



A PHYSICAL SECURITY TECHNOLOGY NEWSLETTER

# SECURITYFACTS



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## X-07 AND X-08 LOCKS ARE APPROACHING END OF LIFE

If you are currently using an X-07 or X-08 lock, you may begin experiencing malfunctions related to the age of these locks and should consider replacing them. Some of these issues may lead to a “lock-out,” resulting in an expensive neutralization and repair procedure.

### BACKGROUND

The X-07 lock was manufactured from early 1992 until fall 1999; the X-08 lock was manufactured from fall 1999 until late summer 2002. These locks are approved to Federal Specification FF-L-2740, which defines testing of locks to simulate approximately 15 to 20 years of use. So the fact that some of these locks have functioned years beyond their tested operational lifecycle, means reliability of these locks is now a big concern, and should be addressed as quickly as possible. With continued use, you can expect various problems to occur. If your lock is exhibiting any of the following symptoms, replace it immediately.

### X-07 DIAL SLIPPING ON SPINDLE

**Symptom:** The lock takes longer to power-up; lock doesn't get enough power and powers-down too soon; combination can be entered, but dial slips when trying to retract the bolt.

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*(Continued from page 1)*

**Solution:** To open an X-07 with any of those symptoms: Pull outward on the dial, or twist it sideways, while turning, to get the hub to grip the spindle and power the lock. Once it's open, replace the lock immediately.

## **X-07 BIT-FLIP**

**Symptom:** You properly enter the correct combination, but the result is a lightning bolt. The reason is that the combination has changed within the lock in a binary fashion. (A "bit" has "flipped" from a zero to a one, or vice versa.) This yields a different decimal combination from the original.

If a lock has had a bit-flip, its combination cannot be changed using its serial number. To open such a lock, you will need the correct recorded combination, entered into a "bit-flip" program to generate all possible combinations. Call the DoD Lock Program Hotline for assistance with this process. Dial each of the possible combinations. If the lock opens, remove it and replace it immediately. However, it may not open because some of the binary changes result in undialable combinations.

**Solution:** If the "bit-flip" generated combinations fail to open the lock, then neutralize the container, as appropriate (see Federal Standard 809 for guidance) and replace. Call the DoD Technical Support Hotline for guidance.

## **X-07 BOLT RELOCK PIN LOCKOUT**

**Symptom:** If the lock is mounted right hand (bolt

points to the right, as seen from inside the container or vault door), vibration or mechanical shock can shake loose the relock pin in the bolt, immobilizing the bolt. After the combination is entered and the dial is turned clockwise to retract the bolt, the dial comes to a stop, but the bolt does not retract.

**Solution:** Call the DoD Technical Support Hotline for guidance.

## **X-08 LOCK RELIABILITY PROBLEM**

**Symptom:** You enter the correct combination and receive "OP," but the bolt does not retract and the dial keeps turning. The stepper motor in an X-08 lock has a plastic gear that should reset to the neutral position each time it is locked. The design of the gear and manufacturing tolerances sometimes allow the gear to remain partly rotated. The next time the lock is opened, a tooth will be broken off that gear. Eventually there won't be enough teeth on the gear to retract the bolt, resulting in a lockout.

**Solution:** Call the DoD Technical Support Hotline for guidance.

## **SUMMARY**

All X-07 and X-08 locks (and CDX-07 and CDX-08 locks) are reaching their expected service life. We recommend that activities still using these locks consider replacing them. Ordering information is available on the DoD Lock Program website:

<http://www.navfac.navy.mil/go/locks>. 



**Kaba Mas X-07 Combination Lock**



**Kaba Mas X-08 Combination Lock**



## FF-L-2740B APPROVED LOCKS ARE AVAILABLE FOR PURCHASE

Locks meeting Federal Specification FF-L-2740B, *Locks, Combination, Electromechanical*, are now available for purchase. See the table below for ordering information.

