

**Products for New Energy
Production Process Applications**



Contributing to the Efficiency and Cost Reduction of New Energy Production Processes



Hydrogen-energy (AWE · PEM · AEM · SOEC)

Hydrogen energy is being promoted as a technology that contributes to carbon neutrality and addresses energy challenges. However, the widespread adoption of green hydrogen—produced through water electrolysis without generating CO₂—remains a significant challenge. To support this transition, Iwaki proposes optimal pumping solutions tailored to each type of electrolyzer.

(AWE · PEM · AEM · SOEC). [AWE: Alkaline Water Electrolysis, PEM: Proton-Exchange Membrane, AEM: Anion-Exchange membrane, SOEC: Solid-Oxide Electrolyzer Cell]



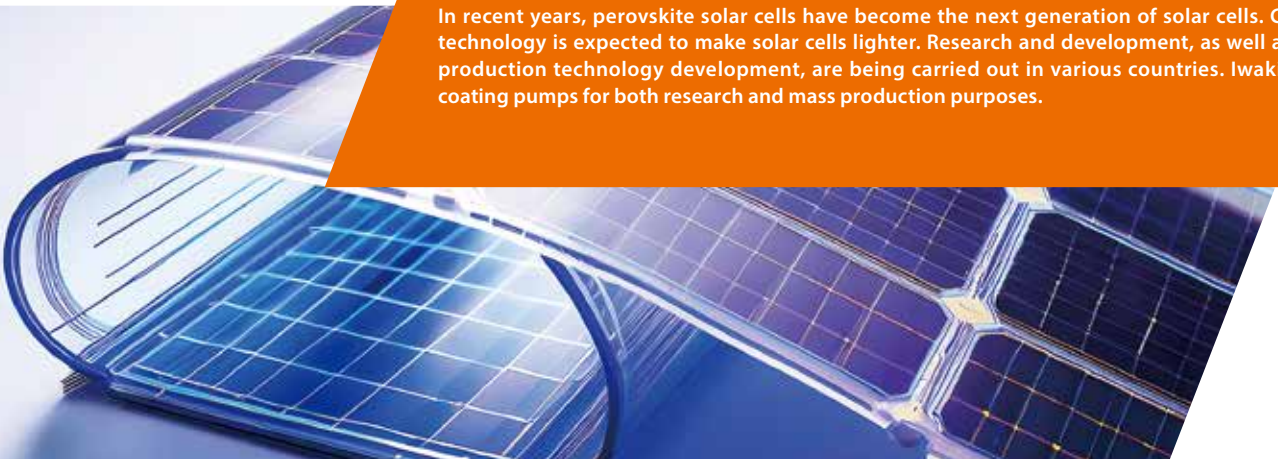
Fuel-cell (PEFC · SOFC)

Fuel cells are power generators that use the chemical reaction between hydrogen and oxygen. Iwaki offers pumps for reforming water injection, cooling circulation, and heat recovery used in the equipment to match the power generation capacity. It contributes to the space saving of the equipment and the maintenance improvement by the long life.



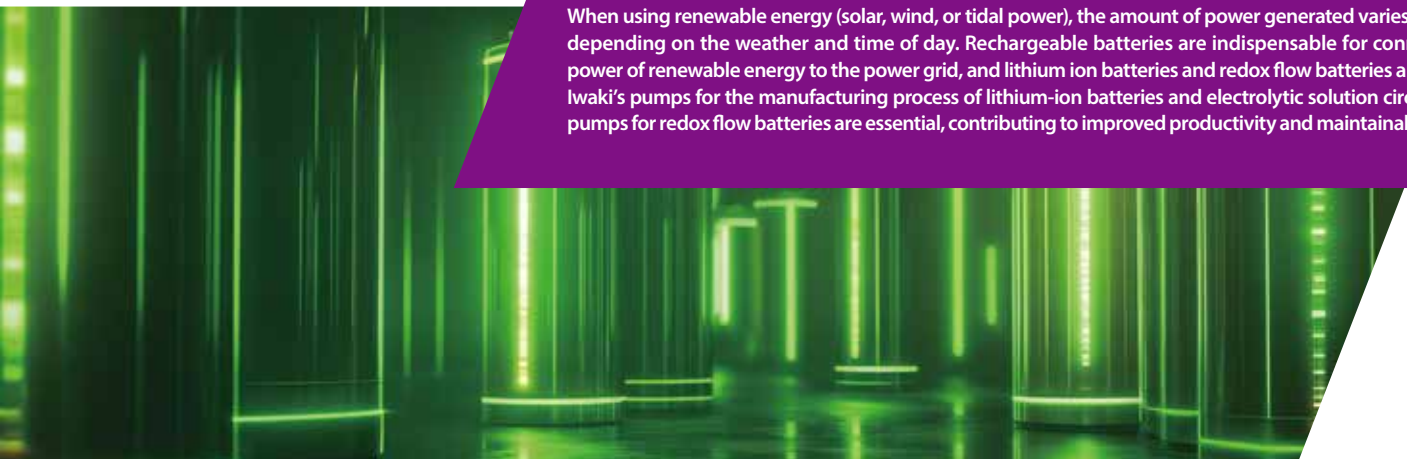
Solar cells (Perovskite)

