TRINE ACCESS TECHNOLOGY
1440 Ferris Place · Bronx · New York · 10461-3699

AXION PREMIUM ELECTRIC STRIKES

TRINE 3000 SERIES ELECTRIC RELEASES

Model Number:
3234 - Fail Secure
3234RS - Fail Safe

Model Number:
3234W - Fail Secure
3234WRS - Fail Safe

Model Number:
3478 - Fail Secure
3478RS - Fail Safe

Congratulations on the purchase of this quality TRINE security product.

This product has been designed to install easily, perform reliably, and provide years of trouble free security.

In order for this product to fulfill its objectives, certain steps must be performed by the installer, and certain site conditions must be satisfied.

Before proceeding with your installation, please review the following list of items. If you have any questions first please finish reading this document to see if the information you require is contained in this document, otherwise please call:

TRINE TECH SUPPORT (718) 829-2332 EXT. 425,
or visit the TRINE Website www.TrineOnline.com.

The TRINE Model #3234, #3234W & Model #3478 are designed for new installation or retrofitting into metal, wood and aluminum door frames. Be sure that you have ordered the correct TRINE strike for your application.

STANDARD FEATURES

- Face Plate - 3234, 2-3/4" x 1-1/8"
  3234W, 3-3/4" x 1-1/4"
  3478, 4-7/8" x 1-1/4"
- Mortise Type - 1" backset (**Smallest in the Industry**)
- Durability - 500,000 Life Cycles
- Holding Force - 1,200 Pounds (Static Force)
  - 70 ft-lb (Dynamic Force)
- All stainless steel locking parts
- Solid Cast Latch - Stainless Steel
- Cavity: Width 5/8", Height 1-1/8", Depth 1/2"
- Non-handed
- Heavy-duty latch spring
- Silent Operation
- Intermittent Duty with the Standard versions
- Intermittent and Continuous Duty with the LC versions
- Micro Solenoid assembly
- Fail-Secure:(standard action) unlocks with power
- Fail-Safe: RS (reverse action) unlocks when power is off

	FINISHES		
	3234	3234W	3478
US3 (Polished Brass)	●	●	●
US4 (Satin Brass)	●	●	●
US10B (Dark Bronze)	●		●
US26 (Bright Chrome)			●
US26D (Satin Chrome)		●	
US32D (Satin Stainless Steel)	●		●

RECOMMENDED INSTALLATION SEQUENCE:

1. Verify strike is proper for the door into which it is to be installed.
2. Verify that you have all parts required to complete the installation.
3. Verify that the new electric release operates with the existing power supply/control circuit (retrofit applications); or verify that the new power supply/ control circuit operates the new electric release (new installations).
4. Locate and clearly mark the circuit breaker which provides ac power to your transformer/ power supply or that supplies power to the receptacle into which you will plug your transformer/power supply. This will enable you to safely cut power during installation, and permit troubleshooting if required.
5. Verify that the receptacle or circuit providing power to the electric release is not controlled by a wall switch, time clock, or other external device.
6. Verify that the circuit/receptacle used for the locking system is not powering any other equipment. Remember that interruption of power to your locking system could prevent access into the protected area, or jeopardize the security/safety of the site's occupants.
7. Verify that the door and associated components are in good working order.
8. Install electric release as per attached guidelines.
9. Wire electric release as per attached guidelines.
10. Perform final test of completed installation.

LUBRICATION: The TRINE Model #3234, #3234W & #3478 **do not require lubrication**. Lubricating these units will actually hamper their performance by attracting dust and debris into the tight tolerance precision Micro Solenoid assembly.

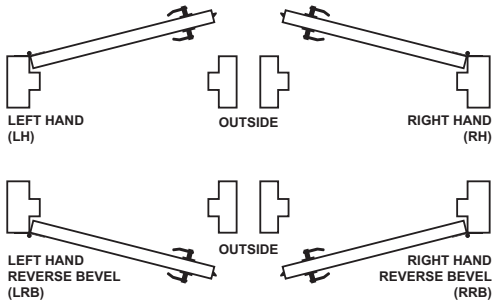
GETTING STARTED: Before proceeding with your installation, verify that the door to which the electric release is being applied is in good working condition.

These items are essential for either new installations or retrofits Items which should be specifically checked prior to beginning the installation include:

- The hinges (or pivots) are in good condition
- If your installation is a retrofit, that the existing latch lines up perfectly with the existing strike plate.
- The door is not rubbing on the saddle or anywhere on the frame
- The door closer is not leaking and is in good condition and properly adjusted.
- The door is not warped or otherwise damaged which might hamper its operation or otherwise affect your installation or the final system's performance.
- That the door frame member into which the door release is to be installed is deep enough (1 inch) for the body of the electric strike, and that the wiring to operate the electric release can be installed for your application.

HANDING: The TRINE Model #3234, #3234W and #3478 are **non-handed**.

DOOR HANDING GUIDE



HANDING OF DOOR IS ALWAYS DETERMINED FROM THE OUTSIDE.

DUTY & VOLTAGES: The TRINE Model #3234, #3234W & Model #3478 are available as FAIL-SECURE (Normally Locked, Power to Unlock), INTERMITTENT DUTY and are supplied in two different operating voltage and the **LC VERSION**, suitable for use in a range of voltages from 12V to 24V AC or DC. The TRINE Model #3234RS, 3234WRS & Model #3478RS are FAIL-SAFE (Normally Unlocked, Power to Lock), continuous duty and are supplied with LC module.

LC units will operate on any input voltage from 12V to 24V AC or DC, and offer both the benefits of reducing inventory by enabling you to stock one strike. ***In addition, they offer both surge suppression and inductive kickback protection.***

Please refer to the accompanying VOLTAGE DROP CHART for recommended wire gauges for various voltages and wire lengths.

VOLTAGE DROP GUIDE		
Length to Transformer	**12V**	**24V**
Up to 50 feet	18 AWG	20 AWG
50 to 150 feet	16 AWG	18 AWG
150 to 300 feet	14 AWG	16 AWG
300 to 600 feet	12 AWG	14 AWG

The TRINE MODEL # 3234, #3234W and #3478: FAIL-SECURE "INTERMITTENT DUTY" units are designed for momentary application of voltage for access control purposes, and cannot be continuously powered without permanent and irreversible damage to the electric strike's solenoid.

The TRINE MODEL #3234-RS, #3234W-RS and #3478-RS: FAIL-SAFE "CONTINUOUS DUTY" versions may be used for applications where the release must remain UNLOCKED for extended periods. Please contact TRINE for other additional TRINE electric release solutions for those applications requiring a continuous duty FAIL-SECURE electric release that may be powered for extended periods, commonly referred to as CONTINUOUS DUTY.

The TRINE **LC version** of MODEL # 3234, 3234W, #3478, # 3234-RS, #3234W-RS and #3478-RS can be used for "INTERMITTENT DUTY" AND "CONTINUOUS DUTY"

3000 SERIES ELECTRICAL CHARACTERISTICS CHART:

STANDARD MODELS

VOLTAGE	CURRENT (AMPS)	COIL RESISTANCE (OHMS)	DUTY	AUDIBLE SOUND	WIRE COLOR	MODEL
12V DC	0.480	25	Int	Silent	Blue-Blue	STD
24V DC	0.240	100	Int	Silent	White-White	STD

LC & RS MODELS

VOLTAGE	CURRENT (AMPS) PULL-IN/HOLDING	COIL RESISTANCE (OHMS)	DUTY	AUDIBLE SOUND	WIRE COLOR	MODEL
12V DC	0.743/0.298	13	Int./Cont.	Silent	Red-Red	LC
12V AC	0.715/0.277	13	Int./Cont.	Silent	Red-Red	LC
24V DC	0.397/0.170	13	Int./Cont.	Silent	Red-Red	LC
24V AC	0.378/0.173	13	Int./Cont.	Silent	Red-Red	LC

ELECTRICAL: If you are performing a new installation, be certain that you make provisions for the proper voltage power supply for your electric strike. If you are performing a retrofit type installation, determine that the voltage present at the location of the strike is appropriate for the TRINE strike you have, that the circuitry supplying the voltage is operating properly, and also verify that you are able to cut the power completely to the door location so that you may perform the installation safely without endangering yourself or causing damage to the power supply or other devices connected to the circuit. It is strongly recommended that you also test for high voltages which may exist between each lead of the power wiring to the electric release solenoid, and to the door frame which is an earth ground. Dangerous voltages or currents may occur due to a miswire or other pre-existing fault conditions in the system you are servicing.

TESTING YOUR ELECTRIC STRIKE; POWER SUPPLY; & SWITCHING CIRCUIT PRIOR TO FINAL MOUNTING OF THE ELECTRIC RELEASE IS RECOMMENDED

POWER SOURCES:

The TRINE MODEL #5208 (12 VDC) or MODEL # 5209 (24 VDC) are suitable DC POWER SUPPLIES which are plug-in and therefore do not require that the installer perform line voltage wiring.
TRINE offers several low voltage transformers suitable for use with the TRINE MODEL #3234, #3234W & #3478 electric releases.

HARDWIRED POWER SUPPLY MODELS are also available - see our website or call our Customer Support Line for details.

SILENT OPERATION: The TRINE #3234, #3234W & #3478 are referred to as "Silent Operating"; unlike some types of AC electric releases which make a "buzzing sound" when activated. For some applications, such as entrances into apartment buildings or storerooms, an audible sound is desirable, and even expected. For other applications, such as offices, silent operation is preferred because a buzzing sound is distracting or disturbing. Verify with your client which they require, and if an audible signal when the electric release is activated is desirable, then add a sounding device as shown in the accompanying wiring diagrams.

CONFIRMING PROPER LOCK-LATCH ENGAGEMENT & CLEARANCES:
The latch and the lock must engage properly for the electric strike to operate as intended. On doors where the gap between the edge of the door and the jamb are within standard tolerances and the latch is the proper length, no adjustments will be required and this is true for the majority of installations.

But too little lock-latch engagement will result in an installation were the door may be easily spread; allowing the locked door to be forced open.

