



RSPC-ESP

MODEL "RSPC-ESP"

POLLUTION CONTROL UNIT

GENERAL SPECIFICATIONS AND DESCRIPTION

GENERAL: Furnish one (1) Gaylord ClearAir™ Pollution Control Unit model number RSPC-ESP-____ as manufactured by Gaylord Industries in accordance with the following:

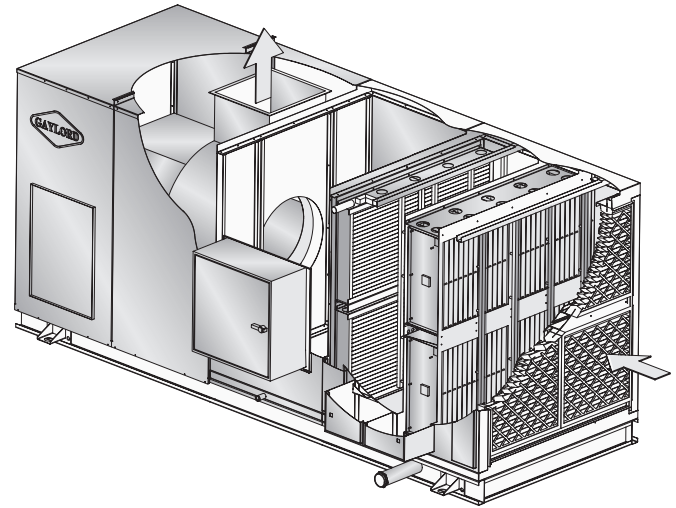
The pollution control unit shall consist of a smoke control section, odor control section (optional) and exhaust fan section (optional) all built into a common base as an integral unit. Smoke control shall be accomplished by electrostatic precipitation (ESP). The unit shall be ETL listed to UL 867 and UL710 and labeled.

SMOKE CONTROL SECTION: The smoke control section shall contain one or more electrostatic precipitator (ESP) cells to remove smoke particles from the air stream to a level no higher than 20% opacity when operated in accordance with the operation and maintenance guidelines. The ESP cells shall be of a floating plate design to eliminate plate warpage during high heat operation. Each cell shall have nine (9) tungsten wires run perpendicular to the air flow which will ionize the air stream. Spike type systems shall not be accepted. The cells shall be positioned on slide tracks so that they may be easily removed through a hinged cell access door(s). For ease of handling, individual cells shall weigh less than 54 lbs. There shall be removable, cleanable debris screens located immediately upstream of the ESP cells and a moisture separator immediately downstream. An electrical panel mounted on the unit shall contain the high voltage power pack assembly, safety disconnect switch, main disconnect switch, fuses and a magnetic starter for the exhaust fan when fan is included. The safety disconnect switch shall interface with the electrical panel access door such that when opened it will shut off service to the power pack(s) and ground them to drain the residual electrical charge from both the power pack(s) and ESP cells. The ESP cell access door shall interface with the electrical panel access door so that it cannot be opened without first opening the electrical panel access door. The high voltage power pack(s) shall be self-limiting type and shall be self-contained. The electrical panel shall include indicating lights to monitor cell and transformer voltage. The main disconnect switch for the exhaust fan and control circuits shall lock the electrical panel access door closed when in the "on" position. The unit shall contain one or more oscillating wash manifold(s) with "Conserva-Clean" spray nozzles to wash the ESP cells with hot detergent injected water each time the exhaust fan is shut off. Maximum required wash pressure is not to exceed 30 PSI at 140°F. Maximum water flow rate per cell is not to exceed 2.3 GPM.

CONTROL CABINETS: EXPLANATORY NOTE REGARDING CONTROL CABINETS: There are multiple arrangements of controls for the operation of exhaust hoods and the ClearAir™ Unit. In the one arrangement, the Control Cabinet in the kitchen serves both the exhaust hood and the ClearAir™ Unit. In an alternate arrangement, there is a Control Cabinet for the exhaust hood electrically interfaced with a Sub Panel that serves the ClearAir™ Unit. In both arrangements the Exhaust Fan, ESP, Wash Cycles and Fire Cycle functions are controlled by the main control cabinet. The difference between the two is the location of the plumbing components.

1. Main Control Cabinet Only - This arrangement is typically used when the ClearAir™ Unit is located on the roof or mechanical room immediately above or within 50' of the control cabinet.

2. Main Control Cabinet and Sub Panel Combination - This arrangement is typically used in the following situations: (a) when the ClearAir™ Unit is located in a mechanical room away from the exhaust hood or (b) when it is impractical to inter-connect the hot water lines between the main control cabinet and the ClearAir™ Unit or (c) when there is insufficient space in the kitchen area to store the detergent required for the wash system of the ClearAir™ Unit.



