

RECIRCULATING AQUACULTURE SYSTEM

Delivering Aquaculture Success Sustainably









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GET IN TOUCH



ABOUT US

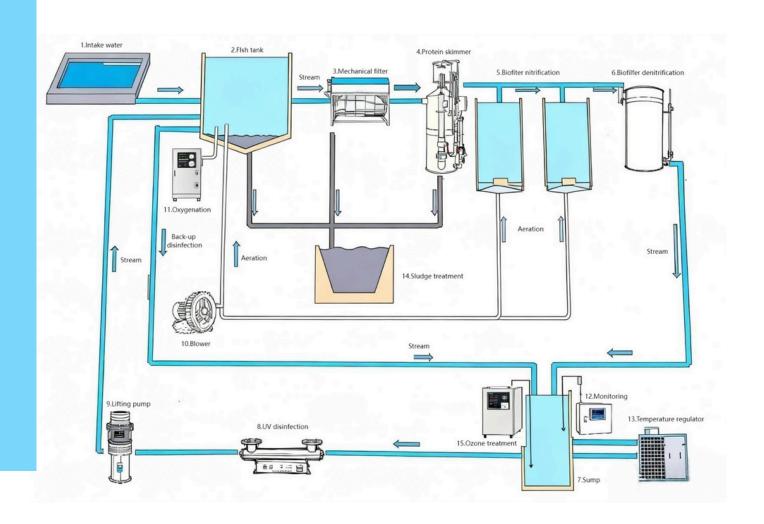
We are a leading provider of Recirculating Aquaculture Systems (RAS), delivering sustainable technologies that empower fish farmers to achieve higher yields with lower environmental impact.



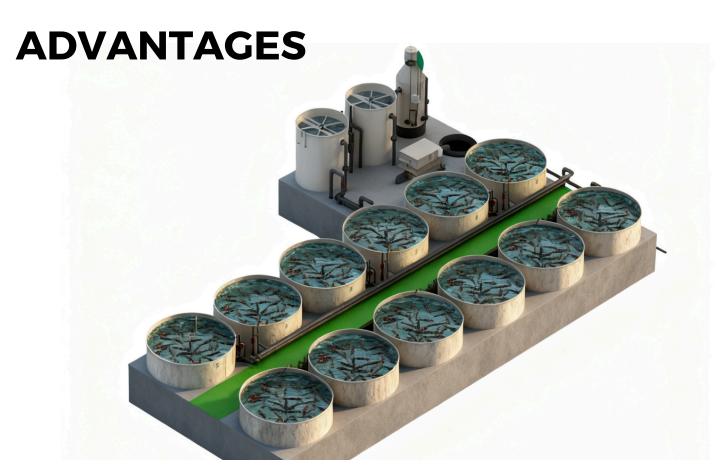
From project design and equipment manufacturing to installation and after-sales support, we provide turnkey aquaculture solutions tailored to each client's needs. Our systems recycle water, optimize efficiency, and ensure healthy, high-quality fish production.

MEET RAS

The Recirculating Aquaculture System (RAS) is a controlled environment aquaculture model that uses a series of efficient water treatment technologies to continuously purify, sterilize and recycle aquaculture water.







- Environmentally friendly and sustainable
- Controllable risks, stable production
- Saving Water and land
- Extremely high yields, improving profits
- Precise feeding, cost control

OUR PRODUCT



CANVAS FISH TANK

- Made from high-strength PVC/PE canvas, lightweight yet durable.
- Foldable design for easy transport, assembly, and storage.
- UV-resistant and waterproof coating ensures long service life outdoors.
- Corrosion-free alternative to concrete tanks, ideal for temporary or permanent setups.
- Cost-effective solution for RAS, hatcheries, nurseries, and small grow-out stages.
- Available in multiple sizes and depths, customizable according to project needs.





