat® with pump“ is ordered, installation occurs at the factory.	• Flow rate at atmospheric pressure : 0.1 l/min • Maximum suction head: 3m H_2O self-priming • ambient temperature: 10–40°C / 50-104°F • medium temperature: 10–45°C / 50-113°F • mounting: on 35 mm / 1.4“ DIN top-hat rail

	PERIClip®	DOSIClip® Vi	
	dosing pump for Testomat 2000® Polymer / PO4 / Modul CL/NH2CL	dosing pump for Titromat® and Testomat devices that measure carbonate hardness	
Order number	270430	270471	
Description	hose pump for aqueous media	electromagnetically driven piston dosing pump for dosing aqueous media that are free of suspended matter	
Technical data	• pump volume: 400–500 µl/min • ambient temperature: 10–45°C / 50-113°F • mounting: on 35 mm / 1.4“ DIN top-hat rail • dimensions: 75 x 45 x 110 mm (HxWxD) 3“ x 1,8“ x 4.3“	• as with DosiClip • for use with strongly acidic media	

Plug-in Cards	SK 910 current interface	RS 910 interface card	UK 910 voltage interface
			
Is used	for Testomat 2000® devices, Titromat	for Testomat 2000® devices, Titromat	for Testomat 2000® devices, Titromat
Order number	270305	270310	270315
Description	plug-in card current interface	RS232 plug-in card (serial interface)	plug-in card voltage interface
Technical data	• output current: 0–20mA or 4–20mA • maximum load: 500 Ohm • galvanic isolation	• for connecting a log printer or protocol converter (field bus, Ethernet, etc.)	• output voltage: 0/2–10V • galvanic isolation

	Network logger	Switching power supply board	SD card data logger
Is used	for Testomat 2000®	for Testomat® EVO and PRO	for Testomat 2000® devices, Titromat
Order number	100492	32394	100490
Description	Plug-in card with a 100 MBit network connection	Switching power supply unit for the power supply of Testomat® EVO and PRO devices	plug-in card for storing measurement results and error messages on an SD card
Technical data	• Web server, FTP server and built-in Flash storage • 8 MB Flash storage for 400,000 measurement values and notifications (around 5 years) • Generation of measurement and alarm data on a monthly basis • Files saved in “CSV” format and can be subsequently processed with Office packages.	• power supply 100-240 VAC / 100-350 VDC, 47-63 Hz	• now available for all Testomat 2000® and Titromat devices (after software update of older units) • including standard SD card up to 2GB • the data are available in CSV format and can be further processed or analyzed easily in a spreadsheet program

	USB data logger	OLED display module	
Is used	for Testomat® 808	for Testomat® Moduls	
Order number	100493	37764	
Description	Data logger with USB connection	Plug-in card with OLED display for the measurement on Testomat modules	
Technical data	• The data logger stores the measurement values via the 20mA port at regular intervals. Data can be accessed by the integrated USB port • sufficient storage capacity for 32,768 values. • comes complete with driver and applications • Cannot be used in the Testomat® 808 SIO2!	• Permanently plugged into the control board. • Measurement display only, no menu for programming. The unit is always programmed via the Service Monitor programme, which is stored on an SD card in the Testomat® module.	

Selection help

Our Testomat devices have many uses in water analysis. This table will help you find the Testomat device suited to your needs.

	chlorination systems	decarbonization systems	iron removal systems	water softening systems	galvanization	boiler feed water	sewage treatment plants	cooling towers	medical technology	with dosing of antioxidants	with calibration function	with self-cleaning measuring chamber	osmosis systems	swimming pool	sterilisation/hospitals	drinking water supply	monitoring disinfectant dosing	monitoring chromate content	monitoring conditioning agents	monitoring two measuring points	water treatment	water blending
Testomat® Limit Testomat® 808	○	○	○	●	◐	◐	○	◐	○	○	○	○	●	◐	◐	◐	○	○	○	○	◐	◐
Testomat® 808 SiO2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	○	○	○	○	○	◐	○
Testomat ECO®	○	○	○	●	◐	◐	○	◐	○	○	○	○	◐	◐	◐	◐	○	○	○	○	◐	◐
Testomat® EVO TH	○	○	○	●	◐	◐	○	◐	○	○	○	○	◐	◐	◐	◐	○	○	○	○	◐	◐
Testomat® EVO TH CAL	○	○	○	●	◐	◐	○	◐	○	○	●	○	◐	◐	◐	◐	○	○	○	○	◐	◐
Testomat ECO® C	○	●	○	◐	◐	◐	○	◐	○	○	○	○	◐	●	○	◐	○	○	○	○	◐	◐
Testomat 2000®	○	◐	○	●	◐	●	○	◐	○	○	○	○	◐	◐	◐	◐	○	○	○	◐	◐	◐
Testomat 2000® Antox	○	◐	○	●	◐	◐	○	◐	○	●	○	○	◐	◐	○	◐	○	○	○	◐	◐	◐
Testomat 2000® BR	○	○	○	○	◐	○	○	○	○	○	○	○	○	○	○	◐	●	○	○	◐	◐	○
Testomat 2000® CAL	○	◐	○	●	◐	○	○	○	○	○	●	○	◐	○	◐	◐	○	○	○	◐	◐	◐
Testomat 2000® CLO2	●	○	○	○	○	○	○	◐	○	○	○	○	○	◐	○	●	●	○	○	◐	◐	○
Testomat 2000® CLF	●	○	○	○	○	○	○	○	○	○	○	○	○	◐	○	◐	●	○	○	◐	◐	○
Testomat 2000® CLT	●	○	○	○	○	○	○	◐	○	○	○	○	○	◐	○	◐	●	○	◐	◐	◐	○
Testomat 2000 CLT self clean®	●	○	○	○	○	○	○	◐	●	○	○	●	○	◐	○	◐	○	○	◐	◐	◐	○
Testomat 2000® CN	○	◐	○	●	◐	●	○	◐	○	○	○	○	◐	◐	◐	◐	○	○	○	◐	◐	◐
Testomat 2000® CrVI	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	●	○	◐	◐	○
Testomat 2000® DUO / DUO CN	○	◐	○	●	◐	◐	○	◐	○	○	○	○	◐	◐	◐	◐	○	○	○	●	◐	◐
Testomat 2000® PO4	○	○	○	○	○	◐	●	●	○	○	○	○	○	○	○	○	○	○	●	◐	◐	○
Testomat 2000® Polymer	○	○	○	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	●	◐	◐	○
Testomat 2000® self clean	○	◐	○	●	◐	◐	○	◐	○	○	○	●	◐	◐	◐	◐	○	○	◐	◐	◐	◐
Testomat 2000® THCL	◐	○	○	◐	○	○	○	○	○	○	○	○	●	◐	◐	●	◐	○	◐	●	◐	○
Testomat 2000® V	○	◐	○	●	◐	○	○	○	○	○	○	○	○	○	○	○	○	○	○	◐	◐	●
Testomat® Modul TH	○	○	○	●	◐	◐	○	◐	○	○	○	○	◐	◐	◐	◐	○	○	○	◐	◐	◐
Testomat® Modul CL/ NH2CL	●	○	○	○	○	○	○	◐	○	○	○	○	○	◐	○	◐	●	○	◐	◐	◐	○
Testomat® PRO Fe	○	○	●	○	◐	◐	◐	○	○	○	○	●	◐	◐	○	●	○	○	○	◐	◐	○
Testomat® PRO Ca self clean	○	○	○	○	○	●	○	●	○	○	○	●	○	◐	○	○	◐	○	○	●	◐	●
Testomat® PRO CLT/F	●	○	○	○	○	○	○	◐	○	○	○	●	○	◐	○	◐	●	○	◐	◐	◐	○

