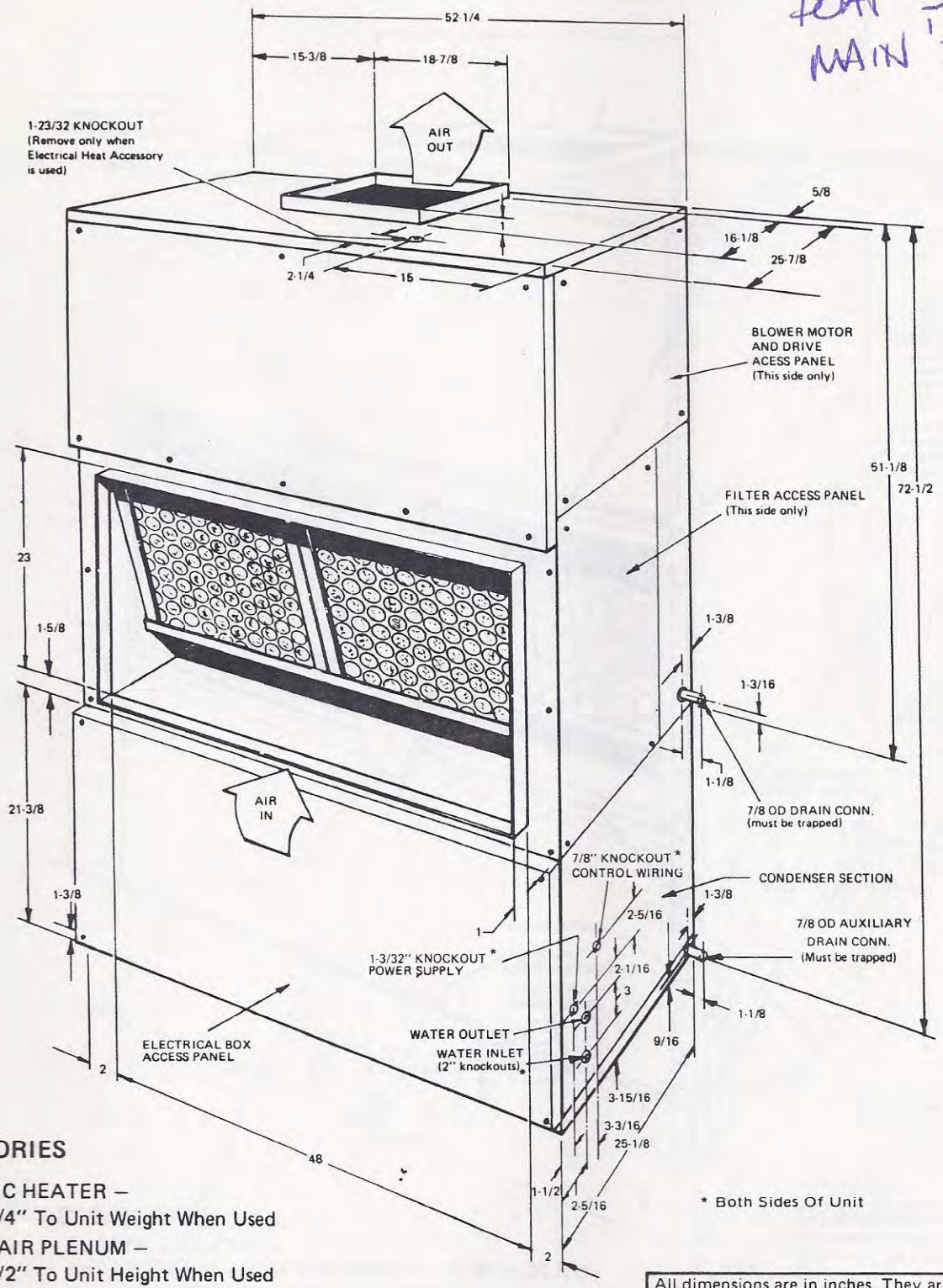
BOAT'S MAIN DECK



* Both Sides Of Unit

ACCESSORIES

- ELECTRIC HEATER –
  Add 14-1/4" To Unit Weight When Used
- SUPPLY AIR PLENUM –
  Add 27-1/2" To Unit Height When Used

All dimensions are in inches. They are subject to change without notice. Certified dimensions will be provided upon request.

MINIMUM CLEARANCES	
Side with RETURN AIR opening	24"
Side with SUPPLY AIR opening	24"[1]
Side with PIPING CONNECTIONS	52"[2]
Side opposite PIPING CONNECTIONS	12"
Side with access for both POWER & CONTROL WIRING	– 3
Bottom	– 4

[1] Overall dimension of the unit will vary if an electric heater or a supply air plenum is used.
[2] This dimension is required for removal of the coil. Only 26" is required for normal servicing.
[3] Although no clearance is required for service and operation, some clearance may be required for routing the power and control wiring.
[4] Allow enough clearance to trap the auxiliary drain line.

FIG. 3 – UNIT DIMENSIONS (CBB090 and CBB120)

Focsle Deck BOAT DECK MAIN DECK

TABLE 3 — PHYSICAL DATA

Description			Unit Model CBB060	CBB090	CBB120	CBB180
Compressor (Fully Hermetic)	Quantity Per Unit 3-3/4-Ton		–	2	–	–
	5-Ton		1	–	2	1
	10-Ton		–	–	–	1[2]
Evaporator Coil	Rows Deep x Rows Wide		3 x 24	3 x 24	3 x 32	4 x 26
	Finned Length - inches		30	46	46	54.5
	Face Area - square feet		5.0	7.7	10.2	12.4
	Tube (Copper) OD - inches		3/8	3/8	3/8	1/2
	Fins (Aluminum) per inch		13	13	13	12
Centrifugal Blower (Forward Curve)	Diameter x Width - inches		10 x 10	15 x 15	15 x 15	18 x 18
Motors[1]	Nominal HP Rating		3/4 (1@460-3-60)	1-1/2	2	3
Filters (Throwaway)	Quantity Per Unit	16" x 25" x 1"	2	4	4	–
		20" x 20" x 1"	–	–	–	6
	Face Area - Square feet		5.6	11.1	11.1	16.7
Condenser (Water-Cooled)	Quantity Per Unit 3-3/4-Ton		–	2	–	–
	5-Ton		1	–	2	3
Operating Charge	Refrigerant-22, Lbs. - Oz. System #1		5-1	4-10	5-14	12-0[2]
	System #2		–	4-10	5-14	5-4

[1] Refer to Table 11 for additional blower motor and drive data.
[2] The 10-Ton system is wired for first stage operation.

