

BLOCK 673 LOT 8 ADDRESS (SITE) BRICKMALL 2796 Hooper Ave PERMIT NO. 1572-95

RECEIVED

JUN 12 1995



# CONSTRUCTION PERMIT APPLICATION

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

DIV. OF PERMITTING

## I. IDENTIFICATION

1. Proposed Work-site at: BRICKMALL 2796 Hooper Ave
2. Name of Owner in Fee: Liberty Travel Tel. (201) 934-3648  
Address 69 Spring St Ramsey NJ 07446  
street municipality zip code
3. Ownership in Fee: Public ☐ Private ☒
4. Principal Contractor: Russ Kelly Inc Tel. (609) 235-6164  
Address 12 Orchard Way Mt. Laurel NJ 08360
- License No. OR, if new home, Builder Reg. No. \_\_\_\_\_ Exp. Date \_\_\_\_\_
- Federal Emp. No. 22-21546-68 Social Security No. \_\_\_\_\_
5. Architect or Engineer Robert Zampolin Tel. (201) 358-1160  
Address 187 Fairview Ave Westwood NJ 07675
6. Responsible Person in Charge of Work Russ Kelly Tel. (609) 235-6164

## V. FEE SUMMARY (for office use only)

|                                   |                | Update | Update |
|-----------------------------------|----------------|--------|--------|
| 1. Building                       | \$ <u>150-</u> |        |        |
| 2. Electrical                     |                |        |        |
| 3. Plumbing                       | <u>56</u>      |        |        |
| 4. Fire Protection                | <u>46</u>      |        |        |
| 5. Elevator Devices               |                |        |        |
| 6. Subtotal                       | \$ <u>252-</u> |        |        |
| 7. Less 20% for State Plan Review | <u>25-</u>     |        |        |
| 8. Subtotal                       | \$ <u>9 =</u>  |        |        |
| 9. DCA Training Fee               |                |        |        |
| 10. Subtotal                      | \$ <u>20</u>   |        |        |
| 11. Cert. of Occupancy            | <u>515.00</u>  |        |        |
| 12. Other <u>2PA</u>              |                |        |        |
| 13. TOTAL                         | \$ <u>321-</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. Construction Classification \_\_\_\_\_
7. Total Land Area Disturbed \_\_\_\_\_ sq. ft.
8. Flood Hazard Zone \_\_\_\_\_
9. Base Flood Elevation \_\_\_\_\_
10. Wetlands yes \_\_\_\_\_ no \_\_\_\_\_
11. Max. Live Load \_\_\_\_\_
12. Max. Occupancy Load \_\_\_\_\_

## II. PROPOSED WORK

1. ☐ Minor work (single trade)
2. ☐ Small Job (\$5,000 and no prior approvals)
3. ☐ New Building
4. ☐ Addition
5. ☒ Alteration
6. ☒ Fire Protection
7. ☒ Plumbing
8. ☒ Electrical
9. ☐ Elevator Devices
10. ☐ Asbestos Abatement
11. ☒ Demolition

Est. Cost

8,000  
500  
2,000  
2,000  
1,000  
13,500

Alter

## OPTIONAL (for office use only)

| Plans Rec'd By | Date Rec'd     | Rejection Date | Approval Date  | Re-viewer | Resubmission Dates Approval | Rejection      | Re-viewer |
|----------------|----------------|----------------|----------------|-----------|-----------------------------|----------------|-----------|
| <u>JK</u>      |                |                | <u>6/21/95</u> | <u>JK</u> | <u>7/12/95</u>              | <u>WS</u>      |           |
|                |                |                | <u>6/21/95</u> | <u>JK</u> | <u>7/10/95</u>              |                | <u>JK</u> |
|                |                |                | <u>6/21/95</u> | <u>JK</u> | <u>7/10/95</u>              |                | <u>JK</u> |
| <u>On</u>      | <u>6/21/95</u> | <u>N/A</u>     | <u>On</u>      | <u>On</u> | <u>7/12/95</u>              | <u>Paul OK</u> |           |

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. ☐ Pressure Vessels
4. ☐ Refrigeration Systems
5. ☐ Cross-Connections/Backflow Preventers
6. ☐ Hazardous Uses/Places of Assembly
7. ☐ Sprinklers
8. ☐ Smoke Control Systems in Open Wells
9. ☐ Underground Storage Tanks

## VII. DESCRIPTION OF BUILDING USE

### A. RESIDENTIAL

1. ☐ Hotels (R-1)
2. ☐ Multi-Family (R-2)
3. ☐ Two-Family (R-3) BOCA
4. ☐ Two-Family (R-4) CABO
5. ☐ One-Family (R-3) BOCA
6. ☐ One-Family (R-4) CABO

No. of dwelling units: \_\_\_\_\_  
Before Construction \_\_\_\_\_  
After Construction \_\_\_\_\_  
Net gain or loss \_\_\_\_\_

### B. NON-RESIDENTIAL

1. State Specific Use: Travel Agent
2. Use Group: B
3. Change in Use Group, Indicate Former: M

## 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.vii:

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 New Jersey Uniform Construction Code, N.J.A.C. 5:32-2.15(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 Russ Kelly

Address 12 Orchard way  
Mt. Laurel NJ 08054

Telephone (609) 235-6166

Signature Russ Kelly Date \_\_\_\_\_

OFFICE DATE RECEIVED: \_\_\_\_\_

| VIII. PRIOR APPROVALS CHECKLIST<br>(office use only)          | LOCAL APPROVAL    |            | COUNTY APPROVAL   |            | REGIONAL APPROVAL |            | STATE APPROVAL    |            | COMMENTS                                                                                                                                                             |
|---------------------------------------------------------------|-------------------|------------|-------------------|------------|-------------------|------------|-------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                               | Prelimin. Initial | Final Date | Prelimin. Initial | Final Date | Prelimin. Initial | Final Date | Prelimin. Initial | Final Date |                                                                                                                                                                      |
| <input type="checkbox"/> Zoning Officer                       |                   |            |                   |            |                   |            |                   |            | <div style="text-align: center; font-size: 2em; font-weight: bold;">                     IMPORTANT<br/>                     A.H.B.T. - EXEMPT                 </div> |
| <input type="checkbox"/> Planning Board                       |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/> Zoning Board                         |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/> Sewer Authority                      |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/> Water Authority                      |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/> Fire Department                      |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/> Police Department                    |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/> Health Department                    |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/> Soil Conservation                    |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/> N.J. Dept. of Community Affairs      |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/> N.J. Department of Transportation    |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/> N.J. Dept. of Environmental Protect. |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/> Utility Dig No.                      |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/>                                      |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |
| <input type="checkbox"/>                                      |                   |            |                   |            |                   |            |                   |            |                                                                                                                                                                      |

**IX. SUBCODES AND SPECIAL REGULATIONS APPLICABLE (office use only—optional)**

| Name of Code & Edition |              | Name of Code & Edition         |             |
|------------------------|--------------|--------------------------------|-------------|
| Building _____         | Energy _____ | Barrier Free _____             | Other _____ |
| Electrical _____       |              | Flood Hazard _____             |             |
| Plumbing _____         |              | As Built Elevation Cert. _____ |             |
| Fire Protection _____  |              |                                |             |
| Mechanical _____       |              |                                |             |

**X. CERTIFICATES ISSUED (office use only)**

DATE ISSUED      DATE EXPIRED      DATE REISSUED      DATE EXPIRED

|                                                              |                 |                |       |       |
|--------------------------------------------------------------|-----------------|----------------|-------|-------|
| <input type="checkbox"/> Temporary Certificate of Occupancy  | No. _____       | _____          | _____ | _____ |
| <input type="checkbox"/> Temporary Certificate of Compliance | No. _____       | _____          | _____ | _____ |
| <input type="checkbox"/> Continued Certificate of Occupancy  | No. _____       | _____          | _____ | _____ |
| <input type="checkbox"/> Certificate of Compliance           | No. _____       | _____          | _____ | _____ |
| <input type="checkbox"/> Certificate of Occupancy            | No. _____       | _____          | _____ | _____ |
| <input checked="" type="checkbox"/> Certificate of Approval  | No. <u>1572</u> | <u>7-12-95</u> |       |       |



# CERTIFICATE

Date Issued 7/12/95  
Control #  
Permit # 1572-95

## IDENTIFICATION

Block 673 Lot 8  
Work Site Location 2796 Hooper Avenue/Brick Mall  
Brick, N.J.  
Owner in Fee Liberty Travel  
Address 69 Spring St  
Ramsey, N.J.  
Tele. ( )  
Contractor Russ Kelly Inc  
Address 12 Orchard Way  
Mt. Laurel N.J.  
Tele. ( )  
Lic. No. or Bldg. Reg. No.  
Federal Emp. No.  
or Social Security No.

Home Warranty No. N/A  
Use Group B 2 hour  
Maximum Live Load  
Description of Work/Use:

### Commercial Alter/Tenant Fit-Up

Type of Warranty Plan: [ ] State [ ] Private  
Construction Classification  
Maximum Occupancy Load

## CERTIFICATE OF OCCUPANCY/APPROVAL

### ☐ CERTIFICATE OF OCCUPANCY

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

### ☐ 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 OCCUPANCY

If this is a Temporary Certificate of Occupancy the following conditions must be met no later than , 19 or the owner will be subject to a fine or order to vacate:

Fee \$  
Paid [ ] Check No.  
Collected by:

CONSTRUCTION OFFICIAL

*Anthony G. Lewis*



Date Issued 6-21-95  
Control #  
Permit # 1572.95

IDENTIFICATION Block 673 Lot 8

Work Site Location 2794 Francis Ave. Contractor Kenneth L. H. Jones  
Old Penn State Address 12 Ashburn N.W.  
 Owner In Fee Walter T. Jones Mr. Kenneth L. H. Jones  
 Address 69 Ashburn St. 08360  
Kenneth L. H. Jones 07448  
 Tele. ( ) \_\_\_\_\_ Lic. No. or Bldrs. Reg. No. \_\_\_\_\_ Exp. Date \_\_\_\_\_  
 Federal Emp. No. \_\_\_\_\_  
 or Social Security No. \_\_\_\_\_

is hereby granted permission to perform the following work:

☒ BUILDING      ☐ PLUMBING      ☐ OTHER

☐ ELECTRICAL      ☐ FIRE PROTECTION

☐ ELEVATOR DEVICES

**DESCRIPTION OF WORK:**

Comm. Allen

**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 \$ 11,500.

2nd Edition

U.C.C. Form F-170C

**CONSTRUCTION OFFICIAL**

1 WHITE - OFFICE    2 CANARY - TAX ASSESSOR    3 PINK - JACKET    4 GOLD - APPLICANT

| PAYMENTS (Office Use Only) |                    | **0005** |
|----------------------------|--------------------|----------|
| Building                   | 150-               | 1572.00  |
| Plumbing                   | 56 TH OFN          | 0.00     |
| Electrical                 | 673 #              |          |
| Fire Protection            | 500 TH -           | 0.00     |
| Other                      | P/R 25 - 8 #       |          |
| Other                      | 1 INITIATING       | 150.00   |
| DCA Training Fee           | 9 PLUMBING         | 56.00    |
| Cert. of Occ.              | 20 FTRE            | 16.00    |
| Other                      | Z.P.A. 15 PLUMBING | 25.00    |
| Total                      | 321 - D.C.A.       | 9.00     |
| Check No.                  | # 2489 / 0         | 20.00    |
| Cash                       | 7000 FTRE          | 15.00    |
| Collected By:              |                    |          |



# PERMIT UPDATE

Date Update Issued

Control #

Permit # 15W-95

Date Permit Issued

7/7/95

IDENTIFICATION Block 673 Lot 8

Work Site Location 2766 Horden Ave

Liberty Travel

Owner in Fee LIBERTY TRAVEL

Address 69 Spring St

Ramsey 07446

Tele. (201) 934-3648

Contractor Russ Kelly Inc

Address 12 Orchard Way

MT. CAPEL NJ

Tele. (609) 235-6164

Lic. No. or Bldrs. Reg. No. \_\_\_\_\_

Federal Emp. No. \_\_\_\_\_

or Social Security No. \_\_\_\_\_

is hereby granted permission to perform the following work:

☐ BUILDING ☒ PLUMBING ☐ Other \_\_\_\_\_

☐ ELECTRICAL ☒ FIRE PROTECTION

DESCRIPTION OF WORK:

update permit to change Air handler

Estimated Cost of Work \$ 1200<sup>00</sup>

C. J. Allen  
CONSTRUCTION OFFICIAL

U.C.C. Form F-190A

| PAYMENTS (Office Use Only) 8 # |                 |
|--------------------------------|-----------------|
| Building                       | PLUMBING \$5.00 |
| Plumbing                       | FIRE \$3.00     |
| Electrical                     | D.C.A. \$1.00   |
| Fire Protection                | TOTAL \$9.00    |
| Other                          | CHARGE \$0.00   |
| Other                          |                 |
| DCA Training Fee               | 1- \$18.47      |
| Cert. of Occ.                  |                 |
| Other                          |                 |
| Total                          | 99-             |
| Check No.                      | # 2719          |
| Cash                           |                 |
| Collected By:                  |                 |



ELECTRICAL  
SUBCODE  
TECHNICAL SECTION



Date Received  
Date Issued  
Control #  
Permit #

JUL 7 95 00620

Brick

Will Call

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

Block 673 Lot 8 Work Site Location Black Hall 2796 Hood Rd. Ave.

Owner in Fee Liberty Travel  
Address 69 Spruce St  
Brimsby N.J. 07446

Tele. (201) 934-3445  
Contractor T.V. Williams Electric Inc.

Address 701 General Ave.  
Greenwood N.J. 08107

Tele. (609) 853-6718  
Lic. No. 12115  
Federal Emp. No. 22-3235121 or Social Security No. \_\_\_\_\_

B. ELECTRICAL CHARACTERISTICS

Use Group Present \_\_\_\_\_ Proposed \_\_\_\_\_  
☐ Pole/Pad # \_\_\_\_\_ ☐ Temporary ☐ Other \_\_\_\_\_  
Building Occupied as \_\_\_\_\_ Utility Co. \_\_\_\_\_  
Est. Cost of Elec. Work \$ 520.00

JOB SUMMARY (Office Use Only)

| PLAN REVIEW:                                                                                     |                               | INSPECTIONS       |          |
|--------------------------------------------------------------------------------------------------|-------------------------------|-------------------|----------|
| PLAN REVIEW:                                                                                     | INSPECTIONS                   | Dates (Month/Day) | Initial  |
| <input type="checkbox"/> No Plans Required                                                       | Type:                         | Failure           | Approval |
| Joint Plan Review Required:                                                                      | Rough                         |                   |          |
| <input type="checkbox"/> Bldg. <input type="checkbox"/> Plumb.                                   | Temporary                     |                   |          |
| <input type="checkbox"/> Fire <input type="checkbox"/> Elevator                                  | Constr. Serv.                 |                   |          |
| <input type="checkbox"/> Elec. Plans Approved                                                    | TCO                           |                   |          |
| Date: _____                                                                                      | Other <u>work 2/16/85</u>     |                   |          |
| Approved by: _____                                                                               | Service                       |                   |          |
|                                                                                                  | Final                         |                   |          |
| SUBCODE APPROVAL                                                                                 | Temp. Cut-in-Card Date Issued |                   |          |
| <input type="checkbox"/> CO <input type="checkbox"/> CCO <input checked="" type="checkbox"/> TCA | Final Cut-in-Card Date Issued |                   |          |
| Date: <u>2/16/85</u>                                                                             |                               |                   |          |
| Approved By: <u>STK</u>                                                                          |                               |                   |          |

C. CERTIFICATION IN LIEU OF OATH

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

☒ Licensed Electrical Contractor ☐ Exempt Applicant

Signature—Contractor Seal

D. TECHNICAL SITE DATA

| NO. | SIZE | ITEM                                            | FEE (Office Use Only) |
|-----|------|-------------------------------------------------|-----------------------|
|     |      | Fixtures (1)                                    |                       |
|     |      | Receptacles (2)                                 |                       |
|     |      | Switches (3)                                    |                       |
|     |      | Total 1 + 2 + 3                                 |                       |
|     |      | Kw Range                                        |                       |
|     |      | Kw Oven(s)                                      |                       |
|     |      | Kw Surface Unit                                 |                       |
|     |      | hp Dishwasher                                   |                       |
|     |      | hp Garbage Disposal                             |                       |
|     |      | Kw Dryer                                        |                       |
|     |      | Kw A/C Unit                                     |                       |
|     |      | Burglar Alarms                                  |                       |
|     |      | Intercoms Panels                                |                       |
|     |      | Smoke Detectors                                 |                       |
|     |      | hp Whirlpool/spa                                |                       |
|     |      | Pool Bonding                                    |                       |
|     |      | hp Pool Filter Motor                            |                       |
|     |      | Pool Lights                                     |                       |
|     |      | <u>1 1/2 hp Kw Water Heater(s)</u>              |                       |
|     |      | <u>1 30,000 Btu Central heat:</u>               |                       |
|     |      | oil (gas) or elec.                              |                       |
|     |      | Kw Baseboard Heat Units                         |                       |
|     |      | Thermostats                                     |                       |
|     |      | hp Heat Pump                                    |                       |
|     |      | hp Pump(s)                                      |                       |
|     |      | <u>1 60 Amp Motor Control Center/Sub Panels</u> |                       |
|     |      | Signs                                           |                       |
|     |      | Light Standards                                 |                       |
|     |      | hp Motors—Fractional H.P.                       |                       |
|     |      | hp Motors—All Others                            |                       |
|     |      | Kw Transformers                                 |                       |
|     |      | Kw Generators                                   |                       |
|     |      | <u>1 60 Amp Service Entrance 3 Phase</u>        |                       |
|     |      | Other                                           |                       |

|                                                   |                          |                  |
|---------------------------------------------------|--------------------------|------------------|
| Paid <input type="checkbox"/> Check # <u>2729</u> | Administrative Surcharge | \$               |
|                                                   | Minimum Fee              | \$               |
| Collected by: _____                               | DCA Training Fee         | \$               |
|                                                   | TOTAL FEE                | \$ <u>166.00</u> |

U.C.C. Form F-1208 SF

1 Write - Inspector Copy  
3 Print - Office Copy  
2 Copy - Office Copy  
4 Gold - Applicant Copy

12 Orchardway Mt. Laurel

2/10/95 - (1) SWITCHED CONTROLS @ RT  
HEATING EQUIPMENT ABOVE CEILING

- (2) MAIN BREAKER CLIP REQUIRED.
- (3) SECURE MC CABLE EVERYWHERE
- (4) INSTALL WAVE FILTERS "
- (5) 2 240 BREAKERS WITH 10 AWG ?
- (6) DAMAGED SIGN DISCONNECT
- (7) OLD STYLE WAVE FILTERS FALL OUT
- (8) TUNER 1 AND NOT LABELED
- (9) PERM PLACES FOR SERVICE EQUIPMENT
- (10) REMOVE UNUSED BREAKER LABELED "MAIN"  
IN SUB PANEL
- (11) WATER PIPED GROUND & JUMP ?
- (12) ACCESS ROOF
- (13) SHEET METAL SCREW IN PANEL NOT  
APPROVED FOR E GROUND TERMINATION.





