



SENIOR DESIGN ORGANIZATION PROJECT DESCRIPTIONS

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Filtered Commercial Kitchen Hood Make-up Air Fan

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Adequate ventilation is essential for any commercial or residential kitchen. Typically large commercial restaurants will use extractor hoods to remove harmful fumes or excess hot air from the cooking area. When removing air from the kitchen, it is necessary to introduce an equal amount of clean air into the atmosphere so that a comfortable environment can be achieved. Inadequate ventilation will make for an uncomfortable work environment and cause stress on the employees, and may lead to a higher staff turnover.

The project consists of designing, manufacturing, and testing a “make-up” air unit for commercial cooking applications that will supply conditioned air to the kitchen area. The design will consist of three main components: a filter, dx-coil, and supply fan. A modular design will be a key aspect for the unit so that parts may be independently created and used in different systems based on the buyer’s specifications. The fan and filter must be selected from Hood Depot’s stock assortment. Considerations for selecting the filter should include pressure loss, filter face velocity, and size of filter. Also, a control panel must be utilized to control the fan and light operations. The panel will also monitor the filter and coil by use of pressure sensors to inform the operator when the components become clogged.

The make-up air unit will be designed for manufacturing in different parts of the world. The fan and air-conditioning unit will be selected to accommodate different geographical climates. In addition, user manuals and warning labels will be provided in multiple languages and have graphic based illustrations.

Supply air units are necessary for any commercial kitchen. By using the resources available at Hood Depot Intl. Inc., a make-up air unit will be designed and manufactured that will satisfy the needs of many customers.