Type “L” Vent
Installation Instructions

UL 641
Listed

General Information

- AirJet “L” Vent is listed for use with modern high-efficiency oil or gas fired appliances with operating flue temperatures up to 570° F. Type “L” Vent is designed for appliances requiring negative or neutral pressure venting systems.

- Appliances which meet the above requirements are suitable for use with Type “L” Vent. These include oil fired furnaces, boilers, water heaters, room heaters, and decorative appliances. In addition, gas fired Category I equipment or equipment listed as suitable for use with Type “B” Vent may be vented with Type “L” Vent. Installation is in accordance with applicable standards NFPA 31, NFPA 54, and NFPA 211.

- Besides use as a total system, Type “L” Vent may be used as a vent connector to metal or masonry chimneys to minimize condensation. It may also be used as a connector to listed side wall power venters which maintain negative pressure on the vent. Type “L” Vent may be used as a chimney liner in an unoccupied masonry chimney.

- **Use of AirJet Type “L” Vent as a total system is recommended.** Type ”L” Vent provides the flexibility of additional pipe and fittings (elbows, tees, connectors, adjustable lengths) to replace “heat losing” single wall connectors.

- AirJet Type “L” Vent provides a continuous stainless steel lined conduit for flue gases. The double-wall construction includes a galvalume exterior jacket for pipe and fittings used on the interior portion of the system. For extra corrosion resistance with oil-burning equipment, exterior components include a stainless cap, stainless jacketed 3’ and 5’ pipe sections, and aluminum flashings and storm collars.

- Use of commercially available combustion-enhancing, acid-neutralizing fuel additives is recommended. Sulfur compounds becoming sulfuric acid, and having a high dew point temperature, are detrimental to any masonary or metal chimney or vent systems.

- **LIMITATIONS** on use include the following:
  -Type “L” Vent is not listed for use with wood or coal-fired appliances.
  -Outside wall installations should be totally encased up to the final section with enclosures consisting of materials equal in fire rating to the building envelope.

- Minimum height of vent is 6’. Maximum height supported by a single LBA base assembly is 30’. An additional LBA may be used at succeeding floor levels for taller systems.

- **Always maintain 3” clearance to combustibles.** AirJet supports, fire stops and bands provide necessary clearance. Type “L” Vent is tested and listed for up to 570° continuous use, and 1700° for a 10 minute “safety overfire” situation.

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AirJet Exclusive Snap-Lock Assembly

AirJet pipe and fittings are assembled with the exclusive **Snap-Lock** system. Always follow UP arrows on label - male end up. Engage male and female end inner liners and directly line up locks. The “button punches” on the male end line up with the folded-under tabs on the female end. As an easy frame of reference, if you **line up the exterior pipe seams** the locks will be in the proper position. **Push straight down to securely snap lock**, all the way around the joint. (No twisting is necessary.)

If sections need to be disengaged, first **pull up** against the joint (this re-engages the locks). **Then twist** the upper section **counter clockwise**, and pull up to unlock.

Installation Instructions

Standard Interior Installation

1. START off of appliance flue collar with one of the following:

• Securely attach Draft Hood Connector (LDH) to flue collar with 3 evenly spaced sheet metal screws.

• If downsizing an oversized flue outlet (see sizing information, page 7) start with a single wall decreaser screwed to the flue outlet in 3 locations.

• For a combustion testing “access port”, a short length of single wall may be used from the flue outlet, attached to “L” Vent connector. The normally required 3/8” hole may be drilled in the decreaser or short length of single wall.

Attach single wall fitting or pipe to “L” Vent pipe with 3 sheet metal screws, cutting tabs in the outer galvalume jacket, Figure 2. **Minimize use of single wall** to maintain higher flue gas temperatures and minimize condensation.

2. PLACE BASE ASSEMBLY (LBA support and fire stop) on framed out ceiling, (see required dimensions, Figure 3) or bottom of joists at base of intended vertical main vent. Nail or sheet metal screw 4 straps securely to top of joists. **Always maiantain 3” clearance to combustibles.**

Slide first section of main vent from underneath base assembly (male end first) all the way up through the LBA hole and tabs up to the “inverted bead” (concave indentation around the circumference of the pipe) 1 1/2” from the female end.

