

# FHC | ALUMINUM<sup>®</sup>

STOREFRONTS & ENTRANCE SYSTEMS

## FRAMED STOREFRONT ENTRANCE DOORS



USE TEMPERED  
GLASS

OR



USE INSULATED  
TEMPERED GLASS



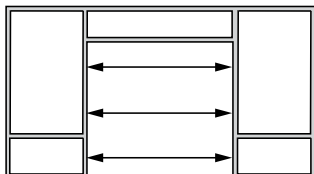
## Introduction

This installation guide provides general instructions for the installation of FHC ALUMINUM® Storefront Framed Entrance Doors. It is designed to assist the professional glazing contractor in the successful installation of new or replacement FHC doors and assumes basic knowledge and expertise in the field.

## Site Assessment Check List for a New Door

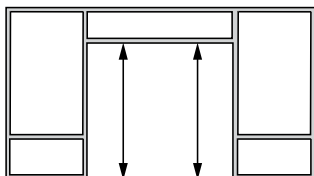
- ☐ Familiarize yourself with the local building codes and regulations that govern storefront installations. Ensure that the proposed door meets all the necessary requirements.
- ☐ Examine the structural integrity of the surrounding walls and framework to ensure they can support the weight of the FHC ALUMINUM® Framed Door.
- ☐ Check for obstructions: Identify any potential obstructions in the vicinity of the door, both inside and outside, that may hinder the installation process or the operation of the door.
- ☐ Evaluate ADA compliance: Ensure that the door complies with the Americans with Disabilities Act (ADA) requirements for accessibility. This includes appropriate door width, hardware height, and operability.
- ☐ Inspect flooring conditions: Check the condition of the flooring inside and outside the storefront. The flooring should be level and free from any defects that could affect the door's operation.
- ☐ Consider safety and security measures: Assess and inform the client for the need of additional devices, such as panic bars, electronic access control systems, automatic doors, push pads, and other egress options that may be required.

## Measuring



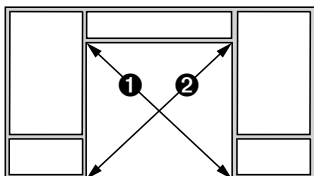
### Opening Width:

Measure the horizontal opening in (3) places as shown. Use the smallest dimension for the width. Record the number.



### Opening Height:

Take (2) measurements of the vertical opening as shown. Use the smallest dimension for the opening height. Record the number.



### Squareness:

Check the squareness of the opening. Measure the diagonal dimensions of the opening as shown ① and ②. If the opening is more than 1/4" out-of-square, it should be corrected prior to door installation.

Width \_\_\_\_\_

Height \_\_\_\_\_

☐ Single Door

☐ Double Door

### DRAWINGS NOT TO SCALE

**NOTE:** Variations may occur from images depicted due to parts availability and improvement updates. Refer to your FHC shop drawings for current part number and details.

# Glass Deductions

## Glass Formulas For Doors With Standard Rails

### 200 SERIES

### 300 SERIES

### 500 SERIES

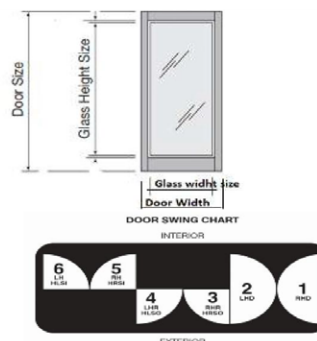
## RAIL SIZES:

5762	2 5/16"
5763	3 1/4"
5654	3 3/4"
5655	6"
6100	10"

## STILE SIZES:

5760	2 1/8"
5761	2 1/8"
5767	2 1/8"
6650	3 3/4"
6651	3 3/4"

6655	3 3/4"
6652	5 3/16"
6653	5 3/16"
6666	5 3/16"



## Glass Size Sample

### 200 Series 1/4" Glass

1. Door Size W= 35 3/4" x H= 83 3/16"

## Formula

35 3/4" Minus [2 5/16" + 2 5/16"] = 31 1/8" Glass Width Size  
83 3/16" Minus [2 1/2" + 10 3/16"] = 70 1/2" Glass Height Size

## Note:

Round Glass Calculation To the Nearest 1/16" Inch.

## Glass Size Deduction For 200 Series Narrow Stile

### Single Door 1/4" Glass

5762 Top, 6100 Bottom 5760 Pivot Side, 5760 Lead side 5761 Pivot Side, 5761 Lead side	Door Height Minus [2 1/2" + 10 3/16"]	Door Width Minus [2 5/16" + 2 5/16"]
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### Single Door 1/4" Glass

5763 Top, 6100 Bottom 5760 Pivot Side, 5760 Lead side 5761 Pivot Side, 5761 Lead side	Door Height Minus [7/16" + 10 3/16"]	Door Width Minus [2 5/16" + 2 5/16"]
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### Pair of Doors 1/4" Glass

5762 Top, 6100 Bottom 5760 or 5761 Pivot Side, 5767 Lead side Active 5760 or 5761 Pivot Side, 5761 Lead side Inactive	Door Height Minus [2 1/2" + 10 3/16"]	Door Width Minus [2 5/16" + 2 5/16"]
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### Pair of Doors 1/4" Glass

5763 Top, 6100 Bottom 5760 or 5761 Pivot Side, 5767 Lead side Active 5760 or 5761 Pivot Side, 5761 Lead side Inactive	Door Height Minus [7/16" + 10 3/16"]	Door Width Minus [2 5/16" + 2 5/16"]
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### Single Door 1" Glass

5762 Top, 6100 Bottom 5760 Pivot Side, 5760 Lead side 5761 Pivot Side, 5761 Lead side	Door Height Minus [2 13/16" + 10 1/2"]	Door Width Minus [2 5/8" + 2 5/8"]
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### Single Door 1" Glass

5763 Top, 6100 Bottom 5760 Pivot Side, 5760 Lead side 5761 Pivot Side, 5761 Lead side	Door Height Minus [3 3/4" + 10 3/16"]	Door Width Minus [2 5/8" + 2 5/8"]
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### Pair of Doors 1" Glass

5762 Top, 6100 Bottom 5760 or 5761 Pivot Side, 5767 Lead side Active 5760 or 5761 Pivot Side, 5761 Lead side Inactive	Door Height Minus [2 13/16" + 10 1/2"]	Door Width Minus [2 5/8" + 2 5/8"]
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### Pair of Doors 1" Glass

5763 Top, 6100 Bottom 5760 or 5761 Pivot Side, 5767 Lead side Active 5760 or 5761 Pivot Side, 5761 Lead side Inactive	Door Height Minus [3 3/4" + 10 3/16"]	Door Width Minus [2 5/8" + 2 5/8"]
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## Glass Size Deduction For 300 Series Medium Stile

### Single Door 1/4" Glass

5654 Top, 6100 Bottom 6650 Pivot Side, 6650 Lead side 6651 Pivot Side, 6651 Lead side	Door Height Minus [3 15/16" + 10 3/16"]	Door Width Minus [3 15/16" + 3 15/16"]
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### Pair of Doors 1/4" Glass

5654 Top, 6100 Bottom 6650 or 6651 Pivot Side, 6665 Lead side Active 6650 or 6651 Pivot Side, 6651 Lead side Inactive	Door Height Minus [3 15/16" + 10 3/16"]	Door Width Minus [3 15/16" + 3 15/16"]
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### Single Door 1" Glass

5654 Top, 6100 Bottom 6650 Pivot Side, 6650 Lead side 6651 Pivot Side, 6651 Lead side	Door Height Minus [4 1/4" + 10 1/2"]	Door Width Minus [4 1/4" + 4 1/4"]
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### Pair of Doors 1" Glass

5654 Top, 6100 Bottom 6650 or 6651 Pivot Side, 6665 Lead side Active 6650 or 6651 Pivot Side, 6651 Lead side Inactive	Door Height Minus [4 1/4" + 10 1/2"]	Door Width Minus [4 1/4" + 4 1/4"]
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## Glass Size Deduction For 500 Series Wide Stile

### Single Door 1/4" Glass

5655 Top, 6100 Bottom 6652 Pivot Side, 6652 Lead side 6653 Pivot Side, 6653 Lead side	Door Height Minus [6 3/16" + 10 3/16"]	Door Width Minus [5 3/16" + 5 3/16"]
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### Pair of Doors 1/4" Glass

5655 Top, 6100 Bottom 6652 or 6653 Pivot Side, 6666 Lead side Active 6652 or 6653 Pivot Side, 6653 Lead side Inactive	Door Height Minus [6 3/16" + 10 3/16"]	Door Width Minus [5 3/16" + 5 3/16"]
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### Single Door 1" Glass