In recent years, perovskite solar cells have become the next generation of solar cells. Coating technology is expected to make solar cells lighter. Research and development, as well as mass production technology development, are being carried out in various countries. Iwaki offers coating pumps for both research and mass production purposes.



Rechargeable Batteries (Lithium-ion Batteries and Redox Flow Batteries)

When using renewable energy (solar, wind, or tidal power), the amount of power generated varies greatly depending on the weather and time of day. Rechargeable batteries are indispensable for connecting power of renewable energy to the power grid, and lithium ion batteries and redox flow batteries are used. Iwaki's pumps for the manufacturing process of lithium-ion batteries and electrolytic solution circulation pumps for redox flow batteries are essential, contributing to improved productivity and maintainability.



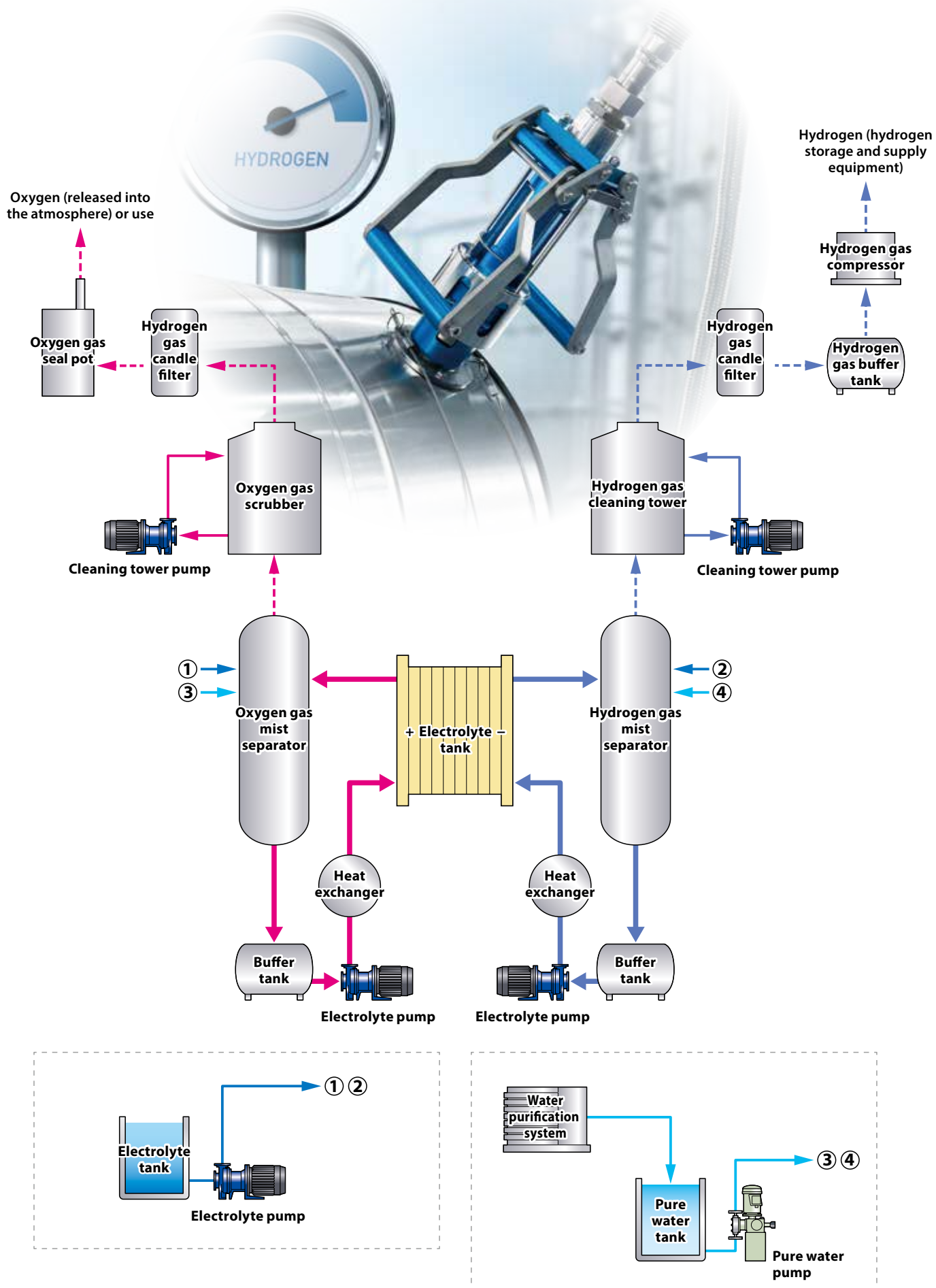
CO₂ separation/recovery

(chemical adsorption method/polymer permeation membrane)

