

**McDonald AC & Heat**

License No. # TACLB27171E

221 Ave F

Bay City, TX 77414

Phone: 979-244-2428

Email: mac2871@gmail.com

URL: www.mcdonaldacandheat.com

INVOICE

Date: October 22, 2021

Thank you David Cobb -

Here is a copy of your invoice. Thank you for your business! If you have any questions please fee

McDonald AC & Heat

Customer SummaryCustomer InformationDavid Cobb
979-479-0643
cobbd1@tisd.netService Address163 Byrd Salyer
Bay City, Tx 77414Billing Address163 Byrd Salyer
Bay City, Tx 77414**Invoice Summary**

Amount \$9,844.14	Terms Due on Receipt	Amount Paid \$0.00	Amount Owed \$9,844.14	Service Agreement Member? No
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Invoice Details

TaskID	Description	System	Tax	Qty	Pref Cust
NewEquip	Equipment installation per proposal KM1398B. Please see the proposal for more details.	New System 2021	✓	1	\$9,0'
Customer Notes					:
		Subtotal			\$9,0'
		Taxable Subtotal			\$9,0'
		Sales Tax (MGCOMMTAX) - 8.25%			\$7'
		Total Amount			\$9,8'

Payment History

Date	Payment Method	Payment Made By	Comment / Notes
			Total Payment Rece

Equipment & Diagnostics

Diagnostics

Affiliations

Terms and Conditions

Customer Signature
(Work Authorize)

I have the authority to order the above described work. It is agreed that the se
equipment or material furnished until full and complete payment is made, and if

agreed, the seller shall have the right to remove same and the seller shall be liable for the cost of removal. If this invoice is not paid within 30 days, I agree to pay the cost of removal (18% annual rate) or the maximum allowed in the state of residence on the unpaid invoice. I agree to pay seller's attorney fees and any court costs. The fee on all returned

Regulated by The Texas Department Of Licensing & Regulation, P.O. Box 12157, Austin, TX 78711-0157. 803-9212 / 1-512-463-6599. www.tdlr.texas.gov License## TACLB27171E

Customer Signature
(Work Completed)

All work has been completed to
LIMITED

All materials, parts and equipment are warranted by the manufacturers' and suppliers. All labor performed by the above named company is warranted for 30 days or less in writing. The above named company makes no other warranties, express or implied. No technicians are not authorized to make any such warranties on behalf of above named company.

McDonald AC & Heat

221 Ave F
Bay City, TX 77414

979-244-2428
mac2871@gmail.com

PROPOSAL (Better)

Trane

2.5 Ton Trane XR14 Condenser with TEM4 Air Handler

Proposal #: KM1398B
Date: Sep 03, 2021
Customer: David Cobb

Installation Address:
163 Byrd Salyer, Bay City, Tx, 77414

Phone: 979-479-0643
Email: cobbdl@tisd.net

Dear David Cobb,

We appreciate the opportunity to earn your business. Attached is Proposal KM1398B for your review.

If you have any questions please feel free to contact us at 979-244-2428.

Best Regards,

McDonald AC & Heat

\$9,093.89

The XR14 A/C system has a SEER rating of up to 16.00, making it an excellent choice for home comfort and for earning energy-efficiency tax credits. Pair it with TEM4 air handler for a combined affordability and flexibility.

Features

- Climatuff compressor
- Spine Fin outdoor coil
- Upgraded fan motor
- Full-side louvered panels protect your investment
- Corrosion-resistant Weatherguard fasteners
- Unique DuraTuff non-corrosive base pan
- Quick-Sess cabinet with full coil protection
- Standard convertible line
- Galvanized steel cabinet
- Optional electric heat
- All-aluminum coil
- No-rust polymer drain pan

\$ Price

Cash Price :
\$9,093.89

Equipment Summary

Equipment

Condenser

Trane XR14 Air Conditioner 4TTR4030L1

Air Handler

Trane TEM4 Air Handler TEM4A0B30S

AHRI # :

7482002

SEER

14.5

EER

0.0

Capacity

2.5 Ton

Manufacture Warranty:Air Conditioner:

10-Year Limited Warranty on Compressor

10-Year Limited Warranty on Outdoor Coil

10-Year Limited Warranty on Internal Functional Parts

Air Handler:

10-Year Registered Limited Warranty on Internal Functional Parts

Customer Preferences

What's Included

Material/Parts Condenser Pad Copper Fittings Disconnect Drain Line
Insulation - Up to 6 Ft Float Switch Foil Tape Heat Kit - Up to 10KW
Plywood PVC Fittings Rebuilding Platform Stands (2) Suction Line
Insulation - 6 Foot TXV WhipDuctwork Duct Sealant - per gal Supply Air
Duct Run , R-6 Flex, Box, Grille per run (7) Supply Air PlenumJob
Related Activities Blow Drain Line Misc - Carpentry Pump Down and
Evacuate Reclaim Refrigerant Removal & Disposal of EquipmentWarranty
One Year Labor Warranty Warranty RegistrationService Agreement 1 Year
Service Agreement



Installer's Guide

Condensing Units

4TTR4018-060

ALL phases of this installation must comply with NATIONAL, STATE AND LOCAL CODES

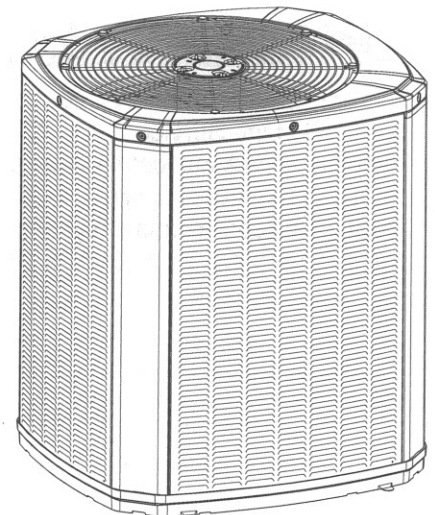
IMPORTANT — This Document is customer property and is to remain with this unit. Please return to service information pack upon completion of work.

These instructions do not cover all variations in systems or provide for every possible contingency to be met in connection with the installation. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to your installing dealer or local distributor.

Note: The manufacturer recommends installing only approved matched indoor and outdoor systems. Some of the benefits of installing approved matched indoor and outdoor split systems are maximum efficiency, optimum performance and the best overall system reliability.

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Section 1. Safety

WARNING

This information is intended for use by individuals possessing adequate backgrounds of electrical and mechanical experience. Any attempt to repair a central air conditioning product may result in personal injury and/or property damage. The manufacture or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

WARNING

These units use R-410A refrigerant which operates at 50 to 70% higher pressures than R-22. Use only R-410A approved service equipment. Refrigerant cylinders are painted a "Rose" color to indicate the type of refrigerant and may contain a "dip" tube to allow for charging of liquid refrigerant into the system. All R-410A systems use a POE oil that readily absorbs moisture from the atmosphere. To limit this "hygroscopic" action, the system should remain sealed whenever possible. If a system has been open to the atmosphere for more than 4 hours, the compressor oil must be replaced. Never break a vacuum with air and always change the driers when opening the system for component replacement. For specific handling concerns with R-410A and POE oil reference Retrofit Bulletins SS-APG006-EN and APP-APG011-EN or APP-APG012-EN.

WARNING

UNIT CONTAINS R-410A REFRIGERANT!
R-410A operating pressures exceed the limit of R-22. Proper service equipment is required. Failure to use proper service tools may result in equipment damage or personal injury.

SERVICE

USE ONLY R-410A REFRIGERANT AND APPROVED POE COMPRESSOR OIL.

WARNING

Extreme caution should be exercised when opening the Liquid Line Service Valve. Turn counterclockwise until the valve stem just touches the rolled edge. No torque is required. Failure to follow this warning will result in abrupt release of system charge and may result in personal injury and /or property damage.

WARNING

LIVE ELECTRICAL COMPONENTS!

During installation, testing, servicing, and troubleshooting of this product, it may be necessary to work with live electrical components. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

CAUTION

If using existing refrigerant lines make certain that all joints are brazed, not soldered.

CAUTION

Scroll compressor dome temperatures may be hot. Do not touch the top of compressor; it may cause minor to severe burning.

WARNING

WARNING!

This product can expose you to chemicals including lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Section 2. Unit Location Considerations

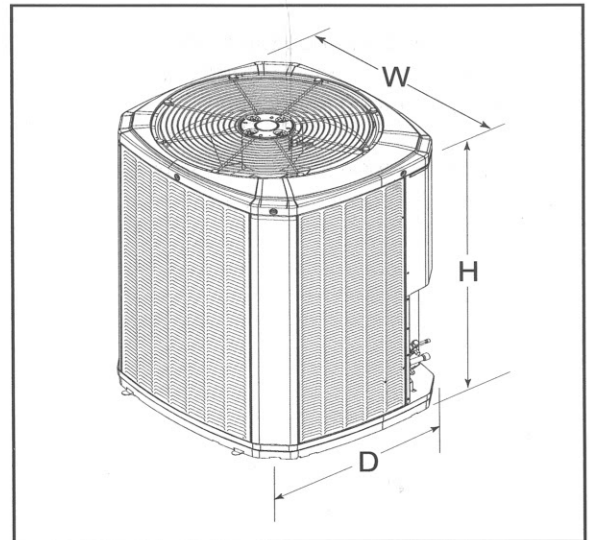
2.1 Unit Dimensions and Weight

Table 2.1

Unit Dimensions and Weight		
Models	H x D x W (in)	Weight* (lb)
4TTR4018L	29 x 26 x 29	133
4TTR4024/25L	29 x 26 x 29	133
4TTR4030/31L	29 x 30 x 33	156
4TTR4036/37L	33 x 30 x 33	156
4TTR4042/43L	29 x 34 x 37	184
4TTR4048L	29 x 34 x 37	189
4TTR4060L	37 x 34 x 37	211
* Weight values are estimated.		

When mounting the outdoor unit on a roof, be sure the roof will support the unit's weight.

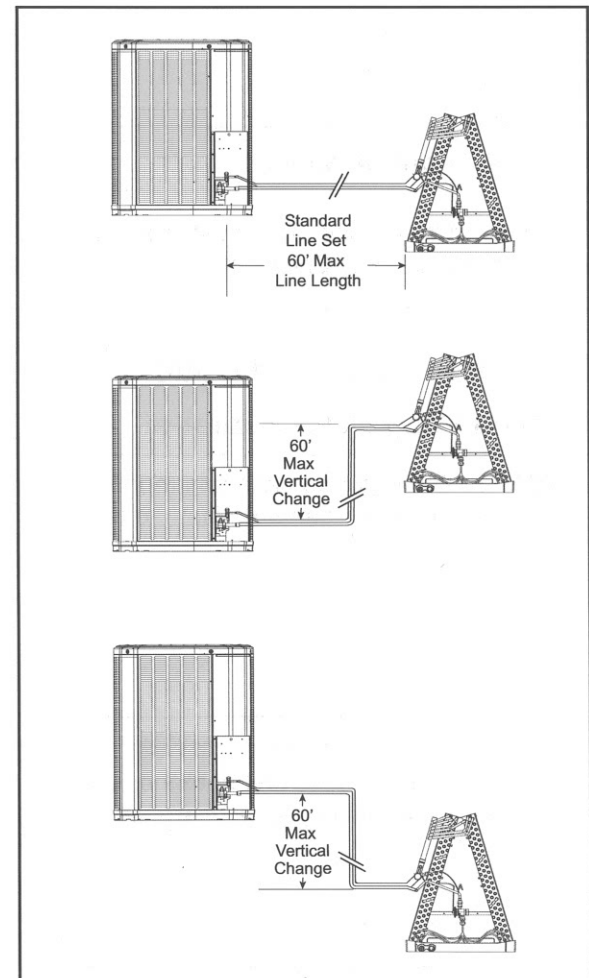
Properly selected isolation is recommended to alleviate sound or vibration transmission to the building structure.



2.2 Refrigerant Piping Limits

1. The maximum length of refrigerant lines from outdoor to indoor unit should NOT exceed sixty (60) feet.
2. The maximum vertical change should not exceed sixty (60) feet.
3. Service valve connection diameters are shown in Table 5.1.

Note: For line lengths greater than sixty (60) feet, Refer to Refrigerant Piping Application Guide, SS-APG006-EN or Refrigerant Piping Software Program, 32-3312-03 (or latest revision).

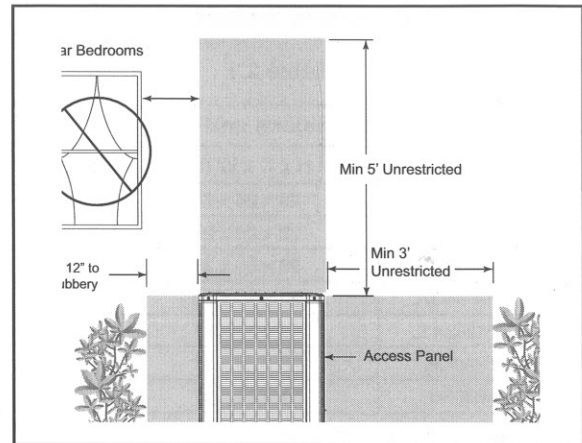


2.3 Suggested Locations for Best Reliability

Ensure the top discharge area is unrestricted for at least five (5) feet above the unit.

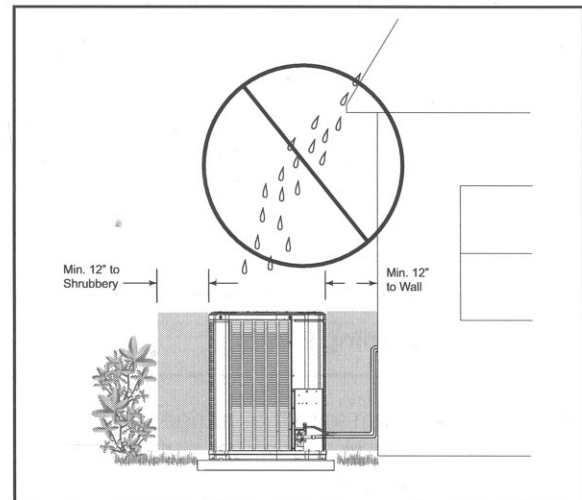
Three (3) feet clearance must be provided in front of the control box (access panels) and any other side requiring service.

Do not locate close to bedrooms as operational sounds may be objectionable.



Position the outdoor unit a minimum of 12" from any wall or surrounding shrubbery to ensure adequate airflow.

Outdoor unit location must be far enough away from any structure to prevent excess roof runoff water from pouring directly on the unit.



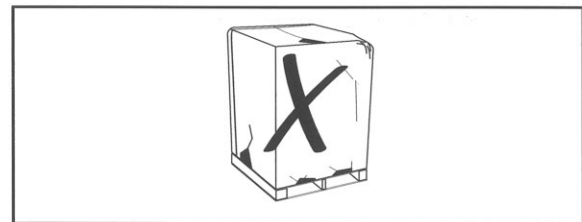
2.4 Coastal Considerations

If installed within one mile of salt water, including seacoasts and inland waterways, models without factory supplied Seacoast Salt Shields require the addition of BAYSEAC001 (Seacoast Kit) at installation time.

Section 3. Unit Preparation

3.1 Prepare The Unit For Installation

STEP 1 - Check for damage and report promptly to the carrier any damage found to the unit.



STEP 2 - To remove the unit from the pallet, remove tabs by cutting with a sharp tool.

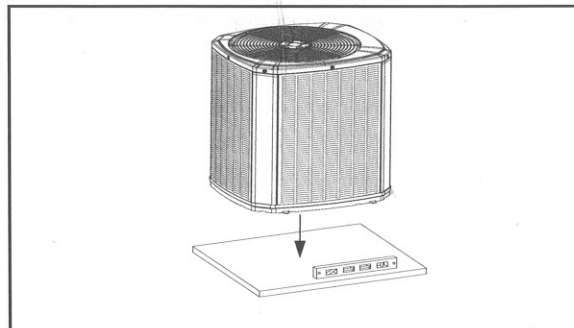


Section 4. Setting the Unit

4.1 Pad Installation

When installing the unit on a support pad, such as a concrete slab, consider the following:

- The pad should be at least 1" larger than the unit on all sides.
- The pad must be separate from any structure.
- The pad must be level.
- The pad should be high enough above grade to allow for drainage.
- The pad location must comply with National, State, and Local codes.



Section 5. Refrigerant Line Considerations

5.1 Refrigerant Line and Service Valve Connection Sizes

Table 5.1

Model	Line Sizes		Service Valve Connection Sizes	
	Vapor Line	Liquid Line	Vapor Line Connection	Liquid Line Connection
4TTR4018L	3/4	3/8	3/4	3/8
4TTR4024/25L	3/4	3/8	3/4	3/8
4TTR4030/31L	3/4	3/8	3/4	3/8
4TTR4036/37L	3/4	3/8	3/4	3/8
4TTR4042/43L	7/8	3/8	7/8	3/8
4TTR4048L	7/8	3/8	7/8	3/8
4TTR4060L	7/8	3/8	7/8	3/8

5.2 Factory Charge

The outdoor condensing units are factory charged with the system charge required for the outdoor condensing unit, ten (10) feet of tested connecting line, and the smallest rated indoor evaporative coil match. Always verify proper system charge via subcooling (TXV/EEV) or superheat (fixed orifice) per the unit nameplate.

See table for line length adders.

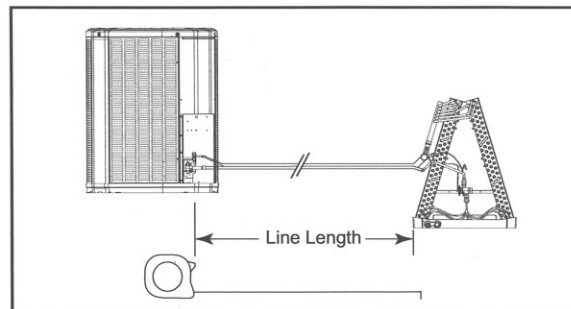
TUBING INFORMATION						
LINE TYPE		REFRIGERANT TO ADD AT SPECIFIED ADDITIONAL LENGTH				
Suction Line	Liquid Line	20 ft	30 ft	40 ft	50 ft	60 ft
3/4"	3/8"	3 oz	9 oz	15 oz	21 oz	27 oz
7/8"	3/8"	3 oz	9 oz	16 oz	22 oz	28 oz

5.3 Required Refrigerant Line Length

Determine required line length and lift. You will need this later in STEP 2 of Section 14.

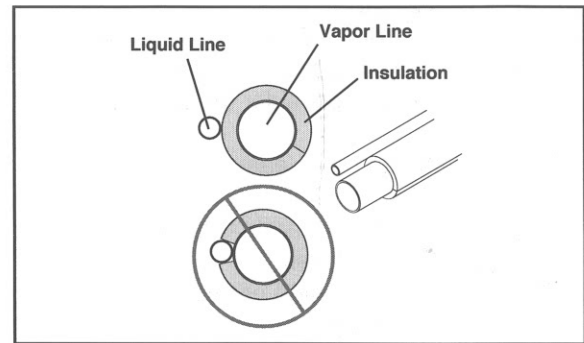
Total Line Length = _____ Ft.

