Installation Instructions

RESCO™ Vent Tables For Category I Fan-Assisted Furnaces

NOTE: Before beginning the installation, read this instructions manual, along with those provided in the literature packet, carefully and completely.

NOTE: Category I furnaces operate with a nonpositive vent static pressure to limit the potential for vent gas leakage and with a vent gas temperature at least 140° F above the vent gas dew point to limit the potential for condensation in the venting system.

INTRODUCTION

This information supplements the information found in the Installation, Start-Up, and Operating Instructions provided with this furnace.

All venting instructions for Category I fan-assisted or induced-draft appliances are included in these instructions.

When reference is made in this publication to the National Fuel Gas Code NFPA 54-1988/ANSI Z223.1-1988 (NFGC), it applies to installations in the United States of America. When reference is made to the National Standard of Canada Natural Gas and Propane Installation Codes CAN/CGA-B149.1-M91 and .2-M91, it applies to installations in Canada. Venting systems for **RESCO™** fan-assisted furnaces shall be made in accordance with 1 of the above codes and all authorities having jurisdiction, except that the vent sizing tables in these installation instructions are to be used in place of the vent sizing tables in appendices G or B, respectively, of the United States or Canadian codes.

GENERAL INSTRUCTIONS

These instructions are for fan-assisted furnaces classified as Category I furnaces in accordance with ANSI Z21.47a-1990.

Type-B connector and vent pipe, single-wall metal connector pipe, and/or lined masonry chimneys shall be used to vent these Category I furnaces in accordance with these venting instructions. Chimneys shall conform to ANSI/NFPA 211-1988 in the United States and to a Provincial or Territorial Building Code in Canada (in its absence, the National Building Code of Canada).

A clay tile-chimney liner in poor condition can be relined in lieu of repairing or rebuilding, if the rest of the chimney is in good condition. If the rest of the chimney is in poor condition, repairing or rebuilding is required. UL Listed (ULC listed in Canada) metal liner or a UL listed Type-B vent pipe shall be used for relining. Rebuilding and repairing shall conform to ANSI/NFPA 211-1988.

A chimney without a clay tile liner, which is otherwise in good condition, shall be rebuilt to conform to ANSI/NFPA 211-1988 or be lined with a UL listed (ULC listed in Canada) metal liner or UL listed Type-B vent. Relining with a listed metal liner or Type-B vent is considered to be a vent-in-a-chase.

If a metal liner or Type-B vent is used to line a chimney, no appliance shall be vented into the annular space between the chimney and the metal liner.

Clay tile-lined chimneys exposed to the outdoors below the roof line may require relining with a listed metal liner to reduce vent gas condensation in cold climates. Experience in local areas with standard drafthood-equipped furnaces will indicate whether exposed tile-lined chimneys have condensation problems. Fan-assisted furnaces installed in accordance with these instructions will not have chimney condensation problems, if standard drafthood-equipped furnaces installed in accordance with the NFGC have not experienced condensation problems in exposed tile-lined chimneys.

APPLIANCE APPLICATION REQUIREMENTS

Appliance operation has a significant impact on the performance of the venting system. If the appliances are sized, installed, adjusted, and operated properly, the venting system and/or the appliances should not suffer from condensation and corrosion.

The venting system and all appliances shall be installed in accordance with applicable listings, standards, and codes.

1. The furnace should be sized to provide 100 percent of the design heating load requirement plus any margin that occurs because of furnace model size capacity increments. Heating load estimates can be made using approved methods available from **RESCO™**, Air Condi tioning Contractors of America (Manual J), American Society of Heating, Refrigerating, and Air-Conditioning Engineers, or others. Excessive oversizing of the furnace could cause the furnace and/or vent to fail prematurely.
2. When a metal vent or metal liner is used, the vent must be in good condition and be installed in accordance with the vent manufacturer's instructions.
3. When a masonry chimney is used, chimney construction must conform to ANSI/NFPA 211 and must be in good condition. Inspections before the sale and at the time of installation will determine the acceptability of the chimney or the need for repair and/or (re)lining. An inspection chart is included on page 3. If the inspection of a previously used tile-lined chimney:
   a. Shows signs of vent gas condensation, the chimney should be relined in accordance with these venting tables with a listed metal liner or Type-B vent to reduce condensation. If a condensate drain is required by local code, refer to the National Fuel Gas Code, Section 7.9 for additional information on condensate drains.

Form: IM-GA1A-04 Cancels: IM-GA1A-03 Printed in U.S.A. 4-92 Catalog No. 92-33GA-1A7

b. Indicates the chimney exceeds the maximum permissible size in these tables, the chimney should be rebuilt or relined to conform to these instructions.

4. The return-air temperature must be at least 60° F db except for brief periods of time during warm-up from setback no lower than 55° F db or during initial start-up from a standby condition.

5. The furnace shall be adjusted according to the Installation, Start-Up, and Operating Instructions provided with the furnace for the following:

   a. Gas input rate—Low gas input rate can cause low vent gas temperatures and, thus, condensation and corrosion in the furnace and/or venting system. Derating is permitted only for altitudes above 2000 ft.

   b. Mid-point of the air temperature rise range. Low air temperature rise can cause low vent gas temperature.

   c. Thermostat heat anticipation or cycle rate to reduce short cycling.

6. Air for combustion must not be contaminated by halogen compounds, which include chlorides, fluorides, bromides, and iodides. These compounds are found in many common home products such as detergent, paint, glue, aerosol spray, bleach, cleaning solvent, salt, and air freshener, and can cause corrosion of furnaces and vents. Avoid using such products in the combustion air supply.

   Furnace use during construction of the building could cause the furnace to be exposed to halogen compounds, causing premature corrosion failure of the furnace or venting system.

7. Vent dampers on any appliance connected to the common vent can cause condensation and corrosion in the venting system. Do not use vent dampers on appliances common-vented with this furnace. These venting tables apply only to appliances without vent dampers.

VERTICAL VENT OR CHIMNEY SIZING AND INSTALLATION

1. The **RESCO™** Tables found on the following pages are based on the GAMA Venting Tables. **RESCO™** Tables are designed to be used with only these furnaces. The **RESCO™** Tables provide a simple method to size typical vent and chimney installations without referring to the GAMA Venting Tables. Additional venting and chimney configurations are possible by using the GAMA Venting Tables.

2. Refer to the installation instructions titled VENTING TABLES CATEGORY I CENTRAL FURNACES, A.G.A., GAMA for full information concerning the requirements to use metal vents and masonry chimneys for these furnaces.

The following information and WARNING must be considered in addition to the requirements defined in the GAMA Venting Tables, Section III General Venting Requirements:

If a vent (common or dedicated) becomes blocked, the furnace will be shut off by the draft safeguard switch located on the inducer assembly.

⚠ **WARNING: Do not bypass the draft safeguard switch, as an unsafe condition could exist which must be corrected. Failure to follow this warning could result in a build-up of carbon monoxide and lead to personal injury or death.**

REMOVAL OF EXISTING FURNACES FROM COMMON VENT SYSTEM

1. In replacement installations where an existing vent system may be used, inspect the vent system for condition, size, type of material, and height to meet the appliance application requirements. If it is oversized, condensation could corrode the venting system. Installation of a new venting system may be required.

2. When removing an existing furnace from a venting system serving other appliances, the vent system is likely to be too large to vent the remaining attached appliances properly.

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

   a. Seal any unused openings in the common venting system.

   b. Visually inspect the venting system for proper size and horizontal pitch and determine there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition.

   c. Insofar as is practical, close all building doors and windows and all doors between space in which appliances remaining connected to the common venting are located and other spaces of the building. Turn on clothes dryers and any appliance not connected to the common 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.

   d. Follow the lighting instructions. Place the appliance being inspected in operation. Adjust thermostat so appliance will operate continuously.