PLUMBING  
SUBCODE  
TECHNICAL SECTION



Date Received 11/17/95  
Date Issued 6-21-95  
Control #  
Permit # 1872-95

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

Block 673 Lot 8  
Work Site Location Chick mail 2796 Hoppen Ave  
Owner in Fee Liberty Travel  
Address 1934 Ramsey 07446  
Tele. (201) 934 3648  
Contractor Schmidt's Mechanical Inc  
Address 629 Union mill RD  
Tele. MT Laurel NJ 08054  
Lic. No. 604234-2987  
Federal Emp. No. 222450294 or Social Security No. \_\_\_\_\_

B. PLUMBING CHARACTERISTICS

Use Group Present 177 Proposed B  
Building Sewer Size \_\_\_\_\_ Public Sewer \_\_\_\_\_ Private Septic \_\_\_\_\_  
Water Service Size \_\_\_\_\_ Public Water \_\_\_\_\_ Private Well \_\_\_\_\_  
Estimated Cost of Plumbing Work \$ 200

JOB SUMMARY (Office Use Only)

| PLAN REVIEW:                                                                         | INSPECTIONS   | Dates (Month/Day)                |
|--------------------------------------------------------------------------------------|---------------|----------------------------------|
| <input type="checkbox"/> No Plans Required                                           | Type:         | Failure Failure Approval Initial |
| Joint Plan Review Required:                                                          | Slab          | _____                            |
| <input type="checkbox"/> Bldg. <input type="checkbox"/> Elec.                        | Rough         | _____                            |
| <input type="checkbox"/> Fire <input type="checkbox"/> Elevator                      | Water         | _____                            |
| <input checked="" type="checkbox"/> Plumb. Plans Approved                            | Sewer         | _____                            |
| Date: <u>1/1/95</u>                                                                  | Fixtures      | _____                            |
| Approved by: <u>[Signature]</u>                                                      | Gas Equipment | _____                            |
| SUBCODE APPROVAL:                                                                    | Gas Piping    | _____                            |
| <input type="checkbox"/> CO <input type="checkbox"/> CCO <input type="checkbox"/> CA | Solar         | _____                            |
| Approved By: _____                                                                   | TCO           | _____                            |
| Date: _____                                                                          |               | _____                            |

C. CERTIFICATION IN LIEU OF OATH

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

Richard Brown  
Signature—Contractor Seal

☐ Licensed Plumbing Contractor ☐ Exempt Applicant

D. TECHNICAL SITE DATA (List 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                             | <u>15</u>             |
|     | Steam Boiler                           | _____                 |
|     | Hot Water Boiler                       | <u>2550</u>           |
|     | Sewer Pump                             | _____                 |
|     | Interceptor/Separator                  | _____                 |
|     | Backflow Preventer                     | _____                 |
|     | Greasetrap                             | _____                 |
|     | Water Cooled A/C or Refrigeration Unit | _____                 |
|     | Sewer Connection                       | _____                 |
|     | Water Service Connection               | _____                 |
|     | Active Solar System                    | _____                 |
|     | Other                                  | _____                 |

Paid ☐ Check # \_\_\_\_\_ Administrative Surcharge \$ \_\_\_\_\_  
Minimum Fee \$ \_\_\_\_\_  
DCA Training Fee \$ \_\_\_\_\_  
Collected by: \_\_\_\_\_ TOTAL \$ 4465



**PLUMBING  
SUBCODE  
TECHNICAL SECTION**



Date Received  
Date Issued  
Control #  
Permit #

**A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION, WHEN CHANGING**

CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 673 Lot B

Work Site Location Black Man 2796 Hooper Ave

Owner in Fee Winery Travel

Address 48 Spring St

Telephone 934-3648

Contractor Schmidt's Mechanical Inc.

Address 629 Union Mill Rd

Telephone 664-284-2887

Lic. No. 6103

Federal Emp. No. 222450284 or Social Security No. \_\_\_\_\_

**B. PLUMBING CHARACTERISTICS**

Use Group Present ny Proposed B

Building Sewer Size \_\_\_\_\_ Public Sewer \_\_\_\_\_ Private Septic \_\_\_\_\_

Water Service Size \_\_\_\_\_ Public Water \_\_\_\_\_ Private Well \_\_\_\_\_

Estimated Cost of Plumbing Work \$ 2,000

**JOB SUMMARY (Office Use Only)**

PLAN REVIEW:

☐ No Plans Required

Joint Plan Review Required:

☐ Bldg. ☐ Elec.

☐ Fire ☐ Elevator

☒ Plum./Plas Approved

Date: 6/21/95

Approved by: [Signature]

SUBCODE APPROVAL:

☒ CO ☐ CA

Approved By: [Signature]

Date: 7/10/95

**C. CERTIFICATION IN LIEU OF OATH**

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

Signature—Contractor Seal [Signature]

☐ Licensed Plumbing Contractor ☐ Exempt Applicant

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

NO.

FIXTURE/EQUIPMENT

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

Steam Boiler

Hot Water Boiler

Sewer Pump

Interceptor/Separator

Backflow Preventer

Greasetrap

Water Cooled A/C

or Refrigeration Unit

Sewer Connection

Water Service Connection

Active Solar System

Other

FEE (Office Use Only)

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U.C.C. Form F-1308

1 White - Inspector Copy

2 Canary - Office Copy

3 Pink - Office Copy

4 Gold - Applicant Copy



# FIRE PROTECTION SUBCODE TECHNICAL SECTION



Date Received  
Date Issued 6-21-95  
Control #  
Permit # 1572-25

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

Block 673 Lot 8  
Work Site Location Brick Hall  
2796 Heeper Ave  
Owner in Fee Liberty Trust Peter Tricharas  
Address LA Spang ST 914-96718454  
Browsey AS 07446  
Tele. (213) 934-3648  
Contractor Huss Kew Inc.  
Address 120 Orchard way 07057  
Tele. (609) 235-6164  
Lic. No. \_\_\_\_\_  
Federal Emp. No. 22-21546-68 or Social Security No. \_\_\_\_\_

## B. FIRE PROTECTION CHARACTERISTICS

Use Group Present 14 Proposed 15  
Constr. Class. Present \_\_\_\_\_ Proposed \_\_\_\_\_  
Heating Systems ☐ New ☒ Existing  
Type: ☒ Gas ☐ Oil ☐ Electrical ☐ Solar  
☐ Other \_\_\_\_\_  
Location: \_\_\_\_\_  
Total Est. Cost of Fire Prot. Work \$ 250 ☐ Other \_\_\_\_\_

## JOB SUMMARY (Office Use Only)

| PLAN REVIEW:                                                          |  | INSPECTIONS:     |         |         |                    |
|-----------------------------------------------------------------------|--|------------------|---------|---------|--------------------|
| <input type="checkbox"/> No Plans Required                            |  | Type:            | Failure | Failure | Dates (Month/Day)  |
| Joint Plan Review Required:                                           |  | Suppression Test |         |         | Approval           |
| <input type="checkbox"/> Bldg. <input type="checkbox"/> Plumb.        |  | Fire Alarm Test  |         |         | Initial            |
| <input type="checkbox"/> Elec. <input type="checkbox"/> Elevator      |  | Smoke Test       |         |         |                    |
| <input checked="" type="checkbox"/> Fire Plans Approved               |  | Mechanical       |         |         | <u>7/16/95</u>     |
| Date: <u>6/21/95</u>                                                  |  | TCO              |         |         | <u>[Signature]</u> |
| Approved by: <u>[Signature]</u>                                       |  | Other            |         |         |                    |
| SUBCODE APPROVAL:                                                     |  | Other            |         |         |                    |
| <input type="checkbox"/> CO <input type="checkbox"/> CCO <u>KI CA</u> |  | Other            |         |         |                    |
| Date: <u>7/10/95</u>                                                  |  | Other            |         |         |                    |
| Approved by: <u>[Signature]</u>                                       |  |                  |         |         |                    |

## C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

SIGNATURE \_\_\_\_\_

## D. TECHNICAL SITE DATA

### Description of Work

Water Supply Source \_\_\_\_\_  
Method of Valve Supervision \_\_\_\_\_  
Local Alarm Supervision \_\_\_\_\_  
Central Supervision \_\_\_\_\_  
Proprietary Supervision \_\_\_\_\_

Flammable Liquid Storage Tanks ( ) Capacity \_\_\_\_\_ Fuel \_\_\_\_\_  
Combustible Liquid Storage Tanks ( ) Capacity \_\_\_\_\_ Fuel \_\_\_\_\_  
L.P.G. Storage Tanks ( ) Capacity \_\_\_\_\_ Fuel \_\_\_\_\_  
L.N.G. Storage Tanks ( ) Capacity \_\_\_\_\_ Fuel \_\_\_\_\_

Wet Sprinkler Heads \_\_\_\_\_  
Dry Sprinkler Heads \_\_\_\_\_  
TOTAL \_\_\_\_\_

Smoke Detectors 5-10 \_\_\_\_\_  
Heat Detectors in Meeting Room \_\_\_\_\_  
TOTAL 2 \_\_\_\_\_

Stand Pipes \_\_\_\_\_  
Kitchen Hood Exhaust Systems \_\_\_\_\_

Pre-Engineered Systems \_\_\_\_\_  
CO<sub>2</sub> Suppression \_\_\_\_\_  
Halon Suppression \_\_\_\_\_  
Foam Suppression \_\_\_\_\_  
Dry Chemical \_\_\_\_\_  
Wet Chemical \_\_\_\_\_

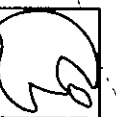
Gas or Oil Fired Appliance \_\_\_\_\_  
OTHER \_\_\_\_\_

## FEE (Office Use Only)

Paid ☐ Check # \_\_\_\_\_ Administrative Surcharge \$ \_\_\_\_\_  
Minimum Fee \$ \_\_\_\_\_  
DCA Training Fee \$ \_\_\_\_\_  
Collected by: \_\_\_\_\_ TOTAL FEE \$ 46



# FIRE PROTECTION SUBCODE TECHNICAL SECTION



Date Received 7/17/95  
Date Issued  
Control # 1572-95  
Permit # update

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

Block 673 Lot 8  
Work Site Location 2796 Hopper Ave  
Owner in Fee Liberty Lane  
Address Ramsey St 07446  
Tele. (201) 934-3648  
Contractor Schmitts Mechanical INC  
Address 629 Union Mill Rd  
Tele. (609) 235-2887  
Lic. No. 6103  
Federal Emp. No. 22450284 or Social Security No.

## B. FIRE PROTECTION CHARACTERISTICS

Use Group Present m7 Proposed B  
Const. Class. Present Proposed  
Heating Systems K New Existing  
Type: K Gas Oil Electrical Solar  
Location: Sewer City  
Total Est. Cost of Fire Prot. Work \$ [ ] Other

## JOB SUMMARY (Office Use Only)

| PLAN REVIEW:                                                       | INSPECTIONS:     | Dates (Month/Day)                |
|--------------------------------------------------------------------|------------------|----------------------------------|
|                                                                    | Type:            | Failure Failure Approval Initial |
| <input type="checkbox"/> No Plans Required                         | Suppression Test |                                  |
| <input type="checkbox"/> Bldg. <input type="checkbox"/> Plumb.     | Fire Alarm Test  |                                  |
| <input type="checkbox"/> Elec. <input type="checkbox"/> Elevator   | Smoke Test       |                                  |
| <input checked="" type="checkbox"/> Fire Place Approved            | Mechanical       |                                  |
| Date: 7/5/95                                                       | TCO              |                                  |
| Approved by: [Signature]                                           | Other            |                                  |
| SUBCODE APPROVAL:                                                  | Other            |                                  |
| <input checked="" type="checkbox"/> CO <input type="checkbox"/> CO | Other            |                                  |
| Date: 7/10/95                                                      | Other            |                                  |
| Approved by: [Signature]                                           |                  |                                  |

## C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Richard Bottom  
SIGNATURE

## D. TECHNICAL SITE DATA

### Description of Work

Water Supply Source  
Method of Valve Supervision  
Local Alarm Supervision  
Central Supervision  
Proprietary Supervision

Flammable Liquid Storage Tanks  
Combustible Liquid Storage Tanks  
L.P.G. Storage Tanks  
L.N.G. Storage Tanks

( ) Capacity Fuel  
( ) Capacity Fuel  
( ) Capacity Fuel  
( ) Capacity Fuel

### Number

Wet Sprinkler Heads  
Dry Sprinkler Heads  
TOTAL

Smoke Detectors  
Heat Detectors  
TOTAL

Stand Pipes  
Kitchen Hood Exhaust Systems

Pre-Engineered Systems

CO<sub>2</sub> Suppression  
Halon Suppression  
Foam Suppression  
Dry Chemical  
Wet Chemical

Gas or Oil Fired Appliance  
OTHER 1 FURNACE 1

## FEE (Office Use Only)

Paid [ ] Check #  
Collected by:  
Administrative Surcharge \$  
Minimum Fee \$  
DCA Training Fee \$  
TOTAL FEE \$



Date Received 6-21-95  
Date Issued  
Control #  
Permit # 1572-95

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

Block 673 Lot 8  
Work Site Location BRICK MALL 2796 HOOPER AVE  
Owner in Fee LIBRARY TRAVEL Peter Trahanas  
Address 69 Spring St 914-967-8454  
Amherst, NY 07446  
Tele. (201) 934-1364B  
Contractor Russ Kelly Inc.  
Address 12 Orchard Way  
My-Land, NY 08054  
Tele. (609) 235-6164  
Lic. No. or Bids. Reg. No. \_\_\_\_\_  
Federal Emp. No. 22-21546-68 or Social Security No. \_\_\_\_\_

**JOB SUMMARY (Office Use Only)**

| PLAN REVIEW                                                                                  | Date | Initial | INSPECTIONS | Dates (Month/Day) |          |         |
|----------------------------------------------------------------------------------------------|------|---------|-------------|-------------------|----------|---------|
|                                                                                              |      |         | Type:       | Failure           | Approval | Initial |
| <input type="checkbox"/> No Plans Req.                                                       |      |         | Footings    |                   |          |         |
| <input type="checkbox"/> All                                                                 |      |         | Foundation  |                   |          |         |
| <input type="checkbox"/> Footing                                                             |      |         | Slab        |                   |          |         |
| <input type="checkbox"/> Foundation                                                          |      |         | Frame       |                   |          |         |
| <input type="checkbox"/> Frame                                                               |      |         | Insulation  |                   |          |         |
| <input type="checkbox"/> Other                                                               |      |         | Finishes    |                   |          |         |
| Joint Plan Review Required:                                                                  |      |         | Energy      |                   |          |         |
| <input type="checkbox"/> Elec. <input type="checkbox"/> Plumb. <input type="checkbox"/> Fire |      |         | Mechanical  |                   |          |         |
| SUBCODE APPROVAL                                                                             |      |         | TCO         |                   |          |         |
| <input type="checkbox"/> CO <input type="checkbox"/> CCO <input type="checkbox"/> SA         |      |         | Other       |                   |          |         |
| Date: <u>7-12-95</u>                                                                         |      |         | Final       |                   |          |         |
| Approved By: <u>[Signature]</u>                                                              |      |         |             |                   |          |         |

**B. BUILDING CHARACTERISTICS**

Use Group Present M Proposed R  
Constr. Class Present \_\_\_\_\_ Proposed \_\_\_\_\_  
No. of Stories \_\_\_\_\_  
Height of Structure \_\_\_\_\_ Ft.  
Area--Largest Floor \_\_\_\_\_ Sq. Ft.  
New Bldg. Area/All Floors \_\_\_\_\_ Sq. Ft.  
Volume of New Structure \_\_\_\_\_ Cu. Ft.  
Total Land Area Disturbed \_\_\_\_\_ Sq. Ft.

**Est. Cost of Bldg. Work:**  
1. New Bldg. \$ 8,000  
2. Alteration \$ 8,000  
3. Total (1+2) \$ 16,000

**C. CERTIFICATION IN LIEU OF OATH**

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Signature \_\_\_\_\_

**D. TECHNICAL SITE DATA**

DESCRIPTION OF WORK

Tenant for up to 3 per person  
convert pizza rest. into  
Travel agent  
new ceiling  
new residence  
carpet

(Office Use Only)  
FEE

| TYPE OF WORK:                                  | Height (6' or over) |
|------------------------------------------------|---------------------|
| <input type="checkbox"/> New Building          |                     |
| <input type="checkbox"/> Addition              |                     |
| <input checked="" type="checkbox"/> Alteration |                     |
| <input type="checkbox"/> Roofing               |                     |
| <input type="checkbox"/> Siding                |                     |
| <input type="checkbox"/> Fence                 |                     |
| <input checked="" type="checkbox"/> Sign       | <u>25</u> Sq. Ft.   |
| <input type="checkbox"/> Pool                  |                     |
| <input type="checkbox"/> Asbestos Abatement    |                     |
| <input type="checkbox"/> Other                 |                     |
| <input type="checkbox"/> Other                 |                     |
| <input checked="" type="checkbox"/> Demolition |                     |

Administrative Surcharge \$ \_\_\_\_\_  
Paid ☐ Check # \_\_\_\_\_ Minimum Fee \$ \_\_\_\_\_  
Collected by: \_\_\_\_\_ DCA TRAINING FEE \$ \_\_\_\_\_  
TOTAL FEE \$ \_\_\_\_\_

# TOWNSHIP OF BRICK

## ZONING PERMIT

Date of Issue: June 12, 1995

1995 Z 0887

Block 673 Lot 8 Zone B-3

Property Address: 2796 Hooper Avenue, Brick Mall

Owner: Peter Tranhanas (Phone): (914) 967-8454

Applicant: Russ Kelly (Phone): (609) 235-6164

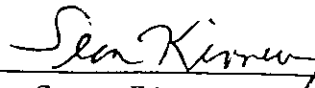
Use: Liberty Travel Office

Proposed Construction (if any): Interior alterations.

Conditions:

Please note that Building Permits, as well as Zoning Permits, must be obtained prior to any construction.

This permit shall be null, void and of no effect if any of the facts contained in the application upon the basis of which this permit was granted are false or untrue in any material respect. This permit shall expire one (1) year after the date of issuance if the use or substantial construction has not been commenced.

  
Sean Kinnevy

Land Use Officer

# INSTALLATION INSTRUCTIONS

## MULTI-POSITION GAS-FIRED FURNACES INDUCED-DRAFT

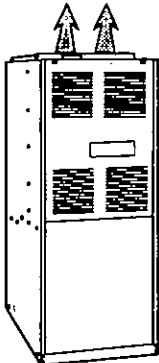
Supersedes: 650.69-N3W (394)

650.69-N3W (1294)

035-10959

### MODELS: PBKM (Upflow/Horizontal)

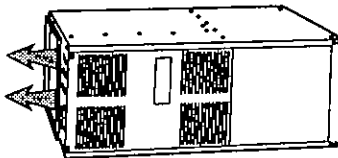
40-140 MBH INPUT



UPFLOW



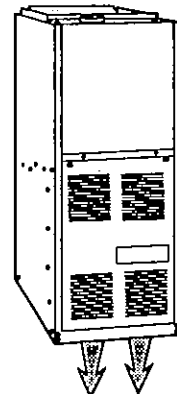
HORIZONTAL (RIGHT)



HORIZONTAL (LEFT)

### MODELS PBKD (Downflow)

60-130 MBH INPUT



DOWNFLOW



### CAUTION

THIS PRODUCT MUST BE INSTALLED IN STRICT COMPLIANCE WITH THE ENCLOSED INSTALLATION INSTRUCTIONS AND ANY APPLICABLE LOCAL, STATE, AND NATIONAL CODES INCLUDING BUT NOT LIMITED TO, BUILDING, ELECTRICAL AND MECHANICAL CODES.