Figure 1

Standard Interior Installation

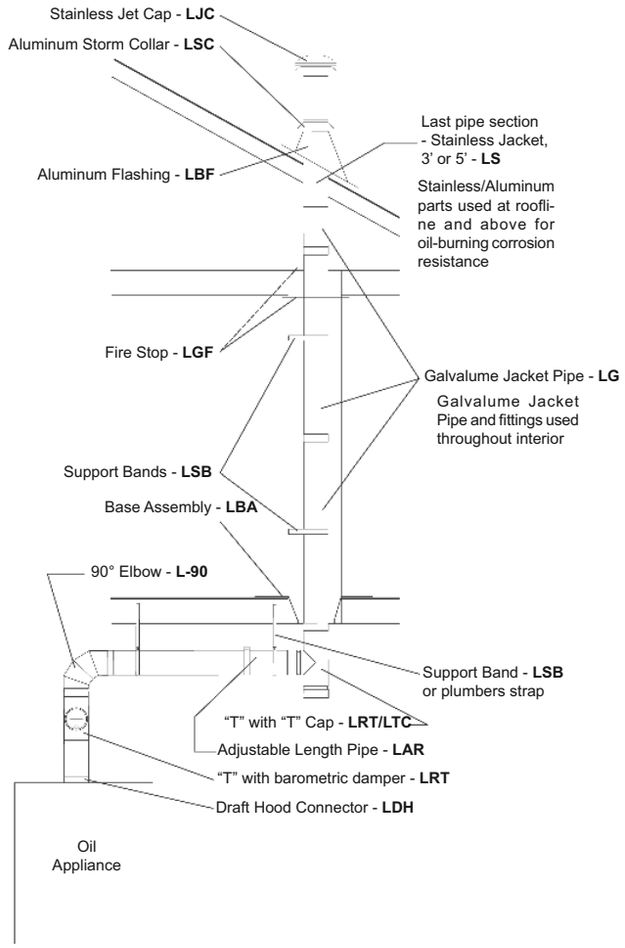
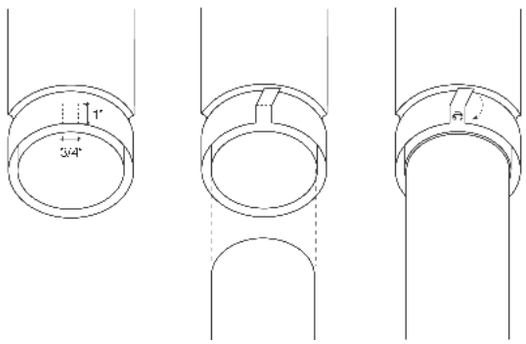


Figure 2

Single Wall Attachment

1. Cut 1” slits in galvalume jacket - female end.
2. Fold up tab - insert single wall pipe (minimum 3/4” overlap).
3. Screw through inner liner and single wall. Fold tab down. Attach in 3 equally spaced positions around joint.



Slide the pipe up to the point that the four tabs in the hole seat themselves into the inverted bead. Correctly seated tabs provide listed support for up to 30' of vent. An additional LBA may be used as a re-support at succeeding floors for systems taller than 30'

3. It is useful to put in **"L" Vent connector** working backwards from the established main vertical vent toward the flue outlet.

Various connector configurations can be accomplished in compliance with all codes for single and multiple appliance applications using "L" Vent 5', 3', 2', and 1' pipe lengths, 90° and 45° elbows, tees, increasers, draft hood connectors, and adjustable lengths. (Single appliance installation with tee shown.)

Adjustable lengths (slip joint - LAR1's) in combination with fixed lengths allow the installer to come out to an exact point with a vertical, lateral, or angled run. This eliminates the need for cutting sections as is customary with single wall connector.

• Lateral are angled runs should be supported every 3' utilizing LSB supports or 1/2" minimum plumber's strap wrapped around the pipe (secured with a nut and bolt arrangement) and securely nailed or screwed into surrounding joists.

• Pitch lateral runs upward 1/4" per foot away from the appliance.

4. Use a **BAROMETRIC DRAFT CONTROL** when required by the appliance manufacturer. These may be connected to the "snout" of a standard Type L Tee (LRT) and are usually required in the vertical section in close proximity to the appliance (consult manufacturer's instructions). Connection of standard barometric draft control to the inner liner of "L" Vent snout is similar to single wall hook up, Figure 4. Three equally spaced tabs and sheet metal screws are required.

5. Proceed upwards in **MAIN VENT** utilizing lengths of pipe snap-locked securely in place. In occupied spaces on succeeding floors the "L" Vent system should be enclosed with construction of equal fire rating to the surrounding structure. **Always maintain 3" minimum clearance to combustibles.** At succeeding floors a fire stop (LGF) is required at each floor level. (Consult local codes.) Minimum framing opening requirements are: 4" I.D. - 10 5/8"; 5" I.D. - 11 5/8"; 6" I.D. - 12 5/8"; 7" I.D. - 13 5/8"; 8" I.D. - 14 5/8" (Figure 3). Standard 16" on center framing (14 1/2" opening) allows plenty of room for "L" Vent minimums. Additional support and spacing may be provided by LSB support bands.

