EcoFlex™ Electrified Mortise Locks (NAC-)
with High-Security Monitoring Options
# Installation and Wiring Instructions

Attention Installer

Please read these instructions carefully to prevent missing important steps.

Please Note: Improper installations may result in damage to the lock and void the factory warranty.

Important: The accuracy of the door preparation is critical for proper functioning and security of this lock.

Misalignment can cause premature wear and a lessening of security.
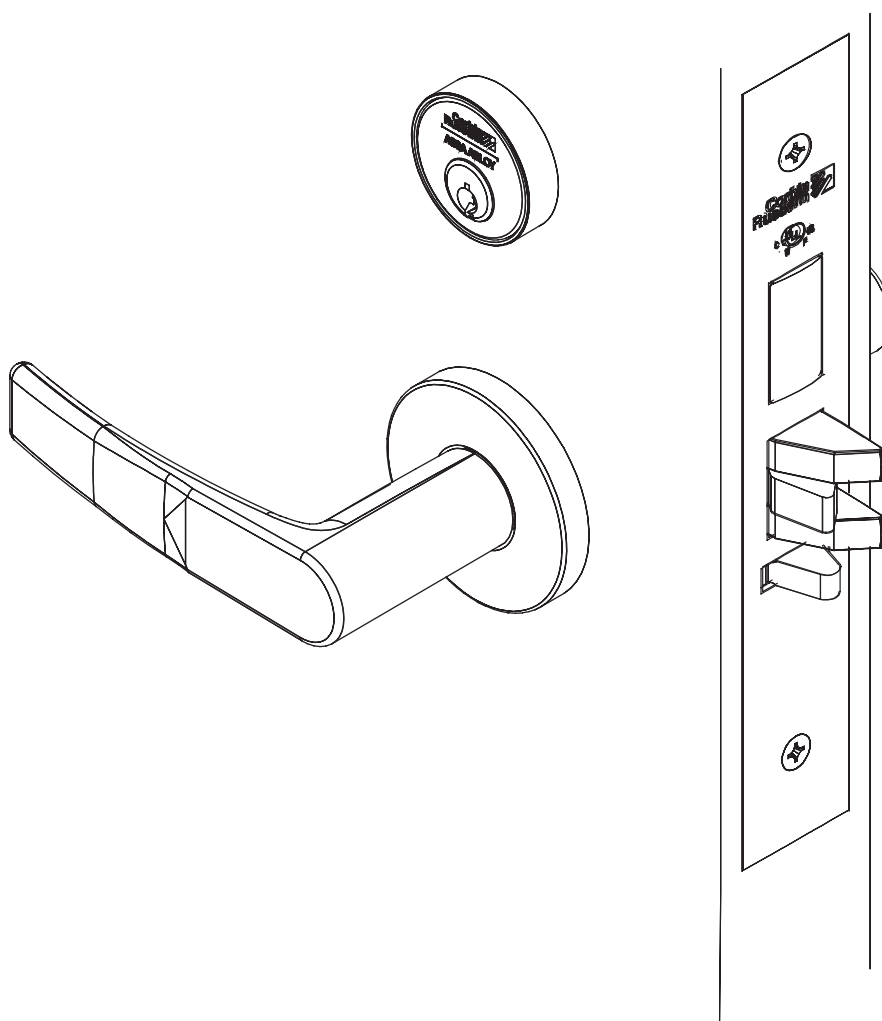
For Technical Assistance call Corbin Russwin at 1-800-810-WIRE (9473)

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Installation and Wiring Instructions**

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Table of Contents

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1) Regulatory Compliance

Changes or modifications to this unit not expressly approved by the party responsible for compliance 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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux radiations de la FCC définies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et votre corps. Cet émetteur ne doit pas être co-localisé ou fonctionner en conjonction avec une autre antenne ou un autre émetteur.

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.

2) Warning

This product can expose you to lead which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to: **www.P65warnings.ca.gov**.

Ce produit peut vous exposer au plomb qui, dans l'état de la Californie, est reconnu pour causer le cancer, des anomalies congénitales ou d'autres problèmes de reproduction. Pour plus d'informations, visitez: **www.P65warnings.ca.gov**.

Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and Corbin Russwin 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.

ATTENTION OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

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

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3) General Description

The NAC- mortise lock provides increased security over typical electrified mortise locks with dead bolt, dead bolt monitoring, request to exit monitoring, and door status monitoring built into a single lock. This lock can also be specified with factory installed and tested end-of-line resistors monitoring the request to exit and door position outputs.

The high security monitoring options of our industry-leading Integrated Wired locks are now available in a mortise lock that can be used as a stand-alone electrified lock or in conjunction with a wall reader.

Every NAC lock is shipped with door position and request to exit monitoring installed. NAC locks ordered with deadbolt are supplied with deadbolt monitoring.

4) Specifications / Features

If your lock is configured with End of Line Resistors, reference instruction sheet FM406 for the wiring of RX & DPS outputs.

- Latch - Stainless steel, 3⁄4" projection
- Deadbolt - Stainless steel, 1" projection
- Guardbolt - Stainless steel, non-handed
- Handed - Easily field reversible without opening case
- Case - 12 gauge heavy duty wrought steel
- Fail safe or fail secure operation (specified when ordering or easily field-configurable)
- Operates from 12-24VDC
- UL and CUL listed for use on Fire Doors

Electrical Specifications
12/24VDC System
- Actuator draw = .015 Amp continuous
- Maximum 2 locks per 1 Amp power supply (1/2 Amp peak current draw)

Example:
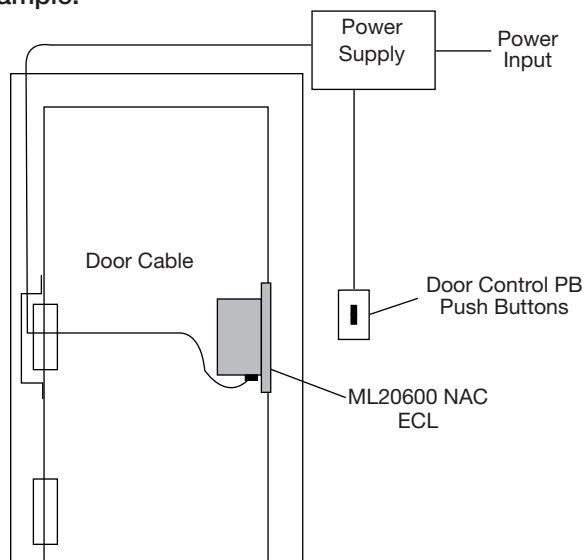
The system is designed to be installation-friendly with connectors from the electric hinge through the door to the lock. External electrical connections are made to a harness that extends from the frame.
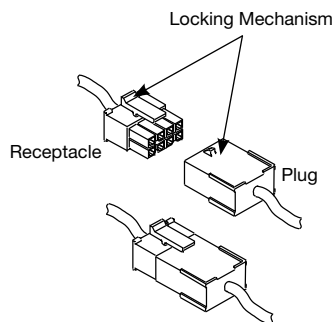
ElectroLynx®is a registered trademark of ASSA ABLOY, Inc.

IMPORTANT:
The plug and receptacle connectors are designed to mate and lock together as shown in the illustration. Plug the connectors into each other with the locking mechanism aligned as indicated.