Total Vertical Change (lift) = _____ Ft.



5.4 Refrigerant Line Insulation

Important: The Vapor line must always be insulated. DO NOT allow the liquid line and Vapor line to come in direct (metal to metal) contact.



5.5 Reuse Existing Refrigerant Lines

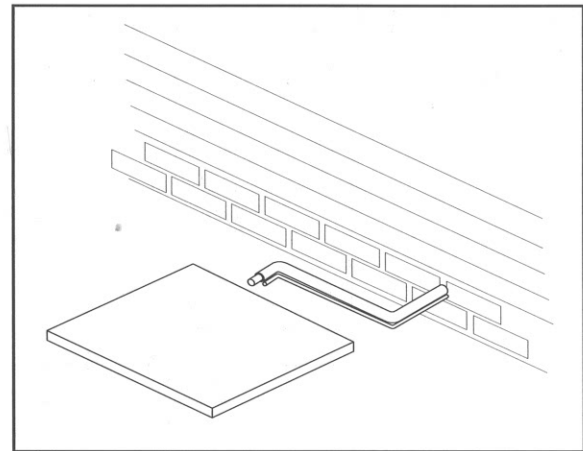
CAUTION

If using existing refrigerant lines make certain that all joints are brazed, not soldered.

For retrofit applications, where the existing indoor evaporator coil and/or refrigerant lines will be used, the following precautions should be taken:

- Ensure that the indoor evaporator coil and refrigerant lines are the correct size.
- Ensure that the refrigerant lines are free of leaks, acid, and oil.

Important: For more information see publication number SS-APG006-EN.



Section 6. Refrigerant Line Routing

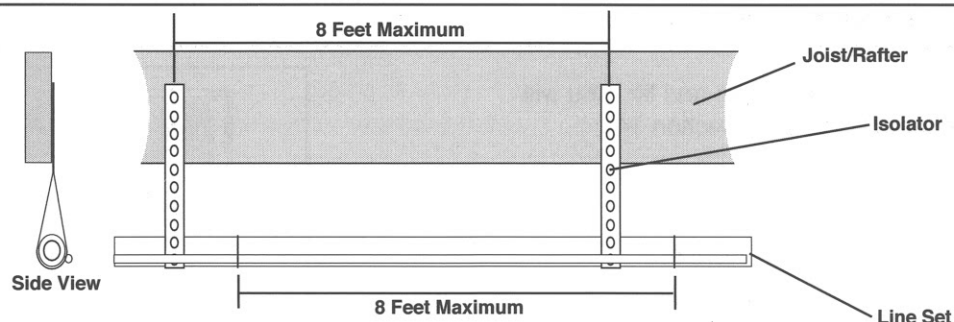
6.1 Precautions

Important: Take precautions to prevent noise within the building structure due to vibration transmission from the refrigerant lines.

Comply with National, State, and Local Codes when isolating line sets from joists, rafters, walls, or other structural elements.

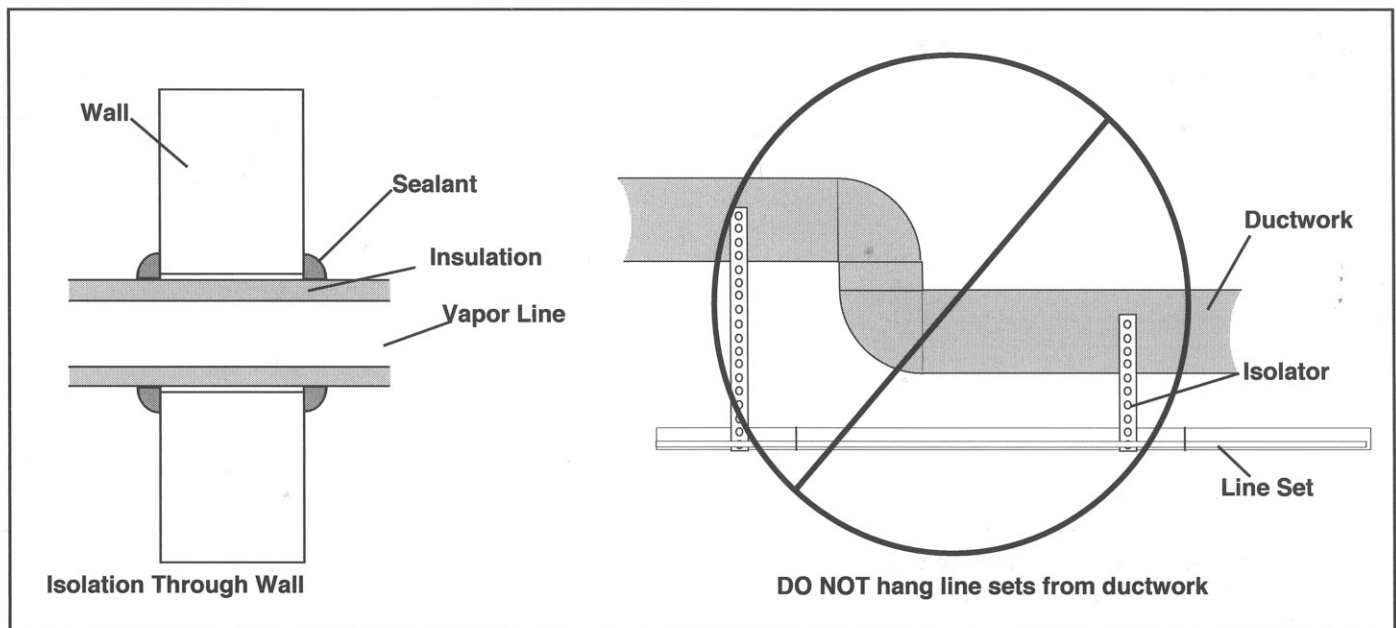
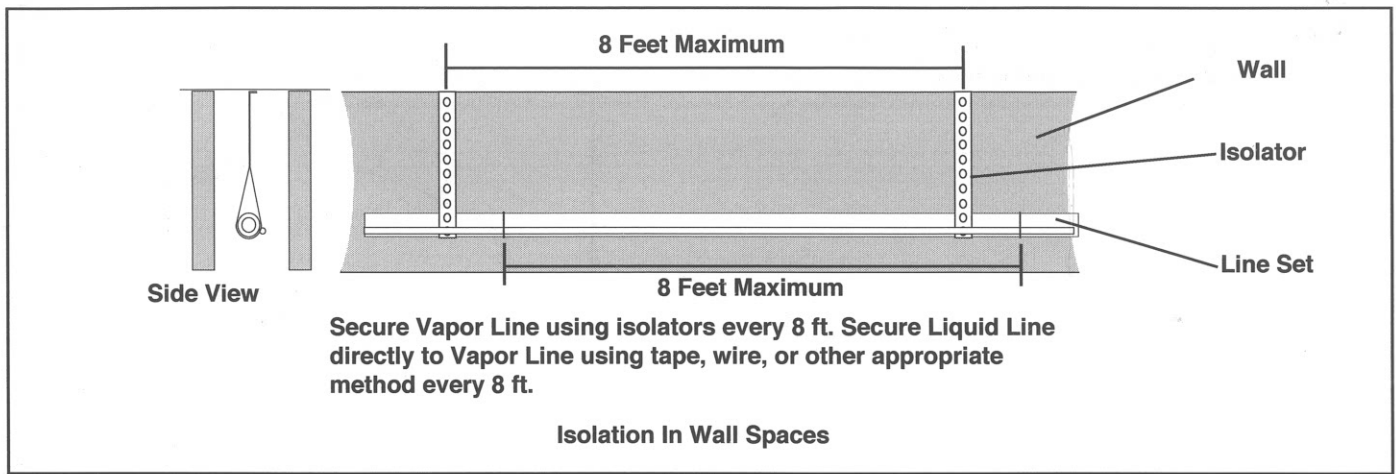
For Example:

- When the refrigerant lines have to be fastened to floor joists or other framing in a structure, use isolation type hangers.
- Isolation hangers should also be used when refrigerant lines are run in stud spaces or enclosed ceilings.
- Where the refrigerant lines run through a wall or sill, they should be insulated and isolated.
- Isolate the lines from all ductwork.
- Minimize the number of 90° turns.



Secure Vapor line from joists using isolators every 8 ft. Secure Liquid Line directly to Vapor line using tape, wire, or other appropriate method every 8 ft.

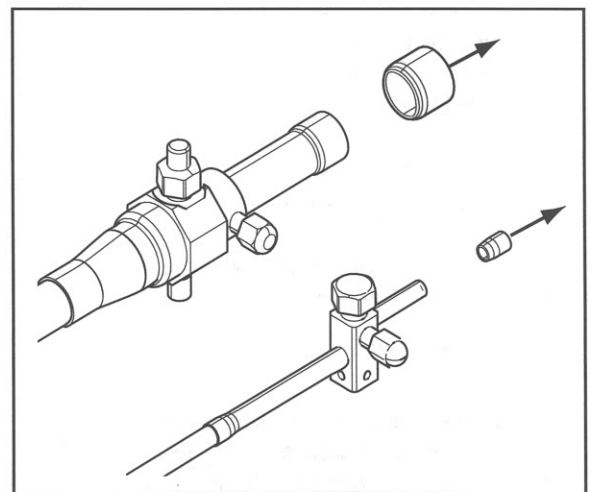
Isolation From Joist/Rafter



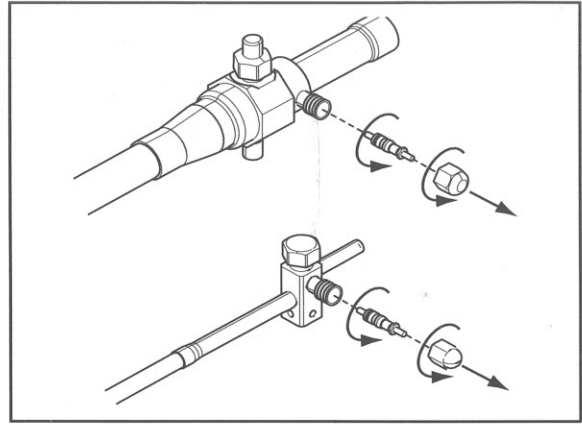
Section 7. Refrigerant Line Brazing

7.1 Braze The Refrigerant Lines

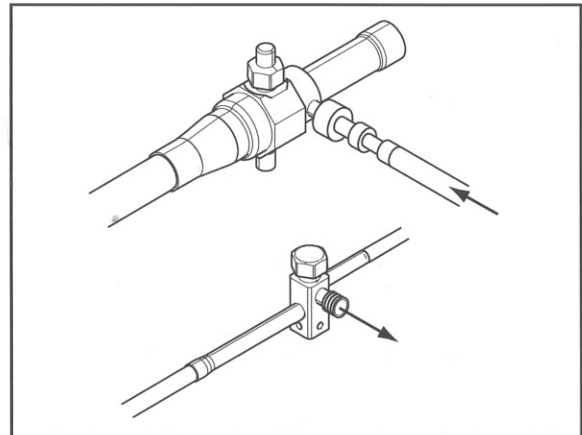
STEP 1 - Remove caps or plugs. Use a deburring tool to debur the pipe ends. Clean both internal and external surfaces of the tubing using an emery cloth.



STEP 2 - Remove the pressure tap cap and valve cores from both service valves.



STEP 3 - Purge the refrigerant lines and indoor coil with dry nitrogen.



STEP 4 - Wrap a wet rag around the valve body to avoid heat damage and continue the dry nitrogen purge.

Braze the refrigerant lines to the service valves.

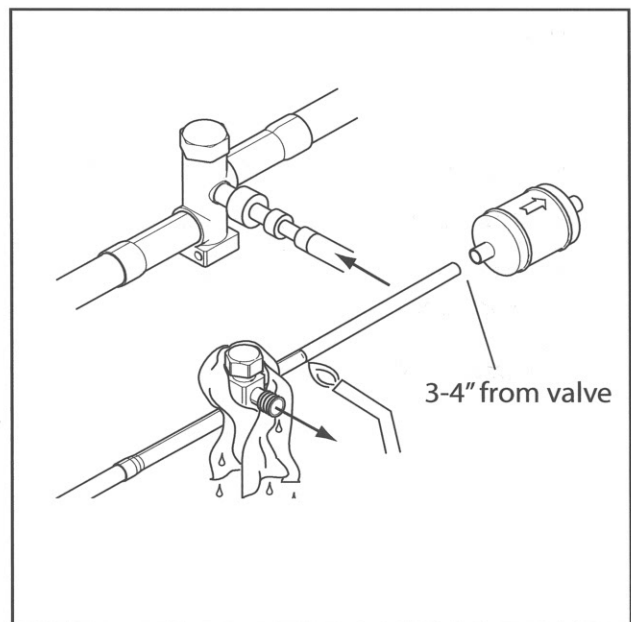
For units shipped with a field-installed external drier, check liquid line filter drier's directional flow arrow to confirm correct direction of refrigeration flow (away from outdoor unit and toward evaporator coil) as illustrated. Braze the filter drier to the Liquid Line.

Continue the dry nitrogen purge. Do not remove the wet rag until all brazing is completed.

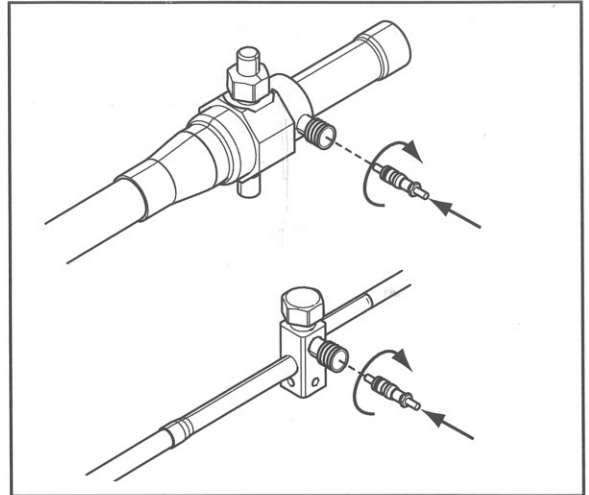
Important: Remove the wet rag before stopping the dry nitrogen purge.

Note: Install drier in liquid line.

NOTE: Precautions should be taken to avoid heat damage to basepan during brazing. It is recommended to keep the flame directly off of the basepan.



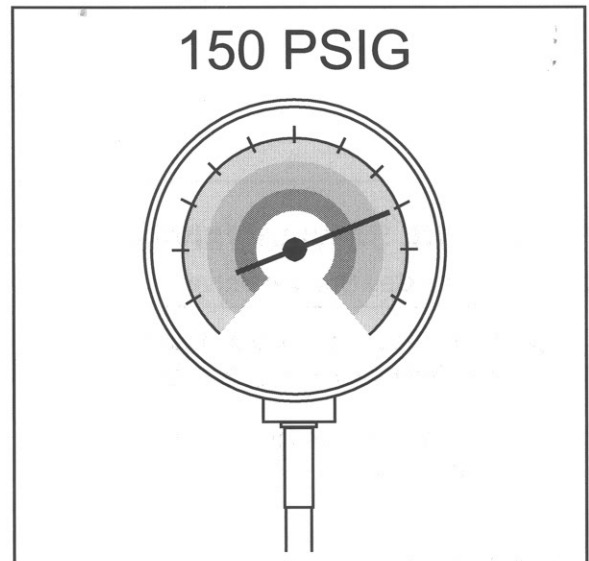
STEP 5 - Replace the pressure tap valve cores after the service valves have cooled.



Section 8. Refrigerant Line Leak Check

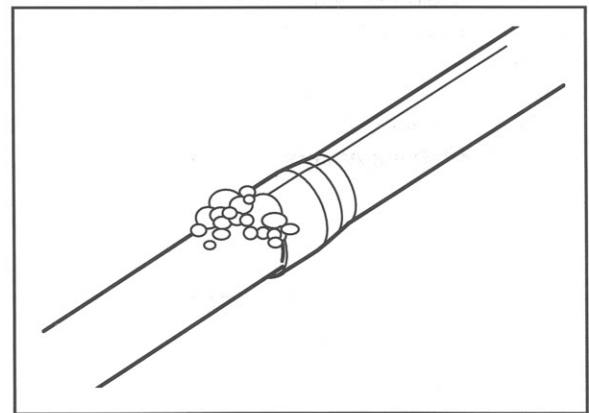
8.1 Check For Leaks

STEP 1 - Pressurize the refrigerant lines and evaporator coil to 150 PSIG using dry nitrogen.



STEP 2 - Check for leaks by using a soapy solution or bubbles at each brazed location.

Remove nitrogen pressure and repair any leaks before continuing.

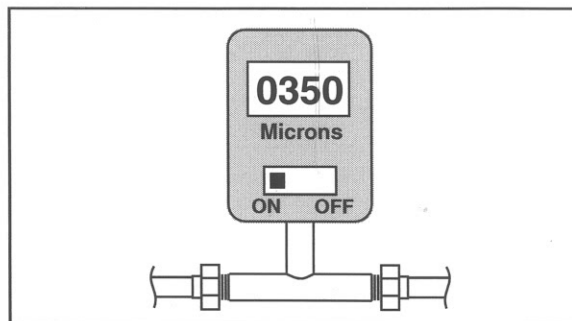


Section 9. Evacuation

9.1 Evacuate the Refrigerant Lines and Indoor Coil

Important: Do not open the service valves until the refrigerant lines and indoor coil leak check and evacuation are complete.

STEP 1 - Evacuate until the micron gauge reads no higher than 350 microns, then close off the valve to the vacuum pump.



STEP 2 - Observe the micron gauge. Evacuation is complete if the micron gauge does not rise above 500 microns in one (1) minute.

Once evacuation is complete blank off the vacuum pump and micron gauge, and close the valves on the manifold gauge set.



Section 10. Service Valves

10.1 Open the Gas Service Valve

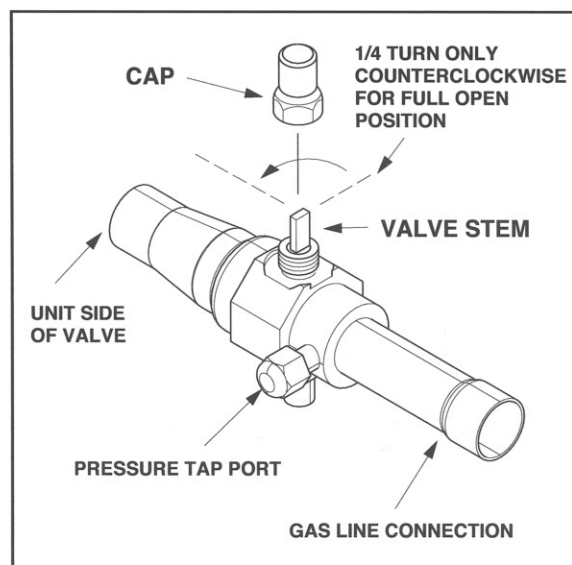
Important: Leak check and evacuation must be completed before opening the service valves.

