International Comfort Products

THIS BOOKLET CONTAINS IMPORTANT INFORMATION

INSTALLER: USE THE INFORMATION IN THIS BOOKLET TO INSTALL THE APPLIANCE AND AFFIX THIS BOOKLET ADJACENT TO THE APPLIANCE AFTER INSTALLATION.

USER: KEEP THIS BOOKLET OF INFORMATION FOR FUTURE REFERENCE.

SERVICER: USE THE INFORMATION IN THIS BOOKLET TO SERVICE THE APPLIANCE AND AFFIX THE BOOKLET ADJACENT TO THE APPLIANCE AFTER SERVICING.

LITERATURE ASSEMBLY BOOKLET NO. 348157-701

Cover Page P/N 348157-201

348157-701 REV.-

MODEL WJH4K

348157-701 REV.-

Printed on recycled paper.

NOTE TO INSTALLER: This manual must be left with the equipment owner.

Effective January 1, 2015, all split system and packaged air conditioners must be installed pursuant to applicable regional efficiency standards issued by the Department of Energy.

International Comfort Products
Limited Warranty Certificate

Covered Products: Residential R–410A Heating and Cooling Products (See Chart Below)

FOR WARRANTY SERVICE OR REPAIR:

Contact the installer or an International Comfort Products dealer. You may be able to find the installer's name on the equipment or in your Owner's Packet. You can also find an International Comfort Products dealer online at www.icpusa.com. For help, contact: International Comfort Products, Consumer Relations, P.O. Box 4808, Syracuse, New York, 13221, Phone 1–877–591–8908.

Product registration: You can register your product at https://productregistration.icpusa.com.

Fill in the installation date, model and serial number of the unit in the space provided below and retain for your records.

Model No. WJH4K

Serial No. 4270110503O3

Date of Installation _____

Installed by _____

Name of Owner _____

Address of Installation _____

International Comfort Products ("ICP") warrants this product against failure due to defect in materials or workmanship under normal use and maintenance as follows. All warranty periods begin on the date of original installation and are for the duration, in years, listed below. If a part fails due to defect during the applicable warranty period ICP will provide a new or remanufactured part, at ICP's option, to replace the failed defective part at no charge for the part. Alternatively, and at its option, ICP will allow a credit in the amount of the then factory selling price for a new equivalent part toward the retail purchase price of a new ICP product. Except as otherwise stated herein, those are ICP's exclusive obligations under this warranty for a product failure. All warranties in this document are subject to all provisions, conditions, limitations and exclusions listed below and on the reverse of this document.

RESIDENTIAL APPLICATIONS

This warranty is to the original purchasing owner and subsequent owners only to the extent and as stated in the Warranty Conditions and below. The limited parts warranty period in years, depending on the part and the claimant, is as shown in the chart below.

Unit Replacement limited warranty – Available on qualifying models only, see chart below for list of covered models and duration of warranty. Available to original purchaser in owner-occupied single family residential applications only, and is not available to subsequent homeowners. If the heat exchanger, compressor, or condenser coil fails due to defect during the applicable Unit Replacement limited warranty time period, a one-time replacement with a comparable ICP unit will be provided. This unit replacement limited warranty is in addition to the standard parts warranty. Proof of purchase and installation date will be required. Unit replacements are subject to review and verification by an ICP representative. The remaining balance of the original unit's standard warranty will be transferred to the replacement unit. This limited warranty is subject to all provisions, conditions, limitations and exclusions listed below and on the reverse of this document.

Product Family	Product Description	Warranty Period in Years					
		Unit Replacement‡	Heat Exchanger		Parts (Including Compressor and Coil)		
		Original Owner	Original Owner	Subsequent Owners	Original Owner	Original Registered Owner*	Subsequent Owners
WPG4	Small Package	1	10	10	5	10	5
WPA4, WPH4, WJA4, WJH4	Small Package	1	–	–	5	10	5

‡ See Warranty Conditions on reverse.

* If properly registered within ninety (90) days after original installation, parts are warranted for a period of ten (10) years to the original purchaser. Otherwise, parts warranty is five (5) years (except in California and Quebec, and other jurisdictions that prohibit warranty benefits conditioned on registration).

OTHER APPLICATIONS

For all applications other than residential applications, the warranty period is ten (10) years on the heat exchanger and five (5) years on the compressor, and one (1) year on all other parts. The warranty is to the original owner only and is not available for subsequent owners.

LEGAL REMEDIES - The owner **must** notify the Company in writing, by certified or registered letter to ICP, Warranty Claims, P.O. Box 4808, Syracuse, New York 13221, of any defect or complaint with the product, stating the defect or complaint and a specific request for repair, replacement, or other correction of the product under warranty, mailed at least thirty (30) days before pursuing any legal rights or remedies.

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Table 6 – Filter Pressure Drop (IN. W.C.)

FILTER SIZE in. (mm)	CFM																	
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200
20X20X1 (508X508X25)	0.05	0.07	0.08	0.10	0.12	0.13	0.14	0.15	—	—	—	—	—	—	—	—	—	—
20X24X1 (508X610x25)	—	—	—	0.08	0.09	0.10	0.11	0.13	0.14	0.15	0.16	—	—	—	—	—	—	—
24X30X1 (610X762x25)	—	—	—	0.04	0.05	0.06	0.07	0.07	0.08	0.09	0.10	—	—	—	—	—	—	—
24X36X1 (610X914X25)	—	—	—	—	—	—	—	0.06	0.07	0.07	0.08	0.09	0.09	0.10	0.11	0.12	0.13	0.14

Table 7 – Accessory Electric Heat Pressure Drop (IN. W.C.)

HEATER kW	CFM							
	800	1000	1200	1400	1600	1800	2000	2200
5-20	0.033	0.037	0.042	0.047	0.052	0.060	0.067	0.075

MAINTENANCE

To ensure continuing high performance, and to minimize the possibility of premature equipment failure, periodic maintenance must be performed on this equipment. This cooling unit should be inspected at least once each year by a qualified service person. To troubleshoot unit, refer to Table 9, Troubleshooting Chart.

NOTE TO EQUIPMENT OWNER: Consult your local dealer about the availability of a maintenance contract.

⚠ WARNING

PERSONAL INJURY AND UNIT DAMAGE HAZARD

Failure to follow this warning could result in personal injury or death and possible unit component damage.

The ability to properly perform maintenance on this equipment requires certain expertise, mechanical skills, tools and equipment. If you do not possess these, do not attempt to perform any maintenance on this equipment, other than those procedures recommended in the Owner's Manual.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

1. Turn off electrical power to the unit and install lockout tag before performing any maintenance or service on this unit.
2. Use extreme caution when removing panels and parts.
3. Never place anything combustible either on or in contact with the unit.

⚠ CAUTION

UNIT OPERATION HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Errors made when reconnecting wires may cause improper and dangerous operation. Label all wires prior to disconnecting when servicing.

The minimum maintenance requirements for this equipment are as follows:

1. Inspect air filter(s) each month. Clean or replace when necessary.
2. Inspect indoor coil, drain pan, and condensate drain each cooling season for cleanliness. Clean when necessary.
3. Inspect blower motor and wheel for cleanliness each cooling season. Clean when necessary.
4. Check electrical connections for tightness and controls for proper operation each cooling season. Service when necessary.
5. Ensure electric wires are not in contact with refrigerant tubing or sharp metal edges.

