



Installation and Maintenance Guide DCW () Series Direct Drive Chilled Water Air Handlers

Congratulations on selecting the AeroCool chilled water air handler from AeroSys, Inc. This unit is designed to provide you with years of service with minimal maintenance. Please read the entire Installation Guide before installing and operating your new air handler.

Unit Installation

The unit should be installed so there is a slight pitch toward the front of the cabinet for condensate drainage.

Duct connections

The cool air (supply) duct must be insulated to prevent condensation and minimize premature cooling capacity loss through the duct walls. A flexible duct collar is recommended to minimize system noise through vibration transmission via the duct work. At least 3 (three) feet of straight duct should be connected to the conditioned air discharge (blower outlet).

Piping Connections

Chilled water pipes are brought through the front left of the unit, as shown in photo. Care must be taken when soldering the connections to not damage the finish on the unit. Piping should be connected so water enters on the leaving air side of the coil (lower chilled water connection). All piping connections should be performed by qualified technicians and in accordance with all state and federal regulations.

Electrical Connections

Access to the electrical motor connections is through the top right side of the unit. An internal 4x4 junction box is mounted inside the top right side of the cabinet.

! WARNING !

UNIT CONTAINS HAZARDOUS ELECTRICAL VOLTAGE. DISCONNECT POWER SUPPLY BEFORE WORKING ON IT. THE LINE SIDE OF DISCONNECT REMAINS ENERGIZED WHEN DISCONNECT IS "OFF".

The unit must be grounded in accordance with the National Electric Code and any applicable local codes and/or ordinances. All electrical connections should be made by qualified technicians and in accordance with all state and federal regulations.

This unit uses a PSC, thermally protected motor with sleeve bearings. Connect the single phase power supply to the unit as follows for the selected motor speed. Cap the unused wire connections.

Motor Connections

All units

White: Common	Brown: Capacitor
115 volt units (4 speed motor, uses 3 speeds)	
Red: Capped	Blue: Medium Speed
Yellow: Medium High	Black: High Speed
208 volt units (3 speed motor)	
Red: Low Speed	Blue: Medium Speed
Black: High Speed	

The motor ampere draw must be checked after installation to ensure the current draw does not exceed the motor/unit nameplate amperage. If the motor current draw exceeds the motor rating, increase the external static pressure by restricting the airflow on the air handler. Suggested options are to use a high quality pleated filter or partially close the conditioned air registers.

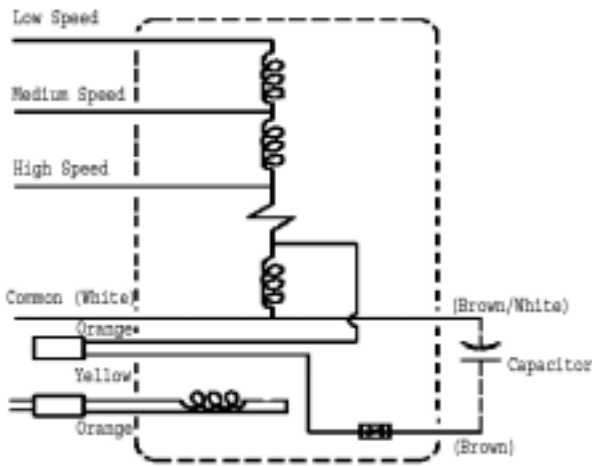
Condensate Drain

The condensate drain connection is PVC-type plastic pipe. The condensate drain trap must be properly designed to ensure the removal of condensate (incorrect trapping can hold water in the pan causing overflow). Be sure the drain pitches downward at a slope of one inch every ten feet of run. The drain connection is located on the front of the unit below the chilled water stub-outs. If the fan coil unit is located where condensate overflow may cause damage, a secondary water-tight, corrosion resistant pan is recommended to catch overflow caused by clogged drains or other reasons. A separate condensate drain and trap must be provided for the secondary pan.

