



Good Gate Inc.

Customer Design Guide

Residential Sliding Carriage Gate

Date: August 22, 2019

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 6 x #6 wood screws with pre-drilled holes along the heel of the lowest. The support method is designed for 3/4in 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 5/8in. Typically, there is some thickness of finished flooring in residential elevators. A typical arrangement is to have 1/2in plywood above the structural flooring and this leaves 1/8in for the final flooring.



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 1.5 after accounting for a 1 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 offerings:

- Up to 36in Wide Opening (4 panel design)
- UP to 45in 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 36in wide opening can simply be reduced by the commensurate amount for a reduce opening but the pocket dimensions, outlined later in this guide, will remain the same, for obvious reasons, unless you request a custom product with reduced panel width.

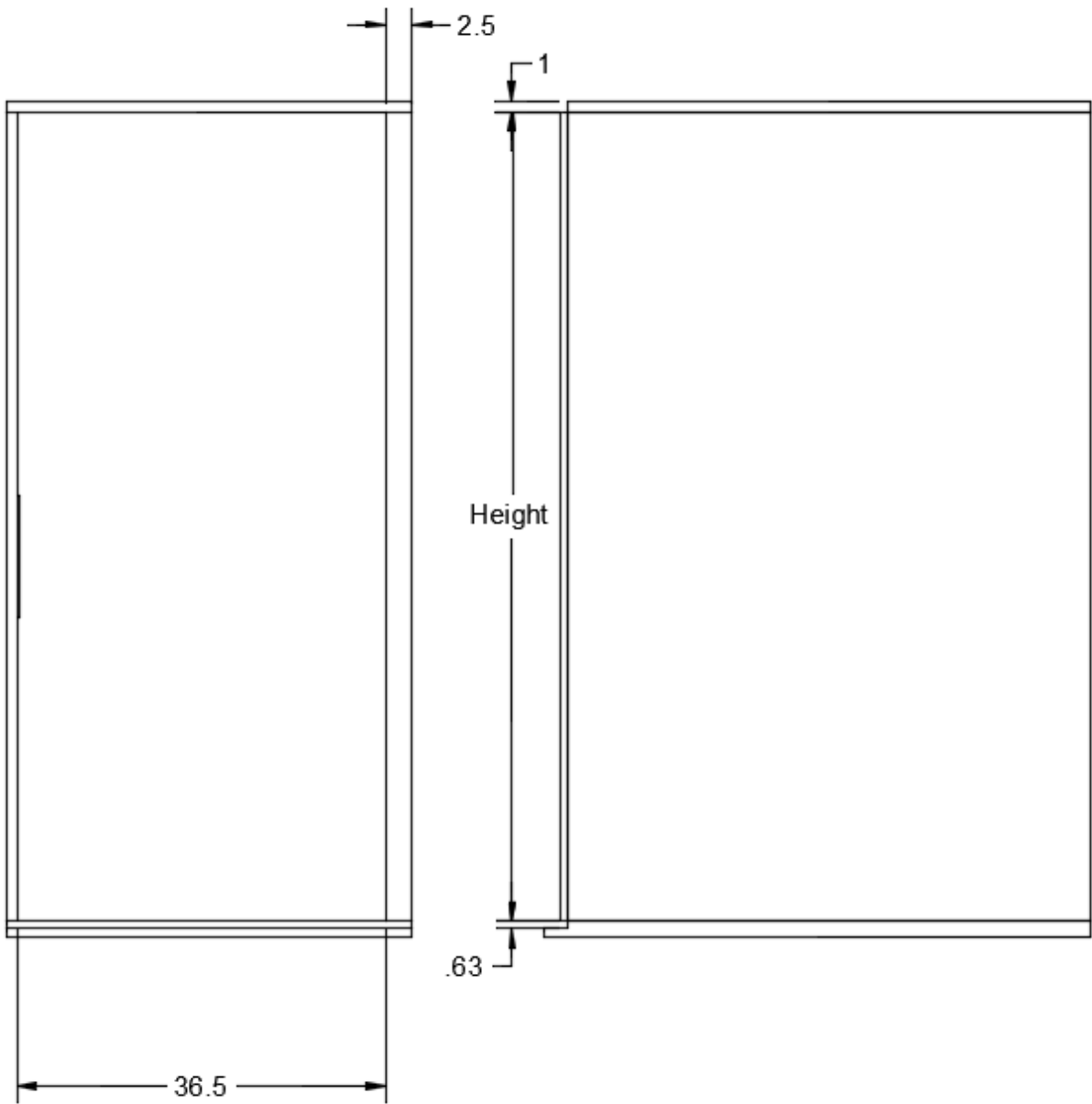
There are also 3 different heights of carriage gates but, other than the carriage height and the physical height of the gate panels all the other dimensions will remain the same for each of the 4 and 5 panel arrangements. The 3 standard carriage gate heights are:

