



# UNIVERSAL MOUNT FAN COIL UNIT (4-Pipe)

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## Operation and Installation Manual

CFFWA4P 04, 08, 12, 16 & 20



### 4-Pipe Universal Mount Fan Coil Unit

Please read this manual before using the fan coil unit.  
Installation and service must be carried out by trained and qualified technicians only.



**Recognize this symbol as an indication of important safety or instruction related information throughout this publication.**

## GENERAL

Read the entire contents of this manual before beginning installation. Multiaqua assumes no responsibility for equipment installed contradictory to any code requirement or installation instructions.

Careful attention has been given to the preparation of this IOM (Installation and Operation Manual) and the content has been carefully compiled for your convenience. Dimensions were verified at the time of the writing of this IOM. The manufacturer reserves the right to make changes for the improvement of products without prior notice, therefore dimensions should always be field verified before the installation process begins.

The components of this unit have been inspected at the factory and readied for shipment. Upon receiving the shipment, a visual inspection of the packaging must be performed. If any damage to the packaging is discovered, an inspection of the components must be performed and noted on the delivery documents. If component damage is found, a damage claim must be filed by the receiving party against the delivery party immediately.

This product is designed and manufactured to permit installation in accordance with national codes. It is the installer's responsibility to install the product in accordance with national codes and/or prevailing local codes and regulations.

Care must be taken to ensure the structural integrity of the supporting members, clearances, and provisions for servicing, power supply, coil connections, and/or condensate removal. This unit is designed for a ceiling or wall installation only.

The manufacturer reserves the right of change for the improvement of products without prior notice. Please contact manufacturer or visit [www.Multiaqua.com](http://www.Multiaqua.com) for the latest product information.

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## Section 1) INSPECTION OF PACKAGING

1. It is advisable to place the unit close to the installation site without removing it from the package. Do not put heavy tools or weights on the package.
2. Check the package to ensure no damage has occurred during transportation.
3. Check packaging for accessories inside the packaging materials before discarding.
4. Do not lift unit from packaging by the cover assembly, condensate, or by the water connections.
5. Remove cover assembly and lift the unit by the four corners of the unit body.
6. Once the unit is removed from the packaging, check and record the unit model and serial number for future reference.

## Section 2) SAFETY PRECAUTIONS

The appliance should be installed in accordance with NEC wiring regulations as well as, all mechanical codes.

1. When working on air conditioning equipment, observe precautions in this manual, and on all labels attached to the unit.
2. Ensure that the electrical supply is the correct voltage required for your specific installation according to the label on the equipment.



**CAUTION: INSTALLING & SERVICING SHOULD BE CARRIED OUT BY TRAINED AND QUALIFIED SERVICE PERSONNEL ONLY.**



**CAUTION: BEFORE STARTING ANY WORK, PUT ON ALL PERSONAL PROTECTION EQUIPMENT INCLUDING, BUT NOT LIMITED TO, GLOVES AND SAFETY GLASSES REQUIRED FOR THE JOB.**



**CAUTION: BEFORE CARRYING OUT ANY WORK, TURN OFF THE MAIN POWER AT THE SERVICE DISCONNECT AND FOLLOW ALL LOCKOUT- TAGOUT PROCEDURES.**

## Section 3) OPERATIONAL LIMITS

- Power supply: Please refer to the label attached to the unit for correct power supply.
- Minimum entering water temperature: 35.6°F
- Maximum entering water temperature: 180 °F
- Maximum water system pressure shall not exceed: 150 psi

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## Section 4) SELECTION OF INSTALLATION LOCATION

- Do not install the unit in rooms where any hazards are present which include, but are not limited to, flammable gas, alkaline or acid substances, or where hazardous or corrosive atmosphere exists. Aluminum/copper coils and/or internal plastic components can be damaged beyond repair. Cabinets are internally insulated from the factory. However, when these units are installed in high ambient/high humidity environments, additional external cabinet insulation may be required.

