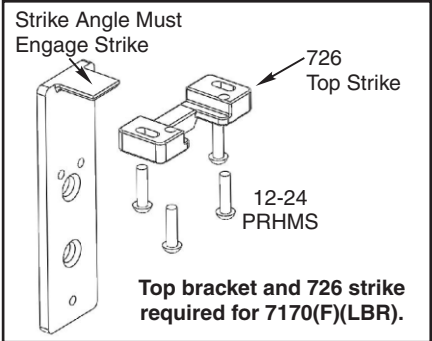
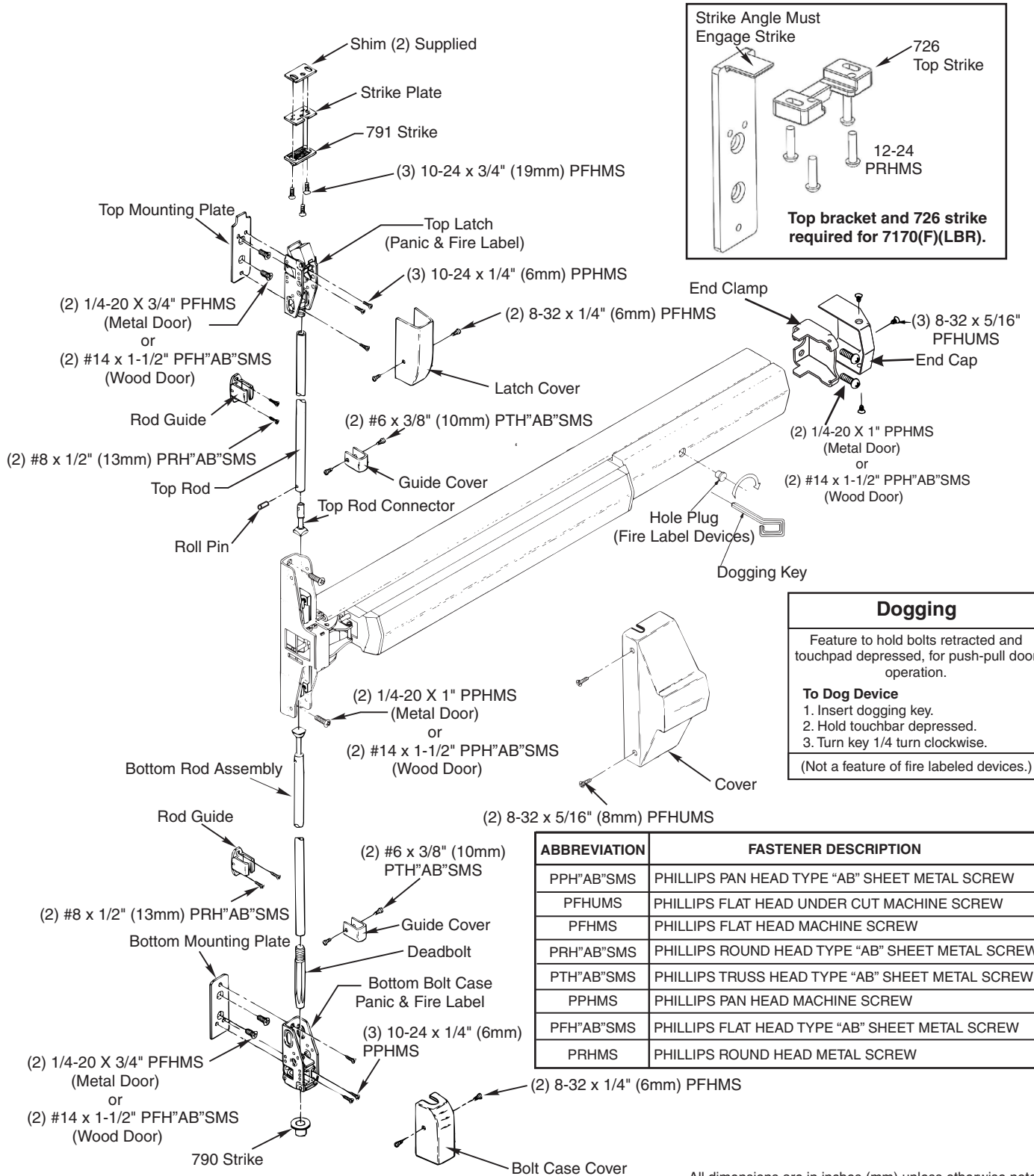




7110(F), 7170(F)(LBR) Surface Vertical Rod Exit Device Series Installation Instructions



Dogging

Feature to hold bolts retracted and touchpad depressed, for push-pull door operation.

To Dog Device

1. Insert dogging key.
2. Hold touchbar depressed.
3. Turn key 1/4 turn clockwise.

(Not a feature of fire labeled devices.)

