



model specific instructions

**661C(P)
662C
663C**

SPLIT-SYSTEM HEAT PUMP


Cancels: II 661C-18-1 II 661C-18-2
6-96

NOTE: Read the entire instruction manual before starting the installation. Refer to Split-System Heat Pump Common Installation and Start-Up Practices (included in this packet).


SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal word DANGER, WARNING, or CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **would** result in minor personal injury or product and property damage.

 **WARNING:** Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label. Electrical shock can cause personal injury or death.

INSTALLATION

I. MOUNT UNIT TO PAD

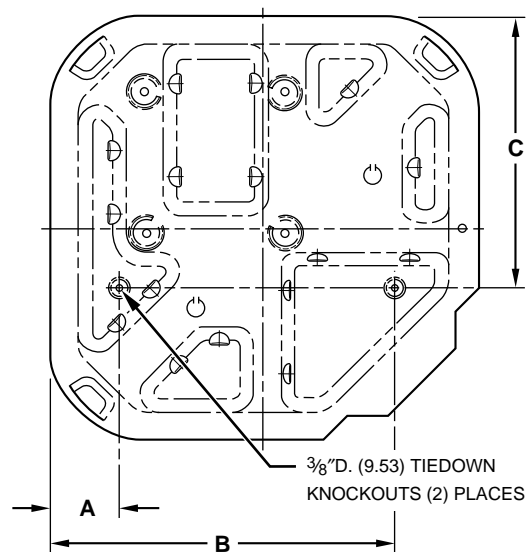
Refer to Fig. 1 for pad dimensions and dimensions needed to mount unit to pad.

II. REFRIGERANT TUBING

Refer to Fig. 2 for refrigerant tube dimensions and connections.

III. MECHANICAL CONNECTION (661P MODEL)

1. Remove plastic retainer holding outdoor piston and piston retainer in the liquid service valve. Connect and tighten the liquid service valve adapter to the valve body prior to assembling ferrule/lock nut. (See Fig. 3.)
2. Cut tubing to the correct length, deburr and size as necessary, making sure tube ends are square. If a large burr is evident, the ID and OD must be deburred to allow the tube to bottom in valve.




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| UNIT SIZE | MIN. PAD DIM. (IN.) | TIEDOWN KNOCKOUT LOCATIONS | | |
|--|---------------------|----------------------------|---------|---------|
| | | A (In.) | B (In.) | C (In.) |
| 661C(P)018-030 662C018 663C018 | 22-1/2 X 22-1/2 | 3-11/16 | 18-1/8 | 14-3/8 |
| 661C(P)036-060 662C024-060 663C024-060 | 30 X 30 | 6-1/2 | 23-1/2 | 20 |

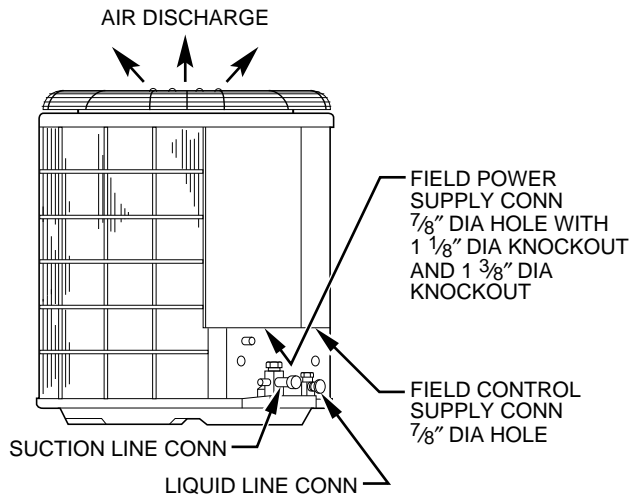
Fig. 1—Mount Unit to Pad

3. Remove lock nut and ferrule from plastic bag taped to service panel. (See Fig. 4.) Remove the lock nut and ferrule from liquid service valve adapter. (See Fig. 3.)

 **CAUTION:** If undersized, damaged, or elliptically shaped tubing is used when making connection, leaks could result.

4. Slide the lock nut and ferrule onto each tube. (See Fig. 5.)
5. Apply a few drops of refrigerant oil to the ferrule and valve threads and adapter threads to reduce assembly torque and assist sealing.
6. Insert tube end into the service valve or adapter until it bottoms.
7. Push the ferrule into place and hand tighten the nut until an increase in torque is felt.
8. Mark the nut and tube and tighten 1-1/2 turns from the mark. (See Fig. 6.) Keep the tube bottomed in the valve and adapter while tightening nut.

