

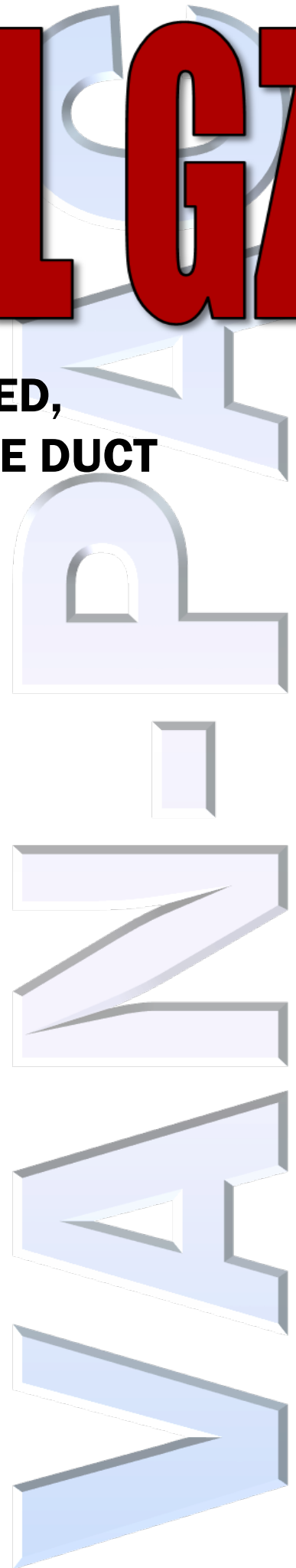
# MODEL GZ

**ROUND 2-HOUR FIRE RATED,  
ZERO-CLEARANCE GREASE DUCT**

**CERTIFIED TO UL 2221**



**KITCHEN VENTILATION PRODUCTS**



For over 75 years, Van-Packer has supplied venting products to the Commercial and Industrial heating and process markets. For the past 30 years we have also provided round, listed and labeled, factory built grease duct to the commercial kitchen ventilation market. Van-Packer offers our premium Model GZ, round, 2-hour fire-rated, zero clearance, no chase, factory built grease duct for Commercial Kitchens.

## **GZ LISTINGS & CODE COMPLIANCE**

Model GRZ, GRS, GZ, GA, Gplus and GS grease duct models can be intermixed to maximize versatility and minimize costs while still offering the safest kitchen ventilation system you can get.

Model GZ grease ducts are “Certified” by Intertek file VPC/FMF 120-03 (USA) and VPC/FMF 120-04 (Canada), as a “Factory Built Grease Duct Enclosure” in accordance with UL1978/ULC S662 (Standard for Safety, Grease Ducts), and with UL 2221/ULC S144 (Tests for Fire Resistive Grease Duct Enclosure Assemblies) when installed in accordance with Van-Packer’s installation instructions and applicable local or national codes.

Model GZ is classified for a maximum 2-hour fire resistance rating and may be installed at zero clearance to combustibles. This rating qualifies the insulation and outer shell wall as an alternative to a fire resistive shaft enclosure.

**NFPA 96, Chapter 4, Section 4.3.3.1 states the following:** “Factory-built grease duct protection system shall be listed in accordance with UL 2221” (Standard for ventilation control and fire protection of commercial cooking operation). No other standard is acceptable for “factory built” grease ducts.

## **SAFETY FIRST**

Model GZ offers an unmatched level of safety and security to Building Owners, Mechanical Engineers, Project Managers, and Code Inspectors that far exceed a value engineered product manufactured by a Local Sheet Metal Contractor. Do not value engineer public safety out of your building and business before your building is even opened.

## **PROFESSIONAL ENGINEERING AND TECHNICAL SUPPORT**

Van-Packer welcomes the opportunity to assist you with your design. Our staff can provide you with duct sizing and pressure drop analysis, custom project specifications and system drawings. We offer technical support, before and after the sale. Our installation AutoCAD drawings, provided with the project materials, include a parts list keyed to the drawing. This is to make it easy for installers to assure that assembly of critical parts are installed in their proper locations.

