Guide Specifications

DAVE LENNOX *SIGNATURE*® COLLECTION SLO185BV

Lo-Boy – Variable Speed Blower

August 1, 2014

Note: This specification is for **Lennox Industries SLO185BV Oil Furnaces**. Revise specification section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

This specification utilizes the Construction Specifications Institute (CSI) *Manual of Practice*, including *MasterFormat*™, *SectionFormat*™ and *PageFormat*™. Optional text and text requiring a decision is indicated by bolded brackets **[ ]**; delete text not required in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

FURNACES

SECTION 23 54 00

PART 1 - GENERAL

1.1 SECTION INCLUDE

A. Oil Furnaces

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI *MasterFormat* and specifier's practice.

1.2 RELATED SECTIONS

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section. Retain only those reference standards to be used within the text of this Section. Add and delete as required for specific project.

1.3 REFERENCES

A. Units are certified by AHRI
B. U.S Department of Energy (DOE), units rated to
C. Units are labeled according Federal Trade Commission (FTC) requirements
D. Units are ETL-Intertek listed
E. Energy Star® Certified
F. Burners are U.L approved, C.S.A certified and certified according to ANSI Standard 296.6

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.

1.4 PERFORMANCE REQUIREMENTS

A. Nominal oil heat input: 79/105=79,000/105,000 btuh , 124/141=124,000/141,000 btuh
B. Annual Fuel Utilization Efficiency (AFUE): 85%
C. Nominal Add-on Cooling Capacity: **[**3.5-**][** 5-**]** tons

D. Electrical Characteristics
    1. 60 HZ
    2. 120 V
    3. Single Phase
    4. 24V Transformer
    5. Fuel Requirements: Oil

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.5 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division1 Submittal Procedures
B. Product Data: Submit product data, including manufacturer's SPEC-DATA® product sheet, for specified products
C. Shop Drawings:
    1. Submit shop drawings in accordance with Section **[**01 33 00 - Submittal Procedures**]**
    2. Indicate:
        a. Equipment, piping and connections, together with valves, strainers, control assemblies, thermostatic controls, auxiliaries and hardware and recommended ancillaries which are mounted, wired and piped ready for final connection to building system, its size and recommended bypass connections.
        b. Piping, valves and fittings shipped loose showing final location in assembly
        c. Control equipment shipped loose, showing final location in assembly
        d. Field wiring diagrams
        e. Dimensions, internal and external construction details, installation clearances, recommended method of installation, sizes and location of mounting bolt holes
        f. Detailed composite wiring diagrams for control systems showing factory installed wiring and equipment on packaged equipment or required for controlling devices or ancillaries, accessories, controllers.
D. Quality Assurance:
    1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties
    2. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements
    3. Manufacturer's Instructions: Manufacturer's installation instructions

Specifier Note: Coordinate paragraph below with Part 3 Field Quality Requirements Article herein. Retain or delete as applicable.

E. Manufacturer's Field Reports: Manufacturer's field reports specified herein

F. Closeout Submittals: Submit the following:
    1. Warranty: Warranty documents specified herein
    2. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance. Include names and addresses of spare part suppliers.
    3. Provide brief description of unit, with details of function, operation, control and component service
    4. Commissioning Report: Submit commissioning reports, report forms and schematics in accordance with Section **[**01 81 00 – Commissioning**]**

1.6 QUALITY ASSURANCE

A. Qualifications:
    1. Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project
    2. Manufacturer Qualifications: Manufacturer capable of providing field service representation during construction and approving application method

B. Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings).

1.7 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirements
B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays
C. Packing, Shipping, Handling and Delivery:
    1. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact
    2. Ship, handle and unload units according to manufacturer's instructions
D. Storage and Protection:
    1. Store materials protected from exposure to harmful weather conditions
    2. Factory shipping covers to remain in place until installation

Specifier Note: Coordinate article below with Conditions of the Contract and Division 1 Closeout Submittals (Warranty).

1.8 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions
B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements.

C. Warranty: Commencing on Date of Installation

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

1. Heat exchanger - Limited lifetime warranty in residential applications.
2. Oil burners and all other covered components – 10-year limited warranty in residential applications.

