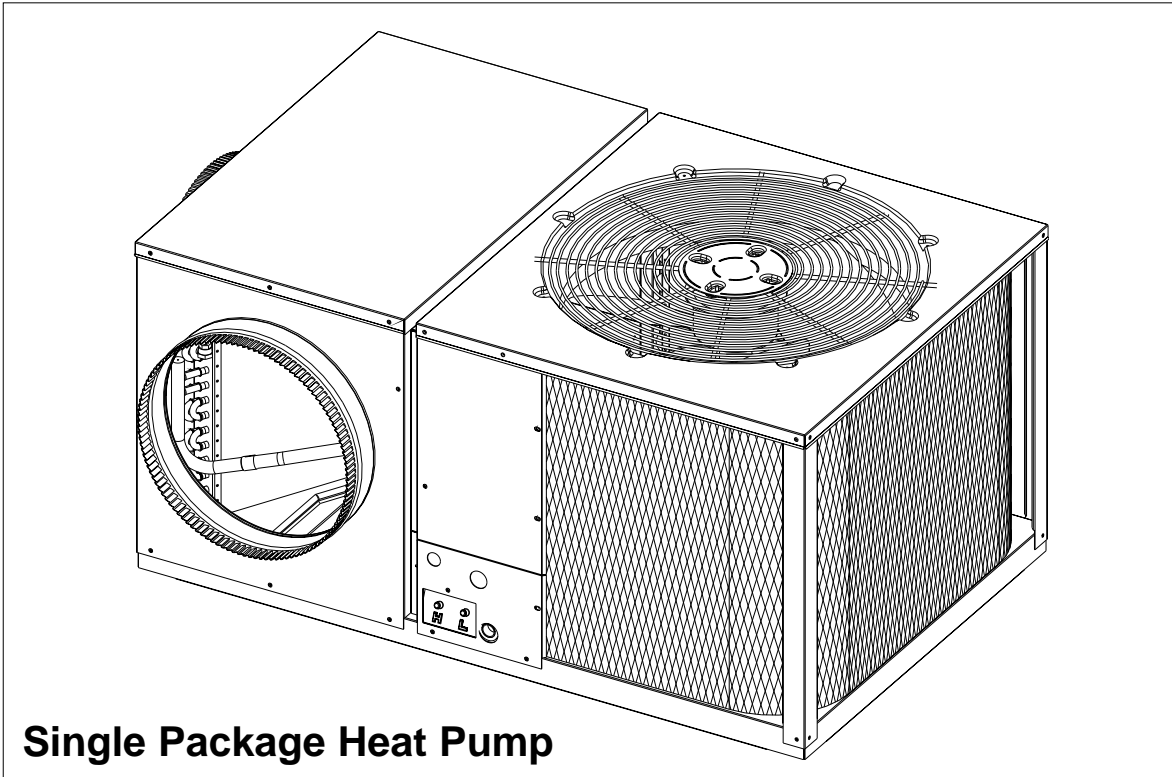


USER'S MANUAL AND INSTALLATION

Q3B (A,C) Series 10 and 12 SEER Single Package Heat Pump



IMPORTANT

Read this owner information to become familiar with the capabilities and use of your appliance. Keep this with literature of other appliances where you have easy access to it in the future. If a problem occurs, check the instructions and follow recommendations given. If these suggestions don't eliminate your problem, call your installing contractor or distributor in your area.

INTRODUCTION

Your heat pump is a unique, all weather comfort-control system appliance. The basic operation of the heating/cooling system is described on page 2 of this manual. The surprising fact that heat exists in air even at below-freezing temperatures is actually the basic law of physics which the heat pump uses to provide energy saving heating comfort. At outdoor temperatures of 47° Fahrenheit (or 8°

Celsius), your heat pump can deliver approximately 2 to 3 units of heat energy per each unit of electrical energy used, as compared to a maximum of only 1 unit of heat energy produced with conventional heating systems. During the cooling season, the heat pump reverses the flow of the heat-absorbing refrigerant to become an energy-efficient, central air conditioner.

SECTION 1. OWNER INFORMATION

Your heat pump will heat and cool your home year round, saving your energy dollars. During the summer, a heat pump performs like any normal air conditioner. That is, the excess heat energy inside the home is absorbed by the refrigerant and exhausted outside the home. During the winter months, a heat pump performs like an air conditioner running in reverse. That is, available heat energy outside the home is absorbed by the refrigerant and exhausted inside the home. This is an efficient heating means because you only pay for "moving" the heat from the outdoors to the indoor area. You do not pay to generate the heat, as is the case with more traditional furnace designs.

OPERATING INSTRUCTIONS

To Operate Your Heat Pump in Cooling —

1. Set the thermostat system switch to COOL and the thermostat fan switch to AUTO. (See Figure 1)
2. Set the thermostat temperature selector to the desired cooling temperature. The outdoor unit fan, the indoor blower, and the compressor will all cycle on and off to maintain the indoor temperature at the desired cooling level.

To Shut Off Air Conditioner

1. Turn the system switch to "Heat" or "Off."
2. Turn the thermostat to the desired heating temperature setting.

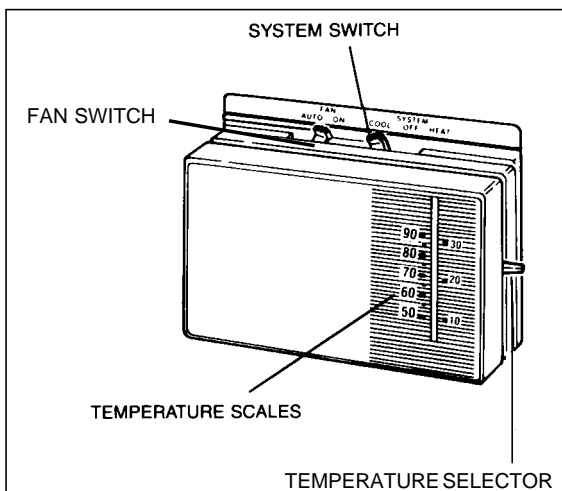


Figure 1. Typical Heat/Cool Thermostat

To Operate Your Heat Pump For Heating —

1. Set the thermostat system switch to HEAT and the thermostat fan switch to AUTO. (See Figure 1)
2. Set the thermostat temperature selector to the desired heating temperature. The outdoor unit fan, the indoor blower, and the compressor will all cycle on and off to maintain the indoor temperature at the desired heating level.

