

- Special Gas Vent
- Category I, II, III, & IV Venting
- Type B & Type L Vents
- UL-103 Pressure Stacks

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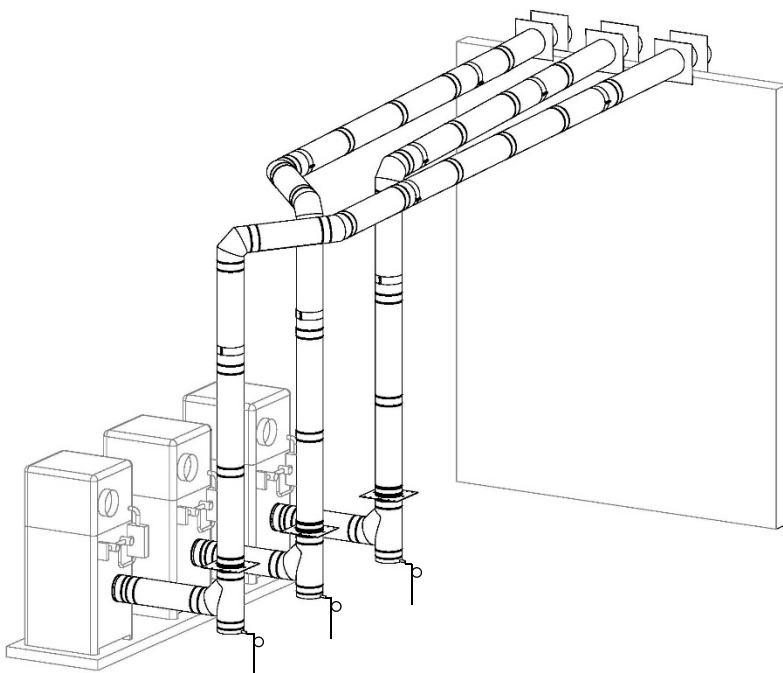
Gas/Oil Vents & UL-103 Stacks



Model DWKL & SWKL Installation Instructions

IMPORTANT: DO NOT INSTALL THESE PRODUCTS UNTIL YOU HAVE READ AND FULLY UNDERSTAND THESE INSTRUCTIONS. FAILURE TO COMPLY WITH THESE INSTRUCTIONS WILL RESULT IN AN IMPROPER INSTALLATION AND WILL VOID THE WARRANTY.

- Examine all components for possible shipping prior to installation.
- Proper joint assembly is essential for a safe installation. Follow these instructions exactly as written. Check severeness of joints upon completion of assembly.
- This venting system must be free to expand and contract. This venting system must be supported in accordance with these instructions.
- Check for unrestricted vent movement through walls, ceilings, and roof penetrations.
- Different manufacturers have different joint systems and adhesives. Do not mix pipe, fittings, or joining methods from different manufacturers.



These Instructions are applicable for the following variations:

DWKL & SWKL

DWKL-Vt & SWKL-Vt

DWKL-Lt & SWKL-Lt

DWKL-Rx



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PART 1 - GENERAL INFORMATION

INTRODUCTION

These instructions must be followed in all details and failure to do so may result in a hazardous installation. As a general rule begin to assemble the vent at the appliance outlet but plan for the total vent layout, including supports and other components, before installing the vent system. As such these instructions are organized into different sections for these various components. Contact Jeremias Inc. if there are any questions regarding these instructions.

The safe operation of the venting system and appliance is based on the use of parts supplied by Jeremias and the performance of the assembly may be affected if the combination of these parts is not used in actual building construction. Acceptance of the assembly is void if the installation instructions are not followed. Contact local building or fire officials about restrictions and installation inspection in your area.

DWKL is the designation model number for Jeremias' Double Wall conical Special Gas Vent and exhaust system. SWKL is the designation model number for the Single Wall option. The -Vt, -Lt, and -Rx variations have different inner gage thickness and/or insulation. For the purpose of these installation instructions, both DWKL and SWKL, as well as all the variations, will be treated together. Differences in installation, weights, and clearances will be shown where needed.

APPLICATIONS & USES

Models DWKL and SWKL are factory built stainless steel venting systems for gas-fired appliances listed as Category I, II, III or IV. The Model DWKL is Double Wall and Model SWKL is Single Wall. Each may be intermixed in the same vent system assuming proper clearances and other installation guidelines are maintained for each system.

All DWKL and SWKL Models are intended for use in connecting heating and hot water appliances to the outdoors. The venting system shall not be routed into, through, or within any other vent, except a masonry flue which may be used to route the venting system if no other appliance is vented into that same chimney flue. There are also many other applications and uses including, but not limited to the following: Boiler Stacks, Chimney Liners, Chutes, Fireplace Chimneys, Laundry Dryer Vents, Fume Venting, Industrial Oven and Process Stacks, Incinerator Exhausts, Paint Booth Exhausts, Particle Conveying, Engine Exhausts, and Ventilation Ducts. See separate instructions for these applications.

EXHAUST CALCULATIONS & DESIGN

Always refer to the appliance's instructions to determine proper sizing and connection of the venting system to the appliance. Jeremias engineering department, upon request, will use the "Chimney, Gas Vent, and Fireplace Systems" chapter of the ASHRAE Handbook to assure that the vent system is sized in accordance with the appliance manufacturers' installation instructions.

Always refer to the appliance's instructions to determine limitations with respect to installation and use, such as maximum horizontal length from the appliance, maximum height, joining of two or more parts to constitute the intended assembly, maximum number of offsets in the assembly, and the required installation air space clearances.

UL LISTINGS

UL-103 Standard, Building Heating Appliance Chimney Listing / ULC/ORD-C959 Industrial Type 540°C Chimney - under this Listing, all variations of Model DWKL have been determined suitable for venting flue gases from gas, liquid and solid fuel fired appliances at a temperature not exceeding 1000°F (540°C) continuously. 1400°F (760°C) intermittent (maximum one hour), and 1700°F (930°C) brief (maximum 10 minutes) is also permitted under this application. All variations of Model SWKL Listings for this applications are per UL-103 only.

See separate UL-103 / ULC/ORD-C959 Installation Instructions for all installation, enclosure/clearances and support methods.

UL-1738 Standard, Venting Systems for Gas-Burning Appliances, Categories II, III and IV - under this Listing and in a category known as "Special Gas Vents", all variations of Model DWKL and SWKL have been determined suitable for venting Category II, III and IV gas-fired appliances Listed in accordance with certain ANSI gas appliance standards. In this application Model DWKL and SWKL are suitable for use at a temperature not exceeding 550°F (288°C) continuously and with a maximum internal pressure of 90 Inch water column (22,400 Pascal).

ULC-S636 (Canadian) Standard for Type BH Gas Venting Systems - under this (c-UL) Listing and in a category known as "Type BH Vents", all variations of Models DWKL and SWKL have been determined suitable for venting certain gas fired appliances producing flue gas temperatures not exceeding 245°C (473°F) and positive internal pressures not exceeding 22,400 Pascals (90 Inch water column).

UL-441 Standard, Gas Vents / ULC-S605 (Canadian) Standard for Gas Vents - under these Listings, all variations of Model DWKL have been determined suitable for venting flue gases from gas fired appliances equipped with draft hoods and for venting certain other gas fired appliances specifically Listed for use with Type B Gas Vent.

UL-641 Standard, Type L Low-Temperature Venting Systems / ULC-S609 (Canadian) Standard for Low-Temperature Vents Type L - under these Listings, all variations Model DWKL has been determined suitable for venting flue gases from gas and liquid fuel-burning appliances that exhaust low-temperature flue gases not exceeding 570°F (299°C) and that are Listed for use with Type L venting systems.

UL-1777 Standard, Chimney Liners - under this Listing, all variations of Model SWKL have been determined suitable for venting flue gases from gas and liquid fuel fired appliances at a temperature not exceeding 570°F (299°C).

ULC-S635, (Canadian) Standard for Lining Systems for Existing Masonry or Factory-Built Chimneys and Vents - under this (c-UL) Listing, all variations of Model SWKL have been determined suitable for venting flue gases from gas, liquid and solid fuel fired appliances where the temperature of the flue gases does not normally exceed 650°C (1200°F).

See separate UL-1777 / ULC-S635 Installation Instructions Addendum for information and requirements specific to chimney liner applications.

TERMINATION REQUIREMENTS

Above roof terminations are required to terminate a minimum of 3' (0.9m) above the roof penetration and 2' (0.6m) minimum above any portion of the building with 10' (3.1m) horizontally. See NFPA 54. Consult with the Authority Having Jurisdiction for actual requirements if in question.

If the appliance permits sidewall venting:

- 1) A venting system that exits the structure thorough a sidewall or the like shall terminate not less than 12 inches above the ground.
- 2) A termination of the venting system be located above the snow line in geographical areas where snow accumulates.
- 3) The termination of the venting system shall not be located in traffic areas, such as walkways, unless the venting system is at least 7 feet (2.13m) above the ground.

When the venting system is relative to appliances that incorporate combustion air inlet systems, the venting system shall terminate:

- 4) 6 feet (1.8m) or more from the combustion air intake of any appliance.
- 5) More than 3 feet (0.91m) from any other building opening, gas utility meter, service regulator, and the like.
- 6) Less distance if specified by the appliance's instructions.

CONTINUOUS PIPE SLOPE

Any horizontally installed portion of a venting systems shall have a slope (upwards for Category II, III, or IV appliances or downwards for Category III or IV appliances) not less than ¼" (0.64mm) every

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12" 304.8mm) to prevent collection of condensate at any location of the assembly. As an option, the installer may also use Jeremias 87° elbows and fittings that will create a slope of 3/8" (15.9mm) per every 12" (0.64mm).

Means shall be provided for draining the condensate. Due to ice buildup and blockage, it is required that the proper sloping be employed when the vent is installed in a horizontal installation. Refer to the appliance manufacturer's instructions for further details regarding the installation of the condensate drain fittings.

PART NUMBER IDENTIFICATIONS

These instructions identify Model DWKL and SWKL item code in text and illustrations. Actual part numbers include the Model (DWKL or SWKL), diameter, item code, and variation (none, -Vt, -Lt, or -Rx)

Example 1: DWKL8-36L for an 8 inch inner diameter Model DWKL double wall 36 inch length of pipe.

Example 2: SWKL10-90WT-Vt for a 10 inch inner diameter Model SWKL single wall 90° Wye Tee in the -Vt variation.

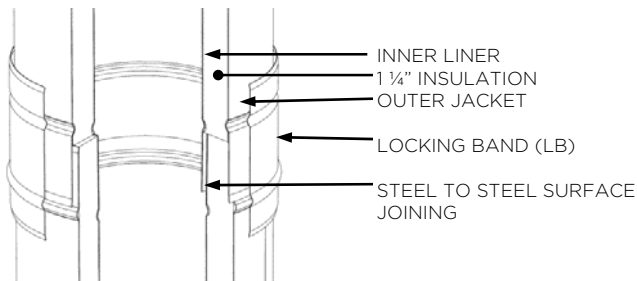
Example 3: DWKL12-87BT-Rx for a 12 inch inner diameter Model DWKL double wall 87°-degree Boot Tee in the -Rx variation.

FEATURES & BENEFITS

Models DWKL and SWKL are cylindrical, factory built, modular venting systems that incorporate a steel to steel conical joint and clamp system for quick and easy assembly in the field. The conical joint is tapped in place creating a gas and liquid tight seal where sealant is not needed.

The double wall Model DWKL is insulated with 1/4" thick fiber which allows the inner and outer pipes to stay aligned, without the use of additional clips or brackets, eliminating hot spots at the joint connections.

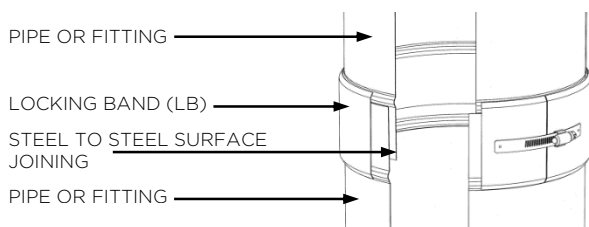
Figure 1-1, Model DWKL Assembly Detail



Further features of Model DWKL double wall and fiber insulated include:

- a) Reduced clearance to combustibles
- b) Reduced outer pipe skin temperatures
- c) Reduced building heat gain
- d) Increased efficiencies of energy recovery systems
- e) Reduced noise levels caused by high velocity exhausts
- f) Maintain flue gas heat for vent draft performance

Figure 1-2, Model SWKL Assembly Detail



PIPE WEIGHT

The approximate installed weight of the DWKL and SWKL exhaust systems can be found using this table. This table does not include

accessories such as supports and guides, nor shipping packaging or palletizing weight.

Table 1-1, DWKL & SWKL Installed Weight in Lbs./Ft (kg/m)

Inside Diameter	DWKL DWKL-Rx	SWKL	DWKL-Vt DWKL-Lt	SWKL-Vt SWKL-Lt
3" (76mm)	3.5 (5.1)	1.1 (1.7)	3.0 (4.4)	0.6 (1.0)
4" (102mm)	4.4 (6.5)	1.5 (2.2)	3.8 (5.7)	0.9 (1.3)
5" (127mm)	5.3 (7.9)	1.9 (2.8)	4.4 (6.5)	1.1 (1.6)
6" (152mm)	6.3 (9.3)	2.2 (3.3)	5.4 (8.0)	1.3 (1.9)
7" (178 mm)	7.2 (10.7)	2.6 (3.9)	6.1 (9.1)	1.5 (2.2)
8" (203mm)	8.1 (12.1)	3.0 (4.4)	6.8 (10.1)	1.7 (2.5)
9" (229mm)	9.1 (13.5)	3.4 (5.0)	7.6 (11.3)	1.9 (2.8)
10" (254mm)	10.0 (14.9)	3.7 (5.6)	8.4 (12.5)	2.1 (3.2)
11" (249mm)	10.9 (16.3)	4.1 (6.1)	9.1 (13.5)	2.3 (3.5)
12" (305mm)	11.9 (17.7)	4.5 (6.7)	10.0 (14.9)	2.6 (3.8)
13" (330mm)	12.8 (19.1)	4.9 (7.2)	10.7 (15.9)	2.8 (4.1)
14" (356mm)	13.8 (20.5)	5.2 (7.8)	11.6 (17.3)	3.0 (4.4)
16" (406mm)	15.6 (23.2)	6.0 (8.9)	13 (19.3)	3.4 (5.1)
18" (457mm)	17.5 (26.0)	6.7 (10.0)	14.6 (21.7)	3.8 (5.7)
20" (508mm)	19.4 (28.8)	7.5 (11.1)	16.2 (24.1)	4.3 (6.3)
22" (559mm)	21.3 (31.6)	8.2 (12.2)	17.8 (26.5)	4.7 (5.0)
24" (610mm)	23.1 (34.3)	9.0 (13.3)	19.2 (28.6)	5.1 (7.6)
26" (660mm)	23.7 (35.3)	9.5 (14.1)	DNA	DNA
28" (711mm)	25.5 (37.9)	10.3 (15.3)	DNA	DNA
30" (762mm)	27.2 (40.5)	11.0 (16.4)	DNA	DNA
32" (812mm)	29.0 (43.2)	11.7 (17.4)	DNA	DNA
34" (863mm)	30.7 (45.7)	12.5 (18.6)	DNA	DNA
36" (914mm)	32.5 (48.4)	13.2 (19.6)	DNA	DNA

KL PASTE

KL Paste is a ceramic lubricating and assembly paste. The purpose is to help guide the pipe connections to assure the best steel to steel connection. It also seals the joint by allowing the ceramic to fill any microscopic steel imperfections. On fittings it will help the installer rotate to the correct position before tapping in place.