APPLICATION

Specifically designed for the removal of smoke particles by electrostatic precipitation for the removal of smoke and odor from the airstream of commercial kitchen exhaust systems.

FEATURES

- Removes smoke particles by high voltage ionization using electrostatic cells
- Water-wash system automatically washes the electrostatic cells daily using the least amount of water of any equipment on the market
- Robust smoke control using ionized collector plates specially designed to protect against cell warpage
- Custom designed to kitchen exhaust requirements up to 32,000 CFM

OPTIONS

- Optional exhaust fan and odor abatement equipment available
- Manufacturer designed and approved sprinkler or liquid chemical internal fire protection available
- Optional variable speed control available

CONTROL CABINET (WHEN SUB PANEL IS NOT USED): The controls and plumbing components, including the backflow preventer and line strainer, for the operation of the Exhaust Fan, ESP, Wash System and Fire Cycle of the Pollution Control Unit shall be an integral part of the Kitchen Exhaust Hood Control Cabinet as specified in Division 11 or provided with the RSPC. All interconnecting wiring and piping shall be the responsibility of the appropriate trades.

CONTROL CABINET AND SUB PANEL COMBINATION: The controls for the operation of the Exhaust Fan, ESP, Wash System and Fire Cycle of the Pollution Control Unit shall be an integral part of the Kitchen Exhaust Hood Control Cabinet as specified in Division 11. All plumbing components, including the backflow preventer and line strainer, for the ClearAir™ unit, shall be housed in the Sub Panel or provided with the RSPC. All interconnecting wiring shall be the responsibility of the appropriate trades.

A Sub Panel shall be furnished with the pollution control unit. The Sub Panel shall be constructed of 18 gauge stainless steel, number 4 finish, with welded corners and hinged doors to the plumbing and electrical compartments. The plumbing compartment or RSPC unit shall be pre-plumbed with a reduced pressure principle device backflow preventer, shut off valve, pressure/temperature gauge, one or more slow close solenoid valves, detergent pump and a detergent flow switch. The electrical compartment shall have a terminal



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block for single point connection of all electrical components. The detergent container shall be located next to the Sub Panel and shall be provided by the detergent supplier. The Sub Panel shall be shipped loose for field installation by the appropriate trades.

ODOR CONTROL OPTIONS:

Media Bed of 50/50 Blend Potassium Permanganate & Carbon Blend - The unit shall be provided with odor control utilizing a media bed of 50% potassium permanganate/50% carbon blend complying with UL 900 Type 1 classification. The odor removal media shall be housed in slide out reusable steel modules. There shall be a rack to accept 30% pleated media after filter located immediately downstream of the odor control media. Optional replaceable filters shall be mounted in filter slide tracks to prevent air bypass around the ends of the installed filter bank. The odor control media and after filters shall be removable through side access doors with lift and turn latches.

Spray Odor Control - The unit shall be provided with a spray odor control system utilizing an odor neutralizer chemical. The odor spray control cabinet shall be mounted on the side of the unit and shall contain a liquid spray compressor piped to the spray nozzle in the fan plenum, adjustable delay timers with fuse protected circuitry factory wired to the unit electrical panel. The cabinet shall include one (1) five gallon container of Gaylord Formula GS-710 Odor Neutralizer. The cabinet shall contain a heater to prevent freezing of the odor neutralizer.

EXHAUST FAN OPTIONS:

Exhaust Fan (Standard Centrifugal Fan): The unit shall include a centrifugal exhaust fan listed to UL 762. The exhaust fan shall be an SWSI upblast arrangement #9 with a non-overloading BI, AF or FB wheel. The motor, drives, bearings and fan mounting base shall be located out of the exhaust air stream as required by the International Mechanical Code and NFPA-96. The fan shall be AMCA certified and bear the AMCA seal for performance. The fan housing shall be constructed of heavy gauge steel. The fan bearings shall be heavy duty self-aligning pillow block type rigidly mounted on heavy structural steel supports. The motor shall be PE, inverter-ready ODP three-phase mounted on a common base with the fan and shall be pre-wired to the electrical cabinet located on the unit. The electrical cabinet shall include a disconnect switch, motor starter, overloads and fuses. The factory provided drive assembly shall be adjustable pitch on 5 HP and smaller, fixed pitch on 7.5 HP and larger. It shall also be sized for a minimum 1.5 service factor. After final system balancing, fixed pitch sheaves shall be provided and installed by the air balancing contractor to provide proper flow at actual installed conditions.

