MHNCCW-10-01 (4-Pipe) Chilled/Hot Water Ceiling Concealed 208/230V

4-Pipe Heating & Cooling Fan Coil 30,000 BTUH

Rev. 1.2

HVAC Guide Specifications

Chilled and Hot Water Fan Coil
4-Pipe

Nominal Size:
30,000 BTUH

Multiaqua Model Number:
MHNCCW-10-01

Part 1-General

1.01 System Description

Multiaqua Chilled Water Fan Coils are manufactured with heavy gauge galvanized steel to resist corrosion.

1.02 Quality Assurance

A. Certified in accordance with U.L. Standard 95, latest version (U.S.A.)
B. Manufactured in a facility registered to ISO 9002, Manufacturing Quality Standard.
C. Fully load tested at the factory.
D. Damage resistant packaging.

1.03 Delivery, Storage and Handling

A. Packaged and readied for shipment from the factory.
B. Controls shall be capable of withstanding 150°F storage temperatures in the control compartment.
C. Stored and handled per manufacturer's recommendations.

Part 2-Product

2.01 Equipment

A. General:
   1. Unit shall be a factory assembled and tested chilled and hot water fan coil.
   2. Shall be assembled with heavy gauge galvanized steel.
   3. Contained with the unit shall be all factory wiring, piping, associated controls and special accessories required prior to start up.

B. Unit Cabinet:
   1. Composed of heavy gauge galvanized steel casing with a baked polyester powder.
   2. Shall be internally insulated to ensure quiet operation.

C. Fan Motors:
   1. Shall be available in 208/230-1-50/60 VAC.
   2. Fan motors shall be three speed, direct drive, and PSC type.
   3. Totally enclosed.
   4. Internal overload protected.

D. Blower Wheels:
   1. Blower wheels are forward curved and dynamically balanced.

E. Water Coil:
   1. Manufactured with water coils containing 3/8" copper tubing mechanically bonded to aluminum fins.
   2. Contain both a manual water drain and manual air bleed port per coil.
   3. Maximum operating pressure is 150 psig.
   4. Coils shall be capable of being field converted from right to left hand connection.

F. Drain Pan:
   1. All drain pans shall be coated on both the interior and exterior with baked polyester powder to resist corrosion.
   2. The exterior of all drain pans shall be insulated with closed cell to prevent condensation.
   3. Pans shall contain a left and right hand primary sloped drain connection as well as a sloped right hand secondary drain connection.

Part 3-Controls and Safeties

3.01 Controls

A. Fan coils shall be completely factory wired and tested.
B. All components shall be wired to an internal terminal block to allow for a field installed thermostat and or fan speed control.
C. Controls shall include the following components.
   1. 24vac transformer.
   2. Fan relays.
   3. Optional thermostats.

3.02 Safeties:

A. Fan coil shall contain a non-reusable fuse on the secondary voltage side of the transformer.

Part 4-Operating Characteristics:

4.01 Electrical Requirements

A. Primary electrical power supply shall enter the unit at a single location.
B. Electrical power supply shall be rated to withstand 120°F operating ambient temperatures.
C. Control and high voltage points shall be accessed through terminal block.

Part 5- Accessories:

5.01 Enclosures

A. Fan coils are not offered on the MHNCCW models. Enclosure provided by others.

Part 6- Definitions:

6.01 Abbreviations

A. CFM = Cubic Feet per Minute
B. DB = Dry Bulb Temperature
C. EWT = Entering Water Temperature
D. GPM = US Gallons Per Minute
E. MBH = BTU X 1000
F. SC = Sensible Cooling
G. TC = Total Cooling = Sensible + Latent
H. WB = Wet Bulb Temperature
I. WPD = Water Pressure Drop in feet of head
J. dB = Decibel Level
K. m = Meter
L. In = Inches
M. FPI = Fins per Inch
N. OD = Outside Diameter
O. ID = Inside Diameter
P. MCA = Minimum Circuit Amps
Q. MOP = Maximum Over current Protection
R. LBS = Pounds U.S.