NOTE: Do not vent refrigerant gases into the atmosphere

STEP 1 - Remove valve stem cap.

STEP 2 - Using an adjustable wrench, turn valve stem 1/4 turn counterclockwise to the fully open position.

STEP 3 - Replace the valve stem cap to prevent leaks. Tighten finger tight plus an additional 1/6 turn.



10.2 Open the Liquid Service Valve

WARNING

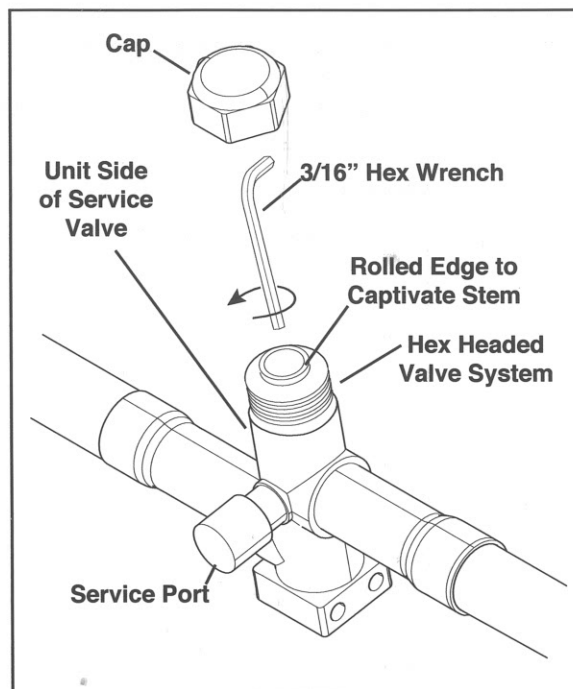
Extreme caution should be exercised when opening the Liquid Line Service Valve. Turn counterclockwise until the valve stem just touches the rolled edge. No torque is required. Failure to follow this warning will result in abrupt release of system charge and may result in personal injury and /or property damage.

Important: Leak check and evacuation must be completed before opening the service valves.

STEP 1 - Remove service valve cap.

STEP 2 - Fully insert 3/16" hex wrench into the stem and back out counterclockwise until valve stem just touches the rolled edge (approximately five (5) turns.)

STEP 3 - Replace the valve cap to prevent leaks. Tighten finger tight plus an additional 1/6 turn.



Section 11. Electrical - Low Voltage

11.1 Low Voltage Maximum Wire Length

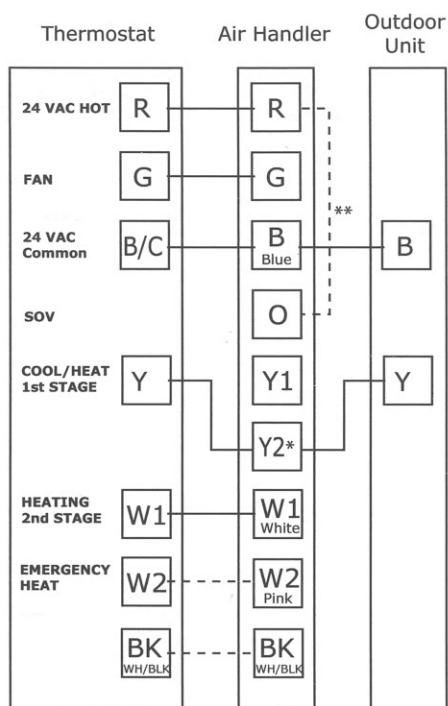
Table 11.1 defines the maximum total length of low voltage wiring from the outdoor unit, to the indoor unit, and to the thermostat.

Table 11.1

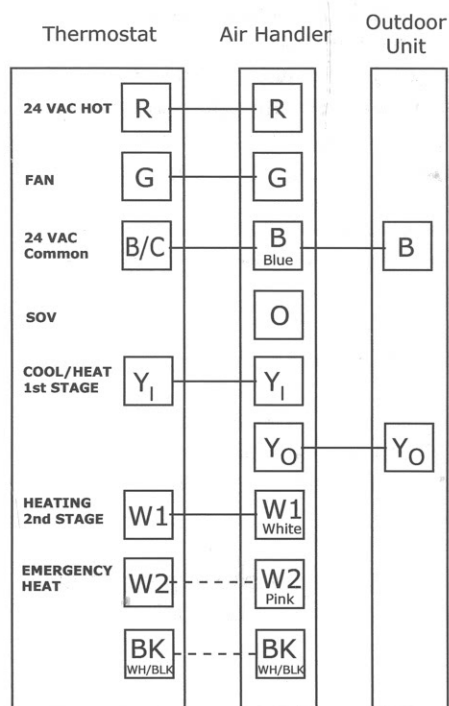
24 VOLTS	
WIRE SIZE	MAX. WIRE LENGTH
18 AWG	150 Ft.
16 AWG	225 Ft.
14 AWG	300 Ft.

11.2 Low Voltage Hook-up Diagrams

With TEM 3, 4, 6, 8



With TAM 4, 7, 9



- Units with pigtails require wirenuts for connections. Cap all unused wires.
- In AC systems for multiple stages of electric heat, jumper W1 and W2 together if comfort control has only one stage of heat.
- TEM3/4 - Bypass air handler and connect Y from comfort control directly to OD unit
- * TEM6 Only
- ** TEM6 only - When using a BK enabled comfort control, cut BK jumper and bypass Y1 and Y2 at the air handler. Connect BK from comfort control to BK of the air handler
- TAM4 only - Wire as shown, no BK is available
- TAM7 only - When using a BK enabled comfort control cut BK jumper on the AFC and connect BK from comfort control to BK of the air handler

Section 12. Electrical - High Voltage

12.1 High Voltage Power Supply

⚠ WARNING

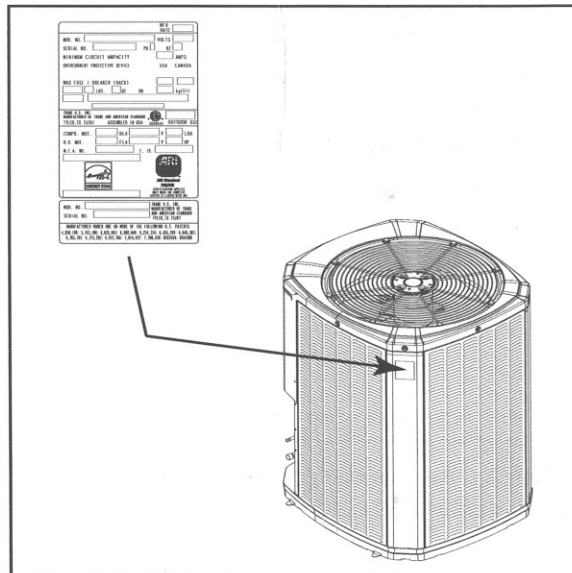
LIVE ELECTRICAL COMPONENTS!

During installation, testing, servicing, and troubleshooting of this product, it may be necessary to work with live electrical components. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

The high voltage power supply must agree with the equipment nameplate.

Power wiring must comply with national, state, and local codes.

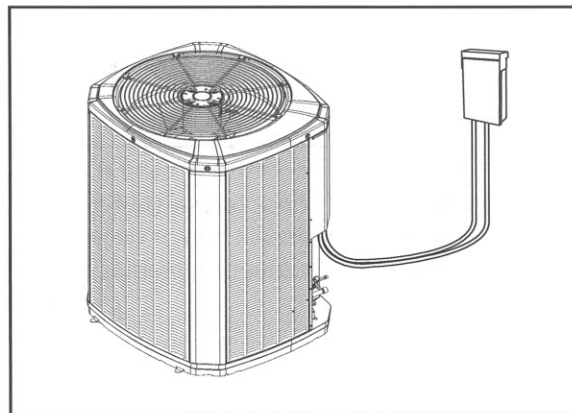
Follow instructions on unit wiring diagram located on the inside of the control box cover and in the Service Facts document included with the unit.



12.2 High Voltage Disconnect Switch

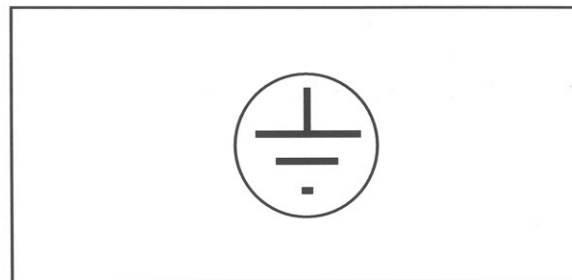
Install a separate disconnect switch at the outdoor unit.

For high voltage connections, flexible electrical conduit is recommended whenever vibration transmission may create a noise problem within the structure.



12.3 High Voltage Ground

Ground the outdoor unit per national, state, and local code requirements.

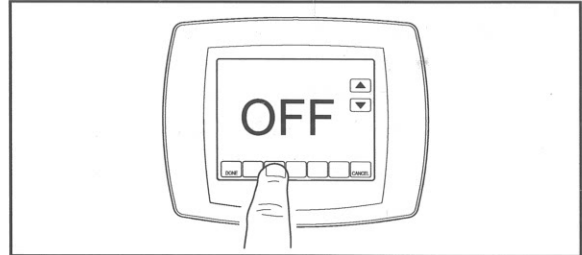


Section 13. Start Up

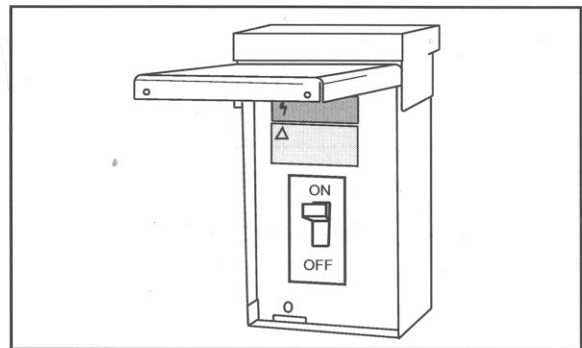
13.1 System Start Up

STEP 1 - Ensure Sections 7 through 12 have been completed.

STEP 2 - Set System Thermostat to OFF.



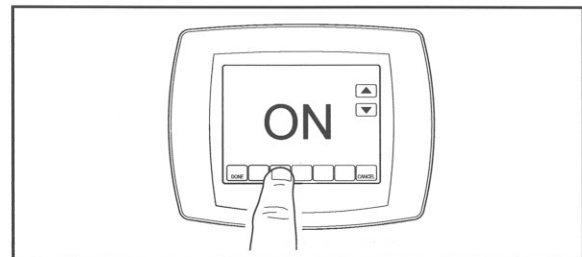
STEP 3 - Turn on disconnect(s) to apply power to the indoor and outdoor units.



STEP 4 - Wait one (1) hour before starting the unit if compressor crankcase heater accessory is used and the Outdoor Ambient is below 70°F.



STEP 5 - Set system thermostat to ON.



Section 14. System Charge Adjustment

14.1 Temperature Measurements (Systems can be rated with TXV, EEV or Piston. Ensure charging method is correct).

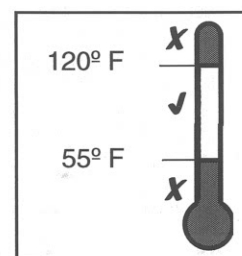
STEP 1 - Check the outdoor temperatures.

Subcooling (in cooling mode) is the only recommended method of charging above 55° F ambient outdoor temperature.

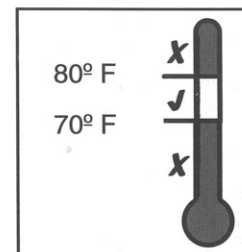
Note: For Superheat (In Cooling Mode), refer to the Superheat Charging Table

For best results the indoor temperature should be kept between 70° F to 80° F.

Note: It is important to return in the spring or summer to accurately charge the system in the cooling mode when outdoor ambient temperature is above 55° F.



Outdoor Temp



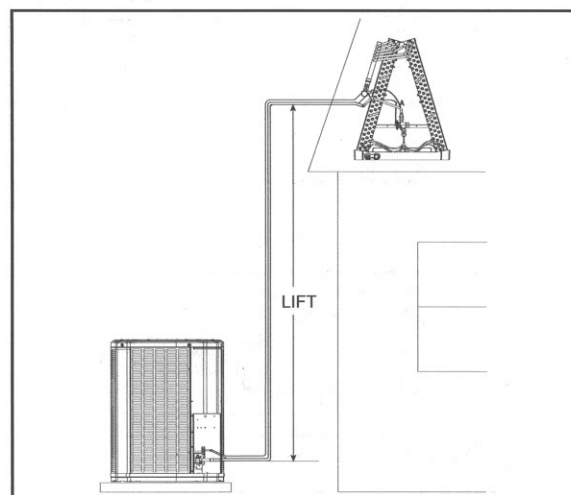
Indoor Temp

14.2 Subcooling Charging in Cooling (Above 55° F Outdoor Temp.)

STEP 1 - Use the refrigerant line total length and lift measurements from Section 5 and use line length adders as shown in Section 5.2 if required.

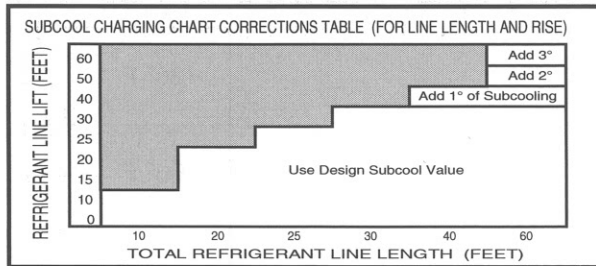
Total Line Length = _____ Ft.

Vertical Change (Lift) = _____ Ft.

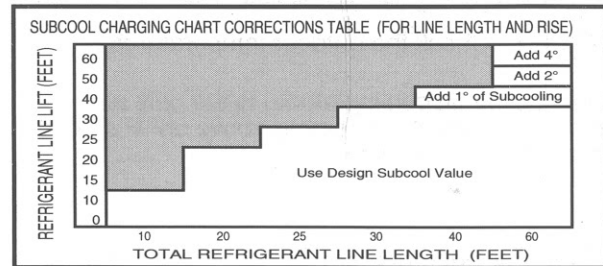


STEP 2 - Determine the final subcooling value using total Line Length and Lift measured in STEP 1 and the charts below.

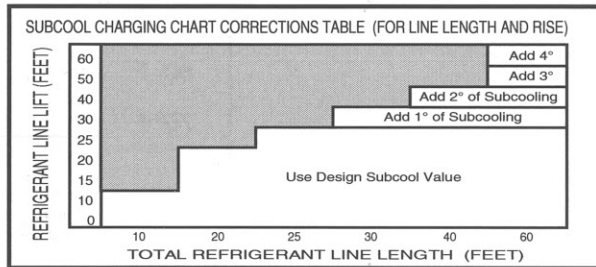
1 1/2 Ton



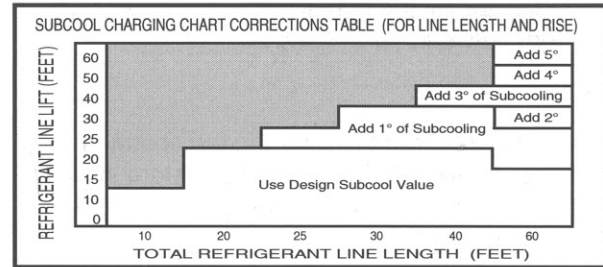
2 Ton



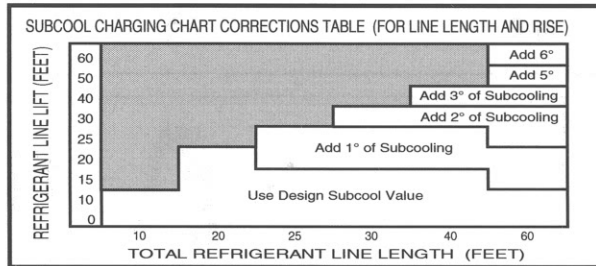
2 1/2 Ton



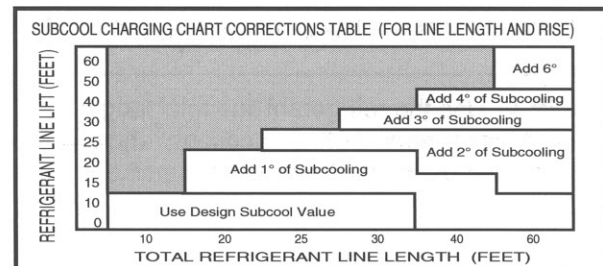
3 Ton



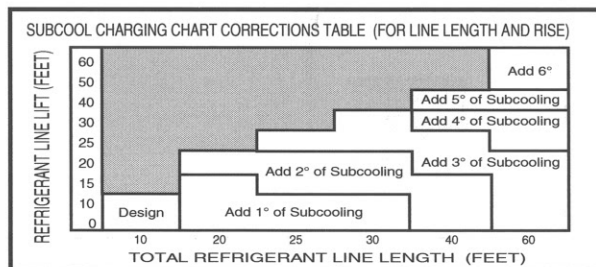
3 1/2 Ton



4 Ton



5 Ton



Design Subcooling Value = _____ ° F
(from nameplate or Service Facts)

Subcooling Correction = _____ ° F

Final Subcooling Value = _____ ° F

STEP 3 - Stabilize the system by operating for a minimum of 20 minutes.

At startup, or whenever charge is removed or added, the system must be operated for a minimum of 20 minutes to stabilize before accurate measurements can be made.

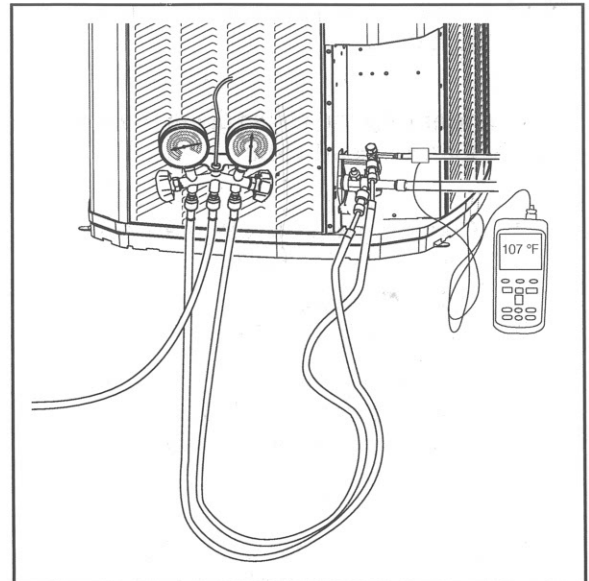


STEP 4 - Measure the liquid line temperature and pressure at the outdoor unit's service valve.