Air Filter

IMPORTANT: Never operate the unit without a suitable air filter in the return-air duct system. Always replace the filter with the same dimensional size and type as originally installed. See Table 1 for recommended filter sizes.

Inspect air filter(s) at least once each month and replace (throwaway-type) or clean (cleanable-type) at least twice during each cooling season and twice during the heating season if electric heat is installed, or whenever the filter becomes clogged with dust and lint.

Unit Top Removal

NOTE: When performing maintenance or service procedures that require removal of the unit top, be sure to perform all of the routine maintenance procedures that require top removal, including coil inspection and cleaning, and condensate drain pan inspection and cleaning.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Disconnect electrical power, and install lockout tag to the unit before removing top.

Only qualified service personnel should perform maintenance and service procedures that require unit top removal.

Refer to the following top removal procedures:

1. Unplug all three wires from the outdoor fan motor.
2. Remove screws on unit top cover flange. (Save all screws.)
3. Lift top from unit carefully. Set top on edge and make sure that top is supported by unit side that is opposite duct (or plenum) side.
4. Carefully replace and secure unit top to unit, using screws removed in Steps 1 and 2, when maintenance and/or service procedures are completed.

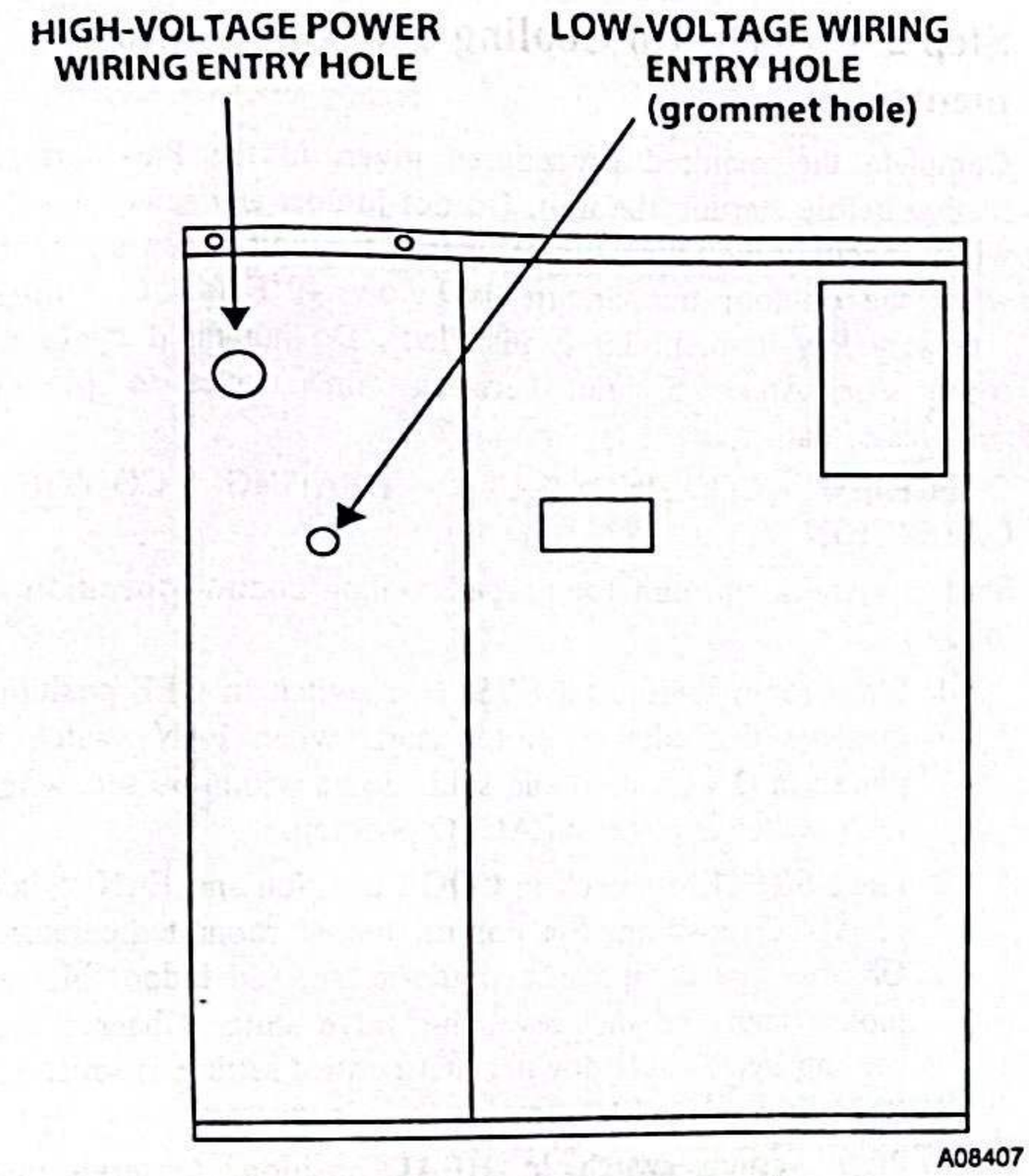

Fig. 13 - Unit Electrical Connection

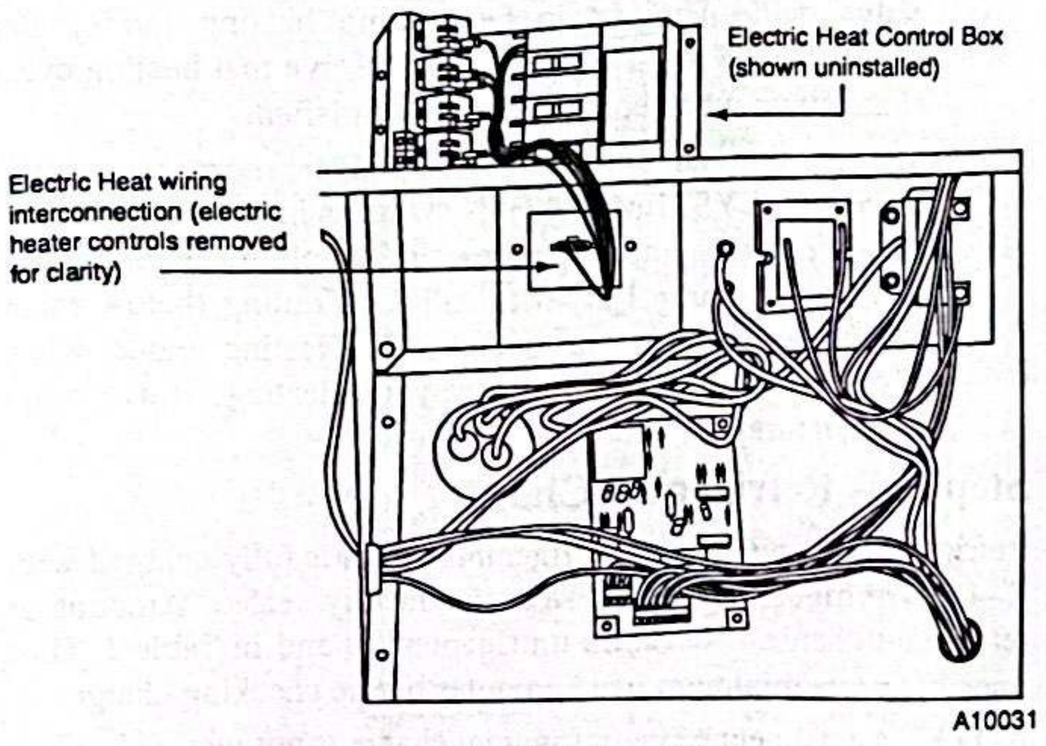

Fig. 14 - Control Box Wiring

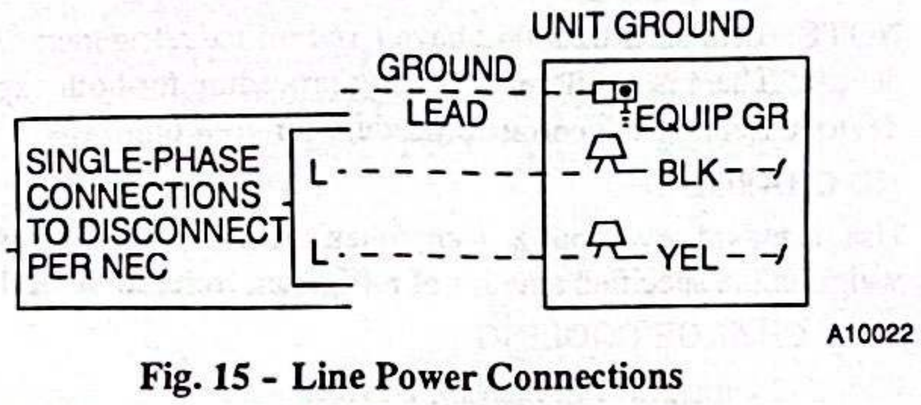

Fig. 15 - Line Power Connections

CONNECTING GROUND LEAD TO UNIT GROUND

Connect the ground lead to the chassis using the unit ground in the control box (See Fig. 14 and Fig. 15).

ROUTING CONTROL POWER WIRES (24-V)

Form a drip-loop with the thermostat leads before routing them into the unit. Route the thermostat leads through grommeted hole provided in unit into unit control box (See Fig. 13). Connect thermostat leads and unit power leads as shown in Fig. 15, Fig. 16 and Fig. 17.

The unit transformer supplies 24-v power for complete system including accessory electrical heater. Transformer is factory wired for 230-v operation.

Unit main harness contains a 3 amp automotive style replaceable fuse. If transformer secondary voltage is not available at red and brown leads in unit low voltage box, check fuse in red lead near transformer. Replace with Littelfuse brand, part number 257003.

Unit main harness also contains a 1k ohm, 3 watt load resistor wired across low voltage leads "G" and "C". Purpose of resistor is to provide a small electrical load for the indoor thermostat fan circuit to ensure reliable operation.

ACCESSORY ELECTRIC HEAT WIRING

Refer to accessory electric heat installation instructions for information on installing accessory electric heat. Accessory electric heat wiring is shown in Fig. 17 and Fig. 18.

NOTE: When installing an accessory electric heater, the high voltage wire harness pass-through must be sealed with silicone or equivalent at the partition in order to comply with the 2% or less air leakage certification.

