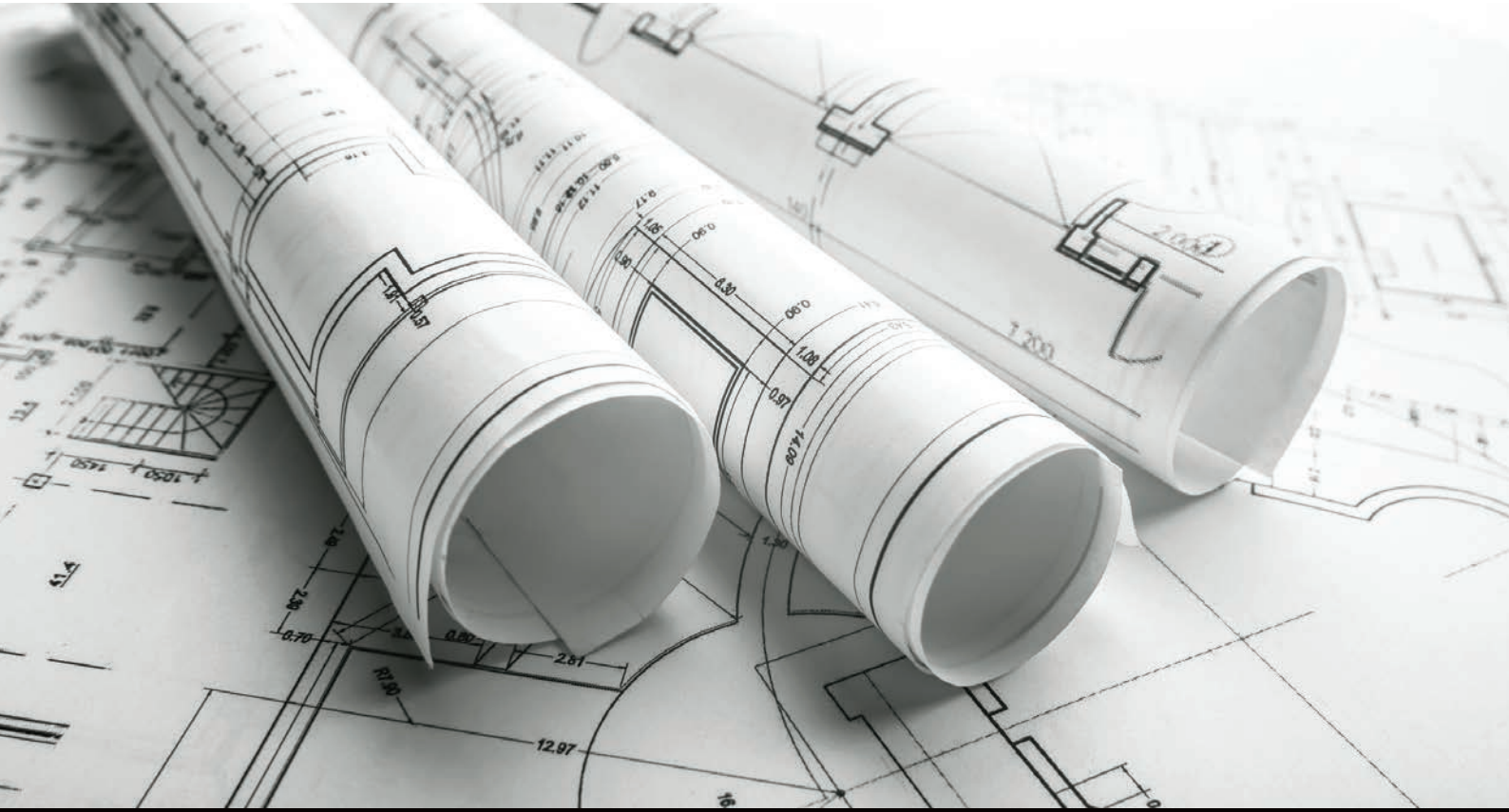


taylordolman



Planning Guide

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Guldmann™

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Guldmann planning guide

Our intention with this planning guide is to offer architects, consulting engineers and others a tool that can simplify the planning of effective ceiling hoist systems.

Our goal is to ensure reliable, effective solutions for the benefit of all parties.

Although we have made every effort to provide answers to the most frequently asked questions, which experience has shown may arise when planning ceiling hoist systems, other questions and problems will unavoidably arise.

We therefore offer professional assistance in the form of such services as:

- initial demand analyses carried out by Guldmann's ergonomic specialists
- help with planning and calculations, call us or send us a sketch or AutoCAD / Revit drawing
- participation in planning meetings
- a visit to our demo-rooms where you can see and try out the functions of the products and test planning arrangements in practice

As a principal rule we provide service free of charge.

Guldmann's installation and service departments have undoubtedly the most experienced corps of quality conscious installers and service consultants. This allows us to offer installation and, if required, subsequent operation of both simple and highly complex systems at competitive prices.

You can contact us at the following address:

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Guldmann™

PLANNING GUIDE

Vers. 11.00

INTRODUCTION

SOLUTION TYPES

CONSIDERATIONS

PLANNING

Guldmann develops, manufactures,
distributes and maintains products and
services that make the daily lives
of disabled people and their
helpers a little easier.

| Time to care |



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Guldmann's FACT of life

Flexibility

We know and we act according to the fact that what is right today may be wrong tomorrow – we do not have a monopoly of the truth.

Ambitions

We set common ambitious goals and strive for improvements.

Competence

We know what we talk about. The capability and knowledge of the individual is our common strength.

Trustworthiness

We inspire to instill confidence in us through confidence in each other.

Guldmann in brief

Since the beginning in 1980 Guldmann has devoted the company's entire resources to making life easier for the disabled and their helpers.

Today Guldmann works within three focus areas:

1. Guldmann

Guldmann offers a comprehensive system comprising different solutions that create better working conditions for carers and care institutions. A Guldmann system releases resources to allow more and better care for the disabled. The products in the Guldmann system comprise lifting and moving systems.

2. Stepless

Stepless is a series of products that makes it easier for walking-impaired people to gain access to their surroundings.

The products from Stepless comprise portable and stationary ramps and lifting platforms.

3. Consulting

In Guldmann Consulting, the main focus is occupational health and safety issues among staff handling and caring for patients. Consulting provide knowledge sharing within this area because it is an essential part of preventing workrelated injuries.

An international company

Guldmann is a well-established, international company with its own representatives in Denmark, Sweden, Germany, England, Italy, France, Ukraine, Norway, Holland, Canada and the USA. In addition we have partners and distributors in many other countries.

Facts about Guldmann

Started	1980
Number of employees	+500
Headquarters	Denmark
CVR No.	27 70 67 46
Owner	Guldmann Holding A/S
Bank	Sydbank
Accountants	Deloitte
Member of	The Confederation of Danish Industries The Danish Export Group Association



Security, safety and comfort. These are the key words when lifting a disabled person. Both for the disabled person and for the carer, who must also safeguard his or her health.

Guldmann's activities have since 1980 been based on these three key words. Today Guldmann specialises in technical aids for securely, safely and comfortably lifting and moving disabled people. Constant product development has resulted in the Guldmann's ceiling hoist system - a comprehensive, unique and cohesive system that is characterised by great flexibility.

Guldmann's ceiling hoist system comprises a wide range of lifting and rail modules that can be combined with different types of hoist and lifting sling. A lifting sling is a textile belt that the disabled person is placed in when being lifted. The individual components can be combined to create both simple and highly complex systems.

A ceiling hoist system is extremely flexible and is designed to meet the individual needs of the disabled. At the same time the system makes it possible to adapt to the various architectural conditions and limitations that must be taken into account when installing a hoist.

Guldmann's ceiling hoist system has a simple, distinguished design and can be discreetly incorporated into the user's surroundings.

In order to gain the maximum benefit of a ceiling hoist system it is important to take the system into consideration from the beginning when planning accommodation for the disabled - whether this is a new building or a conversion of existing premises.

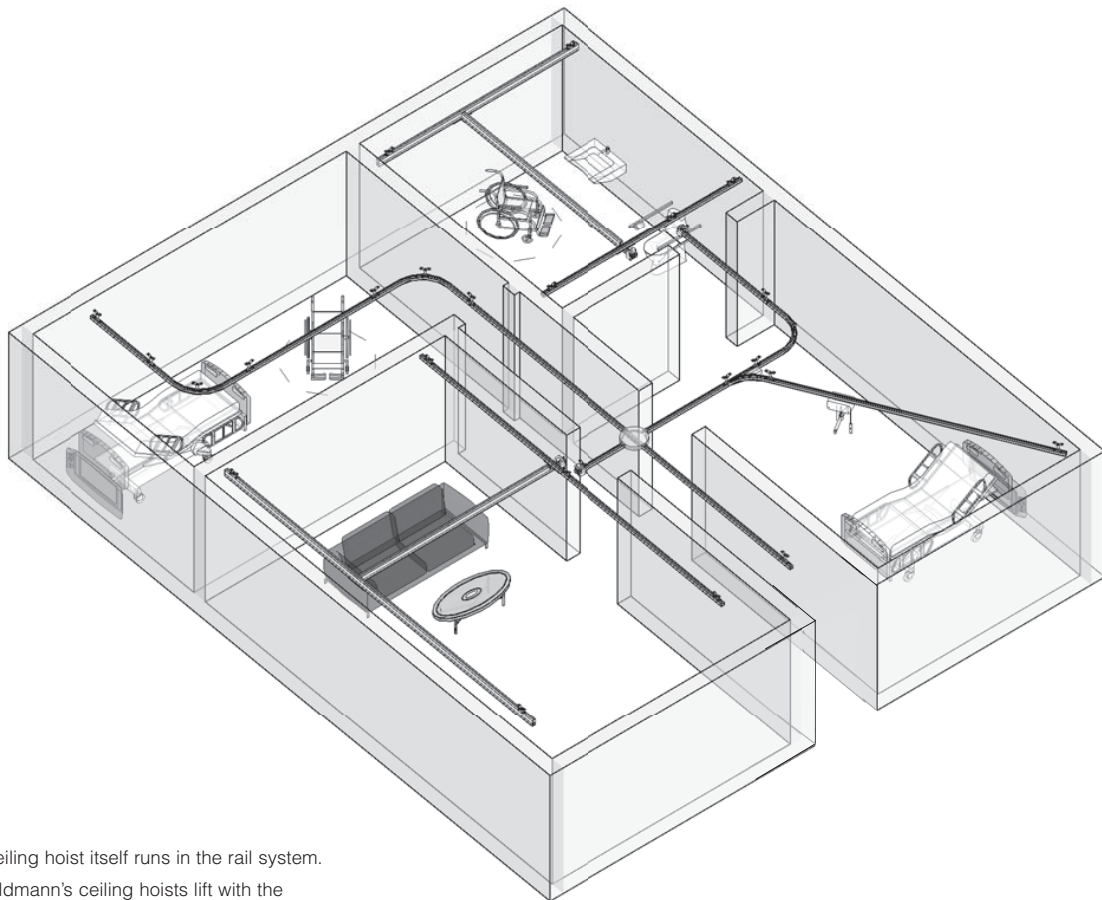


A rail system comprises one or more rails, which are installed in or on the ceiling, the wall or on freestanding upright support brackets.

The rail system is constructed in modules. This makes it easy to create individual solutions and to adapt the system to existing buildings. The modules are easy to handle during installation and transport. The flexible modules also make the system suitable for recirculation.

Rail systems can be installed anywhere. Private homes, hospitals, nursing homes, therapy clinics, riding centres and swimming pools are just some of the places where a rail system can help to improve the working environment for carers and heighten the quality of life for the disabled.

A ceiling hoist system takes up no floor space, makes little noise and is always ready for use.



The ceiling hoist itself runs in the rail system. All Guldmann's ceiling hoists lift with the help of a battery operated motor. The hoist is equipped with a hanger to which the sling is secured. The rail system that the hoist runs in can be:

- A room-covering system
- Single track
- A combination of the two systems

The hoist is manually controlled, or controlled with the help of a drive-motor.





INTRODUCTION



SOLUTION TYPES

- Presentation of different ceiling hoist systems

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SOLUTION TYPES

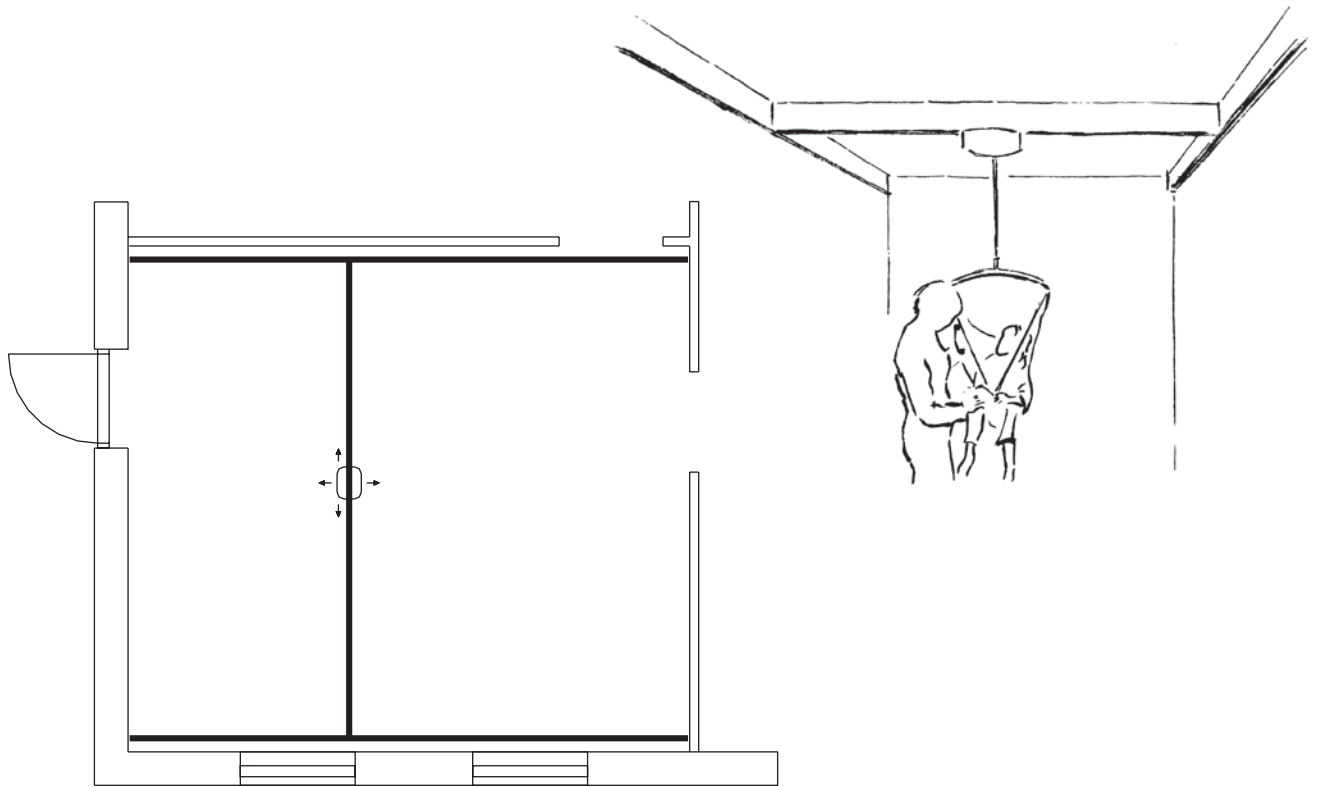
The room-covering rail system comprises two parallel rails installed in or on the ceiling, the wall or on freestanding upright support brackets. A traverse rail runs between or under the parallel rails. The hoist itself glides backwards and forwards on the underside of the traverse rail in a travelling trolley, which is equipped with wheels that run inside the rail. Horizontal movement is smooth and comfortable for the user.

The room-covering system makes it possible to lift the disabled person to and from any place in the room and is the optimum solution in rooms where many lifts are carried out.

Installing a room-covering system saves space and provides an extremely high degree of freedom. The bed, a wheelchair and the other furniture in the room can be placed as desired and lifting can be carried out rapidly, easily and comfortably both with regard to the carer and the disabled person.

In addition the planner has considerable freedom to design the rooms in the building – both because the system saves space and because it offers flexibility when lifting a person.

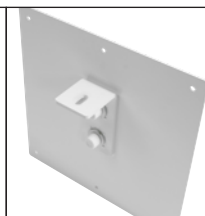
In some cases the parallel rails can be built into the ceiling so that only the lower part of them is visible.



Rail profiles



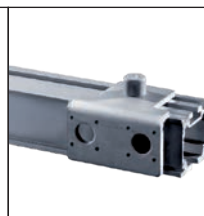
Bracket



Bracket



Bracket



GH3



Positioning lock

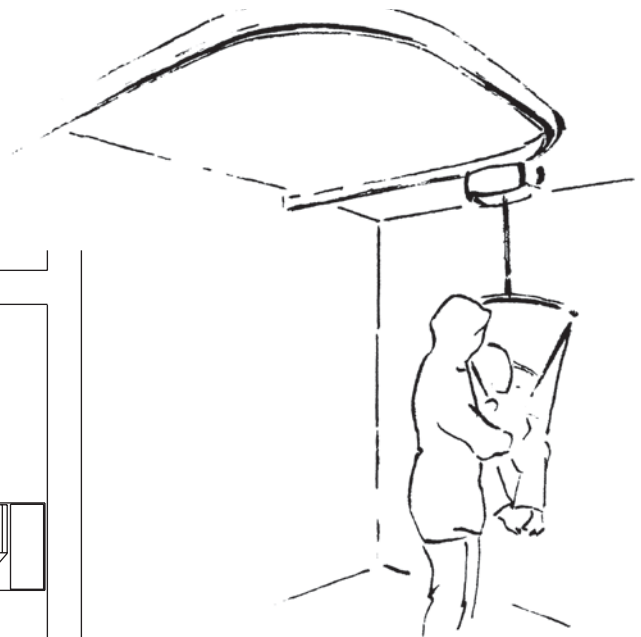
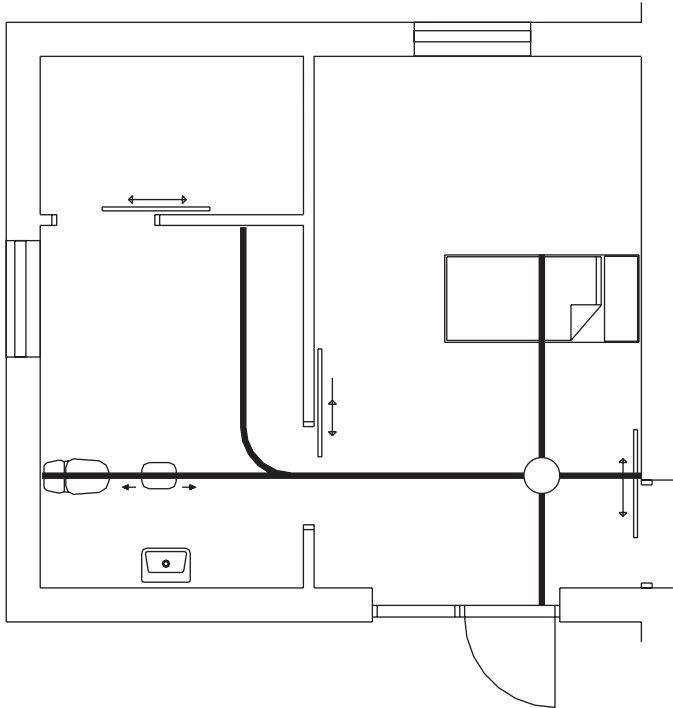




In its basic form the single track rail system comprises a single rail in which the ceiling hoist runs. The system can be extended with curves of various angles, Switch tracks and Turn tables.

The single track system is very suitable for moving people over longer distances. Examples of this could be corridors, riding schools or swimming pools.

Over and above this the single track system can be used in the same situations and rooms as the room-covering system. But attention should be paid to the fact that wheelchairs, beds and other aid facilities must be located directly beneath the rail. This places limitations on the layout of the room due to the location of the rail. In some cases the rail can be built into the ceiling so that only the lower part is visible.



GH1 F

Travelling trolley

Bracket

Curves

Free standing system

Traverse trolleys



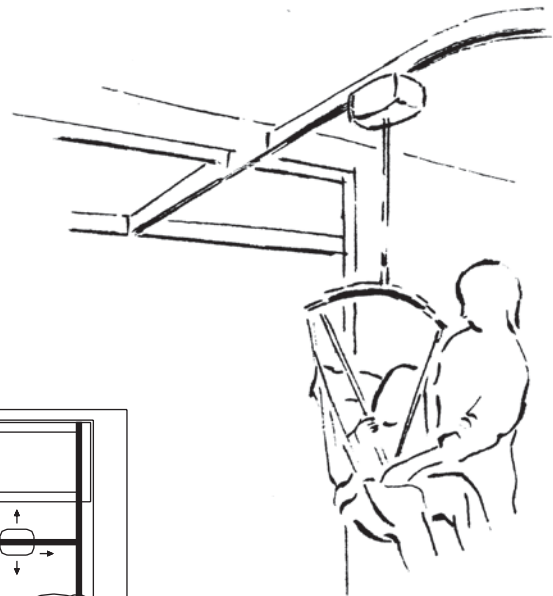
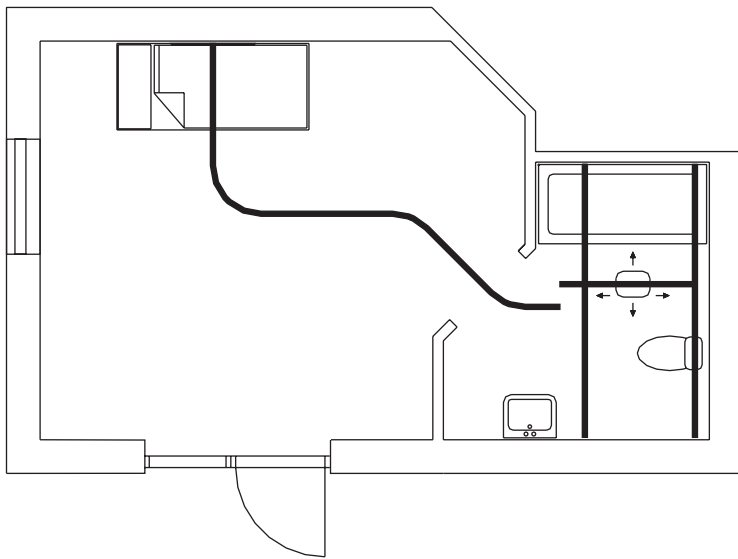


It is possible to combine the room-covering system with a single track rail system in adjacent rooms with the help of a Combi-lock.

A Safety lock is installed on the traverse rail in the room covering system to prevent the hoist from running out of the rail. Another Safety lock is installed on the single track rail system. Together will the two Safety locks form a Combi lock. When the traverse rail and the single track are aligned, both Safety gates will open, and the hoist can be moved from one system to the other without problems.

The rail in the single track rail system must be installed at a right angle to the parallel rails on the room-covering rail system.

The parallel rail in the room-covering system which is closest to the room with the single track system must be installed some distance into the room to provide space for the safety lock and the Combi-lock between the wall and the rail.

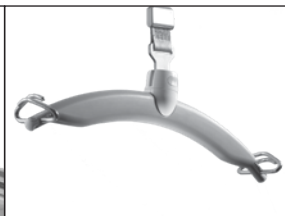


GH1

Bracket

Lifting hanger

Combi-lock





All Guldmann's hoist types lift with the help of a battery-driven motor and run in the rail system with the help of a travelling trolley, which is manually controlled or controlled with the help of a motor.

GH3

GH3 ceiling hoist lifts with the help of a lifting hanger to which the sling is attached. The hanger is raised or lowered from the hoist, which is installed in the rail and can either be moved horizontally manually or with help of drive motors. Lifting capacity up to 275 kg (605 lbs).



GH3+

Ceiling hoist similar to GH3, but with options like Integrated Scale, Class III Scale, Trainer Module, Care Lift Management, Service Monitoring System, WiFi Module and Horizontal Drive Motor. The lifting speed is also faster. Lifting capacity up to 400 kg (880 lbs)



GH3 Twin

GH3 Twin is a heavy duty ceiling hoist with double lifting straps, which lifts using a cross hanger or a horizontal lifter on which the sling is attached. The GH3 Twin has options like Integrated Scale, Class III Scale, CLM, Service Monitoring System and WIFI Module. Lifting capacity up to 500 kg (1100 lbs).



GH1

GH1 has a lifting capacity up to 255 kg (560 Lbs). GH1 is recharged when the hand control is placed in the docking station.



GH1 F

GH1 F is a flexible hoist which can rapidly and easily – with the least manual handling – be transferred from one rail system to another in a specially designed transport trolley. GH1 F has a lifting capacity up to 255 kg (560 lbs.)



GH1 Q

GH1 Q is a flexible hoist with a quick release system. GH1 Q has a lifting capacity up to 255 kg (560 Lbs). GH1 Q is recharged through the hand control when it is placed in the docking station.





CONSIDERATIONS

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When designing buildings for the disabled it is important for all parties involved to clarify the following questions when choosing technical aids facilities for lifting and moving people:

Who are the users?

It is an often overlooked fact that both disabled people and carers are users of systems for moving people.

Where is the lifting requirement?

The bedroom?

The bathroom and toilet?

Guldmann recommends that daily working routines should be reviewed by a working group comprising a carer, a therapist, technical staff, an architect and a ceiling hoist consultant. This will make it possible to discover where the lifting requirements in the building are and, on the basis of this, to arrive at the best solution for all users.

Which lifting method is best in the specific situation?

A manual lifting?

A mobile hoist?

A ceiling hoist?

Although a ceiling hoist system will be the most functional solution in most situations, other lifting methods can be more suitable in certain cases.

Which rail system should be chosen?

A room-covering system?

A single track system?

A combination?

Which type of ceiling hoist should be chosen?

GH3?

GH3+?

GH3 Twin?

GH1?

GH1 F?

GH1 Q?

GHZ?

Which type of building is in question?

An existing building?

A renovated building?

A new building?

A ceiling hoist system can be adapted for use anywhere, but the possibilities vary depending on whether a new or an existing building is in question.

REMEMBER

– the choice of a technical aid is decisive for:

What the working environment will be like for carers

What the user's quality of life will be

How the entire area of the room can be utilised

How the carer's time can be utilised

How money can be utilised

Guldmann can help to arrive at the optimum solution in each case.

This table shows which consequences the choice of lifting modules and rail types has for the lifting height in two different situations:

1. Moving a patient to and from a bed
2. Moving a patient to and from a wheelchair

Conditions are described in detail below.

The fields in the table are either white or grey

- White fields indicate that there is insufficient lifting height. This means that it will be necessary to lift the patient's feet and legs manually. The figure in the field shows how great a distance is lacking.
- Grey fields indicate that the lifting height is sufficient and how great an extra distance there is.

Conditions

- Person Height, 180 cm (5'11")
- Sling Basic Basic size, Medium
- Bed GB4, distance from floor to top of mattress is 48 cm (19")
- Wheelchair Distance from floor to top of seat is 55 cm (21½")

	Rails	Room height 225 cm (88")		Room height 240 cm (94")		Room height 250 cm (98")		Room height > 300 cm (117")	
		Bed (x)	Wheelchair (y)	Bed (x)	Wheelchair (y)	Bed (x)	Wheelchair (y)	Bed (x)	Wheelchair (y)
GH3/GH1	A-Rail	- 10 (4")	+ 25 (10")	+ 5 (2")	+ 40 (15¾")	+ 15 (6")	+ 50 (19½")	+ 65 (25½")	+ 100 (39¼")
	B-Rail	- 16 (6¼")	+ 18 (7")	- 1 (½")	+ 33 (13")	+ 9 (3½")	+ 43 (17")	+ 59 (23")	+ 93 (36½")
	C-Rail	- 21 (8¼")	+ 13 (5")	- 6 (2¼")	+ 28 (11")	+ 4 (1½")	+ 38 (15")	+ 54 (21")	+ 88 (34½")

GH1 Q	A-Rail	- 11 (4¼")	+ 24 (9½")	+ 4 (1½")	+ 39 (15¼")	+ 14 (5½")	+ 49 (19¼")	+ 64 (25")	+ 99 (39")
	B-Rail	- 18 (7")	+ 17 (6½")	- 3 (1¼")	+ 32 (12½")	+ 27 (10½")	+ 42 (16½")	+ 77 (30")	+ 92 (36")
	C-Rail	- 22 (8½")	+ 12 (4¾")	- 7 (2¾")	+ 27 (10½")	+ 22 (8½")	+ 37 (14½")	+ 72 (28¼")	+ 87 (34")

GH1 F	A-Rail	- 26 (10¼")	+ 9 (3½")	- 11 (4¼")	+ 24 (9½")	- 1 (½")	+ 34 (13½")	+ 49 (19¼")	+ 84 (33")
	B-Rail	- 33 (13")	+ 2 (¾")	- 18 (7")	+ 17 (6½")	- 8 (3¼")	+ 27 (10½")	+ 42 (16½")	+ 77 (30¼")
	C-Rail	- 38 (15")	- 3 (1¼")	- 23 (9")	+ 12 (4")	- 13 (5")	+ 22 (8½")	+ 37 (14½")	+ 72 (28¼")

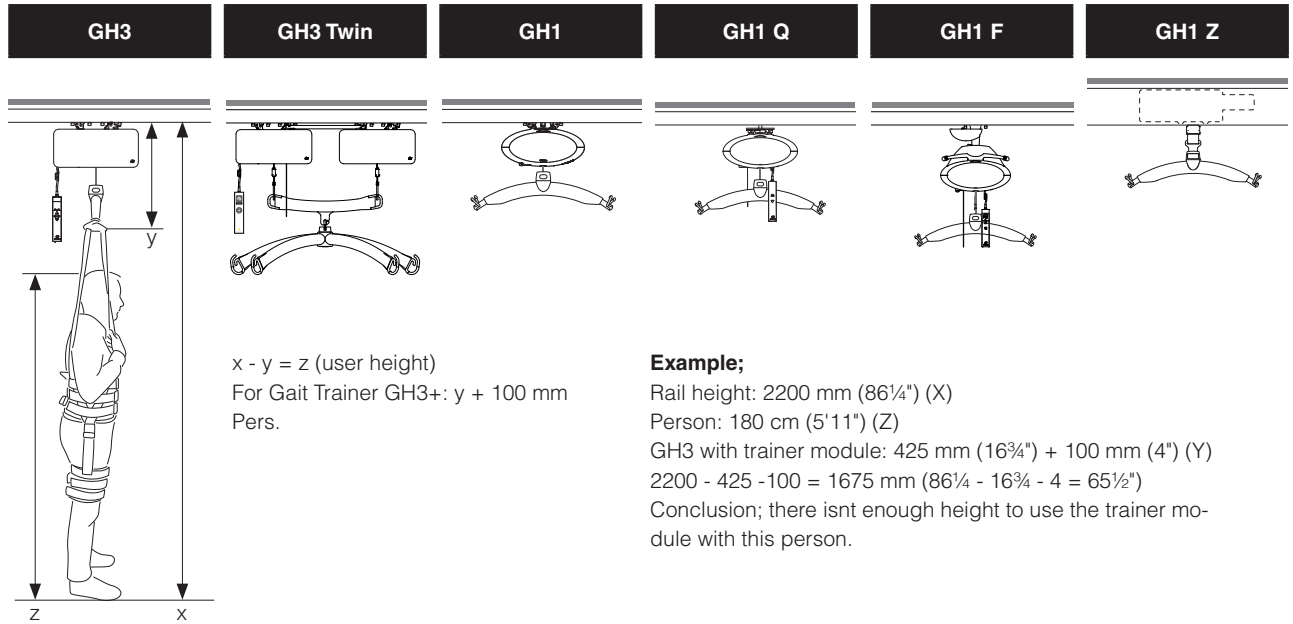
GHZ	GHZ--Rail	+ 0 (0")	+ 33 (13")	+ 14 (5½")	+ 48 (19")	+ 24 (9½")	+ 58 (22¾")	+ 74 (29")	+108 (42½")
-----	-----------	----------	------------	------------	------------	------------	-------------	------------	-------------

GH3 with trainer module	Rails	Room height 225 cm (88")	Room height 240 cm (94")	Room height 250 cm (98")	Room height 270 cm (xxx")
	A-Rail	- 15 (6")	0 (0")	+ 10 (4")	+ 60 (23½")
	B-Rail	- 22 (8½")	- 7 (2¾")	+ 4 (1½")	+ 53 (21")
	C-Rail	- 26 (10")	- 11 (4½")	- 1 (½")	+ 49 (19")

All measurements are in cm / inch

These measurements are from the lower edge of traverse rail to floor level, (System A, B or C see page 47), and include 10 cm (4") for strap movement.

Remember if there is obstructions like smoke detectors or sprinklers in the ceiling, it will influence the height and therefore also for the use of the Trainer module.



This table shows which consequences the choice of lifting modules and rail types has for the lifting height.

The conditions are with a person who is 1800 mm (70½") in height.

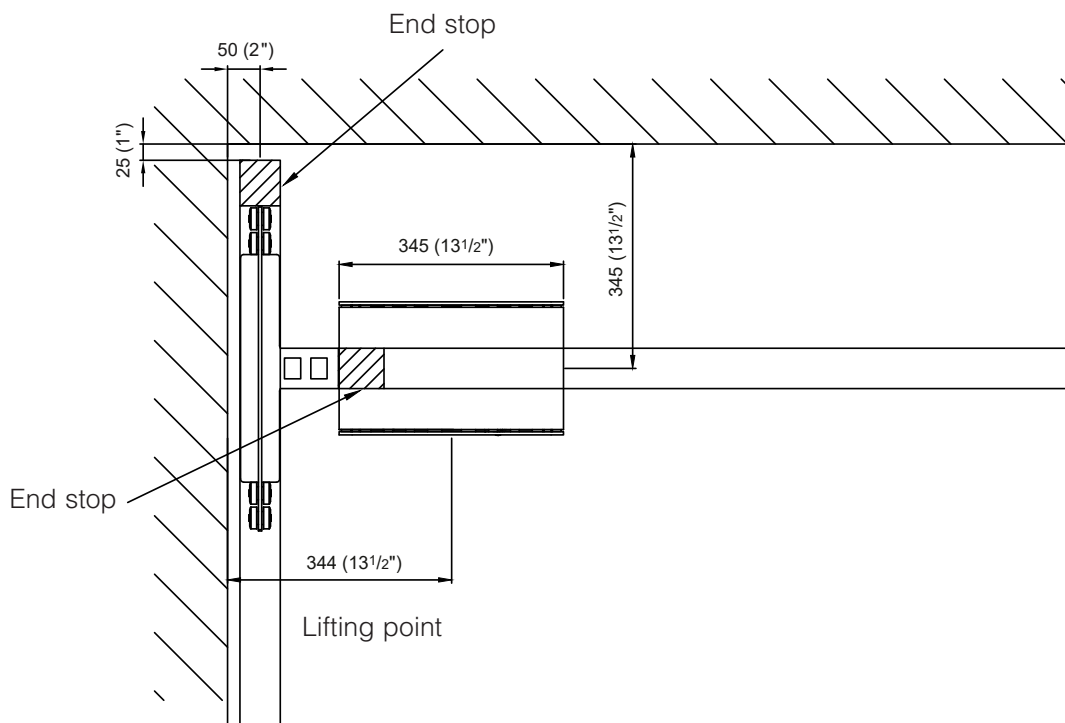
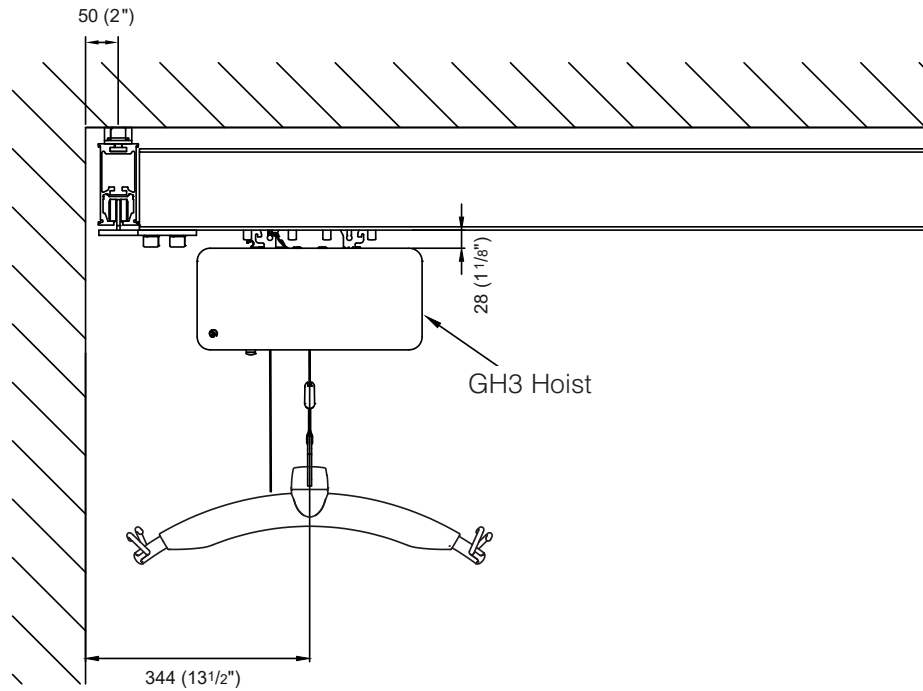
	y	x	x = 2100 (82 ½")	x = 2200 (86¼")	x = 2300 (90¼")	x = 2400 (94")	x = 2500 (98")	> 2500 (98")
GH3	425 mm (16 ¾")	Moving	-	✓	✓	✓	✓	✓
		Gait training	-	-	✓	✓	✓	✓
		Trainer (GH3+)	-	-	✓	✓	✓	✓
GH3 Twin	583 mm (23")	Moving	-	-	-	✓	✓	✓
		Gait training	-	-	-	✓	✓	✓
GH1	415 mm (16 ¼")	Moving	-	-	✓	✓	✓	✓
		Gait training	-	-	✓	✓	✓	✓
GH1 Q	427 mm (16 ¾")	Moving	-	-	✓	✓	✓	✓
		Gait training	-	-	✓	✓	✓	✓
GH1 F	580 mm (22 ¾")	Moving	-	-	-	✓	✓	✓
		Gait training	-	-	-	✓	✓	✓
GH1 Z	254 mm (10")	Moving	✓	✓	✓	✓	✓	✓
		Gait training	✓	✓	✓	✓	✓	✓



CONSIDERATIONS

Outer lifting point for GH3 in systems with standard size traverse trolley and the traverse rail mounted in between the parallel rails (B system shown).

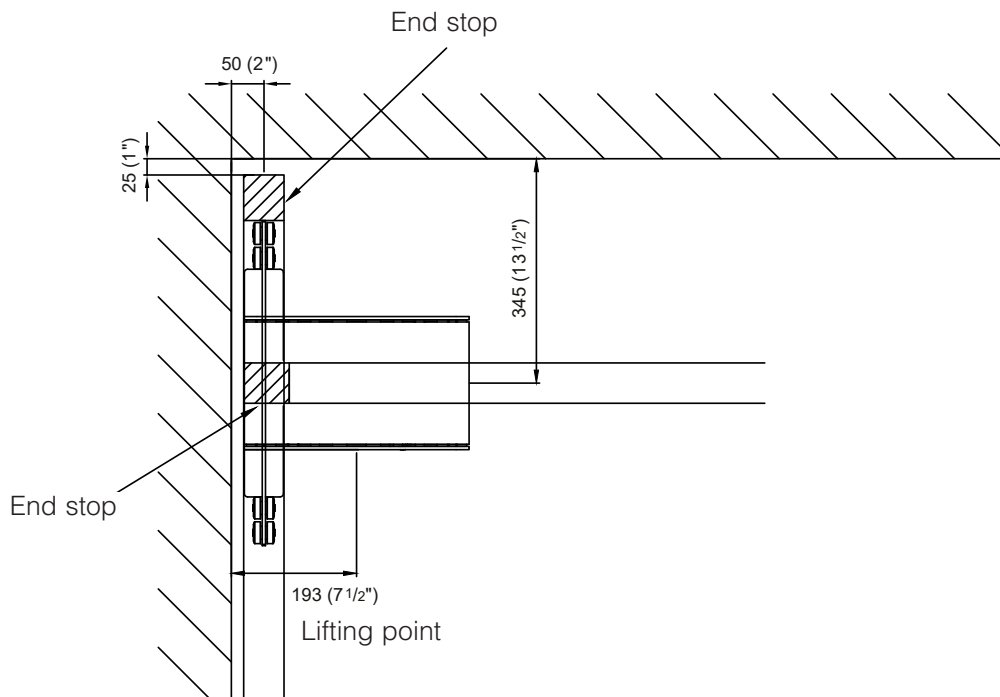
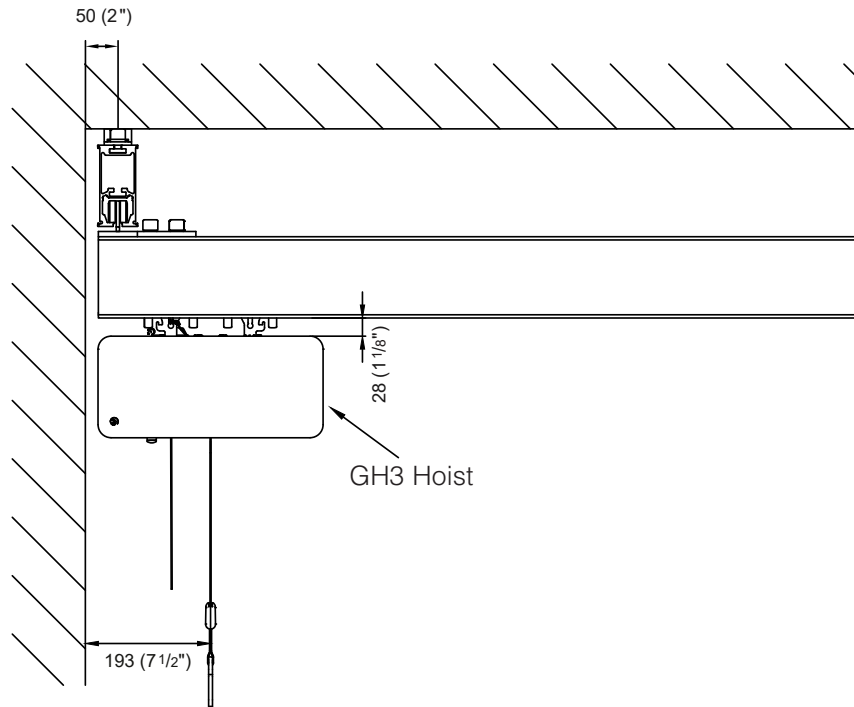
See other hoist types and parallel rails on the following pages.





CONSIDERATIONS

Outer lifting point for GH3 hoist in systems with underhanging traverse rail (G system shown). See other hoist types on pages 25 - 28.

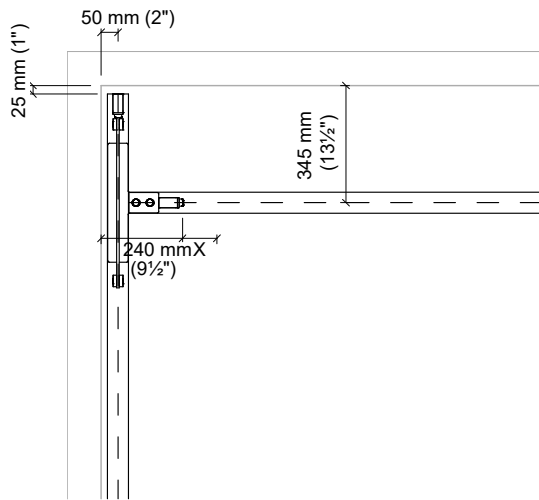




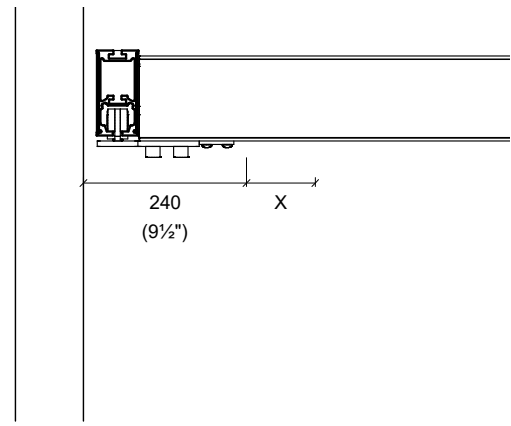
Ceiling hoist:

X:

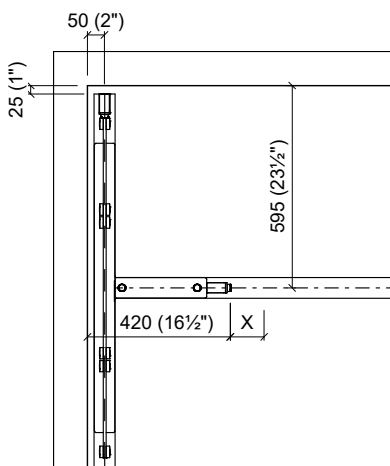
GH1	91 mm	(3½")
GH1F	53 mm	(2")
GH1Q	46 mm	(1½")
GH1Q	101 mm	(4")
GH3+ with scale	125 mm	(5")
GH3 Twin	305 mm	(12")



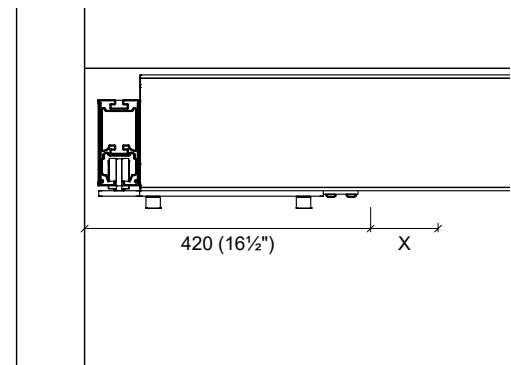
With standard traverse trolley



With standard traverse trolley



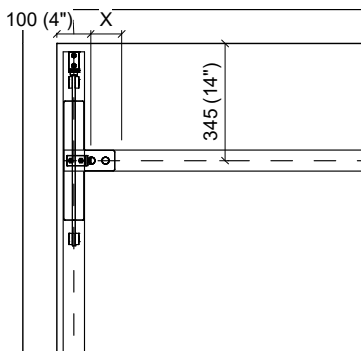
With Long traverse trolley



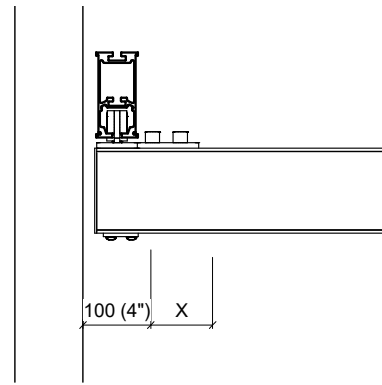
With Long traverse trolley



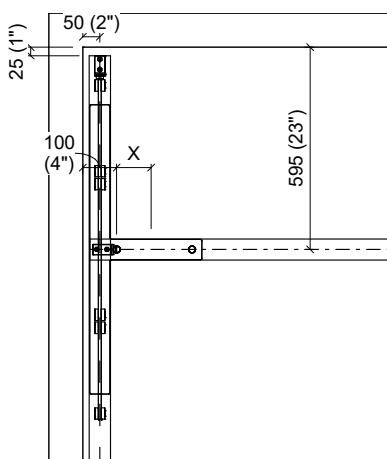
Ceiling hoist:	X:
GH1	91 mm (3½")
GH1F	53 mm (2")
GH1Q	46 mm (1½")
GH3	101 mm (4")
GH3+ with scale	125 mm (5")
GH3 Twin	305 mm (12")



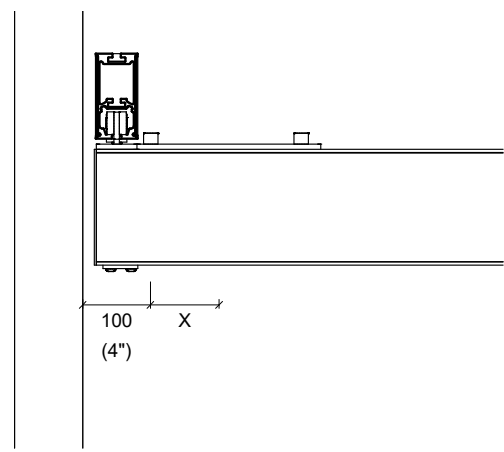
Underhanging traverse rail with standard traverse trolley



Underhanging traverse rail with standard traverse trolley



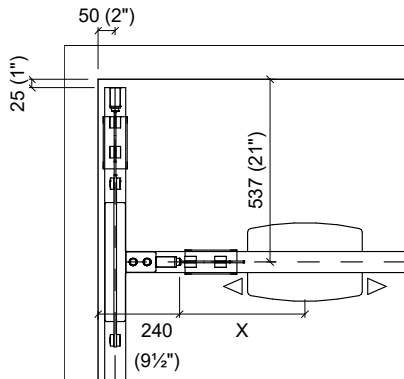
Underhanging traverse rail with long traverse trolley



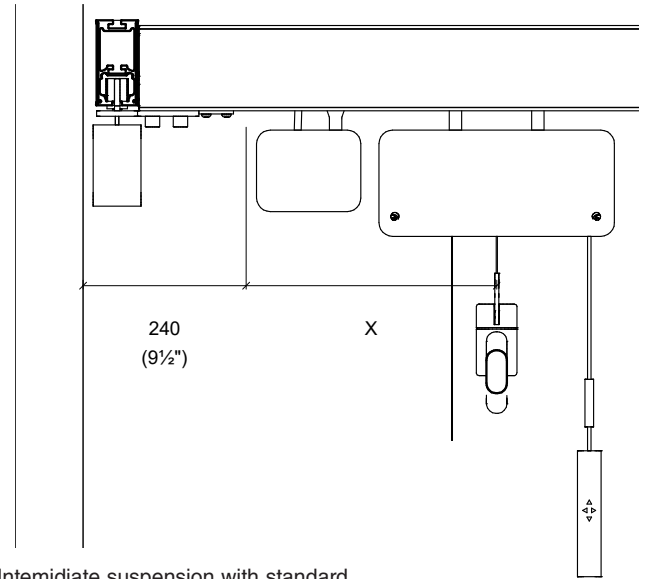
Underhanging traverse rail with long traverse trolley



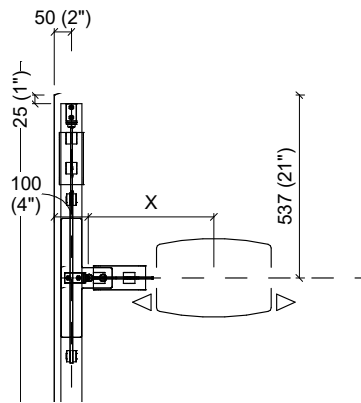
Ceiling hoist:	X:
GH3	369 mm (14½")
GH3+ with scale	393 mm (15½")



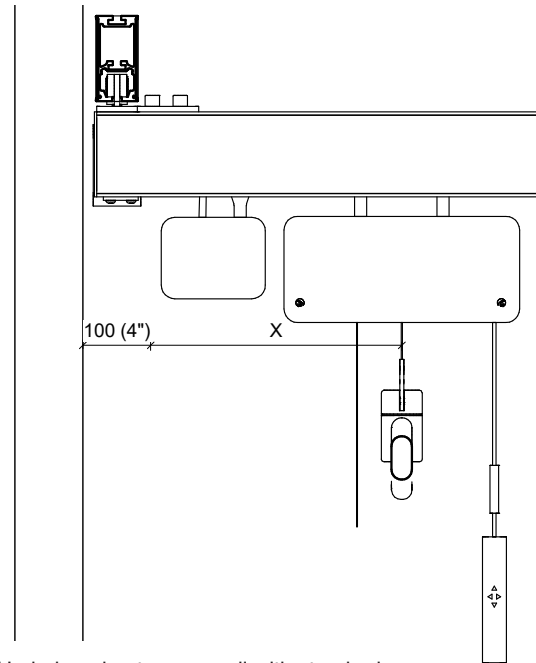
Intermediate suspension with standard traverse trolley



Intermediate suspension with standard traverse trolley



Underhanging traverse rail with standard traverse trolley



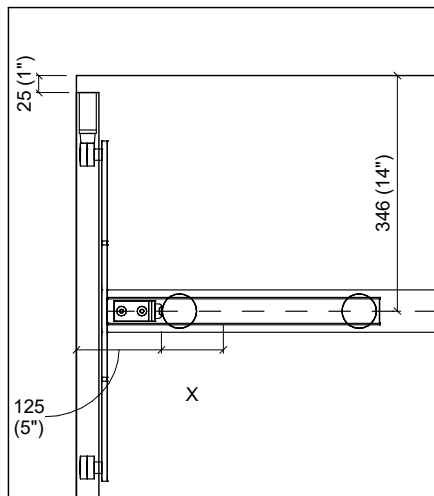
Underhanging traverse rail with standard traverse trolley



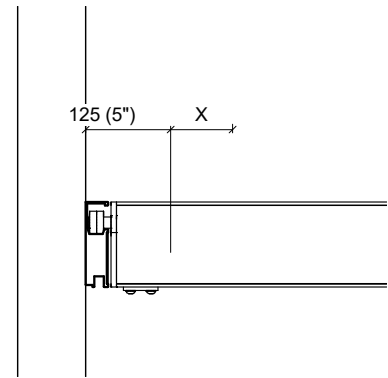
Ceilin hoist:

X:

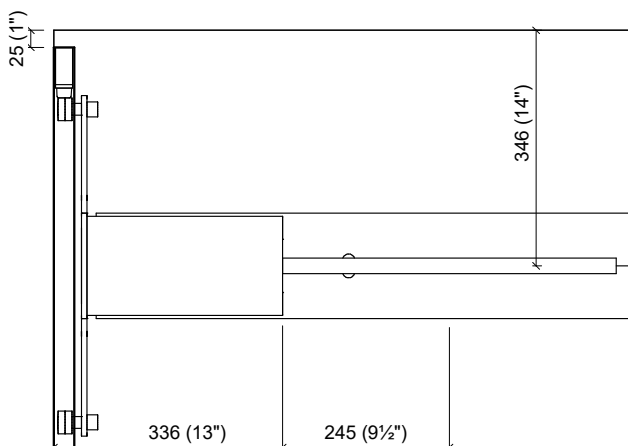
GH1	91 mm	(3½")
GH1F	53 mm	(2")
GH1Q	46 mm	(1½")
GH3	101 mm	(4")
GH3+ with scale	125 mm	(5")
GHZ	245 mm	(12")



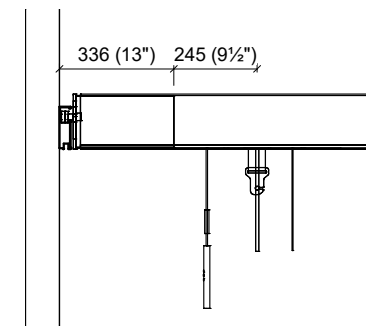
Intermediate suspension with wall rail



Intermediate suspension with wall rail



GHZ
Mål: 1 : 10



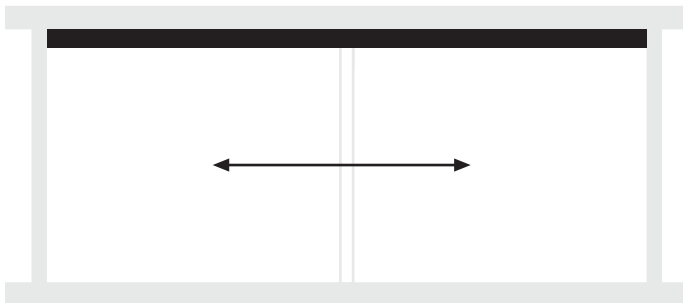
GHZ
Mål: 1 : 20



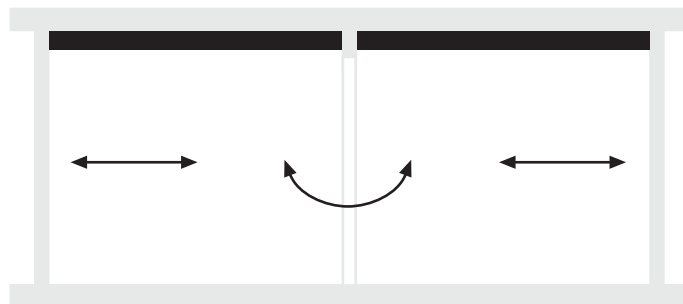
CONSIDERATIONS

Once it has been established that there is a need to carry out lifts in several rooms, a decision must be made as to how the disabled person will be moved from room to room and from rail system to rail system. The door opening can either be heightened so that the rail can be led directly through and the hoist can be run from room to room without stopping. Or a Swing solution can be chosen, where the original height of the door opening can be retained and the disabled person be “swung” through the door opening. This can be carried out with two hoists where the hanger is “swung” through the door opening.

