

CASE STUDY

Leading Beverage Company Saves Energy and Costs with Unique Solution from Ingersoll Rand

Our client is a major global soft drink bottler and one of the world's premier consumer goods companies. Their European bottling facility in Belgium uses compressed air to fill cans for a variety of popular beverage brands.

THE CHALLENGE

Our client's distinct requirements for a new air compressor made it clear that no ordinary system would suffice.

Quality was the first priority. As with many companies across the food and beverage industry, the company aims to remove all risk of potential product contamination in their facilities. That includes their use of compressed air.

Heat recovery and energy efficiency were also essentials. Our client uses hot water for their bottling process. Generating this hot water by using the waste heat of the oil-free compressors would be ideal, but the Belgium facility does not have cooling water on site to operate a water-cooled oil-free compressor, which could then be operated with heat recovery. The company also takes great strides to reduce their carbon footprint wherever possible across their operations.

Last but not least, the company needed its new air compressor to remain fully operational with no unplanned downtime. For the sake of profitability and productivity, they could not afford any exceptions.

CLIENT REQUIREMENTS

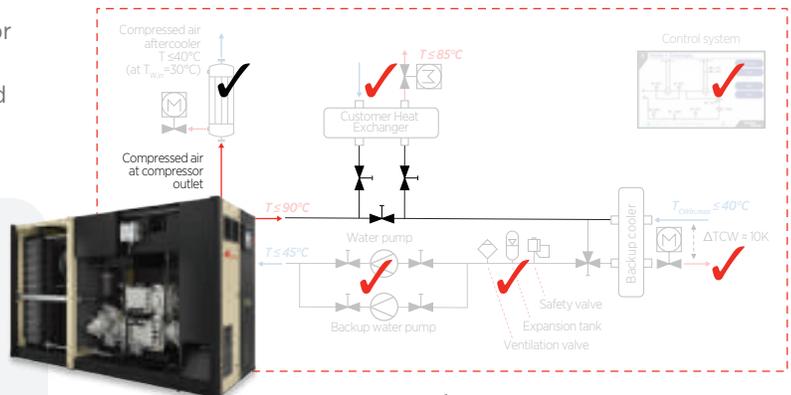
- Class 0 oil-free air to eliminate contamination risk
- Heat recovery and energy efficiency
- Operational reliability with no/minimal unplanned downtime
- Lower total cost of ownership

THE SOLUTION

After a thorough review of contenders, the company selected the **Ingersoll Rand E160ne Series oil-free rotary screw air compressor**—the first and only air-cooled oil-free compressor on the market with optional integrated heat recovery.

The E Series compressor provides 100% oil- and silicone-free air per ISO 8573-1:2010 Class 0 standards for food and beverage industries. The unique closed-package design delivers turnkey functionality: our client did not need to purchase additional downstream equipment, such as a pump skid, water cooler, backup cooler or extra piping, which normally would be necessary for the heat recovery.

Air-cooled E75-160ne Series enables heat recovery without the need for additional downstream equipment



Air-cooled E75-160ne Series Compressor

- ✓ Often not required with E Series Air-cooled
- ✓ Included in E Series Air-cooled

The E16One uses ultra-high efficiency dual motors for an independent control of first and second stage airoend speed, thereby achieving up to 13% greater energy efficiency than leading water-cooled compressors on the market. The high speed of the motors also eliminates the need for any gearbox, whereas standard 2-stage compressor designs always need gearboxes, which require oil and create friction that results in energy loss.

As part of the overall solution, Ingersoll Rand also installed two D-EC Cycling Refrigerated Dryers. These dryers deliver even greater levels of energy efficiency and waste minimisation when paired with the E Series compressor. Leveraging thermal mass and cold energy storage, the refrigeration system automatically deactivates during periods of low load to help our client reduce energy consumption. No other dryers available match these levels of efficiency or the resulting low operating costs.

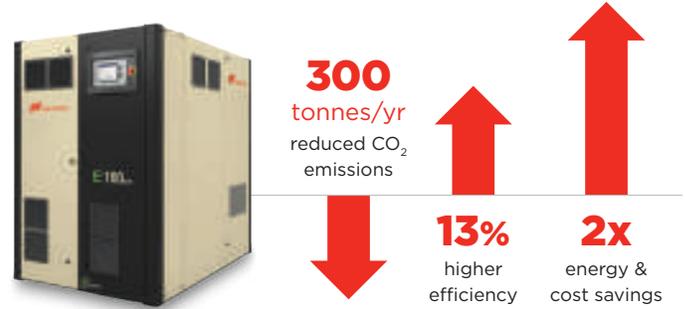
For guaranteed reliability, our client and their third-party maintenance subcontractor selected Ingersoll Rand's PackageCARE Service Program. Ingersoll Rand performs all scheduled maintenance and uses predictive and analytical tools (such as remote monitoring via the Helix™ Connected Platform) to help prevent unexpected interruptions. Should our client require other maintenance, nearby technicians can be dispatched quickly.



THE RESULTS

By choosing an all-in-one turnkey solution with integrated heat recovery, our client gained a new compressor and new dryers with a lower initial investment, lower energy consumption, and a lower total cost of ownership.

The E16One has the potential to save our client thousands of euros each year. The 13% higher efficiency in compressed air generation contributes more than 20.000€ savings per year in electricity costs.¹ Additional savings of more than 60.000€ per year can potentially be achieved with the use of heat recovery.² Compared to other leading products on the market, the E16One offers nearly double the amount of energy and cost savings while reducing CO₂ emissions by more than 300 tonnes per year.³



KEY ADVANTAGES of Ingersoll Rand E16One with PackageCARE Maintenance

- 100% oil- and silicone-free air
- Integrated heat recovery
- All-in-one solution
- Guaranteed reliability
- Smallest footprint
- Lowest noise levels
- Regular maintenance schedule
- Lower total cost of ownership

Ingersoll Rand E Series oil-free rotary screw air compressors

are utilize state-of-the-art design features to achieve unparalleled energy efficiency. Providing continuous 100% oil-free air, these compressors offer an optimized total package for risk-free operation at a low total operating cost.

“We evaluated a few options for our new compressor, but none of them could match the efficiency gains available through Ingersoll Rand’s E Series. The initial upfront investment was relatively low because it’s a fully turnkey system. And the integrated heat recovery will help us lower costs and energy use moving forward.”

— Director of Operations, Global Soft Drink Bottler

1. Based on 8,000 operating hours per year and an electricity price of 15 ct/kWh.

2. Based on 8,000 operating hours per year, substitution of a conventional gas boiler, gas price of 5 ct/kWh.

3. Based on a gas boiler efficiency of 90% and average specific CO₂ emissions of electricity generation of 0,366 kg/kWh.