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

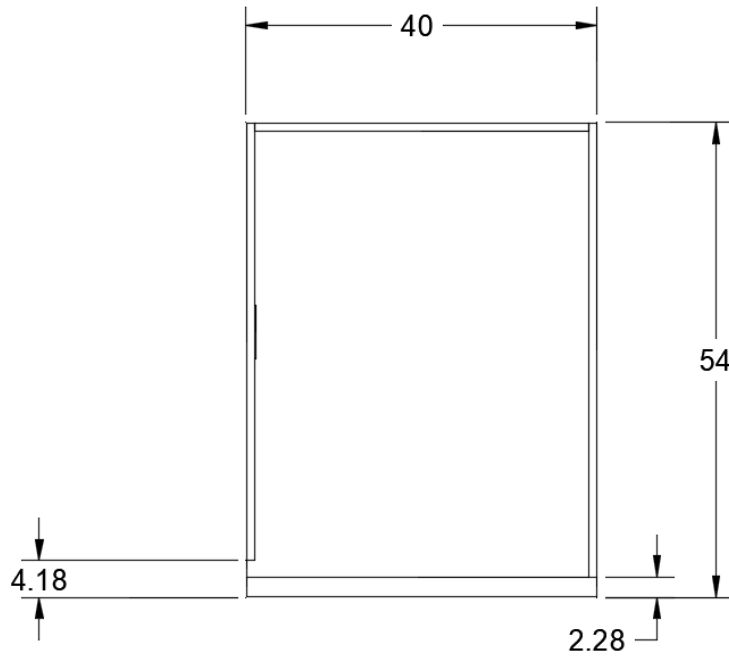
The following drawings show the overall dimensional requirements for the above noted 4 and 5 panel arrangements.

