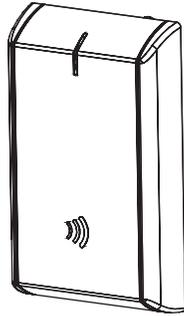
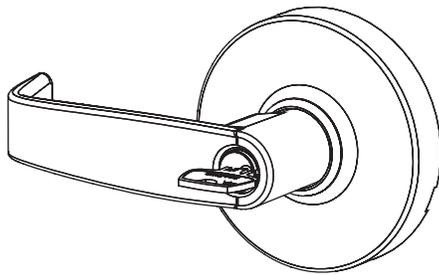


SARGENT

ASSA ABLOY



IN100



with Aperio™ Technology Cylindrical Lock Installation Instructions

A8189B
07/16

Copyright 2016, Sargent Manufacturing Company, an ASSA ABLOY Group company.
All rights reserved. Reproduction in whole or in part without the express written
permission of Sargent Manufacturing Company is prohibited.

ASSA ABLOY, the global leader
in door opening solutions



Table of Contents

1	Warning	3
2	General Description	4
3	Hardware Specifications	4
4	Electronic Specifications	4
5	Parts Breakdown	5
6	Lock Installation	7
7	Operational Check	19
8	Lock LED Indications	20

1 Warning

Changes or modifications to this device not expressly approved by ASSA ABLOY could void the user's authority to operate the equipment.

FCC:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada:

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareillage numérique de la classe B répond à toutes les exigences de l'interférence canadienne causant des règlements d'équipement. L'opération est sujette aux deux conditions suivantes: (1) ce dispositif peut ne pas causer l'interférence nocive, et (2) ce dispositif doit accepter n'importe quelle interférence reçue, y compris l'interférence qui peut causer l'opération peu désirée.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.



Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and SARGENT Manufacturing makes no representations or warranties concerning what such impact may be in any specific situation. When retrofitting any portion of an existing fire rated opening, or specifying and installing a new fire-rated opening, please consult with a code specialist or local code official (Authority Having Jurisdiction) to ensure compliance with all applicable codes and ratings.

To avoid possible damage from electrostatic discharge (ESD), some basic precautions should be used when handling electronic components:

- Minimize build-up of static by touching and/or maintaining contact with unpainted metal surfaces such as door hinges, latches, and mounting plates especially when mounting electronic components such as readers and controllers onto the door.
- Leave components (reader and controller) protected in their respective anti-static bags until ready for installation
- Do not touch pins, leads or solder connections on the circuit boards

2 General Description

The SARGENT® IN100 mortise lock with Aperio™ Technology makes it easy and cost-effective to bring access control to more doors. It uses local wireless communication between the lock and an Aperio hub to connect to an access control system, eliminating the greatest cost and inconvenience of traditional access control – the wiring at the door. The IN100 utilizes HID® multiCLASS SE® technology, it supports heightened identity security and multiple credentials, including mobile access.

All technology features are supported by the physical security of SARGENT ANSI/BHMA Grade 1 hardware - quality components that provide high security, performance and durability.

3 Hardware Specifications

- Complete lockset with on-board memory
- ADA compliant
- Easily retrofits existing (cylindrical lock) door preps
- Latch - 1/2" standard 3/4" throw fire-rated double doors (optional) (41- prefix)
- Deadlocking latch - Stainless steel, non handed
- Lock furnished for 1-3/4" doors. For other thicknesses, consult factory.
- ANSI/BHMA A156.25 Listed Grade 1 Compliant
- Outside lever controlled by contactless reader or mechanical cylinder
- May be used for indoor and exterior applications

4 Electronic Specifications

- Input Power: DC 9V, 1.5A (6 AA alkaline batteries)
- Optional hard-power 12VDC to 24VDC
- HID® multiCLASS SE™ technology offers support for the following credentials:
 - High Frequency (13.56 MHz):
 - HID iCLASS®
 - HID iCLASS SE® (SIO-enabled)
 - HID iCLASS® Seos™
 - HID MIFARE® SE
 - HID DESfire® EV1 SE
 - MIFARE Classic
 - DESfire EV1
 - Low Frequency (125 kHz):
 - HID Prox®
 - NFC-enabled Mobile Phones
- Uses low-rate wireless personal area networks (IEEE 802.15.4)
- Multiple time zone and holiday access scheduling
- First-in unlock or automatic unlock configuration, based on specified time schedule
- Uses AES 128-bit wireless encryption*
- Privacy button

*For specific security information, please contact your local ASSA ABLOY Door Security Solutions sales consultant or call 800-810-WIRE.

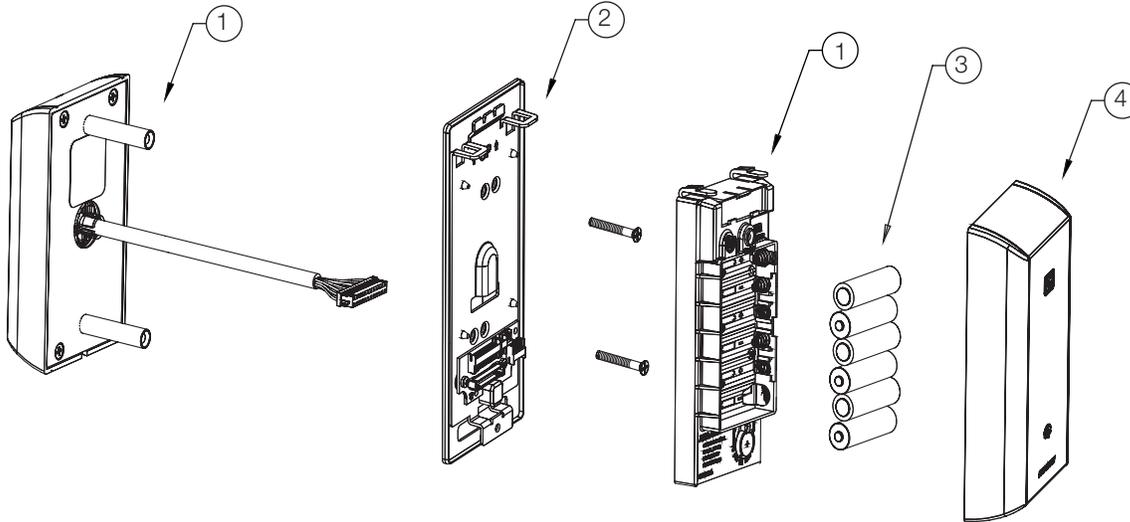


To comply with "Fire Listed" doors, the batteries must be replaced with alkaline batteries only.

Warning: SARGENT Mfg. Co. IN100 locksets utilizing a door position switch (DPS) are not rated for, or intended for use in life safety applications.