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5) Product Illustration
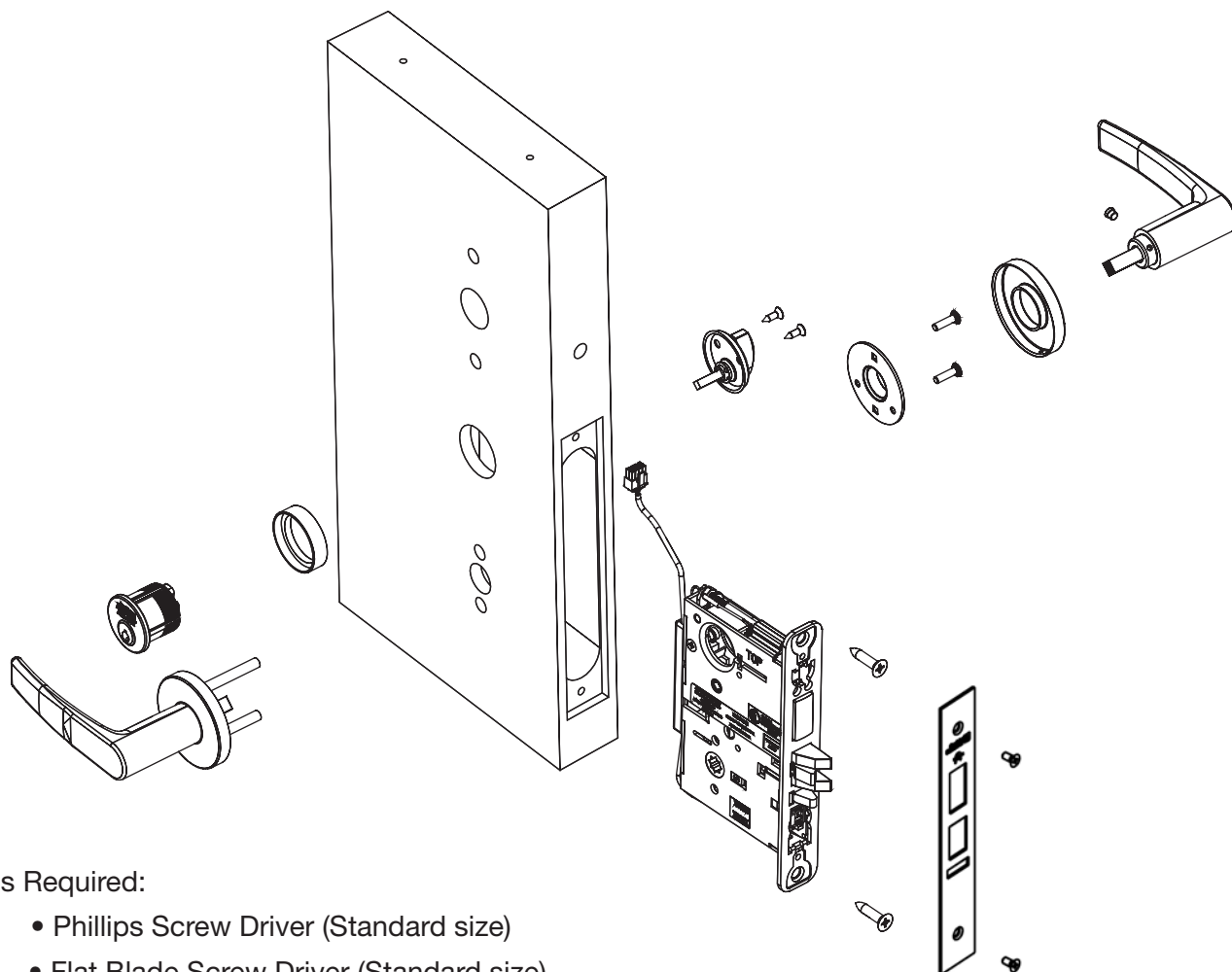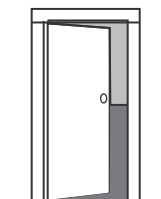

Tools Required:

- Phillips Screw Driver (Standard size)
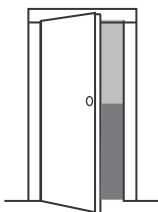- Flat Blade Screw Driver (Standard size)
- 1/8" Allen Wrench
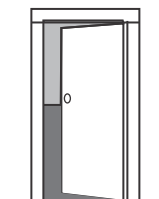
6) Installation Instructions

1. **Verify Hand and Bevel of door.** Illustrations shown are as viewed from the outside or secure side of opening.
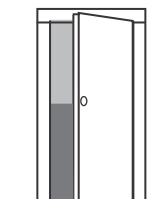
Left Hand
Hinges Left.
Open Inward.
"LH"

Left Hand
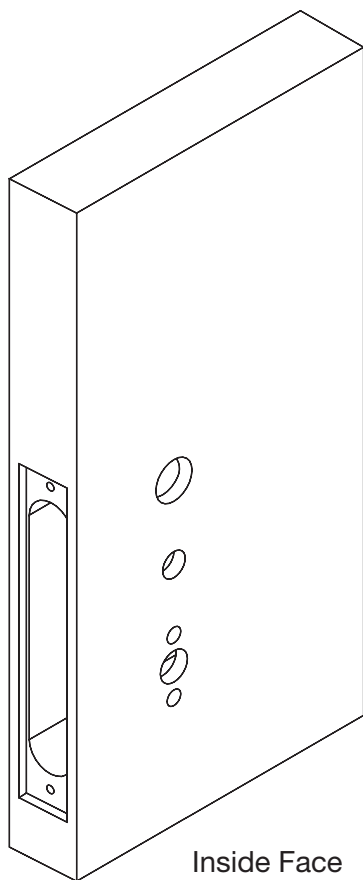Reverse Bevel
Hinges Left.
Open Outward
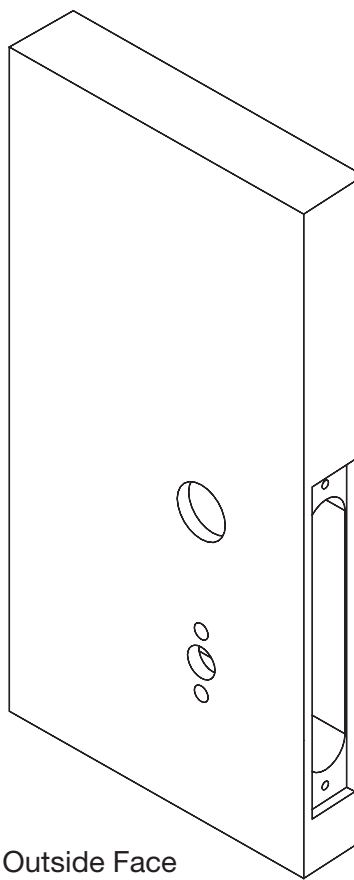"LHRB"

Right Hand
Hinges Right.
Open Inward.
"RH"

Right Hand
Reverse Bevel
Hinges Right.
Open Outward
"RHRB"

2. **Prep door according to supplied door marker.** For door manufacturer templates, visit **www.corbinrusswin.com**.