36in Wide (4 Panel) Carriage Dimensions – Left Hand Opening

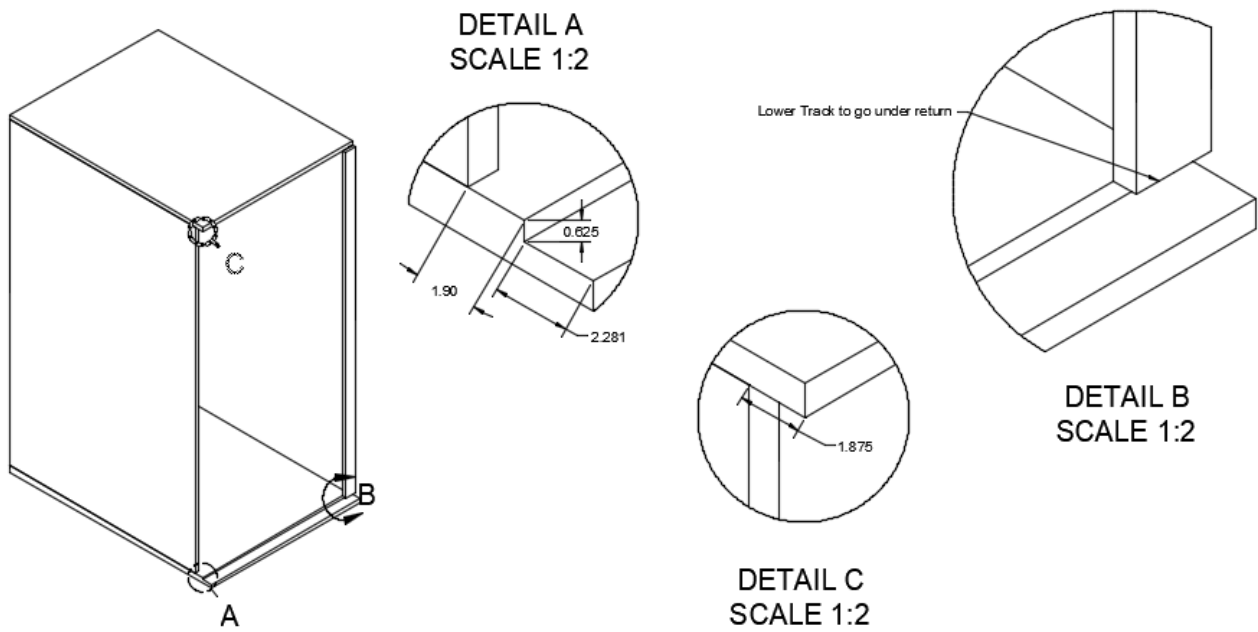


Front Entrance of Carriage

Side View of Carriage

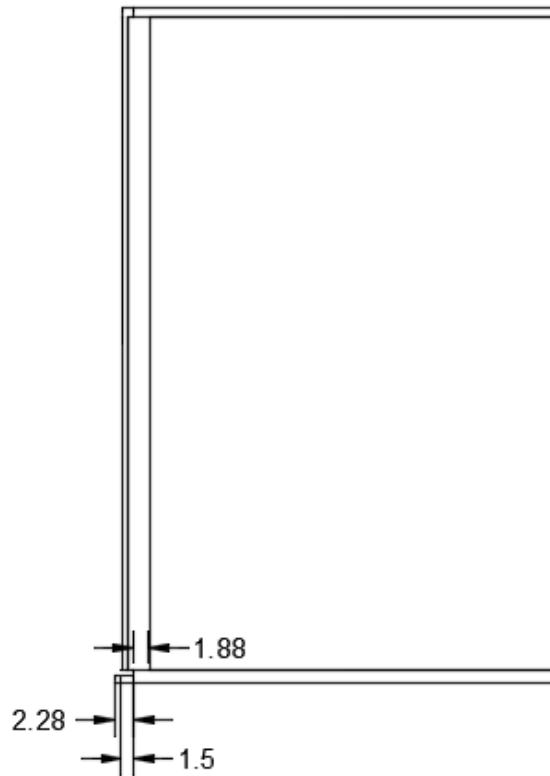
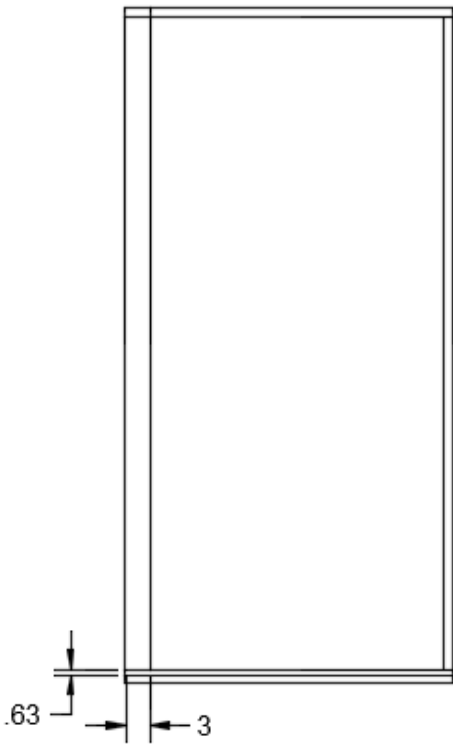
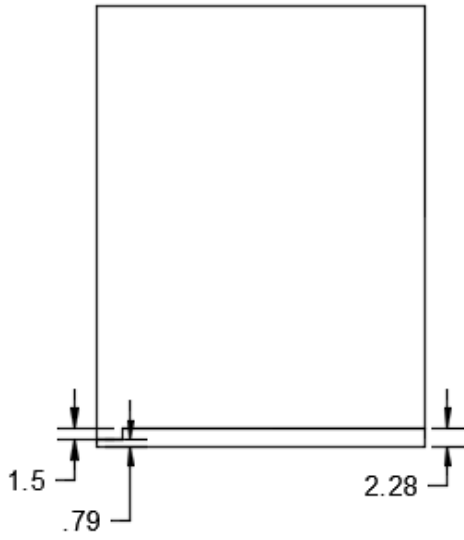


