



**1551 Mt. Rose Avenue  
York, PA 17403-2909**

**HOMEOWNER'S WINDOW  
MAINTENANCE & OPERATION  
MANUAL**

**FOR:**

**ACOUSTICAL ALUMINUM WINDOWS**

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**Congratulations . . . and thank you for your selection of Graham Architectural Products windows, which have become an integral part of your new home or replacement window project. All our products are manufactured to the highest possible standards. All Graham windows and patio doors are engineered and randomly selected for testing by certified third party laboratories to assure that our products perform as designed day in and day out. Like any highly-engineered product, periodic maintenance is required to assure a lifetime of low maintenance performance.**

There are several elements the homeowner should pay attention to when cleaning and maintaining their Graham window or door. These elements are:

- The cleanliness of the aluminum, glass, and screen
- The operability of vents and sashes
- Effectiveness of the water drainage system
- Understanding of condensation and humidity

### **Cleanliness of the Aluminum, Glass, and Screen**

In order to extend the life of your window, it is very important to keep it clean. Many kinds of debris and dirt build-up can harm your window and decrease its durability. The aluminum should be cleaned on a regular basis to prevent a build-up, which could be difficult to remove later. Although this sounds like a difficult task, it really is quite easy to clean the aluminum surface with little effort. In most cases, a heavy rain is sufficient to clean the exterior side of the window.

### **Normal Maintenance for Aluminum Painted Surfaces**

The painted surface provided will not normally show an appreciable amount of dirt collection. Very often, rainfall may be sufficient to keep the exterior surface clean. In most geographic locations dirt or soil will not have a detrimental effect on the coating, but cleaning may be desirable for appearance sake. Graham recommends following AAMA publication No. 610.1-1979 "Voluntary Guide Specification for Cleaning and Maintenance of Painted Aluminum Extrusions and Curtain Wall Panels" for maintaining the aluminum finish. A copy of that document can be found in **Appendix 1** of this manual.

### **Normal Maintenance for Glass**

Clean the glass using standard glass cleaner such as Windex®. Do not use abrasive cleaners, as it will scratch the glass. Decals and dried debris can be removed with a new single edged razor blade, wetting the glass first with glass cleaner.

### **Normal Maintenance of the Screen**

To clean the screens, simply hose them off with water. For built-up dirt, you can use a mild soap and sponge, then rinse thoroughly. Do not use abrasive cleaners. Damaged screen mesh can be replaced by the owner or by most local hardware shops. Do not use aerosol cleaning agents on screens, as certain propellants in the cleaners can cause damage to the molded corner parts.

## Vent and Sash Operation

### General

The windows which have been installed into your home are referred to as “dual windows.” This means that there are two sets of sash or vents (interior and exterior) separated by a wide air space. This wide air space between the panes of glass results in better noise reduction. The interior sash/vent must be operated or removed for cleaning the exterior sash/vent.

### Hung Windows

Hung windows are windows with the operating sash moving in a vertical direction. These windows are balanced using block and tackle devices; one on each side of the operating sash. To operate the sash, make sure the locking device is in the unlocked position, grasp the pull handle, and slide the sash away from the locking frame member (upward for the bottom sash and downward for the top sash). More detail is given in the **2400** window section of this manual.

### Horizontal Sliding Windows

Horizontal sliding windows are windows where the sash move in a horizontal direction. To operate the sash, make sure the locking device is in the unlocked position, grasp the pull handle, and slide the sash away from the locking frame member. Ensure that there is no debris in sill tracks, as this will impede smooth operation. More detail is given in the **0400** window section of this manual.

### Casement/Projected Windows

#### **Casement window:**

A window unit in which the vent cranks outward, to the right or left.

#### **Projected window:**

Window unit that the vent swings either inward or outward, from the top or the bottom.

All moving hinge and locking hardware should be kept clean and lubricated at least annually with a greaseless type lubricant. More detail is given in the **6500** window section of this manual.

### Fixed Windows

Fixed windows are those windows that have non-operating sash or fixed glazing. More detail is given in the **1100** window section of this manual.

### Sliding Glass Doors

Sliding glass doors are doors comprised of one or more operating panels that move in a horizontal direction. To operate the panel, make sure the locking device is in the unlocked position, grasp the pull handle, and slide the panel away from the locking frame member. More detail is given in the **0800** door section of this manual.

### Water Drainage System

Your Graham windows incorporate a low-point, high-pressure weep system. This system uses small holes in the window sill, which will route water to the exterior face of the window or door through very small openings (weep holes). It is customary for water to accumulate in the sill area when raining. There is no cause for alarm, as this water will weep to the exterior. At times, the small passages get plugged with excess dirt and debris. This is evidenced by water standing in the sill long after the rain has stopped or overflowing the sill during a rain period. In most cases, a piece of wire or a pipe cleaner inserted into the weep holes will clear the debris (**Photo 1**). In severe cases, the snap-in sill track may be removed to expose possible clogged openings in the sill frame. Highly-effective weep systems have been engineered into all Graham window products to allow for water drainage. Please keep weep holes clean and clear so that water drains to the outside, as designed. To ensure proper operation, keep the sill of your windows free of dust, and periodically clean your weep holes with a small soft bottle brush or pipe cleaner.