## **VERSATILITY**

Van-Packer grease duct products offer unsurpassed versatility. We offer our round grease duct in diameters from 6” to 36” I.D. with the ability to mix round or rectangular grease duct parts in a system. This allows the grease duct to be installed with minimal head room requirement while still taking advantage of the low pressure drop and high flow rates allowable with round grease duct.

For installation details, please see “Model GZ Zero Clearance Grease Duct Installation Guidelines.”

## **MATERIALS**

Liner diameters (duct I.D.) from 6" to 36" are constructed from 20 gauge (0.035") materials. Shell diameters (duct O.D.) from 12" to 26" are constructed from 24 gauge (0.025") materials and 28" to 42" are constructed from 20 gauge (0.035") materials. Standard liner material is type 304 S.S., with optional material type of 316 S.S. Standard shell material is aluminized steel, with optional material types of 430 S.S., 304 S.S., and 316 S.S. Consult the factory for availability of optional material types and thicknesses.

## **SIZES**

Our sizes start at 6" I.D. to 10" I.D. available in 1" increments and from 10" I.D. to 36" I.D. available in 2" increments.

## CLEANOUTS, DRAINS, & GREASE

Many Model GZ sections, accessories, and combinations can be used for cleanout and inspection access of the grease duct system. Access panel sections, 90° tee sections with end caps, and many other combinations of components can serve as cleanout doors as described by NFPA 96. Grease ducts must be provided with adequate cleanout doors to allow for the inspection and cleaning of the entire grease duct system. Refer to NFPA 96 for specific requirements.

Cleanout, drain, and grease trap requirements may change when grease duct systems are equipped with automatic cleaning and / or some types of fire suppression equipment. Refer to NFPA 96 and additional codes / authorities having jurisdiction for specific duct system requirements.

## PART IDENTIFICATION

Model GZ part numbers will have the letters “GZ” prefix, followed by the duct size inside dimension (I.D.), then the part description code, next a special qualifier code(s), and last the liner/shell designation. Part description codes are generally three characters and are either alpha or alpha numeric. Qualifier codes are most often used to designate section lengths, tee projection I.D., and the large I.D. end of increasers. The following are two examples of part numbers with their associated description and part number breakdown.

### GZ10STR30AL

Refers to a Model GZ 10" I.D., 30" long straight section constructed with a 304 S.S. liner and an aluminized steel shell.

**GZ** = Model GZ  
**10** = Section I.D.  
**STR** = Part Code, Straight Section  
**30** = Section length, 30" long  
**A** = Liner Code, 304 S.S.  
**L** = Shell Code, ALZ Steel

### GZ1290T08BC

Refers to a Model GZ 12" I.D. 90 degree tee section with an 08" I.D. projection constructed with a 316 S.S. liner and a 430 shell.

**GZ** = Model GZ  
**12** = Tee Body 12" I.D.  
**90T** = Part Code, 90 Degree, Tee Section  
**08** = Tee Projection, 08 I.D.  
**B** = Liner Code, 316 S.S.  
**C** = Shell Code, 430 S.S.

### Liner Material Codes

**A** = 304 S.S.  
**B** = 316 S.S.

### Shell Material Codes

**A** = 304 S.S.  
**B** = 316 S.S.  
**C** = 430 S.S.  
**L** = Aluminized Steel

## SLOPE

In accordance with NFPA 96, the IMC, UL1978, and the UMC, Model GZ Grease Duct must be sloped toward the hood to prevent grease from pooling on the bottom of the duct. The required slope is 1/16" per foot (min) slope on horizontal runs up to 75 feet. The pitch would be a maximum of 4-11/16" at 75 feet. Runs that exceed 75 feet the 1/16" slope can be used with some additional exceptions:

- 1) When the duct can be pitched continuously back to the hood or grease drain/reservoir. Additional grease drainage points not exceeding 75 feet spacing will be required.
- 2) For ducts that are stagger sloped (saw tooth configuration) up hill to a peak point then downhill to a valley point. The distance between a peak and valley point shall not exceed 75' and every valley (low) point must allow for grease drainage.

