

Model DW Series

Grease Duct Guidelines

UL Listed under Standard 103 for Flue Gas
Temperatures up to 1400°F (759°C)
Venting systems for Factory-Built Chimneys
For Building Heating Appliances
UL Listed under Standard 1978

GENERAL The Model DW and DWplus Grease Duct use the same components as the same model chimneys with the addition of some special fittings. These instructions are to be used in conjunction with the Model DW and DWplus GENERAL INSTALLATION GUIDELINES. The Grease Duct Systems are installed at different clearances than the chimney systems (see Grease Duct Clearances).

STANDARDS The Model DW and DWplus Grease Ducts are to be installed in accordance with the Van-Packer Installation Instructions provided with the components and NFPA 96 (Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations).

APPLICATION Both the Model DW and DWplus Grease Ducts are used to convey smoke and grease laden vapors from kitchen hoods or grease extractors to the building exterior through a blower or fan. These grease duct systems are for use in institutional, commercial, industrial and other similar installations.

CLEANOUT DOORS Grease Ducts must be provided with cleanout doors or openings at each change of direction unless the entire length of the Grease Duct can be cleaned and inspected from either end of the system. Cleanout doors in horizontal ductwork must be at the sides of the duct (12' maximum intervals) and the lower edge of the opening must be at least 1-1/2 inches above the bottom of the duct. Refer to NFPA 96.

CLEARANCES The Grease Ducts are to be installed at the following minimum clearances to combustible material. If the Grease Ducts are to be fully enclosed, they must be enclosed in an appropriate fire rated enclosure in accordance with the requirements of NFPA 96.

CLEARANCE CHART

Model Diameter (Inches)	DW (Inches, mm)	DWplus & plus2 (Inches, mm)	DWplus3 (Inches, mm)	DWplus4 (Inches, mm)
6	7 / 178	4 / 102	2 / 51	1 / 25
8	8 / 203	5 / 127	2 / 51	2 / 51
10	8 / 203	5 / 127	2 / 51	2 / 51
12	9 / 229	5 / 127	2 / 51	2 / 51
14	10 / 254	6 / 152	3 / 76	3 / 76
16	10 / 254	6 / 152	3 / 76	3 / 76
18	10 / 254	6 / 152	3 / 76	3 / 76
20	11 / 279	7 / 178	4 / 102	4 / 102
22	11 / 279	7 / 178	5 / 127	4 / 102
24	12 / 305	7 / 178	5 / 127	4 / 102
26	12 / 305	8 / 203	5 / 127	4 / 102
28	12 / 305	8 / 203	6 / 152	5 / 127
30	13 / 330	9 / 229	6 / 152	5 / 127
32	13 / 330	9 / 229	6 / 152	5 / 127
34	14 / 356	9 / 229	7 / 178	6 / 152
36	14 / 356	10 / 254	7 / 178	6 / 152
38	15 / 381	10 / 254	8 / 203	6 / 152
40	15 / 381	10 / 254	8 / 203	7 / 178
42	16 / 406	11 / 279	9 / 229	7 / 178
44	16 / 406	11 / 279	9 / 229	8 / 203
46	17 / 432	11 / 279	9 / 229	8 / 203
48	17 / 432	11 / 279	9 / 229	8 / 203

ASSEMBLY NFPA 96 requires grease duct joints to be liquid tight. The following steps should be taken for proper joint assembly:

- 1.) Inspect all liner flanges and vee bands for bends, kinks or other deformations and straighten if necessary.
- 2.) Clean all liner flanges and vee bands with detergent and warm water or commercial degreasers (follow label directions).
- 3.) Butt liner flanges together.
- 4.) Apply High Temperature joint cement over the liner flanges.
- 5.) Place the vee band / joint cement over the liner flanges and tighten.
 - a.) Place the draw-ups at the top or side of the duct to help prevent leaks.
 - b.) Light tapping around the vee band will help align the flanges and make tightening the screws easier.
 - c.) Vice Grip Pliers modified to fit in vee band draw-up holes are very helpful when drawing the ends of the vee band together so that the screws and nuts may be put in place.
 - d.) Tighten the vee band as soon as possible, before the joint cement begins to harden.
- 6.) The draw band is now installed. Refer to the Joint assembly Installation sheet packed with each carton.