Use 1 teaspoon of paste per 24" length of joint perimeter. Example: 10 inch diameter has 31" of perimeter length, so use about 1.3 teaspoons per each 10 inch joint connection. Below table allows for a 20% waste.

Table 1-2, No. (#) of Joints per 3.5 oz. Tube

Ø	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	13"	
#	42.6	32.0	25.6	21.3	18.2	16.0	14.2	12.8	11.6	10.6	9.8	
Ø	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"
#	9.1	8.0	7.1	6.4	5.8	5.3	4.9	4.5	4.2	4.0	3.7	3.5

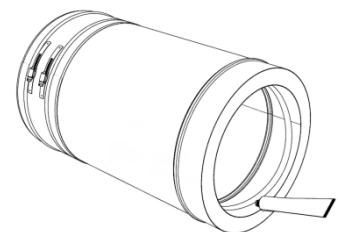
JOINT ASSEMBLY

The Model DWKL joint system is designed for a quick and easy installation. Follow Steps 1 through 4 for general pipe and fittings assembly.

Figure 1-3, Model DWKL Assembly

Step 1

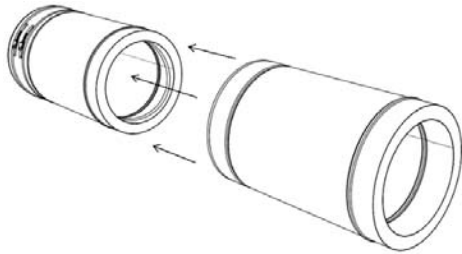
Clean the inner side of the female end and the outer side of the male end of each inner liner. Apply the KL Paste to the female end.



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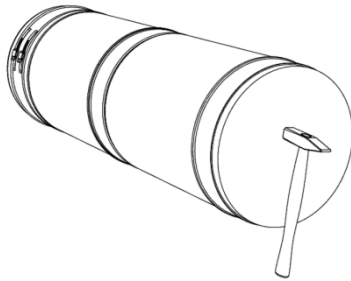
Step 2

Use your hands to center both pipes in alignment. Connect both pipes and press them together as much as possible by hand.



Step 3

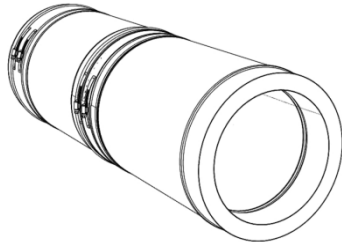
Use the wood plate (supplied with shipment) and place it on the end of the assembly.



Tap 2-3 times. Make sure to press both inner and outer pipes together; the inner should not be more than 1/8" longer than the outer pipe once the male/female conical ends are engaged.

Step 4

Install and fix the Locking Band (LB). To ensure the connection is secure, the Locking Band has to be perfectly fitted in both grooves.



The Model SWKL single wall is exactly the same joint as the inner portion of the above Model DWKL. Use the same installation procedures for SWKL as DWKL. Check the joints and seams for gas tightness when using the venting system with a Category II, III or IV appliance.

ENCLOSURES & CLEARANCES

Model DWKL chimney is intended to be installed unenclosed or with non-combustible enclosures, and is not for use in one or two story family dwellings.

If the chimney passes through any zone or story of a building outside of which the connected appliance is located, it is to be enclosed in non-combustible construction having a fire rating equal to or greater than that of the wall or ceiling through which it passes. Check with the Authority Having Jurisdiction for material with an appropriate fire rating. Where, according to local code, no chase enclosure is required, Model DWKL may be installed adjacent to a wall of combustible construction at the minimum clearance specified on each pipe section and in the individual Listing as shown in the following tables.

Model SWKL is meant to be used as an option for "Unlisted Metal Chimneys (Smokestacks) for Nonresidential Applications" and/or "Chimney Connectors and Vent Connectors" as defined in NFPA-211. As such follow all applicable NFPA-211 requirements regarding Uses, Clearances, Termination, and Size.

Table 1-3, DWKL & SWKL Clearances for UL-103 Building Heating Appliance Chimney

Inside Diameter	DWKL Building Heating Appliance Chimney	SWKL Single Wall Stack & Connector
3" (76mm) - 6" (152mm)	0.50" (12.7mm)	18" (457.2mm)
7" (178mm) - 14" (456mm)	0.75" (19.1mm)	18" (457.2mm)
16" (406mm) - 36" (914mm)	1.00" (25.4mm)	18" (457.2mm)

Model DWKL double wall special gas vent is intended to be installed unenclosed or with enclosures. Model SWKL Single Wall is intended to be installed unenclosed or with enclosures in certain

smaller diameters. To minimize condensation and protect against mechanical failure, it is recommended to use DWKL double wall gas vent for installations that require more than 5' of exposure in the outdoors.

If the gas vent passes through any zone or story of a building outside of which the connected appliance is located, it is to be enclosed in non-combustible construction having a fire rating equal to or greater than that of the wall or ceiling through which it passes. Check with the Authority Having Jurisdiction for material with an appropriate fire rating.

Where, according to local code, no chase enclosure is required, Model DWKL (all diameters) and SWKL (3" and 4" diameters only) may be installed adjacent to a wall of combustible construction at the minimum clearance specified on each pipe section and in the individual Listing as shown in the following tables.

Table 1-4, DWKL Clearance for Special Gas Vent

Inside Diameter	Max Appliance Flue Gas Temperature and/or Application	DWKL Double Wall Special Gas Vent			
		Unenclosed		Enclosed	
		Vertical	Horizontal	Vertical	Horizontal
3" - 13"	550°F	0.5"	1"	0.5"	4"
	480°F	0.5"	1"	0.5"	3"
	400°F	0"	1"	0"	2"
14" - 18"	550°F	1"	2"	1"	5"
	480°F	1"	2"	1"	4"
	400°F	0"	1"	0.5"	3"
20" - 24"	550°F	1"	3"	1"	5"
	480°F	1"	3"	1"	4"
	400°F	0"	1"	0.5"	3"
26" - 36"	550°F	1"	5"	1"	6"
	480°F	1"	5"	1"	4"
	400°F	0"	1"	1"	4"
All Diameters	Class IIC - 230°F (110°C) max	0"			
	Class IIB - 194°F (90°C) max	0"			
All Diameters	Type B	1"			
All Diameters	Type L	1"			

Table 1-5, SWKL Clearances for Special Gas Vent

Inside Diameter	Max Appliance Flue Gas Temperature and/or Application	SWKL Single Wall Special Gas Vent			
		Unenclosed		Enclosed	
		Vertical	Horizontal	Vertical	Horizontal
3" - 4"	550°F	2"	2"	5"	9"
	480°F	2"	2"	DNA	DNA
5" - 12"	480°F or 550°F	3"	3"	DNA	DNA
13" - 18"	480°F or 550°F	4"	4"	DNA	DNA
20" - 24"	480°F or 550°F	5"	5"	DNA	DNA
26" - 30"	480°F or 550°F	6"	6"	DNA	DNA
32" - 36"	480°F or 550°F	7"	7"	DNA	DNA
All Diameters	Class IIC - 230°F (110°C) max	0"		0.25"	
	Class IIB - 194°F (90°C) max	0"			

In regards to above Class IIC and IIB temperatures (for reference purposes) - common plastics used in venting applications are PP (Polypropylene) with limit of 230°F, CPVC with limit of 194°F, and PVC with limit of 148°F.

For clearances to combustibles for other items such as thimbles, see PART 6 - THIMBLE & FLASHINGS in these instructions.

WARNING: Do not place insulation in the required clearances spaces surrounding the vent system.

Clearance to non-combustibles: As required for installation, access, inspection, or per local code.

PART 2 - SUPPORT & GUIDING

SUPPORT AND GUIDE OPTIONS

Models DWKL and SWKL have many options for supporting and guiding:

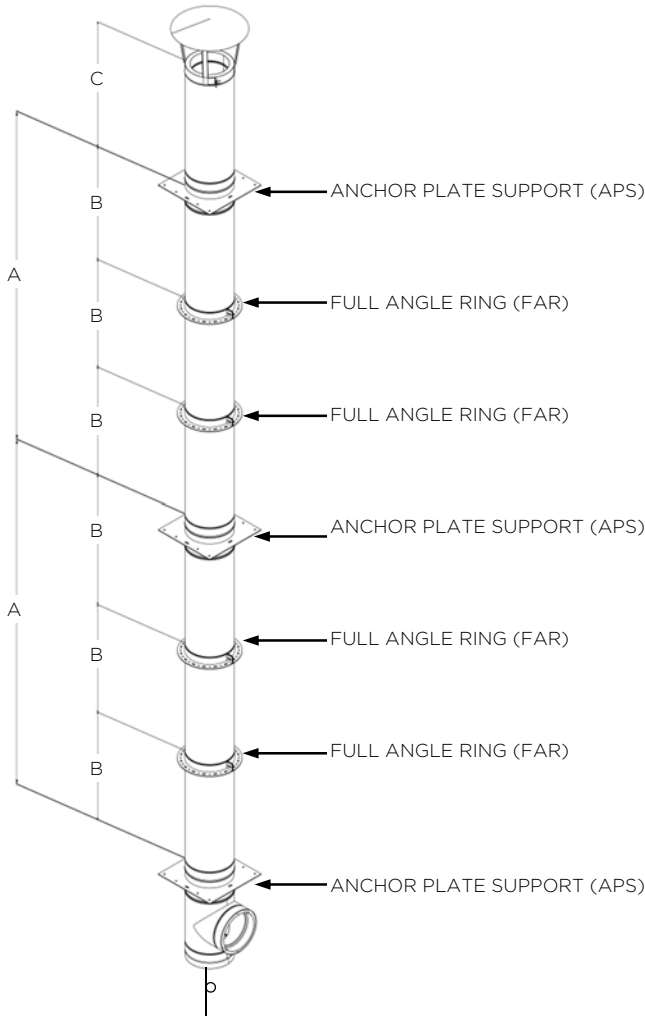
- 1) Anchor Plate Support (APS)
- 2) Heavy Duty Base for Support/Ring (HDB)
- 3) Wall Brackets for Support/Ring (WB)
- 4) Light Support Band (LSB)
- 5) Full Angle Ring (FAR)
- 6) Half Angle Ring (HAR)
- 7) Guy Wires band (GWB)

In addition to the spacing requirements for supports in this section, a support must always be located at an elbow or offset to prevent unacceptable stress on that fitting.

VERTICAL SUPPORT SPACING & LIMITS

Figure 2-1 provides the maximum vertical support spacing for various support options (Dimension A). See Table 2-1 for maximum distances.

Figure 2-1, Maximum Vertical Support Spacing



NOTE: See PART 3 "Lengths for Thermal Expansion" in these instructions for important use of expansion joints between anchor plate support locations.

Table 2-1, Vertical Support Spacing Limitations (Dim A)

Vertical Support Method / Part Nos.	Dim A - Maximum Support Height				
	Diameter	DWKL DWKL-Rx	DWKL-Lt	DWKL-Vt	SWKL SWKL-Lt SWKL-Vt
Anchor Plate Support / APS					
3" - 6" (76 - 152mm)	300' (91.4m)	300' (91.4m)	300' (91.4m)	300' (91.4m)	300' (91.4m)
7" - 10" (178 - 254mm)	208' (63.3m)	248' (75.5m)	282' (85.9m)	300' (91.4m)	275' (83.3m)
11" - 13" (279 - 330mm)	162' (49.3m)	194' (59.1m)	223' (67.9m)	300' (91.4m)	200' (61.0m)
14" - 18" (356 - 457mm)	119' (36.2m)	142' (43.2m)	166' (50.5m)	300' (91.4m)	200' (61.0m)
20" - 24" (508 - 610mm)	90' (27.4m)	108' (32.9m)	127' (38.7m)	231' (70.4m)	150' (45.7m)
26" - 30" (660 - 762mm)	88' (26.8m)	DNA	DNA	222' (67.7m)	DNA
32" - 36" (813 - 914mm)	86' (26.2m)	DNA	DNA	213' (64.9m)	DNA
Anchor Plate Support with Heavy Duty Base / APS & HDB					
3" - 6" (76 - 152mm)	300' (91.4m)	300' (91.4m)	300' (91.4m)	300' (91.4m)	300' (91.4m)
7" - 10" (178 - 254mm)	300' (91.4m)	300' (91.4m)	300' (91.4m)	300' (91.4m)	275' (83.3m)
11" - 13" (279 - 330mm)	300' (91.4m)	300' (91.4m)	300' (91.4m)	300' (91.4m)	200' (61.0m)
14" - 18" (356 - 457mm)	224' (68.2m)	269' (81.9m)	300' (91.4m)	300' (91.4m)	200' (61.0m)
20" - 24" (508 - 610mm)	170' (51.8m)	205' (62.4m)	239' (72.8m)	300' (91.4m)	150' (45.7m)
26" - 30" (660 - 762mm)	111' (33.8m)	DNA	DNA	275' (83.3m)	DNA
32" - 36" (813 - 914mm)	93' (28.3m)	DNA	DNA	230' (70.1m)	DNA
Anchor Plate Support with Wall Bracket / APS & WB					
3" - 6" (76 - 152mm)	70' (21.3m)	81' (24.6m)	92' (28.0m)	200' (60.9m)	300' (91.4m)
7" - 10" (178 - 254mm)	44' (13.4m)	52' (15.8m)	60' (18.2m)	119' (36.2m)	208' (63.3m)
11" - 13" (279 - 330mm)	34' (10.3m)	41' (12.4m)	47' (14.3m)	90' (27.4m)	157' (47.8m)
14" - 18" (356 - 457mm)	25' (7.6m)	30' (9.1m)	35' (10.6m)	66' (20.1m)	115' (35.0m)
20" - 24" (508 - 610mm)	19' (5.7m)	23' (7.0m)	27' (8.2m)	49' (14.9m)	85' (25.9m)
26" - 30" (660 - 762mm)	12' (3.7m)	DNA	DNA	29' (8.8m)	DNA
32" - 36" (813 - 914mm)	10' (3.0m)	DNA	DNA	24' (7.3m)	DNA

VERTICAL GUIDE SPACING

Table 2-2 provides the maximum vertical guide spacing (Dimension B) for all guide options. Also shown is the maximum freestanding distance above the last support or guide (Dimension C).

Applicable vertical guides are FAR Full Angle Ring, LSB Light Support Band, and GWB Guy Wires Band

Table 2-2, Vertical Guide Spacing (Dim B and C)

Vertical Guide Spacing	DWKL, DWKL-Rx & SWKL		DWKL-Vt & DWKL-Lt		SWKL-Vt & SWKL-Lt	
	B	C	B	C	B	C
3" (76mm) - 24" (610mm)	19.5' (5.9m)	10.0' (3.0m)	14.6' (4.4m)	7.5' (2.2m)	11.1' (3.3m)	5.7' (1.7m)
26" (660mm) - 36" (914mm)	20.2' (6.2m)	8.2' (2.5m)	DNA	DNA	DNA	DNA

HORIZONTAL SUPPORT SPACING

Table 2-3 provides the maximum unsupported horizontal spacing (distance) between guides for an exhaust installed inside the building.

PART 2 - SUPPORT & GUIDING

Applicable horizontal supports are FAR Full Angle Ring, HAR Half Angle Ring, LSB Light Support Band, and GWB Guy Wires Band.