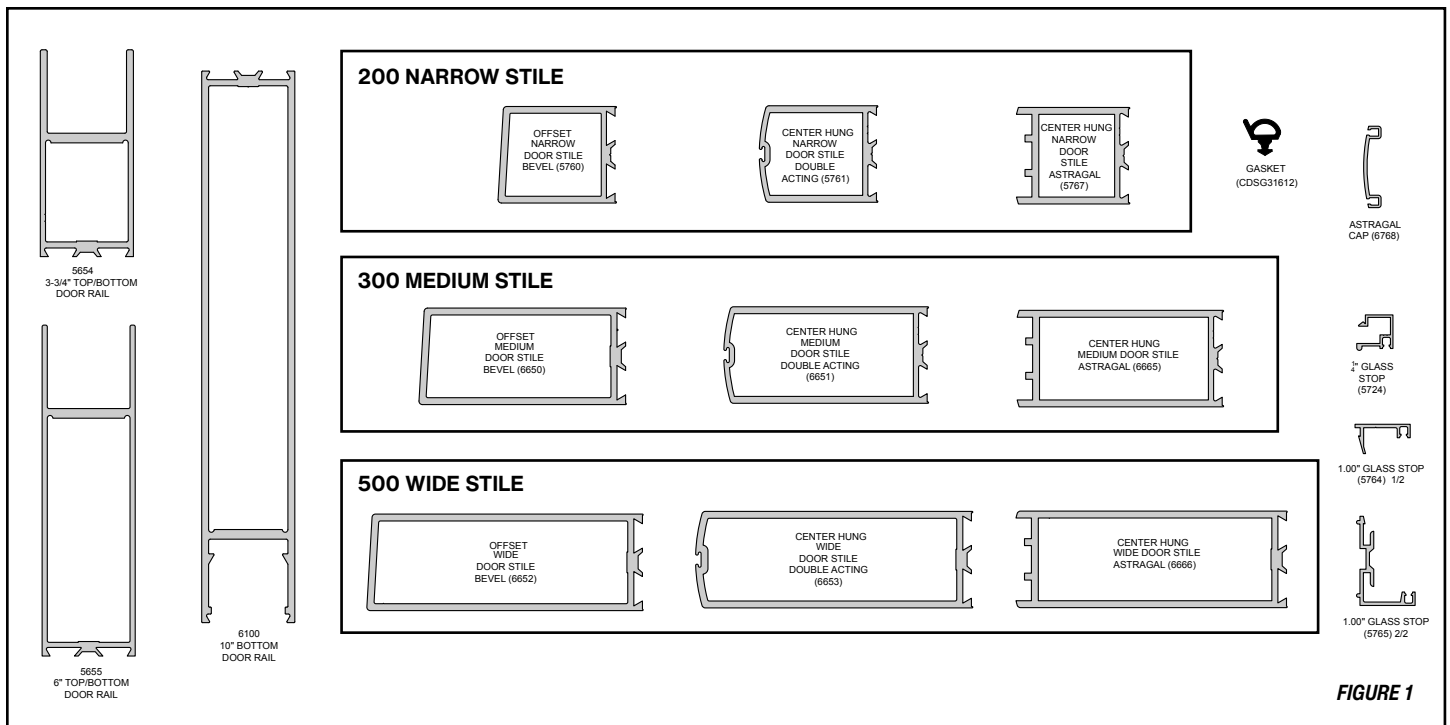
5655 Top, 6100 Bottom 6652 Pivot Side, 6652 Lead side 6653 Pivot Side, 6653 Lead side	Door Height Minus [6 1/2" + 10 1/2"]	Door Width Minus [5 1/2" + 5 1/2"]
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### Pair of Doors 1" Glass

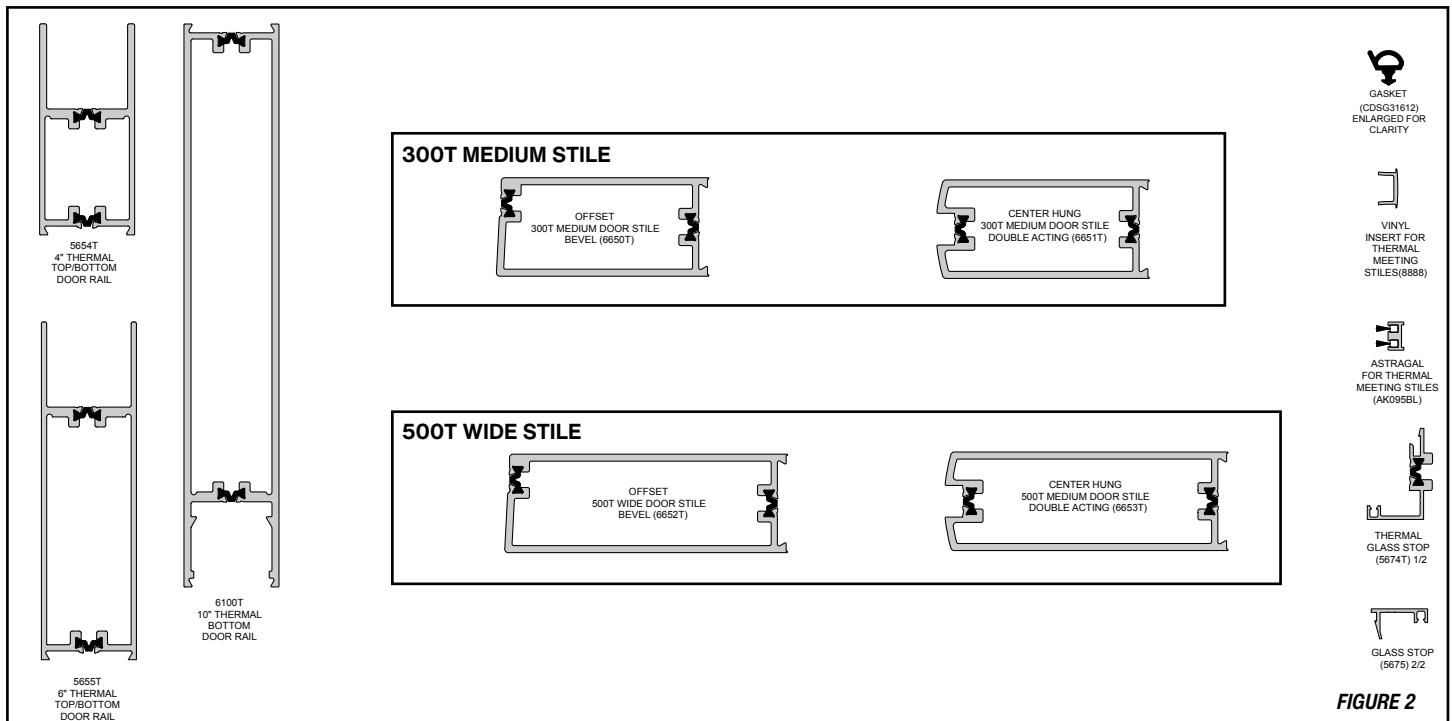
5655 Top, 6100 Bottom 6652 or 6653 Pivot Side, 6666 Lead side Active 6652 or 6653 Pivot Side, 6653 Lead side Inactive	Door Height Minus [6 1/2" + 10 1/2"]	Door Width Minus [5 1/2" + 5 1/2"]
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## Door Frame Parts

