

HMD

Direct Fire Heated
Make-Up Air Unit



 **COOK**

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HMD: Direct Fire Heated Make-Up Air Unit

Loren Cook Company's HMD product line offers outstanding performance and durability for direct fire make-up air applications.

Direct fire units offer the highest heating efficiency possible by having the flame directly in the airstream, creating no efficiency losses from heating a tube or plenum.

Applications include:

- Kitchen or food service
- Parkways
- Skywalks
- Light industrial
- Wherever tempered make-up air is required.

The HMD offers industry leading standard features in a "package system" that contains features that are optional from all other competitors. The rugged yet simple design of the unit provides low maintenance and superior performance. The standard controls offer flexibility for future integration and are extremely user friendly, with optional remote display.

There are three models:

Model	CFM Range		Propane		Natural Gas	
	Min	Max	Max. Temp. Rise	Max. MBH *	Max. Temp. Rise	Max. MBH *
HMD-2400	680	2400	84°F	251	100°F	299
HMD-3400	2000	3400	76°F	322	94°F	398
HMD-4100	3000	4100	78°F	398	91°F	464

*Based on an altitude of 0 feet and an air temperature of 0°F.

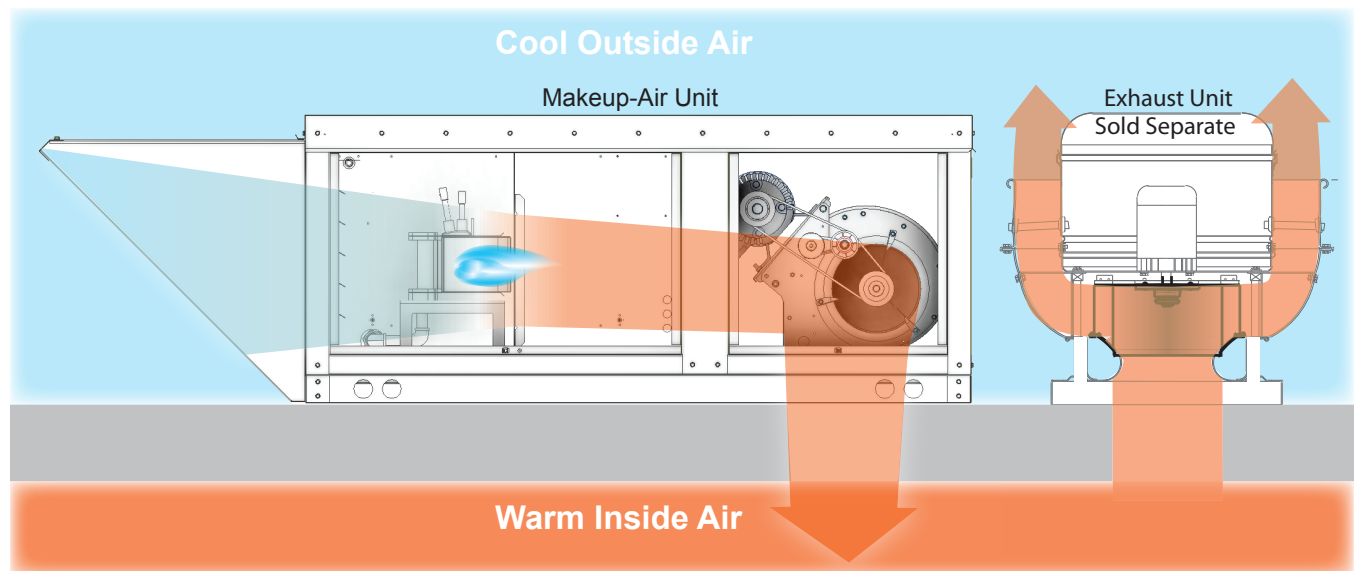


Loren Cook Company certifies that the HMD shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



HMD is ETL certified for US and Canada to the ANSI Z83.4 & CSA 3.7 standard - 2003 for 100% Non-Recirculating Direct Gas-Fired Industrial Air Heaters and meet Factory Mutual Insurance requirements.

