
Track Installation Guide

General Information



Design Policy and Copyright

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As our policy is one of continuous improvement, we reserve the right to modify designs without prior notice.

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ArjoHuntleigh and the environment. Several measures more respectful of the environment have already been implanted in our offices. Small gestures to major changes; everything is important and makes a real difference.

ArjoHuntleigh in brief

ArjoHuntleigh is committed to support people, caregivers and residents by providing solutions that enhance their everyday interactions. We focus on the key area of patient handling.

Part of the GETINGE GROUP, ArjoHuntleigh is a leading global provider of equipment and systems that contribute to quality enhancement and cost efficiency within healthcare and life sciences. Equipment, services and technologies are supplied under the brands ArjoHuntleigh for patient handling and hygiene, disinfection, DVT prevention, medical beds, therapeutic surfaces and diagnostics; Getinge for infection control and prevention within healthcare and life science and Maquet for surgical workplaces, cardiopulmonary and critical care.

Track Installation Guide

ARJOHUNTLEIGH designed this guide to help you understand the installation process and particularities.

Contact the ArjoHuntleigh technical support team at +1-819-868-0441 to obtain more information or visit on our web site at www.ArjoHuntleigh.com

Using this guide

This Track Installation Guide provides technical information that must be taken into account when planning or undertaking an installation and should not be used as a substitute for the formal accredited ArjoHuntleigh training. Although every attempt is made to use language that is clear and concise, occasionally questions and specific circumstances may arise regarding the meaning of sections of a standard as they relate to specific applications. ArjoHuntleigh will be responding to all written request, including interpretation clarifications, in a timely manner.



Hardware and material

The ArjoHuntleigh products presented in this installation guide are to be assembled as per current procedures. Only ArjoHuntleigh approved components should be used. Particular specifications on hardware (e.g. "zinc-plated" lag bolts) must be respected.

This installation guide explains the basics of ceiling tracks requirements from a Canadian perspective, and should never substitute a complete hands-on training given by a recognized ArjoHuntleigh trainers. The users of this manual shall always follow local, regional and national applicable standards and requirements. Every effort has been made to ensure the accuracy of contents of this document. However, if you discover any errors or anything that seems peculiar, please notify your dedicated ArjoHuntleigh ceiling track installation representative.

ArjoHuntleigh assumes no liability, either explicit or implicit, with respect to the information presented in this installation guide. And specific circumstances may arise regarding the meaning of sections of a standard as they relate to specific applications. ArjoHuntleigh will respond to all written request, including interpretation clarifications, in a timely manner.

NOTE...

All documents concerning installations are subject to alterations and corrections without notice. Contact us to make sure you have the latest version of any document.

For information, call at +1-819-868-0441.

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Seven Installation Steps

The complete track installation procedure is divided into 7 different steps.

01

DEALER ADDRESS:		Phone: _____
Name: _____		Fax: _____
Address: _____		Date: _____
Contact: _____		
INSTALLATION SITE: <input type="checkbox"/> Same as above		
Name: _____		Type: <input type="checkbox"/> Private residence <input type="checkbox"/> Nursing Home
Address: _____		<input type="checkbox"/> Group Home <input type="checkbox"/> Other: _____
Contact: _____		
GENERAL INFORMATION:		
Home or building under construction/renovation at the time of assessment: _____		
Architectural plans available: _____		
LOGISTIC INFORMATION: Note: Addict sleep may apply		
Ship to dealer: <input type="checkbox"/> Yes <input type="checkbox"/> No	Have you reviewed the area? <input type="checkbox"/> Yes <input type="checkbox"/> No	(Space restriction, stairs, etc.)
Ship to installation site: <input type="checkbox"/> Yes <input type="checkbox"/> No	Followers provided with assessment form: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Loading dock available: <input type="checkbox"/> Yes <input type="checkbox"/> No	New Electrical outlet required: <input type="checkbox"/> Yes <input type="checkbox"/> No	Infection control level required: _____
Warehouse available for unloading: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Storage available: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Other information: _____		
CEILING LIFT REQUIREMENT AND QUANTITY: <input type="checkbox"/> Non applicable		
Possible ceiling lift:	V1	V2
<input type="checkbox"/> V1 Lift _____ units	<input type="checkbox"/> V2 _____ units	
<input type="checkbox"/> Voyager Lift _____ units	<input type="checkbox"/> Voyager _____ units	
Other accessories:		
no name: <input type="checkbox"/> Today <input type="checkbox"/> Fix no trace <input type="checkbox"/> Silent <input type="checkbox"/> _____		
no name: <input type="checkbox"/> Standard <input type="checkbox"/> 24" <input type="checkbox"/> no trace <input type="checkbox"/> 30" <input type="checkbox"/> _____		
ACCESSORIES:		
<input type="checkbox"/> Part # _____	Description _____	
<input type="checkbox"/> _____	_____	
<input type="checkbox"/> _____	_____	
<input type="checkbox"/> _____	_____	
<input type="checkbox"/> _____	_____	
<input type="checkbox"/> _____	_____	
<input type="checkbox"/> _____	_____	
<input type="checkbox"/> _____	_____	
<input type="checkbox"/> _____	_____	
<input type="checkbox"/> _____	_____	

Site assessment



Weight load test



Room evaluation (when the installers arrive)



Ceiling lift and charger installation



Bill of material and drawings



Inspection and commissioning



Track Installation

Step 1: Site Assessment

The site assessment document is composed of multiple pages.

The first page is dedicated to general information on the project:

- Customer information
- Installation site details.
- Logistical information.
- Quantity/type of ceiling lifts, spreader bars, slings and possible accessories.

The second page can be copied as required depending on configuration variables involved in the project. A sketch of a room along with ceiling type, dimensions and measurements is mandatory.



NOTE...

Great care was given to optimize the site assessment document. To assure the best response time in answering your requests, make sure to fill out every section of the document. This will allow ArjoHuntleigh to respond quickly and efficiently.



LOG ON!

You can find these documents (#001-11750-EN) in the appendix of this manual as well as in the dealer section of ArjoHuntleigh website.
www.arjohuntleighlibrary.com

Step 2: Room Evaluation

The purpose of this step:

- First contact with customer.
 - Confirm remaining details of installation (schedule, times, contacts).
 - Compare the drawings vs actual room in question for accuracy.
 - Check if all the necessary materials are present on-site.
-
- Verify with the person in charge if there are any special requirements for the proposed locations.
 - Verify if infectious control procedures are applicable.
 - Compare drawings with actual room layout and structure.
 - Check room dimensions, furniture location (bed, bathroom sink, etc.), transfer points, access to the structure and structure details.
 - Evaluate potential obstructions:
 - Height min: 2.1 m (7 ft) - max: 3.0m (10 ft)
 - Sprinklers (varies according to local regulations)
 - Curtain track
 - Lights
 - Vents
 - Surveillance camera
 - Other...



NOTE...

...Each point above should be considered before the beginning of the installation.

If modifications and/or relocations are required, make sure they are completed prior to the beginning of the installation project.

Step 3: Bill of Material (BOM)

ARJOHUNTLEIGH
GETTING GROUP

Sledge Social / Head Office
2001 Torquay
Maple Dr. CANADA J1R 5Y5
Tel: 1-800-668-0361
Fax: 819-849-5249

Bill To: WOL 29 (29)---SDD NONE---
Bill From: WOL 29 (29)---SDD NONE---
Ship By: CTD

Order Date: Sep-11-10
Print Date: Sep-11-10
Pg: 1 of 2

Customer Name: CANADA
Customer Number: 1000
Contract: 1000

Price Quotation QC-16477

Your HQ Number: 8039924

Part Number	Qty	Description	Unit	Price	Disc	Ext. Price
930002	1.0000	VA-405 BRACKET	EA	0.0000	0.00	0.00
000-00341	5.0000	TRIGGERED BOX 1/8-24 X 1 1/2" 5/8"	EA	0.0000	0.00	0.00
000-00423	15.0000	ADJUSTER COVER 1/8-24 5/8"	EA	0.0000	0.00	0.00
000-00424	25.0000	WELL STOP LABEL 1/8-24 5/8"	EA	0.0000	0.00	0.00
000-00425	25.0000	WELL STOP LABEL 1/8-24 5/8"	EA	0.0000	0.00	0.00
000-01150	3.0000	STAFF 3/4" X 1/4"	EA	0.0000	0.00	0.00
000-01200	25.0000	POST MOUNTING KIT FOR 1/8-24 5/8"	EA	0.0000	0.00	0.00
000-04450	25.0000	POST MOUNTING KIT FOR 1/8-24 5/8"	EA	0.0000	0.00	0.00
000-05020	35.0000	TRIGGERED BOX 1/8-24 5/8"	EA	0.0000	0.00	0.00
100-10050	1.0000	PLATE KIT	EA	0.0000	0.00	0.00
100-11000	14.0000	CURTAIN HANGER 3/8" DIA.	EA	0.0000	0.00	0.00
100-11100	1.0000	1" DIA. MOUNTING BRACKET SIDE	EA	0.0000	0.00	0.00
100-11150	14.0000	1" DIA. MOUNTING BRACKET SIDE	EA	0.0000	0.00	0.00
100-11300	1.0000	1" DIA. MOUNTING BRACKET END	EA	0.0000	0.00	0.00
100-11400	14.0000	1" DIA. MOUNTING BRACKET END	EA	0.0000	0.00	0.00
100-11500	1.0000	TRUCK BRACKET MOUNTING	EA	0.0000	0.00	0.00
100-11600	1.0000	TRUCK BRACKET MOUNTING	EA	0.0000	0.00	0.00
100-11700	1.0000	TRUCK BRACKET MOUNTING	EA	0.0000	0.00	0.00
100-11800	1.0000	TRUCK BRACKET MOUNTING	EA	0.0000	0.00	0.00
100-11900	1.0000	TRUCK BRACKET MOUNTING	EA	0.0000	0.00	0.00
07501	1.0000	WHITE STAINLESS BRACKET	EA	0.0000	0.00	0.00
Total Price				0.0000	0.00	0.00
Price After Discount (1.0000)				0.0000	0.00	0.00
TOTAL				0.0000	0.00	0.00

This step is to ensure that all necessary hardware is included based on the assessment form information and CAD drawings as per ArjoHuntleigh standards.

ARJOHUNTLEIGH
GETTING GROUP

Sledge Social / Head Office
2001 Torquay
Maple Dr. CANADA J1R 5Y5
Tel: 1-800-668-0361
Fax: 819-849-5249

Ship To: WOL 29 (29)---SDD NONE---
Ship By: CTD

Order Date: Sep-11-10
Print Date: Sep-11-10
Pg: 2 of 2

Customer Name: CANADA
Customer Number: 1000
Contract: 1000

Price Quotation QC-16477

Your HQ Number: 8039924

In the 'Notes' Section, please refer to the notes on the following pages. A copy of the quote can be emailed to: arjo@arjohuntleigh.com or faxed to: 819-849-5249.

NOTE: Quotes that include notes appear in the purchase order. Quotes that do not include notes are not included in the purchase order.

Customer Signature: _____

The following documents might be provided by ArjoHuntleigh upon completion of the CAD drawing and technical review.

NOTE...

You can find drafting tool instructions (#001-11790-XX) and a technical review form (#001-11770-XX) on www.arjohuntleighlibrary.com

IMPORTANT NOTES

- Drawings will illustrate the information provided by the ArjoHuntleigh Equipment Consultant.
- All obstructions to the rail and/or installation components (vent, light, sprinkler, door header, ...) are the responsibility of the facility, unless specified on the official quotation and purchase order.
- Installation shall be conducted by an installation team certified by the manufacturer.
- Installer shall install only according to methods approved by the manufacturer.
- For all typical structures, remarks described in document AM-ING-027-1 -General Installation Notes- shall be applied.
- The capacity of the structure shall be validated by an expert (engineer) mandated by the facility. The manufacturer is not responsible to validate if the structure information supplied is correct (for span, capacity and deflection).
- Facility must consult the lift Operating and Product Care Instructions for recommendations regarding preventative maintenance and inspection.
- Drawings need to be signed (page 1) and Initialized (all other pages with the exception of standard installation methods) by the facility designate responsible to confirm that the details have been reviewed and accepted.
- For regulatory reasons, a Initial weight load test at the charges specified by the manufacturer, along with complete inspection are mandatory to validate, on each track installed, the conformity of the track assembly. Related documentation shall be kept available for consultation for a minimum of 15 years.

GENERAL DRAWING APPROBATION INITIALS

- Review of all 3 pages
- Total quantity of rooms 1
- Approbation of layout for each room
- Approbation of structure for each room

CUSTOMER APPROVAL: _____ DATE: _____

Legend

Light

Vent

Access trap required

Existing access trap

Sprinkler

Smoke detector

Electrical outlet

CURTAIN

IV

Swivel pole

Bracket

Joint bracket

Wall bracket

Wall post side

Wall post

"T" junction

Gate

Turntable

Exchanger

Motor/Charger location

(*) Symbol may vary depending of equipment type

REVISION(S)	DATE(S) (D-M-Y)

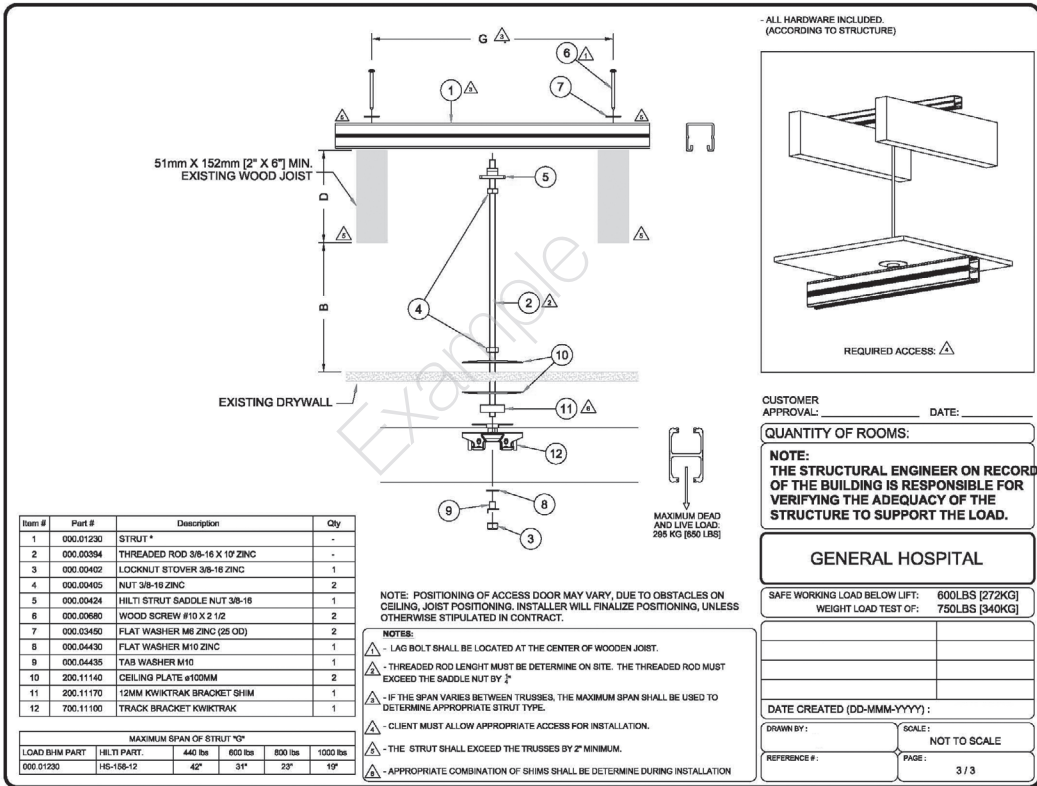
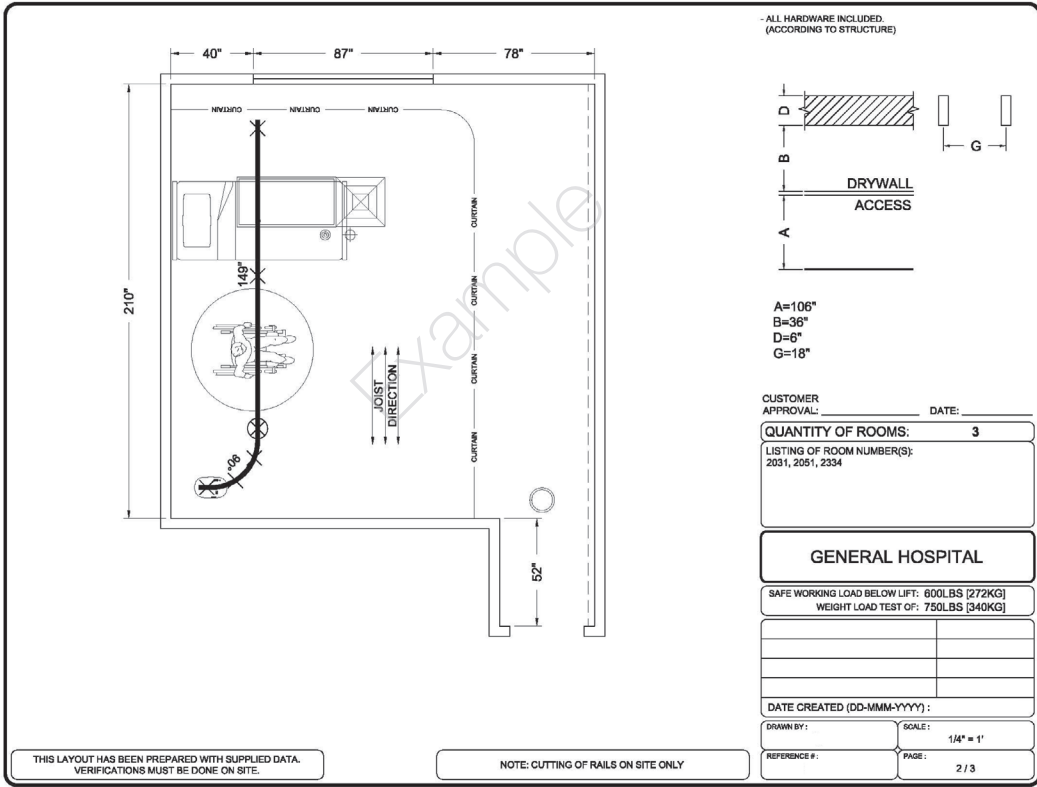
INSTALLATION DRAWING

EXAMPLE

DISTRIBUTOR: ARJOHUNTLEIGH		ARJOHUNTLEIGH
REPRESENTATIVE: ARJOHUNTLEIGH		
DATE (DD-MMM-YYYY): 01-OCT-2012		
REFERENCE #: QC-XXXXX	PAGE: 1 / 3	

14 - General Information

001-1161-EN - REV 3



Step 4: Track Installation

The purpose of this step:

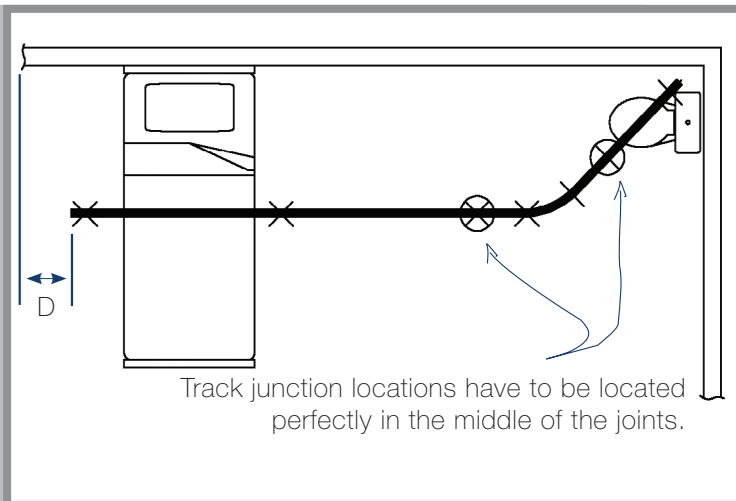
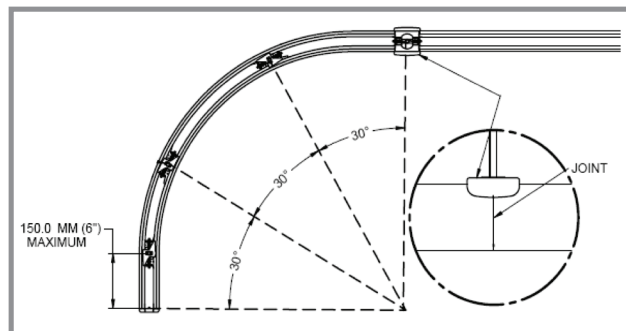
- Transpose the plans (drawings) into the room targeted for installation.
- Establish exact anchor points relative to equipment.
- Maximize the transfer points and follow the recommendations/requests of the customers.

TRICKS:

- Use clamps to align multiple pieces of track together.
- It is highly recommended to keep the curves that you are using to mark the layout for that particular room (curve length and radius may vary slightly).
- Use the rotary laser vertically to assure straight lines.
- Use the plumb laser to determine the bracket locations.
- Start layout with track junctions to ensure that there is no obstruction in the way of the joints.
- Target areas without obstructions for easier installation (avoid vents, lights, etc.).

MEASUREMENTS:

- Maximum distance between brackets: see table in "Bracket Positioning".
- Maximum distance between last bracket and end of the track (overhang): 30 cm (12 in).
- Minimum quantity of brackets on a curve: 1 on each extremity and 2 equally spread in the middle of the curve (total: 4 brackets).

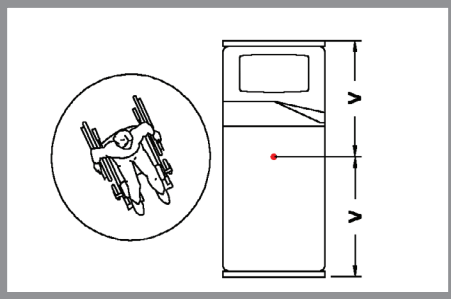


Minimum distance between the end of the track and the wall (D) for motor insertion:

- 28 cm (11 in) for 272 kg (600 lb) motors and less, and also for the Maxi Sky® 2 Plus trolley.
- 41 cm (16 in) for 454 kg (1000 lb) motors.

Establishing the Transfer Point Location - Bed

01



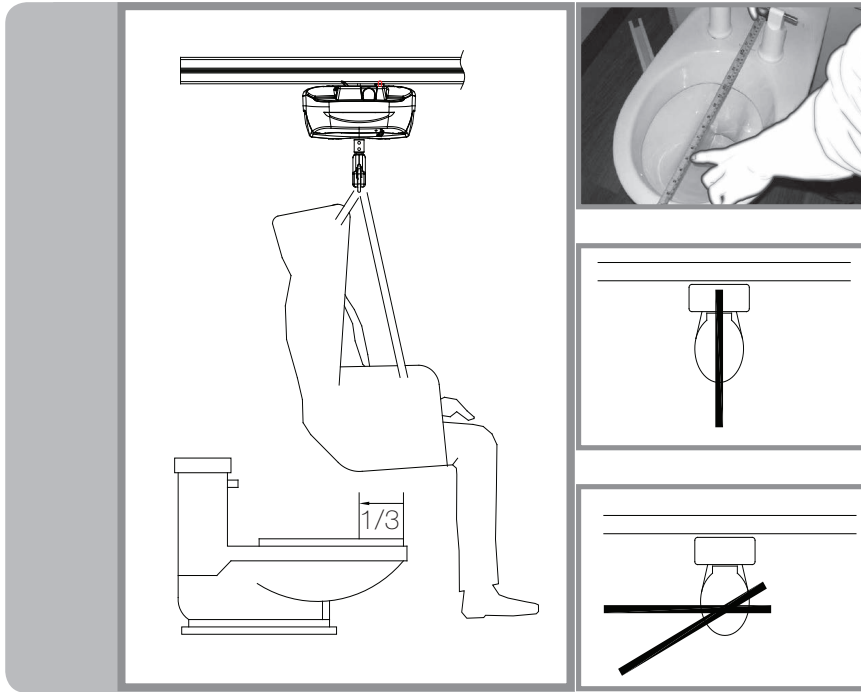
When the bed is in position, measure 100 cm (40 in) plus bumpers or head board.
If the bed is not in the room, ask to see a similar available bed and measure the length of the mattress.

02



Divide the dimensions by two and add all obstructions/ additional spacing from the head of the mattress to the wall.

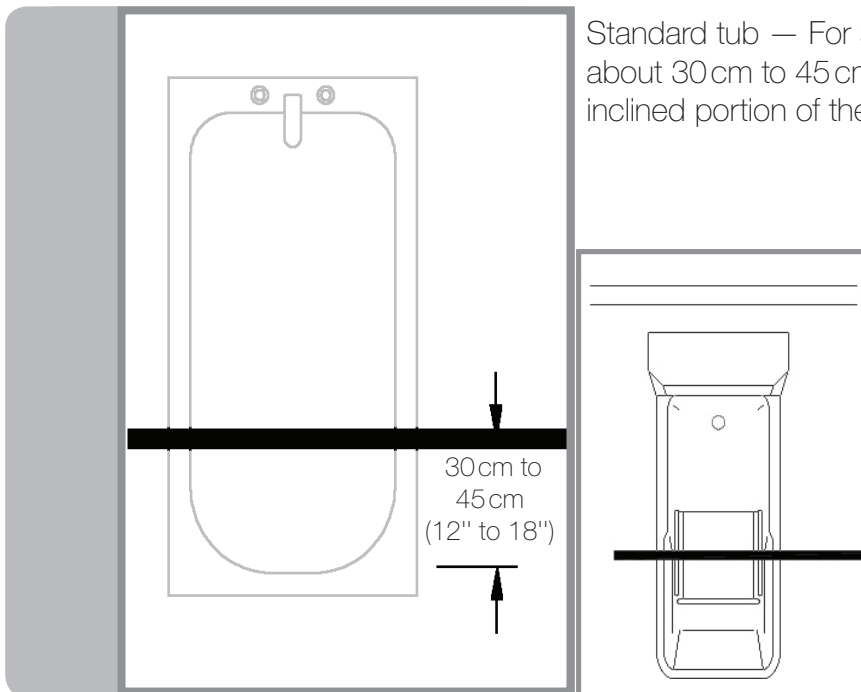
Establishing the Transfer Point Location - Toilet and Bath



Toilets — When approaching sideways over a toilet, aim for the forward 1/3 of the bowl for the transfer point.

Frontal transfer

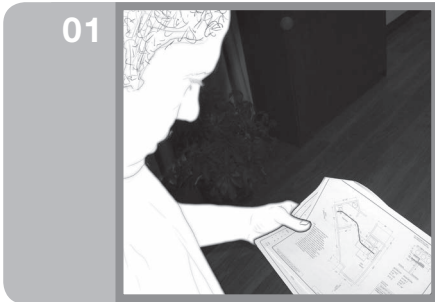
Side transfer — If track is in the toilet's axis, place the track centered with the bowl, in line with the axis.



Standard tub — For standard tubs, the transfer point is at about 30 cm to 45 cm (12 in to 18 in) from the bottom of the inclined portion of the bath.

Sit-in tub — For tubs with integrated or fixed seats, the track must be centered with the seat.

Marking Transfer Points



01

Analyse the drawings.



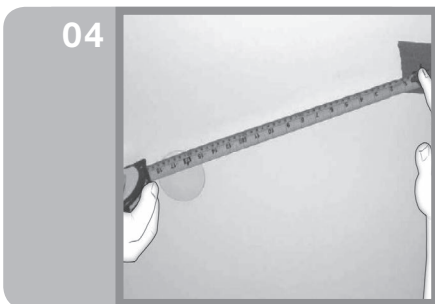
02

Verify measurements.



03

Reassess obstacles and readjust drawing with actual conditions.



04

Determine transfer points for each area. For example: the middle of the mattress...



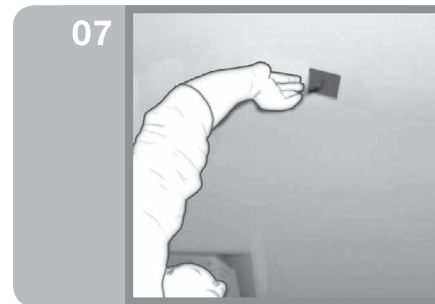
05

...front 1/3 of the toilet, etc.



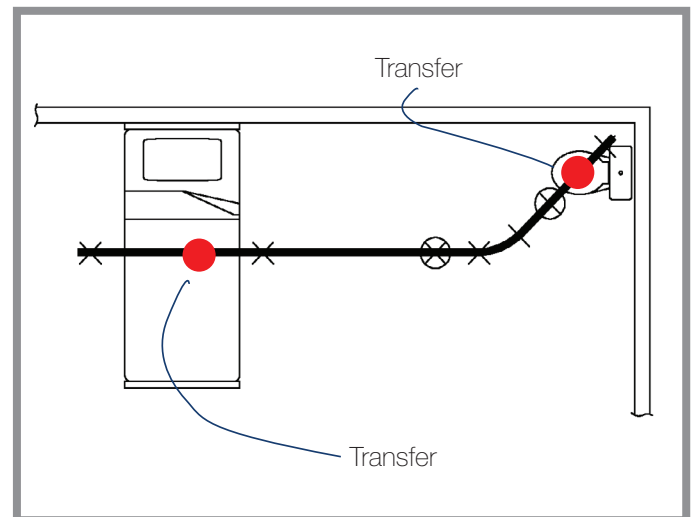
06

Using the plumb laser, transfer the optimal point onto ceiling...



07

...and clearly indicate it on ceiling to make sure that the track layout will pass over requested areas.



TRANSFER POINTS

Placing Guidelines

01



Transpose bed transfer measurement onto the floor.

02



To do so, use masking tape and a fine-pointed marker.

03



Mark the same measurement on the opposite side of the room.
Both marks will be used as a straight line for the track.

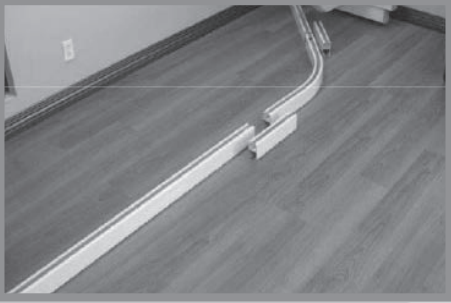
04



Align the self-levelling rotary laser over both marks. The laser line indicates the straight length of the future installation.

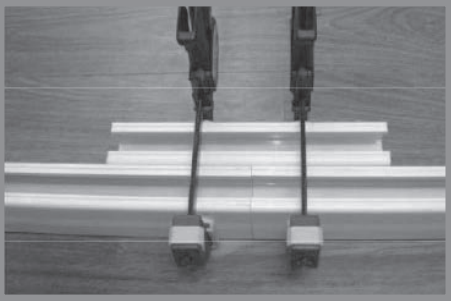
Laying Out the Design On the Floor

01



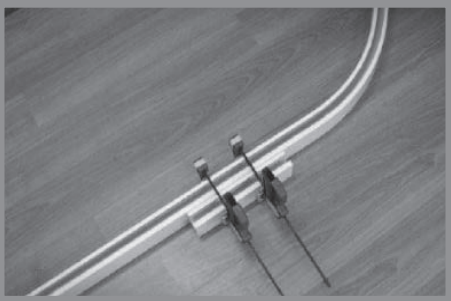
Put all parts of the layout on the floor. Track pieces can be cut to predetermined lengths.

02



Using clamps and some rigid, straight material (e.g. pieces of track), join all the pieces together.

03



All joints must be perfectly aligned and tightened for best results.

04



Repeat for all the track sections.

Positioning Layout On the Floor

01



Move track layout and lasers to meet transfer points and avoid obstructions.

02



Using alignment tool, center the tracks over guidelines...

03



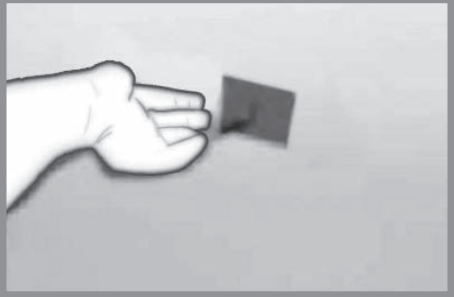
...and transfer points marked earlier.

04

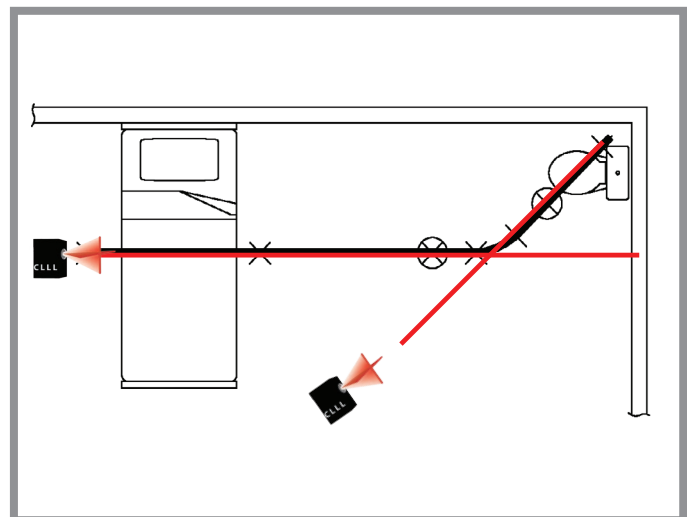


Make sure the guidelines are parallel to the center of the tracks.

05



Finally, transpose predetermined toilet and bed transfer points.



LASER GUIDELINES

Positioning the Brackets

Critical measurements:

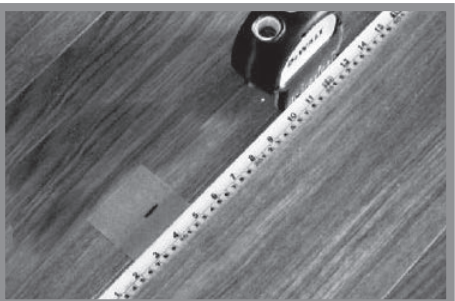
- Make sure to leave a space of 28 cm (11 in) at the end of one track to allow the insertion of the lift. If you are about to install a Maxi Sky 1000, the space required is 41 cm (16 in)
- Always leave more than 30.5 cm (12 in) between the track and the wall to avoid damaging the wall with the spreader bar.
- For maximum distances between brackets refer to the KWIKtrak Span Chart (#001-01014-EN).
- You can also find the critical measurements in the documentation from the various hardware manufacturers approved by ArjoHuntleigh.

01



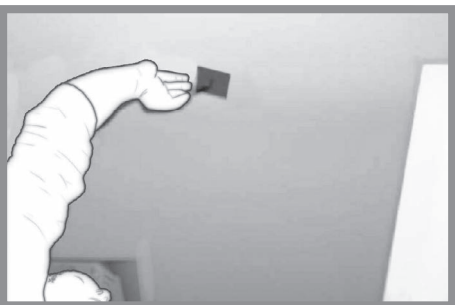
Lay the measuring tape next to the side of the tracks placed as guidelines to determine the bracket locations.

02



Aligned with the laser guideline, measure a 20-30 cm (8-12 in) overhang distance on one end. Mark the spot on the floor, using masking tape and a marker. This point is going to be used as reference.

03



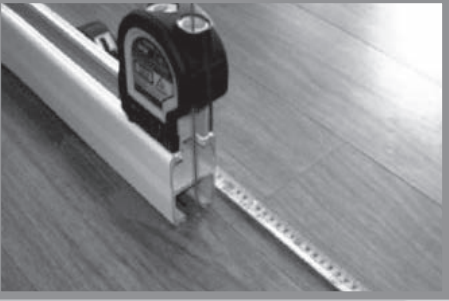
Place plumb laser over the mark. Transfer the mark onto the ceiling.

04



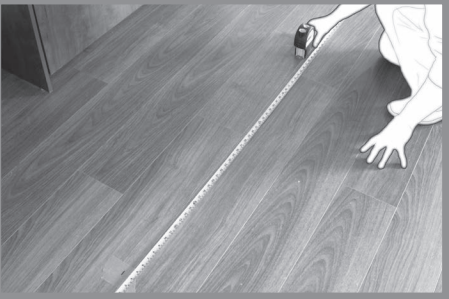
Repeat the process for the remaining bracket locations of each straight track. Spread distances between each bracket evenly. Do not exceed distances allowed (refer to Kwiktrak span chart #001-01014-EN).

05



For track junctions, the bracket location has to be perfectly centered with the joint.

06



Example 1: The remaining distance between the last bracket and track junction = 2.7 m (108 in). Divide this distance so that there is a bracket every 1.3 m (50 in).

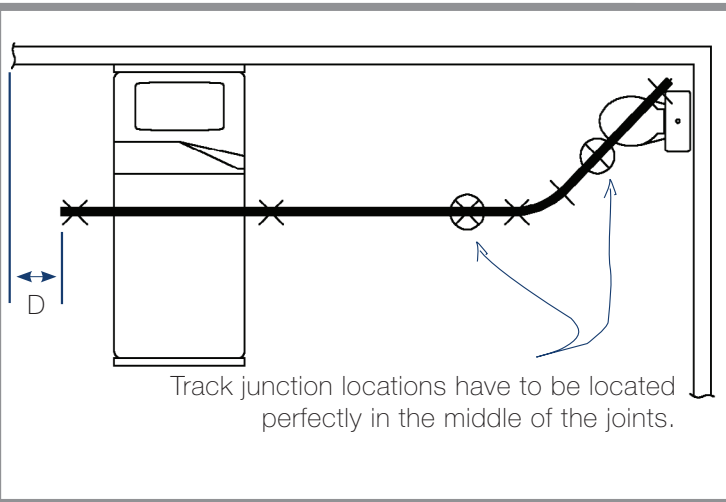
Example 2: For a straight track of 3 m (118 in). Take off both overhang distances (2 x 25 cm (10 in = 0.5 m (20 in))). Divide the remaining 2.5 m (98 in) in two, so that there is 1.25 m (49 in) between each bracket.

07



Mark all bracket locations on floor and ceiling as reference. Drill locations on the ceiling.

08



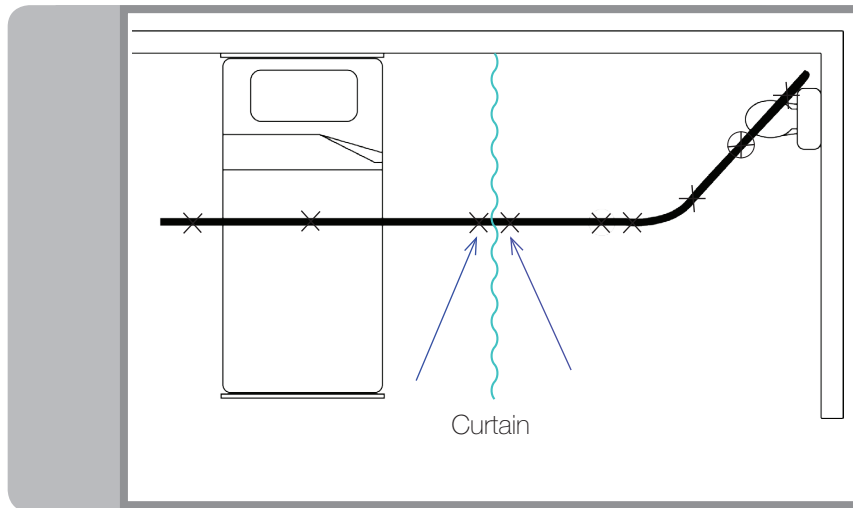
Maximum distance between remaining brackets of the straight portion is 177 cm (70 in) for 272 kg (600 lb) and 208 cm (82 in) for 200 kg (440 lb).

Example: A track of 300 cm - 28 cm = 275 cm (118 in - 10 in = 108 in)

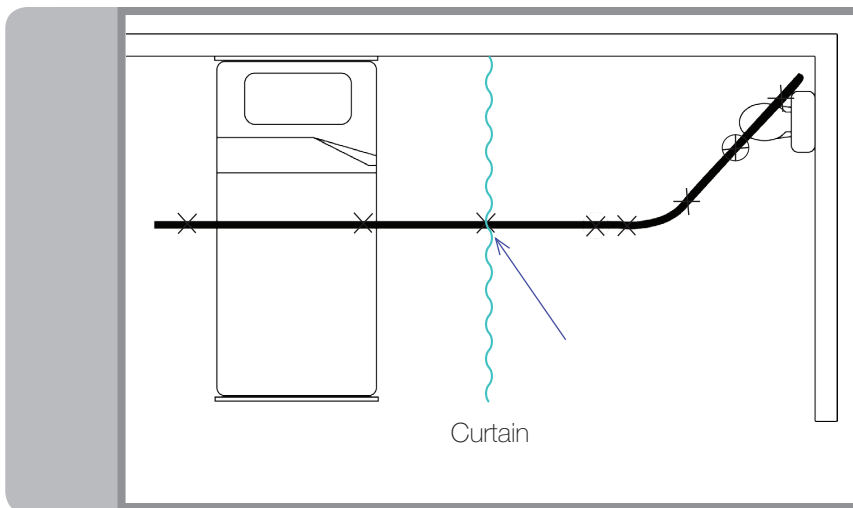
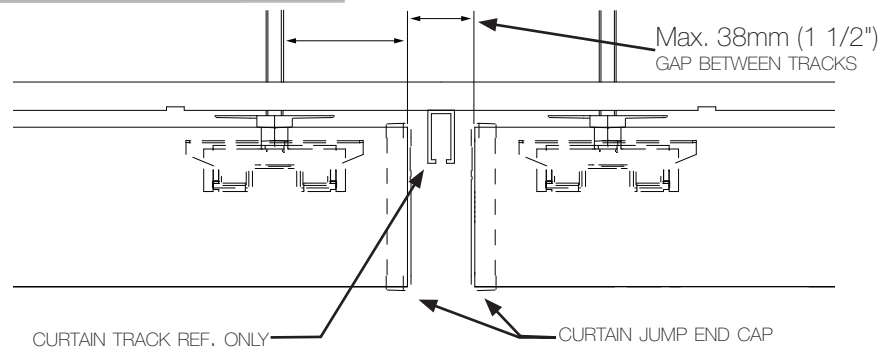
$\Rightarrow 300 \text{ cm} - \text{"D"} \text{ divided by } 2 = \text{Distance between brackets.}$

(See KWIKtrak Span Chart for other lifting devices)

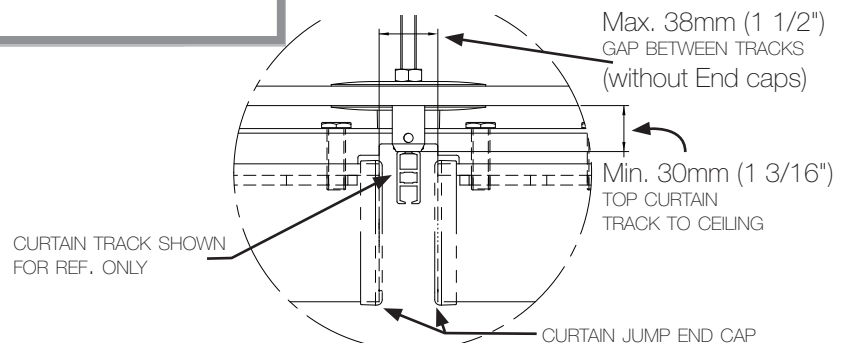
Bracket Positioning With Curtain Track In the Trackway






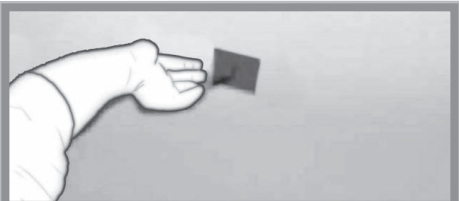
For 120 kg (265 lb) track system load capacity, standard brackets can be placed from 50-100 mm from end of track gap.

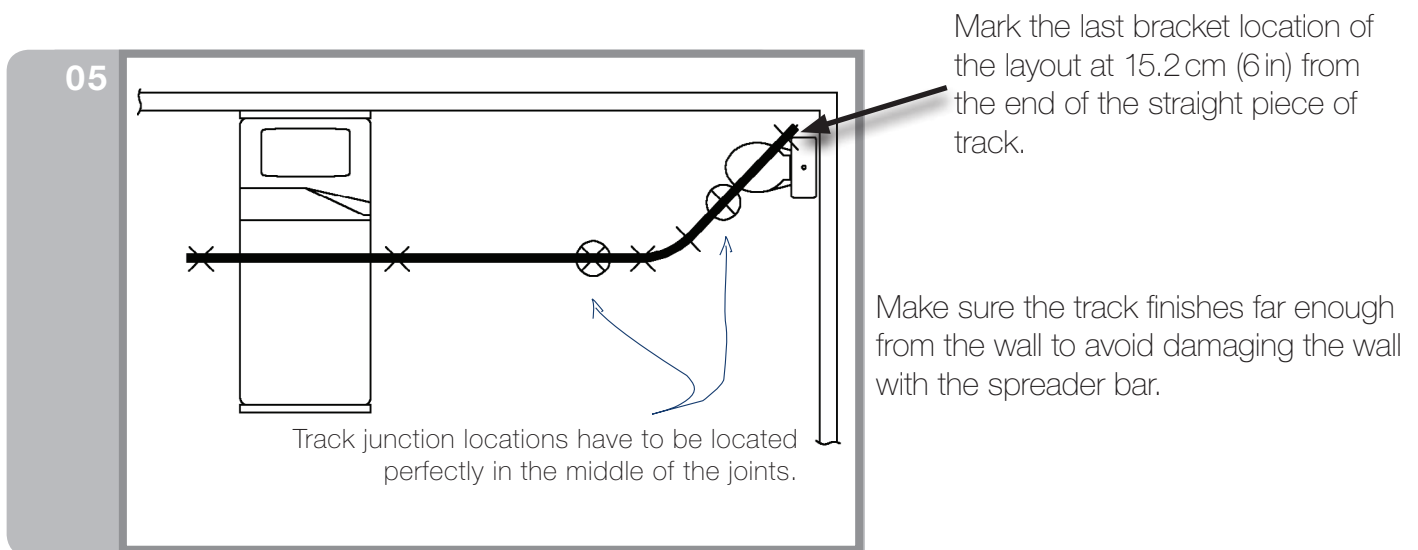


For 272 kg (600 lb) track system load capacity, curtain gap bracket must be placed centered with the curtain track.



Bracket Positioning On Curves (at the end of the trackway)

- 01**  Repeat process for remaining bracket locations of each curved track.
Spread distances between each bracket evenly.
- 02**  For track junctions, the bracket location has to be perfectly centered with the joint.
- 03**  Mark the last bracket location of the layout at 25 cm (10 in) from the end of the straight piece of track, making sure the track finishes far enough from the wall to avoid damaging the wall with the spreader bar.
- 04**  Mark all bracket locations on the floor and ceiling as reference. Drill locations on the ceiling.

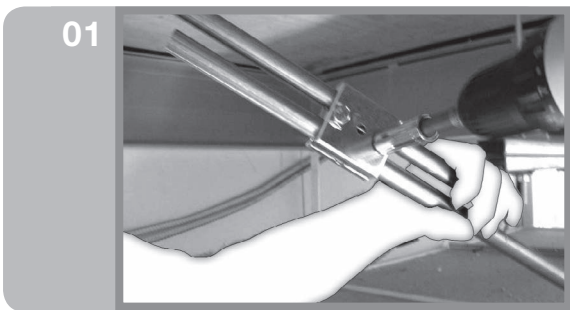


Lateral Brace Preparation

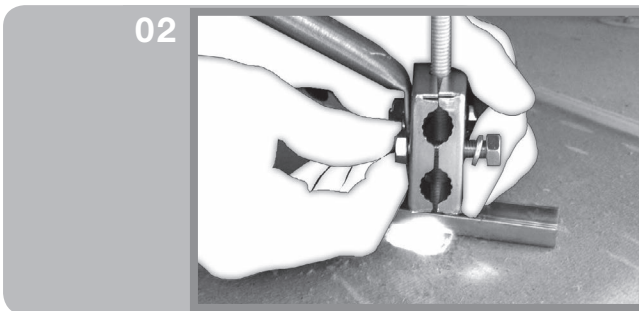
Concrete To Tile

Lateral braces minimize bracket movements caused by patient handling and transfer. Optimal brace installation must be performed to avoid premature aging of installation and ensure safety. Lateral braces are required only with suspended tile ceilings or direct installations.

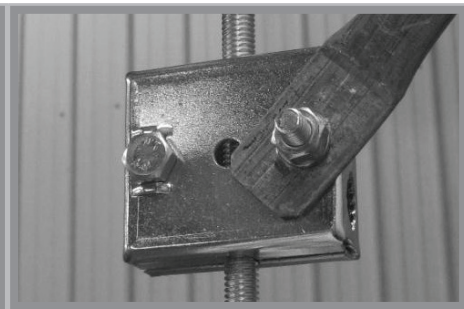
- Lateral braces must always be installed perpendicularly to track junction and every end of track.
- A lateral brace must always be perpendicular to straight rails.
- The lateral braces must be attached firmly to the structure and need to respect a 45° to 90° angle (from the threaded rod) for a better support.
- See Lateral Braces Installation Guide (001-01015-EN) for detailed instructions.



Loosen the center clamp of the lateral brace.



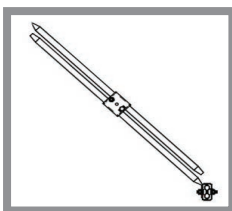
Possible Method



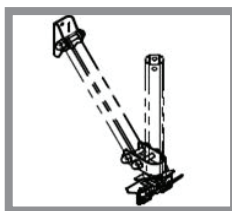
Recommended Method

Attach the bottom clamp to the threaded rod.

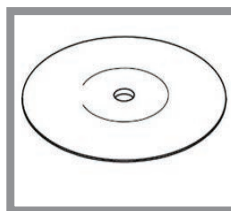
Material



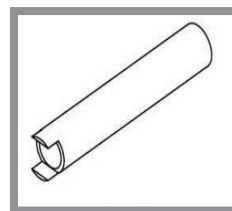
Adjustable lateral brace



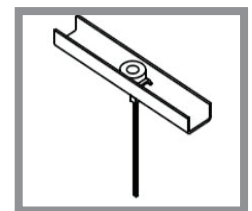
Visible lateral brace



Ceiling plate



Tool for pressure nut



Pressure nut

Guidelines

Producing a “sandwich effect” with ceiling plates or pressure nuts is ALWAYS required.(Refer to: “sandwich effect” preparation section.)

Lateral brace for:

—Suspended tile ceilings:

- Apply the *sandwich effect*.
- Lateral bracing is required if the distance between the structure and the subceiling exceeds 21 cm (9 in).
- If distance is less than 21 cm (9 in), installer should use his judgement as to whether lateral bracing is required (depending on track configuration: straight, curves).

—Drywall ceilings:

- Apply the *sandwich effect*.
- Well applied, the pressure nut method provides sufficient stiffness for drywall ceilings with a concrete structure.
- When access is available, the *sandwich effect* with two ceiling plates is sufficient.

—Suspended rails below suspended ceiling:

- Visible laterals are required when the suspension is greater than 21 cm (9 in).
- If distance is less than 21 cm (9 in), installer should use his judgement as to whether lateral bracing is required (depending on track configuration: straight, curves).

—Locations:

- Lateral braces on every end of track and joint (perpendicular), and at least one parallel brace in the track axis (it can be anywhere) per two sections of track.

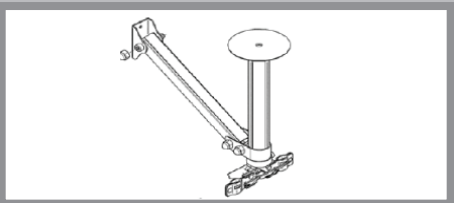
See Lateral Braces Installation Guide (001-01015-EN) for detailed instructions.

01



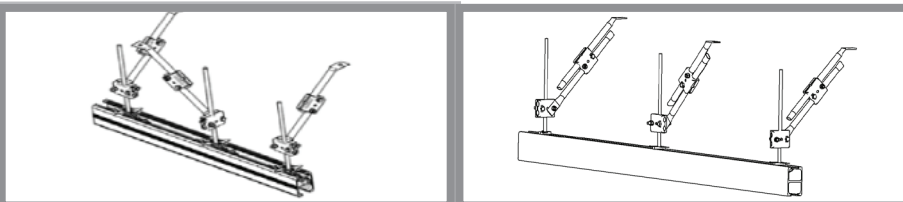
Adjustable lateral brace

02



Visible lateral brace

03



Lateral brace position

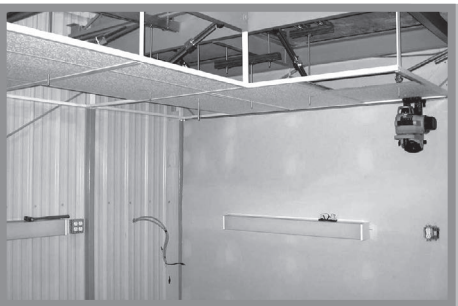
Bracket Installation

Levelling (find the lowest point, or datum point)

The purpose of this step:

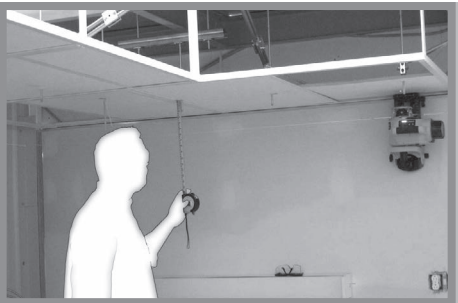
- Find the optimal levelling installation.
- Install the brackets to the proper height.

01



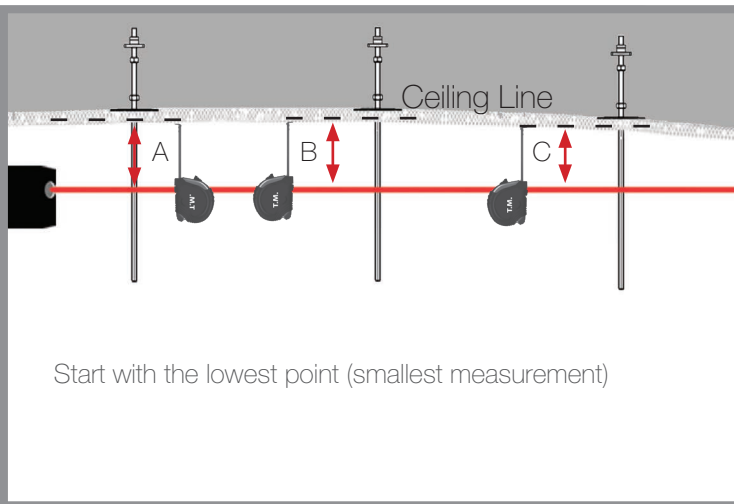
All threaded rods should exceed approximately 5 cm (6 in) from the suspended ceiling.

02



Using a self-levelling rotary laser line as reference, find the threaded rod where the lowest ceiling location of the layout is found.

03



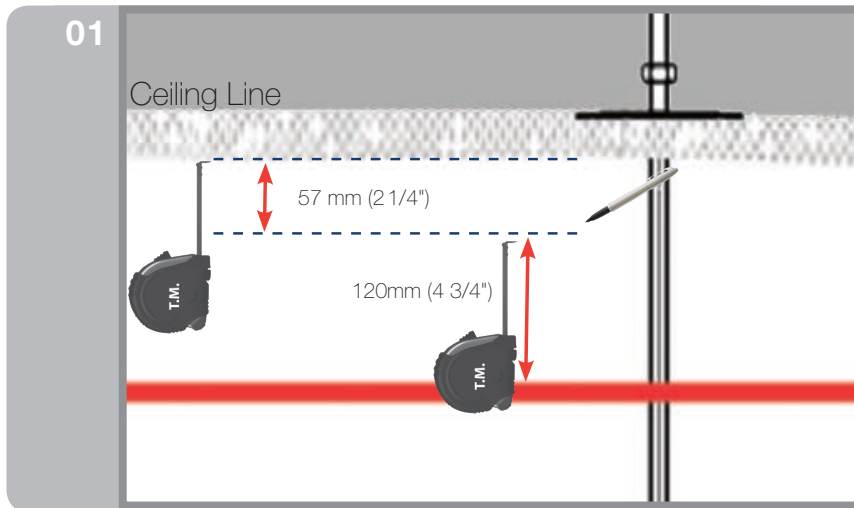
EXAMPLE OF MEASUREMENTS

Ceiling height at each bracket location compared to the reference laser line.

Example:

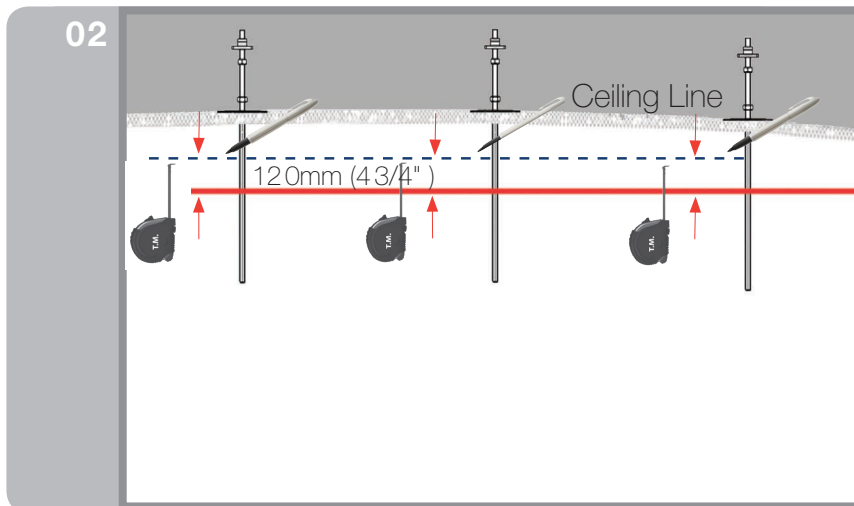
- Bracket A: 11.8 cm (4 5/8 in)
- Bracket B: 12 cm (4 3/4 in)
- Bracket C: 11.5 cm (4 1/2 in)

Levelling (levelling the threaded rods)



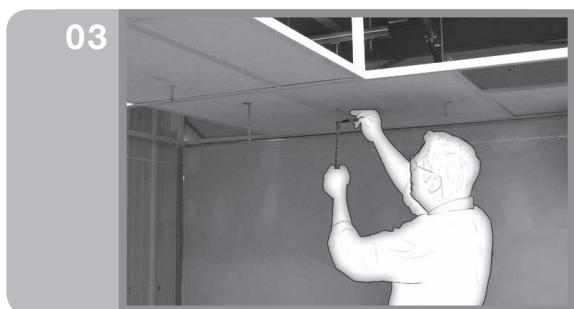
Locate the threaded rod with the lowest ceiling height. At that location measure downwards 57 mm (2 1/4 in) and mark your threaded rod.

The minimum threaded rod length required for a bracket is 57 mm (2 1/4 in) (ceiling plate, shim 12 mm (1/2 in), bracket, washer, tabwasher and stover locknut).

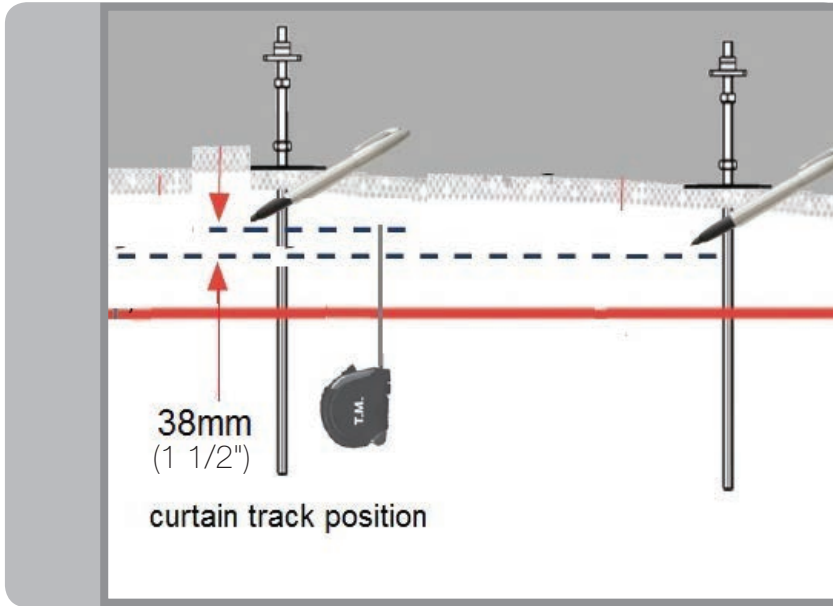


Once the first threaded rod has been marked, we now need to mark the remaining rod locations.

Hold the end of your measuring tape on the mark. Determine the measurement from your mark to the cross line laser level. Transcribe that measurement to all of the other threaded rods in the layout.



With all threaded rods marked and levelled, proceed to the next step, cutting the threaded rods.

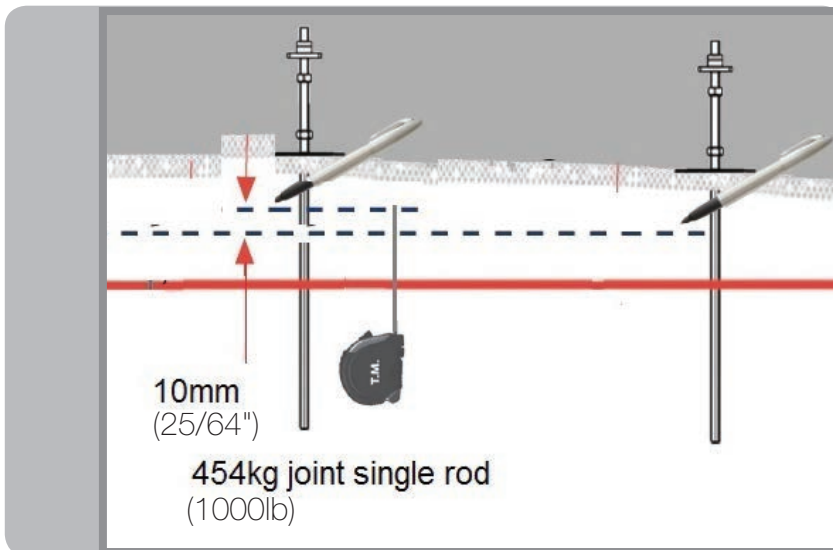


If you have a curtain gap track layout equipped with a curtain gap bracket (single rod) fixed under ceiling setup:

Locate the threaded rod with the lowest ceiling height.

The minimum threaded rod length required for a bracket is 74 mm (2 15/16 in). (Ceiling plate 2x shim 12 mm, 1x shim 3 mm, 1x shim 1.5 mm, bracket, washer, tabwasher, stover nut.)

Then, at the curtain track position, the distance from your cross line laser level is 38 mm (1 1/2 in) higher than reference rod cutting level.



If you have a track layout with a 454 kg (1000 lb) single rod joint method:

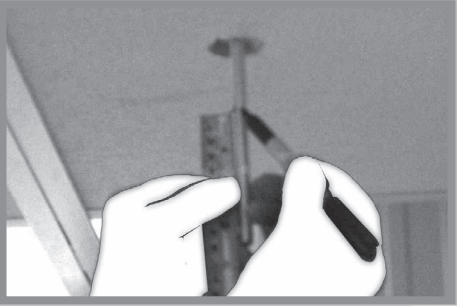
Locate the threaded rod with the lowest ceiling height.

The minimum threaded rod length required for a bracket is 57 mm (2 1/4 in). (Ceiling plate shim 12 mm, bracket, washer, tabwasher, stover nut.)

Then, at the 454 kg (1000 lb) joint, the distance from your cross line laser level is 10 mm (25/64 in) higher than reference rod cutting level.

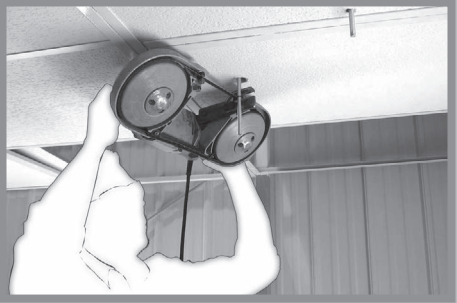
Cutting the Threaded Rods

01



Double-check the reference measurement and verify the height of each threaded rod.

02



Using the portable band saw and safety goggles...

03



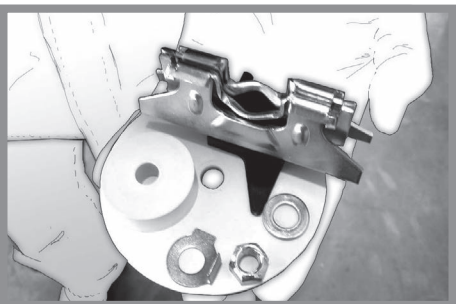
...cut the threaded rods to their determined marks.

Preparing the Tabwashers

Note:

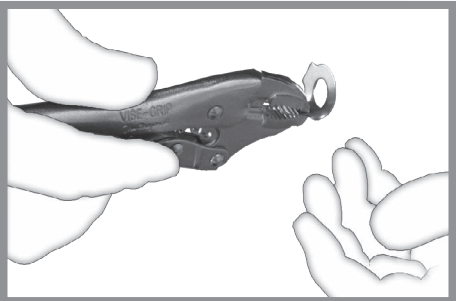
- This procedure is identical for both standard brackets and joint brackets.

01



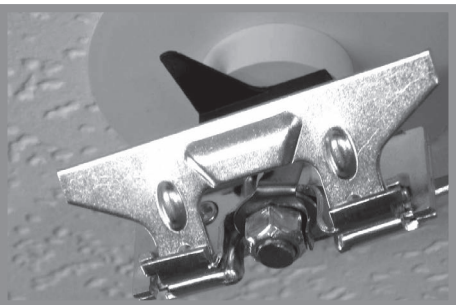
Prepare the tabwashers before assembling of the reference bracket.

02



Using a pair of pliers, bend the tab at 90°.

03



You are now ready to install the reference bracket.

Installing the Reference Bracket

01



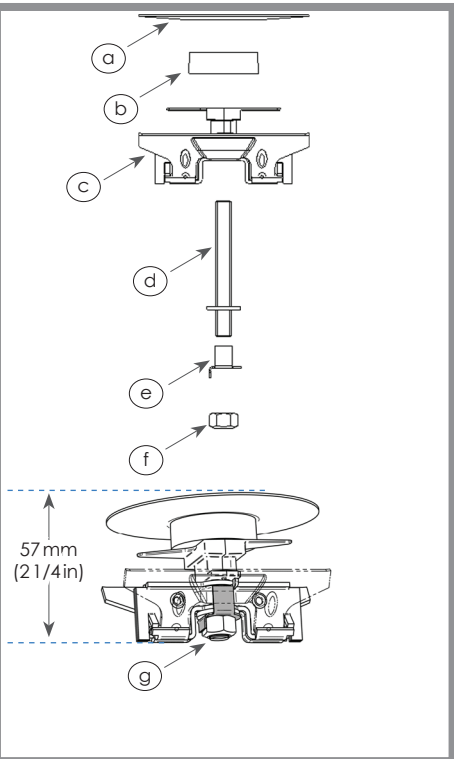
When installing the KWIKtrak directly to the ceiling—that is, with no suspension—57 mm (2¼ in) of threaded rod is needed to protrude out of the ceiling at the “lowest point”. The first part to install is the ceiling plate. The rounded side of the plate goes downwards for a nicer finish. Install the 12 mm (1/2 in) shim, the empty side upwards.

02



Install the bracket, followed by the washer and the pre-bent tabwasher (the long tab of the tabwasher goes upward, between the middle core of the bracket and a side wing).

03



Install the stover nut and tighten it until the first thread of the rod surpasses the bottom of the stover nut.

The bracket should remain firmly snug but not overly tight. Using the rotary laser, take a reading of the height of the reference bracket.

Repeat that assembly for all other brackets. Adjust to the exact same height.

Later, use 1.5 mm (1/16 in), 3 mm (1/8 in) and 12 mm (1/2 in) shims to fill the difference in height.

Once all brackets have been installed, revalidate that they are level and at equal distance when measuring at the same location at each bracket area.

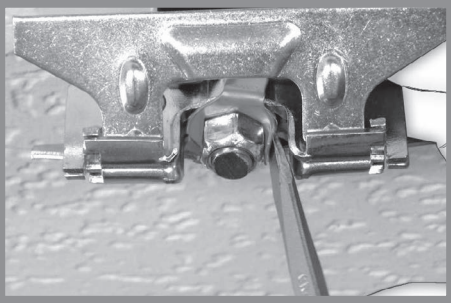
- a. ceiling plate
- b. 12 mm shim
- c. KWIKtrak bracket
- d. washer
- e. tabwasher
- f. stover nut
- g. plus 2-3 threads surpassing the stover nut

Bending/Securing the Tabwasher

Note:

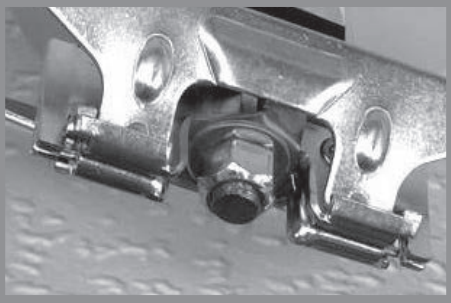
- This procedure is identical for both standard brackets and joint brackets.

01



Using a flat screwdriver or longnose pliers, bend the small tab of the tabwasher downward until it rests against one flat side of the stover nut.

02



Repeat step and make sure that the washer is on top of the tabwasher. The small tab will not reach the stover locknut if the washers are not at the proper position.

On this picture, washer and tabwasher are reversed.

03

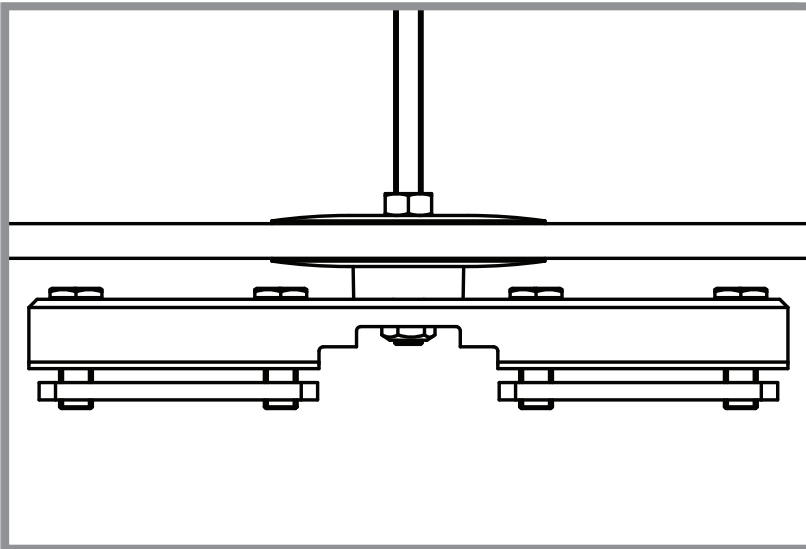


Double-check the height of all remaining brackets. The maximum acceptable tolerance is 1 mm (1/16 in).

Preparing Curtain Gap Brackets (single rod)

Note:

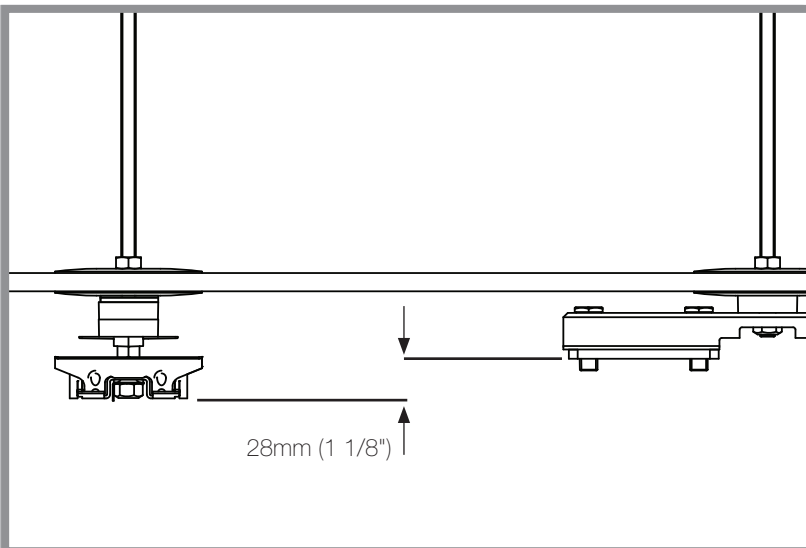
- The curtain gap bracket is meant for ≥ 120 kg (265 lb) installations, to ensure a smooth track gap crossing with the curtain gap trolleys.
- At minimum, the curtain gap track shall be shimmed down of 30 mm (1 3/16 in) from the ceiling.



Install a ceiling plate, a 12 mm (1/2 in) shim, curtain gap bracket and a stover nut.

On the threaded rod, let 2-3 threads surpassing the stover nut.