PRE-START-UP

⚠ WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death and/or property damage.

1. Follow recognized safety practices and wear protective goggles when checking or servicing refrigerant system.
2. Relieve and recover all refrigerant from system before touching or disturbing compressor plug if refrigerant leak is suspected around compressor terminals.
3. Never attempt to repair soldered connection while refrigerant system is under pressure.
4. Do not use torch to remove any component. System contains oil and refrigerant under pressure.
5. To remove a component, wear protective goggles and proceed as follows:
   a. Shut off electrical power to unit and install lockout tag.
   b. Relieve and reclaim all refrigerant from system using both high- and low-pressure ports.
   c. Cut component connecting tubing with tubing cutter and remove component from unit.
   d. Carefully unsweat remaining tubing stubs when necessary. Oil can ignite when exposed to torch flame.

Proceed as follows to inspect and prepare the unit for initial start-up:

1. Remove all access panels.
2. Read and follow instructions on all DANGER, WARNING, CAUTION, and INFORMATION labels attached to, or shipped with unit.

⚠ WARNING

PERSONAL INJURY AND ENVIRONMENTAL HAZARD

Failure to relieve system pressure could result in personal injury and/or death.

Relieve pressure and recover all refrigerant before system repair or final unit disposal.

Wear safety glasses and gloves when handling refrigerant. Keep torches and other ignition sources away from refrigerants and oils.

Table 3 – Superheat Charging

SUPERHEAT CHARGING TABLE
(SUPERHEAT °F (°C) AT COMPRESSOR SUCTION SERVICE PORT)

OUTDOOR TEMP °F (°C)	EVAPORATOR ENTERING AIR °F (°C) WB													
	50 (10)	52 (11)	54 (12)	56 (13)	58 (14)	60 (16)	62 (17)	64 (18)	66 (19)	68 (20)	70 (21)	72 (22)	74 (23)	76 (24
55 (12.7)	9 (5.0)	12 (6.7)	14 (7.8)	17 (9.4)	20 (11)	23 (13)	26 (14)	29 (16)	32 (18)	35 (19)	37 (21)	40 (22)	42 (23)	45 (25)
60 (15.6)	7 (3.9)	10 (5.6)	12 (6.7)	15 (8.3)	18 (10)	21 (12)	24 (13)	27 (15)	30 (17)	33 (18)	35 (19)	38 (21)	40 (22)	43 (24)
65 (18.3)	–	6 (3.3)	10 (5.6)	13 (7.2)	16 (8.9)	19 (11)	21 (12)	24 (13)	27 (15)	30 (17)	33 (18)	36 (20)	38 (21)	41 (23)
70 (21.1)	–	–	7 (3.9)	10 (5.6)	13 (7.2)	16 (8.9)	19 (11)	21 (12)	24 (13)	27 (15)	30 (17)	33 (18)	36 (20)	39 (22)
75 (23.9)	–	–	–	6 (3.3)	9 (5.0)	12 (6.7)	15 (8.3)	18 (10)	21 (12)	24 (13)	28 (16)	31 (17)	34 (19)	37 (21)
80 (26.7)	–	–	–	–	5 (2.8)	8 (4.4)	12 (6.7)	15 (8.3)	18 (10)	21 (12)	25 (14)	28 (16)	31 (17)	35 (19)
85 (29.4)	–	–	–	–	–	–	8 (4.4)	11 (6.1)	15 (8.3)	19 (11)	22 (12)	26 (14)	30 (17)	33 (18)
90 (32.2)	–	–	–	–	–	–	5 (2.8)	9 (5.0)	13 (7.2)	16 (8.9)	20 (11)	24 (13)	27 (15)	31 (17)
95 (35.0)	–	–	–	–	–	–	–	6 (3.3)	10 (5.6)	14 (7.8)	18 (10)	22 (12)	25 (14)	29 (16)
100 (37.7)	–	–	–	–	–	–	–	–	8 (4.4)	12 (6.7)	15 (8.3)	20 (11)	23 (13)	27 (15)
105 (40.6)	–	–	–	–	–	–	–	–	5 (2.8)	9 (5.0)	13 (7.2)	17 (9.4)	22 (12)	26 (14)
110 (43.3)	–	–	–	–	–	–	–	–	–	6 (3.3)	11 (6.1)	15 (8.3)	20 (11)	25 (14)
115 (46.1)	–	–	–	–	–	–	–	–	–	–	8 (4.4)	14 (7.8)	18 (10)	23 (13)