● especially appropriate ◐ appropriate ○ not appropriate

Indicators/reagents
Testomat 2000® indicators (500 ml bottle)

Indicator type	Unit °dH (resolution)	°f (resolution)	ppm $CaCO_3$ (resolution)	mmol/l (resolution)	Order number
TH 2005	0,05-0,50 (0,01)	0,09-0,89 (0,02)	0,89-8,93 (0,2)	0,01-0,09 (0,01)	152005
TH 2025	0,25-2,50 (0,05)	0,45-4,48 (0,10)	4,48-44,8 (0,9)	0,04-0,45 (0,01)	152025
TH 2050*	0,50-5,00 (0,10)	0,89-8,90 (0,10)	8,90-89,0 (0,1)	0,09-0,89 (0,10)	152050
TH 2100	1,00-10,00 (0,20)	1,79-17,9 (0,40)	17,9-179 (3,8)	0,18-1,79 (0,04)	152100
TH 2250	2,50-25,00 (0,50)	4,48-44,8 (1,00)	44,8-448 (10)	0,45-4,48 (0,10)	152250
TC 2050	0,50-5,00 (0,50)	0,90-8,96 (0,90)	8,9-89,5 (8,9)	0,18-1,79 (0,18)	153050
TC 2100	1,00-20,00 (1,00)	1,79-35,8 (1,79)	18-358 (18)	0,36-7,14 (0,36)	153100
TM 2005				0,05-0,50 (0,05)	154005
TP 2100				1-15,0 (1,00)	155100

*not for Testomat® 2000 devices

Testomat 2000® indicators (100 ml bottle)

Indicator type	Unit °dH (resolution)	°f (resolution)	ppm $CaCO_3$ (resolution)	mmol/l (resolution)	Order number
TH 2005 (2 x 100 ml)	0,05-0,50 (0,01)	0,09-0,89 (0,02)	0,89-8,93 (0,2)	0,01-0,09 (0,01)	151005
TH 2025	0,25-2,50 (0,05)	0,45-4,48 (0,10)	4,48-44,8 (0,9)	0,04-0,45 (0,01)	151025
TH 2050*	0,50-5,00 (0,10)	0,89-8,90 (0,10)	8,90-89,0 (0,1)	0,09-0,89 (0,10)	152050
TH 2100	1,00-10,00 (0,20)	1,79-17,9 (0,40)	17,9-179 (3,8)	0,18-1,79 (0,04)	151100
TH 2250	2,50-25,00 (0,50)	4,48-44,8 (1,00)	44,8-448 (10)	0,45-4,48 (0,10)	152250

*not for Testomat® 2000 devices

Please note that a different bottle insert is required for the 100 ml from the insert included in the delivery. (T2000 conversion kit, art. no. 40143)

Titromat® reagents (500 ml bottle)

Reagent type	for	Parameters	Measuring range	Resolution	Order number
TH 2500 reagent A	TH	Water hardness	2,5-50 °dH	2,5 °dH	155160
TH 2500 reagent B	TH	Water hardness	2,5-50 °dH	2,5 °dH	155161
TC 2010 reagent A	M1	Carbonate hardness	0,05-1 °dH	0,025 °dH	155172
TC 2010 reagent B	M1	Carbonate hardness	0,05-1 °dH	0,025 °dH	155173
TC 2020 reagent A	M2	Carbonate hardness	0,05-2 °dH	0,05 °dH	155170
TC 2020 reagent B	M2	Carbonate hardness	0,05-2 °dH	0,05 °dH	155171
TC 2060 reagent A	KH	Carbonate hardness	2-60 °dH	2 °dH	155176
TC 2060 reagent B	KH	Carbonate hardness	2-60 °dH	2 °dH	155177
TC 2150 reagent A	KH	Carbonate hardness	5-150 °dH	5 °dH	155178
TC 2150 reagent B	KH	Carbonate hardness	5-150 °dH	5 °dH	155179

Testomat 2000® reagents (500 ml bottle)

Reagent type	Parameters	for device	Measuring range	Order number
Calcium reagent A	Calcium carbonate $CaCO_3$	PRO Ca	0 - 33°dH	158123
Calcium reagent B	Calcium carbonate $CaCO_3$	PRO Ca	0 - 33°dH	158124
Calcium reagent C	Calcium carbonate $CaCO_3$	PRO Ca	0 - 33°dH	158125
CL 2250 A**	total chlorine + free chlorine	CL T + CL F	0-2,5 mg/l	156230
CL 2250 B**	total chlorine + free chlorine	CL T + CL F	0-2,5 mg/l	156231
CL 2250 C**	total chlorine	CL T	0-2,5 mg/l	156232
Chlorine reagent set T*	total chlorine + free chlorine	CL T + CL F	0-2,5 mg/l	156235
Chlorine reagent set T 50%*	total chlorine + free chlorine	CL T + CL F	0-2,5 mg/l	156237
Chlorine reagent set F*	free chlorine	CL F	0-2,5 mg/l	156233
Chlorine reagent set F 50%*	free chlorine	CL F	0-2,5 mg/l	156236
Chlorine reagent set T	total chlorine	Modul CL	0-5 mg/l	158239
Chlorine reagent set F	free chlorine	Modul CL	0-5 mg/l	158234
Chlorine reagent set M	monochloramine	Modul NH2CL	0-5 mg/l	158238
CLO2 reagent set A u. B*	chlorine dioxide	ClO_2	0-4,7 mg/l	156265
CrVI 2100 A	chromate CrO_4^{2-} or chromium VI	CrVI	0-5,0 mg/l 0-1,0 mg/l	156220
CrVI 2100 B	chromate CrO_4^{2-} or chromium VI	CrVI	0-5,0 mg/l 0-1,0 mg/l	156221
FE 2005 A	iron dissolved (I I) u. (I I I)	Fe, PRO Fe	0-1,0 mg/l	156250
FE 2005 B	iron dissolved (I I) u. (I I I)	Fe, PRO Fe	0-1,0 mg/l	156251
Sulfite reagent A	sulfite	SO_3^{2-}	0-50 mg/l	156240
Sulfite reagent B	sulfite	SO_3^{2-}	0-50 mg/l	156241
Brom reagent set*	bromine	Br	0-5,6 mg/l	156295
Polymer reagent A	polymer	Polymer	0-50 mg/l	156271
Polymer reagent B	polymer	Polymer	0-50 mg/l	156272
PO4 reagent set 2100	phosphate	PO_4	0-10 mg/l	156264
PO4 reagent 2100 A (20 litres)	phosphate	PO_4	0-10 mg/l	156281
PO4 reagent 2100 B (5 litres)	phosphate	PO_4	0-10 mg/l	156282

*The reagent sets are designed for the uniform consumption of reagents; the capacities of the individual reagent bottles are therefore not identical.

** Only reagents CL 2250 A and B are required for measuring free chlorine. All three reagents CL 2250 A, B and C are required for measuring total chlorine.