### FOR YOUR SAFETY

#### WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Open windows.
- Do not touch any electrical switch; do not use any phone in your building.
- Extinguish any open flame.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

### WARNING

IMPROPER INSTALLATION MAY CREATE A CONDITION WHERE THE OPERATION OF THE PRODUCT COULD CAUSE PERSONAL INJURY OR PROPERTY DAMAGE.

### FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

**WARNING:** Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information, consult a qualified installer, service agency or the gas supplier.

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## GENERAL INFORMATION

### DESCRIPTION

This Category I furnace is designed for installation in a residential or commercial application. A Category I furnace has a fan assisted combustion system equipped with an integral mechanical means to draw products of combustion through the combustion chamber and heat exchanger. It may be installed in a basement, garage, equipment room, alcove, attic or any other indoor location where all required clearances to combustibles and other restrictions are met. It is designed for natural gas-fired operation, but may be converted to propane (LP).

High altitude and propane (LP) changes or conversions required in order for the appliance to satisfactorily meet the application must be made by an authorized distributor: in Canada, a certified conversion station or other qualified agency, using factory specified and/or approved parts.

Upflow/horizontal (PBKM) furnaces and downflow (PBKD) furnaces may be used only as Category 1 units.

The furnace must be installed so that all electrical components are protected from water.

### INSPECTION

As soon as a unit is received, it should be inspected for possible damage during transit. If the damage is evident, the extent of the damage should be noted on the carrier's freight bill.

A separate request for inspection by the carrier's agent should be made in writing. Also, before installation, the unit should be checked for screws or bolts which may have loosened in transit.

### NOTES, CAUTIONS & WARNINGS

The installer should pay particular attention to the words: **NOTE**, **CAUTION** and **WARNING**. NOTES are intended to clarify or make the installation easier. CAUTIONS are given to prevent equipment damage. WARNINGS are given to alert the installer that personal injury and/or equipment or property damage may occur if installation procedures are not handled properly.

**WARNING:** The furnace area must not be used as a broom closet or for any other storage purposes, as a fire hazard may be created. Never store items such as the following on, near or in contact with the furnace.

1. Spray or aerosol cans, rags, brooms, dust mops, vacuum cleaners or other cleaning tools.
2. Soap powders, bleaches, waxes or other cleaning compounds; plastic items or containers; gasoline, kerosene, cigarette lighter fluid, dry-cleaning fluids or other volatile fluid.
3. Paint thinners and other painting compounds.
4. Paper bags, boxes or other paper products.

**WARNING:** Never operate the furnace with the blower door removed. To do so could result in serious personal injury and/or equipment damage.

**WARNING:** Each furnace in this series is a Category I furnace, suitable for common venting with other gas-fired appliances as allowed by the National Fuel Gas Code, NFPA 54/ANSI Z223.1-latest edition.

**WARNING:** This appliance is not to be used for temporary heating of buildings or structures under construction.

**WARNING:** Do not install this furnace in a corrosive or contaminated atmosphere.

**WARNING:** Do not install this furnace in a mobile home or recreational vehicle.

**WARNING:** Furnaces shall not be installed directly on carpeting, tile or other combustible material other than wood flooring.

### LIMITATIONS AND LOCATION

This furnace should be installed in accordance with all national/local building/safety codes and requirements, or in the absence of local codes, with the National Fuel Gas Code, ANSI Z223.1 - (latest edition) or, in Canada, CAN/CGA B149.1 or .2 - (latest edition), and other applicable codes.

Use only the type of gas approved for this furnace; refer to the furnace rating plate.

**WARNING:** Only use natural gas in furnaces designed for natural gas. Only use propane (LP) gas for furnaces that have been properly converted to use propane (LP) gas. Do not use this furnace with butane. Using wrong gas could create a hazard, resulting in damage, injury or death.

For installations above 2,000 feet, reduce input 4% for each 1,000 feet above sea level. Canadian installations must be derated 10% for elevations from 2,000 ft. to 4,500 ft. Accessory high altitude kits are available to properly derate furnace.

In the U.S. only, furnace shall not be connected to a chimney flue serving a separate appliance designed to burn solid fuel.

Check the rating plate and power supply to be sure that electrical characteristics match. All models use nominal 120 vac, 1 Ø, 60 Hz. power supply.

A furnace installed in a residential garage must be located so that all burners and burner ignition devices are located no less than 18" above the garage floor, and located or protected to prevent damage by vehicles.



The size of the unit should be based on an acceptable heat loss calculation for the structure. ACCA, Manual J or other approved methods may be used.

The furnace should be located using these guidelines:

1. Where a minimum amount of vent piping and elbows will be required.
2. As centralized with the air distribution as possible.
3. Where adequate combustion air will be available.
4. In an area where ventilation facilities provide for safe limits of ambient temperature under normal operating conditions.
5. Where it will not interfere with proper air circulation in the confined space.
6. Where the vent will not be blocked or restricted.
7. Where sufficient space is provided to allow proper service access. Minimum recommended service clearances are as follows:
  - Twenty-four (24) inches between the front of the furnace and an adjacent wall or another appliance, when access is required for servicing and cleaning.
  - Eighteen (18) inches at the side where access is required for passage to the front when servicing or for inspection or replacement of flue/vent connections.
8. Where it will not interfere with the cleaning, servicing or removal of other appliances.
9. Where the following minimum clearances (in inches) to combustibles can be maintained:

| Location     | Upflow      | Horizontal                              | Downflow |
|--------------|-------------|-----------------------------------------|----------|
| Top          | 1           | 0                                       | 0        |
| Front        | 6           | 6                                       | 6        |
| Vent Piping  | 3*          | 3*                                      | 3*       |
| Rear         | 0           | 0                                       | 0        |
| Sides        | 0           | 1 (flue side)<br>0 (opposite flue side) | 0        |
| Floor        | Combustible | Combustible                             | 1**      |
| Closet       | Yes         | No                                      | Yes      |
| Alcove       | Yes         | Yes                                     | Yes      |
| Attic        | Yes         | Yes                                     | Yes      |
| Line Contact | No          | Yes                                     | No       |

\* May be 1" for Type B-1/BH vent

\*\*Special floor base or air conditioning coil required for combustible floor.

## NOMENCLATURE

P B KM -L D08 N 040

|   |   |    |    |     |   |                              |
|---|---|----|----|-----|---|------------------------------|
| P | B | KM | -L | D08 | N | 040                          |
|   |   |    |    |     |   | Nominal capacity (MBH Input) |
|   |   |    |    |     |   | Heating Fuel                 |
|   |   |    |    |     |   | N = Natural, L = Low NOx     |
|   |   |    |    |     |   | Type Drive & CFM (x100)      |
|   |   |    |    |     |   | D = Direct, V = Variable     |
|   |   |    |    |     |   | Voltage Code                 |
|   |   |    |    |     |   | -L = 120 - 1 - 60            |
|   |   |    |    |     |   | Product Identifier           |
|   |   |    |    |     |   | KM = Upflow, Horizontal      |
|   |   |    |    |     |   | KD = Downflow                |
|   |   |    |    |     |   | Product Generation           |
|   |   |    |    |     |   | B (U.S. & Canada)            |
|   |   |    |    |     |   | Product Category             |
|   |   |    |    |     |   | P = Furnace                  |

## UNIT INSTALLATION

### COMBUSTION AIR

All installations must comply with Section 5.3, Air for Combustion and Ventilation of the National Fuel Gas Code, ANSI Z223.1 or Sections 7.2, 7.3 or 7.4 of CAN/CGA B149.1 or .2 Installation Code - latest editions.

The following must be considered to obtain proper air for combustion and ventilation in confined spaces:

#### 1. Air Source from Inside the Building -

Two permanent openings, one within 12 inches of the top of the confined space and one within 12 inches of the bottom, shall each have a free area of not less than one square inch per 1,000 Btuh of total input rating of all appliances located in the space. The openings shall communicate freely with interior areas having adequate infiltration from the outside.

**NOTE:** At least 100 square inches free area shall be used for each opening.

#### 2. Air Source from Outdoors -

Two permanent openings, one within 12 inches of the top of the confined space and one within 12 inches of the bottom, shall communicate directly, or by means of ducts, with the outdoors or to such crawl or attic spaces that freely communicate with the outdoors.

- a. Vertical Ducts - Each opening must have a free area of not less than one square inch per 4,000 Btuh of total input of all appliances located in the space.

#### EXAMPLE:

$$\frac{\text{Total Input of All Appliances}}{4000} = \text{Square Inches Free Area}$$

- b. Horizontal Ducts - Each opening must have a free area of not less than one square inch per 2,000 Btuh of total input of all appliances located in the space.

**NOTE:** Ducts must have the same cross-sectional area as the free area in the opening to which they are connected. The minimum dimension of rectangular ducts shall be three inches.

#### 3. Louvers, Grilles and Screens

- a. In calculating free area, consideration must be given to the blocking effects of louvers, grilles and screens.
- b. If the free area of a specific louver or grille is not known, refer to Table 1 to estimate free area.

TABLE 1 - ESTIMATED FREE AREA

|                                  |                               |
|----------------------------------|-------------------------------|
| Wood or Metal Louvers or Grilles | Wood 20-25%*<br>Metal 60-70%* |
| Screens**                        | 1/4 in. mesh or larger 100%   |

\* Do not use less than 1/4 in. mesh

\*\* Free area of louvers and grilles varies widely; installer should follow louver or grille manufacturer's instructions.

#### 4. Special Combustion and Ventilation Considerations

Operation of a mechanical exhaust, such as an exhaust fan, kitchen ventilation system, clothes dryer or fireplace may create conditions requiring special attention to avoid unsatisfactory operation of gas appliances.

The size of combustion air openings previously discussed will not necessarily govern when a special engineering design ensures an adequate supply of air for combustion and ventilation. Where the return duct system is not complete, the return connection must be run full size from the furnace to a location outside the utility room or basement.

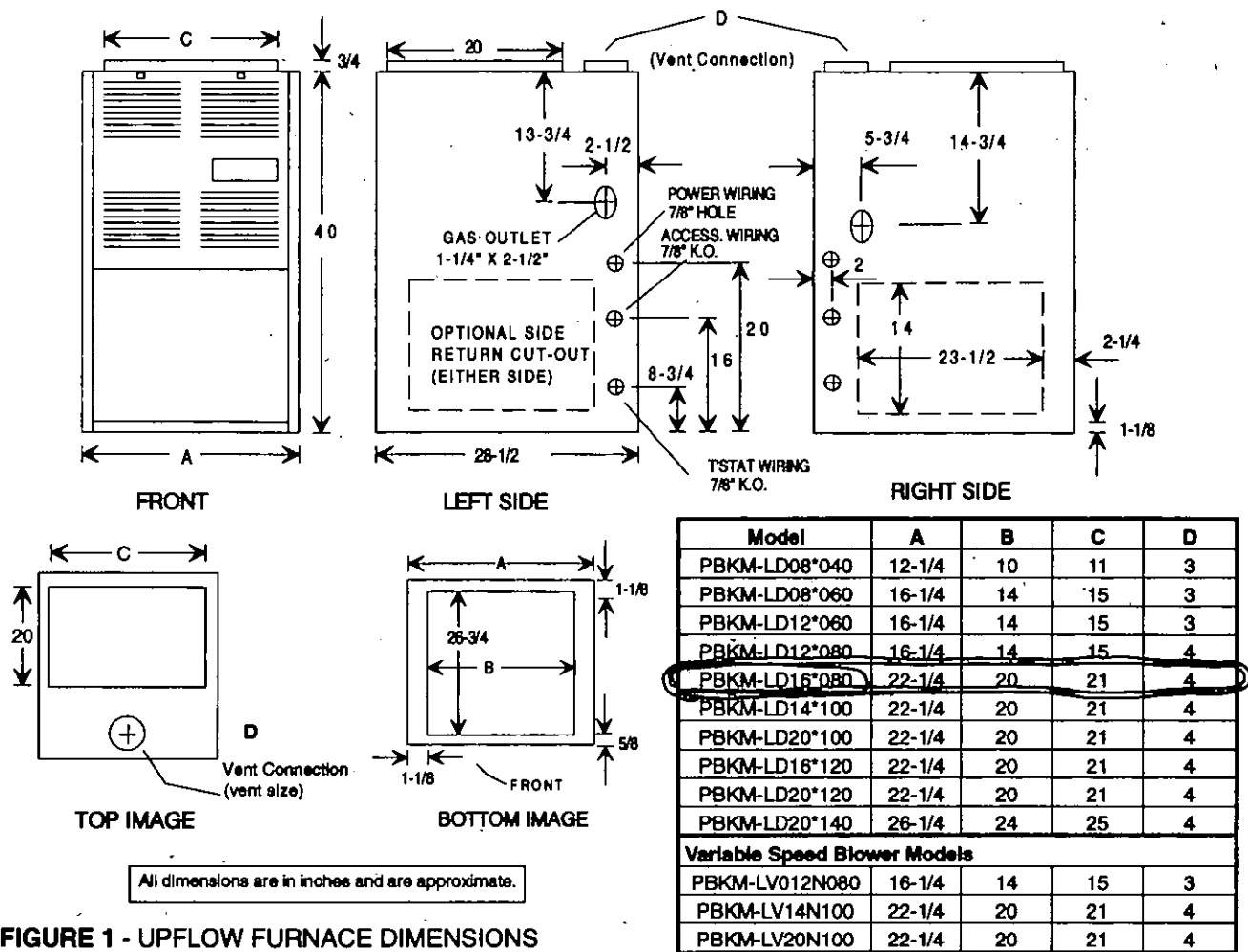


FIGURE 1 - UPFLOW FURNACE DIMENSIONS

TABLE 2 - RATINGS &amp; PHYSICAL/ELECTRICAL DATA

| Model                               | Air Temp Rise °F | Max. Outlet Temp. °F | Blower |         | Total Unit Amps | Max. Over-Current Breaker | Min. Wire Size (AWG) @ 75 Ft. One Way | Recommended High Velocity Filter Size |         | Weight (lbs) |
|-------------------------------------|------------------|----------------------|--------|---------|-----------------|---------------------------|---------------------------------------|---------------------------------------|---------|--------------|
|                                     |                  |                      | HP     | Size    |                 |                           |                                       | Side                                  | Bottom  |              |
| PBKM-LD08*040                       | 10-40            | 180                  | 1/4    | 9 x 6   | 12              | 15                        | 14                                    | 16 X 25                               | 12 X 27 | 85           |
| PBKM-LD08*060                       | 35-65            | 180                  | 1/6    | 10 x 7  | 12              | 15                        | 14                                    | 16 X 25                               | 16 X 27 | 98           |
| PBKM-LD12*060                       | 25-55            | 180                  | 1/2    | 10 x 7  | 12              | 15                        | 14                                    | 16 X 25                               | 16 X 27 | 102          |
| PBKM-LD12*080                       | 25-55            | 180                  | 1/2    | 10 x 7  | 12              | 15                        | 14                                    | 16 X 25                               | 16 X 27 | 115          |
| PBKM-LD16*080                       | 20-50            | 180                  | 1/2    | 10 x 10 | 12              | 15                        | 14                                    | 16 X 25                               | 20 X 27 | 119          |
| PBKM-LD14*100                       | 30-60            | 180                  | 1/2    | 10 x 9  | 12              | 15                        | 14                                    | 16 X 25                               | 20 X 27 | 130          |
| PBKM-LD20*100                       | 30-60            | 180                  | 3/4    | 11 x 10 | 13.8            | 15                        | 14                                    | 16 X 25                               | 20 X 27 | 135          |
| PBKM-LD16*120                       | 30-60            | 180                  | 3/4    | 10 x 9  | 13.0            | 15                        | 14                                    | 16 X 25                               | 20 X 27 | 146          |
| PBKM-LD20*120                       | 25-55            | 180                  | 3/4    | 11 x 10 | 13.8            | 15                        | 14                                    | 16 X 25                               | 20 X 27 | 151          |
| PBKM-LD20*140                       | 35-65            | 180                  | 3/4    | 11 x 10 | 13.8            | 15                        | 14                                    | 16 X 25                               | 25 X 27 | 163          |
| <b>Variable Speed Blower Models</b> |                  |                      |        |         |                 |                           |                                       |                                       |         |              |
| PBKM-LV012N080                      | 25-55            | 180                  | 1/2    | 10 x 7  | 12              | 15                        | 14                                    | 16 X 25                               | 16 X 27 | 119          |
| PBKM-LV14N100                       | 30-60            | 180                  | 1/2    | 10 x 9  | 12              | 15                        | 14                                    | 16 X 25                               | 20 X 27 | 135          |
| PBKM-LV20N100                       | 30-60            | 180                  | 1      | 11 x 10 | 12              | 15                        | 14                                    | 16 X 25                               | 20 X 27 | 140          |

NOTES: 1. Filters may be provided as an accessory or field supplied. High velocity type must be used

2. All airflow over 1800 cfm requires return air from both side inlets or bottom

• Model designator may be "N" for standard units, or "L" for factory built low NOx units. Canadian units offered only as "N" models.