Inside Face
of Door

Outside Face
of Door

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6

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6) Installation Instructions (Continued)

3. Handing of Lock Body

1. Move the red locking screw to side of lock body being locked (Fig. 1)

2. Push in latch then depress catch plate with screw driver (Fig. 1)

3. Pull latch out of lock body and turn latch over (Fig. 2)

Catch Plate

RED Locking Screw

Figure 1

Figure 2
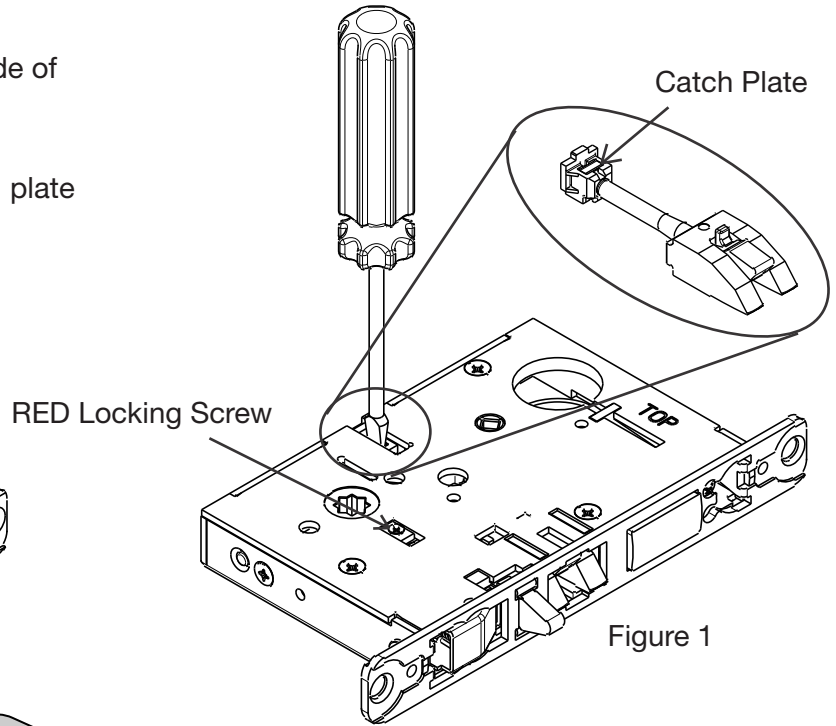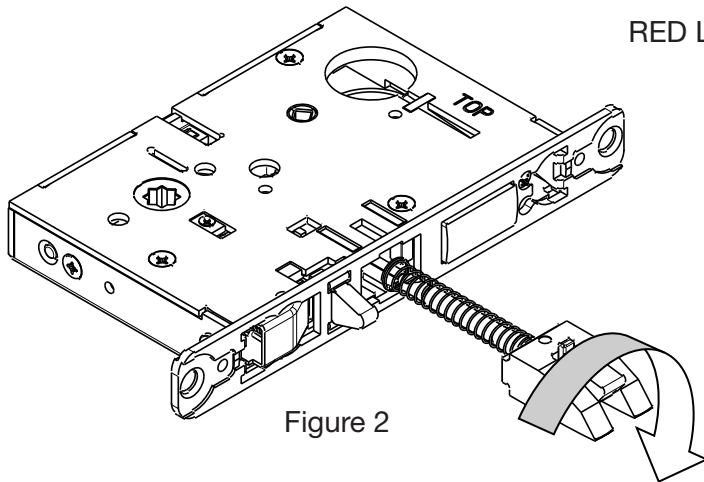
Step 4) Push in latch while holding screw driver behind latch tail (Fig. 3)

Note: Push in latch until catch plate is no longer depressed (Fig. 4)

Step 5) Rotate lock front to match bevel of door as shown (Fig. 5)

MAKE SURE CATCH PLATE IS EVEN W/TOP SURFACE

GOOD   BAD

Figure 4

Figure 5

Figure 3
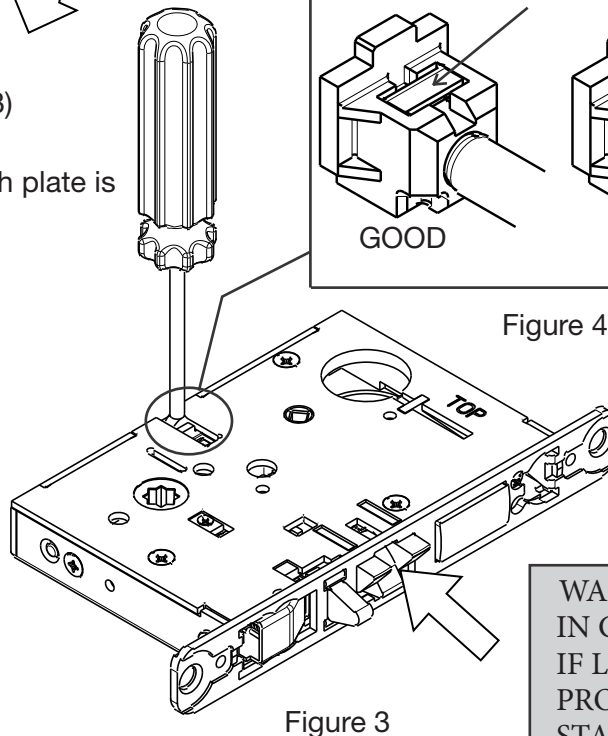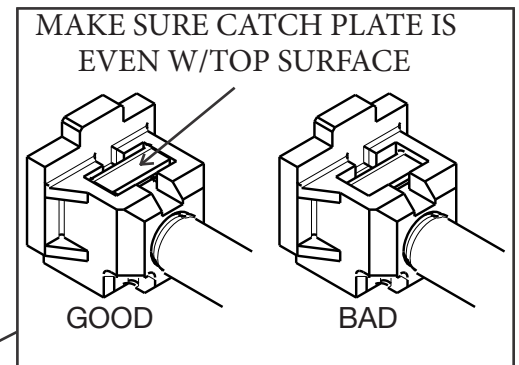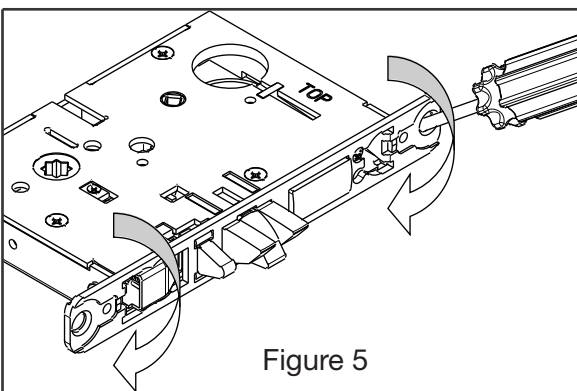
WARNING: LOCK-IN CAN OCCUR IF LATCH IS NOT PROPERLY IN-STALLED

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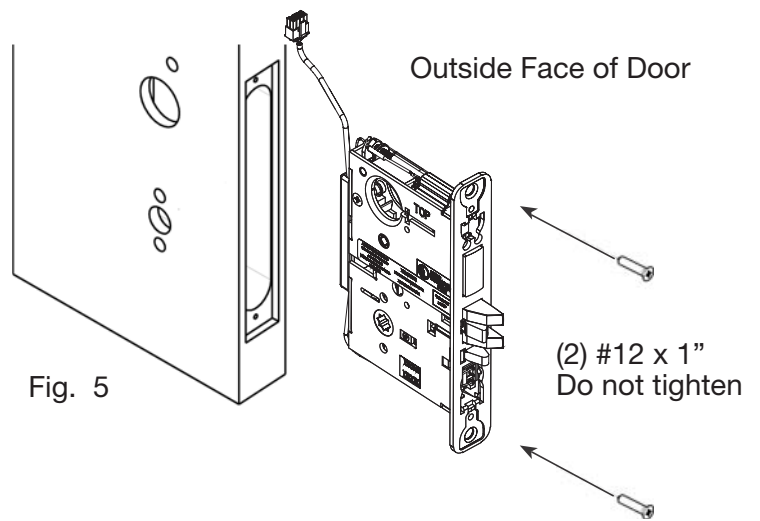
6) Installation Instructions (Continued)

4. Configuring the Fail Safe/Fail Secure and RX* DIP switch settings:

Please note that the lock must be cycled once in order for setting changes to take effect.

