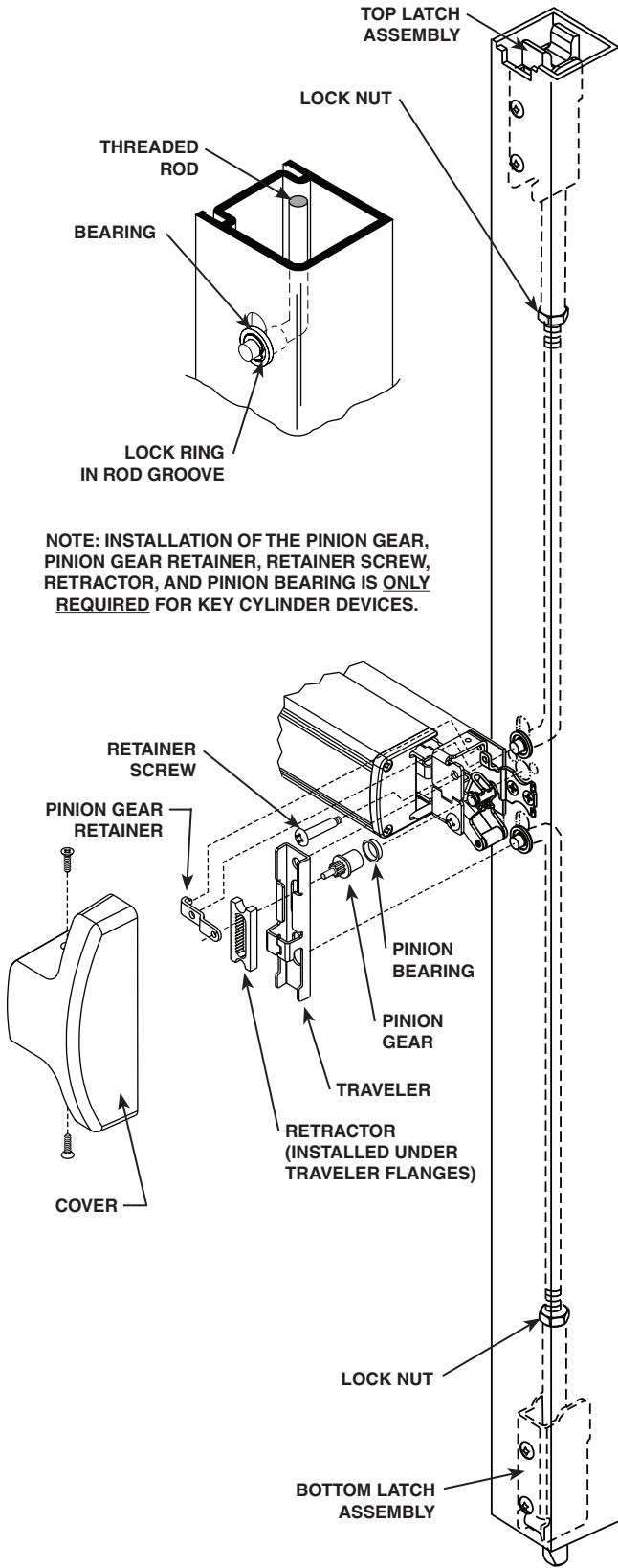


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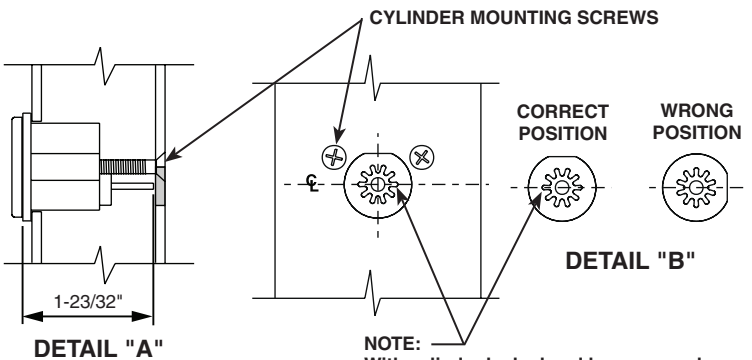
NOTE: INSTALLATION OF THE PINION GEAR, PINION GEAR RETAINER, RETAINER SCREW, RETRACTOR, AND PINION BEARING IS ONLY REQUIRED FOR KEY CYLINDER DEVICES.