In addition to promoting the use of renewable fuels, CO₂ must be separated and recycled to achieve carbon neutrality. Iwaki magnetic drive pumps for refrigerant circulation pumps (amine-based solvents) that are most suitable for the chemical absorption method and small pumps for the polymer permeation membrane method.



Hydrogen-energy (AWE · PEM · AEM · SOEC)





MDW

Wide range and wide variation

Large magnet pumps for process

The outer pump body is cast iron made to withstand severe conditions.



MXM



MDM



MDE



MPCP

High pressure resistance, long life, easy maintenance

Stainless steel magnet drive pumps

Stainless steel magnetic drive pumps withstand high pressures and temperatures.



MP-PN40



MP



MMP



MET

Meeting diverse needs for chemical grouting

Motor driven metering pumps

High quality, high precision, wide variation, low pulsation, economy, ease of use, and applicable for all applications.



IX



LK



AX

Ideal for integration in small equipment

Direct drive pumps

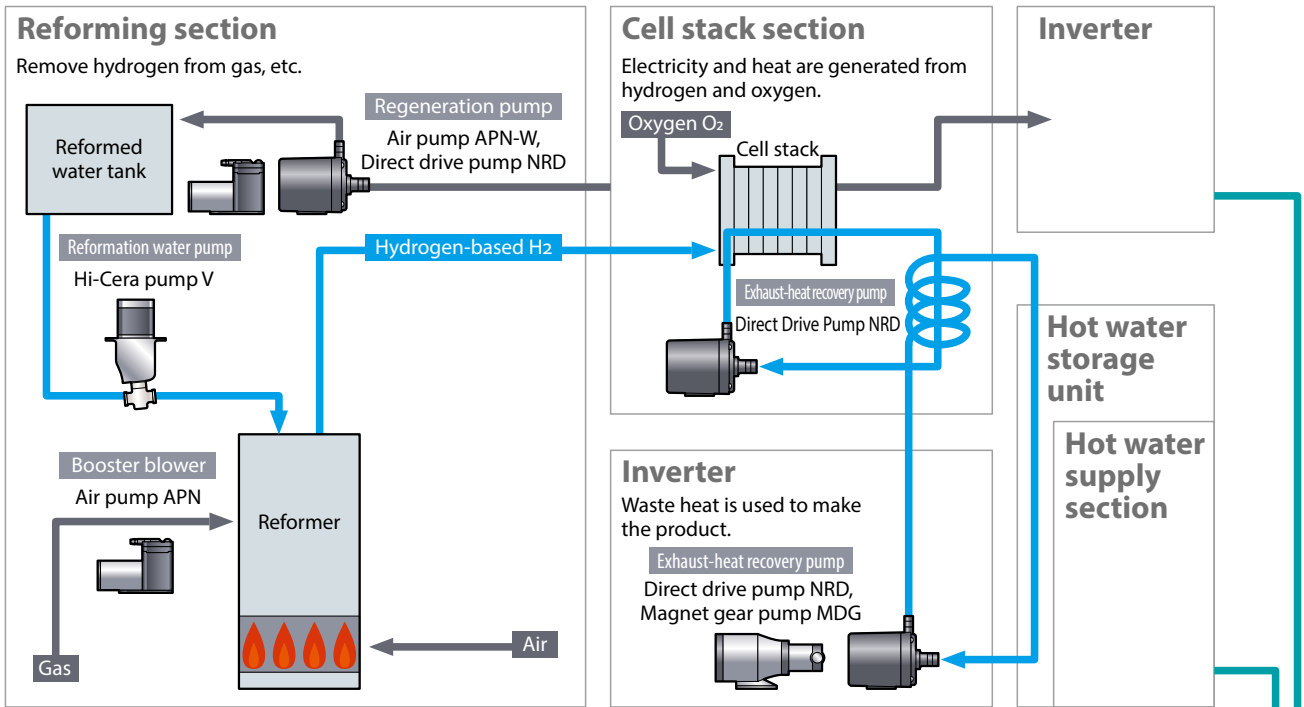
Canned motor pumps driven by DC brushless motors.



