

Installation Instructions

NOTE: Hot Water Coils are not suitable for use in potable water systems. Coil water circuit must be plumbed separately from residential hot water supply. These instructions cover the installation of listed coils with upflow, downflow, or horizontal air distribution systems. Installation of this equipment should be performed by a qualified technician.

WARNING!

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in property damage, personal injury or death. Installation or repairs made by unqualified persons can result in hazards to you and others.

Installation must conform with local building codes or, in the absence of local codes, with National Electrical Code ANSI/NFPA 70--2005 or current edition.

The information contained in this manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.

Shut OFF electric power at unit disconnect and/or service panel before beginning the following procedures.

LOCATION:

The hot water coil mounts directly over the discharge end of the air handler and aligns with the back and sides of air handler. The coil tubing is facing the same direction as the access door on the air handler. Coil may be used for horizontal, upflow or downflow configurations. It is best if the air handler is located in the conditioned space to minimize the possibility of freezing ambient temperatures. Location reasonably

close proximity to the hydronic equipment is also preferred.

INSTALLATION

Before starting the installation, verify that the air handler has been properly installed. If the low voltage connections were brought into the cabinet on the top (left side), they may have to be moved so they come into the cabinet from the side. Whether or not they have to be moved depends on several things, type of wire and connectors used and fittings to be used on coil (See Fig. 1).

1. Disconnect primary power to the air handler before performing the installation.
2. If the duct work is already connected to the air handler, it will be necessary to remove approximately 21 in. (533 mm) where it connects to the discharge plenum. A tran-

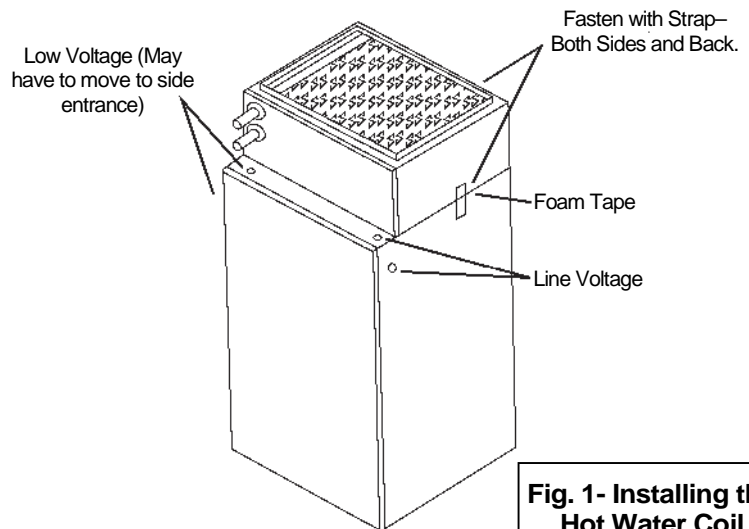


Fig. 1- Installing the Hot Water Coil

sition will be required to connect plenum to coil. The 21 in. (533 mm) allows 3 in. (76 mm) for transition.

3. Apply the foam sealing tape around the bottom of the coil cabinet, then position the coil over the air handler discharge. Secure the coil case to the sides of the air handler with sheet metal screws to secure to fan coil.

4. Connect the discharge plenum to the discharge opening on the coil. Fasten to the flange using sheet metal screws.

WATER LINE INSTALLATION

NOTE: Shut-off electrical power or gas to the hot water supply.

Shut-off the water supply and drain the hot water supply before starting the water line installation. All plumbing connections should be made with an appropriate lead-free solder.

The hot water coil may be used in conjunction with a broad variety of hydronic equipment or boilers, including gas-fired, oil fired and electrically heated. Do not exceed 180°F (82°C) water temperature. If possible, select a hydronic equipment equipped with extra openings for a circulation loop. They may be side connections or a pair of additional connections on top of the hydronic equipment. Standard hydronic equipment may also be used, although some variation in hydronic equipment performance may be noticed.

Plan the water lines to minimize run lengths and the number of elbows. Use a least 3/4 inch (nominal) water tube. Both supply and return run should be insulated separately with closed cell foam pipe insulation. A typical installation using a hot hydronic equipment is shown in Fig. 2.

1. The supply run from the hot water supply to the coil should be connected to the hot water opening on top of the hydronic equipment or the upper side opening if the hydronic equipment is equipped for a recirculating loop.
2. The return run may be connected to the hydronic

equipment in several different locations. If the hydronic equipment is equipped for a recirculating loop, use the lower side opening.

3. A Check valve is recommended to minimize thermo-syphoning of hot water through the coil during cooling season, unless the coil is operated as a separate zone in a multi-zone system, which is normally found only in boiler driven applications. Swing-check valves are recommended to minimize pressure drop. They should be mounted in a vertical section of pipe to be the most effective.
4. A circulating pump may be installed anywhere in the recirculating loop, either supply or return side, but it is usually more convenient to install immediately next to the coil because of the wiring connections.

ELECTRICAL CONNECTIONS

1. Pump and/or zone valves must be activated from a 24 volt circuit from the room thermostat through a 24 VAC SPST Coil. See Fig. 3. Any enclosed type fan relay meeting voltage and amp ratings will work, but it must be enclosed in an acceptable junction box.
2. Make all line voltage wiring connections inside the fan coil or in a junction box.

GROUNDING

Permanently ground in accordance with local codes and ordinances and in the United States with National Electrical Code ANSI/NFPA70-2005 or current edition. Use a copper conductor of the appropriate size from the junction box, to a grounding lug on the circuit breaker panel or grounding prong of 115 Volt receptacle, when a plug connection is used.