Defrost — During cold weather heating operation, the outdoor unit will develop a coating of snow and ice on the heat transfer coil. This is normal and the unit will periodically defrost itself. During the defrost cycle, the outdoor fan will stop, while the compressor continues to run and heat the outdoor coil, causing the snow and ice to melt. During defrost, there may be some steam rising from the outdoor unit as the warm coil causes some melted frost to evaporate.

BEFORE YOU CALL A SERVICEMAN

Check your system at the start of each air conditioning season. Make sure it's working correctly, clean or change filters and make any needed adjustments.

In addition, follow these simple rules:

1. Never run your system without a filter. If you do, the cooling coils will collect dirt and may become clogged.
2. Leave thermostat set at the comfort level you wish. Let it control the operation of the air conditioning system. If room temp is unsatisfactory, gradually raise the setting until comfort is restored.
3. It takes longer for an air conditioner to cool your dwelling than it does for your furnace to heat it. So . . . don't turn the unit on and expect an immediate drop in temperature. If your home is hot and humid, the temperature will drop slowly.
4. Check your filters every 30 days to see if they are dirty. To keep them clean, use a mild solution of detergent and water on washable types. Replace non washable filters.
5. Keep your outdoor condenser coil clean. (You can hose it down when it gets dirty.)

If your air conditioner isn't working:

1. Make sure the fuses are not blown or that your circuit breakers are on.

2. See that your thermostat is set at the desired temperature and that your system's switch is on "Cool."
3. For best air flow, make sure your return grille is not covered and that the filter is clean.
4. Check the outdoor condenser coil and make sure it is clean and not clogged with grass or leaves.

If your air conditioner still isn't working, call your nearest distributor.

SECTION 2. INSTALLER INFORMATION

GENERAL

Read the following instructions completely before performing the installation.

These instructions are for the use of qualified personnel specially trained and experienced in the installation of this type of equipment and related system components. Some states require installation and service personnel to be licensed. Unqualified individuals should not attempt to interpret these instructions or install this equipment.

The single packaged heat pumps are designed for outdoor installation only and can be readily connected into the high static duct system of a home. The only connections needed for installation are the supply and return ducts, the line voltage, and thermostat wiring.

The single package heat pump is completely assembled, factory wired, and factory run tested. The units are ready for easy and immediate installation.

Use of components other than those specified may invalidate ARI Certification, Code Agency Listing, and limited warranty on the heat pump.

PRE-INSTALLATION CHECK

Before any installation is attempted, the cooling load of the area to be conditioned must be calculated and a system of the proper capacity selected. It is recommended that the area to be conditioned be completely insulated and vapor sealed.

The installer should comply with all local codes and regulations which govern the installation of

this type of equipment. Local codes and regulations take precedence over any recommendations contained in these instructions. Consult local building codes and the National Electrical Code (ANSI CI) for special installation requirements.

The electrical supply should be checked to determine if adequate power is available. If there is any question concerning the power supply, contact the local power company.

Inspecting Equipment: All units are securely packed at the time of shipment and, upon arrival, should be carefully inspected for damage. Claims for damage (apparent or concealed) should be filed immediately with the carrier.

INSTALLATION

(For Platinum Series ready homes)

1. **LOCATE THE 40 AMP BRANCH CIRCUIT DISCONNECT RECEPTACLE AND DISCONNECT COVER LOCATED OUTSIDE ON ONE OF THE OUTER WALLS OF THE HOME.**

Locate the unit within the reach of the Power Cord assembly and branch circuit receptacle.

- Create a solid, level position, preferably on a concrete slab or plastic pad (use NORDYNE P/N-903897 or equivalent) and slightly above grade level, located where the skirting channel across top of unit is directly under bottom edge of wall. (See Fig. 2)
- Minimum clearances to obstructions. (See Fig. 2)

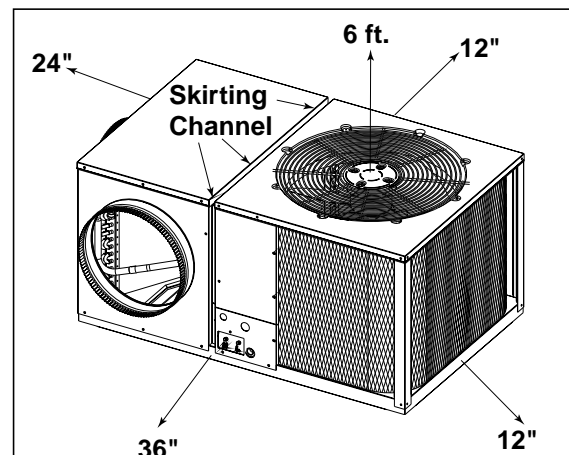


Figure 2. Minimum Unit Clearances

2. UNPACK THE UNIT

It is recommended that the unit be unpacked at the installation site to minimize damage due to handling.

- Remove the bands from around the unit.
- Unfold the top and bottom cap flanges.
- Carefully remove the top cap and tube.

CAUTION:

Do not tip the unit on its side. Oil may enter the compressor cylinders and cause starting trouble. If unit has been set on its side, restore to upright position and do not run for several hours. Then run unit for a few seconds. Do this three or four times with five minutes between runs.

3. INSTALL THE RETURN AND SUPPLY AIR FITTINGS ON THE UNIT

The supply and return fittings are shipped in the supply duct. They attach to the unit openings with a flange and bead arrangement, secured with two sheet metal screws. Note: For ease of access, install fitting before positioning unit in final location.

SUPPLY DUCT

Position the supply duct collar so the edge of the unit openings fit between the flange and the bead. Overlap the collar ends keeping the small screw holes underneath. Align the holes in the crimped area and install one screw.