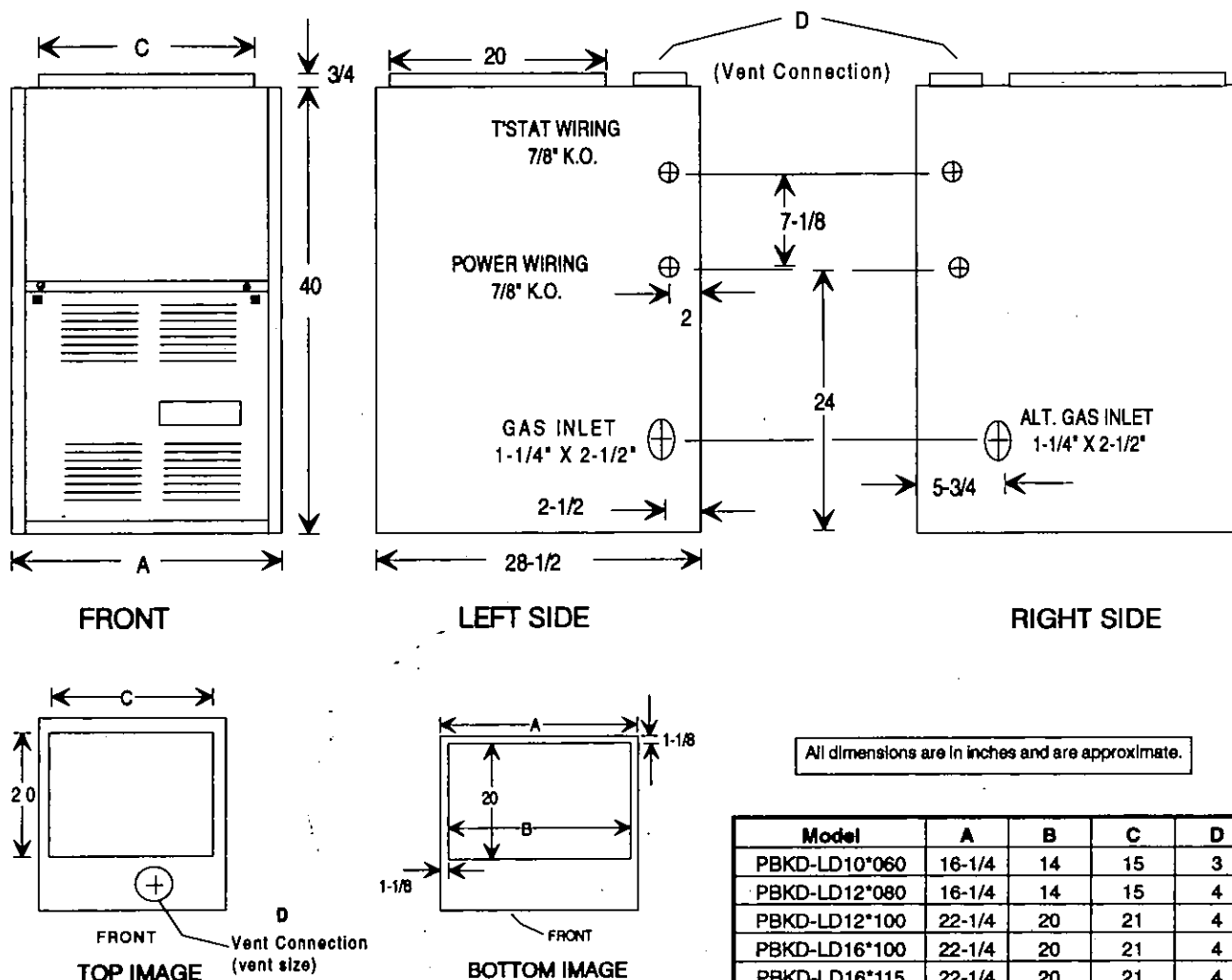


FIGURE 2 - DOWNFLOW FURNACE DIMENSIONS

TABLE 3 - RATINGS &amp; PHYSICAL/ELECTRICAL DATA

| Model         | Air Temp Rise °F | Max. Outlet Temp. °F | Blower |         | Total Unit Amps | Max. Over-Current Breaker | Min. Wire Size (AWG) @ 75 Ft. One Way | Recommended High Velocity Filter Size | Weight (lbs) |
|---------------|------------------|----------------------|--------|---------|-----------------|---------------------------|---------------------------------------|---------------------------------------|--------------|
|               |                  |                      | HP     | Size    |                 |                           |                                       |                                       |              |
| PBKD-LD10*060 | 35 - 65          | 165                  | 1/4    | 10 x 7  | 12.0            | 15                        | 14                                    | (2) 14 X 20                           | 105          |
| PBKD-LD12*080 | 25 - 55          | 155                  | 1/2    | 10 x 8  | 12.0            | 15                        | 14                                    | (2) 14 X 20                           | 118          |
| PBKD-LD12*100 | 35 - 65          | 165                  | 1/2    | 10 x 10 | 12.0            | 15                        | 14                                    | (2) 14 X 20                           | 134          |
| PBKD-LD16*100 | 30 - 60          | 160                  | 3/4    | 11 x 10 | 13.8            | 15                        | 14                                    | (2) 14 X 20                           | 140          |
| PBKD-LD16*115 | 30 - 60          | 160                  | 3/4    | 11 x 10 | 13.8            | 15                        | 14                                    | (2) 14 X 20                           | 156          |
| PBKD-LD20*130 | 35 - 65          | 165                  | 3/4    | 11 x 10 | 13.8            | 15                        | 14                                    | (2) 14 X 20                           | 168          |

• Model designator may be "N" for standard units, or "L" for factory built low NOx units

The recommended source of combustion air is to use the outdoor air supply. Excessive exposure to contaminated combustion air will result in safety and performance related problems. However, the use of indoor air in most applications is acceptable, except as follows:

1. If the furnace is installed in a confined space it is recommended that the necessary combustion air come from the outdoors by way of attic, crawl space, air duct or direct opening.
2. If outdoor combustion air is used, there must be no exposure to the installations or substances listed in "3" below.
3. The following types of installations may require OUTDOOR AIR for combustion, due to chemical exposure.
  - a) Commercial buildings
  - b) Buildings with indoor pools
  - c) Furnaces installed in laundry rooms
  - d) Furnaces installed in hobby or craft rooms
  - e) Furnaces installed near chemical storage areas

Exposure to the following substances in the combustion air supply may also require OUTDOOR AIR for combustion.

- f) Permanent wave solutions
- g) Chlorinated waxes and cleaners
- h) Chlorine based swimming pool chemicals
- i) Water softening chemicals
- j) De-icing salts or chemicals
- k) Carbon tetrachloride
- l) Halogen type refrigerants
- m) Cleaning solvents (such as perchloroethylene)
- n) Printing inks, paint removers, varnishes, etc.
- o) Hydrochloric acids
- p) Cements and glues
- q) Antistatic fabric softeners for clothes dryers
- r) Masonry acid washing chemicals

## VENTING

### CATEGORY I VENTING

Category I venting consists of vertically venting one or more appliances in single wall, B-vent or masonry chimney (as allowed), using single wall metal pipe or B-vent connectors.

**NOTE:** This appliance may be common vented with another gas appliance as allowed by the following codes and standards.

The furnace rating plate lists the maximum vent gas temperature. This temperature must be used to select appropriate venting materials and clearances. A typical example is shown below.

#### "CATEGORY 1/450° F. MAX. VENT TEMP."

All installations must be vented in accordance with the National Fuel Gas Code, NFPA 54/ANSI Z223.1 - latest edition. For reference, the National Fuel Gas Code Handbook, available from NFPA (item JP-54HB92) is recommended. The appliance must also be vented in compliance with all local utility and code requirements. In Canada, the furnace must be vented in accordance with the National Standard of Canada, CAN/CGA-B149.1 and .2 - latest editions.



**WARNING:** A furnace shall not be connected to a chimney flue serving a separate appliance designed to burn solid fuel.

### VENT SAFETY CHECK PROCEDURE

**WARNING:** If this furnace is replacing a common-vented furnace, it may be necessary to resize the existing vent line and chimney to prevent oversizing problems for the new combination of units. Refer to the National Fuel Gas Code,

ANSI Z223.1 or CAN/CGA B149.1 or .2 Installation Code - latest editions.

The following steps shall be followed with each appliance connected to the venting system placed in operation, while any other appliances connected to the common venting system are not in operation.

1. Seal any unused openings in the common venting system.
2. Inspect venting system for proper size and horizontal pitch, as required in the National Fuel Gas Code ANSI Z223.1 or the CAN/CGA B149 Installation Codes and these instructions. Determine that there is no blockage or restriction, leakage, corrosion or other deficiencies which could cause an unsafe condition.
3. Insofar as is practical, close all building doors and windows and all doors between the space in which the appliance(s) connected to the venting system are located and other spaces of the building. Turn on clothes dryers and any other appliances not connected to the common venting system. Turn on any clothes dryers and any appliance not connected to the venting system. Turn on any exhaust fans, such as range hoods and bathroom exhausts so they will operate at maximum speed. Do not operate a summer exhaust fan. Close fireplace dampers.
4. Follow the lighting instructions. Place the appliance being operated in operation. Adjust thermostat so appliance will operate continuously.
5. Test for draft hood equipped appliance spillage at the draft hood relief opening after 5 minutes of main burner operation. Use the flame of a match or candle.
6. After it has been determined that each appliance connected to the venting system properly vents when tested as outlined above, return doors, windows, exhaust fans, fireplace dampers and any other gas-burning appliance to their previously conditions of use.
7. If improper venting is observed during any of the above tests, the venting system must be corrected.
8. Any corrections or resizing of the common venting system must be in accordance with the National Fuel Gas Code, ANSI Z223.1 or Section 7, Venting Systems and Air Supply for Appliances, CAN/CGA B149.1 or .2 Installation Code - latest editions. If the common vent system must be resized, it should be resized to approach the minimum size as determined using the appropriate tables in Appendix G of the above codes or the venting tables supplied with the furnace.

## DUCTWORK

The duct system's design and installation must:

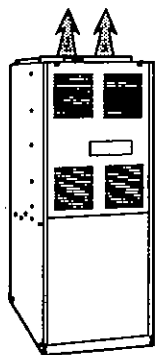
1. Handle an air volume appropriate for the served space and within the operating parameters of the furnace specifications.
2. Be installed in accordance with standards of NFPA (National Fire Protection Association) as outlined in NFPA pamphlets 90A and 90B (- latest editions).
3. Create a closed duct system. The supply system must be connected to the furnace outlet and the return duct system must be connected to the furnace inlet. Both supply and return duct systems must terminate outside the space containing the furnace.
4. Generally complete a path for heated or cooled air to circulate through the air conditioning and heating equipment and to and from the conditioned space.

**CAUTION:** The cooling coil must be installed in the supply air duct downstream of the furnace.

When the furnace is used in conjunction with a cooling coil, the furnace must be installed parallel with, or on the upstream side of the cooling unit to avoid condensation in the primary heat exchanger.

When a parallel flow arrangement is used, the dampers or other means used to control air flow must be adequate to prevent chilled air from entering the furnace, and if manually operated, must be equipped with means to prevent operating of either unit unless the damper is in the full heat or cool position.

## UPFLOW APPLICATION



### Supply Plenum Connection

Attach the supply plenum to the furnace outlet duct connection flanges. This is typically through the use of "S" cleat material when a metal plenum is used. The use of an approved flexible duct connector is recommended on all installations. This connection should be sealed to prevent air leakage.

If a matching cooling coil is used, it may be placed directly on the furnace outlet and sealed to prevent leakage. Follow

the coil instructions for installing the supply plenum.

On all installations a removable access panel should be provided in the outlet duct such that smoke or reflected light would be observable inside the casing to indicate the presence of leaks in the heat exchanger. This access cover shall be attached in such a manner as to prevent leaks.

### Return Duct Connection

Return air may enter the furnace through the side(s) or bottom depending on the type of application. See the specific type application installation for details. Be sure to see the "Filters" section of this instruction.

## FILTERS (UPFLOW/HORIZONTAL)

All applications require the use of a filter. This may be through the use of any of the following accessory or field supplied methods:

- Internal Side Filter With Retainer - 1BF0302 (Upflow)**  
This provides a cleanable, high velocity type filter and retainer hardware for mounting inside the furnace cabinet.
- External Side Return Filter Rack - 1SR0301. (Upflow)**  
This provides a 16x25 cleanable, high velocity type filter and attaches to the furnace side panel and the return air duct. The filter may be easily replaced.
- Internal Mount Bottom Return Filter Accessory (Upflow) - 1BF0301-304**  
This provides a cleanable, high velocity type filter and retainer hardware for mounting inside the furnace cabinet. This type filter requires removing the furnace blower compartment cover to change the filter.
- External Bottom Return/End Return Horizontal, Filter Rack Accessory - 1HF0301-304**  
Provides a cleanable, high velocity type filter and rack. Attaches to the end of the furnace and provides duct flanges.
- Field Supplied Filter and Mounting System.**  
A return air filter grille or duct mounted filter may be provided. The following minimum sizes are recommended.

| RECOMMENDED SIZE FOR FIELD SUPPLIED HIGH VELOCITY FILTERS |         |            |
|-----------------------------------------------------------|---------|------------|
| Furnace CFM                                               | FILTER  |            |
|                                                           | Size    | Sq. inches |
| 800                                                       | 12 x 27 | 300        |
| 1200                                                      | 16 x 27 | 400        |
| 1600                                                      | 20 x 27 | 500        |
| 2000                                                      | 25 x 27 | 625        |

**NOTE:** Air velocity through throw-away type filters may not exceed 300 feet per minute. All velocities over this require the use of high velocity filters.

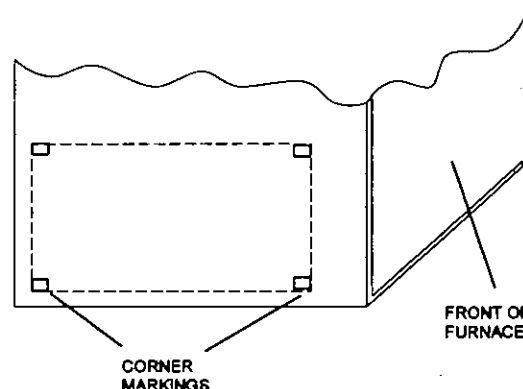


FIGURE 4 - SIDE RETURN CUTOUT MARKINGS

### Side Return

Locate and knock out the square corner locators. These indicate the size of the cutoff to be made in the furnace side panel (see Figure 4).

Install the side filter rack following the instructions provided with that accessory. If a filter(s) is provided at another location in the return air system, the ductwork may be directly attached to the furnace side panel.

**NOTE:** Some accessories such as electronic air cleaners and pleated media may require a larger side opening.

**CAUTION:** All installations must have a filter installed.

The return duct may be attached to the furnace by "S-cleat", bend tabs or other approved methods. Be sure to seal the duct to the furnace to prevent air leakage.

Those applications over 1800 CFM require either return from two sides, or bottom.

Where the return duct system is not complete, the return connection must run full size to a location outside the utility room or basement. For further details, consult Section 5.3 (Air for Combustion and Ventilation) of the National Fuel Gas Code, ANSI Z223.1, or CAN/CGA B149.1 or .2, Installation Code - latest editions.

### Bottom Return

Converting the furnace to open bottom return requires removing the bottom closure plate. Use the following steps.

- Remove the upper access door and blower compartment door.

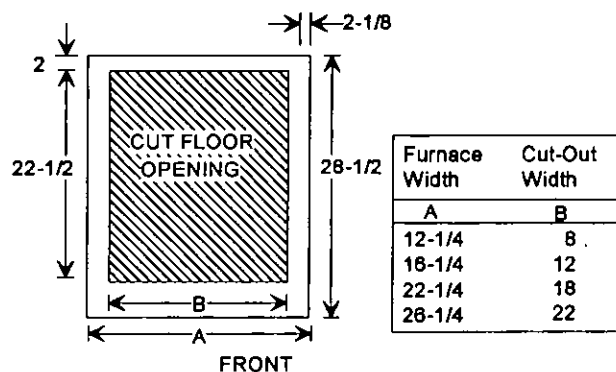


FIGURE 5- BOTTOM RETURN (COMBUSTIBLE FLOOR)

2. Remove the four screws securing the front bottom angle and remove it from the unit. Keep the angle for reinstallation.
3. Remove the screws from the furnace wrapper which secure the bottom closure panel and remove the panel from the blower compartment by pulling it forward and tilting upward.
4. Reinstall the front bottom angle and access doors.

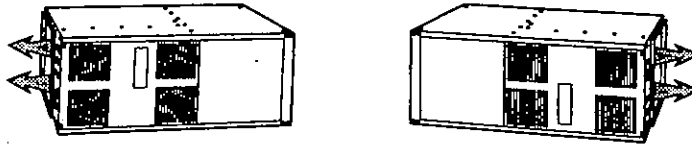
Bottom return applications normally pull return air through a base platform or return air plenum. Refer to Figure 5 for opening dimensions. Be sure the return platform structure is suitable to

support the weight of the furnace. Seal the furnace to the plenum to prevent air leakage.

**NOTE:** If an external mounted filter rack is being used, see the instructions provided with that accessory for proper hole cut size.

Upflow attic installations must meet all minimum clearances to combustibles and have floor support with required service accessibility.

## HORIZONTAL APPLICATION - PBKM MODELS ONLY



### UPFLOW/HORIZONTAL MODELS

Upflow furnaces may be installed horizontally with the supply airflow toward the left or right by laying the unit on the left or right panel. **Do not install the unit on the rear panel.** After determining the best orientation, lay the unit on top of the shipping carton to protect the finish.

The appropriate electrical knock-outs for power wiring, control wiring and gas piping should be removed at this time.

When in the horizontal position, return air may enter through the end of the unit, the bottom panel, the top panel or any combination of these openings. Return air may not be connected into the rear panel of the unit.

To convert the upflow model furnace to open bottom, refer to the Upflow Application - Bottom Return section of this manual and follow steps 1 thru 4 to remove the bottom closure panel.

### ATTIC INSTALLATION

This appliance is design certified for line contact for furnaces installed horizontally. The intersection of the furnace top and sides form a line.

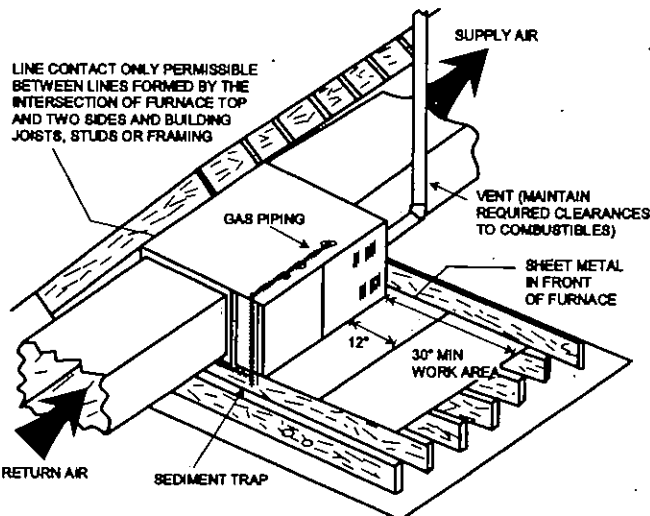


FIGURE 6 - TYPICAL ATTIC INSTALLATION

This line may be in contact with combustible material. However, refer to "Venting" and "Clearances" in this manual for additional information.

Secure a platform constructed of plywood or other building material to the floor joists. Sheet metal, 12" in front of the furnace is required. Refer to Figure 6 for details.

**WARNING:** When a furnace is installed in an attic or other insulated space, keep all insulating materials at least 12" away from furnace and burner combustion air openings.

### CRAWL SPACE INSTALLATION

The furnace can be hung from floor joists or installed on suitable blocks or pad. Blocks or pad installations shall provide adequate height to ensure the unit will not be subject to water damage.

When suspending the furnace from rafters or floor joists using rod, pipe or straps, refer to Physical Data (Page 4) for furnace weights to determine suitable means of suspension. Angle supports should be placed at the supply air end and near the blower deck. Units may also be suspended by using straps or other material at the same location. All four suspension points must be level to ensure quiet furnace operation.

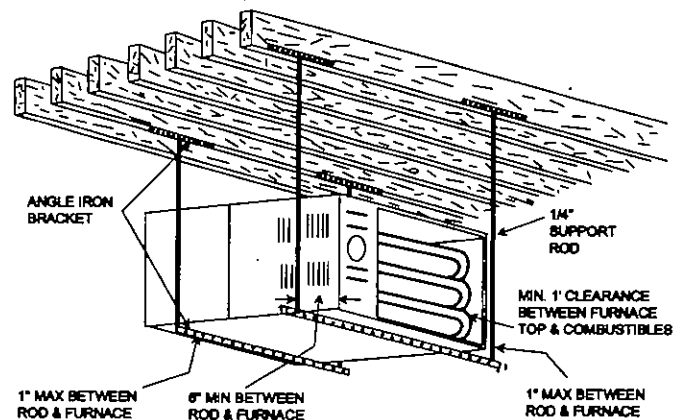
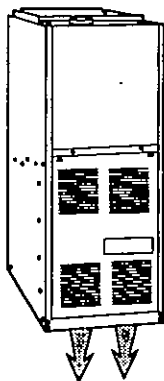


FIGURE 7 - TYPICAL FURNANCE INSTALLATION USING SUSPENSION MATERIALS

## DOWNFLOW APPLICATION



### DOWNFLOW FILTERS

A top return filter rack is supplied with the furnace. Two 14" x 20" permanent washable filters are supplied with each unit. Refer to Downflow Application for details.