**Photo 1**  
**Keep Weep Holes Clear of Debris**

### Understanding Condensation & Humidity

Condensation on exterior surfaces of windows and doors occurs because of the improved U-values of the windows produced today. On clear nights with still, humid air, condensation occurs when moisture-laden air comes in contact with a glass surface that is below the dew point temperature. “Dew point” is the temperature at which the air will no longer hold its moisture vapor. Cold air holds less moisture than warm air. In high-performance windows with low-E glass and argon gas-filled, the outside glass surface will actually be colder than a similar “regular” window without these features. This is because the high-performance window is doing its job— reducing heat flow to the outside and preventing the warming of the exterior surface above dew point. This is not a window defect. Like dew forming on grass and car hoods, it is a natural phenomenon. Condensation on interior surfaces of windows and doors occurs because of a combination of high humidity and insufficient air exchange inside the home. In many windows built using older technologies, there were gaps in the windows where a significant draft could be felt and where air would flow. This exchange of air, in many cases, was sufficient enough to prevent condensation from forming. The high-performance windows of today are designed to be as air tight as possible to reduce heat loss. By doing this, it reduces air flow, and in humid conditions, will allow for condensation to form on windows. Again, this is not a window defect.

**Table I. Maximum Humidity Levels for No Window Condensation  
 (Interior Glass Surface <sup>1</sup>)**

<b>Glass Surface Temperatures and Relative Humidity with Inside Temperature at 70°F</b>								
Outdoor Temp.	Single Glazed Window				Double Glazed Window			
	15 mph wind		No wind		15 mph wind		No wind	
	Indoor Glass Temp.	Indoor R.H.	Indoor Glass Temp.	Indoor R.H.	Indoor Glass Temp.	Indoor R.H.	Indoor Glass Temp.	Indoor R.H.
40°F	47°F	44%	55°F	59%	59°F	68%	61°F	73%
20°F	32°F	24%	45°F	41%	52°F	53%	56°F	61%
0°F	17°F	12%	35°F	27%	45°F	41%	50°F	49%
-20°F	2°F	6%	24°F	17%	38°F	32%	44°F	39%
-40°F	-14°F	2%	14°F	10%	31°F	23%	38°F	31%

<sup>1</sup>There are many different types of window framing materials. These values are for the window glazed area only.

Recommended maximum humidity levels to prevent condensation on all parts of the window are listed below taking into account various window framing materials and glazing types. These are the recommended humidity levels, and may not be applicable for every household. Differences in glass types (lowE vs. clear) will allow for variances in humidity levels.

<u>Outdoor Temp.</u>	<u>Maximum Indoor Humidity with 70°F Room Temperature</u>
+10°F to +35°F	not over 35%
0°F to +10°F	not over 30%
-10°F to 0°F	not over 25%
-20°F to -10°F	not over 20%
-20°F or below	not over 15%

**Other factors that influence condensation are:**

**Window Size-** Larger windows may have a higher tendency to show condensation.

**Window Location-** Windows protected from the wind will have a higher tendency to show condensation.

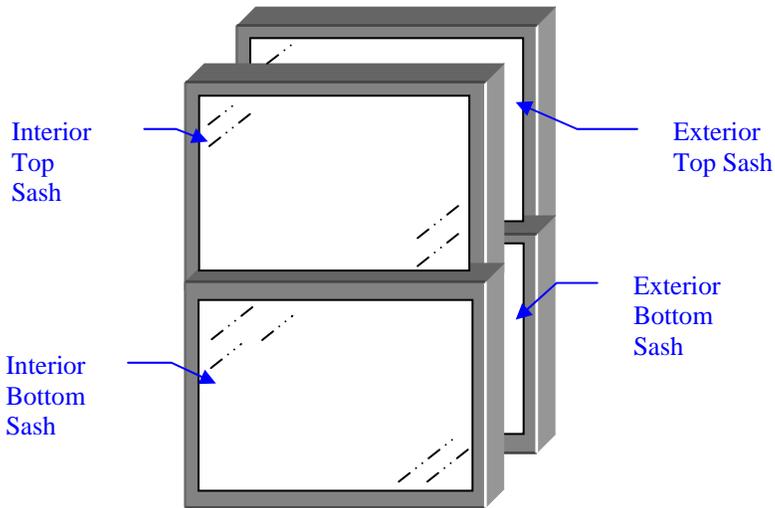
**Screens-** Windows protected by exterior screens may have a different condensation behavior than the same windows without screens under the same conditions.

**Air Circulation-** Good air circulation, such as exposure to wind, reduces the occurrence of condensation. Building projections, foliage, and other wind breaks may contribute to condensation.

**Interior Shades-** Opening interior shades or blinds may reduce condensation by allowing more heat to transfer to the outside or allow interior room airflow to come in contact with the window.

Minor differences in conditions can cause condensation to form on one window and not on another, even when they are side-by-side. Finally, condensation on windows can be a seasonal, night-time event. When outside temperatures are warm, the glass temperature will usually be above the dew point. The same is true during cold, winter weather. Condensation will most often occur during transition months.

**MAINTENANCE INSTRUCTIONS  
 SERIES 2400  
 DOUBLE HUNG WINDOW**



**Sash Removal**

**A. Interior Bottom sash**

1. Activate balance release clips which are located in the jamb tracks about six inches from the top of the window (**Photo 2**). Clips are activated by pulling the lower edge away from the jamb.
2. Unlock and raise sash until balances engage the release clips. Continue to raise sash another two (2) inches to free the sash from the balances (**Photos 3 & 4**).
3. While holding sash by the top and bottom rail, shift sash towards either jamb. When sash is completely over to one side, pull the other side inward and the sash will come free from the frame. Continue to pull the sash into the room while supporting its weight (**Photos 5 & 6**).