ABBREVIATION	FASTENER DESCRIPTION
PPH"AB"SMS	PHILLIPS PAN HEAD TYPE "AB" SHEET METAL SCREW
PFHUMS	PHILLIPS FLAT HEAD UNDER CUT MACHINE SCREW
PFHMS	PHILLIPS FLAT HEAD MACHINE SCREW
PRH"AB"SMS	PHILLIPS ROUND HEAD TYPE "AB" SHEET METAL SCREW
PTH"AB"SMS	PHILLIPS TRUSS HEAD TYPE "AB" SHEET METAL SCREW
PPHMS	PHILLIPS PAN HEAD MACHINE SCREW
PFH"AB"SMS	PHILLIPS FLAT HEAD TYPE "AB" SHEET METAL SCREW
PRHMS	PHILLIPS ROUND HEAD METAL SCREW

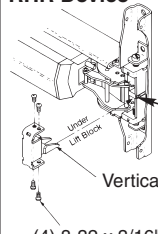
All dimensions are in inches (mm) unless otherwise noted.



To Change Hands

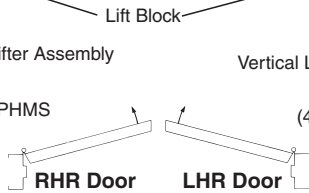
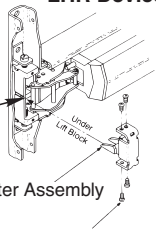
Maintenance

RHR Device



Remove (4) Screws and Vertical Lifter Assembly. Rotate device to opposite hand (180 degrees). Insert Lifter Assembly under Lift Block and re-install screws.

LHR Device



1. Periodically remove covers and coat mechanisms with a silicone base lubricant. This is particularly required in corrosive environments for proper product function.
2. Check mounting fasteners periodically. Retighten if found loose. Apply screw locking compound (available at automotive part stores) or change part fasteners if screws continue to back out.
3. Periodic checks (and adjustments) of strikes are required to compensate for changes in the opening (e.g. door sagging).

Check Before Starting

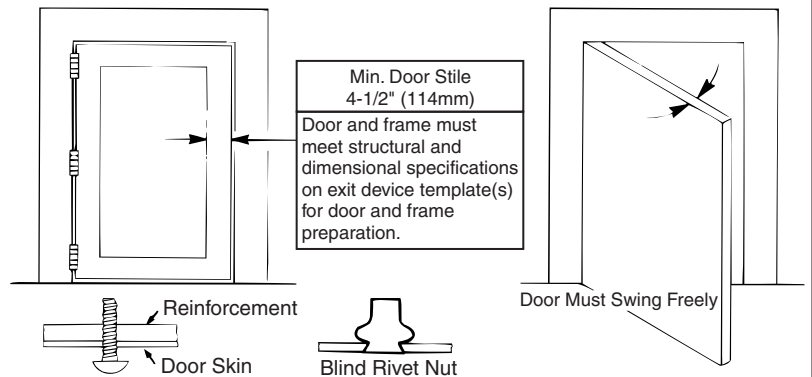
Unreinforced Doors or Frames

Doors and Frames with walls having a structural thickness (metal skin plus reinforcement or solid hardwood) to engage less than (3) full screw threads are considered unreinforced.

Unreinforced Doors: Use SNB (sex nuts and bolts).

Unreinforced Frames: Use Blind Rivet Nuts.

Recommended fasteners for unreinforced openings are not necessarily supplied by Yale Locks and Hardware.

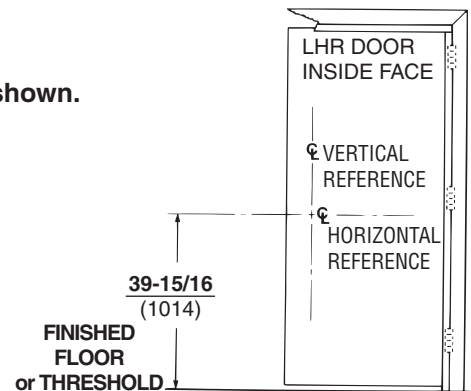
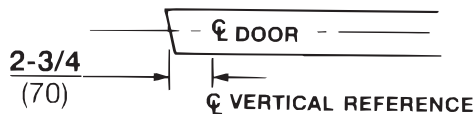


1. Mark Door

Single Door or Pair without Mullion

Locate and Mark Horizontal and Vertical Reference Centerlines as shown.

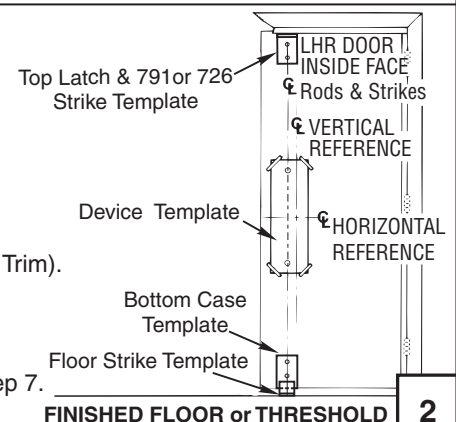
LHR door shown, preparation is typical for both door hands.



Note: Door should be in the closed position while marking horizontal and vertical reference lines. Paper or the Plastic Template may be used in this step.