6.02 Measurements

A. All measurements with regard to length, width, and height shall be in inches.

MHNCCW-10-01 Product Specifications

Physical Data										
Model Number	Height (in)	Length (in)	Depth (in)	Weight (lbs.)	Cooling Rows FPI	Heating Rows FPI	Copper Diameter (in)	Water Inlet (in)	Water Outlet (in)	Drain (in)
MHNCCW-10-01	10	43.70	21.65	74.8	4-14	2-14	3/8	5/8	5/8	3/4

Electrical Data						
Model Number	Nominal CFM	Volts/ Phase/ Hertz	Motor HP	Full Load Ampacity	Fuse or HACR Circuit Breaker Per Circuit	
					MCA	MOP
MHNCCW-10-01	1000	208/230-1-50/60	1/4	1.63	2.04	4

MHNCCW-10-01 Chilled Water Performance Data

MHNCCW-10-01 COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1000	42	4.0	TC	27906
			SC	21314
			WPD	8.4
		5.0	TC	31173
			SC	22869
			WPD	12.8
		6.0	TC	33781
			SC	24047
			WPD	18.0
		6.75	TC	35275
			SC	24715
			WPD	22.4

***High Speed**

MHNCCW-10-01 COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B..
1000	45	4.0	TC	24948
			SC	20238
			WPD	8.4
		5.0	TC	27668
			SC	21438
			WPD	12.7
		6.0	TC	29937
			SC	22489
			WPD	17.9
		6.75	TC	31293
			SC	23111
			WPD	22.3

***High Speed**

Chilled Water Coil

Recommended minimum flow rate for this unit at ≥ 2 fps is 2.75 gpm
Recommended maximum flow rate for this unit at ≤ 6 fps is 7.75 gpm

Hot Water Coil

Recommended minimum flow rate for this unit at ≥ 2 fps is 1.50 gpm
Recommended maximum flow rate for this unit at ≤ 6 fps is 3.75 gpm

MHNCCW-10-01 Hot Water Performance Data

MHNCCW-10-01 HOT WATER CAPACITIES													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**	**170°**	**180°**
50	1000	1.5	3.9	15754	19576	23425	27295	31182	35083	38993	42910	46832	50754
		2.75	12.0	19144	23848	28579	33334	38107	42895	47694	52501	57315	62132
		3.0	14.0	19562	24373	29211	34071	38951	43844	48748	53661	58580	63503
		3.75	21.2	20547	25606	30692	35799	40923	46062	51210	56367	61529	66696

MHNCCW-10-01 HOT WATER CAPACITIES													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**	**170°**	**180°**
60	1000	1.5	3.9	12053	15863	19700	23560	27437	31329	35231	39141	43056	46974
		2.75	11.9	14561	19247	23963	28704	33465	38241	43030	47828	52633	57442
		3.0	14.0	14870	19663	24485	29332	34198	39080	43974	48878	53788	58704
		3.75	21.1	15597	20639	25709	30803	35915	40141	46180	51328	56482	61641

MHNCCW-10-01 HOT WATER CAPACITIES													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**	**170°**	**180°**
70	1000	1.5	3.9	8333	12132	15958	19808	23677	27561	31456	35360	39270	43182
		2.75	11.9	9964	14635	19337	24065	28813	33579	38358	43148	47945	52748
		3.0	13.9	10165	14943	19751	24584	29438	34310	39194	44089	48992	53901
		3.75	21.0	10638	15664	20720	25800	30900	36017	41146	46285	51432	56584

MHNCCW-10-01 HOT WATER CAPACITIES													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**	**170°**	**180°**
80	1000	1.5	3.9	4594	8382	12200	16041	19902	23779	27668	31566	35471	39379
		2.75	11.8	5356	10012	14700	19415	24153	28908	33679	38460	43250	48047
		3.0	13.9	5450	10212	15006	19827	24670	29531	34406	39293	44189	49091
		3.75	20.9	5670	10681	15723	20790	25879	30985	36105	41236	46376	51522

Heating at ANSI/AHRI 440 with addendum 1, 6.3.2 Table 1 as follows:

ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	1.5	27640
	2.75	33705
	3.0	34443
	3.75	36166