### NON-THERMAL DOORS



### THERMAL DOORS



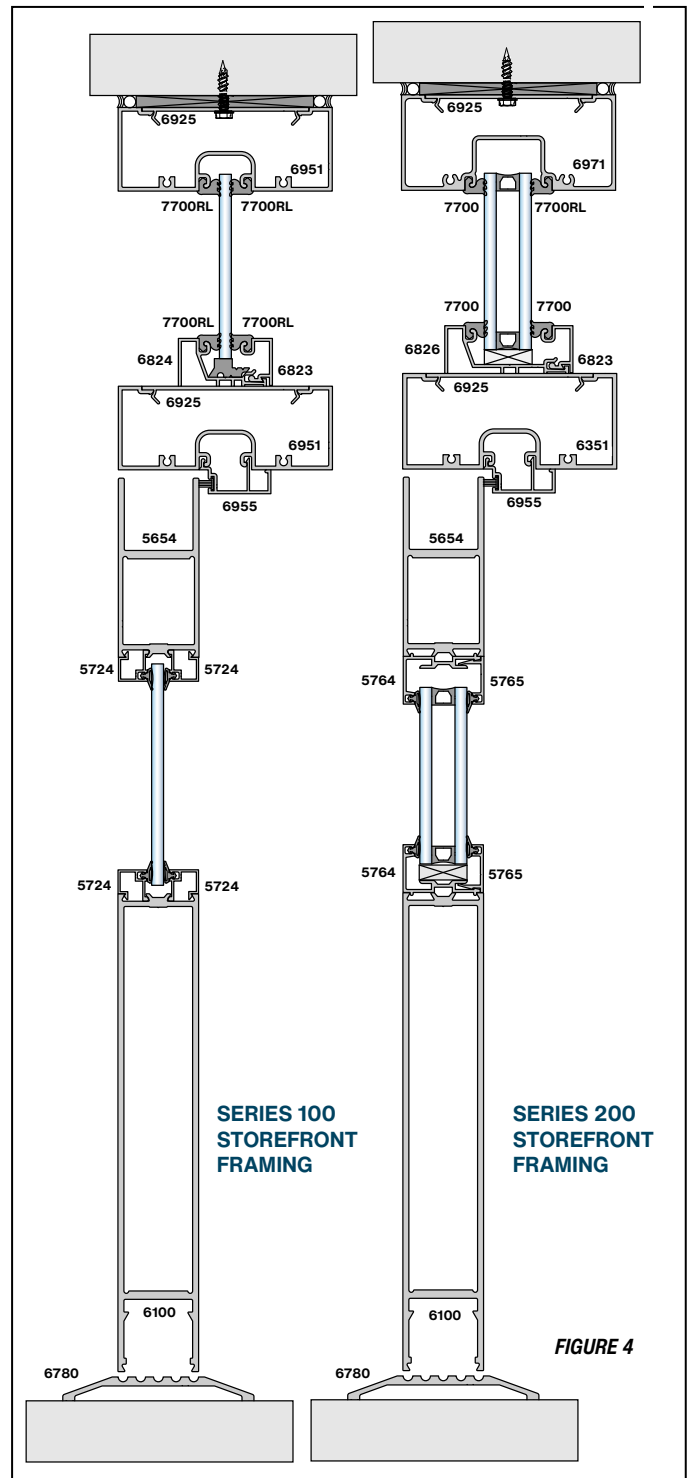
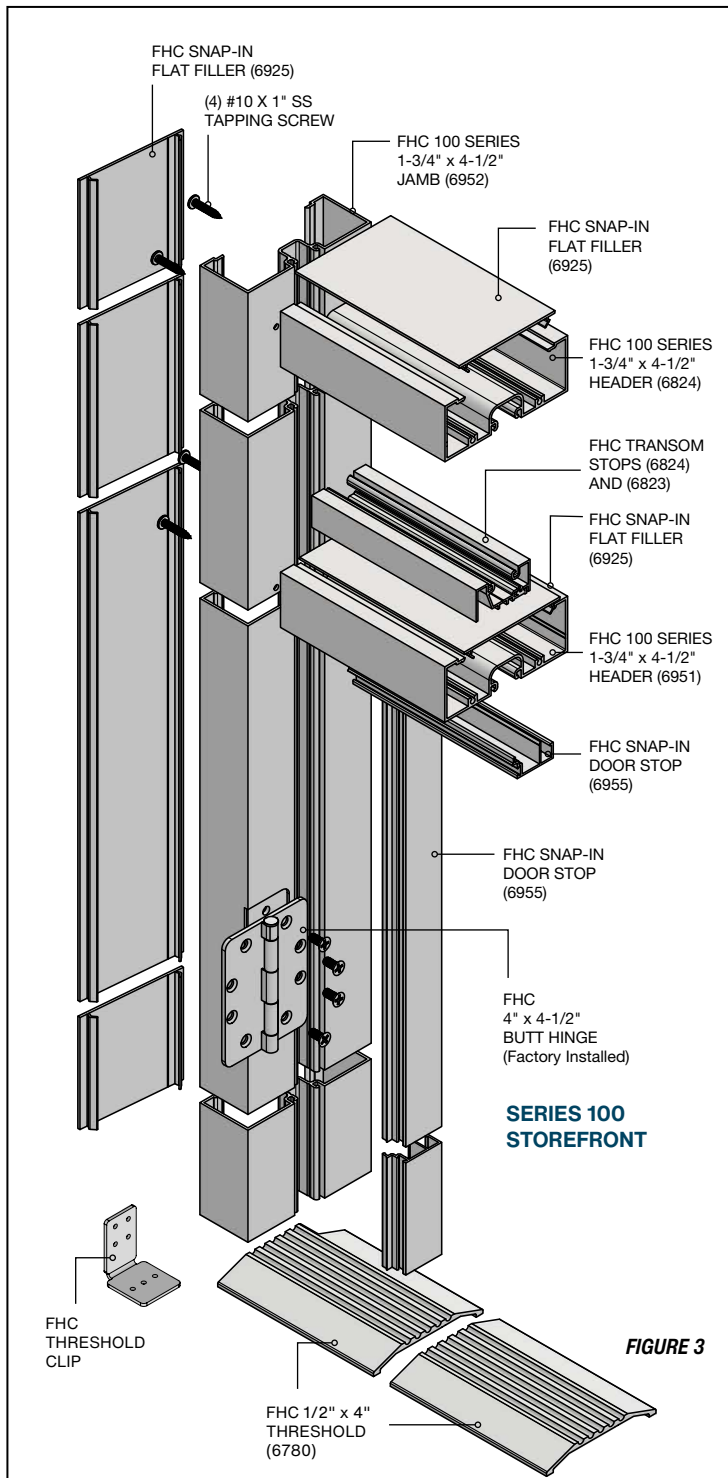
#### DRAWINGS NOT TO SCALE

**NOTE:** Variations may occur from images depicted due to parts availability and improvement updates. Refer to your FHC shop drawings for current part number and details.

## 200, 300, AND 500 SERIES OFFSET DOOR WITH TRANSOM

### OFFSET 100 & 200 SERIES STOREFRONT FRAME FOR BUTT HINGED DOOR AND SURFACE CLOSER

Continuous Hinge and Pivot Hinge Similar Frame Configuration



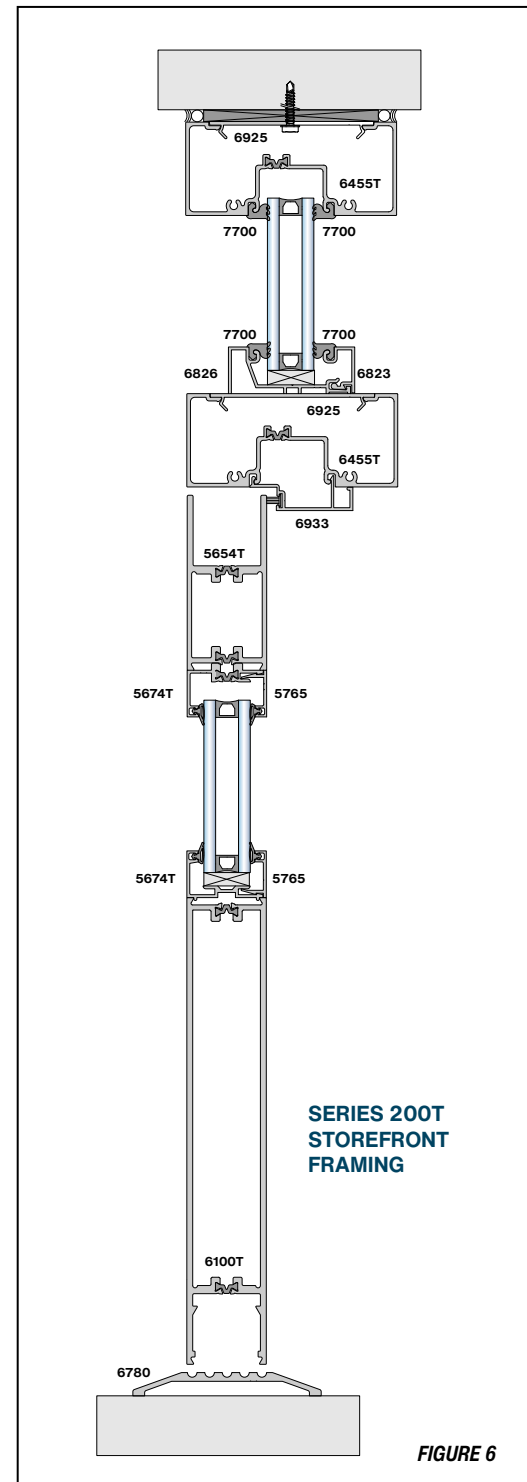
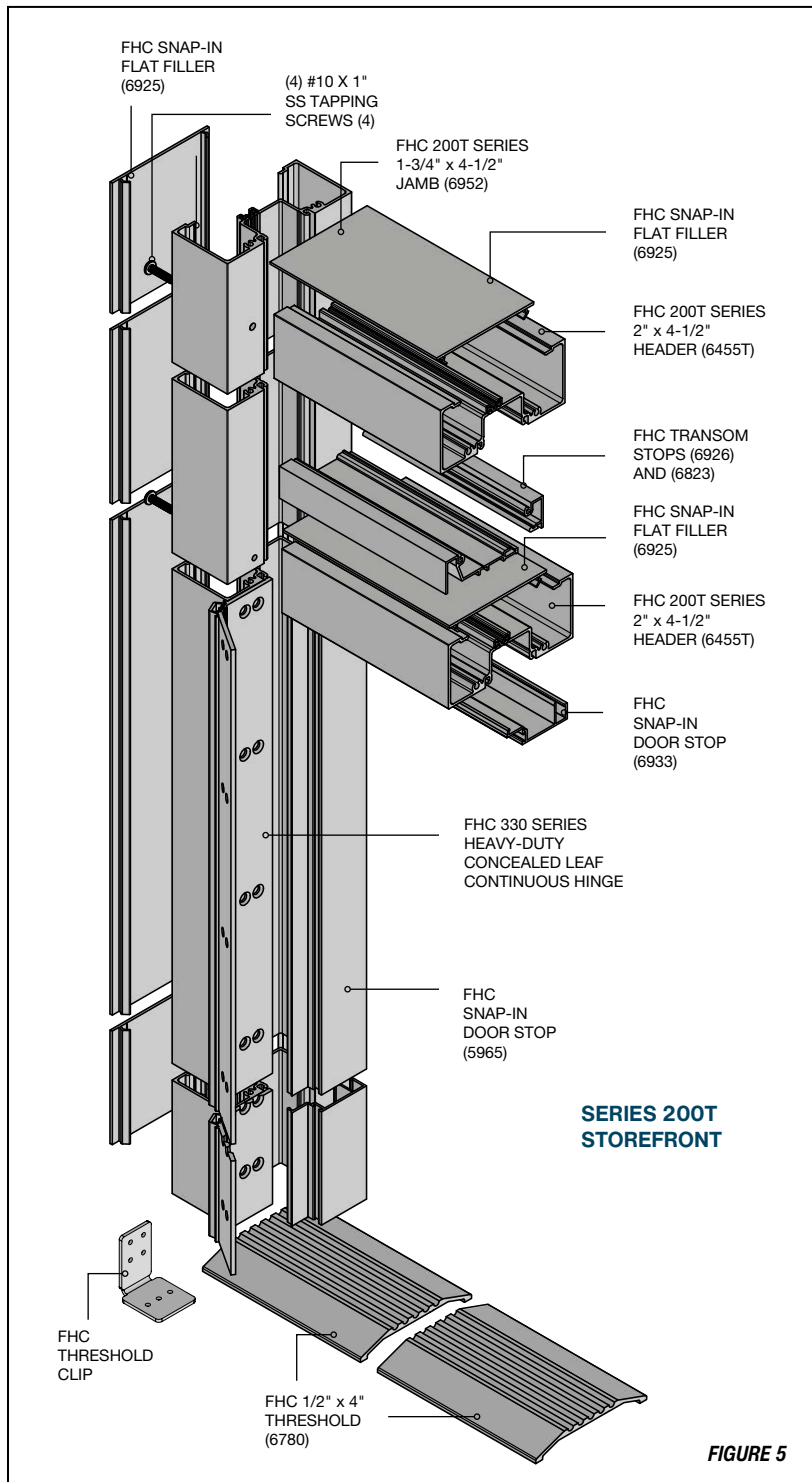
#### DRAWINGS NOT TO SCALE

