PORTLAND M

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Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 10/09/13

Jeff Levine, AICP, Director
Director of Planning and Urban Development

Tammy Munson
Director, Inspections Division

Electronic Signature and Fee Payment Confirmation

Notice: Your electronic signature is considered a legal signature per state law.

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law. You are also signifying your intent on paying your fees by the opportunities below.

I, the undersigned, intend and acknowledge that no permit application can be reviewed until payment of appropriate permit fees are ***paid in full*** to the Inspections Office, City of Portland Maine by method noted below:

☐ Within 24-48 hours, once my complete permit application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

☑ Within 24-48 hours, once my permit application and corresponding paperwork has been electronically delivered, I intend to **hand deliver** a payment method to the Inspections Office, Room 315, Portland City Hall.

☐ I intend to deliver a payment method through the U.S. Postal Service mail once my permit paperwork has been electronically delivered.

Applicant Signature: Brent Grass Date: 9-20-2013

I have provided digital copies and sent them on: Date: 9-20-2013

NOTE: All electronic paperwork must be delivered to buildinginspections@portlandmaine.gov or by physical means ie; a thumb drive or CD to the office.

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HVAC / Power Equipment Checklis

Date: 10/09/13

All of the following information is required and must be submitted. Checking off each item as you prepare your application package will ensure your package is complete and will help to expedite the permitting process.

- ☑ A floor plan that includes structural details, size and dimensions of the floor the equipment is going to be installed.
- ☑ Information on how the unit is being vented & hanging details if appropriate.
- ☑ Details of the specific equipment being installed; ie; specifications and any heating technical specifications. Often this information can be obtained from the manufacturer's spec sheet or retail advertisements.
- ☑ A plot plan showing the shape and dimension of the lot, with the distance from the actual property lines, and the principal structure may be required.
- ☑ Proof of ownership is required if it is inconsistent with the assessors records.

All HVAC installations must be conducted in compliance with the IRC 2009 Building Code

Separate permits are required for plumbing and electrical installations, as required.

Separate permits are also required based on different properties (different Chart, Block and Lot.)

Permit Fee: $30.00 for the first $1000.00 construction cost, $10.00 per additional $1000.00 cost

This is not a Permit; you may not commence any work until the Permit is issued.

FILL IN AND SIGN WITH INK

Application for Heating, Ventilation, Air Condition (HVAC) Cooking or Power Equipment

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To the Inspector of Buildings, Portland Maine:

The undersigned hereby applies for a permit to install the following HVAC, cooking or power equipment in accordance with the Laws of Maine, the Building Code of the City of Portland, and the following specifications:

Address/CBL: 552 Congress St c37,bH, L#6 Use of Building: Artist Work Date: 9-20-13

Name and Address of Owner: Maine College of Art 522 Congress St portland ME

Installer's Name and Address: HVAC Services Inc 73 Bradley Dr. Westbrook, ME

E-Mail: bgrass@hvacserv.com

Location of Appliance:
☐ Basement ☐ Floor
☐ Attic ☐ Roof

Type of Fuel:
☐ Gas ☐ Oil ☐ Solid

Appliance Name: Replace existing Hot Water Coil

UL Approved: ☑ Yes ☐ No

Will appliance be installed in accordance with the manufacturer's installation instructions? ☐ Yes ☐ No

Type of License of Installer:
Master Plumber #: na
Solid Fuel #: na
Oil #: na
Gas #: na
Other: na hw piping, ducting and controls

Type of Venting: (*Plan required for submittal*)
☐ Masonry Lined
Factory Built: na
☐ Metal
Factory Built UL Listing: na
☐ Direct Vent
Type: na UL #:

# of Tanks: na

Type of Fuel Tank:
☐ Gas ☐ Oil

Size of Tank: na coil and ductwork

Distance from tank to center of flame: na

Cost of Work: $ 18800

Permit Fee: $ 210

Approved
Fire:
Electric:
Building:

Approved with Conditions
☐ See attached letter or requirements

Inspector's Signature Date Approved

Signature of Installer: **E:Mail:** bgrass@hvacserv.com

NOW AVAILABLE WITH "AUTOSPEED 24V" CONTROL

First Co.®

Product Specifications

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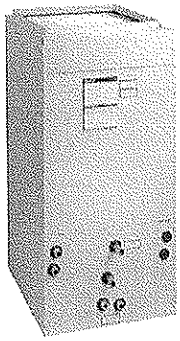
Date: 10/09/13