Tap collar as necessary to ensure engagement with unit opening and install second screw. Tighten first screw.

DUCTING SYSTEM

DUCT REQUIREMENTS

THE AIR OUTPUT OF THE SYSTEM WILL NOT CONDITION THE HOME IF THE AIR IS LOST TO THE OUTSIDE THROUGH LEAKS IN THE DUCT SYSTEM. ALSO, DUCTS WHICH ARE COLLAPSED OR RESTRICTED BY FOREIGN OBJECTS WILL PREVENT ADEQUATE AIR FLOW.

CONNECTING THE RETURN AND SUPPLY AIR FLEXIBLE DUCTS

- Use 12" duct to connect unit to the home duct system. (See Fig. 3 and 4)
- Use 14" duct to connect unit to furnace. (See Fig. 3 and 4)
- The flexible ducts can be connected to the corresponding fittings with clamps (field supplied). Note: All connections should be leak tight or a loss in cooling capacity will result.
- The flexible ducts may be cut to the required length, see instructions packed with duct. Keep all ducts as short and straight as possible. Avoid sharp bends.
- Ducts may be spliced with sheet metal sleeves and clamps.
- Once the inner duct is connected to the proper fitting, the insulation and plastic sleeve should be pulled over the connection and clamped.
- For homes with multiple supply ducts or for special applications, a Y fitting is available to divide the supply air so it can be ducted to different areas of the home for more efficient cooling/heating. Note: The Y fitting should be insulated for maximum performance.

CONDENSATE DRAIN

A 3/4" condensate drain connection is located on the side of the unit below the electrical compartment. (See Figure 5). A field supplied condensate drain should be installed. Route the condensate to a suitable drainage area. Any connecting tube or hose must have the outlet below the fitting on the unit for proper drainage.

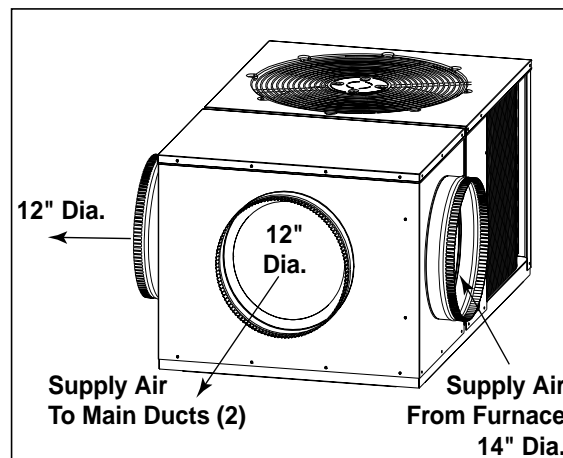
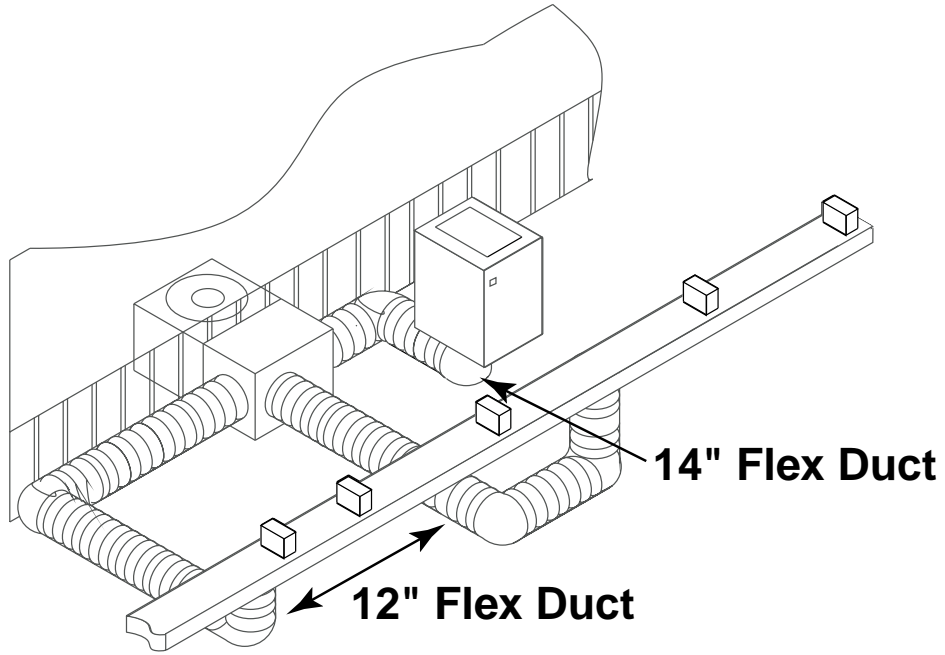
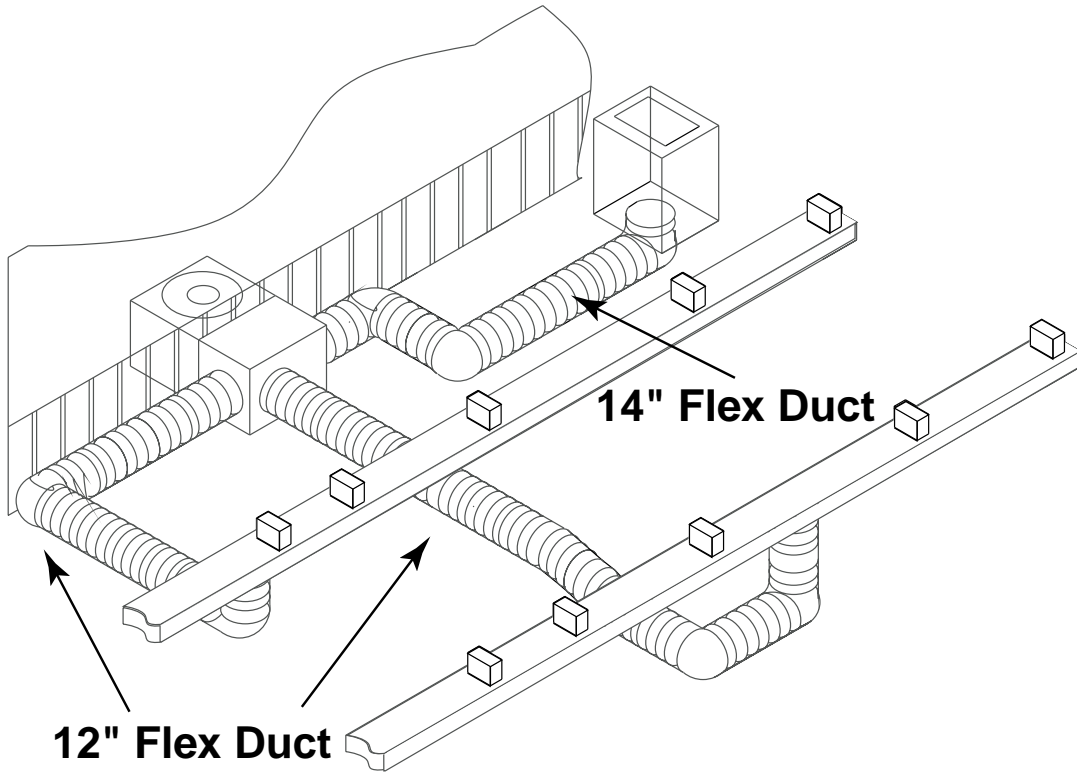