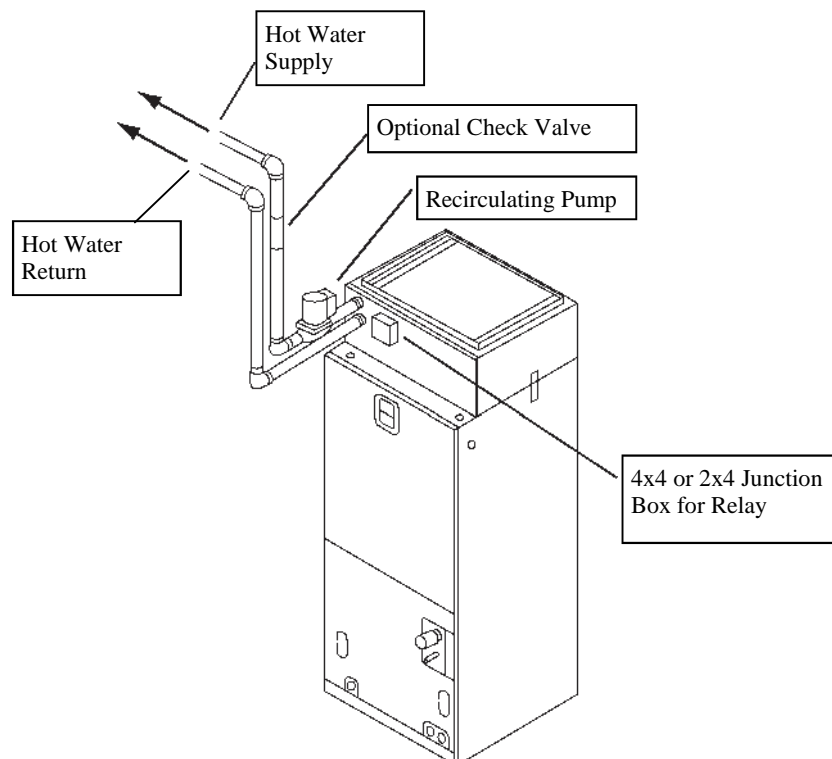


Fig. 2 - Typical Water Lines Installation

CAUTION!

UNIT CORROSION HAZARD

Failure to follow this caution may result in property or unit damage.

Copper supply and return piping must NOT be installed directly into aluminum boiler section castings due to galvanic corrosion between dissimilar metals. Iron or steel bushings or pipe nipples should be used between copper system piping and boiler to make final connection to boiler. Also, the use of dielectric unions is acceptable. The packaged boiler (field provided and installed) may be furnished with iron piping in the front boiler section for the supply and return connections.

STARTUP PROCEDURES

SYSTEM FILL

1. Verify pump on hydronic system is off.
2. Fill system with water, purging air as the system fills.
3. Restore electrical power to the blower and set thermostat so heat should come on. This will energize the circulating pump to start flow through the coil. Allow it to run for several minutes to make sure air is flushed from system, then close faucet.
4. Turn thermostat off, so circulating pump is not running.
5. Restore electrical power or gas to the hydronic equipment. The system is now ready for start-up.
6. Refer to hydronic equipment installation instructions for additional information regarding filling the boiler or water heater.
7. Allow sufficient time for the hydronic equipment to reach normal operating temperature. Check the thermostat setting. The hot water coil is designed to operate on any hot water source between 140°F (60°C) and 180°F (82°C).

WATER TREATMENT AND FREEZE PROTECTION

1. When filling the hydronic system, water treatment is generally not required or desired. For localities where the water is unusually hard (above 7 grains hardness) or for low pH water conditions (below 7.0), consult a local water treatment specialist.
 - a. This coil is designed for use in a closed hydronic heating system ONLY!
 - b. Excessive feeding of fresh make-up water to the hydronic system may lead to premature failure of the hydronic equipment.
2. Use clean fresh tap water for initial fill and make-up of hydronic system.
 - a. A sand filter must be used if fill and make-up water from a well is to be used.
 - b. Consideration should be given to cleaning the heating system, particularly in retrofit situations, where a new hydronic equipment is being installed in an older piping system.
 - c. In older systems, obviously discolored, murky,

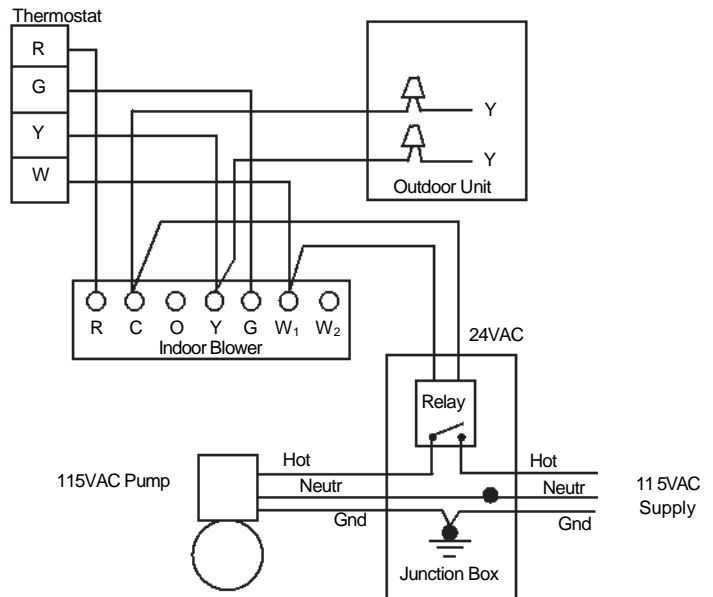


Fig. 3 - Typical Low Voltage Control Wiring-Cooling with Hot Water Coil

- a. or dirty water, or a pH reading below 7, are indications that the system should be cleaned.
 - b. A pH reading between 7 and 8 is preferred.
3. Antifreeze if needed, must be of a type specifically designed for use in closed hydronic heating systems and with aluminum.
 - a. Choice and use of antifreeze must be in accordance with local plumbing codes.
 - b. Only INTERCOOL NFP-50 is approved for use. INTERCOOL NFP-50 is available from Interstate Chemical Company.

