

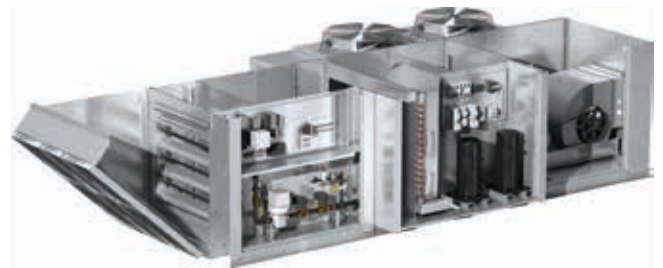
# Packaged DX Cooling Options

## Kitchen Make-Up Air

Providing unconditioned make-up air through ceiling diffusers or perforated kitchen hood plenums can create an uncomfortable work environment during the summer months in commercial kitchens. Although conditioned make-up air can increase comfort levels, the need to cool and dehumidify this air to a 55°F supply air temperature can be detrimental to the food preparation process as well as significantly increase equipment first cost and energy costs. Greenheck has introduced a packaged DX cooling option in the models DGX, IGX, and MSX designed to cool the kitchen make-up air to 70-75°F. Our competitor, Captive Aire Systems, has also introduced a packaged DX make-up air offering. This article compares the features and performance of the Captive Aire MPU and Greenheck's product offering.

### HOW IT WORKS

The package DX system effectively conditions outside air to create a comfortable work environment without significant increase in equipment costs.



### DESIGN FOCUS

- 1000 – 7500 cfm
- Available with 100% outside air and variable air volume
- Economical first cost and competitive lead times
- Offset the radiant heat generated from cooking process for the cook's comfort (Primary focus on sensible cooling).
- DX systems that can provide 70-75°F leaving air temperatures

### OUR PRODUCT

- Packaged DX Cooling options on models DGX, IGX and MSX

### Packaged DX Unit Selling Features

- Complete selection for heating and cooling needs compared to a split system as no field piping is required
- Up to 50% airflow reduction capabilities
- Easy access to all components of the unit
- Low profile design to meet local code requirements
- Unit available as a downblast, upblast, or horizontal discharge
- Unit appearance shows engineered design excellence
- Fully piped and charged at the factory for ease of installation
- 18 ga. G-90 galvanized construction with optional painted cabinet
- R410a refrigerant with Copeland® compressors from 3 to 16 tons

<b>Features</b>	<b>Benefits</b>
<ul style="list-style-type: none"> <li>• Draw-thru cooling</li> </ul>	<ul style="list-style-type: none"> <li>• Even airflow across coil for efficient cooling operation and less chance of water carryover</li> </ul>
<ul style="list-style-type: none"> <li>• 2 row cooling coils</li> </ul>	<ul style="list-style-type: none"> <li>• Less cost, better temperature control and less compressor cycling</li> </ul>
<ul style="list-style-type: none"> <li>• 14 ga. continuous formed base</li> </ul>	<ul style="list-style-type: none"> <li>• Stronger structure with less unit vibration</li> </ul>
<ul style="list-style-type: none"> <li>• Standard high and low pressure cutouts and crank case heaters</li> </ul>	<ul style="list-style-type: none"> <li>• Increased compressor life</li> </ul>
<ul style="list-style-type: none"> <li>• Low discharge temperature cutout</li> </ul>	<ul style="list-style-type: none"> <li>• Prevents coils from freezing</li> </ul>

# Greenheck Advantage

## COMPETITOR PRODUCT

- Captive Aire MPU Unit

### Competitor Packaged Cooling Unit Weaknesses

- 20 ga. casing with 1.5 lbs foil faced insulation
- Condensing unit(s) mounted on top of the fan / heat section making access to refrigeration components difficult
- Coil is a blow-thru design with perforated material to break up airflow which equates to a high static loss
- Less cooling capacity capabilities as multiple condensers are needed to meet tonnage requirements of 7.5 – 15 tons
- Downblast discharge units require extended plenum on end of unit consuming valuable roof space
- 1 and 2 row coils used with face velocity up to 600 ft/min. in a blow-thru arrangement increasing the likeliness of water carryover. When there is a higher velocity, there is a greater chance of water carryover.



## OUR COMPETITIVE ADVANTAGE

	Greenheck	Captive Aire
<b>Power Connection</b>	Single point connection	Separate power connections required to cooling section
<b>Coil Arrangement</b>	Draw-thru arrangement ensuring laminar flow across coil	Blow-thru design that requires perforated plate to break up air flow before entering coil resulting in higher unit static
<b>VAV Airflow Turndown</b>	50% airflow reduction available	20% airflow turndown
<b>Discharge Position</b>	Downblast, horizontal, or upblast standard	Horizontal as a standard. Downblast is optional but requires an additional discharge plenum
<b>Access to Refrigeration Components</b>	Access to compressors, valves, and condensing fans below roof of unit	Compressors are stacked on top of the unit making access to condensers difficult
<b>Product Image</b>	Well received by the engineering community as a product built for heating and cooling	Condensers mounted on top of existing MUA unit create a height problem and concern of structural support and vibration