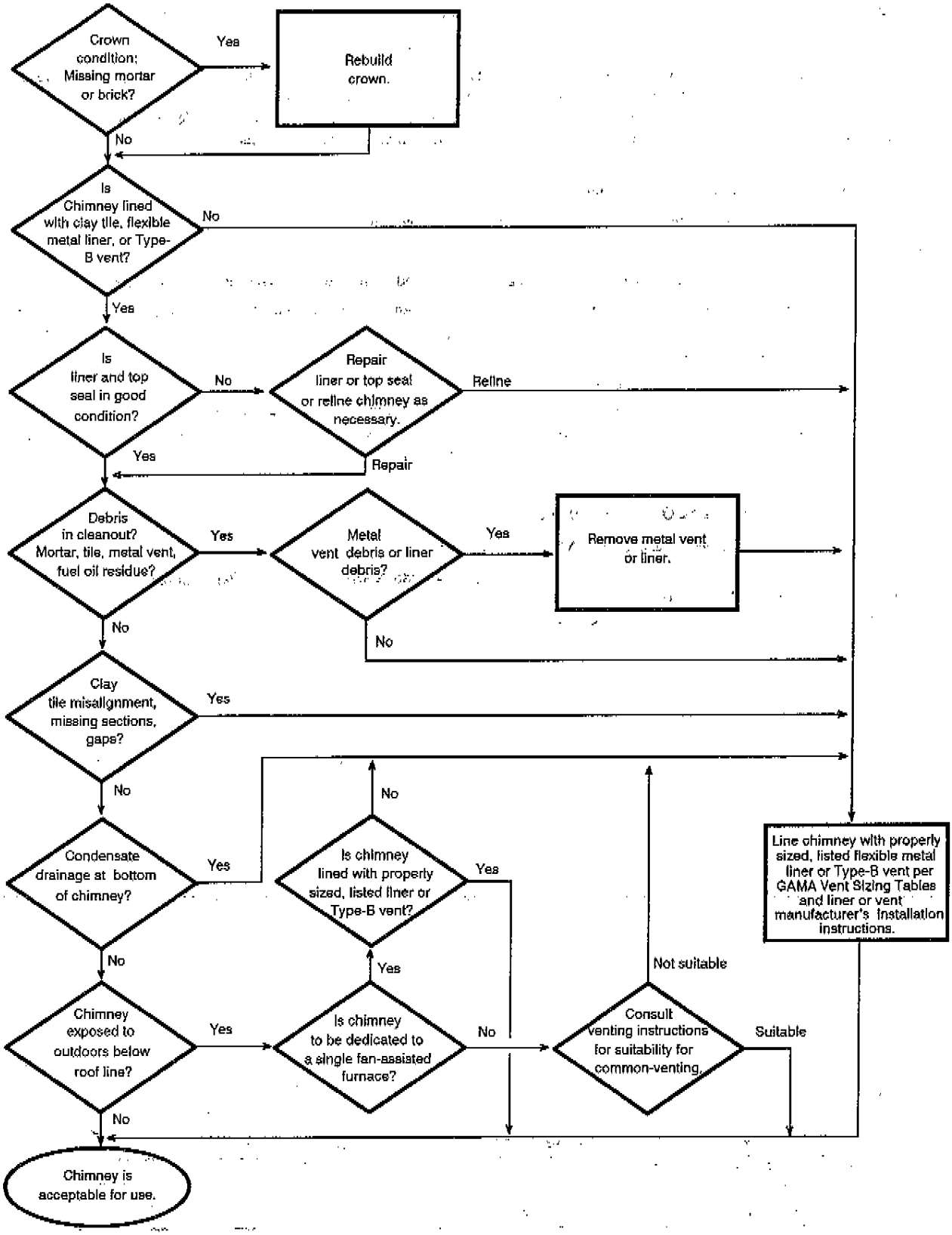
   e. Test for spillage at the drafthood relief opening after 5 minutes of main burner operation. Use the flame of a match or candle.

   f. After it has been determined that each appliance remaining connected to the common venting system properly vents when tested as outlined above, return doors, windows, exhaust fans, fireplace dampers and any other gas-burning appliance to their previous conditions of use.

   g. If improper venting is observed during any of the above tests, the common venting system must be corrected. The vent system or vent connectors may need to be resized according to these instructions to approach the minimum size using the appropriate GAMA Venting Tables, Part 7 of the National Fuel Gas Code NFPA 54-1988/ANSI Z223.1- 1988 in the United States or Part 5 of the Natural Gas or Propane Installation Code CAN/CGA-B149.1-M91 or .2- M91 in Canada, and all authorities having jurisdiction.

CHIMNEY INSPECTION CHART

For additional requirements refer to the National Fuel Gas Code NFPA 54-1988/ANSI Z223.1-1988 and ANSI/NFPA 211-1988 Chimneys, Fireplaces, Vents, and Solid Fuel Burning Appliances in the U.S.A. or to the Canadian Installation Codes CAN/CGA-B149.1M91 and .2-M91 in Canada.



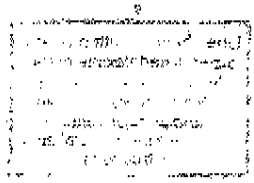
RESCO™ TABLE APPLICATION REQUIREMENTS

The use of these tables is restricted as follows:

1. NR = not recommended (vent pressurization or condensation may occur)
2. For connector or vent configurations between table entries, such as vent heights, connector rises, and/or laterals:
   a. Connector size—choose the larger of the connector sizes.
   b. Minimum vent size (Tables 1, 2, 3, 10, and 11)—choose the larger of the vent sizes.
   c. Maximum vent size (Tables 10 and 11)—choose the smaller of the vent sizes.

   If 1 of the sizes is NR, the GAMA Venting Tables may give a usable size.

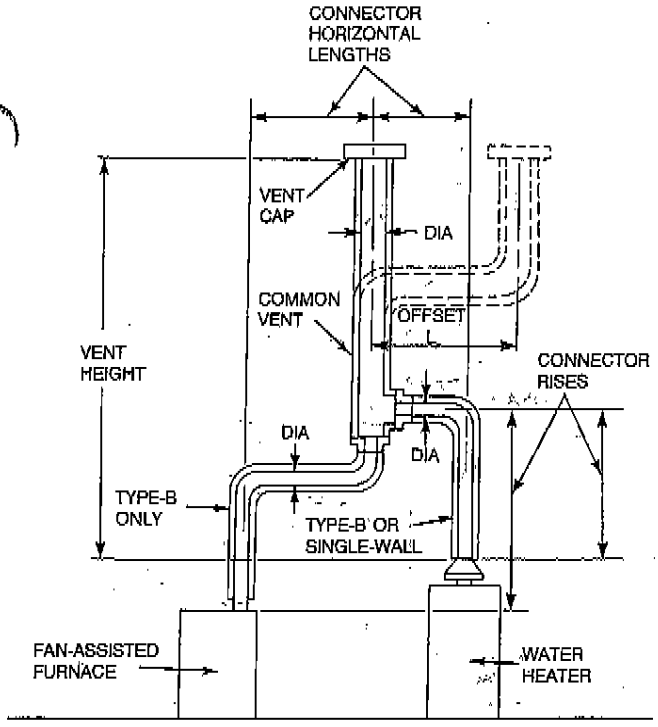
   See EXAMPLE 2: INTERPOLATION BETWEEN TABLE ENTRIES on page 14.
3. Installations may be up to 10,000 ft altitude. For altitudes at which the common vent connectors or dedicated (single-appliance) vents may be installed, see tables. No altitude limitation is required for a common vent or chimney, or for drafthood-equipped water heater connector. Although appliance input shall be derated 4 percent per 1000 ft above sea level starting at 2000 ft altitude, use the sea level input in RESCO™ Tables. In Tables 1 through 11 (except Table 9), the code letters indicate the highest altitudes at which connectors or dedicated vents shall be installed.
4. A vent or chimney may be offset as noted in the table below and as shown in Fig. 1, 2, 6, 7, or 8.
5. For chimneys exposed to the outdoors, refer to venting General Instruction section.
6. Common-vented appliances only
   a. One RESCO™ Category I fan-assisted furnace with 1 Category I drafthood-equipped, 50 MBH input or less water heater.
   b. Common vent and furnace connectors: size per RESCO™ Tables 1 through 8. Size the connector and vent (chimney) from the same FURNACE INPUT column.
   c. Water heater connectors: refer to RESCO™ Table 9.
   d. Vent connectors may be manifolded (common-vented below the vent) as noted in the table below and as shown in Fig. 5. A manifolded connector shall be sized as a common vent (not a connector) with the same table used to size the connectors and common vent. If the vent or furnace connector is Type-B, the manifolded connector shall also be Type-B. For a chimney sized with Table 7 or 8, single-wall pipe may be used for a manifolded connector, but Type-B is recommended.
   e. Vent dampers shall not be used on water heaters.
7. Dedicated-vent furnaces: size per RESCO™ Tables 10 and 11.
8. Additional configurations are possible by using the GAMA venting tables.
9. For additional requirements refer to the National Fuel Gas Code NFPA 54-1988/ANSI Z223.1-1988, Part 7 in the U.S.A. and Part 5 in the Canadian Installation Codes CAN/CGA-B149.1-M91 and .2-M91.
   RESCO™ Tables are based on the GAMA Venting Tables.