Use of any antifreeze other than INTERCOOL NFP-50 will void warranty.

Antifreeze must be maintained per manufacturer's specifications. Failure to do so will result in the warranty being voided.
 - c. Do not use automotive antifreeze as the type of corrosion inhibitors used will coat the boiler's heat transfer surfaces and greatly reduce capacity and efficiency.
 - d. Consult antifreeze manufacturer's literature for compatibility of antifreeze with aluminum boiler. Some brands have corrosion inhibitors that break down more rapidly or become ineffective at higher operating temperatures when used with aluminum. Follow the antifreeze manufacturer's instructions on determining the proper ratio of antifreeze to water for the expected low temperature conditions, and for maintaining the quality of the anti-freeze solution from year to year.
 - e. Use of antifreeze in any boiler will reduce capacity by as much as 10 to 20 percent, due to differing heat transfer and pumping characteristics. This must be taken into consideration when sizing the heating system, pump(s), and expansion tank. Consult antifreeze manufacturer's literature for specific information on reduced capacity.

Follow all instructions for your hydronic system regarding system fill-up, purging, and start up.

Table 1 – Heating Capacity -- HotWater Coils -- HC2AXX017050

EWT (F)	GPM	PD (FT)		CFM											
				625				875				1125			
				AIR ENTERING TEMPERATURE EDB (F)											
				60	65	70	75	60	65	70	75	60	65	70	75
140	3.0	2.1	TC	24.10	22.62	21.13	19.64	28.45	26.71	24.97	23.21	31.72	29.79	27.85	25.90
			LDB	95.3	98.2	101.0	103.9	89.8	93.0	96.2	99.5	85.8	89.3	92.8	96.2
			LWT	123.7	124.7	125.7	126.7	120.7	121.9	123.1	124.3	118.5	119.8	121.1	122.5
	4.0	3.1	TC	25.48	23.90	22.32	20.74	30.46	28.59	26.71	24.83	34.30	32.20	30.09	27.98
			LDB	97.3	100.0	102.8	105.5	91.9	95.0	98.1	101.2	87.9	91.3	94.6	97.9
			LWT	127.1	127.9	128.7	129.5	124.5	125.5	126.4	127.4	122.6	123.7	124.7	125.8
	5.0	4.0	TC	26.38	24.75	23.11	21.47	31.81	29.85	27.89	25.92	36.06	33.84	31.62	29.40
			LDB	98.6	101.3	103.9	106.6	93.3	96.3	99.3	102.3	89.4	92.6	95.8	99.1
			LWT	129.3	129.9	130.6	131.3	127.1	127.9	128.7	129.5	125.4	126.3	127.2	128.1
	6.0	4.9	TC	27.03	25.35	23.67	21.99	32.78	30.76	28.74	26.71	37.34	35.05	32.75	30.44
			LDB	99.6	102.2	104.8	107.4	94.3	97.3	100.2	103.1	90.4	93.6	96.8	99.9
			LWT	130.9	131.4	132.0	132.6	128.9	129.6	130.3	131.0	127.4	128.1	128.9	129.7
160	3.0	2.1	TC	30.45	28.95	27.45	25.95	36.01	34.25	32.49	30.72	40.18	38.23	36.27	34.31
			LDB	104.6	107.5	110.3	113.2	97.7	100.9	104.2	107.4	92.7	96.2	99.6	103.1
			LWT	139.3	140.3	141.3	142.3	135.5	136.7	137.9	139.1	132.6	134.0	135.3	136.6
	4.0	3.1	TC	32.14	30.55	28.96	27.37	38.49	36.60	34.71	32.82	43.38	41.26	39.14	37.01
			LDB	107.0	109.8	112.5	115.3	100.3	103.4	106.5	109.6	95.3	98.7	102.0	105.3
			LWT	143.6	144.4	145.2	146.0	140.4	141.3	142.3	143.3	137.9	138.9	140.0	141.1
	5.0	4.0	TC	33.25	31.60	29.96	28.31	40.15	38.18	36.20	34.22	45.56	43.33	41.09	38.85
			LDB	108.7	111.3	114.0	116.7	102.0	105.1	108.1	111.0	97.1	100.3	103.6	106.8
			LWT	146.4	147.1	147.8	148.4	143.6	144.4	145.2	146.0	141.4	142.3	143.2	144.1
	6.0	4.9	TC	34.04	32.35	30.66	28.97	41.35	39.31	37.28	35.24	47.14	44.83	42.52	40.19
			LDB	109.8	112.4	115.0	117.6	103.3	106.3	109.2	112.1	98.4	101.6	104.7	107.9
			LWT	148.4	149.0	149.6	150.1	145.9	146.6	147.3	148.0	144.0	144.7	145.5	146.3
180	3.0	2.1	TC	36.87	35.36	33.85	32.33	43.66	41.89	40.11	38.33	48.76	46.80	44.82	42.84
			LDB	114.0	116.9	119.7	122.6	105.7	109.0	112.2	115.4	99.7	103.2	106.6	110.1
			LWT	154.8	155.8	156.8	157.9	150.1	151.3	152.5	153.8	146.6	148.0	149.3	150.7
	4.0	3.1	TC	38.87	37.27	35.67	34.07	46.61	44.71	42.81	40.90	52.58	50.45	48.31	46.17
			LDB	116.9	119.7	122.4	125.2	108.8	111.9	115.0	118.1	102.8	106.2	109.5	112.8
			LWT	160.1	160.9	161.7	162.5	156.1	157.1	158.0	159.0	153.0	154.1	155.2	156.3
	5.0	4.0	TC	40.18	38.53	36.87	35.21	48.58	46.60	44.61	42.62	55.17	52.92	50.68	48.42
			LDB	118.8	121.5	124.2	126.8	110.9	113.9	116.9	119.9	104.9	108.2	111.4	114.7
			LWT	163.5	164.2	164.9	165.6	160.1	160.9	161.7	162.5	157.4	158.3	159.2	160.1
	6.0	4.9	TC	41.11	39.41	37.72	36.02	50.00	47.95	45.91	43.85	57.04	54.72	52.39	50.06
			LDB	120.2	122.8	125.4	128.0	112.4	115.3	118.3	121.2	106.4	109.6	112.8	116.0
			LWT	165.9	166.5	167.1	167.7	162.9	163.6	164.3	165.0	160.5	161.3	162.1	162.9

