Actuators

Heads

Operating Instructions: Linear Insertion Heads & Actuators

Description

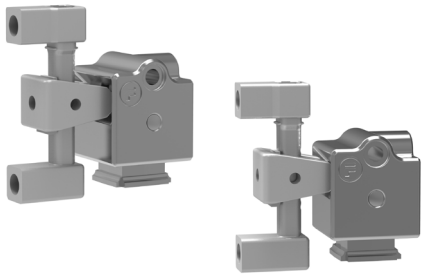
For secure head retention in all applications the top M8 head fixings must be used. All linear heads & actuators are designed as heavy duty stainless steel tongue units and are ideal for fast & frequent access.

*pro*AT Slimline Head

- Full stainless steel construction.
- 4 actuator entry positions at 90° increments for either hinged or sliding doors. On site handing change possible.
- Mounted upside down it is self cleaning, ideal for dusty environments.
- 40mm x 40mm package size.
- Padlockable Lock-Out plug available.

*pro*AT Slimline Tongue Actuator

- Misalignment tolerance of + / - 12mm.
- 6mm overtravel allowance.
- Minimum hinged guard operating radius: 250mm.



SA S6

Options & Ordering Information

Description	Part No.	Handing
***pro*AT Slimline Head**		
AT Slimline Head	S6	Front / Left / Rear / Right
AT Slimline c/w Lock-Out Plug	S8	Front / Left / Rear / Right
***pro*AT Slimline Tongue**		
AT Slimline Tongue	SA1	Front
AT Slimline Tongue	SA2	Left
AT Slimline Tongue	SA3	Back
AT Slimline Tongue	SA4	Right

*pro*Hinged Handle

- Integrated handle for hinged guarding.
- HS1 - Short reach for use with *pro*Stop or slimline LOK units (40mm wide).
- HL1 - Long reach for use with *pro*LOK units (80mm wide).
- Used in conjunction with the S6 slimline head.
- Misalignment of + / - 12mm.
- 6mm overtravel allowance.
- Minimum hinged guard operating radius: 250mm.

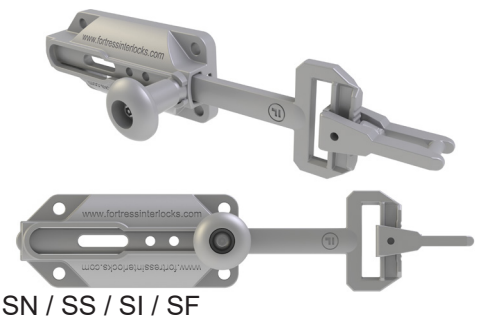
HS1 / HL1

Options & Ordering Information

Description	Part No.	Handing
Hinged Handle - Short Reach	HS1	Front
Hinged Handle - Long Reach	HL1	Front

*pro*Slidebar Short Tongue

- Slidebars have a second operating action and are suitable for hinged or sliding guards. No hinged guard radius limit is present and the risk of impacts to interlock on large guards is removed.
- Available in four variants: Standard, Spring Loaded, Internal Lever and Non-Latching with Internal Lever.
- Built in lock-out facility to accommodate a maximum of 4 padlocks with up to 8mm diameter shackles.
- Internal lever options available for use when escape release module is present in guard locking unit.



SN / SS / SI / SF

Operating Instructions: Linear Insertion Heads & Actuators

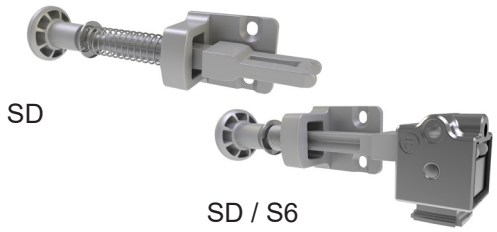
Options & Ordering Information

Description	Part No.	Handing	Internal Handle Capable of Opening Door from Inside*	Internal Handle Capable of Closing Door from Inside	Sprung Opening Action
Standard Slidebar Assembly with Slimline Tongue	SN2	Left			
Standard Slidebar Assembly with Slimline Tongue	SN4	Right			
Sprung Slidebar Assembly with Slimline Tongue	SS2	Left			✓
Sprung Slidebar Assembly with Slimline Tongue	SS4	Right			✓
Slidebar Assembly with Slimline Tongue and Internal Handle	SI2	Left	✓		
Slidebar Assembly with Slimline Tongue and Internal Handle	SI4	Right	✓		
Slidebar Assembly with Slimline Tongue and Internal Lever with Non Latching External Handle	SF2	Left		✓	
Slidebar Assembly with Slimline Tongue and Internal Lever with Non Latching External Handle	SF4	Right		✓	

*Internal handle can only open door once all additional locking means have been unlocked or removed. Slidebar internal handle does not perform an escape release function - an additional escape release adaptor is required.

*pro*Hand Operated Actuator

- Hand operated sprung actuator used in conjunction with S6 head.
- Hand operated actuators have second operating action and are suitable for hinged or sliding guards. No hinged guard radius limit is present and the risk of impacts to interlock on large guards is removed.
- Actuator rotatable in 90° increments for mounting flexibility.
- Spring return keeps actuator retracted while guard is open.



SD

SD / S6

Options & Ordering Information

Description	Part No.	Handing
Hand Operated Actuator	SD2	Left
Hand Operated Actuator	SD4	Right

*pro*AT Head

- 2 position fixing at 90° increments, to either hinged or sliding doors, allowing on site handing change.
- Can be fitted with lockout devices for additional safety (T7 & T8).
- Mounted upside down it is self cleaning, ideal for dusty environments.

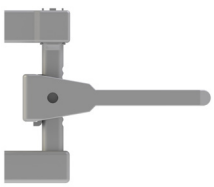
*pro*AT Tongue Actuator

- Misalignment tolerance of + / - 12mm.
- 12mm overtravel allowance.

*pro*AT Short Tongue Actuator - TK

- Misalignment of + / - 12mm.
- 3mm overtravel allowance - Tongue will not protrude head.
- Minimum hinged guard operating radius:- 750mm.
- 3 position fixing at 90° increments.

T6



TA / TK

Options & Ordering Information

Description	Part No.	Handing
***pro*AT Head**		
*pro*AT Head	T6	Left / Right
*pro*AT Head c/w Drop Down Lock-Out	T7	Left / Right
*pro*AT Head c/w ATL Lock-Out Clip	T8	Left / Right

***pro*AT Tongue**		
AT Tongue	TA2	Left
AT Tongue	TA4	Right
***pro*AT Short Tongue**		
AT Tongue	TK2	Left
AT Tongue	TK4	Right

*pro*Handle

The *pro*Handle is available in three variations; EN, EF, EH.

- Intuitive opening style.
- Used in conjunction with *pro*AT head.
- Used on hinged or sliding doors.
- Zinc alloy casing.
- Built in lock-out facility to accommodate a maximum of 4 padlocks with up to 8mm diameter shackles.
- Misalignment + / - 12mm.
- Red handled EH version for use with non locking system (*pro*Stop) or when escape release module is present in guard locking unit.
- On site handing change possible.

EN Version

EF Version

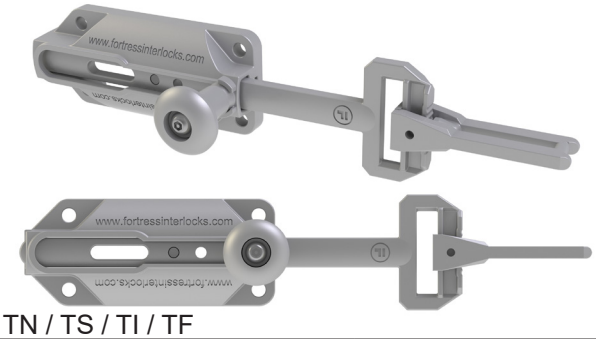
EH Version

Options & Ordering Information

Description	Part No.	Handing	Red 'Open-Only' Internal Handle	Silver Open & Close Internal Handle	No Internal Handle
*pro*Handle	EN2	Left			✓
*pro*Handle	EN4	Right			✓
*pro*Handle	EF2	Left		✓	
*pro*Handle	EF4	Right		✓	
*pro*Handle	EH2	Left	✓		
*pro*Handle	EH4	Right	✓		

*pro*Slidebar

- Slidebars have second operating action and are suitable for hinged or sliding guards. No hinged guard radius limit is present and the risk of impacts to interlock on large guards is removed.
- Available in four variants: Standard, Spring Loaded, Internal Lever and Non-Latching with Internal Lever.
- Built in lock-out facility to accommodate a maximum of 4 padlocks with up to 8mm diameter shackles.
- Internal lever options available for use when escape release module is present in guard locking unit.



TN / TS / TI / TF

Options & Ordering Information

Description	Part No.	Handing	Internal Handle Capable of Opening Door from Inside*	Internal Handle Capable of Closing Door from Inside	Sprung Opening Action
Standard Slidebar Assembly	TN2	Left			
Standard Slidebar Assembly	TN4	Right			
Sprung Slidebar Assembly	TS2	Left			✓
Sprung Slidebar Assembly	TS4	Right			✓
Slidebar Assembly with Internal Lever	TI2	Left	✓		
Slidebar Assembly with Internal Lever	TI4	Right	✓		

Slidebar Assembly with Internal Lever and Non Latching External Handle	TF2	Left	✓	✓	
Slidebar Assembly with Internal Lever and Non Latching External Handle	TF4	Right	✓	✓	

*Internal lever can only open door once all additional locking means have been unlocked or removed. Slidebar internal lever does not perform an escape release function - an additional escape release adaptor is required.

