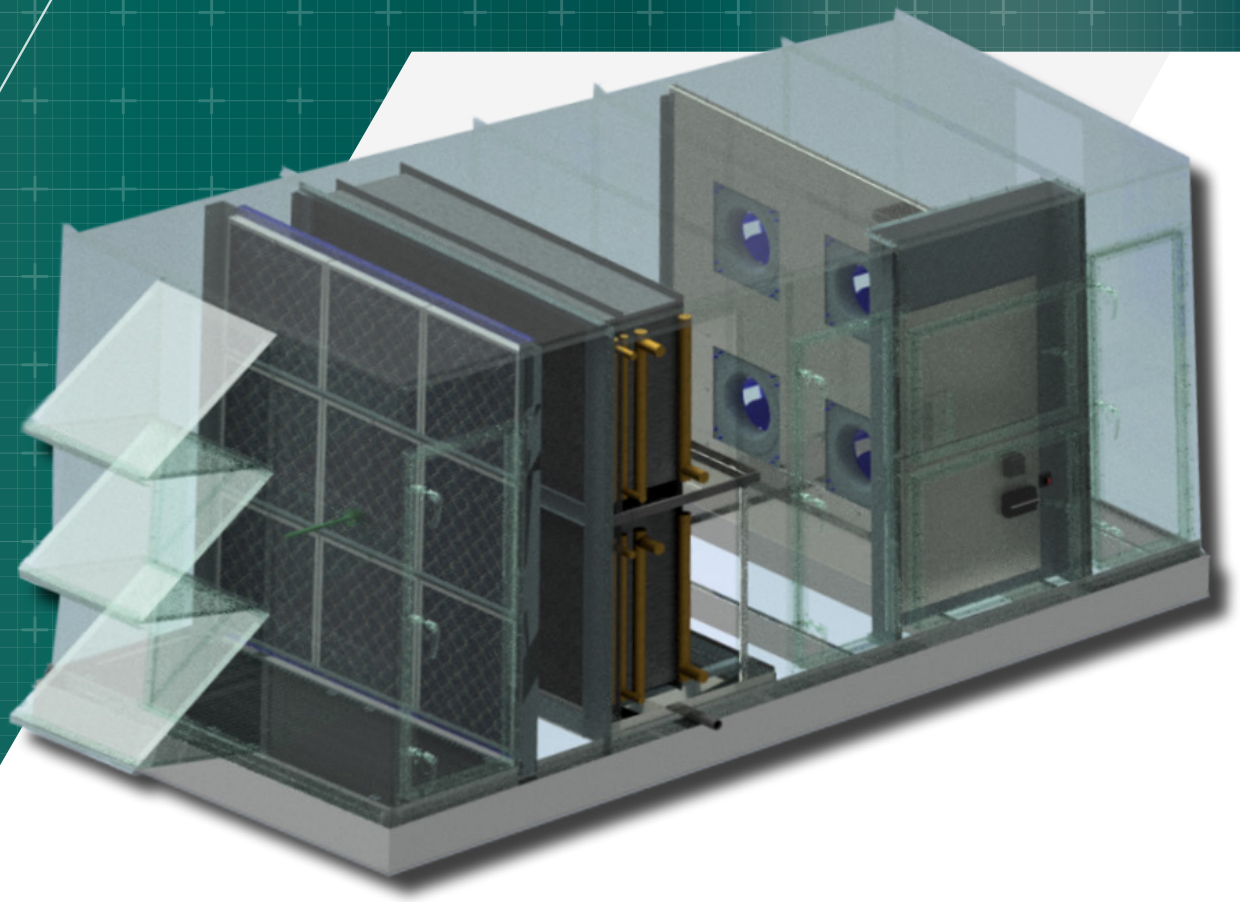
FläktGroup
SEMCO
SPECIALIZED
HEALTHY
AIR SOLUTIONS

ELITE SERIES

AIR HANDLING UNIT
INSTALLATION & OWNER'S MANUAL



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This appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

INTRODUCTION

This manual describes how to store, clean and maintain a FläktGroup® SEMCO® ElitePro air handling unit (AHU).

Each section provides information to guide the installation and maintenance of all components that may be included in the system. If more information is needed about one or more items of equipment installed in the system, consult the manufacturer's manual that accompanies the equipment or is included with our submittal.

It should also be noted that a section or sections of this manual might not apply to your system; for example, it may not include an evaporative cooler. The manual has been prepared to cover the basic system as well all-optional components, that may be included in an ElitePro AHU.

THE ELITEPRO AIR HANDLING UNIT

The ElitePro AHU offers the same superior air quality and construction as an ElitePro ERU, in a compact size and without the added benefit of energy recovery and savings.

The FläktGroup SEMCO ElitePro Series pre-engineered and factory assembled air handling unit (AHU), capable of treating a building's incoming air supply. The ElitePro AHU may be used as an outdoor air pre-conditioner for an existing conventional air handling system, as an economizer, or as a make-up air unit.

The ElitePro Series also includes world-class performance electronically commutated fans (EC fans). The ElitePro EC fans include high-precision CFD designed hollow aerofoil profiled blades as well as an innovative mix-flow impeller design which improves the airflow pattern for a more natural and efficient flow — assuring minimum turbulence, maximum dynamic pressure and the lowest possible noise level. These fans are designed to minimize noise and optimize system efficiency which allows the ElitePro to provide superior energy savings and cost.

Also, included in all units are light weight, dual-wall foam panels which provide a clean aesthetic, exceptional insulation and superior air leakage prevention. A plug-and-play controls system allows for a turnkey solution to save you money on installation costs — minimizing time and difficulty of installation. It will provide important communication to your building automation system to allow you to control the environment.

The ElitePro Series AHUs deliver a high-quality, outstanding performance you can rely on for a wide breadth of applications, with a low first cost.

DEFINITIONS

See **FIGURE 1** on **PAGE 3** for an illustration with correlating numbers to the definitions below.

1. **OUTDOOR AIR -** The fresh outside air that is being drawn in through the outside dampers. Once it passes through the Elite AHU it becomes the supply air.

2. **SUPPLY AIR -** Air provided to the indoor space. Outside air that passes through the Elite AHU and becomes supply air.

3. **OUTSIDE AIR DAMPER -** A set of blades used to regulate the outside air flow into the unit.

4. **SUPPLY AIR EC FAN -** high efficiency, single-sided intake EC fans equipped with rear-curved motor impellers and vaneless diffusers.

5. **COOLING AND/OR HEATING COILS -** chilled water, DX cooling coils, hot water or electric pre-heat coils, which allows for a full integration of heating and cooling options.

6. **OUTDOOR SUPPLY AIR FILTER BANK -** 2" MERV 8 or MERV 13 air filters used to filter incoming outdoor air.

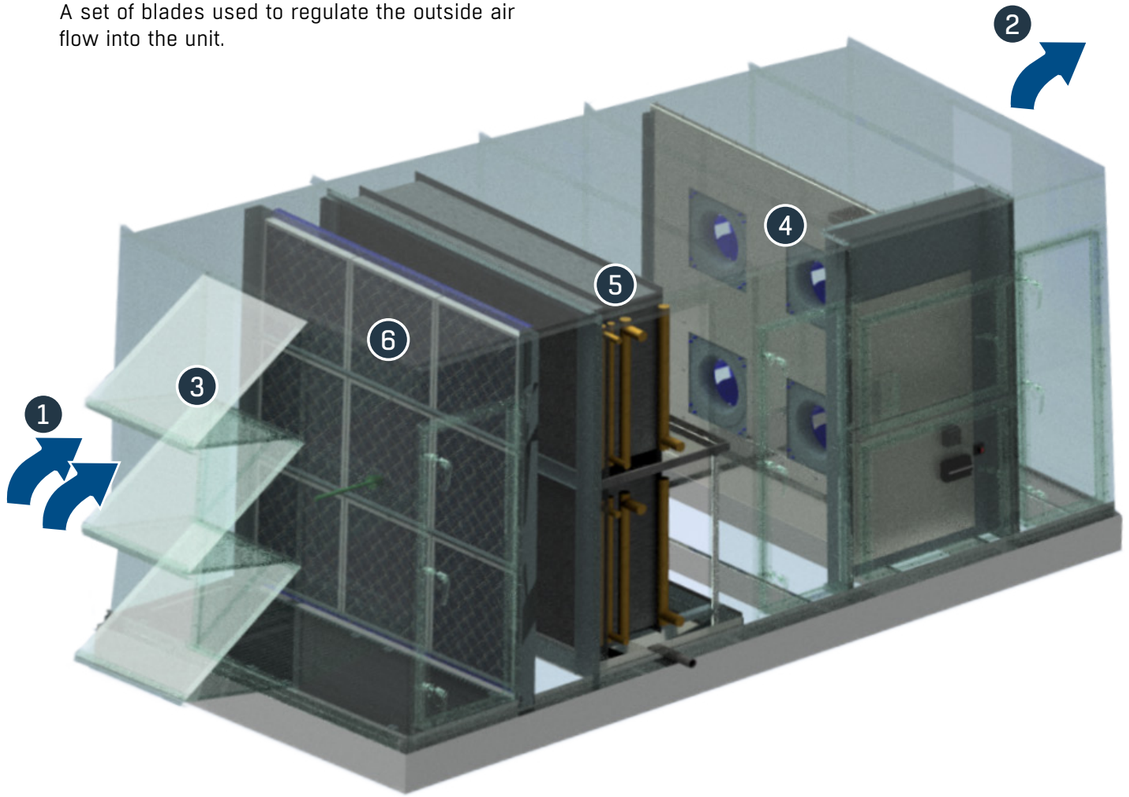


FIGURE 1

SYSTEM INSTALLATION

How to handle the system upon delivery to the project site.

To off load each of the system's modules, lift only with the lugs located at the base of each module (See **FIGURE 2**). **DO NOT** lift with a forklift. Spreader bars must be used to hoist sections to avoid damaging the enclosure (See **FIGURE 3**).

FIGURE 2. Lift modules only with lugs located at the base of each module. Do not use a forklift. **NOTE:** Chain hoists used to level unit.

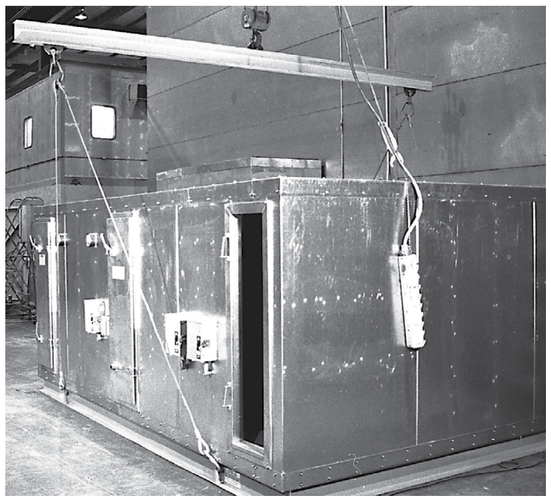


FIGURE 3. Spreader bars must be used for hoisting modules to avoid damaging the enclosure.

LIFTING

Chokers need to be adjustable so that the unit is level when it is picked up and, more importantly, set down. Setting the unit down on one corner could cause the unit to rack. Lever chain pullers are useful for this purpose.

INSPECTION

In addition to inspecting modules and equipment visually for possible shipping damage, be sure to consult "Inspection" instructions described later in this manual for each optional component.

RECEIVING

A packing list is supplied with each shipped system and can be found inside the electric box. The list should be compared with arriving shipments to ensure that all modules and equipment have been delivered in good condition. Visible damage should be noted on the trucker's bill of lading when receiving the unit.

1) Prior to leaving the plant, each system has been tested. You will find the quality assurance label on the inside of the electric box cover along with the wiring schematic.

2) If the modules are to be stored for more than three days prior to installation, a visual inspection of all equipment is necessary. Report missing or damaged equipment to FläktGroup SEMCO immediately. Freight claims are difficult to justify long after delivery has been completed. If the modules are to be stored, see the following section.

3) Modules accumulate dust, dirt and corrosive matter (like salt) during shipment to the installation site on open trailers, and are exposed to still more grime on the construction site. Therefore, it is imperative that the exterior of each module be washed down with soap and water soon after it arrives. Abrasives and solvents should not be used without first consulting FläktGroup SEMCO.

4) The interior of each module should also be cleaned thoroughly and all equipment should be lubricated before storing or beginning operation. See other sections for specific lubrication instructions.