When exhaust air leaves the building, it must be replaced. Without proper design, air will enter in the form of a draft. The HMD supplies heated outside air, at a controlled rate, keeping the temperature comfortable.



Curb, duct work and hood not shown.


Standard Features

- Natural gas or propane fueled
- Housing constructed of minimum 18 gauge G90 galvanized steel
- Removable access panels
- Weatherization
- Cabinet lined with 1" thick 3 lb density FSK insulation
- Corrosion resistant fasteners
- Lifting points
- DWDI Forward curved steel blower mounted on vibration isolators
- Motorized intake damper
- Intake weather hood
- Permanent 1" thick washable aluminum filter
- Cast aluminum burner with stainless steel baffles
- Redundant gas valves
- Gauges for supply and manifold gas pressure
- Intermittent direct spark ignition system
- Electronic flame modulation
- Field adjustable profile plates
- Intake air temp sensor
- Mild weather stat
- Freeze protection
- Pre-wired and pre-piped controls
- Lockable disconnect switch
- Permanently lubricated bearings rated at 200,000 hours average life
- Adjustable motor pulley adjusted to specified RPM
- Static resistant belts
- Standard motors ship factory installed

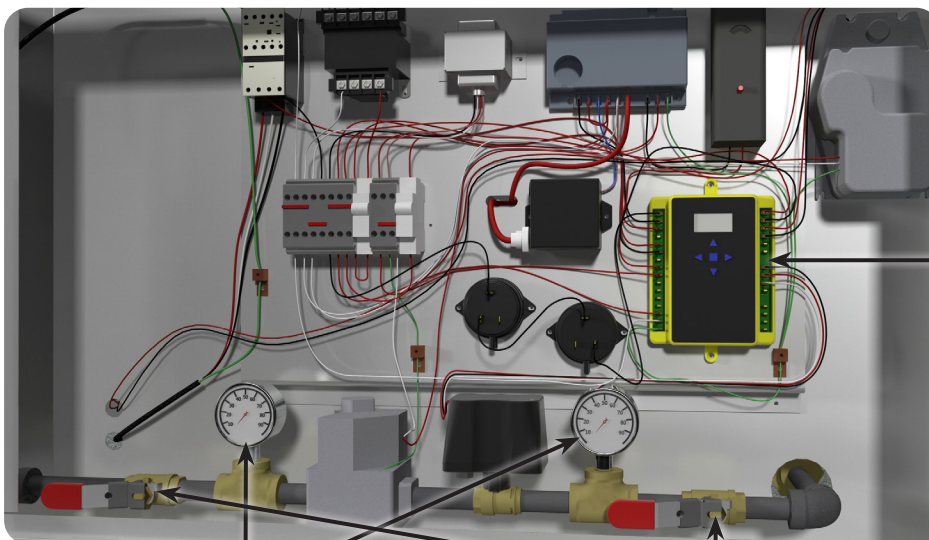
Additional Options:

- Remote Display Panel
- Belt Tensioner
- GFCI outlets
- Heater Interlock Relay
- Low/High Pressure Gas Switch
- Intake Extension
- Gas Pressure Regulator
- Variable Frequency Drive
- Filters:
 - Dirty Filter Sensor
 - Filter Box
 - Replacement Filters

COOK's Package System vs Most Competitors

		Most Competitors
Freeze Protection	Standard	Optional
Mild Weather Stat	Standard	Optional
Inlet Air Sensor	Standard	Optional
Dual Gas Pressure Gauges	Standard	Optional
Digital Discharge Controls	Standard	Optional
Direct Spark Ignition	Standard	Optional
NEMA 3 Lockable Disconnect	Standard	Optional
Motorized Inlet Damper	Standard	Optional
Washable Filters	Standard	Optional
ISTA Certified Transit Tested Crating	Standard	Optional

