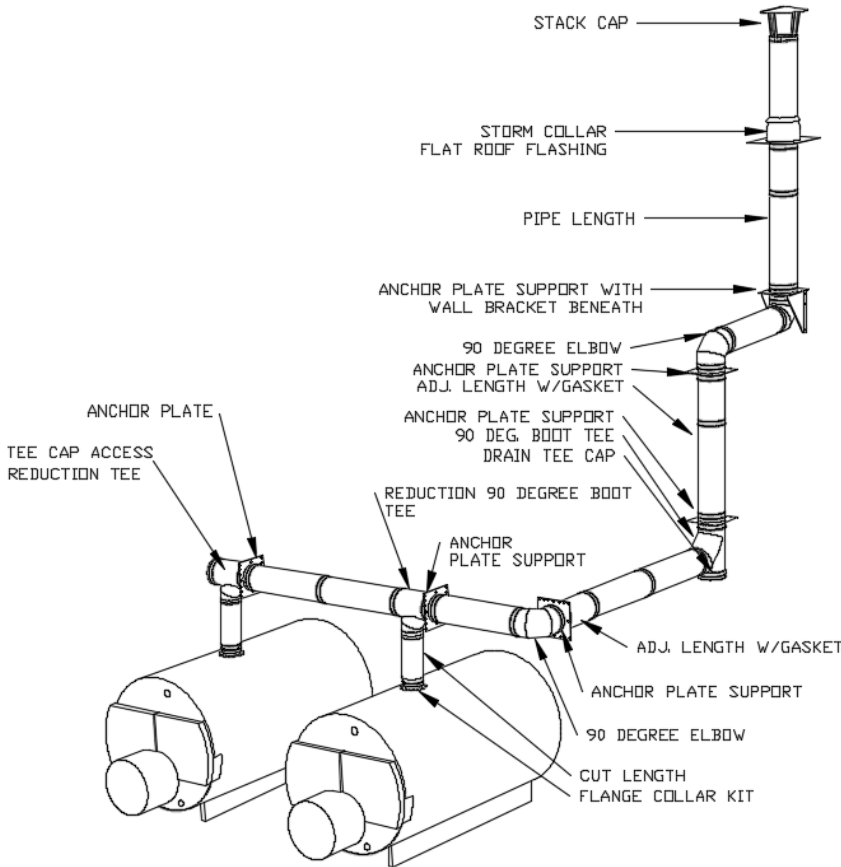


All Fuel Exhaust System

- Model SWAF – Single-Wall All Fuel Exhaust System
- Model DWAF+1 – Double-Wall All Fuel Exhaust System with 1.25” Fiber Insulation

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 damage prior to installation
- Proper joint assembly is essential for a safe installation – follow these instructions exactly as written and check severeness of joints upon completion of assembly
- This venting system must be free to expand and contract, and 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

⚠ WARNING

CARBON MONOXIDE POISONING HAZARD. Failure to follow the steps outlined below for each appliance being connected to the venting system being placed into operation could result in carbon monoxide poisoning or death.

⚠ WARNING

Risk of carbon monoxide poisoning or fire due to joint separation or pipe breakage.

A MAJOR CAUSE OF VENT RELATED FIRES IS FAILURE TO MAINTAIN REQUIRED CLEARANCES (AIR SPACES) TO COMBUSTIBLE MATERIALS. IT IS OF THE UTMOST IMPORTANCE THAT JEREMIAS AF SYSTEMS BE INSTALLED ONLY IN ACCORDANCE WITH THESE INSTRUCTIONS.

Important: Read all instructions before beginning the installation. Failure to comply with with these instructions may result in a hazardous installation resulting in injury or damage to property. An improper installation will void the manufacturer’s warranty.

Keep these instructions for future reference.

For Technical Support or more product information please contact us at 678-388-2740 or visit our website at www.jeremiasinc.com

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SECTION 1 – GENERAL INFORMATION

IMPORTANT:

These instructions must be followed in all details. Failure to do so may result in a hazardous installation. Contact Jeremias Inc. if there are any questions regarding these instructions.

The safe operation of a factory-built chimney assembly 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. Compliance with local code, acceptance by the local code authority (AHJ) and warranty coverage is contingent upon the Jeremias Exhaust system being installed and maintained in strict accordance with these installation and maintenance instructions.

Contact Local Building or Fire Officials about restrictions and installation inspection in your area.

Failure to follow proper installation procedures as described in these instructions, including joint connections, vent pitch and improper appliance connections may cause unsafe conditions.

It is the responsibility of the installer to contact the local authorities having jurisdiction concerning any installation restrictions, including guarding or placement of terminations and/or inspection requirements that may apply.

Permits may be required before starting an installation. This product must be installed in accordance with local building code requirements as well as National codes: USA-National Fuel Gas Code ANSI-Z223.1 or NFPA Standard 54, or NFPA 211. In Canada, CAN/CGA-B149.1 or CAN/CGA-149.2 Propane Installation Code as applicable.

Introduction

Jeremias model AF is a factory built stainless steel venting system intended for use in connecting gas fired appliances to the outdoors. There are also many other applications and uses including, but not limited to the following: Grease ducts, Dryer Vents, Fume Venting, Industrial Oven and Process Stacks, Paint Booth Exhausts, Particle Conveying, and Ventilation Ducts.

The vent segments are easily joined together to form a secure, install leak free vent system. A full range of fittings & accessories are available to accommodate each application.

Each model has several variations including single wall, double wall, material grade, material thickness, insulation type and insulation thickness. These models/variations may be intermixed in the same exhaust or chimney system assuming proper clearances and other installation guidelines are maintained for each system. For purposes of these instructions both models SWAF and DWAF will be treated together. Differences in UL listings, installation and weights will be shown where needed. See Product Code Key Section for model details.

Listings

Model AF is listed to the following Standards:

- UL-103 Standard, Building Heating Appliance Chimney Listing / ULC/ORD-C959 Industrial Type 540°C Chimney** – under this Listing, Model DWAF has 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. Model SWAF Listings for this application are per UL-103 only.
- UL-103 Standard, Additional Type HT Listing** – Model DWAF+ (3" to 36" Diameter ONLY) has qualified for UL's additional, optional Type HT rating for Building Heating Appliance Chimneys which indicates it has been evaluated and found suitable for exposure to 2100°F flue gases for 10 minutes. Many local authority having jurisdictions require a Type HT rating for chimneys for certain appliance venting applications, especially with solid fuel.
- UL-2561 Standard, 1400F Chimney Listing / ULC/ORD-C959 Industrial Type 760°C Chimney** – under this Listing, Model DWAF has been determined suitable for venting flue gases at a temperature not exceeding 1400°F continuously and intermittent service (maximum 10 minutes) at temperatures not exceeding 1800°F.
- 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 AF 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 AF is suitable for use at a temperature not exceeding 550°F (288°C) continuously with maximum internal pressure not exceeding 20" water column (5,000 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 Model AF 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 5,000 Pascal(20" water column).
- UL-1978 Standard, Grease Duct** – under this Listing, Models SWAF & DWAF have been determined suitable for Grease Ducts as defined by NFPA-96, the "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations". UL confirmed proper minimum air space clearance to combustibles for 500°F continuous exhaust gas temperatures and 2000°F exhaust gas temperature for 30 minutes simulating a kitchen exhaust fire. UL also confirmed that the installed joints are grease and smoke tight.
- ULC-S662, (Canadian) Standard for Factory-Built Grease Ducts** – under this (c-UL) Listing, Models SWAF & DWAF have been determined suitable for Grease Duct applications in accordance with the National Building Code -2010.
- UL-441 Standard, Gas Vents / ULC-S605 (Canadian) Standard for Gas Vents** - under these Listings, all variations of Model AF 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 of Model AF have 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.

Product Code Key

Each part manufactured by Jeremias is identified with a product code. The product code contains the Model, Vent size, Part ID, and other information.

Part Number Example:

	Family	Model	Diameter	Product ID	Variant	Wall Space
Example	DW	AF	6	45EL	+	1
	SW = Single Wall DW = Double Wall	AF = All Fuel	6" to 48"	45° Elbow	+ = Ceramic Insulation -RX= Mineral Wool insulation () = Air Space Insulation -ZC = Zero Clearance	1 = 1.25" Space 2 = 2.25" Space 3 = 3.25" Space 4 = 4.25" Space

General Installation Requirements

- When venting Cat II, III or IV appliances AF must be used for the entire length of the system.
- Do not mix pipe, fittings or joint methods from different manufacturers.
- The vent system must be free to expand and contract and must be supported as required by these instructions (Check for unrestricted vent movement through walls, ceilings and roof penetrations.).
- Refer to the gas appliance manufacturer's instructions to determine venting requirements and limitations with respect to the installation and use of the appliance.
- Every vent system must be planned and installed for performance and safety.

Failure to conform to these installation instructions and all applicable codes may result in catastrophic property damage, personal injury or death. These instructions are a guide to assist a professional installer.

- Proper operation of the vent system and appliance depends on the use and correct assembly of all parts specified for a particular installation.
- Tee sections should only be incorporated in conjunction with a drain on appliances tested for use with a drain, or if allowed by the manufacturer, for multiple appliance connections.
- If required by the appliance manufacturer, a drain fitting must be located as close as possible to the appliance's flue outlet. Depending on the arrangement of the vent system, more than one drain may be required. Unless a drain fitting is supplied with the appliance, install a Jeremias drain fitting.
- More than one Category II, III or IV appliance may not be connected to the same vent system unless the appliance manufacturer specifically approved such a system, and the appliances are designed for multiple venting. Cat II, III and IV appliances may never be common vented with Cat I natural draft appliances.
- The vent system must not come in contact with plumbing or electrical systems.
- Maintain rated clearances to combustibles over the entire length of the vent system.
- Except for installation in one- or two-family dwellings, a vent system that extends through any zone above that on which the connected appliance is located, shall be provided with an enclosure having a fire resistance rating equal to or greater than that of the floor or roof assemblies through which it passes.
- Never install Jeremias Special Gas Vent on an appliance that is not listed for use with a special gas vent or Type BH vent.
- The vent system shall not be routed into, through or within any vent, such as an existing masonry or factory-built chimney that is connected to another appliance.
- Do not field install insulation in any required clearance around AF vent system.
- Note: Reference the appliance manufacturer's installation and operating guides and follow any allowances and limitations for elbows.
- Reference the appliance manufacturer's installation and operating guides for maintaining ventilation and air circulation where required.

Suggested Tools, Equipment & Hardware

Reciprocating & Keyhole Saws	Drill	Plumb Bob, Level & Tape Measure	#3 Phillips Screw Driver
Metal Snips	Hammer	Caulk Gun	5/16" Nut Driver
Screwdrivers	Safety Glasses & Gloves	Ladder	Roofing Nails
High Temp Sealant	8-penny nails	#8 1-1/2" x 2-1/2" screws	Framing Square
Anti-Seize for all Stainless-Steel fasteners			

Safety Notice

Product has sharp edges. Use extreme caution while working with product. Always wear proper personal protection equipment (gloves, safety glasses, sleeves, etc.) while working with product.

Enclosures & Clearances

Building Heating Appliance Chimney and Grease Duct systems are intended to be installed unenclosed or with non-combustible enclosures and are not for use in one- or two-story family dwellings.

If the Chimney or Grease Duct passes through any zone or story of a building outside of which the connected appliance or hood 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 local code authority (AHJ) for material with an appropriate fire rating. Do not wrap or place any type of insulation in the required clearances space surrounding the Chimney in an effort to reduce the clearance to combustibles or to create some sort of fire protective enclosure. Follow NFPA-96 regarding methods of reduced clearances for Grease Ducts.

Where, according to local code, no chase enclosure is required, Model AF may be installed adjacent to a wall of combustible construction at the minimum airspace clearance specified on each pipe section and in the individual Listing as shown in the following tables.

Table 1-1 - Clearance to Combustibles – Industrial Chimney & Grease Duct

Model:	SWAF		DWAF+1	
Application:	Single-Wall Grease Duct & Building Heating Appliance	Building Heating Appliance 1000°F Chimney	Building Heating Appliance 1400°F Chimney	Grease Duct UL1978
3" (76mm) - 6" (152mm)	18" (457mm)	0.50" (12.7mm)	0.50" (12.7mm)	2" (50.8mm)
7" (178mm) - 14" (456mm)	18" (457mm)	0.75" (19.1mm)	0.75" (19.1mm)	2" (50.8mm)
16" (406mm) - 34" (863mm)	18" (457mm)	1.00" (25.4mm)	1.00" (25.4mm)	3" (76.2mm)
36" (914mm)	18" (457mm)	1.00" (25.4mm)	1.00" (25.4mm)	4" (101.6mm)
38" (965mm) - 48" (1219mm)	18" (457mm)	2.00" (50.8mm)	N/A	5" (127mm)

Special Gas Vent systems are intended to be installed in unenclosed. Some sizes can be installed in enclosed configurations. Reference Table 1-2 and 1-3 for proper clearance to combustibles.

To minimize condensation and protect against mechanical failure, it is recommended to use DWKL/FL 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.

Table 1-2 - Clearance to Combustibles - Gas Vent (Single-Wall AF)

Model:		Minimum Airspace Clearance to Combustibles			
		SWAF			
		Single-Wall Special Gas Vent			
Diameter	Max Flue Gas Temperature	Unenclosed		Enclosed	
		Vertical	Horizontal	Vertical	Horizontal
3" & 4"	550°F	2"	2"	5"	9"
5" to 12"	550°F	3"	3"	N/A	
13" to 18"	550°F	4"	4"	N/A	
20" to 24"	550°F	5"	5"	N/A	
26" to 30"	550°F	6"	6"	N/A	
32" to 36"	550°F	7"	7"	N/A	
38" to 48"	550°F	8"	8"	N/A	
3" to 36"	Class IIC 230°F/110°C Class IIB 194°F/90°C	0"	0"	0"	0.25"
		0"	0"	0"	0"

Table 1-3 - Clearance to Combustibles - Gas Vent (Double-Wall AF Fiber Insulated)

		Minimum Airspace Clearance to Combustibles			
		DWAFF+1 (Double-Wall Fiber Insulated)			
Diameter	Model: Max Flue Gas Temperature	Unenclosed		Enclosed	
		Vertical	Horizontal	Vertical	Horizontal
3" to 12"	550°F	0.5"	1"	0.5"	4"
	480°F	0.5"	1"	0.5"	3"
	400°F	0"	1"	0"	2"
13" to 18"	550°F	1"	2"	1"	5"
	480°F	1"	2"	1"	4"
	400°F	0"	1"	0.5"	3"
20" to 24"	550°F	1"	3"	1"	5"
	480°F	1"	3"	1"	4"
	400°F	0"	1"	0.5"	3"
26" to 36"	550°F	1"	5"	1"	6"
	480°F	1"	5"	1"	4"
	400°F	0"	1"	1"	4"
38" to 48"	550°F	2"	7"	2"	7"
3" to 36"	Class IIC 230°F/110°C Class IIB 194°F/90°C	0"			
3" to 34"	Type B Vent	1"			
36" to 48"		2"			
3" to 22"	Type L Vent	1"			
24" to 36"		2"			
38" to 48"		3"			

Notes: Unenclosed configuration requires at least one side of the enclosure open.
 Regarding 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.
WARNING: Do not place insulation in the required clearances spaces surrounding the vent system.

Clearance for Non-combustibles

0" clearance or as required for installation, access, inspection or per local code.

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

Minimum Framing Dimensions through Wall or Ceiling

Where the vent passes through the wall or ceiling, the minimum Clearance to Combustibles must be maintained (See Table 1-4). Framing should also provide support and attachment for roofing and other assemblies. See Fig 1-1.

Table 1-4 – Minimum Framing Dimensions

Vent Size (ID) AF	Vertical Penetration Ceiling/Roof	Horizontal Penetration Wall
3" to 12"	O.D. + 3.5" x O.D. + 3.5"	O.D. + 3.5" x O.D. + 3.5"
13" to 48"	O.D. + 3.5" x O.D. + 3.5"	O.D. + 3.5" x O.D. + 3.5"

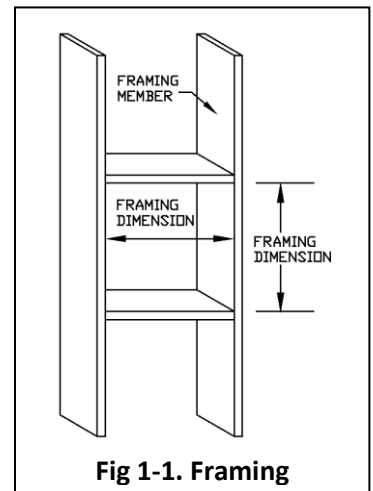


Fig 1-1. Framing

Vent Size

Refer to the appliance manufacturer's installation instructions for proper sizing and vent configuration – **contact Jeremias Technical Support for assistance in this regard.**

Horizontal Installation Requirements / Vent Slope

Any horizontally installed portion of a venting systems shall have a slope upwards not less than ¼" (0.64mm) every 12" (304.8mm) and be installed so that condensate flows back toward the appliance or drain. The install must be such to prevent collection of condensates, formation of ice buildup or blockage at any location of the assembly. Condensate must flow freely and may not be retained in any part of the vent system. Refer to appliance manufacturer's installation instructions for further details regarding the installation of condensate drain fittings and the pitch of the system. As an option, the installer may also use Jeremias 87° elbows and fittings that will create a slope of ⅜" (15.9mm) per every 12" (0.64mm). For Kitchen Ventilation System, see Section 7 for slope requirements.

Application	Minimum Slope
Condensing Gas Vent	¼" (6.4mm) Rise per 12" (305mm) Horizontal Run
Kitchen Grease Duct	1/16" (1.6mm) Rise per 12" (305mm) Horizontal Run

Vertical or Through-the-Roof Installation

Determine an appropriate path to route the vent system. See Termination Requirements section for guidance on location. See Table 2-2 (DIM C) and Fig 2-1 for Maximum vertical unsupported height above the roof. If the vent length exceeds this figure, it must be re-supported with a Guy Section or other horizontal support. If necessary, cut holes in floors and ceilings to frame firestop plates. Exterior portions of the vent located below the roof line should be enclosed to limit condensation in the system. As an alternate, Model double-wall AF may also be used.

Termination Requirements

Gas Vents

Location of the termination of the venting system should comply with the National Fuel Gas Code, ANSI Z223.1, manufacturer's recommendations and/or applicable local codes. See Diagram for typical terminal locations. See Fig. 1-4 & 1-5.

- When venting through a sidewall, terminate the system not less than 12" (.3m) above the ground and above the snow line in areas where snow accumulates. The termination area must be kept clear of snow and ice at all times.
- Terminate the system at least 7' (2.1m) above a public walkway or driveway, no less than 6' (1.8m) from the combustion air intake or any appliance or 3' (.9m) from any other building opening, gas utility meter, service regulator or the like. It must also terminate at least 3' (.9m) above any forced air inlet within 10' (3.1m) and terminate at least 4' (1.2m) below, 4' horizontally from or 1' (.3m) above any door, window or gravity air inlet into any building as provided in the National Fuel Code ANSI Z223.1 and NFPA 54. Proper judgment may require greater distances depending on the size of the equipment installed or to allow for snow drift or fall from overhead roofs or trees.
- The termination shall be far enough away from trees, shrubs or decorative items to avoid damage.
- Total vent length from the appliance flue collar to the outside termination shall not exceed the maximum specified by the appliance manufacturer's instructions.
- Reference Joint Assembly section for instructions on installing terminations parts. The Termination can be removed for inspection of the vent. Removal is the reverse procedure as defined in Joint Assembly section.

Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances

Per NFPA-211, building heating appliance chimneys are required to terminate a minimum of 3' above the highest point where it passes through a roof of a building and a minimum of 2' higher than any part of the building within a horizontal distance of 10'. There are exceptions to this requirement, such as mechanical draft and various listed appliances with other requirements, so consult with the Authority Having Jurisdiction for actual requirements if in question.

Commercial Cooking Operations

Strictly follow NFPA-96 for the termination requirements for Grease Duct and/or kitchen exhaust duct systems.

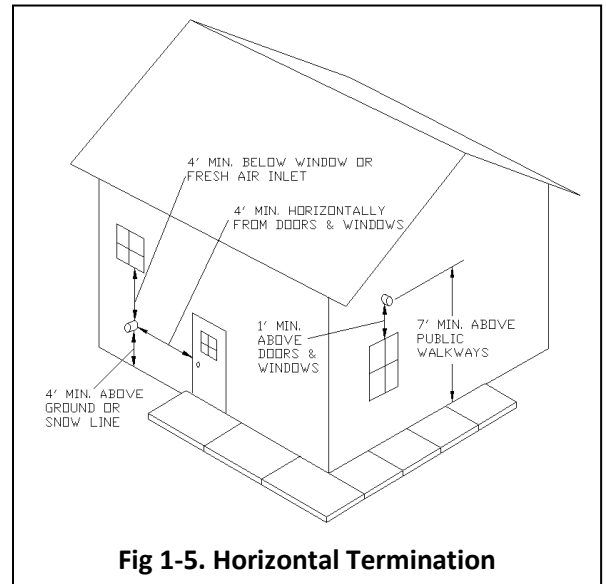


Fig 1-5. Horizontal Termination

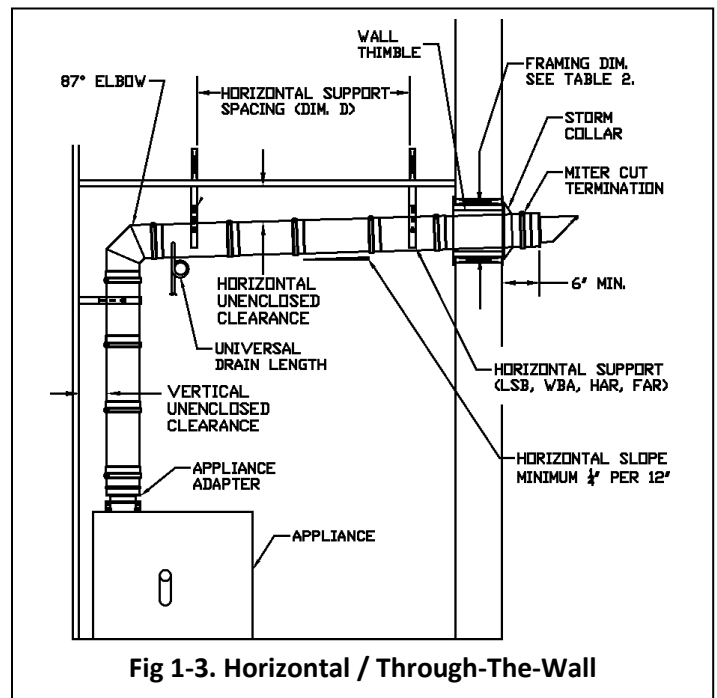


Fig 1-3. Horizontal / Through-The-Wall

PIPE WEIGHT

The approximate installed weight of the SWAF & DWAF exhaust systems can be found using Table 1-3. This table does not include accessories such as supports and guides, nor shipping packaging or palletizing weight (See Table 1-5).

Model AF

Models DWAF and SWAF are cylindrical, factory built, modular exhaust systems that incorporate an overlapping joint and clamp system for quick and easy assembly in the field. Sealant is used to make a gas and liquid tight seal.

Each connection has a 2.2" overlap allowing greater stiffness, sealing, and durability.

The double wall Model DWAF is insulated with 1¼" thick compressed 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. The single wall Model SWAF can be used as an option for Unlisted Metal Chimneys (Smokestacks) or single wall Steel Pipe Connectors as defined by NFPA-211. Model SWAF is intended for an entirely non-combustible surrounding and must be installed in strict accordance with NFPA-211 requirements for single wall stacks and connectors.

Model	SWAF	DWAF+1
Wall Thickness	N/A	1.25"
Insulation Type	N/A	Ceramic Fiber
Inside Diameter	lb./ft	lb./ft
3"	1.1	4.4
4"	1.5	5.5
5"	1.9	6.5
6"	2.2	7.6
7"	2.6	8.6
8"	3.0	9.7
9"	3.4	10.7
10"	3.7	11.8
11"	4.1	12.8
12"	4.5	13.8
13"	4.9	14.9
14"	5.2	15.9
16"	6.0	18.0
18"	6.7	20.1
20"	7.5	22.2
22"	8.2	24.3
24"	9.0	26.4
26"	9.5	28.5
28"	10.3	30.6
30"	11.0	32.7
32"	11.7	34.7
34"	12.5	36.8
36"	13.2	38.9
38"	19.3	51.4
40"	20.3	54.1
42"	21.3	56.7
44"	22.3	59.3
46"	23.3	61.9
48"	24.3	64.5

Table 1-5. SWAF & DWAF Installed Weight (Lb./ft)

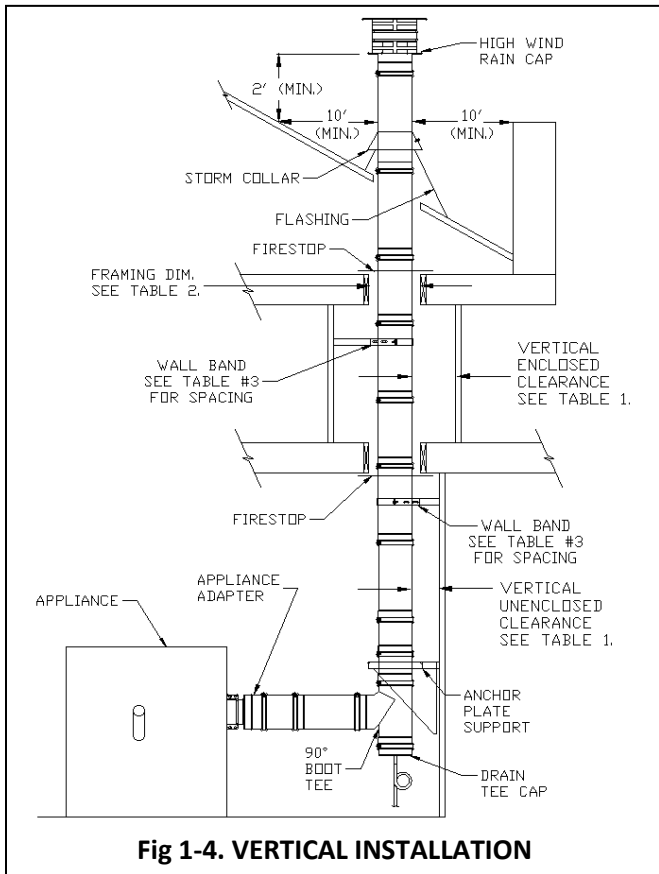


Fig 1-4. VERTICAL INSTALLATION

Joint Assembly – Model SWAF

Single-Wall Model SWAF joint system is designed for a quick and easy installation. See Figs 1-2 to 1-5.

To Assemble:

1. Clean / prepare the surfaces where sealant is to be applied.
2. Select correct sealant based on flue gas and application. Approximate Sealant usage is shown in Table 1-6.:
 - a. J-2000 Sealant for Flue Gas temperatures up to 2,000F. High temperature Heating system or Engine exhaust
 - b. J-600 Sealant for Flue Gas temperatures up to 600F. Low temperature heating system or Grease Duct.
3. Apply J- Sealant continuously (1/4" bead minimum) to the male end of the inner flue pipe. Sealant is to be approximately 1-1/4" from the end of pipe. (See Fig 1-2)
4. Position both pipes so they are in alignment. Engage the pipes and press them together until they completely engage by 2.2".
5. Position the Locking Band (LB) around the joint and ensure grooves in LB are seated in the Pipe grooves.
6. Secure LB, using 5/16" nut driver or flat-head screwdriver to tighten gear clamps

Diameter	# of Joints
3" - 6"	6.7
8" - 10"	6.0
11" - 12"	5.3
13" - 16"	4.7
18" - 20"	4.0
22" - 24"	3.3
26" - 28"	2.7
30" - 32"	2.0
34" - 36"	1.3
38" - 48"	0.7

Table 1-6. Sealant Usage

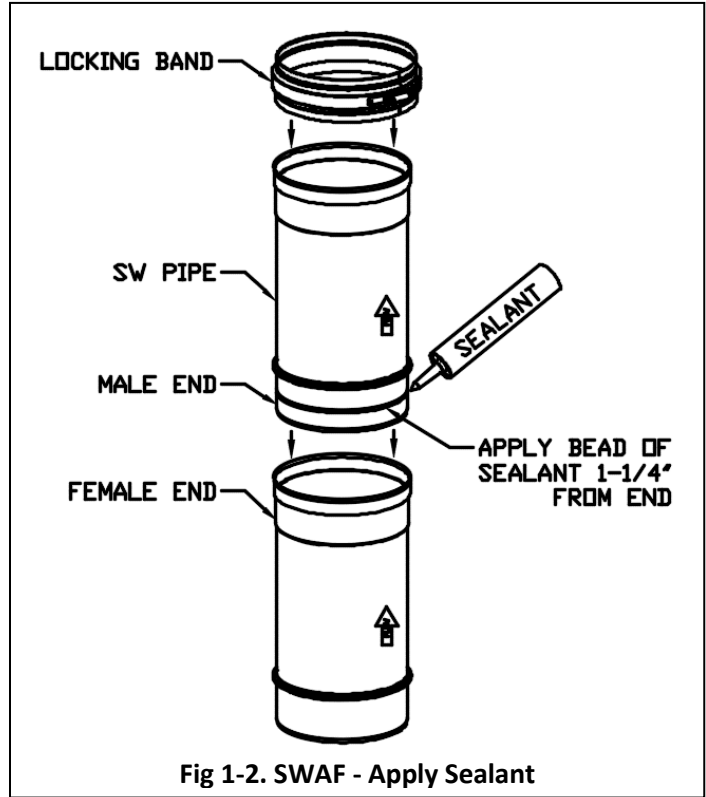


Fig 1-2. SWAF - Apply Sealant

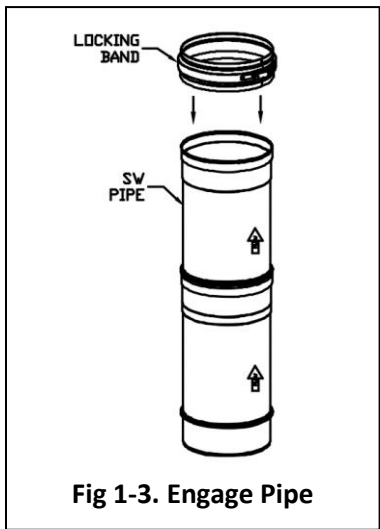


Fig 1-3. Engage Pipe

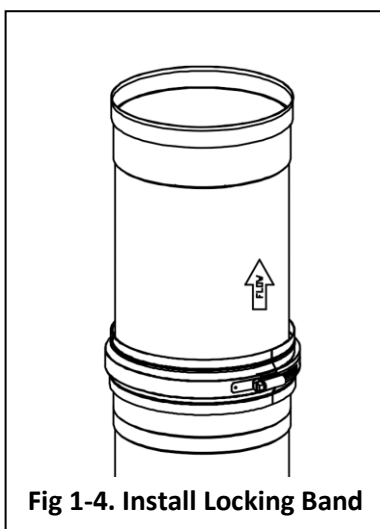


Fig 1-4. Install Locking Band

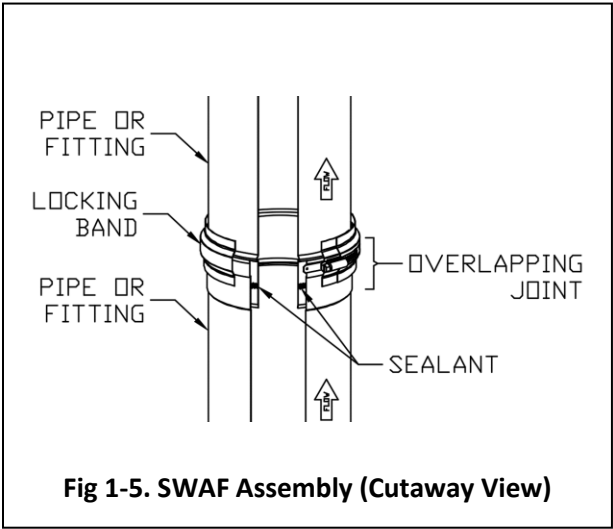


Fig 1-5. SWAF Assembly (Cutaway View)

Joint Assembly – Model DWAF+1

Double-Wall AF joint system is designed for a quick and easy installation. See Figs 1-6 to 1-9.

To Assemble:

1. Clean / prepare the surfaces where sealant is to be applied.
2. Select correct sealant based on flue gas and application (Sealant usage is shown in Table 1-4):
 - a. J-2000 Sealant for Flue Gas temperatures up to 2,000F. High temperature Heating system or Engine exhaust
 - b. J-600 Sealant for Flue Gas temperatures up to 600F. Low temperature heating system or Grease Duct.
3. Apply J- Sealant continuously (1/4" bead minimum) to the male end of the inner flue pipe. Sealant is to be approximately 1-1/4" from the end of pipe. (See Fig 1-7)
4. Position both pipes so they are in alignment. Engage the pipes and press them together until they completely engage by 2.2".
5. Position the Locking Band (LB) around the joint and ensure grooves in LB are seated in the Pipe grooves. (See Fig 1-8)
6. Secure LB, using 5/16" nut driver or flat-head screwdriver to tighten gear clamps

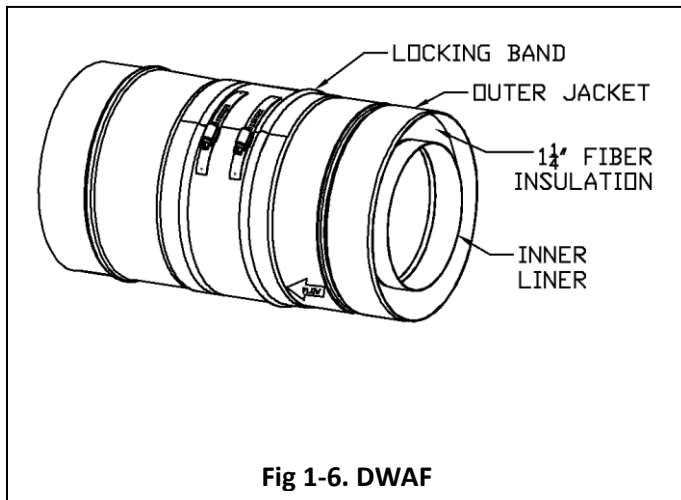


Fig 1-6. DWAF

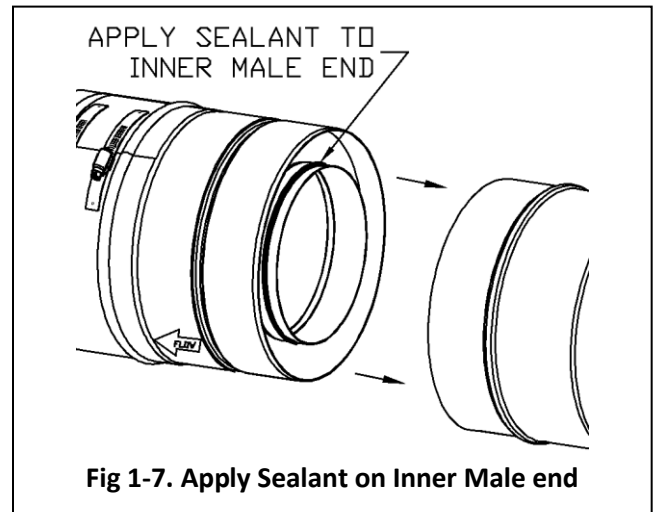


Fig 1-7. Apply Sealant on Inner Male end

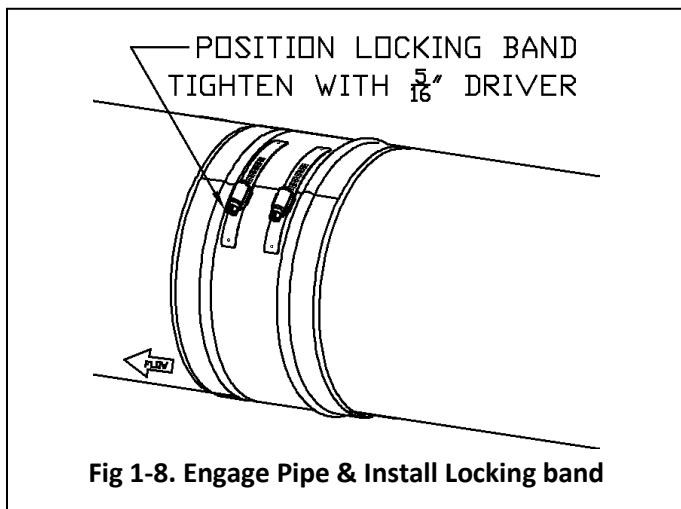


Fig 1-8. Engage Pipe & Install Locking band

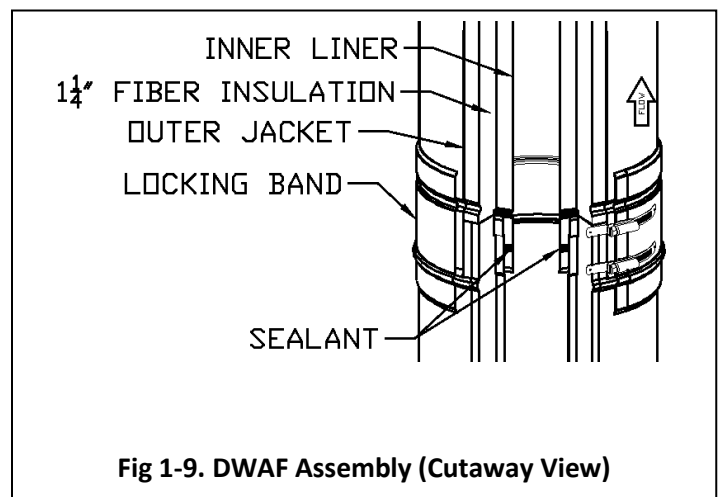


Fig 1-9. DWAF Assembly (Cutaway View)

Installed Vent Length

Due to the engagement of the vent sections, the effective installed length of any vent pipe or fitting is 2-3/16" less than the described length.