PP FISH TANK (POLYPROPYLENE TANK)

- Constructed from food-grade polypropylene sheets, safe and non-toxic.
- Strong structure with excellent chemical and corrosion resistance.
- Smooth inner surface for easy cleaning and biosecurity maintenance.
- Long service life with minimal maintenance compared to traditional tanks.
- Suitable for intensive RAS, broodstock, fingerling, and growout production.
- Can be customized in diameter, height, and shape (round, rectangular, conical bottom).



SUBMERGED DRUM FILTER

- Automatic rotating drum filter for solid waste removal in RAS.
- High filtration precision (70–80 µm mesh) ensures clean and clear water.
- Equipped with stainless steel mesh (304/316L) for durability in fresh and seawater.
- Backwashing system with high-pressure spray for continuous self-cleaning.
- Energy-efficient operation with low motor and pump power requirements.
- Reduces suspended solids, uneaten feed, and feces to maintain optimal water quality.
- Available in multiple flow capacities (100 m³–800 m³/hr) to match system size.





ROTARY DRUM FILTER

- Continuous mechanical filtration for suspended solids removal.
- Precision mesh (60–100 μ m) captures uneaten feed and fish waste.
- Automatic backwash with high-pressure spray jets, ensuring uninterrupted operation.
- Stainless steel or PP construction, resistant to corrosion in fresh and seawater.
- Energy-efficient motor and pump system for low operating costs.
- Scalable models to handle flows from small hatcheries to industrial RAS farms.



PROTEIN SKIMMER

- Removes fine organic waste, proteins, and dissolved organics from the water.
- Improves water clarity and reduces biological oxygen demand (BOD).
- Increases dissolved oxygen (DO) levels by stripping CO₂ and volatile compounds.
- Integrated ozone inlet allows direct connection with an ozone generator for enhanced sterilization, improved water clarity, and better breakdown of organic matter.
- Compact design with high-efficiency venturi or needlewheel pumps.
- Essential for marine RAS and high-density aquaculture systems.





FISH INCUBATOR

- Highly integrated, plug and play.
- Full automation, labor saving design.
- Controlled environment for hatching fish eggs with high survival rates.
- Uniform water flow ensures oxygen supply and prevents dead zones.
- Transparent design for easy monitoring of egg development.
- Easy-to-clean structure reduces contamination risk.
- Suitable for tilapia, catfish, salmonids, and ornamental fish hatcheries.





- Converts toxic ammonia (NH₃) and nitrite (NO₂-) into less harmful nitrate (NO₃-).
- Supports stable water quality for intensive stocking densities.
- Available as trickling filters, moving bed biofilm reactors (MBBR), or bead filters.
- Customizable capacity to match feeding rates and biomass.
- Critical component for longterm RAS stability.

MOVING BED BIOFILM REACTOR

- High surface area carriers (500– 1000 m²/m³) for bacterial colonization.
- Lightweight, floating design ensures optimal mixing and aeration.
- Resistant to clogging and biofouling, with long service life.
- Supports high ammonia removal rates in compact spaces.
- Suitable for fresh, brackish, and marine water RAS.





ROOTS BLOWER

- Delivers large volumes of air at low pressure.
- Reliable aeration for biofilters and fish tanks.
- Rugged design with long service life, suitable for continuous 24/7 operation.
- Low vibration and noise with advanced silencer options.
- Available in multiple capacities for small to industrial RAS farms.



VORTEX BLOWER



- High-pressure air delivery for specialized RAS applications.
- Compact and oil-free design ensures clean, dry air supply.
- Used for oxygenation, ozone injection, and protein skimmers.
- Energy-efficient with minimal maintenance requirements.
- Ideal for aquaculture requiring stable high-pressure air.





- Removes excess CO₂ and nitrogen gas from water.
- Improves oxygen uptake efficiency and fish health.
- Designs include packed columns, cascade trays, and forced aeration towers.
- Built from corrosion-resistant materials (FRP, PVC, or stainless).
- Essential for intensive aquaculture with high feeding rates.

