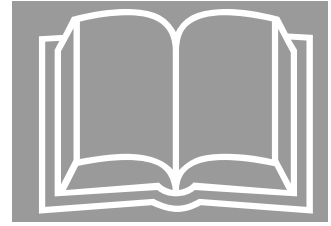


SEPTEMBER 22, 2010

UNITEC<sup>®</sup> PARTS COMPANY  

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INSTALLATION PROCESS MANUAL  
UT-ID 21.3-500



ABA6940CD Folding Door  
Restrictor Specifications

SEPTEMBER 22, 2010

# ABA6940CD Folding Door Restrictor Specifications

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## BACKGROUND

This UNITEC folding door restrictor when installed correctly, fully meets the requirements described in ANSI A17.1 rule 2.12.5 and Appendix B. It is a completely maintenance free, passive device that has no moving parts when the elevator is in normal operation. The moving portion of the car door restrictor angle can be temporarily positioned (disengaged with locally supplied blocking), in order to make this a very maintenance mechanic friendly device.

## REQUIREMENTS

**WARNING: Under no circumstances shall angles from this kit be installed in a way that violates ANSI code.**

Generally, angles must be installed so car doors can open within 3.0-in. above and below each landing, but cannot open beyond 18.0-in. above and below each landing.

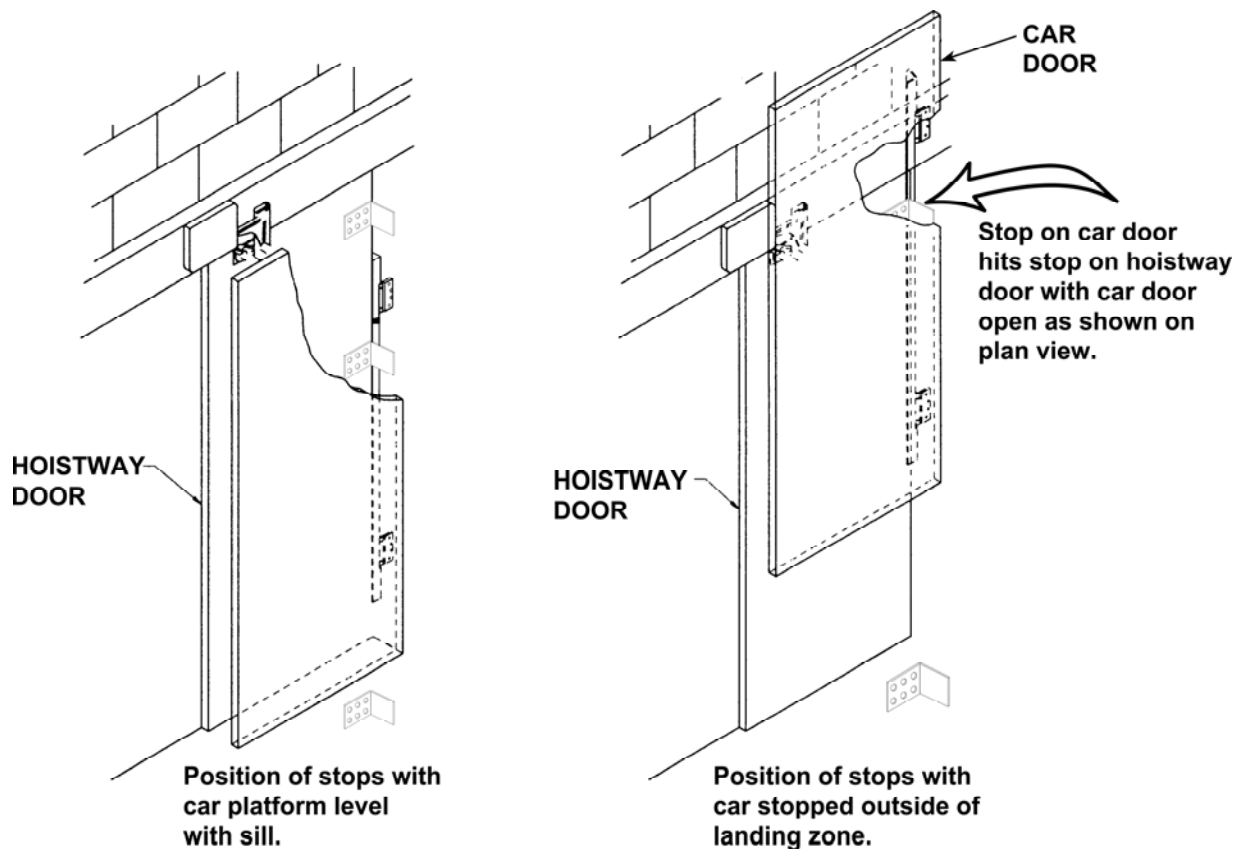


Figure 1: Door Restrictor Free and Engaged Views

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## Running and Door Clearances