NRD

Fuel-cell (PEFC · SOFC)

* Both PEFC (Polymer Electrolyte Fuel Cell) and SOFC (Solid Oxide Fuel Cell) are available. The following figure shows the flowchart of PEFC.



Long life, low power consumption and light weight design

Hi-Cera pumps

Compact, lightweight, plunger pump ideal for device integration. High-precision discharge rate.

For fixed quantity injection of reformed water

Installation track record for 1 kWh devices

Installation track record for 3kWh/5kWh devices

Installation track record for 10 kWh devices



V-07AF4



V-07AEP



V-10

Air Pump Optimized for Equipment Integration

Diaphragm air pumps

It is ideal for waste liquid recovery applications because it enables air mixed liquid transfer. With a hygienic oil-free diaphragm system. Ultra-compact, lightweight and low noise design.

For gas-liquid mixture transfer

For fuel pressure boosting blower



APN-W

Brushless DC motor

with built-in drivers for speed control (DC1-5V)

Direct drive pumps

Brushless DC motor with built-in drivers. Rotational speed can be controlled by external signal. (DC1-5V) Rated for high temperature liquid of 80°C

For cooling water and waste heat recovery



NRD-05/08/08Z(-P)

NRD-20/30

NRD-40/40X

NRD-70/70X/100/100X/100H

Compact design seal-less gear pump

Magnet gear pumps

A brushless DC motor with built-in drivers is adopted. Max. Corresponds to high temperature liquid of 95°C.

For waste heat recovery



MDG

Solar cells (Perovskite)

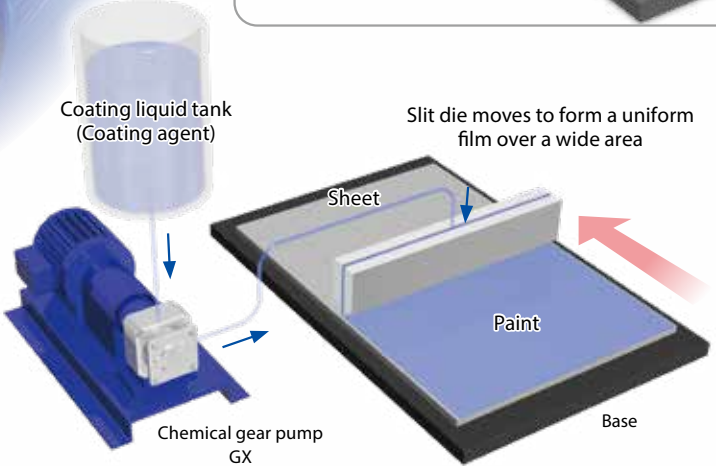
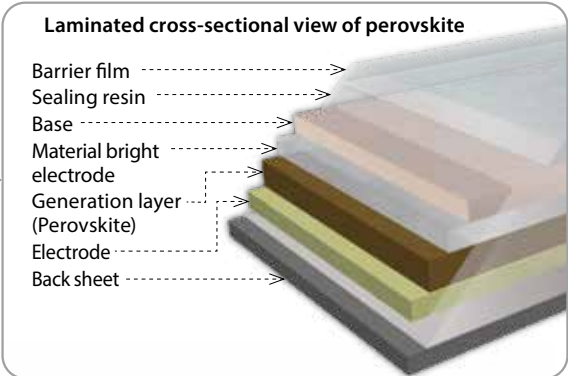
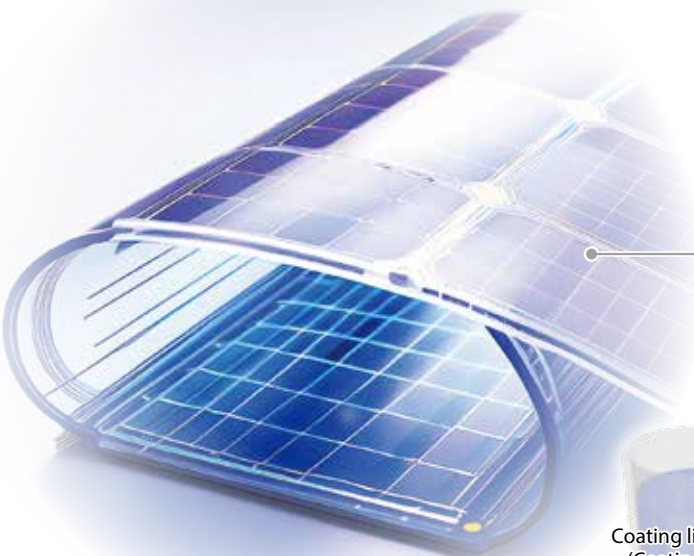


Image of mass production type slit die coating

Meeting diverse needs for chemical

Motor driven metering pumps

High quality, high precision, wide variation, low pulsation, ease of use for all applications.