Measured Liquid Line Temp = _____ ° F

Liquid Gage Pressure = _____ PSI

Final Subcooling Value = _____ ° F



STEP 5 - Use the final subcooling value, refrigerant temperature and pressure from STEP 4, to determine the proper liquid gage pressure using Table 14.2.

Example: Assume a 12° F Final Subcooling value and liquid temp of 90° F.

1. Locate 12° F Final Subcooling in Table 14.2.
2. Locate the Liquid Temperature (90° F) in the left column.
3. The Liquid Gage Pressure should be approximately 327 PSI. (This is shown as the intersection of the Final Subcooling column and the Liquid Temperature row.

Table 14.2

R-410A REFRIGERANT CHARGING CHART							
LIQUID TEMP (°F)	FINAL SUBCOOLING (°F)						
	8	9	10	11	12	13	14
	LIQUID GAGE PRESSURE (PSI)						
55	179	182	185	188	191	195	198
60	195	198	201	204	208	211	215
65	211	215	218	222	225	229	232
70	229	232	236	240	243	247	251
75	247	251	255	259	263	267	271
80	267	271	275	279	283	287	291
85	287	291	296	300	304	309	313
90	309	313	318	322	327	331	336
95	331	336	341	346	351	355	360
100	355	360	365	370	376	381	386
105	381	386	391	396	402	407	413
110	407	413	418	424	429	435	441
115	435	441	446	452	458	464	470
120	464	470	476	482	488	495	501
125	495	501	507	514	520	527	533

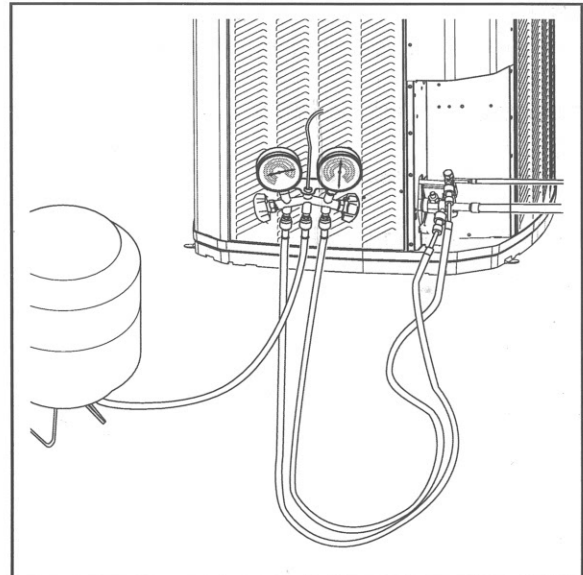
From Dwg. D154557P01 Rev. 3

STEP 6 - Adjust refrigerant level to attain proper gage pressure.

Add refrigerant if the Liquid Gage Pressure is lower than the chart value.

1. Connect gages to refrigerant bottle and unit as illustrated.
2. Purge all hoses.
3. Open bottle.
4. Stop adding refrigerant when liquid line temperature and Liquid Gage Pressure matches the charging chart Final Subcooling value.

Recover refrigerant if the Liquid Gage Pressure is higher than the chart value.



STEP 7 - Stabilize the system.

1. Wait 20 minutes for the system condition to stabilize between adjustments.

Note: When the Liquid Line Temperature and Gage Pressure approximately match the chart, the system is properly charged.

2. Remove gages.
3. Replace service port caps to prevent leaks. Tighten finger tight plus an additional 1/6 turn.



STEP 8 - Verify typical performance.

Refer to System Pressure Tables to verify typical performance.

(Example only - see Pressure Tables)

R-410A REFRIGERANT CHARGING CHART												
LIQUID TEMP (°F)	DESIGN SUBCOOLING (°F)											
	8	9	10	11	12	13	14					
	LIQUID GAGE PRESSURE (PSI)											
55	179	182	185	188	191	195	198					
60	195	198	201	204	208	211	215					
65	211	215	218	222	225	229	232					
70	229	232	236	240	243	247	251					
75	247	251	255	259	263	267	271					
80	267	271	275	279	283	287	291					
85	287	291	296	300	304	309	313					
90	309	313	318	322	327	331	336					
95	331	336	341	346	351	355	360					
100	355	360	365	370	376	381	386					
105	381	386	391	396	402	407	413					
110	407	413	418	424	429	435	441					
115	435	441	446	452	458	464	470					
120	464	470	476	482	488	495	501					
125	495	501	507	514	520	527	533					

Refer to Service Facts or
Installer's Guide for charging method.

Refer to Service Facts or Installer's Guide for charging method.

OD 13/14 SEER AC only		18	24/25	30/31	36/37	42/43	48	60
OD Temp	ID Wet Bulb	Suction Pressure						
110	71	160	159	156	157	158	154	158
	67	154	152	150	149	150	148	148
	63	148	144	144	142	142	140	140
	59	142	137	138	135	135	132	132
100	71	156	155	152	153	154	152	154
	67	150	148	146	145	147	144	146
	63	144	141	140	138	138	136	138
	59	138	134	134	132	131	130	130
90	71	152	152	150	149	152	148	150
	67	146	145	144	143	143	142	142

Fixed Orifice Superheat Charging Table

	Indoor Wet Bulb Temp (F)																														
Outdoor Dry Bulb Temp. (F)		50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	
	55	7	9	10	11	12	14	15	17	18	20	21	23	24	26	27	29	30													
	60	5	7	8	9	10	12	13	15	16	18	19	21	22	24	25	27	28	30	31											
	65			4	6	8	10	11	13	14	16	17	18	19	21	22	24	25	27	28	27	31									
	70					5	7	8	10	11	13	14	16	17	18	19	21	22	24	25	27	28	30	31							
	75							5	6	7	9	10	12	14	16	18	19	21	22	24	26	28	29	31	32						
	80									4	6	7	9	10	11	12	14	16	18	19	21	23	25	26	28	29	31	33			
	85											4	6	7	9	10	13	14	16	18	20	21	23	24	26	28	29	30	31	32	
	90														4	6	8	10	11	13	14	16	18	20	22	24	25	27	28	30	31
	95															4	6	8	10	13	14	16	18	20	22	23	25	26	28	29	
	100																	6	8	10	12	13	16	18	20	21	23	25	27	29	
	105																		4	6	7	9	11	13	15	18	20	22	24	26	28
	110																				4	7	9	11	13	16	18	21	23	26	28
115																						6	9	12	14	16	19	21	24	26	

Using a digital psychrometer, measure the return air wet-bulb temperature at the unit just before the coil. Also measure the outdoor dry-bulb temperature. Use these temperatures to locate the target superheat on the charging table. Do not attempt to charge the system if these conditions fall outside of this charging table.

ADD refrigerant to DECREASE total superheat. REMOVE refrigerant to INCREASE total superheat. Always allow 10 to 15 minutes of operation after any refrigerant or air flow change prior to determining the final superheat.

STEP 9 - Record System Information for reference.

Record system pressures and temperatures after charging is complete.

Outdoor model number = _____

Measured Suction Line Temp = _____ ° F

Measured Outdoor Ambient = _____ ° F

Liquid Gage Pressure = _____ PSI

Measured Indoor Ambient = _____ ° F

Suction Gage Pressure = _____ PSI

Measured Liquid Line Temp = _____ ° F

Section 15. Checkout Procedures and Troubleshooting

15.1 Operational And Checkout Procedures

Final phases of this installation are the unit Operational and Checkout Procedures. To obtain proper performance, all units must be operated and charge adjustments made.

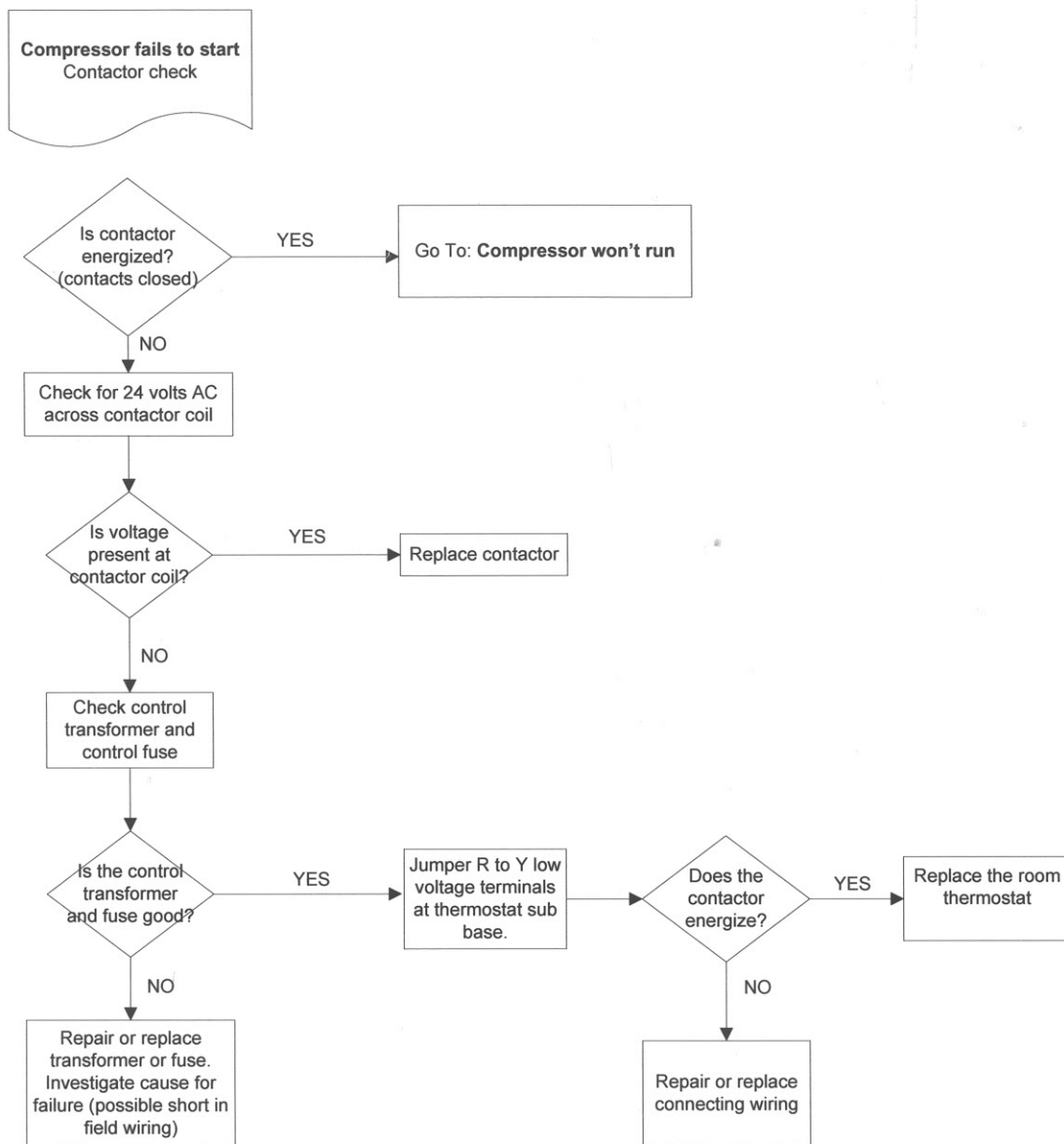
Important: Perform a final unit inspection to be sure that factory tubing has not shifted during shipment. Adjust tubing if necessary so tubes do not rub against each other when the unit runs. Also be sure that wiring connections are tight and properly secured.

CHECKOUT PROCEDURE

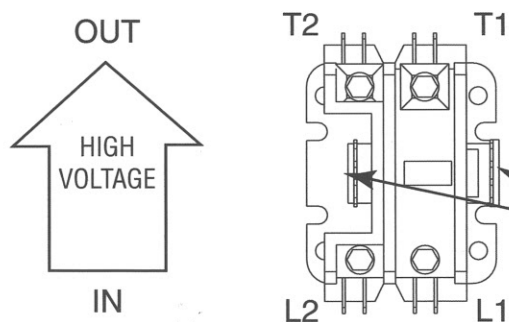
After installation has been completed, it is recommended that the entire system be checked against the following list:

- | | |
|--|--|
| 1. Leak check refrigerant lines. [] | 7. Be sure that indoor coil drain line drains freely. Pour water into drain pan..... [] |
| 2. Properly insulate suction lines and fittings..... [] | 8. Be sure that supply registers and return grilles are open and unobstructed..... [] |
| 3. Properly secure and isolate all refrigerant lines..... [] | 9. Be sure that a return air filter is installed..... [] |
| 4. Seal passages through masonry.
If mortar is used, prevent mortar from coming into direct contact with copper tubing..... [] | 10. Be sure that the correct airflow setting is used.
(Indoor blower motor) [] |
| 5. Verify that all electrical connections are tight..... [] | 11. Operate complete system in each mode to ensure safe operation..... [] |
| 6. Observe outdoor fan during on cycle for clearance and smooth operation..... [] | |

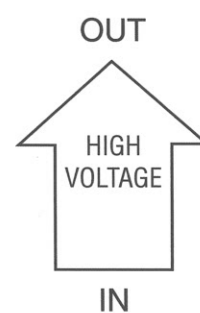
TROUBLESHOOTING



Single Pole Contactor (MS)*



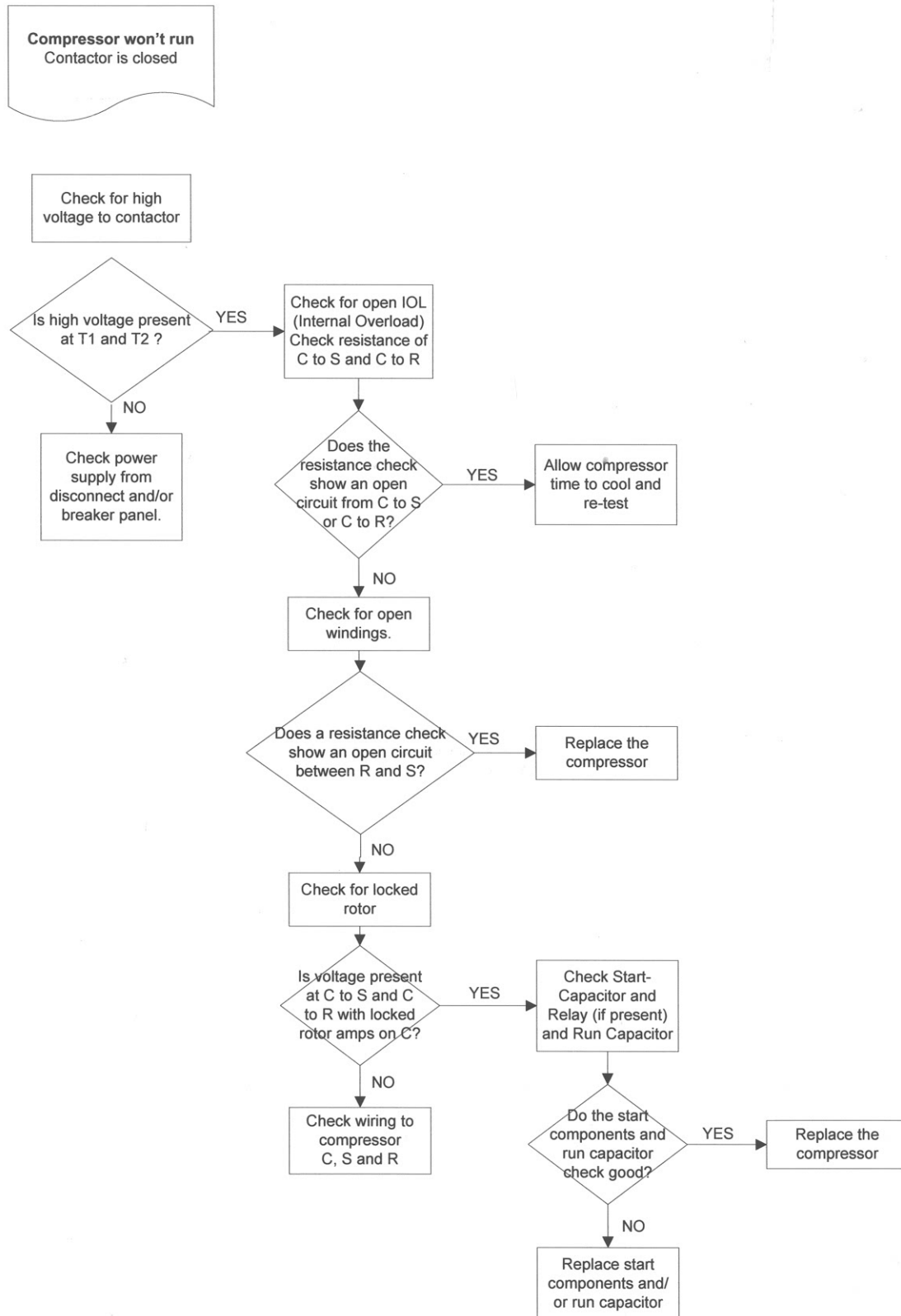
Double Pole Contactor (MS)*



Contactor Coil
24 VAC

*Refer to Wiring Diagram to determine if a single pole or double pole contactor is used.

TROUBLESHOOTING



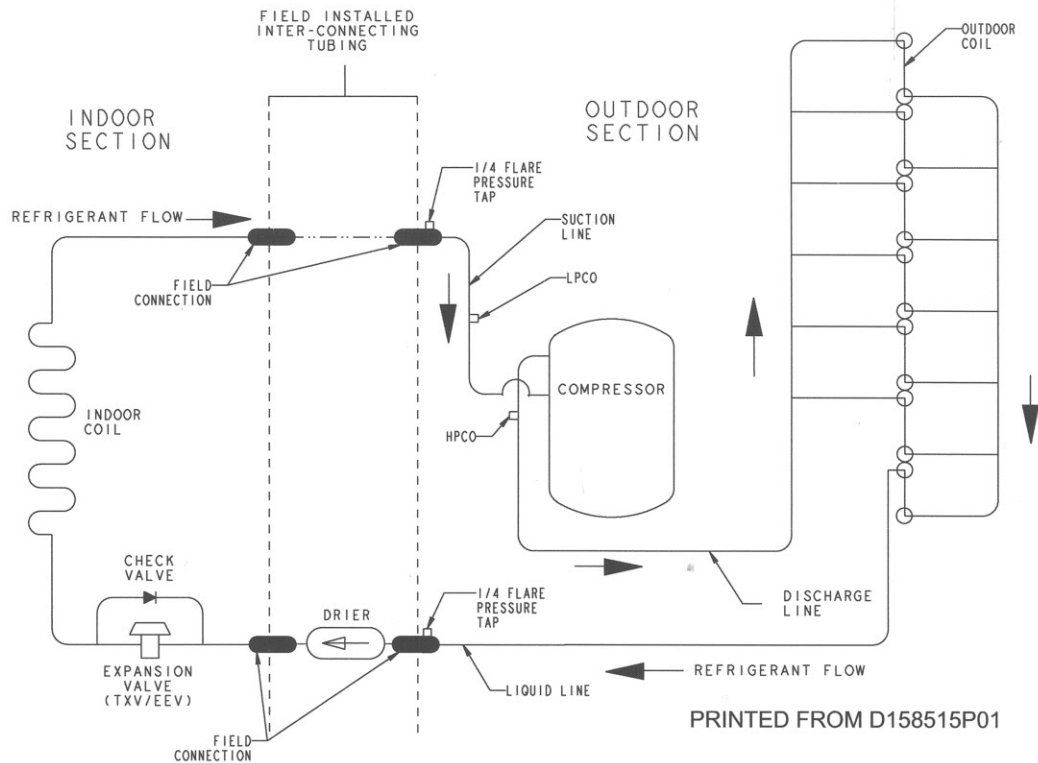
2, 2 1/2 & 3-Ton Units



3 1/2 & 4-Ton Units



5-Ton Units



Trane - by Trane Technologies (NYSE: TT), a global climate innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or tranetechnologies.com.



