Good Gate Inc.

Customer Design Guide

Residential Sliding Carriage Gate

Date: January 18, 2022

Warning

Read all instructions thoroughly.

Failure to following the instructions in this manual and the associated manuals for installation, testing and maintenance could result in serious injury or death.

In addition, it will render all Good Gate Inc. warranty provisions null and void.

Good Gate Inc. disclaims any and all liability for any personal injury or property damage resulting from the installation and operation of a product that has been modified from the original design. No person or company is authorized to change the design of the product without written authorization by a duly authorized Good Gate Inc. representative.

The Good Gate Inc. carriage gate product is intended to be installed in an assembly that has been designed to meet ASME A17.1/CSA B44 and is intended for residential use only. Usage outside of those requirements or without the additional safety items required by code is not the responsibility of Good Gate Inc.

Ensure that there is nothing obstructing the carriage travel before operating an elevator equipped with this product and ensure that the required clearances, as outlined in this design guide, are in place.

1 Top of Carriage Support

The top track of the carriage gate is intended to be attached to 3/4in plywood ceiling support or an equivalent structure. Design of the carriage should allow for the track to be fully supported by the upright on the closure side of the carriage structure to ensure that any loads are transmitted to the upright.

The upper track is secured to the top of the carriage with four #6 wood screws using the pre-drilled holes along the heel of the track. As well, three z-brackets are included for extra top track support. Six #6 self-tapping screws are provided to attach the z-brackets to the pre drilled holes in the top track.

The support method is designed for a 3/4 in plywood support or equivalent. If you are using other materials that could have tear out concerns (melamine/MDF) you should consider additional brackets that tie back to structural members in your carriage design.

Allowances should be made to ensure that the upper track and the lower track will be parallel and aligned so that the gate panels will move freely once installed. For details on how to check for alignment please see the installation manual.

2 Lower Track/ Sill Support

The lower track is intended to be fully supported across the width by the floor of the carriage.

The height of the lower track is 5/8 in. Typically, there is some thickness of finished flooring in residential elevators. A typical arrangement is to have 1/2 in plywood above the structural flooring and this leaves 1/8 in for the final flooring.

Bottom Sill Placement – RIGHT Hand Gate Arrangement with Slam Post Wall

3 Adjustment to Flooring Thickness

As the upper support track is mounted to the top of the carriage, the whole assembly can be raised in tandem if the flooring thickness is altered substantially at some point during carriage construction or during installation. Equal thickness spacers are required to ensure proper operation. This is limited by the relief area that is available between the panel rib and the top of the carriage which is roughly 0.75 in after accounting for a 0.75 in ceiling thickness. This should accommodate most conceivable flooring and ceiling combinations without custom ordering panels.

4 Dimensional Requirements

Depending on the width of the carriage gate, different dimensional requirements will need to be accommodated.

There are 2 widths of carriage gate offered:

- Up to 36 in Wide Opening (4 panel design)
- Up to 45 in Wide Opening (5 panel design)

Widths can be adjusted for smaller openings using the same offering. Please see the installation manual for details on these adjustments during set up. For design purposes, the dimensions for a 36 in wide opening can simply be reduced by the commensurate amount for a reduced opening.

There are also 3 different heights of carriage gates but, other than the carriage height and the physical height of the gate panels all the other dimensions will remain the same for each of the 4 and 5 panel arrangements. The 3 standard carriage gate heights are:

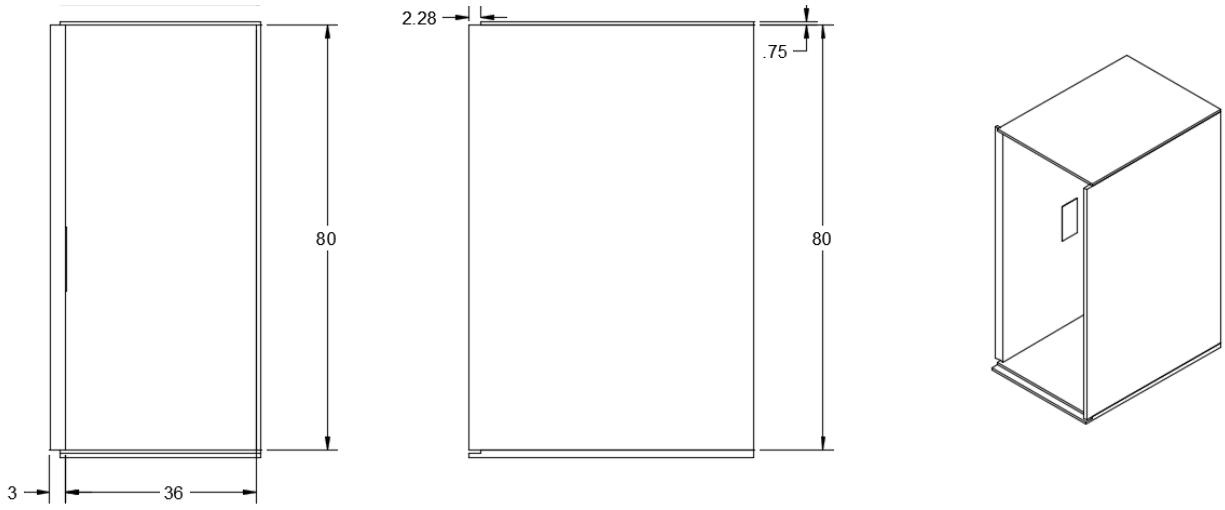
- 80 in height
- 84 in height
- 96 in height

Custom height gates are also possible, but dimensions would need to be provided as part of a design process and are not covered here.