REQUIRED SUCTION TUBE TEMPERATURE °F (°C)
(MEASURED AT COMPRESSOR SUCTION SERVICE PORT)

SUPERHEAT TEMP °F (°C)	SUCTION PRESSURE AT SUCTION SERVICE PORT PSIG (kPa)								
	107 (738)	111 (766)	116 (800)	120 (828)	125 (862)	130 (897)	135 (931)	140 (966)	145 (1000)
0 (0)	35 (1.7)	37 (2.8)	39 (3.9)	41 (5.0)	43 (6.1)	45 (7.2)	47 (8.3)	49 (9.4)	51 (11)
2 (1.1)	37 (2.8)	39 (3.9)	41 (5.0)	43 (6.1)	45 (7.2)	47 (8.3)	49 (9.4)	51 (11)	53 (12)
4 (2.2)	39 (3.9)	41 (5.0)	43 (6.1)	45 (7.2)	47 (8.3)	49 (9.4)	51 (11)	53 (12)	55 (13)
6 (3.3)	41 (5.0)	43 (6.1)	45 (7.2)	47 (8.3)	49 (9.4)	51 (11)	53 (12)	55 (13)	57 (14)
8 (4.4)	43 (6.1)	45 (7.2)	47 (8.3)	49 (9.4)	51 (11)	53 (12)	55 (13)	57 (14)	59 (15)
10 (5.6)	45 (7.2)	47 (8.3)	49 (9.4)	51 (11)	53 (12)	55 (13)	57 (14)	59 (15)	61 (16)
12 (6.7)	47 (8.3)	49 (9.4)	51 (11)	53 (12)	55 (13)	57 (14)	59 (15)	61 (16)	63 (17)
14 (7.8)	49 (9.4)	51 (11)	53 (12)	55 (13)	57 (14)	59 (15)	61 (16)	63 (17)	65 (18)
16 (8.9)	51 (11)	53 (12)	55 (13)	57 (14)	59 (15)	61 (16)	63 (17)	65 (18)	67 (19)
18 (10.0)	53 (12)	55 (13)	57 (14)	59 (15)	61 (16)	63 (17)	65 (18)	67 (19)	69 (21)
20 (11.1)	55 (13)	57 (14)	59 (15)	61 (16)	63 (17)	65 (18)	67 (19)	69 (21)	71 (22)
22 (12.2)	57 (14)	59 (15)	61 (16)	63 (17)	65 (18)	67 (19)	69 (21)	71 (22)	73 (23)
24 (13.3)	59 (15)	61 (16)	63 (17)	65 (18)	67 (19)	69 (21)	71 (22)	73 (23)	75 (24)
26 (14.4)	61 (16)	63 (17)	65 (18)	67 (19)	69 (21)	71 (22)	73 (23)	75 (24)	77 (25)
28 (15.6)	63 (17)	65 (18)	67 (19)	69 (21)	71 (22)	73 (23)	75 (24)	77 (25)	79 (26)
30 (16.7)	65 (18)	67 (19)	69 (21)	71 (22)	73 (23)	75 (24)	77 (25)	79 (26)	81 (27)
32 (17.8)	67 (19)	69 (21)	71 (22)	73 (23)	75 (24)	77 (25)	79 (26)	81 (27)	83 (28)
34 (18.9)	69 (21)	71 (22)	73 (23)	75 (24)	79 (26)	79 (26)	81 (27)	83 (28)	85 (29)
36 (20.0)	71 (22)	73 (23)	75 (24)	81 (27)	81 (27)	81 (27)	83 (28)	85 (29)	87 (31)
38 (21.1)	73 (23)	75 (24)	83 (28)	83 (28)	83 (28)	83 (28)	85 (29)	87 (31)	89 (32)
40 (22.2)	75 (24)	85 (29)	85 (29)	85 (29)	85 (29)	85 (29)	87 (31)	89 (32)	91 (33)

COOLING ONLY CHARGING PROCEDURE

1. Operate unit a minimum of 10 minutes before checking charge.
2. Measure suction pressure by attaching an accurate gauge to compressor suction side service port.
3. Measure suction side temperature by attaching an accurate thermisitor type or electronic thermometer to suction line about 10 inches from compressor.
4. Measure outdoor air dry-bulb temperature with thermometer.
5. Measure indoor air (return air) wet-bulb temperature with a sling psychrometer or electronic equivalent.
6. Using Superheat Charging Table find outdoor temperature and indoor air wet-bulb temperature. At this intersection note superheat. Where a dash (–) appears on table do not attempt to charge unit under these conditions or refrigerant slugging may occur. In this situation refrigerant must be evacuated and weighed in. See rating plate for charge quantity.
7. Refer to Required Suction Tube Temp. table. Find superheat temperature located in step 6 and suction pressure. At this intersection note suction line temperature.
8. If unit has a higher suction line temperature than charted temperature, add refrigerant until charted temperature is reached.
9. If unit has a lower suction line temperature than charted temperature, reclaim refrigerant until charted temperature is reached.
10. If outdoor air temperature or pressure at suction port changes, charge to new suction line temperature indicated on chart.

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Table 4 – Required Subcooling

Model Size	Required Subcooling °F (°C) – Outdoor Ambient Temperature °F (°C)				
	75 (24)	85 (29)	95 (35)	105 (41)	115 (46)
AC 060	14 (7.7)	14 (7.7)	14 (7.7)	13 (7.3)	13 (7.3)
HP 048	12 (6.7)	12 (6.7)	11.5 (6.4)	11.3 (6.3)	11 (6.1)
HP 060	10 (5.6)	9 (5)	8 (4.4)	8 (4.2)	7 (4.1)

Charging Procedure

1- Measure Discharge line pressure by attaching a gauge to the service port.
2- Measure the Liquid line temperature by attaching a temperature sensing device to it.
3- Insulate the temperature sensing device so that the Outdoor Ambient doesn't affect the reading.
4- Refer to the required Subcooling in the table based on the model size and the Outdoor Ambient temperature.
5- Interpolate if the Outdoor ambient temperature lies in between the table values.
6- Find the Pressure Value in the table corresponding to the the measured Pressure of the Compressor Discharge line.
7- Read across from the Pressure reading to obtain the Liquid line temperature for a required Subcooling
8- Add Charge if the measured temperature is higher than the table value.
9 - Remove charge if the measured temperature is lower than the table value.