STORAGE

If the system, or parts thereof, must be stored before installation, indoor storage is preferred. If not possible, modules should be located on a hard surface with adequate drainage so that water cannot accumulate under the modules. A solid paved surface would be appropriate. Modules must be stored on blocks or timbers that raise modules at least four inches above the ground.

If stored indoors, modules should be protected from damage. If stored outdoors, modules must be covered with well-anchored canvas tarps. Heavy-mil plastic tarps should be used with caution as they can trap moisture against the unit.

Moisture must not be allowed to enter the modules. Whether stored indoors or outdoors, all openings must be closed tightly and piping penetrations must be capped. However, drain connections should be left open.

As noted previously, modules must be washed to remove corrosive materials and dirt before storage.

During the storage period, modules should be opened and inspected every 30 days. Fans must be inspected and rotated a few times by hand and stopped in a position other than the original position. Fans should also be lubricated as prescribed on the fan label.

If moisture is found in any module, it must be removed immediately. The source of the moisture must be determined and corrected immediately.

During storage, modules should not be stacked on top of each other.

Boxes containing bolts, gaskets and other items should be stored inside the modules. They can be found in a box located in the supply air compartment along with a packing list.

INSTALLATION

If the unit is equipped with a UV-C germicidal lamp system; **READ THE UV MANUFACTURER'S OWNER'S MANUAL BEFORE INSTALLING THE ELITE AHU UNIT.** The manufacturer's owner's manual is located with the unit's ship loose items.

- The unit **MUST** be de-energized prior to maintenance or cleaning of the UV light system.
- Reference cleaning instructions in the UV light IOM.
- UV lights that have been damaged must not be operated. Unintended use of the unit or damage to the casing may result in the escape of dangerous UV-C radiation. UV-C radiation may cause harm to the eyes and skin.
- Doors and access panels bearing the ultraviolet radiation hazard symbol, which may have UV-C spectral irradiance greater than 1.7 uW/cm^2 are provided with a safety interlock switch to interrupt power to the UV-C lamps for safety. **DO NOT** override the interlock switch.
- Disconnect power before opening doors or access panels bearing the ultraviolet radiation hazard symbol to perform inspection or maintenance.
- UV-C barriers bearing the ultraviolet radiation hazard symbol **SHOULD NOT BE REMOVED**. **DO NOT** operate UV-C lamps outside of the unit.
- Reference the unit submittal for UV-C lamp models and part numbers.

1) Prepare the installation site by cleaning it of all debris. Supports, which the modules will be installed on, should be level. The unit base is designed either for mounting on a concrete pad or onto a roof curb (See **PAGES 14** and **15**).

2) Consult drawings and submittal provided to determine the location of each module. Plan to lift modules in the order required for your Installation and within the limitations of your lifting equipment (See **LIFTING** on **PAGE 4**).

3) Adjoining ends of modules are covered with plywood and/or plastic sheets during transport. This must be removed prior to hoisting the modules in place (See **FIGURE 4**).

FIGURE 4. Module sides which are to be joined at time of installation are covered with plywood and/or plastic sheets for protection during transport. Throughout the unit you will find instruction labels indicating which steps **MUST** be performed for proper installation.

4) Remove shipping restraints at roof joint (**NOT SHOWN**).

5) Hoist the first module in place. Spreader bars and hoisting lugs must be used on each module for hoisting. **DO NOT USE FORKLIFTS** (See **FIGURES 2** and **3** on **PAGE 4**).

6) Remove opening plug panels once unit is set in place prior to unit startup. (See **FIGURE 5**).

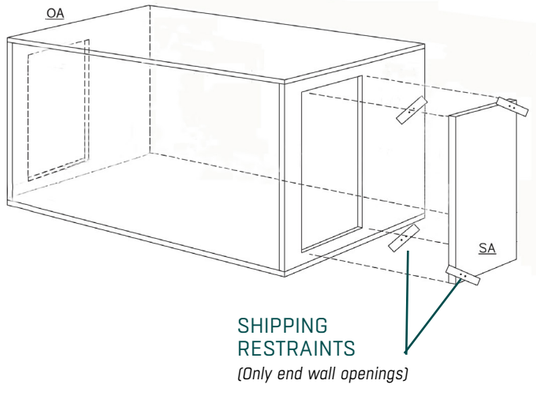


FIGURE 5. Remove screws inside unit on shipping restraint straps in order to remove opening plug panels prior to unit startup.

7) Holes for conduit, piping, etc., are normally precut in the unit panels at the factory. However, if it is necessary to change the location of a hole or to cut a new one, these guidelines must be observed:

- Every hole represents a potential leak. Avoid adding new holes to the enclosure if possible.
- If it is necessary to add a new hole or to move the location of a hole already in the unit, select a location as close as possible to hookup inside the enclosure.
- Cut holes through panels. **DO NOT** cut through seams (where two panels come together).

8) Removable panels are furnished for large items such as coils. Adequate service space in front of these panels should be provided in case the item or items will have to be removed at some future time (See **FIGURE 6**).

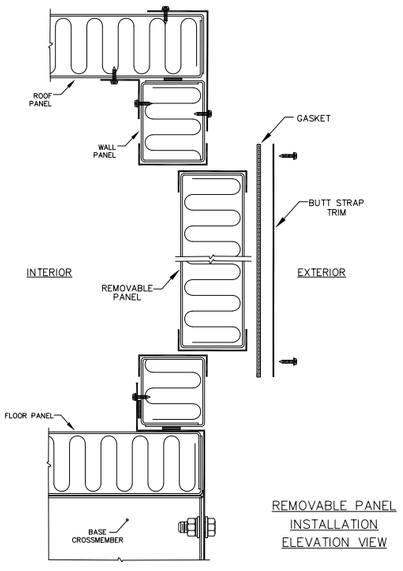


FIGURE 6. Detailed drawing of removable panel installation.

9) Complete service connections to piping and power. The unit must be installed in accordance with national wiring regulations.

10) If hoods do not come pre-attached, after installing the unit, attach the outdoor air hood and the exhaust hood working from top to bottom.

11) Align the top hood assembly with the top of the unit opening such that the top flange is immediately at the top of the opening. Align the hood width wise, so as to avoid existing screw heads on the unit enclosure. **NOTE:** The hood may not necessarily be centered on the opening width.

12) Secure hoods to the unit using screws across the top flange through provided mounting holes. (See **FIGURE 7**)

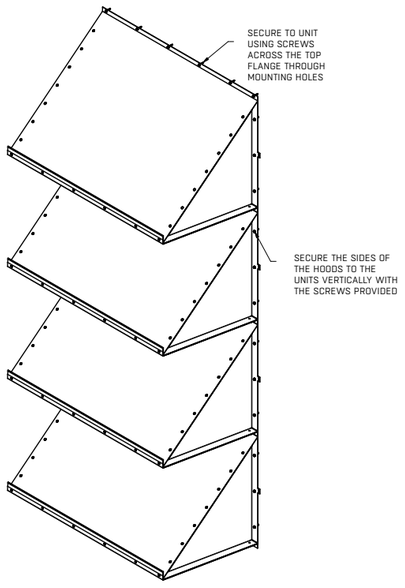


FIGURE 7.

13) Position the next hood — align the holes in the bottom of flange of the upper hood with the top flange of the lower hood, ensuring that the lower hood laps **BEHIND** the upper hood as shown in **FIGURE 8**. Secure overlapping flanges at sides to the unit using screws through provided mounting holes. (See **FIGURE 9)**

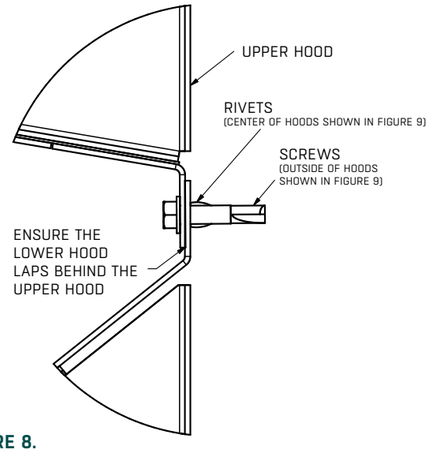


FIGURE 8.

14) Secure the sides of the hoods vertically with the provided screws.

15) Rivet the center mating flanges of the hoods together in the opening using the aligned holes. (See **FIGURE 9**)

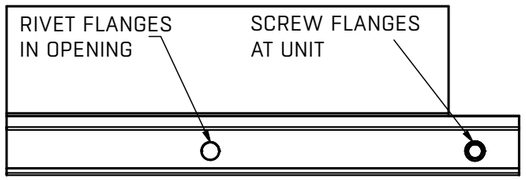


FIGURE 9.

UV-C LAMP INSTALLATION — OPTIONAL

WARNING: BEFORE INSTALLING UV-C LAMPS, SWITCH OFF ALL POWER TO THE ELITEPRO AHU UNIT.

1) Consult all applicable electrical codes before installing. Check fixture labels for correct power requirements and supply the correct voltage from a suitable, protected (fused or breaker), and a grounded power source.

CAUTION: USING VOLTAGES OTHER THAN THOSE LISTED ON VOLTAGE LABELS WILL VOID PRODUCT WARRANTY AND MAY RESULT IN ADDITIONAL DAMAGE TO THE SYSTEM. FIXTURES SHOULD BE OPERATED CONTINOUSLY TO AVOID GROWTH OF MOLD AND BACTERIA WHEN THE AHU IS SWITCHED OFF.

2) Power must also be switched off at all install access points with a properly rated, SPST interlock switch to completely de-energize the assembly when its install location is accessed.

3) Determine the best location for the UV-C lamps for intended use and access to a power supply.. **NOTE:** The box is a NEMA 2/IP11, recommended for indoor use — it may be mounted inside or outside of the target plenum (outside is preferred). If outdoors, a NEMA 4 box is recommended.

MOUNTING

4) Use the spacing table in **FIGURE 10** to determine the ideal distance between metal lamp clamps. Mount using the provided self-drilling screws. Lamp clamps may be mounted to any surface near the intended UV-C lamp installation site.

NOMINAL LAMP LENGTH	DISTANCE BETWEEN LAMP CLAMPS
33"	APPROXIMATELY 31.5"
61"	APPROXIMATELY 59.5"

FIGURE 10.

CAUTION: ALWAYS TURN THE MAIN POWER SYSTEM OFF, BEFORE CHANGING LAMPS. FAILURE TO DO SO MAY PRODUCE A PROTECTION FAULT WITHIN THE POWER SUPPLY. BEFORE RE-POWERING A FIXTURE, FOLLOW MANUFACTURERS INSTRUCTIONS TO MAKE SURE **ALL** CONNECTIONS (INCLUDING LAMP PINS) ARE TIGHT AND COMPLETE TO AVOID SPARKS, SHORTS OR OVERHEATING. A PROTECTION FAULT REQUIRES A RESET PROCEDURE. TO RESET THE **PROGRAMMED START** FUNCTION OF A POWER SUPPLY, DISCONNECT **ALL** POWER AND POWER WIRES AND WAIT ONE MINUTE. START BY RECONNECTING A/C POWER FIRST AND THEN TURN ON ALL SWITCHES. ALL LAMPS SHOULD LIGHT.

CONNECTING POWER

5) Read the power requirements located on the fixture label — sum up the power requirements for all lamps associated with the installation and install them in accordance of national and local electrical codes. Power should be connected to the fixture via the appropriate conduit.

