

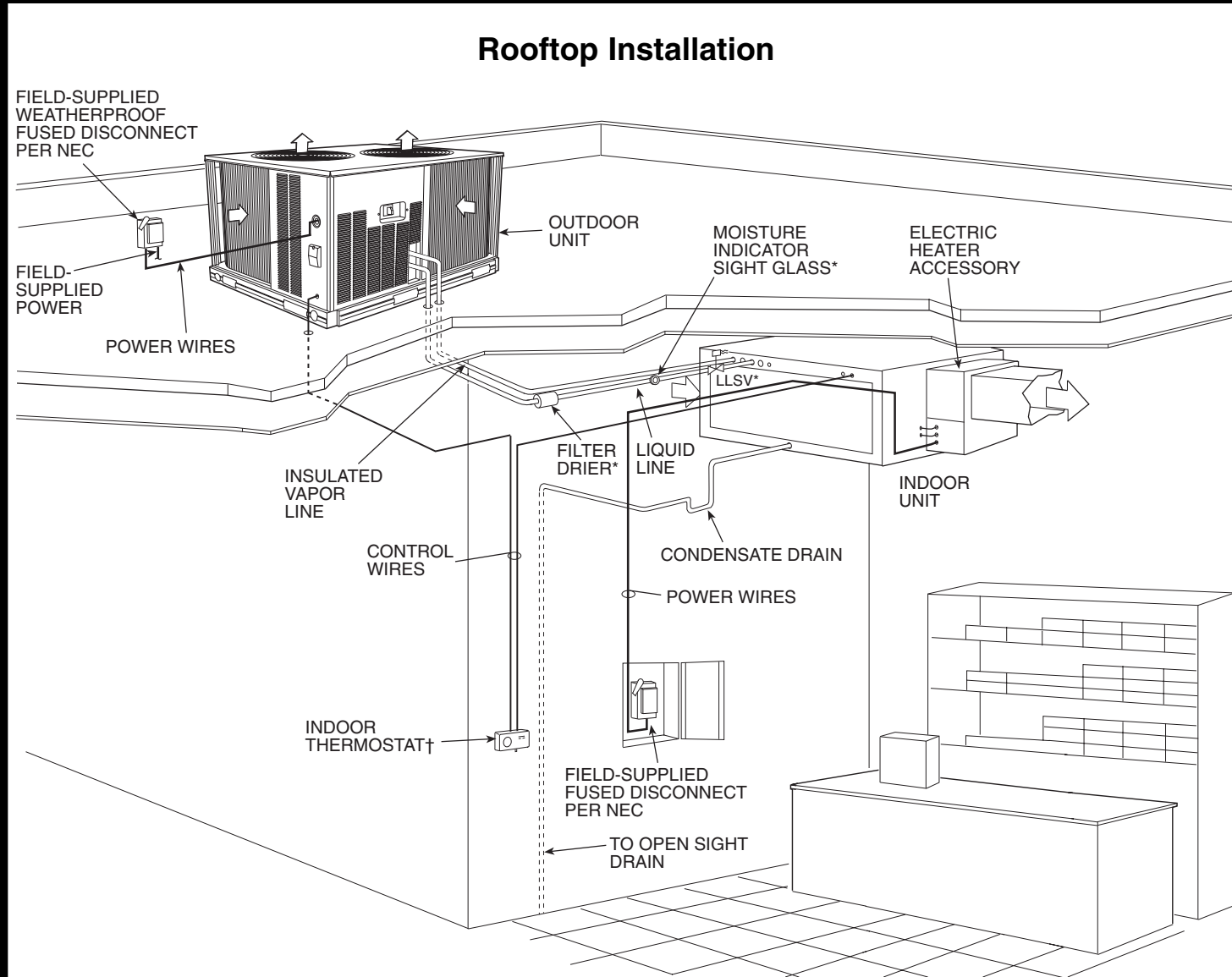
Commercial Split System Installation Chart

6 to 10 Ton Condensing Units
7½ and 10 Ton Heat Pump Units

See Installation, Start-Up and Service Manual for detailed instructions and safety precautions.

Cancels: CI 569D-72-1 CI 569D-72-2 10/15/04

TYPICAL PIPING AND WIRING



LEGEND
LLSV — Liquid Line Solenoid Valve
NEC — National Electrical Code
TXV — Thermostatic Expansion Valve

*Field supplied. See Refrigerant Specialties table in "3) Install Refrigerant Piping" section, opposite.
†Accessory item.

NOTES:

- All piping must follow standard refrigerant piping techniques. Refer to Carrier System Design Manual for details.
- All wiring must comply with the applicable local and national codes.
- Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include details for, a specific installation.
- Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
- Internal factory-supplied TXVs not shown.

