

# ULTRA-HIGH RECOVERY & MINIMIZED BRINE DRIVE SAVINGS

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**CUSTOMER**  
Jinma Energy

**LOCATION**  
Henan, China

**PROJECT TYPE**  
Turnkey High-Recovery BWRO Desalination Plant

**COMMISSIONED**  
2020

**CAPACITY**  
7,920 m<sup>3</sup>/day (1,453 gpm)

**STATUS**  
Operational

## OVERVIEW

Henan Jinma Energy company, a leading Chinese coke producer and processor, was testing innovative technologies to treat wastewater from the petroleum coke (petcoke) production process. ROTEC's pilot demonstrated continuous stable operation at an 80% recovery rate in harsh feed-water conditions over several months. This led to a full-scale project based on our Flow Reversal [RO technology](#), comprised of an array of three units with 2,640 m<sup>3</sup>/day (485 gpm) feed capacity each, providing a total feed capacity of 7,920 m<sup>3</sup>/day (1,453 gpm). Now operational and delivering a recovery rate of up to 90%, the plant is efficiently meeting customer and regulatory demands, while saving hassle and cost.



## THE NEED

With increasing pressure from the national government to minimize industrial waste for disposal, Chinese factories are being urged to reduce brine concentration quantities. Rising to the challenge, Henan Jinma Energy selected ROTEC FR-RO technology for its new [wastewater treatment facility](#).

The company's goals: to significantly reduce brine quantities today and enable future savings, eliminating the need for an additional brine concentration system, such as an evaporator or crystallizer.

## THE PROCESS

ROTEC designed, manufactured, installed and commissioned onsite an array of three FR-RO units to treat petroleum coke plant tertiary effluent. Based on ROTEC's proprietary FR-RO technology, each unit treats ~110 m<sup>3</sup>/h (484 gpm). RO trains are fed with the plant's wastewater after combined biological/UF/MF pretreatment. Each train consists of three stages – 15:6:3 (PV configuration) – and is built from corrosion-resistant duplex piping material, and designed to reach up to 50 Barg.

## SUSTAINED HIGH RECOVERY AND MINIMIZED RISK

The treatment plant, based on the game-changing FR-RO technology and combined with our highly cost-effective brine concentration solution, is operating successfully at Jinma Energy, [delivering stable performance with up to 90% recovery – an extremely high recovery rate for petroleum coke plant tertiary effluent](#). Despite the harsh feed water conditions, the plant is highly effective at reducing brine drainage, eliminating the risk of heavy fines that can be levied for draining large amounts of concentrate.

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## LOOKING TO GAIN MORE FROM WATER? LET'S TALK.









ROTEC provides holistic, modular reverse osmosis desalination solutions and services. With our eco-friendly approach based on our FR-RO technology, we enhance water recovery, efficiency, and reliability, supporting healthy communities.

### Keep in touch

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