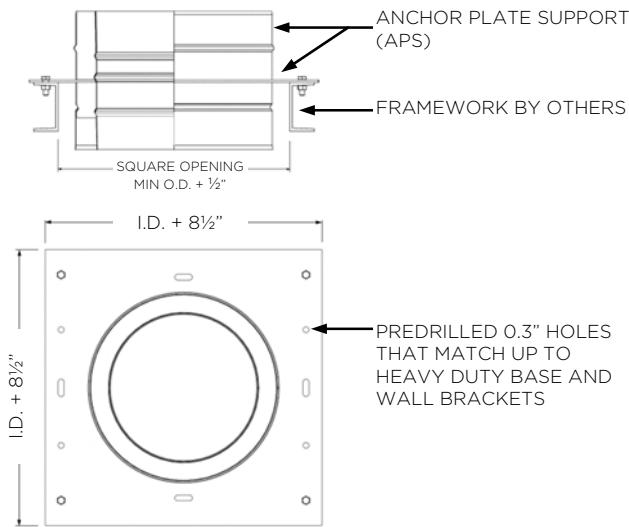
Table 2-3, Horizontal Support Spacing

Maximum Unsupported Horizontal Spacing	DWKL, DWKL-Rx & SWKL	DWKL-Vt & DWKL-Lt	SWKL-Vt & SWKL-Lt
3" (76mm) - 14" (356mm)	15.0' (4.5m)	11.3' (3.4m)	8.6' (2.6m)
16" (406mm) - 24" (610mm)	12.0' (3.7m)	6.8' (2.1m)	5.0' (1.5m)
26" (660mm) - 36" (914mm)	9.0' (2.7m)	DNA	DNA

ANCHOR PLATE SUPPORT (APS)

The Anchor Support Plate consists of a short length of pipe that has a single heavy plate factory welded to the inner pipe. It is intended to provide maximum support to vertical sections and to provide an anchor support for horizontal sections.

Figure 2-2, Anchor Plate Dimensions



The plate must be braced back to the building structure or support with rigid structural members by the installing contractor. The structural project engineer should select support members in accordance with good engineering practice to suit each specific application, or follow the guidelines to meet the following figures.

Figure 2-3, Anchor Plate Support for Vertical

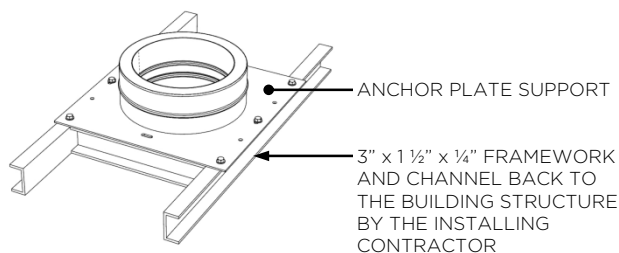
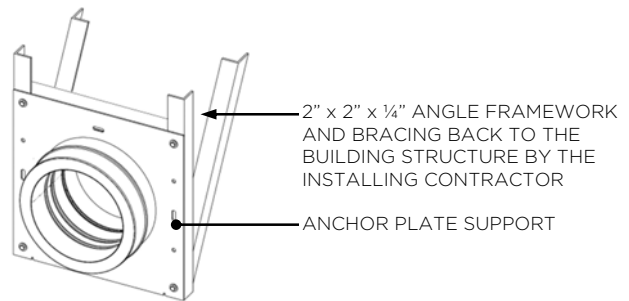


Figure 2-4, Anchor Plate Support for Horizontal



The Anchor Plate Support may only be attached to non-combustible construction such as block, concrete, or steel.

DO NOT ATTACH THE ANCHOR SUPPORT PLATE TO COMBUSTIBLE MATERIALS.

HEAVY DUTY BASE (HDB)

This is a factory-built base and framework for the Anchor Plate Support allows quick and easy installations when bracing the support back to the building structure. The installing contractor only provides the channel as Heavy Duty Base acts as the framework.

Hardware for attaching the APS Anchor Plate Support to the HDB Heavy Duty Base is supplied with the base.

Figure 2-5, Heavy Duty Base Support for Vertical

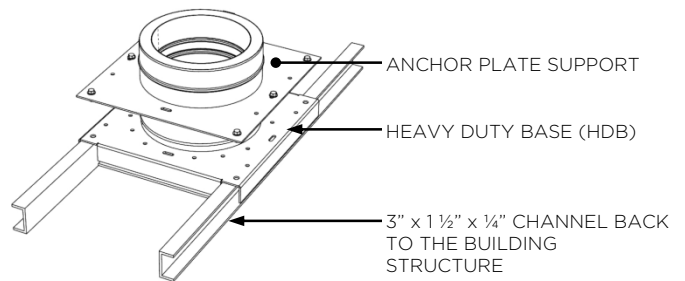
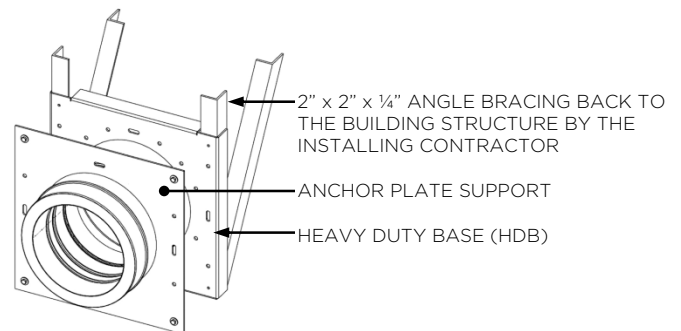


Figure 2-6, Heavy Duty Based Support for Horizontal

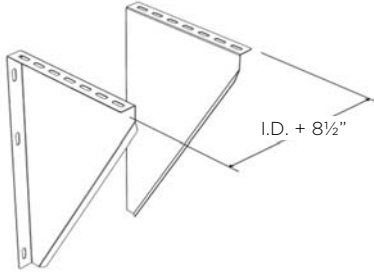


PART 2 - SUPPORT & GUIDING

WALL BRACKETS FOR SUPPORT (WB)

These Wall Brackets will conveniently support the Anchor Plate Support back to a non-combustible wall.

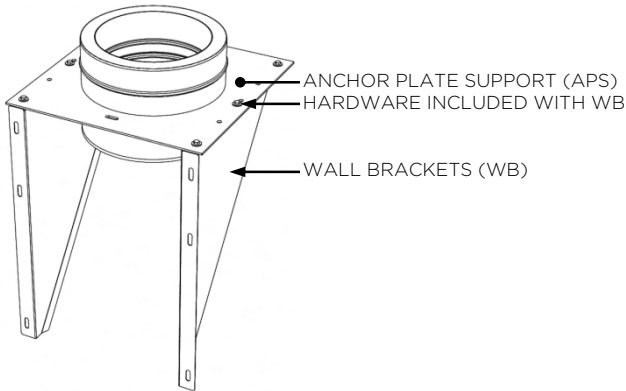
Figure 2-7, Wall Brackets



Hardware for attaching the Anchor Plate Support to the Wall Brackets is supplied with the brackets.

However, hardware for attaching these Wall Brackets to the wall is by others. The structural engineer should select hardware and in accordance with good engineering practice to suit each specific application.

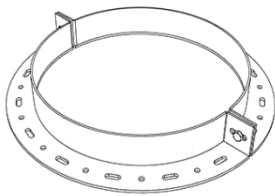
Figure 2-8, Wall Brackets for Anchor Plate Support



FULL ANGLE RING (FAR)

The Full Angle Ring is used as a vertical guide and is braced to the building structure by the installing contractor. It can also be used in horizontal configurations where exposed to weather (wind) or on vibrating or high pressure applications such as engine exhaust.

Figure 2-9, Full Angle Ring



Also see Figures 2-10 and 2-11, the Heavy Duty Base or Wall Brackets may also be used to help support the Full Angle Ring back to the building structure.

Figure 2-10, Heavy Duty Base for Full Angle Ring Example

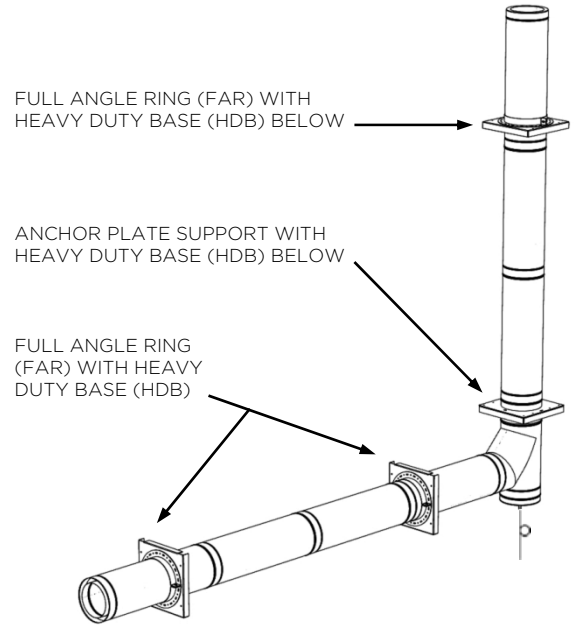
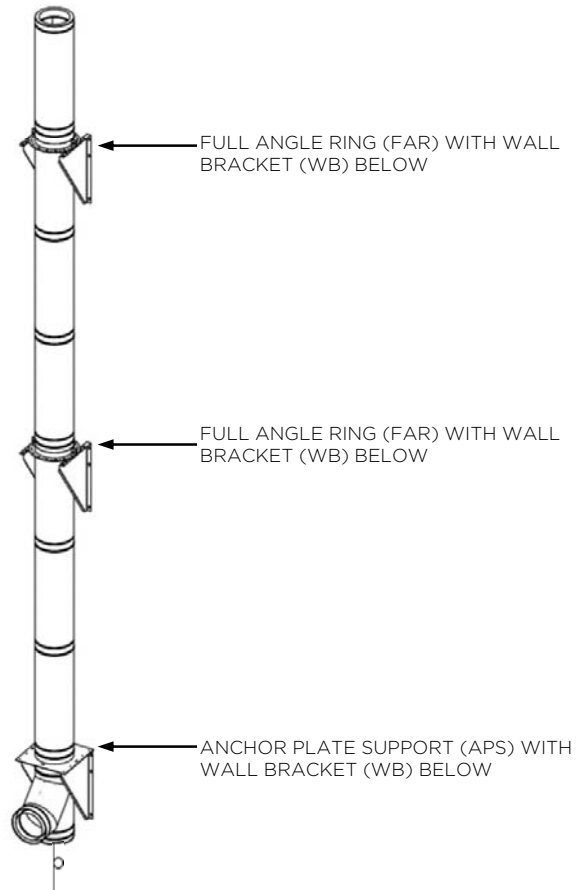


Figure 2-11, Wall Brackets for Full Angle Ring Example

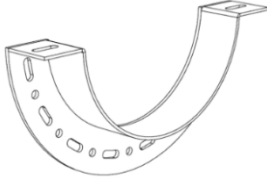


PART 2 - SUPPORT & GUIDING

HALF ANGLE RING (HAR)

The Half Angle Ring is used to support/guide horizontal installations and may be suspended by threaded rods. See Full Angle Ring (FAR) for outdoor or vibrating installations.

Figure 2-12, Half Angle Ring



LIGHT SUPPORT BAND (LSB)

The Light Support Band can be used on low pressure and low temperature applications such as heating boiler stacks (not for use with engine or turbine exhaust) for support/guide in horizontal or vertical installations.

The band firmly clamps around the pipe outer jacket and includes four (4) 1/4" x 20 stainless steel nuts and bolts. Remaining hole in the middle where wires or threaded rods (by the installing contractor) are used for support or guiding back to the building structure.

Figure 2-13, Light Support Band

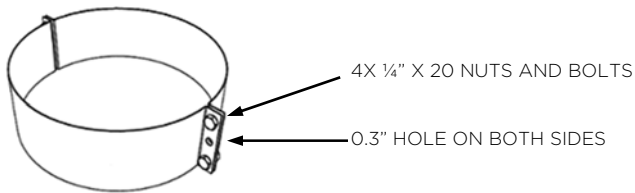
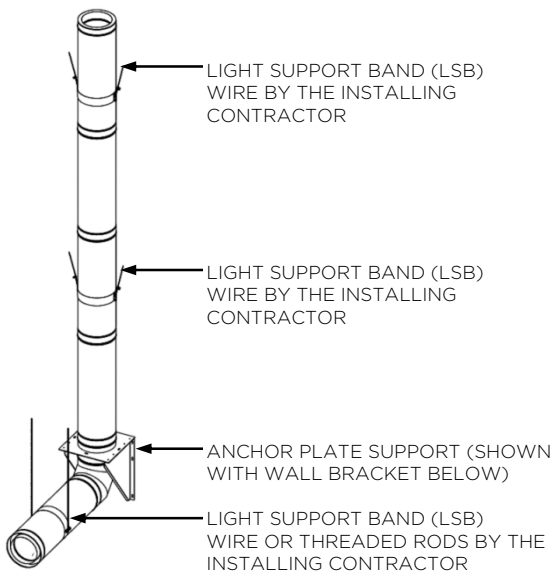


Figure 2-14, Light Support Band Installation Example



GUY WIRES BAND (GWB)

The Guy Wires Band permits easy connection for three (3) guy wires at 120 degrees apart. The band firmly clamps around the pipe outer jacket and includes three (3) 1/4" x 20 stainless steel nuts and bolts.

The actual guy wires are by others, the structural engineer should select wire size in accordance with good engineering practice to suit each specific application.

Figure 2-15, Guy Wires Band

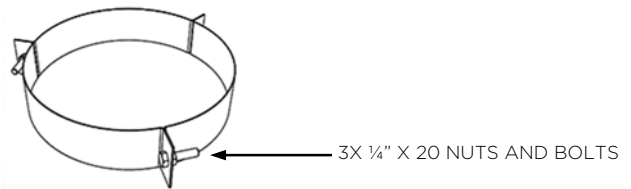
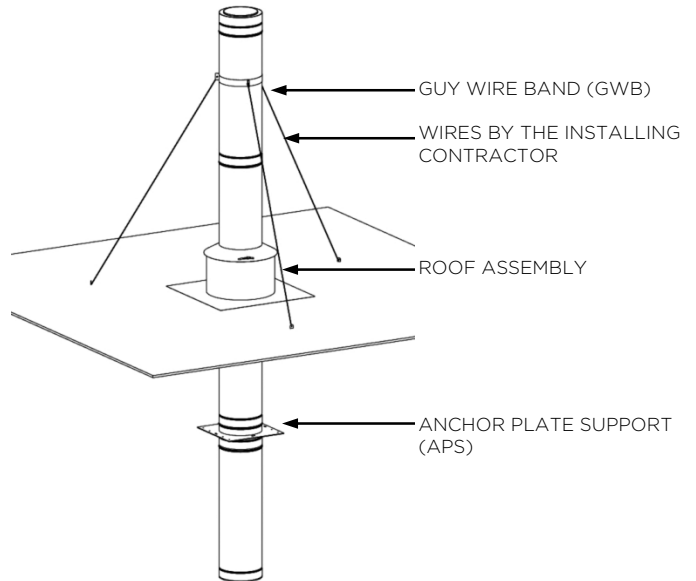


Figure 2-16, Guy Wire Band Installation Example



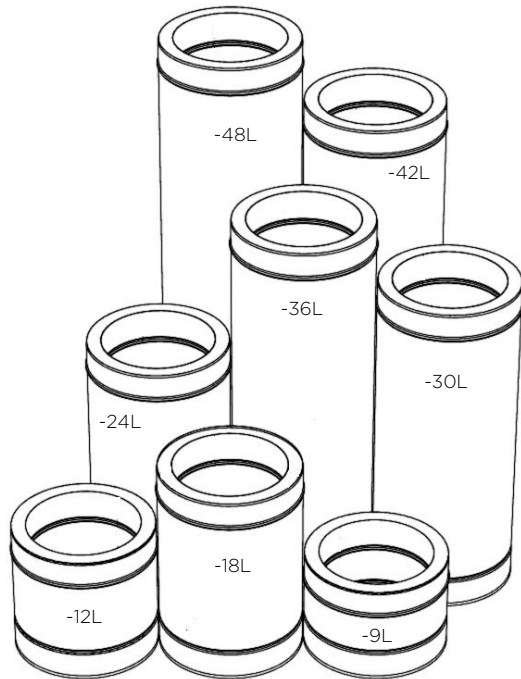
PART 3 - PIPE & OTHER LENGTHS

6", 9", 12", 18", 24", 30", 36", 42", & 48" FIXED PIPE LENGTHS (___L)

Models SWKL and DWKL have various fixed lengths of pipe. 6" length is only available in SWKL.