Manifolded Connector and Offset Vent (or Chimney) Application Requirement

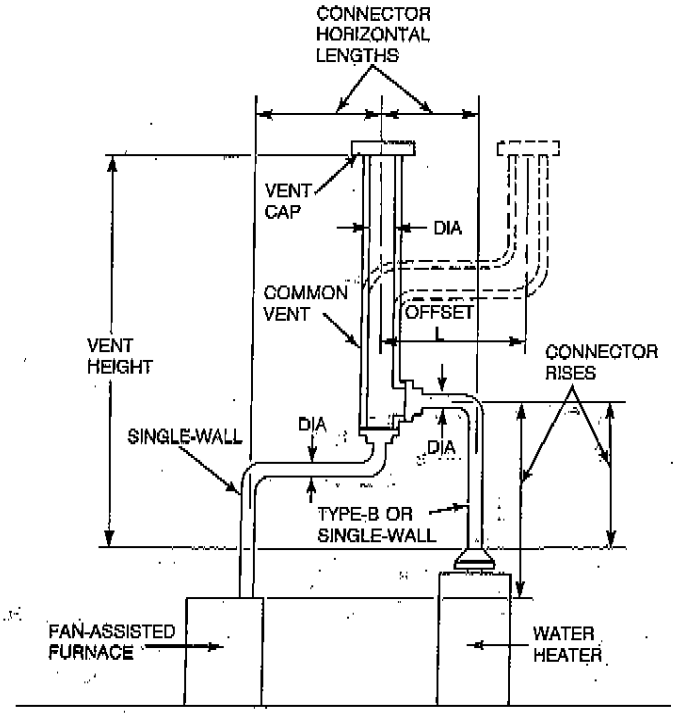
CONNECTOR OR VENT INSIDE DIA (IN.)	4	5	6	7	8	9	10
RECTANGULAR LINER OUTSIDE DIMENSIONS (IN.)	4x8	N/A	N/A	N/A	8x8	8x12	12x12
L—Maximum Horizontal Length (Ft)	6	7.5	9	10.5	12	13.5	15

N/A=Not Applicable
NOTE: Use as shown in Fig. 1, 2, 5, 6, 7, and 8.



