



SERVICE MANUAL

BSD SAFE

CHASSIS HARDWARE

&

AUDITLOK[®] XL

LOCK ELECTRONICS

NKL[®] is a member of FireKing Security Group
101 Security Parkway — New Albany IN 47150 USA
Ph. 800.528.9900 or 812-948-8400
www.fireking.com

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INTRODUCTION

ABOUT NKL BSD SAFE

NKL has produced the “BSD” style safe for more than two decades. In that time the safe has undergone numerous relatively minor changes to the physical design. The major features have remain unchanged and include NKL’s 5-point boltwork outer door with a manual drop to a secure inner compartment. Since 2000 only the AuditLok XL has been used on BSD safes. BSD safes are available in several standard sizes with a variety of interior options. Although numerous parts exist for custom variations, parts listed in this manual are restricted to standard models.

AUDITLOK XL ELECTRONIC LOCK

AuditLok XL is an electronic lock control package used primarily although not exclusively on NKL “BSD” safes. Major AuditLok XL features include positive user identification, duress and burglary alarm output, programmable delay and timelock settings, armored car override, and a comprehensive audit log. Electronics can provide access control for up to four safe doors, each configured uniquely. There are two generations of AuditLok XL electronics.

“OLD” AuditLok XL (PRE-2008)

AuditLok XL electronics were first available in the mid 1990s. Originally, AuditLok XL allowed only Key access. In 2005 NKL released an updated software version to support Keyless access.

“NEW” AuditLok XL (2008)

In early 2008 NKL released a completely new generation of AuditLok XL electronics. User features remain substantially similar even though the new AuditLok XL uses completely different circuit boards and cables. New AuditLok XL electronics allow either Key or Keyless access.

UPGRADE POLICY

As of this writing it is NKL policy to replace old AuditLok XL (pre-2008) components with the same generation parts until those parts are no longer available. When old AuditLok XL parts are no longer available safes requiring repair will have to be upgraded to new (2008) AuditLok XL electronics. A complete upgrade kit is available from NKL Parts Department.

REPAIR SERVICE

Repair of an NKL safe or any safe with AuditLok XL electronics should only be attempted by factory authorized personnel. Service must be coordinated and approved by NKL prior to the repair to be covered under warranty or service contract. Unauthorized service will void your warranty and/or terms of your service contract and will definitely not be paid by NKL. Outside the United States contact your dealer or distributor to obtain authorized service.

TECHNICAL SUPPORT

NKL factory technicians are available to provide technical assistance to authorized field technicians. NKL technicians are available by phone 8 am to 10 pm Eastern time Mon-Sat and 8 am to 4 pm on Sundays. After hours leave a voice-mail and the on duty technician will return your call. Be prepared to provide the work order number when asked.

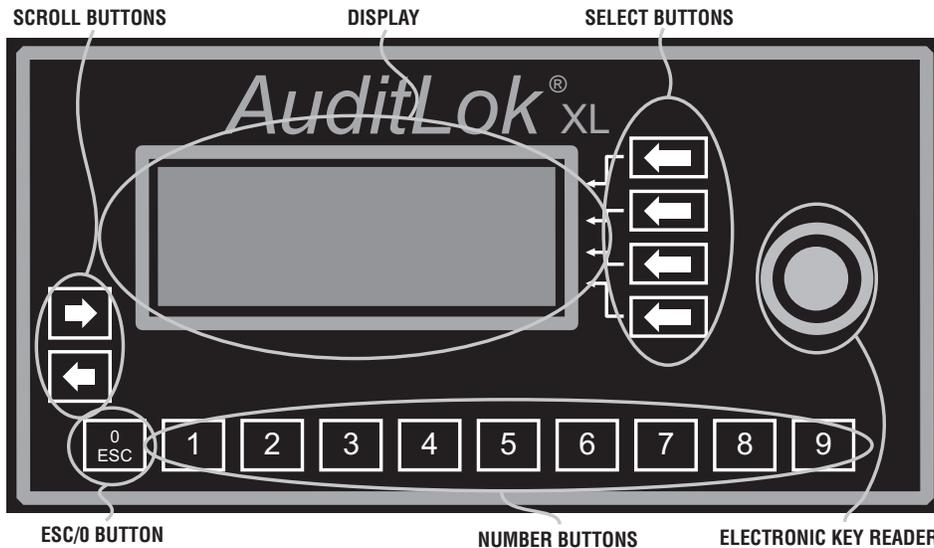
**NKL TECHNICAL SUPPORT
1.800.452.4655**

OPERATING INSTRUCTIONS

Refer to the applicable Operation Manual or Store Manual for detailed operating instructions for the generation of electronics on your safe.