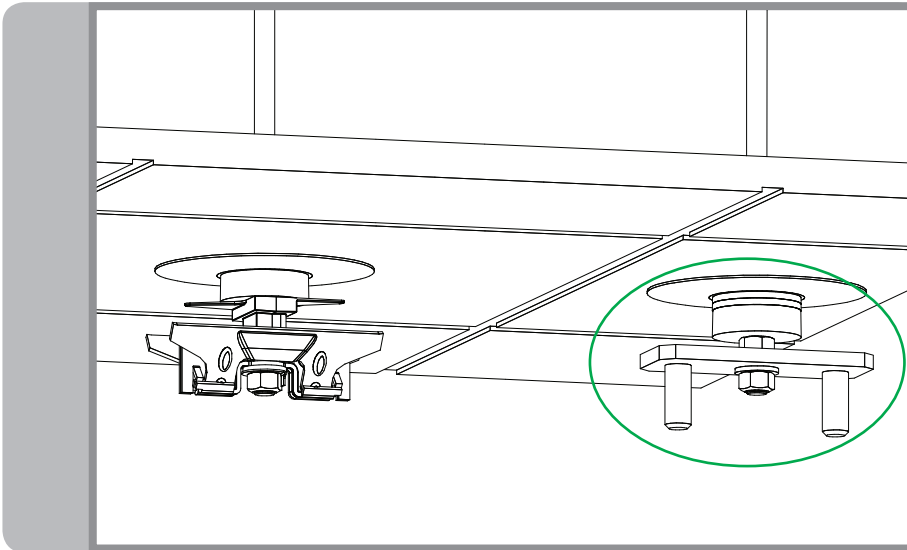
Note: This is the recommended minimum shimming to permit access to tighten bolts.



For leveling curtain track bracket, place tape measure under track bracket and position the curtain gap bracket at 28 mm (1 1/8 in).

Note: Precise leveling of tracks may be required further in the process.

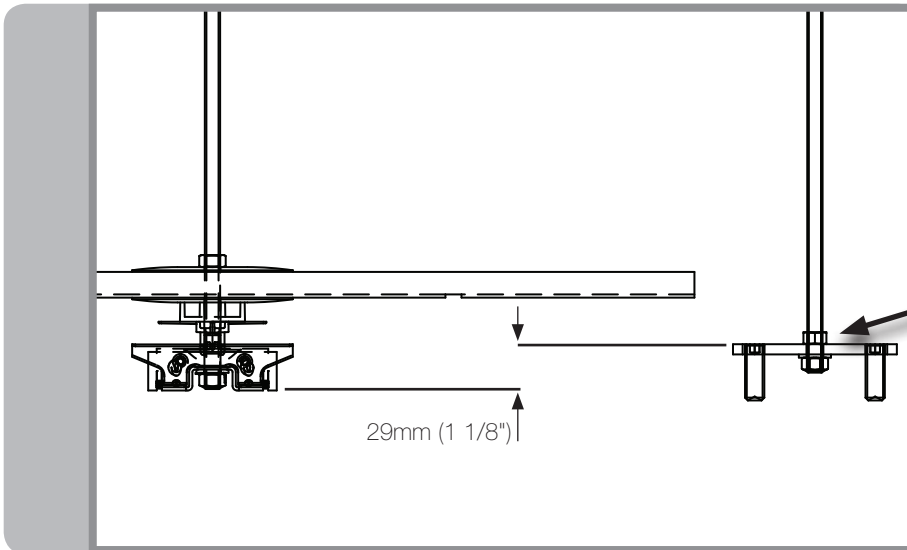
Preparing 454 kg (1000lb) Joint Bracket (single rod)



Install a ceiling plate, a 12 mm (1/2 in) shim, 2x 3 mm (1/8 in) shim, a nut, joint bracket, flat washer and a stover nut.

On the threaded rod, let 2-3 threads surpassing the stover nut.

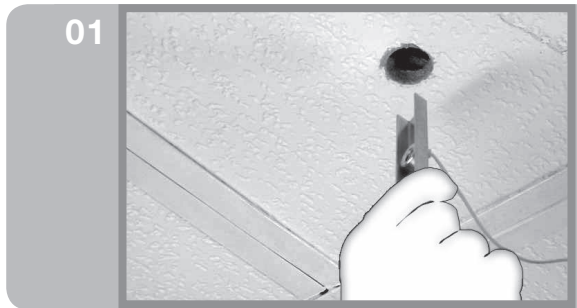
Note: This is the recommended minimum shimming to permit access to tighten bolts.



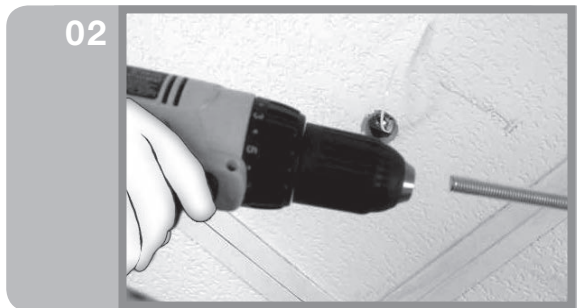
For leveling joint track bracket, place tape measure under track bracket and position the bracket at 29 mm (1 1/8 in)(top of plate).

Tighten the jam nut on top of the joint plate by holding the stover nut from turning (under joint plate).

Installing Under a Drywall-Dropped Ceiling



Insert the pressure nut through hole in drywall. Make sure to keep the tie-wrap beneath the drywall.

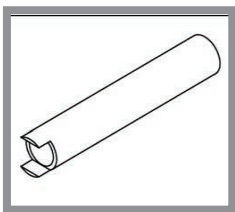


Take the end of threaded rod and insert it into the drill chuck.

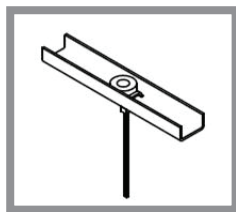


Once locked in, pull on the plastic tie-wrap to keep the pressure nut from moving.

Material

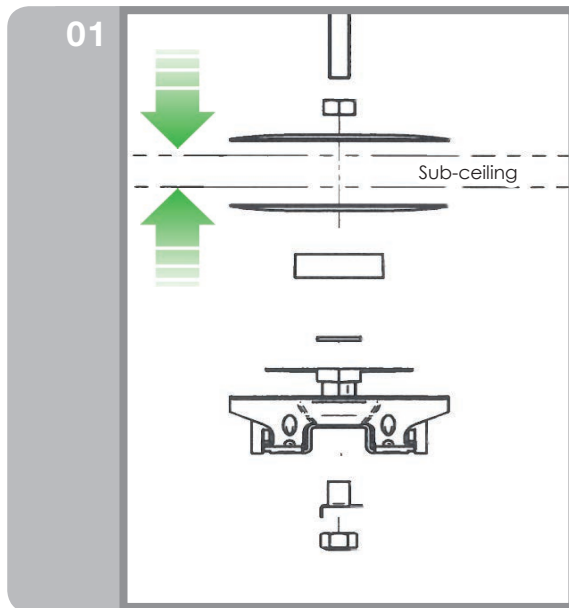


Tool for pressure nut (3/8-16 in and M10)



Pressure nut (3/8-16 in and M10)

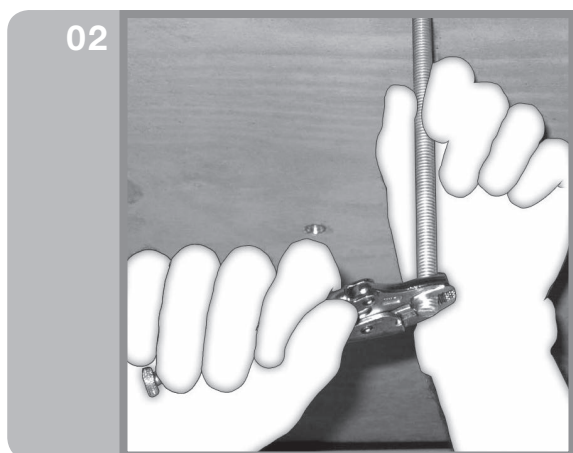
Preparing the Sandwich Effect



The purpose of this step:

- Attach the threaded rod to the anchoring system.
- Prepare the sandwich assembly.

The *sandwich effect* involves creating a permanent force of pressure that acts on the sub-ceiling through the use of two ceiling plates (one above and one below the sub-ceiling).



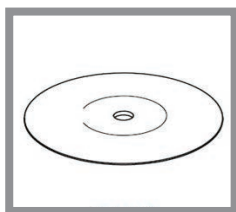
Direct installation

- Cut a piece of threaded rod to 18 cm (8 in).
- Tighten threaded rod into the anchor until you get to the end of the anchor. Turn an additional 1/4 turn to lock the threaded rod into the anchor.

Suspended installation

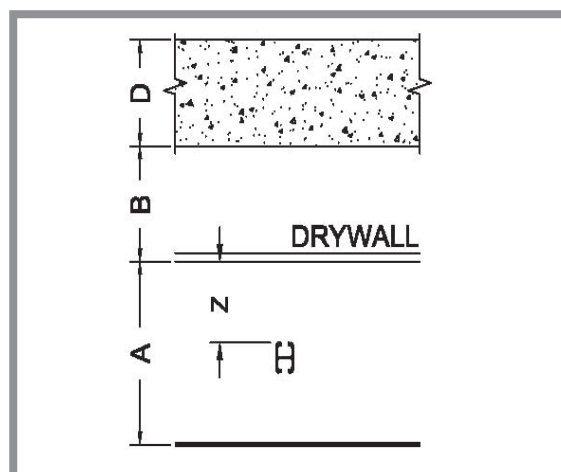
- Cut the threaded rod to the proper length (suspension distance [value Z on drawings] + 15 cm (6 in)).
- Turn this piece of threaded rod into the anchor until you get to the end of the anchor. Add a 1/4 turn to lock the threaded rod into the anchor.

Material



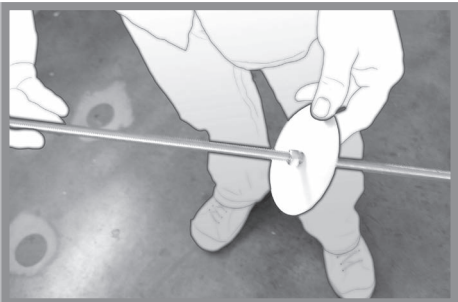
Ceiling plate

Diagram



Installing Below a Suspended Ceiling

01



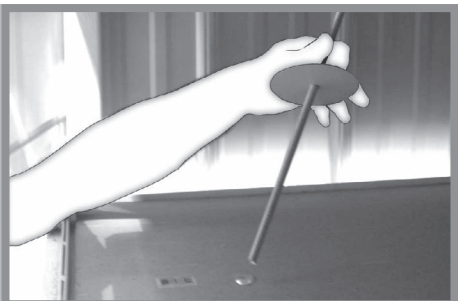
Direct installation:

Cut the threaded rod to the proper length (distance between structure and tiles (value B on plan) + 15 cm (6 in)).

Suspended installation:

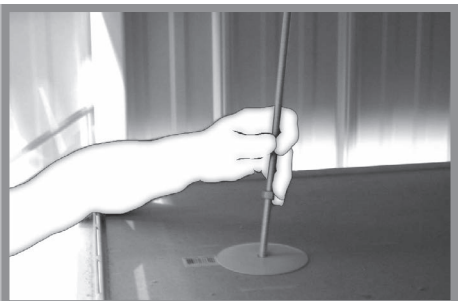
Cut the threaded rod to the proper length (distance between structure and tiles (value B on plan) + suspended distance (value Z on plan) + 15 cm (6 in)).

02



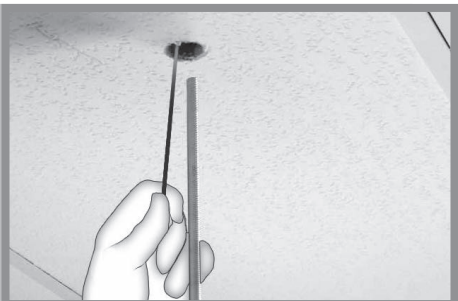
Put a ceiling plate and a nut at one extremity of the threaded rod. For the *sandwich effect*, the rod needs to protrude 15 cm (6 in) below the suspended ceiling.

03



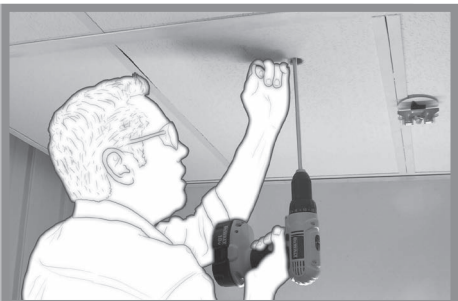
Tighten the threaded rod into the anchor until you get to the end of the anchor. Turn an additional 1/4 turn to lock the threaded rod into the anchor.

04



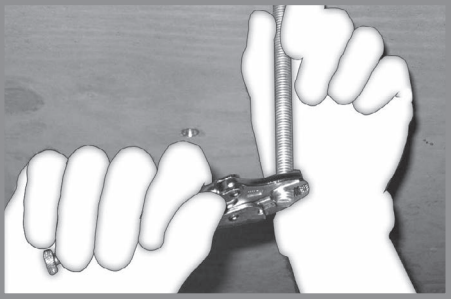
While holding the tie-wrap, insert the threaded rod into the pressure nut and turn the rod into pressure nut.

05



Use drill to insert the threaded rod into place, all the while holding the pressure nut tie-wrap to prevent it from moving.

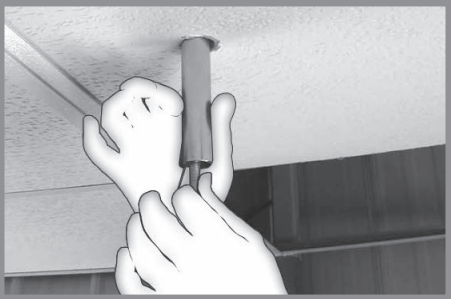
06



Once the threaded rod is all the way into the anchor, lock the threaded rod into the anchor using vise grip pliers and turning the rod an additional 1/4 turn.

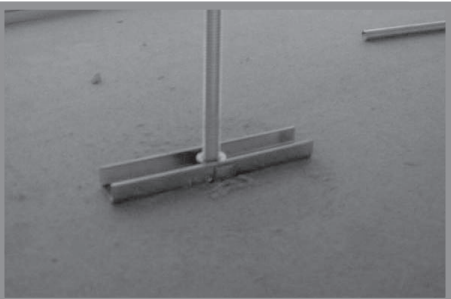
Once the threaded rod is locked in the nut, turn clockwise to bring pressure nut tight against the drywall.

07



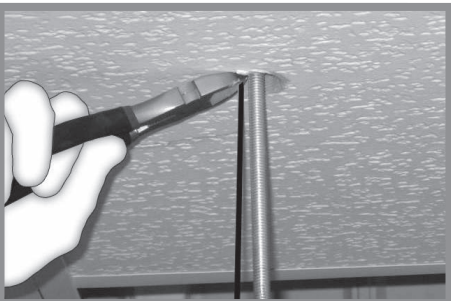
Use the pressure nut tool to rotate the pressure nut downward, until the *sandwich effect* is achieved.

08



When access is not possible, a pressure nut is used to achieve the *sandwich effect*. Another common application for the pressure nut is during "phase jobs".

09



Once this step is complete, cut off the unused part of the tie wrap from the pressure nut.

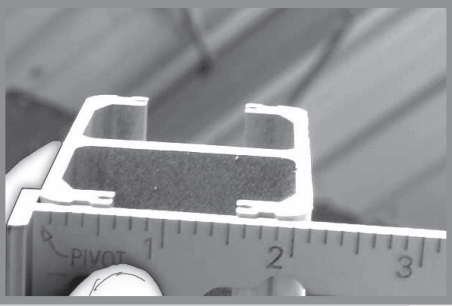
Track Installation

Checking the Ends of Track

The purpose of this step:

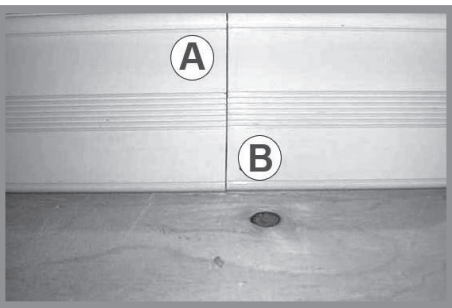
- Place the rails in the correct position.
- Get perfect track junctions.
- Secure the track brackets.

01



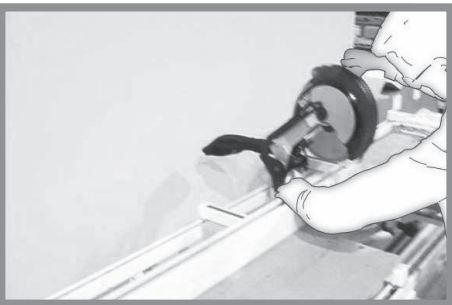
Verify if the ends of the tracks are squared and undamaged (e.g. bent, kinked or scratched).

02



If not exactly squared, try flipping some tracks upside down to match reverse angles.

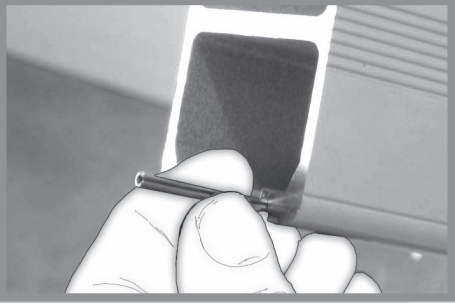
03



Or recut the track to get the ideal angle.

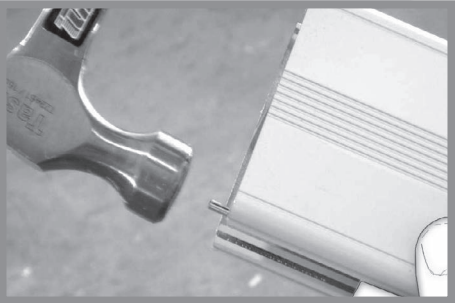
Installing the Spring Pins

01



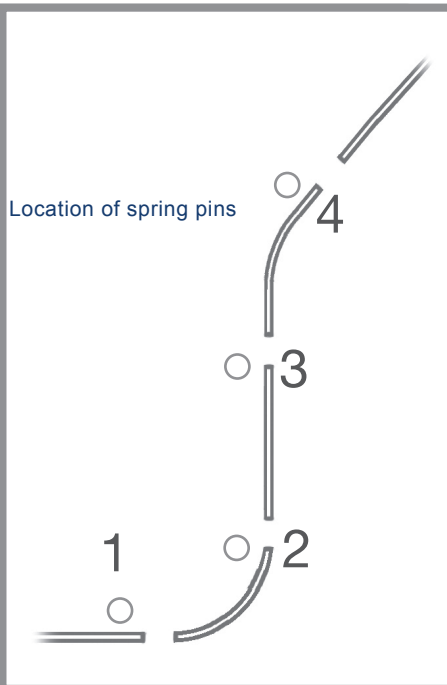
Install the spring pins on bottom grooves of the track. Make sure to align the slot of each spring pin so that it is facing sideways and outwards in relation to the track.

02



Using a hammer, fully insert spring pins into the grooves in the tracks.

03



Note:

A good practice when installing spring pins is to punch all the springs in the same direction. This will help keeping the joints closed.

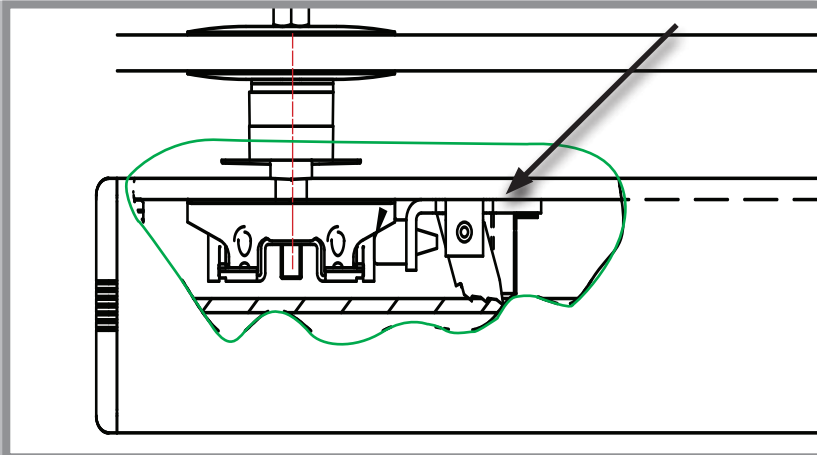


If required, at the end of junctions, pre-drill the spring pins grooves (bottom of the track) with 3.3mm (1/8 in) drill bits to remove any excess paint.

Curtain Gap Track Adjustment (2x standard brackets)

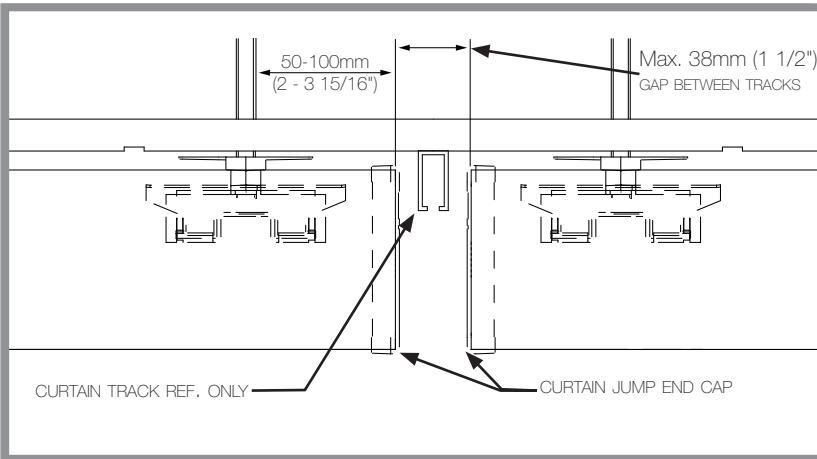
Note:

- The curtain gap configuration with 2x standard brackets is meant for 120 kg (265 lb) SWL installations.

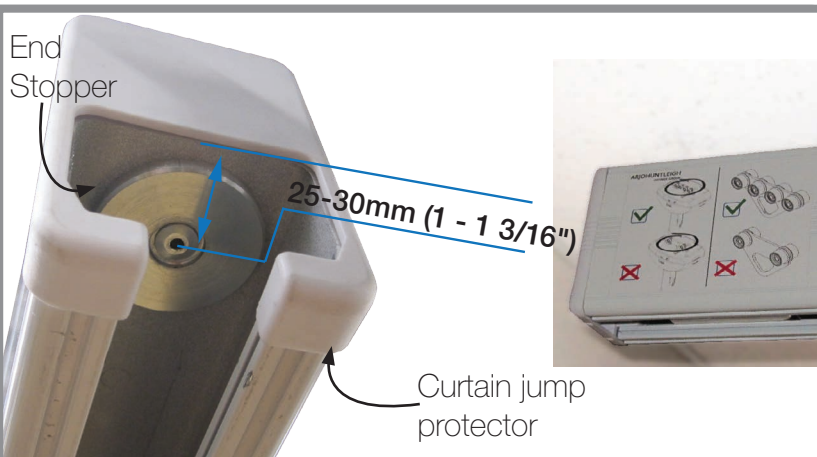


Before clipping the tracks to the brackets, insert an autolock end stopper in the upper section of both tracks, next to the bracket at each extremity.

Note: This prevents gap from opening when lifting device impacts end of track stoppers.



Once the tracks are installed, slide them to adjust a 38 mm (1 1/2 in) gap, maximum

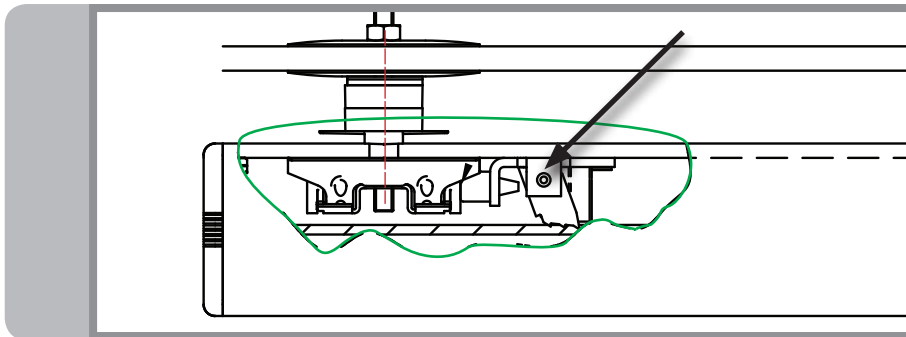


- Install both end stopper with rivets, drill $\varnothing 4.9$ mm ((1 - 1 3/16 in) #10) hole at 25-30 mm (1 3/16 in) from extremity of track.
- Clean drilling debris.
- Install both curtain gap end caps.
- Apply trolley compatibility sticker on track.

Curtain Gap Track Adjustment (single rod bracket)

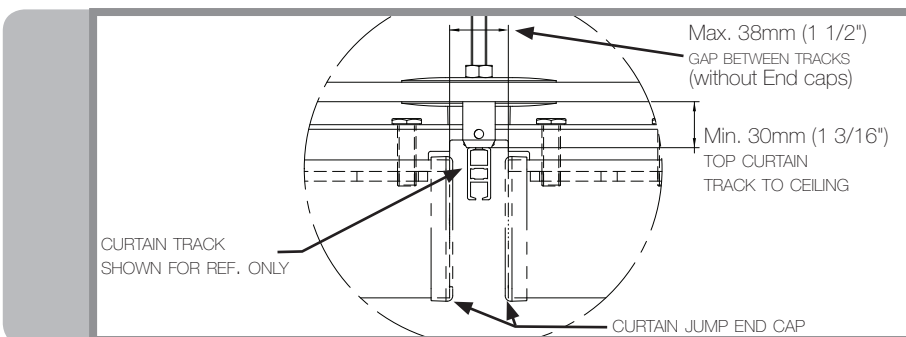
Note:

- The curtain gap configuration with single rod bracket is recommended for >120 kg (265 lb) SWL installations.

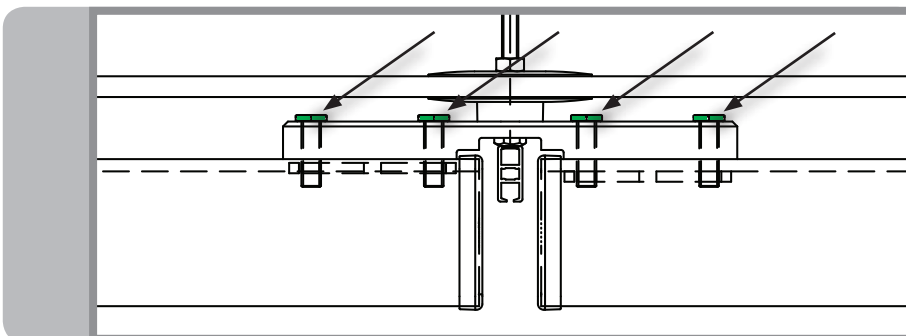


Before clipping the tracks to the brackets, insert an autolock end stopper in the upper section of both tracks, next to the bracket at each extremity.

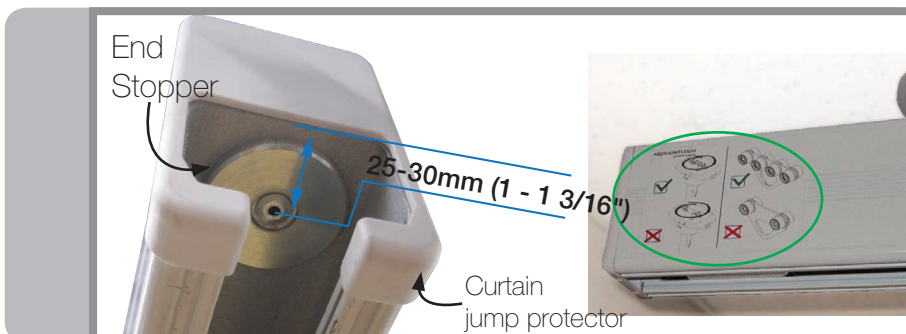
Note: This prevents sliding of track along the brackets.



Once the tracks are installed, slide them to adjust a 38mm (1 1/2 in) gap, maximum.



Torque (4x) M12 bolts 30-40 N*m



- Install both end stopper with rivets, drill $\varnothing 4.9$ mm (1 - 1 3/16 in) (#10) hole at 25-30 mm (1 3/16 in) from extremity of track.
- Clean drilling debris.
- Install both curtain gap end caps.
- Apply trolley compatibility sticker on track.

Clipping the Tracks

01



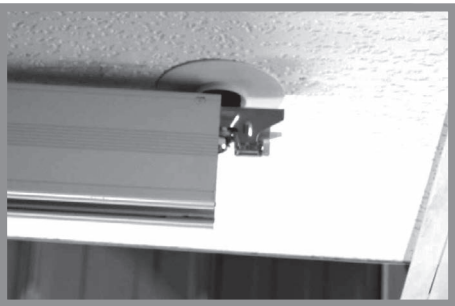
Align the brackets in the direction of the track.

02



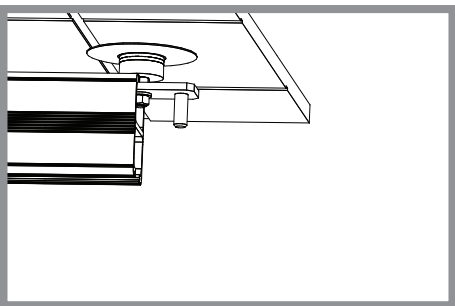
Clip the track up into the brackets and shake it to ensure the brackets will fully open.

03



Align the tracks to get the end of the track exactly in the middle of the joint bracket.

04



Alternate option for 454 kg (1000 lb) joint bracket single rod method. Align the tracks to get the end of the track exactly in the middle of the joint bracket.

Locking the Brackets

01

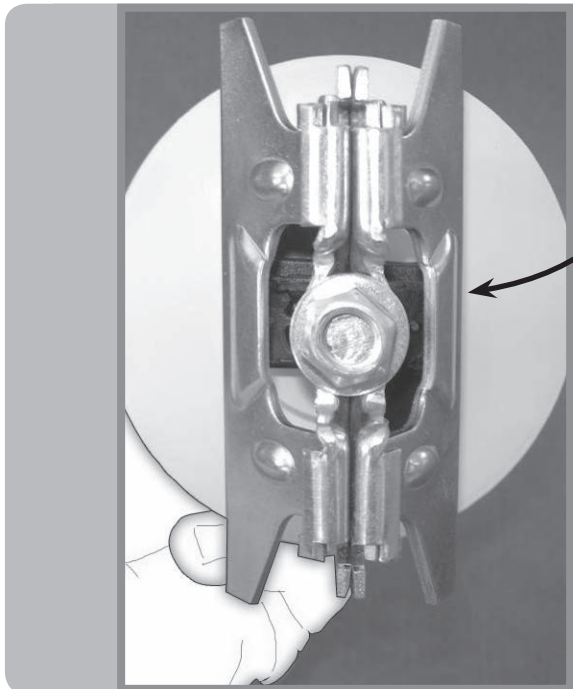


The lock-unlock tool is required to proceed with this next step. Use the smaller extremity of the tool to lock the bracket. Use the bigger extremity of the tool to unlock the bracket.

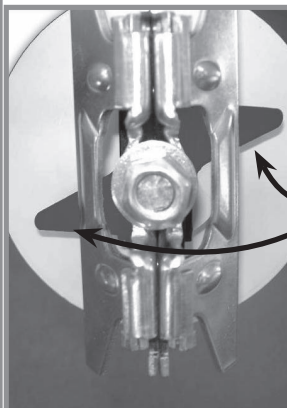
02



Insert the tool between the track and the black wings of the bracket below it. Turn clockwise when looking from under until black wings become aligned with the track. The bracket is locked.



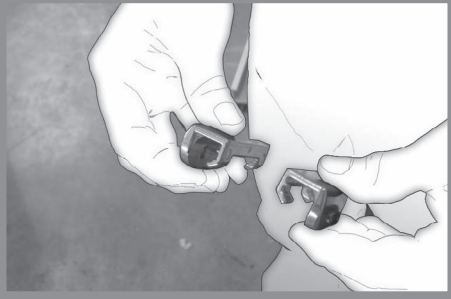
Locked bracket (black wings not visible)



Unlocked bracket (black wings are still visible)

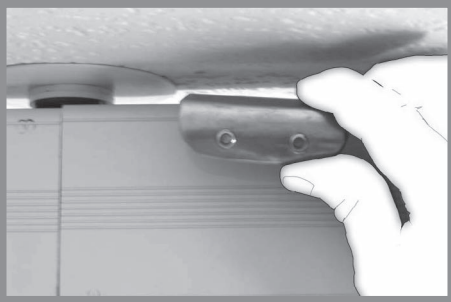
Installing the Block Joints

01



Two KWIKtrak block joints are necessary on each track joint.

02



Carefully insert the block joints on the upper part of the track, below the black cam of the bracket.

03



Use a hammer to push the block joints until they get halfway over the junctions of the two tracks. Make sure you do not scratch the tracks.

Do not tighten the setscrews right away.

*Another possibility is to install a joint plate with 2 rivets instead of the 2 KWIKtrak block joints. See next page for details.



NOTE...

Q: Impossible to push the block joints.
A: Check if spring pins are in the way.

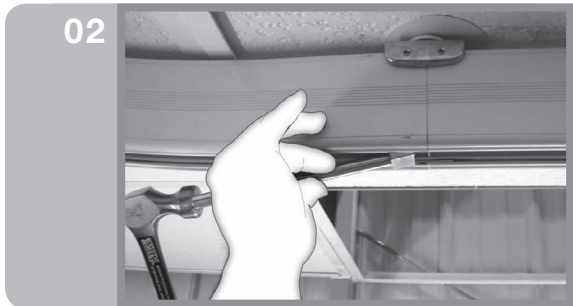
Q: Difficult to position the block joints.
A1: Check if tracks are uneven at the joint.
A2: Check if there are missing spring pins.

Positioning the Spring Pins and Securing Joints



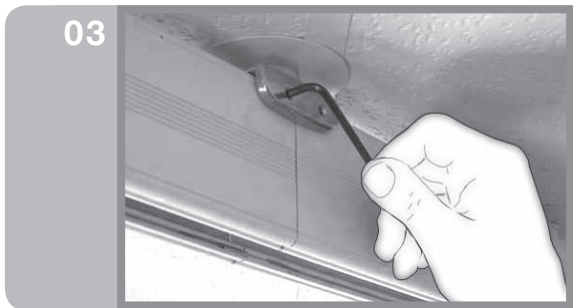
01

Rotate the spring pin tool into the bottom grooves of the track.



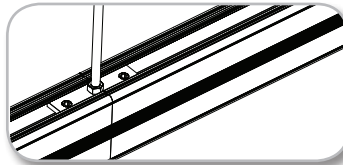
02

Using a hammer, hit the spring pin tool until the spring pins are inserted halfway into both tracks.
If the track junction is still open, readjust the spring pins on the other side of the bracket.



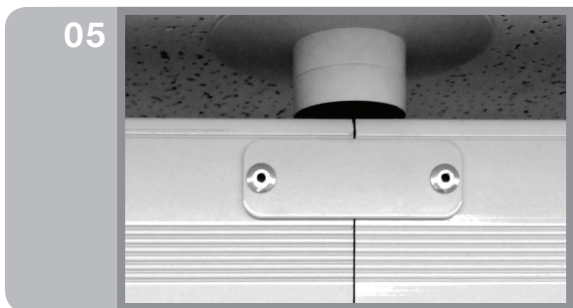
03

Once the spring pins are centered, tighten the block joint setscrews (recommended torque of 7-8 N·M (62-71 lb.in)). For 454 kg (1000 lb) joint bracket single rod: tighten the set screws to 20N·M (15 lb*ft) with allen key 6 mm.



04

Clip the plastic caps, provided in joint bracket kit, over the block joints.



05

Alternate Method:

Note: Mandatory for 454 kg (1000 lb) track joints.

- Drilling should be achieved using drilling jig #001-11510 rev.1
- Drill 2 holes 4.9 mm (#10) in the track.
- Install a joint plate with 2 rivets provided in the joint kit.

Note: Install the joint plate on one side only, where it is the least apparent.

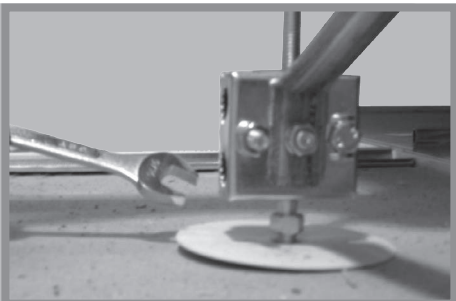
Final Adjustments

Tightening the Lateral Braces

The purpose of this step:

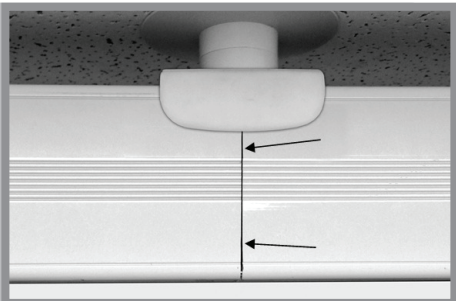
- Tightening the lateral bracing assembly for maximum (long lasting) stiffness.

01



Apply *sandwich effect* by tightening the nut.

02



Align the straight parts of the tracks for smooth lines by adjusting the track junctions. You may need to push or pull at the junctions.

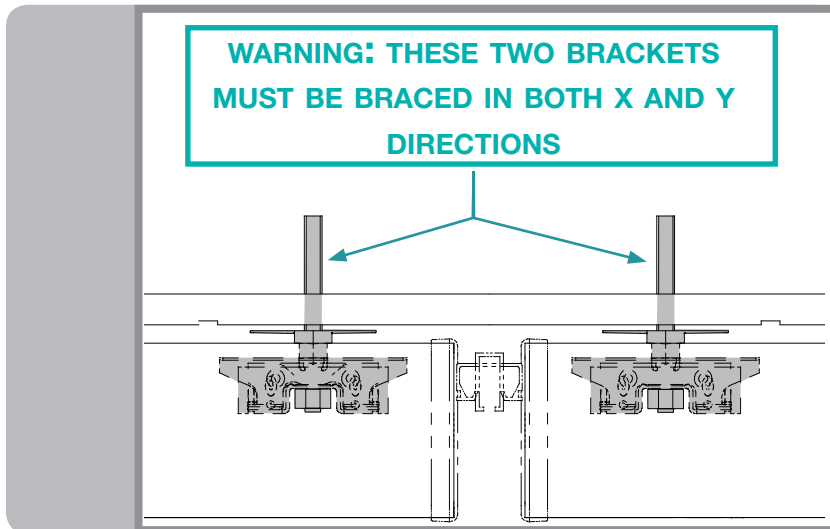
03



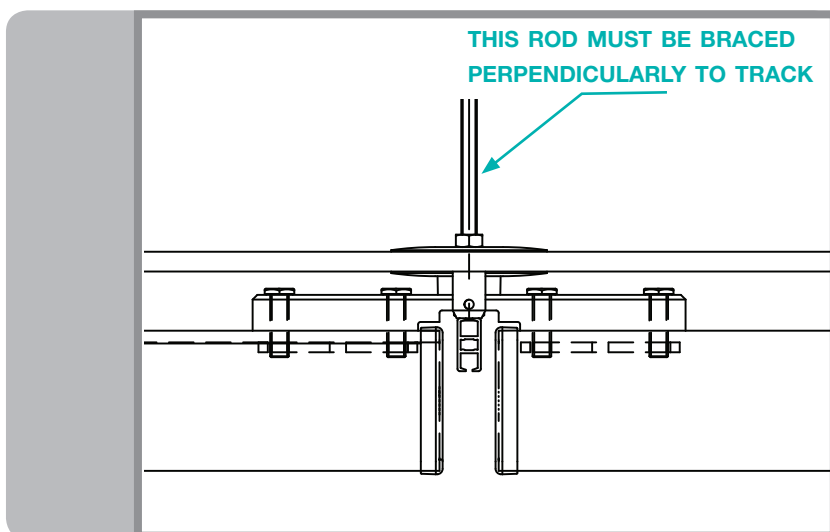
Tighten the middle clamp of the lateral braces. See Lateral Braces Installation Guide (001-01015-EN) for detailed instructions.

Special Consideration - Curtain Gap Bracing

For ≤ 120 kg (265 lb) SWL configuration installations. (2x standard brackets)



For ≥ 120 kg (265 lb) SWL configuration installations. (single rod bracket)



Installing the End Stopper

01



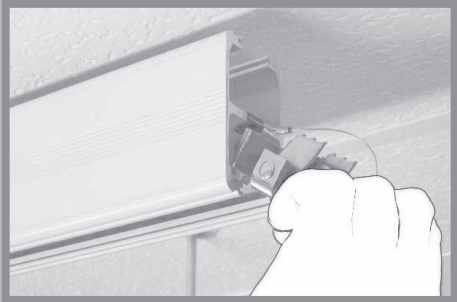
Use the clip to attach the end stopper to the middle part of the track.



NOTE...

The following 5 points are extremely important. Never forget to securely install the end stoppers.

02



Slide the end stopper into the bottom cavity of the track, until you get to the end of the wire (use black clip to secure wire). Make sure that:

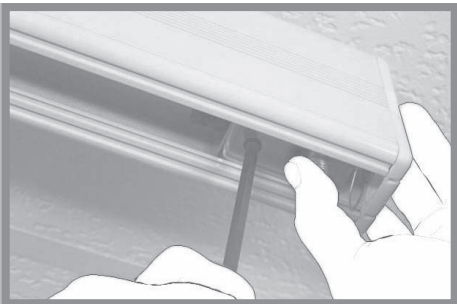
- the end stopper bumper faces the middle of the track layout.
- The setscrews are facing downwards on the track.

03



Insert the plastic end cap.

04



Push back the end stopper until it touches the plastic end cap. To do so, use an Allen Key or a screwdriver, and push on the spring-loaded mechanism accessible by a hole on the bottom of the end stopper. When the spring-loaded pivoting portion is pushed upwards, the end stopper can move laterally.

05



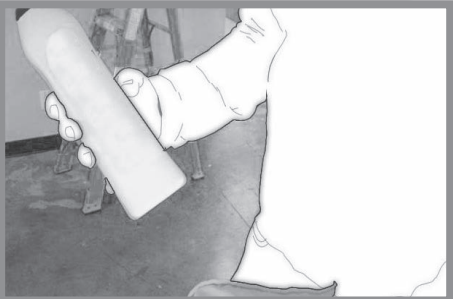
Verify if the self-locking mechanism is working properly by pushing the end stopper. If the end stopper does not move, tighten the setscrew using a 6mm Allen key 20N·m (15 lbf·ft).

Cleaning the Installation

The purpose of this step:

- Remove debris from the track to avoid damage to the ceiling lift's wheels.
- Return the room to its original state.

01



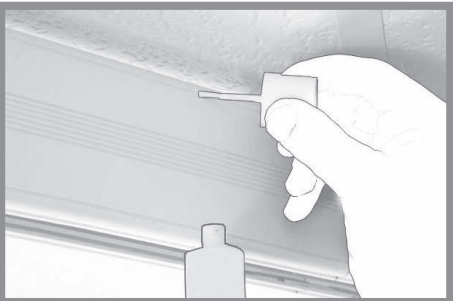
Using a rag and a mild cream cleaning detergent, remove any small debris and dust from inside and outside the tracks.

02



Clean off any handprints on the tracks.

03



Use white touch up paint for scratches and scrapes on tracks.

Remove construction debris and dust caused by the installation work performed in the room.

Step 5: Initial Weight Load Test



WARNING: Ensure there is no patient in the room while doing a weight load test.

WARNING: We recommend using trolley #700-10660 for curtain gap pass through. When using trolley #700-10650, stop before the gap, measure, then lower the WLT and remove trolley from track section, then enter opposite end of track layout to complete remaining deflection measurements

The purpose of this step:

- Make sure the structure and the hardware will be able to support the full capacity of the system. The 3-phases of the weight load test includes:
 - Phase 1—Initial run through.
 - Phase 2—Measuring the height unloaded.
 - Phase 3—Measuring the height loaded.

Generalities

01



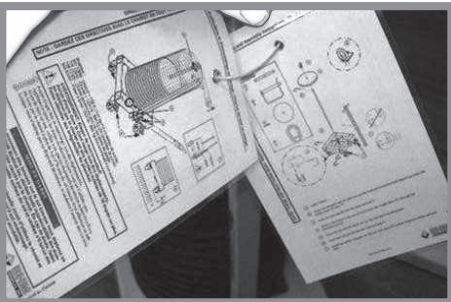
Use a safe weight load test trolley (WLT) and make sure it is going to be able to bear the weight load once it is suspended.



NOTE...

The weight to be applied must be equivalent to the maximum capacity of the track, multiplied by 1.25 or 1.5, according to local regulations.

02



Read instructions carefully.

03



Make sure the elevator and building are able to bear the weight.

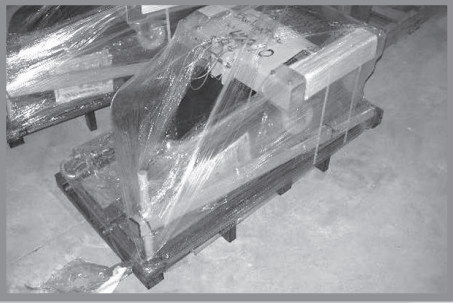


NOTE...

Regulatory authorities requires archiving weight load test documents for future consultations. Fill out the Weight Load Test Form (#001-11760-XX).

Assembling the WLT Trolley

01



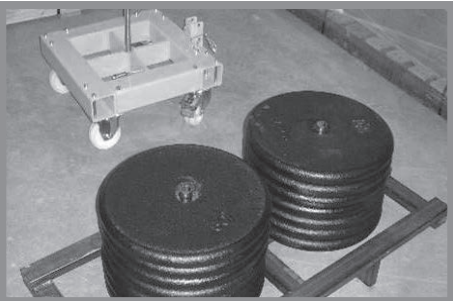
Unwrap the skid and put the trolley's base on the floor.

02



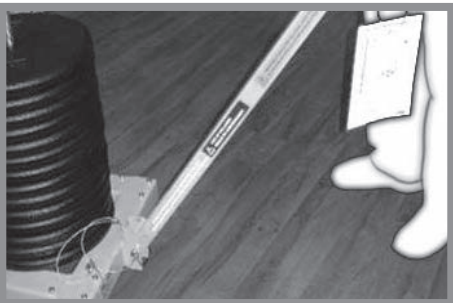
Install the threaded rod by removing the hook head attachment.

03



Transfer the weights onto the WLT trolley, replace and secure the hook head attachment using the pin provided with it.

04



Install the carrying arm using the provided pins. The load test is ready to be performed.

Initial Walk-Through

01



Insert the portable trolley into the track to be tested.

02



Make sure there are end stoppers at every extremity of the track and that the autolocks are working properly by pushing outwardly on each one.

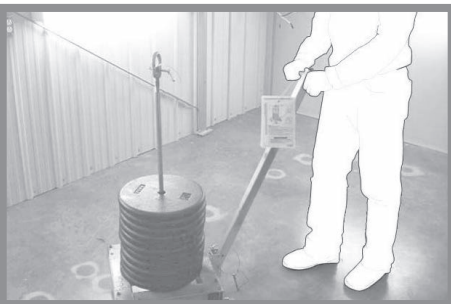
Visually inspect each track bracket to ensure they are all locked.

03



Hook on the weight load trolley. Check if all security parts of the trolley are in place and if the lifting pulley is securely hooked.

04



Lift the WLT trolley from the ground, no more than 50 mm (2 in) to make sure it does not touch the floor.

Never stand with your feet under the trolley during the test.

04



Slowly and carefully circulate the trolley within the track layout from one end to the other. It is recommended to run the load through the entire system prior to taking any measurement. The system will move to its final position.

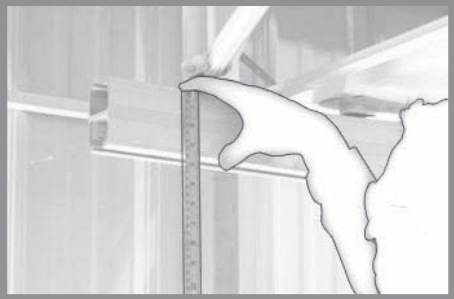
Taking Measurements (unloaded tracks)

01



Install the rotating laser on a stable location that is 15 cm (6 in) - 30 cm (12 in) lower than the bottom of the tracks. Make sure the reference laser line is level.

02



Using a measuring tape, measure between the track and the laser line.

Always take the same reference point (either at the top or at the bottom of the laser line).

Be sure to use the same measuring tape throughout; different measuring tapes may have varying looseness in their tape end hooks.

03



With the above mentioned measurements, fill the corresponding columns (weight unloaded) into the weight load test document.

04



Repeat the process under each bracket prior to moving to next phase.



NOTE...

It is not recommended to use the ceiling as a reference point. Its position may vary when load is applied.

Taking Measurements (loaded)

01



DO NOT MOVE YOUR LASER

Make sure you have completed phase 2 and that the laser is still at the same position.

Lift the WLT trolley from the floor maximum 50 mm (2 in).

02



Take measurements of the height of the track while you pass under each bracket.

03



With the above mentioned measurements, fill in the corresponding columns in the weight load test document (#001-11760-XX).

Compare heights loaded and unloaded, calculate the difference (deflection) and complete the appropriate column of the form. Keep the completed form in order to archive it with the project file. Evidence of the initial test must be kept.

04



Fill out the weight load test sticker (#001.12725.33) and apply it properly on the most visible side of the track, nearest to the transfer location.

Step 6: Ceiling lift and Charger Installation

Installing the Ceiling Lift and the Charging Station

Note: If the track installation is equipped with ECS System, refer to Installation Manual #001.07650.EN .



Open the box and carefully take everything out...



...finishing with the lift.*



Remove the white end cap where the ceiling lift is going to be installed.



Loosen and remove the end stopper...



Slide the end stopper out and put it on the top of the track without unclipping it from the track. This precaution will prevent you from forgetting to replace the end stopper later on.

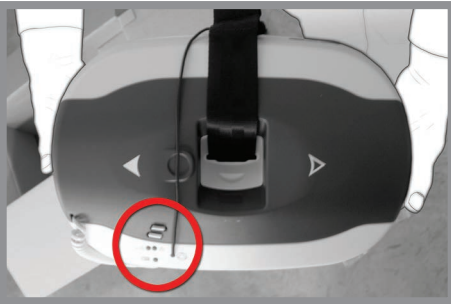
*The Maxi Sky 600 is being used as an example in these illustrations. Details and specifications from one ceiling lift to another will vary.

06



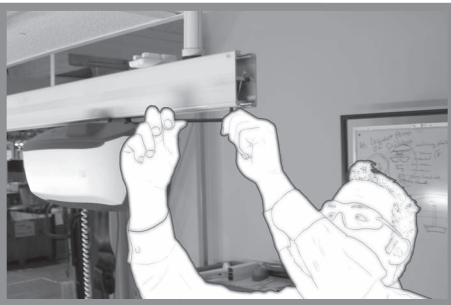
After removing the plastic packaging from around the ceiling lift, carefully insert the wheels in the lower cavity of the track.

07



Ideally, install the ceiling lift so that the LEDs on the underside of the lift will be visible to the care provider upon entering the room.

08



Replace the end stopper. Verify if the self-locking mechanism is working properly and tighten the setscrew using a 6mm Allen key 20N·m (15 lbf·ft).



NOTE...

This step is extremely important.
Never forget to correctly install the end stoppers.

09



Reinstall the white cap.

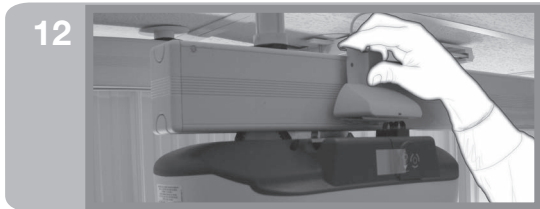
10



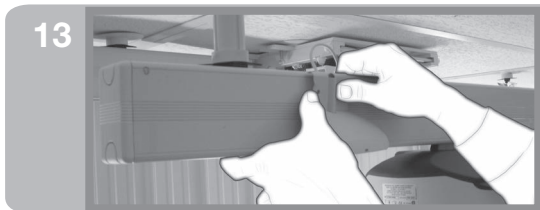
Slide the ceiling lift until it reaches the end stopper, the location where the charger is going to be installed.



There are 3 electrical contacts on the charger. To ensure that the ceiling lift will be able to charge, the two charging contacts of the ceiling lift must be in contact with the two terminals indicated in the illustration.



Align charger station with ceiling lift contacts.



...clip the charger onto the track by:

- first hooking the bottom of the charger bracket onto the bottom of the track,
- then pushing the top of the charger bracket inwards to fully clip it in place.



Take this opportunity to remove the door sticker.



NOTE...

ArjoHuntleigh does not recommend having more than one ceiling lift on the same layout.

- The installation methods must respect the manufacturer recommendations
- The installation must respect the track span requirements;
- The installation must be done by a certified installer;
- The structure has been validated by the engineer mandated by the customer;
- The weight load test (125 % or 150 % of the safe working load, depending on local codes) must be performed immediately after the installation has been completed by a certified installer/technician;
- A weight load test with the safe working load and a visual inspection must be conducted at least once a year by a certified installer/technician;

ArjoHuntleigh remains available at all times to support and guide you in any installation project.

15



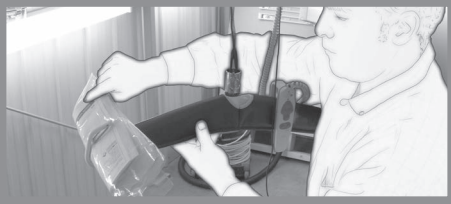
Turn the ceiling lift on.

16



With the hand control, perform some basic tests (move forward/backward, up/down), and hook it on the spreader bar.

17



Fold the installation manual of the ceiling lift and squeeze it into one of the spreader bar hooks.

The ceiling lift installation is now completed.

Step 7: Inspection and Commissioning

ARJOHUNTLEIGH Commissioning Form
GETINGE GROUP

Page 1 of 1

Facility: _____ Installer's Name: _____
 Address: _____ Company Name: _____
 Bus. Phone: _____ Email: _____ Bus. Phone: _____ Email: _____

LOCATION PRODUCT
 Installation site: Residential Long-term care Hospital Rehab area ICU Other _____
 Project reference No.: _____ Room No.: _____ Structure: _____ Type of track: KW60trak _____ mm
 Ceiling lift model: _____ Ceiling lift SWL: _____ Ceiling lift serial no.: _____ Other: _____
 Other serial numbers: Furniture Exchanger Scale
 Track design: Linear X/R track Wall-mount Wall bracket

INSPECTION ITEMS	RESULTS		
	YES	NO	N/A
1. Track respects predetermined transfer zones.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Installation respects minimum sprinkler distances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Installation avoids obstructions (lights, vents, curtains, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Installation respects minimum distances needed for lift insertion: 30 cm (11 in) for 272 kg (600 lb) ceiling lifts or 45 cm (18 in) for 454 kg (1000 lb) ceiling lifts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Brackets are in locked position.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. All tracks are aligned with respects to the main straight track, producing clean, smooth lines throughout the installation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Gaps at track junctions are smaller than 1 mm (1/26 in).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Absence of excessive accumulation of debris.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. End stoppers are all in place, attached, with set screws adjusted and tightened.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Maximum track overhangs are of 80 cm (22 in) in length.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Weight Load Test (WLT) certification sticker properly applied and signed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The installation produced minimal damage to the ceiling, walls and tracks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Transformer box properly installed and charging correctly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Excess charger wires hidden in plastic conduit, resulting in a clean installation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Access doors properly installed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Anchors/hardware were attached according to designated methods and specifications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. The installation respects the technical shop drawings for this particular structure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Sandblasts effect applied correctly tracks, masked proper stiffness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Lateral reinforcements installed properly where required.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. All parts of the installation are locked, tightened and solidly attached.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Tracks are clean (inside and outside).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If any of the above items fails inspection, please list the items and provide comments:

RESULTS

INSPECTION PASSED: YES NO

PLEASE Name (Block letters) _____ Date _____ Signature _____

NO: 111161-EN-0

The purpose of this step is to:

- Identify loose/missing end stoppers, unlocked brackets...
- Use red tags for quarantine issues, as shown below.
- Identify problem with layout, incorrect transfer points, obstruction, missing lateral brace, deficient ceiling lift and charging stations.



Material

Ladder

- Camera
- Allen keys
- Measuring tape
- Flashlight
- Flat screwdriver (to open the access doors)
- Clipboard with drawings of the project
- Weight load test (if requested)



NOTE...

...all documents concerning inspections must be available for ArjoHuntleigh for a period of 15 years from the date of inspection.

Required Documents

- Room Commissioning (#001-11760-XX document, available at www.arjohuntleighlibrary.com).
- Drawings, authenticated and signed by the client.
- Red tags for quarantine issues, as shown below.



Taking Pictures

Do not hesitate to take the most pictures you can while reading measurements.

- Avoid pictures that are blurred, too dark.
- For rooms, take picture of the room number before entering, but hide patients' names for privacy. Try to avoid taking pictures with patients in the shot.
- For pictures above and below the ceiling, try capturing the structure, anchoring methods, lateral braces, layout, transfers, charger, joints, etc.



Recommended Tools

Electric and Hand Tools

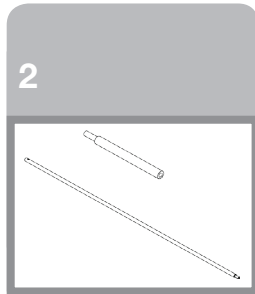
Electric tools and associated accessories:

- Portable band saw (pic. #1)
- HDI/HDIP setting tool (threaded or not) (pic. #2)
- HDI/HDIP 50 cm (21 in) and 100 cm (42 in) punch extension (pic. #2)
- Self-levelling plumb bob laser (pic. #3)
- Impact drill (SDS CHUCK) (pic. #4)
- Self-levelling rotating laser (pic. #5)
- Blades for band saw
- Mitre saw
- Non-ferrous blades for mitre saw
- Cordless drill
- 150 mm x Ø 13 mm SDS (6 in x Ø 1/2) concrete drill bit
- 460 mm x Ø 13 mm SDS (18 in x Ø 1/2) concrete drill bit
- 1 m x Ø 13 mm SDS (42 in x Ø 1/2) concrete drill bit
- 150 mm x Ø 22 mm concrete drill bit (6 in x Ø 7/8)
- Chemical applicator gun



1.

Portable band saw



2

HDI setting tool and punch extensions



3

Self-levelling plumb bob laser



4

Impact drill with SDS chuck



5

Self-levelling rotating laser

Hand tools

- Metric and imperial measuring tape
- Hammer
- Vise grip
- Metric Allen key kit
- Electrical extension cord
- 3M mask and filters
- 3/8 in drive ratchet
- 9/16 in socket
- 10 mm socket
- 13 mm socket
- 3/8 in socket adaptor for drill
- 9/16 in open key
- 13 mm open key
- 17 mm open key
- Quick grip medium clamps
- Headlamp
- Cutter knife
- Wire cutter
- 3/8 in chuck adaptor for cordless drill
- 2 m (6 ft) ladder
- #2 screwdriver
- Phillips #2 screwdriver
- T20 torx screwdriver
- Square 30 cm x 30 cm (12 in x 12 in)
- Hole saw 102 mm (4 in)
- Hole saw 32 mm (1 1/4 in)
- Wood drill bit 6.5 mm x 300 mm (1/4 in x 12 in)
- 3.3 mm drill bit for spring pin
- Wood drill bit 3 mm x 150 mm (1/8 in x 6 in)
- Universal drill 8 mm x 150 mm (5/16 in x 6 in)
- Varybit 3.2 mm - 12.7 mm (1/16 in - 1 in)
- Masking tape

NOTE...

To ensure accuracy, tool calibration according to manufacturer requirements is recommended.



Successful Installation

To complete a successful installation, always keep in mind the following points:

- Anchors are installed properly and will support the targeted safe working load.
- The installation respects tested and approved procedures (follow the step sequence found in this guide).
- All material used meet equivalent specifications (size, gauge, quality, etc.) (comparing to typical methods).
- Track system is suitable to the structure.
- The installation focuses on low maintenance and durability.
- Lateral reinforcements are installed when required.
- *Sandwich effect* is always applied.
- Appearance
- The track is levelled without obvious junctions.
- Once the work is completed, the room and track system must be properly clean of dust and debris.
- Functional installation
- The layout respects transfer points identified on signed drawings.

General Installation Notes

1. General points

- 1.1. *Installation drawings and Installation recommendations were elaborated in compliance with the National Building Code of Canada.*
- 1.2. *The materials and the quality of the work performed must comply with the National Building Code of Canada.*
- 1.3. *It is the responsibility of the engineer in charge of the building to ensure that the bearing capacity of the building structure is adequate to support additional charges related to the installation and use of the track system.*
- 1.4. *The nominal capacity of typical installations is shown in the drawing title blocs and corresponds to the following charge distribution depending on the capacity indicated in the drawing title blocs:*

Dead and Live Loads							
Ceiling Lift							
MS440		MS600/MS2		MS1000		MS2Plus	
Dead Load	Live Load	Dead Load	Live Load	Dead Load	Live Load	Dead Load	Live Load
14kg(30lb)	200kg(440lb)	28kg(60lb)	272kg(600lb)	32kg (70lb)	454kg(1000lb)	91kg(200lb)	454kg(1000lb)
Combined		Combined		Combined		Combined	
214kg (470lb)		300kg (660lb)		486kg (1070lb)		545kg (1200lb)	
Dead loads include worst case scenario setups such as DPS & Scales							

KWIKtrak Systems							
Straight tracks		Accessories		H90 Curves		H140 Curves	
Dead Load Per meter		Dead Load		Dead Load		Dead Load	
H90mm	3,2kg (7lb)	Exchanger	15,5kg (34lb)	45° R 1070mm	4kg (9lb)	45° R 1070mm	7kg(15lb)
H140mm	5kg (11lb)	Turntable	14kg (31lb)	90° R 1070mm	6,5kg (14lb)	90° R 1070mm	10kg(22lb)
H180mm	6,5kg (14lb)	Gate	7,5kg (16lb)	45° R 575mm	3,5kg (7,5lb)		
				90° R 575mm	3,6kg (8lb)		
				45° R 575mm + 2m	14kg (31lb)		
				90° R 575mm + 2m	15,5kg (34lb)		

- 1.5. ArjoHuntleigh emphasizes that it is imperative that the track system is installed by trained and certified personnel by ArjoHuntleigh that comply with the current regulations.
- 1.6. If concerned or doubt the method of installation, please communicate with our technical service department at ArjoHuntleigh by phone at 1-819-868-0441.

2. Strut Profiles

- 2.1. Material used for Strut channels must comply with ASTM A653 GR 33.
- 2.2. Strut profile selection shall be chosen according to manufacturer's span chart and track system allowable load.

3. Drop-in anchors and expansion anchors

- 3.1. All drop-in anchors and expansion anchors installations must be with ArjoHuntleigh approved hardware only.
- 3.2. Additional attention must be addressed between reinforcement distances and the edge distance.
- 3.3. If the information relative to the installation of the anchors shown on drawings provided by ArjoHuntleigh and the recommendations prove to be contradictory in comparison with the ones provided by another manufacturer, always contact ArjoHuntleigh before using any suspicious hardware.
- 3.4. The resistance calculations were performed by considering an installation in concrete of good quality with no crevices and with a resistance of 27.6 MPa (4000 psi) unless otherwise noted.
- 3.5. If the reinforcement bars are intercepted during drilling, stop drilling and relocate the position for the anchoring to a distance minimum of two (2) times the height of the anchoring. Advise the chief engineer of the building of all possible deterioration of reinforcement.

4. Chemical anchor

- 4.1. All recommendations for the use and installation of adhesive anchoring systems must be followed. Additional attention must be addressed to the level of cleaning for anchoring holes and for the minimum cure time to respect.

5. Wood

- 5.1. The calculation of resistance is performed with help of regulation CAN/CSA-O86-01 – Engineering Design iWood.
- 5.2. The installation is always performed in a dry environment, as defined within the regulation CA/CSA.086-01.
- 5.3. The wood has a percentage of humidity of 15% or less.
- 5.4. The duration of the charge is normal, as defined within the regulation CA/CSA.086-01.
- 5.5. The wood was not subjected to safeguarding treatment or fire proofing.
- 5.6. The calculations were considered with category SPF wood. (this grade has no influence on the fasteners).

Responsibilities

ArjoHuntleigh is responsible to establish and maintain adequate installations and inspection instructions, as well as appropriate testing procedures, so that devices will perform as intended after installation.

The certified technician installing tracks must ensure that the installation, inspection, and any required testing is performed in accordance with ArjoHuntleigh instructions and procedures. Files should be kept in accordance with ArjoHuntleigh regulatory agreement.



WARNING: ArjoHuntleigh's responsibilities with regards to installation procedures are limited to the part assembly's capacity to support the tracks. The load capacity of any structure has to be assessed by an engineer under the responsibility of the client.



WARNING: Any arrangements concerning new electrical outlets, consulting services for the structure, local specifications, building services, or any supplements to the installation must be coordinated and cared for financially by the client.




WARNING: The manufacturer recommendation for load tests is to be performed by qualified personnel each year. Documents related to these tests must be archived for 15 years.



WARNING: Our policy is one of continuous development, and we therefore reserve the right to make technical modifications without notice. The content of this publication may not be copied either whole or in part without the consent of ArjoHuntleigh.



NOTE...

This symbol  is used to alert the reader of potential risks or unsafe practices, which could result in serious injuries.

Metric Conversions and Equivalents

The metric Conversion Act of 1975, as amended by the Omnibus Trade and Competitiveness Act of 1988, establishes the SI (System International) metric system as the preferred system of measurement in the United States. Many products are currently manufactured and supplied in SI or "hard" metric sizes such as anchor bolts of 10mm, 12mm, etc. diameter. Where the inch-pound system is given or used, "soft" metric conversion can sometimes be used (but specifically not when selecting critical to only use the specified Imperial or Metric diameter bit). The soft conversion diameters for anchor bolts is given by Table 1. Standard metric conversion factors commonly used for fastening products are given in Tables 2 & 3.

Table 1: Diameters

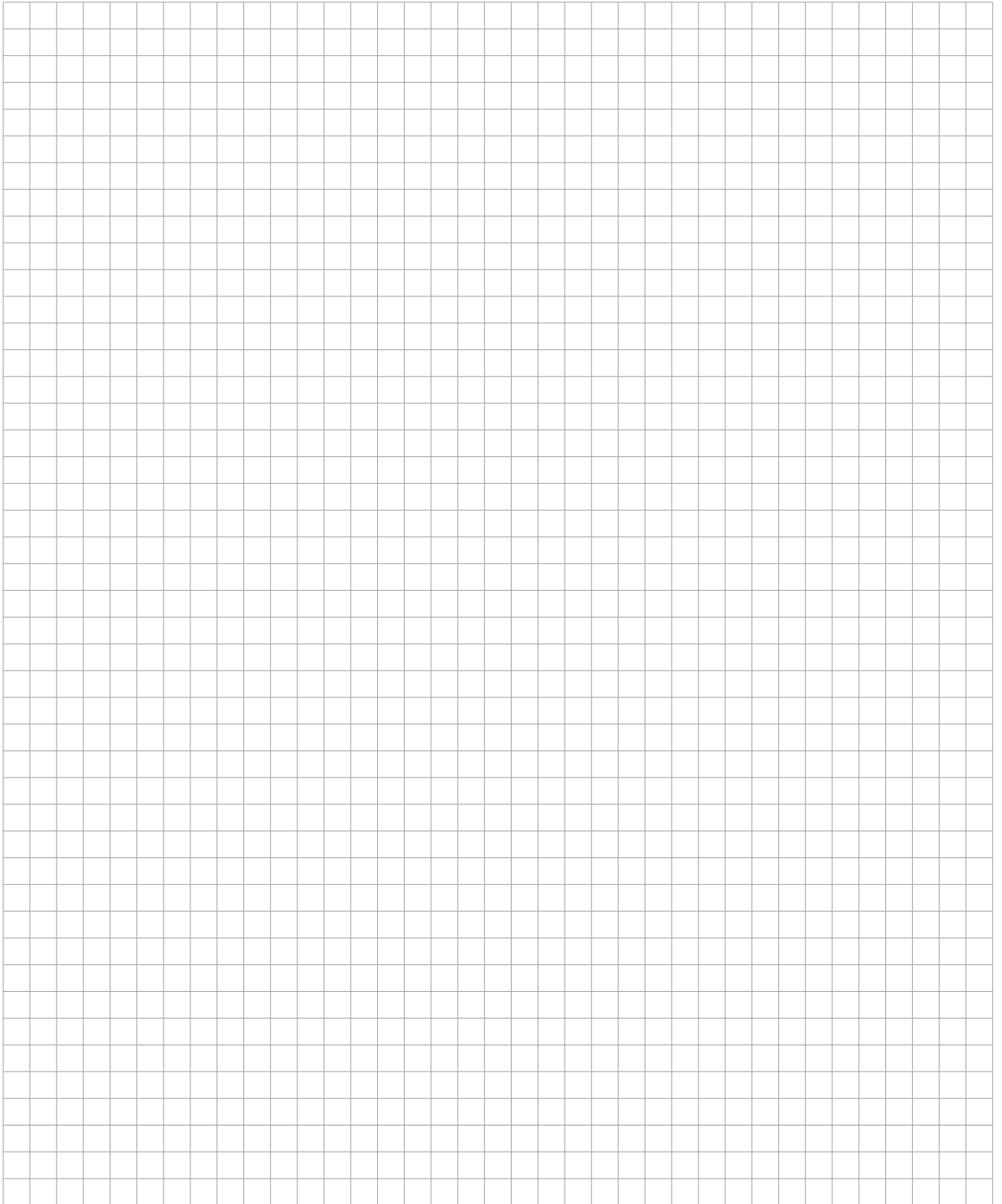
Inch-Pound System Inch	Hard Metric Conversion mm	Use for Soft metric Conversion mm
1/4	6.35	6
5/16	7.94	8
3/8	9.52	10
1/2	12.70	12
5/8	15.88	16
3/4	19.05	20
1	25.40	25
1-1/4	31.75	32

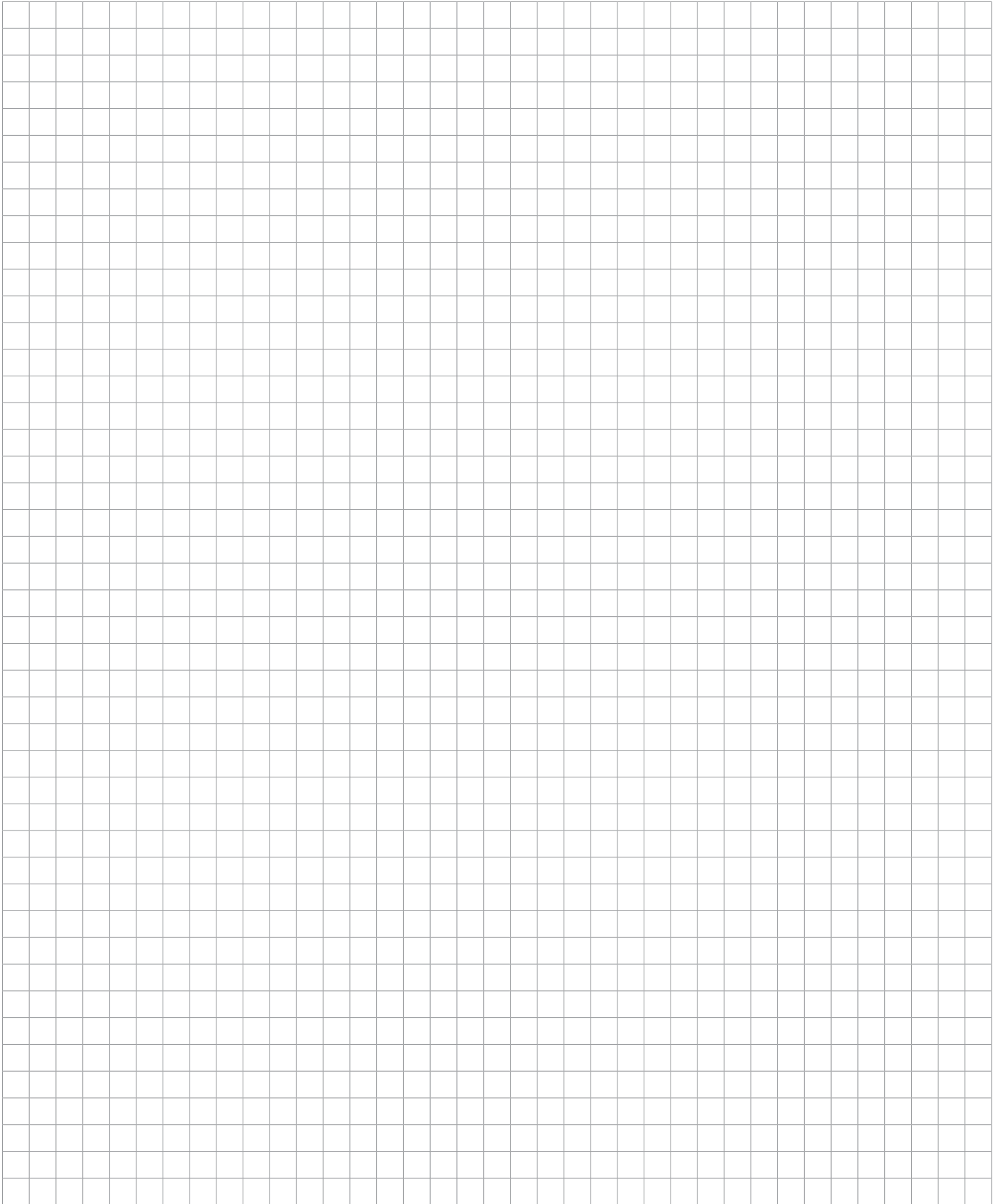
Table 2: Imperial Units to SI Units

To Convert	Into	Multiply By
Length		
inch (in)	millimeter (mm)	25.4000
foot (ft)	meter (m)	0.3048
Area		
square inch (in ²)	square millimeter (mm ²)	645.1600
square inch (in ²)	square centimeter (cm ²)	6.4516
square foot (ft ²)	square meter (m ²)	0.0929
Volume		
cubic inch (in ³)	cubic centimeter (cm ³)	16.3871
cubic foot (ft ³)	cubic meter (m ³)	0.0283
gallon (US gal)	liter (L)	3.7854
Force		
pound force (lbf)	newton (N)	4.4482
pound force (lbf)	kilonewton (kN)	0.0044
Pressure		
pound/square inch (psi)	newton/square millimeter (N/mm ²)	0.0069
pound/square inch (psi)	mega pascal (MPa)	0.0069
KIP/square inch (ksi)	mega pascal (MPa)	6.8946
pound/square foot (psf)	newton/square meter (N/m ²)	47.8801
Torque or Bending Moment		
foot pound (ft·lb)	newton meter (N·m)	1.3558
inch pound (in·lb)	newton meter (N·m)	0.1130
Diaphragm Shear		
pounds/ lineal foot (plf)	newton/meter (N/m)	14.5939

Table 3: SI Units to Imperial Units

To Convert	Into	Multiply By
Length		
millimeter (mm)	inch (in)	0.0394
meter (m)	foot (ft)	3.2808
Area		
square millimeter (mm ²)	square inch (in ²)	0.0016
square centimeter (cm ²)	square inch (in ²)	0.1550
square meter (m ²)	square foot (ft ²)	10.7639
Volume		
cubic centimeter (cm ³)	cubic inch (in ³)	0.0610
cubic meter (m ³)	cubic foot (ft ³)	35.3147
liter (L)	gallon (US gal)	0.2642
Force		
newton (N)	pound force (lbf)	0.2248
kilonewton (kN)	pound force (lbf)	224.8089
Pressure		
newton/square millimeter (N/mm ²)	pound/square inch (psi)	145.0400
mega pascal (MPa)	pound/square inch (psi)	145.0400
mega pascal (MPa)	KIP/square inch (ksi)	0.1450
newton/square meter (N/m ²)	pounds/square foot (psf)	0.0209
Torque or Bending Moment		
newton meter (N·m)	foot pound (ft·lb)	0.7376
newton meter (N·m)	inch pound (in·lb)	8.8496
Diaphragm Shear		
newton/meter (N/m)	pounds/ lineal foot (plf)	0.0685







CONCRETE

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Structure Family: Dense Concrete

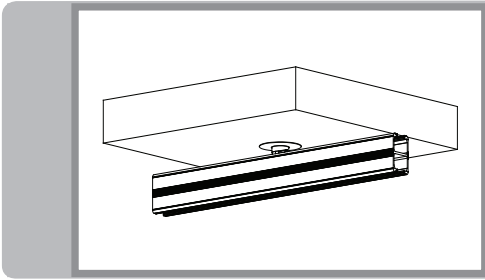
Special Considerations

The purpose of this step:

- The structural engineer hired by the client is responsible for verifying the adequacy of the structure in supporting the load.
- Minimum requirement for concrete thickness: 100mm (4 in) HDI (North America Only)
- Minimum requirement for concrete density: 27.6MPa (4000PSI) for anchor fixing HDI - HDI-L.
- Before installing, make sure concrete is in good condition.