3) INSTALL REFRIGERANT PIPING

- Select suction (S) and liquid (L) line size from the table below.
- Select refrigerant specialties.
- Suction line accumulator(s) are required when line length exceeds 75 ft.
- Maximum linear line length is 100 ft.
- Do not bury refrigerant piping underground.

REFRIGERANT PIPING SIZES

UNIT	LINEAR LENGTH OF PIPING — FT							
	0-25		25-50		50-75		75-100	
	Line Size (in. OD)							
	L	S	L	S	L	S	L	S
6 Ton	3/8	1 1/8	3/8	1 1/8	3/8	1 1/8	3/8	1 1/8
7 1/2 Ton	3/8	1 1/8	1/2	1 1/8	1/2	1 1/8	1/2	1 3/8*
10 Ton Scroll Compressor	1/2	1 3/8	1/2	1 3/8	1/2	1 3/8	1/2	1 3/8
10 Ton Semi-Hermetic Compressor	1/2	1 3/8	1/2	1 3/8	1/2	1 3/8	1/2	1 3/8
10 Ton Dual Scroll Compressor	(2) 3/8	(2) 1 1/8	(2) 3/8	(2) 1 1/8	(2) 3/8	(2) 1 1/8	(2) 3/8	(2) 1 1/8

LEGEND
L — Liquid Line S — Suction Line

*Heat pump units, 1 1/8 in.

NOTES:

- Pipe sizes are based on a 2° F loss for liquid and suction lines.
- Pipe sizes are based on the maximum linear length, shown for each column, plus a 50% allowance for fittings.
- Charge units with R-22 in accordance with unit installation instructions.

CONDENSING UNIT REFRIGERANT SPECIALTIES PART NUMBERS

UNIT	LIQUID LINE SIZE (in.)	LIQUID LINE SOLENOID VALVE (LLSV)	LLSV COIL	SIGHT GLASS	FILTER DRIER	SUCTION LINE ACCUMULATOR
6 Ton	3/8	200RB5T3M	AMG/24V	AMI-1TT3	P502-8304S*	S-7063S*
7 1/2 Ton	3/8	200RB5T3M	AMG/24V	AMI-1TT3	P502-8304S*	S-7063S*
	1/2	200RB5T4M	AMG/24V	AMI-1TT4	P502-8304S	S-7063S*
10 Ton Scroll Compressor	1/2	200RB6T4M	AMG/24V	AMI-1TT4	P502-8307S*	S-7063
10 Ton Semi-Hermetic Compressor	1/2	200RB6T4M	AMG/24V	AMI-1TT4	P502-8307S*	S-7063
10 Ton Dual Scroll Compressor	3/8	200RB5T3M Qty 2	AMG/24V Qty 2	AMI-1TT4 Qty 2	P502-8304S* Qty 2	S-7061 Qty 2

*Bushings required.

HEAT PUMP UNIT REFRIGERANT SPECIALTIES PART NUMBERS

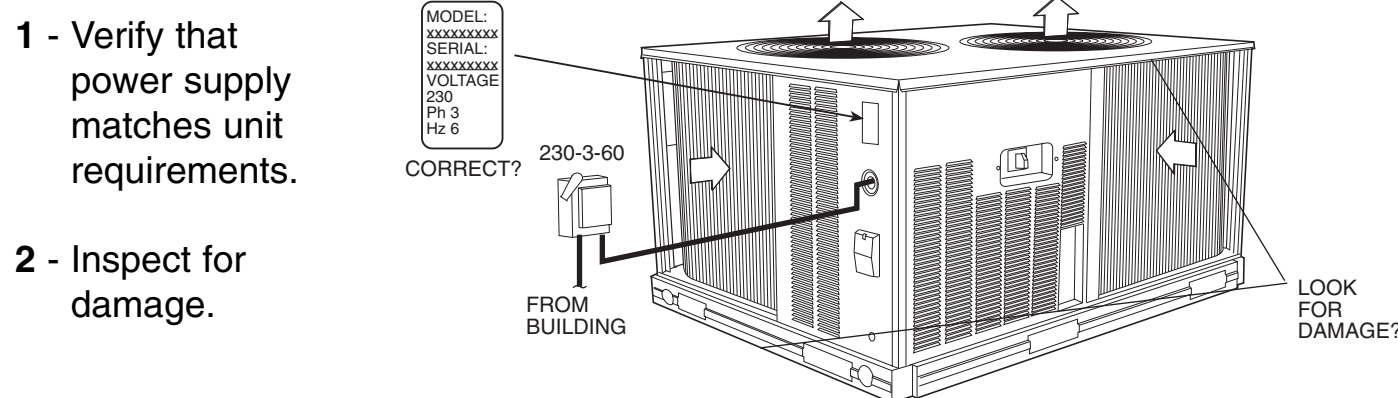
UNIT	LIQUID LINE SIZE (in.)	LIQUID LINE SOLENOID VALVE (LLSV)	LLSV COIL	SIGHT GLASS	FILTER DRIER	SUCTION LINE ACCUMULATOR
7 1/2 Ton	3/8	200RB GS-1928 5T4*	AMG/24V	AMI-1TT3	P504-8083S	†
	1/2	200RB GS-1928 5T4	AMG/24V	AMI-1TT4	P504-8084S	†
10 Ton Scroll Compressor	1/2	200RB GS-1928 5T4	AMG/24V	AMI-1TT4	P504-8164S	†

*Bushings required. †Factory installed.