INSTALLING CYLINDERS BY OTHERS

COVER REMOVAL
Remove cover by loosening two mounting screws. Device must be undogged for removal. Remove retainer screw, pinion gear retainer, retractor, traveler and pinion gear.

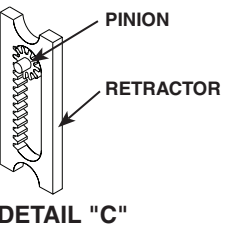
CYLINDER INSTALLATION
Cut tailpiece to correct length and install (see Detail "A"). Mounting screw heads must be flush with door surface.

PINION GEAR AND TRAVELER RE-INSTALLATION
With cylinder in locked position and key removed, insert pinion gear over cylinder tailpiece. Note position of gear teeth in reference to horizontal center line (see detail "B"). If teeth do not line up with center line, remove pinion, rotate 1/4 turn in either direction and replace. Insert retractor under traveler flanges. Install traveler and retractor by positioning over ends of rods and pinion gear. See retractor installation below for orientation of retractor.

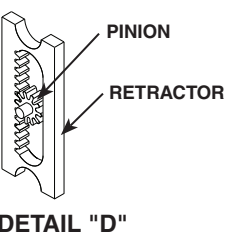


NOTE:
Keep retractor teeth all to the left so keys turn same direction.

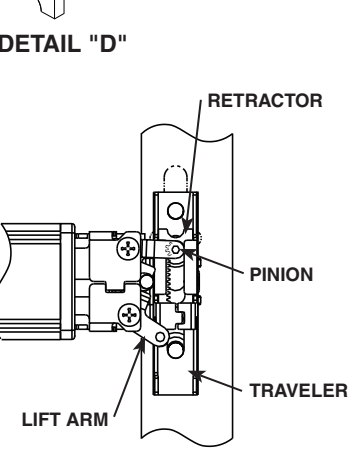
NOTE:
With cylinder locked and key removed, insert pinion gear as shown. Note gear teeth location on horizontal center line.



RETRACTOR INSTALLATION WITH KEY DOGGING (STANDARD FACTORY SETTING)
Install retractor over pinion gear with pinion at extreme top end of gear slot (see Detail "C"). The cylinder key can then be rotated a full turn (360°) and removed from cylinder, unlocking door and holding it unlocked. Inserting key in cylinder and reversing direction of rotation will release dogging feature, locking the door.



RETRACTOR INSTALLATION WITHOUT KEY DOGGING
Install retractor over pinion gear with pinion approximately 1/2 way down gear slot (see Detail "D"). Rotating the key as far as it will go, will unlock the door, but key must be returned to original position to be removed from cylinder. Door will again lock when it closes.



COVER RE-INSTALLATION
Place pinion gear retainer over end of pinion as shown. Fasten pinion gear retainer to centercase using retainer screw. Before re-installing cover, check orientation of lift bar as shown (see Detail "E"). Secure cover to device by slipping it over centercase and securing cover screws. After re-installation, confirm that all parts move freely and that cylinder operates properly.

When panic is activated, the bottom bolt should be held flush to within 1/32" of the bottom of door and top latch held retracted.

