

BLOCK 530 LOT 1 QUALIF /CODE _____ ADDRESS (SITE) 489 Jackson Ave PERMIT NO. 12-0443



CONSTRUCTION PERMIT APPLICATION

C-12-000199

Applicant Completes: Sections I,II,II (optional). IV, VI, and VII

I. IDENTIFICATION

1. Proposed Work Site at: 489 Jackson Ave Brick

2. Name of Owner in Fee: Demarco

Te [REDACTED] e-mail _____

Address: Dum street municipality zip code

3. Ownership in Fee: Public _____ Private X

4. Principal Contractor: Gold Medal Plumbing Heating Cooling Electric, Inc. Tel. (732) 390-3700

Address 11 Cotters Lane, East Brunswick, NJ 08816 e-mail _____

License No. OR, if new home, Builder Reg. No. 9734 Exp. Date _____

Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____

Federal Emp. ID No. 830357354 Fax (732) 390-3791

5. Architect or Engineer _____ Contact _____

Address _____ e-mail _____

Tel. () _____ FAX () _____

6. Responsible Person in Charge once Work has Begun Adam Belitz

Tel. (732) 390-3700 FAX (732) 390-3791

V. FEE SUMMARY (for office use only)		Update	Update
1. Building	\$	<u>40.</u>	
2. Electrical		<u>110.</u>	
3. Plumbing		<u>45.</u>	
4. Fire Protection			
5. Elevator Devices			
6. Subtotal			
7. Less 20% for State Plan Review	\$		
8. Subtotal	\$	<u>82.</u>	
9. State Permit Surcharge Fee			
10. Subtotal	\$		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	\$	<u>217.</u>	

VI. BUILDING/SITE CHARACTERISTICS

1. Number of Stories _____

2. Height of Structure _____ ft.

3. Area—Largest Floor _____ sq. ft.

4. New Building Area _____ sq. ft.

5. Volume of New Structure _____ cu. ft.

6. Max. Live Load _____

7. Max Occupancy Load _____

8. If Industrialized Building: State Approved _____ HUD _____

9. Total Land Area Disturbed _____ sq. ft.

10. Flood Hazard Zone _____

11. Base Flood Elevation _____ ft.

12. Wetlands yes _____ no _____

(office use only)

IIa. PROPOSED WORK:

☐ Minor Work ☐ New Building ☐ Addition ☐ Demolition

☒ Repair ☐ Alteration ☐ Renovation ☐ Reconstruction

☐ Asbestos Abat. -Subch. 8 ☐ Lead Hazard Abatement ☐ Radon Remediation ☐ Annual Permit

IIb. SUBCODES: (Check all that apply)

☐ Building ☒ Electrical ☒ Plumbing ☐ Fire Protection ☐ Elevator

FOR OFFICE USE ONLY (Optional)								
Est. Cost	Plans Rec'd by	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Rejection	Re-viewer
<u>3200</u>				<u>1-24-12</u>	<u>JS</u>			
<u>9800</u>			<u>01-23-12</u>			<u>2/02/12</u>		<u>ml</u>
<u>600</u>				<u>12-27-12</u>	<u>JO</u>			
TOTAL COSTS								

14,000

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL (primary use)

1. State Specific Use: _____

2. Use Group, Proposed: _____

3. Change in Use Group, Indicate Former: _____

4. No. of dwelling units: Total Units Income-restricted

Gained, Sale _____

Gained, Rental _____

Lost, Sale _____

Lost, Rental _____

B. NON-RESIDENTIAL (primary use)

1. State Specific Use: _____

2. Use Group, Proposed: _____

3. Change in Use Group, Indicate Present: _____

C. MIXED USE -List secondary use(s): _____

D. Construct. Classification: Present _____ Proposed _____

III. DO YOU WANT: (optional)

1. ☐ Partial Releases

2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

1. ☐ Elevators/Escalators/Lifts/ Dumbwaiters/Moving Walks

2. ☐ High Pressure Boilers

3. ☐ Refrigeration Systems

4. ☐ Cross-Connections/Backflow Preventers

5. ☐ Hazardous Uses/Places of Assembly

6. ☐ Smoke Control Systems in Open Wells

7. ☐ Underground Storage Tanks

8. ☐ Swimming Pools, Spas and Hot Tubs

9. ☐ LP Gas Tanks

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

- A. ☐ I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

- B. ☐ I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(e)1.ix:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

- C. ☐ I further certify that I will perform or supervise the following work:

C.1. ☐ Building C.2. ☐ Fire Protection

I further certify that I will perform the following work:

C.3. ☐ Electrical C.4. ☐ Plumbing

- D. ☐ I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature _____ Date _____

II. AGENT SECTION (to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

☒ Check if contractor.

Agent Name Gold Medal Plumbing Heating Cooling Electric, Inc.

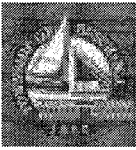
Address 11 Cotters Lane

East Brunswick, NJ 08816

Telephone (732) 390-3700

Signature _____

III. ☐ LEAD HAZARD ABATEMENT: Include Homeowner or Building Owner Affidavit as per N.J.A.C. 5:17.



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 02/27/2013
Control Number C-12-000199
Permit Number 12-0443
Permit Issue Date 02/28/2012
Certificate Number 12-0443

Certificate

Construction Code Division

(Certificate of Approval)

Identification

Work Site Location: 489 JACKSON AVE. Brick Township, NJ Block: 530 Lot: 1 Qual: _____
Owner in Fee: DEMARCO, NICHOLAS & ELIZABETH
Owner Address: 489 JACKSON AVE BRICK NJ 08723
Telephone: _____
Contractor GOLD MEDAL PLUMBING HEATING/COOLING ELECTRIC INC
Address 11 COTTERS LN EAST BRUNSWICK NJ 08816
Telephone: (732) 390-3700 Fax: (732) 390-3791
License Number or Builders Registration Number: 11918 9734 13VH02738600 Federal Emp. Number: 830-357354

Home Warranty Number: _____

Type of Warranty Plan: ☐ State ☐ Private

Use Group: R-5 Construction Classification: _____

Maximum Live Load: 0 Maximum Occupancy Load: 0

Description of Work/Use: AIR CONDITIONER, FURNACE, HOT WATER HEATER

Certificate Comments:

☐ **Certificate of Occupancy**

This serves notice that said building or structure has been constructed in accordance with the New Jersey Uniform Construction Code and is approved for occupancy.

☒ **Certificate of Approval**

This serves notice that the work completed has been constructed or installed in accordance with the New Jersey Uniform Construction Code and is approved. If the permit was issued for minor work, this certificate was based upon what was visible at the time of inspection.

☐ **Certificate of Continued Occupancy**

This serves notice that based on a general inspection of the visible parts of the building there are no imminent hazards and the building is approved for continued occupancy.

☐ **Temporary Certificate of Compliance**

The following conditions must be met no later than or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:

Conditions to be met:

☐ **Certificate of Clearance - Lead Abatement 5:17**

This serves notice that based on written certification, lead abatement was performed as per NJAC5:17 to the following extent.

- ☐ Total removal of lead-based paint hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Clearance - Asbestos Abatement**

This serves notice that based on written certification, asbestos abatement was performed to the following extent.

- ☐ Total removal of asbestos hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Compliance**

This serves notice that said potentially hazardous equipment has been installed and/or maintained in accordance with the New Jersey Uniform Construction Code and is approved for use until

☐ **Temporary Certificate of Occupancy**

The following conditions must be met no later than: or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:

Conditions to be met:

Construction Official

Fee: \$0.00
Check Number: _____
Collected By: _____



CONSTRUCTION PERMIT

Date Issued 2/28/12
Control # C-12-000199
Permit # 12-0443

IDENTIFICATION Block: 530 Lot: 1 Qualifier
Work Site Location: 489 JACKSON AVE. Brick Township, NJ Contractor GOLD MEDAL PLUMBING HEATING/COOLING
Address 11 COTTAGE LN EAST BRUNSWICK NJ 08816
Owner in Fee DEMARCO, NICHOLAS & ELIZABETH
489 JACKSON AVE. BRICK NJ 08723 Telephone: (732) 390-3700
Lic. No. or Bldrs. Reg. No. 9734
Federal Employee No. 830-357354

Is hereby granted permission to perform the following work:

- | | | |
|--|--|--|
| ☐ BUILDING | ☒ PLUMBING | ☐ LEAD HAZARD ABATEMENT |
| ☒ ELECTRICAL | ☒ FIRE PROTECTION | ☐ DEMOLITION |
| ☐ ELEVATOR DEVICES | ☐ ASBESTOS ABATEMENT
(Subchapter 8 only) | ☐ OTHER |

DESCRIPTION OF WORK:

AIR CONDITIONER, FURNACE, HOT WATER HEATER

Note: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work \$13,000

[Signature]
Construction Official

2-23-12
Date

PAYMENTS (Office Use Only)

Building	\$0
Electrical	\$40
Plumbing	\$110
Fire Protection	\$45
Elevator Devices	\$0
Other	\$0.00
DCA Training Fee	\$22
CO Fee	
Other	\$0
Total	\$217
Check No. <u>4095</u>	
Cash	\$0
Credit	\$0
Collected By	

U.C.C. F170
equiv (rev 8/03)

1 WHITE - INSPECTOR

2 CANARY - OFFICE

3 PINK - TAX ASSESSOR

4 GOLD - APPLICANT

REQUIRED INSPECTIONS

Construction work must be inspected in accordance with the State Uniform Construction Code Regulations N.J.A.C. 5:23-2.18. This agency will carry out such periodic inspections during the progress of work as are necessary to insure that the work installed conforms with the requirements of the Uniform Construction Code.

The owner or other responsible person in charge of work must notify this agency when work is ready for any required inspections specified below. Requests for inspections must be made at least 24 hours prior to the time the inspection is desired. Inspections will be performed within three business days of the time for which they are requested. The work must not proceed in a manner which will preclude the inspection until it has been made and approval granted.

☒ Required inspections for all subcodes for one- and two-family dwellings are as follows:

1. The bottom of footing trenches before placement of footings, except that in cases of pile foundations, inspections shall be made in accordance with the requirements of the building subcode.
2. Foundations and all walls up to grade level prior to back filling.
3. All structural framing, connections, wall and roof sheathing and insulation; electrical rough wiring, panel and service installation; rough plumbing. The framing inspection shall take place after the rough electrical and plumbing inspections and after the installation of the heating, ventilation and /or air conditioning duct system. The insulation inspection shall be performed after all other subcode rough inspections and prior to the installation of any interior finish material.
4. Installation of all finished materials, sealings of exterior joints, plumbing piping, trim and fixtures; electrical wiring, devices and fixtures; mechanical systems equipment.

ELECTRIC	\$40.00
PLUMBING	\$110.00
FIRE	\$45.00
DCA	\$22.00
TOTAL	\$217.00

Additional required inspections for all subcodes of construction, for other than one- and two-family dwellings, are fire suppression systems, heat producing devices and Barrier Free subcode accessibility, if applicable.

☐ Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:

☒ A final inspection is required for each applicable subcode area before a final Certificate of Occupancy or Approval may be issued. The final inspections include the installation of all interior and exterior finish materials, sealing of exterior joints, mechanical system and other required equipment; electrical wiring, devices and fixtures; plumbing pipes, trim and fixtures; tests required by any provision of the adopted subcodes, Barrier Free accessibility, if applicable; and verification of compliance with NJAC 5:23-3.5, "Posting structures".

☐ A complete copy of released plans must be kept on the job site.

If you do not understand any of this information, please ask.



**FIRE
SUBCODE**



Date Received
Date Issued
Control #
Permit #

2/28/12
12-0443

Seal

A. IDENTIFICATION-APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 830 Lot 1 Qualification Code B-1C
Work Site Location 484 Jackson Ave
Owner in Fee: Demarco
Tel: [REDACTED] e-mail: [REDACTED]
Address: 11 Cotters Lane street municipality zip code
Contractor: Gold Medal Plumbing Heating Cooling Electric, Inc. Tel: (732) 390-3700
Address East Brunswick, NJ 08816

Fire Protection Equipment, NJ Div of Fire Safety Permit No. [REDACTED]
Fire Protection Equipment, NJ Div. of Fire Safety Installer No. 9734 Exp. Date [REDACTED]
Fire Alarm Contractor No. 9734
Home Improvement Contractor Registration No. or Exemption Reason (if applicable): [REDACTED]
Federal Emp. ID No. 830357354 FAX: (732) 390-3791

B. FIRE PROTECTION CHARACTERISTICS

Use Group: Present Proposed [REDACTED]
Const. Class: Present Proposed [REDACTED]
Heating System: [REDACTED] New or [REDACTED] Modification to Existing
OR [REDACTED] Conversion OR [X] Replacement
Fuel Type: [X] Gas [] Oil [] Electric [] Solar
Location: [] Other [REDACTED]
Total Cost of Fire Protection Work \$ 600

JOB SUMMARY (Office Use Only)

PLAN REVIEW

INSPECTIONS

Dates (Month/Day)

[X] No Plans Required
[] Partial-Understand Utilities Approved
Date: 2-13-12 Approved by: [Signature]
[] Fire Protection Plans Approved
Date: [REDACTED] Approved by: [REDACTED]
Joint Plan Review Required: [REDACTED]
[] Bldg. [] Elec. [] Plumb. [] Elev.
MECHANICAL
Smoke Control
TCO
Flam/Combust Tanks
Fireplace Venting
Final
Other
Approved by: [Signature] 3/14/12

C. CERTIFICATION IN LIEU OF OATH
I hereby certify that I am the (agent of) owner of record and I am authorized to make this application.

[X] Certified Contractor

Applicant Signature/Contractor's Signature
[] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK
Replace Furnace + water heater

Water Supply Source [REDACTED]
Method of Alarm/Suppression System Supervision [REDACTED]

NUMBER FEE (Official Use Only)

Alarm Systems

[] System
[] 110v interconnected
[] CO Detectors/110v
Alarm Devices (i.e., smoke, heat, pulls, water/flow)

Supervisory Devices (i.e., tamper, low/high air)
Signaling Devices (i.e., horn/strobes, bells)
Other Devices [REDACTED]

TOTAL

Suppression Systems

Fire Pump [REDACTED] GPM Type [REDACTED]
Dry Pipe/Alarm Valves
Pre-action Valves
Sprinkler Heads (Dry and Wet)
Standpipes

Pre-engineered Systems

Wet Chemical
Dry Chemical
CO₂ Suppression
Foam Suppression
FM200 Suppression
Other [REDACTED]

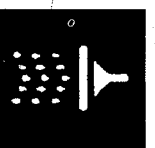
Other Systems

Kitchen Hood Exhaust System
Smoke Control System
Fuel-Fired Appliances [X] Gas [] Oil [] Solid
Fireplace Venting/Metal Chimney
Other [REDACTED]

Administrative Surcharge \$ [REDACTED]
Minimum Fee \$ [REDACTED]
State Permit Surcharge Fee \$ [REDACTED]
TOTAL FEE \$ [REDACTED]



PLUMBING
SUBCODE
TECHNICAL SECTION



Date Received 2/28/12
Date Issued
Control #
Permit # 12-0443

A. IDENTIFICATION-APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 530 Lot 1 Qualification Code
Work Site Location 484 Jackson Ave Brick

Owner in Fee: Demarzio
Te: Same e-mail
Address: Same

Contractor: Gold Medal Plumbing Heating Cooling Electric, Inc. Tel. (732) 390-3700
Address: 11 Cotters Lane East Brunswick, NJ 08816

Contractor License No. 9734 Exp. Date
Home Improvement Contractor Registration No. or Exemption Reason (if applicable):
Federal Emp. ID No. 830357354 FAX: (732) 390-3791

B. PLUMBING CHARACTERISTICS
Use Group: Present Proposed

Building Sewer Size Public Sewer Private Septic
Water Service Size Public Water Private Well
Est. Cost of Plumbing Work \$ 9200

JOB SUMMARY (Office Use Only)

PLAN REVIEW		INSPECTIONS		Dates (Month/Day)	
	Type	Failure	Failure	Approval	Initial
☒ No Plans Required	Slab				
	Rough				
	Water				
	Sewer				
	Fixtures				
	Gas Equipment				
	Gas Piping				
	LP Gas Tank				
	Fuel Oil Piping				
	Solar				
	TCO				
Approved by: [Signature] Date: 3-20-12					

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and I am authorized to make this application, and perform the work listed on this application.

Applicant Signature/Contractor's Seal and Signature
[X] Licensed Plumbing Contractor [] Exempt Applicant

D. TECHNICAL SITE DATA (List of all fixtures.)

NO	FIXTURE/EQUIPMENT	FEE (Office Use Only)
	Water Closet	
	Urinal/Bidet	
	Bath Tub	
	Lavatory	
	Shower	
	Floor Drain	
	Sink	
	Dishwasher	
	Drinking Fountain	
	Washing Machine	
	Hose Bibb	
	Water Heater	
	Fuel Oil Piping	
	Gas Piping	
	LP Gas Tank	
	Steam Boiler	
	Hot Water Boiler	
	Sewer Pump	
	Interceptor/Separator	
	Backflow Preventer	
	Greasetrap	
	Sewer Connection	
	Water Service Connection	
	Stacks	
	Garbage Disposal	
	Other A/C + Furnace	

Administrative Surcharge \$
Minimum Fee \$
State Permit Surcharge Fee \$
TOTAL FEE \$

88/85

UCC/F-130
Professional Printing
(856) 468-7933

- Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three parts
1. White-Inspector Copy
 2. Canary-Applicant Copy
 3. Pink-Office Copy
 4. White Tag-Office Copy

3/14/12-mA

0. Can not use GAS relay - OK 03:13:12 PM



**ELECTRICAL
SUBCODE
TECHNICAL SECTION**



Date Received 2/28/12
Date Issued 12-04-12
Control #
Permit #

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block S30 Lot 1 Qualification Code Brick

Work Site Location 489 Jackson Ave

Owner In Fee: Demeco

Tel. () e-mail

Address 740E street municipality zip code

Contractor: GOLD MEDAL PLUMBING HEATING COOLING ELECTRIC INC. Tel. (732) 390-3700

Address 11 COTTERS LANE EAST BRUNSWICK, NJ 08816

Contractor License No. 11918 Exp. Date

Home Improvement Contractor Registration No. or Exemption Reason (if applicable):

Federal Emp. ID No. 830357354 FAX: (732) 390-3791

B. ELECTRICAL CHARACTERISTICS

Use Group: Present Proposed

[] Pole/Pad # [] Temporary [] Other

Building Occupied as Utility Co.

Estimated Cost of Electrical Work \$ 3200

JOB SUMMARY (Office Use Only)		INSPECTIONS		Dates (Month/Day)	
PLAY/REVIEW	Type:	Failure	Failure	Approval	Initial
☒ No Plans Required <u>1-24-12-J</u>	Rough				
	Barrier-Free				
	Trench				
Joint Plan Review Required	Temp. Serv.				
[] Building [] Plumbing	Constr. Serv.				
[] Fire [] Elevator	TCO				
[] Elec. Plans Approved	Other				
Date:	Service				
Approved by:	Final				
	Barrier-Free				
	Temp. Cut-in-Card Date Issued				
	Final Cut-in-Card Date Issued				
	Annual Pool Inspection				
	Date of Grounding and Bonding				
Approved by: <u>J</u>	Certification				

C. CERTIFICATION IN LIEU OF OATH
I hereby certify that I am the (agent of) owner of record and I am authorized to make this application, and perform the work listed on this application.

D. TECHNICAL SITE DATA
QTY. SIZE ITEMS

- Lighting Fixture
- Receptacles
- Switches
- Detectors
- Light Poles
- Motors—Fract. HP
- Emergency & Exit Lights
- Communications Points
- Alarm Devices/F.A.C. Panel

TOTAL NUMBERS

- Pool Permit/with UW Lights
- Storable Pool/Spa/Hot Tub
- KW Elec. Rang/Receptacle
- KW Oven/Surface Unit
- KW Elec. Water Heater
- KW Elec. Dryer/Receptacle
- KW Dishwasher
- HP Garbage Disposal
- KW Central A/C Unit
- HP/KW Space Heater/Air Handler
- KW Baseboard Heat
- HP Motors 1/ + HP
- KW Transformer/Generator
- AMP Service
- AMP Subpanels
- AMP Motor Control Center
- KW/Elec. Sign/Outline Light
- Furnace

FEE (Office Use Only)

Administrative Surcharge \$
Minimum Fee \$
State Permit Surcharge Fee \$
TOTAL FEE \$

UCC/F-120
Professional Printing
(856) 468-7933

for 732-390-3791 1/25/12



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723
(732) 262-1027

Subcode Official Review

To: 489 JACKSON AVE BRICK, NJ 08723 CC:

RE: Plumbing Subcode
Block: 530 Lot: 1 Qual:
489 JACKSON AVE
Permit Number: Control Number: C-12-000198
Last Submit Date: Friday, January 20, 2012

Date: Monday, January 23, 2012

Dear DEMARCO, NICHOLAS & ELIZABETH,
Your request is hereby denied based upon the following infractions.
1- submit the bty input & output of the existing and the
replacement furnace

Previous	Furnace
Input	100 k
Output	80k

*+ New
please*

	New
In	88 k
Out	85 k

Sincerely,

Paul Auth, Subcode Official

Page 1

*** FAX TX REPORT ***

TRANSMISSION OK

JOB NO.	3715
DESTINATION ADDRESS	97323903791
PSWD/SUBADDRESS	
DESTINATION ID	
ST. TIME	01/25 10:26
USAGE T	00' 29
PGS.	1
RESULT	OK



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723
(732) 262-1027

fax 732-390-3791 1/25/12

Subcode Official Review

To: 489 JACKSON AVE BRICK, NJ 08723 CC:

RE: Plumbing Subcode
Block: 530 Lot: 1 Qual:
489 JACKSON AVE.
Permit Number: Control Number: C-12-000199
Last Submit Date: Friday, January 20, 2012

Date: Monday, January 23, 2012

Dear DEMARCO, NICHOLAS & ELIZABETH,
Your request is hereby denied based upon the following infractions.
1- submit the btu input & output of the existing and the
replacement furnace

Sincerely,

Paul Auth , Subcode Official



CHIMNEY VERIFICATION FOR REPLACEMENT OF FUEL-FIRED EQUIPMENT

BLOCK 530 LOT 1 QUALIFICATION CODE _____ PERMIT # _____
WORK SITE ADDRESS 489 Jackson Ave Brick
Owner in Fee Nemaroo
Verifying Individual Adam Belitz Company Gold Medal PHCE
Address 11 Cotters Lane East Brunswick NJ 08816
Street City State Zip Code
Tel: (732) 390-3700 Fax: () _____

Check the Appropriate Box(es):

Type of Replacement:

- ☐ Oil to Gas Conversion
☐ Gas to Oil Conversion
☒ Gas Appliance Replacement
☐ Oil to Oil Replacement
☐ Other _____

Existing Vent/Chimney:

- ☐ "B" Label Vent
☐ "L" Label Vent
☐ Flexible Liner
☒ Power Vent/Exhauster

Size _____

- ☐ Chimney-Interior
☐ Chimney-Exterior
☐ Masonry Chimney-Tile Lined
☐ Masonry Chimney-Unlined
☐ Other _____

Type	Fuel Type	BTU Rating (input/hour)
Appliance 1: <u>Furnace</u>	Oil / Gas / Other: <u>Gas</u>	<u>88,000</u>
Appliance 2: <u>Water Heater</u>	Oil / Gas / Other: <u>Gas</u>	<u>42,000</u>
Appliance 3: _____	Oil / Gas / Other: _____	_____

CHIMNEY LINER

If a chimney liner is being installed, all documentation on the liner must accompany the Permit application.