NEW (2008) AUDITLOK XL ELECTRONICS

FIRST SERIAL NUMBER SP2008010094 (AND ALL SP2008x ON BSD2620)



IDENTIFYING GENERATIONS

New (2008) AuditLok XL keypads have teal buttons and at idle the display will appear to be turned off.

KEYS

Permission level is assigned at the time a user is enrolled whether the user is keyless or a key user. Keys used with an old Auditlok XL may be used with a new AuditLok XL although the new AuditLok XL will disregard permissions associated with the old AuditLok XL. The #8 Armored Car Key is the only key with specific permissions recognized by the new AuditLok XL. The #8 Armored Car Key will bypass time delay and timelock and allow immediate access after confirmation by a second user.

PERMISSION LEVELS

Four permission levels exist in the new AuditLok XL. Administrator can configure all safe settings except Company Code (this setting may only be set by factory override). Manager can open doors and perform limited supervisory actions. Users are only permitted to open safe doors.

LOG IN

- Keyless:
 - Press any number button except **ESC/0**.
 - Enter your user number.
 - Select **DONE**.
 - Fingerprint Users: Present finger to fingerprint reader when screen indicates **PRESENT FINGERPRINT**.
- Key: Present your e-key to the key receptacle.
- Enter your PIN.

WARNING: Five consecutive failed attempts to log in will result in a security violation with a five minute lockout.

OVERRIDES

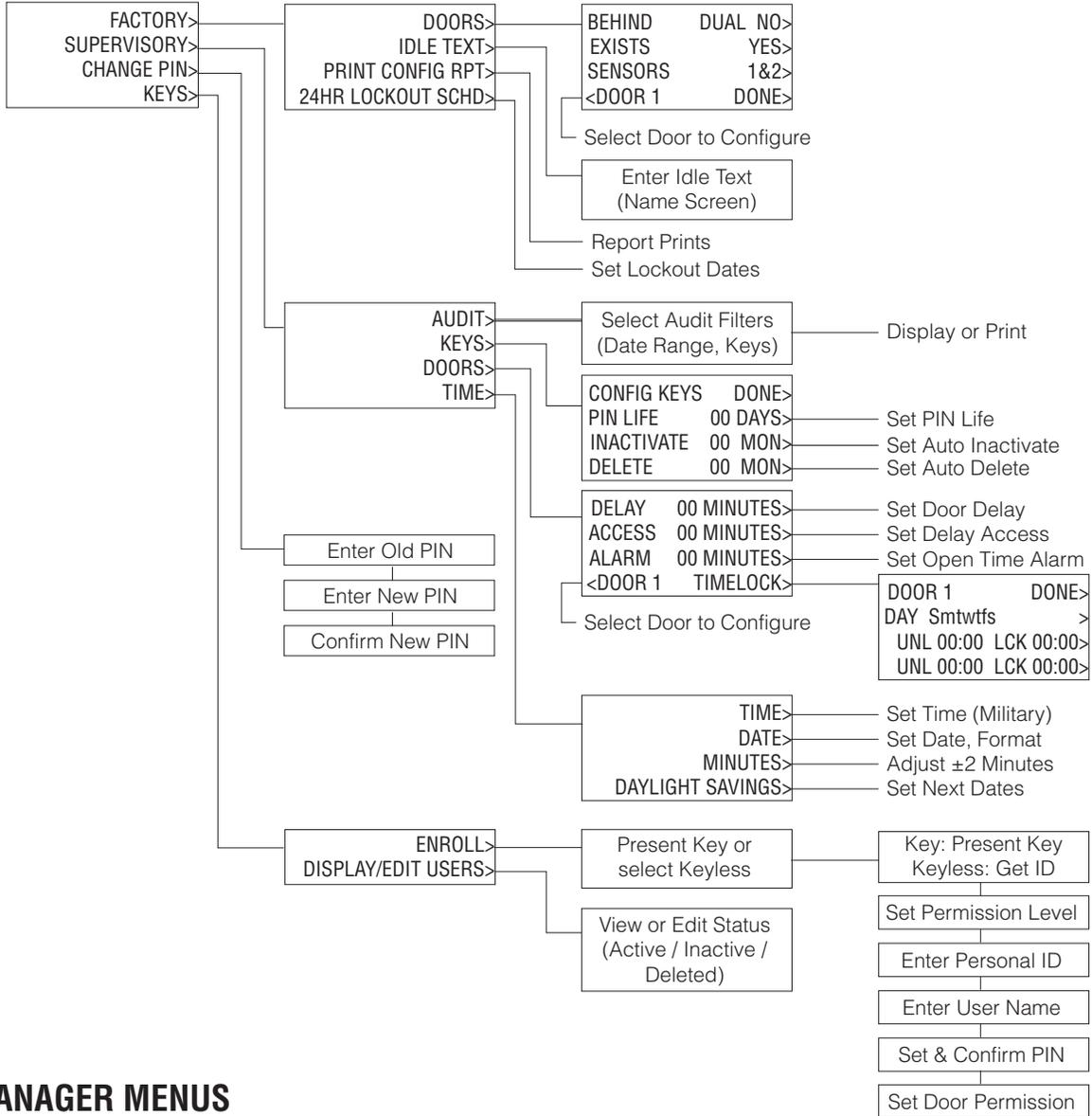
Several overrides are available to access various administrator level menus, set company code, break timelock, or to enable the XL-iP feature. To obtain a factory override, you must be call NKL Technical Support (1.800.452.4655) when you are physically in front of the safe. The technician will direct you through the override process.