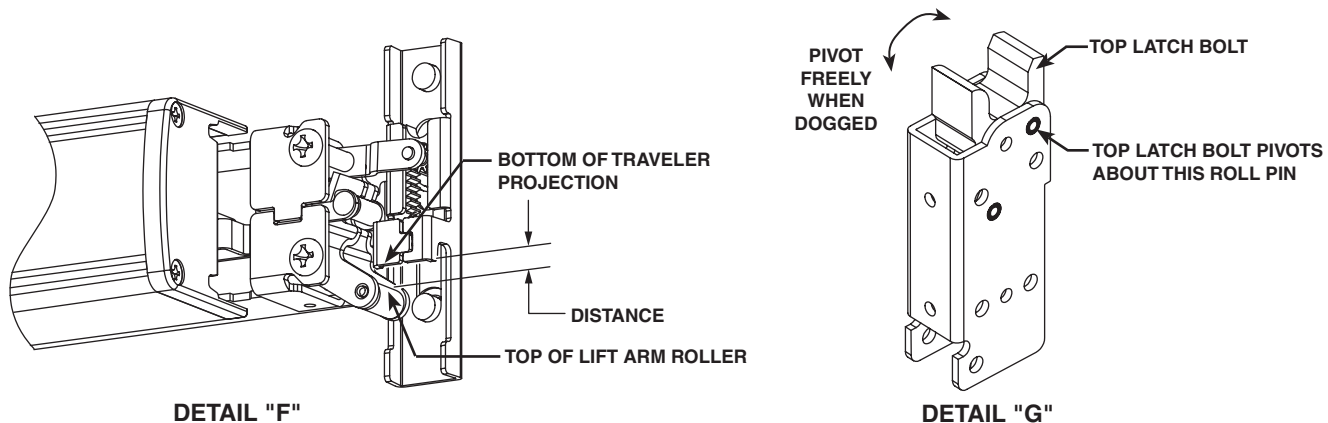
When panic device is released, bottom bolt should extend between 7/16" and 1/2" below bottom of door and top latch held in locked position.

ROD ADJUSTMENT PROCEDURE

1690 Series rods are preset at the factory. However, in some cases the rods may require adjustment. The general rod adjustment procedure is to adjust the top rod first and then the bottom rod.

1690 TOP ROD ADJUSTMENT

- With the 1690 device installed and rods in the door, remove the active cover.
- Dog the device. If it dogs and undogs freely go to **Step 3**. If it does not, the top rod is too long.
To determine how much to shorten the rod:
 - Undog the device.
 - Hold the top rod all the way up and push the lift arm to the bottom of its travel with the push bar completely out.
 - Measure the distance between the bottom of the traveler projection and the top of the lift arm roller (**See Detail "F"**).
 - Subtract the distance from 1/2".
 - Using the difference from **Step D**, find the number of turns to shorten the top rod from the "**Rod Adjustment Table**" shown below.
 - Remove the top rod and shorten it by the required number of turns. Reinstall the top rod.
- Dog the device and push the traveler against the lift arm while maintaining pressure on the traveler. Attempt to pivot the top latch bolt (**See Detail "G"**). If the top latch bolt pivots freely, go to **Step 4**. If the top latch bolt drags or lifts the top rod, the top rod is too short.
To determine how much to lengthen the top rod:
 - Push the traveler all the way down then slowly lifting it away from the lift arm until the top latch bolt moves freely.
 - Measure the distance between the bottom of the traveler projection and the top of the lift arm roller (**See Detail "F"**).
 - Using the measured distance, find the number of turns to lengthen the top rod from the "**Rod Adjustment Table**".
 - Remove the top rod and lengthen it by the required number of turns. Reinstall the top rod.



ROD ADJUSTMENT TABLE																
DISTANCE	1/32"	1/16"	3/32"	1/8"	5/32"	3/16"	7/32"	1/4"	9/32"	5/16"	11/32"	3/8"	13/32"	7/16"	15/32"	1/2"
NO. OF TURNS	1	2	3	3	4	5	6	6	7	8	9	9	10	11	12	12

1690 BOTTOM ROD ADJUSTMENT

- Undog the device and push down firmly on the lift arm and end of the bottom rod (be sure the push bar is all the way out).
Find the location of the bottom rod to the bottom of the door. Make sure you measure from the bottom of the door, NOT from the latch housing. If the bottom rod is flush with the door or sticks out from the door no more than 1/32", go to **Step 7**.
- If the bottom rod sticks out more than 1/32", the bottom rod is too long.
To determine how much to shorten the bottom rod:
 - Measure the distance that the bottom rod sticks out of the door and look up the number of turns required to shorten the bottom rod in the "**Rod Adjustment Table**".
 - Remove the bottom rod, shorten it by the required number of turns, reinstall bottom rod.
- If the bottom rod is recessed into the door by more than 1/16", the bottom rod is too short.
To determine how much to lengthen the bottom rod:
 - Measure the distance that the bottom rod is recessed into the door and look up the number of turns required to lengthen the bottom rod in the "**Rod Adjustment Table**".
 - Remove the bottom rod, lengthen it by the required number of turns, reinstall bottom rod.