DRAWING NUMBER	REV
50ZH500700	A
SHEET 1 OF 1	

Required Liquid Line Temperature for a Specific Subcooling (R-410A)											
	Required Subcooling °F						Required Subcooling °C				
Pressure (psig)	5	10	15	20	25	Pressure (kPa)	3	6	8	11	14
189	61	56	51	46	41	1303	16	13	11	8	5
196	63	58	53	48	43	1351	17	15	12	9	6
203	66	61	56	51	46	1399	19	16	13	10	8
210	68	63	58	53	48	1448	20	17	14	11	9
217	70	65	60	55	50	1496	21	18	15	13	10
224	72	67	62	57	52	1544	22	19	16	14	11
231	74	69	64	59	54	1593	23	20	18	15	12
238	76	71	66	61	56	1641	24	21	19	16	13
245	77	72	67	62	57	1689	25	22	20	17	14
252	79	74	69	64	59	1737	26	23	21	18	15
260	81	76	71	66	61	1792	27	25	22	19	16
268	83	78	73	68	63	1848	29	26	23	20	17
276	86	80	75	70	65	1903	30	27	24	21	19
284	87	82	77	72	67	1958	31	28	25	22	20
292	89	84	79	74	69	2013	32	29	26	23	21
300	91	86	81	76	71	2068	33	30	27	24	22
309	93	88	83	78	73	2130	34	31	28	26	23
318	95	90	85	80	75	2192	35	32	29	27	24
327	97	92	87	82	77	2254	36	33	31	28	25
336	99	94	89	84	79	2316	37	34	32	29	26
345	101	96	91	86	81	2378	38	35	33	30	27
354	103	98	93	88	83	2440	39	36	34	31	28
364	105	100	95	90	85	2509	40	38	35	32	29
374	107	102	97	92	87	2578	41	39	36	33	30
384	108	103	98	93	88	2647	42	40	37	34	31
394	110	105	100	95	90	2716	44	41	38	35	32
404	112	107	102	97	92	2785	45	42	39	36	33
414	114	109	104	99	94	2854	46	43	40	37	34
424	116	111	106	101	96	2923	47	44	41	38	35
434	118	113	108	103	98	2992	48	45	42	39	36
444	119	114	109	104	99	3061	48	46	43	40	37
454	121	116	111	106	101	3130	49	47	44	41	38
464	123	118	113	108	103	3199	50	48	45	42	39
474	124	119	114	109	104	3268	51	48	46	43	40
484	126	121	116	111	106	3337	52	49	47	44	41
494	127	122	117	112	107	3406	53	50	47	45	42
504	129	124	119	114	109	3475	54	51	48	46	43
514	131	126	121	116	111	3544	55	52	49	46	44
524	132	127	122	117	112	3612	56	53	50	47	45
534	134	129	124	119	114	3681	58	54	51	48	45

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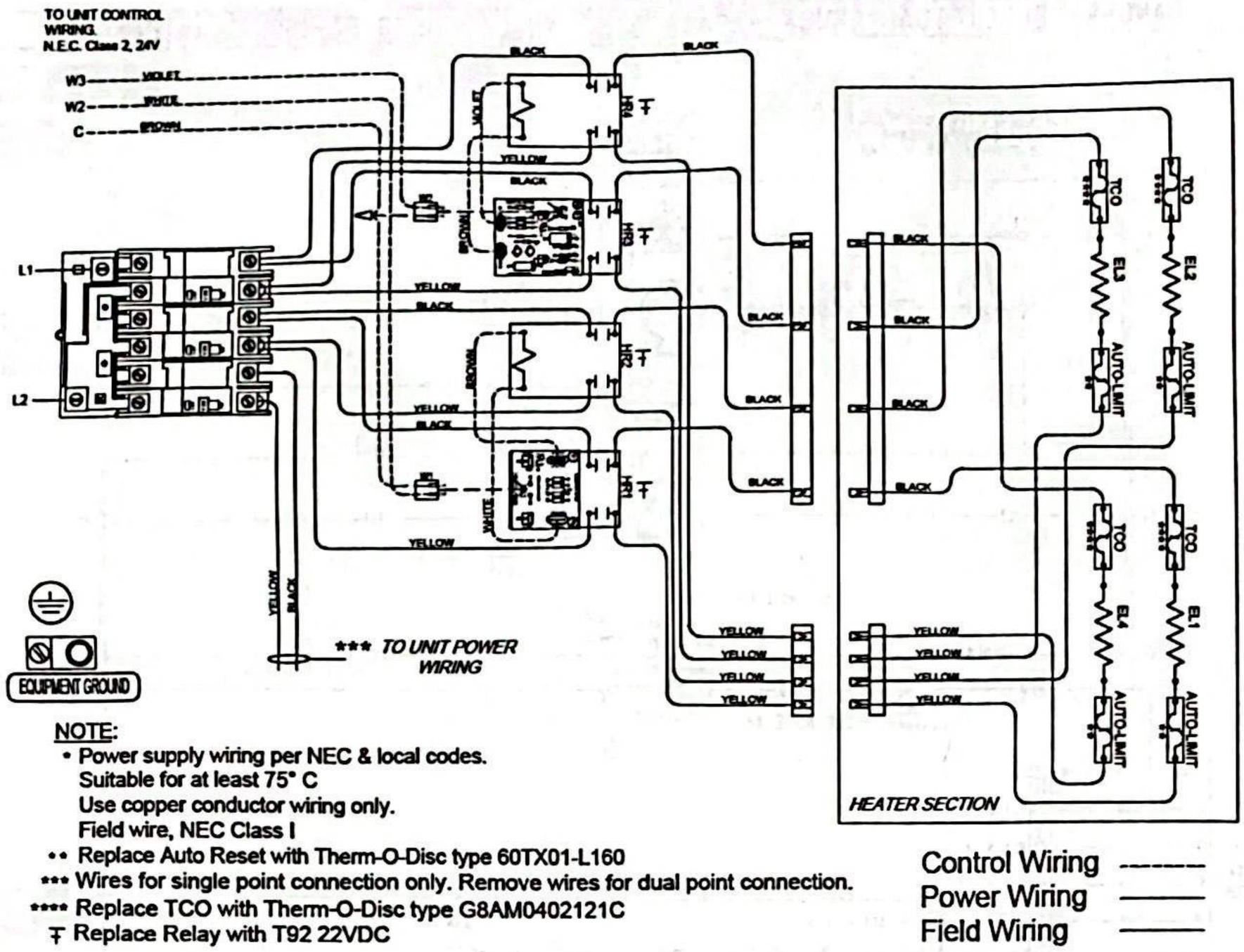

NOTE:
- Power supply wiring per NEC & local codes.
  Suitable for at least 75° C
  Use copper conductor wiring only.
  Field wire, NEC Class I

•• Replace Auto Reset with Therm-O-Disc type 60TX01-L160
••• Wires for single point connection only. Remove wires for dual point connection.
•••• Replace TCO with Therm-O-Disc type G8AM0402121C
∓ Replace Relay with T92 22VDC

NOTE: 20kW Heater shown. Smaller heaters have fewer elements and controls

A190069

Fig. 18 - Accessory Electric Heater Wiring

Table 5 – Wet Coil Air Delivery*
(Deduct 10 percent for 208 Volt Operation)