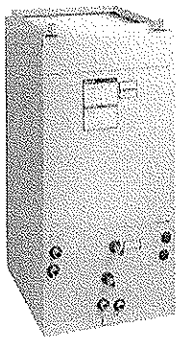
Vertical / Horizontal
Direct Drive
Hydronic Fan Coils
300 - 2100 CFM

NEW OPTION AVAILABLE: "AUTOSPEED 24V" CONTROL PACKAGE

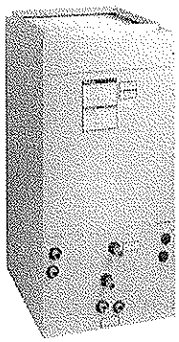
(With 24V, Automatic 3-speed fan selection)



MB Series
(2-pipe, cooling and heating)
(replaces the MH Series)



MB-HW Series
(4-pipe, cooling and heating)
(replaces the MH-HW Series)



MBE Series
(2-pipe, cooling with electric heat)
(replaces the MHE Series)

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FIRST CO. - P.O. Box 270969 - Dallas, Texas 75227 - Ph. (214) 388-5751 - Fax (214) 388-2255 - www.firstco.com

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MB-HW Series - Cooling / Heating (4-pipe)	5
MBE Series - Cooling / Electric Heat	6
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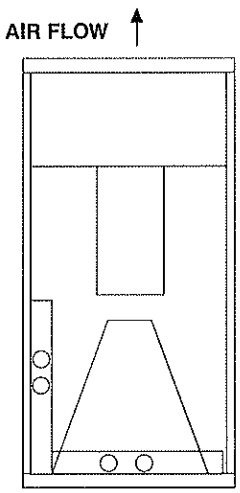
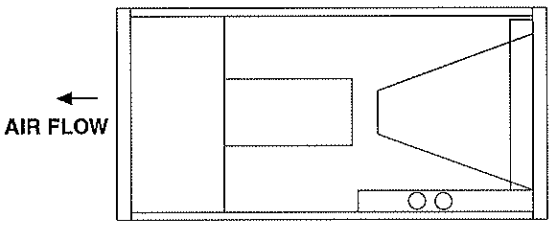
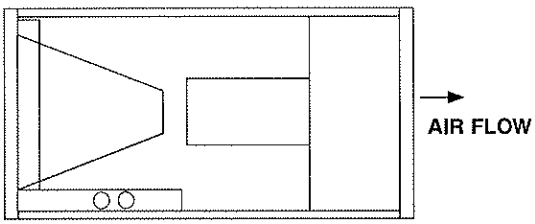
3-WAY AIRFLOW (MB, MBE, MB-HW)





(STANDARD HORIZONTAL POSITION)



(ALTERNATE HORIZONTAL POSITION)
(FIELD-CONVERTIBLE)

RESURGAM, CITY OF PORTLAND, MAINE
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General Construction Features

Basic Unit

All models are manufactured with heavy gauge galvanized steel to resist corrosion.

Each cabinet is fully insulated.

Coil connections are stubbed out the cabinet for easier installation.

Coils

Coils have 3/8 inch copper tubing expanded to high efficiency aluminum fins. Manual air vents are provided and all coils are pressure tested to 350 psig.

Drain Pans

All fan coils can be installed vertically or horizontally (right-to-left airflow) with no modification. Horizontal drain pans can be repositioned within the cabinet to allow horizontal installation with left-to-right airflow. Each drain pan is coated with a "mastic" material to reduce corrosion.

Threaded primary and secondary drain connections are also provided.

Motors

Standard motors are PSC type with internal thermal overload protection and are mounted with rubber isolation bushings.

Blower wheels are centrifugal, forward curved, and dynamically balanced.

Filters

One inch throw away filters are factory installed.

Agency Listing

All standard models are U.L. Listed.

Additional Features

Optional "Autospeed 24V" control: (see P.8)

The MB and MB-HW models are available with an optional 24V 3-speed control board and a 24V 3-speed digital wall thermostat. This option, called the "Autospeed 24V", provides maximum comfort and efficiency by automatically selecting the appropriate High, Medium, or Low fan speed, depending on room temperature and thermostat temperature setting.

MB Series

The MB Series 2
comes with a 4 row c
coil and a 120V mult
No controls are furni

MBE Series (240V)

The MBE Series 2-pipe fan coil comes with a 4 row cooling coil, 240V multi-speed motor, 240/24 transformer, and up to 25kW of factory installed electric heat. Models with more than 10kW also include a circuit breaker for branch circuit protection. Control voltage is 24V.

MBE Series (277V)

This fan coil comes with a 4 row cooling coil, 277V multi-speed motor, and up to 10kW of factory installed electric heat. All models are U.L. Listed.