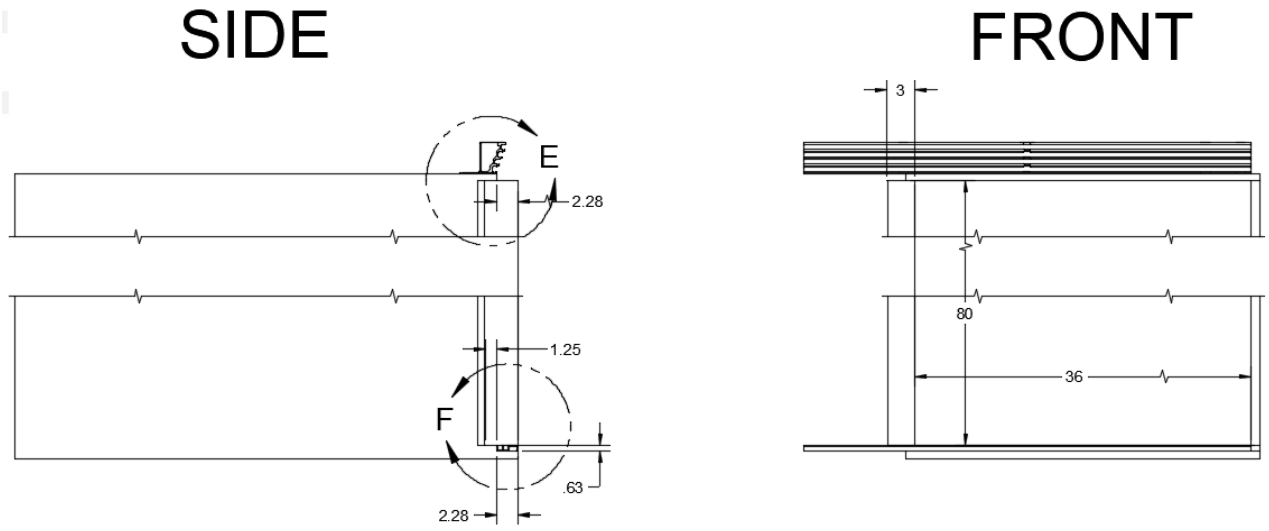
The following drawings show the overall dimensional requirements for cab arrangements as well as alignment

36in Wide by 80in Tall (4 Panel) Carriage Dimensions – RIGHT Hand Opening

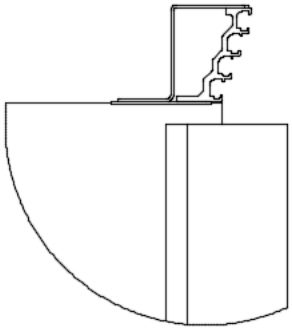
This carriage arrangement has a return on the pocketing side that extends away from the interior. For a wider cab arrangement the return would extend in to the cab and an example of that arrangements is shown in the 40in wide carriage section.



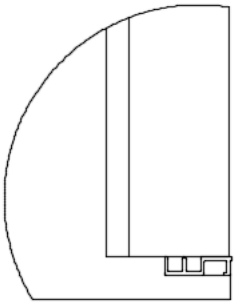
Detailed Views with Dimensions of Ceiling, Return, and Floor Support



The cut back on the ceiling should be in line with the back edge of the lower track and the upper track is mounted with the lowest track front edge just slightly protruding from the upper cut back edge.