Note: Saw tooth configuration in accordance with "SMACNA Kitchen Ventilation System Duct Design Manual."

Van-Packer can provide special fittings to accommodate these slope requirements where a horizontal run meets a vertical run or where long horizontal runs require a "saw tooth" approach to minimize overhead clearance requirements.

## APPROXIMATE SEALANT USAGE

Section I.D.	6"	7"	8"	9"	10"	12"	14-16"	18-20"	22"-30"	32"-36"
Joints per Tube	12	10	9	8	7	6	5	4	3	2

## MODEL GZ SUPPORTS

Van-Packer offers a few options for supports, as seen on page 8. The structural engineer for the project should select support member channels, beams, rods, wires/cables etc., and joining methods in accordance with good engineering practices to suite each specific application. Rods, wires/cables should ONLY be used for hangers, NOT structural supports. Van-Packer accepts no responsibility for the design and/or modification of building or structures to accept a given load. All support framing, anchoring methods, etc. are by others. Grease ducts require one support at every change in direction.

## PRODUCT WEIGHT

Use the following GZ weight tables to calculate the weight of each grease duct run, and support in accordance with good engineering practices.

**APPROXIMATE INSTALLED WEIGHT (Pounds/Foot)**

<b>I.D.</b>	<b>O.D.</b>	<b>LBS/FT</b>
06"	12"	13
07"	13"	15
08"	14"	16
09"	15"	18
10"	16"	19
12"	18"	22
14"	20"	25
16"	22"	27
18"	24"	30

<b>I.D.</b>	<b>O.D.</b>	<b>LBS/FT</b>
20"	26"	33
22"	28"	39
24"	30"	42
26"	32"	46
28"	34"	49
30"	36"	52
32"	38"	55
34"	40"	58
36"	42"	61

**APPROXIMATE HEIGHT LIMITATION (in feet)**

<b>I.D.</b>	<b>O.D.</b>	<b>STR</b>	<b>TEE</b>	<b>PLS</b>	<b>WSA</b>
06"	12"	132	44	167	103
07"	13"	123	44	155	93
08"	14"	115	43	144	84
09"	15"	108	43	136	77
10"	16"	103	43	129	71
12"	18"	94	43	118	62
14"	20"	88	43	105	55
16"	22"	83	42	96	49
18"	24"	78	37	87	45
20"	26"	75	33	81	41
22"	28"	65	27	68	34
24"	30"	63	25	64	32
26"	32"	61	21	60	30
28"	34"	59	18	57	28
30"	36"	58	14	54	26
32"	38"	56	12	51	25
34"	40"	55	9	49	22
36"	42"	54	7	47	20

### **ROUND DOUBLE WALL DUCT, GZ \_\_STR\_\_**

Standard lengths are 18", 30", or 42" and special lengths are available on request. Please consult factory for availability of special lengths.



### **ACCESS PANEL SECTION, GZ \_\_DMD\_\_**

Used to provide access for cleanout. Access panels are available in the following sizes: 8 x 4, 12 x 8, 16 x 12, and 24 x 18 ( inches).



### **DUCT DRAIN SECTION, GZ \_\_DDS\_\_**

The Duct Drain Section is used to drain grease from a horizontal duct run. An internal dam directs grease to the drain coupling. See notes 1 & 2 on duct coupling section below.



### **DUCT COUPLING SECTION, GZ \_\_DCS\_\_**

This section is used to allow installation of fire suppression nozzles, fire detection devices, wash down nozzles or to drain condensate or grease from a horizontal section where a grease dam is not required. Specify coupling location on duct. See notes 1 & 2 below.

Notes apply to both Duct Drain Section and Duct Coupling Section:

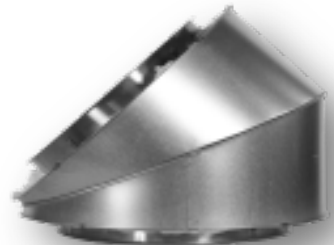
1. The drain is usually installed in an 18" duct length, but may be installed in other duct lengths if required.
2. Consult factory for availability.



