Stairfriend 23

Curved Stairlift

Planning Guide

savaria

Applicable Codes:

ASME A17.1/CSA-B44
ASME A18.1
CAN/CSA B355-19

Printed in Canada

Purpose of This Guide

This guide assists architects, contractors, and lift professionals to incorporate the Stairfriend 23 curved stairlift into a residential or public building design.

The design and manufacture of the Stairfriend Stairlift meets the requirements of the following codes and standards:

- ASME A18.1-2003 Section 4 (Public)
- ASME A18.1-2005 Section 4 (Public)
- ASME A18.1-2008 Section 4 (Public)
- ASME A18.1-2011 Section 4 (Public)
- ASME A18.1-2014 Section 4 (Public)
- ASME A18.1-2017 Section 4 (Public)
- ASME A18.1-2003 Section 7 (Private)
- ASME A18.1-2005 Section 7 (Private)
- ASME A18.1-2008 Section 7 (Private)
- ASME A18.1-2011 Section 7 (Private)
- ASME A18.1-2014 Section 7 (Private)
- ASME A18.1-2017 Section 7 (Private)
- B355-19

We recommend that you contact your local authority having jurisdiction to ensure that you adhere to all local rules, regulations and fire regulations pertaining to curved stairlifts.

IMPORTANT: This Planning Guide provides nominal dimensions and specifications useful for the initial planning of a stairlift project. **Dimensions and specifications are subject to change without notice due to continually evolving code and product applications.**

Before beginning installation, please consult Savaria Corporation or the authorized Savaria dealer in your area to ensure you receive your site-specific installation drawings with the dimensions and specifications for your project.

Visit our website for the most recent drawings and dimensions.

How to Use This Guide

1 Determine your client's intended use of the lift.
2 Determine the local code requirements.
3 Determine the site installation parameters.
4 Plan for electrical requirements.

History

May 26, 2023 – Initial release
April 24, 2024 - Revised pages 5, 6, 15 and 16, Revised graphics throughout, added revision number
September 26, 2024 - Revised cover
Novermber 5, 2024 - Added Emergency Stop Button

Contents

Description of the lift

The Stairfriend curved stairlift is designed to be installed on stairs that feature a curve, an intermediate landing, or when out-of-the-way parking is desired.

The stairlift features a double-rail system for strength and durability and provides a smooth, comfortable ride. The seat features an open, lower back design for excellent comfort while riding in the chair. The list is easy to operate with controls on the armrest as well as two included radio frequency remote controls.

Savaria custom bends the rail to your exact specifications based on computer-aided design and photo measuring ensuring an accurate installation.

The unit travels along the guide rails at a comfortable speed up to 20 feet per minute (0.1 metres per second).

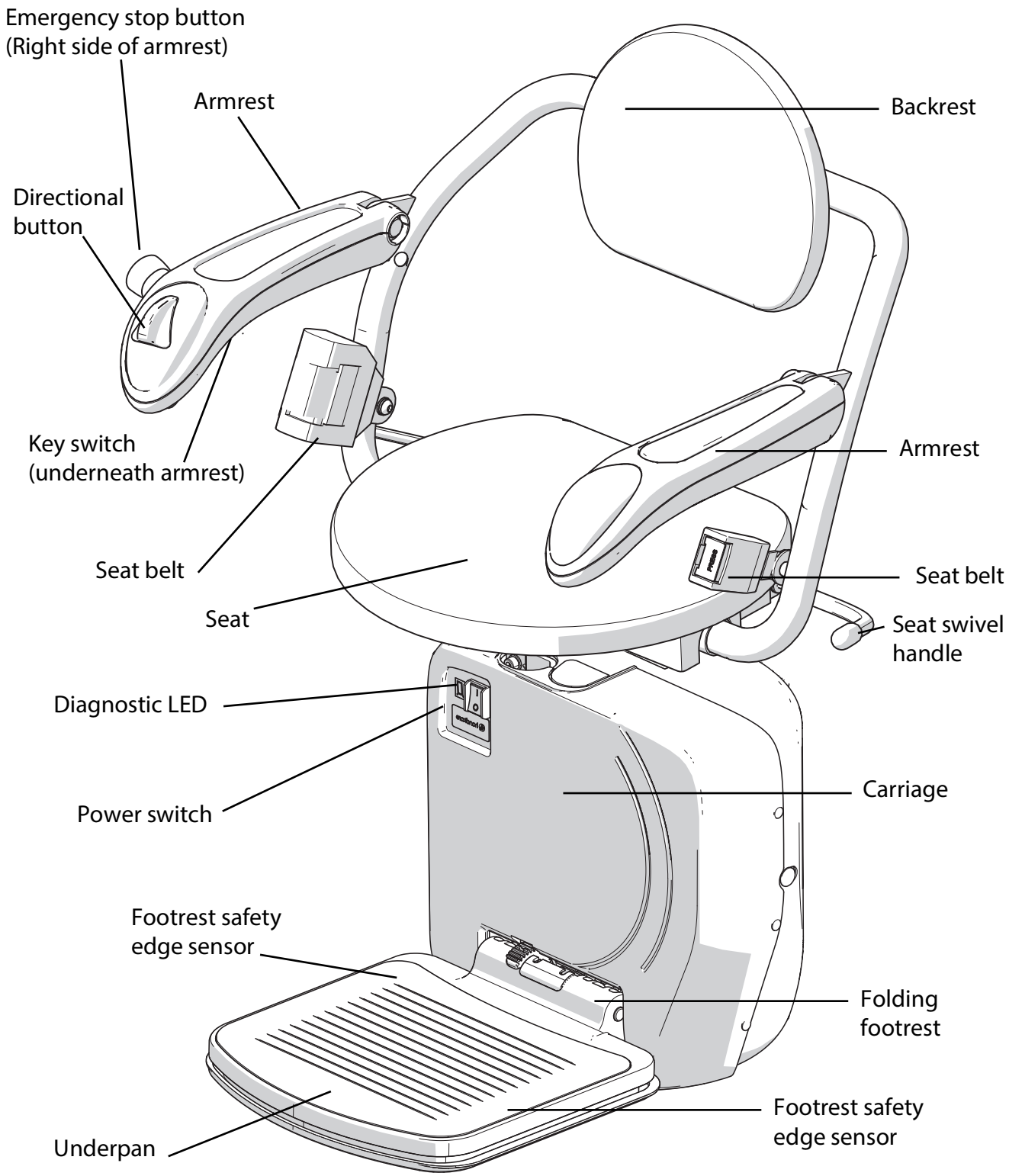
Features and benefits

- Battery charging at the top and bottom (and optional intermediate landings) to ensure the stairlift is always charged and ready to go, even if there is a power failure
- Choice of seat and backrest with wipe-clean synthetic leather
- Capacity up to 350 lbs (160 kg)
- Seat swivels and locks into position for safe boarding and deboarding (at the top only)
- Retractable seat belt to ensure your safety
- Folds up to less than 16" (40.5 cm) to allow easy access to the stairs when the lift is not in use
- On-board controls with soft start and smooth stop operation
- Two radio frequency remote controls included, offering greater range and control of the lift from other rooms
- Overspeed governor and obstruction sensors to stop the chair if it meets an object in both the up or down travel directions
- Reliable rack and pinion drive with sturdy, twin steer tube rail construction
- Custom-built for curves, turns, landings and parking
- Can be mounted on either side of the stairs
- Onboard diagnostics to identify any service issues
- Options: 90° or 180° parking, top or bottom overrun, keyless access, emergency stop button, and extra long seat belt

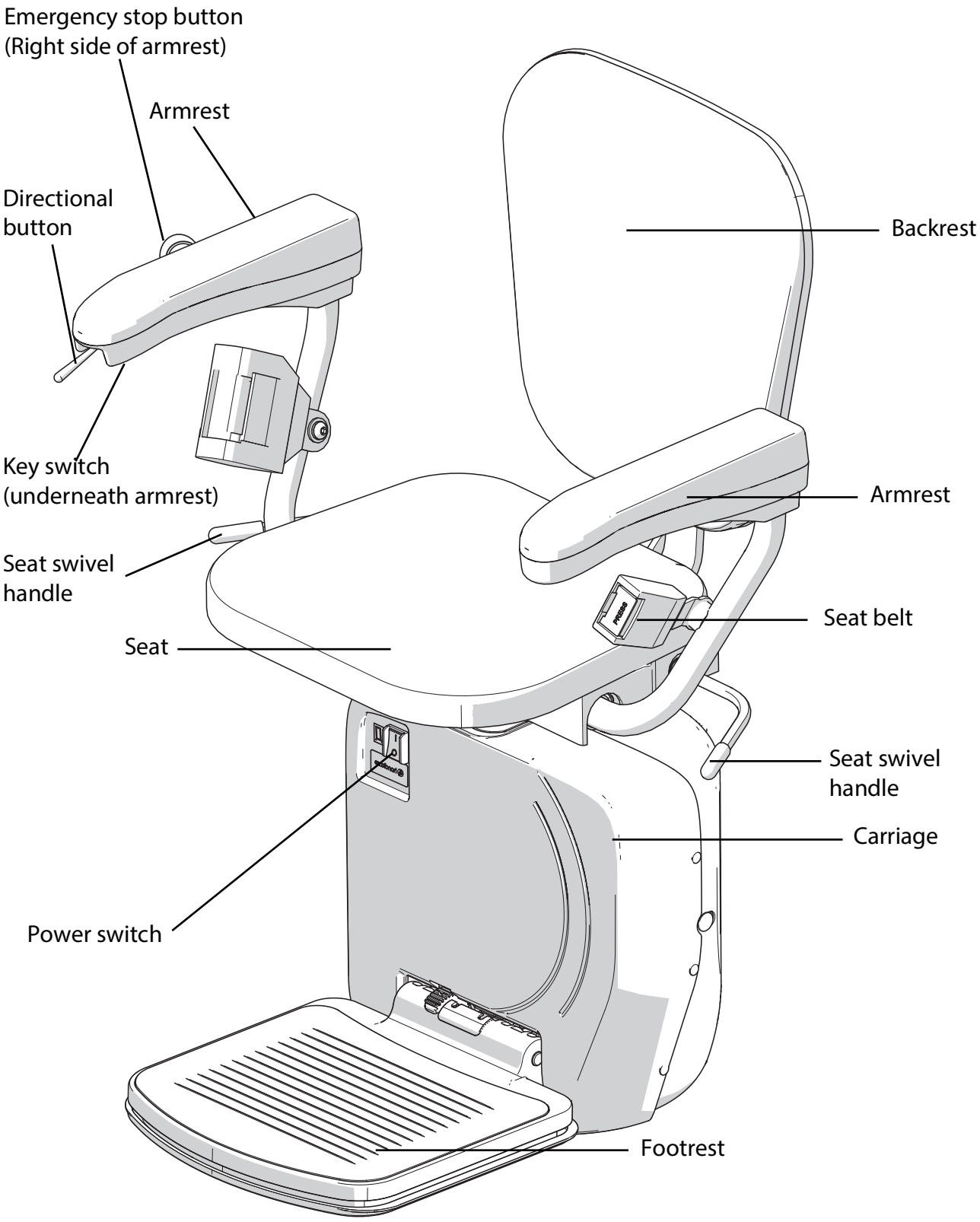
Specifications of the lift

Specification	Data
Applications	Residential or commercial, indoor, curved stairs
Capacity	300 lbs, Heavy duty, 350 lb (160 kg)
Maximum travel	49 ft (14.9 m) at 300 lbs
Maximum travel (heavy duty)	49 ft (14.9 m) at 350 lbs
Travel speed	20 ft/min (0.1 m/s); 12 ft/min (0.06 m/s) at bends
Daily cycle	Normal: 10 Heavy: 30 Excessive: 50 Maximum starts in 1 hour on standard installation: 5 NOTE: Please consult your Sales Representative if there a chance you may exceed these amounts.
Range of incline	0 to 56°
Drive system	Rack and pinion
Operator controls	Constant-pressure type (toggle switch and remote control call/send units)
Seat belt	Retractable
Motor	0.6 hp, 24V (DC) power that charges on standard household power
Fold-up width	16'' (40.50 cm)
Fold-out width	27'' (69.5 cm)
Rail	Steel
Emergency operation	Full up and down travel on power interruption (full battery backup)
Features	Directional button on the armrest Radio frequency remote controls to call/send the lift Manual lowering capability Folding seat (with seat belt) Folding footrest Obstruction sensors on the carriage and footrest Locking seat swivel handles Emergency stop button
Options	Savaria Link remote monitoring

Lift components (V-seat shown)



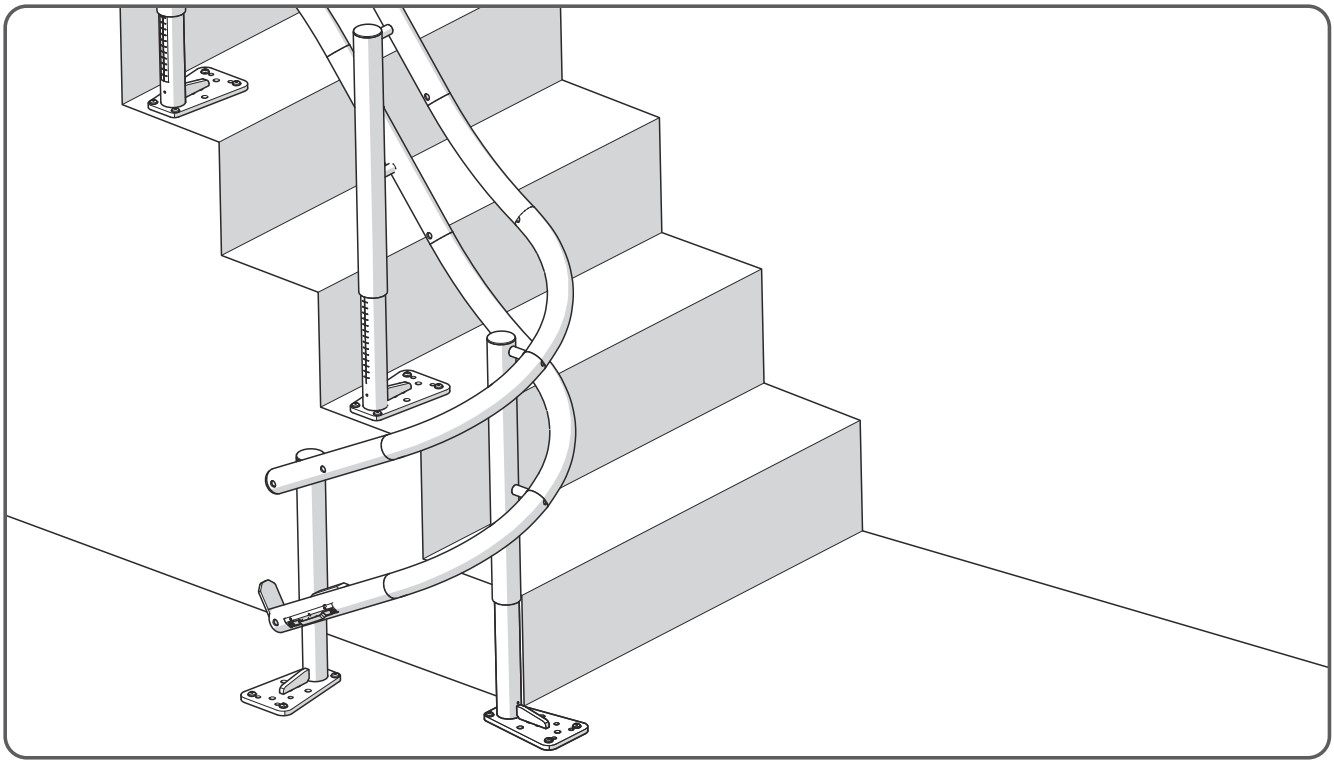
Lift components (L-seat shown)



Guide rails

The lift travels up and down the stairway along two guide rails – an upper rail and a lower rail with a gear track.