*pro*AT Coded Head

- More than 10 codes to give a “medium level” coded actuator as defined in ISO 14119:2013.

*pro*AT Coded Tongue

- Engraved with coding information to facilitate pairing with coded *pro*AT head in installation.

YA

Options & Ordering Information

Description	Part No.	Handing
***pro*AT Coded Head**		
*pro*AT Coded Head	Y6	Left / Right
Description	**Part No.**	**Handing**
***pro*AT Coded Tongue**		
*pro*AT Coded Tongue	YA2	Left
*pro*AT Coded Tongue	YA4	Right

*pro*Slidebar Coded Tongue

- Used in conjunction with the coded *pro*AT head.
- More than 10 codes to give a “medium level coded actuator” as defined in ISO14119:2013.
- Engraved with coding information to facilitate pairing with coded *pro*AT head in installation.


YN / YI

Options & Ordering Information

Description	Part No.	Handing	Internal Handle Capable of Opening Door from Inside*	Internal Handle Capable of Closing Door from Inside	Sprung Opening Action
Standard Slidebar Assembly with Coded Tongue	YN2	Left			
Standard Slidebar Assembly with Coded Tongue	YN4	Right			
Slidebar Assembly with Internal Lever with Coded Tongue	YI2	Left	✓		
Slidebar Assembly with Internal Lever with Coded Tongue	YI4	Right	✓		

*Internal lever can only open door once all additional locking means have been unlocked or removed. Slidebar internal lever does not perform an escape release function - an additional escape release adaptor is required.

Important:

This product is designed for use according to the installation and operating instructions enclosed. It must be installed by a competent and qualified personnel who have read and understood the whole of this document prior to commencing installation. If the 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 mis-application of this product.
Note: The availability of spare actuators and keys makes it possible to bypass the safety devices and, for this reason, the security of any spare actuators and keys must be effectively monitored. Where applicable, the same also applies for keys used for resetting after an escape release or manual override.

BEWARE OF INTENTIONAL MISUSE CAUSED BY OPERATORS WANTING TO BYPASS SAFETY SYSTEMS. THE INSTALLER SHOULD ASSESS THE RISKS AND MITIGATE AGAINST THEM.
IF YOU HAVE ANY QUESTIONS OR QUERIES OF ANY NATURE WHATSOEVER PLEASE CONTACT THE SUPPLIER WHO WILL BE PLEASED TO ADVISE AND ASSIST.

Technical Specification

Heads	**T6 / T7 / T8 / Y6 - *pro*AT Head Modules**				**S6 - Slimline Head Module**				
Housing Material	Zinc alloy to BSEN12844 & stainless steel to BS3146				Stainless steel to BS3146				
Paint Finish	Gloss powder coat on passivated zinc alloy				N/A				
Colour	Black and stainless steel				Stainless steel				
Actuators	**TA / TK / YA Tongue**	**TN / TI / TF / YN / YI**	**TS Sprung Slidebar**	**EH / EN / EF Handle**	**SA Tongue**	**HS1 / HL1 Hinged Handle**	**SN / SI / SF Slidebar**	**SS Sprung Slidebar**	**SD Hand Operated**
Housing Material	Stainless steel to BS3146			Zinc alloy to BSEN12844 & stainless steel to BS3146	Stainless steel to BS3146				
Paint Finish	N/A			Gloss powder coat on passivated zinc alloy	N/A				
Colour	Stainless steel			Black and stainless steel	Stainless steel				
Holding Force, F	10 kN				10 kN	10 kN	5 kN *	5 kN *	5 kN *
Operating Force	N/A	N/A	12 N	2 Nm	N/A	N/A	N/A	12 N	12 N
Mechanical Life	≤ 1,000,000 Switching Cycles								
Shock and Vibration Resistance	Tested in accordance with GS-ET-19								
Performance Level (EN ISO 13849-1:2015)	Up to PLe								
Category (EN ISO 13849-1:2015)	Up to Cat.4								
B10d	5,000,000 Operations								
Environment	Indoor								
Ambient Temperature	-5˚C to 80˚C (23˚F to 176˚F) **								
Maximum Humidity	80% @ ≤ 31°C ; 50% @ 40°C				N/A				

*Destructive test of GS-ET-19, 5.18 exceeded 10,000N.
**The units will only continue to work below freezing point (0°C) where it can be guaranteed that ice will not form on or in the unit; as it will cause the mechanical parts to bind and jam.

Head Safety Functions		**Part No.**		
Safety Function 1	Retain actuator	S6 / T6	T7	S8 / T8
Safety Function 2	Transfer motion of actuator removal into breaking of safety contacts			
Safety Function 3	Prevents insertion of actuator when “locked out”			

Actuators Safety Functions		**Part No.**	
Safety Function 1	Provides link from interlock to door	SA / TA / TK / YA / HS1 / HL1 / TN / TS / SN / SS / YN / EN / SD	TI / TF / YI / SI / SF / EH / EF
Safety Function 2	Internal handle assists escape release (Only when used with an additional escape release module)		

Functionality
Hinged Handle & Tongue Actuator
To Gain Access to a Guarded Area First remove any locking means by correctly operating any assembled *pro* EK / SK / AK key adaptors or *pro*LOK unit. Pull on the guard in parallel with the tongue actuators entry direction or on the handle section of the *pro*Hinged Handle so the actuator is removed from head.
To Close and Relock a Guarded Area Close the door to engage the actuator of the tongue actuator or *pro*Hinged Handle in the head. Relock the guarded area by operating any *pro* EK / SK / AK key adaptor or *pro*LOK unit.
Slidebar Actuator
To Gain Access to a Guarded Area First remove any locking means by correctly operating any assembled pro EK / SK / AK key adaptors or proLOK unit. Grasp the knob pulling the slidebar so the actuator is removed from the head.
To Close And Relock A Guarded Area Lift the knob casting and move the slidebar towards the head so that the tongue is inserted. Relock the guarded area by operating any *pro* EK / SK / AK key adaptor or *pro*LOK unit.
Internal Lever Slidebars The internal lever of the TI or TF slidebars can be operated from inside the guarded area but must only be used with an *pro*AT head and stop without any safety or access key adaptors (EK / SK / AK) or with an *pro*AT head and escape release adaptor. If any locking device is used (e.g. key adaptors EK / SK / AK or a solenoid LOK unit) then the escape release function of a the locking unit must first be activated before the internal lever can be operated.
Non Latching (TF) The slidebar is free to slide backwards and forwards without the external knob being operated. This allows the internal lever to close the door from the inside.
Hand Operated Actuator
To Gain Access to a Guarded Area First remove any locking means by correctly operating any assembled *pro* EK / SK / AK key adaptors or *pro*LOK unit. Pull on the knob casting of the *pro*Hand Operated Actuator so the actuator is removed from head.
To Close and Relock a Guarded Area Close the door and engage the actuator of the *pro*Hand Operated Actuator in the head. Relock the guarded area by operating any *pro* EK / SK / AK key adaptor or *pro*LOK unit.
***pro*Handle**
To Gain Access to a Guarded Area First remove any locking means by correctly operating any assembled *pro* EK / SK / AK key adaptors or *pro*LOK unit. Access can then be gained to the guarded area by operating the silver access handle of the *pro*Handle, so the tongue is removed from head. In the case of an EH or EF *pro*Handle, the guarded area can also be opened internally using either the red internal 'open-only' handle (EH *pro*Handle) or the internal silver access handle (EF *pro*Handle). Important note; The internal handle of any *pro*Handle will not provide an immediate unlocking and opening of a locked guarded area. Any locking devices must be unlocked separately prior to the operation of an internal handle.
To Close and Relock a Guarded Area Close the door and operate the silver handle of the *pro*Handle to engage the tongue into the head of an amGard*pro* product stack. Relock the guarded area by operating any *pro* EK / SK / AK key adaptor or *pro*LOK unit.