Standard Control Panel



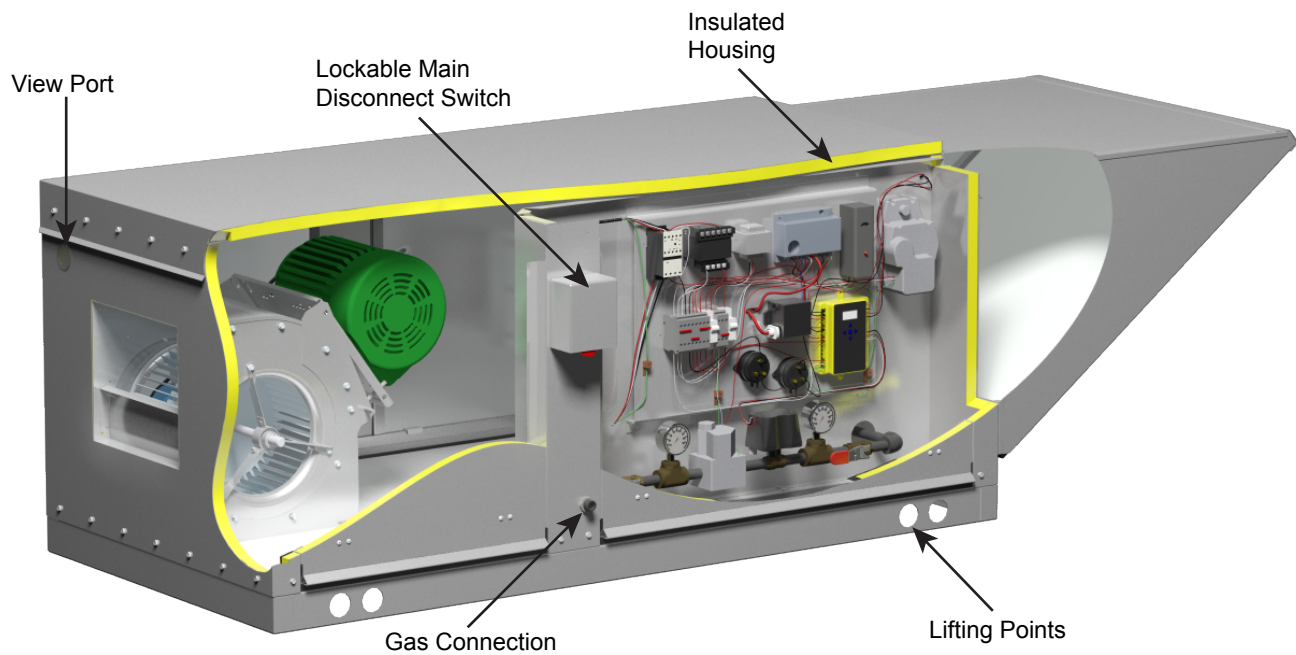
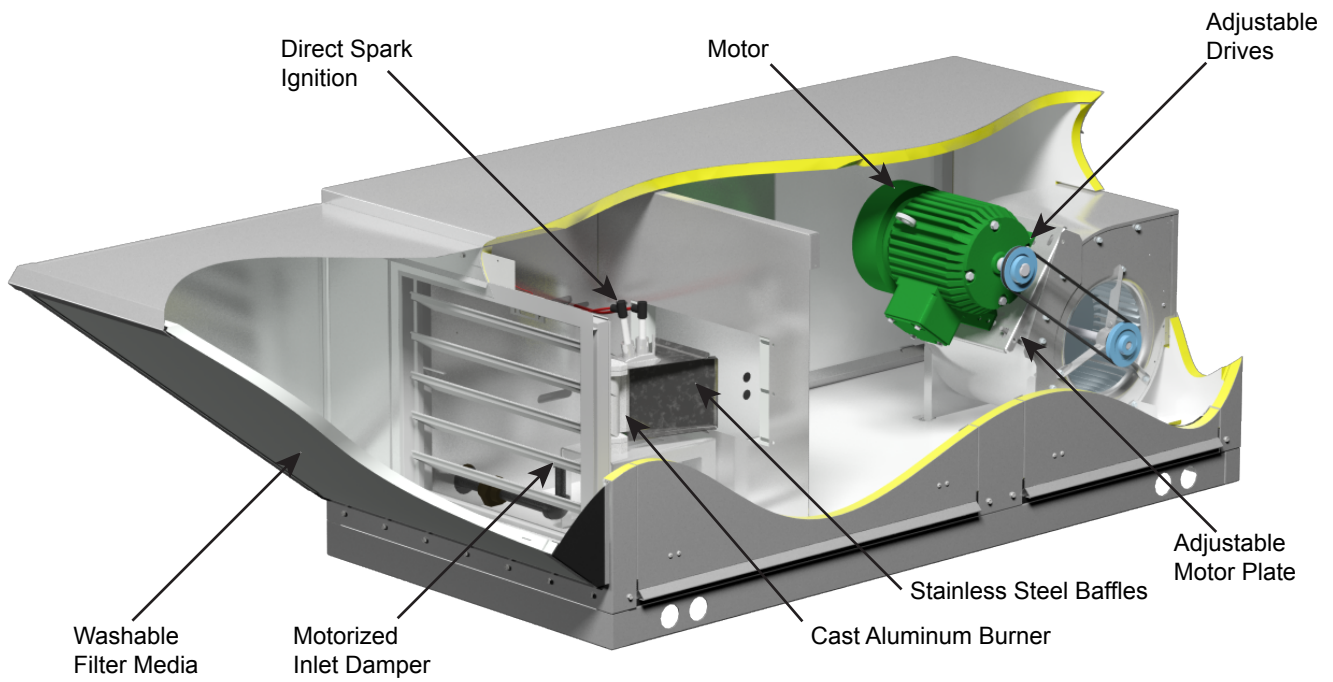
Dual Gas Pressure Gauges