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# 300T & 500T SERIES THERMAL OFFSET DOOR WITH TRANSOM

## OFFSET 200T SERIES STOREFRONT FRAME FOR CONTINUOUS HINGED DOOR AND SURFACE CLOSER

Butt Hinge and Pivot Hinge Similar Frame Configuration



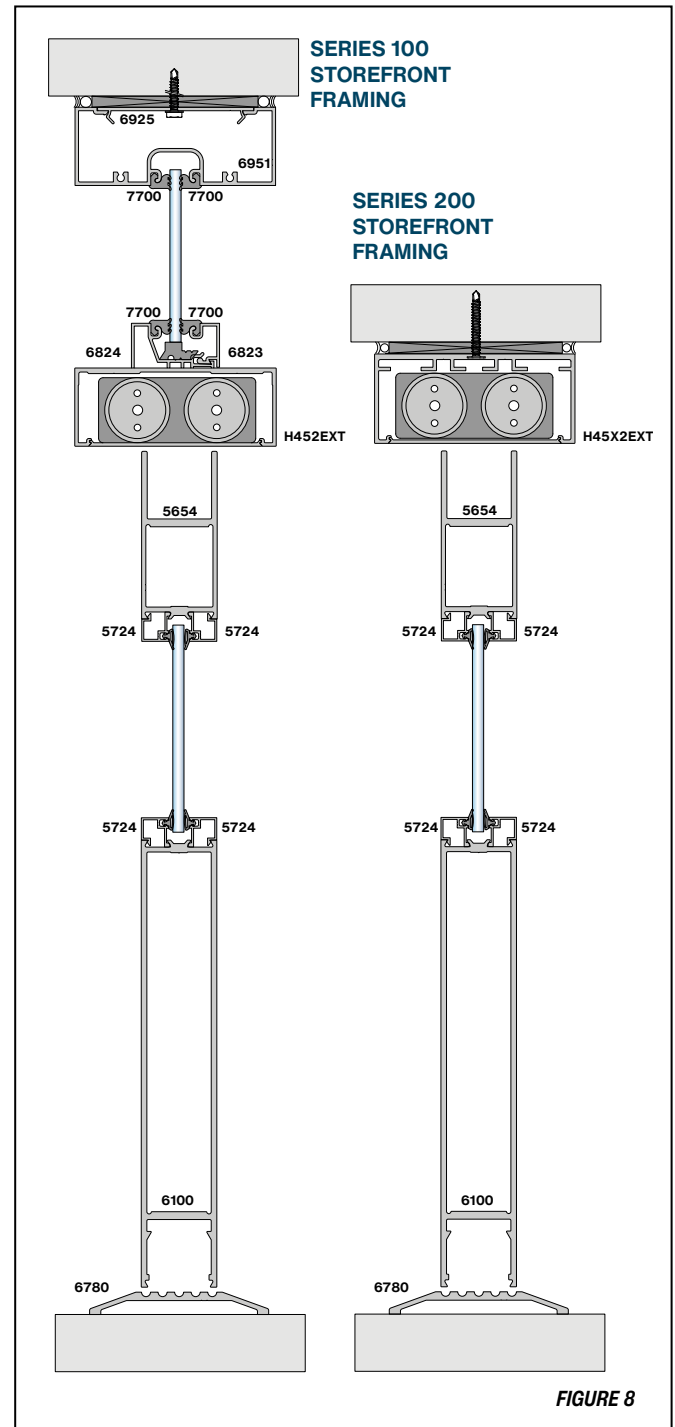
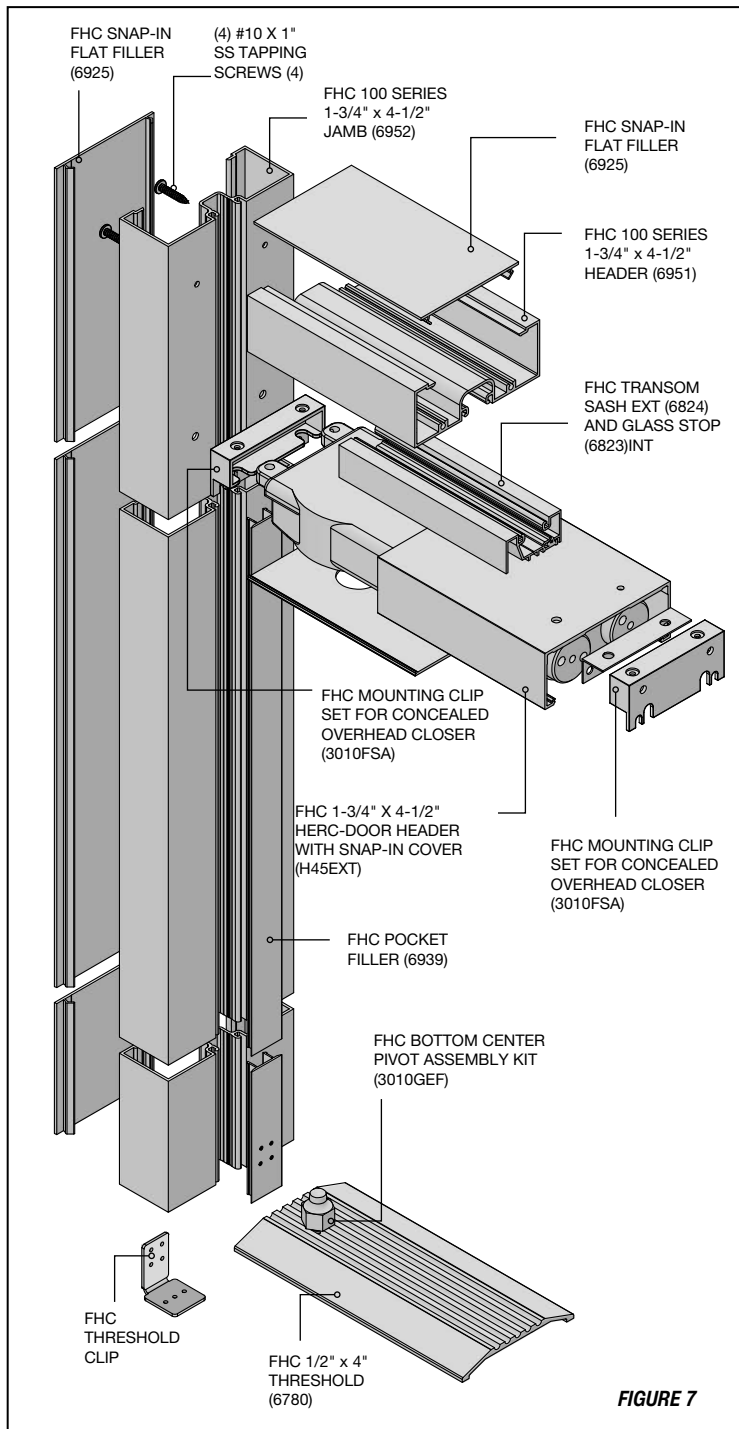
### DRAWINGS NOT TO SCALE

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# 200, 300, AND 500 SERIES CENTER HUNG DOOR WITH CLOSER

## CENTER HUNG 100 and 200 SERIES STOREFRONT FRAME FOR CONCEALED OVERHEAD CLOSER



### DRAWINGS NOT TO SCALE

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## OFFSET ARM SLIDE FOR CONCEALED OVERHEAD CLOSER

### OFFSET STOREFRONT GEAR-HINGED FRAME AND DOOR WITH OFFSET ARM SLIDE

#### Butt Hinge and Pivot Hinge Similar Installation Steps

FHC currently offers mortised mount offset slide arm kits VO-Type requires a minimum 9/16" top depth. JO- Type requires a minimum 7/8" top depth. All FHC ALUMINUM® Framed Doors will accept either type. The mortised version of VO and JO offer a stronger attachment point and is recommended on large-heavy doors that exceed 150 lbs. Offset arm slide assemblies are designed to be used with butt hinges, offset pivot hinges, and continuous hinges.

Install the storefront door with the desired offset hinge system and adjust for consistent clearance of 1/8" between frame and door.

Swing the door open to 90° and block the bottom to hold in position.

Turn the OHC spindle with an open-end wrench to the same 90° position and hold in place by closing both adjustment valves. Do not over-tighten.

Disconnect the arm from the nylon slide block. Insert the slide block into the track at the top of the door. If the closer has a hold open of 90°, insert the large end first. Insert the small end for 110° closers.

Attach the offset arm to the slide block pivot pin and attach the safety clip. Check to see that the arm and slide move freely along the track.

Remove the blocks from the door and have an assistant swing the door until the square clamping saddle of the offset arm aligns with the closer spindle. Attach the arm and secure with the provided through bolt.

The slide should transfer the closing force of the closer to the door allowing it to fully close and open to the maximum. If the slide is restricted to maximum by the spring stop, try reversing the slide orientation.