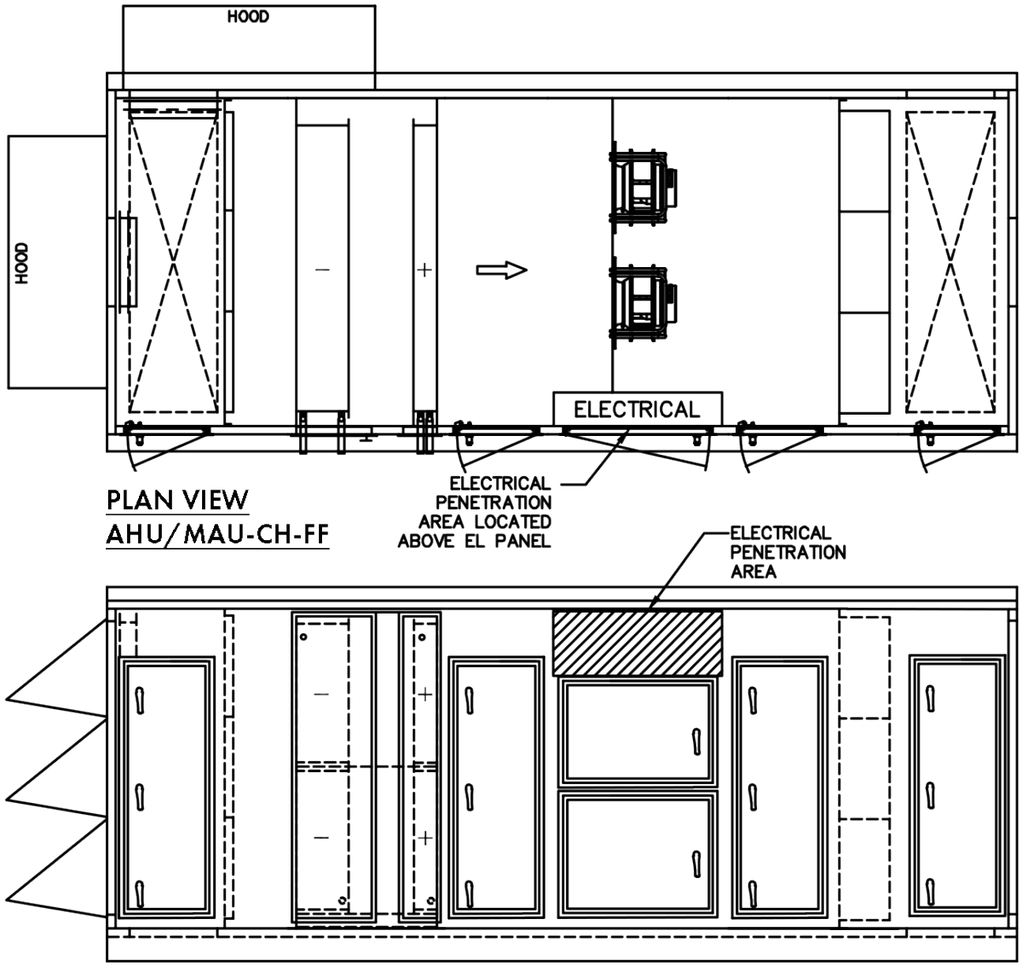
6) All power-in wire gauge and switch ratings must be in accordance with applicable codes. Power must also be switched at install access points with a properly rated. SPST interlock switch to completely de-energize the assembly when its install location is accessed.

7) Refer to the wiring diagram for the ballast power wiring.

8) **GROUNDING:** ground wires should be wired to provide a grounding lug.

ELECTRICAL PENETRATION

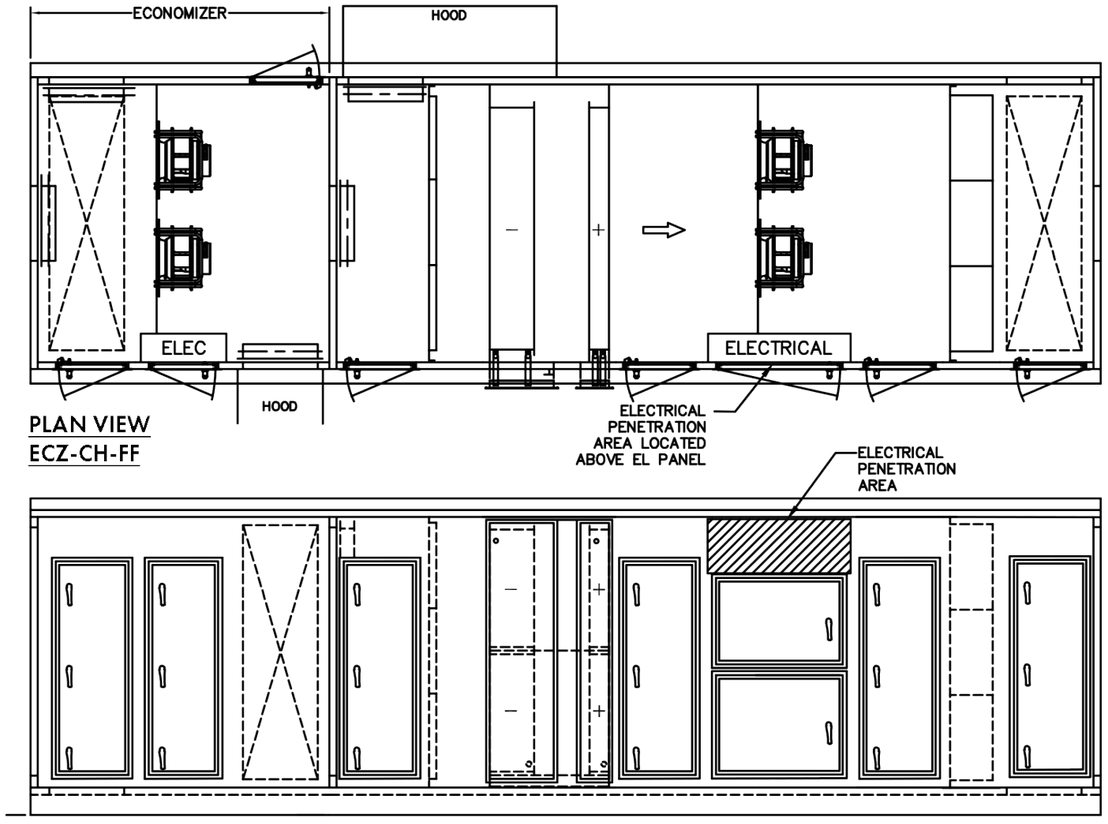
AHU & MAU



PLAN VIEW
AHU/MAU-CH-FF

SIDE ELEVATION
AHU/MAU-CH-FF

ECONOMIZER



PLAN VIEW
ECZ-CH-FF

SIDE ELEVATION
ECZ-CH-FF

UNIT WEIGHTS

UNIT SIZE	UNIT WEIGHT (LBS)										
	C	CH	CGB	CEH	EH	EHC	EHCEH	EHCH	EHHP	GB	GBC
AHU/MAU-020	1,547.3	1,667.5	2,289.8	2,163.1	1,710.8	2,151.3	2,764.8	2,270.2	2,331.0	1,849.3	2,289.8
AHU/MAU-020-FF	1,885.8	2,006.0	2,628.3	2,501.6	2,049.3	2,489.8	3,103.3	2,608.7	2,669.5	2,187.8	2,628.3
ECZ-020	2,519.4	2,639.6	3,261.9	3,135.2	2,682.9	3,123.4	3,736.9	3,242.3	3,303.1	2,821.4	3,261.9
ECZ-020-FF	2,857.9	2,978.1	3,600.4	3,473.7	3,021.4	3,461.9	4,075.4	3,580.8	3,641.6	3,159.9	3,600.4
AHU/MAU-030	2,007.5	2,172.9	2,945.6	2,799.2	2,219.8	2,784.7	3,573.5	2,948.5	3,013.5	2,380.8	2,945.6
AHU/MAU-030-FF	2,454.2	2,619.6	3,392.3	3,245.9	2,666.5	3,231.4	4,020.2	3,395.2	3,460.2	2,827.5	3,392.3
ECZ-030	3,294.6	3,460.0	4,232.7	4,086.3	3,506.9	4,071.8	4,860.6	4,235.6	4,300.6	3,667.9	4,232.7
ECZ-030-FF	3,741.3	3,906.7	4,679.4	4,533.0	3,953.6	4,518.5	5,307.3	4,682.3	4,747.3	4,114.6	4,679.4
AHU/MAU-050	2,275.4	2,486.7	3,355.7	3,234.3	2,561.6	3,219.3	4,176.1	3,429.3	3,503.0	2,698.1	3,355.7
AHU/MAU-050-FF	2,732.4	2,943.7	3,812.7	3,691.3	3,018.6	3,676.3	4,633.1	3,886.3	3,960.0	3,155.1	3,812.7
ECZ-050	3,772.6	3,983.9	4,852.9	4,731.5	4,058.8	4,716.5	5,673.3	4,926.5	5,000.2	4,195.3	4,852.9
ECZ-050-FF	4,229.6	4,440.9	5,309.9	5,188.5	4,515.8	5,173.5	6,130.3	5,383.5	5,457.2	4,652.3	5,309.9
AHU/MAU-075	2,905.8	3,195.9	4,232.0	4,144.1	3,285.5	4,126.1	5,361.4	4,414.5	4,489.5	3,391.5	4,232.0
AHU/MAU-075-FF	3,497.2	3,787.3	4,823.4	4,735.5	5,326.9	4,717.5	5,952.8	5,005.9	5,080.9	3,982.9	4,823.4
ECZ-075	4,827.7	5,117.8	6,153.9	6,066.0	5,207.4	6,048.0	7,283.3	6,336.4	6,411.4	5,313.4	6,153.9
ECZ-075-FF	5,419.1	5,709.2	6,745.3	6,657.4	5,798.8	6,639.4	7,874.7	6,927.8	7,002.8	5,904.8	6,745.3
AHU/MAU-100	3,482.2	3,863.9	5,095.7	4,974.4	3,941.8	4,954.7	6,444.2	5,334.8	5,370.7	4,082.9	5,095.7
AHU/MAU-100-FF	4,154.6	4,536.3	5,768.1	5,646.8	4,614.2	5,627.1	7,116.6	6,007.2	6,043.1	4,755.3	5,768.1
ECZ-100	5,835.9	6,217.6	7,449.4	7,328.1	6,295.5	7,308.4	8,797.9	7,688.5	7,724.4	6,436.6	7,449.4
ECZ-100-FF	6,508.3	6,890.0	8,121.8	8,000.5	6,967.9	7,980.8	9,470.3	8,360.9	8,396.8	7,109.0	8,121.8
AHU/MAU-125	3,966.1	4,409.1	5,764.5	5,521.8	4,355.1	5,499.8	7,052.3	5,940.9	6,021.2	4,619.7	5,764.5
AHU/MAU-125-FF	4,766.5	5,209.5	6,564.9	6,322.2	5,155.5	6,300.2	7,852.7	6,741.3	6,821.6	5,420.1	6,564.9
ECZ-125	6,672.0	7,115.0	8,470.4	8,227.7	7,061.0	8,205.7	9,758.2	8,646.8	8,727.1	7,325.6	8,470.4
ECZ-125-FF	7,472.4	7,915.4	9,270.8	9,028.1	7,861.4	9,006.1	10,558.6	9,447.2	9,527.5	8,126.0	9,270.8
AHU/MAU-150	4,547.6	5,087.9	6,708.1	6,416.9	5,076.1	6,392.7	8,258.2	6,930.8	7,951.4	5,391.3	5,764.5
AHU/MAU-150-FF	5,475.9	6,016.2	7,636.4	7,345.2	6,004.4	7,321.0	9,186.5	7,859.1	8,879.7	6,319.6	6,692.8
ECZ-150	7,820.8	8,361.1	9,981.3	9,690.1	8,349.3	9,665.9	11,531.4	10,204.0	11,224.6	8,664.5	9,037.7
ECZ-150-FF	8,749.1	9,289.4	10,909.6	10,618.4	9,277.6	10,594.2	12,459.7	11,132.3	12,152.9	9,592.8	9,966.0
AHU/MAU-175	4,979.2	5,576.8	7,498.2	7,030.2	5,557.7	7,004.9	9,051.9	7,600.1	7,626.3	6,051.1	7,498.2
AHU/MAU-175-FF	5,969.3	6,566.9	8,488.3	8,020.3	6,547.8	7,995.0	10,042.0	8,590.2	8,616.4	7,041.2	8,488.3
ECZ-175	8,386.5	8,984.1	10,905.5	10,437.5	8,965.0	10,412.2	12,459.2	11,007.4	11,033.6	9,458.4	10,905.5
ECZ-175-FF	9,376.6	9,974.2	11,895.6	11,427.6	9,955.1	11,402.3	13,449.3	11,997.5	12,023.7	10,448.5	11,895.6
AHU/MAU-200	5,344.1	6,001.5	7,824.7	7,580.3	5,978.0	7,553.8	9,786.1	8,208.9	8,220.2	6,248.9	7,824.7
AHU/MAU-200-FF	6,407.2	7,064.6	8,887.8	8,643.4	7,041.1	8,616.9	10,849.2	9,272.0	9,283.3	7,312.0	8,887.8
ECZ-200	9,001.9	9,659.3	11,482.5	11,238.1	9,635.8	11,211.6	13,443.9	11,866.7	11,878.0	9,906.7	11,482.5
ECZ-200-FF	10,065.0	10,722.4	12,545.6	12,301.2	10,698.9	12,274.7	14,507.0	12,929.8	12,941.1	10,969.8	12,545.6
AHU/MAU-225	5,851.7	6,575.9	8,469.8	8,338.1	6,594.7	8,309.9	10,791.8	9,031.6	9,042.6	6,754.6	8,469.8
AHU/MAU-225-FF	7,024.5	7,748.7	9,642.6	9,510.9	7,767.5	9,482.7	11,964.6	10,204.4	10,215.4	7,927.4	9,642.6
ECZ-225	9,867.3	10,591.5	12,485.4	12,353.7	10,610.3	12,325.5	14,807.4	13,047.2	13,058.2	10,770.2	12,485.4
ECZ-225-FF	11,040.1	11,764.3	13,658.2	13,526.5	11,783.1	13,498.3	15,980.2	14,220.0	14,231.0	11,943.0	13,658.2
AHU/MAU-250	6,251.7	7,053.9	9,400.0	8,970.2	7,102.7	8,940.9	11,654.9	9,740.5	9,735.1	7,561.9	9,400.0
AHU/MAU-250-FF	7,494.4	8,296.6	10,642.7	10,212.9	8,345.4	10,183.6	12,897.6	10,983.2	10,977.8	8,804.6	10,642.7
ECZ-250	10,601.5	11,403.7	13,749.8	13,320.0	11,452.5	13,290.7	16,004.7	14,090.3	14,084.9	11,911.7	13,749.8
ECZ-250-FF	11,844.2	12,646.4	14,992.5	14,562.7	12,695.2	14,533.4	17,247.4	15,333.0	15,327.6	13,154.4	14,992.5