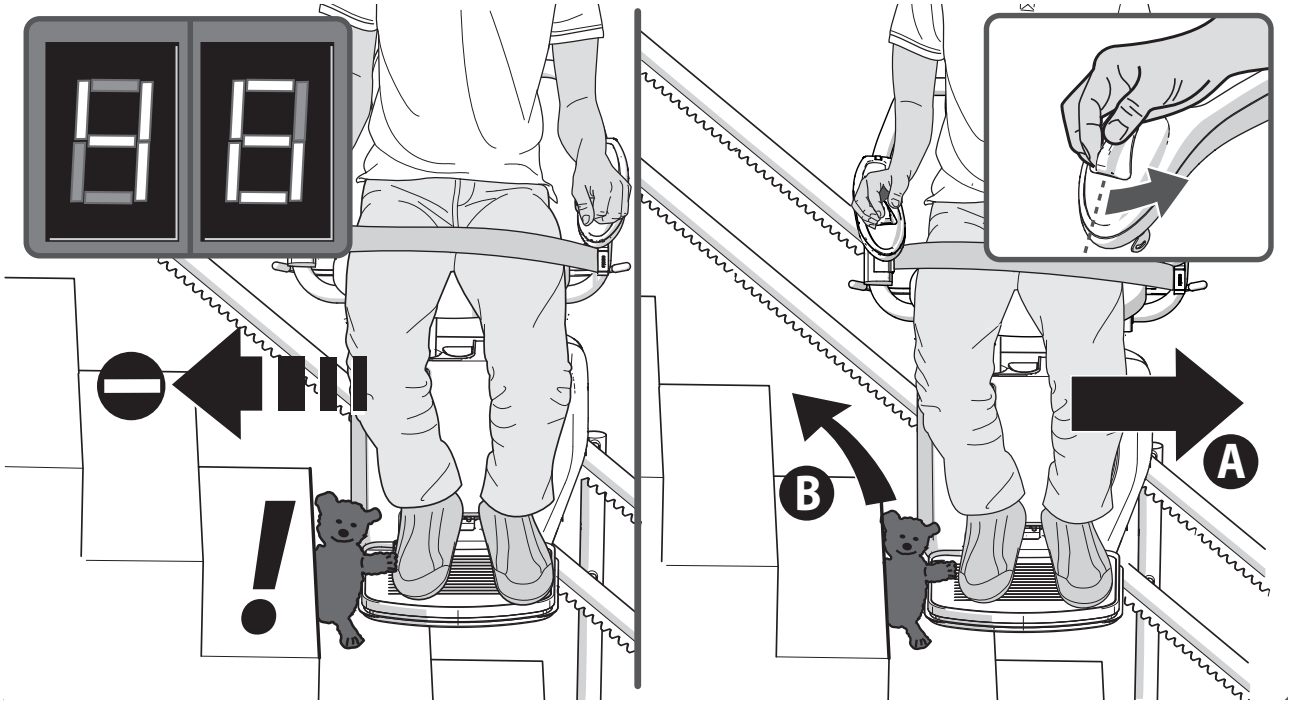
The guide rails are mounted on feet at the locations specified in your Installation drawings. Rail sections are connected together at the rail joints using bolts and joint pins. Once all rail sections have been joined together and location is finalized according to the Installation drawings, the feet are then secured to the stairs.



Safety features

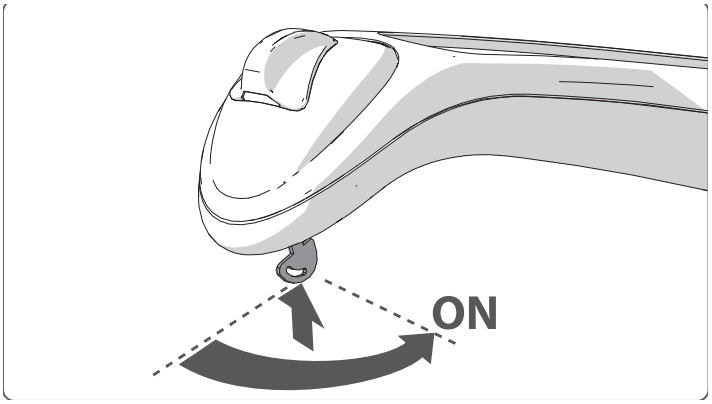
Obstruction sensors

There are sensors inside the carriage bumpers and the footrest underpan that stop the lift if it encounters an obstacle on the stairs.



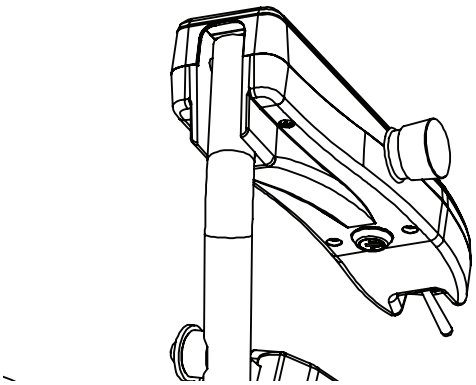
Key switch

The key switch is located underneath the armrest and must be turned on to activate the stairlift.



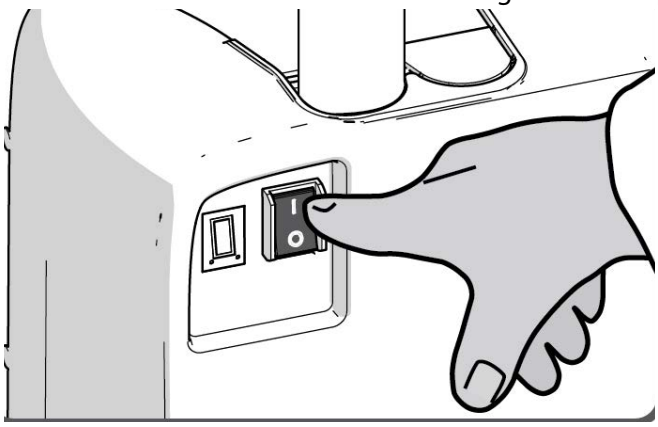
Emergency stop button

The emergency stop button is located on the arm of the chair. Pressing this button with stop the unit immediately.



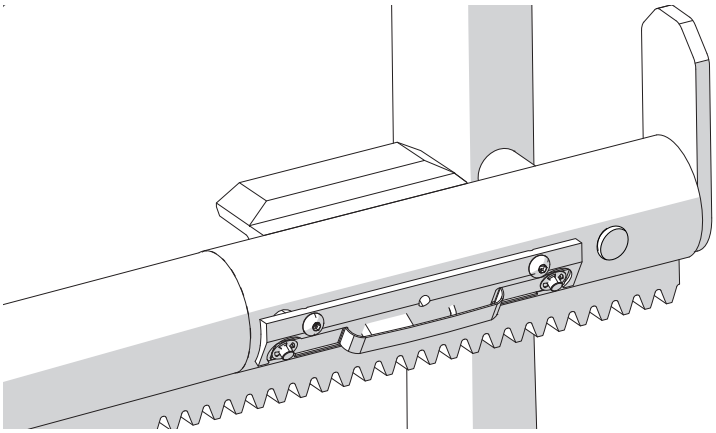
Power switch

The power switch is located on the front of the carriage and turns power on/off to the stairlift.



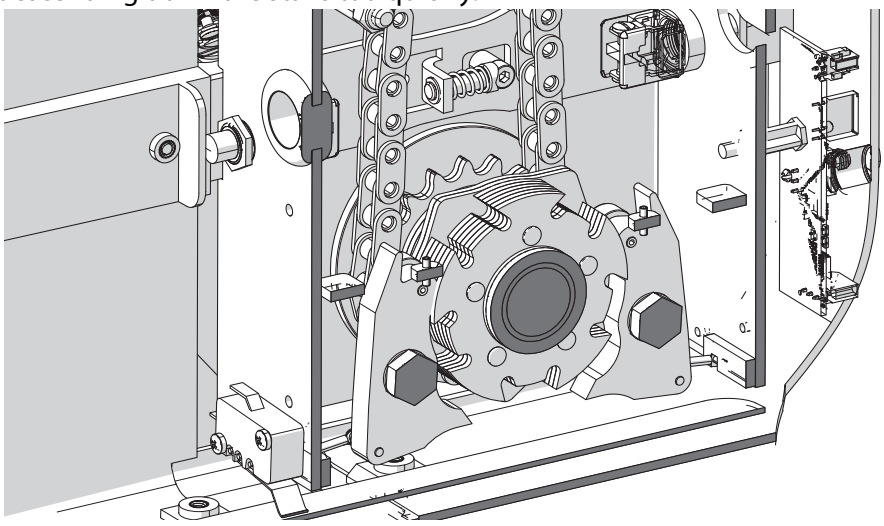
End stops

The end stops are mounted on the rail and are used to stop the lift at the upper and lower end of the stairs.



Overspeed governor

The overspeed governor is a safety device that activates to quickly bring the lift to a stop if it is descending down the stairs too quickly.



Site verification

Stairway

Due to close running clearances, the Owner/Agent must ensure that the stairs (where provided) are level, plumb (+/-1/8" (3 mm)) and square and are in accordance with the dimensions specified on the site-specific Installation drawings.

Minimum overhead clearance

The Contractor/Customer must ensure the minimum overhead clearance is in compliance with codes.

Construction site

The Contractor/Customer is responsible for all masonry, carpentry and drywall work as required, and for patching and finishing (including painting) all areas where walls/floors may need to be cut, drilled or altered in any way to permit the proper installation of the lift.

Dimensions

The Contractor/Customer must verify all dimensions on the site-specific Installation drawings and report any discrepancies to the Agent or Distributor.

Installation

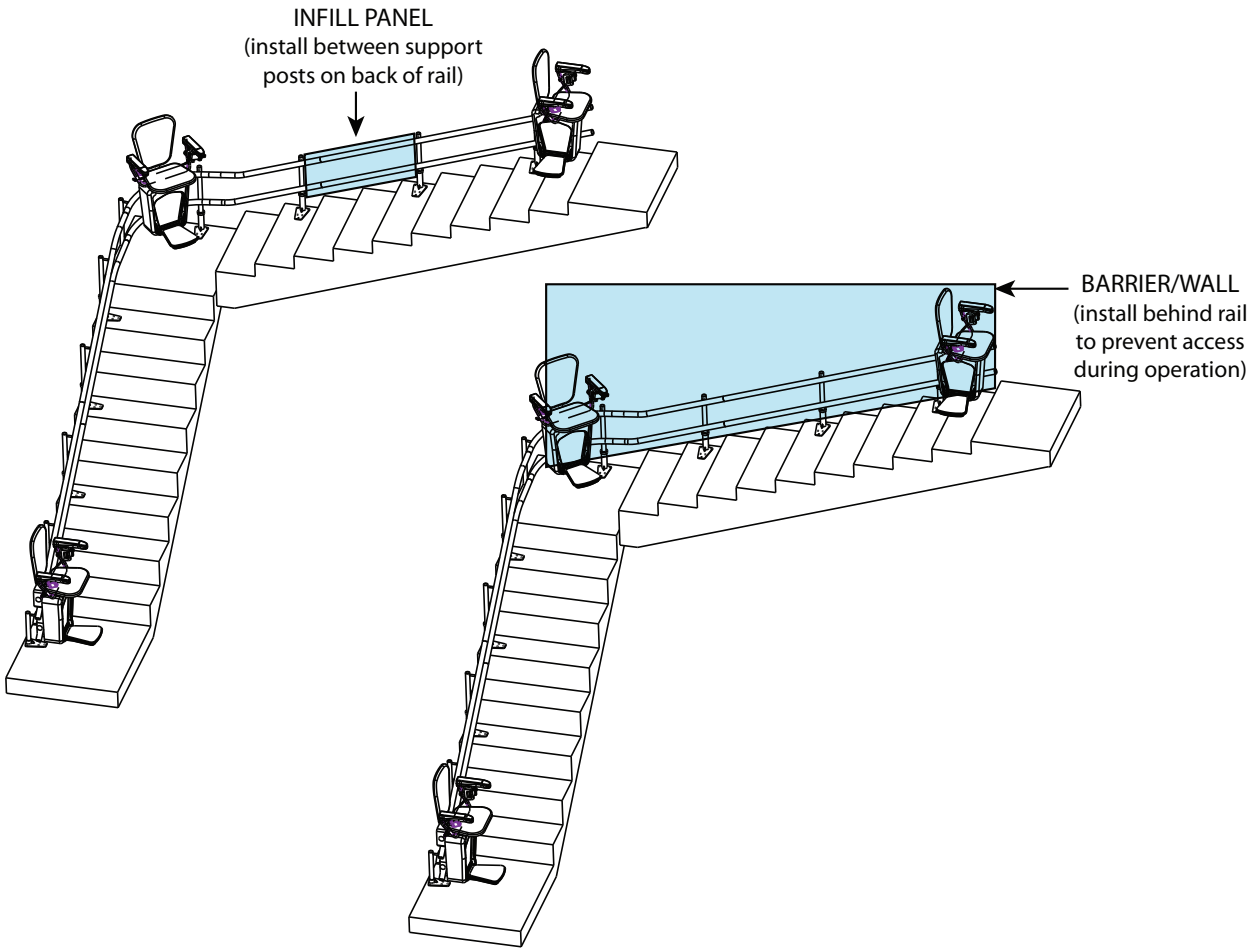
The equipment must be installed by a qualified technician in compliance with the codes identified on the front cover of this manual.

The conformity for access to the stairlift is the distributor's responsibility.

Provisions by others - infill panels

IMPORTANT NOTE

Upon completion of installation when the back of the rail is exposed, infill panels must be installed between the support posts, or a constructed barrier or wall must be installed behind the rail (see the illustration below). This will prevent access to the back of the rail during operation.



Provisions by others - Savaria Link option

If you have the Savaria Link Ethernet remote monitoring option, ensure that you have an Ethernet connection with Internet capability in the vicinity of the unit's controller.

If you have the Savaria Link Wireless remote monitoring option, ensure that you have a wireless signal with Internet capability in the vicinity of the unit's controller.

Electrical requirements

General

Electrical equipment and wiring must comply with Section 38 of CSA C22.1 (Canada) or Section 620 of NEC ANSI/NFPA 70 (USA).

Main power supply

120 VAC, 15 Amp, 60 Hz single-phase circuit through a fused disconnect.

There must be an electrical outlet for the charger.

Lighting

Contractor/customer to provide lighting. Lighting must be a minimum of 100 Lux at the platform and landings.