Figure 3. Supply Air Fittings

Q3B WITH M1 OR E2 FURNACE INSTALLATION



SINGLE DUCT APPLICATION



MULTIPLE DUCT APPLICATION

Figure 4. Typical Applications

! WARNING:

Turn off electrical power before servicing controls. Severe electrical shock may result unless power is turned off. Unit must be installed in compliance with the National Electrical Code (NEC) and local codes.

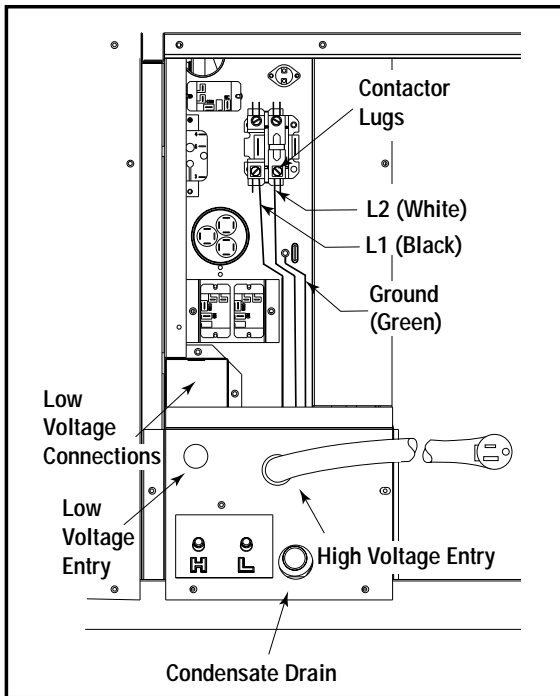


Figure 5. Power Entry and Hook Up

ELECTRICAL CONNECTIONS

1. ELECTRICAL SERVICE

HIGH VOLTAGE

- An approved branch circuit disconnect receptacle of adequate size and disconnect cover per NEC has already been installed at the intended location of the unit on one of the four exterior walls of the home.
- Attach the approved Power Cord/Disconnect Plug (NORDYNE P/N-903899) to the unit using a strain relief connector (Romex type or equivalent) through the high voltage knockout provided.
- Extend the power cord leads up into the control panel and connect L1 (Black) and L2 (White) directly to the contactor lugs provided. (See Fig. 5)
- Ground the heat pump unit by attaching the power cord ground wire (Green-w/ eyelet) to the unit using the green grounding screw provided in the control panel. (See Fig. 5)

LOW VOLTAGE

- Low voltage wiring from the indoor furnace and thermostat will be located under the home near the branch circuit receptacle and cover. Route the 24V control wires through the low voltage sealing grommet. (See Figure 5)
- Connect the low voltage control wires to the leads in the low voltage compartment as shown in Figure 5 and 6.