### **ELBOWS, GZ \_\_\_\_E\_\_**

Elbows are used to change direction, for offsets and as peaks and valleys where long horizontal runs require a "saw tooth" configuration. Elbows are available from 5° to 45° turns. Standard configurations are 5°, 15°, 30°, and 45°.

For other turns, standard elbows may be combined or special elbows can be ordered. Consult factory for availability.



### **90° CENTERED TEE, GZ \_\_90T\_\_**

The 90° Centered Tee is used for 90° turns, manifolds and cleanouts. Available with reduced size projection. Specify projection size diameter.



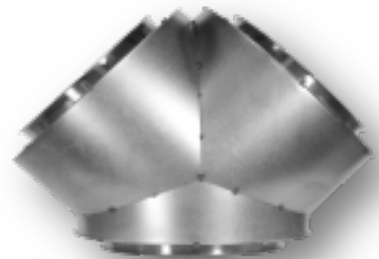
### **45° TEE, GZ \_\_45T\_\_**

The 45° Tee is used for low resistance 45° direction changes. Available with reduced size projection. Specify projection size diameter.



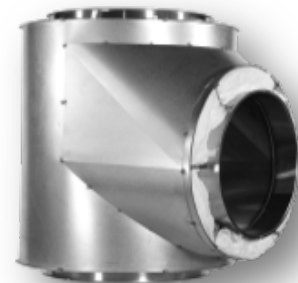
### **90° WYE SECTION, GZ \_\_WYE\_\_**

The 90° Wye Section is used for 90° turns with cleanout access. All connections are the same size.



### **90° BOOT TEE, GZ \_\_BTT\_\_**

The Boot Tee is used to make low resistant 90° turns. Please specify projection diameter.



### **INCREASER, GZ \_\_INC\_\_ AND ECCENTRIC INCREASER, GZ \_\_ECC\_\_**

An increaser is cone shape whereas the eccentric increaser provides the increase in a manner such that one side of the duct being joined may remain aligned. In other words, "One side is flat."



### **END CAP WITH DRAIN, GZ\_\_C/D\_\_**

Used as a drain at the bottom of a vertical section.

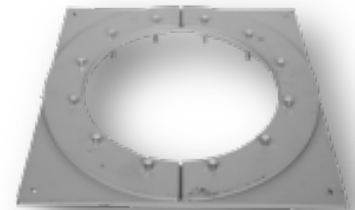


### **END CAP, GZ\_\_CAP\_\_**

Same as above, but bottom is solid with no drain.

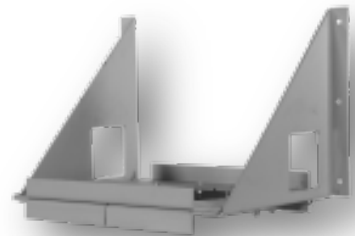
### **PLATE SUPPORT ASSEMBLY, GZ\_\_PLS\_\_**

Plate support assembly is used for vertical & horizontal structural anchor points. The PLS consists of a support plate and two half draw bands. The support plate is sandwiched between the flanges of adjacent grease duct sections and is supported by field fabricated support members. See additional information on page 4 and 5.



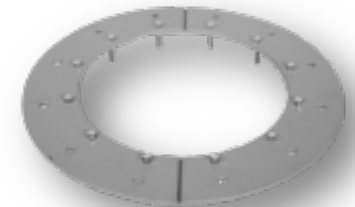
### **WALL SUPPORT ASSEMBLY, GZ\_\_WSA\_\_**

The WSA is intended to provide a rigid support location. In some instances, additional field fabricated support members from the building wall structure to the wall bracket may be required. Anchor bolts and support members are to be designed and provided by others. The WSA is comprised of (2) wall brackets, a support plate and (2) half draw bands. See additional information on page 4 and 5.