Contractor/customer to provide emergency lighting. Emergency lighting of 2 Lux must be provided for a minimum of one hour on the platform along the travel route.

Clearance

Folding/unfolding

The stairlift requires 1" (2.54 cm) clearance when folding and unfolding between two wall.

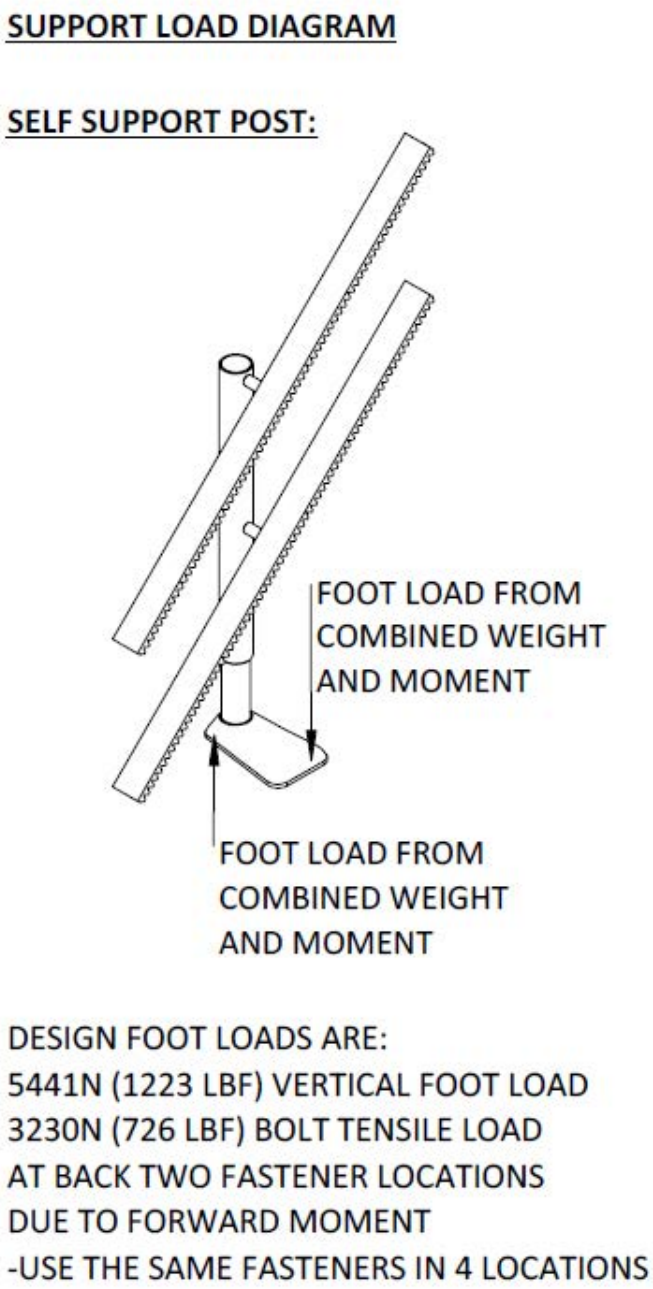
Structural requirements

Floor/support wall loads

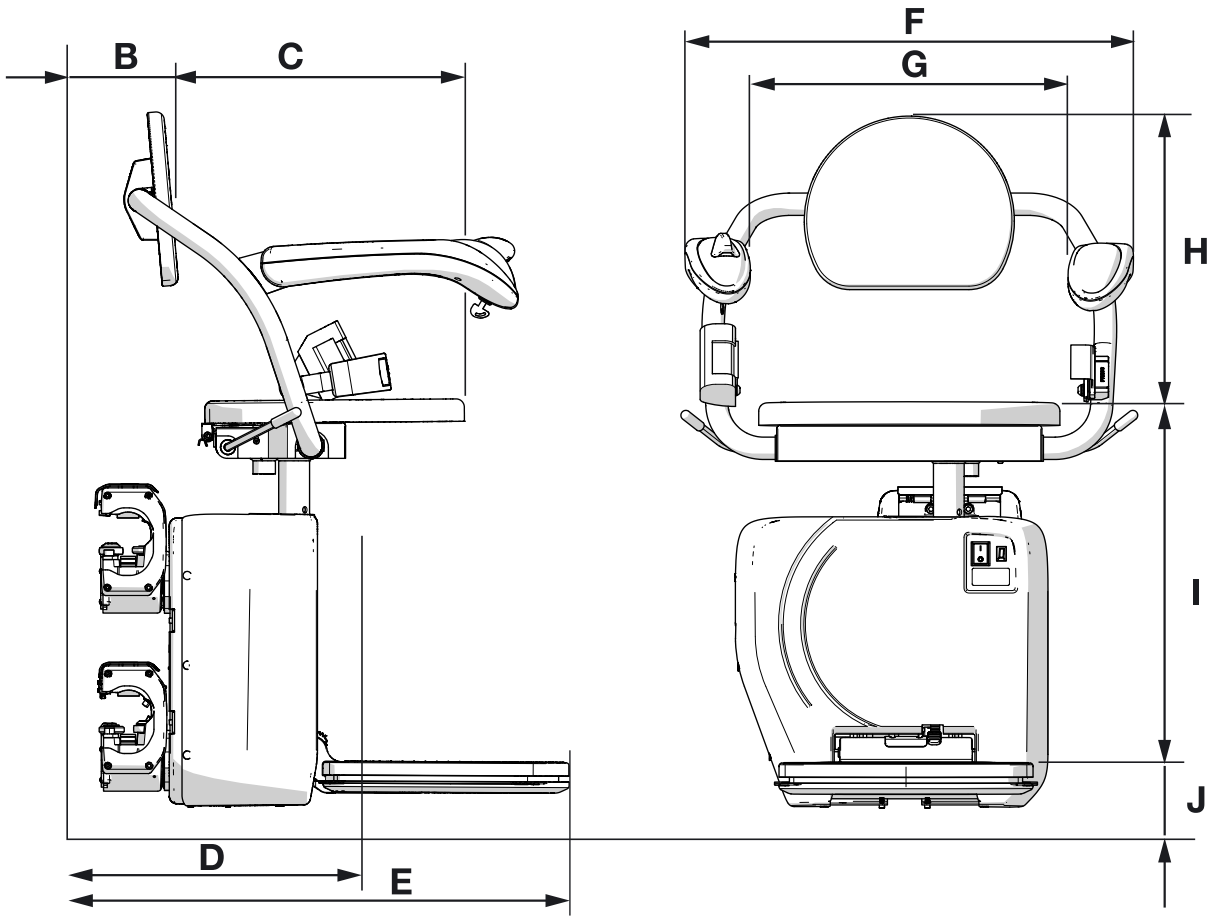
A structural engineer must ensure that the building and stairway will safely support all loads imposed by the lift equipment. Adequate structural support must be provided at the top landing, bottom landing and throughout the supporting wall along the stairs.

NOTE: A foot gasket is required on tile, stone or concrete floor.

Support load diagram

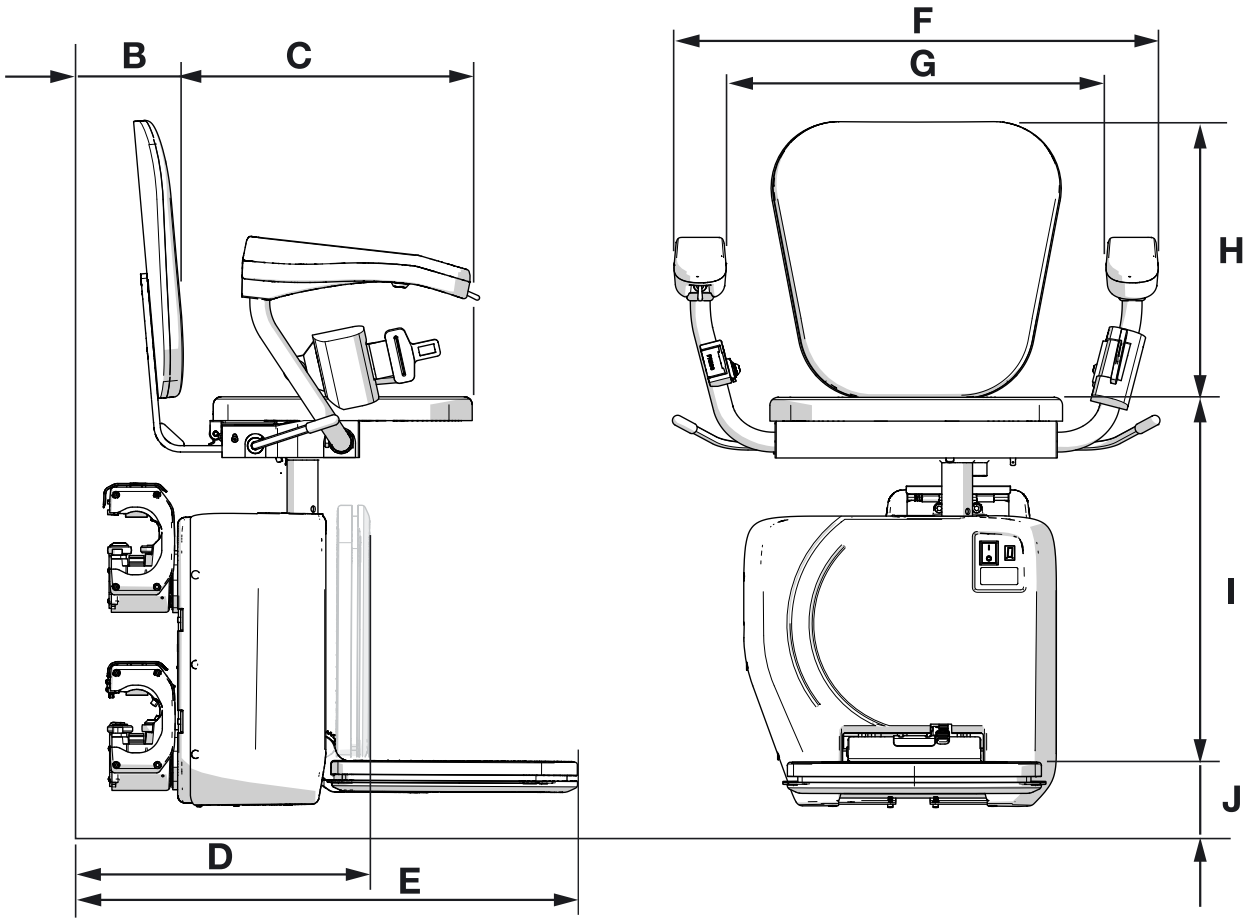


Dimensions - V seat



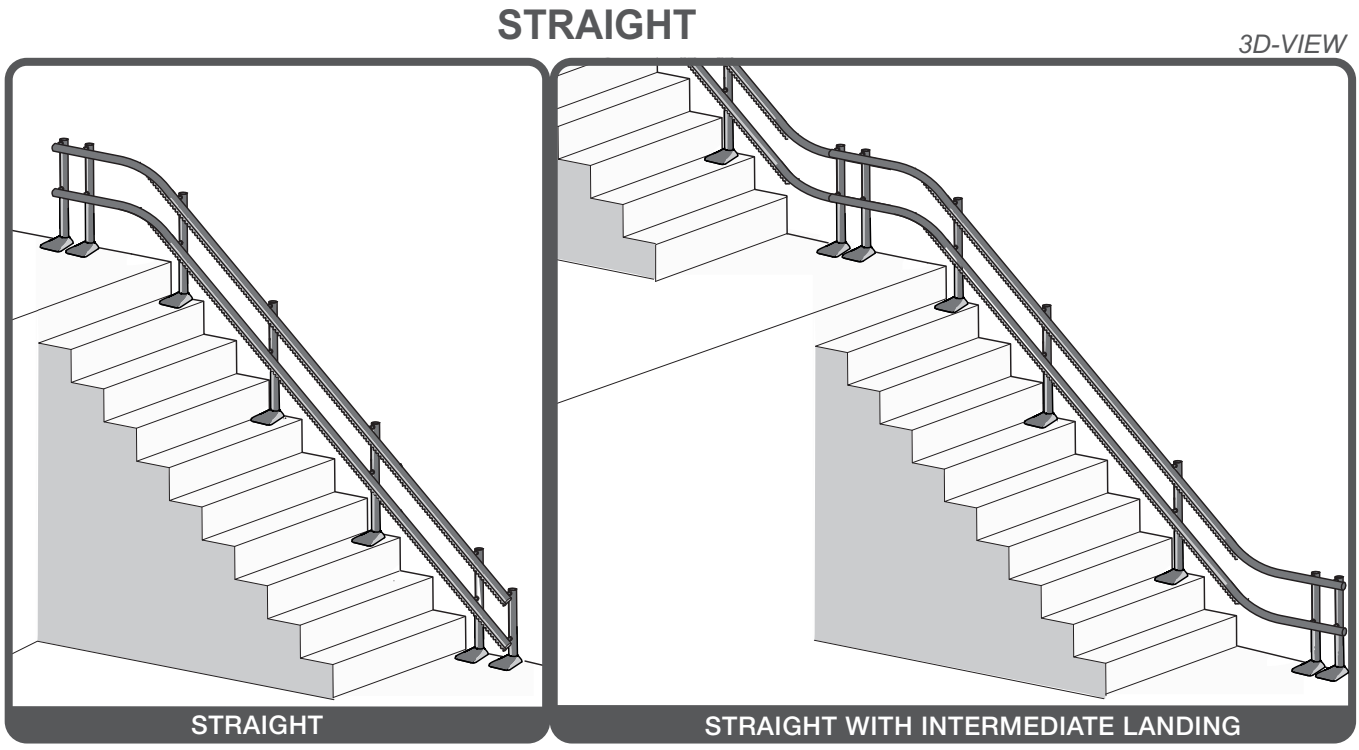
	Specification	Measurements
A	Minimum Swivel radius	28.5" (72.5 cm)
B	Wall to inner seat back	4.66" (11.84 cm)
C	Seat depth	16" (40.5 cm)
D	Minimum folded with to footplate	16" (40.5 cm)
E	Minimum open with to edge of footplate -large -small	 27.4" (69.5 cm) 25.0" (63.6 cm) 25.75" (65.5 cm)
F	Armrest width -external	23.69 - 25.94" (60.2 - 65.9 cm)
G	Armrest width - internal	18.25 - 20.5" (46.4 cm - 52.4 cm)
H	Seat back height	15.13" (38.5 cm)
I	Footplate to seat height -with footplate rake adjustment	19.43 - 20.5" (49.3 - 52.1 cm) ....
J	Minimum footplate height	2.75" (7.0 cm)
	Minimum track intrusion into staircase	5" (12,4 cm)
	Weight capacity	350 lbs
	Speed	0.39ft/sec
	maximum staircase angle	56°