Trial action



IX

Ultra-high efficiency linear drive

Linear pumps

Ultra-high-efficiency linear drive developed in-house for superior quantitiveness and liquid delivery accuracy.

Trial action



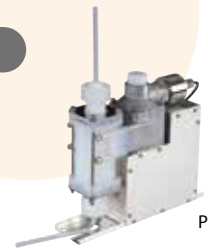
LR

Lowers resist usage

Photoresist dispensing pumps

A high-torque stepping motor is used as the drive source. Maintains high discharge rate accuracy.

Trial action



PDS

Easy disassembly and cleaning

Air driven diaphragm pumps

Compressed air is used as the driving source to enable high-pressure discharge of Max. 0.85MPa. Completely self-priming.

for mass production



TCR501 (Made of SUS316L)



TCR255

Fluid delivery with less pulsation

Chemical gear pumps

No galling or seizure occurs, and the pump can handle a wide range of liquids—from low to high viscosity. Even fluids that are sensitive to agitation or prone to foaming can be transferred gently and smoothly.

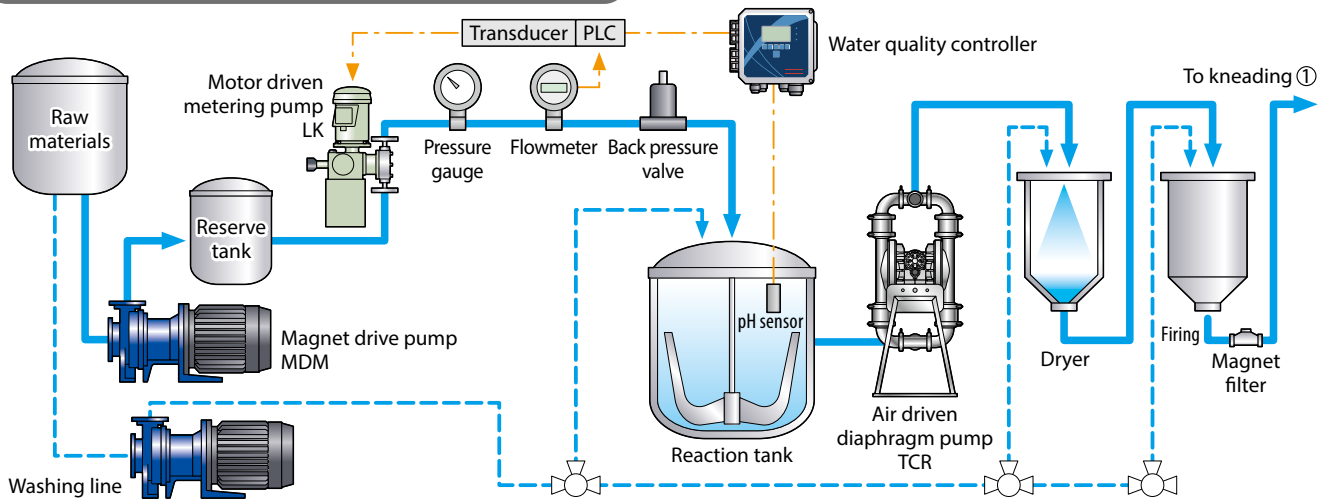
for mass production



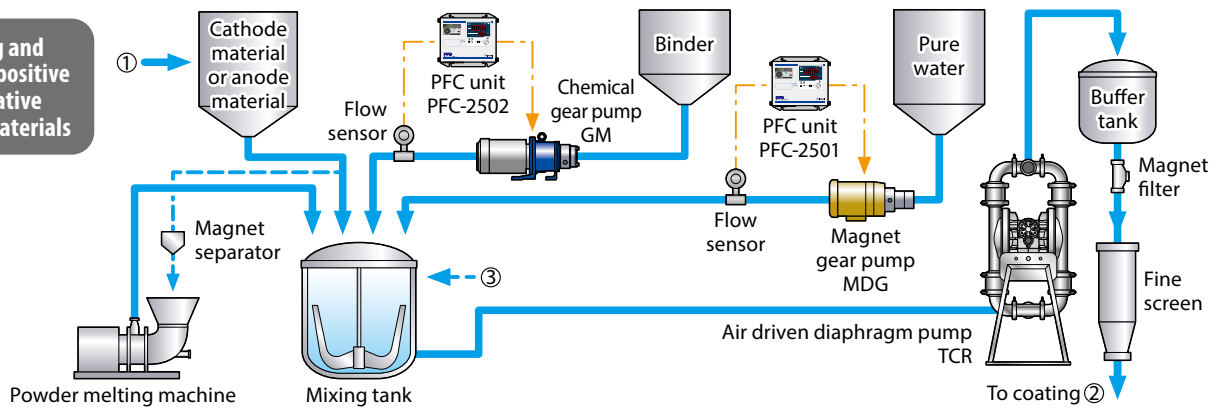
GX

Rechargeable Batteries (Lithium-ion Batteries)

Production positive-electrode electrode material



Kneading and transfer of positive and negative electrode materials



Compact design seal-less gear pump

Magnet gear pumps