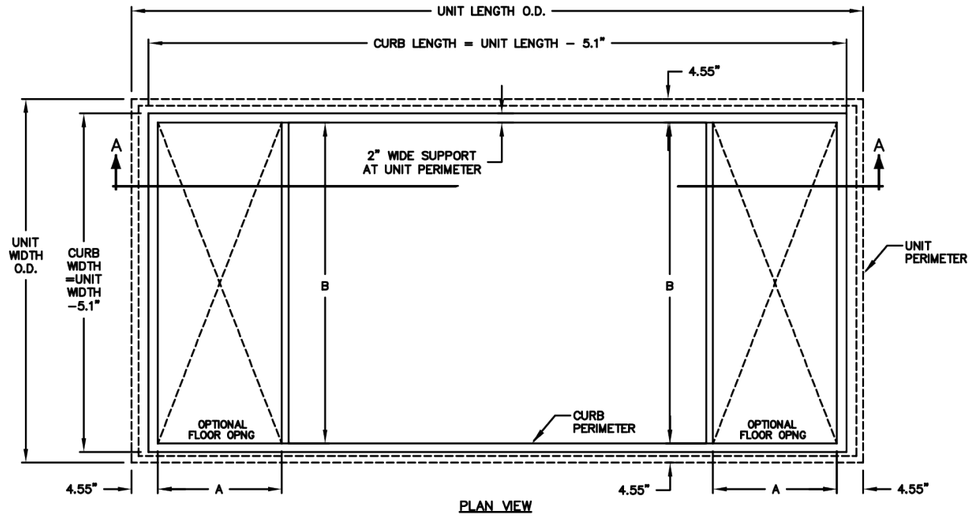
UNIT SIZE	UNIT WEIGHT (LBS)									
	GBHP	H	HC	HCEH	HCH	HHP	HP	HPEH	HPGB	HPH
AHU/MAU-020	2,469.5	1,398.4	1,659.1	2,273.6	1,949.5	2,018.7	1,728.3	2,342.7	2,469.5	2,018.7
AHU/MAU-020-FF	2,808.0	1,736.9	1,997.6	2,612.1	2,288.0	2,357.2	2,066.8	2,681.2	2,808.0	2,357.2
ECZ-020	3,441.6	2,370.5	2,631.2	3,245.7	2,921.6	2,990.8	2,700.4	3,314.8	3,441.6	2,990.8
ECZ-020-FF	3,780.1	2,709.0	2,969.7	3,584.2	6,505.8	3,329.3	3,038.9	3,653.3	3,780.1	3,329.3
AHU/MAU-030	3,174.5	1,830.5	2,161.8	2,951.8	2,547.9	2,624.2	2,238.0	3,028.1	3,174.5	2,624.2
AHU/MAU-030-FF	3,621.2	2,277.2	2,608.5	3,398.5	2,994.6	3,070.9	2,684.7	3,474.8	3,621.2	3,070.9
ECZ-030	4,461.6	3,117.6	3,448.9	4,238.9	3,835.0	3,911.3	3,525.1	4,315.2	4,461.6	3,911.3
ECZ-030-FF	4,908.3	3,564.3	3,895.6	4,685.6	4,281.7	4,358.0	3,971.8	4,761.9	4,908.3	4,358.0
AHU/MAU-050	3,639.4	2,042.9	2,471.1	3,428.8	2,895.1	2,984.2	2,560.4	3,518.1	3,639.4	2,984.2
AHU/MAU-050-FF	4,096.4	2,499.9	2,928.1	3,885.8	3,352.1	3,441.2	3,017.4	3,975.1	4,096.4	3,441.2
ECZ-050	5,136.6	3,540.1	3,968.3	4,926.0	4,392.3	4,481.1	4,057.6	5,015.3	5,136.6	4,481.4
ECZ-050-FF	5,593.6	3,997.1	4,425.3	5,383.0	4,849.3	4,938.1	4,514.6	5,472.3	5,593.6	4,938.4
AHU/MAU-075	4,595.5	2,632.3	3,174.6	4,411.1	3,740.0	3,836.3	3,270.9	4,507.4	4,595.5	3,836.3
AHU/MAU-075-FF	5,186.9	3,223.7	3,766.0	5,002.5	4,331.4	4,427.7	3,862.3	5,098.8	5,186.9	4,427.7
ECZ-075	6,517.4	4,554.2	5,096.5	6,333.1	5,661.9	5,758.2	5,192.8	6,429.3	6,517.4	5,758.2
ECZ-075-FF	7,108.8	5,145.6	5,687.9	6,924.5	6,253.3	6,349.6	5,784.2	7,020.7	7.108.8	6,349.6
AHU/MAU-100	5,511.8	3,173.2	3,837.1	5,327.8	4,539.4	4,602.1	3,899.8	5,390.5	5,511.8	4,602.1
AHU/MAU-100-FF	6,184.2	3,845.6	4,509.5	6,000.2	5,211.8	5,274.5	4,572.2	6,062.9	6,184.2	5,274.5
ECZ-100	7,865.5	5,526.9	6,190.8	7,681.5	6,893.1	6,955.8	6,253.6	7,744.2	7,865.5	6,955.8
ECZ-100-FF	8,537.9	6,199.3	6,863.2	8,353.9	7,565.5	7,628.2	6,926.0	8,416.6	8,537.9	7,628.2
AHU/MAU-125	6,285.9	3,584.9	4,376.6	5,930.5	5,138.5	5,251.1	4,489.3	6,043.2	6,285.9	5,251.1
AHU/MAU-125-FF	7,086.3	4,385.3	5,177.0	6730.9	5,942.2	6,051.5	5,289.7	6,843.6	7,086.3	6,051.5
ECZ-125	8,991.8	6,290.8	7,082.5	8,636.4	7,844.4	7,957.0	7,195.2	8,749.1	8,991.8	7,957.0
ECZ-125-FF	9,792.2	7,091.2	7,882.9	9,436.8	8,644.8	8,757.4	7,995.6	9,549.5	9,792.2	8,757.4
AHU/MAU-150	8,266.7	4,138.2	5,050.1	6,917.1	5,955.1	7,013.6	6,108.5	7,975.7	8,266.7	7,013.6
AHU/MAU-150-FF	9,195.0	5,066.5	5,978.4	7,845.4	6,883.4	7,941.9	7,036.8	8,904.0	9,195.0	7,941.9
ECZ-150	11,539.9	7,411.4	8,323.3	10,190.3	9,228.3	10,286.8	9,381.7	11,248.9	11,539.9	10,286.8
ECZ-150-FF	12,468.2	8,339.7	9,251.6	11,118.6	10,156.6	11,215.1	10,310.0	12,177.2	12,468.2	11,215.1
AHU/MAU-175	8,119.6	4,557.5	5,534.5	7,583.2	6,557.6	6,626.0	5,602.9	7,651.6	8,119.6	6,626.0
AHU/MAU-175-FF	9,109.7	5,547.6	6,524.6	8,573.3	7,547.7	7,616.1	6,593.0	8,641.7	9,109.7	7,616.1
ECZ-175	11,526.9	7,964.8	8,941.8	10,990.5	9,964.9	10,033.3	9,010.2	11,058.9	11,526.3	10,033.3
ECZ-175-FF	12,517.0	8,954.9	9,931.9	11,980.6	10,955.0	11,023.4	10,000.3	12,049.0	12,516.4	11,023.4
AHU/MAU-200	8,491.1	4,830.9	5,954.8	8,188.7	7,015.1	7,073.1	6,012.8	8,246.7	8,491.1	7,073.1
AHU/MAU-200-FF	9,554.2	5,894.0	7,017.9	9,251.8	8,078.2	8,136.2	7,075.9	9,309.8	9,554.2	8,136.2
ECZ-200	12,148.9	8,488.7	9,612.6	11,846.5	10,672.9	10,730.9	9,670.6	11,904.5	12,148.9	10,730.9
ECZ-200-FF	13,212.0	9,551.8	10.675.7	12,909.6	11,736.0	11,794.0	10,733.7	12,967.6	13,212.0	11,794.0
AHU/MAU-225	9,202.6	5,331.9	6,524.2	9,008.0	7,717.0	7,779.9	6,587.0	9,070.9	9,202.6	7,779.9
AHU/MAU-225-FF	10,375.4	6,504.7	7,697.0	10,180.8	8,889.8	8,952.7	7,759.8	10,243.7	10,375.4	8,952.7
ECZ-225	13,218.2	9,347.5	10,539.8	13,023.6	11,732.6	11,795.5	10,602.6	13,086.5	13,218.2	11,795.5
ECZ-225-FF	14,391.0	10,520.3	11,712.6	14,196.4	12,905.4	12,968.3	11,775.4	14,259.3	14,391.0	12,967.6
AHU/MAU-250	10,194.2	5,645.3	6,997.1	9,713.0	8,226.3	8,277.7	7,048.4	9,764.4	10,194.2	8,277.7
AHU/MAU-250-FF	11,436.9	6,888.0	8,239.8	10,955.7	9,469.0	9,520.4	8,291.1	11,007.1	11,436.9	9,520.4
ECZ-250	14,544.0	9,995.1	11,346.9	14,062.8	12,576.1	12,627.5	11,398.2	14,114.2	14,544.0	12,627.5
ECZ-250-FF	15,786.7	11,237.8	12,589.6	15,305.5	13,818.8	13,870.2	12,640.9	15,356.9	15,786.7	13,870.2