**Photo 2**  
 Activate Balance Release Clip



**Photo 3**  
 Unlock And Raise Bottom Sash



**Photo 4**  
 Raise Sash Until Balances Engage Balance Clips



**Photo 5**  
 Shift Sash To One Side



**Photo 6**  
 Pull Sash Out Of Jamb  
 And Inward To Remove From Frame

## SERIES 2400 DOUBLE HUNG WINDOW

### B. Interior Top Sash

1. After the bottom sash is removed, lower the top sash until the balance release clips are exposed. Activate the balance release clips and remove the sash as described above in steps two and three (**Photo 7**).

### C. Exterior Sash

1. The exterior sash are removed in the same manner as the interior set of sash. Follow the steps above for interior sash removal to remove the exterior sash also.

### Sash Replacement

1. Insert sash completely into one jamb pocket while holding sash so that bottom rail is two (2) inches above the lower end of the sash balance (**Photo 8**). (Top sash must be installed prior to installing the lower sash).
2. Align sash with the other jamb and shift sash into a centered position between the jambs.
3. Carefully lower the sash onto the balances. The balances should support the weight of the sash.
4. Lower the sash to clear the balance release clips. De-activate the clip by pushing in the bottom of each clip so it is flush with the jamb (**Photo 9**).
5. If balance does not lower with sash (stays up while sash goes down) **stop process**. Remove sash and start over at step 1.

### Balance Replacement

1. Remove sash, as described above, to expose the balances located in each jamb.
2. Firmly grip balance housing and pull down to release the balance from the clip (**Photo 10**). Continue to hold balance firmly while slowly allowing balance to move upward until the hook attaching the balance to the jamb is exposed.



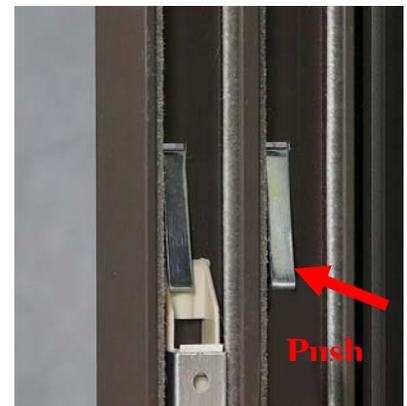
**Photo 10**  
Grasp And Pull Balance



**Photo 7**  
Activate Top Sash Balance Clip



**Photo 8**  
Slide Sash Into Jamb Pocket



**Photo 9**  
De-activate Balance Release  
Clip

**SERIES 2400  
DOUBLE HUNG WINDOW**

3. Disconnect balance hook from jamb using a flat blade screw driver (**Photo 11**).
4. To install a new balance, place the hook through the slot in jamb and push balance down until top of balance is below the clip. Allow balance to slide up and engage the bottom of the balance clip (**Photo 12**).



**Photo 11**  
Remove Balance Hook With  
Screwdriver



**Photo 12**  
Balance Engaging In Release Clips

**Cleaning and Lubricating of Jamb Track**

1. We recommend that the balance tracks be cleaned and lubricated at least once a year.
2. To clean, use a mild, non-abrasive cleaner and wipe down the interior and exterior track pockets in both the jamb balance track from top to bottom (**Photo 13**).
3. Dry the track with a clean, dry cloth.
4. Lubricate by spraying the entire length of the jamb tracks with silicone spray lubricant. A pure, non-petroleum base silicone spray is recommended (**Photo 14**).

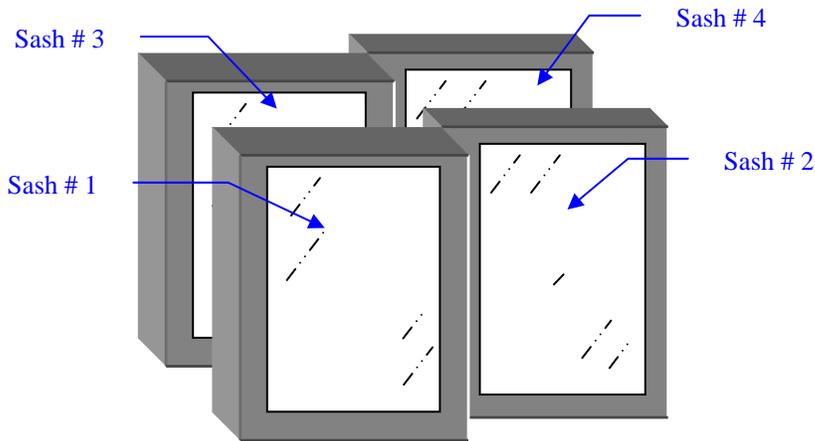


**Photo 13**  
Keep Jamb Tracks Clean



**Photo 14**  
Use Non-petroleum Base Silicone  
To Lubricate Jamb Tracks

## MAINTENANCE INSTRUCTIONS SERIES 0400 HORIZONTAL SLIDING WINDOW



### Sash Removal

There are four sash in the main frame of a typical horizontal sliding window. For purposes of this manual, they will be referred to as sash # 1 through # 4. Sash # 1 will be the innermost sash progressing outward to sash # 4, the outermost, when looking at the window from inside the home. To remove the sash, the innermost sash (# 1) is removed first, and then # 2, # 3, and finally # 4. A three lite or XOX slider with a total of six vents is also available. Follow the rationale below for sash removal, removing end sash first then center sash.