SAFETY CONSIDERATIONS

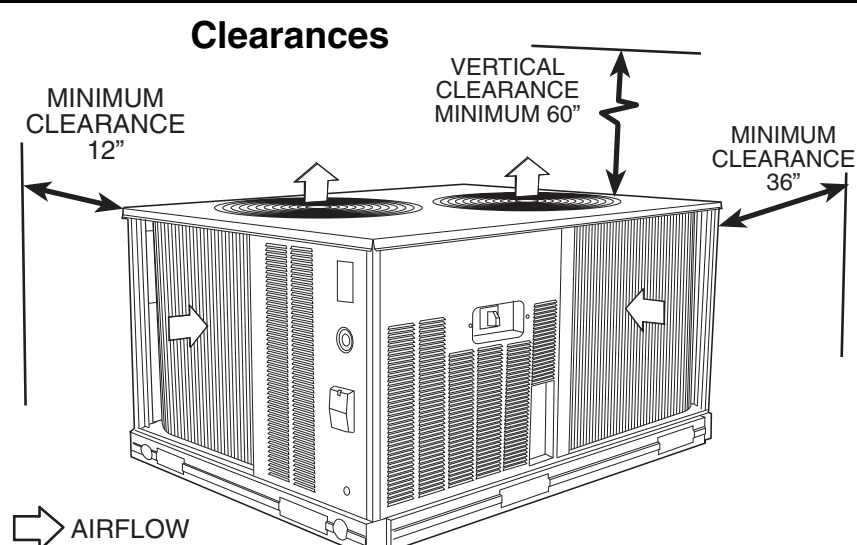
- Installing, starting up, and servicing air-conditioning equipment can be hazardous due to system pressures, electrical components, and equipment location.
- Only trained, qualified installers and service mechanics should install, start-up, and service this equipment.
- Untrained personnel can perform basic maintenance functions such as cleaning coils. All other operations should be performed by trained service personnel.
- When working on the equipment, observe precautions in the literature and on tags, stickers, and labels attached to the equipment.
- Follow all safety codes. Wear safety glasses and work gloves. Keep quenching cloth and fire extinguisher nearby when brazing. Use care in handling, rigging, and setting bulky equipment.

1) INSPECT UNIT

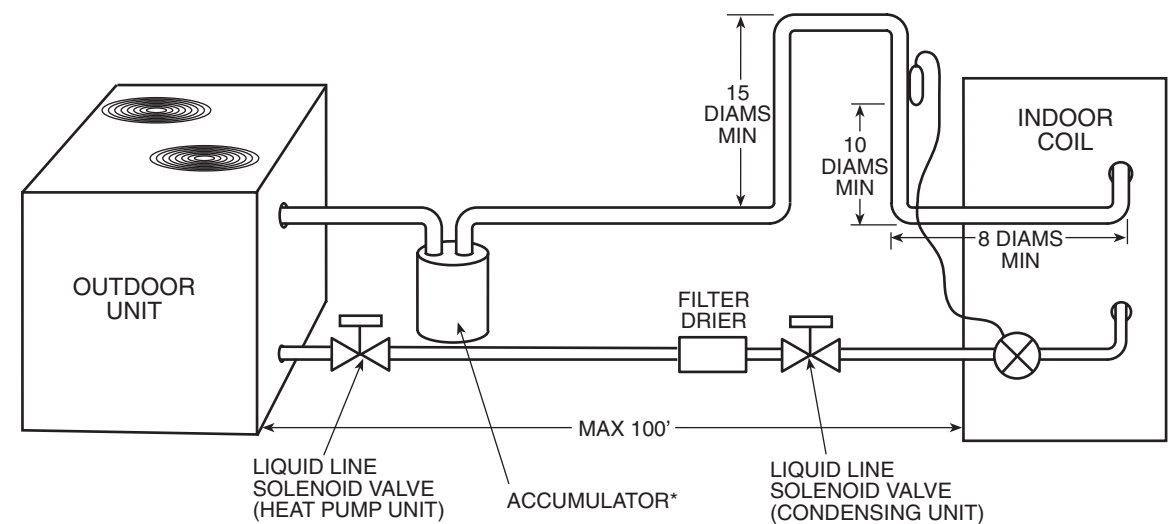


2) INSTALL OUTDOOR UNIT

- Select a location that meets the requirements and limitations of the refrigerant piping recommendations shown in next section, "3) Install Refrigerant Piping."
- Maintain adequate clearance for airflow and service access.
- Unit may be mounted on a field-supplied pad or support rails.