Redundant Gas Valves

Temperature Controller Including:

- Electronic Flame Modulation
- Mild Weather Stat
- Freeze Protection

Horizontal discharge shown





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HMD is ETL certified for US and Canada to the ANSI Z83.4 & CSA 3.7 standard - 2003 for 100% Non-Recirculating Direct Gas-Fired Industrial Air Heaters and meet Factory Mutual Insurance requirements.

Direct Gas-Fired, Heated Make-Up Air Unit, Belt Driven

Description: Unit shall be a roof mounted, belt driven, direct gas-fired, heated make-up air unit.

Certifications: Unit shall be manufactured at an ISO 9001 certified facility. Unit shall be listed by ETL for US and Canada to ANSI Z83.4-2003 / CSA 3.7-2003 for 100% Non-Recirculating Direct Gas-Fired Industrial Air Heaters and meet Factory Mutual Insurance requirements. Unit shall bear the AMCA Certified Ratings Seal For Sound and Air Performance.

Construction: The unit shall be of bolted construction utilizing corrosion resistant fasteners. Housing shall be minimum 18 gauge G90 galvanized steel, bolted to a minimum 14 gauge G90 galvanized steel unit base suitable for curb or flat mounting. The base shall include integral lifting holes. Unit shall be provided with an insulated housing and 1" washable permanent aluminum filters. Internal blower and motor assembly shall be mounted on rubber vibration isolators. Unit shall have removable panels for easy access to all essential components. Unit shall bear an engraved aluminum nameplate. Nameplate shall indicate design CFM, static pressure, maximum fan RPM, and all ANSI required burner information. Unit and gas train shall be factory assembled and tested prior to shipment. Unit shall be shipped in ISTA Certified Transit Tested Packaging.

Burner: Burner shall be a two stage combustion burner with cast aluminum manifold and stainless steel baffles capable of operation on Natural gas or Propane. Burner shall be non-clogging, with direct spark ignition and have minimum 30:1 turndown capability with no moving parts. Gas train shall include redundant shutoff valves, high and low gas pressure gauges, and stainless steel ball modulating valve.

Controls: Unit shall have single point wiring and lockable disconnect switch. Motor starter and controls shall be provide and sized for proper unit operation. Discharge temperature controls shall have digital display with integrated freeze protection and economizer/mild weather burner cutout.