TABLE 4 — COOLING CAPACITY[1]

Model	Air Entering Cooling Coil CFM	Temp., °F DB	WB	Total Condenser Water GPM	Condenser Water Temperature, °F: 80 Total MBH	80 Sens. MBH	80 KW[2]	80 Water Range, °F	90 Total MBH	90 Sens. MBH	90 KW[2]	90 Water Range, °F	100 Total MBH	100 Sens. MBH	100 KW[2]	100 Water Range, °F	110 Total BH	110 Sens. MBH	110 KW[2]	110 Water Range, °F
CBB060 (1 Phase)	2000	86	72	15	69	45	4.4	11.2	65	44	4.7	10.8	62	43	5.0	10.5	58	42	5.3	10.1
		80	67		63	43	4.3	10.4	59	42	4.6	10.0	56	41	4.9	9.7	53	40	5.2	9.4
		74	62		57	41	4.2	9.6	54	40	4.5	9.3	51	39	4.8	9.0	48	38	5.1	8.7
		68	57		52	40	4.1	8.8	49	39	4.4	8.6	46	38	4.7	8.3	43	37	5.0	8.0
CBB060 (3 Phase)	2000	86	72	15	69	45	4.2	11.1	65	44	4.5	10.7	62	43	4.8	10.4	58	42	5.1	10.0
		80	67		63	43	4.1	10.3	59	42	4.4	9.9	56	41	4.7	9.6	53	40	5.0	9.3
		74	62		57	41	4.0	9.5	54	40	4.3	9.2	51	39	4.6	8.9	48	38	4.9	8.6
		68	57		52	40	3.9	8.7	49	39	4.2	8.5	46	38	4.5	8.2	43	37	4.8	7.9
CBB090	3000	86	72	22.5	102	68	6.2	11.0	97	66	6.6	10.6	91	63	7.0	10.2	85	60	7.5	9.8
		80	67		94	65	6.0	10.2	89	63	6.4	9.9	84	61	6.8	9.5	78	58	7.3	9.1
		74	62		86	62	5.8	9.4	81	61	6.2	9.1	76	59	6.6	8.8	71	56	7.1	8.4
		68	57		77	60	5.7	8.6	73	59	6.1	8.4	68	57	6.5	8.1	64	55	7.0	7.8
CBB120	4000	86	72	30	139	93	8.4	11.2	132	90	9.0	10.8	124	87	9.6	10.4	116	85	10.3	10.0
		80	67		128	90	8.2	10.5	121	87	8.8	10.1	114	84	9.4	9.7	106	81	10.0	9.3
		74	62		118	87	8.0	9.7	110	84	8.6	9.4	103	81	9.2	9.0	96	78	9.8	8.6
		68	57		107	84	7.8	8.9	100	81	8.4	8.6	93	78	9.0	8.3	86	75	9.6	7.9
CBB180	6000	86	72	45	211	146	13.4	11.4	203	140	14.0	11.2	188	134	14.7	10.6	170	128	15.4	9.9
		80	67		195	139	13.1	10.6	187	135	13.7	10.4	175	130	14.4	9.9	158	125	15.1	9.3
		74	62		175	133	12.8	9.7	168	130	13.5	9.5	158	126	14.2	9.1	145	122	14.8	8.7
		68	57		154	127	12.6	8.8	149	125	13.3	8.6	141	122	14.0	8.4	132	119	14.6	8.1

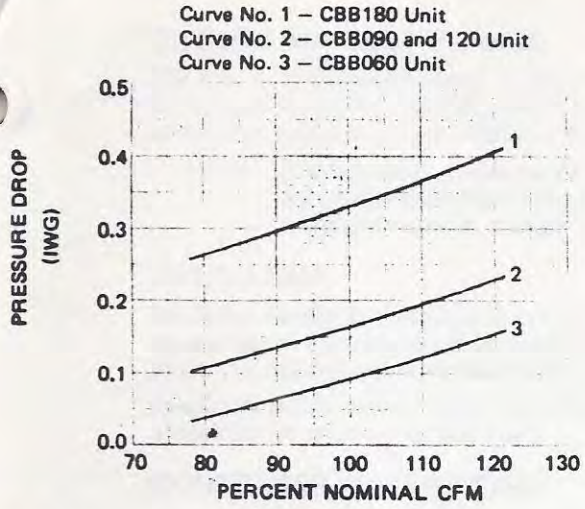
Focsle BOAT MAIN

Nominal Rating

[1] These capacities are gross ratings. For net capacities, determine the KW requirements of the supply air blower motor per the BLOWER PERFORMANCE data, Table 7. Convert KW to MBH per the following equation and deduct this equivalent heat from the gross cooling ratings.

$$\text{Blower Motor KW} \times \frac{3.415\ \text{MBH}}{\text{KW}} = \text{Blower Motor Heat (MBH)}$$

[2] Compressor KW only. For total unit KW, add the KW requirement of the supply air blower per the BLOWER PERFORMANCE data, Table 7.



IG. 9 – CFM CURVE

TABLE 10 – CFM RATINGS

Model	% OF NOMINAL CFM				
	80	90	100	110	120
	CFM				
CBB060*	1600	1800	2000	2200	2400
CBB090	2400	2700	3000	3300	3600
CBB120	3200	3600	4000	4400	4800
CBB180	4800	5400	6000	6600	7200

*Filters must be removed on CBB060 unit only before readings are taken.

ABLE 11 – BLOWER MOTOR AND DRIVE DATA

Unit Model		Motor* HP	Motor* Power Supply	Blower RPM	Adjustable Motor Pulley Pitch Diameter (in.)	Adjustable Motor Pulley Bore (in.)	Fixed Blower Pulley Pitch Diameter (in.)	Fixed Blower Pulley Bore (in.)	Belt Designation	Belt Pitch Length (in.)
CBB060	-F -T	3/4	208/230-1-60	810-1110	2.8 - 3.8	5/8	6.0	3/4	A32	33.3
	-W	1	460-3-60			7/8				
CBB090	-T -W	1½	208/230-3-60 460-3-60	655-880	2.8 - 3.8	7/8	7.5	1	A36	37.3
CBB120	-T -W	2	208/230-3-60 460-3-60	700-950	2.8 - 3.8	7/8	7.0	1	A36	37.3
CBB180	-T -W	3	208/230-3-60 460-3-60	625-810	3.4 - 4.4	7/8	9.5	1	A57	58.3

All of these motors are 1750 RPM and have a 56 frame, inherent protection and permanently lubricated ball bearings. The 3/4 HP motor is split phase and has a resilient base and a 1.25 service factor. All of the 3-phase motors have a solid base and a 1.15 service factor.