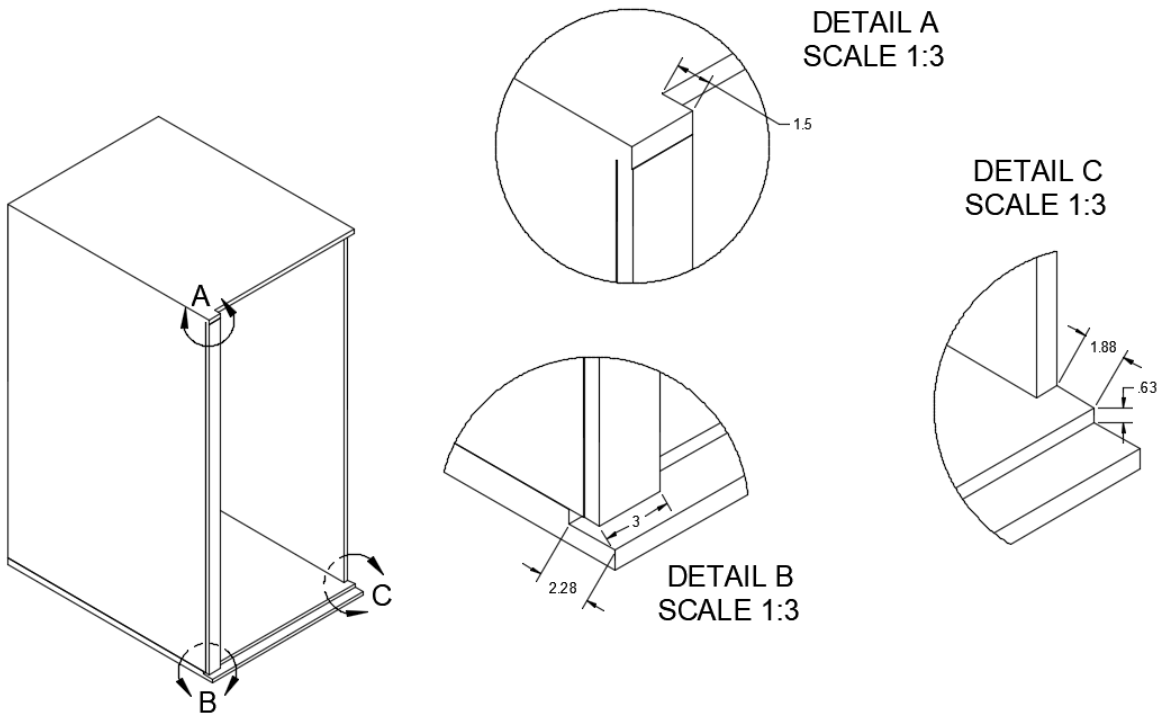
Top View of Carriage without Ceiling Panel



