ACCESSORY KIT INSTALLATION INSTRUCTION

2SA067* START KITS

For 13 SEER Models NL, NM, UB, & UQ 024-060 R-410A Package Air Conditioners and Heat Pumps

IMPORTANT - These instructions are intended for the use of qualified individuals specially trained and experienced in installation of this type of equipment and related system components.

Installation and service personnel are required by some states to be licensed.

Persons not qualified shall not install this equipment or interpret these instructions.

⚠WARNING

Improper installation may damage equipment, can create a shock hazard, and will void the warranty.

NOTE: The words “Shall" or “Must" indicate a requirement which is essential to satisfactory and safe product performance.

The words “Should" or “May" indicate a recommendation or advice which is not essential and not required but which may be useful or helpful.

CONTENTS OF KIT

The compressor starting kit consists of a potential (starting) relay, screws, capacitor strap and starting capacitor with wiring leads. Kit may contain more hardware than necessary for some models and wires may be longer than required. Start kits for the various models are listed in Table 1.

IMPORTANT - Do not mis-match kits or damage will occur to the equipment.

APPLICATION

The compressor in the outdoor unit has a PSC (permanent split capacitor) motor which does not require a starting relay and capacitor, under ordinary operating conditions. The omission of these components eliminates a potential source of field problems making the system more trouble-free.

In order to take advantage of these benefits and trouble-free operation, the starting torque, or load, must be kept to a minimum. The suction and discharge pressures must be nearly equal before the compressor will start.

Because of the lower starting torque inherent in PSC motors, certain conditions such as low voltage and exceptionally high operating temperature, short thermostat cycles, etc. can affect the starting operation.

When such conditions exist, and cannot be corrected, it is recommended that the field installed compressor starting kit be used to convert the compressor motor to CSR (capacitor, capacitor run) operation.

NOTE: All Start Kits listed in these instructions are for use with outdoor units rated at 208-230V/ 1PH/60HZ.

⚠WARNING

SHOCK HAZARD - Shut off electrical supply to outdoor unit at main disconnect. One side of the contactor remains closed at all times, so main disconnect must be opened when servicing electrical components to prevent electrical shock, which could result in personal injury or death.

TABLE 1: STARTER KIT

Start Kit Model No.	Package Unit Model Number	Compressor	See Section For Installation
2SA06715106	NM024C00A1AAA1 NL024C00A1AAA1	H82J183ABCA	A
2SA06715206	NM030C00A1AAA1 NL030C00A1AAA1	H82J223ABCA	A
2SA06715306	NM036C00A1AAA1 NL036C00A1AAA1	H82J283ABCA	A
2SA06715406	NM042C00A1AAA1 NL042C00A1AAA1	H82J353ABCA	A
2SA06715406	NM048C00A1AAA1 NL048C00A1AAA1	H82J403ABCA	A
2SA06715506	NM060C00A1AAA1 NL060C00A1AAA1	HRH051U1LP6	A
2SA06715606	UQ024C00A1AAA1 UB024C00A1AAA1	ZP20K5E-PFV	B
2SA06715606	UQ030C00A1AAA1 UB030C00A1AAA1	ZP25K5E-PFV	B
2SA06715606	UQ036C00A1AAA1 UB036C00A1AAA1	ZP31K5E-PFV	B
2SA06715706	UQ042C00A1AAA1 UB042C00A1AAA1	HRH036U1LP6	B
2SA06715706	UQ048C00A1AAA1 UB048C00A1AAA1	HRH040U1LP6	B
2SA06715606	UQ060C00A1AAA1 UB060C00A1AAA1	ZP49K5E-PFV	B

SECTION A

13 SEER R-410A MODELS NM, NL SERIES PACKAGED AIR CONDITIONERS

Pre-drilled screw holes are provided in the control box. Using screws provided in the kit, install the start relay and start capacitor as shown in Figure 1.

NOTE: When installing kits on units, run wires through wiring clamp as shown in Figure 1.

On units which have a solid-state start device; remove solid state start device along with the red and brown wiring connections to run capacitor.