⚠ Check polarity:
Verify + (red) wire

*RX output only configurable for locks with end-of-line resistance monitoring. Default is normally open.
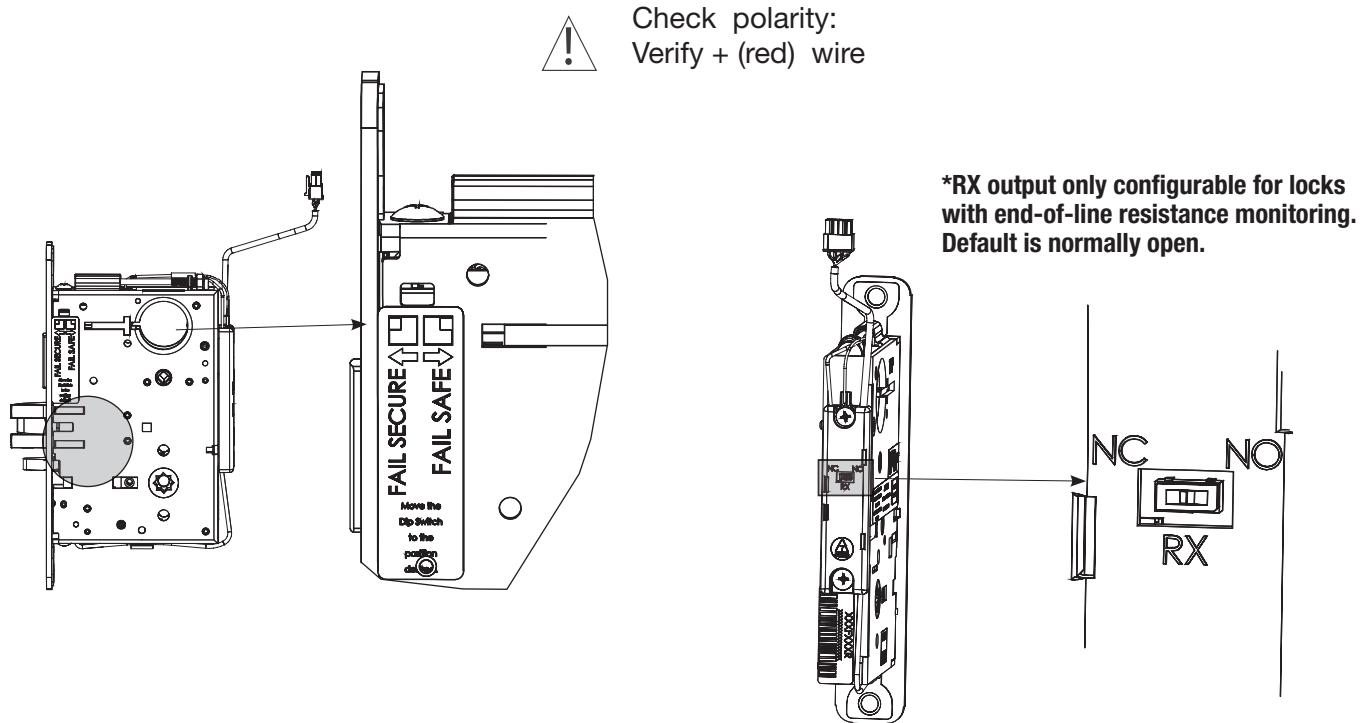
5. Install Lock Body into Door:

a. Plug mortise lock harness into ElectroLynx® harness in door (Fig. 5).

Important: Door must remain open during installation. Use door stop.

b. Install, but do not tighten two #12 x 1" combination screws through lock body (Fig. 5).

Fig. 5

Outside Face of Door

(2) #12 x 1"
Do not tighten

6) Installation Instructions (Continued)

6. Install Cylinder:

    a. Thread cylinder into lock body (Fig. 6a).

      Note: Make sure cylinder is oriented correctly (Fig. 6a1).

    b. Tighten cylinder clamp using 7/64" allen wrench (provided) (Fig. 6b).

    c. Turn the key to make sure that lock functions correctly (latch, deadbolt, and key).
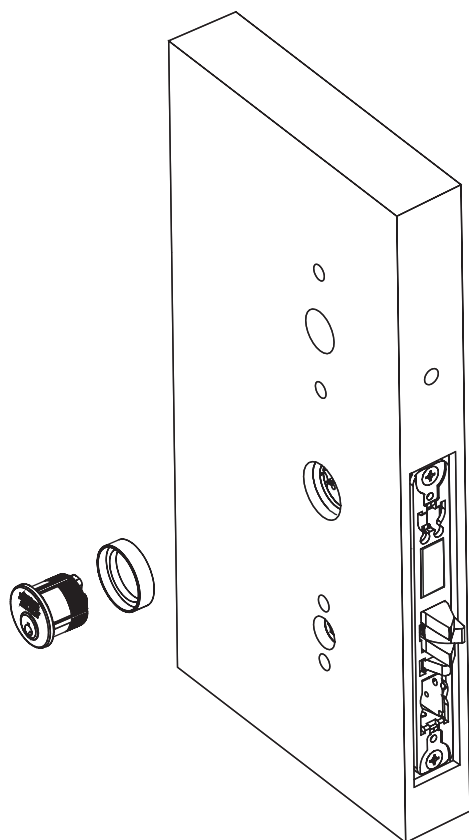
Fig. 6b1