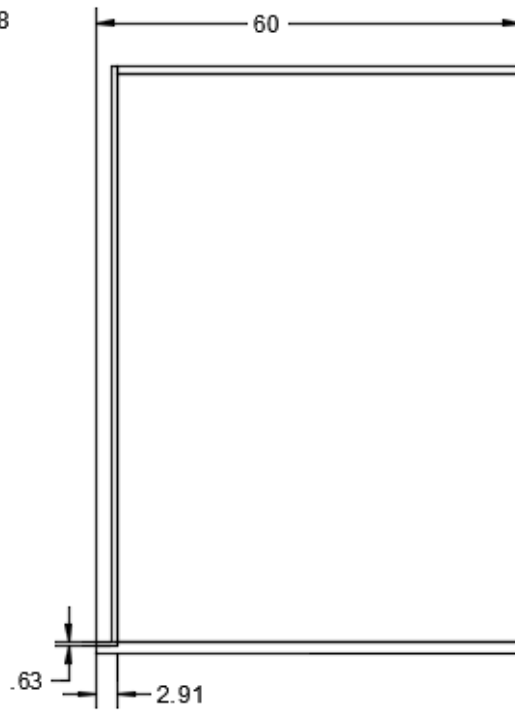
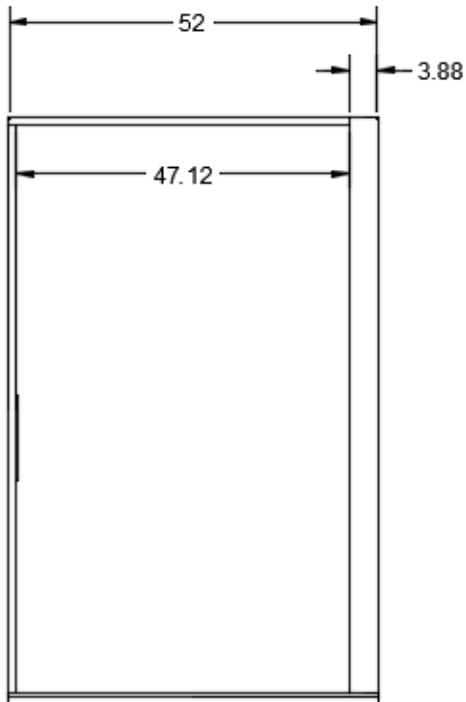
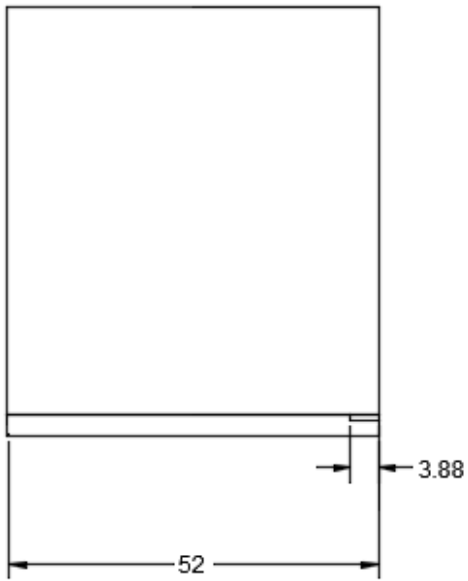
Detailed Isometric Views with Dimensions of Ceiling, Return, and Floor Support