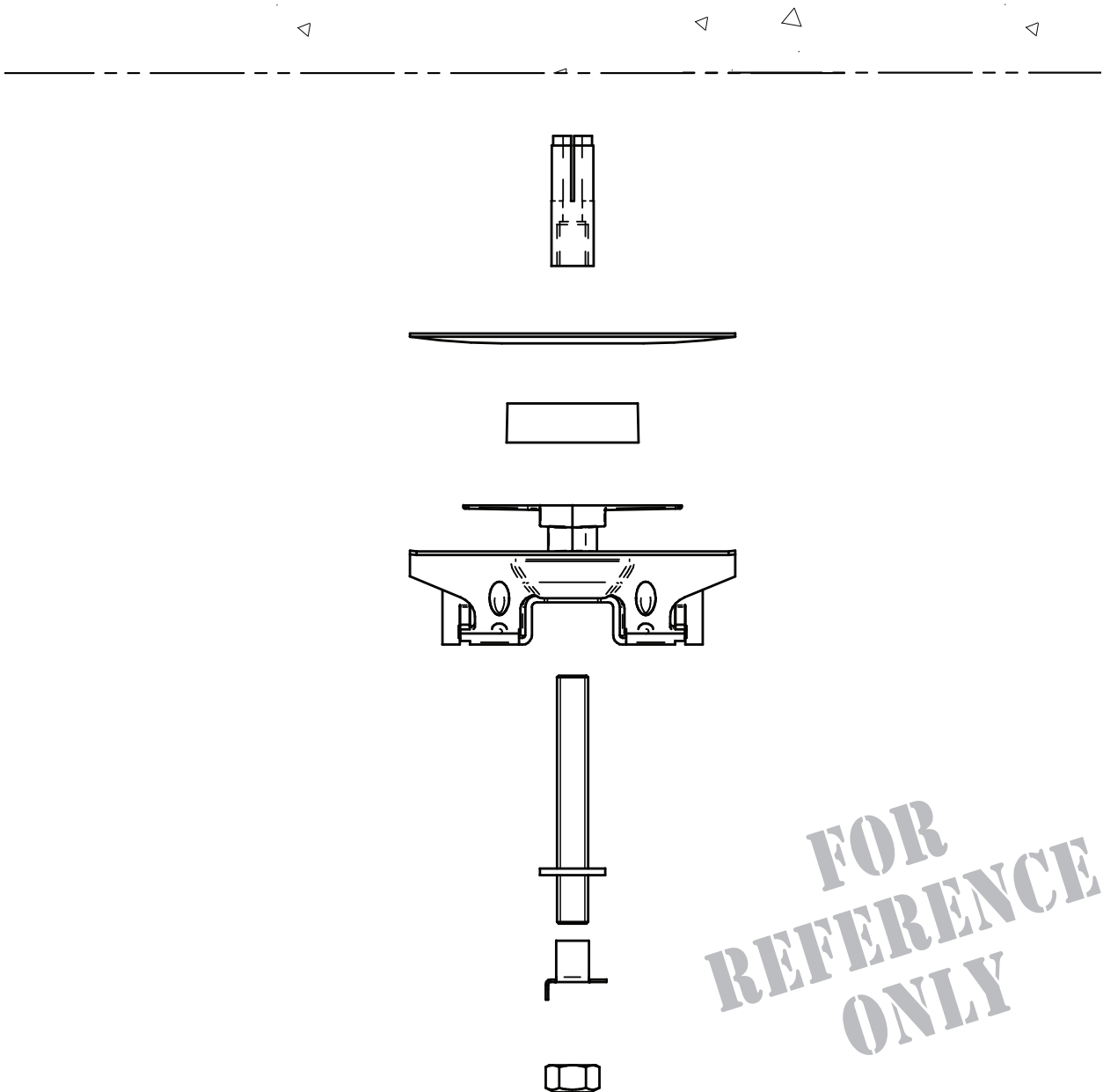


Detail: Direct Concrete



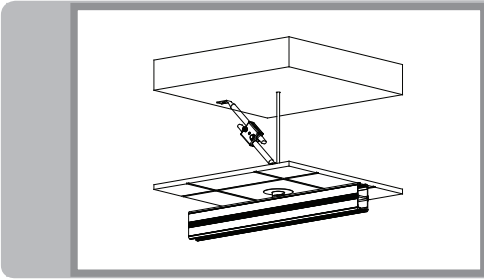
A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 30110.01



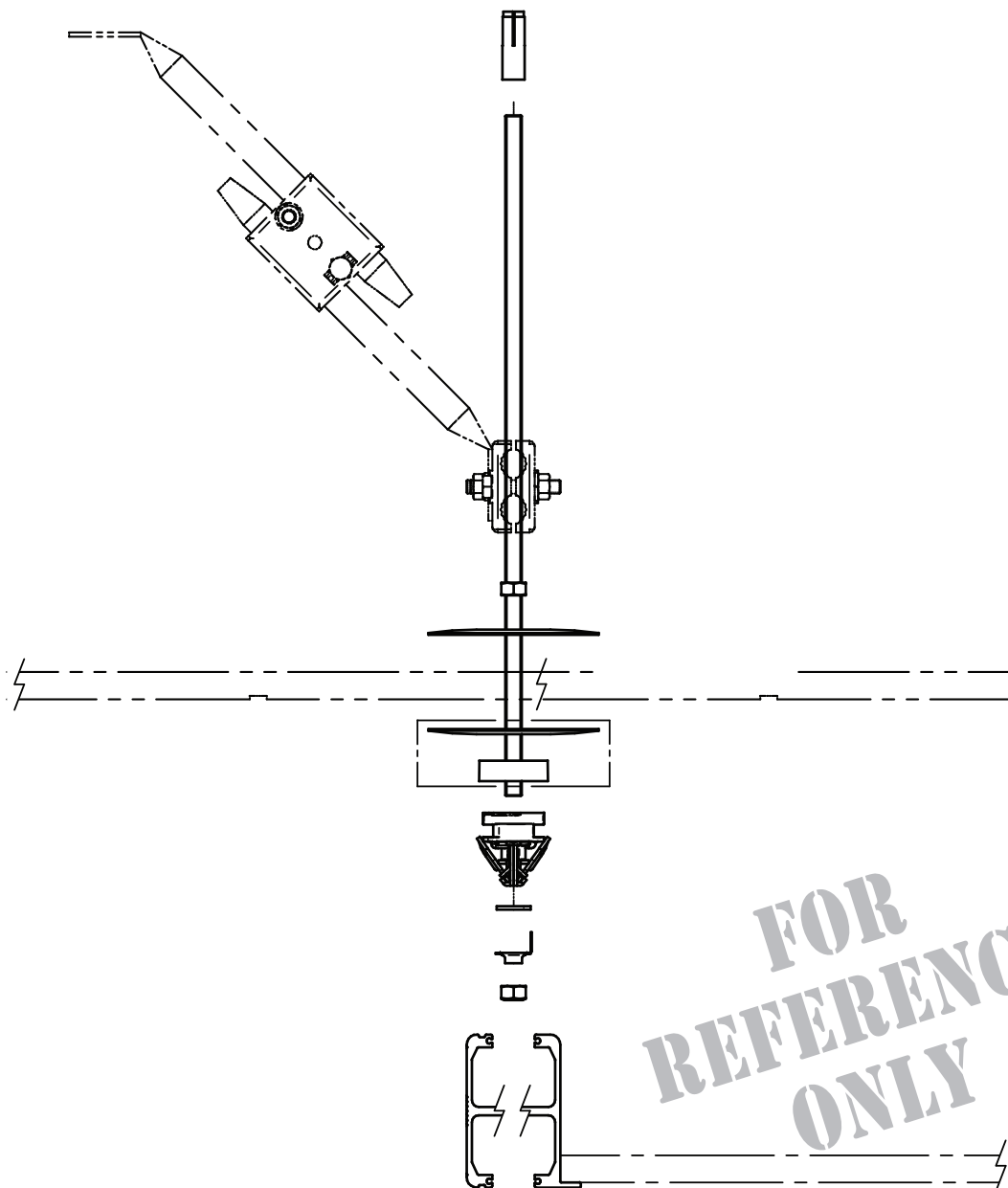
**FOR
REFERENCE
ONLY**

Detail: Concrete With Suspended Tiles



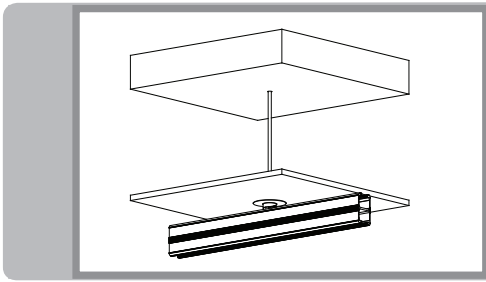
A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 31210.01



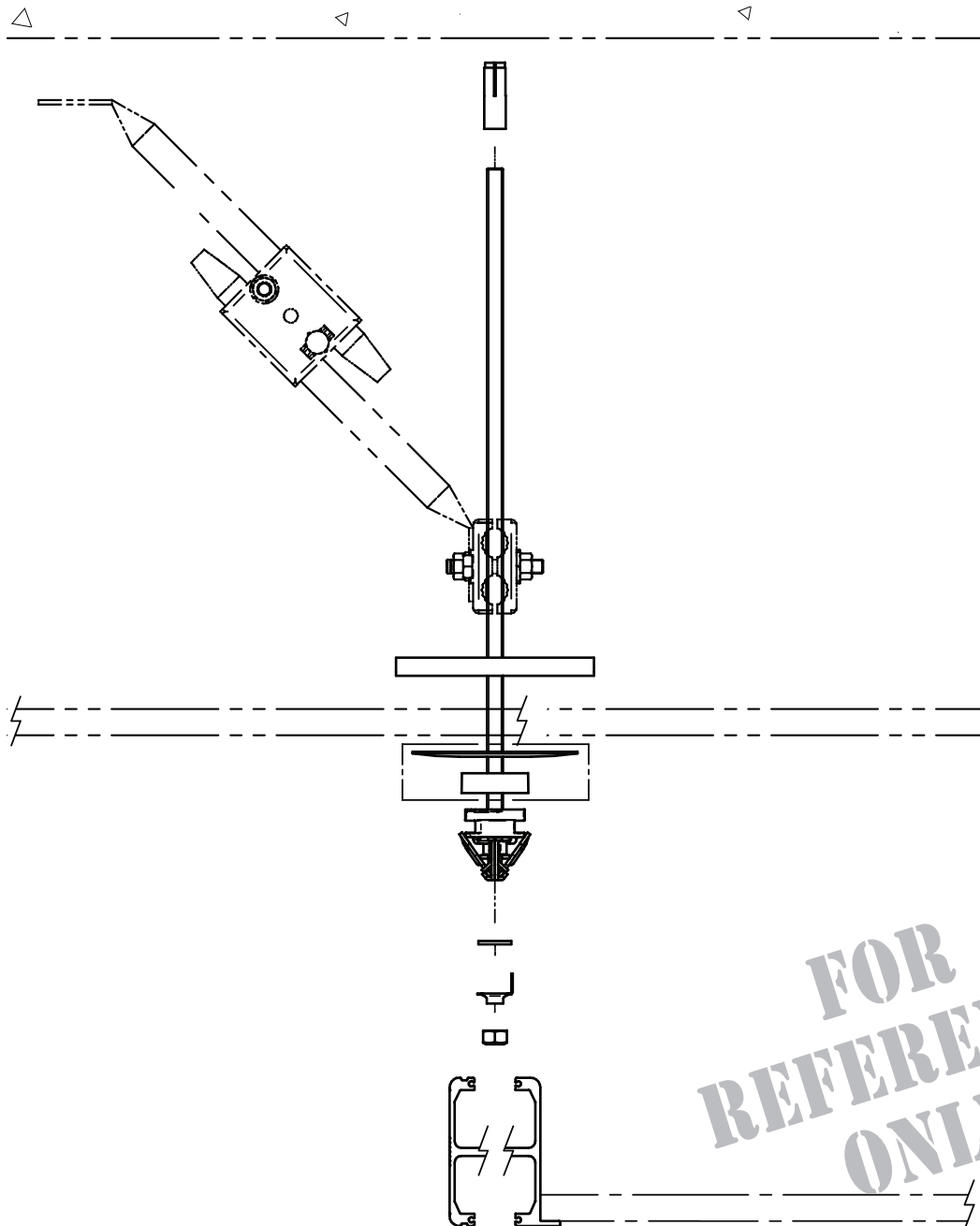
**FOR
REFERENCE
ONLY**

Detail: Concrete With Suspended Drywall



A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

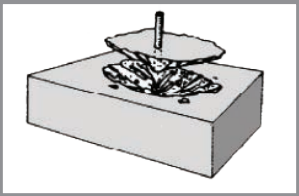
Ref.: 32210.01



**FOR
REFERENCE
ONLY**

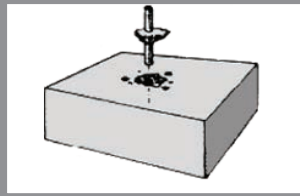
Risks from installations in concrete structures:

01



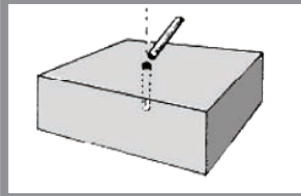
Concrete spall cone

02



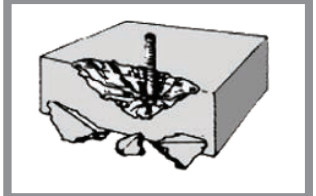
Bond failure

03



Steel breakage

04

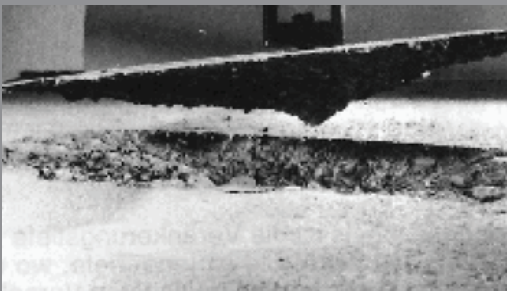


Edge breakout



NOTE...

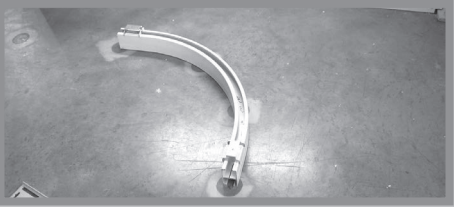
Respect spaces and distances with the edges of concrete slabs.
Avoid anchors that exceed from concrete slabs.



Method: Direct Concrete

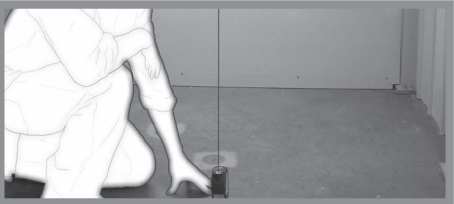
Before performing this step, refer to step 4 for layout, bracket positioning and transfer points.

01



Mark ceiling bracket positions.

02



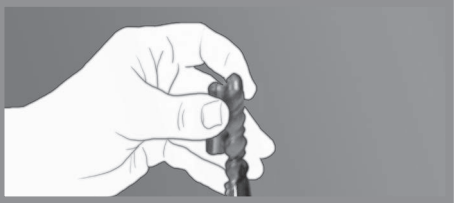
Place the plumb laser in the centre of marks on the floor...

03



...and transfer bracket positions onto ceiling with a black marker.

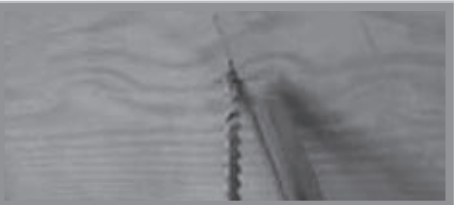
04



Once all brackets have been located on the ceiling, begin drilling procedures.

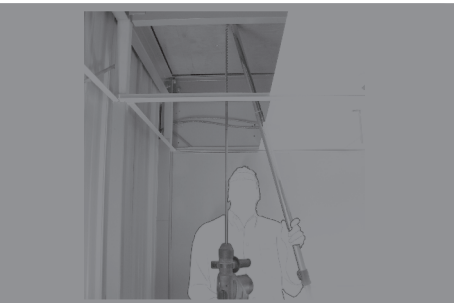
Measure the anchor's depth on the drill bit and mark it with a black marker. This mark will help you to know when the right measurement of depth has been reached.

05



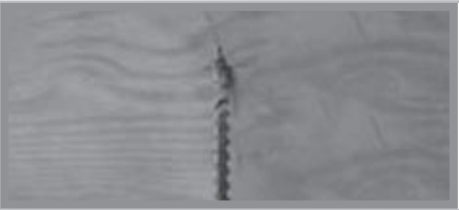
Place the drill bit in the middle of your transferred mark and place a vacuum nozzle beside.

06



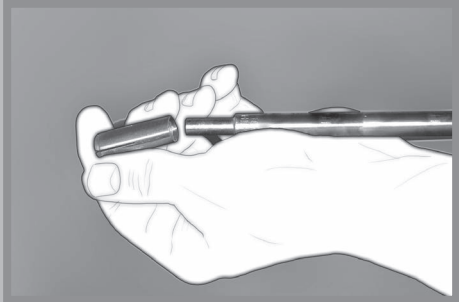
The vacuum is optional but will greatly reduce the dust particles in the room.

07



Start drilling until you have reached your anchor's predetermined depth.
Follow these steps for each anchor.

08



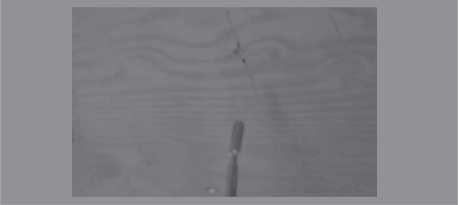
Using a setting tool, insert the anchor onto it.



NOTE...

There are two kinds of setting tools. In this case, use the one with the longest tip and with no square marking.

09



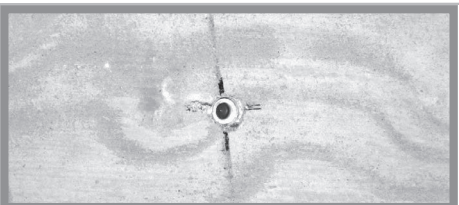
With setting tool, place anchor into drilled hole to a maximum of half length.

10



Remove setting tool from anchor and using the setting tool, push up on the exterior of the anchor to completely insert it into the hole. This will avoid pushing the anchor too far. Do not use the setting tool inside the anchor to push it all the way in. This may result in the anchor opening before reaching all the way in.

11

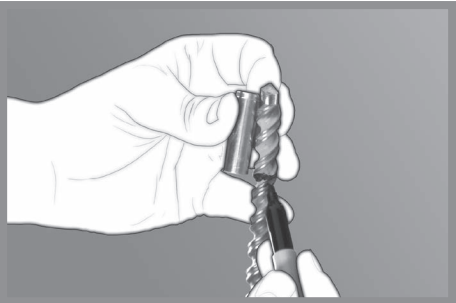


Once the anchor is flush to concrete, insert setting tool into the anchor and using a hammer, keep hitting the setting tool until there is a "bouncing effect".
Another way to know if you have punched correctly is by the sound the tool will make when the anchor is completely open.

Method: Concrete To Suspended Ceiling

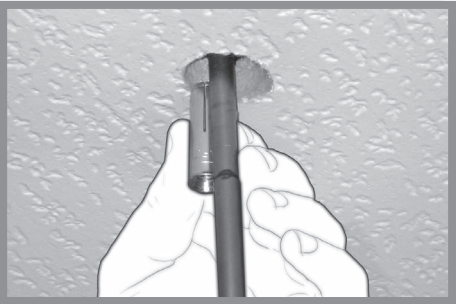
Before performing this step, refer to step 4 for layout, bracket positioning and transfer points.

01



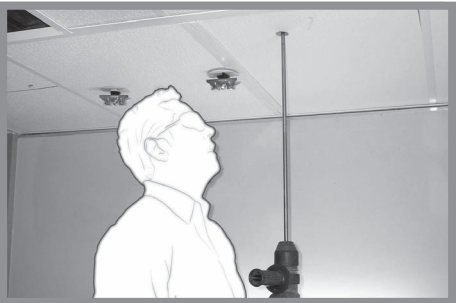
Measure the anchor's depth on the drill bit and mark it with a black marker.

02



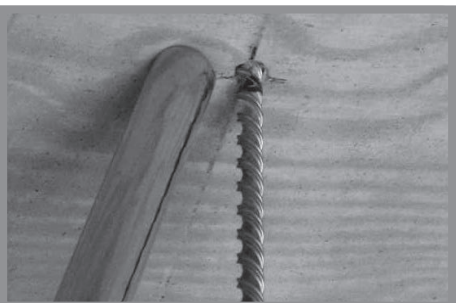
Transfer the center of the hole in the tile onto the concrete using a sharpie pen.
If the distance is too great, use the setting tool with a pen taped to it (e.g. with masking tape).

03



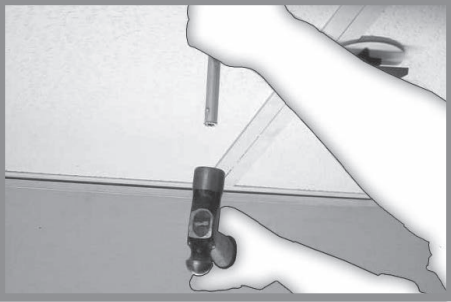
Before drilling, remove tile. If this is not possible due to sprinklers and/or other obstructions, drill through tile.

04



Continue drilling until depth mark has been reached.
When drilling, you can have a vacuum nozzle nearby to reduce the dust particles in the room.

05



Using a setting tool, insert the anchor into it.



NOTE...

There are two kinds of setting tools. In this case, use the one with the longest tip (and with no square marking).

06



With setting tool, place anchor into drilled hole to a maximum of half length.

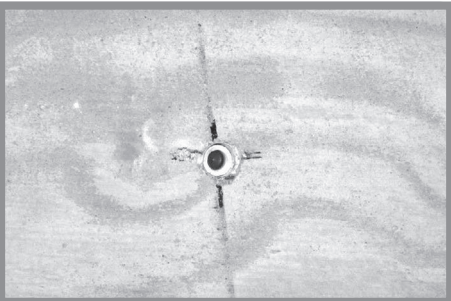
07



Remove setting tool from anchor and using the setting tool, push the anchor completely into the hole by using the exterior of the anchor to push on. This will avoid pushing the anchor too far.

Do not use the setting tool inside the anchor to push it all the way in. This may result in the anchor opening before reaching all the way in.

08



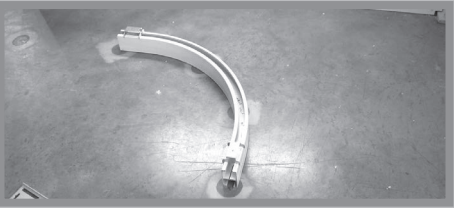
Once the anchor is flush to concrete, insert setting tool into the anchor and using a hammer, keep hitting on setting tool until there is a "bouncing effect".

Another way to know if you have punched correctly is by the sound the tool will make when the anchor is completely open.

Method: Concrete To Drywall

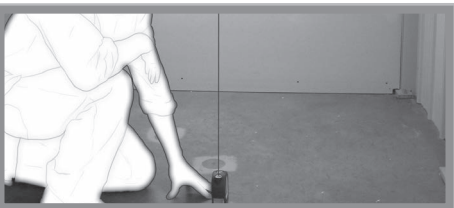
Before performing this step, refer to step 4 for layout, bracket positioning and transfer points.

01



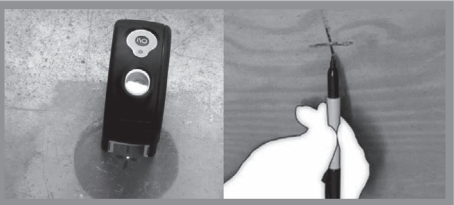
Mark ceiling bracket positions.

02



Place the plumb laser in the centre of marks on the floor...

03



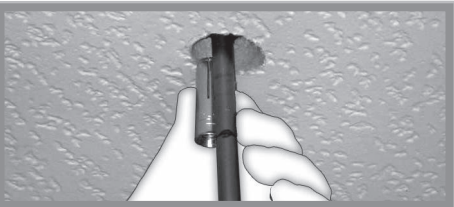
...and transfer bracket positions onto ceiling with a black marker.

04



With 32 mm (1 1/4 in) hollow punch on drill, drill out drywall in centre of predetermined mark.

05



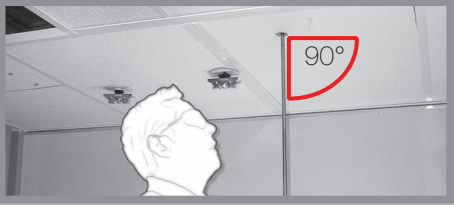
Measure drilling depth onto drill bit using an anchor and a black marker.

05



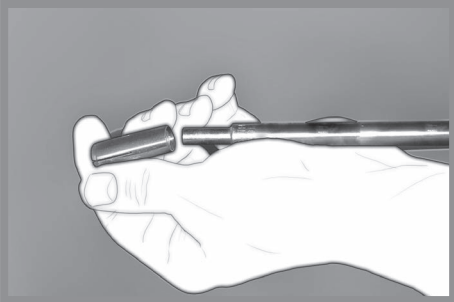
With drill bit of 50 to 100 cm (18 to 42 in)

07



...drill to desired depth and make sure the drill bit is perfectly vertical (preferably with a bubble level).

08



Insert anchor onto setting tool.



NOTE...

There are two kinds of setting tools. In this case, use the one with the longest tip (and with no square marking).

09



Using setting tool, push anchor into drilled hole, up to halfway point.

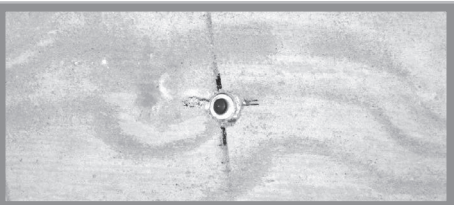
Remove setting tool.

10



Using the side of the anchor, push anchor until fully inserted in concrete. This will avoid pushing the anchor too far.

11



Once the anchor is flush to concrete, insert setting tool into the anchor and using a hammer, keep hitting the setting tool until there is a "bouncing effect".

Another way to know if you have punched correctly is by the sound the tool will make when the anchor is completely open.

Possible Issues and Recommended Solutions

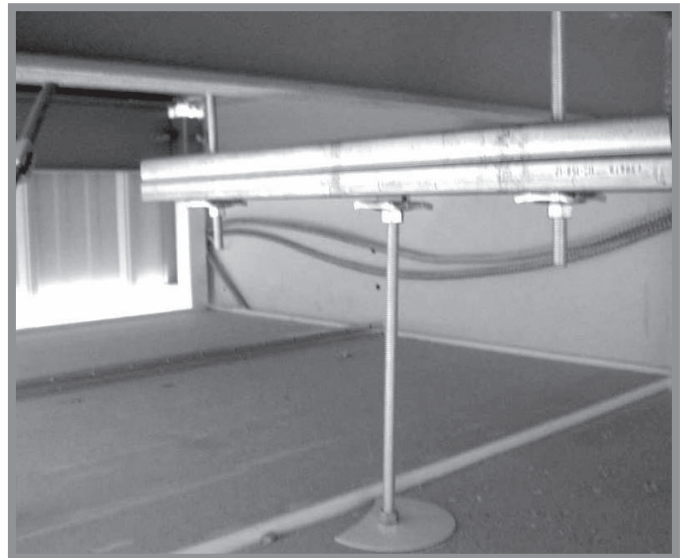
Considering the possibility of having various elements (structural, HVAC, electrical, etc.) blocking the installation, here are some solutions:

VENTILATION, BEAM, etc:

- Bridging is required.
- Drop a threaded rod on each side of the obstruction.
- Install a "C" strut, respecting required distances according to the manufacturer.
- All installation components must be tightened and locked.

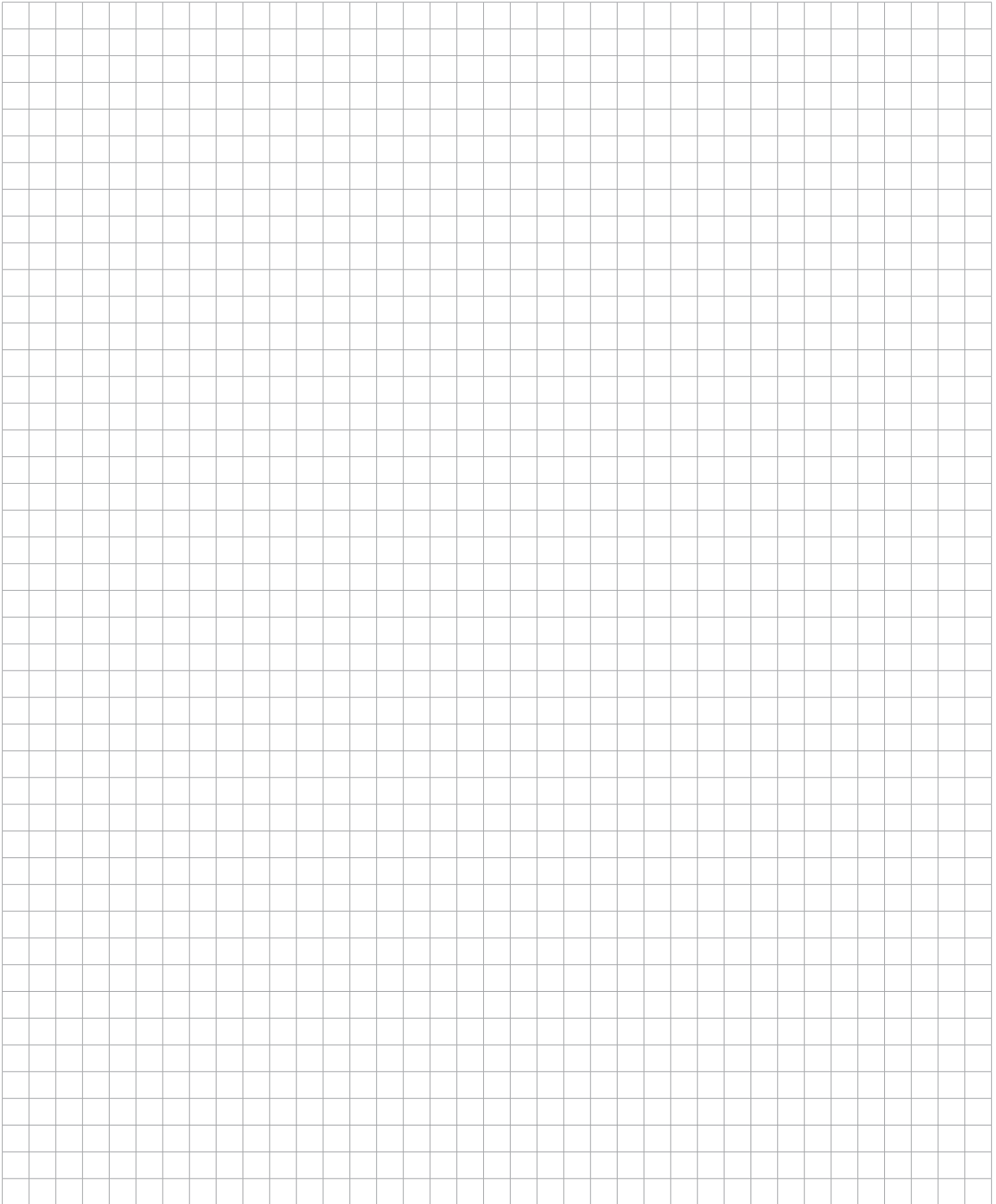
STEEL REINFORCEMENT, ELECTRICAL CONDUIT, AND SMALL OBSTRUCTIONS:

- Bridging is required.
- Drop a threaded rod on a minimum distance of 15 cm (6 in) on each side of the obstruction.
- Install a "C" strut, respecting required distances according to the manufacturer.
- All installation components must be tightened and locked.



NOTE...

...when bridging is visible, all noticeable parts should be painted white and end caps should be used for better appearance.

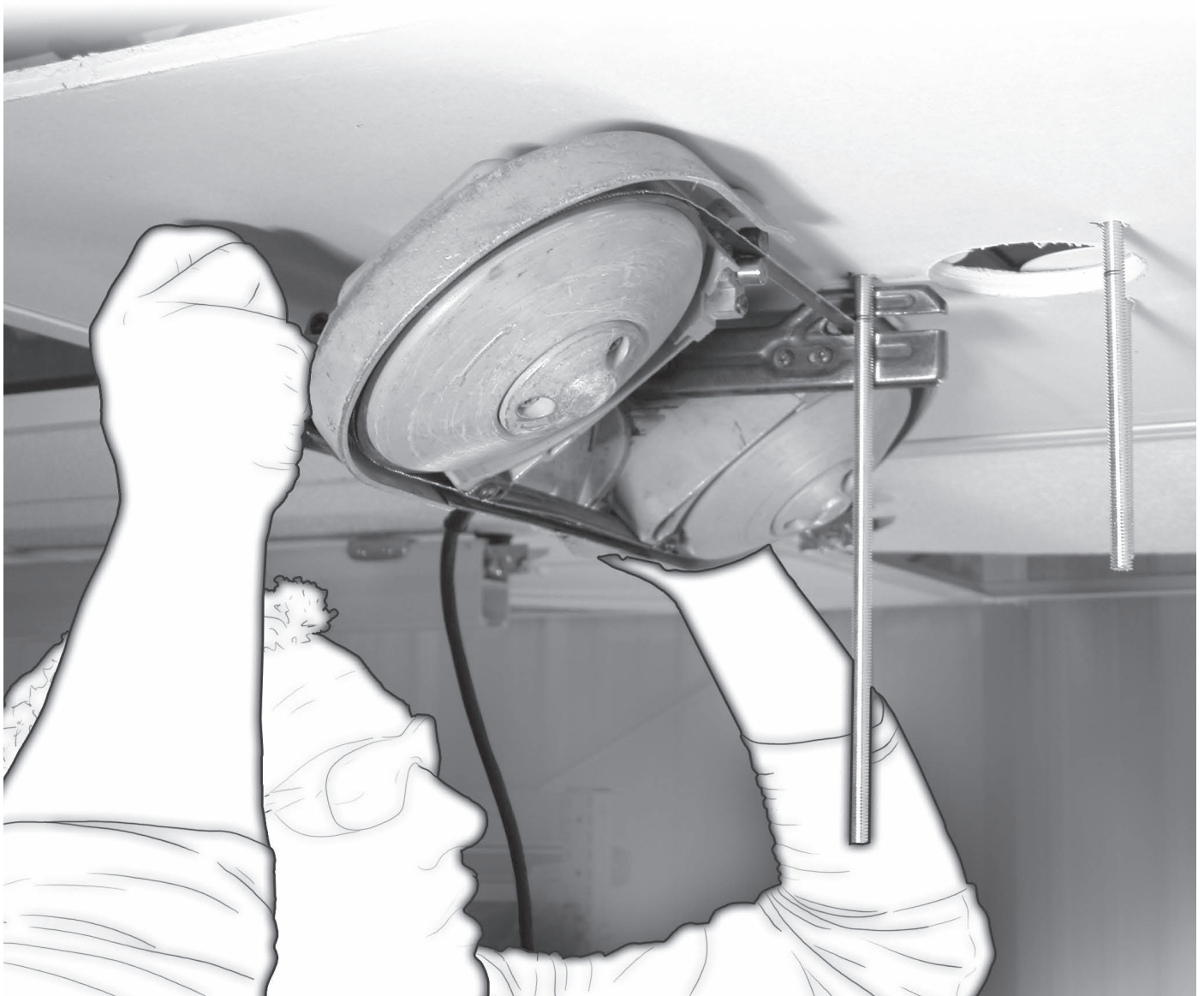


Structure Family: Hollowcore

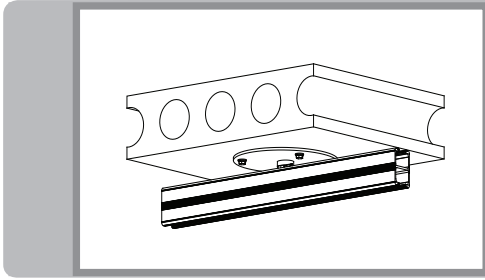
Special Considerations

The purpose of this step:

- The structural engineer hired by the client is responsible for verifying the adequacy of the structure to support the load.
- Follow manufacturer's instructions for anchor installation.
- Minimum requirement for concrete thickness: 79 mm (3 1/8 in)
- Minimum requirement for concrete density: 27.58 MPa (4000 psi) for anchor fixing.
- Before installing, make sure concrete is in good condition.

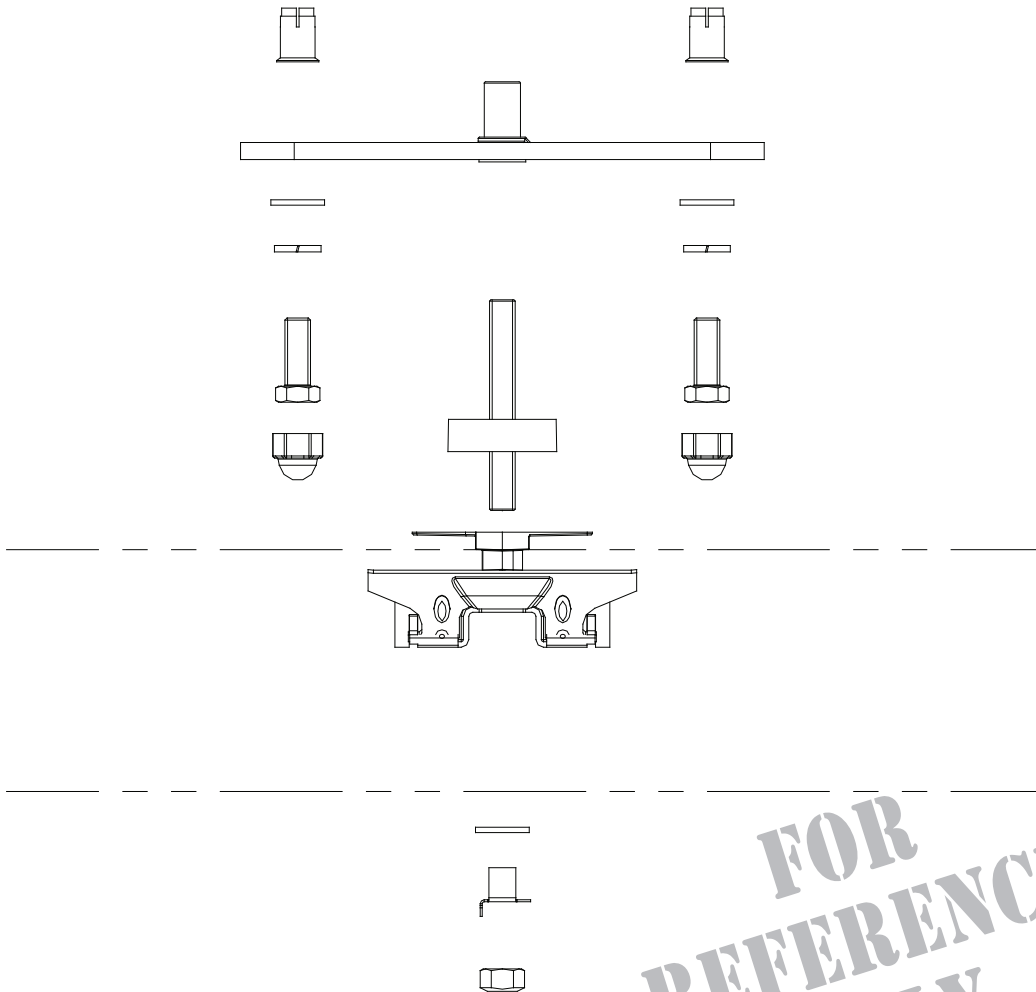


Detail: Direct Hollowcore



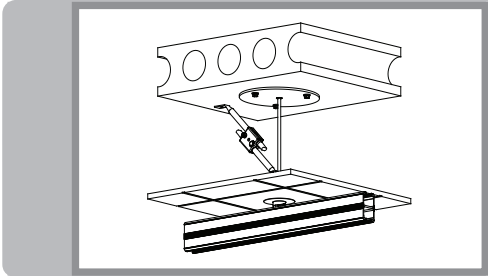
A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 30110.02



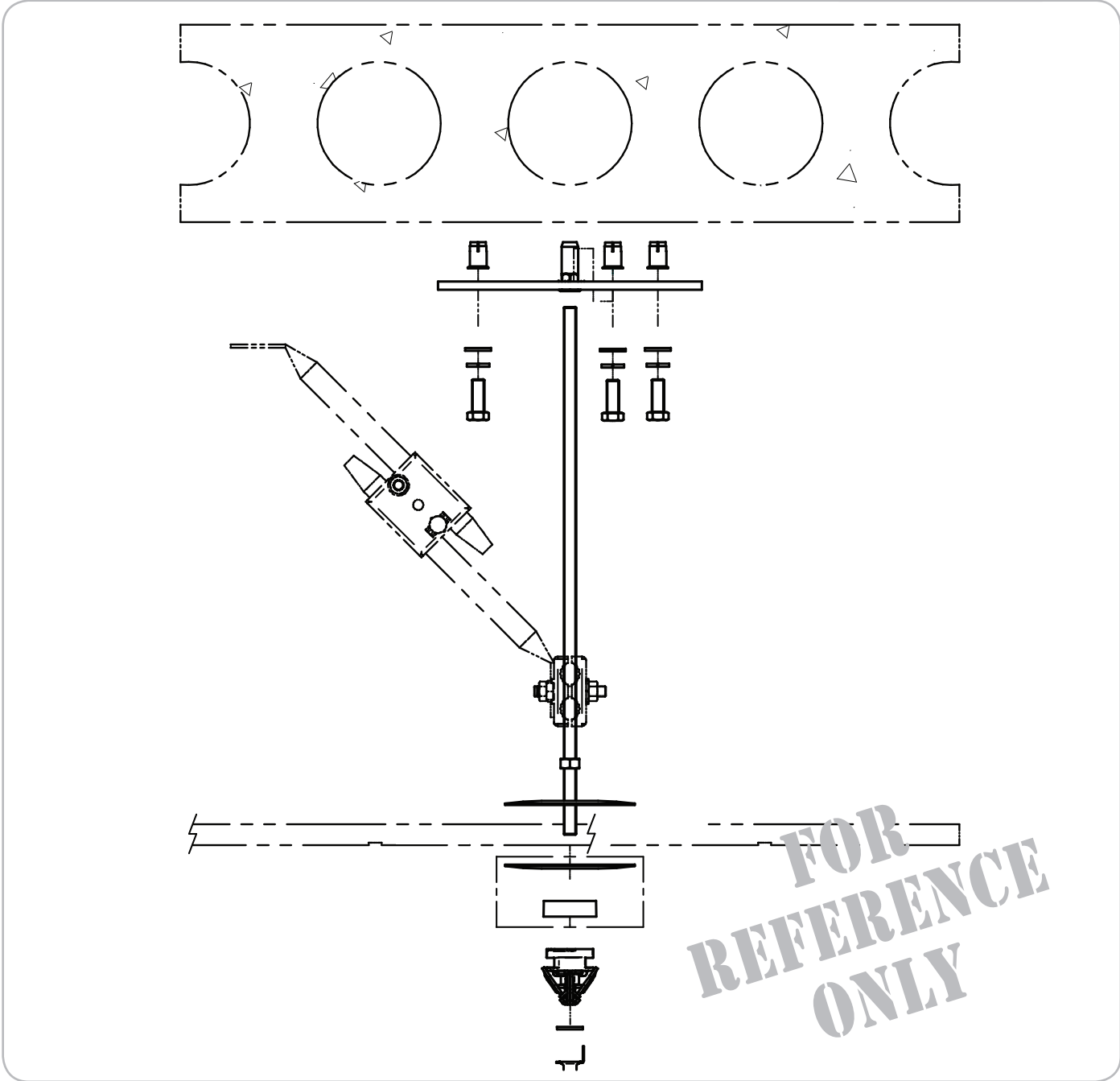
**FOR
REFERENCE
ONLY**

Detail: Suspended Tiles Under Hollowcore

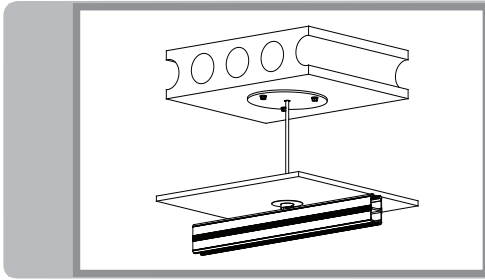


A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 31210.02

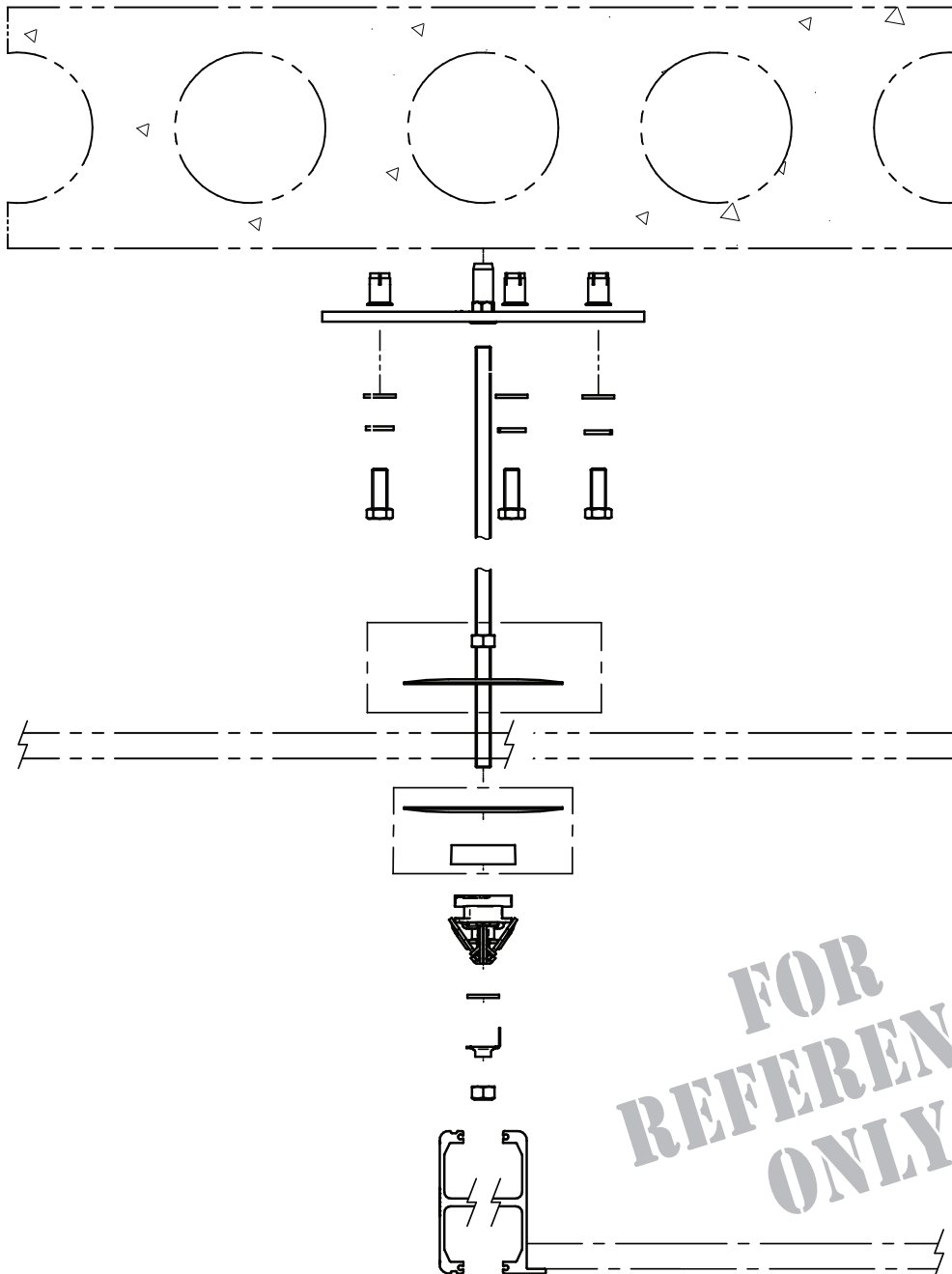


Detail: Suspended Drywall Under Hollowcore

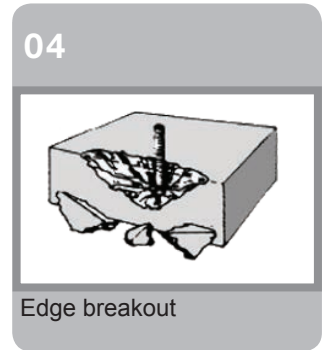
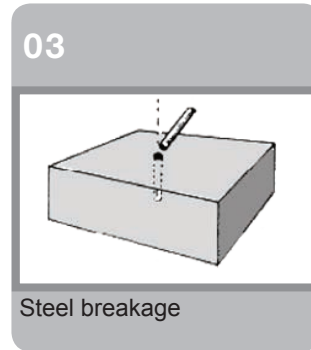
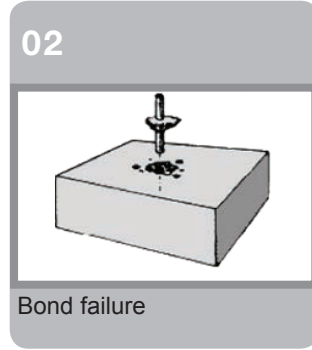
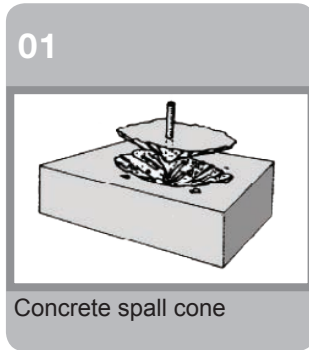


A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 32210.02

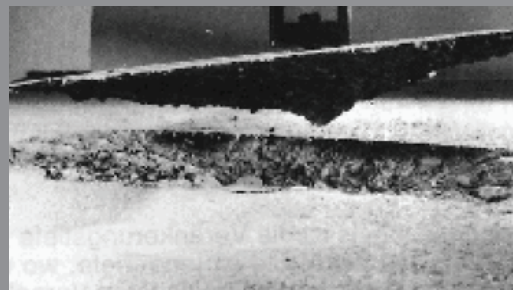


Risks from installations in concrete structures:



NOTE...

Respect spaces and distances with the edges of concrete slabs.
Avoid anchors that exceed from concrete slabs.



Method: Direct Hollowcore Slabs With Dropped Ceiling

Before performing this step, refer to step 3 for layout, bracket positioning and transfer points.

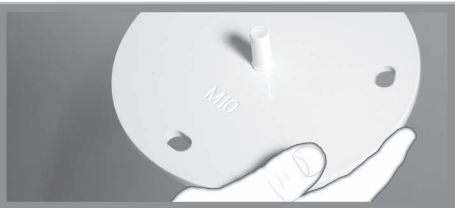
If concrete is really porous or if thickness at the bottom of cores is inferior to 28 mm (1 1/8 in), use a chemical anchor. For more information, refer to the end of this procedure.

01



Mark the centre spot of the bracket...

02



...this centre spot corresponds to the PEM nut on the hollow core plate...

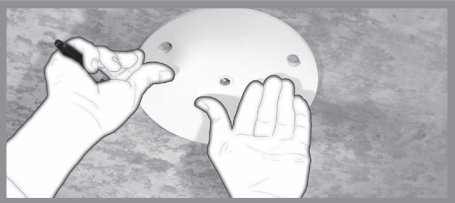
03



Drill slab.

See manufacturer recommendations for choosing the right drill bit. The minimum requirement is that it must fit with the PEM nut.

04



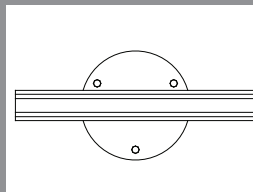
Position the hollowcore plate.



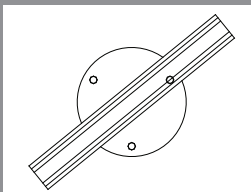
MAKE SURE...

...the track will not come into conflict with the bolts. In that case, you will have to reconfigure the plate or put bracket shims.

✓ Correct



✗ Incorrect

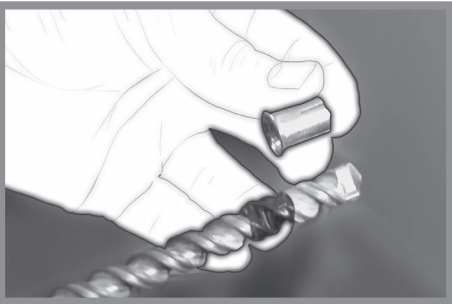


05



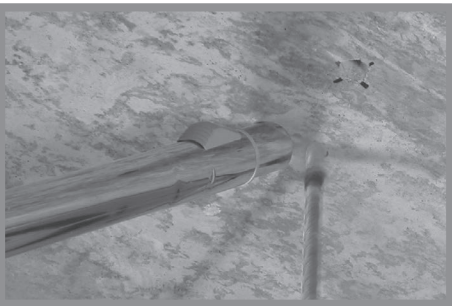
Mark positions.

06



With masking tape or a black marker, mark the correct depth for the anchors on your drill bit.

07



Drill each anchor position to the required depth.

08



Insert the anchors into the holes.

09



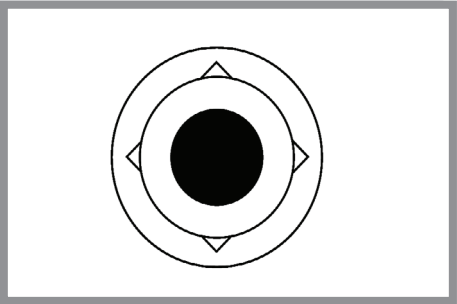
Fix anchors with a setting tool.



NOTE...

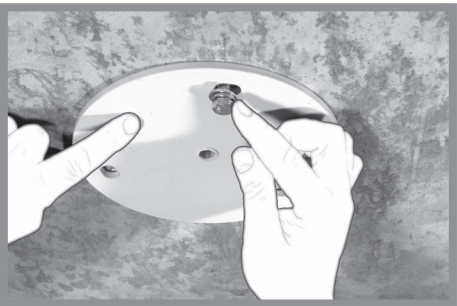
There are two kinds of setting tools. In this case, use the one with the shortest tip.

10



Make sure there is a mark left by the setting tool on the edge of the sleeve. This mark signifies that the anchor has been well installed.

11



Install the plate and required hardware...

12



...and securely fix the plate to the anchors.



NOTE...

...the recommended torque is 14.9N·m (11 lbf·ft).

13



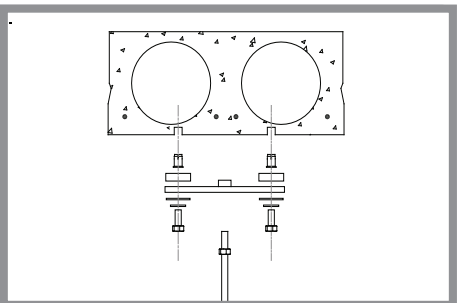
Insert threaded rod into PEM nut.



NOTE...

...it is highly recommended that a strong glue (e.g. Loctite 262 or equivalent) be applied to the threaded rod.

14



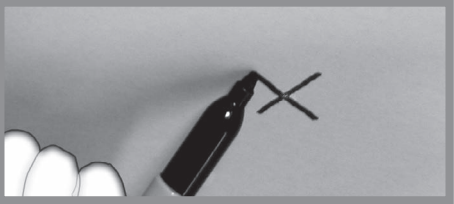
Only for a suspended installation:

Add a nut onto the threaded rod.

Method: Hollowcore Slabs With Drywall Dropped Ceiling

Before performing this step, refer to step 3 for layout, bracket positioning and transfer points.

01



Mark the center point on the drywall ceiling.

02



Leaving the plate on the floor, mark anchor points on the ceiling.

03



Using a hole saw with a 100 mm (4 in) diameter, drill in the middle for an easier access above the drywall plate and slab.

04



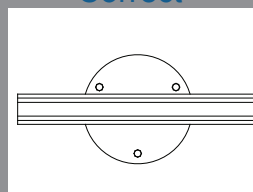
With the appropriate drill bit, drill three anchor points.



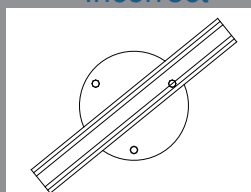
MAKE SURE...

...the track will not come into conflict with the bolts. In that case, you will have to reconfigure the plate or put bracket shims.

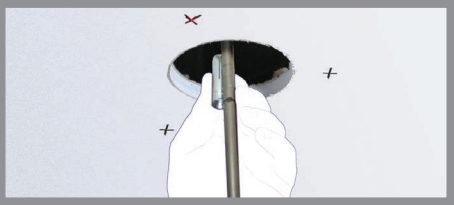
✓ Correct



✗ Incorrect



05



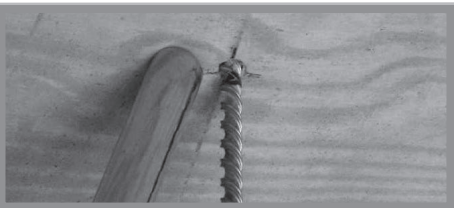
Measure the drilling depth using a black marker and an anchor.

06



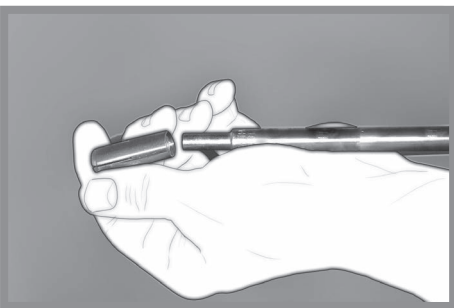
With a level, position the drill bit perfectly to the vertical.

07



Then, with a drill bit length of 50 to 100 cm (18 to 42 in), drill the slab according to the determined depth.

08



Insert anchor onto setting tool.



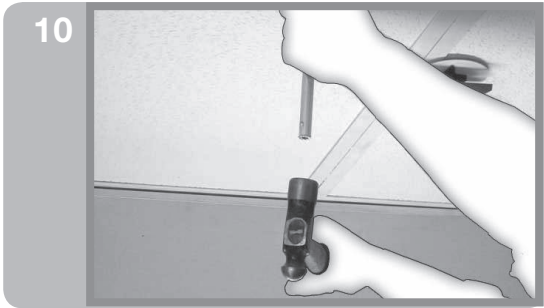
NOTE...

There are two kinds of setting tools. In this case, use the one with the shortest tip.

09



Using a setting tool, push anchor into drilled hole to a maximum of half length.
Remove the setting tool.



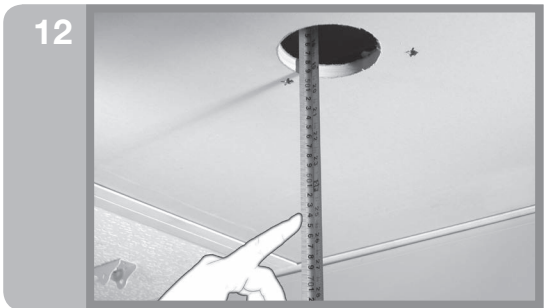
10

Using the side of the anchor, push it all the way into the concrete.



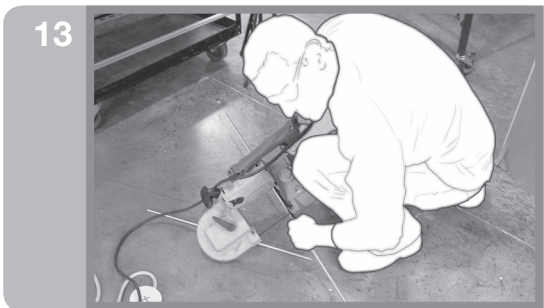
11

Once the anchor is flush to concrete, insert setting tool into the anchor and using a hammer, keep hitting on setting tool until there is a “bouncing effect”. Another way to know if you have punched correctly is by the sound the tool will make when the anchor is completely open.



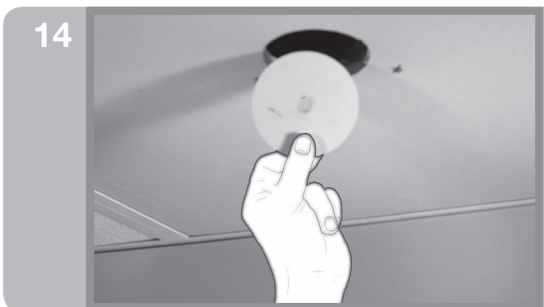
12

Measure the threaded rods to the proper length distance between ceiling and slab + 15 cm (6 in).



13

Cut the threaded rods to the proper lengths.



14

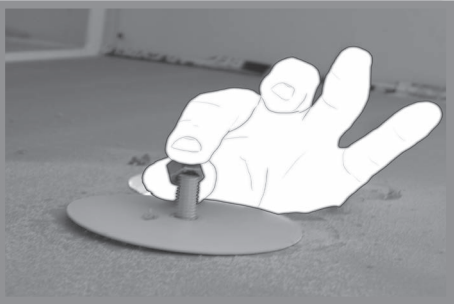
Insert a ceiling plate through the principal hole made in the drywall.

15



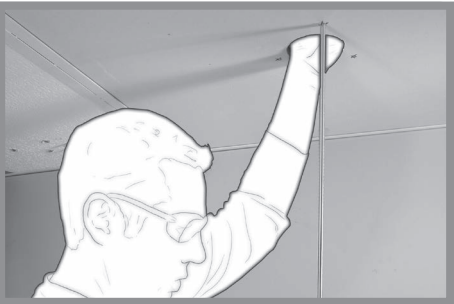
Then, through the first of the three “attachment holes”, insert the first threaded rod. Make it pass by the hole in ceiling plate.

16



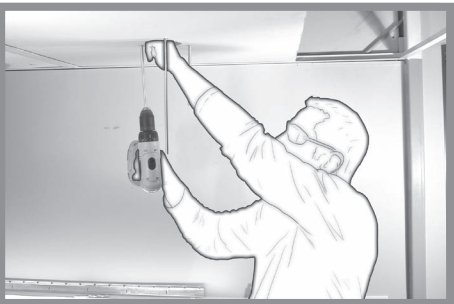
...and add a nut.

17



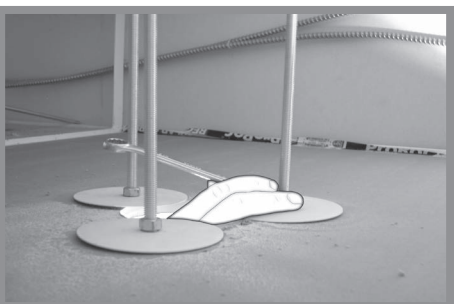
Place the threaded rod in the drill mandrel and screw the threaded rod into the nut.

18



Fix the threaded rod in the first anchor installed in concrete.

19



To produce the *sandwich effect*, tighten nut until it makes a slight pressure on ceiling.

Repeat process for the three anchors.

20



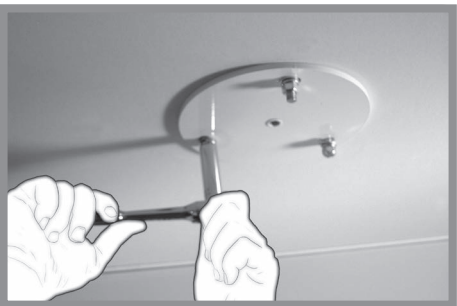
Measure length of rods beneath drywall dropped ceiling, and mark a 22 mm (7/8 in) length.

21



Cut rods using the portable band saw.

22



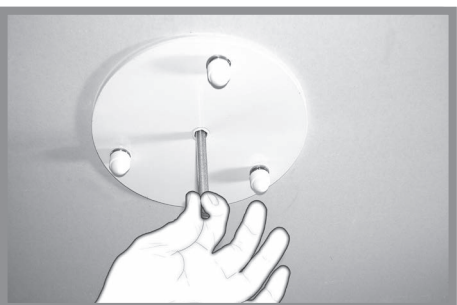
Install the plate and attach hardware.

23



Install plastic caps.

24



Install a threaded rod of about 15 cm (6 in) and tighten with a pair of pliers.

NOTE...

...It is recommended that a strong glue (e.g. Loctite 262 or equivalent) be applied on the anchors

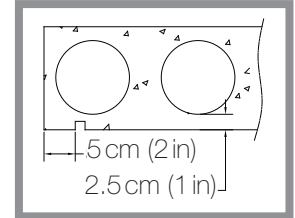


Method: Chemical Anchor Installation

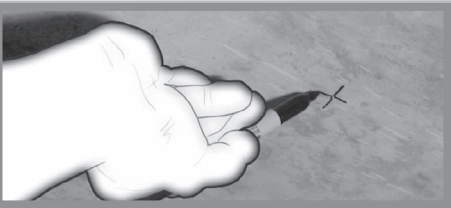
Before performing this step, refer to step 3 for layout, bracket positioning and transfer points.

Chemical anchors are required only in exceptional situations:

- when concrete is very porous.
- when thickness of concrete at the bottom of cores is inferior to 28 mm (1 1/8 in).
- when an anchor is located at less than 50 mm (2 in) from the edge of a slab.



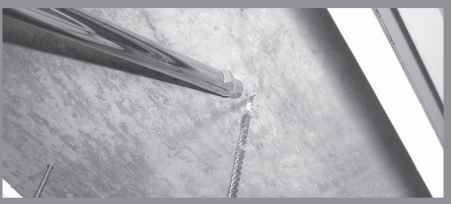
01



Mark the anchor's location.

If possible, drill in one of a core axis.

02



Using the appropriate drill bit

03



...drill a hole.

04



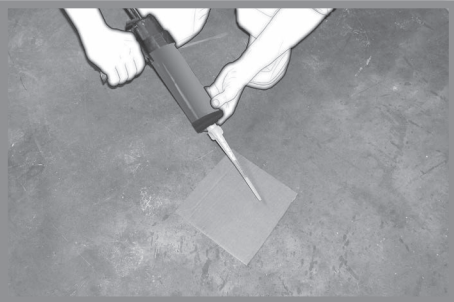
Cut the tip of the threaded rod that is to be inserted into the anchor at 45° angle...

05



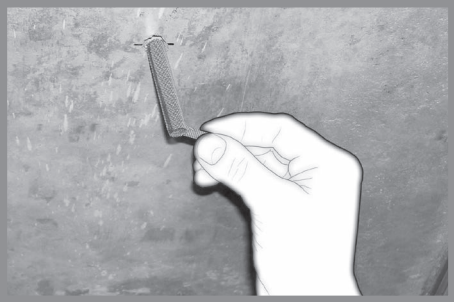
...this will keep the threaded rod from moving in the anchor.

06



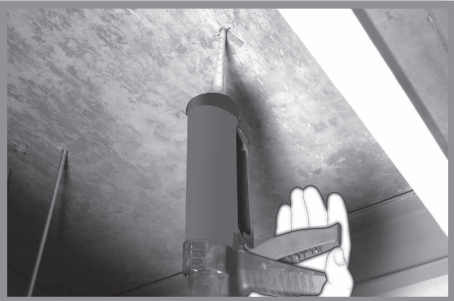
Make sure to use the chemical mixture that has reacted correctly by laying out a bead of mixture of about 15 cm (6 in). That bead should not be used.

07



Insert screen tube into hole.

08



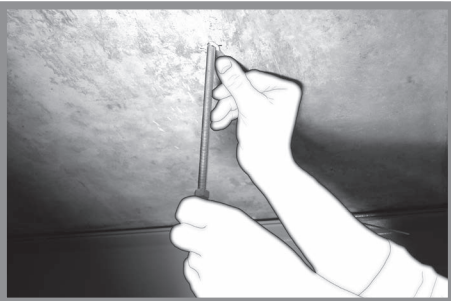
Following the manufacturer's recommendations, inject adhesive into screen tube.

09



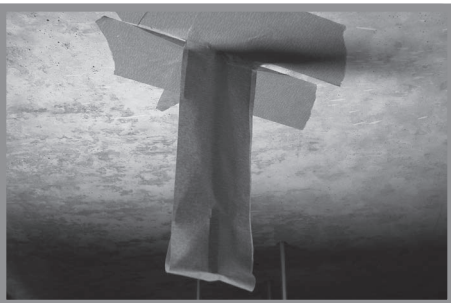
A mass of adhesive will be created inside the core.

10



Insert the rod delicately into screen tube. Take care to not move the rod.

11



To maintain the rod in position, use masking tape.

It takes 4 to 6 minutes for the chemical mixture to congeal.

12



Remove masking tape and add the appropriate hardware.