Rail transition is the most functional solution both for the disabled person and the carer. However, attention should be drawn to the fact that there are certain limitations and problems in connection with a Swing solution.



Rail transition



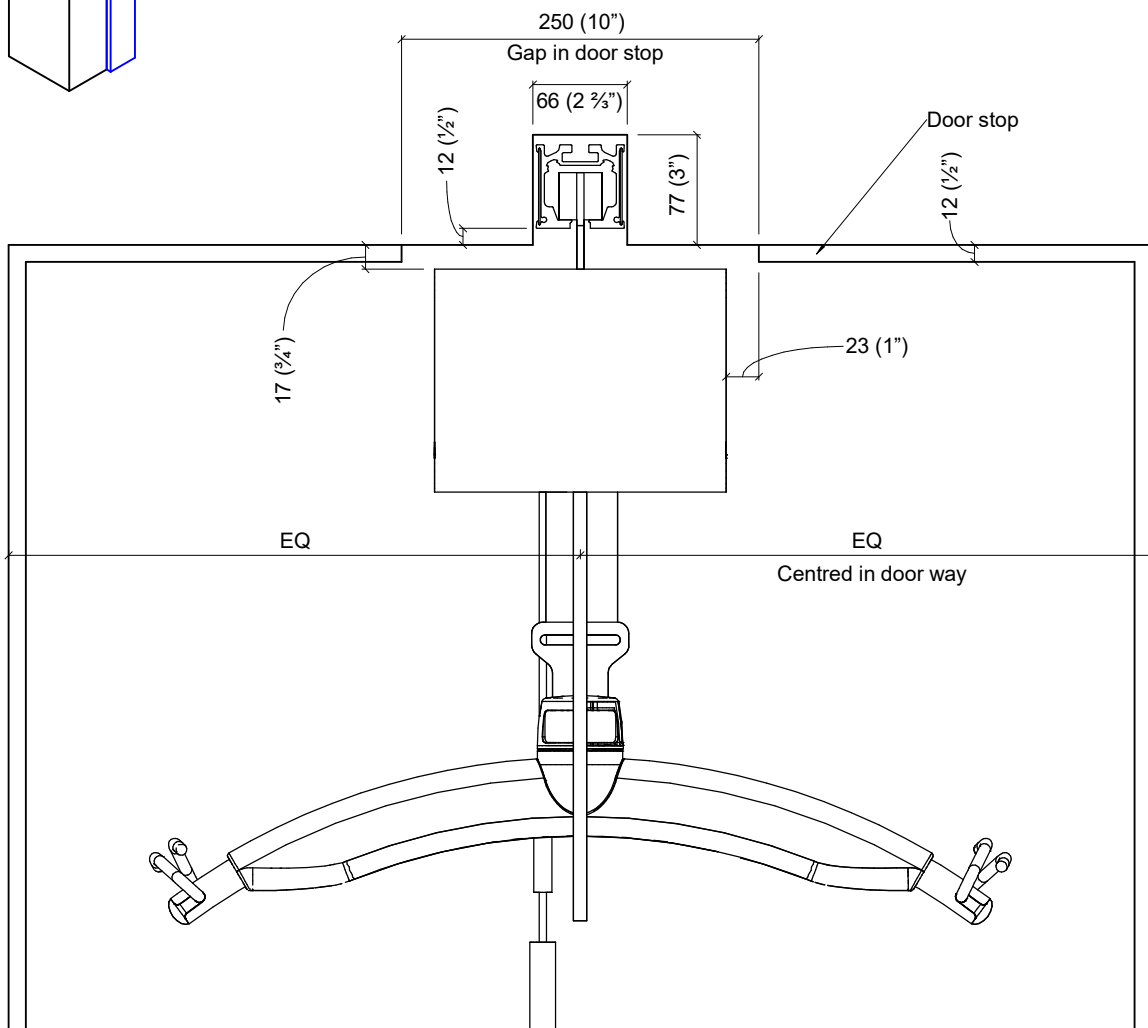
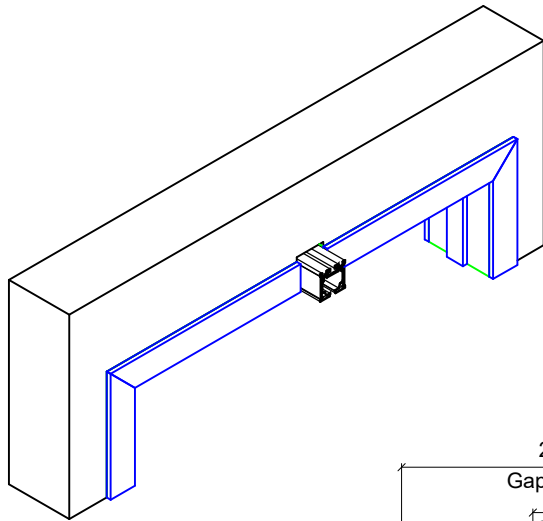
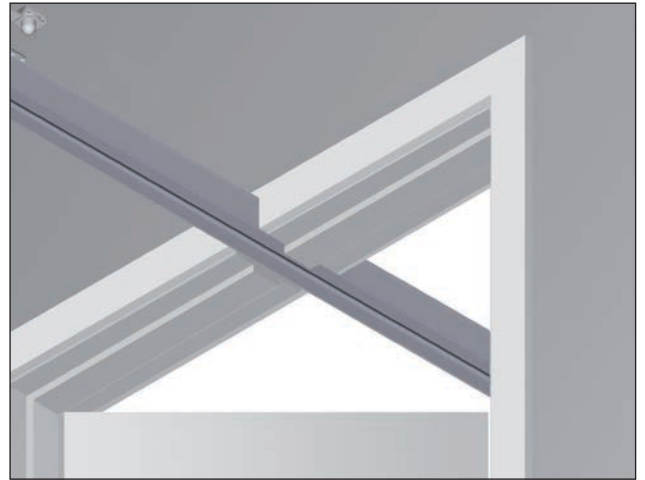
The Swing solution



CONSIDERATIONS

Oversize door

The door plate and the door opening are increased in height so that they reach the lower edge of the rail.



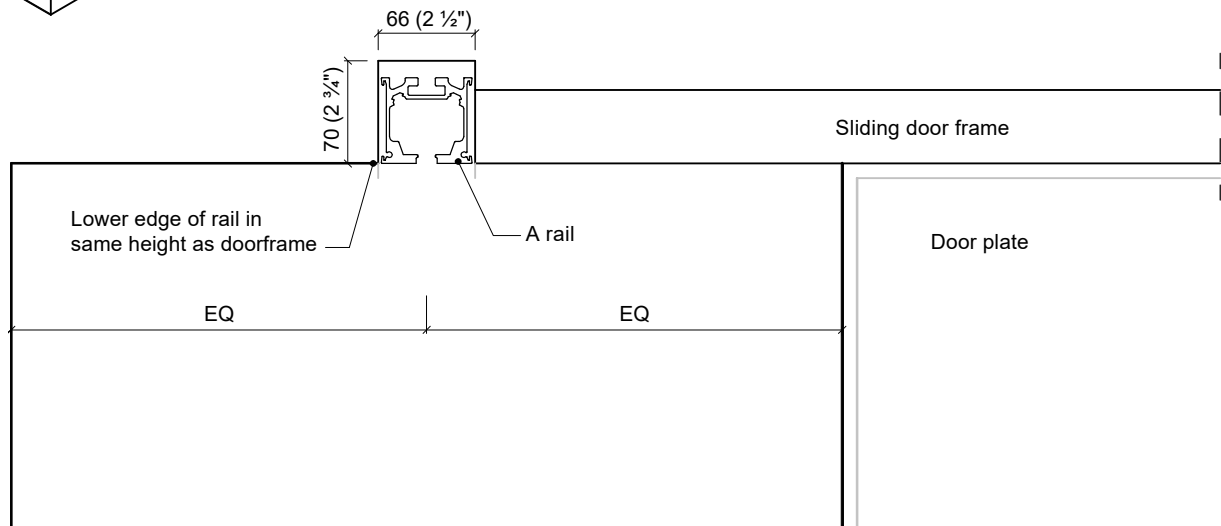
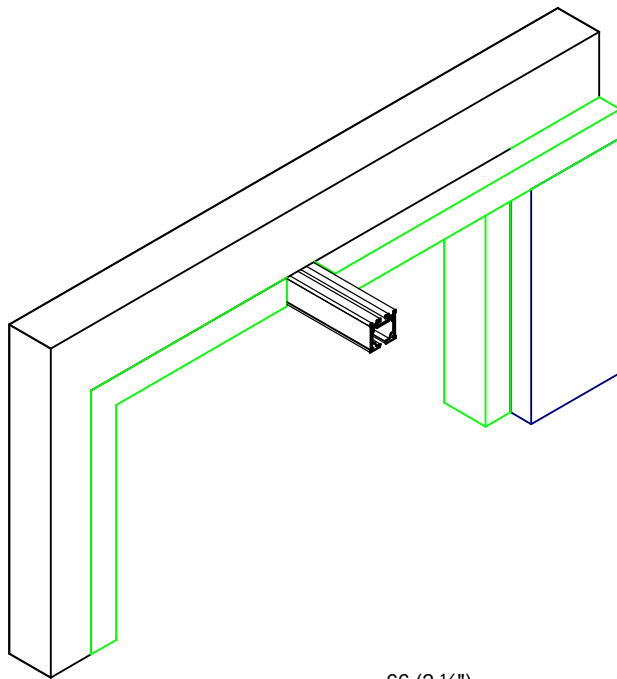
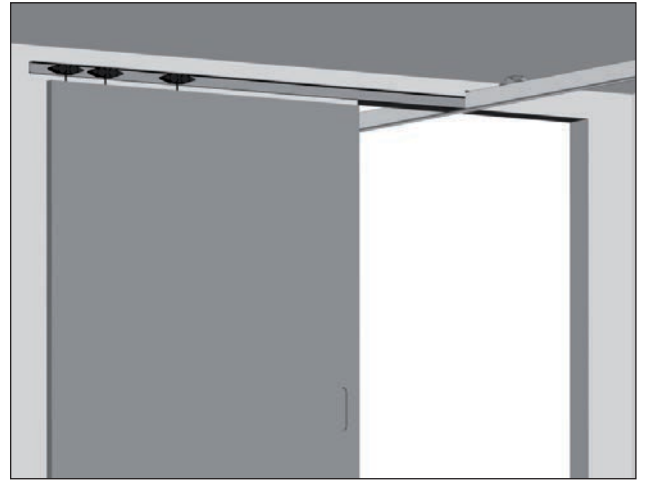


CONSIDERATIONS

Sliding door

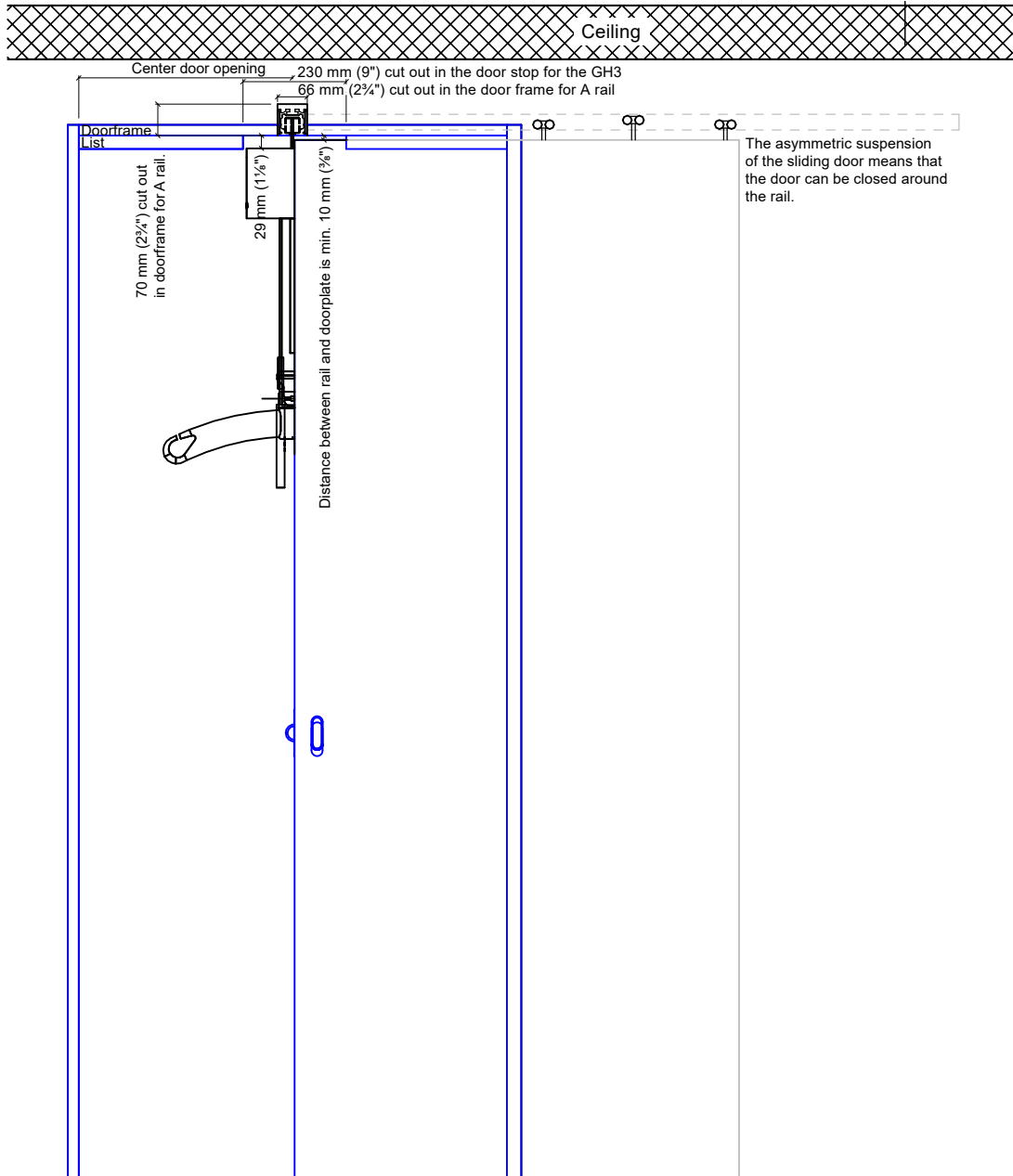
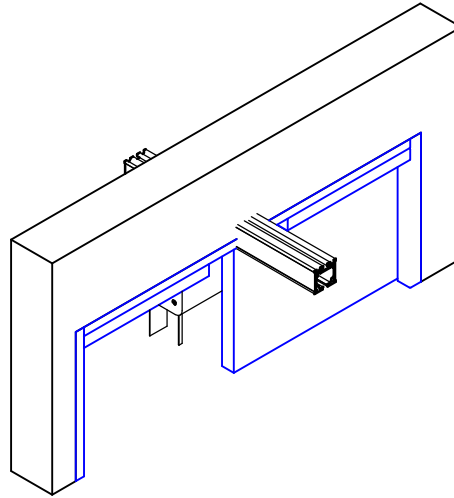
As with the case of the ordinary door, the door plate and the door opening are increased in height so that they reach the lower edge of the rail. The rail is led through the frame.

The asymmetric suspension of a sliding door means that the door can be closed around the rail.





CONSIDERATIONS





Transition through a door opening Sliding door

Guldmann™

CONSIDERATIONS

The transition through the door frame is used when the rail system covers more rooms. It is a aesthetic and user friendly solution, both for caregivers and users.

For this solution, it is important to be observant of the following:

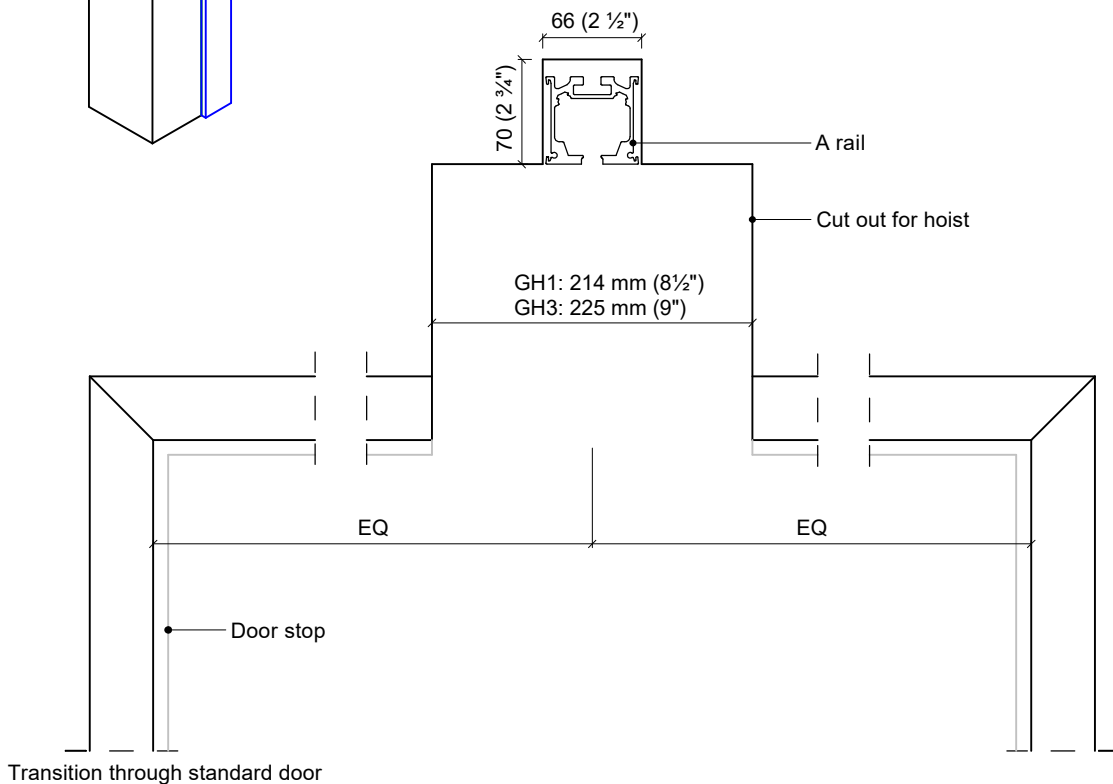
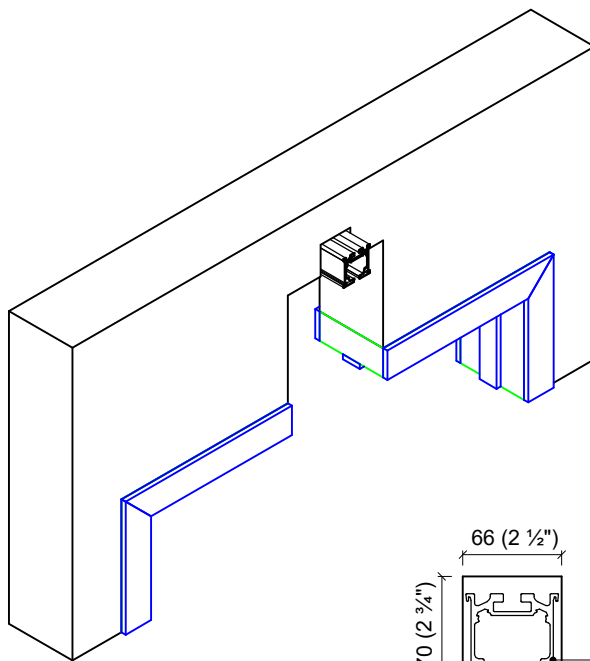
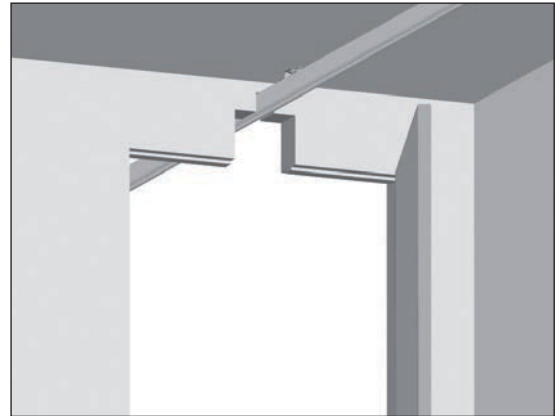
- Room height
- Lamps, sprinklers, smoke detectors etc. attached to the ceiling
- The door solution
- The construction above the door





Standard door

– cutting a hole in the wall for the hoist
The hoist is run through an opening in the wall – allowing a standard door height to be maintained.





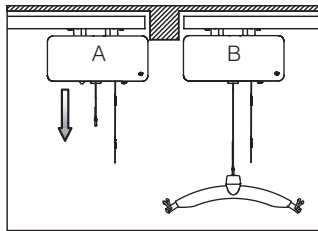
In order to be able to use a Swing solution with transition through a door opening, ceiling height must be at least 2400 mm/94" and the maximum thickness of the wall must be 110 mm/4½".

Advantages of the Swing solution

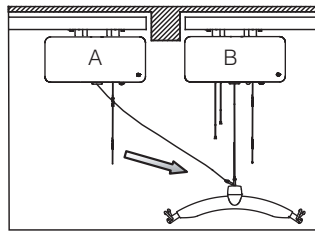
- Saves the expense of heightening the door opening and door plate.

Disadvantages of the Swing solution

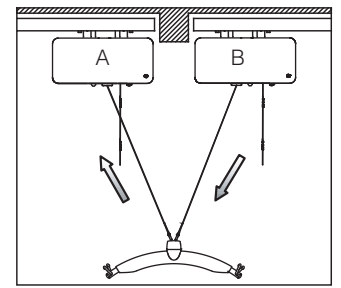
- Moving the disabled person from room to room is time consuming.
- The carer must be given special instructions in order to be able to carry out the move correctly.
- It is necessary to use two hoists – one in each room.



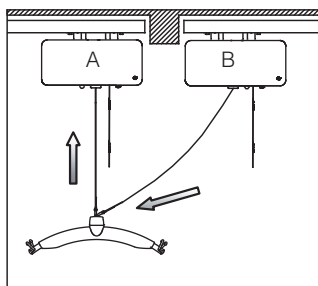
1. Bring the two hoist as close to each other as possible. Adjust the height of the lifting hanger on B so that the transfer can be performed without the user touching the floor during the transfer from one hoist to another..



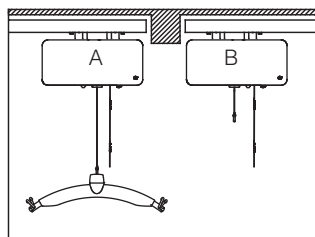
2. Take the free lifting strap from hoist A and secure it to the swing adapter on the lifting hanger. In order to lower the free lifting strap on A a slight pull must be applied to the strap.



3. Lower the lifting hanger using hoist B while lifting the strap on A to perform the swing transfer. The transfer has been completed when there is no load on the lifting strap on B.



4. Disconnect the lifting strap on hoist B from the lifting hanger and raise the strap on B out of the way.



5. Move the lifting hanger from hoist A to operating height, and the doorway transfer is complete.



In connection with a single rail system (A-rail) the height of the doorhead is calculated as following:

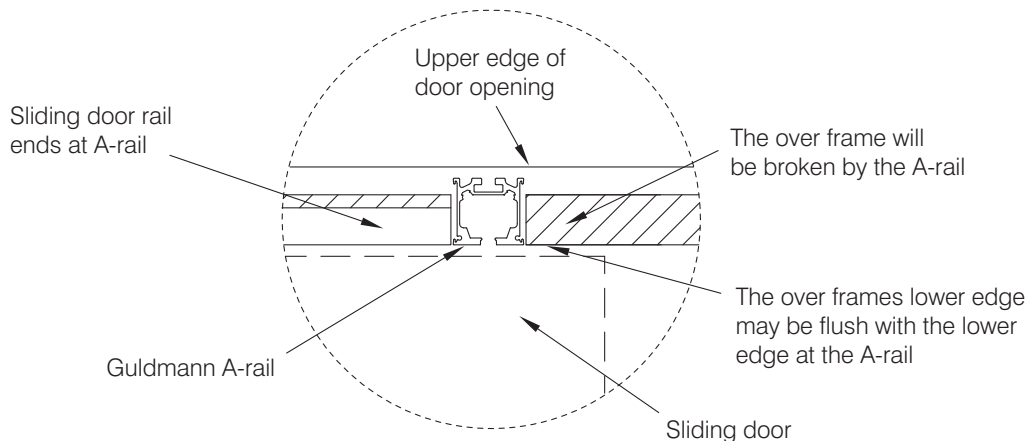
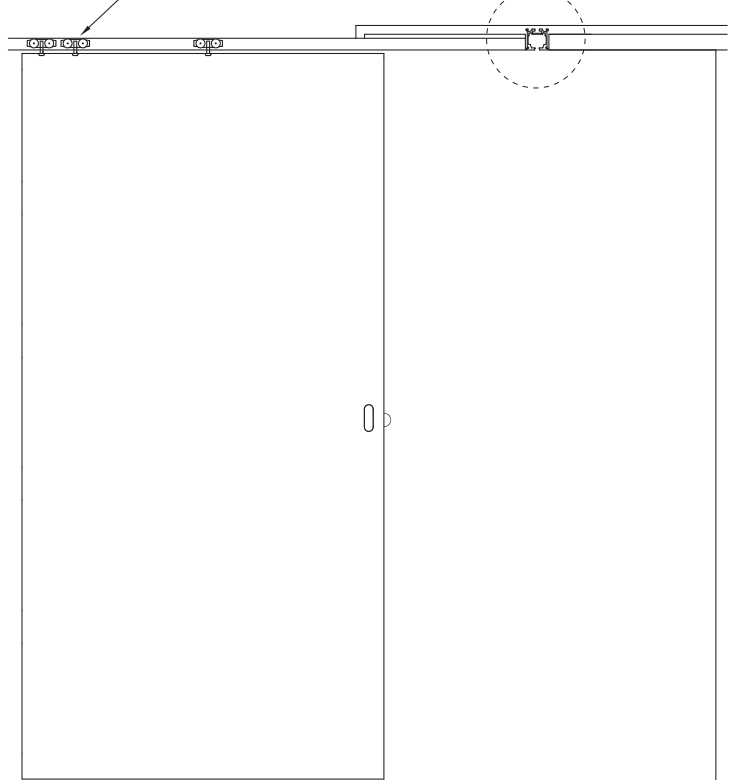
Sliding doors:

Height from floor to the lower edge of A-rail minus 20 mm (3/4").

This example illustrates the most frequently used methods when linking rails in two rooms. If other requirements arise in connection with a project, Guldmann will be pleased to help find the best solution.

If a coping board is to be used to conceal a sliding door rail, this board must hang at a maximum of 8 mm / 3/8" below the lowest edge of the hoist rail, as a wider board could hinder the free passage of the hoist through the door opening.

Sliding door with asymmetric suspension





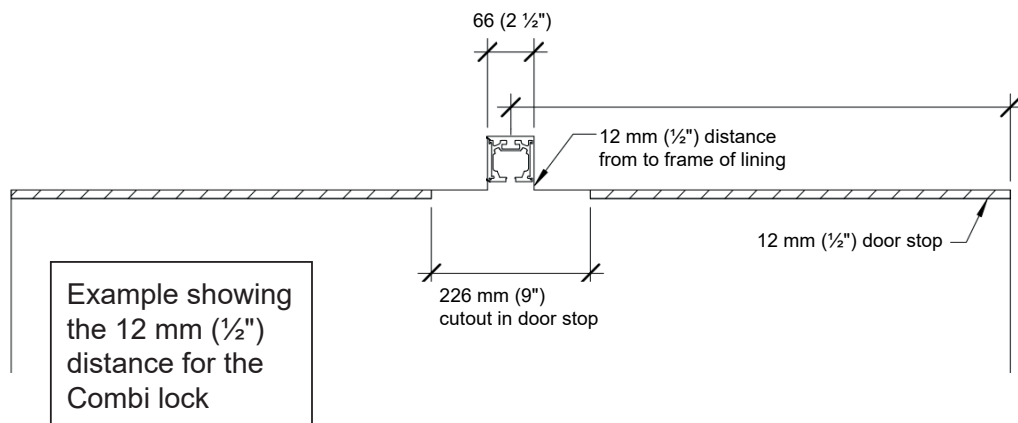
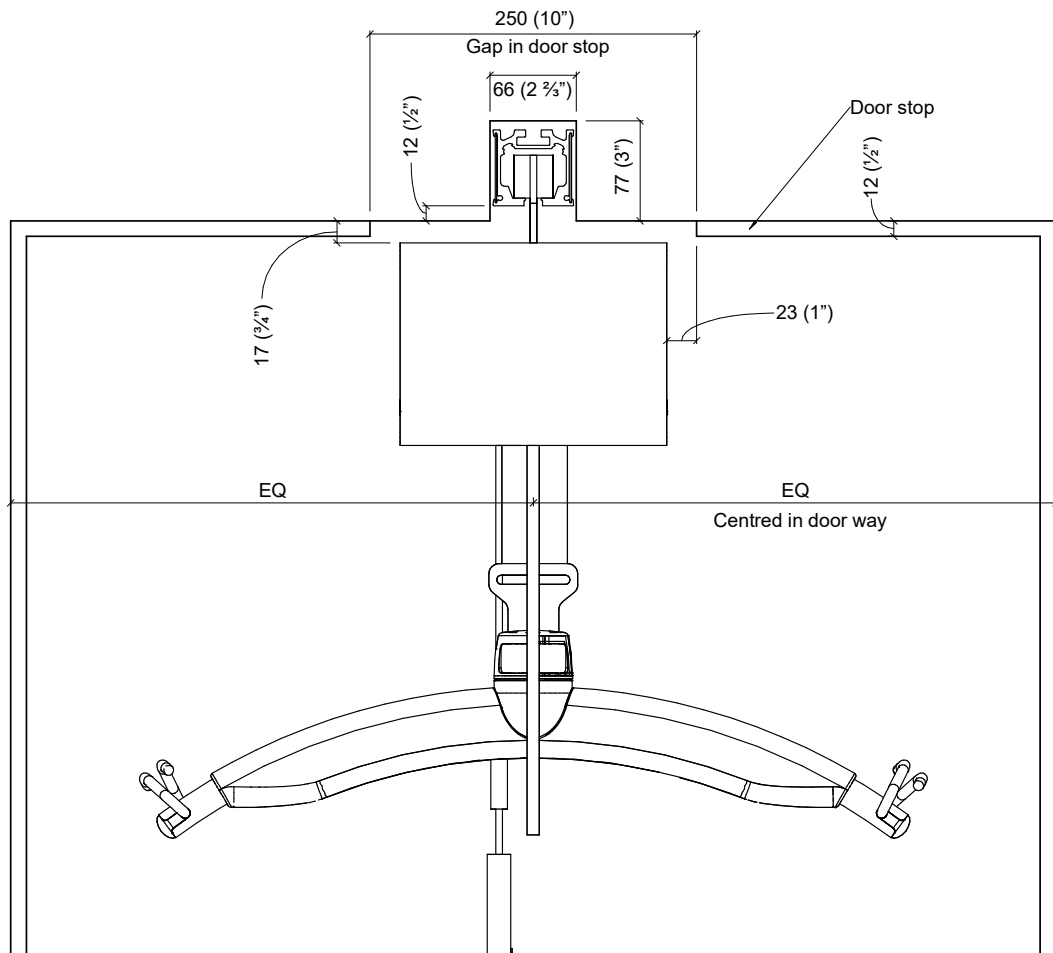
In connection with a single rail system (A-rail) the height of the doorhead is calculated as following:

Side-hung doors:

Height from floor to the lower edge of A-rail minus 30 mm (1 1/4").

On all details where the rail is shown passing through a doorway with a hinged door the rail needs to be recessed 12 mm (1/2") in the door frame.

Note: Remember to keep an distance from lower edge at the rail to the door head of minimum 12 mm (1/2") to avoid the door and Combi lock collide.





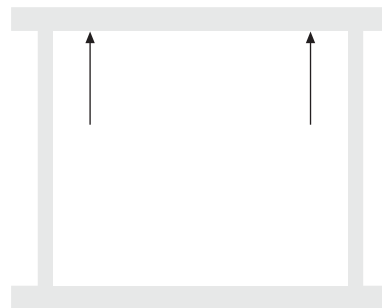
CONSIDERATIONS

A ceiling hoist system can be installed on the ceiling, on the wall, or with the help of upright support brackets. The method of installation should be chosen on the basis of the specific conditions in each situation.

Ceiling

Ceiling installation can be carried out on:

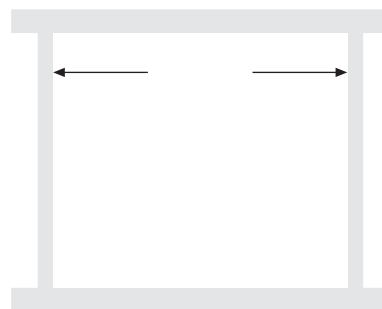
- Concrete ceilings
- Wooden constructions (requires reinforcement between rafters)
- Roof cassettes



Wall

Wall installation can be carried out on:

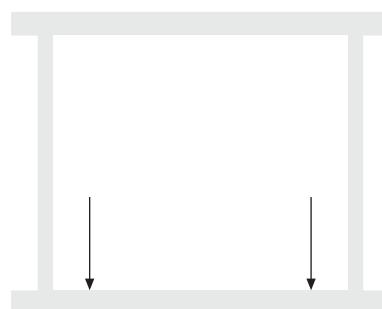
- Brick walls
- Concrete walls
- Light walls such as wooden and plasterboard walls



Upright support bracket

Upright support brackets are used when:

- Ceiling or wall installation is inappropriate or difficult due to lack of strength or other installations in ceiling or on walls.

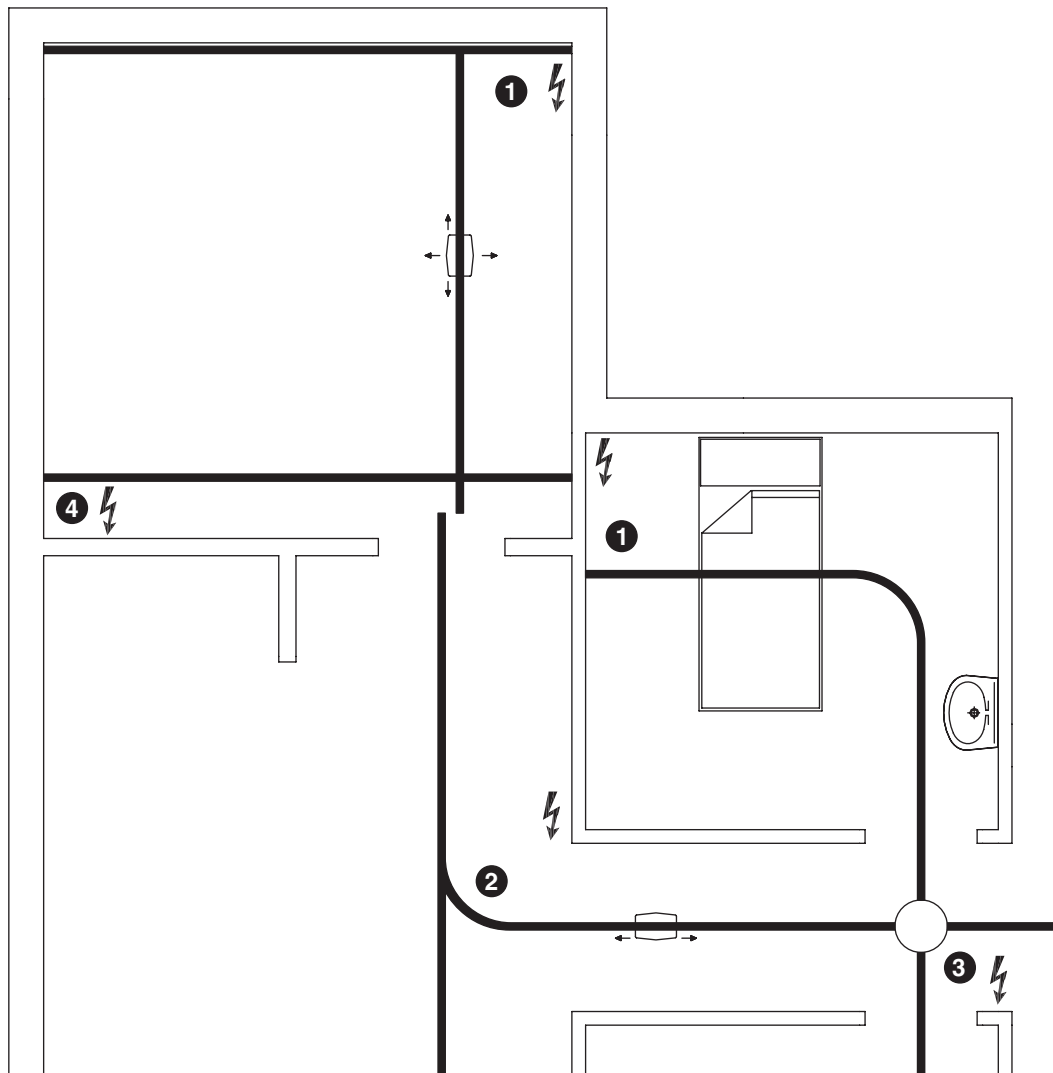




CONSIDERATIONS

The following components must be connected to the power supply when a ceiling hoist system is installed:

- ❶ Transformer for charging of hoist
- ❷ Transformer for activating the Switch track.
- ❸ Transformer for activating the Turntable
- ❹ Transformer for activating Positioning lock





CONSIDERATIONS



PLANNING

- Scale drawings and assistance with planning

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There are different rail types,

A, A+, B, B+, C, C+, Wall rail and GHZ rail

Rail A are normally used in single-track systems.

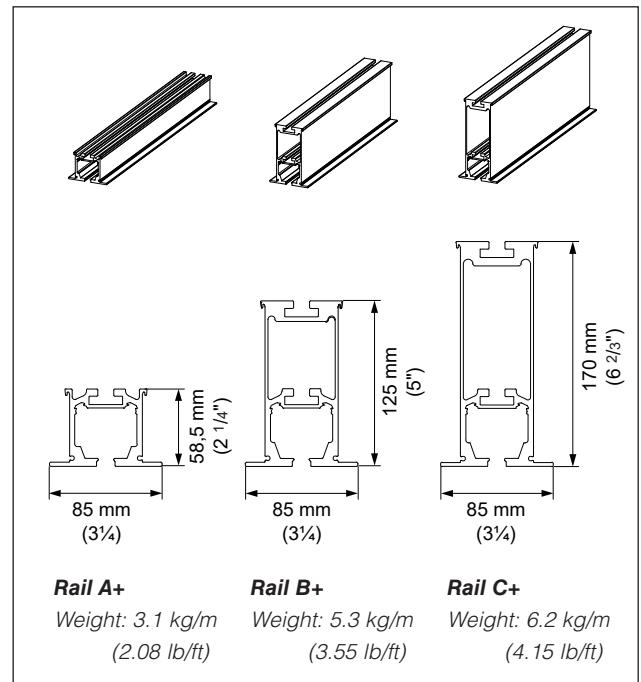
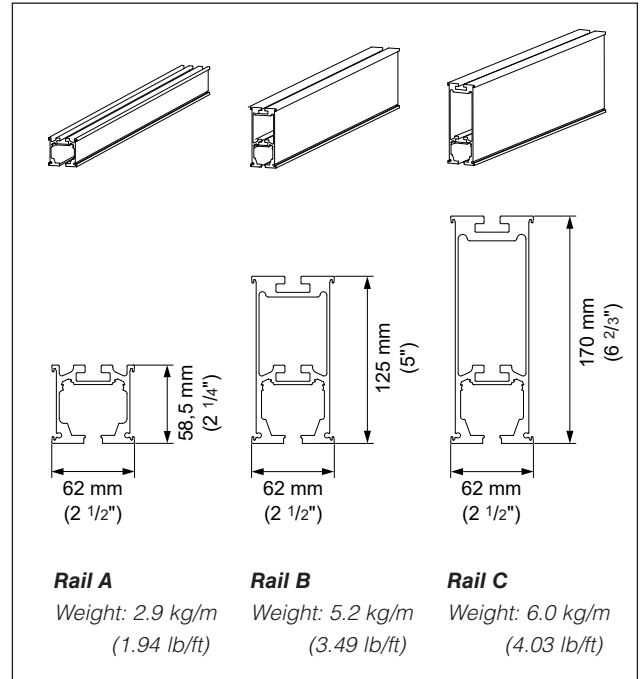
The overall height of the rails in a room-covering system can vary from 99 mm (4") for two Rail A (traverse rail mounted between Rail A parallel rails, System "A") to 381 mm (15") including bracket for two Rail C (Rail C parallel rails with underhanging Rail C traverse rail, System "I"). The traverse rail can be mounted in between the parallel rails, it can be underhung or be a combination of the two solutions i.e. system "M"

Rail A, B, C, A+, B+ and C+ can be ordered with or without charging liner. The rails are available in meter lengths, and will be cut to size by the installer on site.

The rails are available in the following lengths:
Rail A and A+: 1 m (39¼"), 2 m (78"), 3 m (117"), 4 m (157"), 5 m (196"), 6 m (235")

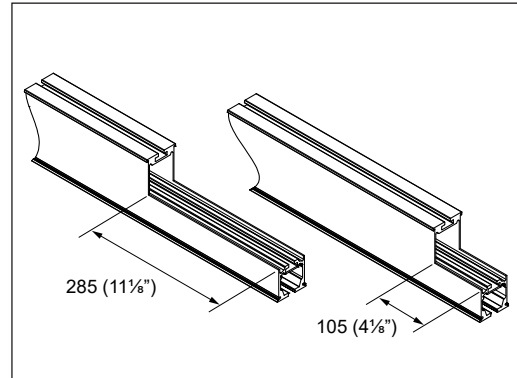
Rail B and B+: 3 m (117"), 4 m (157"), 5 m (196"), 6 m (235"), 7 m (274"), 8 m (314")

Rail C and C+: 5 m (196"), 6 m (235"), 7 m (274"), 8 m (314")



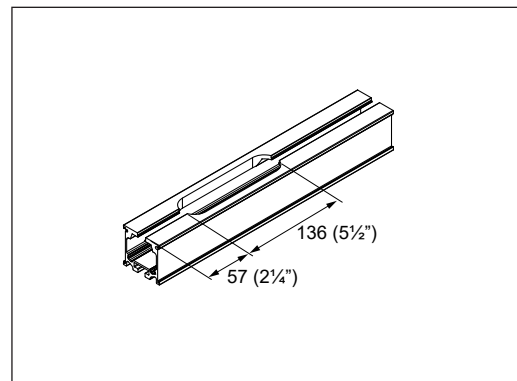


Rail B and C can also be ordered with short or long cut-out for Combi lock.

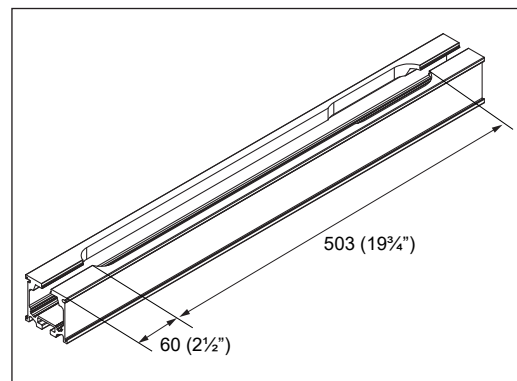


Rail A, B, C, A+, B+ and C+ rails can be ordered with cut-out for trolleys. The cut-out will allow easy access to trolleys for service, especially where the rails are integrated in the ceiling or wall to wall installed. The rails can be ordered in meter lengths with either short or long cut-out.

The short cut-out is used for ceiling hoist and traverse trolleys up to 375 kg (825 lbs).

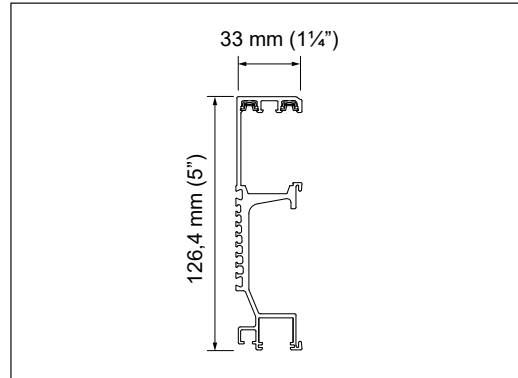


The long cut-out is used for parrallel rails with HD traverse trolleys 500 kg (1100 lbs)



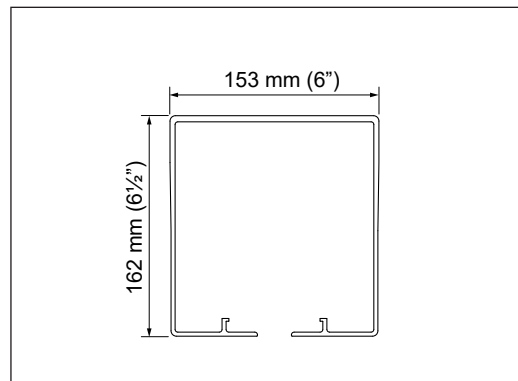
Wall rail can be ordered with or without charging liner. The rails is available in meter lengths and will be cut to size by the installer onsite.

The rails are available in the following lengths: 3 m (117"), 4 m (157"), 5 m (196"), 7 m (274")



GHZ rail can only be used as traverse rail in a Wall rail system, and can be ordered in meter lengths, and will be cut to size by the installer onsite.

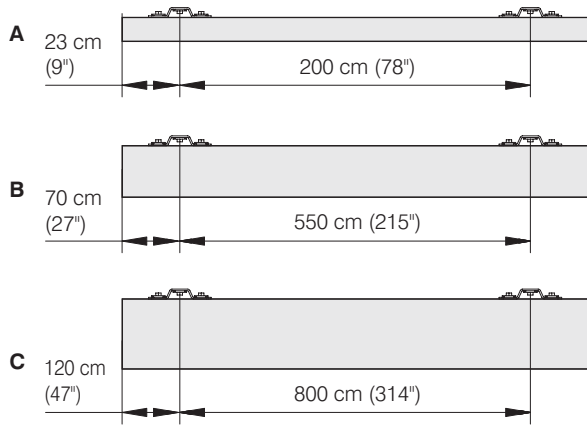
The rails are available in the following lengths: 3 m (117"), 4 m (157"), 5 m (196")



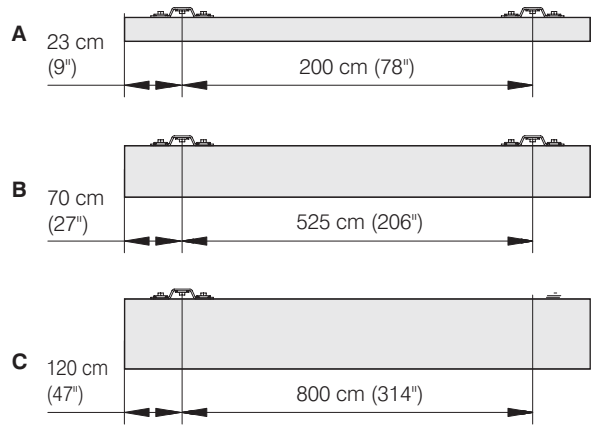


Max distance between brackets

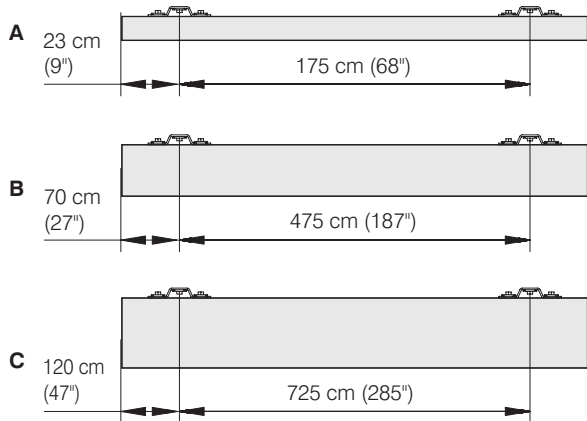
Max 175 kg (385 lbs)



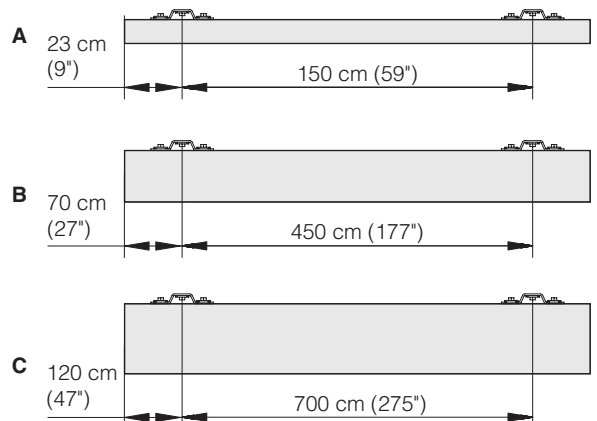
Max 205 kg (450 lbs)



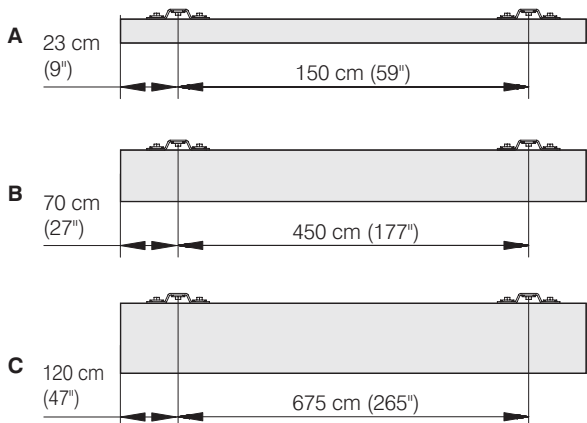
Max 255 kg (560 lbs)



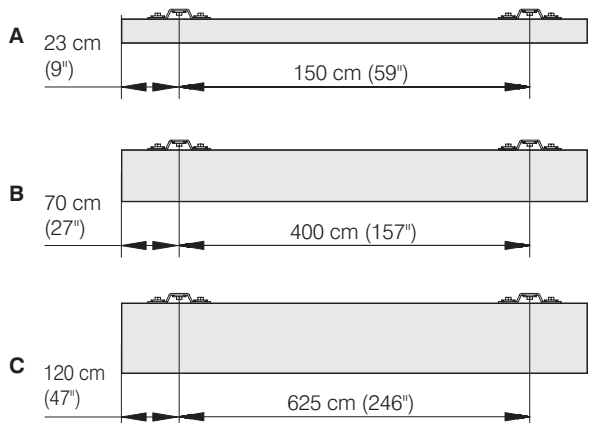
Max 275 kg (605 lbs)



Max 300 kg (660 lbs)



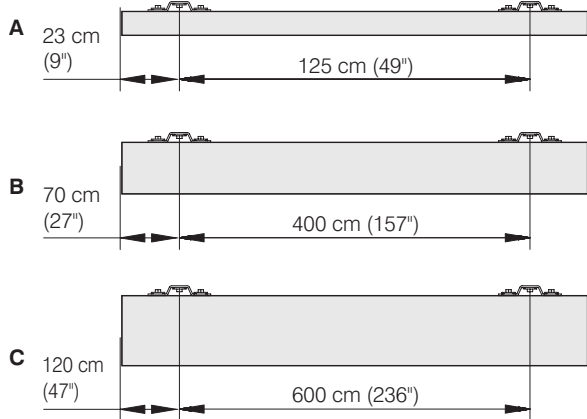
Max 350 kg (770 lbs)



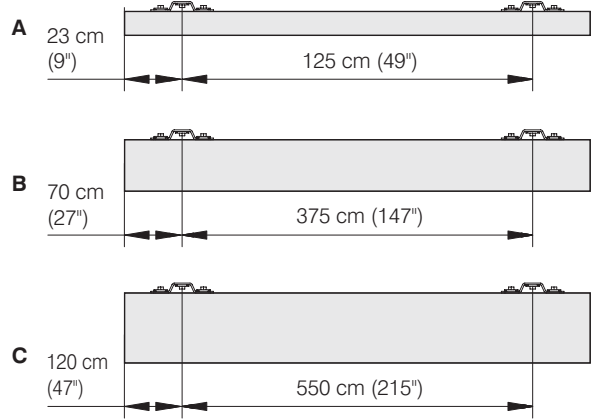


Max distance between brackets

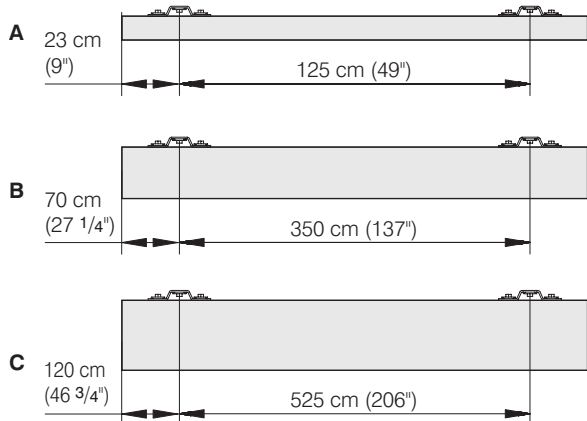
Max 375 kg (825 lbs)



Max 400 kg (880 lbs)



Max 500 kg (1100 lbs)





PLANNING

A traverse rail mounted between the parallel rails is an aesthetically good solution, as the rail is installed close to the ceiling and takes up a minimum of space in the room.