### THESE UNITS ARE NOT RATED FOR EXPLOSION PROOF ENVIRONMENTS

- Do not install in workshops or kitchens where airborne oil vapors or other chemicals may be deposited on the coils, reducing the performance or damaging the internal plastic parts of the unit.
- Choose a position near the wall as close to the center of the room as possible. See Figure 1

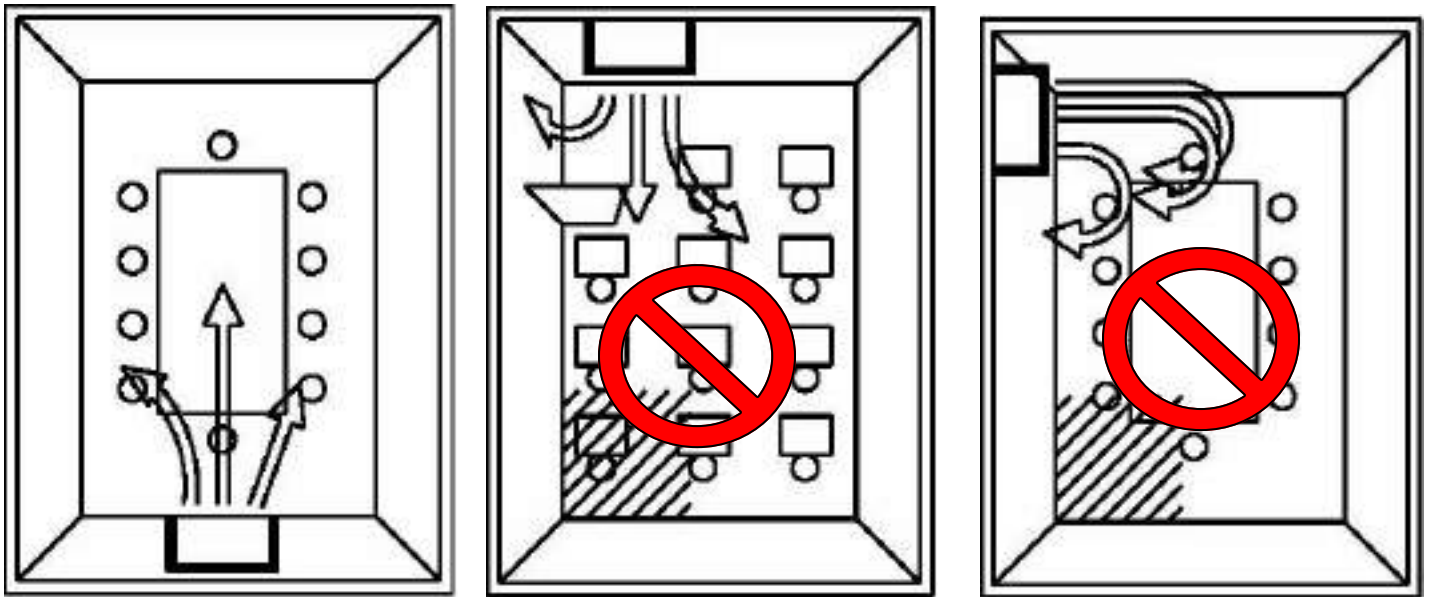


Figure 1

- The installation location on the ceiling or wall must have sufficient strength to carry the gross weight of the unit listed in the table to the right. Mounting hardware diameters listed are suggestions only Local code requirements must be consulted by the installing contractor.