Downflow furnaces typically are installed with the filters located above the furnace, extending into the return air duct. An alternate method is detailed in the Filters (Upflow/Horizontal) sections, Step 4. The branch duct must attach to the vertical ductwork above the filter height (FH) in Figure 8. Refer to dimensions in Figure 8 for proper installation.

The filter rack (provided) should be secured to the center of the front and rear flanges at the furnace top. Drill a hole through the front and rear duct flange into the filter rack and secure it with a sheet metal screw.

Refer to the unit rating plate for furnace model then see the dimensions page of this instruction for return air plenum dimensions. Install the plenum following instructions under Ductwork in this instruction.

### SUPPLY AIR DUCTS

Installations on combustible material or floors must use a combustible floor base (shown in Figure 9 - 1FB0302-304) as specified on the rating plate or a matching cooling coil.

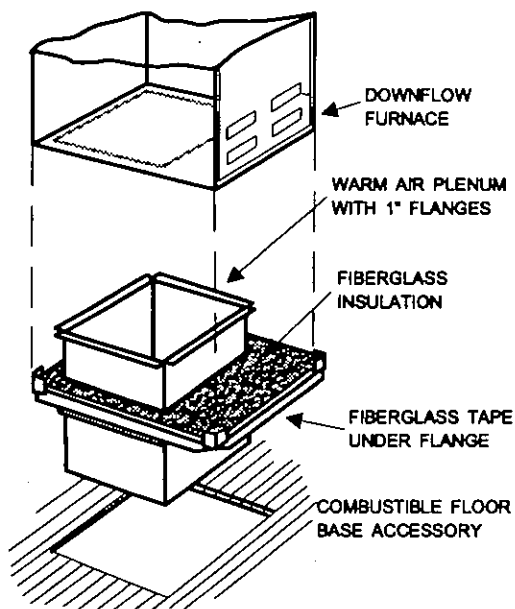


FIGURE 9 - COMBUSTIBLE FLOOR BASE ACCESS'Y

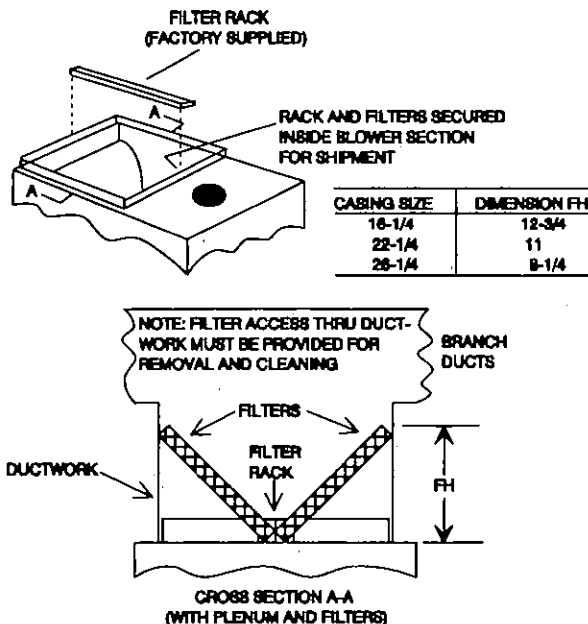


FIGURE 8 - DOWNFLOW FILTERS

Follow the instructions with the combustible floor base accessory. The floor opening dimensions for the floor base are shown in Figure 10.

This base can be replaced with a matching cooling coil, properly sealed to prevent leaks. Follow the cooling coil instructions for installing the plenum.

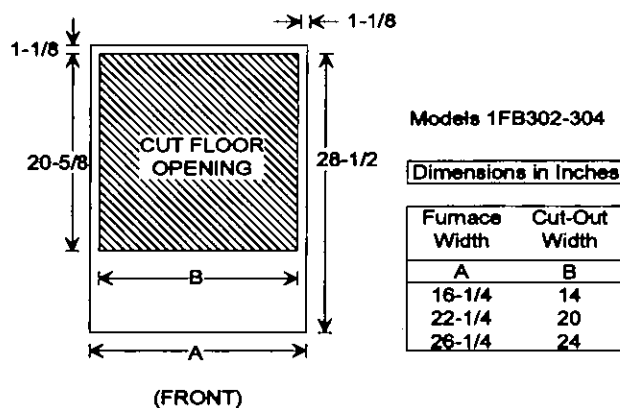


FIGURE 10 - FLOOR BASE ACCESSORY  
BOTTOM SUPPLY OPENING

### GAS PIPING

**NOTE:** An accessible manual shutoff valve must be installed upstream of the furnace gas controls and within 6 feet of the furnace. A 1/8" NPT plugged tapping, accessible for test gauge connection, should be installed immediately upstream of the gas supply connection to the furnace.

The furnace and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.48 kPa).

The furnace must be isolated from the gas supply piping system by closing its individual external manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig (3.48 kPa).

**CAUTION:** Never apply a pipe wrench to the body of the combination automatic gas valve. A wrench must be placed on the projection or wrench boss of the valve when installing piping to it.

Gas piping may be connected from either side of the furnace. Sizing and installation of the supply gas line should comply with the local utility requirements.

The gas supply should be a separate line, installed in accordance with the National Fuel Gas Code, ANSI Z223.1, or CAN/CGA B149.1 or 2 Installation Codes - (latest editions).

Some utility companies, or local codes, require pipe sizes larger than the minimum sizes listed. Using the properly sized wrought iron, approved flexible or steel pipe, make gas connections to the unit. Installation of a drop leg and ground union is required (See Figure 11).

| INLET GAS PRESSURE RANGE |               |               |
|--------------------------|---------------|---------------|
|                          | Natural Gas   | Propane (LP)  |
| Minimum                  | 4.5 in. W.C.  | 11 in. W.C.   |
| Maximum                  | 13.8 in. W.C. | 13.8 in. W.C. |

**WARNING:** Compounds used on threaded joints of gas piping must be resistant to the action of liquified petroleum gases.

**WARNING:** After all gas piping connections are completed, leak test all joints, fittings and furnace connections with rich soap and water solution, commercial available bubble type leak detection fluid, or other approved means.

**WARNING:** Do not use an open flame or other source of ignition for leak testing.

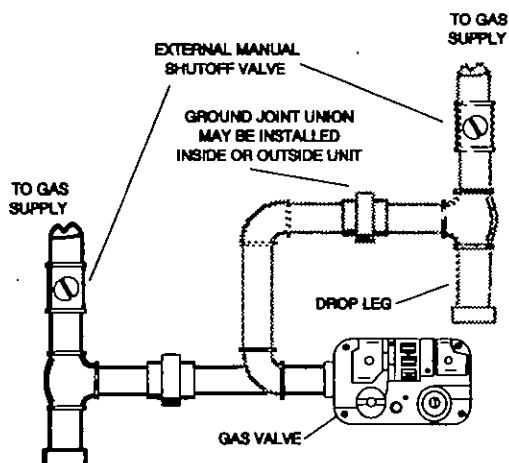


FIGURE 11 - GAS PIPING

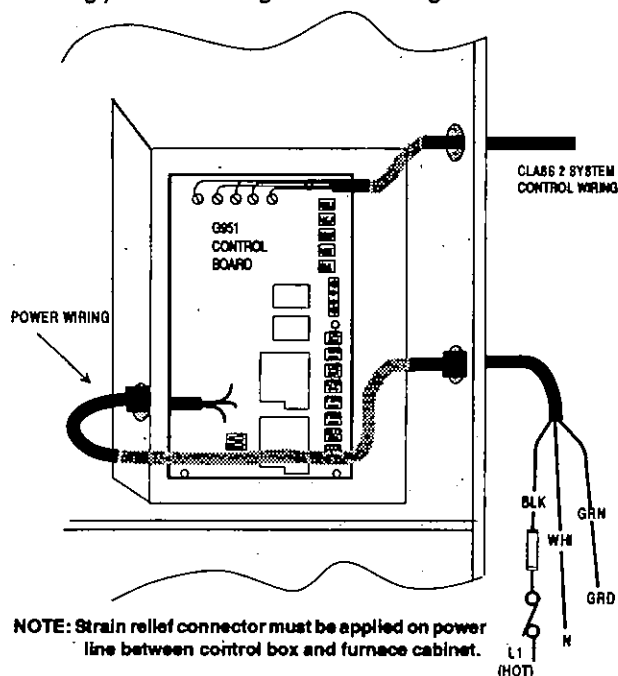
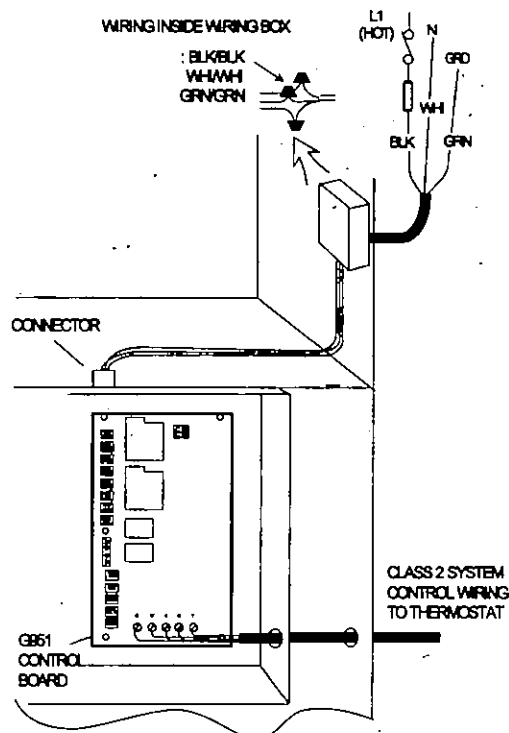
## ELECTRICAL POWER CONNECTION

Field wiring to the unit must conform to and be grounded in accordance with the provisions of the National Electrical Code ANSI/NFPA No. 70 -latest edition, Canadian Electric Code C22.1 Part 1 - (latest edition) and/or local codes. Electrical wires which are field installed shall conform with the temperature limitation for 63°F/35°C rise wire when installed in accordance with instructions. Specific electrical data is given on the furnace rating plate.

Provide a power supply separate from all other circuits. Install overcurrent protection and disconnect switch per local/national electrical codes. The switch should be reasonable close to the unit for convenience in servicing. With the disconnect switch in the OFF position, check all wiring against the unit wiring label. Also, see the wiring diagram in this instruction.

**Use copper conductors only.**

**CAUTION:** Do not pull the lead to the HSI during the power wiring process. Pulling lead will damage the HSI.



NOTE: Strain relief connector must be applied on power line between control box and furnace cabinet.

NOTE: Canadian installations must have flexible conduct to protect power wiring between furnace jacket and control box.

FIGURE 12 - POWER/CONTROL WIRING (Upflow Models -left, Downflow Models - right)



**NOTE:** The furnace's control system depends on correct polarity of the power supply.

Connect the power supply as shown on the unit wiring label on the inside of the blower compartment door and Figure 12. The black furnace lead must be connected to the L1 (hot) wire from the power supply. The white furnace lead must be connected to neutral. Also, the green equipment ground wire must be connected to the power supply ground.

Remove the screw retaining the wiring box. Route the power wiring through the unit side panel with a conduit connector or other proper connection. Make wiring connections as shown in Figure 12. Replace the wiring box and screw.

An alternate wiring method is to use a field provided 2 x 4 box and cover on the outside of the furnace. Route the furnace leads into the box using a protective bushing where the wires pass through the furnace panel.

**NOTE:** The power connection leads and wiring box on upflow units may be relocated to the left side of the furnace. Remove the screw and slide box and wires under manifold bracket. Reposition on the left side of the furnace and fasten to blower deck using hole provided.

## ELECTRICAL CONTROL CONNECTIONS

Install the field-supplied thermostat. The thermostat instructions for wiring are packed with the thermostat. With the thermostat set in the OFF position and the main electrical source disconnected, complete the low-voltage wiring from the thermostat to the terminal board on the low-voltage transformer. Connect Class 2 control wiring as shown in Figures 12 and 13.

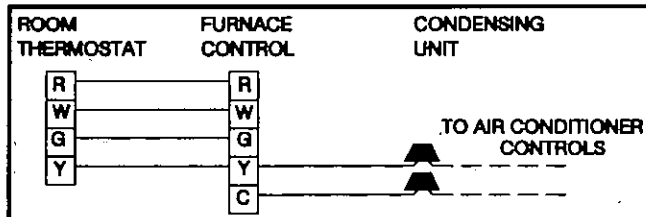


FIGURE 13 - TYPICAL HEATING AND COOLING

Set the heat anticipator in the room thermostat to .45 amps. Setting it lower will cause short cycles. Setting it higher will cause the room temperature to exceed the setpoint.

**NOTE:** Some electronic thermostats do not have adjustable heat anticipators. They may have other type cycle rate adjustments. Follow the thermostat manufacturer's instructions.

The 24-volt, 40 VA transformer is sized for the furnace components only, and should not be connected to auxiliary devices such as humidifiers, air cleaners, etc. The transformer may provide power for an air conditioning unit contactor.

## SAFETY CONTROLS

### Blower Door Safety Switch

This unit is equipped with an electrical interlock switch mounted in the blower compartment. This switch interrupts all power at the unit when the panel covering the blower compartment is removed.

**WARNING:** Blower and burner must never be operated without the blower panel in place.

Electrical supply to the unit is dependent upon the panel that covers the blower compartment being in place and properly positioned.

Unitary Products Group

**CAUTION:** Main power supply to the unit must still be interrupted at the main power disconnect switch before any service or repair work is to be done to the unit. Do not rely upon the interlock switch as a main power disconnect.

### Rollout Switch Controls

These controls are mounted on the burner assembly. If the temperature in the burner compartment exceeds its set point, the igniter control and the gas valve are de-energized. This is a manual reset control and must be reset before operation can continue. The operation of this control indicates a malfunction in the combustion air blower or a blocked vent pipe connection.

### Pressure Switch

This furnace is supplied with a differential pressure switch which monitors the flow through the furnace and venting system. This switch de-energizes the ignition control module and the gas valve if any of the following conditions are present:

1. Blockage of internal flue gas passageways.
2. Blockage of vent piping.
3. Failure of combustion air blower/motor.

### Limit Control

There is a high temperature limit control located on the furnace vestibule panel just to the right and above the gas valve. This is an automatic reset control and provides over temperature protection due to reduced airflow, such as a dirty filter.

### Auxiliary Limit Controls

These high temperature limit controls are located in the blower compartment, one on each side. These are manual reset controls and give high temperature protection when the unit is applied in the horizontal position.

## START-UP AND ADJUSTMENTS

The initial start-up of the furnace requires the following additional procedures.

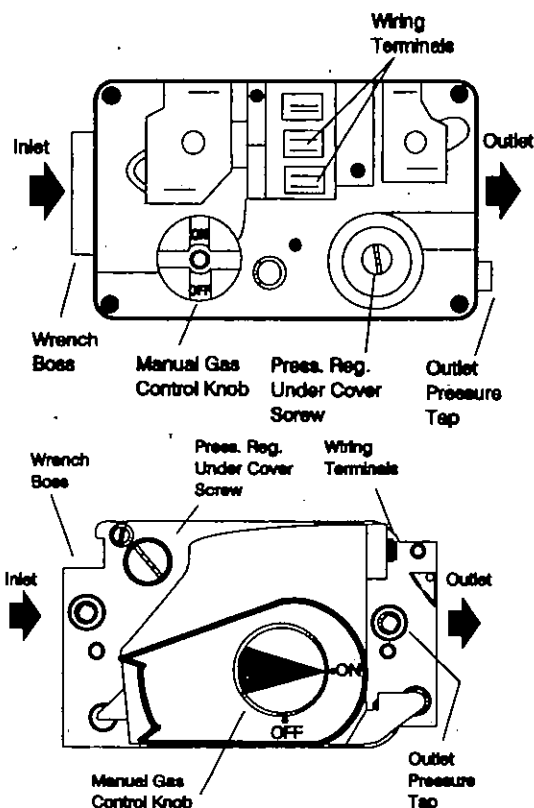
1. When the gas supply is initially connected to the furnace, the gas piping may be full of air. In order to purge this air, it is recommended that the ground joint union be loosened until the odor of gas is detected. When gas is detected, immediately retighten the union and check for leaks. Allow five minutes for any gas to dissipate before continuing with the start-up procedure.
2. All electrical connections made in the field and in the factory should be checked for proper tightness.

## IGNITION SYSTEM CHECKOUT/ADJUSTMENT

1. Turn the gas supply ON at external valve and main gas valve.
2. Set the thermostat above room temperature to call for heat.
3. System start-up will occur as follows:
  - a. The venter motor will start and come up to speed. Shortly after venter start-up, the hot surface igniter will glow for about 31 seconds.
  - b. After this warm-up cycle, the ignition module will energize (open) the main gas valve for seven seconds.

**NOTE:** Furnace may be equipped with either a G951ADB or G951EDB control. On units equipped with the EDB control the hot surface igniter will begin to glow prior to the inducer motor being energized.

**NOTE:** Burner ignition may not be satisfactory on first start-up due to residual air in gas line, or until gas pressure (manifold) is adjusted.



**FIGURE 14 - GAS VALVES**  
**TOP - WHITE-RODGERS 36E97**  
**BOTTOM - HONEYWELL VR8205**

4. With the furnace in operation, paint the pipe joints and valve gasket lines with a rich soap and water solution. Bubbles indicate a gas leak. Take appropriate steps to stop the leaks. If the leak persists, replace the component.

**WARNING:** DO NOT omit this test! NEVER use a flame to check for gas leaks.

#### CHECKING GAS INPUT

1. Turn off all other gas appliances connected to gas meter.
2. With the furnace turned on, measure the time needed for one revolution of the hand on the smallest dial on the meter. A typical domestic gas meter usually has a 1/2 or 1 cubic foot test dial.
3. Using the number of seconds for each revolution and the size of the test dial increment, find the cubic feet of gas consumed per hour from Table 4.

**NOTE:** To find the Btuh input, multiply the number of cubic feet of gas consumed per hour by the BTU content of the gas in your particular locality. Contract your gas company for this information, as it varies widely from city to city.

**EXAMPLE:** It is found by measurement that it takes 26 seconds for the hand to turn on the 1 cubic foot dial to make a revolution with only a 120,000 Btuh furnace running. Using this information, locate 26 seconds in the first column of Table 3.

Read across to the column headed "1 Cubic Foot" where you will see that 138 cubic feet of gas per hour are consumed by the furnace at that rate. Multiply 138 by 850 (the BTU rating of the gas obtained from the local gas company). The result is 117,300 Btuh, which is close to the 120,000 Btuh rating of the furnace.

**TABLE 4 - GAS RATE (Cubic Feet Per Hour)**

| Seconds for One Revolution | Size of Test Dial |              |
|----------------------------|-------------------|--------------|
|                            | 1/2 cubic foot    | 1 cubic foot |
| 10                         | 180               | 360          |
| 12                         | 150               | 300          |
| 14                         | 129               | 257          |
| 16                         | 113               | 225          |
| 18                         | 100               | 200          |
| 20                         | 90                | 180          |
| 22                         | 82                | 164          |
| 24                         | 75                | 150          |
| 26                         | 69                | 138          |
| 28                         | 64                | 129          |
| 30                         | 60                | 120          |
| 32                         | 56                | 113          |
| 34                         | 53                | 106          |
| 36                         | 50                | 100          |
| 38                         | 47                | 95           |
| 40                         | 45                | 90           |
| 42                         | 43                | 86           |
| 44                         | 41                | 82           |
| 46                         | 39                | 78           |
| 48                         | 37                | 75           |
| 50                         | 36                | 72           |
| 52                         | 35                | 69           |
| 54                         | 34                | 67           |
| 56                         | 32                | 64           |
| 58                         | 31                | 62           |
| 60                         | 30                | 60           |

If the actual input is not within  $\pm 2\%$  of the furnace rating, with allowance being made for the permissible range of the regulator setting (0.3 inches W.C.), replace the orifice spuds with spuds of the proper size.