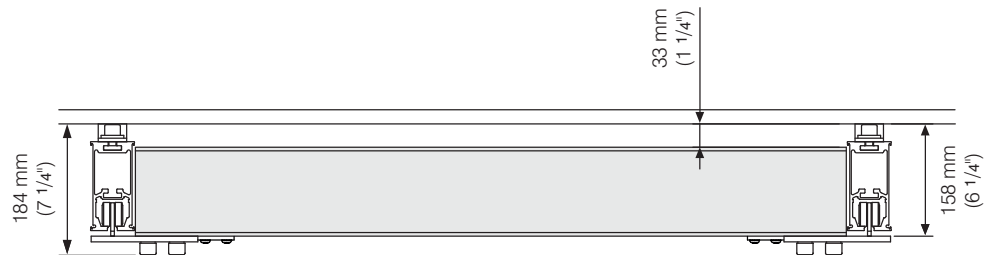
A system

Rail A traverse rail mounted between rail A parallel rails.



B system

Rail B traverse rail mounted between rail B parallel rails.



C system

Rail C traverse rail mounted between rail C parallel rails.





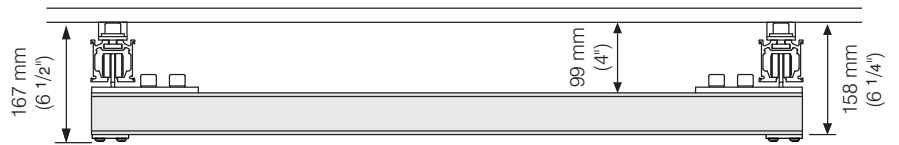
PLANNING

An underhanging traverse rail is used

- When it is impossible to mount the traverse rail between the parallel rails, because lamps, smoke alarms or similar equipment have been installed on the ceiling.
- When the traverse and parallel rails cannot be of equal height.

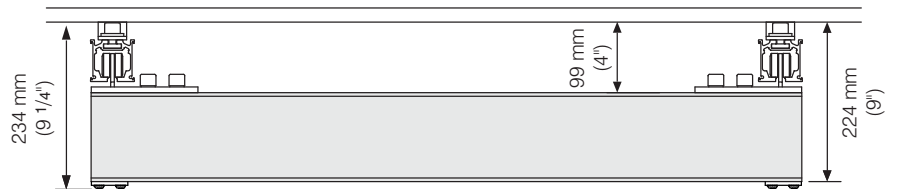
D system

Rail A parallel rails with underhanging rail A traverse rail.



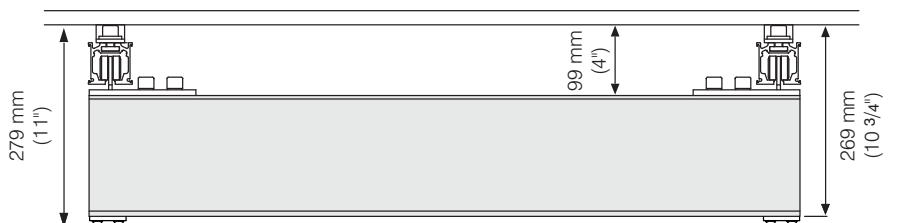
E system

Rail A parallel rails with underhanging rail B traverse rail.



F system

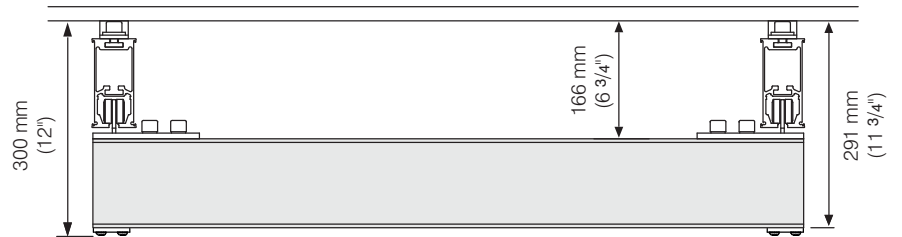
Rail A parallel rails with underhanging rail C traverse rail.





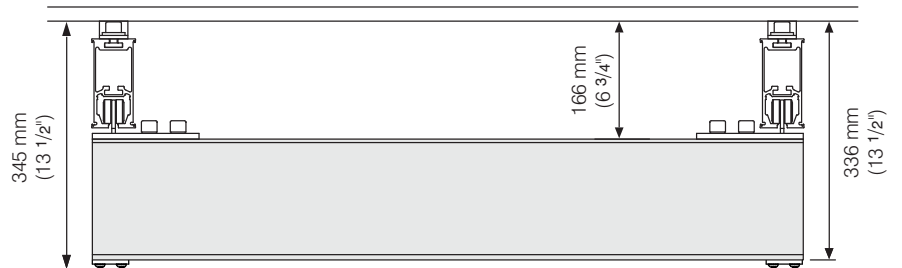
G system

Rail B parallel rails with underhanging rail B traverse rail.



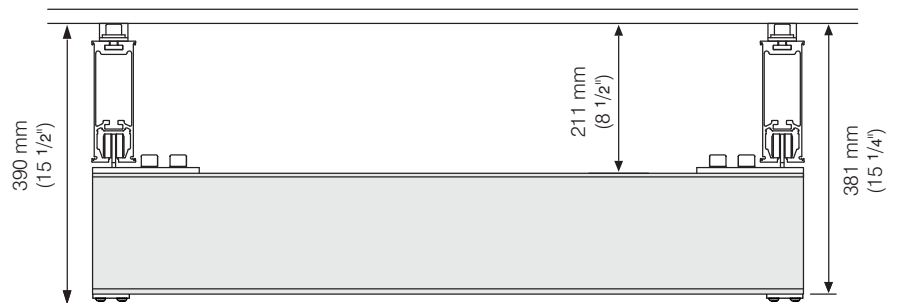
H system

Rail B parallel rails with underhanging rail C traverse rail.



I system

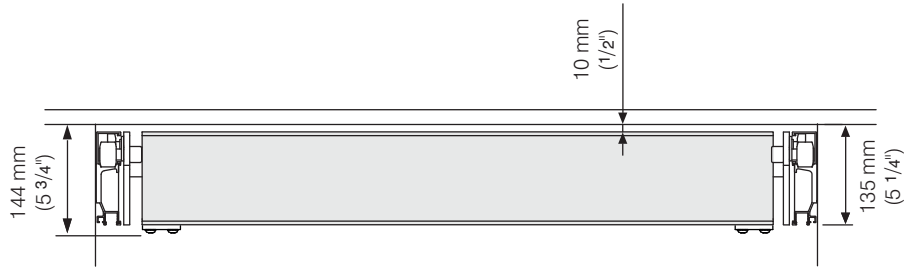
Rail C parallel rails with underhanging rail C traverse rail.





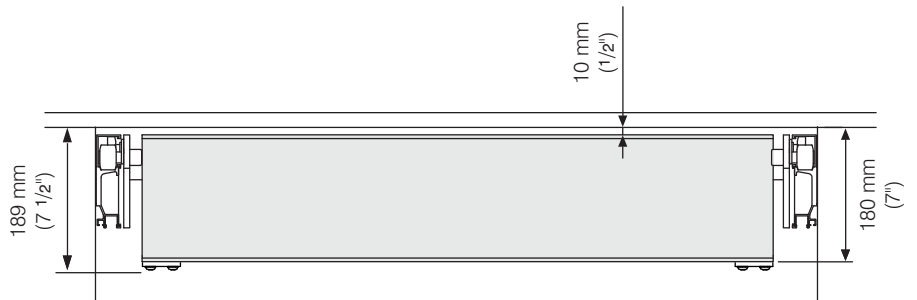
J system

Wall rails with B traverse rail.
SWL: 255 kg (560 lbs).



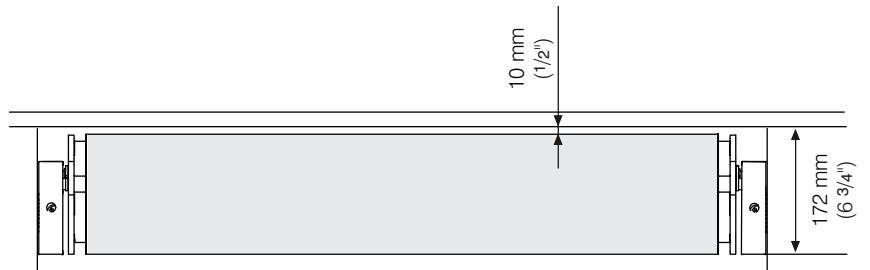
JC system

Wall rails with C traverse rail.
SWL: 255 kg (560 lbs)



K system

Wall Rails with GHZ traverse rail.
SWL: 255 kg (560 lbs)

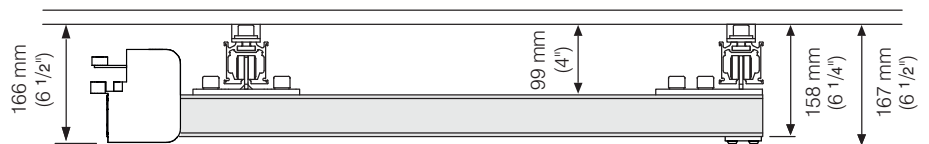




The rails can be cut to size so that room-covering and single track systems can be combined, even though different rail types are used in the two systems.

L system

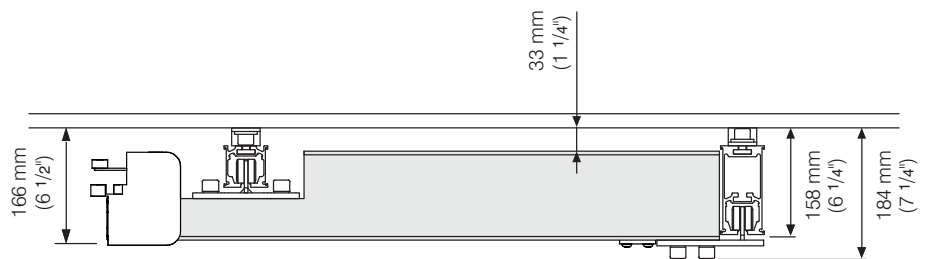
Rail A parallel rails with underhanging Rail A traverse rail, to a combination system.
 SWL: 255 kg (560 lbs).



M system

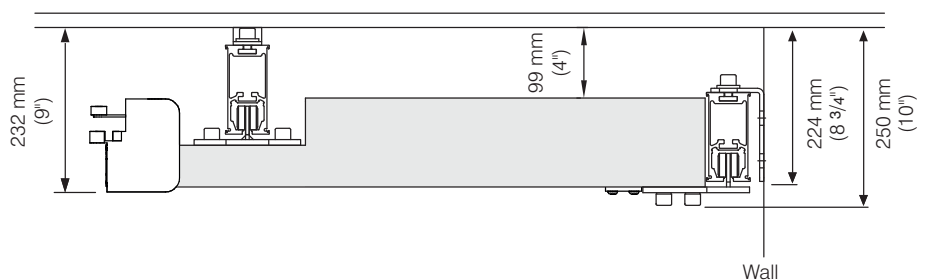
Rail A/Rail B parallel rails with underhanging Rail B traverse rail/intermediate suspension, cut-out for a combination system.

This solution is the most frequently used of the combination solutions and, thanks to the solution with intermediate suspension, it has a harmonious appearance. In addition the height of the combined system can be minimised with the help of a Rail A facing the combination side.
 SWL: 255 kg (560 lbs).



MB system

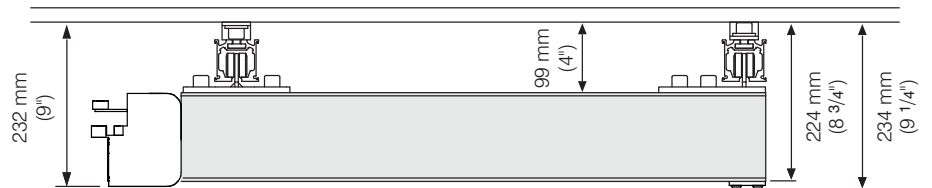
Rail B parallel rails with underhanging Rail B traverse rail/intermediate suspension, cut-out for a combination system.
 SWL: 255 kg (560 lbs).





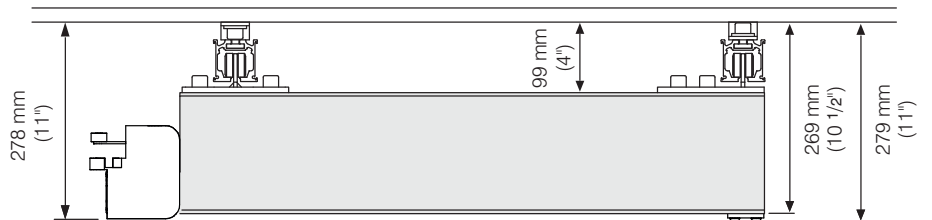
N system

Rail A parallel rails with underhanging Rail B traverse rail cut-out for a combination system.
SWL: 375 kg (825 lbs)



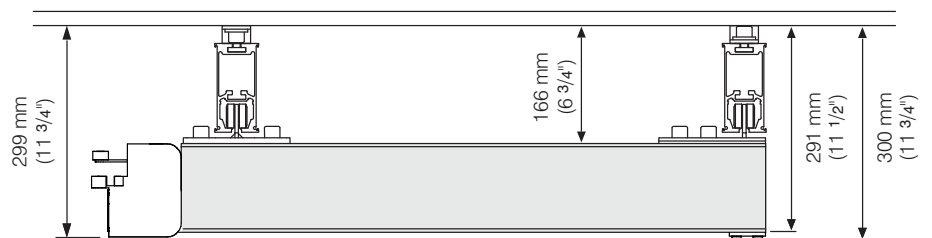
O system

Rail A parallel rails with underhanging Rail C traverse rail cut-out for a combination system.
SWL: 375 kg (825 lbs)



P system

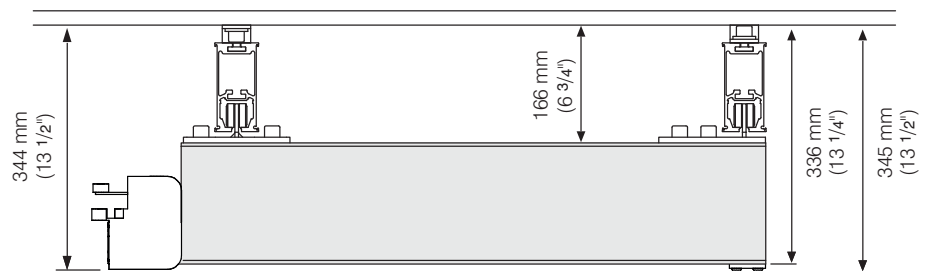
Rail B parallel rails with underhanging Rail B traverse rail cut-out for a combination system.
SWL: 375 kg (825 lbs)





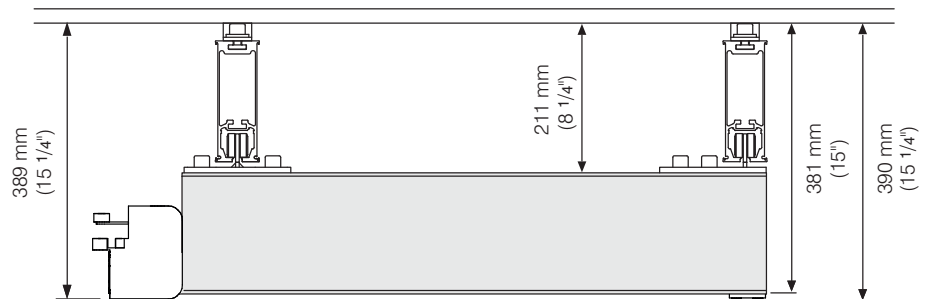
Q system

Rail B parallel rails with underhanging Rail C traverse rail cut-out for a combination system.
SWL: 375 kg (825 lbs)



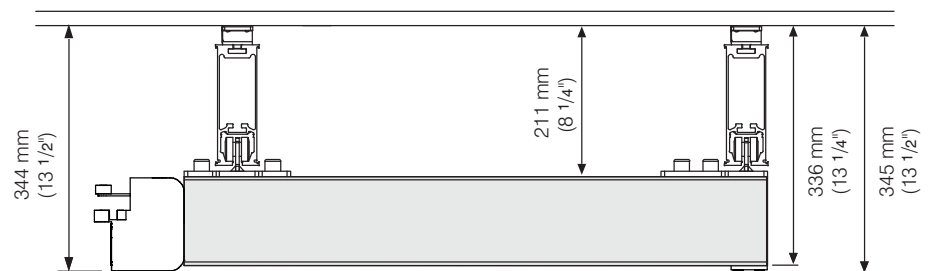
R system

Rail C parallel rails with underhanging Rail C traverse rail cut-out for a combination system.
SWL: 375 kg (825 lbs)



S system

Rail C parallel rails with underhanging Rail B traverse rail short cut-out for Combi-lock.
SWL: 375 kg (825 lbs)





Rail curves are used where it is necessary to change the direction of the rail in a single-rail system.

Rail curves are available in angles of 30°, 45°, 60° and 90° and it is A or A+ rail.

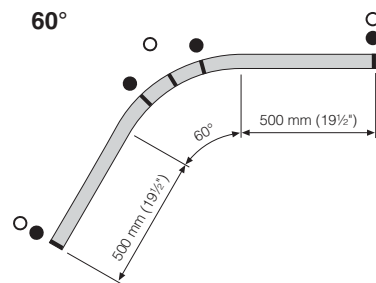
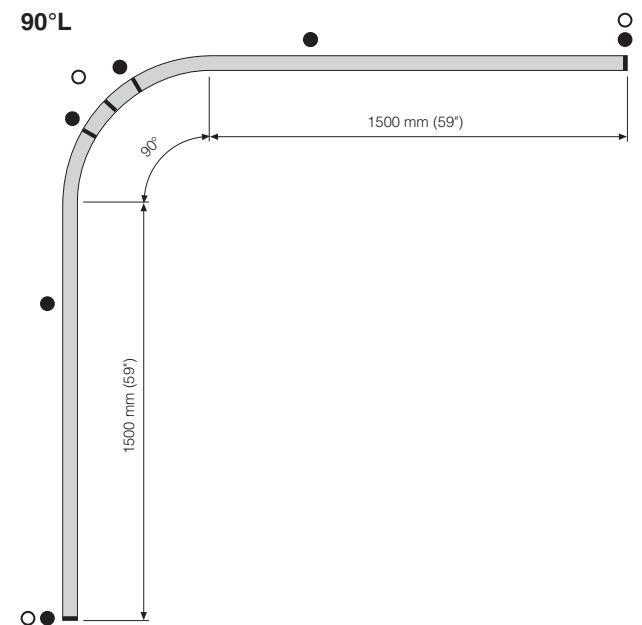
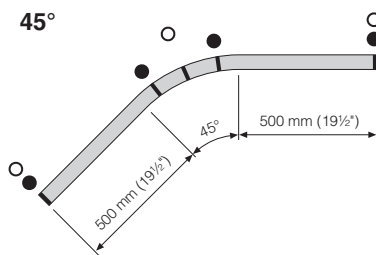
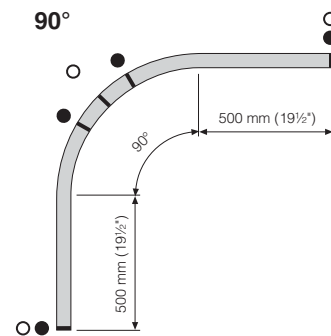
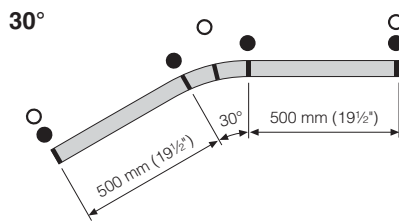
As a minimum three brackets must be used to mount all rail curves with SWL at 255 kg (560 lbs) – one of the brackets must always be placed in the middle of the curve.

For curves installed with a SWL more than 255 kg (560 lbs), 4 brackets should be used as minimum.

○ = Max 255 kg (560 lbs)

● = Max 500 kg (1100 lbs)

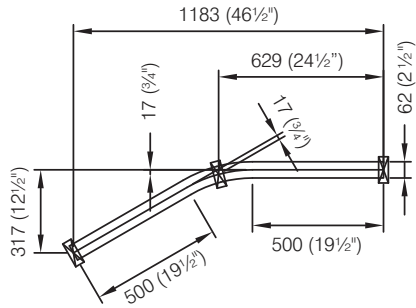
All rail curves are with a 500 mm (19½") radius to center of rail.



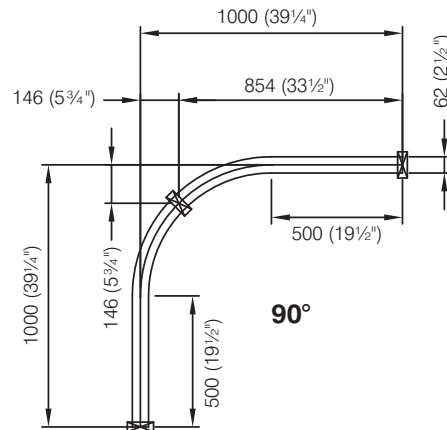


SWL max 255 kg (560 Lbs)

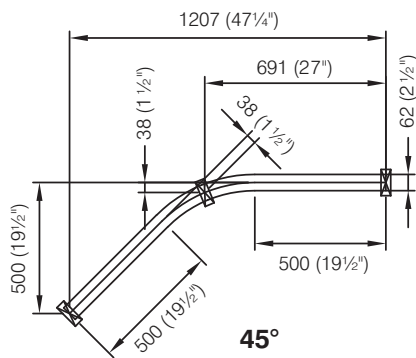
All curves are with a 500 mm (19½") radius to center of rail.



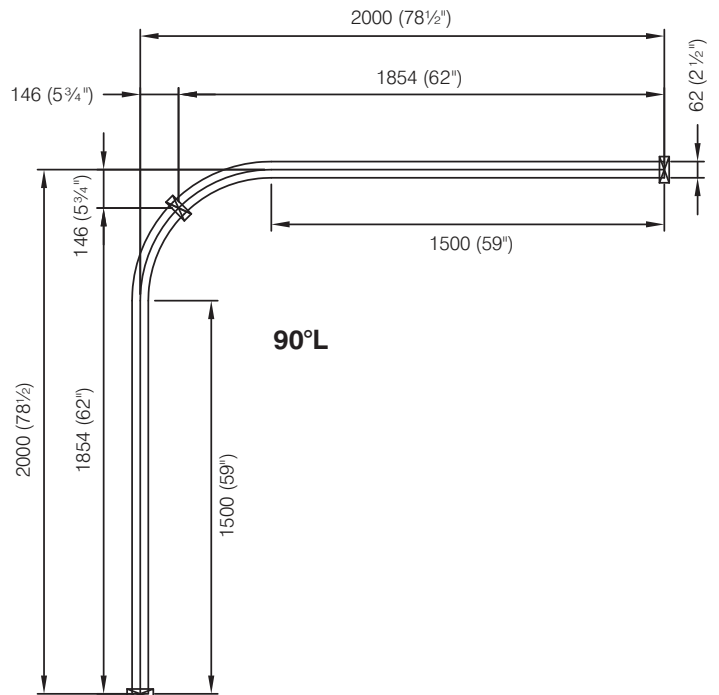
30°



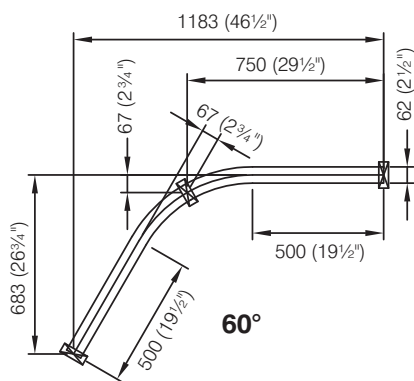
90°



45°



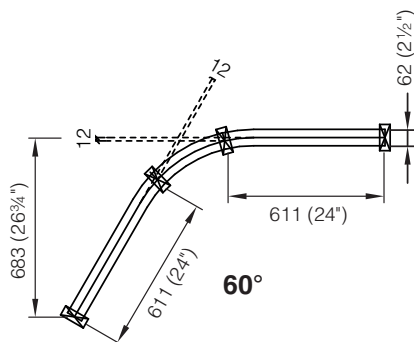
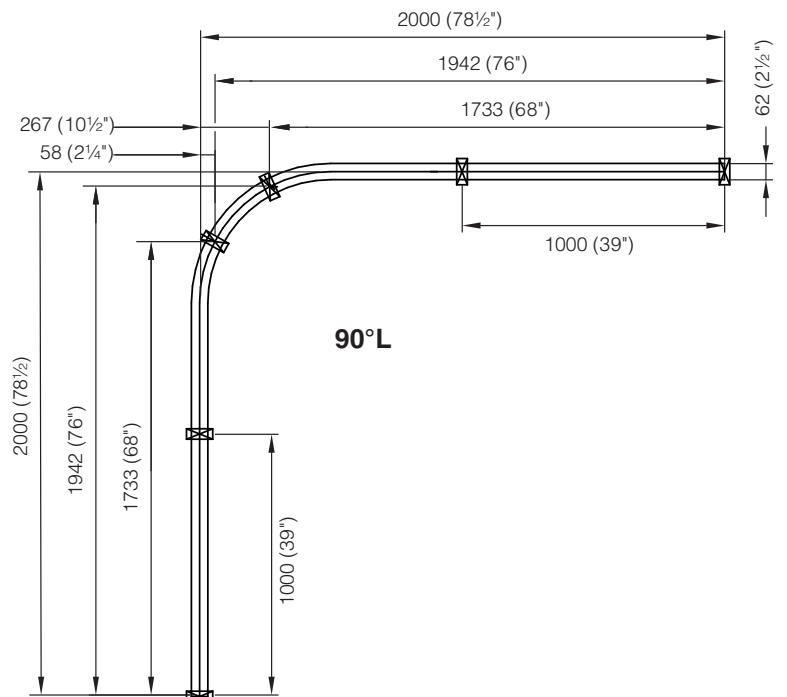
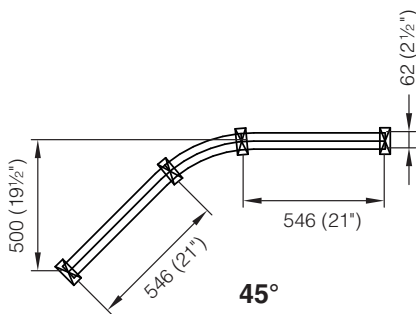
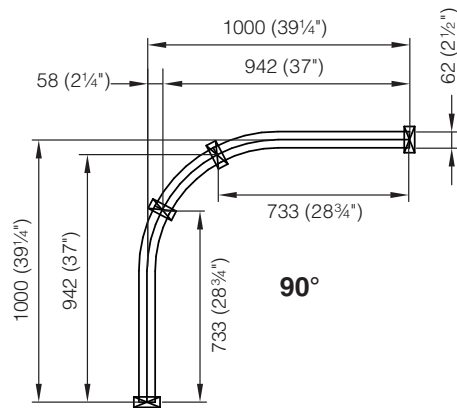
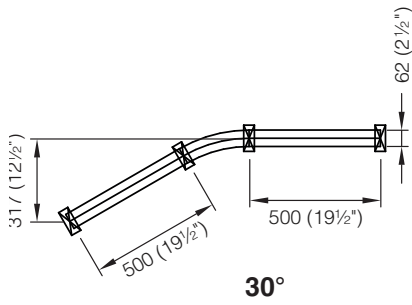
90°L



60°



SWL max 500 kg (1100 Lbs)

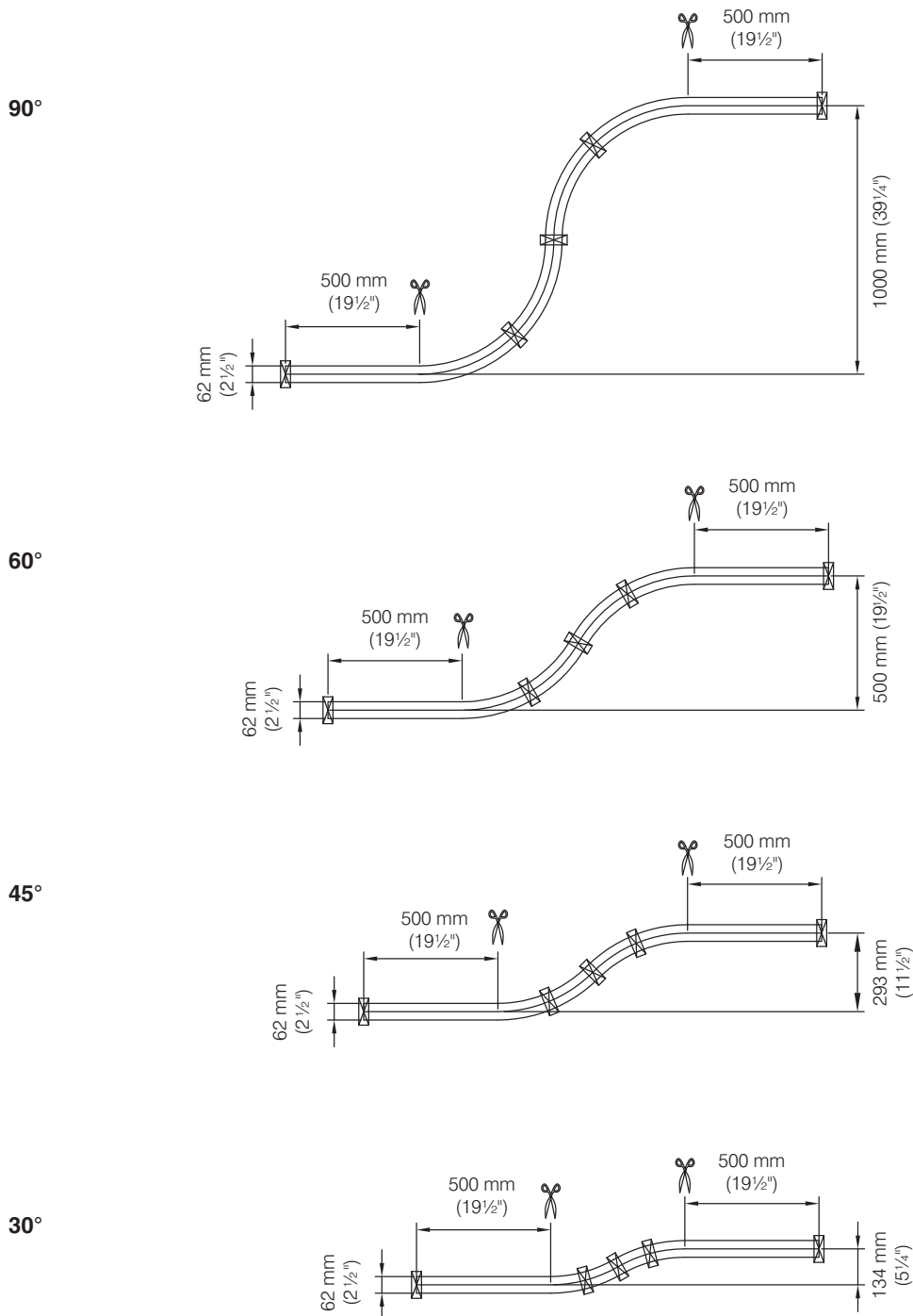




There are many possible combinations of rail curves. All standard curves end in a 500 mm straight rail. The dimensions given are the absolute minimum dimensions.

Note: The scissor symbol indicates the max. length which can be shortened of rail curves.

Note: The below systems are shown with brackets for SWL 255 kg (560 Lbs).





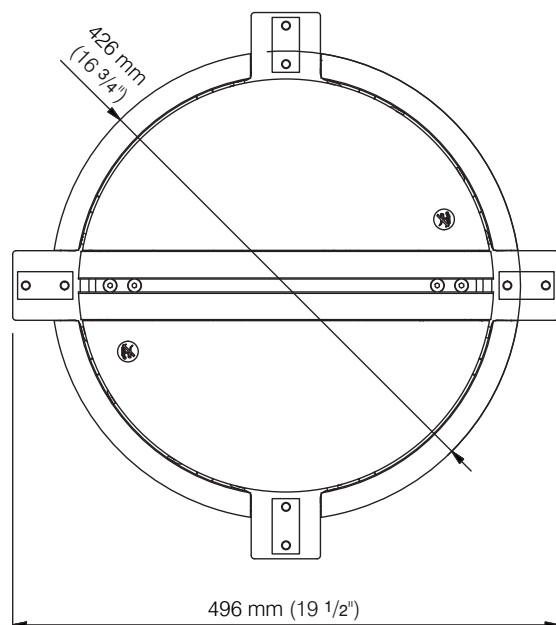
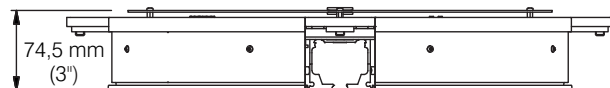
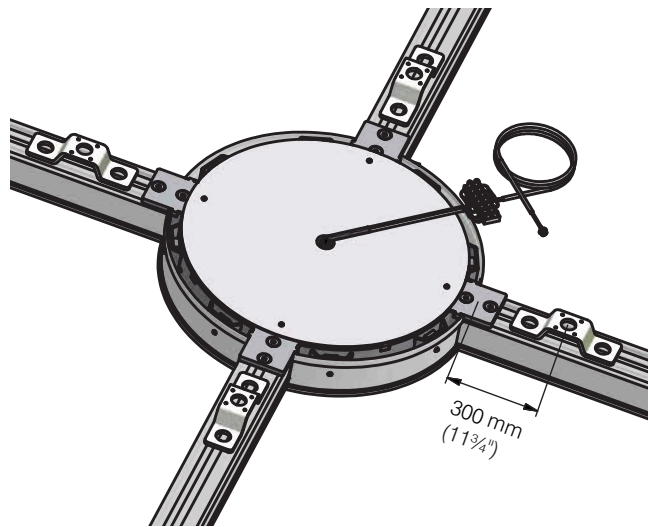
PLANNING

A Turntable must be installed in places where two rails cross each other. The Turntable is electrically operated. The 4 ceiling brackets must be installed as close as possible to the Turntable. Maximum distance from center of Turntable to center of Ceiling bracket is max. 500 mm (20").

The Turntable is A rail and can be built into the ceiling so only the lower part is visible.

Note: There are two different Turntables either SWL 255 kg (560 lbs) or SWL 375 kg (825 lbs)

Note: There is an option for activation of the Turntable via an IR hand control.





Switch tracks are used where there is a need to lead the rail in several directions. The Switch track is operated electrically.

As a minimum a bracket must be mounted at each rail end of the Switch track.

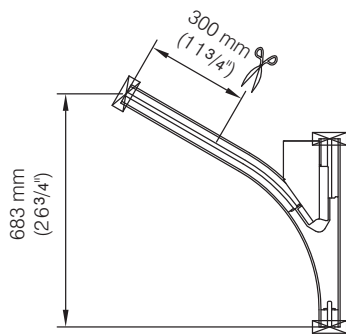
The Switch track is A-rail and can be built into the ceiling so only the lower part is visible.

Note: The Switch track can only be used for systems with max 255 kg (560 lbs) lifting capacity.

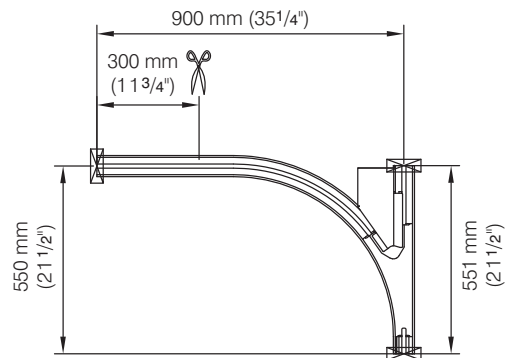
Note: The scissor symbol indicates the max. length which can be shortened of Switch track.

Note: There is an option for activation of the Switch track through an IR hand control

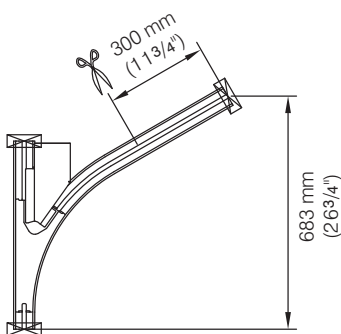
60° Left



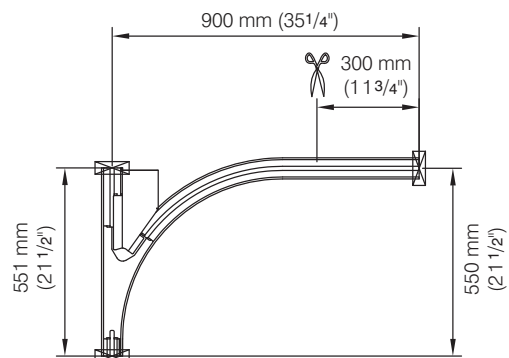
90° Left



60° Right



90° Right

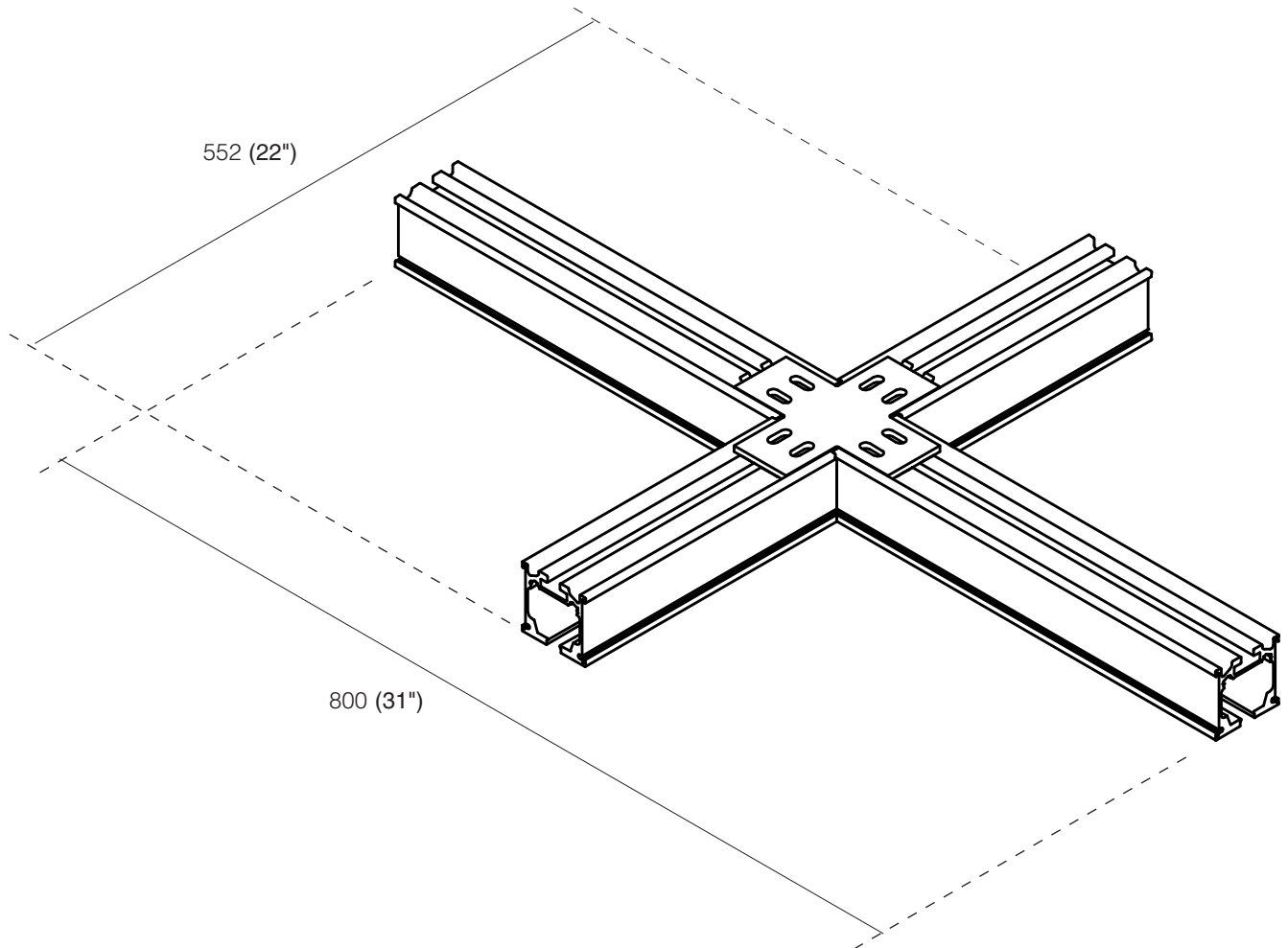




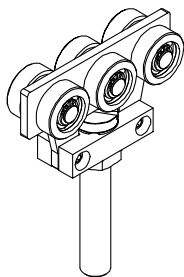
PLANNING

A rail cross is used in systems where a folding door or wall can be integrated together with the rail system.

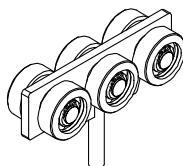
The Rail cross is A rail and there is option for charging liner in the short direction.



Trolley assembly for moveable wall



Trolley assembly for moveable door



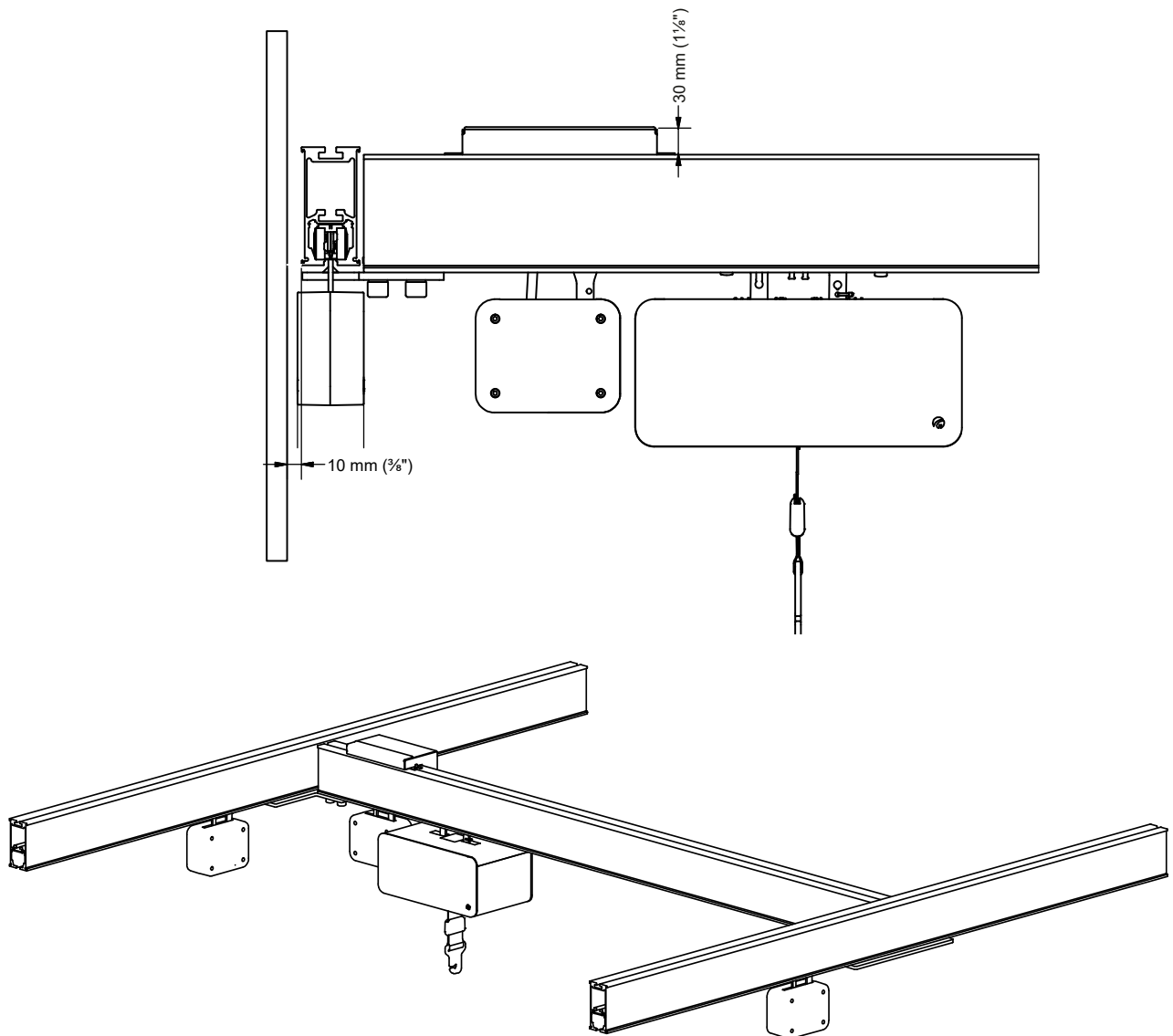


The Positioning Lock is used where a ceiling hoist and/or traverse rails need to be locked in a rail system.

The Positioning lock is only intended for installation with GH3 or GH3+ ceiling hoists.

The positioning lock is only available in an electric (battery powered) version, and is operated via an IR hand control.

The Position lock can only be installed in room covering rail systems or in straight single rails (A-, B- or C-rails).





Combi-lock
Max 255 kg/560 lbs

PLANNING

A Combi-lock is used to lock the rails together when two rail systems are linked. The Combi-lock is always used together with two safety locks to prevent the hoist running out of the rail.

The Combi-lock cannot be installed in the door opening due to insufficient space. In the room where the room-covering system is installed, the parallel rail closest to the adjacent room with the single track system, must be installed at a sufficient distance from the wall to leave space for the two safety locks.

The Combi-lock is manually operated. When the rails are aligned, the safety locks will automatically open and allow free passage for the hoist.

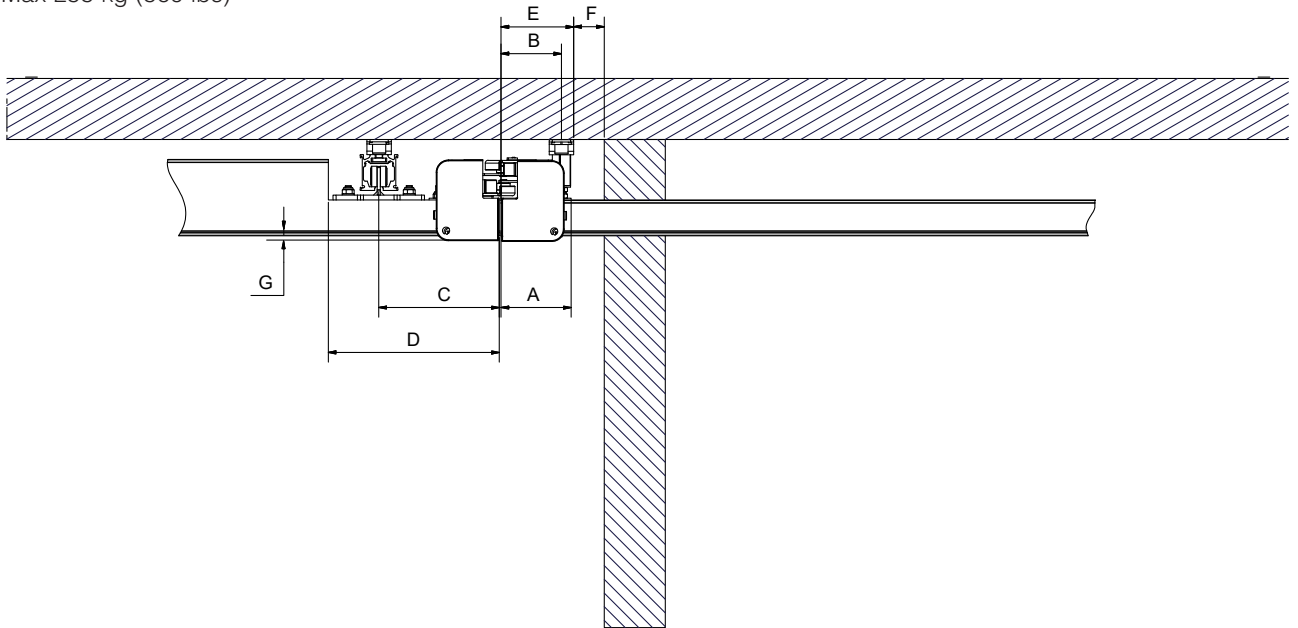
When a room-covering system is linked to a single track system, the single track system must be suspended in order for the two systems to be at the same height.

Combi-Lock systems with traverse rail with long cut-out (e.g. System M) have a max. SWL at 255 kg (560 lbs).

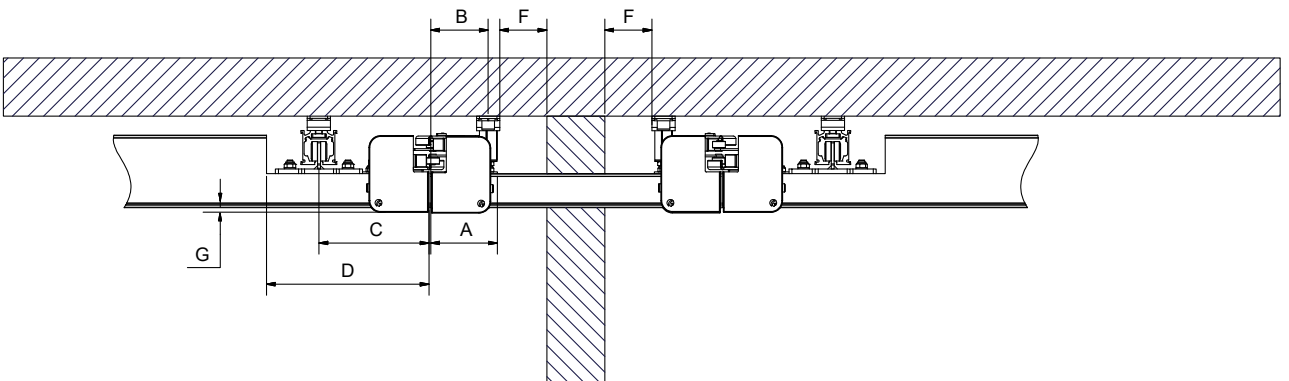
Note: remember to keep an distance from the doorhead to the lower edge of the rail at at least 12 mm (1/2"), to make sure that the sidehung door doesn't collide with the Combi lock.