NEW (2008) AUDITLOK XL ELECTRONICS

FIRST SERIAL NUMBER SP2008010094 (AND ALL SP2008X ON BSD2620)

ADMINISTRATOR MENUS

The following chart illustrates the flow of menus available at Admin level:



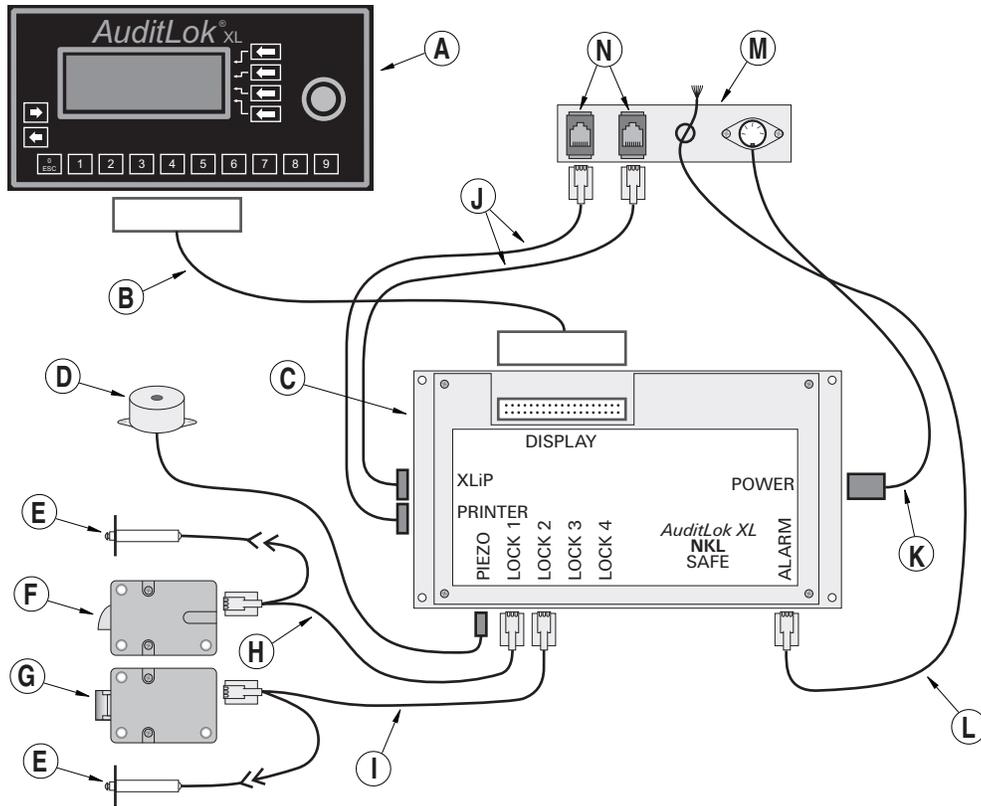
MANAGER MENUS

The following chart illustrates an abbreviated flow of available menus. For more detail refer to corresponding menu item above.