CAUTION: Do NOT operate a motor above its nominal HP rating when a unit is equipped with either a hot water or steam coil accessory.

Focsle

Boat

Main

Motors are 600 - 3 -60

UCT CONNECTIONS

ll ducts should be made in accordance with all local d/or National Codes and in line with good duct in- allation practices.

uctwork should be suspended with flexible hangers. o not fasten directly to building or structure.

low clearance around duct for safety in handling ater air, if any.

UPPLY AIR DUCTS

e Figure 10 for suggested method of connecting pply air duct work.

uct should be sized no smaller than the duct flanges he blower section.

se flexible fiberglass or plastic cloth collars or other n-flammable material at the duct connections to inimize the transmission of noise and vibration.

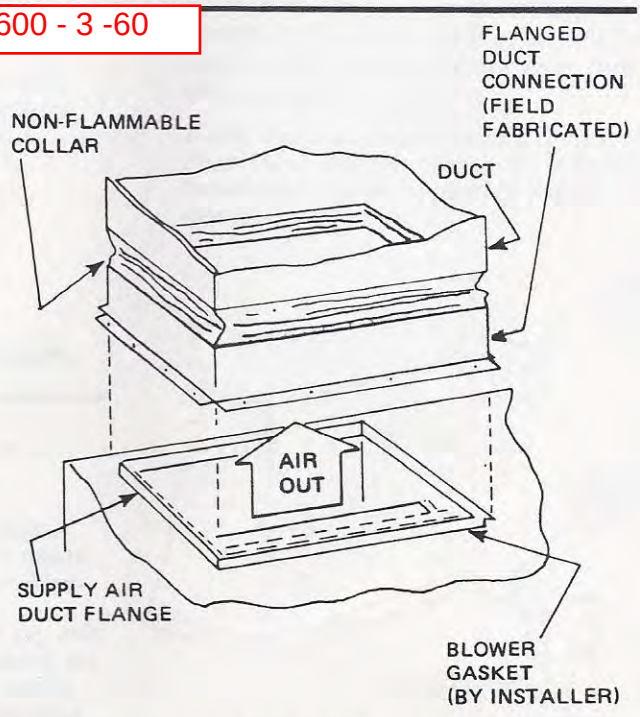
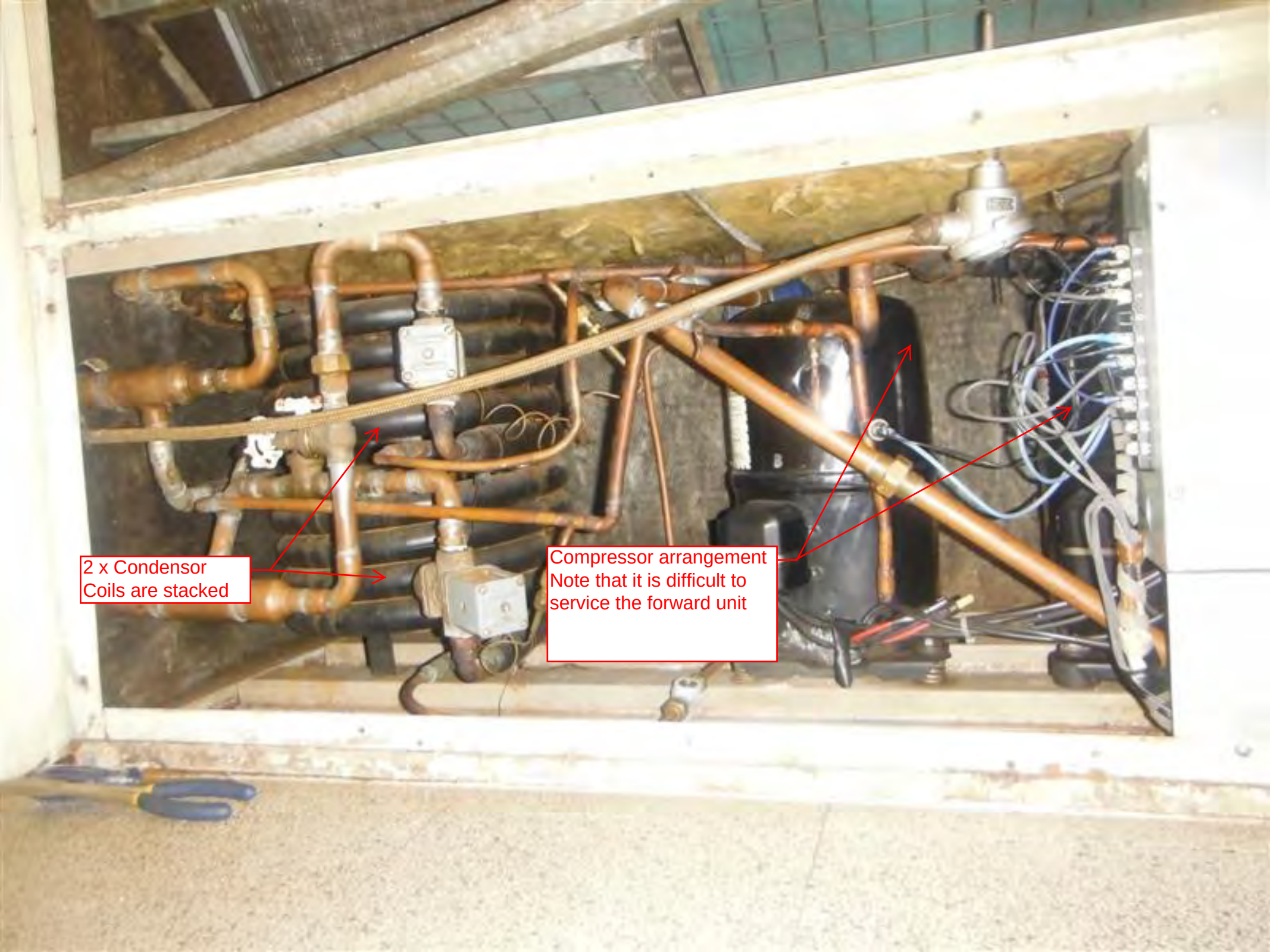


