AQUA

Technology for Traction Batteries

The sum of the benefits makes the decision easy!

Introduction AQUA

One of the most important components of lead-acid batteries for use in material handling applications is that of the electrolyte: a solution of sulfuric acid and water. When recharging batteries, water is consumed (by electrolysis). Thus, deionized water must be refilled after a full charge has been completed. It is extremely critical that the purity of the water used to refill of the highest quality.

We offer the full range of accessories for properly filling and monitoring your batteries such as a single point water refill system AQUAmatic, an electric level sensor AQUAcontrol, a gravity feed water tank AQUAtank or a mobile water cart refill system AQUAmobil.

In addition, we offer you a wide range of possibilities for the production of deionized water using our ion exchangers from our AQUApoint product line.

Deionized water can easily be produced with tap water through an ion exchanger as impurities in the tap water are removed. In order to store the quality of the deionized water, it should be kept in the containers provided specifically for this purpose. Containers made of suitable materials such as glass, hard rubber, polyethylene, polypropylene, PVC or other plastics are recommended. Metal containers must not be used .

Innovative technology for traction batteries

The same applies to pipes, valves, shut- off valves, couplings, refill guns and hoses.

The reliable operation of ion exchangers involves highly sophisticated technology and high-quality chemicals as well as state-of-the-art regeneration processes with documented batch monitoring of the parameters, capacity and quality.

The following pages provide you with detailed information on the topic of “AQUA“ for traction batteries.

Please note: We also provide the service of regenerating your cartridges.

The 3 golden rules for water filling:

- AFTER charging
- ONLY if necessary
- ONLY with deionized / demineralized / distilled water

Water filling system AQUAmatic 3.0

The AQUAmatic water filling system provides quality and reliability - whether in traction batteries, in stationary installations or electric commercial vehicles and cleaning machines.

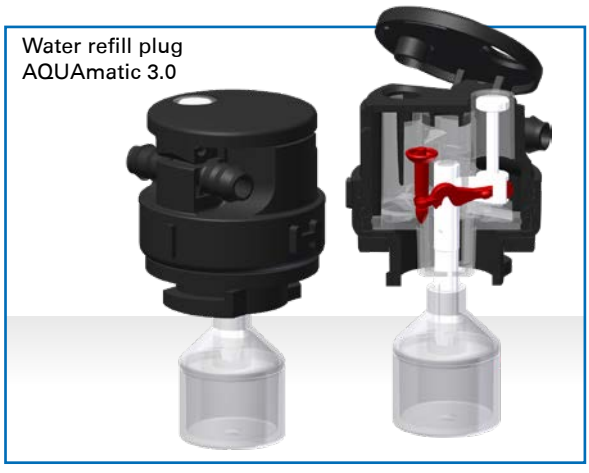
The core of the water refill system is the injector plug. The right system for each battery type is guaranteed to be correct due to a wide variety of choices.

The automatic filling system consists of mechanically operated water refill plugs with a float control made of acid-resistant plastic, a hose system made of transparent PVC, connectors and accessories.

All cells are filled with the system. Only AFTER charging the battery should it be it connected to a hose assembly and refilled. Water pressure ranges from 0.2 to 3.8 bar (3 to 55 psi) are acceptable.

SYSTEM FEATURES

- Easy handling - can be installed quickly and easily.
- Fill level - always exactly at the same level.
- Functional reliability - caps are no longer opened by hand.
- No risk of injury - since there is no contact with battery acid.
- Cost savings - time it takes to refill batteries is considerably reduced.



Water refill plug
AQUAmatic 3.0

Water refill system AQUAmatic 4.0

SYSTEM FEATURES

- Shrouded float protection - entirely surrounds the float mechanism so that the filling system functions properly and correct filling levels are guaranteed under all applications.
- New injection system - provides up to 20% faster filling with a precise shut-off point.
- Closed, compact design - offers excellent protection during transportation and assembly. Moreover, the protective shroud protects the mechanical system inside the injector plug against contamination.
- Exact, consistent filling level - independent of the filling pressure, the required filling levels are exactly attained in the individual cells as a result of the high precision injection system (filling pressure range 0.2 to 3.8 bar – 3 to 55 psi).
- New design of the AQUAmatic 4.0 plug - prevents possible defects which may be caused by impact damage such as punctured floats, bent float stem or cracked housing.
- Optimized geometry of the hose connections allows a filling pressure up to 3.8 bar or 55 psi when using hose clamp rings.
- Maximum safety - Additional float protection shroud.
- Extremely low overall height - The injector plug can be mounted on the battery without any interference - even when space is limited.
- Easy and safe installation - due to the newly designed plug-in version.

Water refill plug
AQUAmatic 4.0

Electric level sensor AQUAcontrol

The electrolyte level sensor AQUAcontrol monitors the electrolyte level in traction batteries. The housing material consists of acid-resistant plastic.

Voltage, power and measuring wires are fully insulated with rubber washers to provide a tight seal.

Highly luminous LEDs indicate the battery condition.

The sensor is installed utilizing power from 6 of the battery's cells.

AQUAcontrol Standard

AQUAcontrol Plus (with remote light)

AQUAcontrol Plus 2.0 (with external LED at the connector)

AQUAcontrol Small (for 2/3 PzB and 2 PzS batteries)

SYSTEM FEATURES

- Highly luminous LED
  Green = Sufficient water level
  Flashing red = Low water level
- Easy handling - can be installed quickly and easily.
- Opposing cable outlets - isolated resistance.
- Patented technology - safe and fully insulated connections with patented connectors.
- No corrosion
- Cost saving - only check and fill the battery if necessary.
- Available in 4 versions:
  AQUAcontrol Standard
  AQUAcontrol Plus (with remote light)
  AQUAcontrol Plus 2.0
  (with external LED at the connector)
  AQUAcontrol Small
  (for 2/3 PzB and 2 PzS batteries)

Gravity water tank AQUAtank

The gravity AQUAtank is used in order to easily fill an industrial battery with deionized water.