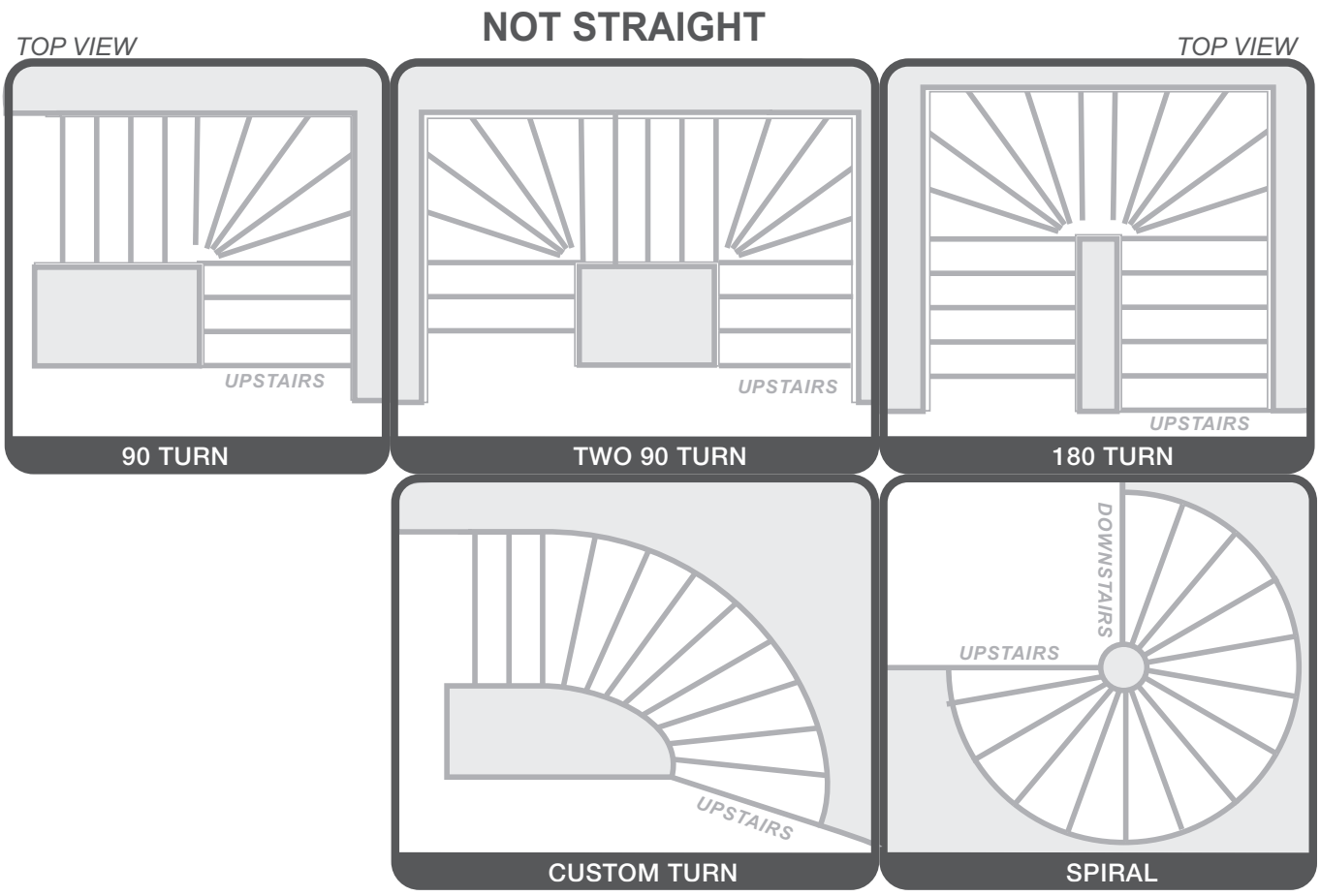
Dimensions -L seat



	Specification	Measurements
A	Minimum Swivel radius	26.3"(66.8 cm)
B	Wall to inner seat back	4" (10.2 cm)
C	Seat depth	15'' (37.8 cm)
D	Minimum folded with to footplate	16'' (40.6 cm)
E	Minimum open with to edge of footplate -small footplate -offset footplate	 27.4'' (69.5 cm) 25.0'' (63.6 cm) 25.75'' (65.5 cm)
F	Armrest width -external	24.06 - 27.31" (61.1 - 69.4 cm)
G	Armrest width - internal	18.25 - 21.5" (46.4 - 54.4 cm)
H	Seat back height	13.68" (35.3 cm)
I	Footplate to seat height -with footplate rake adjustment	19.26 - 20.16'' (48.4 - 51.2 cm)
J	Minimum footplate height	3-4'' (7.6 - 10.2 cm)
	Minimum track intrusion into staircase	5'' (12,4 cm)
	Weight capacity	350 lbs
	Speed	0.39 ft/sec
	maximum staircase angle	56°

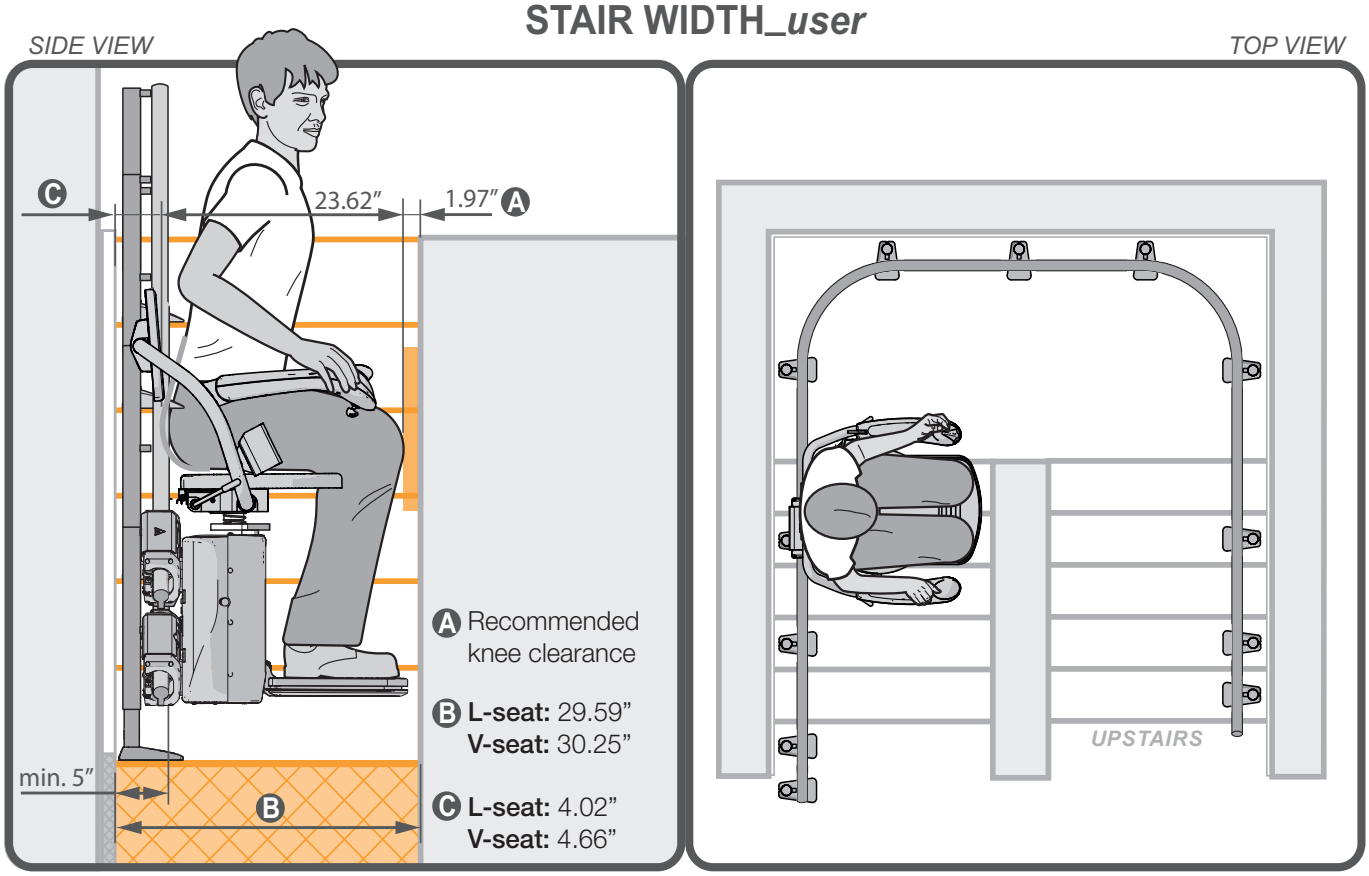
Stair Type: Straight and curved



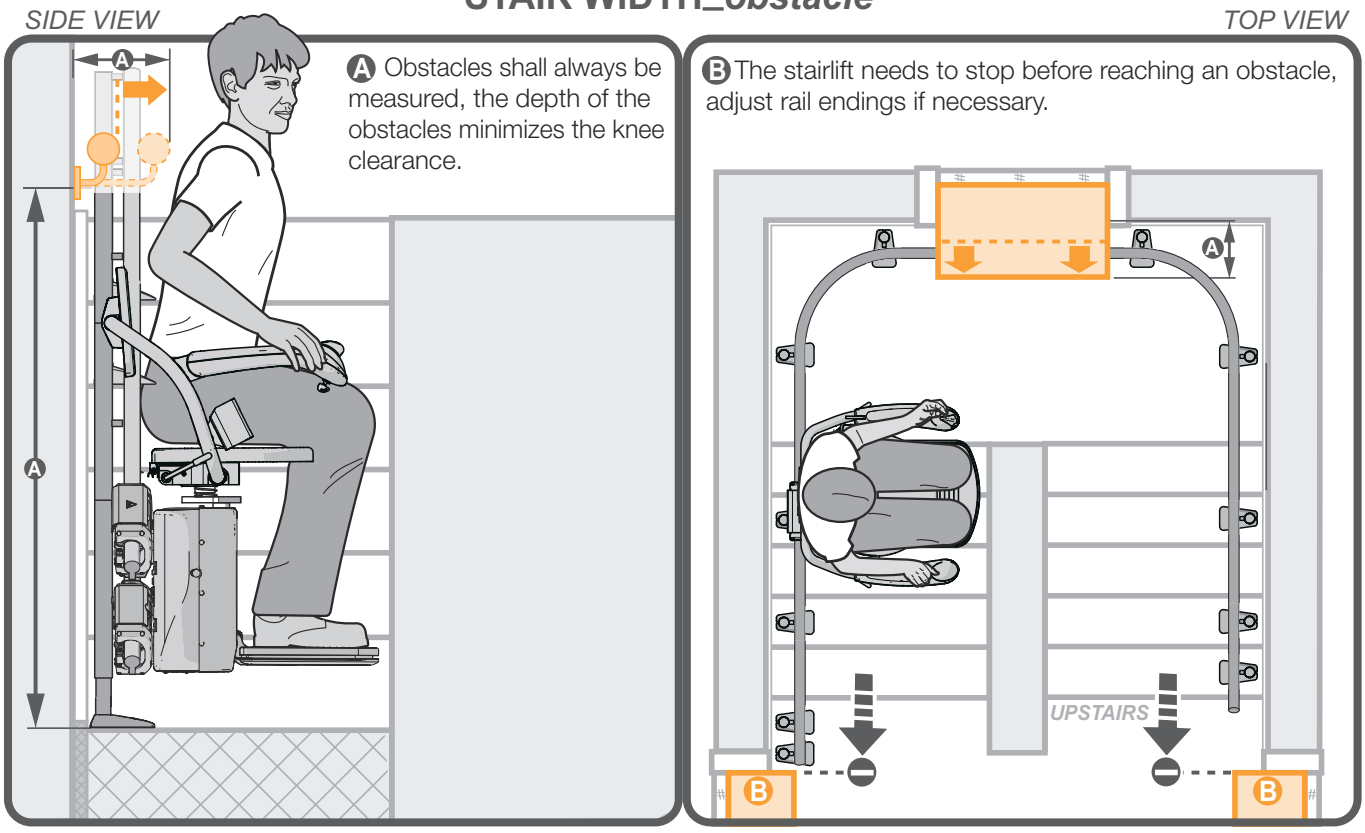


Stair Width

STAIR WIDTH_*user*



STAIR WIDTH_*obstacle*



Stair Width - cont

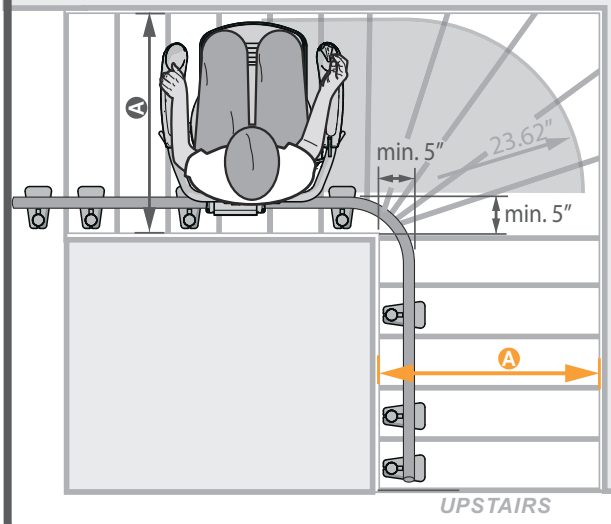
STAIR WIDTH INNER SIDE_*Standard*

TOP VIEW

Stair type: **90 TURN**

Ⓐ **L-seat:** 29.59”
V-seat: 30.25”

The maximum helix inclination is 54˚

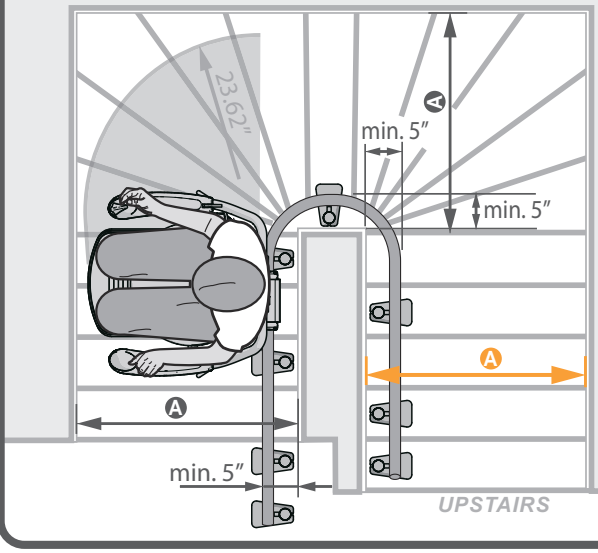


TOP VIEW

Stair type: **180 TURN**

Ⓐ **L-seat:** 29.59”
V-seat: 30.25”