OPERATIONAL CHECK

- Dog the device. The top latch bolt should pivot freely and the bottom latch bolt should be flush with the bottom of the door.
- Undog the device and trip the top latch bolt. The top latch bolt should stay latched and the bottom bolt should extend at least 7/16" to 1/2" from the bottom of the door.

1690 TOUCHBAR CONCEALED EXIT DEVICE PARTS BREAK DOWN

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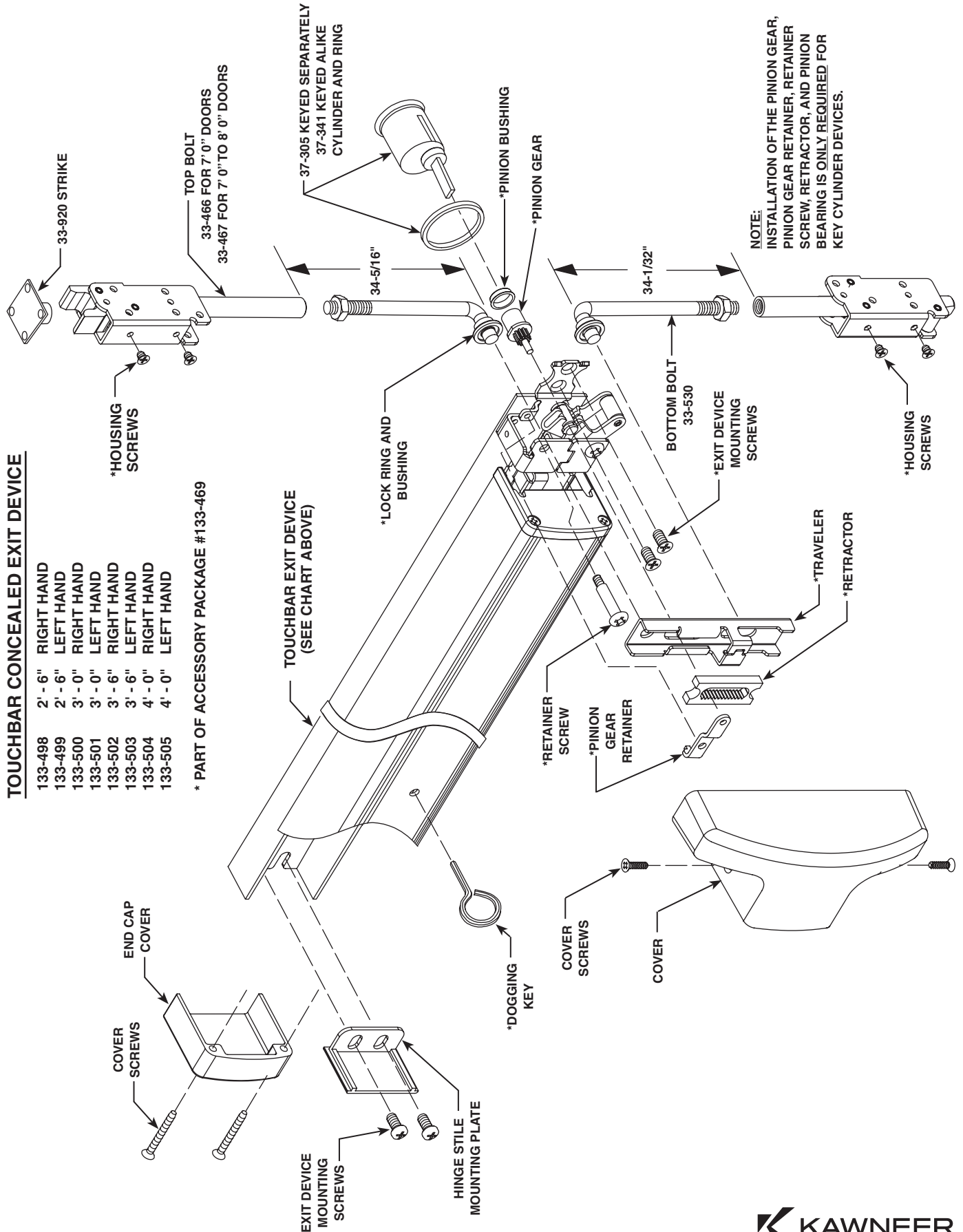
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TOUCHBAR CONCEALED EXIT DEVICE

