



Conserve O Gram

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Installing The Retrofit Gasket Kit

The counter-height, single door, standard museum cabinet has been in use by the National Park Service for decades and has proven to be an excellent storage container for small to medium-sized museum objects. (See *Conserve O Gram* 4/1.) The cabinet provides a relatively stable microenvironment of minimally fluctuating relative humidity and temperature levels. It also reduces the potential for damage caused by dust, air pollutants, insects, rodents, and light.

For the cabinet to provide these beneficial conditions, the gasket that lines the door jamb must be in good condition and form a positive seal against air infiltration and biological infestation.

Problems with Early Gaskets

In most standard cabinets in use by NPS and manufactured before 1980, the gaskets were made of polyurethane foam. However, in some of the earliest cabinets the gaskets were made of arsenic- or mercuric chloride-impregnated felt. The felt was intended to kill insects trying to eat through it to enter the cabinet. These felt gaskets pose a potential health hazard to staff and, therefore, should be carefully removed following the procedures given below.

Experience has shown that the more frequently encountered polyurethane foam gaskets readily deteriorate, primarily because of oxidation or exposure to ultraviolet radiation. Polyurethane foam gaskets deteriorate and lose resiliency and structural integrity in approximately two to five years, at which point the foam crumbles and falls away, causing the cabinet to lose the ability to maintain a stable microenvironment.

Both foam and felt gaskets were attached with a pressure-sensitive adhesive. When force is repeatedly applied to the gasket from a single direction over time, as in the act of replacing the lift-off door or closing the swing door, the adhesive loses its holding ability and the gasket is forced out of position. This is known as *gasket creep*. At this point, the desirable microenvironment cannot be maintained.

Replacing the Gaskets

NPS Curatorial Services Division staff have worked with cabinet manufacturers to develop a gasket retrofit kit that remedies the problems caused by deteriorating foam or dangerous felt gaskets and gaskets that creep out of position. The kit is available to parks from the Curatorial Services Division. (Curatorial Services Division can also provide source assistance to non-NPS users.) One kit provides the materials needed to re-gasket a standard museum cabinet. By combining kits, as described below, wardrobe and doublewide cabinet gaskets also can be replaced.

The kit gasket is a long-lived, chemically inert, stable silicone polymer and poses no health hazard. The problem of gasket creep was eliminated by attaching metal retainers that form a channel to prevent the gasket from moving out of position. The installation of the gasket will probably be a one-time replacement.

The illustration on page 3 shows how the retrofit gasket kit is installed. The procedure applies to cabinets with both swing and lift-off doors. All the components identified in the illustration are provided as part of the kit. In addition to the kit, the following materials and equipment are needed:

- mineral spirits (e.g., V.M.&P. Naphtha) available at paint and hardware stores
- denatured alcohol
- rust-inhibiting enamel paint, varnish, or lacquer, available at paint and hardware stores
- single-edge razor blade or utility knife for removing old gasket
- steel file, medium tooth
- power drill
- pop riveter

Procedures for Installing the New Gasket

Safety Precautions: When filing and drilling metal cabinets, wear latex gloves, a dust respirator, and safety goggles.

If pesticide-impregnated felt gaskets must be removed (described on page 1), wear latex gloves and a respirator with an organic vapor/high-efficiency particulate air (HEPA) filtering cartridge. Clean up all felt and dusty residue, seal it in a jar or can, and label clearly. The felt must be disposed of as toxic waste, in accordance with the Park's Hazardous Waste Disposal Program. Contact the Park or the Regional Hazardous Waste Coordinator for disposal guidance.

1. Read instructions that are provided with the kit.
2. Remove objects and drawers from the cabinet and place them in a secure location.
3. Remove the old gasket with a utility knife or single-edge razor blade. Use mineral spirits, if necessary, to dissolve the adhesive. Check this surface and file as needed to make it smooth and flat. If welds protrude above the flat metal surface at the corners, file them flush with the adjacent metal.
4. Place each retainer in the proper position (see illustration) making sure it lies straight and flat. Then, using the holes in the retainer as a guide, drill matching holes in the case through the surface just cleaned.