- | | | | |
|---------|---|--------|-----------|
| A. | : | 114 mm | (4 1/2") |
| B. | : | 99 mm | (4") |
| C. | : | 195 mm | (7 3/4") |
| D. | : | 280 mm | (11 1/4") |
| E. | : | 119 mm | (4 3/4") |
| F. min. | : | 50 mm | (2") |
| G. | : | 10 mm | (3/8") |

Max 255 kg (560 lbs)



Max 255 kg (560 lbs)





Combi-lock
Max 255 kg/560 lbs

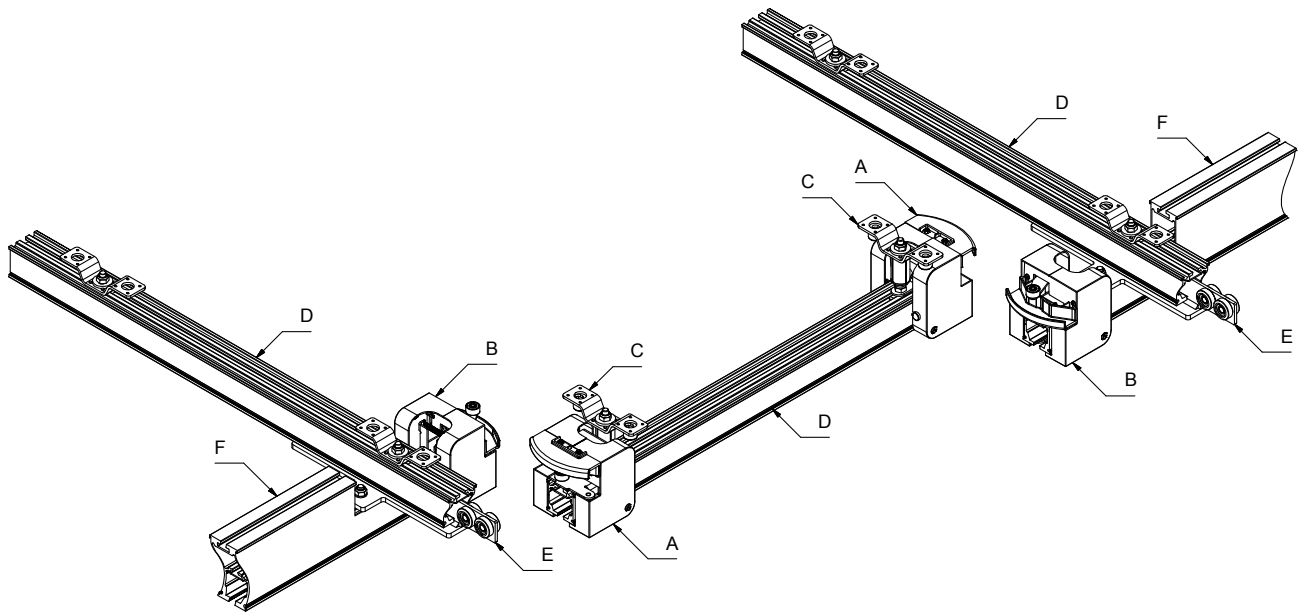
Guldmann™

PLANNING

The double Combi-lock is used at the transition between two room-covering rail systems to provide optimum safety when the two rail systems are used together.

Comprises:

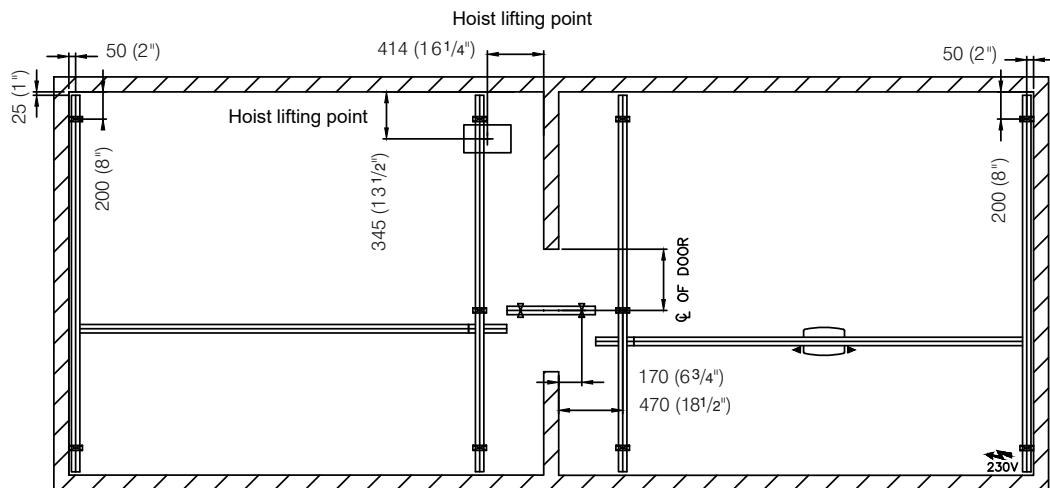
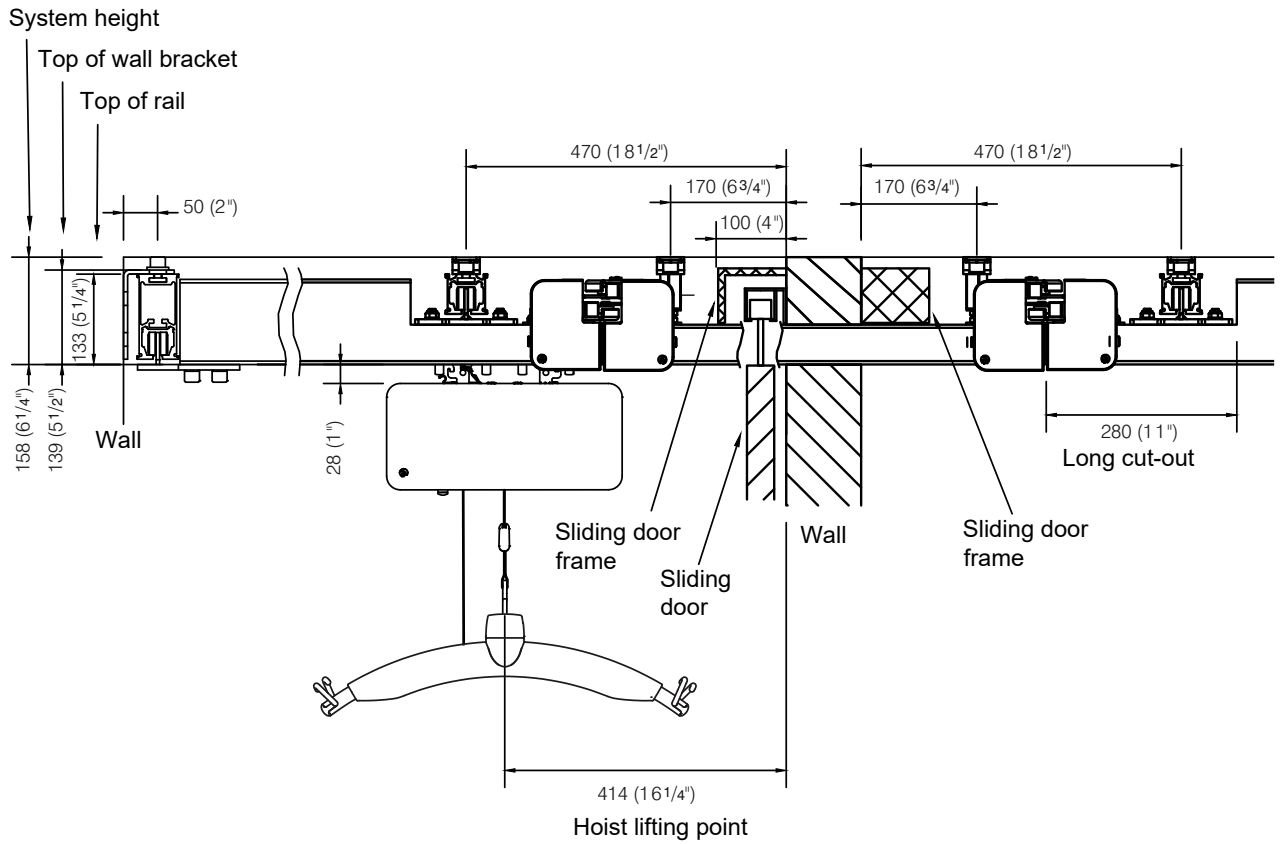
- A. Two safety locks for fixed rail.
- B. Two safety locks for traverse rail.
- C. Ceiling bracket adjustable or ceiling bracket lowered adjustable for Combi-lock.
- D. Rail A, B or C.
- E. Traverse trolley.
- F. Traverse rail is a B or C rail which is cut down to the height of an A rail, in the place where the safety lock for the traverse rail is installed.





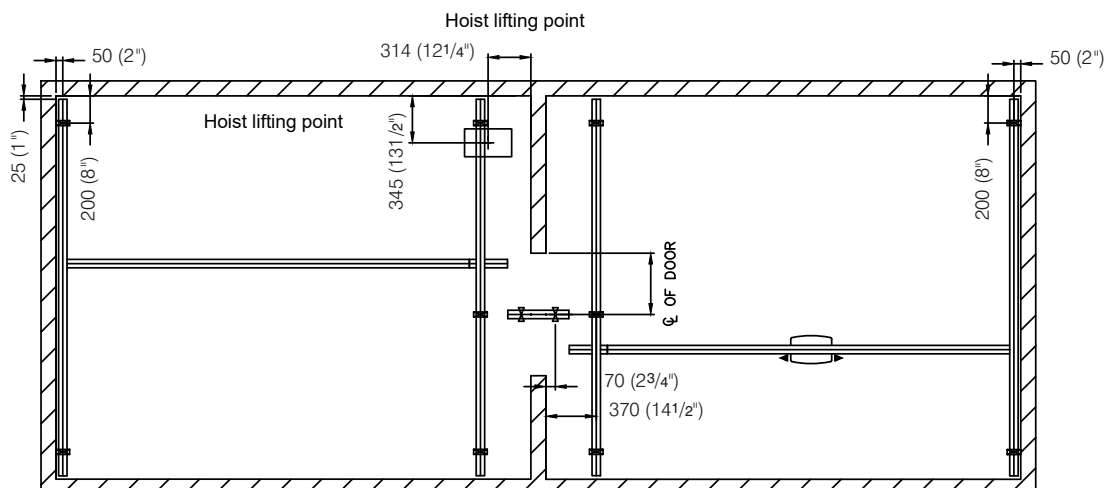
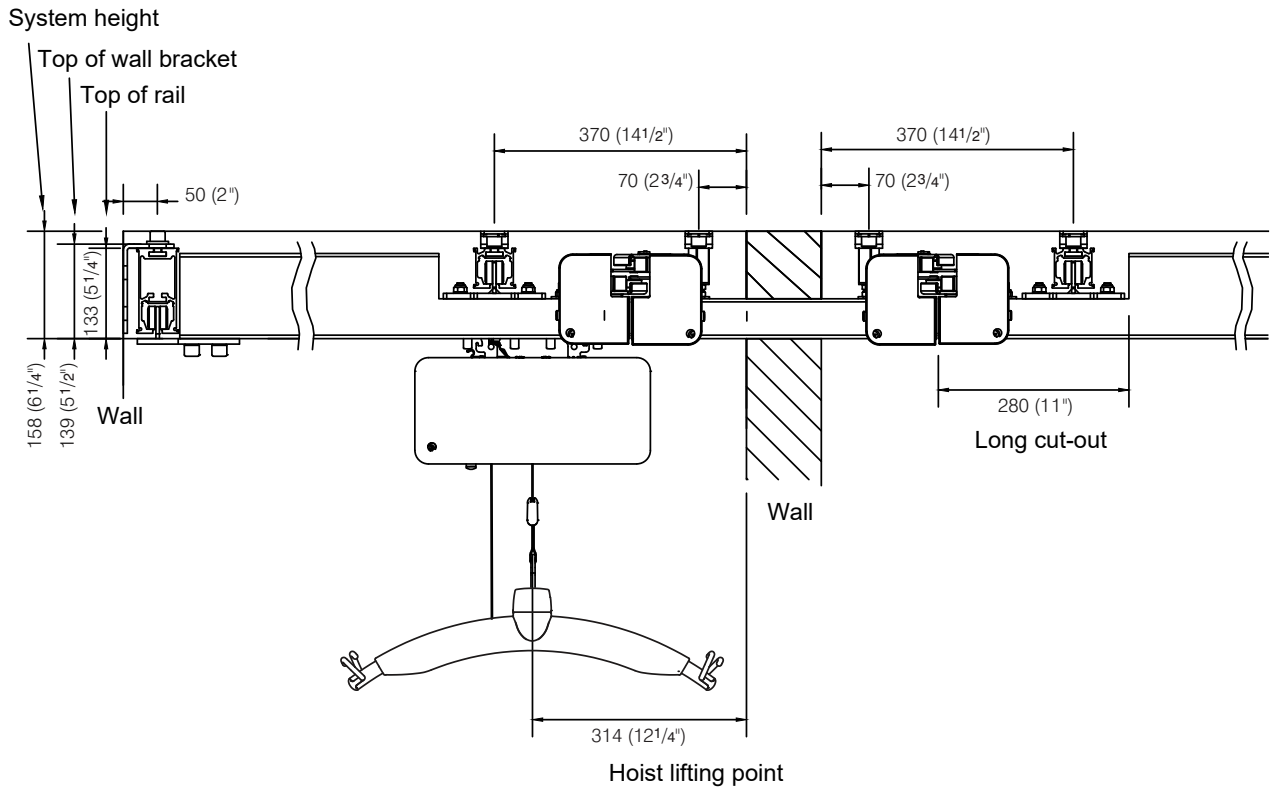
PLANNING

Standard dimensions for M system with sliding door frame.





Standard dimensions for M system without sliding door frame.





Combi-lock
Max 375 kg/825 lbs

Guldmann™

PLANNING

Combi-lock systems with traverse rails with short cut-out (e.g. System N) can be used for systems up to 375 kg (825 lbs).

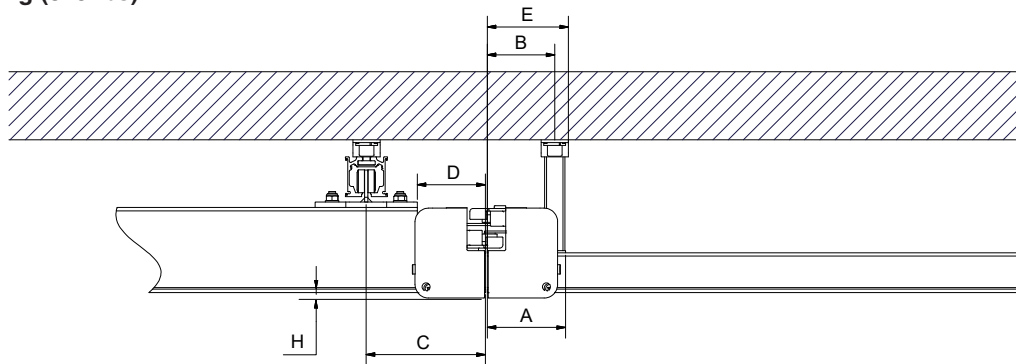
Systems with SWL over 255 kg (560 lbs) may only be installed in concrete ceiling.

Note: remember to keep an distance from the doorhead to the lower edge of the rail at at least 12 mm (1/2"), to make sure that the sidehung door doesn't collide with the Combi lock.

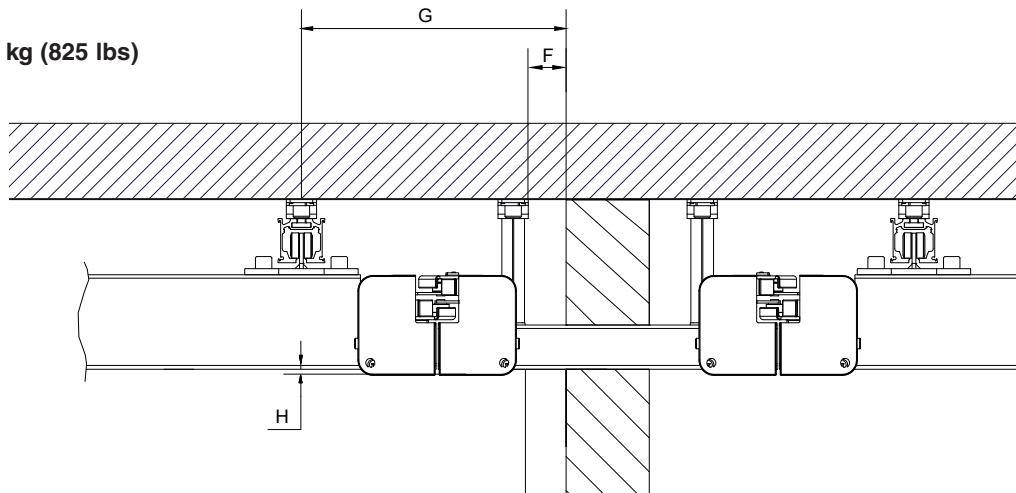
Mål

A	114 mm	(4 1/2")
B	99 mm	(4")
C	175 mm	(6 3/4")
D	100 mm	(4")
E	119 mm	(4 3/4")
F min.	50 mm	(2")
G	350 mm	(13 3/4")
H	10 mm	(3/8")

Max 375 kg (825 lbs)



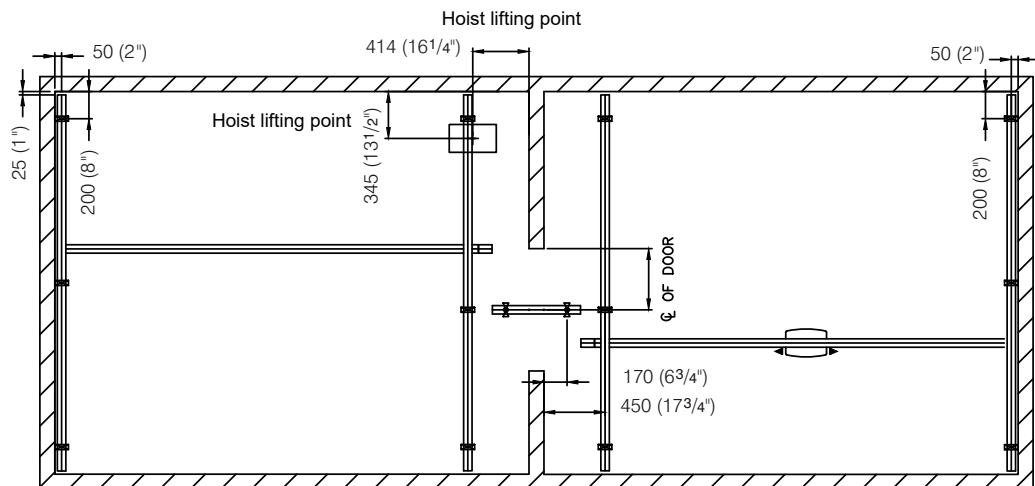
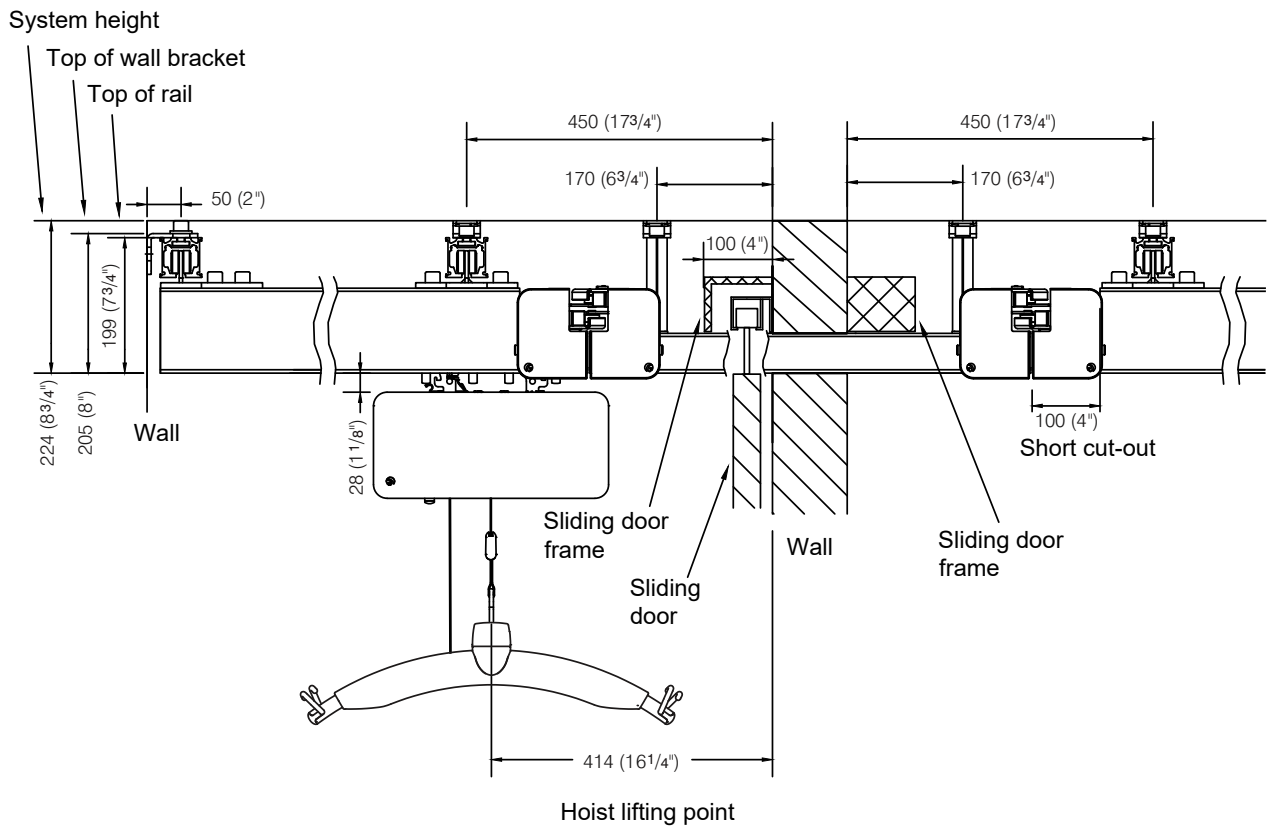
Max 375 kg (825 lbs)





PLANNING

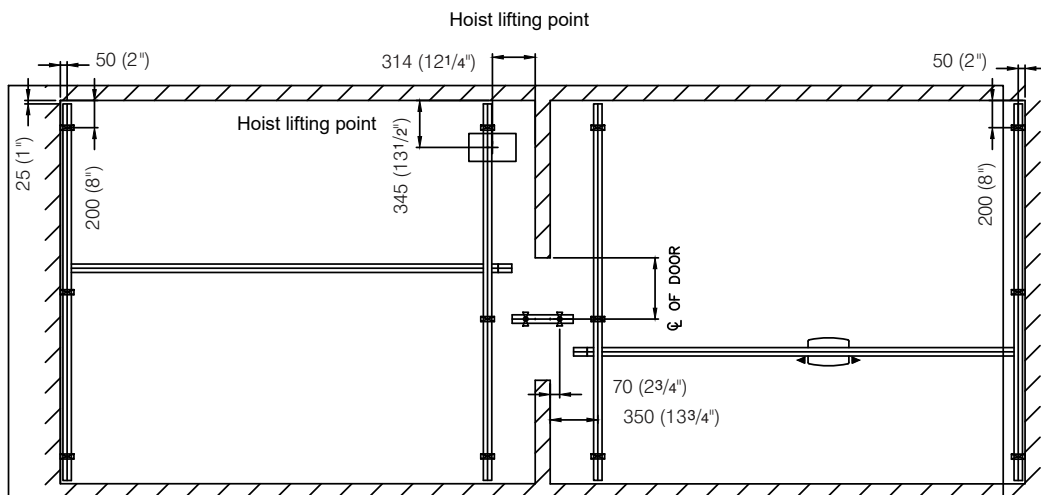
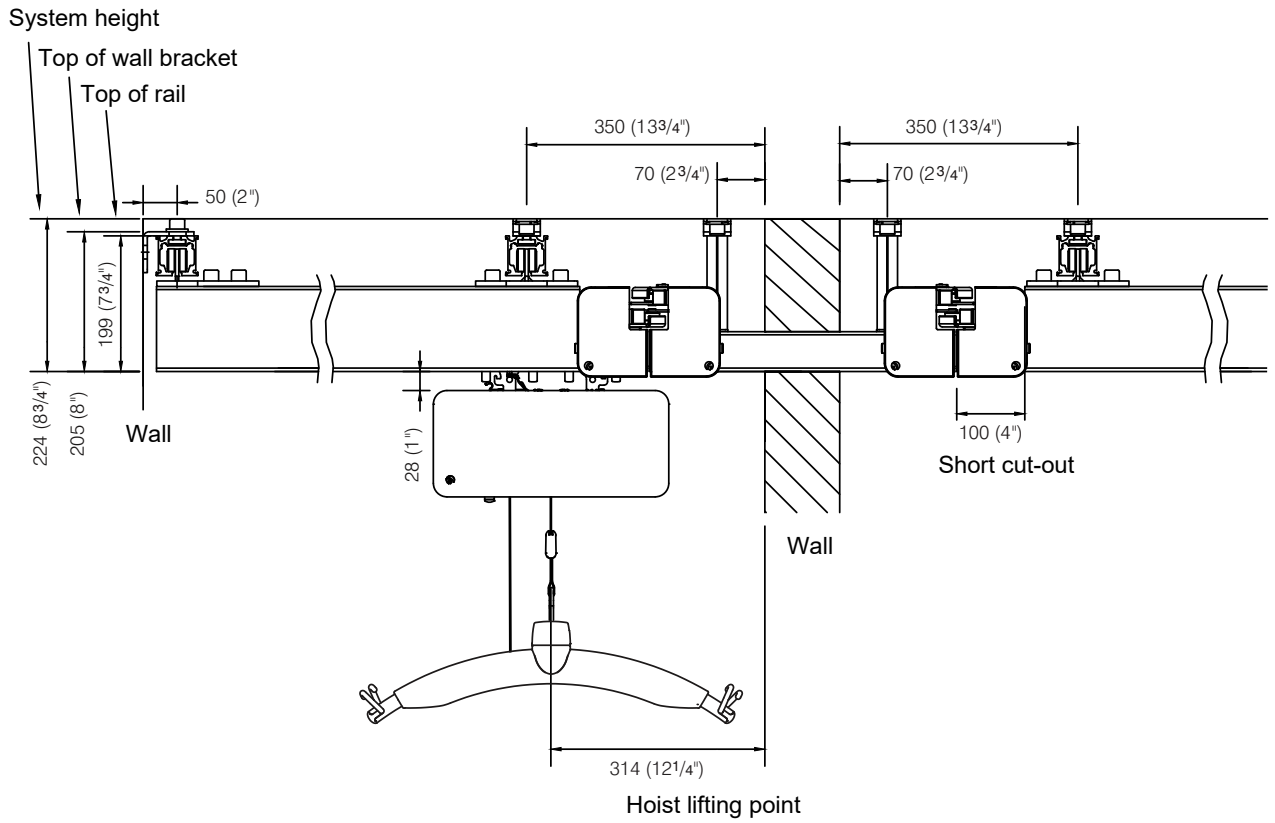
Standard dimensions for N system with sliding door frame.





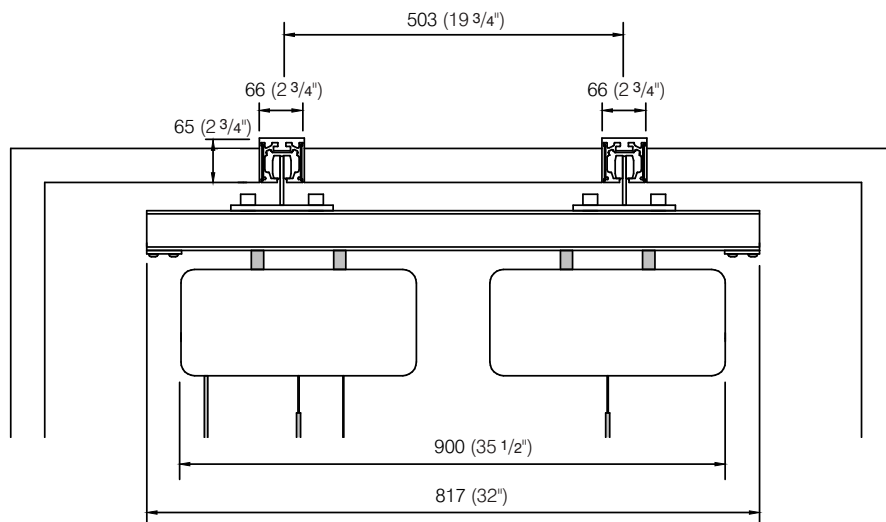
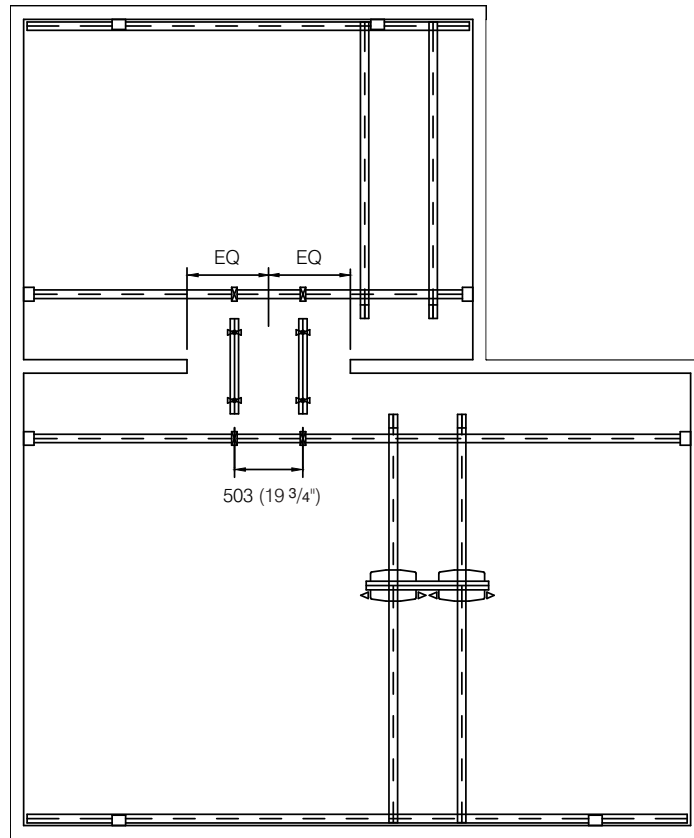
PLANNING

Standard dimensions for N system without sliding door frame.





PLANNING

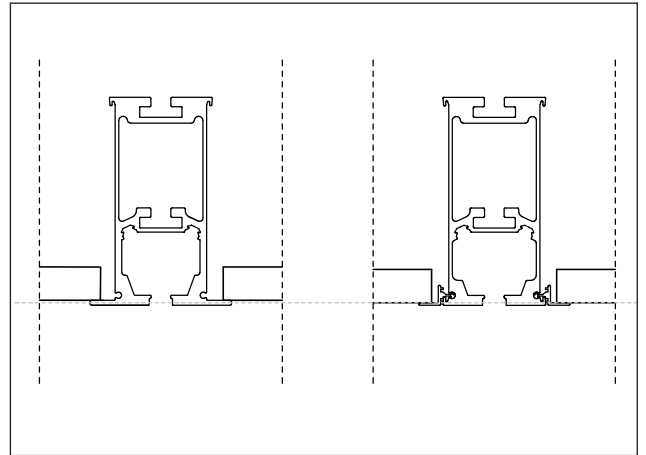


NB! Only with traverse trolley lowered 25 mm/1 inch



Single rail systems

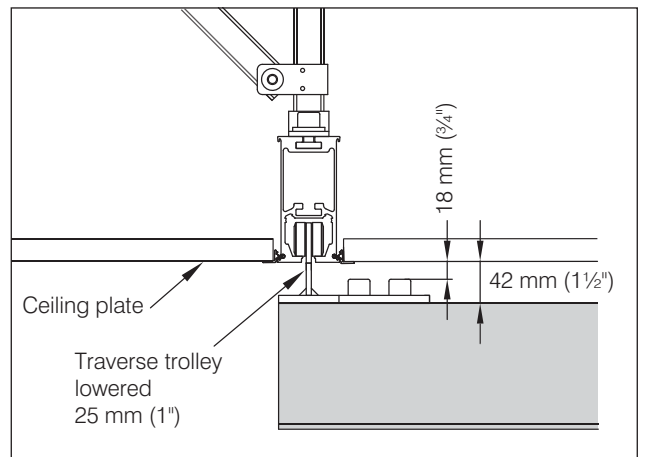
Single rail systems can be built into the ceiling, so that only the lower edge of the rail is visible by using the profile for suspended ceiling, or by using A+, B+ or C+ rails.



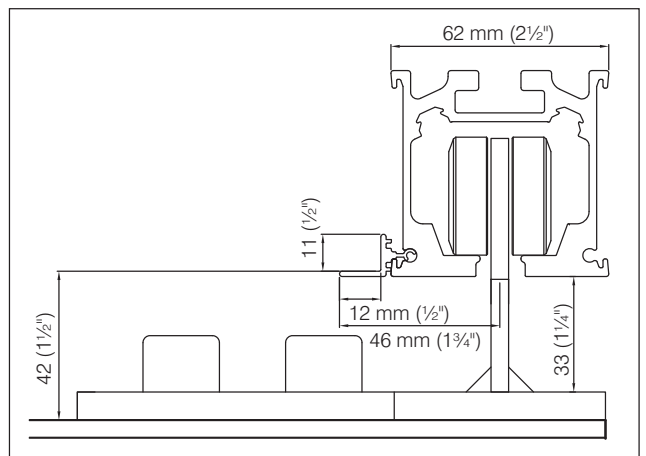
Room-covering systems

In a room-covering system it is possible to build in the parallel rails flush with the ceiling, so that only the lower edge of the rails is visible by using the profile for suspended ceiling together with a lowered traverse trolley, or by using A+, B+ or C+ rails.

The traverse rail can be lowered even more with help of spacers to allow space for e.g. smoke detectors, lamps etc.



Dimension for rails, ceiling profiles and a lowered traverse trolley for rails built into the ceiling.



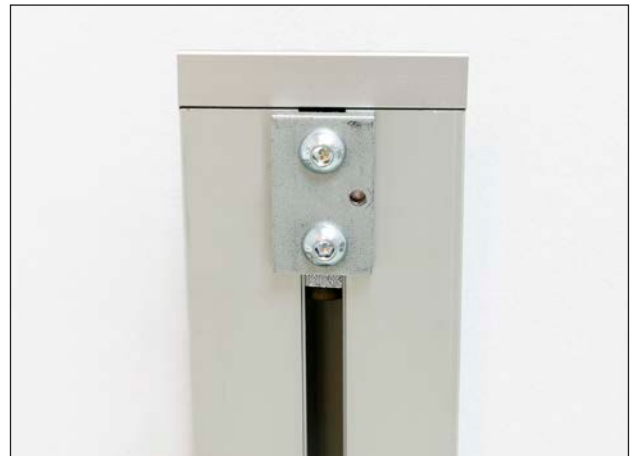


PLANNING

Rails integrated in the ceiling

When using +rails the lower part edge of the rail will be flush with the suspended ceiling.

The ceiling must be self supporting, but can be placed on the ceiling profile. It must not be fastened or secured to the edge profile or the rail.

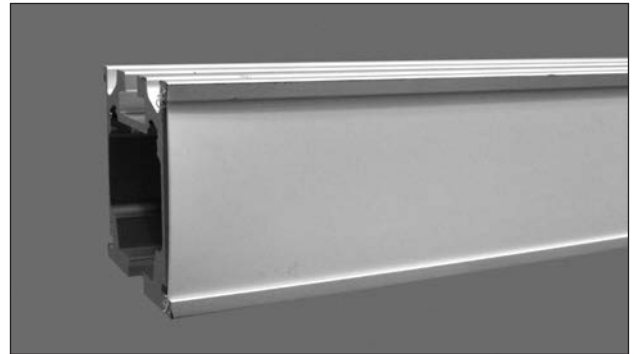




Inserting side cover on rails

Side covers can be added on the rails. The cover is placed in the top and bottom groove on the side of the rail.

The cover can either be dark grey or white.



End covers can be added to the rails, to hold the side covers in place.



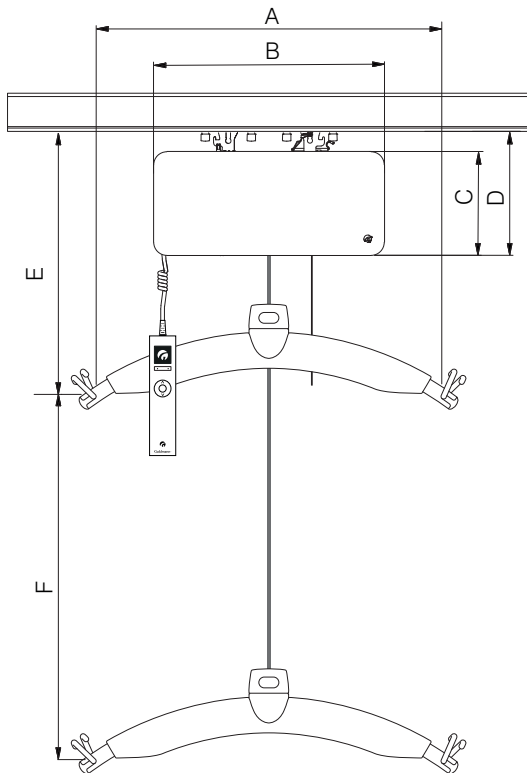
Top cover can be added to the rails between rail and ceiling, to minimize dust at the top of the rail.
Max distance between rail and ceiling 55 mm (2¼")
Top cover will always be white.





Dimensions

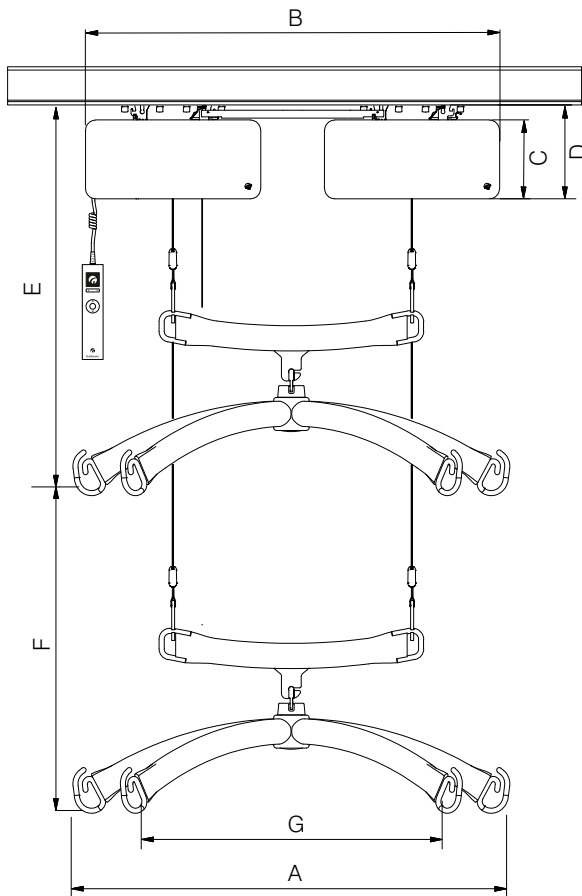
A	580 mm	(22 3/4")
B	345 mm	(13 1/2")
C	156 mm	(6 1/8")
D	184 mm	(7 1/4")
E, min	425 mm	(16 3/4")
F	2500 mm	(98")
Depth of hoist	205 mm	(8")





Dimensions

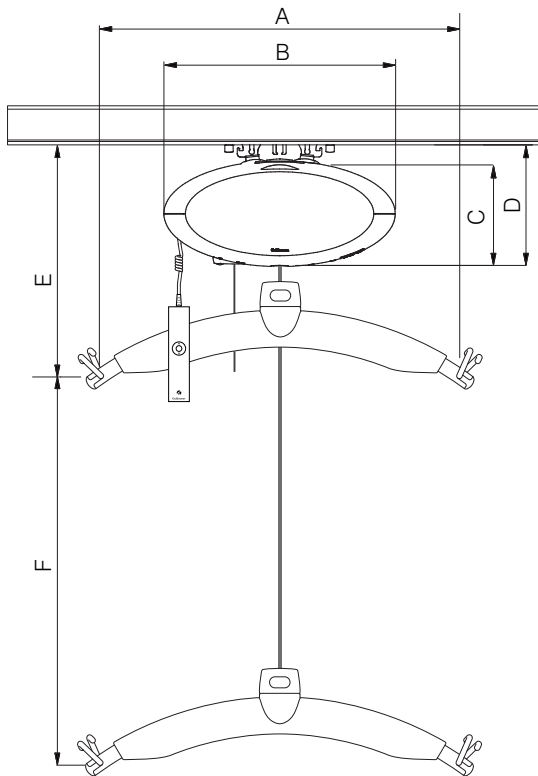
A	860 mm	(33 3/4")
B	817 mm	(32")
C	156 mm	(6 1/8")
D	184 mm	(7 1/4")
E, min	655 mm	(25 3/4")
F	2500 mm	(98")
G	473 mm	(18 1/2")
Depth of hoist	205 mm	(8")





Dimensions

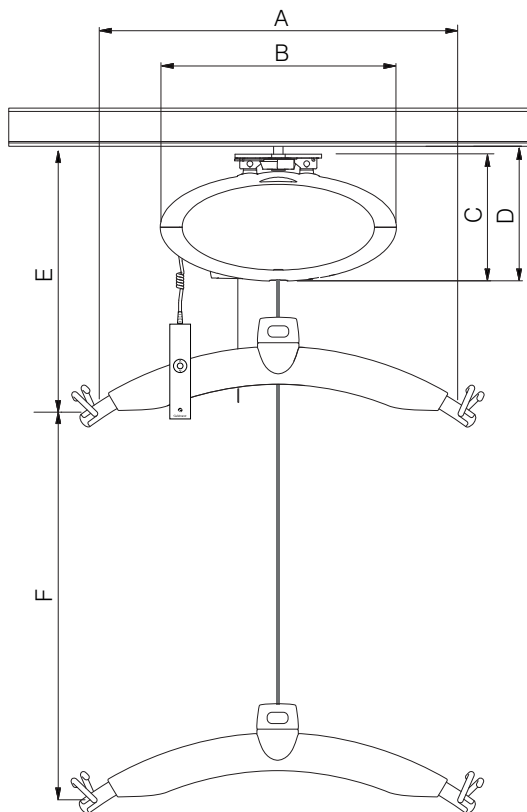
A	580 mm	(22 3/4")
B	350 mm	(13 3/4")
C	156 mm	(6 1/8")
D	184 mm	(7 1/4")
E, min.	415 mm	(16 1/4")
F	2500 mm	(98")
Depth of hoist	194 mm	(7 1/2")





Dimensions

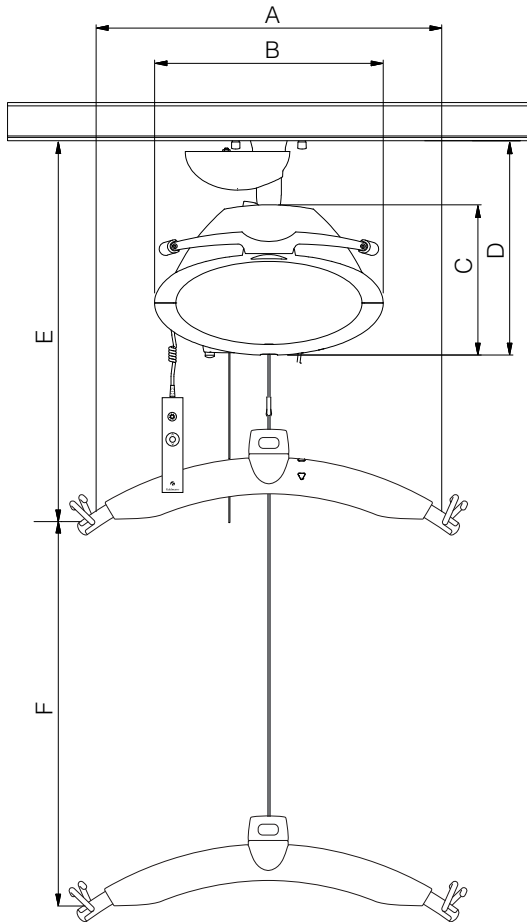
A	580 mm	(22 3/4")
B	350 mm	(13 3/4")
C	187 mm	(7 1/3")
D	196 mm	(7 3/4")
E, min	427 mm	(16 3/4")
F	2500 mm	(98")
Depth of hoist	194 mm	(7 1/2")





Dimensions

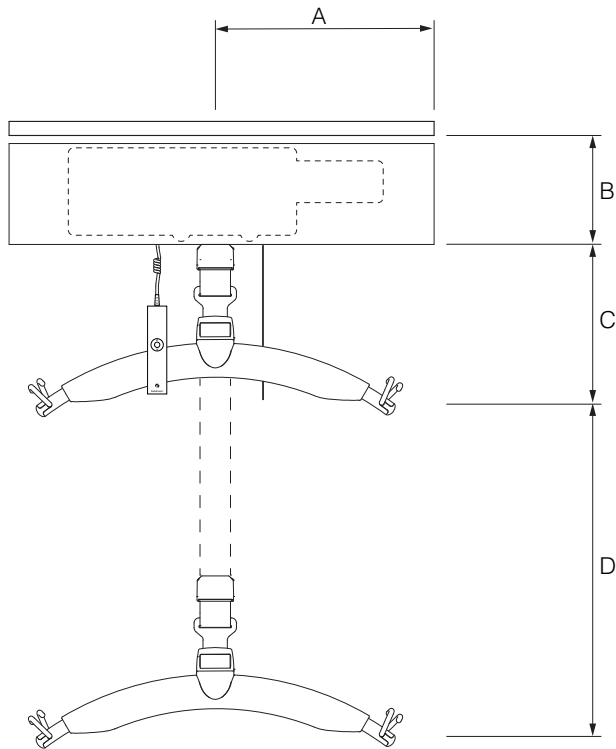
A	530 mm	(20 3/4")
B	350 mm	(13 3/4")
C	230 mm	(9")
D	330 mm	(13")
E, min.	580 mm	(22 3/4")
F	2500 mm	(98")
Depth of hoist	194 mm	(7 1/2")



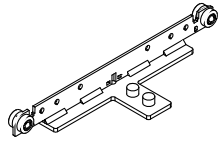
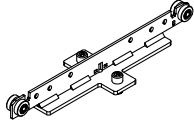
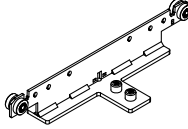
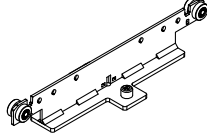
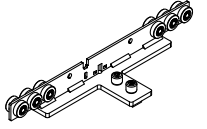
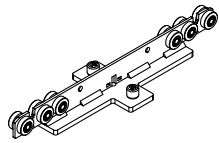
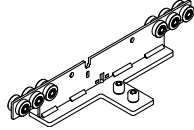
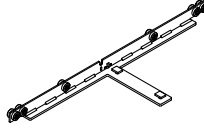
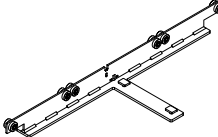
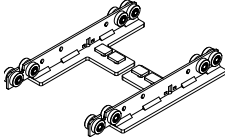
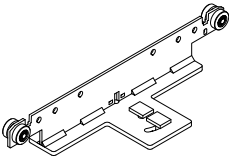
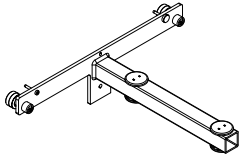
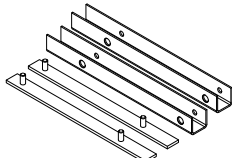
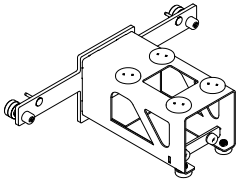
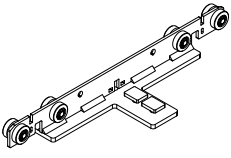


Dimensions

A	450 mm	(18")
B	172 mm	(7")
C	254 mm	(10")
D	2500 mm	(100")
Depth of hoist	155 mm	(6")





TRAVERSE TROLLEYS	TRAVERSE TROLLEY 375 kg (825 lbs)	TRAVERSE TROLLEY CROSS COMBI-LOCK 375 kg (825 lbs)	TRAVERSE TROLLEY LOWERED 25 mm 375 kg (825 lbs)	TRAVERSE TROLLEY CROSS LOWERED 25 mm (1") 375 kg (825 lbs)	TRAVERSE TROLLEY HEAVY DUTY 500 kg (1100 lbs)
					
	550076 : GREY 550491 : WHITE	550779 : GREY 555205 : WHITE	554189 : GREY 551327 : WHITE	554526 : GREY 558664 : WHITE	550078 : GREY 550493 : WHITE
	TRAVERSE TROLLEY HEAVY DUTY CROSS 500 kg (1100 lbs)	TRAVERSE TROLLEY LOWERED 25 mm (1") 500 kg (1100 lbs)	TRAVERSE TROLLEY LONG 400 kg (880 lbs)	TRAVERSE TROLLEY LONG LOWERED 25 mm (1") 400 kg (880 lbs)	TRAVERSE TROLLEY SHORT (1 SET) 375 kg (825 lbs)
					
	559548 : GREY 559549 : WHITE	554546 : GREY 554548 : WHITE	556106 : GREY 555802 : WHITE	558102 : GREY 560080 : WHITE	561960 : GREY 561960-WH : WHITE
TRAVERSE TROLLEY ADJUSTABLE, LOWERED 25 mm (1") 375 kg (825 lbs)	TRAVERSE TROLLEY FLEXIBLE FOR B-RAIL 255 kg (560 lbs)	KIT FOR TRAVERSE TROLLEY FLEXIBLE FOR C-RAIL 255 kg (560 lbs)	TRAVERSE TROLLEY FLEXIBLE FOR GHZ RAIL 255 kg (560 lbs)	TRAVERSE TROLLEY FOR MINI, MIDI, MAXI AND JUMBO RAIL 400 kg (880 lbs)	
					
561091 : GREY 561091-WH : WHITE	560790 : WHITE	560720 : WHITE	556290 : WHITE	561058 : GREY	

Recommendations

Traverse trolley long (556106, 555802, 558102, 560080) should be used in systems where the traverse rail is longer than 5 m (196").

Traverse trolley cross (550779, 555205, 554526, 558664, 559548, 559549) should be used in systems where the traverse rail is underhanging the parallel rails and where there is an overhang at minimum 100 mm (4"). And it must always be used in systems with Combi lock.

Traverse trolley HD (550078, 550493, 559548, 554549, 554546, 554548) can also be used in systems with "curtain gaps". The distance between the rails must not exceed 40 mm (1½")

Traverse trolley short, set of trolleys (561960) can be used where the traverse rail must be closer to the wall than normal. The trolley is 100 mm (4") shorter in one end.

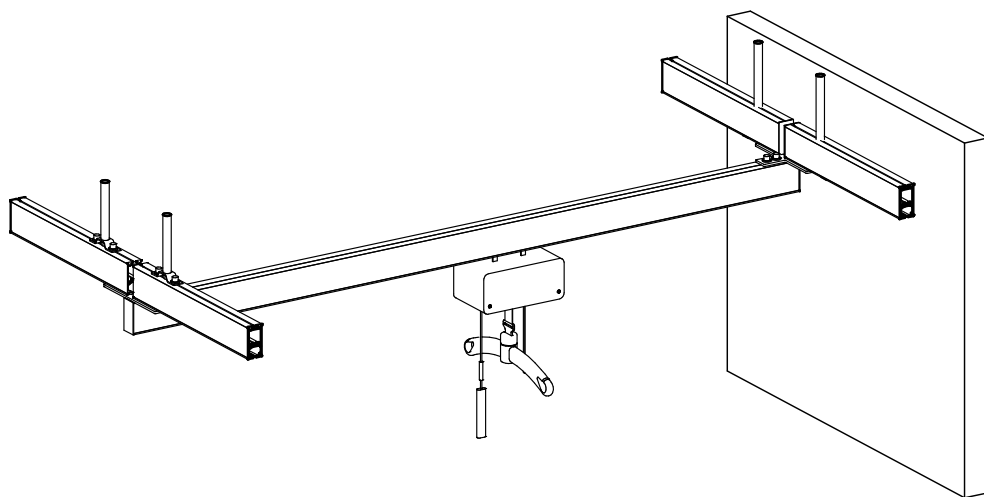
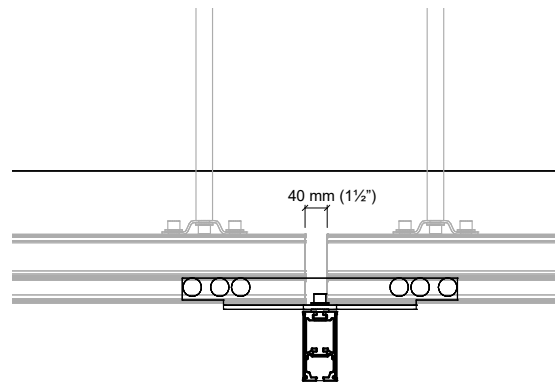
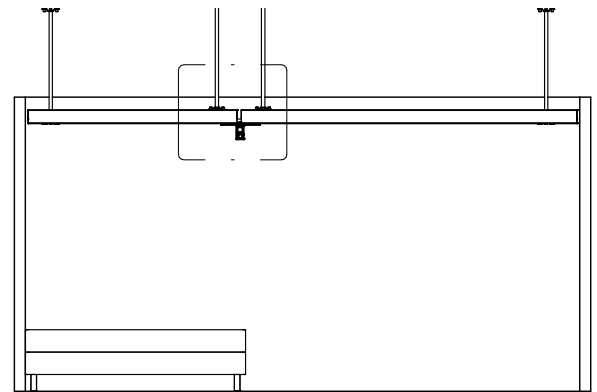
Traverse trolley adjustable (561091) can be used in rooms where the traverse rail must be in another angle than 90 degree from the parallel rails.



PLANNING

It is possible to have a gap in the room covering rail system for e.g. an curtain. The gap can max. be 40 mm (1½"). The brackets must be installed as close to the gap as possible, and the traverse trolley must be an HD traverse trolley with 6 wheel sets.

For the single rail system, special trolley for the hoist must be ordered, and the gap here is also max. 40 mm (1½"), and the brackets must be installed as close to the gap as possible.