UNIT DIMENSIONS

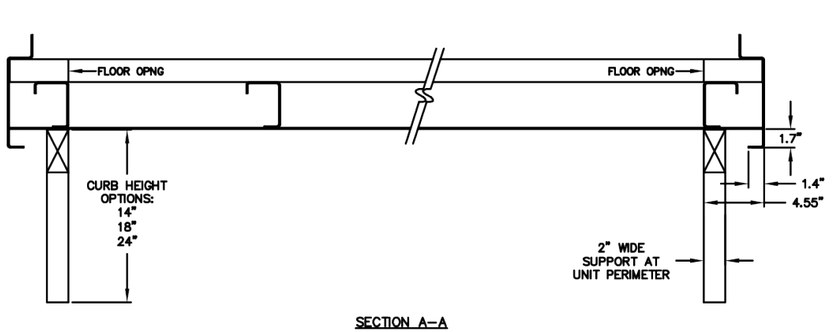
UNIT SIZE	UNIT O.D. (LxW) DIMENSIONS IN INCHES									
	C	CH	CGB	CEH	EH	EHC	EHCEH	EHCH	EHHP	GB
AHU/MAU-020	168.8 x 44.0	176.3 x 44.0	240.3 x 44.0	221.2 x 44.0	164.8 x 44.0	219.2 x 44.0	271.6 x 44.0	226.7 x 44.0	227.7 x 44.0	185.9 x 44.0
AHU/MAU-020-FF	209.2 x 44.0	216.7 x 44.0	280.7 x 44.0	261.6 x 44.0	205.2 x 44.0	259.6 x 44.0	312.0 x 44.0	267.1 x 44.0	268.1 x 44.0	226.3 x 44.0
ECZ-020	252.8 x 44.0	260.3 x 44.0	324.3 x 44.0	305.2 x 44.0	248.8 x 44.0	303.2 x 44.0	355.6 x 44.0	310.7 x 44.0	311.7 x 44.0	269.9 x 44.0
ECZ-020-FF	293.2 x 44.0	300.7 x 44.0	364.7 x 44.0	345.6 x 44.0	289.2 x 44.0	343.6 x 44.0	396.0 x 44.0	351.1 x 44.0	352.1 x 44.0	310.3 x 44.0
AHU/MAU-030	168.8 x 59.0	176.3 x 59.0	244.7 x 59.0	221.2 x 59.0	164.8 x 59.0	219.2 x 59.0	271.6 x 59.0	226.7 x 59.0	227.7 x 59.0	190.3 x 59.0
AHU/MAU-030-FF	209.2 x 59.0	216.7 x 59.0	285.1 x 59.0	261.6 x 59.0	205.2 x 59.0	259.6 x 59.0	312.0 x 59.0	267.1 x 59.0	268.1 x 59.0	230.7 x 59.0
ECZ-030	252.8 x 59.0	260.3 x 59.0	328.7 x 59.0	305.2 x 59.0	248.8 x 59.0	303.2 x 59.0	355.6 x 59.0	310.7 x 59.0	311.7 x 59.0	274.3 x 59.0
ECZ-030-FF	293.2 x 59.0	300.7 x 59.0	369.1 x 59.0	345.6 x 59.0	289.2 x 59.0	343.6 x 59.0	396.0 x 59.0	351.1 x 59.0	352.1 x 59.0	314.7 x 59.0
AHU/MAU-050	168.8 x 46.0	176.3 x 46.0	266.7 x 46.0	221.2 x 46.0	164.8 x 46.0	219.2 x 46.0	271.6 x 46.0	226.7 x 58.0	227.7 x 58.0	212.3 x 46.0
AHU/MAU-050-FF	209.2 x 46.0	216.7 x 46.0	307.1 x 46.0	261.6 x 46.0	205.2 x 46.0	259.6 x 46.0	312.0 x 46.0	267.1 x 58.0	268.1 x 58.0	252.7 x 46.0
ECZ-050	252.8 x 46.0	260.3 x 46.0	350.7 x 46.0	305.2 x 46.0	248.8 x 46.0	303.2 x 46.0	355.6 x 46.0	310.7 x 58.0	311.7 x 58.0	296.3 x 46.0
ECZ-050-FF	293.2 x 46.0	300.7 x 46.0	391.1 x 46.0	345.6 x 46.0	289.2 x 46.0	343.6 x 46.0	396.0 x 46.0	351.1 x 58.0	352.1 x 58.0	336.7 x 46.0
AHU/MAU-075	168.8 x 58.0	176.3 x 58.0	257.5 x 58.0	221.2 x 58.0	164.8 x 58.0	219.2 x 58.0	271.6 x 58.0	226.7 x 58.0	227.7 x 58.0	203.1 x 58.0
AHU/MAU-075-FF	209.2 x 58.0	216.7 x 58.0	297.9 x 58.0	261.6 x 58.0	205.2 x 58.0	259.6 x 58.0	312.0 x 58.0	267.1 x 58.0	268.1 x 58.0	243.5 x 58.0
ECZ-075	252.8 x 58.0	260.3 x 58.0	341.5 x 58.0	305.2 x 58.0	248.8 x 58.0	303.2 x 58.0	355.6 x 58.0	310.7 x 58.0	311.7 x 58.0	295.3 x 58.0
ECZ-075-FF	293.2 x 58.0	300.7 x 58.0	381.9 x 58.0	345.6 x 58.0	289.2 x 58.0	343.6 x 58.0	396.0 x 58.0	35110 x 58.0	352.1 x 58.0	335.7 x 58.0
AHU/MAU-100	168.8 x 58.0	176.3 x 58.0	265.7 x 58.0	221.2 x 58.0	164.8 x 58.0	219.2 x 58.0	271.6 x 58.0	226.7 x 58.0	227.7 x 58.0	211.3 x 58.0
AHU/MAU-100-FF	209.2 x 58.0	216.7 x 58.0	306.1 x 58.0	261.6 x 58.0	205.2 x 58.0	259.6 x 58.0	312.0 x 58.0	267.1 x 58.0	268.1 x 58.0	251.7 x 58.0
ECZ-100	252.8 x 58.0	260.3 x 58.0	349.7 x 58.0	305.2 x 58.0	248.8 x 58.0	303.2 x 58.0	355.6 x 58.0	310.7 x 58.0	311.7 x 58.0	295.3 x 58.0
ECZ-100-FF	293.2 x 58.0	300.7 x 58.0	390.1 x 58.0	345.6 x 58.0	289.2 x 58.0	343.6 x 58.0	396.0 x 58.0	351.1 x 58.0	352.1 x 58.0	335.7 x 58.0
AHU/MAU-125	168.8 x 70.0	176.3 x 70.0	255.9 x 70.0	221.2 x 70.0	164.8 x 70.0	219.2 x 70.0	271.6 x 70.0	226.7 x 70.0	227.7 x 70.0	201.5 x 70.0
AHU/MAU-125-FF	209.2 x 70.0	216.7 x 70.0	296.3 x 70.0	261.6 x 70.0	205.2 x 70.0	259.6 x 70.0	312.0 x 70.0	267.1 x 70.0	268.1 x 70.0	241.9 x 70.0
ECZ-125	252.8 x 70.0	260.3 x 70.0	339.9 x 70.0	305.2 x 70.0	248.8 x 70.0	303.2 x 70.0	355.6 x 70.0	310.7 x 70.0	311.7 x 70.0	285.5 x 70.0
ECZ-125-FF	293.2 x 70.0	300.7 x 70.0	380.3 x 70.0	345.6 x 70.0	289.2 x 70.0	343.6 x 70.0	396.0 x 70.0	351.1 x 70.0	352.1 x 70.0	325.9 x 70.0
AHU/MAU-150	168.8 x 82.0	176.3 x 82.0	265.7 x 82.0	221.2 x 82.0	164.8 x 82.0	219.2 x 82.0	271.6 x 82.0	226.7 x 82.0	227.7 x 82.0	211.3 x 82.0
AHU/MAU-150-FF	209.2 x 82.0	216.7 x 82.0	306.1 x 82.0	261.6 x 82.0	205.2 x 82.0	259.6 x 82.0	312.0 x 82.0	267.1 x 82.0	268.1 x 82.0	251.7 x 82.0
ECZ-150	252.8 x 82.0	260.3 x 82.0	349.7 x 82.0	305.2 x 82.0	248.8 x 82.0	303.2 x 82.0	355.6 x 82.0	310.7 x 82.0	311.7 x 82.0	295.3 x 82.0
ECZ-150-FF	293.2 x 82.0	300.7 x 82.0	390.1 x 82.0	345.6 x 82.0	289.2 x 82.0	343.6 x 82.0	396.0 x 82.0	351.1 x 82.0	352.1 x 82.0	335.7 x 82.0
AHU/MAU-175	174.8 x 82.0	182.3 x 82.0	271.7 x 82.0	227.2 x 82.0	170.8 x 82.0	225.2 x 82.0	277.6 x 82.0	232.7 x 82.0	233.7 x 82.0	217.3 x 82.0
AHU/MAU-175-FF	215.2 x 82.0	222.7 x 82.0	312.1 x 82.0	267.6 x 82.0	211.2 x 82.0	265.6 x 82.0	318.0 x 82.0	273.1 x 82.0	274.1 x 82.0	257.7 x 82.0
ECZ-175	263.7 x 82.0	271.2 x 82.0	360.6 x 82.0	316.1 x 82.0	259.7 x 82.0	314.1 x 82.0	366.5 x 82.0	321.6 x 82.0	322.6 x 82.0	306.2 x 82.0
ECZ-175-FF	304.1 x 82.0	311.6 x 82.0	401.0 x 82.0	356.5 x 82.0	300.1 x 82.0	354.5 x 82.0	406.9 x 82.0	362.0 x 82.0	363.0 x 82.0	346.6 x 82.0
AHU/MAU-200	186.8 x 94.0	194.3 x 94.0	281.3 x 94.0	239.2 x 94.0	182.8 x 94.0	237.2 x 94.0	289.6 x 94.0	244.7 x 94.0	245.7 x 94.0	226.9 x 94.0
AHU/MAU-200-FF	227.2 x 94.0	234.7 x 94.0	321.7 x 94.0	279.6 x 94.0	223.2 x 94.0	277.6 x 94.0	330.0 x 94.0	285.1 x 94.0	286.1 x 94.0	267.3 x 94.0
ECZ-200	287.7 x 94.0	295.2 x 94.0	382.2 x 94.0	340.1 x 94.0	283.7 x 94.0	338.1 x 94.0	390.5 x 94.0	345.6 x 94.0	346.6 x 94.0	327.8 x 94.0
ECZ-200-FF	328.1 x 94.0	335.6 x 94.0	422.6 x 94.0	380.5 x 94.0	324.1 x 94.0	378.5 x 94.0	430.9 x 94.0	386.0 x 94.0	387.0 x 94.0	368.2 x 94.0
AHU/MAU-225	198.8 x 94.0	206.3 x 94.0	293.3 x 94.0	251.2 x 94.0	194.8 x 94.0	249.2 x 94.0	301.6 x 94.0	256.7 x 94.0	257.7 x 94.0	238.9 x 94.0
AHU/MAU-225-FF	239.2 x 94.0	246.7 x 94.0	333.7 x 94.0	291.6 x 94.0	235.2 x 94.0	289.6 x 94.0	342.0 x 94.0	297.1 x 94.0	298.1 x 94.0	279.3 x 94.0
ECZ-225	311.7 x 94.0	319.2 x 94.0	406.2 x 94.0	364.1 x 94.0	307.7 x 94.0	362.1 x 94.0	414.5 x 94.0	369.6 x 94.0	370.6 x 94.0	351.8 x 94.0
ECZ-225-FF	352.1 x 94.0	359.6 x 94.0	446.6 x 94.0	404.5 x 94.0	348.1 x 94.0	402.5 x 94.0	454.9 x 94.0	410.0 x 94.0	411.0 x 94.0	392.2 x 94.0
AHU/MAU-250	198.8 x 94.0	206.3 x 94.0	293.3 x 94.0	251.2 x 94.0	194.8 x 94.0	249.2 x 94.0	301.6 x 94.0	256.7 x 94.0	257.7 x 94.0	238.9 x 94.0
AHU/MAU-250-FF	239.2 x 94.0	246.7 x 94.0	333.7 x 94.0	291.6 x 94.0	235.2 x 94.0	289.6 x 94.0	342.0 x 94.0	297.1 x 94.0	298.1 x 94.0	279.3 x 94.0
ECZ-250	311.7 x 94.0	319.2 x 94.0	406.2 x 94.0	364.1 x 94.0	307.7 x 94.0	362.1 x 94.0	414.5 x 94.0	369.6 x 94.0	370.6 x 94.0	351.8 x 94.0
ECZ-250-FF	352.1 x 94.0	359.6 x 94.0	446.6 x 94.0	404.5 x 94.0	348.1 x 94.0	402.5 x 94.0	454.9 x 94.0	410.0 x 94.0	411.0 x 94.0	392.2 x 94=.0