SECTION 2 – SUPPORT & GUIDING

Vertical Support Spacing and Limits

AF pipe vent must be supported properly. Several support options are available. Refer to Table 2-1 and Fig 2-1 (Dim A) for maximum support height capabilities. For all support options, ensure non-combustible hanger straps (or similar) are secured into joists or other solid structures. Ensure all minimum clearances to combustibles are maintained. Never drill or screw through the vent system. Additional support must always be located at an elbow or offset to prevent unacceptable stress on that fitting.

Vertical Guide Spacing

In addition to vertical support, AF systems require guides to maintain proper alignment of the system and lateral support for wind loads. Refer to Table 2-1 & Fig. 2-1 (Dim B) for Vertical Guide Spacing. Applicable vertical guides are FAR Full Angle Ring, LSB Light Support Band, and GWB Guy Wires Band. For Maximum Vertical Unsupported (Freestanding) Height above the support see Dim. C.

Horizontal Support Spacing

Horizontal installations of AF systems require guides to maintain proper alignment of the system and lateral support for wind loads. Refer to Table 2-3 and Fig. 2-2 for Horizontal Spacing.

Applicable horizontal supports are FAR Full Angle Ring, HAR Half Angle Ring, LSB Light Support Band, and GWB Guy Wires Band. Refer to corresponding section for detailed instructions.

Dim A - Maximum Support Height (Feet)		
Diameter	SWAF	DWAF+1
Anchor Plate Support (APS)		
3" - 6"	300	239
7" - 10"	300	172
11" - 13"	300	136
14" - 18"	300	101
20" - 24"	231	77
26" - 30"	222	70
32" - 36"	213	69
38" - 48"	84	32
Anchor Plate Support (APS) with Heavy Duty Base (HDB)		
3" - 6"	300	239
7" - 10"	300	247
11" - 13"	300	251
14" - 18"	300	191
20" - 24"	300	146
26" - 30"	275	89
32" - 36"	230	75
38" - 48"	91	34
Anchor Plate Support (APS) with Wall Bracket (WB)		
3" - 6"	200	56
7" - 10"	119	36
11" - 13"	90	28
14" - 18"	66	21
20" - 24"	49	16
26" - 30"	29	10
32" - 36"	24	8

Table 2-1 – Maximum Support Height (Dim A)

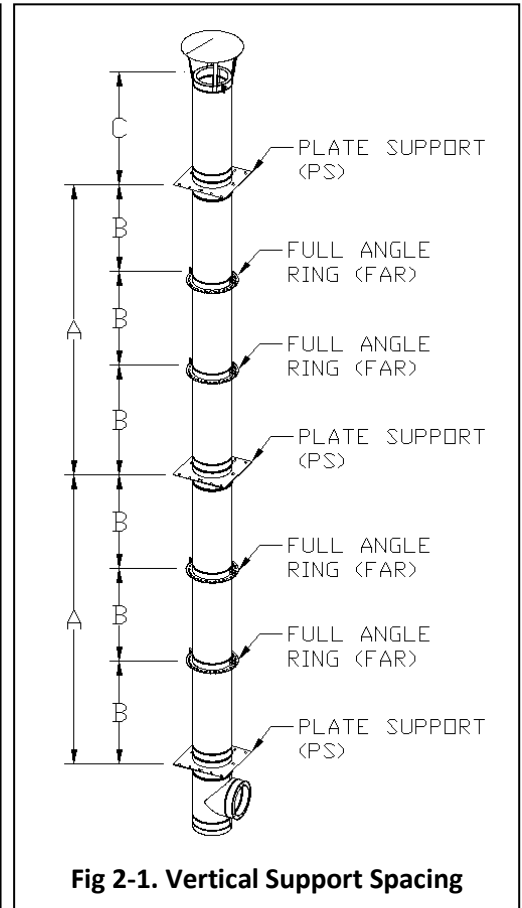


Fig 2-1. Vertical Support Spacing

Diameter	SWAF & DWAF	
	(Dim. B)	(Dim. C)
3" - 24"	19'6"	10'
26" - 48"	20'4"	8' 2"

Table 2-2 – Vertical Guide Spacing Between Supports (Dim B) & Max Vertical Unsupported / Freestanding Height Above Support (Dim. C)

Diameter	SWAF & DWAF
3" - 14"	15'
16" - 24"	12'
26" - 36"	9'
38" - 48"	8'

Table 2-3 – Maximum Horizontal Support Spacing Between Supports (Dim. D).

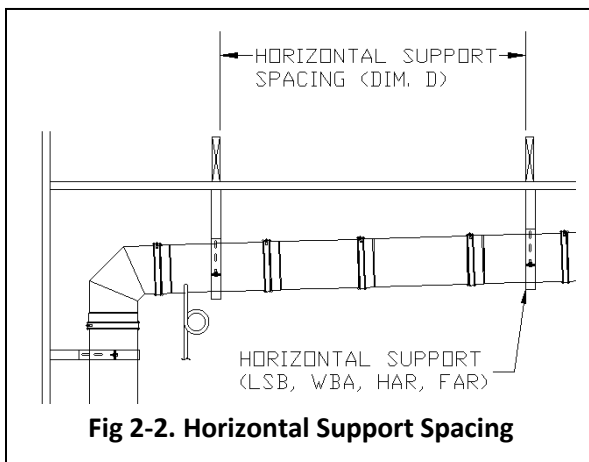


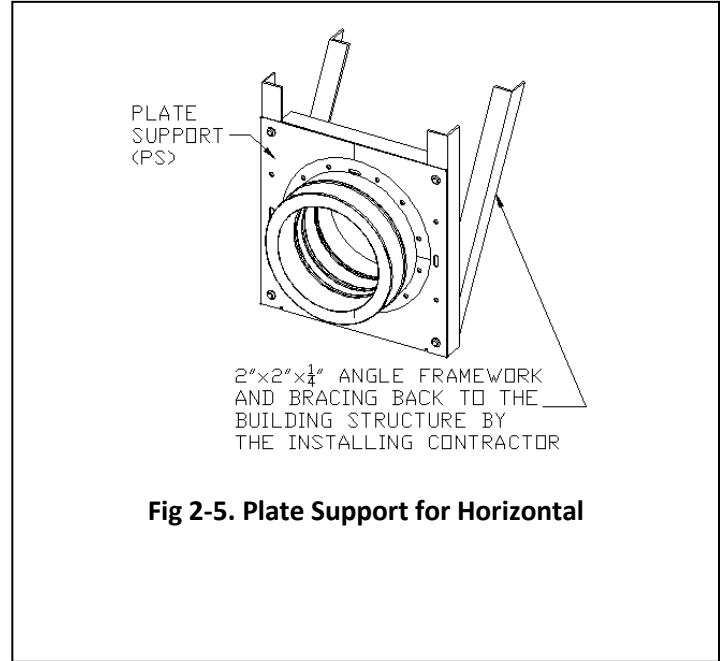
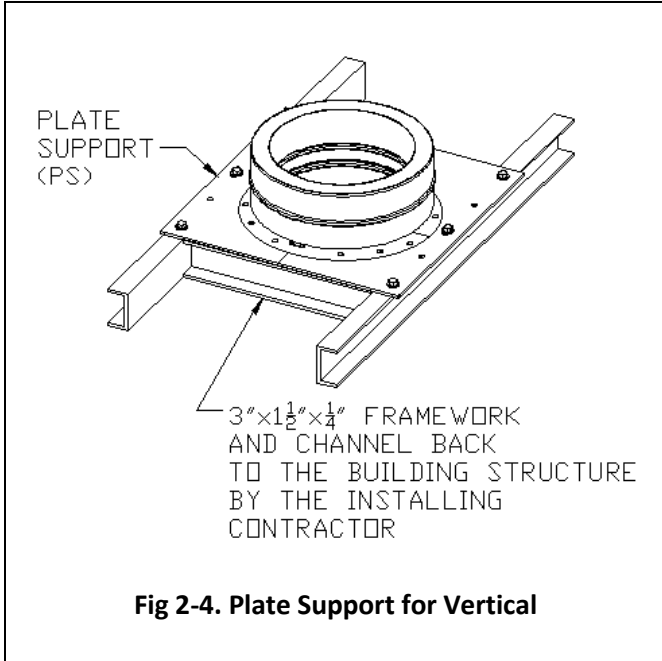
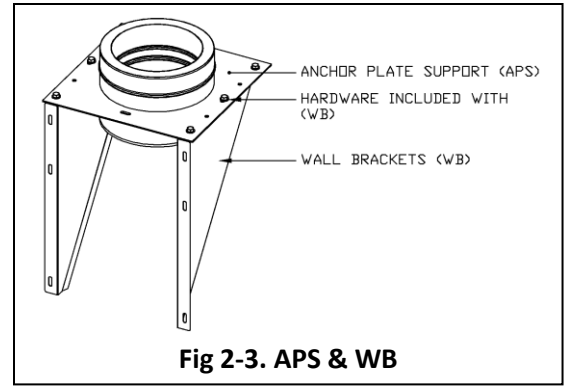
Fig 2-2. Horizontal Support Spacing

Anchor Plate Support (APS) & Wall Brackets (WB)

The APS is a section of vent that is used to provide vertical support sections and provide an anchor support for horizontal sections. The APS must be anchored 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 in Figs 2-3 to 2-5. The Anchor Plate Support may only be attached to non-combustible construction such as block, concrete, or steel. **DO NOT ATTACH THE SUPPORT PLATE TO COMBUSTIBLE MATERIALS.** See Table 2-1 for Maximum Support height. It can be supported with standard Wall Brackets (WB) or with field fabricated supports.

To Install (See Fig 2-3):

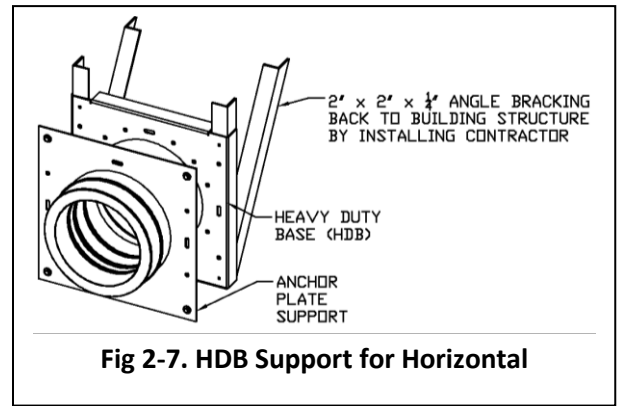
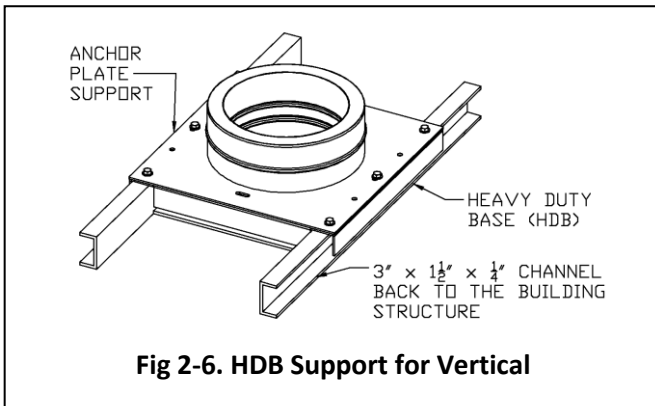
1. Use supplied fasteners to bolt APS to WB (optional) or other support member.
2. Secure WB or other support member to joist or other solid structure.
3. Install adjoining vent sections as described in Joint Assembly section.



HEAVY DUTY BASE (HDB)

The HDB is a factory-built base and framework for the Plate Support. It 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. See Figs 2-6 & 2-7.

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



Half Angle Ring (HAR)

The Half Angle Ring is used to support/guide horizontal installations of vent. It may be suspended by threaded rods or angle iron. See Full Angle Ring (FAR) for outdoor or vibrating installations. See Fig 2-8.

Full Angle Ring (FAR)

The Full Angle Ring is used as a vertical guide to keep system aligned and provide horizontal support. It 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. See Figs 2-8 & 2-9

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. See Fig 2-10.

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. See Fig 2-12.

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. See Fig 2-14.

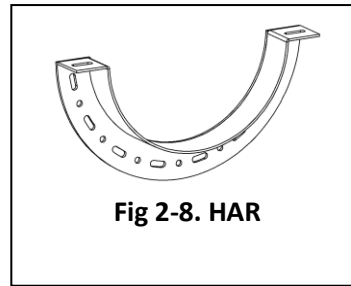


Fig 2-8. HAR

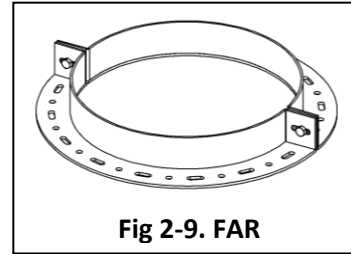


Fig 2-9. FAR

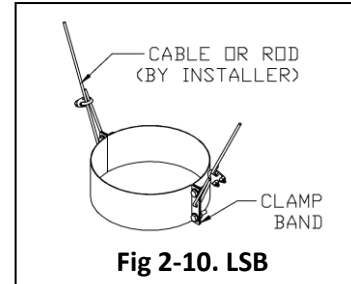


Fig 2-10. LSB

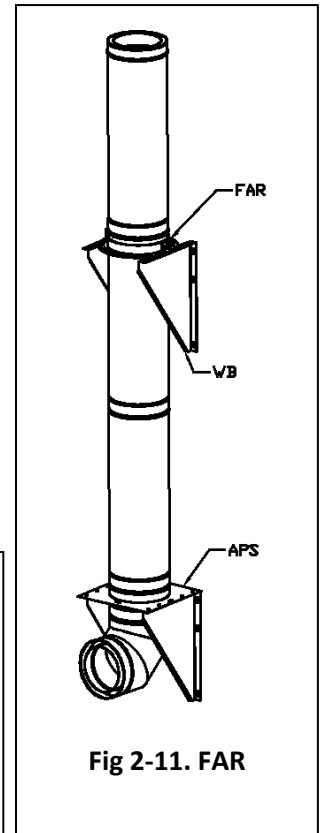


Fig 2-11. FAR

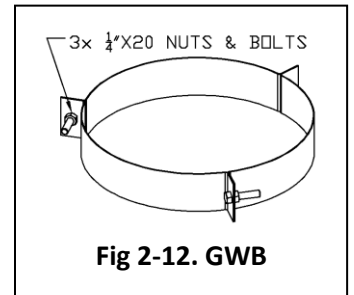


Fig 2-12. GWB

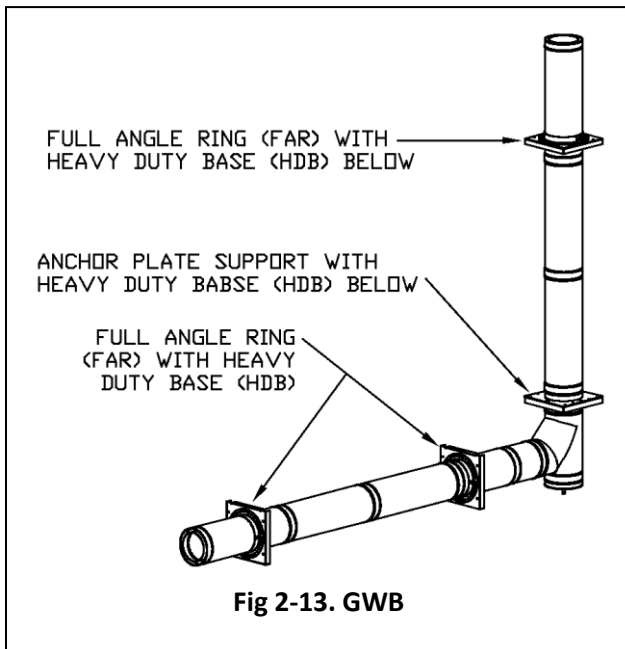


Fig 2-13. GWB

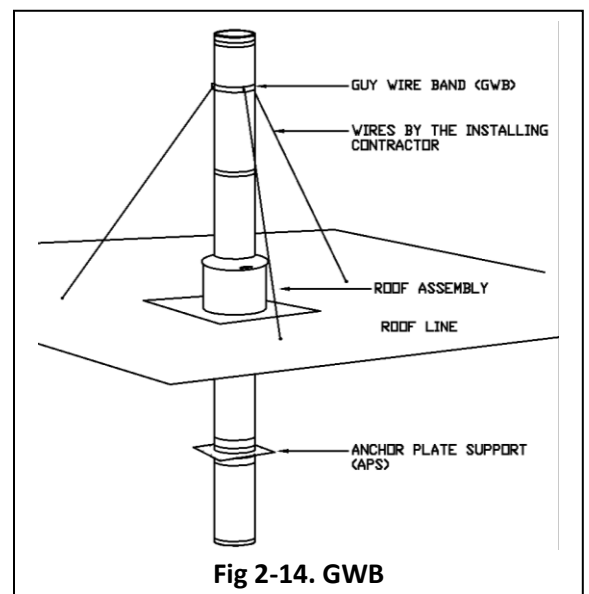


Fig 2-14. GWB

SECTION 3 – PIPE & OTHER LENGTHS

Fixed Pipe Lengths (_L)

Model AF is available in a variety of fixed pipe lengths (e.g., 6", 9", 12", 18", 24", 30", 36", 42", & 48"). Refer to the catalog for available sizes. Additionally, where required, custom lengths may be ordered from Jeremias Inc. Refer to the corresponding Joint Assembly section for installation instructions.