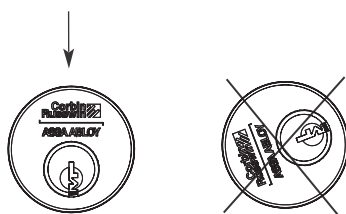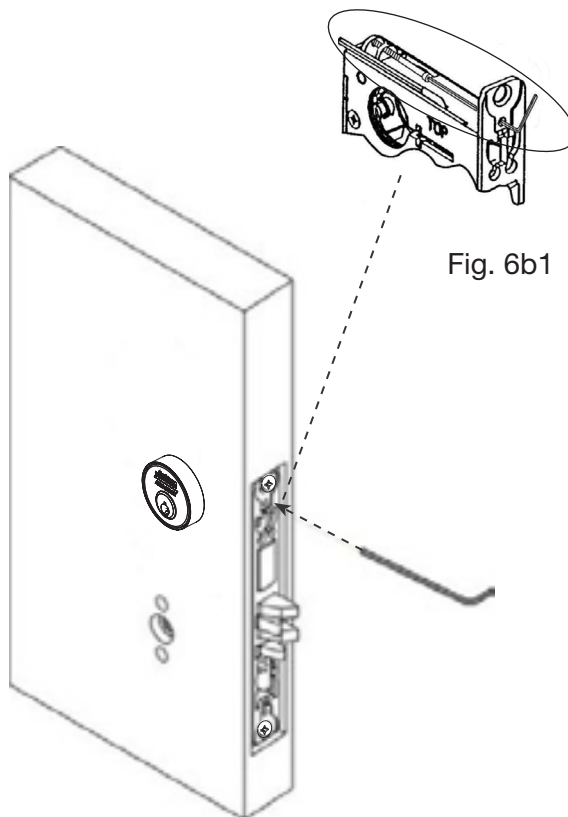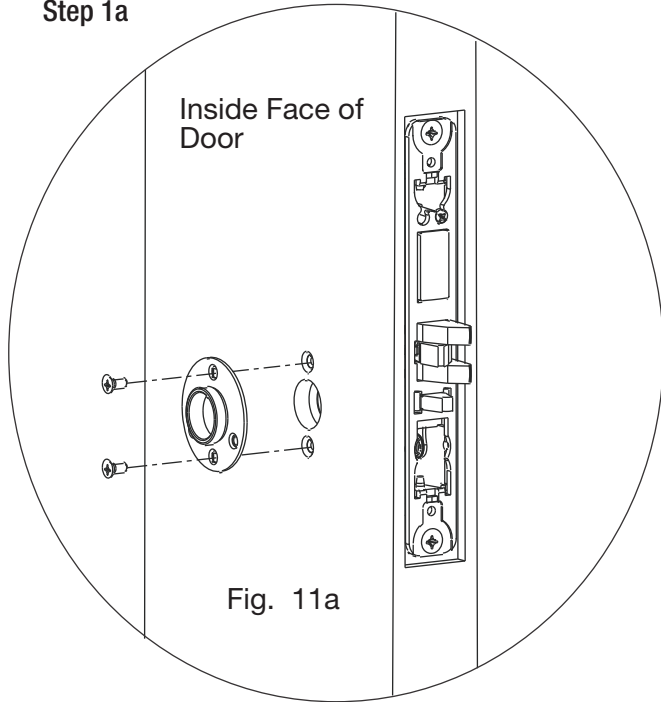Position cylinder so that the logo is right-side up.

Fig. 6a1

Fig. 6b

EcoFlex™ Electrified Mortise Locks (NAC-)
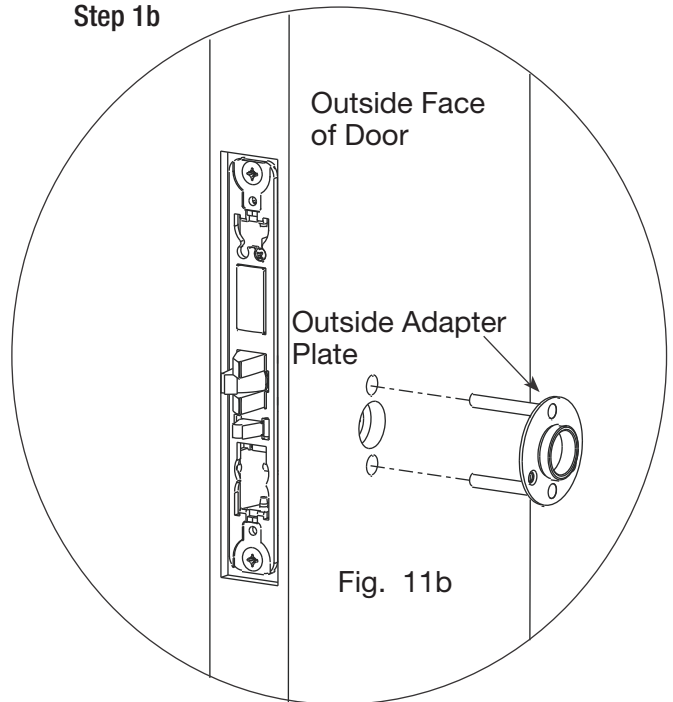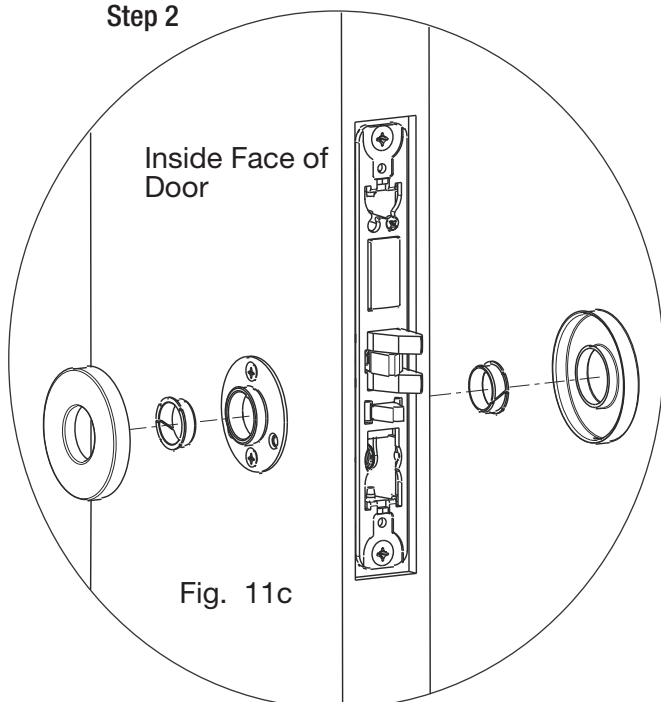# with High-Security Monitoring Options
Installation and Wiring Instructions

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6) Installation Instructions (Continued)

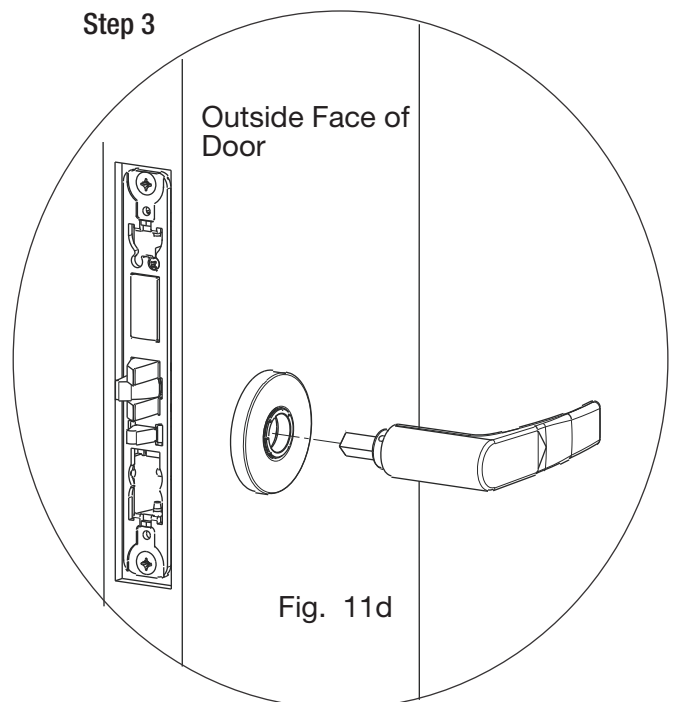**7a. Install Standard Lever Trim. Refer to 7b on following pages for MUSÉO Trim:**