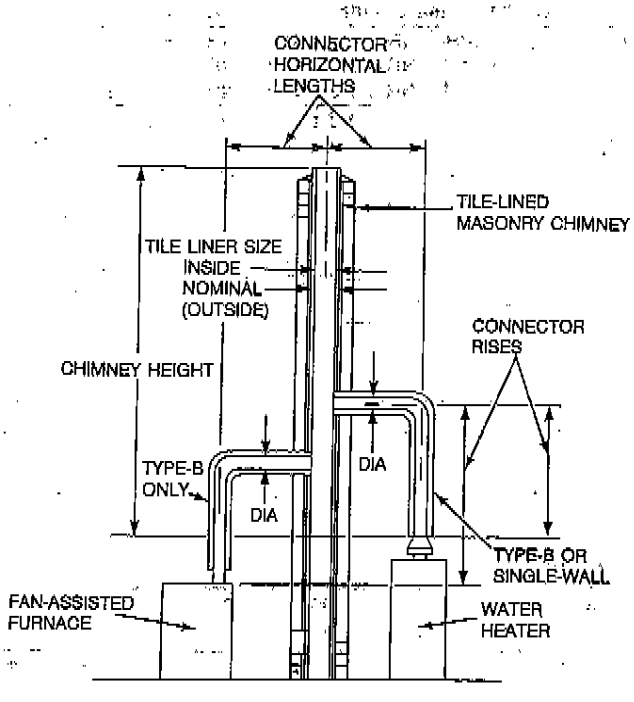
A91200

Fig. 1—Use With Tables 1 and 2



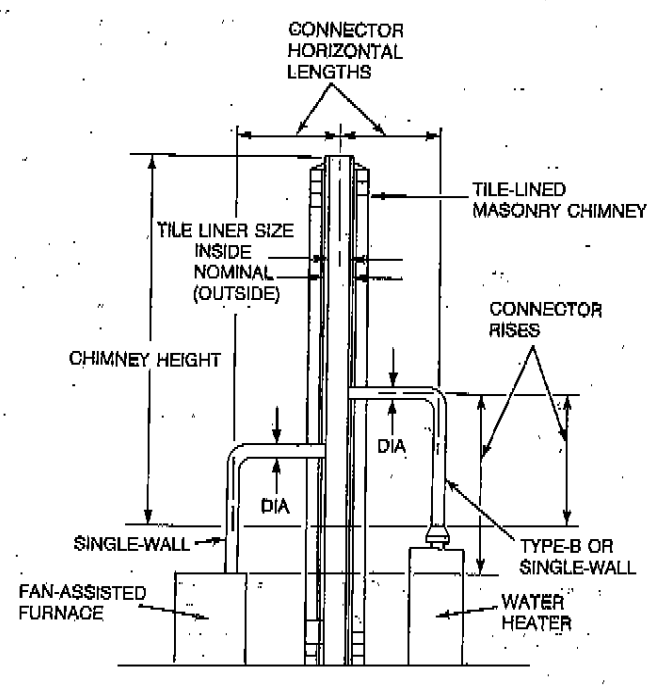
A91201

Fig. 2—Use With Tables 3 and 4



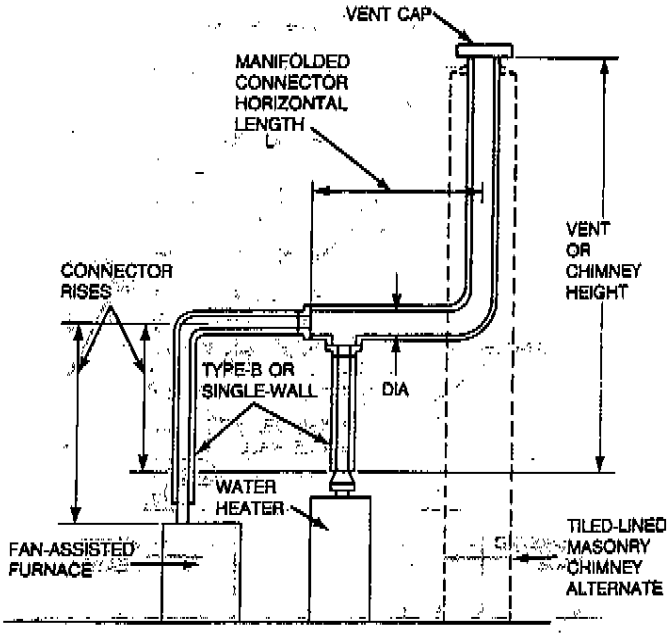
A91202

Fig. 3—Use With Tables 5 and 6



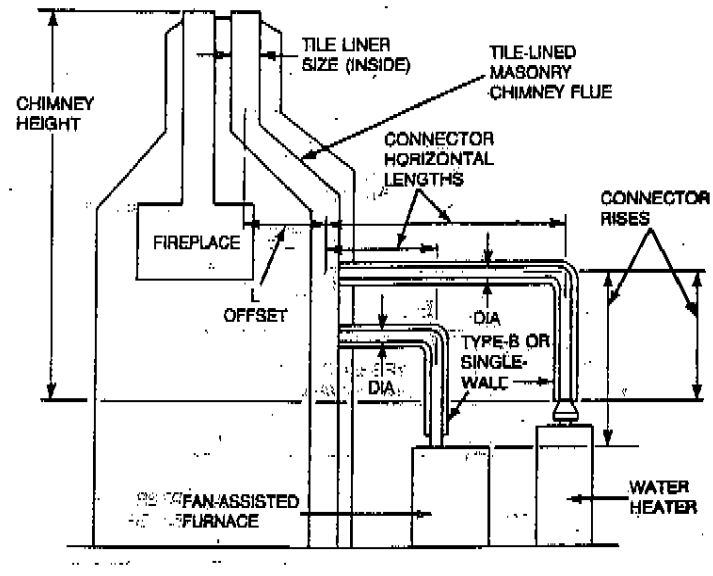
A91203

Fig. 4—Use With Tables 7 and 8



A91311

Fig. 5—Manifolded Vent Connectors for Use With Tables 1 through 8



A91312

Fig. 6—Masonry Chimney Offset for Use With Tables 5 through 8

RESCO™ Table—1
Type-B Common Vent
Type-B Connector For Up To 2 Elbows

FURNACE INPUT (MBH)		42-46			63-69			84-92			105-115			126-138			147-154		
FLUE COLLAR SIZE (In.)		4			4			4			4			5			5		
CONNECTOR HORIZONTAL LENGTH (Ft)		0 to 4.5	4.5 to 9	9 to 13.5	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 7.5	7.5 to 15	15 to 22.5	0 to 7.5	7.5 to 15	15 to 22.5
Vent Height (Ft)	Connector Rise (Ft)	Fan Assisted Furnace, Type-B Connector Inside Diameter (In.) With Up To 2 Elbows Common Vented With 1 Drafthood-Equipped Water Heater With Up To 50 MBH Input																	
10	1	4 D	4 D	4* D	4 J	4* J	NR	5 J	5* J	NR	5 J	6*H	NR	6 J	6* J	NR	6 J	6* J	NR
	2	4 B	4 B	4* B	4 J	4* J	NR	5 H	5* H	NR	5 J	5* J	NR	6 J	6* J	NR	6 J	6* J	NR
	3	4 B	4 B	4* B	4 J	4* J	NR	4 J	5* J	NR	5 J	5* J	NR	5 J	6* J	NR	6 J	6* J	NR
20	1	3 J	4 D	4 D	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	6† J	5 J	6 J	6† J
	2	3 J	4 D	4 D	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	6† J	5 J	6 J	6† J
	3	3 J	3 J	4 C	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5† J	5 J	5 J	6† J
30	1	3 J	3 J	4 E	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	6 J
	2	3 J	3 J	4 D	4 J	4 J	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	6 J
	3	3 J	3 J	3 J	4 J	4 J	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J
Vent Height (Ft)		TYPE-B DOUBLE-WALL COMMON VENT INSIDE DIAMETER (In.)																	
		Minimum																	
10		4 ‡			5 ‡			6 ‡			6 ‡			6 ‡			7		
20		4 ‡			4 ‡			5 ‡			5 ‡			6 ‡			6 ‡		
30		4			4 ‡			5			5 ‡			5 ‡			6		
Water Heater Drafthood Outlet Dia		Maximum																	
	3 In.	7			7			7			7			7			7		
	4,5,6 In.	10			10			10			10			10			10		

RESCO™ Altitude Code Letters Table

MAXIMUM ALTITUDE ABOVE SEA LEVEL (FT)	0 TO 2000	3000	4000	5000	6000	7000	8000	9000	10,000
Letter Code	A	B	C	D	E	F	G	H	J

NOTE: The letter codes next to the connector sizes indicate the highest altitudes at which each connector shall be installed. See Application Requirement No. 3 and the Altitude Code Letters Table.

NOTE: Refer to the RESCO™ Table Application Requirements in front of these tables for other application requirements.
*Connector horizontal length shall not exceed 10 ft.
†Connector horizontal length shall not exceed 20 ft.
‡Increase the common vent by 1 table size for manifolded connector and/or common vent offset. See Application Requirements No. 4 and 6. d.

RESCO™ Table—2
Type-B Common Vent
Type-B Connector For 3 Elbows

FURNACE INPUT (MBH)		42-46			63-69			84-92			105-115			126-138			147-154		
FLUE COLLAR SIZE (In.)		4			4			4			4			5			5		
CONNECTOR HORIZONTAL LENGTH (Ft)		0 to 4.5	4.5 to 9	9 to 13.5	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 7.5	7.5 to 15	15 to 22.5	0 to 7.5	7.5 to 15	15 to 22.5
Vent Height (Ft)	Connector Rise (Ft)	Fan Assisted Furnace, Type-B Connector Inside Diameter (In.) With 3 Elbows Common Vented With 1 Drafthood-Equipped Water Heater With Up To 50 MBH Input																	
10	1	4 D	4 D	4* D	4 J	5* D	NR	5 J	5* J	NR	6 H	6* H	NR	6 H	6* J	NR	6 J	7* H	NR
	2	4 B	4 B	4* B	4 J	4* J	NR	5 H	5* H	NR	5 J	6* H	NR	6 H	6* J	NR	6 J	6* J	NR
	3	4 B	4 B	4* B	4 J	4* J	NR	5 J	5* J	NR	5 J	5* J	NR	6 J	6* J	NR	6 J	6* J	NR
20	1	4 D	4 D	4 D	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	6 J	5 J	6 J	6† J	6 J	6 J	6† J
	2	4 D	4 D	4 D	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	6 J	6† J	6 J	6 J	6† J
	3	3 J	4 C	4 C	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	6† J	5 J	6 J	6† J
30	1	3 J	4 E	4 E	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	6 J	5 J	6 J	6 J
	2	3 J	4 D	4 D	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	6 J	5 J	6 J	6 J
	3	3 J	3 J	4 D	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	6 J
Vent Height (Ft)		TYPE-B DOUBLE-WALL COMMON VENT INSIDE DIAMETER (In.)																	
		Minimum																	
10		4 ‡			5 ‡			6 ‡			6 ‡			6 ‡			7		
20		4 ‡			4 ‡			5 ‡			6			6 ‡			6 ‡		
30		4			4 ‡			5			5 ‡			6			6		
Water Heater Drafthood Outlet Dia		Maximum																	
	3 in.	7			7			7			7			7			7		
	4,5,6 In.	10			10			10			10			10			10		

RESCO™ Table—3
Type-B Common Vent
Single-Wall Connector For Up To 2 Elbows

FURNACE INPUT (MBH)		42-46			63-69			84-92			105-115			126-138			147-154		
FLUE COLLAR SIZE (In.)		4			4			4			4			5			5		
CONNECTOR HORIZONTAL LENGTH (Ft)		0 to 4.5	4.5 to 9	9 to 13.5	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 7.5	7.5 to 15	15 to 22.5	0 to 7.5	7.5 to 15	15 to 22.5
Vent Height (Ft)	Connector Rise (Ft)	Fan Assisted Furnace, Single-Wall Metal Connector Inside Diameter (In.) With Up To 2 Elbows Common Vented With 1 Drafthood-Equipped Water Heater With Up To 50 MBH Input																	
6	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
15	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 A	NR	NR	NR	NR	NR
	2	NR	NR	NR	NR	NR	NR	4 A	NR	NR	NR	NR	NR	5 A	NR	NR	NR	NR	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 B	NR	NR
30	1	NR	NR	NR	NR	NR	NR	4 A	NR	NR	NR	NR	NR	5 A	5* A	NR	5 D	5 D	NR
	2	NR	NR	NR	NR	NR	NR	4 A	NR	NR	4 D	NR	NR	5 A	5* A	NR	5 D	5 D	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	4 C	NR	NR	5 A	5* A	NR	5 C	5 C	NR
Vent Height (Ft)		TYPE-B DOUBLE-WALL COMMON VENT INSIDE DIAMETER (In.)																	
		Minimum																	
6		NR			NR			NR			NR			NR			NR		
15		NR			NR			5†			NR			6†			6†		
30		NR			NR			5†			5†			5†			6†		
Water Heater Drafthood Outlet Dia		Maximum																	
	3 in.	NR			NR			7			7			7			7		
	4,5,6 In.	NR			NR			10			10			10			10		

RESCO™ Altitude Code Letters Table

MAXIMUM ALTITUDE ABOVE SEA LEVEL (FT)	0 TO 2000	3000	4000	5000	6000	7000	8000	9000	10,000
Letter Code	A	B	C	D	E	F	G	H	J

NOTE: The letter codes next to the connector sizes indicate the highest altitudes at which each connector shall be installed. See Application Requirement No. 3 and the Altitude Code Letters Table.