2. Prepare Door, Frame, & Sill

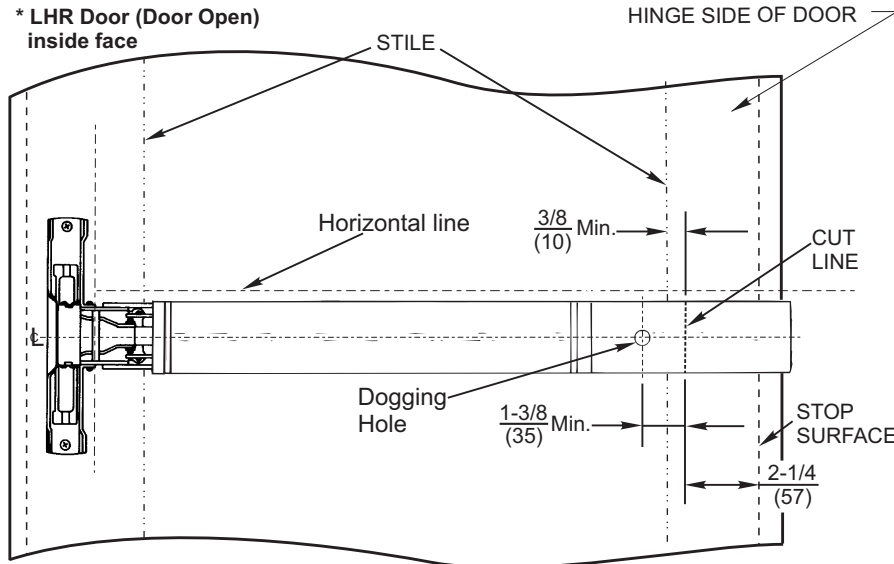
- A. Locate "Device Template" aligning VERTICAL REFERENCE and HORIZONTAL REFERENCE lines. Tape template to door face.
- B. Extend centerline of Rod and Strikes from "Device Template" to door top and bottom, on door face.
- C. Locate Top Latch/Strike and Bottom Bolt Case templates in place over centerline of Rods and Strikes on door. Tape templates in place and mark holes. Note that the centerline of the rods and strikes used to install top and bottom bolts is not the Vertical Reference centerline.
- D. Locate and tape Trim Template to door when required (See instructions packed with Trim).
- E. Mark and prepare holes per installation template (exclude 791 or 726 strike, holes prepared in Step 7).
- F. Locate 790 Bottom Strike Template. Tape in place over Rods and Strikes centerline on door. Tape template in place and mark hole locations. Holes to be prepared in Step 7.
- G. Remove templates from door.



3. Size Device

Device must be field cut to size, as required

* LHR Door (Door Open)
inside face



Determine device length

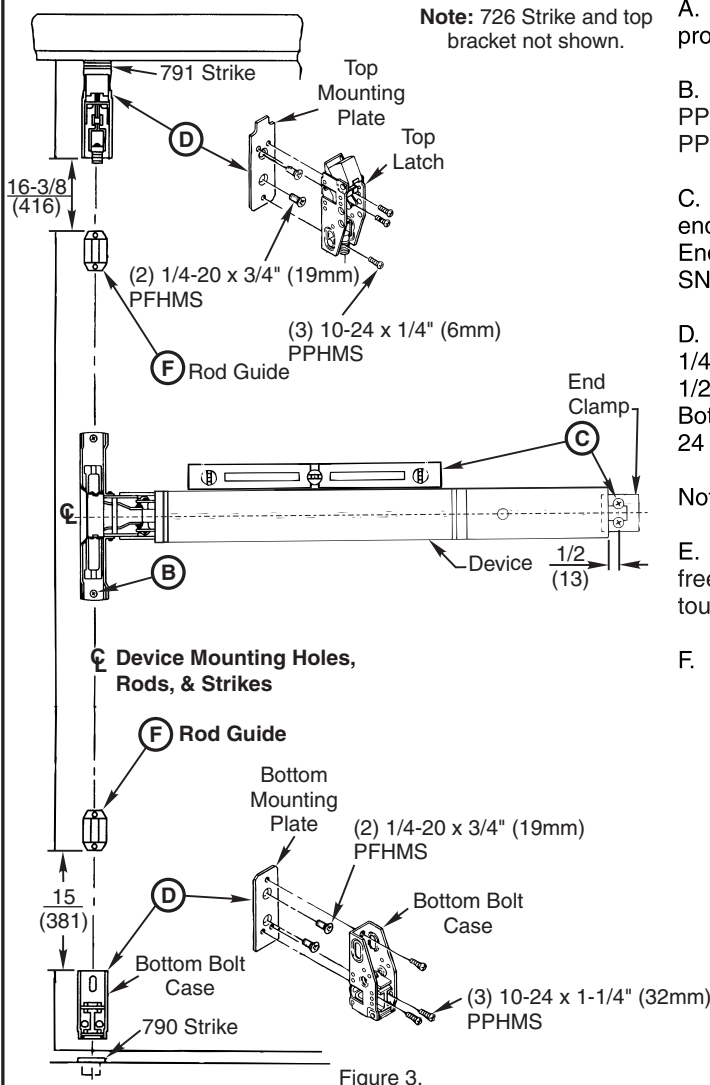
1. Close door. Measure 2-1/4" (57mm) from the Stop Surface on the hinge side of the door, mark Horizontal Reference at this point.

Note: This dimension must be 3/8" (10mm) minimum from edge of the stile on the door.

2. Open door. Align mounting holes in device with Mounting Holes in the door. Mark device where it crosses the mark from Step 1. If mark is less than 1-3/8" (35mm) min. from Dogging Hole, a shorter device is required.