The maximum helix inclination is 54˚



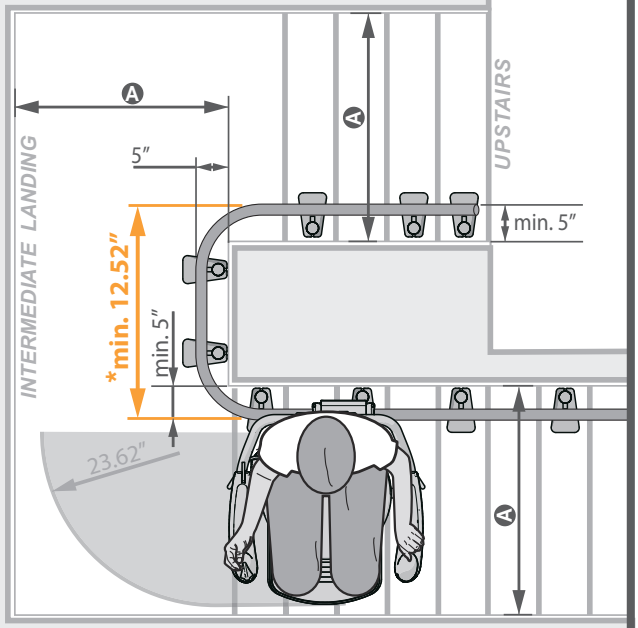
STAIR WIDTH INNER SIDE_*landing*

SIDE VIEW

Stair type: **180 TURN**

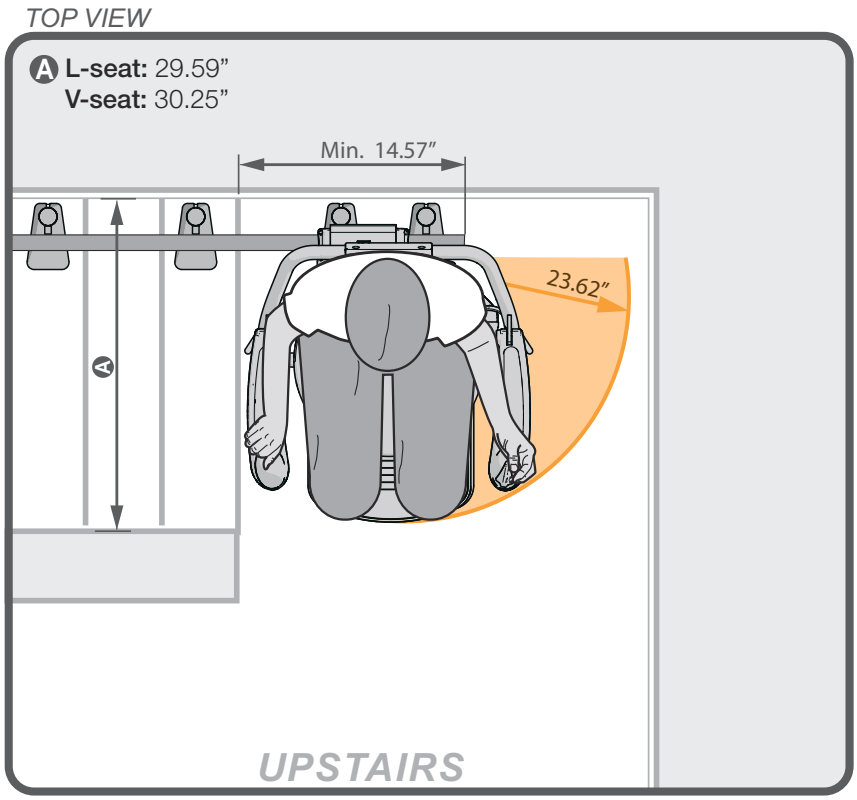
TOP VIEW

Ⓐ **L-seat:** 29.59”
V-seat: 30.25”

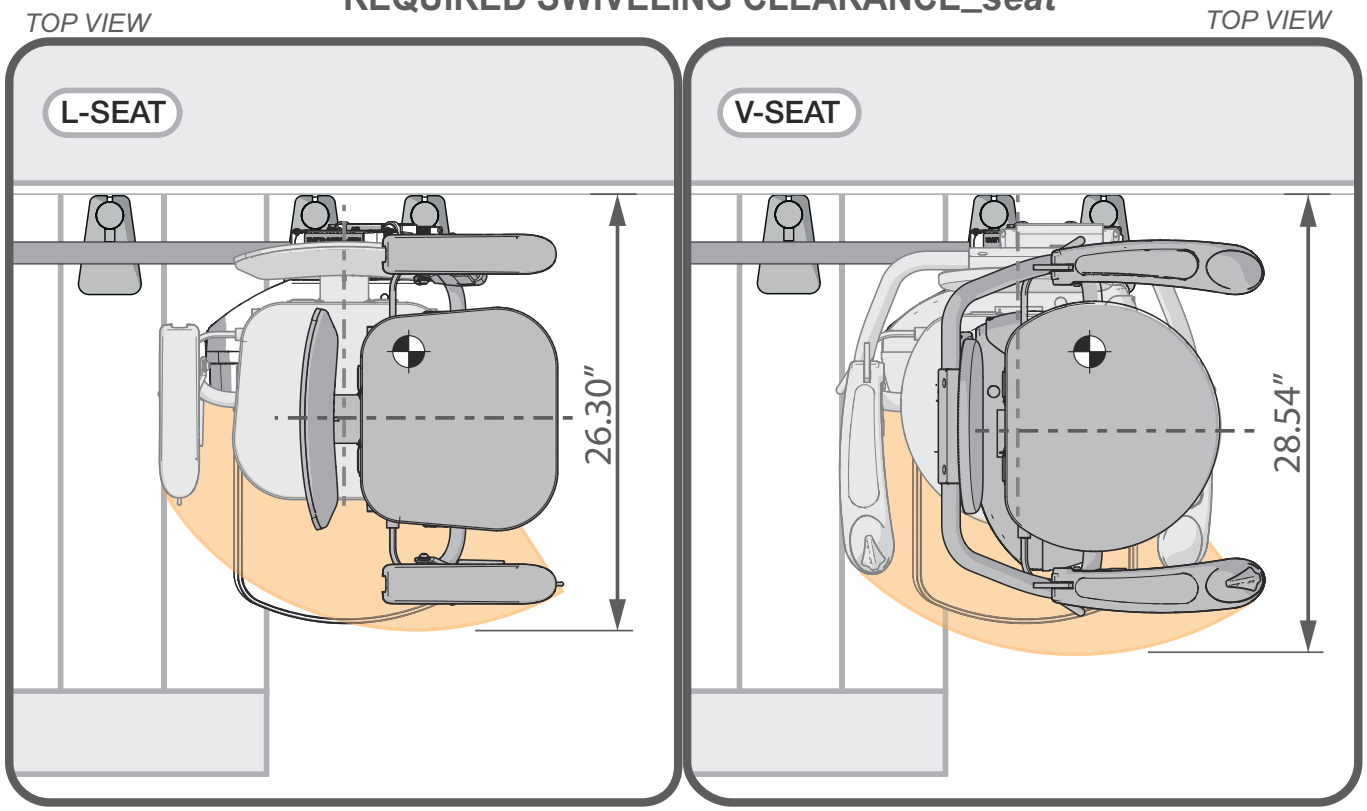


* 318 mm with continuous radius 373 mm with straight in-between
Measurements from centre of track

REQUIRED SWIVELING CLEARANCE_*user*

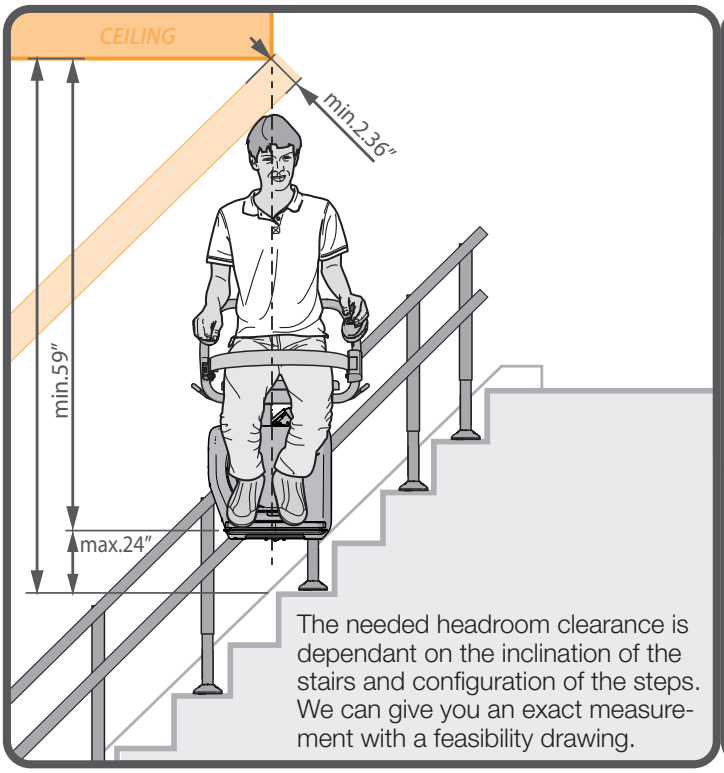


REQUIRED SWIVELING CLEARANCE_*seat*



OVERHEAD CLEARANCE

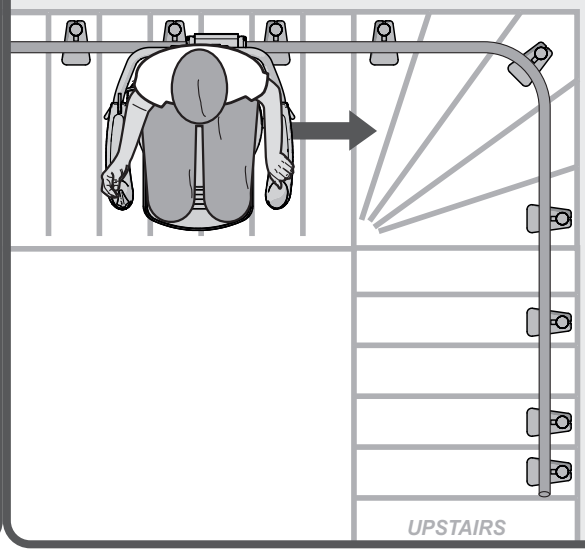
SIDE VIEW



The needed headroom clearance is dependant on the inclination of the stairs and configuration of the steps. We can give you an exact measurement with a feasibility drawing.

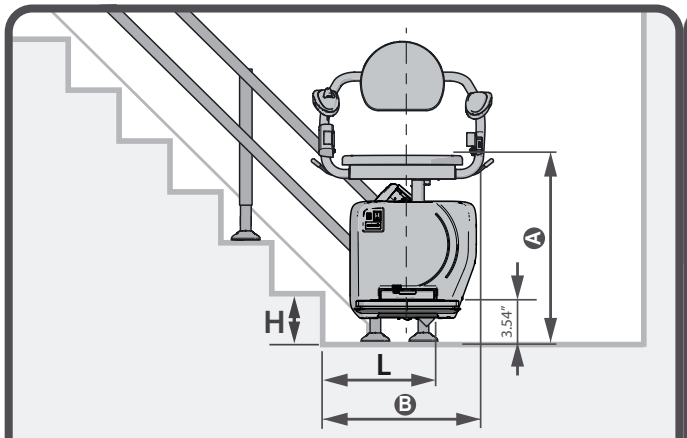
TOP VIEW

Bulkhead clearences are also depending on the position the seat stem is mounted in the chassis.

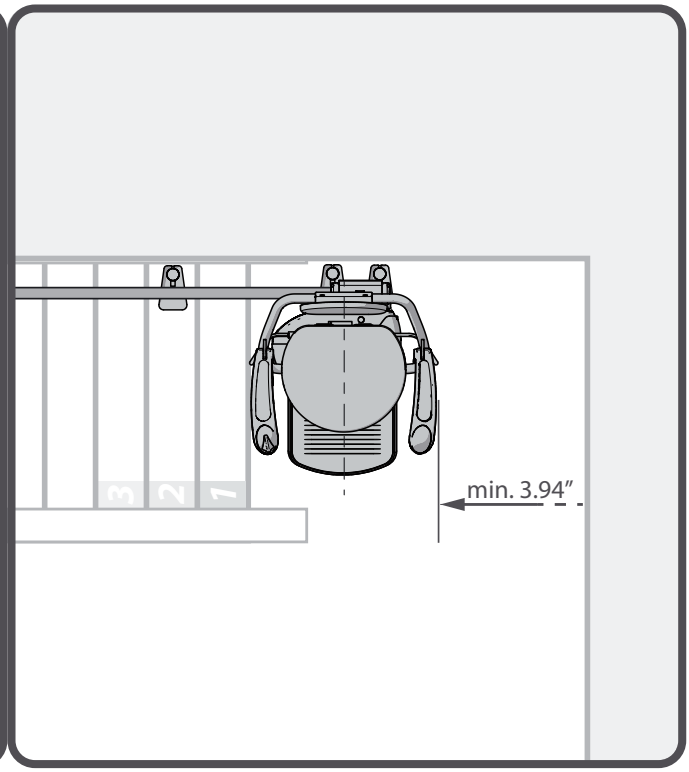


STANDARD

SIDE VIEW



TOP VIEW



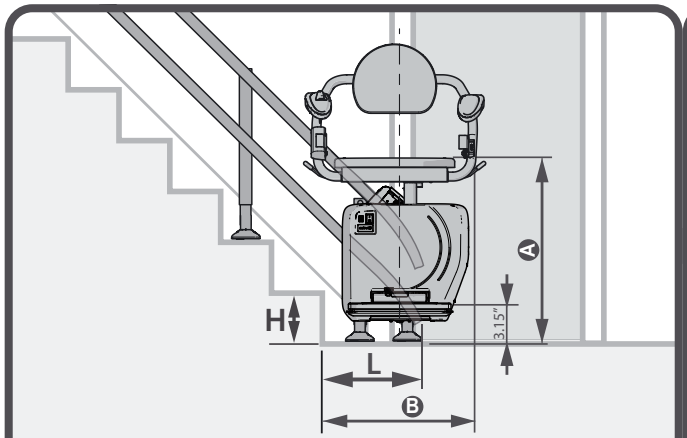
A L-seat: 22.80 – 23.7″
V-seat: 22.97- 24.04″

B L-seat: 28.86″
V-seat: 28.68″

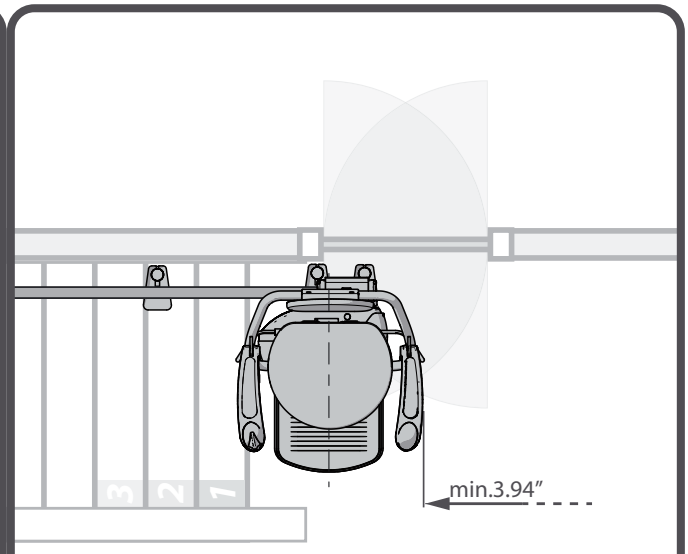
With H= 7.09″ and L= 19.69″

SHORT RAILENDING

SIDE VIEW



TOP VIEW



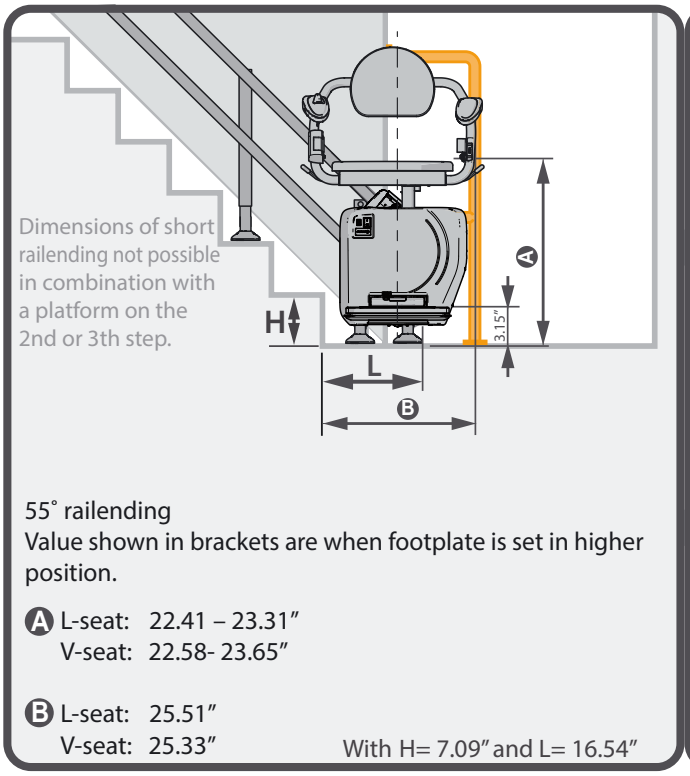
A L-seat: 22.41 – 23.31″
V-seat: 22.58- 23.65″