MB-HW Series

The MB-HW Series 4-pipe fan coil includes a 4 row cooling coil, a 2, 3, or 4 row heating coil installed in the reheat position, and a 120V multi-speed motor. No controls are furnished.

Model Number Nomenclature

12 MB E15

NOM. CFM (100's)
- 8 - 800 CFM
- 10 - 1000 CFM (4-pipe only)
- 12 - 1200 CFM
- 16 - 1600 CFM
- 20 - 2000 CFM

Basic Unit

Basic Unit Options
- E # - "E" designates electric heat
  # is kW of electric heat
- 2HW - 2 row hot water coil
- 3HW - 3 row hot water coil
- 4HW - 4 row hot water coil

In keeping with its policy of continuous progress and product improvement, First Operations reserves the right to make changes without notice. Maintenance for all First Co. products is available under "Product Maintenance" at www.firstco.com.

MB Series

Cooling / Heating (2-pipe)

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PHYSICAL DIMENSIONS											
UNIT MODEL	A	B	C	D	E	F	G	H	COIL CONNECT		
8MB	40	20	20	18-1/2	16	2	18	16	7/8 SWE		
12MB	42	23	20	21-1/2	16	2	18	17	7/8 SWE		
16/20MB	48	28	21-1/4	26-1/4	17-1/4	2	19-1/4	18	1-1/8 SWEAT	20 X 25 X 1	210

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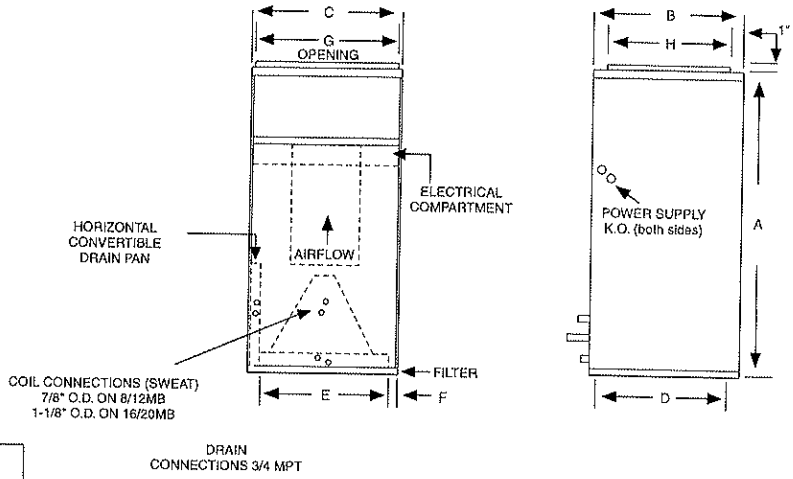

NOTE: See Page 7 for cooling capacities and hand/motorized valves

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Features:

1. 4 row cooling / heating coil
2. 120V multi-speed motor
3. Vertical / Horizontal drain pan (right-to-left and left-to right airflow)
4. Manual air vent
5. Throw away filter

HEATING DATA - 180°F EWT, 70°F EAT						
UNIT MODEL	CFM	GPM	P.D. (FT. WTR.)	HEAT BTUH (1000)	LVG AIR °F	LVG WTR °F
8MB	800	3.0	2.5	57.7	137	132
		4.5	5.5	62.2	142	142
		6.0	9.5	65.0	145	148
	600	3.0	2.5	47.8	144	138
		4.5	5.5	51.0	149	147
		6.0	9.5	53.1	152	152
12MB	1200	4.0	2.4	83.9	135	128
		6.0	4.8	90.9	140	140
		8.0	7.9	95.2	144	146
	1000	4.0	2.4	74.7	139	133
		6.0	4.8	80.3	144	143
		8.0	7.9	83.8	148	149
16MB	1600	6.0	3.3	118.7	138	131
		8.0	5.4	124.7	142	139
		10.0	7.9	129.5	145	144
	1400	6.0	3.3	108.3	142	134
		8.0	5.4	114.0	145	142
		10.0	7.9	118.1	148	146
20MB	2000	7.0	4.3	141.6	136	126
		10.0	7.9	151.3	140	140
		13.0	12.5	157.5	143	146
	1600	7.0	4.3	121.7	140	135
		10.0	7.9	129.5	145	144
		13.0	12.5	134.4	148	149