Any custom length may be ordered from Jeremias Inc.

Figure 3-1, Fixed Pipe Lengths

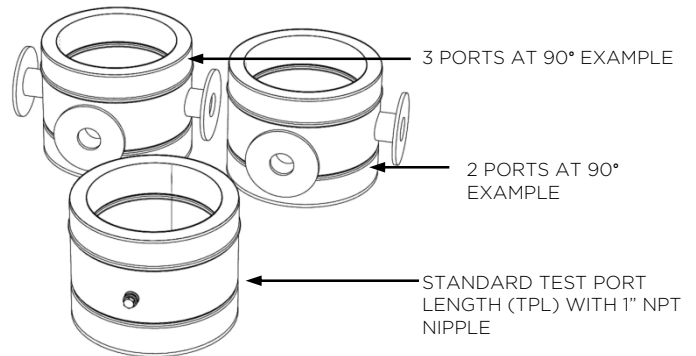


TEST/NOZZLE PORT LENGTH (TPL)

A Test/Nozzle Port Length can be used for monitoring flue gases, horizontal drain, or implementing internal cleaning equipment inside the pipe. Standard is one 1" NPT nipple, but any size can be factory installed and in multiple configurations.

All ports are continuously welded to the inner pipe. Gaskets or sealant used to connect other equipment and supporting of this equipment is by others.

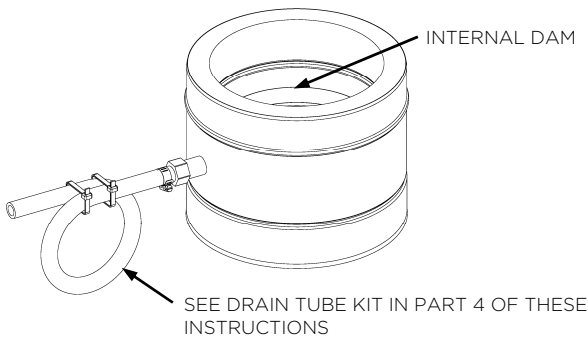
Figure 3-3, Test/Nozzle Port Section



UNIVERSAL DRAIN LENGTH (UDL)

The Universal Drain Length traps all rain water or condensation inside the pipe via an internal dam and routes to an external 1" NPT nipple. This works in both horizontal and vertical configurations.

Figure 3-2, Universal Inline Drain



PART 3 - PIPE & OTHER LENGTHS

18" & 30" CUT PIPE LENGTHS (CL)

Cut Pipe Lengths are specifically engineered to be field cut to desired length. This permits the greatest flexibility for complicated installations.

- The minimum installed length of 18CL and 30CL is 5.3".
- The maximum installed length of the 18CL is 15.8".
- The maximum installed length of the 30CL is 27.8".

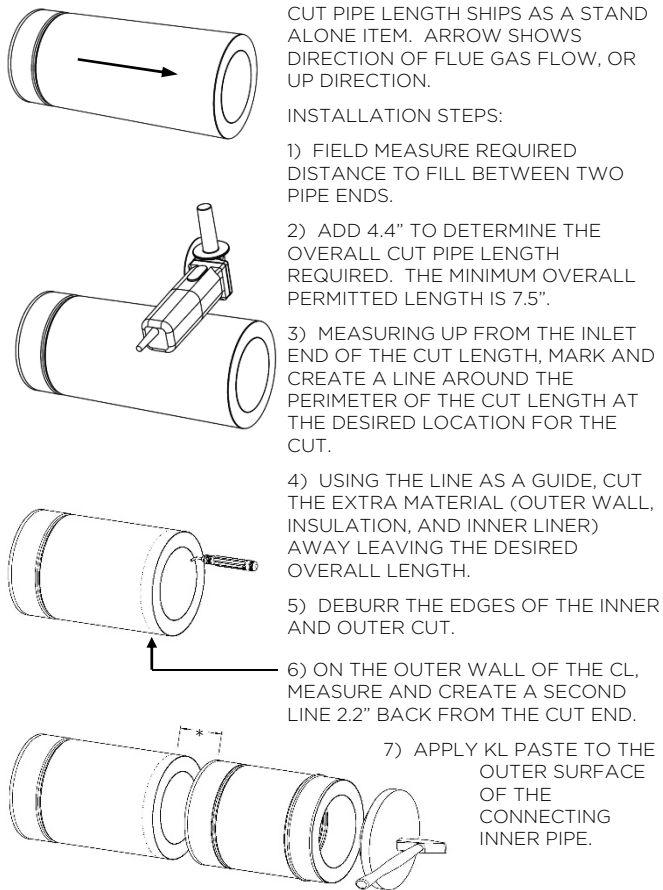
Cut Pipe Lengths are used in all applications and have been evaluated by UL and confirmed suitable for positive internal pressures up to 60" W.C. (15000 Pa).

IMPORTANT: Proper installation of the Cut Pipe Length involves a procedure of very careful measurement and cutting (either in the field or shop) of the outlet end(s) of the Cut Pipe Length with appropriate equipment and technique to achieve a clean, burr free, straight end(s). Experienced sheet metal tradesmen are familiar with such equipment and techniques and should be used for such purpose.

Examples of equipment commonly used for such purpose include:

Type 27 Right Angle Grinder Cutting Wheels for stainless steel and NOGA Model DB1000 double edge deburring tool for thin sheet metal.

Figure 3-5, Cut Pipe Length Installation



8) TAP THE ADJOINING LENGTH OR CUT LENGTH INTO PLACE USING THE SUPPLIED WOOD PLATE. PROPER ENGAGEMENT IS ACHIEVED WHEN THIS DIMENSION (*) BECOMES ZERO.

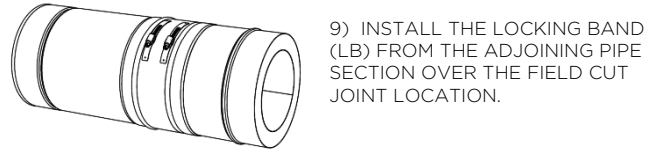
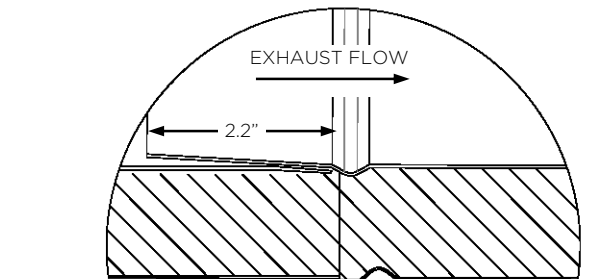
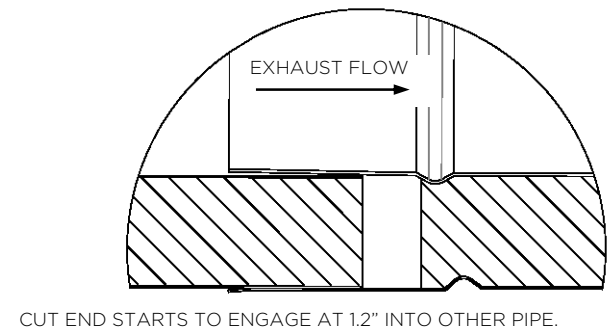
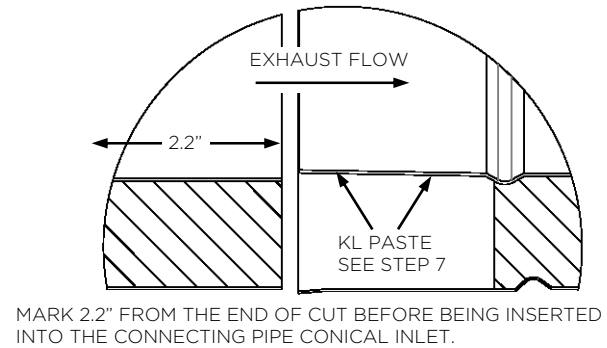
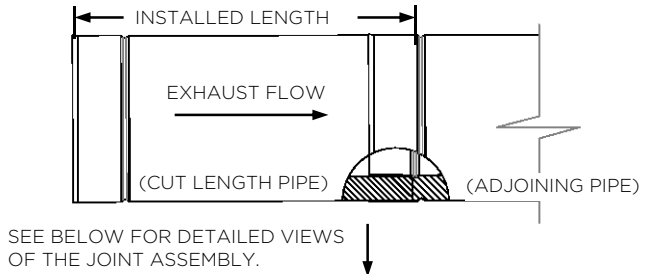


Figure 3-6, Cut Pipe Length Joint Detail



LOCKING BAND IS NOT SHOWN FOR CLARITY.

PART 3 - PIPE & OTHER LENGTHS

LENGTHS FOR THERMAL EXPANSION

Models DWKL and SWKL assembled lengths act like a continuous steel pipe, so thermal expansion must be compensated for between anchored or fixed supports.

The Model DWKL inner is permitted to expand a greater length than the outer jacket as there are no fixed steel connections between the inner and outer.

Any expansion of the inner in excess of 0.375" (9mm) requires one of the following expansion capable lengths between fixed anchor points:

- 1) Adjustable Length (18AL or 30AL)
- 2) Adjustable Length with Gasket (18AG or 30AG)
- 3) Adjustable Length with Graphite Packing (18ALG or 30ALG)

18" & 30" ADJUSTABLE LENGTHS (___AL)

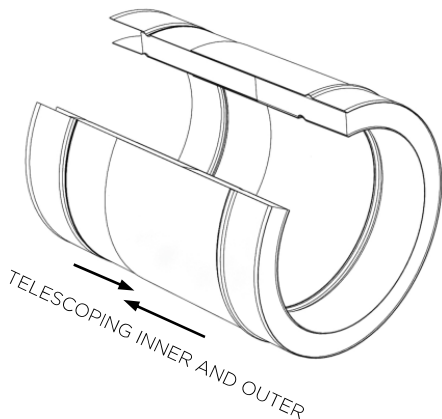
Adjustable Lengths incorporate a telescoping length that compensates inner thermal expansion. These adjustable lengths ship completely assembled, and no modifications are required in the field.

The minimum installed length of the 18AL is 10.5".
The maximum installed length of the 18AL is 15.5".

The minimum installed length of the 30AL is 22.5".
The maximum installed length of the 30AL is 27.5".

Adjustable Lengths (AL) are intended to be used in negative internal pressure applications only. For positive pressure applications use Adjustable Lengths w/ Gasket (18AG or 30AG), or Adjustable Lengths w/ Graphite Packing (18ALG or 30ALG).

Figure 3-7, 18" & 30": Adjustable Lengths



18" & 30" ADJUSTABLE LENGTHS W/ GRAPHITE PACKING (___ALG)

Adjustable Lengths with Graphite Packing have two functions: to serve as an expansion joint and to make up for a required odd length. The adjustable length incorporates a telescoping inner liner that accommodates thermal expansion in longer runs of pipe. It telescopes into a larger diameter stationary length and is sealed by a heavy gage clamp/graphite packing sealing system. It is finished off with a clam shell outer jacket.

Adjustable Lengths ship completely assembled at the "maximum Installed Length" shown herein, and no modifications are required in the field when used only as an expansion joint.

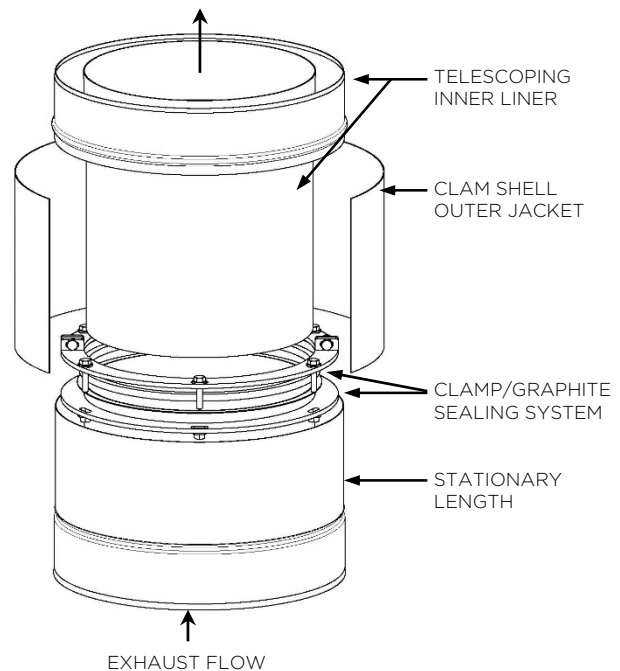
When also using the Adjustable Length to make up for an odd length, you must remove the outer jacket and loosen the clamp/graphite seal to allow the telescoping inner to easily slide further into the stationary length. The insulation may need to be trimmed back also. Tighten the sealing system back in place.

To assure correct engagement of the inlet and outlet ends, the Adjustable Length must be installed to the connecting pipe or fitting while the graphite seal is tightened (either before loosening as the adjustable ships or after tightening when used to make up an odd length).

The Adjustable Length with Graphite Packing has been evaluated by UL and confirmed suitable for positive internal static pressures up to 8" WC (2000 Pa).

CAUTION: ALG is limited to 8" WC (2000 Pa) positive pressure. ALG is not intended for use with oil or solid fuel.

Figure 3-9, ALG Adjustable Length Model DWKL Assembly



PART 3 – PIPE & OTHER LENGTHS

Figure 3-10, Adjustable Length Clamp/Graphite Sealing System Detail

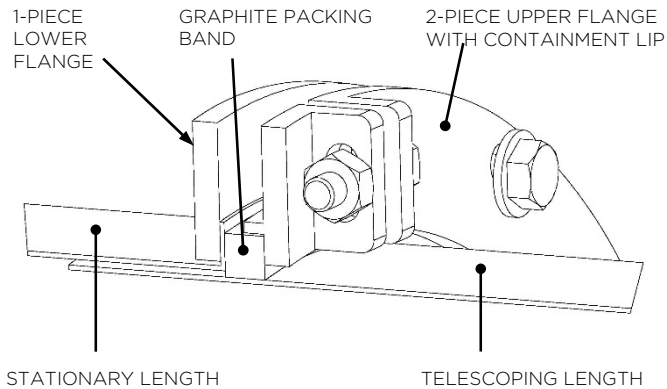
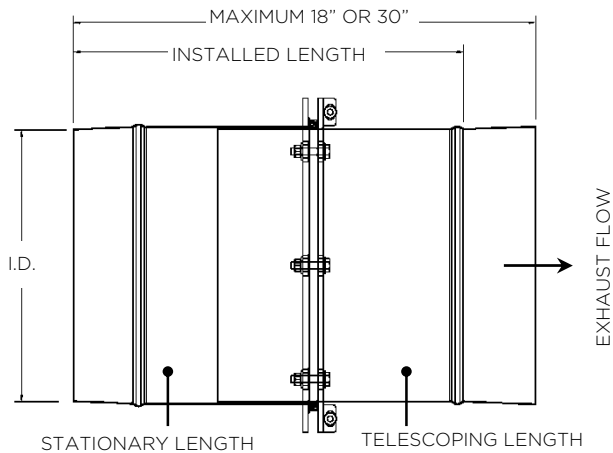


Figure 3-11, 18" & 30" ALG Adjustable Length Dimensions



- The minimum Installed Length of the 18ALG is 11.6"
- The maximum Installed Length of the 18ALG is 15.8"
- The minimum Installed Length of the 30ALG is 15.8"
- The maximum Installed Length of the 30ALG is 27.8"

The above figure shows Model SWKL which is exactly the same as the inner liner of Model DWKL.