NEW (2008) AUDITLOK XL ELECTRONICS

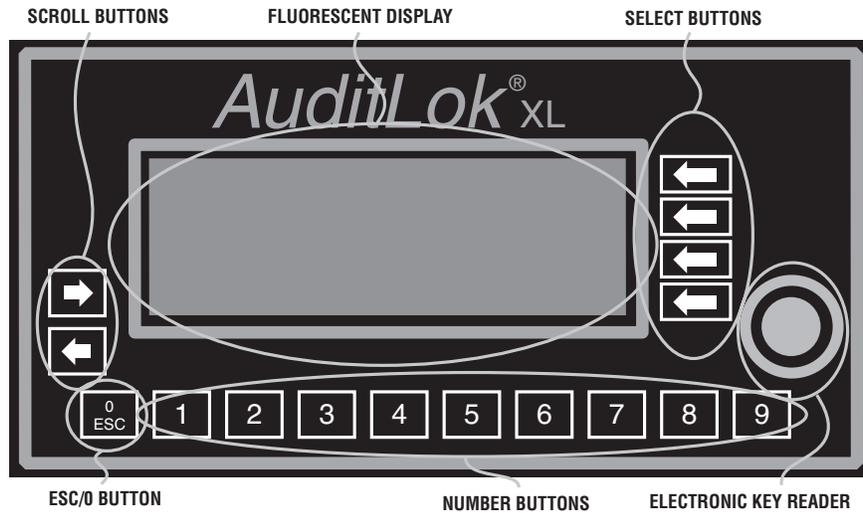
FIRST SERIAL NUMBER SP2008010094 (AND ALL SP2008x ON BSD2620)



Item	Part	Description
A	15027500	Outer Display/Keypad Assembly
B	15027004	Communication Cable
C	15027000	Inner Module Assembly
D	15027002	Piezoelectric Buzzer Assembly (cable attached)
E	15054013	Door Sensor Plunger (x2)
F	15016000	Outer Door Swingbolt Lock
G	15011000	Inner Door Springbolt Lock
H	15025825	Outer Door Armored Lock Cable
I	15025901	Inner Door Armored Lock Cable
J	15027003	Data Cable (Printer, XLiP)
K	15027001	Power Supply Internal Harness Assembly
L	15020613	Alarm Cable
M	18000006	Rear connector plate
N	700463B	RJ45/RJ45 Modular Clip Jack (mounted to connector rear plate)
-	801216	Power Supply External Transformer (not shown)

OLD (PRE-2008) AUDITLOK XL ELECTRONICS

DISCONTINUED AS OF SERIAL NUMBER SP2008010094



IDENTIFYING GENERATIONS

Old (Pre-2008) AuditLok XL keypads have white buttons and at idle the display will show a flashing star (screen saver feature) that constantly moves randomly as a screen saver.

KEYS

Electronic keys for this series of electronics are stamped with a number. The number stamp indicates permission level. Refer to the key level chart (right). Menu paths depend on permission level.

LOG IN

- Present your key to the key reader.
- Enter your PIN.

WARNING: Five consecutive failed attempts to log in will result in a security violation with a five minute lockout.