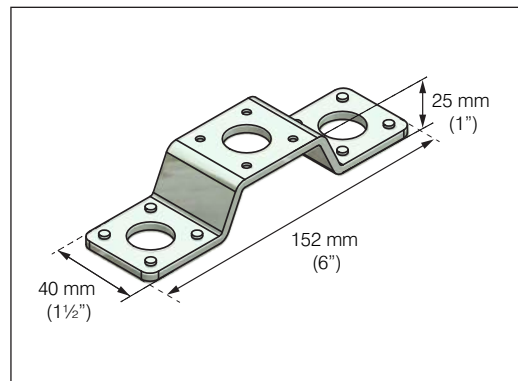
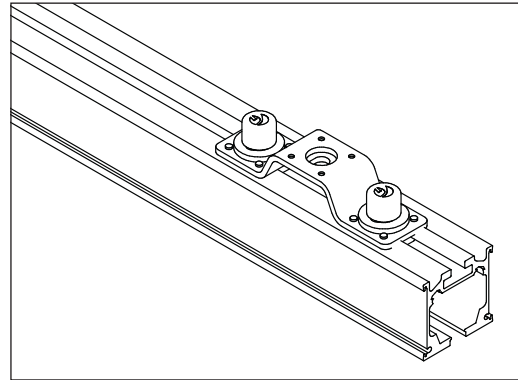
Ceiling bracket standard

Use: The Ceiling bracket standard is used for single rail and room-covering systems. The distance between the upper edge of the rail and the ceiling must be 25 mm (1").

Installation: Depending on the underlying surface or/and the lifting capacity, the Ceiling bracket standard should be secured to the ceiling with one or two fixings. The bracket can be used on concrete and timber ceilings.

SWL: Max. 255 kg (560 lbs) - 1 fixing

SWL: Max. 500 kg (1100 lbs) - 2 fixings

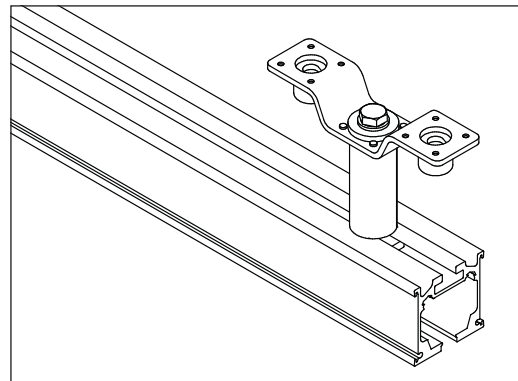


Ceiling bracket lowered standard for straight rails and rail curves

Use: The Ceiling bracket lowered standard is used for single rail systems or room-covering systems.

Installation: The Ceiling bracket lowered standard should be secured to the ceiling with two fixings.

SWL: Max. 500 kg (1100 lbs)

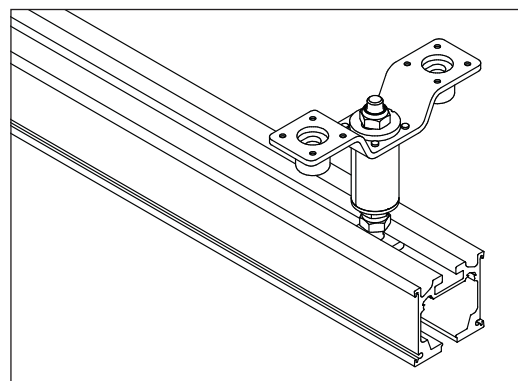


Ceiling bracket adjustable 5 mm (1/5 inch) for Combi lock

Use: The Ceiling bracket adjustable is used together with the Safety lock when a Combi lock is used in combination systems.

Installation: The Ceiling bracket adjustable is mounted with 2 fixings in the ceiling.

SWL: Max. 375 kg (825 lbs)





Ceiling bracket lowered rod

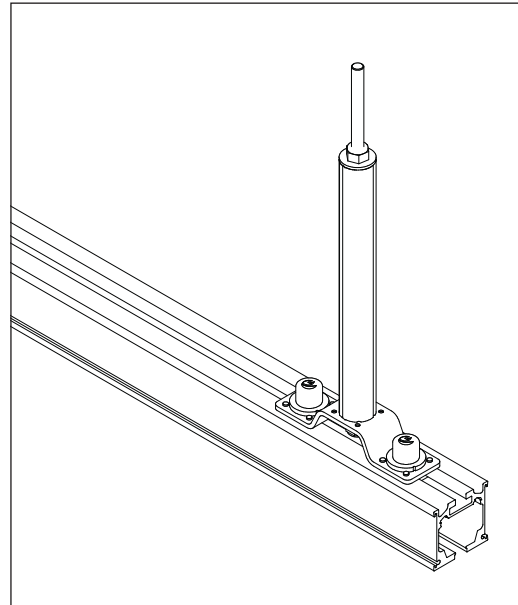
Use: The Ceiling bracket lowered rod (with aluminium profile) is used in connection with suspended ceiling constructions. The bracket is primarily used in rooms with high ceilings in order to be able to install the rail system beneath the suspended ceiling at an ordinary installation and users' height. Can also be used in combination with Hilti's MQ system.

Installation: The Ceiling bracket lowered rod is joined by cutting the aluminium tube to the required length.

Note: There is no limitation with regard to the length of the Ceiling bracket lowered rod. But in connection with longer lengths the bracket should be anchored to the wall or ceiling with a Stabilizing bracket to stabilize the rail system and ensure that the construction is solid even with a long suspension.

SWL: Max. 255 kg (560 lbs) - with flush ancor

SWL: Max. 500 kg (1100 lbs) - with Hilti MQ system

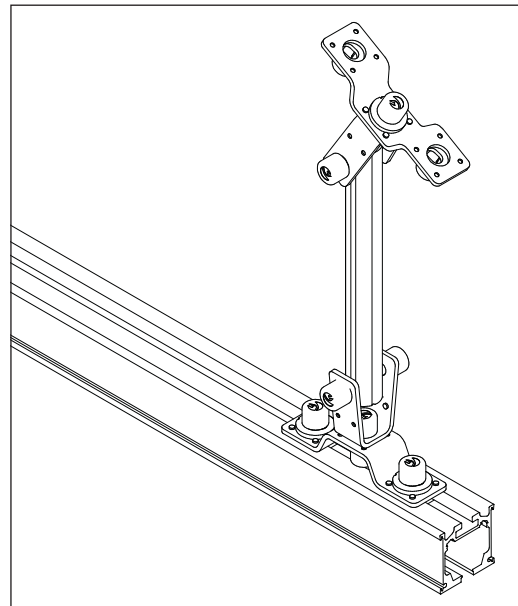


Ceiling bracket slope lowered

Use: An adjustable Ceiling bracket slope lowered (with aluminium profile) is used in rooms with high, sloping ceilings. The bracket makes it possible to install the rail system at an ordinary installation and users' height.

Installation: An adjustable Ceiling bracket slope lowered, is connected by cutting the aluminium tube to the required length. The aluminium tube is first mounted on the U profile of the bracket. The bracket is then installed on the ceiling in the same way as with the other suspended ceiling brackets - but the angle can be adjusted on this type.

SWL: Max. 205 kg (450 lbs)





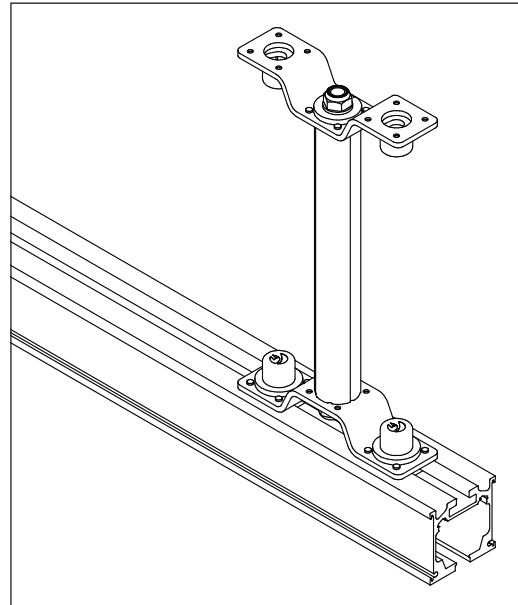
Ceiling bracket straight lowered

Use: The Ceiling bracket straight lowered (with aluminium profile) is used in connection with suspended ceiling constructions. The bracket is primarily used in rooms with high ceilings in order to be able to install the rail system beneath the suspended ceiling at an ordinary installation and users' height.

Installation: The Ceiling bracket straight lowered is joined by cutting the aluminium tube to the required length. Remember to allow for the space required by the upper and the lower ceiling brackets.

SWL: Max. 500 kg (1100 lbs).

Note: There is no limitation with regard to the length of the Ceiling bracket straight lowered. In connection with the bracket it could be necessary to use a Stabilizing bracket to stabilize the rail system and ensure that the construction is stable.

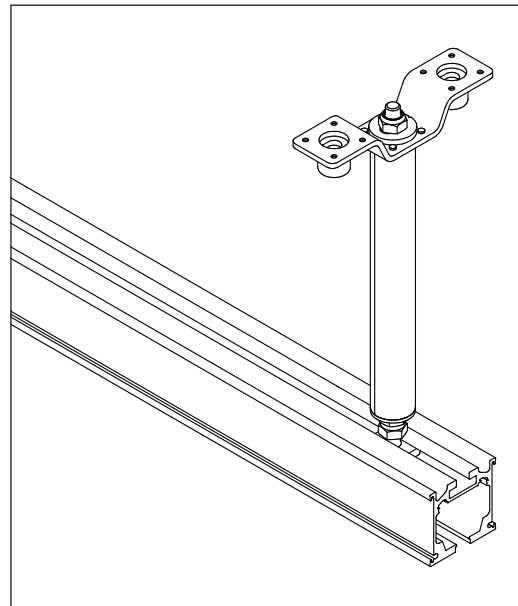


Ceiling bracket lowered adjustable for Combi-lock

Use: The ceiling bracket lowered adjustable for Combi lock is used together with the Safety lock when a Combi lock is used in combination systems.

Installation: The Ceiling bracket lowered adjustable bracket is mounted with 2 fixings in the ceiling.

SWL: Max. 375 kg (825 lbs).



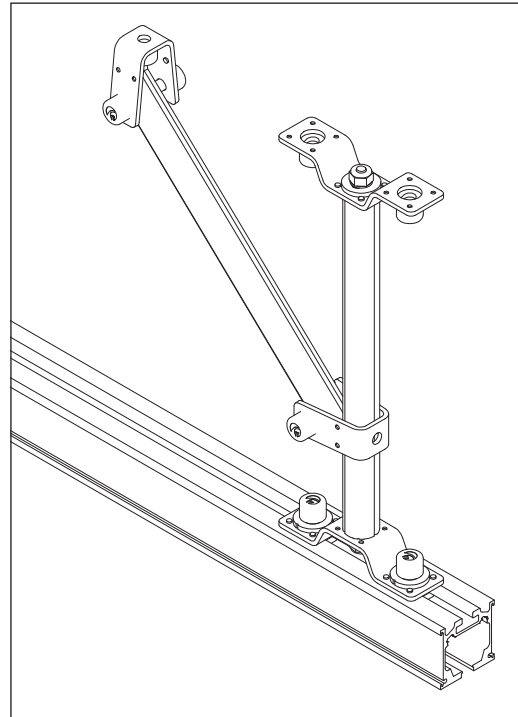


Stabilizing bracket

Use: The stabilizing bracket is installed as a side support for a suspended Ceiling bracket in cases where the rail system has been lowered considerably relative to the ceiling. Even in connection with long suspension lengths this makes the construction very stable.

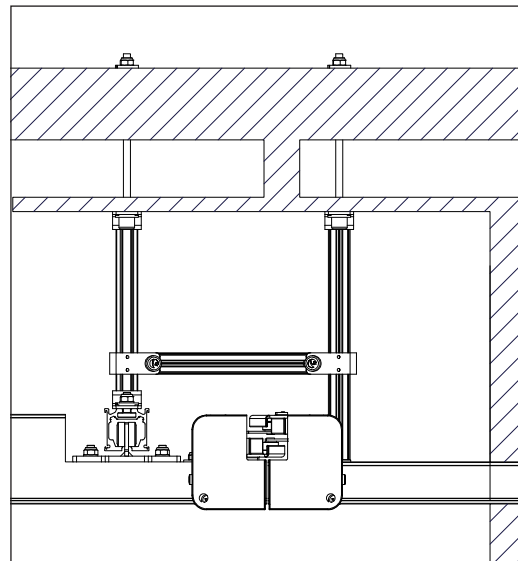
Installation: A holder is mounted around the aluminium tube on the Ceiling bracket. The aluminium tube on the stabilizing bracket is cut to length relative to the distance to the wall or ceiling and secured to the holder on the ceiling bracket.

Note: Stabilizing bracket must be used when the lowered brackets is longer than 300 mm (12")



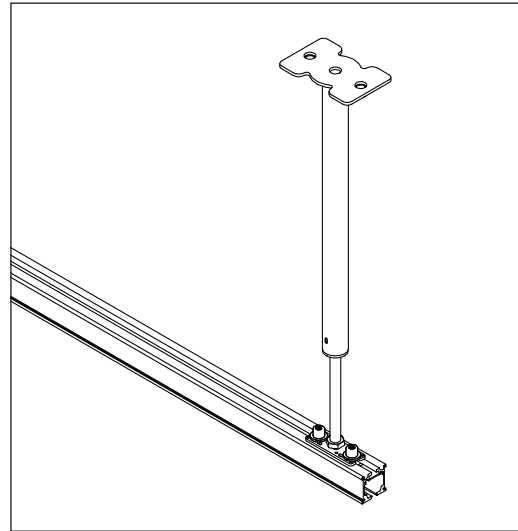
Stabilizer bracket for Combi-lock

Is installed between room-covering rail system and single track rail system to stabilise connection of rails.



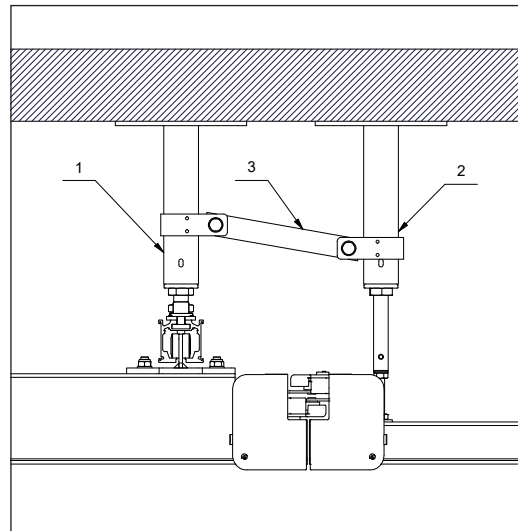
Ceiling bracket adjustable

Ceiling bracket adjustable is available in different lengths from 250 mm (9 ¾") to 2000 mm (78 ½"). Each bracket can be adjusted up to 200 mm (7 ¾") in height.

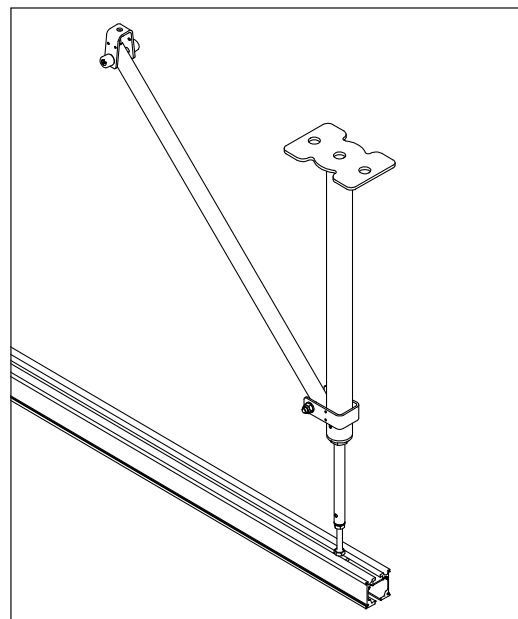


Ceiling bracket adjustable for Combi-lock (2) is used for the installation of Combi-lock. Bracket can be obtained from minimum 316 mm (12 ¼") to 2070 mm (81"). Each bracket comes in different lengths and can be adjusted 200 mm (7 ¾").

*Pos no 1 is ceiling bracket adjustable straight lowered
Pos. no. 2 is ceiling bracket adjustable for Combi lock
Pos. no. 3 is Stabilizing kit for Combi lock*



Stabilizing bracket is available in different lengths from 250 mm (9 ¾") to 2000 mm (78 ½").





Reinforcement

In cases where the ceiling construction consists of timber joists, it is necessary to install a reinforcement in between the joists in order to be able to install the ceiling bracket.

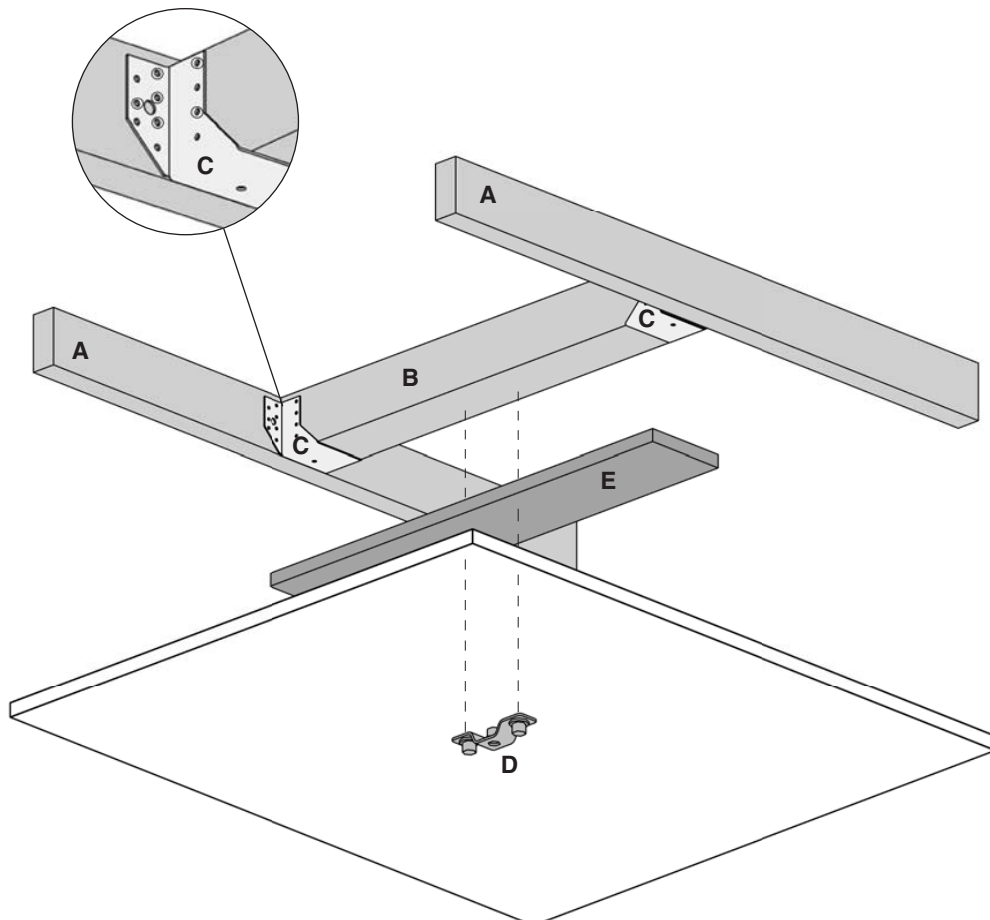
For reinforcement use timber minimum 4"x 6" – 100 x 150 mm, with appropriate fittings of the type BMF 3224 – 100 x 90 mm.

It is important to fasten the fittings with nails in the marked holes only, as illustrated, or else the timber may split. Lower edge of reinforcement shall be level with lower edge of joists.

Shutter boards must be mounted direct under the reinforcement.

Nail the fittings to the marked holes only.

- A. Joists
- B. Timber 4"x 6" – 100 x 150 mm
- C. Fittings BMF 3224 – 100 x 90 mm
- D. Guldmann ceiling bracket
- E. Timber shuttering (if needed)





Reinforcement, Combi-lock

In cases where the ceiling construction consists of timber joists, it is necessary to install a reinforcement in between the joists in order to be able to install the ceiling bracket.

For combination systems it is important that the reinforcement is executed in such a way that any buckling of the system is aligned - i.e. fittings for parallel rail and fittings for combi-lock must be fixed to the same beam/reinforcement.

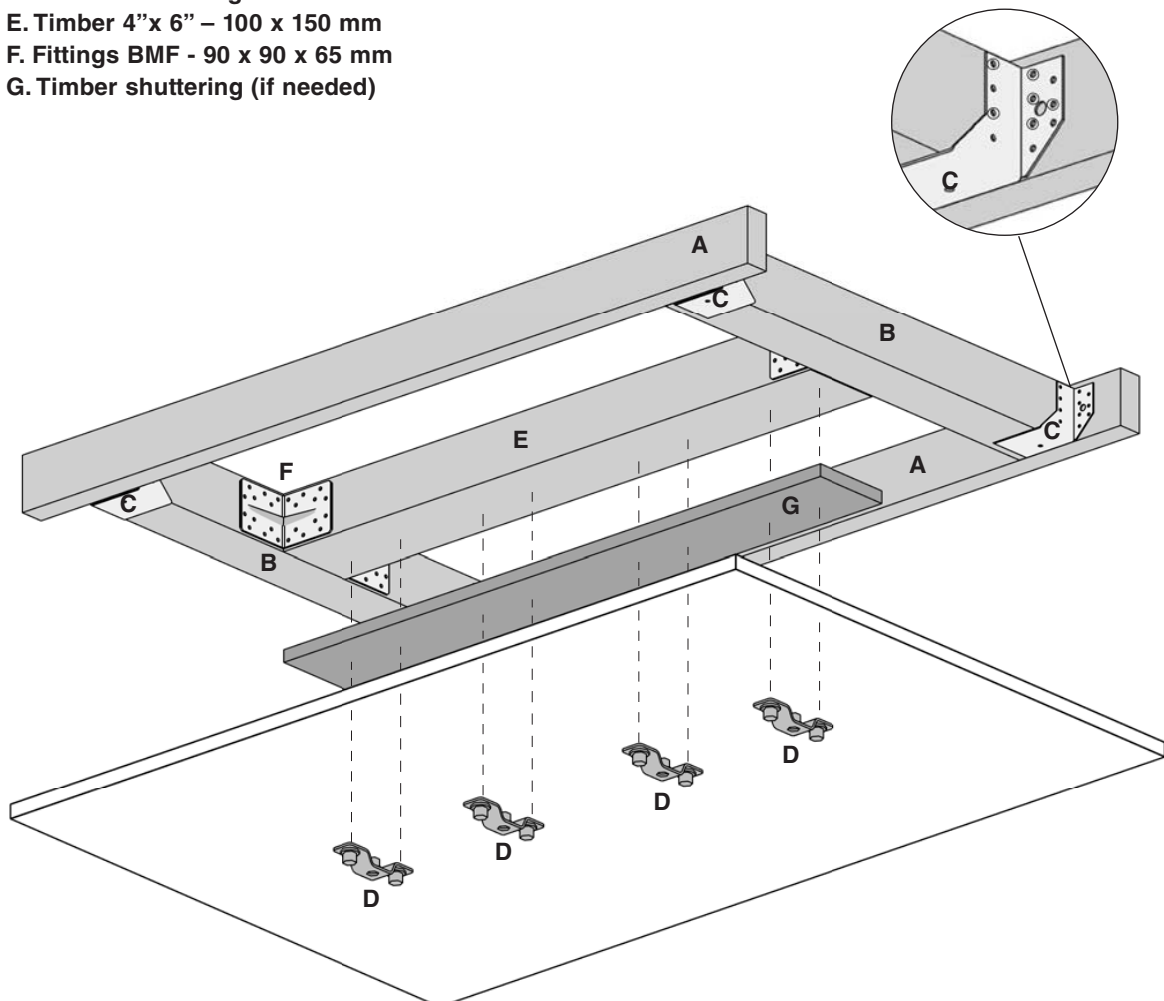
In the centre of the door opening fix timber 100 x 150 mm (4"x 6") on the side of timber 100 x 150 mm (4"x 6") with 4 angle brackets with ribs of type BMF 99.

It is important to fasten the fittings with nails in the marked holes only, as illustrated, or else the timber may split. Lower edge of reinforcement shall be level with lower edge of joists.

Shutter boards must be mounted direct under the reinforcement.

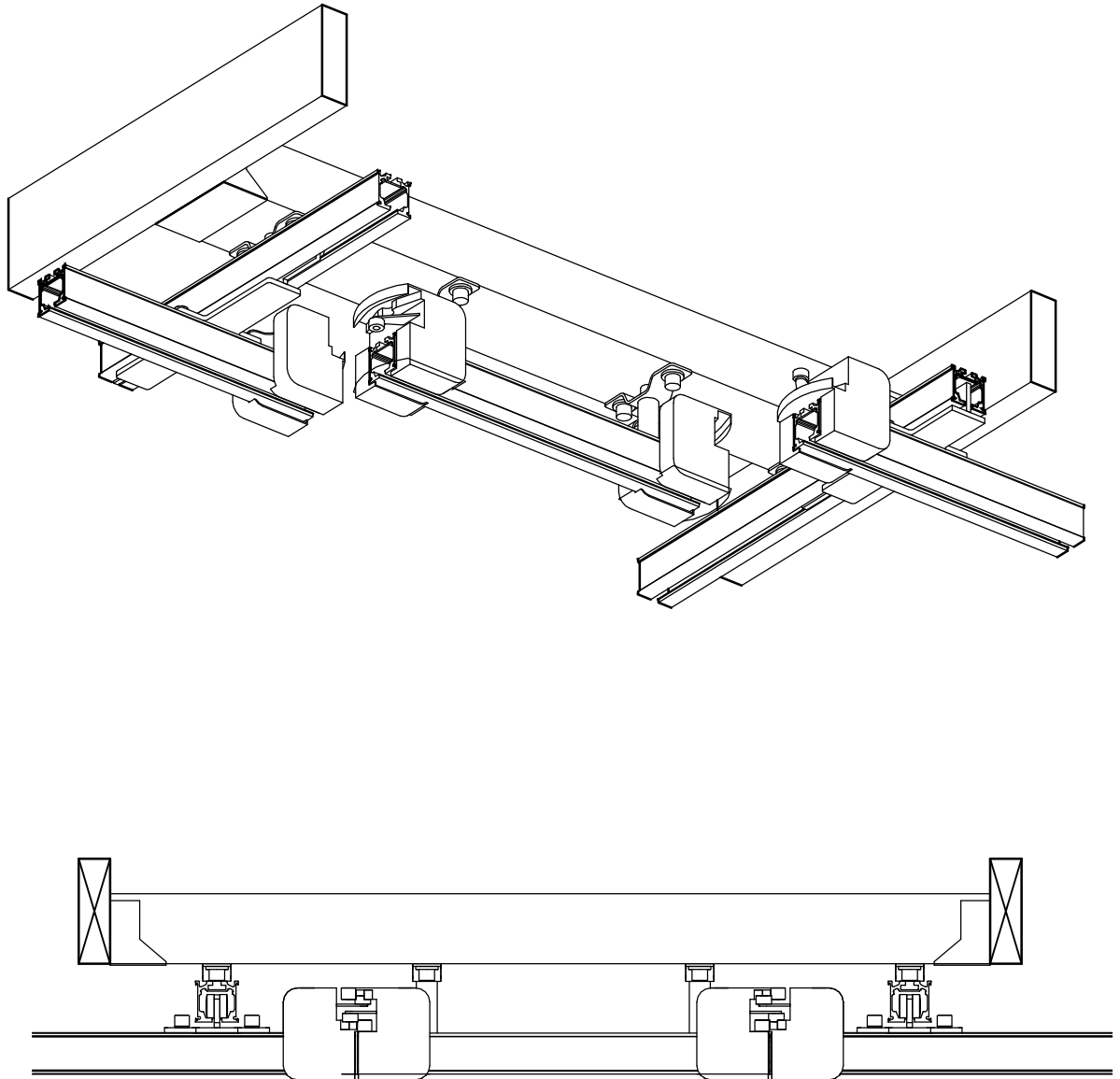
Nail the fittings to the marked holes only.

- A. Joists
- B. Timber 4"x 6" – 100 x 150 mm
- C. Fittings BMF 3224 – 100 x 90 mm
- D. Guldmann ceiling bracket
- E. Timber 4"x 6" – 100 x 150 mm
- F. Fittings BMF - 90 x 90 x 65 mm
- G. Timber shuttering (if needed)





PLANNING





Mounting of Wall brackets at plasterboard walls requires wall reinforcements.

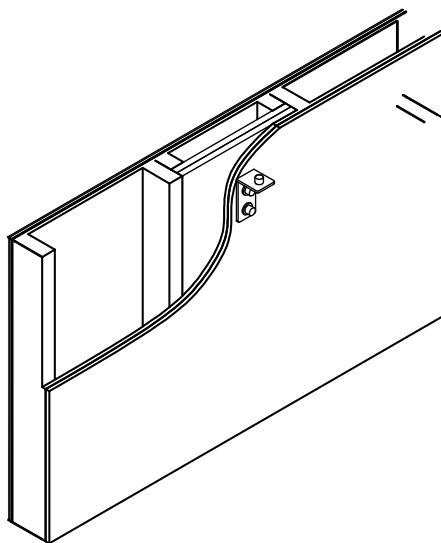
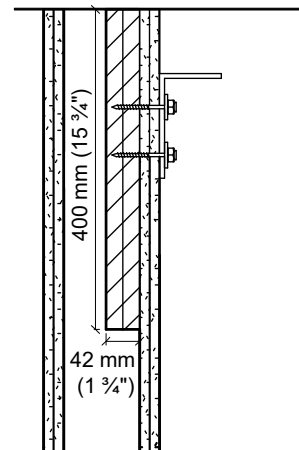
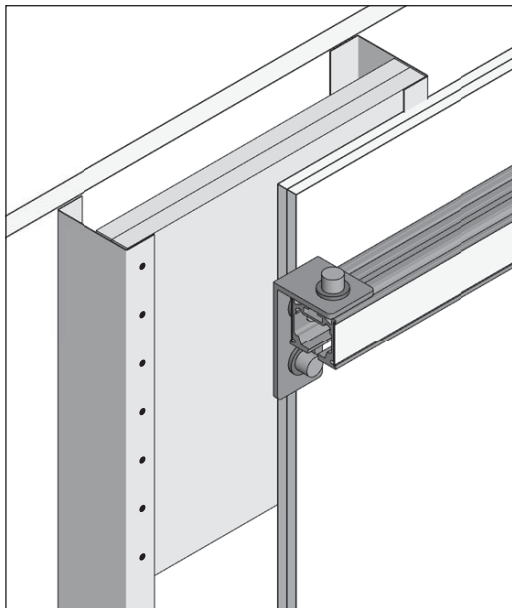
Note

Each reinforcement must consist of 2 pcs 21 mm (7/8") plywood sheets of Finnish beech.

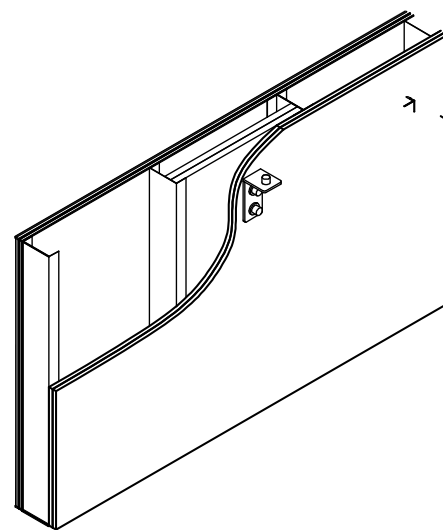
Height: min 400 mm (15 3/4")

Width: distance between vertical posts according to Guldmann layout for placing the rails.

The plywood sheets are mounted with 7 pcs of flatheaded screws 4x32 mm (5/32x1 1/4") on each vertical steel section. As standard the plywood sheet must be placed as close to the ceiling as possible.



Timber section



Steel section



Wall bracket end

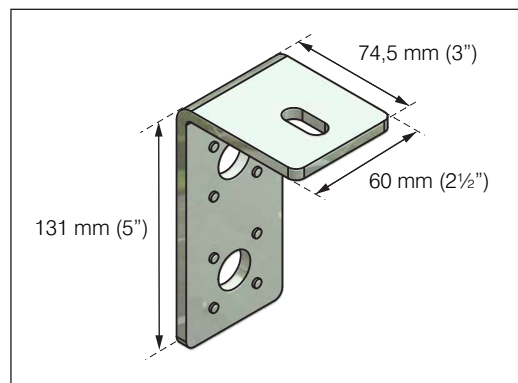
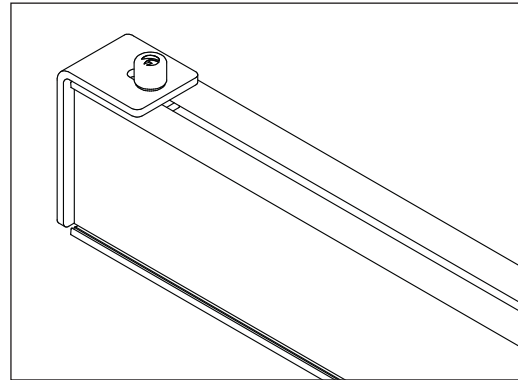
Use: The Wall bracket end is used to install all types of rail between vertical surfaces. The bracket can be used, e.g. in connection with installing room-covering rail systems in rooms where the ceiling is inaccessible or sloping.

The Wall bracket can be installed on all types of wall – both brick, concrete, lightweight concrete, wood and double plasterboard walls. The Wall bracket end must be combined with a Plasterboard bracket on double plasterboard walls without wall reinforcement.

Installation: The Wall bracket must be secured to the wall with two fixings.

SWL: Max. 500 kg (1100 lbs).

Note: The wall bracket end, can also be used as an side-hung bracket.



Wall bracket side

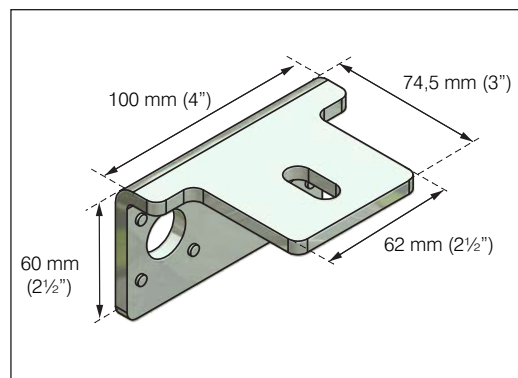
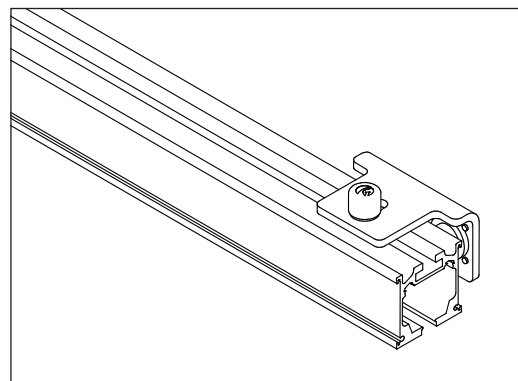
Use: The Wall bracket side, is used as side-hung brackets at the parallel rails in a room-covering system. The Wall bracket can be installed on all types of wall – both brick and concrete, lightweight concrete, wood and plasterboard. The Wall bracket end must be combined with a Plasterboard bracket on plasterboard walls.

Installation: The Wall bracket for side-hung rails must be secured to the wall with two fixings.

SWL: Max. 500 kg (1100 lbs)

Note: installed as shown at the picture the SWL will be max. 350 kg (770 lbs).

Note: The Wall bracket for side-hung rails can also be used as an end bracket.





Plasterboard bracket

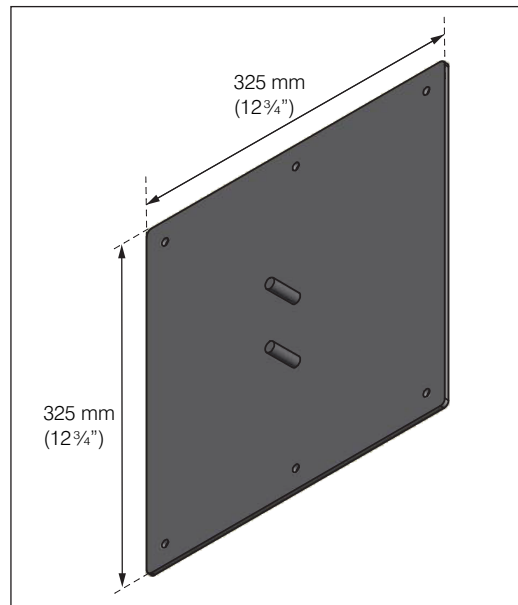
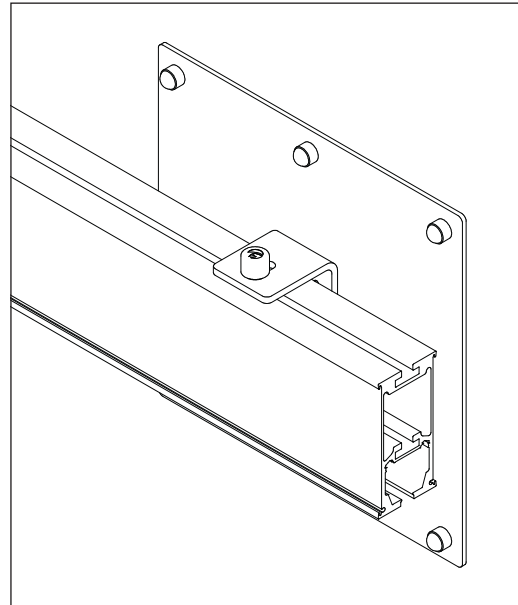
Use: The Plasterboard bracket is used as an adapter for the Wall bracket in connection with installations on plasterboard walls or other types of light wall.

A Plasterboard bracket provides the necessary high stability and strength to install rail systems on plasterboard walls. But it is a requirement that these are double plasterboard walls at least 24 mm (1") thick.

Installation surface (WxH) 325 x 325 mm (12¾" x 12¾").

Installation: The Plasterboard bracket can be secured direct to the plasterboard wall with six Hilti HTS-S M6 x 60 mm or Hilti HHD-S m6/24x65. The Wall bracket end must then be secured to the two threaded rods on the Plasterboard bracket with 10 mm lock nuts.

SWL: Max. 255 kg (560 lbs)





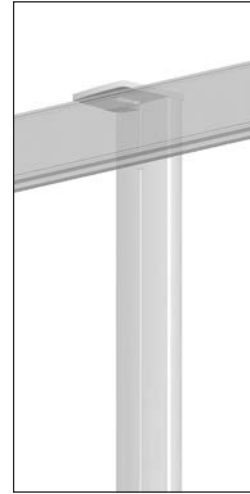
Upright support bracket

Use: The Upright support bracket is used in rooms where it is impossible to secure brackets to the ceiling or the wall. These could be rooms with extensive window areas, for example.

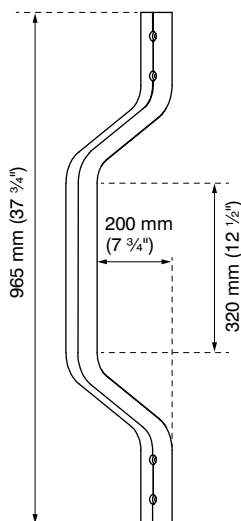
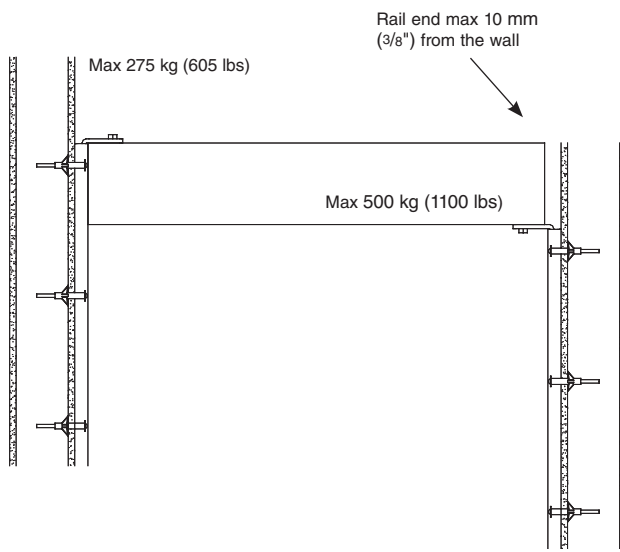
The Upright support bracket can be supplied with various types of adapter that make it possible to lead studs around such obstacles as cable and installation panels or skirting boards.

The Upright support bracket and adapter can be used e.g. at institutions or hospitals, where it is difficult to fasten brackets to the ceiling due to various pipe systems.

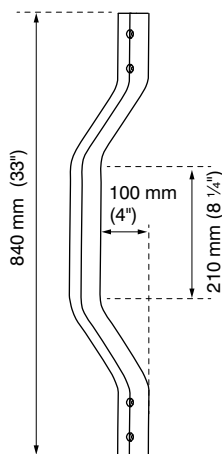
Installation: The Upright support bracket is installed on the floor, but the brackets must also be fastened to the wall in order to guide them.



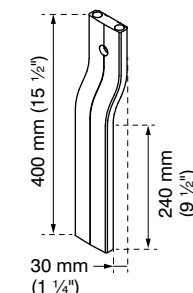
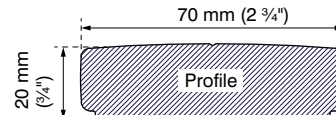
Can be mounted on single plasterboard.
SWL: Max. 500 kg (1100 lbs)



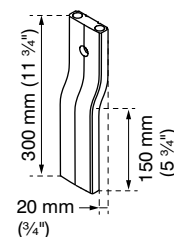
SWL: Max. 275 kg (605 lbs)



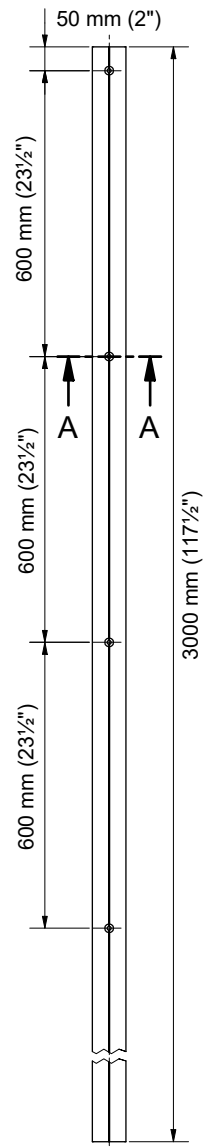
SWL: Max. 275 kg (605 lbs)



SWL: Max. 500 kg (1100 lbs)

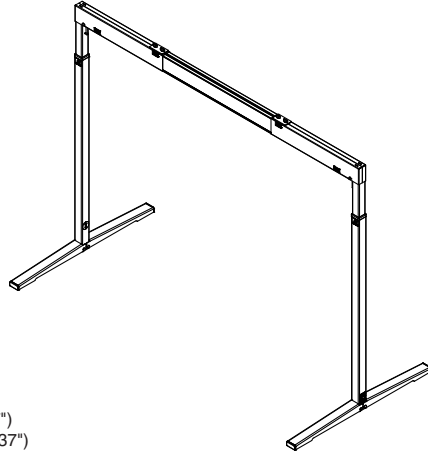


SWL: Max. 500 kg (1100 lbs)



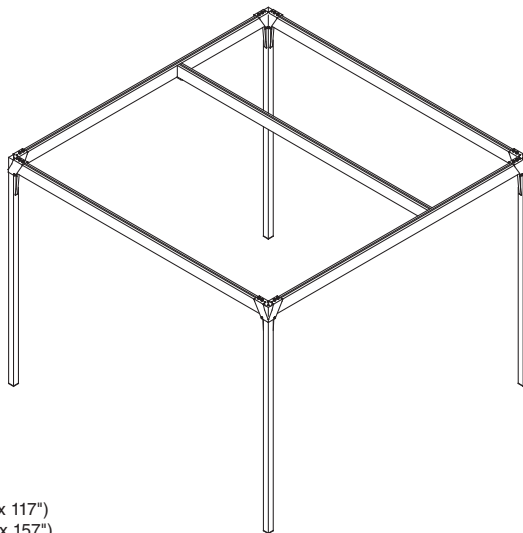


FREE-STANDING SINGLE RAIL SYSTEM ADJUSTABLE
255 kg (560 lbs)



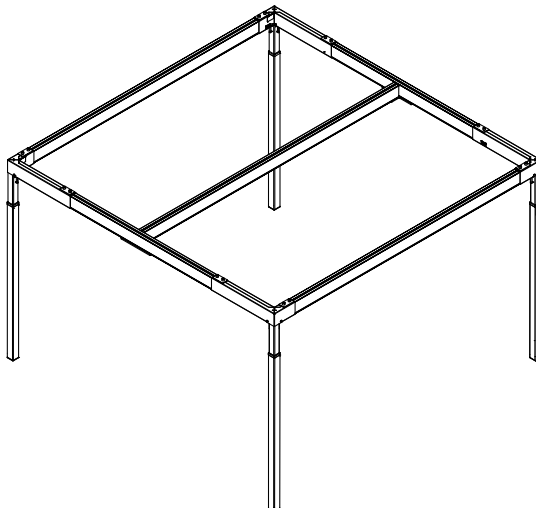
- 556000 : 2 - 3 m (78½ - 117")
- 553000 : 2½ - 3½ m (98 - 137")
- 556297 : 3 - 4 m (117 - 157")

ROOM COVERING SYSTEM HEIGHT ADJUSTABLE
350 kg (770 lbs)



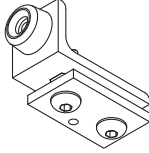


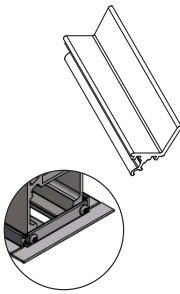
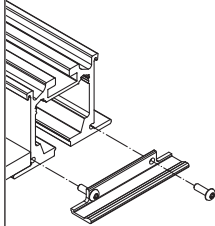
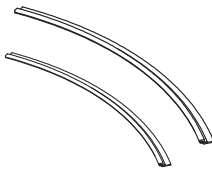

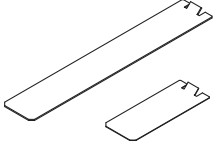
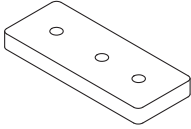
- 555262 : 3 x 3 m (117 x 117")
- 555570 : 4 x 4 m (157 x 157")

FREE-STANDING ROOM COVERING RAIL SYSTEM ADJUSTABLE
255 kg (560 lbs)




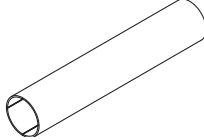
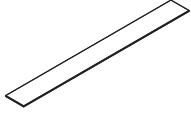





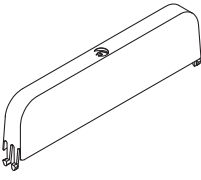


- 554729: 3 x 3-4 m
(117 X 117 - 157")
- 557968: 4 x 4-5 m
(157 x 157 - 196")



RAIL ACCESSORIES	END STOP		END COVER		SIDE COVER			
	 <p>12330 : GREY 123301 : WHITE</p>		 <p>GREY 550447 : RAIL A 550448 : RAIL B 550449 : RAIL C WHITE 550463 : RAIL A 550464 : RAIL B 550465 : RAIL C</p>		 <p>GREY 550763 : RAIL A, COIL à 100 m (40') 550764 : RAIL B, COIL à 100 m (40') 550765 : RAIL C, COIL à 100 m (40') WHITE 550766 : RAIL A, COIL à 100 m (40') 550767 : RAIL B, COIL à 100 m (40') 550768 : RAIL C, COIL à 100 m (40') 556078 : WALL RAIL, COIL à 100 m</p>			
	PROFILE FOR CEILING		RAIL ABC+ END PROFILE		PROFILE FOR CEILING CURVES		PROFILE FOR CEILING FOR TURNTABLE	SPRING PLATE FOR PROFILES
	 <p>550284 : 3 m (9 3/4') 559229 : RAIL END 559448 : SCREWS (100 pcs)</p>		 <p>562458 : GREY 562458-WH : WHITE 559448 : SCREWS (100 pcs)</p>		 <p>550280 : 30° 550281 : 45° 550282 : 60° 550283 : 90°</p>		 <p>550755 : SET</p>	 <p>551399 : RAIL A 50 PCS. 550716 : RAIL B 50 PCS. 550717 : RAIL C 50 PCS.</p>
	SPACER LOWERING TRAVERSE RAIL							
	 <p>GREY / WHITE 551077 / -WH: 15 mm (1/2") 551078 / -WH: 20 mm (3/4") 551079 / -WH: 30 mm (1 1/4") 551096 / -WH: 35 mm (1 1/2") 551080 / -WH: 40 mm (1 3/4") 551081 / -WH: 50 mm (2") 551082 / -WH: 60 mm (2 1/2") 551083 / -WH: 70 mm (2 3/4") 551084 / -WH: 80 mm (3 1/4") 551085 / -WH: 90 mm (3 1/2") 551086 / -WH: 100 mm (4")</p>							



RAIL ACCESSORIES	ROSETTE Ø30 ADAPTER PROFILE	ROSETTE Ø20 CEILING BRACKET ADJUSTABLE	ROSETTE Ø48/Ø52 CEILING BRACKET ADJUSTABLE	COVER CEILING BRACKET ADJUSTABLE	ADJUSTING PLATE CEILING BRACKET ADJUSTABLE
					
	550193 : WHITE	562024 : WHITE	562026 : WHITE	562037 : WHITE	562071 : WHITE 1 mm 562072 : WHITE 2 mm
	HANDCONTROL	WALL SWITCH FLUSH MOUNTED	WALL SWITCH SURFACE MOUNTED	IR SENDER	IR POSITION LOCK
					
	TURNTABLE 9350151 : SWITCH TRACK	TURNTABLE 9350471 : SWITCH TRACK	TURNTABLE 935049 : SWITCH TRACK	935034	935039
	COVER FOR TROLLEY				
					
	550570 : GREY 550584 : WHITE				

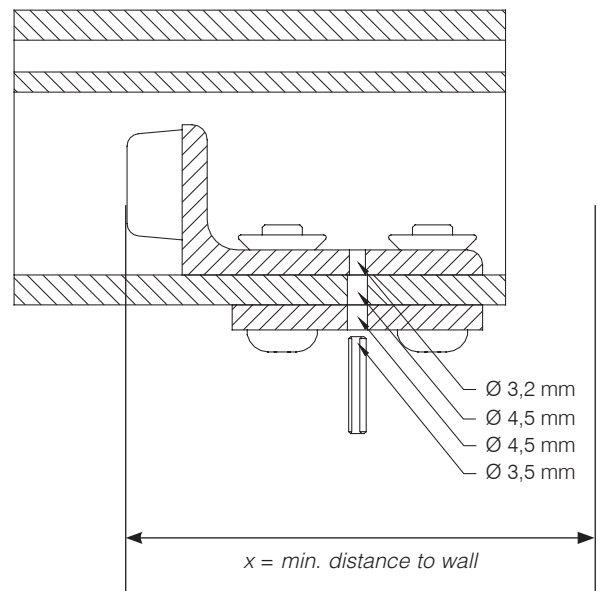
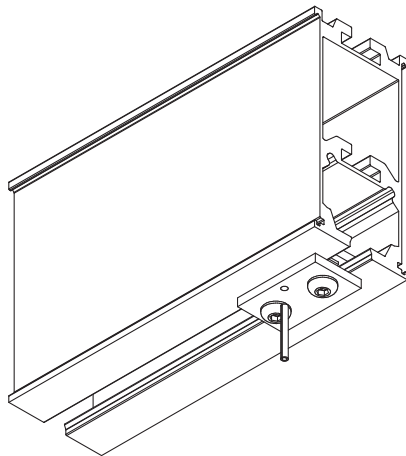


Fitting of End stops

End stops must always be used at the ends of rails, whether free hanging, or butting up to a wall or other elements.

- The End stop is placed in the rail before it is fitted.
- Before the End stop is placed in the rail, check that the flange nuts are positioned correctly.
- When the rail system has been fully installed, place the End stops in the correct position at the ends of the rails.

- If there is a risk that the End stop may fall out, a hole of 4.5 mm (1/4") is drilled through the rail – not through the angle bracket of the End stop.
- Hammer the accompanying spring pin into the End stop and rail, flush to the metal plate.
- When dismantling the End stop the screws must be all out, subsequently the angle profile including cylinder pin can be tipped out, hence the pin is still attached to the angle profile.



Adjustment of End stop at underhung traverse rail

(To avoid hoist for hitting the wall)

Hoist X=minimums measure

GH3	Trolley length	170 mm	(6 3/4")	x = 100 mm	(4")
GH3+	Trolley length (with scale)	210 mm	(8 1/2")	x = 90 mm	(3 1/2")
GH1	Trolley length	170 mm	(6 3/4")	x = 100 mm	(4")
GH1Q	Trolley length	130 mm	(5 1/4")	x = 145 mm	(5 1/2")
GH1F	Trolley length	166/50 mm	(6 3/4" / 2")	x = 160 mm	(6 1/2")



The Wall rail system is a simple and elegant alternative to the traditional room covering rail systems.

The Wall rail can be installed directly at the wall, it is white powder coated and has a SWL up to 255 kg (560 lbs).

