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HCR Air Doors

Product Brochure

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HCR® Air Doors Overview

The World Leader in Re-Circulatory Air Door Technology

In 1974, the founders of HCR set out to find a better solution for moving traffic through cooler and freezer doors. Using a completely fresh engineering approach and the principles of psychrometrics, the refrigeration engineers at HCR developed new technologies that pioneered the re-circulatory air door industry.

Today, with more than 40 years of field experience, HCR has gone from the drawing board to application, from a basic idea to reality and has proven itself with thousands of successful installations worldwide. HCR doors can be found inside the facilities of the largest, most demanding and cost conscious grocery and food distribution centers, food processing plants, refrigerated warehouses, and retail grocery stores. HCR is the only air door manufacturer to have independent test results by CTS labs to back up their claims.

Features

- Dramatic removal of frost and ice
- Elimination of moving door parts
- Majorly reduced safety concerns
- Remarkably increased productivity
- Greater efficiency in reducing two-way air exchange
- Reduced doorway maintenance costs
- Significantly increased merchandise movement
- Extended shelf life of products
- Solutions to doorway infiltration problems
- Consistent temperatures maintained throughout facility

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AC Doors

Overview

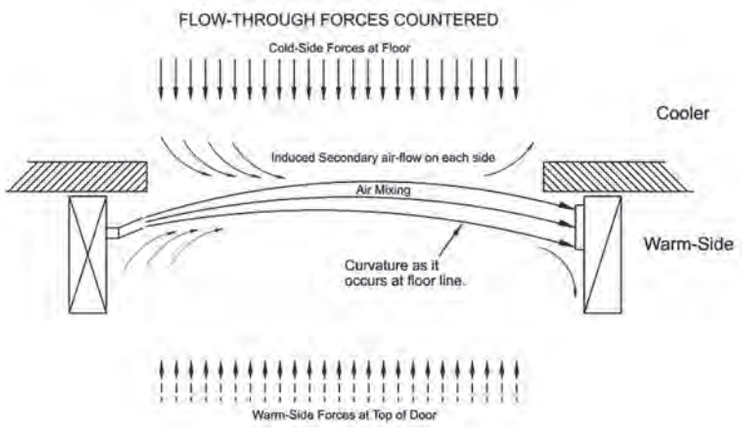
Model AC is HCR's basic unit–Horizontal, Curvilinear, and Re-circulatory. Its air stream produces counter-flow forces equal and opposite to the two-way flow-through forces caused by air temperature differences. This unit maintains temperatures in open doorways between cooler-to-cooler, cooler-to-ambient, and freezer-to-freezer open environments.

Features

- Significantly reduces two-way air exchange
- Greatly diminishes air infiltration
- Mixes air at the interface between room air and the air curtain's air stream
- Available in stainless and powder-coat finishes
- Can be used between two freezers without requiring any heat

Request ADS-400

Air Flow Patterns of the AC



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CAC Doors

Overview

The Model CAC Air Curtain is for applications where temperatures and humidity exceed the limits of our Model AC. A heater unit
is added to condition the air as it mixes inside the vestibule. The Model CAC automatically adjusts as conditions change to optimize performance and reduce energy consumption.

With the use of HCR sensors and software, Model CAC can be integrated into a facility's refrigeration control and monitoring system. This allows not only remote monitoring, but remote adjusting of the HCR equipment.

Features

- Single nozzle and intake
- Proprietary nozzle design
- Greatly diminishes air and moisture infiltration
- Powder coated steel
- Metal clad insulation when required
- PLC controls when required

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NPAC Doors

Overview

The basic NPAC model is made to counteract the one-way flow-through forces caused by negative building pressure or by wind effects.

Features

- Single nozzle and intake
- Proprietary nozzle design
- Greatly diminishes one-way air flow caused by building air imbalances
- Powder coated steel
- Metal clad insulation when required
- PLC controls when required

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DCAV Doors

Overview

The Model DCAV uses two re-circulatory air curtains, creating an air vestibule between the two air streams where the air is captured and treated to a non-frost, non-fog state. The Model DCAV automatically adjusts as conditions change to optimize performance and reduce energy consumption. As a result, refrigeration loss is reduced and refrigeration cycle efficiency is improved. Warehouse productivity dramatically increases.

