

# SERVICE AND APPLICATION NOTES

September 16, 2011

H-11-04

## Additional Vent Options for 90% Efficiency Furnaces

Lennox is pleased to announce venting enhancements to enable easier installations. These will apply to SLP98, EL195, ML193 and ML195 furnaces. We are currently updating the installation instructions to show these new options. Please use this Service and Application Note as approval until the updated installation instructions are available.

### Non-Direct Vent Installation Enhancements (not allowed on SLP98):

Installation options now include the ability to bring combustion air from a ventilated attic or crawl space with flue gases discharged outdoors. See figure 1. See vent tables in installation instruction for overall maximum vent pipe length.

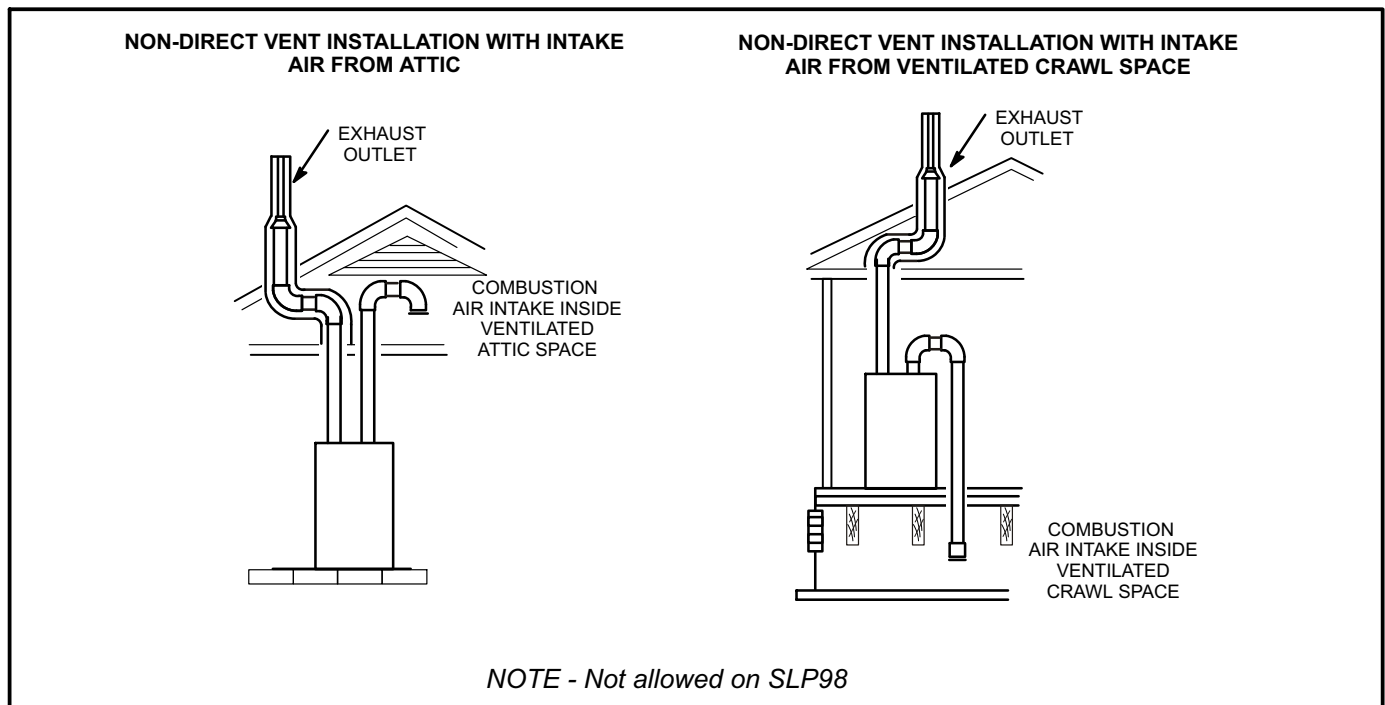


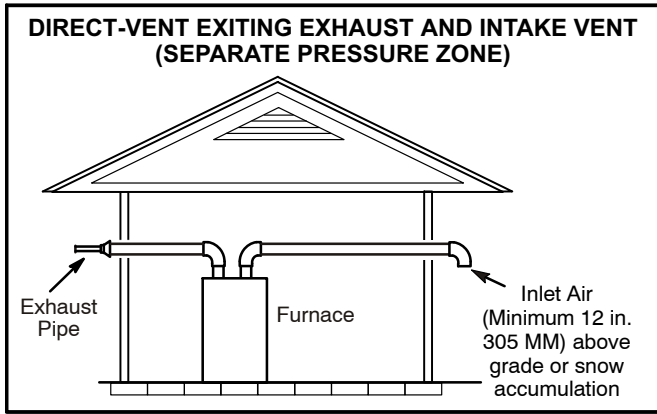
FIGURE 1

### **⚠ CAUTION**

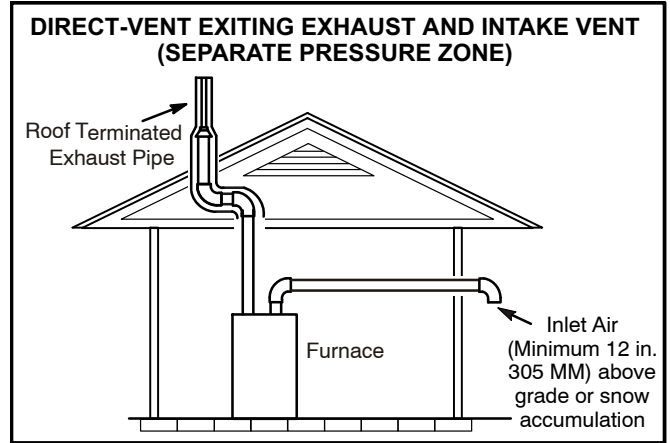
If this unit is being installed in an application with combustion air coming from a space serviced by an exhaust fan, power exhaust fan, or other device which may create a negative pressure in the space, take care when sizing the inlet air opening. The inlet air opening must be sized to accommodate the maximum volume of exhaust air as well as the maximum volume of combustion air required for all gas appliances serviced by this space.

**Direct Vent Installation Enhancements:**

We have enhanced our direct vent installation options to now include the ability to terminate intake and exhaust in separate zones. This includes the option of exiting the intake on one side of the structure and exhaust on another side (figure 2), as well as terminating exhaust through the roof and intake through the side of the structure (figure 3). See vent tables in installation instruction for overall maximum vent pipe length. Follow vent termination clearances in unit installation instruction.