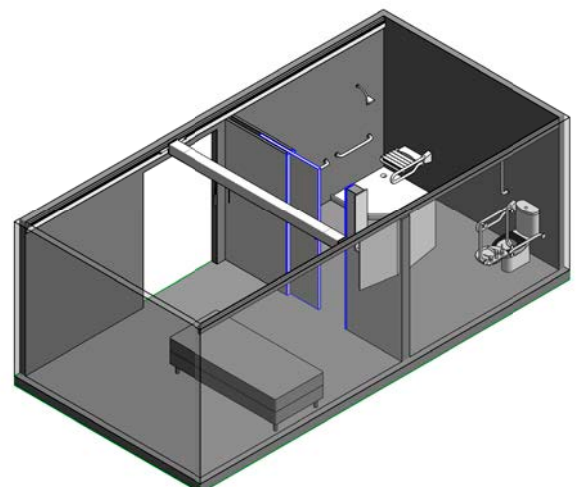
The Wall rail system can have 3 different traverse rails - B rail, C rail or GHZ rail.

The traverse rail is mounted with traverse trolleys which automatically compensate for any misalignment in the room, up to 80 mm (3 1/4").

The Wall rail can be supplied with charging liners, so the hoist will charge all over the rail system. This enables the installation of the range of the GH3 and GH3+ ceiling hoists and to the use/include the benefits they feature; integrated scale, CLM-Online, Trainer Module, or Positioning Lock etc.

Fixings and endstop is hidden behind white covers.

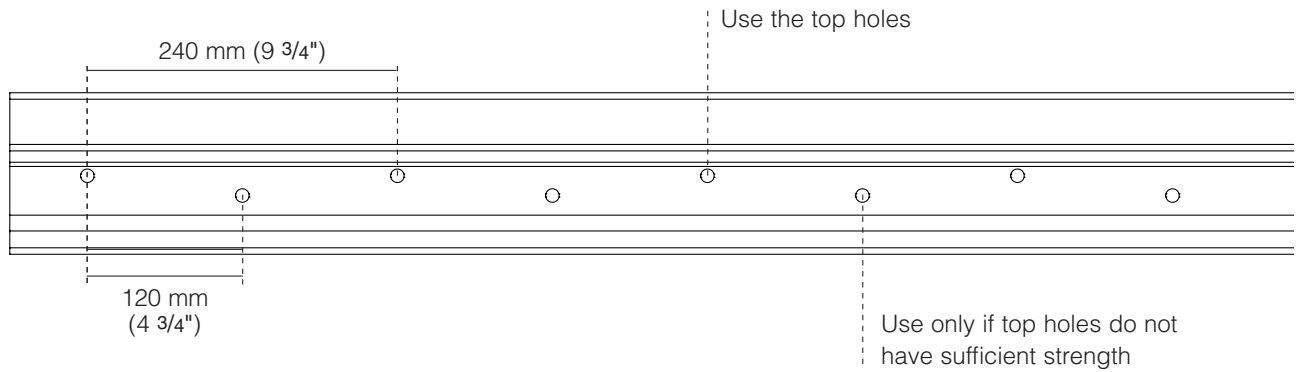
The traverse trolley with traverse rail can easily be mounted after the Wall rails are installed.





The white powder coated Wall rails is supplied with pre-drilled holes for fixings, and can be installed on almost any wall construction.

Endstop, traverse trolley and traverse rail can be inserted in the Wall rail system after the installation of the Wall rails.



Construction material	Fixing HILTI	Distance between fixings
Concrete B25 (C20/25)	HUS3-H 8x65	1200 mm (48")
Solid bricks	HRD 10x60	480 mm (19 1/4")
Hollow bricks	HRD 10x80	480 mm (19 1/4")
Tile wall Thermo blocks (Hz 20 N/mm ²)	HRD 10x80	480 mm (19 1/4")
Solid lime sand bricks	HRD 10x60	480 mm (19 1/4")
Leca/Fibo elements 6 – 10 N/mm ²	HUS3-H 8x65	480 mm (19 1/4")
Aerated concrete (ca. 375 kg/m ³) 2 N/mm ²	HRD 10x80	240 mm (9 3/4")
Aerated concrete (ca. 550 kg/m ³) 4 N/mm ²	HRD 10x80	240 mm (9 3/4")
Plaster board 2 x 12,5 mm (2 x 1/2")	HTB-S M6x60 HHD-S M6/24x65	240 mm (9 3/4")
Plaster board 1 x 12,5 mm (1 x 1/2")	HHD-S M6/12x52 HTB-S M6x60	240 mm (9 3/4")
Fermacell 1 x 10 mm (1 x 3/8")	HHD-S M6/9x38 HHD-S M6/12x52 HTB-S M6x60	240 mm (9 3/4")
Fermacell 1 x 12,5 – 15 mm (1 x 1/2")	HHD-S M6/12x52 HHD-S M6/24x65 HTB-S M6x60	480 mm (19 1/4")

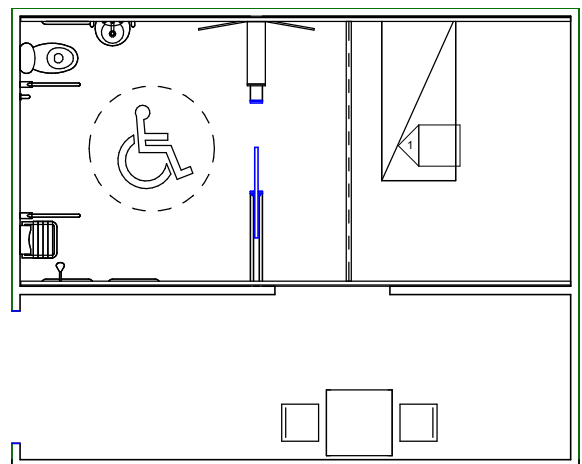
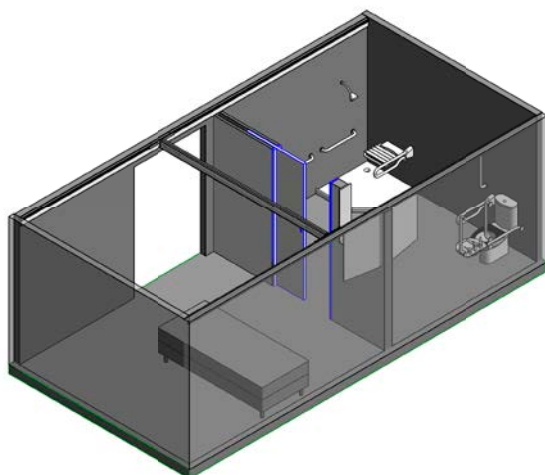
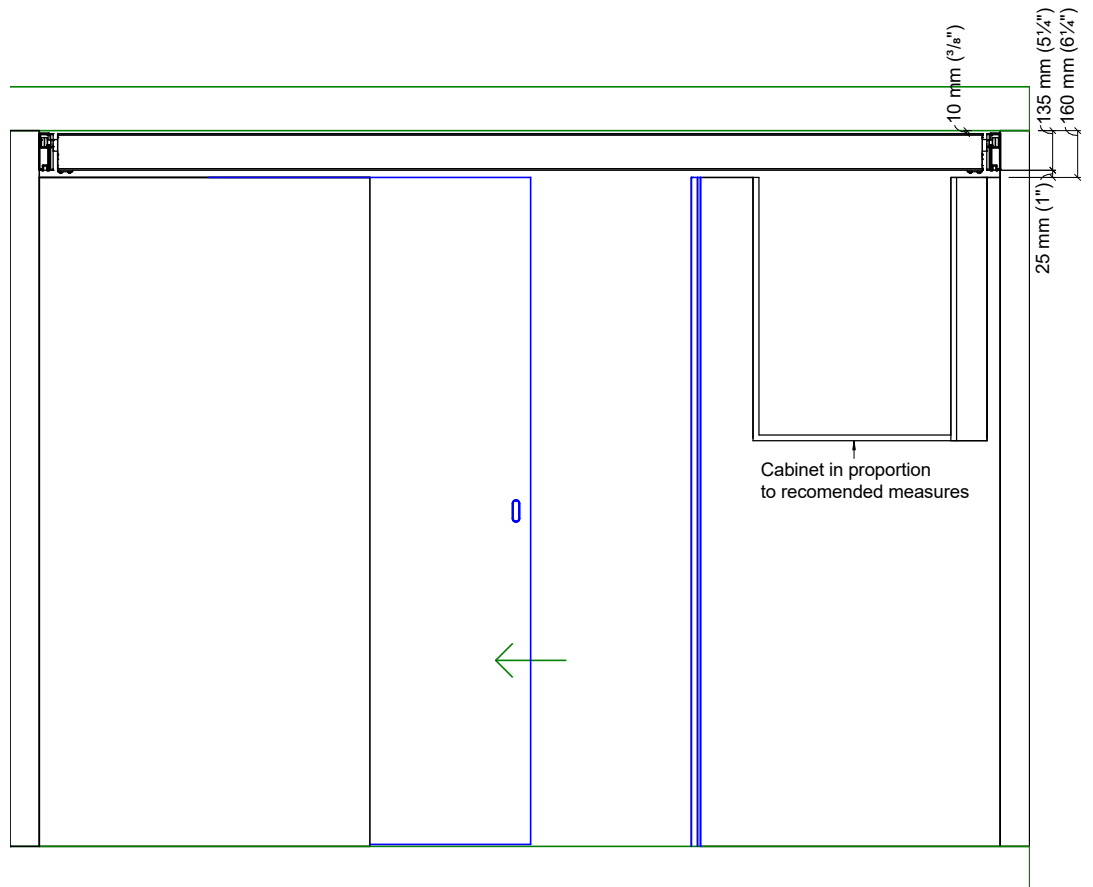


Cabinet cut out

Height min. 450 mm (17½")
Width min. 600 mm (23½")
Depth min. 220 mm (8¾")

Charging

With charging through the hand control, it is recommended to place the docking station in the cabinet.



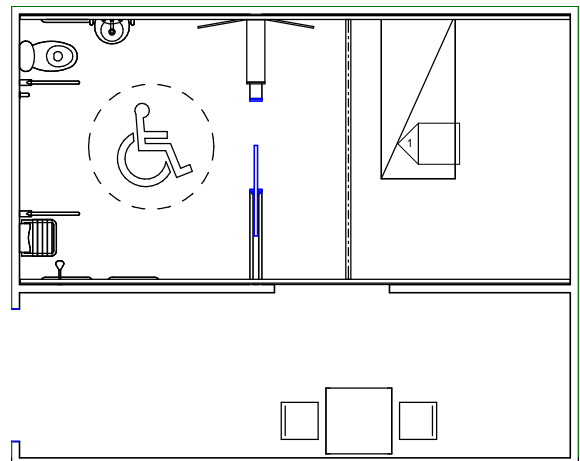
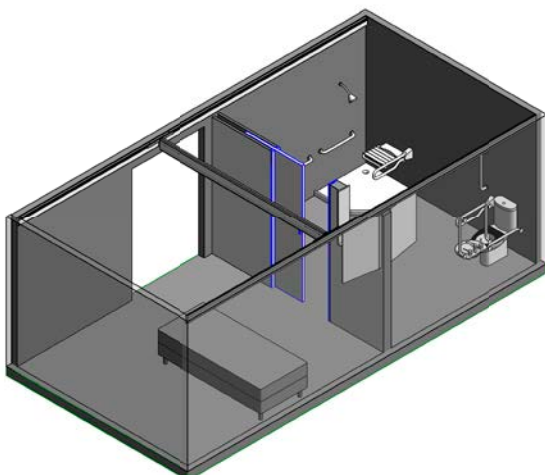
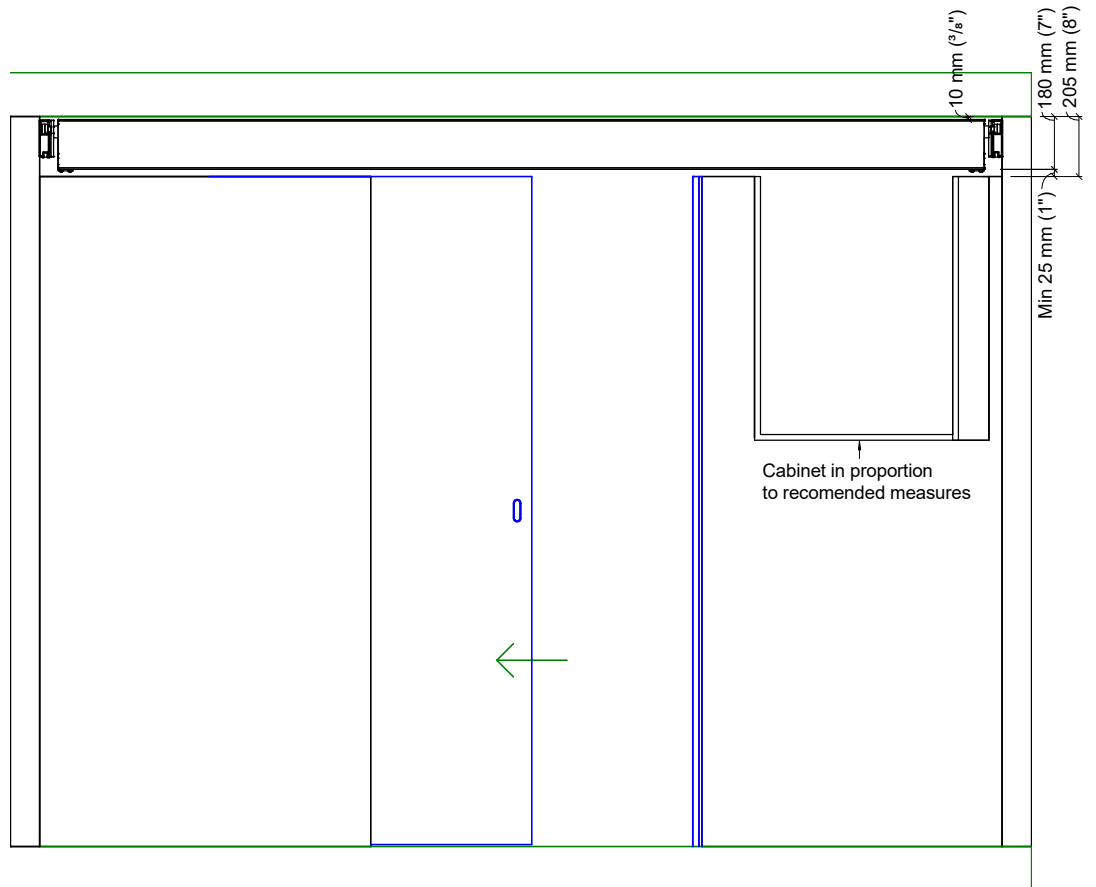


Cabinet cut out

Height min. 450 mm (17½")
Width min. 600 mm (23½")
Depth min. 220 mm (8¾")

Charging

With charging through the hand control, it is recommended to place the docking station in the cabinet.



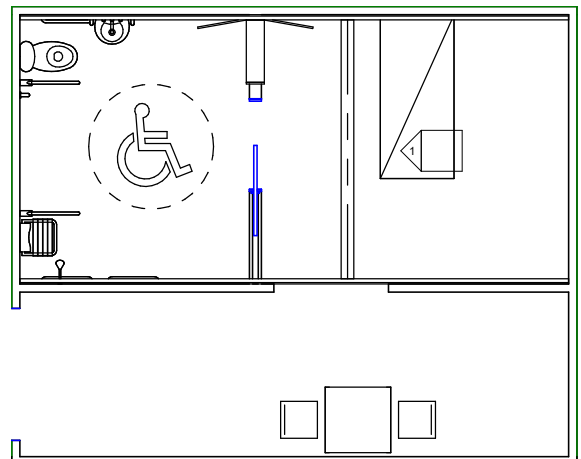
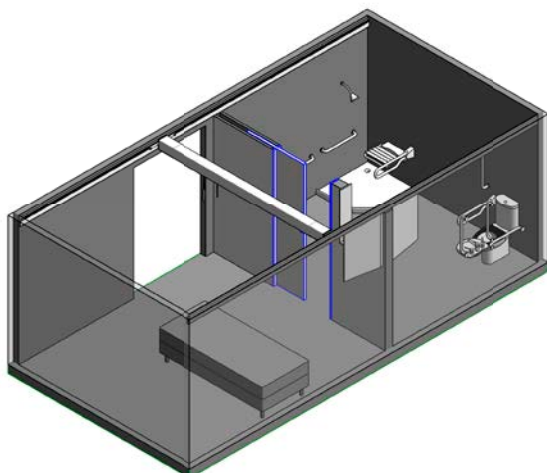
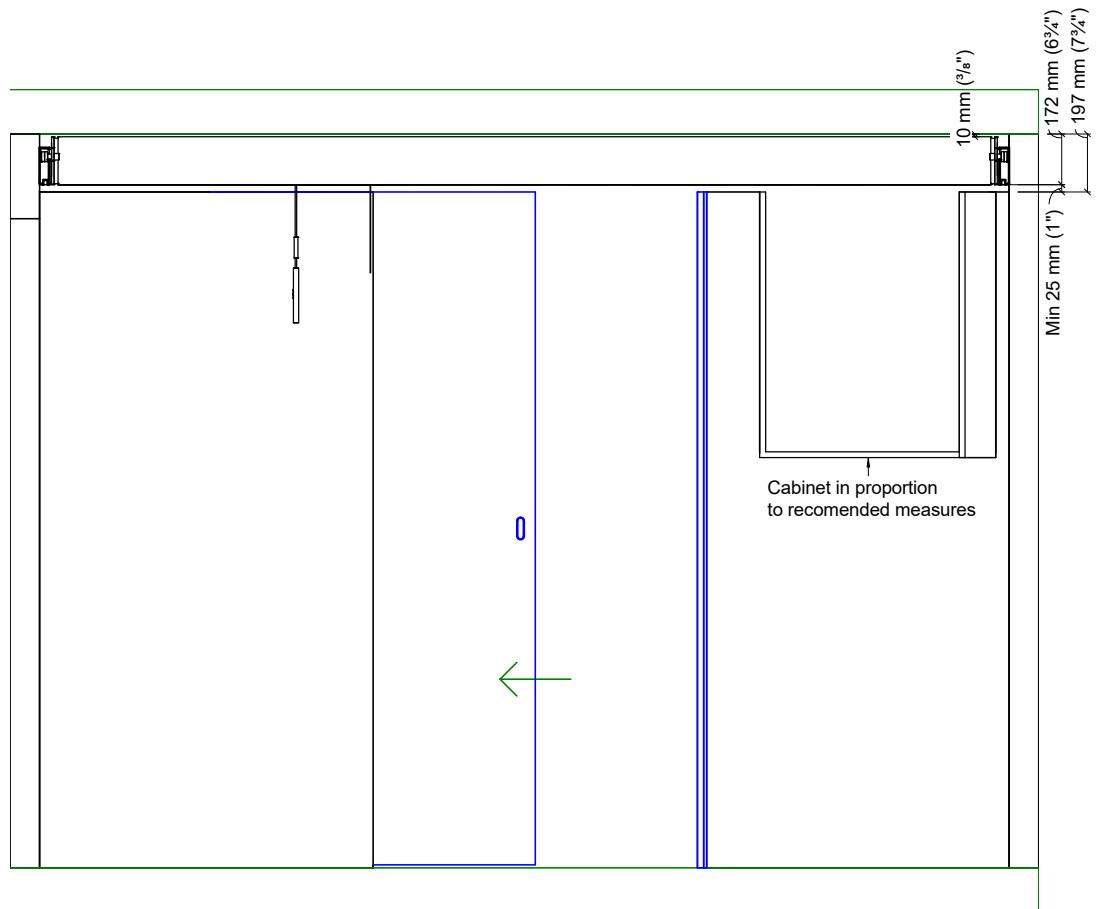


Cabinet cut out

Height min. 450 mm (17½")
Width min. 600 mm (23½")
Depth min. 220 mm (8¾")

Charging

With charging through the hand control, it is recommended to place the docking station in the cabinet.





Transformer

A transformer must be connected to the power supply when a GH3 ceiling hoist, Switch track or/and Turntable is installed.

GH3 hoist

In connection with single rail systems the power point should be located in the closest corner.

In connection with room-covering systems the transformer should be located in the corner with regard to accessibility and furnishings.

Switch tracks and Turntable

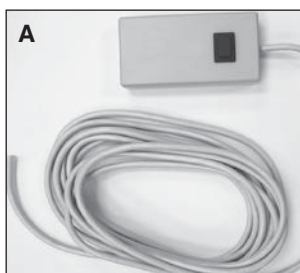
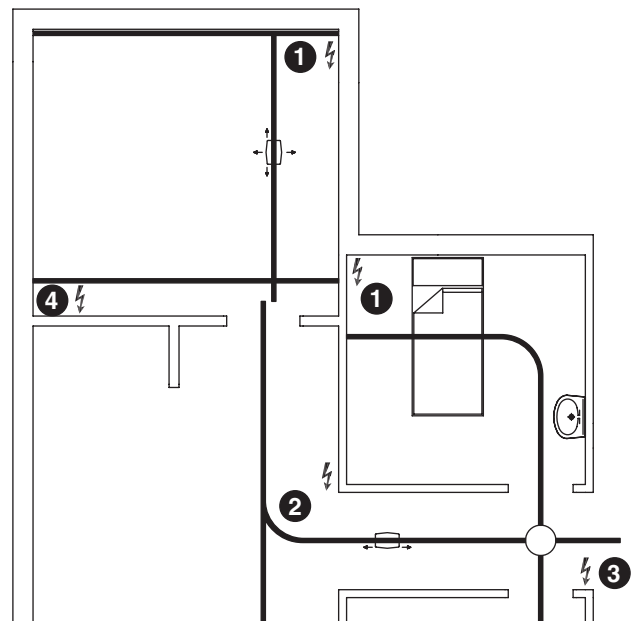
A 110/230 V electric point must be used for the Switch tracks and Turntable. The transformer should be plugged into the power point.

Where possible the power point should be installed above the ceiling - on a truss for example above a suspended ceiling, where applicable. If this is not possible the power point should be installed on the wall near the ceiling right next to the rail.

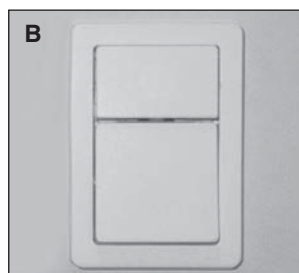
Hand control for the Switch tracks and Turntable

The Switch track and Turntable is activated with the help of a handcontrol. The handcontrol (A) should be placed at an ordinary height close to the Switch track or Turntable. The handcontrol can also be integrated into a wall switch (B) or at the wall (C), or the Switch track or Turntable can be operated by an IR sender (D).

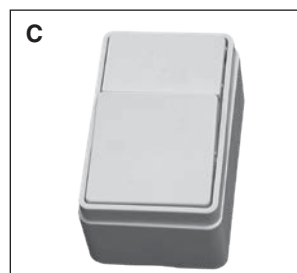
- 1 Transformer for charging of hoist
- 2 The Switch track
- 3 The Turntable
- 4 Positioning lock



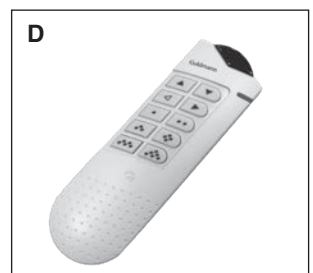
Hand control for Switch track and Turntable.



It is possible to integrate the hand control for Switch track and Turntable into a wall switch. (1,5 module FUGA).



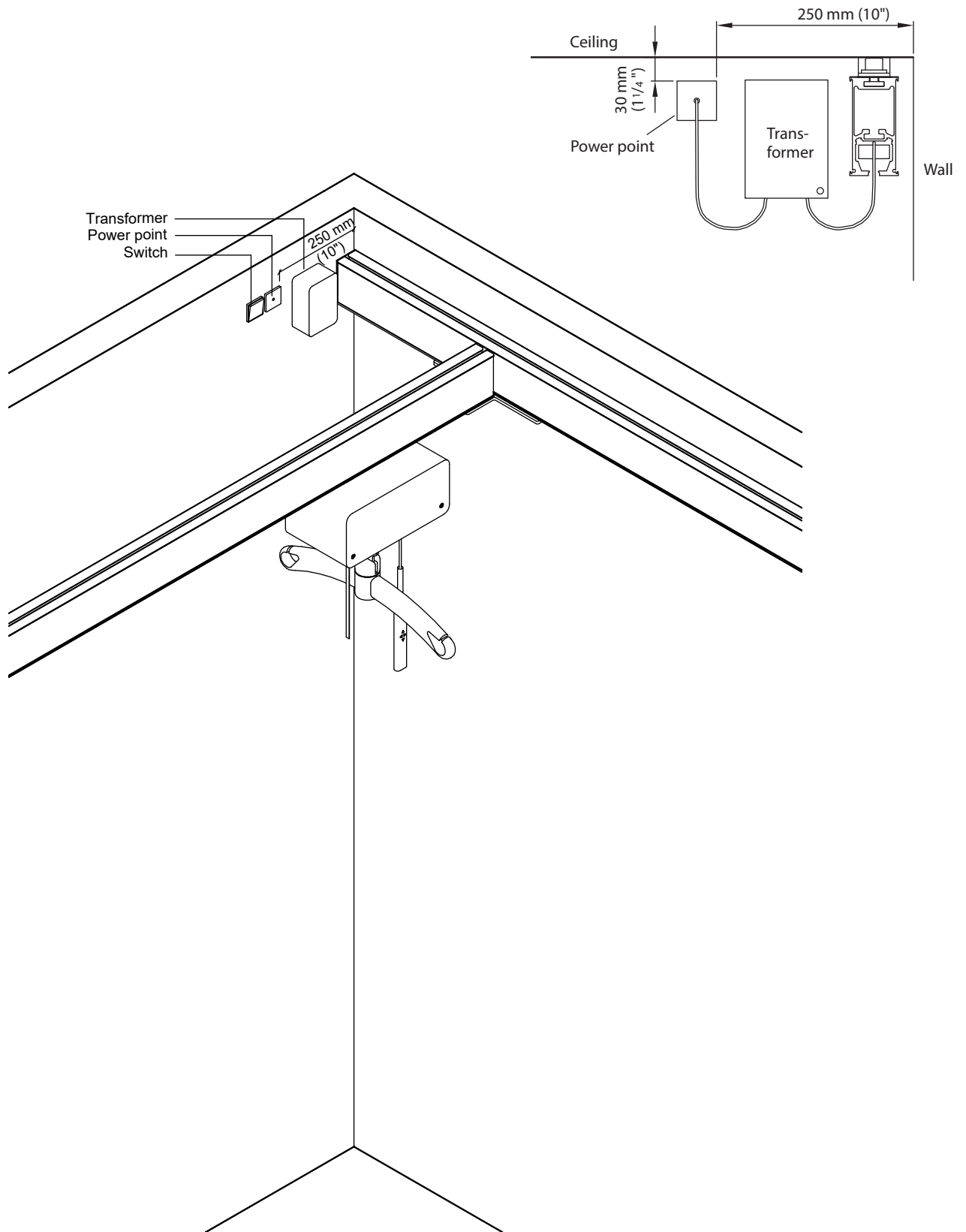
C. Direct fixed hand control at wall.



D. IR

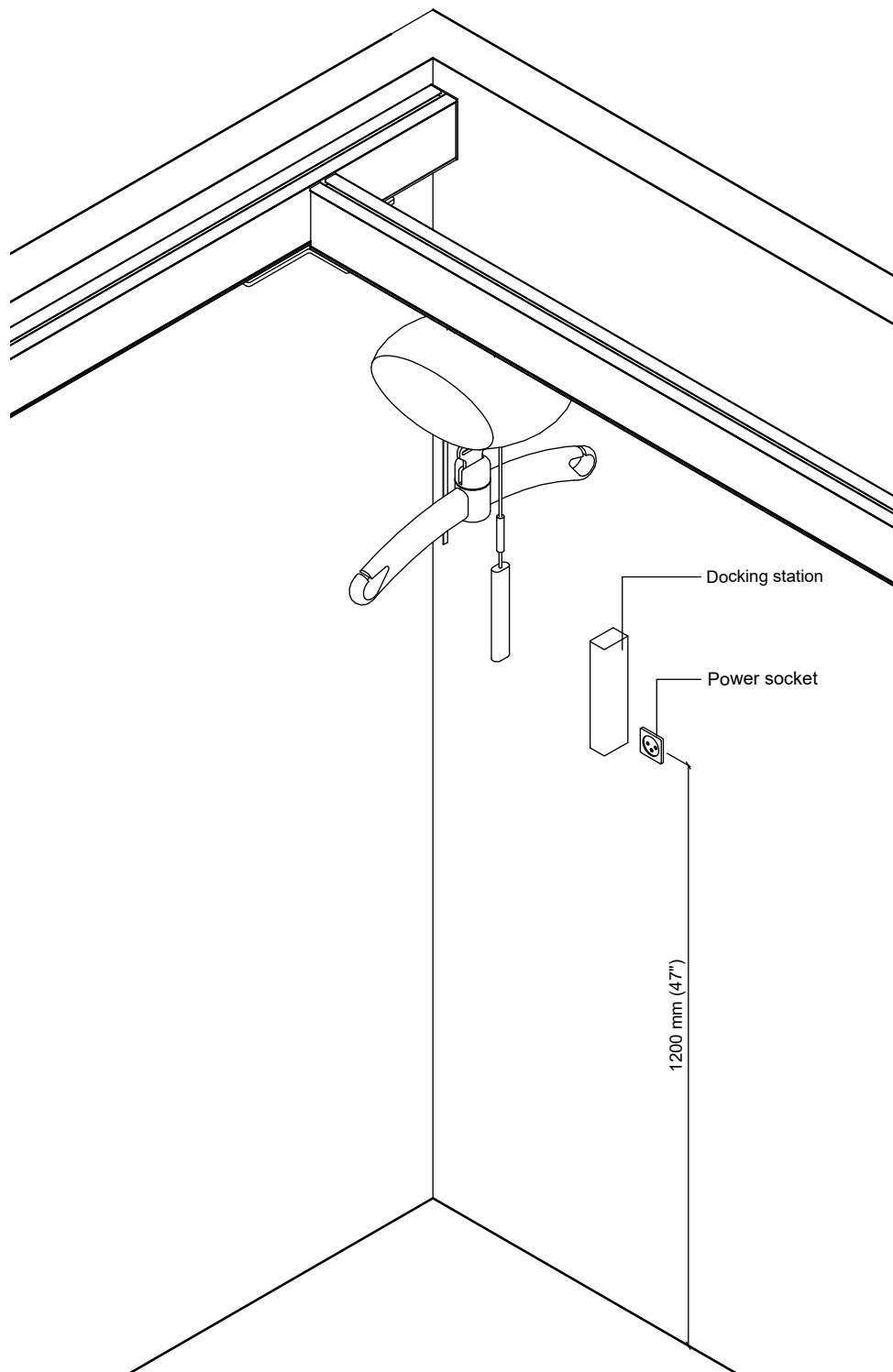


Location of power point for transformer
for GH3 hoist



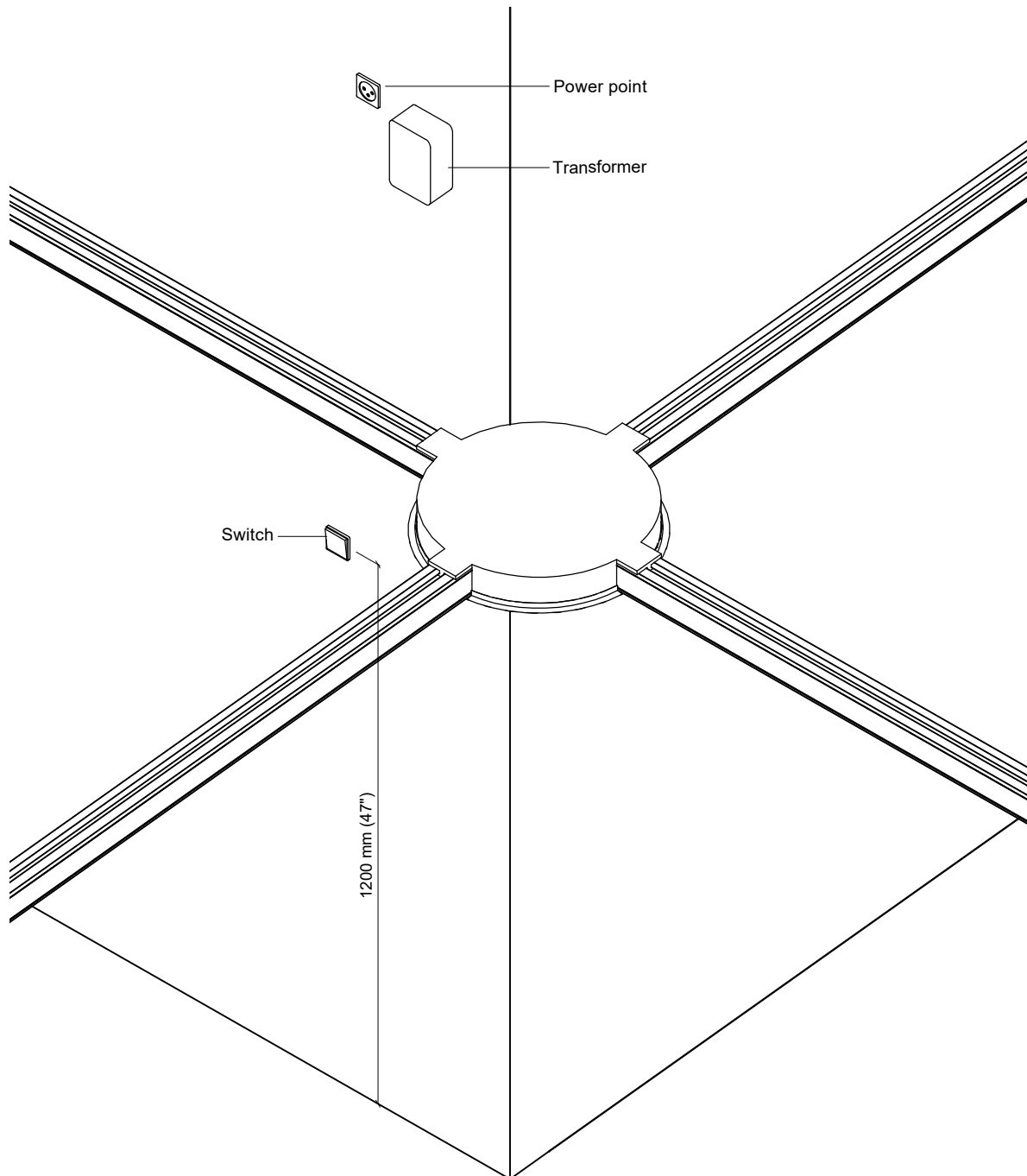


GH1, GHZ and GH3 with charging through the hand control.



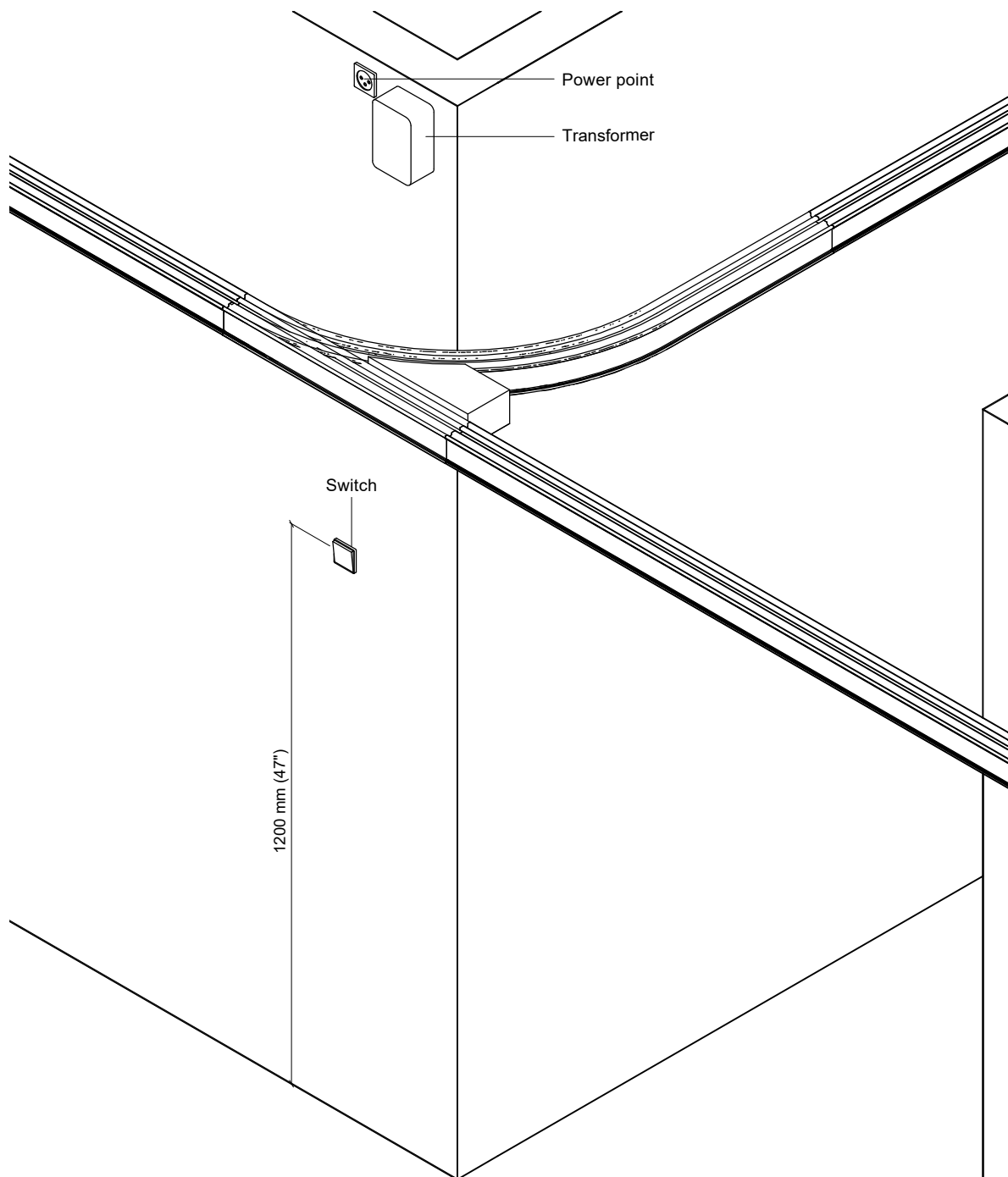


Wall switch for activating the Turn table.





Wall switch for activating the Switch track.





These precautions apply to installations made in Denmark. Local requirements may differ.

Guldmann ceiling hoist and rail systems are manufactured and installed in accordance with the rules on Electro-Medical Equipment IEC 60601-1.

Guldmann has a UL/DEMKO approval of its products which confirms that they meet the requirements contained in IEC 60601-1.

This regulation defines how medical equipment must be classified and also how it must be protected so that danger of electric shock does not arise when handling the products.

Guldmann ceiling hoist and related rail system are classified as equipment in Class I – High Voltage Regulation, Electro-Medical Equipment, Chapter 14.

Reference is made to Fig. 701A – Area Division 0 to 3.

Installation of the rail system is carried out with safety voltage – designated SELV. The safety transformer with a nominal voltage of 33 V AC voltage.

In accordance with the High Voltage Regulation, Chapter 701 – AREAS WITH BATHTUBS OR SHOWERS

Chapter 701.4 Protection for safety reasons

When SELV is used (safety voltage), protection against direct contact must be in place regardless of the size of the voltage, i.e. to min IP2X.

The geometry of the live rails meet the requirements for protection against contact.

Regarding installation of Guldmann rail systems in bathroom environments

Guldmann power supply (transformer) and rail with charging liner must be installed in accordance with the illustrations in Fig. 701A & 701B and guidelines interpreted here below.

Guideline for transformer:

- Transformer class 1 must be installed above 3 m (9 3/4') if installed directly over areas 2 and 3. Or above 2,25 m (7 1/4') if not installed directly above areas 2 and 3 (outside area 3)
- Transformer class 2 must be installed above 2,25 m (7 1/4') (area 3) if the mains power is protected by a residual-current circuit breaker max. 30 mA (RCCB) (HPFI-breaker "DK").

Guidelines for single rail and room covering rail system:

- Single rail system without charging liner must be installed above 2,25 m (7 1/4'), ground connection of rail (area 3 and outside area 3)

Guidelines for rail system with open end:

- The rail with charging liner must be installed with end cover and with a minimum clearance of 100 mm (4") to the charging liner from the open rail end. (to apply to IP20).

If e.g. cleaning by hosing, the power supply and charging area must be located completely separate from the area in which splashing with water may occur.

For single rails the grounding may be located as required either in the bathroom or in the adjacent room.

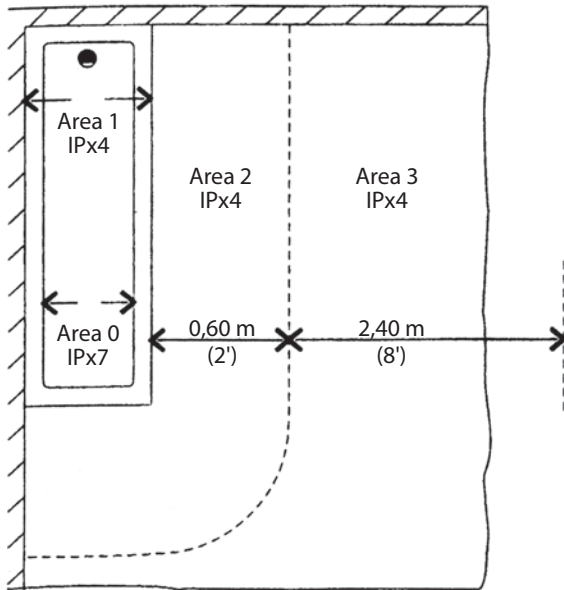
Note

These rules have been issued by the Electricity Council and form part of the High Voltage Regulation. There **may** be special local requirements for the installation of rail systems in medical treatment areas.

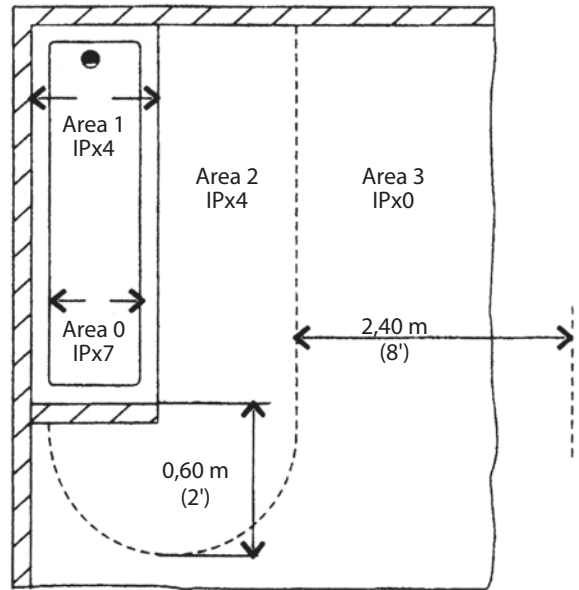
Any special requirements carried out without the participation of Guldmann are at the purchaser's own risk.



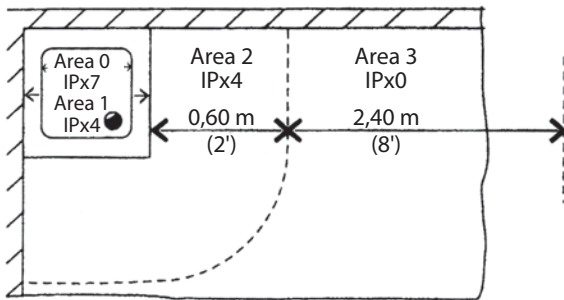
a) Bathtub



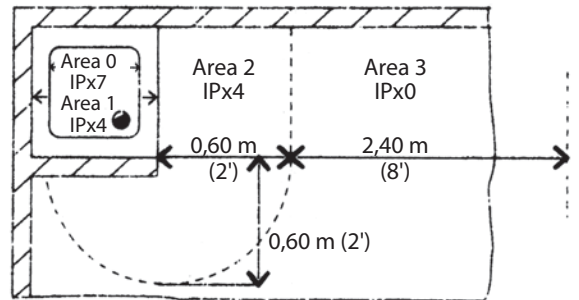
b) Bathtub with fixed partition wall



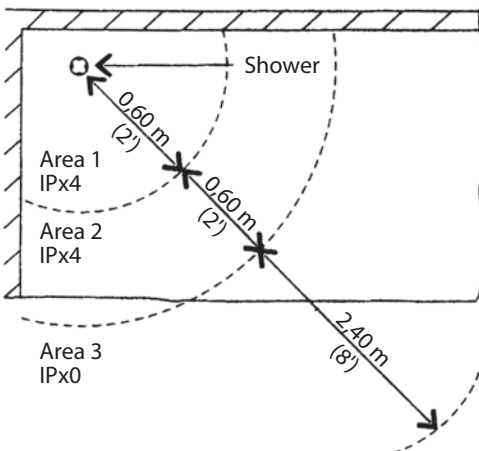
c) Showerbasin



d) Showerbasin with partition wall



e) Shower without basin



f) Shower without tray, but with fixed partition wall

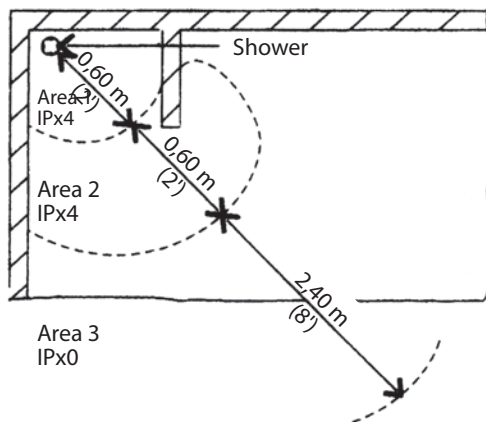
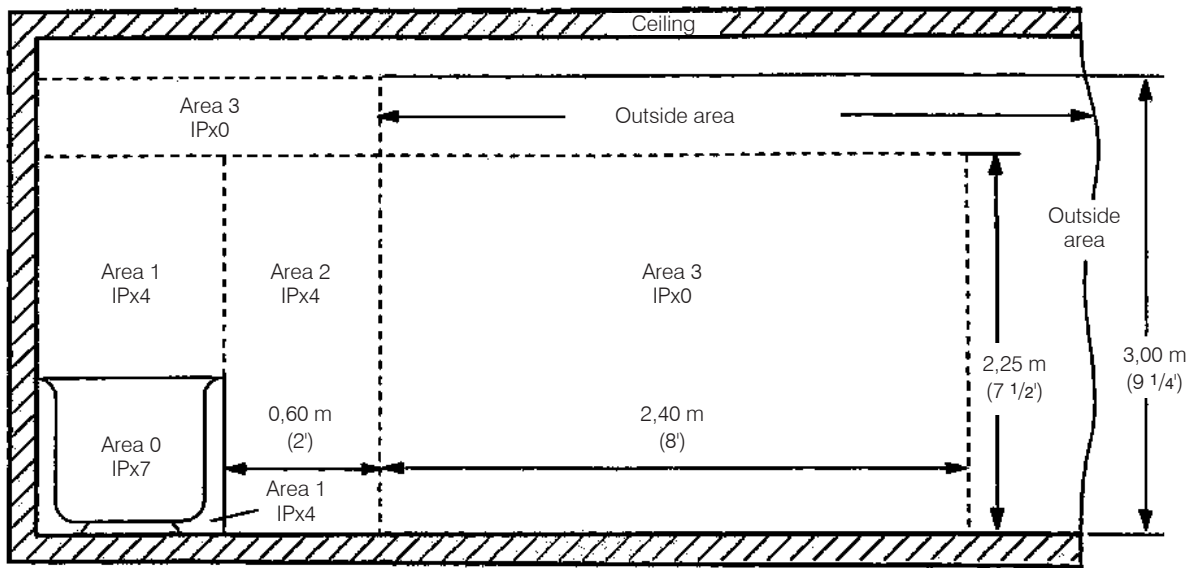


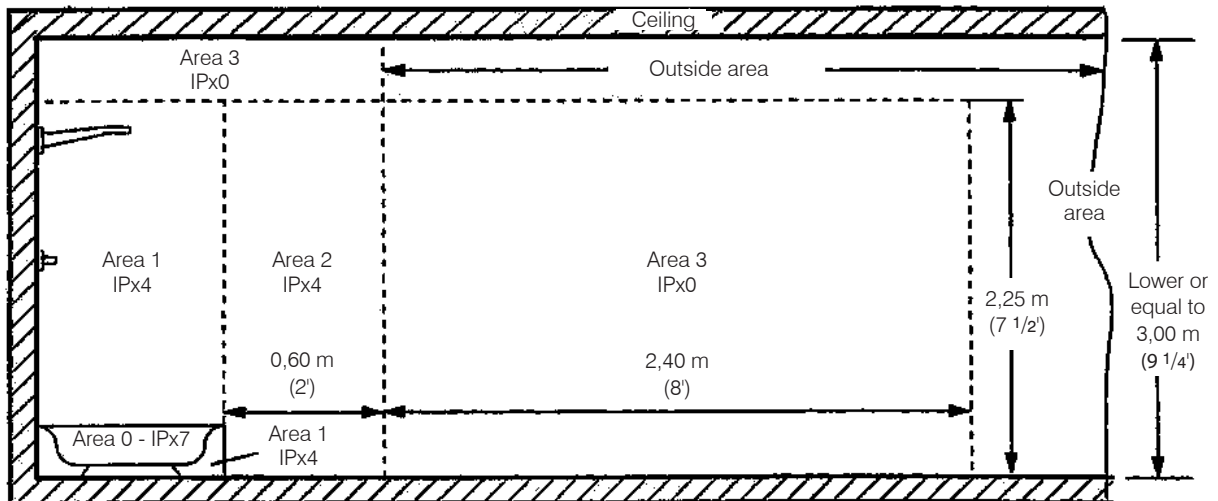
Figure 701 A – Area distribution (plan)



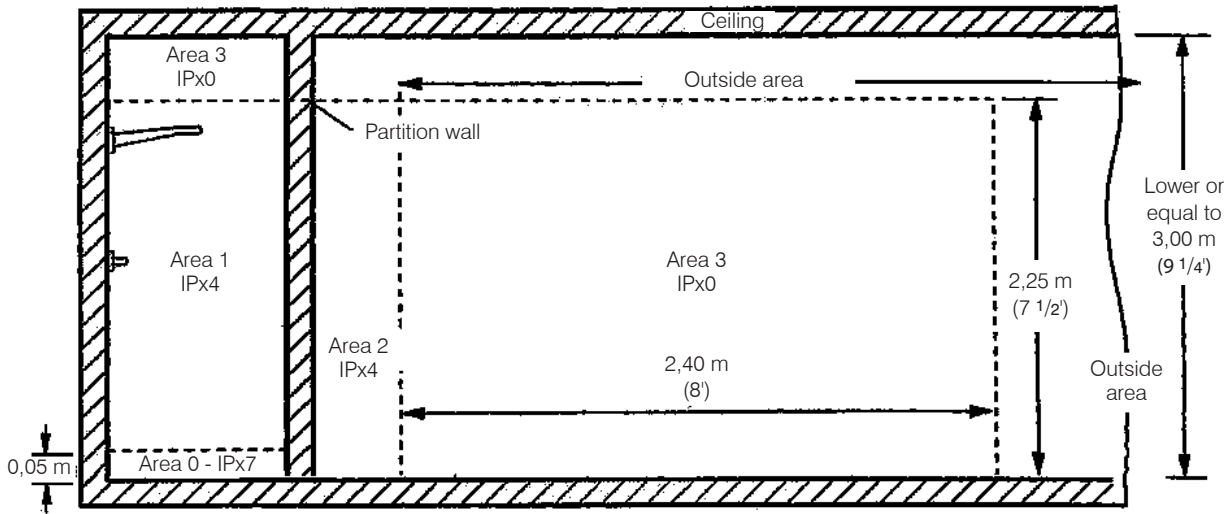
g) Bathtub



h) Showerbasin



i) Shower without basin, with partition wall





When installing rail systems in seismic area, there will be local regulations to comply with.

The guidelines are general and should be verified locally.

In cooperation with Hilti we have made these suggestions, where all parts are from Hilti or Guldmann.

The parts from Hilti come with Hilti's item number and product code.

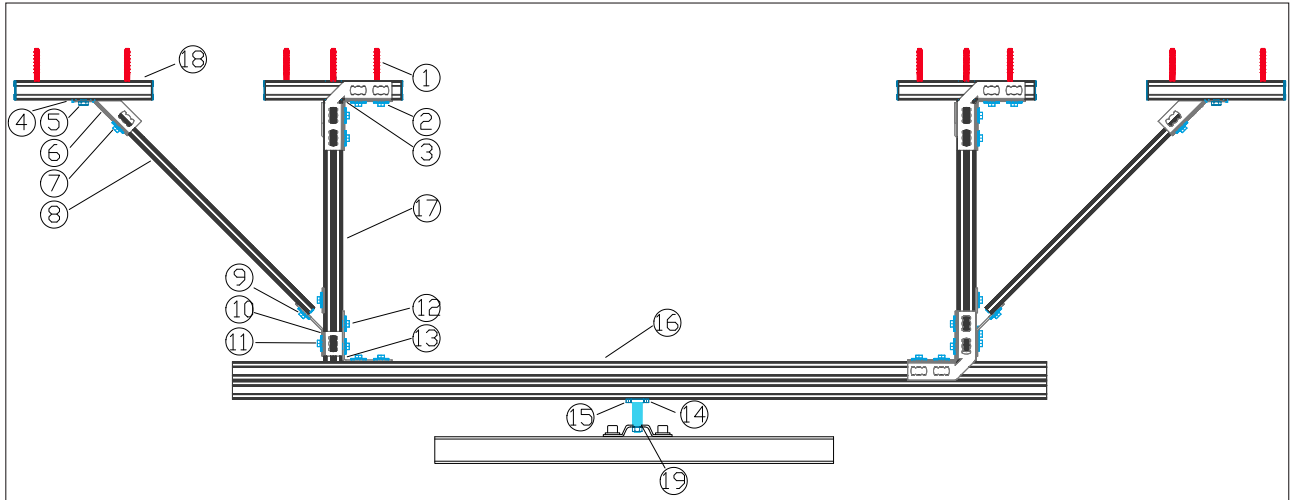
The seismic zones are either; Zoned Moderated Low to Moderated High or Zoned High to Very high.