The AHRI Certified mark indicates Trane U.S. Inc. participation in the AHRI Certification program. For verification of individual certified products, go to ahridirectory.org.

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18-AC51D1-10B-EN 24 Apr 2020
Supersedes 18-AC51D1-10A-EN (October 2019)

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Air Handlers, Heat Pumps and Air Conditioners – Owner's Guide

Congratulations on the purchase of your new outdoor unit. Your outdoor unit is designed to work with a matched indoor unit creating a system that delivers years of dependable service and performance.

Proper Maintenance*

Your system requires maintenance and repair by a properly trained service technician. "Do-it-yourself" repairs on an in-warranty unit may void your warranty.

Other than performing the simple maintenance recommended below, you should not attempt to make any adjustments or repairs to your system. Your dealer can assist you with questions or problems.

1) Replace the air filter(s)

A clean filter saves you money by helping ensure top system efficiency.

When replacing your filter(s), always use the same size and type that was originally supplied or consult with your dealer for recommendations. Be sure to replace it with the arrows pointing in the direction of the airflow.

Where disposable filters are used, they must be replaced every month with the same size as originally supplied. Clean or replace your filter twice a month during seasons when the unit runs more often.

Ask your dealer where the filter is located in your system and how to service it.

2) Maintain free outdoor coil airflow

Efficient operation of your system depends on the free flow of air over outdoor unit's coil.

Do not plant flowers or shrubbery right next to the unit. Also, make sure that nothing is stacked against the sides of the unit or draped over it.

Buildup of snow and ice can restrict airflow. As soon as possible after accumulation, clean snow from the area around the outdoor unit.

3) Clean the finish

To ensure the longevity of the outdoor unit appearance, clean the exterior finish with soap and fresh water. For stubborn grease spots, use a household detergent. Do not use lacquer thinner or other synthetic solvents as they may damage the finish. *Note: For coastal region locations, a monthly fresh water rinse is recommended.*

4) Call your dealer for additional routine maintenance

Your system should be inspected at least once per year by a properly trained service technician.

Ask your dealer about economical service or preventative maintenance agreements that cover seasonal

⚠ WARNINGS

1. Disconnect all electrical power to the indoor air handler or furnace before removing access panels to perform any maintenance. Disconnect power to both the indoor and outdoor units. **NOTE:** There may be more than one electrical disconnect switch. Electric shock can cause personal injury or death.
2. Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause personal injury or property damage. Consult a qualified installer or service agency for information or assistance.

⚠ CAUTIONS

1. To prevent injury, death, or property damage, read and follow all instructions and warnings, including labels shipped with or attached to unit before operating your new outdoor system.
2. Although special care has been taken to minimize sharp edges in the construction of your unit, be extremely careful when handling parts or reaching into the unit.
3. Condensate drains should be checked and cleaned periodically to assure condensate can drain freely from coil to drain. If condensate cannot drain freely, water damage could occur.
4. If heating system is not operational during the cold weather months, provisions must be taken to prevent freeze-up of all water pipes and water receptacles. This is very important during times of vacancy.

IMPORTANT: If the indoor air exceeds 60% relative humidity or simply feels uncomfortably humid, it is recommended that the indoor fan only be used in the AUTO mode.

*Visit our website or ask your dealer for more information on:

- System operation
- Troubleshooting/Maintenance
- Optimizing system performance/Energy savings
- Warranties and Product Registration

Before you call for service, check the following:

Problem	Possible cause	Remedy
Insufficient heating or cooling	a. dirty filters b. air not circulating freely c. blocked outdoor coil	a. clean or replace b. check supply registers and return grills for blockage c. clear away leaves or other debris
Failure to operate	a. power off b. open circuit breaker or burned-out fuses c. improperly adjusted thermostat	a. make sure main switch is in ON position b. reset circuit breaker, or replace burned-out fuses c. check setting, adjust thermostat
Auxiliary heat indicator on	When outdoor temperature falls, intermittent lighting is normal	Monitor light. If it stays on continuously when above 30°F, or if it comes on when 50°F outdoors, call for service.
No Heating or Cooling – Blower does not operate	Blower door removed or ajar	Close door securely to restore power to blower
Unusual Noise		Call your local servicer

Product Registration

Registered Limited Warranty terms are available if the product is registered within 60 days of installation. If the product is not registered within 60 days of installation, the Base Limited Warranty terms will apply.

Registration can be completed online. Please take a few moments to record the following information to ensure your product registration process is quick and easy:

Indoor Unit Model No: _____ Serial No: _____
Outdoor Unit Model No: _____ Serial No: _____
Thermostat Model Number _____
Installation/Startup Date _____
Dealer _____
Dealer Service Phone _____

Limited Warranty

Subject to the terms and conditions of this limited warranty, Trane U.S., Inc. ("Company") extends a limited warranty to the original purchaser only for parts (but not labor) replaced as a result of manufacturing defects for the product(s) identified in **Tables 1, 1A, 1B** attached hereto ("Products") that are installed in residential/multi-family application (personal, family, or household purposes) and subject to normal use and maintenance in the United States and Canada. All repairs of Products covered under this limited warranty must be made with authorized service parts and by a licensed service provider. Additionally, commercial applications are treated differently under this limited warranty as stated in **Tables 1, 1A, 1B** attached hereto. "Commercial applications" shall mean any application other than for personal, family or household use.

This limited warranty applies to Products manufactured on or after January 1, 2020. Please read it in its entirety.

TERM: Tables 1, 1A, 1B (attached hereto) contain the Limited Warranty Period for the original purchaser:

- For most installed Products including, but not limited to, Products installed in a builder's model home, the Commencement Date shall be the date that the original installation is complete and all Product start-up procedures have been properly completed and recorded on the installer's invoice, which includes all model and serial numbers of the installed Product(s). If the installation and start-up date was not recorded on the installer's invoice the Commencement Date shall be sixty (60) days after the factory manufacture date, which is determined by the Product serial number.
- If a Product is installed in a newly constructed home, the Commencement Date is the date the original purchaser purchased the residence from the builder. Proof of Product purchase, installation, and/or closing date of the residence may be required to confirm the Commencement Date.
- The installation of Product replacement parts under this limited warranty shall not extend the original warranty period. The warranty period for any Product part replaced under this limited warranty is the applicable warranty period remaining under the original Product warranty.
- If the original purchaser sells the home within five (5) years of the Commencement Date, this limited warranty shall apply to the subsequent purchaser(s) for all parts except the heat exchanger until five (5) years from the Commencement Date and for the heat exchanger until twenty (20) years from the Commence Date.

How to Obtain Service: To locate a service provider in your area, who will provide service under this limited warranty, for Trane Product(s) please visit: www.trane.com or call 877-263-7578, for American Standard Product(s) please visit: www.americanstandardair.com or call 855-480-2741. Company may request proof of Product purchase and/or installation, including installation address, in order to provide replacement part(s) under this limited warranty.

What Company Will Do: As the Company's only responsibility and the purchaser's only remedy under this limited warranty, Company will furnish a replacement part for installation by licensed HVAC service provider, without charge for the part only, to replace any Product part that fails due to a manufacturing defect under normal use and maintenance. The purchaser must pay for any and all shipping and handling charges and other costs of warranty service for the replacement part. If the Product part is not available, the Company will, at its option, provide a free suitable part or provide a credit in the amount of the then factory selling price for a new suitable substitute part to be used by the purchaser towards the retail purchase price of a new Company product. Any new Product purchase shall be at purchaser's sole cost and expense including, but not limited to, all shipping, removal, and installation costs and expenses.

Eligibility Requirements: The following items are required in order for the Product(s) to be covered under this limited warranty:

- The Product(s) must be in the same location where they were originally installed.
- The Product(s) must be properly installed, operated, and maintained by a licensed HVAC service provider in accordance with the Product specifications or installation, operation, and maintenance instructions provided by Company with each Product. Failure to conform to such specification and/or installation, operation, and maintenance instructions shall void this limited warranty.
- Company may request written documentation showing the proper preventative maintenance.
- All Product parts replaced by Company under this limited warranty must be given to the servicing provider for return to Company.
- Air handler, air conditioner, heat pumps, cased or uncased coils, stand-alone furnaces, and packaged units must be part of an Air Conditioning, Heating, and Refrigeration Institute rated and matched system or a specification in a Company provided bulletin or otherwise approved in writing by a Company authorized representative.
- All claims under this limited warranty must be filed within 90 days of failure date.

Exclusions: Following are not covered by this limited warranty:

- Labor costs, including, but not limited to, costs for diagnostic calls or the removal and reinstallation of Products and /or Product parts.
- Shipping and freight expenses required to ship Product replacement parts.
- Failures, defects or damage (including, but not limited to, any loss of data or property) caused by:
 - o Any third party product, service, or system connected or used in conjunction with the Product(s);
 - o Any use that is not designed or intended for the Product(s);
 - o Modification, alteration, abuse, misuse, negligence, or accident;
 - o Improper storage, installation, maintenance, or operation including, but not limited to, operation of electrical equipment at voltages other than the range specified on the Product nameplate;
 - o Any use in violation of the written instructions or specifications provided by Company;
 - o Any acts of God including, but not limited to, fire, water, storms, lightning, or earthquakes, or any theft or riots;
 - o A corrosive atmosphere or contact with corrosive material such as, but not limited to, chlorine, fluorine, salt, sulfur, recycled waste water, urine, fertilizers, rust, or other damaging substances or chemicals.
- Products purchased direct including, but not limited to, Internet, or auction purchases and purchases made on an uninstalled basis.
- Cabinets or cabinet pieces that do not affect Product performance, air filters, refrigerant, refrigerant line sets, belts, wiring, fuses, surge protection devices, non-factory installed driers, and Product accessories.
- Increased utility usage costs.
- Replacement parts required to convert Product(s) from R-410A refrigerant to any other refrigerant.
- Use of alternate, contaminated, counterfeit, non-manufacture approved refrigerants, and/or non-approved refrigerant additives including, but not limited to, dyes will void this warranty.
- Liquid line filter drier must be replaced when a compressor replacement is necessary. A suction line filter drier must be added for compressor failures defined as burnouts and failure to do so will void this limited warranty.

Additional Terms: THIS LIMITED WARRANTY AND LIABILITY SET FORTH HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESS OR IMPLIED, IN LAW OR IN FACT. THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE DURATION OF THE APPLICABLE PRODUCT WARRANTY. COMPANY DOES NOT AUTHORIZE ANY PERSON TO CREATE FOR IT ANY OBLIGATION OR LIABILITY IN CONNECTION WITH THE PRODUCT(S). NOTWITHSTANDING ANYTHING IN THIS LIMITED WARRANTY TO THE CONTRARY, COMPANY SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, AND/OR PUNITIVE DAMAGES, WHETHER BASED ON CONTRACT, WARRANTY, TORT, (INCLUDING, BUT NOT LIMITED TO, STRICT LIABILITY OR NEGLIGENCE), PATENT INFRINGEMENT, OR OTHERWISE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. COMPANY'S MAXIMUM LIABILITY HEREUNDER IS LIMITED TO THE ORIGINAL PURCHASE PRICE FOR THE PRODUCT(S).

No action arising out of any claimed breach of this limited warranty may be brought by the purchaser more than one (1) year after the cause of action has arisen.

This limited warranty gives you specific legal rights, and you also have other rights that vary from state to state. If this Product is considered a consumer product, please be advised that some state laws do not allow exclusions or limitations on incidental or consequential damages, or limitations on how long a warranty lasts; or how long an implied warranty lasts, so that the above limitations may not apply to you. Refer to your local laws for your specific rights under this limited warranty. If you any questions regarding this limited warranty, please contact your original installation dealer, or any participating dealer, should your original installation dealer no longer be available.

Customer Relations, PO Box 4419, Bridgeton, MO 63044; Phone 1-800-945-5884
Or visit our website at www.trane.com or www.americanstandardair.com

GW-658-2032

TABLE 1: Warranty Time Periods for Trane and American Standard Products applied in residential applications.

SINGLE PHASE R-410A OUTDOOR UNITS:

4TTR, 4TWR, 4TTL6, 4TWL6, 4TWL9, 4A6B, 4A7B, 4A7M, 4A7A, 4A7L6, 4A6L6, 4A6L9

Limited Warranty Period - Original Purchaser:
Compressor, Outdoor Coil, Parts – ten (10) years.

4TTX, 4TTV, 4TWX, 4TWV, 4A6H7, 4A6V, 4A7A7, 4A7V:

Limited Warranty Period - Original Purchaser:
Compressor – twelve (12) years, Outdoor Coil, Parts – ten (10) years.

AIR HANDLERS:

TAM, GAF2, GAM5, GMU, GMV, TEM, TMM:

Limited Warranty Period - Original Purchaser:
Indoor Coil and Parts – ten (10) years.

PACKAGED AIR CONDITIONERS and HEAT PUMPS (SINGLE-PHASE):

4TCC4, 4TCY5, 4WCC4, 4WCY5, 4WHC4:

Limited Warranty Period - Original Purchaser:
Compressor, Coils, Parts – ten (10) years.

4YCC4, 4DCY4, 4DCL4, 4YCY5, (SINGLE-PHASE):

Limited Warranty Period - Original Purchaser:
Compressor, Coils, Parts – ten (10) years, Heat Exchanger – twenty (20) years.

4WCZ6 (SINGLE-PHASE):

Limited Warranty Period - Original Purchaser:
Compressor – twelve (12) years, Coils, Parts – ten (10) years.

4DCZ6, 4YCCZ6 (SINGLE-PHASE):

Limited Warranty Period - Original Purchaser:
Compressor – twelve (12) years, Coils, Parts – ten (10) years,
Heat Exchanger – twenty (20) years.

FURNACES (*First digit may be a "T" or an "A"):

L8X1, S8X1, S8X2, S8B1

Limited Warranty Period - Original Purchaser:
Parts – ten (10) years, Heat Exchanger – twenty (20) years.

S9B1, S9V2, S9X2, S9X1, *UD2-V/*DD2-V, *UD2-C-V/*DD2-C-V, *UHM/*DHM:

Limited Warranty Period - Original Purchaser:
Parts – ten (10) years, Heat Exchanger – Lifetime

MODULAR BLOWERS: P0V0

Limited Warranty Period - Original Purchaser:
Parts – ten (10) years.

CASED AND UNCASD COILS:

4TXC, 4PXC, 4PXA, 4TXF-CC/CZ, 4GXC, 4MXC, A4MX:

Limited Warranty Period - Original Purchaser:
Coil, Parts – ten (10) years.

DUCTLESS SYSTEMS (Sold in Canada only):**

4TYK/4MYW, 4TXK/4MXW, 4TXM, 4MXC85, 4MXL, 4MXD, 4MXF, 4MXX

Limited Warranty Period - Original Purchaser:
All Parts – ten (10) years.

****If any part of your Ductless System fails because of a manufacturing defect under normal use and maintenance within the Limited Warranty Period, the Company will furnish the required replacement part, or if the compressor, outdoor coil or indoor coil should be the part that fails during the Limited Warranty period, the affected unit will be replaced. The purchaser must pay for any and all shipping and handling charges and other costs of warranty service for the replacement part including, but not limited to, any related service labor, diagnosis calls and refrigerant. There is no distinction between residential and commercial use for this Limited Warranty term and coverage.**

SPECIFIC TERMS FOR 3-PHASE UNITS

(Models up to 5 Tons in a RESIDENTIAL Application):

3-PHASE OUTDOOR UNITS: 4TTA, 4TTS6, 4TWA, 4TWS6, 4A7C, 4A7S6, 4A6C, 4A6S6:

Limited Warranty Period - Original Purchaser:
Compressor, Outdoor Coil, Parts – ten (10) years.

3-PHASE PACKAGED UNITS: 4TCY4, 4WCZ6, 4DCZ6, 4WCY4, 4DCY4, 4DCL4, 4YCCZ6, 4YCY4

Limited Warranty Period - Original Purchaser:
Compressor, Outdoor Coil, Parts – ten (10) years.

4WCZ6, 4DCZ6, 4YCCZ6:

Limited Warranty Period - Original Purchaser:
Compressor – twelve (12) years, Coils, Parts – ten (10) years,
Heat Exchanger – twenty (20) years

Table 1A: Limited Warranty Time Periods for Trane and American Standard Products applied in residential applications.

CONTROLS: *CONT102, *CONT103, *CONT202, *CONT203, *CONT302, *CONT303, *CONT401, *CONT402, *CONT624, *CONT724, ZSENS930, TCONT830

Limited Warranty Period - Original Purchaser: five (5) years

CONTROLS: *CONT824, *CONT850, *ZON1050, *ZON1040

Limited Warranty Period - Original Purchaser: ten (10) years

ZONING PRODUCTS: ZZONEPNLAC52Z, ZZONEEXPAC52Z, ZSENSAL0400, BAYSEN01ATEMPA, BAY24VRP, ZDAMPDR, ZDAMPSPM, ZDAMPBM, ZDAMP-PRR

Limited Warranty Period - Original Purchaser: ten (10) years

HUMIDIFIERS: *HUMD200, *HUMD300, *HUMD500 and EHUM800

Limited Warranty Period - Original Purchaser: ten (10) years

ENERGY RECOVERY VENTILATOR (EERV): EERV100, EERV200 & EERV300

Limited Warranty Period - Original Purchaser: ten (10) years

FANS AND OTHER VENTILATION PRODUCTS: Ventilator QF130V

Limited Warranty Period - Original Purchaser: five (5) years

AIR CLEANERS: TFD, AFD & EFD

Limited Warranty Period - Original Purchaser: ten (10) years

***(First digit may be a "T", "E" or an "A")**

DEHUMIDIFIERS: 70V, 98H, 105XT, SD-12, 100V, 155XT, 205H

Limited Warranty Period: Five (5) Year Functional Parts, Five (5) Year Unit Exchange

***Refrigerant System Failure * Refrigerant System Failure means a failed component in the sealed refrigerant circuit including compressor, coil and related components.**

Note: If any part of your Dehumidifier Refrigerant System fails because of a manufacturing defect under normal use and maintenance within the Limited Warranty Period the affected unit will be exchanged. The purchaser must return the affected unit to the place of purchase in exchange for an equal replacement unit. Documentation relating to original owner, purchase date and install location will be required including a service diagnosis of failure. The purchaser is responsible for all costs of warranty service including, but not limited to, any related service labor or diagnosis calls. The purchaser relinquishes all rights to ownership of the returned unit.