Manufacturer: _____ Model: _____ UL Listing: _____
Material of Liner: Stainless Steel _____ Aluminum _____
Size of Appliance Vent: _____ Size of Liner: _____ Height of Chimney: _____
Length of Connector: _____ Vent Connector Rise: _____
How does the appliance vent? ☐ Natural Draft ☐ Fan-assisted ☐ Other: _____

PLEASE SIGN ONE OF THE FOLLOWING VERIFICATION STATEMENTS

For Oil or Coal to Gas Conversions:

I have verified that the chimney/vent is in good repair and clear of obstruction and is substantially clean of residue from its previous use serving an oil or coal appliance. I have verified that the chimney/vent is appropriately lined and sized for the appliance(s) being installed.

Signature _____

Date _____

Oil to Oil or Gas to Gas Replacements or New/Additional Appliances:

I have verified that the existing chimney/vent is in good repair and clear of obstruction. I have verified that the existing chimney/vent is appropriately lined and sized for the appliance(s) being installed and/or remaining.

Signature _____

Date _____

Direct Vent Appliance:

I hereby verify that the appliance(s) being installed is a direct vent appliance. I further verify that the existing chimney/vent is appropriately lined and sized for any remaining appliances.

Signature _____

Date _____

Verification Not Submitted:

I choose not to submit verification. I understand that I will be required to be present for the inspection to remove and reinstall the chimney vent connector.

Signature _____

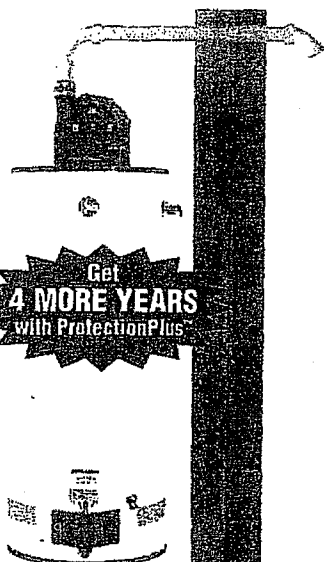
Date _____

FOR MINOR AND EMERGENCY WORK, THIS FORM MUST BE PROVIDED WITH YOUR PERMIT APPLICATION.
FOR ALL OTHER WORK, THIS FORM MUST BE PRESENTED TO THE CODE OFFICIAL PRIOR TO FINAL INSPECTION.

All applicable information requested on this form must be supplied.
This form may not be submitted by a homeowner in lieu of the required inspection.

PowerVent Induced Draft Gas Water Heater with the Guardian System™

HoweVent



Available in 40 and 50 Gallon Models

- ▶ 6-Year Limited Tank and Parts Warranty*
- ▶ With ProtectionPlus™ the 6-Year Limited Tank Warranty Becomes 10 Years! SEE PAGE 52.

Guardian System™

- Air/fuel shut-off system offers double protection
- Maintenance free –no filter to clean

Flammable Vapor Detection Sensor

- Protective control system that disables the heater in the presence of flammable vapor accumulation

Flexible Venting Options

- Long venting lengths up to 100 feet
- PVC, ABS, or CPVC vent pipe options
- Vertical or horizontal termination

Plus...

- New Quiet Blower
- Self-Diagnostic System
- Environmentally Friendly Low NOx Burner
- High Altitude Compliant – Tall models are certified for applications up to 7,700 feet and short models up to 6,000 feet

- Self-Cleaning – EverKleen™ patented system fights sediment build-up
- Reduces fuel costs and provides more hot water
- Patented magnesium anode rod design incorporates a special resistor that protects the tank from corrosion for longer life
- Standard 110 volt electrical connection
- Exceeds National Appliance Energy Conservation Act (NAECA) and ASHRAE requirements
- * See Residential Warranty Information Brochure for complete warranty information.

Energy Factor and Average Annual Operating Costs based on D.O.E. (Department of Energy) test procedures. D.O.E. national average fuel rate natural gas 91¢/therm; LP \$1.23/gallon.



DESCRIPTION			FEATURES					ROUGHING IN DIMENSIONS (SHOWN IN INCHES)								ENERGY INFO	
TYP	GAL CAP	MODEL NUMBER	GAS INPUT IN THOUS. BTU/Hr		RECOVERY IN G.P.H. 90° RISE		FIRST HOUR DEL. G.P.H.	HT. TO TOP OF ASSEMBLY	TANK HT.	DIAM.	HT. TO GAS CONN. COIN.	WATER CONN. CTR.	HT. TO SIDE TAP VALVE	WATER CONN. SIDE	SHIP. WT. (LBS)	ENERGY FACTOR	AVG. ANN. OPER. COSTS
			NAT.	LP	NAT.	LP	NAT.									NAT.	NAT. GAS
TALL	40	42VP40FW	40	40	40.4	40.4	68	69-1/4	59	19-3/4	14	8	53-1/2	3/4	140	0.64	\$213
	50	42VP50FW	42	42	42.4	42.4	87	68-1/4	58	21-3/4	14	8	52-1/2	3/4	170	0.64	\$213
SHORT	40	42VP40SFW	36	34	36.4	34.3	71	61-1/2	50-1/2	20-1/4	14	8	44	3/4	152	0.64	\$213
	50	42VP50SFW	36	34	36.4	34.3	85	61-1/2	50-1/2	22-1/4	14	8	44	3/4	176	0.62	\$220

* Specify LP gas when ordering. Add "PF" suffix to the model number. Example 42VP40PFW.

VENTING INFORMATION FOR 2" VENTS

NUMBER OF 90° ELBOWS WITH VENT TERMINAL	NUMBER OF 45° ELBOWS	MINIMUM PIPE LENGTH REQ. (FT.)	MAXIMUM PIPE LENGTH (FT.)
One (1)	None	4.0	44.0
One (1)	One (1)	4.0	41.0
Two (2)	None	4.0	38.0
Two (2)	One (1)	4.0	35.0
Three (3)	None	4.0	32.0

For the 2" vent, one 90° elbow is approximately equal to 6 feet of pipe. One 45° elbow is approximately equal to 3 feet of pipe.

VENTING INFORMATION FOR 3" VENTS

NUMBER OF 90° ELBOWS WITH VENT TERMINAL	NUMBER OF 45° ELBOWS	MINIMUM PIPE LENGTH REQ. (FT.)	MAXIMUM PIPE LENGTH (FT.)
One (1)	None	5.0	95.0
One (1)	One (1)	5.0	92.5
Two (2)	None	5.0	90.0
Two (2)	One (1)	5.0	87.5
Three (3)	None	5.0	85.0
Three (3)	One (1)	5.0	82.5
Four (4)	None	5.0	80.0
Four (4)	One (1)	5.0	77.5
Five (5)	None	5.0	75.0

For the 3" vent, one 90° elbow is approximately equal to 5 feet of pipe. One 45° elbow is approximately equal to 2.5 feet of pipe.

Old Furnace Input Output
100K 80K

GAS FURNACES



DAVE LENNOX SIGNATURE® COLLECTION

Upflow / Horizontal - Variable Capacity - Variable Speed Blower

ENGINEERING DATA

Bulletin No. 210577

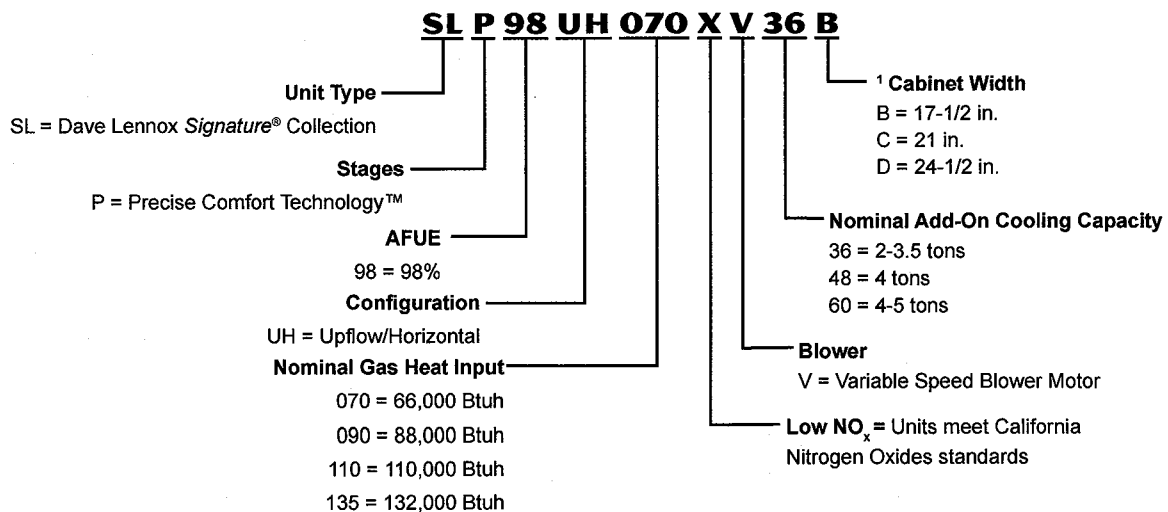
May 2011

Supersedes March 2011



AFUE - Up To 98.2%
Input - 66,000 to 132,000 Btuh
Nominal Add-on Cooling - 2 to 5 Tons

MODEL NUMBER IDENTIFICATION



¹ Indoor coils with the same letter designation will physically match the furnace.

FEATURES

CONTENTS

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WARRANTY

Duralok Plus™ Aluminized Steel Heat Exchanger - Limited lifetime warranty in residential applications (twenty year transferable), ten years in non-residential applications.

All Other Covered Components - Limited ten year warranty in residential applications, one year in non-residential applications.

Refer to Lennox Equipment Limited Warranty certificate included with equipment for details.

APPROVALS

Units are certified by AHRI.

Units tested and rated according to US DOE test procedures and FTC labeling regulations.

Blower data from unit tests conducted in Lennox Laboratory air test chamber.

Approved by the California Energy Commission and meets California Nitrogen Oxides (NOx) Standards.

ENERGY STAR® certified units are designed to use less energy, help save money on utility bills, and help protect the environment.

ISO 9001 Registered Manufacturing Quality System

APPLICATIONS

Input capacities of 66,000, 88,000, 110,000 and 132,000 Btuh.

Variable heat capacity in increments as small as 1% or as large as needed within minimum/maximum input range.

Energy efficiency up to (AFUE) 98.2%.

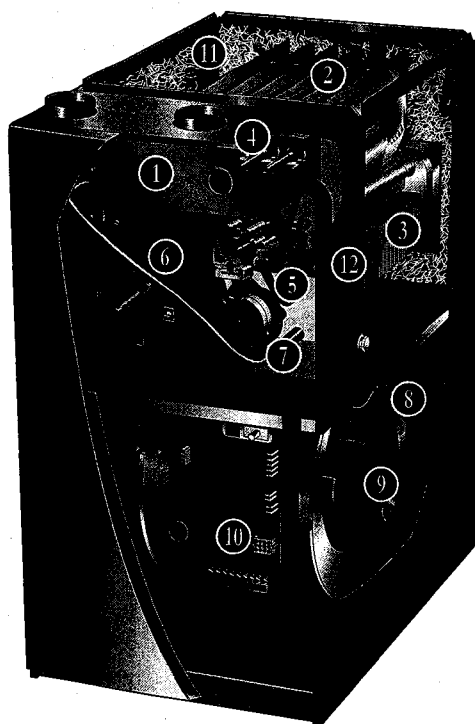
Compact cabinet for upflow, horizontal-right or horizontal-left applications without any internal modifications to the unit.

Variable speed blower ideal for zoning applications.

Lennox add-on indoor coils, high-efficiency air cleaners and humidifiers can easily be added to furnace.

Shipped factory assembled with controls installed and wired.

Each unit factory test operated to ensure proper operation.



Zoning Applications

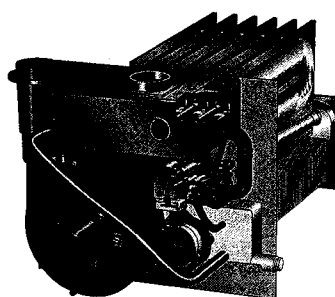
The SLP98UHV furnace is designed to work with the Lennox Harmony III™ zoning system with conventional thermostats. Zoning system provides direct feedback to the SLP98UHV, controlling both airflow and heat output to precisely match the comfort requirements for up to four zones.

HEATING SYSTEM

1 SilentComfort™ Technology

Patented burner sound enclosure and extra cabinet insulation reduces operating sound levels.

2 Lennox Duralok Plus™ Heat Exchanger Assembly



Lennox developed heat exchanger assembly consists of primary heat exchanger and secondary condenser coil assembly.

Main multi-pass crimped seam design clamshell type heat exchanger.

Constructed of heavy-gauge, aluminized steel.

Designed for normal expansion and contraction with maximum efficiency and minimum resistance to air flow.

3 Secondary heat exchanger condenser coil constructed of aluminum fins fitted to stainless steel tubes.

Coil is factory tested for leaks.

Condensate drain header box assembly located on front of coil.

Compact size of complete heat exchanger assembly permits low overall design of furnace cabinet.

FEATURES

HEATING SYSTEM (CONTINUED)

Heat exchanger assembly has been laboratory life cycle tested in excess of industry standards.

Lennox Designed Header Box

Header box on end of condenser coil collects flue condensate for disposal through condensate drains.

The drains are located on each side of the cabinet for easy field installation of condensate drain trap.

Only one drain is used, the other drain is sealed.

Condensate drain trap is included with the unit for field installation.

Lennox Designed Flue Condensate Trap Assembly

Condensate trap assembly is mounted outside the conditioned air stream.

Assembly can be mounted on either side of cabinet in upflow applications. Assembly is mounted below the cabinet in horizontal applications. See Dimension Drawing and Installation Instructions. Can also be mounted remotely (up to 5 ft. away) from unit.

90° street elbow furnished for ease of drain trap installation.

Drain connection can be made with field provided PVC pipe or PVC coupling.

Drain cap on trap allows easy cleaning and winterizing.

4 Inshot Burners

Aluminized steel inshot burners provide efficient, trouble-free operation.

Burner venturi mixes air and gas in correct proportion for proper combustion.

Burner assembly is removable from the unit as a single component for ease of service.

5 Variable Capacity Gas Control Valve

Variable capacity gas control valve adjusts capacity output in increments as small as 1% or as large as needed. 24 volt redundant combination valve combines manual shut off switch (On-Off), automatic electric valve (dual) and gas pressure regulation into a compact combination control.

Flame Rollout Switch

Manual reset switches are factory installed on burner box.

Switch provides protection from abnormal operating conditions.

SureLight® Hot Surface Ignitor

Tough, reliable, long-life, trouble-free performance.

Silicon nitride ignitor.

Cemented to steatite block for protection against current leakage.

Ignition leads are constructed of nickel plated copper and are enclosed in high temperature Teflon® insulation for dependable operation.

6 Variable Speed Combustion Air Inducer

Three-phase variable speed inducer motor is controlled by the SureLight Control.

Overload protected (auto-reset).

Heavy-duty blower prepurges heat exchanger and safely vents flue products.

Operates only during heating cycle.

7 Pressure Switches (Two-Stage)

Prove Combustion Air Inducer operation before allowing gas valve to open.

Limit Control

Automatic reset, primary limit is accurately located on vestibule panel on all units.

OPTIONS

High Altitude Pressure Switch Kit

Required for proper unit operation on installations above 7500 ft.

Natural Gas to LPG/Propane Conversion Kit

Required for field changeover from natural gas to LPG/Propane. Includes gas valve and orifices.

LPG/Propane to Natural Gas Conversion Kit

Required for field changeover from LPG/Propane to natural gas.

DIRECT VENT

Furnace can only be installed in Direct Vent (two pipe) applications. In Direct Vent applications, combustion air is supplied from outdoors and flue gases are discharged outdoors.

OPTIONS

Termination Kits

Facilitates installation of combustion air intake pipe and flue exhaust pipe.

Refer to venting table in this bulletin to determine pipe size needed and proper termination kit required.

See Optional Accessories table and dimension drawings.

Termination Kit - Concentric

2 or 3 inch kit contains concentric termination assembly, reducer bushing and 45° elbow.

2 inch kit for -070 model contains an outdoor exhaust accelerator.

Kit requires single hole penetration of roof or wall for installation.

Roof Termination Flashing Kit is available for use with 2 inch Kits.

CSA certified.

Termination Kit - Flush-Mount

Kit contains flush-mount termination, accelerator, mounting template and hardware.

Kit may be used with 2, 2-1/2 or 3 in. pipe.

DIRECT VENT (CONTINUED)

Termination Kits - Wall Assembly

Close Couple (US Only)

2 or 3 inch kit consists of close-couple, side-by-side PVC piping with galvanized steel wall cover plate for sealing and isolating piping penetration of the wall.

Piping spacing and length is sized for proper wall installations.

CSA certified.

Close Couple WTK (Canada Only)

2 or 3 inch kit contains one insulated faceplate, one insulated exhaust pipe, elbow and fittings.

Wall Ring

2 inch kit contains 2 stainless steel outside seal caps, 2 galvanized steel inside seal caps, 4 seal rings for the caps and 18 inch insulation sleeve for sealing and isolating intake and exhaust piping penetration of wall.

Maintain a maximum of 6 inches between the inlet and outlet openings in the installation of the pipes.

Roof Termination Flashing Kit

2 or 3 inch kit contains two neoprene rubber roof flashings for vertical venting through a roof.

Vent pipe and insulation not furnished.

Also available for use with 2 inch (use 3 inch flashing) Concentric Vent Termination Kits used in vertical venting rooftop applications.

BLOWER

Variable Speed Direct Drive Blower

Each blower assembly statically and dynamically balanced.

Change in blower speeds is easily accomplished by simple DIP switch changes on the SureLight control or on optional icomfort Touch™ Communicating Thermostat.

See Blower Performance tables.

- 8 Blower assembly easily removed for servicing.

9 Variable Speed Blower Motor

Variable speed motor maintains specified air volume from 0 though 0.8 in. w.g. (heating) and 0 through 1.0 in. w.g. (Cooling) static range.

Variable speed operation is achieved by the use of an ECM (Electronically Commutated Motor) motor.

Motor is controlled by the SureLight® Control.

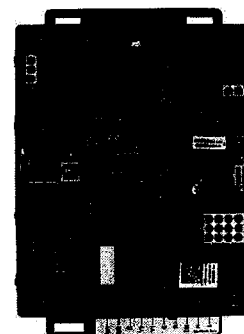
Motor is equipped with ball bearings and is resiliently mounted.

When furnaces are used with the Harmony III™ Zoning System with conventional thermostats (not the optional icomfort Touch™ Communicating Thermostat), blower motor operates from predetermined minimum - maximum air volumes to satisfy zone requirements.

10 CONTROLS

Surelight® Control (icomfort™ Compatible)

Advanced control communicates information about various operating parameters in the furnace to the optional **icomfort Touch™ Communicating Thermostat** to constantly maintain the highest level of comfort, performance and efficiency available.



Auto Configuration - On start-up the control automatically sends a description of the unit to the optional **icomfort Touch™ Communicating Thermostat** to automatically configure the number of stages and features available.

Connections for connecting a conventional heating/cooling thermostat are also provided on the control.

Control also features:

Innovative AirFlex™ technology allows custom blower settings based on the application.

Precise Comfort Technology™ automatically adjusts blower speed and heat input in increments as small as 1% or as large as needed for greater temperature control.

Variable-speed combustion air inducer is controlled by the Surelight Control. Prior to ignition, a pre-purge cycle for 15 seconds is initiated. After the main burners are turned off, a post-purge cycle for 20 seconds is run.

Thermostat Control - Designed to operate in a variable capacity mode. The unit will automatically adjust firing rate based on demand and changing conditions. For optimal performance, the use of a high-quality, digital two-stage thermostat with adjustable settings for first stage/second stage, on/off differentials and adjustable stage timers is recommended.

Furnace Input Staging Options

Thermostat Type	Input Staging Available
icomfort Touch™ Communicating Thermostat	Variable Capacity (increments as small as 1%)
	Four Stage (35, 60, 80, 100%)
Two-Stage (Conventional)	Variable Capacity (increments as small as 1%)
	Two-stage (70% and 100%)
Single-Stage (Conventional)	Three-Stage (35%, 70% and 100%)

SureLight® Ignition Control - Ignition control continuously monitors line voltage and maintains the igniter power at a constant level to provide consistent lighting and maximum igniter life.

CONTROLS (CONTINUED)

Safety Controls - Flame sensor utilizes flame rectification for safe and reliable operation.

Should flame fail to ignite, control will initiate 4 re-attempts at ignition before locking out unit operation for 60 minutes.

Watchguard type circuit automatically resets ignition controls after one hour of continuous thermostat demand after unit lockout, eliminating nuisance calls for service.

Display LED - Seven segment LED displays alphanumeric information related to diagnostics as well as system operation and status. Diagnostic codes are held in non-volatile memory, immune from power interruptions. Holds up to ten diagnostic codes in order of occurrence for recall on demand. Port on blower door allows for easy viewing.

DIP Switch Settings

(Note - DIP switches settings are not used with icomfort Touch™ Thermostat)

Select Thermostat used - Single-Stage or Two-Stage.

Select Operation Mode - Two-Stage, Three-Stage or Variable Capacity.

Two selectable second stage recognition times (7 and 12 minutes) are available on the control when the furnace is used with a single-stage thermostat. When used with a two-stage thermostat, furnace will only initiate second stage operation with a second stage thermostat demand.

Heating Speeds - A combination of DIP switch settings allow Normal, 7.5% increase, 15% increase, 7.5% decrease or 15% decrease motor speed selection within heating speed selected for fine tuning air volume. See Blower Performance tables.

Cooling Speeds - A combination of DIP switch settings allow Normal, 10% increase or 10% decrease motor speed selection within cooling speed selected for fine tuning air volume. See Blower Performance tables.

Blower Speed Ramping (Cooling Mode) - DIP switch settings allow one of four blower speed profiles during cooling operation.

Profile A (factory setting) - Motor runs at 50% for 30 seconds, then at 82% for 7-1/2 minutes, then at 100% (if needed) until demand is satisfied. Once demand is met, motor runs at 50% for 30 seconds, then ramps down to stop.

Profile B - Motor runs at 82% for 7-1/2 minutes and then at 100% (if needed) until demand is satisfied. Once demand is met, motor ramps down to stop.

Profile C - Motor runs at 100% until demand is satisfied. Once demand is met, motor runs at 100% for 60 seconds, then ramps down to stop.

Profile D - Motor runs at 100% until demand is satisfied. Once demand is met, motor ramps down to stop.

Dehumidification (Active or Humiditrol® Option) - A jumper on the control control must be clipped to enable active dehumidification and/or operation with a Humiditrol® Whole-Home Dehumidification System. A humidity controlling thermostat or device is also required. During a call for cooling, air volume is automatically reduced, forcing humidity removal by the air conditioner or heat pump system. After the humidity has reached the desired set-point the cooling air volume returns to its designed rate. A dehumidification signal from the thermostat reduces the cooling cfm to 70% of the requested cooling cfm.

Dual-Fuel Operation - A jumper on the control must be clipped to enable operation with a single or two-stage heat pump. The indoor blower is started without delay when a call for heat is received.

Two-Stage Compressor Operation - A jumper on the control must be clipped to enable operation with a two-stage compressor. The cooling blower speeds for first and second stage cooling will be dictated by the applicable DIP switch settings.

Lennox System Operations Monitor Connection - Monitors outdoor unit operation (communicating mode).

Blower On Time (Heating) - Blower on time is fixed at 45 seconds, blower off time is adjustable from 60, 90, 120 and 180 seconds (factory setting - 90 seconds).

Blower Off Time (Cooling) - For air-conditioning applications, blower on time is 2 seconds following thermostat demand for cooling.

Blower off delay is 30 seconds at 50% of high cool cfm.

Controls evaporator humidity by controlling blower and compressor speed on two-stage outdoor units when used with Lennox ComfortSense™ 7000 thermostat.

