PRODUCT SPOTLIGHT: COPELAND SCROLL™ COMPRESSORS

Less Is More

When it comes to regulatory compliance, foodservice refrigeration equipment manufacturers have their work cut out for them over the next few years. In 2018, the Environmental Protection Agency (EPA) will be phasing out the use of R-404A in new remote condensing units for walk-in coolers and freezers (WICF). Then, the Department of Energy (DOE) has proposed the enforcement of its new WICF efficiency mandate in 2020, as measured by the annual walk-in efficiency (AWEF) standard. The challenge for foodservice OEMs is to design new condensing units and standalone equipment that comply with both requirements.

Our new 3/4 to 1 1/2 horsepower (HP) offerings extend the existing Copeland Scroll ZF* KA and ZB*K A compressor lines, allowing OEMs to combine compliance into a single design cycle for smaller low- and medium-temperature applications. As with any Copeland Scroll compressor, these smaller offerings deliver high efficiencies and reliable performance.

As the EPA phases down the use of hydrofluorocarbons (HFCs) with higher global warming potential (GWP), new refrigeration platforms must be designed to accommodate the performance characteristics of lower-GWP alternatives. The new fractional HP Copeland Scroll compressors are rated for use with new R-448A/449-A as well as existing lower-GWP HFCs such as R-407A.

Liquid-injected for low-temperature efficiencies

Walk-in freezers that rely on outdoor condensing units will require compressors that can mitigate the higher discharge temperatures produced when using new refrigerant alternatives in low-temperature applications. The Copeland Scroll ZF*K A fractional HP models utilize liquid-injection technology to cool discharge temperatures and reduce compressor stress. Traditional hermetic reciprocating models will require additional modifications and heat-reduction strategies in these low-temperature scenarios that can’t match the inherent simplicity and efficiency advantages of Copeland Scroll technology.

Copeland Scroll ZF*K A fractional HP compressors are the basis of Emerson’s X-Line outdoor condensing unit, enabling it to simultaneously meet both DOE (AWEF efficiency) and EPA (lower-GWP refrigerant) requirements in low-temperature applications. Other condensing unit manufacturers can achieve similar benefits with the expansion of Copeland Scroll into smaller HP ranges.

Wide applicability in medium temperatures

For medium-temperature, walk-in coolers, the new fractional HP ZB*K A compressors deliver enhanced AWEF efficiencies in WICF condensing units. It’s important to note that incumbent hermetic reciprocating compressors cannot achieve the same efficiencies without modifications to other system components (e.g., coils, cooling fans, etc.). Patented Copeland Scroll technology enables significant efficiency improvements in medium-temperature WICF applications without the investments in additional components or engineering, design and development (ED&D) costs.
The new ZB*KA compressors represent an extension of the medium-temperature line of compressors to better serve today’s wide range of walk-in cooler requirements. OEMs can now integrate reliable Copeland Scroll technology into their complete lineup of walk-in refrigeration equipment, while achieving compliance with environmental and energy efficiency regulations.

Simplify the design cycle

As foodservice refrigeration OEMs complete the design cycles needed to comply with EPA and DOE regulations over the next few years, the new fractional HP Copeland Scroll compressors will offer them many distinct advantages. In low-temperature, walk-in applications, the liquid-injected ZF*KA models will enable reliable operation without the need for complex heat-mitigation techniques. And in medium temperatures, where larger coils, evaporator fans and other components may be needed to meet AWEF targets, the efficiency of Scroll technology alone will often get the job done. Compared to its hermetic reciprocating counterparts, CopelandScroll is simpler to incorporate into new designs without additional engineering, development and design costs.

Copeland Scroll ZF*KA fractional HP compressors offer superior efficiencies needed to exceed the DOE’s minimum efficiency requirements in walk-in freezers. Hermetic reciprocating compressors on their own are unable to meet low-temperature requirements.

The new ZB*KA compressors represent an extension of the medium-temperature line of compressors to better serve today’s wide range of walk-in cooler requirements. OEMs can now integrate reliable Copeland Scroll technology into their complete lineup of walk-in refrigeration equipment, while achieving compliance with environmental and energy efficiency regulations.

Simplify the design cycle

As foodservice refrigeration OEMs complete the design cycles needed to comply with EPA and DOE regulations over the next few years, the new fractional HP Copeland Scroll compressors will offer them many distinct advantages. In low-temperature, walk-in applications, the liquid-injected ZF*KA models will enable reliable operation without the need for complex heat-mitigation techniques. And in medium temperatures, where larger coils, evaporator fans and other components may be needed to meet AWEF targets, the efficiency of Scroll technology alone will often get the job done. Compared to its hermetic reciprocating counterparts, Copeland Scroll is simpler to incorporate into new designs without additional engineering, development and design costs.

Copeland Scroll ZF*KA fractional HP compressors offer superior efficiencies needed to exceed the DOE’s minimum efficiency requirements in walk-in freezers. Hermetic reciprocating compressors on their own are unable to meet low-temperature requirements.

The new ZB*KA compressors represent an extension of the medium-temperature line of compressors to better serve today’s wide range of walk-in cooler requirements. OEMs can now integrate reliable Copeland Scroll technology into their complete lineup of walk-in refrigeration equipment, while achieving compliance with environmental and energy efficiency regulations.

Simplify the design cycle

As foodservice refrigeration OEMs complete the design cycles needed to comply with EPA and DOE regulations over the next few years, the new fractional HP Copeland Scroll compressors will offer them many distinct advantages. In low-temperature, walk-in applications, the liquid-injected ZF*KA models will enable reliable operation without the need for complex heat-mitigation techniques. And in medium temperatures, where larger coils, evaporator fans and other components may be needed to meet AWEF targets, the efficiency of Scroll technology alone will often get the job done. Compared to its hermetic reciprocating counterparts, Copeland Scroll is simpler to incorporate into new designs without additional engineering, development and design costs.

Copeland Scroll ZF*KA fractional HP compressors offer superior efficiencies needed to exceed the DOE’s minimum efficiency requirements in walk-in freezers. Hermetic reciprocating compressors on their own are unable to meet low-temperature requirements.

The new ZB*KA compressors represent an extension of the medium-temperature line of compressors to better serve today’s wide range of walk-in cooler requirements. OEMs can now integrate reliable Copeland Scroll technology into their complete lineup of walk-in refrigeration equipment, while achieving compliance with environmental and energy efficiency regulations.

Simplify the design cycle

As foodservice refrigeration OEMs complete the design cycles needed to comply with EPA and DOE regulations over the next few years, the new fractional HP Copeland Scroll compressors will offer them many distinct advantages. In low-temperature, walk-in applications, the liquid-injected ZF*KA models will enable reliable operation without the need for complex heat-mitigation techniques. And in medium temperatures, where larger coils, evaporator fans and other components may be needed to meet AWEF targets, the efficiency of Scroll technology alone will often get the job done. Compared to its hermetic reciprocating counterparts, Copeland Scroll is simpler to incorporate into new designs without additional engineering, development and design costs.