Possible Issues and Recommended Solutions

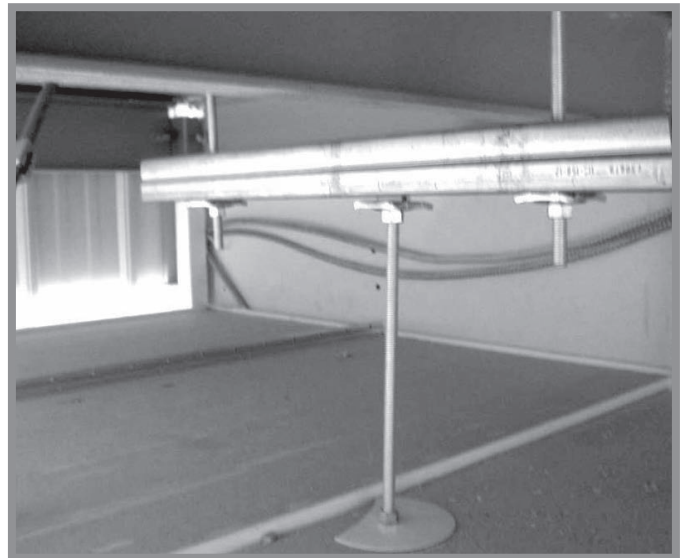
- Considering the possibility of having various elements (structural, HVAC, electrical, etc.) blocking the installation, here are some solutions:

VENTILATION, BEAM, etc.:

- Bridging is required.
- Drop a threaded rod on each side of the obstruction.
- Install a "C" strut respecting required distances according to the manufacturer.
- All installation components must be properly tightened and locked.

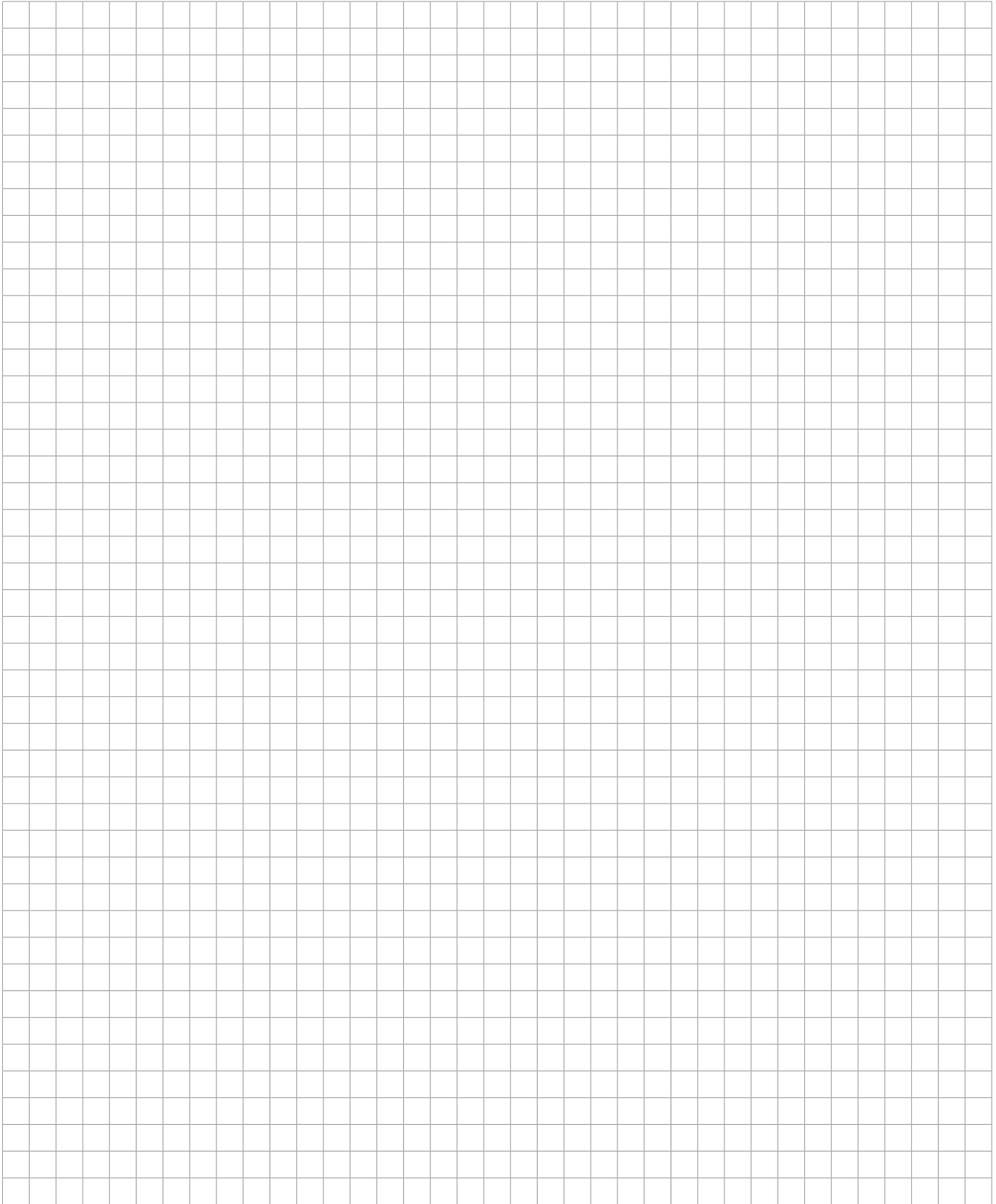
STEEL REINFORCEMENT, ELECTRICAL CONDUIT, AND SMALL OBSTRUCTIONS:

- Bridging is required.
- Drop a threaded rod on a minimum distance of 15 cm (6 in) on each side of the obstruction.
- Install a "C" strut respecting required distances according to the manufacturer.
- All installation components must be properly tightened and locked.



NOTE...

...when bridging is visible, all noticeable parts must be painted white and end caps must be used.



Structure Family: Concrete Beams

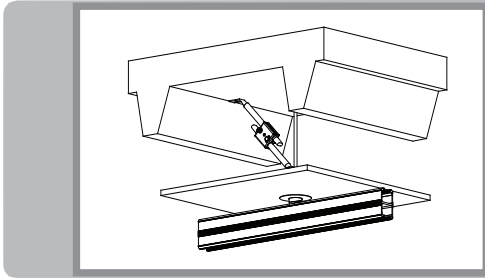
Special Considerations

The purpose of this step:

- The structural engineer hired by the client is responsible for verifying the adequacy of the structure that will support the load.
- Follow manufacturer's instructions for anchor installation.
- Minimum requirement for concrete thickness: 79 mm (3 1/8 in)
- Minimum requirement for concrete density: 27.6 MPa (4000 psi) for anchor fixing.
- Before installing, make sure concrete is in good condition.

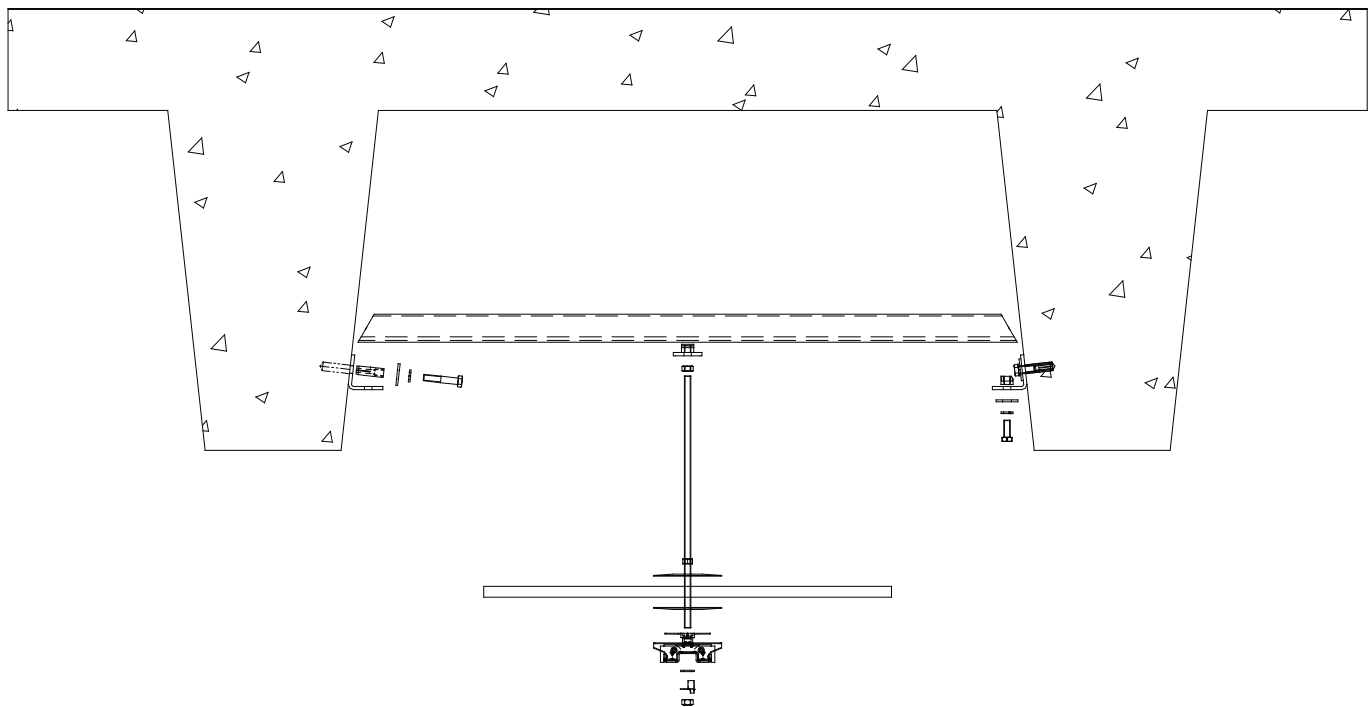


Detail: Concrete Beams With Strut Channel



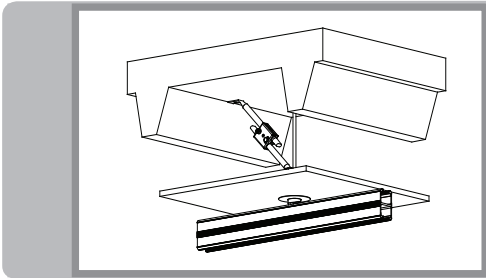
A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 32210.10



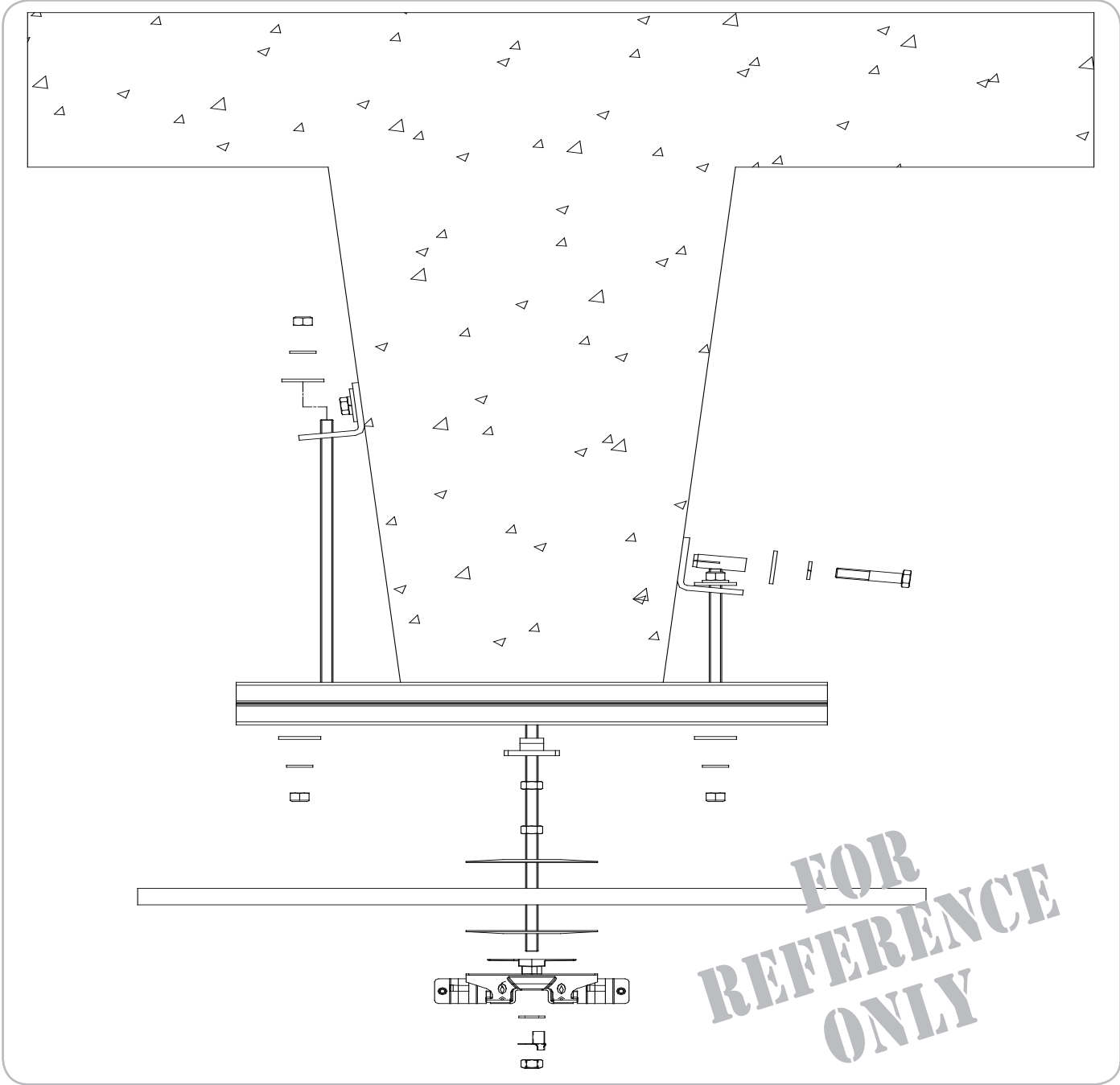
**FOR
REFERENCE
ONLY**

Detail: Concrete Beams With Attachment Under Beam



A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

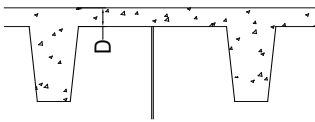
Ref.: 32210.11



Installing Carriage Pieces In the Existing Structure

Installation in concrete beams can be performed in different ways, according to beam dimensions, slab thickness and the threaded rod's position. In order of importance, proceed with the following methods:

01

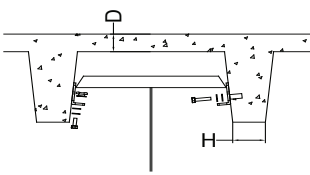


Anchor located directly in concrete slab:

Required condition:

- Slab thickness of less than 79 mm (3 1/8 in).
- Installation:
- Refer to "Direct Concrete" section.

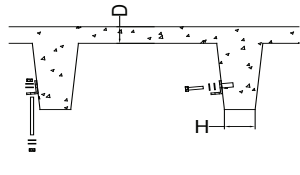
02



Anchor into beams' sides:

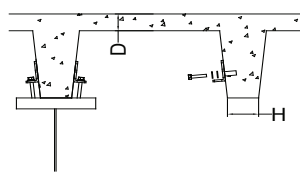
Required condition:

- Slab thickness of less than 79 mm (3 1/8 in).
- An access to the sides of the beams.
- Beam thickness of 79 mm (3 1/8 in) minimum, to the anchors.

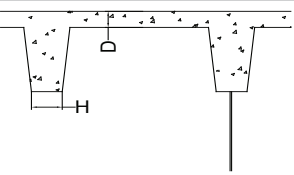


Installation:

- Refer to the methods found in the following pages:
- Attachment with a strut channel on beam's sides.
- Attachment without strut channel on beam's sides.



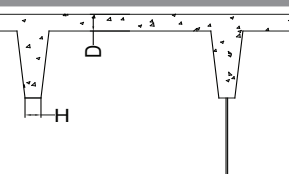
03



Anchor into beams' sides: Anchor at the bottom of beams:

Conditions:

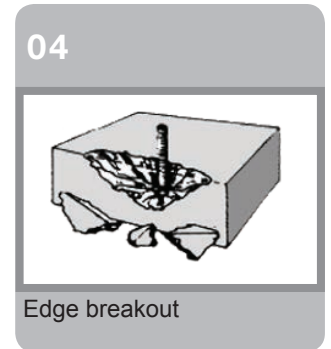
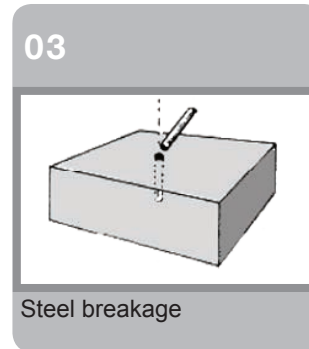
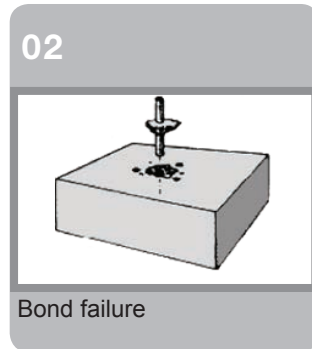
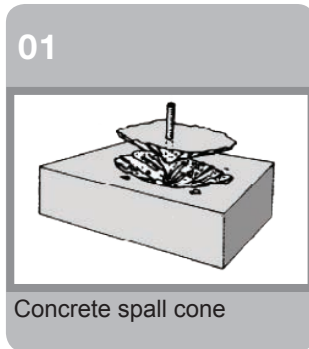
- Slab thickness of less than 79 mm (3 1/8 in).
- No access to the sides of beams.
- Method A: beam of 16 cm (6 in) minimum / HDI anchor.
- Method B: beam of 10 to 15 cm (4 to 6 in) / Chemical anchor.



Installation:

- Procedures found in the next pages.

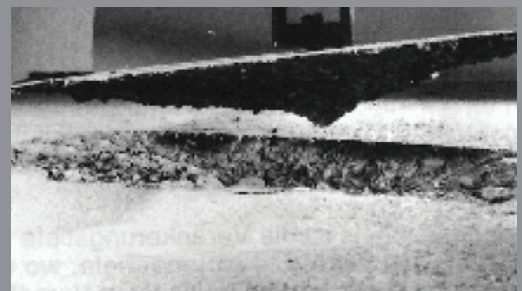
Risks from installations in concrete structures:



NOTE...

Respect spaces and distances with the edges of concrete slabs.

.Avoid anchors that exceed from concrete slabs.



Method: Attachment With a Strut Channel On Concrete Beams' Sides

01



Mark the threaded rod's location on slab.
Transfer this point at a right angle, on each side of the beams, to get the anchor point axis of squares.

02



Once you get the anchor point axis, determine anchors' height. Take care to:

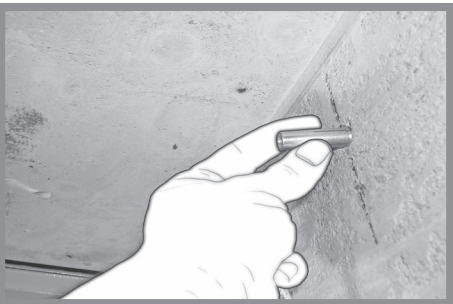
- Position the two squares at the same level.
- Place squares at 11,5 cm (4 1/2 in) from the bottom of beams.
- Leave enough space above to fix the "C" strut.

03



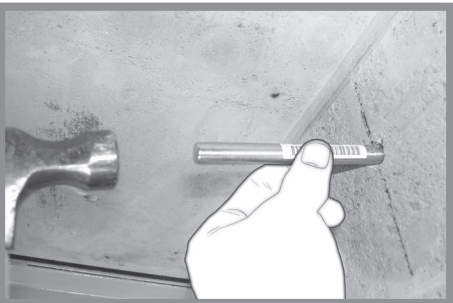
Drill according to the manufacturer's recommendations.

02



Attach anchors.

03



Using a setting tool and a hammer, fasten the anchor (expansion).

06



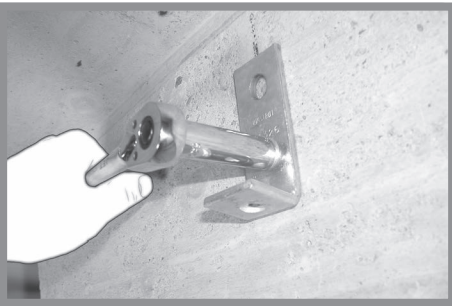
Fold the square so that, once installed, the tab is perfectly horizontal.

07



Fasten the appropriate bolt and washer (see technical drawing).

28



Tighten.



NOTE...

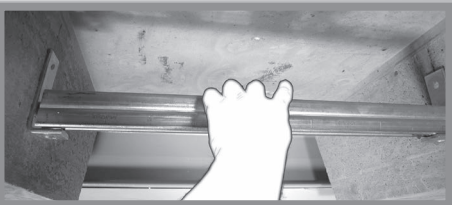
...the recommended torque is 14.9N·m (11 lbf·ft).

09



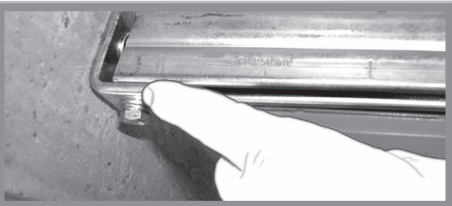
Repeat procedure on the other side.

10



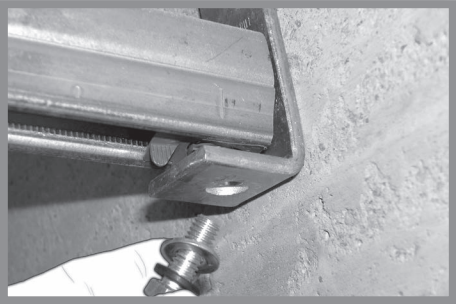
Cut the strut channel in the appropriate length.

11



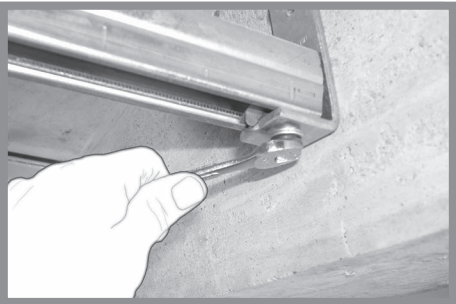
Make sure the strut channel covers the maximum of the 90° square's horizontal leg.

12



Install the appropriate attachment hardware.

13



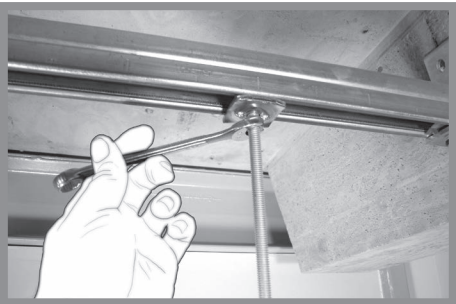
Tighten hardware to secure the strut channel.

14



Insert the threaded rod and its attachment hardware in the strut channel.

15



Move the threaded rod to the right position and tighten to secure it.

16



Move Threaded Rod To the Right Position and Tighten To Secure It.

01



Mark the threaded rod's location on slab.
Transfer this point at a right angle, on each side of the beam, to get the anchor point axis of squares.

02



Once you get the anchor point axis, determine anchors' height. Take care to:

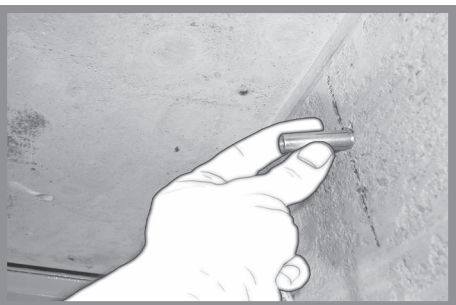
- Position the two squares at the same level.
- Place squares at 11.5 cm (4 1/2 in) from the bottom of beams.
- Leave enough space above to fix the "C" strut.

03



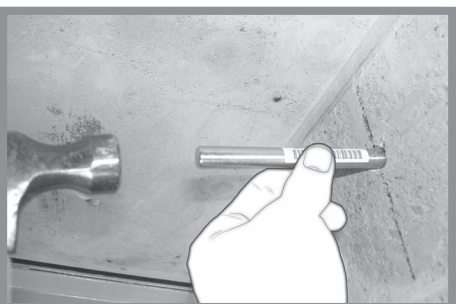
Drill according to the manufacturer's recommendations.

04



Install anchors.

05



Using a setting tool and a hammer, fasten the anchor (expansion).

06



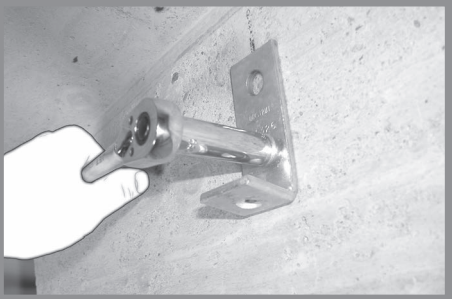
Fold the square so that, once installed, the tab is perfectly horizontal.

07



Fasten the appropriate bolt and washer (see technical drawing).

08



Tighten.



NOTE...

...the recommended torque is 14.9N·m (11 lbf·ft).

09



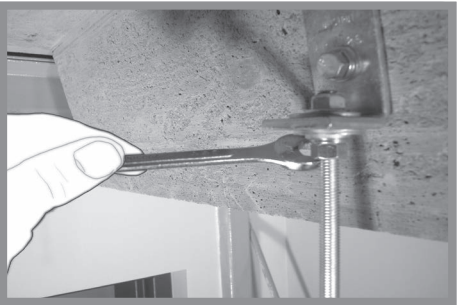
Install the threaded rod with its attachment hardware.

10



Add hardware...

11



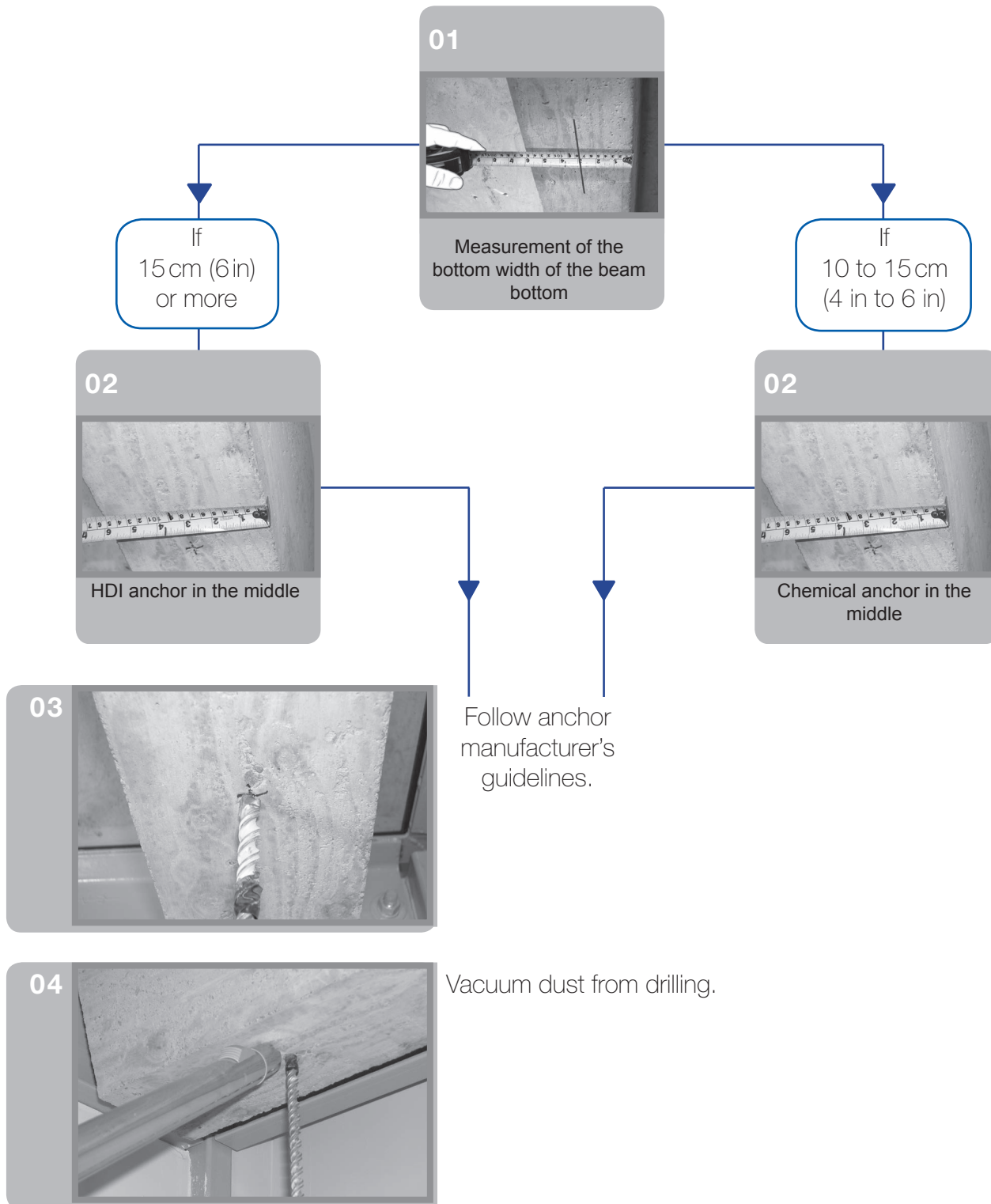
...and tighten.

12



Method: Attachment At the Bottom Of Beams

Before performing this step, refer to bracket positioning and transfer points section.



05



Install the anchor...

06



...and fasten it with a setting tool and a hammer.

07



Screw the threaded rod into the anchor.



NOTE...

...the recommended torque is 14.9N·m (11 lbf·ft).

Possible Issues and Recommended Solutions

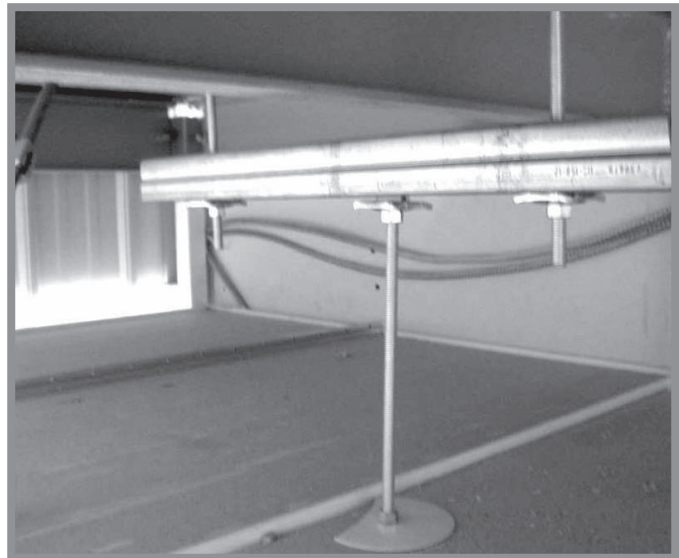
Considering the possibility of having various elements (structural, HVAC, electrical, etc.) blocking the installation, here are some solutions:

VENTILATION, BEAM, etc.:

- Bridging is required.
- Drop a threaded rod on each side of the obstruction.
- Install a "C" strut respecting required distances according to the manufacturer.
- All installation components must be properly tightened and locked.

STEEL REINFORCEMENT, ELECTRICAL CONDUIT, AND SMALL OBSTRUCTIONS:

- Bridging is required.
- Drop a threaded rod on a minimum distance of 15 cm (6 in) on each side of the obstruction.
- Install a "C" strut respecting required distances according to the manufacturer.
- All installation components must be properly tightened and locked.



NOTE...

...when bridging is visible, all noticeable parts must be painted white and end caps must be used.

Annexes

Concrete Structure details

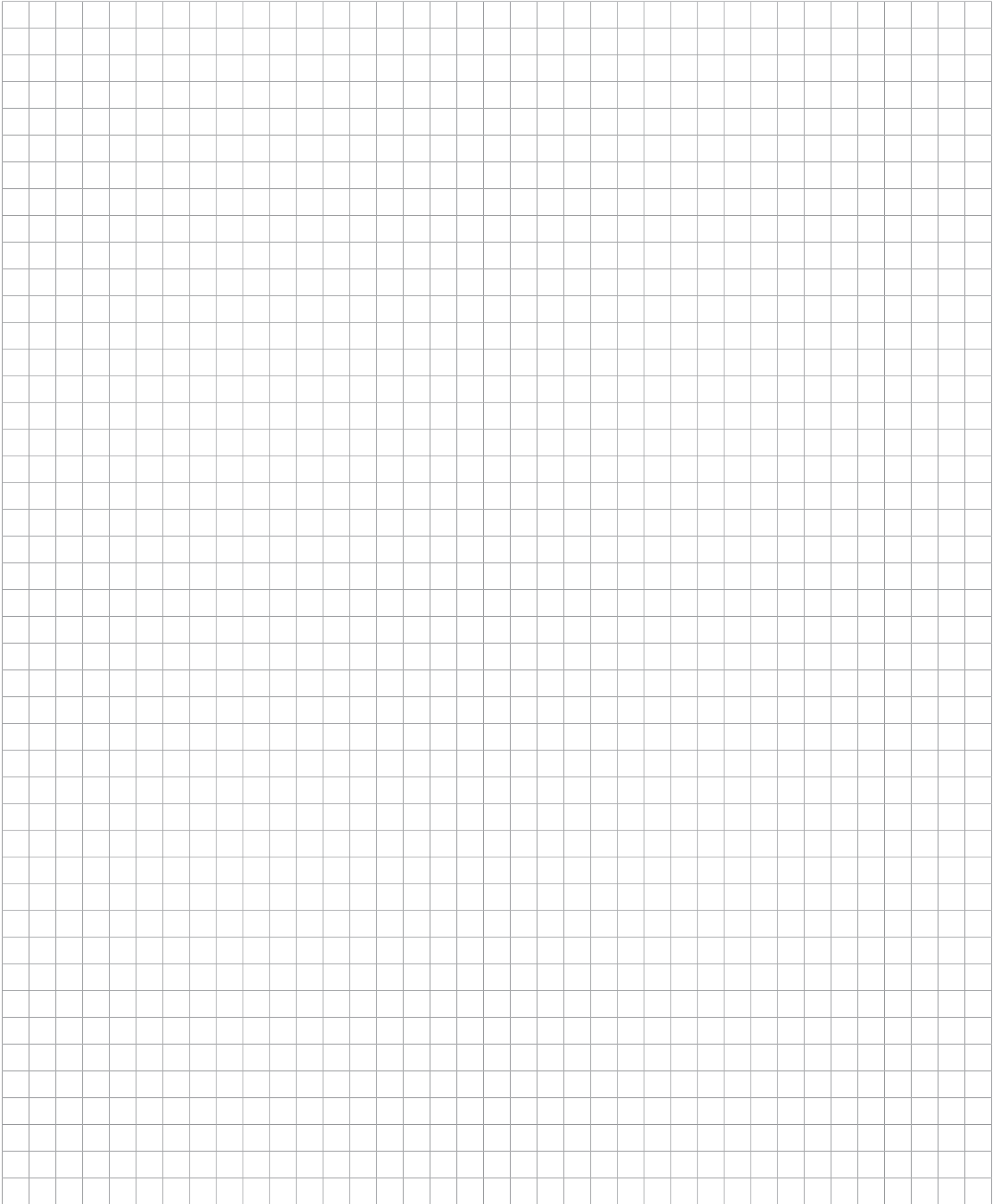
Drawing list

Number	Description	Comment
30110.01	Concrete Slab/Direct	Single rod, drop in anchor
30110.02	Hollowcore Slab/Direct	Fixation plate 3 pts
30110.03	Concrete Slab/Direct	Double rod
30110.04	Hollowcore Structure/Direct with Strut	Double rod, Strut bridge
31210.01	Suspended Tiles	Single rod, drop in anchor
31210.02	Suspended Tiles	Single rod, Fixation plate 3 Pts
31210.03	Concrete Slab/Suspended Tiles	Double rods, drop in anchor
31210.04	Suspended Tiles	Double rods, Strut bridge
31210.05	Suspended Tiles	Single rod, HUS EZ-I
32210.01	Suspended Drywall	Single rod, drop in anchor
32210.02	Suspended Drywall	Single rod, Fixation plate 3 Pts
32210.04	Suspended Drywall	Double rods, drop in anchor
32210.05	Suspended Drywall	Double rods, Strut bridge
32210.10	Concrete Beam	Single rod, Strut bridge between beam
32210.11	Strut Bridge	Single rod, Strut bridge on one beam
32210.12	Lateral Fastening	Single rod, Side of beam
32210.13	Drywall/Bottom of Beams (without chemical anchor)	Single rod, drop in anchor



LOG ON!

ArjoHuntleigh is constantly improving its products and procedures. For this reason, it may be possible that technical drawings have been updated since this manual was produced. We highly recommend you to obtain the latest revisions of these technical drawings.





STEEL

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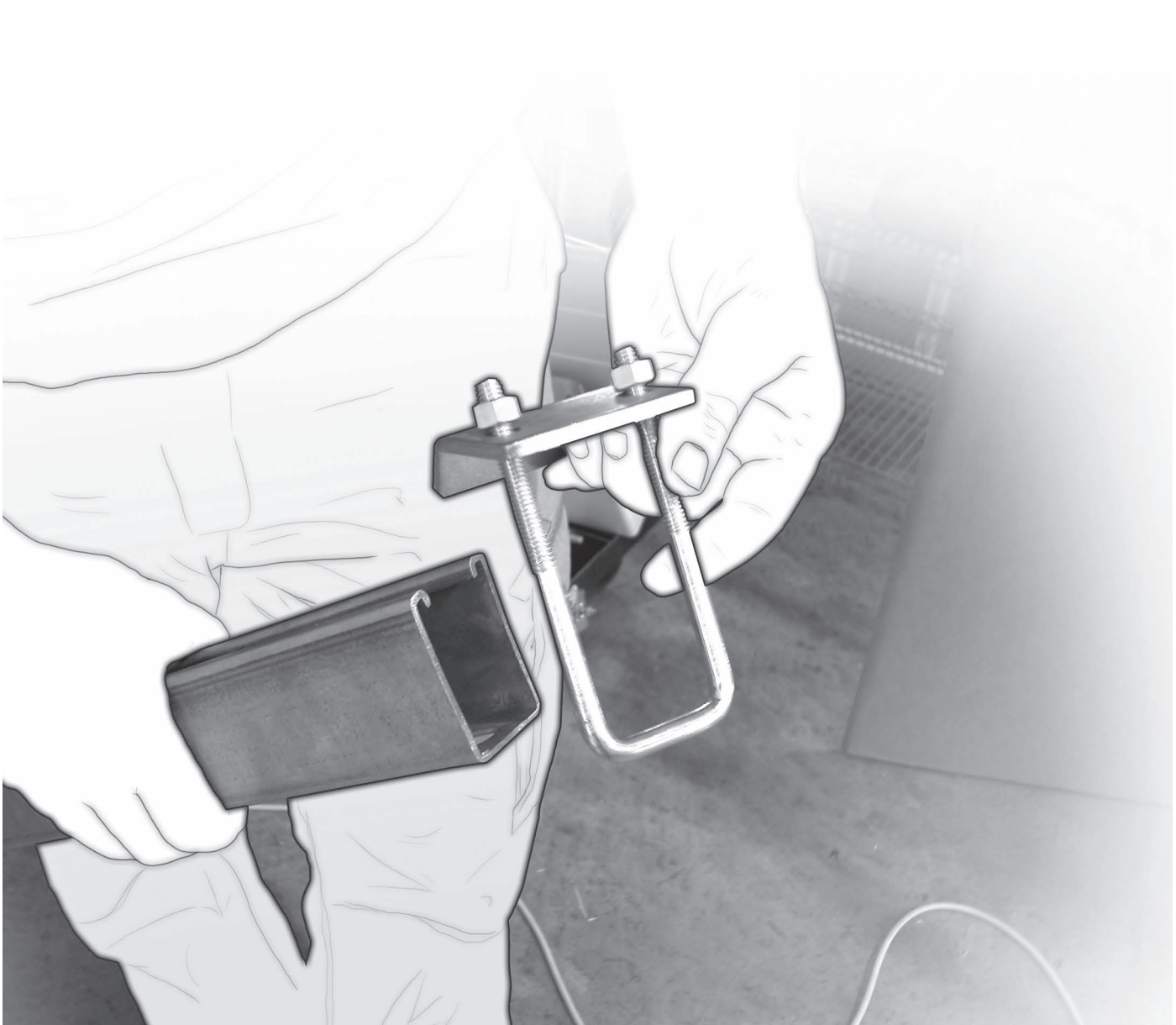
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Detail: Steel With Suspended Tiles	123
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Structure Family: Steel

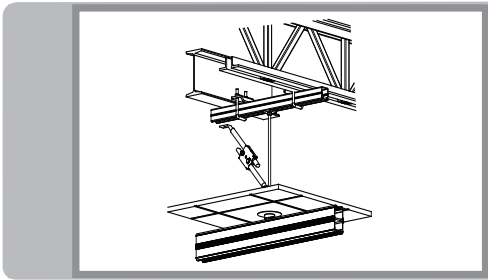
Special Considerations

The purpose of this step:

- The structural engineer hired by the client is responsible for verifying the adequacy of the structure to support the load.
- Follow manufacturer's instructions for anchor installation.

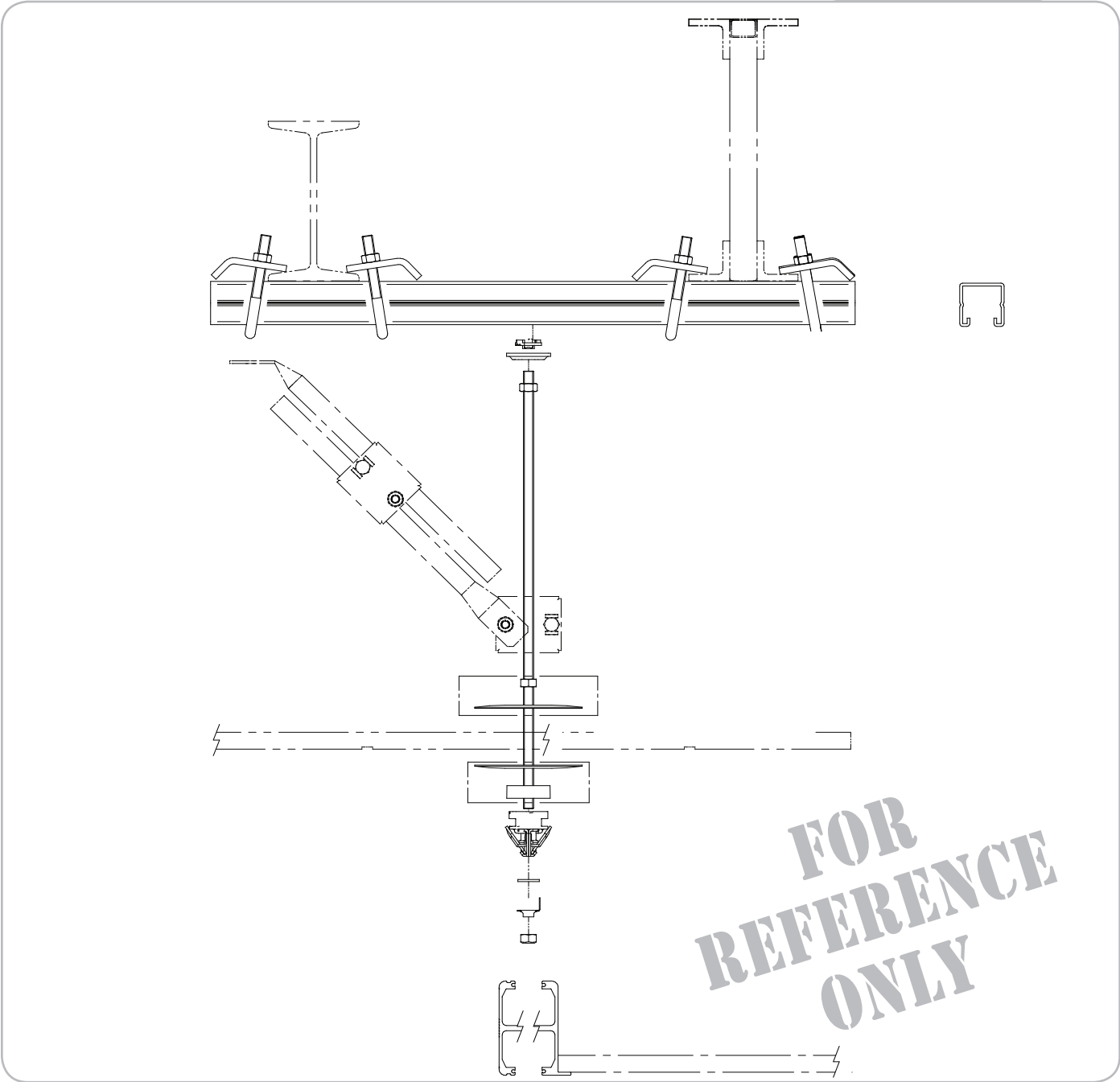


Detail: Steel With Suspended Tiles

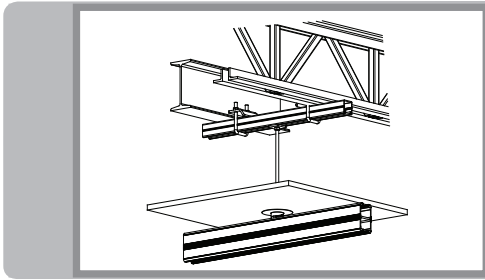


A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 21210.01

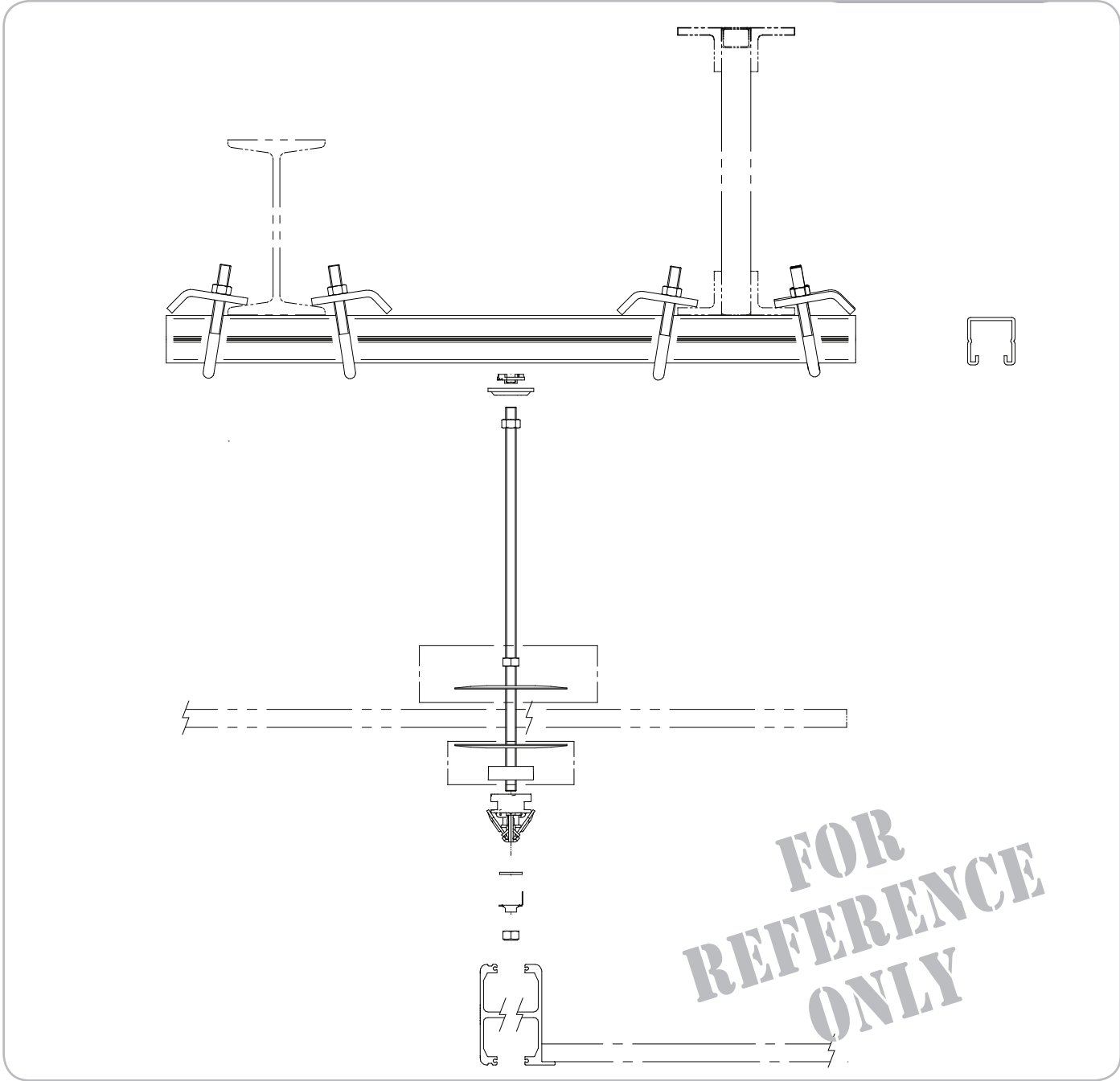


Detail: Steel With Suspended Drywall



A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

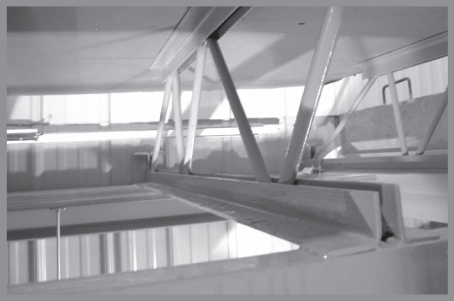
Ref.: 22210.01



Method: Steel

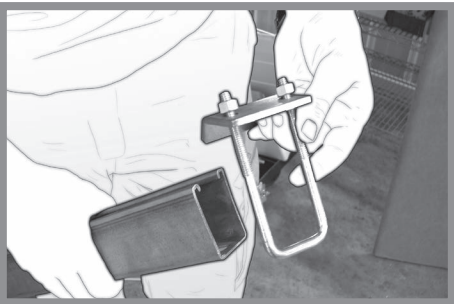
Before performing this step, refer to step 3 for layout, bracket positioning and transfer points.

01



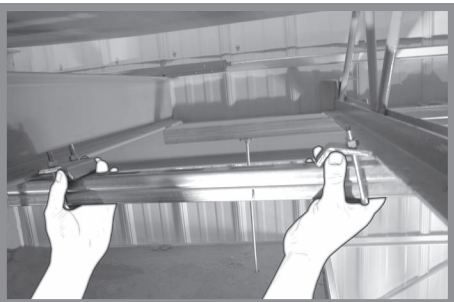
The following installation procedure can be used with reinforcing metal joists and "I" or "L" shaped joists.

02



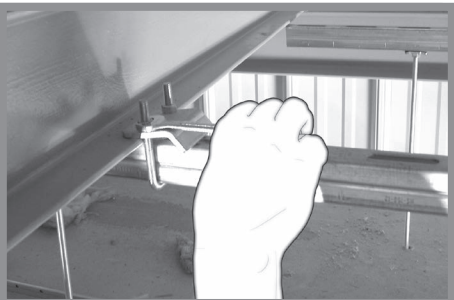
Slide a clamp on each side of the "C" strut that has already been cut to the correct length. The C strut must exceed the joists by about 50 mm (2 in).

03



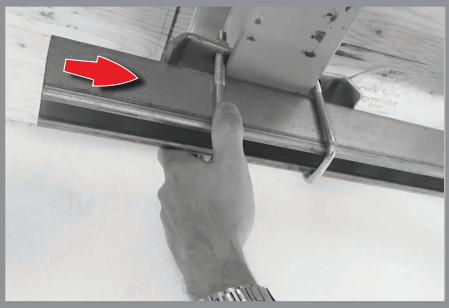
Position the "C" strut in the hole's axis of the attic floor...

04



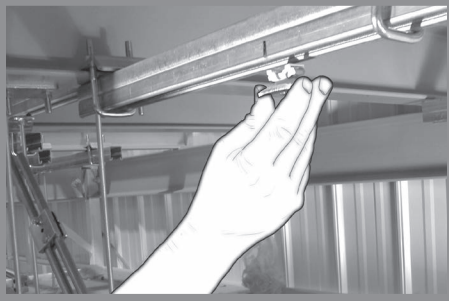
...and firmly tighten the two screws located at the ends of the "C" strut.

05



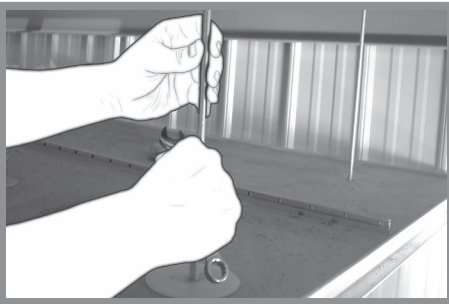
Slide 3rd & 4th clamps on exceeding strut and tighten them to the joist.

06



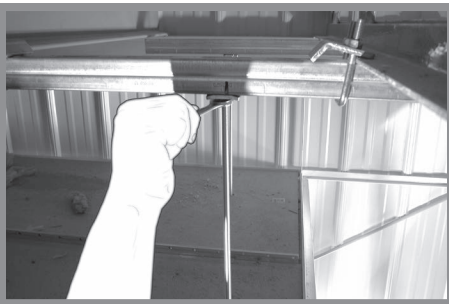
Fasten a coupling nut in the hole's axis of the suspended ceiling.

07



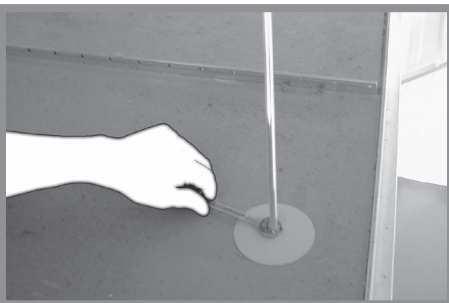
Insert the bottom end of a threaded rod into a ceiling plate that is in contact with the suspended ceiling, and then, into the suspended ceiling itself. Screw the other rod's extremity into the coupling nut.

08



Make sure the rod is perfectly vertical and placed in the hole axis. Then, tighten the coupling nut.

09



Tighten the nut of the ceiling plate for a proper *sandwich effect*.

Possible Issues and Recommended Solutions

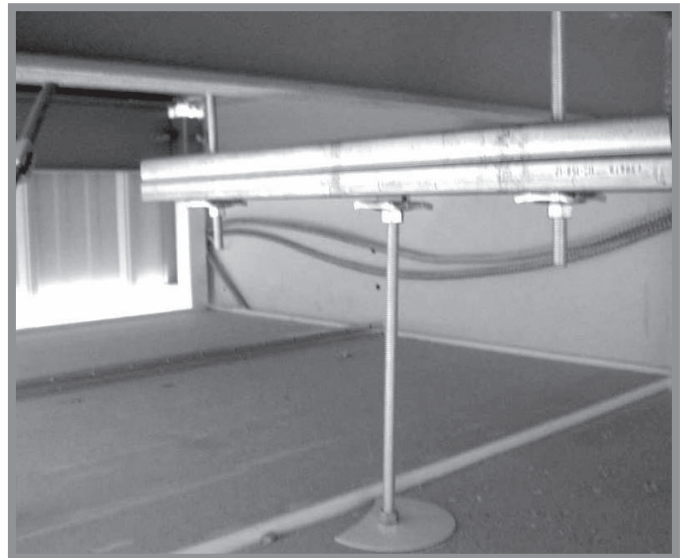
Considering the possibility of having various elements (structural, HVAC, electrical, etc.) blocking the installation, here are some solutions:

VENTILATION, BEAM, etc.:

- Bridging is required.
- Drop a threaded rod on each side of the obstruction.
- Install a "C" strut respecting required distances according to the manufacturer.
- All installation components must be properly tightened and locked.

STEEL REINFORCEMENT, ELECTRICAL CONDUIT, AND SMALL OBSTRUCTIONS:

- Bridging is required.
- Drop a threaded rod on a minimum distance of 15 cm (6 in) on each side of the obstruction.
- Install a "C" strut respecting required distances according to the manufacturer.
- All installation components must be properly tightened and locked.



NOTE...

...when bridging is visible, all noticeable parts must be painted white and end caps must be used.

Annexes

Steel Structure details

Drawing List

Number	Description	Comment
21210.01	Suspended Tiles	Single rod
21210.02	Steel Beams/Suspended Drywall	Double rod
22210.01	Steel Beams/Suspended Drywall	Single rod
22210.02	Steel Beams/Suspended Drywall	Double rod



LOG ON!

ArjoHuntleigh is constantly improving its products and procedures. For this reason, it may be possible that technical drawings have been updated since this manual was produced. We highly recommend you to obtain the latest revisions of these technical drawings.







WOOD

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Structure Family: Wood Beams (2 x 6 in) and More

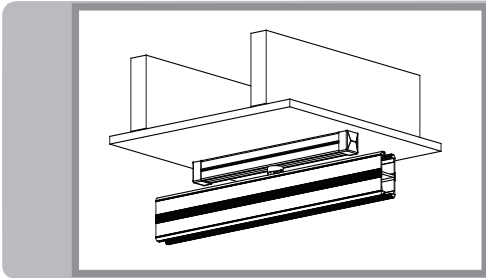
Special Considerations

The purpose of this step:

- The structural engineer hired by the client is responsible for verifying the adequacy of the structure that will support the load.

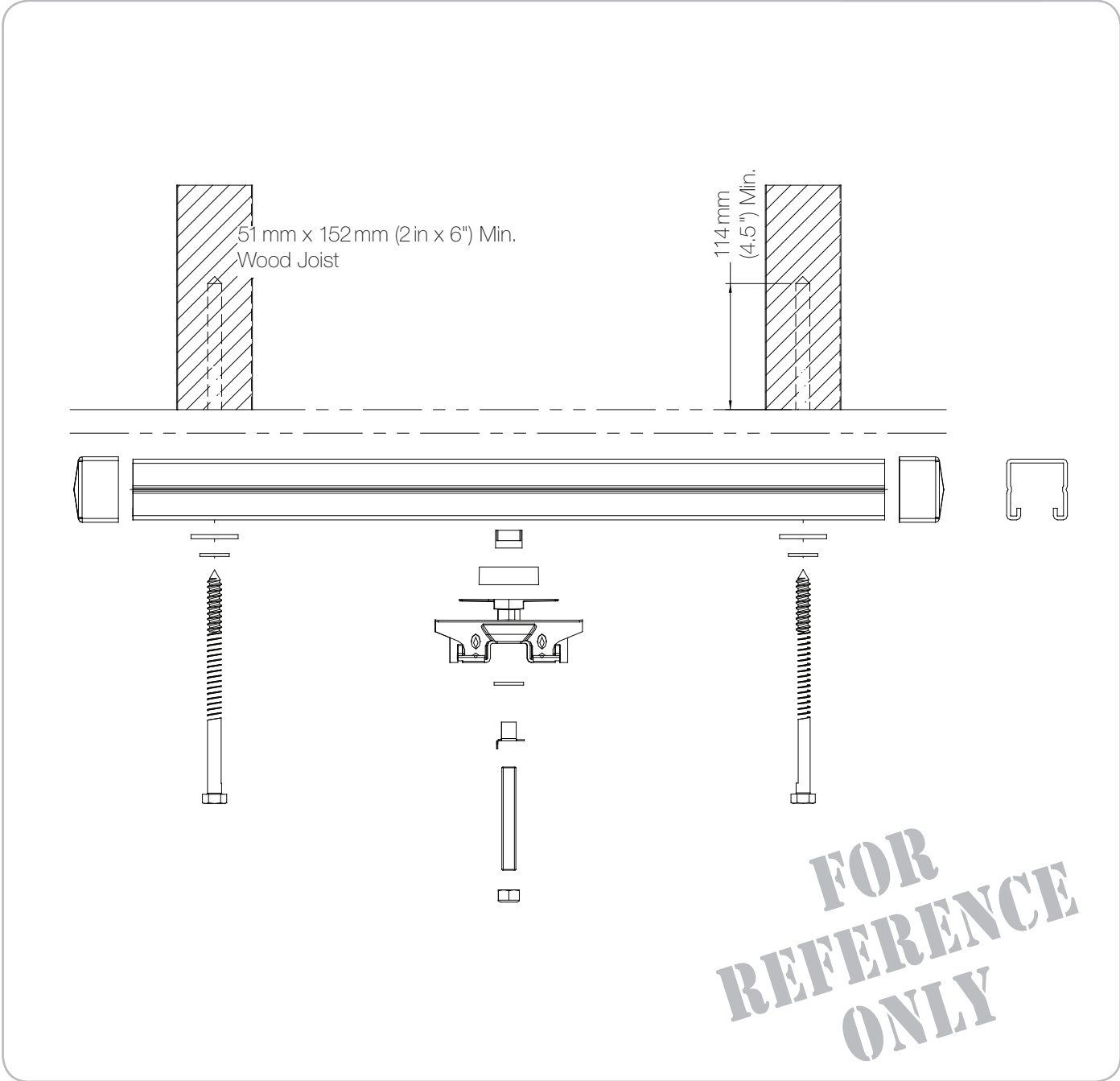


Detail: 2x6 in With No Access To the Structure

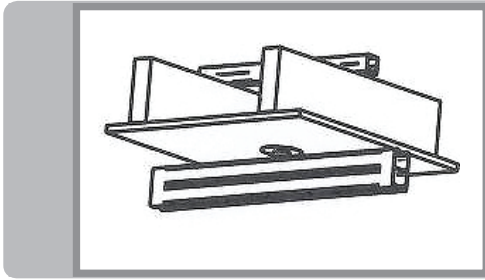


A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 12110.03

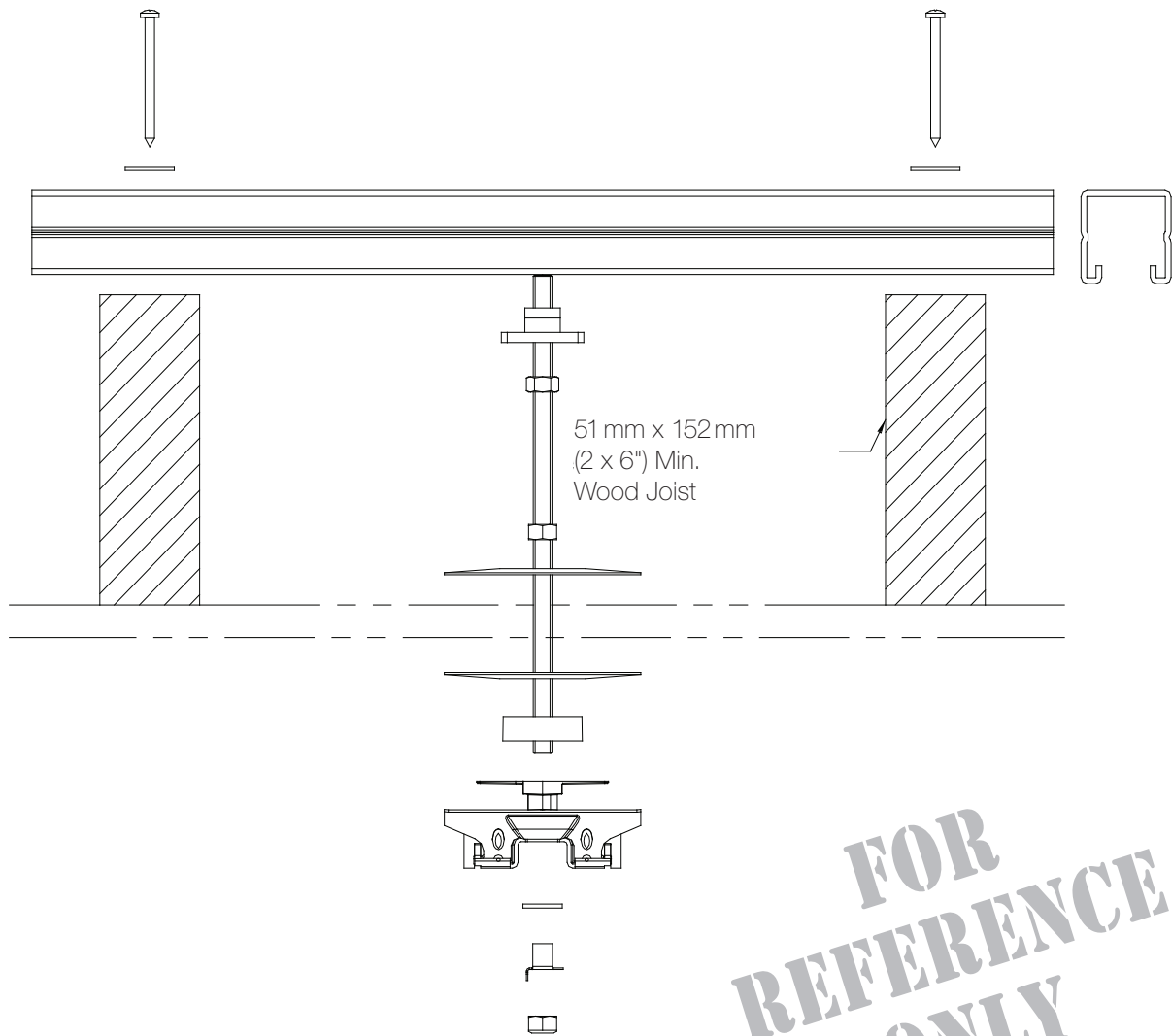


Detail: 2x6 in With Access To the Structure



A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 12110.02



Method: 2x6 in With Access To the Structure

Before performing this step, refer to step 4 for layout, bracket positioning and transfer points.

01



Find the anchor's position and transfer it onto the suspended ceiling.

02



Drill the suspended ceiling where there is a marked point.

03



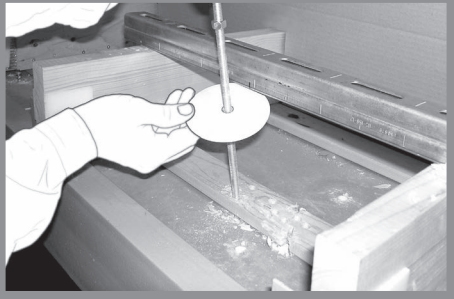
Measure the distance between beams, then add 10cm (4in) and cut a "C" strut to the corresponding length, .

04



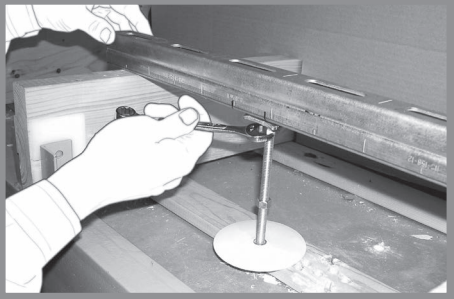
Install the strut channel on beams by aligning it with the hole's axis on the suspended ceiling.

05



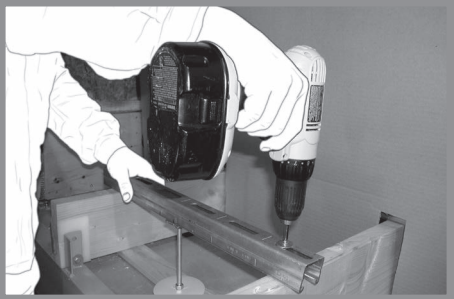
Insert a portion of the threaded rod with its hardware into the hole of the suspended ceiling.

06



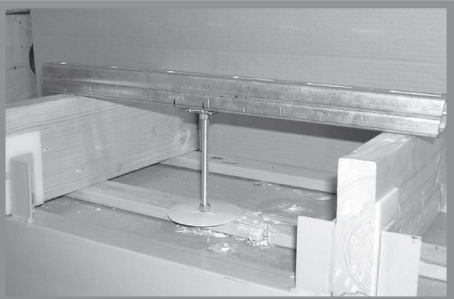
Fasten the saddle nut to the strut channel and tighten it firmly. Tighten also the nut of the ceiling plate to produce the *sandwich effect*.

07



With the appropriate hardware, fasten the ends of the strut channel into the beams.

08



Method: 2x6 in With Access To the Structure

Before performing this step, refer to step 4 for layout, bracket positioning and transfer points.



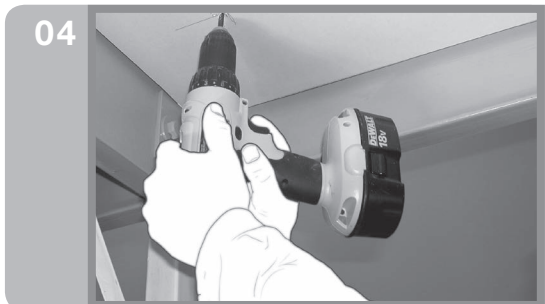
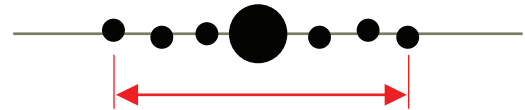
Determine the anchor point and transfer it onto the suspended ceiling using a plumb laser.



Using a pencil, draw a line that passes by the anchor point and in the axis of the track to be installed.



To detect the edges of a beam, drill holes, using a sharp drill bit, along the line that you have previously drawn. Find out whether there is a beam or not behind the holes.



Having the edges of beam as reference points, use a 6 mm (1/4 in) drill bit to drill the middle of beam at a depth of 10 to 14 cm (4 to 5 in).

05



Measure the distance between beams...

06



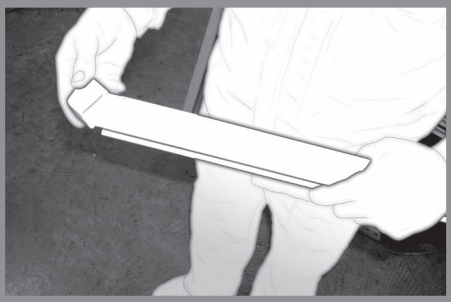
...and transfer that measurement onto a white strut channel, then add 4".

07



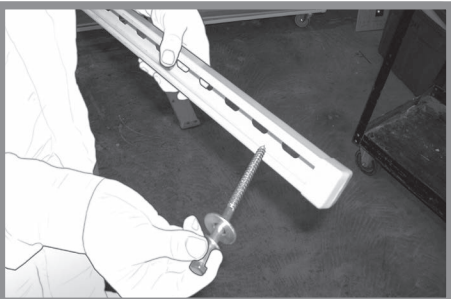
Cut the strut channel to the measured length.

08



Fix the caps to the ends of the strut channel.

09



With the required hardware, fasten the strut channel in the anchor points.

10



Tighten the lag bolt into the wood and repeat step for the other end of the strut channel.



NOTE:

Respect the minimum threaded depth of the lag screw specified on approved technical drawings.

The minimum threaded depth must be strictly followed, otherwise the carrying capacity of the lag bolt will be seriously reduced.

The lag bolt must be turned with a wrench, not driven with a hammer.

11



Place a saddle nut, tighten it...

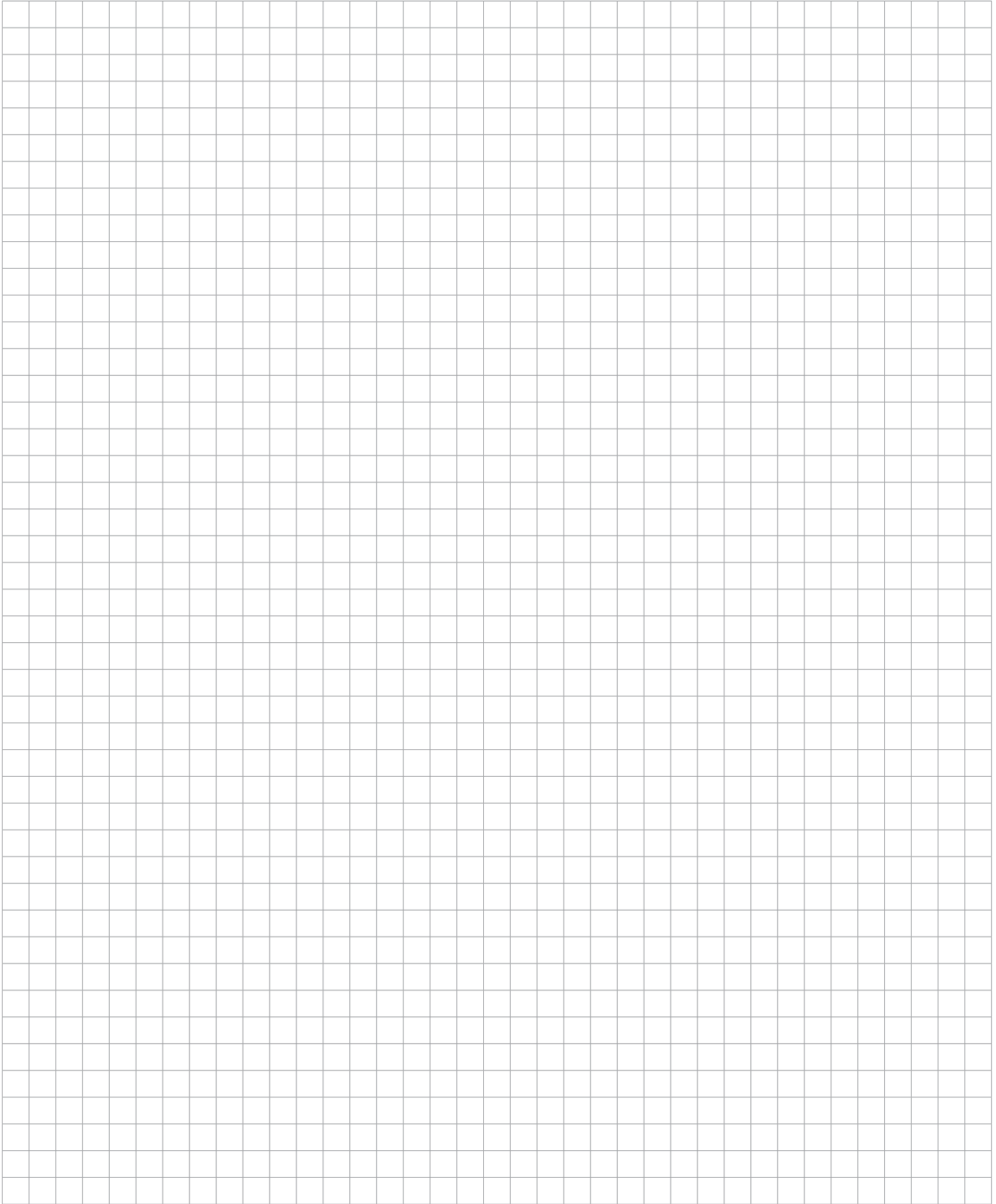
12



...and attach the threaded rod on it.