Continuous Blower Speed - Adjustable continuous blower speed is a percentage of the high cooling speed selection. There are four selectable options (via DIP switch settings) of 28%, 38% (default setting), 70% and 100%.

Accessory Terminals - Two accessory terminals furnished for additional power supply requirements for 120 volt (less than 1 amp) power humidifiers and powered air cleaners.

One 24 volt humidifier output furnished for non-powered humidifiers.

Control is factory installed in the unit control box.

24 Volt Transformer

Furnished and factory installed in control box.

40VA transformer has circuit breaker wired in series.

Field Wiring Make-up Box

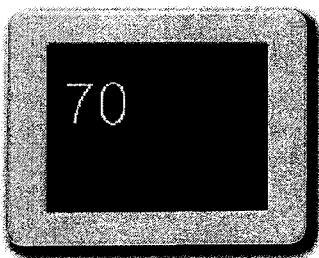
Furnished for line voltage wiring.

Factory installed internally on left side of furnace.

Box may be installed internally or externally on either side of furnace.

CONTROLS (CONTINUED)**OPTIONS****icomfort Touch™ Communicating Thermostat
(part of the icomfort™ Residential Communicating
Control System)**

The icomfort Touch™ communicating thermostat recognizes and connects to all icomfort™-enabled products to automatically configure and control the system (based on user-specified settings) for the highest level of comfort, performance and efficiency. Also recognizes model and serial number information for icomfort™-enabled products to simplify installation.



Large full color touchscreen - no hidden buttons or doors.

A simple easy-to-use menu-driven touchscreen allows complete system configuration. Scheduled maintenance alerts, system warnings and troubleshooting are also displayed in simple English on thermostat screen.

Conventional products (not icomfort™-enabled) can easily be added and controlled by the icomfort Touch™ Communicating Thermostat.

(NOTE - An icomfort™-enabled indoor unit (furnace or air handler) is required for proper operation with a conventional outdoor unit.)

A tabbed interface lists all programming options on the screen.

Installer setup screens allow quick and simple system configuration without a manual. Installer can also run tests on complete system or individual components for easy maintenance and troubleshooting.

Serial communications bus (RSBus), with less wiring than a conventional heating/cooling system, allows system communication. Uses 4-wire, 18-gauge standard thermostat wiring.

See the icomfort Touch™ Communicating Thermostat Engineering Handbook bulletin in the Controls section for more information.

ComfortSense® 7000 Touchscreen Thermostat

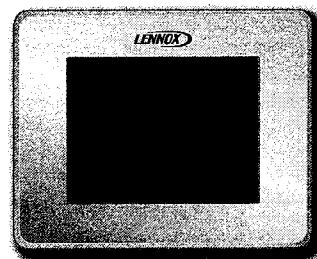
Electronic 7-day, universal, multi-stage, programmable, touchscreen thermostat.

4 Heat/2 Cool.

Auto-changeover.

Controls humidity during cooling mode.

Offers enhanced capabilities including humidification / dehumidification / dewpoint measurement and control, Humiditrol® control, and equipment maintenance reminders.



Easy-to-use, menu driven thermostat with a back-lit, LCD touchscreen.

Remote outdoor temperature sensor (optional) allows the thermostat to display outdoor temperature. Required in dual-fuel and Humiditrol® applications.

See the ComfortSense® 7000 Engineering Handbook bulletin in the Controls section for more information.

Thermostat

Thermostat (icomfort Touch™ Communicating Thermostat, or programmable/non-programmable) is not furnished with unit.

See Thermostat bulletins in Controls Section and Lennox Price Book for selection.

OPTIONS**Night Service Kit**

Contains most commonly used service parts:

- Furnace control
- Ignitor
- Flame sensor
- Gas valve
- Transformer
- Service Manual

FEATURES

CABINET

Low-profile, narrow width cabinet allows easy installation in upflow or horizontal applications.

Heavy-gauge, cold rolled steel construction.

Pre-painted cabinet finish.

Flanges provided on supply air opening for ease of plenum connection or alignment with indoor coil.

- 11 Fully insulated cabinet with foil faced insulation on sides and back of heating compartment and sealed mat faced insulation in blower compartment.

Sealed blower compartment. Inner blower compartment access panel seals blower compartment from air leakage.

Complete service access.

Safety interlock switch automatically shuts off power to unit when inner blower compartment access panel is removed.

- 12 Gas piping and electrical inlets are provided in both sides of cabinet.

Return Air Entry:

For bottom/end return-air entry, remove furnished bottom seal panel from cabinet.

For side return-air entry (upflow applications only), corners are marked on either side of cabinet for return air cut-outs.

On furnaces with side return air and condensate trap on the same side of the cabinet, a field fabricated transition or optional Return Air Base is required when using an IAQ product higher than 14-3/16 in. installed next to the unit and serviced from the front. IAQ products higher than 20 in. require a field fabricated transition. See dimension drawings.

NOTE - 60C and 60D size units that require air volumes over 1800 cfm must have one of the following:

1. Single side return air with transition, to accommodate 20 x 25 x 1 in. cleanable air filter, required to maintain proper air velocity.
2. Single side return air with optional Return Air Base.
3. Bottom return air.
4. Return air from both sides.
5. Bottom and one side return air.

See Blower Performance Tables for additional information.

Coil Match-up

All furnaces exactly match C33 and CX34 cased upflow indoor coils and CH33 horizontal indoor coils with same letter designation in model number. No adaptor required.

Engaging holes furnished on cabinet for alignment.

C33 uncased coils match furnaces without any overhang but require an optional adaptor base or field fabricated transition to match furnace opening. See C33 coil bulletin for additional information.

OPTIONS

Condensate Drain Heat Cable Kits

Self-limiting wattage heat cable prevents condensate drain from freezing in unconditioned areas.

Available in 6, 24 or 50 ft. lengths.

Heat Cable Tape:

66 ft. length, 1/2 in. wide fiberglass.

60 ft. length, 2 in. wide aluminum foil.

Crawl Space Vent Drain Kit

Allows venting through a crawl space for upflow and horizontal applications.

Includes 2 or 3 in. sanitary tee, 2 in. PVC assembly, PVC boot and clamp.

Horizontal Suspension Kit

Provides suspension of unit and coil in horizontal applications.

Allows complete service access.

Consists of corner mounted hanging brackets with vibration isolators, return air end support rail and hardware for assembly.

Metal hanging straps must be field provided.

Return Air Base

On furnaces with side return air and condensate trap on the same side of the cabinet, a field fabricated transition or Return Air Base is required when using an IAQ product higher than 14-3/16 in. installed next to the unit and serviced from the front.

IAQ products higher than 20 in. require a field fabricated transition.

Must be used for 60C and 60D models with air volumes over 1800 cfm in upflow applications when only one side return is required.

Cabinet is shipped flat for easy field assembly and is pre-painted steel to match the furnace.

Gasketed for tight seal.

See Dimension Drawing.

FEATURES

FILTER (NOT FURNISHED)

Filter and provisions for external mounting must be field provided.

OPTIONS

Air Filter and Rack Kit for Horizontal Return Air (End) Applications

Washable or vacuum cleanable polyurethane frame type filter and external end return air rack available for field installation.

Rack has filter door for easy filter servicing.

Flanges on rack allow easy duct connection.

See dimension drawing.

Air Filter and Rack Kit for Upflow Side Return Air

Applications - Not for use with Return Air Base

Washable or vacuum cleanable polyurethane frame type filter and external side return air rack available for field installation.

Available in single and ten pack kits.

Rack has filter door for easy filter servicing.

Flanges on rack allow easy duct connection.

Field installs on either side of unit cabinet. See dimension drawing.

INDOOR AIR QUALITY

See Indoor Air Quality section and Lennox Price Book for a complete list of indoor air quality products (air purification systems, high efficiency air filters and filter cabinets, UV lights, humidifiers, fresh air ventilation system and heat/energy recovery systems).

INSTALLATION CLEARANCES

Sides	¹ 0 inches (0 mm)
Rear	0 inches (0 mm)
Top/Plenum	1 inch (25 mm)
Front	0 inches (0 mm)
Front (service/alcove)	24 inches (610 mm)
Floor	² Combustible

NOTE - Air for combustion must conform to the methods outlined in the National Fuel Gas Code (NFPA 54/ANSI-Z223.1) or the National Standard of Canada CAN/CSA-B149.1 "Natural Gas and Propane Installation Code".

NOTE - In the U.S. flue sizing must conform to the methods outlined in the current National Fuel Gas Code (NFPA 54/ANSI-Z223.1) or applicable provisions of local building codes. In Canada flue sizing must conform to the methods outlined in National Standard of Canada CAN/CSA-B149.1.

¹ Allow proper clearances to accommodate condensate trap and vent pipe installation.

² Do not install the furnace directly on carpeting, tile, or other combustible materials other than wood flooring.

SPECIFICATIONS

Gas Heating Performance	Model No.	SLP98UH070XV36B	SLP98UH090XV36C	SLP98UH090XV48C
	¹ AFUE	97.0%	98.0%	97.5%
Maximum	Input - Btuh	66,000	88,000	88,000
	Output - Btuh	64,000	85,000	85,000
	Temperature rise range - °F	50 - 80	60 - 90	50 - 80
	Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	3.5 / 10.0	3.5 / 10.0	3.5 / 10.0
	Minimum			
	Input - Btuh	23,000	31,000	31,000
	Output - Btuh	22,000	30,000	30,000
	Temperature rise range - °F	35 - 65	35 - 65	35 - 65
	Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	0.5 / 1.5	0.5 / 1.5	0.5 / 1.5
	High static - in. w.g.	0.8	0.8	0.8
Connections in.	Intake / Exhaust Pipe (PVC)	2 / 2	2 / 2	2 / 2
	Gas pipe size IPS	1/2	1/2	1/2
	Condensate Drain Trap (PVC pipe) - i.d.	1/2	1/2	1/2
	with furnished 90° street elbow with field supplied (PVC coupling) - o.d.	1/2 slip x 1/2 Mipt 1/2 slip x 1/2 NPT	1/2 slip x 1/2 Mipt 1/2 slip x 1/2 NPT	1/2 slip x 1/2 Mipt 1/2 slip x 1/2 NPT
Indoor Blower	Wheel nominal diameter x width - in.	10 x 9	10 x 9	11 x 11
	Motor output - hp	1/2	1/2	3/4
	Tons of add-on cooling	2 - 3	2 - 3.5	2.5 - 4
	Air Volume Range - cfm	339 - 1365	520 - 1360	528 - 1770
Electrical Data	Voltage (Maximum Amps)	120 volts - 60 hertz - 1 phase		
	Blower motor full load amps	7.7	7.7	10.1
	Maximum overcurrent protection	15	15	15
Shipping Data	lbs. - 1 package	138	155	165

NOTE - Filters and provisions for mounting are not furnished and must be field provided.

¹ Annual Fuel Utilization Efficiency based on DOE test procedures and according to FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.

SPECIFICATIONS

Gas Heating Performance	Model No.	SLP98UH090XV60C	SLP98UH110XV60C	SLP98UH135XV60D
	¹ AFUE	98.2%	97.5%	97.5%
Maximum	Input - Btuh	88,000	110,000	132,000
	Output - Btuh	85,000	106,000	128,000
	Temperature rise range - °F	50 - 80	50 - 80	55 - 85
	Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	3.5 / 10.0	3.5 / 10.0	3.5 / 10.0
	Minimum			
	Input - Btuh	31,000	39,000	46,000
	Output - Btuh	30,000	38,000	45,000
	Temperature rise range - °F	35 - 65	35 - 65	35 - 65
	Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	0.5 / 1.5	0.5 / 1.5	0.5 / 1.5
	High static - in. w.g.	0.8	0.8	0.8
Connections in.	Intake / Exhaust Pipe (PVC)	2 / 2	2 / 2	2 / 2
	Gas pipe size IPS	1/2	1/2	1/2
	Condensate Drain Trap (PVC pipe) - i.d.	1/2	1/2	1/2
	with furnished 90° street elbow with field supplied (PVC coupling) - o.d.	1/2 slip x 1/2 Mipt 1/2 slip x 1/2 NPT	1/2 slip x 1/2 Mipt 1/2 slip x 1/2 NPT	1/2 slip x 1/2 Mipt 1/2 slip x 1/2 NPT
Indoor Blower	Wheel nominal diameter x width - in.	11 x 11	11 x 11	11 x 11
	Motor output - hp	1	1	1
	Tons of add-on cooling	3 - 5	3 - 5	3.5 - 5
	Air Volume Range - cfm	375 - 2195	554 - 2125	634 - 2190
Electrical Data	Voltage (Maximum Amps)	120 volts - 60 hertz - 1 phase		
	Blower motor full load amps	12.8	12.8	12.8
	Maximum overcurrent protection	20	20	20
Shipping Data	lbs. - 1 package	165	175	190

NOTE - Filters and provisions for mounting are not furnished and must be field provided.

¹ Annual Fuel Utilization Efficiency based on DOE test procedures and according to FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

			"B" Width Models	"C" Width Models	"D" Width Models
CABINET ACCESSORIES					
Horizontal Suspension Kit - Horizontal only			51W10	51W10	51W10
Return Air Base - Upflow only			50W98	50W99	51W00
CONDENSATE DRAIN KITS					
Condensate Drain Heat Cable	6 ft.		26K68	26K68	26K68
	24 ft.		26K69	26K69	26K69
	50 ft.		26K70	26K70	26K70
Heat Cable Tape	Fiberglass - 1/2 in. x 66 ft.		36G53	36G53	36G53
	Aluminum foil - 2 in. x 60 ft.		16P89	16P89	16P89
Crawl Space Vent Drain Kit			51W18	51W18	51W18
CONTROLS					
icomfort Touch™ Communicating Thermostat			49W95	49W95	49W95
¹ Remote Outdoor Temperature Sensor (for dual fuel and Humiditrol®)			X2658	X2658	X2658
² Discharge Temperature Sensor			88K38	88K38	88K38
ComfortSense® 7000 Thermostat			Y2081	Y2081	Y2081
³ Remote Outdoor Temperature Sensor (for dual fuel and Humiditrol)			X2658	X2658	X2658
FILTER KITS					
⁴ Air Filter and Rack Kit	Horizontal (end)	Size of filter - in.	87L96 - 18 x 25 x 1	87L97 - 20 x 25 x 1	87L98 - 25 x 25 x 1
	Side Return	Single	44J22	44J22	44J22
		Ten Pack	66K63	66K63	66K63
			Size of filter - in.	16 x 25 x 1	16 x 25 x 1
NIGHT SERVICE KITS					
Night Service Kit			65W78	65W78	65W78
TERMINATION KITS					
Direct Vent Applications Only. See Installation Instructions for specific venting information.					
Termination Kits	Concentric	US - 2 in.	71M80	69M29	---
		3 in.	---	60L46	60L46
		Canada - 2 in.	44W92	44W92	---
		3 in.	---	44W93	44W93
	Flush-Mount	2, 2-1/2 or 3 in.	51W11	51W11	51W11
	Wall - Close Couple	US - 2 in.	22G44	---	---
		3 in.	44J40	44J40	44J40
	Wall - Close Couple WTK	Canada - 2 in.	30G28	---	---
		3 in.	81J20	81J20	81J20
	Roof	2 in.	15F75	15F75	---
	Wall Ring Kit	2 in.	15F74	15F74	---
Roof Termination Flashing Kit (2 flashings)			44J41	44J41	44J41

¹ Remote Outdoor Sensor may be used with an icomfort™-enabled outdoor unit for a secondary (alternate) sensor reading. Sensor may also be used with a conventional outdoor unit.

² Optional for service diagnostics.

³ Remote Outdoor Temperature Sensor for ComfortSense 7000 Thermostat must be connected directly to the thermostat. Do not connect it to the icomfort™ control.

⁴ Cleanable polyurethane frame type filter.

NOTE - Termination Kits 44W92, 44W93, 30G28, 81J20 are certified to ULC S636 standard for use in Canada only.

GAS HEAT ACCESSORIES

Input	High Altitude Pressure Switch Kit	Natural Gas to LPG/Propane Kit	LPG/Propane to Natural Gas Kit
	7501 - 10,000 ft.	0 - 10,000 ft.	0 - 10,000 ft.
All models	80W69	65W77	70W87

TERMINATION KITS USAGE

Input Size	Vent Pipe Diameter in.	Concentric Terminations			Standard Terminations					
		Concentric Kits			Close Couple Kits		Wall Ring Kit	Flush Mount kit	Outdoor Exhaust Accelerator (Diameter X Length) For use with Close Couple and Wall Ring Kits	
		2 in.		3 in.	2 in.	3 in.	2 in.	2, 2-1/2 or 3 in.	1-1/2 x 12 in.	2 x 12 in.
		³ 71M80 ^{3, 4} 44W92	69M29	60L46 ⁴ 44W93	22G44 ⁴ 30G28	44J40 ⁴ 81J20	15F74	51W11	Field Provided	
070	2	Yes	---	---	Yes	¹ Yes	Yes	Yes	Yes	---
	2-1/2	Yes	---	---	Yes	¹ Yes	Yes	Yes	Yes	---
	3	Yes	---	---	Yes	¹ Yes	Yes	Yes	Yes	---
090	2	---	Yes	Yes	---	Yes	² Yes	Yes	---	Yes
	2-1/2	---	Yes	Yes	---	Yes	² Yes	Yes	---	Yes
	3	---	Yes	Yes	---	Yes	² Yes	Yes	---	Yes
110	2-1/2	---	Yes	Yes	---	Yes	---	Yes	---	Yes
	3	---	Yes	Yes	---	Yes	---	Yes	---	Yes
135	3	---	---	Yes	---	Yes	---	Yes	---	Yes

¹ Requires field provided 1-1/2 in. outdoor exhaust accelerator.

² Requires field provided 2 in. outdoor exhaust accelerator.

³ Concentric Kits 71M80 and 44W92 include 1-1/2 in. outdoor exhaust accelerator, required when used with 070 input models. Accelerator is not used with 090, 110, 135 input models.

⁴ Termination Kits 44W92, 44W93, 30G28, 81J20 are certified to ULC S636 standard for use in Canada only.

VENT LENGTHS - FEET**STANDARD TERMINATION AT ELEVATION 0 - 7500 ft.**

	Pipe Size Input	2 in.				2-1/2 in.				3 in.			
		070	090	110	135	070	090	110	135	070	090	110	135
No. of 90 ELL	1	91	69	N/A	N/A	140	93	43	N/A	162	143	118	114
	2	86	64	N/A	N/A	135	88	38	N/A	157	138	113	109
	3	81	59	N/A	N/A	130	83	33	N/A	152	133	108	104
	4	76	54	N/A	N/A	125	78	28	N/A	147	128	103	99
	5	71	49	N/A	N/A	120	73	23	N/A	142	123	98	94
	6	66	44	N/A	N/A	115	68	18	N/A	137	118	93	89
	7	61	39	N/A	N/A	110	63	13	N/A	132	113	88	84
	8	56	34	N/A	N/A	105	58	N/A	N/A	127	108	83	79
	9	51	29	N/A	N/A	100	53	N/A	N/A	122	103	78	74
	10	46	24	N/A	N/A	95	48	N/A	N/A	117	98	73	69

STANDARD TERMINATION AT ELEVATION 7501 - 10,000 ft.

	Pipe Size Input	2 in.				2-1/2 in.				3 in.			
		070	090	110	135	070	090	110	135	070	090	110	135
No. of 90 ELL	1	66	44	N/A	N/A	115	68	N/A	N/A	137	118	93	89
	2	61	39	N/A	N/A	110	63	N/A	N/A	132	113	88	84
	3	56	34	N/A	N/A	105	58	N/A	N/A	127	108	83	79
	4	51	29	N/A	N/A	100	53	N/A	N/A	122	103	78	74
	5	46	24	N/A	N/A	95	48	N/A	N/A	117	98	73	69
	6	41	19	N/A	N/A	90	43	N/A	N/A	112	93	68	64
	7	36	14	N/A	N/A	85	38	N/A	N/A	107	88	63	59
	8	31	N/A	N/A	N/A	80	33	N/A	N/A	102	83	58	54
	9	26	N/A	N/A	N/A	75	28	N/A	N/A	97	78	53	49
	10	21	N/A	N/A	N/A	70	23	N/A	N/A	92	73	48	44

CONCENTRIC TERMINATION ELEVATION 0 - 7500 ft.

	Pipe Size Input	2 in.				2-1/2 in.				3 in.			
		070	090	110	135	070	090	110	135	070	090	110	135
No. of 90 ELL	1	83	67	N/A	N/A	130	89	39	N/A	146	139	114	105
	2	78	62	N/A	N/A	125	84	34	N/A	141	134	109	100
	3	73	57	N/A	N/A	120	79	29	N/A	136	129	104	95
	4	68	52	N/A	N/A	115	74	24	N/A	131	124	99	90
	5	63	47	N/A	N/A	110	69	19	N/A	126	119	94	85
	6	58	42	N/A	N/A	105	64	14	N/A	121	114	89	80
	7	53	37	N/A	N/A	100	59	N/A	N/A	116	109	84	75
	8	48	32	N/A	N/A	95	54	N/A	N/A	111	104	79	70
	9	43	27	N/A	N/A	90	49	N/A	N/A	106	99	74	65
	10	38	22	N/A	N/A	85	44	N/A	N/A	101	94	69	60

CONCENTRIC TERMINATION ELEVATION 7501 - 10,000 ft.

