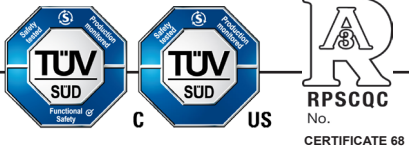


**Operating Instructions: Hygienic Guard Lock
Mounting Accessory Kit**



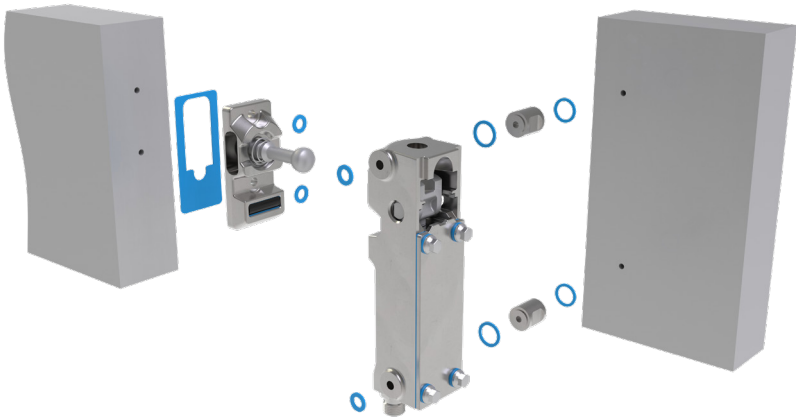
Description

The HGL Hygienic Mounting Kit is the preferred method of mounting the Hygienic Guard Lock in hygienic washdown environments. Using spacer posts which positions the switch 20mm away from the mounting surface allows for more access around the switch for easier cleaning. Gaskets for the posts are also included to seal against metal-to-metal contact.

To aid hygienic mounting, the optional HGL-HM Mounting Kit can be purchased. The HGL-HM Kit contains;

- 2 x Stainless Steel Spacers / Stand-offs to assemble Switch body away from mounting surface for increased cleaning access.
- 4 x Gasket Washers to seal between Spacers/Stand-offs, Switch assembly and mounting surface.

Note: HGL-HM Mounting Kit does not included fixings.



Hygienic Design and 3-A RPSCQC Authorisation



The HGL Hygienic Guard Lock has been specifically designed for use in environments and applications where regular wash down occurs and where hygiene and good sanitation are particularly critical. The HGL and the accompanying HGL-HM Hygienic Mounting kit are designed to minimise unnecessary voids and apertures and also to limit all areas of metal to metal contact. Where apertures and voids do exist, such as for the locking head portion of the HGL, a simple open design allows for maximum cleaning access and inspection visibility.

The HGL and HGL-HM kit have been Third Party Verified against all relevant sanitary (hygienic) requirements for design, materials and fabrication of ANSI/3-A 00-01-2018 and are authorised as part of the 3-A Replacement Parts and System Component Qualification Certificate (RPSCQC) Program.

Important:

Fortress' Hygienic Guard Interlock is designed for use according to the installation and operating instructions enclosed. It must be installed by competent and qualified personnel who have read and understood the whole of this document prior to commencing installation. If the device or guarded machinery equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. Any modification to or deviation from these instructions invalidates all warranties.

Fortress Interlocks Ltd accepts no liability whatsoever for any situation arising from misuse or misapplication of the device. The device is not to be used as a mains isolator or emergency stop. The device is a component to be added to a permanent electrical installation meeting the requirements of the applicable IEC/ EN standards.

Operating Instructions: Hygienic Guard Lock Mounting Accessory Kit

All the voltages used within the connected circuits must be derived from a safety extra low voltage or protected extra low voltage power supply (SELV or PELV). The device meets the requirements of the standard EN ISO 14119 – Safety of machinery, interlocking devices associated with guards. Principles for design and selection. The device contains a single electrical circuit; all inputs, outputs and power supply have a common voltage reference, 0V.

DO NOT LEAVE AUXILIARY RELEASE / OVERRIDE DRIVER BIT IN PLACE!

Access to the auxiliary release driver bit must be securely controlled as they could make it possible to bypass the safety devices and allow access to areas that may have a residual hazard or may result in incorrect operation of some devices.