IN100 Cylindrical Lock

5 Parts Breakdown

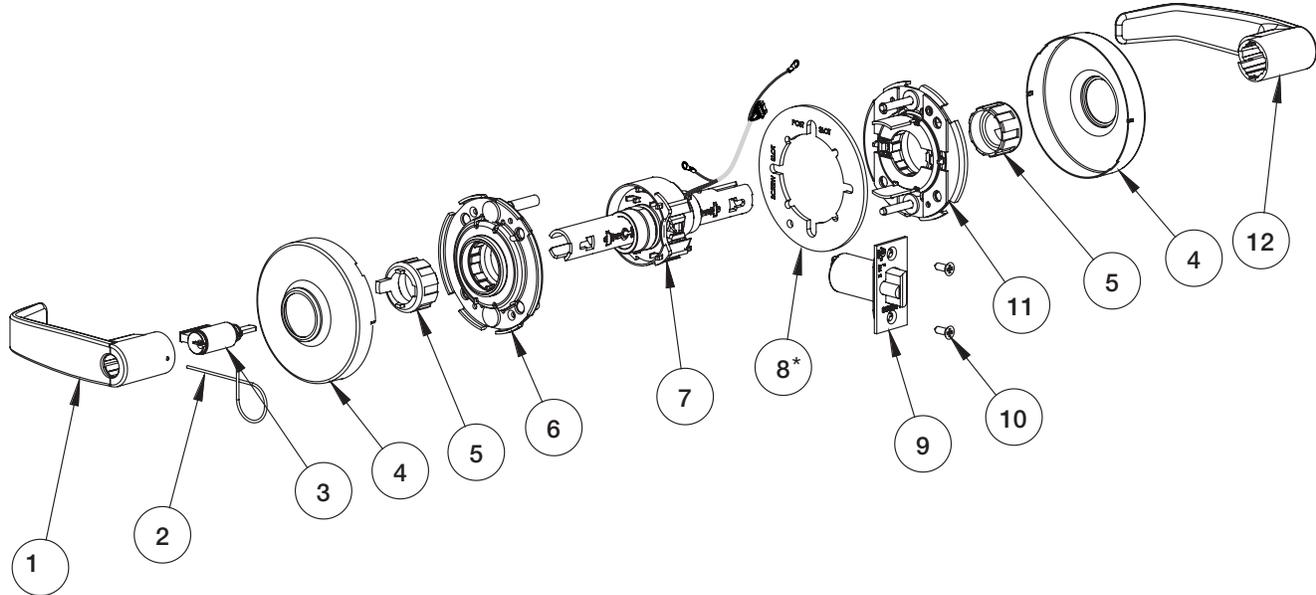


ITEM	PART NUMBER/ORDER STRING	DESCRIPTION	COLOR/TRIM	QTY
1	IN-100-EM0110G77-IP-B	HID iCLASS®, HID iCLASS SE® (SIO-enabled), HID iCLASS® Seos™, HID MIFARE® SE, HID DESfire® EV1 SE, HID Prox®, NFC-enabled mobile phones	Black	1
	IN-100-EM0110G77-IP-W	HID iCLASS®, HID iCLASS SE® (SIO-enabled), HID iCLASS® Seos™, HID MIFARE® SE, HID DESfire® EV1 SE, HID Prox®, NFC-enabled mobile phones	White	1
	IN-100-EM0110G77-IP-MB-[xxx]*	HID iCLASS®, HID iCLASS SE® (SIO-enabled), HID iCLASS® Seos™, HID MIFARE® SE, HID DESfire® EV1 SE, HID Prox®, NFC-enabled mobile phones	Black with metal trim	1
	IN-100-EM0110G77-IP-MW-[xxx]*	HID iCLASS®, HID iCLASS SE® (SIO-enabled), HID iCLASS® Seos™, HID MIFARE® SE, HID DESfire® EV1 SE, HID Prox®, NFC-enabled mobile phones	White with metal trim	1
	IN-100-EM0110G77-IPS-B	All credentials supported by the IP option plus MIFARE Classic and DESfire EV1	Black	1
	IN-100-EM0110G77-IPS-W	All credentials supported by the IP option plus MIFARE Classic and DESfire EV1	White	1
	IN-100-EM0110G77-IPS-MB-[xxx]*	All credentials supported by the IP option plus MIFARE Classic and DESfire EV1	Black with metal trim	1
	IN-100-EM0110G77-IPS-MW-[xxx]*	All credentials supported by the IP option plus MIFARE Classic and DESfire EV1	White with metal trim	1
2	IN-EM04	Mounting plate assembly		1
3	N/A	AA battery (alkaline only)		6
4	IN-EM02-B	Inside Escutcheon Assembly with Privacy Button - Black Plastic	Black	1
	IN-EM02-W	Inside Escutcheon Assembly with Privacy Button - White Plastic	White	
	IN-EM02-MB-xxx*	Inside Escutcheon Assembly with Privacy Button - Black Plastic & Metal Trim	Black with metal trim	
	IN-EM02-MW-xxx*	Inside Escutcheon Assembly with Privacy Button - White Plastic & Metal Trim	White with metal trim	

* Specify finish

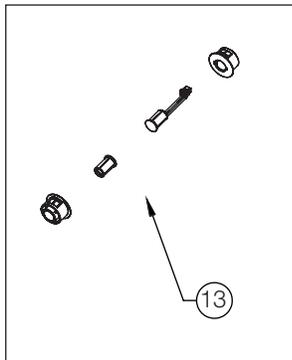
Copyright © 2016, Sargent Manufacturing Company, an ASSA ABLOY Group company. All rights reserved. Reproductions in whole or in part without express written permission of Sargent Manufacturing Company is prohibited.

Parts Breakdown (Continued)



ITEM	PART NO./ORDER STRING	DESCRIPTION	QTY.
1	---	Outside Lever (Reference Catalog for Available Styles)	1
2	10-0043	Lever Retainer Key (In Screw Pack 10-2052)	1
3	---	Cylinder Assembly (Reference Catalog for Available Cylinders)	1
4	---	Rose (Reference Catalog for Available Styles)	2
5	10-0792	Spacer Bushing	2
6	10-3049	Outside Rose Spring Assembly	1
7**	10-3452	Lockbody Assembly 10G77 (Standard Cylinder)	1
	10-3453	Lockbody - LFIC (Removable Core)	
	10-3454	Lockbody - SFIC	
	10-3455	Lockbody - Keso	
	10-3456	Lockbody - Medeco Keymark LFIC & Schlage Full Size Interchangeable Core	
8	10-0847	Adapter Plate/Spacer (Only Included With 1-3/8" Thick Doors)	2
9	10-3192	Latch Assembly	1
10	10-2052	Screw Pack	2
11	10-3048	Inside Rose Spring Assembly	1
12	---	Inside Lever (Reference Catalog for Available Styles)	1
13	52-5374	Door Position Switch Kit (SPDT)	1

*Adapter Plate/Spacer (10-0847) is only shipped with orders that specify 1-3/8" doors.



**The IN100 10G77 cylindrical lock supports Escape Return functionality.

Tools Required:

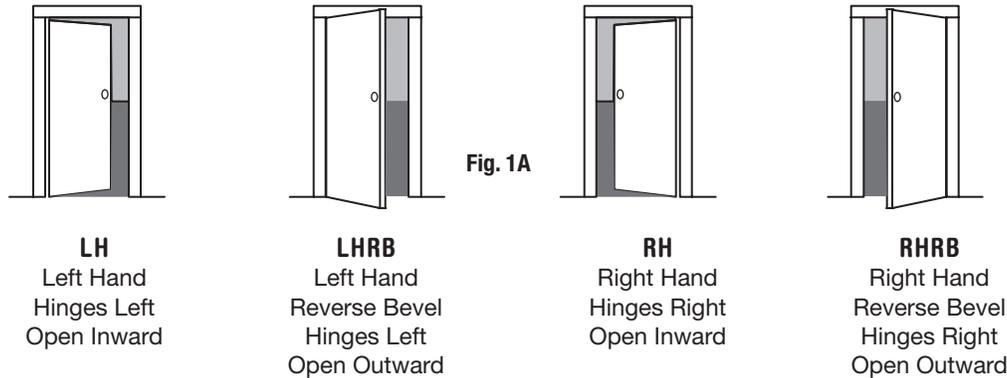
- #2 Phillips screwdriver
- Flat head screwdriver
- Security allen wrench

6 Lock Installation

1 Prepare Door

A. Verify Hand and Bevel of Door

Stand on outside of locked door when determining door hand.



B. Prepare Door

Prior to installation, all holes must be free of burrs, debris and sharp edges.

Prepare door according to appropriate template (see website www.intelligentopenings.com).

- Field Template: A8149 (ships with product)
- Door Manufacturer's Template: 4712

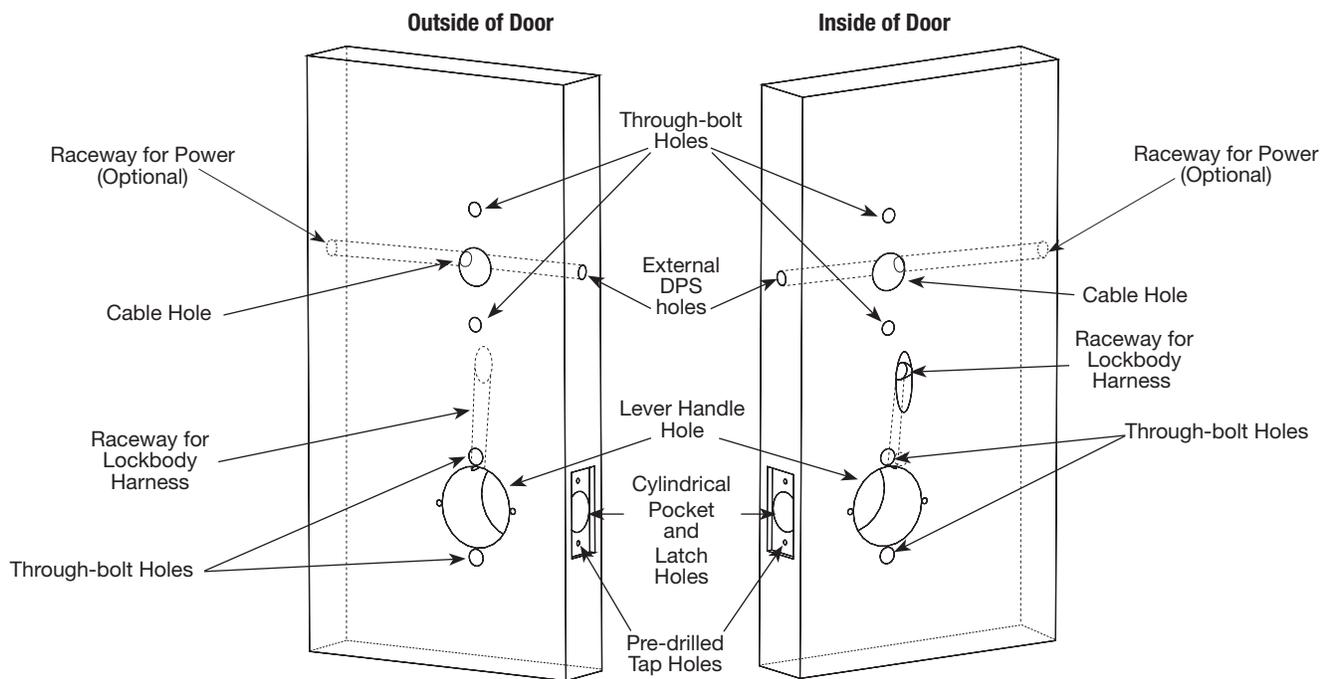


Fig. 1B Wood Door Preparation

Copyright © 2016, Sargent Manufacturing Company, an ASSA ABLOY Group company. All rights reserved. Reproductions in whole or in part without express written permission of Sargent Manufacturing Company is prohibited.

2 Install Strike

Install strike in the door frame (Fig. 2).