Testomat® special solutions

Reagent type	Device	Order number
Self clean cleaning solution (500 ml)	T 2000 self clean	151105
Calcium cleaning solution (500 ml)	Testomat® Pro Ca self clean	158126
Antox solution (2 x 100 ml) for eliminating oxidant-related disruptions	T 2000 Antox	151107

	Type	Limit value	Bottle	Order number	Packaging unit
808/F-BOB	300	0,02 °dH residual hardness	100 ml	140001	2 x 100 ml
	300S	0,05 °dH residual hardness	100 ml	140002	2 x 100 ml
	301	0,1 °dH residual hardness	100 ml	140003	2 x 100 ml
	302	0,2 °dH residual hardness	100 ml	140004	2 x 100 ml
	303	0,3 °dH residual hardness	100 ml	140005	2 x 100 ml
	305	0,5 °dH residual hardness	100 ml	140006	2 x 100 ml
	310	1 °dH residual hardness	100 ml	140007	2 x 100 ml
	320	2 °dH residual hardness	100 ml	140008	2 x 100 ml
	330	3 °dH residual hardness	100 ml	140009	2 x 100 ml
	350	5 °dH residual hardness	100 ml	140010	2 x 100 ml
C-BOB	C 5	0,5 °dH carbonate hardness	100 ml	140020	2 x 100 ml
	C 10	1 °dH carbonate hardness	100 ml	140021	2 x 100 ml
	C 15	1,5 °dH carbonate hardness	100 ml	140022	2 x 100 ml
	C 20	2 °dH carbonate hardness	100 ml	140023	2 x 100 ml
	C 30	3 °dH carbonate hardness	100 ml	140024	2 x 100 ml
	C 40	4 °dH carbonate hardness	100 ml	140025	2 x 100 ml
M-BOB	M 1	0,1 mmol/l minus m-value	100 ml	140040	2 x 100 ml
	M 3	0,3 mmol/l minus m-value	100 ml	140041	2 x 100 ml
	M 5	0,5 mmol/l minus m-value	100 ml	140042	2 x 100 ml
808/F-BOB	300	0,02 °dH residual hardness	500 ml	141001	500 ml
	300 S	0,05 °dH residual hardness	500 ml	141002	500 ml
	301	0,1 °dH residual hardness	500 ml	141003	500 ml
	302	0,2 °dH residual hardness	500 ml	141004	500 ml
	303	0,3 °dH residual hardness	500 ml	141005	500 ml
	305	0,5 °dH residual hardness	500 ml	141006	500 ml
	310	1 °dH residual hardness	500 ml	141007	500 ml
	320	2 °dH residual hardness	500 ml	141008	500 ml
	330	3 °dH residual hardness	500 ml	141009	500 ml
	350	5 °dH residual hardness	500 ml	141010	500 ml
C-BOB	C 5	0,5 °dH carbonate hardness	500 ml	141020	500 ml
	C 10	1 °dH carbonate hardness	500 ml	141021	500 ml
	C 15	1,5 °dH carbonate hardness	500 ml	141022	500 ml
	C 20	2 °dH carbonate hardness	500 ml	141023	500 ml
	C 30	3 °dH carbonate hardness	500 ml	141024	500 ml
	C 40	4 °dH carbonate hardness	500 ml	141025	500 ml
M-BOB	M 1	0,1 mmol/l minus m-value	500 ml	141040	500 ml
	M 3	0,3 mmol/l minus m-value	500 ml	141041	500 ml
	M 5	0,5 mmol/l minus m-value	500 ml	141042	500 ml
808 SiO2	A	0,3 - 1,2 ppm SiO2	500 ml	141808	500 ml
	B	0,3 - 1,2 ppm SiO2	500 ml	141809	500 ml
	reagent set A+B	0,3 - 1,2 ppm SiO2	100 ml	140808	100 ml

Limit value kits	DUROGNOST® I	DUROGNOST® SR 0	DUROGNOST® SR
Is used als	quick colorimetric determination of residual hardness	limit value test for quick determination of residual hardness	limit value test for quick determination of residual hardness
Order number	400050	400056	400055
Description	special indicator in powder form for quick colorimetric determination of minimum hardness traces in the range of 0–0.1°dH or 0–2 ppm $CaCO_3$ or 0,2 °f (French hardness) complete with measuring tube and spoon analyses: approx. 700 measuring time: approx. ½ minute	special liquid indicator in a dropper bottle for monitoring the residual hardness of softened water, adapted for limit values of 0.1 and 0.05 °dH. complete with measuring tube and stopper analyses: approx. 250 measuring time: approx. ½ minute	equipped like DUROGNOST® SR 0, but adapted for limit values of 0.5 and 0.25 °dH analyses: approx. 250 measuring time: approx. ½ minute

	DUROGNOST® SR 1	DUROGNOST® special buffer solution	
			A company logo on the supplement is free with purchase of more than 100 Duroval® or Durognost® articles.
Is used als	limit value test for quick determination of residual hardness	buffer solution for alkaline water samples	
Order number	400054	400016	
Description	equipped like DUROGNOST® SR0, but adapted to limit values of 1 and 0.5 °dH analyses: approx. 250 measuring time: approx. ½ minute	for buffering strongly alkaline water samples (pH over 10) for determining total and residual hardness with DUROGNOST® and DUROVAL® kits (8 ml dropper bottle) analyses: approx. 200	

Titration quick test kits	DUROVAL® 1 drop = 1 °dH	DUROVAL® 1 drop = 1 °f	DUROVAL® 1 Tr. = 10 ppm CaCO3
Is used as	titration kit for determining water hardness via complexometric titration	titration kit for determining water hardness via complexometric titration	titration kit for determining water hardness via complexometric titration
Order number	1 piece 400010 50 pieces 400110 neutral inlays without folding box 50 piece kit 400112 neutral inlays without folding box 50 pieces 400118 neutral inlays with folding box	1 piece 400011 50 pieces 400111 neutral inlays without folding box 50 piece kit 400113 neutral inlays without folding box 50 pieces 400119 neutral inlays with folding box	400012
Description	1 drop corresponds to 1 degree of German hardness analyses: approx. 30 (with an average hardness of 10 °dH).	1 drop corresponds to 1 degree of French hardness analyses: approx. 30 (with an average hardness of 10 °f)	1 drop corresponds to 10 ppm $CaCO_3$ analyses: approx. 30 (with an average hardness of 10 °f) approx. 30 (with an average hardness of 100 ppm $CaCO_3$)

	DUROVAL® 1 drop = 1 °KH	DUROVAL® 1 drop = 0,1 °dH	DUROVAL® AP
Is used as	titration kit for determining carbonate hardness via acidimetric titration	titration kit for determining water hardness via complexometric titration	titration kit for determining water hardness via complexometric titration
Order number	1 piece 400015 50 pieces 400120	400007	400021
Description	1 drop corresponds to 1 degree of carbonate hardness analyses: approx. 30 (with an average hardness of 10 °dH).	1 drop corresponds to 0.1 degree of German hardness analyses: approx. 30 (with an average hardness of 1 °dH).	• measuring tube • powder indicator • dosing pipette calibrated 0–30 °dH • 50 ml titration solution analyses: approx. 100 (with an average carbonate hardness of 15 °dH) measuring time: approx. 2 minutes measurement accuracy: 0.5 °dH