Step 1a

Inside Face of Door

Fig. 11a

Step 1b

Outside Face of Door

Outside Adapter Plate

Fig. 11b

Step 2

Inside Face of Door

Fig. 11c

Step 3

Outside Face of Door

Fig. 11d

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6) Installation Instructions (Continued)

Step 4

Inside Face of Door

Fig. 4a

Use Correct Spindle Orientation

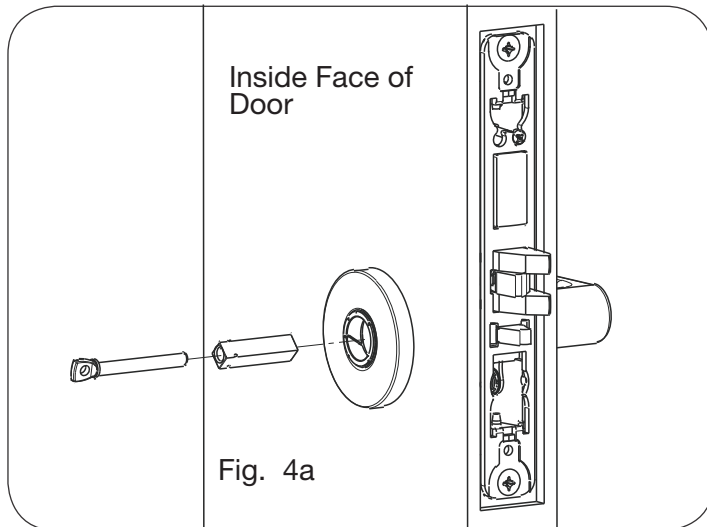STANDARD   MUSÉO

Lever   Lever
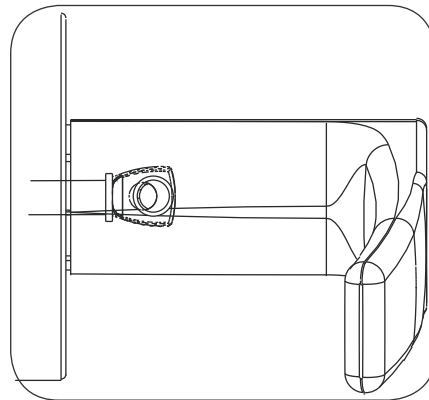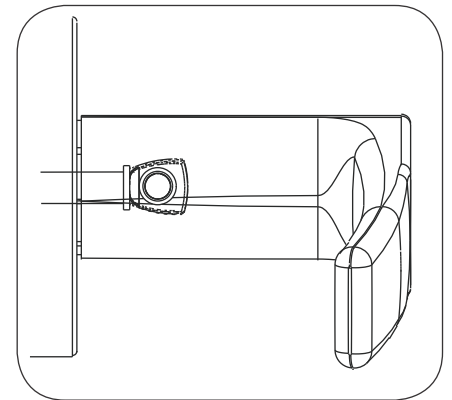
Good   Bad
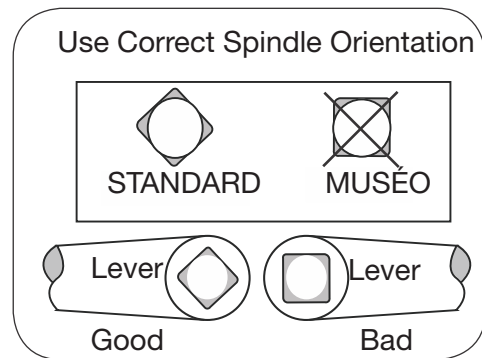
Fig. 4b

Step 5   Align adjustment bolt with threaded hole in lever
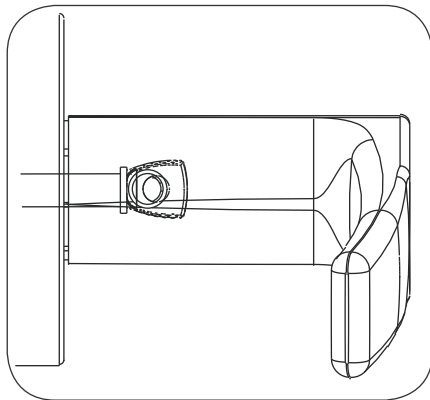
Adjustment bolt needs to be threaded in farther.
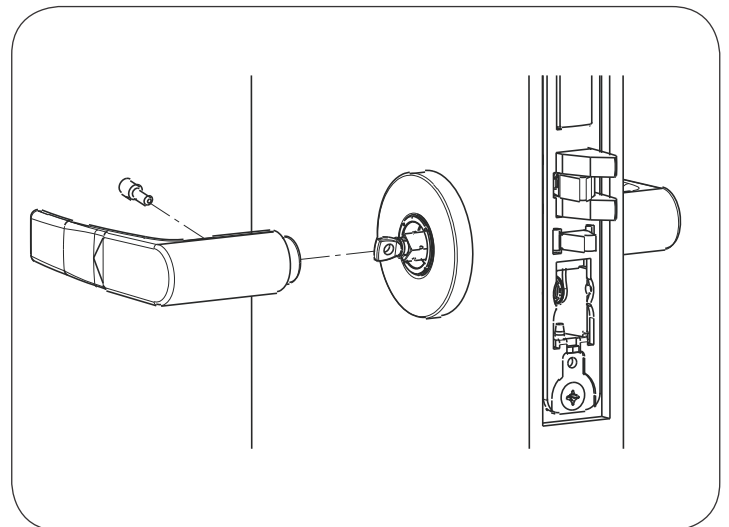
Adjustment bolt needs to be unthreaded.

Adjustment bolt fully aligned.

Step 6

Notes:

- Unthread adjustment bolt approximately four turns for a good starting point (After being fully tightened).

- Make sure O/S lever is fully inserted into adapter plate before aligning adjustment bolt.

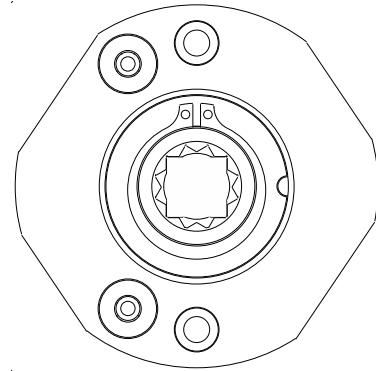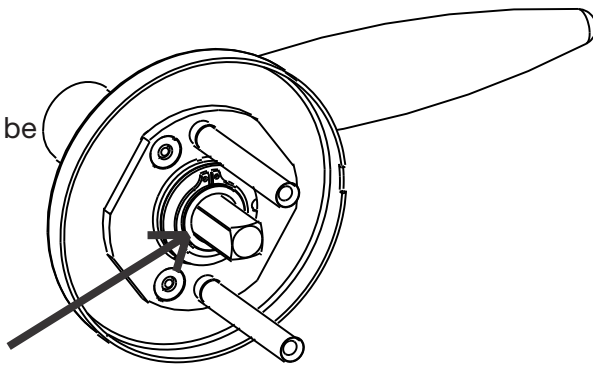## 6) Installation Instructions (Continued)

7b.   Install MUSÉO Trim:

1.)