- Installation requires approximately 5-1/4-in. (+/- 1/8 in.) between car doors and hoistway doors with a standard 1-1/4 in. running clearance sill to sill. If space is smaller, tell UNITEC. They have a fix.
- Car door-to-hoistway sill nose must be greater than 2-3/4 in.
- Hoistway door-to-car sill nose must be greater than 3-3/8 in.. If space is smaller, tell UNITEC. They have a fix.
- A greater distance than 5-1/4 in. between the car and hoistway doors may be permissible, but field shimming of the car angle would be required. Shims for the car angle only are included in standard kits, if needed.
- Sill mounted closers for two-speed doors on the hoistway side can still be used with these restrictors. Arrangements now all incorporate the mounting of angles to the facia below sills with sill mounted closers.

## Car Door Space

The window of space needed on the face of the car door.

- 84-in. entrance heights (EH). Window required is 6-in. wide (+/- 1/4 in.) by 52-in. (vertically from the trailing edge bottom of the driven car door panel and to ensure that no operator linkage passes through this space either).
- 96-in. entrance heights. Window required is 6-in. wide (+/- 1/4 in.) by 64-in. (measured from the trailing edge bottom of the driven car door panel and to ensure no operator linkage passes through this space).

**NOTE:** If the above space is not available (for example - clearance for two speed door linkage) there is a possibility of application of equipment that takes up a smaller window of space on the car, but costs for hoistway angles go up significantly. Inquire on UNITEC.

## Installation Requirements

- To fasten a car restrictor angle to the driven car door requires eight screw fasteners.
- Two-speed doors fasten the car restrictor angle to the trailing edge of the fast speed door.
- Generally, two short hoistway angles need fastening to each hoistway door, and one shallow angle just beneath each hoistway sill. Each angle requires four screw fasteners. In some cases the fastening of one or more shallow reach angles (p/n ABA283ANE4) to the facia between floors is required.

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## Survey and Floor-to-Floor Height (FH) Restrictions

UNITEC does provide the special contract specifying of this product where the sill-to-sill floor heights fall outside the standard ranges indicated below:

- **For 84-in. Entrances:** Allowable sill-to-sill floor height range without specifying any extra facia angles is: **99-0 in. to 142 in. (11 ft. 10 in.)**
- **For 96-in. Entrances:** Allowable sill-to-sill Floor Height range without specifying any extra facia angles is: **111 in. to 166 in. (13ft.- 10 in.)**

If any sill-to-sill floor height falls outside these ranges, UNITEC can still help you. Fill out the survey completely (see Appendix A) and fax UNITEC at 860-286-1625.

If your entrance heights are not consistent (not all 84 in. +/- 1 in. or not all 96 in. +/- 1 in.), or are something other than 84 in. or 96 in., fill out survey completely and fax to UNITEC at 860-286-1625.

## ESTIMATING/ORDERING for STANDARD JOBS

If your particular job falls within the standards mentioned above, the cost can now be estimated assuming:

- All entrance heights are either all 84 in. or all 96 in. and
- All sill-to-sill floor heights fall between the ranges shown above.

### Estimates

- Approximately \$25.00 per floor for hoistway angles (includes the hardware cost)
- Approximately \$300.00 per car angle (contains the hardware that is needed)

### Parts Ordering

Table 1 lists the constant parts for both the 84-in. entrance height (floor height below 142.0 in.) and the 96-in. entrance height (floor height below 166.0 in.). Table 2 lists additional required parts for the indicated floor heights.