UNIT SIZE	UNIT O.D. (LxW) DIMENSIONS IN INCHES										
	GBC	GBHP	H	HC	HCEH	HCH	HHP	HP	HPEH	HPGB	HPH
AHU/MAU-020	240.3 x 44.0	248.8 x 44.0	150.8 x 44.0	176.3 x 44.0	228.7 x 44.0	212.7 x 44.0	213.7 x 44.0	177.3 x 44.0	229.7 x 44.0	248.8 x 44.0	213.7 x 44.0
AHU/MAU-020-FF	280.7 x 44.0	289.2 x 44.0	191.2 x 44.0	216.7 x 44.0	269.1 x 44.0	253.1 x 44.0	254.1 x 44.0	217.7 x 44.0	270.1 x 44.0	289.2 x 44.0	254.1 x 44.0
ECZ-020	324.3 x 44.0	332.8 x 44.0	234.8 x 44.0	260.3 x 44.0	312.7 x 44.0	296.7 x 44.0	297.7 x 44.0	261.3 x 44.0	313.7 x 44.0	332.8 x 44.0	297.7 x 44.0
ECZ-020-FF	364.5 x 44.0	373.2 x 44.0	275.2 x 44.0	300.7 x 44.0	353.1 x 44.0	337.1 x 44.0	338.1 x 44.0	301.7 x 44.0	354.1 x 44.0	373.2 x 44.0	338.1 x 44.0
AHU/MAU-030	244.7 x 59.0	253.2 x 59.0	150.8 x 59.0	176.3 x 59.0	228.7 x 59.0	212.7 x 59.0	213.7 x 59.0	177.3 x 59.0	229.7 x 59.0	253.2 x 59.0	213.7 x 59.0
AHU/MAU-030-FF	285.1 x 59.0	293.6 x 59.0	191.2 x 59.0	216.7 x 59.0	269.1 x 59.0	253.1 x 59.0	254.1 x 59.0	217.7 x 59.0	270.1 x 59.0	293.6 x 59.0	254.1 x 59.0
ECZ-030	328.7 x 59.0	337.2 x 59.0	234.8 x 59.0	260.3 x 59.0	312.7 x 59.0	296.7 x 59.0	297.7 x 59.0	261.3 x 59.0	313.7 x 59.0	337.2 x 59.0	297.7 x 59.0
ECZ-030-FF	369.1 x 59.0	377.6 x 59.0	275.2 x 59.0	300.7 x 59.0	353.1 x 59.0	337.1 x 59.0	338.1 x 59.0	301.7 x 59.0	354.1 x 59.0	377.6 x 59.0	338.1 x 59.0
AHU/MAU-050	266.7 x 46.0	275.2 x 46.0	150.8 x 46.0	176.3 x 46.0	228.7 x 46.0	212.7 x 46.0	213.7 x 46.0	177.3 x 46.0	229.7 x 46.0	275.2 x 46.0	213.7 x 46.0
AHU/MAU-050-FF	307.1 x 46.0	315.6 x 46.0	191.2 x 46.0	216.7 x 46.0	269.1 x 46.0	253.1 x 46.0	254.1 x 46.0	217.7 x 46.0	270.1 x 46.0	315.6 x 46.0	254.1 x 46.0
ECZ-050	350.7 x 46.0	359.2 x 46.0	234.8 x 46.0	260.3 x 46.0	312.7 x 46.0	296.7 x 46.0	297.7 x 46.0	261.3 x 46.0	313.7 x 46.0	359.2 x 46.0	297.7 x 46.0
ECZ-050-FF	391.1 x 46.0	399.6 x 46.0	275.2 x 46.0	300.7 x 46.0	353.1 x 46.0	337.1 x 46.0	338.1 x 46.0	301.7 x 46.0	354.1 x 46.0	399.6 x 46.0	338.1 x 46.0
AHU/MAU-075	257.5 x 58.0	266.0 x 58.0	150.8 x 58.0	176.3 x 58.0	228.7 x 58.0	212.7 x 58.0	213.7 x 58.0	177.3 x 58.0	229.7 x 58.0	266.0 x 58.0	213.7 x 58.0
AHU/MAU-075-FF	297.9 x 58.0	306.4 x 58.0	191.2 x 58.0	216.7 x 58.0	269.1 x 58.0	253.1 x 58.0	254.1 x 58.0	217.7 x 58.0	270.1 x 58.0	306.4 x 58.0	254.1 x 58.0
ECZ-075	341.5 x 58.0	350.0 x 58.0	234.8 x 58.0	260.3 x 58.0	312.7 x 58.0	296.7 x 58.0	297.7 x 58.0	261.3 x 58.0	313.7 x 58.0	350.0 x 58.0	297.7 x 58.0
ECZ-075-FF	381.9 x 58.0	390.4 x 58.0	275.2 x 58.0	300.7 x 58.0	353.1 x 58.0	337.1 x 58.0	338.1 x 58.0	301.7 x 58.0	354.1 x 58.0	390.4 x 58.0	338.1 x 58.0
AHU/MAU-100	265.7 x 58.0	274.2 x 58.0	150.8 x 58.0	176.3 x 58.0	228.7 x 58.0	212.7 x 58.0	213.7 x 58.0	177.3 x 58.0	229.7 x 58.0	274.2 x 58.0	213.7 x 58.0
AHU/MAU-100-FF	306.1 x 58.0	314.6 x 58.0	191.2 x 58.0	216.7 x 58.0	269.1 x 58.0	253.1 x 58.0	254.1 x 58.0	217.7 x 58.0	270.1 x 58.0	314.6 x 58.0	254.1 x 58.0
ECZ-100	349.7 x 58.0	358.2 x 58.0	234.8 x 58.0	260.3 x 58.0	312.7 x 58.0	296.7 x 58.0	297.7 x 58.0	261.3 x 58.0	313.7 x 58.0	358.2 x 58.0	297.7 x 58.0
ECZ-100-FF	390.1 x 58.0	398.6 x 58.0	275.2 x 58.0	300.7 x 58.0	353.1 x 58.0	337.1 x 58.0	338.1 x 58.0	301.7 x 58.0	354.1 x 54.0	398.6 x 58.0	338.1 x 58.0
AHU/MAU-125	255.9 x 70.0	264.4 x 70.0	150.8 x 70.0	176.3 x 70.0	228.7 x 70.0	212.7 x 70.0	213.7 x 70.0	177.3 x 70.0	229.7 x 70.0	264.4 x 70.0	213.7 x 70.0
AHU/MAU-125-FF	296.3 x 70.0	304.8 x 70.0	191.2 x 70.0	216.7 x 70.0	269.1 x 70.0	253.1 x 70.0	254.1 x 70.0	217.7 x 70.0	270.1 x 70.0	304.8 x 70.0	254.1 x 70.0
ECZ-125	339.9 x 70.0	348.4 x 70.0	234.8 x 70.0	260.3 x 70.0	312.7 x 70.0	296.7 x 70.0	297.7 x 70.0	261.3 x 70.0	313.7 x 70.0	348.4 x 70.0	297.1 x 70.0
ECZ-125-FF	380.3 x 70.0	388.8 x 70.0	275.2 x 70.0	300.7 x 70.0	353.1 x 70.0	337.1 x 70.0	338.1 x 70.0	301.7 x 70.0	354.1 x 70.0	388.8 x 70.0	338.1 x 70.0
AHU/MAU-150	265.7 x 82.0	274.2 x 82.0	150.8 x 82.0	176.3 x 82.0	228.7 x 82.0	212.7 x 82.0	213.7 x 82.0	177.3 x 82.0	229.7 x 82.0	274.2 x 82.0	213.7 x 82.0
AHU/MAU-150-FF	306.1 x 82.0	314.6 x 82.0	191.2 x 82.0	216.7 x 82.0	269.1 x 82.0	253.1 x 82.0	254.1 x 82.0	217.7 x 82.0	270.1 x 82.0	314.6 x 82.0	254.1 x 82.0
ECZ-150	349.7 x 82.0	358.2 x 82.0	234.8 x 82.0	260.3 x 82.0	312.7 x 82.0	296.7 x 82.0	297.7 x 82.0	261.3 x 82.0	313.7 x 82.0	358.2 x 82.0	297.7 x 82.0
ECZ-150-FF	390.1 x 82.0	398.6 x 82.0	275.2 x 82.0	300.7 x 82.0	353.1 x 82.0	337.1 x 82.0	338.1 x 82.0	301.7 x 82.0	354.1 x 82.0	398.6 x 82.0	338.1 x 82.0
AHU/MAU-175	271.7 x 82.0	280.2 x 82.0	156.8 x 82.0	182.3 x 82.0	234.7 x 82.0	218.7 x 82.0	219.7 x 82.0	183.3 x 82.0	235.7 x 82.0	280.0 x 82.0	219.7 x 82.0
AHU/MAU-175-FF	312.1 x 82.0	320.6 x 82.0	197.2 x 82.0	222.7 x 82.0	275.1 x 82.0	259.1 x 82.0	260.1 x 82.0	223.7 x 82.0	276.1 x 82.0	320.6 x 82.0	260.1 x 82.0
ECZ-175	360.6 x 82.0	369.1 x 82.0	245.7 x 82.0	271.2 x 82.0	323.6 x 82.0	307.6 x 82.0	308.6 x 82.0	272.2 x 82.0	324.6 x 82.0	369.1 x 82.0	308.6 x 82.0
ECZ-175-FF	401.0 x 82.0	409.5 x 82.0	286.1 x 82.0	311.6 x 82.0	364.0 x 82.0	348.0 x 82.0	349.0 x 82.0	312.6 x 82.0	365.0 x 82.0	409.5 x 82.0	349.0 x 82.0
AHU/MAU-200	281.3 x 94.0	289.8 x 94.0	168.8 x 94.0	194.3 x 94.0	246.7 x 94.0	230.7 x 94.0	231.7 x 94.0	195.3 x 94.0	247.7 x 94.0	289.8 x 94.0	231.7 x 94.0
AHU/MAU-200-FF	321.7 x 94.0	330.2 x 94.0	209.2 x 94.0	234.7 x 94.0	287.1 x 94.0	271.1 x 94.0	272.1 x 94.0	235.7 x 94.0	288.1 x 94.0	330.2 x 94.0	272.1 x 94.0
ECZ-200	382.2 x 94.0	390.7 x 94.0	269.7 x 94.0	295.2 x 94.0	347.6 x 94.0	331.6 x 94.0	332.6 x 94.0	296.2 x 94.0	348.6 x 94.0	390.7 x 94.0	332.6 x 94.0
ECZ-200-FF	422.6 x 94.0	431.1 x 94.0	310.1 x 94.0	335.6 x 94.0	388.0 x 94.0	372.0 x 94.0	373.0 x 94.0	336.6 x 94.0	389.0 x 94.0	431.1 x 94.0	373.0 x 94.0
AHU/MAU-225	293.3 x 94.0	301.8 x 94.0	180.8 x 94.0	206.3 x 94.0	258.7 x 94.0	242.7 x 94.0	243.7 x 94.0	207.3 x 94.0	259.7 x 94.0	301.8 x 94.0	243.7 x 94.0
AHU/MAU-225-FF	333.7 x 94.0	342.2 x 94.0	221.2 x 94.0	246.7 x 94.0	299.1 x 94.0	283.1 x 94.0	284.1 x 94.0	247.7 x 94.0	300.1 x 94.0	342.2 x 94.0	284.1 x 94.0
ECZ-225	406.2 x 46.0	414.7 x 94.0	293.7 x 94.0	319.2 x 94.0	371.6 x 94.0	355.6 x 94.0	356.6 x 94.0	320.2 x 94.0	372.6 x 94.0	414.7 x 94.0	356.6 x 94.0
ECZ-225-FF	446.6 x 46.0	455.1 x 94.0	334.1 x 94.0	359.6 x 94.0	412.0 x 94.0	396.0 x 94.0	397.0 x 94.0	360.6 x 94.0	413.0 x 94.0	455.1 x 94.0	397.0 x 94.0
AHU/MAU-250	293.3 x 94.0	301.8 x 94.0	180.8 x 94.0	206.3 x 94.0	258.7 x 94.0	242.7 x 94.0	243.7 x 94.0	207.3 x 94.0	259.7 x 94.0	301.8 x 94.0	243.7 x 94.0
AHU/MAU-250-FF	333.7 x 94.0	342.2 x 94.0	221.2 x 94.0	246.7 x 94.0	299.1 x 94.0	283.1 x 94.0	284.1 x 94.0	247.7 x 94.0	300.1 x 94.0	342.2 x 94.0	284.1 x 94.0
ECZ-250	406.2 x 94.0	414.7 x 94.0	293.7 x 94.0	319.2 x 94.0	371.6 x 94.0	355.6 x 94.0	356.6 x 94.0	320.2 x 94.0	372.6 x 94.0	414.7 x 94.0	356.6 x 94.0
ECZ-250-FF	446.6 x 94.0	455.1 x 94.0	334.1 x 94.0	359.6 x 94.0	412.0 x 94.0	396.0 x 94.0	397.0 x 94.0	360.6 x 94.0	413.0 x 94.0	455.1 x 94.0	397.0 x 94.0