Thread adapter plate hub into
lever and fully tighten

Align adapter plate hub with square
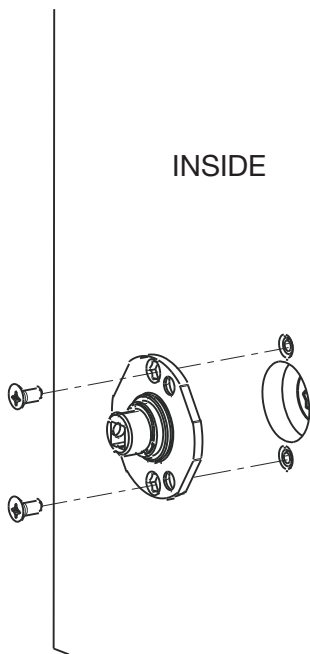hole in lever; keeping hub as tight as possible

NOTE: Spindle can be
used to help thread
hub into lever
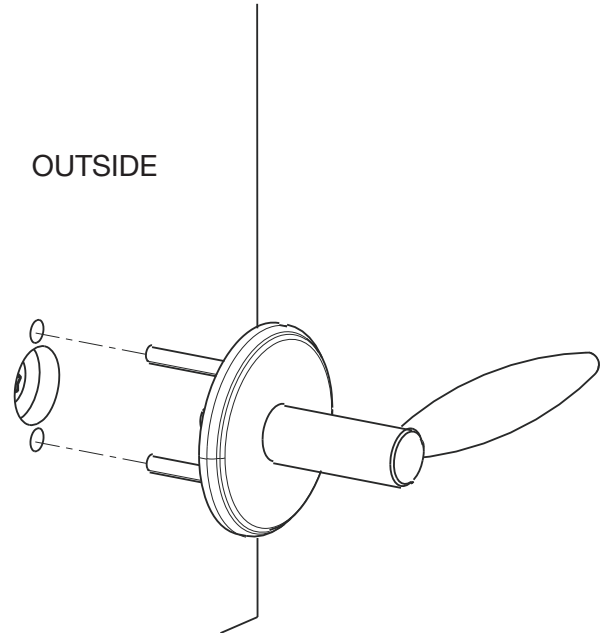
Adapter Plate Hub

2.)

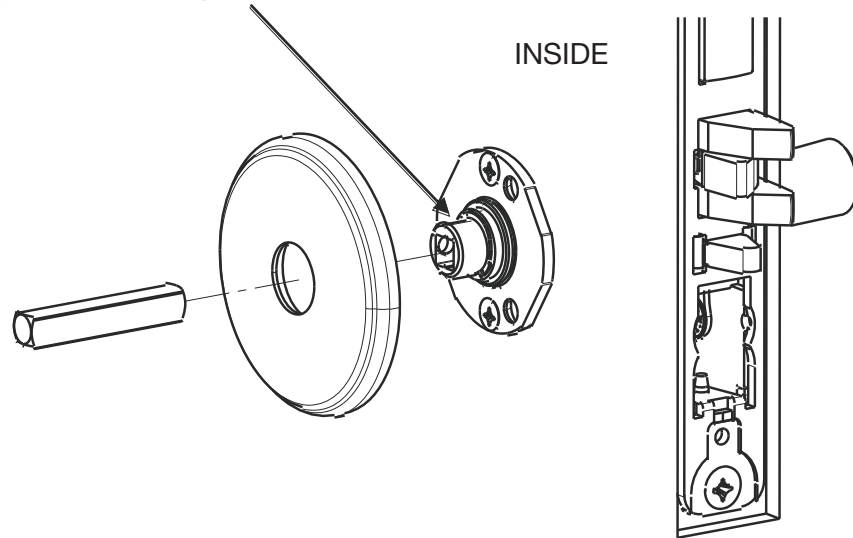INSIDE   OUTSIDE

6) Installation Instructions (Continued)

3.)

Set screw in hub faces away from door edge.
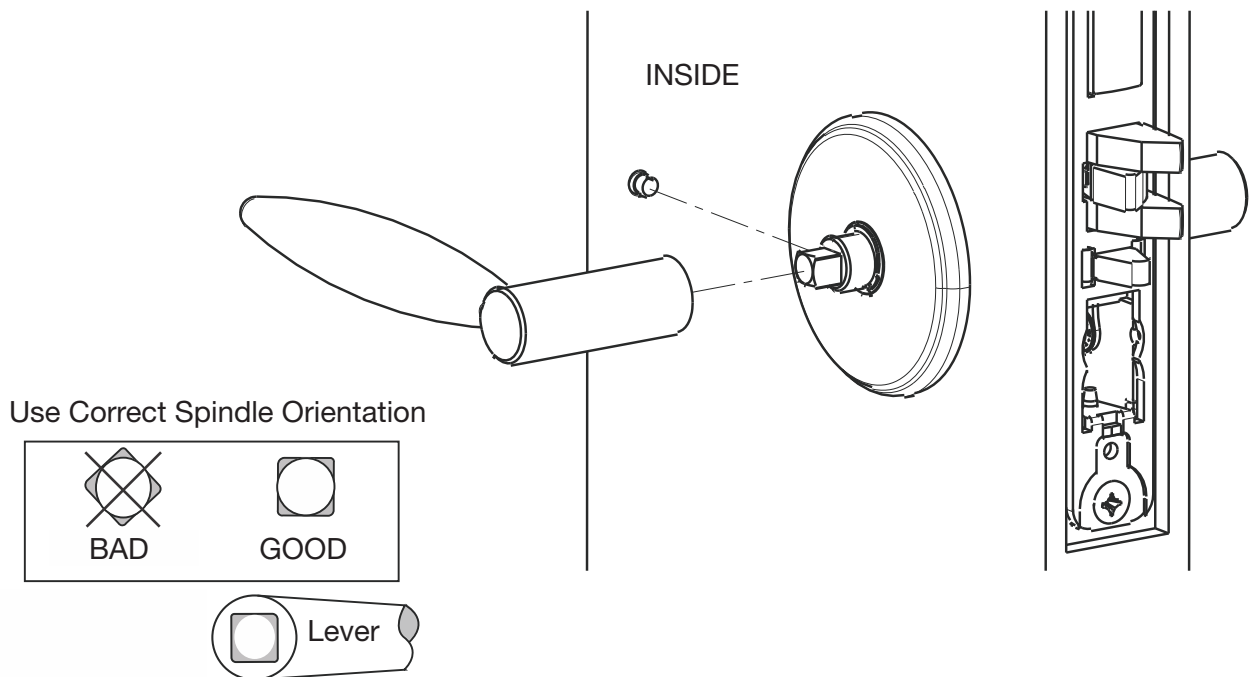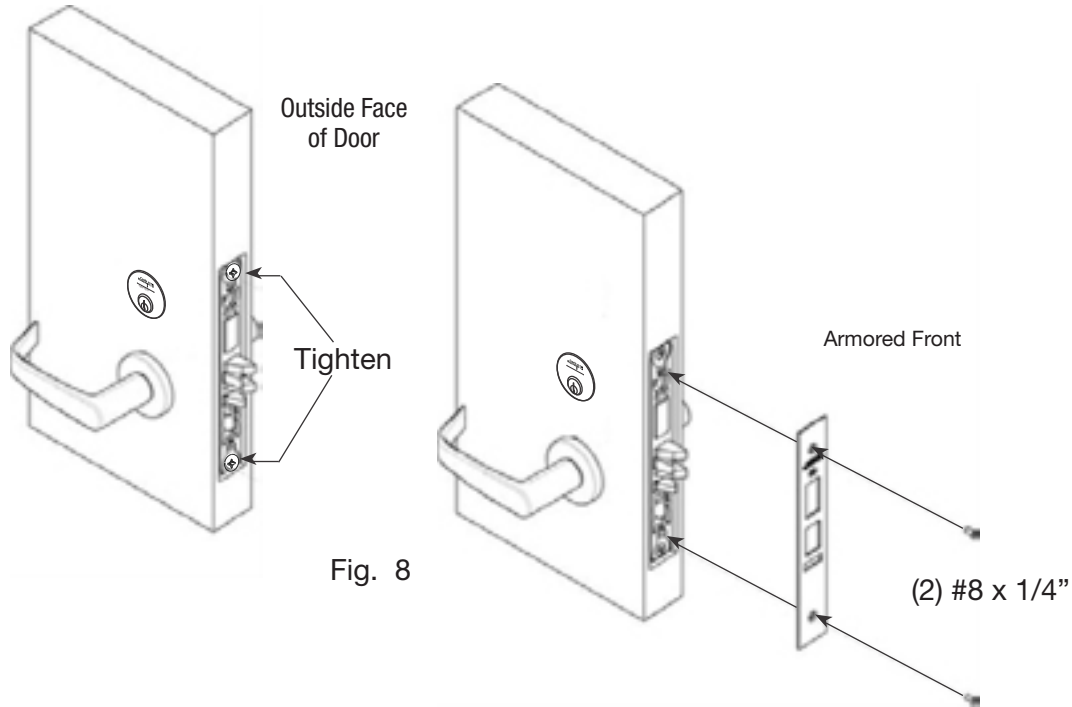
INSIDE