FIRE EXTINGUISHING EQUIPMENT NFPA 96 requires that approved fire extinguishing equipment be provided to protect duct systems (see NFPA 96, latest edition, for possible exceptions and other details).

Listed fire extinguishing systems shall be installed in accordance with the terms of their listing and the manufacturer's instructions. Some types of fire extinguishing equipment are as follows: Carbon dioxide (NFPA 12), Sprinkler (NFPA 13), Foam-Water (NFPA 16), and Dry Chemical (NFPA 17).

The Duct Coupling Section (Part DCS) is used for the attachment of various types of fire extinguishing equipment.

AUTOMATIC CLEANING EQUIPMENT A hot water/detergent cleaning system may be incorporated into the duct system (provided by others) using the Duct Coupling Section (Part DCS) and the Duct Drain Section (Part DDS). Typically, 160° F water with a detergent injection system is used. This allows the duct system to be cleaned on a daily basis. With an automatic cleaning system the grease drains (from the grease trap) are to be connected to the main sewer drain.

GREASE TRAPS It is recommended that any drains in the grease duct system, be fitted with grease traps (provided by others). This allows grease that runs into the drains during normal operation to be collected and contained outside of the duct. NFPA 96 recommends that the size of the grease trap be limited to one gallon or less. Each duct drain should be provided with its own grease trap. The grease trap must be mounted as close to the drain as possible because grease may solidify in a length of pipe and plug the drain. After each cleaning of the duct system, **VISUALLY INSPECT EACH DUCT DRAIN**, to be sure that it is free of grease. All grease traps must be checked and cleaned as often as needed to safely maintain the system.

When manually cleaning the grease duct system with hot water and detergent, the grease traps should be removed and the wastewater drained into temporary containers of sufficient capacity.

DUCT SLOPE The applicable codes require horizontal ducts less than 75 feet in length to slope at a minimum of 1/4 unit vertical in 12 units of horizontal toward the hood or a grease reservoir; and for ducts exceeding 75 feet the slope shall not be less than 1 unit vertical in 12 units horizontal. In general, these slope requirements are based on, and intended for rectangular field-installed grease ducts which are not listed by a certification agency. Factory-built round grease ducts that are listed to UL 1978 and have proven through testing and/or analysis to provide better flow characteristics as compared to the rectangular duct may be installed at reduced slopes in accordance with their listing and when these alternate slopes/methods are allowed by the AHJ.

In accordance with their listing, Van-Packer grease ducts listed to UL 1978 are to be installed at a slope of not less than 1/16 (0.0625) unit vertical in 12 units horizontal toward the hood or toward a grease reservoir. This slope may also be used for horizontal grease ducts where the duct length exceeds 75 feet under two conditions: (1) For ducts sloped continually in the same direction (e.g., all uphill from a hood or reservoir), additional grease drainage points not exceeding 75 feet spacing are required, and (2) For ducts that are stagger sloped (e.g., uphill to a peak point then downhill to a valley point), the distance between a valley point and peak point shall not exceed 75 feet and every valley must allow for grease drainage (i.e., a hood or reservoir). When grease ducts are not sloped as described above, and the ducts exceed 75 feet in horizontal length, Van-Packer grease ducts listed to UL 1978 are to be installed at a slope of not less than 3/16 (0.1875) unit vertical in 12 units horizontal toward the hood or toward a grease reservoir. Obtain AHJ approval for these alternate methods.