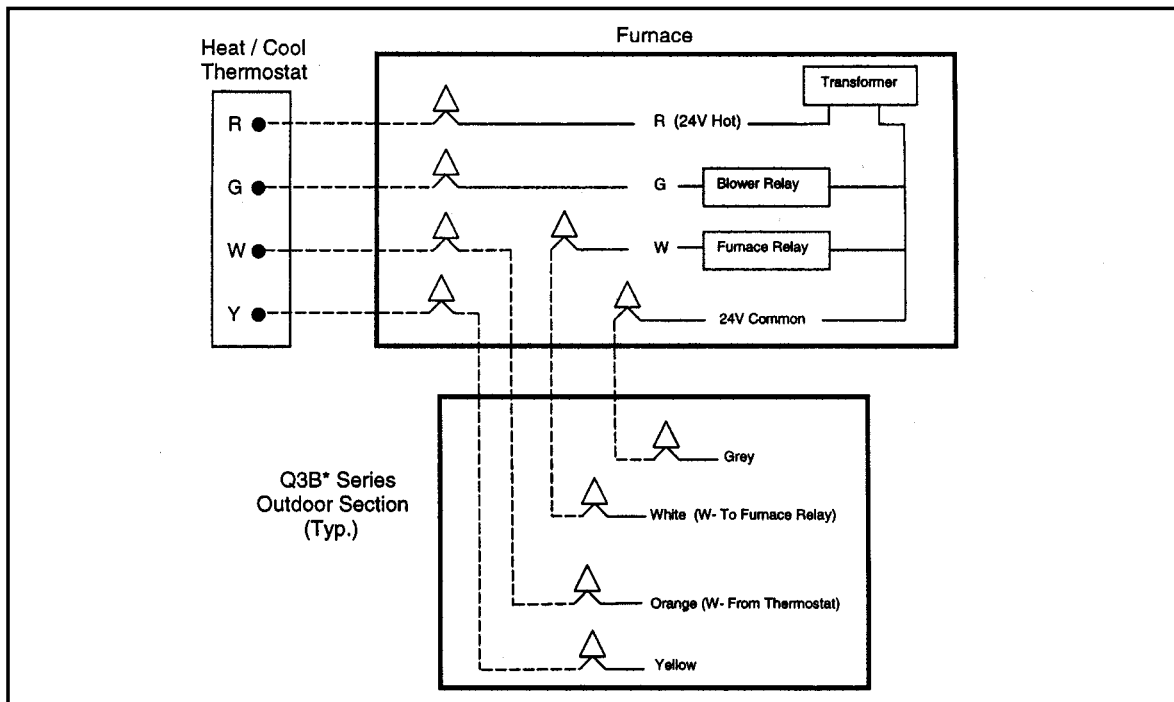


Figure 6. Low Voltage Connections

2. OVERCURRENT PROTECTION

In general, the best fuse or breaker for any air conditioner is the smallest size that will permit the equipment to run under normal use and service without nuisance trips. Such a device, sized properly, gives maximum equipment protection. The principal reason for specifying a time delay type is to prevent nuisance trips when the unit starts.

In the event that a fuse does blow or a breaker trips, always determine the reason. Do not arbitrarily put in a larger fuse or breaker and do not, in any case, exceed the maximum size listed on the data label of the unit.

3. HEAT-COOL THERMOSTAT OPERATION

Heat-Cool Thermostat: Your thermostat should be located on an inside wall approximately five feet from the floor away from drafts and doors. Do not locate lamps or other objects near the thermostat which could affect its operation or block a free flow of air.

The heat-cool thermostat is equipped with a system HEAT-COOL switch, which provides a positive means of preventing simultaneous operation of the heating and cooling mode. The thermostat is also equipped with an AUTO-ON fan switch which allows the home owner to operate the indoor blower when air circulation is desired.

4. DEFROST CYCLE CONTROL

The defrost cycle is initiated via a signal from a low pressure switch located in the outdoor side return gas tubing. This signal indicates the coil pressure has fallen low enough due to the build up of frost. The defrost cycle will terminate via a temperature switch located on the outdoor coil after the frost has been cleared.

5. OUTDOOR THERMOSTAT

The outdoor thermostat (located at the top of the control panel) prevents the auxiliary heat source (gas or electric) from operating above a certain set point. The thermostat is non-adjustable with a factory setting of 40°F.

SYSTEM OPERATION

1. PRE-START CHECK LIST

The following check list should be observed prior to starting the unit.

- Is the unit level? It should be level or slightly slanted toward the drain for proper condensate drainage.
- Is there free air flow to and from the condenser? A one foot clearance around the coil, and six foot clearance above the fan?
- Is the wiring correct according to the wiring diagram and electrical codes?
- Are all the wiring connections tight? Check the condenser fan to make sure it turns freely.
- Is the thermostat wired correctly? Is it installed in a proper location?

2. START-UP PROCEDURE

- a. Set the system switch to the OFF position.
- b. Dial thermostat setting as high as it will go.
- c. Turn on power supply at the circuit breaker.
- d. Set the system switch to ON or COOL. Set the temperature setting to below room temperature. Verify that the indoor blower, outdoor fan, and compressor are energized and the cooling function starts.
- e. Verify that the discharge air grilles are adjusted and the system is balanced.
- f. Verify that there are no air leaks in the duct work.
- g. Verify that the condensate drain is properly installed and that it functions correctly.
- h. Dial the thermostat higher than room temperature. The unit should stop.
- i. Set thermostat to the HEAT position. Proceed to check for correct heat pump operation.
- j. If outdoor temperature is below 35° F verify that the furnace controls and burners or heating elements operate correctly.
- k. If outdoor temperature is above 35° F you may jumper out the outdoor thermostat to check for proper furnace operation.
- l. Instruct the owner on unit operation, filter servicing, and proper thermostat operation.

10 SEER - Refrigerant Charging Tables for Heating Mode of Operation


2 Ton


OUTDOOR TEMPERATURE (DEG. F)																				
0			10			20			30			40			50			60		
Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.
16	112	116	24	139	133	32	166	151	40	193	168	48	205	188	54	226	209	61	247	231
17	119	114	25	145	131	33	171	149	41	197	166	49	212	185	55	233	205	62	254	225
18	126	112	26	151	129	34	176	147	42	200	164	50	219	182	56	240	200	63	261	219
19	133	110	27	157	127	35	180	145	43	204	162	51	226	179	57	247	196	64	268	213
20	140	108	28	163	125	36	185	143	44	208	160	52	233	176	58	254	191	65	275	206
21	147	106	29	169	123	37	190	141	45	211	158	53	240	173	59	261	187	66	282	200
22	154	104	30	174	121	38	195	139	46	215	156	54	247	171	60	268	182	67	289	194

2-1/2 Ton

OUTDOOR TEMPERATURE (DEG. F)																				
0			10			20			30			40			50			60		
Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.
15	121	132	22	140	136	29	158	140	36	176	144	45	186	155	55	209	172	65	233	190
16	128	130	23	146	134	30	163	138	37	180	142	46	193	152	56	216	168	66	240	183
17	135	128	24	151	132	31	168	136	38	184	140	47	200	149	57	223	163	67	247	177
18	142	126	25	157	130	32	172	134	39	187	138	48	207	146	58	230	159	68	254	171
19	149	124	26	163	128	33	177	132	40	191	136	49	214	144	59	237	154	69	261	165
20	156	122	27	169	126	34	182	130	41	195	134	50	221	141	60	244	150	70	268	159
21	163	120	28	175	124	35	187	128	42	198	132	51	228	138	61	251	145	71	275	153

* Note: All pressures are listed in psig. and all temperatures in °F.