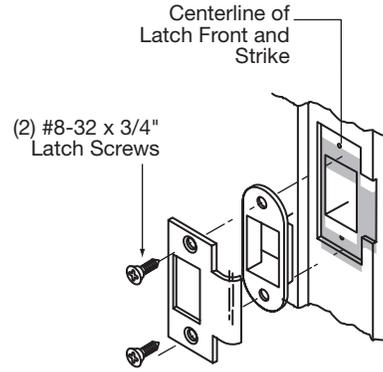


Fig. 2

3 Install Latchbolt

1. Install latch with beveled bolt facing the strike.
2. Attach with two screws but DO NOT tighten completely at this time. See section 8 - Secure Lock to the Door.

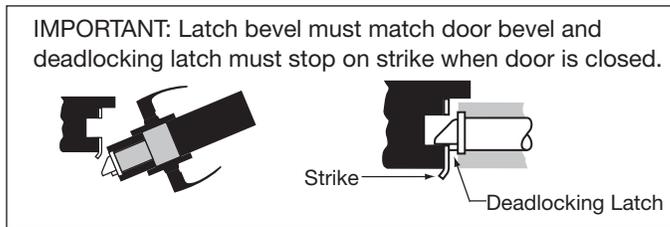


Fig. 3B

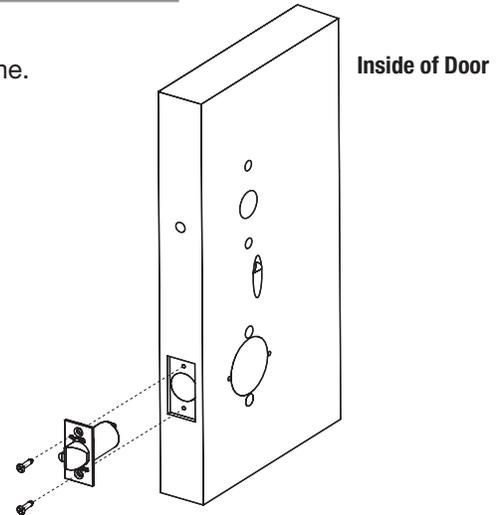


Fig. 3A

4 Install Door Position Switch (DPS)

1. Push wires through raceway toward lock prep.
2. Push DPS firmly into place by hand.
Note: DO NOT TAP SWITCH WITH ANY TOOL.
3. Install magnet into door frame. Push firmly into place by hand. See A7983.
4. To connect DPS to lock controller per diagram, refer to the wiring in Step #10 (Page 15).

CAUTION: if DPS is not installed or is installed improperly, door status monitoring features will not function.

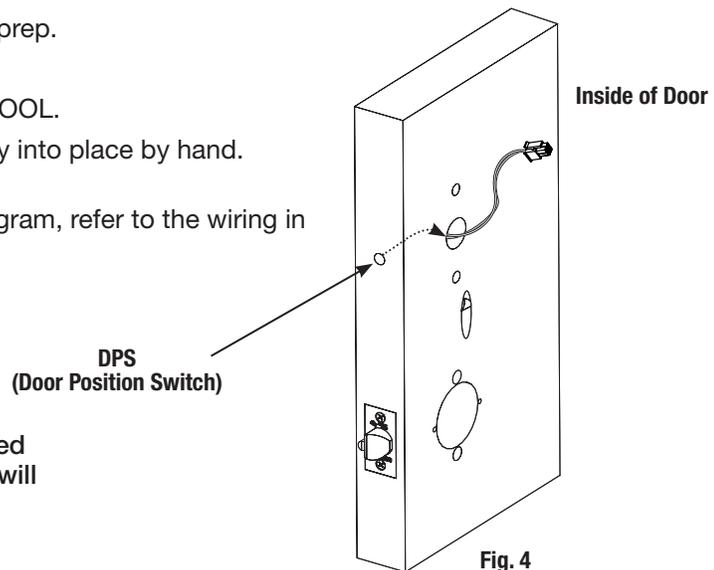


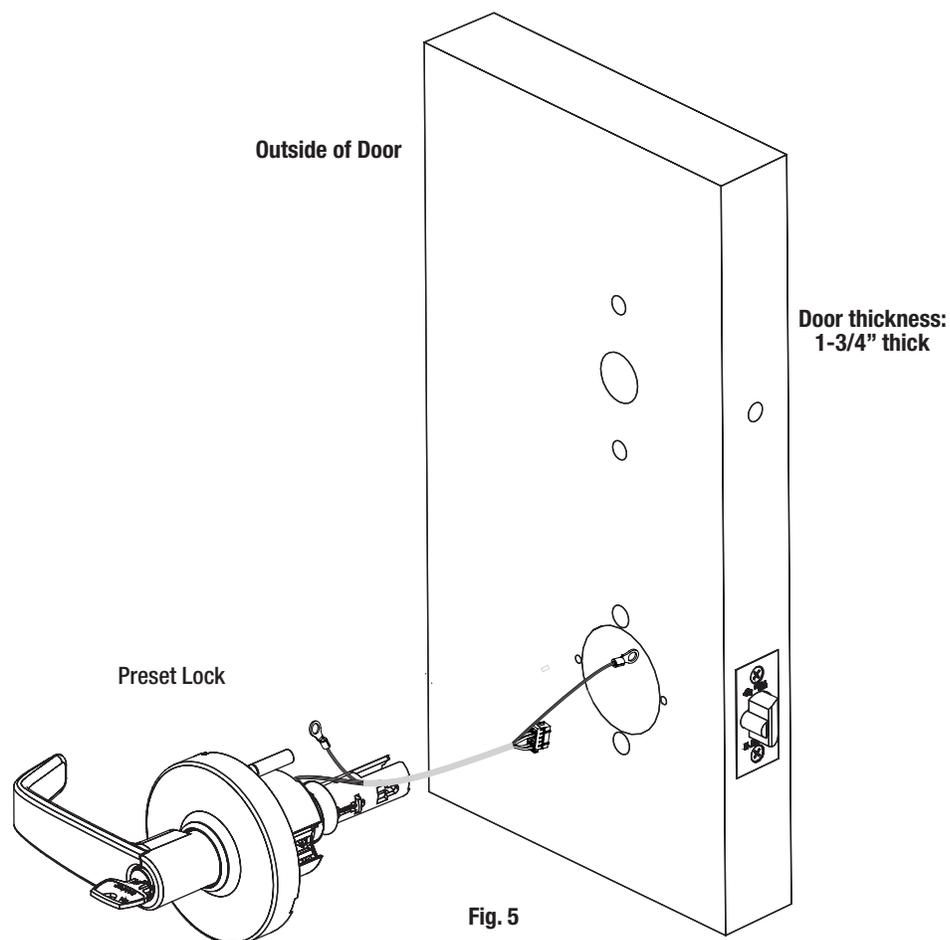
Fig. 4

5 Lock Adjustments

A. Lock Preset:

- Lockbody holes: 12 and 6 o'clock (Fig. 5).

The lock is shipped “preset” and does not require adjustment for 1-3/4” thick doors.



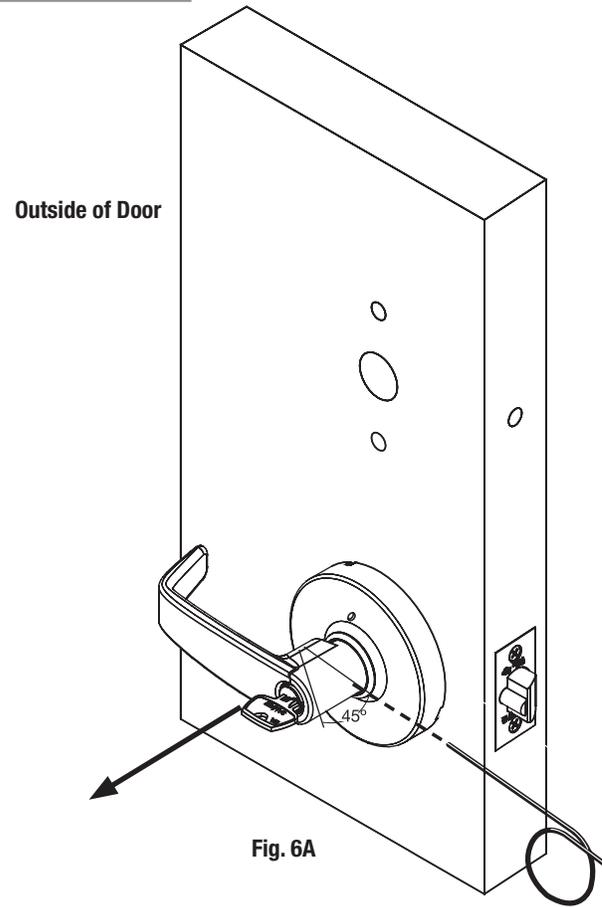
NOTE: Adjusting for a thicker door requires removal of the outside lever, scalp and spacer bushing; see the following sections.