LEGEND

EDB -- Entering Dry-Bulb (F)
 EWT -- Entering Water Temperature (F)
 LDB -- Leaving Dry Bulb (F)
 LWT -- Leaving Water Temperature (F)
 TC -- Total Capacity (MBH)

Table 2 – Heating Capacity -- HotWater Coils -- HC2AXX021070

EWT (F)	GPM	PD (FT)		CFM											
				675				1138				1600			
				AIR ENTERING TEMPERATURE EDB (F)											
				60	65	70	75	60	65	70	75	60	65	70	75
140	5.0	3.9	TC	29.84	27.99	26.14	24.28	40.04	37.57	35.11	32.63	47.02	44.14	41.25	38.36
			LDB	100.5	103.1	105.6	108.2	92.2	95.3	98.3	101.4	86.9	90.3	93.7	97.1
			LWT	127.9	128.6	129.4	130.1	123.7	124.7	125.7	126.7	120.9	122.1	123.2	124.4
	6.0	5.0	TC	30.56	28.66	26.76	24.86	41.42	38.87	36.32	33.75	49.01	46.00	42.99	39.97
			LDB	101.5	104.0	106.5	108.9	93.3	96.3	99.3	102.3	88.0	91.4	94.7	98.0
			LWT	129.7	130.3	130.9	131.6	126.0	126.8	127.7	128.6	123.4	124.4	125.4	126.5
	7.0	6.2	TC	31.10	29.17	27.23	25.30	42.48	39.86	37.24	34.61	50.54	47.44	44.33	41.21
			LDB	102.2	104.7	107.1	109.5	94.2	97.1	100.1	103.0	88.9	92.2	95.5	98.7
			LWT	131.0	131.5	132.1	132.7	127.7	128.4	129.2	130.0	125.3	126.2	127.1	128.0
	8.0	7.5	TC	31.52	29.56	27.60	25.64	43.31	40.64	37.96	35.28	51.76	48.58	45.39	42.19
			LDB	102.8	105.2	107.6	110.0	94.8	97.7	100.6	103.5	89.6	92.8	96.1	99.3
			LWT	132.0	132.5	133.0	133.5	129.0	129.7	130.4	131.0	126.9	127.7	128.5	129.3
160	5.0	3.9	TC	37.58	35.72	33.85	31.99	50.52	48.04	45.56	43.07	59.40	56.50	53.60	50.68
			LDB	111.0	113.6	116.1	118.7	100.6	103.7	106.8	109.8	94.0	97.4	100.8	104.2
			LWT	144.7	145.4	146.2	146.9	139.4	140.4	141.4	142.4	135.7	136.9	138.1	139.3
	6.0	5.0	TC	38.46	36.56	34.64	32.73	52.23	49.67	47.10	44.52	61.87	58.84	55.81	52.77
			LDB	112.2	114.7	117.2	119.7	102.0	105.0	108.0	111.0	95.4	98.7	102.1	105.4
			LWT	146.9	147.6	148.2	148.9	142.2	143.1	144.0	144.9	138.9	140.0	141.0	142.0
	7.0	6.2	TC	39.12	37.18	35.23	33.29	53.53	50.90	48.26	45.62	63.76	60.64	57.51	54.37
			LDB	113.1	115.6	118.0	120.5	103.1	106.0	109.0	111.9	96.5	99.8	103.0	106.3
			LWT	148.6	149.2	149.7	150.3	144.4	145.2	145.9	146.7	141.4	142.3	143.2	144.1
	8.0	7.5	TC	39.63	37.66	35.69	33.72	54.55	51.87	49.18	46.48	65.26	62.06	58.85	55.64
			LDB	113.8	116.2	118.6	121.0	103.9	106.8	109.7	112.6	97.3	100.6	103.8	107.0
			LWT	149.9	150.4	150.9	151.4	146.1	146.8	147.5	148.1	143.3	144.2	145.0	145.8
180	5.0	3.9	TC	45.38	43.51	41.64	39.76	61.11	58.62	56.13	53.63	71.92	69.01	66.09	63.16
			LDB	121.6	124.2	126.7	129.3	109.1	112.2	115.3	118.4	101.1	104.6	108.0	111.3
			LWT	161.4	162.1	162.9	163.7	154.9	155.9	157.0	158.0	150.5	151.7	152.9	154.1
	6.0	5.0	TC	46.42	44.51	42.59	40.67	63.15	60.57	57.99	55.40	74.86	71.82	68.77	65.72
			LDB	123.0	125.5	128.0	130.5	110.8	113.8	116.8	119.8	102.8	106.2	109.5	112.8
			LWT	164.1	164.8	165.4	166.1	158.4	159.3	160.2	161.1	154.4	155.4	156.5	157.5
	7.0	6.2	TC	47.20	45.25	43.30	41.34	64.68	62.04	59.39	56.74	77.11	73.97	70.83	67.68
			LDB	124.1	126.5	129.0	131.4	112.0	115.0	117.9	120.9	104.1	107.4	110.7	113.9
			LWT	166.2	166.7	167.3	167.9	161.0	161.8	162.6	163.4	157.4	158.3	159.2	160.2
	8.0	7.5	TC	47.80	45.83	43.85	41.87	65.89	63.19	60.49	57.79	78.88	75.67	72.45	69.23
			LDB	124.9	127.3	129.8	132.2	113.0	115.9	118.8	121.7	105.1	108.4	111.6	114.8
			LWT	167.7	168.2	168.8	169.3	163.1	163.8	164.5	165.2	159.8	160.6	161.4	162.2