Do NOT extend the telescoping inner outwards further away from the stationary length than the above "maximum Installed Length".

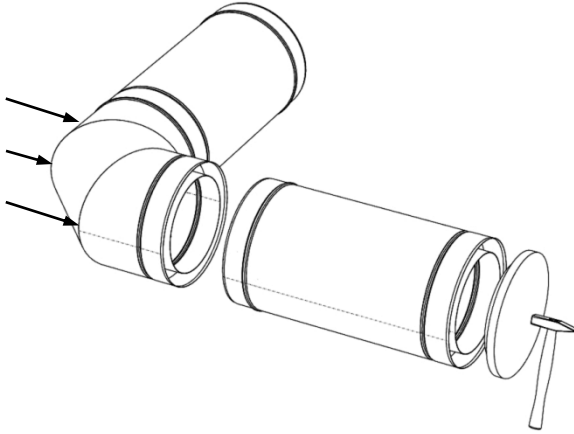
In horizontal Adjustable Length installations, add guides near each end to assure correct alignment at all times. In vertical installations, place the Adjustable Length just below a Support as the Adjustable Length is not load bearing.

PART 4 - FITTINGS, TEE CAPS, & INCREASERS

SPECIAL CONSIDERATION FOR INSTALLING FITTINGS

When tapping the pipe length into the fitting, 2nd person must hold the fitting in place from behind.

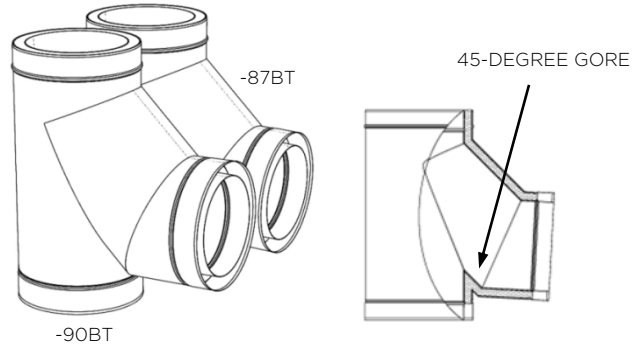
Figure 4-1, Special Consideration for Fittings



87° & 90° BOOT TEE (__BT)

Jeremias Boot Tees offer the added 45-degree gore that directs the flue gases towards the outlet at a 45-degree angle. Most others still allow the flue gases to enter the outlet branch at 90-degrees. Snout can be same or any size smaller than the body.

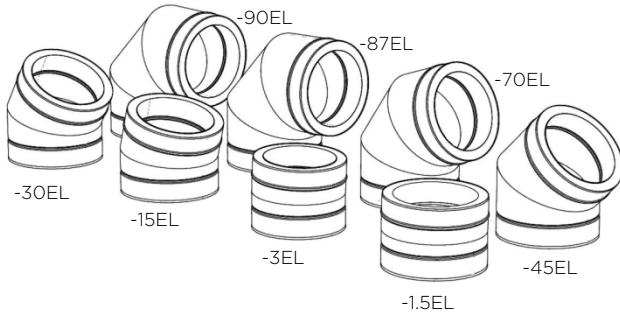
Figure 4-4, 87° & 90° Boot Tee (__BT)



1.5°, 3°, 15°, 30°, 45°, 70°, 87°, & 90° ELBOW (__EL)

Elbows may be used singular or in combination to provide changes in direction.

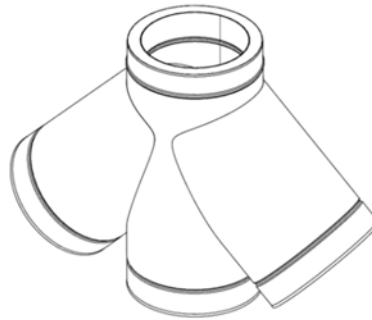
Figure 4-2, 1.5°, 3°, 15°, 30°, 45°, 70°, 87°, & 90° Elbows



45° DOUBLE TEE (45DT)

Used as a two-way manifold entry Tee, offset with one or two of the access cap options, or base Tee with one of the drain tee caps options. Snouts can be any size smaller than the body.

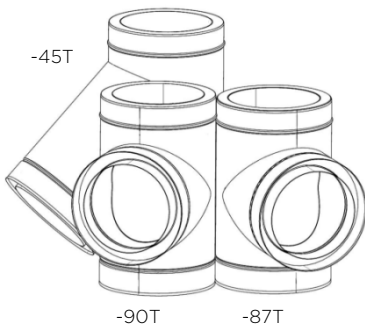
Figure 4-5, 45° Double Tee



45°, 87°, & 90° TEE (__T)

Used as a manifold entry Tee, offset with one of the access cap options, or base Tee with one of the drain tee caps options. Snout can be same or any size smaller than the body.

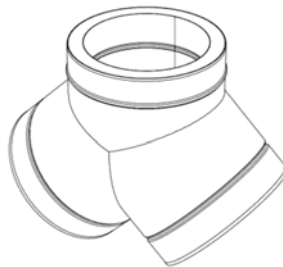
Figure 4-3, 45°, 87°, & 90° Tees



90° WYE TEE (90WT)

Used for two-way entries where a tee cap or access cannot be used due to the application or as a 90° that can have an access cap at the middle.

Figure 4-6, 90° Wye Tee



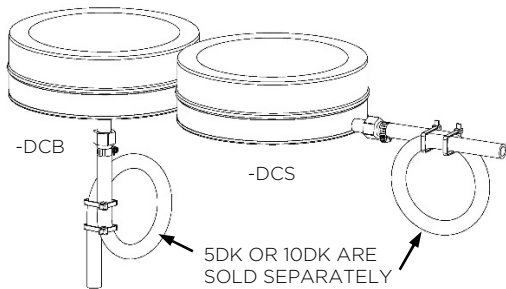
PART 4 - FITTINGS, TEE CAPS, & INCREASERS

DRAIN TEE CAPS (DCB & DCS)

Two styles of Drain Tee Caps are available. Each includes a 1" NPT Nipple for a drain line attachment by the installing contractor or use of Jeremias' Drain Tube Kit.

The DCB (B for Bottom) has the nipple at the base. The DCS (S for Side) has the nipple on the side which is convenient in certain applications where the horizontal appliance outlet is very low to the floor.

Figure 4-7, Drain Tee Caps



DRAIN TUBE KITS (5DK & 10DK)

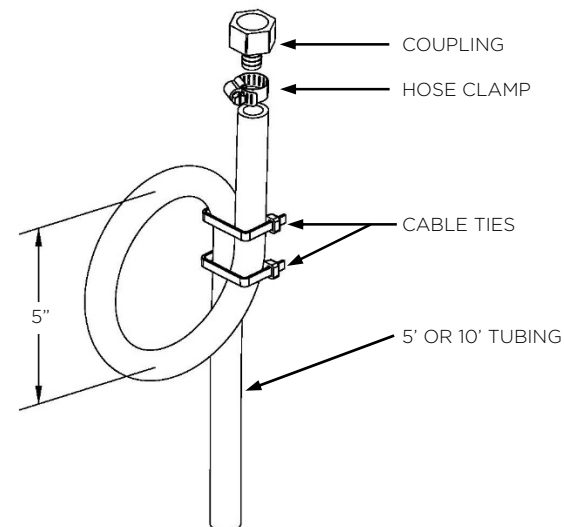
The Jeremias Drain Tube Kits contains:

- 1) 1" N.P.T to 5/8" hose coupling
- 2) Hose clamp
- 3) 5/8" Silicone Tube in 5' or 10' length
- 4) Two (2) cable ties

When installing the Drain Tube Kits be sure make a trap by forming a 5" diameter loop and secure with the provided cable ties. Fill the trap with water before attaching the tube to the coupling and securing the hose clamp.

Check local codes/regulations to determine how the condensate fluid is to be drained. Local regulations may require the use of a neutralizer kit when using a condensate trap. A condensate pump may also be required. Contact the appliance manufacturer or local distributor if the neutralizer kit and/or condensate pump is required.

Figure 4-8, Drain Tube Kit

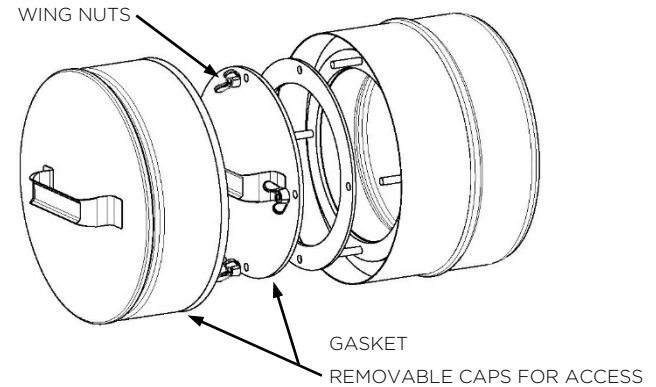


TEE CAP ACCESS (TCA)

Tee Cap Access permits access to the inside of the vent for inspection and/or cleaning. It can be placed at the end of a snout of any three or four-way fitting.

Gasket and hardware are included so that the internal cap may be removed and reinstalled.

Figure 4-9, Tee Cap Access



INCREASERS AND REDUCERS

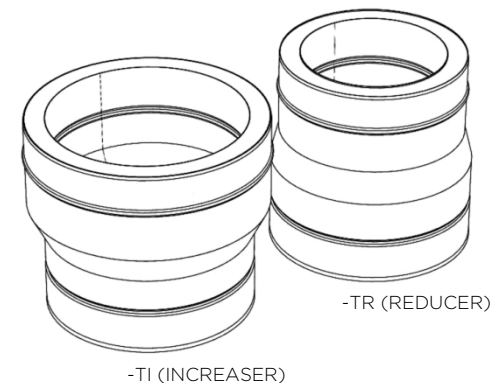
Reduction fittings are typically used in manifold applications when needed. There are many options for increasers and reducers.

TAPERED INCREASER & REDUCER (TI & TR)

Tapered Increasers and Reducers keep the same centerline.

Be cautious of using these in the horizontal, due to increased or decreased diameter changes this will cause a low point in the exhaust where condensate can trap. Use the Eccentric increaser and reducer in horizontal installations instead.

Figure 4-10, Tapered Increaser and Reducer

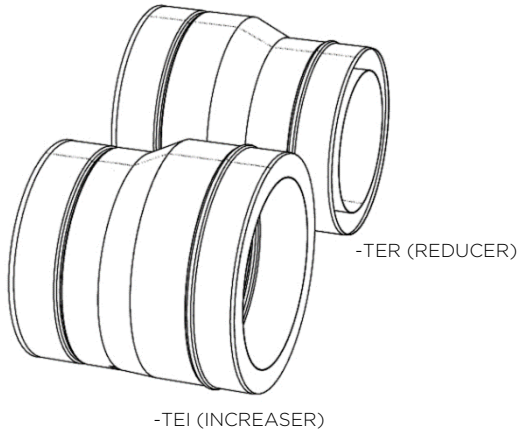


PART 4 - FITTINGS, TEE CAPS, & INCREASERS

TAPERED ECCENTRIC INCREASER & REDUCER (TEI & TER)

Tapered Eccentric Increases and Reducers keep the same low point, or are flat on bottom. They also create a slight centerline offset if used in the vertical installation.

Figure 4-11, Eccentric Increaser and Reducer

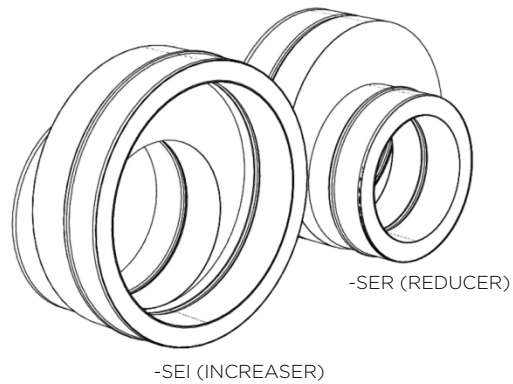


STEPPED ECCENTRIC INCREASER & REDUCER (SEI & SER)

Stepped Eccentric Increases and Reducers can be used in tight situations and are available in all steps.

The Stepped Eccentric Increases and Reducers are non-structural part and must not be subject to loads in either the axial or lateral directions.

Figure 4-13, Stepped Eccentric Increaser and Reducer



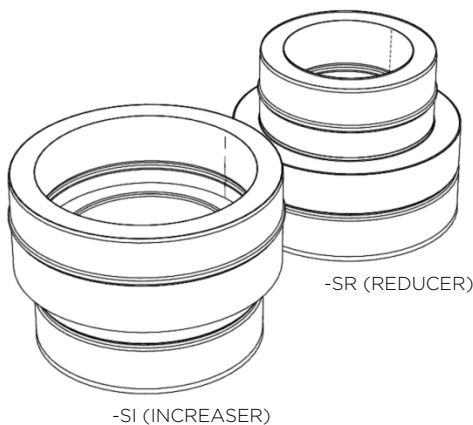
STEPPED INCREASER & REDUCER (SI & SR)

Stepped Increases and Reducers can be used in tight situations and are available in all steps.

The stepped increasers and reducers are non-structural part and must not be subject to loads in either the axial or lateral directions.

Be cautious of using these in the horizontal. Increased or decreased diameter changes will cause a low point in the exhaust where condensation can trap. Use the Eccentric increaser and reducer parts in horizontal installations instead.

Figure 4-12, Stepped Increaser & Reducer



PART 5 - ADAPTERS & TERMINATIONS

START & END ADAPTERS

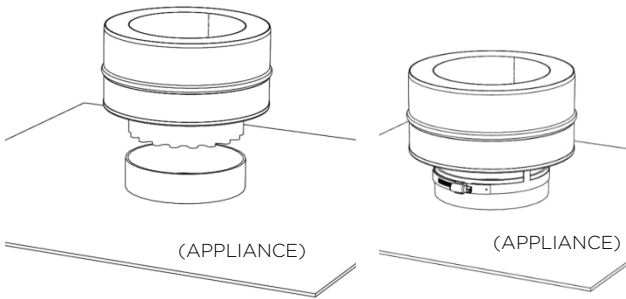
Since Models DWKL and SWKL are directional with flow, both START and END adapters are typically used in every application.

Up to 550°F flue gas temperatures use Dow Corning 736 or equivalent sealant. Above 550F use only appliance approved gaskets/blanket (that comes with equipment you are connecting to such as ANSI flange connections on engine and power generation equipment)

RAW COLLAR ADAPTER (INSIDE) START & END (RCIS & RCIE)

Connects Models DWKL and SWKL to a nominal collar via flashing inside the appliance collar. Has a support clamp around the outside that rigidly holds the adapter in place. Use approved sealant for gas tight connection.