BEWARE OF INTENTIONAL MISUSE CAUSED BY OPERATORS WANTING TO BYPASS SAFETY SYSTEMS.

THE INSTALLER SHOULD ASSESS THE RISKS AND MITIGATE AGAINST THEM.

The installation and operation of the device and the complete machine guarding application must take into account the requirements of EN ISO 14119, in particular Section 7 - Design for minimising defeat possibilities. In order to maintain device safety rating, overall system must be validated to BS EN ISO 13849-2 and/or evaluated in accordance with BS EN 62061.

IF YOU HAVE ANY QUESTIONS OR QUERIES OF ANY NATURE WHATSOEVER PLEASE CONTACT THE SUPPLIER WHO WILL BE PLEASED TO ADVISE AND ASSIST.

General Data	HGL-HM when used with a Safety-on-Guard-Locking HGL	HGL-HM when used with a Safety-on-Guard HGL
Spacer Materials	316 Stainless Steel	
Gasket Materials	FDA Food Contact Compliant Silicon Rubber (ref. 21 CFR 177-2600)	
Holding Force F	5 kN	7.5 kN
Holding Force F_{Zh}	5 kN	7.69 kN
Maximum Holding Force, F_{1max} ^c	10 kN	10 kN
^c F_{1max} values recorded with HGL products mounted using HGL-HM Mounting Kit, 4 x M5 A4-80 Stainless Steel Hex Head Bolts and 2 x M8 A4-80 Stainless Steel bolts as per figure 10.		

Mounting Instructions

Tools and Fixings Required

- 4 x M5 Screws for securing switch and actuator.
 - Screws must be suitable length for a minimum of 10mm thread engagement.
 - Screws must be security type to prevent unauthorised removal or tampering.
 - Screws must be of hygienic design and form so as not to compromise product cleaning and maintenance.
 - Recessed socket head bolts may only be used if; the HGL product is mounted away from any product contact source, they are shielded from any product residue.
 - Required torque setting; 6.5 Nm.
 - Minimum required screw type and class to maintain **F_{Zh}** value; A4-80 Stainless Steel.
- Calibrated torque wrench / driver suitable for securing M5 fixing screws.
- Auxiliary release driver bit (provided) to operate auxiliary release function.
- 1/4" Driver to suit auxiliary release driver bit.
- Adhesive threadlocker to secure mounting fixings from loosening due to vibration.

Note: Threadlocker must be FDA compliant, non-toxic and must be suitable for the environment to which the HGL product is to be used.

- Threadlocker must be 'middle strength' or greater.

Mechanical Mounting Instructions

1. Locate the device so that operation of the auxiliary release function, functional testing, electrical testing, scheduled inspection and maintenance and final unit replacement are all easily possible.
2. Operate the auxiliary release function to remove the actuator from the switch assembly. Note, this step is not applicable to Power-to-Lock solenoid type devices.
3. Mount the switch and actuator assemblies to appropriate parts of the machine or guarding (see Fig.4 for example mounting).
 - The actuator must be correctly aligned and oriented with the switch as per the assembly dimensions.
 - All mounting surfaces should be flat, stable and suitable of providing a minimum of 10mm M5 thread engagement or sufficient support to either an M5 Nut or M5 T-Nut.

Operating Instructions: Hygienic Guard Lock Mounting Accessory Kit

- For mounting in certain hygienic applications additional gaskets and spacer posts maybe required to aid cleaning and remove risk of metal-to-metal joins. In these applications the HGL-HM Mounting Kit can be used, see HGL-HM specific instructions below for more details.
- If mounting to a hollow section frame or post, the integrity of the frame shall not be compromised by drilling into the hollow interior. Welded studs or fully welded sleeves should then be used to the exterior of the hollow frame to maintain solid form and to not compromise frame sealing.

4. Perform mechanical function tests before completing installation and commission. See mechanical function test section.

Mount the complete Device only in the correctly assembled condition.