230 VOLT HORIZONTAL DISCHARGE											
UNIT SIZE	SPEED TAP	AIR DELIVERY[2]	EXTERNAL STATIC PRESSURE (IN. W.C.)									
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
024	1	SCFM	933	799	758	707	675	608	549	497	435	394
	2	SCFM	1016	921	882	854	809	761	711	668	599	552
	3	SCFM	1079	1041	1003	970	944	909	866	810	764	724
030	1	SCFM	1052	1018	984	943	914	879	833	795	732	678
	2	SCFM	1141	1107	1069	1036	1006	974	932	899	856	784
	3	SCFM	1246	1213	1181	1144	1108	1078	1043	1015	973	931
036	1	SCFM	1311	1253	1195	1136	1083	1023	958	895	818	729
	2	SCFM	1413	1364	1313	1256	1203	1148	1084	1022	969	882
	3	SCFM	1571	1525	1473	1423	1364	1313	1261	1210	1156	1090
042	1	SCFM	1499	1434	1394	1349	1307	1273	1232	1169	1108	1038
	2	SCFM	1568	1532	1497	1459	1407	1381	1346	1304	1252	1185
	3	SCFM	1635	1593	1560	1523	1484	1439	1406	1369	1335	1264
048	1	SCFM	1657	1625	1590	1554	1517	1486	1448	1417	1381	1340
	2	SCFM	1707	1673	1644	1614	1586	1549	1515	1479	1449	1407
	3	SCFM	1931	1900	1870	1840	1809	1778	1749	1714	1683	1646
060	1	SCFM	1774	1746	1717	1678	1639	1590	1538	1492	1461	1418
	2	SCFM	1857	1820	1784	1752	1720	1671	1625	1579	1532	1509
	3	SCFM	2183	2144	2115	2079	2049	2018	1986	1933	1859	1733

*Air delivery values are based on operating voltage of 230v, wet coil, without filter or electric heater. Deduct filter and electric heater pressure drops to obtain static pressure available for ducting.

NOTES:

1. Do not operate the unit at a cooling airflow that is less than 350 cfm for each 12,000 Btuh of rated cooling capacity. Evaporator coil frosting may occur at airflows below this point.
2. Standard Cubic Feet per Minute

CONFIGURING UNITS FOR DOWNFLOW (VERTICAL) DISCHARGE

Units are dedicated side supply products. They are not convertible to vertical air supply. A field-supplied plenum must be used to convert to vertical air discharge.

Step 6 — Connect Condensate Drain

NOTE: When installing condensate drain connection be sure to comply with local codes and restrictions.

Unit removes condensate through a 1-3/64 in. (27 mm) ID hole (using 3/4-in. (19 mm) ID piping or tubing) which is located at the end of the unit. See Fig. 4-9 for location of condensate connection.

Condensate water can be drained directly onto the roof in rooftop installations (where permitted) or onto a gravel apron in ground level installations. Install a field-supplied condensate trap at end of condensate connection to ensure proper drainage. Make sure that the outlet of the trap is at least 1 in. (25 mm) lower than the drain pan condensate connection to prevent the pan from overflowing (See Fig. 11 and 12). When using a gravel apron, make sure it slopes away from the unit.

If the installation requires draining the condensate water away from the unit, install a 2-in. (51 mm) trap using a 3/4-in. (19 mm) ID tubing or pipe. (See Fig. 11 and 12.) Make sure that the outlet of the trap is at least 1 in. (25 mm) lower than the unit drain-pan condensate connection to prevent the pan from overflowing. Prime the trap with water. Connect a drain tube using a minimum of 3/4-in. (19 mm) PVC, 3/4-in. (19 mm) CPVC, or 3/4-in. copper pipe (all field supplied). Do not undersize the tube. Pitch the drain tube downward at a slope of at least 1 in. (25 mm) for every 10 ft (3 m) of horizontal run. Be sure to check the drain tube for leaks. Prime trap at the beginning of the cooling season start-up. Allowable glues for condensate trap connection are: Standard ABS, CPVC, or PVC cement.

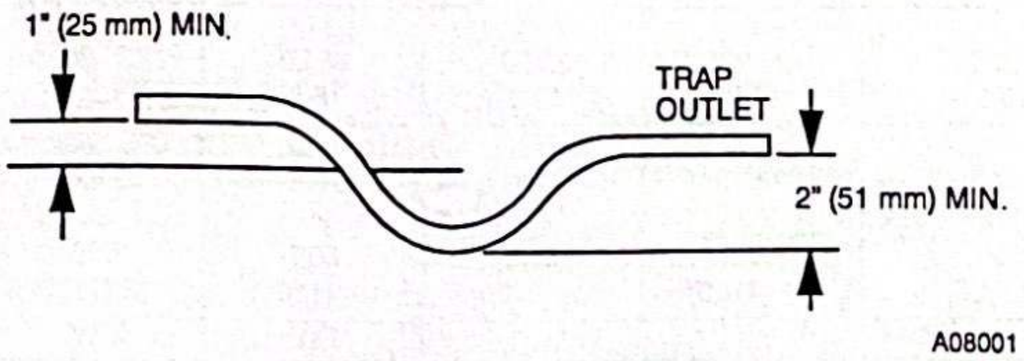

Fig. 11 - Condensate Trap

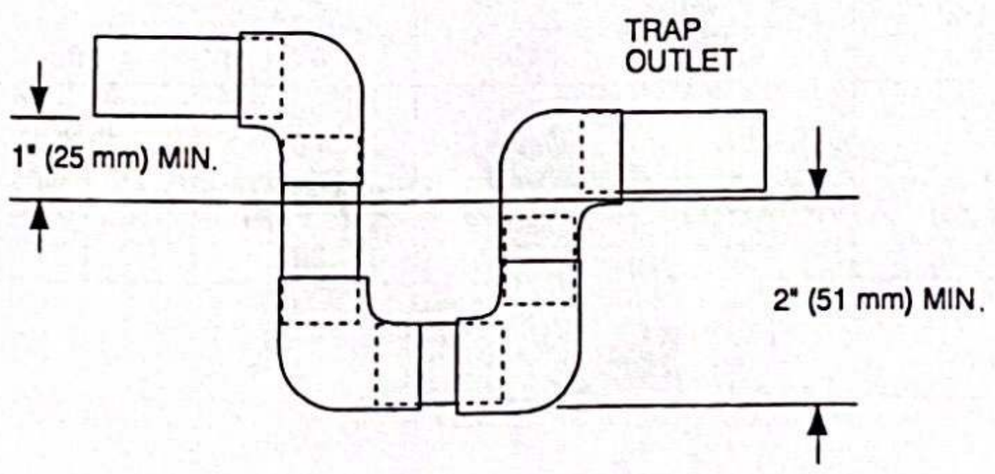

Fig. 12 - PVC Condensate Trap

Step 7 — Install Electrical Connections

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

The unit cabinet must have an uninterrupted, unbroken electrical ground to minimize the possibility of personal injury if an electrical fault should occur. This ground may consist of an electrical wire connected to the unit ground screw in the control compartment, or conduit approved for electrical ground when installed in accordance with NEC, ANSI/NFPA 70 American National Standards Institute/ National Fire Protection Association (latest edition) (in Canada, Canadian Electrical Code CSA C22.1) and local electrical codes.

⚠ CAUTION

UNIT COMPONENT DAMAGE HAZARD

Failure to follow this caution may result in damage to the unit being installed.