SPECIFIC TERMS FOR COMMERCIAL APPLICATIONS:

Limited Warranty Period Applies for all controls, zoning products, humidifiers, dehumidifiers and ERV's, Fans and Air Cleaners.

Limited Warranty Period - five (5) years

Table 1B: Limited Warranty Time Periods for Trane and American Standard Products applied in residential applications.

Electric Heaters for Multi-Position Air Handlers

BAYEA, BAYEC, BAYHTR15, BAYHTR35, BAYHTRM5

Limited Warranty Period - Original Purchaser: ten (10) years

Optional Accessories for Multi-Position Air Handlers

UVC LIGHTS: BAYUVC

Limited Warranty Period - Original Purchaser: Ballast - ten (10) years, Bulbs - one (1) year

COMPRESSOR CONTROL MODULE: BAY24CCVK

Limited Warranty Period - Original Purchaser: ten (10) years

Hydronic Heaters for Multi-Position Air Handlers BAYWA

Limited Warranty Period - Original Purchaser: ten (10) years

Electric Heaters for Packaged Units

BAYHTRV, BAYHTRC

Limited Warranty Period - Original Purchaser: ten (10) years

Optional Accessories for Packaged Units

UVC LIGHTS: BAYUV

Limited Warranty Period - Original Purchaser: Ballast - ten (10) years, Bulbs - one (1) year

ECONOMIZERS: BAYECON

Limited Warranty Period - Original Purchaser: ten (10) years

MOTORIZED DAMPER: BAYDMPR

Limited Warranty Period - Original Purchaser: ten (10) years

SPECIFIC TERMS FOR COMMERCIAL APPLICATIONS

SINGLE PHASE and ALL 3-PHASE

(Models listed in Tables 1, 1B – excluding ductless systems)

Limited Warranty Period: Coil, Parts – one (1) year.

Limited Warranty Period: Compressor – five (5) years.

Limited Warranty Period: Packaged Unit Heat Exchanger – five (5) years.

Limited Warranty Period: For All Heat Exchangers on All Other Furnaces – twenty (20) years.

INSTALLATION INSTRUCTIONS/HEATER SELECTOR

BAYHTR*5 Series Electric Heater Kits

Supplementary Electric Heaters for TEM3, TEM4 , TEM6 & TEM8 Air Handlers

Models:

BAYHTR1504BRK	BAYHTR1505BRK	BAYHTR1508BRK	BAYHTR1515BRK †	BAYHTR1519BRK †	BAYHTR1525BRK
BAYHTR1504PDC	BAYHTR1505PDC	BAYHTR1508PDC	BAYHTR3515LUG †		
BAYHTR1504LUG	BAYHTR1505LUG	BAYHTR1508LUG	BAYHTR1516BRK †	BAYHTR1520BRK †	BAYHTR4505AUT
BAYHTR3505LUG	BAYHTR3505TBC	BAYHTR1510BRK	BAYHTR3516LUG †		BAYHTR4508AUT
		BAYHTR1510PDC	BAYHTR1517BRK	BAYHTR1523BRK	BAYHTR4510AUT
		BAYHTR1510LUG	BAYHTR3517LUG	BAYHTR3523LUG	BAYHTR4515AUT
		BAYHTR3510LUG			BAYHTR4520AUT

† = Discontinued Models Replaced by BAYHTR1517, BAYHTR3517 or BAYHTR1523. New Heater Models are backward compatible with Previous 15 & 20 KWs

WARNING

Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage. For assistance or additional information, consult a qualified installer or service agency.

WARNING

Installation and servicing of air conditioning equipment can be hazardous due to internal refrigerant pressure and live electrical components. Only trained and qualified service personnel should install or service this equipment. Installation and service performed by unqualified persons can result in property damage, personal injury, or death.

These instructions are intended as a general guide only, for use by qualified personnel and do not supersede any national or local codes in any way. Installation must conform with the local building codes and with the latest editions of the National Electrical Code.

Read these instructions thoroughly before starting installation. Only qualified installers or technicians should install the electric heat section and all other equipment used in HVAC systems. Federal, state, and local codes must be followed when installing this or any other HVAC equipment.

WARNING

If this unit is to be installed in a mobile or manufactured home application, the ductwork must be sized to achieve static pressures within the manufacturer's guidelines. All other installation guidelines must also be followed. Failure to do so may result in equipment damage, personal injury, and improper performance of the unit.

WARNING

If these instructions and/or codes are not followed or if the equipment is not properly installed, possible injury or death could occur during installation or operation.

WARNING

Sharp metal edges can cause injury. When installing the unit, use care to avoid sharp edges.

WARNING

Be sure to disconnect all power to the unit while installing and servicing this equipment. Turn off accessory heater power switch if applicable. Be mindful that there may be more than one disconnect servicing this equipment. Use proper tools and protective equipment during installation and service. TAG Disconnect switch(es) with a suitable WARNING LABEL.

CAUTION

The installation of this appliance must conform to the requirements of the National Fire Protection Association; the National Electrical Code, ANSI/NFPA No.70 (latest edition) in the United States; the Canadian Electrical Code Part 1, CSA 22.1 (latest edition) in Canada; and any state or provincial laws or local ordinances. Local authorities having jurisdiction should be consulted before installation is made. Such applicable regulations or requirements take precedence over the general instructions in this manual.

Inspection of Shipment

Before proceeding with the heater installation, inspect thoroughly for shipping damage. Notify the shipper immediately if any damage is found. Check all ceramic insulators for breakage and inspect heater element wire to see that none have been deformed. Clean all dirt, dust and moisture from equipment. Check for proper clearances of live parts, between phases, and to ground. Make sure that all required barriers are in place. Check conductors run in multiple to ensure that they are properly wired. Refer to base installation instructions for complete unit installation details.

WARNING

- When installing in a garage, the elements must be at least 18" above the floor.
- If this appliance is installed in an enclosed area such as a garage or utility room with any carbon monoxide (CO) producing appliance (i.e. Automobile, Furnace, Water-Heater etc.), ensure the area is properly ventilated.
- A means of strain relief and conductor protection must be provided at the supply wire entrance.

Attention Installing Personnel

As a professional installer, you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with the Instruction Manual. Pay close attention to all safety warnings. Often during installation or repair, it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

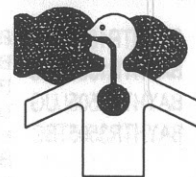
Remember, it is Your responsibility to install the product safely and to know it well enough to be able to instruct a customer on its safe use.

Safety is a matter of thinking before acting. Most dealers have a list of specific good safety practices ... follow them.

The precautions listed in this installation manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here are to take precedence.



**DANGER
PELIGRO**



Carbon Monoxide Poisoning Hazard

Special Warning for Installation of Furnaces or Air Handling Units in Enclosed Areas such as Garages, Utility Rooms or Parking Areas.

Carbon monoxide producing devices (such as automobile, space heater, gas water heater, etc.) should not be operated in enclosed areas such as unventilated garages, utility rooms or parking areas because of the danger of carbon monoxide (CO) poisoning resulting from the exhaust emissions. If a furnace or air handler is installed in an enclosed area such as a garage, utility room or parking area and a carbon monoxide producing device is operated therein, there must be adequate, direct outside ventilation.

This ventilation is necessary to avoid the danger of CO poisoning which can occur if a carbon monoxide producing device continues to operate in the enclosed area. Carbon monoxide emissions can be (re)circulated throughout the structure if the furnace or air handler is operating in any mode.

CO can cause serious illness including permanent brain damage or death.



WARNING

Reminder: If these instructions and/or codes are not followed or if the equipment is not properly installed, possible injury or death could occur during installation or operation.

Introduction

This electric heater kit is designed to provide power directly to the unit from the electric heater kit's power supply eliminating the need for additional circuits. The power and control wiring use a single polarized plug to connect the heater and the unit. See the Heater Data table on page #5 for the number of circuits required.

WARNING

HIGH VOLTAGE

Risk of electrical shock.

Before installing or servicing unit, be sure ALL power to the units is OFF. More than one disconnect switch may be present. Failure to disconnect power supplies can result in property damage, personal injury, or death.



CAUTION

To avoid possible personal injury, use extreme caution if using power tools to remove the small breaker mounting brackets. The brackets may quickly rotate and cause injury.

Reminder: The power must be in the OFF position. There may also be more than one means of disconnect servicing this product.

Electric Heater kit Installation

NOTE: If physical damage is observed during the inspection DO NOT install this kit.

Before installing the unit, check the information on the unit rating plate to ensure that the unit meets the job specification, proper electrical power is available, and the proper duct clearances are maintained.

Refer to base unit installation instructions as required.

- 1.) Remove Blower access panel.
- 2.) Locate heater knock-out plate at rear of control box.
- 3.) With tin snips, cut the four tabs located at the center points of the edges of knock-out plate. (See fig. 1)
- 4.) Discard knock-out plate.
- 5.) Slide heater into opening.
- 6.) Secure heater to control box opening with four screws located at the corners of the mounting plate. (See fig. 2)
- 7.) Locate locking tab at the top edge of the breaker/pull disconnect mounting plate. (See fig. 3)

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- 8.) Slip tab into slot of cabinet located along the front edge of the discharge panel. (See fig. 3)

Note: left side breaker mount location must be used for TEM8A0B24/30 cabinet, 25KW Heaters & Single point entry kits.

- 9.) Secure breaker/pull disconnect mounting plate with two screws along the bottom of the plate. (See fig. 3)

- 10.) For heater kits with circuit breakers, snap breaker on to breaker mounting plate. (See fig. 4)

- 11.) Make all wiring connections per applicable field wiring diagrams. All installations must conform to national, state & local electrical codes.

- 12.) Connect the polarized harness plug to the polarized plug on the heater. (See fig. 2)

- 13.) Refer to the heater minimum airflow chart or the unit rating nameplate for the appropriate minimum blower speed tap to be used with the approved heater installed.

- 14.) Connect all field wiring per air handler installation guide. **USE COPPER CONDUCTORS ONLY**

- 15.) Remove the appropriate breaker knock-out plates from the blower access panel. Cut and remove insulation behind the knock-out. (See fig. 5)

Note: LUG models, do not remove Knockouts or insulation

Important: Left Knockouts must be used for the following

- All TEM8A0B24/30 Air Handlers
- All 25 KW heaters
- All TEM air Handlers with Single Point Entry Kit-(see Seal Kit Installer's Guide for install instructions)

Note: Follow instructions in the Breaker Seal Kit 18-GJ85D1(latest Rev). Breaker Seal Kit will ship with TEM8A0B air Handlers, 25 kw Heaters & single pt. kits for TEM Air Handlers

Center knockouts used for all other 4-20kw installations in TEM air handlers (except TEM8A0B24/30)

- Single breaker uses the bottom horizontal knock-out.
- Dual breakers use both horizontal knock-outs.
- Pull disconnect uses the vertical knock-out at the very bottom.

- 16.) Install the blower access panel ensuring alignment of breakers through the access panel.

- 17.) A wiring diagram label is supplied with the electric heater kit. Attach the wiring diagram in a prominent/visible location.

NOTE: If installing this BAYHTR15 series heater kit into a TEM3 or TEM4 air handler, go to step 18.

- 18.) Cut heat-shrink insulated section off of heater low voltage field wires [W1-White, Blue, & Pink (if applicable)]

- 19.) Strip 1/2" insulation from cut end for field thermostat wiring termination.

Introduction

Dual Voltage Kits (480 V Heaters)

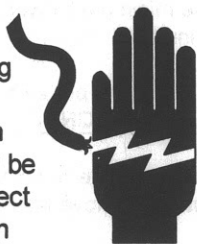
These electric heater kits Must be supplied with two voltage sources(480 volt for the heater & 240 volt for the unit) and are designed to provide power directly to the unit from the electric heater kit's. Power may be supplied with Kit # 10-14195-00 or by providing sepearte power supplys per local codes. The power and control wiring use a single polarized plug to connect the heater and the unit. See the Heater Data table on page #5 for the number of circuits required.



WARNING

HIGH VOLTAGE

Risk of electrical shock. Before installing or servicing unit, be sure ALL power to the units is OFF. More than one disconnect switch may be present. Failure to disconnect power supplies can result in property damage, personal injury, or death.



CAUTION

To avoid possible personal injury, use extreme caution if using power tools to remove the small breaker mounting brackets. The brackets may quickly rotate and cause injury.

Reminder: The power must be in the OFF position. There may also be more than one means of disconnect servicing this product.

Electric Heater kit Installation

NOTE: If physical damage is observed during the inspection DO NOT install this kit.

Before installing the unit, check the information on the unit rating plate to ensure that the unit meets the job specification, proper electrical power is available, and the proper duct clearances are maintained.

Refer to base unit installation instructions as required.

- 1.) Remove Blower access panel.
 - 2.) Locate heater knock-out plate at rear of control box.
 - 3.) With tin snips, cut the four tabs located at the center points of the edges of knock-out plate. (See fig. 1)
 - 4.) Discard knock-out plate.
 - 5.) Slide heater into opening.
 - 6.) Secure heater to control box opening with four screws located at the corners of the mounting plate. (See fig. 2)
 - 7.) Locate locking tab at the top edge of the breaker/pull disconnect mounting plate. (See fig. 3)
 - 8.) Make all wiring connections per applicable field wiring diagrams. Unit must be wired with appropriate voltage applied to proper input(s) to insure proper function and avoid damage to Unit. (See Fig. 6)
All installations must conform to national, state & local electrical codes.
 - 9.) Connect the polarized harness plug to the polarized plug on the heater. (See fig. 2)
 - 10.) Refer to the heater minimum airflow chart or the unit rating nameplate for the appropriate minimum blower speed tap to be used with the approved heater installed.
 - 11.) Connect all field wiring per air handler installation guide. **USE COPPER CONDUCTORS ONLY**
 - 12.) Remove the appropriate breaker knock-out plates from the blower access panel. Cut and remove insulation behind the knock-out. (See fig. 5)
 - Single breaker uses the bottom horizontal knock-out.
 - Dual breakers use both horizontal knock-outs.
 - Pull disconnect uses the vertical knock-out at the very bottom.
 - 13.) Install the blower access panel ensuring alignment of breakers through the access panel.
 - 14.) A wiring diagram label is supplied with the electric heater kit. Attach the wiring diagram in a prominent/visable location.
- NOTE: If installing this BAYHTR15 series heater kit into a TEM3 or TEM4 air handler, go to step 15.**
- 15.) Cut heat-shrink insulated section off of heater low voltage field wires [W1-White & Blue]
 - 16.) Strip 1/2" insulation from cut end for field thermostat wiring termination.

NOTE: Illustrations may vary from the actual unit by cabinet and heater size.

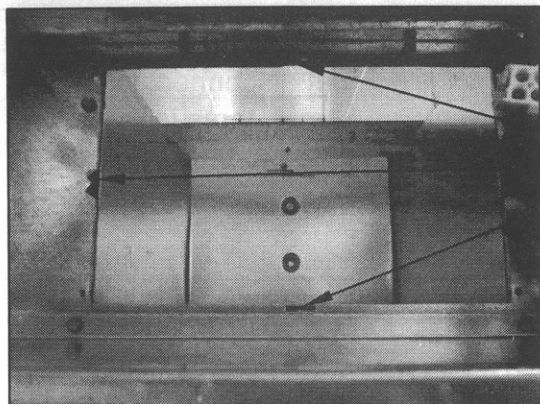


FIGURE 1

MOUNTING SCREW LOCATION

CUT-OUT TAB LOCATION

POLARIZED PLUG CONNECTION

LOW VOLTAGE FIELD WIRES
SHOWN ALREADY STRIPPED

AIRFLOW DIRECTION LABEL

BREAKER BRACKET LOCKING TAB LOCATION

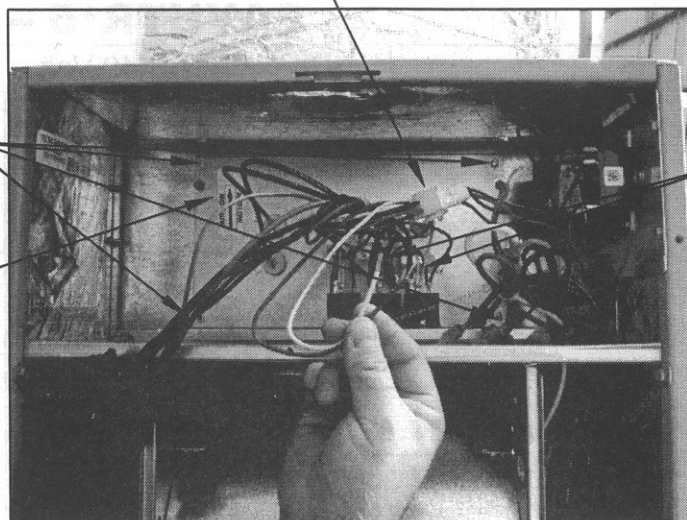


FIGURE 2

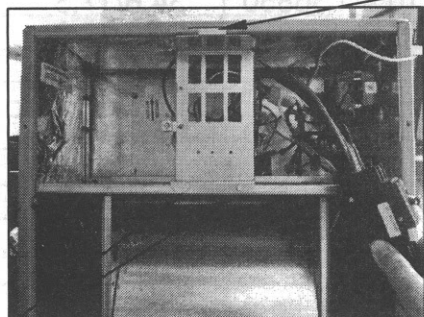


FIGURE 3

BREAKER MOUNTING SCREW LOCATION

KNOCK-OUT FOR CIRCUIT BREAKER(S)

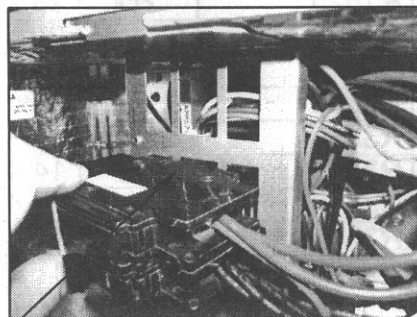


FIGURE 4

SNAP ON CIRCUIT BREAKER

Left Knockout)

Center Knockouts

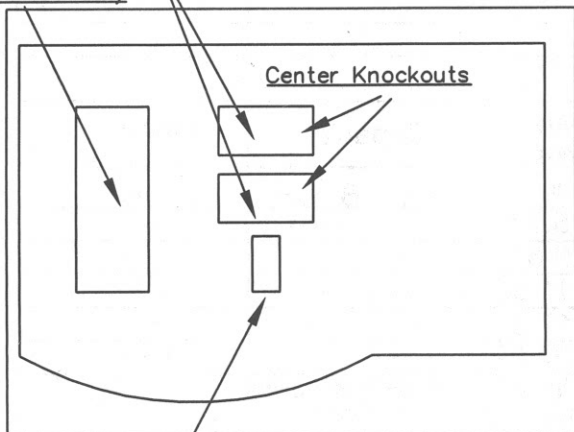


FIGURE 5

KNOCK-OUT FOR PULL DISCONNECT

240 VOLT 1ph POWER SUPPLY FOR UNIT

480 VOLT 3ph POWER SUPPLY FOR HEATER ONLY

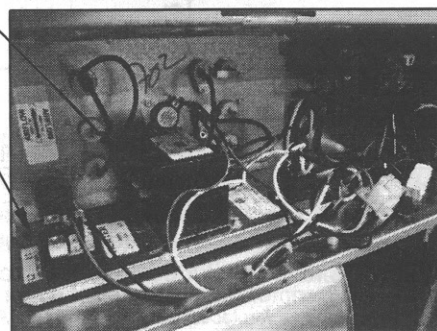


FIGURE 6

HEATER KIT TABLES

IMPORTANT: The BAYHTR** electric heat kit, designed for use with this unit, may include a combination of 30 and/or 60 amp circuit breakers to provide an electrical disconnect for service personnel that are intended to help protect internal electrical components in the event of a short circuit or ground fault. As designed, the circuit breakers supplied in the BAYHTR** heat kits do not provide over-current protection of the branch circuit. Therefore, the branch circuit(s) shall be sized and protected according to the unit nameplate.