NOTE: Refer to the RESCO™ Table Application Requirements in front of these tables for other application requirements.
*Connector horizontal length shall not exceed 10 ft.
†Connector horizontal length shall not exceed 20 ft.
‡Increase the common vent by 1 table size for manifolded connector and/or common vent offset. See Application Requirements No. 4 and 6. d.

RESCO™ Table—4
Type-B Common Vent
Single-Wall Connector For 3 Elbows

FURNACE INPUT (MBH)		42-46			63-69			84-92			105-115			126-138			147-154		
FLUE COLLAR SIZE (In.)		4			4			4			4			5			5		
CONNECTOR HORIZONTAL LENGTH (Ft)		0 to 4.5	4.5 to 9	9 to 13.5	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 7.5	7.5 to 15	15 to 22.5	0 to 7.5	7.5 to 15	15 to 22.5
Vent Height (Ft)	Connector Rise (Ft)	Fan Assisted Furnace, Single-Wall Metal Connector Inside Diameter (In.) With 3 Elbows Common Vented With 1 Drafthood-Equipped Water Heater With Up To 50 MBH Input																	
6	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
15	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
30	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 A	NR	NR	5 A	NR	NR
	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 A	NR	NR	5 A	NR	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 A	NR	NR	5 A	NR	NR
Vent Height (Ft)		TYPE-B DOUBLE-WALL COMMON VENT INSIDE DIAMETER (In.)																	
		Minimum																	
6		NR			NR			NR			NR			NR			NR		
15		NR			NR			NR			NR			NR			NR		
30		NR			NR			NR			NR			5†			6†		
Water Heater Drafthood Outlet Dia		Maximum																	
	3 in.	NR			NR			NR			NR			7			7		
	4,5,6 In.	NR			NR			NR			NR			10			10		

†Increase the common vent by 1 table size for manifolded connector and/or common vent offset. See Application Requirements No. 4 and 6, d.

RESCO™ Table—5
Tile-Lined Masonry Chimney Common Vented
Type-B Connector For Up To 2 Elbows

FURNACE INPUT (MBH)		42-46			63-69			84-92			105-115			126-138			147-154		
FLUE COLLAR SIZE (In.)		4			4			4			4			5			5		
CONNECTOR HORIZONTAL LENGTH (Ft)		0 to 4.5	4.5 to 9	9 to 13.5	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 7.5	7.5 to 15	15 to 22.5	0 to 7.5	7.5 to 15	15 to 22.5
Chimney Height (Ft)	Connector Rise (Ft)	Fan Assisted Furnace, Type-B Connector Inside Diameter (In.) With Up To 2 Elbows Common Vented With 1 Drafthood-Equipped Water Heater With Up To 50 MBH Input																	
15	1	NR	NR	NR	4 J	4 J	NR	4 J	5 H	NR	5 J	5 J	NR	5 J	5 J	NR	5 J	6 J	NR
	2	3 J	NR	NR	4 H	4 H	NR	4 J	4 J	NR	5 J	5 J	NR	5 J	5 J	NR	5 J	5 J	NR
	3	3 H	3 H	NR	4 G	4 G	NR	4 J	4 J	NR	4 J	5 J	NR	5 J	5 J	NR	5 J	5 J	NR
30	1	3 J	NR	NR	4 J	4 J	4 J	4 J	4 J	5 H	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	6 J
	2	3 J	3 J	NR	4 J	4 J	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J
	3	3 H	3 H	NR	4 H	4 H	4 H	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J
50	1	3 J	NR	NR	4 J	4 J	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J
	2	3 J	3 J	NR	4 J	4 J	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J
	3	3 H	3 H	NR	4 H	4 H	4 H	4 J	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J
Clay-Tile Chimney Liner		LINER NOMINAL RECTANGULAR DIMENSIONS (OUTSIDE) OR CIRCULAR INSIDE DIAMETER (In.)																	
		Minimum																	
		8x8 or 6 Dia*			8x8 or 6 Dia*			8x8 or 6 Dia*			8x8 or 7 Dia*			8x8 or 7 Dia*			8x8 or 7 Dia*		
Water Heater Drafthood Outlet Dia		Maximum																	
	3 in.	8x8 or 7 Dia			8x8 or 7 Dia			8x8 or 7 Dia			8x8 or 7 Dia			8x8 or 7 Dia			8x8 or 7 Dia		
	4,5,6 In.	12x12 or 10 Dia			12x12 or 10 Dia			12x12 or 10 Dia			12x12 or 10 Dia			12x12 or 10 Dia			12x12 or 10 Dia		

*8x12 or 6-in. dia at 50-ft height.

RESCO™ Altitude Code Letters Table

MAXIMUM ALTITUDE ABOVE SEA LEVEL (FT)	0 TO 2000	3000	4000	5000	6000	7000	8000	9000	10,000
Letter Code	A	B	C	D	E	F	G	H	J

NOTE: The letter codes next to the connector sizes indicate the highest altitudes at which each connector shall be installed. See Application Requirement No. 3 and the Altitude Code Letters Table.

NOTE: Refer to the RESCO™ Application Requirements in front of these tables for other application requirements.

RESCO™ Table—6
Tile-Lined Masonry Chimney Common Vented
Type-B Connector For 3 Elbows

FURNACE INPUT (MBH)		42-46			63-69			84-92			105-115			126-138			147-154		
FLUE COLLAR SIZE (In.)		4			4			4			4			5			5		
CONNECTOR HORIZONTAL LENGTH (Ft)		0 to 4.5	4.5 to 9	9 to 13.5	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 7.5	7.5 to 15	15 to 22.5	0 to 7.5	7.5 to 15	15 to 22.5
Chimney Height (Ft)	Connector Rise (Ft)	Fan Assisted Furnace, Type-B Connector Inside Diameter (In.) With 3 Elbows Common Vented With 1 Drafthood-Equipped Water Heater With Up To 50 MBH Input																	
15	1	NR	NR	NR	4 J	4 J	NR	5 H	5 H	NR	5 J	5 J	NR	5 J	6 J	NR	6 J	6 J	NR
	2	NR	NR	NR	4 H	4 H	NR	4 J	5 G	NR	5 J	5 J	NR	5 J	5 J	NR	5 J	6 J	NR
	3	3 H	NR	NR	4 G	4 G	NR	4 J	4 J	NR	5 J	5 J	NR	5 J	5 J	NR	5 J	6 J	NR
30	1	NR	NR	NR	4 J	4 J	5 C	4 J	5 H	5 H	5 J	5 J	5 J	5 J	5 J	6 J	5 J	6 J	6 J
	2	3 J	NR	NR	4 J	4 J	4 J	4 J	4 J	5 H	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	6 J
	3	3 H	NR	NR	4 H	4 H	4 H	4 J	4 J	5 G	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J
50	1	NR	NR	NR	4 J	4 J	4 J	4 J	4 J	5 H	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	6 J
	2	3 J	NR	NR	4 J	4 J	4 J	4 J	4 J	5 H	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J
	3	3 H	NR	NR	4 H	4 H	4 H	4 J	4 J	4 J	4 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J	5 J
Clay-Tile Chimney Liner		LINER NOMINAL RECTANGULAR DIMENSIONS (OUTSIDE) OR CIRCULAR INSIDE DIAMETER (In.)																	
		Minimum																	
		8x8 or 6 Dia*			8x8 or 6 Dia*			8x8 or 6 Dia*			8x8 or 7 Dia*			8x8 or 7 Dia*			8x8 or 7 Dia*		
Water Heater Drafthood Outlet Dia		Maximum																	
	3 in.	8x8 or 7 Dia			8x8 or 7 Dia			8x8 or 7 Dia			8x8 or 7 Dia			8x8 or 7 Dia			8x8 or 7 Dia		
	4,5,6 In.	12x12 or 10 Dia			12x12 or 10 Dia			12x12 or 10 Dia			12x12 or 10 Dia			12x12 or 10 Dia			12x12 or 10 Dia		

RESCO™ Table—7
Tile-Lined Masonry Chimney Common Vented
Single-Wall Connector For Up To 2 Elbows