13





Structure Family: Roof Truss (2 x 4")

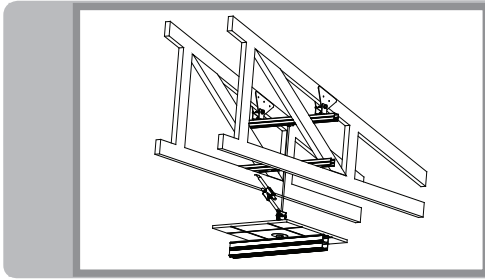
Special Considerations

The purpose of this step:

- The structural engineer hired by the client is responsible for verifying the adequacy of the structure that will support the load.
- Follow manufacturer's instructions for anchor installation.

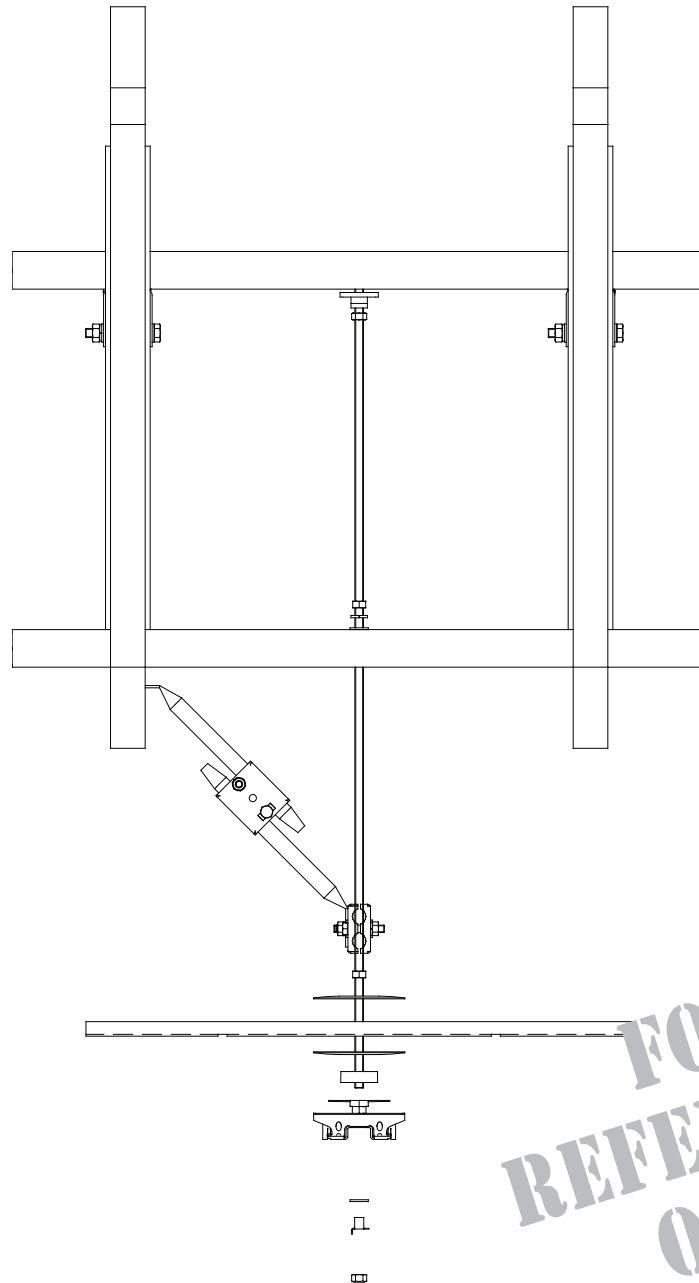


Detail: 2x4 in Truss With Drywall



A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 11210.04



**FOR
REFERENCE
ONLY**

Four Possible Methods For Attachment

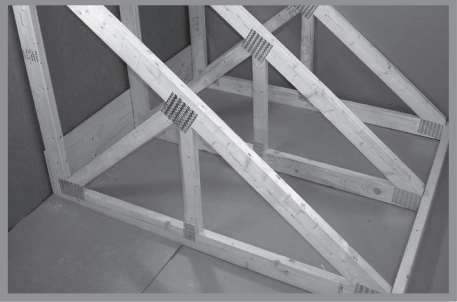
Installing in roof trusses can be performed in different ways, according to the bracket's positions and other parameters.
Here are the methods to follow for every case:

01	02	03	04
<p>Conditions:</p> <ul style="list-style-type: none"> - Anchor at less than 20 cm (8 in) from a node. - Anchor at less than 20 cm (8 in) from a beam. 	<p>Conditions:</p> <ul style="list-style-type: none"> - Anchor at less than 20 cm (8 in) from a node. - Anchor at less than 20 cm (8 in) from a beam. - Needs 3 beams. 	<p>Conditions:</p> <ul style="list-style-type: none"> - Anchor at more than 20 cm (8 in) from a node. - Needs 3 beams. 	<p>Conditions:</p> <ul style="list-style-type: none"> - Anchor at less than 20 cm (8 in) from a node. - Needs 3 beams.
<p>Advantages:</p> <ul style="list-style-type: none"> - Low price - Quick installation 	<p>Advantages:</p> <ul style="list-style-type: none"> - Low price - Quick installation 	<p>Advantages:</p> <ul style="list-style-type: none"> - Less restraining 	<p>Advantages:</p> <ul style="list-style-type: none"> - Less restraining

Method: 2x4 in Truss - (Method A)

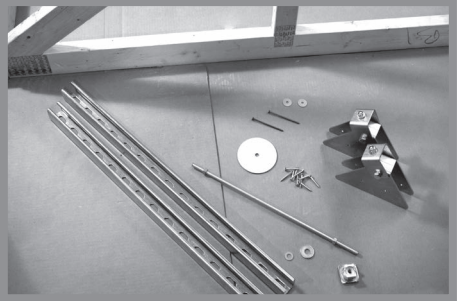
Before performing this step, refer to step 4 for layout, bracket positioning and transfer points.

01



Before starting, make sure there are no possible obstructions within the structure.

02



The kit contains everything necessary to install a bracket.

03



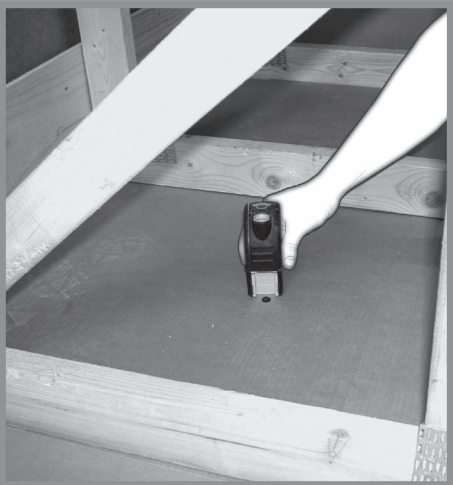
Mark the anchor location on the dropped ceiling.

04



Drill the anchor point in the dropped ceiling.

05



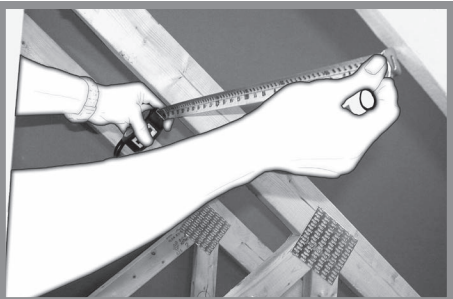
Once in the dropped ceiling, place a vertical laser into the predrilled hole axis.



NOTE...

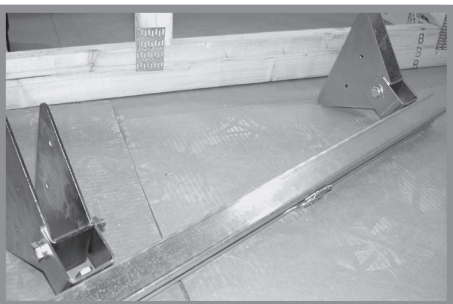
Note that the following step must be performed only when the bracket is located at more than 20 cm (8 in) from a node AND at more than 20 cm (8 in) from a truss. Otherwise, consult method B or C.

06



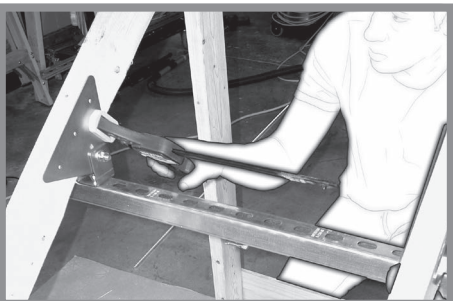
Measure the distance between trusses...

07



...and, later, adjust the kit.

08



Temporarily install the kit at an approximate location and secure one of its side using a vice.

09



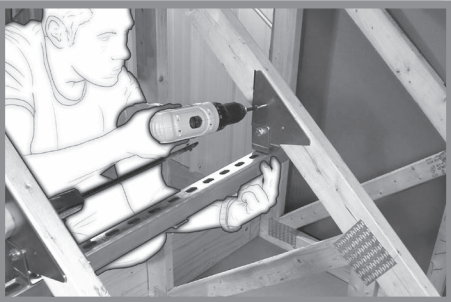
Align the other side of the kit with the truss to reach the anchor point marked by the laser.

10



Mark the bracket location.

11



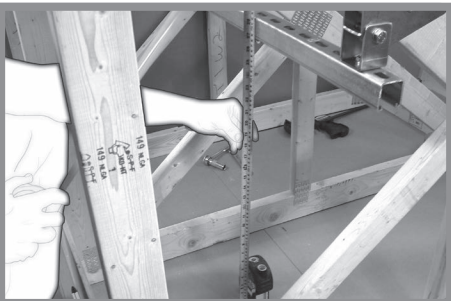
Fasten both brackets on each side.
Three screws on one side...

12



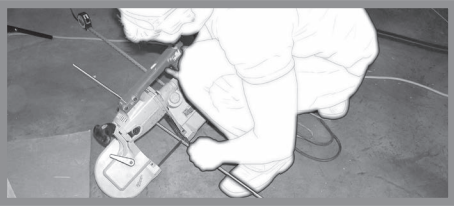
...and two on the other side. Repeat this procedure on the other truss. In total, there should be 10 screws.

13



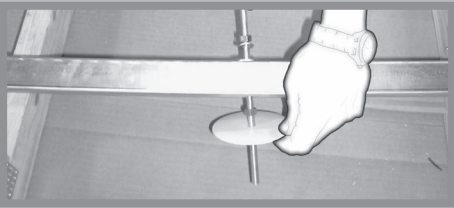
Measure the necessary threaded rod length above the suspended ceiling. Add a 25 cm (10 in) measurement that will be needed to attach the bracket below the suspended ceiling.

14



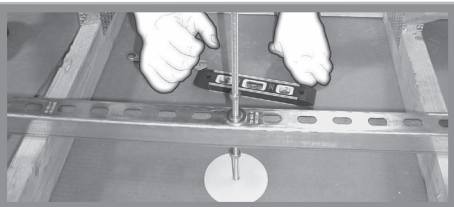
Cut the threaded rod in the predetermined length.

15



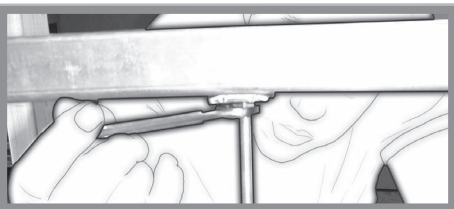
Prepare the "C" strut and threaded rod's assembly. Take care to leave enough space for you to be able to adjust the rod's position once everything is in position.

16



Insert the top of rod into the upper "C" strut using the included bracket.

17



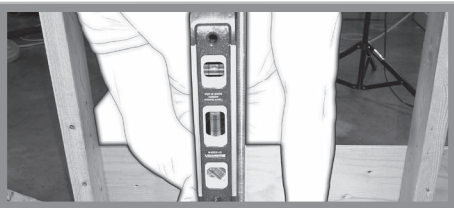
Tighten the nut firmly.

18



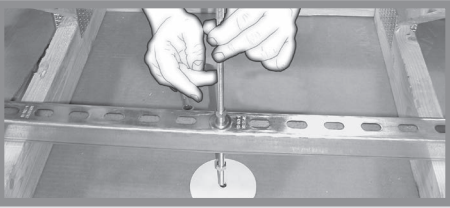
Make sure the threaded portion of the threaded rod is completely inserted into the bracket.

19



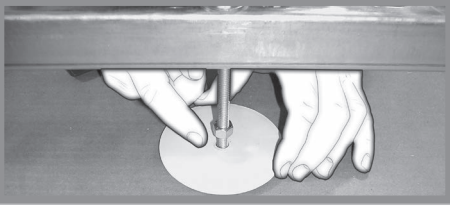
Using a level, make sure the rod is perfectly vertical.

20



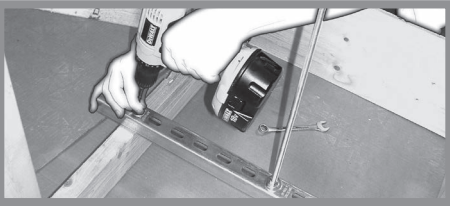
Adjust the central nut.
Make sure it exerts a slight pressure against the lower "C" strut.

21



Adjust the nut at the bottom.
Make sure it exerts a slight pressure against the ceiling.

22



Fasten the lower "C" strut using included screws and washers.

23



Make sure the assembly is firmly anchored.

24



Control and adjust the upper "C" strut. It needs to be perfectly horizontal.

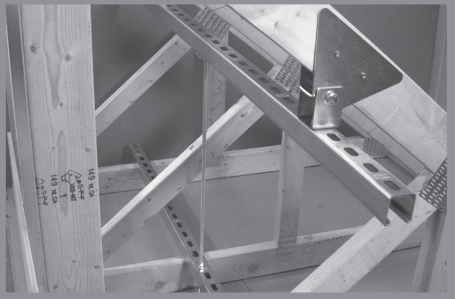
25



Method: 2x4 in Truss - (Method B)

Before performing this step, refer to step 4 for layout, bracket positioning and transfer points.

01



Follow the same method as in “Truss 2x4 in (Method A)” section, using 1.5 m (60 in) “C” struts that will be leaned against three trusses instead of two.

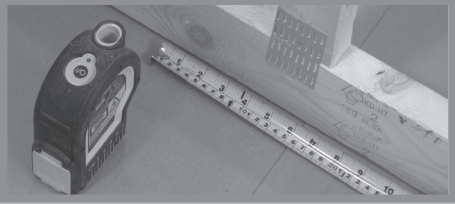
02



Method: 2x4 in Truss - (Method C)

Before performing this step, refer to step 4 for layout, bracket positioning and transfer points.

01



Locate the bracket's hole.

02



Align the strut channel above the hole, making sure the strut channel covers 3 trusses.

03



Check if the hole is located in the axis of a strut channel opening.

04



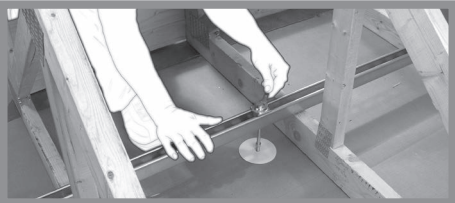
Screw the ends of the two struts channel.

05



Fix the threaded rod and its hardware.

06

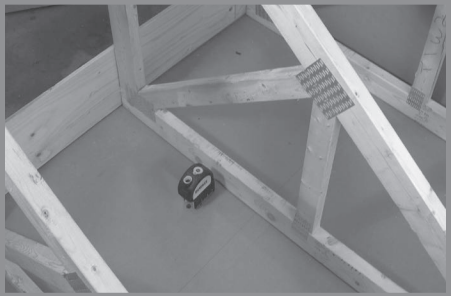


Tighten the assembly and make sure the *sandwich effect* has been applied.

Method: 2x4 in Truss - (Method D)

Before performing this step, refer to step 4 for layout, bracket positioning and transfer points.

01



Find the anchor point on the suspended ceiling.

02



Fasten the first strut channel above the 3 trusses with the appropriate hardware. The nearest truss to the anchor point is the central truss.

03



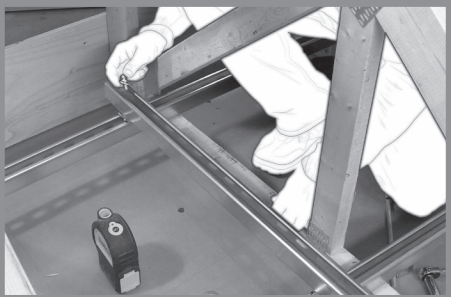
Proceed in the same way to fasten a second strut channel.

04



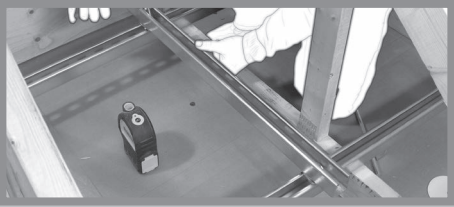
Place a strut channel perpendicularly, above the first two strut channels and mark its position with a marker. Make sure a hole in the small strut channel is in the axis of the anchor point.

05



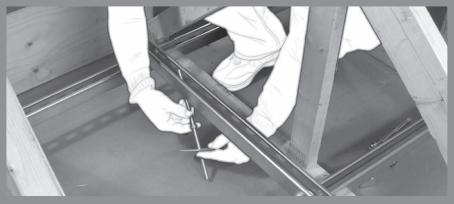
Turn the small strut channel over (hollow part facing the top) and attach two saddle nuts...

06



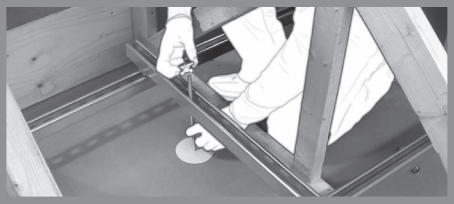
...tighten them firmly.

07



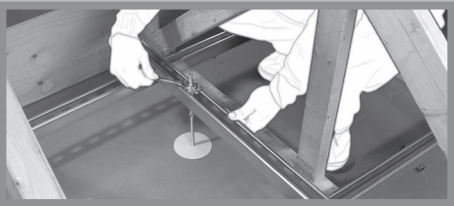
Where the bracket is located, insert a portion of the threaded rod with its corresponding hardware.

08



Insert a saddle nut...

09



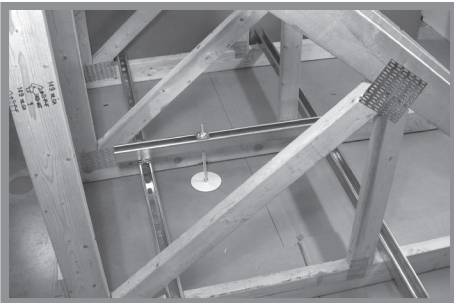
...and tighten it.

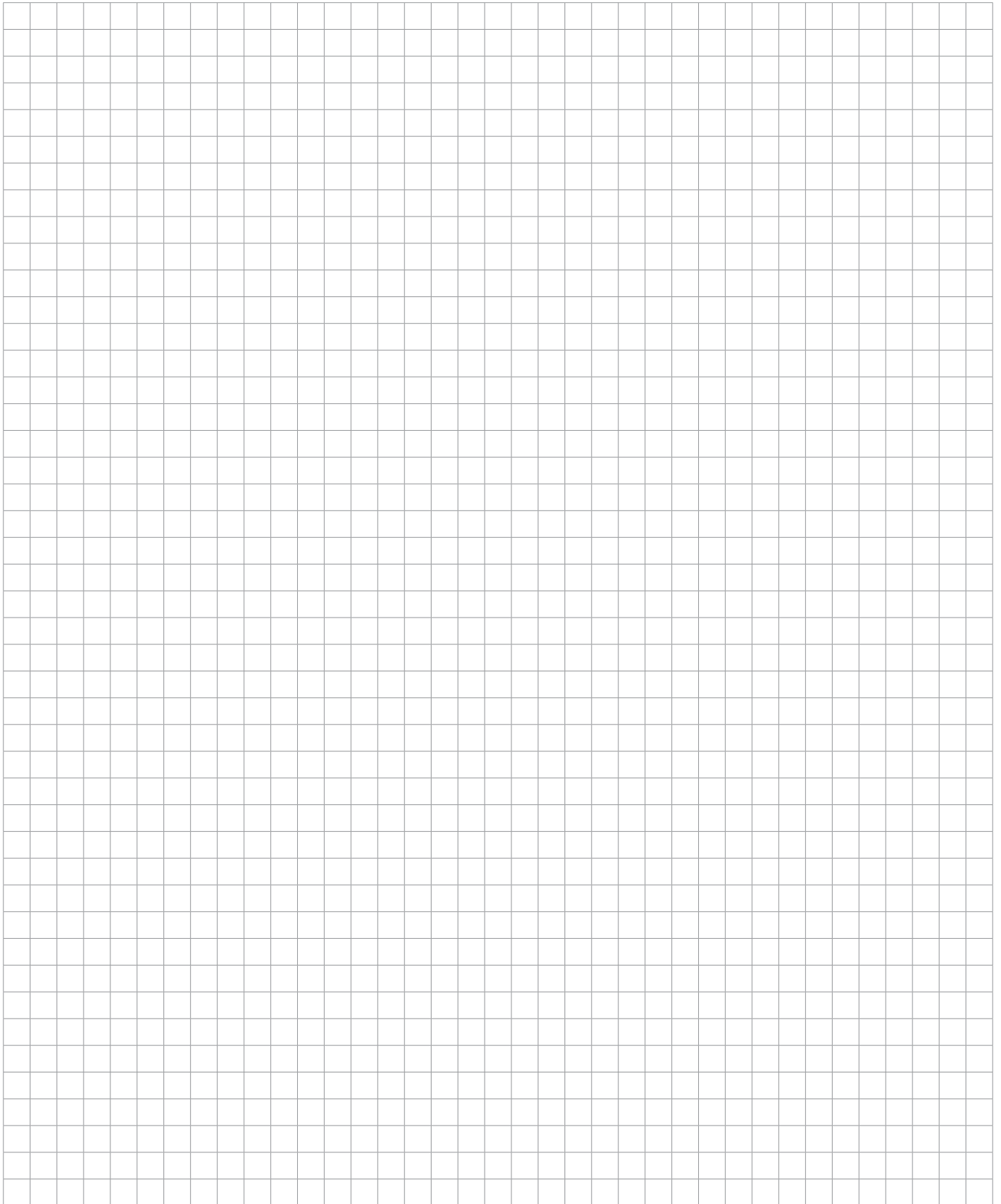
10

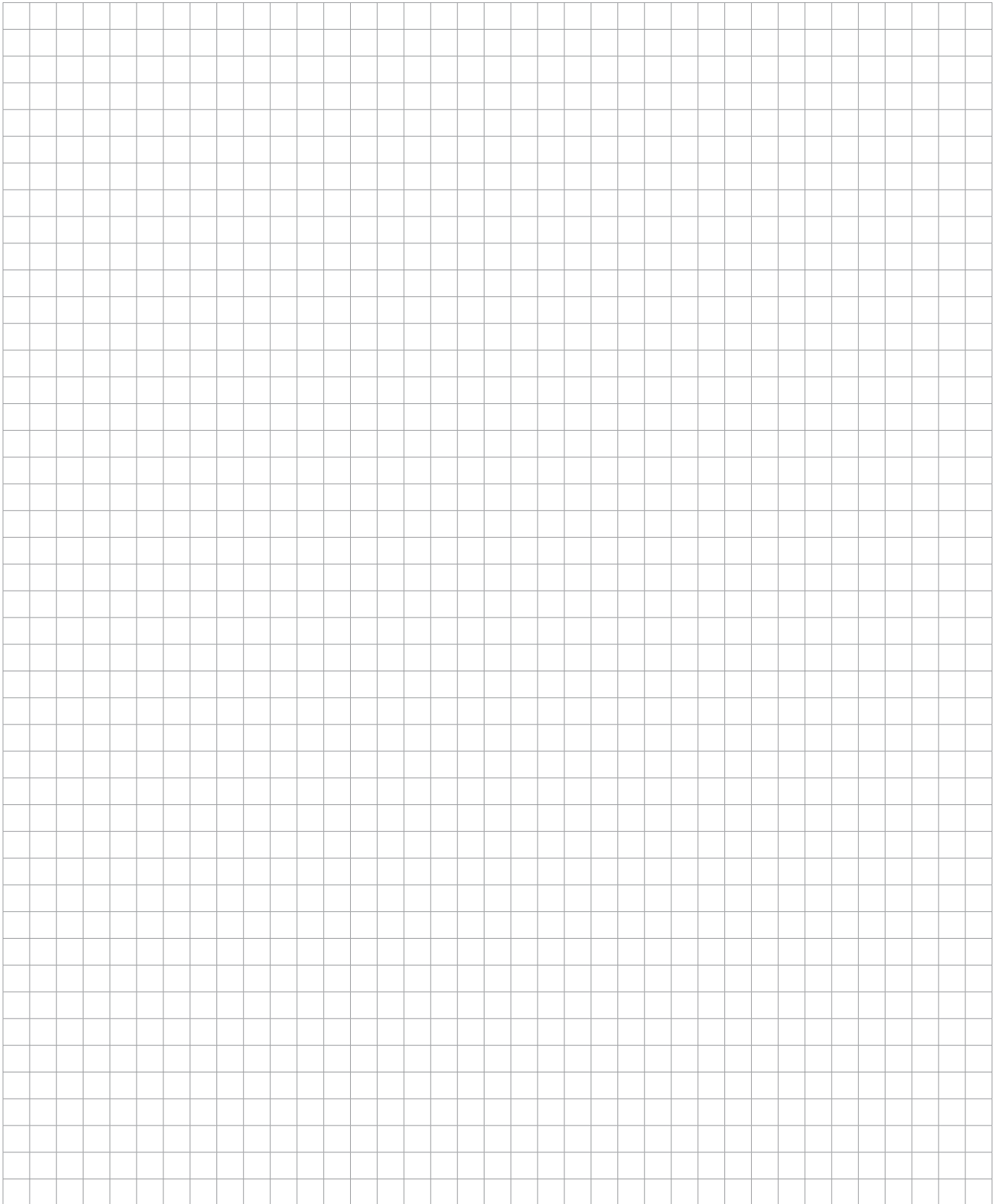


Tighten the bottom nut to produce the *sandwich effect* with the ceiling plate.

11







Structure Family: Engineered Beams (TJI)

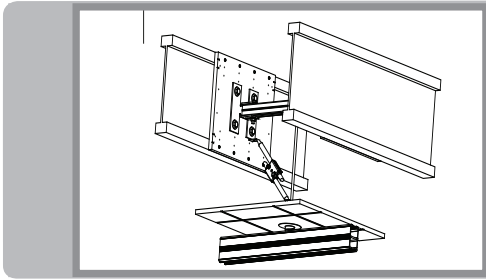
Special Considerations

The purpose of this step:

- The structural engineer hired by the client is responsible for verifying the adequacy of the structure that will support the load.
- Follow manufacturer's instructions for anchor installation.

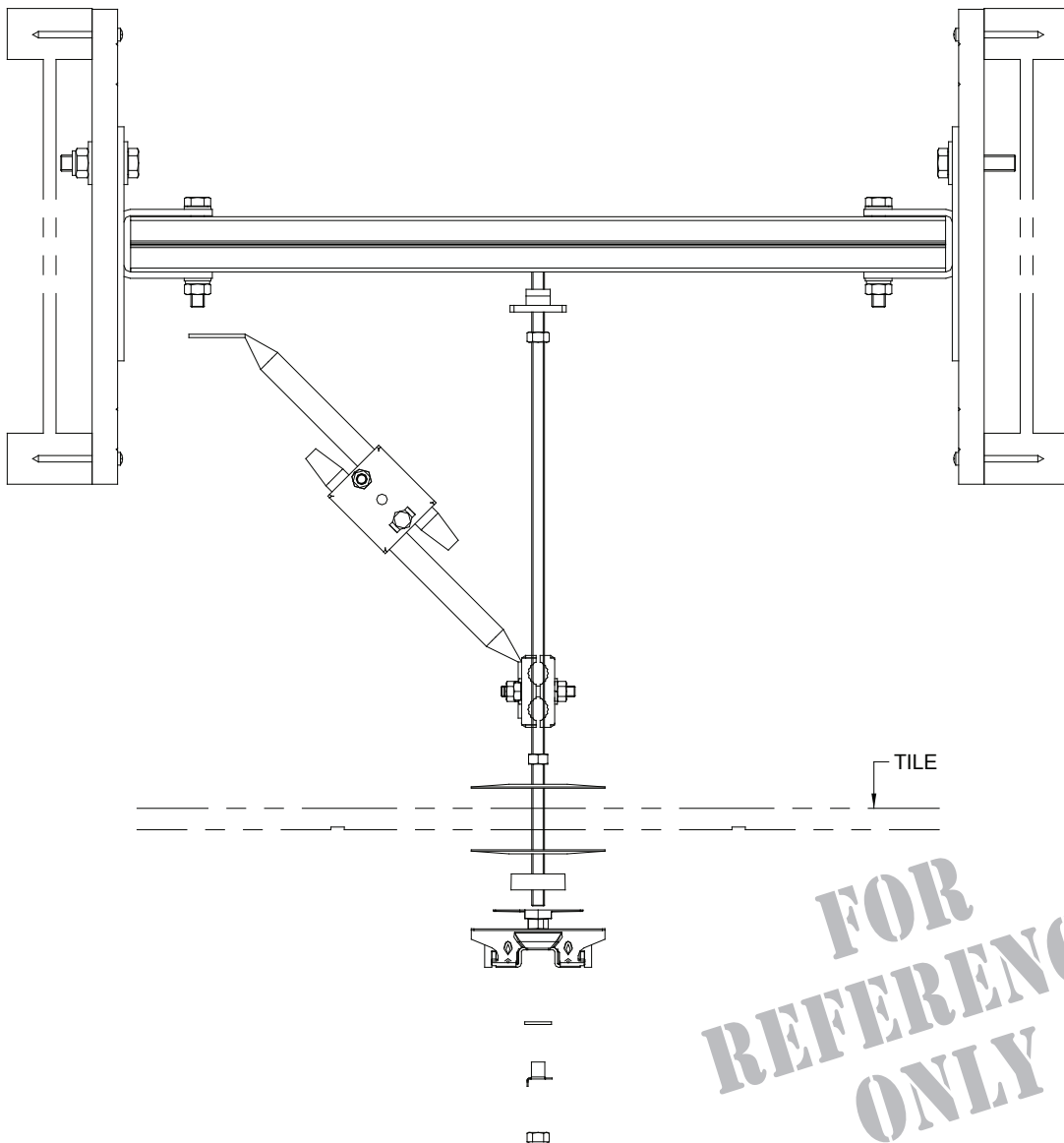


Detail: Engineered Beams (TJI) With Tiles



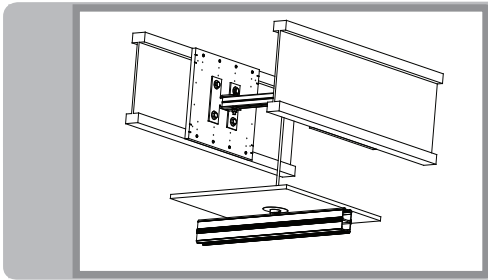
A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 11210.08



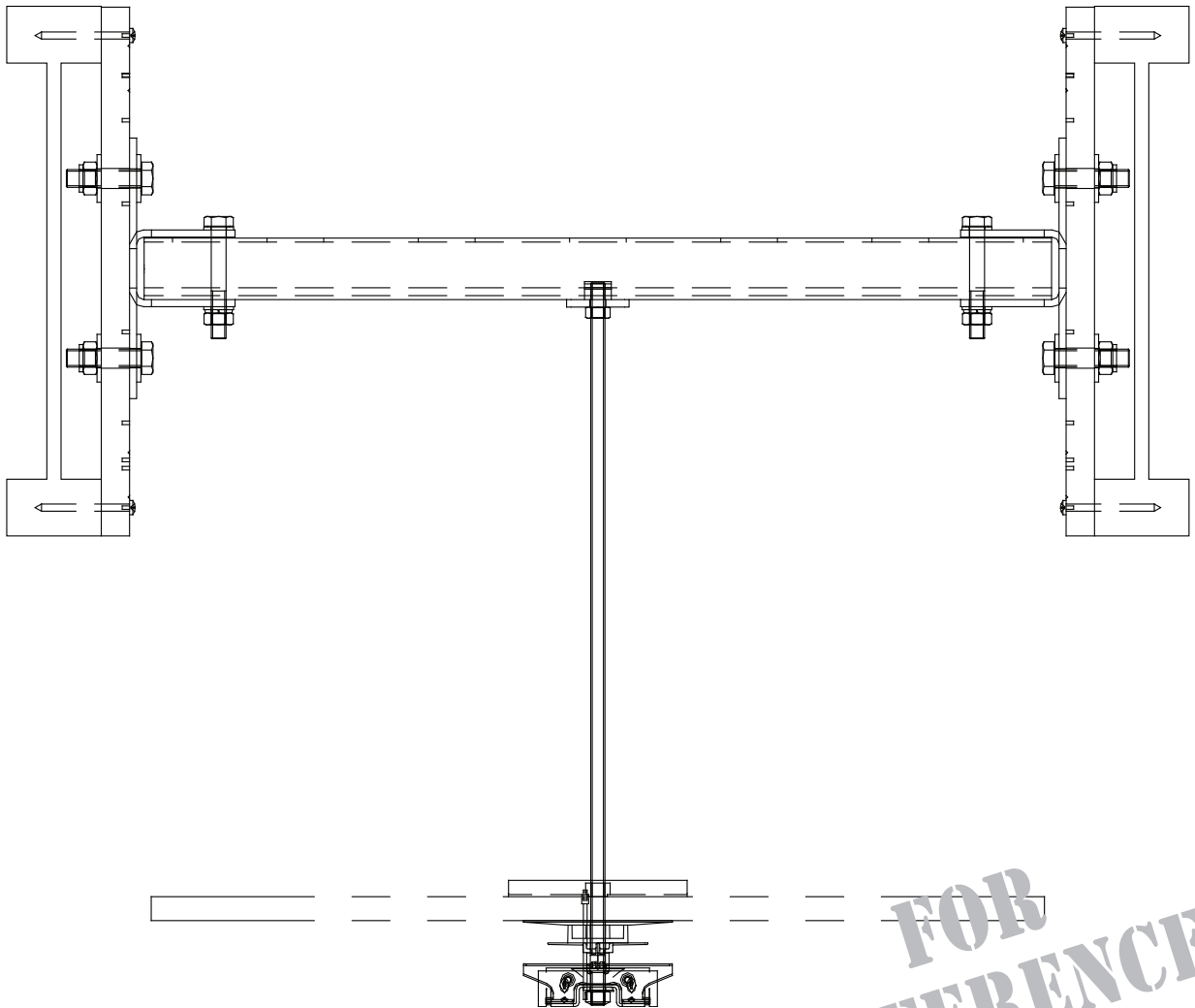
**FOR
REFERENCE
ONLY**

Detail: Engineered Beams (TJI) With Drywall



A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 12210.08



**FOR
REFERENCE
ONLY**

Method: Engineered Beams (TJI)

Before performing this step, refer to step 4 for layout, bracket positioning and transfer points.

01



Perpendicular to the beams...

02



...transfer the anchor points on both beams.

03



Measure the beams' height...

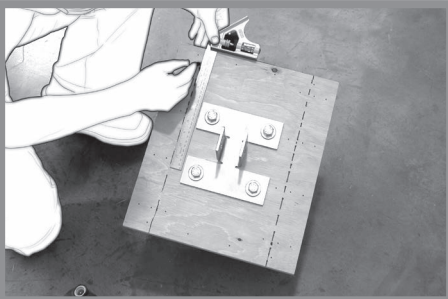
04



...and transfer this measurement on the two plates required for mounting.

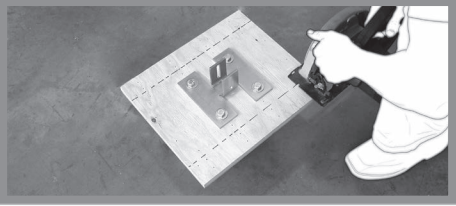
Make sure the metallic attachment is perfectly centered on the plate after the plate has been cut.

05



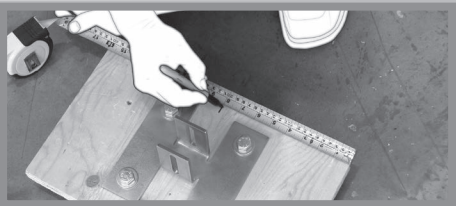
Respecting your measurements, trace some cut lines.

06



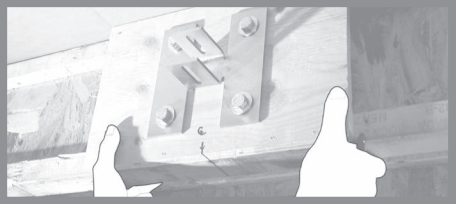
Cut plywood to size by sawing off the excess parts.

07



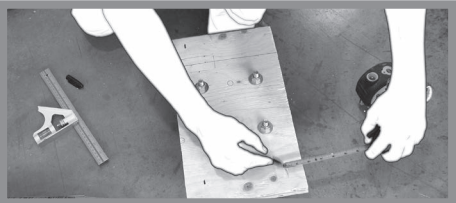
Measure and mark the central axis onto the plates.

08



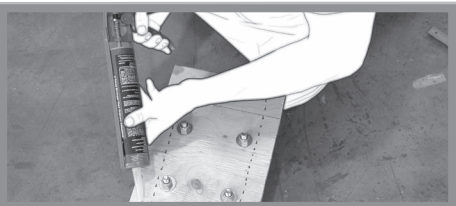
Put the plate on the beam and mark both locations of beams' lowest and upper edges onto the plate. These measurements will help you to spread the attachment screws evenly.

09



Lay out a glue line so that it is in contact with the beams' lowest and highest sections.

10



Apply a thin line of glue on previous drawn lines...

11



Stick the plate on the beam by aligning your reference marks. Tighten everything with a clamp.

12



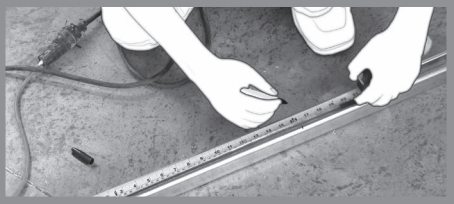
Set screws in the predrilled holes.

13



Repeat the procedure on the opposite beam.
Then, measure the distance between the two fastening plates.

14



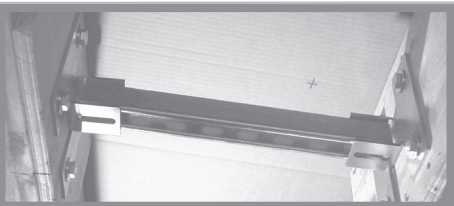
Transfer this measurement onto a strut channel.

15



...and cut it to the determined length.

16



Put the strut channel into the "H-brackets" of the two fastening plates.

17



Install the required hardware...

18



...and tighten firmly.

19



Place a saddle nut and a portion of a threaded rod.

20



Firmly tighten the saddle nut.

21



The "Lite" ceiling lifts are designed to support a maximum working load of 100 kg (220 lb). Some methods have been specially developed to facilitate the installation.

The anchoring system methods for light installations are almost the same as those intended for conventional ceiling lifts (272 kg [600 lb] or more). For light installations, use the installation details found in this section, and follow procedures explained in the previous sections (2 x 4 in, 2 x 6 in, and TJI).



NOTE...

The methods described in this section ("Light installations") can only be applied to "Lite" Ceiling Lifts that are LIMITED TO THEIR INFERIOR LIMIT OF 100 kg (220 lb).

In all other cases, it is mandatory to follow the anchoring methods for the conventional ceiling lifts (272 kg [600 lb] or more).

Light Installations

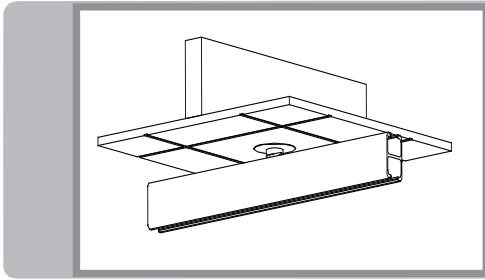
Special Considerations

The purpose of this step:

- The structural engineer hired by the client is responsible for verifying the adequacy of the structure that will support the load.

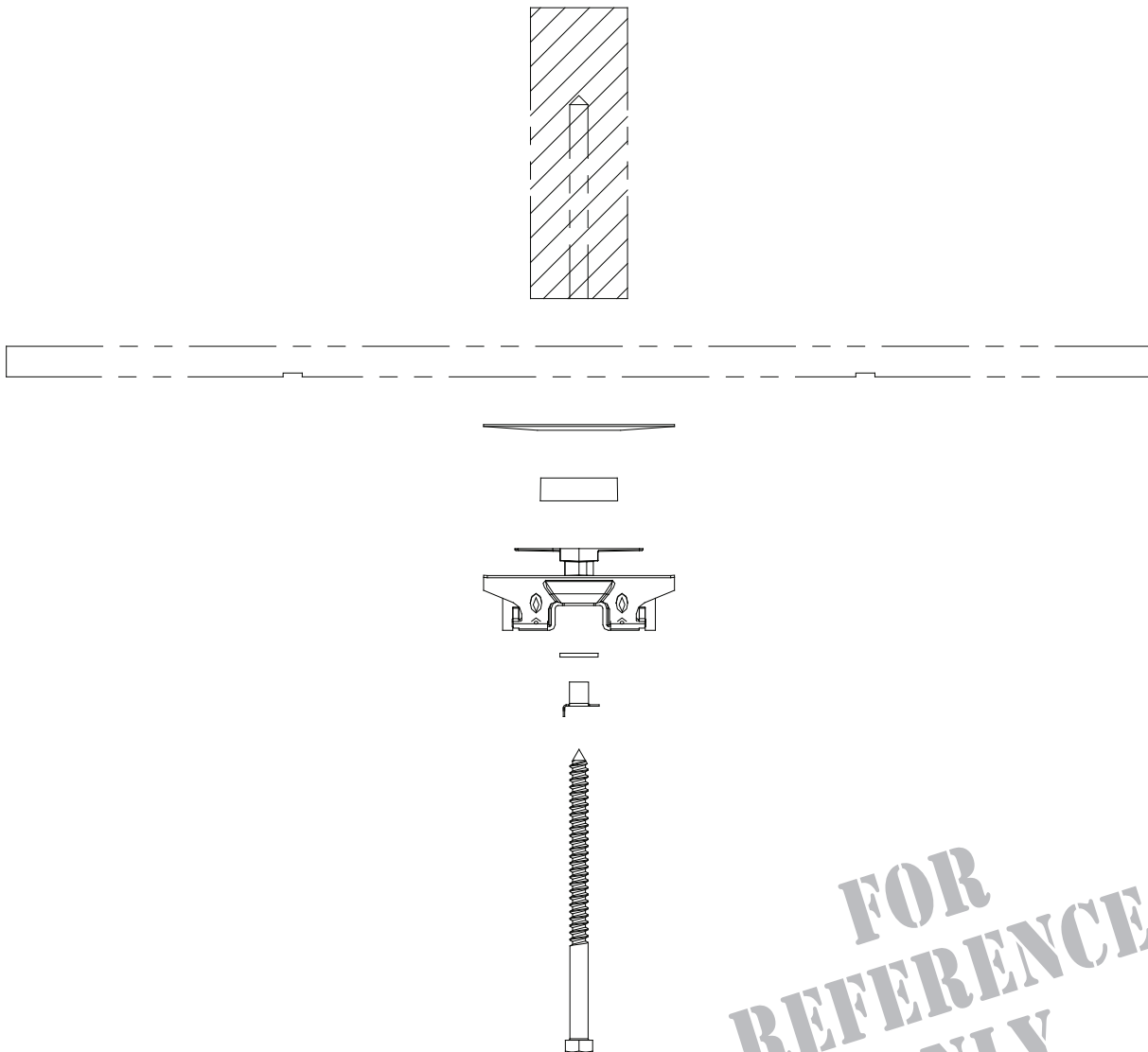


Detail: Wood 2x4 in Directly



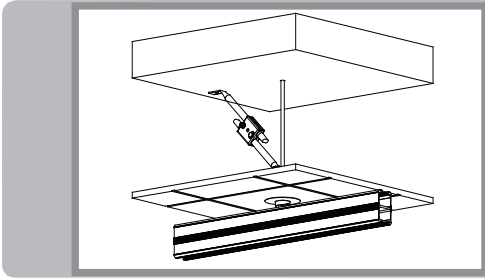
This detail is valid for the Lite Ceiling Lifts motors limited to 100 kg (220 lb) only. A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 12110.50



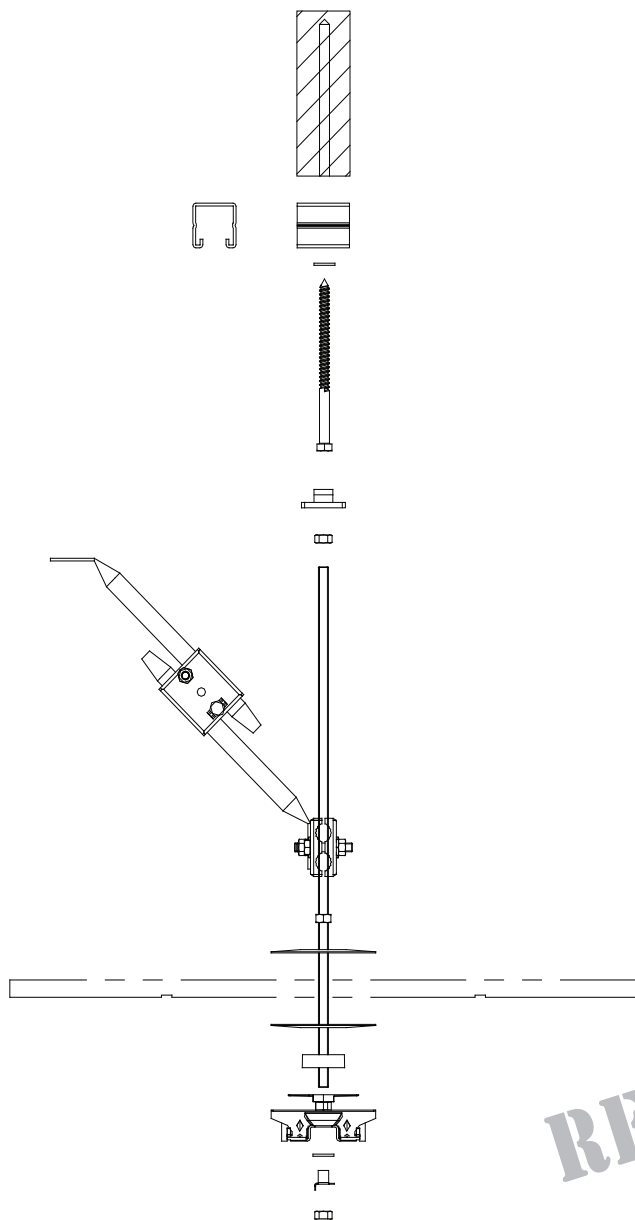
**FOR
REFERENCE
ONLY**

Detail: Wood 2x4 in With Tiles

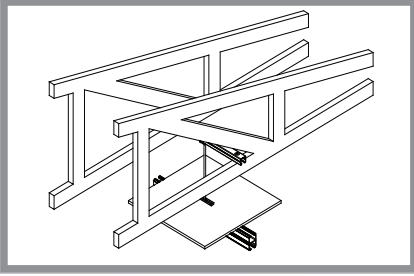


This detail is valid for the Lite Ceiling Lifts motors limited to 100 kg (220 lb) only. A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 11210.50

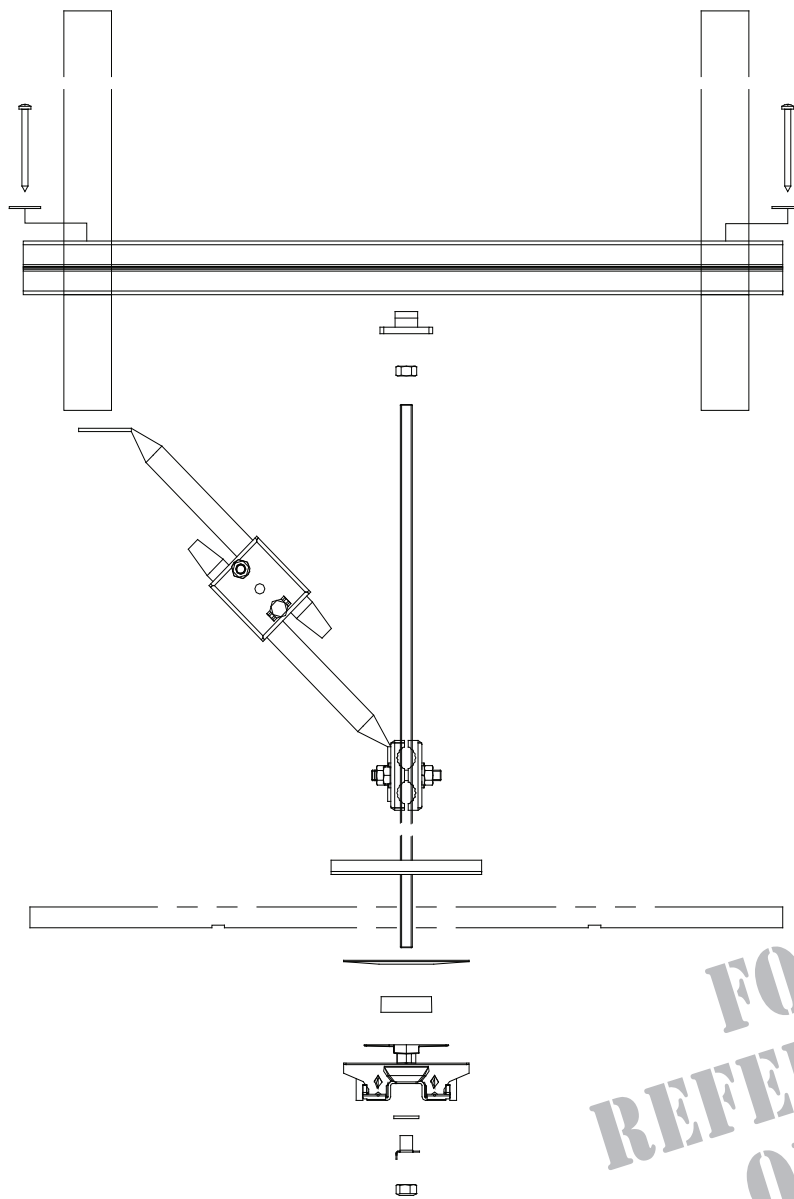


Detail: Roof Trusses 2x4in With Tiles



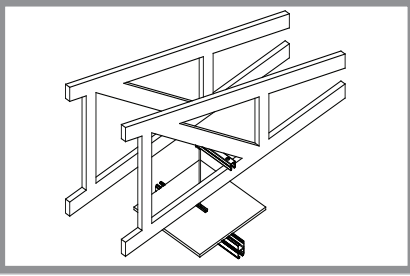
This detail is valid for the Lite Ceiling Lifts motors limited to 100 kg (220 lb) only. A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 11210.51



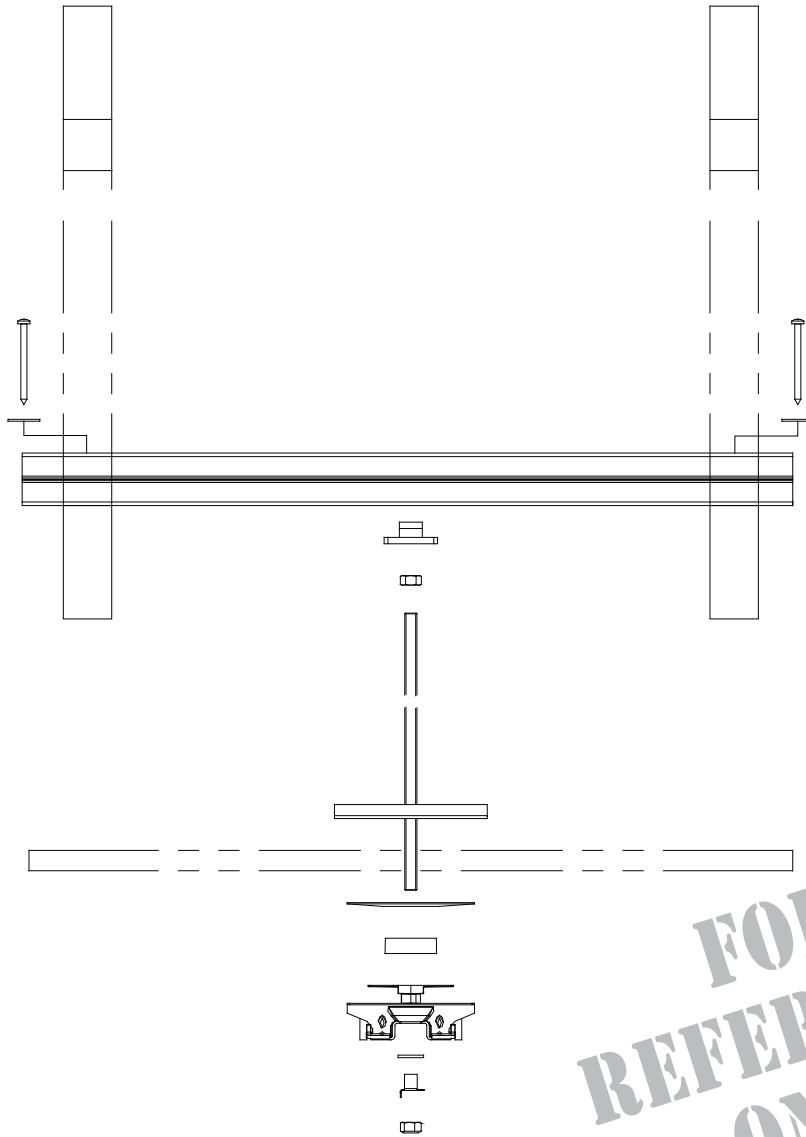
**FOR
REFERENCE
ONLY**

Detail: Roof Trusses 2x4 in With Drywall



This detail is valid for the "Lite" Ceiling Lifts limited to 100 kg (220 lb) only. A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 12210.51



**FOR
REFERENCE
ONLY**

Annexes

Wood Structure details

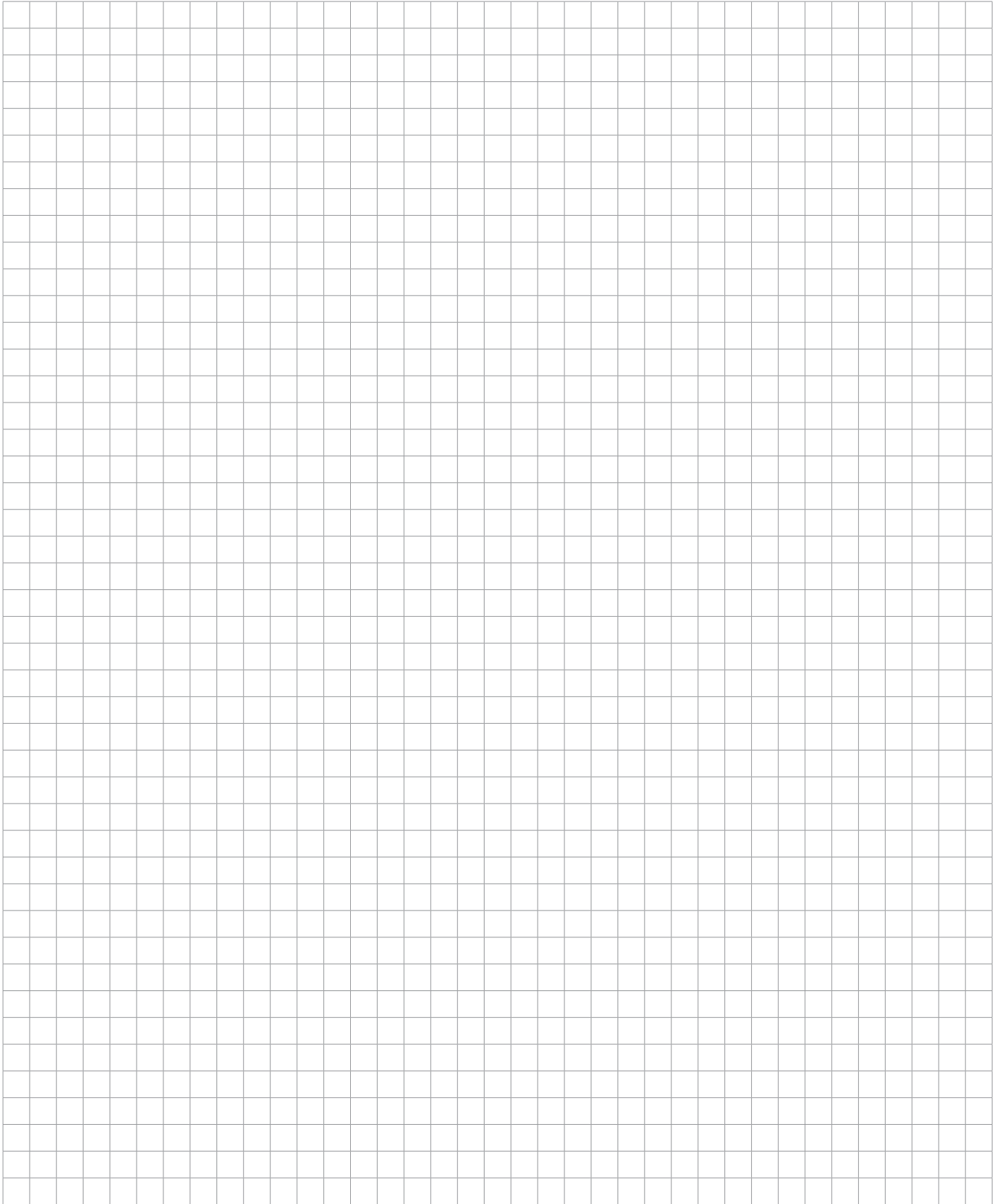
Drawing List

Number	Description	Comment
11210.01	2 x 6 - Suspended Tiles	
11210.04	Installation on 2 x 4 Wood Trusses/Tiles	
11210.08	Installation on Engineering Wood Joist/Tiles	
11210.50	Wood 2 x 4 in With Tiles	Max. SWL 120 kg (264 lb)
11210.51	Installation on 2 x 4 in Wood Trusses/Gypsum	Max. SWL 120 kg (264 lb)
12110.03	Direct With Visible Unistrut	
12110.50	2 x 4 in - Suspended Tiles	Max. SWL 120 kg (264 lb)
12210.01	2 x 6 in - Drywall With Access	
12210.04	Installation on 2 x 4 in Wood Trusses/Drywall	
12210.08	Installation on Engineering Wood Joist/Drywall	
12210.50	2 x 4 in Suspended Drywall	Max. SWL 120 kg (264 lb)
12210.51	Installation on 2 x 4 in Wood Trusses/Gypsum	Max. SWL 120 kg (264 lb)



LOG ON!

ArjoHuntleigh is constantly improving its products and procedures. For this reason, it may be possible that technical drawings have been updated since this manual was produced. We highly recommend you to obtain the latest revisions of these technical drawings.





WALL TO WALL

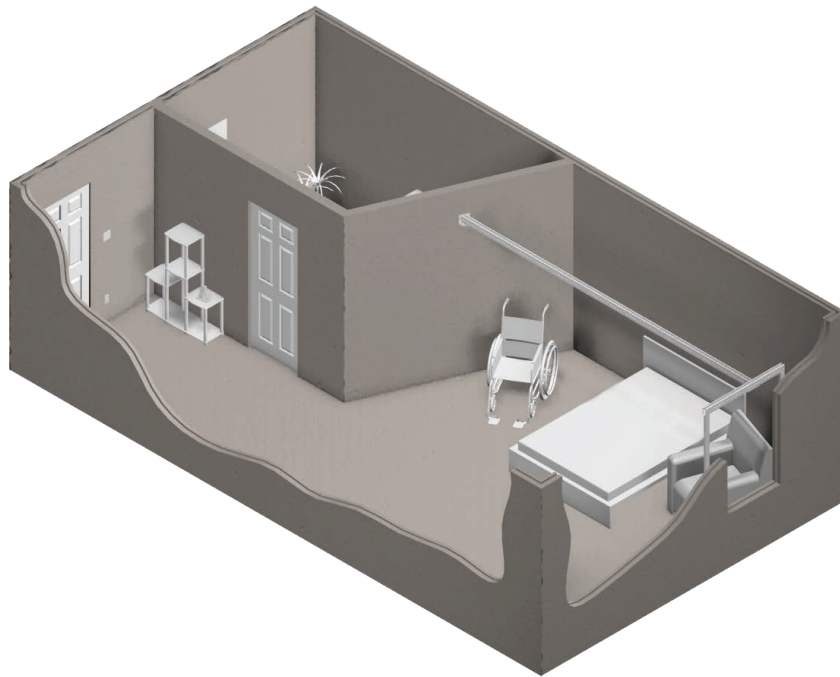
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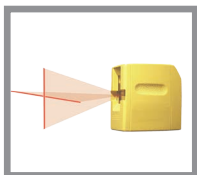
Wall To Wall, T-Junction/Wall Bracket

The purpose of this layout:

- When it is not possible to install the tracking system onto the above structure, wall applications can be the solution. Many options are possible: angled walls, wrapping around windows, etc...



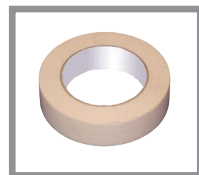
Tools required for this layout:



Crossline Laser Level (CLLL)



Tape Measure (T.M.)

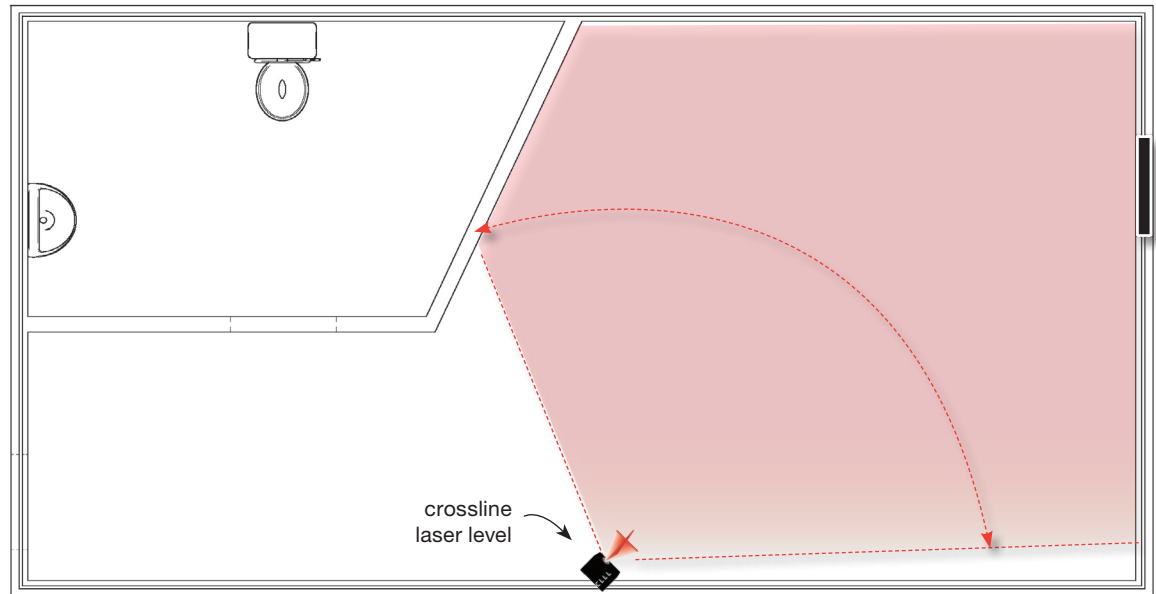


Masking Tape



Marker

Determining the Datum Point Prior To Cutting Wall Posts



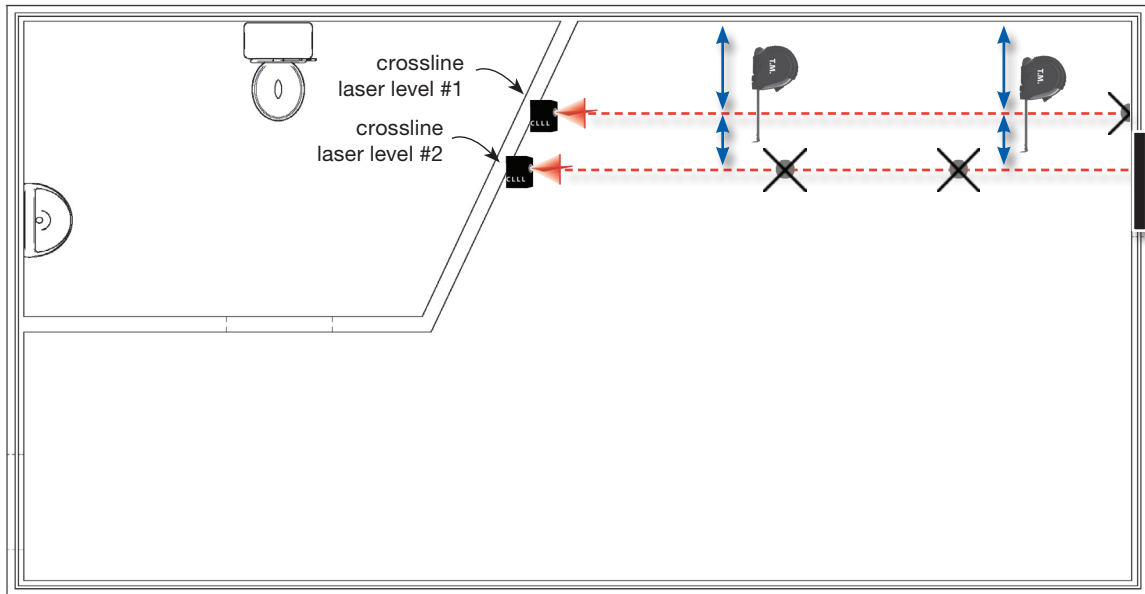
- Using the crossline laser level, position it in a location where you can establish the lowest point in the ceiling (Datum point).
- From the lowest point, measure down the width of the track and add 50 mm (2 in) make a mark on the wall. From there, measure to crossline laser level.
(Refer to document #001.12900.XX).
- If it is on the wall post side, you will not have to mark the wall bracket as it does not go mounted on the same line.
- Proceed to mark both wall posts from that mark. Measure down to the floor for the length of each wall post.
- At this point you can cut the wall posts and prepare them for installation.



NOTE...

When installing wall posts with wall brackets, you should always start with the wall posts even if the wall bracket is at the lowest point.

Determining First Wall Post Location and Transfer Point Over a Bed



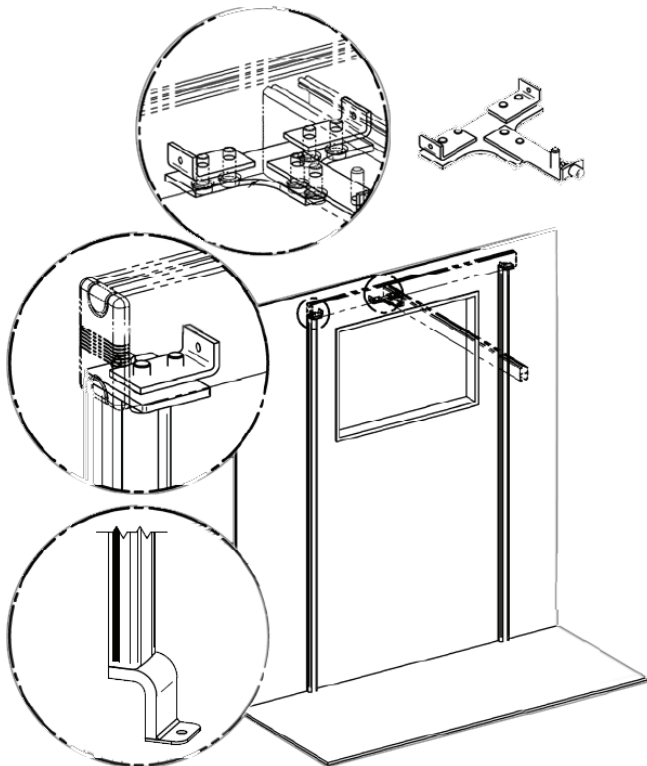
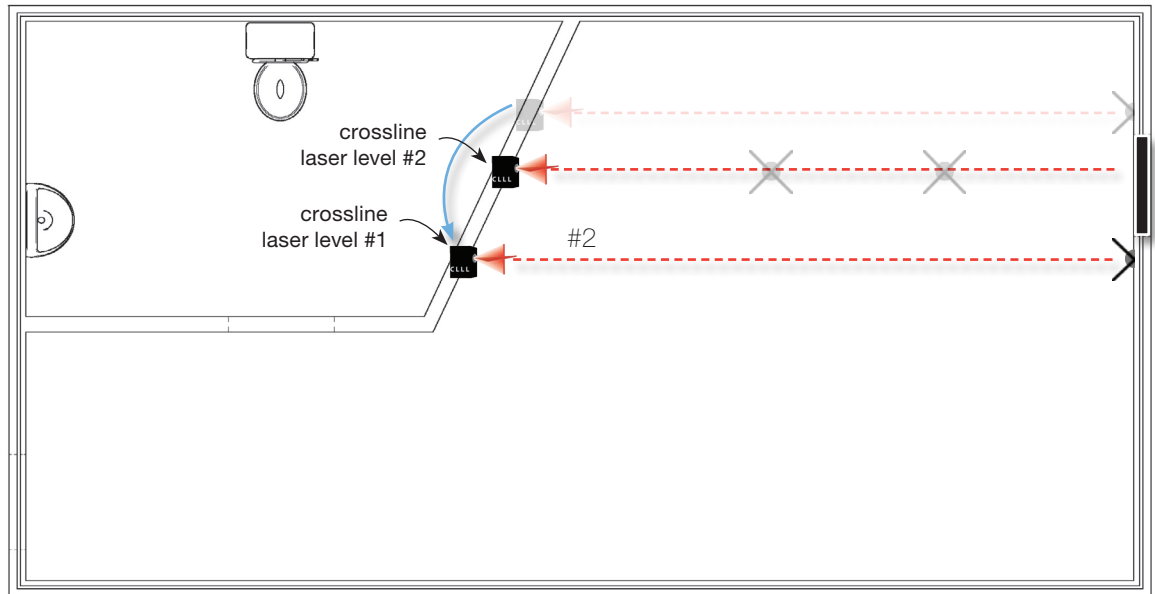
- Using a tape measure, locate the drop point over the bed.
- Make two marks on the floor and line up with the crossline laser level #1.
- Using crossline laser level #2, line up and mark for your first wall post. Make sure you are not too close to the window. Usually, 76 mm (3 in) to 127 mm (5 in) works best.
- Line the wall post up with the center of the crossline laser level #1 and mark the wall where you had predrilled the holes.
- Drill out the holes using a 10 mm (3/8 in) drill bit.
- Insert the anchors supplied and attach the wall post to the wall.

i

NOTE...