Seismic zoned moderated low to moderated high ($0,5g < a < 1,0g$)		
HUS3-H 10x60 anchor	2079911	1
MQM M10 wing nut	369626	2, 6, 8, 9
M10x25 bolt	47426	3, 10
MQ-41 channel	369591	4
MQ-21d channel	369601	7
MQZ L11 plate	369679	5
M10 threaded rod		11

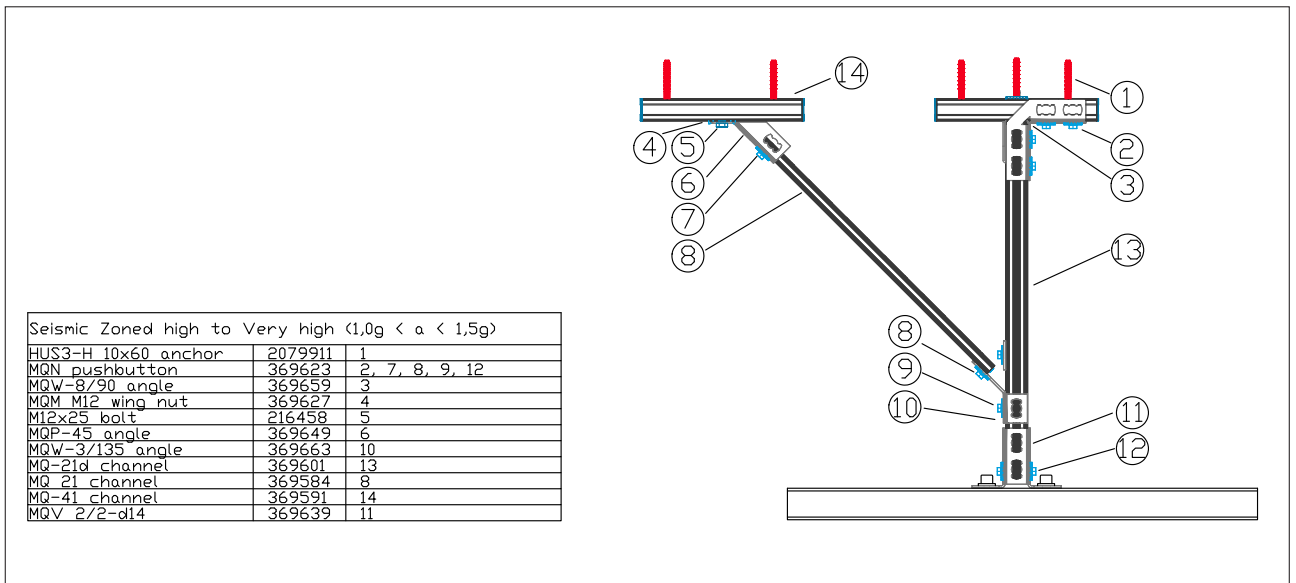
Seismic zoned moderated low to moderated high ($0,5g < a < 1,0g$)		
HUS3-H 10x60 anchor	2079911	1
MQM M10 wing nut	369626	2
M10x25 bolt	47426	3
MQ-41 channel	369591	4



PLANNING



Seismic Zoned high to Very high ($1,0g < a < 1,5g$)		
HUS3-H 10x60 anchor	2079911	1
MQN pushbutton	369623	2, 7, 9, 11, 12
MQW-8/90 angle	369659	3, 13
MQM M12 wing nut	369627	4
MQM M10 wing nut	369626	15
M12x25 bolt	216458	5
MQP-45 angle	369649	6
MQW-3/135 angle	369663	10
MQZ-L11 plate	369679	14
MQ-41 channel	369603	16
MQ-21d channel	369601	17
MQ 21 channel	369584	8
MQ-41 channel	369591	18
M10 threaded rod		19



Seismic Zoned high to Very high ($1,0g < a < 1,5g$)		
HUS3-H 10x60 anchor	2079911	1
MQN pushbutton	369623	2, 7, 8, 9, 12
MQW-8/90 angle	369659	3
MQM M12 wing nut	369627	4
M12x25 bolt	216458	5
MQP-45 angle	369649	6
MQW-3/135 angle	369663	10
MQ-21d channel	369601	13
MQ 21 channel	369584	8
MQ-41 channel	369591	14
MQV 2/2-d14	369639	11



Note

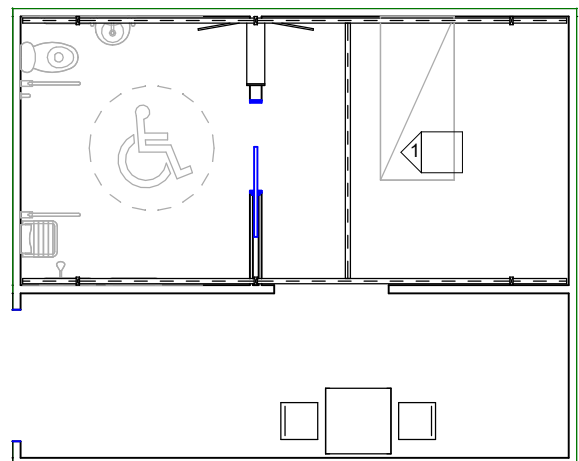
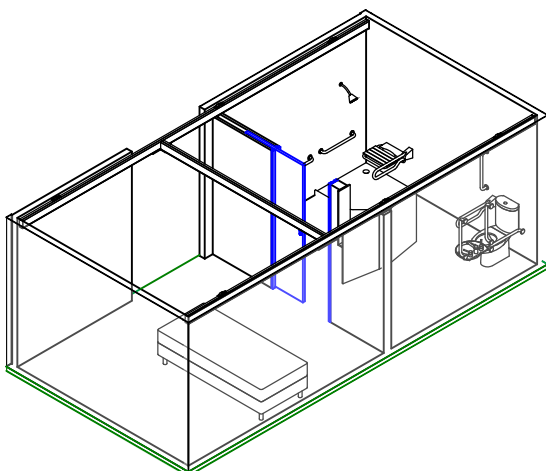
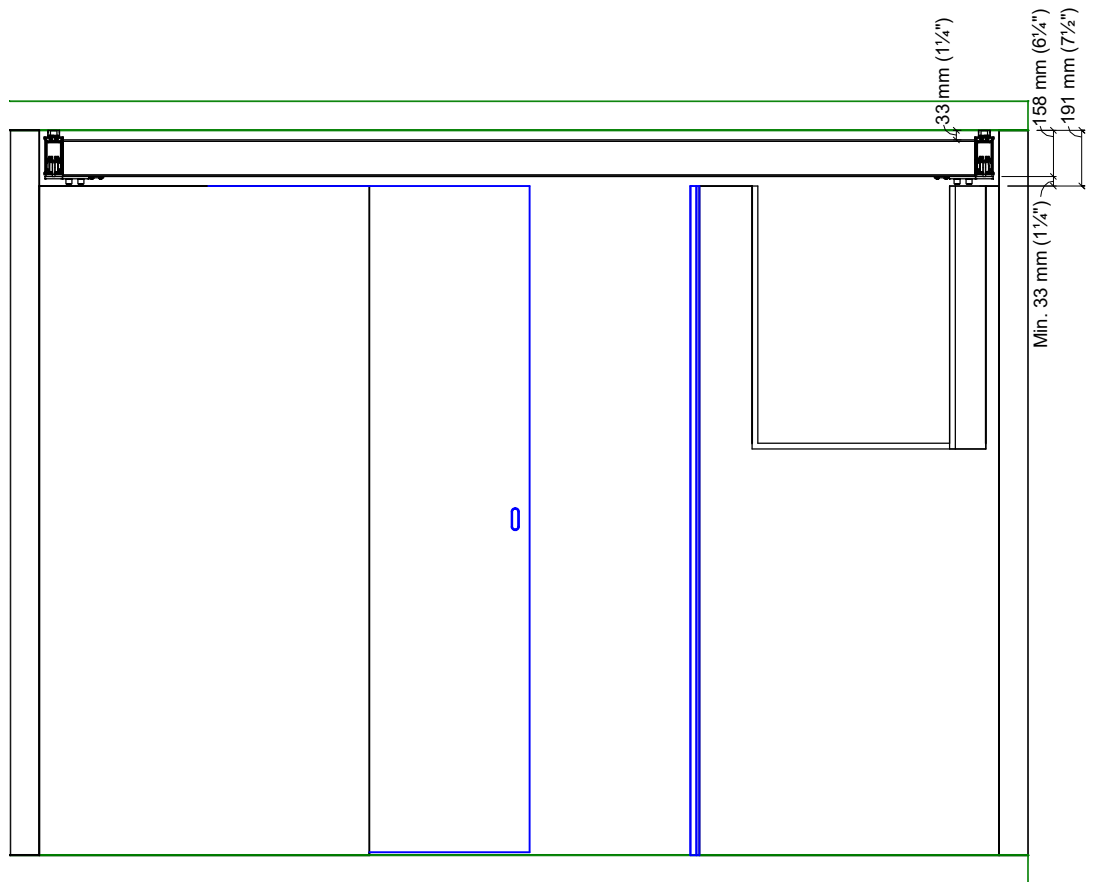
- An extra bracket over the wall is recommended to minimize the rail deflection.
- Remember that fire detectors, sprinklers and the like are not taken into account.
- Distance from wall to traverse rail should be calculated in each case.

Closet

- Must be done without top piece.
- Measures (minimum).
 - Height 450 mm (18")
 - Width 600 mm (23½")
 - Depth 220 mm (8¾")

Charging

For hoists with charging through the hand control, it is recommended to charge in the closet.





Note

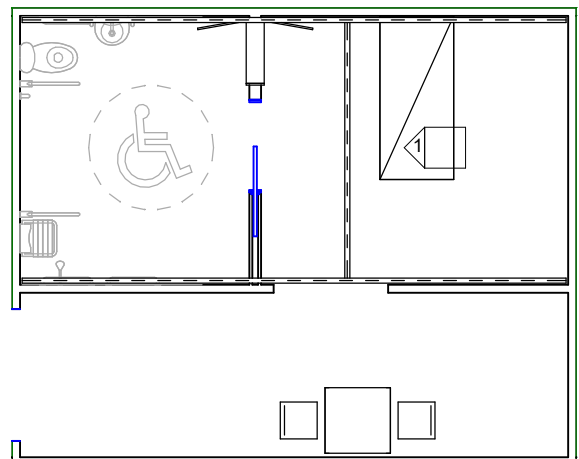
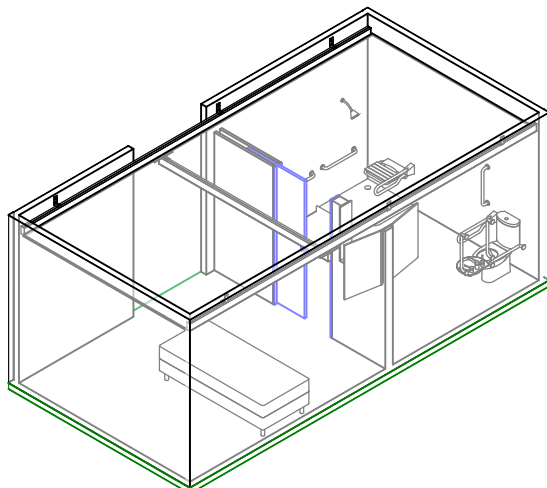
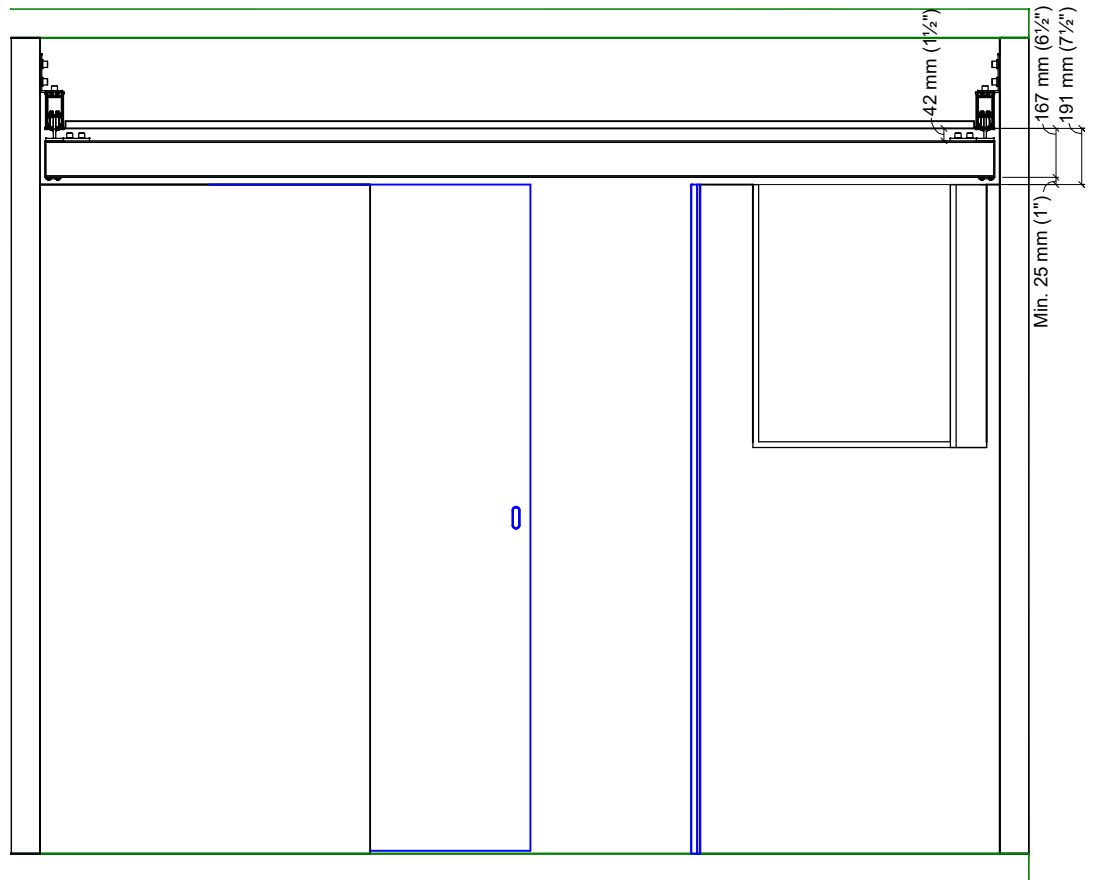
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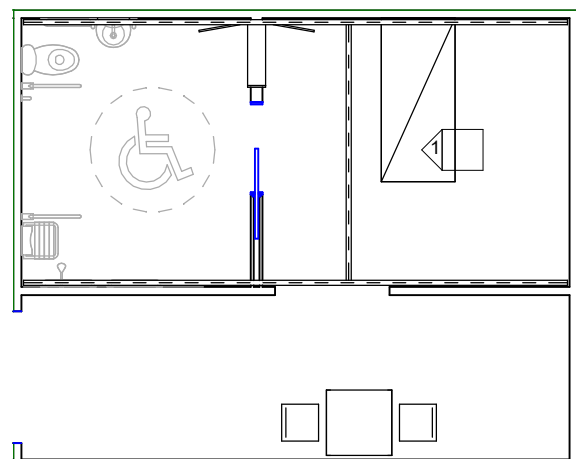
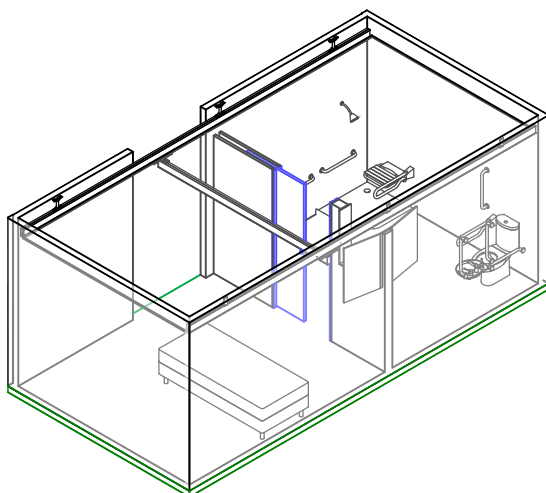
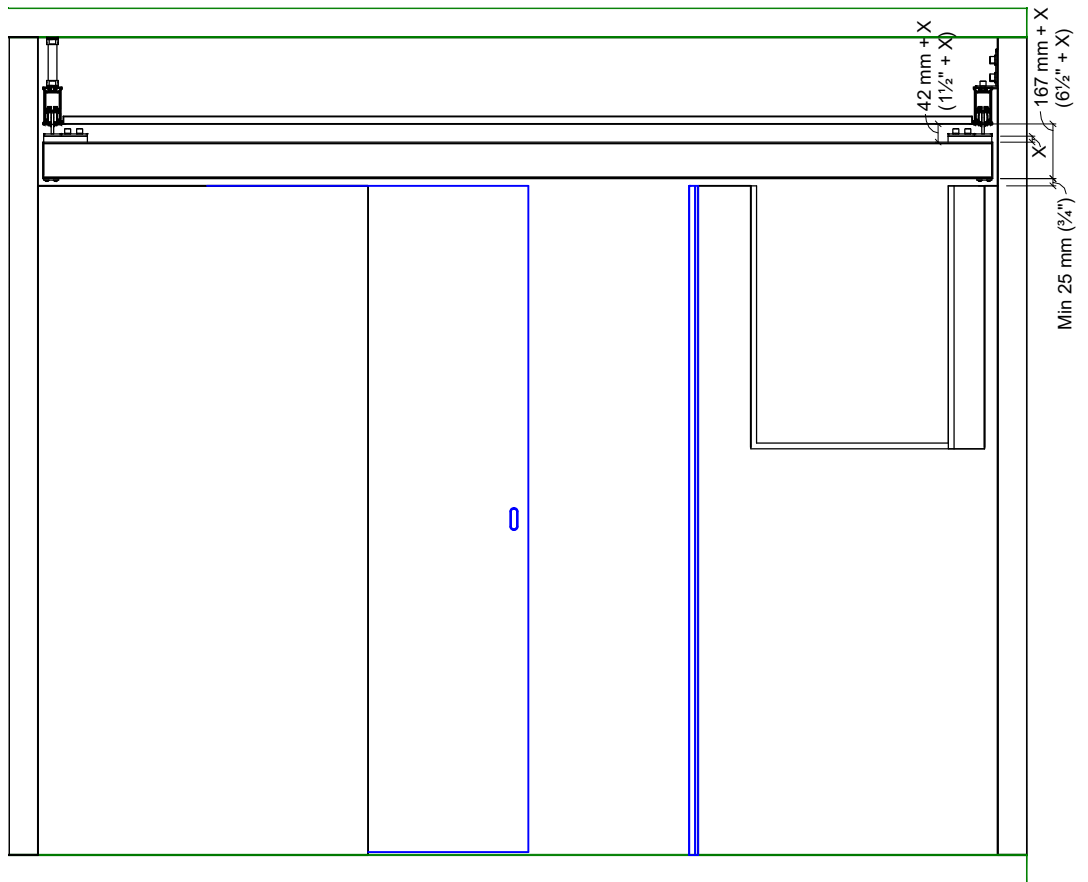
Charging

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Spacers for lowering traverse rail

It is possible to lower the traverse rail with help of spacers, so the distance between ceiling and traverse rail increases up to 100 mm (4").

X = 15 mm (½"), 20 mm (¾"), 30 mm (1¼"), 35 mm (1½"),
40 mm (1½"), 50 mm (2"), 60 mm (2½"), 70 mm (2¾"),
80 mm (3"), 90 mm (3½"), 100 mm (4")





Silkeborgmodel
With cut-out in the parallel rails

Guldmann™

PLANNING

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- Distance from wall to traverse rail should be calculated in each case.

Closet

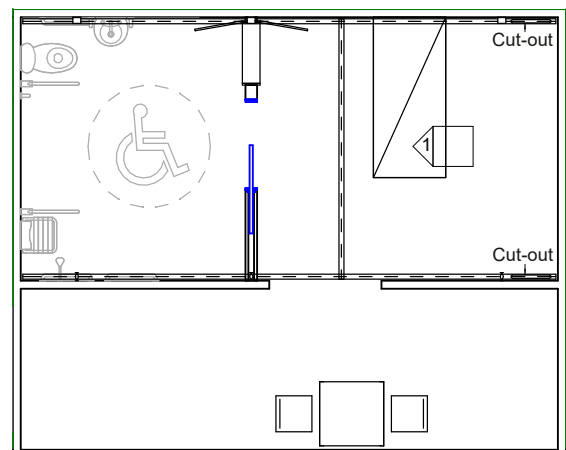
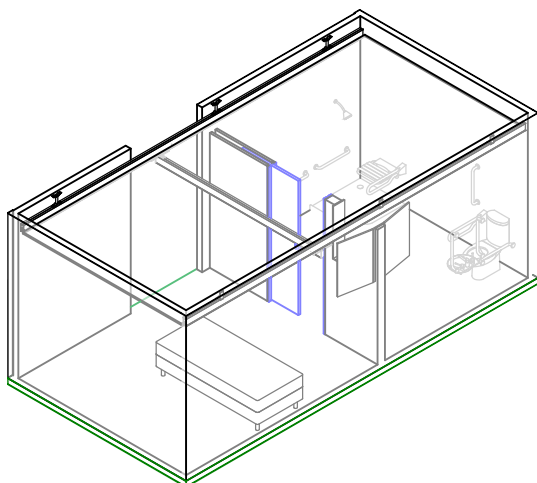
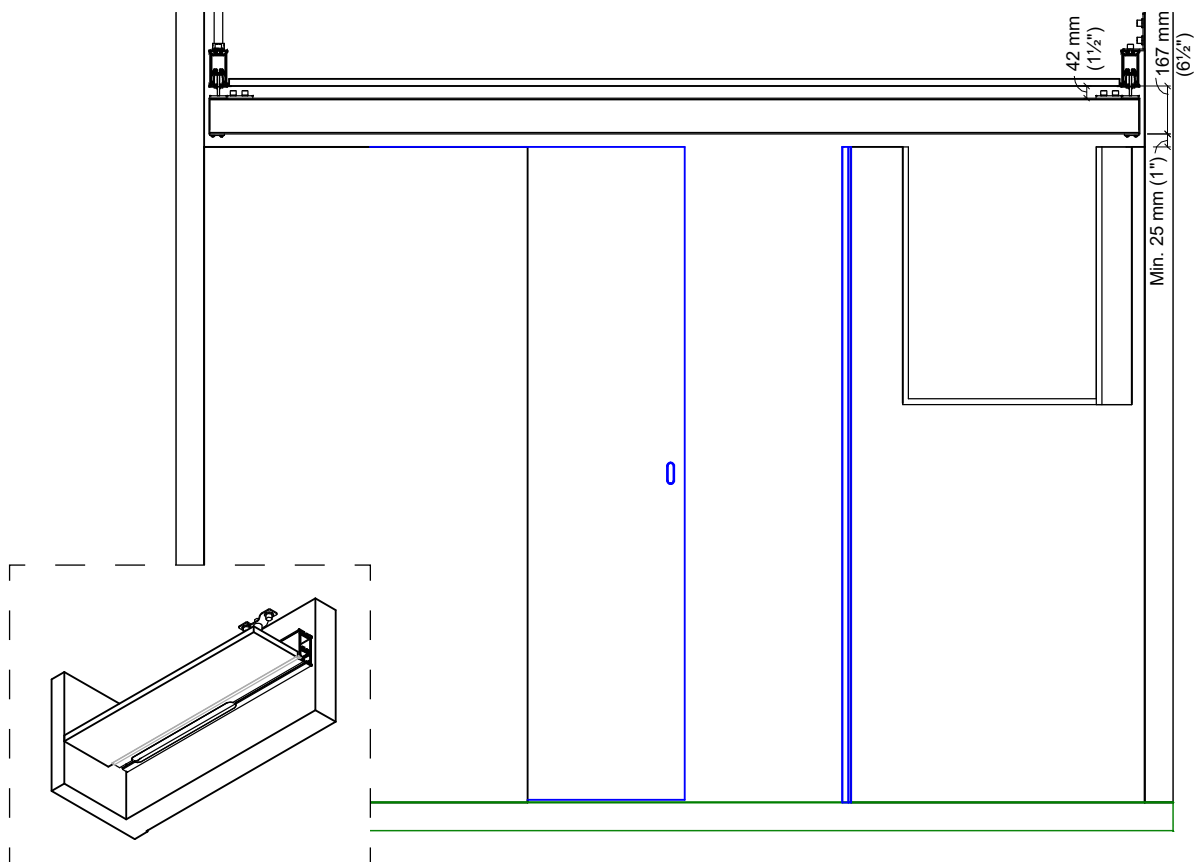
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 - Depth 220 mm (8¾")

Charging

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Cut-out

With parallel rails which are built-in the ceiling it is recommended to have a cut-out, so traverse trolleys etc. can be easily maintained.





Note

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- Remember that fire detectors, sprinklers and the like are not taken into account.
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Closet

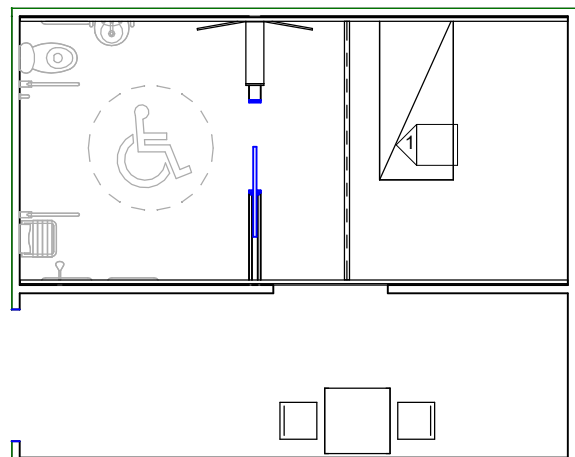
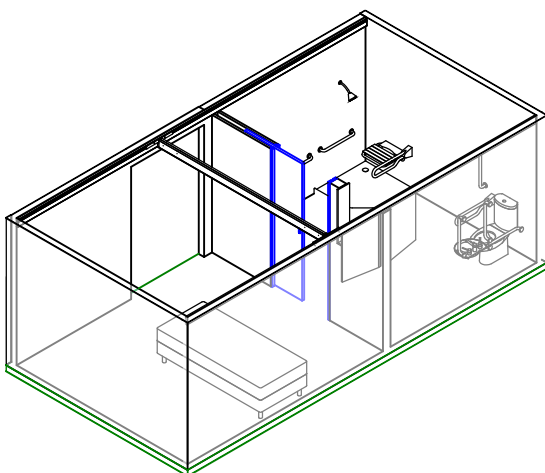
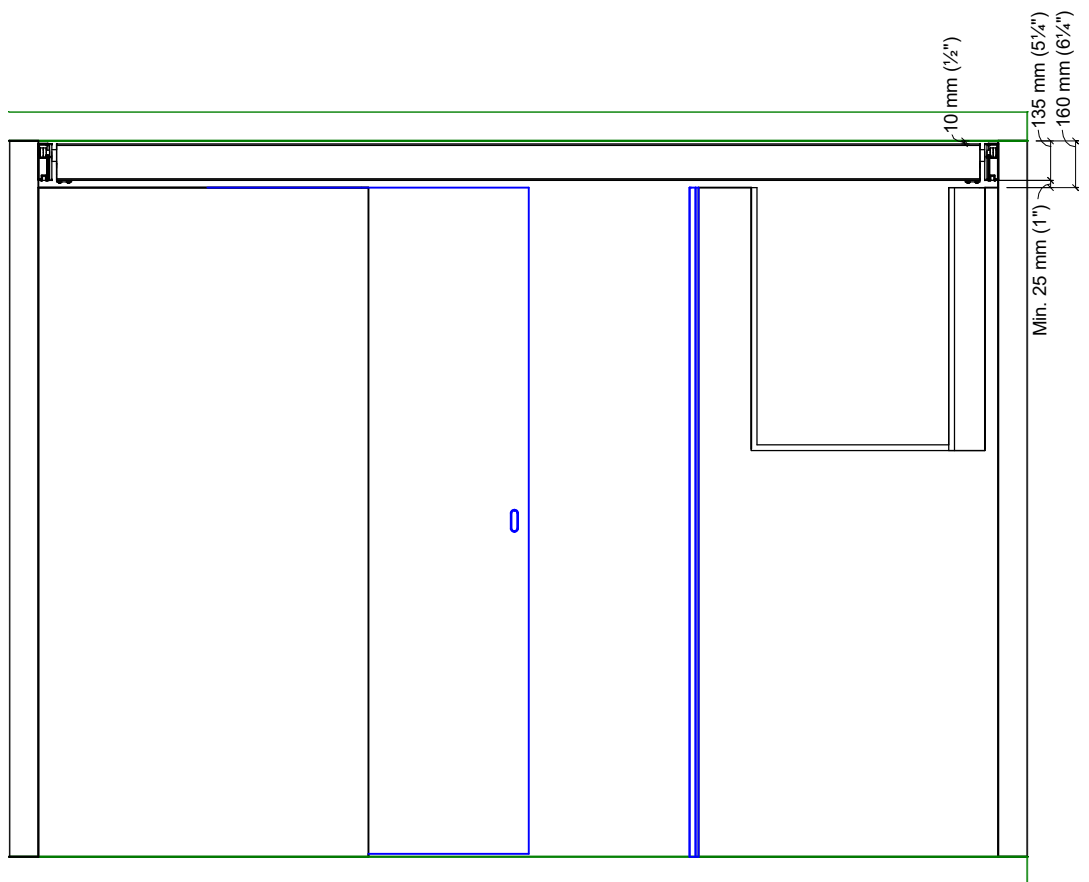
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Closet

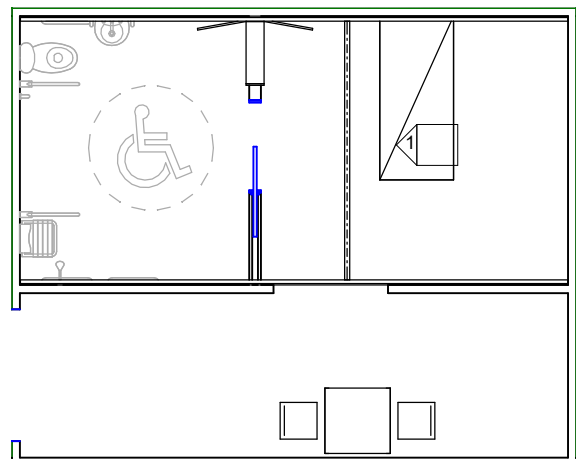
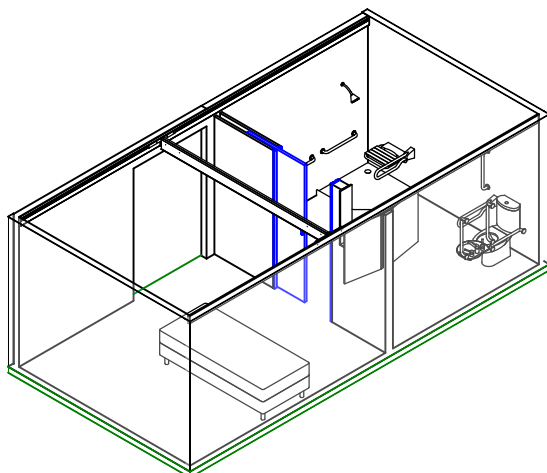
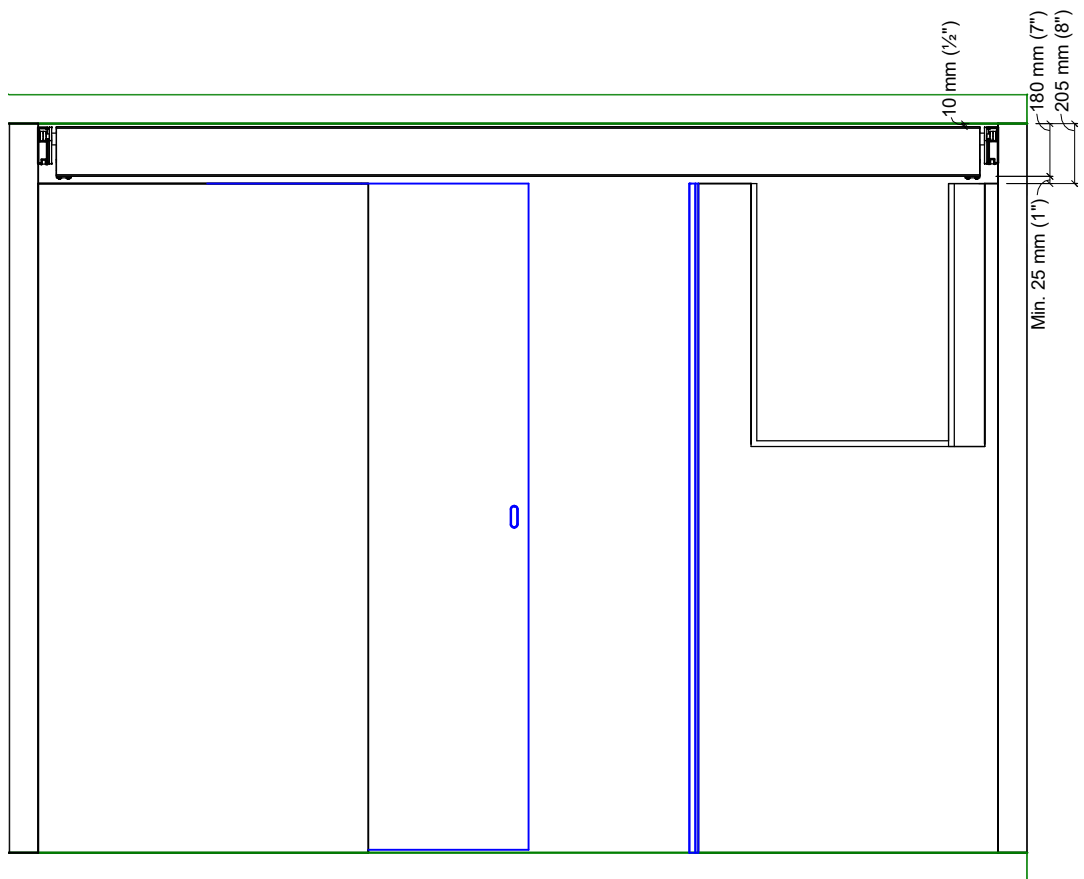
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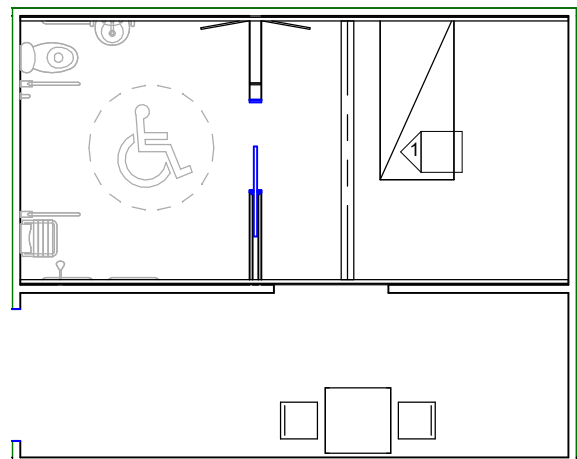
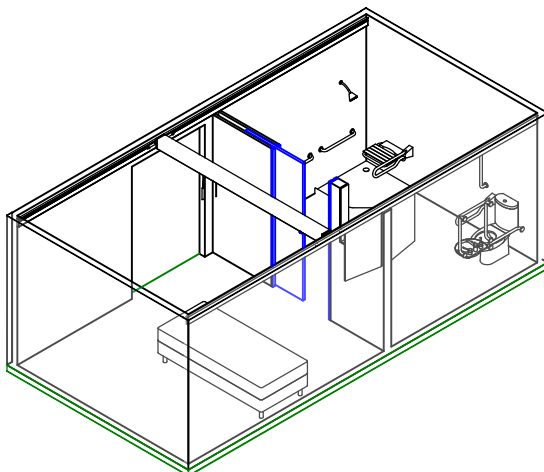
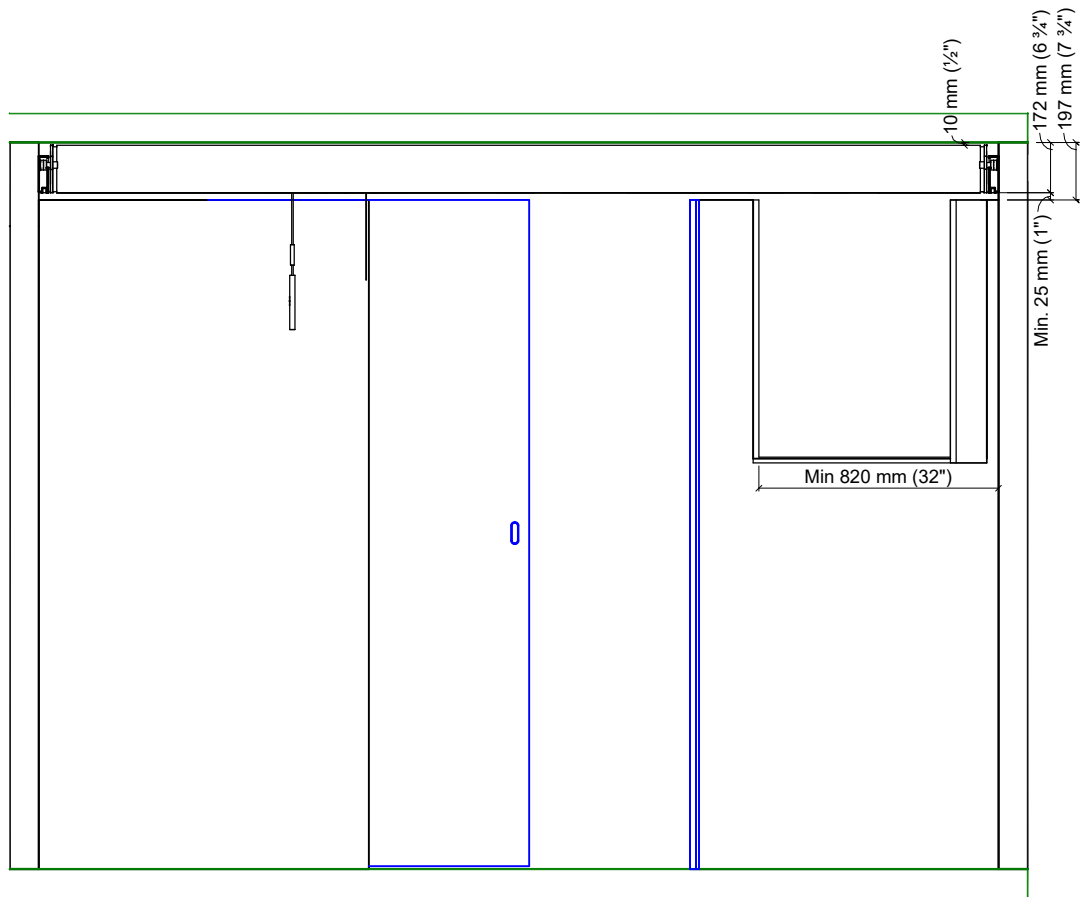
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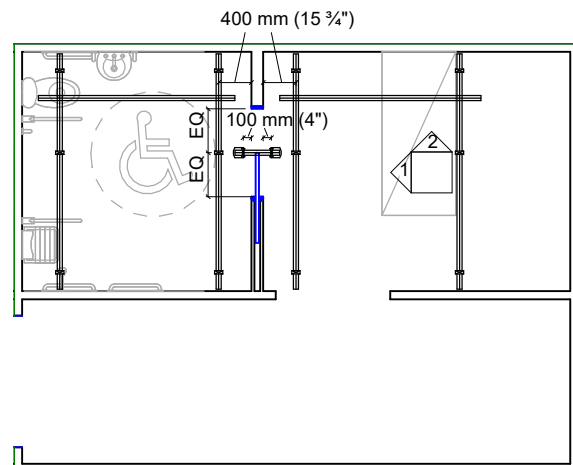
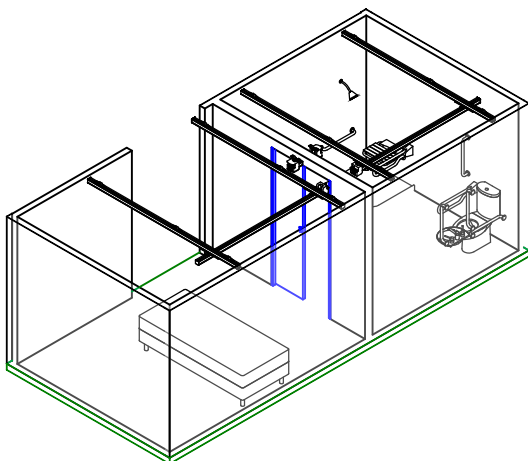
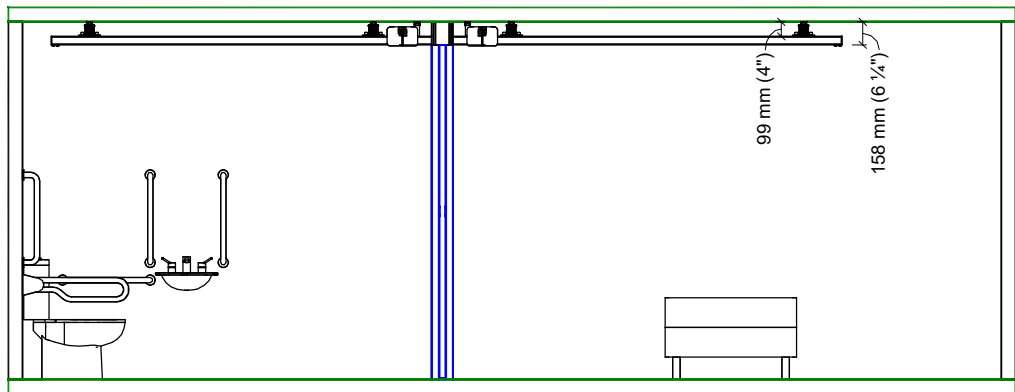
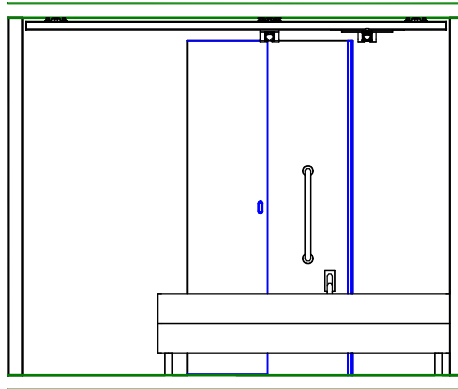
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Note

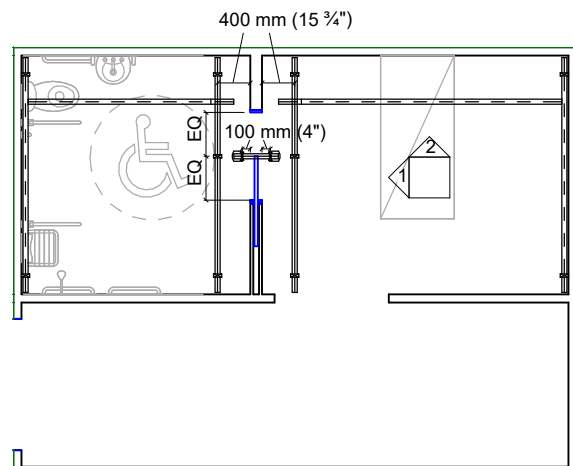
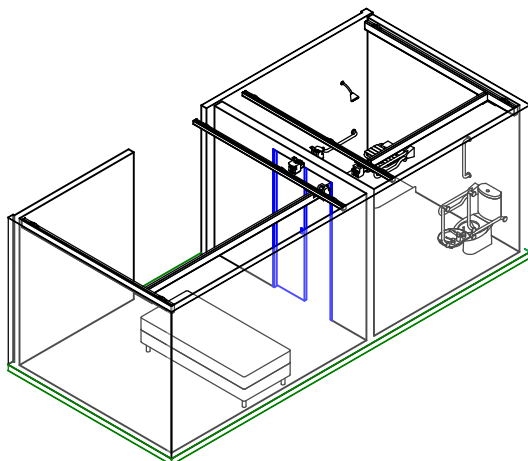
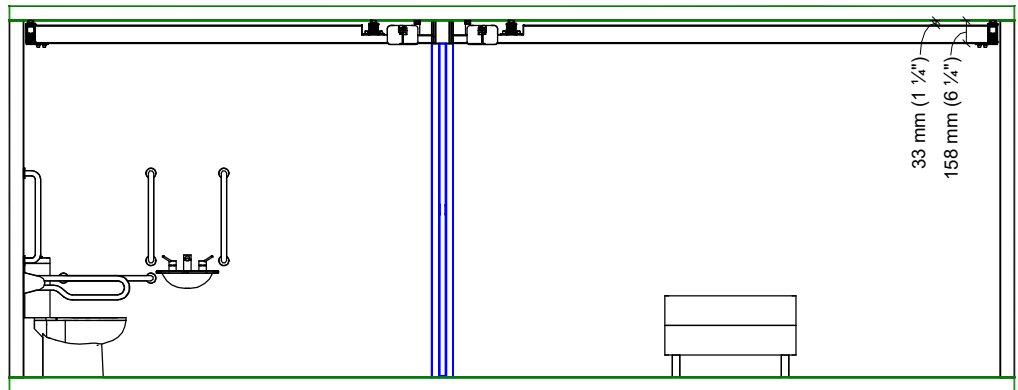
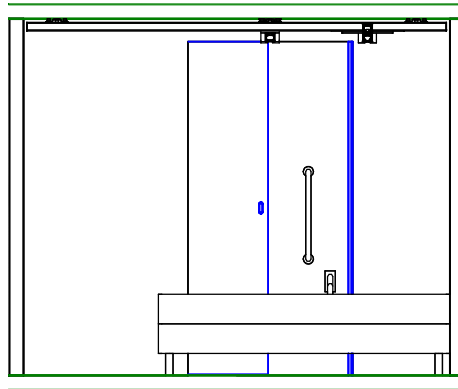
- All measurements are minimum measurements
- The Combi lock must be installed in the ceiling construction (concrete or timber 100 x 150 mm (4 x 6"))
- SWL is 255 kg (560 lbs)
- Sliding door is placed in the wall
- Power outlet for charging must be placed at the rear parallel rail from the Combi lock





Note

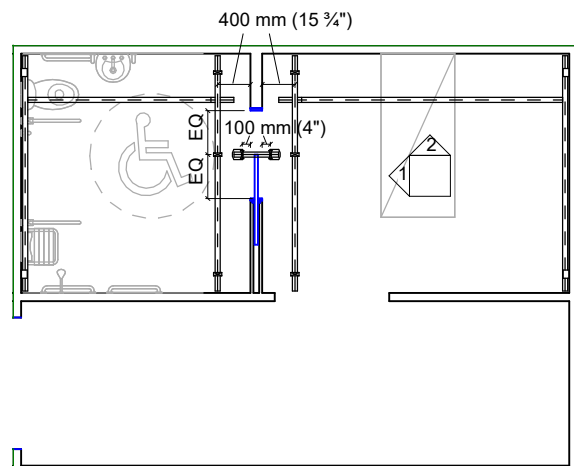
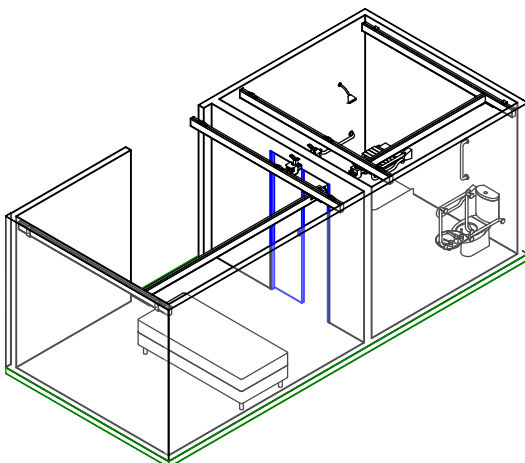
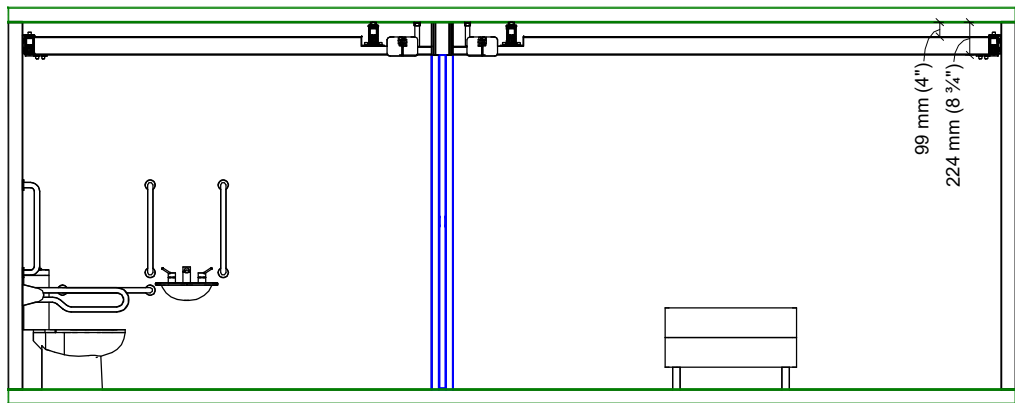
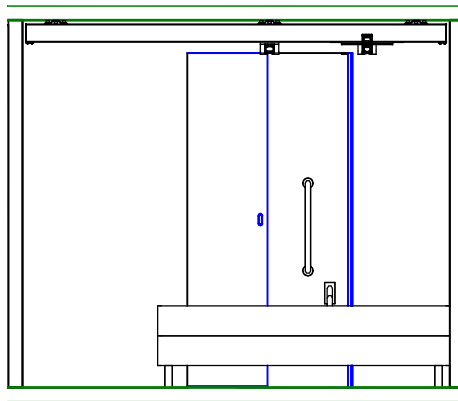
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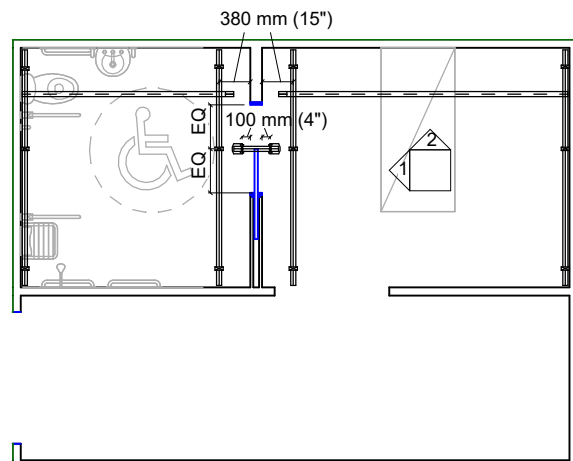
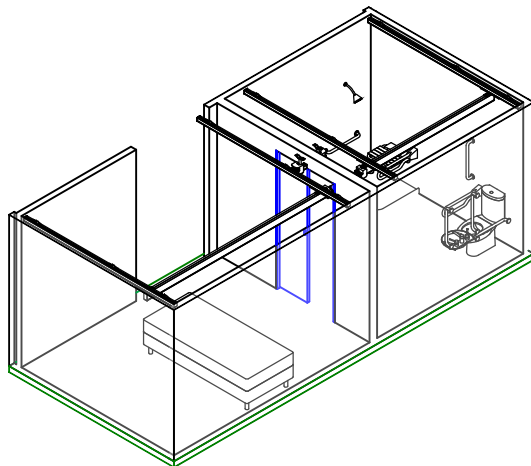
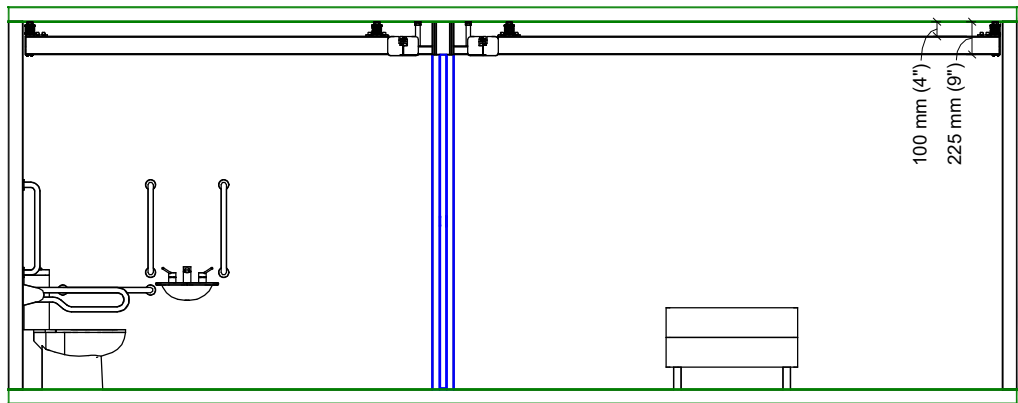
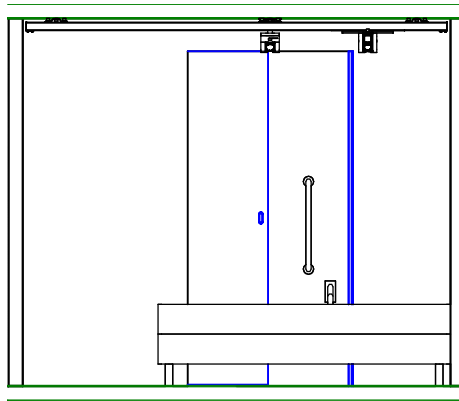
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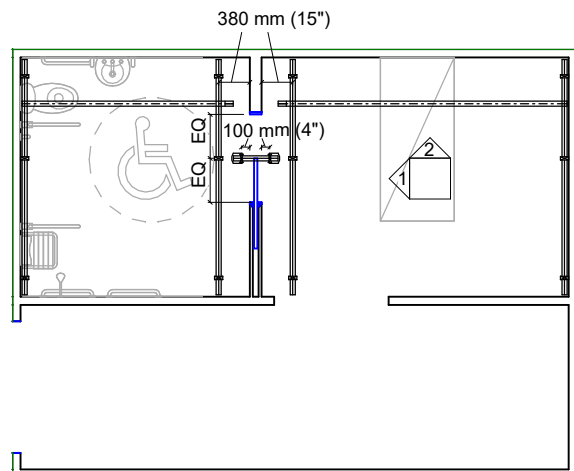
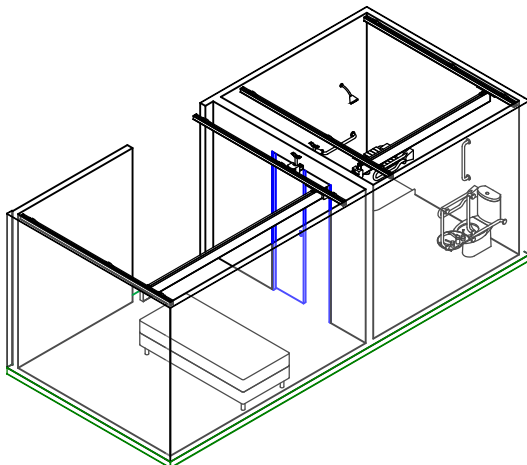
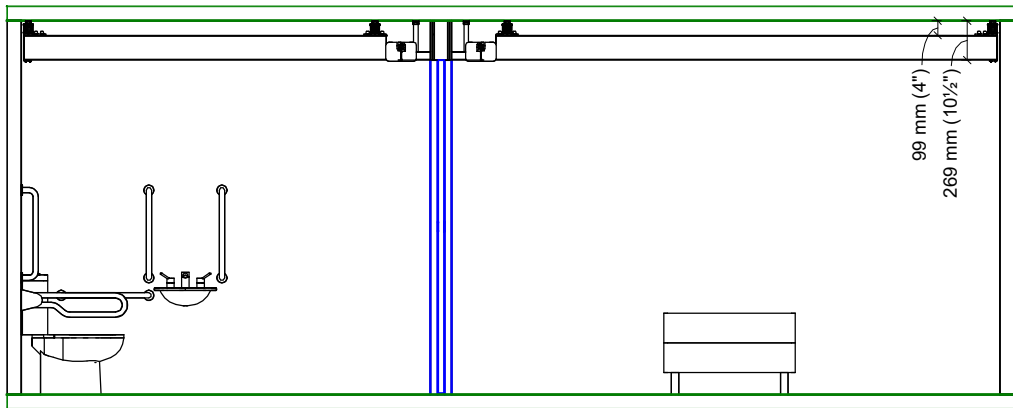
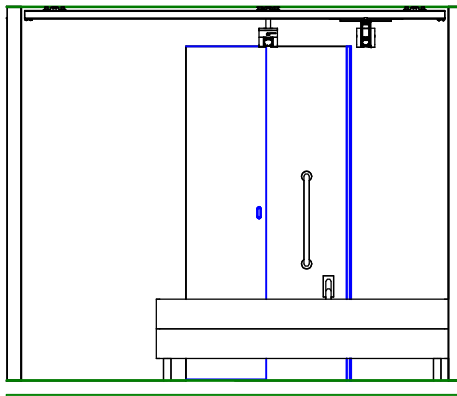
- All measurements are minimum measurements
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Note