CURB SUPPORT



PLAN VIEW

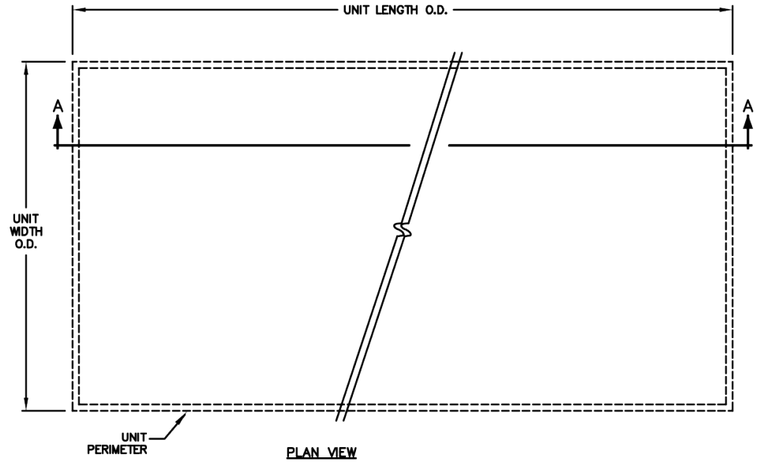


SECTION A–A

NOTE: Roof curb should be sized to allow unit to hang over curb

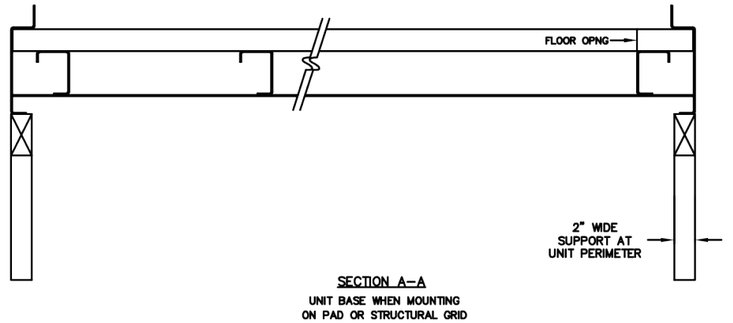
	CURB DIMENSIONS (INCHES)						
ELITE UNIT SIZE	CURB WIDTH	CURB LENGTH (CL)	CURB LENGTH WITH FINAL FILTER (FF)	CURB LENGTH WITH ECONOMIZER (ECZ)	CURB LENGTH WITH FINAL FILTER & ECONOMIZER	"A" DIMENSION	"B" DIMENSION
AHU/MAU-020	38.9"	UNIT LENGTH - 5.1"	CL + 40.4"	CL + 84.0"	CL + 40.4" + 84.0"	21.0"	34.9"
AHU/MAU-030	53.9"						49.9"
AHU/MAU-050	40.9"						36.9"
AHU/MAU-075	52.9"						48.9"
AHU/MAU-100	52.9"						48.9"
AHU/MAU-125	64.9"						60.9"
AHU/MAU-150	76.9						72.9"
AHU/MAU-175	76.9			CL + 88.9"	CL + 40.4" + 84.0"	24.0"	72.9"
AHU/MAU-200	88.9			CL + 100.9"	CL + 40.4" + 100.9"	24.0"	84.9"
AHU/MAU-225	88.9			CL + 112.9"	CL + 40.4" + 112.9"	30.0"	84.9"
AHU/MAU-250	88.9			CL + 112.9"	CL + 40.4" + 112.9"	30.0"	84.9"

CURB INSTALLATION



PLAN VIEW

TYPICAL UNIT WITH HOUSEKEEPING PAD OR STRUCTURAL GRID SUPPORT



SECTION A–A

UNIT BASE WHEN MOUNTING ON PAD OR STRUCTURAL GRID

NOTE: Roof curb should be sized to allow unit to hang over curb

	CURB DIMENSIONS (INCHES)						
ELITE UNIT SIZE	CURB WIDTH	CURB LENGTH (CL)	CURB LENGTH WITH FINAL FILTER (FF)	CURB LENGTH WITH ECONO-MIZER (ECZ)	CURB LENGTH WITH FINAL FILTER & ECONOMIZER	"A" DIMENSION	"B" DIMENSION
AHU/MAU-020	38.9"	UNIT LENGTH - 5.1"	CL + 40.4"	CL + 84.0"	CL + 40.4" + 84.0"	21.0"	34.9"
AHU/MAU-030	53.9"						49.9"
AHU/MAU-050	40.9"						36.9"
AHU/MAU-075	52.9"						48.9"
AHU/MAU-100	52.9"						48.9"
AHU/MAU-125	64.9"						60.9"
AHU/MAU-150	76.9						72.9"
AHU/MAU-175	76.9			CL + 88.9"	CL + 40.4" + 84.0"	24.0"	72.9"
AHU/MAU-200	88.9			CL + 100.9"	CL + 40.4" + 100.9"	24.0"	84.9"
AHU/MAU-225	88.9			CL + 112.9"	CL + 40.4" + 112.9"	30.0"	84.9"
AHU/MAU-250	88.9			CL + 112.9"	CL + 40.4" + 112.9"	30.0"	84.9"

WALL MOUNTED EC FANS

All necessary system fans and fan motors are installed at the factory. However, before attempting to operate them, a pre-startup inspection is recommended.

1) Make sure all power to the fan motors is off.

2) When checking the fan, be sure to:

A) Check fan bolts and mountings for tightness. Tighten any loose screws and bolts.

B) Rotate the impeller by hand; it should turn freely. If not, check for obstructions and contact FläktGroup SEMCO.

C) Ensure that the fan wheel, drives and fan interiors are clean and free of debris.

3) Check supply fan motor mountings for tightness to ensure that they have not loosened during transit or on-site installation. If necessary, tighten loose mountings. Turn motor shaft by hand to verify that it turns freely.

Wall mounted EC fan

OPERATION

1) After completing inspection checks on fans, turn power on then off quickly. Power should be on just long enough to start fan rotation.

2) If fans start rotating in the wrong direction (see arrow on the blower) turn off power immediately. To correct rotation, lock out power to the unit feeder, and switch any two line power wires.

3) Using an amp probe or amp meter, check the actual operating current of the motor to make sure it is not being overloaded or underpowered. The operating current must not exceed the nameplate current.

4) Allow the assembly to run for about an hour. During this time, listen for any unusual sounds. To correct noise problems, see **TROUBLESHOOTING** on **PAGE 22.**

DAMPERS

Although the dampers have been installed and checked at the factory, a pre-startup inspection is recommended to be sure that nothing has become detached or damaged during shipment or on-site installation.

INSPECTION

1) Check blade rotation clearance. Verify that blades open and close properly and rotate sufficiently. If they do not, check for obstructions, broken or bent blades, or loose linkage. Correct or repair as necessary (See **FIGURE 11**).

FIGURE 11. Be sure that damper blades open and close properly and have sufficient rotation clearance.

2) Be sure that actuator arms and bars connecting damper motors to control rods or shafts are tight. (See **FIGURE 12**).

FIGURE 12. Damper actuator

3) The dampers are controlled by electric motors. Make sure that wiring is complete. Check the wiring diagram on the motor.

4) Turn on power and observe whether or not the controls trigger dampers correctly. Be sure that limit switches close when blades are open and open when blades are closed.

COILS

Heating and/or cooling coils can be ordered with the air handling unit. All necessary heating and/or cooling coils have been installed at the factory. Information for our standard heating and cooling coil is below. For any custom coil additions, please refer to the submittal document and the manufacturers coil information for maintenance and warranty information. Before operating coils, a brief pre-startup inspection is recommended.

INSPECTION

Inspect all pipe connections to verify they are tight and that no damage has occurred during transit or on-site installation.

1) Steam coils – Be sure that the unit is level so the coils inside the casing slope toward the header.

2) Hot water coils – check the freeze protection thermostat for proper operation so that it will function to prevent freeze-ups.

OPERATION

- Steam coils – non-freeze steam coils are designed to operate steam pressures up to, and including, 150 psig and temperatures to 350°F.
- During initial operation, make sure that condensate flows back to the headers. Check for leaks.
- Hot water coils are designed to operate pressures to 300 psig, and temperatures to 366°F. Check for leaks during initial operation.
- Cooling coils are designed to withstand pressures to 300 psig. During initial operation, check for leaks.
- Condenser and evaporator coils are certified to withstand a working pressure of up to 750 psig. Check for leaks during initial operation.

SUPPLEMENTAL HEATERS

For units equipped with supplemental heaters, a minimum clearance of 36 inches (914 mm) must be maintained from the side of the unit featuring the control panel to combustible surfaces, per the National Electrical Code (NEC).

There is a specified minimum clearance of 6 inches (152 mm) on the back facing side of the unit. The minimum clearance should be followed, unless the amount specified by the local building code is greater.

DIRECT GAS BURNERS

All direct-fired gas burners are factory installed and run tested. The air heat burners are composed of aluminum, corrosion resistant material. The burners allow the unit to treat outdoor, incoming air with uniform, odorless and smokeless flames. For start-up and adjustment instructions please refer to the manufacturer's literature. Contact FläktGroup SEMCO if additional copies are needed.

DUCT HEATER

Duct heaters have been factory installed and run tested. As gas pressures vary according to job-site complete Manufacturer's start-up and adjustment instructions must be followed. Please refer to the manufacturer's literature included with unit for details or contact FläktGroup SEMCO for additional copies.

ELECTRIC HEAT

Heater will be the open coil electric resistance type. Heater will include, door interlocking non-fused disconnect switch, magnetic de-energizing contractors, control circuit transformer, pressure type air flow interlock switch and manual and auto reset thermal cutout over current protection. The electric heater will require a separate power feeder connection in addition to the power connection to the main unit electrical panel.

WRAP-AROUND HEAT PIPE

For additional dehumidification a wrap-around heat pipe may be added. Heat pipes are factory installed in two sections, pre-cool and reheat. The pre-cool pipe will be installed in the incoming air stream and the reheat pipe will be installed down stream.

Heat pipe manufacturer, type, and degree of installation can vary from job to job depending upon job specifications. Consult the submittal for manufacturer information. Manufacturer's literature should be referred to for details related to installation, start-up, and troubleshooting.

ULTRAVIOLET (UV) LIGHTS

If an ultraviolet germicidal lamp system (UV-C) is installed in your unit, please observe the following cautions and consult the manufacturer's instruction and maintenance manual before opening the device.

- All power **MUST BE** turned off and the device must be disconnected from any electrical supply mains, before any installation, maintenance, or cleaning can take place.
- Always turn the system off, especially cutting off power to the power supply, before replacing lamps. Failure to do so may produce a protection fault within the power supply. Before re-powering a fixture, follow the manufacturer's instructions to make sure **ALL** connections (including lamp pins) are tight and complete to avoid sparks, shorts, or overheating. A protection fault requires a reset procedure. To reset the "programmed start" function of a power supply, disconnect **ALL** power and power wires and wait one minute. Start by reconnecting A/C power first and then turn on all switches. All lamps should light.
- Using the UV-C lamp system for any purpose other than the one intended or damage to housing, may result in the escape of dangerous UV-C radiation. UV-C radiation may, even in small does cause harm to the skin and eyes.
- UV-C lamp systems that are visibly damaged, **MUST NOT** be operated.
- Doors and access panels bearing a UV radiation hazard label, may have UV-C spectral irradiance greater than 1.7 $\mu W/cm^2$.
- Doors and access panels with high levels of UV-C spectral irradiance come equipped with interlocking safety switches. The interlocking switches immediately turn off power to the UV-C lamps for your safety. **DO NOT OVERRIDE**.
- When conducting user maintenance, it is recommended to disconnect the power before opening doors and access panels bearing UV radiation hazard labels.
- UV-C barriers bearing UV radiation hazard labels should not be removed.
- **DO NOT** operate UV-C lamps outside of the ElitePro AHU.
- Refer to the submittal for UV-C model/and or part numbers as well as replacement parts.

Ultraviolet light manufacturer, type, and degree of installation can vary from job to job depending upon job specifications. Consult the UV light manufacturer's literature for details related to installation, start-up, and troubleshooting.

AIR FILTERS

Air filters for the AHU are boxed, tagged and shipped loose inside the system for field installation. This minimizes any risk for filter damage during transit. The air filters must place installed prior to startup or the warranty could be voided.