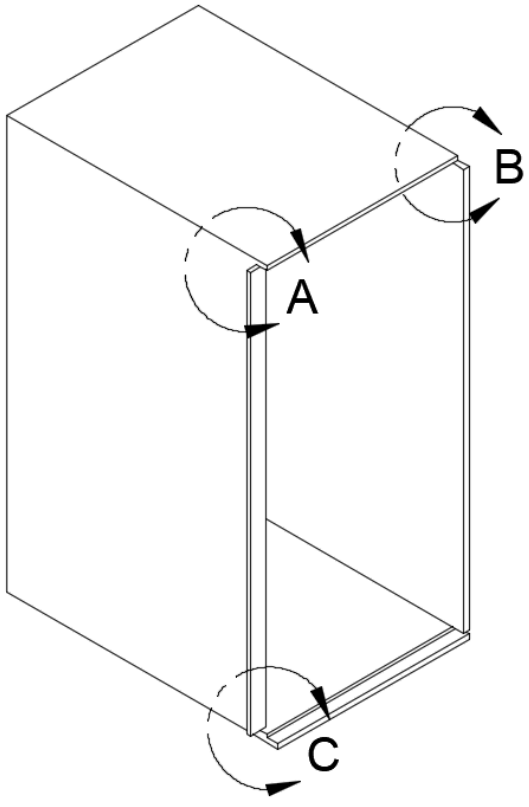


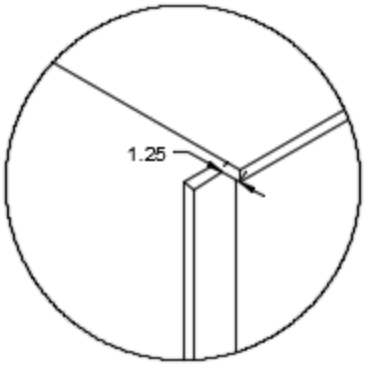
DETAIL E



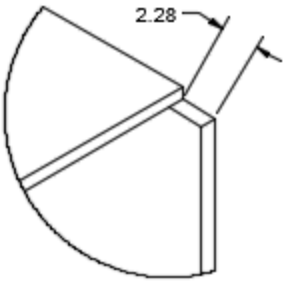
DETAIL F

Isometric Views of Details

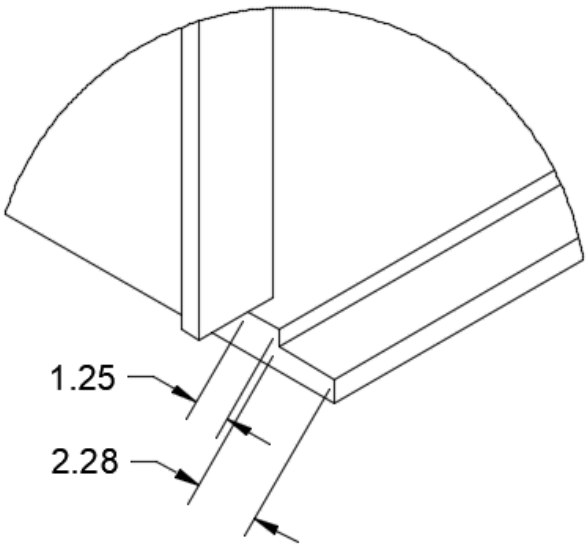




DETAIL A
SCALE 1:6

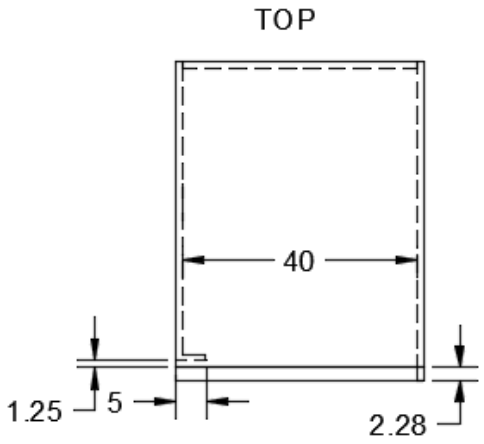


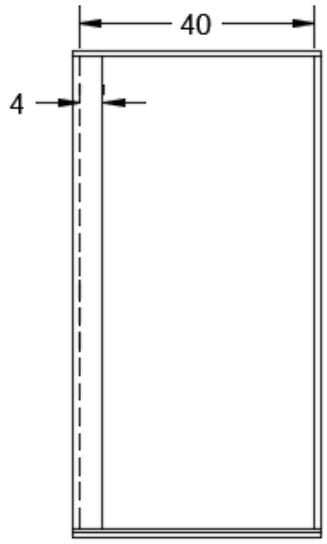
DETAIL B
SCALE 1:6



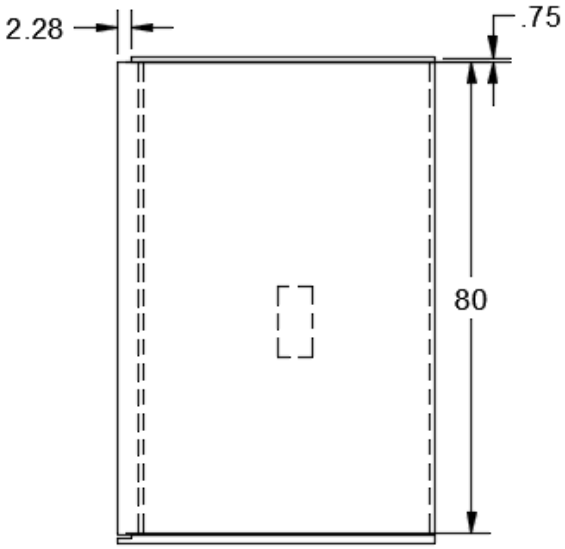
DETAIL C
SCALE 1:6

40in Wide by 80in Tall (4 Panel) Carriage Dimensions – RIGHT Hand Opening





Front

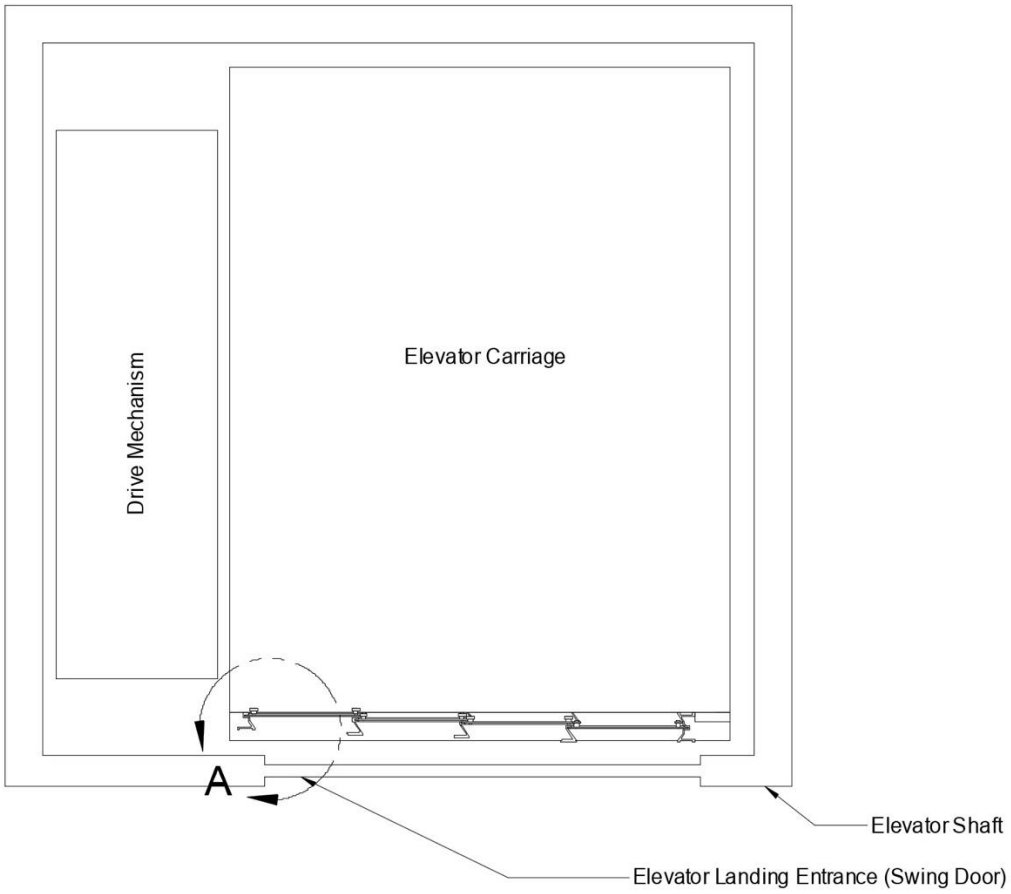


SIDE

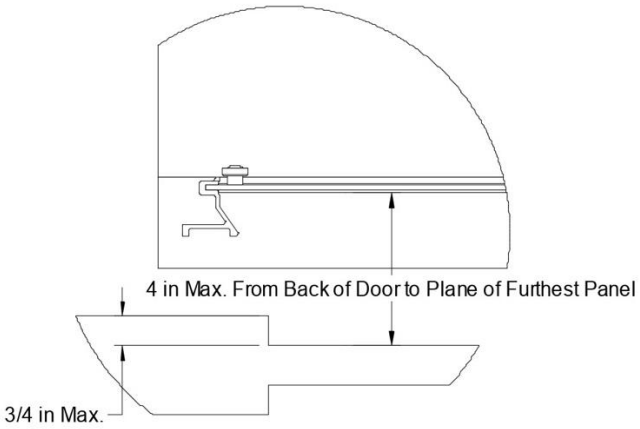
5 Clearance to Shaft Wall and Door

The Good Gate Inc. carriage gate is designed to meet the requirements outlined in ASME A17.1/ CSA B44 section 5 for residential elevators.

The following 2 images outline the clearances that should be designed into your carriage assemblies to comply with the code and ensure proper operation of the Good Gate product. The first drawing shows the set up for a 36 in wide (4 panel) offering that has a 3/4 in offset for the door from the shaft wall and less than 4 in offset from the back of the door to the furthest panel away from the shaft wall.



For a (5 panel) carriage gate, the arrangement is altered such that the back of the door is flush with the shaft wall instead of having the 3/4 in setback. **A flush door is required to meet code on a 5-panel gate arrangement if the running clearance is not reduced to 3/4in**