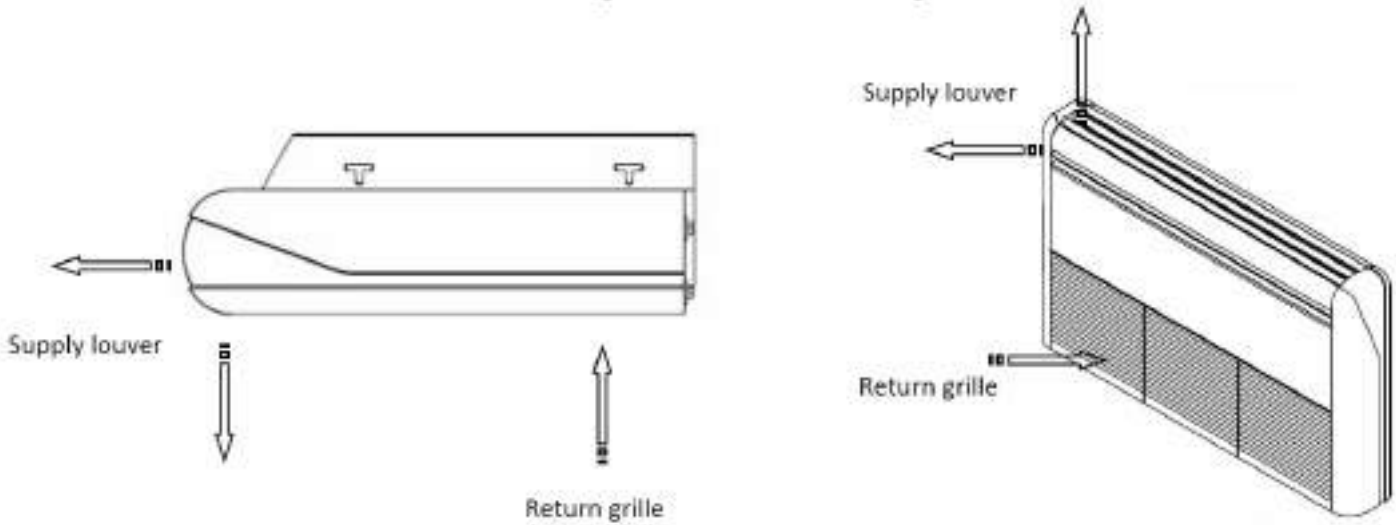
MODEL	Dry Weight	Mounting
CFFWA4P-04	81.6 lbs.	5/16
CFFWA4P-06	88.1 lbs.	5/16
CFFWA4P-08	94.8 lbs.	5/16
CFFWA4P-12	132.3 lbs.	3/8
CFFWA4P-16	156.5 lbs.	3/8
CFFWA4P-20	167.6 lbs.	3/8

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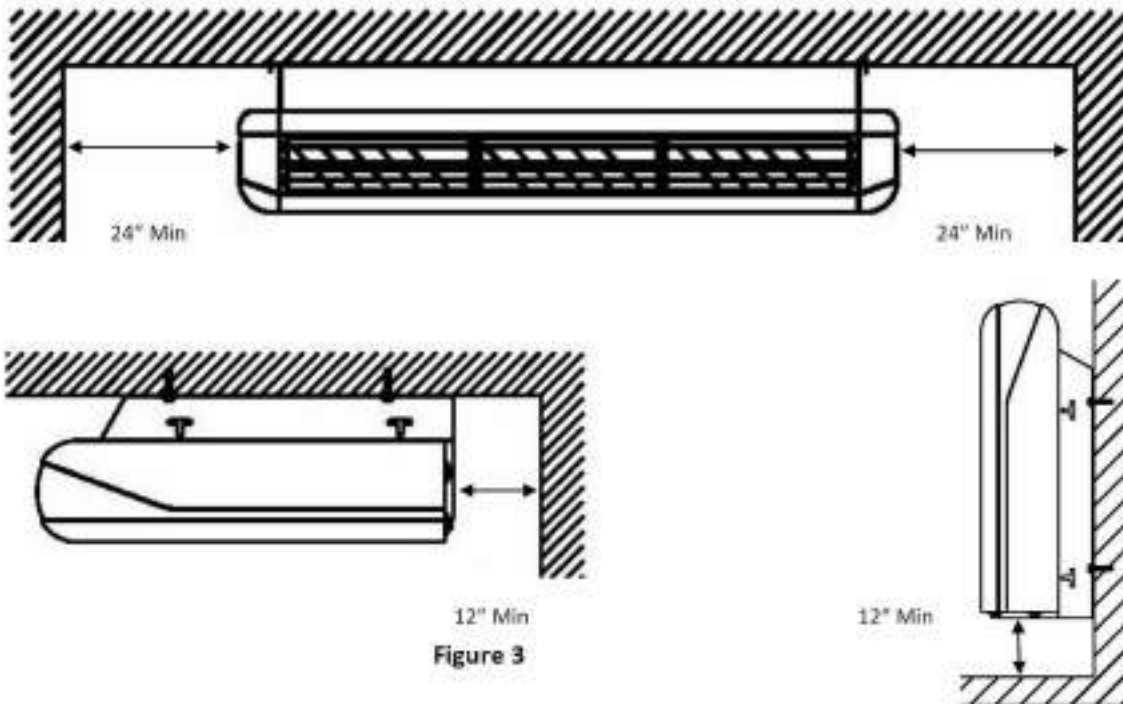
**Section 4) SELECTION OF INSTALLATION LOCATION (continued)**