B L-seat: 25.51″
V-seat: 25.33″

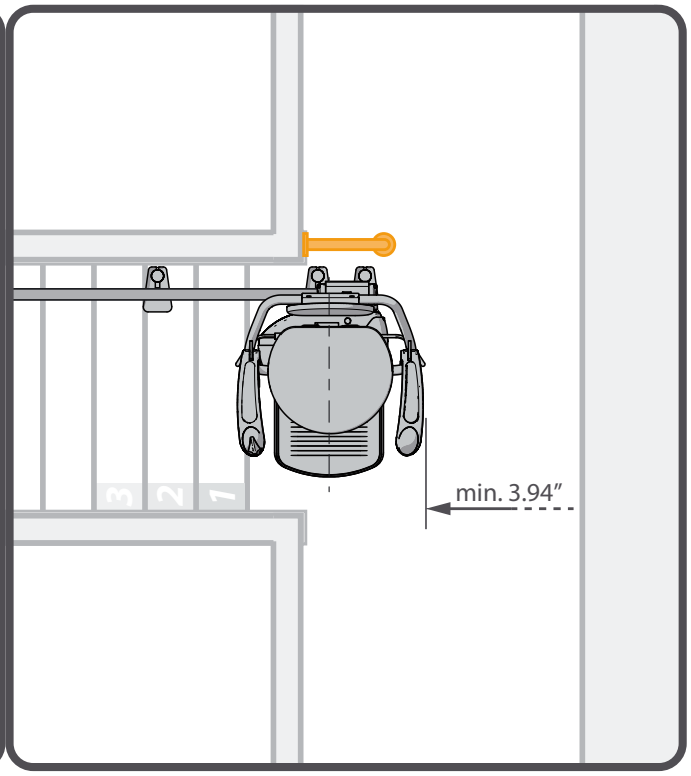
With H= 7.09″ and L= 16.54″

SHORT RAILENDING_+*guard*

SIDE VIEW



TOP VIEW



55˚ railending
Value shown in brackets are when footplate is set in higher position.

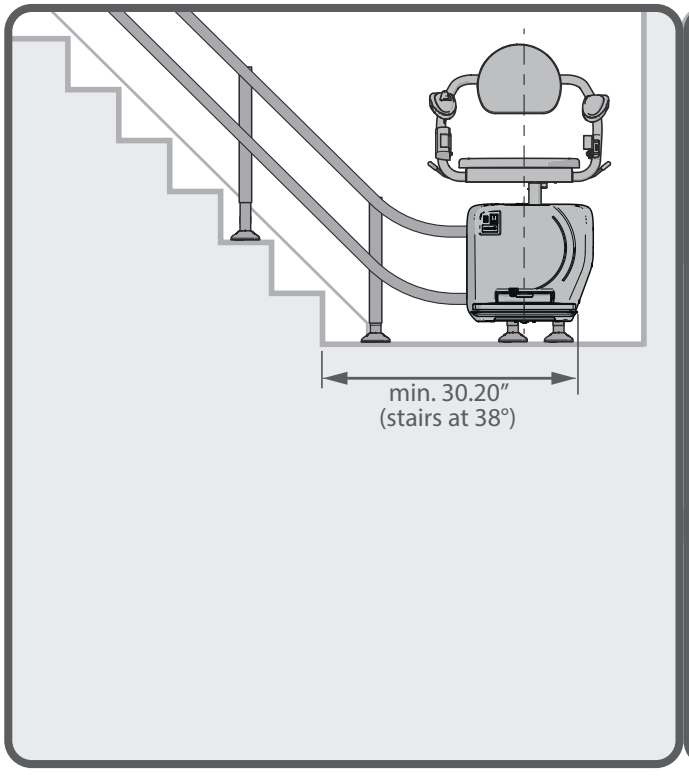
Ⓐ L-seat: 22.41 – 23.31″
V-seat: 22.58- 23.65″

Ⓑ L-seat: 25.51″
V-seat: 25.33″

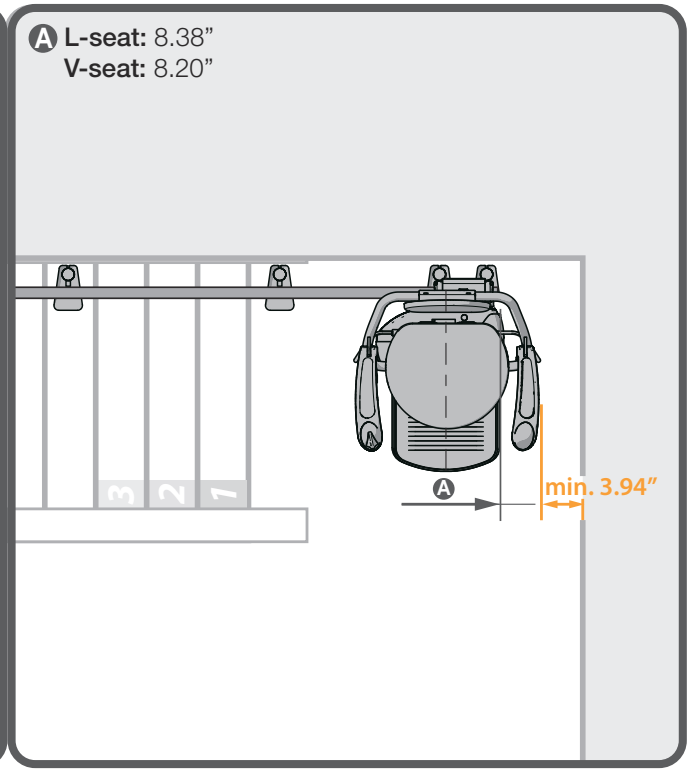
With H= 7.09″ and L= 16.54″

HORIZONTAL

SIDE VIEW

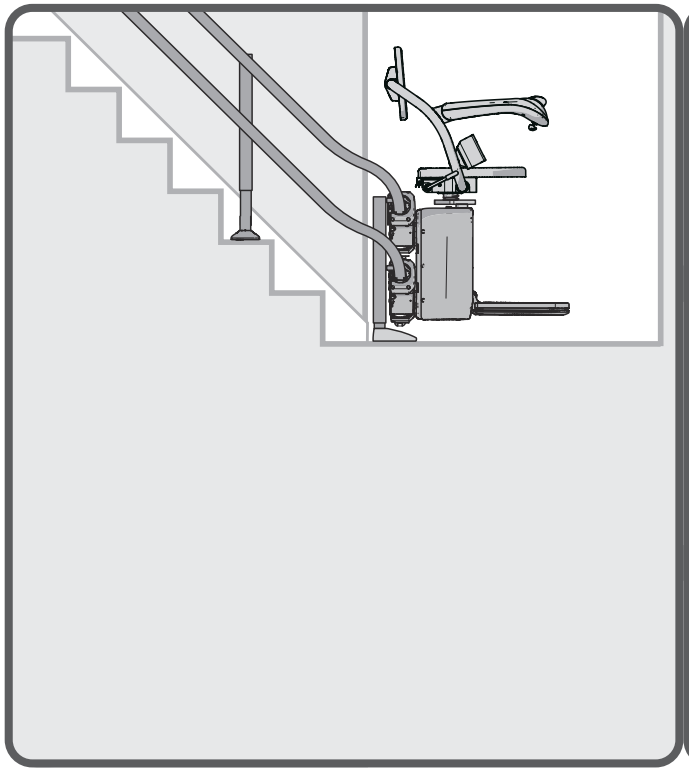


TOP VIEW

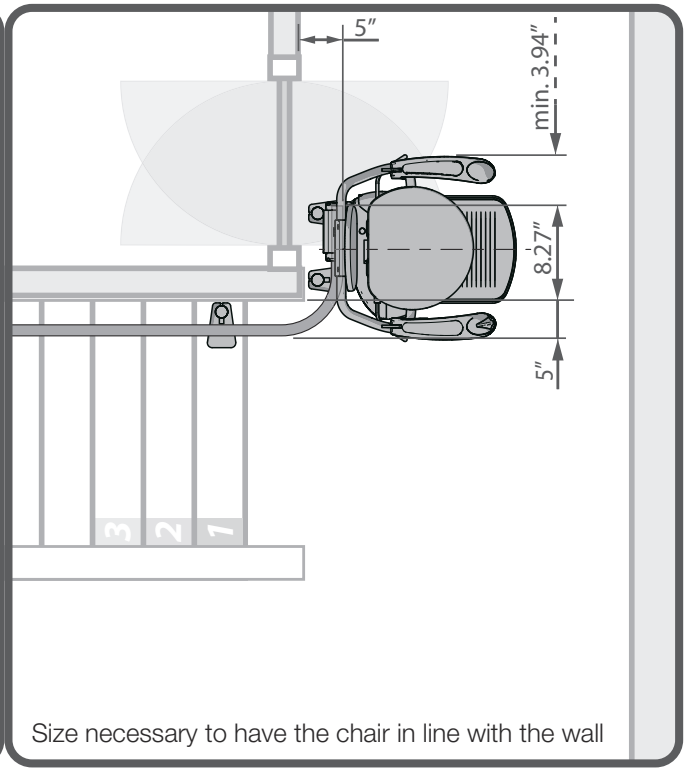


90⁰ PARK INSIDE_*standard*

SIDE VIEW



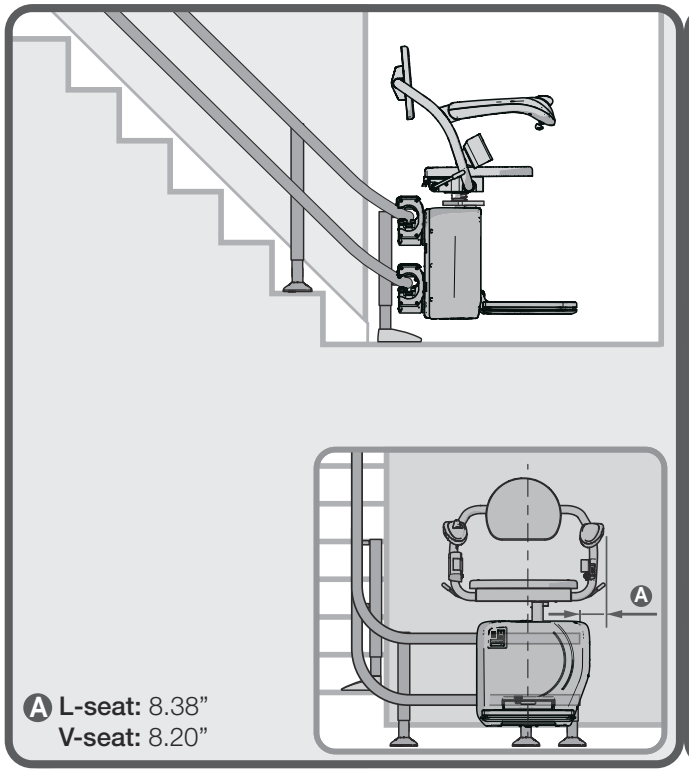
TOP VIEW



Size necessary to have the chair in line with the wall

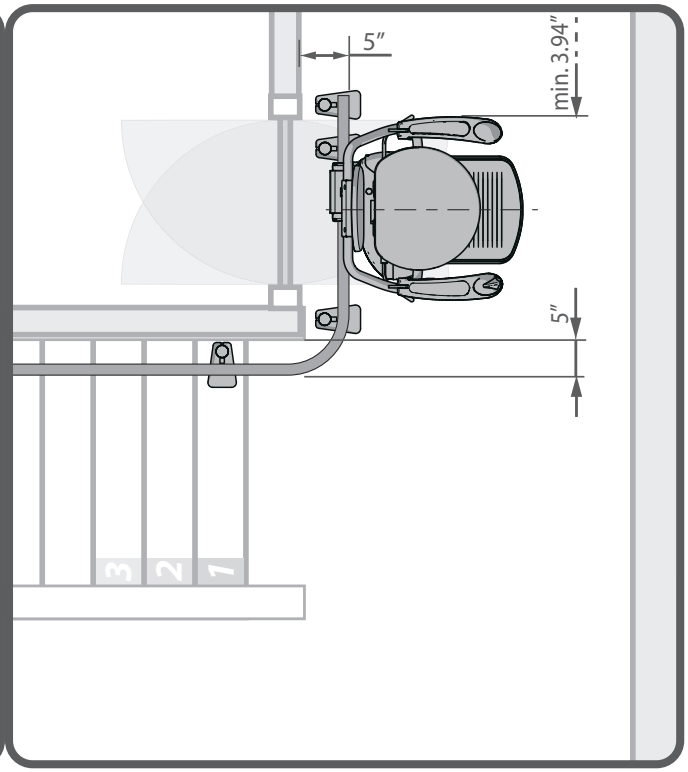
90⁰ PARK INSIDE_*horizontal*

SIDE VIEW



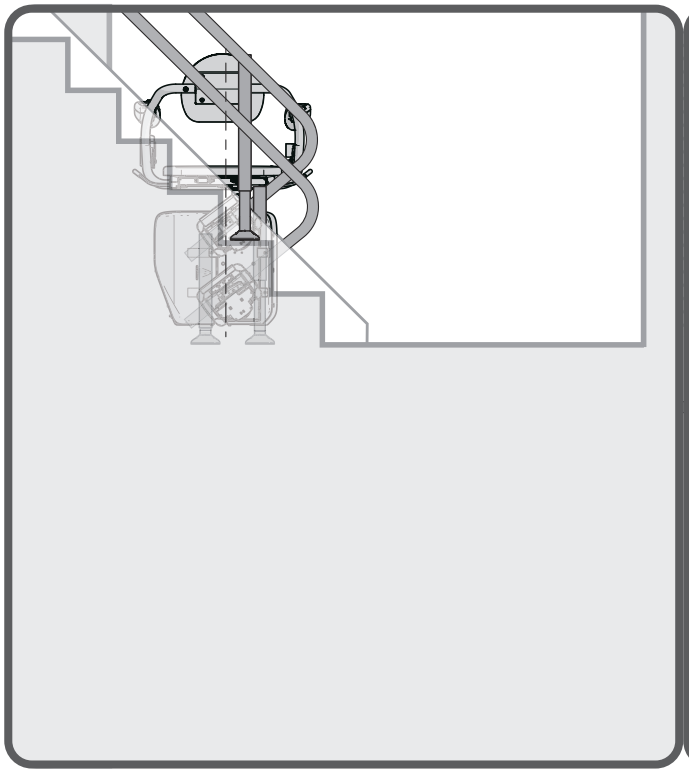
Ⓐ **L-seat:** 8.38”
V-seat: 8.20”