*pro*AT Slimline Head & Tongue Actuator

Figure 1: Dimensional Drawing - S6

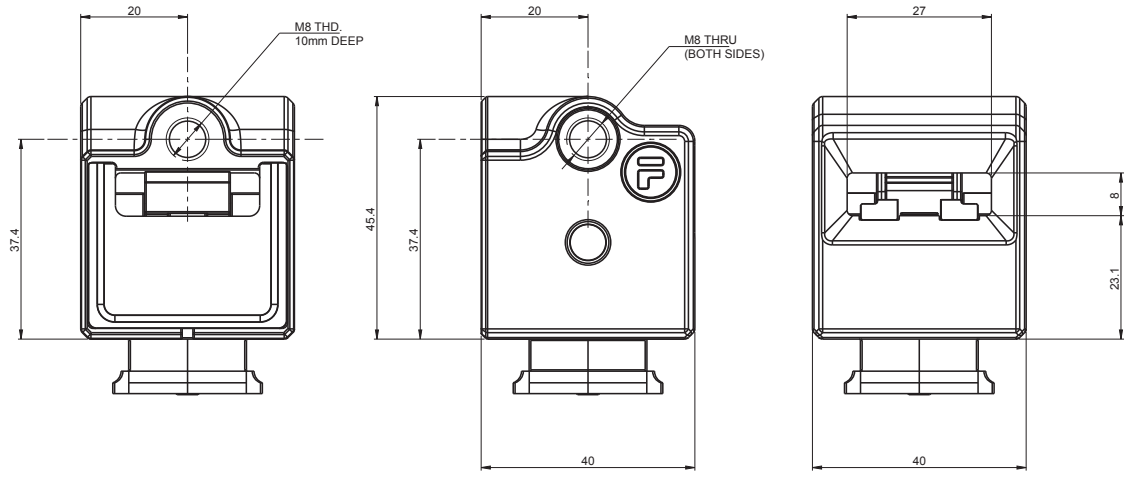
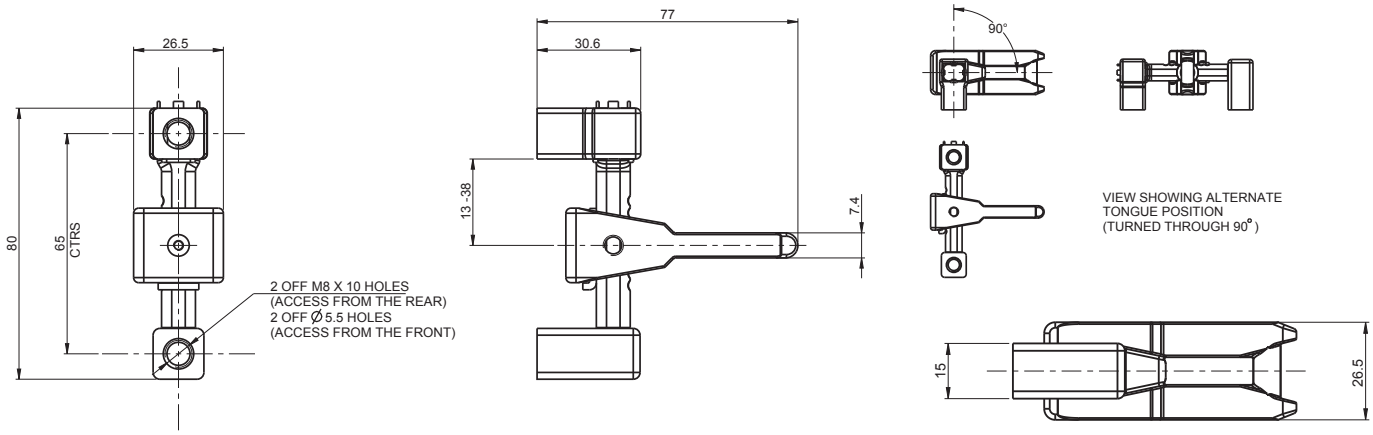


Figure 2: Dimensional Drawing - SA



Tools and Fixings Required

Ø8.2mm Drill
1 x M8 Screw for Fixing Head. (Screw must be suitable length for a minimum of 10mm thread engagement with head. Required screw type and class; A2 70. Required torque setting; 4-6 Nm.)
2 x M8 Screw for Fixing Actuator. (Screw must be suitable length for a minimum of 10mm thread engagement with actuator. Required screw type and class; A2 70. Required torque setting; 4-6 Nm.)

Required Torque Settings:

If removed during mounting, re-orientation or electrical wiring, all supplied fixing screws of the complete guard interlocking device must be refitted using the following torque settings;
M3 Screws – 0.8-1.0 Nm.
M4 Screws – 2-4 Nm.
M5 Screws – 2-4 Nm.
M8 Screws (Required for device mounting but not supplied) **– 4-6 Nm.**

Mounting

1. Mount the complete guard interlocking device only in its correctly assembled condition.
2. Locate so it is in a suitable position for the accompanying amGard*pro* stack and within reach for easy user operation.
3. Remove the tongue assembly from the head.
4. The head may be rotated in increments of 90° to suit the installation.
5. Mount the complete guard interlocking device together with head assembly to a flat metal static part of the machine. Use M5 screws through the unit or M8 screws from the rear.
6. The tongue bracket can be rotated through 90° to provide an alternative mounting option. To do this, remove the pozi-drive screw, slide out the shim plate, rotate bracket (keeping grooved surface pointing towards tongue), replace shim plate and pozi-drive screw.
7. Align the tongue and fix it to a flat metal plate permanently attached to the guard using 2 x M8 screws from the rear. Ensure tongue full engages into head.
8. Make sure that the gap around the perimeter of the device when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.
9. All fixing screws used to mount the complete guard locking device must be permanently prevented from removal, either by vibration or by personnel using standard tools. If mounting fixings are visible, they must be secured against manipulation and un-authorised or un-identifiable removal. In these cases, a middle strength adhesive screwlocker is required.
10. The installation and operation of the complete guard interlocking device must take into account the requirements of EN ISO 14119; in particular Section 7 – Design for minimising defeat possibilities.
11. The complete guard interlocking 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 guard interlocking device.
12. If fitted in conjunction with a push escape release adaptor, the complete guard interlocking device must be mounted in the correctly assembled condition so that the escape release action is only possible from within the guarded area.

Testing

The Slimline Head & Tongue Actuator must be mechanically tested as part of the complete guard installation prior to live use to ensure the system performs as required. Refer to the installation instructions of all assembled modules, adaptors and components of the accompanying amGard*pro* stack to ensure all required testing is performed correctly prior to live use. Make sure that the gap around the perimeter of the guard, when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.

Hinged Handle

Figure 3: Dimensional Drawing - HS1

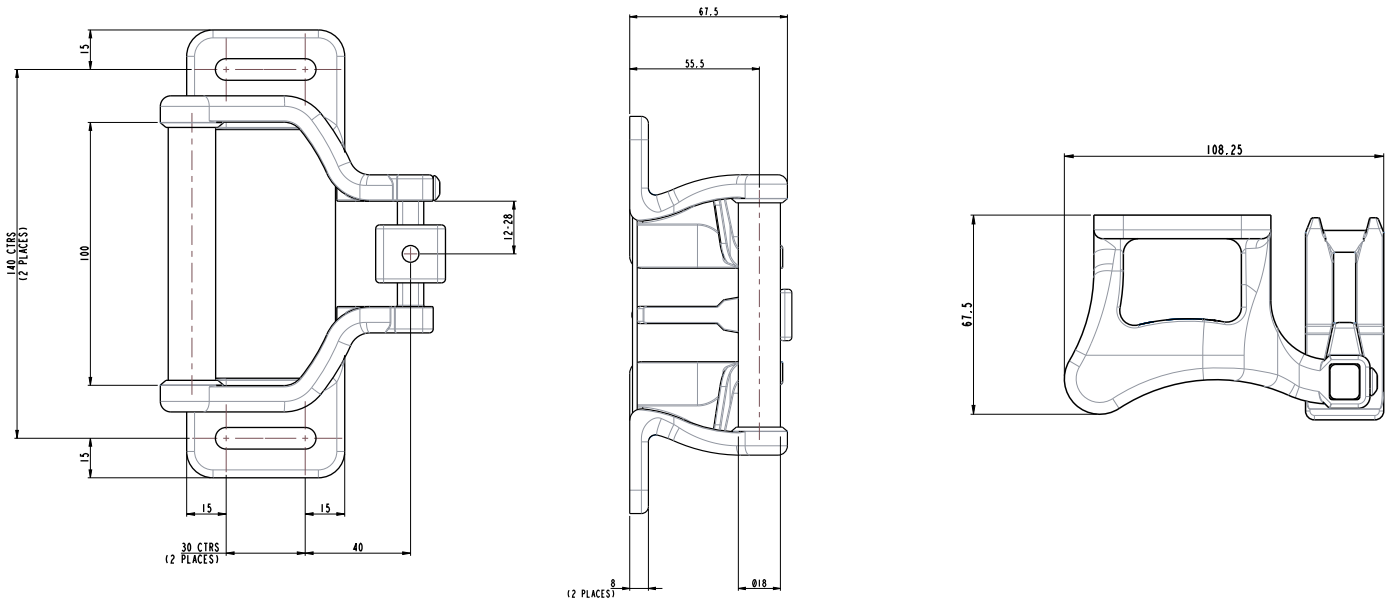
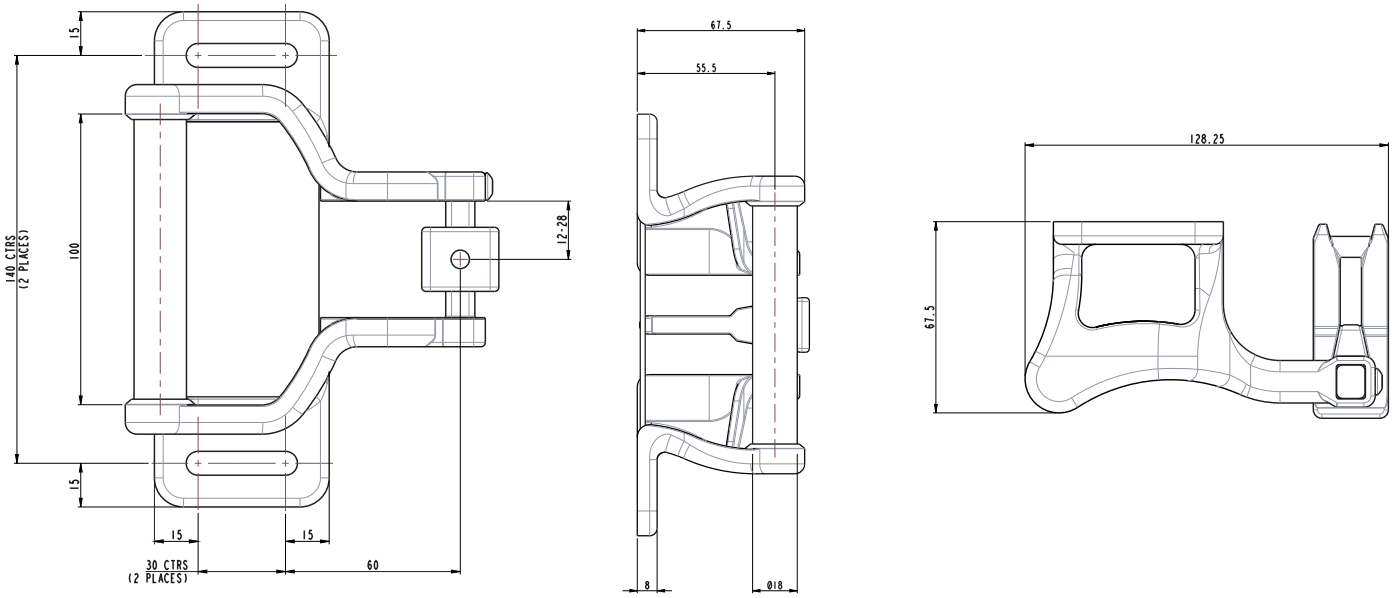