5. Verify that the return grille (nothing within 36") and supply louvers are not obstructed and the conditioned air is able to circulate throughout the room. See Figure 2



**Figure 2**

6. Ensure there is sufficient space around the unit to service it. The dimensions shown in Figure 3 are minimum suggestions. Your application may require more space to access controls, control valves, pumps, or local code requirements.



**Figure 3**

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## Section 5a) HORIZONTAL / CEILING INSTALLATION OF UNIT

1. For ceiling installation mark position of suspension rods, water pipes, condensate drain, power supply cables, etc. Supporting rods can be fixed, depending on the type of ceiling, as shown in Figure 4.
2. The casing is fixed to the slab with four (4) threaded rods. The rods should have two (2) nuts and washers to lock the unit in position when using a wooden or steel "trapeze style hanger". See Figure 4. Installing contractor may choose to use a field supplied, vibration elimination solution on the hanging rods.

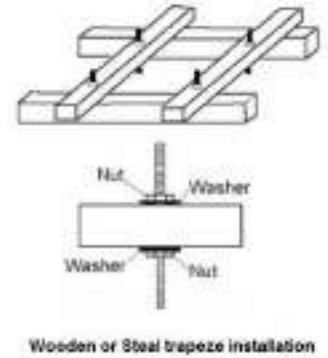


Figure 4



**When lifting the unit into position, the unit must be supported from end to end. Coil damage could result if this precaution is not taken that is not covered by factory warranty.**

3. Whenever the installation of the unit will be facilitated by using a lift, the following precautions must be observed:
  - A. Remove the plastic return grille assemblies to protect it from damage. This will be done by removing the filters and removing two (2) screws in each section. See Figure 5
  - B. Insert plywood sheet between the lift and the unit so that the unit will be protected while lifting the unit in place.
  - C. After the unit is secured to the lift, carefully lift the unit to the ceiling.
4. Now that the unit is at ceiling height, attach threaded rods to mounting brackets on the side of the unit. See Figure 6.

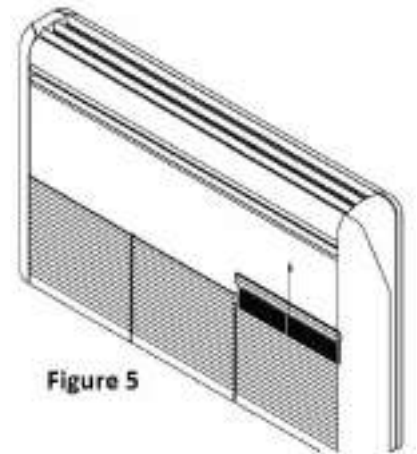


Figure 5

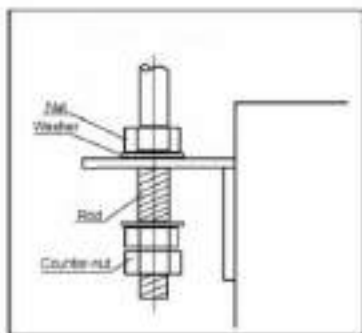
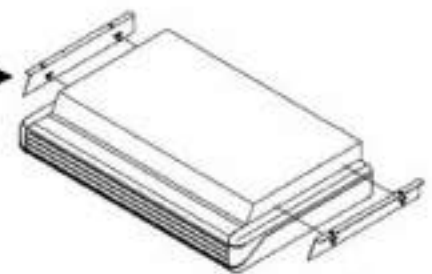