**FIGURE 2**



**FIGURE 3**

**Direct Vent and Non-Direct Vent Enhancements:**

Tables 1, 2 and 3 show maximum allowable exhaust vent pipe length without insulation in unconditioned space for winter design temperatures. See vent tables in installation instruction for overall maximum vent pipe lengths.

*NOTE - Refer to 99% Minimum Design Temperature table provided in the current edition of the ASHRAE Fundamentals Handbook.*

**TABLE 1  
Single-Stage High Efficiency Furnace**

Winter Design Temperatures °F (°C)	Vent Pipe Diameter	Unit Input Size				
		045	070	090	110	135
32 to 21 (0 to -6)	2 in.	26	44	44	24	N/A
	2-1/2 in.	18	32	50	58	N/A
	3 in.	14	26	38	55	60
20 to 1 (-7 to -17)	2 in.	16	28	40	24	N/A
	2-1/2 in.	12	20	30	44	N/A
	3 in.	9	16	26	32	40
0 to -20 (-18 to -29)	2 in.	10	20	30	24	N/A
	2-1/2 in.	8	14	20	32	N/A
	3 in.	4	10	16	26	30

*NOTE - 1/4" per foot minimum slope of vent pipes must be strictly adhered to and verified or freeze up could occur.*

**TABLE 2**  
**Two - Stage High Efficiency Furnace**

Winter Design Temperatures °F (°C)	Vent Pipe Diameter	Unit Input Size				
		045	070	090	110	135
32 to 21 (0 to -6)	2 in.	20	30	40	24	n/a
	2-1/2 in.	15	22	30	40	n/a
	3 in.	12	18	25	32	32
20 to 1 (-7 to -17)	2 in.	12	20	25	24	n/a
	2-1/2 in.	10	14	20	24	n/a
	3 in.	6	10	15	20	20
0 to -20 (-18 to -29)	2 in.	8	12	18	22	n/a
	2-1/2 in.	6	8	12	16	n/a
	3 in.	2	6	10	12	12

NOTE - 1/4" per foot minimum slope of vent pipes must be strictly adhered to and verified or freeze up could occur.

**TABLE 3**  
**Variable Capacity High Efficiency Furnace**

Winter Design Temperatures °F (°C)	Vent Pipe Diameter	Unit Input Size			
		070	090	110	135
32 to 21 (0 to -6)	2 in.	8	14	14	n/a
	2-1/2 in.	6	9	12	n/a
	3 in.	4	6	8	12
20 to 1 (-7 to -17)	2 in.	5	7	8	n/a
	2-1/2 in.	4	5	6	n/a
	3 in.	2	2	4	6
0 to -20 (-18 to -29)	2 in.	3	4	5	n/a
	2-1/2 in.	2	2	3	n/a
	3 in.	1	1	1	2

NOTE - 1/4" per foot minimum slope of vent pipes must be strictly adhered to and verified or freeze up could occur.