Excellent corrosion and heat resistance, transfers liquids high pressure Sealless structure for compact size and long life.

Positive and negative electrode material kneading



MDG

Versatile with wide variations

Air driven diaphragm pumps

Compressed air is used as the driving source to enable high-pressure discharge of Max. 0.85MPa. Completely self-priming.

Kneading and transfer of positive and negative electrode materials



TCR501 (SUS electropolishing type)



TCR501 (Made of SUS316L)

Wide range and wide variation

Magnet drive pumps

A wide range of models are available, from small models for embedded devices to large models for processes.

High quality, high precision, wide variation, low pulsation, ease of use for all applications.

Production Electrolytic solution

Production positive-electrode electrode material



MDM

Control equipment for reliability and security

Water quality control/flow control

Superior operability and functionality realize constant flow rate (pressure) control of water quality and rotate pumps.

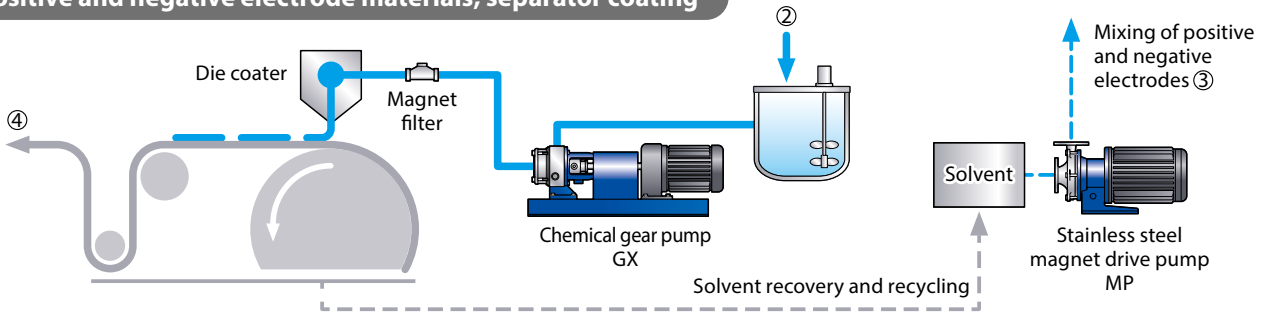
Production positive-electrode electrode material

Positive and negative electrode material kneading

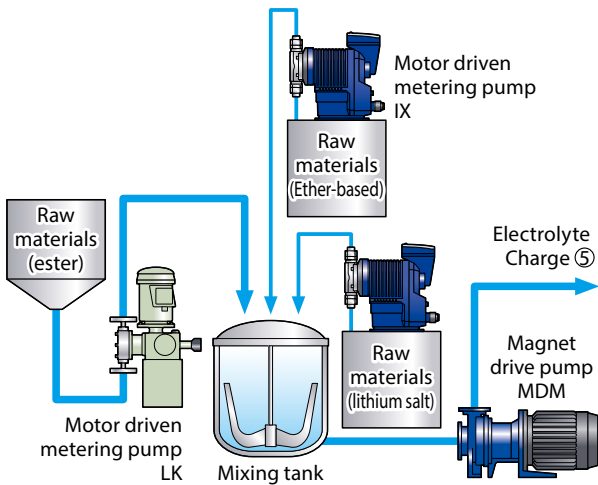


ML

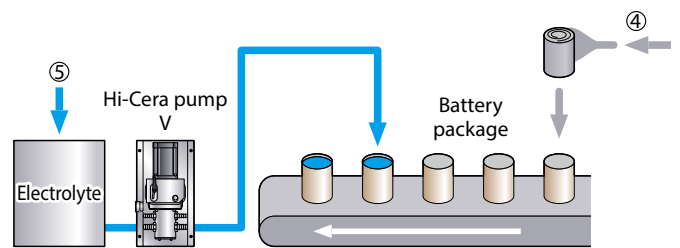
Positive and negative electrode materials, separator coating