Figure 6



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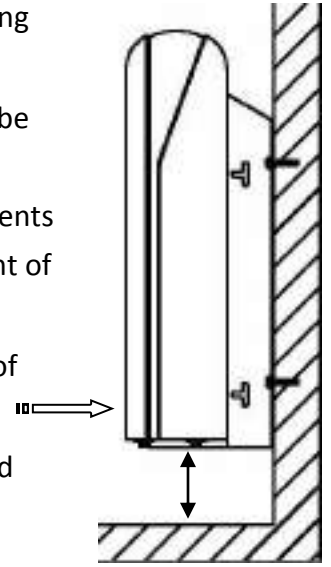
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## Section 5b) VERTICAL / WALL OR UPFLOW INSTALLATION OF UNIT

- 1b. Unit can only be mounted with a top discharge or up flow in the vertical mounting position.
- 2b. Wall construction as well as the fasteners used for wall/vertical mounting must be capable of supporting the operational weight of the unit. The contractor and or engineer on the job will be responsible for determining the need for reinforcements that may be or may not be needed in the wall to support the operational weight of the unit.
- 3b. When the unit is lifted into place the unit must be supported the entire length of the unit to avoid coil damage during this process.
- 4b. Remember to allow 36" minimum from the front of the unit for service and good return air flow.

The bottom of the unit will require 12" minimum of clearance to the floor for service.



### Installation for all units

5. Ensure the unit is level, otherwise condensate water cannot drain properly.
6. Connect all supply and return water connections to the unit. It is recommended to use a vibration eliminator, such as a flexible connector, to prevent the transmitting of vibration noise. Connections can be routed either through the back/bottom panel or through the top/back of the unit as illustrated in Figure 7 below. Locations of these openings are on the dimensional drawing.

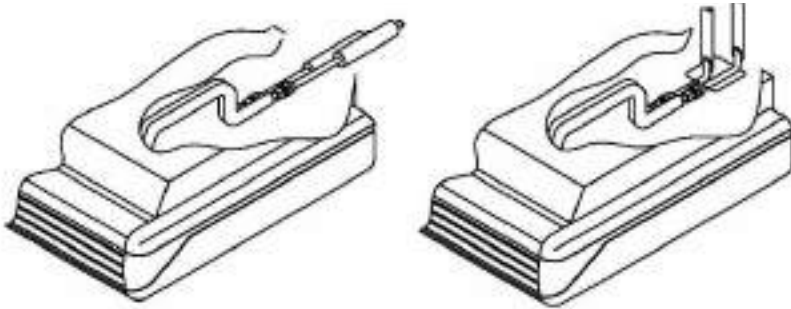


Figure 7 Ceiling/ Horizontal

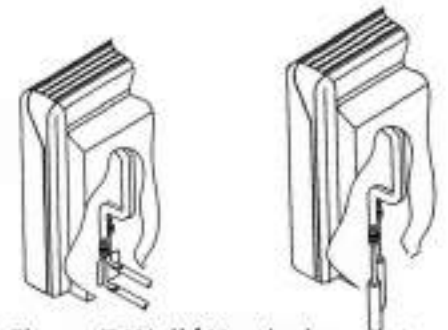


Figure 7 Wall/ Vertical mount

7. Connect the condensate drain to a gravity drain in compliance with all codes. After connection of the chilled water and hot water lines, as well as the condensate drain, verify that the unit remains level.