BLOWER DATA									
UNIT MODEL	NOM. COOL TONS	MOTOR HP-AMP (120V)	MOTOR SPEED	CFM vs. EXTERNAL STATIC PRESSURE					
				0.05	0.10	0.20	0.30	0.40	0.50
8MB	2	1/5-3.0	High	920	890	825	750	680	580
			Med-Hi	750	730	680	610	540	450
			Med-Low	555	530	480	420	330	---
			Low	350	310	240	170	100	---
12MB	3	1/3-6.0	High	1220	1185	1120	1070	1015	960
			Med-Hi	1085	1060	1010	960	910	865
			Med-Low	935	915	875	830	775	700
			Low	750	730	695	650	605	550
16MB	4	1/2-8.0	High	1730	1690	1620	1540	1450	1350
			Med	1580	1550	1490	1430	1360	1270
			Low	1360	1340	1310	1270	1210	1100
20MB	5	3/4-10.5	High	2030	2000	1950	1900	1840	1770
			Med	1630	1615	1580	1540	1490	1440
			Low	1280	1270	1240	1210	1180	1140

NOTE: Discharge air temperature must not exceed 150 degrees.

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MB-HW
Cooling

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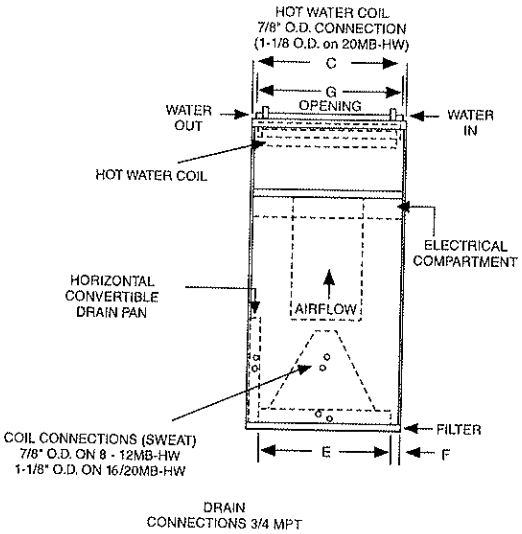

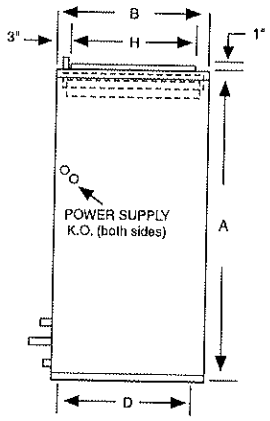

Features:

1. Separate co oling and heating coils (4 row cooling coil)
2. 120V multi-speed motor
3. Vertical / Horizontal drain pan (right-to-left and left-to-right airflow)
4. Manual air vent
5. Throw away filter

HOT WATER COIL PERFORMANCE DATA

UNIT MODEL	CFM	GPM	P.D. (FT. WTR.)	HEATING BTUH (1000) AT ENTERING WATER TEMPERATURE (1)		
				120°F	140°F	180°F
8MB-2HW	800	1	0.13	13.0	18.2	28.6
		2	0.51	17.4	24.3	38.2
		3	1.13	18.9	26.5	41.7
	600	1	0.13	11.3	15.8	24.8
		2	0.51	14.9	20.8	32.7
		3	1.13	16.1	22.5	35.4
8MB-3HW	800	1	0.22	16.6	23.3	36.5
		2	0.83	22.2	31.1	48.8
		3	1.83	24.2	33.9	53.2
	600	1	0.22	14.2	19.9	31.2
		2	0.83	18.7	26.2	41.4
		3	1.83	20.2	28.3	44.5
10MB-3HW	1000	2	1.04	26.3	36.8	57.8
		4	3.64	30.7	43.0	67.6
		6	7.55	32.8	45.9	72.2
	800	2	1.04	23.1	32.3	50.7
		4	3.64	26.7	37.4	58.8
		6	7.55	28.4	39.8	62.5
12MB-3HW	1300	2	1.10	30.2	42.3	66.5
		4	3.64	35.9	50.3	78.9
		6	7.55	38.6	54.0	84.9
	1100	2	1.10	27.9	39.0	61.3
		4	3.64	32.7	45.7	71.8
		6	7.55	34.9	48.9	76.8
16MB-4HW	1700	4	1.40	50.5	70.7	111.2
		6	2.89	55.0	77.0	121.0
		8	4.83	57.9	81.0	127.4
	1500	4	1.40	46.7	65.3	102.6
		6	2.89	50.6	70.9	111.4
		8	4.83	53.2	74.4	116.9
20MB-4HW	2100	5	1.86	62.4	87.4	137.4
		7	3.33	67.0	93.9	147.5
		9	5.15	70.2	98.3	154.5
	1800	5	1.86	56.6	79.3	124.6
		7	3.33	60.6	84.8	133.3
		9	5.15	63.3	88.6	139.3

(1) Contact factory for capacities at other conditions.