Production Electrolytic solution



Electrolyte filling



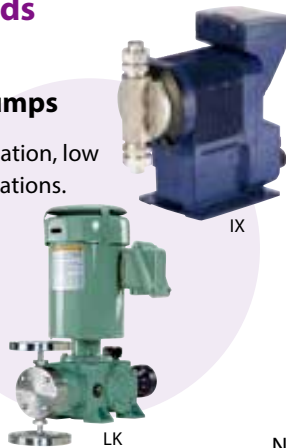
Meeting diverse needs for chemical

Motor driven metering pumps

High quality, high precision, wide variation, low pulsation, ease of use for all applications.

Production Electrolytic solution

Production positive-electrode electrode material



High-precision filling pump with excellent controllability

Hi-Cera pumps/Dispense Pumps

Valve plunger pump with high precision injection and high precision control. The unique valveless structure eliminates troubles such as air lock.

Electrolyte filling



Fluid delivery with less pulsation

Chemical gear pumps

No galling or seizure occurs, and the pump can handle a wide range of liquids—from low to high viscosity. Even fluids that are sensitive to agitation or prone to foaming can be transferred gently and smoothly.

Positive and negative electrode material kneading

Positive and negative electrode materials, separator coating

Stainless steel magnet drive pumps

Stainless steel magnetic drive pumps withstand high pressures and temperatures.

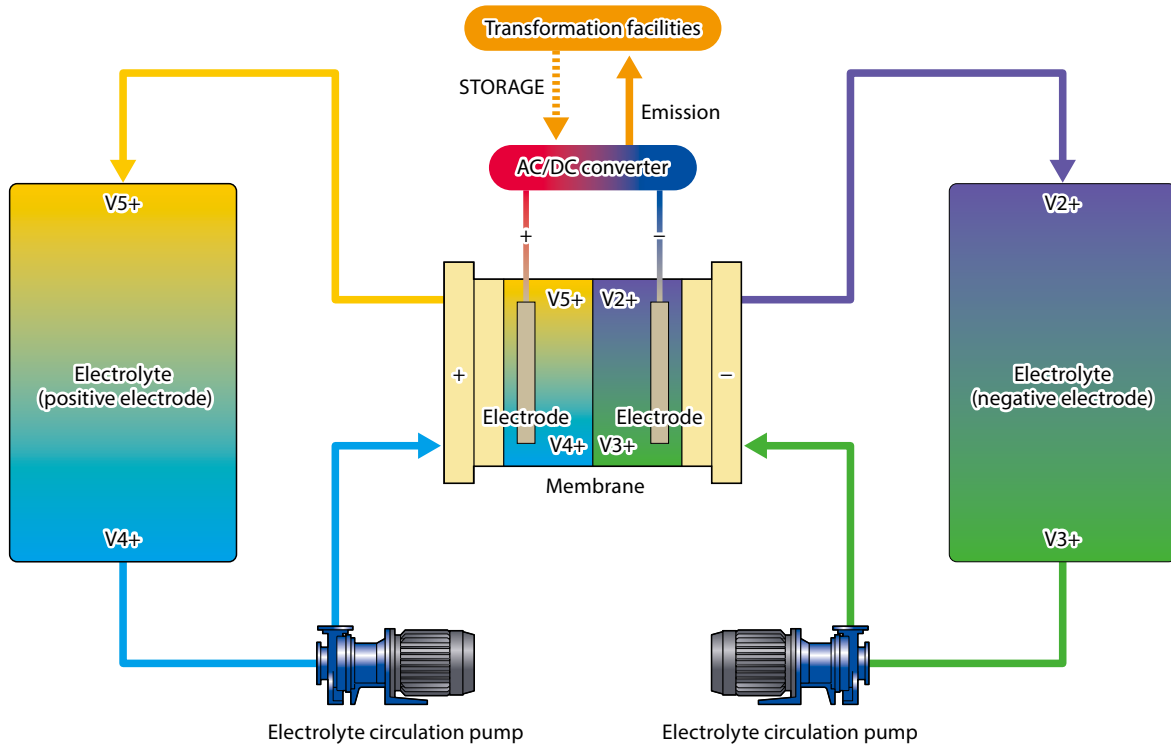
Production Electrolytic solution

Production positive-electrode electrode material



Rechargeable Batteries (Redox Flow Batteries)

