

CARE & MAINTENANCE PACKAGE

BVG 8900 SERIES LIFT-AND-SLIDE DOOR

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GENERAL INFORMATION

This handbook demonstrates the care and maintenance requirements of the 8900 Series - lift and slide door system, which needs to be followed to allow for proper operations as well as to uphold the visual requirements of the door system over a period of time.

The information contained inside of this document is to be viewed as a necessary part of the door system and should be kept until the removal of the product. This document should be stored in an accessible location at all times, known to the appropriate personnel responsible for the maintenance of the product.

The manufacturer should supply the client with the accompanying CARE & MAINTENANCE PACKAGE, which the client must then retain. In the event that the hardware is not used/maintained as stated in this manual, BVG declines all responsibility for damages or injury.

Our support staff/offices are available for any specialized inquiries or technical questions regarding this manual, or any onsite issues regarding hardware operation/malfunctions.

PERIODIC CLEANING OF HARDWARE

Clean each and every one of the moving pieces of the hardware/components routinely. The use of aggressive solvents/cleaning products is not recommended, as they may negatively affect the protective coatings of the hardware/mechanical devices. It is advisable to use neutral soap and water for cleaning purposes.

Individual hardware items have been exposed to surface treatments to prevent corrosion. Testing of hardware items were completed in climatic chambers to verify the continuing performance of these treatments over time.

Surface finishes may be negatively affected by a combination of contaminants and water in contact with the hardware components.

To maintain the surface integrity / quality of the components over a period of time, and prevent unexpected damages, it is required to observe the following:

- The area where sash and frame are in contact tend to corrode more easily as they are in contact with aggressive vapours as well as low condensation for periods of time. When such situation occurs, provide sufficient ventilation to those areas.
- Clean the parts that are exposed most frequently to avoid collecting dirt and debris. This also helps prevent the oxidation and corrosion of the parts.

Protection of product finishes is required to maintain the integrity of the system. If the hardware experiences damage from cleaning with coarse/abrasive tools, its protection against corrosion is no longer guaranteed, and functionality of the door system may be compromised:

- Refrain from using acidic or harmful cleaning products, solvents such as synthetic thinners, acetone thinners or any products whose make up is unknown.
- Do not use any solvent-based detergents and polishers.

- All tracks need to be clear of dust and debris to maintain proper function of drainage path.
- The fumes from acid or acetic cured sealants can damage the surface of the hardware and can weaken them over time.
- Clean the sash runners weekly to remove debris which may hinder the operation performance of the doors.
- Check that operation force of handle is not significantly higher than that for normal application.

VISUAL INSPECTION

Many potential problems can be easily intercepted prior to issues occurring, through visual inspections / minor operation movements. The following list contains items to review while conducting a visual inspection:

- Ensure tracks are clean and clear of debris.
- Make sure all parts are present and in their correct places.
- Check to see if interlock end cap bases / covers are present at head and sill of each panel
- Ensure the foam blocks in the sill track (underneath each interlock) are present and in good condition.
- Ensure gaskets & weather strips along vertical surface of interlock are still in the correct positions.
- Ensure weep doors on front face sill frame have not been removed.
- Verify that the bumpers on the middle and the fixed panels are still in place.
- Inspect visible portions of gaskets around the perimeter or individual panels.
- Ensure handle operates smoothly and doesn't require excessive force.
- Panels (non-fixed applications) should slide uninterrupted along the track, when panel is in the raised position. Excessive force should not be required.
- Perform 10 cycles of complete handle rotation on each panel (open and close movement) to ensure all hardware is working correctly and without interruptions.

LUBRICANTS

After the hardware has been cleaned and dried, it must be lubricated to restore the smooth operation of all moving parts. In some cases, this may also increase decrease the chances of hardware corrosion. There are a number of acceptable commercially available products that can be used for each application. It is recommended that the replacement lubricant be similar to what was removed (If the gears were coated with grease before cleaning, re-apply a grease lubricant, not a spray applied lubricant such as WD-40).