PART 2 - PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards, and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.1 OIL FURNACE

A. Product: Lo-Boy Oil Furnaces
B. Manufacturer: Lennox Industries
    1. 1. Contact: 2140 Lake Park Blvd.; Richardson, TX 75080; Telephone: (800) 453-6669; website: www.lennoxcommercial.com
C. Proprietary Products/Systems:
    1. Cabinet:
        a. Heavy gauge steel
        b. Pre-painted textured finish
        c. Entire heating section is lined with foil faced fiberglass insulation
        d. Complete service access to blower
        e. Blower compartment is completely insulated
        f. Return air entry is possible on either side or bottom of cabinet
        g. Removal of louvered heating section door allows access to oil burner, inspection door and control compartment
        h. Door is equipped with handhold for ease of removal
        i. Control compartment is totally enclosed to provide a safe, compact, clean area

j. Oil line and electrical inlets openings are provided in sides

k. Lo-boy models have a lower profile than standard upflow oil furnaces, they are configured with both supply and return air openings on top of unit

l. Flue outlet

1. Located on top of cabinet on front flue models and can be relocated to either sides
2. Rear flue models allow the flue to be installed away from indoor coils and air cleaners

2. Heating System:

a. Beckett™ NX Oil Burner

3. Smooth operating, high pressure atomizing type burner
4. Heavy duty motor
5. Air turbo injector
6. Flame retention head
7. All parts are removable for servicing
8. Factory installed, wired and fire tested
9. 120VAC primary safety control and ceramic glazed electrodes
10. Nozzle provided for field conversion to higher heating capacity
11. Factory installed cadmium sulfide cell flame detector and primary safety control

b. Advanced Burner Control

1. 120VAC primary safety control
2. Controls the oil burner motor and igniter
3. Welded relay protection
4. Limited reset and recycle
5. Reset button
6. 3 status lights for system monitoring and diagnostics
    a. Yellow : pump prime mode
    b. Green: flame sensing
    c. Red: restricted lockout
7. Valve-On delay/ Motor-Off Delay
8. 15 second lockout time
9. Interrupted or intermittent duty ignition
10. Disable function
11. Technician pump priming mode

c. EZ Clean Heat Exchanger

1. Streamlined drum type heat exchanger exposes maximum surface area with minimum air resistance
2. Heavy gauge steel
3. Strategically placed poles for easy cleaning

4. Mounting channels are provided in cabinet base for support

d. Combustion Chamber
   1. Factory installed, specially designed with alumina silica ceramic fiber
   2. Can withstand temperatures of up to 2550 degrees F

e. Flame Inspection Tube
   1. Located at the front of the unit
   2. Opening is large enough for normal inspection mirror

f. Barometric Draft Control
   1. Field installed in flue pipe

4. Blower
   a. Variable speed direct drive blower
   b. Each blower is statically and dynamically balanced
   c. Change in blower speed is easily accomplished by simple jumper change
   d. Easily removed for servicing

5. Filter
   a. Large, cleanable, frame-type filters available

6. Controls
   a. Electronic blower control
      1. Single stage cooling airflow ramp up
      2. Two stage cooling airflow ramp up
      3. Passive and active dehumidification
      4. Continuous blower operation
   b. Powered air cleaner connections
   c. Transformer
      1. 24 V/40VA transformer
      2. Factory installed
   d. Limit Control
      1. Factory installed on vestibule panel

7. **[**Optional Accessories:**]**
   a. **[**Heating:**]**
      1. **[**Oil Filter**]**
      2. **[**Two-Stage Oil Pump**]**
      3. **[**Air Intake Kit**]**
         a. **[**Provides 4in. air inlet connection to burner for outdoor combustion air**]**
   b. **[**Controls:**]**
      1. **[**ComfortSense® 7000 Touchscreen Thermostat**]**
      2. **[**Thermostat**]**

2.2 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

Specifier Note: Article below is an addition to the CSI *SectionFormat* and a supplement to MANU-SPEC. Revise article below to suit project requirements and specifier's practice.

A. Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions and **[**Lennox Industries**]** SPEC-DATA® sheets.

3.2 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

3.3 INSTALLATION

A. Install **[**Oil Furnace**]** in accordance with manufacturer's instructions and regulations of authorities having jurisdiction.

END OF SECTION