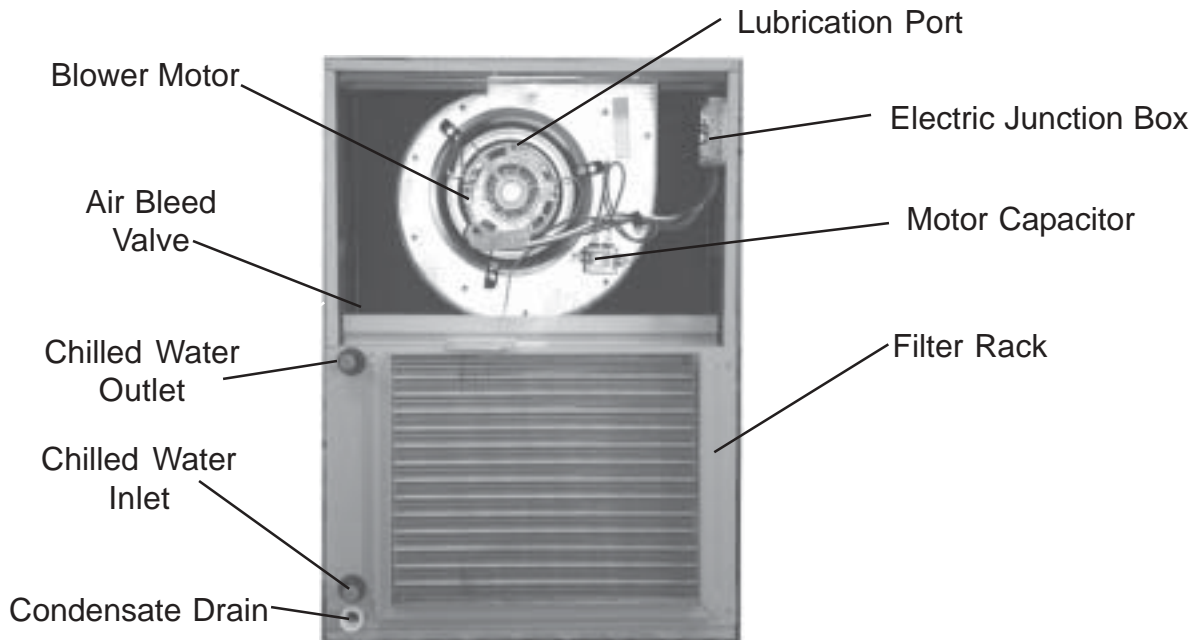
Water Piping

All piping must be supported independent of the coil. Swing joints or flexible fittings must be provided to absorb expansion and contraction strains. Rigid piping reduces the effectiveness of vibration isolators. The water supply should always be connected so that the entering water is on the leaving air side of the coil. Coils must be adequately vented in order to prevent air binding in the top of the coil.

Blower Motor



DCW Series



MAINTENANCE

Filters

The unit is shipped without filters installed. To insure trouble-free operation, the filter must be cleaned or replaced on a regular basis. Dirty filters result in poor performance. To service filters, slide filter upward and remove from the filter rack.

Type of Filters: All types of filters should be checked monthly or more frequently if conditions indicate.

1. Throwaway: Replace as required.
2. Renewable: (Fiber media.) Remove filter pad from the frame and discard. Replace with throwaway media cut to the proper size.

Oiling

If the unit has been supplied with oil ports on the motor, add 3 drops of SAE 20 weight non-

detergent oil to each of the two oil holes on the fan motor once every year.

Condensate Pan

Check condensate pan for debris and clean to prevent water overflow from condensate pan.

Cleaning

The exterior cabinet surface should be kept clean and waxed. The evaporator coil should be cleaned every 6 months or as necessary.

Winterization

If the unit is installed in an area where freezing temperatures are possible, the unit must be protected by either draining the coil and piping or filling the system with a pre-mixed water and anti-freeze solution. DO NOT USE automotive type anti-freeze.