3. Before cutting, make sure the End Cover is in place and there is no gap between it and the Pushpad. Cut device on mark from Step 2.

4. Mount Device & Components



Note: 726 Strike and top bracket not shown.

A. Mount trim when required per installation instruction sheet provided with trim pack.

B. Fasten Device at the Latch Head using (2) 1/4-20 x 1" (25mm) PPHMS or 3/8" (10mm) dia. SNB (Metal Door) or #14 X 1-1/2" PPH"AB"SMS (Wood Door), to door surface.

C. Set Device Level. Using the End Clamp as a template locate the end clamp mounting holes. Prepare end clamp holes and mount End Clamp using (2) 1/4-20 x 1" (25mm) PPHMS or 3/8" (10mm) SNB or #14 X 1-1/2" PPH"AB"SMS (Wood Door).

D. Attach Top and Bottom Mounting Plates to door surface using (4) 1/4-20 x 3/4" (13mm) PFHMS or 3/8" (10mm) dia. SNB or #14 x 1-1/2" (38mm) PFH"AB"SMS (Wood Door). Attach Top Latch and Bottom Bolt Case to Top and Bottom Mounting Plates using (6) 10-24 x 1/4" (6mm) PFHMS. (See Figure 3).

Note: For 7170(F)(LBR) options see 726 strike template.

E. Check Slide Action. Depress pushpad, slide should move up freely, if not, verify handing (See Front Side for Details). Release touchbar (slide should fall back to original rest position).

F. Install Rod Guides, (See Detail).

1. Locate Rod Guide as dimensioned. Spot (2) mounting holes.

2. Prepare holes.

- Metal Door: #28 - .140" (3.5mm) dia. Inside face.

- Wood Door: #28 - .140" (3.5mm) dia. X 3/4" (19mm) deep.

3. Mount Guides, fasten with (2) #8 x 1/2" (13mm) PRH"AB"SMS as shown.

Figure 3.

5. Rod Preparation & Assembly

Note: Below listed instructions are based on a device mounted 39-15/16" (1014mm) from finished floor or threshold. Any deviation on device mounting height must be accommodated to insure proper device function.

A. Top Rod Sizing

- For openings under 7' (2134mm), subtract the actual opening height from 7' (2134mm).

Example: 6'8" (2032mm) opening
 $7'0" (2134mm) - 6'8" (2032mm)$
 $= 4" (102mm)$

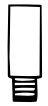
Top Rod must have 4" (102mm) cut from end with 1/8" (3mm) thru hole. Use attached drill fixture to locate and re-drill 1/8" (3mm) dia. hole thru the top rod. Make sure rod bottoms out inside drill fixture prior to drilling. (See Figure 5A).

- For opening over 7' (2134mm), subtract 7' (2134mm) from the actual opening height.

Example: 7'6" (2286mm) - 7'0" (2134mm)
 $= 6" (152mm)$

Top Rod must have a 6" (152mm) extension added to length (See below for available rod lengths).

Rod Extension Options

	60-1510-0280: 2" (51mm)
	60-1510-0277: 6" (152mm)
	60-1510-0278: 12" (305mm)
	(Specify Device Finish)

B. Assemble Top Rod

Insert Top Rod Connector into sized Top Rod and Install 1/8" (3mm) x 1/2" (13mm) Roll Pin thru both pieces until flush on both sides. (See Figure 5B).

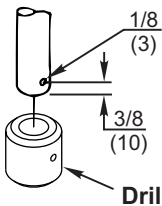


Figure 5A: Drill Pin Hole

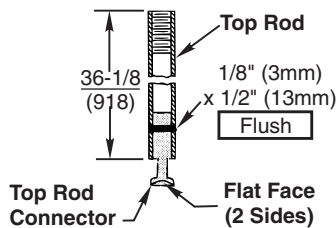
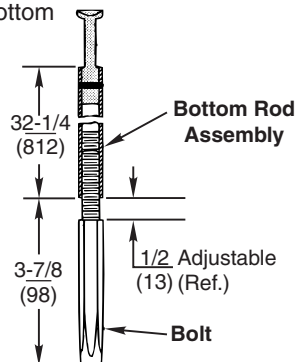


Figure 5B: Top Rod Assembly

6. Bottom Bolt Assembly

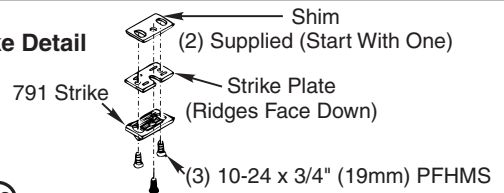
- Thread Bottom Bolt into Bottom Rod Assembly.

- Leave 1/2" (13mm) for adjustment.



7. Complete Installation

Top Strike Detail



A. Install Top Rod and 791 Strike

- Thread Top Rod Assembly onto Top Latch. Lift rod to fully retract Top Latchbolt. Depress Pushpad and hold depressed. Adjust top rod length until Rod Connector seats into the Slide Assembly in latch case.

Note: For 7170 devices, skip section (2a) and 2(b). See the installation instructions for the 726 strike on page 9.

- Position the Top Strike Roller between the Tripping Lever and the Bolt on the Top Latch. Verify hole positions and prepare holes per Installation Instruction Template.