- The complete machine guarding installation must conform to all relevant design, construction and installation standards and guidelines.
- Any gap around the perimeter of the machine and guarding when closed and locked (Safety Outputs High) must not exceed the limits specified in the relevant standards.
- All fixing screws used to mount the complete device must be permanently prevented from removal. If mounting fixings are visible, they must be secured against removal by personnel using standard tools, manipulation and un-authorised or un-identifiable removal. If mounting fixings are not visible or hidden, they must be secured against removal or loosening due to vibration. In both cases, a middle strength adhesive threadlocker is required.
- The complete device must not be used as a mechanical stop. Where applicable, precautions must be made to ensure the door or gate of any guarded area has sufficient support and stops to prevent the impact on the device.

Figure 1: Actuator Mounting using HGL-HM mounting kit

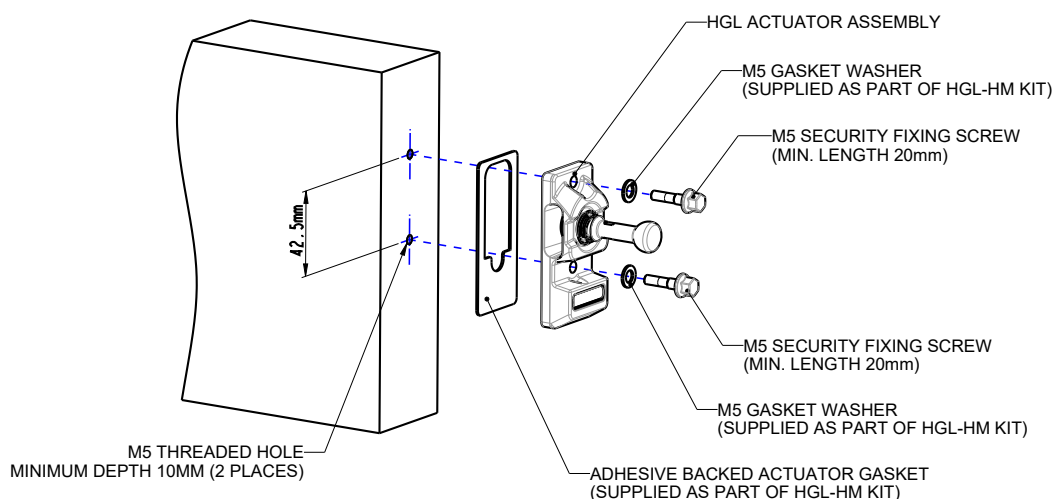
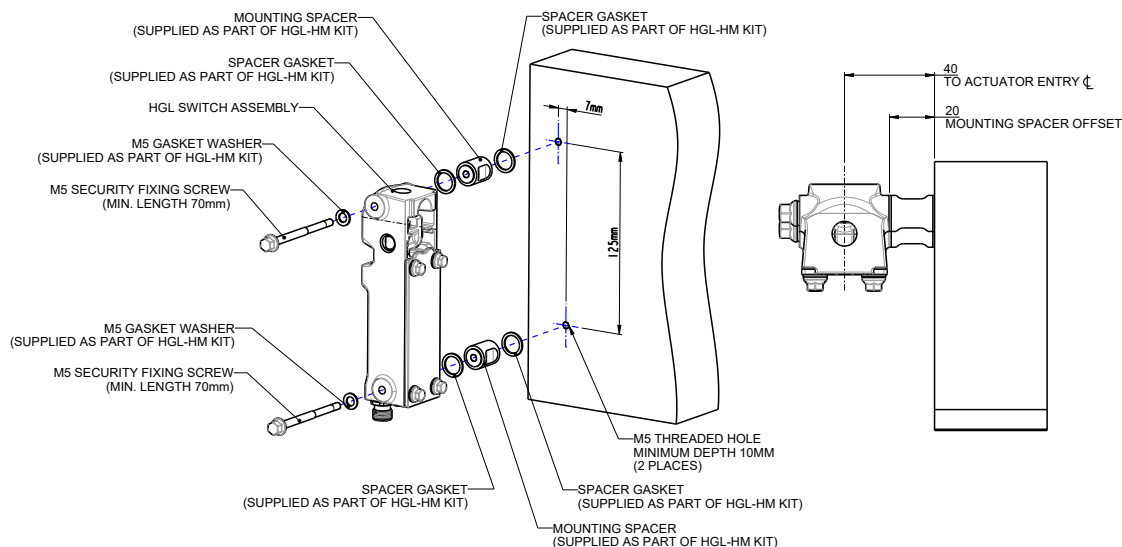


Figure 2: Switch Mounting using HGL-HM mounting kit and M5 threaded holes



Operating Instructions: Hygienic Guard Lock Mounting Accessory Kit

Figure 3: Switch Mounting using HGL-HM mounting kit and M8 through holes.