OVERRIDES

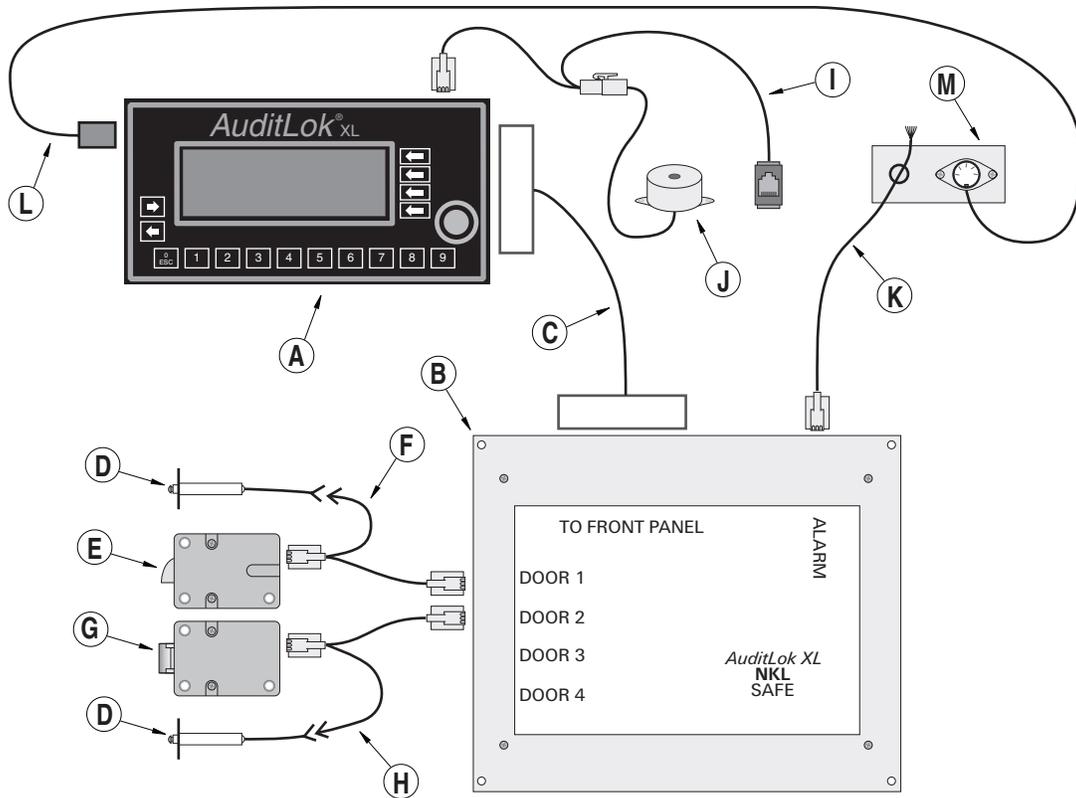
Several overrides are available to access various factory and supervisory level screens or break timelock. To obtain a factory override, you must be call NKL Technical Support (1.800.452.4655) when you are physically in front of the safe. The technician will direct you through the override process.

Key Level:	1	2	3	4	5	6	7	8	9	10
Open Safe Door 1	X	X	X	X	X				X	
Open Safe Door 2		X	X	X	X				X	
Open Safe Door 3				X	X				X	
Open Safe Door 4					X				X	
Display or Print Audit				X	X	X	X		X	X
Audit Via Modem					X	X	X		X	X
Adjust DST			X	X	X	X	X		X	X
*Enroll Users				X	X	X	X		X	X
*Delete Users			X	X	X	X	X		X	X
*Set Timelocks						X	X		X	X
*Set Door Delay, Access, and Warning Times							X		X	X
Armor Car Override								X		
Adjust Minutes		X	X	X	X	X	X		X	X
Arm/Disarm Alarm	X	X	X	X	X					X
*Set Time or Date										X
*Set Time or Date Format										X
*Print Configuration										X
*Initialize Audit										X
*Set Idle Text										X
*Configure Doors										X
*Set Company Code										X
*Set Key Life										X
*Timelock Override										
*Lost Key Override										