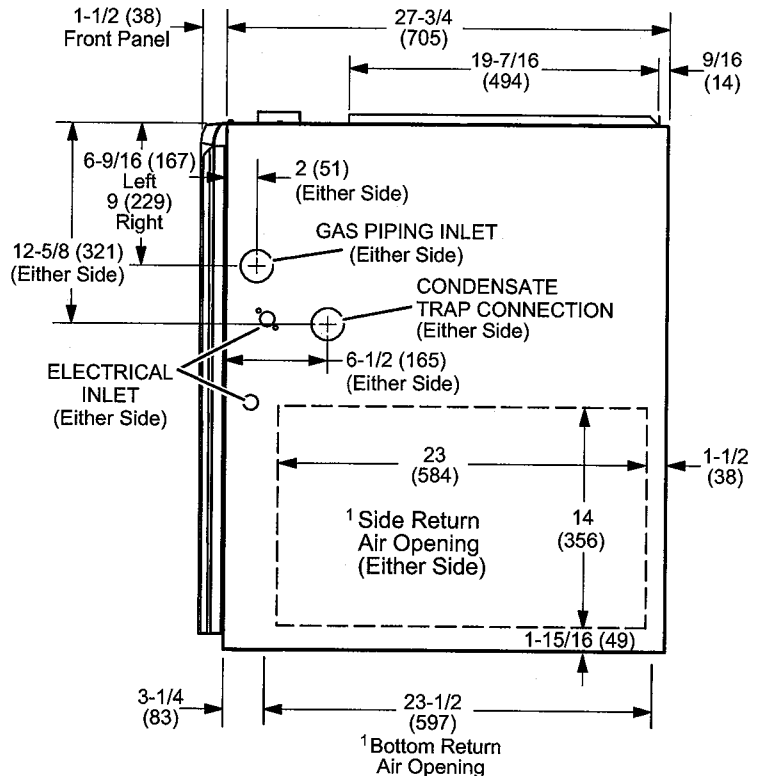
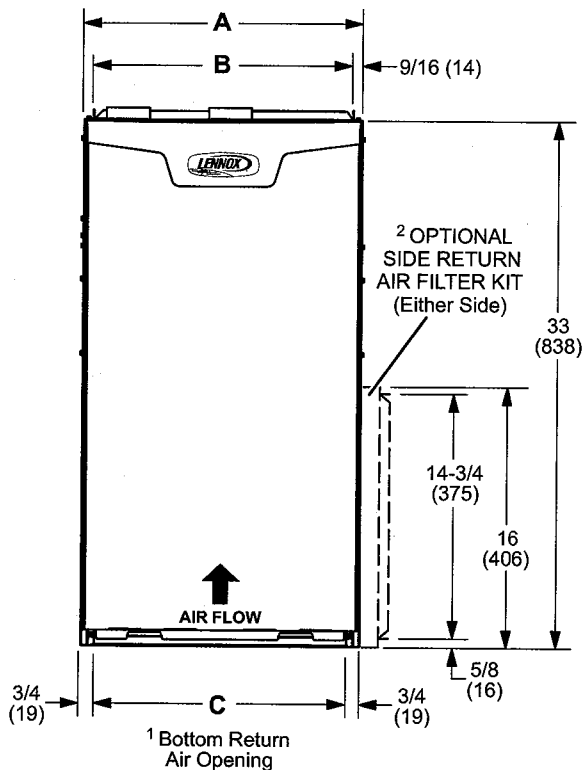
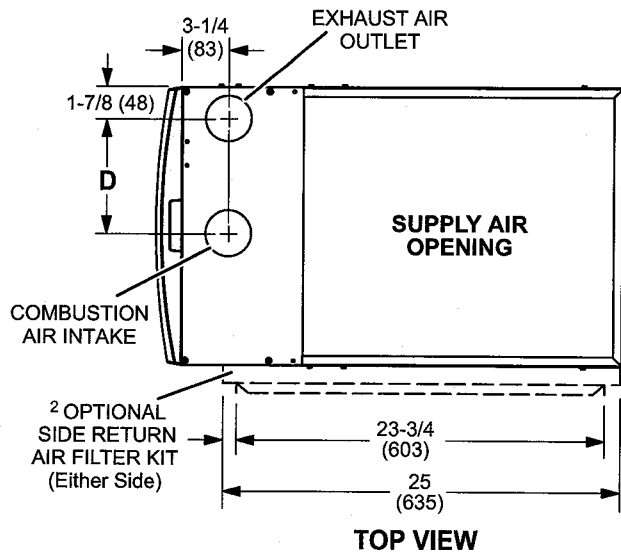
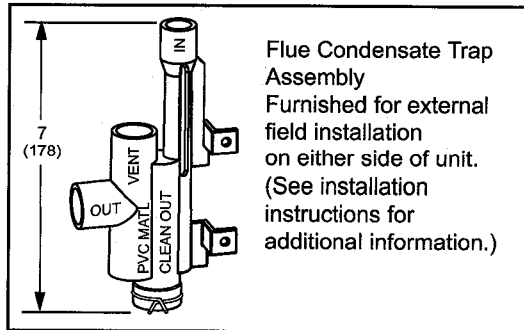
	Pipe Size Input	2 in.				2-1/2 in.				3 in.			
		070	090	110	135	070	090	110	135	070	090	110	135
No. of 90 ELL	1	58	42	N/A	N/A	105	64	N/A	N/A	121	114	89	80
	2	53	37	N/A	N/A	100	59	N/A	N/A	116	109	84	75
	3	48	32	N/A	N/A	95	54	N/A	N/A	111	104	79	70
	4	43	27	N/A	N/A	90	49	N/A	N/A	106	99	74	65
	5	38	22	N/A	N/A	85	44	N/A	N/A	101	94	69	60
	6	33	17	N/A	N/A	80	39	N/A	N/A	96	89	64	55
	7	28	12	N/A	N/A	75	34	N/A	N/A	91	84	59	50
	8	23	N/A	N/A	N/A	70	29	N/A	N/A	86	79	54	45
	9	18	N/A	N/A	N/A	65	24	N/A	N/A	81	74	49	40
	10	13	N/A	N/A	N/A	60	19	N/A	N/A	76	69	44	35

DIMENSIONS - INCHES (MM) - UPFLOW POSITION

¹ NOTE - 60C and 60D size units that require second stage air volumes over 1800 cfm must have one of the following:

1. Single side return air with transition, to accommodate 20 x 25 x 1 in. cleanable air filter. Required to maintain proper air velocity.
 2. Single side return air with Optional Return Air Base
 3. Bottom return air.
 4. Return air from both sides.
 5. Bottom and one side return air.
- See Blower Performance Tables for additional information.

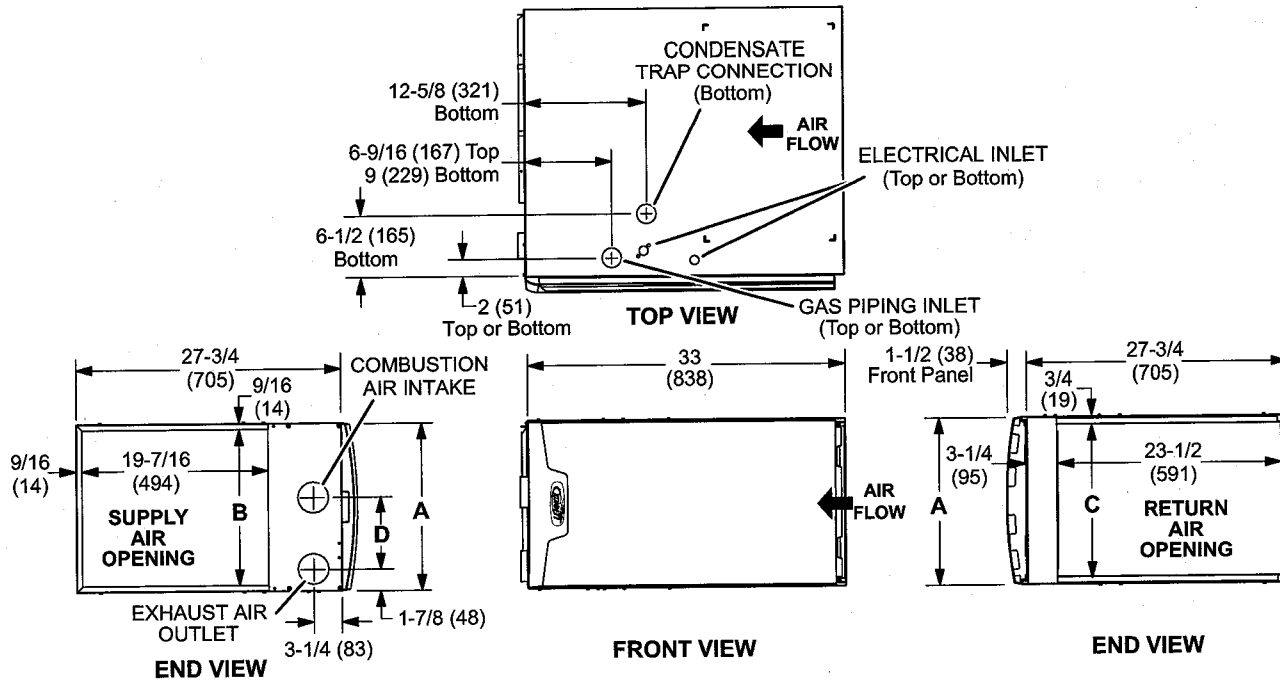
² Optional Side Return Air Filter Kit is not for use with the Optional Return Air Base.



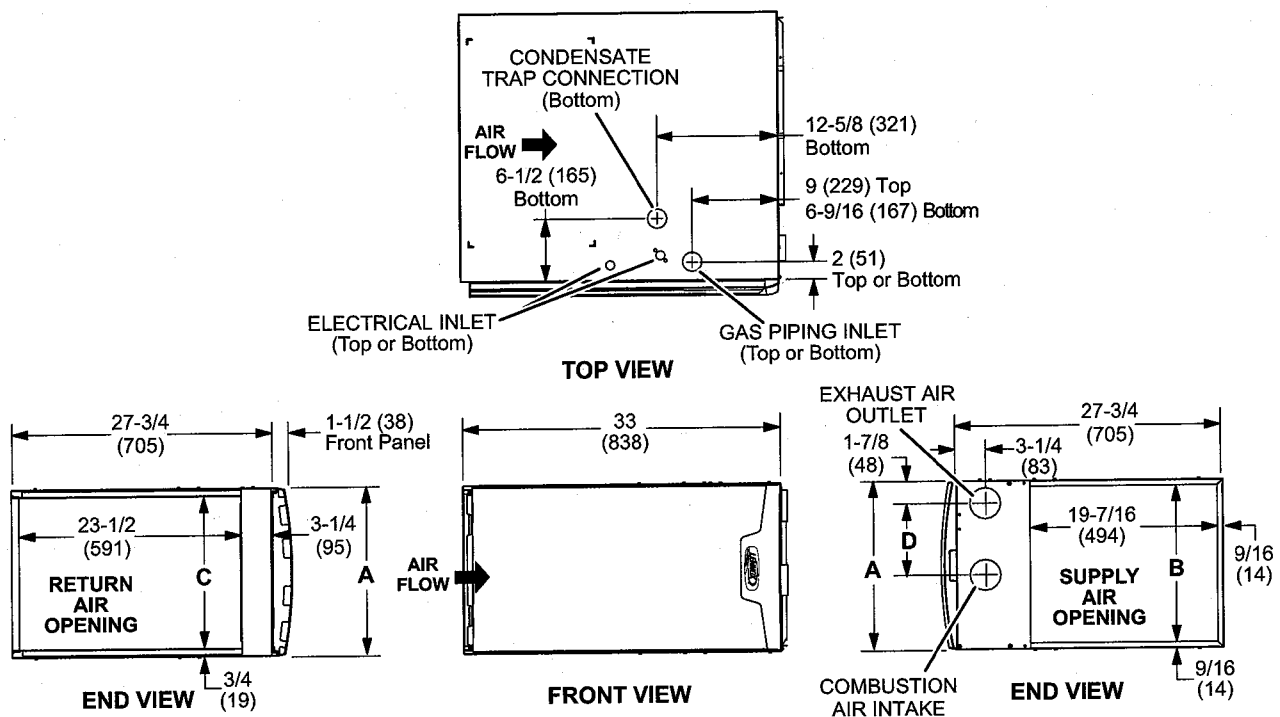
Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
SLP98UH070XV36B	17-1/2	446	16-3/8	416	16	406	7-5/8	194
SLP98UH090XV36C	21	533	19-7/8	505	19-1/2	495	9-3/8	238
SLP98UH090XV48C								
SLP98UH090XV60C								
SLP98UH110XV60C								
SLP98UH135XV60D	24-1/2	622	23-3/8	594	23	584	11-1/8	283

DIMENSIONS - INCHES (MM) - HORIZONTAL POSITION

LEFT-HAND AIR DISCHARGE



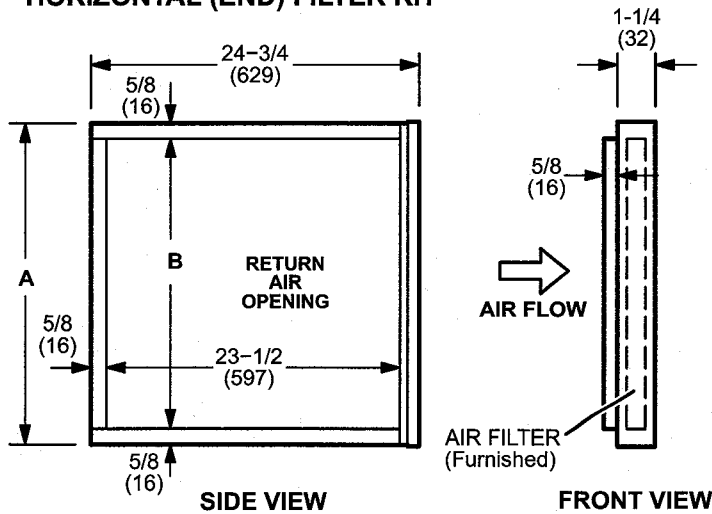
RIGHT-HAND AIR DISCHARGE



Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
SLP98UH070XV36B	17-1/2	446	16-3/8	416	16	406	7-5/8	194
SLP98UH090XV36C	21	533	19-7/8	505	19-1/2	495	9-3/8	238
SLP98UH090XV48C								
SLP98UH090XV60C								
SLP98UH110XV60C	24-1/2	622	23-3/8	594	23	584	11-1/8	283
SLP98UH135XV60D								

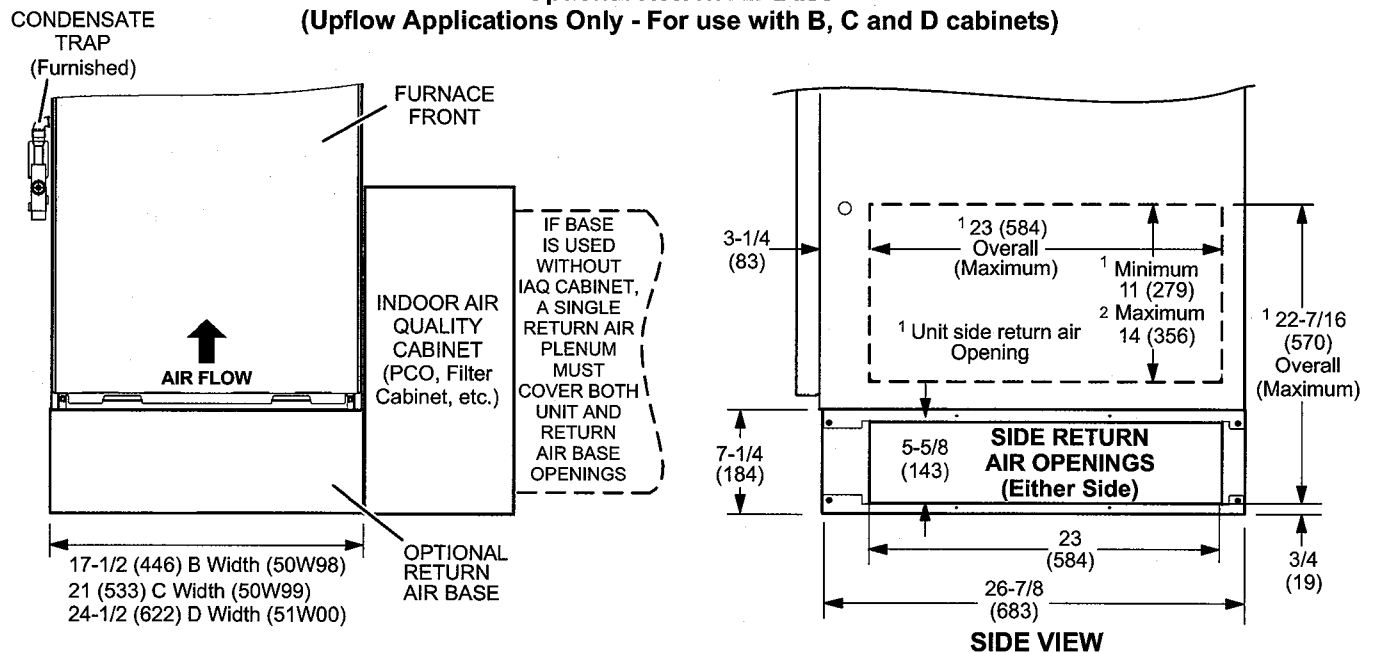
OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)

HORIZONTAL (END) FILTER KIT



Furnace Cabinet Width	Catalog Number	A		B	
		in.	mm	in.	mm
B	87L96	18	457	16-3/4	425
C	87L97	21	533	18-3/4	476
D	87L98	25	635	23-3/4	603

Optional Return Air Base (Upflow Applications Only - For use with B, C and D cabinets)



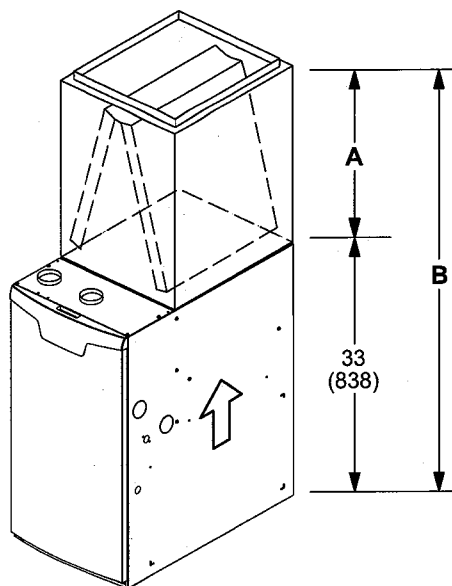
NOTE- Optional Side Return Air Filter Kits are not for use with Optional Return Air Base.

¹ Both the unit return air opening and the base return air opening must be covered by a single plenum or IAQ cabinet. Minimum unit side return air opening dimensions for units requiring 1800 cfm or more of air (W x H): 23 x 11 in. (584 x 279 mm). The opening can be cut as needed to accommodate plenum or IAQ cabinet while maintaining dimensions shown. Side return air openings must be cut in the field. There are cutting guides stenciled on the cabinet for the side return air opening. The size of the opening must not extend beyond the markings on the furnace cabinet.

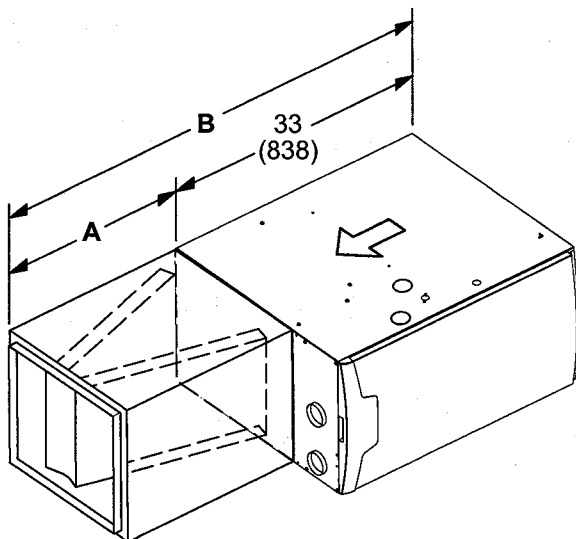
² To minimize pressure drop, the largest opening height possible, up to 14 in. (356 mm), is preferred.

DIMENSIONS - INCHES (MM) - FURNACE/COIL COMBINED DIMENSIONS

UPFLOW POSITION



Model No		Cased				Uncased (CX34 - cased only)			
		A		B		A		B	
CX34	C33	in.	mm	in.	mm	in.	mm	in.	mm
---	C33-18A	12-1/2	318	45-1/2	1156	9-3/4	248	42-3/4	1086
CX34-19A-6F	C33-19A	16-1/2	419	49-1/2	1257	9-3/4	248	42-3/4	1086
---	C33-24A	16-1/2	419	49-1/2	1257	14	356	47	1194
CX34-18/24A-6F	C33-24B	16-1/2	419	49-1/2	1257	13-7/8	352	46-7/8	1191
CX34-18/24B-6F	C33-24C								
CX34-18/24C-6F									
CX34-25A-6F	C33-25A	18-1/2	470	51-1/2	1308	16-1/4	413	49-1/4	1251
CX34-25B-6F	C33-25B	18-1/2	470	51-1/2	1308	15-7/8	403	48-7/8	1241
CX34-30B-6F	C33-30B	20-1/2	521	53-1/2	1359	17-3/4	451	50-3/4	1289
CX34-30C-6F	C33-30C								
CX34-30A-6F	C33-30A	20-1/2	521	53-1/2	1359	18	457	51	1295
CX34-31A-6F	C33-31A	22-1/2	572	55-1/2	1410	21-1/4	540	54-1/4	1378
CX34-31B-6F	C33-31B	22-1/2	572	55-1/2	1410	20-1/4	514	53-1/4	1353
CX34-36A-6F	C33-36A	24-1/2	622	57-1/2	1461	22-1/8	562	55-1/8	1400
CX34-36B-6F	C33-36B	24-1/2	622	57-1/2	1461	21-7/8	556	54-7/8	1394
CX34-36C-6F	C33-36C	24-1/2	622	57-1/2	1461	21-1/4	540	54-1/4	1378
CX34-38A-6F	C33-38A	24-1/2	622	57-1/2	1461	22-1/4	565	55-1/4	1403
CX34-38B-6F	C33-38B	24-1/2	622	57-1/2	1461	22	559	55	1397
CX34-42B-6F	C33-42B	24-1/2	622	57-1/2	1461	21-7/8	556	54-7/8	1394
CX34-43B-6F	C33-43B	27-1/2	699	60-1/2	1537	26-1/4	667	59-1/4	1505
CX34-43C-6F	C33-43C	27-1/2	699	60-1/2	1537	25-3/4	654	58-3/4	1492
---	C33-44C	24-1/2	622	57-1/2	1461	21-1/2	546	54-1/2	1384
CX34-44/48B-6F	C33-48B	24-1/2	622	57-1/2	1461	22-1/8	562	55-1/8	1400
CX34-44/48C-6F	C33-48C	24-1/2	622	57-1/2	1461	21-1/2	546	54-1/2	1384
CX34-49C-6F	C33-49C	29-1/2	749	62-1/2	1588	28-1/2	724	61-1/2	1562
CX34-50/60C-6F	C33-50/60C	27-1/2	699	60-1/2	1537	24-3/4	629	57-3/4	1467
CX34-60D-6F	C33-60D	25-1/2	648	58-1/2	1486	24-3/4	629	57-3/4	1467
CX34-62C-6F	C33-62C	31-1/2	800	64-1/2	1638	30-5/8	778	63-5/8	1616
CX34-62D-6F	C33-62D	29-1/2	749	62-1/2	1588	28-3/4	730	61-3/4	1568

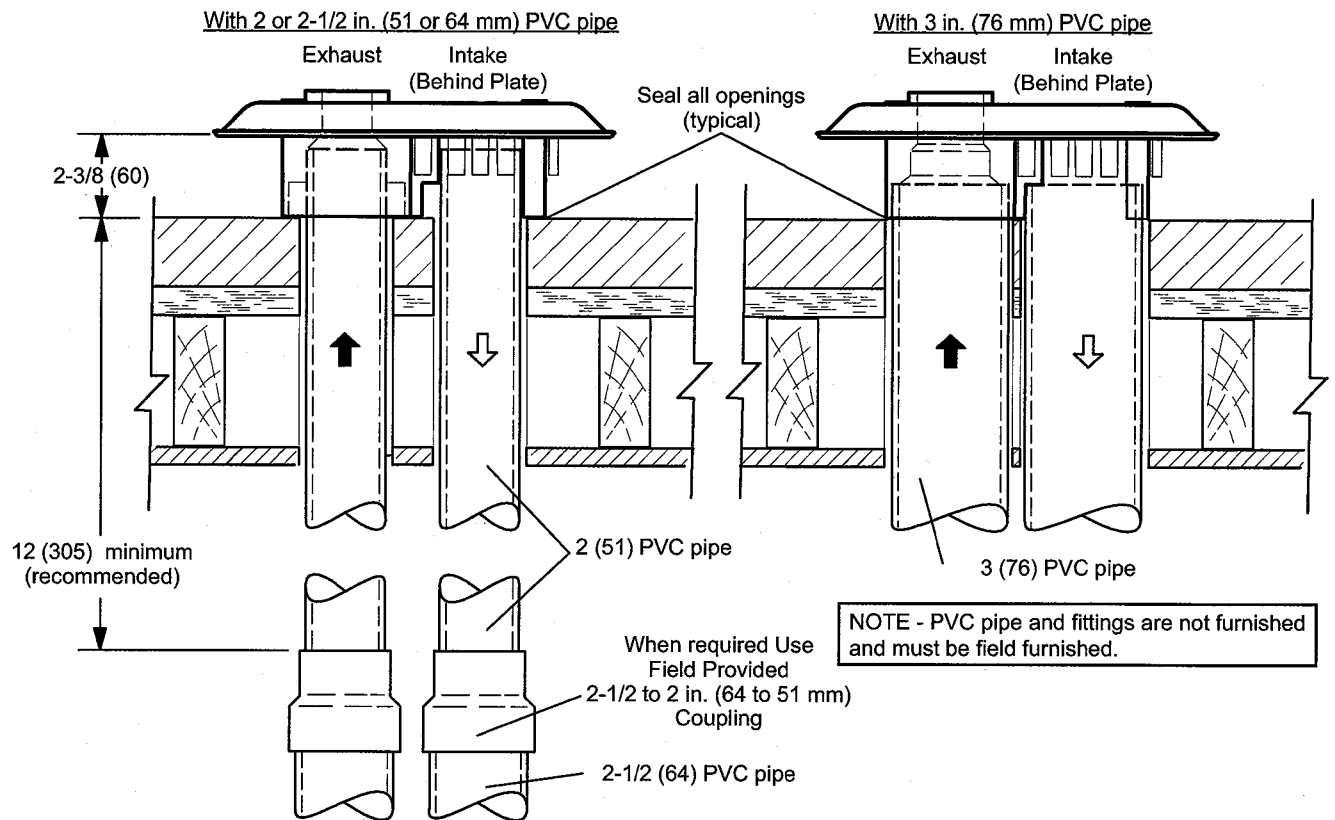
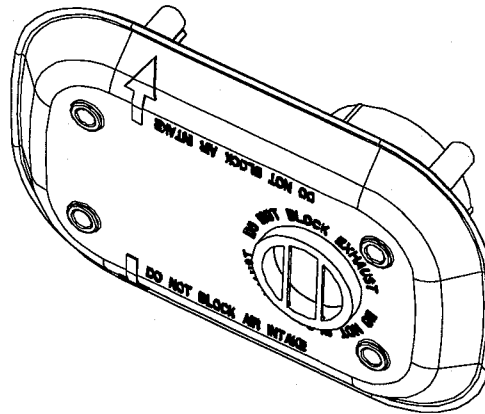