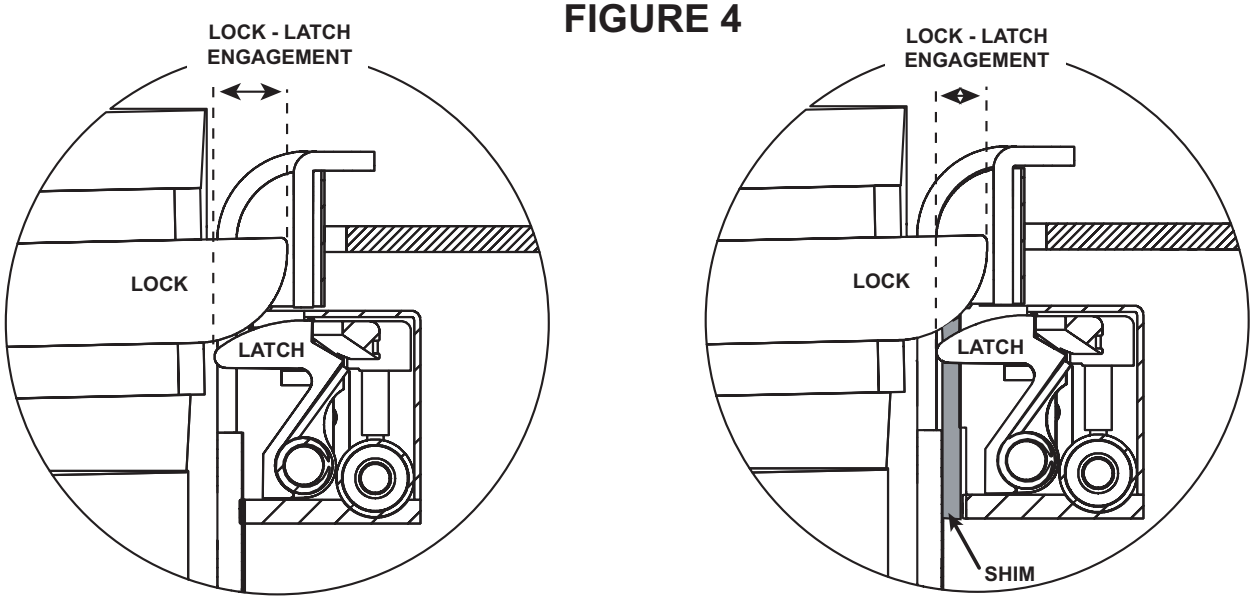
Too much lock-latch engagement will result in a situation where the door release will interfere with the door latch, causing binding; improper operation and premature mechanical wear on the latch and release.

Extended latch length (LL) minus the gap (G) between the edge of the door and the edge of the jamb equals the amount of lock-latch engagement.

"Lock-Latch Engagement = LL - G"

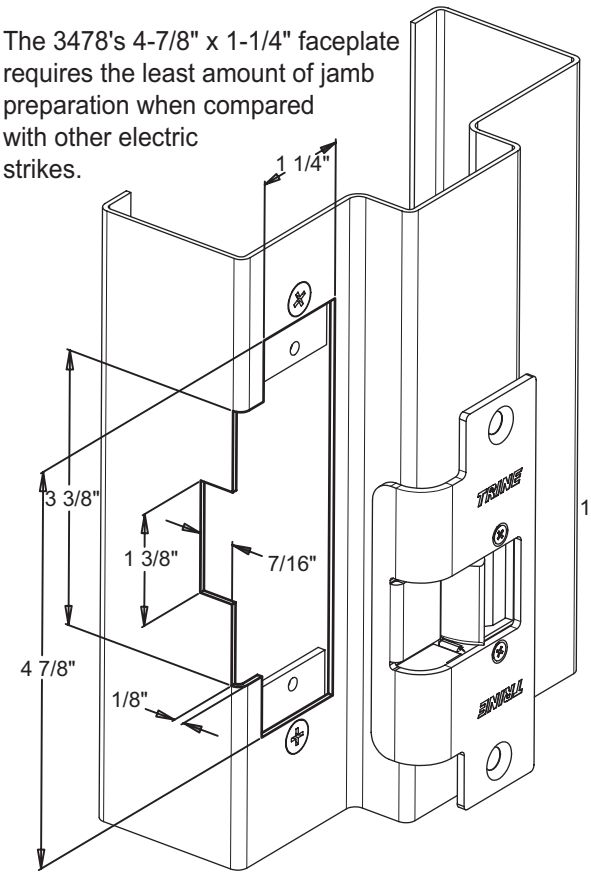
INSTALLATION OF SHIM:
An adequate amount of clearance must exist between the door latch and the strike keeper so that they do not interfere or bind when the door opens or closes. Two 1/16" thick shims are supplied with the TRINE #3234, #3234W and #3478 which may be installed as shown in the "Installation Drawings section" to resolve this situation if this problem is encountered. (also See Figure 4 below).

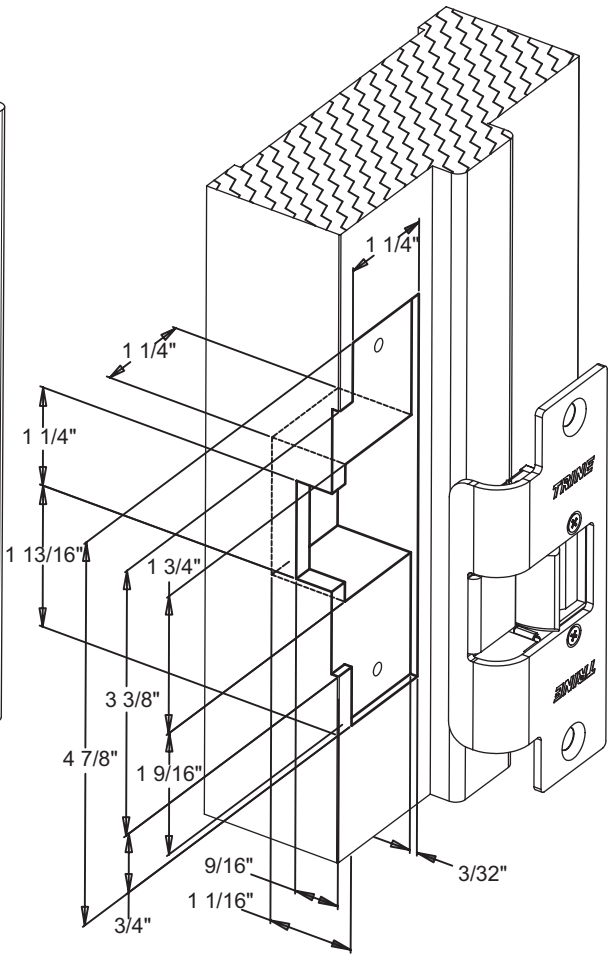
FIGURE 4

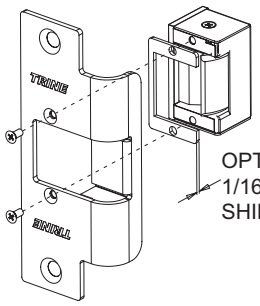


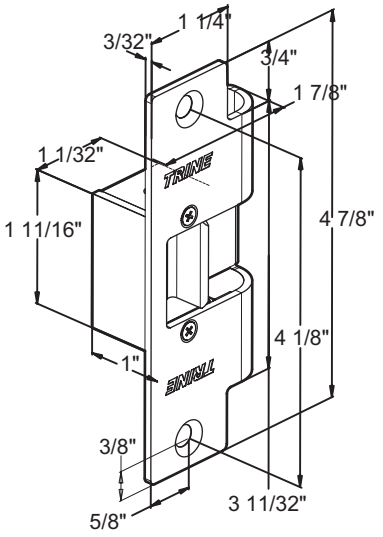
METAL AND WOOD FRAME INSTALLATION

The 3478's 4-7/8" x 1-1/4" faceplate requires the least amount of jamb preparation when compared with other electric strikes.