6. When **PIERCING ATTIC FLOOR**, framing opening should have a fire stop underneath the floor joist and just above it. All insulation must be kept a minimum of 3" away from the pipe at all times. In an accessible attic the "L" Vent pipe does not need to be enclosed. Maintain a minimum of 3" clearance to all combustibles and

Figure 3

Framing Clearance

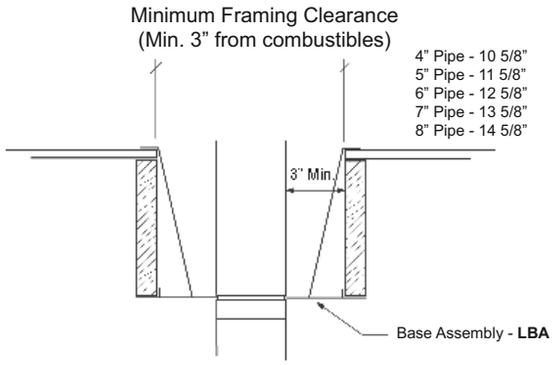
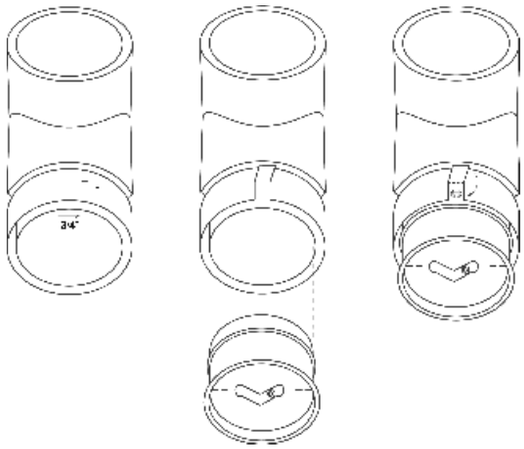


Figure 4

Barometric Damper Control Installation



AirJet Type “L” Vent

7. AIRJET “L” VENT PROVIDES A U.L. LISTED WIND-TESTED VENT CAP which requires 2’ horizontally to the roof surface. Consequently, extra long offsets in the attic or height above the roof are not necessary to meet the traditional termination requirements for chimneys. Extra exposed height above the roof and over-length offsets in a cold attic are undesirable contributors to condensation problems, with modern oil-fired appliances.

Offsets in attics should be minimized. 30° or 45° angles are preferred although one 60° offset may be permitted. Maximum horizontal length (L in Figure 5) is limited to 18” per inch of vent diameter as follows:

Vent I.D.	L-Total Horizontal Length
4”	6.0 Feet
5”	7.5 Feet
6”	9.0 Feet
7”	10.5 Feet
8”	12.0 Feet

Offsets require sizing capacity deductions (usually 10% per combined angle of 90°) See NFPA 54, NFPA 31 or Canadian Standard B-139. Support offsets with 1/2” minimum plumber’s strap.

8. AIRJET’S WIND-TESTED VENT CAP (4”-8” LJC) is permitted to be terminated in accordance with Figure 6 (chart and drawing) provided it is at least 8 feet from a vertical wall.

9. CUT HOLE IN ROOF to mount termination components. (Flashing, storm collar, stainless-jacket pipe section and cap.) Minimum 3” clearance to pipe must be maintained.

Use appropriate aluminum flashing for roof pitch as follows:
- LBFT - Flat roof
- LBF - Flat to 6/12 pitch
- LBFX - 7/12 to 12/12 pitch

On pitched roofs, upper half of flashing base should be mounted underneath shingles and lower half is positioned on top of surrounding shingles. Nail securely in place and caulk exposed edges.

Come as close to roof level as possible with galvalume-jacket pipe on interior portion of system. Use LS 3’ or 5’ stainless-jacket section to attain required vent length above roof line. An LSB support bracket attached to the side of the roof joist, centering the pipe below the flashing opening, provides a useful termination support. Snap LS section securely in place protruding to required height through flashing. Assemble tabs on storm collar (LSC) and slide down over pipe to point where edge seats on back or top of flashing. This covers flashing vents but allows circulation at that point. Weather seal top of storm collar and tabs with quality silicone caulk or roofing cement. Snap LJC listed cap in proper position over pipe, pushing base down just over male end locks. (Cap may be taken off by pulling up and twisting counter clockwise to unlock.)