HORIZONTAL POSITION

Model Number		A		B	
		in.	mm	in.	mm
CH33-18A-2F		21-1/2	546	54-1/2	1384
CH33-24/30A-2F	CH33-42B-2F	26-1/2	673	59-1/2	1511
CH33-36A-2F	CH33-48C-2F				
CH33-36B-2F	CH33-60D-2F				
CH33-36C-2F					
CH33-44/48B-2F	CH33-62D-2F	31-1/2	800	64-1/2	1638
CH33-50/60C-2F					

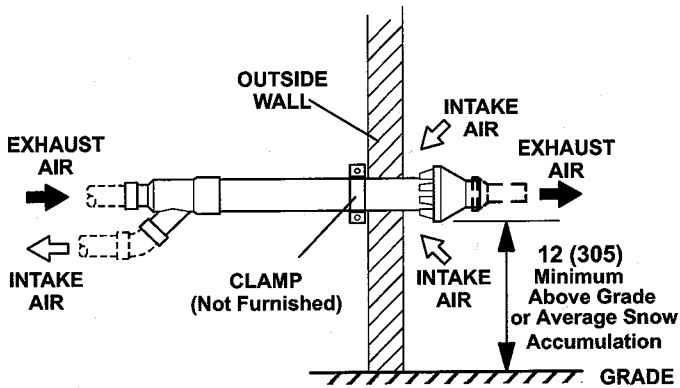
OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)

FLUSH-MOUNT VENT TERMINATION KIT (51W11)

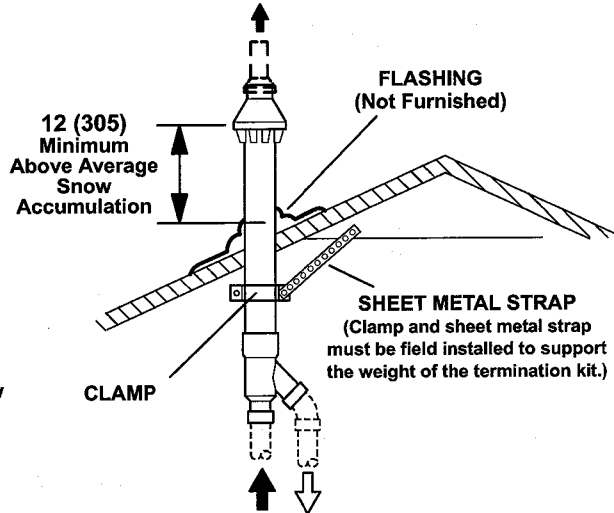


OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)

CONCENTRIC WALL TERMINATION APPLICATIONS



CONCENTRIC ROOF TERMINATION APPLICATIONS

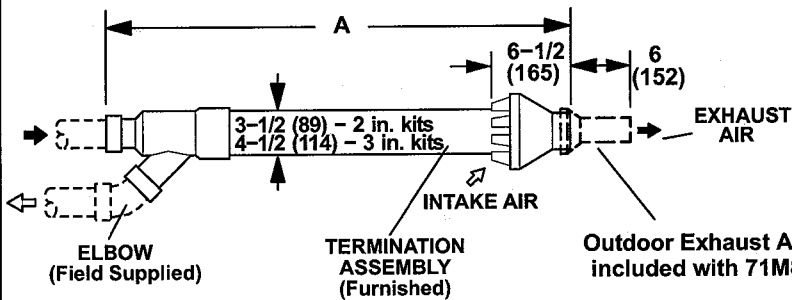


71M80 / 69M29 / 44W92 – 2 inch kits

60L46 / 44W93 – 3 inch kits

See Installation Instructions for additional information.

Note - Field provided reducer may be required to adapt larger vent pipe size to termination.



Cat. No.	A		B	
	in.	mm	in.	mm
71M80 69M29	33-3/8	848	16-3/4	425
44W92 (Canada)	29	737	15-1/2	394
60L46	38-7/8	987	21-3/16	538
44W93 (Canada)	36-1/8	918	19-1/2	495

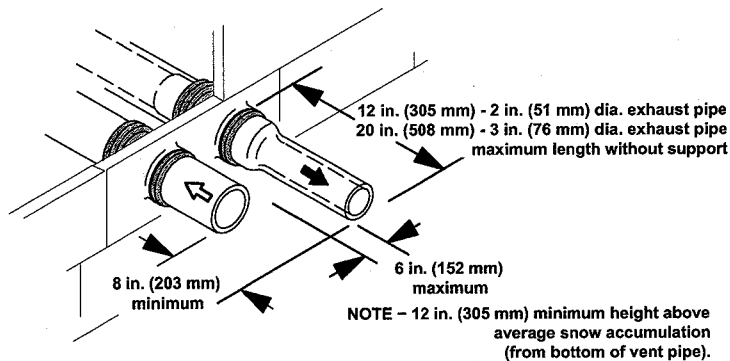
NOTE - Typical illustration for dimensions only. Design may vary depending on kit ordered.

WALL ASSEMBLY TERMINATION KIT – RING KIT 15F74 – 2 inch (51 mm)

See Installation Instructions for additional information.

Note - Field provided reducer may be required to adapt larger vent pipe size to termination.

DIRECT VENT APPLICATION



OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)

WALL TERMINATION KITS (CLOSE-COUPLE) EXTENDED VENT FOR GRADE CLEARANCE

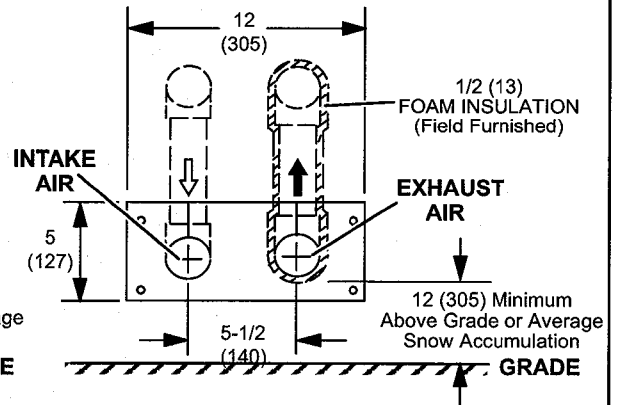
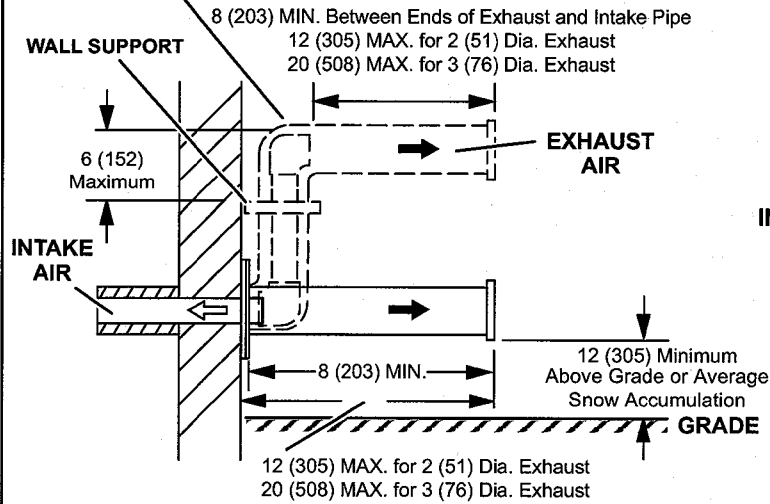
2 inch (51 mm) 22G44 (US)

3 inch (76 mm) 44J40 (US)

See Installation Instructions for additional information.

Note - Field provided reducer may be required to adapt larger vent pipe size to termination.

If Intake and Exhaust Pipe is less than 12 in. (305 mm) above snow accumulation or other obstructions, field fabricated piping must be installed.



WALL TERMINATION KITS (CLOSE-COUPLE) EXTENDED VENT FOR GRADE CLEARANCE

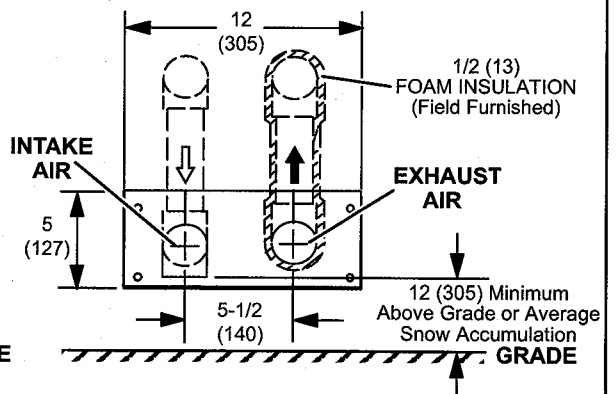
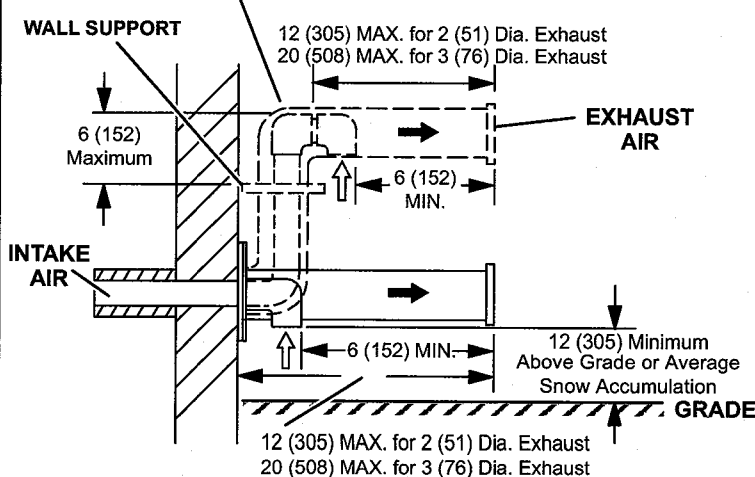
2 inch (51 mm) 30G28 (WTK Canada)

3 inch (76 mm) 81J20 (WTK Canada)

See Installation Instructions for additional information.

Note - Field provided reducer may be required to adapt larger vent pipe size to termination.

If Intake and Exhaust Pipe is less than 12 in. (305 mm) above snow accumulation or other obstructions, field fabricated piping must be installed.



BLOWER DATA

SLP98UH070XV36B BLOWER PERFORMANCE (less filter)

BOTTOM RETURN AIR

HEATING BLOWER PERFORMANCE - 0 through 0.8 in. w.g. External Static Pressure Range

Heating Adjust CFM Selections	Heating Input Range and Blower Volume - CFM							
	35%	40%	50%	60%	70%	80%	90%	100%
Increase (+15%) Heat CFM	489	538	636	735	833	931	1030	1128
Increase (+7.5%) Heat CFM	450	496	588	680	772	864	956	1048
Default Heat CFM	410	453	539	624	710	796	881	967
Decrease (-7.5%) Heat CFM	380	419	498	578	657	736	815	895
Decrease (-15%) Heat CFM	349	385	458	531	604	676	749	822

COOLING BLOWER PERFORMANCE - 0 through 1.0 in. w.g. External Static Pressure Range

Cooling Adjust CFM Selections	Blower Speed Selections							
	First Stage Cool Speed - cfm				Second Stage Cool Speed - cfm			
	Low	Medium-Low	Medium High	High (Default)	Low	Medium-Low	Medium High	High (Default)
Increase (+10%) Cool CFM	600	740	840	970	860	1060	1215	1365
Default Cool CFM	555	665	770	855	810	960	1130	1265
Decrease (-10%) Cool CFM	500	600	680	790	705	840	1005	1140

The effect of static pressure is included in air volumes shown.

The following control configurations are available. See Installation Instructions for details and DIP switch settings.

Heat Modes Available (Heating Blower Performance Table):

Single stage thermostat:

- 35%, 70%, 100% input (three-stage) with time delays in-between

Two-stage thermostat:

- Variable Rate Capacity Mode - furnace automatically adjusts firing rate based on first- and second-stage cycle times
- W1 demand at 70% input, W2 demand at 100% input. No delay between stages

icomfort Touch™ Communicating Thermostat:

- Variable Rate Capacity Mode - furnace automatically adjusts firing rate based on first- and second-stage cycle times
- 35%, 60%, 80%, 100% (four-stage) with time delays in-between

Cool Mode Available (Cooling Blower Performance table):

First stage COOL (two-stage air conditioning units only) is approximately 70% of the same second stage COOL speed position.

Continuous Fan speeds are approximately 28%, 38%, 70% and 100% (DIP switch selectable) of the same second-stage COOL speed position minimum 300 cfm.

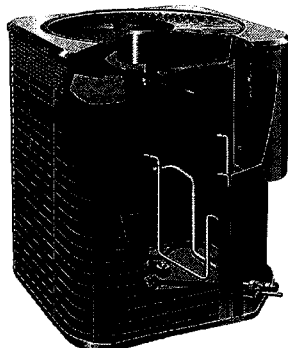
Lennox Harmony III™ Zoning System Applications - Minimum blower speed is 250 cfm.

SLP98UH070XV36B BLOWER MOTOR WATTS - COOLING

Blower Speed Options	Motor Watts @ Various External Static Pressures - in. wg.																			
	First Stage										Second Stage									
	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Increase (+10%) Cool CFM																				
Low	22	36	51	60	80	95	101	117	138	68	88	105	129	152	169	198	214	231	244	274
Medium-Low	37	57	75	89	106	127	148	168	182	121	144	168	192	211	243	262	287	305	329	358
Medium-High	62	85	97	122	144	164	180	203	220	213	231	259	285	311	328	357	374	397	419	445
High	88	115	132	155	176	203	233	240	274	304	322	359	379	411	442	458	486	502	527	554
Default Cool CFM																				
Low	16	29	42	55	71	82	98	112	120	52	69	86	107	122	146	165	183	199	212	229
Medium-Low	26	41	63	79	88	112	128	145	159	89	108	135	151	174	198	223	247	268	288	298
Medium-High	39	62	77	96	117	140	156	180	196	151	173	201	225	243	266	289	313	339	368	383
High	65	84	104	125	148	166	178	206	225	237	256	284	303	328	343	374	395	421	435	454
Decrease (-10%) Cool CFM																				
Low	11	21	35	53	64	75	82	95	113	34	50	67	86	106	121	141	159	174	186	201
Medium-Low	21	36	51	66	81	92	107	127	141	64	85	100	114	145	160	182	206	219	237	251
Medium-High	35	48	66	82	104	118	137	146	159	101	125	143	171	193	211	242	258	282	304	330
High	43	60	82	100	123	144	159	174	197	161	188	211	229	258	277	307	327	354	379	404



LOUVERED



NON-LOUVERED

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

Installation and service must be performed by a licensed professional installer (or equivalent) or a service agency.

⚠ IMPORTANT

This unit must be matched with an indoor coil as specified in Lennox Engineering Handbook. Coils previously charged with HCFC-22 must be flushed.

⚠ WARNING



Electric Shock Hazard. Can cause injury or death. Unit must be grounded in accordance with national and local codes.

Line voltage is present at all components when unit is not in operation on units with single-pole contactors. Disconnect all remote electric power supplies before opening access panel. Unit may have multiple power supplies.

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14ACX Air Conditioners, which will also be referred to in this instruction as the outdoor unit, uses HFC-410A refrigerant. This outdoor unit must be installed with a matching indoor unit and line set as outlined in the *Lennox 14ACX Engineering Handbook*.

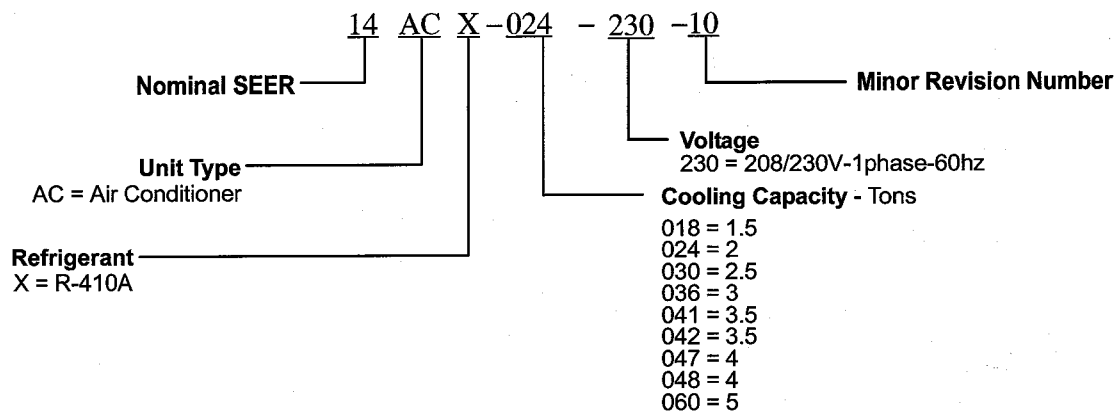
This outdoor unit is designed for use in systems that use one of the following refrigerant metering devices:

- Thermal expansion valve (TXV)
- Fixed orifice

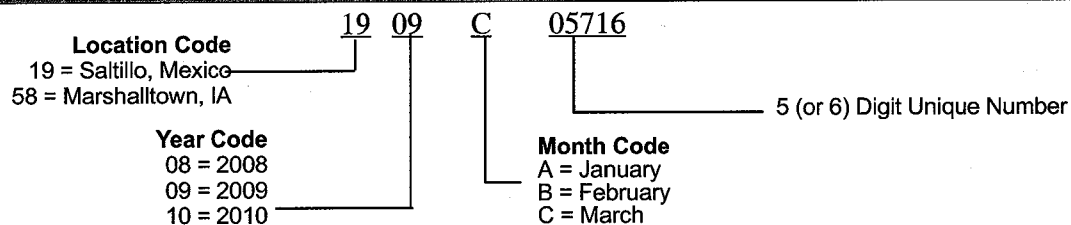
⚠ IMPORTANT

The Clean Air Act of 1990 bans the intentional venting of refrigerant (CFCs, HCFCs and HFCs) as of July 1, 1992. Approved methods of recovery, recycling or reclaiming must be followed. Fines and/or incarceration may be levied for noncompliance.

Model Number Identification



Typical Serial Number Identification



Specifications

Model Number	Unit		Outdoor Fan	
	Sound Rating Number (dB) ¹	Factory Refrigerant Charge ²	Number of Blades	Diameter - inches.
14ACX-018-230-01	73	5 lbs. 12 oz.	3	18
14ACX-018-230-02	76	5 lbs. 11 oz.	3	18
14ACX-018-230-10	76	5 lbs. 11 oz.	3	18
Model Number	Unit		Outdoor Fan	
	Sound Rating Number (dB) ¹	Factory Refrigerant Charge ²	Number of Blades	Diameter - inches.
14ACX-024-230-01	73	5 lbs. 10 oz.	3	22
14ACX-024-230-02	76	6 lbs. 8 oz.	3	22
14ACX-024-230-10	76	6 lbs. 8 oz.	3	22
Model Number	Unit		Outdoor Fan	
	Sound Rating Number (dB) ¹	Factory Refrigerant Charge ²	Number of Blades	Diameter - inches.
14ACX-030-230-01	73	5 lbs. 10 oz.	3	22
14ACX-030-230-02	76	6 lbs. 11 oz.	3	22
14ACX-030-230-10	76	6 lbs. 11 oz.	3	22
Model Number	Unit		Outdoor Fan	
	Sound Rating Number (dB) ¹	Factory Refrigerant Charge ²	Number of Blades	Diameter - inches.
14ACX-036-230-01	73	6 lbs. 8 oz.	3	22
14ACX-036-230-02	76	6 lbs. 11 oz.	3	22
14ACX-036-230-10	76	6 lbs. 11 oz.	3	22
Model Number	Unit		Outdoor Fan	
	Sound Rating Number (dB) ¹	Factory Refrigerant Charge ²	Number of Blades	Diameter - inches.
14ACX-042-230-01	73	6 lbs. 8 oz.	3	22
14ACX-042-230-02	76	6 lbs. 11 oz.	3	22
14ACX-042-230-10	76	6 lbs. 11 oz.	3	22
Model Number	Unit		Outdoor Fan	
	Sound Rating Number (dB) ¹	Factory Refrigerant Charge ²	Number of Blades	Diameter - inches.
14ACX-048-230-01	73	6 lbs. 10 oz.	3	22
14ACX-048-230-02	76	6 lbs. 11 oz.	3	22
14ACX-048-230-10	76	6 lbs. 11 oz.	3	22
Model Number	Unit		Outdoor Fan	
	Sound Rating Number (dB) ¹	Factory Refrigerant Charge ²	Number of Blades	Diameter - inches.
14ACX-060-230-01	73	10 lbs. 12 oz.	3	22
14ACX-060-230-02	76	10 lbs. 12 oz.	3	22
14ACX-060-230-10	76	10 lbs. 12 oz.	3	22

Model Number	Unit		Outdoor Fan	
	Sound Rating Number (dB) ¹	Factory Refrigerant Charge ²	Number of Blades	Diameter - inches.
14ACX-042-230-01	78	8 lbs. 10 oz.	4	22
14ACX-042-230-02	78	8 lbs. 10 oz.	4	22
14ACX-042-230-10	78	8 lbs. 10 oz.	4	22

Model Number	Unit		Outdoor Fan	
	Sound Rating Number (dB) ¹	Factory Refrigerant Charge ²	Number of Blades	Diameter - inches.
14ACX-048-230-01	78	10 lbs. 0 oz.	4	22
14ACX-048-230-02	78	10 lbs. 0 oz.	4	22
14ACX-048-230-10	78	10 lbs. 0 oz.	4	22

Model Number	Unit		Outdoor Fan	
	Sound Rating Number (dB) ¹	Factory Refrigerant Charge ²	Number of Blades	Diameter - inches.
14ACX-048-230-01	78	10 lbs. 0 oz.	4	22
14ACX-048-230-02	78	10 lbs. 0 oz.	4	22
14ACX-048-230-10	78	10 lbs. 0 oz.	4	22

Model Number	Unit		Outdoor Fan	
	Sound Rating Number (dB) ¹	Factory Refrigerant Charge ²	Number of Blades	Diameter - inches.
14ACX-060-230-01	80	12 lbs. 0 oz.	4	26
14ACX-060-230-02	80	12 lbs. 0 oz.	4	26
14ACX-060-230-10	80	12 lbs. 0 oz.	4	26

¹ Tested according to AHRI Standard 270-2008 test conditions.