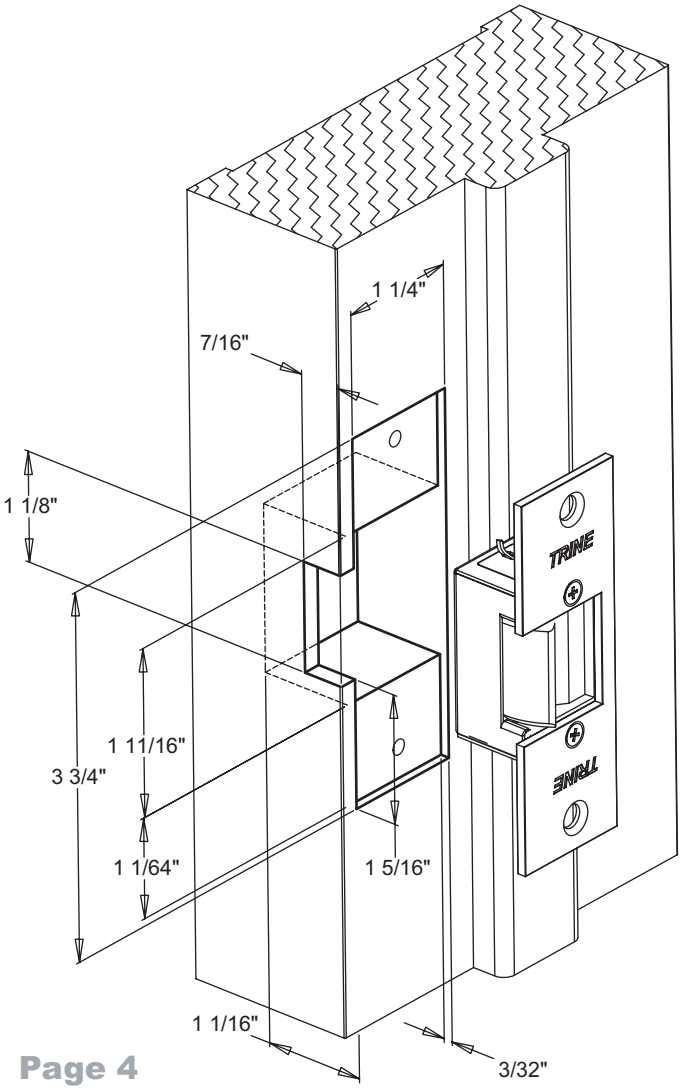


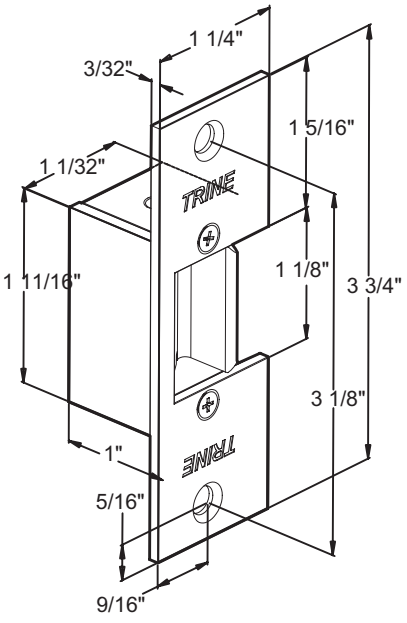


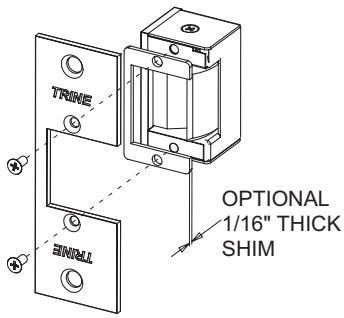


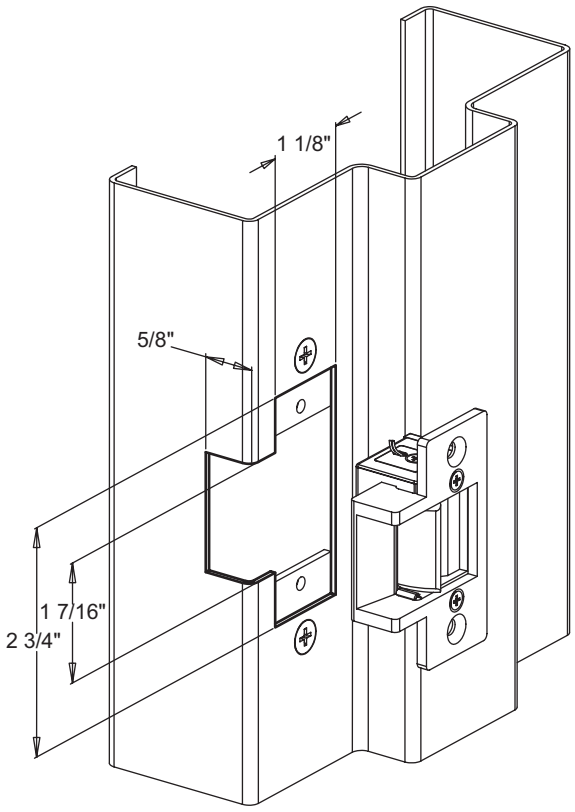
WOOD FRAME INSTALLATION

The 3234W's 3-3/4" x 1-1/4" faceplate requires the least amount of jamb preparation when compared with other electric strikes.



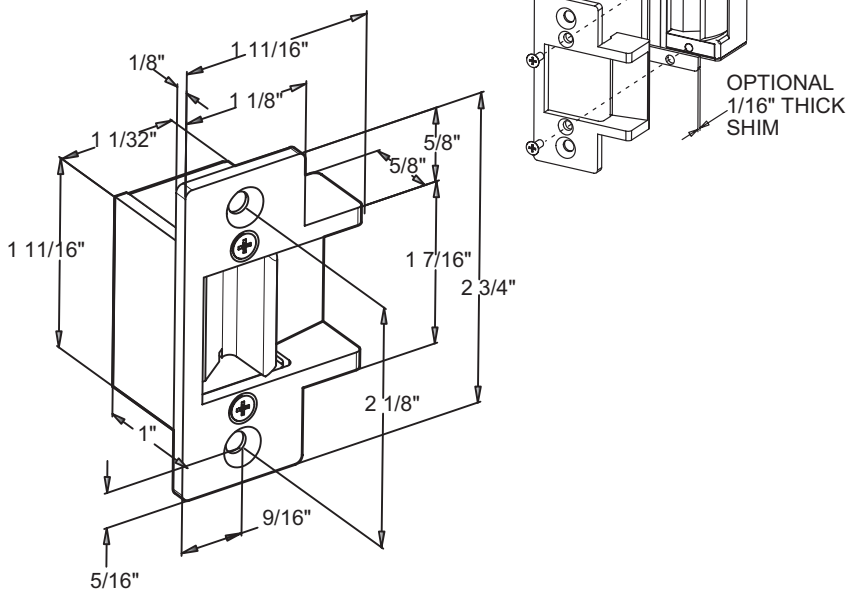






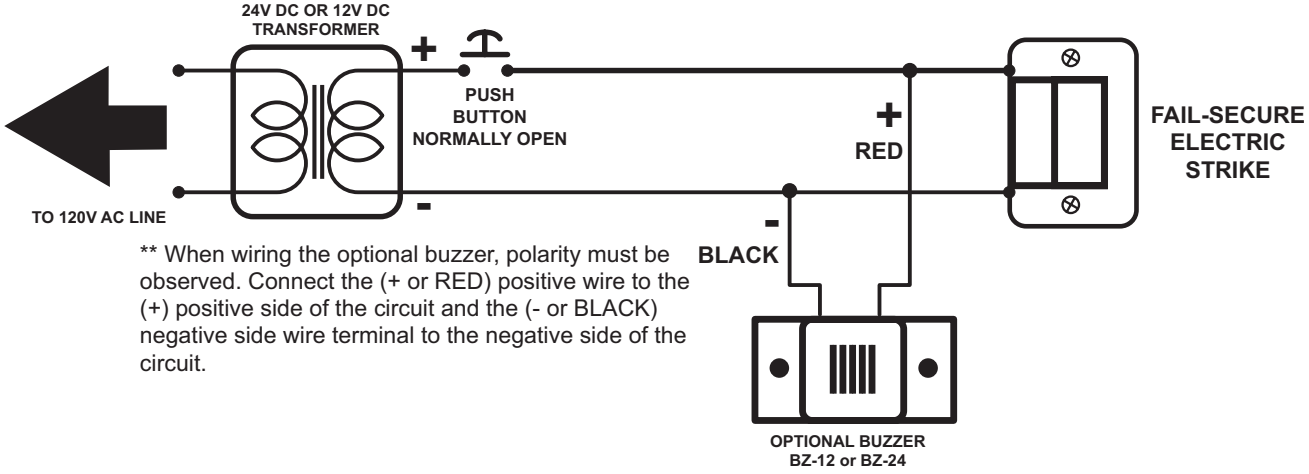
METAL FRAME INSTALLATION

The 3234's 2-3/4" x 1-1/4" faceplate requires the least amount of jamb preparation when compared with other electric strikes.



WIRING DIAGRAM

FIGURE 1
USING DC TRANSFORMER



** When wiring the optional buzzer, polarity must be observed. Connect the (+ or RED) positive wire to the (+) positive side of the circuit and the (- or BLACK) negative side wire terminal to the negative side of the circuit.

FIGURE 2
FAIL-SAFE MODELS

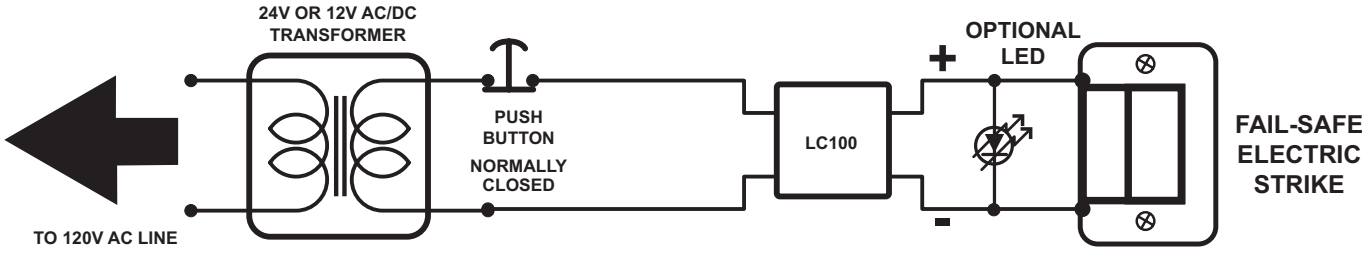
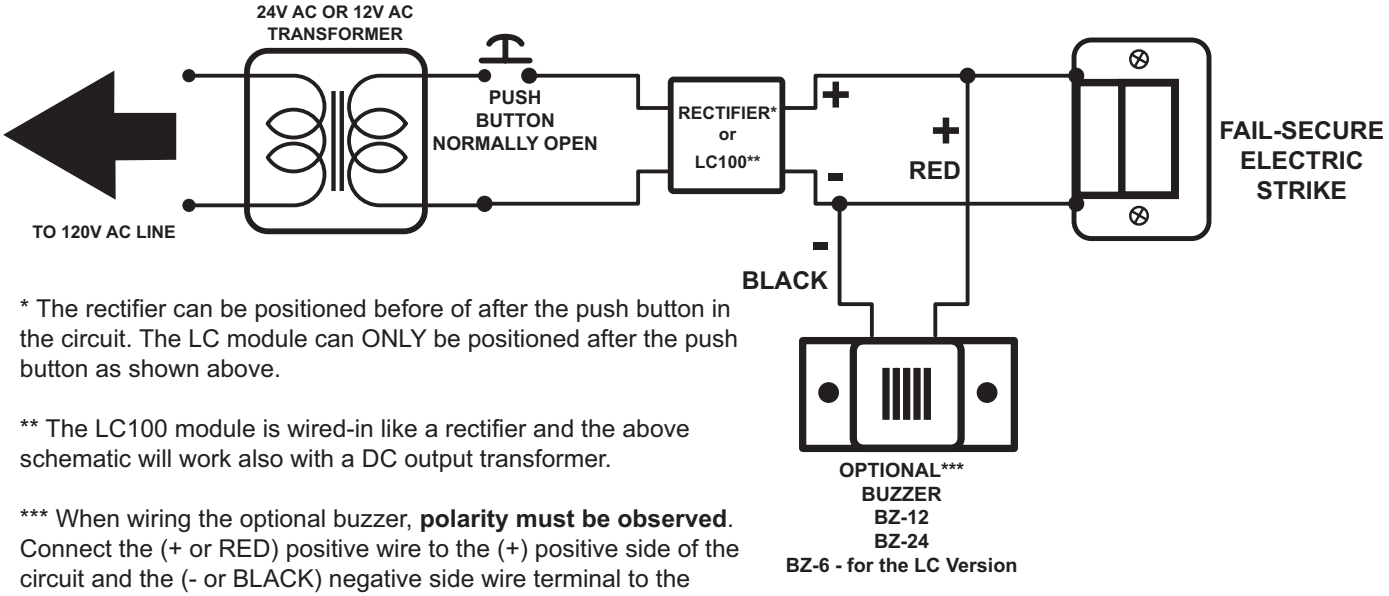


FIGURE 3
USING AC TRANSFORMER



* The rectifier can be positioned before of after the push button in the circuit. The LC module can ONLY be positioned after the push button as shown above.

** The LC100 module is wired-in like a rectifier and the above schematic will work also with a DC output transformer.

*** When wiring the optional buzzer, **polarity must be observed**. Connect the (+ or RED) positive wire to the (+) positive side of the circuit and the (- or BLACK) negative side wire terminal to the negative side of the circuit.