PHYSICAL DIMENSIONS

UNIT MODEL	A	B	C	D	E	F	G	H	FILTER SIZE	SHIP WT. (LBS)
8MB-HW	40	20	20	18-1/2	16	2	18	16	18 X 20 X 1	120
10/12MB-HW	42	23	20	21-1/2	16	2	18	19	20 X 22 X 1	135
16MB-HW	48	28	21-1/4	26-1/4	17-1/4	2	18	24	20 X 25 X 1	210
20MB-HW	52	28	25-1/4	26-1/2	21-1/4	2	22	24	14 X 24 X 1 (2 required)	260

BLOWER DATA

UNIT MODEL	NOM. COOL TONS	MOTOR HP-AMP (120V)	MOTOR SPEED	CFM vs. EXTERNAL STATIC PRESSURE					
				0.05	0.10	0.20	0.30	0.40	0.50
8MB-HW	2	1/5-4.5	High	950	920	855	790	720	645
			Med	860	835	785	720	650	580
			Low	780	755	705	650	590	510
10MB-HW	2.5	1/5-4.5	High	1120	1095	1045	995	940	880
			Med	850	840	810	780	740	690
			Low	680	670	655	625	585	510
12MB-HW	3	1/2-8.0	High	1340	1310	1250	1190	1120	1050
			Med	1290	1260	1200	1140	1080	1000
			Low	1200	1170	1120	1070	1010	940
16MB-HW	4	3/4-10.5	High	1810	1780	1760	1660	1590	1530
			Med	1570	1550	1510	1460	1400	1340
			Low	1280	1260	1220	1180	1130	1050
20MB-HW	5	1-10.4	High	2160	2125	2055	1980	1895	1810
			Med	1865	1840	1785	1710	1620	1525
			Low	1560	1540	1490	1435	1365	1260

NOTE: See Page 7 for cooling capacities and accessories

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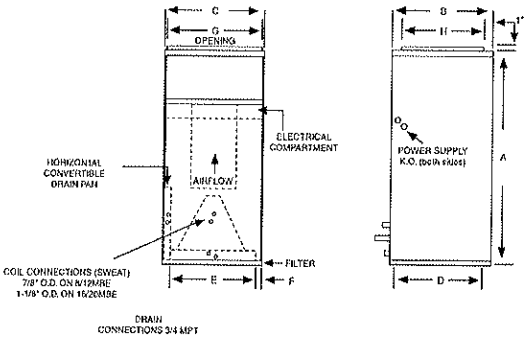
MBE Series

Cooling / Electric Heat



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PHYSICAL DIMENSIONS									
UNIT MODEL	A	B	C	D	E	F	G	H	CON
8MBE	40	20	20	18-1/2	16	2	18	16	7/
12MBE	42	23	20	21-1/2	16	2	18	17	7/
16/20MBE	48	28	21-1/4	26-1/4	17-1/4	2	19-1/4	18	1-1

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BLOWER DATA (240V)											
UNIT MODEL	NOM. COOL TONS	MOTOR HP-AMP (240V)	MOTOR SPEED	DUTY	CFM vs. EXTERNAL STATIC PRESSURE						
					0.05	0.10	0.15	0.20	0.30	0.40	0.50
8MBE	2	1/6-2.0	HIGH	COOL	900	880	860	830	790	700	600
			LOW	HEAT	740	710	690	660	630	570	490
12MBE	3	1/3-2.5	HIGH	COOL	1410	1380	1340	1310	1270	1190	1060
			LOW	HEAT	1170	1150	1130	1100	1080	1030	970
16MBE	4	1/2-3.5	HIGH	COOL	1760	1730	1680	1640	1580	1480	1360
			MED	COOL	1490	1460	1430	1400	1370	1300	1210
			LOW	HEAT	1280	1260	1230	1210	1190	1130	1080
20MBE	5	3/4-5.0	HIGH	COOL	2130	2110	2090	2060	2025	1930	1820
			LOW	HEAT	1690	1680	1660	1640	1620	1580	1540

NOTE:
16MBE is factory wired on high speed for cooling.

