DESIGNED & MANUFACTURED IN GREAT BRITAIN

MECHAN CONTROLS

Installation Instruction for

MK-Safe DL Access Lock

Machine Safety for People and Productivity

Operating Instructions: MK-Safe DL- Access Lock

Description	DL- Access Lock
MK-Safe is the easy-to-configure trapped key interlocking system. It is suitable for various industrial safety applications. The casing of MK-Safe DL range is stainless steel 316 which is designed and built to withstand harsh industrial environments. The coding system has 15,000+ different key codes available. The master coding system can be provided as an option. DL1 access lock is mounted on the access door of the safe guarding area. It is designed to control the access to the protected area. DL1 is the single barrel access lock to suit tongue type actuator. DL2 is mounted on the access door of the safeguarding area. It is designed to control the access to the protected area. DL2 is the double barrel access lock to suit tongue type actuator. DL2 has 2 options, SA type and AA type. DL2-SA type is composed of one safety lock barrel and one access lock barrel. DL2-AA is composed of 2 access lock barrels.	 

Technical Specification: DL- Access Lock

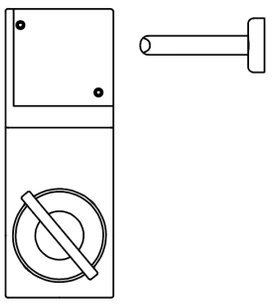
Housing Material	316 Stainless Steel
Internal Component Material	Full Stainless Steel
Retention Force	2500N Max
Operating Temperature	0ºC - 80ºC
Mechanical Lifetime	400,000 Operations
Head Rotation	4 Positions at 90º increments

Safety Standards	
Standards	EN ISO 14119:2013 EN ISO 13849-1:2015 EN ISO 13849-2:2012 EN IEC 62061:2021
Certifications	CE marked for all applicable directives

Safety Related Data	
B10d	2,000,000
SIL up to	SIL 3 acc. to EN 62061
Performance Level (PL) up to	PL-e acc. to EN ISO 13849-1
Safety Category up to	CAT4 acc. to EN ISO 13849-1
Coding	Type 2 acc. to EN ISO 14119

DL1 Operation

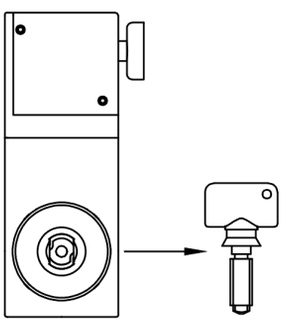
The operation of releasing the DL actuator:



Actuator is released
The key is trapped

When the access key is inserted and turned in the lock body, the actuator can be released.
Once the actuator is released, the access key is trapped in the lock body.

Operation of locking the DL actuator:

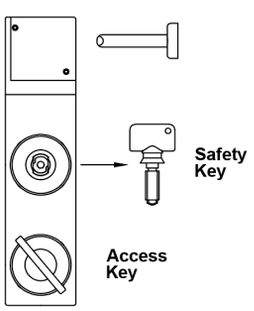


Actuator is locked
The key is removed

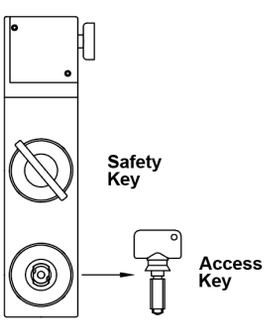
When the actuator is inserted in the lock body, the access key can be released
Once the access key is released, the actuator is trapped in the lock body

DL2 SA Operation

DL2 SA type (one safety lock + one access lock) operation:
The operation of releasing the DL actuator: (DL2 SA type)
1. Insert and turn the access key to the trapped position.
2. The safety key can be turned to the released position.
3. The actuator can be released.
4. Once the actuator is released and the safety key is released, the access key is trapped in the lock body.