 - Shaded Boxes indicate flooded conditions

 - Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

10 SEER - Refrigerant Charging Tables for Heating Mode of Operation - Continued

3 Ton


OUTDOOR TEMPERATURE (DEG. F)																				
0			10			20			30			40			50			60		
Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.
13	121	146	20	137	148	28	153	150	36	169	152	44	172	156	52	185	163	61	198	169
14	128	144	21	143	146	29	158	148	37	173	150	45	179	153	53	192	158	62	205	163
15	135	142	22	149	144	30	162	146	38	176	148	46	186	151	54	199	154	63	212	157
16	142	140	23	154	142	31	167	144	39	180	146	47	193	148	55	206	149	64	219	151
17	149	138	24	160	140	32	172	142	40	184	144	48	200	145	56	213	145	65	226	145
18	156	136	25	166	138	33	177	140	41	187	142	49	207	142	57	220	140	66	233	139
19	163	134	26	172	136	34	182	138	42	191	140	50	214	139	58	227	136	67	240	132

3-1/2 Ton

OUTDOOR TEMPERATURE (DEG. F)																				
0			10			20			30			40			50			60		
Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.
12	127	148	21	141	150	29	155	151	37	169	152	45	172	167	53	186	196	61	200	224
13	134	146	22	147	148	30	160	149	38	173	150	46	179	164	54	193	191	62	207	218
14	141	144	23	153	146	31	165	147	39	177	148	47	186	162	55	200	187	63	214	212
15	148	142	24	159	144	32	169	145	40	180	146	48	193	159	56	207	182	64	221	205
16	155	140	25	164	142	33	174	143	41	184	144	49	200	156	57	214	178	65	228	199
17	162	138	26	170	140	34	179	141	42	188	142	50	207	153	58	221	173	66	235	193
18	169	136	27	176	138	35	184	139	43	191	140	51	214	150	59	228	169	67	242	187

* Note: All pressures are listed in psig. and all temperatures in °F.

 - Shaded Boxes indicate flooded conditions

 - Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

10 SEER - Refrigerant Charging Tables for Heating Mode of Operation - Continued

4 Ton

OUTDOOR TEMPERATURE (DEG. F)																				
0			10			20			30			40			50			60		
Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.
19	147	139	22	154	138	25	161	137	28	168	135	37	174	157	52	200	201	68	226	245
20	154	137	23	160	136	26	166	135	29	172	133	38	181	154	53	207	196	69	233	239
21	161	135	24	166	134	27	171	133	30	176	131	39	188	151	54	214	192	70	240	232
22	168	133	25	172	132	28	176	131	31	179	129	40	195	148	55	221	187	71	247	226
23	175	131	26	178	130	29	180	129	32	183	127	41	202	145	56	228	183	72	254	220
24	182	129	27	183	128	30	185	127	33	187	125	42	209	143	57	235	178	73	261	214
25	189	127	28	189	126	31	190	125	34	190	123	43	216	140	58	242	174	74	268	208

5 Ton

OUTDOOR TEMPERATURE (DEG. F)																				
0			10			20			30			40			50			60		
Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.	Suc. Press	Disch. Press.	Disch. Temp.
11	150	152	15	163	152	20	175	151	25	188	150	35	203	166	51	243	198	66	284	230
12	157	150	16	168	150	21	180	149	26	191	148	36	210	163	52	250	193	67	291	224
13	164	148	17	174	148	22	185	147	27	195	146	37	217	160	53	257	189	68	298	218
14	171	146	18	180	146	23	189	145	28	199	144	38	224	157	54	264	184	69	305	211
15	178	144	19	186	144	24	194	143	29	202	142	39	231	154	55	271	180	70	312	205
16	185	142	20	192	142	25	199	141	30	206	140	40	238	151	56	278	175	71	319	199
17	192	140	21	198	140	26	204	139	31	210	138	41	245	149	57	285	171	72	326	193

* Note: All pressures are listed in psig. and all temperatures in °F.

 - Shaded Boxes indicate flooded conditions

 - Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

12 SEER - Refrigerant Charging Tables for Heating Mode of Operation

2 Ton

OUTDOOR TEMPERATURE (DEG. F)																				
0			10			20			30			40			50			60		
Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.
15	110	96	23	132	116	32	155	136	40	177	156	48	187	176	53	207	196	59	228	216
16	117	94	24	138	114	33	159	134	41	181	154	49	194	173	54	214	192	60	235	210
17	124	92	25	144	112	34	164	132	42	185	152	50	201	170	55	221	187	61	242	204
18	131	90	26	150	110	35	169	130	43	188	150	51	208	168	56	228	183	62	249	198
19	138	88	27	156	108	36	174	128	44	192	148	52	215	165	57	235	178	63	256	192
20	145	86	28	162	106	37	179	126	45	196	146	53	222	162	58	242	174	64	263	186
21	152	84	29	167	104	38	183	124	46	199	144	54	229	159	59	249	169	65	270	179

2-1/2 Ton

OUTDOOR TEMPERATURE (DEG. F)																				
0			10			20			30			40			50			60		
Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.
12	120	128	21	133	132	30	147	136	39	160	140	48	158	152	55	164	173	62	170	194
13	127	126	22	139	130	31	151	134	40	164	138	49	165	150	56	171	169	63	177	187
14	134	124	23	145	128	32	156	132	41	167	136	50	172	147	57	178	164	64	184	181
15	141	122	24	151	126	33	161	130	42	171	134	51	179	144	58	185	160	65	191	175
16	148	120	25	157	124	34	166	128	43	175	132	52	186	141	59	192	155	66	198	169
17	155	118	26	163	122	35	170	126	44	178	130	53	193	138	60	199	151	67	205	163
18	162	116	27	169	120	36	175	124	45	182	128	54	200	135	61	206	146	68	212	157

* Note: All pressures are listed in psig. and all temperatures in °F.