1. Attach the black lead wire from the starting kit relay **#5** to **T1** terminal of the contactor.
2. Attach the red lead wire from the starting kit capacitor to dual capacitor **"C"**.
3. Locate the brown wire connecting the dual capacitor **"HERM"** to the S (start) terminal on the compressor.
4. Attach the brown lead wire from the starting kit relay #2 to the same terminal on the run capacitor that was located in Step 3. See Figure 2 and 3.
5. Attach the yellow wire from the starting kit relay #1 to the start capacitor.

NOTE: The wiring of the capacitor and relay must agree with Figure 2 and 3. Also, see diagram on control box cover.

All components must be fastened securely and all wires must be routed to avoid contact with high or low voltage terminals or sharp edges. Use the plastic wire tie found with the kit to insure proper wire routing.

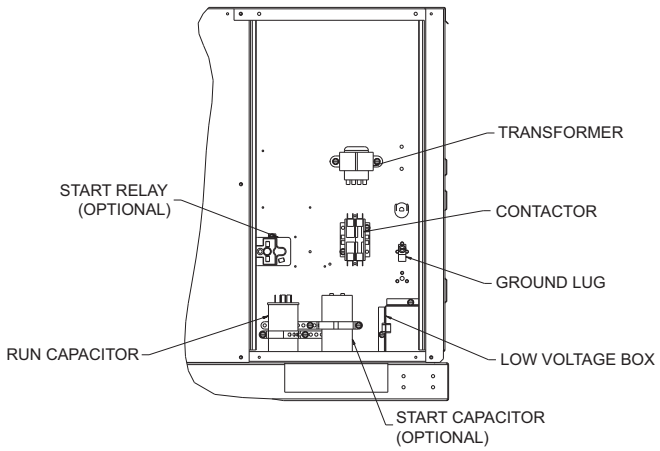

FIGURE 1: COOLING

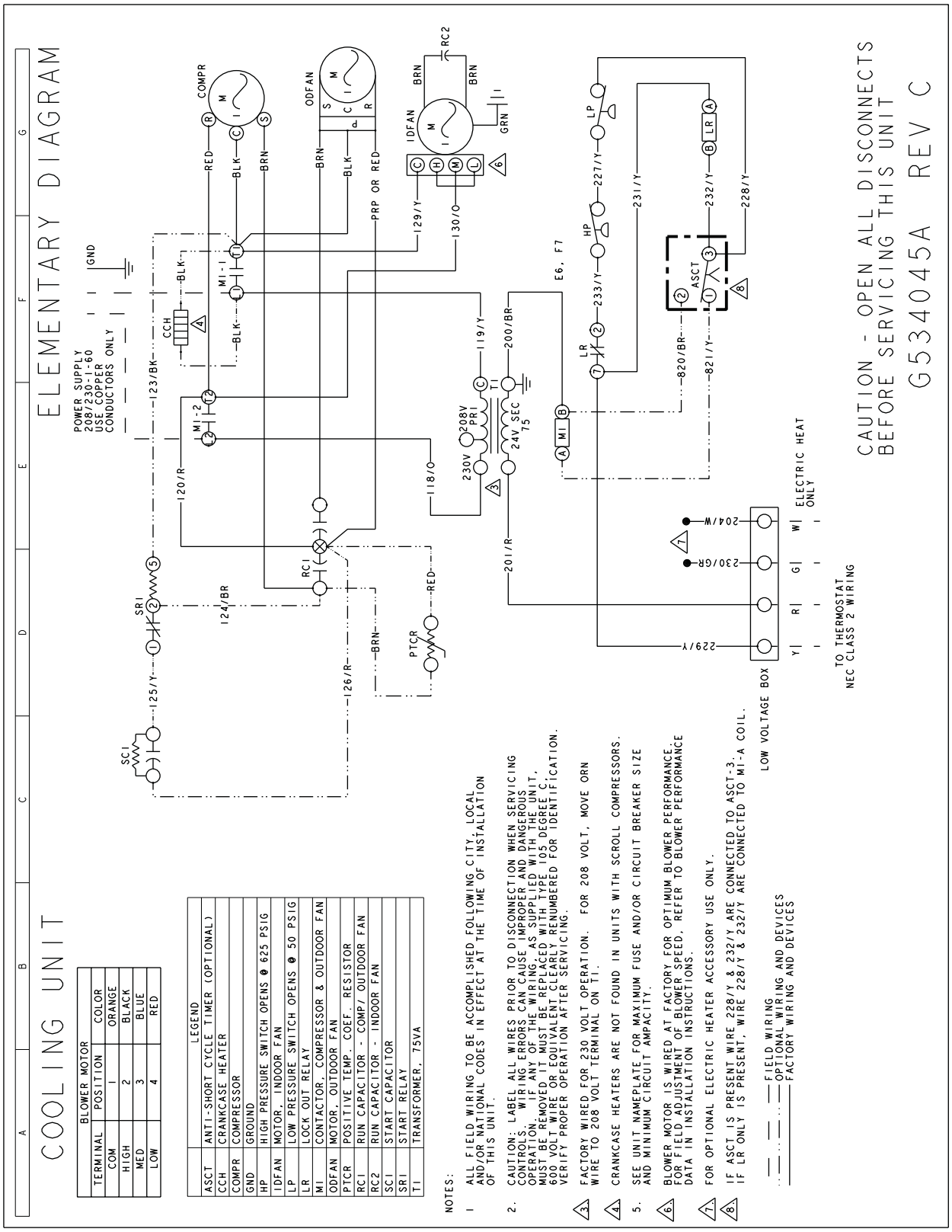

FIGURE 2: TYPICAL NM, NL 024, 030, & 036 WIRING DIAGRAM

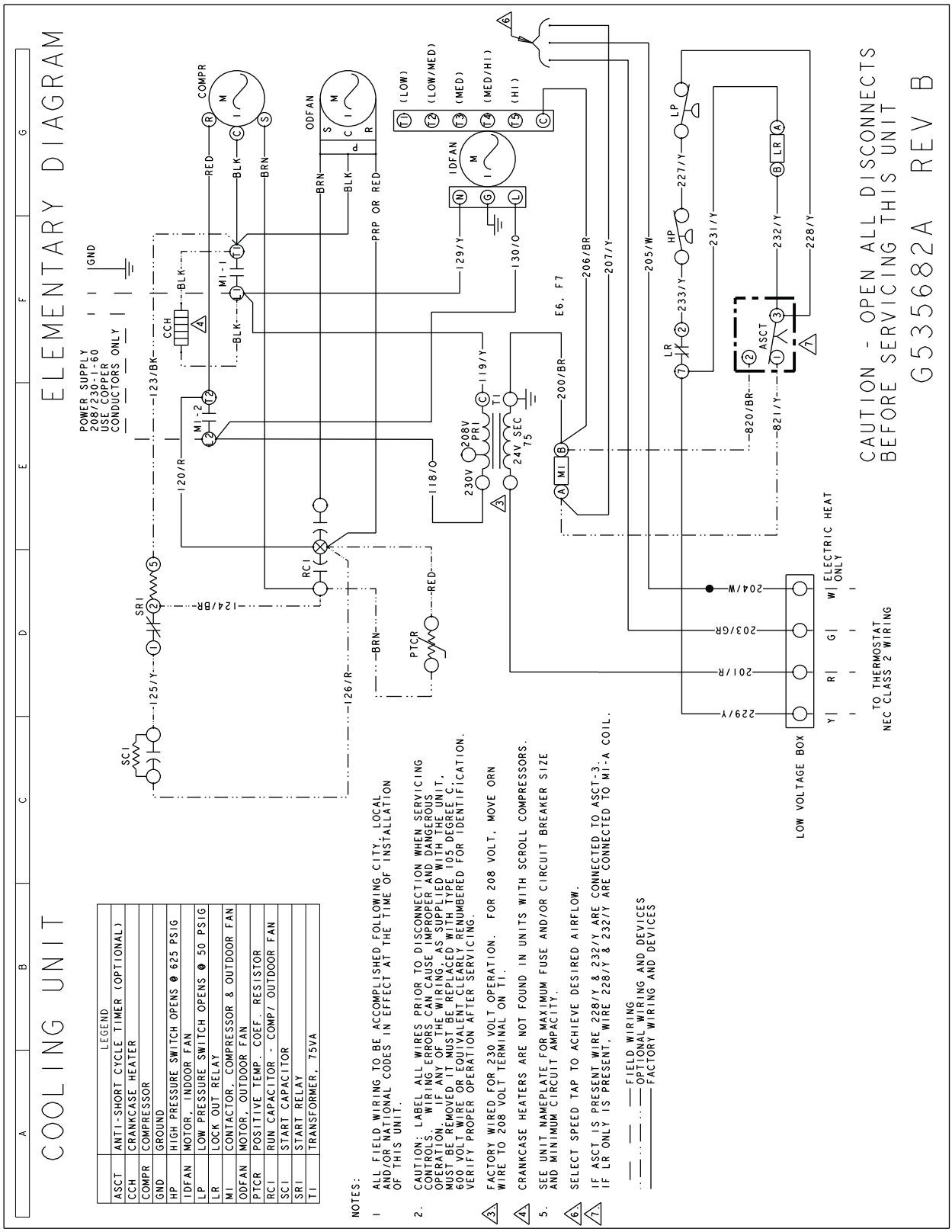

FIGURE 3: Typical NM, NL 042, 048 & 060 Wiring Diagram

SECTION B

13 SEER UQ, UB SERIES PACKAGED HEAT PUMPS

Pre-drilled screw holes are provided in the control box. Using screws provided in the kit, install the start relay and start capacitor as shown in Figure 4.

NOTE: When installing kits on units, run wires through wiring clamp as shown in Figure 4.

On units which have a solid-state start device; remove solid state start device along with the red and brown wiring connections to run capacitor.

1. Attach the black lead wire from the starting kit relay **#5** to **T1** terminal of the contactor.
2. Attach the red lead wire from the starting kit capacitor to dual capacitor **"C"**.
3. Locate the brown wire connecting the dual capacitor **"HERM"** to the S (start) terminal on the compressor.
4. Attach the brown lead wire from the starting kit relay #2 to the same terminal on the run capacitor that was located in Step 3. See Figure 5.
5. Attach the yellow wire from the starting kit relay #1 to the start capacitor.

NOTE: The wiring of the capacitor and relay must agree with Figure 5. Also, see diagram on control box cover.

All components must be fastened securely and all wires must be routed to avoid contact with high or low voltage terminals or sharp edges. Use the plastic wire tie found with the kit to insure proper wire routing.