Insert and trap access key into release safety key, the actuator is released

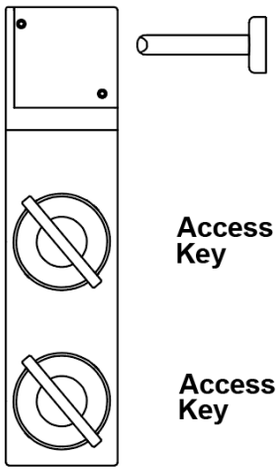


Insert the actuator, insert and trap the safety key the access key is released

The operation of locking the DL actuator: (DL2 SA type)
1. Insert the actuator is inserted to the lock head.
2. Return the safety key, insert and turn to trapped position.
3. Once the actuator and the safety key are trapped, the access key can be released.

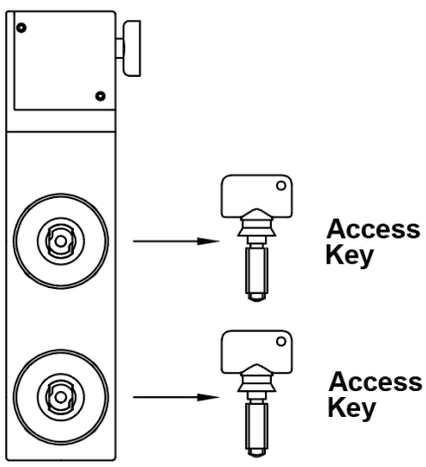
DL2 AA Operation

DL2-AA type (two access locks) operation:
The operation of releasing the DL actuator: (DL2 AA type)
1. Insert and turn both access keys to the trapped position.
2. The actuator can be released.
3. Once the actuator is released,
   both access keys are trapped in the lock body.



Actuator is released
Both keys are trapped

The operation of locking the DL actuator: (DL2 AA type)
1. Insert the actuator into the lock head.
2. Both of the access keys can be released.
3. Once any of the two access keys are released,
   the actuator is trapped in the lock head.



Actuator is locked
Both keys are removed

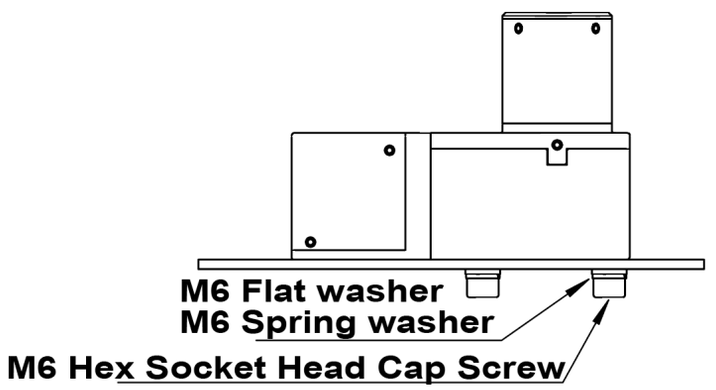
The information is designed to help suitably qualified personnel install and operate Mechan Controls safety equipment. Before using this product, read this guide thoroughly along with any relevant European and/or National Standards E.g. Machinery Directive 2006/42/EC and its Amendments, Provision and Use of Work Equipment Regulations. Further information can be obtained from Mechan Controls Ltd.

Mechan Controls Ltd accepts no responsibility for managing key codes for the customers. It is the customer's responsibility to implement a proper key code management system and means to prevent unintentional duplication of key codes. If an organization decides to keep spare or master keys then they shall be under management control and this shall be taken into account in the risk assessment. For further information, please refer to ISO/TS 19837.