OZONE GENERATOR

- Strong oxidizer to sterilize water and break down organic waste.
- Reduces pathogens, algae, and color in water.
- Increases water clarity and decreases biofouling on tanks/pipes.
- Controlled dosing ensures fish safety.
- Compatible with RAS ozone contact chambers and protein skimmers.





TEMPERATURE REGULATOR

- Maintains optimal water temperature for specific fish species.
- Digital display with automated heating/cooling control.
- Supports integration with chillers, heaters, and heat exchangers.
- Essential for stable growth in variable climates.
- Available for both fresh and marine aquaculture.





OXYGEN GENERATOR

- PSA (Pressure Swing Adsorption) technology for >90% purity O₂.
- On-demand oxygen production, reducing cylinder dependency.
- Low operating cost and high reliability.
- Scalable capacity for hatcheries, grow-out, and broodstock facilities.
- Ensures high DO levels for intensive fish culture.





- Efficient device for dissolving oxygen into water.
- High transfer efficiency (>90%) with minimal loss.
- Compact and easy to install in RAS systems.
- Reduces oxygen cost compared to traditional aeration.
- Suitable for both freshwater and seawater systems.

SUBMERSIBLE WATER PUMP

- Energy-efficient pumps designed for continuous operation.
- Quiet, compact, and easy to maintain.
- Handles large water volumes with high reliability.
- Anti-corrosion and antiblocking impeller design.
- Suitable for drum filters, biofilters, and general circulation.





VARIABLE FREQUENCY PUMP

- Adjustable flow rate for flexible water management.
- Saves energy by matching pump output to real-time demand.
- Extends equipment lifespan with soft start/stop functions.
- Digital monitoring and control options available.
- Essential for large-scale and modular RAS facilities.

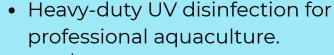


UV STERILIZER (PVC)



- Lightweight and cost-effective UV disinfection unit.
- Eliminates bacteria, viruses, and parasites in water.
- PVC housing for corrosion resistance in fresh/brackish water.
- Easy to install inline with RAS piping.
- Suitable for hatcheries and small-scale farms.





- 304/316 stainless housing for seawater resistance.
- Higher flow handling capacity than PVC models.
- Long lamp life with high UV-C efficiency.
- Used in intensive hatcheries, broodstock, and grow-out systems.



MONITORING SYSTEM

- Real-time monitoring of DO, pH, temperature, ORP, ammonia, and flow.
- IoT-enabled with remote alarms and cloud data storage.
- Automates feeding, oxygen injection, and pump control.
- Improves biosecurity and reduces human error.
- Scalable for hatchery, nursery, and grow-out RAS.





CENTRAL DRAIN

- Conical tank drain with dual separate outlets.
- Efficiently removes solid waste and uneaten feed.
- Reduces sludge accumulation and improves water clarity.
- Easy to maintain and clean.
- Essential for maintaining biosecurity in fish tanks.





RADIAL FLOW SETTLER

- Gravity-based solids removal unit.
- Removes larger particles before mechanical filtration.
- Low-energy, simple design with high solids capture efficiency.
- Reduces load on drum filters and biofilters.
- Cost-effective pretreatment for RAS.



SAND FILTER

- Mechanical filtration using silica sand or media.
- Removes fine suspended solids and turbidity.
- Backwash function for easy cleaning.
- Durable FRP or stainless steel construction.
- Often used in combination with UV or ozone treatment.





ALL-IN-ONE MACHINE

- Compact "plug-and-play" module combining:
 - o Drum filter
 - o Protein skimmer
 - o Biofiltration (MBBR)
 - o UV disinfection
 - o Oxygenation unit
- Handles flow from 30–60 m³/h, suitable for small farms, R&D, or quarantine.
- Skid-mounted and factory-tested for fast deployment.
- Reduces installation time and ensures reliable operation.
- Ideal for investors seeking rapid setup and proven performance.

SUCCESS STORIES



SHANDONG RAS BREEDING BASE

The Wanfang Water RAS workshop boasts an annual production capacity of 800 tons. It achieves a high survival rate of over 90% and an ultra-low feed conversion factor of 1.1, significantly reducing costs by 25%. By successfully mitigating natural risks, the product meets raw food standards and commands a premium of up to 30%.