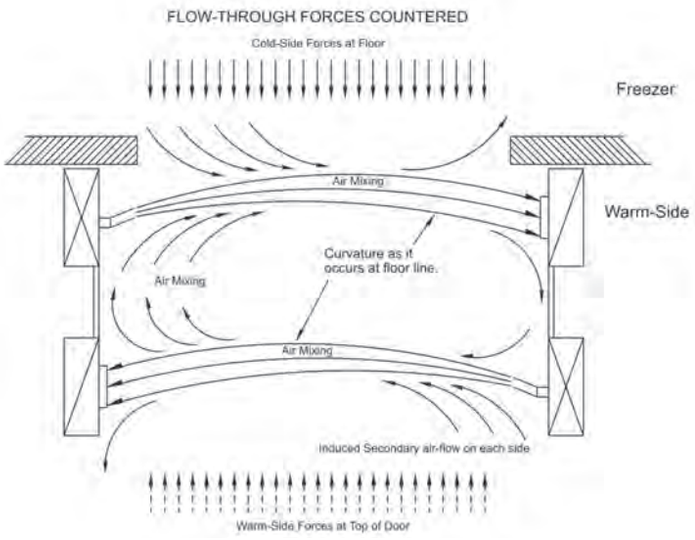
With the use of HCR sensors and software, Model DCAV can be integrated into a facility's refrigeration control and monitoring system. This allows not only remote monitoring, but remote adjusting of the HCR equipment, thus reducing maintenance costs.

Features

- No frost, fog or icing
- Eliminates safety hazards
- No haze within cold room
- Reduced coil defrosting burden
- Sublimates existing frost build-up
- PLC controls when required

Request ADS-401

Air Flow Patterns of the HCR DCAV



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3CAV Doors

Overview

The Model 3CAV is primarily used between rooms with extreme temperature differences and very high traffic. The frost elimination cycle is similar to the Model DCAV, but the additional vestibule improves efficiency as well as increases the model's temperature range applicability. Due to the reduced moisture gains, no frost, fog, or icing will be present and existing frost build-up will be sublimated. The Model 3CAV automatically adjusts as conditions change to optimize performance and reduce energy consumption.

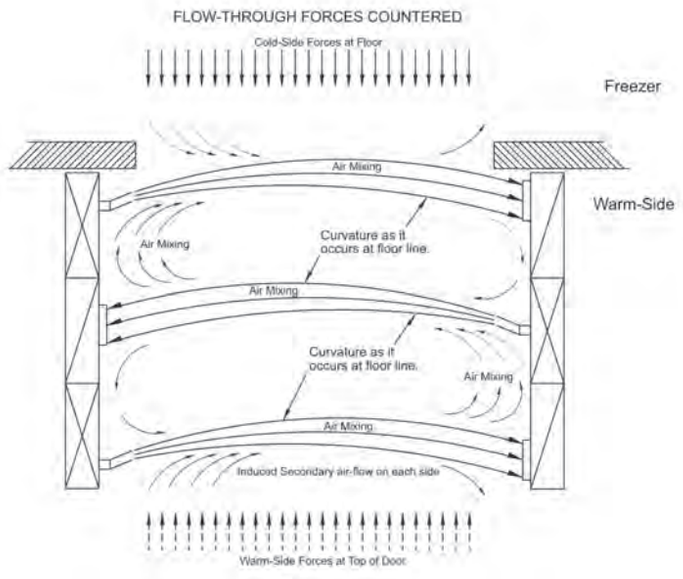
With the use of HCR sensors and software, Model 3CAV can be integrated into a facility's refrigeration control and monitoring system. This allows both remote monitoring and remote adjusting of the HCR equipment. With the vision of a wide open doorway, safety hazards are eliminated while facility output is maximized.

Features

- Reduced refrigeration loss
- Less coil defrosting burden
- No haze within cold room
- Lowered maintenance costs
- Improved refrigeration cycle efficiency
- PLC controls when required

Request ADS-402

Air Flow Patterns of the HCR 3CAV



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Hybrid – AC/CAC & Versaflex® Doors

Overview

Achieve the next level of efficiency by adding an HCR Model AC or CAC to your existing door. Perfect for high-traffic doorways where ice and infiltration are a challenge, an HCR Air Door provides another layer of protection to assure that the opening remains accessible for workflow, yet closed for costly air infiltration and energy efficiency. The energy efficiency of an insulated Hittable Bi-Parting or Single Sliding Door will be maximized.

