

Model GRZA Rectangular Fire-Rated Grease Duct

Product Overview · U.S. Patent No. D908,201

Listings

Van-Packer's Model GRZA grease duct is the only rectangular grease duct system that is listed and labeled to UL 1978/ULC-S144 (Standard for Safety, Grease Ducts), UL 2221/ULC-S662 (Standard for Safety, Tests of Fire Resistive Grease Duct Enclosure Assemblies), ASTM E 814/ULC-S115 (Standard Test Method for Fire Tests of Penetration Firestop Systems) and ICC-ES AC101.2 (Acceptance Criteria for Grease Duct Enclosure Assemblies: Segmented Grease Duct Systems).

So, what does all this mean?

First, Model GRZA is listed by ETL (Intertek) as a grease duct tested to UL 1978. This means it is suitable for the removal of smoke and grease laden vapors from commercial, industrial, institutional, and similar cooking applications where continuous operating temperatures are 500° F (260° C) or less and intermittent temperatures are 2000° F (1093° C) or less.

Second, Model GRZA carries listings that allow the built-in enclosure, that is, the insulation and jacket, to qualify as an alternative to the fire rated enclosure required in NFPA 96, whenever the duct penetrates a fire-rated wall or floor/ceiling or when it is run in a concealed space. This enclosure carries a fire rating of either one or two hours, depending on the materials of construction selected.

Third, Model GRZA may be installed at zero inches of clearance to combustibles, except where it is completely enclosed in non-ventilated, combustible construction.

Sizes and Materials of Construction

Model GRZA is available as square duct in sizes from 6" x 6" to 36" x 36" or as rectangular duct from 6" x 8" to 27" x 48". Rectangular duct is limited to a 6 to 1 ratio of width to height or height to width. For both square and rectangular duct, sizes are incremented as needed to fit the job. The maximum cross-sectional area of any duct is 1296 square inches.

In the USA, liners (inner walls) are constructed of 20 gauge or 0.035 inches thick Type 304, stainless steel for 2 hour Fire Rated Duct.

Shells (outer walls) are constructed of aluminized steel, with optional Type 430, stainless steel. The shell thickness is 24 gauge or 0.024 inches thick for ducts where all sides (inside dimension) of the duct is 30" or less (36" outside dimension).

Where any one (inside dimension) of the duct exceeds 30" (36" outside dimension) the shell thickness is 20 gauge or .035 inches thick.

Other material types and/or material thicknesses are available, however using non-standard material types/thicknesses may extend the delivery, always consult the factory for availability.

Installation

Joint assembly for Model GRZA sections is simple and quick. First, using acetone or automotive brake cleaner, wipe the mating surfaces of the flanges to assure that there is no mill oil or dirt to prevent the sealant from adhering to the flange. Next, run a bead of sealant onto the face of the flange, roughly $\frac{1}{8}$ to $\frac{1}{4}$ inch in diameter approximately $\frac{1}{4}$ to $\frac{1}{2}$ inch from the liner. Bring the mating flanges together, aligning the outside edges. Two bolts can be used to assure alignment when joining the flanges. Insert the bolts and manually tighten the nuts. Then, after all the bolts are installed in the flange, torque the nuts to (approximately) 4 ft-lbs and wipe off any sealant that has squeezed out to the inside of the duct.

When the system has passed inspection by the authority having jurisdiction, using the insulation strips provided, make 3 wraps around the joints finishing with a 2 inch overlap on the outside layer. The insulation must completely fill the void between the insulation of the adjacent parts. Finally, complete the grease duct enclosure by placing the draw band around the joint, overlapping the shell ends of the assembled components and securing it with the supplied fasteners. We recommend applying sealant (by others) between the draw bands and the duct shell prior to assembly, when in locations

where moisture is present or where the duct is exposed to the elements. We also recommend installing self-tapping sheet metal screws (by others) on opposite sides of the upper end in vertical installations only.

Codes

There are a few issues that must be addressed to assure that the installation of Model GRZA grease duct meets code requirements.

First, it is acceptable to connect more than one hood to the duct system, but the hoods must be either in the same room or in adjacent rooms and all on the same floor. The duct between hoods cannot penetrate partitions that are fire rated. Note that when a grease duct serves a solid fuel fired appliance, it cannot be interconnected to grease ducts serving other appliances, in accordance with the International Mechanical Code.

Second, the duct must be sloped in accordance with its listing(s). For GRZA the slope required is 1/8 unit in 12 units of horizontal run if the length of the run is 75 feet or less. If the length of the run is more than 75 feet, the slope required is 1/2 unit in 12 units of horizontal run.

Third, for horizontal runs where personnel entry is not possible, cleanouts are required at intervals not greater than 12 feet and not more than 10 feet from a change of direction more than 45°. For vertical installations passing through floor(s) above that on which the hood is located, a cleanout is required on each floor or at intervals of 12 feet, whichever is less.

Components

A typical GRZA grease duct installation consists of several different components, including straight duct, elbows, tees, wyes, cleanout sections, fan and hood adapter pieces, nozzle sections (for the attachment of wash down or fire suppression components), terminations, supports, guides, braces, brackets, and through penetration firestops. Installation details for these components may be found in our installation instructions, but the through penetration firestops deserve particular notice. Most manufacturer's firestops are designed so that the duct must be centered in the hole for installation. However, the GRZA through penetration firestop may be installed in a non-centered hole with clearance as little as 1 inch on one side and as much as 4 inches on the other or anywhere in between.

Benefits of Using Model GRZA

There are several benefits to the use of Model GRZA grease duct in your project.

- 1. Safety** — Model GRZA grease duct is a fully listed and labeled system tested to the stringent requirements of UL, ASTM and the ICC. In order to pass these tests, the product must exhibit the ability to contain internal fire and withstand an external fire under conditions that exceed those found in the real world. It must also prove that it is structurally sound in regular use and during a fire, again under conditions that exceed real world applications.
- 2. Quality** — People's moods are affected by the things going on around them and in turn the quality of the work they perform is affected by those moods. Thus, we utilize automatic production equipment wherever possible. Additionally, we are subject to unannounced inspection by our listing agency. In order to maintain our listings (and therefore stay in business) it is critical that we follow our fabrication and Quality Assurance procedures as tested and approved. This is an area where factory pre-fabricated, modular ducts excel over field fabricated products. Production line equipment rarely make errors.
- 3. Reliability**
 - The materials we purchase to fabricate our products are certified to meet ASTM specifications and those certifications are maintained on file by Van-Packer.
 - Our shipping schedules are designed to meet your needs and Van-Packer takes pride in meeting our scheduled ship dates.
 - Our production, customer service and technical personnel are carefully trained and highly skilled to provide the highest level of quality and service.
- 4. Confidence** — Most importantly, we give you confidence that the grease duct system you design and install will be safe and in service for many years to come, but should you have issues or concerns, we will be there to help.

Safety, Quality, Reliability and Confidence — why would you accept anything less?