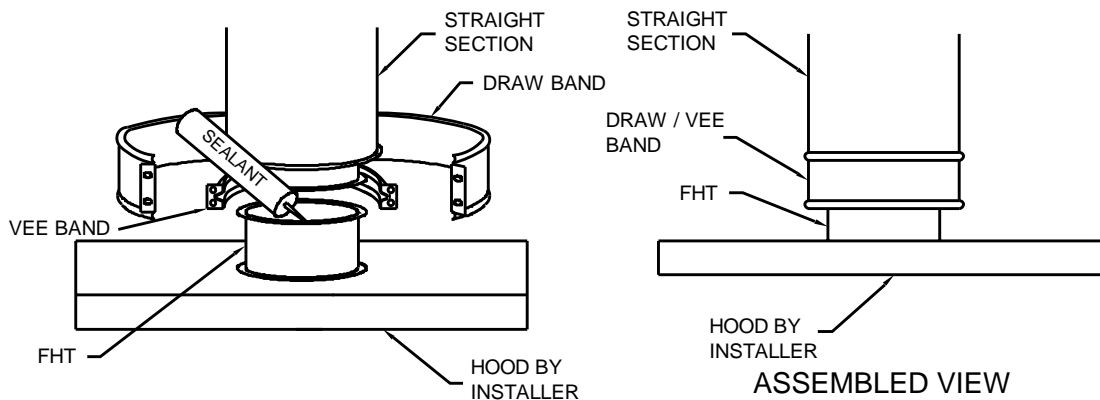
Fan / Hood Transition

Part FHTB

The Model DW and DWplus grease Duct is attached to a fan or kitchen exhaust hood using a Fan / Hood Transition (Part FHT). This part is a 3" long inner pipe section with a 7/16" flange on each end. This part may also be ordered with a flange on one end only, if required to make welding more convenient. The part would then require a custom part number.

The Fan / Hood Transition is continuously field weld to the fan or hood and attached to the grease duct by means of a vee band. The part may also be continuously weld to an intermediate flange or transition, which is then weld to the fan or hood.

Part FHT, consists of: one Starter Section (Parts S/S), one Vee Band (Part VEE), and one Draw band (Part DRW).



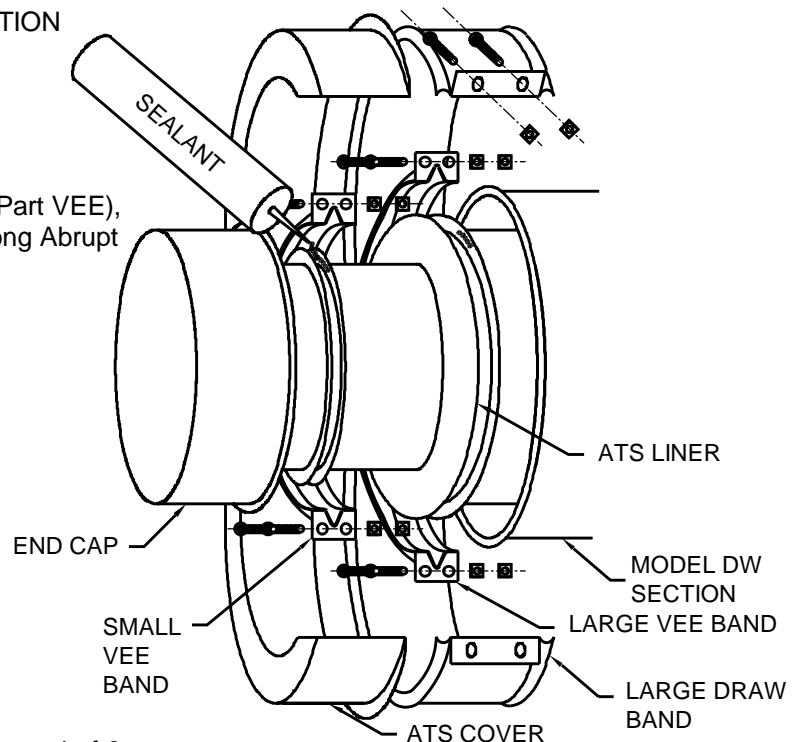
Abrupt Transition Section

Part ATS

The Abrupt Transition Section is used in conjunction with an End Cap at the end of a horizontal run of grease duct to provide a cleanout. It should be sized to provide 2 inches between the bottom of the duct and the bottom of the opening. Example: For a 12"Ø grease duct; a D08ATSA12 would be required, plus a D08CAPA. The joints are assembled with standard Vee bands and Draw bands. Refer to the "GENERAL INSTALLATION GUIDELINES" for further details.

This piece may also be used in a run where transition between sizes is needed and space is limited.

Part ATS, consists of: one large diameter Vee band (Part VEE), one large diameter Draw band (Part DRW), one 3" Long Abrupt Transition Section Liner, and one ATS Shell Cover.