- Shaded Boxes indicate flooded conditions



- Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

12 SEER - Refrigerant Charging Tables for Heating Mode of Operation - Continued

3 Ton

OUTDOOR TEMPERATURE (DEG. F)																				
0			10			20			30			40			50			60		
Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.
13	120	118	22	136	126	31	152	135	40	167	143	48	169	155	57	179	170	65	189	185
14	127	116	23	142	124	32	156	133	41	171	141	49	176	152	58	186	165	66	196	179
15	134	114	24	148	122	33	161	131	42	174	139	50	183	149	59	193	161	67	203	173
16	141	112	25	154	120	34	166	129	43	178	137	51	190	146	60	200	156	68	210	167
17	148	110	26	159	118	35	171	127	44	182	135	52	197	143	61	207	152	69	217	160
18	155	108	27	165	116	36	175	125	45	185	133	53	204	141	62	214	147	70	224	154
19	162	106	28	171	114	37	180	123	46	189	131	54	211	138	63	221	143	71	231	148

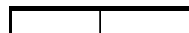
3-1/2 Ton

OUTDOOR TEMPERATURE (DEG. F)																				
0			10			20			30			40			50			60		
Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.
21	133	124	25	146	127	29	160	130	34	173	132	43	183	155	56	213	198	70	243	242
22	140	122	26	152	125	30	164	128	35	176	130	44	190	152	57	220	194	71	250	235
23	147	120	27	158	123	31	169	126	36	180	128	45	197	150	58	227	189	72	257	229
24	154	118	28	164	121	32	174	124	37	184	126	46	204	147	59	234	185	73	264	223
25	161	116	29	170	119	33	179	122	38	187	124	47	211	144	60	241	180	74	271	217
26	168	114	30	176	117	34	184	120	39	191	122	48	218	141	61	248	176	75	278	211
27	175	112	31	182	115	35	188	118	40	195	120	49	225	138	62	255	171	76	285	205

* Note: All pressures are listed in psig. and all temperatures in °F.



- Shaded Boxes indicate flooded conditions



- Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

12 SEER - Refrigerant Charging Tables for Heating Mode of Operation - Continued

4 Ton

OUTDOOR TEMPERATURE (DEG. F)																				
0			10			20			30			40			50			60		
Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.	Suc. Press.	Disch. Press.	Disch. Temp.
7	122	121	16	137	123	24	152	125	32	167	126	43	175	144	57	202	178	71	228	213
8	129	119	17	143	121	25	157	123	33	170	124	44	182	141	58	209	174	72	235	206
9	136	117	18	149	119	26	161	121	34	174	122	45	189	138	59	216	169	73	242	200
10	143	115	19	155	117	27	166	119	35	178	120	46	196	136	60	223	165	74	249	194
11	150	113	20	161	115	28	171	117	36	181	118	47	203	133	61	230	160	75	256	188
12	157	111	21	167	113	29	176	115	37	185	116	48	210	130	62	237	156	76	263	182
13	164	109	22	172	111	30	180	113	38	189	114	49	217	127	63	244	151	77	270	176

* Note: All pressures are listed in psig. and all temperatures in °F.



- Shaded Boxes indicate flooded conditions



- Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

10 SEER - Refrigerant Charging Tables for Cooling Mode of Operation

2 Ton

	OUTDOOR TEMPERATURE (°F)															
	70		75		80		85		90		95		100		105	
Suct. Press.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.
69	170	167														
71	172	172	186	169												
73	174	178	188	174	202	171										
75	179	178	190	179	204	176	218	173								
77	183	181	195	181	206	181	220	178	234	175						
79			198	184	210	183	222	182	236	180	250	177				
81					214	187	226	186	238	184	252	182	266	180		
83							229	189	242	188	254	186	268	184	282	182
85							233	193	245	192	257	190	270	188	284	186
87									249	196	261	194	273	192	286	190
89											264	198	276	196	289	194
91													280	200	292	198
93															295	203
95																

2-1/2 Ton

	OUTDOOR TEMPERATURE (°F)															
	70		75		80		85		90		95		100		105	
Suct. Press.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.
68	188	161														
70	190	167	205	165												
72	192	172	207	170	221	169										
74	196	175	209	175	224	174	238	172								
76	199	178	212	178	226	178	240	177	255	176						
78			216	181	229	182	242	182	257	181	272	180				
80					233	185	246	185	259	185	274	184	288	183		
82							249	189	263	189	276	188	290	187	305	187
84							253	193	266	193	279	192	292	191	307	191
86									269	197	283	196	296	196	309	195
88											286	200	299	200	313	199
90													303	204	316	204
92															319	208
94																

* Note: All pressures are listed in psig, and all temperatures in °F.



- Shaded Boxes indicate flooded conditions



- Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

10 SEER - Refrigerant Charging Tables for Cooling Mode of Operation - Continued

3 Ton


	OUTDOOR TEMPERATURE (°F)															
	70		75		80		85		90		95		100		105	
Suct. Press.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.
67	196	160														
69	199	165	213	165												
71	201	170	215	170	229	171										
73	202	179	217	175	231	176	245	176								
75	205	181	218	182	233	180	247	180	261	181						
77			222	185	235	186	249	185	263	185	277	185				
79					238	189	251	189	265	189	279	190	293	190		
81							255	193	268	194	281	194	295	194	309	194
83							258	197	271	197	284	198	297	198	311	198
85									275	201	288	202	301	202	313	202
87											291	206	304	206	317	207
89													308	211	321	211
91															324	216
93																

3-1/2 Ton

	OUTDOOR TEMPERATURE (°F)															
	70		75		80		85		90		95		100		105	
Suct. Press.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.
70	207	162														
72	209	168	223	168												
74	211	173	225	173	238	173										
76	211	183	227	178	240	178	254	178								
78	215	186	227	186	242	183	256	182	269	182						
80			231	189	244	189	258	187	271	187	284	187				
82					247	192	260	192	273	191	286	191	300	191		
84							263	195	276	195	289	195	302	195	315	195
86							267	199	279	199	292	199	304	199	317	198
88									283	203	295	203	308	203	319	202
90											299	207	311	208	324	207
92													315	212	327	212
94															331	216
96																

* Note: All pressures are listed in psig, and all temperatures in °F.