133-498	2' - 6"	RIGHT HAND
133-499	2' - 6"	LEFT HAND
133-500	3' - 0"	RIGHT HAND
133-501	3' - 0"	LEFT HAND
133-502	3' - 6"	RIGHT HAND
133-503	3' - 6"	LEFT HAND
133-504	4' - 0"	RIGHT HAND
133-505	4' - 0"	LEFT HAND

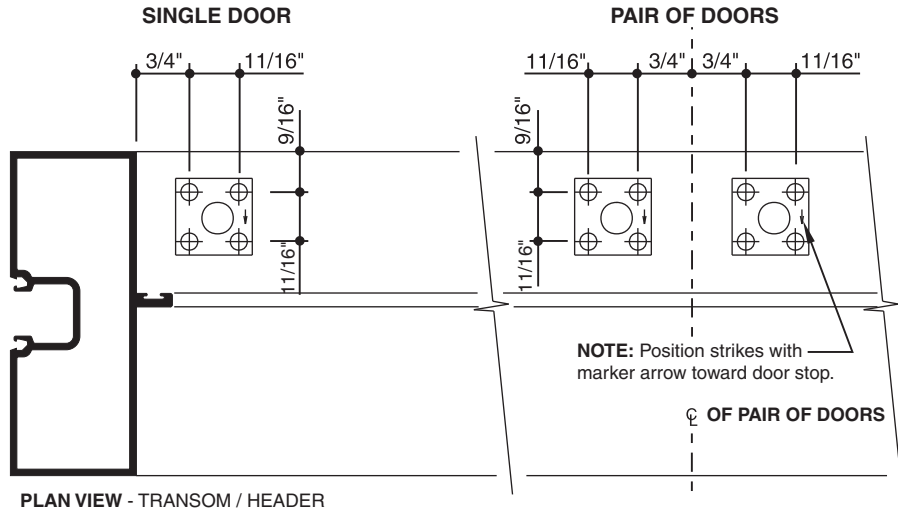
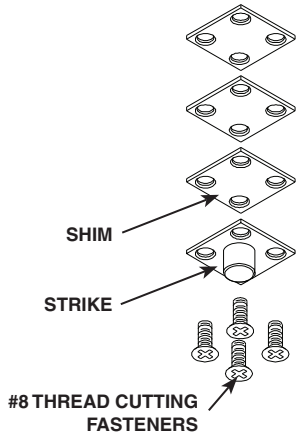
* PART OF ACCESSORY PACKAGE #133-469