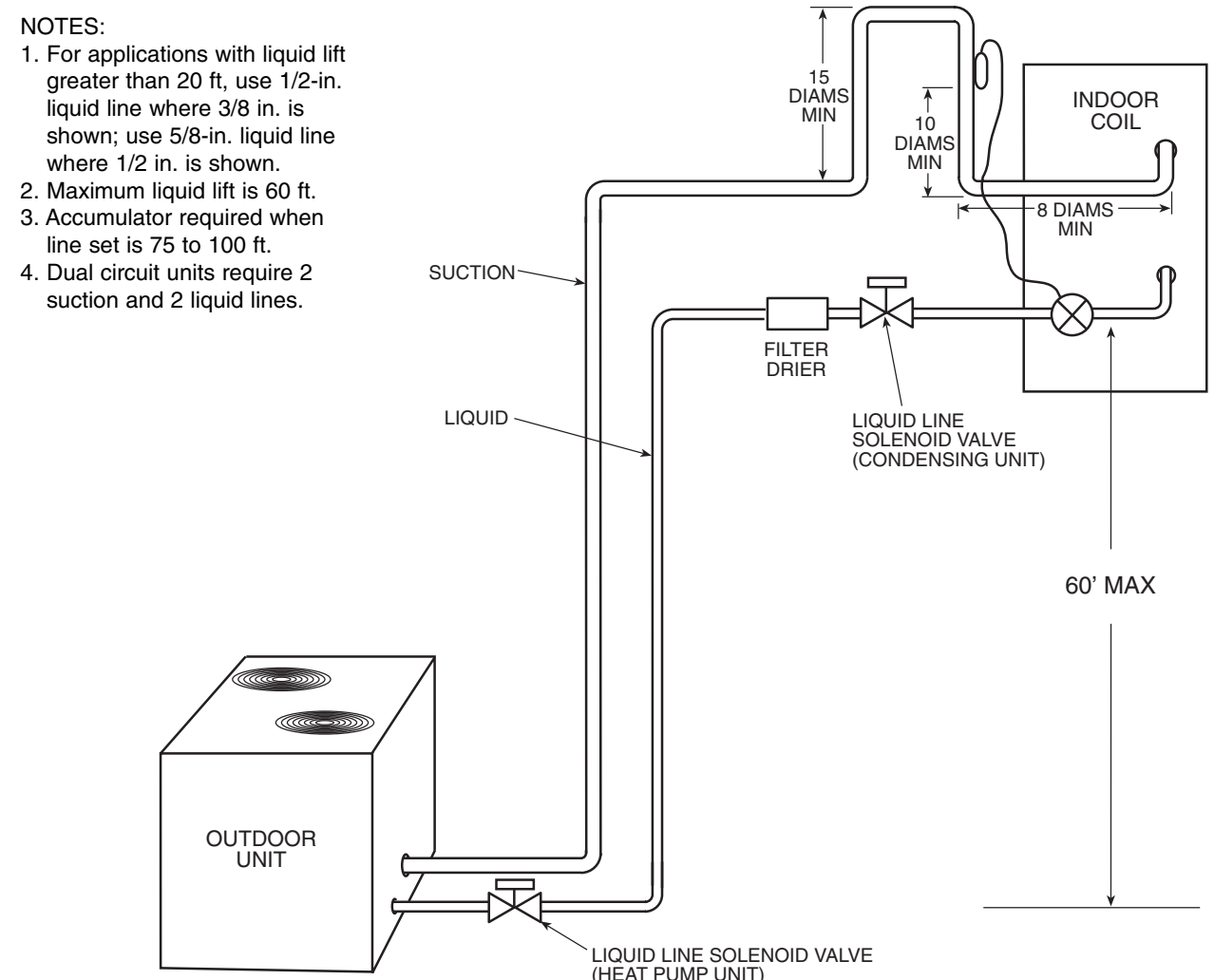


Typical Piping for Units on the Same Level



*Accumulator required when line set is 75 to 100 ft. (Factory installed on heat pump units.)

Typical Piping When Indoor Unit is Above the Outdoor Unit



NOTES:

- For applications with liquid lift greater than 20 ft, use 1/2-in. liquid line where 3/8 in. is shown; use 5/8-in. liquid line where 1/2 in. is shown.
- Maximum liquid lift is 60 ft.
- Accumulator required when line set is 75 to 100 ft.
- Dual circuit units require 2 suction and 2 liquid lines.