ELECTRICAL DATA (240 / 208V)											
UNIT MODEL		ELECTRIC HEAT CAPACITY				TOTAL AMPS		MIN. CIR. AMPACITY		MAX. FUSE OR HACR BREAKER	
		kW		BTUH							
		240V	208V	240V	208V	240V	208V	240V	208V	240V	208V
8MBE	3	3	2.3	10,200	7,700	14	13	18	16	20	20
	4	4	3	13,600	10,200	19	16	23	20	25	20
	5	5	3.8	17,000	13,000	23	20	28	25	30	25
	6	6	4.5	20,500	15,400	27	24	36	29	40	30
	8	8	6	27,300	20,500	35	31	46	38	50	40
	10	10	7.5	34,100	25,600	44	38	54	47	60	50
12MBE	5	5	3.8	17,000	13,000	24	21	30	26	30	30
	8	8	6	27,300	20,500	36	32	46	40	50	40
	10	10	7.5	34,100	25,600	45	39	56	49	60	50
	(1) 15	15	11.3	51,100	38,500	45	39	56	49	60	50
						21	18	26	23	30	25
16MBE	5	5	3.8	17,000	13,000	25	22	30	27	30	30
	8	8	6	27,300	20,500	37	33	47	40	50	40
	10	10	7.5	34,100	25,600	46	40	57	50	60	50
	(1) 15	15	11.3	51,100	38,500	46	40	57	50	60	50
						21	18	27	23	30	25
	(1) 20	20	15	68,200	51,100	46	40	57	50	60	50
						42	36	53	46	60	50
	(1) 25	25	18.75	85,250	63,900	46	40	57	50	60	50
						42	36	53	46	60	50
						21	18	27	23	30	25
20MBE	5	5	3.8	17,000	13,000	27	24	34	30	35	30
	8	8	6	27,300	20,500	40	35	49	44	50	45
	10	10	7.5	31,100	25,600	48	42	60	53	60	60
	(1) 15	15	11.3	51,100	38,500	48	42	60	53	60	60
						21	18	27	23	30	25
	(1) 20	20	15	68,200	51,100	48	42	60	53	60	60
						42	36	53	46	60	50
	(1) 25	25	18.75	85,300	63,900	48	42	60	53	60	60
						42	36	53	46	60	50
						21	18	27	23	30	25

(1) 15kW and 20kW models require 2 supply circuits.
25kW models require 3 supply circuits.

Features:

1. Factory installed electric heat
2. 4 row cooling coil
3. 208/240V motor
4. 240/24V transformer
5. Circuit breaker disconnect (above 10kW) (Except 277V)
6. Manual air vent
7. Throw away filter
8. Vertical / horizontal drain pan (right-to-left and left-to-right airflow)
9. 277 V models available (10kW max) (See below)

NOTES:
Units suitable for installation with 0" clearance to combustible material.

NOTE: See Page 7 for cooling capacities and accessories

In keeping with its policy of continuous progress and product improvement, First Operations reserves the right to make changes without notice. Maintenance for all First Co. products is available under "Product Maintenance" at www.firstco.com.

ELECTRICAL DATA (277V)						
UNIT MODEL	ELECTRIC HEAT CAPACITY			TOTAL AMPS	MIN. CIR. AMPACITY	MAX. FUSE OR HACR BREAKER
	kW	HP	BTUH			
8MBE	0	1/6	-	1.2	-	-
	3		10,200	12	15	15
	5		17,000	20	24	25
	6		20,500	23	29	30
	8		27,300	30	38	40
	10		34,100	38	47	50
12MBE	0	1/3	-	2.4	-	-
	5		17,000	21	26	30
	8		27,300	32	40	40
	10		34,100	39	49	50
16MBE	0	1/2	-	3.0	-	-
	5		17,000	21	27	30
	8		27,300	32	40	40
	10		34,100	39	49	50
20MBE	0	3/4	-	4.0	-	-
	5		17,000	22	28	30
	8		27,300	33	40	40
	10		34,100	40	50	50