Exhaust Fan (Optional Tubular Fan): The unit shall include a tubular centrifugal exhaust fan listed to UL 762. The motor, drives, bearings and fan mounting base shall be located out of the exhaust air stream as required by the International Mechanical Code and NFPA-96. The fan shall be AMCA certified and bear the AMCA seal for performance. The fan housing shall be constructed of heavy gauge steel. The fan bearings shall be heavy duty rigidly mounted on heavy structural steel supports. The motor shall be PE, inverter-ready ODP three-phase mounted on a common base with the fan and shall be pre-wired to the electrical cabinet located on the unit. The electrical cabinet shall include a disconnect switch, motor starter, overloads and fuses. The factory provided drive assembly shall be adjustable pitch on 5 HP and smaller and fixed pitch on 7.5 HP and larger. It shall also be sized for a minimum 1.5 service factor. After final system balancing, fixed pitch sheaves shall be provided and installed by the air balancing contractor to provide proper flow at actual installed conditions.

SPRING ISOLATION: The exhaust fan shall be installed with spring isolation with 1" deflection and a flex connection to properly isolate the fan from the duct work. If isolation is provided the fan shall be housed to provide a fire barrier for the flex connections and to comply with NFPA 96.

INTERNAL FIRE DETECTION: The unit shall be equipped with a thermostat(s), set at 250°F, located in the smoke control section of the unit. The thermostat shall be interfaced with the kitchen exhaust hood Main Control Cabinet such that in the event of a fire condition, when the thermostat reaches its set point of 250°F, the system control goes into a fire mode. The fire mode shall shut off the exhaust fan, and turn on the wash sprays in the pollution control unit.

UNIT CONSTRUCTION: The unit housing shall be constructed of a minimum of 16 gauge G90 bright galvanized steel. The perimeter base shall be 12 gauge formed channel with lifting lugs at each corner and along the length as required. The internal housing shall be externally welded liquid tight for compliance to the International Mechanical Code and NFPA-96 grease duct construction requirements.

ACCESSORIES OPTIONS:

Spare ESP Cells - The unit shall be supplied with a minimum of one extra ESP cell of each cell type and one soak tank. The soak tank shall be constructed of 18 gauge stainless steel and shall be mounted on heavy-duty casters. There shall be a hose bib at the bottom of the tank for draining.

Detergent - Provide 30 gallon drum of Gaylord Formula G-510EF Detergent.

FIRE EXTINGUISHING SYSTEM OPTIONS: Specifier Note: NFPA-96 requires a fire extinguishing system for protection of the smoke and odor control sections and protection of the duct downstream of any filters or dampers. Not all authorities having jurisdiction require protection. Check with your AHJ. If required, specify one of the following systems.

WET CHEMICAL SYSTEM: Provide a complete factory mounted Ansul wet chemical fire extinguishing system, including nozzles piping and detection runs. Pipe penetrating the unit cabinet shall use a UL listed fitting. System shall be installed in accordance with the systems listing and NFPA-96. The supplier shall provide a letter from Ansul verifying that the system design is acceptable to Ansul for this application. The Ansul Automan cabinet may be mounted on the side of the unit for easy access, certification and service. If the unit is exposed to freezing conditions, the Ansul Automan cabinet shall be mounted in an insulated thermostatically-controlled heated cabinet.

WATER SPRAY SPRINKLER FIRE SYSTEM: Specifier Note: Units that are located indoors may be factory pre-piped for a wet pipe building sprinkler system. Provide a pre-piped water spray fire system installed in accordance with NFPA-96. The unit shall be piped with one pendent type sprinkler nozzle located in the smoke control section, one in the odor control section, if equipped with 50/50 media bed, and one in the exhaust fan section for interconnection to the building sprinkler system by the appropriate trades. Pipe penetrating the unit cabinet shall use a UL listed fitting. Nozzles shall be the bulb type rated at 325°F.

CHECK OUT AND DEMONSTRATION: Upon completion of installation, the entire pollution control system, including the kitchen exhaust hoods, shall be commissioned by a factory certified service technician. Start-up shall include checking all ESP cells, filters, high voltage components, exhaust fan, control cabinets and sub panels as well as running the system through wash and fire cycle. The appropriate maintenance personnel shall be given a technical manual and a complete demonstration of the system, including operation and maintenance procedures. Upon completion of the commissioning, a detailed start-up report shall be made available to the architect and owner certifying proper system operation. Changes required in fan drive components shall be performed by the air balancing contractor per instruction of the Gaylord start-up representative.

The manufacturer reserves the right to modify the materials and specifications resulting from a continuing program of product improvement or the availability of new materials.