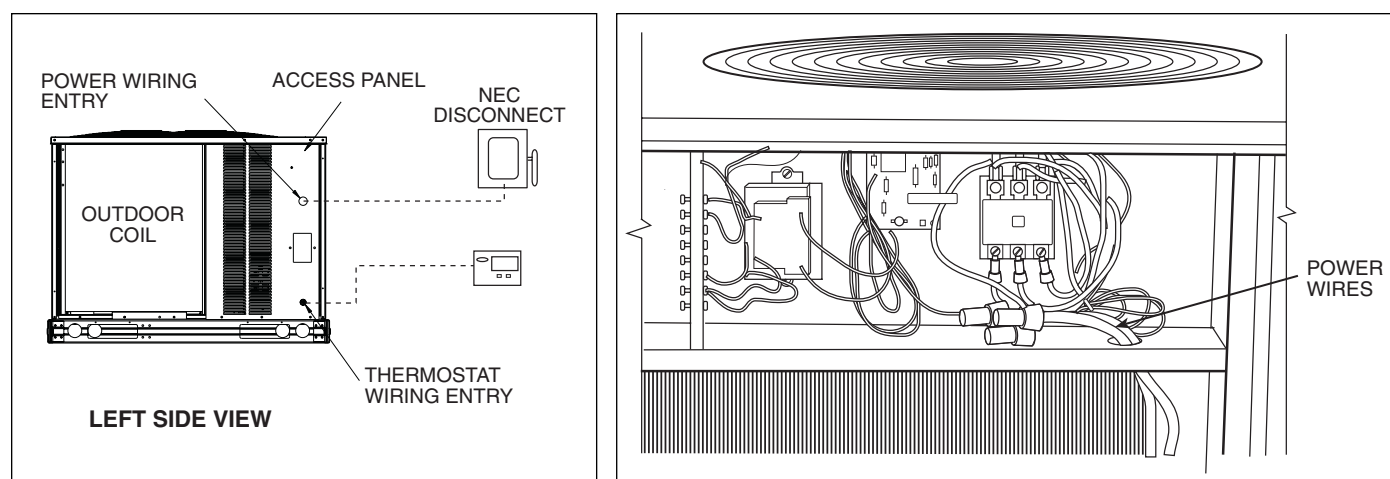
4) MAKE ELECTRICAL CONNECTIONS

⚠ WARNING

Before installing or servicing system, always turn off main power to system and install lockout tag on disconnect. There may be more than one disconnect switch. Electrical shock can cause personal injury.

POWER WIRING

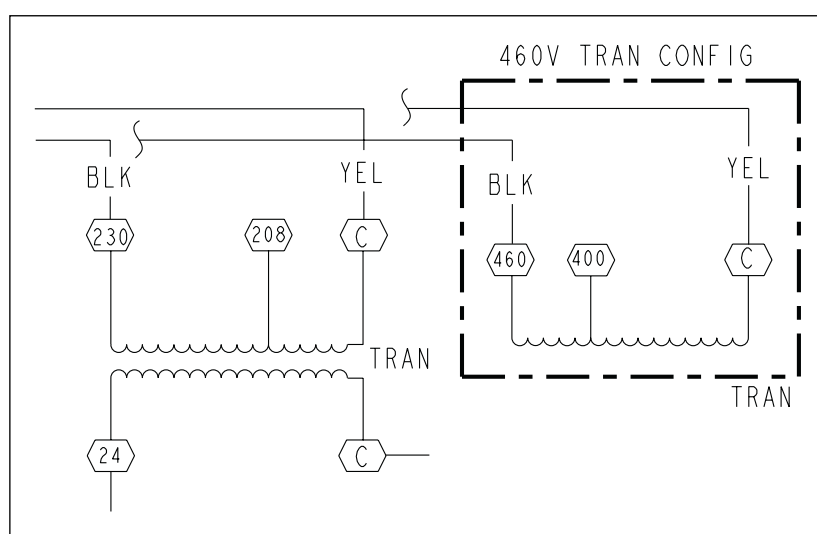
- 1 - Verify that power is off, locked out and tagged off.
- 2 - Route power wiring from disconnect through opening in unit end panel and connect in unit control box as shown on the unit label diagram.