LOCK	STYLE	SOURCE	NSN
Kaba Mas X-10	Style 1	Defense Logistics Agency (DLA) at DoD Email	5340-01-625-9851
		GSA Advantage	5340-01-613-2078
Sargent and Greenleaf Model 2740B	Style 2	Defense Logistics Agency (DLA) at DoD Email	5340-01-628-4750
		GSA Advantage	5340-01-613-2080

Locks meeting Federal Specification FF-L-2740B have been required on all new containers for classified storage since February 15, 2015.

### KABA MAS X-10 AND X-09: COMPARISON

**Visual Distinction:** At first glance an X-10 may appear the same as an X-09. The X-10 is light gray in color, and approximately the same size and shape as the X-09. However, the location of the manufacturer’s date stamp on the dial ring on the X-09 is at the 9 o’clock position; the date stamp on the X-10 at the 8 o’clock position. Another visual difference is that the X-10 has a backlit display, eliminating the need for external light sources when locks are installed in poorly lit areas.

**Operation:** Operation of the X-10 and the X-09 are exactly the same. The dialing sequence is left-right-left-right and the lock can be powered-up in either direction. The X-10 also has the same three modes of operation and includes the same two audit features as the X-09 (total openings count and consecutive failed attempts).

### SARGENT AND GREENLEAF (S&G) MODELS 2740B AND 2740: COMPARISON

**Visual distinction:** S&G Model 2740B lock has a “111” decal to the left side of the viewing area.

**Programming Features:** There are significant differences between Models 2740 and 2740B. The Model 2740 requires a setup module to program single / dual control mode, check the battery condition, and calibrate the dial. The S&G Model 2740B eliminates the use of the setup module and uses the change key along with a simple dialing sequence to accomplish these actions.

**Dialing Features:** The 2740B incorporates the same dialing sequence (left-right-left-right), but you can dial directly to the numbers; there is no need to count the number of dial rotations.



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## PROCURING NEW GSA-APPROVED CONTAINERS

There is some confusion in the field regarding the procurement of GSA-approved security containers, particularly used containers. Information Security Oversight Office (ISOO) Notice 2012-04: “Additional Guidance on Standards for Security Equipment,” states, “GSA security containers sold to private parties [non-government / non-government contractors] through government reutilization processes [such as DRMO] may not be refurbished, reconditioned, recertified and purchased as a GSA-approved security container intended for storage of classified information.”



All Government agencies and DoD contractors must use the GSA Global Supply System for procurement of GSA-approved security containers. ISOO Notice 2014.02: “Procurement of Security Equipment” states, “GSA Approved’ security containers and vault doors must now be procured through GSA Global Supply utilizing the appropriate Nation Stock Number.” If you have questions or need guidance on procuring your new GSA-approved container through the GSA Global Supply System, please contact the DoD Lock Program. 





## HIGH SECURITY PADLOCK SERVICE

The Department of Defense (DoD) Lock Program is now providing services for high security padlock disposal, lock cylinder installation, and broken key extraction for the US Army and US Air Force, as required by DODM 5100.76. For US Navy, US Marine Corps, and US Coast Guard disposal service, please contact: Naval Surface Warfare Center, Crane, IN 47522-5010; call 812-854-1354, or DSN 482-1354.

DoD Lock Program high security padlock disposal services are intended for padlocks that meet military specification MIL-DTL-43607. Customers requesting service are required to complete a High Security Padlock Service Request form. Customers must call the Technical Support Hotline at 1-800-290-7607 or DSN: 551-1212 before completing this form and sending padlocks for service.

In addition to providing disposal services, the DoD Lock Program offers support with lock cylinder installations and broken key extractions. For cylinder installation service, a minimum of one operating key and the purchase of a new replacement cylinder are required. This service is intended to assist end-users who are unfamiliar with replacing a lock cylinder themselves, or for replacing lock cylinders with a missing control key. All pieces of the broken key and spare keys must be sent in with the padlock.

For High Security Padlock service, visit: <http://www.navfac.navy.mil/go/locks> and click on the following links: Security Hardware > High Security Padlocks > High Security Padlock Field Support. 