**All lines are to be insulated without air gaps in the insulation to prevent condensation forming resulting in an undesired leak.**

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## Section 5c) ELECTRICAL AND FRESH AIR INSTALLATION OF UNIT (Continued)

1. Make electrical supply connections in accordance with all code requirements. Low voltage (24vac) and Line voltage connections are located under the side cover on the left side of the unit when facing in the direction of the airflow. See figure 8

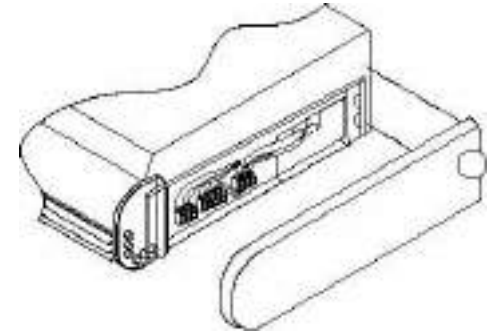
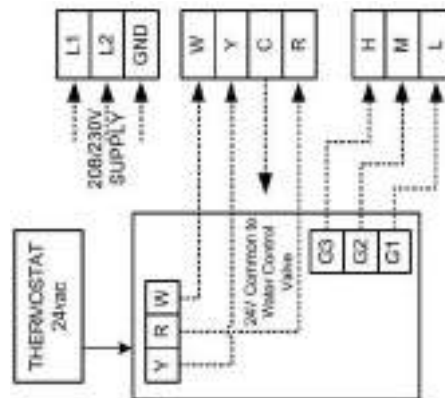


Figure 8

2. Terminal strip configuration is pictured here in Figure 9

Figure 9



3. Fresh air connections should be made at this time if applicable. There are no factory predetermined connection locations for fresh air on the unit cabinet. Connections can be made in the field by the contractor to the back or top of the unit into the fan compartment. Contractor should supply and field fabricate boots for these connections to meet job requirements as needed.



- This source of fresh air **MUST BE DELIVERED TO THE UNIT UNDER POSITIVE PRESSURE** as these units are not rated for static pressure.
- This source of fresh air must be turned off when the unit is not in operation to prevent the introduction of unconditioned air into the conditioned space.
- This source of fresh air must be filtered before delivery to the fan coil unit.

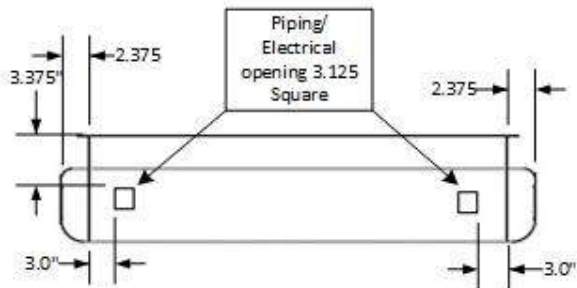
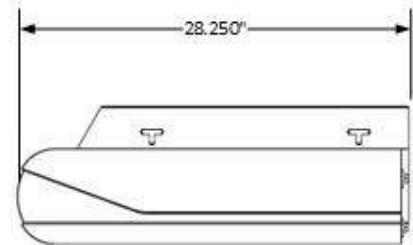
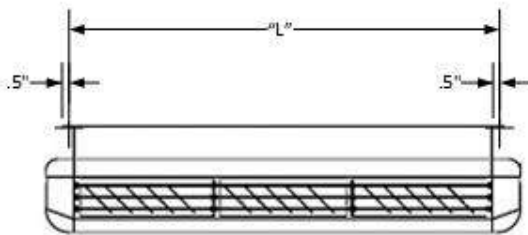
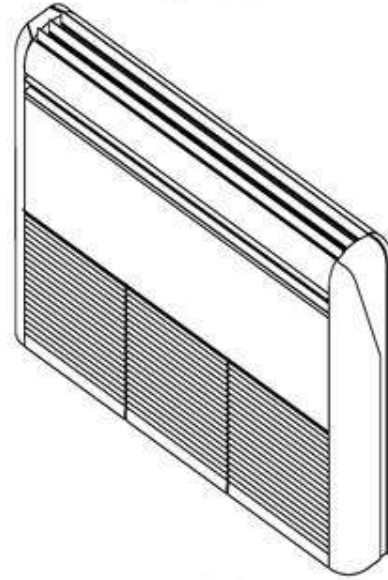
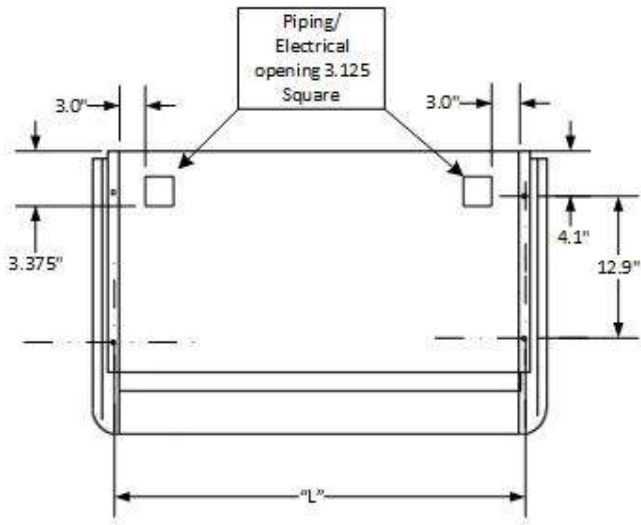
4. Reinstall filter grilles with the tow (2) screws in each section removed earlier. **DO NOT OVER TIGHTEN.**