LEGEND

- EDB -- Entering Dry--Bulb (F)
- EWT -- Entering Water Temperature (F)
- LDB -- Leaving Dry Bulb (F)
- LWT -- Leaving Water Temperature (F)
- TC -- Total Capacity (MBH)

Table 3—Heating Capacity - Hot Water Coils - HC2AXX024080

EWT (F)	GPM	PD (FT)		CFM											
				1050				1400				1750			
				AIR ENTERING TEMPERATURE EDB (F)											
				60	65	70	75	60	65	70	75	60	65	70	75
140	5.0	4.0	TC	41.24	38.69	36.14	33.58	47.82	44.89	41.94	38.99	53.05	49.80	46.54	43.28
			LDB	96.0	98.8	101.6	104.5	91.3	94.4	97.5	100.6	87.8	91.1	94.4	97.8
			LWT	123.2	124.3	125.3	126.4	120.6	121.8	123.0	124.2	118.4	119.8	121.1	122.4
	6.0	5.3	TC	42.56	39.92	37.29	34.64	49.67	46.61	43.55	40.48	55.38	51.99	48.58	45.16
			LDB	97.1	99.9	102.6	105.4	92.5	95.5	98.6	101.6	89.0	92.3	95.5	98.8
			LWT	125.6	126.5	127.4	128.3	123.2	124.2	125.3	126.3	121.2	122.4	123.6	124.7
	7.0	6.6	TC	43.55	40.85	38.15	35.45	51.07	47.93	44.77	41.61	57.18	53.66	50.14	46.61
			LDB	98.0	100.7	103.4	106.1	93.4	96.4	99.4	102.4	89.9	93.1	96.3	99.5
			LWT	127.4	128.1	128.9	129.7	125.2	126.1	127.0	127.9	123.4	124.4	125.5	126.5
	8.0	7.9	TC	44.33	41.58	38.83	36.07	52.18	48.96	45.74	42.51	58.60	54.99	51.38	47.76
			LDB	98.7	101.3	104.0	106.6	94.1	97.1	100.0	103.0	90.7	93.8	97.0	100.1
			LWT	128.7	129.4	130.1	130.8	126.8	127.6	128.4	129.2	125.1	126.0	127.0	127.9
160	5.0	4.0	TC	51.97	49.40	46.83	44.26	60.33	57.37	54.41	51.44	66.97	63.70	60.42	57.13
			LDB	105.3	108.2	111.0	113.8	99.5	102.6	105.7	108.8	95.0	98.4	101.7	105.1
			LWT	138.8	139.8	140.9	141.9	135.4	136.6	137.8	139.0	132.6	134.0	135.3	136.7
	6.0	5.3	TC	53.59	50.94	48.29	45.64	62.61	59.54	56.46	53.37	69.86	66.44	63.02	59.58
			LDB	106.7	109.5	112.3	115.0	100.9	104.0	107.1	110.1	96.6	99.8	103.1	106.4
			LWT	141.8	142.7	143.6	144.5	138.7	139.7	140.8	141.8	136.2	137.4	138.6	139.7
	7.0	6.6	TC	54.82	52.10	49.39	46.67	64.35	61.18	58.02	54.84	72.08	68.55	65.01	61.46
			LDB	107.8	110.5	113.2	115.9	102.1	105.1	108.1	111.1	97.7	100.9	104.1	107.3
			LWT	144.0	144.8	145.6	146.4	141.2	142.2	143.1	144.0	139.0	140.0	141.0	142.1
	8.0	7.9	TC	55.77	53.01	50.24	47.48	65.71	62.48	59.24	56.00	73.84	70.22	66.59	62.95
			LDB	108.6	111.3	114.0	116.6	103.0	105.9	108.9	111.8	98.6	101.8	105.0	108.1
			LWT	145.8	146.5	147.2	147.9	143.2	144.1	144.9	145.7	141.2	142.1	143.0	143.9
180	5.0	4.0	TC	62.78	60.21	57.63	55.04	72.95	69.98	67.01	64.03	81.02	77.74	74.44	71.14
			LDB	114.7	117.6	120.4	123.3	107.7	110.9	114.0	117.1	102.4	105.7	109.1	112.4
			LWT	154.2	155.3	156.3	157.4	150.0	151.3	152.5	153.7	146.7	148.1	149.4	150.8
	6.0	5.3	TC	64.72	62.05	59.39	56.72	75.67	72.59	69.49	66.40	84.48	81.05	77.61	74.16
			LDB	116.4	119.2	122.0	124.7	109.5	112.6	115.6	118.7	104.2	107.5	110.8	114.0
			LWT	157.9	158.8	159.7	160.6	154.1	155.2	156.2	157.3	151.1	152.3	153.4	154.6
	7.0	6.6	TC	66.17	63.44	60.72	57.99	77.73	74.56	71.38	68.20	87.12	83.58	80.02	76.46
			LDB	117.7	120.4	123.1	125.9	110.8	113.9	116.9	119.9	105.6	108.8	112.0	115.2
			LWT	160.6	161.4	162.2	163.0	157.2	158.1	159.1	160.0	154.5	155.5	156.5	157.6
	8.0	7.9	TC	67.29	64.52	61.75	58.97	79.35	76.11	72.86	69.61	89.21	85.58	81.93	78.29
			LDB	118.7	121.4	124.0	126.7	111.9	114.9	117.8	120.8	106.7	109.9	113.0	116.2
			LWT	162.7	163.5	164.2	164.9	159.6	160.5	161.3	162.1	157.1	158.0	159.0	159.9