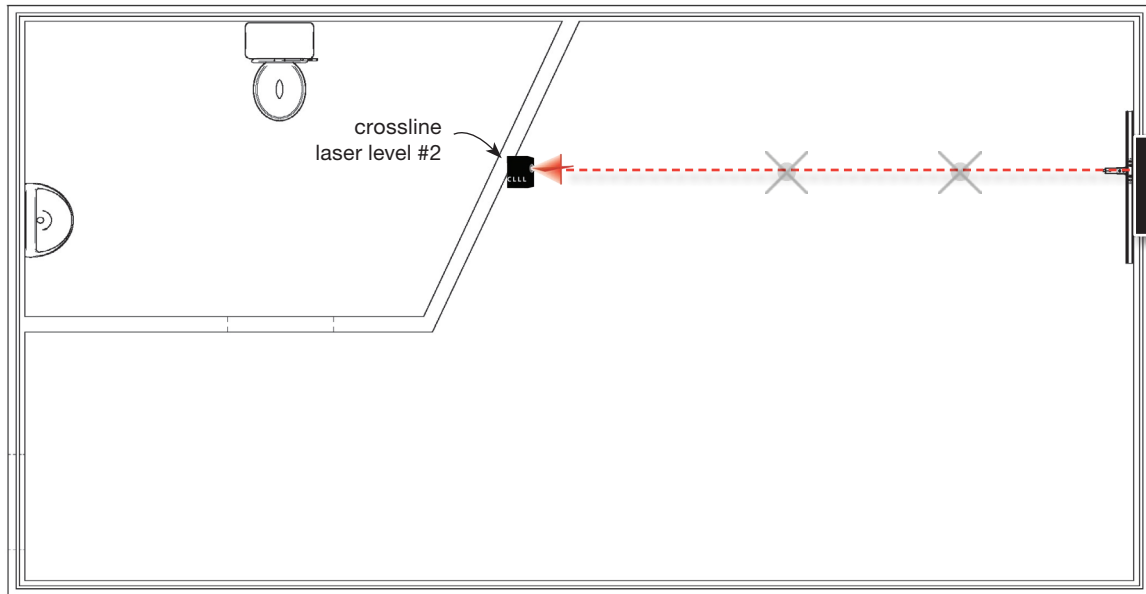
Check to see if you will need to use shims; if so, place the shim behind the wall post and drill the shim and the wall at the same time.

Installing Wall Posts, Wrapping Around a Window



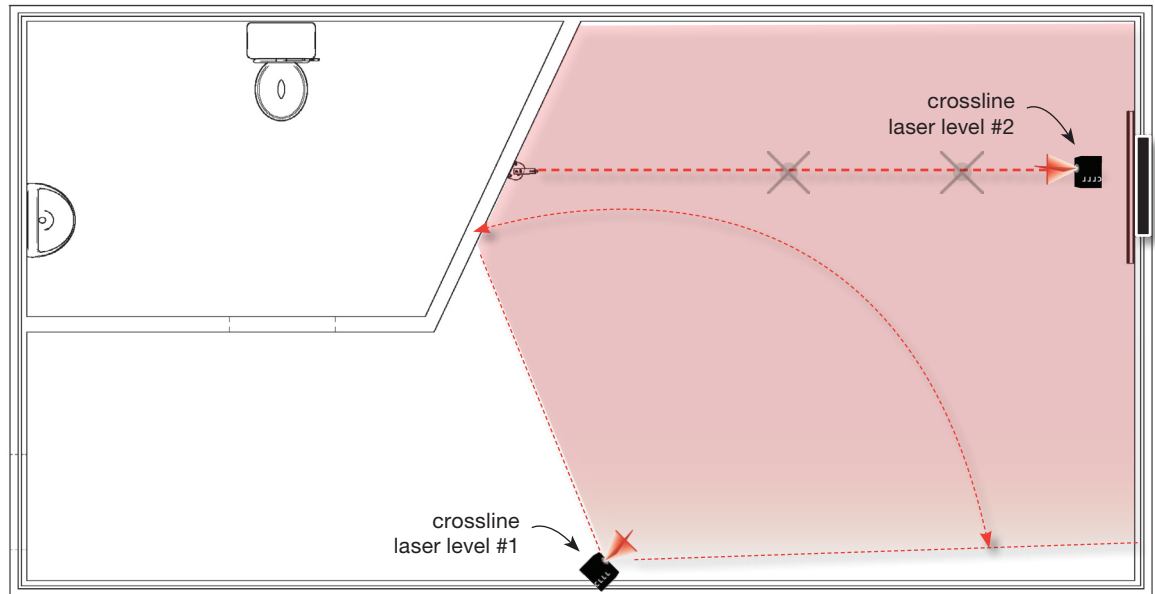
- Repeat the same step previously mentioned for the second wall post.
- Once the wall posts have been installed, install the side-mounted wall post bracket heads (Refer to document #001.12910-XX).
- You can now measure from bracket to bracket to find the length of your track.
- Once the track is measured and cut, be sure to slide in the t-junction stops before installing the track.

Positioning the T-Junction



- With the section of the track installed, we can now install the T-junction.
- Center the T-junction with crossline laser level #2, and bolt it in place.

Positioning the Third Point (wall bracket)



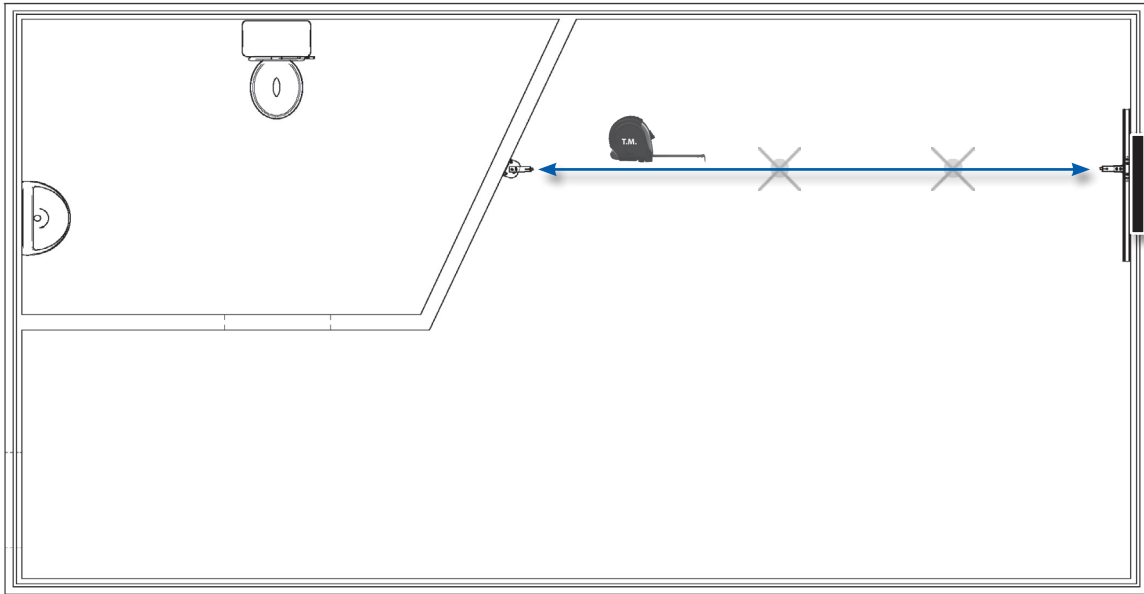
- Once we have the T-junction in place, we can now move crossline laser level #1 to the other side of the room so the line is below the T-junction.
- From the top of the T-junction measure down to the line on crossline laser level #1.
- You can now transfer that measure down to the wall bracket side of the installation using the same method.
- Line up with crossline laser level #2 and mark where the holes are to be drilled. (Refer to section 4, using the correct installation method, depending on the structure)



NOTE...

When installing wall posts with wall brackets, you should always start with the wall posts even if the wall bracket is at the lowest point.

Measuring and Installing Traversing Track



- With a tape measure, find the length of the track. Leave about 0.64 cm ($\frac{1}{4}$ in) of space on each side.
- Slide the wall bracket stop and the T-junction stop into the ends of the track and mount on the brackets.
- Line the stops up and bolt in place.
- Install PVC strip on wall posts.



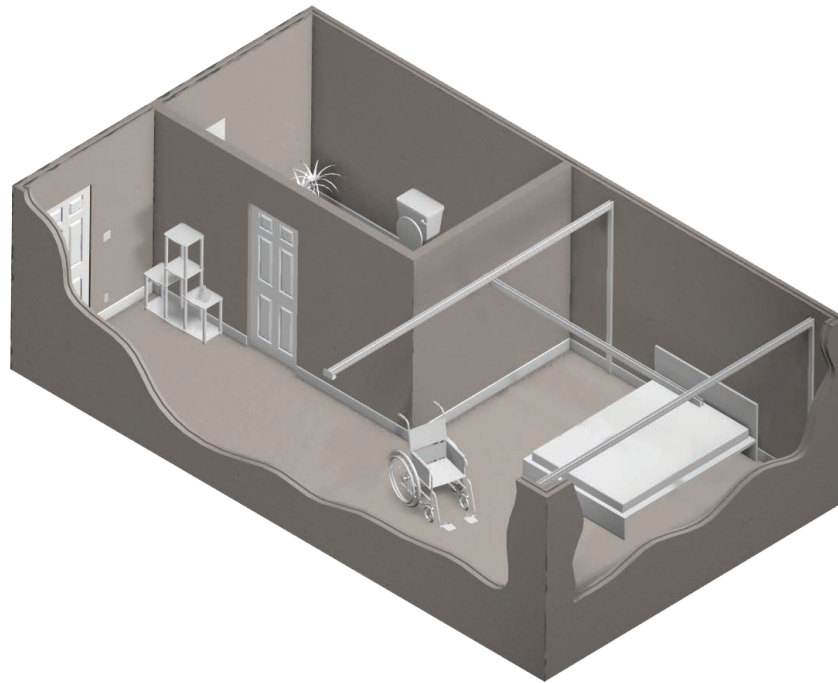
NOTE...

If you are using a portable lift in the track, you need to install the trolley before installing the track.

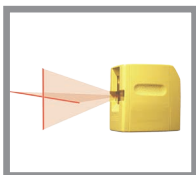
X-Y With Wall To Wall Layout

Purpose of this layout:

- Full room coverage in bedroom area
- No access to the structure above



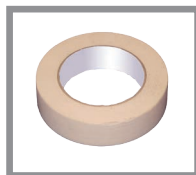
Tools required for this layout:



Crossline Laser
Level (CLLL)



Tape Measure
(T.M.)

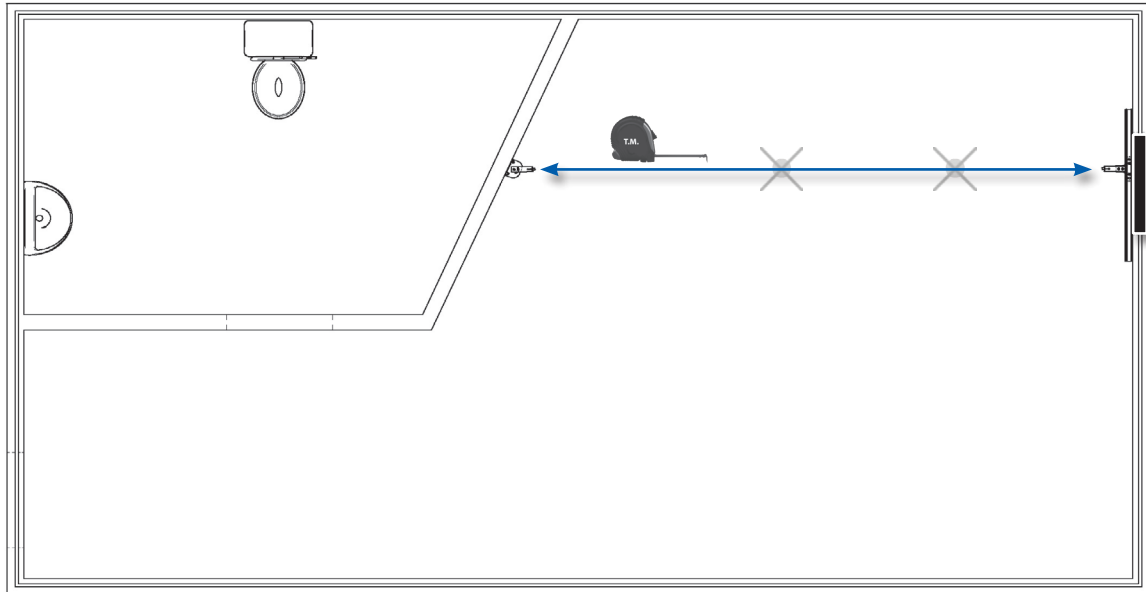


Masking Tape



Marker

Finding the Datum Point To Ensure Spacing Above Fixed Tracks



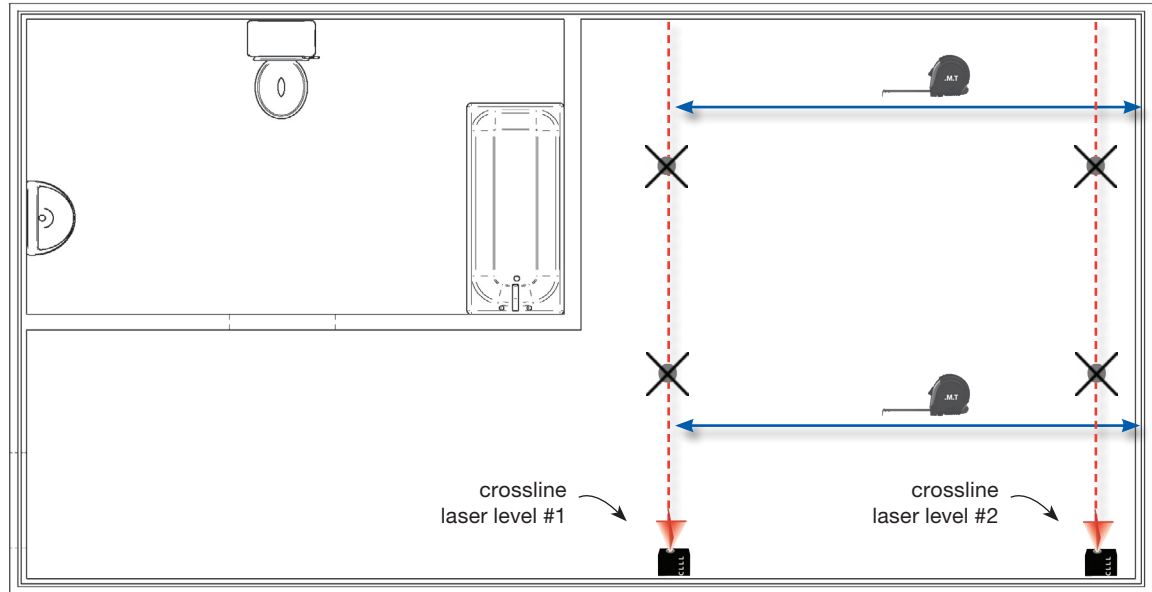
- Find the lowest point in the area where you will be installing the wall posts and wall brackets.
- Measure from the ceiling down the width of your fixed track and add 5.08 cm (2 in).
- Mark that spot.
- From that mark measure down to your crossline laser level #1.
- Transfer that measurement to all wall post locations. (Refer to document #001.12900-XX)



NOTE...

When installing wall posts with wall brackets, you should always start with the wall posts even if the wall bracket is at the lowest point.

Identifying Wall Post Locations and Heights



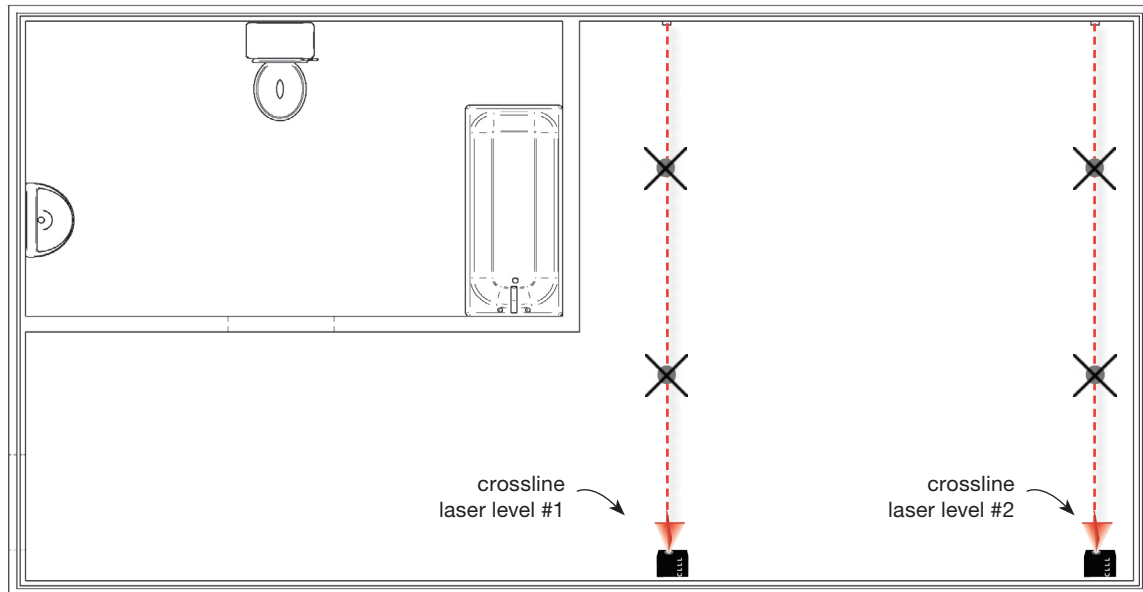
- Find the exact location of the wall posts and measure from the wall marks to the floor; that will be the length you will need to cut the wall posts to.
- Then you can prepare the wall posts for installation.
- Be sure the use the crossline laser level #1 to mark lines on the floor.
(Refer to document #001.12900-XX)



NOTE...

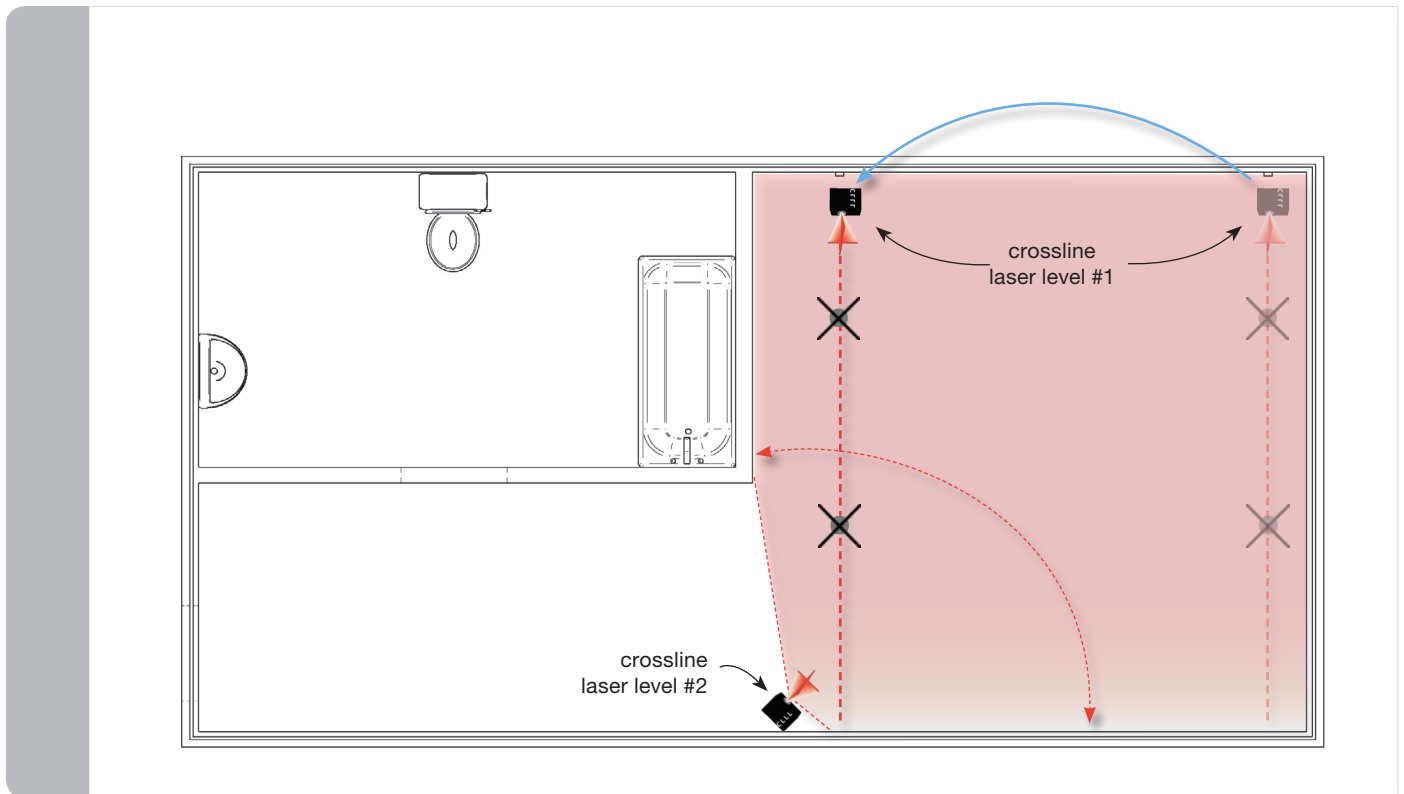
A good practice would be to number the wall posts according to the location where they are being installed.

Install Wall Posts On Headwall



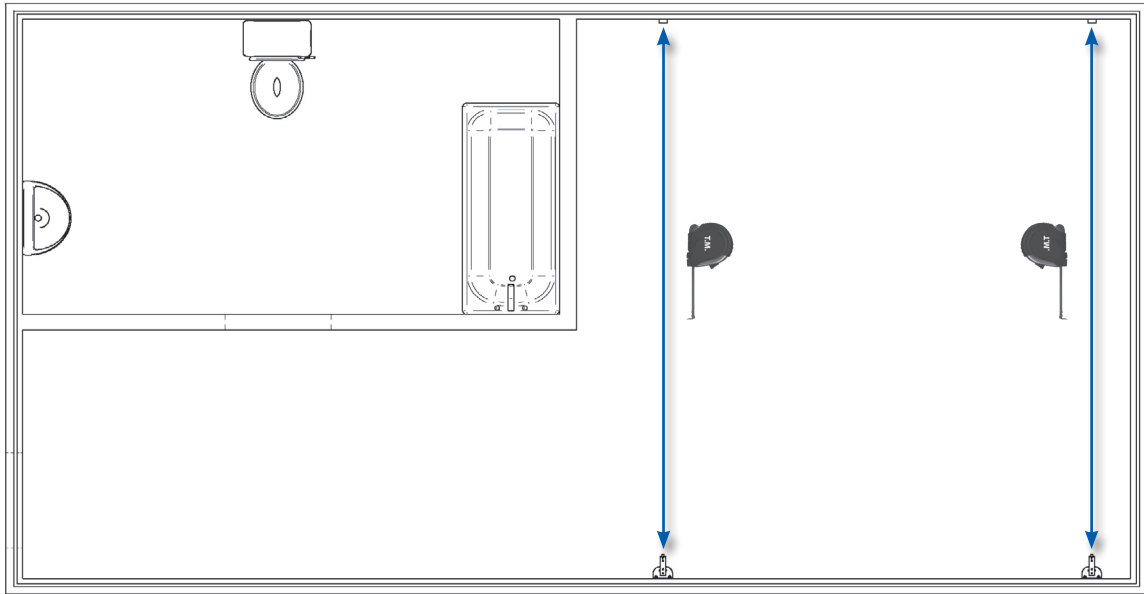
- Line the wall posts up with your crossline laser level.
- Mark the wall with a 6.3 mm (1/4 in) drill bit using the holes you predrilled.
- Move the wall posts and re-drill the holes in the wall with a 9.5 mm (3/8 in) drill bit.
- Insert the expansion anchors supplied and install the wall post.
- Use the same method for both wall posts.
- Install the wall post brackets. (Refer to document #001.12900-XX)

Identifying Wall Post Locations and Heights



- Turn crossline laser level #1 ground and line it up with the marks on the floor.
- Set up crossline laser level #2 to cover all four walls.
- With a tape measure, establish the measure from the lowest point on the wall post bracket to the line of the crossline laser level.
- Transfer the measurement onto the wall bracket.
- Adjust the wall bracket until it lines up with crossline laser level #1.
- Adjust the height until you achieve the correct measurement and mark the holes for drilling.
- Install the wall bracket depending on the structure described in section 4.
- Move the crossline laser level #1 to the second wall post and repeat the procedure.
(Refer to document #001.12900-XX)

Finding the Datum Point To Ensure Spacing Above Fixed Tracks



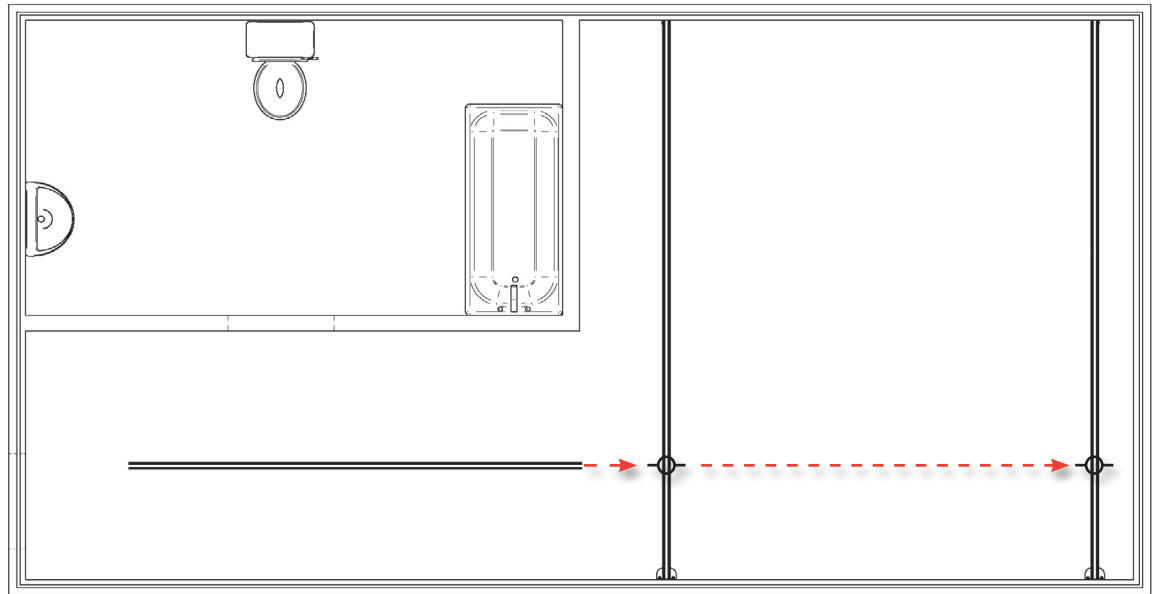
- With a tape measure find the length of the track. Leave about 6 mm (1/4 in) of space on each side.



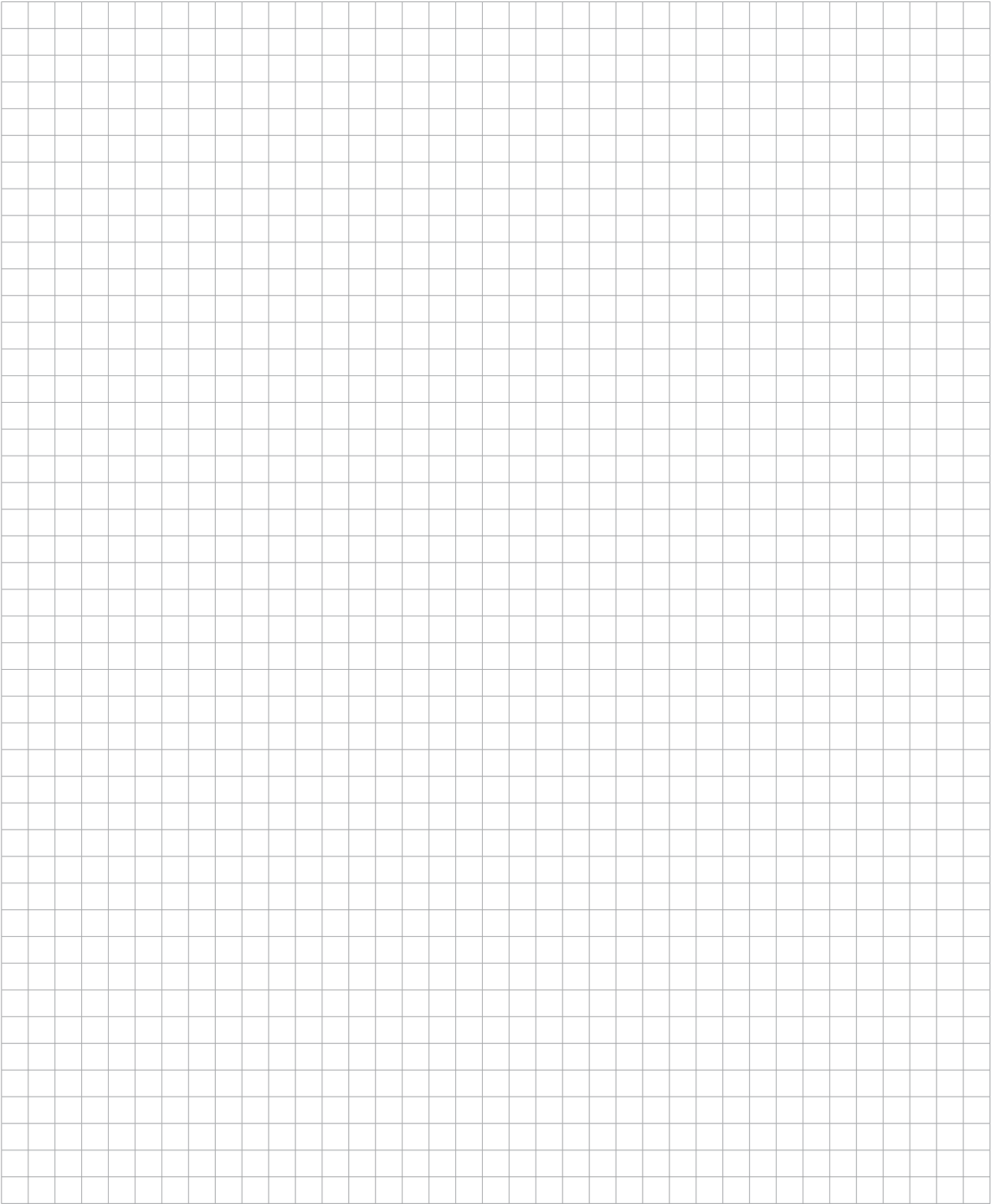
NOTE...

Make sure you install the X-Y trolley and the bracket stops before mounting the track.
The charging location will determine where the fixed trolley will go.

Identifying Wall Post Locations and Heights



- Slide the moving track through one of the trolleys.
- Install the autoblock stoppers and slide the track through the next trolley.
- Adjust the autoblock and lock down the fixed trolley.
- Install the autoblocks and end caps and lock into place.



Structure Family: Wall to wall - Posts

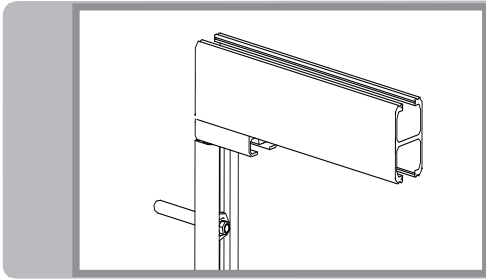
Special Considerations

Purpose of this step:

- The structural engineer hired by the client is responsible for verifying the adequacy of the structure that will support the load.
- Follow manufacturer's instructions for anchor installation.

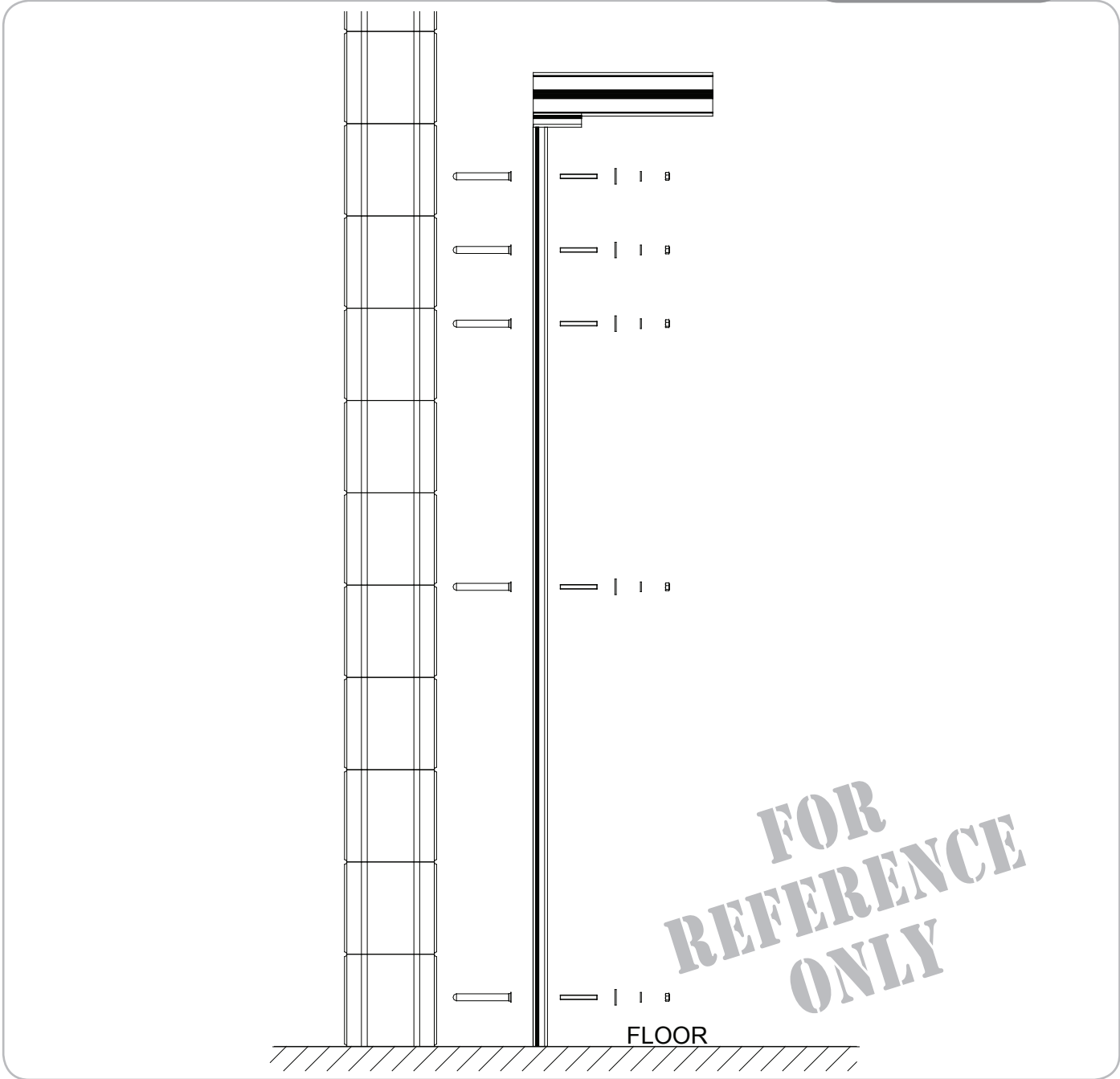


Detail: Wall Posts - Concrete

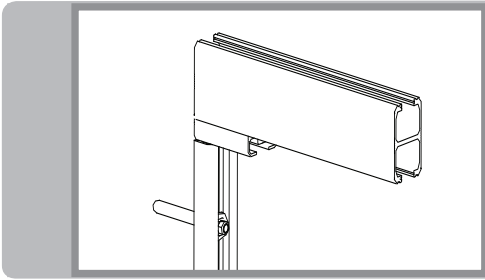


A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 30004.01

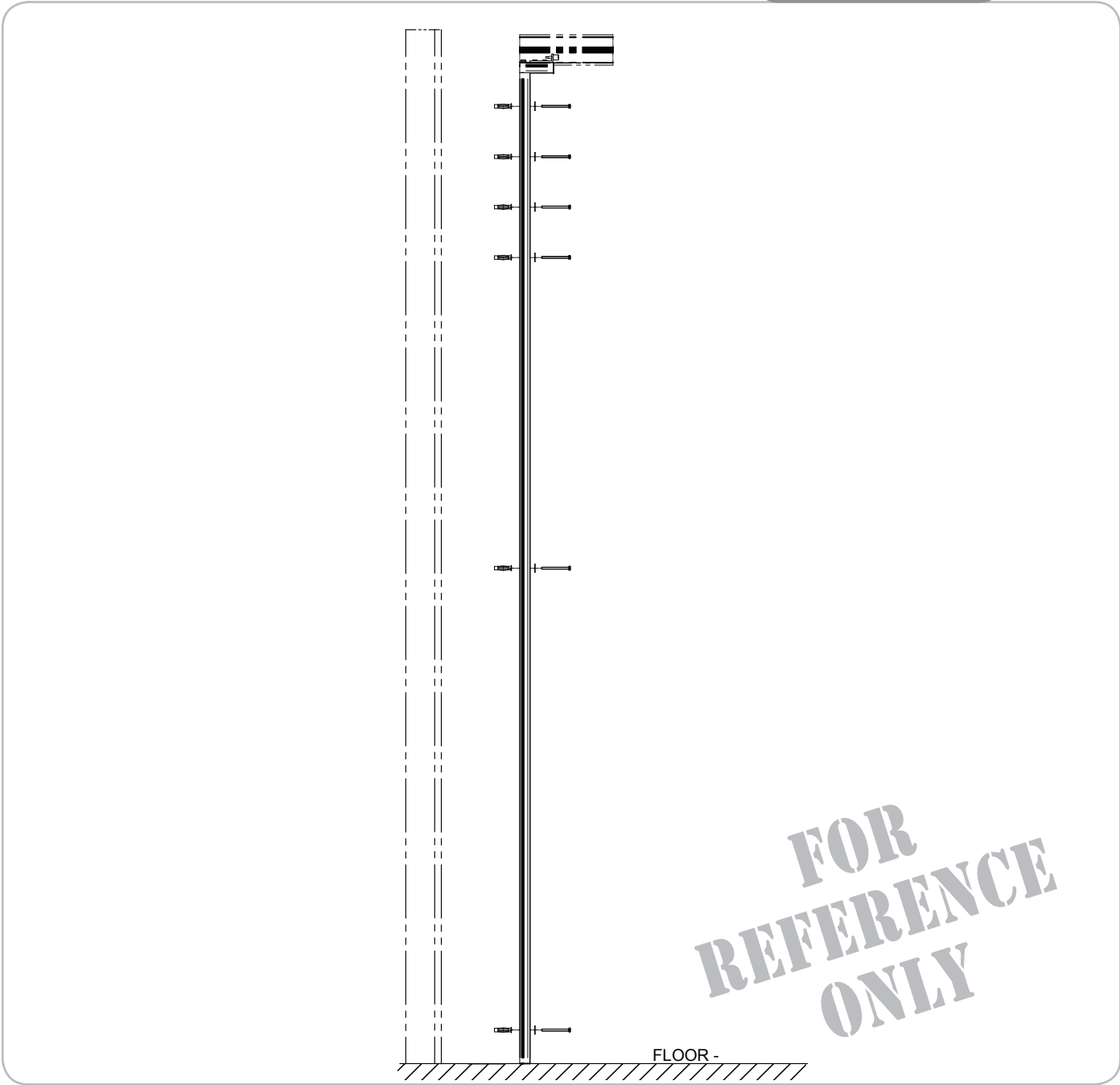


Detail: Wall Posts - Drywall (wood framing)



A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

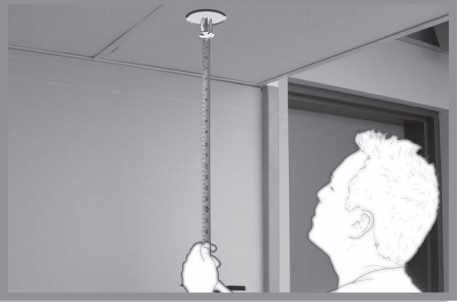
Ref.: 12004.01



Method: Wall to Wall Posts

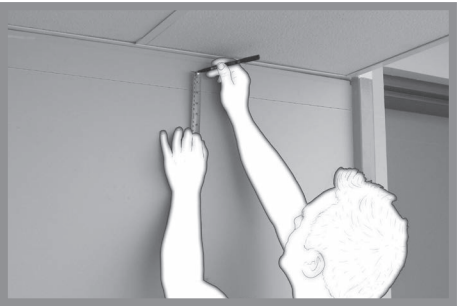
Before performing this step, refer to step 4 for layout, bracket positioning and transfer points.

01



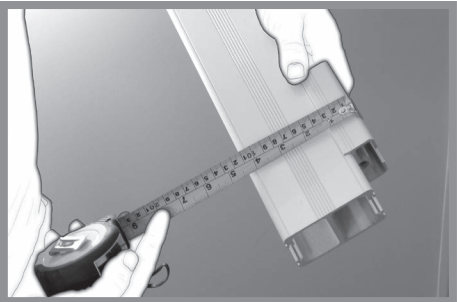
Measure the distance between any possible obstructions (e.g. sprinklers) and the reference laser line.

02



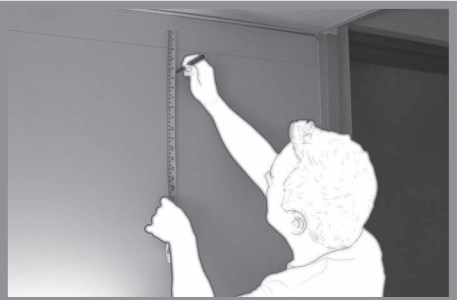
Transfer this measurement onto the wall.

03



Measure the height of track to be installed...

04

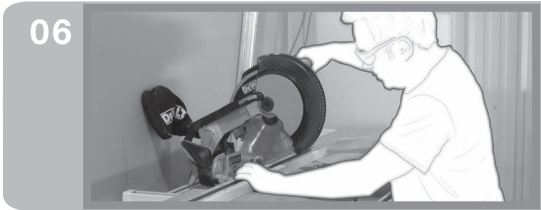


...and transfer it under the reference laser line of the sprinkler. Or, in case there is no obstruction, retransfer it at 2 in from the suspended ceiling.



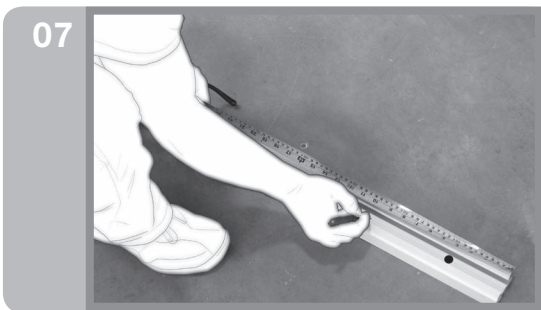
05

Measure the distance between this mark and the floor.



06

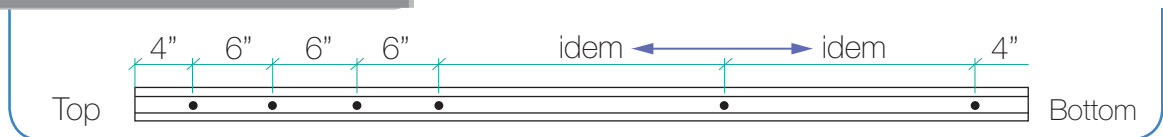
Cut the post to the measured length.



07

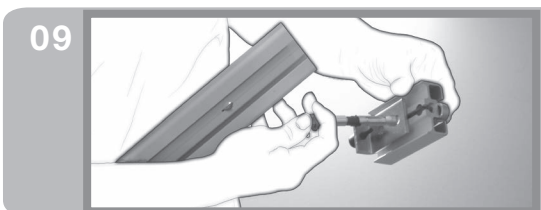
Following the sketch below, mark the 6 points to be drilled on the post.

In other words, at 100 mm (4 in) from the bottom. At 100 mm (4 in), 250 mm (10 in), 400 mm (16 in) from the top, and halfway to the remaining part.



08

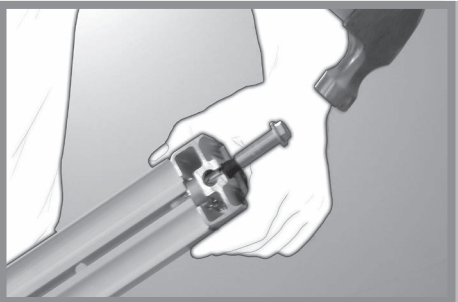
Drill holes.



09

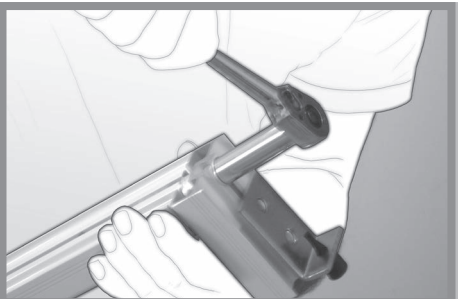
Place the HSL anchor provided with wall post into the post's head...

10



...and insert it in.

11



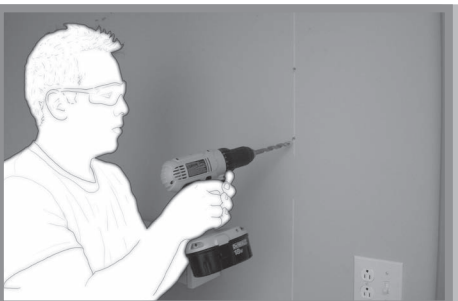
Then, tighten it firmly.

12



Place the post against the wall and predrill the holes by using the post's holes as reference points.

13



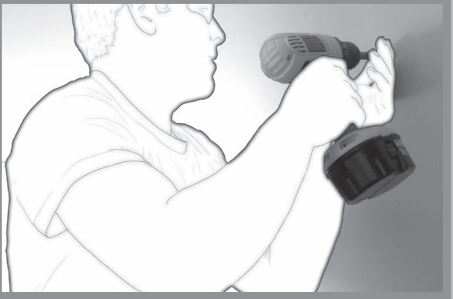
Remove the post and finish drilling the holes into the wall.

14



Insert anchors.

15



To set the anchors use the provided 6.3 mm (1/4 in) bit included with wall post. Continue turning the bolt using 13 mm (1/2 in) or 10 mm (25/64 in) socket on drill.



This step is essential for correctly securing the post. Without it, anchors will not be locked and there may be a high risk of them detaching themselves.

16



Remove screw for set anchor, place predrilled post against the wall. Place provided washer as well as the 6.3 mm (1/4" in) bolt on the screw.

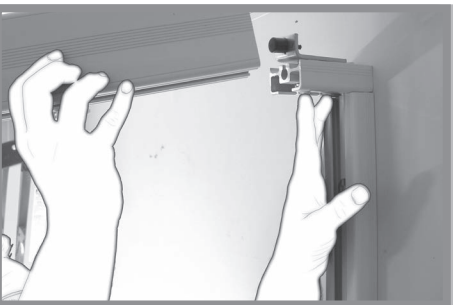
17



...and tighten them firmly.

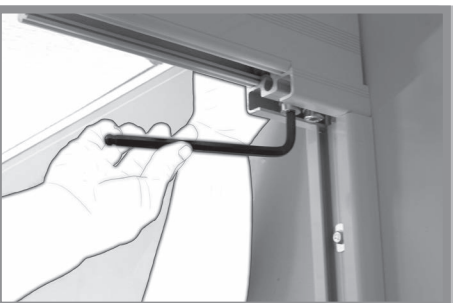
Be careful: overtightening the bolt will cause the anchor to pull itself out.

18



Once the second post is attached by following the same method, place the track on its support... Follow the same method for opposing post. We can now add the post. Remove the end stopper on the post head and slide into the track.

19



...and tighten firmly.

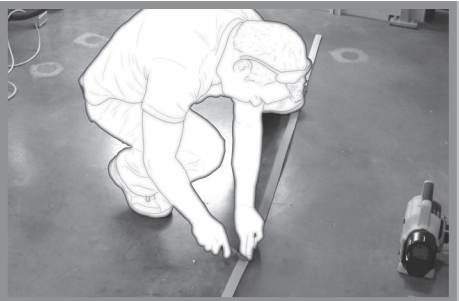
Need to redo these steps.

20



Measure the distance between bottom at post head and floor...

21



...and cut a piece of a PVC strip to this length.

22

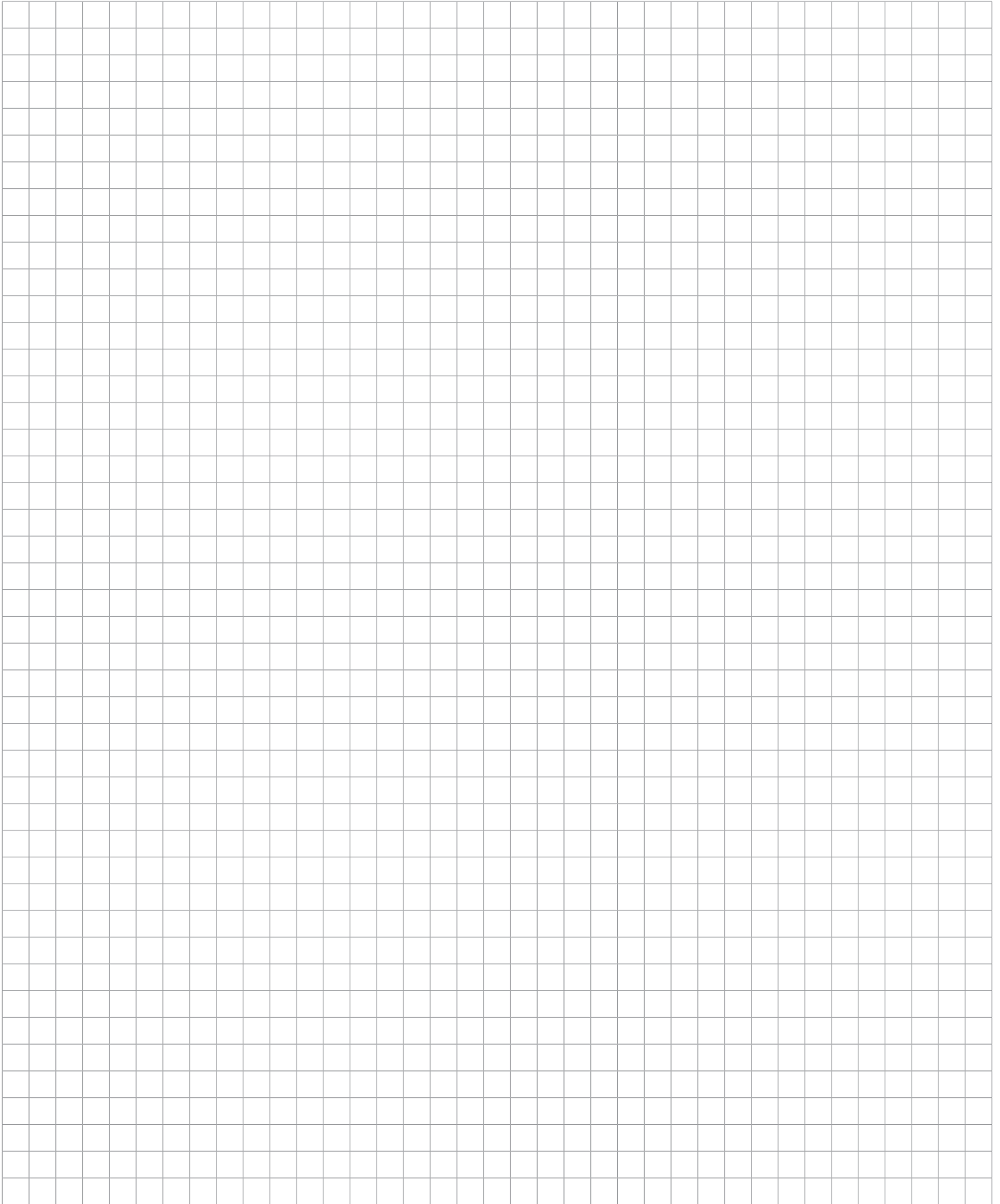


Fasten this PVC strip onto the post, below the track's end stopper.

23



Finally, stick self-adhesive on the track end stopper.
Need to redo.



Structure Family: Wall To Wall - Wall Brackets

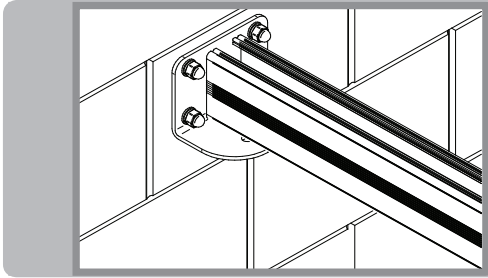
Special Considerations

Purpose of this step:

- The structural engineer hired by the client is responsible for verifying the adequacy of the structure that will support the load.
- Follow manufacturer's instructions for anchor installation.

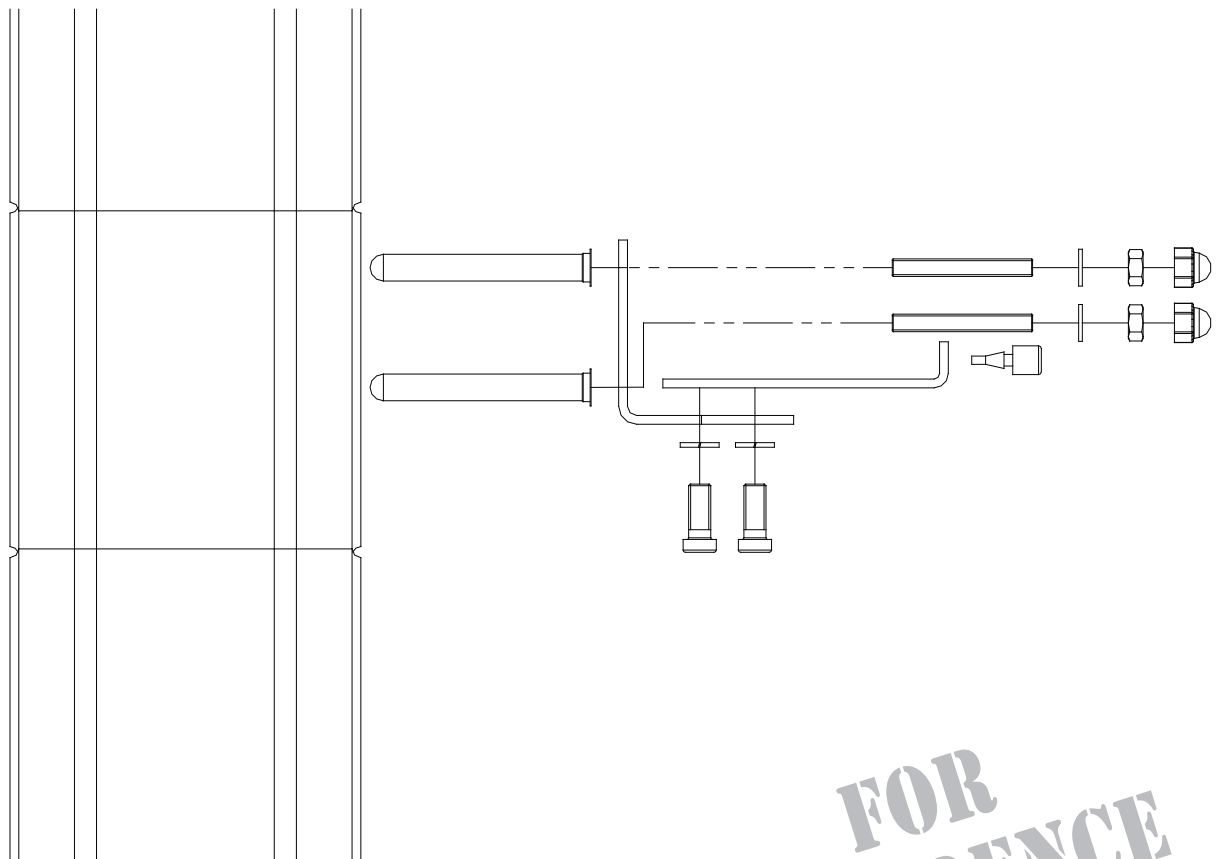


Detail: Wall Brackets - Concrete Blocks



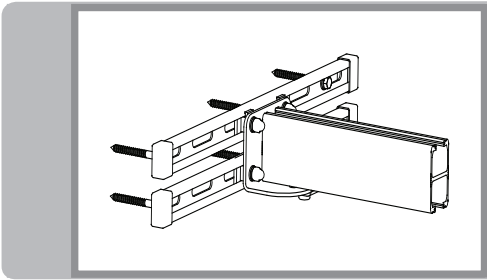
A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 30005.01



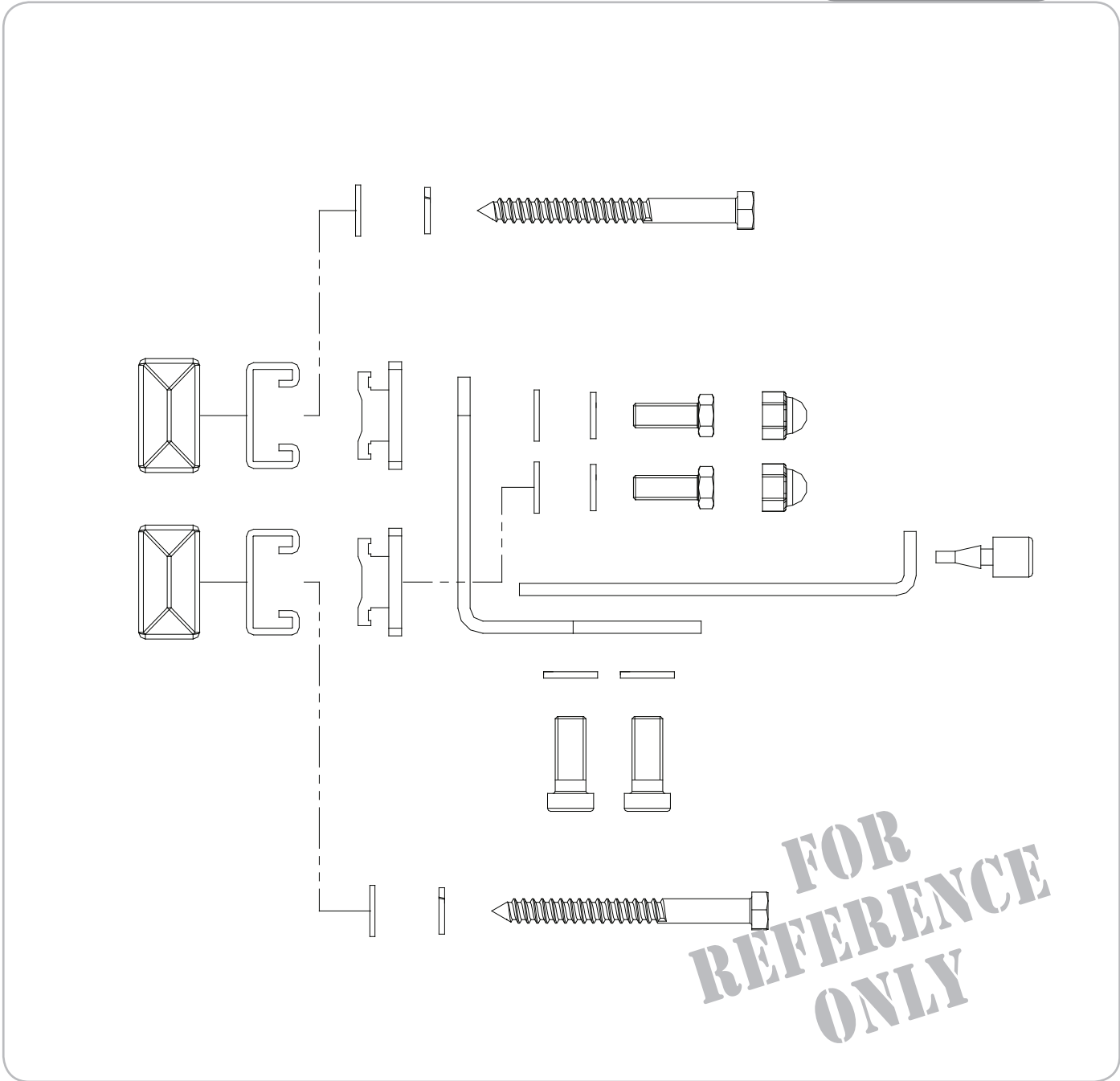
**FOR
REFERENCE
ONLY**

Detail: Wall Brackets - Wood



A detailed and updated version of this technical detail is available in the restricted section of the ArjoHuntleigh website (directions are enclosed in the appendix).

Ref.: 12005.01



**FOR
REFERENCE
ONLY**

Method: Wall Brackets

Before performing this step, refer to step 3 for layout, bracket positioning and transfer points.

01



Measure the total height of the track installed on the wall bracket.

02



Transfer this height at 50 mm (2 in) under the suspended ceiling, 25 mm (1 in) below the lowest ceiling height

03

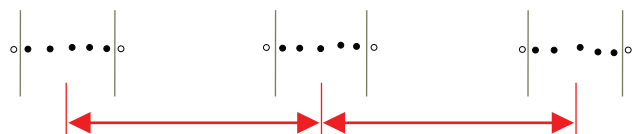


Taking into account these marks, place the wall bracket on the wall and mark 4 holes with a dot. Make sure the bracket is perfectly horizontal.

04



Find the joists' positions by drilling little holes side-by-side as represented on sketch below. Measure the distance from axis to axis of three joists.

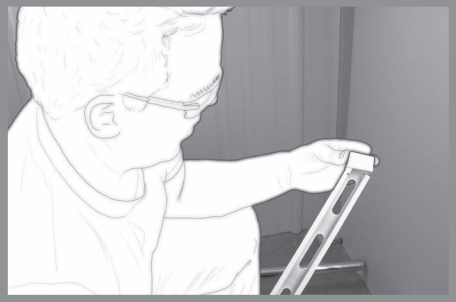


05



Transfer this measurement onto a white "C" strut length, add 100 mm (4 in) to it then cut the strut. Repeat this step to get two lengths per bracket.

06



Place three washers and white caps onto the bracket.

07



Drill holes in the middle of the three joists and place the hardware in it.

08



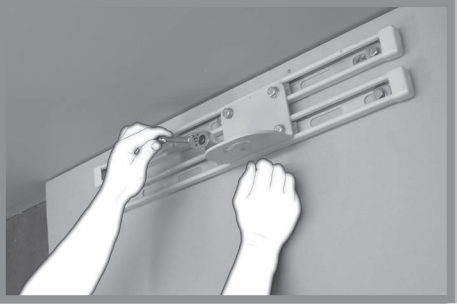
Tighten firmly.

09



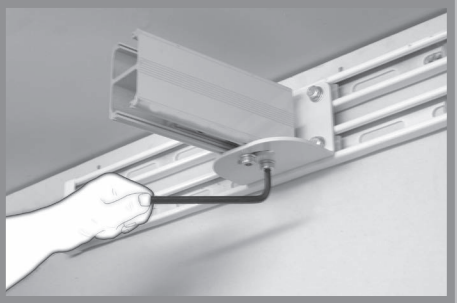
Repeat this step for the second "C" strut. Place the four strut nuts.

10



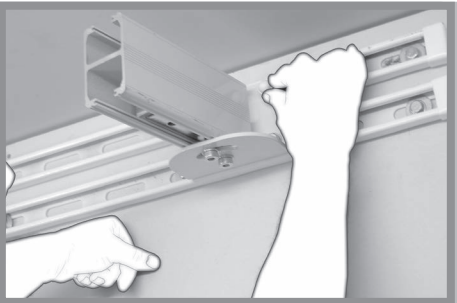
Tighten the attachment hardware.
Insert into end of track, then sit track on Wall Bracket

11



Install the track, adjust the angle and lock the attachment by firmly tightening the hardware.

12



Add the four white caps.

13



A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.



Table of contents

ECS Installation	204
Installing an ECS System Into an X/Y Installation	204
Installing the ECS System Into a Layout Of Tracks	206

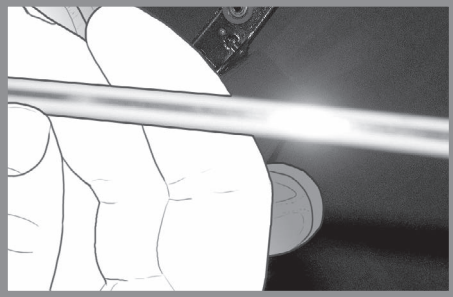
ECS Installation

Installing an ECS System Into an XY Installation

The purpose of this step:

- Place copper strips into the grooves along the bottom of the tracks.
- Attach the cable system and lock the attachments and end caps.
- Attach the tracks.

01



Place the contact strips into the mobile track and into one of the two straight tracks (the one which will power the charger). Cut two lengths of contact strip per track, cutting them an additional 25 mm (1 in) more than the track's length.

02



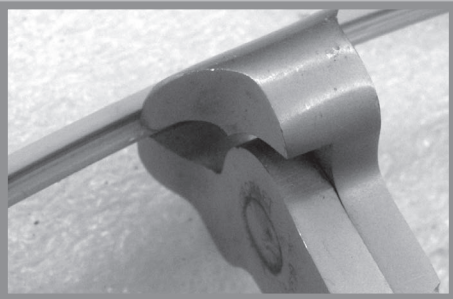
Before installing the contact strips, make sure the copper part is flush with the rubber strip end.

03



Using holding blocks, insert one contact strip into the mobile track and one into the fixed track that is going to receive the charger.

04

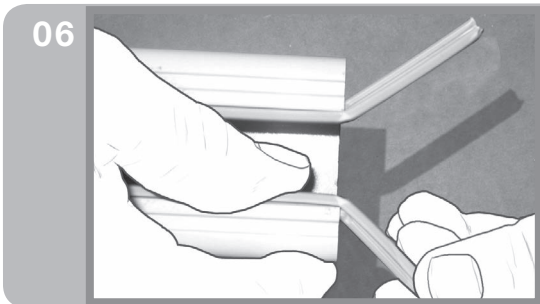


At joints, using a pair of cutters, carefully cut the contact strip bottom part at a 50 mm (2 in) length so as to avoid the spring pins. Do not expose the copper strip.



05

With the proper tool, insert the contact strips into the grooves.



06

Make sure the strips are well placed.
Then, fold the exceeding strip lengths at each end of tracks and cut them down to approximately 10 mm (3/8 in) past the end of track.
This will facilitate the step where the contact box is inserted.



07

Install the two ECS trolleys into the mobile track. Make sure to install the trolley equipped with a wire on the same side that the charger is going to be installed.
Slide the trolley and the track into the two straight tracks. Insert the motor into the mobile track.



08

Place an autolock stopper and a contact box at the ends of the mobile and fixed tracks, on the same side that the charger equipped with a wire is installed. The autolock stopper must be at 50 mm (2 in) from the end of the track and the contact box must be at 25 mm (1 in) from the end of the track. Then, install each autolock stopper and contact box on each end of every track, at the same distances described previously.



09

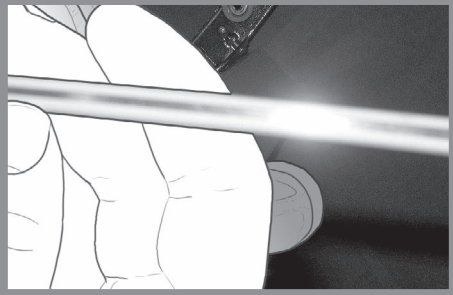
Lock all the autolock stoppers and all the contact boxes. Then, place all the end caps and lock them.
Connect the contact box's cable to the cable from the trolley.
Connect the cable from the trolley to the charger's cable.
Plug the charger into the electrical outlet.

Installing the ECS System Into a Layout Of Tracks

The purpose of this step:

- Place copper strips into the grooves along the bottom of the tracks.
- Attach the cable system and lock the attachments and end caps.
- Attach the tracks.

01



To install an ECS system, you have to install contact strips. Measure the track layout total's length. Add about 50 mm (2 in) to this measurement and cut an equivalent contact strip.

02



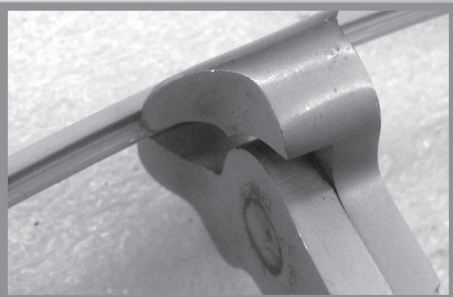
Before installing the contact strips, make sure the copper part is flush with the rubber strip end.

03



Using holding blocks, place the two contact strip lengths into the tracks.

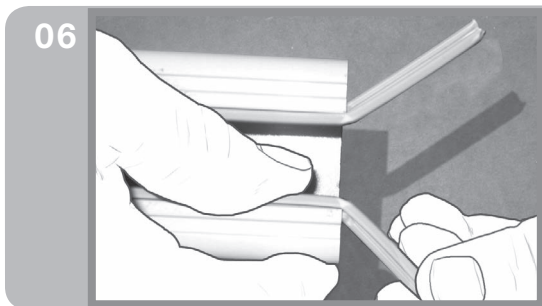
04



At joints, using a pair of pliers, carefully cut the contact strip bottom part at a 50 mm (2 in) length so to avoid the spring pins. Do not expose the copper strip.



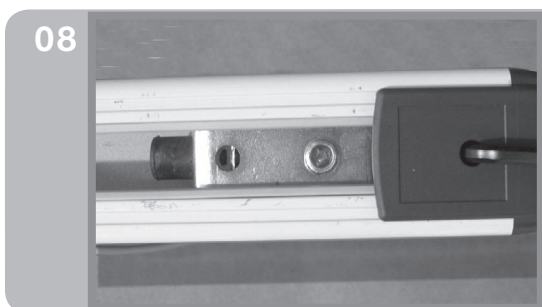
05 With the proper tool, insert the contact strips into the grooves.



06 Make sure the strips are well placed.
Then, fold the exceeding strips at each end of tracks and cut them down to approximately 10 mm (3/8 in) past the end of track.
This will facilitate the step where the contact box is inserted.



07 Place an autolock stopper and a contact box at the ends of the mobile and fixed tracks, on the same side the charger with a wire is installed. The autolock stopper must be at 50 mm (2 in) from the end of the track and the contact box must be at 25 mm (1 in) from the end of the track. Then, install each autolock stopper and contact box on each end of the tracks, at the same distances described previously.



08 Lock all the autolock stoppers and all the contact boxes. Then, place all the end caps and lock them.
Connect the contact box's cable to the cable from the trolley.
Connect the cable from the trolley to the charger's cable.
Plug the charger into the electrical outlet.

NOTE...

...the complete procedure (document #001.07650-EN) may be available upon request or at the ArjoHuntleigh website.







MIRROR STRIP

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Mirror Strip Kit For KWIKtrak Rail

Mirror Strip Installation

The purpose of this kit:

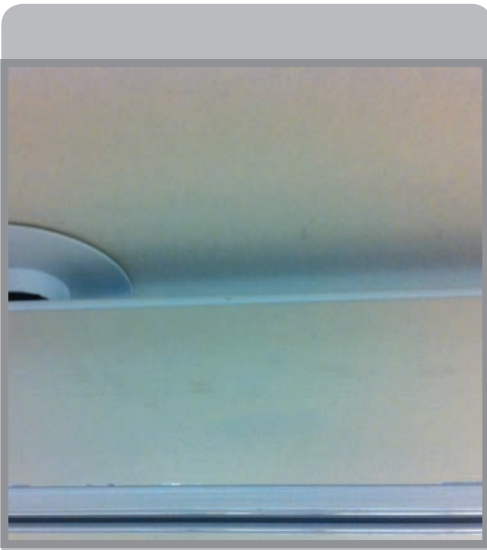
- Reduce the visual impact of a track in a ceiling lift installation by reflecting the ceiling details on the track.
- Show the compatibility of the kit with KWIKtrak 90 mm, 140 mm and 180 mm rails.

Notes:

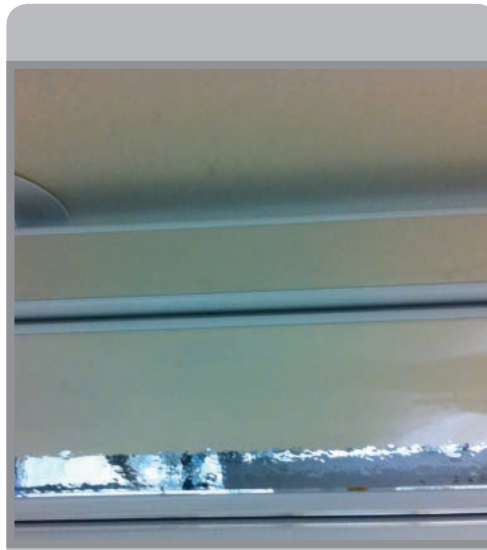
- The effect is optimal with a 90 mm rail.
- It is preferable and easier to apply the mirror strip prior to rail installation.
- Ensure that Safe Working Load (SWL) identification label is always visible on the rail after the mirror strip application.
- The application on a rail that is already installed is possible, but is more sensitive and may require the removal of some elements (e.g.: joint brackets).
- It could be decided that the mirror strip be applied on only one side of the rail, since in most layouts only one side of the rail is visible, please confirm with site manager.