TOP VIEW

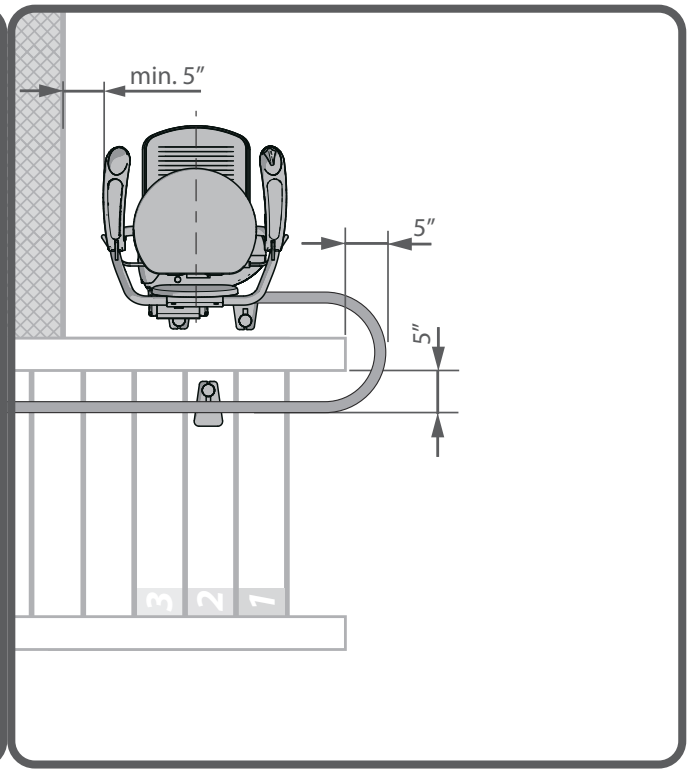


180⁰ PARK INSIDE_*standard*

SIDE VIEW

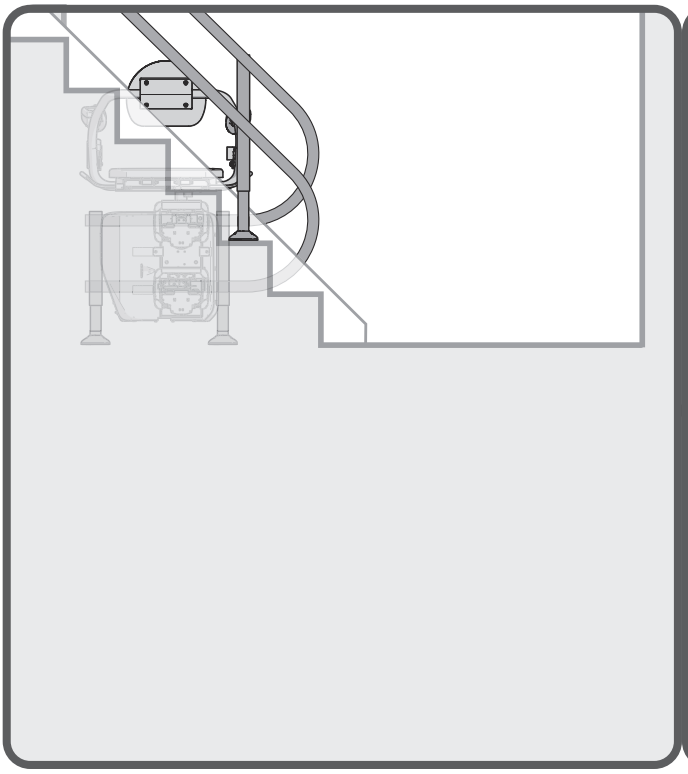


TOP VIEW

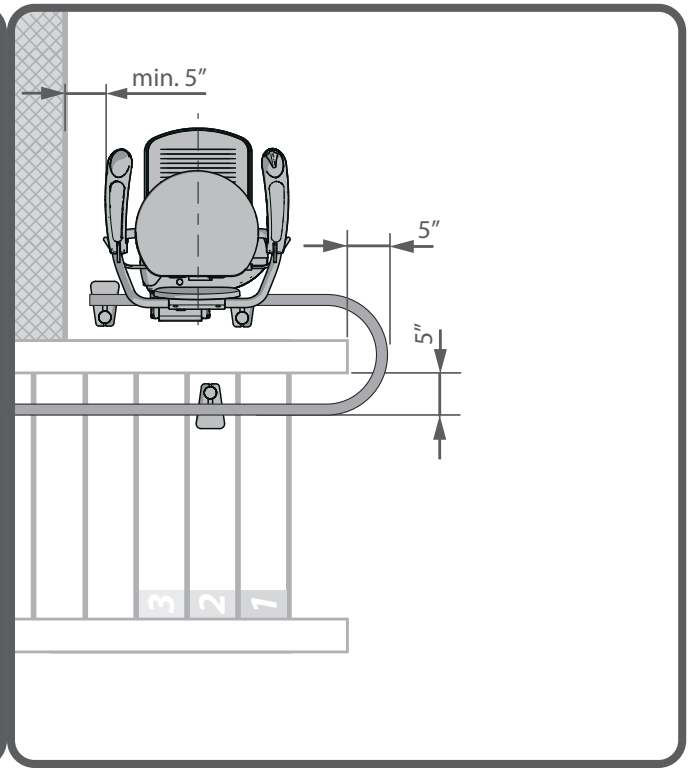


180⁰ PARK INSIDE_*horizontal*

SIDE VIEW

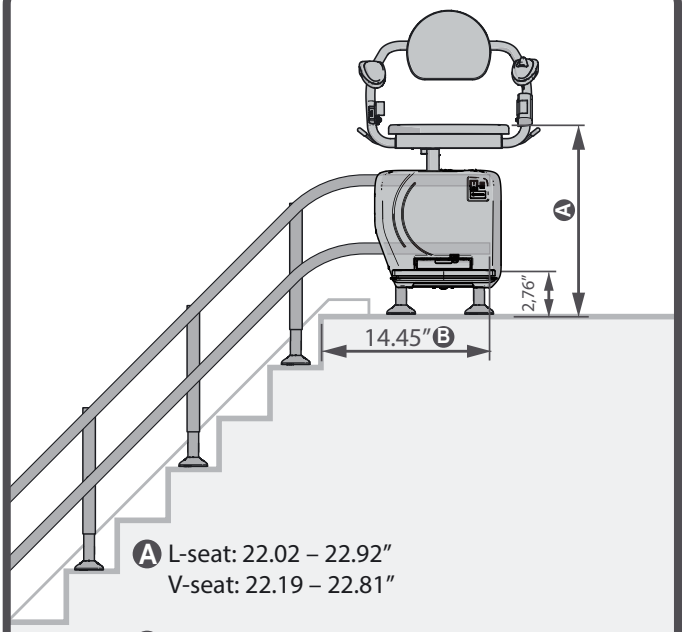


TOP VIEW



HORIZONTAL OVERRUN

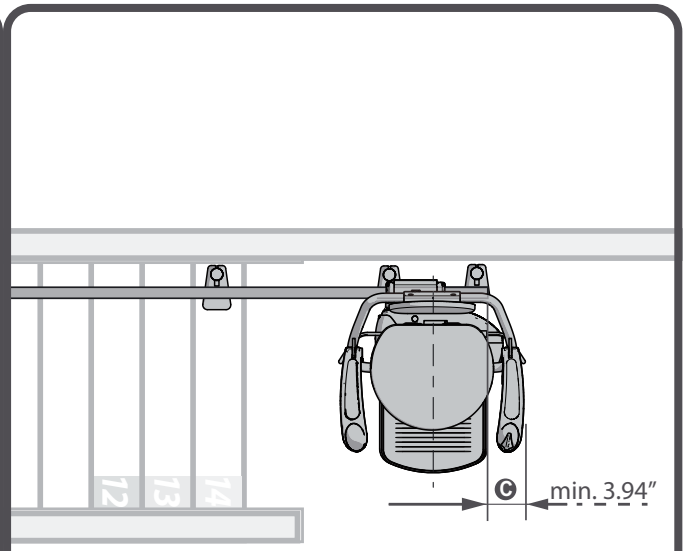
SIDE VIEW



A L-seat: 22.02 – 22.92″
V-seat: 22.19 – 22.81″

B 14.45″ is recommended. Shorter or longer is possible. When shorter the chair needs to be swivelled before getting on/off.

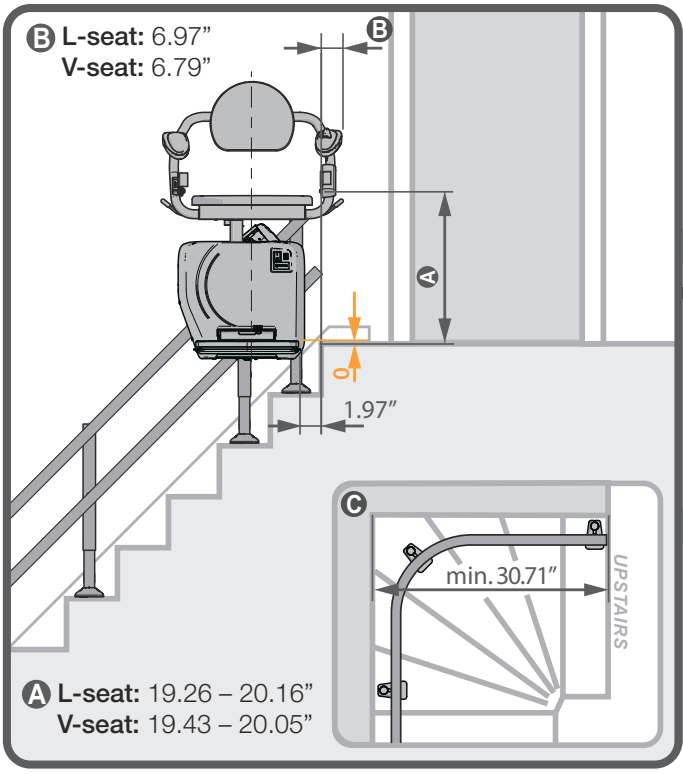
TOP VIEW



C L-seat: 4.21″
V-seat: 4.03″

FOOTREST ‘0’

SIDE VIEW

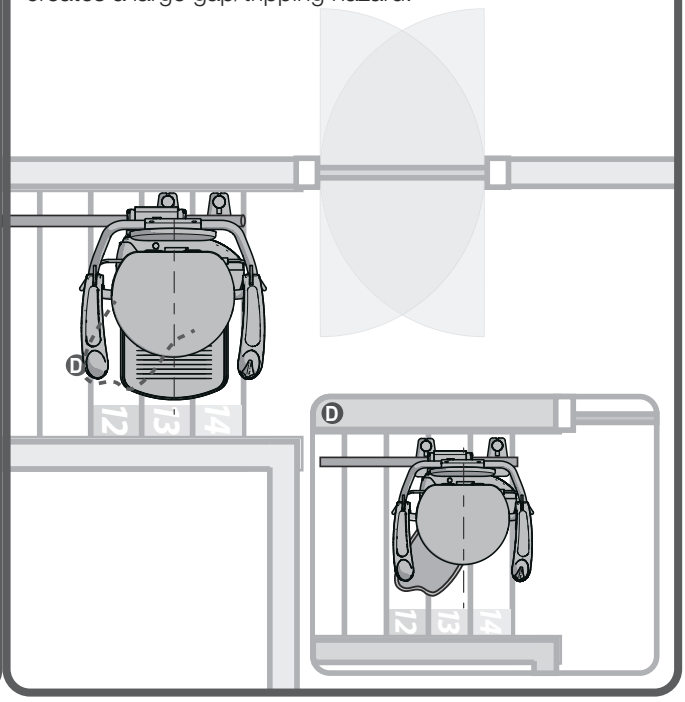


B **L-seat:** 6.97″
V-seat: 6.79″

A **L-seat:** 19.26 – 20.16″
V-seat: 19.43 – 20.05″

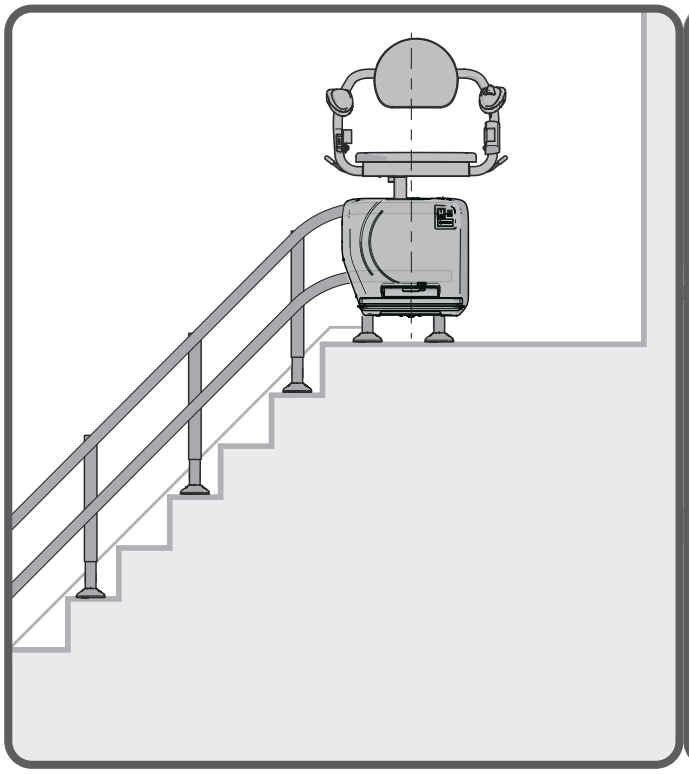
TOP VIEW

Footrest level in combination with an extended footrest creates a large gap/tripping hazard.

