



Waterco Case Study

Wonjin Fisheries Co. Ltd.

Waterco's aquaculture solutions boost food security

Wonjin Fisheries Co. Ltd. (South Korea)

- Multicyclone's superior filtration used widely in aquatic industries
- High-quality construction able to withstand the corrosive coastal environment
- Waterco's reputation for quality, reliability and superiority embraced by Koreans

Setting: A distinct fish food culture based on marine products

Located on the Korean Peninsula in East Asia and surrounded by the ocean on three sides – the Yellow and East China seas, and the Sea of Japan – the Republic of Korea (known as South Korea) is blessed with

an abundance of marine resources, which has resulted in a distinct fish-eating culture. Abalone, flounder, eel and sea cucumber are some of the culinary delicacies farmed for human consumption.

According to the Food and Agriculture Organization of the United Nations¹,

“*Wonjin's and Waterco's names have been associated with good quality in Korea's aquaculture industry.*”

*says Steven Liew,
Waterco's Business Development Manager.*

steady decrease in capture production in recent years has spurred South Korea to increasingly rely on aquaculture, not only to improve food security but also provide employment opportunities and generate revenue.

¹ www.fao.org

Key fish landing sites in South Korea are located in the coastal cities or towns known as Busan, Incheon, Ulsan, Gyeonggi, Gangwon, Chungnam, Jeonbuk, Jeonnam, Gyeongbuk, Gyeongnam and Jeju².

Chungnam, which is considered South Korea's richest province, is home to Wonjin Fisheries Co. Ltd., a successful company that designs and builds aquaculture systems.



Sea water drawn in from the coast contains high levels of debris, which need to be filtered before passing to the land-based fish tanks or raceways.

Challenge: Removing debris from sea water

Essential to South Korea's high-density, year-round aquaculture sector is the ability of companies like Wonjin Fisheries to maintain superior water quality and control the challenging aquaculture environment, explains Waterco's Business Development Manager, Steven Liew.

"Sea water drawn in from the coast contains high levels of debris, which need to be filtered before passing to the land-based fish tanks or raceways," he says. "A reliable filtration system and good control of aquaculture environment are vital as failure can be very costly to the farmers.

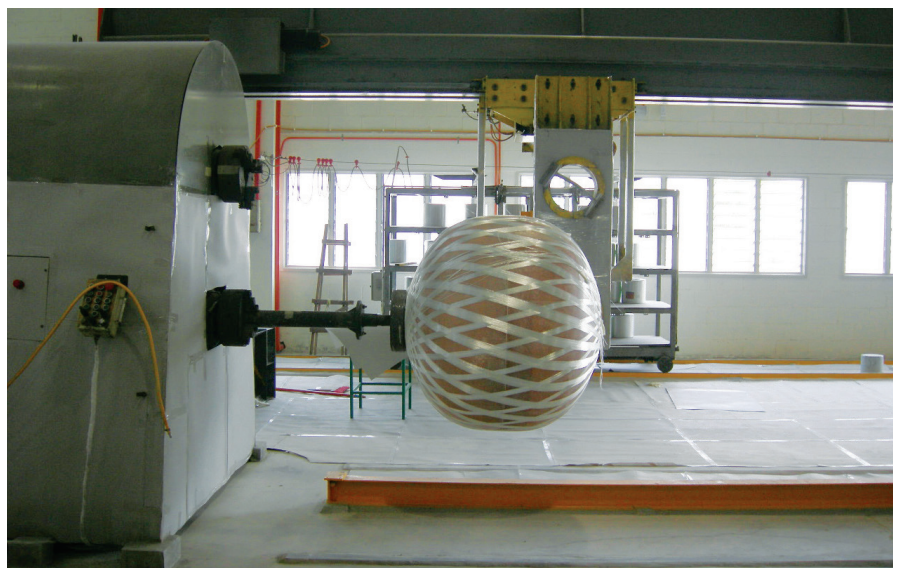
Equipment must be low maintenance and able to withstand the harsh corrosive effects of sea water."

Ongoing problems with existing filtration systems led Wonjin Fisheries technicians to test Waterco's Micron Commercial Fibreglass Filter, which continues to set global benchmarks in durability, versatility, reliability and longevity. Manufactured from the highest grade of non-corrosive materials, it is the ideal choice for harsh environments including sea water applications.

"They specifically asked for durable products that required minimal maintenance," recalls Steven.

Solution: Durable filtration solution

Constructed from an 18-ounce combination of high tensile strength chopped strand and woven mat – resulting in superior multi-directional strength – Waterco's proprietary fibreglass manufacturing techniques enable the option of large sight glasses and large manholes for its high-pressure filters, capable of withstanding up to a 1,000kPa/150psi pressure rating.



Micron Filter's inner shell is filament wound using a computer controlled four-axis machine.

² www.fao.org

Waterco's Micron horizontal fibreglass filters are known throughout the industry for their impressive performance and reliability.



Waterco's elliptical positive sealing manways provide reliable access to the filter vessel for visual inspections and cleaning.

"Positive sealing manway, proprietary flat surface port boring process, strong flange engineering design, good backwash hydraulic, optional sight glass and large lateral manhole were key benefits that differentiated Waterco's filter from the competition," Steven explains.

The filtration system set up by Wonjin Fisheries also included Waterco's MultiCyclone 70XL and MultiCyclone 16 pre-filtration device, Micron MD6500 2.5 bar filter, and four units of Hydrostar MK3 three-phase commercial pumps equipped with marine grade seals.

was very satisfied," says the President of Wonjin Fisheries, Mr Lee Ju-Seuk.



The Hydrostar's pump body is manufactured utilising state of the art engineering plastic moulding with a single piece strainer pot and volute for extra strength. A marine grade stainless steel mechanical seal is incorporated for extra protection against sea water.



MultiCyclone 70XL is a brilliant pre-filtration device that works on the basis of centrifugal water filtration and is designed with no moving parts and no filter media to clean or replace.

Critical to the system is MultiCyclone's unique centrifugal water filtration technology, specifically the incoming water is channelled so that it enters multiple hydrocyclones tangentially, generating a strong centrifugal effect. This spins the sediment out to the hydrocyclone's wall and then spirals it down to the sediment sump, while the cleansed water spirals upwards and out of the filter.

Furthermore, Waterco's MultiCyclone does not contain moving parts, nor filter media that requires cleaning or changing, dramatically reducing maintenance costs and time.

"It operated smoothly as expected and Wonjin Fisheries' engineers found the installation process easy and the end-user

Conclusion: Quality products for the aquaculture industry

In South Korea, and all around the world, Waterco's filtration solutions are helping fish farmers and aquaculture technicians maximise control over the environment, improve stock levels, reduce maintenance and downtime, and ultimately increase the return on investment.

And, because Waterco's commercial filtration range has been customised to suit the aquaculture sector, there is no need for companies like Wonjin Fisheries to modify products to suit their requirements.

"This further cements Waterco's reputation as a quality product supplier to the aquaculture industry," says Steven.