1. Make all electrical connections in accordance with NEC ANSI/NFPA 70 (latest edition) and local electrical codes governing such wiring. In Canada, all electrical connections must be in accordance with CSA standard C22.1 Canadian Electrical Code Part 1 and applicable local codes. Refer to unit wiring diagram.
2. Use only copper conductor for connections between field-supplied electrical disconnect switch and unit. DO NOT USE ALUMINUM WIRE.
3. Be sure that high-voltage power to unit is within operating voltage range indicated on unit rating plate. On 3-phase units, ensure phases are balanced within 2 percent. Consult local power company for correction of improper voltage and/or phase imbalance.
4. Do not damage internal components when drilling through any panel to mount electrical hardware, conduit, etc.

HIGH-VOLTAGE CONNECTIONS

The unit must have a separate electrical service with a field-supplied, waterproof disconnect switch mounted at, or within sight from the unit. Refer to the unit rating plate, NEC and local codes for maximum fuse/circuit breaker size and minimum circuit amps (ampacity) for wire sizing.

The field-supplied disconnect may be mounted on the unit over the high-voltage inlet hole when the standard power and low-voltage entry points are used. See Fig. 13 and Fig. 14 for acceptable location.

Operation of unit on improper line voltage constitutes abuse and may cause unit damage that could affect warranty.

ROUTING POWER LEADS INTO UNIT

Use only copper wire between disconnect and unit. The high-voltage leads should be in a conduit until they enter the unit; conduit termination at the unit must be watertight. Run the high-voltage leads through the hole on the control box side of the unit (See Fig. 13). When the leads are inside the unit, run leads to the control box (See Fig. 14). Connect leads to the black and yellow wires (See Fig. 15).

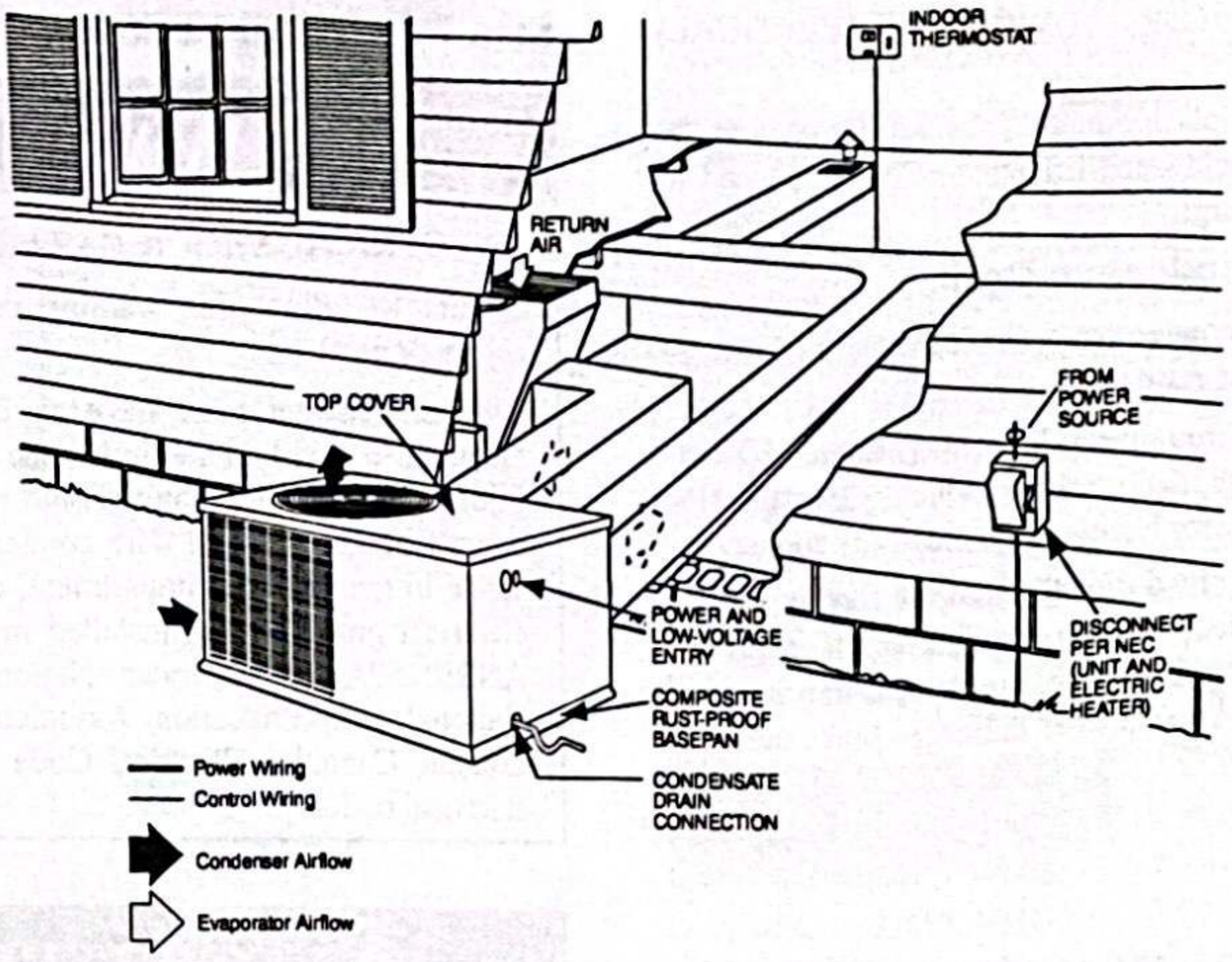

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Fig. 10 - Typical Installation

Table 1 – Physical Data

UNIT SIZE	024	030	036	042	048	060
NOMINAL CAPACITY (ton)	2	2.5	3	3.5	4	5
SHIPPING WEIGHT (lb) (kg)	312 142	333 151	334 152	388 177	407 185	475 215
COMPRESSOR TYPE	SCROLL					
REFRIGERANT	R-410A					
REFRIGERANT QUANTITIY (lb) QUANTITY (kg)	7.00 3.18	7.20 3.27	6.30 2.86	9.10 4.13	7.70 3.49	11.5 5.22
OUTDOOR METERING DEVICE	TXV	Piston			TXV	Piston
ORIFICE OD (in.) (mm)	– –	0.049 1.245	0.057 1.448	0.059 1.499	– –	0.070 1.778
OUTDOOR COIL ROWS...FINS/in. FACE AREA (sq. ft)	2...20 9.1	2...20 10.2	2...20 10.2	2...20 13.0	2...20 15.5	2...20 15.5
OUTDOOR FAN NOMINAL AIRFLOW (cfm) DIAMETER (in.) DIAMETER (mm) MOTOR HP (RPM)	2000 20 508 1/8 (825)	2000 20 508 1/8 (825)	2800 20 508 1/4 (1100)	3100 20 508 1/4 (1100)	3100 20 508 1/4 (1100)	3300 20 508 1/3 (1100)
INDOOR METERING DEVICE	Piston				TXV	TXV
ORIFICE OD (in.) (mm)	0.059 1.499	0.059 1.499	0.067 1.702	0.076 1.9304	– –	– –
INDOOR COIL ROWS...FINS/in. FACE AREA (sq. ft)	3...12 4.3	3...14 4.3	3...12 4.9	3...14 4.9	3...14 4.9	3...14 4.9
INDOOR BLOWER NOMINAL COOLING AIRFLOW (cfm) NOMINAL SIZE D x L (in.) (mm) MOTOR (HP)	800 10 x 8 254 x 203 1/3	1000 11 x 9 279 x 229 1/3	1200 11 x 9 279 x 229 1/2	1400 11 x 9 279 x 229 1/2	1600 11 x 9 279 x 229 3/4	1700 12 x 11 305 x 279 1
HIGH-PRESSURE SWITCH (psig) CUTOUT RESET (AUTO)	650 +/- 15 420 +/- 25					
LOW-PRESSURE SWITCH (psig) CUTOUT RESET (AUTO)	20 +/- 5 45 +/- 10					
RETURN-AIR FILTERS THROWAWAY (in.) (mm)	20x20x1 508x508x25	24x30x1 610x762x25		24x36x1 610x914x25		