Installation procedures:

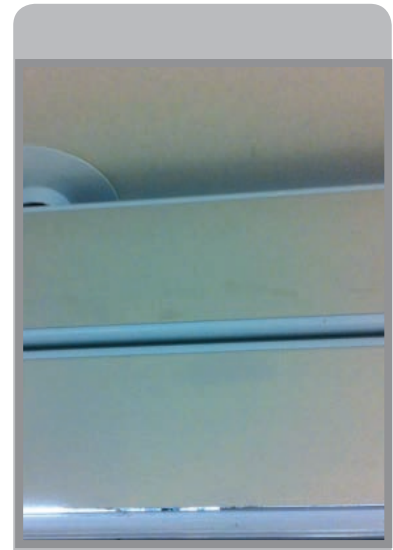
- Refer to Installation Instructions #001-00340



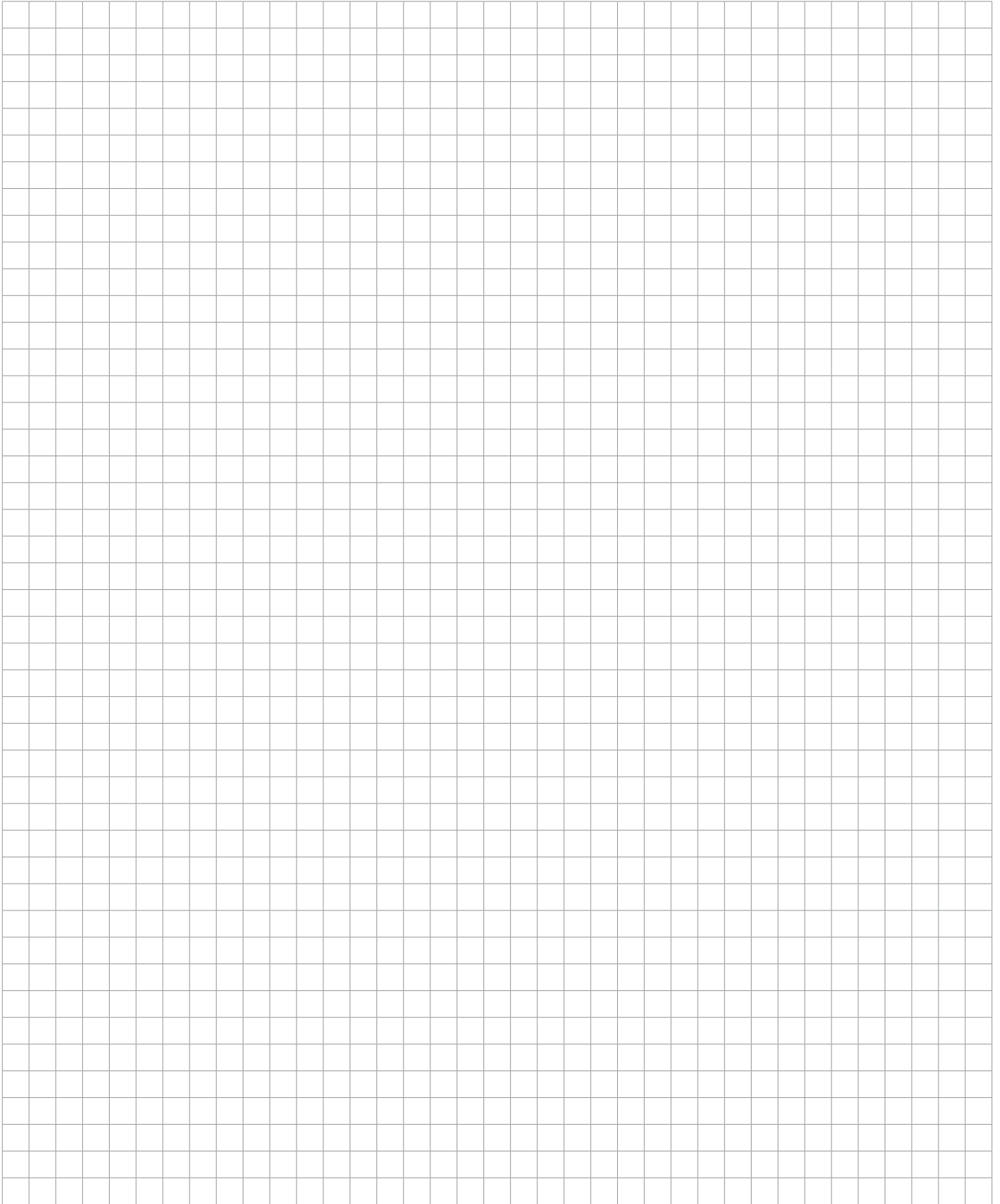
KWIKtrak 90 mm.



KWIKtrak 140 mm.



KWIKtrak 180 mm.



A large grid of graph paper, consisting of 20 columns and 30 rows of small squares, intended for taking notes.



ANNEXES

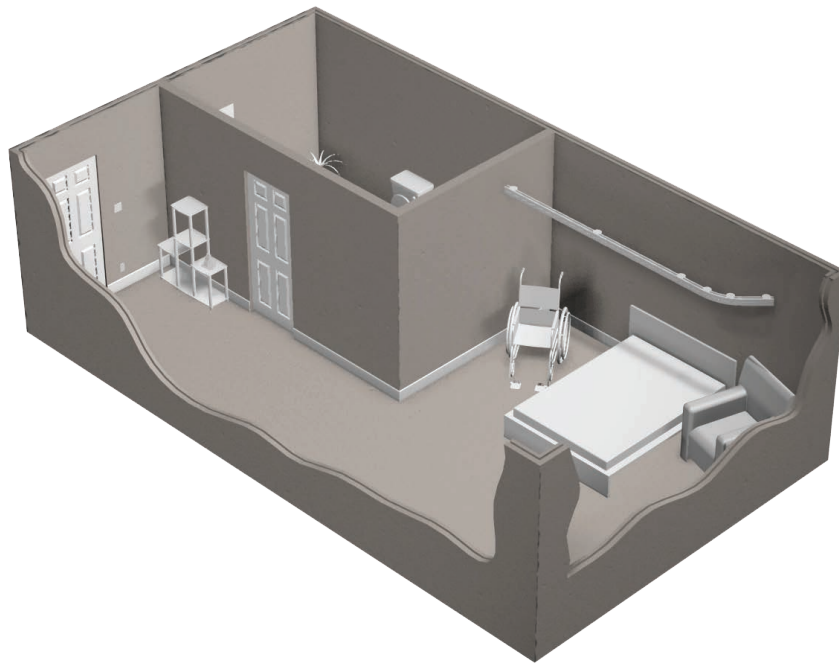
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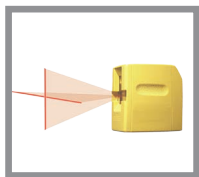
Typical “J” Layout

The purpose of this layout:

- Transpose the plans (drawings) in the room to be installed.
- Establish exact anchor points relative to equipment.
- Maximize the transfer points and follow the recommendations/requests of the customers.



Tools required for this layout:



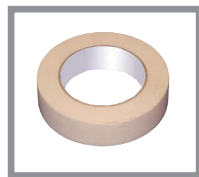
Crossline Laser Level (CLLL)



Tape Measure (T.M.)



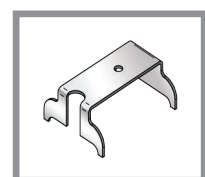
Plumb Laser (P.B.)



Masking Tape

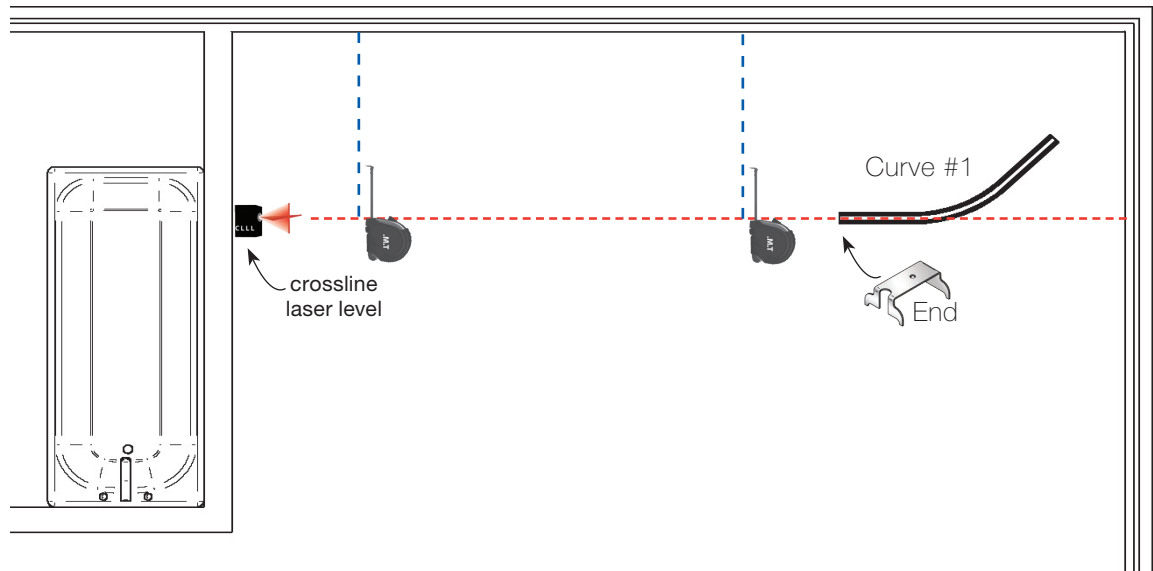


Marker



Curve alignment tool

Aligning curve with straight section



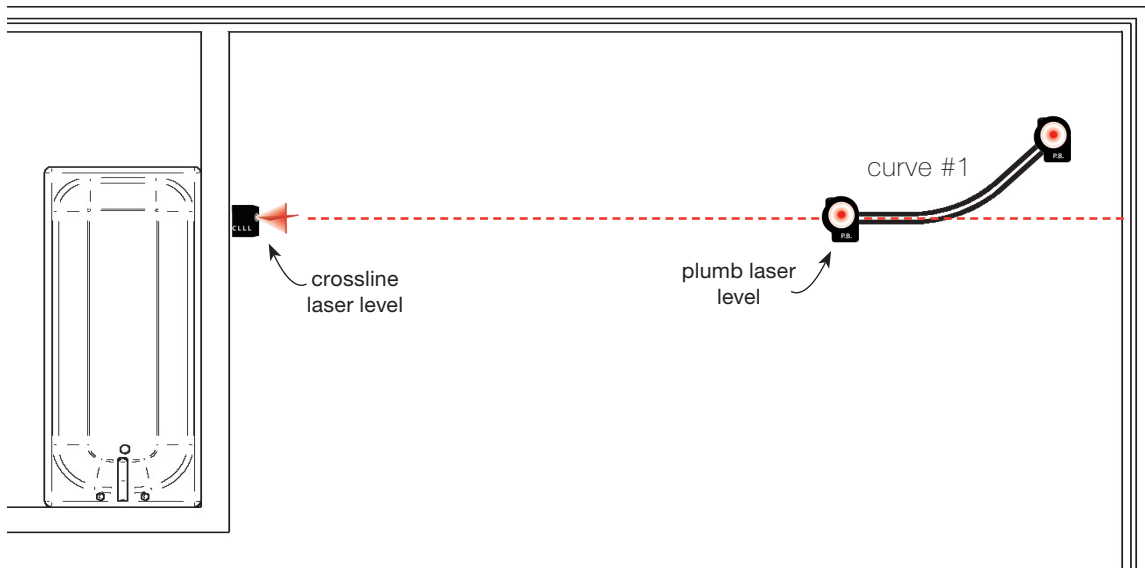
- Set up the crossline laser level parallel with the head wall at desired transfer zone over the bed.
- Add curve #1 into the layout by placing and aligning it with the curve alignment tool.
- Slide the curve alignment tool back and forth on the curve end, to ensure the curve is not kicking “in” or “out” versus the crossline laser line.



NOTE...

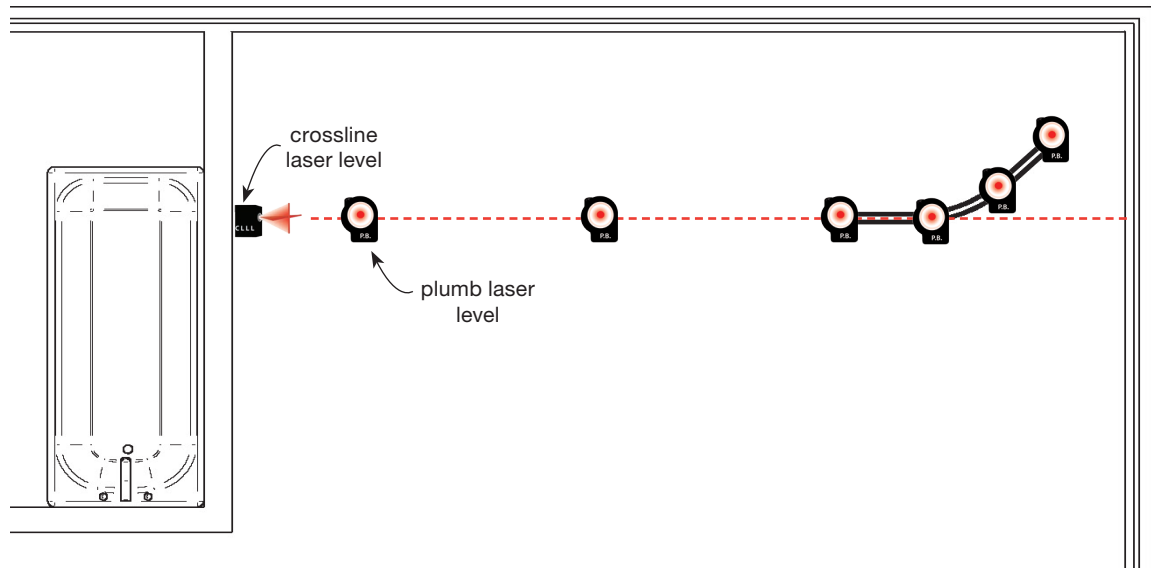
To determine the standard drop point on a bed refer to “Basic knowledge/ Transfer points”

Validating at joint bracket locations



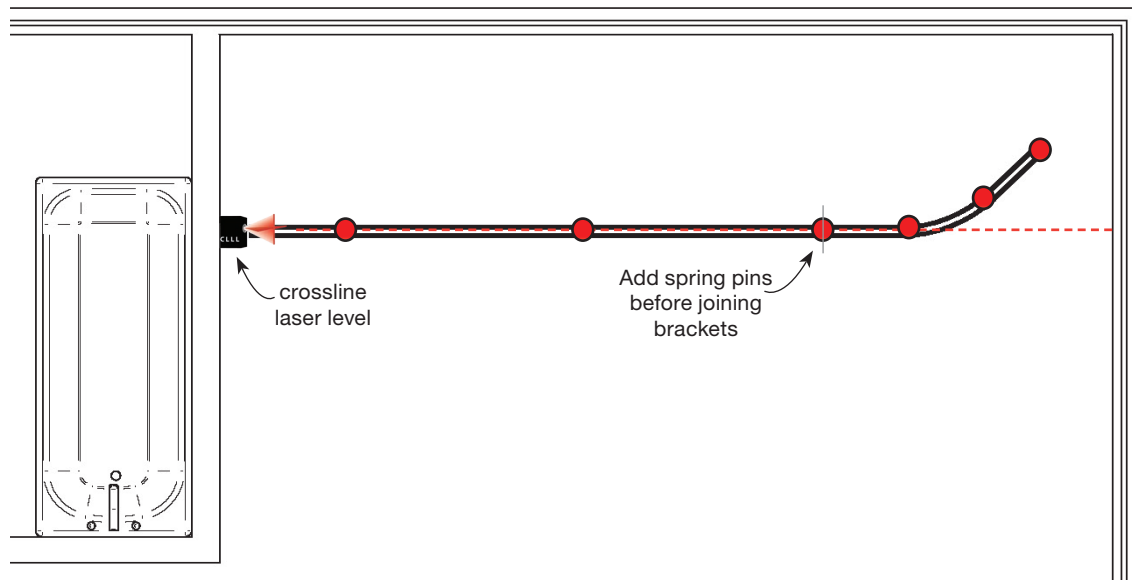
- To facilitate your installation, validate at each curve end using a plumb laser, so that there are no obstructions in your way. If there are, make necessary adjustments and then proceed to identify all bracket locations.

Identify remaining bracket locations



- At each plumb laser position, we recommend that you mark both floor and ceiling using masking tape and a marker at every location. As per the KWIKtrak Span Chart (#001-01014-EN), 4 brackets are required for every curve. Every track section larger than 100 cm (39 in), requires 3 brackets supporting the section. If longer, refer to KWIKtrak Span Chart.
- Drill the ceiling at each plumb laser location.
- Level all rods and brackets.

Clip the tracks up

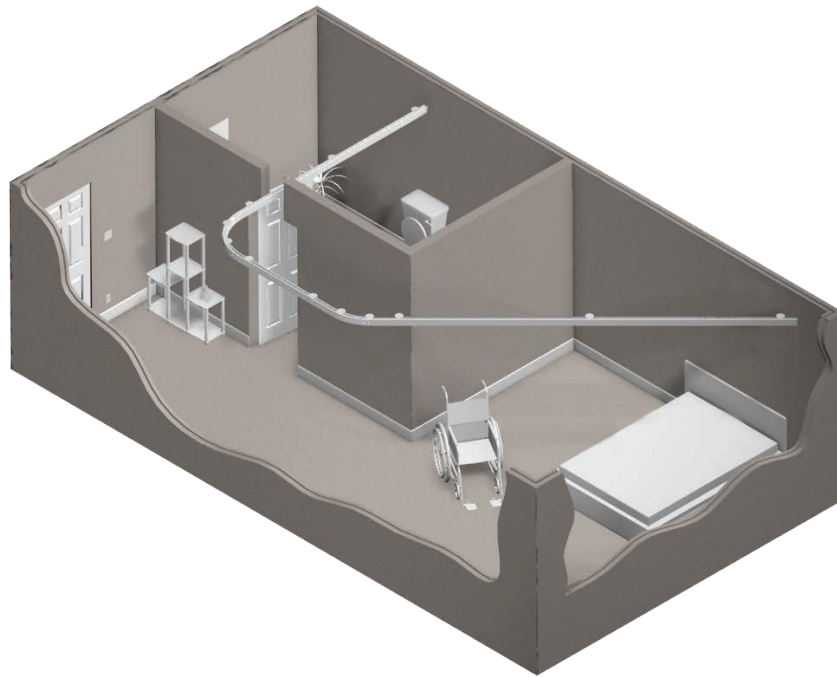


- Once all brackets are installed and levelled off, you are ready to clip the curve up. Center the end of the curve that connects with the following straight track at the joint location, then clip the curve up.
- Align the joint center with joint bracket, ensuring the gap is tight.

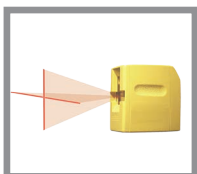
Multiple Curve Layout

The purpose of this layout:

- A multiple curve type layout provides access to multiple areas in that particular room, or possible entry into another room, or area of the home.



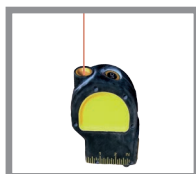
Tools required for this layout:



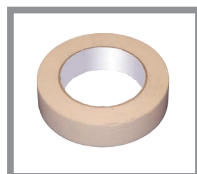
Crossline Laser Level (CLLL)



Tape Measure (T.M.)



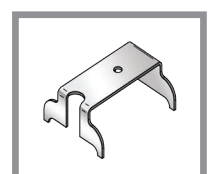
Plumb Laser (P.B.)



Masking Tape

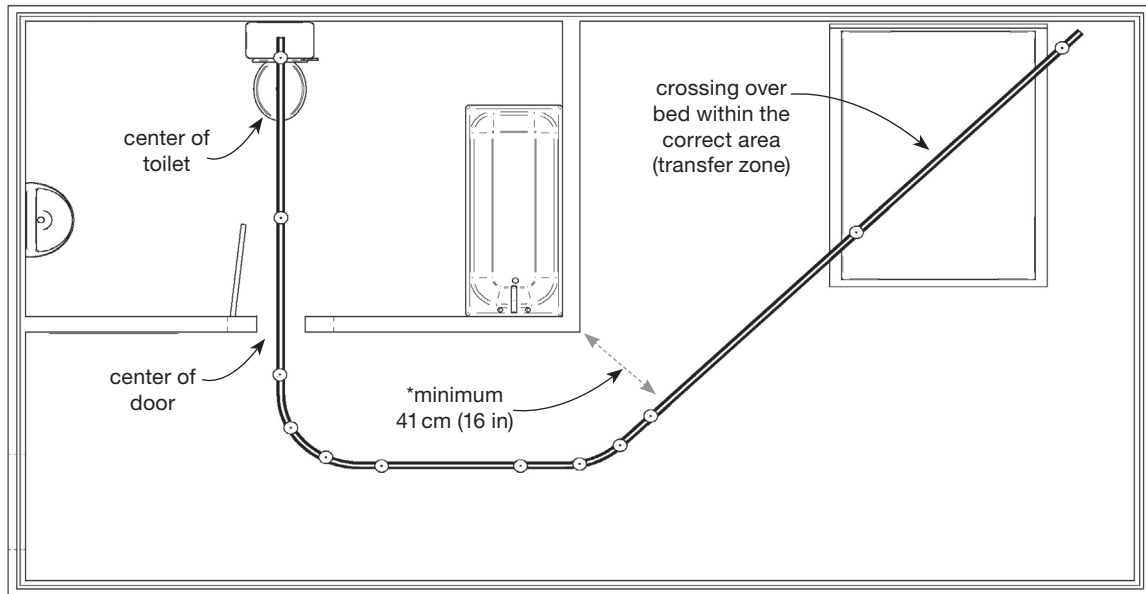


Marker



Curve alignment tool

Ensure that final result will respect ArjoHunleigh minimum requirements



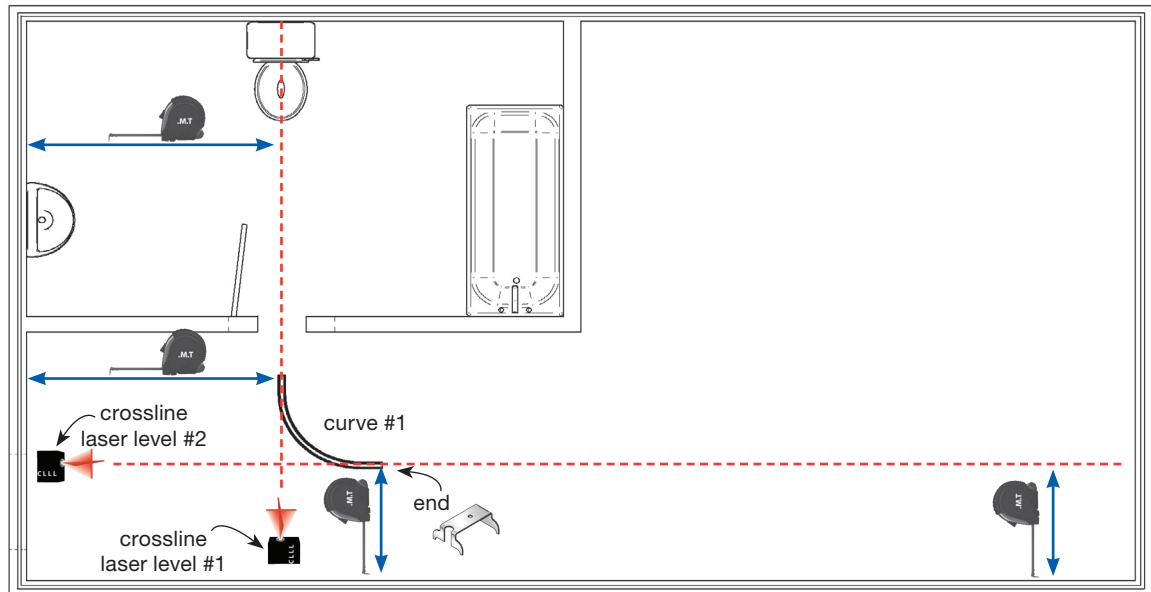
- When installing this type of layout, make sure that you clear at least 40 cm (16 in) from the corner wall. Aim to install in the center of the doorway and achieve proper transfer zones on the bed and the toilet.



NOTE...

Never cut a curve within its radius. A minimum of 76 mm (3 in) is required at the end of the curve to allow the use of the curve alignment tool.

Positioning the curves



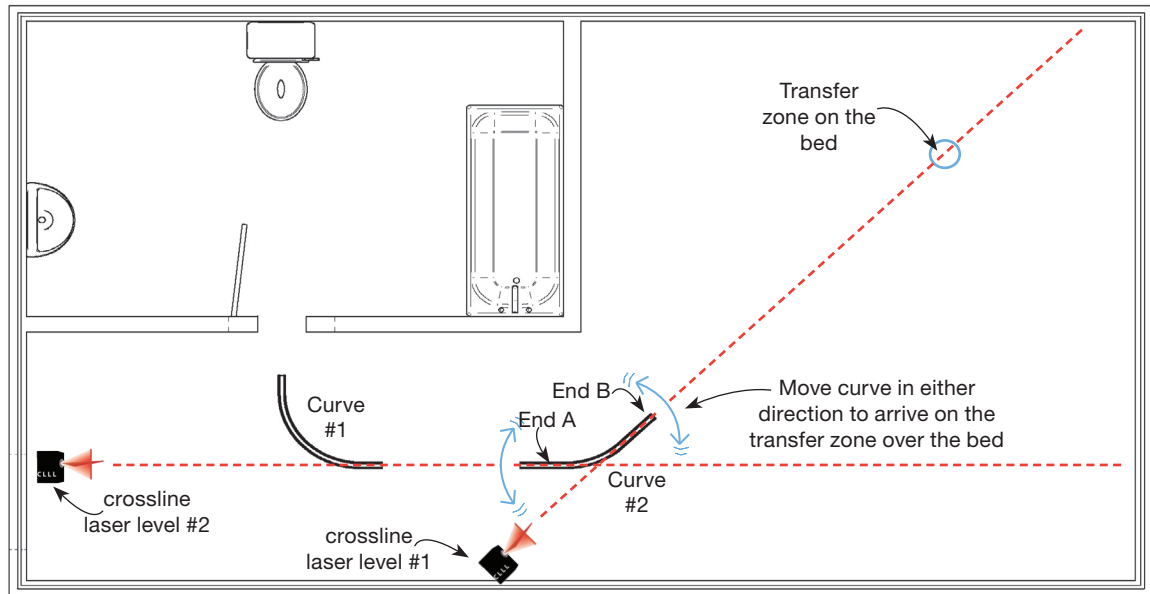
- Ensure the crossline laser level #1 is square with the wall and that we are passing through the center of the doorway and achieving the center of the toilet.
- Position the curve on the floor, in line with the crossline laser level #1. Slightly tilt the curve back and forth, ensuring that it lines up with center of the straight section on the curve, with the crossline laser level #1, using the curve alignment tool.
- Once the curve is in position we are ready to set-up crossline laser level #2 in line with center of the other end of curve #1. To assist with this step, use the curve alignment tool, moving back and forth on the end and move crossline laser level #2.
- Do not move the curve, only the curve alignment tool.



NOTE...

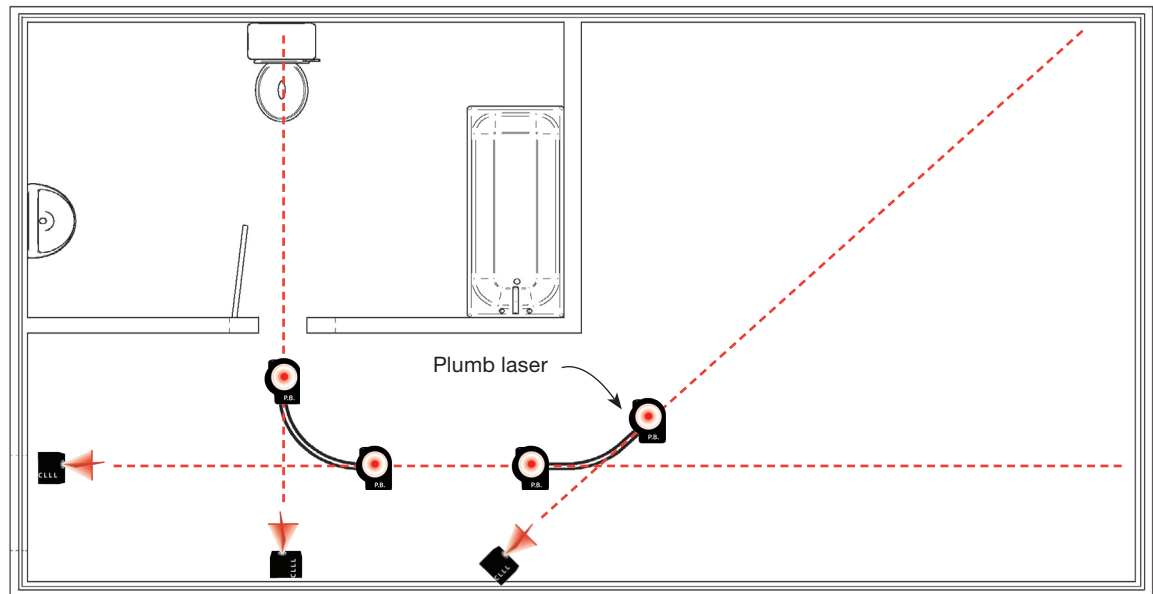
Glide the curve alignment tool back and forth on end of curve to ensure that curve is not kicking out vs the crossline laser level tool.

Validating at joint bracket locations



- Once curve #1 is setup, we are ready to place curve#2 in line with the transfer zone on the bed.
- Move crossline laser level #1 and position it so that it is shining in line with the center of the straight section of curve #2 (end B).
- Now use the curve alignment tool, and line-up crossline laser level #1 with marks on the curve alignment tool.
- Slide curve #2 (left or right) until laser line is hitting the transfer zone over bed.
- Curve #2 needs to keep to the center line of crossline laser level #2. Once this is achieved and you agree to the transfer zone on the bed, ensure that crossline laser level #1 is centered on the curve, again using the curve alignment tool .

Reviewing possible obstructions at joint locations



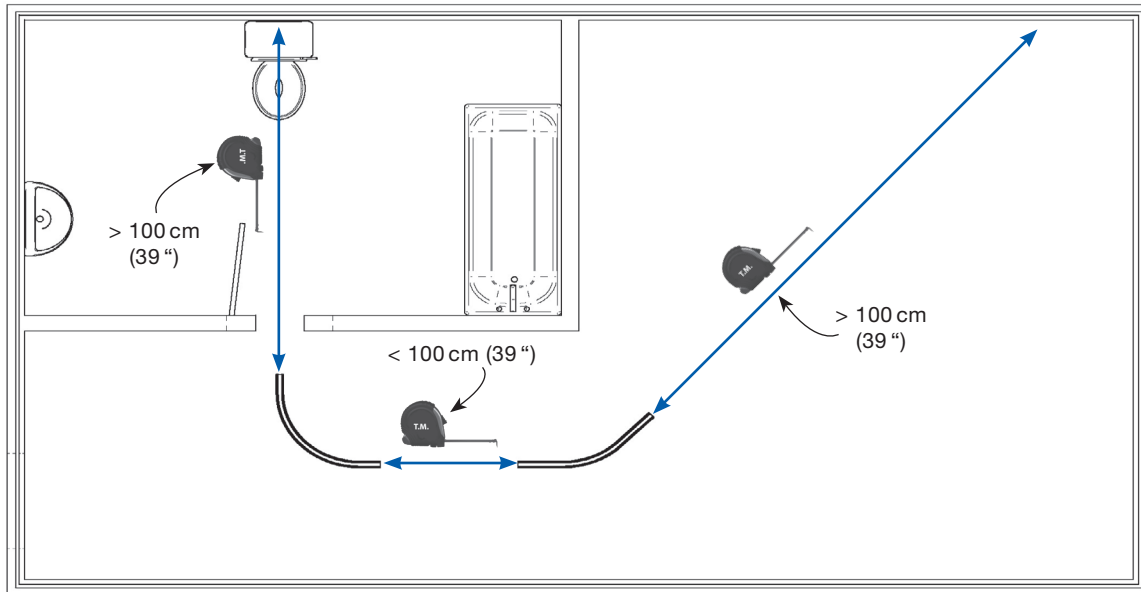
- Once both curves are in place on the floor, and we have achieved our transfer positioning, we need to ensure that we won't be dealing with any obstructions at the joint bracket locations.
- Due to the fact that we cannot shift left or right at a joint location and that we need to keep to the center of any joint location/bracket, you need to survey these areas to ensure you are not in conflict with any obstacles (lights, vents, sprinklers, etc.). If you come into conflict with such obstacles, then it would be best to shift or reconfigure the layout at this point.
- Use the plumb laser to assist with this step.



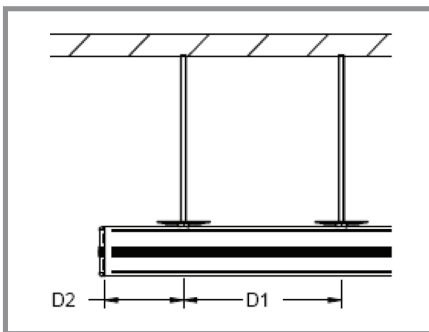
NOTE...

Position the plumb laser tool on the end of curve to confirm that you are avoiding obstructions in the ceiling.

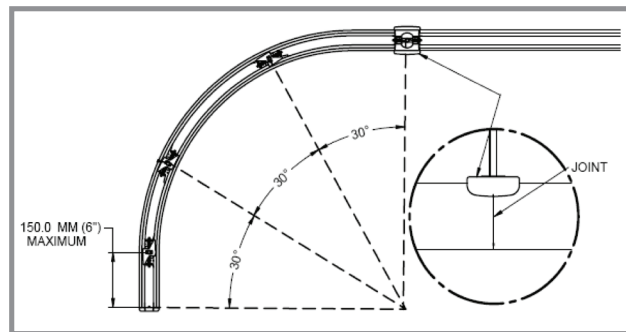
Reviewing bracket spacing



- With a measuring tape, start measuring the straight sections and refer to the KWIKtrak Span Chart (#001-01014-EN) to see if a marking is required in the center of that particular section.

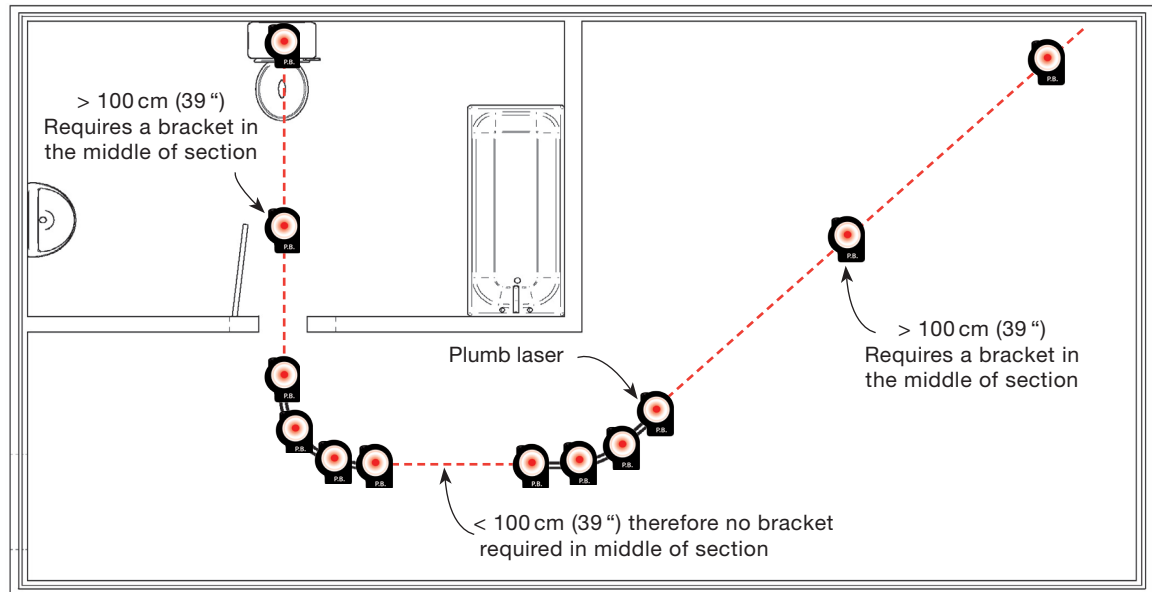


Maximum center to center distance between two consecutive brackets...



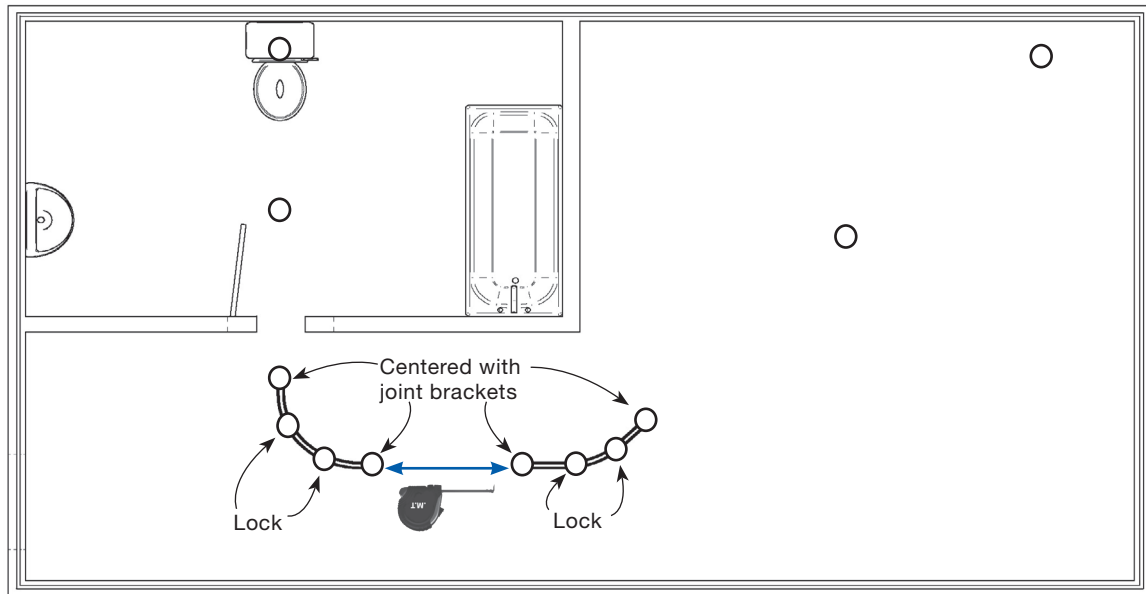
All curved tracks must be supported by 4 brackets...

Marking bracket locations



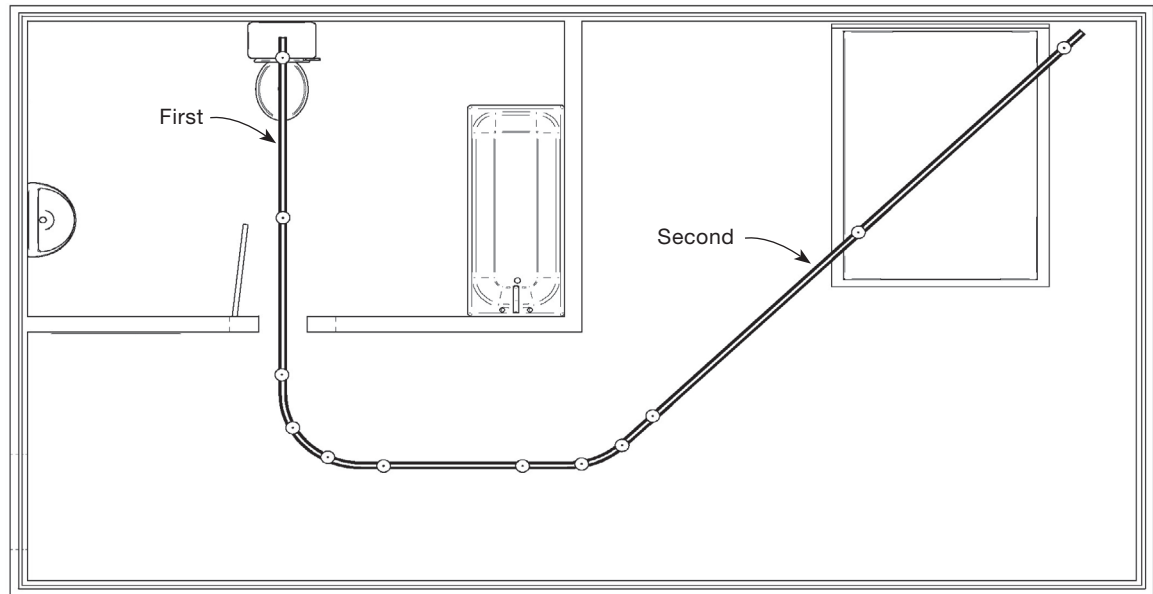
- At each plumb laser position we recommend that you mark both the ceiling and the floor at every bracket location. Refer to KWIKtrak Span Chart (#001-01014-EN).
- Mark the floor and the ceiling with a piece of painter's masking tape along with a marker.
- You are now ready to drill the ceiling at each mark and proceed in dropping your rod.
- Level off all the rods, and install brackets on them.

Connecting the sections



- Once all brackets are installed and levelled off you are now ready to clip the curves up.
- Add the spring pins before clipping the curves up into the brackets. Be sure to center the curve ends with the joint brackets. Lock the two middle brackets on each curve.
- Measure the section of track to be positioned between the two curves. Carefully take your measurements between every curve end. Proceed to cut the section of track with your mitre saw.
- Now clip up the track section between the two curves, making sure the joints are touching on both sides of the track.

Positioning the curves



- Clip the first track up over the toilet and a second one over the bed.

1

NOTE...

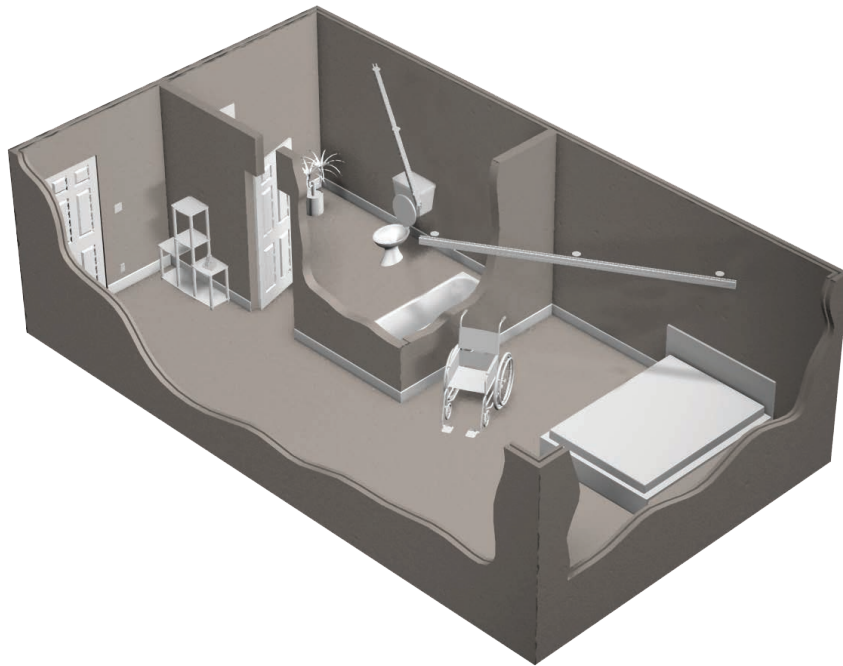
Always move with the flow of your layout. If you have more than two curves, start with the closest together, line them up at the same time, then proceed to the next curve, and so on, moving with the flow of your layout.

Never cut into a radius of a curve. Leave room at either end of the layout for inserting the ceiling lift.

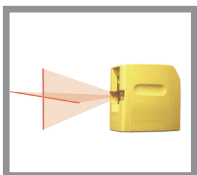
Two-Track Layout

The purpose of this layout:

- Installing track for two main areas of a home (e.g. bedroom and bathroom).



Tools required for this layout:



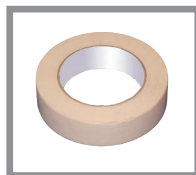
Crossline Laser Level (CLLL)



Tape Measure (T.M.)



Plumb Laser (P.B.)

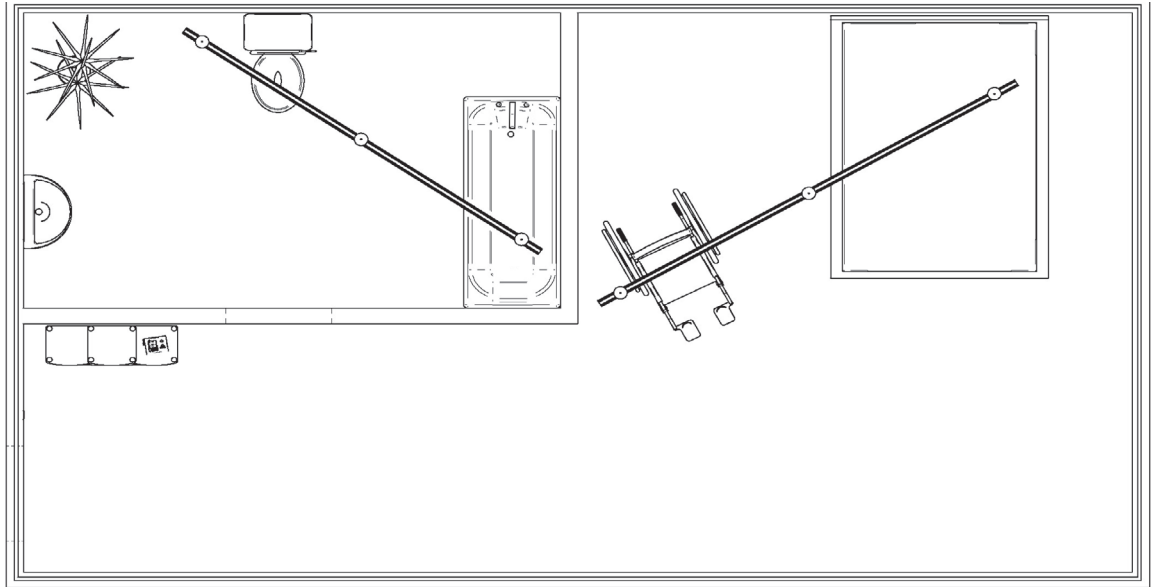


Masking Tape



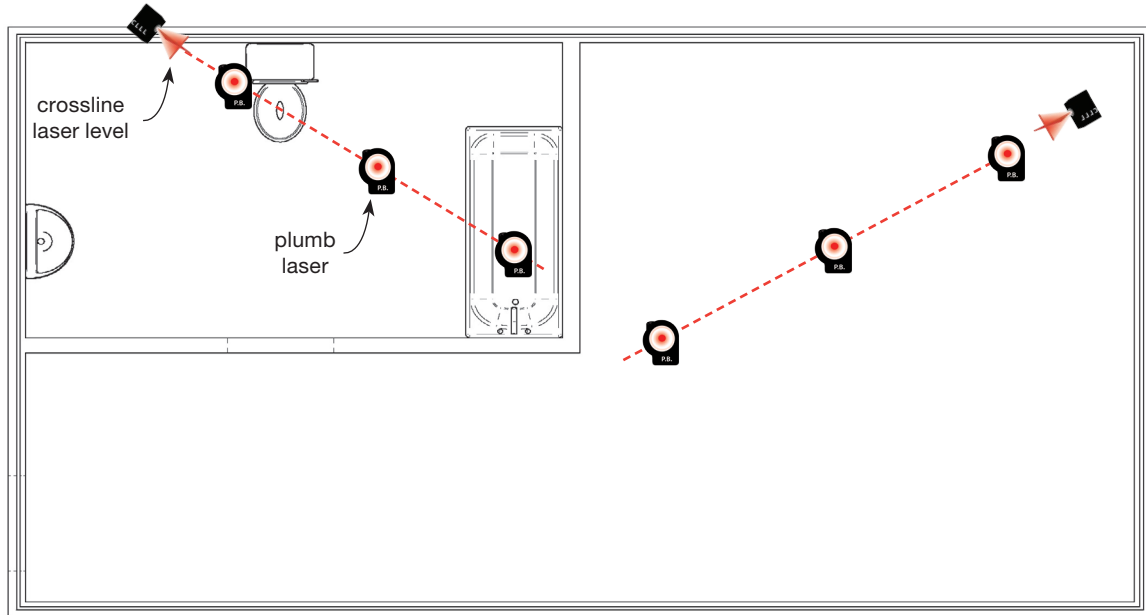
Marker

Ensure final result will respect to ArjoHuntleigh standard requirements.



- When considering this type of layout, make sure that there is no obstruction by the corner wall and be sure to achieve the transfer zone in the bathtub and on the front 1/3 of the toilet.

Bracket positioning



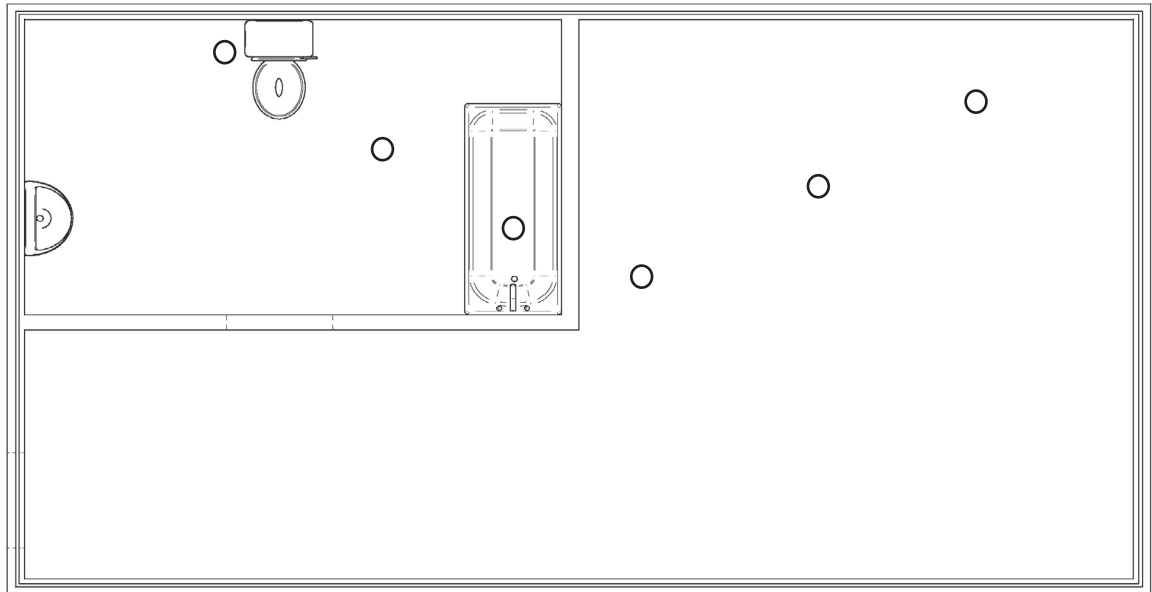
- Take your crossline laser level and shine a clear path, aiming for a transfer point on the toilet and a transfer point in the tub.
- Refer to KWIKtrak Span Chart (#001-01014-EN) for bracket distances.
- Use a plumb laser to identify rods locations.
- Mark both the ceiling and the floor with masking tape and a marker.
- Do the same in the bedroom area, with a transfer area beside the bed, keeping to the transfer zone on the bed.



NOTE...

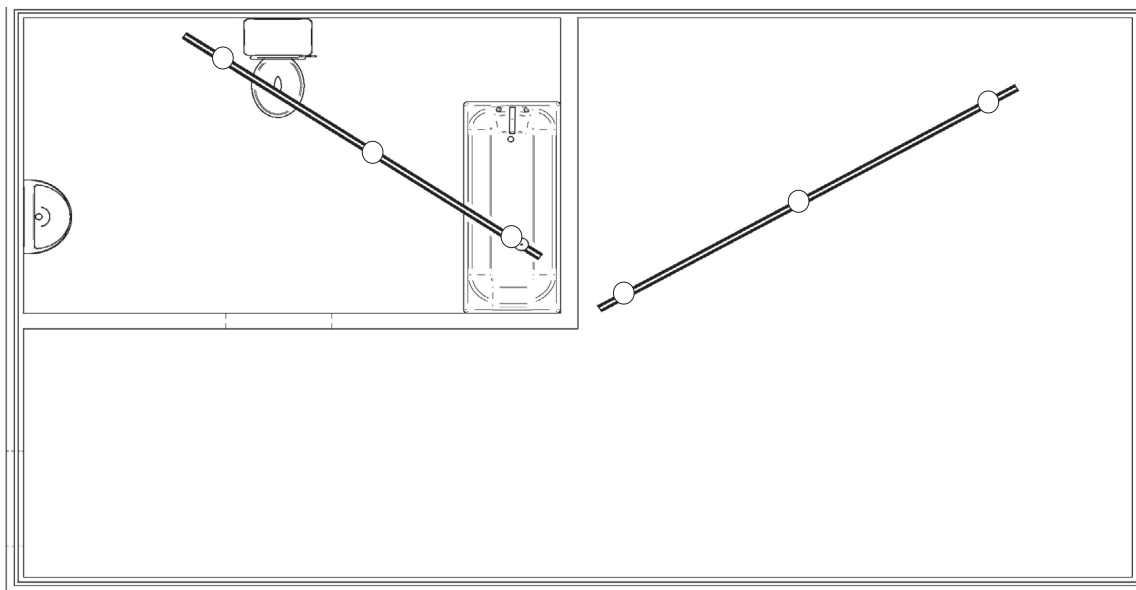
Make sure there will not be a conflict between the faucets of the tub and the patient during a transfer.

Installing the brackets



- Be sure to level off the brackets in the bathroom area separately from the ones located in the bedroom.

Clipping track sections up into place

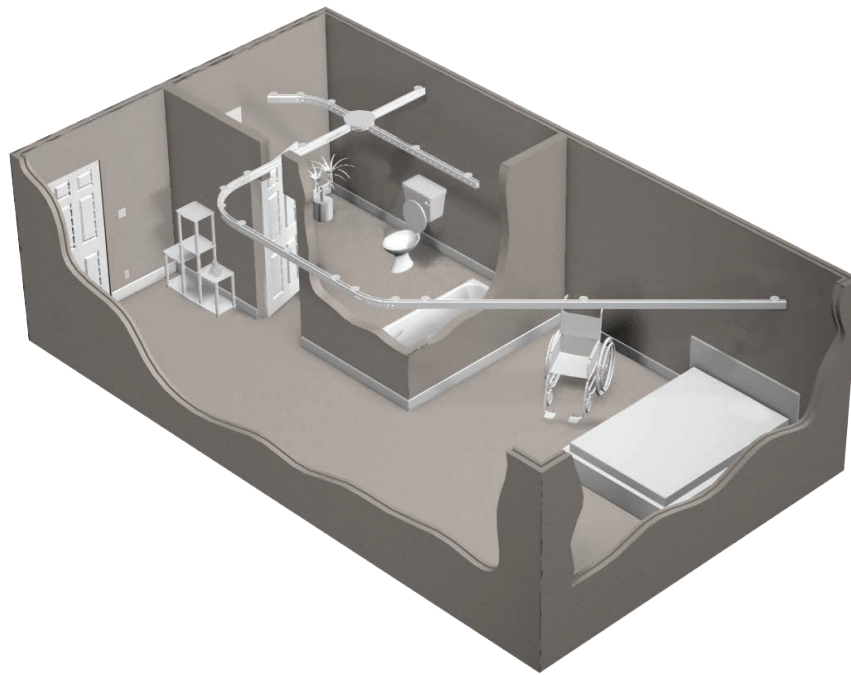


- Clip the track up over the toilet/bath and the one up over the bed.

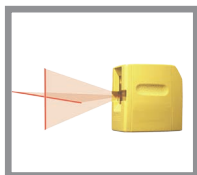
Two Curves With a Turntable Layout

The purpose of this layout:

- Full room layout, providing access to three areas.



Tools required for this layout:



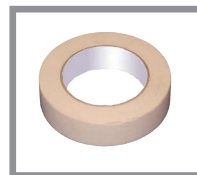
Crossline Laser Level (CLLL)



Tape Measure (T.M.)



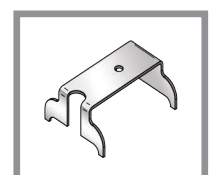
Plumb Laser



Masking Tape

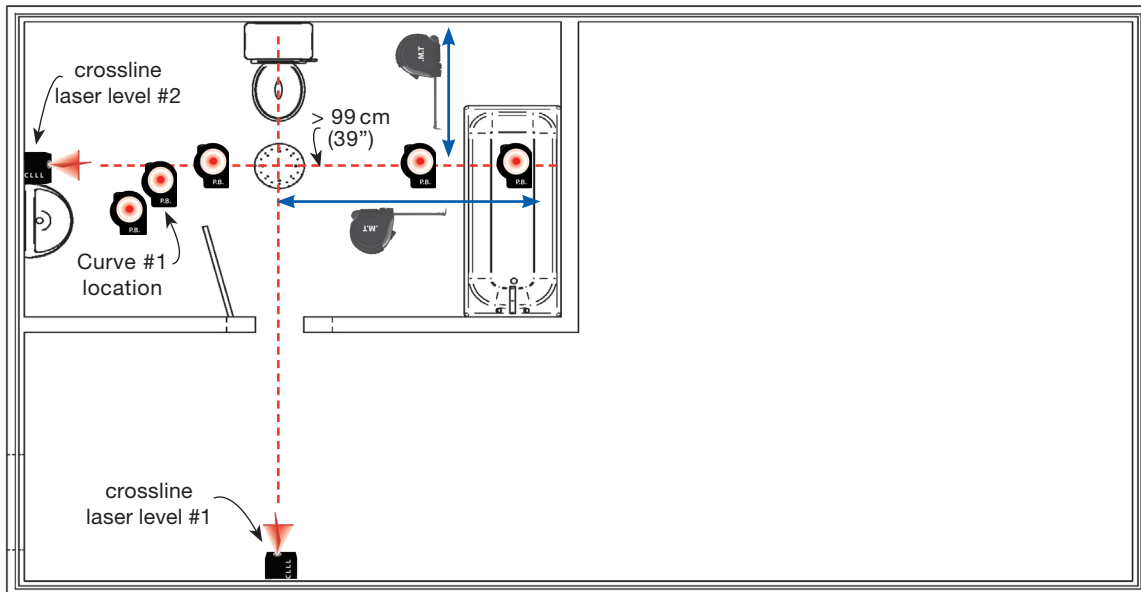


Marker



Curve Alignment Tool

Starting layout with positioning turntable



- Line the turntable up with crossline laser level #1, measure from back wall to drop point in tub to find the distance for crossline laser level #2.
- Position crossline laser level #2 to line up with the floor marks and drop point in tub. Put turntable into position in line with crossline laser level #1. You may need to adjust crossline laser level #2 to line up with turntable.
- Never use crossline laser level #1 to adjust your layout, as it needs to be centered with the door/toilet.
- Place curve in position and line it up with crossline laser level #2. Use the curve alignment tool and the plumb laser to mark out curve and straight section to the tub.

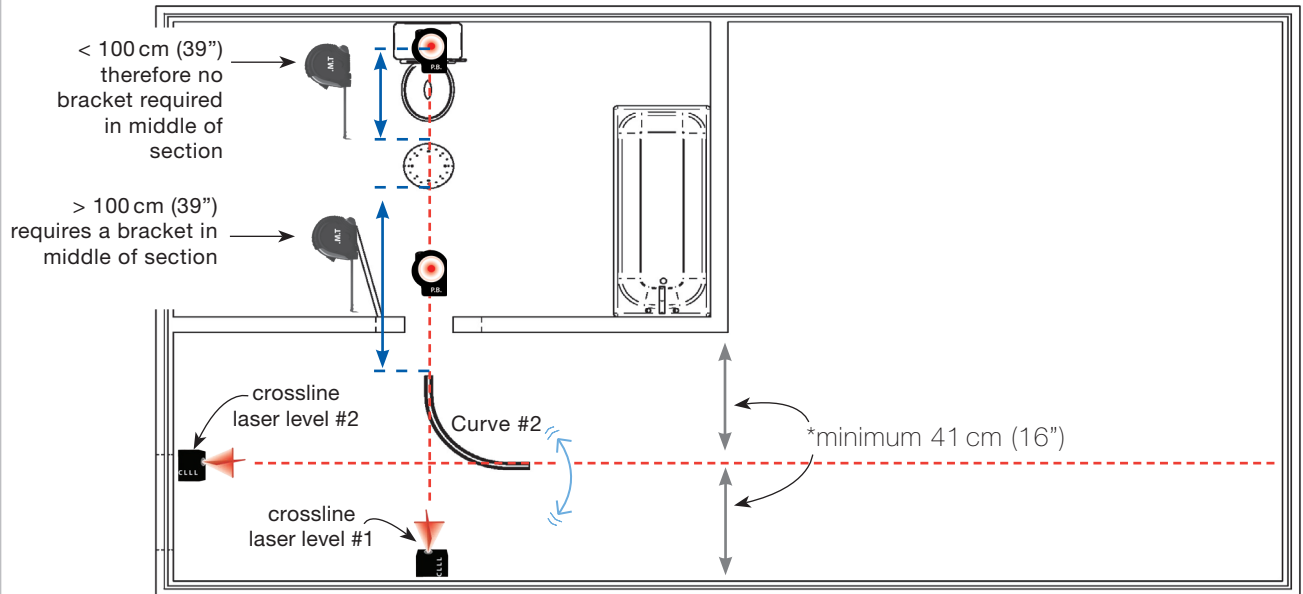
NOTE...

Always perform a visual assessment of the room before starting any layout to determine if there are any obstructions (light, curtain, vent, etc.) and adjust if necessary. Once your turntable is in place, make sure that there are no problems with the structure when it comes to installing your threaded rods.

Laser pointer positioned on turntable over one of the attachment holes.

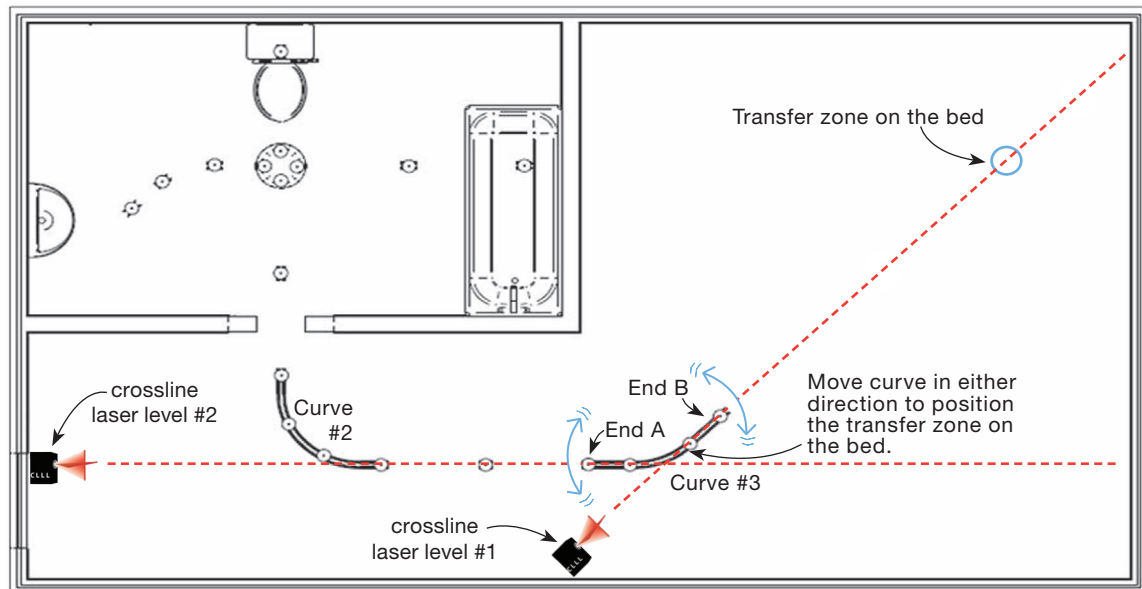


Aligning curve #2 with turntable



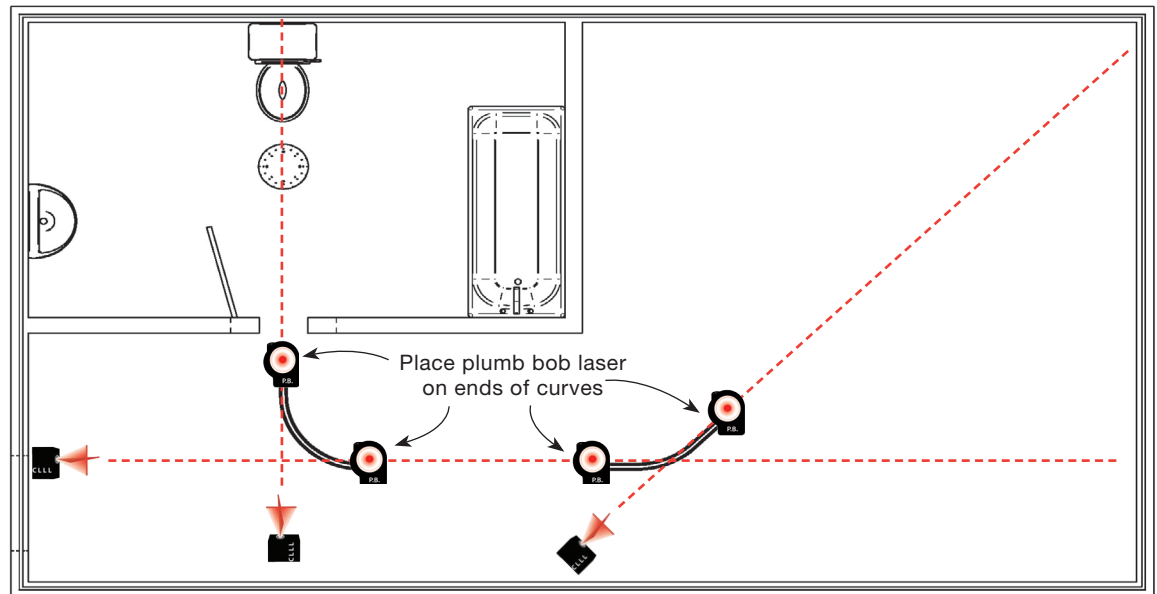
- Using the Curve alignment tool, line up curve #2 with crossline laser level #1, move crossline laser level #2 into position to line up with curve #2, use the curve alignment tool, to find the center line.
- Using a plumb laser, mark the straight section from the turntable to the second curve. If > 100 cm (39 in), see KWIKtrak Span chart (#001-01014-EN).
- Repeat the same steps for the section from the turntable to the toilet.

Aligning curve #3 with end of curve #2



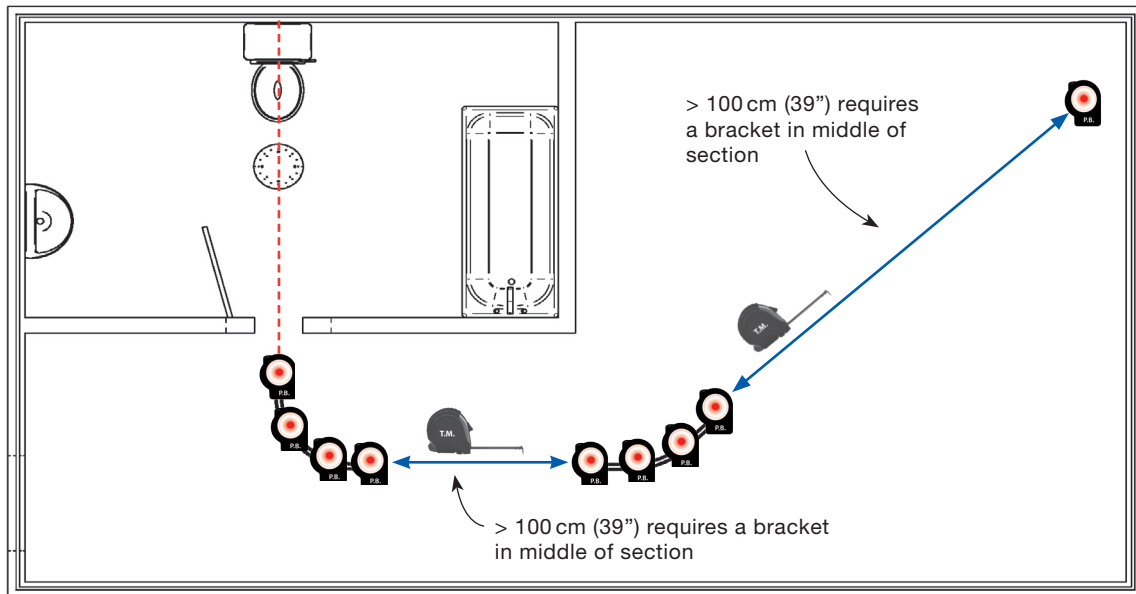
- Once curve #2 is set up, place curve#3 in line with the transfer zone on the bed.
- Move crossline laser level #1 and place it on curve #2 (end B). Line up crossline laser level #1 with the center of the curve using the curve alignment tool.
- Slide curve #3 left or right until the laser line is hitting the transfer zone over the bed.
- Curve #3 needs to keep to the center line of crossline laser level #2. Once you have achieved this and you confirm the transfer zone on the bed, ensure that crossline laser level #1 is centered on curve #3, using the curve alignment tool.

Reviewing joint locations for obstructions

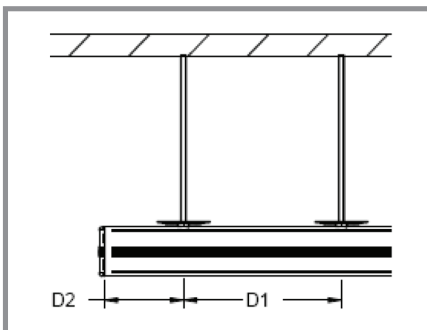


- Once curve #2 and #3 are in place on the floor, and you have established your transfer position, ensure you do not have any obstructions at joint bracket locations. To do so, you need to place the plumb laser on the end of the curve to ensure that you are avoiding ceiling obstacles.
- Due to the fact that we cannot shift left or right at a joint location and that we need to keep to the center of any joint location/bracket, you need to survey these areas to ensure you are not in conflict with any obstacles (lights, vents, sprinklers, etc.). If you come into conflict with any of these obstacles, then it would be best to adjust or reconfigure the layout at this point.
- Use the plumb laser to assist with this step.

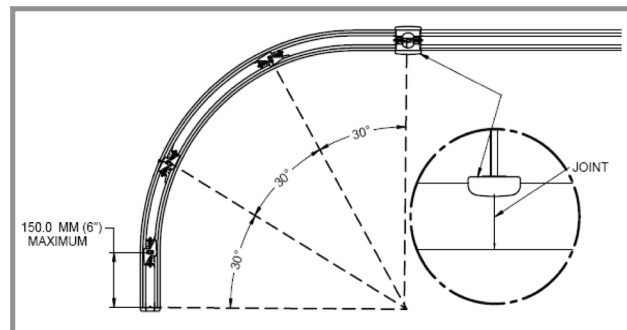
Marking of the remaining layout



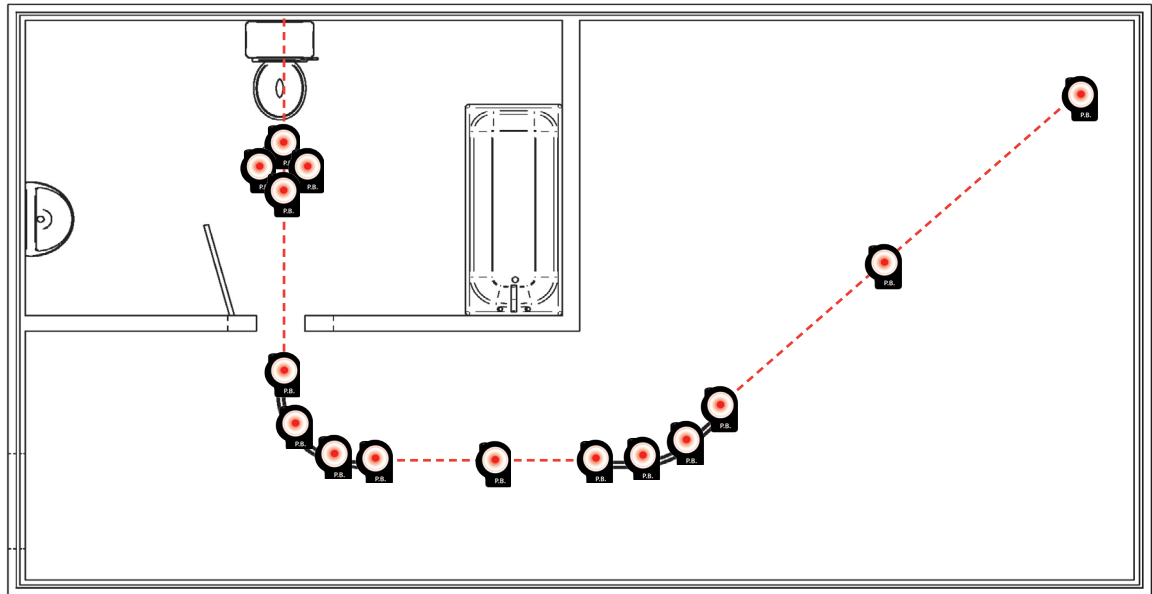
- With a measuring tape, start measuring the straight sections, and refer to the KWIKtrak Span Chart (#001-01014-EN) if a marking is required in the center of that particular section.
- Using the plumb laser, locate the remaining drop points.