- Install Top Strike and Strike Plate using (2) #10-24 x 3/4" (19mm) PFHMS thru outer slots. Adjust and shim strike as needed for zero door rattle. Add third screw (#10-24 x 3/4" (19mm) PFHMS) after final adjustments.

- If Top Bolt does not remain retracted when door is opened, Top Rod is too short. Pull rod out of the guide and the slide then rotate rod to increase length. Upper Bolt should retract flat.

- If upper latch will not deadlock, Top rod is too long. Pull rod out of the guide and the slide and rotate to decrease length.

* If 7170 LBR, skip section B.

B. Install Lower Rod and 790 Strike

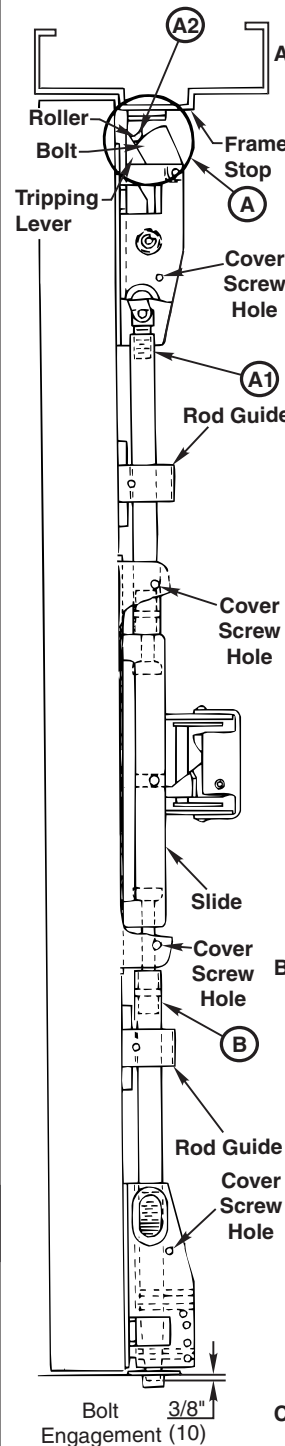
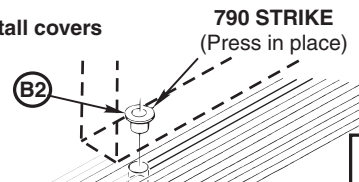
- With door open, actuate Pushpad to retract upper latch. Hang Lower rod from bottom of Slide and adjust bolt so that it clears the finished floor by 1/4".

- Verify location of pipe strike template. Prepare the strike hole and install the pipe strike. Set in place with appropriate bonding material.

- With the door open, actuate pushpad to retract upper latch. Adjust bolt height by pulling the rod out of the guide and slide and rotating until the bolt clears the pipe strike by 1/8".

C. Test device action by Touchbar, by Trim, by Dogging

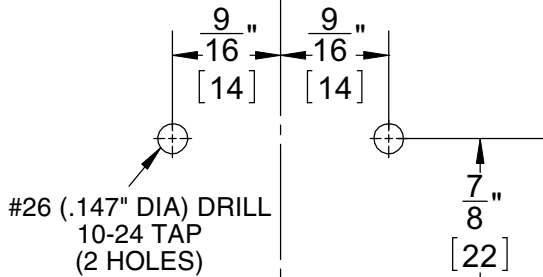
D. Install covers



Note: Bottom Bolt will retract to 1/8" (3mm) above Floor Strike. Floor covering in the door path must be laid out accordingly.

TOP LATCH & 791 STRIKE (7110 only)

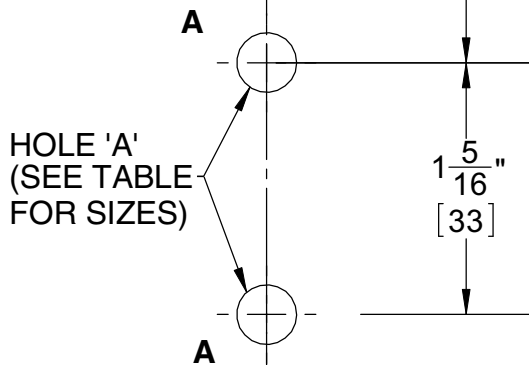
TAPE TO
FRAME STOP



FOLD LINE
(STOP LINE)

ALIGN WITH \varnothing RODS

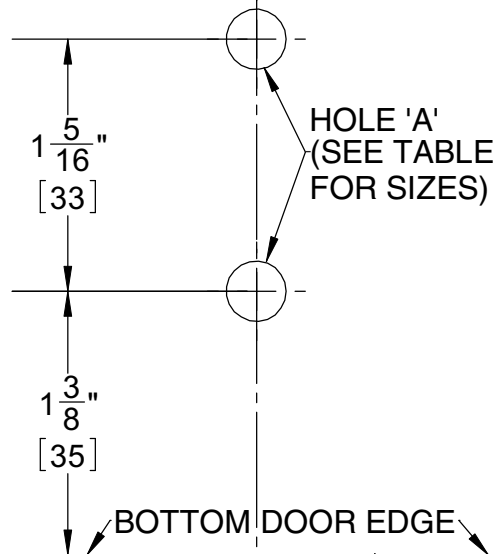
TAPE TO
DOOR STOP



BOTTOM BOLT CASE

TAPE TO
DOOR STOP

ALIGN WITH \varnothing RODS



FOLD ON LINE &
TAPE THIS TAB TO
BOTTOM DOOR EDGE

Notes:

1. For 7170 series devices omit the 791 strike and use this template with the 726 strike template (page 9).
2. Mark \varnothing rods line on door face. Note that the centerline of the rods and strikes, used to install top and bottom bolts, is not the vertical reference centerline.
3. For LBR devices, omit bottom latch and strike installation steps and see separate instructions for top latch and strike.
4. Unreinforced frames require that #10-24 blind rivet nuts (by others) be used to bolt strike. Frames are considered not reinforced when strike mounting screws cannot engage (3) full threads.
5. Dimensions are given in inches (mm).
6. **CAUTION:** Office copiers and facsimile machines may change the size of a drawing and make the template inaccurate to use as a door marker.

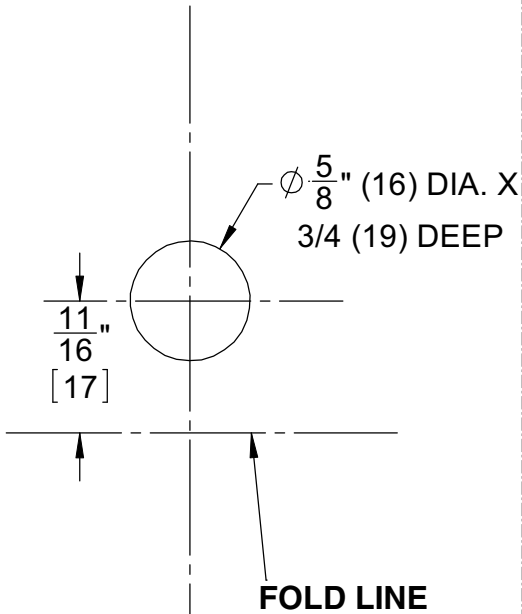
CUTLINE



DOOR/FRAME	FASTENER	HOLE "A" PREPARATION
Metal Reinforced	1/4-20 PPHMS	Drill: #7 (.201 dia.) Tap: 1/4-20
Thru Bolt (Metal or Wood)	1/4-20 SNB	3/8" (9.5mm) dia. Thru door
Wood Door	#14 x 1-1/2" PPH"AB"SMS	Drill: #9 (.196" dia.)

This page left blank intentionally.

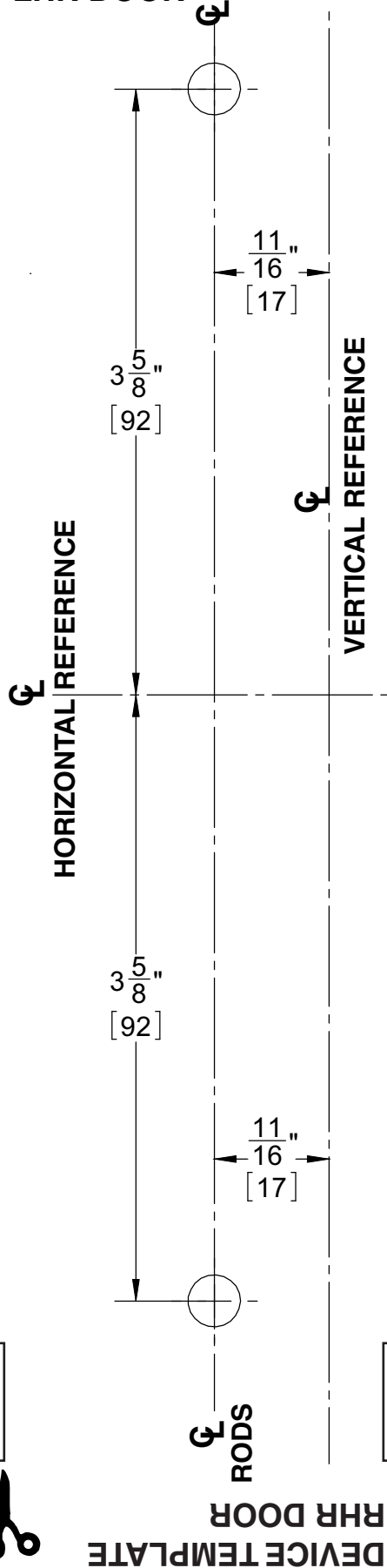
790 STRIKE



TAPE TO DOOR FACE

ALIGN WITH CL OF RODS

DEVICE TEMPLATE LHR DOOR



Notes:

1. For 7170 (LBR) Less bottom rod devices omit the 790 strike and use this template with the 726 strike template (page 9).

2. Mark CL rods line on door face. Note that the centerline of the rods and strikes, used to install top and bottom bolts, is not the vertical reference centerline.

3. For LBR devices, omit bottom latch and strike installation steps and see separate instructions for top latch and strike.