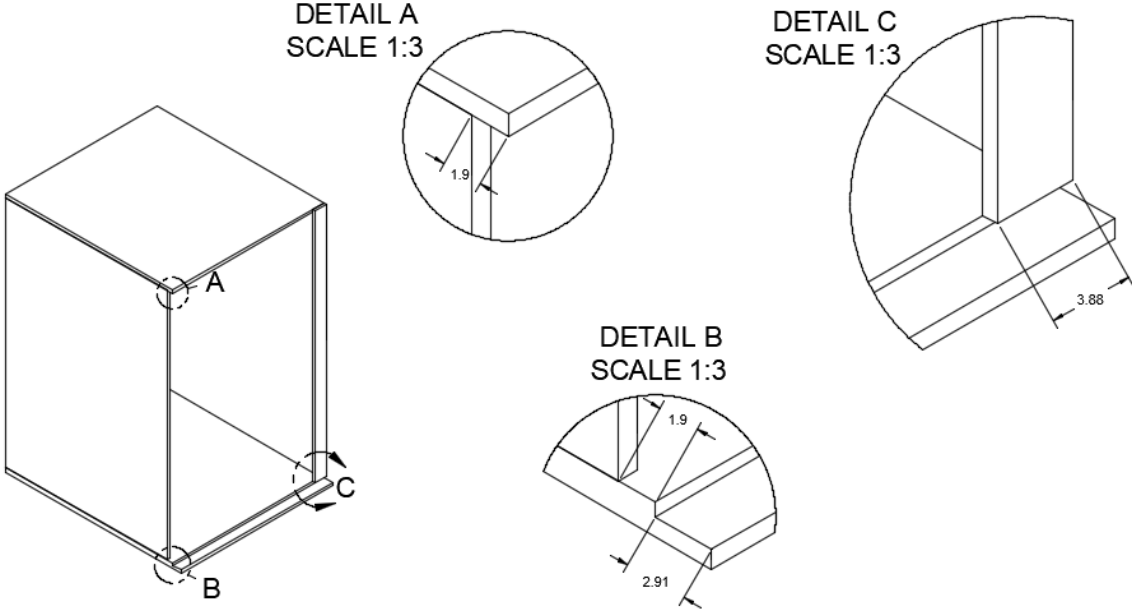
36in Wide (4 Panel) Carriage Dimensions – Right Hand Opening





45in Wide (5 Panel) Carriage Dimensions – Left Hand Opening





5 Pocket Design

To fully expose the opening for entry and exit the gate panels are collected on one side the carriage. This is typically done in a pocket to provide a carriage interior that is clean and aesthetically pleasing.

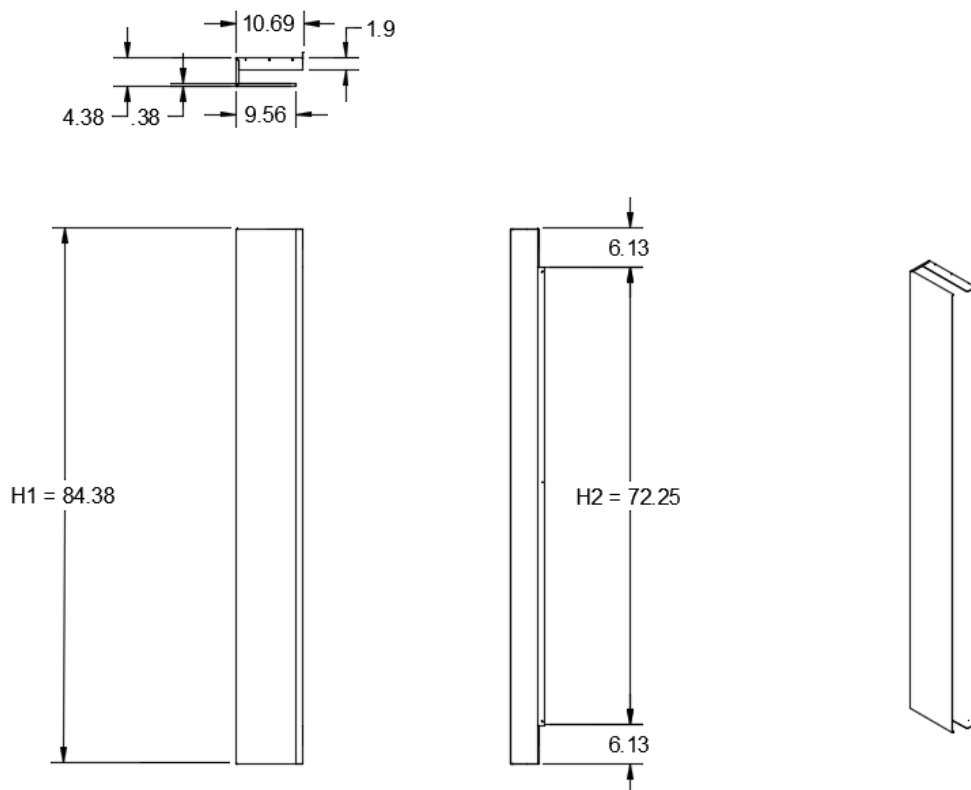
The pocket needs to have sufficient width to allow all the panels to slide in and avoid a pinching hazard on the panel furthest away from the shaft wall as it moves in to the pocket.