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CHILLED WATER COOLING CAPACITY - 4 ROW (MB, MB-HW, MBE SERIES

UNIT MODEL	CFM	GPM	P.D. (FT. WTR.)	45°F ENTERING WATER						42°F ENTERING WATI					
				80°F DB/67°F WB ENT. AIR			75°F DB/63°F WB ENT. AIR			80°F DB/67°F WB ENT. AIR			75°F D E		
				TOTAL MBH	SENS. MBH	TEMP. RISE	TOTAL MBH	SENS. MBH	TEMP. RISE	TOTAL MBH	SENS. MBH	TEMP. RISE	TOTAL MBH		
8MB	600	3.0	2.5	19.0	13.8	12.7	14.5	12.1	9.7	20.7	14.4	13.8	15.8		
		4.5	5.5	22.4	15.1	9.9	17.1	13.1	7.6	24.4	15.9	10.8	18.6	13.7	8.3
		6.0	9.5	24.4	15.9	8.2	18.7	13.7	6.2	26.6	16.8	8.9	20.3	14.4	6.8
	800	3.5	3.4	23.1	17.3	13.2	17.6	15.2	10.1	25.2	18.1	14.4	19.2	15.8	11.0
		5.0	6.7	26.9	18.7	10.7	20.5	16.3	8.2	29.3	19.6	11.7	22.4	17.1	8.9
		6.5	11.0	29.2	19.6	9.0	22.3	17.0	6.9	31.8	20.6	9.8	24.3	17.8	7.5
10/12MB	1000	4.0	2.4	28.3	21.6	14.1	21.6	19.0	10.8	30.8	22.5	15.4	23.6	19.7	11.8
		6.0	4.8	33.9	23.7	11.3	25.9	20.6	8.6	36.9	24.8	12.3	28.2	21.6	9.4
		8.0	7.9	37.3	25.0	9.3	28.5	21.7	7.1	40.6	26.3	10.2	31.0	22.7	7.8
	1200	5.0	3.5	33.7	25.5	13.5	25.8	22.4	10.3	36.8	26.6	14.7	28.1	23.3	11.3
		6.5	5.5	38.0	27.1	11.7	29.1	23.7	8.9	41.5	28.4	12.8	31.7	24.7	9.7
		8.0	7.9	41.0	28.2	10.3	31.3	24.6	7.8	44.7	29.6	11.2	34.1	25.7	8.5
16MB	1400	4.5	2.0	36.2	29.2	16.1	27.7	25.8	12.3	39.5	30.3	17.6	30.1	26.7	13.4
		6.0	3.3	42.4	31.4	14.1	32.4	27.6	10.8	46.2	32.8	15.4	35.3	28.7	11.8
		7.5	4.8	46.9	33.1	12.5	35.8	28.9	9.6	51.1	34.7	13.6	39.0	30.2	10.4
	1600	6.0	3.3	44.2	34.1	14.7	33.8	30.0	11.3	48.2	35.5	16.1	36.8	31.2	12.3
		8.0	5.4	51.0	36.6	12.7	38.9	32.0	9.7	55.5	38.3	13.9	42.4	33.4	10.6
		10.0	7.9	55.7	38.4	11.1	42.5	33.4	8.5	60.7	40.3	12.1	46.3	34.9	9.3
20MB	1600	6.5	3.8	46.1	34.8	14.2	35.2	30.6	10.8	50.3	36.3	15.5	38.4	31.8	11.8
		8.5	6.0	52.3	37.1	12.3	39.9	32.4	9.4	57.0	38.8	13.4	43.5	33.8	10.2
		10.5	8.6	56.6	38.7	10.8	43.2	33.7	8.2	61.7	40.7	11.8	47.1	35.2	9.0
	2000	7.0	4.3	52.4	40.9	15.0	40.0	36.1	11.4	57.1	42.6	16.3	43.6	37.4	12.5
		10.0	7.9	61.7	44.3	12.3	47.1	38.8	9.4	67.3	46.4	13.5	51.4	40.5	10.3
		13.0	12.5	67.5	46.5	10.4	51.6	40.5	7.9	73.6	48.8	11.3	56.2	42.4	8.6

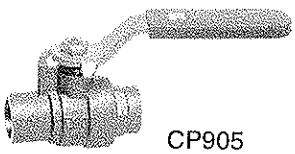
NOTE:

1. All cooling coils have four rows.
2. Contact factory for capacities at other conditions.

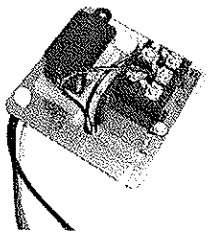
ACCESSORIES: (field installed) MB, MB-HW, MBE Series	
Power Heads: (two power heads required for 4-pipe) - For all units	
E50131180 E50132180 E50137180 E50138180	24V 110V/50Hz - 120V/60 Hz 277V 220V/50 Hz – 230V/60 Hz
Separate Valve Bodies: (order power heads separately)	
E421317 E431317 E421417 E431417	3/4" 2-way - For (P)HYB, 8-12MB/MBE/MB-HW (and 8-16MB-HW htg.coil) 3/4" 3-way - For (P)HYB, 8-12MB/MBE/MB-HW (and 8-16MB-HW htg. coil) 1" 2-way - For 16 - 20MB/MBE/MB-HW (and 20MB-HW htg. coil) 1" 3-way - For 16 - 20MB/MBE/MB-HW (and 20MB-HW htg. coil)
Hand Valves: (Combination balance / shut-off) (2 usually req'd per coil)	
CP90 CP905	3/4" For 8-12MB/MBE/MB-HW (8-16MB-HW Htg. coil) 1" For 16-20MB/MBE/MB-HW (16 and 20MB-HW Htg. coil)
Relay - Transformer	
310-E301	120 / 24V for ALL 120V motors