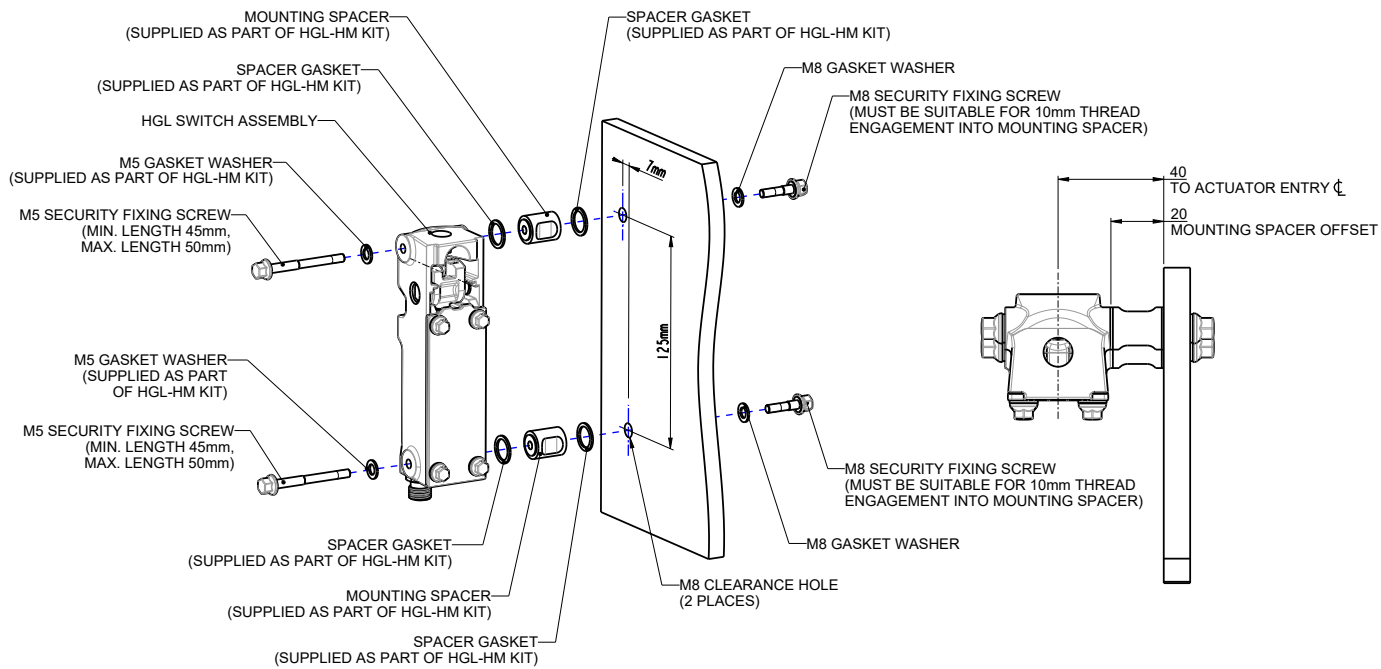


Figure 4: Switch Mounting using HGL-HM mounting kit Dimensional Drawing

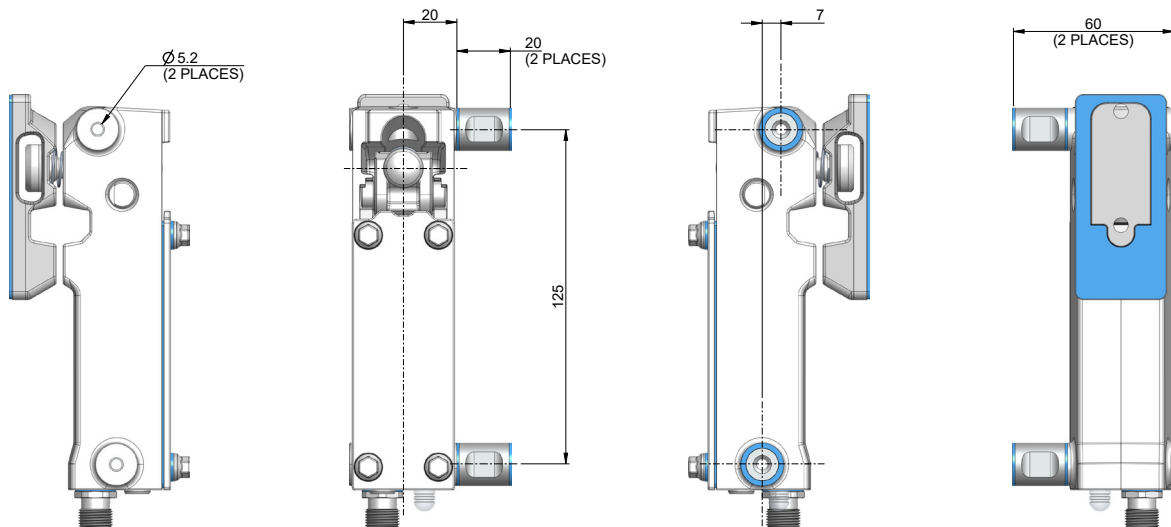
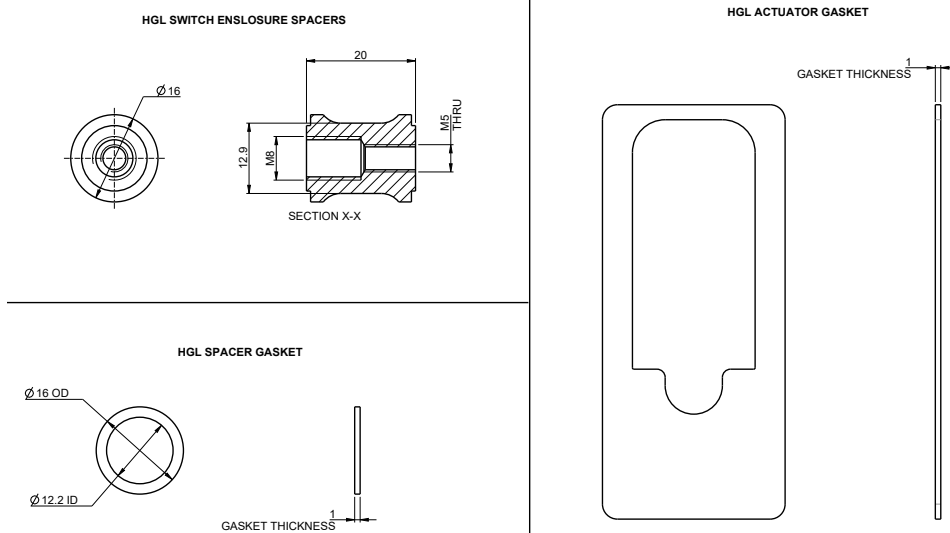


Figure 5: HGL-HM Mounting Kit Components Dimensional Drawing



Operating Instructions: Hygienic Guard Lock Mounting Accessory Kit

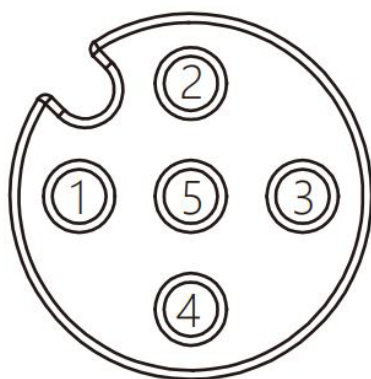
Cord sets to suit the Hygienic Guard Lock