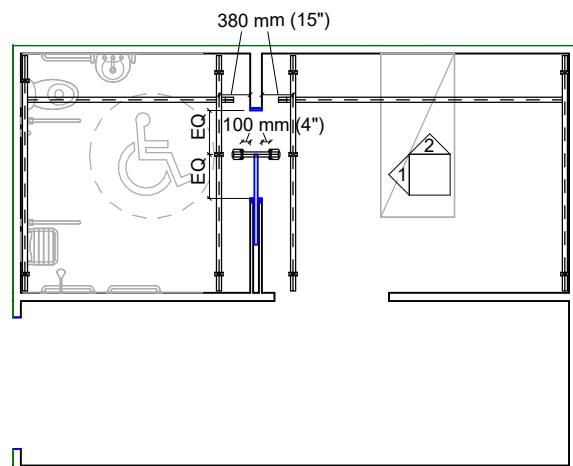
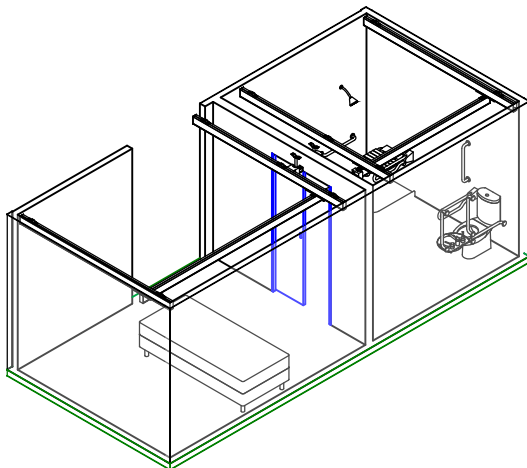
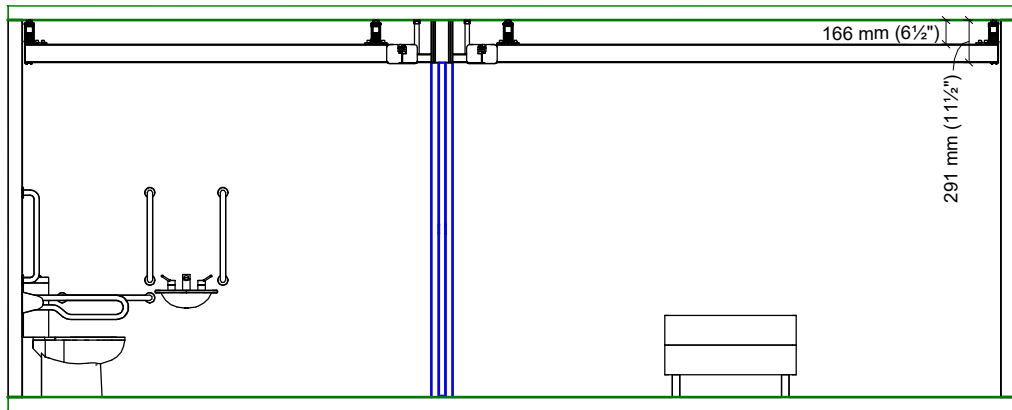
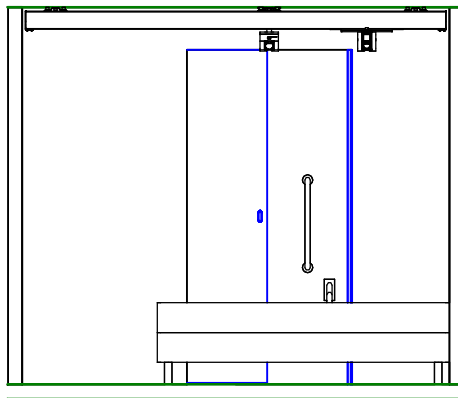
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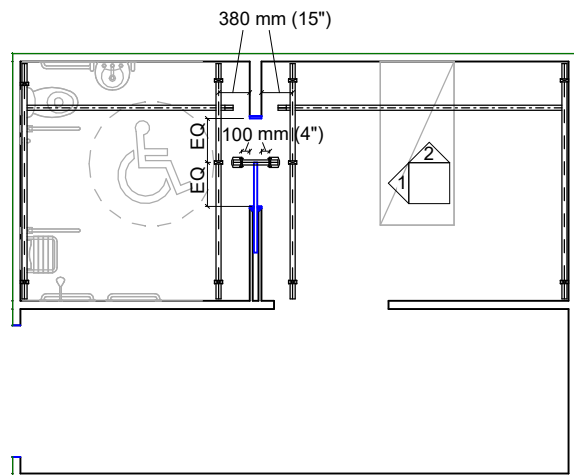
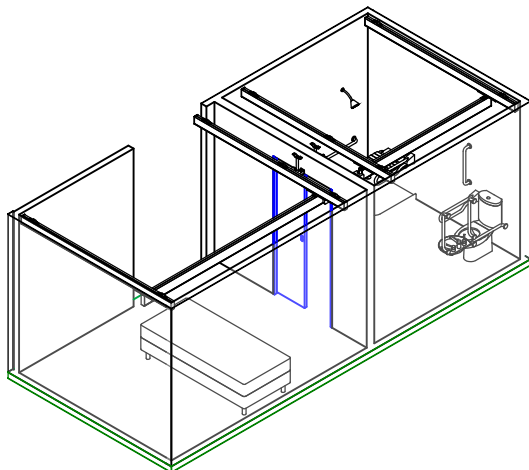
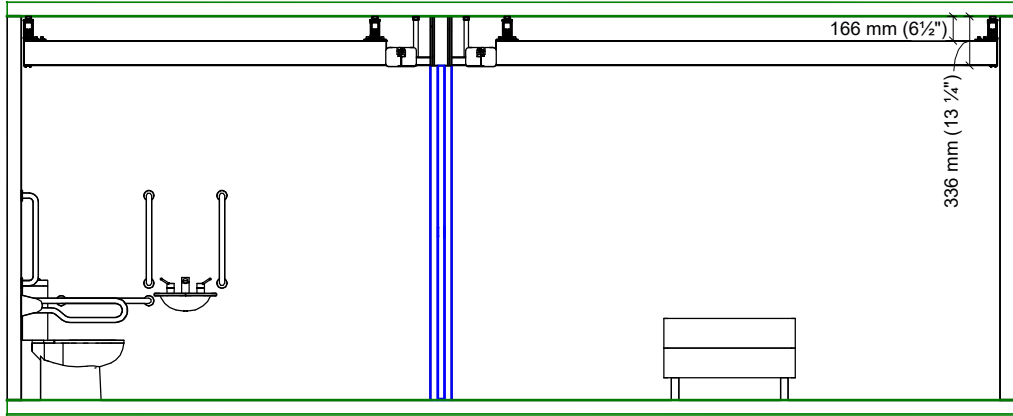
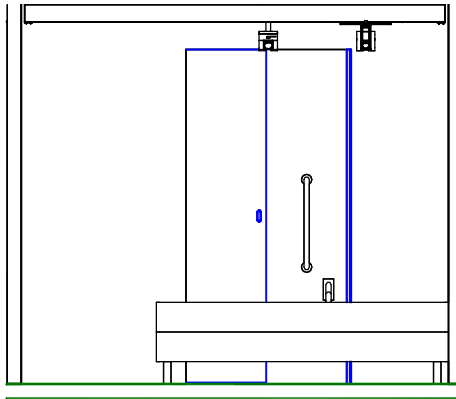
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Note

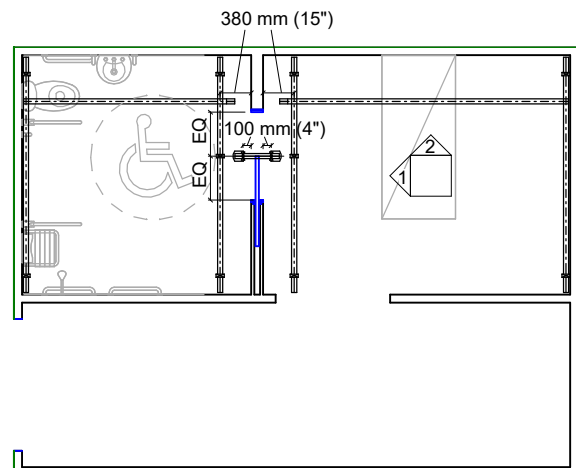
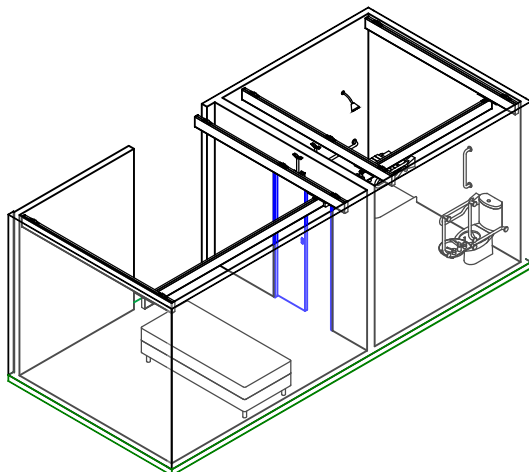
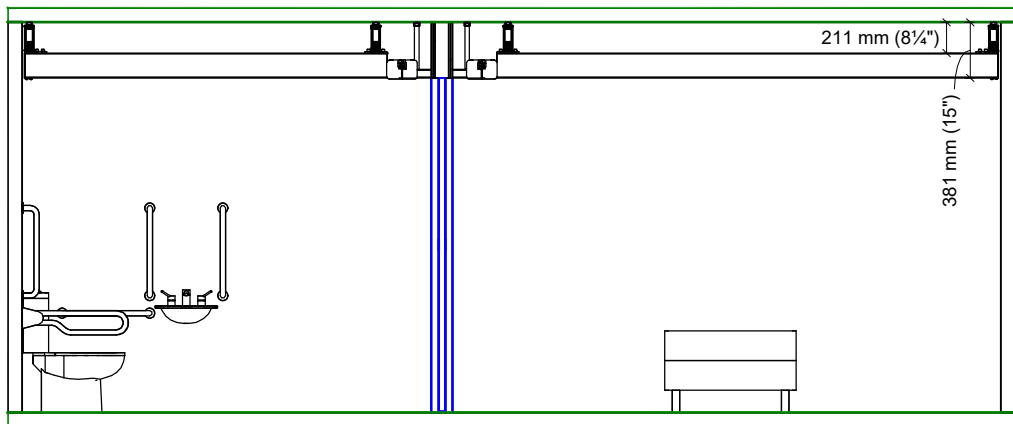
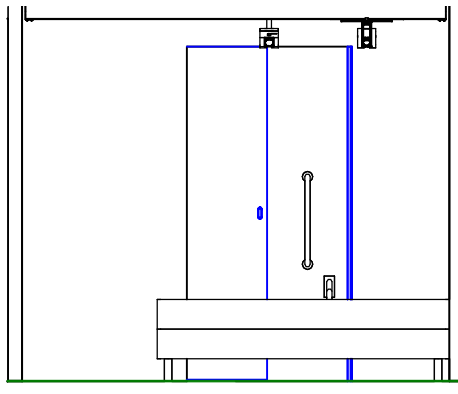
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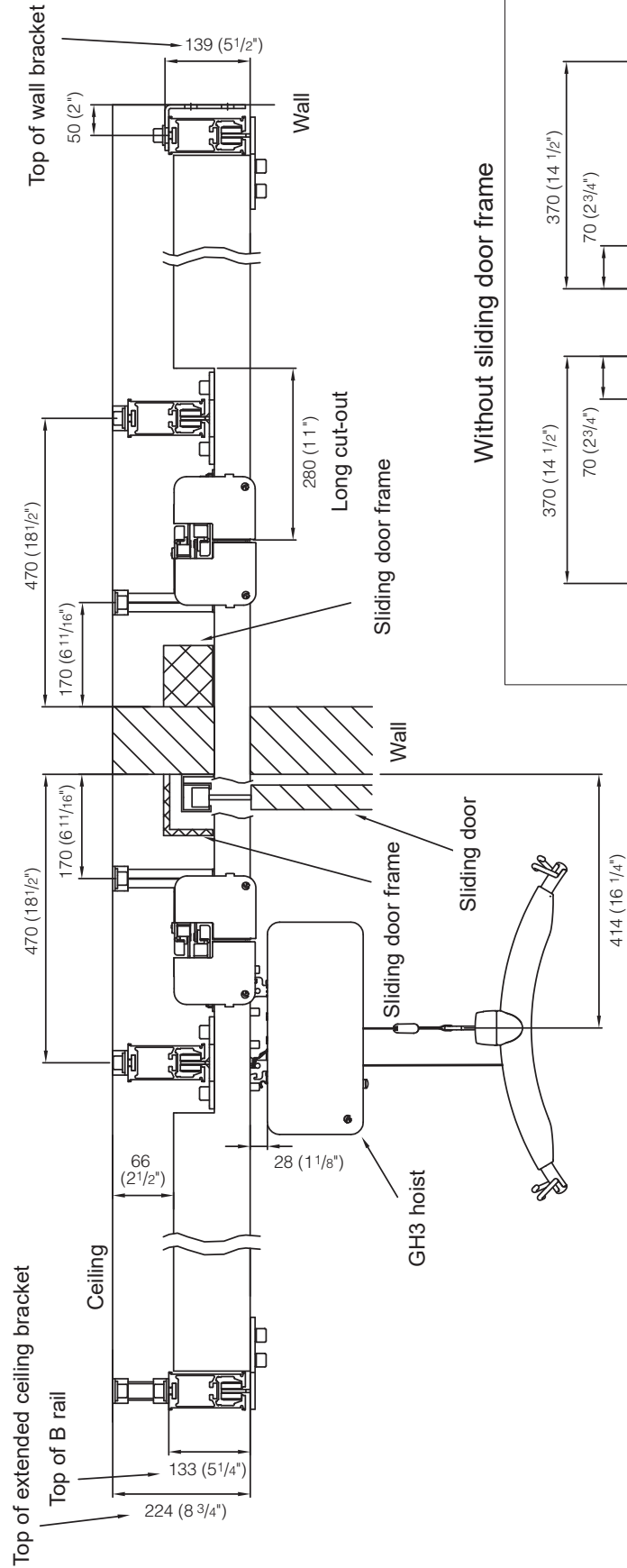
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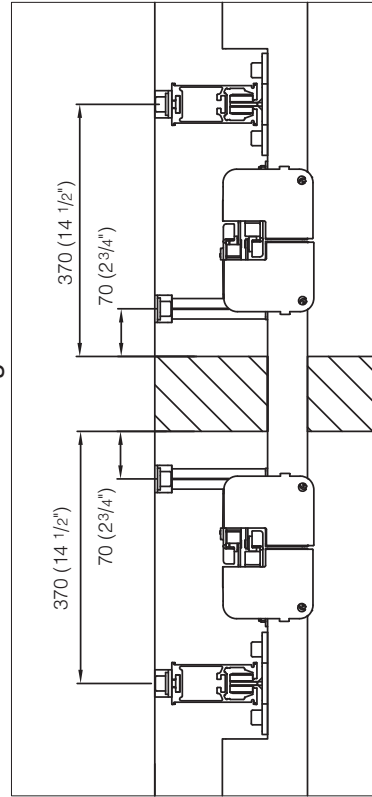


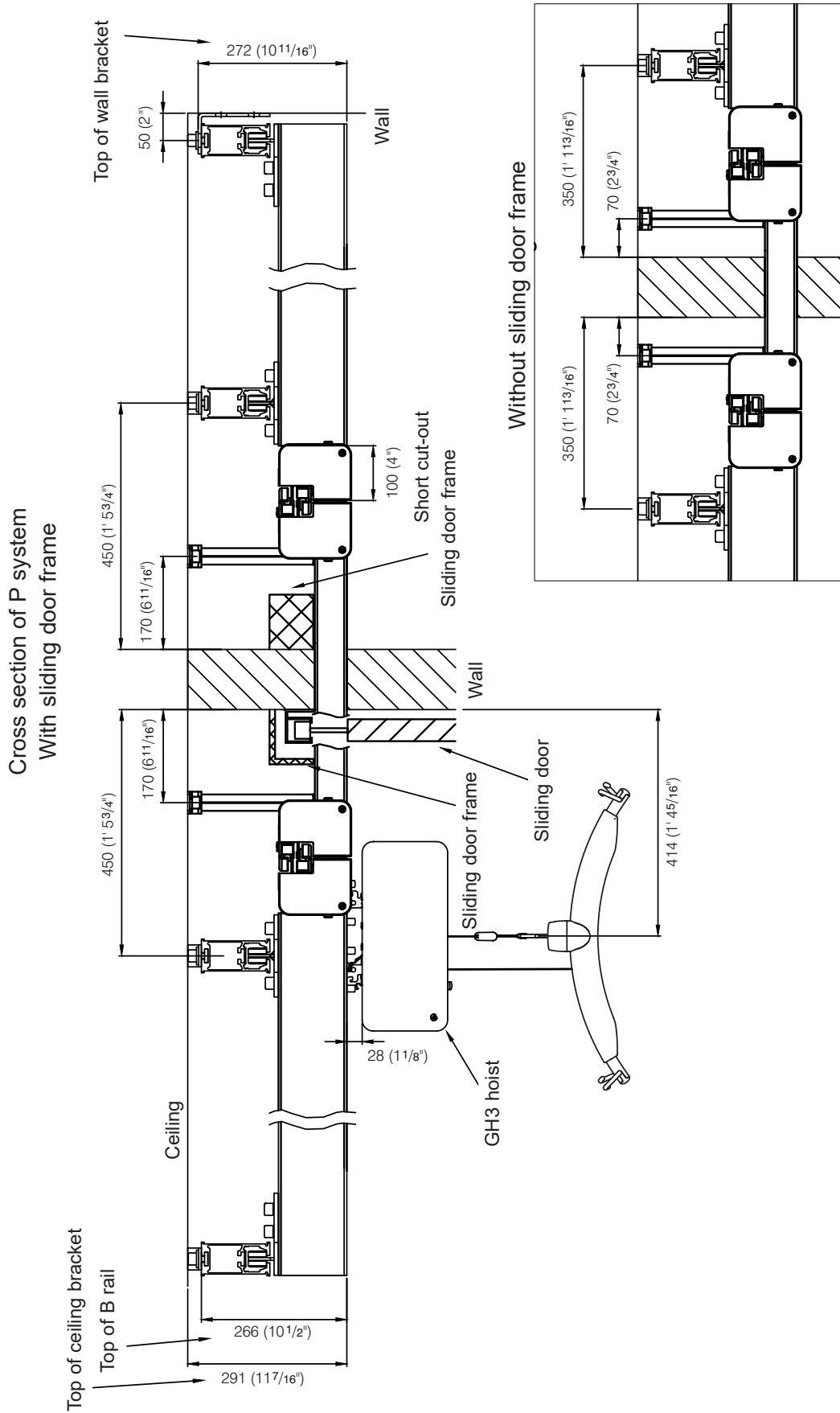


Cross section of MB system
with sliding door frame



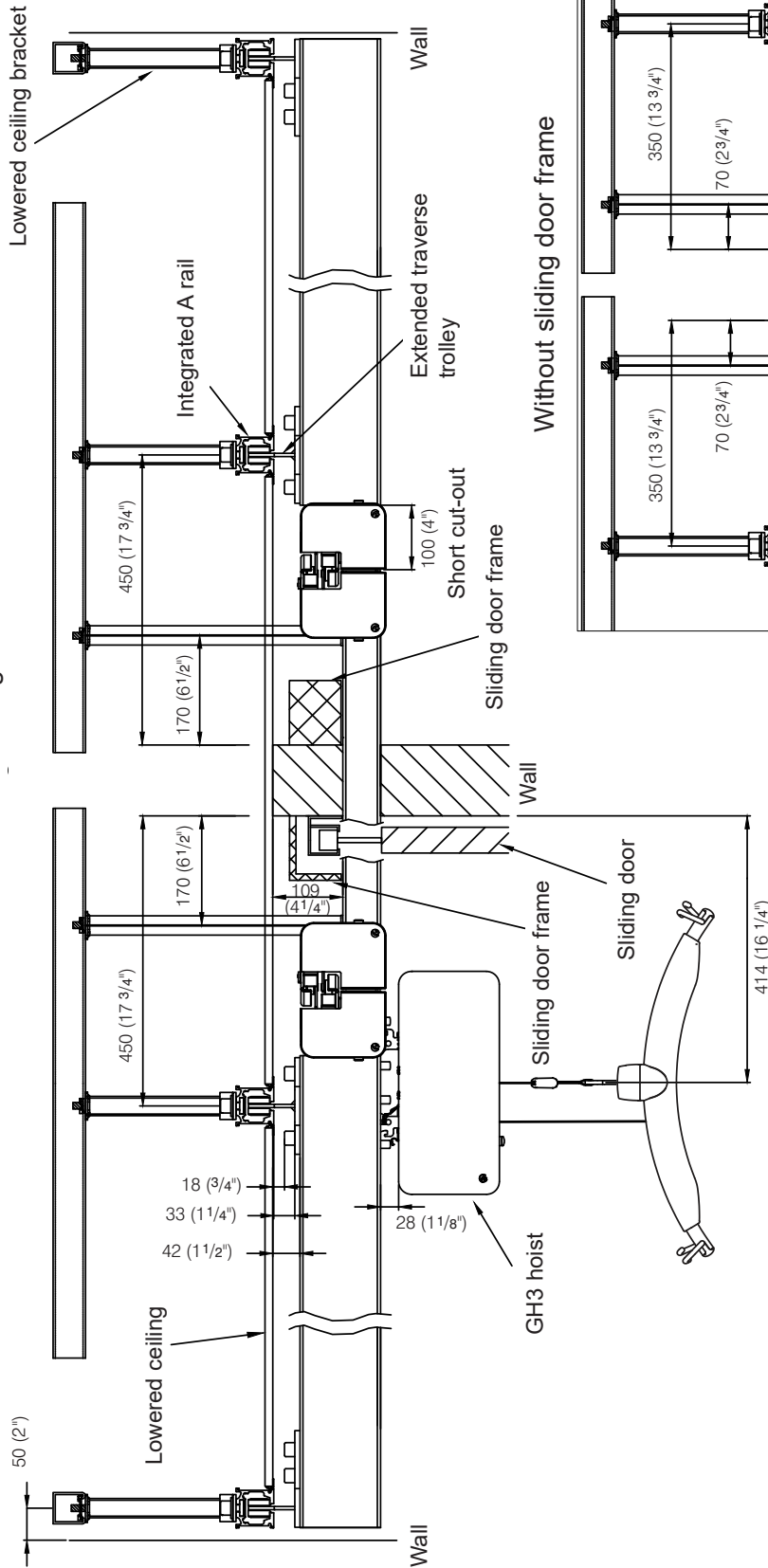
Without sliding door frame



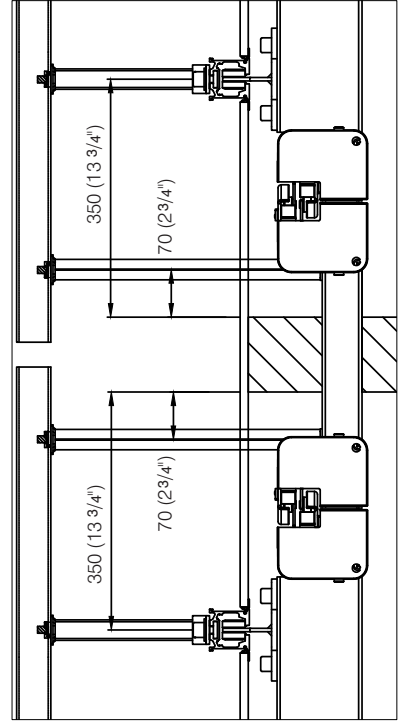




Cross section of N system integrated in ceiling with lowered traverse trolleys
With sliding door frame

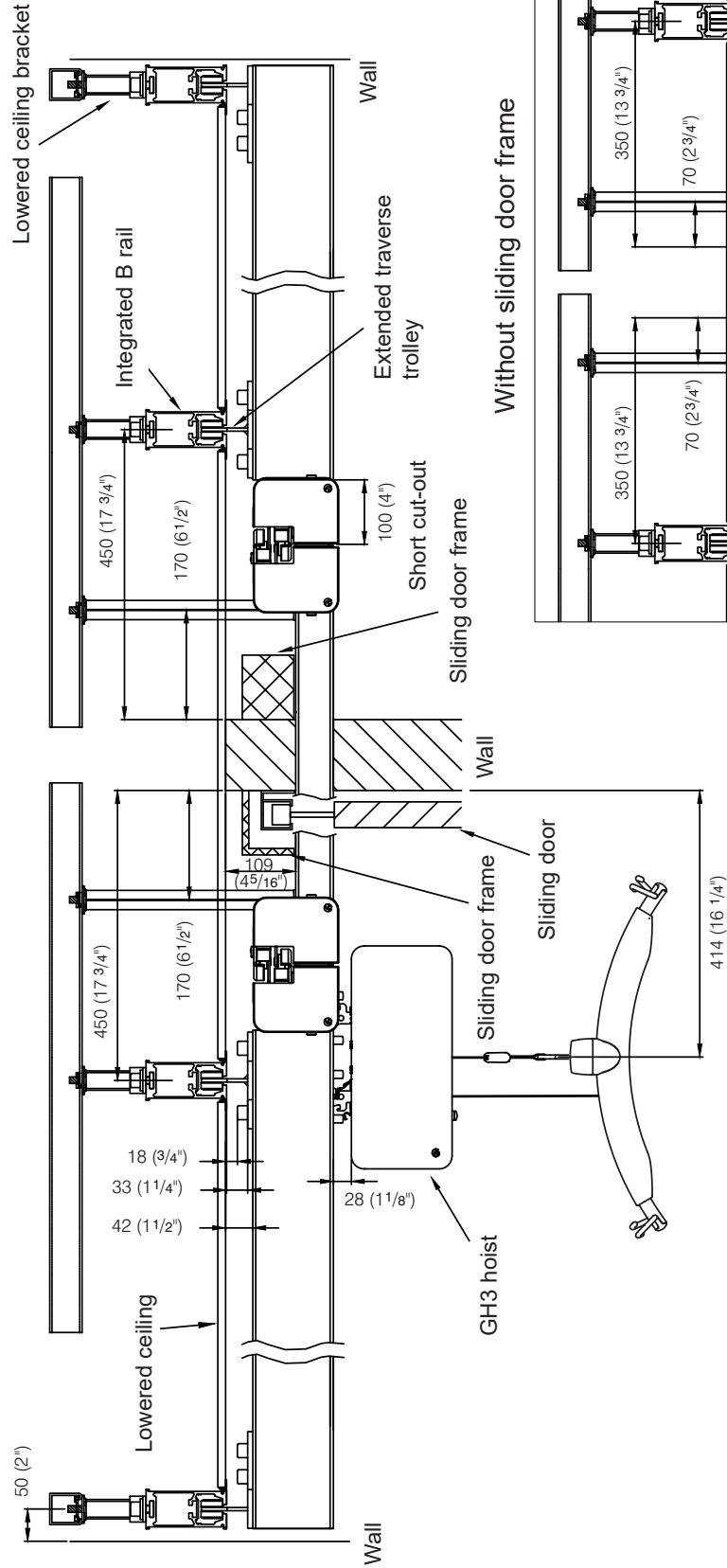


Without sliding door frame

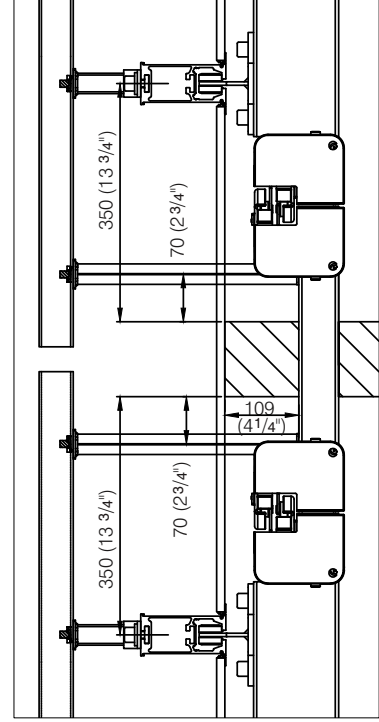


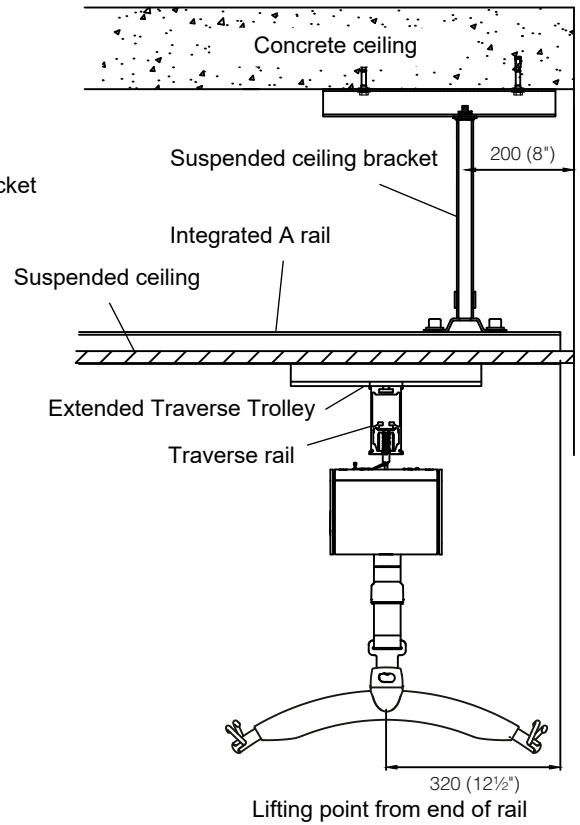
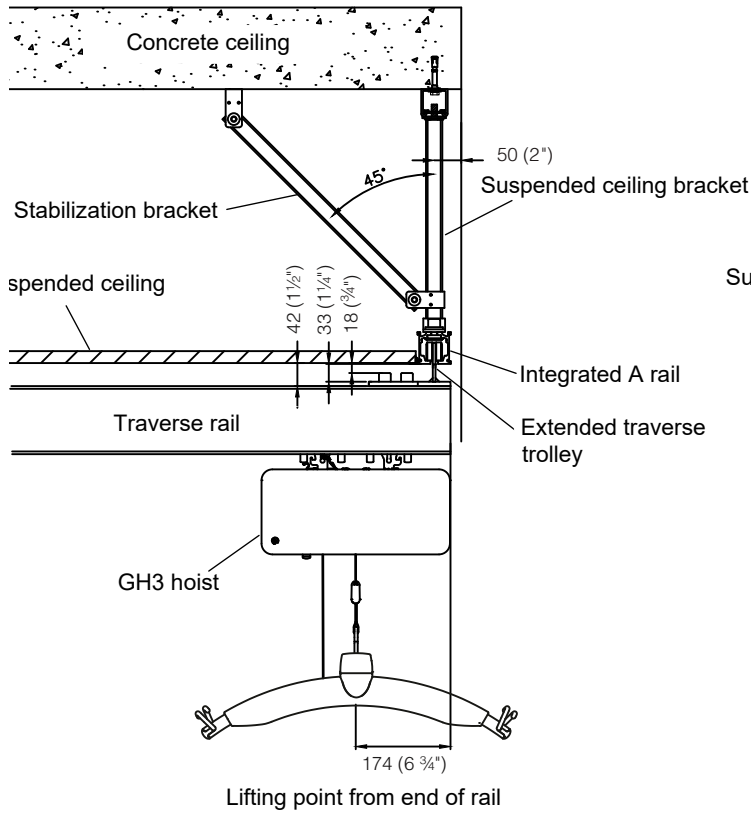


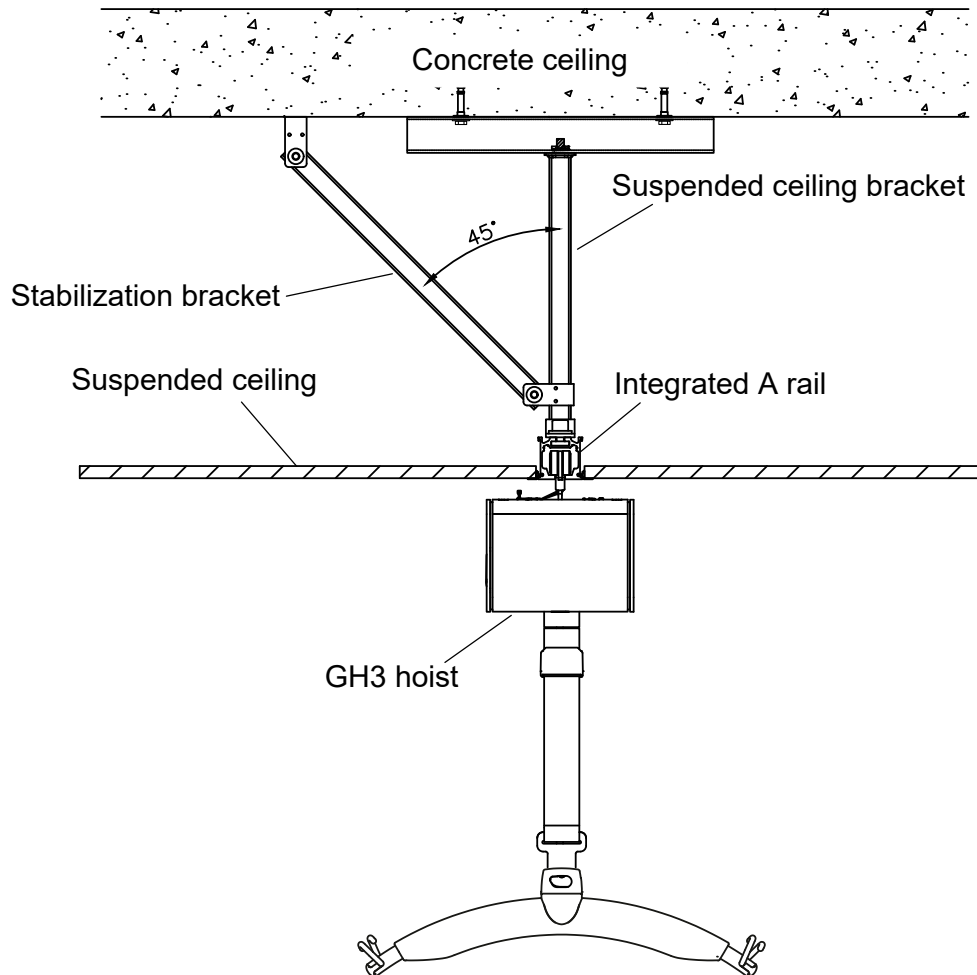
Cross section of P system integrated in ceiling with lowered traverse trolleys
With sliding door frame



Without sliding door frame

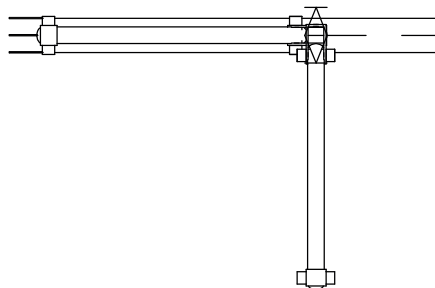
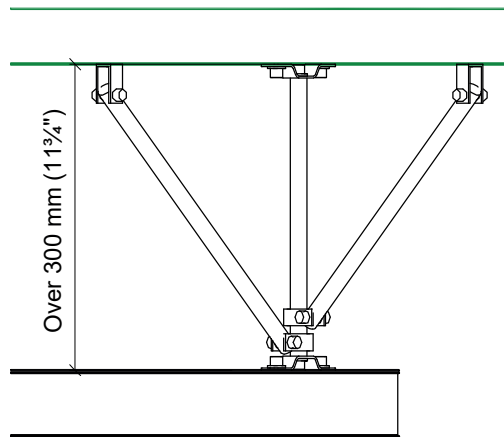
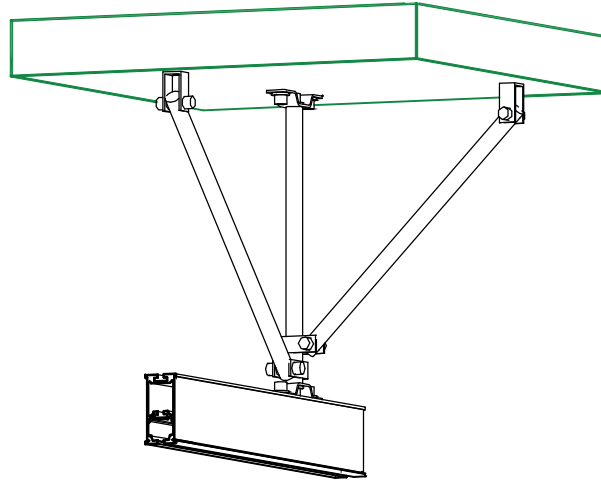






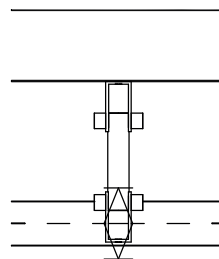
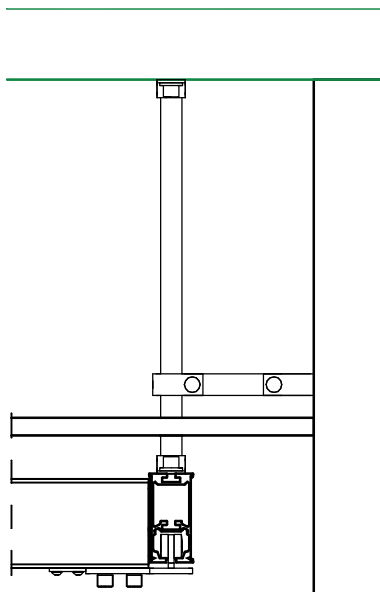
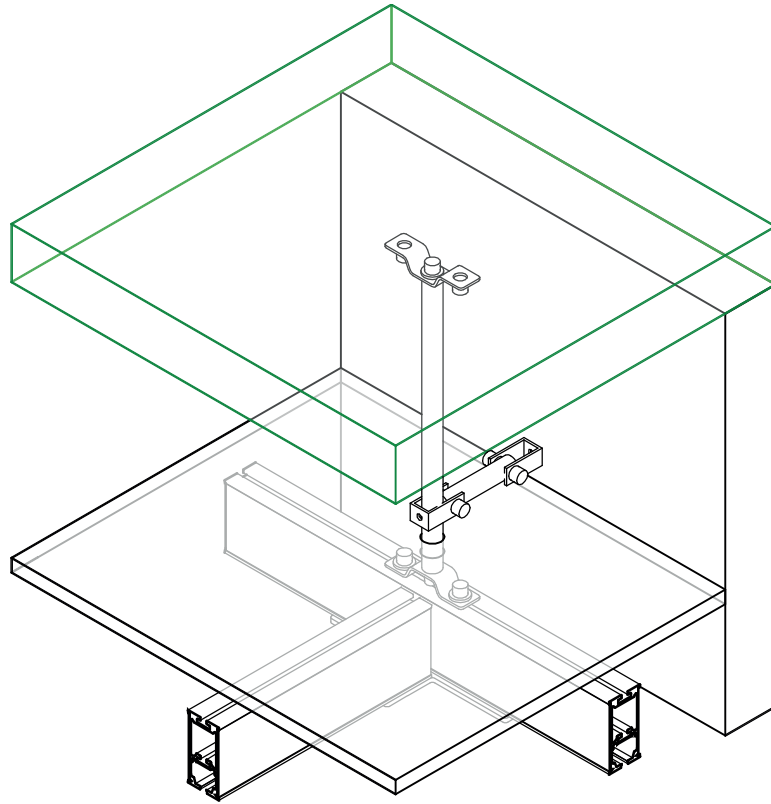


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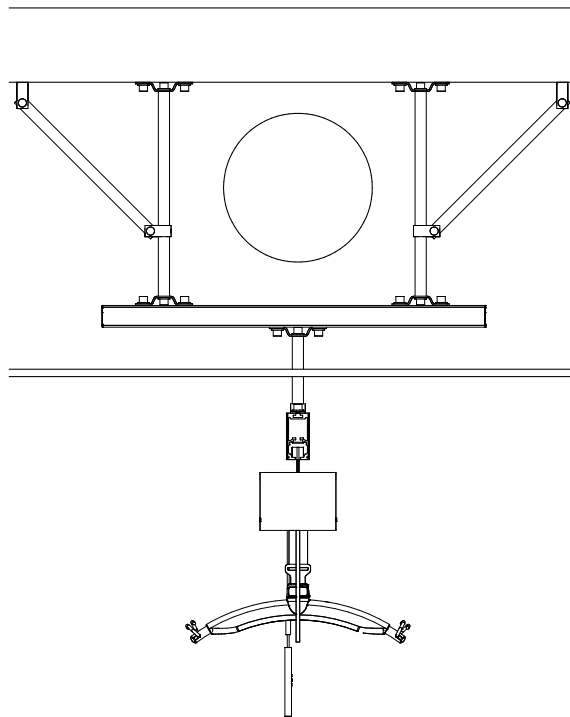
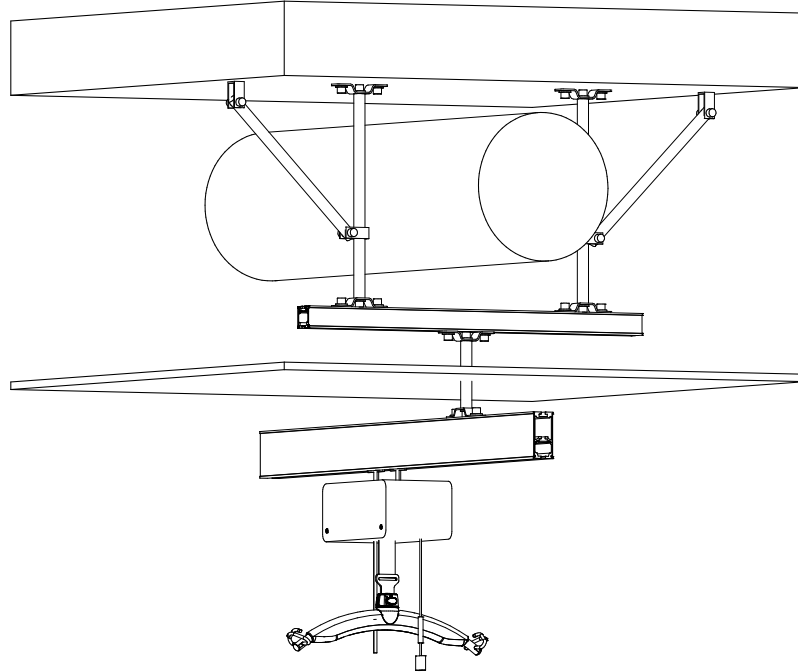


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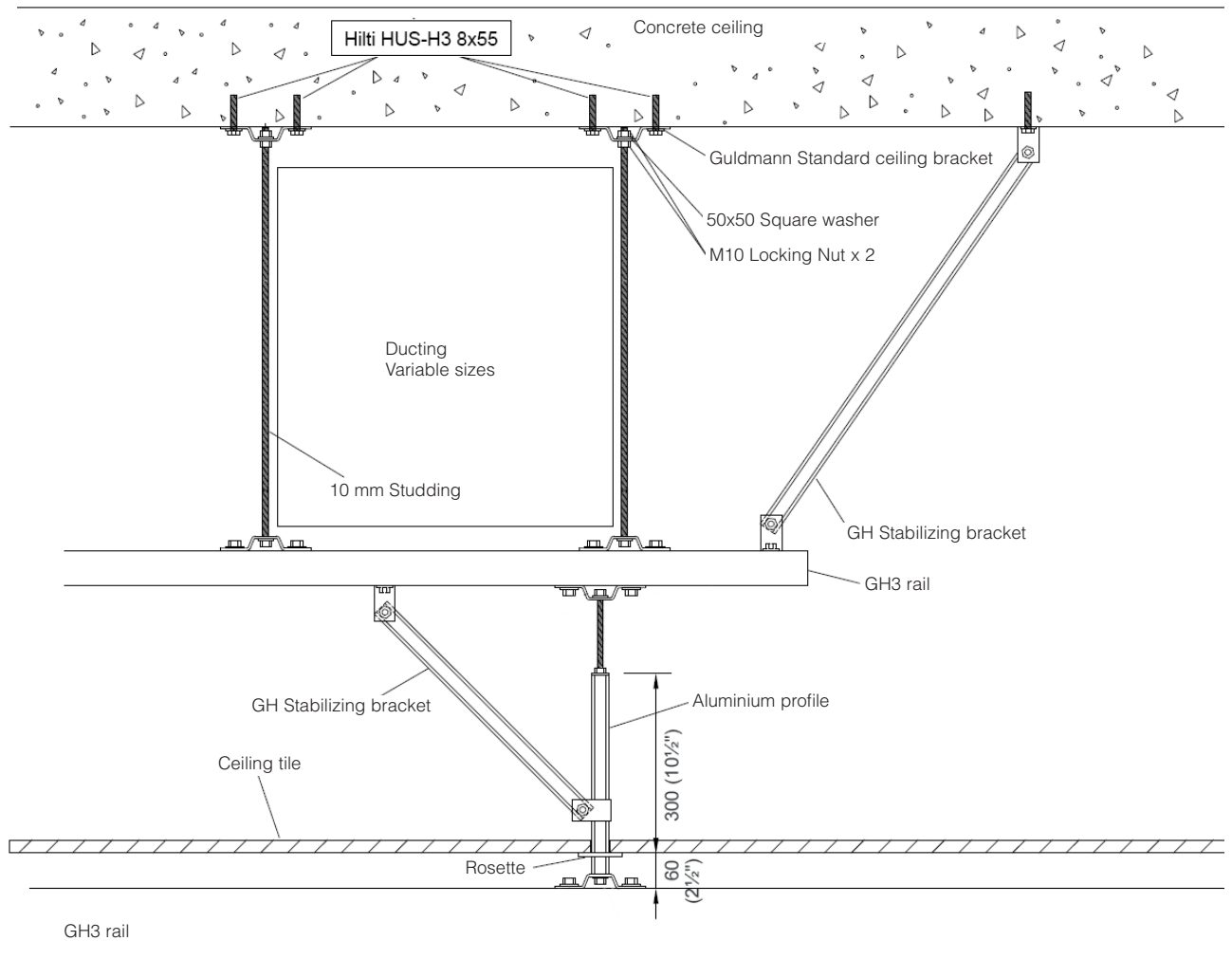


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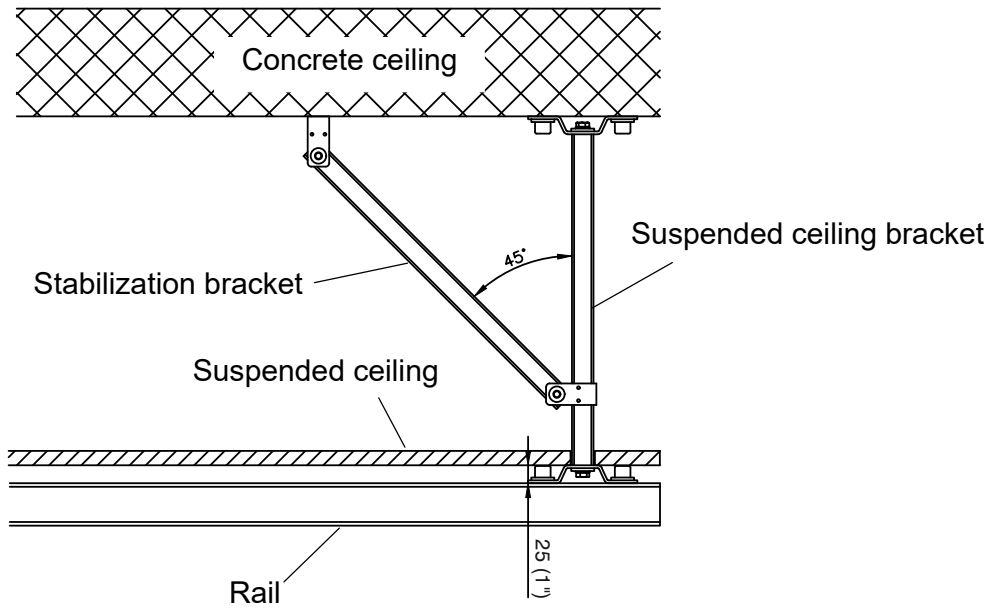


Standard bridging detail into concrete with 60 mm gap from top of rail to underside ceiling.

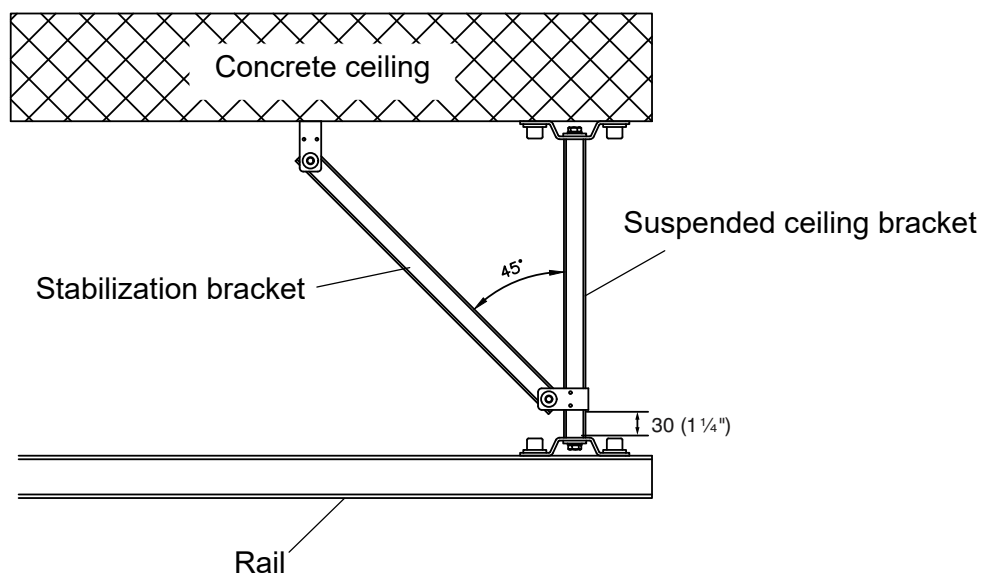




Example with suspended ceiling



Example with mounting direct in ceiling





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