FIG. 10 – SUPPLY AIR DUCT CONNECTION


Main Deck AC unit
Blower
arrangement

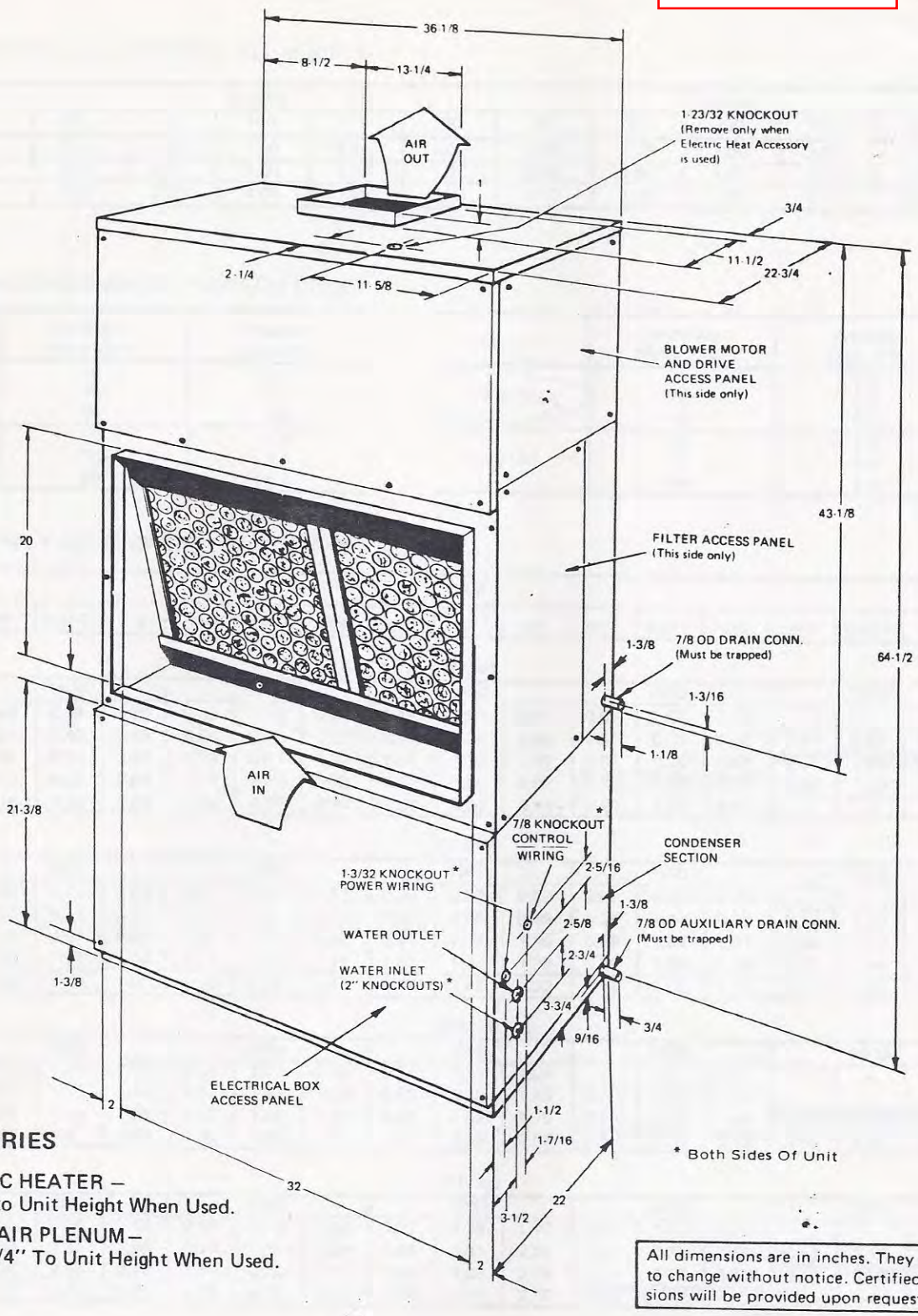

Main Deck AC Unit: Covers removed


Main Deck AC unit
Filter Arrangement
Dirty Filter sensor.
This is not required
in the new units
unless regulations
require it
Return Air
Temperature to
Alarm and
Monitoring system
Sensor to be
retained


2 x Condensor
Coils are stacked
Compressor arrangement
Note that it is difficult to
service the forward unit


Note the insulation condition. specification calls for 2 play walls to eliminate this fouling and allow the surfaces to be cleaned
Evaporators
Filter retaining strip


Drain pipe for
condensate tray.