1. Release the sash lock on sash # 1, and slide sash to the open position, allowing clearance for hands to grip sash (**Photos 15**).
2. Firmly grasp both side rails approximately halfway down from the top, and carefully raise the sash into the head pocket (**Photo 16**).
3. With the sash raised, pull the bottom of the sash toward the interior of the house until the bottom sash rail is clear of the sill (**Photo 17**).
4. With the bottom rail still clear of the sill, lower the sash until it disengages from the head.
5. Continue steps 1-4 for each sash to be removed.



**Photo 15**  
Release Sash Lock And Slide



**Photo 16**  
Grasp Both Side Rails And Raise  
Sash Into Head Pocket



**Photo 17**  
Pull Bottom Of Sash Inward

## SERIES 0400 HORIZONTAL SLIDING WINDOW

### Sash Replacement

1. To replace the sash, the reverse order for the removal is followed (# 4, # 3, # 2, and # 1).
2. Insert top rail of sash # 4 into frame head.

**Note: Make sure the sash is in the correct orientation; the rollers are on the bottom rail of the sash (Photo 18).**

3. With the top rail engaged into the head, align the bottom rail of the sash with the sill sash track (**Photo 19**).
4. Lower the sash into the track and slide sash to check proper alignment.
5. Repeat steps 2-4 for the remaining sash in the order described above.

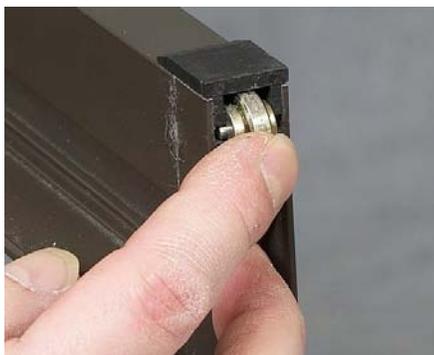


**Photo 18**  
Rollers Are On **Bottom**

### Replacing Sash Rollers



**Photo 20**  
Remove Roller With Flat Blade Screwdriver

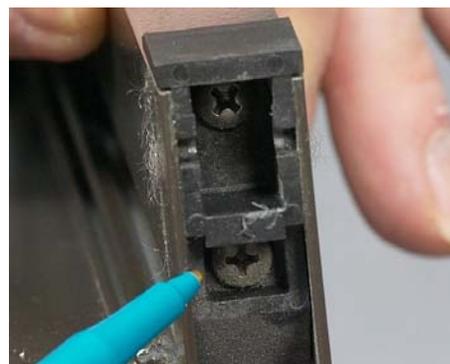


**Photo 21**  
Press New Wheel In Place

1. Use a narrow flat blade screw driver. Insert blade under the wheel and gently pry the wheel out of housing (**Photo 20**).
2. Place new wheel assembly in the provided slot and press into place (**Photo 21**).
3. To replace entire wheel housing, simply remove the two sash assembly screws located inside the housing and slide the housing out of the rail (**Photo 22**).
4. Insert the new wheel housing and align sash assembly screw holes.
5. Insert screws and tighten.
6. If wheel assembly is not previously installed, place the assembly into the housing at this time.
7. Return the sash to the frame as described under sash replacement.



**Photo 19**  
Align Bottom Rail With Sill Sash



**Photo 22**  
Remove Two Screws To Replace Wheel Housing

**SERIES 0400  
HORIZONTAL SLIDING WINDOW**

**Cleaning and Lubricating of Slider Track**



**Photo 23**  
Keep Sash Tracks Clear Of Debris

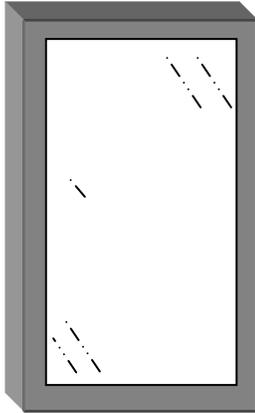
1. We recommend that the Head and Sill Slider Tracks be cleaned and lubricated at least once a year.
2. To clean, use a mild non-abrasive cleaner and wipe down the interior and exterior track pockets in both the head and sill from jamb to jamb (**Photo 23**).
3. Dry track with a clean, dry cloth.



**Photo 24**  
Use Non-petroleum Base Silicone To Lubricate Sash Tracks

4. Lubricate by spraying the entire length of the head and sill slider tracks with silicone spray. A pure, non-petroleum base silicone spray is recommended (**Photo 24**).

**MAINTENANCE INSTRUCTIONS  
SERIES 6500  
CASEMENT/PROJECTED WINDOW**



**Hardware Adjustment**



**Photo 25**  
Place Paper On The Interior Vent  
Weather-Stripping.

**A. Locking Handles**

1. The first step is to tighten the nut and star washer behind the cam handle (project-in-windows) to ensure that it is tight and secure.
2. Make sure that the gasket between the locking handle and the vent or frame is in place (project-in-windows).
3. Perform a paper test (**Photos 25 & 26**) to ensure the vent and frame members are weathering properly. (See Appendix # 2)
4. Check to ensure the locking pawl hits the keeper and compresses the vent and frame properly (**Photo 27**).