**Table 1: Constant Parts for 84-in. and 96-in. Entrance Heights**

Part Name	Part Number	Quantity	Remarks
Door Restrictor	ABA6940CD1	1	per car opening
Angle	ABA283ANE1	2	per hoistway opening
Angle	ABA283ANE6	1	per hoistway opening
Screw	DIN7504KST6.3X19-A1B	12	per hoistway opening

**Table 2: Floor Height Conditional Parts with 84 and 96-in. Entrance Heights**

84-in Entrance Height Floor Heights:	> 142.0 in. ≤ 15 ft. 9 in.	> 15 ft. 9 in. ≤ 19 ft. 7 in.	>19 ft. 7 in. ≤ 23 ft. 5 in.	
96-in Entrance Height Floor Heights:	> 166.0 in. ≤ 18 ft. 9 in.	> 18 ft. 9 in. ≤ 23 ft 7 in.	>23 ft 7 in. ≤ 28 ft. 5 in.	
Part No. Part Name	Quantity			Remarks
ABA283ANE4 Angle	1	2	3	Additional facia angles
DIN7504KST6.3X19-A1B	4			Per angle

**NOTE:** The total number of screws to be specified should equal four times the total number of angles.

Contact UNITEC for floor heights above the last range listed.



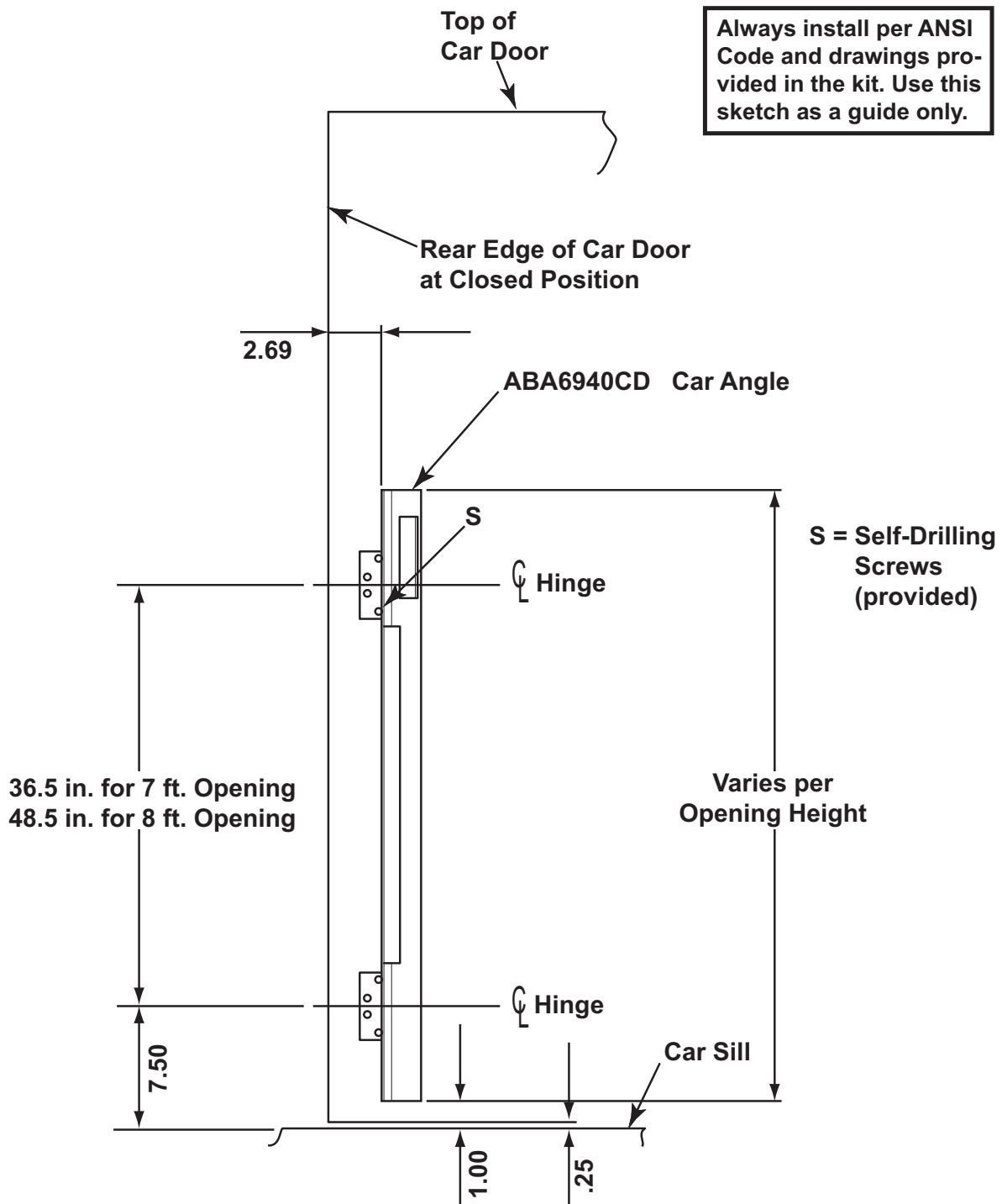


Figure 2: Hinged Car Angle Mounting (view from hoistway)

Always install per ANSI Code and drawings provided in the kit. Use this sketch as a guide only.