The pocket also needs to avoid opening that would allow passengers to access any opening that would place their limbs or other objects in the shaft.

An example of a pocket design is shown below for reference. If you wish to purchase a formed steel pocket from Good Gate Inc. this can be arranged.

H1 and H2 are for an 80in high carriage and this arrangement is for a 4 panel (up to 36in wide opening) gate. For taller carriages additional material height would need to be added and for a 5 panel gate the depth of 4-3/8in would need to increase by 0.625in and the height would increase by 0.875in to accommodate the extra panel width and additional track height.

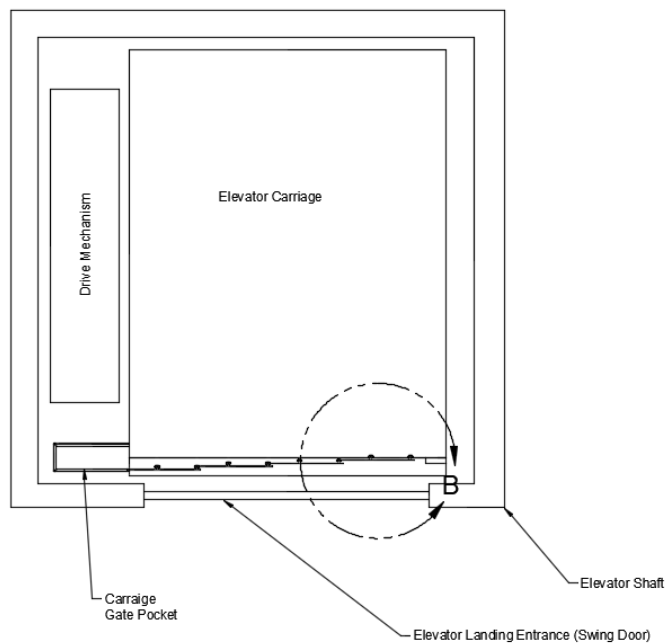
The drawing shown is for a pocket that is for either left or right hand opening and requires a plate to be installed to the top of the pocket depending on which opening is required. If you order the Good Gate pocket then the plate comes with the main pocket.

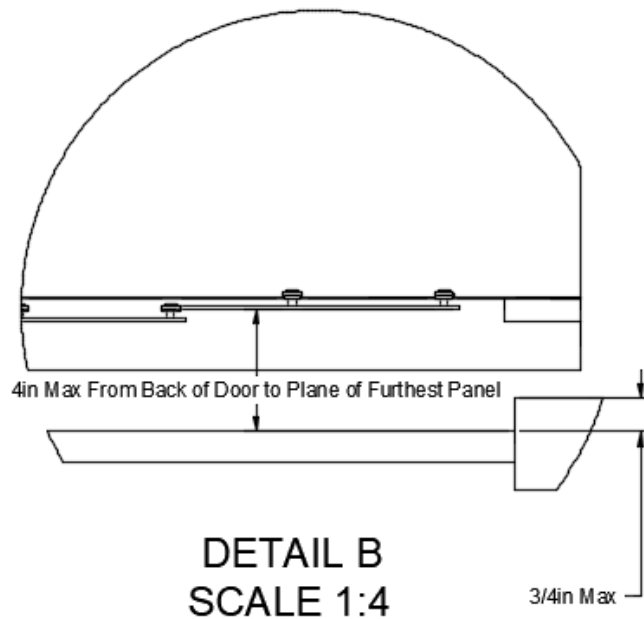


6 Clearance to Shaft Wall and Door

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 in to 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 36in wide (4 panel) offering that has a 3/4in offset for the door from the shaft wall and less than 4in offset from the back of the door to the furthest panel away from the shaft wall.