² Refrigerant charge sufficient for 15 feet length of refrigerant lines.

Electrical Data

208/230V-60 Hz-1 Ph

Model Number	Unit		Compressor		Condenser Fan			
	Maximum Over-current Protection (amps) ¹	Minimum Circuitry Ampacity ²	Rated Load Amps (RLA)	Locked Rotor Amps (LRA)	Motor HP	Nominal RPM	Full Load Amps (FLA)	Locked Rotor Amps (LRA)
14ACX-018-230-01	20	12.3	9.0	48.0	1/5	1075	1.1	2.0
14ACX-018-230-02	20	12.0	9.0	48.0	1/10	1075	0.7	0.7
14ACX-018-230-10	20	12.0	9.0	48.0	1/10	1075	0.7	0.7

208/230V-60 Hz-1 Ph

Model Number	Unit		Compressor		Condenser Fan			
	Maximum Over-current Protection (amps) ¹	Minimum Circuitry Ampacity ²	Rated Load Amps (RLA)	Locked Rotor Amps (LRA)	Motor HP	Nominal RPM	Full Load Amps (FLA)	Locked Rotor Amps (LRA)
14ACX-024-230-01	30	17.9	13.4	58.3	1/6	1075	1.1	2.1
14ACX-024-230-02	30	17.9	13.4	58.3	1/6	825	1.1	2.1
14ACX-024-230-10	30	17.9	13.4	58.3	1/6	825	1.1	2.1

208/230V-60 Hz-1 Ph

Model Number	Unit		Compressor		Condenser Fan			
	Maximum Over-current Protection (amps) ¹	Minimum Circuitry Ampacity ²	Rated Load Amps (RLA)	Locked Rotor Amps (LRA)	Motor HP	Nominal RPM	Full Load Amps (FLA)	Locked Rotor Amps (LRA)
14ACX-030-230-01	30	17.2	12.9	64.0	1/6	825	1.1	2.1
14ACX-030-230-02	30	17.2	12.9	64.0	1/6	825	1.1	2.1
14ACX-030-230-10	30	17.2	12.9	64.0	1/6	825	1.1	2.1

Model Number	Unit		Compressor		Condenser Fan			
	Maximum Over-current Protection (amps) ¹	Minimum Circuitry Ampacity ²	Rated Load Amps (RLA)	Locked Rotor Amps (LRA)	Motor HP	Nominal RPM	Full Load Amps (FLA)	Locked Rotor Amps (LRA)
14ACX-036-230-02	30	18.7	14.1	77.0	1/6	825	1.1	2.1

208/230V-60 Hz-1 Ph

Model Number	Unit		Compressor		Condenser Fan			
	Maximum Over-current Protection (amps) ¹	Minimum Circuitry Ampacity ²	Rated Load Amps (RLA)	Locked Rotor Amps (LRA)	Motor HP	Nominal RPM	Full Load Amps (FLA)	Locked Rotor Amps (LRA)
14ACX-042-230-01	40	24.1	17.9	112.0	1/4	825	1.7	3.1

208/230V-60 Hz-1 Ph

Model Number	Unit		Compressor		Condenser Fan			
	Maximum Over-current Protection (amps) ¹	Minimum Circuitry Ampacity ²	Rated Load Amps (RLA)	Locked Rotor Amps (LRA)	Motor HP	Nominal RPM	Full Load Amps (FLA)	Locked Rotor Amps (LRA)
14ACX-042-230-01	40	24.1	17.9	112.0	1/4	825	1.7	3.1
14ACX-042-230-02	40	24.1	17.9	112.0	1/4	825	1.7	3.1

208/230V-60 Hz-1 Ph

Model Number	Unit		Compressor		Condenser Fan			
	Maximum Over-current Protection (amps) ¹	Minimum Circuitry Ampacity ²	Rated Load Amps (RLA)	Locked Rotor Amps (LRA)	Motor HP	Nominal RPM	Full Load Amps (FLA)	Locked Rotor Amps (LRA)
14ACX-047-230-01	45	26.7	19.3	109.0	1/3	825	1.3	2.9

208/230V-60 Hz-1 Ph

Model Number	Unit		Compressor		Condenser Fan			
	Maximum Over-current Protection (amps) ¹	Minimum Circuitry Ampacity ²	Rated Load Amps (RLA)	Locked Rotor Amps (LRA)	Motor HP	Nominal RPM	Full Load Amps (FLA)	Locked Rotor Amps (LRA)
14ACX-048-230-01	50	29.0	21.8	117.0	1/4	825	1.7	3.1
14ACX-048-230-02	50	29.0	21.8	117.0	1/4	825	1.7	3.1

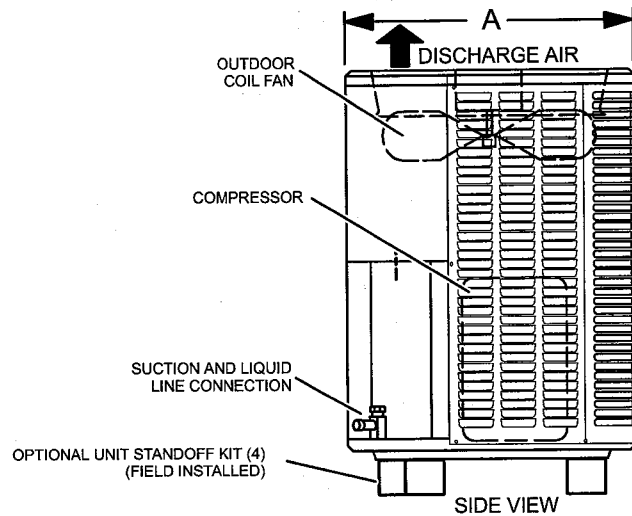
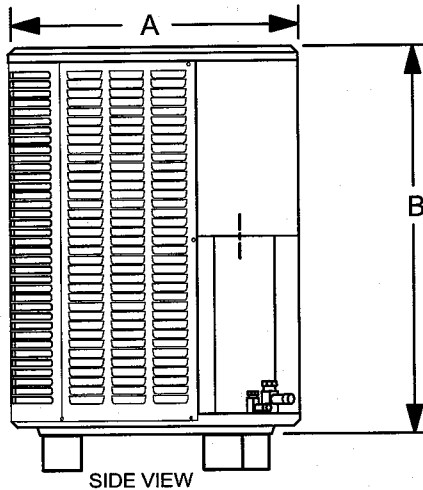
208/230V-60 Hz-1 Ph

Model Number	Unit		Compressor		Condenser Fan			
	Maximum Over-current Protection (amps) ¹	Minimum Circuitry Ampacity ²	Rated Load Amps (RLA)	Locked Rotor Amps (LRA)	Motor HP	Nominal RPM	Full Load Amps (FLA)	Locked Rotor Amps (LRA)
14ACX-060-230-01	60	34.8	26.4	134.0	1/3	825	1.8	2.9
14ACX-060-230-02	60	34.8	26.4	134.0	1/3	825	1.8	2.9

¹ HACR type circuit breaker or fuse.

² Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

Unit Dimensions - Inches (mm)



Model Numbers	A	B
14ACX-024-230-01	24-1/4 (616)	29-1/4 (743)
14ACX-030-230-01	28-1/4 (724)	29-1/4 (743)
14ACX-036-230-01	28-1/4 (724)	29-1/4 (743)
14ACX-041-230-01	28-1/4 (724)	37-1/4 (946)
14ACX-047-230-01	32-1/4 (819)	33-1/4 (845)
14ACX-060-230-XX (All)	32-1/4 (819)	33-1/4 (845)

Refrigerant Metering Device - Indoor Coil

FIXED ORIFICE (RFC) METERING

The following table lists the indoor coil orifice sizes required for the specific outdoor unit listed. Refer to any of the publications listed in this section for the catalog number of the required orifice size.

Table 1. Fixed Orifice Sizes

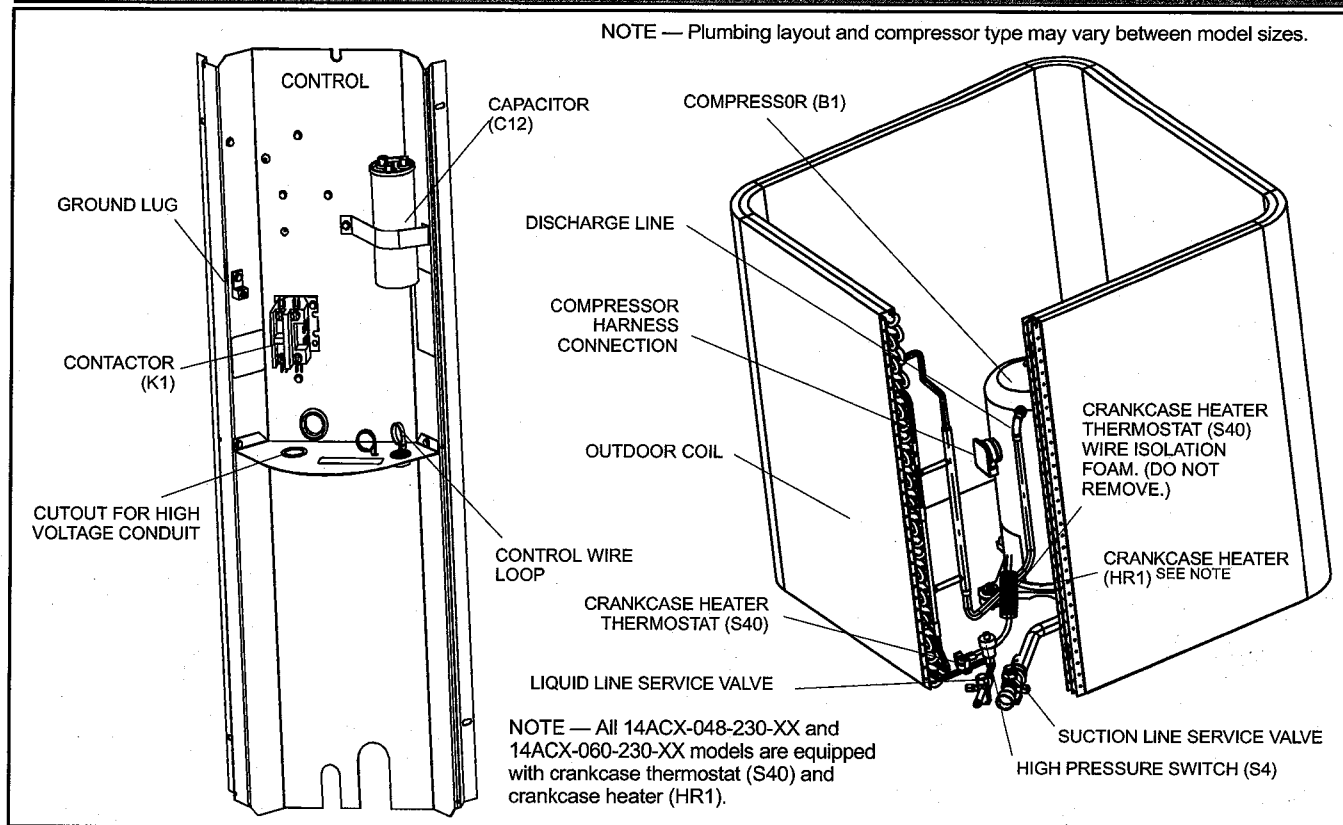
Model Numbers	Orifice Size
14ACX-024-230-XX (All)	.057
14ACX-030-230-01, -10 and -11	.065
14ACX-036-230-02, -10 and -11	.071
14ACX-042-230-XX (All)	.076
14ACX-048-230-XX (All)	.083

EXPANSION VALVE (TXV) METERING

This unit is also compatible with systems that uses an expansion valve. Refer to any of the following publications for the catalog number for the required Lennox expansion valve kit.

- Lennox 14ACX Engineering Handbook
- Lennox Product Catalog

Typical Unit Parts Arrangement



⚠ CAUTION

Physical contact with metal edges and corners while applying excessive force or rapid motion can result in personal injury. Be aware of, and use caution when working near these areas during installation or while servicing this equipment.

Operating Manifold Gauge Set and Service Valves

These instructions are intended as a general guide and do not supersede local codes in any way. Consult authorities who have jurisdiction before installation.

TORQUE REQUIREMENTS

When servicing or repairing heating, ventilating, and air conditioning components, ensure the fasteners are appropriately tightened. Table 2 lists torque values for fasteners.

⚠ IMPORTANT

To prevent stripping of the various caps used, the appropriately sized wrench should be used and fitted snugly over the cap before tightening.

When servicing or repairing HVAC components, ensure the fasteners are appropriately tightened. Table 2 provides torque values for fasteners.

⚠ IMPORTANT

Only use Allen wrenches of sufficient hardness (50Rc - Rockwell Hardness Scale minimum). Fully insert the wrench into the valve stem recess.

Service valve stems are factory-torqued (from 9 ft-lbs for small valves, to 25 ft-lbs for large valves) to prevent refrigerant loss during shipping and handling. Using an Allen wrench rated at less than 50Rc risks rounding or breaking off the wrench, or stripping the valve stem recess.

See the Lennox Service and Application Notes #C-08-1 for further details and information.

Table 2. Torque Requirements

Parts	Recommended Torque	
Sheet metal screws	16 in.-lb.	2 NM
Compressor bolts	90 in.-lb.	10 NM

USING MANIFOLD GAUGE SET

When checking the system charge, only use a manifold gauge set that features low loss anti-blow back fittings. Manifold gauge set used with HFC-410A refrigerant systems must be capable of handling the higher system operating pressures.

The gauges should be rated for use with pressures of 0 - 800 psig on the high side and a low side of 30" vacuum to 250 psig with dampened speed to 500 psi. Gauge hoses must be rated for use at up to 800 psig of pressure with a 4000 psig burst rating.

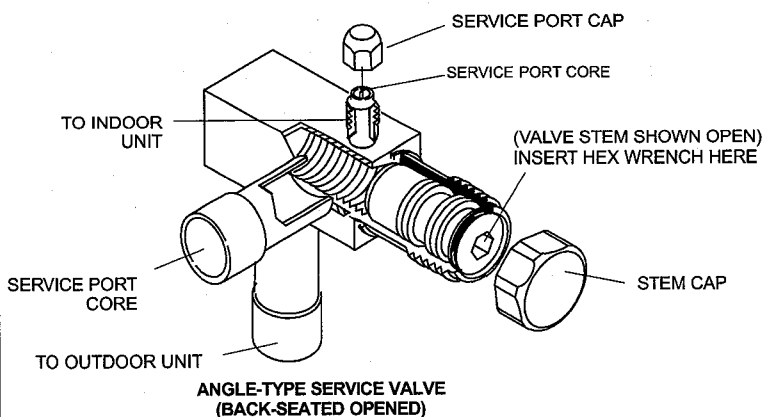
OPERATING SERVICE VALVES

The liquid and vapor line service valves are used for removing refrigerant, flushing, leak testing, evacuating, checking charge and charging. Each valve is equipped with a service port which has a factory-installed valve stem. Figure 1 provides information on how to access and operating both angle and ball service valves.

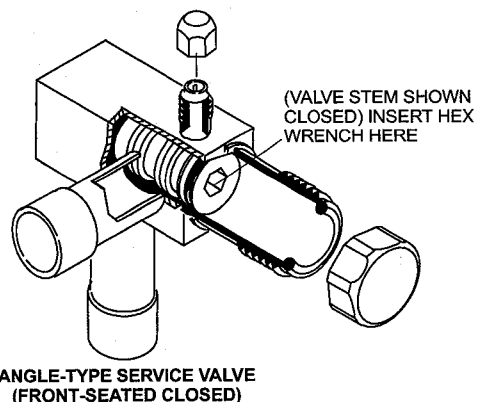
SERVICE VALVES ANGLE AND BALL

Operating Angle Type Service Valve:

1. Remove stem cap with an appropriately sized wrench.
2. Use a service wrench with a hex-head extension (3/16" for liquid line valve sizes and 5/16" for vapor line valve sizes) to back the stem out counterclockwise as far as it will go.



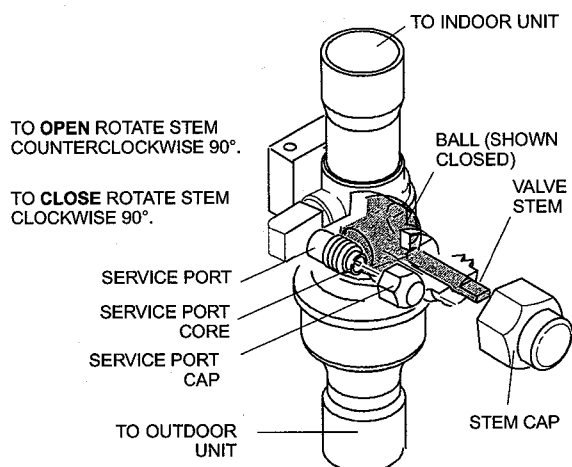
When service valve is **OPEN**, the service port is open to line set, indoor and outdoor unit.



When service valve is **CLOSED**, the service port is open to the line set and indoor unit.

Operating Ball Type Service Valve:

1. Remove stem cap with an appropriately sized wrench.
2. Use an appropriately sized wrench to open. To open valve, rotate stem counterclockwise 90°. To close rotate stem clockwise 90°.



To Access Service Port:

A service port cap protects the service port core from contamination and serves as the primary leak seal.

1. Remove service port cap with an appropriately sized wrench.
2. Connect gauge set to service port.
3. When testing is completed, replace service port cap and tighten as follows:

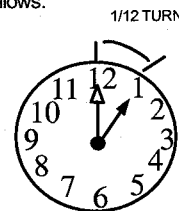
- With torque wrench: Finger tighten and torque cap per table 2.
- Without torque wrench: Finger tighten and use an appropriately sized wrench to turn an additional 1/6 turn clockwise.



Reinstall Stem Cap:

Stem cap protects the valve stem from damage and serves as the primary seal. Replace the stem cap and tighten as follows:

- With Torque Wrench: Finger tighten and then torque cap per table 2.
- Without Torque Wrench: Finger tighten and use an appropriately sized wrench to turn an additional 1/12 turn clockwise.



NOTE — A label with specific torque requirements may be affixed to the stem cap. If the label is present, use the specified torque.

Figure 1. Angle and Ball Service Valves

CLEARANCE ON ALL SIDES — INCHES (MILLIMETERS)

MINIMUM CLEARANCE
ABOVE UNIT

PLACING UNIT ON SLAB

When installing unit at grade level, the top of the slab should be high enough above grade so that water from higher ground will not collect around the unit. The slab should have a slope tolerance as described in figure 3, Detail B.

ROOF MOUNTING

Install the unit a minimum of 6 inches (152 mm) above the roof surface to avoid ice build-up around the unit. Locate the unit above a load bearing wall or area of the roof that can adequately support the unit. Consult local codes for rooftop applications.

If unit coil cannot be mounted away from prevailing winter winds, a wind barrier should be constructed. Size barrier at

least the same height and width as outdoor unit. Mount barrier 24 inches (610 mm) from the sides of the unit in the direction of prevailing winds.

NOTICE

Roof Damage!

This system contains both refrigerant and oil. Some rubber roofing material may absorb oil and cause the rubber to swell when it comes into contact with oil. The rubber will then bubble and could cause leaks. Protect the roof surface to avoid exposure to refrigerant and oil during service and installation. Failure to follow this notice could result in damage to roof surface.

Removing and Installing Louvers



WARNING

To prevent personal injury, or damage to panels, unit or structure, be sure to observe the following:

While installing or servicing this unit, carefully stow all removed panels out of the way, so that the panels will not cause injury to personnel, nor cause damage to objects or structures nearby, nor will the panels be subjected to damage (e.g., being bent or scratched).

While handling or stowing the panels, consider any weather conditions, especially windy conditions, that may cause panels to be blown around and battered.

When removing the unit panels. Remove panel A first, then B, C and finally D. When reinstalling panels, reverse that order starting with panel D, C, B and finally A.

REMOVAL

STEP 1

TO REMOVE PANEL, REMOVE MOUNTING SCREWS SECURING PANEL TO THE UNIT.

PANEL A

STEP 2

SLIGHTLY LIFT PANEL A IN ORDER TO CLEAR SIDE LIPS OF PANEL FROM BASE OF UNIT.

STEP 3

TILT PANEL OUT SLIGHTLY AND PULL DOWNWARD TO REMOVE.

REPEAT STEPS 1, 2 AND 3 TO REMOVE PANELS B, C AND FINALLY D.

PANEL A

PANEL B

PANEL C

PANEL A

PANEL D

INSTALLATION

STEP 1

STARTING WITH PANEL D, INSERT PANEL UNDER UNIT TOP CAP LIP AND LIFT SLIGHTLY TO CLEAR SIDE LIP OF PANEL FROM BASE.

STEP 2

MOVE PANEL IN TOWARDS UNIT. ALIGN LEFT/RIGHT SIDE LIPS OF PANEL WITH GROOVE INSERTS ALONG LEFT/RIGHT SIDE OF UNIT.

STEP 3

SECURE PANEL, WITH MOUNTING SCREWS.

REPEAT STEPS 1 AND 2 TO INSTALL PANELS C, B AND FINALLY A.

TOP CAP

SIDE GROOVE

BASE

PANEL D

Figure 4. Louvers

Table 3. Service Valves Sizes and Refrigerant Line Set Recommendations

Model	Valve Field Size Connections		Recommended Line Set		
	Liquid Line	Suction Line	Liquid Line	Suction Line	L15 Series Line Sets
14ACX-024-230-XX (All)	3/8 in. (10 mm)	3/4 in. (19 mm)	3/8 in. (10 mm)	3/4 in. (19 mm)	L15-41 — 15 feet to 50 feet (4.6 meters to 15 meters)
14ACX-036-230-XX (All)	3/8 in. (10 mm)	7/8 in. (22 mm)	3/8 in. (10 mm)	7/8 in. (22 mm)	L15-65 — 15 feet to 50 feet (4.6 meters to 15 meters)
14ACX-042-230-XX (All)					
14ACX-048-230-XX (All)					
	3/8 in. (10 mm)	1-1/8 in. (29 mm)	3/8 in. (10 mm)	1-1/8 in. (29 mm)	Field Fabricated

NOTE — Some applications may require a field provided 7/8" to 1-1/8" adapter

New or Replacement Line Set

This section provides information on new installation or replacement of existing line set. If a new or replacement line set is not required, then proceed to *Brazing Connections* on page 13.

Field refrigerant piping consists of liquid and suction lines from the outdoor unit (brazed connections) to the indoor unit coil (flare or brazed connections). Use Lennox L15 (brazed, non-flare) series line set, or use field-fabricated refrigerant lines as listed in table 3.

NOTE - When installing refrigerant lines longer than 50 feet, see the *Lennox Refrigerant Piping Design and Fabrication Guidelines, CORP. 9351-L9*, or contact Lennox Technical Support Product Applications for assistance.

To obtain the correct information from Lennox, be sure to communicate the following points:

- Model (14ACX) and size of unit (e.g. -060).
- Line set diameters for the unit being installed as listed in table 3 and total length of installation.
- Number of elbows and if there is a rise or drop of the piping.

If refrigerant lines are routed through a wall, seal and isolate the opening so vibration is not transmitted to the building. Pay close attention to line set isolation during installation of any HVAC system. When properly isolated from building structures (walls, ceilings, floors), the refrigerant lines will not create unnecessary vibration and subsequent sounds.

! IMPORTANT

Mineral oils are not compatible with HFC-410A. If oil must be added, it must be a Polyol ester oil.

The compressor is charged with sufficient Polyol ester oil for line set lengths up to 50 feet. Recommend adding oil to system based on the amount of refrigerant charge in the system. No need to add oil in system with 20 pounds of refrigerant or less. For systems over 20 pounds - add one ounce of every five pounds of refrigerant.

Recommended topping-off POE oils are Mobil EAL ARCTIC 22 CC or ICI EMKARATE™ RL32CF.