#### FHC 3010JO STANDARD OFFSET ARM ASSEMBLY

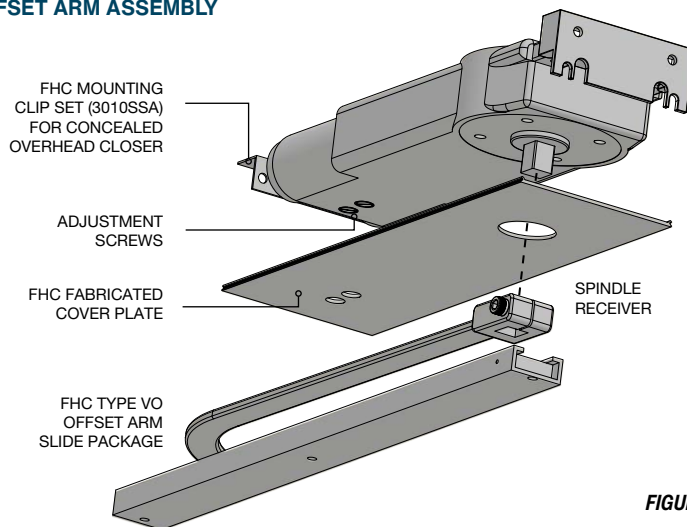


FIGURE 9

#### FHC OFFSET ARM ASSEMBLY WITH DOOR FABRICATION

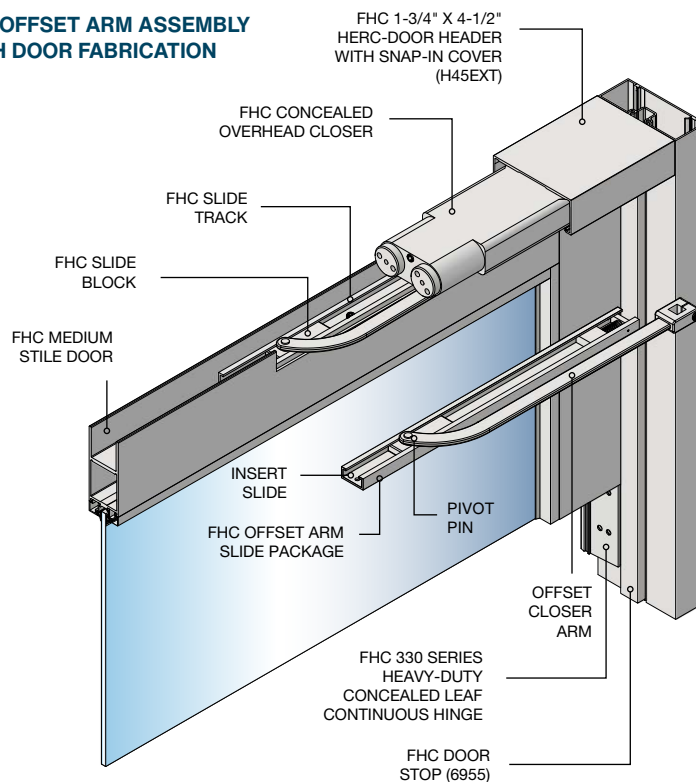


FIGURE 10

#### DRAWINGS NOT TO SCALE

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## BOTTOM CENTER PIVOT FOR FHC DOORS WITH THRESHOLDS

RELEVANT FOR ALL CENTER HUNG FHC ALUMINUM® FRAMED STOREFRONT DOORS UNDER 150 LBS

FHC 3010GE Bottom Center Pivots are designed to be used with FHC ALUMINUM® thresholds. The GEF series have been specially modified to fit FHC ALUMINUM® Doors with a maximum weight capacity of 150 lbs. and a 1-1/2" deep bottom door rail.

Assuming the pivot block has been factory installed, back off the (2) 1/4" X 20 truss-head screws and slide the block to center the pivot axis **FIGURE 12**.

Set the pivot block on the threshold pivot ball. Attach the top pivot to the closer spindle and secure **FIGURE 11**

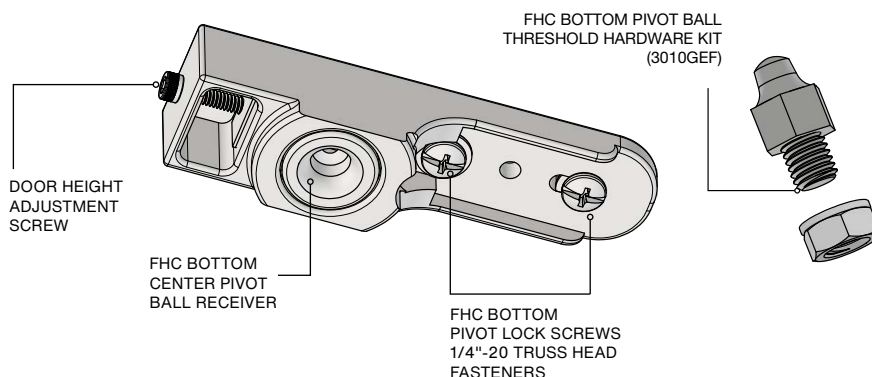
The 3010GEF pivot assembly can raise or lower the door 1/4" by turning the door height adjustment screw. Adjust the door height to the recommended 1/8" gap on all sides.

**FIGURE 13.**

Swing the door several times to check for frame rubbing. Adjust if necessary.

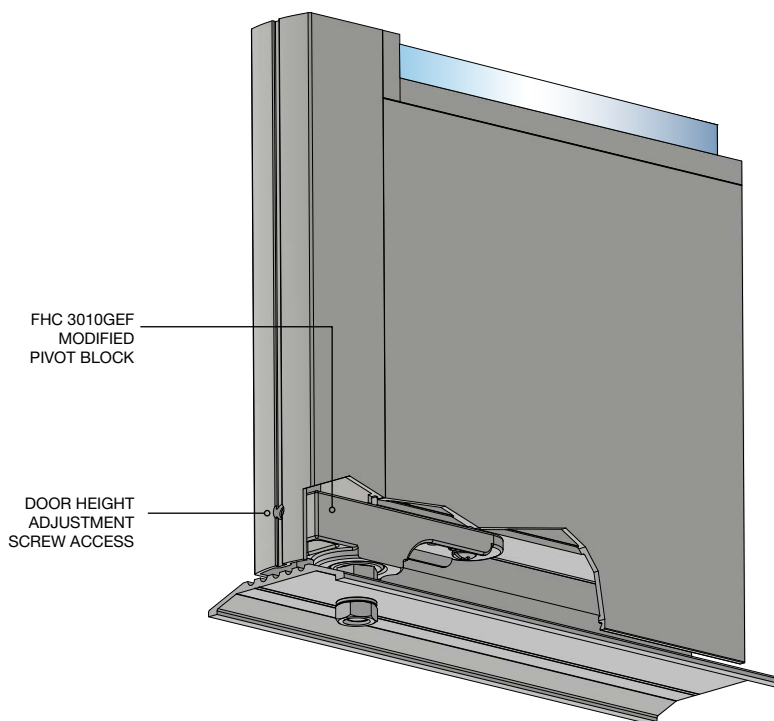
See the next section for top pivot details for the FHC ALUMINUM® Framed Door.

### FHC 3010GEF BOTTOM CENTER PIVOT BLOCK

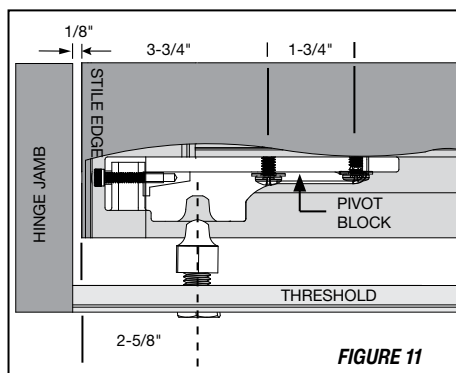


**FIGURE 12**

### FHC DOUBLE ACTING DOOR WITH OVERHEAD & THRESHOLD



**FIGURE 13**



**FIGURE 11**

#### DRAWINGS NOT TO SCALE

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## TOP PIVOT OPTIONS FOR CENTER HUNG DOORS

### RELEVANT FOR ALL FHC CENTER HUNG STOREFRONT DOORS WITH CONCEALED OH CLOSERS

FHC Top pivot arms are designed to provide an adjustable connection between a concealed overhead closer and an FHC ALUMINUM® Framed Storefront Door. The pivot arm clamps to the closer's spindle providing the door with both closing force and latching force.

FHC offers several top pivot options for center hung ALUMINUM® Framed Doors with concealed overhead closers. This section will focus on the PT and S-type pivots.

Remove the access plate and spindle lock bar. **FIGURE 14** and **FIGURE 15**.