Figure 4: Dimensional Drawing - HL1



Tools and Fixings Required

M8 Tap or Ø 8.5 Drill
2 x M8 Screws (Screws must be suitable length for a minimum of 6mm thread engagement if mounting to a threaded panel, or a suitable length to ensure full engagement with M8 Nut if mounted through a panel. Required screw type and class; A2 70. Required torque setting; 4-6 Nm.)
2 x M8 Nuts (Optional)
2 x M8 Washers

Required Torque Settings:

If removed during mounting, re-orientation or electrical wiring, all supplied fixing screws of the complete guard interlocking device must be refitted using the following torque settings;
M3 Screws – 0.8-1.0 Nm.
M4 Screws – 2-4 Nm.
M5 Screws – 2-4 Nm.
M8 Screws (Required for device mounting but not supplied) **– 4-6 Nm.**

Mounting

1. Mount the complete guard interlocking device only in its correctly assembled condition.
2. Locate the *pro*Hinged Handle so it is in a suitable position for the accompanying amGard*pro* stack and within reach for easy user operation.
3. The device must be fitted to a flat metal post, of minimum thickness 6mm, permanently attached to the guard.
4. Machine the panel using the dimensions from figures 3 & 4.
5. Mount the handle to the panel using the 2 x M8 screws nuts and washers, as applicable for the slots in the *pro*Hinged Handle.
6. Make sure that the gap around the perimeter of the guard, when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.
7. All fixing screws used to mount the complete guard locking device must be permanently prevented from removal, either by vibration or by personnel using standard tools. If mounting fixings are visible, they must be secured against manipulation and un-authorised or un-identifiable removal. In these cases, a middle strength adhesive screwlocker is required.
8. The installation and operation of the complete guard interlocking device must take into account the requirements of EN ISO 14119; in particular Section 7 – Design for minimising defeat possibilities.
9. The complete guard interlocking 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 guard interlocking device.
10. If fitted in conjunction with a push escape release adaptor, the complete guard interlocking device must be mounted in the correctly assembled condition so that the escape release action is only possible from within the guarded area.

Testing

The *pro*Hinged Handle must be mechanically tested as part of the complete guard installation prior to live use to ensure the system performs as required. Refer to the installation instructions of all assembled modules, adaptors and components of the accompanying amGard*pro* stack to ensure all required testing is performed correctly prior to live use. Make sure that the gap around the perimeter of the guard, when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.

Slidebar Short Tongue

Figure 5: Dimensional Drawing - SN / SS

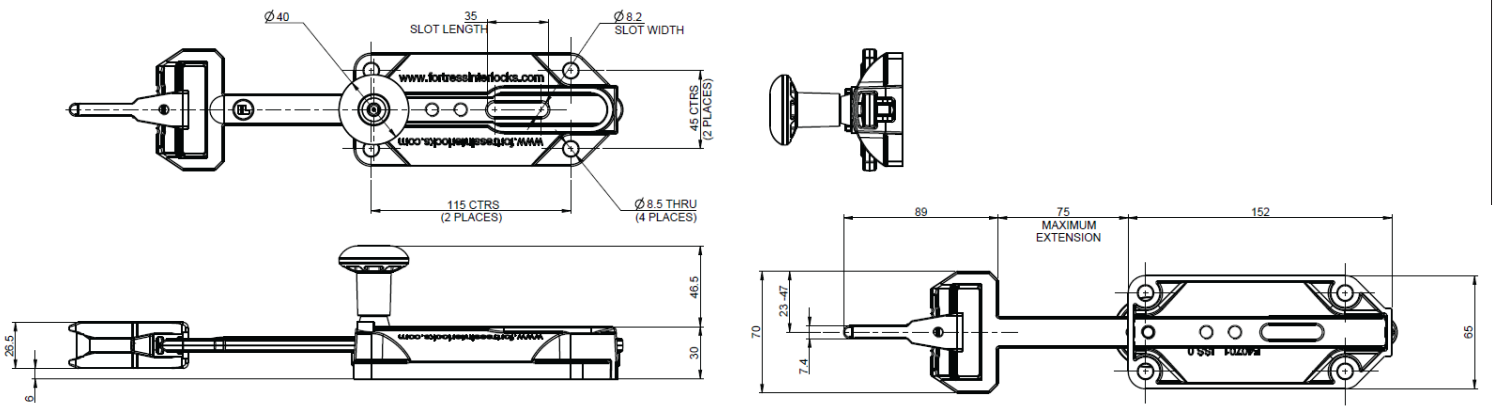
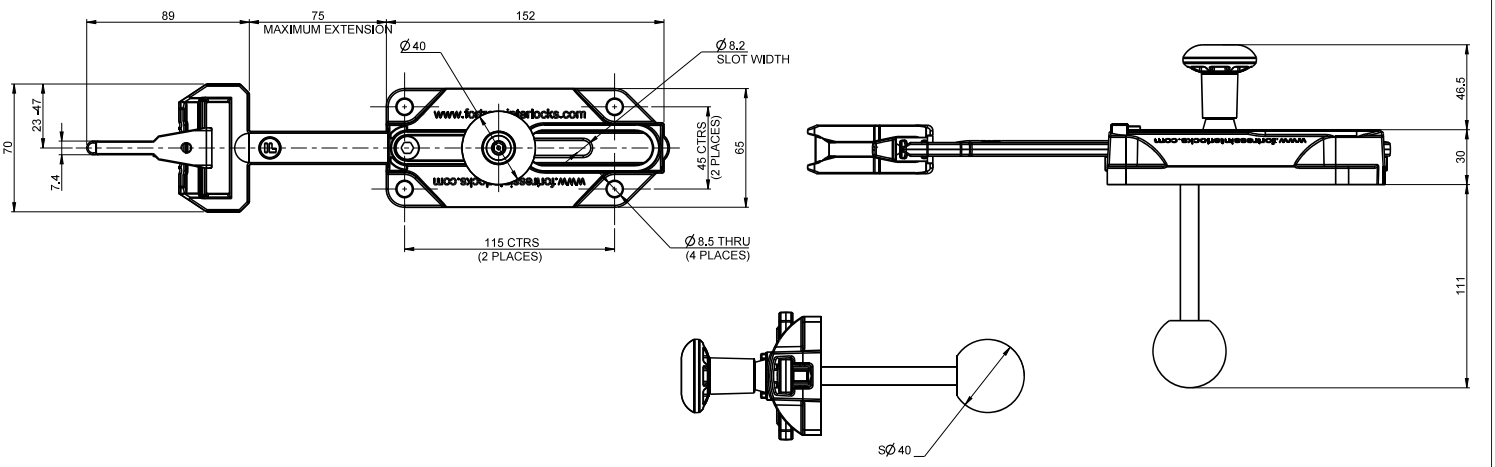


Figure 6: Dimensional Drawing - SI / SF



Tools and Fixings Required

M8 Tap or Ø 8.5 Drill
2 x M8 Screws (Screws must be suitable length for a minimum of 6mm thread engagement if mounting to a threaded panel, or a suitable length to ensure full engagement with M8 Nut if mounted through a panel. Required screw type and class; A2 70. Required torque setting; 4-6 Nm.)
2 x M8 Nuts (Optional)
2 x M8 Washers

Required Torque Settings:

If removed during mounting, re-orientation or electrical wiring, all supplied fixing screws of the complete guard interlocking device must be refitted using the following torque settings;
M3 Screws – 0.8-1.0 Nm.
M4 Screws – 2-4 Nm.
M5 Screws – 2-4 Nm.
M8 Screws (Required for device mounting but not supplied) **– 4-6 Nm.**

Mounting

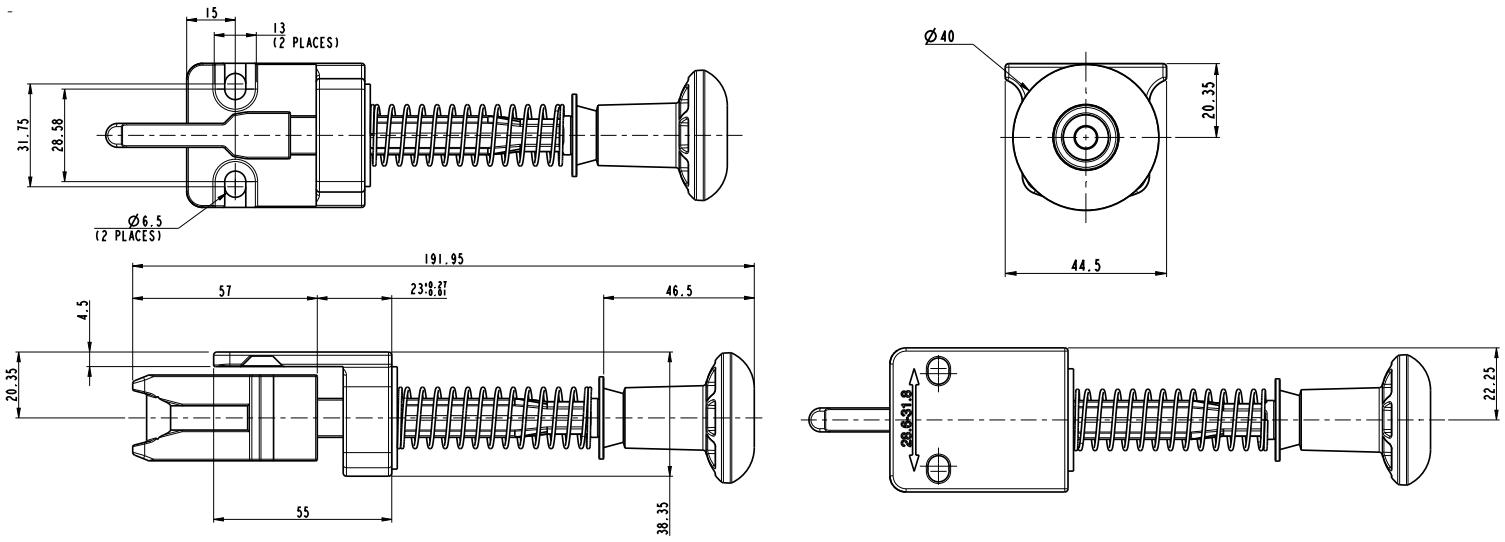
1. Mount the complete guard interlocking device only in its correctly assembled condition.
2. Locate the Slidebar so it is in a suitable position for the accompanying amGard*pro* stack and within reach for easy user operation.
3. The device must be fitted to a flat metal post, of minimum thickness 6mm, permanently attached to the guard.
4. Machine the panel using the dimensions from figures 5 & 6.
5. Mount the handle to the panel using the 4 M8 screws nuts and washers. Make sure that the gap around the perimeter of the guard, when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.
6. All fixing screws used to mount the complete guard locking device must be permanently prevented from removal, either by vibration or by personnel using standard tools. If mounting fixings are visible, they must be secured against manipulation and un-authorised or un-identifiable removal. In these cases, a middle strength adhesive screwlocker is required.
7. The installation and operation of the complete guard interlocking device must take into account the requirements of EN ISO 14119; in particular Section 7 – Design for minimising defeat possibilities.
8. The complete guard interlocking 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 guard interlocking device.
9. If fitted in conjunction with a push escape release module, the complete guard interlocking device must be mounted in the correctly assembled condition so that the escape release action is only possible from within the guarded area.

Testing

The Slidebar Short Tongue must be mechanically tested as part of the complete guard installation prior to live use to ensure the system performs as required. Refer to the installation instructions of all assembled modules, adaptors and components of the accompanying amGard*pro* stack to ensure all required testing is performed correctly prior to live use. Make sure that the gap around the perimeter of the guard, when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.

Hand Operated Actuator

Figure 7: Dimensional Drawing - SD



Tools and Fixings Required

M8 Tap or Ø 8.5 Drill
2 x M8 Screws (Screws must be suitable length for a minimum of 6mm thread engagement if mounting to a threaded panel, or a suitable length to ensure full engagement with M8 Nut if mounted through a panel. Required screw type and class; A2 70. Required torque setting; 4-6 Nm.)
2 x M8 Nuts (Optional)
2 x M8 Washers

Required Torque Settings:

If removed during mounting, re-orientation or electrical wiring, all supplied fixing screws of the complete guard interlocking device must be refitted using the following torque settings;
M3 Screws – 0.8-1.0 Nm.
M4 Screws – 2-4 Nm.
M5 Screws – 2-4 Nm.
M8 Screws (Required for device mounting but not supplied) **– 4-6 Nm.**

Mounting

1. Mount the complete guard interlocking device only in its correctly assembled condition.
2. Locate the Hand Operated Actuator so it is in a suitable position for the accompanying amGard*pro* stack and within reach for easy user operation.
3. The device must be fitted to a flat metal post, of minimum thickness 6mm, permanently attached to the guard.
4. Machine the panel using the dimensions from figure 7.
5. Mount the handle to the panel using the 2 M6 screws nuts and washers, as applicable for Hand Operated Actuator.
6. Make sure that the gap around the perimeter of the guard, when closed (safety circuits closed), does not exceed the limits specified in the relevant standards .
7. All fixing screws used to mount the complete guard locking device must be permanently prevented from removal, either by vibration or by personnel using standard tools. If mounting fixings are visible, they must be secured against manipulation and un-authorised or un-identifiable removal. In these cases, a middle strength adhesive screwlocker is required.
8. The installation and operation of the complete guard interlocking device must take into account the requirements of EN ISO 14119; in particular Section 7 – Design for minimising defeat possibilities.
9. The complete guard interlocking 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 guard interlocking device.

Testing

The Hand Operated Actuator must be mechanically tested as part of the complete guard installation prior to live use to ensure the system performs as required. Refer to the installation instructions of all assembled modules, adaptors and components of the accompanying amGard*pro* stack to ensure all required testing is performed correctly prior to live use. Make sure that the gap around the perimeter of the guard, when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.

*pro*AT Head & Tongue Actuator

Figure 8: Dimensional Drawing - T6 Head

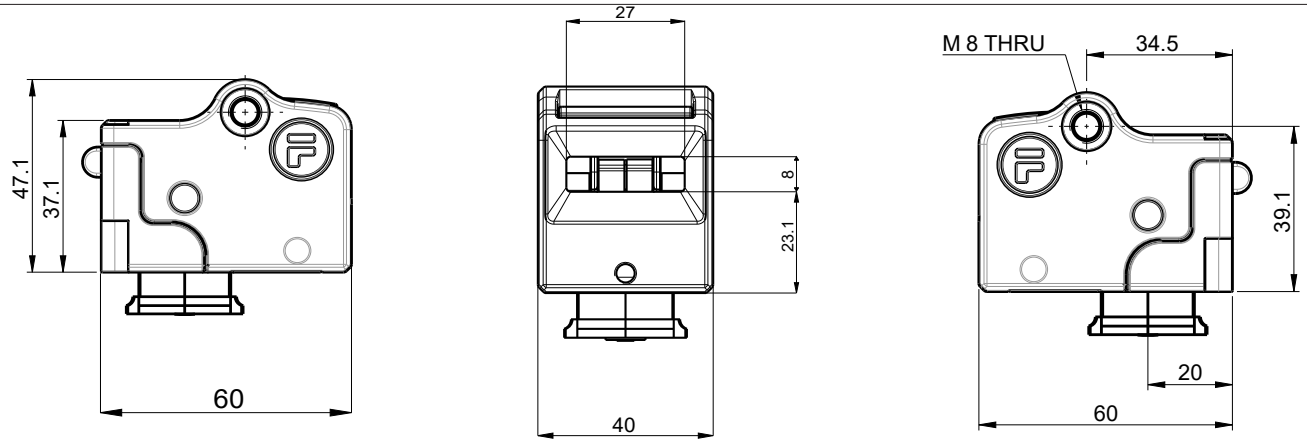
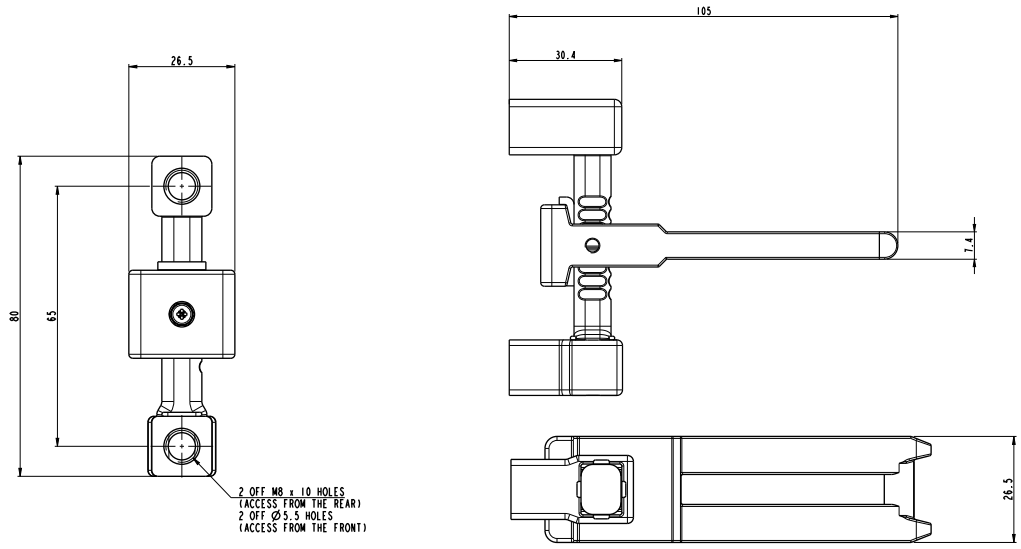