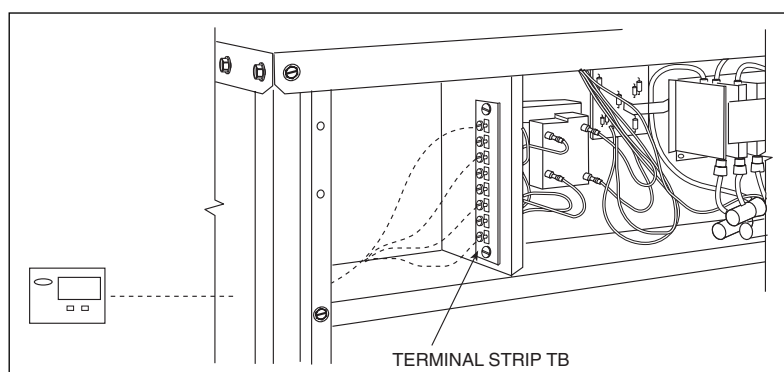
CONTROL WIRING

Transformer Wiring

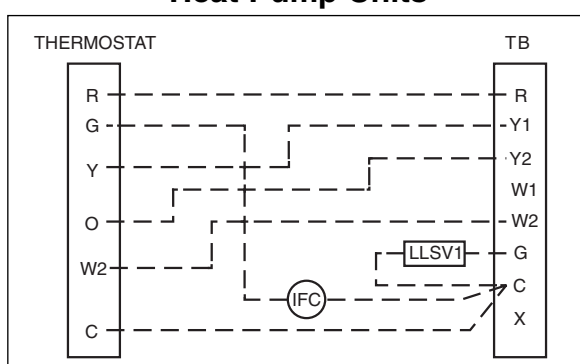
- 1 - Verify that power is off, locked out and tagged off.
- 2 - Transformer wiring: If supply voltage is 208 v or 400 v, move the black wire to the appropriate terminal.



- 3 - Make connections from thermostat to terminal strip (TB) in the outdoor unit.

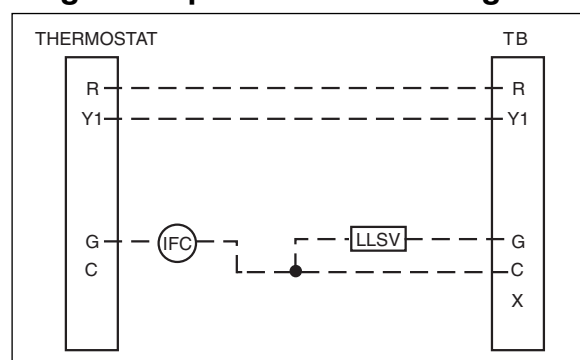


Heat Pump Units



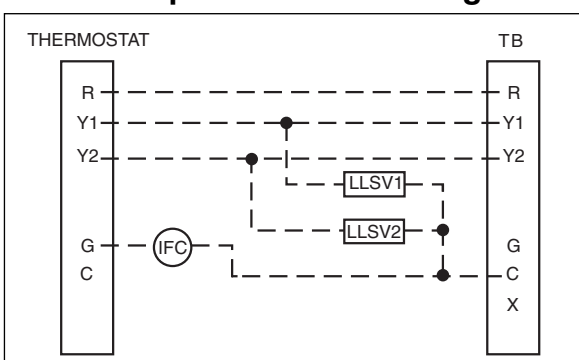
LEGEND
 IFC — Indoor Fan Contactor
 LLSV — Liquid Line Solenoid Valve
 TB — Terminal Board

Single Compressor Condensing Units



LEGEND
 IFC — Indoor Fan Contactor
 LLSV — Liquid Line Solenoid Valve
 TB — Terminal Board

Dual Compressor Condensing Units



LEGEND
 IFC — Indoor Fan Contactor
 LLSV1 — Liquid Line Solenoid Valve Circuit No. 1
 LLSV2 — Liquid Line Solenoid Valve Circuit No. 2
 TB — Terminal Board