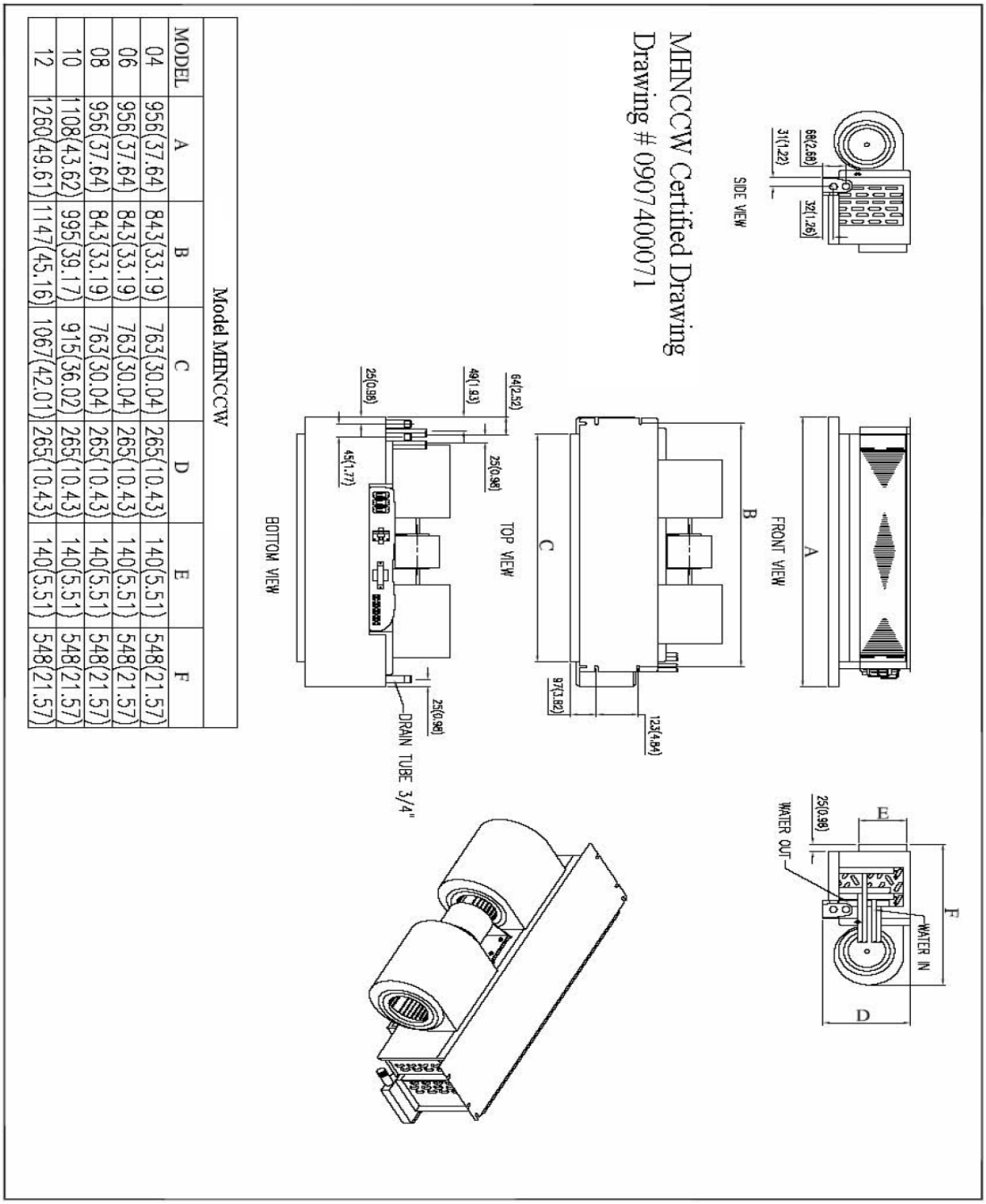
MHNCCW-10-01 CFM and Glycol Adjustments

CFM vs. External Static Pressure Table						
Model Number	Hi Speed					
	0.05	0.1	0.15	0.2	0.25	0.3
MHNCCW-10-01	943	914	880	846	812	769

MHNCCW-10-01 Sound Data

MODEL #	MHCCW-10-01
Fan Speed	dB @ 1 m
H	46

MHNCCW-10-01 Dimensional Drawing



Model MHNCCW

MODEL	A	B	C	D	E	F
04	956(37.64)	843(33.19)	763(30.04)	265(10.43)	140(5.51)	548(21.57)
06	956(37.64)	843(33.19)	763(30.04)	265(10.43)	140(5.51)	548(21.57)
08	956(37.64)	843(33.19)	763(30.04)	265(10.43)	140(5.51)	548(21.57)
10	1108(43.62)	995(39.17)	915(36.02)	265(10.43)	140(5.51)	548(21.57)
12	1260(49.61)	1147(45.16)	1067(42.01)	265(10.43)	140(5.51)	548(21.57)