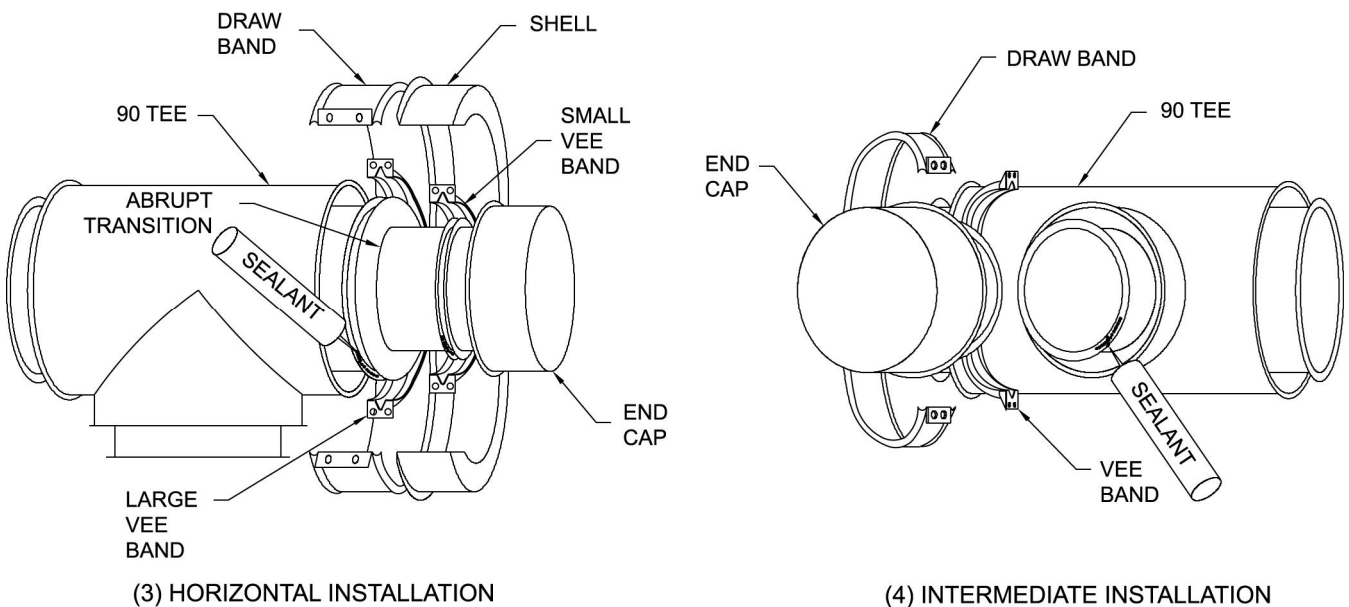
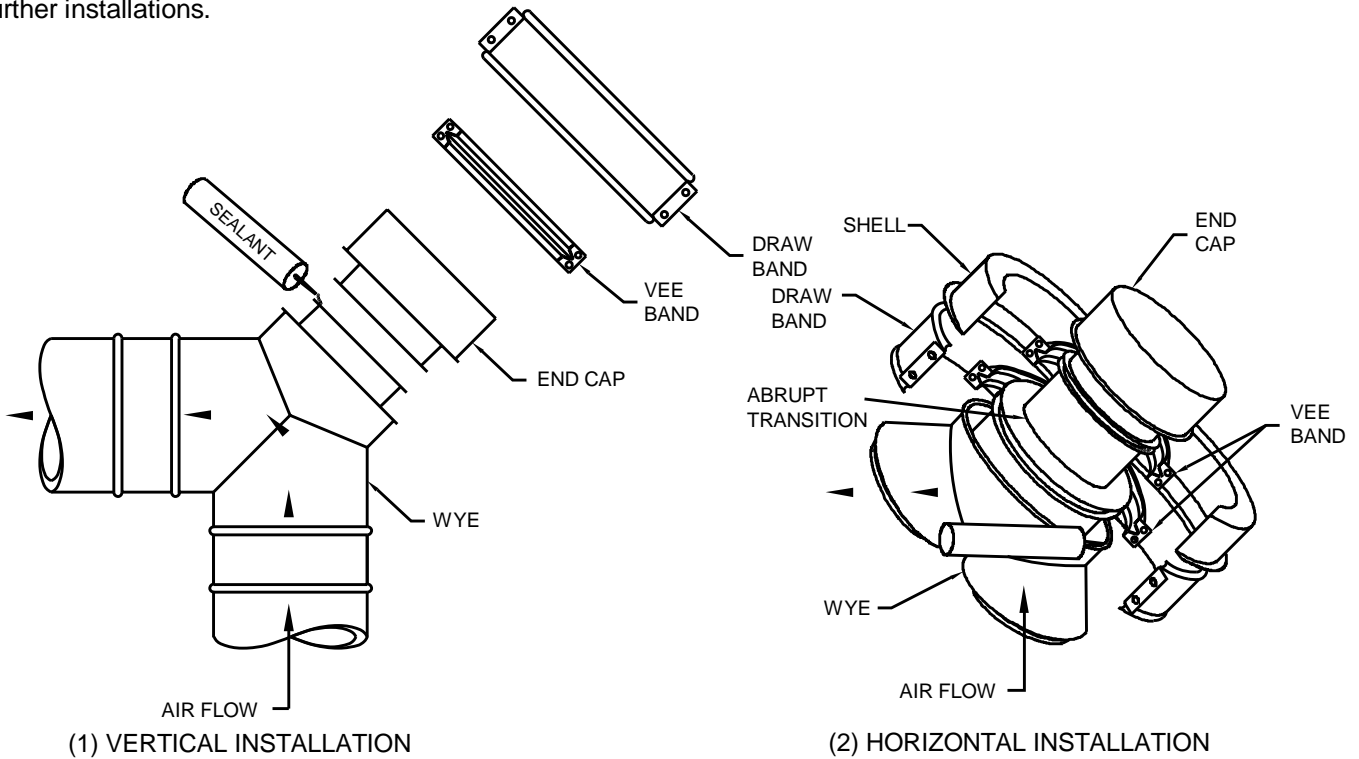