*These functions may be performed via override

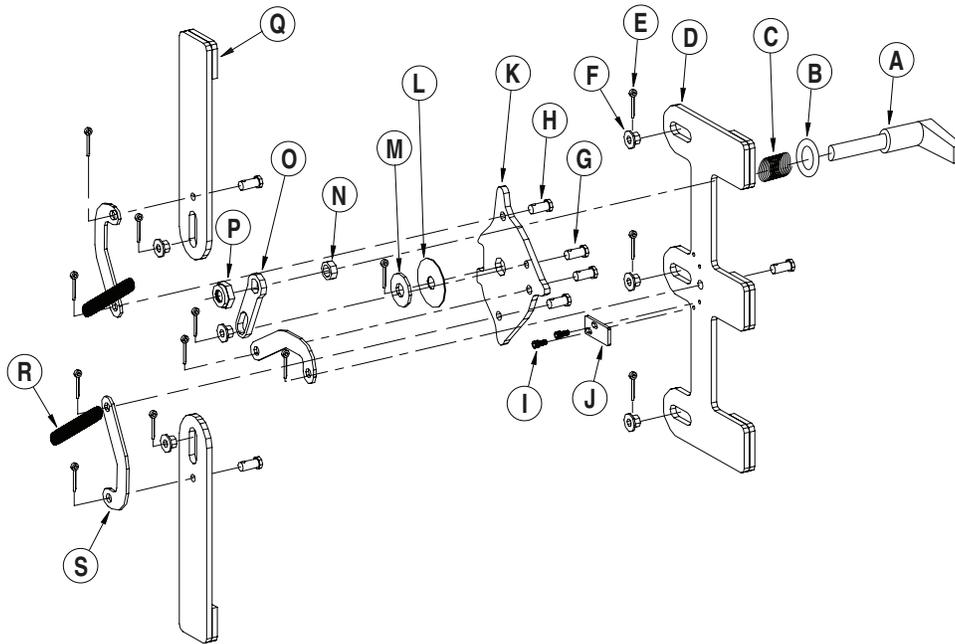
OLD (PRE-2008) AUDITLOK XL ELECTRONICS

DISCONTINUED AS OF SERIAL NUMBER SP2008010094



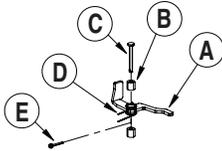
Item	Part	Description
A	15020200	Outer Display/Keypad Assembly
B	15020100	Inner Module Assembly
C	15020700	Communication Cable
D	15054013	Door Sensor Plunger (x2) (since 2004)
-	15000023	Door Sensor Switch (before 2004)
E	15016000	Outer Door Lock
F	15025825	Outer Door Lock Cable (includes 15051013, since 2004)
-	15025827	Outer Door Lock Cable BSD2620L (includes 15051013)
-	15021825	Outer Door Lock Cable (before 2004)
-	15021826	Outer Door Lock Cable BSD4725 (before 2004)
G	15011000	Inner Door Lock
H	15025901	Inner Door Lock Cable (includes 15051013, since 2004)
-	15014000	Inner Door Lock Cable (before 2004, no sensor)
I	15021100	Printer/Buzzer Cable
J	15021300	Piezoelectric Buzzer
K	15020613	Alarm Cable
L	15020320	Power Supply Internal Cable Assembly (for 12V Transformer)
-	15020300	Power Supply Internal Cable Assembly (for 9V Transformer)
-	801216	Power Supply 12V Transformer (since 2000)
-	15000010	Power Supply 9V Transformer (before 2000)
M	10000197	Rear connector plate

5-POINT BOLTWORK



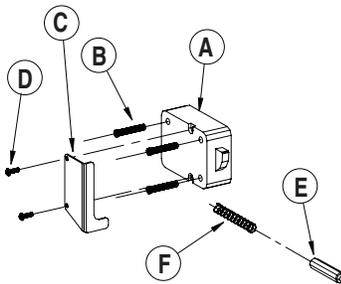
Item	Part	Description
A	801018	Handle Assembly (mounted from outside door)
B	800687	Handle Washer 5/8 ID 1 OD
C	06500004	Handle Spring
D	10000133	E-Bolt (standard, right swing)
D	10000134	E-Bolt (left swing)
E	06151001	Cotter Pin (x13) 3/4 x 7/64
F	700964	Steel Bushing (x6)
G	06141002	Handle Clevis Pin 5/16 x 7/8
H	06141001	Linkage Clevis Pin (x6) 3/8 x 3/4
I	06010013	Hex Socket Head Cap Screw (x2) 10-32 x 3/8
J	10000006	Detent Catch
K	10000001	Cam
L	06020008	Washer 1/2 ID 2 OD
M	HW202	Washer 1/2 ID 1 3/8 OD
N	06041007	Nylon Handle Bushing 1/2 ID
O	10000003	Handle Linkage
P	06091006	Nylock Nut 5/8-11
Q	10050141	Vertical Bolt BSD2620 (x2)
Q	10030141	Vertical Bolt BSD2920 (x2)
Q	10020141	Vertical Bolt BSD3220 (x2)
Q	10010141	Vertical Bolt BSD4125 (x2)
Q	10080141	Vertical Bolt BSD4725 (x2)
R	06500002	Cam Torsion Spring (x2)
S	10000019	Bolt Linkage (x3)