If preset lock does not require adjustment, proceed to **Section 7 - Install Lock.**

6 Through-Bolt and Door Thickness Adjustment (If Required)

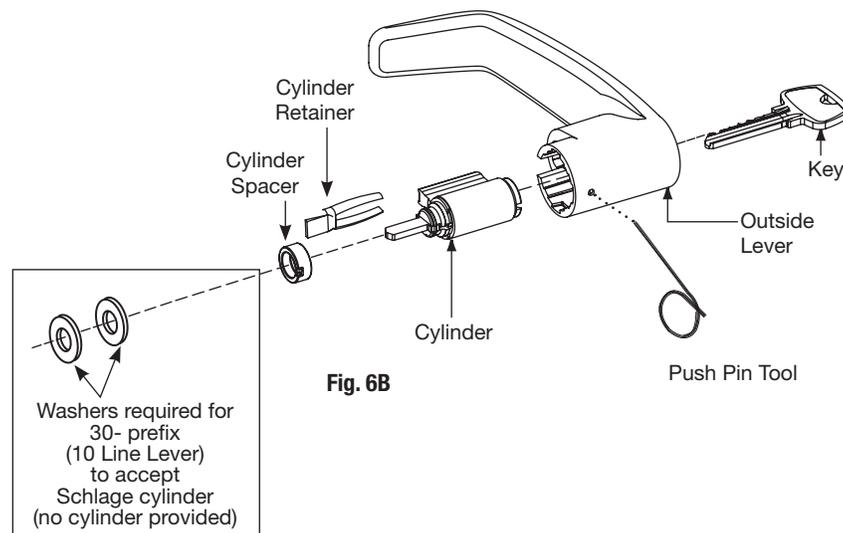
A. Remove Outside Lever

1. Insert key, rotate 45° clockwise and hold.
2. Depress lever retainer with push pin tool (provided).
3. Pull lever outward.



B. How To Change Cylinder (If Necessary)

1. With outside lever in hand, use standard pliers to pull out cylinder retainer.
2. Remove key and cylinder from lever.
3. Insert new cylinder.
4. Secure by pressing cylinder retainer flush with the lever.



C. Through-Bolt and Door Thickness Adjustment

1. (If necessary) remove outside lever, scalp and spacer bushing (Fig. 6C).

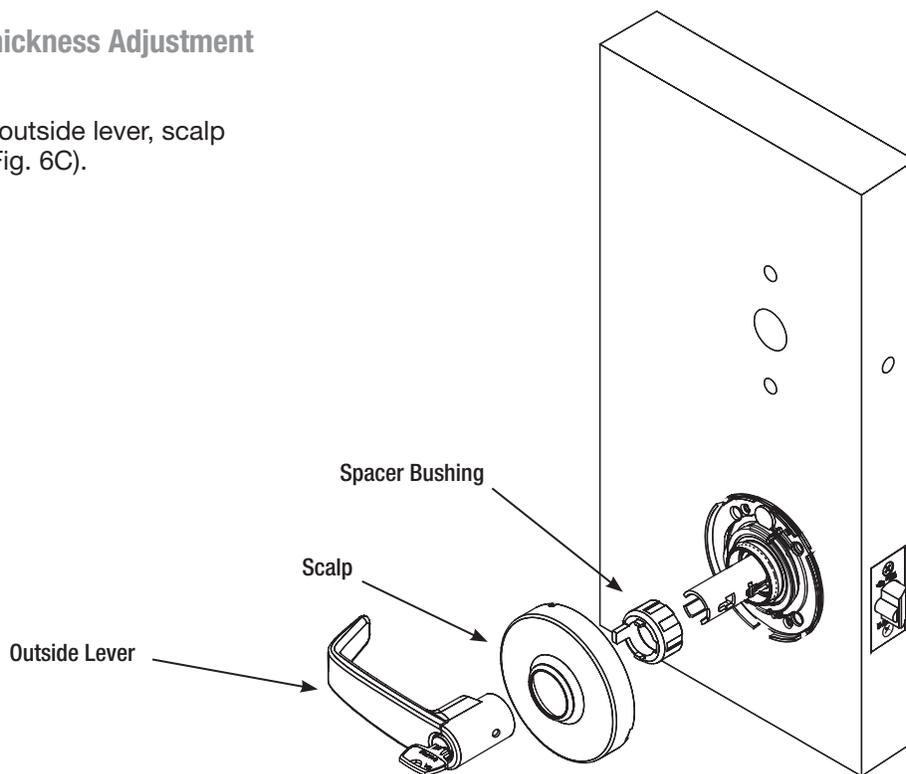


Fig. 6C

2. Rotate mounting plate to either align with through-bolt holes in door, or adjust for proper door thickness (Fig. 6D). Refer to markings on through-bolt post (Fig. 6C Detail).

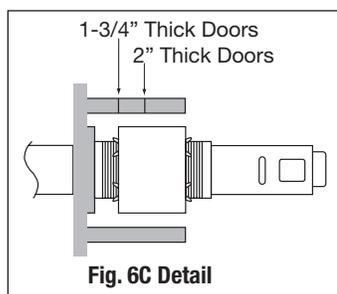


Fig. 6C Detail

3. Re-install spacer bushing to align with back of lever, scalp, and lever (Fig. 6D).

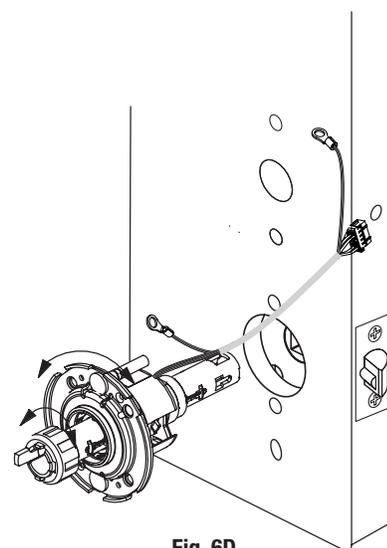


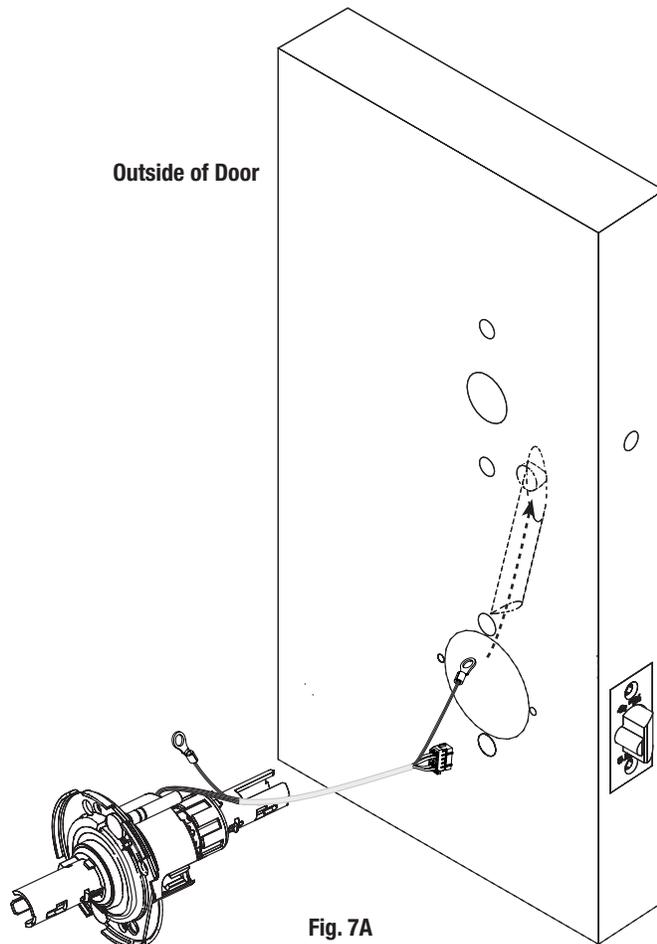
Fig. 6D

7 Install Lock

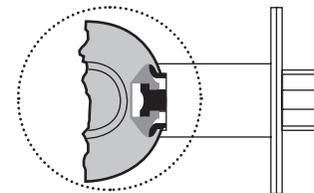
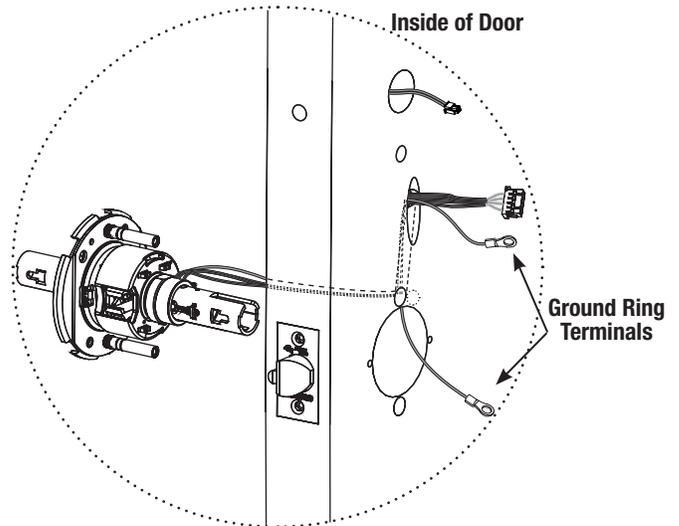
1. From outside of door feed lockbody harness into the lockbody hole (Fig. 7A).
For metal door: Feed harness through inside of door (not shown).
2. Continue to feed harness into raceway (towards top of door), exiting raceway hole on inside of door (Fig. 7B).
3. Slide lockbody into cross-bore hole from outside of door.
4. Lockbody must engage both the latch unit prongs and tail piece (Fig. 7C).

IMPORTANT:

- Door must remain open during installation (use door stop)
- Lockbody must be centered in the door
- Tuck excess wires into raceway to avoid pinching or damaging wires



NOTE: Cable lengths exaggerated for illustrative purposes.



8 Secure Lock to the Door

1. Slide inside rose assembly and spacer bushing over lockbody.
 2. Position ground lug between (top) #10-32x1-1/4" through-bolt and rose assembly (Fig. 8A).
- NOTE:** Proper placement of ground wire (Fig. 8B) will prevent pinching/damage to the ground wire.
3. Secure rose assembly with (2) #10-32x1-1/4" through-bolts.
 4. Secure latch by fully tightening (2) #6 x 3/4" self-tapping screws (refer to previous section 3 - Install Latchbolt).