**Photo 26**  
With Locks In Closed Position Pull



**Photo 27**  
Check Locking Pawl To Keeper Alignment

## SERIES 6500 CASEMENT/PROJECTED WINDOW

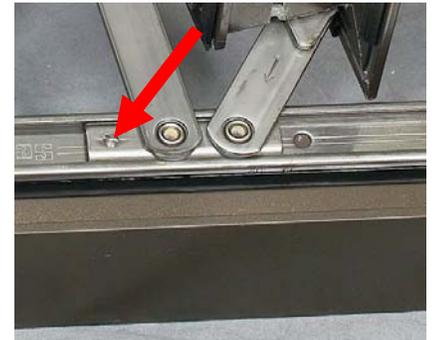
### B. Hinges, Magnum Hinge (slide arms)

1. Make sure the track of the hinge is clean of construction dirt and debris (**Photo 28**).



**Photo 28**  
Check Hinge Track For Debris

2. These hinges are equipped with friction screws that allow the vent to be held in whatever position you open it to (**Photo 29**).
3. These hinges can be provided with stops that allow the vent to open between 85° and 95°. We can also provide limit devices at 45°. If you have a situation that exists that you need a different limiting other than 45° or 90°, please contact the factory.
4. Lubricate hinges per **figure # 1** at every 1200 cycles or once per year (**Photo 30**).



**Photo 29**  
Friction Screw Location



**Photo 30**  
Lubrication Points Location

### C. Butt Hinges

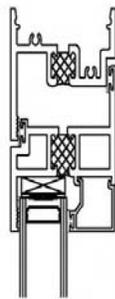
1. Graham Architectural Products provides a five-knuckle butt hinge with a stainless steel pin. These hinges, depending upon the environment, should be lubricated with light oil every 4 – 6 months. This is basically the only maintenance that is required for this hinge. This hinge is typically used for escape windows and larger casement windows.

**SERIES 6500  
CASEMENT/PROJECTED WINDOW**

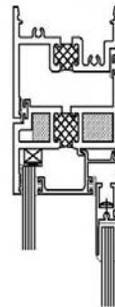
**OPTIONAL GUARDIAN GLAZING SYSTEM**

**(Lift and Tuck System)**

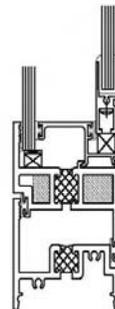
The 6500 window system has an optional interior access panel called a “Guardian insert panel”. This design is similar to the 1100 fixed window described in the next section of this manual whereas a removable glazing panel is attached to the interior of the window. If sash are supplied with a Guardian panel within the primary vent, the following directions will apply in addition to those previously mentioned.



**Standard Design**



**Interior  
Guardian  
insert panel**



**Guardian Panel**

**Removing of Guardian Insert Panel:**

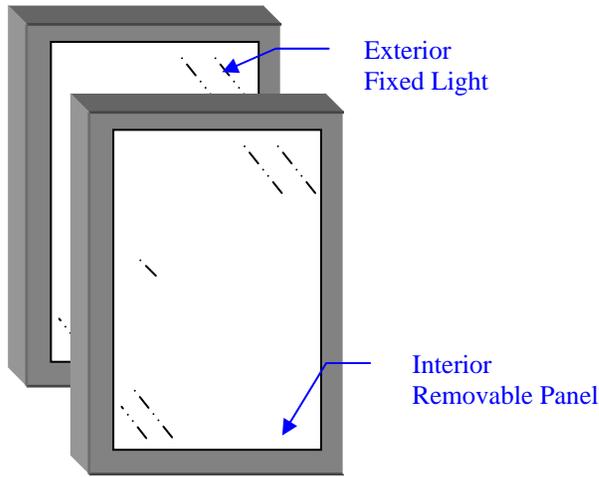
1. Insert a 9/64” Allen key into each guardian lock and turn 90°, to the open position.
2. The Guardian insert is now free to remove by lifting upward until bottom is free to pull outward.

**Installing of Guardian Insert Panel:**

1. Install the Guardian insert into primary sash frame by inserting top rail of Guardian into pocket at top of glazing area.
2. Once top rail is fully inserted, rotate the bottom of the Guardian insert inward, and lower into bottom pocket (**lift and tuck**).
3. Insert a 9/64” Allen key into each Guardian lock and turn 90°, to the locked position.



## MAINTENANCE INSTRUCTIONS SERIES 1100 FIXED WINDOW

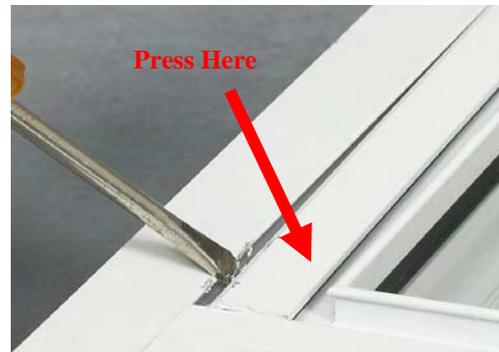


### Interior Sash Removal and Replacement

1. The interior glass is contained in a removable sash. Snap out the two side glazing beads by pressing down on the interior edge of the glazing bead toward the sash. **Note: A flat blunt tool and a rubber mallet can be used to start the glazing bead, but be careful not to damage the bead because it will be reused later (Photos 31 & 32).**



**Photo 31**  
Start With Side Glazing Beads



**Photo 32**  
Once Started, Press Down On Interior Edge Of Bead



**Photo 33**  
Slide Bead Toward Center And

2. Then, while continuing to press down on the bead, remove the bead by sliding it toward the center of the glass until it has disengaged from the frame (**Photo 33**).
3. Remove the top and bottom glazing beads in the same manner.