GUANGDONG RAS PREMIUM SHRIMP FARMING FACTORY

The modular RAS system (16 units, 2,500 m³) produces five phases annually, 10 times higher than conventional ponds. It successfully blocks pathogens such as WSSV, achieving zero antibiotic use. The resulting live shrimp are of exceptional quality and are directly supplied to the Hong Kong and Macau markets, commanding a price 20% higher than the average.





MIDDLE EAST "DESERT OASIS" SEAFOOD FACTORY

Using only 480 square meters, four RAS systems achieve an annual output of 31.2 tons. The system is 95% water-efficient and highly automated (averaging 1.5 hours of daily operation), ensuring a 95% survival rate and providing a stable, high-quality supply for high-end hotels.



SHANDONG RAS GROUPER BREEDING BASE

A RAS circulating water base was built in Shandong, where high-priced grouper and lobster can be cultivated in a controlled environment throughout the year, directly supplying them to high-end hotels and fresh food supermarkets in first-tier cities, breaking away from the seasonal and sea area restrictions of traditional aquaculture.



WHY US

With us, you will overcome the challenges to RAS success: cost, management, and knowledge.

High Operating Costs?

We design energyefficient systems with variable frequency pumps, oxygen cones, and optimized water loops.

Low Survival Rate?

Proven designs that maintain optimal conditions 24/7, ensuring fish health and faster growth.

Lack of Know-How?

We provide full turnkey service: design, manufacturing, installation, and training.

OUR FEATURES



Sustainability

- Systems designed to reuse >90% of water, lowering environmental footprint.
- Energy-efficient pumps, blowers, and filters reduce long-term operating costs.

Partnership

- We work closely with clients to understand goals, challenges, and budget.
- Long-term focus: helping farms scale from pilot phase to industrial production.

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Innovation

- Advanced Recirculating Aquaculture System (RAS) designs with the latest engineering and biological research.
- Continuous improvement through innovation in water treatment, oxygenation, and automation.

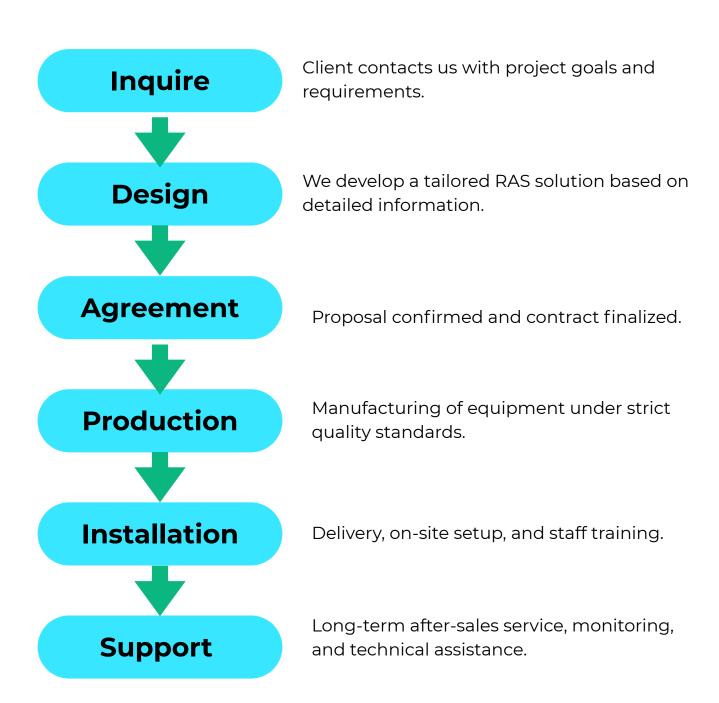
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Customization

- Every project is tailor-made: from small hatcheries to large commercial farms.
- Modular design clients can expand capacity as production grows.



COOPERATION PROCESS





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