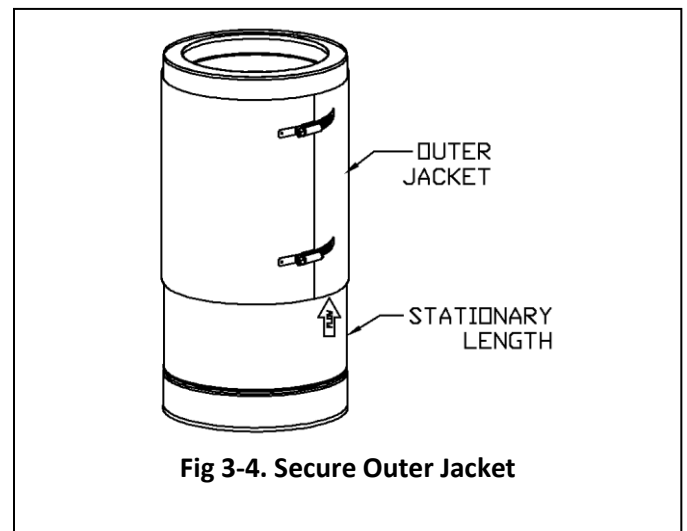
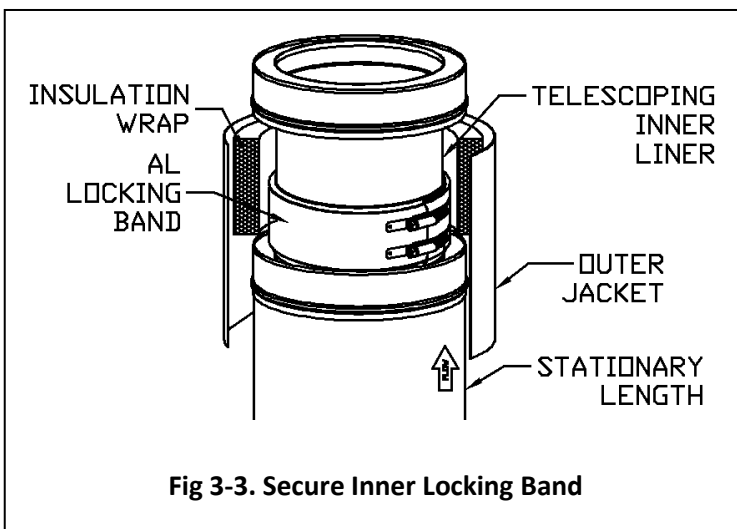
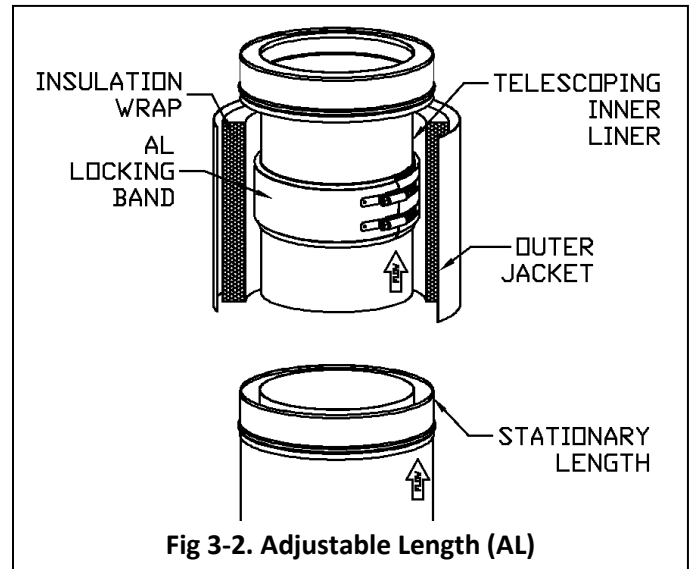
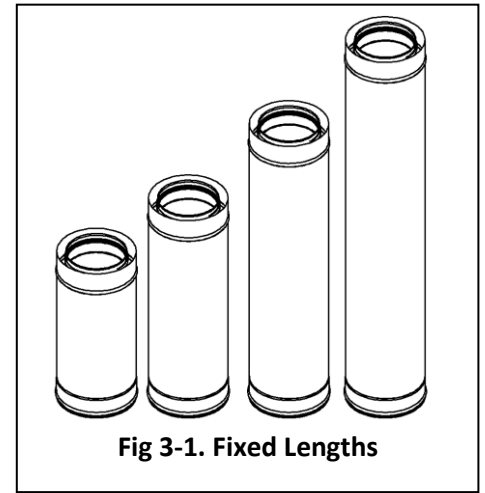
Adjustable Length (AL)

The AL is used where odd length of vent is required. It is not intended to accommodate thermal expansion.

The AL includes a Slip Section, AL-Locking Band and a Wraparound style outer jacket (Double-Wall only). The minimum installed length is 7" long. The Maximum installed length is 19" long.

To Install (See Figs 3-2 & 3-4):

1. Slide the Slip Section inside the adjacent pipe to the desired length. If the Slip Section is too long and interferes with elbow or other component, the extra length can be cut off.
2. Clean/Prepare surface and apply sealant between the Slip Section the connecting pipe to create a seal.
3. Position the AL-Locking Band over the female inner of adjoining pipe. Tighten AL-Locking Band to secure it in place.
4. Wrap the inner flue with provided insulation. It may be necessary to trim the insulation wrap to not interfere with the adjoining stationary length.
5. Install wraparound style outer around outer jacket around the upper outer section of the AL and the outer of the adjacent stationary length.
6. Tighten gear clamps on outer wraparound jacket to secure it in place. For exterior installations, apply J-400 Silver Silicone Sealant between the joint of the Outer Jacket and the pipe to prevent precipitation from entering the insulated wall section.
7. Refer to AF Joint Assembly Section for instructions on installing the subsequent components.



Cutting a pipe to Length

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

- Minimum installed length is 5.3”.
- Maximum installed length is the length of the standard fixed length minus 4.4”

Cut Pipe Lengths are used in all applications and have been evaluated by UL and confirmed suitable for positive internal pressures up to 20” W.C.

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.

Arrow shows direction of flue gas flow, or up direction.

SWAF Pipe Cut to Length

NOTE: A SWAF-Cut Length Band (CLB) is required to complete the joint assembly.

1. Field measure required distance to fill between two pipe ends.
2. Add 4.4” to determine the overall cut pipe length required.
3. Measuring DOWN from the OUTLET end of the pipe, mark a line around the perimeter of the pipe at the desired location for the cut (See Fig 3-5).
4. Using this line as a guide, cut and remove the extra material from the Male End. Deburr all cut edges (See Fig 3-6).
5. Apply Sealant on the cut end approximately 1-1/4” up from the end of the pipe.
6. Engage Cut length until it bottoms out in the adjacent female socket. (See Fig 3-8).
7. Apply additional sealant at the seam between Female Socket and Cut Length
8. Position AF-Cut Length Band (CLB) so it captures the expansion on the female inner and adjacent pipe/fitting.
9. Use a 5/16” driver to evenly tighten the AF-Cut Length Band to the pipe.

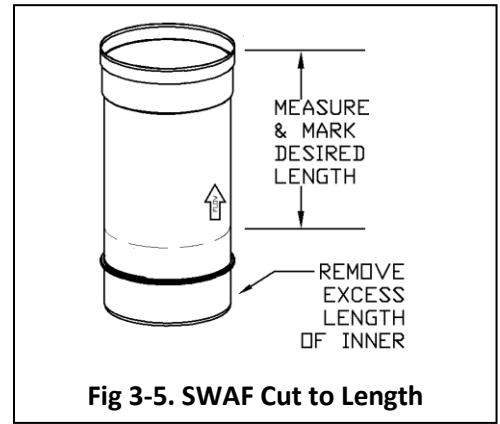


Fig 3-5. SWAF Cut to Length

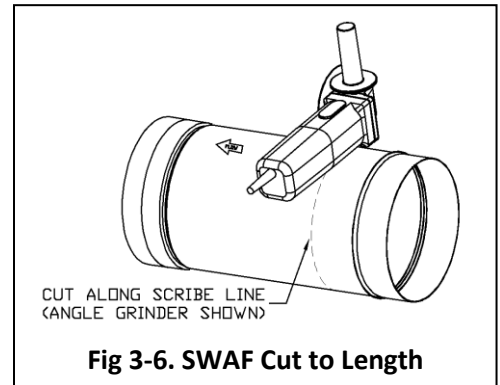


Fig 3-6. SWAF Cut to Length

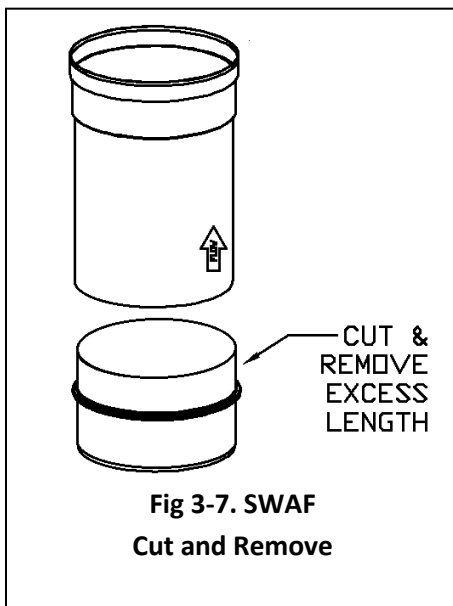


Fig 3-7. SWAF Cut and Remove

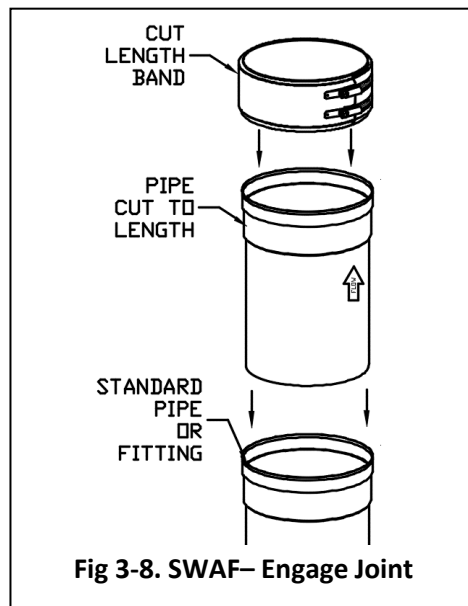


Fig 3-8. SWAF— Engage Joint

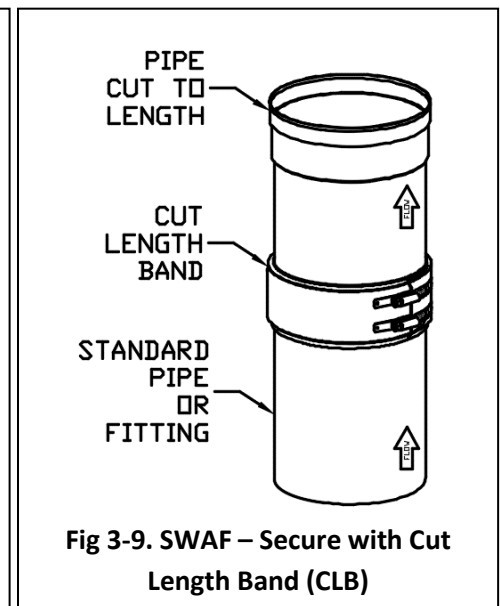


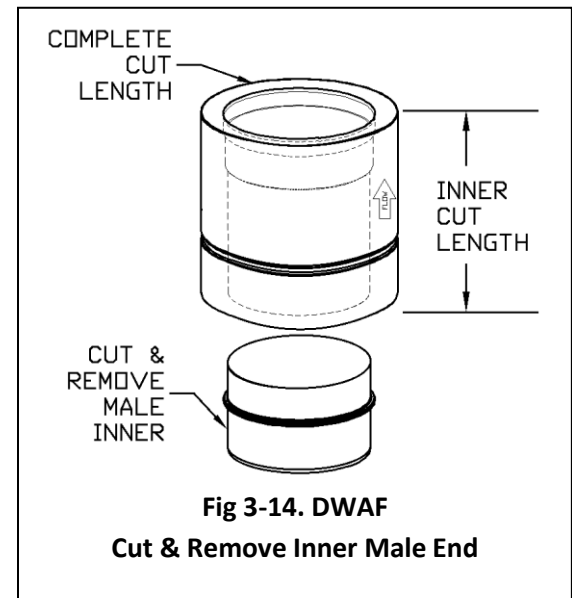
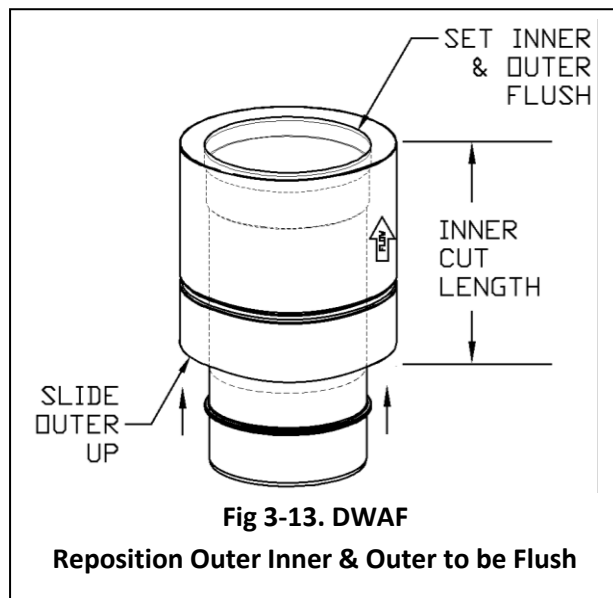
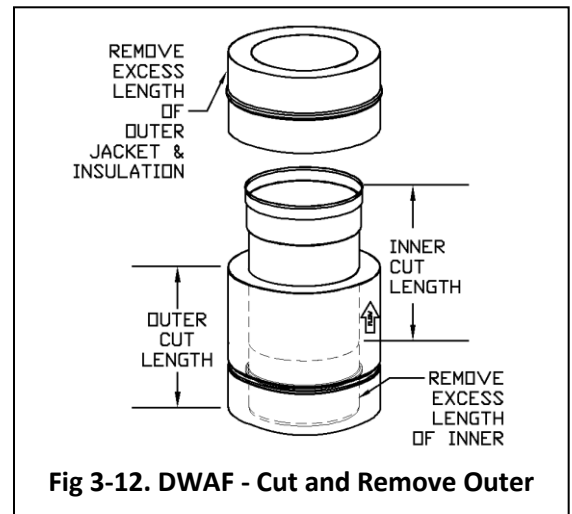
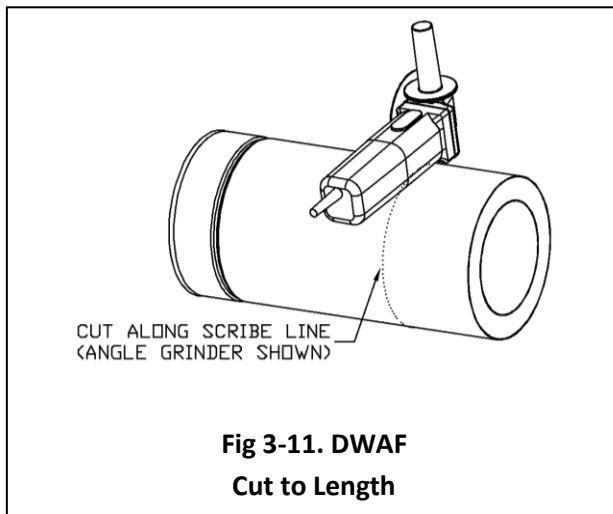
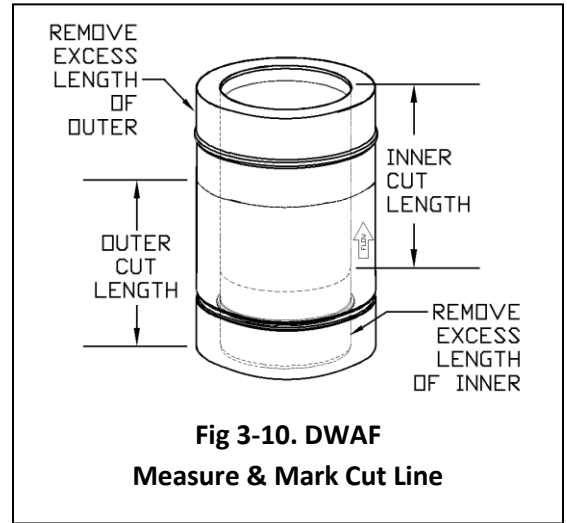
Fig 3-9. SWAF – Secure with Cut Length Band (CLB)

DW-AF Pipe Cut to Length (See Fig 3-10 to 3-14.)

Cutting Double-Wall pipe to length involves a procedure of very careful measurement, cutting and repositioning of insulation. Experienced sheet metal tradesmen are familiar with such equipment and techniques and should be used for such purpose. Additionally, Cut Length Pipe sections (CL) are available to facilitate with this procedure.

To Assemble:

1. Field measure required distance to fill between two pipe ends.
2. Add 4.4" to determine the overall cut pipe length required.
3. Measuring up from the inlet end of the pipe length, mark a line around the perimeter of the cut length at the desired location for the cut (See Fig 3-10).
4. Using this line as a guide, cut the extra material (outer wall and insulation) away leaving the inner liner extending past the outer (See Fig 3-11 & 3-12).
5. Slide the remaining Outer Jacket and insulation up so that it is flush with the Female Socket of the Inner Liner (See Fig 3-13).
6. Measure and mark a second line around the inner liner to indicate the length that needs to be removed from the male Inner liner (See Fig 3-13).
7. Cut and remove the Male Inner (See Fig 3-14).
8. Deburr all cut edges
9. Refer to AF Joint Assembly section for instructions for to complete the Joint Assembly.



Cut Length (18CL & 24CL)

Any AF Pipe can be cut to length, however, the CL provides the easiest installation method for cutting and accommodating odd lengths in the field. The CL includes an inner flue pipe (18" or 24" long), insulation wrap and a Cut Length Band (CLB). See Fig 3-15.

To Assemble:

1. Field measure required distance to fill between two pipe ends.
2. Add 4.4" to determine the overall cut pipe length required.
3. On the inner pipe, Measure DOWN from the OUTLET end of the pipe, mark a line around the perimeter of the pipe at the desired location for the cut (See Fig 3-16).
4. Using this line as a guide, cut and remove the extra material from the Male End. Deburr all cut edges (See Fig 3-6).
5. Apply Sealant on the cut end approximately 1-1/4" up from the end of the pipe.
6. Engage Cut length until it bottoms out in the adjacent female socket.
7. Apply additional sealant at the seam between Female Socket and Cut Length
8. Position AF-Cut Band so it captures the expansion on the female inner and adjacent pipe/fitting (See Fig 3-17).
9. Use a 5/16" driver to evenly tighten the AF-Cut Band to the pipe.
10. Install next adjoining pipe section. Refer to AF Joint Assembly Section. (See Fig 3-18).
11. Wrap the inner flue with provided insulation. It may be necessary to trim the insulation wrap to not interfere with the adjoining stationary length (See Fig 3-19).
12. Install wraparound style outer around outer jacket around the upper outer section of the CL and the outer of the adjacent stationary length (See Fig 3-19).
13. Tighten gear clamps on outer wraparound jacket to secure it in place. For exterior installations, apply J-400 Silver Silicone Sealant between the joint of the Outer Jacket and the pipe to prevent precipitation from entering the insulated wall section.
14. Refer to AF Joint Assembly Section for instructions on installing the subsequent components.