NOTE: A backup wrench on the hex part of the suction valve fitting is required while tightening.

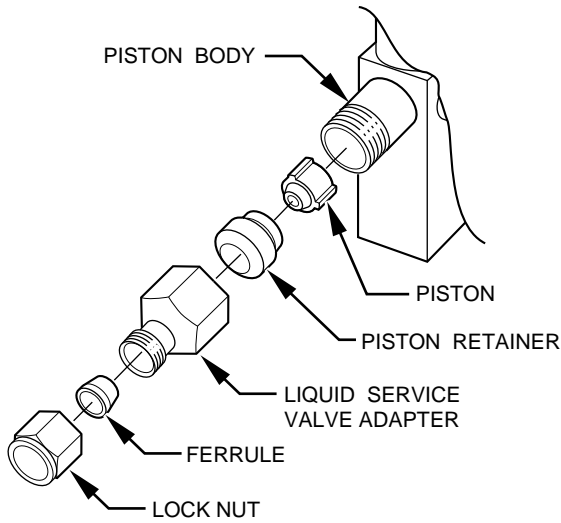


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| UNIT SIZE | LIQUID TUBE | | VAPOR TUBE | |
|-----------|-------------|----------|------------|----------|
| | Conn Dia | Tube Dia | Conn Dia | Tube Dia |
| 018, 024 | 3/8 | 3/8 | 5/8 | 5/8 |
| 030, 036 | 3/8 | 3/8 | 3/4 | 3/4 |
| 042, 048 | 3/8 | 3/8 | 7/8 | 7/8 |
| 060 | 3/8 | 3/8 | 7/8 | 1-1/8 |

Tube diameters are for lengths up to 50 ft. For tubing lengths greater than 50 ft, consult your local distributor.

Fig. 2—Refrigerant Tube Dimensions/Connections



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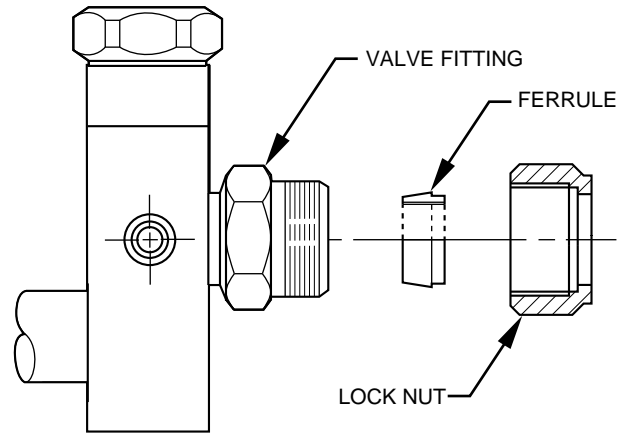
Fig. 3—Liquid Service Valve Mechanical Fitting Assembly (661P Model)

CAUTION: The tube end must stay bottomed in the service valve during final assembly to ensure proper seating, sealing, and rigidity.

A. Mechanical Fitting Repair

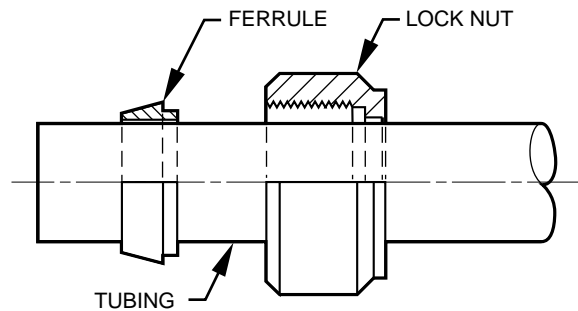
To replace damaged ferrule or tubing, proceed as follows.

1. Attach gages to service valves.
2. Close liquid service valve and operate unit in cooling mode to pump refrigerant charge into condenser coil.
3. When suction pressure reaches 5 psig, shut unit off. Do not operate unit in a vacuum.
4. Close suction service valve and recover refrigerant in tubing.