Figure 9: Dimensional Drawing - TA Tongue



Tools and Fixings Required

Ø8.2mm Drill
1 x M8 Screw for Fixing Head. (Screw must be suitable length for a minimum of 10mm thread engagement with head. Required screw type and class; A2 70. Required torque setting; 4-6 Nm.)
2 x M8 Screw for Fixing Actuator. (Screw must be suitable length for a minimum of 10mm thread engagement with actuator. Required screw type and class; A2 70. Required torque setting; 4-6 Nm.)

Required Torque Settings:

If removed during mounting, re-orientation or electrical wiring, all supplied fixing screws of the complete guard interlocking device must be refitted using the following torque settings;
M3 Screws – 0.8-1.0 Nm.
M4 Screws – 2-4 Nm.
M5 Screws – 2-4 Nm.
M8 Screws (Required for device mounting but not supplied) **– 4-6 Nm.**

Mounting

1. Mount the complete guard interlocking device only in its correctly assembled condition.
2. Locate the *pro*AT Head & Tongue Actuator so it is in a suitable position for the accompanying amGard*pro* stack and within reach for easy user operation.
3. Remove the tongue assembly from the head.
4. The head may be rotated in increments of 90° to suit the installation.
5. Mount the complete guard interlocking device together with head assembly to a flat metal static part of the machine. Use M5 screws through the unit or M8 screws from the rear. The mounting surface should be flat.
6. The tongue bracket can be rotated through 90° to provide an alternative mounting option. To do this, remove the pozi-drive screw, slide out the shim plate, rotate bracket (keeping grooved surface pointing towards tongue), replace shim plate and pozi-drive screw.
7. Align the tongue and fix it to a flat metal plate permanently attached to the guard using 2 x M8 screws from the rear. Ensure tongue full engages into head.
8. Make sure that the gap around the perimeter of the device when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.
9. All fixing screws used to mount the complete guard locking device must be permanently prevented from removal, either by vibration or by personnel using standard tools. If mounting fixings are visible, they must be secured against manipulation and un-authorised or un-identifiable removal. In these cases, a middle strength adhesive screwlocker is required.
10. The installation and operation of the complete guard interlocking device must take into account the requirements of EN ISO 14119; in particular Section 7 – Design for minimising defeat possibilities.
11. The complete guard interlocking 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 guard interlocking device.
12. If fitted in conjunction with a push escape release adaptor, the complete guard interlocking device must be mounted in the correctly assembled condition so that the escape release action is only possible from within the guarded area.

Testing

The *pro*AT Head & Tongue Actuator must be mechanically tested as part of the complete guard installation prior to live use to ensure the system performs as required. Refer to the installation instructions of all assembled modules, adaptors and components of the accompanying amGard*pro* stack to ensure all required testing is performed correctly prior to live use. Make sure that the gap around the perimeter of the guard, when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.

Slidebar

Figure 10: Dimensional Drawing - TN / TS / YN

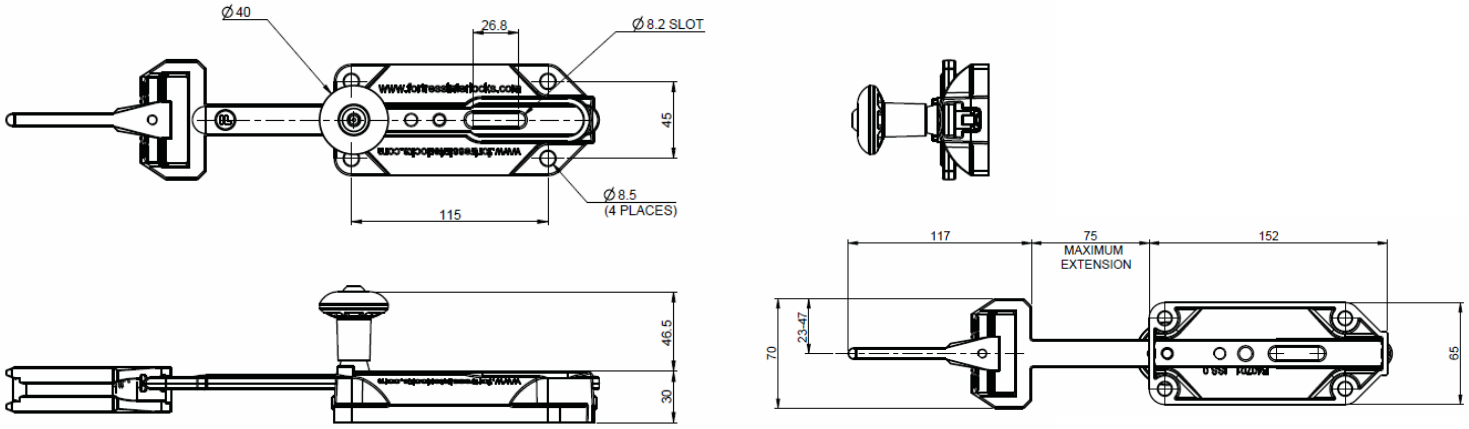


Figure 11: Dimensional Drawing - TI / TF / YI Slidebar with Internal Lever

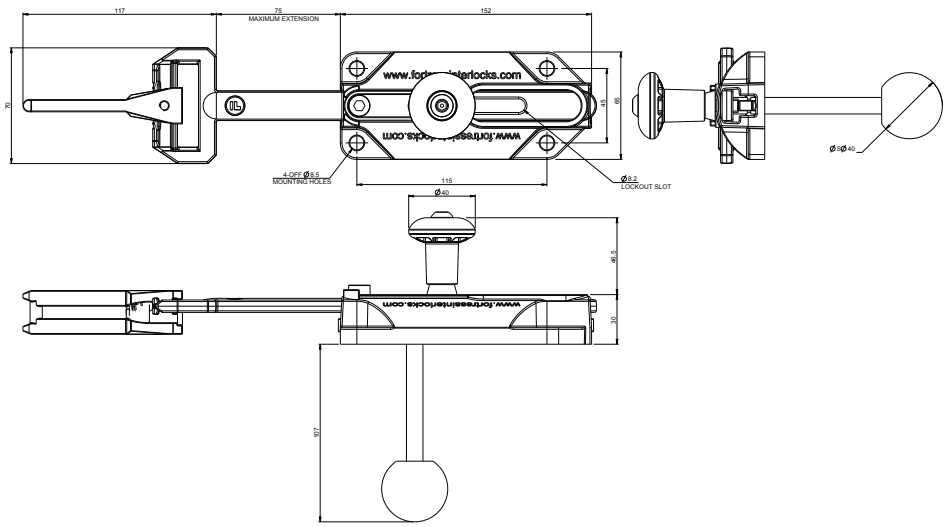
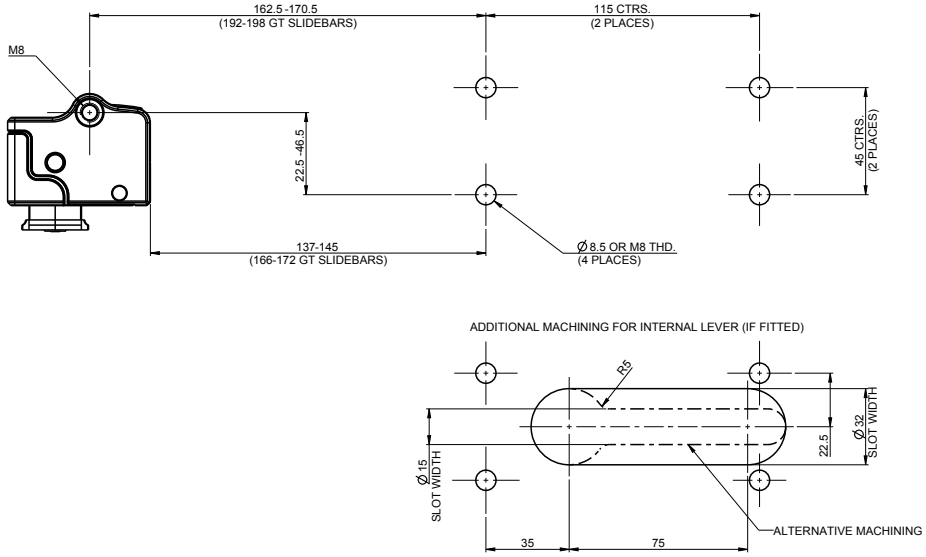