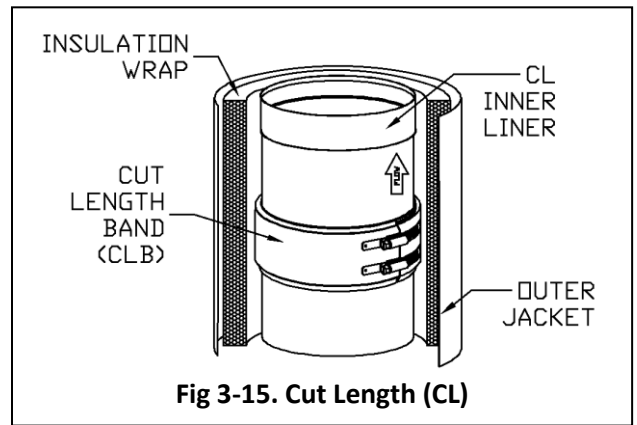


Fig 3-15. Cut Length (CL)

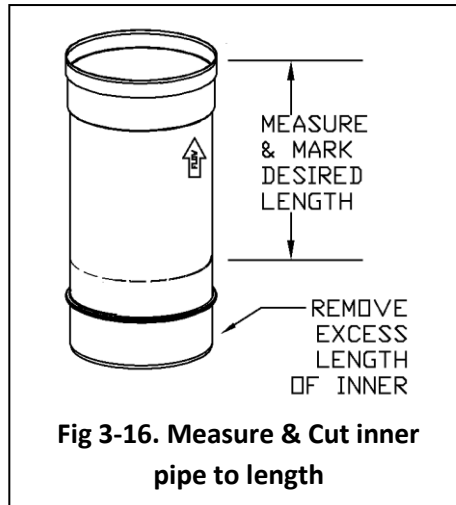


Fig 3-16. Measure & Cut inner pipe to length

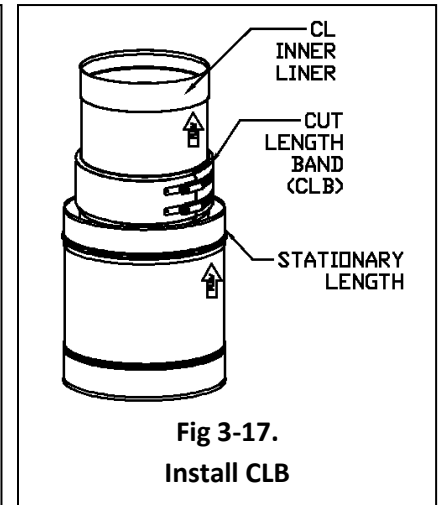


Fig 3-17. Install CLB

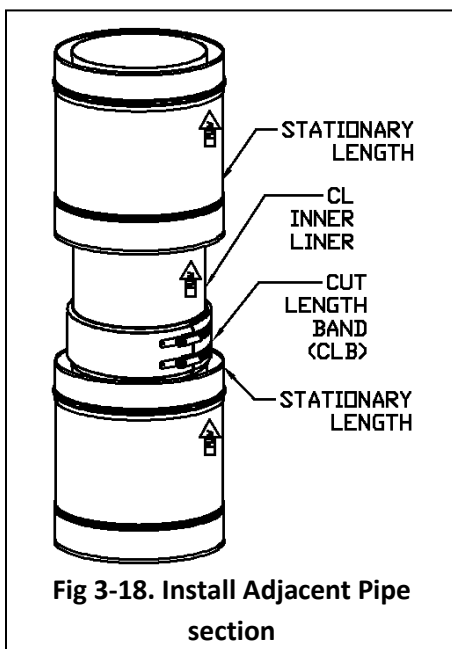


Fig 3-18. Install Adjacent Pipe section

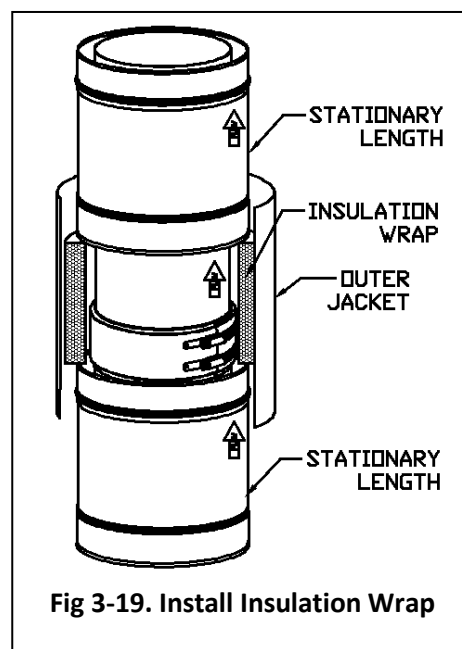


Fig 3-19. Install Insulation Wrap

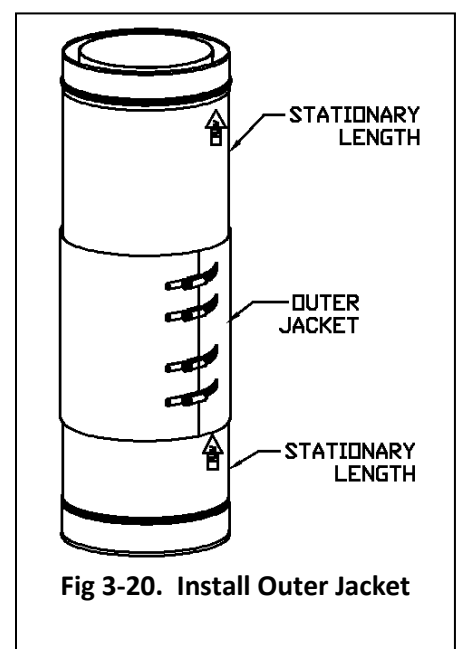


Fig 3-20. Install Outer Jacket

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 drain line. This is intended for Chimney applications and not Grease Ducts. The drain works in both horizontal and vertical configurations. See Fig 3-15.

Test/Nozzle Port Length (TPL)

A Test/Nozzle Port Length can be used for monitoring flue gases, horizontal Grease Duct 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. See Fig 3-16.

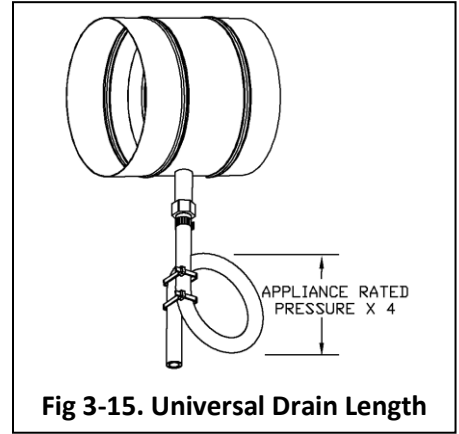


Fig 3-15. Universal Drain Length

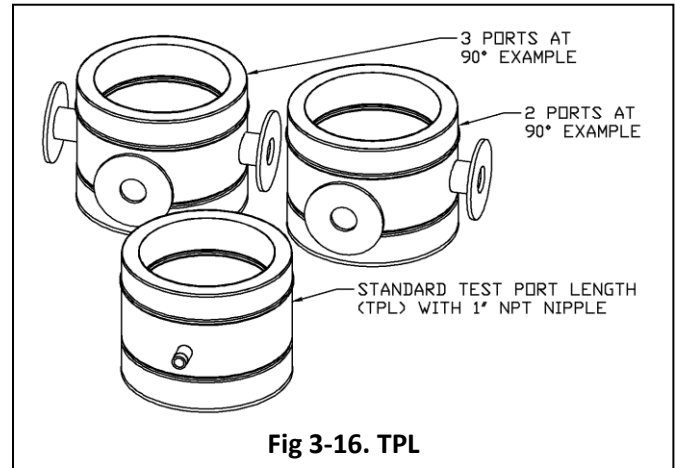


Fig 3-16. TPL

SECTION 4 – FITTINGS, TEE CAPS & INCREASERS

Special Considerations for Fittings

Notice: Tees, Elbows and other fittings must be protected from forces caused by thermal expansion and system weight. Where thermal expansion exceeds 0.375" prior to the fitting, it must be anchored with a support and provisions for thermal expansion be provided. After the fitting, the system is to be re-supported to accommodate weight from additional vent lengths.

Elbow (_EL)

Elbows are used to provide changes in direction. They are available in a variety of standard angles (1.5°, 3°, 15°, 30°, 45°, 70°, 87°, & 90°). Refer to the catalog for available sizes. Additionally, where available, custom lengths may be ordered from Jeremias Inc. Elbows are installed similar to standard pipe. Refer to the corresponding Joint Assembly section for installation instructions.

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.

87° & 90° Boot Tee (_Bt)

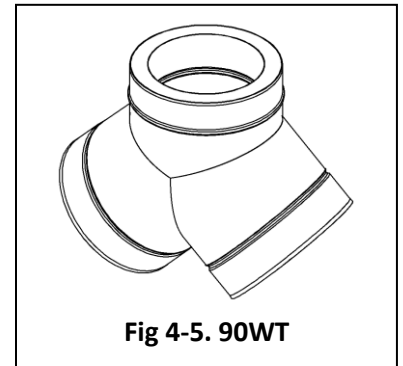
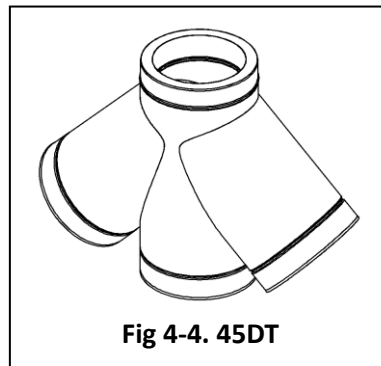
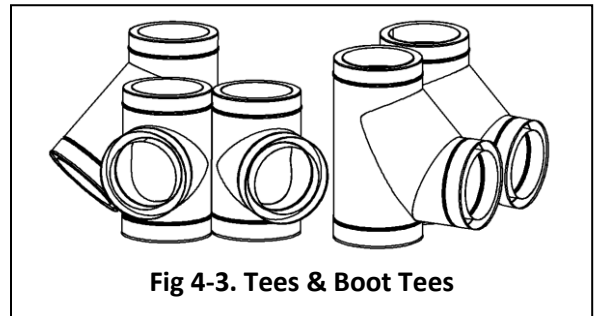
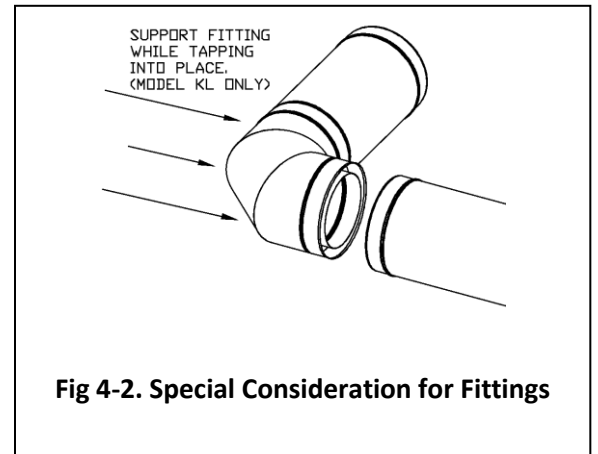
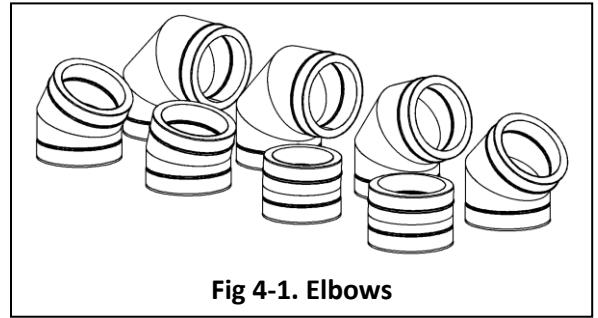
Jeremias Boot Tees offer the added 45-degree gore that directs the flue gases towards the outlet at a 45-degree angle. Most others still allow the flue gases to enter the outlet branch at 90-degrees. Snout can be same or any size smaller than the body.

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. See Fig 4-4.

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. See Fig 4-5.



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. See Fig 4-6.

Increasesers 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 Increasesers 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.

Tapered Eccentric Increaser & Reducer (TEI & TER)

Tapered Eccentric Increasesers 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

Stepped Increaser & Reducer (SI & SR)

Stepped Increasesers 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.

Stepped Eccentric Increaser & Reducer (SEI & SER)

Stepped Eccentric Increasesers and Reducers can be used in tight situations and are available in all steps. The Stepped Eccentric Increasesers and Reducers are non-structural part and must not be subject to loads in either the axial or lateral directions.

Condensate Drains – Universal Drain Length (UDL), Drain Tee Cap for Support (DCSS), Drain Tee Cap Side (DCS), Drain Tee Cap Bottom (DCB)

If appliance instructions or local code calls for a condensate drain, use a Jeremias drain fitting and tubing of appropriate size to route the condensate into the sanitary sewer drain.

Installation requirements:

- A. Install this drain fitting as close to the appliance flue collar as possible.
- B. When transitioning from horizontal to vertical, install Drain Tee Cap Side (DCS) or Drain Tee Cap Bottom (DCB) at bottom of Tee.
- C. For a straight horizontal run, install Universal Drain Length (UDL). Rotate fitting so that the drain tube points downward.
- D. Connect Condensate Drain Tube to fitting. Form drain tubing into a loop. Loop must be a diameter that is at least 4 times the appliance's rated stack pressure in inches of water column.
- E. Prior to final assembly prime the drain loop by pouring a small quantity of water into the drain tube.
- F. Follow all local and national codes and regulations for the draining of acidic condensate.
- G. Do not install drain tube in cold areas where ice can form causing potential damages and hazardous conditions.
- H. Do not use copper as a drain as it may corrode.

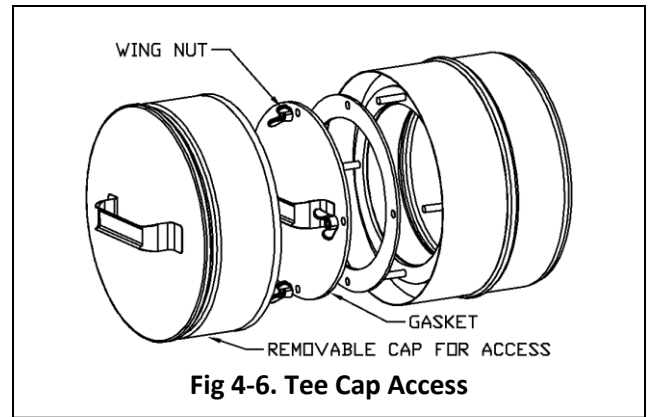


Fig 4-6. Tee Cap Access

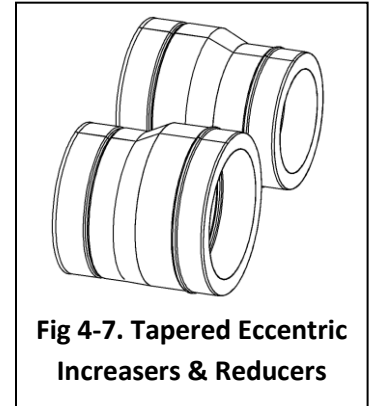


Fig 4-7. Tapered Eccentric Increasesers & Reducers

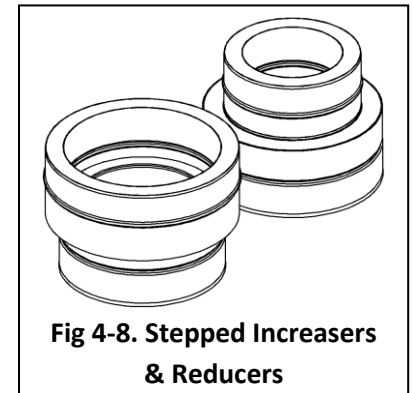


Fig 4-8. Stepped Increasesers & Reducers

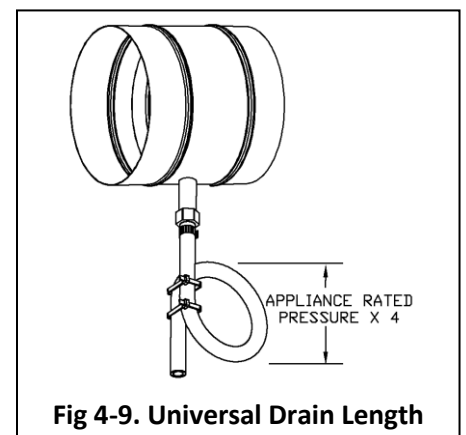


Fig 4-9. Universal Drain Length

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.

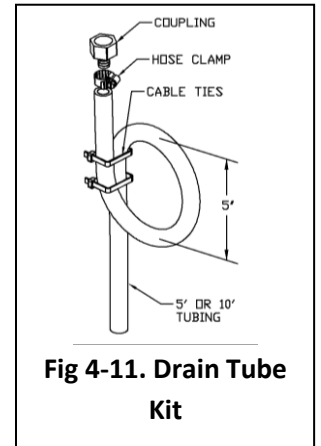
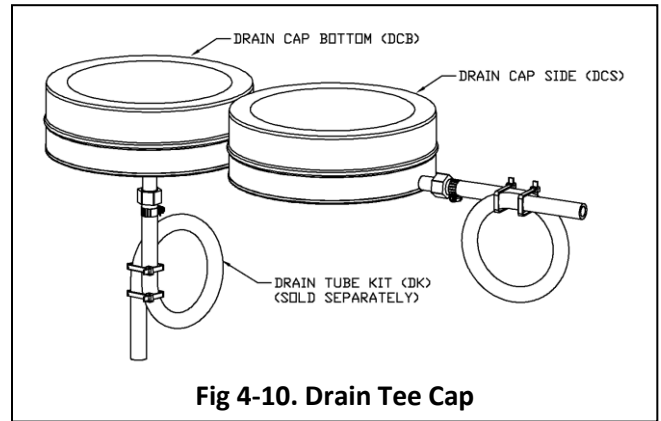
Drain Tube Kits (5dk & 10dk)

The Jeremias Drain Tube Kits contains:

1. 1" N.P.T to $\frac{5}{8}$ " hose coupling
2. Hose clamp
3. $\frac{5}{8}$ " 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.



SECTION 5 – ADAPTERS & TERMINATIONS

Appliance Connection

Connect AF to the appliance flue collar as directed in the appliance manufacturer's installation instructions. If the appliance flue collar is not designed to connect directly to AF a special adapter may be required. Consult the Jeremias catalog or contact Jeremias Technical Support for the proper appliance connector.

Start & End Adapters

Models AF is directional with flow therefore both START and END adapters are typically used in every application.

Up to 550°F flue gas temperatures use J-600 (Dow Corning 736) or equivalent sealant. Above 550°F 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) (RCI)

Connects Model AF 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. See Fig 5-2.

Flange Collar Kit (FCK)

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

Universal Appliance Adapter (UAA)

The UAA is used to connect gas fired appliances listed as Category II, III and IV to Jeremias AF venting systems. It is a universal part for use where standard adapters will not connect to the appliance flue collar.