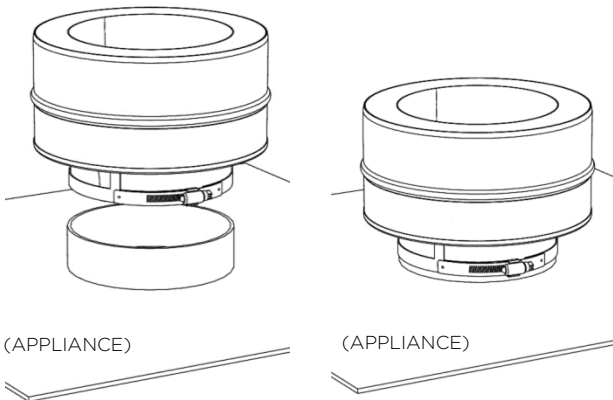
Figure 5-1, Raw Collar Adapter (Inside) Start & End



RAW COLLAR ADAPTER (OUTSIDE) START & END (RCOS & RCOE)

Connects Models DWKL and SWKL to a nominal collar on the outside of the appliance collar. The adapter is split and uses hardware to tighten against the outside of the collar. Use approved sealant for gas tight connection.

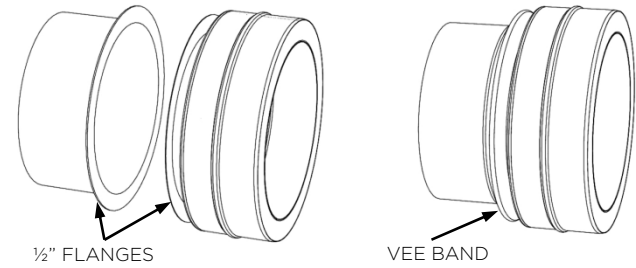
Figure 5-2, Raw Collar Adapter (Outside) Start



FLANGE COLLAR ADAPTER START & END (FCS & FCE)

Connects SWKL and DWKL to any 1/2" flange, typical for many accessories and appliance connections. An optional vee band may be added to secure the flange in place. Use approved sealant for gas tight connection.

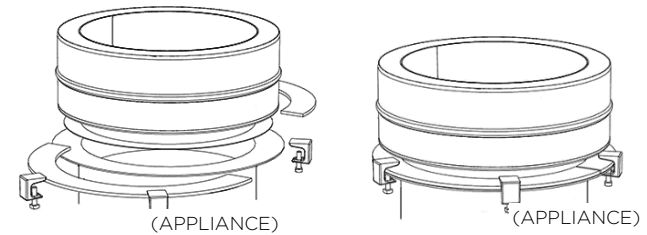
Table 5-3, Flange Collar Adapter with Optional Vee Band



FLANGE COLLAR KIT (FCK)

Connects SWKL and DWKL to any flanged appliance outlet and includes a split plate and beam clamps. Use approved sealant for gas tight connection

Table 5-4, Flange Collar Kit

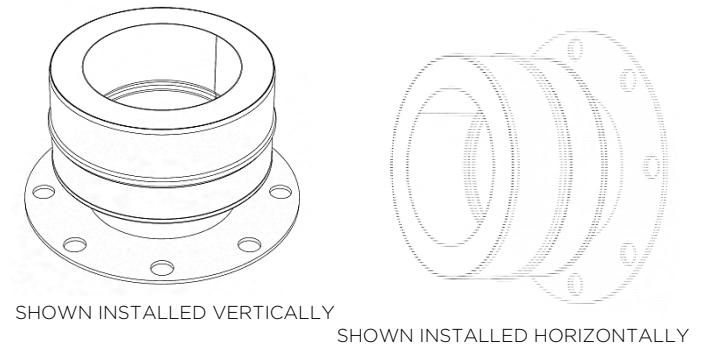


125/150 LB. ANSI FLANGE START & END (AFS & AFE)

125/150 ANSI Flange Start and End are typically used to connect to and from engine and cogeneration equipment.

These items do not come with hardware and gasket for the ANSI flange connection. These are typically supplied by the equipment you are connecting to.

Figure 5-5, 125/150 Lb. ANSI Flange Start & End



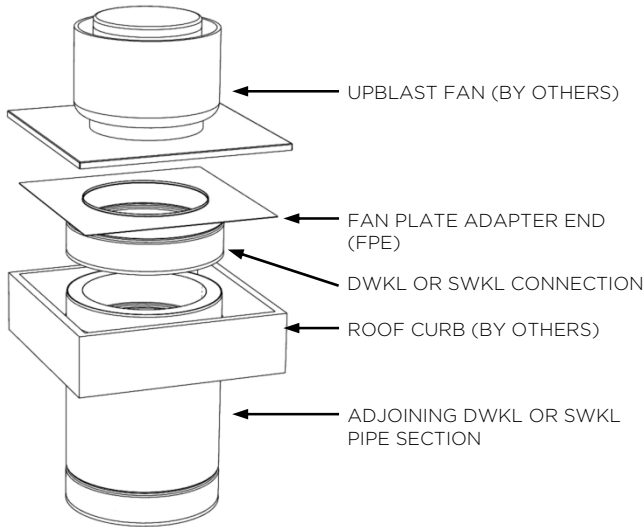
PART 5 - ADAPTERS & TERMINATIONS

FAN PLATE ADAPTER START & END (FPS & FPE)

This is a heavier gauge flat plate that can be used to start at a masonry fireplace outlet, or to attach a fan or fan curb housing at the termination.

When used as a Fan Plate Adapter End (as shown in below Figure 5-6), the flat plate is designed to set directly on top of the roof curb (by others). The installing contractor uses bolts or screws through the plate into the curb.

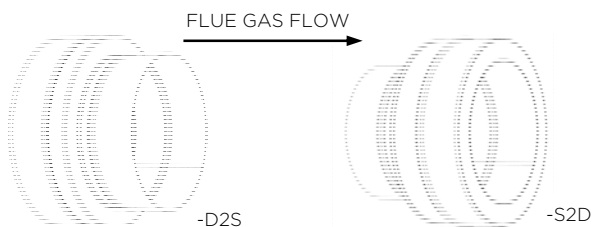
Figure 5-6, Fan Plate Adapter End



DWKL TO SWKL & SWKL TO DWKL ADAPTERS (D2S & S2D)

These adapters allow a smooth transition to and from DWKL double wall and SWKL single wall. They may be installed vertically or horizontally.

Figure 5-7, DWKL/SWKL Adapters



TERMINATIONS

See GENERAL INFORMATION for termination height above roof requirements.

There are two options to most terminations:

- 1) No Screen (N) or With Screen (S)
- 2) Low Temperature or High (H) Temperature

Jeremias uses 1" x 1" x 0.059" thick stainless steel wire mesh for termination screens. The purpose of a screen is to not allow debris or personnel into the exhaust and also used to restrict rodents or birds from entering the exhaust.

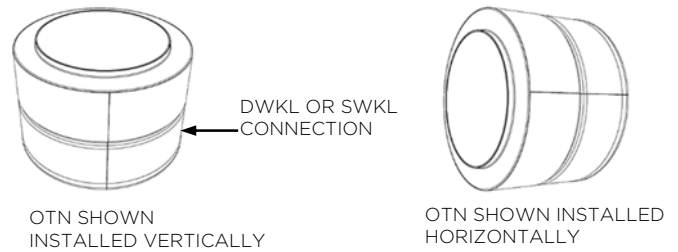
Model DWKL inner pipe will expand to a much greater length than the outer jacket. Some terminations are purposely designed to compensate for this expansion. Low temperature means any application that would have less than 1/2" expansion. High temperature means where expansion could be more than 1/2" but not greater than 6" of expansion between the inner and outer pipes.

OPEN TERMINATION (OTN, OTNH, OTS, & OTSH)

An Open Termination that is unrestrictive. Used in both vertical and sidewall scenarios. Use the Universal Drain Length (UDL) or Drain Tee Cap (DCB or DCS) below to drain rainwater from the exhaust.

The open Termination connects to the Model DWKL or SWKL pipe using a standard Locking Band (LB)

Figure 5-8, Open Termination

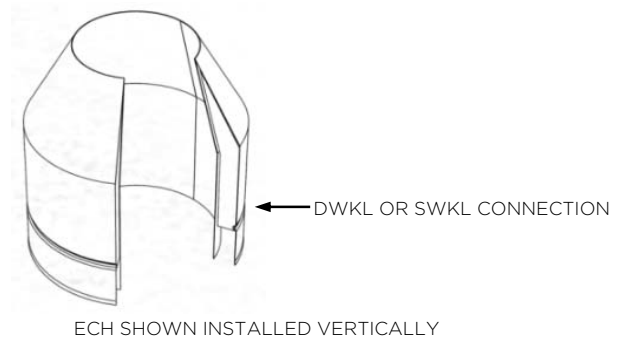


EXIT CONE (EC & ECH)

The Exit Cone increases velocity by 50%. Use the Universal Drain Length (UDL) or Drain Tee Cap (DCB or DCS) below to drain rainwater from the exhaust.

The Exit Cone connects to the Model DWKL or SWKL pipe using a standard Locking Band (LB).

Figure 5-9, Exit Cone



PART 5 - ADAPTERS & TERMINATIONS

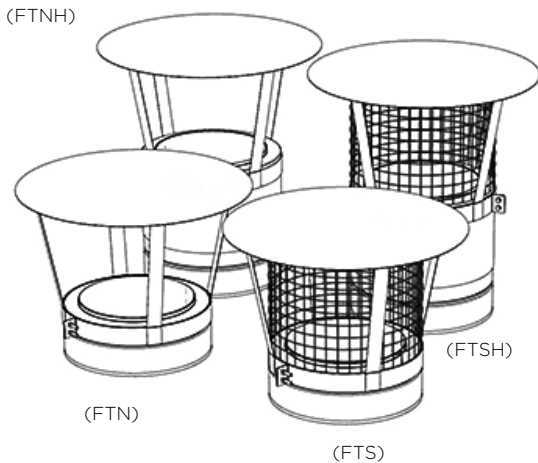
FLAT TOP RAIN CAP (FTN, FTNH, FTS, & FTSH)

A basic flat top rain cap.

Part includes an Open Termination (OTN or OTNH) and shipped completely assembled. The top may be field removed by temporarily removing the bolts on the clamping band if access is required.

The Flat Top Rain Cap connects to the Model DWKL or SWKL pipe using a standard Locking Band (LB).

Figure 5-10, Flat Top Rain Cap options

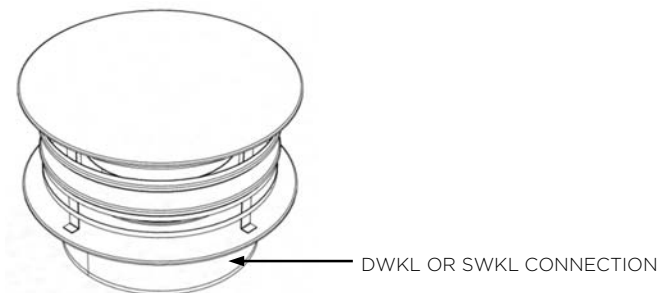


HIGH WIND RAIN CAP (WRC)

This cap helps to reduce downdraft on gravity equipment and provides best rain protection.

The High Wind cap connects to the Model DWKL or SWKL pipe using a standard Locking Band (LB).

Figure 5-12, High Wind Cap



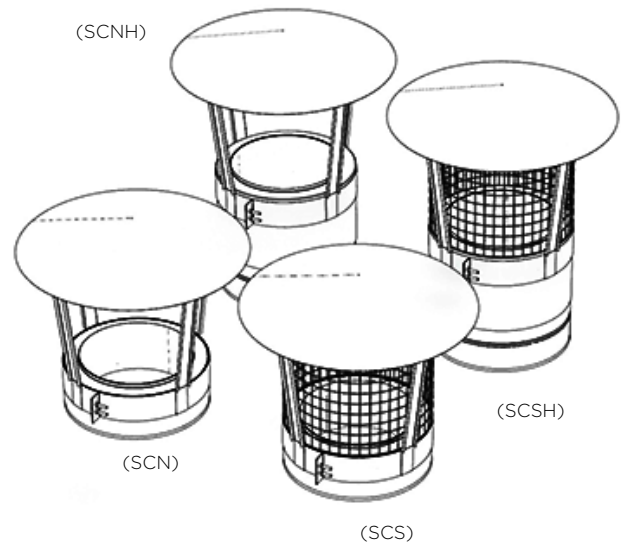
STACK CAP (SCN, SCNH, SCS, & SCSH)

An ASHRAE style of rain cap, also known as china cap, has an inverted cone to help disperse flue gases and to provide a lower pressure drop.

Part includes an Open Termination (OTN or OTNH) and shipped completely assembled. The top may be field removed by temporarily removing the bolts on the clamping band if access is required.

The Stack Cap connects to the Model DWKL or SWKL using a standard Locking band (LB).

Figure 5-12, Stack Cap options

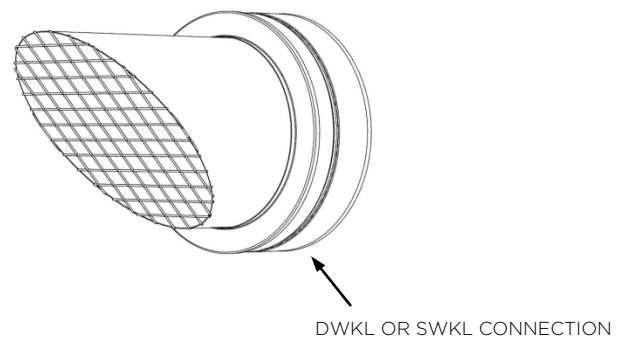


MITER CUT TERMINATION W/ SCREEN (MCS & MCSH)

The Miter Cut Termination can be used horizontal venting.

The Miter Cut Termination connects to the Model DWKL or SWKL using a standard Locking band (LB).

Figure 5-13, Miter Cut Termination



PART 5 - ADAPTERS & TERMINATIONS

90° & 30° Elbow Terminations (90ET & 30ET)

The Elbow Terminations are used for sidewall terminations or at the end of a vertical stack as specified by certain appliance manufacturers.

The Elbow Terminations connects to the Model DWKL or SWKL using a standard Locking band (LB).

Figure 5-14, 90° Elbow Termination

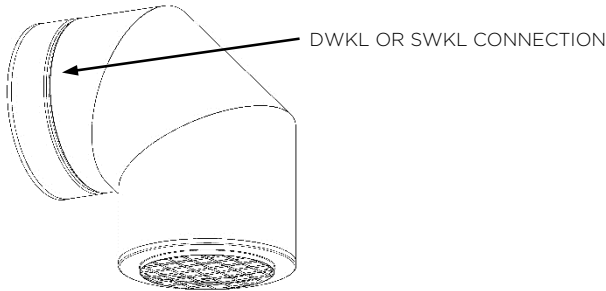
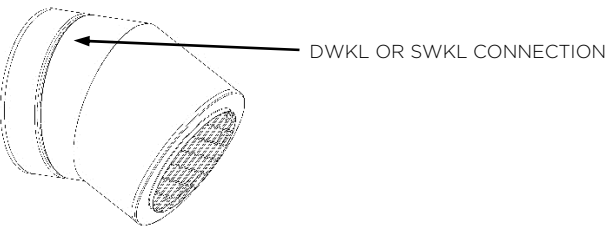


Figure 5-15, 30° Elbow Termination

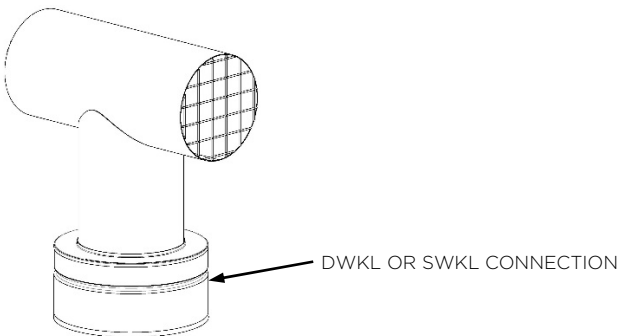


90° Tee Termination (90TT)

The 90° Tee Termination is used for sidewall terminations or vertical terminations as specified by certain appliance manufacturers.