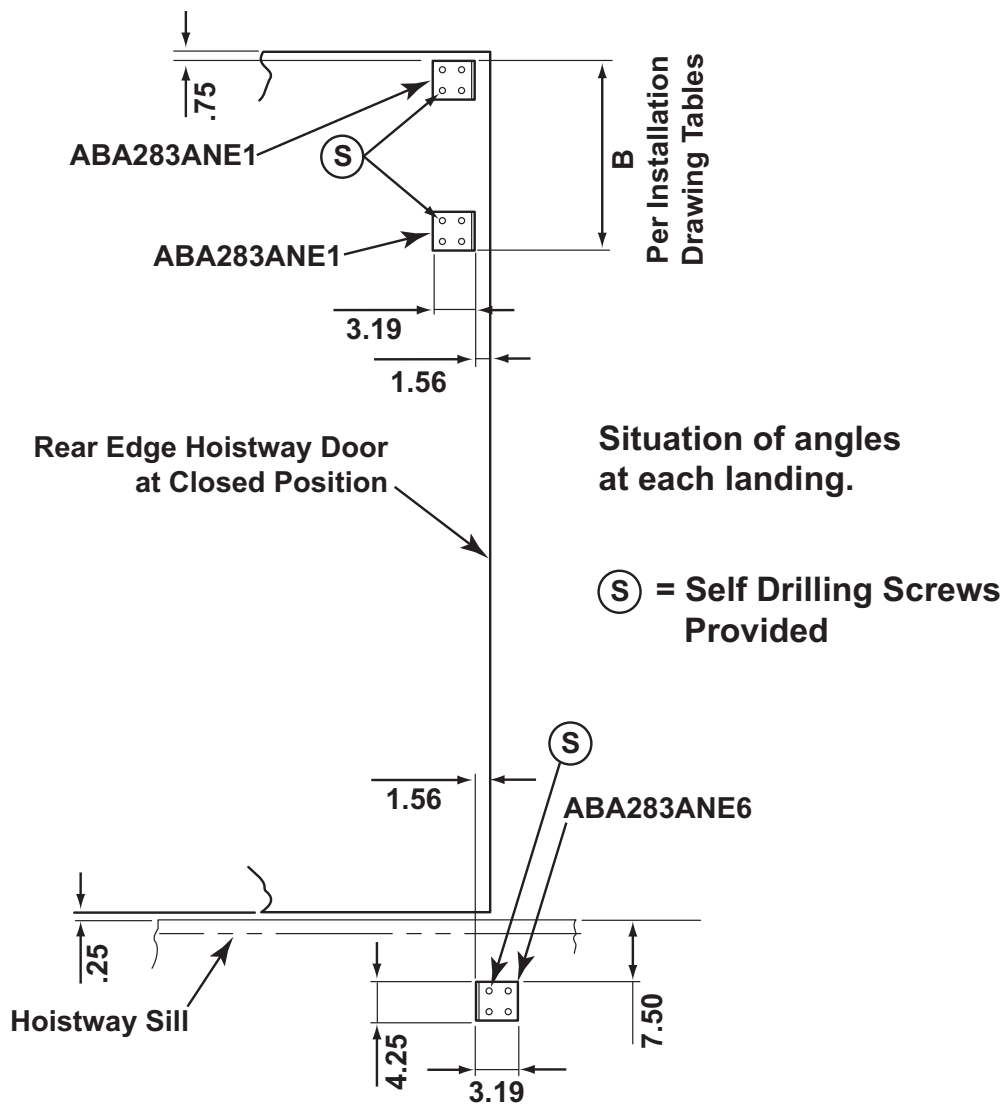


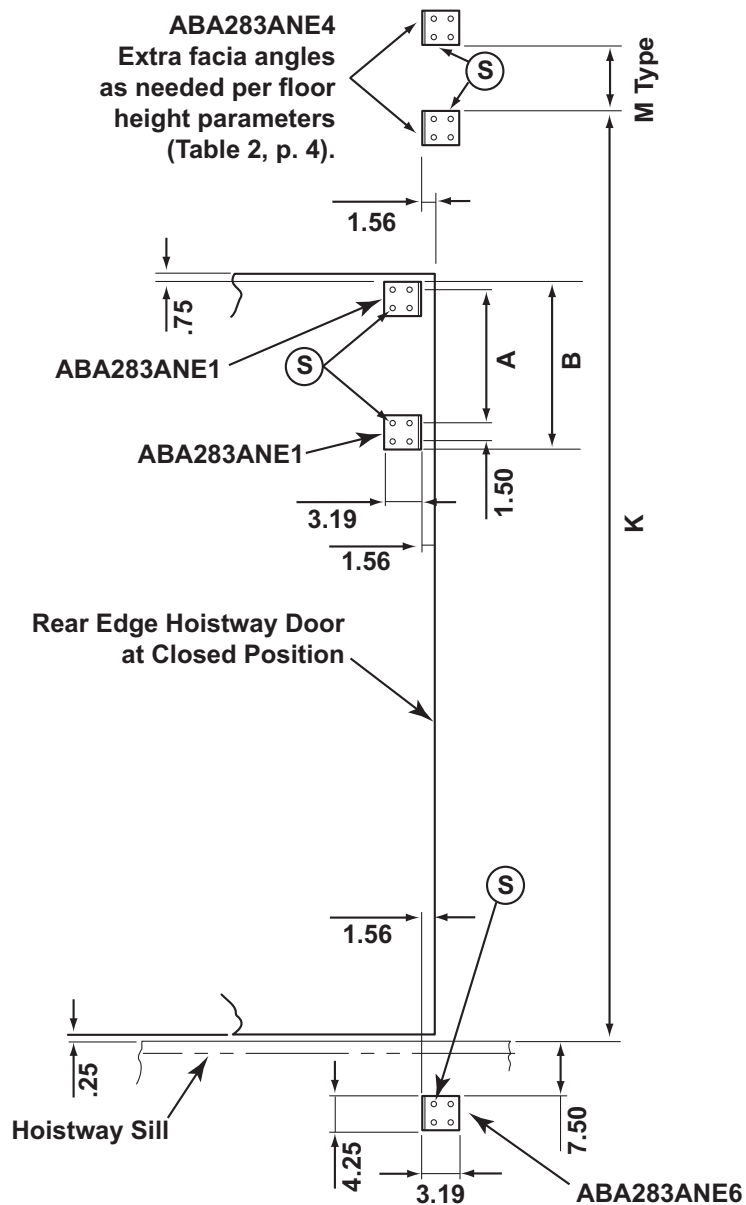
Figure 3: Standard Door, View from Car

Always install per ANSI Code and drawings provided in the kit. Use this sketch as a guide only.

Situation of angles at each landing and in between landings for tall floor height condition.

Ⓢ = Self Drilling Screws Provided

Variables A, B, M, and K to be applied per installation drawing tables from ABA6940CD.



### Tall Floor Heights

Figure 4: Tall Door Heights

**Relevant Identities**

- ABA6940CD1 and ABA6940CD2
- ABA283ANE1, ABA283ANE4, ABA283ANE6
- AAA316HMY1 (see Appendix B)
- AAA386MES1 (see Appendix B)
- AAA255MZ1 and AAA255MZ3
- DIN7504KST6.3x19-A1B (Mounting screws must be ordered separately for the hoistway angles provided generally, 12 per opening (4 per angle) needed.)

**Example:** for 10 openings with no extra facia angles order 120 screws.

For each intermediate angle (ABA283ANE4), order four additional screws.