Refer to the gas appliance manufacturer's instructions to determine venting requirements and limitations with respect to the installation and use of the appliance

To Install:

1. Align the AF pipe with the appliance outlet (See Fig. 5-4)
2. Apply sealant to the following surfaces
 - a. Around the outside perimeter of the appliance outlet.
 - b. Around the outside of the AF inner Pipe
 - c. Along the longitudinal seam of the UAA inner liner
3. Wrap the UAA inner liner around the outside surface of the flue outlet and AF inner. The seam of the UAA should overlap and be sealed with sealant from step 2c. (See Fig. 5-4)
4. Secure the UAA inner liner with 2 hose clamps
5. Verify all seams are tight and sealed with sealant
6. Wrap the UAA outer around the outside of the AF pipe
7. Secure UAA outer with 2 hose clamps

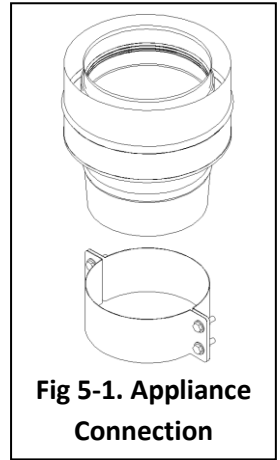


Fig 5-1. Appliance Connection

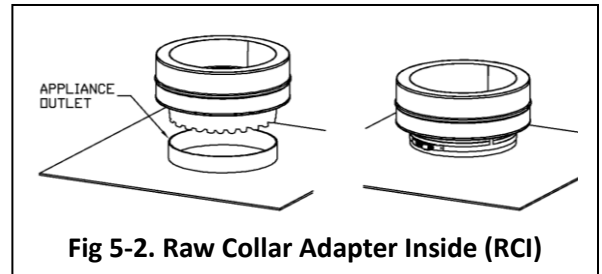


Fig 5-2. Raw Collar Adapter Inside (RCI)

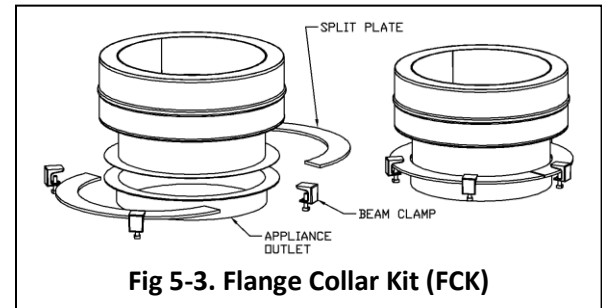


Fig 5-3. Flange Collar Kit (FCK)

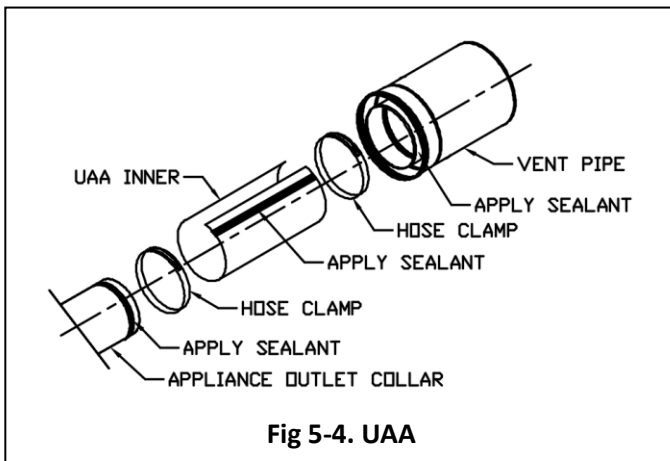


Fig 5-4. UAA

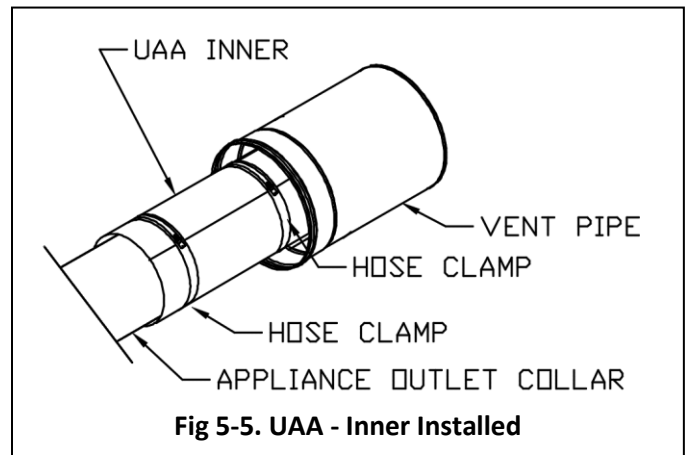


Fig 5-5. UAA - Inner Installed

Raw Collar Outside Adapter (RCO)

The Raw Collar Outside Adapter is used to add a flange on an appliance outlet for connection purposes.

To Install (See Fig 5-6.):

1. Select correct sealant based on flue gas and application (See Joint Assembly Section). Clean/Prepare all surfaces will sealant to be applied.
2. Apply sealant to the outside surface of the appliance outlet.
3. Clamp the RCO outside of appliance outlet.
4. Secured by tightening tensioner bolts.
5. Refer to Joint Assembly section to install subsequent flange pipe sections.

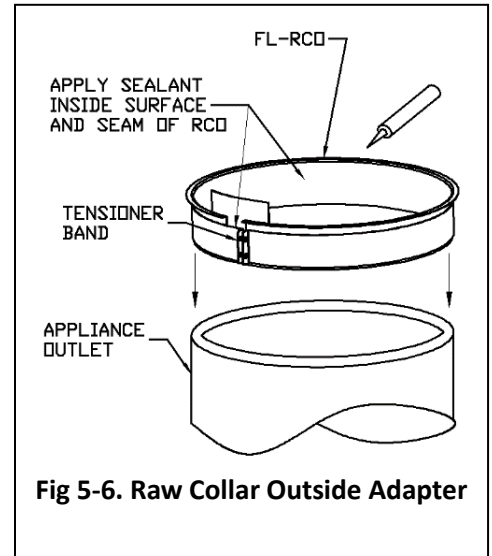


Fig 5-6. Raw Collar Outside Adapter

Raw Collar Adapter (Outside) Start & End (RCOS & RCOE)

Connects Model AF 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. (See Fig 5-7)

No-Weld Hood Adapter (NWA)

Connects Models AF duct to a kitchen exhaust hood without the need for field welding.

To Install (See Fig 5-8A & 8B):

1. Using the Lower ring as a template, scribe and cut center hole and pilot holes in Appliance Hood
2. Align Flanged Pipe Collar on top of appliance hood
3. Apply Gasket between collar connection and appliance hood
4. Align 2-Piece Receiver on top of Flanged Pipe Collar
5. Install Bolts in the lower ring, through Appliance hood and into 2-piece receiver and tighten securely.

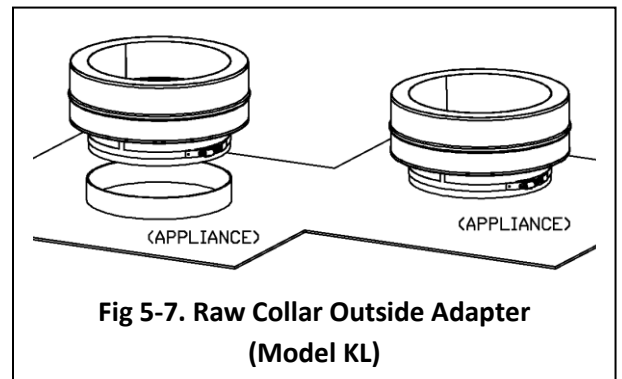


Fig 5-7. Raw Collar Outside Adapter (Model KL)

125/150 LB. ANSI FLANGE (AF)

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. (See Fig 5-9)

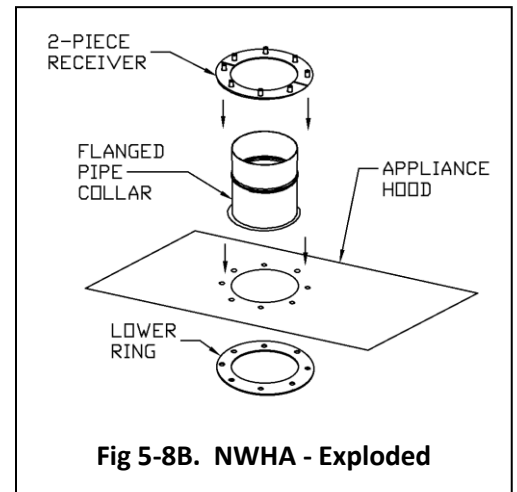
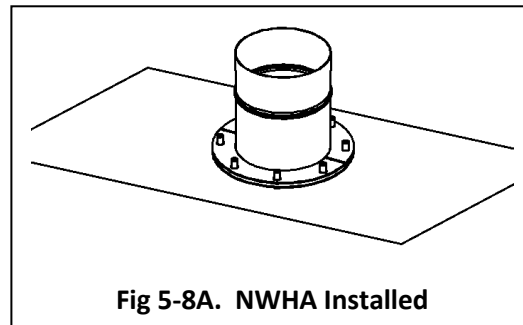


Fig 5-8B. NWA - Exploded

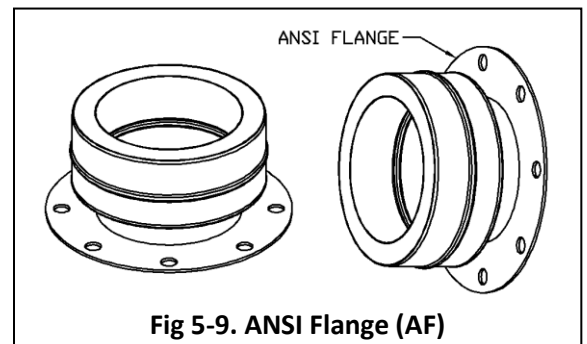


Fig 5-9. ANSI Flange (AF)

Fan Plate Adapter (FP)

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 Figure 5-10), 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.

Double-to-Single wall Adapters (D2S & S2D)

These adapters allow a smooth transition to and from double wall and single wall AF. They may be installed vertically or horizontally. See Fig. 5-11.

Transition to Round Start & End (TRS & TRE)

Used to connect to and from rectangular or square outlets on hood, fans, or auxiliary equipment. Transitions are custom made to order for project requirements. The rectangular or square base can be made in accordance with NFPA-96 no-weld hood connection or may be field welded by the installing contractor. See Fig. 5-12.

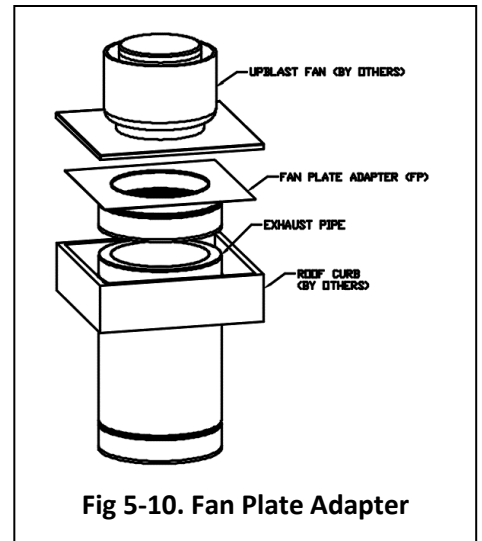


Fig 5-10. Fan Plate Adapter

Terminations

See SECTION 1 - GENERAL INFORMATION for termination height above roof requirements.

There are two options to most terminations:

No Screen (N) or With Screen (S).

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.

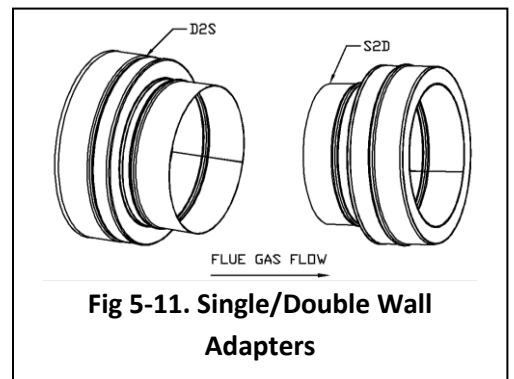


Fig 5-11. Single/Double Wall Adapters

Horizontal Terminations

There are several terminations available to terminate a horizontal system. Horizontal termination options include Exit Cone (EC), Miter Cut Termination (MCS), Tee Termination w/ Screen (90TT), 30° & 90° Elbow Termination w/ Screen (30ET / 90ET) and Opened Termination (OTN). All horizontal terminations must extend a minimum of 6" from the wall. Reference Joint Assembly section for instructions on installing these parts. The Termination can be removed for inspection of the vent. Removal is the reverse procedure as defined in Joint Assembly section.

Open Termination with Screen (OTS)

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 OTS connects to the Model AF pipe using a standard vee band. See Fig 5-13.

Exit Cone (EC)

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. Refer to corresponding Joint Assembly section for installation procedure. See Fig 5-14.

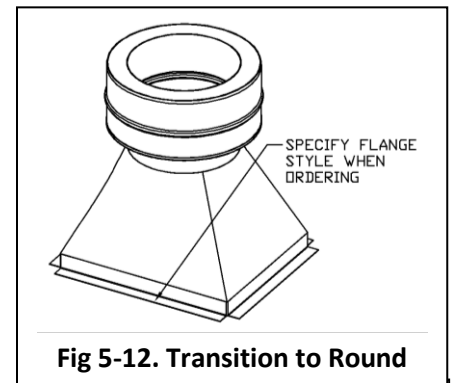


Fig 5-12. Transition to Round

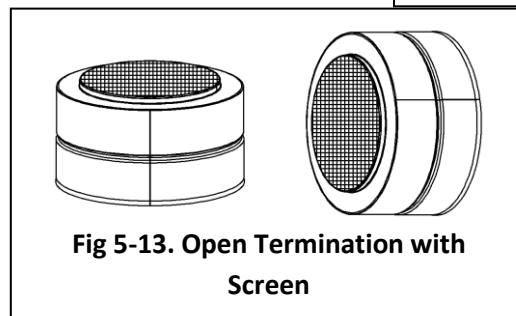


Fig 5-13. Open Termination with Screen

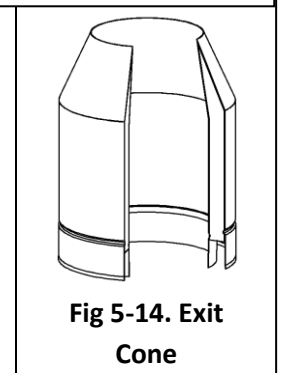


Fig 5-14. Exit Cone

High Wind Rain Cap (WRC)

This cap helps to reduce downdraft on gravity equipment and provides best rain protection. Refer to corresponding Joint Assembly section for installation procedure. See Fig 5-15.

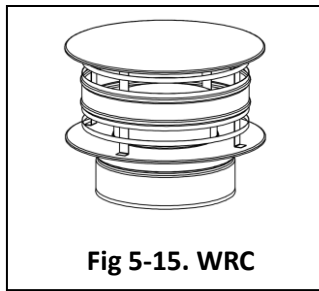


Fig 5-15. WRC

Stack Cap (SCN & SCS)

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. Refer to corresponding Joint Assembly section for installation procedure. See Fig 5-16.

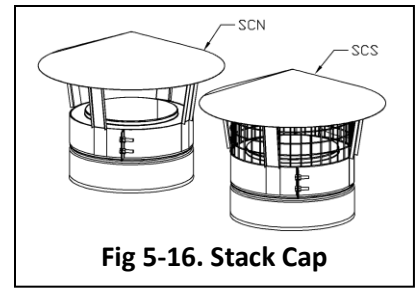


Fig 5-16. Stack Cap

Miter Cut Termination W/ Screen (MCS)

The Miter Cut Termination can be used horizontal venting. Refer to corresponding Joint Assembly and termination requirements section for installation procedure & requirements. See Fig 5-17.

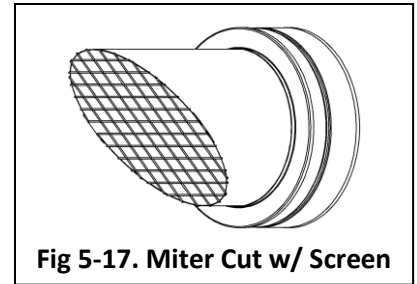


Fig 5-17. Miter Cut w/ Screen

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. Refer to corresponding Joint Assembly and termination requirements section for installation procedure & requirements.

90° Tee Termination (90TT)

The 90° Tee Termination is used for sidewall terminations or vertical terminations as specified by certain appliance manufacturers. Refer to corresponding Joint Assembly and termination requirements section for installation procedure & requirements. See Fig 5-18.

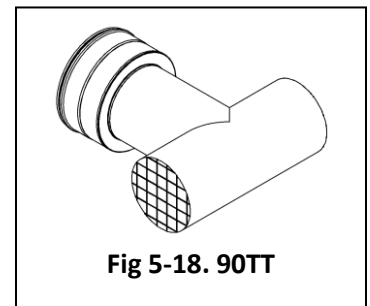


Fig 5-18. 90TT

No-Loss Weather Head (NLWH)

The No-Loss Weather Head (NLWH) incorporated as part of the Jeremias Inc. AF 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 1 – 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 AF pipe using a standard joint connection. See Fig 5-19.

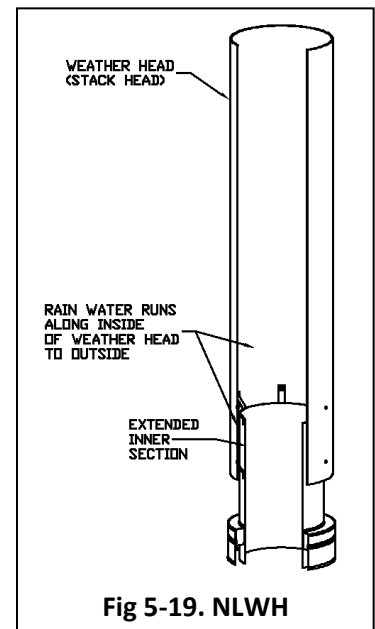


Fig 5-19. NLWH

SECTION 6 – THIMBLES & FLASHINGS

Thimble & Flashing Application Requirements

Thimbles provide for safe installation where AF passes through a combustible wall or ceiling. See Table 6-1 for selection of required Thimble and corresponding flashing and storm collar.

Non-Combustible Roof or Wall penetrations do not require Thimble. Framing dimension is as required for installation, access, inspection or per local code.

Table 6-1 - Thimble & Flashing requirements for Combustible Roof / Wall Penetrations

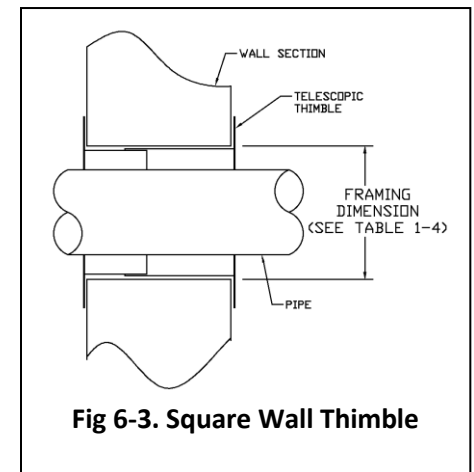
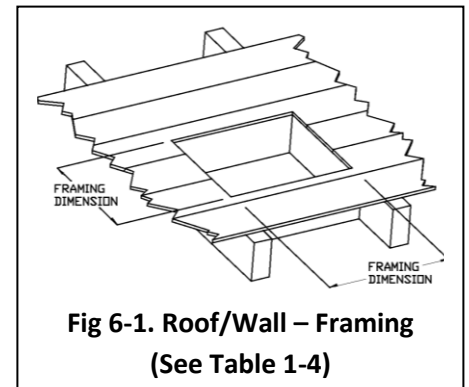
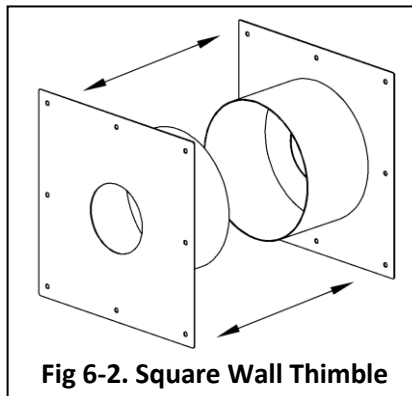
UL Listing / Application	Flue Gas (Max)	Framing Dimension	Roof Thimble	Flashing	Storm Collar	Wall Thimble
UL-1738 / ULC-S636 UL-441 / ULC-S605 Gas Vents	550°F	Table 1-4	Not Required	FRF, PRF, FCF or PCF	SC or SCCF	SWT or LTT
UL-103 / ULC-C959 Building Heating Appliance	1,000°F	Table 1-4	HTT	FRF or PRF	SC	LTT
UL-2561 / ULC-C959 Industrial Chimney	1,400°F	Table 1-4	HTT	VRF	VSC	HTT
UL-1978 / ULC-S662 Grease Duct	500°F / 2,000°F	Table 1-4	HTT	FRF or PRF	SC	HTT

Square Wall Thimble (SWT) [Pipe Size 3" to 12"]

A Wall Thimble is required where vent passes through a combustible wall. When terminating through a non-combustible wall the thimble is optional.