Sargent and Greenleaf Model 831B



Hi-Shear LK 1200



Sargent and Greenleaf Model 833C



Sargent and Greenleaf Model 951

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## ZIF CONNECTOR BRACKET ISSUE

The LCDs on some X-09 and X-10 locks displaying partial numbers or having no display at all are possible symptoms resulting from pinched cables caused by the ZIF connector mounting bracket.

NOTE: A high potential for a lockout could occur in a lock exhibiting the above display symptoms and should be corrected immediately.

The ZIF connector mounting bracket used on Kaba Mas X-09 and early versions of the X-10 locks was modified in November 2012. This modification raised the position of the bracket to 115 degrees versus the original 90 degrees. This bracket angle creates the potential for the LCD cables to be wedged between the edges of the generator mounting plate and the ZIF connector mounting bracket. Over time this can cause the cables to become pinched or chaffed resulting in the LCD number segment loss or total loss of the display. As of February 2014 and starting with serial number X1000202052014ARM, all X-series locks are manufactured with the ZIF connector mounting bracket at the 90 degree position, which eliminates the potential for cable damage. Prior to installing an X-series lock, inspect the ZIF connector bracket. If the bracket is at 115 degrees, do not install the bracket and contact the DoD Lock Program Technical Support Hotline.

The issue is addressed in Kaba Mas' Product Bulletin #50, which can be found on their website:

<http://www.kaba-mas.com>. It explains correction procedures in detail along with photos.

If you have any questions regarding this issue, please call the Technical Support Hotline. 

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## DOD LOCK PROGRAM TRAINING

The DoD Lock Program offers training on combination locks that meet Federal Specification FF-L-2740. This includes the Kaba Mas Models X-09 and X-10 and the Sargent and Greenleaf Models 2740 and 2740B. If you have a large group of students and want training at your facility, please contact us to request schedule availability.

Visit our website at:

<http://www.navfac.navy.mil/go/locks>.

On the "Training" link, select "DoD Lock Program Training" for additional information. 





## X-09 - DISCONTINUATION OF PARTS & SERVICE

With the concurrence of the General Services Administration (GSA) and the Interagency Committee on Security Equipment (IACSE), Kaba Mas will move forward with the “End of Life” process for both the X-09 and CDX-09 locks. Kaba Mas discontinued the availability of X-09 parts and repair services on 1 October 2015. GSA / IACSE support this decision to help promote transition to locks that comply with current federal specifications.

The Kaba Mas X-09 lock is still approved for use and does not require replacement at this time. If you need X-09 lock parts, you can contact any Kaba Mas distributor to check supplies, or call the DoD Lock Program Technical Support Hotline. Availability of spare parts is very limited after October 2015. 🔒



## ELECTRONIC NEWSLETTER

The DoD Lock Program’s Security Facts Newsletter is available electronically. In addition to the considerable cost savings and diminished environmental impact, the electronic issues will be enhanced to offer easier navigation and additional links to the information you need.

To subscribe to the Security Facts Newsletter, use the “Security Facts Newsletter” link on our website. Click on “SFN request form,” include your email address on the form and click “Submit.” Each time we publish a newsletter, we will send you an email notification. Or you can send an email to:

[W\\_NAVFAC\\_DOD\\_Lock\\_Program\\_Support@navy.mil](mailto:W_NAVFAC_DOD_Lock_Program_Support@navy.mil),  
and we will add you to our database. 🔒



# SECURITY FACTS



## TECHNICAL FOCUS: SMART MAGAZINE

### OVERVIEW

The DoD Lock Program developed the SMART Magazine as a cost-effective alternative to conventional magazines. This design incorporates HIGH LEVEL forced entry resistance that meets or exceeds security, regulatory, and safety requirements into a system, which can be retrofitted to existing magazines or installed in new MILCON efforts. The cost of constructing a retrofit SMART Magazine headwall, door, lock and pilaster is less than ¼ the cost of new construction while providing significant security enhancements. The SMART Magazine is a complete package with an expected life span of 50 years.

Major components of the system are fabricated from stainless steel, significantly reducing maintenance cost over the life of the system while improving forced entry resistance (including thermal threats). Additionally, the architectural design of the system ensures tighter tolerances for security and ease of construction in the field.