MATCHING WITH NEW OR EXISTING INDOOR COIL AND LINE SET

The RFC1-metering line consisted of a small bore copper line that ran from condenser to evaporator coil. Refrigerant was metered into the evaporator by utilizing temperature/pressure evaporation effects on refrigerant in the small RFC line. The length and bore of the RFC line corresponded to the size of cooling unit.

If the 14ACX is being used with either a new or existing indoor coil which is equipped with a liquid line which served as a metering device (RFCI), the liquid line must be replaced prior to the installation of the 14ACX unit. Typically a liquid line used to meter flow is 1/4" in diameter and copper.

LIQUID LINE FILTER DRIER INSTALLATION

The filter drier (one is shipped with each 14ACX unit) must be field installed in the liquid line between the outdoor unit's liquid line service valve and the indoor coil's metering device (fixed orifice or TXV) as illustrated in figure 5. This filter drier must be installed to ensure a clean, moisture-free system. Failure to install the filter drier will void the warranty. A replacement filter drier is available from Lennox. See *Brazing Connections* on page 7 for special procedures on brazing filter drier connections to the liquid line.

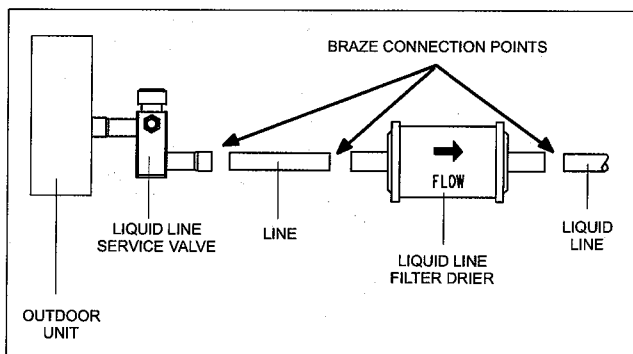


Figure 5. Typical Liquid Line Filter Drier Installation

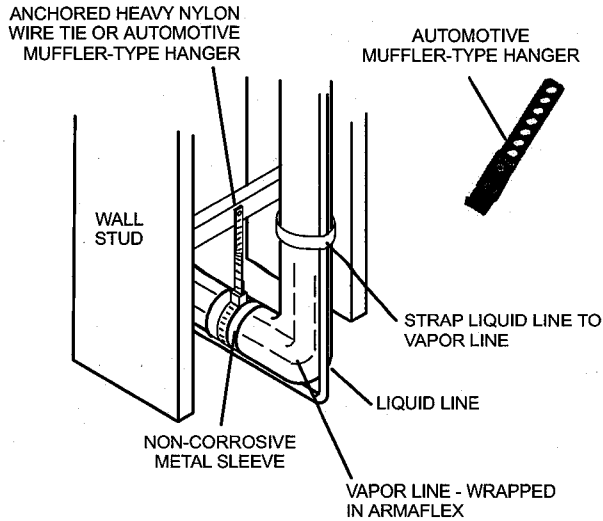
LINE SET

IMPORTANT — Refrigerant lines must not contact structure.

INSTALLATION

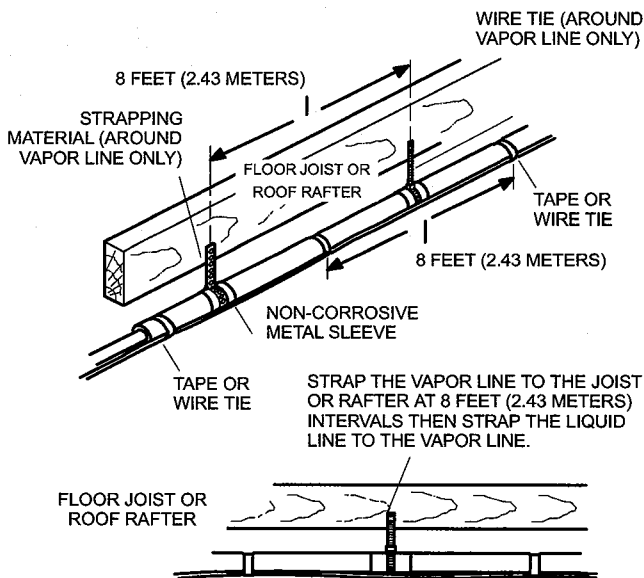
Line Set Isolation — The following illustrations are examples of proper refrigerant line set isolation:

REFRIGERANT LINE SET — TRANSITION FROM VERTICAL TO HORIZONTAL



REFRIGERANT LINE SET — INSTALLING HORIZONTAL RUNS

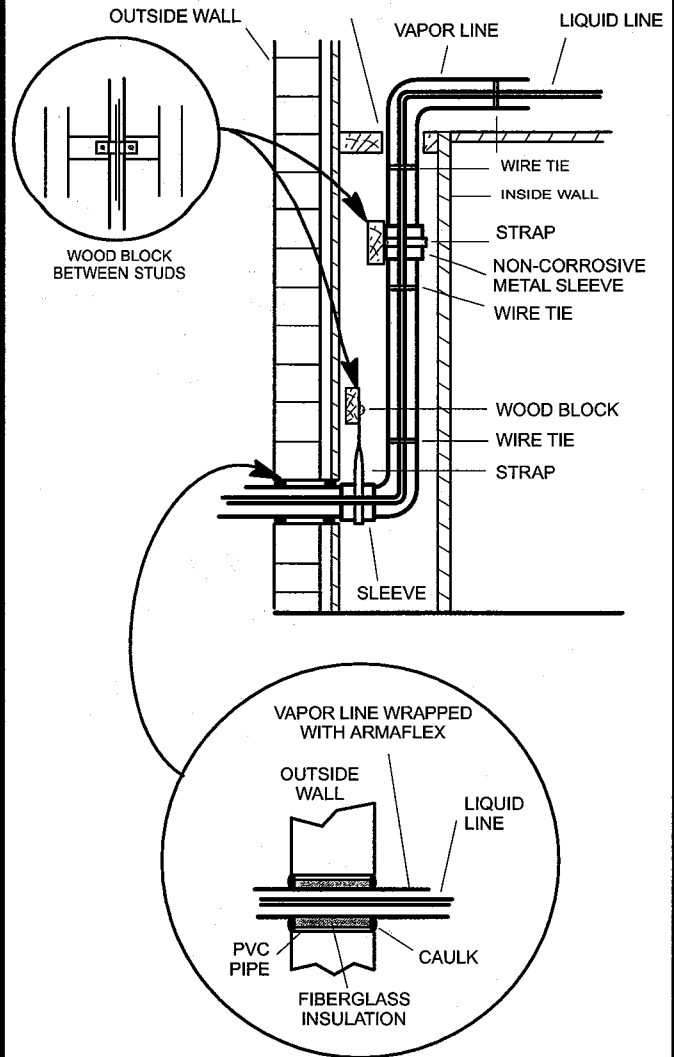
To hang line set from joist or rafter, use either metal strapping material or anchored heavy nylon wire ties.



REFRIGERANT LINE SET — INSTALLING VERTICAL RUNS (NEW CONSTRUCTION SHOWN)

NOTE — Insulate liquid line when it is routed through areas where the surrounding ambient temperature could become higher than the temperature of the liquid line or when pressure drop is equal to or greater than 20 psig.

IMPORTANT — Refrigerant lines must not contact wall



NOTE — Similar installation practices should be used if line set is to be installed on exterior of outside wall.

Figure 6. Line Set Installation

⚠ IMPORTANT

Polyol ester (POE) oils used with HFC-410A refrigerant absorb moisture very quickly. It is very important that the refrigerant system be kept closed as much as possible. DO NOT remove line set caps or service valve stub caps until you are ready to make connections.

⚠ IMPORTANT

If this unit is being matched with an approved line set or indoor unit coil which was previously charged with mineral oil, or if it is being matched with a coil which was manufactured before January of 1999, the coil and line set must be flushed prior to installation. Take care to empty all existing traps. Polyol ester (POE) oils are used in Lennox units charged with HFC-410A refrigerant. Residual mineral oil can act as an insulator, preventing proper heat transfer. It can also clog the expansion device, and reduce the system performance and capacity.

Failure to properly flush the system per the instructions below will void the warranty.

Brazing Connections

Use the procedures outline in figure 7 for brazing line set connections.

⚠ WARNING



Danger of fire. Bleeding the refrigerant charge from only the high side may result in the low side shell and suction tubing being pressurized. Application of a brazing torch while pressurized may result in ignition of the refrigerant and oil mixture - check the high and low pressures before unbrazing.

⚠ WARNING



When using a high pressure gas such as dry nitrogen to pressurize a refrigeration or air conditioning system, use a regulator that can control the pressure down to 1 or 2 psig (6.9 to 13.8 kPa).

⚠ CAUTION

Brazing alloys and flux contain materials which are hazardous to your health.

Avoid breathing vapors or fumes from brazing operations. Perform operations only in well ventilated areas.

Wear gloves and protective goggles or face shield to protect against burns.

Wash hands with soap and water after handling brazing alloys and flux.

⚠ IMPORTANT

Allow braze joint to cool before removing the wet rag from the service valve. Temperatures above 250°F can damage valve seals.

⚠ IMPORTANT

Use silver alloy brazing rods with 5% to 6% minimum silver alloy for copper-to-copper brazing. Use 45% alloy for copper-to-brass and copper-to-steel brazing.

⚠ WARNING



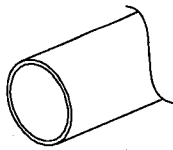
Fire, Explosion and Personal Safety Hazard.

Failure to follow this warning could result in damage, personal injury or death.

Never use oxygen to pressurize or purge refrigeration lines. Oxygen, when exposed to a spark or open flame, can cause damage by fire and/or an explosion, that could result in personal injury or death.

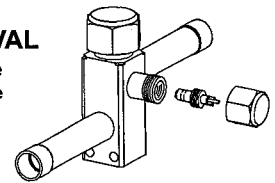
1 CUT AND DEBUR

Cut ends of the refrigerant lines square (free from nicks or dents) and debur the ends. The pipe must remain round and do not pinch end of the line.



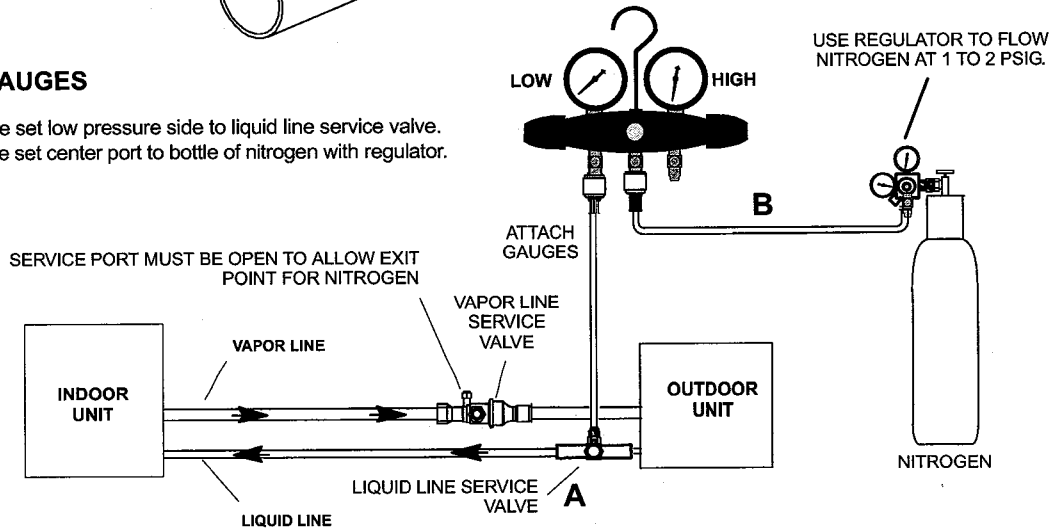
2 CAP AND CORE REMOVAL

Remove service cap and core from both the vapor and liquid line service ports.



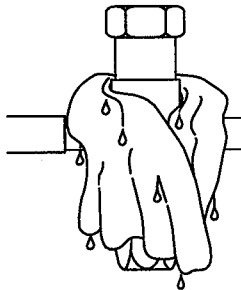
3 ATTACHED GAUGES

- A Connect gauge set low pressure side to liquid line service valve.
- B Connect gauge set center port to bottle of nitrogen with regulator.



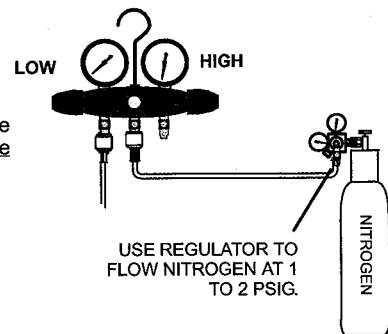
4 WRAP SERVICE VALVE

To protect components during brazing, wrap a wet cloth around the liquid line service valve body and copper tube stub and use another wet cloth underneath the valve body to protect the base paint.



5 FLOW NITROGEN

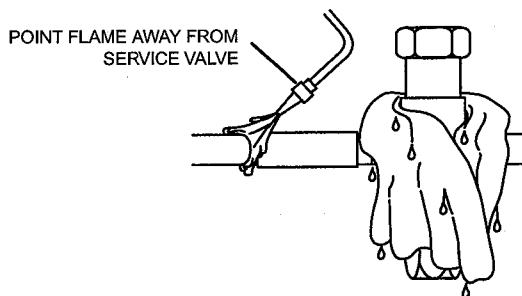
Flow regulated nitrogen (at 1 to 2 psig) through the refrigeration gauge set into the valve stem port connection on the liquid line service valve and out of the valve stem port connection on the vapor service valve.



NOTE — The refrigerant metering device located at the indoor coil will allow low pressure nitrogen to flow through the system.

6 BRAZE LINE SET

Braze the liquid line to the liquid line service valve. Turn off nitrogen flow.



7 INSTALL SERVICE PORT CAPS ONLY

After all connections have been brazed, disconnect manifold gauge set from service ports, cool down piping with wet rag and remove all wrappings. Do not reinstall cores until after evacuation procedure. Reinstall service port caps if desired to close off refrigerant ports.

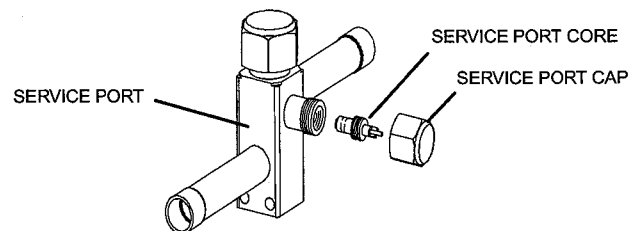
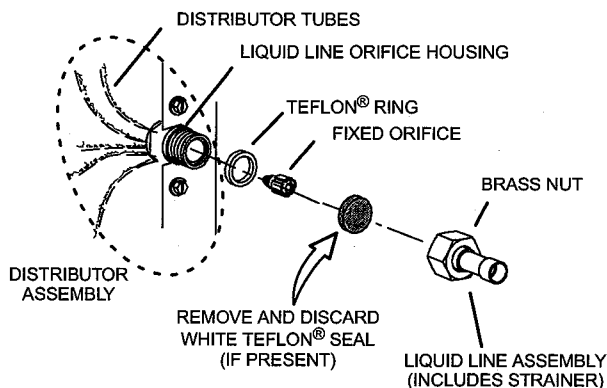


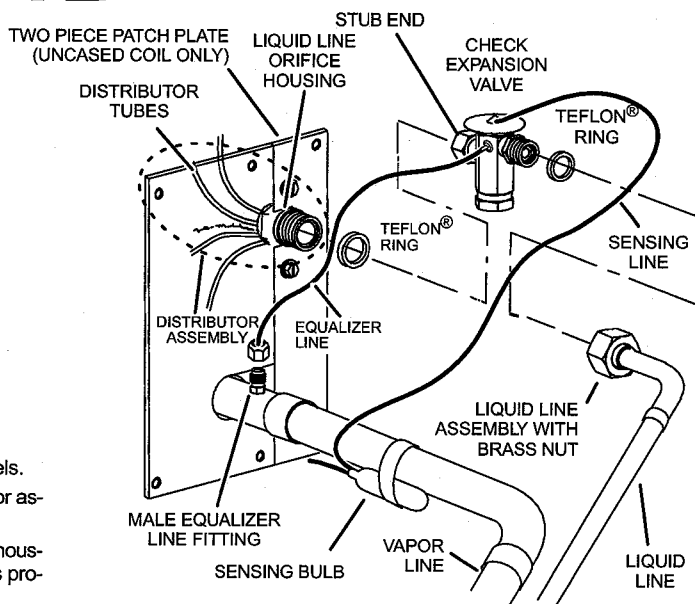
Figure 7. Brazing Connections

1A TYPICAL EXISTING FIXED ORIFICE REMOVAL PROCEDURE (UNCASED OR COIL SHOWN)



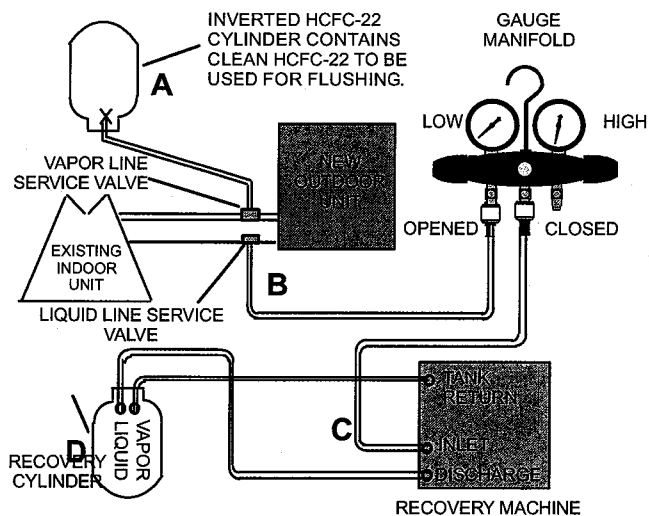
- A On fully cased coils, remove the coil access and plumbing panels.
- B Remove any shipping clamps holding the liquid line and distributor assembly.
- C Using two wrenches, disconnect liquid line from liquid line orifice housing. Take care not to twist or damage distributor tubes during this process.
- D Remove and discard fixed orifice, valve stem assembly if present and Teflon® washer as illustrated above.
- E Use a field-provided fitting to temporary reconnect the liquid line to the indoor unit's liquid line orifice housing.

1B TYPICAL EXISTING EXPANSION VALVE REMOVAL PROCEDURE (UNCASED COIL SHOWN)



- A On fully cased coils, remove the coil access and plumbing panels.
- B Remove any shipping clamps holding the liquid line and distributor assembly.
- C Disconnect the equalizer line from the check expansion valve equalizer line fitting on the vapor line.
- D Remove the vapor line sensing bulb.
- E Disconnect the liquid line from the check expansion valve at the liquid line assembly.
- F Disconnect the check expansion valve from the liquid line orifice housing. Take care not to twist or damage distributor tubes during this process.
- G Remove and discard check expansion valve and the two Teflon® rings.
- H Use a field-provided fitting to temporary reconnect the liquid line to the indoor unit's liquid line orifice housing.

2 CONNECT GAUGES AND EQUIPMENT FOR FLUSHING PROCEDURE



- A Inverted HCFC-22 cylinder with clean refrigerant to the vapor service valve.
- B HCFC-22 gauge set (low side) to the liquid line valve.
- C HCFC-22 gauge set center port to inlet on the recovery machine with an empty recovery tank to the gauge set.
- D Connect recovery tank to recovery machines per machine instructions.

3 FLUSHING LINE SET

The line set and indoor unit coil must be flushed with at least the same amount of clean refrigerant that previously charged the system. Check the charge in the flushing cylinder before proceeding.

- A Set the recovery machine for liquid recovery and start the recovery machine. Open the gauge set valves to allow the recovery machine to pull a vacuum on the existing system line set and indoor unit coil.
- B Invert the cylinder of clean HCFC-22 and open its valve to allow liquid refrigerant to flow into the system through the vapor line valve. Allow the refrigerant to pass from the cylinder and through the line set and the indoor unit coil before it enters the recovery machine.
- C After all of the liquid refrigerant has been recovered, switch the recovery machine to vapor recovery so that all of the HCFC-22 vapor is recovered. Allow the recovery machine to pull down to 0 the system.
- D Close the valve on the inverted HCFC-22 drum and the gauge set valves. Pump the remaining refrigerant out of the recovery machine and turn the machine off.

Figure 8. Removing Metering Device and Flushing

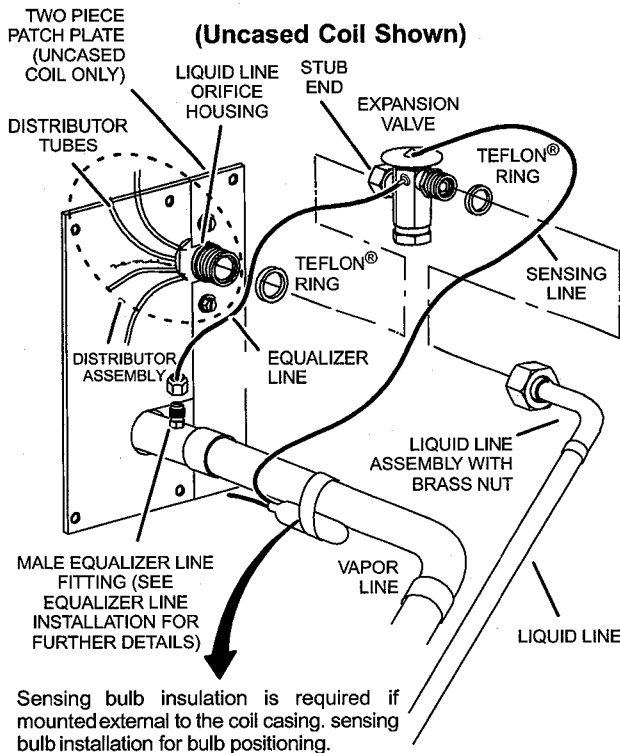
Installing Indoor Metering Device

This outdoor unit is designed for use in systems that use either an fixed orifice (RFC), or expansion valve metering devices at the indoor coil.

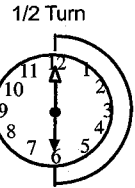
The expansion valve unit can be installed internal or external to the indoor coil. In applications where an

uncased coil is being installed in a field-provided plenum, install the expansion valve in a manner that will provide access for field servicing of the expansion valve. Refer to below illustration for reference during installation of expansion valve unit.

INDOOR EXPANSION VALVE INSTALLATION



- Remove the field-provided fitting that temporary reconnected the liquid line to the indoor unit's distributor assembly.
- Install one of the provided Teflon® rings around the stubbed end of the expansion valve and lightly lubricate the connector threads and expose surface of the Teflon® ring with refrigerant oil.
- Attach the stubbed end of the expansion valve to the liquid line orifice housing. Finger tighten and use an appropriately sized wrench to turn an additional 1/2 turn clockwise as illustrated in the figure above, or 20 ft-lb.
- Place the remaining Teflon® washer around the other end of the expansion valve. Lightly lubricate connector threads and expose surface of the Teflon® ring with refrigerant oil.
- Attach the liquid line assembly to the expansion valve. Finger tighten and use an appropriately sized wrench to turn an additional 1/2 turn clockwise as illustrated in the figure above or 20 ft-lb.

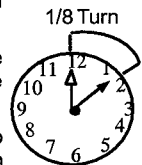


SENSING BULB INSTALLATION

- Attach the vapor line sensing bulb in the proper orientation as illustrated to the right using the clamp and screws provided.