### SERIES 1100 FIXED WINDOW



**Photo 34**  
When All Beads Are Removed, Tilt Sash  
Toward Interior And Remove

4. Carefully lift the sash out of the frame by tilting inward, grasping the side rails, and lifting **(Photo 34)**.
5. The exterior sash is now exposed for cleaning **(Photo 35)**.
6. To replace the sash, the reverse procedure as described above is followed.



**Photo 35**  
Exterior Sash Exposed For Cleaning



**Photo 36**  
To Replace Sash Insert Bottom Rail  
In Sill Sash Track

7. Insert the bottom rail of the fixed sash into the sill of the frame **(Photo 36)**.
8. Tilt sash outward until the sash is vertical and centered in sash track.
9. The glazing beads are replaced starting with the top, then bottom, followed by the sides.
10. To install the glazing beads, start at one end, inserting the flat portion of the glazing bead into the glazing rabbit of the frame **(Photo 37)**.

11. From that end, continue laterally to press the bead into the pocket.
12. Continue this process with the remaining glazing beads.



**Photo 37**  
Replace Glazing Beads Starting With Top

## MAINTENANCE INSTRUCTIONS SERIES 0800 SLIDING GLASS DOOR



### Adjusting Panel Rollers:

1. Each roller height may be adjusted up or down to square the panels to the jamb or interlock.
2. An adjustment screw is located at lower corners of each panel. The adjustment screw is the lower screw (**Photo 38**).
3. Using a large Phillips screwdriver, turn the screw clockwise to raise the panel and counter-clockwise to lower (**Photo 39**).



**Photo 39**  
Turn Screw Counter-Clockwise To Lower Panel

**Note:** It may be necessary to lift the panel and take some of the weight off the rollers while adjusting.



**Photo 38**  
Roller Adjustment Screw

### Operable Panel Removal

**Note:** Two people are recommended for removing and installing panels.

1. Open Operable Panel partially.
2. Lower the panel as low as possible by adjusting the panel rollers (turn screw counter-clockwise).
3. Slide door panel to the **full open position**, but allow clearance for hands to grip sides.
4. Grasp both stiles and carefully raise panel into head pocket (**Photo 40**).



**Photo 40**  
Grasp Side Rails And Lift Into Head Pocket

## SERIES 0800 SLIDING GLASS DOOR

5. With panel raised, pull bottom toward interior until the bottom sash rail is clear of track (**Photo 41**).
6. With bottom rail clear of sill pocket, lower panel until it disengages the head pocket.
7. Carefully remove panel and store in upright position.

### Operable Panel Replacement

1. To replace panel reverse the procedure described above for removal.
2. Insert door panel top rail into head pocket.
3. With the head engaged, move panel into a vertical position.
4. Lower panel into track, slide panel to check proper alignment.



**Photo 41**  
When Bottom Rail Is Clear Of Sill, Pull  
Toward Interior



**Photo 42**  
Remove Sill Threshold



**Photo 43**  
Remove Sill Threshold

### Fixed Panel Removal

1. Remove sill threshold from sill track (**Photos 42 & 43**).
  2. Remove fixed panel retainer clip from fixed jamb by removing attachment screws (**Photo 44**).
- Slide door panel to the *open position*, allowing clearance for hands to grip sides (**Photo 45**).



**Photo 44**  
Remove Screws From Retainer Clip



**Photo 45**  
Grasp Side Rails And Lift Into Head Pocket

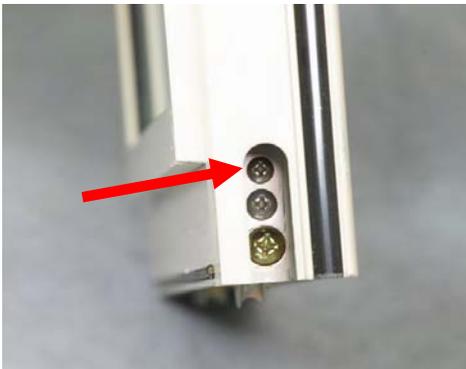
## SERIES 0800 SLIDING GLASS DOOR

3. Lower the panel as low as possible by adjusting panel rollers (see Adjusting Panel Rollers).
4. Grasp both stiles and carefully raise panel into head pocket.
5. With panel raised, pull bottom toward interior until the bottom sash rail is clear of track.
6. With bottom rail clear of sill pocket, lower sash until it disengages the head pocket.

### Fixed Panel Replacement

1. Insert door panel top rail into exterior head pocket.
2. With the head engaged, move panel into a vertical position.
3. Lower sash into exterior track, slide sash to check proper alignment.
4. Adjust rollers so panel is square with fixed jamb, and slide panel into the fixed jamb pocket.
5. Attach the fixed panel retainer clip to fixed jamb using the previously removed screws and the pre-drilled holes.
6. Snap sill threshold into exterior track with slope to the exterior.