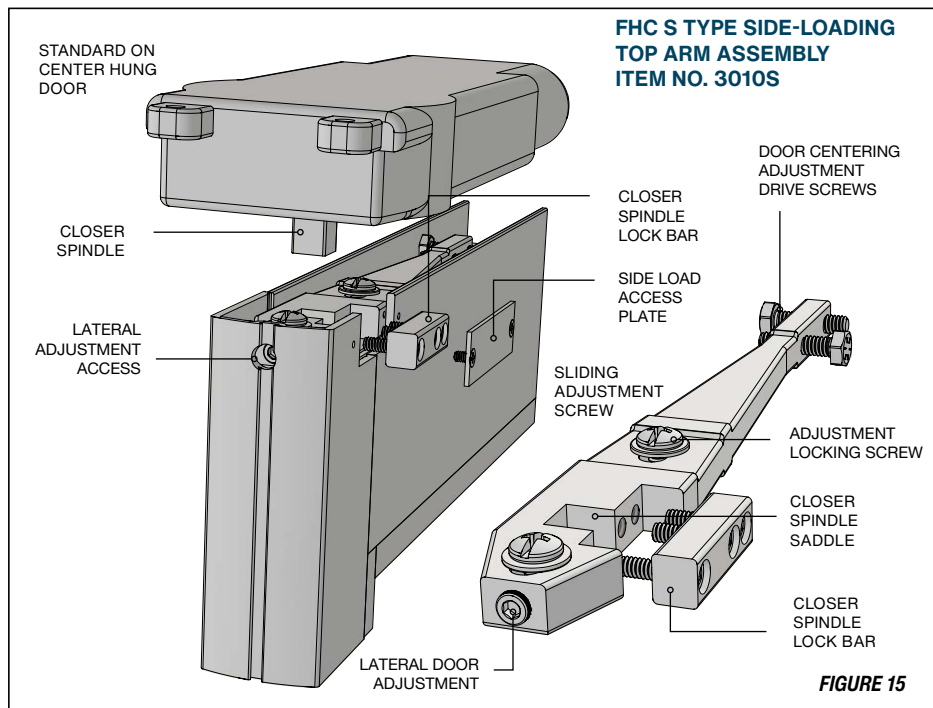
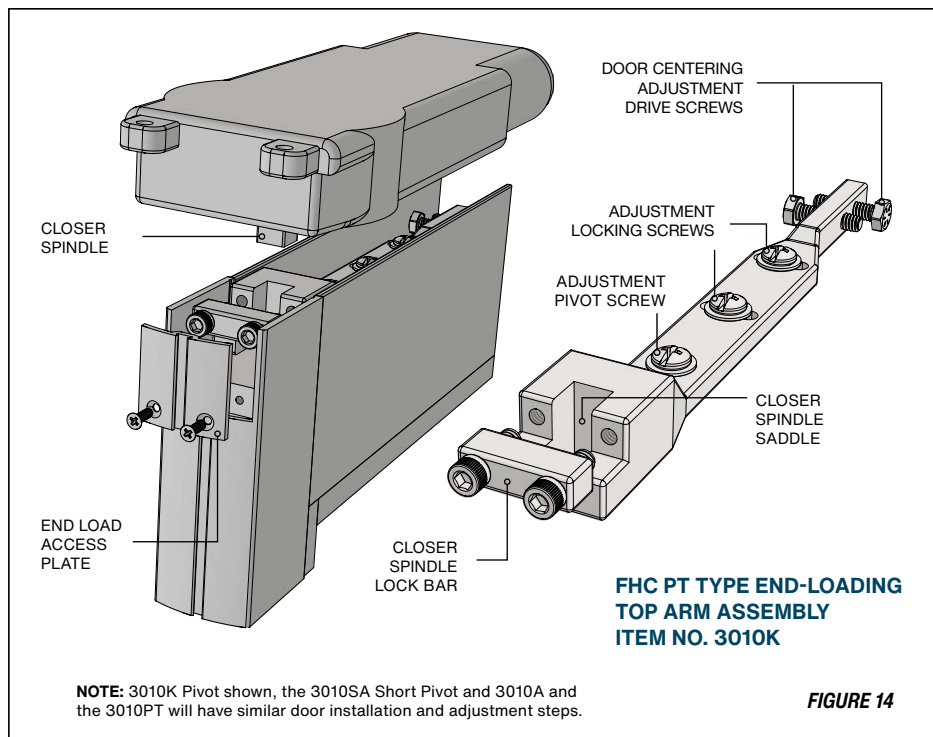
Place the door's bottom center pivot hardware on the pivot receiver mounted to the floor or threshold.

Turn the closer spindle to the hold open position and tilt the door up to mate the spindle saddle to the closer spindle. Attach the closer spindle lock bar with thread locker.

The door should have a 1/8" gap on the top and sides when closed. The gap may be adjusted with the top pivot arm and the bottom pivot assembly. When using a side load pivot, a limited vertical adjustment is possible with the lateral door adjustment screw **FIGURE 11**.

Verify that the door self centers when closed. Adjustment can easily be performed with the centering adjustment hex-drive screws located at the end of the pivot arms.

Attach the access plates and proceed to the closer adjustment section on the next page.



#### DRAWINGS NOT TO SCALE

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# CONCEALED OH CLOSER INSTALLATION AND ADJUSTMENT

RELEVANT FOR ALL FHC OFFSET AND CENTER HUNG ALUMINUM® FRAMED STOREFRONT DOORS

FHC Concealed Overhead Closers are available in medium fixed spring and adjustable spring models. Adjustable closing springs are preferred when multiple story air conditioning systems create stack pressures and installations requiring large-heavy doors. Closing force can be increased by turning the adjustment screw clockwise **FIGURE 16**.

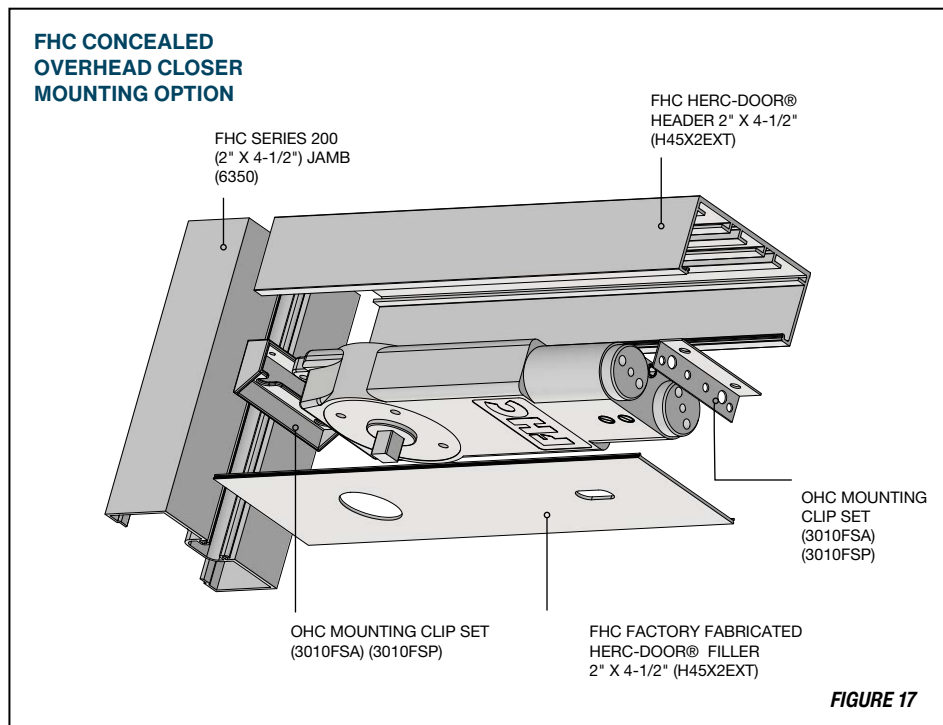
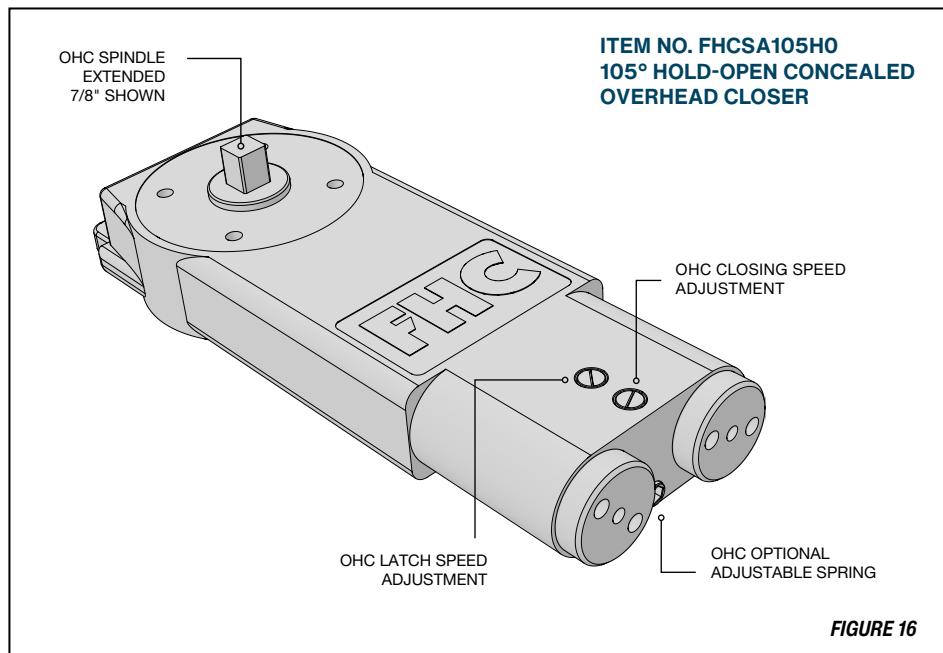
Before making any adjustments to the latching or closing speed, cycle the door 10-12 times.

The latching speed should be adjusted prior to the closing speed. Turn the latch speed adjustment screw clockwise to decrease the flow of hydraulic fluid to the closing cylinders thereby slowing the latching cycle. Do not over tighten the screw into the valve seat as permanent damage to the speed control may result **FIGURE 16**.

The closing speed may be adjusted once the latching speed is at the desired setting. Clockwise turns to the closing speed adjustment screw will slow the cycle. A properly adjusted entry door should travel approximately 80° when closing within 5-7 seconds and slow to half-speed for the remaining 20°.

The latching speed may require a slight final adjustment after cycling the door several times.

Be aware of local ADA requirements.



## DRAWINGS NOT TO SCALE

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## CONCEALED FLOOR CLOSERS

RELEVANT FOR ALL OFFSET AND CENTER HUNG FHC ALUMINUM® FRAMED STOREFRONT DOORS

Several options are available from FHC regarding concealed floor closers. For the purposes of this guide, the FHC Series 900 Heavy-Duty closer will be the focus. Other floor closers are similar in installation and adjustments. Refer to your specific closer's documentation for details **FIGURE 18**.