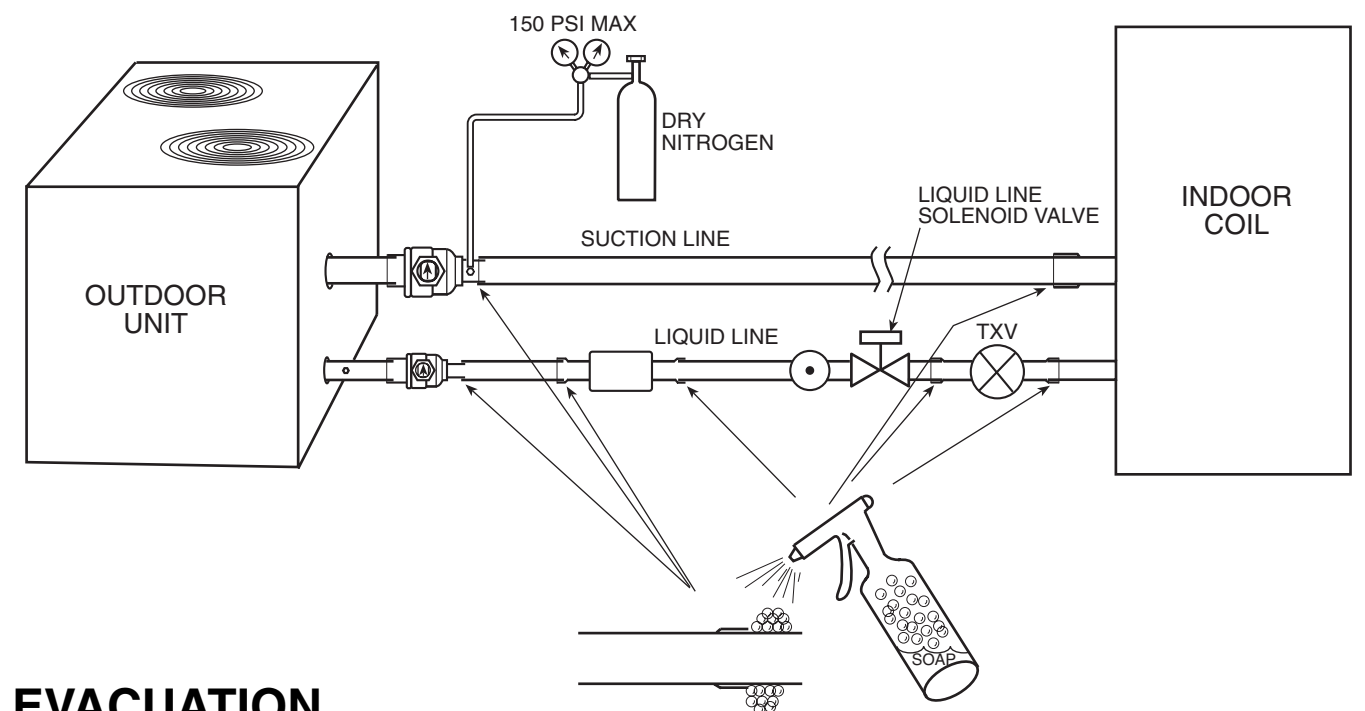
PRE START-UP TIPS

1. Read Installation, Start-Up, and Service manual.
2. Use start-up checklist.
3. Check all wiring connections.
4. Open service valves.
5. Turn on power for indoor and outdoor sections.
6. Energize crankcase heater for 24 hours prior to start-up.
7. Make sure compressor(s) can move freely on mounting snubbers or springs.

5) UNIT PRE-START

LEAK TEST

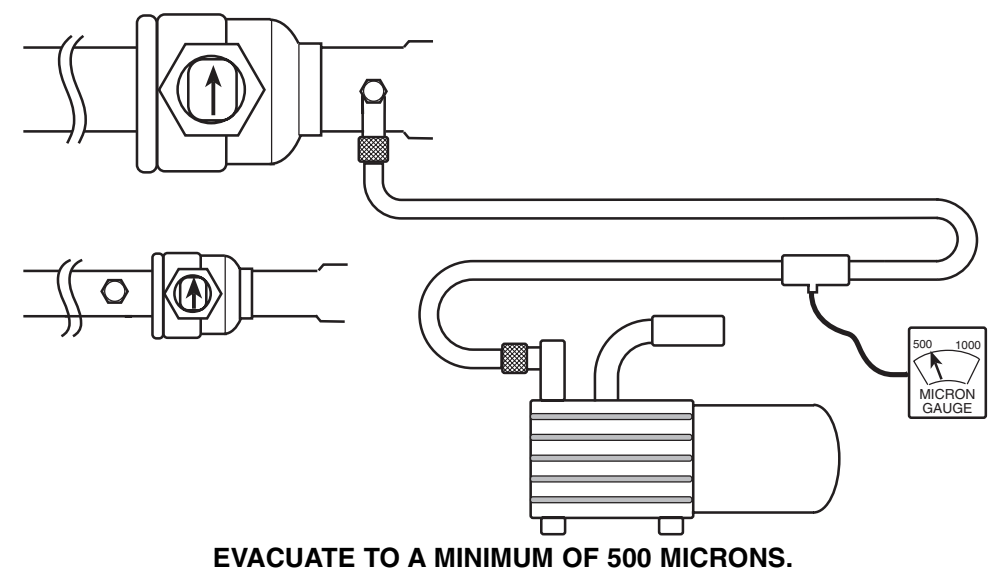
- 1 - Pressurize refrigerant piping; do not exceed 150 psi.
- 2 - Check for leaks.