**CAUTION:** Be sure to relight any gas appliances that were turned off at the start of this input check.

#### ADJUSTMENT OF MANIFOLD GAS PRESSURE

1. Turn gas off at main gas valve. Remove 1/8" plug in the main gas valve body and install proper manometer tube adapter fitting. Connect line from gas valve tap to manometer.
2. Refer to Figure 14 for location of pressure regulator adjustment cap and screw on main gas valve.

**NOTE:** The screw-off cap for the pressure regulator must be removed entirely to gain access to the adjustment screw.

**WARNING:** The cap must be replaced in order for the furnace to operate properly.

3. Turn gas and electrical supplies ON. Start furnace and observe manifold pressure on manifold.
4. Adjust manifold pressure by adjusting gas valve regulator screw.

|              |            |
|--------------|------------|
| Natural Gas  | 3.5" W.C.  |
| Propane (LP) | 10.0" W.C. |

If gas valve regulator is turned in, or clockwise, manifold pressure is increased. If screw is turned out, or counterwise, manifold pressure will decrease.

**WARNING:** The manifold pressure must be checked with the screw-off cap in place on the pressure regulator.

**WARNING:** If manifold pressure is too high, an over-fire condition exists which could cause heat exchanger failure. If the manifold pressure is too low, sooting and eventual clogging of the heat exchanger could occur.

- Once the correct gas pressure to the burners has been established, turn the gas valve knob to OFF and turn the electrical supply switch OFF; then, remove the pressure tap at the gas valve and re-install the plug using a compound (on the threads) resistant to the action of LP gases.
- Turn the electrical and gas supplies back on, and, with the burners in operation, check for gas leakage around the plug with a soap and water solution.

**WARNING:** Be sure that the gas valve pressure regulator cap is replaced.

### ADJUSTMENT OF TEMPERATURE RISE

The temperature rise, or temperature difference between the return air and the heated air from the furnace, must be within the range shown on the furnace rating plate and within the application limitations shown in Table 1. After the temperature rise has been determined, the cfm can be calculated.

After about 20 minutes of operation, determine the furnace temperature rise. Take readings of both the return air and the heated air in the ducts, about six feet from the furnace where they will not be affected by radiant heat.

Increase the blower speed to decrease the temperature rise; decrease the blower speed to increase the rise.

All direct-drive blowers have multi-speed motors. The blower motor speed taps are located in the control box in the blower compartment. Refer to Figure 15 and the unit wiring label to change the blower speed.

You may select a heating speed and a cooling speed. They may be the same speed or a different speed.

To use the same speed tap for heating and cooling, the "heat" terminal and "cool" terminal must be connected using a jumper wire and connected to the desired motor lead. Place all unused motor leads on "Park" terminals. Two are provided.

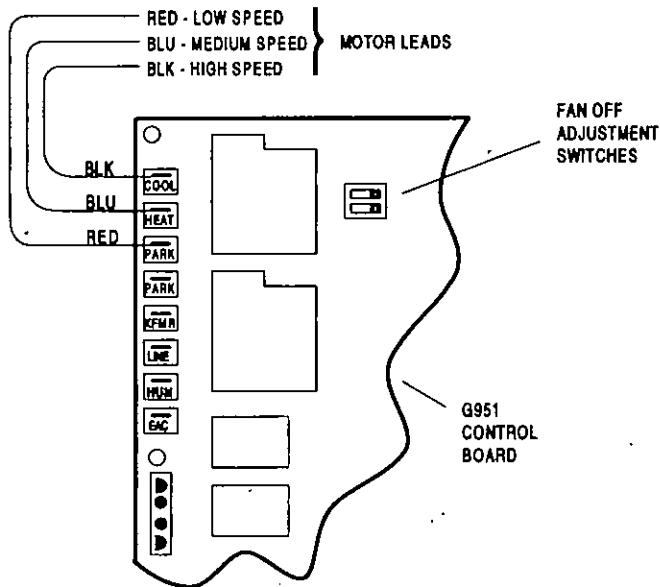


FIGURE 15 - TYPICAL HEAT/COOL SPEED TAP CONNECTIONS

**CAUTION:** Do not energize more than one motor speed at a time or damage will result.

### ADJUSTMENT OF FAN-OFF CONTROL SETTINGS

This furnace is equipped with a time on/time off heating fan control. The fan "on" is fixed at 30 seconds. The fan "off" is field adjustable from 60 to 180 seconds. The fan "off" is factory set to 90 seconds.

The fan-off setting must be long enough to adequately cool the furnace, but not so long that cold air is blown into the heated space. The fan-off timing may be adjusted by setting the option switches located (refer to Figure 14) on the Johnson Controls' G951ADB control board as follows:

| To Delay Fan-Off By: | Set Switch 1 | Set Switch 2 |
|----------------------|--------------|--------------|
| 60 Sec.              | On           | On           |
| 90 Sec.              | On           | Off          |
| 120 Sec.             | Off          | On           |
| 180 Sec.             | Off          | Off          |

### ACCESSORY CONNECTIONS

The furnace control will allow power switching control of various accessories. See Figure 16 for connection details.

#### Electronic Air Cleaner Connection

Two 1/4" spade terminals (AC and AC N) for electronic air cleaner connections are located on the control board. The terminals provide 120 VAC (1.0 amp maximum) during circulating blower operation.

#### Humidifier Connection

Two 1/4" spade terminals (HUM and HUM N) for humidifier connections are located on the control board. The terminals provide 120 VAC (1.0 amp maximum) during heat speed operation of the circulating blower.

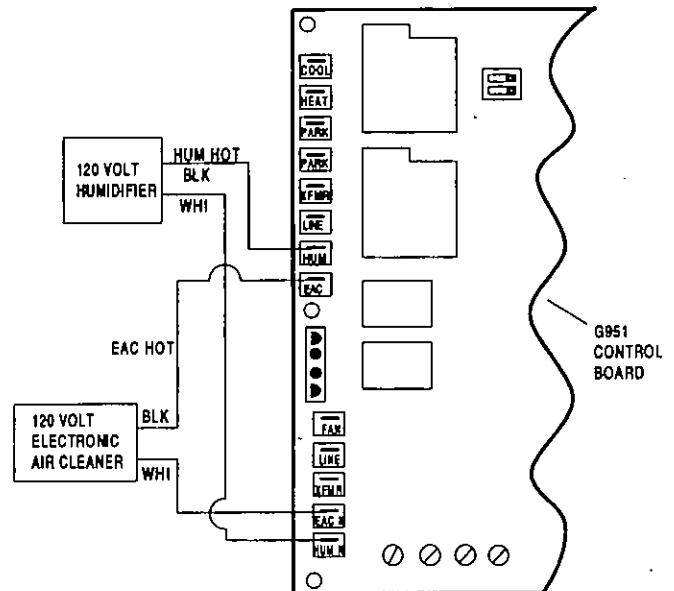


FIGURE 16 - ACCESSORY CONNECTIONS

## OPERATION AND MAINTENANCE

### SEQUENCE OF OPERATION

The following describes the sequence of operation of the furnace. Refer to the schematic wiring diagram (page 19) for component location.

#### CONTINUOUS BLOWER

On cooling/heating thermostats with fan switch, when the fan switch is set in the "ON" position, a circuit is completed between terminals R and G of the thermostat. The blower motor is energized through the cool fan terminal and runs on the selected speed.

#### INTERMITTENT BLOWER - COOLING

On cooling/heating thermostats with fan switch, when the fan switch is set in the "auto" position and the thermostat calls for cooling, a circuit is completed between the R, Y and G terminals. The motor is energized through the cool fan terminal and runs on the selected speed. The fan off setting is fixed at 60 seconds for SEER enhancement.

#### HEATING CYCLE

**NOTE:** Furnace may be equipped with either a G951ADB or G951EDB control. On units equipped with the EDB control the hot surface igniter will begin to glow prior to the inducer motor being energized.

**CAUTION:** Label all wires prior to disconnecting when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

When the system switch is set on HEAT and the fan is set on AUTO, and the room thermostat calls for heat, a circuit is completed between terminals R and W of the thermostat. When the proper amount of combustion air is being provided, a pressure switch activates the ignition control.

The ignition control provides a 31-second warm-up period. The gas valve then opens for seven seconds.

As gas starts to flow and ignition occurs, the flame sensor begins its sensing function. If a flame is detected within seven seconds after ignition, normal furnace operation continues until the thermostat circuit between R and W is opened. After flame is present for 30 seconds, the circulating blower is energized.

When the thermostat circuit opens, the G951ADB ignition control is deenergized. With the ignition control deenergized, the gas flow stops and the burner flames are extinguished. The venter continues to operate for 15 seconds after the gas flow stops.

The blower motor continues to operate for the amount of time set by the fan-off delay dip switches located on the G951ADB control board. The heating cycle is then complete, and the unit is ready for the start of the next heating cycle.

If flame is not detected within the seven second sensing period, the gas valve is deenergized. The G951ADB control is equipped with a re-try option. This provides a 60 second wait following an unsuccessful ignition attempt (flame not detected).

After the 60 second wait, the ignition sequence is restarted with an additional 10 seconds of igniter warm-up time. If this ignition attempt is unsuccessful, one more re-try will be made before lockout.

A momentary loss of gas supply, flame blowout, or a shorted or open condition in the flame probe circuit will be sensed within 0.8 seconds. The gas valve will deenergize and the control will restart the ignition sequence after waiting 60 seconds. Recycles will begin and the burner will operate normally if the gas

supply returns, or the fault condition is corrected prior to the last ignition attempt. Otherwise, the control will lockout.

The G951ADB control will repeat the ignition sequence for a total of four recycles if flame is lost within the first 10 seconds of establishment.

If flame is established for more than 10 seconds after ignition, the G951ADB control will clear the ignition attempt (retry) counter. If flame is lost after 10 seconds, it will restart the ignition sequence. This can occur a maximum of five times.

During burner operation, a momentary loss of power of 50 milliseconds or longer will drop out the main gas valve. When the power is restored, the gas valve will remain deenergized and a restart of the ignition sequence will begin immediately.

#### Hot Surface Ignition System

**WARNING:** Do not attempt to light this furnace by hand (with a match or any other means). There may be a potential shock hazard from the components of the hot surface ignition system. The furnace can only be lit automatically by its hot surface ignition system.

## MAINTENANCE

#### Air Filters

The filters should be checked periodically for dirt accumulation. Dirty filters greatly restrict the flow of air and overburden the system.

Clean the filters at least every three months. See the section titled "Filters" for filter removal instructions. On new construction, check the filters every week for the first four weeks. Inspect the filters every three weeks after that, especially if the system is running constantly.

All filters used with the furnace are the high-velocity, cleanable type. Clean these filters by washing in warm water. Make sure to shake all the water out of the filter and have it reasonably dry before installing it in the furnace. When replacing filters, be sure to use the same size and type as originally supplied.

#### Lubrication

Blower motors in these furnaces are permanently lubricated and do not require periodic oiling.

#### BLOWER CARE

Even with good filters properly in place, blower wheels and motors will become dust laden after long months of operation. The entire blower assembly should be inspected annually. If the motor and wheel are heavily coated with dust, they can be brushed and cleaned with a vacuum cleaner.

The procedure for removing the direct drive blower assembly for cleaning is as follows:

1. Disconnect the electrical supply to the furnace.
2. Remove the access panels.
3. Disconnect the two wire harness plugs from the top of the control box.
4. Remove the four screws holding the control box and position it out of the way.
5. Remove the screws which retain blower to blower deck.
6. Remove the blower assembly with the control wiring still attached.

7. Vacuum the motor and the blower using a soft brush attachment. Care must be used not to disturb any balance weights (clips) on the blower wheel vanes.
8. Before reinstalling the blower assembly, inspect the heat exchanger which is visible in the blower opening of the blower deck. If it requires cleaning, vacuum it with a soft brush attachment.
9. Reinstall the blower assembly. Replace mounting screws that hold the blower assembly to the front portion of the blower deck. Two mounting screws used on the sides of the blower are used for shipping purposes only, and are not necessary after the furnace has been installed.
10. Reinstall the control box and reconnect the wiring harness plugs.
11. Replace the access doors and restore the electrical supply to the unit.

### Burner Removal/Cleaning

The main burners should be checked periodically for dirt accumulation.

If cleaning is required, follow this procedure:

1. Turn off the electrical power to the unit.
2. Remove the access door.
3. Remove the igniter.
4. Turn off the gas supply at the external manual shutoff valve and loosen the ground union joint.
5. Remove the airshield.
6. Remove the four screws that hold the burner assembly to the vest panel and remove the assembly.
7. Remove burners from the burner assembly.
8. Burners may be cleaned by rinsing in hot water.
9. Reassemble the burners in the reverse order, making sure the burner shield is tightened securely in place.

### Cleaning the Heat Exchanger

1. Turn off the main manual gas valve external to the furnace.
2. Turn off electrical power to the furnace.
3. Remove the upper access door and remove airshield
4. Disconnect wires from HSI sensor, rollout switch and HSI igniter. Remove igniter **carefully**, as it is easily broken.
5. Remove the screws that hold the burner assembly to the vestibule panel and remove the assembly. The lower portion of the heat exchanger will now be exposed.
6. Remove inducer blower and motor at the top of the furnace. Remove upper plate.
7. The upper portion of the heat exchanger is now exposed.
8. With a long flexible wire brush, clean inside each tube at both the top and bottom. The brush must pass around the rear heat exchanger tubes. Vacuum loose scale and dirt from each tube.
9. Clean - vacuum all burners.
10. Replace all components in reverse order. Reconnect all wiring.
11. Restore electrical power and gas supply to the furnace.
12. Check furnace operation.

## TROUBLESHOOTING

The following visual checks should be made before troubleshooting:

1. Check to see that the power to the furnace and the ignition control module is ON.
2. The manual shutoff valves in the gas line to the furnace must be open.
3. Make sure all wiring connections are secure.
4. Review the sequence of operation.

Start the system by setting the thermostat above room temperature. Observe the system's response. Then use the Troubleshooting tables in this manual to check the system's operation.

Use the troubleshooting table by reading the upper left-hand box and then following the instructions in each box. If the condition described in the box is true (yes answer), go down to the next box. If the condition is not true (no answer), go to the box to the right.

Continue checking and answering the questions in the boxes until the problem is explained and corrective action is described. After any maintenance or repair, the troubleshooting sequence can be repeated until normal system operation is obtained.

## FURNACE CONTROL DIAGNOSTICS

The furnace has built-in, self diagnostic capability. If a system problem occurs, a fault code is shown by a blinking LED on the blower deck. It is located just to the right of the wiring harness plug. To view the LED, remove the top furnace panel. **DO NOT** remove the furnace blower compartment panel **OR** turn off furnace power as either action will clear the control's memory of the fault.

The control continuously monitors its own operation and the operation of the system. If a failure occurs, the LED will indicate the failure code. If the failure is internal to the control, the light will stay on continuously. In this case, the entire control should be replaced as the control is not field repairable.

If the sensed failure is in the system (external to the control), the LED will flash in the following flash-pause sequences to indicate failure status (each flash will last approximately 1/4 second, each pause will last approximately 2 seconds).

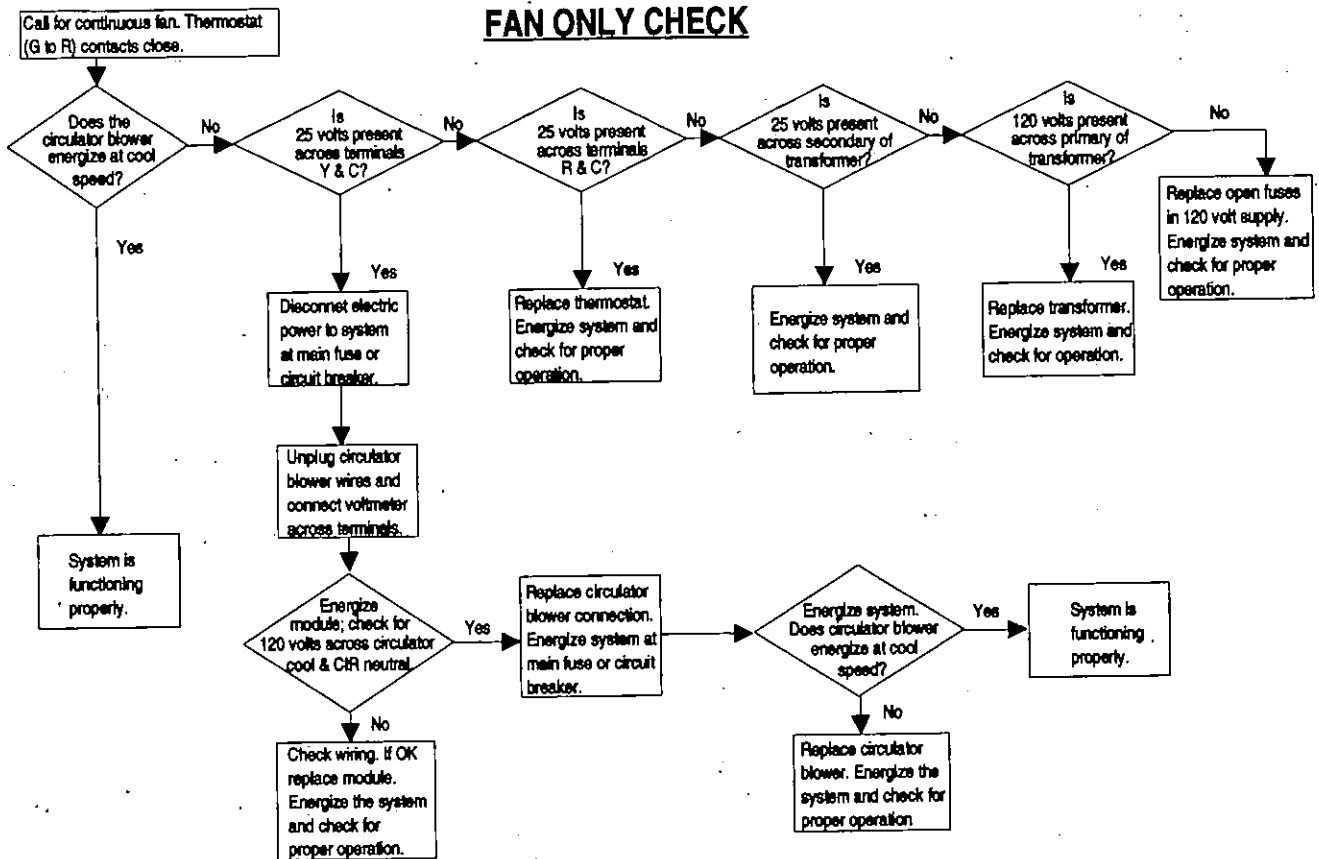
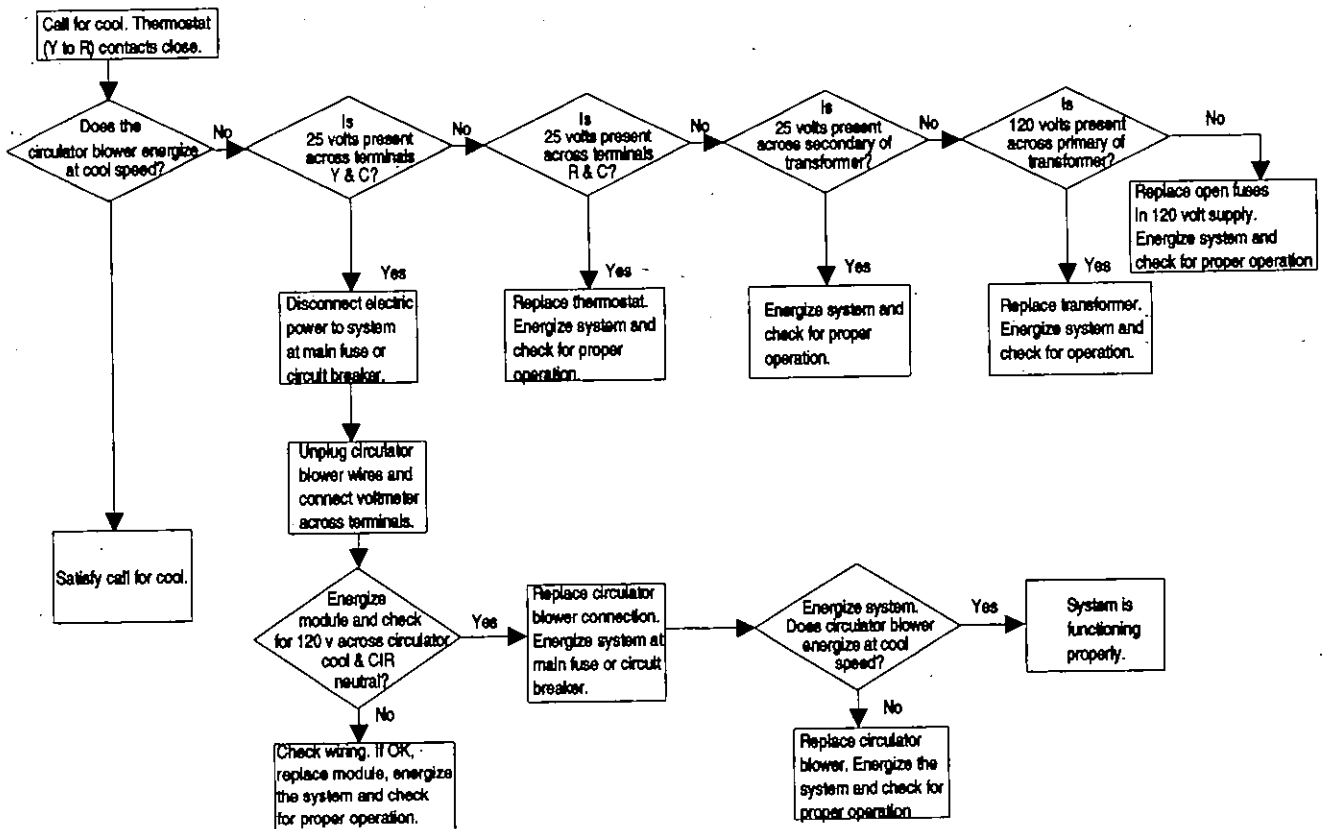
- 1 flash, then pause..... *System lockout*
- 2 flashes, then pause .... *Pressure switch stuck closed*
- 3 flashes, then pause .... *Pressure switch stuck open*
- 4 flashes, then pause .... *Open high limit switch*
- 5 flashes, then pause .... *Open rollout switch*
- Continuous flashing  
(no pause)..... *Flame has been sensed when  
no flame should be present  
(no call for heat)*
- LED on -not flashing..... *Faulty control*