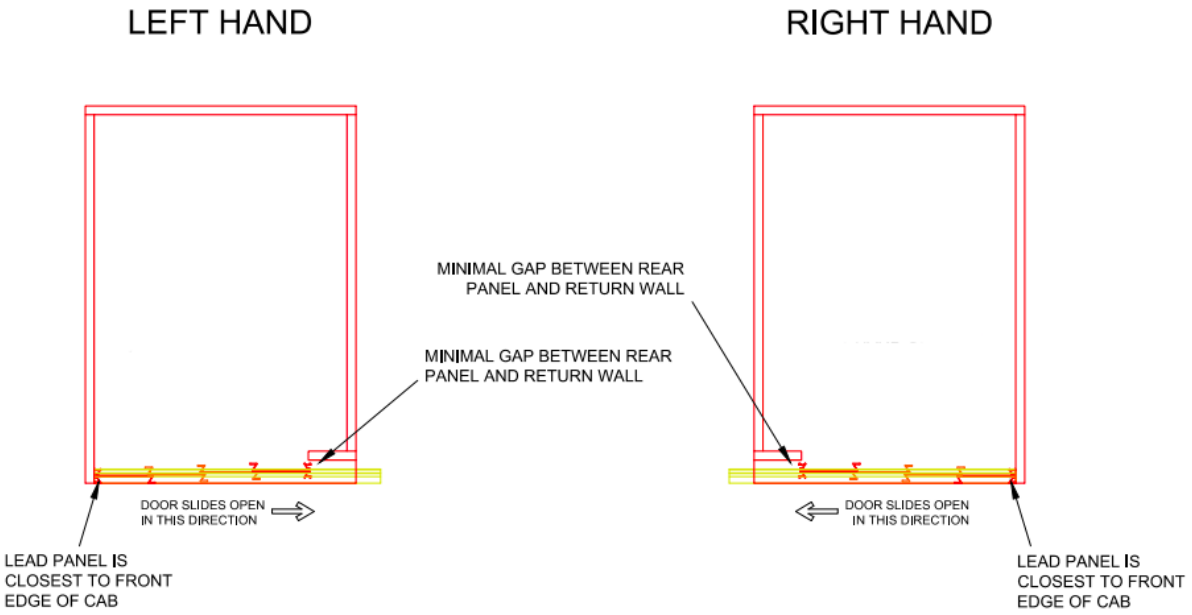


DETAIL A
SCALE 1:3

6 Left- and Right-Hand Opening Arrangements

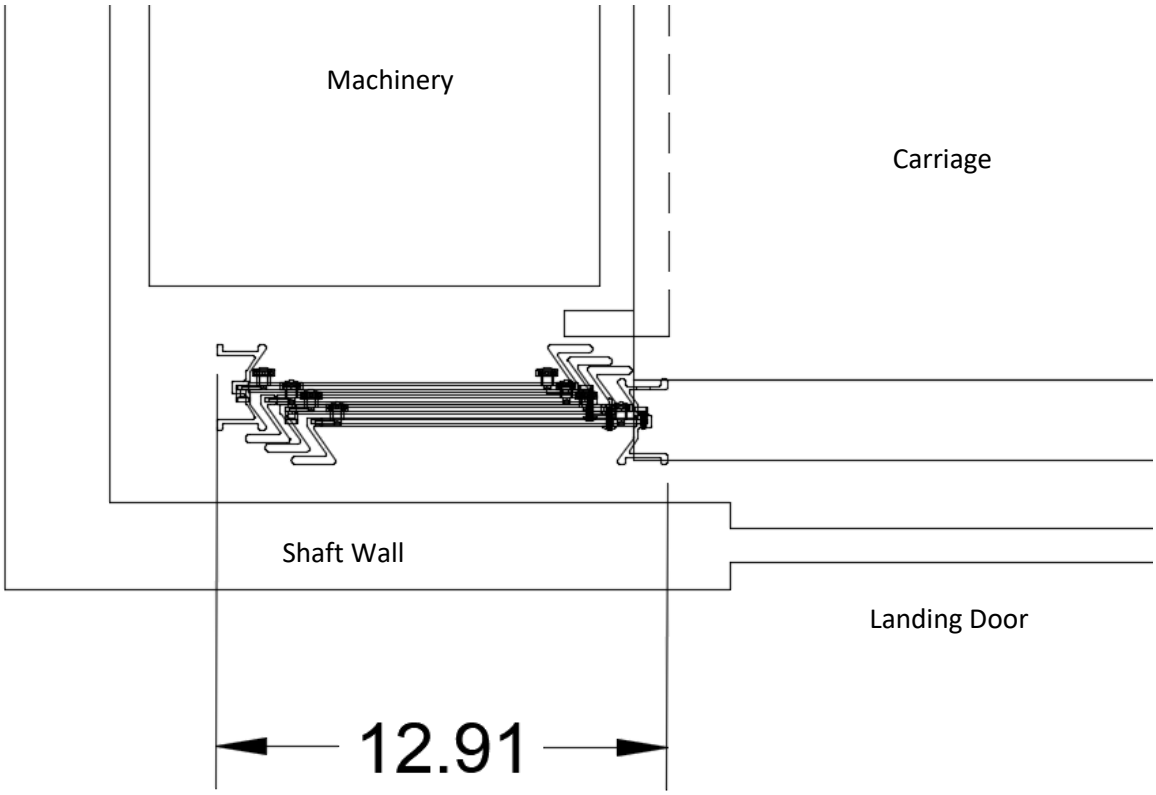
There is both a right- and a left-hand version of the Good Gate product. Hand of opening is always determined from the landing and specifies the side where the gate panels collect.

Details of how to set up the product for either a left- or right-hand are outlined in the installation manual, but it should be noted that the **carriage arrangement needs to comply with the carriage dimensional requirements outlined earlier in this design guide and they are different from one direction to the other.**