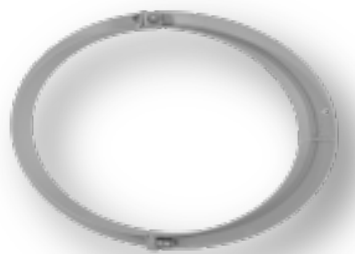
### **GUY ATTACHMENT RING, GZ\_\_GAR\_\_**

Guy attachment ring is used in conjunction with wires, tensioners, anchors, and other miscellaneous hardware attached to building or structure. It is intended to laterally brace vertical assembled duct lengths from wind loads and to maintain alignment as the duct expands and contracts.



### **FULL ANGLE SUPPORT, GZ\_\_FAR\_\_**

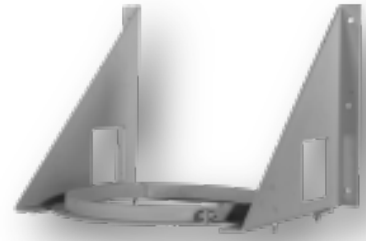
Full angle ring, in conjunction with field fabricated support members attached to the building or structure, are intended to laterally brace the vertical assembled duct lengths from side loads and to also maintain alignment as the duct expands and contracts. The FAR is comprised of (2) halves and when bolted together.





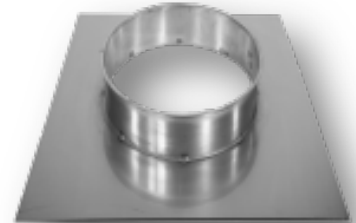
### **WALL GUIDE ASSEMBLY, GZ\_\_WGA\_**

Used in conjunction with the full angle ring to provide horizontal or vertical alignment of the system. The WGA is comprised of a FAR and (2) wall brackets. Anchor bolts for bracket mounting are not included.



### **FAN ADAPTER SECTION, GZ \_\_FAS\_\_X\_\_**

This adapter is used for connection to the hood/fan.



### **FLANGELESS OUTLET FLANGE, GZ\_\_FOA\_**

This adapter is used when the hood/fan has a smooth flangeless outlet.

### **ADJUSTABLE EXPANSION SECTION, GZ\_\_ADJ\_\_**

This section is intended to be used to span distances between 1-1/2" to 19-1/2" and compensates for thermal expansion. These components are comprised of a slip liner and rope gasket.

### **VARIABLE LENGTH SECTION, GZ\_\_VLS\_\_**

Variable length sections are intended to be used to span distances between 4-1/2" to 19-1/2". These components are comprised of a slip liner and locking collar. This part simulates a custom length straight section.

### **FINISHING PLATE, GZ\_\_FPL\_**

The Finishing Plate is used when the duct penetrates an interior floor, ceiling or wall where a fire rating is not required.

### **FLOOR PENETRATION ASSEMBLY, GZ\_\_FPA\_**

This penetration assembly must be used when the duct passes through a fire resistant floor or ceiling. The FPA includes top and bottom floor penetration plates and insulation.

### **WALL PENETRATION ASSEMBLY, GZ\_\_WPA\_**

This penetration assembly must be used when the duct passes through an interior fire resistant wall. The WPA is comprised of (2) insulated wall penetration plates and insulation.