DETENT



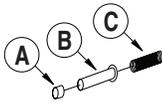
Item	Part	Description
A	10000004	Detent (standard, right swing)
	10000004L	Detent (left swing, not shown)
B	06041004	Nylon Bushing (x2)
C	06141004	Detent Clevis Pin
D	06500003	Detent Torsion Spring
E	06151002	Cotter Pin

LOCK AND RELOCKER



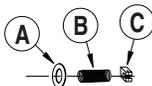
Item	Part	Description
A	15016000	Lock, Swingbolt, Non-handed
B	06030022	Screw (x3) 1/4-20 x 1 1/4 Brass
C	700480	Relocker Plate (standard, right swing)
	700480L	Relocker Plate (left swing, not shown)
D	06030007	Screw (x2) 8-32 x 1/2
E	600-1463	Relocker Pin 3/16 x 1 1/2
F	06500006	Relocker Spring

DOOR CLOSER



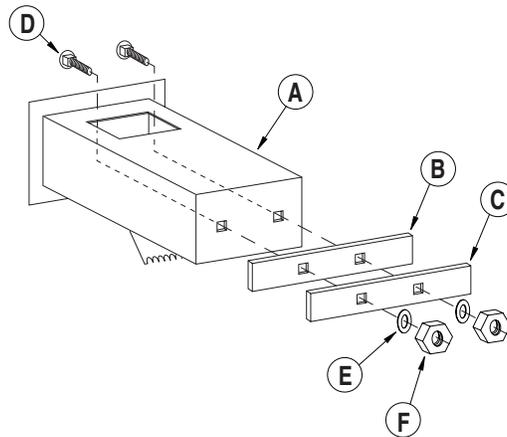
Item	Part	Description
A	800237	Door Closer Rubber Tip
B	10000052	Door Closer Tube
C	06500005	Door Closer Spring

LOCK HARNESS RETAINER



Item	Part	Description
A	06020008	Lock Cable Harness Washer
B	06500012	Lock Cable Harness Spring
C	08001016	Lock Cable Harness Retainer Block

MANUAL DROP DRAWER



Item	Part	Description
A	600764	Drop Drawer
B	701242	Drop Drawer Nylon Stop Stop
C	701243	Drop Drawer Steel Stop Bar
D	HB201	Drop Drawer Backstop Carriage Bolt (x2)
E	6201050	Drop Drawer Backstop Washer (x2)
F	HN201	Drop Drawer Backstop Hex Nut (x2)

INTERNAL HARDWARE NOT SHOWN ELSEWHERE

Part	Description
10000090	Inner Board Cover Plate
06091008	Inner Board Cover Wing-Nuts (x2) 1/4-20
06020007	Inner Board Cover Flatwasher (x2) 1/4
700471	Inner Door Lock Cover Plate
06035001	Torx T-25 Security Head Mounting Screws 10-32 x 1/2 (x9)
06020006	Washer #10 used with Torx Screw (x9)
700527	Dust Cover BSD2620
700521	Dust Cover BSD2920 (10030026 before SP2004004031)
700528	Dust Cover BSD3220 (10020026 before SP2004004031)
700429	Dust Cover BSD4125 (10010043 before SP2004004031)
700530	Dust Cover BSD4725 (10080009 before SP2004004031)
700463B	Buzzer Bracket
920-5021	Flat Washer Zink 1/2
06030007	Screw 8-32 Philips Panhead Machine
06030008	Screw, 4-40 x 1/2 Philips Panhead Machine (x2)
HS400	Screw, 6-32 Type F Philips Panhead Machine (x2)
HS407	Screw, 10-32 Type F Philips Panhead Machine (x5)
800231	Screw, 6-32 x 5/16 Type F Philips Flathead (x5)