If multiple sections of LS pipe (over 5’ high - over 14/12 pitch) are required above roof, the top section should be guyed securely to the roof, in three equally spaced positions. Sue Plumbers strap as a band and #8 wire (minimum) from the strap secured to the roof joists with eye screws.

Figure 5

Offsets

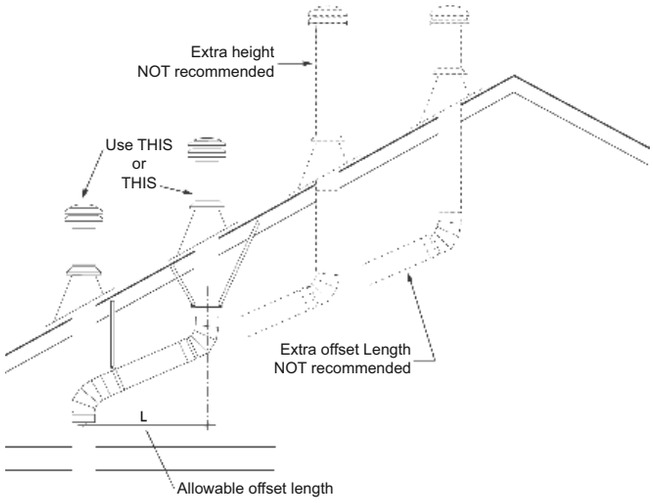
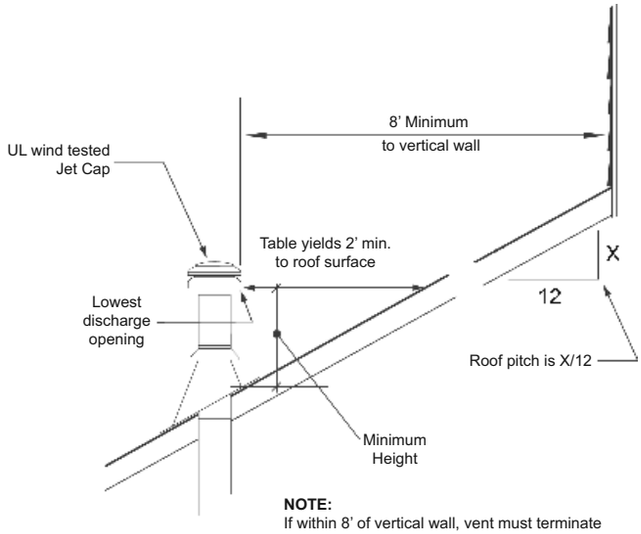


Figure 6

Listed Vent Cap (LJC) Termination Requirements



NOTE:
If within 8’ of vertical wall, vent must terminate 2’ above the highest point. Extra length should be encased to top of wall.

Roof Pitch	Minimum Height (Ft.)
Flat to 7/12	2.50
Over 7/12 to 8/12	2.50
Over 8/12 to 9/12	2.50
Over 9/12 to 10/12	2.50
Over 10/12 to 11/12	3.25
Over 11/12 to 12/12	4.00
Over 12/12 to 14/12	5.00
Over 14/12 to 16/12	6.00
Over 16/12 to 18/12	7.00
Over 18/12 to 20/12	7.50
Over 20/12 to 21/12	8.00

*Lower height allowable with gas equipment.
2.50 Feet is recommended for oil fired equipment.

Encased Outside Wall Application

1. OUTSIDE WALL APPLICATIONS must be fully encased with construction equivalent in fire rating to surrounding components.

All metal chimneys and vents are recommended for enclosure with this type of installation. Long, exposed (unencased) runs of chimney or vent are definite contributors to condensation and corrosion problems. This is particularly true with the low temperature associated with oil or gas fired appliances.

2. MAINTAIN 3" CLEARANCE TO COMBUSTIBLES and insulation materials at all times. AirJet supports, bands and fire stops provide for necessary clearance.

3. MAKE PROVISION FOR AN ACCESS DOOR in the enclosure in proximity to the tee for inspection and/or system cleaning.

4 TYPE "L" VENT CONNECTOR - follow Steps 1 and 3 of the Standard Interior Installation section in regards to Type "L" Vent connector. Also see Step 4 for installing barometric draft controls.

5 WHEN PIERCING AN OUTSIDE WALL use an Adjustable Wall Thimble (LVT) with the non-perforated face plate ring to the outside wall. The wall thimble expands to accommodate up to 6 1/2" wall thickness. For thicker wall construction use a strip of sheet metal attached with screws to the inner and outer halves of the wall thimble to form any extra needed length. Use sheet metal screws to attach face plates to surrounding construction.