FURNACE INPUT (MBH)		42-46			63-69			84-92			105-115			126-138			147-154		
FLUE COLLAR SIZE (In.)		4			4			4			4			5			5		
CONNECTOR HORIZONTAL LENGTH (Ft)		0 to 4.5	4.5 to 9	9 to 13.5	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 7.5	7.5 to 15	15 to 22.5	0 to 7.5	7.5 to 15	15 to 22.5
Chimney Height (Ft)	Connector Rise (Ft)	Fan Assisted Furnace, Single-Wall Metal Connector Inside Diameter (In.) With Up To 2 Elbows Common Vented With 1 Drafthood-Equipped Water Heater With Up To 50 MBH Input																	
15	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 A	NR	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 A	NR	NR
30	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 A	NR	NR	5 B	5 B	NR
	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	4 B	NR	NR	NR	NR	NR	5 A	5 A	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	4 A	NR	NR	NR	NR	NR	5 A	5 A	NR
50	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 A	NR	NR	5 B	5 B	NR
	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	4 B	NR	NR	NR	NR	NR	5 A	5 A	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	4 A	4 A	NR	NR	NR	NR	5 A	5 A	NR
Clay-Tile Chimney Liner		LINER NOMINAL RECTANGULAR DIMENSIONS (OUTSIDE) OR CIRCULAR INSIDE DIAMETER (In.)																	
		Minimum																	
		NR			NR			NR			8x8 or 7 Dia*			8x8 or 7 Dia*			8x8 or 7 Dia*		
Water Heater Drafthood Outlet Dia		Maximum																	
	3 In.	NR			NR			NR			8x8 or 7 Dia			8x8 or 7 Dia			8x8 or 7 Dia		
	4,5,6 In.	NR			NR			NR			12x12 or 10 Dia			12x12 or 10 Dia			12x12 or 10 Dia		

RESCO™ Altitude Code Letters Table

MAXIMUM ALTITUDE ABOVE SEA LEVEL (FT)	0 TO 2000	3000	4000	5000	6000	7000	8000	9000	10,000
Letter Code	A	B	C	D	E	F	G	H	J

NOTE: The letter codes next to the connector sizes indicate the highest altitudes at which each connector shall be installed. See Application Requirement No. 3 and the Altitude Code Letters Table.

NOTE: Refer to the RESCO™ Application Requirements in front of these tables for other application requirements.
*8x12 or 8 in. diameter at 50-ft height.

RESCO™ Table—8
Tile-Lined Masonry Chimney Common Vented
Single-Wall Connector For 3 Elbows

FURNACE INPUT (MBH)		42-46			63-69			84-92			105-115			126-138			147-154		
FLUE COLLAR SIZE (In.)		4			4			4			4			5			5		
CONNECTOR HORIZONTAL LENGTH (Ft)		0 to 4.5	4.5 to 9	9 to 13.5	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 6	6 to 12	12 to 18	0 to 7.5	7.5 to 15	15 to 22.5	0 to 7.5	7.5 to 15	15 to 22.5
Chimney Height (Ft)	Connector Rise (Ft)	Fan Assisted Furnace, Single-Wall Metal Connector Inside Diameter (In.) With 3 Elbows Common Vented With 1 Drafthood-Equipped Water Heater With Up To 50 MBH Input																	
15	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
30	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 B	NR	NR
	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 A	NR	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 A	NR	NR
50	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 B	NR	NR
	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5 A	NR	NR
	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	4 A	NR	NR	NR	NR	NR	5 A	NR	NR
Clay-Tile Chimney Liner		LINER NOMINAL RECTANGULAR DIMENSIONS (OUTSIDE) OR CIRCULAR INSIDE DIAMETER (In.)																	
		Minimum																	
		NR			NR			NR			8x8 or 7 Dia*			NR			8x8 or 7 Dia*		
Water Heater Drafthood Outlet Dia		Maximum																	
	3 In.	NR			NR			NR			8x8 or 7 Dia			NR			8x8 or 7 Dia		
	4,5,6 In.	NR			NR			NR			12x12 or 10 Dia			NR			12x12 or 10 Dia		

*8x12 or 8 in. diameter at 50-ft height.

RESCO™ Altitude Code Letters Table

MAXIMUM ALTITUDE ABOVE SEA LEVEL (FT)	0 TO 2000	3000	4000	5000	6000	7000	8000	9000	10,000
Letter Code	A	B	C	D	E	F	G	H	J

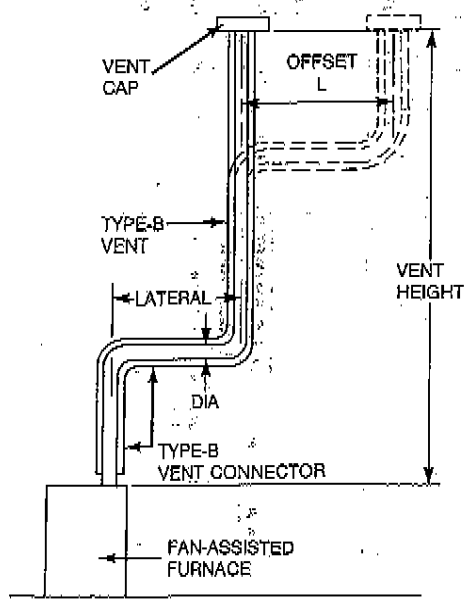
NOTE: The letter codes next to the connector sizes indicate the highest altitudes at which each connector shall be installed. See Application Requirement No. 3 and the Altitude Code Letters Table.

NOTE: Refer to the RESCO™ Application Requirements in front of these tables for other application requirements.

RESCO™ Table—9
Connector For Water Heater Up To 50 MBH Input

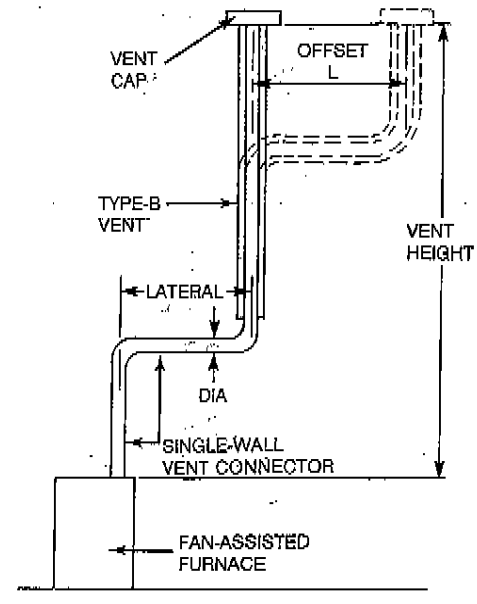
WATER HTR INPUT (MBH)		30									40									50								
MAX NUMBER OF ELBOWS		2			3			4			2			3			4			2			3			4		
CONNECTOR HORIZONTAL LENGTH (FT)		0 TO 4.5	4.5 TO 9	9 TO 13	0 TO 4.5	4.5 TO 9	9 TO 13	0 TO 6	6 TO 12	12 TO 18	0 TO 6	6 TO 12	12 TO 18	0 TO 6	6 TO 12	12 TO 18	0 TO 6	6 TO 12	12 TO 18	0 TO 6	6 TO 12	12 TO 18	0 TO 6	6 TO 12	12 TO 18	0 TO 6	6 TO 12	12 TO 18
CHIMNEY HEIGHT (FT)	CONNECTOR RISE (FT)	DRAFTHOOD-EQUIPPED WATER HEATER, SINGLE-WALL OR TYPE-B DOUBLE-WALL METAL CONNECTOR INSIDE DIAMETER (IN.) COMMON VENTED WITH 1 FAN-ASSISTED FURNACE																										
6	1	4	NR	NR	4	NR	NR	4	NR	NR	5	NR	NR	5	NR	NR	5	NR	NR	5	NR	NR	5	NR	NR	5	NR	NR
	2	4	NR	NR	4	NR	NR	4	NR	NR	4	NR	NR	4	NR	NR	4	NR	NR	4	NR	NR	5	NR	NR	5	NR	NR
	3	3*	NR	NR	3*	NR	NR	4	NR	NR	4	NR	NR	4	NR	NR	4	NR	NR	4	NR	NR	4	NR	NR	5	NR	NR
15	1	4	4	4	4	4	4	4	4	5†	4	5	5†	5	5	5†	5	5	5†	5	5	5†	5	5	5†	5	5	6†
	2	3*	4	4	4	4	4	4	4	4†	4	4	4†	4	4	5†	4	5	5†	4	5	5†	5	5	5†	5	5	5†
	3	3*	3*	4	3*	4	4	4	4	4†	4	4	4†	4	4	4†	4	4	5†	4	4	4†	4	4	5†	4	5	5†
30	1	4	4	4	4	4	4	4	4	5	4	4	5	4	5	5	5	5	5	5	5	5	5	5	5	5	5	6
	2	3*	4	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	5	4	4	5	4	5	5	5	5	5
	3	3*	3*	4	3*	4	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	4	4	4	5	4	5	5
50	1	4	4	4	4	4	4	4	4	5	4	4	5	4	5	5	5	5	5	5	5	5	5	5	5	5	5	6
	2	3*	4	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	5	4	4	5	4	5	5	5	5	5
	3	3*	3*	4	3*	4	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	4	4	4	5	4	5	5