EVACUATION

⚠ CAUTION

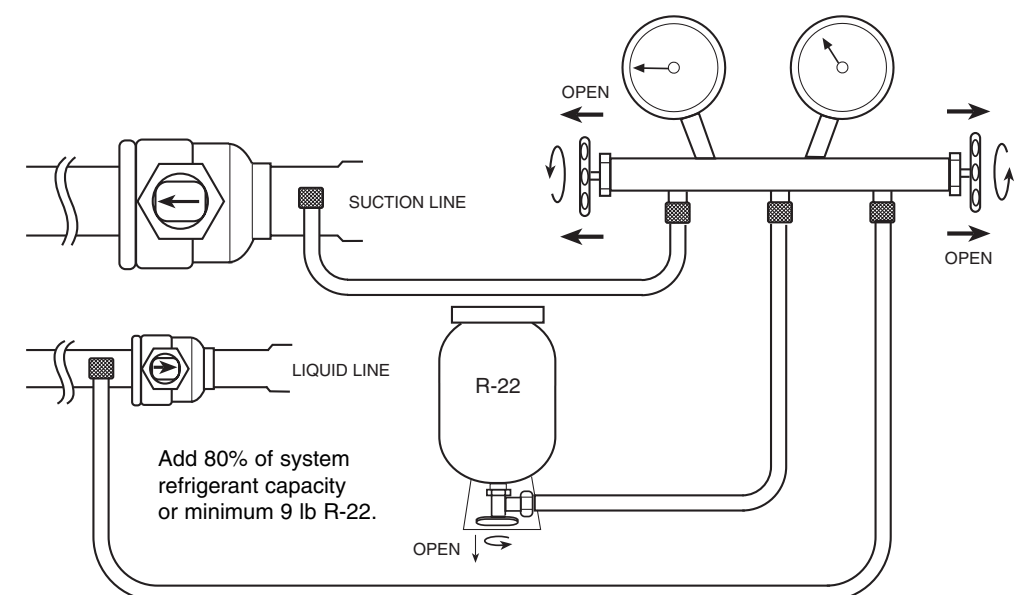
Outdoor unit contains factory-holding charge of R-22. Opening liquid line ball valve prior to charging will release holding charge.



EVACUATE TO A MINIMUM OF 500 MICRONS.

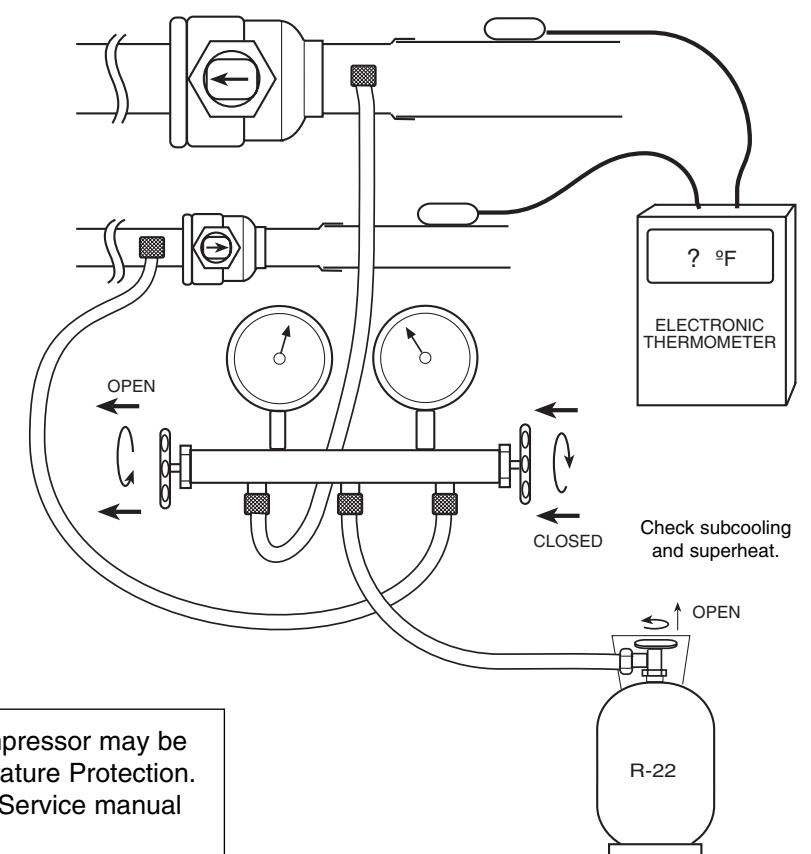
INITIAL CHARGING – UNIT OFF

- 1 - After evacuating the system, precharge the system with 80% of the operating charge (minimum 9 lb).



TRIM CHARGE LEVEL

- 1 - After system has been started and allowed to stabilize, adjust refrigerant level, if required, based on the Cooling Charging Chart found on unit and in Installation Instructions.
- 2 - Check superheat at the compressor; superheat should be 8 to 12°F.



IMPORTANT: Units with Copeland compressor may be equipped with Advanced Scroll Temperature Protection. Refer to the Installation, Start-Up, and Service manual for additional information.