ACCESSORIES

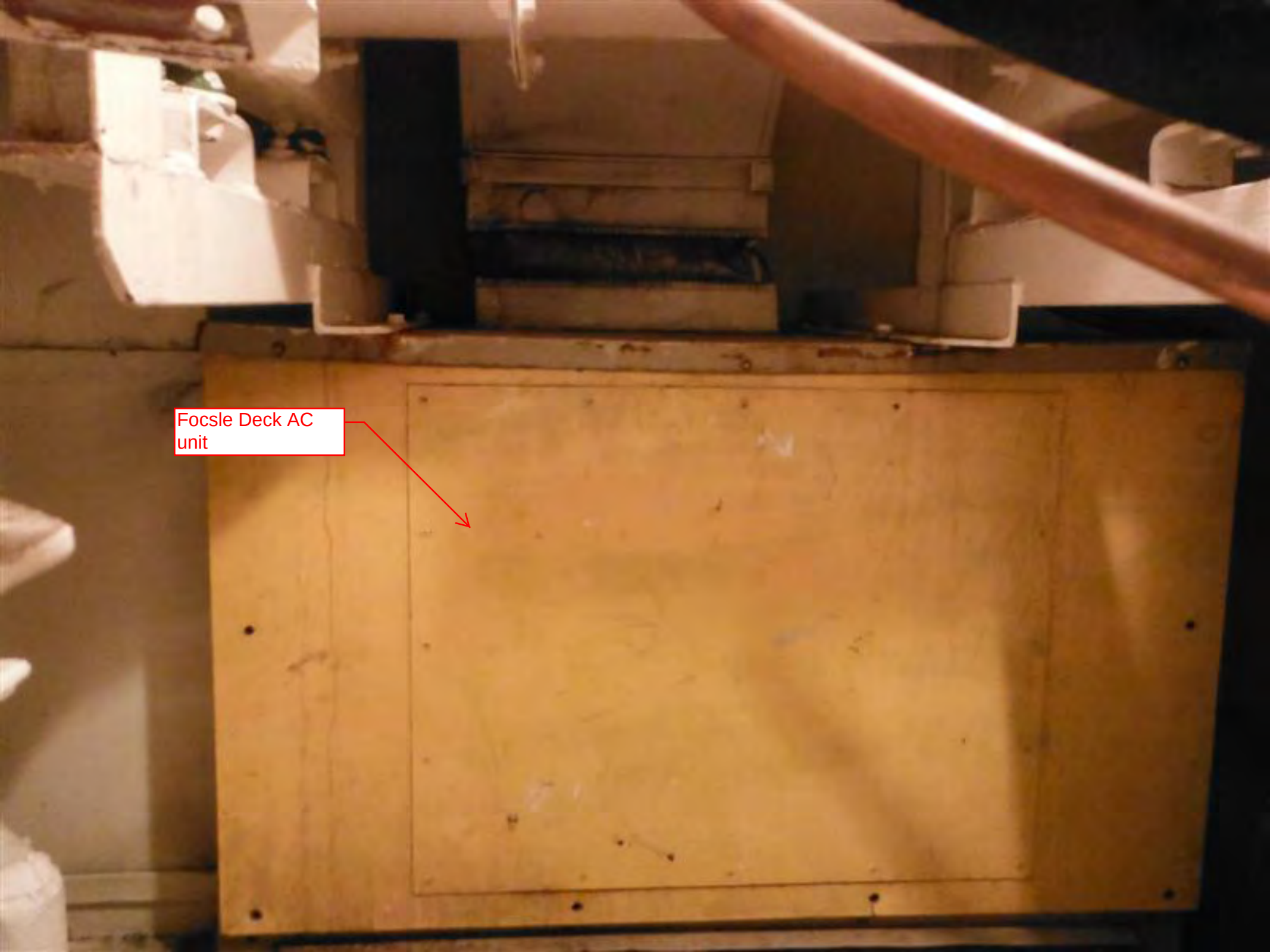
- ELECTRIC HEATER – Add 13" to Unit Height When Used.
- SUPPLY AIR PLENUM – Add 24-1/4" To Unit Height When Used.

All dimensions are in inches. They are subject to change without notice. Certified dimensions will be provided upon request.

MINIMUM CLEARANCES	
Side with RETURN AIR opening	24"
Side with SUPPLY AIR opening	24"[1]
Side with PIPING CONNECTIONS	36"[2]
Side opposite PIPING CONNECTIONS	12"
Side with access for both POWER & CONTROL WIRING	– [3]
Bottom	– [4]

[1] Overall dimension of the unit will vary if an electric heater or a supply air plenum is used.
[2] This dimension is required for removal of the coil. Only 26" is required for normal servicing.
[3] Although no clearance is required for service and operation, some clearance may be required for routing the power and control wiring.
[4] Allow enough clearance to trap the auxiliary drain line.

FIG. 2 – UNIT DIMENSIONS (CBB060)


Focsle Deck AC unit


Focsle Deck AC Unit
This unit only has 2 filter screens


Boat Deck AC Unit


Boat Deck AC Unit


Main Deck AC Unit

Control Room and Bridge units

PRODUCT LINE AND SPECIFICATIONS

MODEL	PHASE	VOLTS	TOTAL AMPERES	WATTS		FUSE SIZE AMPS (A) *	WIRE SIZE GAUGE (B) **	BLOWER MOTOR H.P.	BLOWER MOTOR & DRIVE	EVAP. NO OF ROWS	COIL FACE AREA	COND. H_2O PRES. DROP AT A.R.I.		EVAP. CFM AT ARI	COOLING CAPACITY BTU/HR (C) 85°F ent H_2O 95°F sup H_2O 80°F D.B. ent air 67°F W.B. ent air	HEATING CAPACITY BTU/HR (D) 70°F ent H_2O 70°F D.B. ent air	EFFICIENCY RATINGS	
				COOLING	HEATING							FLOW GPM	AP P.S.I.				E.E.R.	C.O.P.
5K9CM	1	115	10.1	1160		20	14	1/8	2 SPEED DIRECT DRIVE	3	1.4	2.8	3.2	415	10,300		8.9	
5K9CMH	1	115	11.0		1230											13,900		3.3
5K13CM	1	208/230	7.2	1400		15	14	1/8	2 SPEED DIRECT DRIVE	3	1.4	3.3	3.8	465	13,200		9.4	
5K13CMH	1	208/230	8.1		1560											16,500		3.1
5K19CM 5KC19D	1	208/230	11.7	2095		30	14	1/5	2 SPEED DIRECT DRIVE	3	1.9	5.3	9.0	730	19,500		9.3	
5K19CMH 5KC19DH	1	208/230	12.5		2330	30	14									25,400		3.2
5K25CM 5KC25D	1	208/230	13.8	2805		30	12	1/5	2 SPEED DIRECT DRIVE	3	2.9	7.0	6.5	930	25,000		8.9	
5K25CMH 5KC25DH	1	208/230	13.9		2665	30	12									30,000		3.3
5K31CM	1	208/230	18.0	3540		40	10	1/2	2 SPEED DIRECT DRIVE	3	2.9	9.0	8.0	1415	34,000		9.6	
~~5KC31D~~	3		12.4			25	14											
5K31CMH 5KC31DH	1	208/230	21.1		4170	40	10									45,500		3.2
	3		12.2			25	14											
5K33CM 5KC33D	1	208/230	22.3	3960		50	8	1/2	2 SPEED DIRECT DRIVE	4	2.9	10.75	11.0	1310	40,000		10.1	
	3		13.7			30	12											
5K33CMH 5KC33DH	1	208/230	24.0		4570	50	8									53,000		3.4
	3		16.1			30	12											
5K52CM	1	208/230	27.1	5505		60	8	3/4	BELT DRIVE VARIABLE PITCH	3	4.0	14.5	10.0	1830	49,000		8.9	
	3		17.0			40	10											
5K52CMH	1	208/230	26.6		5405	60	8									59,000		3.2
	3		20.1			40	10											
6KC52D	1	208/230	27.2	5545		60	8	3/4	3 SPEED DIRECT DRIVE	3	4.0	14.5	10.0	1830	56,000		10.1	
	3		17.0			40	10											
6KC52DH	1	208/230	29.5		6220	60	8									70,000		3.3
	3		20.1			40	10											
* 6KC65D	1	208/230	31.5	6285		70	6	3/4	3 SPEED DIRECT DRIVE	4	4.0	15.5	10.0	2000	66,000		10.5	
	3		20.0			40	10											
6KC65DH	1	208/230	31.8		6895	70	6									80,000		3.4
	3		22.7			40	10											
5K65CM	3	208/230	19.7	6370		40	10	1	BELT DRIVE VARIABLE PITCH	3	4.0	15.5	10.0	2000	58,000		9.1	
	3	440	13.3			20	14											
	3	570	10.0			15	14											
5K65CMH	3	208/230	19.0		5865	40	10									64,000		3.2
	3	440	15.3			20	14											
	3	570	11.7			15	14											
5K90CM	3	208/230	30.0	9685		60	8	1½	BELT DRIVE VARIABLE PITCH	4	6.0	24.8	8.5	3075	93,000		9.6	
	3	440	13.7			30	12											
	3	570	12.6			25	14											
5K90CMH	3	208/230	33.6		11020	60	8									124,000		3.3
	3	440	16.6			30	12											
	3	570	15.4			25	14											