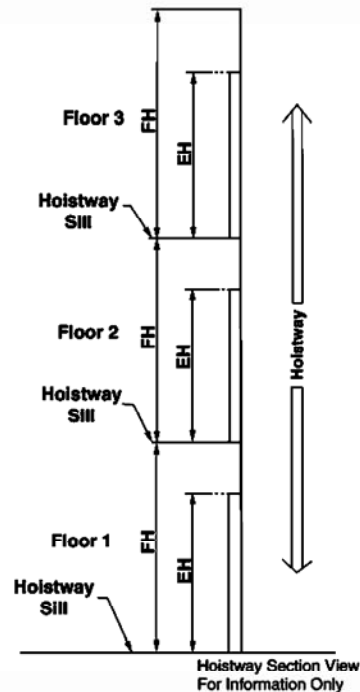
APPENDIX A

**UNITEC®** Folding Door Restrictor Field Survey

**FAX Back to UNITEC® @ 860-286-1625**

NOTE: Use one survey sheet per car, unless all dimensions and landing configurations are the same.

Floor Number	Entrance Height (EH)	Hoistway Floor Height (FH)
1		1-2
2		2-3
3		3-4
4		4-5
5		5-6
6		6-7
7		7-8
8		8-9
9		9-10
10		10-11
11		11-12
12		12-13
13		13-14
14		14-15
15		15-16
16		16-17
17		17-18
18		18-19
19		19-20
20		



NOTES:

1. The table should have one more measurement for Entrance Heights than there are Hoistway Floor Heights.
2. Above 20 floors, contact Unitec® for restrictor options. If job has rear entrances, contact Unitec® directly.

**Fill Out:**

Opening Type:

- Center-Opening
- Single-Slide
- Two-Speed

Number of Cars: \_\_\_\_\_ Number of Landings per Car: \_\_\_\_\_

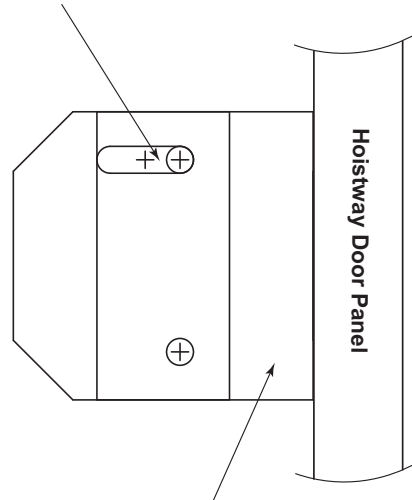
Quantity of Front Entrances: \_\_\_\_\_ Quantity of Rear Entrances: \_\_\_\_\_

If you have Otis type 6940 door locks, provide length of car vane (cam) on the car door: \_\_\_\_\_

## APPENDIX B

Use the special angle (p/n AAA316HMY1) and plate (p/n AAA386MES1) if the hall door to nose of car threshold dimension is 3-3/8-in. or less—in each location where a standard ABA283ANE1 angle would have been used. Select one of each p/n AAA316HMY1 and AAA386MES1. See Figure 5.

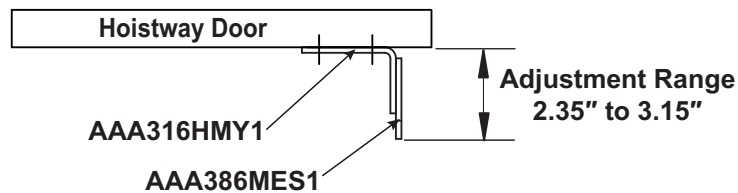
Sliding Plate AAA386MES1 (with slot attached to base angle)



Base Angle AAA316HMY1 (attached to door panel)

**Figure 5: Angle Mounted to Hoistway Door**

The assembly of the AAA316HMY1 base angle and AAA386MES1 plate provides a range of depth adjustment between a low of 2.35 in. and a high of 3.15 in. from the face of the hoistway doors.



**Figure 6: Top View of Angle Mounted to Hoistway Door**

Adjust the position of the AAA386MES1 plate so that it overhangs the sill by approximately 7/8 (0.875) of an inch (Figure 6).

**NOTE:** Adjustment may vary depending on the sill clearance available as well as the protrusion of the car angle into the running clearance. Generally, 7/8 in. overhang into the running clearance is the standard arrangement in conjunction with an overlap of the car angle versus the hoistway angle of 0.41 inches (13/32).