For a 45in wide (5 panel) carriage gate the arrangement is altered such that the back of the door is flush with the shaft wall instead of having 3/4in set back. **A flush door is required to meet code on a 5 panel gate arrangement.**

7 Left and Right Hand Opening Arrangements

The Good Gate product is designed to be used for either left or right hand opening using the same product. Hand of opening is always determined from the landing and using specifies the side where the gate panels collect in to a pocket.

Details of how to set up the product for either right or left 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.**

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

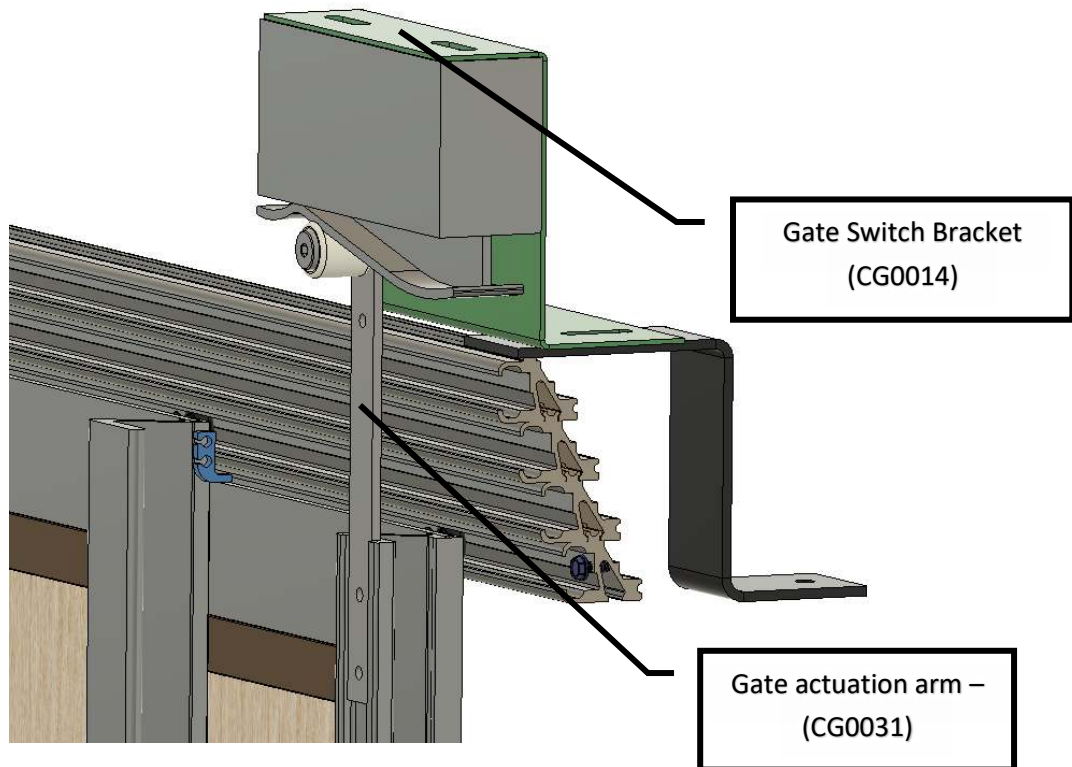
ASME A17.1/ CSA B44 safety code requires that a carriage gate closure switch be incorporated in to the controls so that, if the gate is not in the closed position, then the elevator will not be allowed to operate.

There are several switch suppliers but, should you have ordered a switch from Good Gate with the armature to actuate it, then the following instructions can be used to install it.

- Attach the armature to the appropriate side of the gate (depending on handedness). The arm from good gate 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 left 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.

10 Multiple Carriage Gate Arrangements

For a multi-sided entry carriage multiple carriage gates and pockets will be required. An example of a 90 degree entry-exit style carriage is shown in the drawing below as an example but the same dimensional requirements, as outlined above, will need to be observed for each gate.

The pocket location will be of particular importance in multi-side entry arrangements and you may wish to consider doors that are flush with the shaft wall for all entry points to allow for more flexibility in shaft construction/ tolerances so that the ASME A17.1/ CSA B44 code requirements are observed.