LEGEND

- EDB -- Entering Dry--Bulb (F)
- EWT -- Entering Water Temperature (F)
- LDB -- Leaving Dry Bulb (F)
- LWT -- Leaving Water Temperature (F)
- TC -- Total Capacity (MBH)

Table 4–Heating Capacity - Hot Water Coils - HC3AXX017065

EWT (F)	GPM	PD (FT)		CFM											
				625				875				1125			
				AIR ENTERING TEMPERATURE EDB (F)											
60	65	70	75	60	65	70	75	60	65	70	75				
140	3.0	2.2	TC	30.77	28.86	26.95	25.03	36.75	34.49	32.23	29.96	41.06	38.55	36.03	33.50
			LDB	105.0	107.3	109.6	111.8	98.4	101.1	103.8	106.4	93.5	96.5	99.5	102.5
			LWT	119.2	120.5	121.8	123.0	115.1	116.6	118.2	119.7	112.2	113.9	115.6	117.3
	4.0	3.2	TC	32.53	30.51	28.48	26.46	39.49	37.05	34.60	32.15	44.64	41.89	39.14	36.38
			LDB	107.6	109.7	111.8	113.9	101.2	103.7	106.2	108.7	96.5	99.3	102.1	104.9
			LWT	123.5	124.5	125.5	126.6	119.9	121.2	122.4	123.7	117.3	118.7	120.1	121.5
	5.0	4.0	TC	33.68	31.58	29.48	27.38	41.30	38.74	36.18	33.62	47.07	44.17	41.26	38.34
			LDB	109.3	111.3	113.3	115.3	103.1	105.5	107.9	110.3	98.4	101.1	103.8	106.5
			LWT	126.3	127.2	128.0	128.9	123.2	124.3	125.3	126.3	120.9	122.1	123.2	124.4
	6.0	5.1	TC	34.48	32.33	30.18	28.02	42.60	39.95	37.31	34.66	48.83	45.81	42.79	39.76
			LDB	110.5	112.4	114.3	116.2	104.4	106.8	109.1	111.4	99.9	102.5	105.1	107.7
			LWT	128.3	129.1	129.8	130.5	125.6	126.5	127.4	128.3	123.5	124.5	125.5	126.5
160	3.0	2.2	TC	38.80	36.88	34.95	33.03	46.42	44.14	41.86	39.57	51.90	49.37	46.83	44.28
			LDB	116.8	119.1	121.4	123.6	108.4	111.1	113.8	116.5	102.4	105.4	108.4	111.4
			LWT	133.6	134.9	136.2	137.5	128.4	129.9	131.5	133.1	124.7	126.4	128.1	129.8
	4.0	3.2	TC	40.99	38.95	36.91	34.86	49.82	47.36	44.90	42.43	56.37	53.60	50.83	48.05
			LDB	120.0	122.1	124.2	126.3	112.0	114.5	117.0	119.5	106.0	108.9	111.7	114.5
			LWT	139.1	140.1	141.2	142.2	134.6	135.8	137.1	138.3	131.2	132.6	134.0	135.5
	5.0	4.0	TC	42.40	40.28	38.17	36.05	52.07	49.49	46.91	44.33	59.39	56.47	53.54	50.60
			LDB	122.1	124.1	126.1	128.1	114.3	116.7	119.1	121.5	108.5	111.2	113.9	116.6
			LWT	142.7	143.6	144.4	145.3	138.7	139.8	140.8	141.9	135.7	136.9	138.1	139.3
	6.0	5.1	TC	43.39	41.22	39.05	36.88	53.67	51.01	48.34	45.68	61.57	58.53	55.49	52.44
			LDB	123.5	125.4	127.4	129.3	116.0	118.3	120.6	122.9	110.3	112.9	115.5	118.1
			LWT	145.2	146.0	146.7	147.5	141.7	142.6	143.6	144.5	139.0	140.1	141.1	142.2
180	3.0	2.2	TC	46.92	44.98	43.04	41.10	56.20	53.90	51.60	49.30	62.86	60.31	57.76	55.20
			LDB	128.7	131.0	133.2	135.5	118.6	121.4	124.1	126.7	111.3	114.3	117.3	120.3
			LWT	147.9	149.2	150.5	151.9	141.5	143.1	144.7	146.2	136.9	138.7	140.4	142.2
	4.0	3.2	TC	49.52	47.47	45.41	43.35	60.26	57.79	55.31	52.83	68.23	65.45	62.65	59.86
			LDB	132.5	134.6	136.7	138.8	122.9	125.4	127.9	130.4	115.7	118.5	121.4	124.2
			LWT	154.6	155.6	156.7	157.8	149.1	150.3	151.6	152.9	145.0	146.4	147.8	149.3
	5.0	4.0	TC	51.19	49.06	46.93	44.80	62.94	60.35	57.75	55.15	71.84	68.90	65.95	62.99
			LDB	134.9	136.9	138.9	140.9	125.7	128.1	130.5	132.9	118.7	121.4	124.1	126.7
			LWT	159.0	159.9	160.7	161.6	154.2	155.2	156.3	157.4	150.5	151.7	152.9	154.1
	6.0	5.1	TC	52.36	50.17	47.99	45.81	64.84	62.16	59.48	56.80	74.44	71.38	68.32	65.25
			LDB	136.6	138.6	140.5	142.4	127.7	130.0	132.3	134.6	120.8	123.4	126.0	128.6
			LWT	162.1	162.8	163.6	164.3	157.8	158.7	159.7	160.6	154.5	155.6	156.6	157.7

LEGEND

- EDB -- Entering Dry--Bulb (F)
- EWT -- Entering Water Temperature (F)
- LDB -- Leaving Dry Bulb (F)
- LWT -- Leaving Water Temperature (F)
- TC -- Total Capacity (MBH)