Throughout the operating life of the system, it will be necessary to replace filters as they accumulate dirt from the air stream.

The system is equipped with two pressure differential gauges. As air filters accumulate dirt, the pressure differential will rise.

The **PRE-FILTER CAPACITY AND RESISTANCE TABLE** (**FIGURE 14** on **PAGE 21**) and **FINAL FILTER CAPACITY AND RESISTANCE TABLE** (**FIGURE 15** on **PAGE 21**) provide data for most pre-filters and final filters used in FläktGroup SEMCO units. For each filter size, the pressure differential (resistance at capacity) using new, clean air filters in air streams is shown. The capacities columns define airflow in cubic feet per minute. For specific airflows, interpolating and estimating will provide adequate data.

WHEN TO REPLACE FILTERS

It is recommended that filters be changed when the pressure differential gauge reaches the final resistance rating illustrated in **FIGURES 14** and **15**. Experience with the new system may suggest changing filters at a slightly higher or lower reading. Depending upon the total volume of air required in the building, altering the replacement differential may be necessary. But waiting to change filters when the pressure differential reaches or approaches a higher-than-recommended figure would mean using packed air filters that seriously reduce airflow.

If the system is ordered with final filters, then these will be located behind the pre-filters.

For systems equipped with pre-filter and final filter banks, it is recommended that pre-filter banks be changed twice as often as final filters.

For air filter replacement, a rigid, cell-type filter that matches the specifications shown in the **PRE-FILTER AND FINAL FILTER CAPACITY AND RESISTANCE** Tables is recommended.

UNIT/TAG	PRE-FILTER STANDARD 2" MERV 8 OR OPTIONAL 4"		PRE-FILTER 12" MERV 13		OPTIONAL FINAL FILTER 12" MERV 13, 14, OR 15	
	QUANTITY	SIZE	QUANTITY	SIZE	QUANTITY	SIZE
ELT-AHU-020	1	24x24x2 **OR** 24x24x4	1	24x24x12	1	24x24x12
ELT-AHU-030	2	24x24x2 **OR** 24x24x4	2	24x24x12	2	24x24x12
ELT-AHU-050	4	20x24x2 **OR** 20x24x4	4	20x24x12	4	20x24x12
ELT-AHU-075	4	24x24x2 **OR** 24x24x4	4	24x24x12	4	24x24x12
ELT-AHU-100	6	24x24x2 **OR** 24x24x4	6	24x24x12	6	24x24x12
ELT-AHU-125	9	20x24x2 **OR** 20x24x4	9	20x24x12	9	20x24x12
ELT-AHU-150	9	24x24x2 **OR** 24x24x4	9	24x24x12	9	24x24x12
ELT-AHU-175	12	20x24x2 **OR** 20x24x4	12	20x24x12	12	20x24x12
ELT-AHU-200	12	20x20x2 **OR** 20x20x4	12	20x20x12	9	20x20x12
	4	20x24x2 **OR** 20x24x4	4	20x24x12	7	20x24x12
ELT-AHU-225	9	20x20x2 **OR** 20x20x4	9	20x20x12	9	20x20x12
	6	20x24x2 **OR** 20x24x4	6	20x24x12	6	20x24x12
	1	24x24x2 **OR** 24x24x4	1	24x24x12	1	24x24x12
ELT-AHU-250	12	20x24x2 **OR** 20x24x4	12	20x24x12	12	20x24x12
	4	24x24x2 **OR** 24x24x4	4	24x24x12	4	24x24x12

FIGURE 13. Quantity and size of filters

PRE-FILTER CAPACITY AND RESISTANCE DATA									
FILTER DEPTH	NOMINAL SIZE (INCHES)	ACTUAL SIZE (INCHES)			CAPACITIES (CFM)		RESISTANCE @ CAPACITY (INCHES W.G.).		
		WIDTH	HEIGHT	DEPTH	MEDIUM	HIGH	MEDIUM	HIGH	FINAL
2" MERV 8	20x20x2	19.38	19.38	1.75	850	1,400	0.13	0.24	1.00
	20x24x2	19.38	23.38	1.75	1,000	1,650	0.13	0.24	1.00
	24x24x2	23.38	23.38	1.75	1,200	2,000	0.13	0.24	1.00
4" MERV 8	20x20x4	19.38	19.38	3.75	850	1,400	0.11	0.23	1.00
	20x24x4	19.38	23.38	3.75	1,000	1,650	0.11	0.23	1.00
	24x24x4	23.38	23.38	3.75	1,200	2,000	0.11	0.23	1.00
12" MERV 13	20x20x12	19.38	19.38	11.50	1,750	2,100	0.41	0.23	1.00
	20x24x12	19.38	23.38	11.50	2,100	2,500	0.41	0.23	1.00
	24x24x12	23.38	23.38	11.50	2,500	3,000	0.41	0.23	1.00

FIGURE 14. Pre-filter capacity and resistance data

12" FINAL FILTER CAPACITY & RESISTANCE DATA*						
FILTER MEDIA EFFICIENCY	NOMINAL SIZE (INCHES)	ACTUAL SIZE(1) (INCHES)		AIRFLOW CAPACITY (CFM)	RESISTANCE (IN. W.G.).	
		WIDTH	HEIGHT		INITIAL	FINAL (2)
MERV 13	20x20	19.38	19.38	2,100	0.41	1.50
	20x24	19.38	19.38	2,500	0.41	1.50
	24x24	23.38	23.38	3,000	0.41	1.50
MERV 14	20x20	19.38	19.38	2,100	0.45	1.50
	20x24	19.38	23.38	2,500	0.45	1.50
	24x24	23.38	23.38	3,000	0.45	1.50
MERV 15	20x20	19.38	19.38	2,100	0.58	1.50
	20x24	19.38	23.38	2,500	0.58	1.50
	24x24	23.38	23.38	3,000	0.58	1.50

FIGURE 15. 12" Final filter capacity & resistance data*

***NOTES:**

1) Maximum recommended final resistance. System design may require a lower change-out resistance.
2) Maximum operating temperature limit for the filters is 180°F in continuous operation, and 200°F in intermittent operation. Outdoor Air

TROUBLESHOOTING: FANS AND MOTORS

PROBLEM	POSSIBLE CAUSES	SOLUTION
Fan stops running	No line voltage, line failure, under or over-voltage	Check line voltage
	Earth Fault	Check motor connection and line voltage
	Short circuit winding	Replace fan
	Thermal motor protection has triggered (motor is overheated)	• Check for free air passages; remove foreign bodies if necessary. See the **IMPELLER BLOCKED OR DIRTY** section below. • Check supply air temperature • Check voltage
	Impeller blocked or dirty	• Switch off power to the motor and secure against switching back on. • Check safe isolation from supply. • Remove safety grille • Remove foreign bodies or soiling • Remount the safety grill
Fan will not start	Temperatures are too low for bearing grease	Insert bearing with cold greasing
	Air stream wrong direction (motor turns in wrong direction at high speed	Check air stream (see behavior in rotation by air current in reverse direction)
Fan turns too slowly	Impeller/blade scrapes/brushes	When indicated, clear foreign bodies/dirt from the fan.
	Active temperature management effective — motor or electronics are overheated	• Check for free air passages; remove foreign bodies if necessary. See the **IMPELLER BLOCKED OR DIRT** section above. • Check temperature of supply air • Check installation space (air speed over heat sink)
Air flow too low	Fan turns too slowly	See **FAN TURNS TOO SLOWLY** section above
	Airways blocked	Check for free air passages (supply/exhaust air vents, filters) — see **IMPELLER BLOCKED OR DIRTY** section above
	Pressure loss different than planned	Check fan selection
Vibrations	Imbalance	Check blades for damage, soiling or ice — see the **IMPELLER BLOCKED OR DIRTY** section above
	No or wrong vibration dampers (only radial)	Install correct vibration dampers
Unusual noises	The bearing is damaged or worn	Change the bearings. In motor size 055 ("Z"/"B" at cross flow) and 072 (O) change the fan.
	Impeller/blade scrapes/brushes	When indicated clear foreign bodies and/or dirt from the fan. See the **IMPELLER BLOCKED OR DIRTY** section above.
	Operation beyond stall point (for axial fans)	Check for free air passages (supply/exhaust air vents, filters)
	Wrong overlap on nozzle (for centrifugal fans)	Check installation

MAINTENANCE

DAILY MAINTENANCE

It is recommended that the unit be visually inspected daily. Taking a few moments each day to make sure that the unit is functioning will save many future hours, dollars and headaches. Each day, ensure that:

- The rotor is rotating under power
- The motor is running
- All devices are on and operating (the variable frequency controller and temperature controller).

All other maintenance activity should be conducted monthly, quarterly, semiannually or annually as described in this manual. All essential maintenance services are summarized in the Maintenance Schedule below.

MAINTENANCE: SYSTEM

The system enclosure requires very little maintenance since it is constructed of strong, weather-resistant materials. Equipment contained within the enclosure requires regular maintenance to keep the system operating smoothly. You will find maintenance instructions for every component in this section.

Inspect the enclosure periodically:

- Check for air leaks in the casing
- Ensure modules remain level
- Make sure that doors do not bind
- Check around all penetrations and roof joints to be sure that seals remain tight and do not leak.

MAINTENANCE: FAN MOTORS

- Motors will operate effectively for years if operated by proper current and kept clean and dry.
- Inspect motors every six months for mechanical oscillations. Make sure oscillations do not exceed the limits stated in ISO 14694. If limits are exceeded take measures to correct them by re-balancing the fan in question.
- Inspect connections every six months. Watch for frayed or exposed wiring and loose connections. Repair or tighten as necessary.
- Check operating current every six months. Make sure that motors continue to operate at faceplate current or below.
- Watch for vibration free motion.
- Check motors and impellers periodically for dirt and deposits. If dirt is found, clean soiled areas. If dirt is left on the motor or impeller it may lead to reduced performance, imbalance, and permanent fan damage.
- Use moderate air pressure (25-30 psi) to blow away dirt from vent fins and other accessible areas.
- Check impellers for cracks and corrosion. If corrosion is found, replace the impeller immediately.
- Keep areas surrounding the motors clear so air can circulate freely through the motor to cool it.

MAINTENANCE: DAMPERS

- Every 3 months, inspect dampers, arms, bars, and control rods and shafts for dirt and other foreign matter that would impede normal movement and prevent blades and seals from seating properly. Clean as necessary.
- Inspect seals every three months to be sure that none have pulled loose or deteriorated. If replacement is required and the seal can be replaced, remove it and replace with a new seal of the same shape, design and material used originally. Do not use a different size or shape. In some instances, the seal may not be replaceable and it may be necessary to replace the entire blade.
- No lubrication required. Damper shafts utilize non-lubricating bearings.

MAINTENANCE: COILS

Heating and cooling coils function at peak efficiency when clean and free of foreign matter. Frequent visual inspections should be made, and any built up dirt and foreign matter should be removed. A fin comb may be required to remove matter entangled in fins or coils (See **FIGURE 13**), but flushing with water under normal local pressure will remove most particulates.

FIGURE 16. A fin comb may be used to remove matter entangled in fins, as well as to straighten fins. But normally flushing coils with water under normal pressure will remove most matter.

- An acid or alkaline coil cleaner is recommended every one or two years, depending on the degree of oxidation, to thoroughly clean and brighten coils and fins.
- Local water conditions may make it necessary to treat chilled water systems, hot water systems and steam systems to control corrosion, sludge and/or metal oxides. In some water supplies, scale removers and inhibitors may also be required.
- Cooling coils — if water in the system will be exposed to outdoor temperatures that are below freezing, either drain the system before temperatures dip below 32˚F, or add glycol to the system to prevent freezing.

MAINTENANCE SCHEDULE			MONTH				
COMPONENT	SERVICE	STARTUP	1	3	6	9	12
FAN MOTORS	Clean motors				x		x
	Inspect motor connections				x		x
	Check operating current				x		x
	Check motor bolt tightness				x		x
DAMPERS	Check rotor blade clearance	x					
	Inspect damper for dirt and foreign matter			x	x	x	x
	Inspect dampers seals for deterioration			x	x	x	x
FILTERS	Replace based on pressure differential			x	x	x	x

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FläktGroup® SEMCO®
Corporate Headquarters
1800 East Pointe Drive
Columbia, Missouri 65201 USA

573.443.1481

sales.semco@flaktgroup.com

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