The FHC 900 Series Heavy-Duty Floor Closer is designed to be installed below the finished floor level.

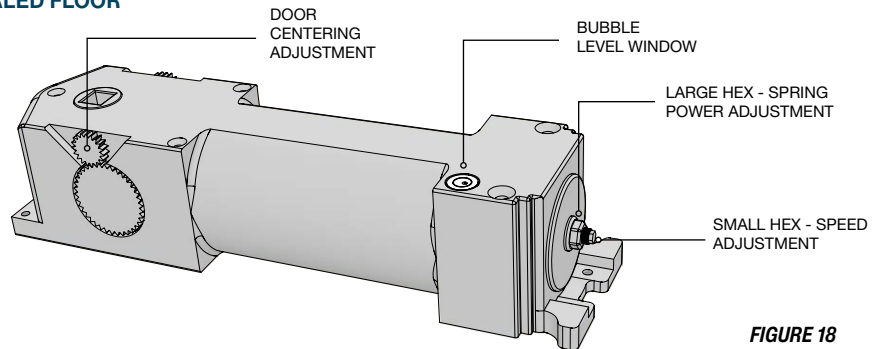
The closer/door height may be adjusted approximately  $\pm 1/4"$ , if required, with threaded studs located inside the cement case. Longer spindles are available from FHC to allow proper clearances for various thresholds.

Placement of the cement case and its concealed closer will vary by closer brand and pivot arms selected. Refer to your shop drawings for the exact placement of the cement case **FIGURE 19**.

The closing speed of the 900 Series Closer can be adjusted with the small hex head nut as shown in **FIGURE 18**.

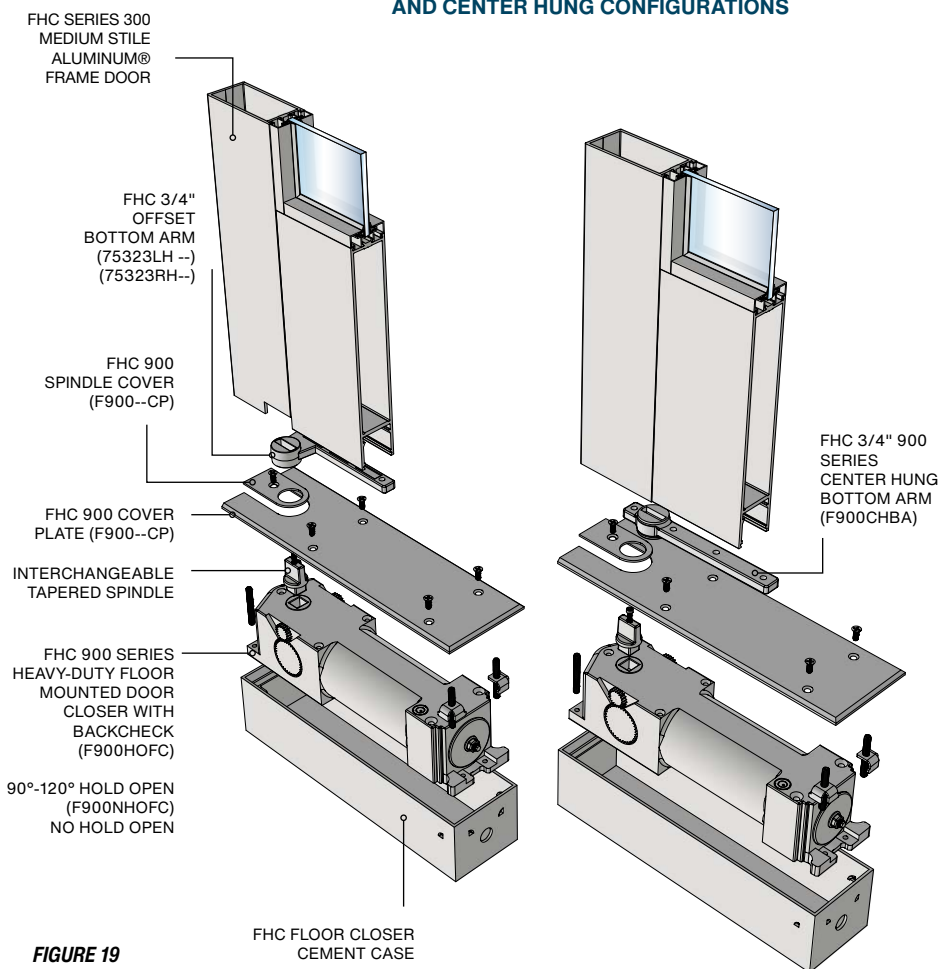
The larger hex nut will adjust the spring closing power. Larger doors, building stack pressures, and panic bars may require a greater closing force. Adjust the door centering with the top gear on either side of the closer using the provided spanner wrench.

### FHC 900 SERIES CONCEALED FLOOR CLOSER



**FIGURE 18**

### FHC 900 SERIES FLOOR CLOSER OFFSET AND CENTER HUNG CONFIGURATIONS



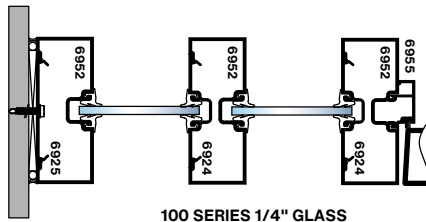
**FIGURE 19**

#### DRAWINGS NOT TO SCALE

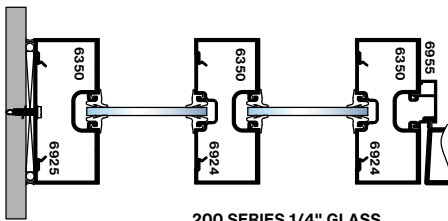
NOTE: Variations may occur from images depicted due to parts availability and improvement updates. Refer to your FHC shop drawings for current part number and details.

# FHC 100, 200, AND 200T STOREFRONT - VERTICAL OPTIONS

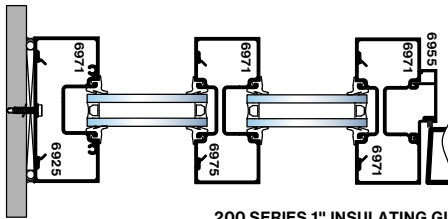
## FOR OFFSET-HUNG DOOR



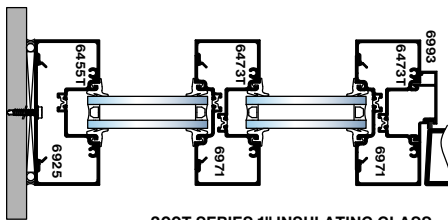
100 SERIES 1/4" GLASS



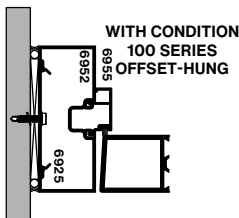
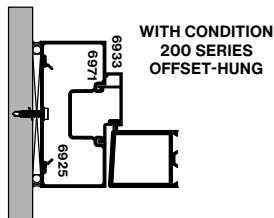
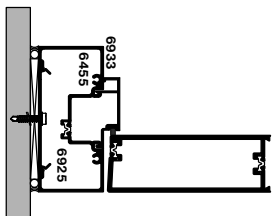
200 SERIES 1/4" GLASS



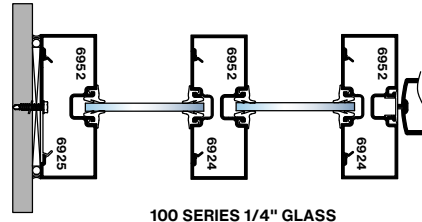
200 SERIES 1" INSULATING GLASS



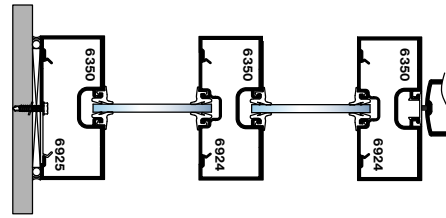
200T SERIES 1" INSULATING GLASS

WITH CONDITION  
100 SERIES  
OFFSET-HUNGWITH CONDITION  
200 SERIES  
OFFSET-HUNGWITH CONDITION  
200T SERIES  
OFFSET-HUNG

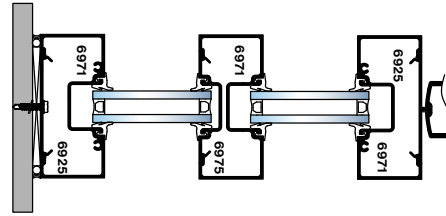
## FOR CENTER-HUNG DOOR



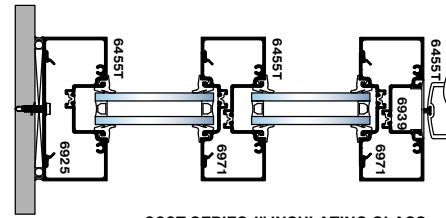
100 SERIES 1/4" GLASS



200 SERIES 1/4" GLASS



200 SERIES 1" INSULATING GLASS



200T SERIES 1" INSULATING GLASS

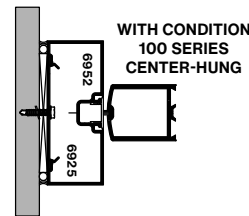
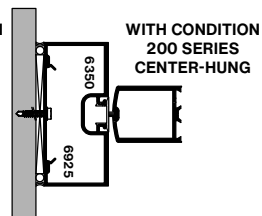
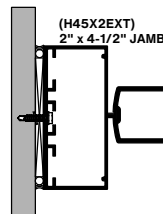
WITH CONDITION  
100 SERIES  
CENTER-HUNGWITH CONDITION  
200 SERIES  
CENTER-HUNGWITH CONDITION  
200 SERIES  
OFFSET-HUNG