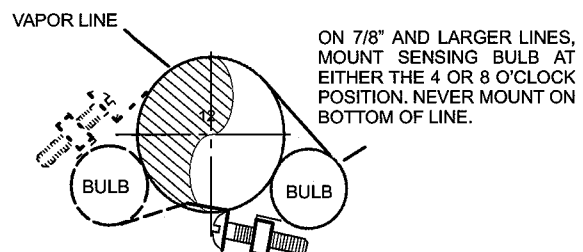
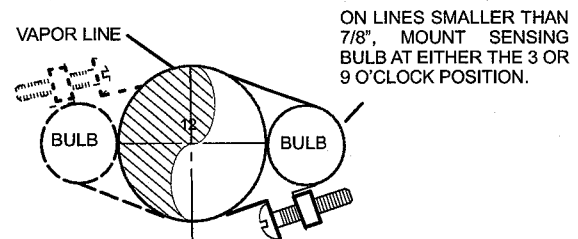
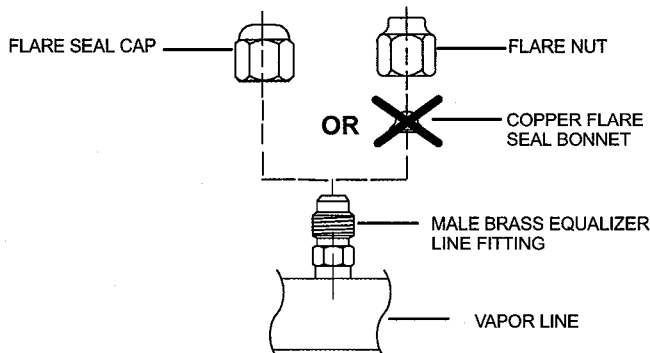
NOTE — Confirm proper thermal contact between vapor line and expansion bulb before insulating the sensing bulb once installed.

- Connect the equalizer line from the expansion valve to the equalizer vapor port on the vapor line. Finger tighten the flare nut plus 1/8 turn (7 ft-lbs) as illustrated below.



EQUALIZER LINE INSTALLATION

- Remove and discard either the flare seal cap or flare nut with copper flare seal bonnet from the equalizer line port on the vapor line as illustrated in the figure to the right.
- Remove and discard either the flare seal cap or flare nut with copper flare seal bonnet from the equalizer line port on the vapor line as illustrated in the figure to the right.



NOTE — NEVER MOUNT ON BOTTOM OF LINE.

Figure 9. Installing Indoor Expansion Valve

⚠ IMPORTANT

The Environmental Protection Agency (EPA) prohibits the intentional venting of HFC refrigerants during maintenance, service, repair and disposal of appliance. Approved methods of recovery, recycling or reclaiming must be followed.

⚠ IMPORTANT

If this unit is being matched with an approved line set or indoor unit coil which was previously charged with mineral oil, or if it is being matched with a coil which was manufactured before January of 1999, the coil and line set must be flushed prior to installation. Take care to empty all existing traps. Polyol ester (POE) oils are used in Lennox units charged with HFC-410A refrigerant. Residual mineral oil can act as an insulator, preventing proper heat transfer. It can also clog the expansion device, and reduce the system performance and capacity. Failure to properly flush the system per the instructions below will void the warranty.

Leak Test Line Set and Indoor Coil

⚠ WARNING



When using a high pressure gas such as dry nitrogen to pressurize a refrigeration or air conditioning system, use a regulator that can control the pressure down to 1 or 2 psig (6.9 to 13.8 kPa).

⚠ IMPORTANT

Leak detector must be capable of sensing HFC refrigerant.

⚠ WARNING

Refrigerant can be harmful if it is inhaled. Refrigerant must be used and recovered responsibly.

Failure to follow this warning may result in personal injury or death.

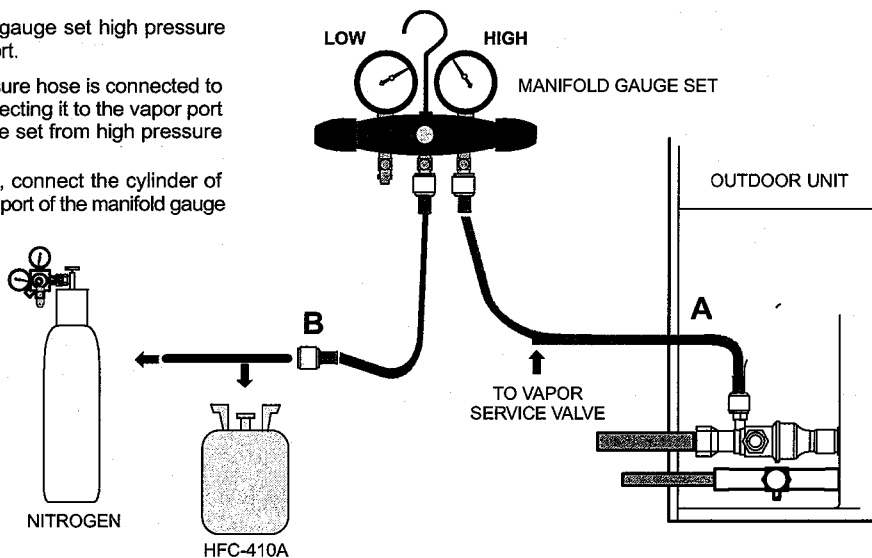
1 CONNECT GAUGE SET

- A** Connect an HFC-410A manifold gauge set high pressure hose to the vapor valve service port.

NOTE — Normally, the high pressure hose is connected to the liquid line port. However, connecting it to the vapor port better protects the manifold gauge set from high pressure damage.

- B** With both manifold valves closed, connect the cylinder of HFC-410A refrigerant to the center port of the manifold gauge set.

NOTE — Later in the procedure, the HFC-410A container will be replaced by the nitrogen container.



2 TEST FOR LEAKS

After the line set has been connected to the indoor and outdoor units, check the line set connections and indoor unit for leaks. Use the following procedure to test for leaks:

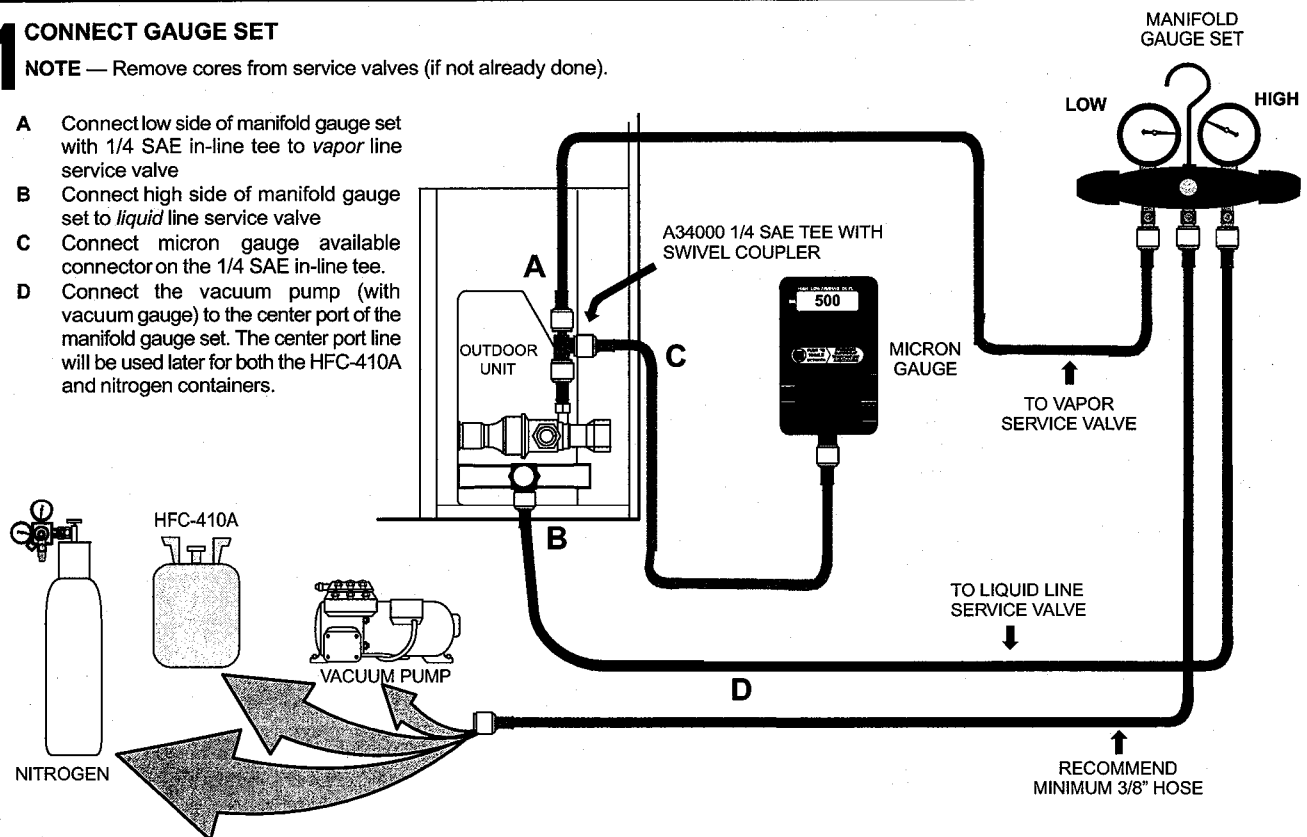
- A** With both manifold valves closed, connect the cylinder of HFC-410A refrigerant to the center port of the manifold gauge set. Open the valve on the HFC-410A cylinder (vapor only).
- B** Open the high pressure side of the manifold to allow HFC-410A into the line set and indoor unit. Weigh in a trace amount of HFC-410A. [A trace amount is a maximum of two ounces (57 g) refrigerant or three pounds (31 kPa) pressure]. Close the valve on the HFC-410A cylinder and the valve on the high pressure side of the manifold gauge set. Disconnect the HFC-410A cylinder.
- C** Connect a cylinder of dry nitrogen with a pressure regulating valve to the center port of the manifold gauge set.
- D** Adjust dry nitrogen pressure to 150 psig (1034 kPa). Open the valve on the high side of the manifold gauge set in order to pressurize the line set and the indoor unit.
- E** After a few minutes, open one of the service valve ports and verify that the refrigerant added to the system earlier is measurable with a leak detector.
- F** After leak testing disconnect gauges from service ports.

Figure 10. Leak Test

1 CONNECT GAUGE SET

NOTE — Remove cores from service valves (if not already done).

- A Connect low side of manifold gauge set with 1/4 SAE in-line tee to vapor line service valve
- B Connect high side of manifold gauge set to liquid line service valve
- C Connect micron gauge available connector on the 1/4 SAE in-line tee.
- D Connect the vacuum pump (with vacuum gauge) to the center port of the manifold gauge set. The center port line will be used later for both the HFC-410A and nitrogen containers.



2 EVACUATE THE SYSTEM

- A Open both manifold gauge valves and start the vacuum pump.
 - B Evacuate the line set and indoor unit to an **absolute pressure** of 23,000 microns (29.01 inches of mercury).
- NOTE** — During the early stages of evacuation, it is desirable to close the manifold gauge valve at least once. A rapid rise in pressure indicates a relatively large leak. If this occurs, **repeat the leak testing procedure**.
- NOTE** — The term **absolute pressure** means the total actual pressure within a given volume or system, above the absolute zero of pressure. Absolute pressure in a vacuum is equal to atmospheric pressure minus vacuum pressure.
- C When the absolute pressure reaches 23,000 microns (29.01 inches of mercury), close the manifold gauge valves, turn off the vacuum pump and disconnect the manifold gauge center port hose from vacuum pump. Attach the manifold center port hose to a dry nitrogen cylinder with pressure regulator set to 150 psig (1034 kPa) and purge the hose. Open the manifold gauge valves to break the vacuum in the line set and indoor unit. Close the manifold gauge valves.
 - D Shut off the dry nitrogen cylinder and remove the manifold gauge hose from the cylinder. Open the manifold gauge valves to release the dry nitrogen from the line set and indoor unit.
 - E Reconnect the manifold gauge to the vacuum pump, turn the pump on, and continue to evacuate the line set and indoor unit until the absolute pressure does not rise above 500 microns (29.9 inches of mercury) within a 20-minute period after shutting off the vacuum pump and closing the manifold gauge valves.
 - F When the absolute pressure requirement above has been met, disconnect the manifold hose from the vacuum pump and connect it to an upright cylinder of HFC-410A refrigerant. Open the manifold gauge valve 1 to 2 psig in order to release the vacuum in the line set and indoor unit.
 - G Perform the following:
 - Close manifold gauge valves.
 - Shut off HFC-410A cylinder.
 - Reinstall service valve cores by removing manifold hose from service valve. Quickly install cores with core tool while maintaining a positive system pressure.
 - Replace the stem caps and secure finger tight, then tighten an additional one-sixth (1/6) of a turn as illustrated.

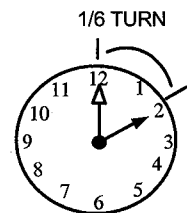


Figure 11. Evacuating System

⚠ WARNING

Danger of Equipment Damage. Avoid deep vacuum operation. Do not use compressors to evacuate a system. Extremely low vacuums can cause internal arcing and compressor failure. Damage caused by deep vacuum operation will void warranty.

⚠ CAUTION

Brazing alloys and flux contain materials which are hazardous to your health.

Avoid breathing vapors or fumes from brazing operations. Perform operations only in well ventilated areas.

Wear gloves and protective goggles or face shield to protect against burns.

Wash hands with soap and water after handling brazing alloys and flux.

Evacuating the system of non-condensables is critical for proper operation of the unit. Non-condensables are

defined as any gas that will not condense under temperatures and pressures present during operation of an air conditioning system. Non-condensables and water suction combine with refrigerant to produce substances that corrode copper piping and compressor parts.

⚠ IMPORTANT

Use a thermocouple or thermistor electronic vacuum gauge that is calibrated in microns. Use an instrument capable of accurately measuring down to 50 microns.

Electrical

In the U.S.A., wiring must conform with current local codes and the current National Electric Code (NEC). In Canada, wiring must conform with current local codes and the current Canadian Electrical Code (CEC).

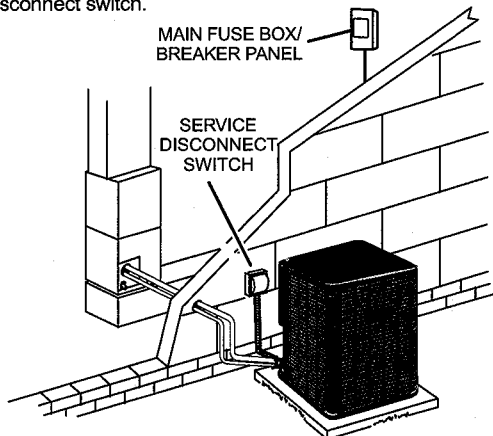
Refer to the furnace or air handler installation instructions for additional wiring application diagrams and refer to unit nameplate for minimum circuit ampacity and maximum overcurrent protection size.

24VAC TRANSFORMER

Use the transformer provided with the furnace or air handler for low-voltage control power (24VAC - 40 VA minimum)

SIZE CIRCUIT AND INSTALL SERVICE DISCONNECT SWITCH

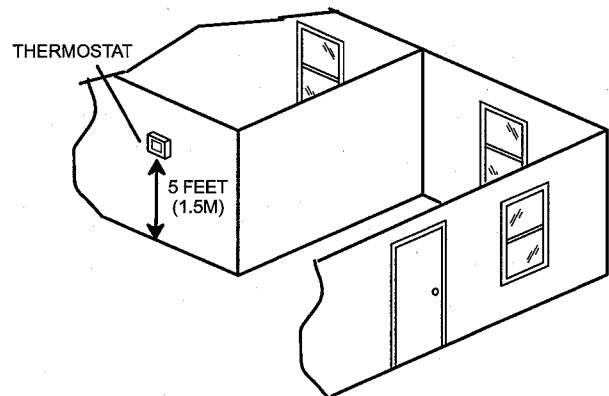
Refer to the unit nameplate for minimum circuit ampacity, and maximum fuse or circuit breaker (HACR per NEC). Install power wiring and properly sized disconnect switch.



NOTE — Units are approved for use only with copper conductors. Ground unit at disconnect switch or to an earth ground.

INSTALL THERMOSTAT

Install room thermostat (ordered separately) on an inside wall approximately in the center of the conditioned area and 5 feet (1.5m) from the floor. It should not be installed on an outside wall or where it can be affected by sunlight or drafts.



NOTE — 24VAC, Class II circuit connections are made in the control panel.

⚠ WARNING



Electric Shock Hazard. Can cause injury or death. Unit must be grounded in accordance with national and local codes.

Line voltage is present at all components when unit is not in operation on units with single-pole contactors. Disconnect all remote electric power supplies before opening access panel. Unit may have multiple power supplies.

ROUTING HIGH VOLTAGE/ GROUND AND CONTROL WIRING

HIGH VOLTAGE / GROUND WIRES

Any excess high voltage field wiring should be trimmed and secured away from any low voltage field wiring. To facilitate a conduit, a cutout is located in the bottom of the control panel. Connect conduit to the control panel using a proper conduit fitting.

CONTROL WIRING

NOTE — Wire tie provides low voltage control wire strain relief and to maintain separation of field installed low and high voltage circuits.

NOTE — For proper voltages, select thermostat wire (control wires) gauge per table above.

NOTE — Do not bundle any excess 24VAC control wires inside control panel.

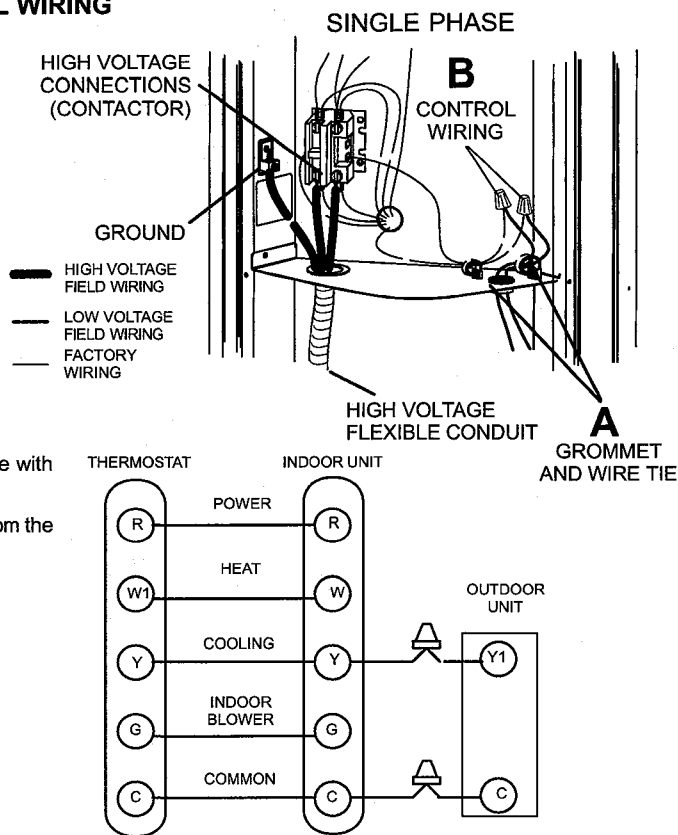
Install low voltage wiring from outdoor to indoor unit and from thermostat to indoor unit as illustrated.

A Run 24VAC control wires through hole with grommet and secure with provided wire tie.

B Make 24VAC thermostat wire connections. Locate the two wires from the contactor and make connection using field provided wire nuts:

- Yellow to Y1
- Black to C (common)

WIRE RUN LENGTH	AWG#	INSULATION TYPE
LESS THAN 100' (30 METERS)	18	TEMPERATURE RATING
MORE THAN 100' (30 METERS)	16	35°C MINIMUM.



GAUGE SET

CONNECTIONS FOR TESTING AND CHARGING

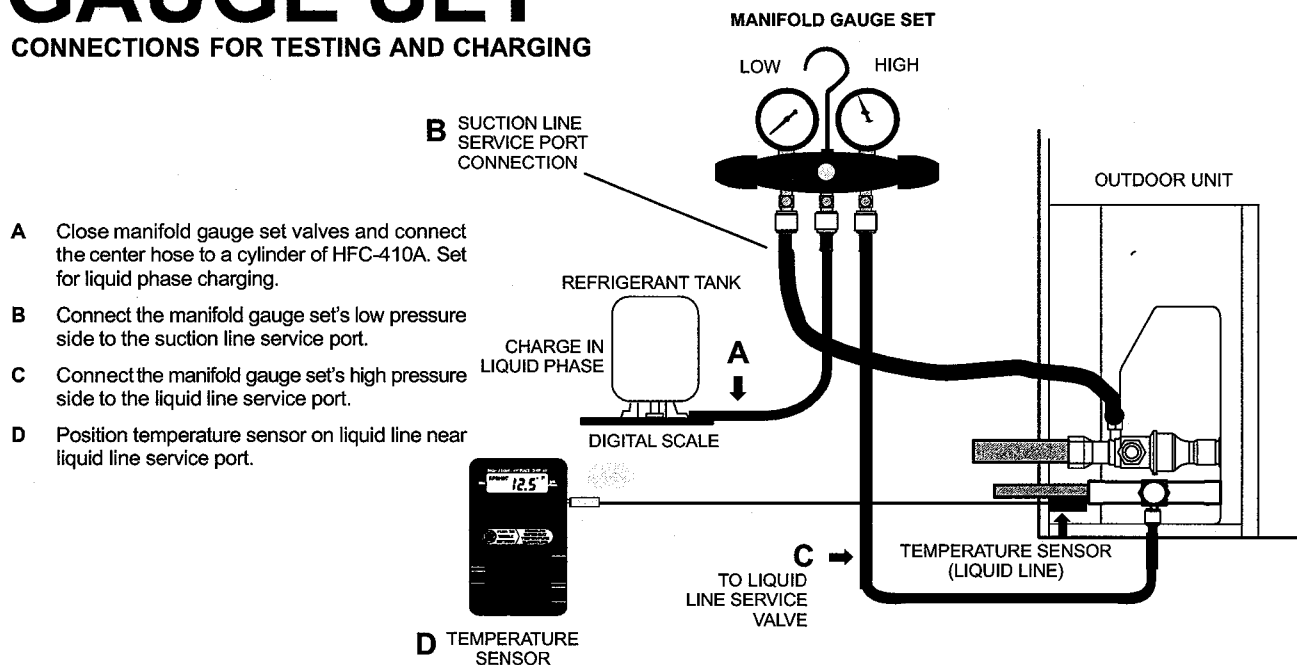


Figure 12. Gauge Set Setup and Connections

Servicing Units Void of Charge

If the outdoor unit is void of refrigerant, clean the system using the procedure described below.

1. Leak check system using procedure outlined in figure 10.
2. Evacuate the system using procedure outlined in figure 11.
3. Use nitrogen to break the vacuum and install a new filter drier in the system.
4. Evacuate the system again using procedure outlined in figure 11..
5. Weigh in refrigerant using procedure outlined under figure 15.

Unit Start Up

IMPORTANT

If unit is equipped with a crankcase heater, it should be energized 24 hours before unit start-up to prevent compressor damage as a result of slugging.

1. Rotate fan to check for binding.
2. Inspect all factory- and field-installed wiring for loose connections.

3. After evacuation is complete, open the liquid line and suction line service valves to release the refrigerant charge (contained in outdoor unit) into the system.
4. Replace the stem caps and tighten as specified in *Operating Service Valves* on page 6.
5. Check voltage supply at the disconnect switch. The voltage must be within the range listed on the unit's nameplate. If not, do not start the equipment until you have consulted with the power company and the voltage condition has been corrected.
6. Set the thermostat for a cooling demand. Turn on power to the indoor indoor unit and close the outdoor unit disconnect switch to start the unit.
7. Recheck voltage while the unit is running. Power must be within range shown on the nameplate.
8. Check system for sufficient refrigerate using the procedures that follow.

System Refrigerant

This section outlines procedures for:

1. Connecting gauge set for testing and charging;
2. Checking and adjusting indoor airflow;
3. Adding or removing refrigerant.