7 Pocketing Dimension

4 Panel 36in Coverage Gate

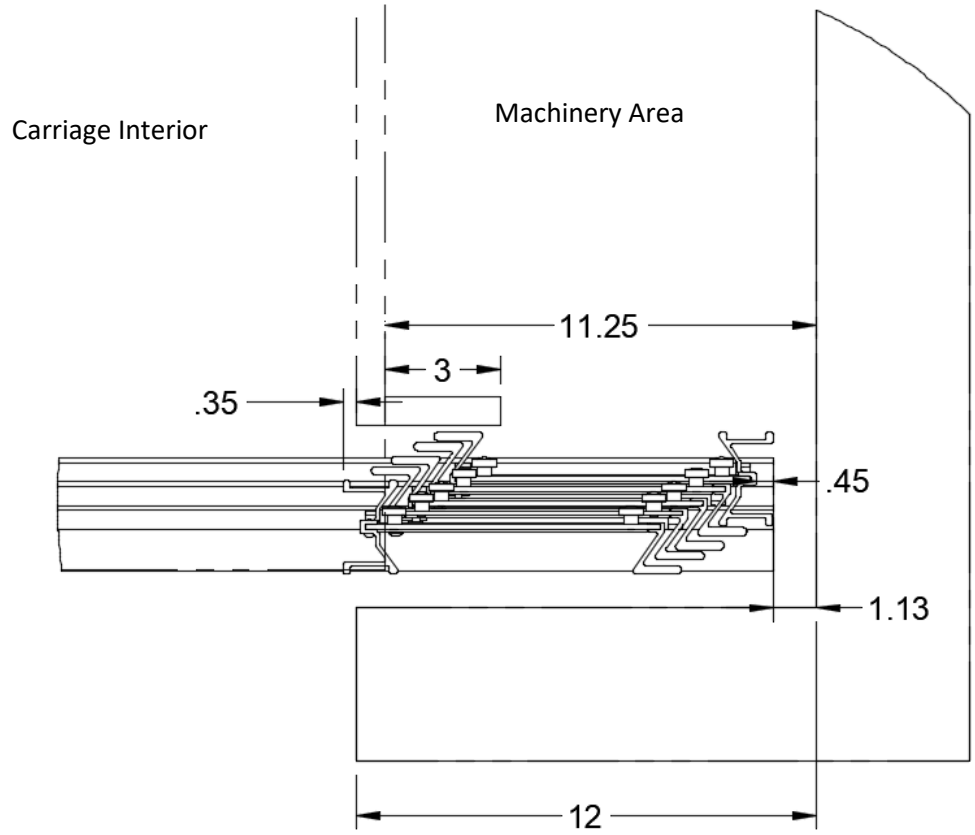


5 Panel 36in Coverage Gate

A 5 panel arrangement can also be provided to reduce the pocketing dimension from 12.9in to 11.5in. A layout for a LEFT Hand version of a 5panel gate is shown below. This arrangement was developed in order to assist in applications where the machinery space/ shaft wall to door jamb is 12in.

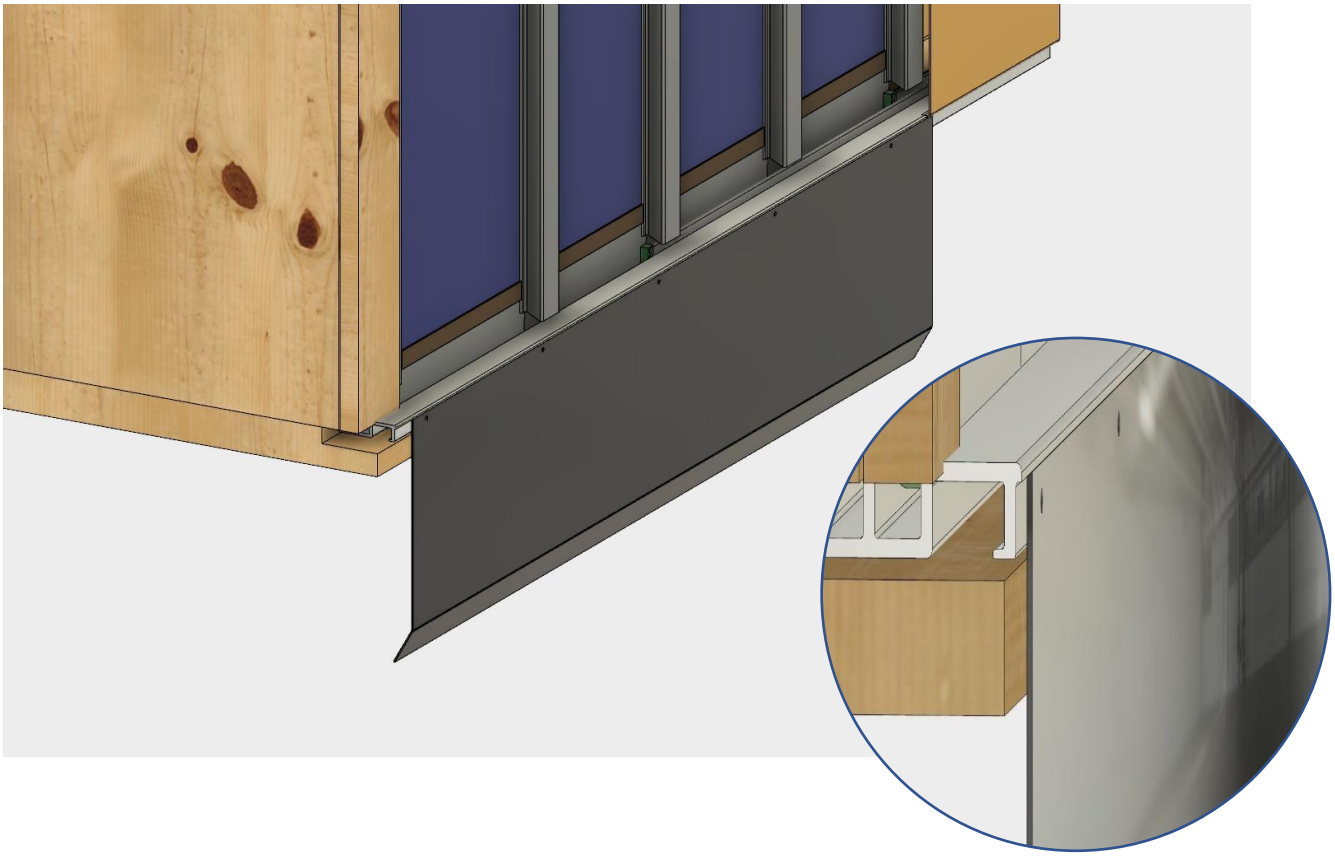
This arrangement also reduces the safety margin on coverage to 0.25in from the standard 4 panel arrangement.