TROUBLESHOOTING THE COMPLETED INSTALLATION:

SYMPTOM: Electric release is not actuating:

1. **Verify proper voltage is present AT STRIKE. If voltage IS present: the strike may have been damaged during the installation, or dirt or debris may be preventing proper operation.**
2. **Verify for proper electric release coil resistance (REFER TO COIL ESISTANCE CHART), for either a short circuit or open circuit. Coil is NOT a serviceable part. Note that intermittent coils can only receive power for 1 minute or less.**
3. **If voltage IS NOT present:**
   - **Verify Circuit breaker is on**
   - **Verify voltage at the transformer/power supply output.**
   - **Verify output from rectifier (if used)**
   - **Verify that there are no additional, unknown external switches or devices which may be interrupting your circuit.**
   - **Check for damaged wiring or bad wire splices.**

SYMPTOM: Door will not open but strike is working

- **Check for other locks on door**
- **Check for proper lock-latch engagement (SEE SECTION: "CONFIRMING PROPER LOCK-LATCH ENGAGEMENT & CLEARANCES").**
- **Lock latch engagement may be not set correctly. (If proper clearance cannot be achieved by installing a shim; a shorter lock latch may be required for your installation.)**
- **Check for excessive backpressure on door release latch by following these steps:**
  While observing the electric release and latch; apply enough pressure on the door so that the lock's latch does not press on the electric release's latch. If applying pressure as described does not cause any movement of the lock away form the latch, then there may be too much pressure on the electric release's latch. If electric release works properly while you are applying this pressure, then steps must taken to relieve this pressure. Possible remedies include:
  - **Re-adjust (or install) a door closer**
  - **Remove door silencers**
  - **Correct excessive door warpage**
  - **Re-center electric release in jamb**
  - **Remove or trim weather stripping around the door**

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3234
Electric Strike Metal Frame Preparation

TRINE ACCESS TECHNOLOGY

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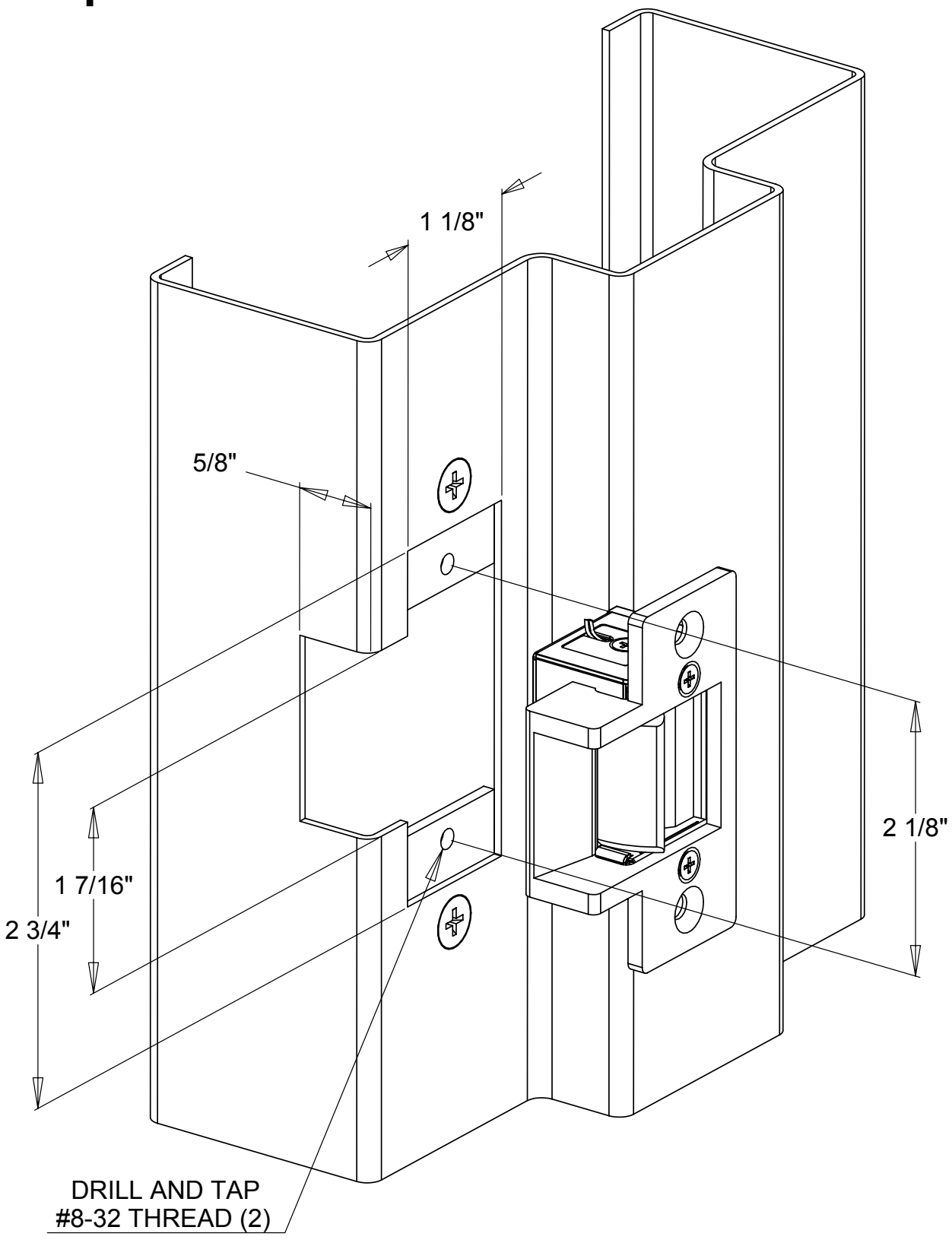

3234
Electric Strike Wood Frame Preparation

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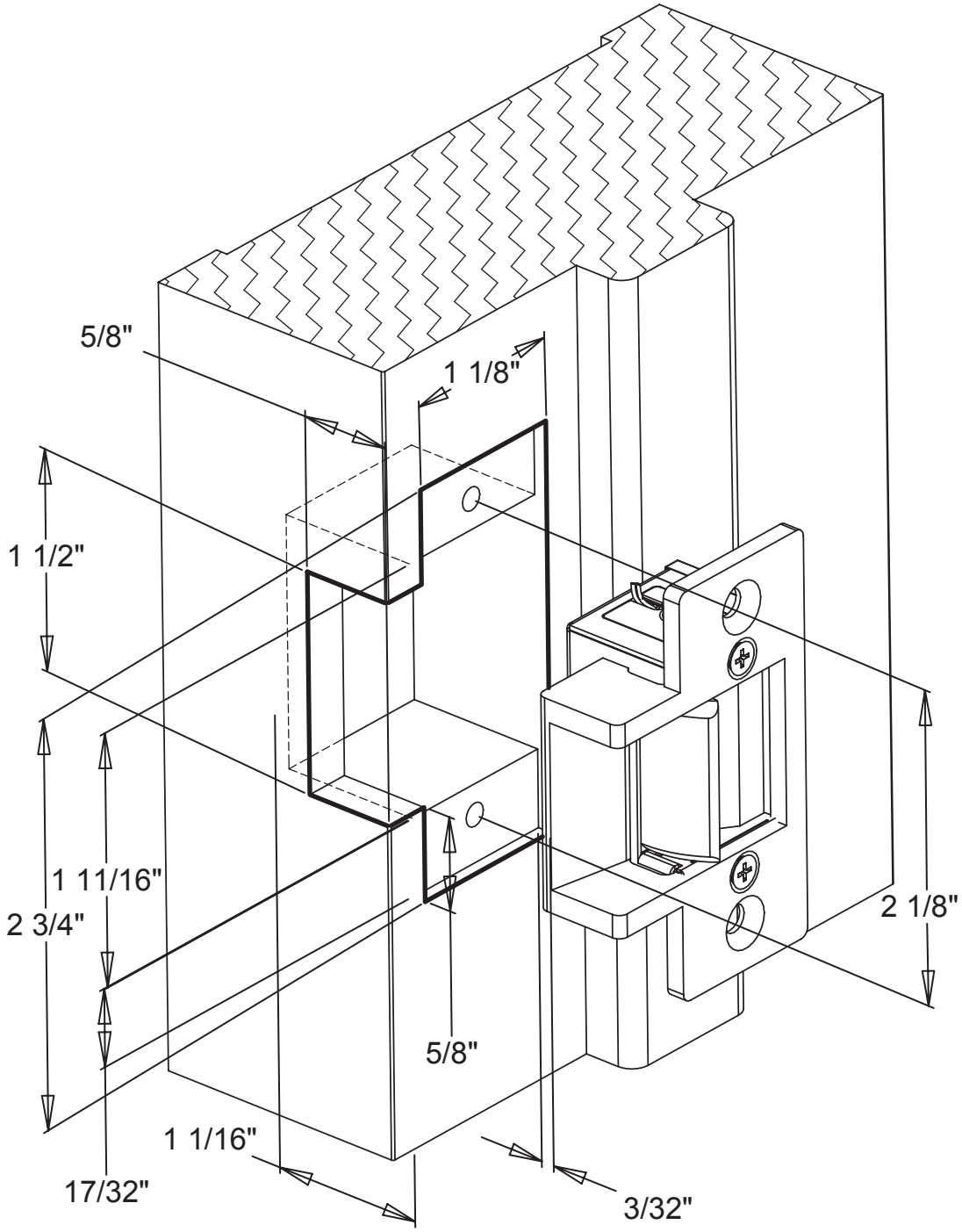