6. SNAP-LOCK TEE TO PIPE protruding through wall thimble. Note: It is useful to use an Adjustable Length (LAR1) on the horizontal run of the connector inside, prior to the wall thimble. This allows the necessary pipe length adjustment to space the body of the tee 3" away from the face of the wall as required. Use a Support Band (LSB) near the bottom of the pipe section immediately above the tee, as shown in Figure 7.

7. PROCEED UPWARDS with pipe lengths using Support Band (LSB) on the vertical run minimum of every 8'. Some local codes require fire stops at each floor level, even in a separate open chase. Consult local officials.

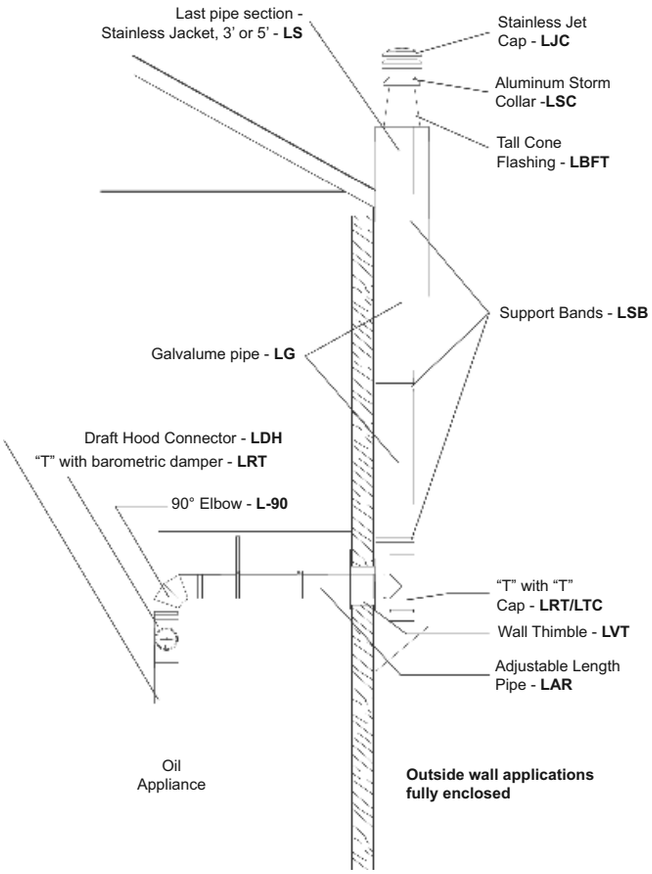
8. TOP OF CHASE should be positioned to yield a total cap height above roof as required in Step 8 of Standard Installation.

9. POSITION TALL CONE FLASHING (LBFT) on chase top to maintain 3" to combustibles. Secure with sheet metal screws or nails on wood construction. Again, last section protruding through the flashing should be a stainless jacketed length (LS3 or LS5). Pipe must protrude above flashing 3" to allow storm collar and cap attachment. Chase and LBFT flashing provide necessary height above roof. Caulk edges of flashing.

10. POSITION STORM COLLAR over pipe down to flashing top. Weather seal top of storm collar with quality silicon caulk or roofing cement. Attach cap, pushing straight down so that hem on inside of cap snaps onto male end pipe locks. Cap may be unlocked for inspection and/or cleaning by twisting counter clockwise and pulling up.

Figure 7

Encased Outside Wall Application



AirJet Type “L” Vent

Negative Pressure Power Venting

AirJet “L” Vent may be used with negative pressure power venters to minimize condensation problems and provide 3” clearance to combustibles. “L” Vent must be used with negative or neutral vent pressure.

1. FOLLOW STEPS 1 AND 3 of the Standard Interior Instruction section with regards to “L” Vent connector. Follow Step 4 on the Barometric Draft Controls if required.

2. “L” Vent may be **USED IN JOIST SPACES** which are normally 16” on center yielding a 14 1/2” opening. Always maintain 3” clearance to combustibles. Support with LSB bands. Minimum joist space openings as follows:

Vent I.D.	Minimum Joist Opening
4”	10 5/8”
5”	11 5/8”
6”	12 5/8”
7”	13 5/8”
8”	14 5/8”

3. ATTACH MALE END of AirJet “L” Vent pipe or 90° elbow **TO COLLAR** of the power venter using 3 equally spaced sheet metal screws. Follow power venter manufacturer’s sizing and installation recommendations.

Type “L” Vent as a Chimney Liner

Type “L” Vent may be used as a chimney liner in an unoccupied masonry chimney. It may be used in conjunction with stainless flexible liner in chimneys with offsets.