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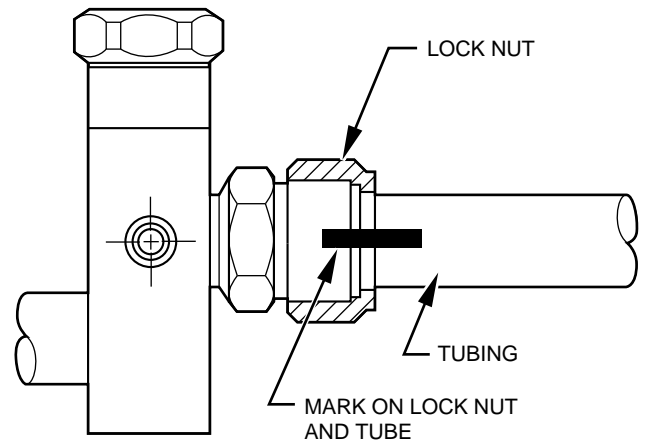
Fig. 4—Suction Service Valve with Mechanical Adapter (661P Model)



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Fig. 5—Lock Nut/Ferrule Positioning (661P)

5. Back-off locknut and ferrule onto tube.
6. Remove damaged part of tubing using tubing cutter. Repeat installation procedure previously outlined using new ferrule.
7. Evacuate tubing set and indoor coil. Check for leaks.
8. Open service valves or recharge unit. Check refrigerant charge.



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Fig. 6—Proper Marking of Valve Assembly

NOTE: A thermostatic expansion valve (TXV) is required on all 663C units. Step 4 refers to the installation of the TXV.

IV. REMOVE INDOOR CHECK-FLO-RATER® PISTON AND INSTALL TXV

CAUTION: For proper unit operation and reliability, units must be installed with a field-supplied hard shut-off TXV. Do not install with evaporator coils having capillary tube metering devices or piston.

After removing existing Check-Flo-Rater from indoor coil, install field-supplied bi-flow hard shut-off TXV kit. (See Fig. 7 and 8.)

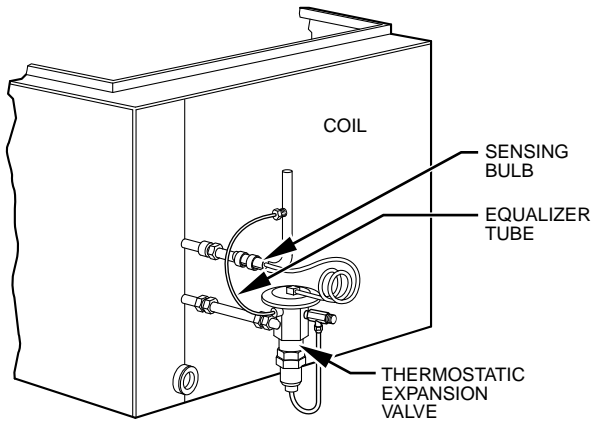


Fig. 7—Typical TXV Installation

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For TXV kit part number and charging instruction, refer to TXV label in your unit. If the indoor unit (fan coil) comes factory equipped with a bi-flow hard shut-off TXV, no TXV change is required.

Install TXV kit to indoor coil as follows:

1. Install suction tube adapter.
2. Install liquid flare-to-sweat adapter.
3. Connect external equalizer tube to fitting on suction tube adapter.
4. Position sensing bulb on horizontal portion of suction tube adapter. Secure using supplied hardware.
5. Insulate bulb after installation. (See Fig. 8.)
6. Leak check all connections.

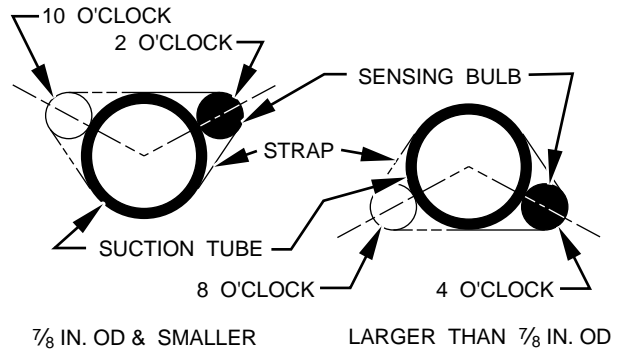


Fig. 8—Positioning of Sensing Bulb

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SERVICE TRAINING

Packaged Service Training programs are an excellent way to increase your knowledge of the equipment discussed in this manual, including:

- Unit Familiarization
- Maintenance
- Installation Overview
- Operating Sequence

A large selection of product, theory, and skills programs is available, using popular video-based formats and materials. All include video and/or slides, plus companion book.

Classroom Service Training plus "hands-on" the products in our labs can mean increased confidence that really pays dividends in faster troubleshooting, fewer callbacks. Course descriptions and schedules are in our catalog.

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