To Install (See Fig. 6-2 & 3):

1. Determine the location for the wall thimble such that a continuous minimum slope of 1/4" per foot is maintained in any horizontal portion of the vent system.
2. Establish proper framing for Wall penetration. Refer to Thimble Sizing Table 1-4.
3. The wall thimble is supplied in two telescoping halves. From the outside, position the cylinder in the framed opening and secure WT plate to the exterior of the building.
4. From the inside, align the WT cylinder with the cylinder from Step #3 and engage WT halves together.
5. Secure with fasteners and use silicone to seal the thimble to the structure.
6. Install vent length through the center of the thimble.
7. Terminate the system with a termination tee, an elbow or a 45° termination with or without bird screen.



Sidewall Thimble (LTT)

This wall thimble provides safe installation against combustibles materials. Only for double-wall DWAF use. Noncombustible wall penetrations do not require a thimble. See Fig 6-4 & 6-5.

The LTT thimble is fiber insulated and includes a heavy gage outside wall plate that is welded to the thimble that centers the 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 DWAF pipe I.D.

The minimum framed opening is DWAF pipe I.D. plus 6". The maximum wall thickness is 11½".

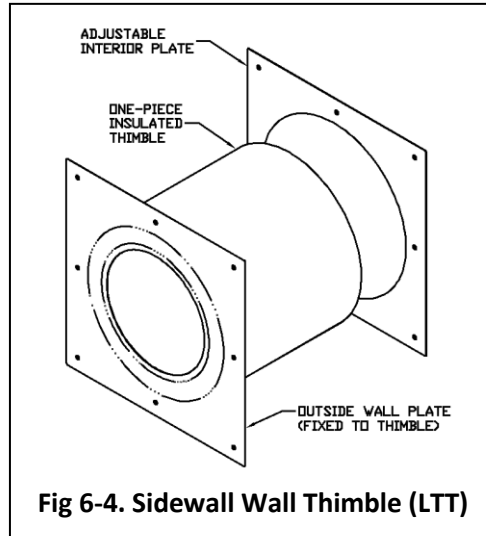


Fig 6-4. Sidewall Wall Thimble (LTT)

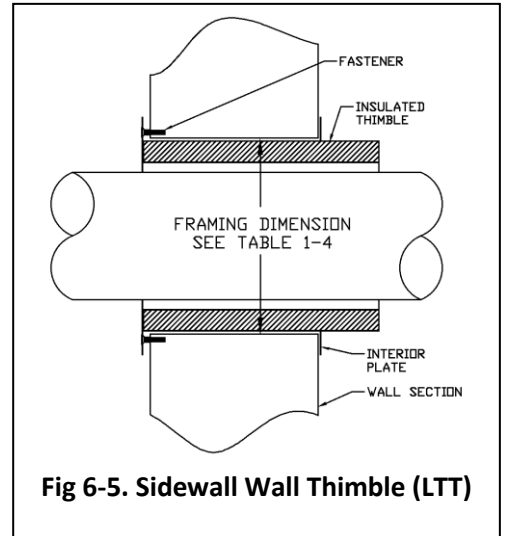


Fig 6-5. Sidewall Wall Thimble (LTT)

High Temperature Thimble (HTT)

This roof thimble provides safe installation against combustible materials. It is part of the Unvented and the Vented Roof Assemblies (see Figure 6-6). Only for DWAF 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.

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.

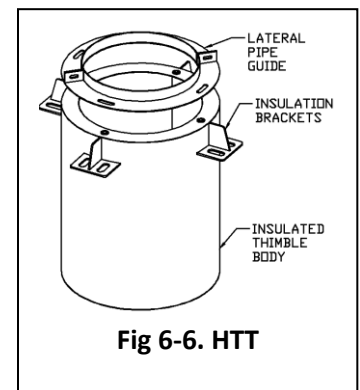


Fig 6-6. HTT

In all cases, it is important to ensure 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.

Flashings

A flashing is used to seal off the opening where the vent passes through the roof. Choose the correct flashing to match the vent size and pitch of the roof.

To install (See Fig 6-7 & 8):

1. Ensure the proper clearance to combustibles is maintained.
2. Position the flashing over the vent. The upper end of the flashing is installed underneath the roofing material. The lower end of the flashing is installed on top of the roofing material.
3. Seal the flashing in place and secure with appropriate roofing fasteners.

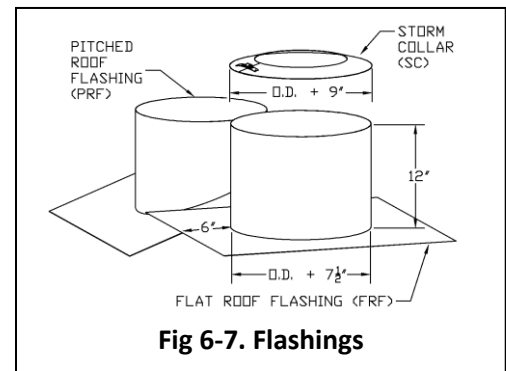


Fig 6-7. Flashings

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 DWAF 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).

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).

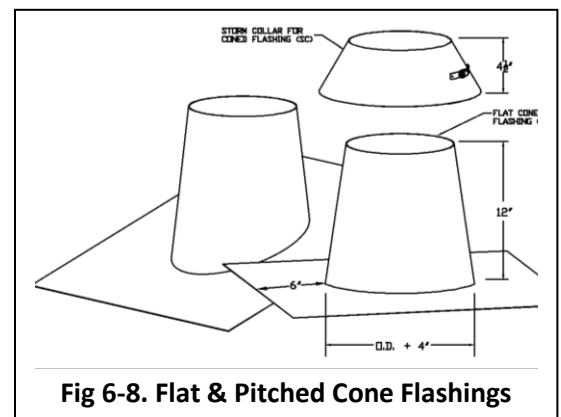


Fig 6-8. Flat & Pitched Cone Flashings

Unvented Roof Assembly

UL has determined the Roof Thimble (HTT) alone, without ventilation, provides a safe installation through a combustible roof for Model DWAF 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. (See Fig 6-10).

Ventilated Roof Assembly

Ventilated Roof Flashing (VRF) and the Ventilated Storm Collar (VSC) are used in conjunction with the HTT High Temperature Insulated Thimble to provide a safe penetration through a combustible roof for all UL-2561 applications (1400°F maximum continuous temperature). (See Fig 6-11).

Ventilated roof flashings (VRF) & Ventilated Storm Collar (VSC)

The Ventilated Roof Flashing is larger than the Flat Roof Flashing and incorporates tabs to allow air to flow under the Ventilated Storm Collar.

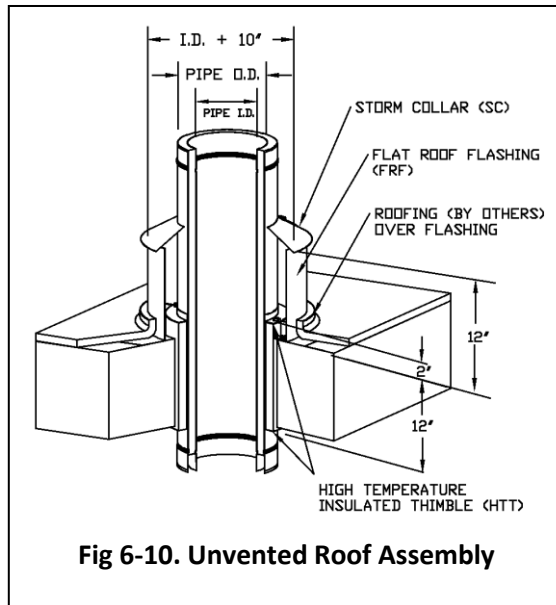


Fig 6-10. Unvented Roof Assembly

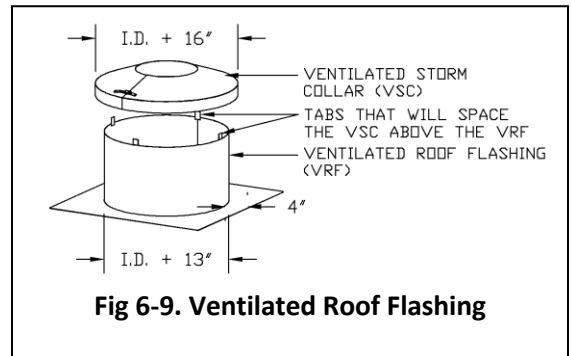


Fig 6-9. Ventilated Roof Flashing

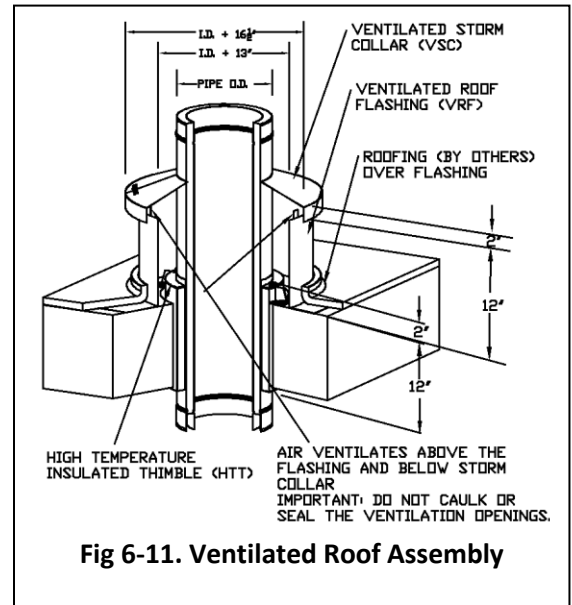


Fig 6-11. Ventilated Roof Assembly

Firestop Spacer (FS)

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 DWAF, only 3" and 4" diameters for SWAF.

To Install:

1. Establish the correct framing dimension (See Table 1-2)
2. Nail the Fire Stop to top of the joist to prevent insulation from falling into the joist.
3. Route the vent through the Fire Stop plate.
4. Keep all attic insulation the proper minimum clearance from pipe by installing an enclosure or similar around the pipe.

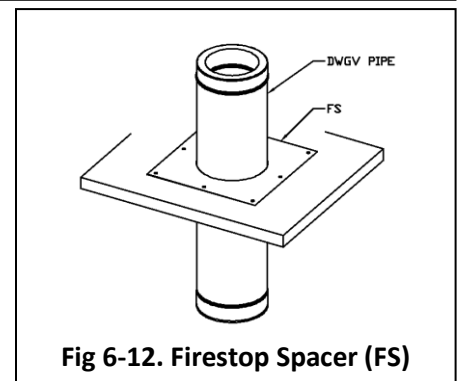


Fig 6-12. Firestop Spacer (FS)

Storm Collar

A Storm Collar is used to seal off the opening between the vent and flashing.

To Install (See Fig 6-9):

1. Position Storm Collar around vent and against the opening of the flashing.
2. Tighten worm gear to secure Storm Collar in place.
3. Apply sealant around seam between Storm Collar and vent.

Heat Shield (HSDW)

The Heat Shield is a light weight ventilated shield intended to lower the skin temperature of an installed DWAF double wall exhaust system where personnel might be able to touch the installed exhaust system.

The Heat Shield has been UL evaluated to provide a maximum of 70°F rise skin temperatures with flue gas temperatures at 1000°F continuous or less.

IMPORTANT:

- Not for use with single wall SWAF system.
- Not used to change required surroundings and air space clearance to combustibles as shown in Part 1 General Information.

The Heat Shield consists of a ventilated shell that wraps around an installed DWAF pipe. Spacing clips center the Heat Shield around the DWAF pipe. The Heat Shield increases the DWAF outside diameter by 3". Total width of the DWAF insulation and added Heat Shield, or distance from inside of pipe to outside of installed Heat-Shield is 2¾".

To Install:

1. The DWAF system must be completely assembled and supported before installing the Heat Shield.
2. Unwrap the Heat Shield. The Heat Shield is factory packaged and delivered in a tighter roll (typically inside a DWAF pipe length, or by itself with straps holding its cylindrical shape).
3. Place Heat Shield around the installed DWAF pipe.
4. Tighten the worm gears to a snug fit, the spacing clips will hold the Heat Shield in place in both horizontal and vertical installations.

Multiple Heat Shields may be butted at ends or overlapped. If overlapped ensure all holes remain open.

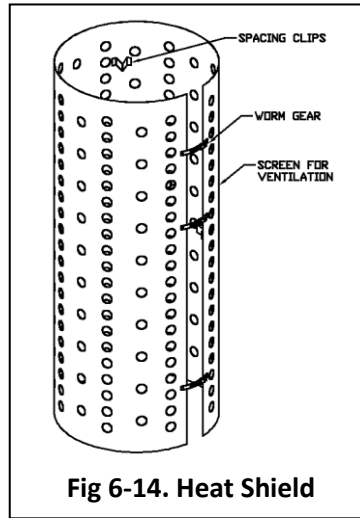


Fig 6-14. Heat Shield

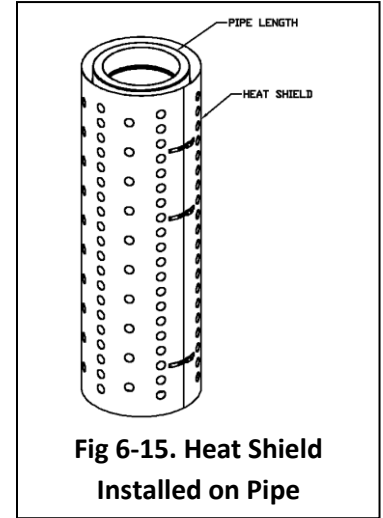


Fig 6-15. Heat Shield Installed on Pipe

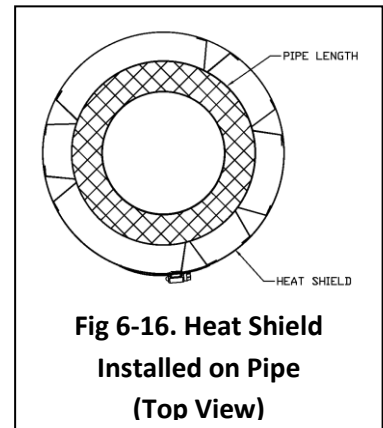


Fig 6-16. Heat Shield Installed on Pipe (Top View)

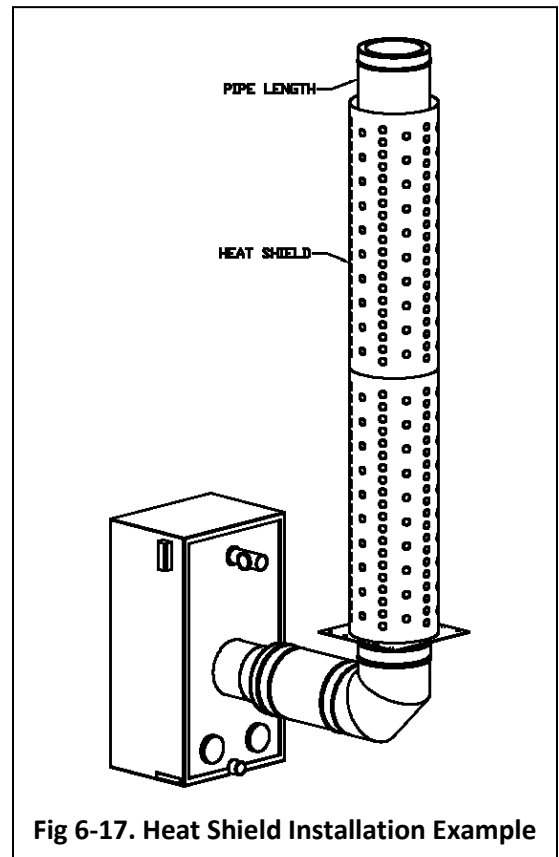


Fig 6-17. Heat Shield Installation Example

SECTION 7 – Kitchen Ventilation Systems

Single Wall

In Grease Ducts, the single wall Model AF is intended to be an alternative option to field welded kitchen exhaust ducts as defined by NFPA-96. In this application these models have the same air space clearance to combustibles as field welded.

Slope

Mechanical codes and good practice require that some slope (back to a grease reservoir or kitchen hood) be created to prevent pooling of grease within horizontal portions of grease duct systems. Per code, grease duct systems are required to incorporate a minimum $\frac{1}{4}$ " per foot slope. Some codes require $\frac{1}{4}$ " per foot for runs less than 75' in length and 1" per foot for runs of 75' and more.

While such slopes are critically important for flat bottom grease ducts in order to prevent pooling, it is well acknowledged that cylindrical ducts prevent pooling with far less slope.

Engineering analysis, including hydraulic fluid calculations and tests confirm that pooling of grease within factory-built, cylindrical grease duct systems can be achieved with far less slope compared to flat bottomed systems, due to the physical characteristics of their construction.

As such, per the terms of the UL Listing and in accordance with UL1978, Jeremias recommends a minimum slope of $\frac{1}{16}$ " per foot (0.3 degrees) for horizontal segments of the AF grease duct systems. Normal system components will permit such slopes to be achieved on horizontal offsets of at least 2' in dimension. Shorter runs require no slope. Where a specific slope is desired, Jeremias offers various options including 1.5°, 3° and 87° elbows as well as 87° tees.