 - Shaded Boxes indicate flooded conditions

 - Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

10 SEER - Refrigerant Charging Tables for Cooling Mode of Operation - Continued

4 Ton


	OUTDOOR TEMPERATURE (°F)															
	70		75		80		85		90		95		100		105	
Suct. Press.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.
65	200	140														
67	202	146	218	150												
69	204	151	220	155	236	159										
71	204	162	222	160	239	164	255	168								
73	207	165	223	168	241	169	257	172	273	176						
75			226	171	242	175	259	177	275	181	291	185				
77					245	178	261	182	277	185	293	189	309	192		
79							264	185	280	189	295	193	311	196	327	200
81							268	189	283	193	299	197	313	200	329	204
83									287	197	302	201	318	205	331	208
85											306	205	321	209	337	213
87													325	213	340	218
89															343	222
91																

5 Ton

	OUTDOOR TEMPERATURE (°F)															
	70		75		80		85		90		95		100		105	
Suct. Press.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.
56	188	143														
58	190	148	205	151												
60	193	154	207	156	222	159										
62	193	163	210	161	225	163	239	166								
64	196	166	210	168	227	168	242	171	256	173						
66			214	171	228	174	244	175	259	178	274	180				
68					232	177	246	180	261	182	276	184	290	187		
70							249	184	263	186	278	189	292	191	307	193
72							253	187	267	190	281	193	294	195	309	197
74									270	194	284	197	299	199	311	201
76											288	201	302	204	316	206
78													305	208	320	211
80															323	215
82																

* Note: All pressures are listed in psig. and all temperatures in °F.

 - Shaded Boxes indicate flooded conditions

 - Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

12 SEER - Refrigerant Charging Tables for Cooling Mode of Operation

2 Ton

	OUTDOOR TEMPERATURE (°F)															
	70		75		80		85		90		95		100		105	
Suct. Press.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.
73	176	98														
75	178	103	190	108												
77	180	109	192	113	203	118										
79	180	120	194	118	206	123	217	128								
81	183	123	194	127	208	128	219	132	231	137						
83			198	130	209	134	221	137	233	141	244	146				
85					212	137	223	142	235	146	246	150	258	155		
87							227	146	238	150	249	154	260	159	271	163
89							230	149	241	154	252	158	262	163	273	167
91									244	158	255	163	266	167	275	171
93											259	167	270	171	281	176
95													273	176	284	181
97															287	185
99																

2-1/2 Ton

	OUTDOOR TEMPERATURE (°F)															
	70		75		80		85		90		95		100		105	
Suct. Press.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.
75	187	124														
77	189	129	203	133												
79	191	135	205	138	218	141										
81	192	143	207	143	221	146	234	149								
83	196	146	208	149	223	151	236	154	250	157						
85			212	152	224	156	238	158	252	161	266	165				
87					228	159	241	163	254	166	268	169	281	172		
89							244	166	257	170	270	173	283	176	297	180
91							248	170	260	174	273	177	285	180	299	183
93									264	178	276	181	289	185	301	187
95											280	185	293	189	305	192
97													296	193	309	197
99															312	201
101																

* Note: All pressures are listed in psig. and all temperatures in °F.



- Shaded Boxes indicate flooded conditions



- Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

12 SEER - Refrigerant Charging Tables for Cooling Mode of Operation - Continued 3 Ton

	OUTDOOR TEMPERATURE (°F)															
	70		75		80		85		90		95		100		105	
Suct. Press.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.
71	183	135														
73	186	140	201	142												
75	188	145	203	147	218	148										
77	188	156	205	152	220	153	235	155								
79	191	158	206	160	222	158	238	159	253	161						
81			209	163	224	164	240	164	255	165	270	167				
83					227	167	242	169	257	170	272	171	287	172		
85							245	172	259	174	274	175	289	176	304	178
87							248	176	263	178	277	179	291	180	306	182
89									266	182	281	183	295	185	308	185
91											284	187	299	189	313	191
93													302	193	316	195
95															320	200
97																

3-1/2 Ton

	OUTDOOR TEMPERATURE (°F)															
	70		75		80		85		90		95		100		105	
Suct. Press.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.
71	171	138														
73	173	143	189	144												
75	176	148	192	149	207	150										
77	177	156	194	154	210	155	225	156								
79	180	159	195	160	212	160	228	160	244	161						
81			199	163	214	165	230	165	246	166	262	167				
83					217	168	232	169	248	170	264	171	279	172		
85							236	173	251	174	266	175	281	176	297	177
87							239	177	254	178	269	179	283	180	299	181
89									258	182	272	183	287	184	301	185
91											276	187	291	189	306	190
93													294	193	309	194
95															313	199
97																

* Note: All pressures are listed in psig. and all temperatures in °F.



- Shaded Boxes indicate flooded conditions



- Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

12 SEER - Refrigerant Charging Tables for Cooling Mode of Operation - Continued

4 Ton

	OUTDOOR TEMPERATURE (°F)															
	70		75		80		85		90		95		100		105	
Suct. Press.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.	Dis. Press.	Dis. Temp.
68	170	138														
70	172	144	187	145												
72	175	149	189	150	204	152										
74	175	158	191	155	206	157	221	158								
76	178	161	192	163	208	162	223	163	237	165						
78			196	166	209	167	225	168	239	169	254	171				
80					213	171	227	172	242	174	256	175	271	176		
82							230	176	244	178	258	179	273	180	287	182
84							234	180	248	182	262	183	275	184	289	186
86									251	185	265	187	279	189	291	190
88											268	191	282	193	296	195
90													286	197	300	199
92															303	204
94																

* Note: All pressures are listed in psig. and all temperatures in °F.



- Shaded Boxes indicate flooded conditions



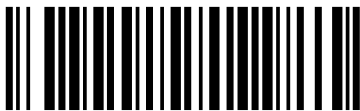
- Rated Design Values. Suction Pressure will be lower than design value if indoor air flow, entering dry bulb, or entering wet bulb temperatures are lower than design.

- Discharge temperatures greater than charted values indicate an undercharged system.

Pressures shown are for heat pump operating only without back-up heat.

INSTALLER

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INSTALLATION INSTRUCTIONS
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