The tank must be mounted at least 3.0 m (10 ft.) above the top of the battery. It is to be placed on a sturdy shelf or rack or fastened to the wall using a wall bracket. Installation of the wall bracket is extremely easy. The correct height is necessary so that the falling water pressure ensures proper functioning of the injectors.
The duration of time it takes to fill the battery depends on the level of the battery's electrolyte and the battery's size. The barber shop style flow monitor indicates when the filling process is complete. The tanks are available in both 30 liter or 60 liter capacities.

AQUAtank 60 l

SYSTEM FEATURES

- Easy filling
- Easy handling - can be installed easily and used anywhere.
- Flow monitor - barber shop style flow indicator easy informs when the filling process is complete.
- Capacity - the tanks are available in 30 liters or 60 liters.
- Cost savings - only fill the battery when necessary.
- Functional reliability - algae prevention due to blue-lucent plastic material.
- Option - shelf available for easy mounting to wall.

AQUAtank 30 l
on wall shelf

Wall shelf for AQUAtank

Mobile water refill cart AQUAmobil

The AQUAmobil is quite simply a mobile cart mounted water tank with a battery operated pump system.

The AQUAmobil consists of a plastic container or tank, submersible pump, battery and charger as well as a 2.5 m (8 ft.) long hose line with quick coupling and barber shop style flow indicator. The blue plastic container is designed to prevent algae growth that is often common in similar systems.

SYSTEM FEATURES

- No installation required
- Mobile watering - allows you to fill your batteries with deionized water anywhere in your facility independent of your water and power sources.
- Optimum fill pressure
- Functional reliability - compatible with all commercially available fill systems.
- Cost savings - duration of the filling process is considerably reduced.
- Easy handling - filling height exactly at the same level as the battery.
- Option - fill gun.

Innovative technology
for traction batteries

AQUApoint 1.0 / 2.0

Wall mounted deionizers save space and are suitable for both small and large water requirements. Water flows through the cartridge over a bed of various resins. Through this process deionized water is created.
Consistently high water quality is guaranteed through this method.
The resins used in the process last a long time and can be recycled in an environmentally friendly way where possible.

AQUApoint 1.0 - 425

Deionizer unit made of plastic housing (non-pressurized)

- Suitable for small quantities of water up to 10 liters/day (2.5 gallons/day)
- Analogue conductivity meter
- 425 liter capacity (112 gallons) with 10° total salinity
- Disposable resin cartridge

AQUApoint 1.0 - 1000

Deionizer unit made of plastic housing (non-pressurized)

- Suitable for smaller quantities of water up to 50 liters/day (13 gallons/per day)
- Optical indicator
- 1,000 liters capacity (264 gallons) with 10° total salinity
- Disposable resin cartridge

AQUApoint 2.0/2.1 2800 / 4000 / 6000

Deionizer unit made of stainless steel cartridges (pressurized)

- Analogue conductivity meter (2.0)
- Digital conductivity meter (2.1)
- Hose reel
- Wall brackets
- Reusable resin cartridge
- Untreated water hose
- Treated clean water hose
- 2,800 to 6,000 liters capacity (740 – 1,585 gallons) with 10° total salinity

AQUApoint 1.0 425

AQUApoint 1.0 1000

AQUApoint 2.0 / 2.1
2800 / 4000 / 6000

According to DIN 57510 deionized water extends the service life of your batteries. Using the AQUApoint 1.0 / 2.0, you can produce water on-site by yourself.

AQUApoint 3.0

AQUApoint 3.0 - 2800 / 4000

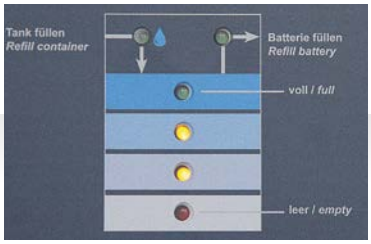
The automatic demineralization unit for the production of deionized battery water with automatic measurement and control monitoring.

For installation all that is needed is a standard power connection and an untreated water supply. The fully automatic demineralization unit offers professional water treatment with leakage and conductivity monitoring.
Maintenance is minimal. All that is required is the proper and timely replacement of the cartridges. This translated to cost savings for you.

SYSTEM FEATURES

- Sturdy cabinet module - for the installation and housing of all components.
- Pressurized stainless steel cartridges - with a capacity of 2,800 - 4,000 liters (740 – 1,057 gallons) with 10° total salinity.
- Digital conductivity meter - with external display and regulated level control.
- Tie downs – with the ability to firmly hold the deionizing cartridges.
- Required Hoses included (untreated and treated water hose).
- Clean water storage tank HT 100 R.
- Water Level control
- Plastic tray - with leakage monitoring.
- 12 V DC pump - with power supply.
- On/off button - with green LED.
- LED status display.
- EMERGENCY STOP
- Filling line - with shut-off valve, in line hose filter, barber shop style flow indicator and automatic hose reel.
- Option - AQUApoint 3.0 - 2800 / 4000 equipped with a replacement cartridge or a second cartridge.

Display indicator



Cartridge - extension

Flow indicator

Cartridge connection

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Dated December 2019 – We reserve the right to make changes without notice