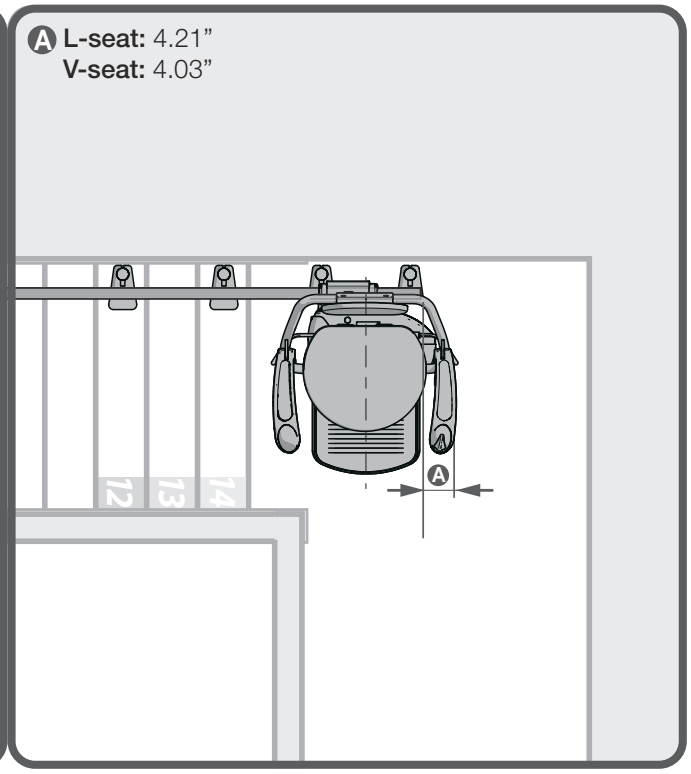


ALLEY

SIDE VIEW

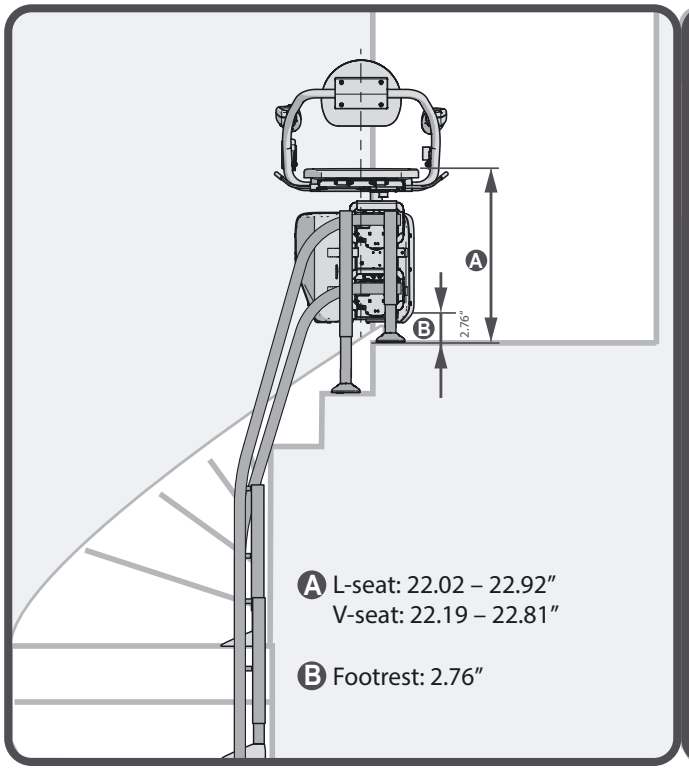


TOP VIEW

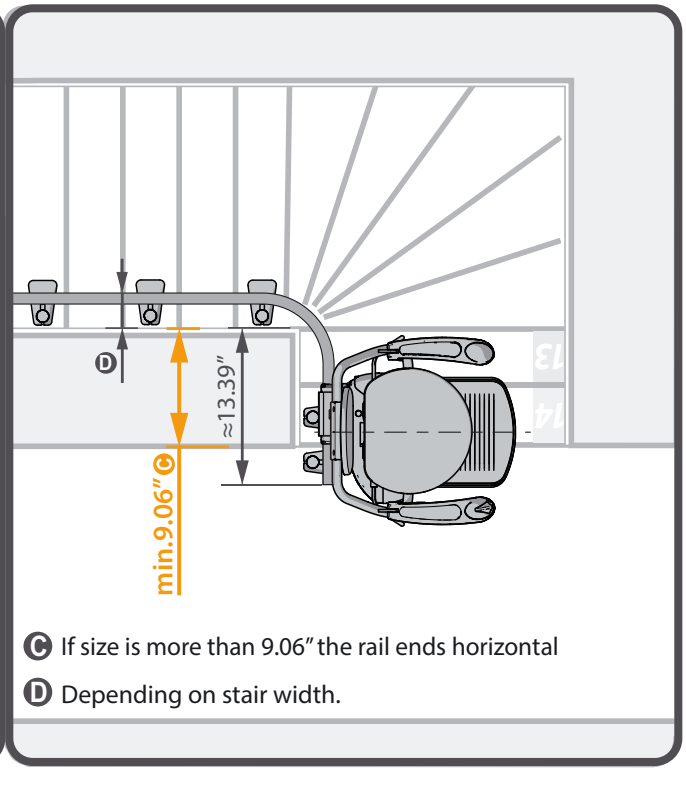


INNER SIDE

SIDE VIEW

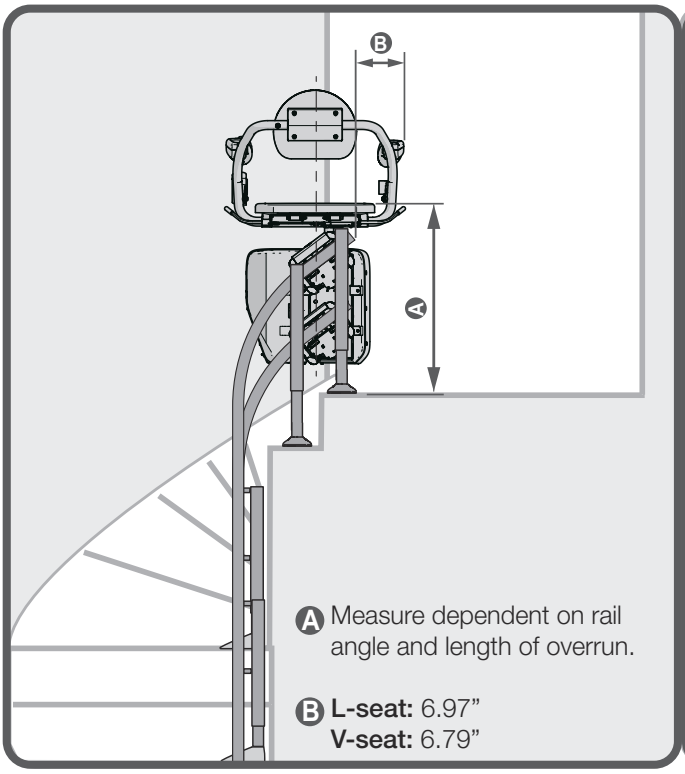


TOP VIEW



INNER SIDE_*max. ?mm*

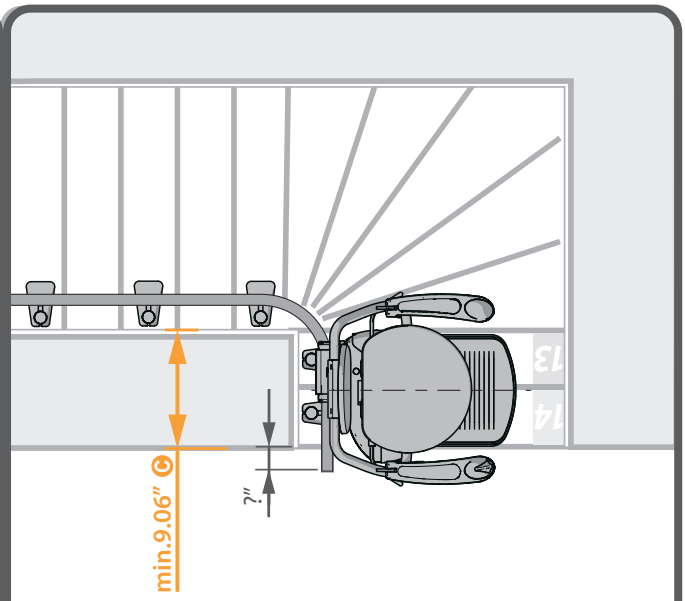
SIDE VIEW



Ⓐ Measure dependent on rail angle and length of overrun.

Ⓑ **L-seat:** 6.97”
V-seat: 6.79”

TOP VIEW

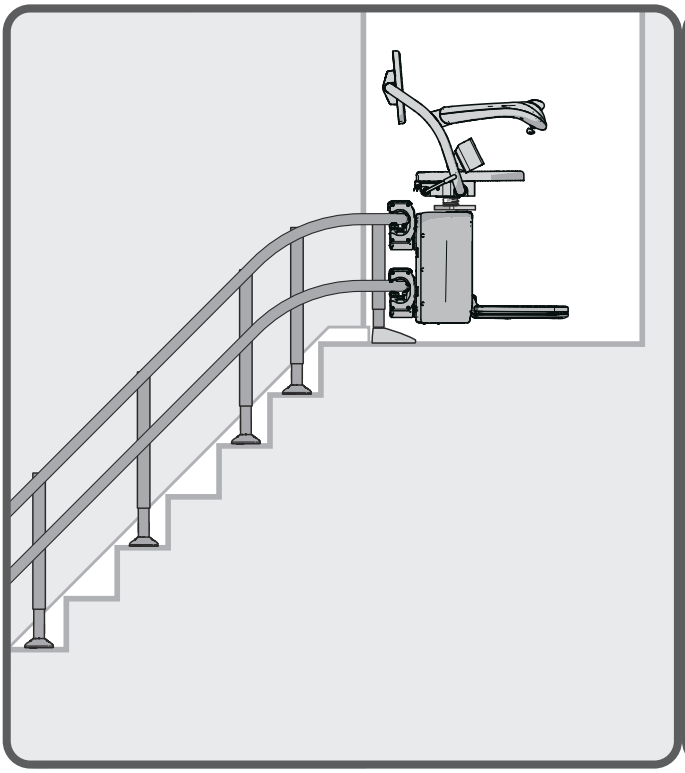


Ⓒ Ifs size is less than 9,06” the rail ends at an angle.

All dimensions are dependant on the staircase

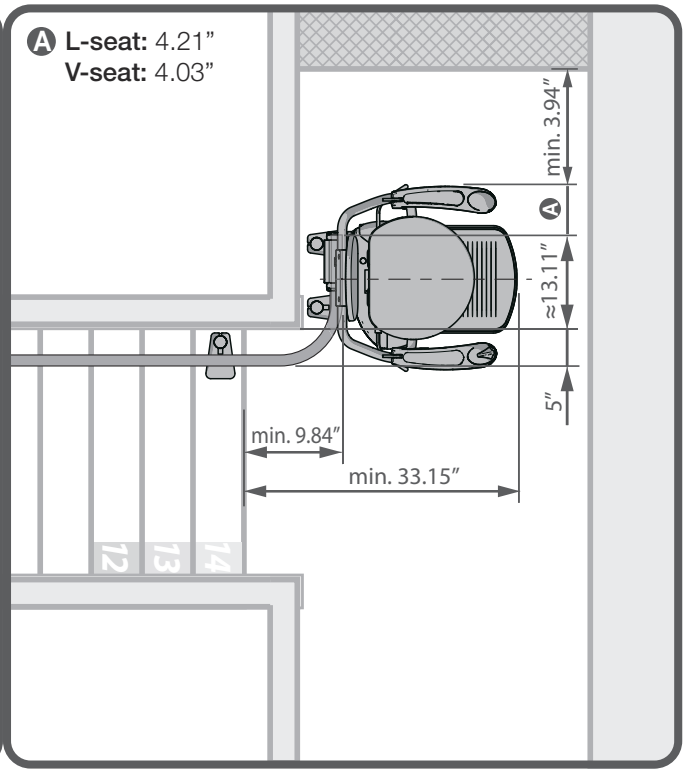
90⁰ PARK INSIDE

SIDE VIEW

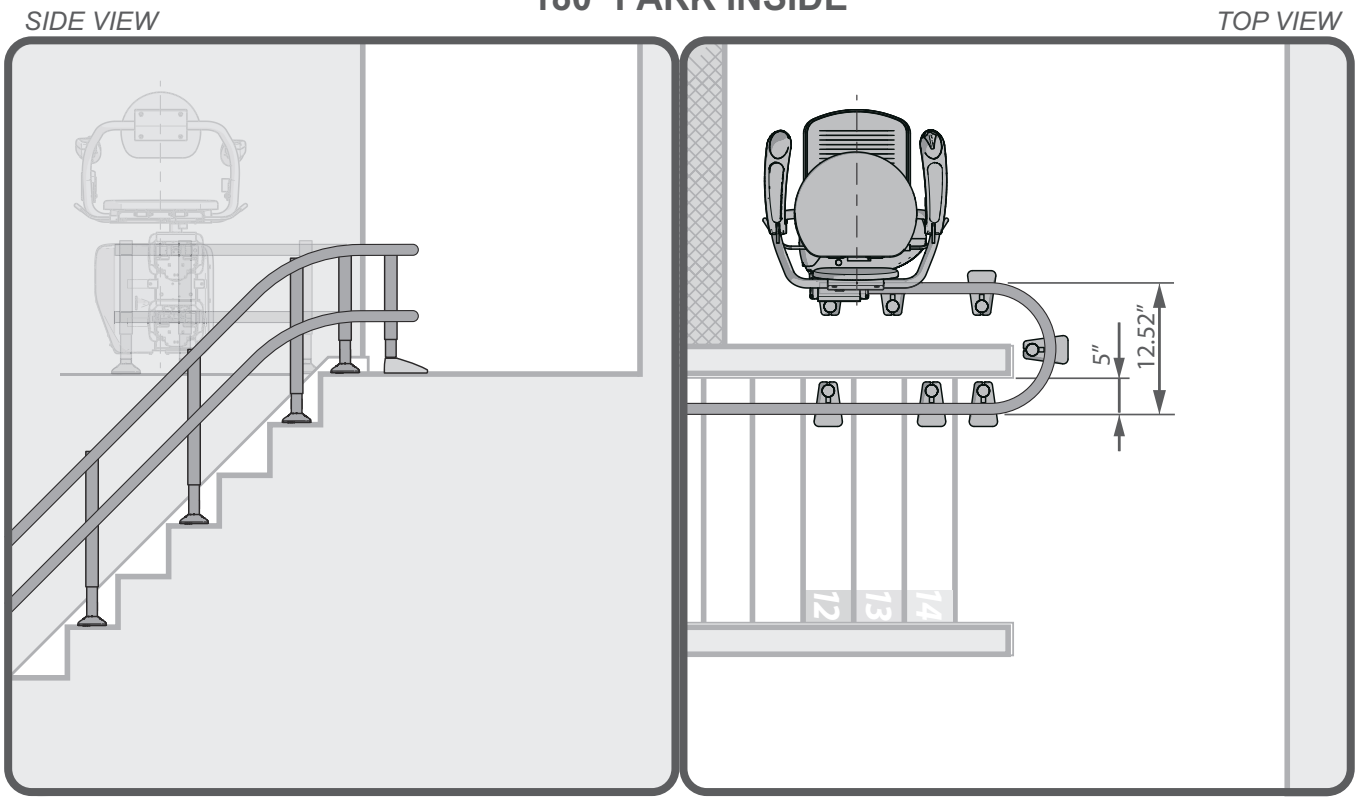


TOP VIEW

Ⓐ **L-seat:** 4.21”
V-seat: 4.03”



180⁰ PARK INSIDE



Find more design resources at:

savaria.com

CAD drawings

Owner's Manual

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Part No. 001370, Rev. 003