Wheel: Wheel shall be DWDI centrifugal forward curved type, constructed of G90 galvanized steel. Wheel shall be balanced in accordance with AMCA Standard 204-05, Balance Quality and Vibration Levels for Fans.

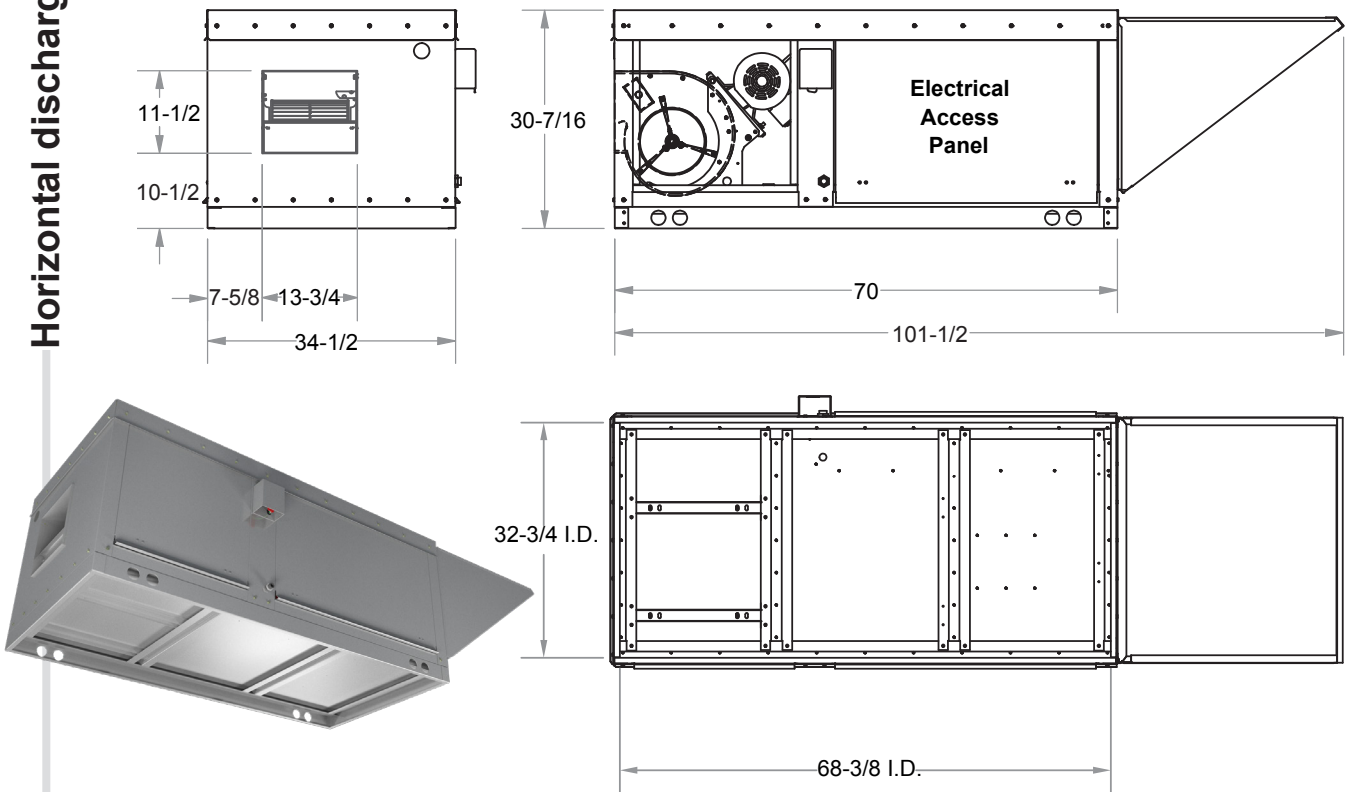
Motor: Motor shall be NEMA design B with minimum class B insulation rated for continuous duty and furnished at the specified voltage, phase and enclosure.

Bearings: Bearings shall be ball type selected for a minimum L50 life in excess of 200,000 hours at maximum cataloged operating speed.