(A) Time Delay Fuses Recommended
(B) Less than 50 Foot Run from Voltage Source.
(C) Rated in accordance with ARI Standard 210-66.
(D) Rated in accordance with ARI Standard 240-67. Heating cycle requires 50° F E.W.T. minimum.

MODEL DESIGNATIONS:
Prefix KC—Vertical Series
Prefix K with suffix CM—Horizontal Series
Suffix H—Heat Pump
Suffix T—Cooling Tower Application

Consult factory for voltages other than listed above. Portable models with capacities to 26,000 BTU/HR also available. Marine models available with components designed for marine use.

* Fuse size based on U.L. formula: 2.25 × compressor R.L.A. + sum of all other motor F.L.A. and rounded down to largest standard size.

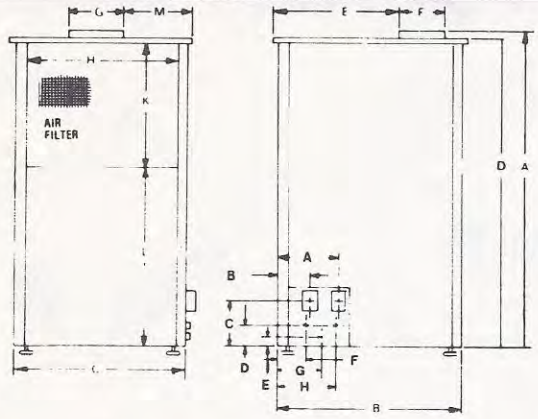
** Wire size based on N.E.C. 310-16 with ampacity calculated per U.L. formula:
Ampacity = 1.25 × compressor R.L.A. + sum of all other motor F.L.A.

AIR FLOW DATA (WET COIL)	SERIES								
	9	13	19	25	31	33	52	65	90
EXTERNAL STATIC PRESSURE	C.F.M.								
.1	415	465	730	930	1450	1350	1920	2200	3300
.2	365	440	680	880	1380	1270	1830	2000	3190

FOR HEATING IN MODEL 6KC65DH ON 208 V, WIRE FOR HIGH-SPEED FAN ONLY.

DIMENSION DATA

"VERTICAL COMFORT SYSTEM"

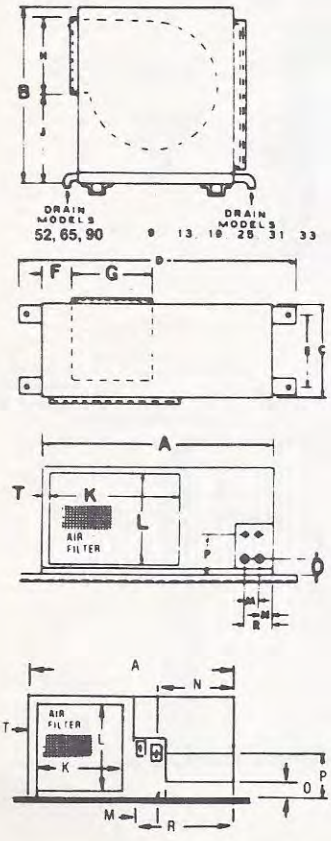


	A	B	C	D	E	F	G	H
5KC19-33	5 11/16	3 5/8	7 3/4	4 3/8	1 9/16	3 3/16	4 11/16	5 11/16
6KC52-65	8 1/4	3 1/2	9 1/2	5 1/4	2 1/8	3	4 1/2	5 1/2

MODEL NUMBERS		5KC19D 5KC19DH	5KC25D 5KC25DH	5KC31D 5KC31DH	5KC33D 5KC33DH	5KC52D 5KC52DH	6KC52D 6KC52DH	6KC65D 6KC65DH
DIMENSIONS (Inches)	A	38 1/4	44 1/4	44 1/4	44 1/4	66	45	45
	B	21 3/4	21 3/4	21 3/4	21 3/4	21 13/16	26	26
	C	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	33	33
	D	37 1/4	43 1/4	43 1/4	43 1/4	65	44	44
	E	12 7/8	10 7/16	9 7/16	9 7/16	9 7/16	12 1/2	12 1/2
	F	7 7/8	10 3/8	11 3/8	11 3/8	11 3/8	11 1/2	11 1/2
	G	9 3/16	12	12 1/4	12 1/4	12 1/4	13 1/4	13 1/4
	H	18	18	18	18	18	29 3/4	29 3/4
	K	17 1/2	23 1/2	23 1/2	23 1/2	28	22	22
	L	18 11/16	18 11/16	18 11/16	18 11/16	18 11/16	20 11/16	20 11/16
	M	5 15/16	4 3/8	4 1/4	4 1/4	3 13/16	9 7/8	9 7/8
WATER CONNECTIONS	Standard	1/2" MF	3/4" MF	5/8" MF	5/8" MF	3/4" MF	3/4" FPT	1" FPT
	"T" Tower Application	1/2" MF	3/4" MF	3/4" MF	3/4" MF	3/4" MF	3/4" MF	1" FPT
	Drain (FPT)	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
AIR FILTER SIZE (F) (Inches)	Width	18	18	18	18	18	29 3/4	29 3/4
	Height	17 1/2	23	23	23	28	22	22
	Thickness	1/2	1/2	1/2	1/2	1/2	1/2	1/2
SHIPPING WEIGHT		205	240	280	300	380	450	475