Features

- Significantly reduces moisture infiltration
- Significantly reduces air exchange between rooms of differing temperature
- AC and CAC is retrofitable to existing Bi-Parting or Single Sliding Doors
- Additional air doors can be added to keep maximizing energy efficiency
- Warm side or cold side mounts

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Hybrid – AC/CAC & Fabric Roll-Up Doors

Overview

By combining an air door with your currently installed door, you are assuring an efficient air block when your hard door is open, reducing cold air loss and decreasing the problems associated with high-traffic openings, such as ice and safety concerns. Additional air doors can be added in a modular process to keep maximizing energy efficiency as door open time increases.

Features

- Maximizes the energy efficiency of a roll-up door
- Effectively reduces moisture infiltration
- Significantly reduces air exchange between rooms of differing temperature
- HCR Model AC and CAC is retrofitable to existing roll-up doors of any brand
- Warm side or Cold side mounts

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PCAV® Push-Thru Freezer Vestibule

Overview

The HCR PCAV® Air Door is an air vestibule that dramatically reduces moisture infiltration into walk-in freezers, while reducing temperature loss when the door is left open. The conditioned air vestibule uses a push-to-open versus a motorized opening. The Air Door also eliminates ice problems, resulting in less evaporator maintenance and general ice cleanup, all providing a quick return on investment typically less than 1.5 years.

Features

- Reduces defrost cycles by 50 to 75%
- Prevents extreme temperature fluctuations
- Dramatically reduces maintenance costs
- Removes slip hazards for a safer employee environment
- Decreases clean up labor

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ECAV and ASSD Doors

ECAV Frost-Free Airlok-Door™

Strip curtains can be added to all HCR models for even greater efficiency in the conditioning process. The Model ECAV consists of two fast-acting strip doors that create a vestibule for conditioning air and an electrically or hot-gas heated anti-frost air-conditioning (AFC) section with automatic temperature control. The ECAV is designed for medium-to light-traffic freezers and high humidity situations and measures approximately 28.5" in the direction of travel.