NOTE: Cable lengths exaggerated for illustrative purposes.

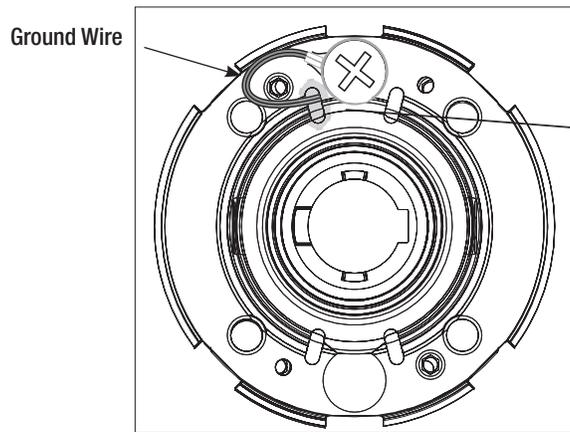


Fig. 8B Detail

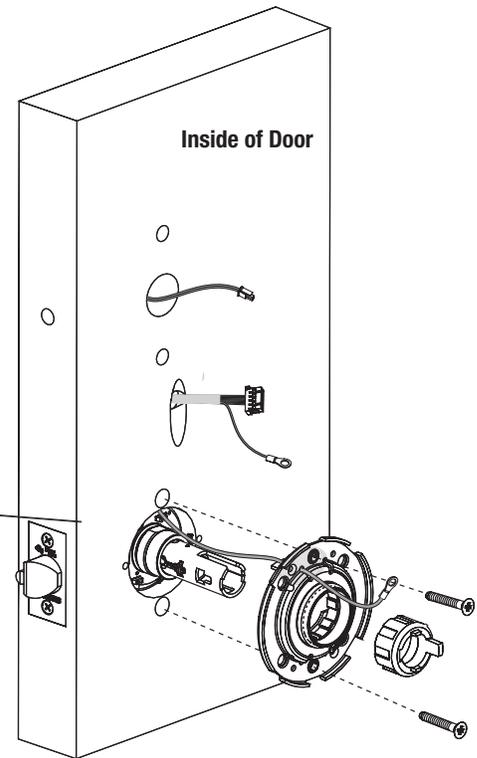


Fig. 8A

9 Assemble Inside Trim

1. Verify spacer bushing is inserted horizontally and aligned with lever (Fig. 9).
2. Place rose over shaft of lockbody against the surface of the door; hand-tighten, turning clockwise.
3. Attach lever. Push until engaged.

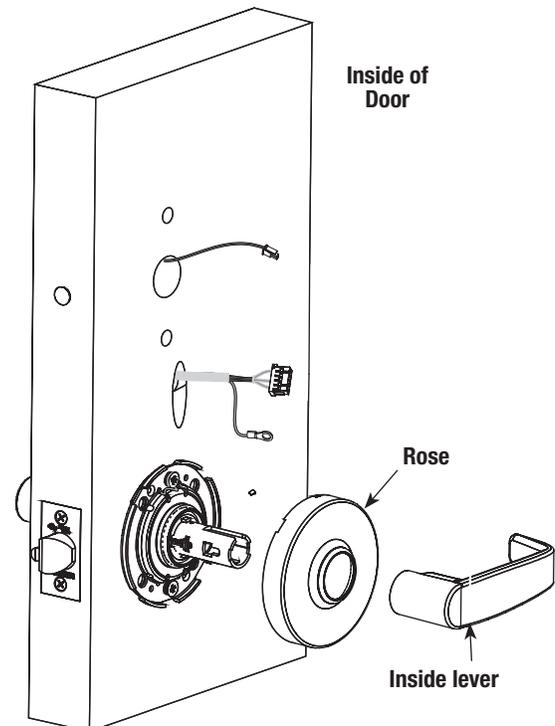


Fig. 9

10 Outside Reader Installation

1. Orient the reader so the LED lens is at the top (Fig. 10A).
2. Feed the cable/connector through the door (from outside to inside).
3. Install the reader to the outside of door by aligning the mounting posts with the door preparation holes. Hold the reader flush against door while ensuring proper alignment.

NOTE: Cable lengths exaggerated for illustrative purposes.