	DUROVAL® A	DUROVAL® A with pipette 0-60°f	DUROVAL AF
Is used as	titration kit for determining water hardness via complexometric titration	titration kit for determining water hardness via complexometric titration	titration kit for determining water hardness via complexometric titration
Order number	400020	400018	400022
Description	• measuring tube • liquid indicator • dosing pipette calibrated 0–30 °dH • 50 ml titration solution analyses: approx. 100 (with an average carbonate hardness of 15 °dH) measuring time: approx. 2 minutes measurement accuracy: 0.5 °dH	• measuring tube • powder indicator • dosing pipette calibrated 0–60 °f (French hardness) • 50 ml titration solution analyses: approx. 100 (with an average carbonate hardness of 26.7 °f) measuring time: approx. 2 minutes measurement accuracy: 1°f	• measuring tube • powder indicator • dosing pipette calibrated 0–30 °dH • 50 ml titration solution analyses: approx. 100 (with an average carbonate hardness of 15 °dH) measuring time: approx. 2 minutes measurement accuracy: 0.5 °dH

	DUROVAL® B	DUROVAL® BP	DUROVAL® BF
Is used as	titration kit for determining water hardness via complexometric titration	titration kit for determining water hardness via complexometric titration	titration kit for determining water hardness via complexometric titration
Order number	400030	400031	400032
Description	• measuring tube • liquid indicator • dosing pipette calibrated 0–2 °dH • 50 ml titration solution analyses: approx. 100 (with an average hardness of 1 °dH) measuring time: approx 2 minutes measurement accuracy: 0.05 °dH	• with measuring tube • powder indicator • dosing pipette calibrated 0–2 °dH • 50 ml titration solution analyses: approx. 100 (with an average hardness of 1 °dH) measuring time: approx 2 minutes measurement accuracy: 0.05 °dH	• with measuring tube • powder indicator • dosing pipette calibrated 0–60 °f (French hardness) • 50 ml titration solution analyses: approx. 100 (with an average hardness of 1.78 °f) measuring time: approx 2 minutes measurement accuracy: 0.1°f

Titration quick test kits	Water hardness DUO	DUROVAL® C	DUROVAL® CPM
Is used as	titration kit for determining water hardness	titration kit for determining carbonate hardness/m-value	kit for determining the carbonate hardness (m-value) and p-value
Order number	400005	400060	400065
Description	determining the hardness of raw water (0–30 °dH) and water after treatment (0–2 °dH) measuring range: 0 –30 °dH resolution: 0,5 °dH measuring range: 0–2 °dH resolution: 0,025 °dH complete with all reagents and accessories	acid capacity up to pH 4,3; $K_{S4,3}$ analyses: approx. 100 (with an average carbonate hardness of 10 °dH) measuring time: approx. 2 minutes measurement accuracy: 0.5 °dH/0.25 mmol/l complete with measuring tube, dosing pipette with calibration 0–20 °dH and 0–7 mmol/l, special connection stopper, indicator, and 50 ml titration solution	equipped like Duroval® C above, but with an additional p-value indicator m-value: acid capacity up to pH 4,3; $K_{S4,3}$ p-value: acid capacity up to pH 8,2; $K_{S8,2}$ measuring time: approx. 2 minutes measurement accuracy: 0.5 °dH/0.25 mmol/l

	DUROVAL® Chlorid	DUROVAL® CO2	DUROVAL® $K_{S\,4,3}$
Is used as	kit for determining the chloride content of water	test kit for the determination of free carbon dioxide in water via drop titration	titration kit for determining acid capacity up to pH 4.3
Order number	400090	400070	400067
Description	complete with all reagents and accessories analyses: approx 200 measuring time: approx. 2 minutes titration pipette: calibrated 0–300 mg/l Cl^- measurement accuracy: 10 mg/l Cl^-	complete with measuring tube, stopper. and three reagents analyses: approx. 200 (with an average concentration of 100 mg/l CO_2)	Acid capacity up to pH 4,3; $K_{S4,3}$ analyses: approx. 100 (with an average acid capacity of 1 mmol/l) measuring time: approx. 2 minutes resolution : 0.05 mmol/l complete with measuring tube, dosing pipette with calibration 0–2 mmol/l, special connection stopper, indicator, and 50 ml titration solution

	DUROVAL® $K_{B\ 8,2}$	DUROVAL® Sulfate	DUROVAL® TF
Is used as	titration kit for determining base capacity up to pH 8.2	kit for determining the sulfate content of water	industrial kit for water treatment plants
Order number	400077	400080	400042
Description	base capacity up to pH 8,2; $K_{B8,2}$ analyses: approx. 100 (with an average base capacity of 1 mmol/l) measuring time: approx. 2 minutes resolution : 0.05 mmol/l complete with measuring tube, dosing pipette with calibration 0–2 mmol/l, special connecti-on stopper, indicator, and 50 ml titration solution	complete with all reagents and accessories analyses: approx 30 titration pipette: calibrated 0–300 mg/l SO_4^{2-} measurement accuracy: 10 mg/l SO_4^{2-}	• measuring tube • powder indicator • dosing pipette calibrated 0–60 °f (French hardness) • 30 ml titration solution analyses: approx. 60 (with an average carbonate hardness of 26.7 °f)

	DUROVAL® TI	DUROVAL® TI with pipette 0-60 °f	DUROVAL® TP
Is used as	industrial kit for water treatment plants	industrial kit for water treatment plants	industrial kit for water treatment plants
Order number	400040	400038	400041
Description	• measuring tube • liquid indicator • dosing pipette calibrated 0–30 °dH • 30 ml titration solution analyses: approx. 60 (with an average carbonate hardness of 15 °dH)	• measuring tube • liquid indicator • dosing pipette calibrated 0–60 °f (French hardness) • 30 ml titration solution analyses: approx. 60 (with an average carbonate hardness of 26.7 °f)	• measuring tube • powder indicator • dosing pipette calibrated 0–30 °dH • 30 ml titration solution analyses: approx. 60 (with an average carbonate hardness of 15 °dH)

Titration quick test kits	KSS titration kit	Polyamine test kit	
Is used as	measuring kit for simple monitoring of cooling lubricant content	test kit for determining the polyamine concentration of circulating water	
Order number	400280	polyamine CCOH 400165 polyamine V 15/30 400166 polyamine K 26 400167 polyamine B42/C71 400168 polyamine A-853R 400169	
Description	complete with all reagents and accessories concentration range and accuracy are customerspecific	product-specific adaptation of the titration solution, complete with all reagents and accessories analyses: approx. 100 (with an average concentration of 30 mg/l) measuring time: approx. 3 minutes resolution: 1 mg/l	

	Polyamine reagents	Polyamine titration solution	Polyamine NI / NT refill pack
Is used as	reorder polyamine reagents	reorder polyamine titration liquid	polyamine NT refill package (reagents C and titration solution)
Order number	reagentien A 400185 (10 bottles with 8 ml) reagentien B 400186 (10 bottles with 8 ml) reagentien C 400187 (10 bottles with 50 ml)	Polyamine CCOH 400188 (10 bottles with 50 ml) Polyamine V 15/30 400189 (10 bottles with 50 ml) Polyamine K 26 400190 (10 bottles with 50 ml) Polyamine B42/C71 400191 (10 bottles with 50 ml) Polyamine A-853R 400192 (10 bottles with 50 ml)	Polyamine CCOH 400175 Polyamine V 15/30 400176 Polyamine K 26 400177 Polyamine B42/C71 400178 Polyamine A-853R 400179 polyamine NI refill pack reagents A+B 400170 can be used universally for all polyamine products