### Replacing Panel Rollers:



**Photo 46**  
Roller Housing Removal Screws

1. The wheel assembly may be replaced by first removing the panel from frame and placing it on a suitable work surface. The panel removal procedure is described above.
2. To remove the wheel housing, simply remove the screw located just above the roller adjustment screw and remove the housing (**Photo 46**).
3. Insert the new wheel housing and align screw holes.
4. Insert screw and tighten.
5. Return the panel to the frame as described under panel replacement.

### Adjusting Lock and Strike Plate

1. To adjust the reach of the lock catch, loosen the two set screws located under the plastic cap in the lock mechanism.
2. Adjust the catch in or out as needed.
3. To adjust strike plate, loosen the attachment screws and slide the plate up or down as needed to align with lock catch (**Photo 47**).



**Photo 47**  
Strike Plate Adjustment Screws

**SERIES 0800  
SLIDING GLASS DOOR**

**Cleaning and Lubricating of Sill Track**

1. It is recommended that the head and sill tracks be cleaned and lubricated at least once a year. Loose debris must be removed as needed.
2. To clean, use a mild non-abrasive cleaner and wipe down the interior and exterior track pockets in both the head and sill from jamb to jamb (**Photo 48**).
3. Dry track with a clean, dry cloth.
4. Lubricate by spraying the entire length of the head and sill slider tracks with silicone spray. A pure, non-petroleum base silicone spray is recommended.



**Photo 48**  
**Keep Sill Clean And Clear Of Debris**

## Appendix 1

### 1. SCOPE

This recommendation covers procedures for cleaning and maintenance of painted aluminum extrusions and curtain wall panels. The procedures are intended for application with painted, architectural aluminum extrusions such as window frames, door frames, railings and trim as well as curtain wall panels, column covers, spandrels, mullions, louvers, vertical trim, etc.

### 2. PURPOSE

These recommendations are intended to assist architects, contractors, owners, building managers, et. al., who are concerned with the care and maintenance of painted, architectural aluminum. The information contains suggested methods as an aid in establishing safe, sound cleaning and maintenance procedures.

### 3. GENERAL

**3.1** Organic coatings on aluminum do not normally show an appreciable amount of dirt collection. In many atmospheres dirt or soil would not indicate a detrimental risk to the coating, but cleaning and surface care may be desirable for the sake of appearance. Cleaning may become desirable in areas where heavy industrial deposits have dulled the surface, where materials from construction processes have soiled the surface or where cleaner run-down from other surfaces should be removed. Local atmospheric conditions as well as building location within a geographical area quite naturally have an effect on cleanliness. Very often, rainfall may be sufficient to keep exterior surfaces appearing clean and bright. These factors coupled with owner attitude regarding surface appearance probably would determine cleaning schedules. Areas that are in direct sight at lower levels would more likely be cleaned. Less obvious areas would be less frequently cleaned or in some instances hardly at all. Cleaning of painted aluminum may be scheduled with other cleaning. For example, glass and painted aluminum components can be cleaned at the same time.

**3.2** Cleaning will be more often required in areas of low rainfall (i.e., Los Angeles) or in heavily industrialized areas. Foggy coastal regions with frequent cycles of condensation and drying may tend to give a build-up of atmospheric salts and dirt. In any climate, sheltered areas such as overhangs, may become soiled because of lack of rain washing. Thorough rinsing is especially important after cleaning of these sheltered areas.

**3.3** If automatic wall cleaning equipment is to be used on a building, a test should be made early in equipment design to insure that the cleaning solutions, brushes, as well as the frequency of cleaning should be taken into consideration to insure that there is no detrimental effect on the coating.

### 4. CLEANING PROCEDURES AND CARE AFTER INSTALLATION

Construction soils, including concrete or mortar, etc., should be removed as soon as possible. The exact procedure for cleaning will vary depending on the nature and degree of soil. Try to restrict cleaning to mild weather. Cleaning should be done on the shaded side of the building or ideally on a mild, cloudy day. Method of cleaning, type of cleaner, etc., of one component of the building must be used with consideration for other components such as glass, sealants, painted surfaces, etc.

#### 4.1 Removal of Light Surface Soil

Removal of light surface soil may be accomplished in several ways. Some testing is recommended to determine the degree of cleaning actually necessary to accomplish the task. Ideally, an initial step of forceful water rinse from the top down is recommended prior to any cleaner application. Significant benefit is gained with some type of surface agitation. Low water volume with moderate pressure is much better than considerable volume with little pressure. Physical rubbing of the surface with soft, wet brushes, sponges or cloth is also helpful.

**4.1.1** The simplest procedure would be to apply the water rinse with moderate pressure to dislodge the soil. If this does not remove the soil, then a concurrent water spray with brushing or sponging should be tested. If soil is still adhering after drying, then a mild detergent will be necessary.

**4.1.2** When mild detergent or mild soap is necessary for removal of soil, it should be used with brushing or sponging. The washing should be done with uniform pressure, cleaning first with a horizontal motion and then with a vertical motion. Apply cleaners only to an area that can be conveniently cleaned without changing position. The surface must be thoroughly rinsed with clean water. It may be necessary to sponge the surface while rinsing, particularly if cleaner is permitted to dry on the surface. The rinsed surface is permitted to air dry or is wiped dry with a chamois, squeegee or lint-free cloth.