NOTE:

1. Power head leads are 18".

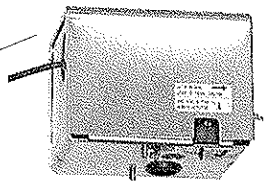


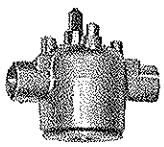
CP905



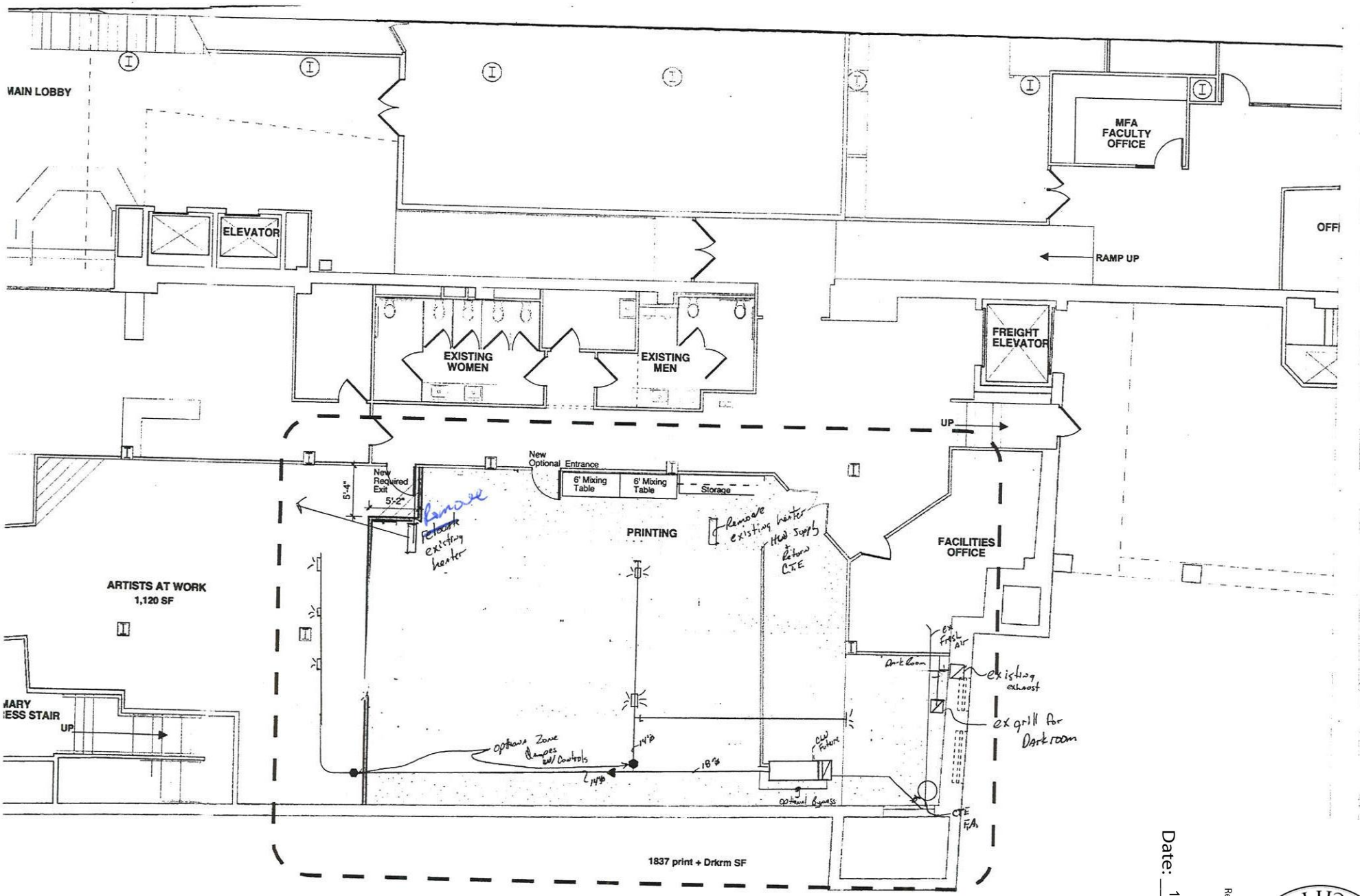
310-E301

Power Head





Valve Body
(2-way)



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