NOTE: USE 2 INCH LONG (OR LONGER) WOOD SCREWS FOR MOUNTING

234X-375
Electric Strike
Timeley Frame
Preparation

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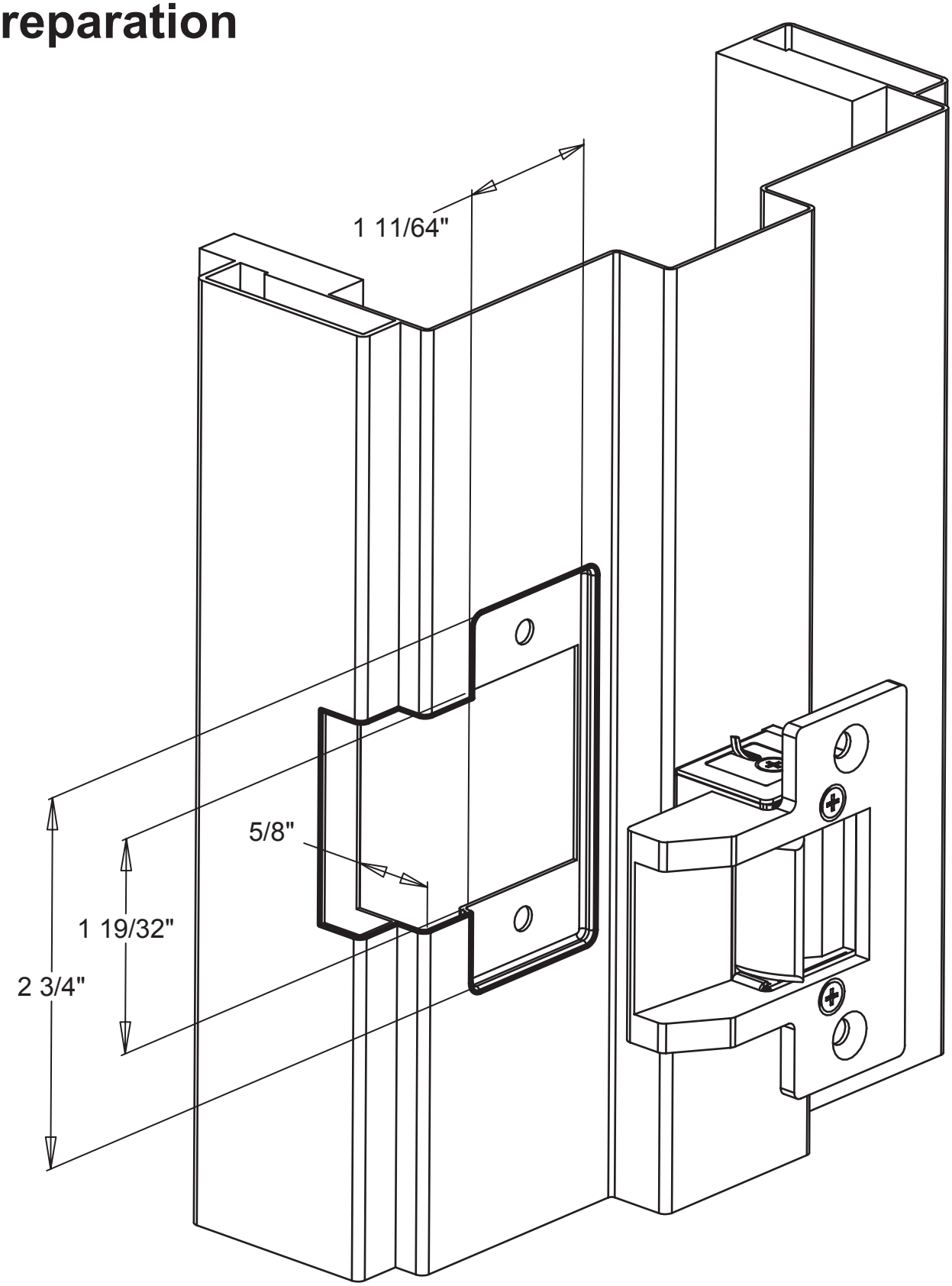

234X-375
Electric Strike
Wood Frame
Preparation

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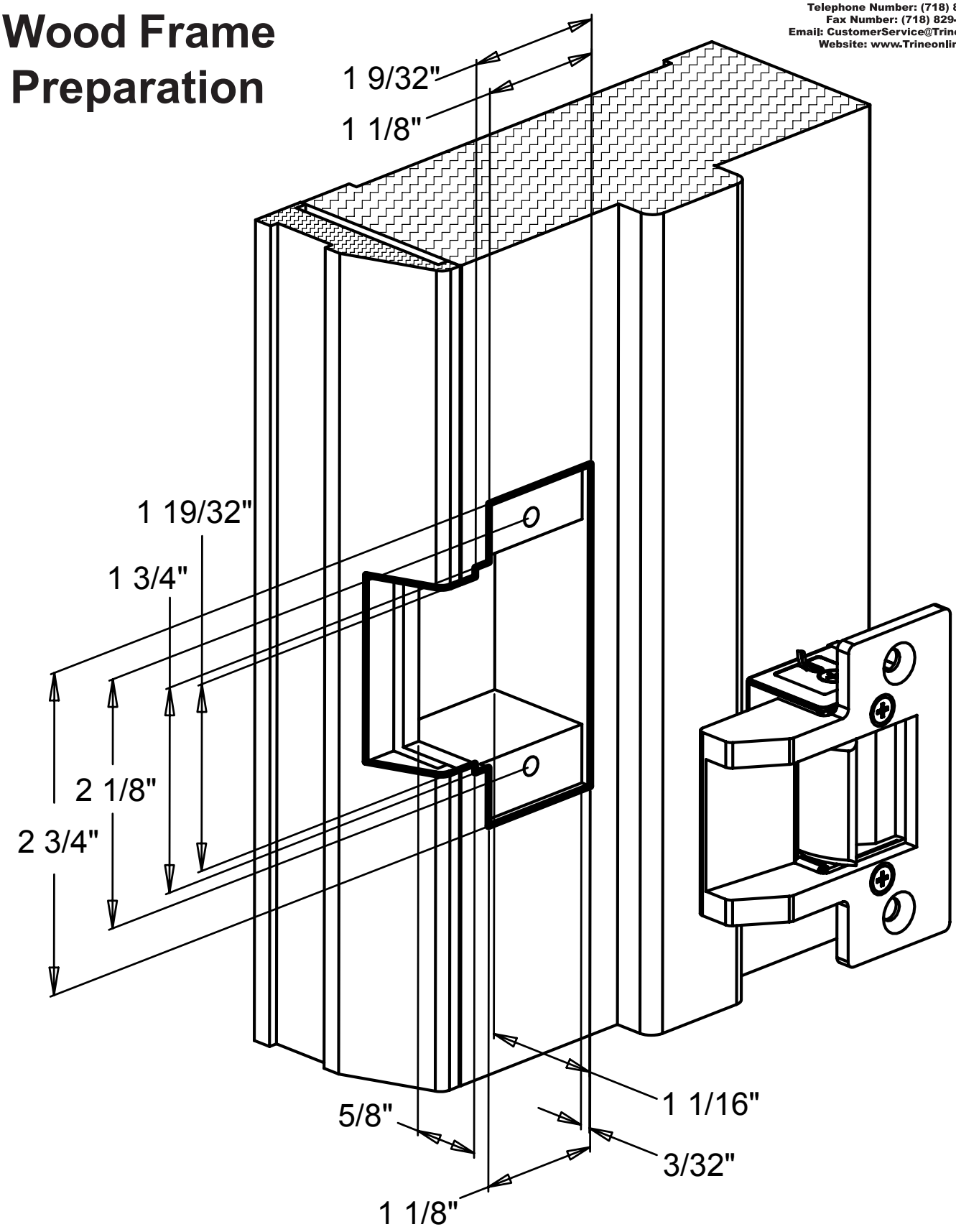

NOTE: USE 2 INCH LONG (OR LONGER) WOOD SCREWS FOR MOUNTING.

258
Electric Strike
Frame Preparation
For Aluminum

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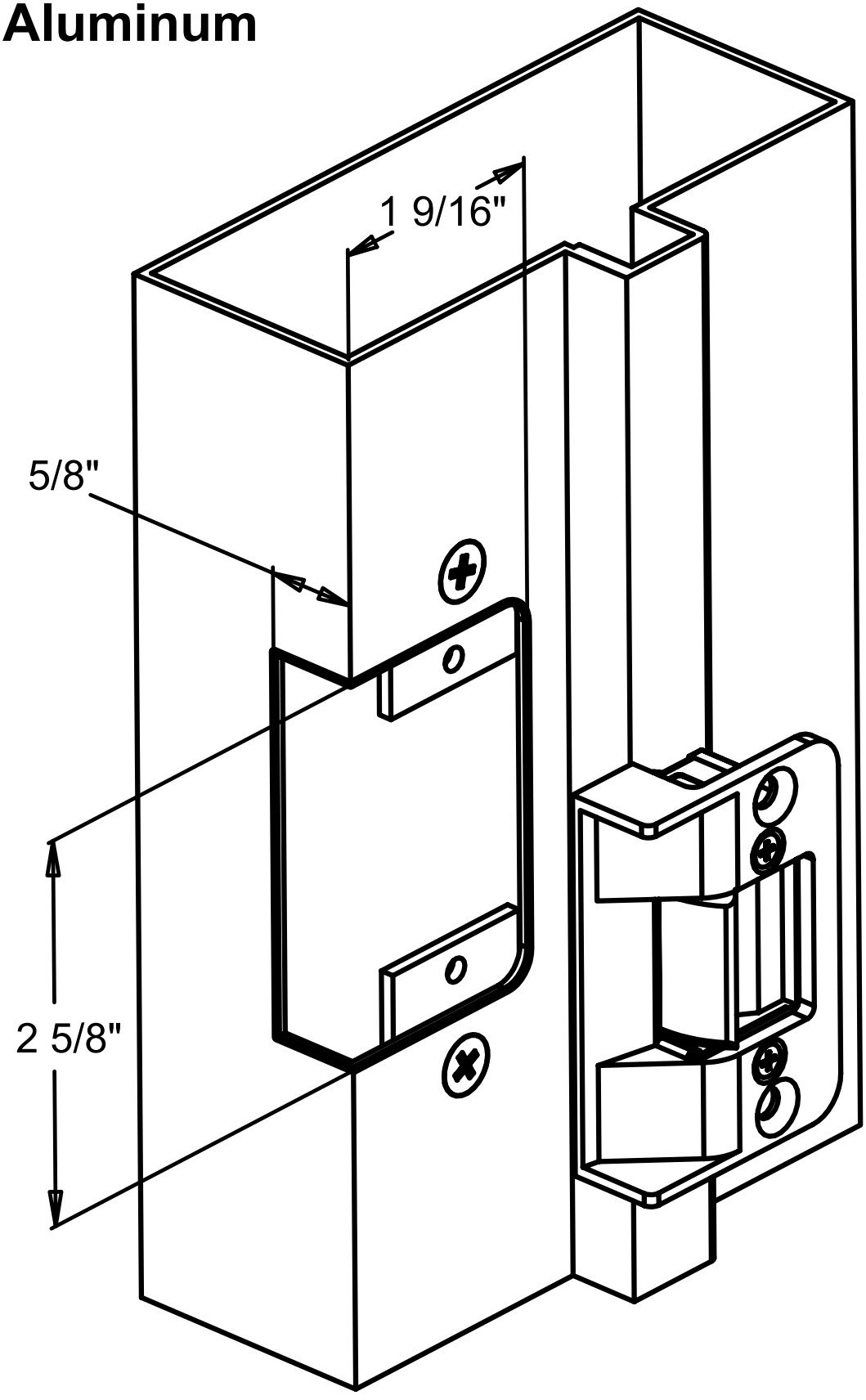