The LED will also flash once at power-up. If the control is locked out, it may be reset by momentary power interruption. Either the 24v thermostat or line voltage may be interrupted for 30 seconds or longer.

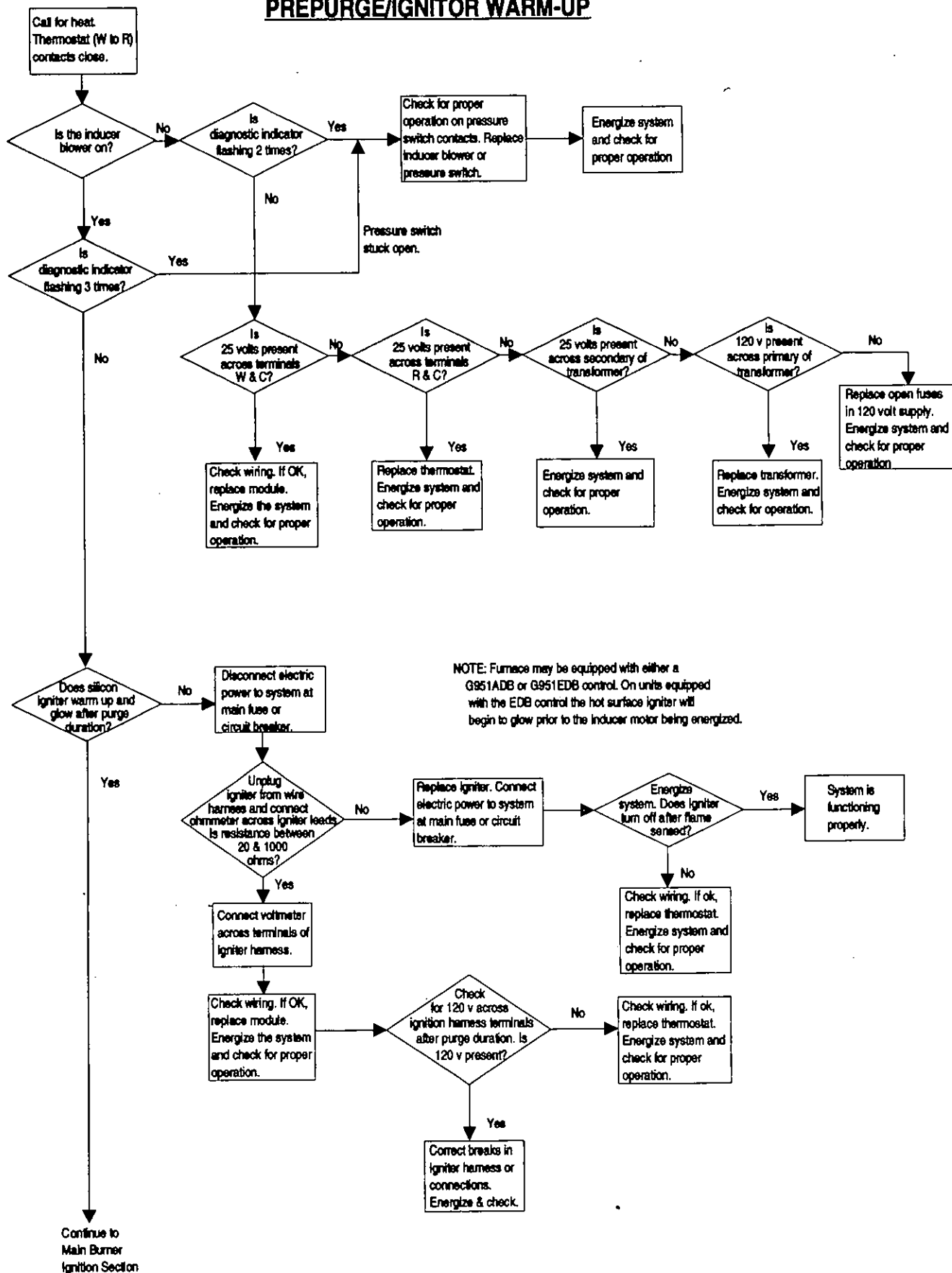
**WARNING:** Never jump pressure switch to allow furnace operation. To do so will allow furnace to operate under potentially hazardous conditions.

**WARNING:** Do not try to repair controls. Replace defective controls with UPG Source 1 Parts.

**WARNING:** Never adjust pressure switch to allow furnace operation.

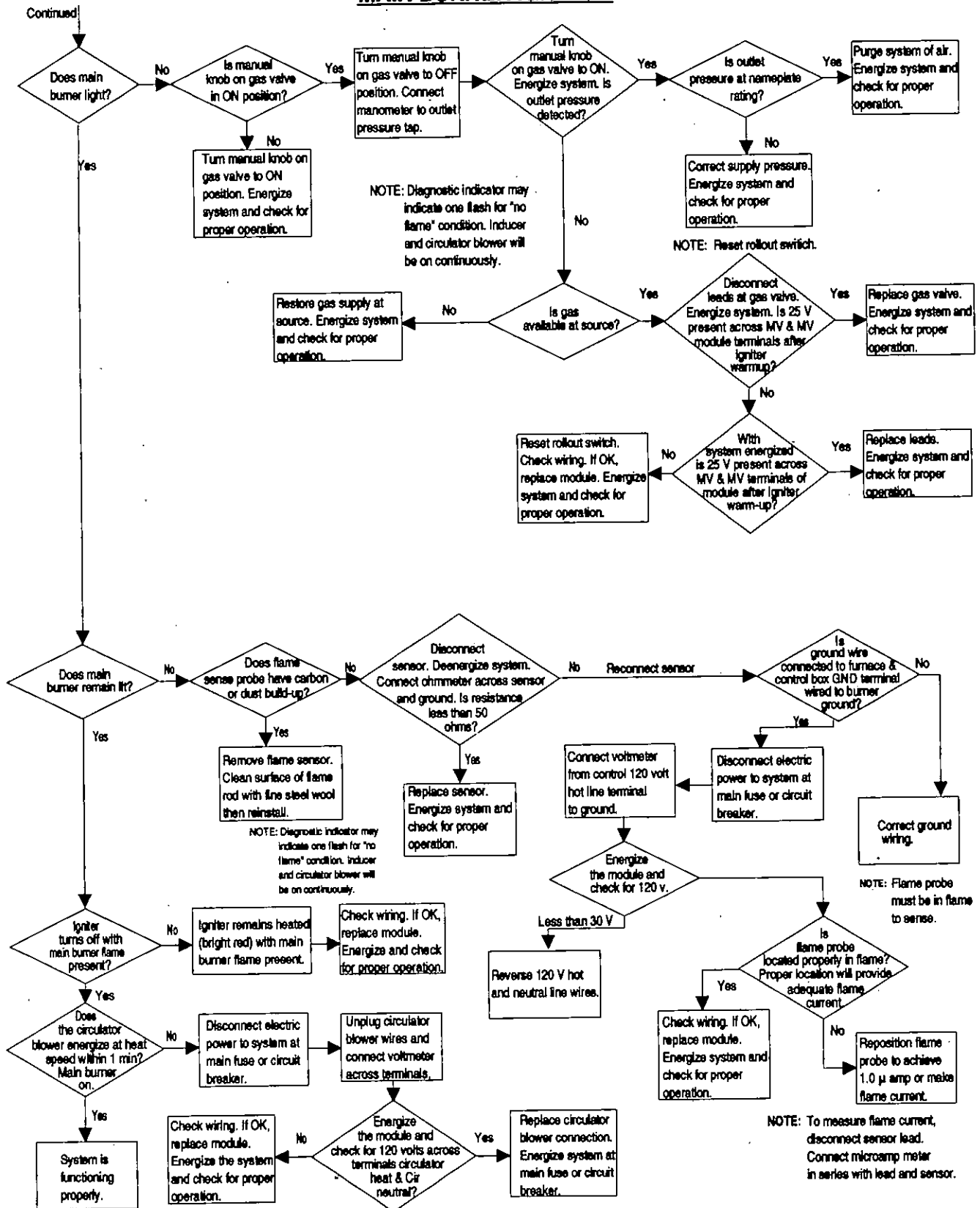
**FAN ONLY CHECK****COOLING CYCLE CHECK**

## PREPURGE/IGNITOR WARM-UP



NOTE: Furnace may be equipped with either a G951ADB or G951EDB control. On units equipped with the EDB control the hot surface igniter will begin to glow prior to the inducer motor being energized.

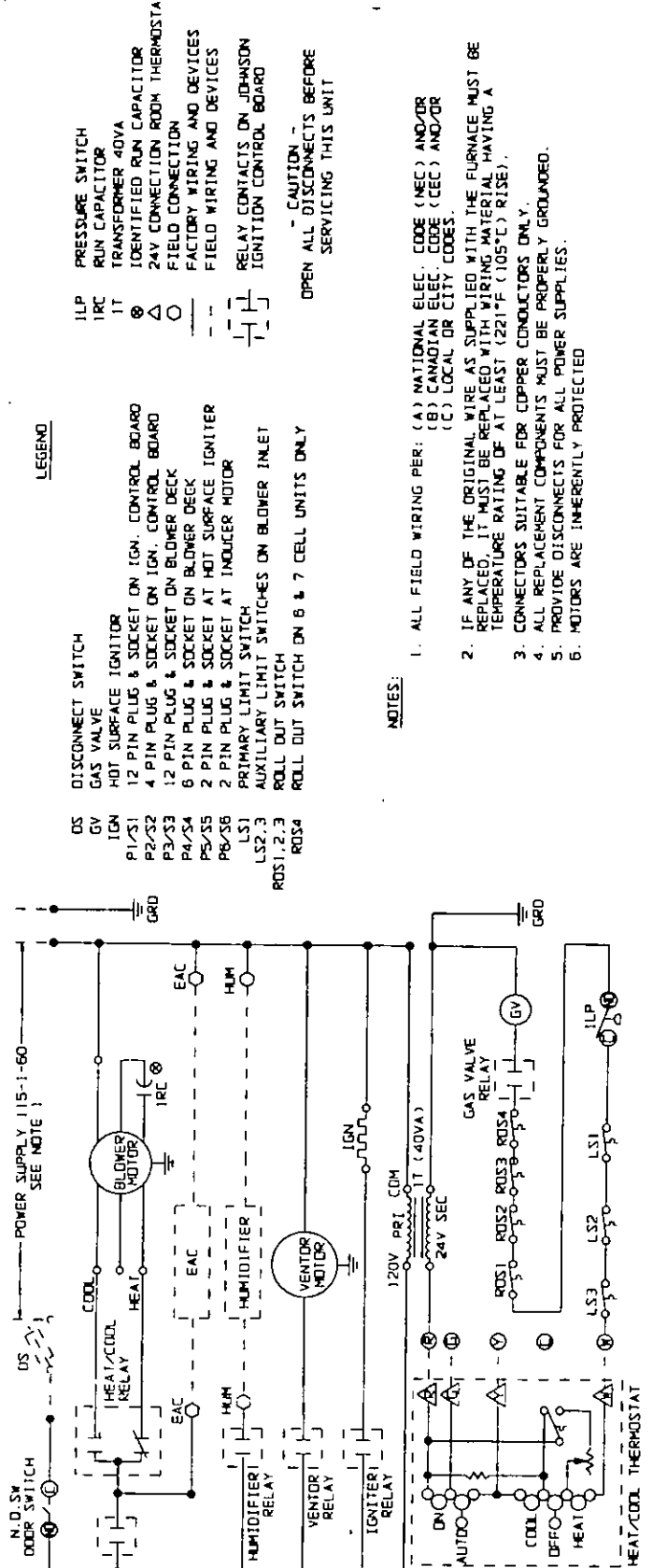
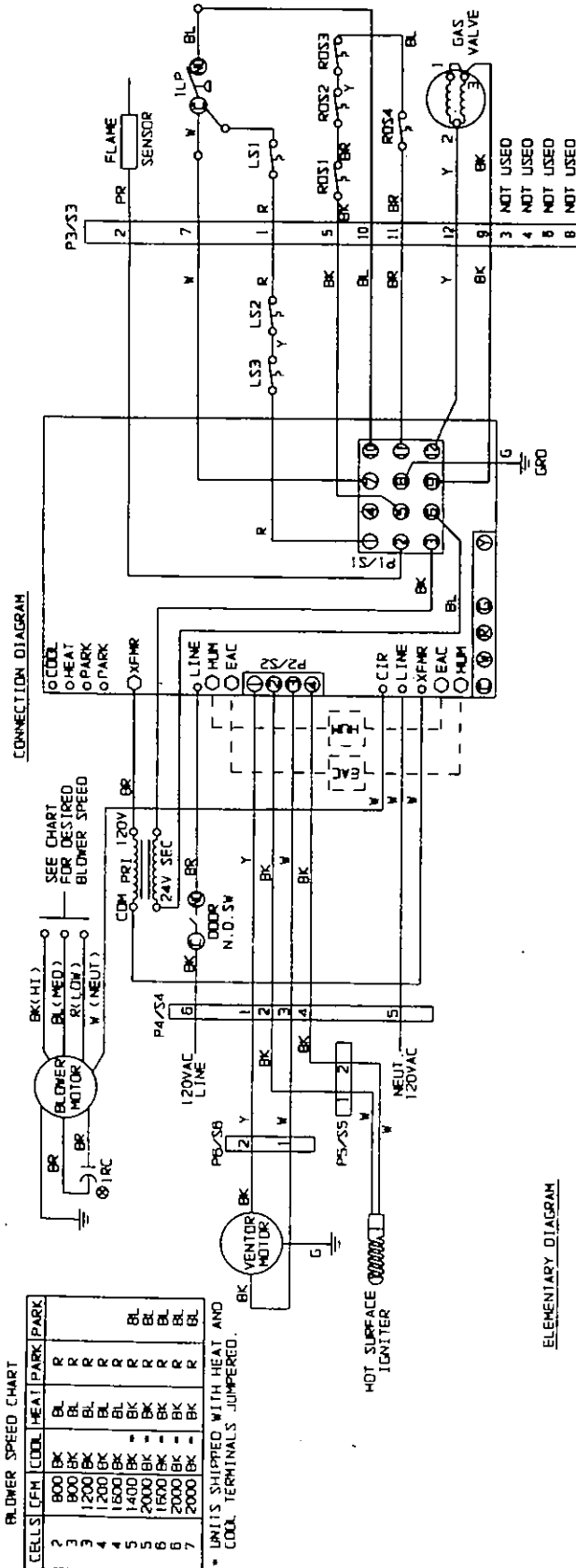
# MAIN BURNER IGNITION