Table 5–Heating Capacity - Hot Water Coils - HC3AXX021090

EWT (F)	GPM	PD (FT)		CFM											
				675				1138				1600			
				AIR ENTERING TEMPERATURE EDB (F)											
				60	65	70	75	60	65	70	75	60	65	70	75
140	5.0	4.1	TC	37.72	35.36	33.00	30.65	51.66	48.47	45.27	42.07	61.21	57.45	53.67	49.89
			LDB	111.2	113.1	115.0	116.8	101.5	104.1	106.5	109.0	95.0	97.9	100.8	103.7
			LWT	124.7	125.6	126.6	127.5	119.0	120.3	121.6	122.9	115.1	116.7	118.2	119.7
	6.0	5.3	TC	38.61	36.19	33.78	31.37	53.55	50.23	46.91	43.58	64.03	60.09	56.13	52.17
			LDB	112.4	114.2	116.0	117.8	103.1	105.5	107.9	110.3	96.6	99.4	102.2	105.0
			LWT	126.9	127.7	128.6	129.4	121.9	123.0	124.1	125.2	118.3	119.7	121.0	122.3
	7.0	6.6	TC	39.27	36.81	34.35	31.89	54.97	51.56	48.15	44.73	66.20	62.11	58.01	53.91
			LDB	113.3	115.1	116.8	118.5	104.2	106.5	108.9	111.2	97.9	100.6	103.3	106.0
			LWT	128.6	129.3	130.0	130.7	124.0	125.0	126.0	127.0	120.8	122.0	123.2	124.4
	8.0	8.0	TC	39.77	37.28	34.79	32.30	56.08	52.61	49.11	45.62	67.90	63.71	59.50	55.29
			LDB	114.0	115.7	117.4	119.1	105.1	107.4	109.6	111.9	98.8	101.5	104.2	106.8
			LWT	129.9	130.5	131.2	131.8	125.8	126.6	127.5	128.4	122.8	123.8	124.9	126.0
160	5.0	4.1	TC	47.45	45.07	42.70	40.33	65.11	61.89	58.67	55.45	77.21	73.42	69.63	65.82
			LDB	124.4	126.3	128.2	130.1	112.4	114.9	117.4	119.8	104.2	107.1	110.0	112.9
			LWT	140.6	141.6	142.6	143.5	133.4	134.7	136.0	137.4	128.5	130.0	131.6	133.1
	6.0	5.3	TC	48.54	46.11	43.68	41.25	67.45	64.11	60.77	57.42	80.73	76.76	72.78	68.79
			LDB	125.9	127.7	129.5	131.3	114.2	116.7	119.1	121.4	106.2	109.0	111.8	114.6
			LWT	143.5	144.3	145.1	146.0	137.0	138.2	139.3	140.5	132.5	133.9	135.2	136.6
	7.0	6.6	TC	49.35	46.88	44.41	41.93	69.21	65.77	62.34	58.90	83.41	79.30	75.18	71.06
			LDB	127.0	128.8	130.5	132.3	115.7	118.0	120.3	122.6	107.7	110.5	113.2	115.9
			LWT	145.6	146.3	147.1	147.8	139.8	140.8	141.8	142.8	135.7	136.9	138.1	139.3
	8.0	8.0	TC	49.97	47.47	44.96	42.45	70.57	67.07	63.56	60.05	85.53	81.31	77.08	72.85
			LDB	127.8	129.6	131.3	133.0	116.8	119.0	121.3	123.6	108.9	111.6	114.3	116.9
			LWT	147.2	147.9	148.5	149.2	142.0	142.9	143.8	144.7	138.2	139.2	140.3	141.4
180	5.0	4.1	TC	57.24	54.86	52.47	50.09	78.67	75.44	72.20	68.96	93.36	89.55	85.74	81.92
			LDB	137.7	139.6	141.5	143.4	123.3	125.8	128.3	130.8	113.4	116.3	119.2	122.1
			LWT	156.5	157.5	158.5	159.4	147.7	149.0	150.3	151.7	141.6	143.2	144.8	146.3
	6.0	5.3	TC	58.55	56.10	53.66	51.21	81.46	78.11	74.75	71.38	97.57	93.58	89.58	85.58
			LDB	139.5	141.3	143.1	144.9	125.5	127.9	130.3	132.7	115.8	118.6	121.4	124.2
			LWT	160.0	160.8	161.6	162.5	152.1	153.3	154.4	155.6	146.6	148.0	149.3	150.7
	7.0	6.6	TC	59.50	57.01	54.53	52.04	83.55	80.11	76.65	73.20	100.7	96.65	92.51	88.37
			LDB	140.8	142.5	144.3	146.1	127.2	129.5	131.9	134.2	117.7	120.4	123.1	125.8
			LWT	162.6	163.3	164.0	164.7	155.5	156.5	157.5	158.5	150.4	151.6	152.9	154.1
	8.0	8.0	TC	60.23	57.71	55.19	52.68	85.18	81.66	78.14	74.61	103.3	99.06	94.82	90.56
			LDB	141.8	143.5	145.2	146.9	128.5	130.8	133.1	135.3	119.1	121.8	124.4	127.1
			LWT	164.6	165.2	165.8	166.5	158.1	159.0	160.0	160.9	153.5	154.6	155.7	156.8

LEGEND

- EDB -- Entering Dry--Bulb (F)
- EWT -- Entering Water Temperature (F)
- LDB -- Leaving Dry Bulb (F)
- LWT -- Leaving Water Temperature (F)
- TC -- Total Capacity (MBH)