Figure 12: Dimensional Drawing - Slidebar Mounting in Relation to Head Fixings Position



Tools and Fixings Required

M8 Tap or Ø 8.5 Drill
2 x M8 Screws (Screws must be suitable length for a minimum of 6mm thread engagement if mounting to a threaded panel, or a suitable length to ensure full engagement with M8 Nut if mounted through a panel. Required screw type and class; A2 70. Required torque setting; 4-6 Nm.)
2 x M8 Nuts (Optional)
2 x M8 Washers

Required Torque Settings:

If removed during mounting, re-orientation or electrical wiring, all supplied fixing screws of the complete guard interlocking device must be refitted using the following torque settings;
M3 Screws – 0.8-1.0 Nm.
M4 Screws – 2-4 Nm.
M5 Screws – 2-4 Nm.
M8 Screws (Required for device mounting but not supplied) **– 4-6 Nm.**

Mounting

1. Mount the complete guard interlocking device only in its correctly assembled condition.
2. Locate the Slidebar so it is in a suitable position for the accompanying amGard*pro* stack and within reach for easy user operation.
3. The device must be fitted to a flat metal post, of minimum thickness 6mm, permanently attached to the guard.
4. Machine the panel using the dimensions from figures 10, 11 & 12.
5. Mount the handle to the panel using the 4 M8 screws nuts and washers. Make sure that the gap around the perimeter of the guard, when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.
6. All fixing screws used to mount the complete guard locking device must be permanently prevented from removal, either by vibration or by personnel using standard tools. If mounting fixings are visible, they must be secured against manipulation and un-authorised or un-identifiable removal. In these cases, a middle strength adhesive screwlocker is required.
7. The installation and operation of the complete guard interlocking device must take into account the requirements of EN ISO 14119; in particular Section 7 – Design for minimising defeat possibilities.
8. The complete guard interlocking 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 guard interlocking device.
9. If fitted in conjunction with a push escape release module, the complete guard interlocking device must be mounted in the correctly assembled condition so that the escape release action is only possible from within the guarded area.

Testing

The Slidebar must be mechanically tested as part of the complete guard installation prior to live use to ensure the system performs as required. Refer to the installation instructions of all assembled modules, adaptors and components of the accompanying amGard*pro* stack to ensure all required testing is performed correctly prior to live use. Make sure that the gap around the perimeter of the guard, when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.

*pro*Handle

Figure 13: Dimensional Drawing - EN

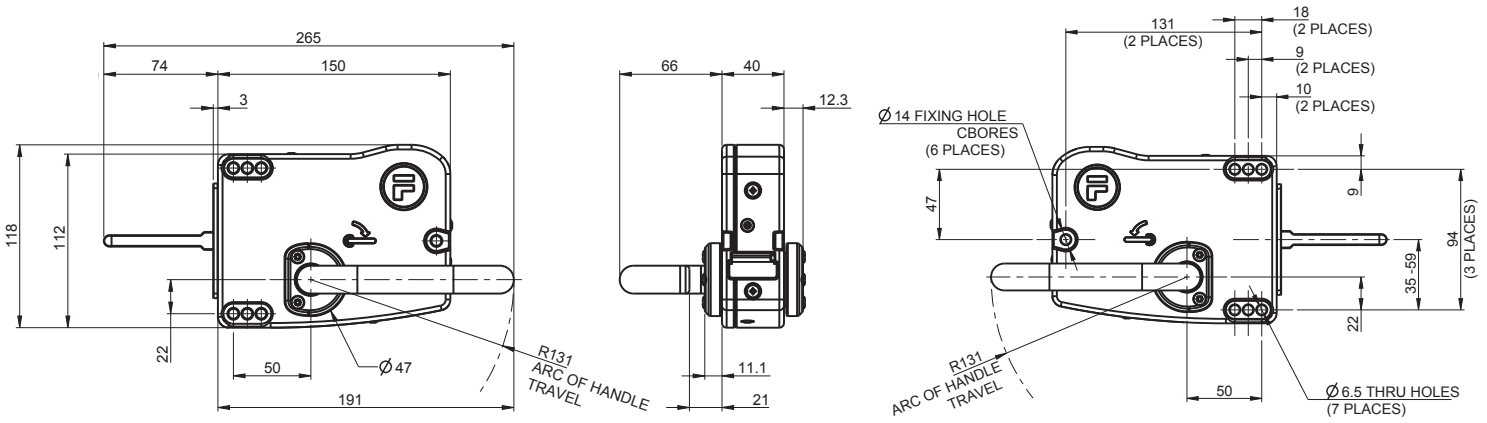


Figure 14: Dimensional Drawing - EF

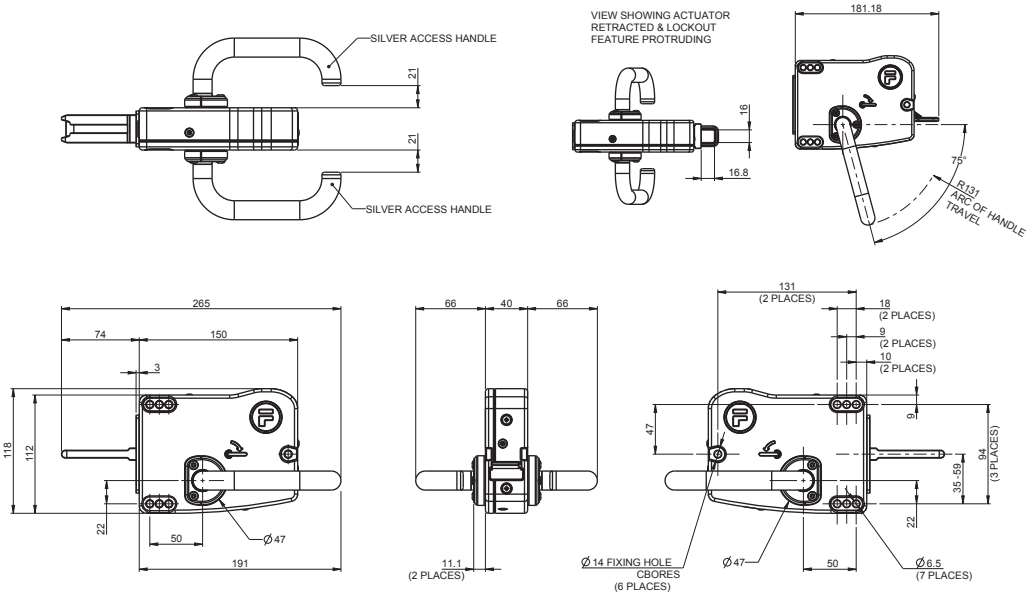
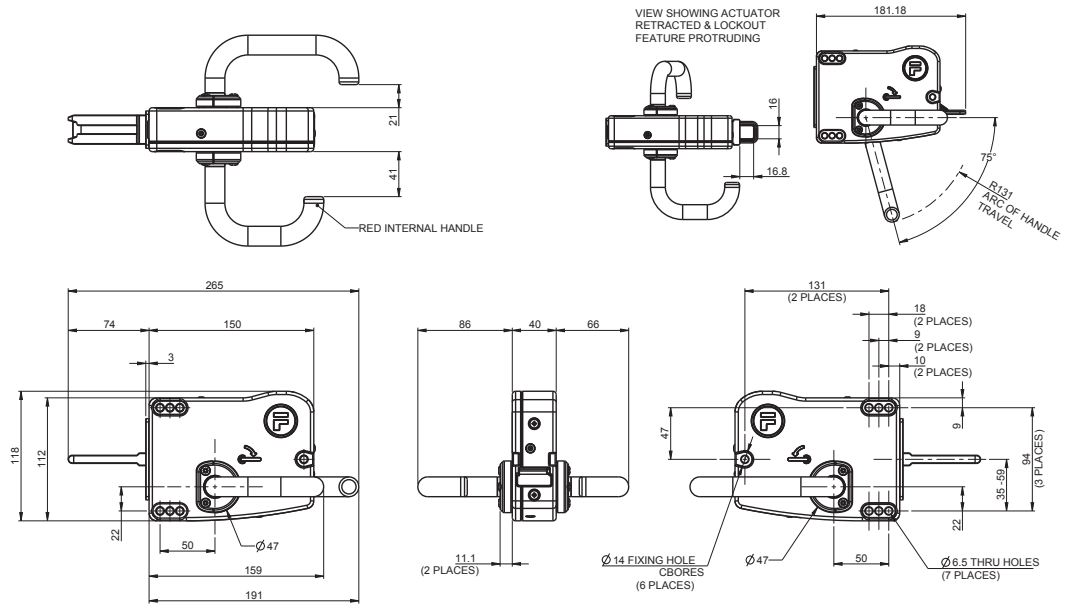