258RD

Electric Strike Frame Preparation For Aluminum Doors

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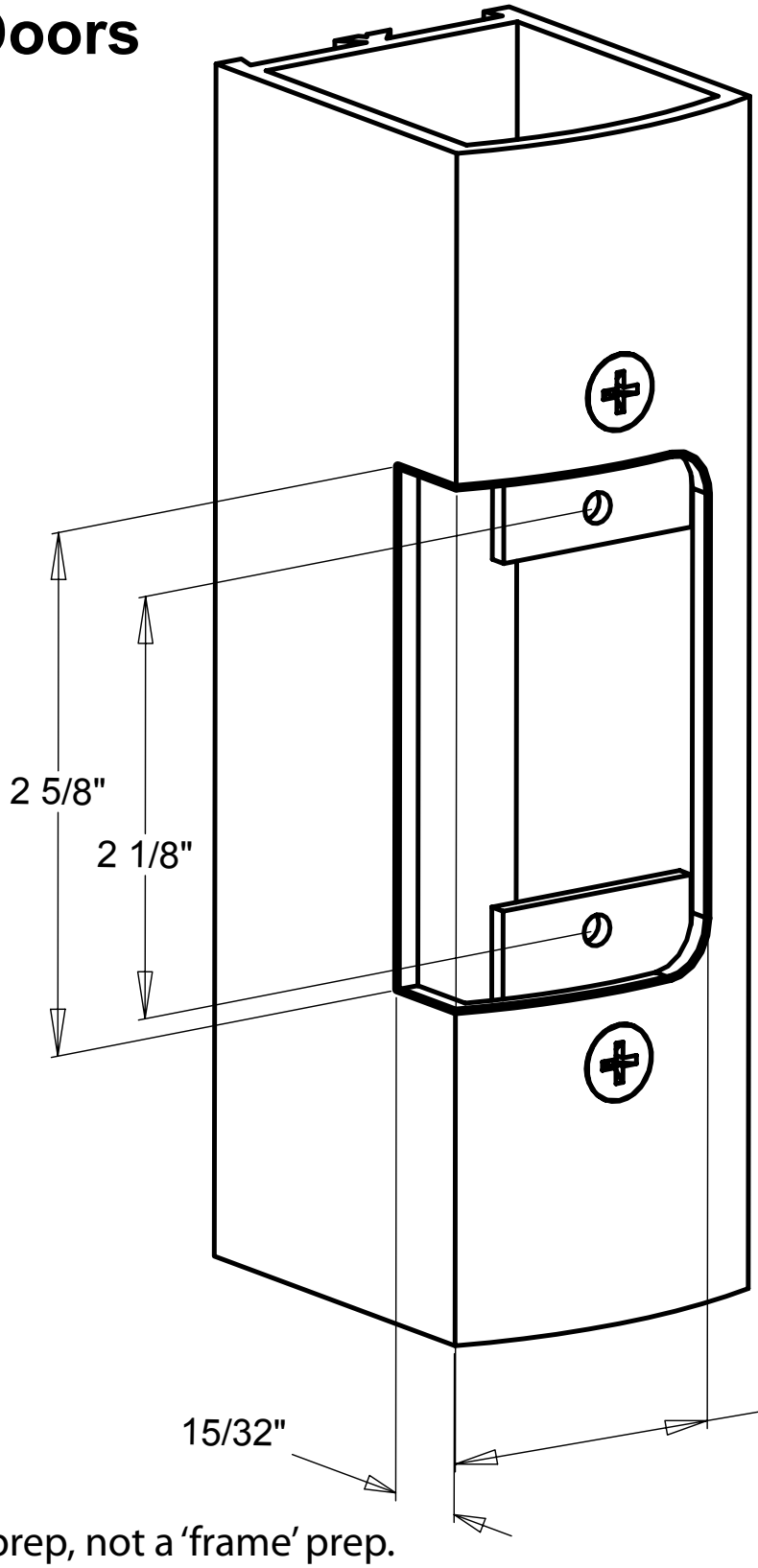
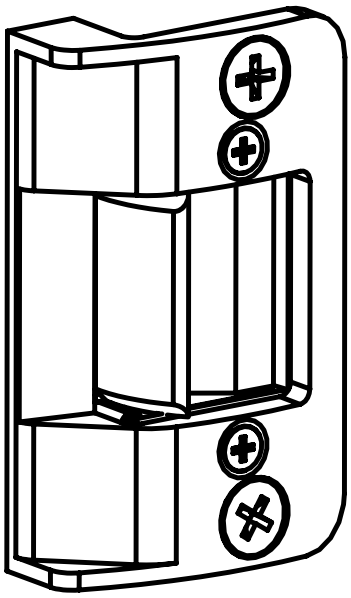
Radius of faceplate matches the radius surface of the door.





NOTE: Door prep, not a 'frame' prep.

3234W/334

Electric Strike
Wood Frame
Preparation

ACCESS TECHNOLOGY

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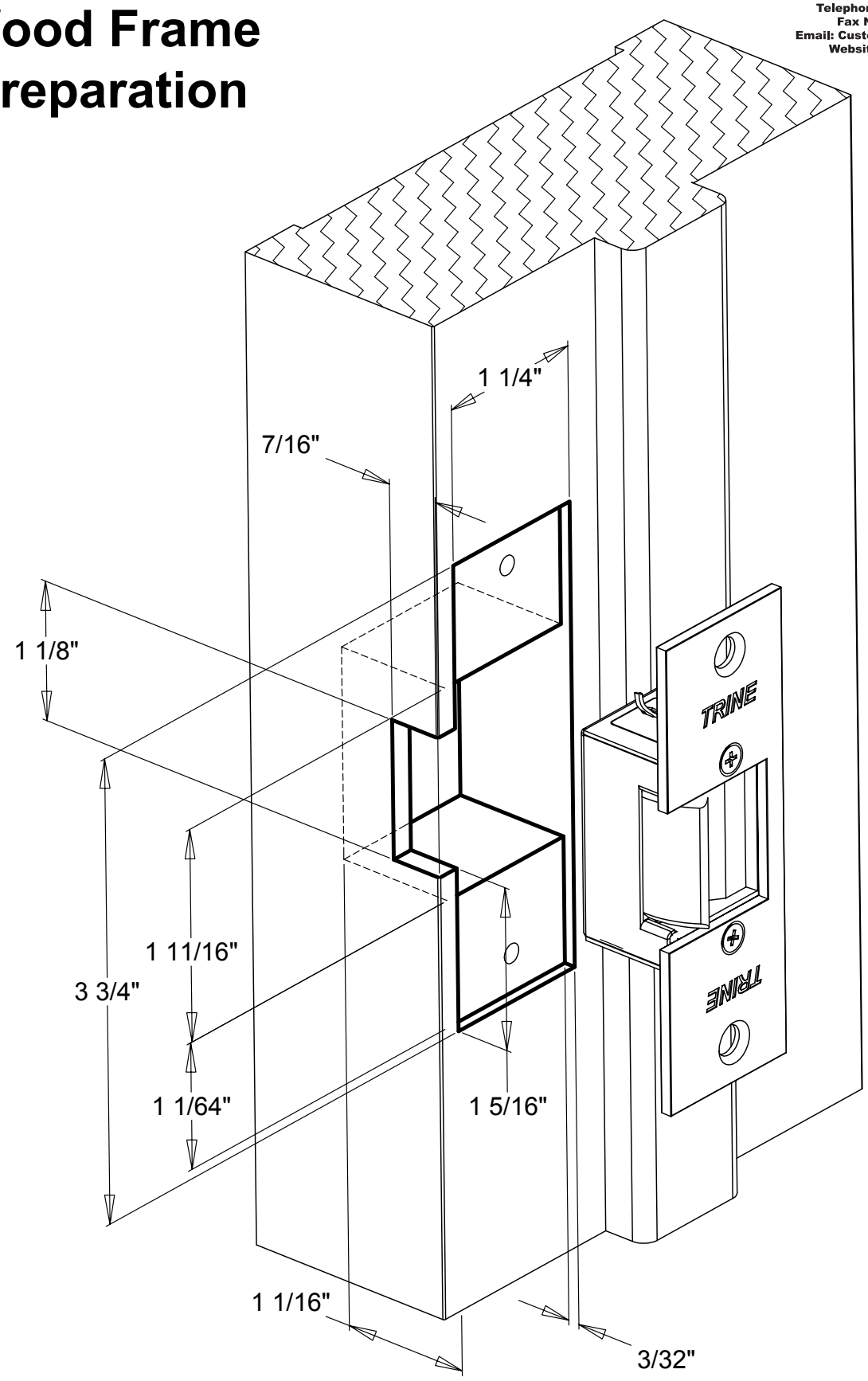