NOTE: Refer to the RESCO™ Application Requirements in front of these tables for other application requirements.
*Three-in. diameter connectors are permitted only with water heaters which have 3-in. diameter drafthood outlets. Do not connect a 3-in. diameter connector to a 4-in. diameter or larger drafthood outlet.
†Connector horizontal length shall not exceed 15 ft.



A91204

Fig. 7—Use With Table 10



A91205

Fig. 8—Use With Table 11

RESCO™ Table—10
Dedicated Vent
Type-B Vent and Type-B Connector For Fan-Assisted Furnace

FURNACE INPUT (MBH)		42-46					63-69					84-92					105-115					126-138					147-154				
FLUE COLLAR SIZE (In.)		4					4					4					4					5					5				
TOTAL MAX NO. OF ELBOWS IN VENT AND CONNECTOR (no elbows with zero lateral)		2	3	4	5	Max Vent Dia (In.)	2	3	4	5	Max Vent Dia (In.)	2	3	4	5	Max Vent Dia (In.)	2	3	4	5	Max Vent Dia (In.)	2	3	4	5	Max Vent Dia (In.)	2	3	4	5	Max Vent Dia (In.)
Vent Height (Ft)	Lateral (Ft)	Conn Dia & Min Vent Dia (In.)					Conn Dia & Min Vent Dia (In.)					Conn Dia & Min Vent Dia (In.)					Conn Dia & Min Vent Dia (In.)					Conn Dia & Min Vent Dia (In.)					Conn Dia & Min Vent Dia (In.)				
10	0	3J	—	—	—	8J	3J	—	—	—	8J	4J	—	—	—	10J	4J	—	—	—	10J	4J	—	—	—	10J	4J	—	—	—	10J
	2	3J	3J	4J	4J	7A	4J	4J	4J	4J	9A	4J	4J	4J	5J	10C	4J	5J	5J	5J	10G	5J	5J	5J	6J	12E	5J	5J	5J	6J	12H
	5	3J	4E	4E	4E	5A	4J	4J	4J	4J	6C	4J	4J	5J	5J	8A	5J	5J	5J	5J	9A	5J	5J	5J	6J	10A	5J	5J	6J	6J	10E
	10	3F	4A	4A	4A	4A	4G	4G	4G	4G	5B	4J	4J	5H	5H	6D	5J	5J	5J	5J	8A	5J	5J	5J	6J	9A	5J	5J	6J	6J	10A
20	0	3J	—	—	—	8J	3J	—	—	—	8J	4J	—	—	—	10J	4J	—	—	—	10J	4J	—	—	—	10J	4J	—	—	—	10J
	2	3J	3J	3J	4J	7D	4J	4J	4J	4J	10A	4J	4J	4J	4J	10A	4J	4J	4J	5J	10J	5J	5J	5J	5J	12H	5J	5J	5J	5J	12J
	5	3J	3J	3J	4G	5A	4J	4J	4J	4J	7A	4J	4J	4J	4J	8B	4J	4J	5J	5J	10A	5J	5J	5J	5J	10D	5J	5J	5J	5J	12A
	10	3G	3G	4A	4A	4A	4J	4J	4J	4J	6A	4J	4J	4J	4J	7A	4J	4J	5J	5J	8A	5J	5J	5J	5J	9A	5J	5J	5J	5J	10A
	15	3D	3D	NR	NR	3D	4E	4E	4E	4E	5A	4J	4J	4J	5F	6B	4J	5J	5J	5J	7A	5J	5J	5J	5J	8B	5J	5J	5J	6J	9B
	20	NR	NR	NR	NR	NR	4B	4B	4B	4B	4B	4G	4G	4G	5C	6A	4J	5G	5G	5G	6D	5J	5J	5J	5J	8A	5J	5J	5J	6J	9A
30	0	3J	—	—	—	8J	3J	—	—	—	8J	4J	—	—	—	10J	4J	—	—	—	10J	4J	—	—	—	10J	4J	—	—	—	10J
	2	3J	3J	3J	3J	7H	3J	4J	4J	4J	8J	4J	4J	4J	4J	10H	4J	4J	4J	4J	10J	4J	5J	5J	5J	10J	4J	5J	5J	5J	10J
	5	3J	3J	3J	3J	5B	3J	4J	4J	4J	7A	4J	4J	4J	4J	9A	4J	4J	4J	5J	10A	4J	5J	5J	5J	10E	5J	5J	5J	5J	12B
	10	3H	3H	3H	4B	4B	4J	4J	4J	4J	6A	4J	4J	4J	4J	7A	4J	4J	4J	5J	8A	5J	5J	5J	5J	10A	5J	5J	5J	5J	10B
	15	3D	3D	NR	NR	3D	4F	4F	4F	4F	5A	4J	4J	4J	4J	6C	4J	4J	5J	5J	8A	5J	5J	5J	5J	9A	5J	5J	5J	5J	10A
	20	NR	NR	NR	NR	NR	4C	4C	4C	4C	4C	4H	4H	4H	4H	6A	4J	4J	5H	5H	7A	5J	5J	5J	5J	8B	5J	5J	5J	5J	9A
	30	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	4B	4B	NR	NR	4B	5C	5C	5C	5C	6A	5F	5F	5F	5F	6G	5J	5J	5J	6F	7A

RESCO™ Altitude Code Letters Table

MAXIMUM ALTITUDE ABOVE SEA LEVEL (FT)	0 TO 2000	3000	4000	5000	6000	7000	8000	9000	10,000
Letter Code	A	B	C	D	E	F	G	H	J

NOTE: The letter codes next to the connector sizes indicate the highest altitudes at which each vent shall be installed. See Application Requirement No. 3 and the Altitude Code Letters Table.

NOTE: Refer to the RESCO™ Application Requirements in front of these tables for other application requirements.

AUG/20/2008/WED 01:40 PM UTC TECH PUB FAX No. 317 240 5662 P. 012

RESCO™ Table—11
Dedicated Vent
Type-B Vent and Single-Wall Connector For Fan-Assisted Furnace