The DoD Lock Program installed a SMART Magazine as a retrofit to an existing magazine at Grand Forks, ND in 2014, and the system is currently undergoing long-term operational cycle testing.

### DOOR SYSTEM

The SMART Magazine uses a steel and concrete sliding door operated by a protected overhead trolley actuated by pushbutton. The door rides inside of a bottom trench that provides both explosive effects resistance and physical security protection. The enlarged door opening allows for easier, safer ordnance handling.

The door is made from commercially available products, incorporating “lessons-learned” from arms, ammunition and explosive (AA&E) operations and previously conducted forced entry test data to meet high threat level protection requirements.



Magazine before Retrofit



Retrofit with SMART Magazine (view 1)



### INTERNAL LOCKING DEVICE AND MULTI-POINT BOLTWORK

The Internal Locking Device (ILD) system provides physical security protection and operational capability superior to existing high security padlock and hasp protective systems. It lowers maintenance costs compared to padlock and hasp systems through design features that protect internal components from the effects of weather and insects. The SMART Magazine design mounts the ILD inside of a concrete and rebar pilaster to enhance physical security protection with minimal door modification. The pilaster-insert design facilitates easy maintenance procedures.

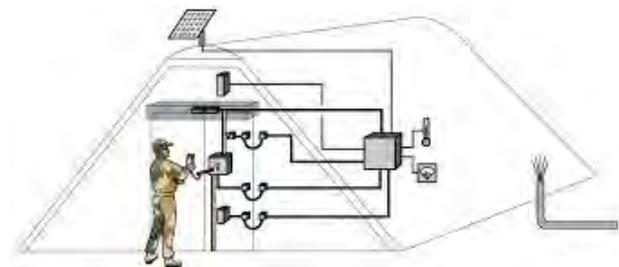
The Multi-Point Boltworks uses an innovative design that provides superior physical security protection by adding multiple lock points on a single magazine door, operated by a reliable and maintenance free cable system, which is easy to operate and maintain. The Multi-Point Boltworks provides the ultimate flexibility for installation by eliminating complex linkage requirements.

### HEADWALL, TRENCH, AND PILASTER

The SMART Magazine headwall, trench and pilaster are designed to support the door, and provide explosive effects resistance and robust physical security capability to the entrance of the magazine.

The SMART Magazine was developed under tasking by the Office of the Secretary of Defense, Physical Security Enterprise and Analysis Group (PSEAG), and Defense Threat Reduction Agency (DTRA).

For additional information, contact the DoD Lock Program Hotline at: <http://www.navfac.navy.mil/go/locks>. 



Retrofit SMART Magazine (view 2)

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## TRAINING OPPORTUNITY: SECURITY ENGINEERING PLANNING ASSISTANCE

THE SECURITY ENGINEERING PLANNING ASSISTANCE TRAINING (SEPAT) COURSE IS DIRECTLY LINKED TO THE CURRENT DOD MISSION ASSURANCE ASSESSMENT BENCHMARKS, AS IT RELATES TO THE UFCS.



Course number is S-830-3000.

4 1/2 days / 36 hours of security engineering training.

For course information, go to:

<https://app.prod.cetars.training.navy.mil/cantrac/vol2.html>

To register, send an email to: [NAVFAC\\_C18\\_SEP@navy.mil](mailto:NAVFAC_C18_SEP@navy.mil).

Latest training dates can be found at:

<http://www.navfac.navy.mil/go/locks> and select the **Security Engineering** link. 