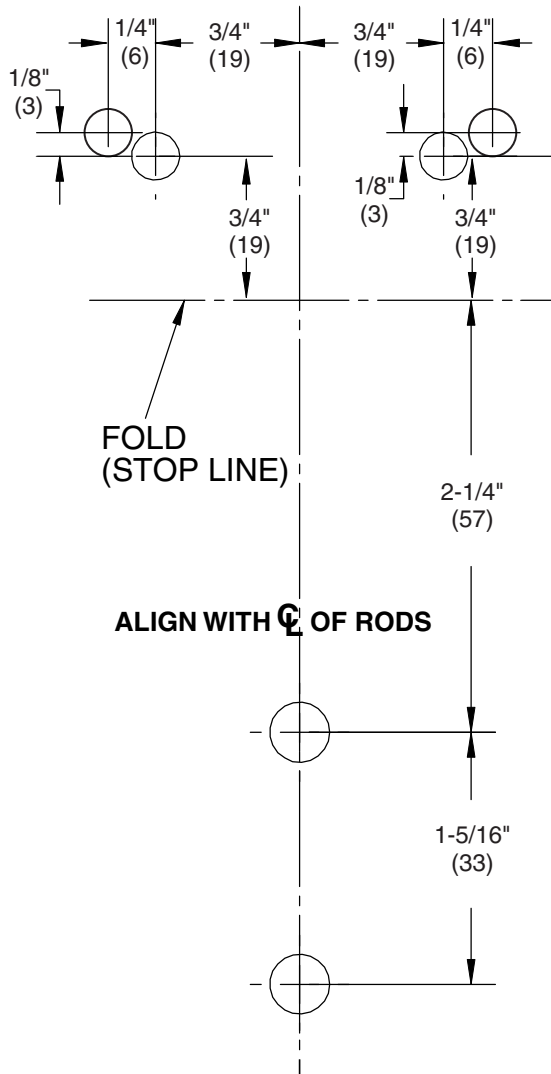
4. Unreinforced frames require that #10-24 blind rivet nuts (by others) be used to bolt strike. Frames are considered not reinforced when strike mounting screws cannot engage (3) full threads.

5. Dimensions are given in inches (mm).

6. **CAUTION:** Office copiers and facsimile machines may change the size of a drawing and make the template inaccurate to use as a door marker.

This page left blank intentionally.

**TAPE THIS TAB TO FRAME STOP
726 STRIKE**



DOOR	FASTNER	HOLE 'A'
METAL REINFORCED	SCREW	1/4-20 TAP
HOLLOW METAL & ALUMINUM	OPTIONAL SNB	5/16 (8) DIA INSIDE DOOR FACE 3/8 (10) DIA OUTSIDE DOOR FACE
ALUMINUM	SNB	THRU DOOR