The 90° Tee Termination connects to the Model DWKL or SWKL using a standard Locking band (LB).

Figure 5-16, 90° Tee Termination



NO-LOSS WEATHER HEAD (NLWH)

The No-Loss Weather Head (NLWH) incorporated as part of the Jeremias Inc. DWKL and SWKL product offering is the same type and construction as no loss weather head style terminations used for vent applications in North America and other parts of the world for decades.

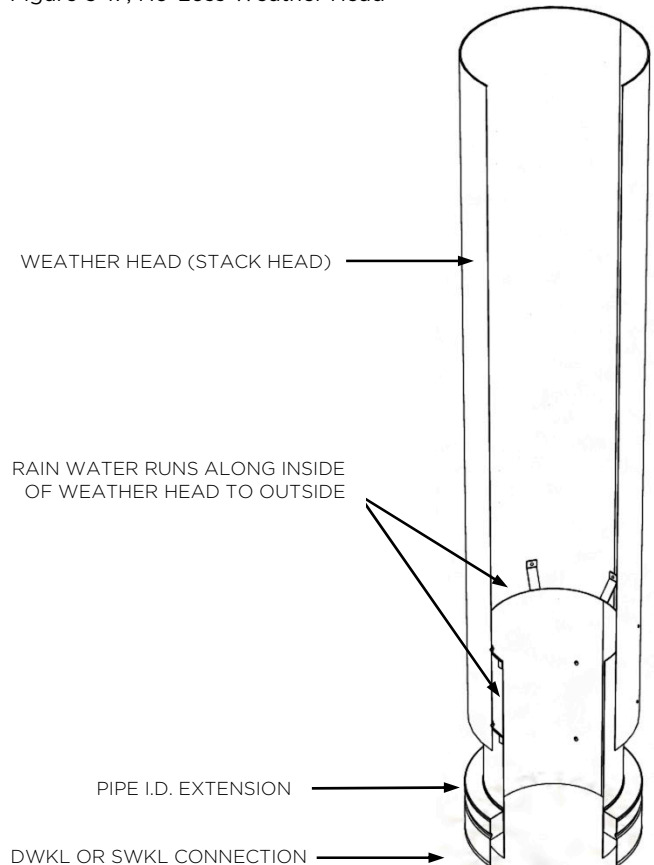
It is a very popular style of termination that provides the unique combination of appreciable rain protection without any obstruction to the vertical exit of the flue gases. It is detailed in American Conference of Governmental Industrial Hygienists (ACGIH) and American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) handbooks.

At present (June 2014), Underwriters Laboratories, Inc. (UL) has no safety standard for these devices so although they are shown in this document and condoned by NFPA, Jeremias Inc. and others, UL has not independently investigated this product.

If the total height exceeds the freestanding distance (Dimensions C) as shown in Section 2 - Support and Guiding, the structural engineer should support and guy the No-Loss Weather Head in accordance with good engineering practice to suit each specific application.

The No-Loss Weather Head incorporates the Open Termination (OTN) at the base and connects to the DWKL or SWKL pipe using a normal Locking Band (LB).

Figure 5-17, No-Loss Weather Head



PART 6 - THIMBLE & FLASHINGS

THIMBLE & FLASHINGS OPTIONS

Following is a list of all thimbles and flashings;

- 1) Roof Thimble (HTT)
- 2) Flat Roof Flashing (FRF)
- 3) Pitched Roof Flashing (PRF)
- 4) Storm Collar (SC)
- 5) Flat Cone Flashing (FCF)
- 6) Pitched Cone Flashing (PCF)
- 7) Storm Collar for Coned Flashings (SCCF)
- 8) Sidewall Thimble (LTT)
- 9) Wall Thimble (WTS or WTR) for 3" & 4" SWKL

ROOF THIMBLE (HTT)

This roof thimble provides safe installation against combustible materials. It is part of the Unvented Roof Assembly (see Figure 6-7). Only for DWKL use.

The thimble is fiber insulated and includes a lateral pipe guide with hardware at the top. The thimble extends 12" from the installation brackets. Hardware to connect brackets to the roof or wall is not included.

Figure 6-1, Roof Thimble (HTT)

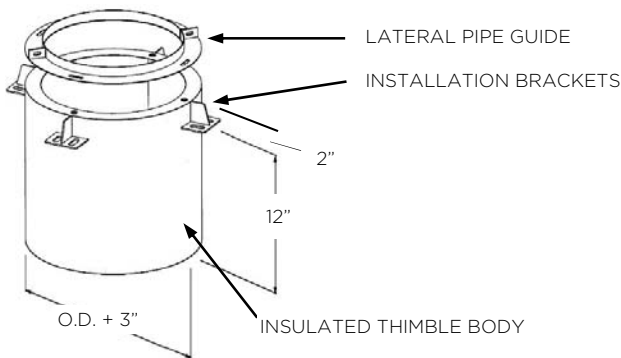
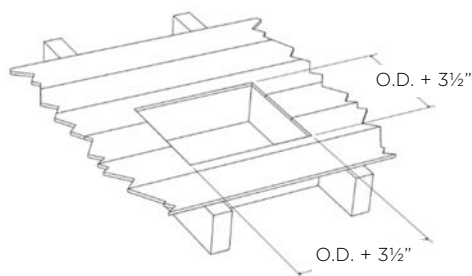


Figure 6-2, Roof Framing for Roof Thimble (HTT)



ROOFS WITH A SLOPE OR PITCH

When using the roof thimble with sloped roof construction, the installing contractor has two choices:

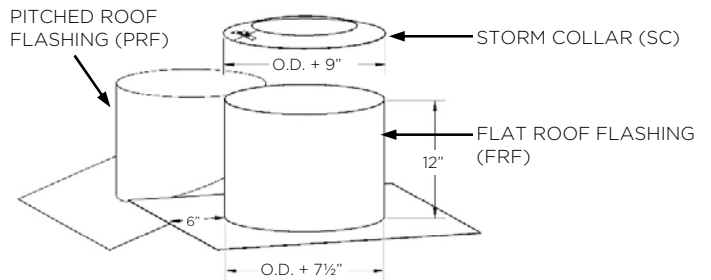
- 1) Fabricate a flat, horizontal curb for installation of the roof thimble shown. The curb extends out from the high side of the roof opening.
- 2) Order a special version of the roof thimble that has the brackets factory installed to match the desired roof pitch.

In all cases, it is important to insure that the thimble body extends down at least 1" past the lowest portion of the roof framing when installed. Thimbles with extended length bodies are available on special request from the factory.

FLAT & PITCHED ROOF FLASHINGS (FRF & PRF) & STORM COLLAR (SC)

The Flat Roof Flashing and Pitched Roof Flashing can be used for non-combustible construction and also fit over the Roof Thimble (HTT) as part of the Roof Assembly with Thimble when DWKL is used for chimney or vent applications with 1000°F flue gases or less. The Storm Collar flashes above the roof flashing and is sealed to the outer jacket (but not attached to the flashing permitting expansion).

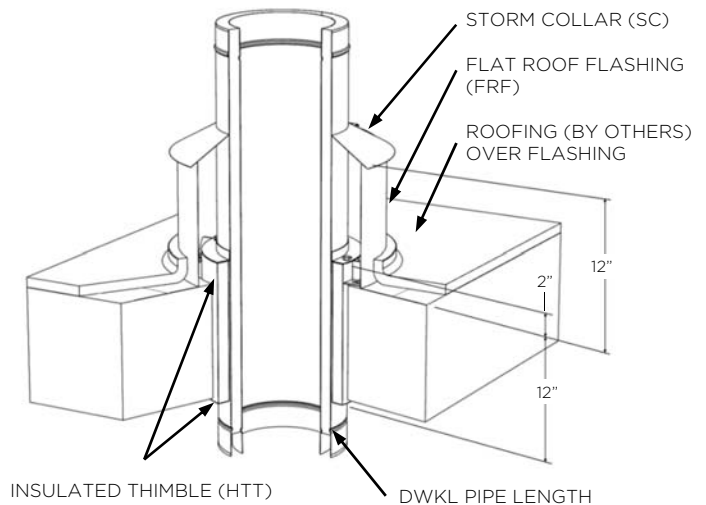
Figure 6-3, Flat & Pitched Roof Flashing and Storm Collar



ROOF ASSEMBLY WITH THIMBLE

UL has determined the Roof Thimble (HTT) alone, without ventilation, provides a safe installation through a combustible roof for Model DWKL applications with 1000°F flue gases or less. This also applies to enclosed Special Gas Vents, Type B Vents, and Type L Vents. In this manner, the Flat Roof Flashing (FRF) in conjunction with the standard Storm Collar (SC) is used.

Figure 6-4, Roof Assembly with Thimble

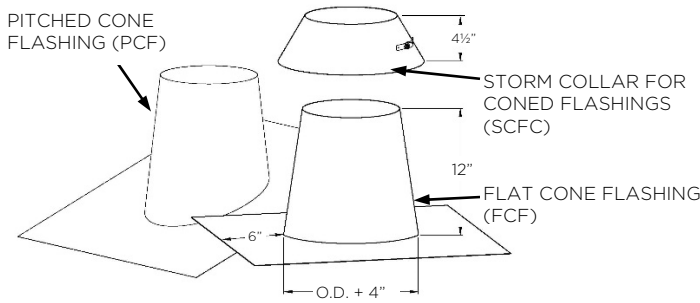


FLAT & PITCHED CONE FLASHINGS (FCF & PCF) & STORM COLLAR (SCCF)

The Flat Cone Flashing and Pitched Cone Flashing can be used for non-combustible construction. The Storm Collar for Coned Flashings flashes above the Cone Flashings and is sealed to the outer jacket (but not attached to the flashing permitting expansion).

PART 6 - THIMBLE & FLASHINGS

Figure 6-5, Flat & Pitched Cone Flashings and Storm Collar



SIDEWALL THIMBLE (LTT)

This wall thimble provides safe installation against combustibles materials. Only for DWKL use. Noncombustible wall penetrations do not require a thimble.

The LTT thimble is fiber insulated and includes a heavy gage outside wall plate that is welded to the thimble that centers the DWKL pipe. A floating inside plate is also provided to finish the inside wall opening. The Outside Plate is attached to the wall by the installing contractor. Both the outside and inside plates measures 10" larger than the DWKL pipe I.D.

The minimum framed opening is DWKL pipe I.D. plus 6". The maximum wall thickness is 1 1/2".

Figure 6-6, Sidewall Thimble (LTT)

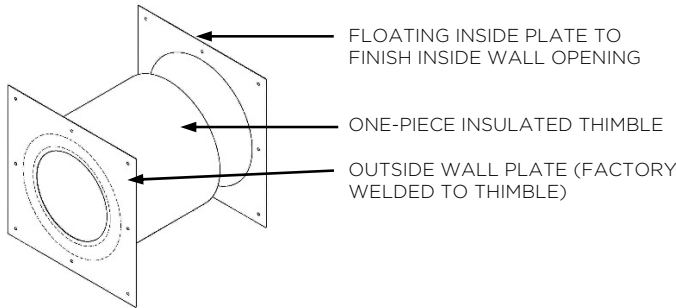
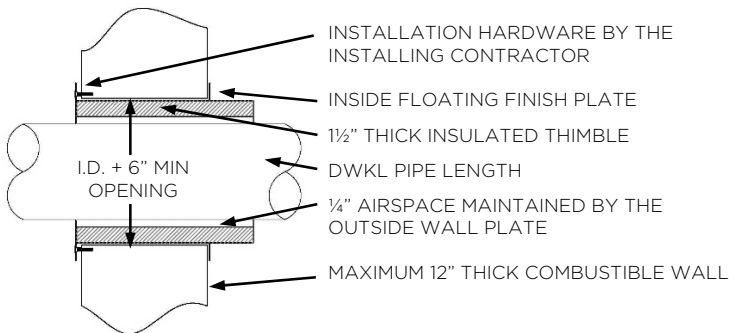


Figure 6-7, Sidewall Thimble (LTT), Installed Cross-Sectional View and Framing Dimension



WALL THIMBLE (WTS / WTR) FOR 3" & 4" SWKL

This wall thimble provides safe installation against passing through combustible wall for 3" and 4" SWKL for Special Gas / Type BH Vent Applications. Noncombustible wall penetrations do not require a thimble.

WTS has a Square Plate and WTR has a Round plate. The maximum wall thickness is 7".

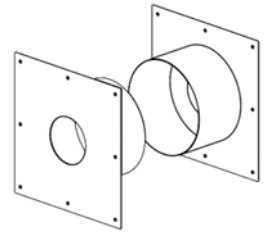
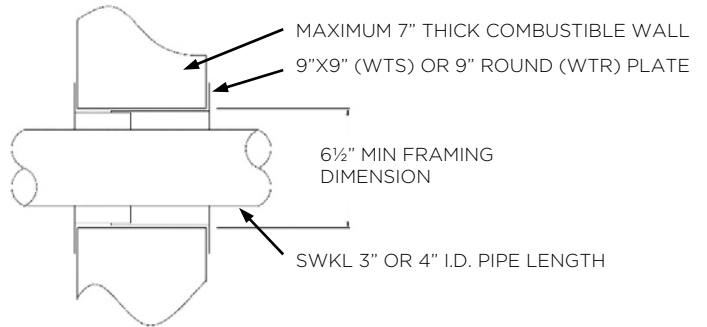


Figure 6-8, Wall Thimble (WT) for 3" & 4" SWKL

Figure 6-9, Wall Thimble (WT) for 3" & 4" SWKL, Cross-Sectional View and Framing Dimension



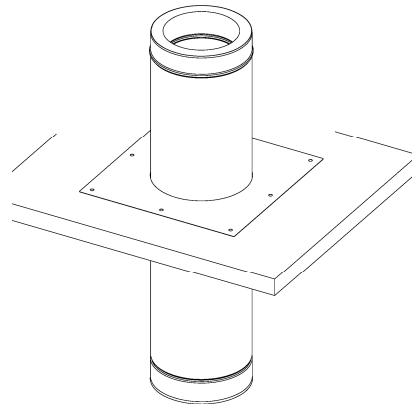
FIRESTOP SPACER (FS)

The Firestop Spacer is for use when penetrating a non-fire resistance rated ceiling or floor in installations where a separate fire rated enclosure is not required. Available in all diameters for DWKL, only 3" and 4" diameters of SWKL, and this Firestop is for venting applications only (not for use with UL-103 chimneys). The square plate measures pipe O.D. + 10".

For all diameters of DWKL: Clearances at DWKL firestops are 1" minimum for all "Unenclosed" and "Enclosed" applications.