Cleanout / Access Openings

Openings for horizontal and vertical cleaning must be provided for Grease Ducts unless the entire length of duct can be cleaned and inspected from one or both ends. Openings shall be provided at the sides or at the top of the duct, whichever is more accessible, and at changes of direction. In vertical ducts where personnel entry is not possible, adequate access for cleaning shall be provided on each floor. Exhaust fans with ductwork connected to both sides shall have access for cleaning and inspection within 3 feet (0.92 m) of each side of the fan. For hoods with dampers in the exhaust or supply collar, an access panel for cleaning and inspection shall be provided in the duct or the hood within 18 inches (457 mm) of the damper. The bottom of the opening must be at least 1-1/2" above the bottom of the duct. There are several ways to provide access:

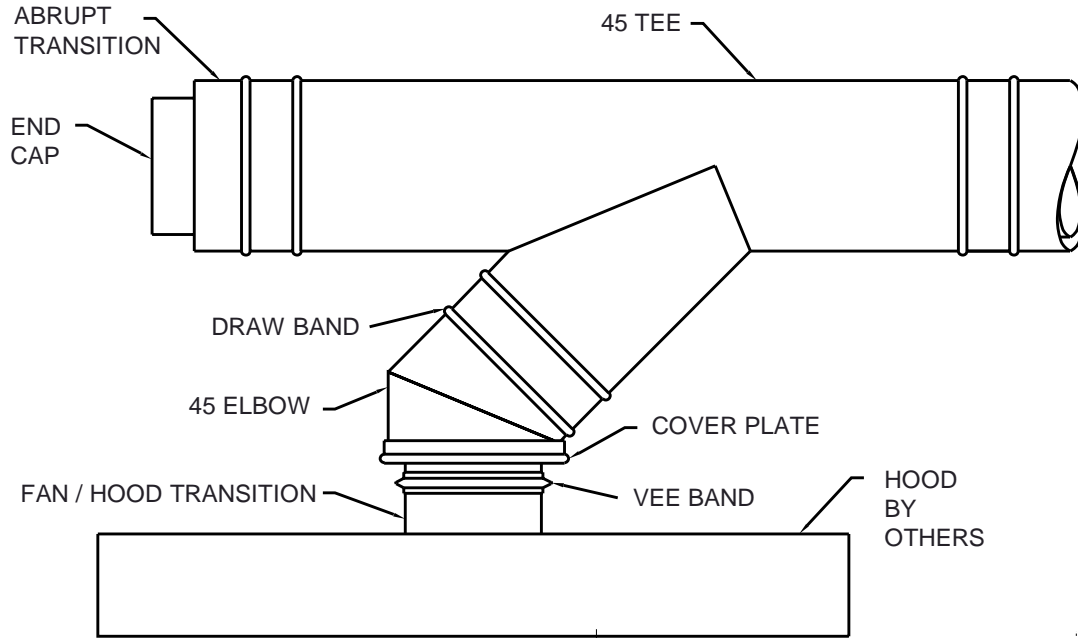
- 1.) 90° Wye with an End Cap for vertical installations.
- 2.) 90° Wye with an Abrupt Transition and End Cap for horizontal installations.
- 3.) 90° Tee with an Abrupt Transition and End Cap.
- 4.) 90° Tee with a small diameter projection and an End Cap.