1. FOLLOW STEPS 1 AND 3 OF the Standard Interior Application section on “L” Vent connector. Follow step 4 on Barometric Draft Controls.

2. CUT A LARGE ENOUGH HOLE out of the side of the masonry chimney for a capped LRT/LTC to be used at the base of the masonry chimney. Support the tee by drilling holes to place 2 – 3/8” minimum rods into the tile liner to support the tee.

3. SNAP SECTIONS OF PIPE TOGETHER securely from the top of chimney, feeding pipe down to connect with the capped tee at the base. Finish the top of chimney with tall cone flashing attached to masonry, storm collar and cap.

4. USE WALL THIMBLE at base if piercing combustible construction going into chimney. Attach horizontal connector to tee snout.

Figure 8

Negative Pressure Power Venting

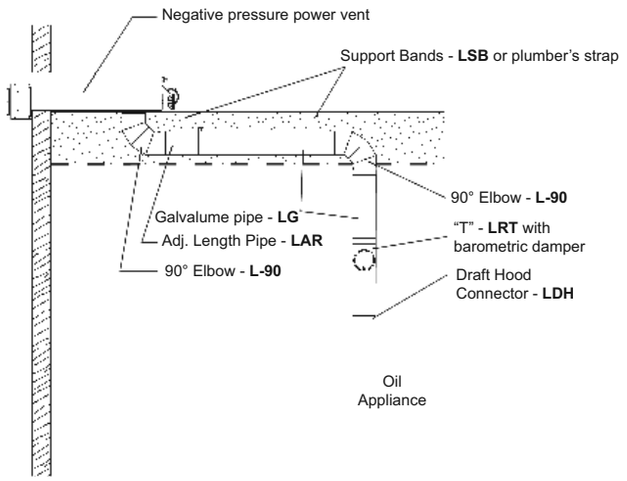
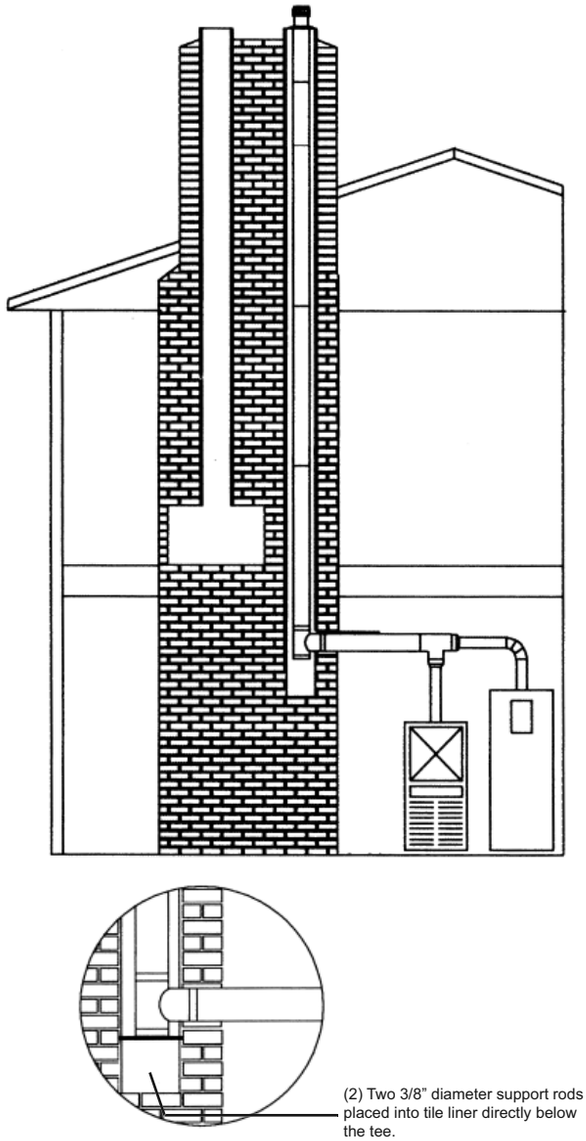


Figure 9

“L” Vent as Chimney Liner



Oil Vent Sizing

Vent sizing is **VERY IMPORTANT** with modern high efficiency oil equipment. As has been proven with NFPA 54 gas vent sizing since 1992, double wall connector, along with smaller more accurate diameters and limitations on vent configuration very successfully minimize condensation/corrosion problems.

Until recently, changes by equipment manufacturers in oil fired flue outlet sizing were limited by the fact that 6" chimney was the smallest diameter product listed for venting oil fired systems. Most manufacturers have provision for downsizing flue outlets, particularly on systems over 15' in height.