5. Unit is now ready for contractor start-up procedures and recording of benchmark data according to all local and national requirements.

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# CFFWA4P Dimensional Drawing



Model	"L" Dimension
CFFWA4P-04	48.3
CFFWA4P-06	48.3
CFFWA4P-08	60.1
CFFWA4P-12	71.9
CFFWA4P-16	83.7
CFFWA4P-20	83.7

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## Fan Performance Characteristics

CFM	CFFWA4P-04	CFFWA4P-06	CFFWA4P-08	CFFWA4P-12	CFFWA4P-16	CFFWA4P-20
Low	275	475	650	925	875	1100
Medium	300	500	750	975	975	1300
High	435	638	879	1100	1157	1644
Wattage @ High Speed	70	133	146	292	580	640

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**PHYSICAL DATA**

Model Number	Height* (in)	Width* (in)	Depth* (in)	Weight	Cooling Coil Rows/ FPI	Water Inlet/ Outlet O.D. (in)	Heating Coil Rows/ FPI	Water Inlet/ Outlet O.D. (in)	Drain Con- nection I.D. (in)
CFFWA4P-04-1	11.3	53.3	28.3	81.6	2/14	.625	1/14	.625	1" tube
CFFWA4P-06-1	11.3	53.3	28.3	88.1	3/14	.625	1/14	.625	1" tube
CFFWA4P-08-1	11.3	64.9	28.3	94.8	3/14	.625	1/14	.625	1" tube
CFFWA4P-12-1	11.3	76.7	28.3	132.3	3/14	.750	1/14	.750	1" tube
CFFWA4P-16-1	11.3	88.5	28.3	156.5	3/14	.875	1/14	.875	1" tube
CFFWA4P-20-1	11.3	88.5	28.3	167.6	3/14	.875	1/14	.875	1" tube

\* All dimensions rounded up to nearest tenth of an inch. All dimensions are as the unit is horizontal/ceiling mounted.