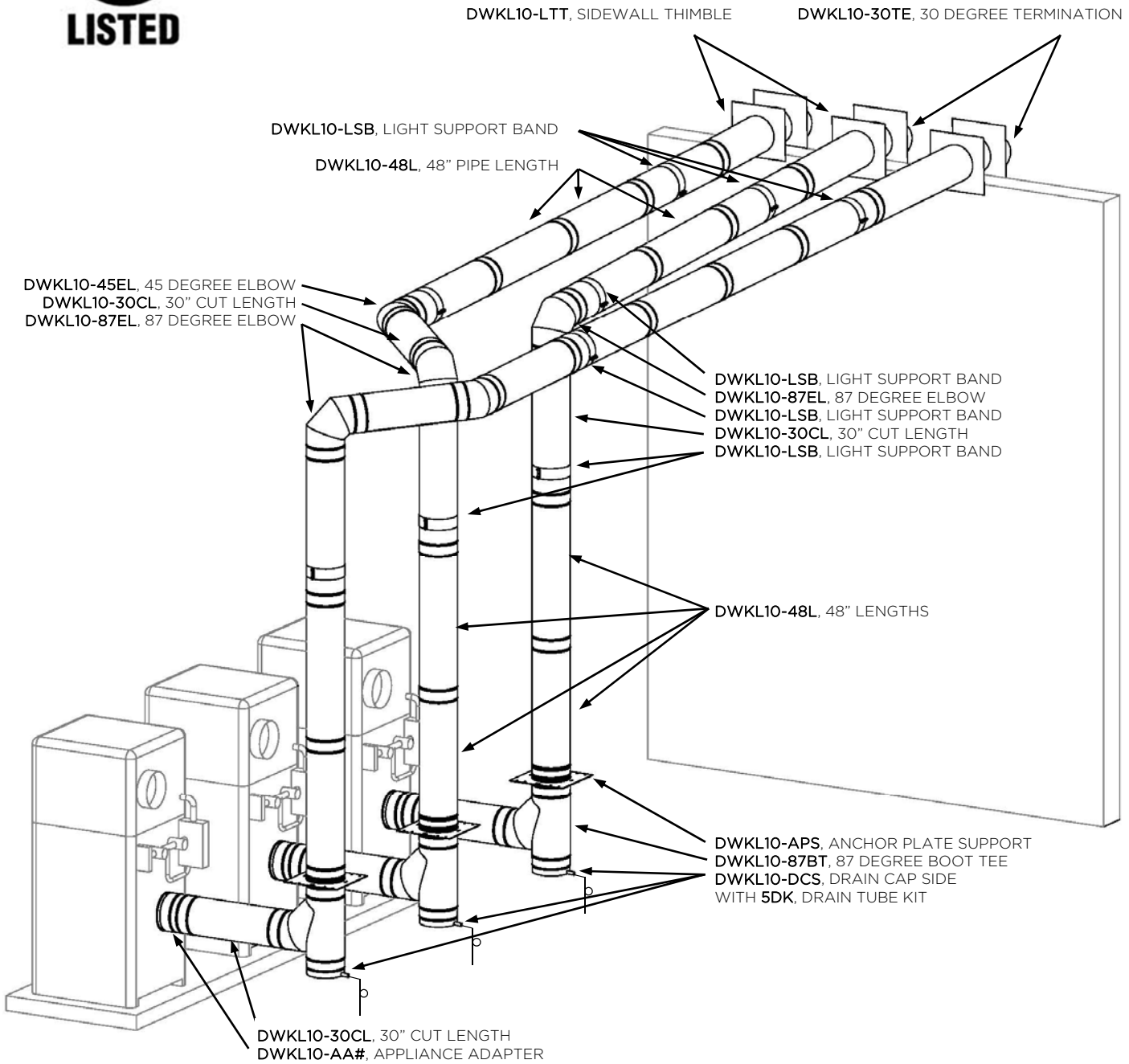
For 3" and 4" diameters of SWKL: Clearances at 3" and 4" SWKL firestops are per Table 1-4 in Part 1 of these instructions. For "Enclosed" applications in the "Horizontal" configuration, the Wall Thimble (WT) should be used.

Figure 6-10, Firestop



PART 7 - SAMPLE SYSTEMS

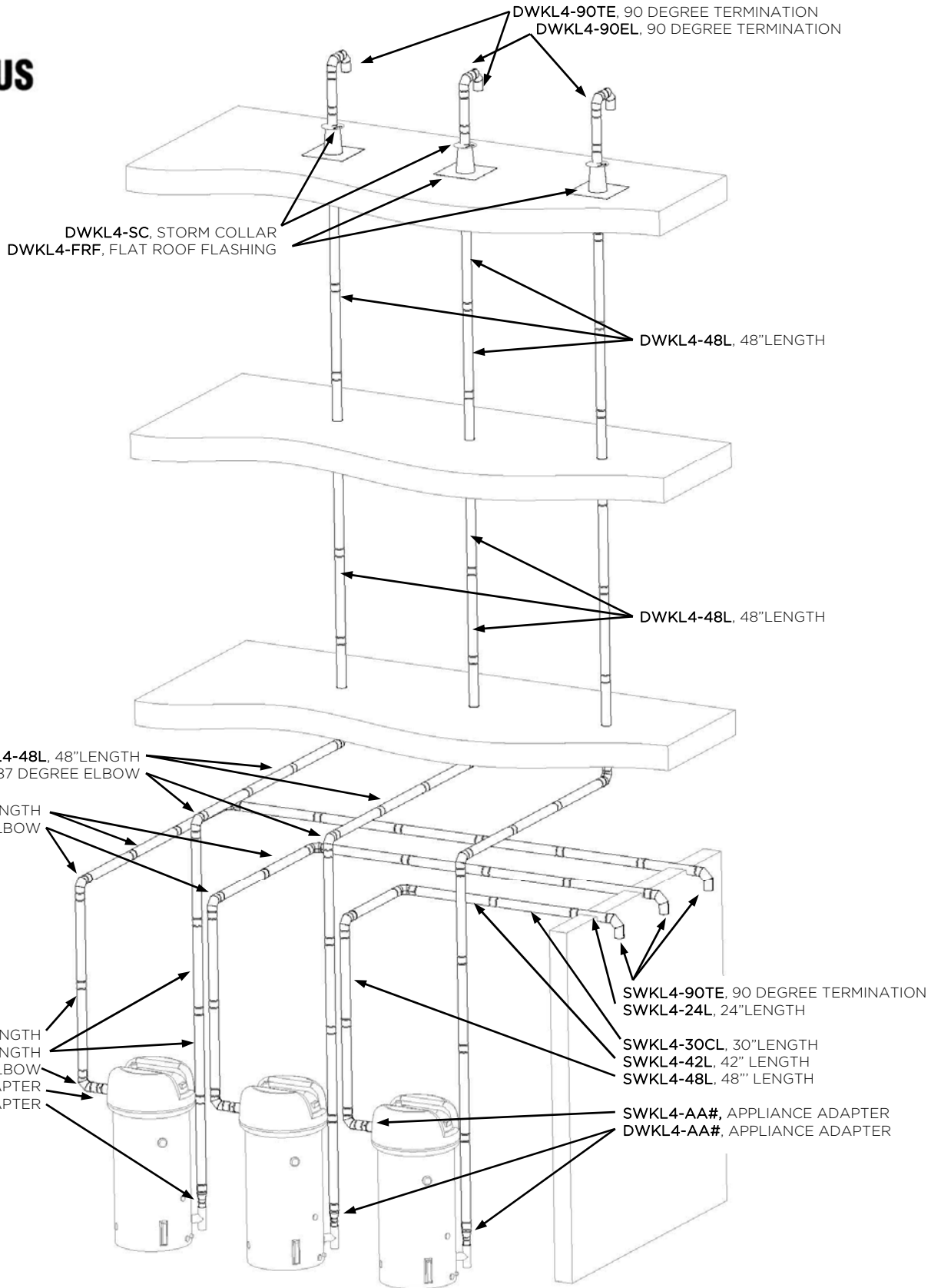
SAMPLE 1 - DWKL CATEGORY III OR IV SIDEWALL 3X 10" I.D. SIDEWALL VENTED



PART 7 - SAMPLE SYSTEMS

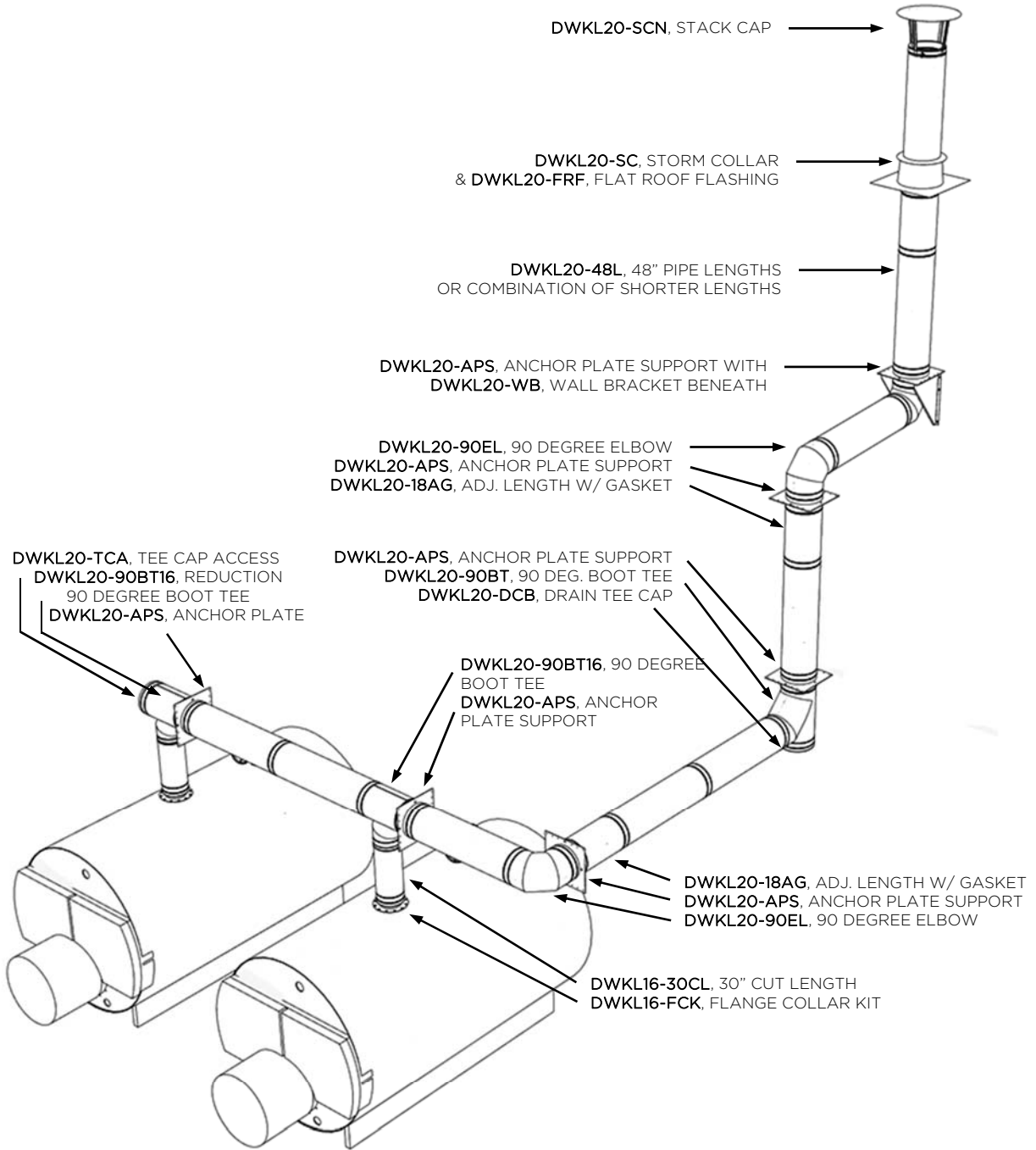
SAMPLE 2 - DWKL/SWKL SEALED COMBUSTION

3X 4" I.D. DWKL VERTICALLY VENTED WITH SWKL SIDEWALL INTAKES



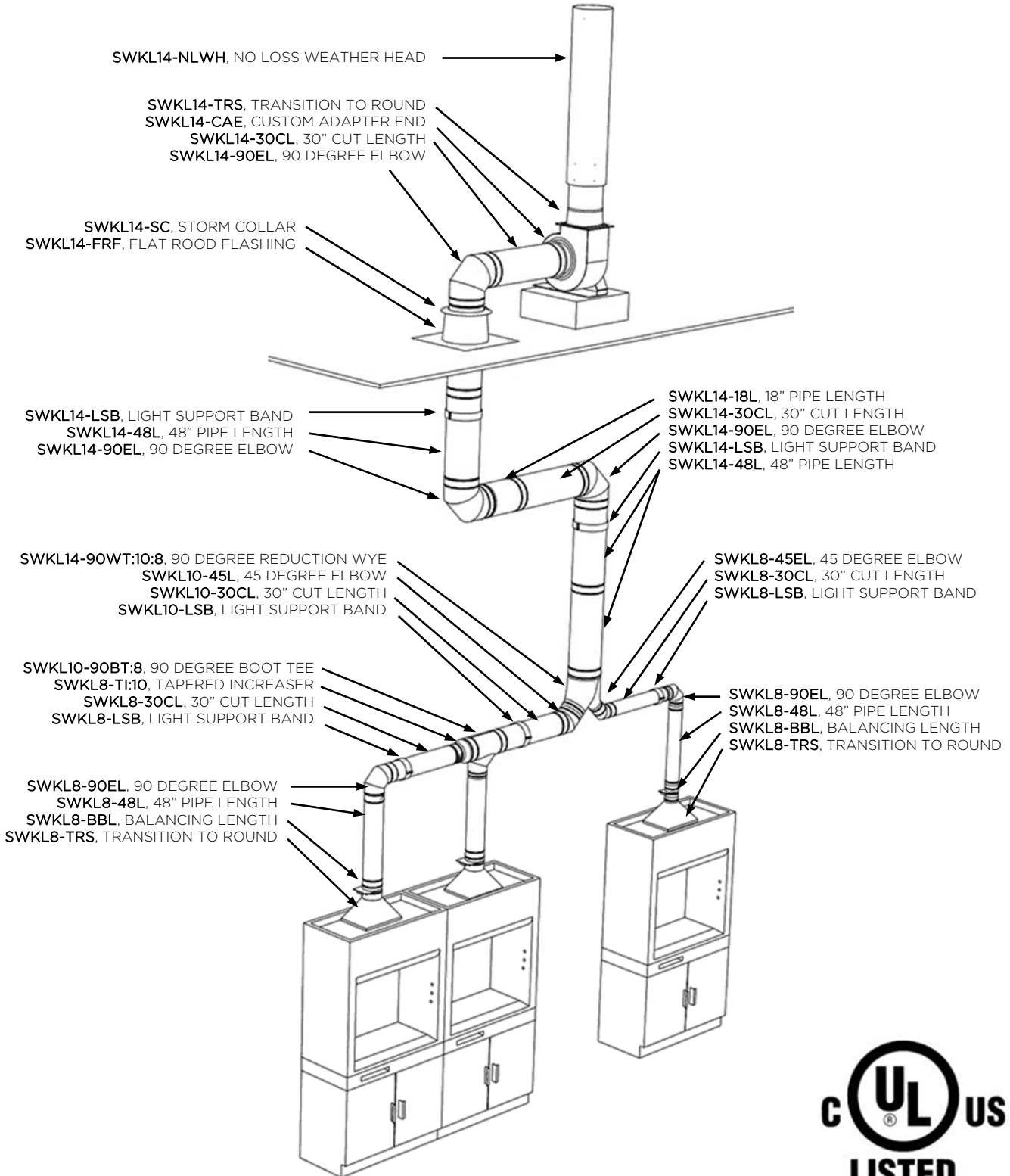
PART 7 - SAMPLE SYSTEMS

SAMPLE 3 - DWKL BOILER STACK 2X 16" I.D. INTO 20" I.D. / 22 1/2" O.D. STACK



PART 7 - SAMPLE SYSTEMS

SAMPLE 4 - SWKL FUME HOOD EXHAUST 3X 8" I.D. INTO 10" I.D. AND 14" I.D. SINGLE WALL EXHAUST



PART 7 - SAMPLE SYSTEMS

SAMPLE 5 - SWKL COMMERCIAL LAUNDRY DRYER EXHAUST 3X 8" I.D. INTO COMMON 16" I.D. WITH INLINE FILTER AND FAN