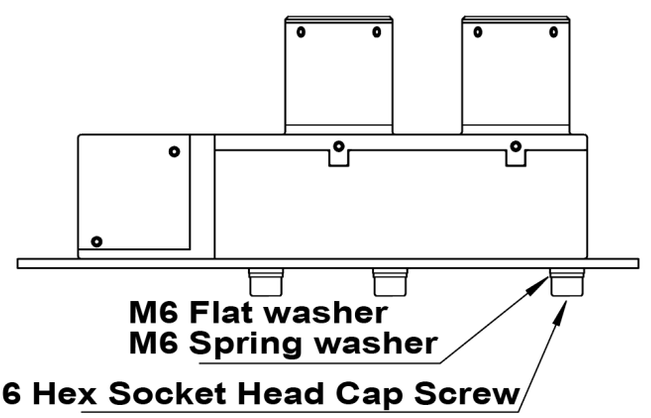
Mounting of the DL1 & DL2 access lock

1. The correct configuration of the DL access lock should be carefully selected based on the safe guarding type, size and operating condition.
2. The required retention force of the safety guarding must not exceed the maximum allowed retention force of the DL unit.
3. The unit should be mounted in its correct assembly condition.
When mounting the unit to the safe guarding, the user must comply to the relevant safety standards.
4. After mounting the unit, it must be commissioned and tested by qualified person to ensure the correct operation and safety function of the unit.
5. The unit should be mounted in the position with no vibration. Otherwise, anti-vibration mounting measurement should be used to ensure the correct operation of the unit.

DL1 Recommended Fixing Required: For panel thickness 3-5mm, 4 x M6*16mm Hex socket head cap screws, for panel thickness 5-10mm 4 x M6*20mm Hex socket head cap screws.
4 x M6 Spring washer, 4 x M6 flat washer.



DL2 Recommended Fixing Required: For panel thickness 3-5mm, 6 x M6*16mm Hex socket head cap screws, for panel thickness 5-10mm 6 x M6*20mm hex socket head cap screws
6 x M6 spring washer, 6 x M6 flat washer.

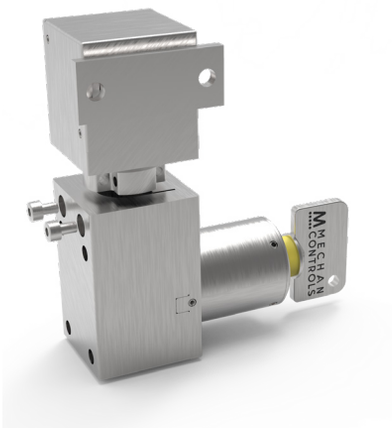


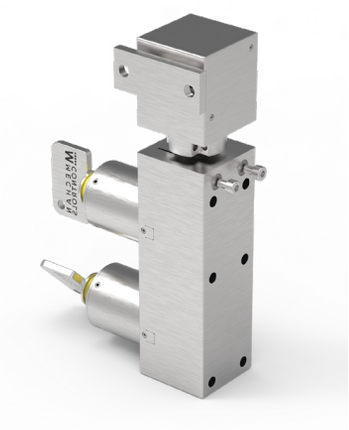
Ensure that all the fixing screws cannot be removed due to the vibration.
The tamper-proof security screws are recommended so that the personnel on site cannot remove the unit using standard tools.
Mount the unit to flat steel plate. The minimum thickness should be 3.0mm
The recommended torque to tighten the M6 fixings above is 8 to 10Nm.

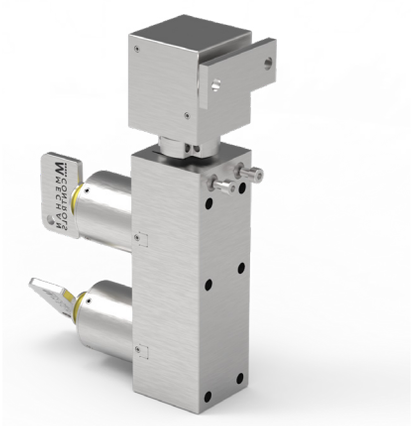
To rotate the head of the DL lock:
1. Remove the two head adjustment screws.
2. Rotate the head to the desired handing, 4 designed orientations
3. Refit the two head adjustment screws. See the note below regarding fitting the head screws.

Note for step 3 refit the head screws: For better alignment of the lock head, drive both screws to finger tight and adjust the lock head, and then fully tighten both screws. The recommended tightening torque for these M4 lock head screws is 2.6Nm to 2.8Nm.