DUROVAL® refill pack

	Hardness grade	Quantity	Order number
DUROVAL® A titration solution	0–30 °dH (0–60 °f)	bottle with 50 ml 50 bottles with 50 ml	400023 400123
DUROVAL® B titration solution	0–2 °dH (0–4 °f)	bottle with 50 ml	400033
DUROVAL® TI titration solution	0–30 °dH (0–60 °f)	bottle with 25 ml	400043
DUROVAL® indicator fluid, 8 ml		liquid, 8 ml	400024
DUROVAL® indicator, 3 g (powder)		powder, 3 g	400025
DUROVAL® C titration solution		bottle with 50 ml	400061
DUROVAL® C indicator, 8 ml		bottle with 8 ml	400062
DUROVAL® P indicator, 8 ml		bottle with 8 ml	400066
DUROVAL® SO_4 ion exchanger			400081
DUROVAL® SO_4 reagent A		2 bottles with 50 ml each	400082
DUROVAL® SO_4 reagent B		bottle with 8 ml	400083
DUROVAL® SO_4 titration solution C		bottle with 50 ml	400084
DUROVAL® chloride reagent A + B		2 bottles with 17 ml each	400091
DUROVAL® chloride titration solution		2 bottles with 50 ml each	400092
DUROVAL® KS 4,3 indicator,		bottle with 8 ml	400068
DUROVAL® KS 4,3 titration solution		bottle with 50 ml	400069
DUROVAL® KB 8,2 indicator,		bottle with 8 ml	400078
DUROVAL® KB 8,2 titration solution		bottle with 50 ml	400079

Colorimetric test kits

	Testoval® ammonium	Testoval® aluminum	Testoval® chlorine DPD method 0,1-1 mg/l
Is used as	color comparison kit for the concentration range 0–10 mg/l NH_4^+	color comparison kit for the concentration range 0–1,5 mg/l Al	color comparison kit for concentration range 0.1–1 mg/l of free and total chlorine
Order number	410680	410650	410520
Description	individual values: 0.1–0.5–1–2.5–5–10 mg/l, complete with 3 reagents analyses: approx. 70 measuring time: approx. 4 minutes	individual values: 0–0,1–0,2–0,5–1–1,5 mg/l, by diluting the water sample 1:10 the measuring range can be extended to 10-times concentrations; complete with 2 reagents analyses: approx. 130 measuring time: approx. 6 minutes	individual values: 0,1–0,2–0,3–0,5–0,75–1 mg/l, complete with 3 reagents analyses: approx. 70 measuring time: approx. 1 minute

Colorimetric test kits	Testoval® chlorine DPD method 0,5-4 mg/l	Testoval® chloride	Testoval® chromate CrVI
Is used as	color comparison kit for concentration range 0.5–4 mg/l of free and total chlorine	color comparison kit for concentration range 0–100 mg/l Cl^-	color comparison kit for concentration range 0–5 mg/l Cr
Order number	411520	410526	410532
Description	individual values: 0,5–1–1,5–2–3–4 mg/l, complete with 3 reagents analyses: approx. 70 measuring time: approx. 1 minute	individual values: 1–5–10–25–50–100 mg/l, complete with 2 reagents analyses: approx. 40 measuring time: approx. 3 minutes	individual values: 0,1–0,25–0,5–1–2,5–5 mg/l, complete with 2 reagents analyses: approx. 180 measuring time: approx. 3 minutes

	Testoval® iron (II) + (III) dissolved, 0-1 mg/l	Testoval® iron (II) + (III) dissolved, 0-10 mg/l	Testoval® hydrazine
Is used as	color comparison kit for concentration range 0–1 mg/l of Fe	color comparison kit for concentration range 0–10 mg/l of Fe	color comparison kit for concentration range 0–1 mg/l N_2H_4
Order number	410547	410544	410556
Description	individual values: 0,05–0,1–0,25–0,5–0,75–1 mg/l, by diluting the water sample 1:10 the measuring range can be extended to 10-times concentrations; complete with 2 reagents analyses: approx. 100 measuring time: approx. 7 minutes	individual values: 0,25–0,5–1–2,5–5–10 mg/l, complete with 3 reagents analyses: approx. 60 measuring time: approx. 7 minutes	individual values: 0–0,05–0,1–0,25–0,5–1 mg/l, complete with reagent analyses: approx. 100 measuring time approx. 2 minutes

Colorimetric test kits	Testoval® copper	Testoval® manganese 0-0,5 mg/l	Testoval® manganese 0-20 mg/l
Is used as	color comparison kit for the concentration range 0–2 mg/l Cu	color comparison kit for the concentration range 0–0,5 mg/l Mn	color comparison kit for the concentration range 0–20 mg/l Mn
Order number	410562	410660	410568
Description	individual values: 0,1–0,25–0,5–1,0–1,5–2 mg/l, complete with reagent analyses: approx. 100 measuring time: approx. 2 minutes	individual values: 0,05–0,1–0,2–0,3–0,4–0,5 mg/l,complete with 3 reagents analyses: approx. 70 measuring time: approx. 17 minutes	individual values: 0,5–1–2,5–5–10–20 mg/l, complete with 2 reagents analyses: approx. 100 measuring time: approx. 1 minute

	Testoval® nitrite	Testoval® Phosphatest® (orthophosphate)	Testoval® pH chlorine DPD
Is used as	color comparison kit for the concentration range 0–1 mg/l NO_2^-	color comparison kit for the concentration range 0–10 mg/l P_2O_5	monitoring pH value and chlorine content in swimming pools
Order number	410690	410592	410601
Description	individual values: 0,05–0,1–0,2–0,3–0,5–1 mg/l, by diluting the water sample 1:10 the measuring range can be extended to 10-times concentrations; complete with reagent. analyses: approx. 100 measuring time: approx. 15 minutes	individual values: 0,25–0,5–1–2,5–5–10 mg/l, by diluting the water sample 1:10 the measuring range can be extended to 10-times concentrations; complete with 3 reagents. analyses: approx. 180 measuring time: approx. 5 minutes	individual values: pH 6,8–7, 4–8, Chlor 0,1–0,5–1 mg/l, complete with a set of reagents analyses: approx. 70 measuring time: approx. 3 minutes

	Testoval® pH value 5,5-8	Testoval® pH value 8-12	Testoval® dissolved silicate
Is used as	color comparison kit for pH range 5,5–8	color comparison kit for pH range 8–12	color comparison kit for the concentration range 0–10 mg/l SiO_2
Order number	410610	410616	410622
Description	individual values: 5,5–6–6,5–7–7,5–8, complete with reagent analyses: approx. 250 measuring time: approx. 1 minute	individual values: 8–8,5–9–10–11–12, complete with reagent analyses: approx. 250 measuring time: approx. 1 minute	individual values: 0.25–0.5–1.0–2.5–5–10 mg/l; by diluting the water sample 1:10 the measuring range can be extended to 10-times concentrations; complete with 4 reagents analyses: approx. 100 measuring time: approx. 19 minutes

	Testoval® sulfite		
Is used as	color comparison kit for the concentration range 0–20 mg/l SO_3^{2-}		
Order number	410634		
Description	individual values: 0,5–1–2,5–5–10–20 mg/l, complete with 2 reagents analyses: approx. 150 measuring time: approx. 3 minutes		