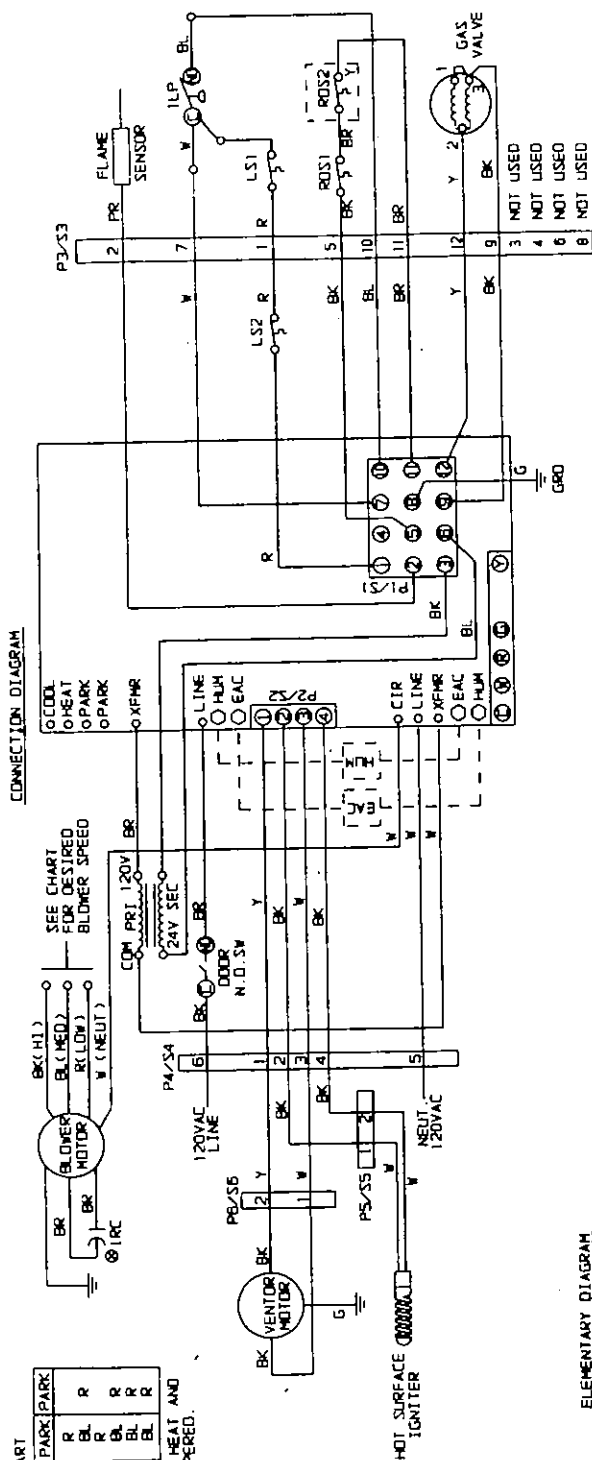
# WIRING DIAGRAM - UPFLOW MULTI-SPEED MODELS

**NOTE:** The furnace's control system depends on correct polarity of the power supply.

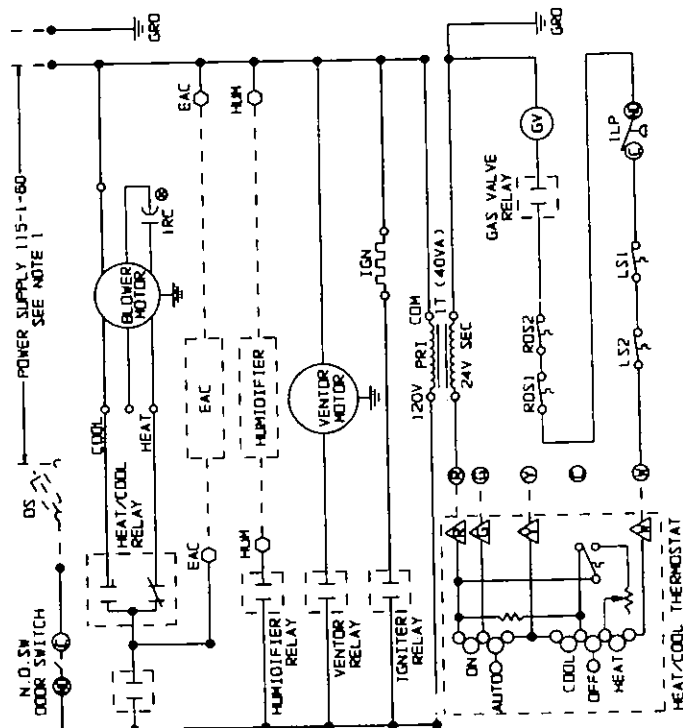


## WIRING DIAGRAM - DOWNFLOW MODELS

**NOTE:** The furnace's control system depends on correct polarity of the power supply.



### ELEMENTARY DIAGRAM



### LEGEND

|                         |        |
|-------------------------|--------|
| DISCONNECT SWITCH       | OS     |
| GAS VALVE               | GV     |
| IGN                     | IGN    |
| 12 PIN SURFACE IGNITION | 1/21   |
| 12 PIN PLUG & SOCKET    | 1/21   |
| 4 PIN PLUG & SOCKET     | 2/52   |
| 12 PIN PLUG & SOCKET    | 3/3/53 |
| 6 PIN PLUG & SOCKET     | 4/4/54 |
| 2 PIN PLUG & SOCKET     | 5/5/55 |
| 2 PIN PLUG & SOCKET     | 6/6/56 |
| PRIMARY LIMIT SWITCH    | LS1    |
| AUXILIARY LIMIT SWITCH  | LS2    |
| ROLL OUT SWITCH ON      | RO1    |
| ROLL OUT SWITCH OFF     | RO2    |

|     |                                |
|-----|--------------------------------|
| ILP | PRESSURE SWITCH                |
| IRC | RUN CAPACITOR                  |
| LT  | TRANSFORMER 40VA               |
| △   | IDENTIFIED RUN CAPACITOR       |
| ⊗   | 24V CONNECTION ROOM THERMOSTAT |
| ○   | FIELD CONNECTION               |
| --  | FACTORY WIRING AND DEVICES     |
| --  | FIELD WIRING AND DEVICES       |
| ⊥   | RELAY CONTACTS ON JOHNSON      |
| ⊥   | IGNITION CONTROL BOARD         |

- CAUTION -  
OPEN ALL DISCONNECTS BEFORE  
SERVICING THIS UNIT

**NOTES:**

1. ALL FIELD WIRING PER: (A) NATIONAL ELEC. CODE (NEC) AND/OR (B) CANADIAN ELEC. CODE (CEC) AND/OR (C) LOCAL OR CITY CODES.
2. IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE FURNACE MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST (221°F (105°C) RISE).
3. CONNECTORS SUITABLE FOR COPPER CONDUCTORS ONLY.
4. ALL REPLACEMENT COMPONENTS MUST BE PROPERLY GROUNDED.
5. PROVIDE DISCONNECTS FOR ALL POWER SUPPLIES.
6. MOTORS ARE INHERENTLY PROTECTED.

**BLOWER PERFORMANCE - UPFLOW/HORIZONTAL - CFM (Includes Filter)**

| MODEL                             | SPEED TAP                | EXTERNAL STATIC PRESSURE, INCHES W.C. |      |      |      |      |      |      |      |      |      |
|-----------------------------------|--------------------------|---------------------------------------|------|------|------|------|------|------|------|------|------|
|                                   |                          | 0.10                                  | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.70 | 0.80 | 0.90 | 1.00 |
| PBKM-LD08*040<br>(See Note 1)     | HIGH                     | 1150                                  | 1090 | 1021 | 945  | 877  | 791  | 670  | 458  | —    | —    |
|                                   | MED                      | 1027                                  | 971  | 930  | 862  | 790  | 714  | 597  | 411  | —    | —    |
|                                   | LOW                      | 848                                   | 817  | 782  | 726  | 673  | 608  | 500  | 317  | —    | —    |
| PBKM-LD08*060<br>(See Note 3)     | HIGH                     | 998                                   | 965  | 934  | 878  | 827  | 769  | 665  | 576  | 489  | 323  |
|                                   | MED                      | 890                                   | 858  | 824  | 775  | 741  | 680  | 584  | 504  | —    | —    |
|                                   | LOW                      | —                                     | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| PBKM-LD12*060<br>(See Note 2)     | HIGH                     | 1548                                  | 1480 | 1396 | 1312 | 1270 | 1126 | 1029 | 908  | 736  | 563  |
|                                   | MED                      | 1275                                  | 1221 | 1180 | 1152 | 1080 | 1016 | 922  | 807  | 657  | 492  |
|                                   | LOW                      | —                                     | 1055 | 1050 | 1034 | 998  | 960  | 888  | 773  | 645  | 446  |
| PBKM-LD12*080<br>(See Note 2)     | HIGH                     | 1605                                  | 1538 | 1427 | 1331 | 1284 | 1178 | 1080 | 978  | 815  | 619  |
|                                   | MED                      | 1172                                  | 1195 | 1140 | 1102 | 1076 | 985  | 908  | 822  | 682  | 566  |
|                                   | LOW                      | —                                     | —    | 967  | 932  | 925  | 885  | 851  | 763  | 630  | —    |
| PBKM-LD16*080<br>(See Note 3)     | HIGH                     | 1967                                  | 1884 | 1795 | 1697 | 1605 | 1477 | 1340 | 1167 | 986  | 799  |
|                                   | MED                      | 1822                                  | 1758 | 1673 | 1592 | 1512 | 1399 | 1256 | 1107 | 917  | 742  |
|                                   | LOW                      | —                                     | —    | 1440 | 1383 | 1330 | 1240 | 1142 | 986  | 841  | 702  |
| PBKM-LD14*100<br>(See Note 3)     | HIGH                     | 1861                                  | 1798 | 1698 | 1584 | 1494 | 1364 | 1258 | 1087 | 898  | 756  |
|                                   | MED                      | 1569                                  | 1503 | 1438 | 1375 | 1277 | 1182 | 1071 | 928  | 772  | 643  |
|                                   | LOW                      | —                                     | 1295 | 1270 | 1198 | 1156 | 1063 | 966  | 857  | 725  | 616  |
| PBKM-LD20*100<br>(See Notes 4, 7) | HIGH                     | 2380                                  | 2318 | 2243 | 2195 | 2107 | 2017 | 1944 | 1811 | 1703 | 1583 |
|                                   | MED                      | 1989                                  | 1976 | 1967 | 1949 | 1907 | 1832 | 1755 | 1680 | 1566 | 1477 |
|                                   | LOW                      | —                                     | —    | 1585 | 1570 | 1527 | 1502 | 1447 | 1398 | 1333 | 1248 |
| PBKM-LD16*120<br>(See Note 4)     | HIGH                     | 2117                                  | 2023 | 1920 | 1821 | 1731 | 1587 | 1459 | 1302 | 1045 | 818  |
|                                   | MED                      | 1905                                  | 1821 | 1743 | 1649 | 1563 | 1465 | 1332 | 1168 | 957  | 643  |
|                                   | LOW                      | 1546                                  | 1532 | 1495 | 1424 | 1357 | 1268 | 1155 | 1000 | 840  | 663  |
| PBKM-LD20*120<br>(See Notes 5, 7) | HIGH                     | —                                     | 2367 | 2342 | 2270 | 2198 | 2110 | 2004 | 1913 | 1797 | 1581 |
|                                   | MED                      | 2027                                  | 1986 | 1945 | 1917 | 1877 | 1820 | 1763 | 1653 | 1558 | 1445 |
|                                   | LOW                      | —                                     | —    | —    | 1349 | 1327 | 1312 | 1281 | 1233 | 1150 | 1078 |
| PBKM-LD20*140<br>(See Notes 6, 7) | HIGH                     | 2204                                  | 2154 | 2081 | 2055 | 2002 | 1933 | 1843 | 1706 | 1545 | 1409 |
|                                   | MED                      | —                                     | 1805 | 1779 | 1758 | 1715 | 1656 | 1579 | 1507 | 1395 | 1292 |
|                                   | LOW                      | —                                     | —    | —    | 1451 | 1451 | 1423 | 1377 | 1284 | 1201 | 1095 |
| PBKM-LV12N080                     | 1200**<br>CFM<br>SETTING | 1200                                  | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | —    | —    |
| PBKM-LV14N100                     | 1400**<br>CFM<br>SETTING | 1400                                  | 1400 | 1400 | 1400 | 1400 | 1400 | 1400 | 1400 | 1400 | 1400 |
| PBKM-LV20N100<br>(See Note 7)     | 2000**<br>CFM<br>SETTING | 2000                                  | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | —    |



These conditions are outside the recommended heating operating range.

Airflow is expressed in standard cubic feet per minute.  
Motor voltage at 115V

\*\* Other CFM settings are available.

Figures shown are for left side return air installation, except for the D20 unit which must use both sides for applications over 1600 CFM. For all bottom applications, see correction factors listed in Notes 1-6.

**NOTES:**

- |                     |                                                        |
|---------------------|--------------------------------------------------------|
| 1 - CFM shown x .90 | 5 - CFM shown x .91                                    |
| 2 - CFM shown x .98 | 6 - CFM shown x .96                                    |
| 3 - CFM shown x .97 | 7 - Air flow shown is with return air from both sides. |
| 4 - CFM shown x .93 | Use the derate factors for bottom return               |

**BLOWER PERFORMANCE - DOWNFLOW - CFM (Includes Filter)**

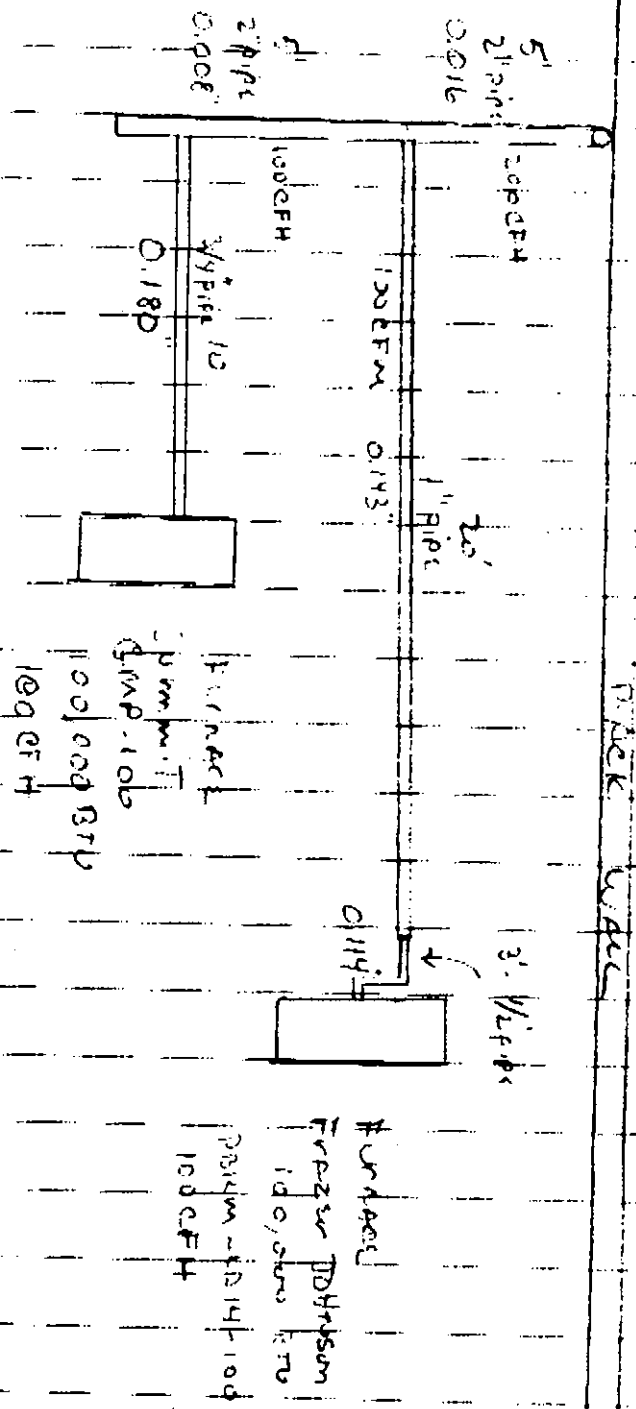
| MODEL         | SPEED TAP | EXTERNAL STATIC PRESSURE, INCHES W.C. |      |      |      |      |      |      |      |      |      |
|---------------|-----------|---------------------------------------|------|------|------|------|------|------|------|------|------|
|               |           | 0.10                                  | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.70 | 0.80 | 0.90 | 1.00 |
| PBKM-LD10*060 | HIGH      | 1356                                  | 1315 | 1222 | 1154 | 1090 | 988  | 888  | 771  | 630  | 462  |
|               | MED       | 1144                                  | 1080 | 1023 | 958  | 919  | 830  | 740  | 635  | 510  | 425  |
|               | LOW       | 967                                   | 942  | 908  | 864  | 811  | 747  | 672  | 574  | 476  | 344  |
| PBKM-LD12*080 | HIGH      | 1557                                  | 1502 | 1410 | 1344 | 1240 | 1142 | 1025 | 882  | 740  | 567  |
|               | MED       | 1289                                  | 1238 | 1175 | 1098 | 1030 | 938  | 855  | 712  | 582  | 455  |
|               | LOW       | 1136                                  | 1081 | 1039 | 965  | 906  | 831  | 739  | 617  | 515  | 413  |
| PBKM-LD12*100 | HIGH      | 1599                                  | 1535 | 1465 | 1375 | 1277 | 1182 | 1089 | 948  | 723  | 554  |
|               | MED       | 1390                                  | 1327 | 1266 | 1195 | 1109 | 1027 | 919  | 813  | 597  | 458  |
|               | LOW       | 1175                                  | 1136 | 1093 | 1027 | 967  | 900  | 816  | 704  | 497  | 362  |
| PBKM-LD16*100 | HIGH      | 2043                                  | 2000 | 1893 | 1823 | 1726 | 1627 | 1503 | 1382 | 1249 | 1134 |
|               | MED       | 1706                                  | 1655 | 1593 | 1533 | 1450 | 1366 | 1265 | 1163 | 1062 | 950  |
|               | LOW       | 1452                                  | 1406 | 1373 | 1317 | 1245 | 1174 | 1112 | 1025 | 935  | 817  |
| PBKM-LD16*115 | HIGH      | 2053                                  | 1977 | 1899 | 1817 | 1725 | 1623 | 1519 | 1401 | 1265 | 1120 |
|               | MED       | 1711                                  | 1667 | 1606 | 1530 | 1458 | 1383 | 1284 | 1184 | 1066 | 951  |
|               | LOW       | 1460                                  | 1434 | 1407 | 1363 | 1310 | 1232 | 1137 | 1064 | 964  | 854  |
| PBKM-LD20*130 | HIGH      | 2330                                  | 2248 | 2177 | 2103 | 2024 | 1910 | 1789 | 1698 | 1555 | 1419 |
|               | MED       | 1867                                  | 1858 | 1814 | 1740 | 1675 | 1593 | 1524 | 1443 | 1330 | 1204 |
|               | LOW       | 1613                                  | 1531 | 1516 | 1490 | 1495 | 1411 | 1337 | 1250 | 1225 | 1010 |



Operation at these heating conditions exceed the listed temperature rise range. A higher blower speed must be selected.

- \* Model designator may be "N" for standard units, or "L" for factory built low NOx units.
- Airflow is expressed in standard cubic feet per minute.  
Motor voltage at 115V

Liberty Truss  
Brick Town



# TOWNSHIP OF BRICK

OCEAN COUNTY, NEW JERSEY

401 CHAMBERS BRIDGE ROAD, BRICK, N.J. 08723

Carolyn L. Patetta, Mayor

**Township Council:**

Warren H. Wolf, President  
Albert Chrobocinski  
Victor Cantillo  
Helen Fayad  
Lee Hartman  
Thomas G. Maiorino  
Mary Lou Powner



Office of Affordable Housing  
Carol A. Wolfe  
Affordable Housing Administrator  
(908) 262-1048

TO: Frederick Millman, CTA  
Tax Assessor

FROM: Carol A. Wolfe  
Affordable Housing Administrator

RE: Block 673, Lot P

DATE: 6/14/91

*Bill Thare*  
*2796 Hooper Ave*  
*(near Hooper Ave)*



Please review the attached application for a Preliminary construction permit.

The estimated equalized added assessment for the construction at the above site is \$ 5,000.00

Preliminary

7/11/2014  
Frederick R. Millman, CTA

6-14-91  
Date



Please review the attached application for a Final Certificate of Occupancy / Approval.

The final equalized added assessment for construction at the above site is \$ \_\_\_\_\_.

Final

\_\_\_\_\_  
Frederick R. Millman, CTA

\_\_\_\_\_  
Date