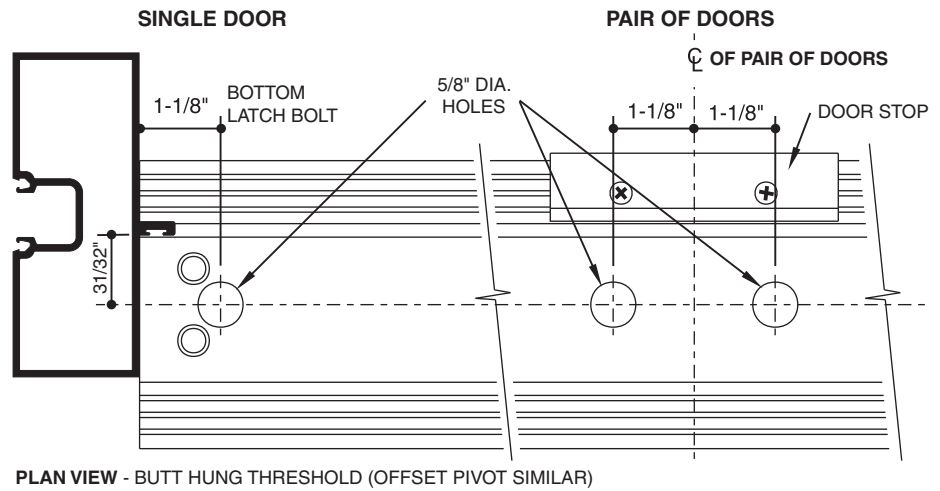
NOTE:
INSTALLATION OF THE PINION GEAR, PINION GEAR RETAINER, RETAINER SCREW, RETRACTOR, AND PINION BEARING IS ONLY REQUIRED FOR KEY CYLINDER DEVICES.

TOP STRIKE INSTALLATION

Install the top strike in the normal position with the marker arrow toward door stop (see sketches below). If adjustment is required the strike can be rotated either 90° or 180°. Shim strike to accommodate top door clearance

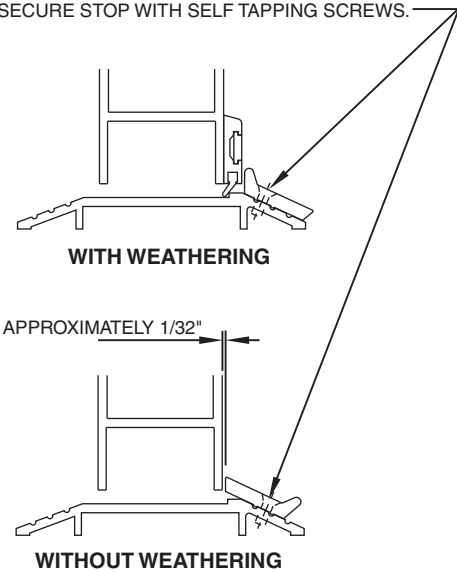


THRESHOLD INSTALLATION

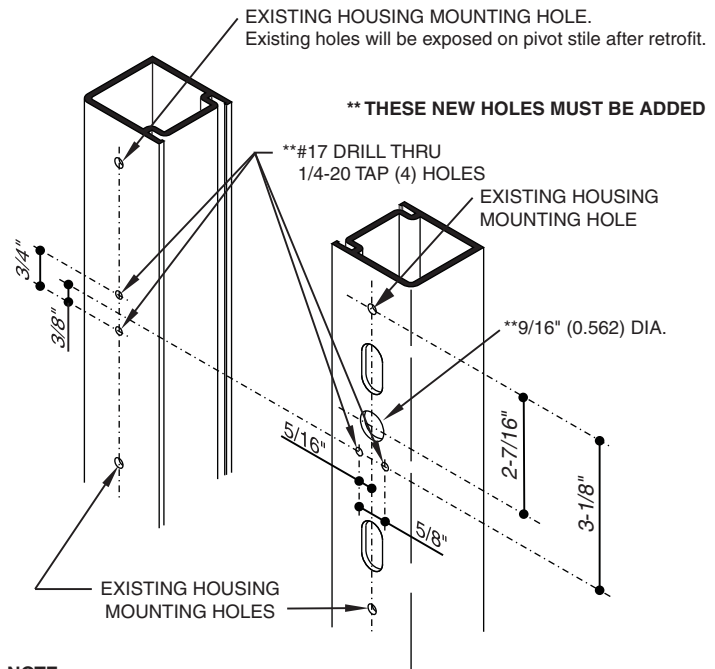


DOOR STOP INSTALLATION

USING DOOR STOP AS A TEMPLATE, DRILL (2) 5/32" (0.156) DIAMETER HOLES AND SECURE STOP WITH SELF TAPPING SCREWS.



CRASH BAR TO TOUCHBAR RETROFIT



NOTE: Dimensions are from centerline of housing mounting holes.

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