Testoval® refill pack

	Product	Order number
aluminum	1 set of reagents for approx. 130 analyses replacement color comparison device aluminum	410651 410652
ammonium	1 set of reagents for approx. 70 analyses replacement color comparison device ammonium	410681 410682
chlorine DPD method 0.1–1 mg/l	1 set of reagents for approx. 70 analyses replacement color comparison device chlorine DPD method 0.1–1 mg/l	410521 410522
chlorine DPD method 0,5-4 mg/l	1 set of reagents for approx. 70 analyses replacement color comparison device chlorine DPD method 0,5-4 mg/l	410521 410523
chloride	1 set of reagents for approx. 40 analyses replacement color comparison device chloride	410527 410528
chromate CrVI	1 set of reagents for approx. 70 analyses replacement color comparison device chromate CrVI	410533 410534
dissolved iron (II) + (III) 0-1 mg/l	1 set of reagents for approx. 100 analyses replacement color comparison device iron (II) + (III) 0-1 mg/l	410548 410549
dissolved iron (II) + (III) 0-10 mg/l	1 set of reagents for approx. 70 analyses replacement color comparison device, iron (II) + (III) 0-10 mg/l	410545 410546
hydrazine	1 set of reagents for approx. 100 analyses replacement color comparison device hydrazine	410557 410558
copper	1 set of reagents for approx. 100 analyses replacement color comparison device copper	410563 410564
manganese 0-0,5 mg/l	1 set of reagents for approx. 70 analyses replacement color comparison device manganese 0-0,5 mg/l	410661 410662
manganese 0-20 mg/l	1 set of reagents for approx. 100 analyses replacement color comparison device manganese 0-20 mg/l	410569 410570
nitrite	1 set of reagents for approx. 100 analyses replacement color comparison device nitrite	410691 410692
Phosphatest®	1 set of reagents for approx. 180 analyses replacement color comparison device Phosphatest®	410593 410594
pH-chlorine DPD	1 set of reagents for approx. 70 analyses replacement color comparison device pH-chlorine DPD	410602 410603
pH value 5,5-8	1 set of reagents for approx. 250 analyses replacement color comparison device pH value 5,5-8	410611 410612
pH value 8-12	1 set of reagents for approx. 250 analyses replacement color comparison device pH value 8-12	410617 410618
dissolved silicate	1 set of reagents for approx. 100 analyses replacement color comparison device silicate	410623 410624
sulfite	1 set of reagents for approx. 150 analyses replacement color comparison device sulfite	410635 410636
cuvettes	replacement cuvette for color comparison devices replacement cuvette for chloride color comparison device	410001 410529

Analysis kits	Standard analysis cabinet H	Standard analysis cabinet S	Analysis cabinet special version
Is used	for water analysis	for water analysis	for water analysis
Order number	410300	410305	410310
Description	• titration kits: 1 Duroval® A, 1 Duroval® B, 1 Duroval® CPM • Testoval® color comparison kits: 1 hydrazine, 1 phosphate, 1 pH value 8–12 • 1 aerometer, 1 100 ml measuring cylinder, 1 500 ml sampling container, 1 100 ml measuring cup, 1 funnel, 50 folding filters	• titration kits: 1 Duroval® A, 1 Duroval® B, 1 Duroval® CPM • Testoval® color comparison kits: 1 sulfite, 1 Phosphatest, 1 pH value 8–12 • 1 aerometer, 1 100 ml measuring cylinder, 1 500 ml sampling container, 1 100 ml measuring cup, 1 funnel, 50 folding filters	**Custom versions available upon request!** example: • titration kits: 1 Duroval® A, 1 Duroval® B, 1 Duroval® CPM • Testoval® color comparison kits: 1 sulfite, 1 Phosphatest • 1 Durognost® special buffer solution • 1 DIST 4 conductivity tester • 1 pHep+ pH tester • 1 100 ml measuring cylinder, 1 500 ml sampling container, 1 100 ml measuring cup, 1 funnel, 50 folding filters

	Boiler house analysis case	Analysis case special version	
			Other combinations of analysis cases and cabinets are possible upon request.
Is used	for water analysis in boiler houses	for water analysis in boiler houses	
Order number	410320	410360	
Description	• titration kits: 1 Duroval® A, 1 Duroval® B, 1 Duroval® CPM • Testoval® color comparison kits: 1 sulfite, 1 Phosphatest • 1 pHep + pH tester, 1 pH 7,01 buffer solution in pouch, 1 pH 10,01 buffer solution in pouch • 1 DiST 4 conductivity tester, 1 5000 µS/cm conductivity solution	**Custom versions available upon request!** example: • titration kits: 1 Duroval® A, 1 Duroval® B, 1 Duroval® CPM • Testoval® color comparison kits: 1 sulfite, 1 Phosphatest	

Accessories Chemie

Product	Order number
measuring tube 1+ 5 + 10 ml	051010
connecting plug, white	051013
pipette, 0-60 polyamine	051101
pipette, 0-4,0 °f	051106
pipette, 0-30 Duroval chloride and sulphate	051109
pipette, 0-30 °dH	051110
pipette, 0-2 °dH	051112
pipette, 0-20 °dH 0-7 mmol/l	051114
pipette, 0-60 °f	051116
replacement cuvette for color comparison devices	410001
analysis cabinet, empty	410301
aerometer	410302
folding filters (pack of 50)	410303
100 ml measuring cylinder	410304
500 ml sampling container	410306
funnel	410307
100 ml measuring cup	410308

We handle the development, production, bottling and shipment of our reagents and analysis kits in house.

Spare parts for controllers

Spare parts for all **Softmaster**® **MMP** and **ROE** series control units and the **MultiControl** control unit can only be supplied to a limited extent.
Please contact your distributor if you require spare parts.

All our newly developed devices undergo thorough testing in the climatic chamber and test space. Upon customers request, we can also produce OEM devices featuring individual front foils.

Water is our element

Our environmental policy specifies the principles of conduct for environmental protection that we follow at Gebr. Heyl Analysentechnik GmbH & Co. KG. It is determined by the management and generally applicable.

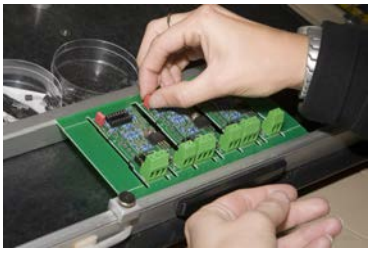
As a commercial enterprise, we are part of a society and also part of the environment and the ecosystem. Consciousness of our responsibility to society, the environment, and the ecosystem is necessary for our children to be able to experience a happy, prosperous future.

As a commercial enterprise, we accept our special responsibility to preserve our natural world. We're convinced that it is necessary to ensure that the free resources of water, air, and earth, as well as flora and fauna, be handled sparingly.

Contract Development

We develop innovative, customized designs ourselves. But that's not all: We provide an appropriate housing design, prepare technical documentation, and obtain the necessary sales permissions and certificates. And if you would like, we also handle series production.

You choose between our two options:



1. From a „flash of inspiration" to the prototype – we develop the product you want according to your specifications

- We plan your product together and look for the best solution for you
- We develop the product according to your specifications
- We create prototypes
- We organize certificates (CE-marking, TÜV inspection, etc.)

2. Whether Softmaster®, MultiControl, or Testomat 2000® – we're happy to adapt our designs to your needs!

- We select the basic instrument corresponding to your needs together with you
- We design additional modules corresponding to your needs
- We develop software according to your specifications
- We create prototypes
- We organize certificates (CE-marking, TÜV inspection, etc.)

Brief overview of our contract development services

- Hardware and software development (analysis instruments, control and measuring devices, dosing pumps)
- Indicator and reagent development (e.g. water analysis)
- Test kit development
- Mechanics construction
- Material logistics
- Layout design
- Prototype fabrication
- Model series production
- Preparing operating instructions, instruction manuals, and safety data sheets
- Organizing desired or required certificates (e.g., CE-marking, TÜV inspection, etc.)
- Product maintenance
- Training

Development of new indicators in our chemical laboratory

We implement your idea!
We produce your product!