The following sizing recommendations are based on, and in accordance with published information in U.S. Standard NFPA 31 and Canadian Standard B 139. Sizing is for single appliance systems or multiple appliances totalling listed BTU values or G.P.H. values.

"L" Vent Sizing Table

BTU Input (Thousands)	GPH	VENT I.D.		AirJet Recommended I.D.	Mininmum Recommended Base Temperature °F for Chimney Height				
		Min.	Max.		10'	15'	25'	35'	45'
77	0.55	4	5	4	290	390	430	475	510
90	0.65	4	5	5	275	340	410	470	495
105	0.75	4	5	5	260	320	380	440	480
119	0.85	4	5	5	250	300	355	430	465
140	1.00	4	6	5	255	300	365	430	450
175	1.25	4	6	5	240	275	320	365	435
210	1.50	5	7	6	240	275	320	365	425
245	1.75	5	7	6	230	265	295	330	385

- Above information is based on venting systems with less than 10' connector length.
- Deduct 10% from maximum values for angled offset in main vent (see page 3) .

Limitations of horizontal length are as follows:

Vent Diameter	30°, 45°, 60° Offset Max. Horizontal Length
4"	6.0 Feet
5"	7.5 Feet
6"	9.0 Feet
7"	10.5 Feet
8"	12.0 Feet

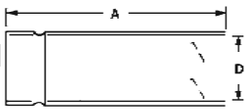
- Smaller diameter is preferred in overlap sizing situations. The following shows effect on vent free area with one sheet metal size change.

I.D.	Free Area Square Inches	% Difference vs. Previous Sheet Metal Size
4"	12.56 sq. in.	
5"	19.62 sq. in.	156% vs. 4"
6"	28.26 sq. in.	144% vs. 5"
7"	38.46 sq. in.	136% vs. 6"
8"	50.24 sq. in.	131% vs. 7"

Type “L” Vent

Round Pipe and Fittings 4”-8”

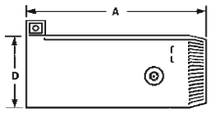
Round Pipe



LG - Galvalume Jacket
LS - Stainless Jacket

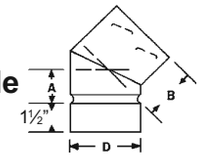
ITEM	A	D
LG5	60”	4” thru 8”
LG3	36”	4” thru 8”
LG2	24”	4” thru 8”
LG1	12”	4” thru 8”
LS5	60”	5” and 8”
LS3	36”	5” and 8”

12” Adjustable Length Pipe



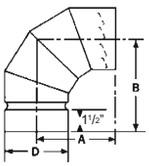
ITEM	A	D
4LAR1	12”	4”
5LAR1	12”	5”
6LAR1	12”	6”
7LAR1	12”	7”
8LAR1	12”	8”

45º Adjustable Elbow



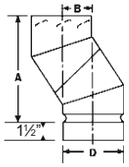
ITEM	A	B	D
4L45	2 5/16”	3 1/8”	4 3/4”
5L45	2 5/8”	3 1/4”	5 3/4”
6L45	2 3/4”	3 5/8”	6 3/4”
7L45	3”	4”	7 3/4”
8L45	3 1/4”	3 7/8”	8 3/4”

90º Adjustable Elbow



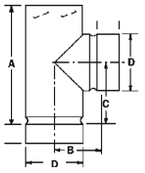
ITEM	A	B	D
4L90	6 25/32”	6 21/32”	4 3/4”
5L90	6 3/4”	6 5/16”	5 3/4”
6L90	7”	6 1/8”	6 3/4”
7L90	7 9/16”	6 3/4”	7 3/4”
8L90	8 3/8”	7 9/16”	8 3/4”

90º Adjustable Elbow as Offset



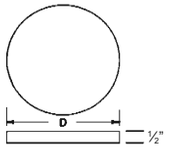
ITEM	A	B	D
4L90	9 1/8”	2 15/16”	4 3/4”
5L90	12”	2 11/16”	5 3/4”
6L90	10 1/4”	2 27/32”	6 3/4”
7L90	11 13/16”	3 1/8”	7 3/4”
8L90	12 5/16”	3 5/8”	8 3/4”

Round Tee



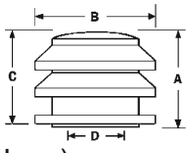
ITEM	A	B	C	D
4LRT	9”	3 3/4”	4 11/16”	4 3/4”
5LRT	10 1/16”	4 1/16”	5 1/8”	5 3/4”
6LRT	11”	4 3/4”	5 5/8”	6 3/4”
7LRT	12”	5 1/8”	6 3/8”	7 3/4”
8LRT	13 1/16”	5 13/16”	6 13/16”	8 3/4”