Electrical Data			
Motor Data	DCW-20	DCW-26	DCW-32
Number of Speeds	3	3	3
Hp @ Hi/Med/Low speeds	1/4-1/6-1/8	1/4-1/6-1/8	1/3-1/4-1/6
Motor Amps			
Volts/Ph/Hz 115/1/60	4.3/ 2.8/ 2.6	4.3/ 2.8/ 2.6	6.0/ 4.7/ 3.6
Volts/Ph/Hz 208-230/1/60	1.6/ 1.0/ 0.8	1.6/ 1.0/ 0.8	2.2/ 1.7/ 1.1
Volts/Ph/Hz 277/1/60	1.3/ 0.9/ 0.7	1.3/ 0.9/ 0.7	1.9/ 1.4/ 0.9

Airflow Data										
Model		DCW-20			DCW-26			DCW-32		
External Static Pressure		Low	Med	High	Low	Med	High	Low	Med	High
	0.1	575	730	840	645	890	1,040	815	1,115	1,305
	0.2	555	700	795	640	855	985	810	1,070	1,235
	0.3	530	665	750	635	820	935	805	1,030	1,170
	0.4	515	625	710	620	780	880	775	980	1,100
	0.5	495	580	660	585	740	825	735	930	1,030

LIMITED WARRANTY

ONE-YEAR WARRANTY:

- **AeroSys Inc.** products are warranted to be free from all manufacturing defects, material or workmanship, for a period of one year from the date of purchase (receipt required), whether or not actual use begins on this date; **or** eighteen months from the date of manufacture if the date of purchase cannot be verified.
- A new unit or replacement part for any defective part will be provided without charge, **PROVIDED** the defective part is returned to our distributor or service department following the return instructions below.
- Replacement part will assume the unused portion of the warranty.

AEROSYS INC. WILL NOT BE RESPONSIBLE FOR:

- Cost incurred for repairing, removing, shipping, servicing, installing, or handling of either defective parts or replacement parts.
- Damage or repairs required due to faulty installation or application by others.
- Start failures due to voltage conditions, blown fuses, open circuit breakers, or other damage due to the inadequacy or interruption of electrical service.
- Damage as a result of floods, winds, fires, lightning, accidents, corrosive atmosphere, or other conditions beyond the control of AeroSys Inc.
- Parts not supplied or designated by AeroSys Inc.
- AeroSys Inc. products installed outside the United States and Canada.
- Damage or repairs needed as a consequence of any misapplication, abuse, improper servicing, unauthorized alteration, or improper operation.
- ANY SPECIAL, INDIRECT, CONSEQUENTIAL, PROPERTY, OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER.

FOR SERVICE OR REPAIR, FOLLOW THESE INSTRUCTIONS:

- Contact the installer, or
- Contact the nearest distributor
- A purchase order number is required to ship a replacement part to a customer. The failed part is to be returned to AeroSys Inc. with freight prepaid. Credit will be issued to the purchase order, if the part is found to be a warranty failure.
- Items returned to AeroSys Inc. by installers or distributors for warranty claim must have a Returned Material Authorization Number assigned to and attached to the part. The Returned Material Authorization Number may be obtained by contacting the Service Department.
- **INSTALLERS / DISTRIBUTORS MUST CALL AND NOTIFY THE FACTORY BEFORE A WARRANTY PART IS RETURNED. THE FAILED PART MUST BE RETURNED PREPAID WITH THE RETURN MATERIAL AUTHORIZATION NUMBERS ON ALL PARTS AND REFERENCE PAPERWORK**

LIMITATION OF WARRANTIES:

- THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. THE REMEDIES PROVIDED FOR THIS WARRANTY ARE EXCLUSIVE AND SHALL CONSTITUTE THE ONLY LIABILITIES ON THE PART OF AEROSYS INC.

Model No. _____ Serial No. _____ Date of
Installation _____

Effective on products manufactured after January 01, 2002