

Open- and Hermetic-Drive Chillers: Expanding Customer Choices



In an era of change, YORK does more than any other HVAC manufacturer to make sure its customers are not squeezed into a "one-size-fits-all" marketing strategy. Expanding customer choices has been one of YORK's strongest commitments. For example, when the HVAC industry began to address the issue of CFC refrigerants, YORK led the way by offering a full range of refrigerant choices to accommodate different customer situations.

Similarly, in the case of compressor choices, we continue to offer the broadest line of centrifugal, screw, scroll and reciprocating compression technologies. More specifically, we have a long and successful record of applying both open- and hermetic-drive compressors to meet specific customer requirements.

Open- and hermetic-drive compressors are technology choices that provide benefits that depend on the application.

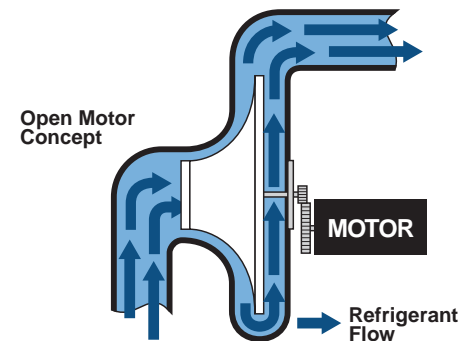
This Update compares the benefits of these two compressor technologies. We believe our customers will find this comparison helpful in evaluating the most appropriate selection between an open-drive or a hermetic-drive chiller.

Benefits of choosing an open-drive chiller

1) Serviceability

Open-drive chillers are often applied where serviceability is of primary importance. If service is ever required, the external motor is easily accessible. On YORK chillers, the use of NEMA-standard D-flange motors makes it easy to detach a motor when service is required, just as it simplifies alignment when a motor is reinstalled.

In addition to convenience, the open-drive motor completely eliminates system cleanup costs associated with a motor burnout,



as well as the extended equipment downtime. Both issues are a primary concern in critical facilities and facilities that use larger capacity equipment. Consequently, most major manufacturers prefer to apply open-drive motors with large-capacity chillers.

The electric motors used in open-drive chillers conform to common electric-motor standards. As such, they are readily available at reasonable costs. Hermetic motors, in contrast, are specially built for the particular compressor model or size range for which they were designed.

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2) Energy savings

Motors in open-drive chillers are air cooled. When motor heat can be rejected into the ambient air through equipment room ventilation systems, that heat is eliminated from the building load, which can reduce energy consumption by 1 to 3% depending on the installation.

3) Application versatility and flexibility when considering conversion

A) Refrigerant convertibility — Open-drive chillers are easily converted to alternative refrigerants. They do not depend on refrigerant cooling, so refrigerant never contacts motor winding insulation. This eliminates two complications of refrigerant contact — motor cooling and material compatibility — encountered in hermetic-motor refrigerant conversions.

B) Energy source flexibility — Open-drive chillers can employ, or be converted to use, electric-motor, gas-turbine, gas-engine, or steam-turbine drives. This versatility lets you take advantage of the most cost-effective combination of energy sources.

C) Electric power versatility — Open-drive chillers can employ higher-voltage electric motors, thereby reducing the complexity and cost of a starter and eliminating the need for transformers. In addition to the obvious capital cost savings on equipment, it is possible to save up to 3% of the power that would otherwise be consumed by the transformer.

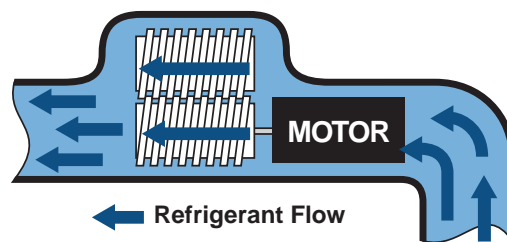
Benefits of choosing a hermetic-drive chiller

1) Competitive first cost

Hermetic-drive motors are often chosen when first cost is the overriding issue. Packaging the drive with the compressor in a single casting provides significant savings. Savings accrue by reducing the wiring size and, consequently, the overall motor size, which is made possible by refrigerant cooling the motor windings. In addition, downsizing significantly reduces the cost of the windings themselves. Eliminating the shaft coupling further reduces cost and space requirements. The inherent economy of hermetic-drive chillers

is particularly advantageous on smaller-tonnage jobs where “first cost” is a predominant issue.

Hermetic Motor Concept



2) Packaged motor versatility

Since the motor is packaged inside an integral housing with the compressor, hermetic-drive chillers can more readily be adapted for outdoor installation, freeing up valuable indoor space. Hermetic motors are less affected by outdoor temperatures because they are cooled by refrigerant and, therefore, do not depend on cooling by the ambient air.

3) Sound Levels

YORK chillers, whether hermetic or open, provide some of the lowest sound levels in the industry. Optional sound attenuation techniques are available to further reduce sound levels and can easily be applied to hermetic motors.

Proven choices that balance first-cost and serviceability

All YORK chillers are built for reliability and performance to meet exacting requirements. YORK remains the only manufacturer committed to extending customer choices by employing all commercially viable technologies. This has been our approach to customer needs for years, and it continues to guide our new product development. The versatility of our global-design platform means that you can tailor a chiller to suit your unique specifications. You will find that our product offering is superior to any competitor, because YORK provides a wider range of products to match customer choices.