Reference page 2 "Cleanout Doors" and check with local building codes and authorities having jurisdiction for further installations.



**45° Tee and 45° Elbow
Part 45T and Part 45E**

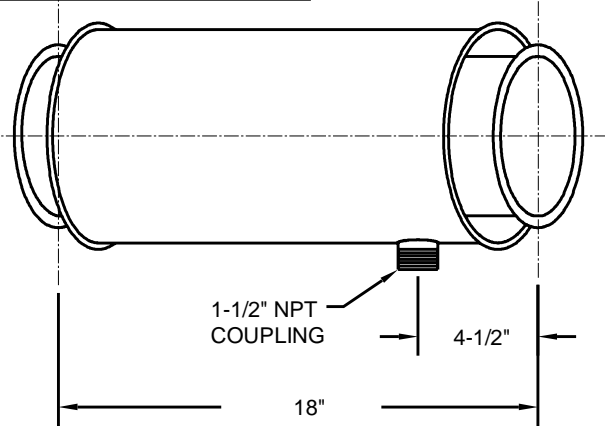
The components are used in horizontal sections of duct to reduce flow losses. The joints are assembled with standard Vee Bands and Draw Bands. Elbows may be used where a change of direction is required in the duct. Elbows are non-load bearing. Remember, openings shall be at each change of direction, provided at the sides or at the top of the duct, whichever is more accessible.



**Duct Coupling Section
Part DCS**

The Duct Coupling Section is used on the Model DW and DWplus Grease Ducts to attach plumbing for cleaning and fire extinguishing equipment.

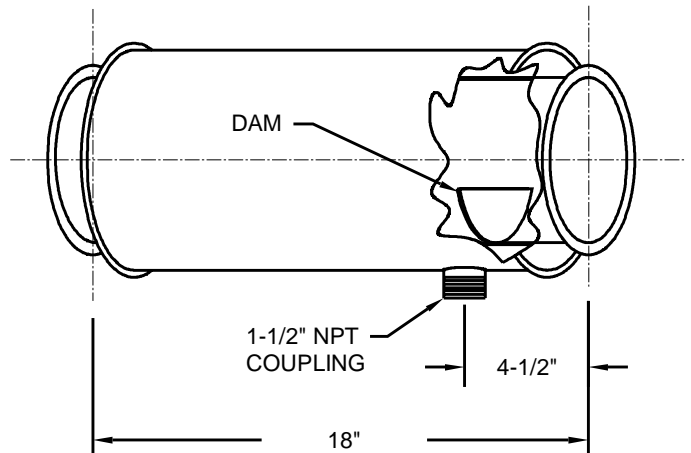
Part DCS, consists of: one Duct Coupling Section (Part DCS), one Vee Band (Part VEE), and one Draw Band (Part DRW).



**Duct Drain Section
Part DDS**

The Duct Drain Section is used to attach plumbing to drains and grease traps.

Part DDS, consists of: one Duct Drain Section (Part DDS), one Vee Band (Part VEE), and one Draw Band (Part DRW).



If required, grease trap connects to a 1-1/2" NPT coupling or to drain by the installing contractor.

NOTES:



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