*Required filter sizes shown are based on the AHRI (Air Conditioning, Heating & Refrigeration Institute) rated airflow at a velocity of 300 ft/min (91 m) for throw-away type or 450 ft/min (137 m) for high capacity type. Recommended filters are 1–in. (25 mm) thick.

Table 2 – Minimum Airflow for Safe Electric Heater Operation

HP Unit Size	Minimum Airflow (CFM)				
	5 kW	7.5 kW	10 kW	15 kW	20 kW
24	750	800	800	X	X
30	750	800	800	X	X
36	750	800	800	1200	X
42	750	800	800	1200	X
48	750	800	800	1200	1800
60	750	800	800	1200	1800

X = NOT APPROVED COMBINATION

UNIT	ELECTRICAL CHARACTERISTICS	UNIT WT.	UNIT HEIGHT	CENTER OF GRAVITY IN (MM)		
		LBS.	KG.	A	X	Y	Z
WJH424000K••0A	208/230-1-60	253	115	30-1/8 [765]	14 [356]	19 [483]	14 [356]
WJH430000K••0A	208/230-1-60	283	128	34-1/8 [867]	14 [356]	19 [483]	16 [406]
WJH436000K••0A	208/230-1-60	285	130	34-1/8 [867]	14 [356]	19 [483]	16 [406]

REQUIRED CLEARANCES TO COMBUSTIBLE MATL

	INCHES [MM]
TOP OF UNIT	0
BOTTOM OF UNIT	0
SIDE OF UNIT WITH DUCT OPENINGS	0
SIDE OF UNIT OPPOSITE DUCT OPENINGS	0

NEC. REQUIRED CLEARANCES.

	INCHES [MM]
BETWEEN UNITS, POWER ENTRY SIDE	42.0 [1067]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE	36.0 [914]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE	42.0 [1067]

REQUIRED CLEARANCE FOR SERVICING

	INCHES [MM]
TOP OF UNIT	36.0 [914]
SIDE OF UNIT OPPOSITE DUCT OPENINGS	30.0 [762]
SIDE OF UNIT WITH POWER ENTRY (EXCEPT FOR NEC REQUIREMENTS)	30.0 [762]

NOTE: CLEARANCES MUST BE MAINTAINED TO PREVENT RECIRCULATION OF AIR FROM OUTDOOR FAN DISCHARGE. A REMOVABLE FENCE OR BARRICADE REQUIRES NO CLEARANCE.

DIMENSIONS IN [ ] ARE IN MM

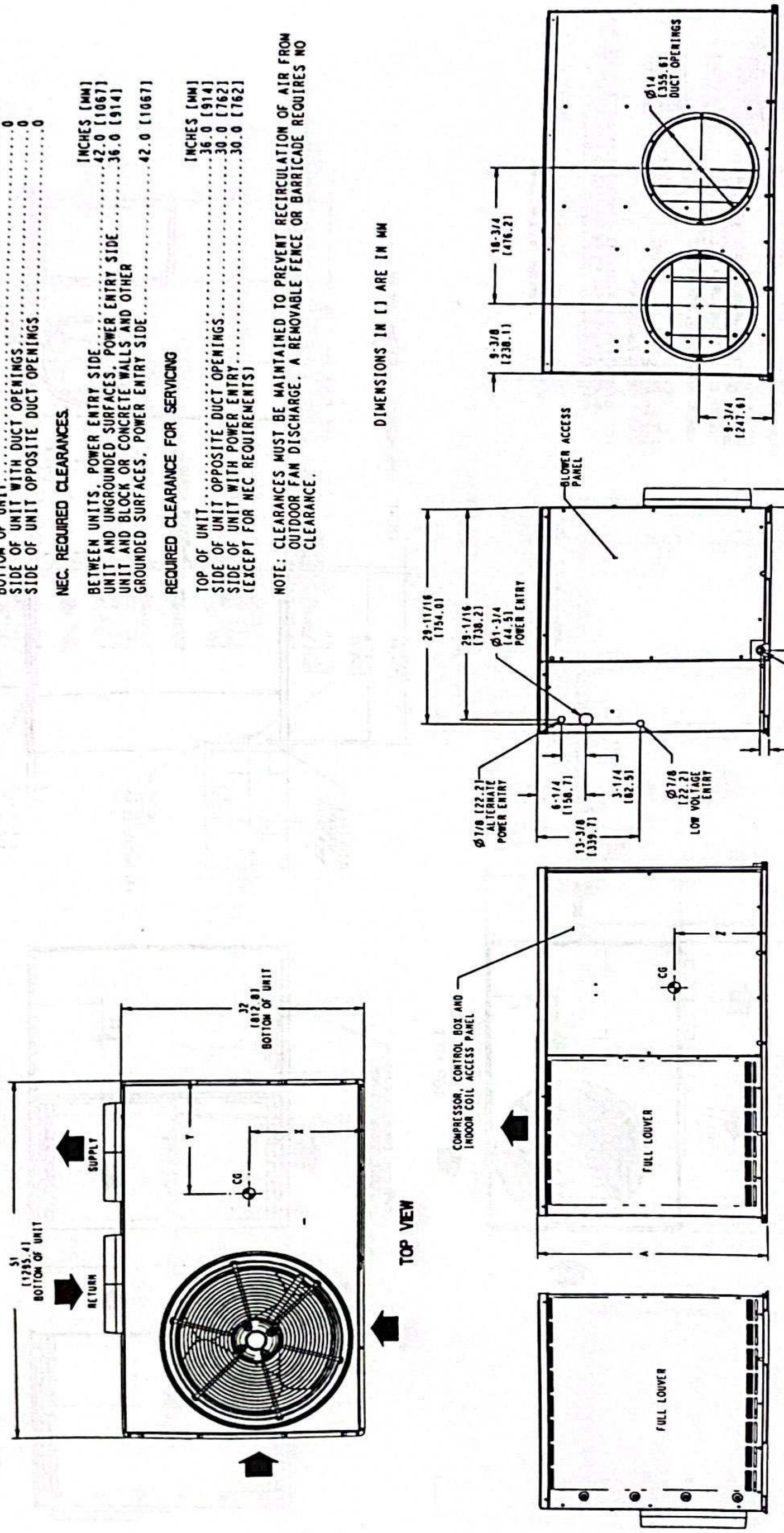

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Fig. 7 - Unit Base Dimensions, WJH4 024-036