Figure 15: Dimensional Drawing - EH



Tools and Fixings Required

Pozi-Drive Screwdriver to suit M4 Pozi Pan-Head screws
3 x M6 Screws / Bolts
3 x M6 Nuts (Optional)
3 x M6 Washers

Required Torque Settings:

If removed during mounting, re-orientation or electrical wiring, all supplied fixing screws of the complete guard interlocking device must be refitted using the following torque settings;
M3 Screws – 0.8-1.0 Nm.
M4 Screws – 2-4 Nm.
M5 Screws – 2-4 Nm.
M8 Screws (Required for device mounting but not supplied) **– 4-6 Nm.**

Mounting

1. Mount the complete guard interlocking device only in its correctly assembled condition.
2. Locate the *pro*Handle so it is in a suitable position for the accompanying amGard*pro* stack and within reach for easy user operation.
3. If required, machine the appropriate fixing and mounting holes using the dimensions from figures 13, 14 & 15.
4. Mount the handle to the panel using the 3 M6 screws nuts and washers, as applicable.
5. Make sure that the gap around the perimeter of the device when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.
6. All fixing screws used to mount the complete guard locking device must be permanently prevented from removal, either by vibration or by personnel using standard tools. If mounting fixings are visible, they must be secured against manipulation and un-authorised or un-identifiable removal. In these cases, a middle strength adhesive screwlocker is required.
7. The installation and operation of the complete guard interlocking device must take into account the requirements of EN ISO 14119; in particular Section 7 – Design for minimising defeat possibilities.
8. The complete guard interlocking 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 guard interlocking device.
9. If fitted in conjunction with a push escape release adaptor, the complete guard interlocking device must be mounted in the correctly assembled condition so that the escape release action is only possible from within the guarded area.

Handing

The EH / EN *pro*Handle may be changed from left-hand orientation (EH2) to right-hand orientation (EH4) or right-hand orientation to left-hand orientation using the following steps:

1. Remove the 3 x M4 Pozi-Pan Screws retaining the silver access handle.
2. Remove the silver access handle, the handle boss and its associated drive coupler from the main *pro*Handle body.
3. Repeat steps 1 & 2 for the red internal 'open-only' handle. (EH only)
4. Refit the silver access handle with its drive coupler and handle boss to the opposite side of the *pro*Handle unit. Ensure that the silver access handle is horizontal when the tongue actuator is out.
5. Refit the red internal 'open-only' handle with its drive coupler and handle boss. Take care to ensure the correct orientation of the internal handle drive coupler – this is different for each handing orientation, see figures 16 and 17 for details. The assembled red handle must be able to retract the tongue actuator but not be able to extend it. (EH only)
6. Ensure all 6 x M4 Pozi Pan screws are refitted tightly and the 3 x M4 screws used for the red internal handle are secured using a medium strength screwlocker.

Figure 16: Mounting to Extruded Aluminium Section -

The unit has been designed to be mounted in 3 different ways; onto extruded aluminium section, flat plate and onto plates or guards greater than 18mm thick.

- The handle will be delivered in this configuration.
- Cut a Ø50mm hole for the handle boss of the red internal 'open-only' handle to go through the guard in the appropriate location.
- Fix the handle to the aluminium section using 2 x M6 T-Nuts and 2 x M6 bolts.
- Use a third M6 bolt to attach the rear mounting to the guard.
- A spacer may be required for the rear fixing.

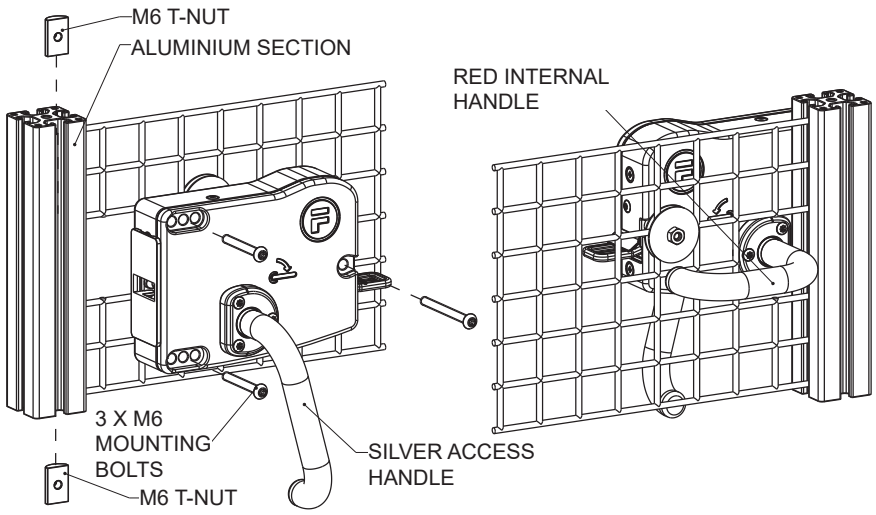


Figure 17: Mounting To Plates & Guards Up to 18mm Thick -

Plates and Guards up to 18mm thick -

- The handle will be delivered in this configuration.
- Cut a Ø50mm hole for the handle boss of the red internal 'open-only' handle to go through the plate / guard in the appropriate location.
- Cut 3 x M6 threads into plate / guard using the panel cutout dimensions given below.
- Insert red internal handle through Ø50mm hole and secure handle to plate / guard using 3 x M6 Bolts.

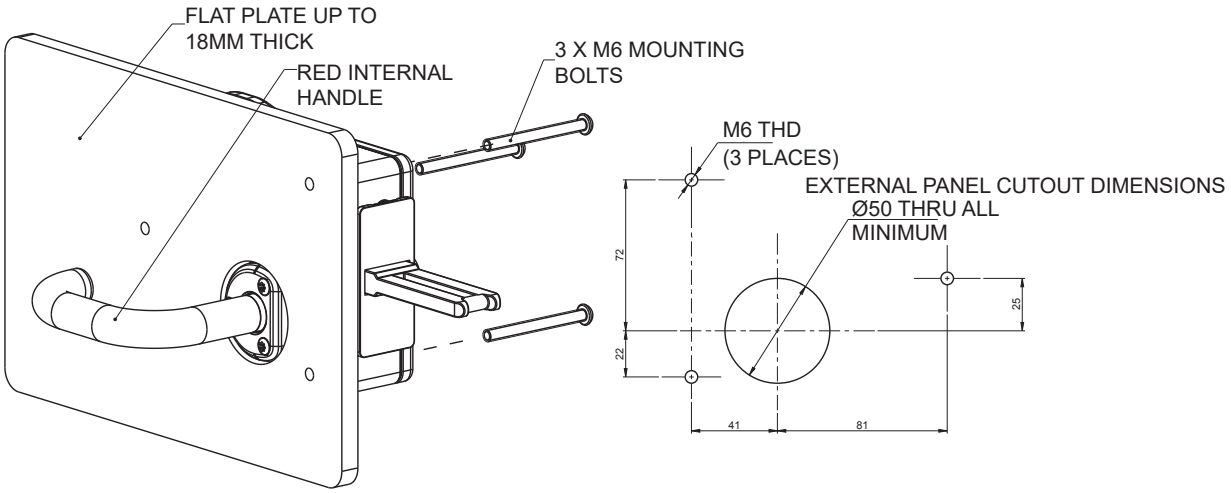


Plate or Guards greater than 20mm thick

This will require an handle with an extended red internal handle or an extension kit to be added to a standard Handle. Please contact your Fortress representative with details of your requirement.

Testing

The *pro*Handle must be mechanically tested as part of the complete guard installation prior to live use to ensure the system performs as required. Refer to the installation instructions of all assembled modules, adaptors and components of the accompanying amGard*pro* stack to ensure all required testing is performed correctly prior to live use. Make sure that the gap around the perimeter of the guard, when closed (safety circuits closed), does not exceed the limits specified in the relevant standards.

Service and Inspection

Regular inspection of the following is necessary to ensure trouble-free, lasting operation:

- Correct operating function
- Secure mounting of components
- Debris and wear
- WD40 lubricant or equivalent, should be applied to each mechanical element every 10,000 operations, or sooner, to ensure smooth product operation and function. There are no user serviceable parts in this product. If damage or wear is found with an assembly, please contact your local Fortress Channel Partner. The complete interlock must be replaced after 1 million switching operations.

Disposal

The Interlocking device does not contain any certified hazardous materials so should be disposed of as industrial waste. All stainless steel can be recycled. Electrical items should not be disposed of in general waste and must be appropriately recycled.

Liability Coverage is Voided Under the Following Conditions:

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

Protection Against Environmental Influences

A lasting and correct safety function requires that the device be protected against the ingress of foreign bodies such as swarf, sand, blasting shot, etc. The device is to be mounted away from the machine, or by the use of anti-vibration mountings, in order to avoid the effects of vibration, shock and bump.

Use in Dusty Environments: Careful product selection is required, which is best performed under the guidance of a Fortress Representative, in order to assess the dust type and product style required. It is normally accepted that the product performs best in a dusty environment when mounted upside down.

Use in Corrosive Environments: Careful product selection is required, which is best performed under the guidance of a Fortress Representative.

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

This guide should be retained for future reference.