**4.1.3** Run-down of cleaner (from any operation) to the lower portions of the building should be minimized and these areas should be rinsed as soon as and as long as necessary to lessen streaking, etc., from unavoidable run-down, lower areas should be kept wet or flooded with water. Do not allow cleaning chemicals to collect on surfaces or to "puddle" on horizontal surfaces, crevices, etc. These should be flushed with water and dried. Always clean coated surfaces down from top to bottom and follow with a thorough rinsing with clean water. (With one-story or low elevation buildings, it is recommended to clean from bottom up and rinse from top down.)

#### 4.1.4 Mild Detergents

Mild soaps or detergents ruled safe for bare hands should be safe for coated aluminum. Stronger detergents such as some dishwasher detergents should be carefully spot tested. Some of the latter would necessitate rubber gloves, long handled brushes, etc. With any, the finish should be thoroughly rinsed with clean water and dried. Some mild cleaning solutions, which would comprised of selecting wetting agents in water solution, are available for automatic-building-washing machines. These machines would have built-in brush agitation, squeegee, filtration and recirculation; in some, a fresh water connection may be provided.

### 5. CLEANING OF MEDIUM TO HEAVY SOIL

5.1 Some type of mild solvent such as mineral spirits may be used to remove grease, sealant or caulking compounds. Stronger solvent or solvent containing cleaners may have a deleterious or softening effect on paints. To prevent harm to the finish, these types of solvent or emulsion cleaners should be spot tested and preferably the coating manufacturer should be consulted. Care should be taken to assure that no marring of the surface is taking place in this manner since this could give an undesirable appearance at certain viewing angles. Cleaners of this type are usually applied with a clean cloth and removed with a cloth. Remaining residue should be washed with mild soap and rinsed with water. Use solvent cleaners sparingly.

5.1.1 It may be possible for solvents to extract materials from sealants which could stain the painted surface or could prove harmful to sealants; therefore, these possible effects must be considered. Test a small area first.

5.2 If cleaning of a heavy surface soil has been postponed or in the cases of an especially tenacious soil, stubborn stains, etc., a more aggressive cleaner and technique may be required. Cleaner and technique should be matched to the soil and the painted finish. Some local manual cleaning may be needed at this point. Always follow the recommendations of the cleaner manufacturer as to the proper cleaner and concentration. Test clean a small area first. Cleaners should not be used indiscriminately. Do not use excessive abrasive rubbing as such may alter surface texture or may impart a "shine" to the surface.

5.2.1 Concrete spillage that has dried on the painted surface may become quite stubborn to remove. Special cleaners and/or vigorous rubbing with non-abrasive brushes or plastic scrapers may be necessary.

~~Supplier should be referenced for comparison.~~

Diluted solutions of Muriatic Acid (under 10%) may be effective in removing dried concrete stains, however, a test area should be tried first. Proper handling precautions must be exercised for safety reasons. Also, effective proprietary cleaners for concrete and mortar staining are available.

#### 5.3 Never Mix Cleaners

The mixing of cleaners may not only be ineffective, but also very dangerous. For example, mixing of chlorine containing materials such as bleaches, with other cleaning compounds containing ammonia can result in poison gas emission.

5.4 Always rinse after removal of heavy surface soil.

### 6. SUMMARY OF GENERAL CLEANING TIPS

6.1 Over-cleaning or excessive rubbing can do more harm than good.

6.2 Strong solvents or strong cleaner concentrations can cause damage to painted surfaces.

6.3 Avoid abrasive cleaners. Do not use household cleaners that contain abrasives on painted surfaces.

6.4 Abrasive materials such as steel wool, abrasive brushes, etc., can wear and harm finishes.

6.5 Avoid drips and splashes. Remove run-downs as quickly as possible.

6.6 Avoid temperature extremes. Heat accelerates chemical reactions and may evaporate water from the solution. Extremely low temperature may give poor cleaning effects. Cleaning under adverse conditions may result in streaking or staining. Ideally, cleaning should be done in the shade at moderate temperature.

6.7 Do not substitute a heavy-duty cleaner for a frequently used mild cleaner.

6.8 Do not scour painted surfaces.

6.9 Never use paint removers, aggressive alkaline, acid or abrasive cleaners. Do not use trisodium phosphate or highly alkaline or highly acid cleaners. Always do a test surface.

6.10 Follow manufacturers recommendations for mixing and diluting cleaners.

6.11 Never mix cleaners. (See 5.3 for precautions.)

6.12 To prevent marring, make sure cleaning sponges, cloth, etc., are grit-free.

6.13 "An ounce of prevention is worth a pound of cure."

### 7. GENERAL INSPECTION AND PRECAUTIONS

#### 7.1 Inspection

It is suggested that the building owner provide a qualified inspector who will see that the desired effect is being obtained with the use of sound procedures. Inspection should commence early in the cleaning procedure.

#### 7.2 Building Surroundings

Consideration must be given to the possible effects of run-down on shrubbery, personnel, equipment, etc., located below. These factors may require considerations toward methods of timing.

## Appendix # 2

### Paper Test

The purpose of this test is to check the compression on the weather-stripping between the sash and the frame of a projected window. The compression on the inside seal is critical to pressure equalization in window performance.

#### STEPS IN A PAPER TEST

1. Open the vent.
2. Find a piece of paper or a dollar bill.
3. Place the paper on the interior vent weather-stripping.
4. Close and lock the vent.
5. Resistance should be felt on the paper while trying to pull it back into the room. The weather-stripping contact between the sash and the frame should provide this resistance.