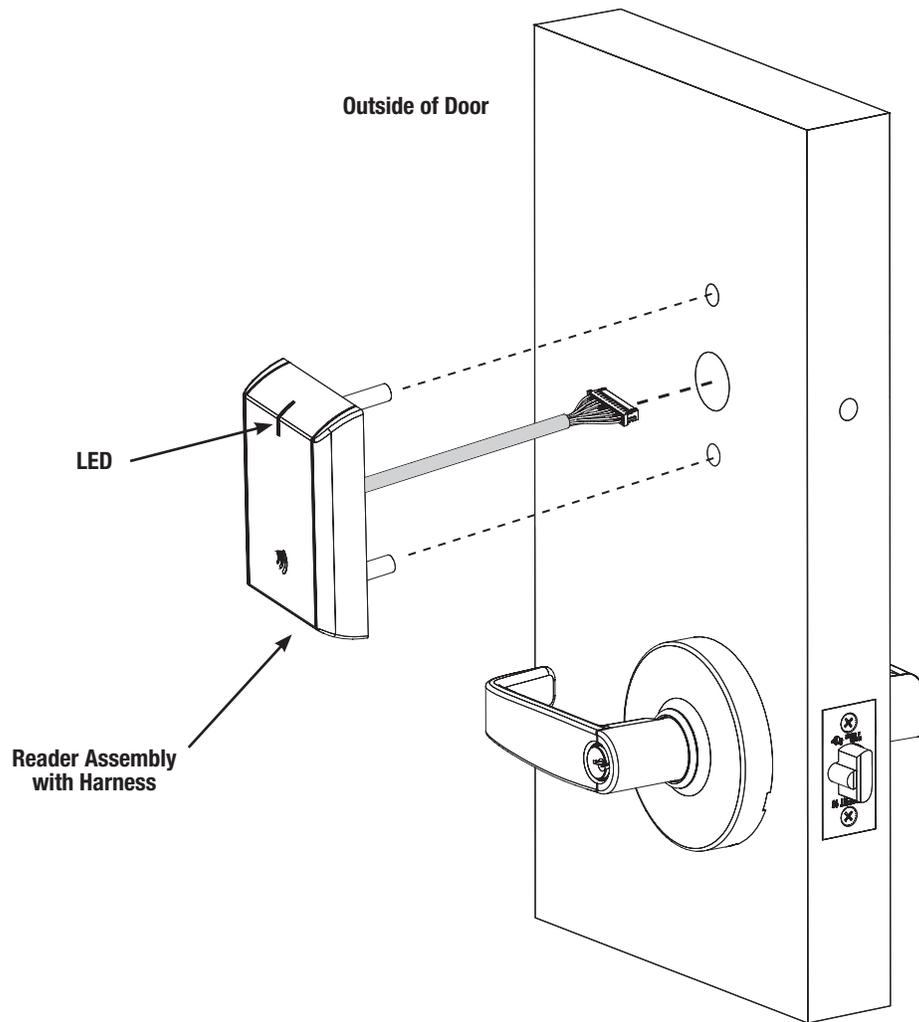


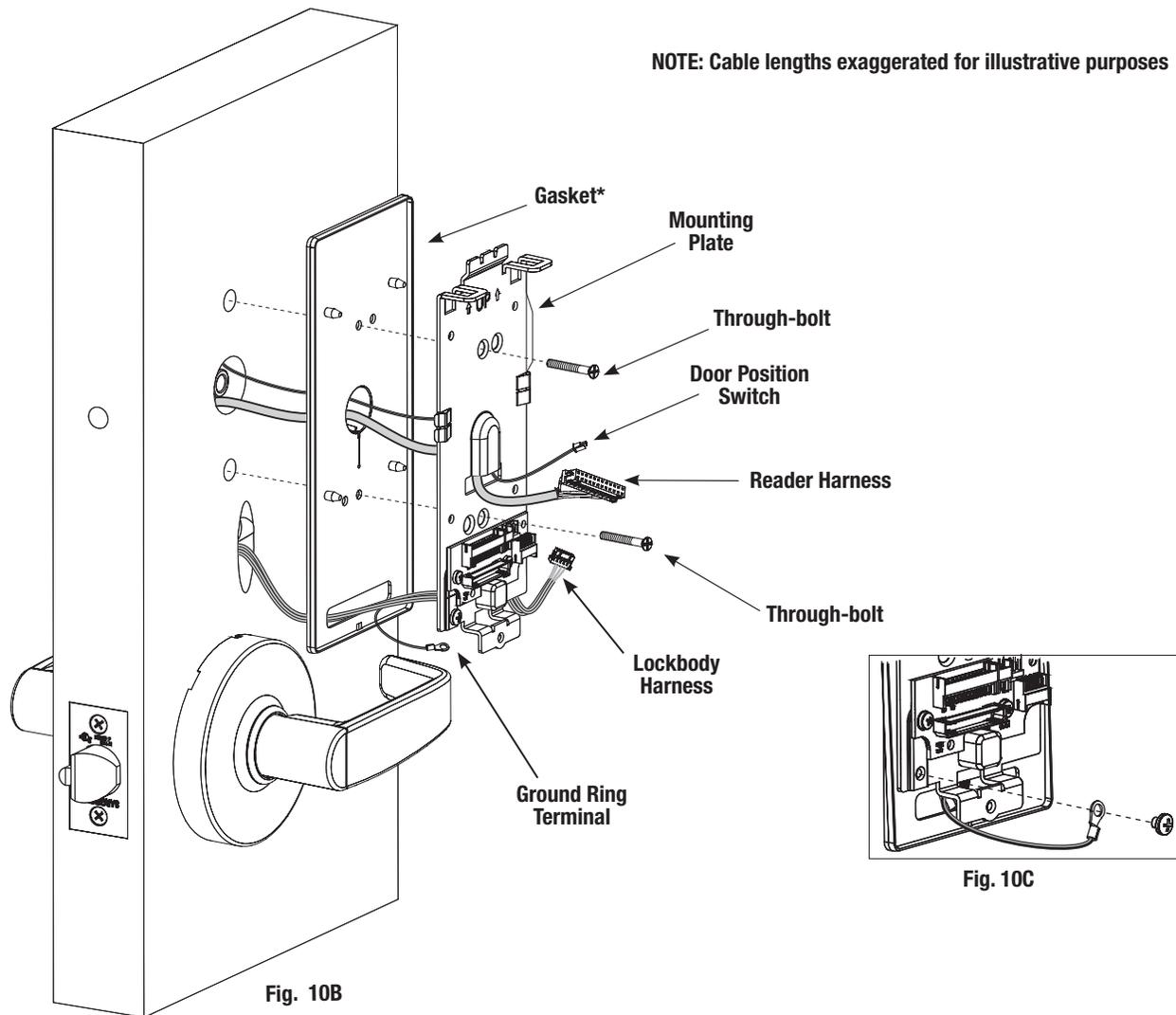
Fig. 10A

10 Outside Reader Installation (Continued)

4. Feed the reader harness and DPS connectors through the inside mounting assembly (and gasket if required*). See Figure 11B.

IMPORTANT: Do not run wires through bottom flange hole in plate (Fig. 11B, C) - it will damage wires and the controller connector. Route wires around flange, do not route wires through the flange hole (Fig. 11C).

5. Tuck excess cable into wire hole on inside of door.
6. Begin to secure the mounting assembly by partially tightening the (2) through-bolts on the inside of the door while ensuring proper alignment as you secure the reader (Fig. 11B).



6. Secure ground lug with #6-32 machine screw (Fig. 10C).

***Gasket is required for outdoor installations. Do not use gasket for fire-rated openings.**

If installing with gasket; separate gasket from mounting plate to feed cables/connectors through holes as indicated (Fig. 10B).

Once cables/connectors are fed through, reattach gasket to mounting plate.

10 Outside Reader Installation (Continued)

Installation of Connectors

CAUTION - Do not touch or allow debris to enter connector contacts.

Secure the following connectors to their respective terminals (Fig. 11D):

- A. Secure the 4-pin DPS connector.
- B. Secure the 10-pin lock body assembly connector.

*NOTE: Optional 2-pin external 9-24VDC power connector.

IMPORTANT: Do not run wires through bottom hole in plate - it will damage wires and the controller connector. Route wires around flange, do not route wires through the flange hole (Fig. 11B, D).

- C. When all connections have been made, tuck excess cable into wire hole on inside of door.

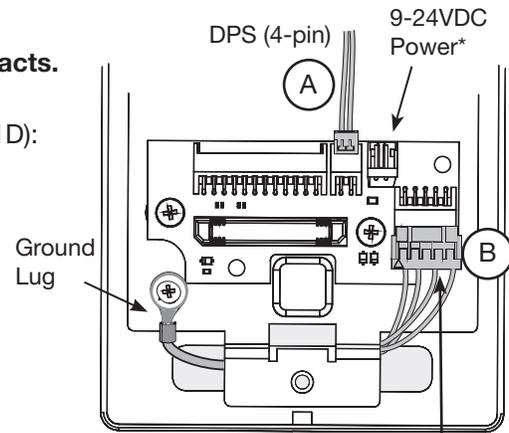


Fig. 11D

Lock Body (10-pin)

Secure Mounting Plate

- D. Secure the mounting assembly while ensuring proper alignment of outside reader and tighten the (2) through-bolts on the inside of the door to secure the reader (Fig. 11E).

- E. Secure the 24-pin card reader connector (Fig. 11F).

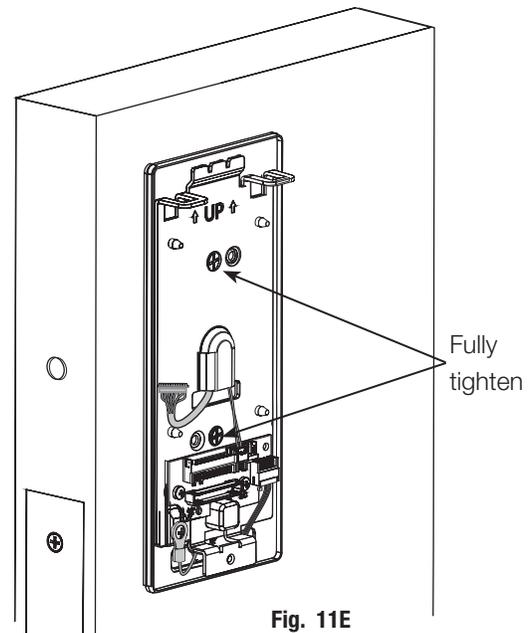


Fig. 11E

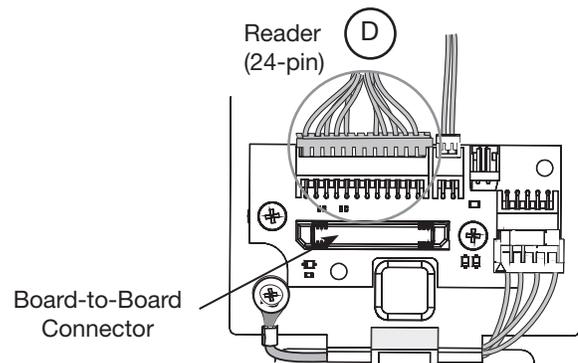


Fig. 11F

11 Installation of Inside Component Assembly (Controller)

1. Insert top tabs of controller into slots on mounting plate (Fig. 12).
2. Ensure proper alignment of board-to-board connectors while pivoting bottom of controller toward door until tab on bottom snaps securely into place on mounting plate.

CAUTION: To avoid possible damage to board-to-board connectors, care should be taken when securing controller to mounting plate. If there is resistance when securing, detach controller to determine cause before re-attaching controller.

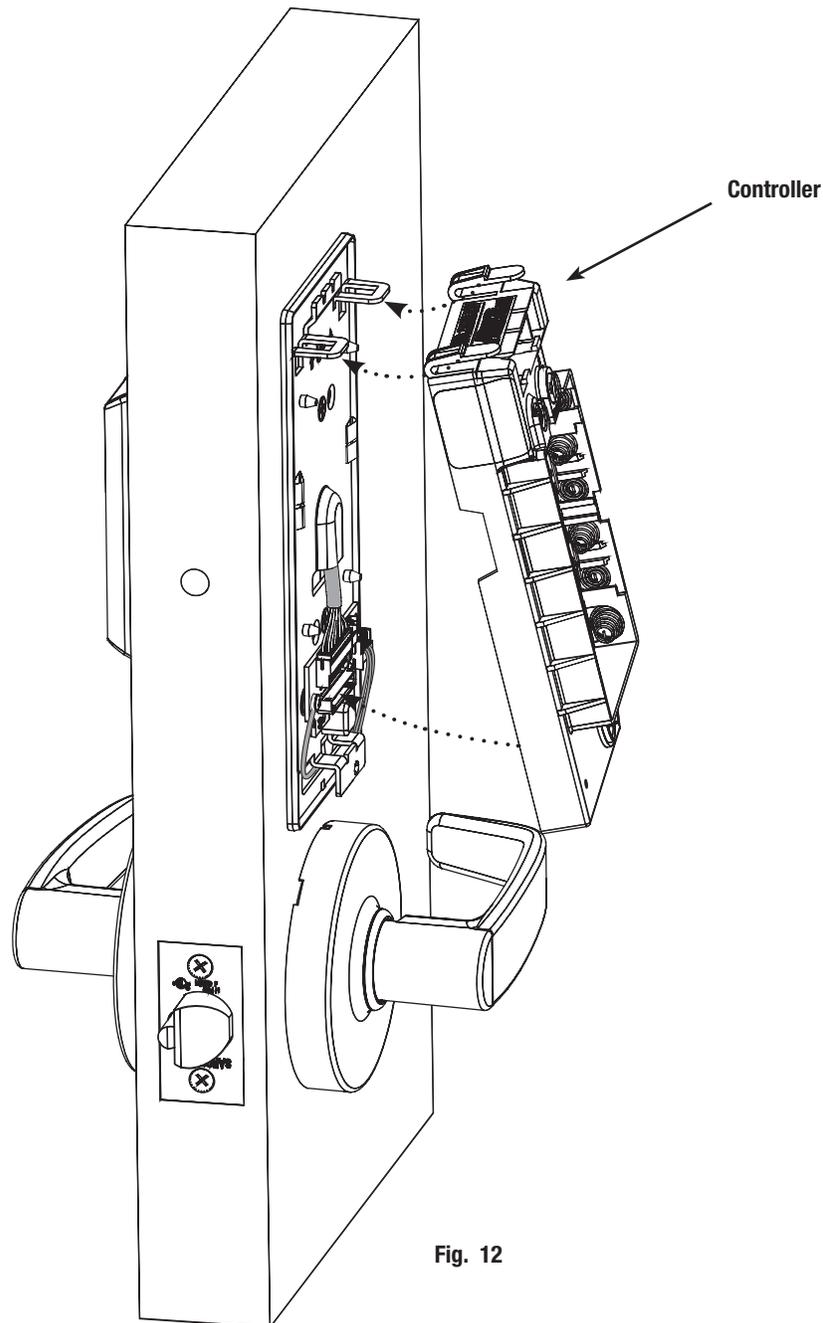


Fig. 12

13 Battery Installation

1. Place (6) "AA" alkaline batteries in the compartment, being careful to align polarity properly (Fig. 12).
2. After batteries are installed, there is a slight delay; then red and green flash*, audible "beep" and lock motor will cycle.