The following list of products indicates where each should be use:

- Lithium Grease: Use on all gear drives; such as operators. Best choice due to waterproofness
- WD40 or CD2: Use on all sliding or rotating joints; such as roller. Will not last as long as oil.
- Automotive Grease or Petroleum Jelly: Will work in same areas as White Grease, but is not water proof and will attract dust. Be Careful when applying grease since it will stain it comes in contact with.
- Light Oil, Such as 3 in 1 Oil: Can be used on sliding or rotating joints. Care must be used when applying due to possible straining of adjacent surfaces and surface finishes.
- Graphite: Can be used on sliding and rotating joints.

Warning: Avoid the use of silicone-based sprays or lubricants. Silicone can cause some plastics parts to become brittle.

There are many other products that can be used which will generate equal results. Care must be used when applying any lubricant to avoid staining and/or damage to door parts. Since lubricants only work if present, periodic checks should be done to ensure the hardware is functioning properly (See page 9 for recommended schedule).

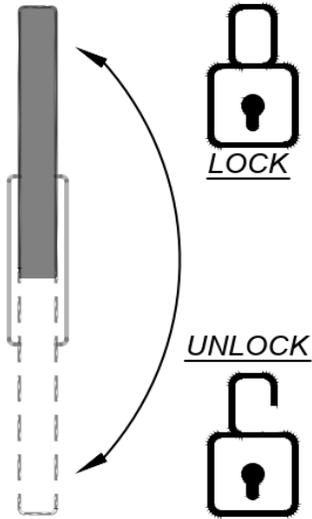
GENERAL INSTRUCTIONS FOR USE

The intended hardware operation is vital to the proper function of the door system. Proper care, use and maintenance of the hardware ensures that the product is user friendly to operate but also increases end user safety.

All BVG products undergo structural and mechanical testing in compliance with the North American Fenestration Standards to ensure product performance and safety. The hardware is checked for damages from continuous use through life cycle testing to verify the performance of door will not degrade over the life of the product. However, in order to prevent any damage on the hardware and ensure user safety, please do as follow:

- Do not introduce additional load/weights on the panels.
- Do not hang items from the handle.
- Do not block or insert an object in between the panels and the frame of the system.
- Do not leave the panels open during periods of strong wind. Panels that are anchored ineffectively can create forceful impacts with one another and thus could damage the hardware.

OPERATION OF LIFT-AND-SLIDE HARDWARE



Lock: When the panel is in the closed position, the door handle will sit parallel with the panel and in the upright position. Never attempt to move or forcefully open the door when the panel is in closed position. Performing this action can lead to damage to the perimeter seals and may leave the product vulnerable for air and water leaks.

Note: A full 180° rotation is required to move the handle from the closed to open, or open to closed position.

Unlock: When the panel is in the open position, the door handle will sit parallel with the panel and in the down position. When in the open position, the panel is raised which reduces friction during panel movement.

Figure 1: Door Handle Open/Close Orientation

HARDWARE MAINTENANCE FREQUENCY TABLE

This section indicates a general timeline for maintenance of BVG Doors. However, the maintenance frequency varies from region to region. The schedule is dependent on the surrounding environment and must be more frequent when installed near coastal areas, industrial areas and heavily polluted areas.

The below table is a general guideline to follow for the recommended frequency of maintenance that is required based on the region where the product is installed:

OUTSIDE HABITAT/ENVIRONMENT	MAINTENANCE FREQUENCY
COASTAL AREA 0 TO 1 KM	EVERY 3 MONTHS
COASTAL AREA 1 TO 20 KM	EVERY 6 MONTHS
ROUGH URBAN AND INDUSTRIAL AREA	EVERY 2 YEARS
TYPICAL URBAN AND INDUSTRIAL AREA	EVERY 3 YEARS
UNPOLLUTED RURAL AREA	EVERY 3 YEARS

Table 1: Maintenance Frequency