Round Tee Cap



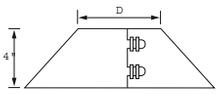
ITEM	D
4LTC	4 3/4”
5LTC	5 3/4”
6LTC	6 3/4”
7LTC	7 3/4”
8LTC	8 3/4”

Jet Cap (Stainless)



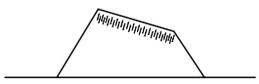
ITEM	A	B	C	D
4LJC	4 7/8”	6 1/2”	4 3/8”	4 11/16”
5LJC	5 13/16”	10 1/2”	5 5/16”	5 11/16”
6LJC	7 13/16”	10 1/2”	7 5/16”	6 11/16”
7LJC	7 13/16”	10 1/2”	7 5/16”	7 11/16”
8LJC	9 13/16”	10 1/2”	9 5/16”	8 11/16”

Storm Collar (Aluminum)



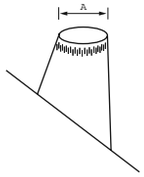
ITEM	D
4LSC	4 3/4”
5LSC	5 3/4”
6LSC	6 3/4”
7LSC	7 3/4”
8LSC	8 3/4”

Adjustable Roof Flashing (Aluminum)



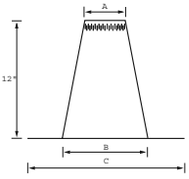
ITEM	A	B
4LBF	4 5/8”	8 3/16”
5LBF	5 1/2”	10 11/16”
6LBF	5”	10 11/16”
7LBF	6 7/8”	13 11/16”
8LBF	6”	13 11/16”

Steep Pitch Flashing (Aluminum)



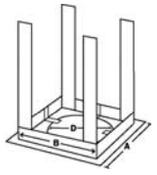
ITEM	A
4LBFX	4”
5LBFX	5”
6LBFX	6”
7LBFX	7”
8LBFX	8”

Tall Cone Roof Flashing (Aluminum)



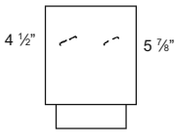
ITEM	A	B	C
4LBFT	4 7/8„	8 13/16”	15 5/32”
5LBFT	5 7/8	8 13/16”	15 5/32”
6LBFT	6 7/8”	10 11/16”	18 5/16”
7LBFT	7 7/8”	10 11/16”	18 5/16”
8LBFT	8 7/8”	10 11/16”	18 5/16”

Base Assembly



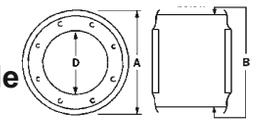
ITEM	A	B	D
4LBA	17”	6 5/8”	4 3/4”
5LBA	17”	7 5/8”	5 3/4”
6LBA	17”	8 5/8”	6 3/4”
7LBA	17”	9 5/8”	7 3/4”
8LBA	17”	10 5/8”	8 3/4”

Draft Hood Connector



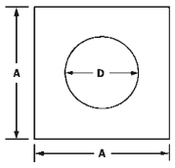
ITEM	D
4LDH	4 5/8”
5LDH	5 5/8”
6LDH	6 5/8”
7LDH	7 5/8”
8LDH	8 5/8”

Wall Thimble



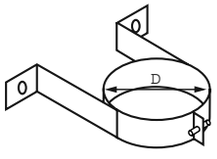
ITEM	D	A	B
4LVT	4 3/4”	9 3/8”	8 1/2”
5LVT	5 3/4”	9 3/8”	8 1/2”
6LVT	6 3/4”	10 3/4”	9 1/2”
7LVT	7 3/4”	12 1/2”	11 1/2”
8LVT	8 3/4”	12 1/2”	11 1/2”

Fire Stop



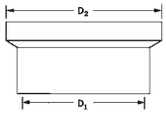
ITEM	A	D
4LGF	17”	4 3/4”
5LGF	17”	5 3/4”
6LGF	17”	6 3/4”
7LGF	17”	7 3/4”
8LGF	17”	8 3/4”

Interior Support Band



ITEM	D
4LSB	4 1/2”
5LSB	5 1/2”
6LSB	6 1/2”
7LSB	7 1/2”
8LSB	8 1/2”

Double Wall Increaser



ITEM	SIZES
__xLD	4x5, 4x6, 5x6, 5x7, 6x7, 7x8

AirJet ‘L’ Vent is listed by Underwriters Laboratories, Standard UL 641 and accepted by FHA, VA.

Made In USA

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