High quality, quick delivery times, customer orientation, and cooperative partnership are the foundations of our company, which operates in many countries. These maxims result in the continuous enhancement of our products and services and the continuous skill enhancement of our employees.

We attach great value to the reliability and durability of our products and have adapted the supply of spare parts to the long service lives of our instruments. In addition, we attach great value to multi-level 100% testing, only possible on the basis of small batch production. We test all assemblies separately before they are installed in our instruments and then subjected to a multi-day quality check in the instrument. Last but not least, we

develop and produce our own products in order to satisfy our own extremely high quality demands. Our mission includes consistently catering to our customers' needs and developing the best solution together with them!

Brief overview of our contract manufacturing services

We produce your product – in small batches too!

- Producing chemical formulations
- Filling into containers of any size
- Packaging
- Circuit board assembly
- Soldering
- Assembly
- Testing

We implement your idea!
You receive a final product from a single source:

- We optimize your product together and look for the best solution for you
- We look for the lowest-priced supplier
- We take care of purchasing all individual parts needed
- We coordinate cooperation with your partners
- We manufacture your product
- We subject the final product to extensive final checks
- We ship your finished product to the desired address in your name

All our newly developed devices undergo thorough testing in the climatic chamber and test space.
Upon customers request, we can also produce OEM devices featuring individual front foils.

Terms and Conditions of Gebrüder Heyl Analysentechnik GmbH & Co. KG

§ 1 Validity of the conditions

Our deliveries and services shall occur exclusively under these terms and conditions. At the same time, they are valid for all future business relations, even if they are not agreed expressly again. Customer‘s terms and conditions differing from them are not valid.

§ 2 Conclusion of a contract

(1) Our offers are non-binding. Technical changes as well as changes in shape, color, and/or weight within the scope of what is reasonable are reserved.

(2) Orders placed with us are binding offers which we can choose to accept within two weeks. Acceptance is declared either in writing or by delivery of goods to our customers.

(3) If customers place an order electronically, we shall immediately confirm receipt of the order. Receipt confirmation does not constitute a binding acceptance of the order, but can be combined with the declaration of acceptance. We shall store the contractual text and send it to the customer via e-mail together with these terms and conditions if requested.

(4) Conclusion of a contract occurs under reserve of the correct and timely delivery through our supplier, unless we are liable in the case of non-delivery, e.g. if a congruent hedging transaction has not been agreed with our supplier. We shall immediately inform the customer of any possible unavailability of the service and refund any service in return already received.

§ 3 Prices

(1) Our quotation prices are valid for 30 days after the quotation date, unless otherwise stated. In case of doubt, the prices specified in our confirmation of order are decisive.

(2) Our prices are valid, unless otherwise agreed, as net prices without cash discounts or any other allowances ex stock in Hildesheim, Germany, excluding packaging and shipping costs and plus the respective statutory VAT.

(3) If there is any change in labor costs, material costs, purchase conditions, etc. between the date of contract conclusion and the agreed and/or actual delivery date, we shall be entitled to adjust our prices accordingly and, if an agreement cannot be reached, to withdraw from the contract. This only applies for non-trade operators if the time between the date of contract conclusion and the delivery is more than four months.

(4) Our invoices are payable within 30 days of the delivery date with no deductions. In the event of default on payment, we are entitled, irrespective of the proof of greater damage caused by delay, to charge a higher default penalty interest at 8% points above the respective base rate.

(5) The off-setting of any counter-claims by the purchaser is permissible only if such counterclaims are undisputed or established in law. Purchasers can only exercise their right of retention if it is based on claims contained in this contract.

§ 4 Delivery

(1) Delivery and service delays due to instances of force majeure or circumstances which make delivery difficult or impossible – e.g. strike, lock-out, administrative regulations, natural disasters, business disruptions, power failure, etc. irrespective of whether we or our suppliers are affected by such circumstances – will exempt us from our contractual deadlines and obligations. We then have the right to postpone the delivery or the service for the period of the hindrance. If the delivery or service becomes impossible or unreasonable and this is not due to our fault, we shall be entitled to terminate the contract. In this case the customer has no right to make claims for damages.

(2) We shall be entitled to carry out partial deliveries and partial services.

§ 5 Transfer of risk

(1) The risk of accidental loss and accidental deterioration of the goods passes to the customer as soon as the consignment has been transferred to the freight carrier in the case of mail order purchase or other parties designated by the customer to carry out delivery. This applies irrespective of which party bears the transport costs.

(2) Goods will still be delivered even if the customer is delayed in accepting the delivery.

(3) We shall only take out transport insurance at the customer‘s request and expense.

§ 6 Warranty against defect

(1) We provide warranty for two years at our own discretion via fault rectification or replacement delivery. If the fault cannot be eliminated within an acceptable time period or if rectification or replacement delivery is to be considered as failed due to other reasons, customers can, according to their choice, demand a reduction or terminate the contract. Failure can only be assumed if sufficient opportunity has been provided to us to rectify the fault or to deliver a replacement without the desired aim being achieved, if fault rectification or replacement delivery is impossible, if we refuse to rectify the fault of deliver a replacement or unacceptably delay fault rectification or replacement delivery, if there is justified doubt regarding the prospect of success, or if they are considered unacceptable due to other reasons. Cancellation is impermissible on the grounds of minor faults. Wear parts (e.g. seals, moving parts, etc.) are only guaranteed for one year. For such parts, deterioration due to proper use does not constitute a fault, We assume no liability for faults that arise due to improper use, nor for faults arising because the original HEYL Testomat® indicator is not used exclusively.

(2) For a commercial transaction our customer must check that the goods conform to the contract immediately upon their receipt, immediately notify us in writing of any visible damages upon receipt of the goods, and notify us of any other defects immediately after their identification (§ 377 HGB); otherwise the goods are considered as accepted. Other business requires written notification of visible damage within two weeks upon receipt of the goods. The burden of proof of the fault, the time of its identification, and the timely receipt of the complaint rests with the customer.

(3) Contrary to the aforesaid rules of warranty, we only sell used items, except in the case of fraudulent intent, with the exclusion of any form of warranty. This does not affect warranty commitments.

(4) If customers decide to terminate the contract due to a fault after an unsuccessful rectification of faults, they are not entitled to an additional claim for damages due to this fault; the customer is obliged to return the goods. If customers make a claim for damages after an unsuccessful rectification of faults, the goods remain with the customers if this is reasonable for them. The claim for damages is then limited to the difference between the purchase price and the value of the faulty item. This is not valid if we have fraudulently attempted to violate the contract.

§ 7 Liability

(1) Our liability and the liability of our vicarious agents are hereby excluded for slight negligent breach of duty, provided that no contractual duties, damages to life, limb, or health, or agreed guarantees or claims in accordance with the German Product Liability Act are affected. In the case of violation of contractual duties our liability shall be limited to typical contractual losses which could have been reasonably foreseen.

(2) The period of limitation of one year applies for claims for damages against us which are not based on willful conduct attributable to us. This does not include suppliers‘ claims for recourse in accordance with section 478 of the BGB.

§ 8 Retention of title

(1) We retain the title to the goods until complete settlement of all claims against the customer that we are entitled to now or in the future.