Table 6– Heating Capacity - Hot Water Coils - HC3AXX024100

EWT (F)	GPM	PD (FT)		CFM											
				1050				1400				1750			
				AIR ENTERING TEMPERATURE EDB (F)											
				60	65	70	75	60	65	70	75	60	65	70	75
140	5.0	4.3	TC	47.90	44.93	41.96	38.98	55.81	52.37	48.93	45.47	62.05	58.25	54.43	50.60
			LDB	101.8	104.3	106.7	109.2	96.5	99.3	102.1	104.9	92.5	95.5	98.6	101.6
			LWT	120.5	121.7	123.0	124.2	117.3	118.7	120.1	121.5	114.8	116.3	117.9	119.4
	6.0	5.6	TC	49.48	46.40	43.33	40.25	58.07	54.48	50.89	47.30	64.96	60.96	56.95	52.94
			LDB	103.1	105.5	107.9	110.3	98.0	100.7	103.4	106.1	94.0	97.0	99.9	102.9
			LWT	123.2	124.3	125.3	126.4	120.3	121.6	122.8	124.0	118.0	119.4	120.7	122.1
	7.0	7.0	TC	50.66	47.51	44.36	41.20	59.78	56.09	52.39	48.68	67.18	63.04	58.89	54.73
			LDB	104.2	106.5	108.8	111.1	99.1	101.8	104.4	107.0	95.1	98.0	100.9	103.8
			LWT	125.3	126.2	127.1	128.0	122.7	123.7	124.8	125.9	120.5	121.7	122.9	124.1
	8.0	8.5	TC	51.58	48.37	45.15	41.94	61.13	57.35	53.56	49.77	68.94	64.69	60.43	56.16
			LDB	105.0	107.3	109.5	111.8	100.0	102.6	105.2	107.7	96.1	98.9	101.7	104.5
			LWT	126.9	127.7	128.5	129.4	124.5	125.4	126.4	127.4	122.5	123.6	124.7	125.7
160	5.0	4.3	TC	60.32	57.33	54.34	51.34	70.35	66.89	63.42	59.95	78.26	74.43	70.59	66.74
			LDB	112.6	115.1	117.6	120.0	106.0	108.8	111.6	114.4	100.9	104.0	107.1	110.1
			LWT	135.4	136.6	137.8	139.0	131.3	132.7	134.1	135.5	128.0	129.6	131.2	132.7
	6.0	5.6	TC	62.27	59.18	56.08	52.99	73.16	69.55	65.94	62.32	81.88	77.86	73.83	69.79
			LDB	114.3	116.7	119.1	121.5	107.8	110.6	113.3	116.0	102.8	105.8	108.8	111.7
			LWT	138.8	139.9	140.9	142.0	135.1	136.3	137.6	138.8	132.1	133.5	134.9	136.2
	7.0	7.0	TC	63.73	60.56	57.41	54.22	75.28	71.57	67.85	64.12	84.64	80.48	76.31	72.13
			LDB	115.6	117.9	120.3	122.5	109.2	111.9	114.5	117.2	104.3	107.2	110.1	113.0
			LWT	141.4	142.3	143.3	144.2	138.0	139.1	140.2	141.3	135.3	136.5	137.7	139.0
	8.0	8.5	TC	64.86	61.63	58.40	55.17	76.95	73.15	69.34	65.53	86.83	82.55	78.27	73.98
			LDB	116.6	118.8	121.1	123.4	110.3	112.9	115.5	118.1	105.4	108.3	111.1	113.9
			LWT	143.4	144.3	145.1	145.9	140.4	141.3	142.3	143.3	137.8	138.9	140.0	141.1
180	5.0	4.3	TC	72.83	69.89	66.87	63.81	85.01	81.54	78.06	74.57	94.61	90.76	86.91	83.04
			LDB	123.5	126.1	128.5	131.0	115.6	118.4	121.2	124.0	109.5	112.6	115.6	118.7
			LWT	150.1	151.3	152.5	153.8	145.1	146.5	147.9	149.4	141.1	142.7	144.3	145.9
	6.0	5.6	TC	75.16	72.05	68.94	65.83	88.37	84.75	81.12	77.49	98.95	94.91	90.87	86.81
			LDB	125.5	127.9	130.3	132.7	117.8	120.5	123.3	126.0	111.8	114.8	117.7	120.7
			LWT	154.3	155.3	156.4	157.5	149.8	151.0	152.2	153.5	146.1	147.5	148.9	150.3
	7.0	7.0	TC	76.89	73.71	70.52	67.33	90.91	87.17	83.44	79.69	102.2	98.07	93.88	89.69
			LDB	127.0	129.4	131.7	134.1	119.5	122.1	124.8	127.4	113.5	116.4	119.3	122.2
			LWT	157.5	158.4	159.3	160.3	153.3	154.4	155.5	156.6	150.0	151.2	152.5	153.7
	8.0	8.5	TC	78.23	74.99	71.75	68.50	92.89	89.07	85.25	81.42	104.8	100.5	96.26	91.96
			LDB	128.2	130.5	132.8	135.1	120.7	123.4	126.0	128.6	114.9	117.7	120.6	123.4
			LWT	159.9	160.8	161.6	162.4	156.2	157.1	158.1	159.1	153.1	154.2	155.3	156.4

LEGEND

- EDB -- Entering Dry--Bulb (F)
- EWT -- Entering Water Temperature (F)
- LDB -- Leaving Dry Bulb (F)
- LWT -- Leaving Water Temperature (F)
- TC -- Total Capacity (MBH)

Table 7—HC Airside Pressure Drop

	CFM	HOT WATER	
		2 ROW	3 ROW
HC017	625	0.0478	0.0718
	875	0.0950	0.1425
	1125	0.1559	0.2339
HC021	675	0.0508	0.1503
	1138	0.0986	0.1480
	1600	0.1971	0.2957
HC024	1050	0.0571	0.0857
	1400	0.1023	0.1534
	1750	0.1605	0.2408

All values are in psi.
 Pressure drop includes standard fiberglass filters.
 All pressure drops are with dry coil.