Part No.	Cable Length	Description	Technical Specification
CABLE-5M-HG1	5m	To suit 5-Pin M12 connectors to flying leads	Ingress Protection: IP67 & IP69 Max. operating temperature: -25°C - 85°C Contact Carrier Material: Nylon, TPU
CABLE-10M-HG1	10m		
CABLE-5M-HG3	5m	To suit 8-Pin M12 connectors to flying leads (8x 24 AWG)	Contact Material: Brass / Gold Coupling nut: Stainless Steel Rated current (A): 2A (8-Pin), 4A (5-Pin)
CABLE-10M-HG3	10m		
CABLE-5M-HGD	5m	To suit 2x 5-Pin daisy chain connectors (5x 22 AWG)	Rated voltage (V): 30V (8-Pin), 60V (5-Pin) Cable Jacket: Black PUR
CABLE-10M-HGD	10m		

Pin Outs

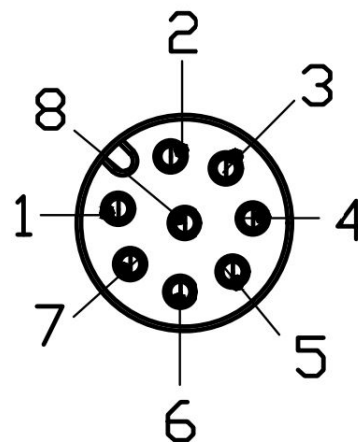
Pin out for the 5-pin

- 1- BN
- 2 - WH
- 3 - BU
- 4 - BK
- 5 - GY



Pin out for the 8-pin

- 1 - WH
- 2 - BN
- 3 - GN
- 4 - YE
- 5 - GY
- 6 - PK
- 7 - BU
- 8 - RD



Electrical Connection Instructions

1. Make sure the electrical supply is isolated and safe before any installation.
2. Insert appropriate M12 connector cabling into base of HGL Enclosure assembly.
 - Note: Suitable connectors and cabling must be used to maintain IP67 and IP69 sealing.
 - Connectors and cabling design and materials must be FDA compliant, non-toxic and must be suitable for the environment to which the HGL product is to be used.
 - Exposed braided and armoured or jointed coverings on cables shall not be used.
3. Perform electrical function tests before completing installation and commission. See electrical function test section.
 - Ensure that all circuits connected to the device are derived from a safety extra low voltage or protected extra low voltage power supply (SELV or PELV).
 - Ensure the electrical connection and installation of the device and complete guarding application is performed according to all relevant local standards and guidelines.

Mechanical Function Test (Unpowered)

Power-to-Unlock HGL Interlocking Devices

1. Insert the actuator into the switch.
It must lock into position.
2. Operate the auxiliary release function and remove the actuator from the switch.
3. Return the override spindle to its locked position and reinsert the actuator into the switch.
It must lock into position.

Power-to-Lock HGL Interlocking Devices

1. Insert the actuator into the switch.
It must not lock into position.

Operating Instructions: Hygienic Guard Lock Mounting Accessory Kit

Electrical Function Test (Powered)

1. Close the guard, ensure the device is in its locked-state.

It must not be possible to open the guard.

- The safety outputs should be high. (Note: SOGL units change state upon guard being locked, SOG upon guard closed).

2. Switch off the machine, unlock the device and open the guard.

- The safety outputs should be Low. (Note: SOGL units change state upon guard being locked, SOG upon guard closed).

Warning: This device does not contain the machine reset or restart facility after an escape or auxiliary release of the guard locking. Additional measures are required to achieve the reset of the machine system.

Disposal

The device does not contain any certified hazardous materials so should be disposed of as industrial waste.

Liability Coverage is Voided Under the Following Conditions:

- If these instructions are not followed.
- Non-compliance with safety regulations.
- Installation and electrical connection not performed by authorised personnel.
- Non-implementation of functional checks.

Protection Against Environmental Influences

In order to maintain full mechanical and electrical performance, the device must be protected against the ingress of all foreign bodies such as swarf, sand, blasting shot etc.

The device is not suited for use in corrosive environments.

The device is only suitable for dusty environments where careful consideration has been given to environment requirements, product selection and mounting positions. Contact your local Fortress channel partner for guidance and details. Where possible the device must be mounted away from the guarded machine or by the use of anti-vibration mountings in order to avoid the effects of vibration, shock and bump.

The manufacturer reserves the right to modify the design at any time and without notice.

This guide should be retained for future reference.