FURNACE INPUT (MBH)		42-46					63-69					84-92					105-115					126-138					147-154				
FLUE COLLAR SIZE (In.)		4					4					4					4					5					5				
TOTAL MAX NO. OF ELBOWS IN VENT AND CONNECTOR (no elbows with zero lateral)		2	3	4	5	Max Vent Dia (In.)	2	3	4	5	Max Vent Dia (In.)	2	3	4	5	Max Vent Dia (In.)	2	3	4	5	Max Vent Dia (In.)	2	3	4	5	Max Vent Dia (In.)	2	3	4	5	Max Vent Dia (In.)
Vent Height (Ft)	Lateral (Ft)	Conn Dia & Min Vent Dia (In.)					Conn Dia & Min Vent Dia (In.)					Conn Dia & Min Vent Dia (In.)					Conn Dia & Min Vent Dia (In.)					Conn Dia & Min Vent Dia (In.)					Conn Dia & Min Vent Dia (In.)				
10	0	3B	—	—	—	3B	3J	—	—	—	4A	4G	—	—	—	5A	4J	—	—	—	5D	4J	—	—	—	6A	4J	—	—	—	6C
	2	3A	3A	NR	NR	3A	4A	4A	4A	4A	4A	4F	4F	4F	5A	5A	4J	5D	5D	5D	5D	5G	5G	5G	6A	6A	5J	5J	5J	6C	6C
	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	4A	4A	NR	NR	4A	5A	5A	5A	5A	5A	5C	5C	5C	NR	5C	5F	5F	NR	NR	5F
	10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	5A	NR	NR	NR	5A
20	0	3C	—	—	—	3C	3J	—	—	—	4B	4H	—	—	—	5A	4J	—	—	—	5E	4J	—	—	—	6A	4J	—	—	—	6D
	2	3B	3B	3B	NR	3B	4A	4A	4A	4A	4A	4G	4G	4G	4G	5A	4J	4J	4J	5E	5E	5H	5H	5H	5H	6A	5J	5J	5J	5J	7A
	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	4B	4B	4B	4B	4B	4F	4F	5A	5A	5A	5D	5D	5D	5D	5D	5G	5G	5G	5G	6A
	10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	4A	4A	NR	NR	4A	5A	5A	5A	5A	5A	5B	5B	5B	5B	5G
	15	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	20	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
30	0	3D	—	—	—	3D	3J	—	—	—	4C	4H	—	—	—	5A	4J	—	—	—	5F	4J	—	—	—	6B	4J	—	—	—	7A
	2	3B	3B	3B	3B	3B	3J	4B	4B	4B	4B	4G	4G	4G	4G	5A	4J	4J	4J	5F	5F	4J	5J	5J	5J	6B	5J	5J	5J	5J	7A
	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	4B	4B	4B	4B	4B	4F	4F	4F	5A	5A	4J	5D	5D	5D	5D	5G	5G	5G	5G	6A
	10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	4B	4B	4B	NR	4B	5A	5A	5A	5A	5A	5C	5C	5C	5C	5C
	15	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	20	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	30	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

RESCO™ Altitude Code Letters Table

MAXIMUM ALTITUDE ABOVE SEA LEVEL (FT)	0 TO 2000	3000	4000	5000	6000	7000	8000	9000	10,000
Letter Code	A	B	C	D	E	F	G	H	J

NOTE: The letter codes next to the connector sizes indicate the highest altitudes at which each vent shall be installed. See Application Requirement No. 3 and the Altitude Code Letters Table.

NOTE: Refer to the RESCO™ Application Requirements in front of these tables for other application requirements.

AUG/20/2008/WED 01:40 PM UTC TECH PUB FAX No. 317 240 5662 P. 013

EXAMPLE 1: COMMON VENTING INTO A MASONRY CHIMNEY

See Fig. 6. An 88,000 Btu/hr fan-assisted furnace with a 4-in. diameter flue collar is to be common vented with a 40,000 Btu/hr input drafthood-equipped water heater with a 4-in. diameter drafthood outlet. The common vent is an existing 25-ft tall masonry chimney with 2 flues. The gas appliance flue is an 8x12 in. nominal size clay-tile liner with a 3-ft offset above the fireplace. The chimney flue is 6 ft from the water heater drafthood outlet. The furnace flue collar is 3 ft from the chimney flue. The headroom above the furnace and water heater is 5 ft and 3 ft, respectively. Including entrance into the chimney, 3 elbows will be required to route each connector to the chimney.

CONNECTOR RISE: The water heater connector rise will be 2 ft to permit clearance to combustible construction. The furnace connector rise will be 3 ft to permit the furnace connector to enter the chimney below the water heater connector. (The water heater is 18 in. taller than the furnace.)

FURNACE CONNECTOR: Try to size single-wall connectors with tile-lined masonry chimney from Table 8. When trying to enter the table at 25 ft Chimney Height, the table skips from 15 to 30 ft. See Table Application Requirement No. 2 on page 4. Try 15 ft Chimney Height with 3 ft of Connector Rise, and try 30 ft Chimney Height with 3 ft of Connector Rise. Move across the table to the Furnace Input column 84—92 MBH and the Connector Horizontal Length column 0 to 6 ft. The connector sizes shown are NR and NR, which means that single-wall pipe is not recommended for this application.

Try Type-B connector pipe. Enter Table 6 in the same way as Table 8. At 15-ft Chimney Height, 3 ft of Connector Rise, and at 30-ft Chimney Height, 3 ft of Connector Rise for 84—92 MBH Furnace Input, and 0 to 6 ft of Connector Horizontal Length, Table 6 requires 4-in. and 4-in. Type-B connectors respectively. A 4-in. Type-B connector should be used because the entries above and below the 25-ft Chimney Height are both 4-in. connectors.

ALTITUDE LIMITATION: The code letter J, next to the connector size 4, indicates the maximum altitude. If the gas input rate is properly derated, the Altitude Code Letters Table at bottom of page 9 indicates the maximum altitude at which this furnace connector size shall be used (10,000 ft above sea level in this instance).

MASONRY CHIMNEY: Continue down the same column to the Clay-Tile Chimney Liner Minimum and Maximum sizes, 8x8 and 12x12 in., respectively. The 8x12 in. nominal liner fits within that range. Check the table titled Manifolded Connector and Offset Vent (or Chimney). See table on page 4 for L-Maximum Horizontal Length in the 8x12 in. column. The 3-ft offset is less than the maximum horizontal length, 13.5 ft. If the connectors are joined before they enter the chimney flue (see Fig. 5), L-Maximum Manifolded Horizontal Connector Length is 9 ft for a 6-in. Type-B manifolded connector in the same table. Select the manifolded connector diameter, 6 in. from Table 6, Clay-Tile Chimney Liner Minimum and Maximum Circular Inside Diameter in the 84—92 MBH column, which permits 6- to 10-in. diameters.

WATER HEATER CONNECTOR: Enter Table 9 at 30-ft Chimney Height, 2 ft of Connector Rise, 40 MBH Water Heater Input, 3 Elbows, and 0 to 6 Ft Connector Horizontal Length. A 4-in. diameter connector is required. Type-B and single-wall connector pipe are permitted.

No altitude restrictions apply to vent connectors for drafthood-equipped water heaters or to common vents with a drafthood-equipped water heater.

EXAMPLE 2: INTERPOLATION BETWEEN TABLE ENTRIES

Use the same installation as in Example 1 except furnace connector rise is 1 ft instead of 3 ft. Determine the furnace connection size.

Enter Table 6. When trying to enter the table at 25-ft Chimney Height, the table skips from 15 to 30 ft. See Table Application Requirement No. 2 on page 4. Try 15-ft Chimney Height with 1 ft of Connector Rise, and try 30-ft Chimney Height with 1 ft of Connector Rise. Move across the table to the Furnace Input column 84—92 MBH and the Connector Horizontal Length column 0 to 6 ft. The connector sizes shown are 5 in. and 4 in., respectively. A 5-in. connector should be used because the Table Application Requirement No. 2.a. indicates to choose the larger of the connector sizes.

The code letters H and J, next to connector sizes 5 and 4, indicate the maximum altitudes. Use the altitude code letter, H, for the chosen connector size (5 in. in this instance).

Installation Check Sheet

A. PRE-INSTALLATION

1. Proper Furnace Size
   - House heating load _____ Btu/hr
   - Furnace output capacity _____ Btu/hr

2. Chimney Inspection
   - Chimney condition _____
   - Chimney size _____
   - Common vent ☐
   - Dedicated vent ☐
   - Signs of condensation ☐
   - Tile lined if masonry ☐

3. Vent and Connector Sizing
   - Furnace input _____ Btu/hr
   - Furnace connector size/type _____ in./_____
   - Water heater less than 50 MBH ☐
   - Water heater drafthood outlet diameter _____ in.
   - Water heater connector size/type _____ in./_____
   - Manifolded connector size/type (if required) _____ in./_____
   - Manifold length (if required) _____ ft
   - Offset length (if required) _____ ft
   - Vent size/type _____ in./_____

B. POST-INSTALLATION

1. Gas Input Rate Adjusted _____ Btu/hr

2. Temperature Rise Set
   - Rating plate mid-point _____ F
   - Furnace setting _____ F

3. Thermostat Heat Anticipator
   - Setting amps _____
   - 3 cycles per hour on electronic ☐

4. Self-Test Operation OK ☐