



► POWERING THE COLD CHAIN IN BUSAN

J & E HALL'S HALLSCREW TECHNOLOGY AT THE HEART OF KOREA'S MODERN GROCERY DISTRIBUTION HUB

INTRODUCTION

In a landmark international project, J & E Hall has supplied four high performance open type screw compressor packages to South Korean refrigeration contractor Chungwoon System. These units, integrating J & E Hall's HallScrew single screw compressors, are now installed in a major online grocery distribution centre located in Busan, South Korea's second-largest city and a key logistics hub.

The compressor packages were developed in close collaboration with Winter Refrigeration, J & E Hall's well established partner in the region, reflecting a shared commitment to engineering excellence and energy efficient cooling solutions.



PROJECT OVERVIEW

The client: Chungwoon System

Chungwoon System is a leading refrigeration contractor in South Korea, delivering custom-engineered solutions to food, logistics, and industrial sectors. Their expertise in complex system integration and high-efficiency cooling technologies makes them a trusted partner for major projects across the country.

End Users: Ocado & Lotte

The distribution facility in Busan supports operations for Ocado, the UK-based online grocery giant, and Lotte, one of South Korea's largest retail conglomerates. Through their joint venture, these companies are transforming how groceries are ordered, stored, and delivered across Korea. The facility relies heavily on high-performance refrigeration to maintain strict temperature control across chilled and frozen zones, ensuring product integrity from storage to final delivery.

Location: Busan, South Korea

Located on the southeastern coast, Busan is South Korea's second-largest city and its busiest port. Its strategic position makes it a prime logistics hub for nationwide cold chain distribution. As online grocery services expand rapidly, reliable and scalable refrigeration systems are critical to meet rising consumer expectations for fresh and frozen goods delivered efficiently.





THE SOLUTION: HallScrew open type screw compressor packages

J & E Hall supplied four custom engineered compressor packages, each tailored to meet the varied cooling demands of the distribution centre. These packages include:

- HSO Series HallScrew compressors
- VFD-compatible drive motors
- Couplings and oil separators
- Integrated economisers and controls (ASME certified)

Each compressor package includes ASME-certified oil separators and economisers, ensuring compliance with internationally recognised standards for pressure vessels. Certification by the American Society of Mechanical Engineers (ASME) guarantees that these components meet rigorous safety, quality, and performance criteria. This not only enhances system reliability and safety but also simplifies regulatory approvals, making the equipment suitable for global deployment—including demanding applications like large-scale distribution centres.

The compressors are designed to run on R507A, a widely used refrigerant suitable for medium and low-temperature applications.

Installed Compressors:

1 x HSO 4225 Evaporating: -32°C
Condensing: +35°C
Capacity: 373 kW
Speed: 3285 rpm

2 x HSO 5230 Evaporating: -10°C
Condensing: +35°C
Capacity: 1505 kW each
Speed: 3576 rpm

1 x Swing Duty HSO 5230 Evaporating: -32°C / -10°C
Condensing: +35°C
Capacity: 374 kW / 1505 kW
Speed: 2110 rpm / 2476 rpm

The inclusion of a swing duty compressor provides flexible operation across both low and medium temperature requirements, optimising energy use depending on demand.

TECHNOLOGY BENEFITS: HSO 4225 and HSO 5230

J & E Hall's new generation HallScrew compressors are engineered for long-term efficiency and operational reliability. Key benefits include:

- High volumetric efficiency and broad operating envelope, ideal for fluctuating loads in distribution centres.
- Reduced vibration and noise through balanced single screw design.
- Optimised part-load performance, especially when integrated with Variable Frequency Drives.
- Compact, easy-to-maintain design with integrated oil management and control systems.

COLLABORATION THAT DELIVERS RESULTS

The success of this project highlights the strength of collaboration between J & E Hall, Winter Refrigeration and Chungwoon System. By aligning engineering expertise and local knowledge, the team delivered a tailored solution capable of supporting large scale chilled and frozen food logistics in a demanding climate.

"J & E Hall were delighted to receive the order from Korean contractor Chungwoon System for four refrigeration open-type screw compressor packages. These cutting-edge packages were meticulously designed and delivered in conjunction with our valued collaboration partner, Winter Refrigeration," stated Douglas Scott, Senior Sales Manager at J & E Hall. "This partnership underscores our commitment to delivering bespoke, high-performance solutions globally."



CONCLUSION

As online grocery shopping continues to surge across Asia, projects like this underline the importance of dependable, efficient refrigeration at every step of the supply chain. The HallScrew compressor packages now operating in Busan provide the performance, flexibility, and efficiency needed to meet South Korea's modern cold chain demands.

With this successful delivery, J & E Hall continues to reinforce its reputation as a global leader in industrial refrigeration technology, supporting partners around the world in building a more sustainable and resilient future for food logistics.