4.)

INSIDE

Use Correct Spindle Orientation

BAD   GOOD

Lever

6) Installation Instructions (Continued)

8. **Install Armored Front:**

    a. Tighten (2) screws through lock body.

    b. Attach armored front with two #8 x ¼" screws (Fig. 8).

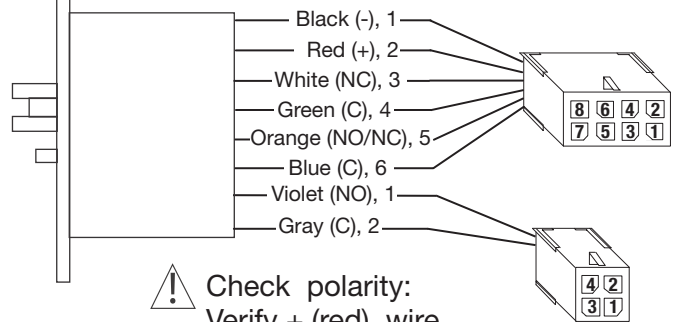Outside Face of Door

Tighten

Armored Front

Fig. 8

(2) #8 x 1/4"

7) Wiring Diagrams

Lock Schematics

8-PIN

- Black(-), 1
- Red(+), 2
- White (NC), 3
- Green (C), 4
- Orange (NO/NC), 5
- Blue (C), 6

12-PIN
(Recommended)

- Black (-), 1
- Red (+), 2
- White (NC), 3
- Green (C), 4
- Orange (NO/NC), 5
- Blue (C), 6
- Violet (NO), 1
- Gray (C), 2

⚠ Check polarity:
Verify + (red) wire
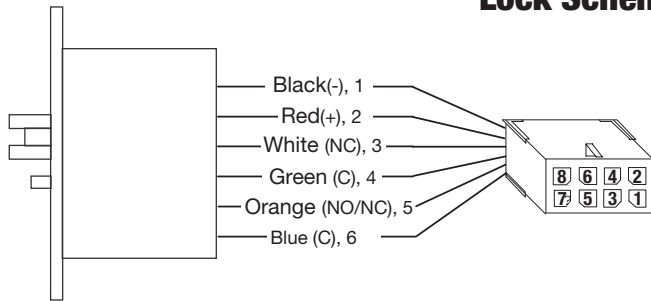
Connector	8-PIN MOLEX								4-PIN MOLEX			
Circuit	1	2	3	4	5	6	7	8	1	2	3	4
Connection	12/24VDC Lock Input		Door Position		Request to Exit		Empty	Empty	Deadbolt Monitoring		Empty	
Wire Color	Black	Red	White	Green	Orange	Blue			Violet	Gray		
Description	NEG	POS	NC	COM	NO/NC	COM			NO	COM		

If your lock is configured with End of Line Resistors, reference instruction sheet FM406 for the wiring of RX & DPS outputs.

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8) Operational Check

For mortise locks with cylinders:

a. Insert key into cylinder and rotate: There should be no friction against lock case, wire harness or any other obstructions.

b. The key will retract the latch: Key should rotate freely.

c. Inside lever: Ensure it retracts the latch.

d. Close door: Ensure latch fully extends and does not bind.

e. Ensure that dead bolt can be projected and retracted by key and inside turn (if present).

Lock/UnLock Check:

a. Turn power ON.

b. Send unlock signal from control panel.

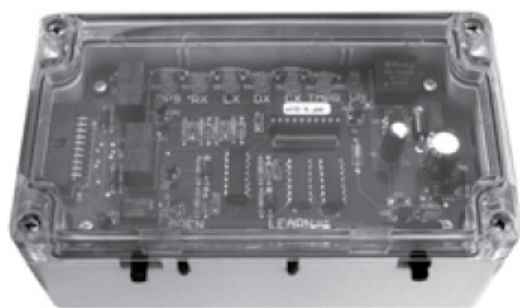c. Verify lock unlocks and re-locks at desired intervals.

Switch Signal Check:

d. Monitor switch signals at control panel and verify each switch activates correctly based on chosen wiring configuration (NO/NC).

e. If end-of-line resistors are present on the RX (request-to-exit) and door status outputs, verify correct signaling by referencing instruction sheet FM406.

The ASSA ABLOY **Wiegand Test Unit** verifies your installation in the field. The test unit checks for proper wiring, card reader data integrity, lock functionality including lock/unlock, door position status, and request-to-exit (REX) status.

In addition, this tool provides product demonstration abilities to highlight the product's features and capabilities.

Wiegand Test Unit

Feature	WT1	WT2
12 or 24VDC solenoid lock voltage adjustable	X	X
Operates as Fail Safe or Fail Secure	X	X
"Learn" mode allows testing of specific cards without programming at the panel level	X	X
Card reader data integrity is validated at test unit	X	X
Works with SE LP10	X	X
Displays detailed Wiegand data, including hexadecimal string and total bits received		X
Displays measured end-of-line resistor values (if applicable)		X

PHR Function Check (if ordered):

f. Check powered lock and unlock function.

g. Throw dead bolt.

The lock should not lock or unlock (from outside of door) when dead bolt is projected.

The ASSA ABLOY Group is the global leader in access solutions. Every day, we help billions of people experience a more open world.

ASSA ABLOY Opening Solutions leads the development within door openings and products for access solutions in homes, businesses and institutions. Our offering includes doors, frames, door and window hardware, locks, perimeter fencing, access control and service.

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Fax: 800-447-6714

corbinrusswin.com

For installation assistance contact Corbin Russwin
1-800-810-WIRE (9473) • techsupport.corbinrusswin@assaabloy.com

FM405 05/20