Vanadium redox flow battery



Wide range and wide variation

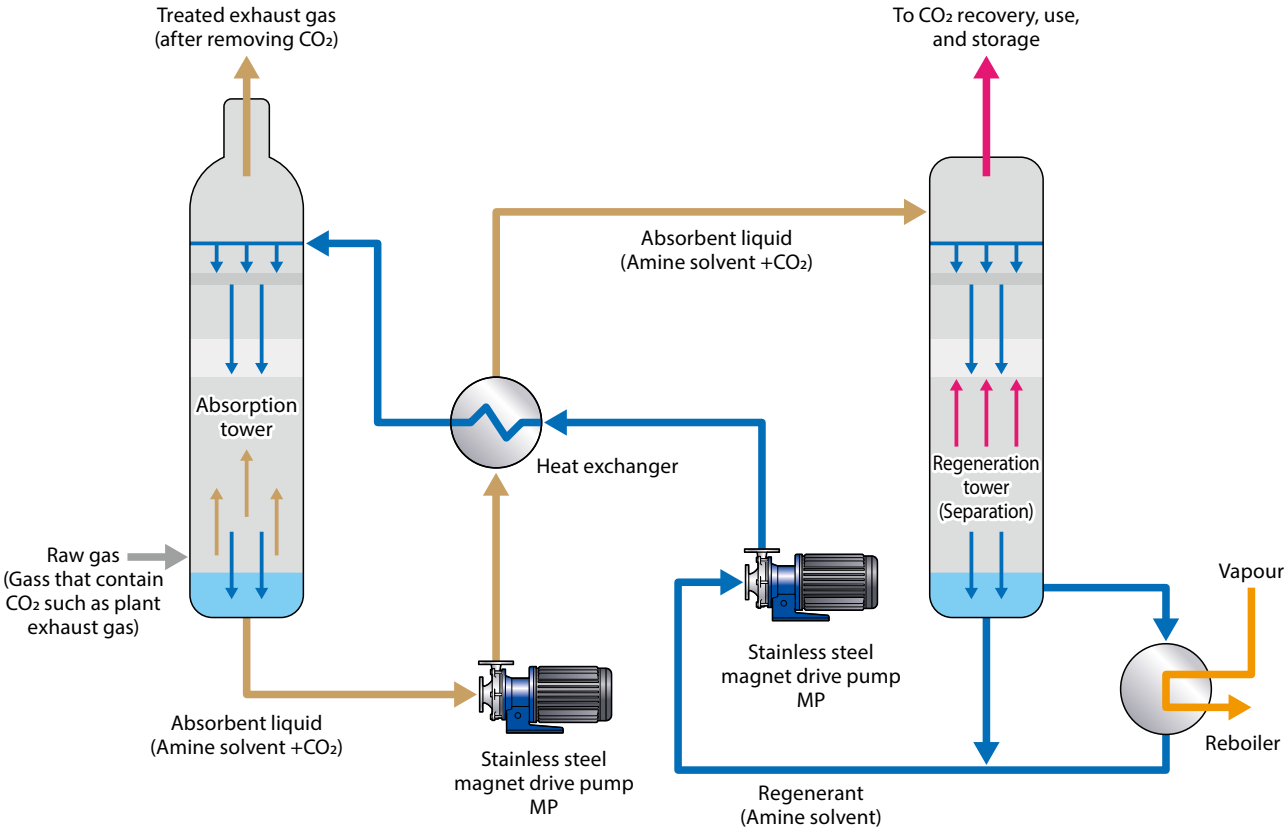
Magnet drive pumps/Direct drive pumps

A wide range of models are available, from small models for embedded devices to large models for processes. High quality, high precision, wide variation, low pulsation, ease of use for all applications.

Electrolyte circulation



CO₂ separation/recovery (chemical adsorption method/polymer permeation membrane)



**High pressure resistance,
long life, easy maintenance**

Stainless steel magnet drive pumps

Stainless steel magnetic drive pumps withstand high pressures and temperatures.

Chemisorption method



**Sealless pump
without liquid leakage**

Small magnet pumps/Direct drive pumps

This product is not only safer but also more compact, making it easier to integrate into a wide range of devices.

Polymer adsorption film method



Clean air supply and intake

Air pumps


Because the diaphragm pump is directly connected to the motor, there is no contamination from carbon or oil, and airtightness with the external environment is preserved.


Polymer adsorption film method



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 **Caution for safety use:** Before use of pump, read instruction manual carefully to use the product correctly. Actual pumps may differ from the photos. Specifications and dimensions are subject to change without prior notice. For further details please contact us.

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