(2) Our customers shall be entitled to process and resell the conditional goods in the ordinary course of business, provided that they are not in default. The pledging of goods or security transfers of ownership is not permissible. Claims resulting with respect to the conditional goods (including all balance claims from the current account) resulting from the resale or any other cause in law (insurance, unlawful act) shall now be assigned by the customer to us as security up to the amount of our claim. We hereby accept the transfer and authorize the customers to collect the claims assigned to us for their account in their own name. This authorization can only be revoked if our customers do not fulfill their payment oblig tions.

(3) Any adaptation and processing of the conditional goods by the customers shall always be carried out in our name and on our behalf. If processing occurs with goods which do not belong to us, we shall acquire co-ownership of the new goods in proportion to the value of the goods supplied by us to other processed goods. The same shall apply if the conditional goods are intermingled with other goods which do not belong to us.

(4) The customers shall keep our retention of title free of charge. They are obliged to take out insurance in a reasonable and usual scope. In the case of an intervention or seizure of the conditional goods by a third party – in particular by a marshal – our customers are obliged to indicate our ownership and to notify us without delay.

§ 9 Installation and maintenance

(1) If our customer asks us to carry out installation and maintenance work, which we do not carry out within the framework of our liability for defects, a separate contract for work and services comes into being. If not stated otherwise hereinafter these terms and conditions also apply for this contract for work and services. Payment takes place according to the respective valid prices for maintenance rates.

(2) A written estimate is required if our customer desires a binding quote. We are bound to this estimate for one complete month after submission.

(3) Customer rights due to defects of installation and maintenance work expire one year from acceptance of the repair item of work. This time limit does not apply if we acted with intent or gross negligence or if we are responsible for damages to life, limb, or health or for claims in accordance with the German Product Liability Act. In the case of contractors, we do not accept liability even for slight negligent breach of marginal contractual obligations.

§ 10 Miscellaneous

(1) The exclusive place of jurisdiction for all disputes is Hildesheim, Germany, if our customer is a trader, a legal person governed by public law, or special public law funds. This shall also apply if our customers do not have a general place of jurisdiction in the Federal Republic of Germany or if their normal place or residence when legal action is brought is unknown.

(2) Changes or additions to this contract have to be in writing. This also applies to the written form clause.

(3) Our customers consent to storage of their personal data for the purpose of contract conclusion.

(4) In the event that a provision of this contract or these terms and conditions is or becomes invalid or unenforceable, this shall not affect the validity of the remaining provisions.

(5) Only the relevant laws of the Federal Republic of Germany shall apply; the UN Convention on the International Sale of Goods is hereby excluded, even if our customer‘s registered seat is abroad.

Headquarters:
Gebrüder Heyl Analysentechnik GmbH & Co. KG
Orleansstr. 75 b
31135 Hildesheim
Germany
Phone: +49 (0) 51 21 28 93 3-0
Fax +49 (0) 51 21 28 93 3-67
E-Mail info@heylanalysis.de
www.heylanalysis.de

Germany sales:
Gebrüder Heyl Vertriebsgesellschaft
für innovative Wasseraufbereitung mbH
Max-Planck-Str. 16
31135 Hildesheim
Phone: +49 (0) 5121 76 09-0
Fax: +49 (0) 5121 76 09-44
E-Mail: vertrieb@heylneomeris.de
www.heylneomeris.de

France:
Heyl Analysis Technologies
Techniparc
9 Rue d'Alembert
91240 Saint Michel sur Orge
Phone: +33 (0) 1 69 46 17 17
Fax: +33 (0) 1 69 46 17 40
E-Mail: contact@heyl-at.com
www.heyl-at.com

Netherlands:
Pro Water B.V.
Postbus 960
7550 AZ Hengelo
Phone: +31 (0) 74 29 15 150
Fax: +31 (0) 74 29 15 350
E-mail: info@prowater.nl
www.prowater.nl

Switzerland:
BWT AQUA AG
Hauptstr. 192
4147 Aesch
Phone: +41 (0) 61 755 88 99
Fax: +41 (0) 61 755 88 90
E-Mail: info@bwt-aqua.ch
www.bwt-aqua.ch

USA:
Heyl Brothers North America L.P.
150 North Michigan Avenue, 35th Floor
Chicago, Illinois 60601
Phone: +1 312-377-6123
Fax: +1 312-644-0738
E-Mail: sales@heylbros.com
www.heylbros.com

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prowater
METEN REGELEN DOSEREN

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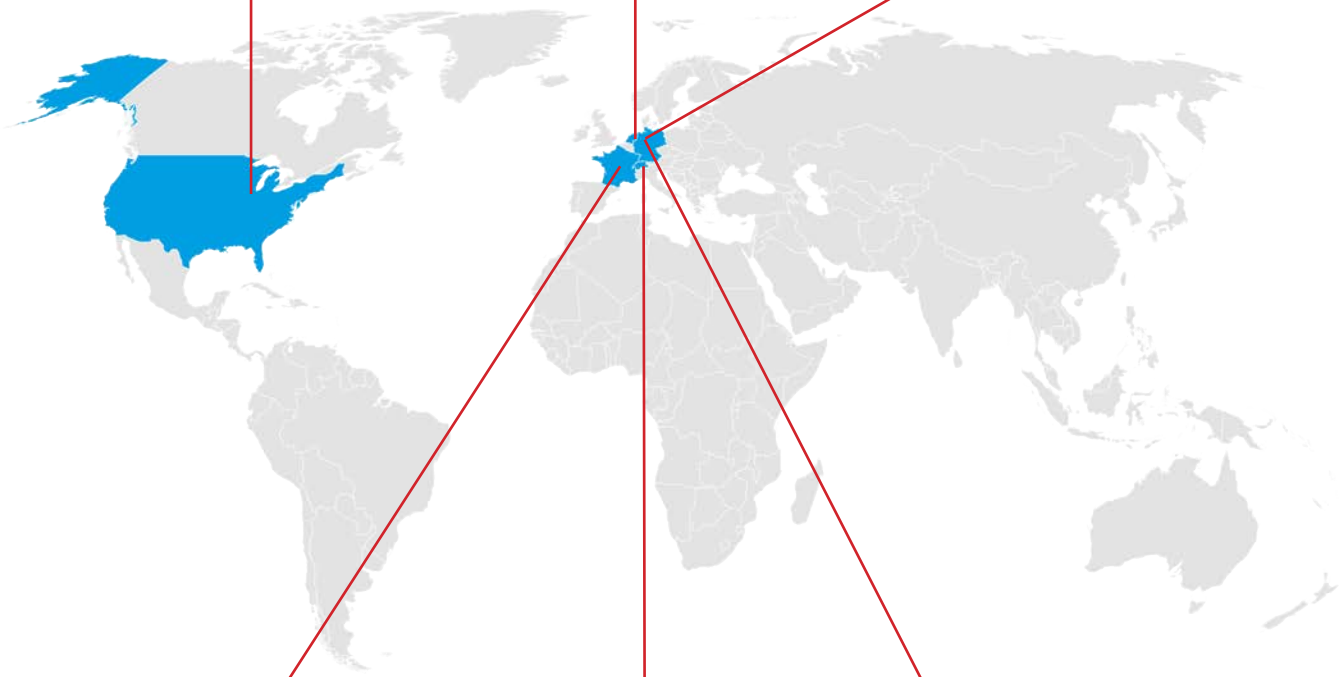

HEYL ANALYSIS TECHNOLOGIES
L'eau est notre élément / Water is our element

BWT

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