OPTIONAL, EXTERNAL, & CONSUMABLE

Part	Description
15021000	Electronic Key
10000146	Shelf BSD2620/2920/3220
10010017	Shelf BSD4125/4725
320-1063Z	Shelf Clips (x4)
Triplite350	Uninterruptable Power Supply
10000192	Coin Rack (BSD2620)
600351	Coin Rack (except BSD2620, after SP2004004031)
10000176	Coin Rack (except BSD2620, after SP2004004031)
04045192	Sticker: Tamper Seal for Dust Cover
04045193	Sticker: Timelock
04045190	Sticker: Unauthorized Service Not Paid by NKL
800220	Intellisafe Logo
3405	Plug Button 3/4
620-1056	Handle Insert Cap 1 OD Brushed Aluminum
800688	Thermal Printer (New XL)
15000325	RJ45/DB25 Printer Adapter (New XL)
15009077	Printer Cable (New XL)
800660	Thermal Paper Replacement Roll 3 1/8 (New XL)
15000097	Okidata Printer (Old XL)
15007052	Okidata DB9/DB25 Printer Adapter (Old XL)
15020002	Okidata Printer Cable (Old XL)

ALARM OUTPUT WIRING NOTES

AuditLok XL provides for duress and burglar alarm connections through a cable located at the back of the safe. Each alarm is switched via a SPDT relay with both normally open and normally closed contacts provided. When an alarm condition is activated, the appropriate relay will switch and remain in the alarm state until a valid key and PIN are presented. Bare terminations from the alarm cable are labeled as follows:

- Burglar Common (blue*)
- Burglar Normally Open (green)
- Burglar Normally Closed (yellow)
- Duress Normally Closed (black)
- Duress Normally Open (red)
- Duress Common (white)

Wire colors may vary depending on when the safe was manufactured. Relay contact specifications are for 30 V_{AC/DC}, 1A, power limited circuits only.

SERVICE NOTES

BASIC TROUBLESHOOTING

Lost PIN: NKL does not have access to any PIN nor can a key (or user number) be made functional without it. If a PIN is lost the user must be deleted and reenrolled.

Damaged Key: This may be caused by extreme temperature; exposure to electromagnetic fields; immersion in liquid. Delete any lost or damaged keys.

Message ERROR, INVALID USER: The user is not enrolled, has been deleted, or the key is damaged.

Message KEY INACTIVE SEE MANAGER: The user is inactive. A manager can reactivate a user.

Display blank and completely inoperative: Check power supply connections. Verify power is present at the AC outlet. Verify power is present at the DIN connector from the transformer. If the power supply is okay the problem is the inner board, outer board, internal power supply cable, or communication cable.

Display responds to only some buttons: Replace the outer board.

Display responds normally but there is no beeping sound when buttons are pressed: The buzzer is damaged or disconnected. The buzzer is located in the cavity behind the outer board. The buzzer is connected directly to the inner board.

Continuous tone with doors closed: A door sensor needs adjustment, has failed or become disconnected. Log in at the Administrator level (New XL) or run an override (New or Old XL) to disable the offending sensor until it can be adjusted, reconnected or replaced.

Unable to enroll a user: The user memory is full. Delete one or more users. If memory is not full and/or deleting users does not solve the problem, run an override to clear the user table or replace the inner board.

Keypoint does not respond: Replace the outer board.

Erratic behavior or corrupt settings: Replace the inner board.

MAJOR HISTORICAL CHANGES

Power Supply (Old XL): In January 2000 NKL switched from a 9V transformer to a 12V transformer. Transformers are not interchangeable due to different connectors and internal cables. Units with the 9V transformer were built with an 8V backup battery mounted behind the inner board. The battery backup feature is no longer supported. An external UPS is recommended for all installations, past or present.

Power Supply (New XL): AuditLok XL requires less power than AuditLok XLV, however you may use the AuditLok XLV transformer (part 15000346) if you have one available and do not have the normal 12V transformer.

Gold Display (Old XL): A gold outer board was used 2001-2003. If a gold outer board fails it should be replaced with a blue outer board (15020200).

Keyless Option (Old XL): Software became available to support keyless access, streaming audit output and optional biometrics reader in 2005.

Door Sensors: Starting in late 2003 to early 2004 NKL stopped using the switch sensor mounted behind the door closer and began using the white magnetic plunger sensor mounted at the top hinge side of the outer door. At the same time the same plunger began being used on the inner door.

Dust Covers: In January 2004 the dust covers were changed for improved quality. New dust covers cannot be retrofitted onto old safes.

Cam Mounting: In January 2000 NKL began using washers with a cotter pin to mount the center cam. Prior to this the cam was mounted with a capture nut.