MHNCCW-12-01 (4-Pipe) Chilled/Hot Water Ceiling Concealed 208/230V

4-Pipe Heating & Cooling Fan Coil 36,000 BTUH

Rev. 1.2

HVAC Guide Specifications

Chilled and Hot Water Fan Coil
4-Pipe

Nominal Size:
36,000 BTUH

Multiaqua Model Number:
MHNCCW-12-01

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-12-01 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-12-01	10	49.68	21.65	83.6	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-12-01	1200	208/230-1-50/60	1/4	1.81	2.26	5

MHNCCW-12-01 Chilled Water Performance Data

MHNCCW-12-01 COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1200	42	5.5	TC	36775
			SC	27055
			WPD	16.4
		6.0	TC	38423
			SC	27738
			WPD	19.3
		6.5	TC	39686
			SC	28350
			WPD	22.4
		7.75	TC	42186
			SC	29513
			WPD	31.1

***High Speed**

MHNCCW-12-01 COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1200	45	5.5	TC	32757
			SC	25400
			WPD	16.3
		6.0	TC	34084
			SC	25998
			WPD	19.2
		6.5	TC	35029
			SC	26482
			WPD	22.3
		7.75	TC	37421
			SC	27594
			WPD	30.9

***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-12-01 Hot Water Performance Data

MHNCCW-12-01 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	1200	1.5	4.3	17607	21858	26135	30432	34745	39069	43402	47739	52077	56415
		2.75	13.0	21871	27236	32630	38049	43487	48940	54404	59876	65353	70832
		3.0	15.3	22408	27911	33443	39000	44575	50166	55768	61378	66993	72611
		3.75	23.0	23679	29506	35361	41241	47138	53051	58974	64906	70843	76783

MHNCCW-12-01 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	1200	1.5	4.3	13479	17720	21987	26275	30579	34896	39221	43553	47886	52220
		2.75	12.9	16638	21986	27365	32769	38194	43636	49089	54552	60021	65493
		3.0	15.2	17035	22520	28037	33579	39142	44720	50312	55912	61519	67130
		3.75	22.9	17975	23784	29624	35488	41372	47273	53186	59108	65036	70969

MHNCCW-12-01 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	1200	1.5	4.2	9329	13560	17818	22097	26394	30705	35025	39351	43681	48011
		2.75	12.9	11389	16721	22085	27476	32889	38320	43764	49218	54679	60145
		3.0	15.1	11648	17116	22618	28146	33697	39265	44846	50438	56037	61641
		3.75	22.8	12260	18052	23875	29726	35598	41487	47389	53302	59223	65149

MHNCCW-12-01 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	1200	1.5	4.2	5156	9379	13629	17902	22193	26498	30813	35135	39462	43789
		2.75	12.8	6125	11441	16792	22172	27574	32994	38429	43876	49330	54790
		3.0	15.1	6246	11699	17187	22703	28242	33800	39372	44956	50548	56146
		3.75	22.7	6534	12309	18118	23956	29816	35694	41587	47492	53405	59325

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	30786
	2.75	38456
	3.0	39409
	3.75	41651

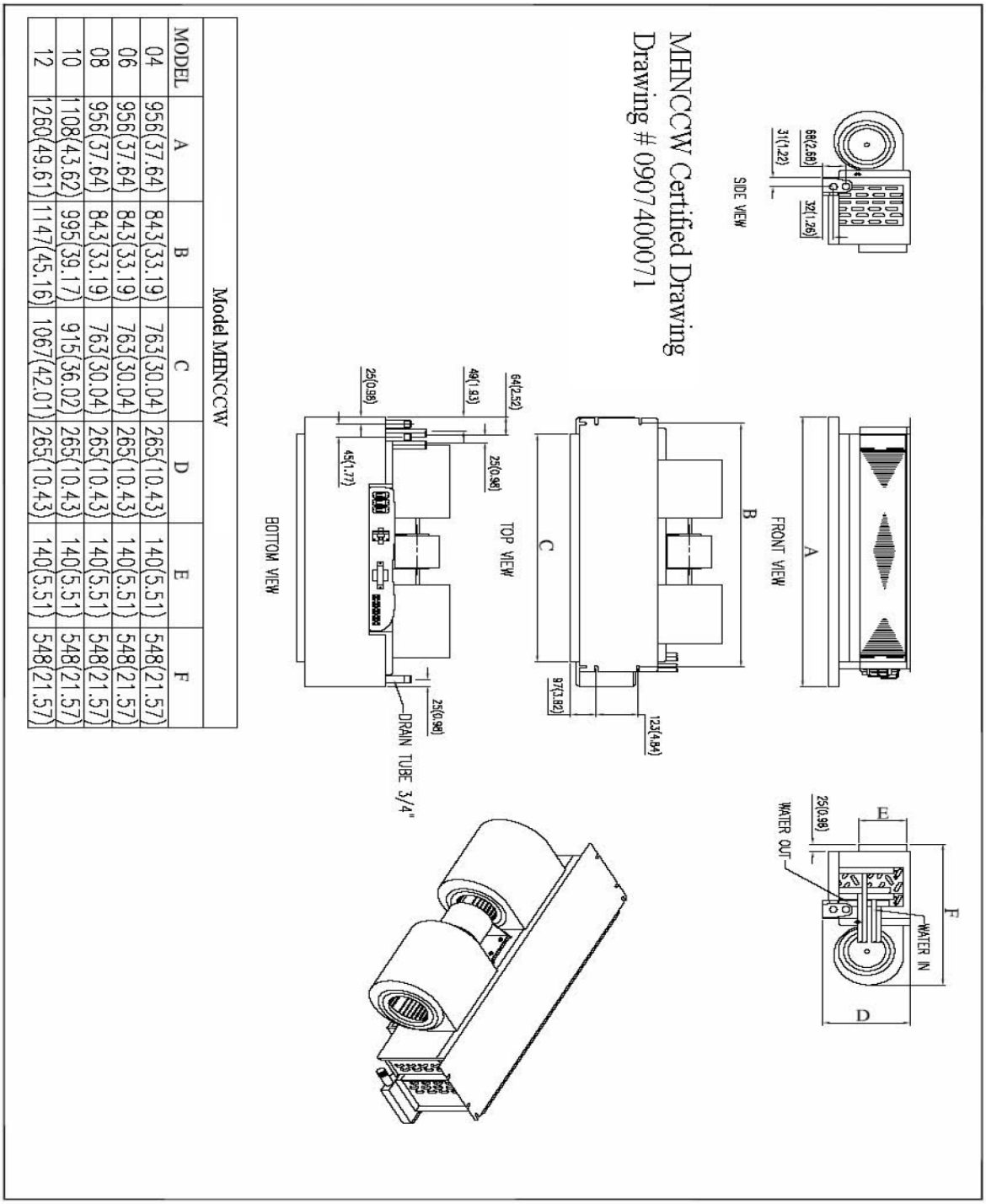
MHNCCW-12-01 CFM Adjustments

CFM vs. External Static Pressure Table						
Model Number	Hi Speed					
	0.05	0.1	0.15	0.2	0.25	0.3
MHNCCW-12-01	1228	1194	1160	1126	1088	1050

MHNCCW-12-01 Sound Data

MODEL #	MHCCW-12-01
Fan Speed	dB @ 1 m
H	48

MHNCCW-12-01 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)