BAYHTR*5 -- HEATER DATA

Heater Model No. Ref.	# of Circuits/ Phases	240 Volt		Heater Amps per Circuit	208 Volt		Heater Amps per Circuit
		Capacity			Capacity		
		kW	BTUH		kW	BTUH	
No Heater							
BAYHTR1504*	1/1	3.8	13100	16	2.88	9800	13.8
BAYHTR1505*	1/1	4.8	16378	20	3.6	12283	17.3
BAYHTR1508*	1/1	7.5	25590	31.25	5.6	19107	26.9
BAYHTR1510*	1/1	9.6	32755	40	7.2	24566	34.6
BAYHTR1515* †	2/1	14.4	49133	40/20	10.8	36850	34.6/17.3
BAYHTR1516* †	2/1	14.4	49133	40/20	10.8	36850	34.6/17.3
BAYHTR1519* †	2/1	19.2	65510	40/40	14.4	49133	34.6/34.6
BAYHTR1520* †	2/1	19.2	65510	40/40	14.4	49133	34.6/34.6
BAYHTR1517*	2/1	14.4	49133	40/20	10.8	36850	34.6/17.3
BAYHTR1523*	2/1	19.2	65510	40/40	14.4	49133	34.6/34.6
BAYHTR1525*	4/1	23.4	79841	25/25/25/25	17.6	59881	22/22/22/22
BAYHTR3505*	1/3	4.8	16378	11.5	3.6	12283	10
BAYHTR3510*	1/3	9.6	32800	23.1	7.2	24566	20
BAYHTR3515* †	1/3	14.4	49133	34.6	10.8	36850	30
BAYHTR3516* †	1/3	14.4	49133	34.6	10.8	36850	30
BAYHTR3517*	1/3	14.4	49133	34.6	10.8	36850	30
BAYHTR3523*	1/3	19.2	65510	46.2	14.4	49133	40
Heater Model No. Ref.	# of Circuits/ Phases	480 Volt		Heater Amps per Circuit	N / A		Heater Amps per Circuit
		Capacity			Capacity		
		kW	BTUH		kW	BTUH	
BAYHTR4505*	1/3	4.8	16378	5.77	-----	-----	-----
BAYHTR4508*	1/3	8.0	27297	9.62	-----	-----	-----
BAYHTR4510*	1/3	9.6	32755	11.55	-----	-----	-----
BAYHTR4515*	1/3	14.4	49133	17.32	-----	-----	-----
BAYHTR4520*	1/3	19.2	65510	23.09	-----	-----	-----
Note: For model specific electrical data, see the air handler Installer's Guide or submittal.							
Note: Heaters with two circuits are displayed as Circuit 1/Circuit 2 (Minimum Circuit							
Ampacity for Circuit 1 includes Blower Motor Amp)							
* Additional descriptor for power type of power entry							
† = Discontinued Models Replaced by BAYHTR1517, BAYHTR3517 or BAYHTR1523. New Heater							
Models are backward compatible with Previous 15 & 20 KW's							

TEM3 & TEM4 MINIMUM HEATER AIRFLOW CFM - HEATER MATRIX

Model No.	BAYHTR1504BRK BAYHTR1504PDC BAYHTR1504LUG BAYHTR1505BRK BAYHTR1505PDC BAYHTR1505LUG BAYHTR3505LUG BAYHTR4505**	BAYHTR1508BRK BAYHTR1508PDC BAYHTR1508LUG BAYHTR1510BRK BAYHTR1510PDC BAYHTR1510LUG BAYHTR3510LUG BAYHTR4508** BAYHTR4510**	BAYHTR1515BRK † BAYHTR3515LUG † BAYHTR1517BRK BAYHTR3517LUG BAYHTR4515**	BAYHTR1519BRK † BAYHTR1523BRK	BAYHTR1520BRK † BAYHTR1523BRK BAYHTR4520**
TEM(3,4)A0B18S21S*	L / L	L / L	--	--	--
TEM(3,4)A0B24S21S*	L / L	L / L	--	--	--
TEM(3,4)A0B30S31S*	L / L	L / L	L / L	L / L	--
TEM(3,4)A0B36S31S*	L / L	L / L	L / L	L / L	--
TEM(3,4)A0C42S41S*	L / L	L / L	L / L	--	L / L
TEM(3,4)A0C48S41S*	L / L	L / L	L / L	--	L / L
TEM(3,4)A0C60S51S*	L / L	L / L	L / L	--	L / L

Cooling/HP Airflow
 Note: On the TEM3A0C60S51S model, taps 1-3=Low, tap 4=Med, tap 5=High
 * = Followed by two digits † = Discontinued Models Replaced by BAYHTR1517, BAYHTR3517 or BAYHTR1523. New
 ** = AUT, DVK or others Heater Models are backward compatible with Previous 15 & 20 KW's

TEM6 MINIMUM HEATER AIRFLOW CFM - HEATER MATRIX

Model No.	BAYHTR1504BRK BAYHTR1504PDC BAYHTR1504LUG BAYHTR1505BRK BAYHTR1505PDC BAYHTR1505LUG BAYHTR3505LUG BAYHTR4505**		BAYHTR1508BRK BAYHTR1508PDC BAYHTR1508LUG		BAYHTR1510BRK BAYHTR1510PDC BAYHTR1510LUG BAYHTR3510LUG BAYHTR4508** BAYHTR4510**		BAYHTR1516BRK † BAYHTR3516LUG † BAYHTR1517BRK BAYHTR3517LUG BAYHTR4515**		BAYHTR1520BRK † BAYHTR1523BRK BAYHTR4520**		BAYHTR1525BRK	
	Heat Pump	No Heat Pump	Heat Pump	No Heat Pump	Heat Pump	No Heat Pump	Heat Pump	No Heat Pump	Heat Pump	No Heat Pump	Heat Pump	No Heat Pump
TEM6A0B24H21SB*	660	600	780	600	780	600	1050	850	N / A		N / A	
TEM6A0B30H21SB*	660	600	780	600	780	600	1050	850	N / A		N / A	
TEM6A0C36H31SB*	875	675	950	820	1000	820	1000	820	1300	1140	N / A	
TEM6A0C42H41SB*	875	675	950	820	1000	820	1000	820	1300	1140	N / A	
TEM6A0C48H41SB*	1200	975	1350	975	1350	975	1365	975	1365	1300	1810	1505
TEM6A0C60H51SB*	1200	975	1350	975	1350	975	1365	975	1365	1300	1810	1505
TEM6A0D48H41SB*	1150	975	1150	975	1150	975	1300	1125	1380	1125	1550	1345
TEM6A0D60H51SB*	1150	975	1150	975	1150	975	1300	1125	1380	1125	1550	1345

Cooling/HP Airflow
* = Followed by two digits
** = AUT, DVK or others

† = Discontinued Models Replaced by BAYHTR1517, BAYHTR3517 or BAYHTR1523. New Heater
Models are backward compatible with Previous 15 & 20 KW's

TEM8 MINIMUM HEATER AIRFLOW CFM - HEATER MATRIX

Model No.	BAYHTR1504BRK BAYHTR1504PDC BAYHTR1504LUG BAYHTR1505BRK BAYHTR1505PDC BAYHTR1505LUG BAYHTR3505LUG BAYHTR4505**		BAYHTR1508BRK BAYHTR1508PDC BAYHTR1508LUG		BAYHTR1510BRK BAYHTR1510PDC BAYHTR1510LUG BAYHTR3510LUG BAYHTR4508** BAYHTR4510**		BAYHTR1516BRK † BAYHTR3516LUG † BAYHTR1517BRK BAYHTR3517LUG BAYHTR4515**		BAYHTR1520BRK † BAYHTR1523BRK BAYHTR4520**		BAYHTR1525BRK	
	Heat Pump	No Heat Pump	Heat Pump	No Heat Pump	Heat Pump	No Heat Pump	Heat Pump	No Heat Pump	Heat Pump	No Heat Pump	Heat Pump	No Heat Pump
TEM8A0B24V21DB*	650	600	850	700	850	700	1000	850	N/A		N/A	
TEM8A0B30V31DB*	650	600	850	700	850	700	1000	850	N/A		N/A	
TEM8A0C36V31DB*	675	675	950	900	950	900	950	900	1500	1300	N/A	
TEM8A0C42V41DB*	675	675	950	900	950	900	950	900	1500	1300	N/A	
TEM8A0C48V41D*	900	800	1300	1200	1350	1000	1400	1100	1430	1300	1850	1600
TEM8A0C60V51D*	1200	997	1200	997	1200	997	1350	1129	1350	1129	1850	1600
TEM8A0D48V41DB*	1200	997	1200	997	1200	997	1350	1129	1350	1129	1800	1400
TEM8A0D60H51DB*	1200	997	1200	997	1200	997	1350	1129	1350	1129	1800	1400

Cooling/HP Airflow
* = Followed by two digits
** = AUT, DVK or others

† = Discontinued Models Replaced by BAYHTR1517, BAYHTR3517 or BAYHTR1523. New Heater
Models are backward compatible with Previous 15 & 20 KW's

Product Specifications

Trane BAYHTR15 Series Electric Heat Kits for TEM3, TEM4, TEM6 & TEM8 Air Handlers

Nomenclature: (ex. BAYHTR1505BRKA)

ex. BAYHTR4505AUTA)

BAY	HTR	1	5	05	BRK
Accessory					
Unit Type					
Heater Kit					Power Entry Description
Phase					BRK Circuit Breaker
1 Single Phase					PDC Pull Disconnect
3 3 phase 240/208 volt					LUG Terminal block Connection
4 480 volt 3 ph					DVK Dual Voltage KIT (480/240V)
* Other					No Auto Former
Series / Family					AUT Dual Voltage KIT (480/240V)
5					Auto Former Included
kw					*** Other designations
04—3.84 KW					
05—4.80 KW				17—14.40 KW	
08—7.50 (8KW for 480V)				19—19.20 KW	
10—9.60 KW				20—19.20 KW	
15—14.40 KW				23—19.20 kw	
16—14.40 KW				25—23.40 KW	

06-7133-00 REV.E

Heating kw Correction Factor

Supply Voltage	240	230	220	210	208								
Correction Factor	1.00	0.92	0.84	0.77	0.75								

[] previous heater Models

Electrical Data

Air Handler Units

Model and Heat Kit Usage	Unit MCA ‡	CIRCUIT # 1*		CIRCUIT # 2*		CIRCUIT # 3*		CIRCUIT # 4*		ACTUAL KW @ 240V	Single Point Kit	
		MCA	MOP	MCA	MOP	MCA	MOP	MCA	MOP		MCA	MOP
TEM3A0B18 / TEM3A0B24	2											
TEM4A0B18 / TEM4A0B24												
BAYHTR1504(BRK, PDC, LUG)		22.0	30	—	—	—	—	—	—	3.84	—	—
BAYHTR1505(BRK, PDC, LUG)		27.0	45	—	—	—	—	—	—	4.80	—	—
BAYHTR1508(BRK, PDC, LUG)		41.1	60	—	—	—	—	—	—	7.50	—	—
BAYHTR1510(BRK, PDC, LUG)		52.0	60	—	—	—	—	—	—	9.60	—	—
240 Volt 3 ph												
BAYHTR3505LUG		16.4	30	—	—	—	—	—	—	4.80	—	—
BAYHTR3510LUG		30.9	45	—	—	—	—	—	—	9.60	—	—
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		8.2	15	—	—	—	—	—	—	4.80	—	—
BAYHTR4508(AUT, DVK)		13.0	15	—	—	—	—	—	—	8.00	—	—
BAYHTR4510(AUT, DVK)		15.4	20	—	—	—	—	—	—	9.60	—	—

Model and Heat Kit Usage	Unit MCA ‡	CIRCUIT # 1*		CIRCUIT # 2*		CIRCUIT # 3*		CIRCUIT # 4*		ACTUAL KW @ 240V	Single Point Kit	
		MCA	MOP	MCA	MOP	MCA	MOP	MCA	MOP		MCA	MOP
TEM3A0B30 / TEM3A0B36	3											
TEM4A0B30												
BAYHTR1504(BRK,PDC, LUG)		23	30							3.84		
BAYHTR1505(BRK,PDC, LUG)		28.0	45							4.80		
BAYHTR1508(BRK,PDC, LUG)		42.1	60							7.50		
BAYHTR1510(BRK,PDC, LUG)		53.0	60							9.60		
BAYHTR1517BRK [BAYHTR1515BRK]		53.0	60	25	30					14.40		
BAYHTR1523BRK [BAYHTR1519BRK]		53.0	60	25	30					19.20		
240 Volt 3 ph												
BAYHTR3505LUG		17.4	30							4.80		
BAYHTR3510LUG		31.9	30							9.60		
BAYHTR3517LUG [BAYHTR3515LUG]		46.3	60							14.40		
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		8.7	15							4.80		
BAYHTR4508(AUT, DVK)		13.5	15							8.00		
BAYHTR4510(AUT, DVK)		15.9	20							9.60		
BAYHTR4515(AUT, DVK)		23.2	25							14.40		
TEM4A0C36	3											
BAYHTR1504(BRK,PDC, LUG)		23	30							3.84		
BAYHTR1505(BRK,PDC, LUG)		28.0	45							4.80		
BAYHTR1508(BRK,PDC, LUG)		42.1	60							7.50		
BAYHTR1510(BRK,PDC, LUG)		53.0	60							9.60		
BAYHTR1517BRK [BAYHTR1515BRK]		53.0	60	25	30					14.40		
BAYHTR1523BRK [BAYHTR1520BRK]		53.0	60	25	30					19.20		
240 Volt 3 ph												
BAYHTR3505LUG		17.4	30							4.80		
BAYHTR3510LUG		31.9	30							9.60		
BAYHTR3517LUG [BAYHTR3515LUG]		46.3	60							14.40		
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		8.7	15							4.80		
BAYHTR4508(AUT, DVK)		13.5	15							8.00		
BAYHTR4510(AUT, DVK)		15.9	20							9.60		
BAYHTR4515(AUT, DVK)		23.2	25							14.40		
BAYHTR4520(AUT, DVK)		30.4	30							19.20		
TEM3A0C42 / TEM3A0C48	3											
BAYHTR1504(BRK,PDC, LUG)		23	30							3.84		
BAYHTR1505(BRK,PDC, LUG)		28.0	45							4.80		
BAYHTR1508(BRK,PDC, LUG)		42.1	60							7.50		
BAYHTR1510(BRK,PDC, LUG)		53.0	60							9.60		
BAYHTR1517BRK [BAYHTR1515BRK]		53.0	60	25	30					14.40		
BAYHTR1523BRK [BAYHTR1520BRK]		53.0	60	50	60					19.20		
240 Volt 3 ph												
BAYHTR3505LUG		17.4	30							4.80		
BAYHTR3510LUG		31.9	30							9.60		
BAYHTR3517LUG [BAYHTR3515LUG]		46.3	60							14.40		
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		8.7	15							4.80		
BAYHTR4508(AUT, DVK)		13.5	15							8.00		
BAYHTR4510(AUT, DVK)		15.9	20							9.60		
BAYHTR4515(AUT, DVK)		23.2	25							14.40		
BAYHTR4520(AUT, DVK)		30.4	30							19.20		