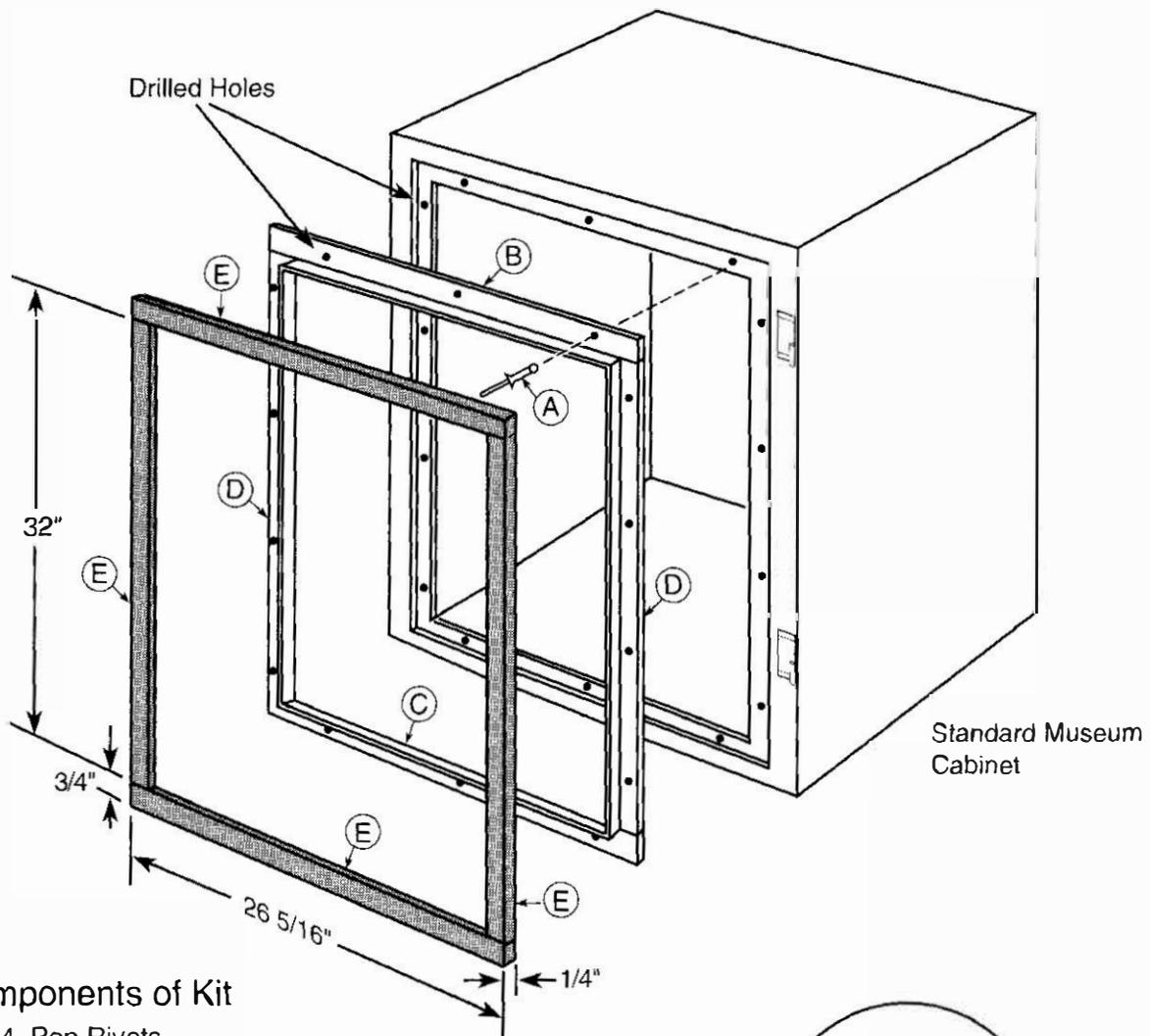
5. Wipe the surface with denatured alcohol for a final cleaning. Touch up the surface as needed by applying a rust-inhibiting enamel paint, varnish, or lacquer to all areas of bare metal on both sides of the cabinet door opening, including drilled holes.
6. Pop-rivet each retainer in place. Continue until all four retainers are in position.
7. Remove the backing paper that covers the adhesive on each piece of gasketing and place the gasket into the channel formed by the metal retainers and the jamb of the door. Install top, bottom, and side gaskets so that the gasket ends abut, forming a continuous seal around the door jamb.
8. Door fit generally will be tight after the new gaskets are installed. If the door fits too tightly to be closed, minor door adjustments can be made as follows:
 - The latch side can be adjusted by filing the ends of the vertical latch bolts or by enlarging the holes in the door jamb where the bolts engage.
 - The hinge side can be adjusted by bending the hinges slightly. They can be bent outward by placing a screwdriver or similar object in the fold of the hinge and closing the door.

By combining components from additional kits, doublewide and wardrobe cabinets that fit the NPS modular size system (see *Conserve O Gram 4/1*) can be re-gasketed. All the components from two kits are required for a wardrobe retrofit. A doublewide cabinet will require two kits minus the two side retainers.

Donald R. Cumberland, Jr.
Museum Specialist
Curatorial Services Division
National Park Service
Harpers Ferry, West Virginia 25425

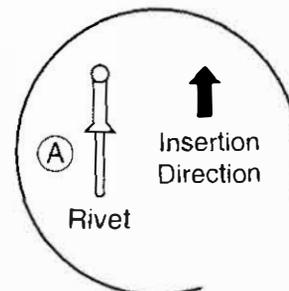
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Retrofit Gasket Kit for NPS Standard Museum Cabinet



Components of Kit

- (A) 14 Pop Rivets
- (B) 1 Top Retainer Angle
1/4" X 3/4" X 26 5/16"
- (C) 1 Bottom Retainer Angle
1/4" X 3/4" X 26 5/16"
- (D) 2 Side Retainer Angles
1/4" X 3/4" X 32"
- (E) 4 Gaskets (1 Top, 1 Bottom, 2 Sides)
- (F) 1 1/8" Drill Bit
- (G) 1 Set of Instructions



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