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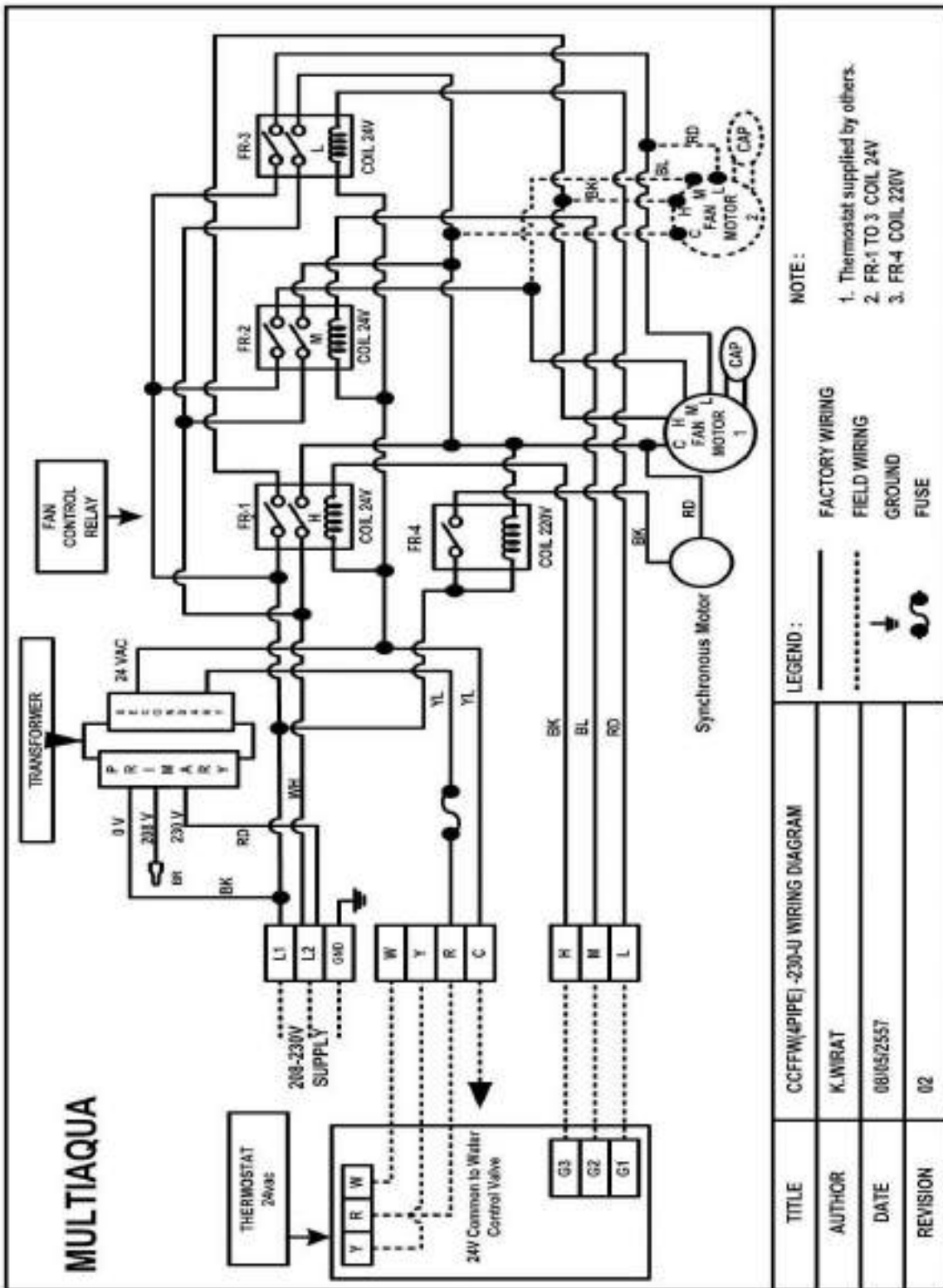
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ELECTRICAL DATA						
Model Number	Nominal CFM	Volt/ Phase/ Hertz	Motor Watts each	Full Load Amps	HACR Circuit Breaker or Glass Fuse per circuit	
					MCA	MOP
CFFWA4P-04-1	435	208/230 -1-50/60	(1) 23	.32	.4	1.0
CFFWA4P-06-1	638		(1) 60	.74	.93	1.0
CFFWA4P-08-1	879		(1) 87	.85	1.06	3
CFFWA4P-12-1	1100		(2) 177	2.3	2.59	3
CFFWA4P-16-1	1157		(2) 182	2.7	3.04	6
CFFWA4P-20-1	1644		(2) 182	2.7	3.04	6

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# CFFWA4P Wiring Diagram



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