NOTE: USE 2 INCH LONG (OR LONGER) WOOD SCREWS FOR MOUNTING

3458
Electric Strike Frame Preparation

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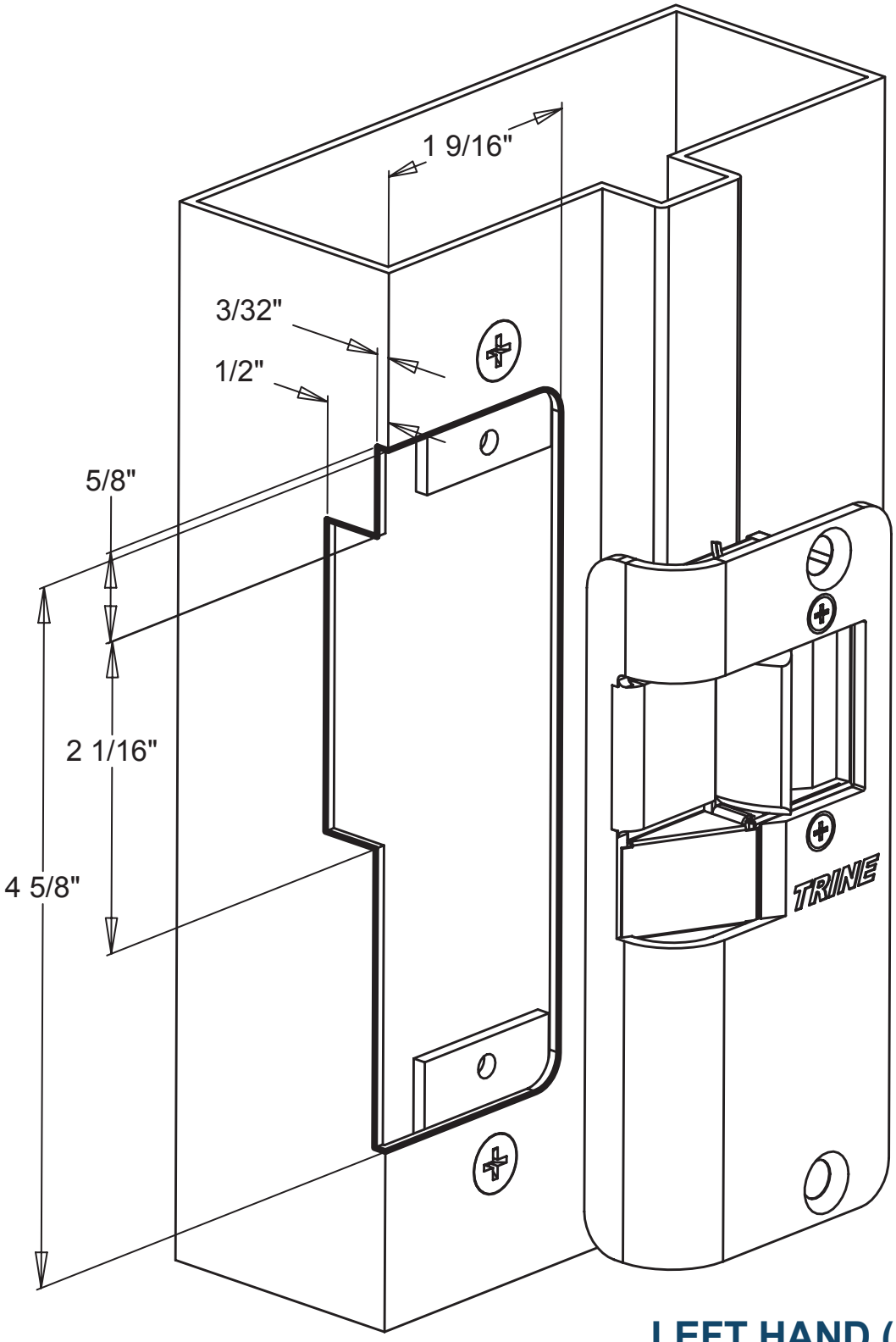

LEFT HAND (LH) SHOWN

3478
Electric Strike Metal Frame Preparation

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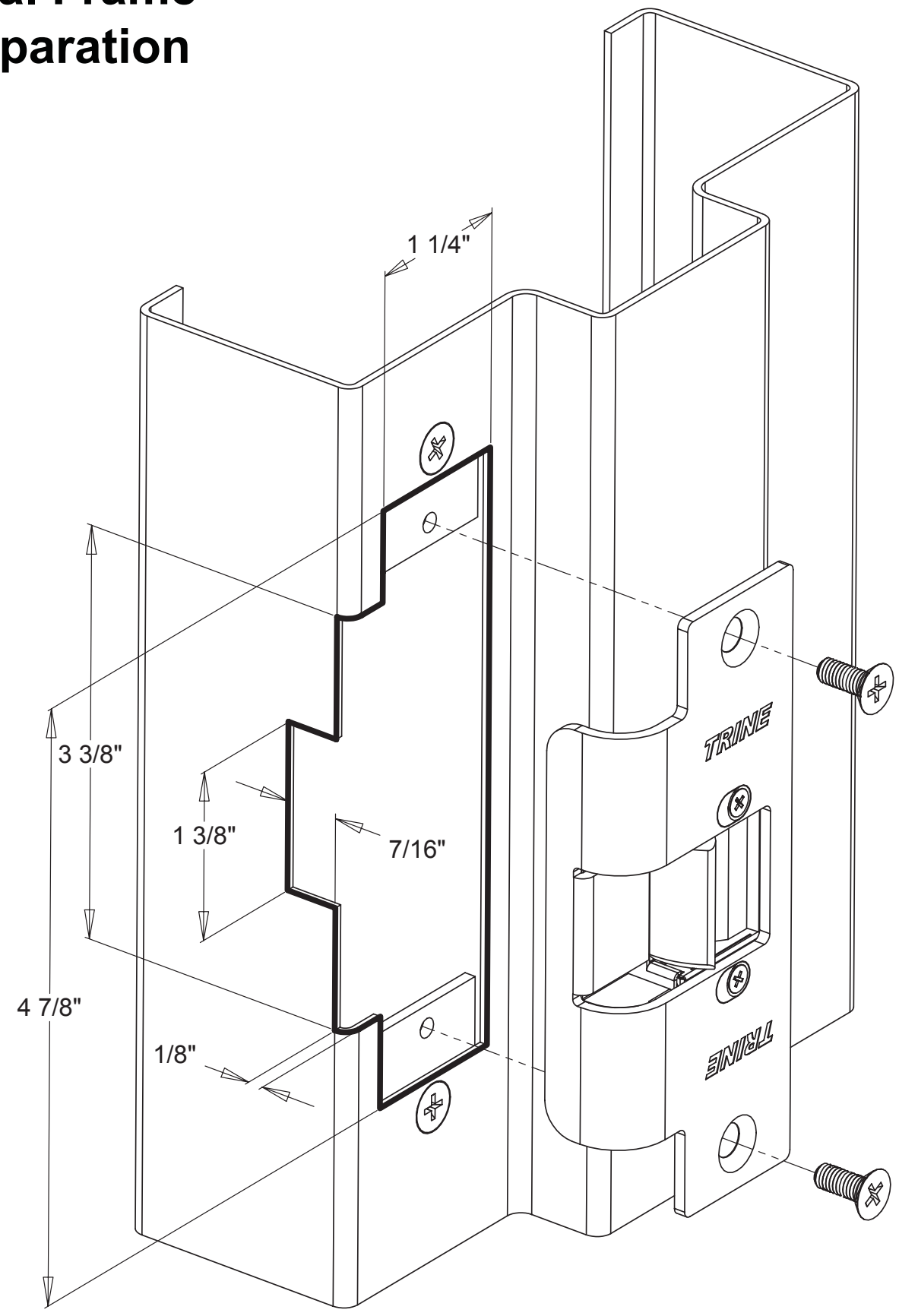

3478
Electric Strike Wood Frame Preparation

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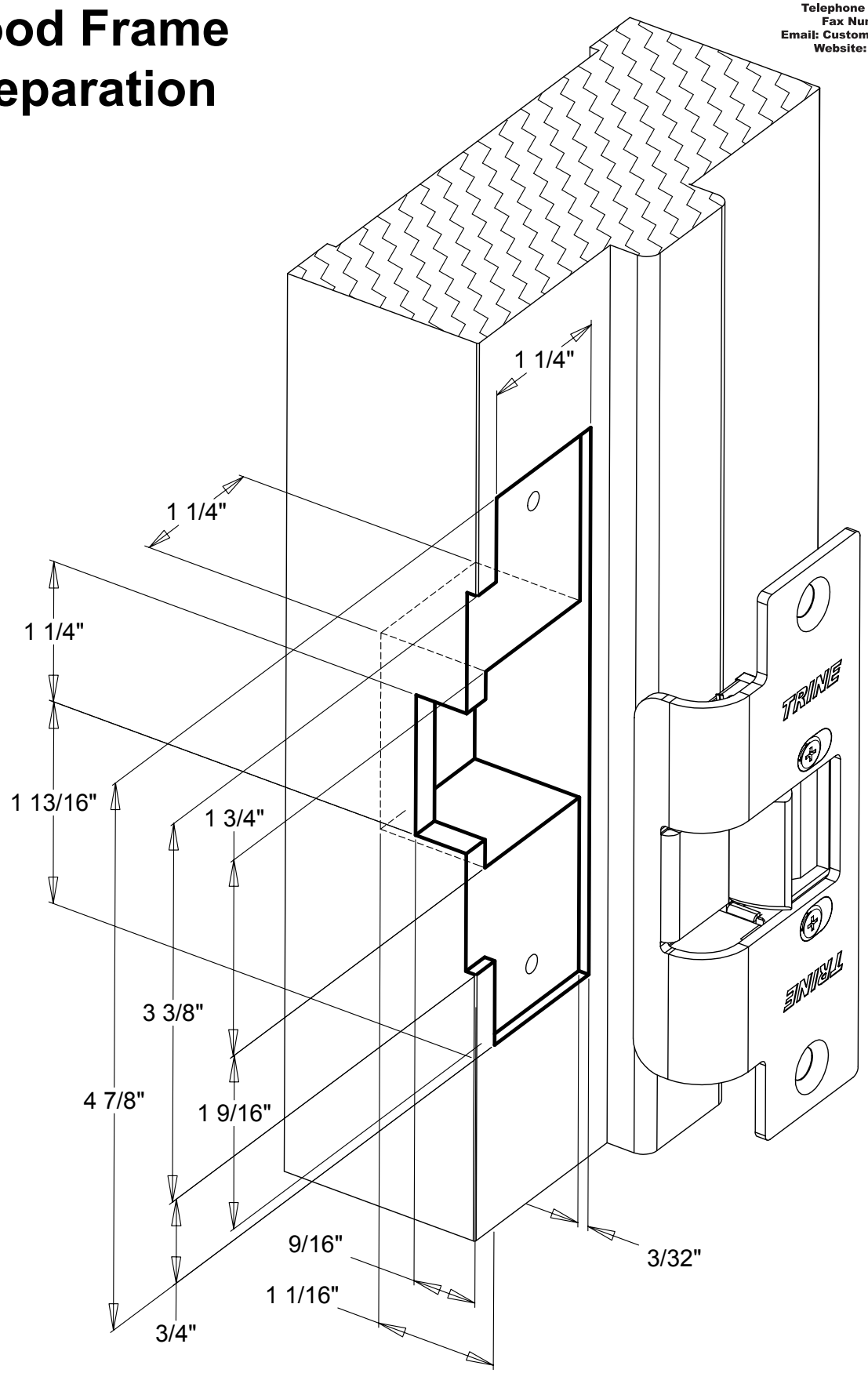