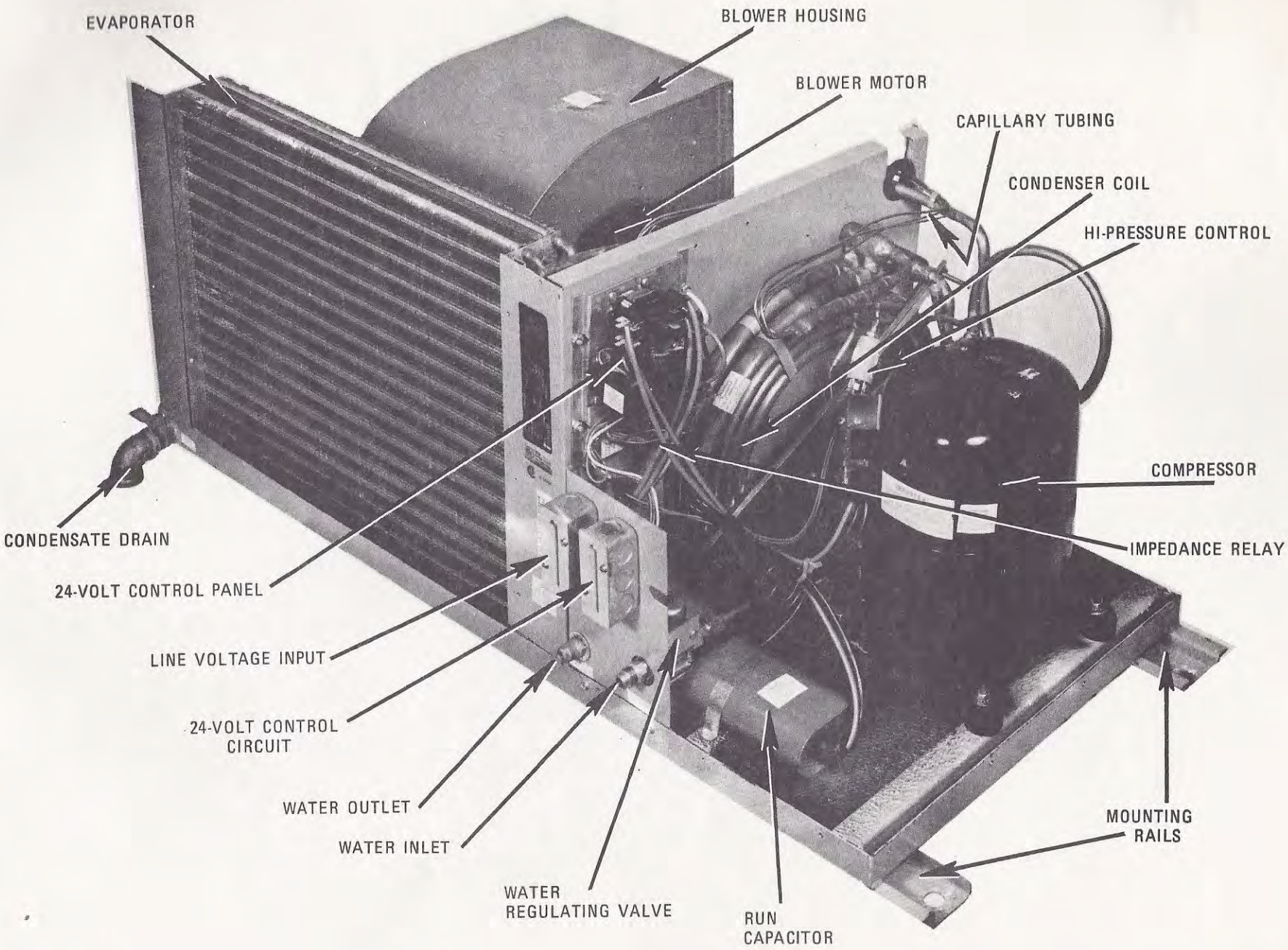
Control Room and Bridge Units

"HORIZONTAL SYSTEM"