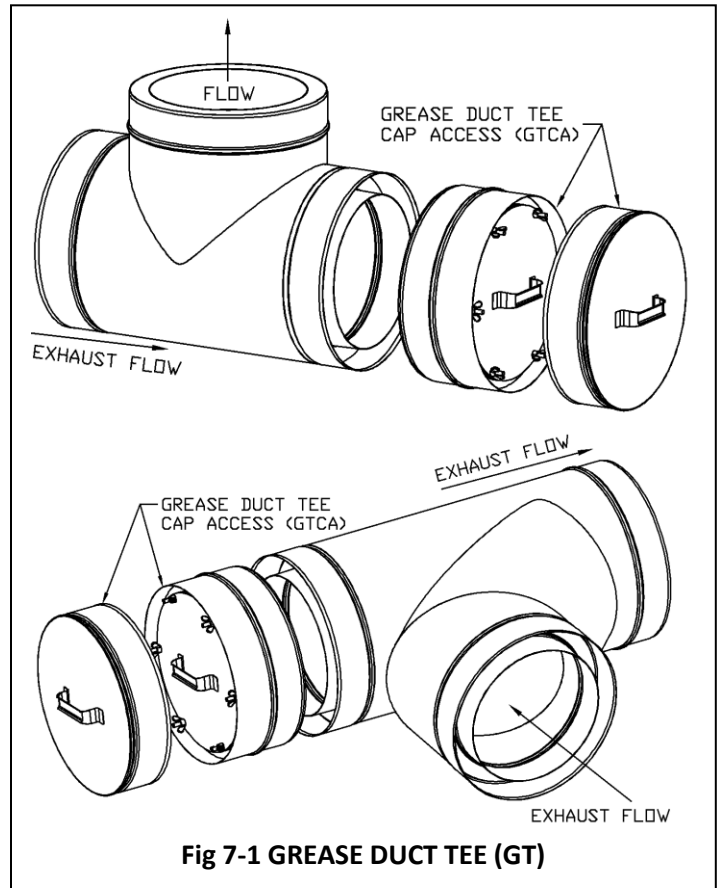


Fig 7-1 GREASE DUCT TEE (GT)

Access for Cleaning Grease Ducts

Follow NFPA-96 for required openings in Grease Duct for accessibility required for thorough cleaning. Following are some openings requirements as mentioned in NFPA-96:

- 1) Openings at changes of direction, if not accessible from the duct entry or discharge.
- 2) Access panel openings for installation and servicing of fire-extinguishing systems.
- 3) Access for cleaning and inspection where fans with ductwork connected on both sides within 3' of each side of fan.
Horizontal grease ducts only:
- 4) Opening for thorough cleaning at 12' intervals, where opening is not large enough for personnel entry.
Vertical grease ducts only:
- 5) Access at the top of a vertical riser to accommodate personnel descent.
- 6) Where personnel entry is not possible, access at every floor.

Model DWAF and SWAF have two standard options for access panels in Grease Duct systems. These are no-tool in design and specifically tested and Listed for Grease Duct use.

Inline Access Door (IAD), see Section 3.

Grease Duct Tee Cap Access (GTCA), see Section 4.

For Model SWAF single wall installations, it is permissible to install Listed Grease Duct Access Doors provided they are installed in accordance with the manufacturer's installation instructions.

Interconnection with Field Welded Grease Ducts

Model AF systems are intended to be installed as a complete system without the use of other manufacturer or field fabricated components. However, Jeremias recognizes the occasional requirement for a rectangular portion of grease duct due to space constraints at certain locations in a system, or when making modifications or additions to an existing grease duct. In such a case, it is permissible to transition to and from Model AF Grease Duct to a code compliant, rectangular or round, welded steel grease duct and back again. In such a case, Jeremias will manufacture and supply a custom single wall stainless steel transition, meeting code thickness requirements, that permits field welding to or from the field welded duct section(s).

Maintain the minimum air space to combustibles of 18" with these custom transitions. Follow NFPA-96 regarding methods for reduced clearances for these single wall custom transitions as well as the field fabricated grease ducts.

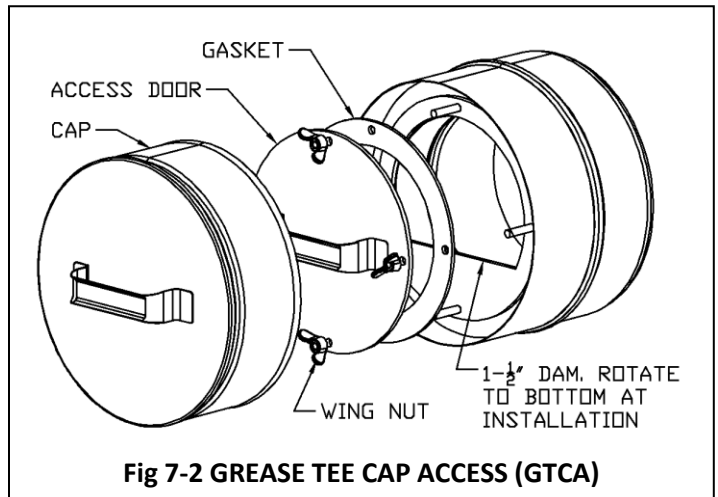
Grease Duct Tee (_GT & _GBT)

Grease Duct Tee fittings have a reversed snout that permits accessibility for cleaning. This is available in every tee option; the arrows below dictate exhaust flow.

Grease Tee Cap Access (GTCA)

Grease Duct Tee Cap Access permits access to the inside Grease Duct for inspection and/or cleaning. It can be placed at the end of a snout of any three or four-way fitting and incorporates a 1½" tall dam to prevent liquid or grease from dropping out when opening.

Gasket and hardware are included so that the internal cap may be removed and reinstalled without tools.



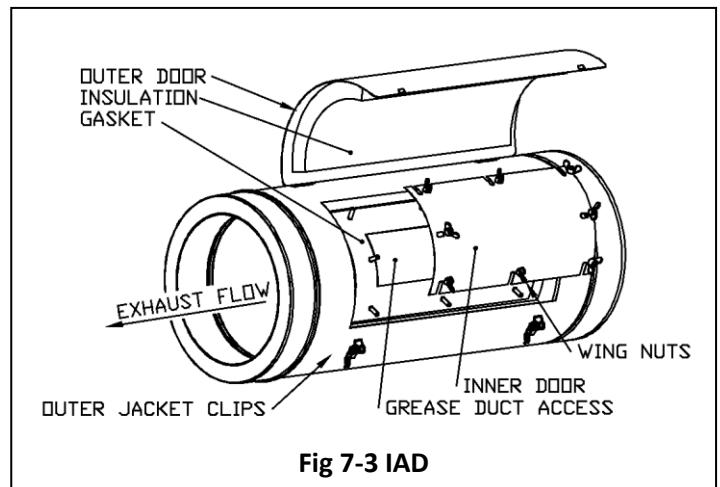
Inline Access Door Length (IAD)

The Inline Access Door is for the Grease Duct application and provides an easy and no-tool access to the inside exhaust for cleaning and inspection. The Inline Access Door ships fully assembled, and no modifications are required in the field.

To open the door, and gain access to the Grease Duct, follow these steps:

1. Unlatch the outer jacket clips and open the door (hinges are on the opposite side of the clips).
2. Remove the precut insulation blanket.
3. Loosen and remove the wing nuts.
4. Remove the inner door.
5. Access the Grease Duct.

Reverse the steps to close the door.



SECTION 9 – FINISHING STEPS, INSPECTION & MAINTENANCE

Final Check

Before completing assembly, recheck all joints to ensure the locking band has been properly installed and has captured the bead. For Category III and IV check joint for gas tightness. Confirm all clearances and support spacing is correct.

OPERATING PRECAUTIONS

Creosote and Soot – Formation and Need for Removal

When wood is burned slowly, it produces tar and organic vapors which combines with expelled moisture in the flue gases to form creosote. The creosote vapors condense in the cool chimney flue of a slow burning fire. As a result, creosote residue accumulates on the inner pipe. If ignited, this creosote makes an extremely hot fire.

For this reason, the chimney should be inspected at least once every two months during the heating season to determine if a creosote or soot buildup has occurred. If creosote or soot has accumulated, it should be removed to reduce risk of a chimney fire.

Important Notice

The UL listing for this product is void if components other than the Listed Components are used. All warranties, stated or implied, are void if the vent or appliance is installed in a non-conforming manner. After installation, check all joints and supports to assure they are secure and functioning as intended and are properly sealed for containment of flue gases.

Maintenance

Jeremias Exhaust Systems provide the benefit of being a low maintenance product.

Jeremias requires that the entire system be checked by a qualified inspector at least once a year after the system is placed in service. The installation must conform to Jeremias installation requirements, requirements of the appliance manufacturer's instructions, as well as National and local codes and regulations.

All exhaust components are to be inspected for proper clearance to combustibles, joints and fasteners are secure and the system is free from any physical damage or corrosion. Terminations are to be free of any foreign material (e.g., leaves or rodent nest). Sealant on storm collars, flashings and other exterior items is to be intact or reseal as needed.

The exterior of the exhaust system can be cleaned with a commercially available stainless-steel cleaner or polish. Products constructed with 409ss (E.g., Models DWCK & DWAF-AE) that is exposed to the exterior conditions are to be protected with a minimum of one base coat of primer and one finish coat of heat-resistant and corrosive resistant paint at all times.

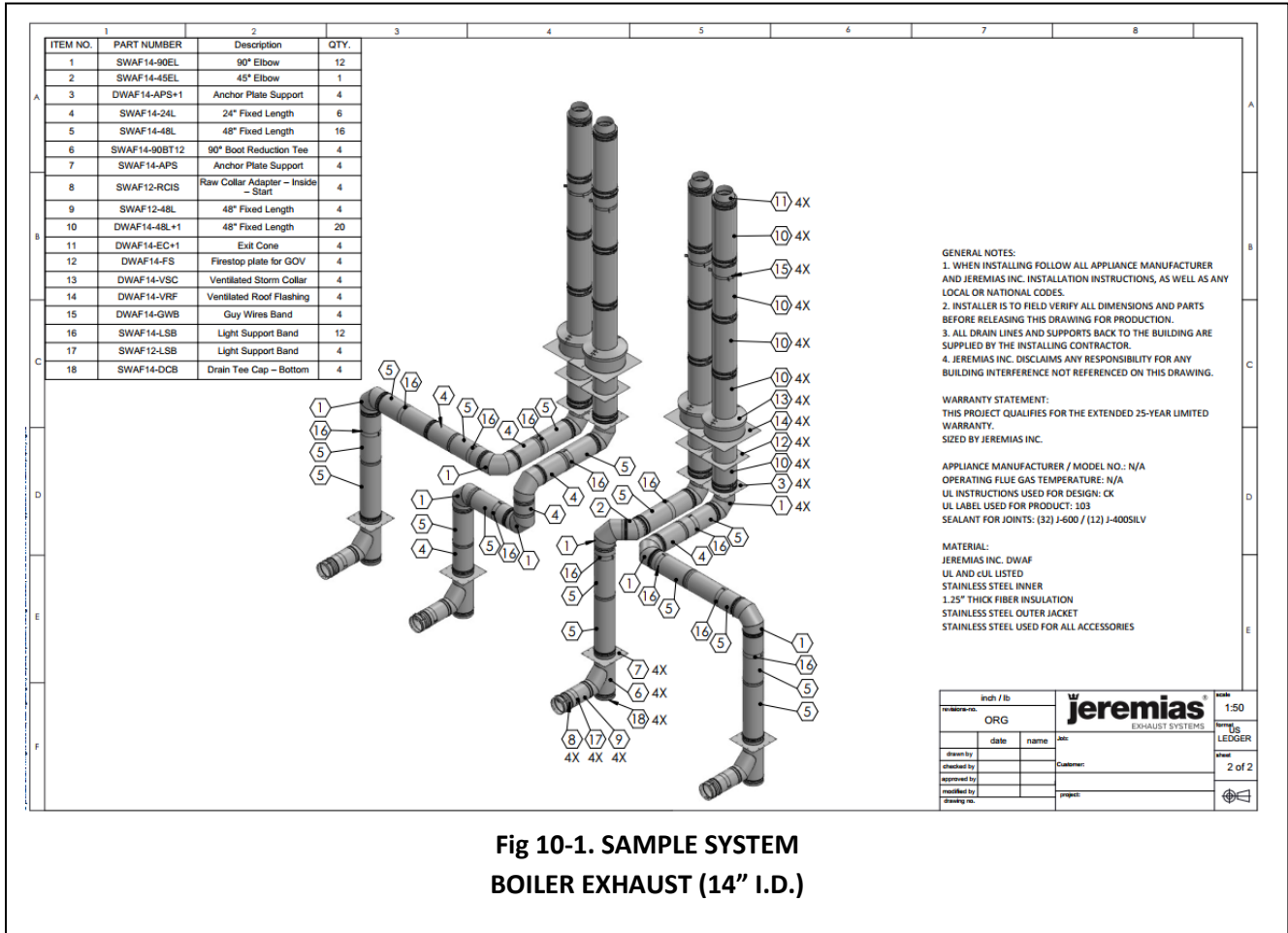
Gas burning appliances are relatively clean, however, a poorly adjusted or malfunctioning appliance can deposit soot and other debris which can enter the vent system. Any such accumulation should be removed, and the appliances adjusted to eliminate future accumulation. Refer to NFPA 54: National Fuel Gas Code and local codes for other maintenance requirements.

If the system incorporates a drain hose from either an in-line fitting or from a drain tee, the hose must be inspected periodically to assure that water remains in the trap loop. If a proper trap loop is not maintained exhaust from the connected appliances may accumulate in the building area.

For Grease Duct applications, NFPA 96 Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations and many local building codes require the duct to be inspected and cleaned at specific intervals prior to surfaces becoming heavily contaminated with grease or oily sludge. Jeremias recommends that grease containers connected to drainage points be emptied and washed out daily or more often, if necessary. If needed, the drain nipples should be checked and cleaned whenever the containers are emptied.

For Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances refer to NFPA211 for annual inspection requirements. If required, cleaning, maintenance and repairs are to be conducted by a qualified chimney sweep. Access should be provided for the inspection and cleaning of all sections of the chimney. It is recommended to use a nylon chimney brush of the correct size. Do not use a brush that will scratch the stainless-steel interior of the chimney.

PART 10 – SAMPLE SYSTEMS



**Fig 10-1. SAMPLE SYSTEM
BOILER EXHAUST (14" I.D.)**

I. 1-Year Limited Warranty

Jeremias Inc. ("Jeremias") provides a 1-year limited warranty ("1-Year Limited Warranty") for its exhaust systems; KL, FL, GV, CK & AF Series (collectively, the "Products") for any defect in workmanship or materials under normal use from the date of shipment to the purchaser of Products ("Purchaser"), subject to the following conditions:

- Product sizing and specifications have been performed in accordance with generally accepted engineering practices.
- Correct installation and maintenance in full compliance with Jeremias' installation and maintenance instructions as published at the time of installation.

II. Limited Lifetime Warranty

Jeremias provides for an extended limited lifetime warranty ("Limited Lifetime Warranty") for any defect in workmanship or materials under normal use from the date of shipment to the Purchaser, subject to the satisfaction of the Limited Warranty Conditions.

III. Limited Warranty Conditions

- Products must have been designed and sized by Jeremias' personnel.
- Availability of a written inspection report from the time of installation, or timely thereafter, by a Jeremias inspector or an inspector authorized by Jeremias, that the Product assembly and installation conformed to all of Jeremias' assembly and installation instructions.
- Products were at all times operated and maintained in full compliance with Jeremias' operation and maintenance instructions as published at the time of installation or as later provided to Purchaser by Jeremias.

For a period of ten (10) years from original installation, Jeremias will provide replacement product to the original owner for the product proven defective with a similar or like quantity of available Jeremias product, free of charge.

From the eleventh (11) through fifteen (15) years Jeremias will provide replacement product to the original owner at a cost of 75% off of the Manufacturers Suggested List Price in effect on the date the claim is received.

At expiration of the fifteen (15) year term, Jeremias will provide replacement product to the original owner at a cost of 50% off of the Manufacturers Suggested List Price in effect on the date the claim is received.

IV. Exclusion of Limited Warranty

The 1-Year Limited Warranty and the Limited Lifetime Warranty (collectively the "Limited Warranty") shall not cover (i) damages to: wear parts, e.g. seals; demonstration units; paintwork; moving parts, including but not limited to compensators, flue gas dampers, draught regulators, chimney, doors; flexible piping; insulation; consumables, such as granulates; minor Product deviations which do not effect functionality; or (ii) damages caused by: contamination of ambient air or combustion air by chlorinated hydrocarbons or other vapors which may cause excessively severe acid condensate to form within the Products; merchandise provided by other manufacturers; installation, transport or commissioning; Purchaser, an installer or other third parties; normal wear and tear; any party other than Jeremias in a willful manner; force majeure, including, but not limited to flood, fire or frost; non-compliance with the assembly, installation, operation and maintenance instructions available at www.JeremiasInc.com; assembly, installation, maintenance or repair by unqualified personnel; improper commissioning; use of Products not in accordance with their intended purpose; exposure of Products to any metals of an inferior quality; contamination of the Products between unpacking and assembly; burning of wood other than unpainted, natural wood, which has been stored for at least 3 years and which moisture level does not exceed 20%; or burning of chipboard or domestic waste.

V. Remedies

If a valid Limited Warranty claim arises, Jeremias shall, in its sole discretion, either repair the Product or deliver a properly functioning Product. This Limited Warranty is limited to repair or replacement of the Product plus shipping cost to the location of the defective Product. The Limited Warranty does not cover labor costs for removal or replacement of the defective Product, unless such labor shall be carried out by Jeremias itself in its sole discretion.

VI. Filing of a Limited Warranty Claim

Limited Warranty claims may only be asserted during the term of the applicable Limited Warranty period. Any extension of the term of the Limited Warranties shall be excluded, regardless of the legal basis. If Purchaser believes that there is a justified Limited Warranty claim, Purchaser shall notify Jeremias to that effect in writing. Any claims stemming from or relating to a Limited Warranty shall be asserted in detail within eight weeks after the discovery of the defect (the time when the notification is received by Jeremias will be the basis for determining whether a claim has been reported within this deadline) or else shall be excluded and not be recognized by Purchaser. Such notification shall include a description of the defect, original proof of purchase, and a copy of the written inspection report as described in Section II above (if applicable).

VII. No Other Warranty

EXCEPT AS SET FORTH EXPRESSLY THEREIN, JEREMIAS MAKES NO WARRANTIES, EITHER EXPRESS OR IMPLIED, REGARDING THE PRODUCTS, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

VIII. Damages Disclaimer and Limitation

IN NO EVENT SHALL JEREMIAS BE LIABLE TO ANY CLIENT OR ANY OTHER PERSON FOR ANY (A) INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING LOSS OF PROFIT OR GOODWILL OR (B) DIRECT DAMAGES TO BODY, HEALTH OR PROPERTY FOR ANY MATTER ARISING OUT OF OR RELATING TO THE PRODUCTS, WHETHER SUCH LIABILITY IS ASSERTED ON THE BASIS OF CONTRACT, TORT OR OTHERWISE EVEN IF JEREMIAS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL JEREMIAS' TOTAL AGGREGATE LIABILITY FOR DAMAGES EXCEED THE GREATER OF THE AMOUNT OF (A) TOTAL COMPENSATION PAID BY PURCHASER TO JEREMIAS FOR THE PRODUCTS, OR (B) PROCEEDS AVAILABLE FROM ANY INSURANCE POLICY IN EFFECT AND APPLICABLE TO THE EVENT GIVING RISE TO SUCH LIABILITY.

IX. Notice

Any notice or other communication hereunder to Jeremias shall be sent postage prepaid, by certified mail, by courier such as United Parcel Service or e-mail, to the following: Jeremias Inc., 983 Industrial Park Drive, Marietta, GA 30062, E-mail: Info@JeremiasInc.com. Notices shall be effective upon receipt.

XI. Terms and Conditions of Sale

Purchaser's Terms and Conditions of Sale as currently in effect shall govern these Limited Warranties, including without limitation the rights and responsibilities granted hereunder.

Jeremias Warranty and Terms & Conditions apply. Visit: <https://jeremiasinc.com/downloads/terms-conditions/>

NOTES



Jeremias Inc.

983 Industrial Park Drive, Marietta, GA 30062