NOTE: USE 2 INCH LONG (OR LONGER) WOOD SCREWS FOR MOUNTING

478X-375
Electric Strike
Timeley Frame
Preparation

TRINE ACCESS TECHNOLOGY

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Telephone Number: (718) 829-2332
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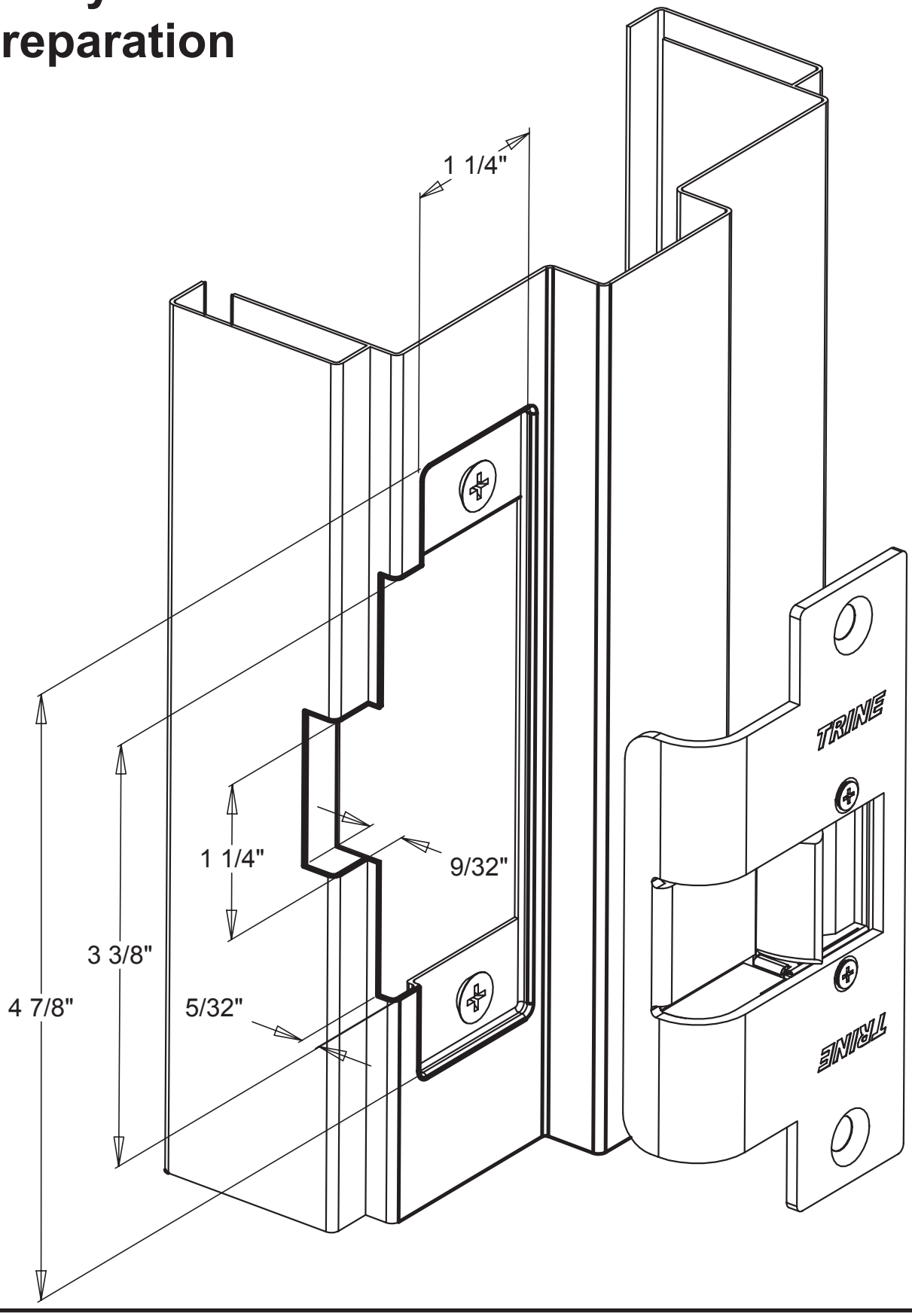

478X-375
Electric Strike
Wood Frame
Preparation

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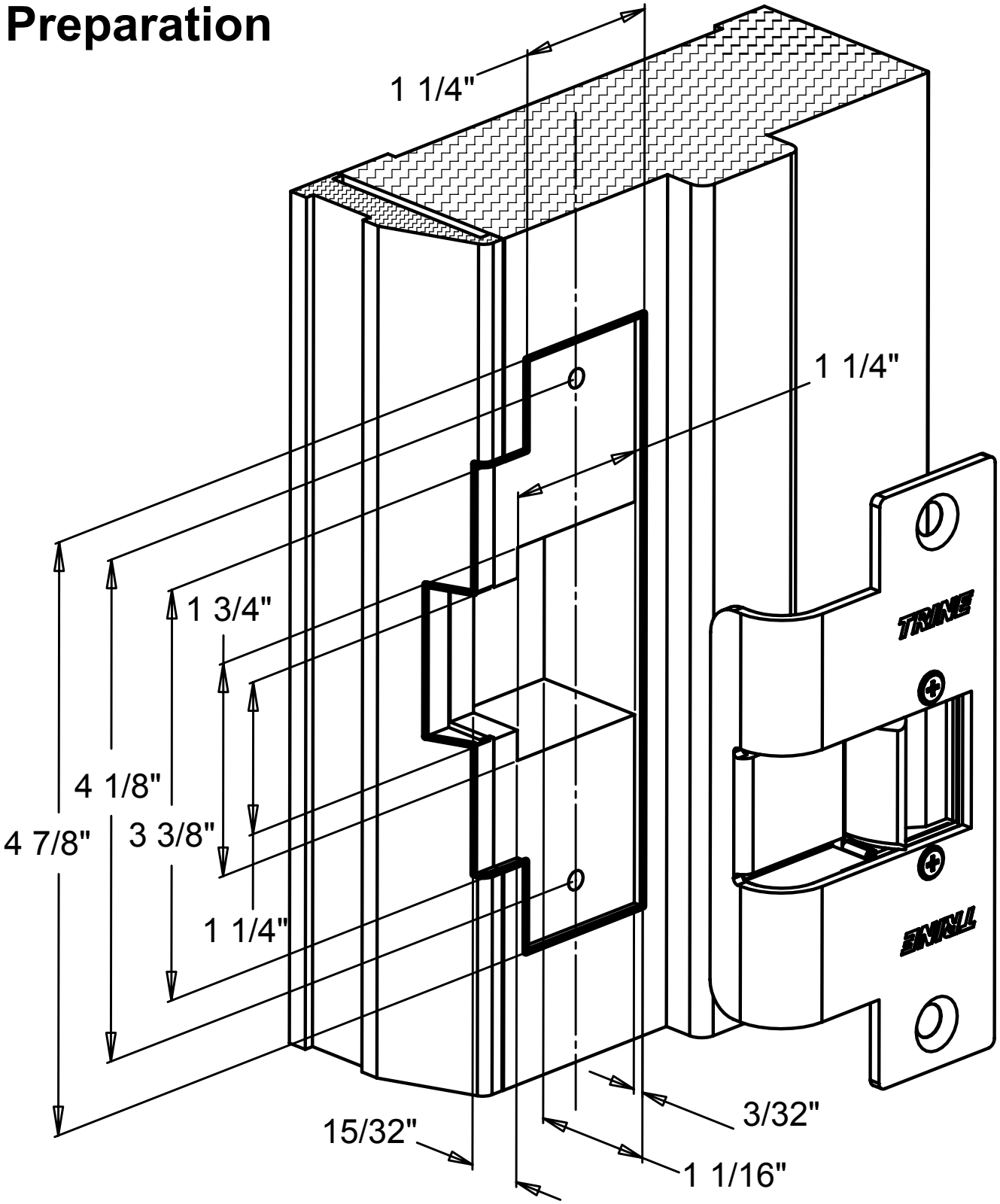


NOTE: USE 2 INCH LONG (OR LONGER) WOOD SCREWS FOR MOUNTING

TRINE ACCESS TECHNOLOGY

AXION PREMIUM ELECTRIC STRIKES

LC100 INSTRUCTIONS

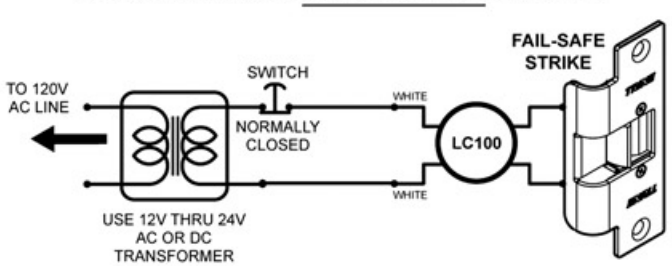
YOU MUST USE THE LC100 ON ALL INSTALLATIONS

The LC-100 is a power regulator for your Axion 3000 Series Strikes. The LED light indicates a properly functioning unit The LC-100 has six (6) wire terminals and they are color coded as follows:

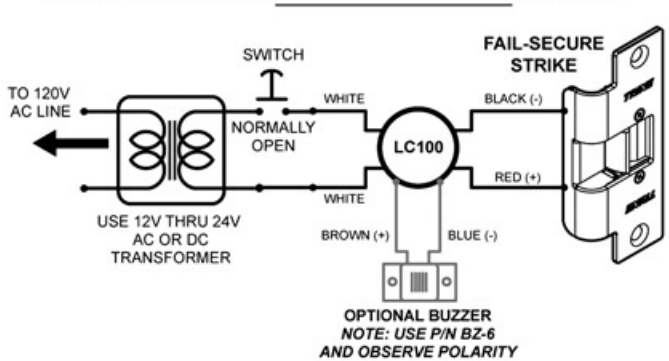
- **White - White Pair:** This is the power input terminal. You can apply 10.8V through 28V AC or DC to this pair.
- **Black - Red Pair:** This is the output terminal. The Black is the negative output and the Red is the positive output. The output voltage is 9.5V DC for approximately 2.5 seconds (also called the trigger voltage) after 2.5 seconds, the voltage output drops down to 5.5V DC for as long as the LC-100 is powered (also called holding voltage). **Remember, the electric strike leads are not polarity sensitive so you can hook up the wires in any order.
- **Blue – Brown Pair:** This pair is an auxiliary power that can be used for a buzzer or indicator light. Brown is the positive output and Blue is the negative output. When the LC-100 is powered this pair outputs 6VDC at 40mA maximum current. **If you are not using this feature it is best to cut the ends off so the wires will not short.

** WARNING - DO NOT SHORT CIRCUIT OUTPUT WIRE LEADS **

WIRING FOR FAIL-SAFE MODE



WIRING FOR FAIL-SECURE MODE



FAILURE TO USE THE LC100 WITH THE ELECTRIC STRIKE WILL VOID THE WARRANTY