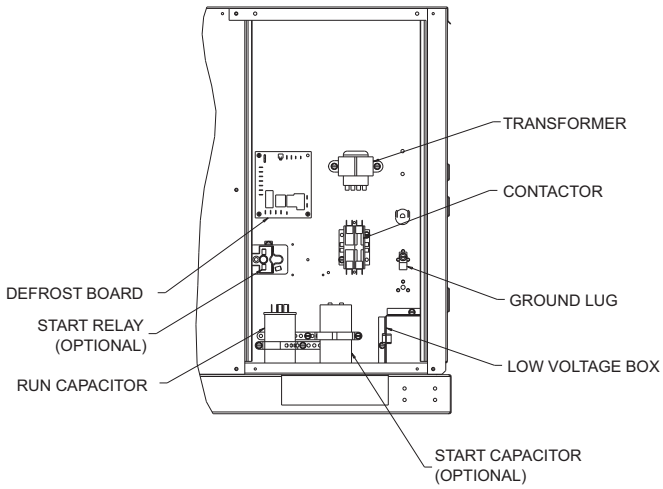

FIGURE 4: HEAT PUMP

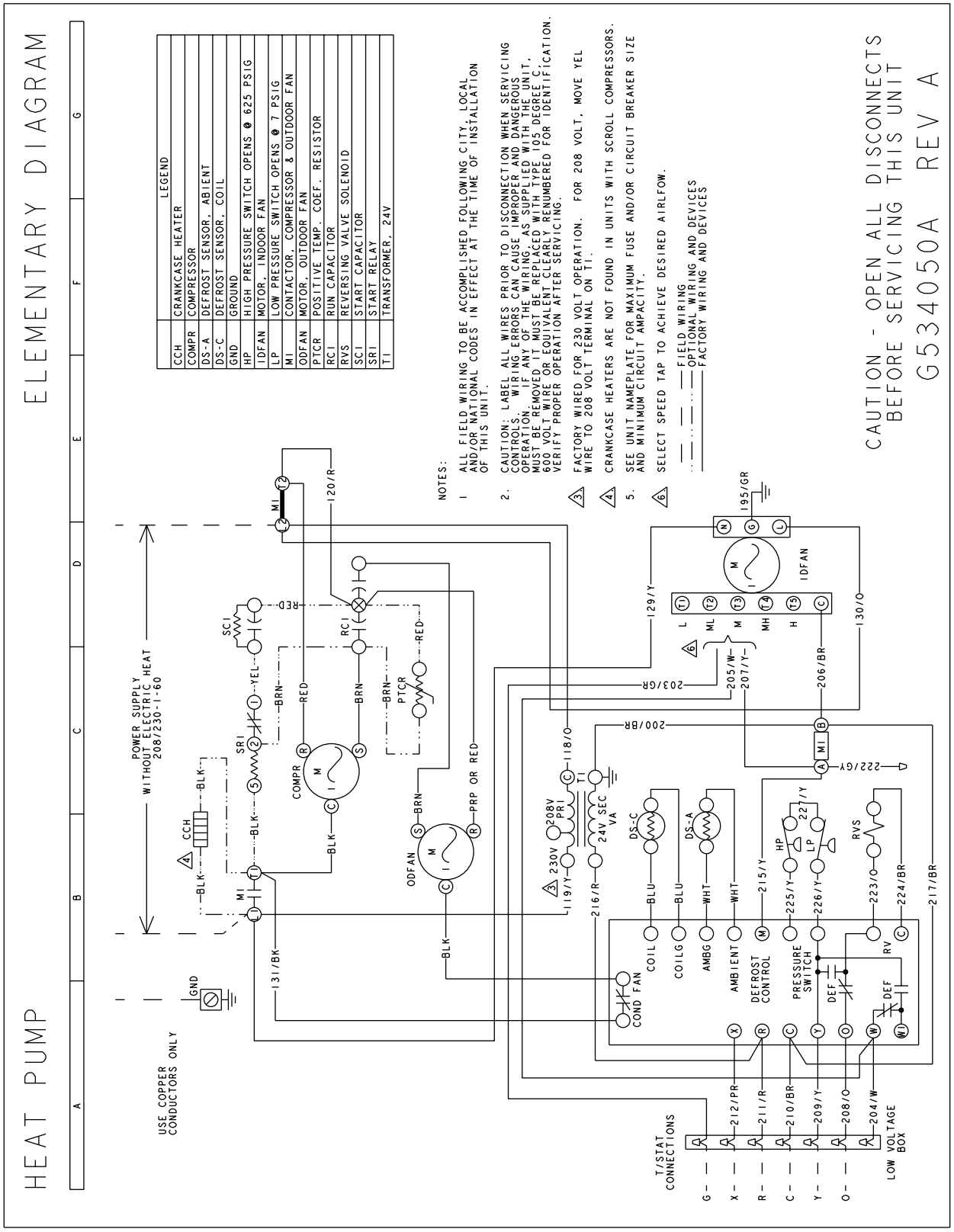

FIGURE 5: TYPICAL UB, UQ 024, 030, 036, 042, 048 & 060 WIRING DIAGRAM

TABLE 2: STARTER KIT RATINGS

KIT NUMBER	COMPONENT RATINGS							
	START CAPACITOR RATINGS	START RELAY RATINGS					
		RATED HOT PICK-UP VOLTS		COLD PICK-UP		DROP-OUT	
				MIN.	MAX.	MIN.	MAX.
2SA06715106	145-175 MFD. 330 VAC	200	200	186	215	40	90
2SA06715206	145-175 MFD. 330 VAC	160	170	152	166	40	90
2SA06715306	189-227 MFD. 250 VAC	140	150	132	148	40	90
2SA06715406	189-227 MFD. 250 VAC	190	200	180	193	40	90
2SA06715506	161-193 MFD. 250 VAC	140	150	132	148	40	90
2SA06715606	88-106 MFD. 330 VAC	170	180	162	175	40	90
2SA06715706	88-106 MFD. 330 VAC	140	150	132	148	40	90

560900-UAI-A-0110
Supersedes: Ref. 172891-UAI-A-1205

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