

## OPERATING INSTRUCTIONS

*This ventilation system is designed to remove smoke, grease-laden vapors and heat from the cooking area in compliance with NFPA (National Fire Prevention Association) Standard 96 and in accordance with the Authority Having Jurisdiction (AHJ).*

*The system typically consists of some or all of the following equipment:*

*Ventilation Hood  
Grease Filters  
Filter Frames*

*'Grease Trough  
Grease Collection Cup  
Exhaust Duct System*

*Exhaust Blower  
Make-up Air System (MUA)  
Controls (On-Off Switch or VFD's)*

**STANDARD CONTROLS:** Standard controls usually consist of three "on-off" wall switches - one for the Hood lights, one for the Exhaust Blower and one for the Make-Up Air unit. Whenever the Exhaust Blower is operating, the MUA should also be turned on.

**VFD CONTROLS:** If your system has VFD (Variable Frequency Drives) controls, follow these instructions:

On the face of the VFD box is "start" button (green) , a "stop" button (red) and two "arrow" or "up" and "down" buttons (blue). There is also an LED screen which displays the number of Hertz (an electrical unit of measurement) being used. The Hertz value will range from a minimum of zero (00.0) to a maximum of 60.0. When the LED reads 60.0 Hertz, 100% power is being used; at 30.0 Hertz, 50% power is being used, 15 Hertz equals 25% power, etc.

Begin operation by pressing the green - start button on the Exhaust VFD. Then press the "up" arrow to 30.0 Hertz. Next start the MUA VFD and set it also at 30.0 Hertz. From here you would change the fan speeds by pressing the "up" or "down" arrows to match the cooking operation. Always set the exhaust VFD first then adjust the MUA VFD to a number approximately equal to the exhaust VFD number. (Note: during peak cooking operations it is likely that the VFD's will be set near their maximum; however, between meals the VFD's can usually be lowered to 15 or 20 Hertz. Likewise, it is likely that higher amounts of air movement will be desired during the summer months and less air movement during the winter months.)

To shut off the blowers, press the red "stop" button. (Note: the next time the VFD is turned on, it will automatically reset at the last number setting before it was shut down.)

VFD's allow for incremental changes in fan speeds to match the cooking loads at any given point in time. The intention is operate the Exhaust Blower VFD at the minimum speed necessary clear the cooking fumes from under the hood. The MUA VFD would then be operated at the maximum speed possible without interfering with the exhaust function. If you see fumes escaping from under the hood ("roll-out") then the exhaust blower is operating too slowly (or the MUA blower is set too high).

### **IF EXHAUST BLOWER FAILS TO START:**

Consult **Service & Maintenance** instructions on reverse side.

**MAKE-UP AIR:** Make-up Air (replacement air or MUA) will enter the kitchen area from the outdoors by way of least resistance. If air is being removed by the exhaust blower, an equivalent amount of replacement air will find its way into the kitchen. If a Make-up Air system was included in your installation, it will provide replacement air either by a gravity (passive) mechanism or by a powered (blower driven) system.

**Powered (Untempered) MUA** systems are activated either in conjunction with the exhaust blower (same switch) or are started with a separate switch which should be turned on whenever the exhaust blower is operating. Powered make-up air is usually disbursed through two mechanisms; 1) via air registers mounted in the facade of the enclosure around the exterior of the hood and 2) via air controllers located along the front edge of the hood. Both mechanisms are adjustable thus allowing the operator to direct the air flows. Typically during the colder months, the facade air registers would be closed and the air controllers would direct the air flow under the hood, toward the grease filters. The system is designed to replace approximately 60% of the air removed by the exhaust blower - higher amounts create turbulence under the hood which defeats the hood's ability to capture properly. The remaining 40% MUA is provided by a combination of building infiltration and the HVAC (heating, ventilating & air conditioning) system.

Your NEVTEC cooking equipment ventilation system has been custom designed to suit your particular needs. Included with your system is our one-year, parts and labor guarantee. The system is designed so that you or any local tradesman, electrician, maintenance man or mechanically inclined person can perform the necessary service once the system is in operation. Should you require information regarding routine servicing or assistance in locating a service person please contact us at the below-listed phone numbers.

### **REQUIRED PERIODIC SERVICE**

**FILTERS** - Grease extraction type filters (sometimes called Baffle or Slotted filters) do not store grease but constantly drain it into the Grease Trough where it drains into the Grease Cup(s) located at the end(s) of the trough. The filters need to be cleaned when they become visibly contaminated. Running them through a commercial dishwasher is permissible.

**MESH TYPE FILTERS** - These filters do not comply with NFPA 96 and should not be used. They are designed such that they collect grease and thus restrict air flow and pose a serious fire hazard.

**DO NOT COOK WITHOUT FILTERS IN PLACE.** Filters are not only for grease removal, they also provide a fire barrier in case of a flare-up from cooking operations

**GREASE COLLECTION CUP** - Located beneath the grease collection trough at the end of the hood (longer hoods have a cup at each end). Remove and empty whenever significant amounts of grease accumulate.

**GREASE COLLECTION TROUGH** - Also called a grease gutter, collects grease as it drains off the filters. With certain types of cooking (e.g. Chinese), the grease tends to solidify at even the slightest drop in temperature. When this happens it may be necessary to clean the trough once a week (or whenever significant build-up occurs). This is best accomplished by using a spatula or similar device to remove the build-up and then wash with a good degreaser.

**HOOD CLEANING** - The interior of the hood should be cleaned whenever significant amounts of grease have built up. The cleaning interval will vary from kitchen to kitchen and with the type of cooking being done. At minimum, one thorough cleaning down to the bare metal should be done each year. Your hood is equipped with removable filter frames which, when removed, enable easy access to the interior of the hood.

**DUCT CLEANING** - As with hoods, the duct system should be cleaned whenever significant amounts of grease have built up. Typically a professional cleaning service would be hired to clean the entire system at least annually and more frequently if your cooking line sustains heavy use.

**BLOWER FANS** - All belt-driven exhaust and make-up air blowers should be serviced at least semi-annually. Check belt tension and condition and replace if necessary. It is best to keep a spare belt on hand (available at auto parts stores). Some blowers (usually older models) need periodic lubrication. A standard grease gun can be used on the shaft bearings and electric motor oil should be used on the motors. Direct-drive blowers seldom require any servicing other than cleaning, likewise, newer belt-driven blowers with sealed bearings require no servicing other than cleaning.

**BLOWER MALFUNCTION** - If your blower should fail to operate, first check the circuit breakers. If the breakers are tripped, reset. If the problem persists, call an electrician or service person.

**BELT- DRIVE BLOWERS** - Check belt, replace if necessary. If motor has failed, any 56 frame type motor of similar horsepower can be used temporarily (even on two-speed systems if a two-speed motor is not immediately available). When replacing a motor or increasing the pulley speed, always check the amperage to prevent overloading the motor.

**DIRECT- DRIVE BLOWERS** - These are special order items. Your electrician can order these motors or call us and we will have one sent to you.

**FIRE SUPPRESSION SYSTEM** - It is required that these systems be inspected twice a year by a licensed service technician to prevent a malfunction in the event of a fire.

**REMEMBER** - The cleaner your system is, the less grease there is to fuel a fire!

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