*See Section 8 - LED Indications for more information

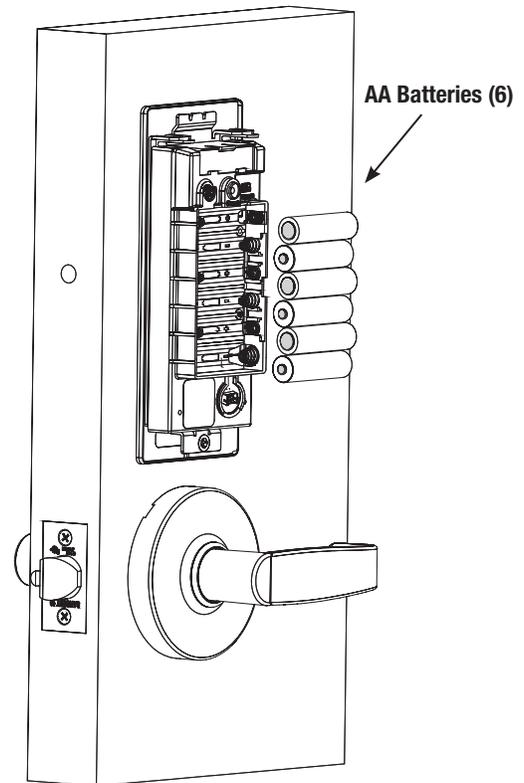


Fig. 12

14 Inside Cover Installation

1. Assemble cover by hooking top edge on inside mounting plate.
2. Carefully press bottom of cover toward door without pinching or damaging wires.
3. Secure cover utilizing security allen wrench (provided).

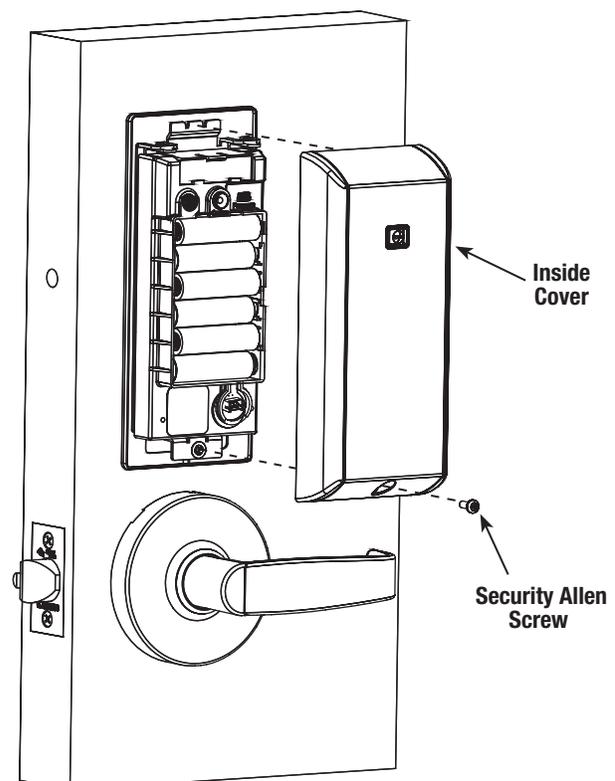


Fig. 13

7 Operational Check

1. Insert key into cylinder and rotate (Fig. 14A).
There should be no friction against lock case, wire harness or any other obstructions.
2. Check that the key retracts the latch.
The key should rotate freely.
3. Try the inside lever; ensure it retracts latch.
4. Present a valid credential* (Fig. 14B) to unlock outside lever; turn lever handle to ensure latch retracts.

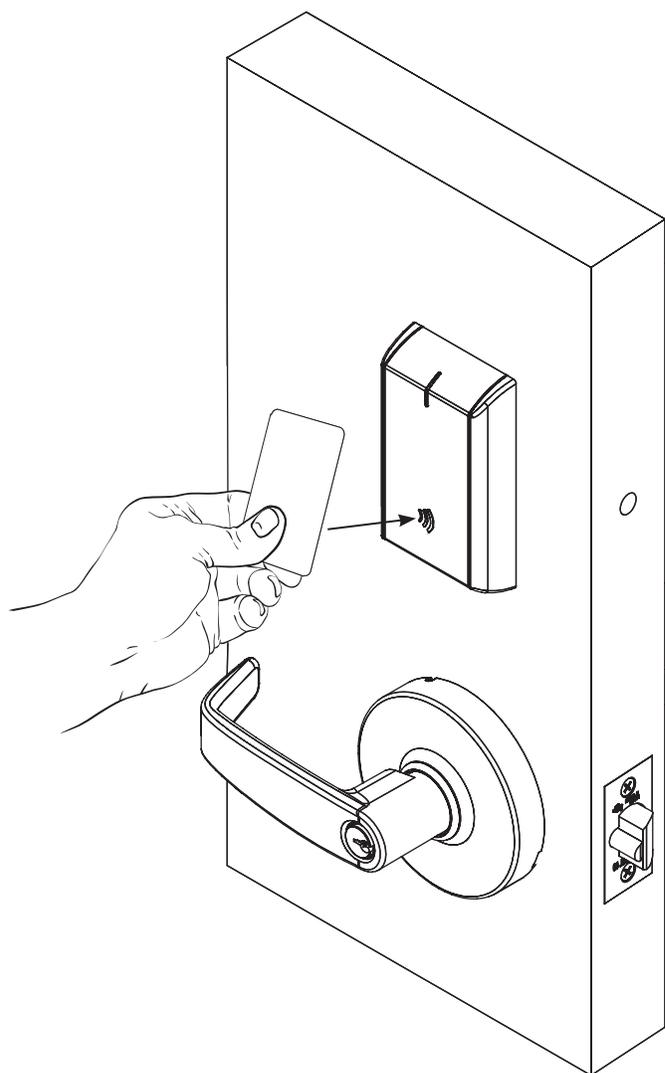


Fig. 14B

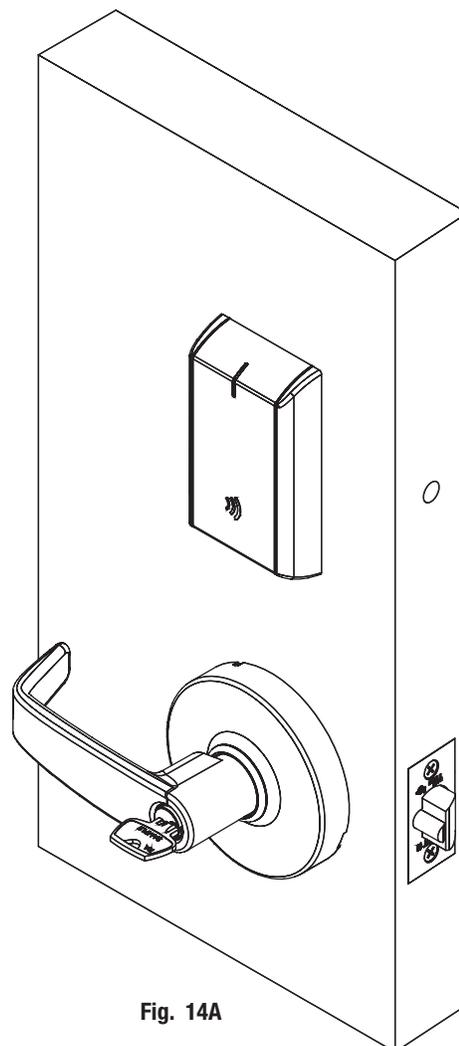


Fig. 14A

Note: The credential should approach the inscription on the reader as indicated (Fig. 14B) to ensure the credential is read properly.
Do not wave credential.

8 LED Indications

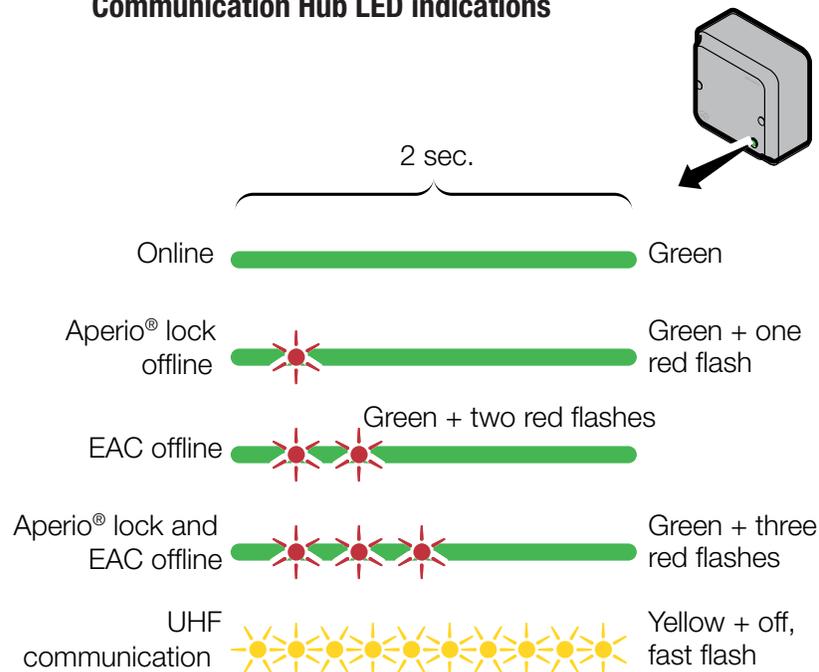
The communication hub has a single LED. It supports an optical scheme of red, green and yellow.