### **FLASHING, GZ\_\_FLS\_**

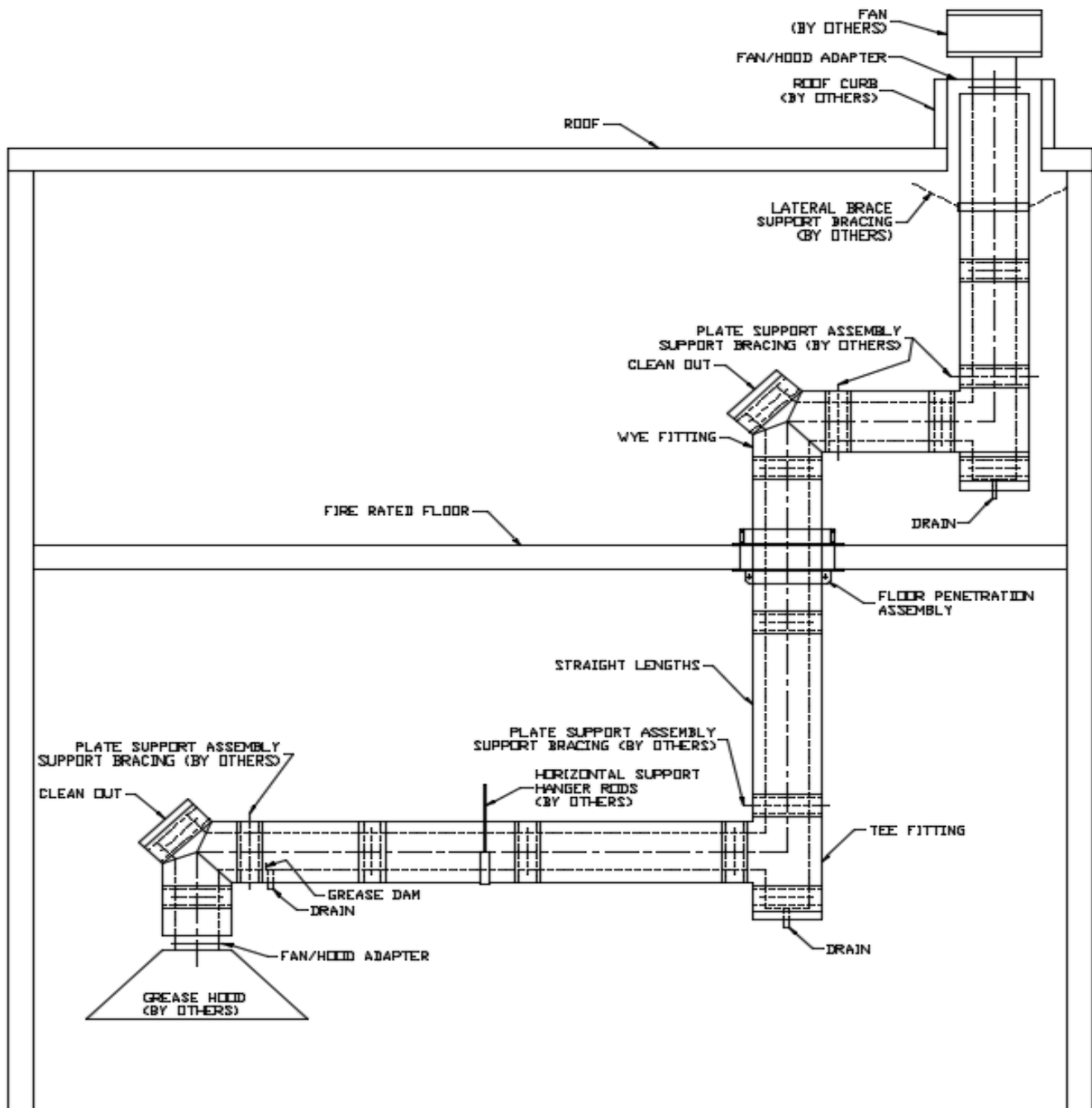
Used when the grease duct is penetrating a non-combustible roof structure without a fan curb, such as with a utility set fan. The flashing is constructed of 24-gauge aluminized steel. Stainless steel option is available.

### **COUNTER FLASHING, GZ\_\_CFL\_**

A counter flashing is installed above the flashing to provide rain protection. The counter flashing is constructed of 24-gauge aluminized steel. Stainless steel option is available.

## SYSTEM INSTALLATION EXAMPLE

Below shows an installation example. This example is intended to reflect general requirements for support locations, with respect to fittings and to also show standard support locations for an installation in accordance with its design listing. This example may not reflect all necessary supports, drains, etc. which may be required to meet applicable codes and to help ensure a well-functioning duct system (refer to applicable codes as required).



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