Model and Heat Kit Usage	Unit MCA ‡	CIRCUIT # 1*		CIRCUIT # 2*		CIRCUIT # 3*		CIRCUIT # 4*		ACTUAL KW @ 240V	Single Point Kit	
		MCA	MOP	MCA	MOP	MCA	MOP	MCA	MOP		MCA	MOP
TEM4A0C42	5											
BAYHTR1504(BRK,PDC, LUG)		25	30	---	---	---	---	---	---	3.84	---	---
BAYHTR1505(BRK, PDC, LUG)		30.0	45	---	---	---	---	---	---	4.80	---	---
BAYHTR1508(BRK, PDC, LUG)		44.0	60	---	---	---	---	---	---	7.50	---	---
BAYHTR1510(BRK,PDC, LUG)		55.0	60	---	---	---	---	---	---	9.60	---	---
BAYHTR1517BRK [BAYHTR1515BRK]		55.0	60	25	30	---	---	---	---	14.40		
BAYHTR1523BRK [BAYHTR1520BRK]		55.0	60	50	60	---	---	---	---	19.20	---	---
240 Volt 3 ph												
BAYHTR3505LUG		19.4	30	---	---	---	---	---	---	4.80	---	---
BAYHTR3510LUG		33.9	30	---	---	---	---	---	---	9.60	---	---
BAYHTR3517LUG [BAYHTR3515LUG]		48.3	60	---	---	---	---	---	---	14.40	---	---
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		9.7	15	---	---	---	---	---	---	4.80	---	---
BAYHTR4508(AUT, DVK)		14.5	15	---	---	---	---	---	---	8.00	---	---
BAYHTR4510(AUT, DVK)		16.9	20	---	---	---	---	---	---	9.60	---	---
BAYHTR4515(AUT, DVK)		24.2	25	---	---	---	---	---	---	14.40	---	---
BAYHTR4520(AUT, DVK)		31.4	35	---	---	---	---	---	---	19.20	---	---
TEM4A0C48	8											
BAYHTR1504(BRK,PDC, LUG)		28	30	---	---	---	---	---	---	3.84	---	---
BAYHTR1505(BRK, PDC, LUG)		33.0	45	---	---	---	---	---	---	4.80	---	---
BAYHTR1508(BRK, PDC, LUG)		47.0	60	---	---	---	---	---	---	7.50	---	---
BAYHTR1510(BRK,PDC, LUG)		58.0	60	---	---	---	---	---	---	9.60	---	---
BAYHTR1517BRK [BAYHTR1515BRK]		58.0	60	25	30	---	---	---	---	14.40		
BAYHTR1523BRK [BAYHTR1520BRK]		58.0	60	50	60	---	---	---	---	19.20	---	---
240 Volt 3 ph												
BAYHTR3505LUG		22.4	30	---	---	---	---	---	---	4.80	---	---
BAYHTR3510LUG		36.9	40	---	---	---	---	---	---	9.60	---	---
BAYHTR3517LUG [BAYHTR3515LUG]		51.3	60	---	---	---	---	---	---	14.40	---	---
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		11.2	15	---	---	---	---	---	---	4.80	---	---
BAYHTR4508(AUT, DVK)		16.0	20	---	---	---	---	---	---	8.00	---	---
BAYHTR4510(AUT, DVK)		18.4	20	---	---	---	---	---	---	9.60	---	---
BAYHTR4515(AUT, DVK)		25.7	25	---	---	---	---	---	---	14.40	---	---
BAYHTR4520(AUT, DVK)		32.9	35	---	---	---	---	---	---	19.20	---	---
TEM3A0C60 / TEM4A0C60	8											
BAYHTR1504(BRK,PDC, LUG)		28	30	---	---	---	---	---	---	3.84	---	---
BAYHTR1505(BRK, PDC, LUG)		33.0	45	---	---	---	---	---	---	4.80	---	---
BAYHTR1508(BRK, PDC, LUG)		47.0	60	---	---	---	---	---	---	7.50	---	---
BAYHTR1510(BRK,PDC, LUG)		58.0	60	---	---	---	---	---	---	9.60	---	---
BAYHTR1517BRK [BAYHTR1515BRK]		58.0	60	25	30	---	---	---	---	14.40		
BAYHTR1523BRK [BAYHTR1520BRK]		58.0	60	50	60	---	---	---	---	19.20	---	---
240 Volt 3 ph												
BAYHTR3505LUG		22.4	30	---	---	---	---	---	---	4.80	---	---
BAYHTR3510LUG		36.9	45	---	---	---	---	---	---	9.60	---	---
BAYHTR3517LUG [BAYHTR3515LUG]		51.3	60	---	---	---	---	---	---	14.40	---	---
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		11.2	15	---	---	---	---	---	---	4.80	---	---
BAYHTR4508(AUT, DVK)		16.0	20	---	---	---	---	---	---	8.00	---	---
BAYHTR4510(AUT, DVK)		18.4	20	---	---	---	---	---	---	9.60	---	---
BAYHTR4515(AUT, DVK)		25.7	25	---	---	---	---	---	---	14.40	---	---
BAYHTR4520(AUT, DVK)		32.9	35	---	---	---	---	---	---	19.20	---	---

Model and Heat Kit Usage	Unit MCA ±	CIRCUIT # 1*		CIRCUIT # 2*		CIRCUIT # 3*		CIRCUIT # 4*		ACTUAL KW @ 240V	Single Point Kit	
		MCA	MOP	MCA	MOP	MCA	MOP	MCA	MOP		MCA	MOP
TEM6A0B24	3	(3.13)										
BAYHTR1504(BRK, PDC, LUG)		24	30	----	----	----	----	----	----	3.84	----	----
BAYHTR1505(BRK, PDC, LUG)		29.0	45	----	----	----	----	----	----	4.80	----	----
BAYHTR1508(BRK, PDC, LUG)		43.0	60	----	----	----	----	----	----	7.50	----	----
BAYHTR1510(BRK, PDC, LUG)		54.0	60	----	----	----	----	----	----	9.60	----	----
BAYHTR1517BRK [BAYHTR1516BRK]		54.0	60	25	30	----	----	----	----	14.40	----	----
240 Volt 3 ph												
BAYHTR3505LUG		18.4	30	----	----	----	----	----	----	4.80	----	----
BAYHTR3510LUG		32.9	45	----	----	----	----	----	----	9.60	----	----
BAYHTR3517LUG [BAYHTR3515LUG]		47.3	60	----	----	----	----	----	----	14.40	----	----
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		9.2	15	----	----	----	----	----	----	4.80	----	----
BAYHTR4508(AUT, DVK)		13.0	15	----	----	----	----	----	----	8.00	----	----
BAYHTR4510(AUT, DVK)		15.4	20	----	----	----	----	----	----	9.60	----	----
BAYHTR4515(AUT, DVK)		23.6	25	----	----	----	----	----	----	14.40	----	----
BAYHTR4520(AUT, DVK)		30.9	35	----	----	----	----	----	----	19.20	----	----
TEM6A0B30 / TEM6A0C36 / TEM6A0C42	5	(5.38)										
BAYHTR1504(BRK, PDC, LUG)		25	30	----	----	----	----	----	----	3.84	----	----
BAYHTR1505(BRK, PDC, LUG)		30.0	45	----	----	----	----	----	----	4.80	----	----
BAYHTR1508(BRK, PDC, LUG)		44.0	60	----	----	----	----	----	----	7.50	----	----
BAYHTR1510(BRK, PDC, LUG)		55.0	60	----	----	----	----	----	----	9.60	----	----
BAYHTR1517BRK [BAYHTR1516BRK]		55.0	60	25	30	----	----	----	----	14.40	----	----
BAYHTR1523BRK [BAYHTR1520BRK]		55.0	60	50	60	----	----	----	----	19.20	----	----
240 Volt 3 ph												
BAYHTR3505LUG		19.4	30	----	----	----	----	----	----	4.80	----	----
BAYHTR3510LUG		33.9	45	----	----	----	----	----	----	9.60	----	----
BAYHTR3517LUG [BAYHTR3515LUG]		48.3	60	----	----	----	----	----	----	14.40	----	----
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		9.7	15	----	----	----	----	----	----	4.80	----	----
BAYHTR4508(AUT, DVK)		14.5	15	----	----	----	----	----	----	8.00	----	----
BAYHTR4510(AUT, DVK)		16.9	20	----	----	----	----	----	----	9.60	----	----
BAYHTR4515(AUT, DVK)		24.1	25	----	----	----	----	----	----	14.40	----	----
BAYHTR4520(AUT, DVK)		31.4	35	----	----	----	----	----	----	19.20	----	----
TEM6A0C48 / TEM6A0C60	9	(8.50)										
TEM6A0D48 / TEM6A0D60												
BAYHTR1504(BRK, PDC, LUG)		29	30	----	----	----	----	----	----	3.84	----	----
BAYHTR1505(BRK, PDC, LUG)		34.0	45	----	----	----	----	----	----	4.80	----	----
BAYHTR1508(BRK, PDC, LUG)		48.0	60	----	----	----	----	----	----	7.50	----	----
BAYHTR1510(BRK, PDC, LUG)		59.0	60	----	----	----	----	----	----	9.60	----	----
BAYHTR1517BRK [BAYHTR1516BRK]		59.0	60	25	30	----	----	----	----	14.40	----	----
BAYHTR1523BRK [BAYHTR1520BRK]		59.0	60	50	60	----	----	----	----	19.20	----	----
BAYHTR1525BRK		39.9	40	31	35	31	35	31	35			
240 Volt 3 ph												
BAYHTR3505LUG		23.4	30	----	----	----	----	----	----	4.80	----	----
BAYHTR3510LUG		37.9	45	----	----	----	----	----	----	9.60	----	----
BAYHTR3517LUG [BAYHTR3515LUG]		52.3	60	----	----	----	----	----	----	14.40	----	----
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		11.7	15	----	----	----	----	----	----	4.80	----	----
BAYHTR4508(AUT, DVK)		16.5	20	----	----	----	----	----	----	8.00	----	----
BAYHTR4510(AUT, DVK)		18.9	20	----	----	----	----	----	----	9.60	----	----
BAYHTR4515(AUT, DVK)		26.2	25	----	----	----	----	----	----	14.40	----	----
BAYHTR4520(AUT, DVK)		33.4	35	----	----	----	----	----	----	19.20	----	----

Model and Heat Kit Usage	Unit MCA ‡	CIRCUIT # 1*		CIRCUIT # 2*		CIRCUIT # 3*		CIRCUIT # 4*		ACTUAL KW @ 240V	Single Point Kit	
		MCA	MOP	MCA	MOP	MCA	MOP	MCA	MOP		MCA	MOP
TEM8A0B24	4	(3.50)										
BAYHTR1504(BRK, PDC, LUG)		24	30	—	—	—	—	—	—	3.84	—	—
BAYHTR1505(BRK, PDC, LUG)		29.0	45	—	—	—	—	—	—	4.80	—	—
BAYHTR1508(BRK, PDC, LUG)		43.0	60	—	—	—	—	—	—	7.50	—	—
BAYHTR1510(BRK, PDC, LUG)		54.0	60	—	—	—	—	—	—	9.60	—	—
BAYHTR1517BRK		54.0	60	25	30	—	—	—	—	14.40	—	—
240 Volt 3 ph												
BAYHTR3505LUG		18.4	30	—	—	—	—	—	—	4.80	—	—
BAYHTR3510LUG		32.9	45	—	—	—	—	—	—	9.60	—	—
BAYHTR3517LUG		47.3	60	—	—	—	—	—	—	14.40	—	—
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		9.2	15	—	—	—	—	—	—	4.80	—	—
BAYHTR4508(AUT, DVK)		13.0	15	—	—	—	—	—	—	8.00	—	—
BAYHTR4510(AUT, DVK)		15.4	20	—	—	—	—	—	—	9.60	—	—
BAYHTR4515(AUT, DVK)		23.6	25	—	—	—	—	—	—	14.40	—	—
BAYHTR4520(AUT, DVK)		30.9	35	—	—	—	—	—	—	19.20	—	—
TEM8A0B30 / TEM8A0C36 / TEM8A0C42	5	(4.88)										
BAYHTR1504(BRK, PDC, LUG)		25	30	—	—	—	—	—	—	3.84	—	—
BAYHTR1505(BRK, PDC, LUG)		30.0	45	—	—	—	—	—	—	4.80	—	—
BAYHTR1508(BRK, PDC, LUG)		44.0	60	—	—	—	—	—	—	7.50	—	—
BAYHTR1510(BRK, PDC, LUG)		55.0	60	—	—	—	—	—	—	9.60	—	—
BAYHTR1517BRK		55.0	60	25	30	—	—	—	—	14.40	—	—
BAYHTR1523BRK		55.0	60	50	60	—	—	—	—	19.20	—	—
240 Volt 3 ph												
BAYHTR3505LUG		19.4	30	—	—	—	—	—	—	4.80	—	—
BAYHTR3510LUG		33.9	45	—	—	—	—	—	—	9.60	—	—
BAYHTR3517LUG [BAYHTR3515LUG]		48.3	60	—	—	—	—	—	—	14.40	—	—
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		9.7	15	—	—	—	—	—	—	4.80	—	—
BAYHTR4508(AUT, DVK)		14.5	15	—	—	—	—	—	—	8.00	—	—
BAYHTR4510(AUT, DVK)		16.9	20	—	—	—	—	—	—	9.60	—	—
BAYHTR4515(AUT, DVK)		24.1	25	—	—	—	—	—	—	14.40	—	—
BAYHTR4520(AUT, DVK)		31.4	35	—	—	—	—	—	—	19.20	—	—
TEM8A0C48 / TEM8A0C60 TEM8A0D48 / TEM8A0D60	7	(7.13)										
BAYHTR1504(BRK, PDC, LUG)		29	30	—	—	—	—	—	—	—	—	—
BAYHTR1505(BRK, PDC, LUG)		34.0	45	—	—	—	—	—	—	—	—	—
BAYHTR1508(BRK, PDC, LUG)		48.0	60	—	—	—	—	—	—	—	—	—
BAYHTR1510(BRK, PDC, LUG)		59.0	60	—	—	—	—	—	—	—	—	—
BAYHTR1517BRK		59.0	60	25	30	—	—	—	—	—	—	—
BAYHTR1523BRK		59.0	60	50	60	—	—	—	—	—	—	—
BAYHTR1525BRK		39.9	40	31	35	31	35	31	35	—	—	—
240 Volt 3 ph												
BAYHTR3505LUG		23.4	30	—	—	—	—	—	—	—	—	—
BAYHTR3510LUG		37.9	45	—	—	—	—	—	—	—	—	—
BAYHTR3517LUG		52.3	60	—	—	—	—	—	—	—	—	—
480 Volt 3 ph **		**										
BAYHTR4505(AUT, DVK)		11.7	15	—	—	—	—	—	—	4.80	—	—
BAYHTR4508(AUT, DVK)		16.5	20	—	—	—	—	—	—	8.00	—	—
BAYHTR4510(AUT, DVK)		18.9	20	—	—	—	—	—	—	9.60	—	—
BAYHTR4515(AUT, DVK)		26.2	25	—	—	—	—	—	—	14.40	—	—
BAYHTR4520(AUT, DVK)		33.4	35	—	—	—	—	—	—	19.20	—	—
[] Denotes replaced Heater models												
** 480 volt kits require dual voltage. Motor load has .5 multiplier to convert to 480 volt load and calculating MCA / MOP for these kits.												
*** Value accounts for 240 volt unit supplied through Autoformer Kit # 10-14195-00												
+- - Please refer to Base Unit MCA for confirmation of MCA value												
The electric heat kits designed for use with these units may include a combination of 15 through 60 amp circuit breakers to provide an electrical disconnect for service personnel that are intended to help protect internal electrical components in the event of a short circuit to ground fault. As designed, the circuit breakers supplied do not provide over-current protection of the branch circuit(s). Therefore, the branch circuit(s) shall be sized and protected according to the nameplate.												

10 Year Limited Warranty

WARRANTY. This warranty extends only to the first purchaser (Buyer) of the Tutco Heat Kit products identified as models 81-0693-00/-01, 81-0694-00/-01, 81-0695-00/-01, 81-0696-00/-01, 81-0697-00/-01, 81-0698-00/-01, 81-0699-00/-01, 81-0700-00/-01, 81-0701-00/-01, 81-0702-00/-01, 81-0703-00/-01, 81-0710-00, 81-0711-00, 81-0712-00, 81-0713-00, 81-0790-00, 81-0795-00, 81-0796-00, 81-0797-00, 81-0821-00 and 81-22392-00 ("Products"), and does not extend to any subsequent purchaser of any of these Products. Seller warrants to Buyer that the Heat Kit Products, consisting of the resistance coils, supporting racks, and included controls (other than fusible links and over-current fuses), when installed correctly according to instructions provided by Seller, and when properly maintained, will be free from defects in workmanship and material for ten (10) years after installation, but not to exceed ten (10) years and six (6) months after manufacture. This warranty does not apply to defects caused by faulty installation, misuse, accident, alteration, improper care or use after installation, decreased airflow, dirty filters, unrated voltage or chemical, electrical or physical abuse. If the product or component is found not to comply with the above warranty, the defective product or component shall be promptly returned, freight prepaid, to Seller's factory for examination. If the failure is due to causes other than faulty installation, Buyer abuse misuse, accident, alteration, improper care or use after installation, decreased airflow, dirty filters, unrated voltage or chemical, electrical or physical abuse, Seller will repair, or at its option, replace the product, component or parts found to be defective at no charge and return to Buyer with shipping charges prepaid, and issue credit for the incoming shipping charge.

THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, STATUTORY OR OTHERWISE, EXPRESS OR IMPLIED, ALL OTHER REPRESENTATIONS TO THE BUYER, AND ALL OTHER OBLIGATIONS OR LIABILITIES WITH RESPECT TO ANY PRODUCT PURCHASED HEREBY, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND SELLER'S OBLIGATION UNDER ALL SUCH WARRANTIES SHALL NOT EXCEED THOSE SET FORTH ABOVE. NO OTHER WARRANTY OR REPRESENTATION WHATSOEVER, EXPRESS OR IMPLIED, HAS BEEN MADE BY SELLER WHICH HAS BEEN RELIED ON BY BUYER. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY DIRECT OR INDIRECT DAMAGES OTHER THAN AS SET FORTH ABOVE OR FOR LOSS OF PROFITS OR OTHER INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Fill in this section and retain for warranty

Purchaser name: _____

Purchase date: _____

Serial number of heat kit: _____

Installation date: _____

1 Year

Limited Warranty

WARRANTY. This warranty extends only to the first purchaser (Buyer) of the Tutco Heat Kit products identified as models 81-0786-00/-01, 81-0787-00/-01, 81-0788-00/-01, 81-0789-00/-01, 81-23420-00/-01, 81-23421-00/-01 & 81-23422-00/-01 ("Products"), and does not extend to any subsequent purchaser of any of these Products. Seller warrants to Buyer that the Heat Kit Products, consisting of the resistance coils, supporting racks, and included controls (other than fusible links and over-current fuses), when installed correctly according to instructions provided by Seller, and when properly maintained, will be free from defects in workmanship and material for one (1) year after installation, but not to exceed one (1) year and six (6) months after manufacture. This warranty does not apply to defects caused by faulty installation, misuse, accident, alteration, improper care or use after installation, decreased airflow, dirty filters, unrated voltage or chemical, electrical or physical abuse. If the product or component is found not to comply with the above warranty, the defective product or component shall be promptly returned, freight prepaid, to Seller's factory for examination. If the failure is due to causes other than faulty installation, Buyer abuse misuse, accident, alteration, improper care or use after installation, decreased airflow, dirty filters, unrated voltage or chemical, electrical or physical abuse, Seller will repair, or at its option, replace the product, component or parts found to be defective at no charge and return to Buyer with shipping charges prepaid, and issue credit for the incoming shipping charge.

THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, STATUTORY OR OTHERWISE, EXPRESS OR IMPLIED, ALL OTHER REPRESENTATIONS TO THE BUYER, AND ALL OTHER OBLIGATIONS OR LIABILITIES WITH RESPECT TO ANY PRODUCT PURCHASED HEREBY, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND SELLER'S OBLIGATION UNDER ALL SUCH WARRANTIES SHALL NOT EXCEED THOSE SET FORTH ABOVE. NO OTHER WARRANTY OR REPRESENTATION WHATSOEVER, EXPRESS OR IMPLIED, HAS BEEN MADE BY SELLER WHICH HAS BEEN RELIED ON BY BUYER. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY DIRECT OR INDIRECT DAMAGES OTHER THAN AS SET FORTH ABOVE OR FOR LOSS OF PROFITS OR OTHER INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Fill in this section and retain for warranty

Purchaser name: _____

Purchase date: _____

Serial number of heat kit: _____

Installation date: _____