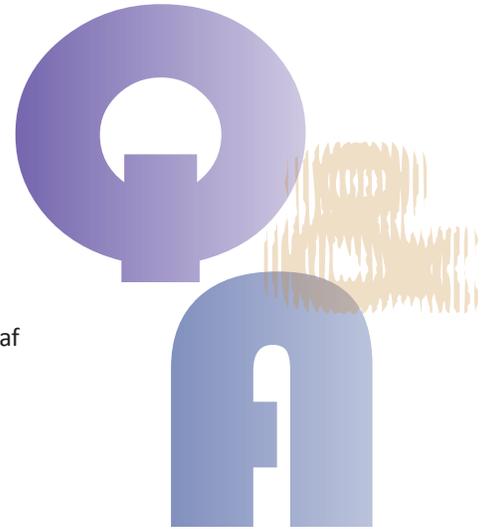




## FREQUENTLY ASKED QUESTIONS

**Q.** I NEED REPLACEMENT KEYS FOR MY SARGENT AND GREENLEAF 831B OR HI-SHEAR LK1200 HIGH SECURITY PADLOCKS. WHERE CAN I GET THEM?

**A.** Replacement keys for the LK1200 and 831B are not available. These locks do not meet requirements of the current specification for high security padlocks. Replace these locks with a Sargent and Greenleaf 833C or 951.



If you need further assistance, please contact the DoD Lock Program Technical Support Hotline at: 1-800-290-7607 or DSN: 551-1212 



# DEPARTMENT OF DEFENSE LOCK PROGRAM



## DOD LOCK PROGRAM

The objective of the DoD Lock Program is to provide technical and management support for research, development, test, and evaluation of locking devices and related security systems used by the DoD. As such, the Program staff has considerable knowledge, skills, and abilities related to locking devices and security systems that can be of substantial value in providing guidance, solutions, and information on these products. The Technical Support Hotline is structured to provide quick and accurate answers to technical questions on hardware selection, requirements, training, specifications, stock numbers, and troubleshooting of equipment failures. The Hotline personnel are also knowledgeable on many other types of security equipment such as vehicle barriers, magazine doors, emergency destruct equipment, etc., and can often provide immediate guidance or at least get you headed in the right direction. Please call us today.

## FOR ASSISTANCE OR INFORMATION CALL:

### Technical Support Hotline:

Phones: 1-800-290-7607; 1-805-982-1212; DSN: 551-1212

FAX: 1-805-982-1253; DSN: 551-1253 or email:

[W\\_NAVFAC\\_DOD\\_Lock\\_Program\\_Support@navy.mil](mailto:W_NAVFAC_DOD_Lock_Program_Support@navy.mil)

Please leave a commercial number for return calls.

### Training Coordinator:

1-805-982-1575; DSN: 551-1575 or email:

[W\\_NAVFAC\\_DOD\\_Lock\\_Program\\_TC@navy.mil](mailto:W_NAVFAC_DOD_Lock_Program_TC@navy.mil)

### Internal Locking Device (ILD) Field Support:

1-805-982-5625; DSN: 551-5625 or email:

[ILD\\_Field\\_Support@navy.mil](mailto:ILD_Field_Support@navy.mil)

### Field Support Branch Manager:

1-805-982-3558; DSN: 551-3558 or email:

[W\\_NAVFAC\\_DOD\\_Lock\\_Program\\_Manager@navy.mil](mailto:W_NAVFAC_DOD_Lock_Program_Manager@navy.mil)

### DoD Lock Program Director:

1-805-982-2673; DSN: 551-2673 or email:

[W\\_NAVFAC\\_DOD\\_Lock\\_Program@navy.mil](mailto:W_NAVFAC_DOD_Lock_Program@navy.mil)

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*Enter "Subscribe to Security Facts" in the email subject field. Or you may call our Technical Support Hotline at:*

**1-800-290-7607; 1-805-982-1212; DSN: 551-1212.**



## You Save Time & Money When You Purchase Equipment from the Defense Logistics Agency

DLA Troop Support, Industrial Hardware, Philadelphia, PA sells a variety of physical security equipment (PSE). PSE available through the DoD Lock Program website includes products required for the protection of classified materials, and weapons and ammunition. Locate the PSE you need from our website. A DLA icon next to the item indicates that it is available from DLA.



Call the Technical Support Hotline to find out more about DLA and the products they sell.

## DOD LOCK PROGRAM WEBSITE:

Remember to add the DoD Lock Program website home page to your favorites. You can find it at:

<http://www.navfac.navy.mil/go/locks>

# SECURITY FACTS

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