In order to still comply with the 3/4in x 4in code requirements in the elevator code the running clearance to the shaft wall must be reduced to 3/4in when using a 5 panel gate.


Carriage Interior
Machinery Area
11.25
3
.35
.45
1.13
12

8 Toe Guard Arrangement

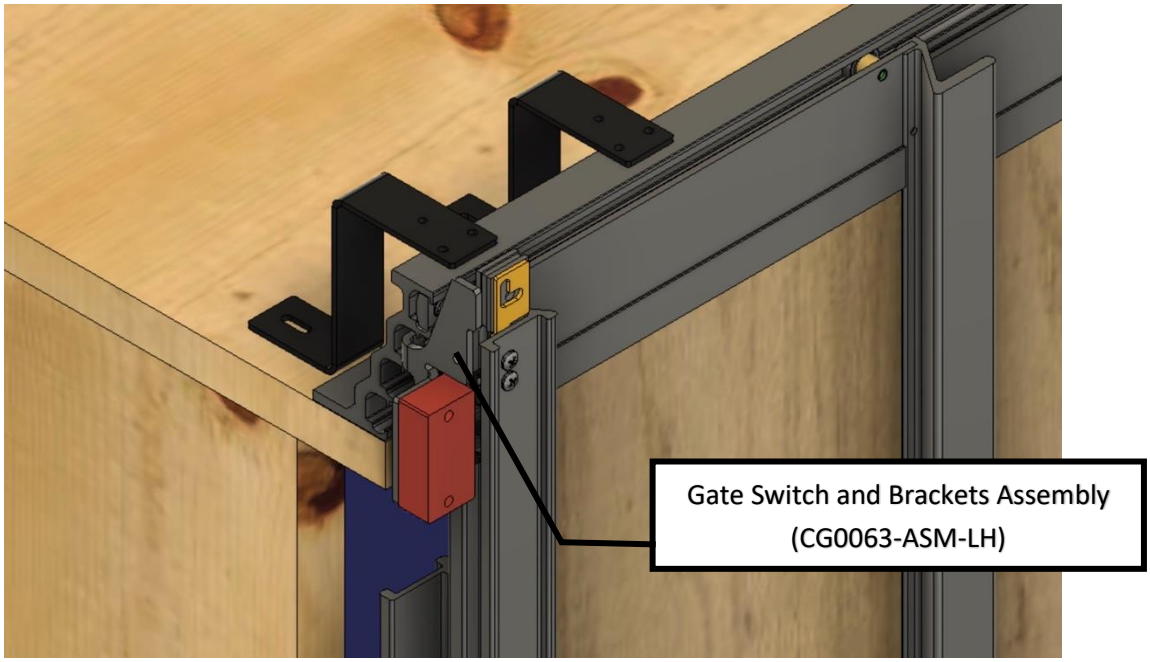
The lower track/sill has a groove on the front edge to allow for a toe guard to be installed. Toe guards are not supplied by Good Gate Inc. and attachment methods are not the responsibility of Good Gate Inc. but, a typical arrangement is shown below.