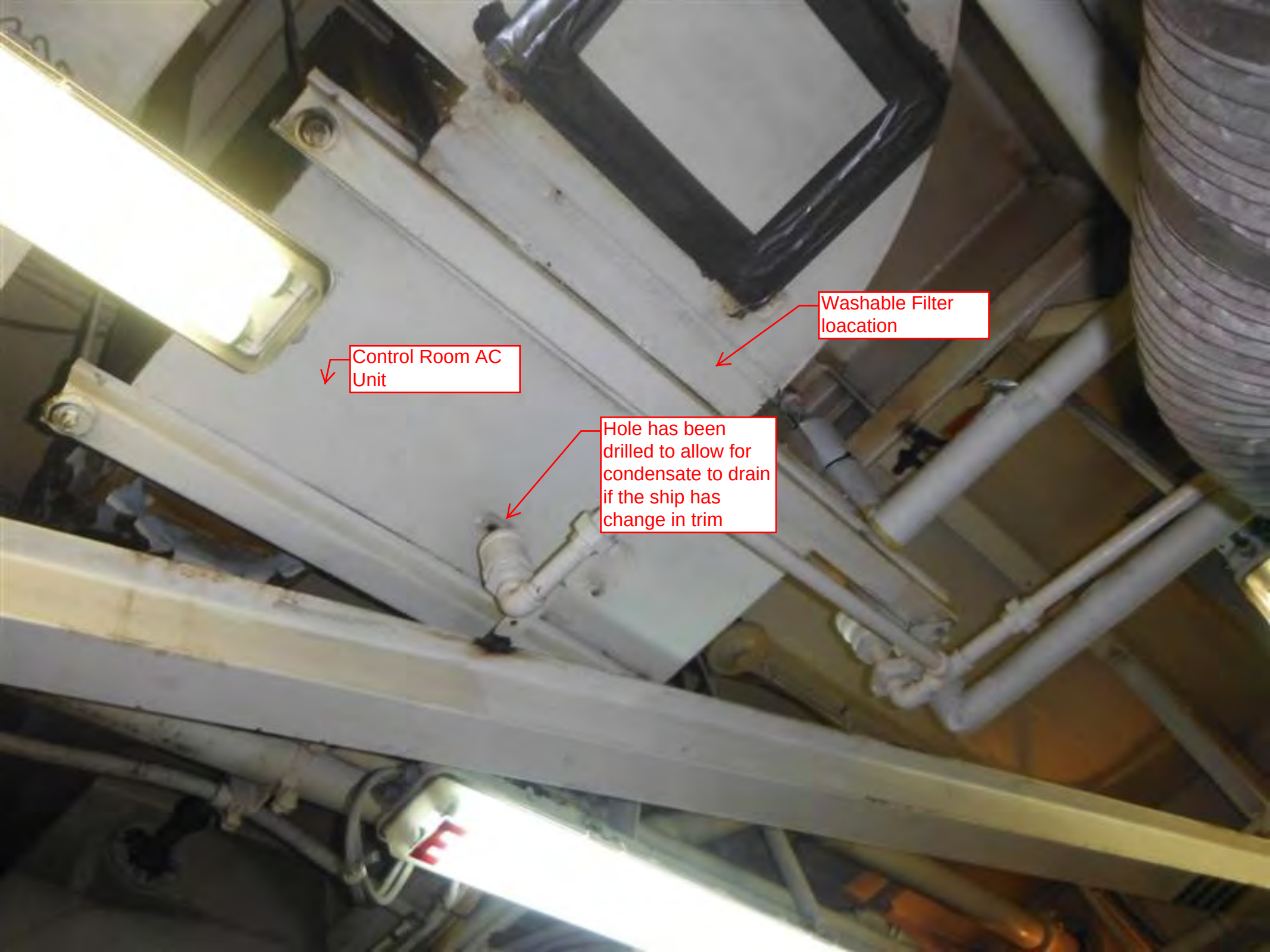
MODEL NUMBERS		5K9CM 5K9CMH	5K13CM 5K13CMH	5K19CM 5K19CMH	5K25CM 5K25CMH	5K31CM 5K31CMH	5K33CM 5K33CMH	5K52CM 5K52CMH	5K65CM 5K65CMH	5K90CM 5K90CMH
DIMENSIONS (Inches)	A	36 7/16	36 7/16	36 7/16	45 7/16	45 7/16	45 7/16	58 3/8	58 3/8	58 3/8
	B	11 7/8	11 7/8	15 11/16	18 1/2	18 1/2	18 1/2	24 3/4	24 3/4	24 3/4
	C	17 9/16	17 9/16	17 9/16	20 1/8	20 1/8	20 1/8	28	28	28
	D	41	41	41	50	50	50	76	76	76
	E	14	14	14	16 3/4	16 3/4	16 3/4	24 1/2	24 1/2	24 1/2
	F	6 3/8	6 3/8	6 3/8	5 3/8	5 3/16	5 3/16	7 5/16	7 5/16	7 5/16
	G	9	9	6 1/4	11 7/8	12 1/4	12 1/4	15 5/8	15 5/8	15 5/8
	H	4 1/2	4 1/2	8	10 3/8	11 7/16	11 7/16	13 9/16	13 9/16	13 9/16
	J	6 3/4	6 3/4	5 1/2	6 3/4	5 9/16	5 9/16	8 9/16	8 9/16	8 9/16
	K	19 7/8	19 7/8	19 3/4	22	22	22	36	36	36
	L	10	10	14	17 1/2	17 1/2	17 1/2	24 1/16	24 1/16	24 1/16
	M	2 5/8	2 5/8	2 5/8	3 1/2	3 1/2	3 1/2	5	5	5
	N	9 3/4	9 3/4	9 3/4	12	12	12	2 3/8	2 3/8	2 3/8
	O	3 3/4	3 3/4	3 3/4	3 1/2	3 1/2	3 1/2	7 1/4	7 1/4	7 1/4
	P	8 1/2	8 1/2	8 1/2	7 7/8	7 7/8	7 7/8	9	9	9
	R	12 3/8	12 3/8	12 3/8	15 1/2	15 1/2	15 1/2	7 3/8	7 3/8	7 3/8
	T	1 1/2	1 1/2	1 1/2	2 3/4	2 3/4	2 3/4	1 1/2	1 1/2	1 1/2
WATER CONNECTIONS	Standard	3/8" MF	3/8" MF	1/2" MF	1/2" MF	5/8" MF	5/8" MF	3/4" FPT	3/4" FPT	1" FPT
	"T" Tower Application	1/2" MF	1/2" MF	1/2" MF	3/4" MF	3/4" MF	3/4" MF	3/4" MF	3/4" FPT	1" FPT
	Drain FPT	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
AIR FILTER SIZE INCHES	Width	20 1/4	20 1/4	20 1/4	22	22	22	17 1/2 2EA.	17 1/2 2EA.	17 1/2 2EA.
	Height	9 7/16	9 7/16	13 1/8	17 1/2	17 1/2	17 1/2	24	24	24
	Thickness	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
SHIPPING WEIGHT		140	190	205	260	280	300	615	615	720

CM HORIZONTAL SERIES




Control Room AC Unit


Control Room AC Unit
S . W . L . 3 TON


Washable Filter loacation
Control Room AC Unit
Hole has been drilled to allow for condensate to drain if the ship has change in trim


Bridge AC Unit
STBD side
Condensate Drain


Bridge AC Unit
STBD


Bridge AC Unit
Compressor


Bridge STBD AC Unit Compressor. Note that the cabinet has been cut away to allow for servicing


Bridge AC Unit
STBD


Bridge AC Unit
Port


Bridge AC Unit
Port


REFRIGERANT
TAG
ENCLOSED
Underside of Stairs to Bridge Deck. These will need to be cut out to access the unit
Bridge AC Unit Port


RANT
USED


REFRIGERANT
TAG
ENCLOSED
Bridge AC Unit
Port


REFRIGERANT
TAG
ENCLOSED


REFRIGERANT
TAG