FIGURE 20

### DRAWINGS NOT TO SCALE

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# FHC 100, 200, AND 200T SERIES HORIZONTAL OPTIONS

## SERIES 100 AND 200 SERIES THERMAL STOREFRONT FRAMING CONFIGURATIONS

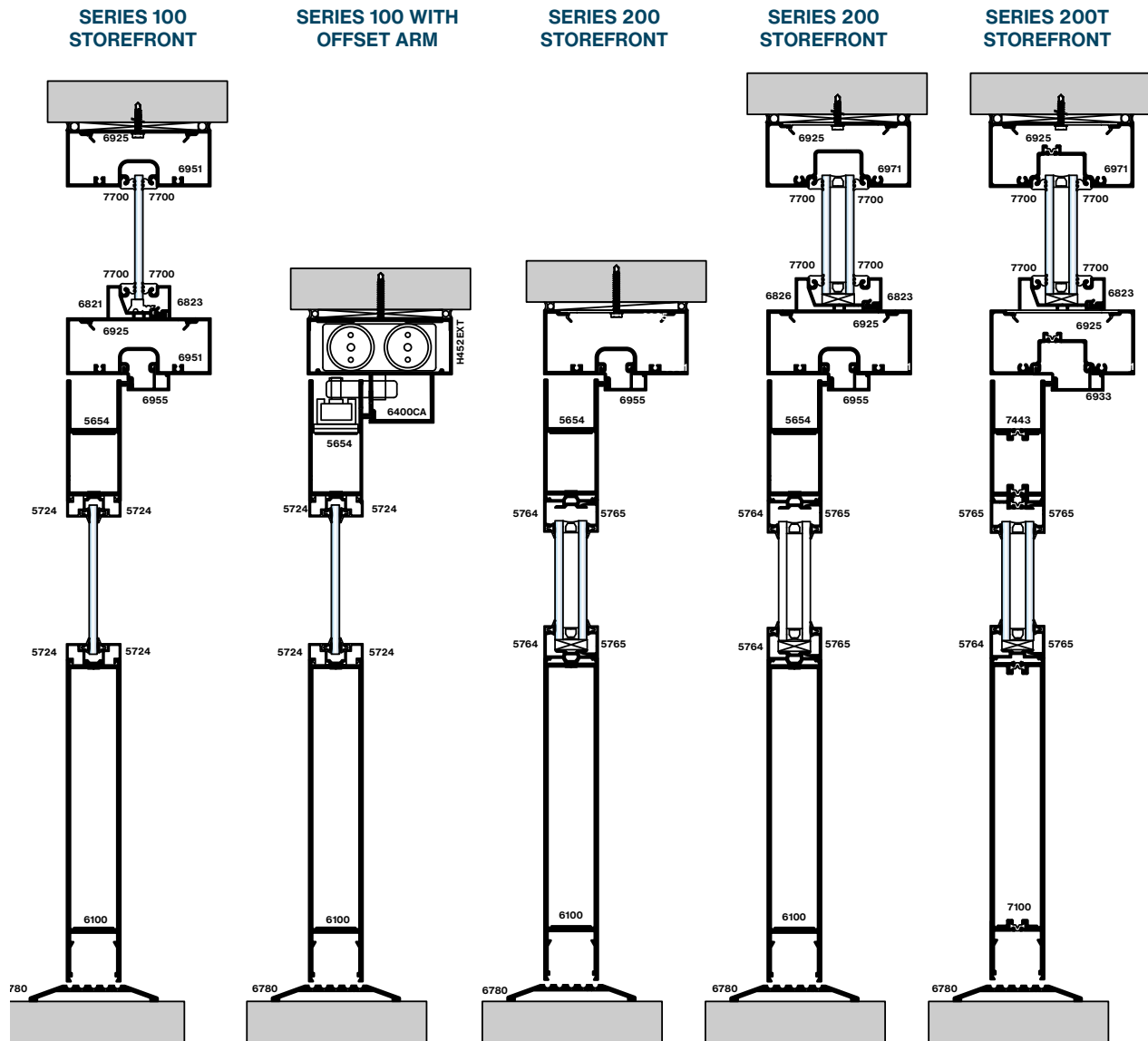
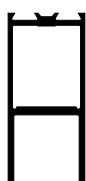


FIGURE 21

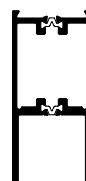
5654  
3-3/4" BOTTOM  
DOOR RAIL



5655  
6" THERMAL  
DOOR RAIL



3-3/4" THERMAL  
BOTTOM DOOR  
RAIL



Additional bottom  
door rails available  
from FHC not  
shown above.

6" THERMAL  
BOTTOM DOOR  
RAIL

### DRAWINGS NOT TO SCALE

NOTE: Variations may occur from images depicted due to parts availability and improvement updates. Refer to your FHC shop drawings for current part number and details.



# FHC 100 AND 200 SERIES HORIZONTAL OPTIONS

## SERIES 100 AND 200 NON-THERMAL STOREFRONT FRAMING CONFIGURATIONS

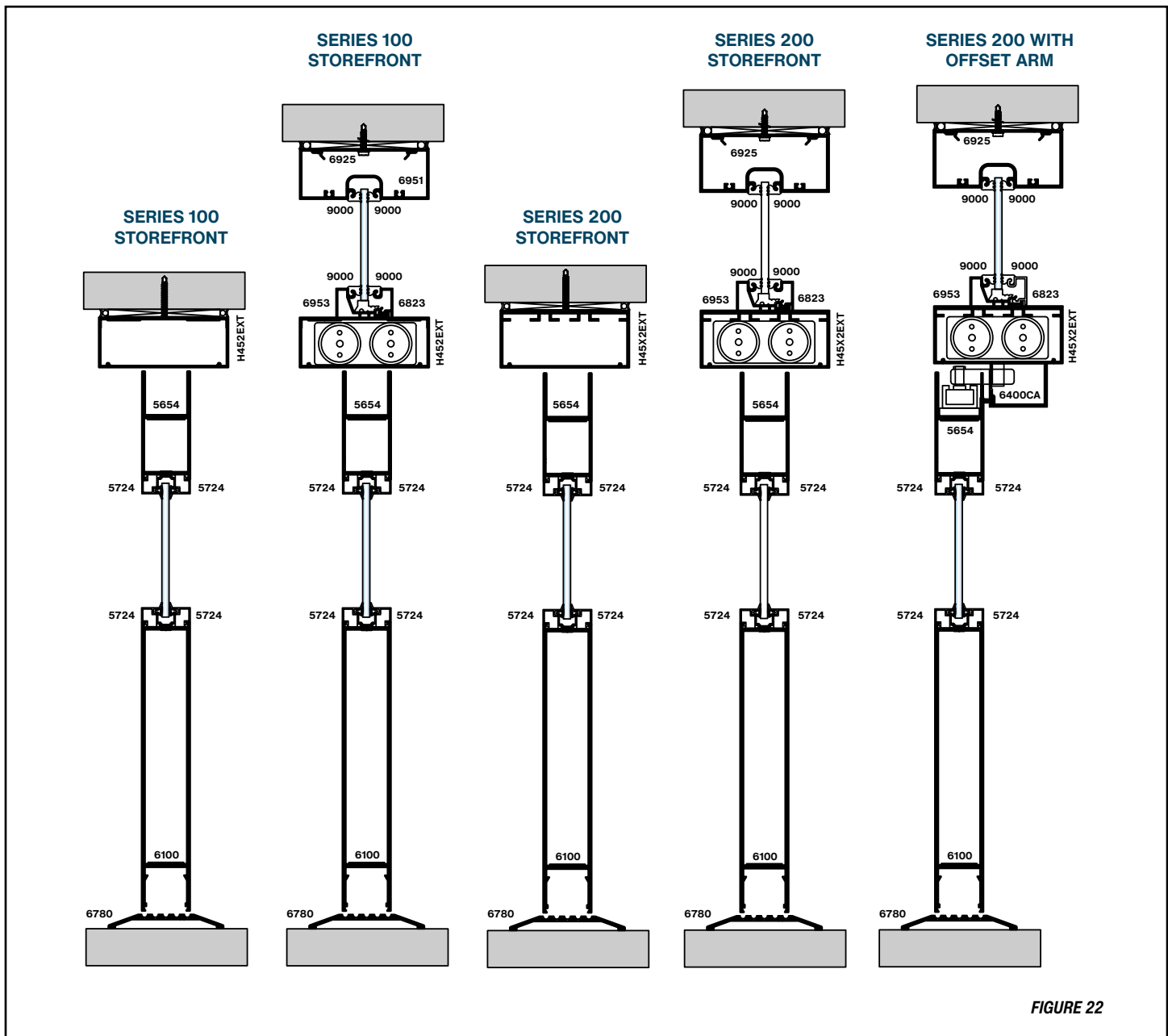
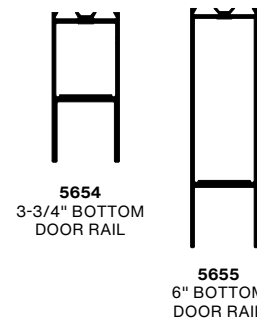


FIGURE 22

Additional bottom  
door rails available  
from FHC not  
shown above.



### DRAWINGS NOT TO SCALE

NOTE: Variations may occur from images depicted due to parts availability and improvement updates. Refer to your FHC shop drawings for current part number and details.