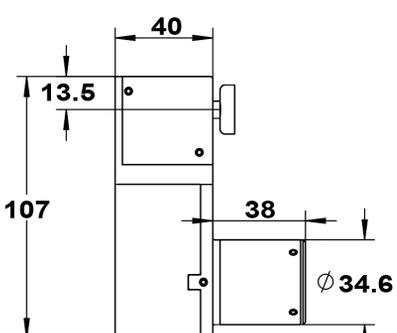
4 Head Positions at 90 Degree Increments

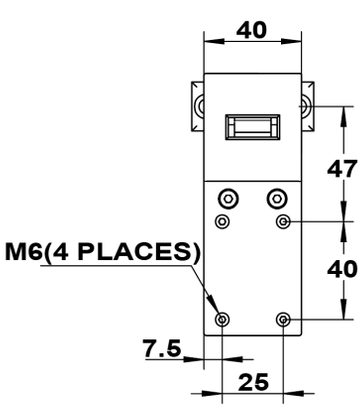


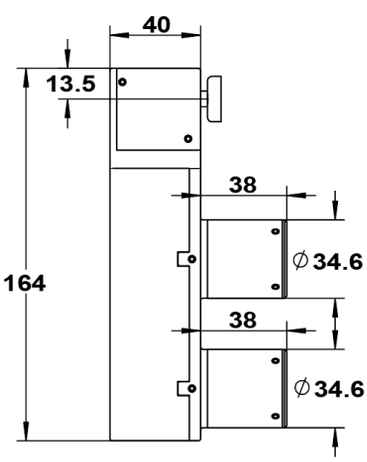


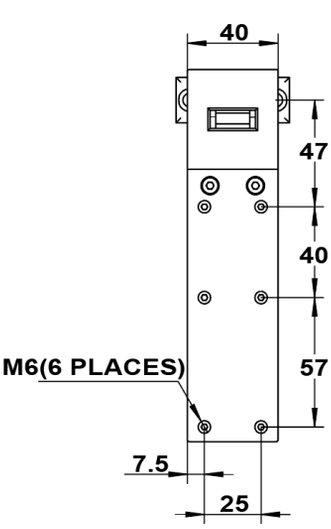


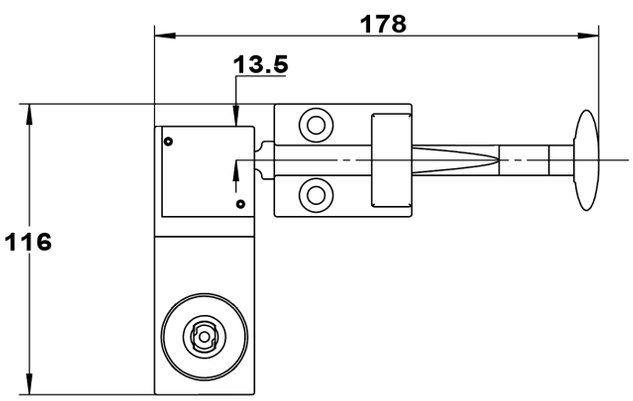
Dimensions





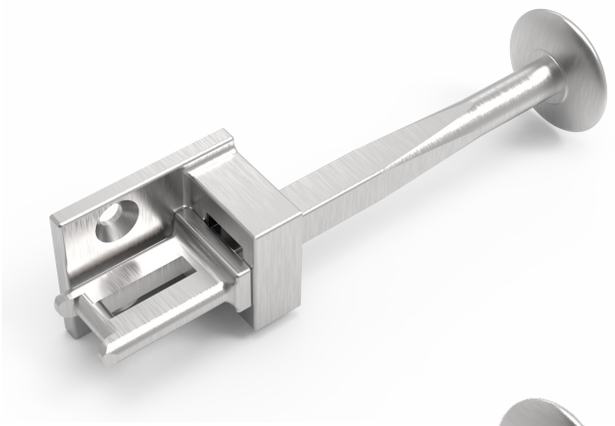


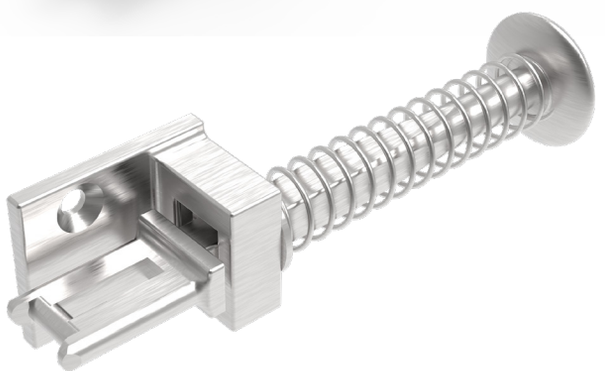


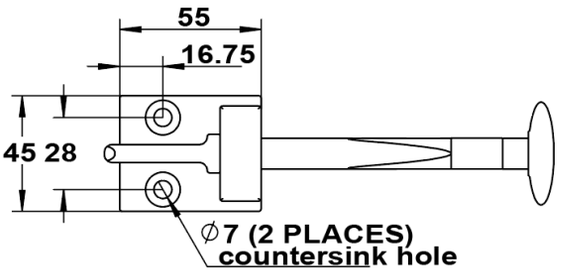


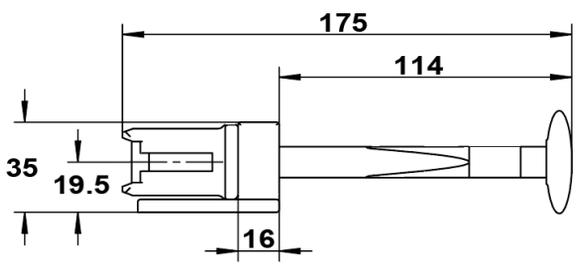
***All dimensions are in MM**

DL Access-Lock Handle









Product Selection DL1 & DL2

MK-DL-1-STC-N-FX-SA

Product Type	
MK-Safe	Mechan Key Exchange

Range	
DL	Door Lock Range

Lock Number	
1	Number of in locks
2	Number of in locks

Code	
STC	Standard Code System
MAC	Master Code System

Dust Cover	
N	No Dust Cover
DC	With Dust Cover

Actuator	
FX	Fixed Actuator
H	Handle Actuator
SPH	Spring Handle Actuator

Lock Barrel	
SA	Safety + Access Lock Barrel
AA	Two Access Lock Barrel

Safety Assessment

A risk assessment should take place to establish that the specifications of the MK-Safe product are suitable for the application required. See Technical Specifications below or contact Mechan Controls for further information.

The products may only be installed, commissioned, operated and maintained by competent persons.
A competent person is a qualified and knowledgeable person who, because of their training, experience and current professional activity, has the specialist knowledge required. An understanding of European and International laws, directives and standards is recommended.

Maintenance

It is recommended to check the unit every week regarding the following aspects:
1. the correct safety function of the unit
2. the correct operation of the unit
3. Look for signs of damage or excessive wear

Damaged units should be replaced or returned to the manufacturer for repair where practical. For the purpose of lubrication or cleaning, use WD40. The unit should be lubricated at a reasonable frequency depending on the operating environment.

Disclaimer

In the interest of product development specifications are subject to change without notice. It is the responsibility of the user to ensure compliance with any acts or by-laws in place. All information regarding Mechan equipment is believed to be accurate at the time of printing. Responsibility cannot be accepted for errors or omissions.

Warranty

Warranty will be void if the following points are true:

- The product was not used for its intended purpose
- Damaged was caused by usage not stated in the manual
- Modifications have been made to the products (e.g exchanging components)
- Operating personnel are not suitably qualified

Warning!

The MK-Safe trapped key system should not be manipulated or overridden. Removing the actuator from the guard may lead to loss of safety resulting in serious injury or death.