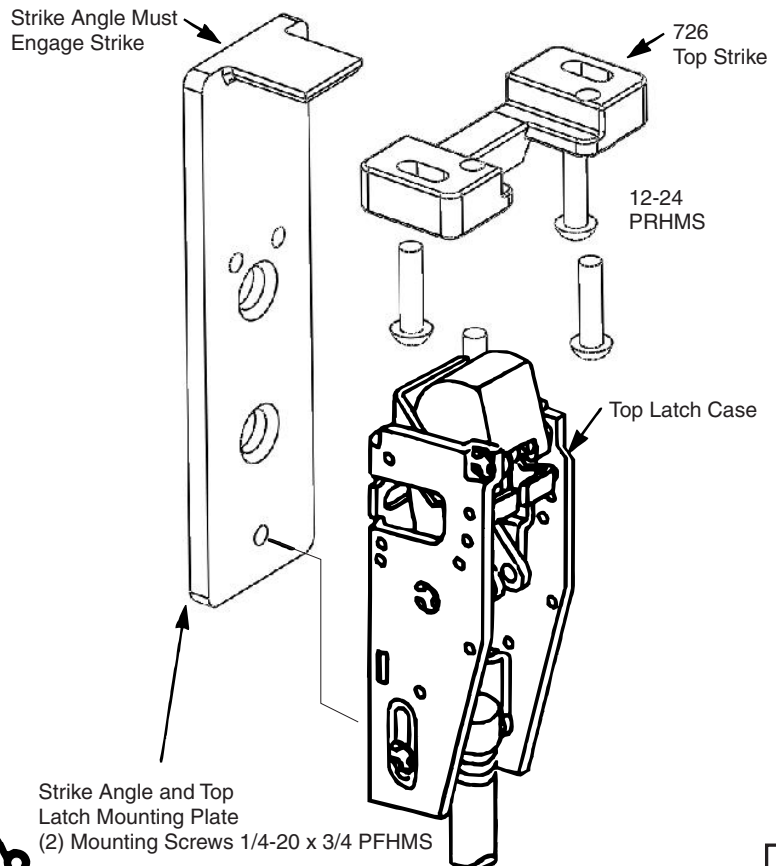
**TAPE TO DOOR
TOP LATCH
& STRIKE**

CUTLINE



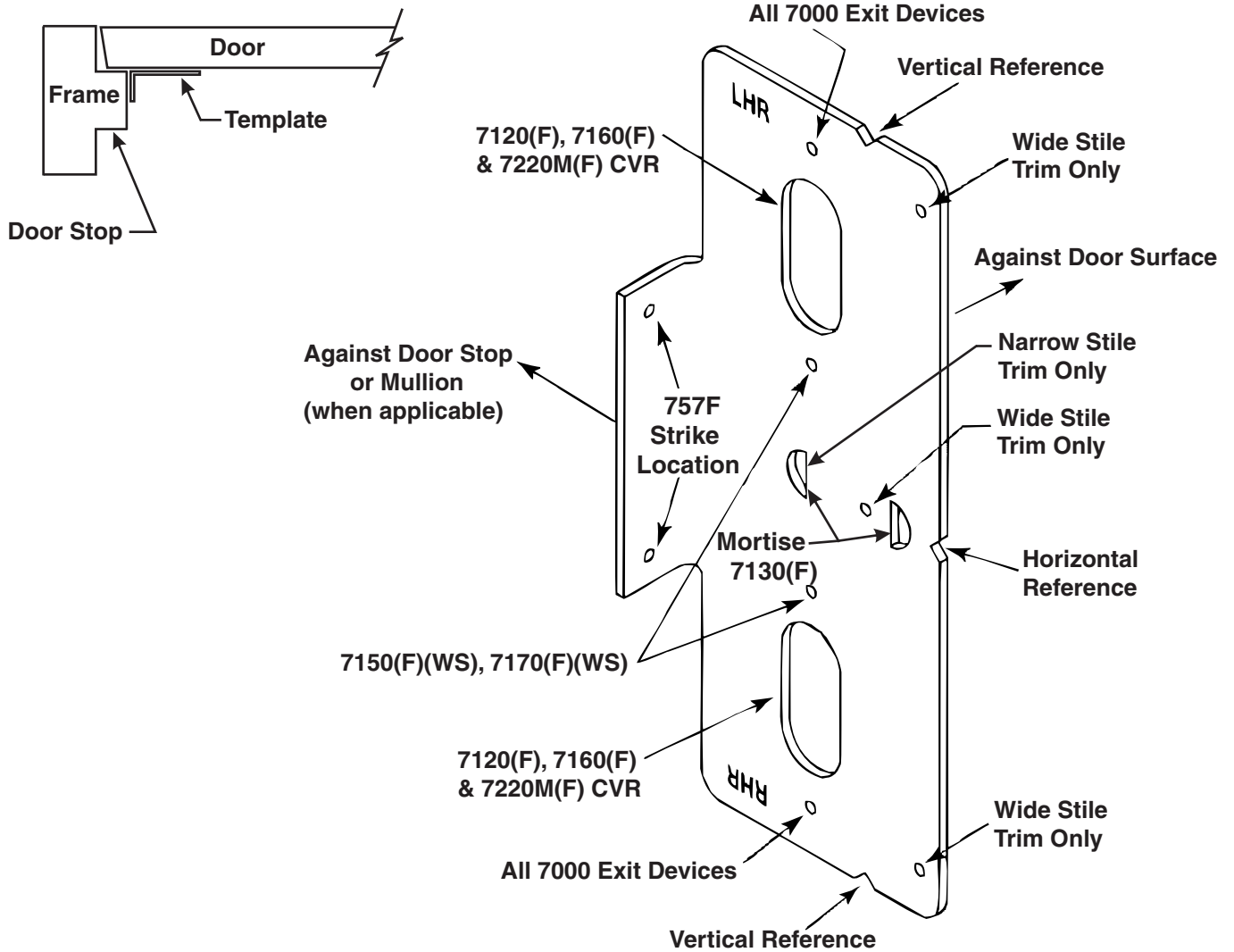
Notes:

1. 726 strike template used for 7170 series devices.
2. Mark Rods line on door face. Note that the centerline of the rods and strikes used to install top and bottom bolts, is not the Vertical Reference centerline.
3. For LBR (Less Bottom Rod) Devices, omit bottom latch and strike installation and install 726 Top Strike with Strike Angle and "Popper" assembly supplied with device.
Caution: LBR Devices should not be used where security is a primary concern.
4. **726 Top Strike Installation:** With door securely closed, tape template to door and frame stop. Spot and prepare holes for 726 top strike using (2) 12-24 Round Head Screws provided. With template still in-place, assemble upper mounting plate to door with the strike angle engaged into the 726 top strike, as shown below. Adjust hole locations for the mounting plate if required. Spot and prepare (2) outer holes then prepare (2) inner holes as designated on the template.
5. Unreinforced frames require that 12-24 blind rivet nuts (by others) be used to bolt strike. Frames are considered not reinforced when strike mounting screws cannot engage (3) full threads.
6. Dimensions are given in inches (mm).
7. **CAUTION:** Office copiers and facsimile machines may change the size of a drawing and make the template inaccurate to use as a door marker.



Plastic Installation Template 7000 Exit Devices

For use in conjunction with instruction sheets packed with exit device.
Holes and slots are identified below by exit device series and trim. Prep door and frame for only those features required for the exit device being installed.



Yale Locks & Hardware

Product Support Tel 800.438.1951 • www.yalelocks.com

Yale Locks & Hardware is a division of Yale Security Inc., an ASSA ABLOY Group company.

Yale® is a registered trademark of Yale Security Inc., an ASSA ABLOY Group company. Other products' brand names may be trademarks or registered trademarks of their respective owners and are mentioned for reference purposes only. These materials are protected under U.S. copyright laws. All contents current at time of publication.

Yale Security Inc. reserves the right to change availability of any item in this catalog, its design, construction, and/or its materials.

Copyright © 2002, 2013, Yale Security Inc., an ASSA ABLOY Group company.

All rights reserved. Reproduction in whole or in part without the express written permission of Yale Security Inc. is prohibited.