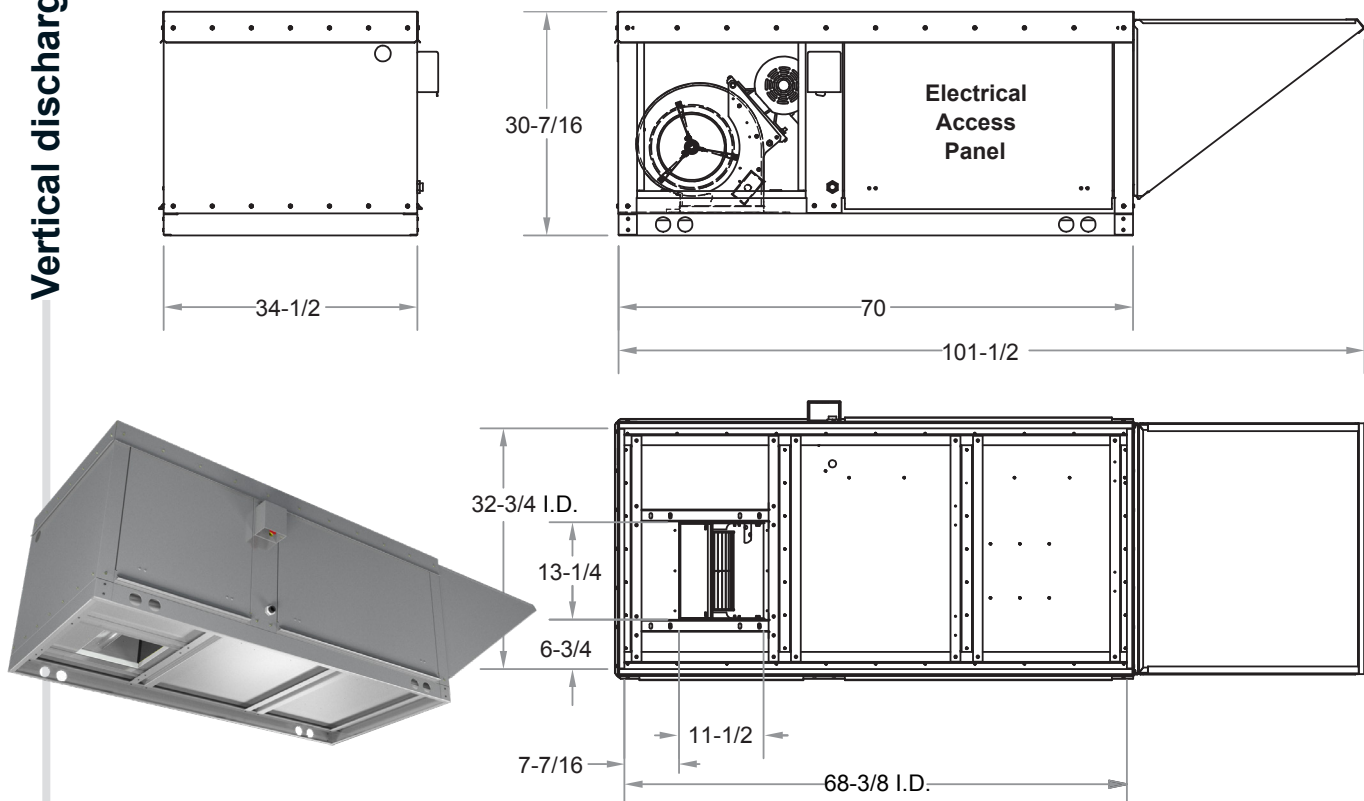
Belts and Drives: Belts shall be oil and heat resistant, static conducting. Drives shall be precision machined cast iron type, keyed and securely attached to the wheel and motor shafts. Drives shall be sized for 150% of the installed motor horsepower. The variable pitch motor drive must be factory set to the specified fan RPM.

Product: Unit shall be model HMD as manufactured by Loren Cook Company of Springfield, Missouri.