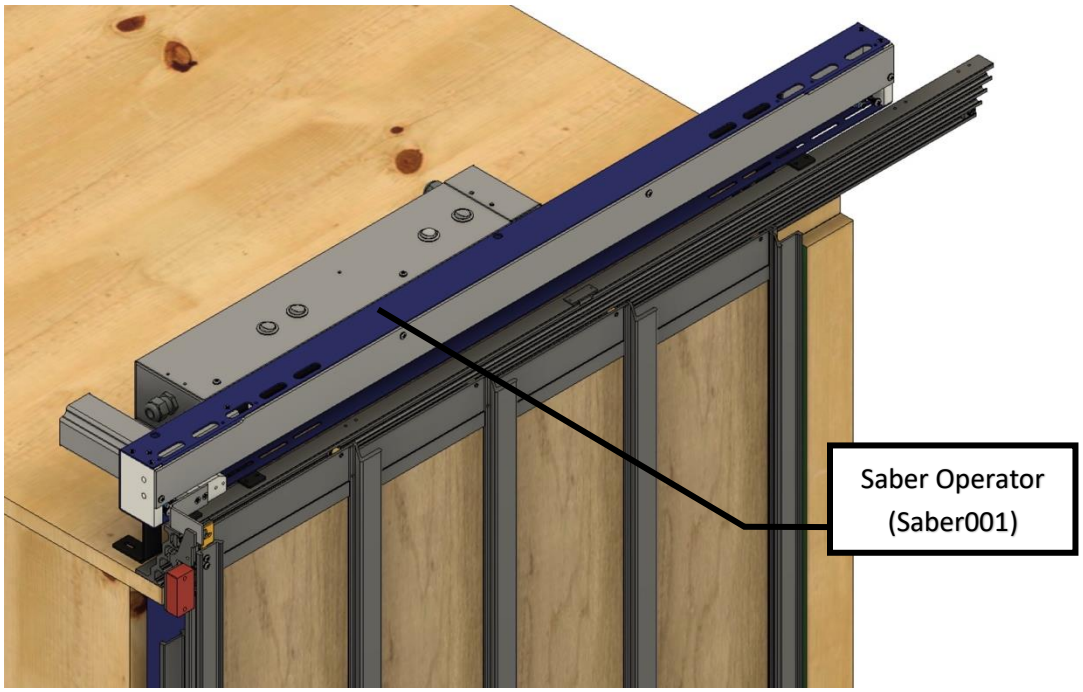
9 Gate Closure Sensor Integration

ASME A17.1/CSA B44 safety code requires that a carriage gate closure switch be incorporated into the controls so that if the gate is not in the closed position then the elevator will not be allowed to operate.

The following set-up shows the recommended gate switch and brackets for Good Gate products:



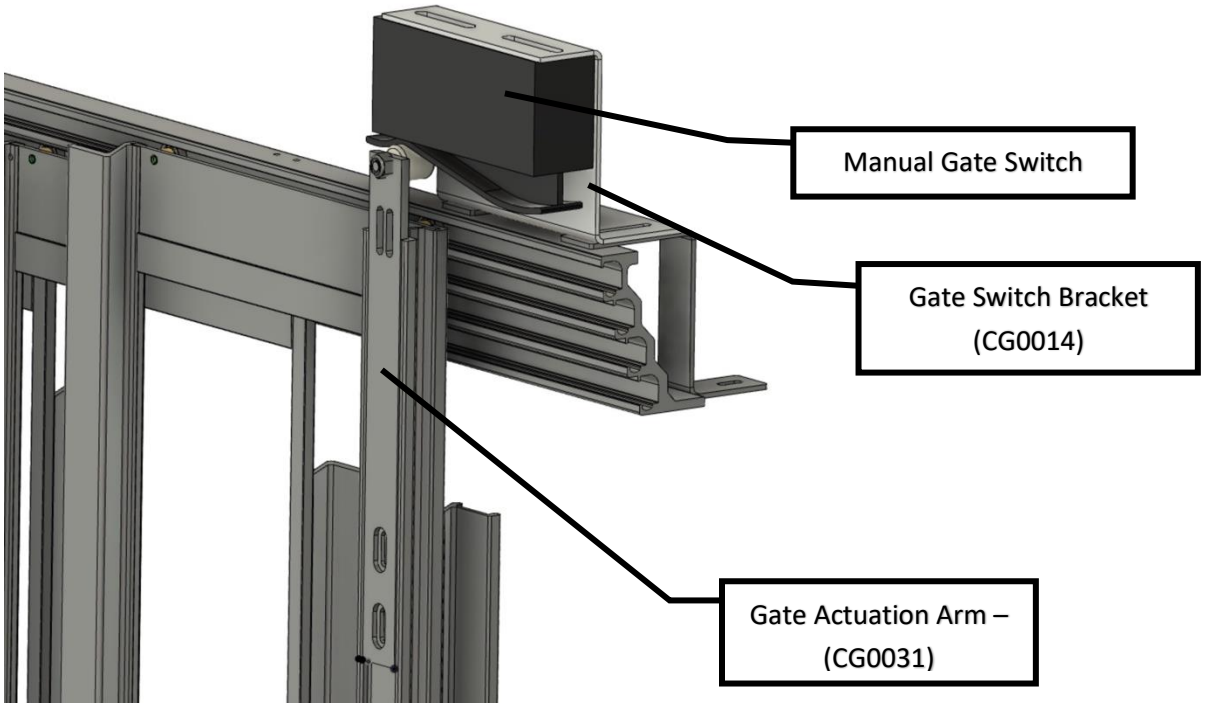
You may also choose to implement a gate operator that will open and close the gate automatically:



Note: A gate closure switch is still required with an automatic gate operator.

Should you have ordered a manual switch from another supplier, and a gate actuation arm from Good Gate, then the following instructions can be used to install them:

- Attach the armature to the appropriate side of the gate (depending on handedness). The arm from Good Gate Inc. can be used for both left- and right-hand gates but the direction the roller faces will be outward for a left-hand gate and inward for a right-hand gate. The right-hand gate version is shown in the image below.
- Attachment will require drilling holes as the exact height of your switch may vary.
- Move the gate to the fully closed position.
- Position the switch and mounting plate such that the switch is activated when the gate is in the closed position and breaks when the gate is not fully closed. This may require some testing if you are not sure when the switch activates.
- Once you have the correct position use the provided screws and nuts to secure the switch in place and connect it to the control system for the elevator.



Warning: The Good Gate product is not intended to operate without a gate closure switch that is connected to elevator controls. Failure to install a code compliant gate closure switch could result in injury or death.