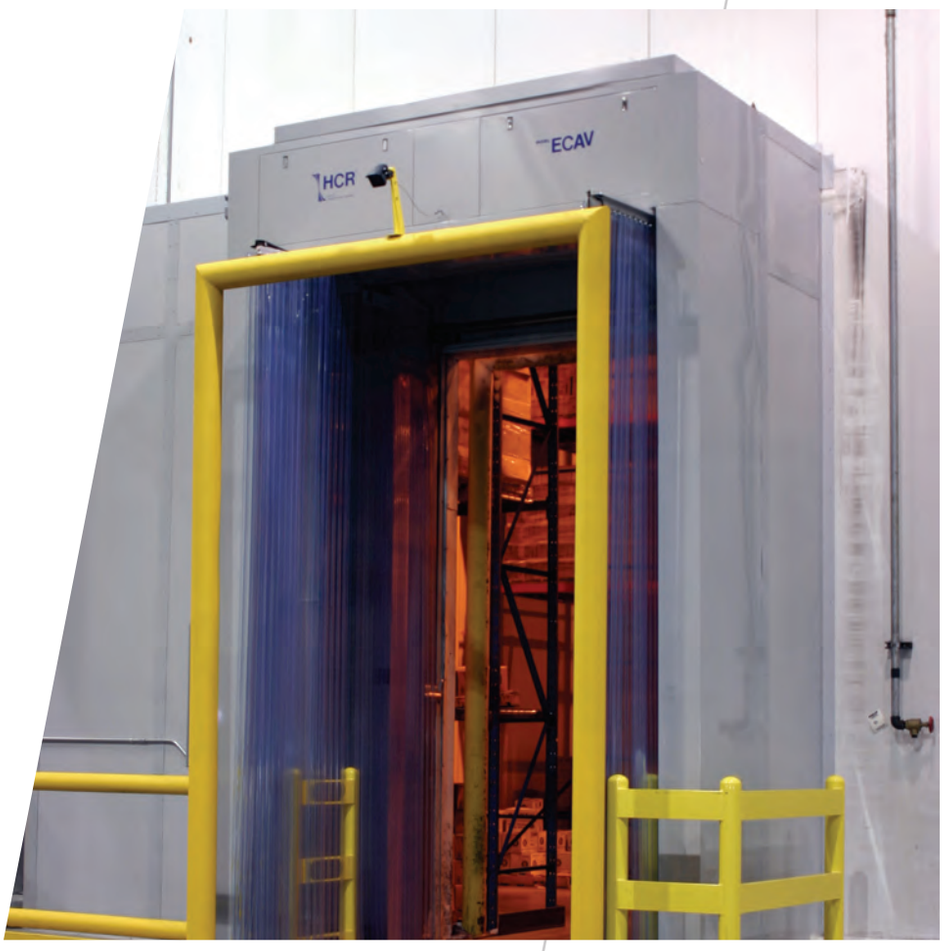
Request ADS-375

ASSD

The Model ASSD is a swift opening and closing motorized strip-door recommended for doorways subjected to infiltration due to temperature differences. Actuated by HCR's "air-slicing" type motion detectors, strip-door operation is easily adjusted to suit traffic speed.

- May be mounted inside the doorway or within the door jamb
- Fully-lapped fixed strips retain 95% effectiveness
- Clear plastic strips significantly outlast push-through strips
- For negative pressure applications under one mph flow-through velocity
- Can be used between two freezers without requiring any heat

Contact Factory for Information



ECAV

ASSD

ECAV

HCR

MCAC – Conveyors

MCAC Miniature Conditioned-Air Curtain

The temperature differences at conveyor openings, if unprotected, are subject to the same problems as regular doorways. Prevent air infiltration, frost, and ice buildup by installing HCR equipment designed to work seamlessly with your conveyor system.

Conveyor units are tailored to suit your specific application in coolers, freezers, or ambient temperatures. HCR project managers and engineers will discover every detail to assure the right solution for you.

Contact Factory for Information

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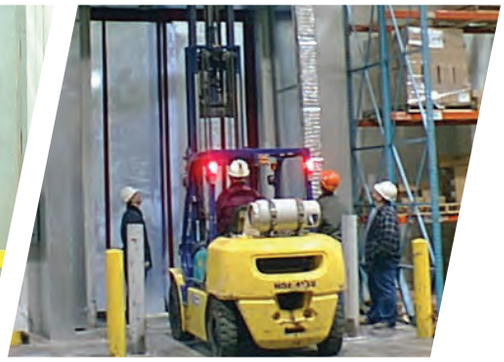
Air Door Options

1. Waste Heat Reclaim

All HCR freezer doorway units can optionally be fitted to include waste heat reclaim coils, making use of the facility's refrigeration waste heat, a by-product of the refrigeration process. Steam or glycol can also be utilized if available. The amount of heat required depends on the doorway size, model selected, and levels of temperature and humidity existing on each side of the opening.

2. Finishes

HCR basic units use powder-coated, cold-rolled steel that is custom fabricated to the specific dimensions of individual openings. HCR units are also available in stainless steel. Powder coating is a method of coating using a powdered plastic resin that is melted onto the unit. Powder coating is usually applied in a single coat, which is very efficient and cost-effective, and provides excellent protection against corrosion.