Horizontal discharge



Vertical discharge



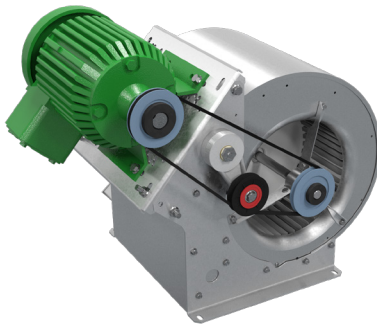
All dimensions in inches. Unit weight: 394 lbs., less motor, drives and accessories.

Remote Display Panel

Enhanced remote digital control panel. The Remote Display Panel features a full color LCD which displays current HMD status as well as indoor, outdoor, discharge and indoor setpoint temperatures. Unit also has 7 day scheduling functions and diagnostics menus to aid in troubleshooting. The Remote Display Panel ships loose for field installation and requires a user supplied low-voltage 4-wire connection.



Belt Tensioner



The automatic belt tensioner maintains constant tension on the drive belt which offers two distinct benefits. It reduces startup and maintenance costs by continuously tensioning the belt throughout its' life and also increases belt life by reducing slippage. Engineering studies indicate properly tensioned belts can operate at 15° to 20° F cooler internal temperature than poorly tensioned belts. A drive belt industry rule of thumb is that every 18° F increase in internal temperature will reduce belt life by 50%. The automatic belt tensioner will easily double belt life compared to installations where belt tension is not properly maintained. COOK's HMD has an easily removable access panel, providing access to the automatic belt tensioner and motor compartment. The drive belt can be replaced in moments (by almost anyone) without the special skills and tools normally needed to achieve proper belt tension. Too much belt tension can reduce the life of both the fan and motor bearings. The COOK automatic belt tensioner will assure proper belt tension throughout the life of the fan, maximizing bearing life and fan reliability.

GFI Outlet

NEMA 3R convenience outlet. Includes outlet and junction box. Shipped loose for field installation. Wiring and power supplied by others.

Heater Interlock Relay

Field wired 24 volt relay (factory mounted in control panel) that allows the user to lock out the heating function of the unit while still allowing the makeup air fan to operate.

Low/High Pressure Gas Switch

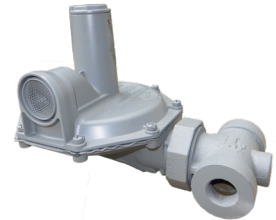
Field wired gas pressure switch (factory mounted in control panel) to notify BMS system of abnormally high or low gas pressure. Dry contacts rated for 120 volts. High and Low pressure switches are sold separately.

Intake Extension

The intake extension is required in NFPA 96 installations where the HMD and VCR are mounted together on a common curb cap. The intake extension provides additional separation (10 feet) between the HMD intake hood and exhaust air from the VCR. The intake extension is constructed of galvanized steel and is shipped loose for field installation. The extension must be supported at the intake end by an equipment rail.

Gas Pressure Regulator

Additional step down natural gas or propane regulator mounted outside the unit to match the building gas pressure to the HMD gas pressure requirement. A regulator is available for building with gas pressure above .5 PSI (14" w.g.) Available in 0-5 PSI, 5-10 psi and 10-15 PSI ranges. Shipped loose for field installation.



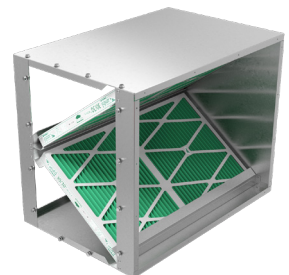
Filters

Dirty Filter Sensor

Field wired pressure switch (factory mounted in control panel) used to notify BMS system when filter pressure drop exceeds set point and filters need to be replaced. Dry contacts rated for 120 volts. Requires field calibration during installation.

Filter Box

Additional V-bank filter box used to provide additional intake air filtration. Available with MERV 8, 11 or 13 filters. Installed between unit and intake hood.



Replacement Filters

Replacement filters for Filter Box. Set of 2. Specify MERV 8, 11 or 13.



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