The indication scheme is described by the figures below:

Communication Hub LED indications

Figure 1.

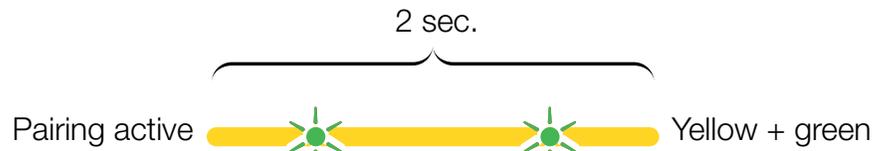
Communication hub normal operation LED indication



Some special LED indication schemes are used during lock maintenance actions:

Figure 2.

Communication hub maintenance LED indication

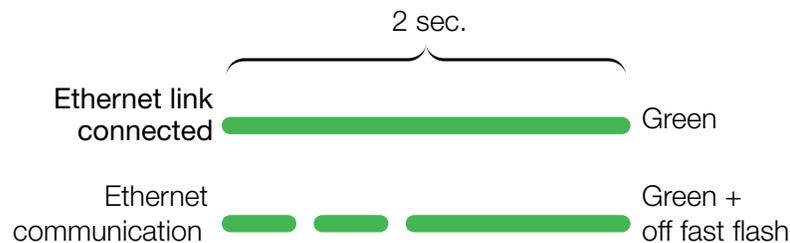


Ethernet LED indication

The LED on the AH40 communication hub indicates both the status of the Ethernet link level and ethernet communication:

Figure 3.

AH40 Communication hub Ethernet LED indication

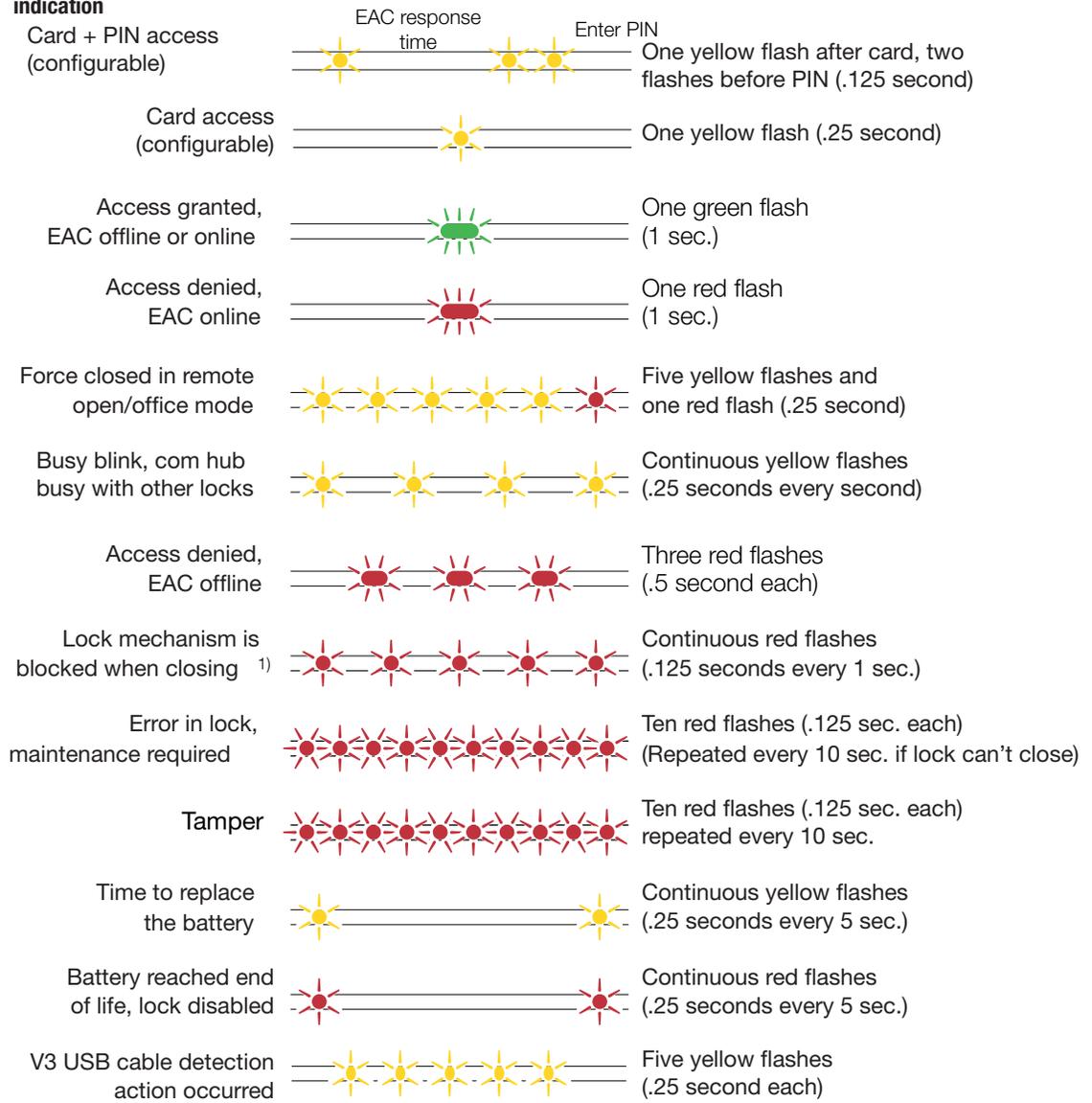


*For more information, refer to Aperio Online Quick Installation Guide Document No: ST-001322-PF Date: 2015-12-23

Lock LED indications

The lock has three LEDs. They support an optical scheme with red, yellow and green.
The indication scheme is described by the figures below:

Figure 4. Lock normal operation LED indication



1) When the lock mechanism is blocked (lock jammed) the lever must be turned to release the lock mechanism.

Some special LED indication schemes are used during lock maintenance actions:



Lock Self-Test LED indication

After replacing batteries, a Power on Self Test (POST) is performed. The result is indicated using a series of red and green LED flashes as described by the figures below.

LED indication after power up/replacement of the battery

8.3.1 Battery not fully charged

Error in lock is an indication -10 quick (125ms) red blinks, that either new batteries are not at the right voltage or a backward battery has been installed; battery not fully charged; energy counter not reset or no Power on self-test done.

Error in lock, maintenance required  Ten red flashes (.125 sec. each)
(Repeated every 10 sec. if lock can't close)

8.3.2 Test pass

1 red (1s) + 1 green (1s), Power on self-test passed, see table below.

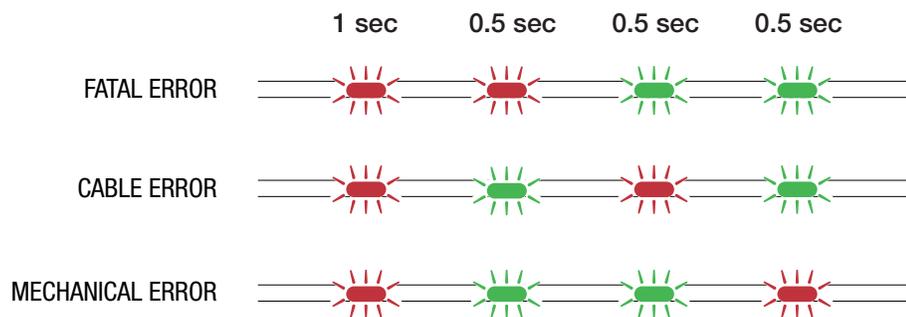
Figure 6. Lock POST LED indication

POST Successful  One red, one green flash
(1 second)

8.3.3 Test fail

1 red (1s) + 3 blinks (500ms, green or red), at least one test failed (red), see table below.

If a fatal error is detected the lock will enter an Error state and continuously indicating fatal error and will not read cards nor unlock.



FATAL ERROR	Tests core functionality. MCUs, memory and internal communication, etc.
CABLE ERROR	Tests communication between the different parts in the system, i.e. different boards connected with a wire.
MECHANICAL ERROR	Test related to moving parts of the lock.



SARGENT®

ASSA ABLOY

SARGENT Manufacturing
100 Sargent Drive
New Haven, CT 06511 USA
800-810-WIRE (9473) • www.sargentlock.com

Founded in the early 1800s, SARGENT® is a market leader in locksets, cylinders, door closers, exit devices, electro-mechanical products and access control systems for new construction, renovation, and replacement applications. The company's customer base includes commercial construction, institutional, and industrial markets.

Copyright © 2016, Sargent Manufacturing Company, an ASSA ABLOY Group company. All rights reserved. Reproduction in whole or in part without the express written permission of Sargent Manufacturing Company is prohibited.

ASSA ABLOY is the global leader in door opening solutions, dedicated to satisfying end-user needs for security, safety and convenience.

A8189B - 07/16