3. Bollards

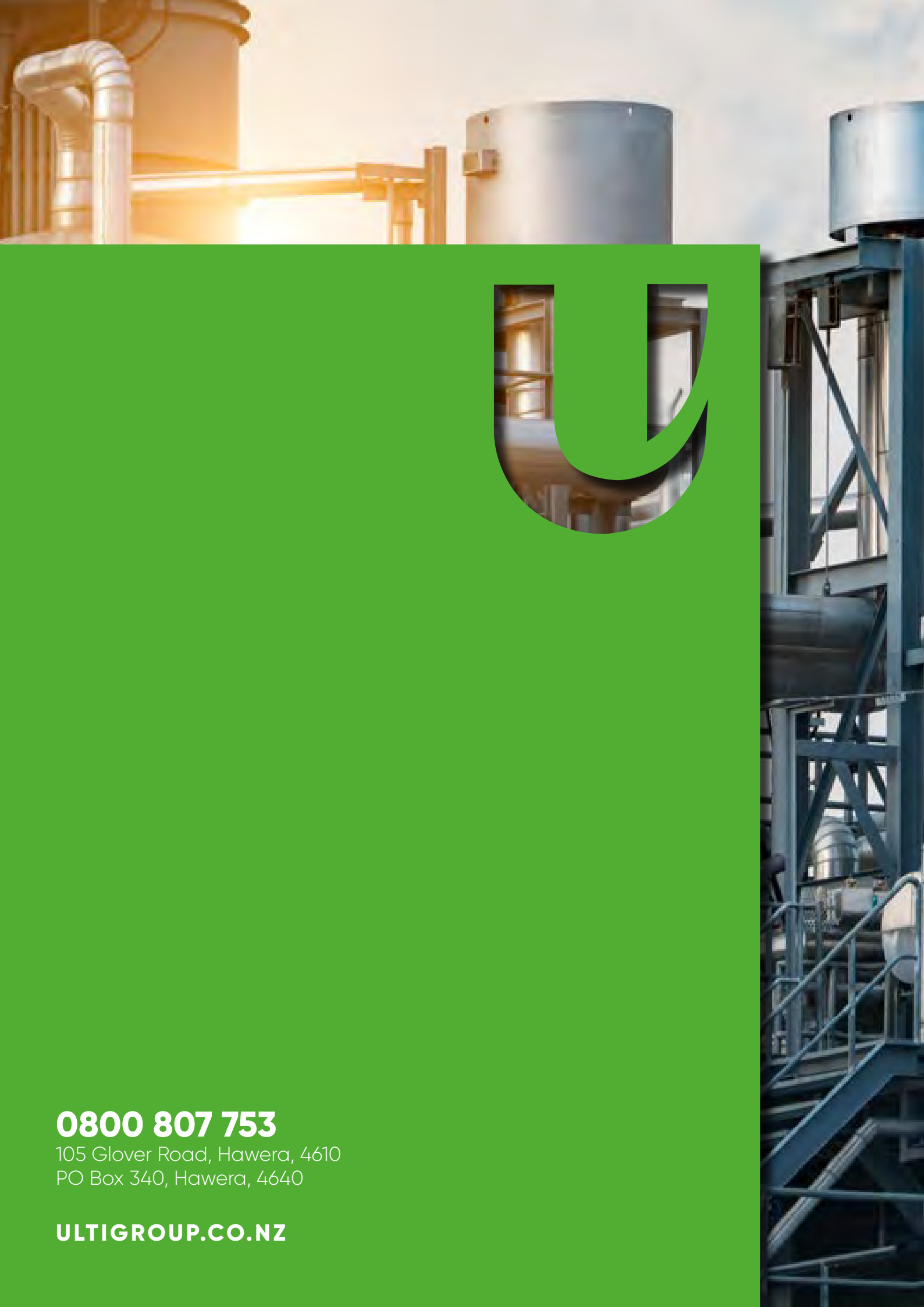
HCR manufactures bollards to accompany its units for maximum protection against damage. Bollards are power-coated in safety yellow. (Request bollard spec sheet for details)

4. Installation

Turn-key installation services are provided by HCR. Optional HCR supervised installation can be arranged using the maintenance personnel and equipment located at the facility site.

HCR Conditioned Air Door Models

- AC Air Curtain
- ASSD Fast Acting Traffic Door
- CAC-EH Conditioned Air Curtain Electric Heat
- CAC-CH Conditioned Air Curtain Condenser Heat
- DCAV-EH Double Conditioned-Air Vestibule Electric Heat
- DCAV-CH Double Conditioned-Air Vestibule Condenser Heat
- 3CAV-EH Triple Conditioned-Air Vestibule Electric Heat
- 3CAV-CH Triple Conditioned-Air Vestibule Condenser Heat
- ECAV-EH Fast-Acting Airlok-Door™, Electric Heat
- ECAV-CH Fast-Acting Airlok-Door™, Condenser Heat
- ECAV/CAC-EH Freezer-to-Ambient Vestibule, Electric Heat
- ECAV/CAC-CH Freezer-to-Ambient Vestibule, Condenser Heat
- NPAC-N Negative Pressure Air Curtain (Normal imbalances)
- NPAC-H Negative Pressure Air Curtain (Large imbalances)
- PCAV-EH or -CH Push-Thru Conditioned Air Vestibule
- MCAC Mini-Conditioned Air Curtain



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