Maximum center to center distance between two consecutive brackets...

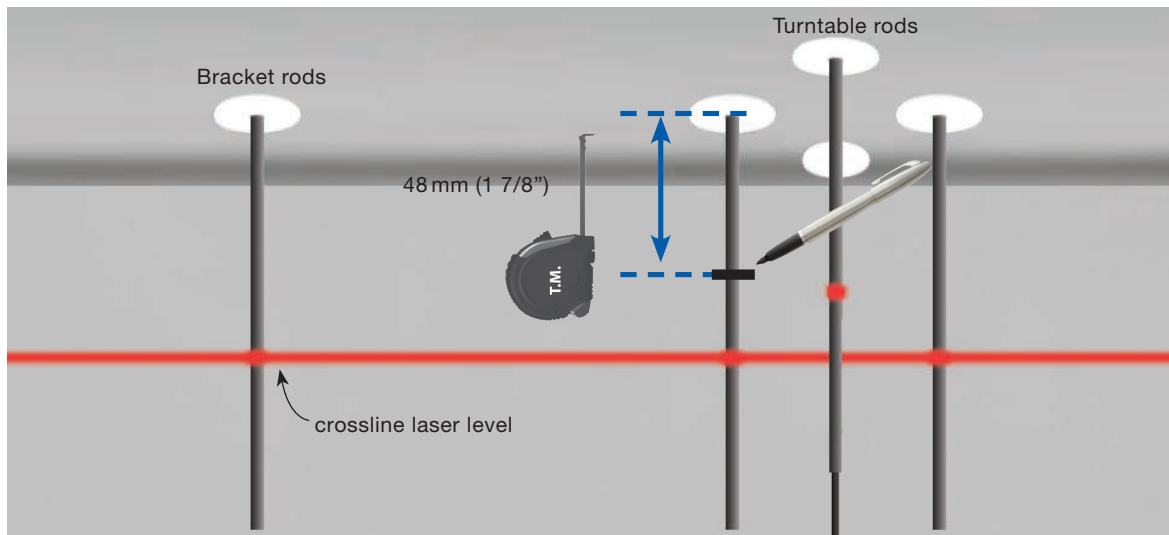


All curved tracks must be supported by 4 brackets...

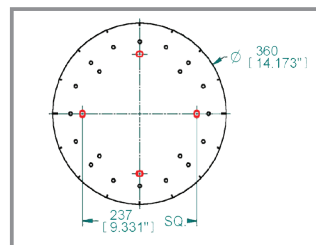


- We recommend that you mark both the floor and ceiling at each plumb laser position as well as at each bracket location. Four brackets are required for each curve, as per the KWIKtrak Span Chart (#001-01014-EB).
- Mark the floor and the ceiling with a piece of masking tape along with a marker.
- Drill the ceiling at each plumb laser and proceed with installing the threaded rods.

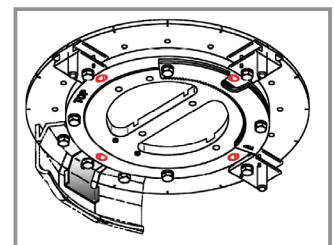
Finding the datum point



- Once all rods are protruding through the ceiling, level them for layout and set up the crossline laser level in the room
- With a tape measure, establish the lowest versus the highest point of ceiling. Start at the lowest point and build up with shims. There are two possibilities in order to do this: The lowest point is at the turntable location, or the lowest point location is elsewhere in the track layout.
- **1st possibility - Lowest point at the turntable location:**
- If the lowest point happens to be at the turntable location, measure the four threaded rods of the turntable to find the lowest point.
- Measure that rod down 48 mm (1 7/8 in) and mark it.
- With the help of the crossline laser level mark the remaining 3 rods.
- Add the ceiling plate and the 12 mm (1/2 in) shim to each rod, holding them in place with masking tape.
- Install the turntable (See Turntable Installation, document #001-11719-EN) for proper mounting instructions)
- Add 15 mm (5/8 in) to the closest bracket rod, to the turntable and level the rest of the rods.

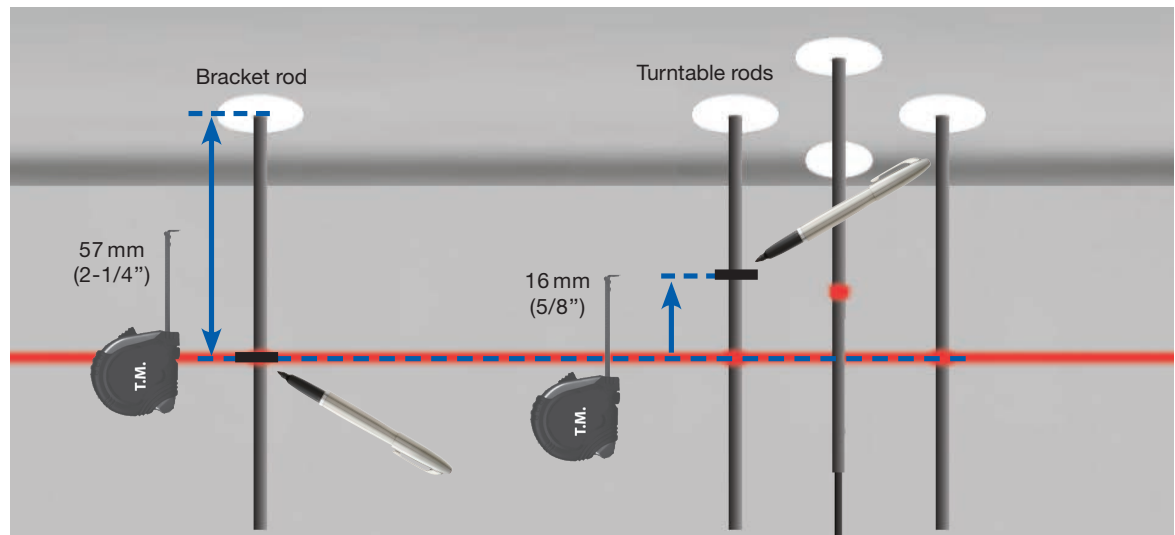


Back of turntable
(Mounting holes)



Back bearing of
turntable

Threaded rod drops



2nd possibility - Lowest point elsewhere in the track layout:

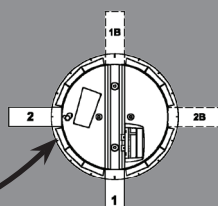
- With the crossline laser level, find the lowest point in the track layout area.
- Once you locate the lowest point, start by measuring 57 mm (2-1/4 in) down from ceiling and mark the first threaded rod.
- Proceed to level all remaining threaded rods including the turntable
- Cut an extra 16 mm (5/8 in) off the threaded rods for the turntable.
- Measure the turntable rods again to determine if you need to add more than one shim;

anything over 60 mm (2 3/8 in) will require more than one 12 mm (1/2 in) shim.

NOTE...

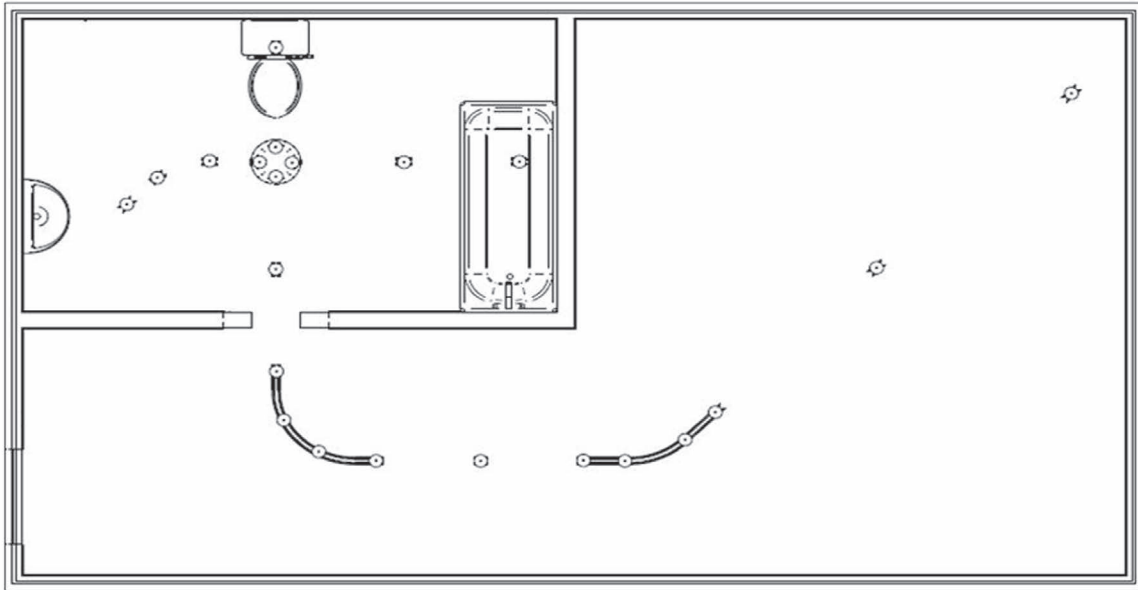
When track #1 and track #2 are installed, you can then align track #1b and track #2b.

You may have to fine tune the levelling of the turntable after the track has been installed. Place limit arm facing this area.



- Install ceiling plates and shims as needed and hold in place with masking tape.
- Install the turntable (See Turntable Installation, #001-11719-EN) for proper mounting instructions)
- Once the turntable is installed, you can proceed to install the rest of the brackets.

Adding track sections to the layout

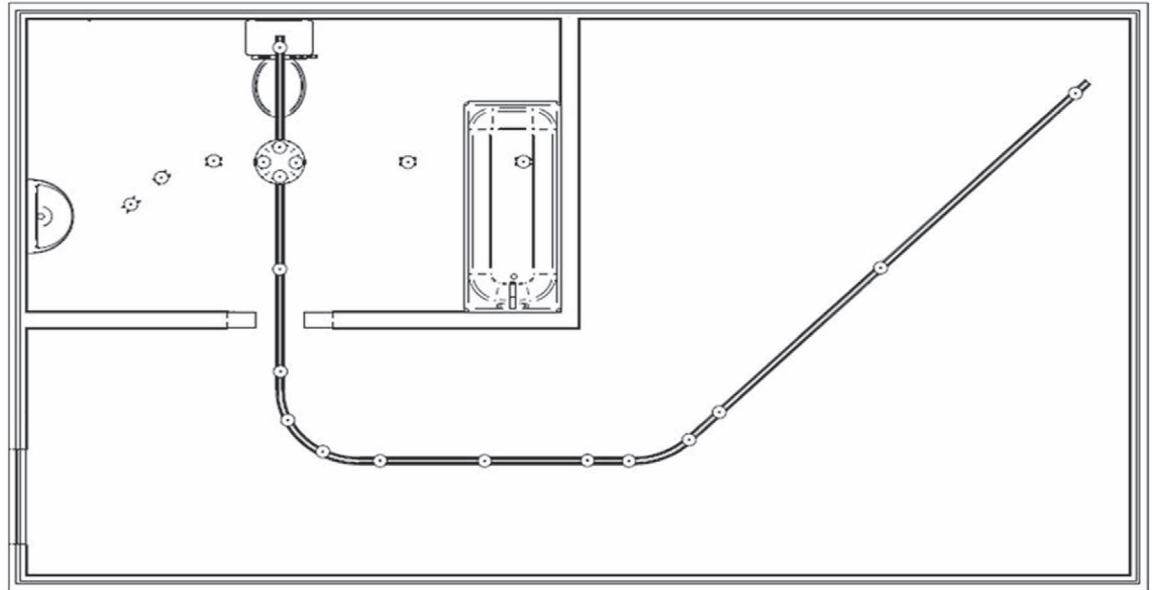


- Once the brackets and the turntable are installed and levelled off, clip the curves up.
- Be sure to center the curve ends with the joint brackets (see diagram).
- Lock the two middle brackets of each curve.
- Measure the section of the track to be positioned between the two curves.

1

NOTE...

Flipping and/or rotating the track section may be required to achieve the best possible joint. Remember you may need to pre-drill the spring pin grooves on the track before inserting the spring pins and prior to clipping sections into place.



- Install the connecting adapter on turntable and measure from spring pin in the adaptor to the end of curve.(Make sure the curve is properly positioned before you take your measurements.)
- Once you have the straight track's proper length, remove the connecting adapter from the turntable and attach it to the end of your straight track.



NOTE...

Make sure the spring pins are touching the track.



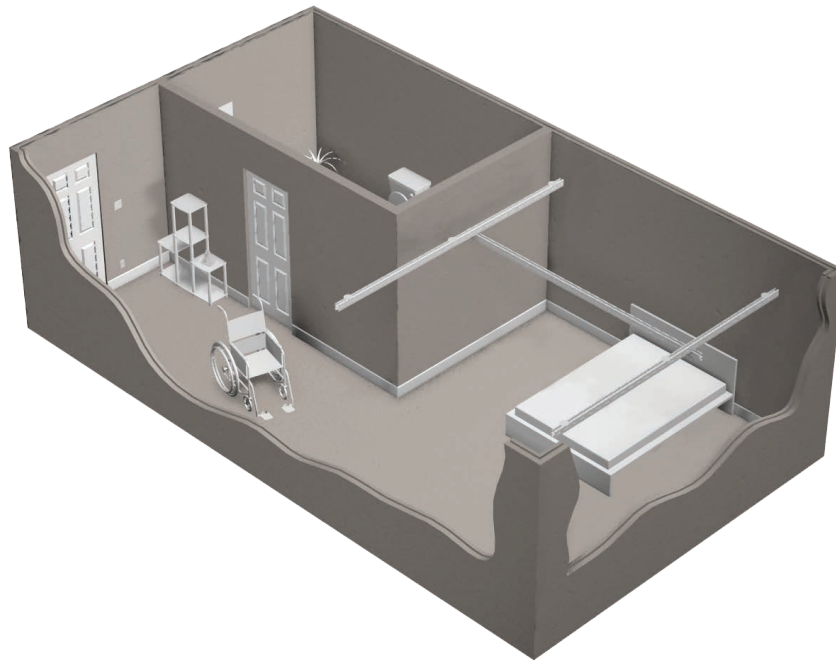
Track junction fastening is detailed in document #001.11720-XX. View details regarding spring pin installation previously discussed in this guide .

- You can now attach the other straight sections of your track.
- Final Steps:
 - Attach the rest of your track sections to the turntable, make sure all the brackets are locked and the sandwich effect is produced.
 - Make sure you leave enough space at one end of the sections connecting to the turntable for the insertion of the lift.
 - In the case shown in the image above, the 45° curve off the turntable would be a good location to install the lift.

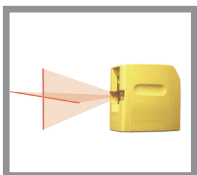
Typical X-Y Layout

The purpose of this layout:

- "H" or "X-Y" layouts permit full room coverage. A transfer can be achieved anywhere below the two parallel tracks.



Tools required for this layout:



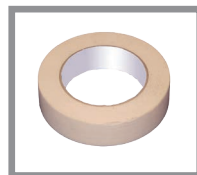
Crossline Laser Level (CLLL)



Tape Measure (T.M.)



Plumb Laser

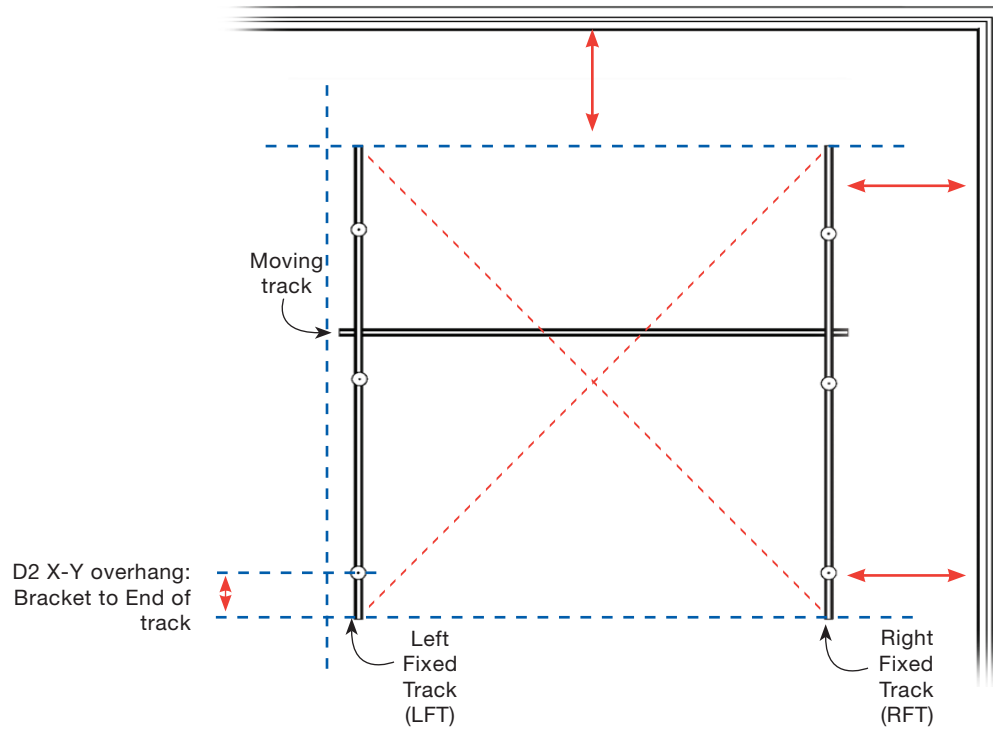


Masking Tape



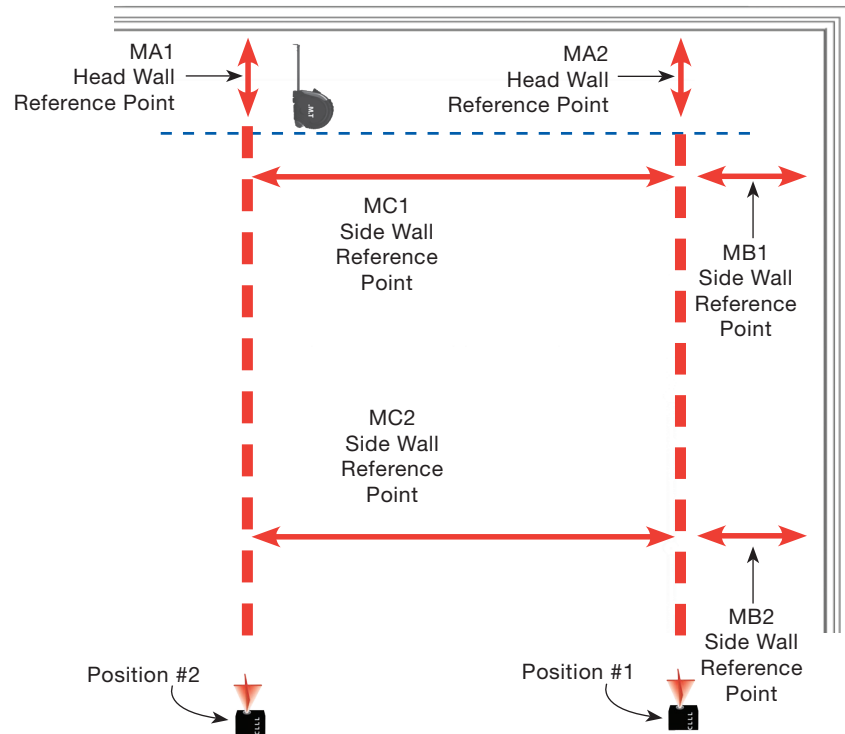
Marker

Positioning X-Y layout in a room



- Square up (LFT + RFT), ensuring they are perfectly parallel.
- Take note of D2 overhang measurement: $D2 = 30 \text{ cm (12 in)}$ max.
- Transfer measurements to the ceiling.

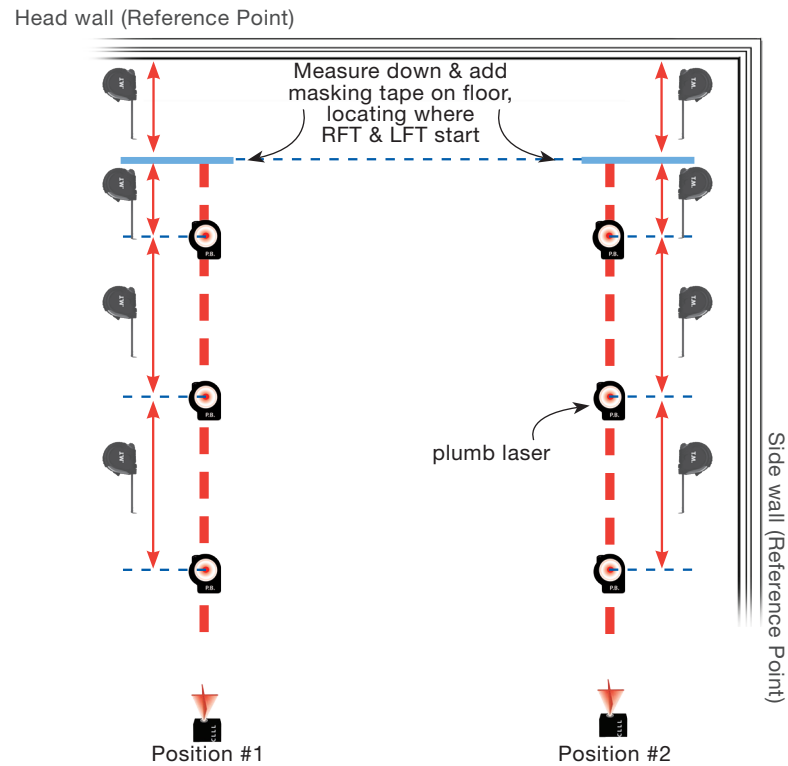
Lining up the two fixed tracks



Review and compare the drawing versus the actual room, surveying the area that needs to be covered.

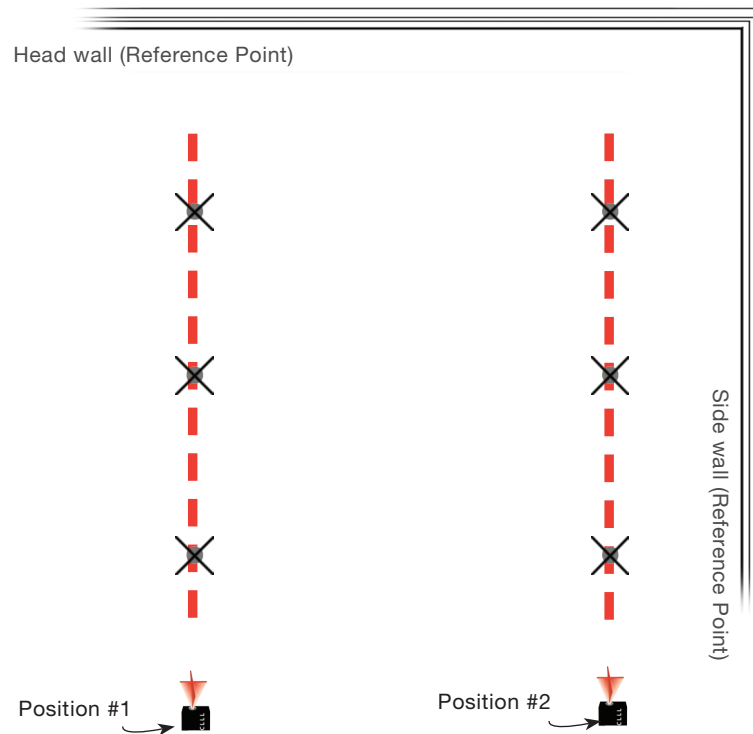
- Step 1: With the tape measure, and with reference to the head wall, make sure that distances MA1 and MA2 are equal.
- Step 2: With the tape measure, and with reference to the side wall, make sure that distances MB1 & MB2 are equal. Place the the crossline laser level on the floor, and verify if it crosses the tape measure at the same measurement in both locations. This establishes the position of our first fixed track.
- Step #3: In order to set the second fixed track parallel to the first, start the measurements from crossline laser level #1 to the second track's desired location. Move the crossline laser level to position #2, and verify if it crosses the tape measure at the same measurement in both locations. This establishes the position of our second fixed track.

Determining the two parallel tracks positioning in the room along with bracket locations



- Mark where left fixed track & right fixed track (LFT & RFT) will start, with masking tape & marker.
- Refer to KWIKtrak Span chart (#001-01014-EN) for bracket distance.
- Use masking tape and a marker to identify each bracket location on the floor. Once identified, use the plumb laser to transfer the marks onto the ceiling.

Final alignment of the two fixed tracks



Once all the bracket positions have been established:

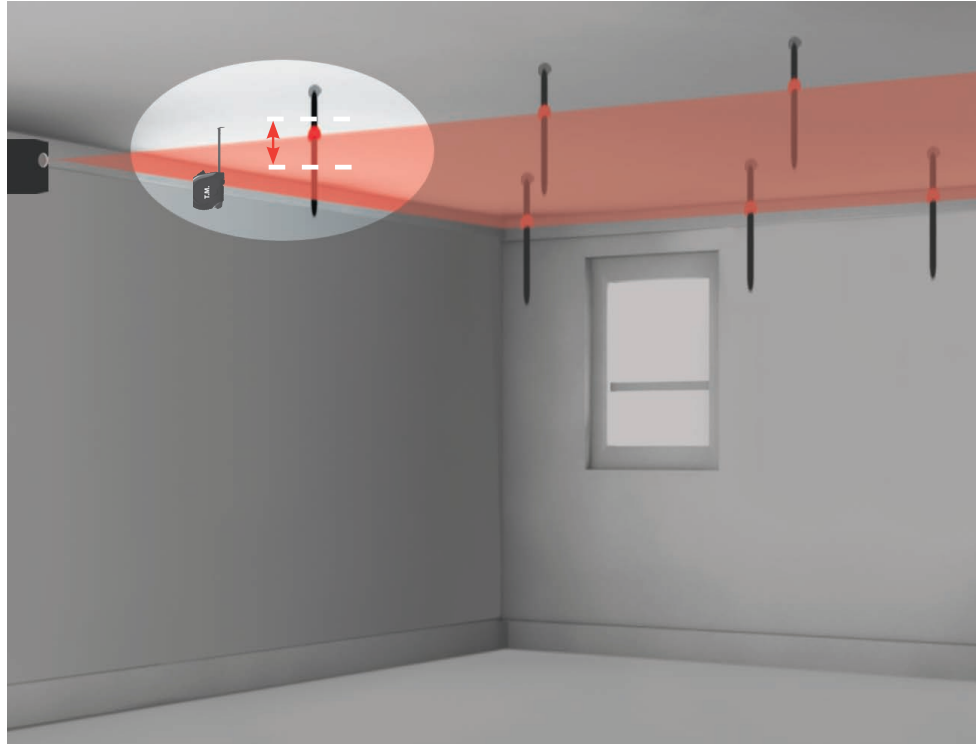
- Turn to the appropriate section of this guide to review fastening to structure information.



NOTE...

All bracket positions need to be validated for datum point.

Finding the datum point on an X-Y



- The scenario that we are demonstrating requires 6 brackets (3 for the left fixed track and 3 for the right fixed track (LFT & RFT)).
- Set up the crossline laser level so that it is pointing in the direction of all 6 of the rods protruding through the ceiling.
- Determine the lowest part of the ceiling vs the highest part of the ceiling (turn to Bracket Levelling section).
- Refer to X-Y Trolley installation instructions: ArjoHuntleigh Library #001-11275-EN and #001-11276-EN.



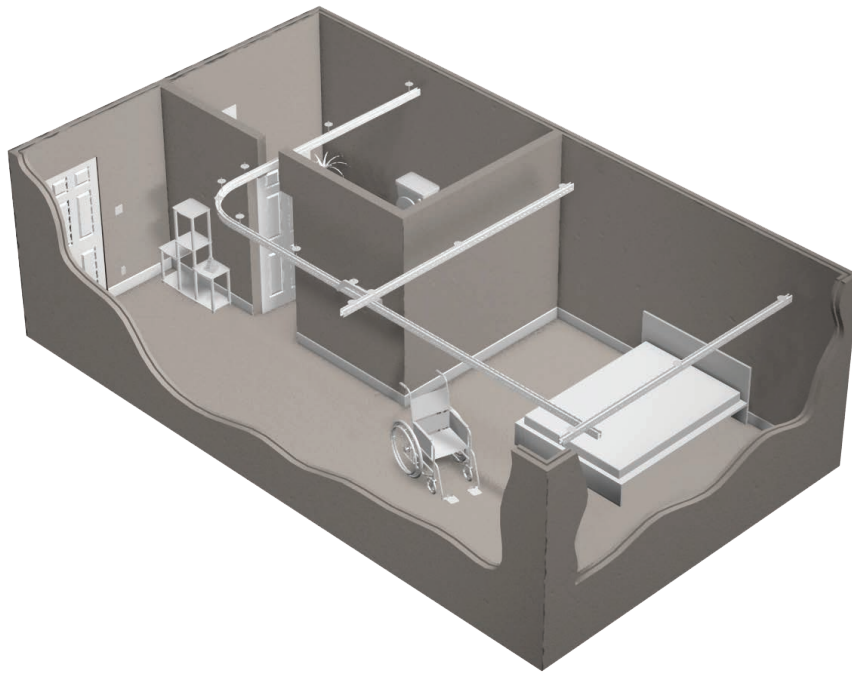
NOTE...

Threaded rods protruding out of the ceiling must measure approximately 15 cm (6 in) to 25.4 cm (10 in)

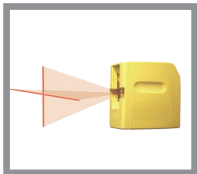
Single Gate X-Y Layout

The purpose of this layout:

- An X-Y system providing full room coverage in the bedroom, combined with a gate system, and tracking leading into the bedroom.



Tools required for this layout:



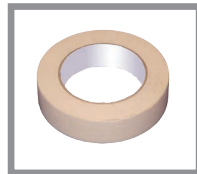
Crossline Laser Level (CLLL)



Tape Measure (T.M.)



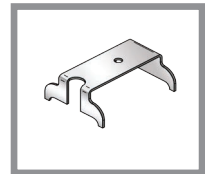
Plumb Laser



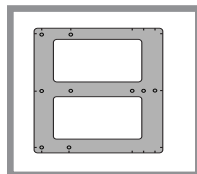
Masking Tape



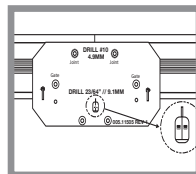
Marker



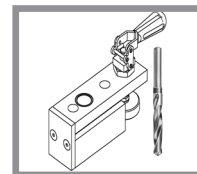
Curve Alignment Tool



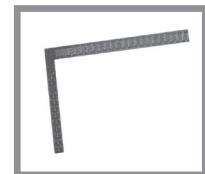
Alignment Plate (optional)



Drilling Jig

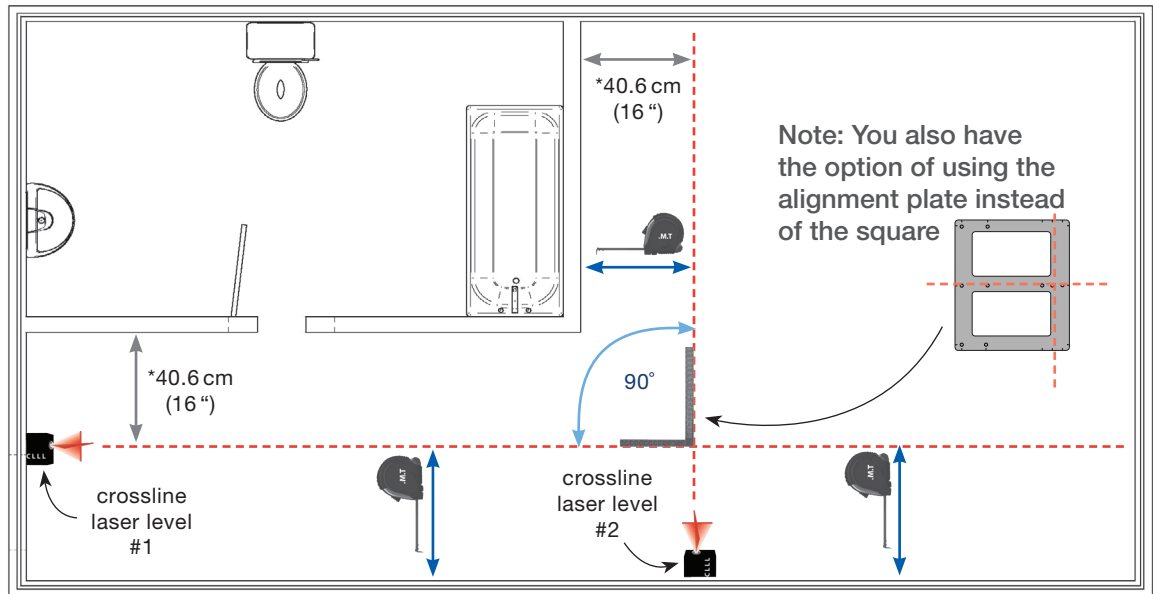


Locker Drilling Jig



60.96 cm (24 in) X 60.96 cm (24 in) Square

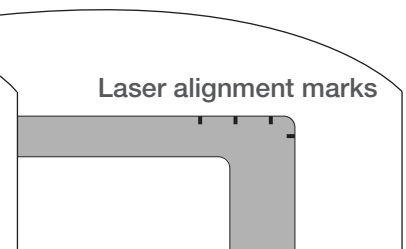
Squaring up the X-Y system with the existing track



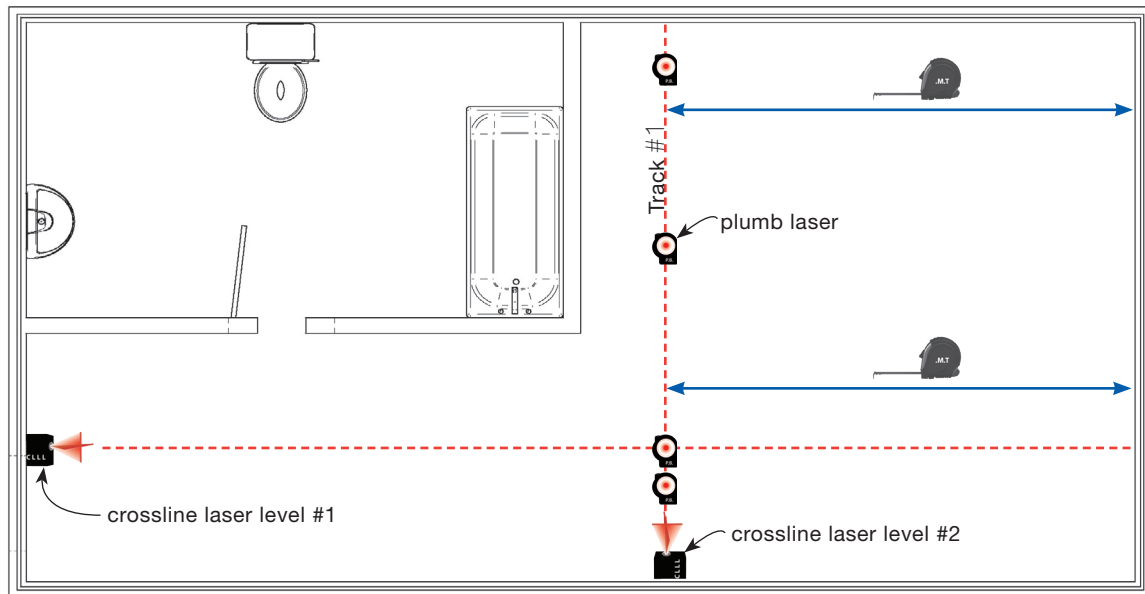
- Review “KWIKtrak Gate System” installation manual #001.11500.XX
- Line up the crossline laser level #1 with the tape measure so that your first line is parallel with the back wall.
- Determine where you want your first fixed X-Y track to be installed.
- This step is very important: Using crossline laser level #2, square up line with crossline laser level #1.
 - To help with the next steps, the alignment plate #225-31284 can be used. This plate is designed to be part of the installation of a gate tracking solution for *Maxi Sky 2 Plus*, but can also be used as a tool to help aligning laser and marking anchors location.
 - Simply put the alignment plate on the floor. Align the laser level #1 with the center the of alignment plate. Then, align the laser level #2 using the appropriate laser alignment mark.

This table shows which holes/laser alignment mark should be used according to the type of installation.

Single gate	Double gate	
Bracket position for Single gate	Bracket position for Single gate side	Bracket Position for Reverse Gate side (3 contacts interface)



Marking bracket locations on left fixed track and avoiding unnecessary deflection at gate crossover area



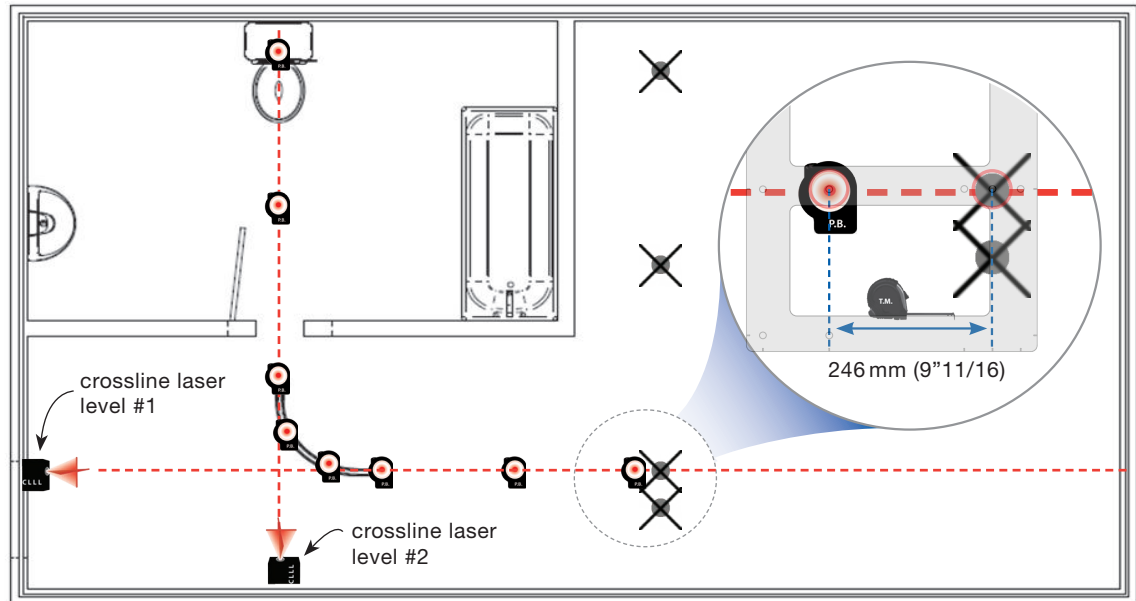
- Once you have squared up both lines, proceed to measure from crossline laser level #2, making sure that your second fixed X-Y track is parallel with your first.
- Put masking tape down and mark track #2.
- Proceed to determine the drop points for track #1 using the plumb laser. Please note: You must install an anchor point where both laser lines intersect. This is mandatory in order to eliminate unnecessary deflections in the track.
- Mark an "X" at every plumb laser location.



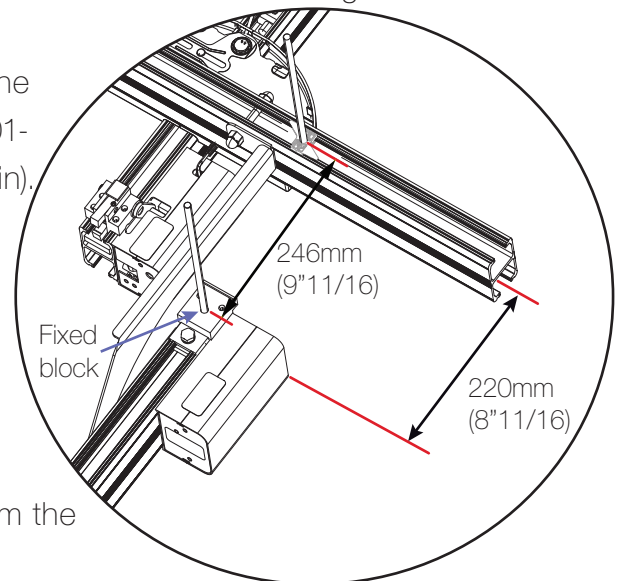
NOTE...

When setting up to mark for an X-Y system, be sure to leave 30 cm (12 in) of space, from track end to wall, to be able to insert the X-Y trolleys into the parallel fixed tracks.

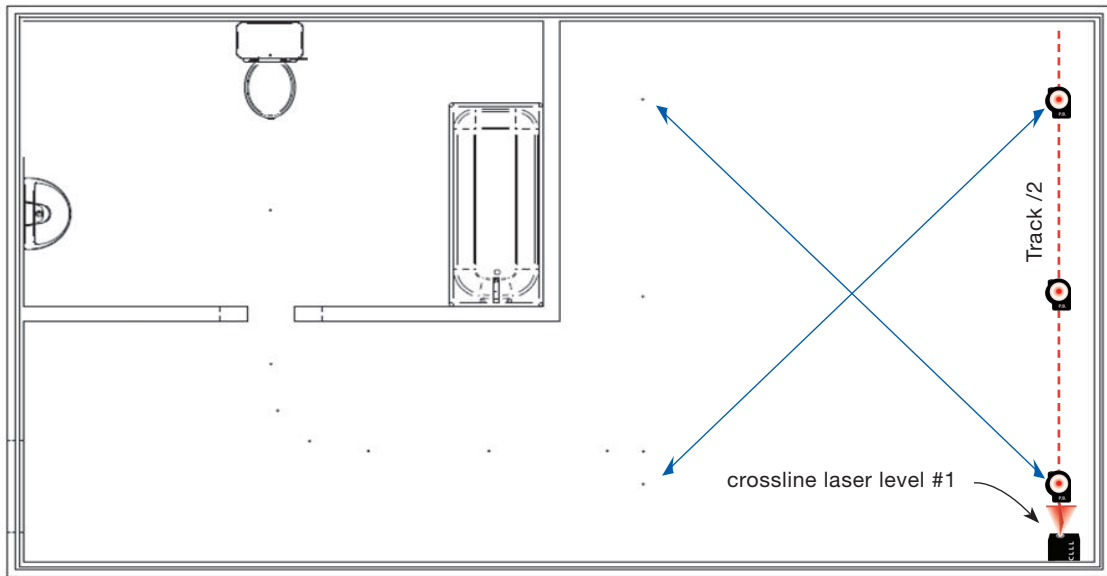
Marking bracket positions leading into the room



- Move crossline laser level #2, and line it up with the center of the door header and toilet.
- Using the curve alignment tool, line up the curve with crossline laser level #1.
- Adjust the curve left or right to get it as close to the center of doorway as possible.
- At this point, you may have to adjust crossline laser level #2 or the curve to get it as close as possible to the center of the doorway.
- Start marking the rest of your anchor points using the plumb laser. Refer to the KWIKtrak Span Chart (#001-01014-EN) if the distance is greater than 99 cm (39 in).
- The “fixed block” requires to be positioned at a specific location to provide a 220 mm (8”11/16) overhang for the moving track. When using the alignment plate, place your laser on the dedicated holes for exact position of the anchors for the fixed block. Once this step of marking the anchors is completed, the alignment plate can be removed from the floor.
- Double check the end of the curve to make sure there are no obstructions preventing you from anchoring your threaded rods. Make any adjustments if needed.



Marking other fixed tracks and bracket positions



- To mark the last three anchor locations, position crossline laser level #1 to line up with marks you made earlier. (This can also be done before positioning the curve.)
- Using the plumb laser, mark your anchor points for this section of track.

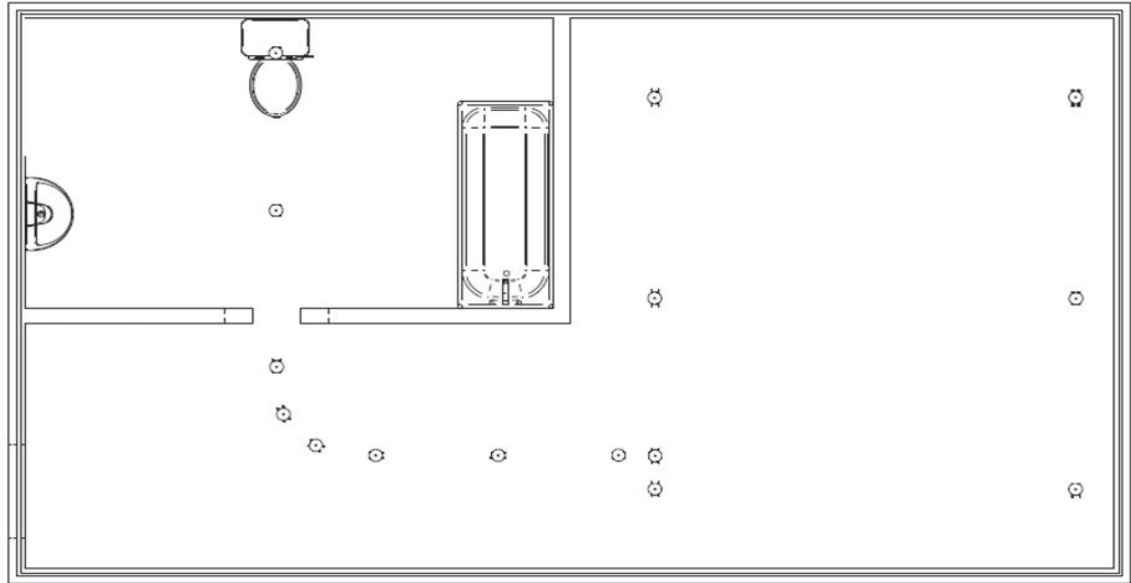
i

NOTE...

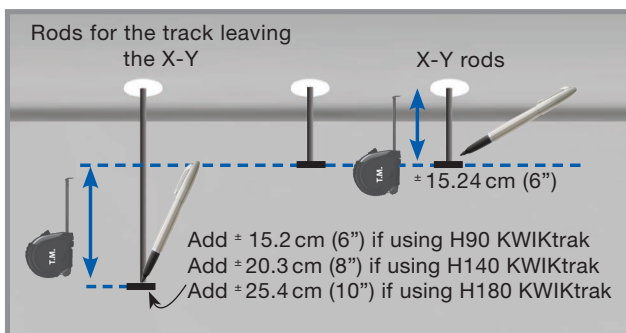
You do not need to add an extra bracket in this section, only the section where the gate is going to be installed.

Square up left fixed track and right fixed track, ensuring they are perfectly parallel.

Anchoring the rods at each bracket location and installing the brackets



- Once you determine that there are no obstructions, install the threaded rods.
- Make sure that rods in the bathroom are at least 15.2 cm (6 in) longer compared to the ones in the X-Y portion.
- Depending on the size of your moving track, the above measurement could be as much as 25.4 cm (10 in). This is a rough cut as you will adjust the lengths in the next step.
- The next step is to find the datum point (lowest point) for the X-Y only.



KWIKtrak H90



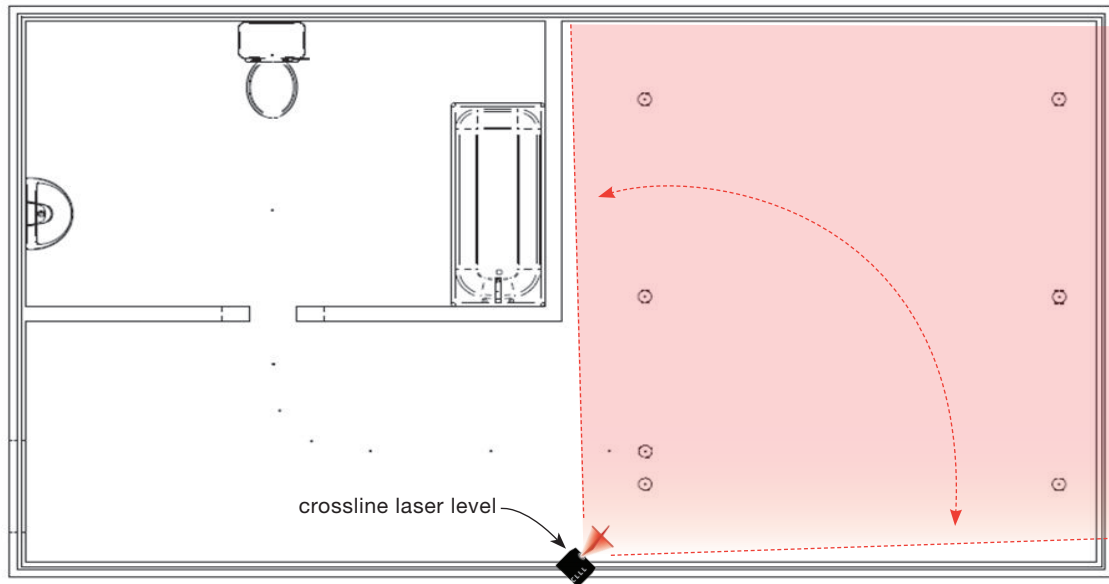
KWIKtrak H140



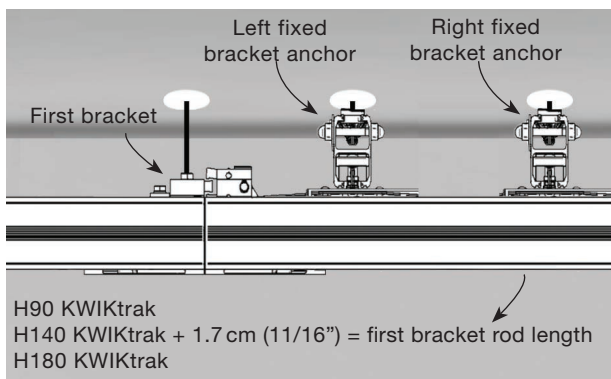
KWIKtrak H180

Closest bracket rod vs Turntable rods

Levelling off the X-Y brackets first

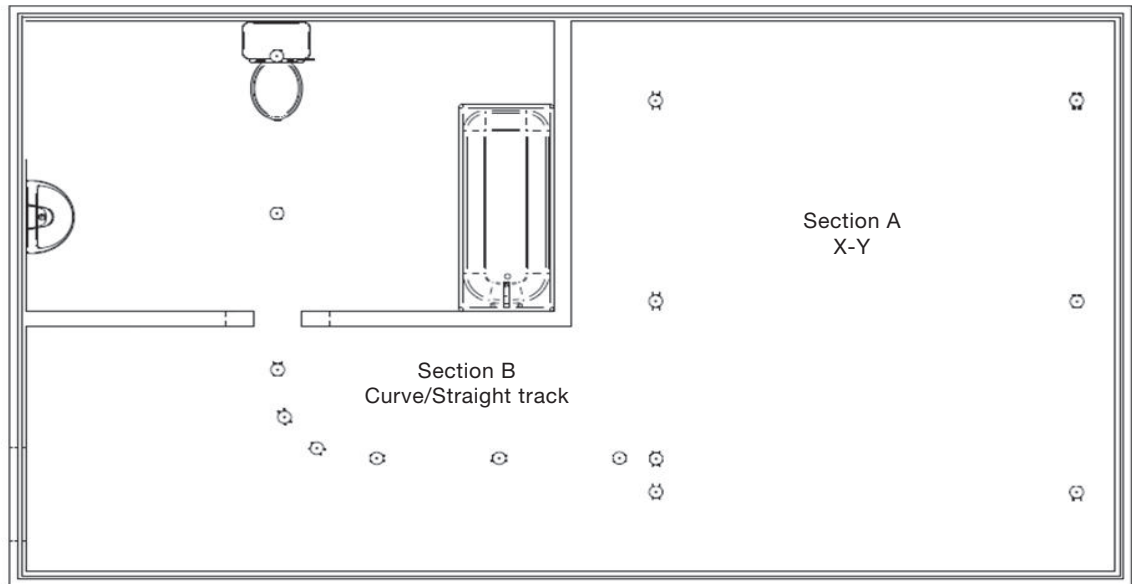


- Take the crossline laser level and position it in a location where you can access all the rods in the X-Y.
- Once you locate the lowest point, measure down 57 mm (2 1/4 in) and mark that rod.
- Proceed to level the rest of your rods in the X-Y.
- Install and level your brackets.
- Measure the rest of the rods, keeping in mind that you must add 1.7 cm (11/16 in) plus the width of the moving track.

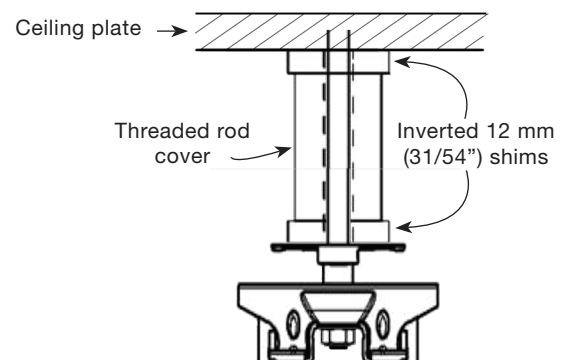


For example, if you are using a H90 Kwiktrak, the bottom of bracket B must be 157 mm (6 3/16 in) lower than the bottom of bracket A. The rod for the fixed block can be cut at the same length but it will need to be cut again later on in the install. Once the correct length for bracket B is determined, use that length to level and cut the rest of the rods.

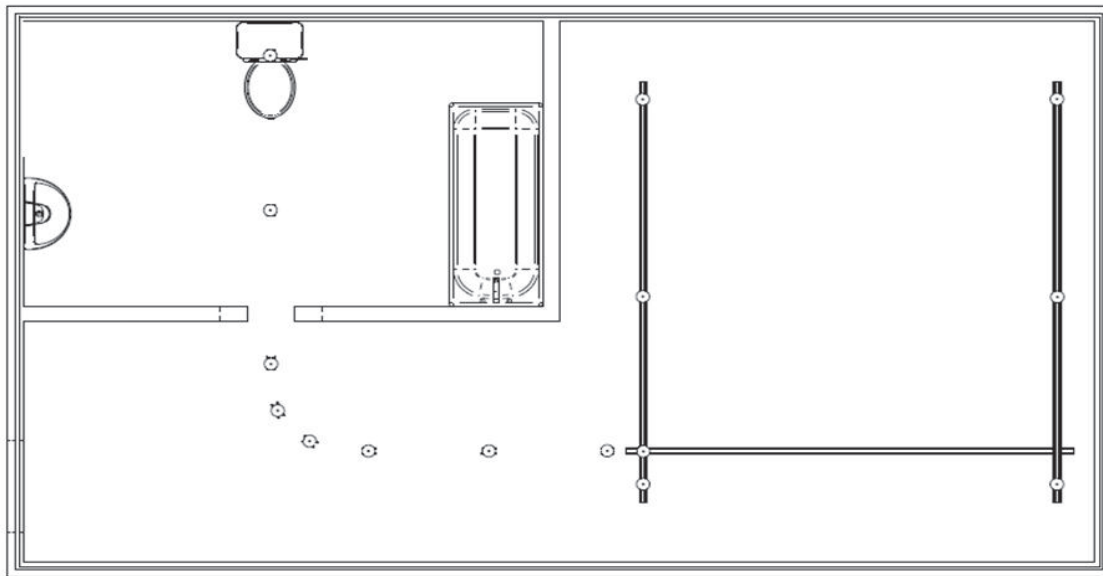
Levelling off the brackets on sections heading into the bathroom



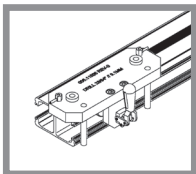
- You are now ready to install the brackets in section B.
- Because these threaded rods are longer than the X-Y threaded rods, you need to use a threaded rod cover in this section. A quick way to find the length you will need for your threaded rod cover is to measure your threaded rod and subtract 51 mm (2 in).
- (For example: If the length of your threaded rod is 21 cm (8 1/4 in), then cut your threaded rod cover at 15.9 cm (6 1/4 in). The length of each threaded rod cover will vary depending on how level the ceiling is. This measurement will not work for the threaded rods in the fixed block.)



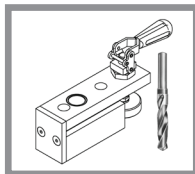
Mounting the tracks and preparing them for gate boxes



- Install the X-Y system. Before you install the moving track you should drill the holes necessary to install the gate.(Refer to document #001.11500.XX)
- Drill the holes for the DF-locker using the locker drilling jig. (Refer to document #001.11500.XX)
- If you are using a H140 or H180 KWIKtrak as the moving track, you will have to cut a section of the track away to install the gate clamp.
- Install the moving track. Be sure to mount the fixed trolley on the gate side (Do not forget to install the autoblocks between the two trolleys)
- Slide moving track into the two fixed tracks, install autoblocks and end caps.



Drilling jig



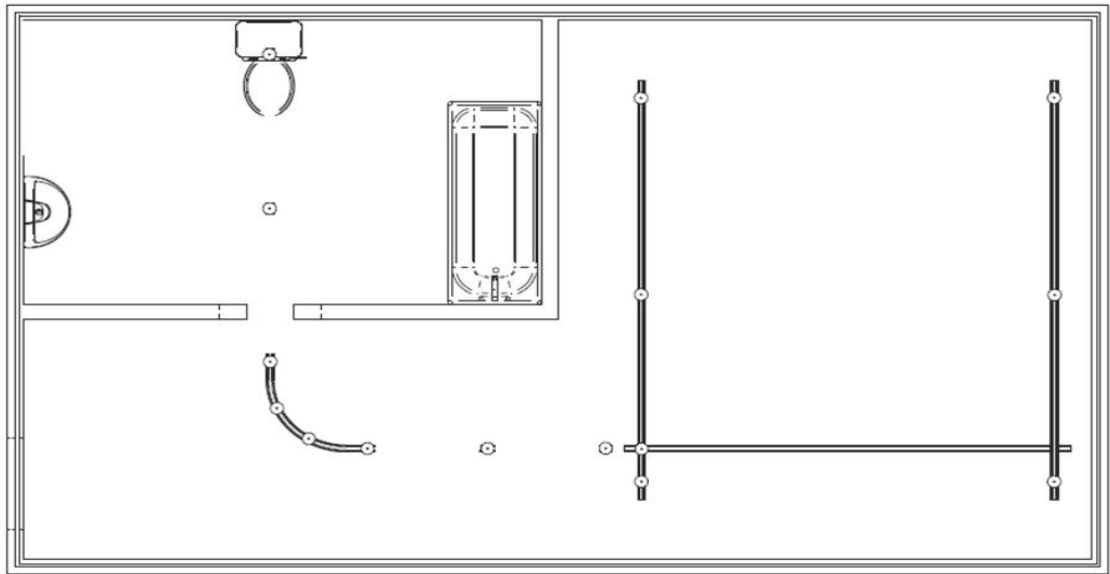
Locker drilling jig

NOTE...



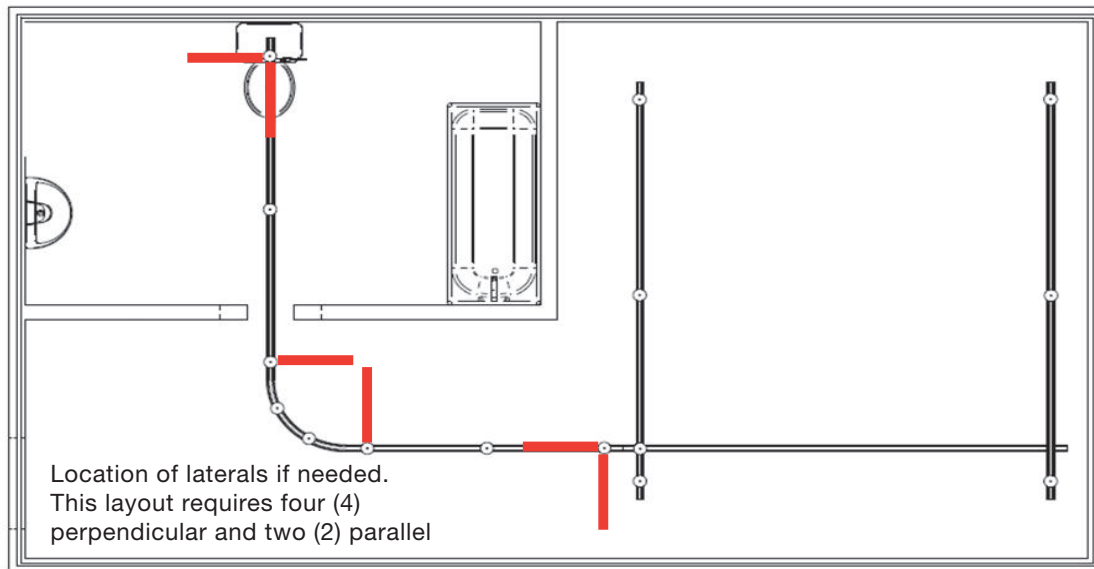
The moving track should not exceed 30.5 cm (12 in) past center of the fixed track.

Completing the track installation

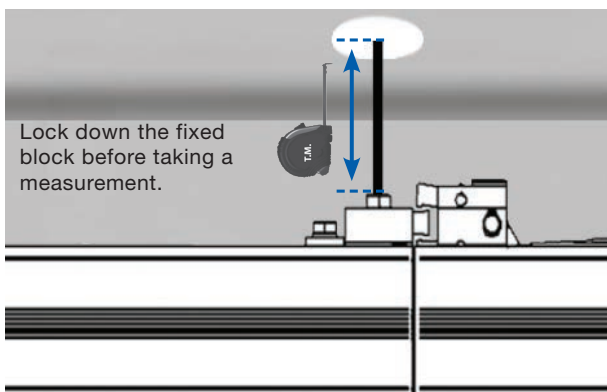


- Clip the curve up, making sure to center the curve ends with the joint brackets.
- Lock the curve's two middle brackets.
- Measure from the end of the curve to 25.4 mm (1 in) past the threaded rod for the fixed block.
- Cut the section of track and predrill the holes for the gate and the DF locker (Refer to document #001.11500.XX)
- Install the track and measure from the fixed block to the ceiling to determine the length of your threaded rod cover. Subtract 9.5 mm (3/8 in) from that measurement.
- Adjust the nut under the fixed block until the track is flush with the moving track.
- Cut any protruding threaded rod so that it is flush with the nut under the fixed block.

Adding lateral braces to eliminate unnecessary movement



- Clip the remaining tracks and lock all brackets and joint brackets.
- It may be necessary to install visible lateral braces if the distance from the ceiling to the fixed track exceeds 21 cm (9 in). (See Lateral Braces Installation Guide (001-01015-EN) for detailed instructions.)
- To find the proper length for the fixed block's threaded rod cover, install and secure the fixed block to the end of the track, put the track up and lock the middle bracket only.
- Measure from the ceiling to the top of the fixed block and subtract 9.5 mm (3/8 in) for the shims and ceiling plate.

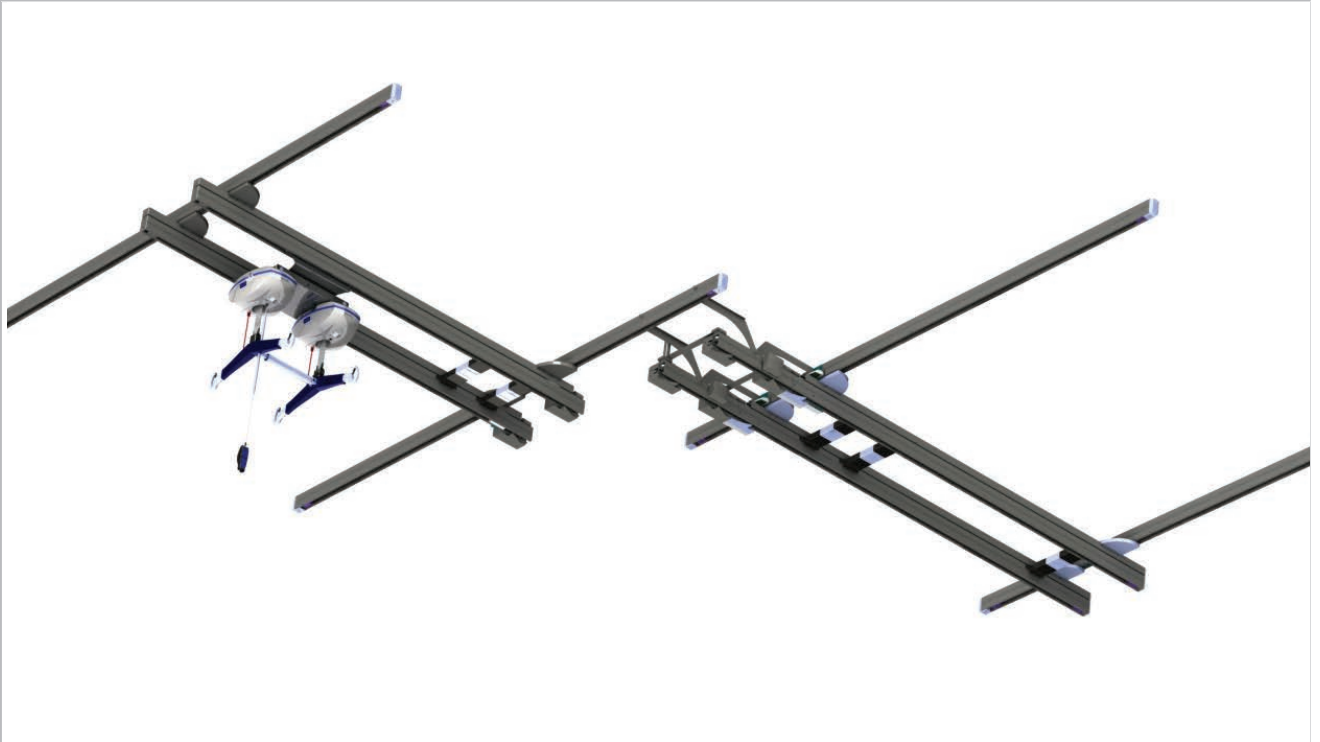


X-Y Layout With Double Gate For Maxi Sky 2 Plus

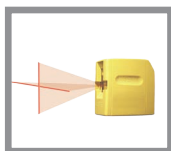
Note that while the most complex installations for the *Maxi Sky 2 Plus* are shown in this manual, all guidelines can be used for simpler installations. An installer level 3 is required to perform the layout shown bellow.

The purpose of this layout:

- An X-Y system providing full room coverage in the patient room, combined with a Double Gate system leading onto a 2nd X-Y system in the bathroom.



Tools required for this layout:



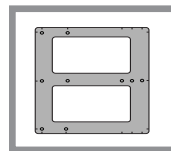
Crossline Laser Level (5 lasers work best)



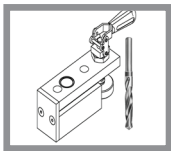
Measuring tape (2 tapes work best)



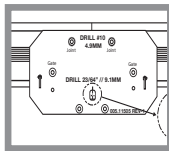
Plumb Laser (4 lasers work best)



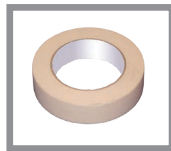
Alignment Plate



Locker Drilling Jig



Drilling Jig



Masking Tape



Marker

Legend

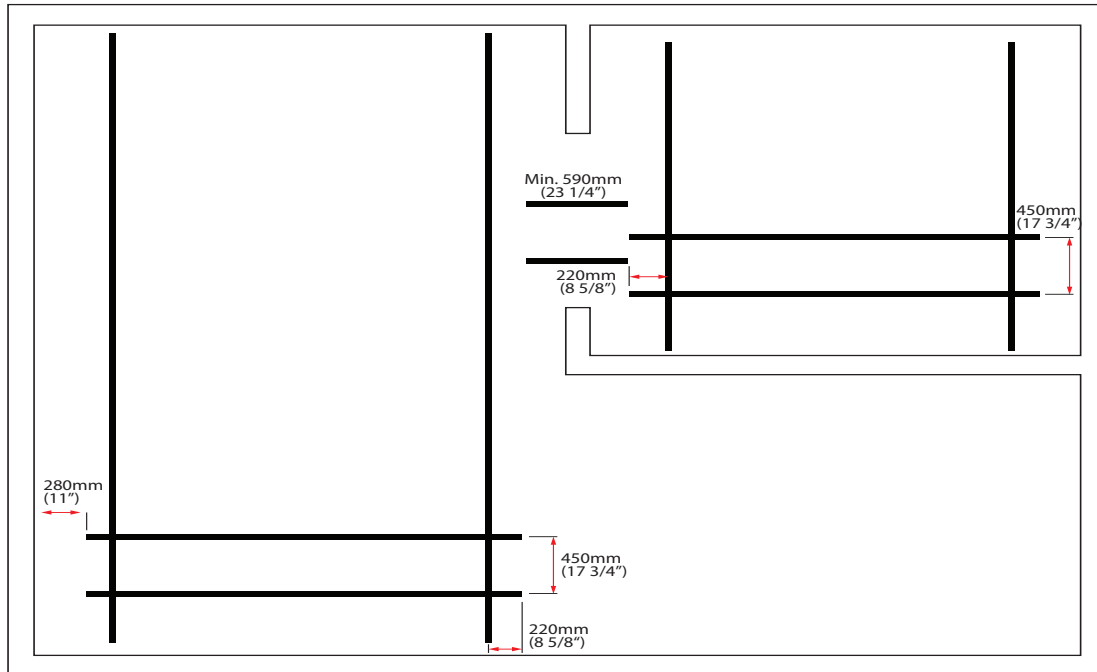
- Plumb laser
- Anchor location point
- Installed threaded rod (272kg/600lb)
- Installed threaded rod (454kg/1000lb)
- Cross line laser level (CLL)
- Measuring Tape
- Bracket location

NOTE...

Review the KWIKtrak Gate System manual #001.11500 EN, the KWIKtrak X-Y Track System Installation Manual #001-11275-EN and the Lateral Braces Installation Guide #001-01015-EN

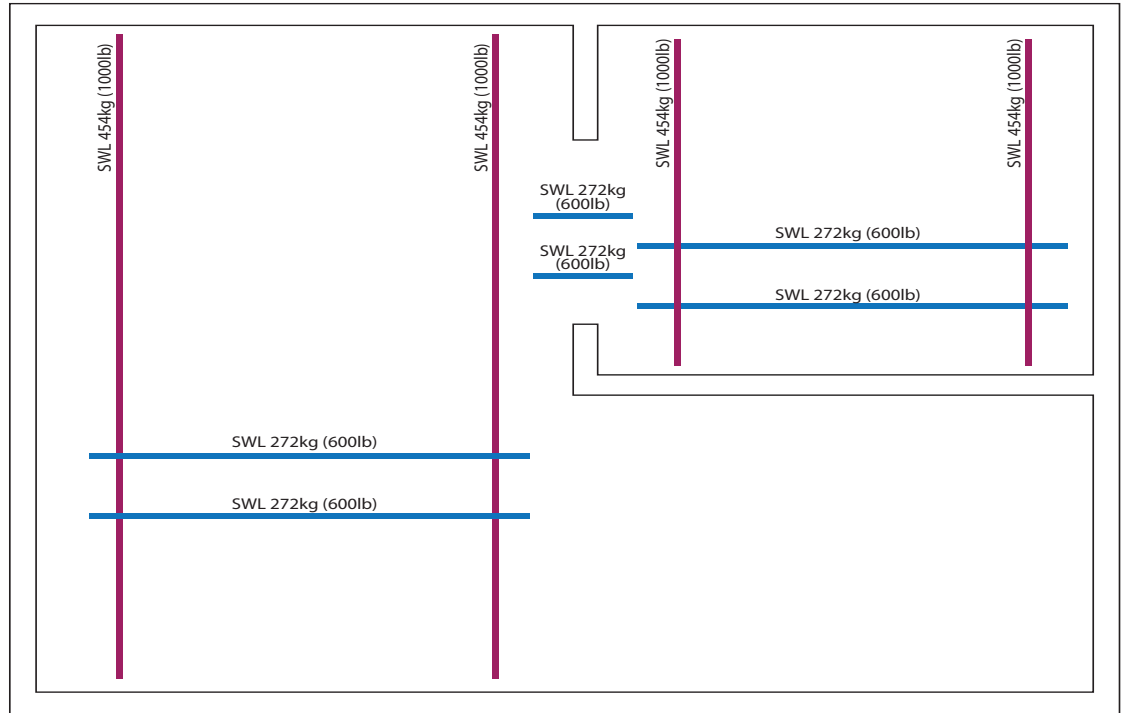


Helpful dimensions to keep in mind when performing such a layout:



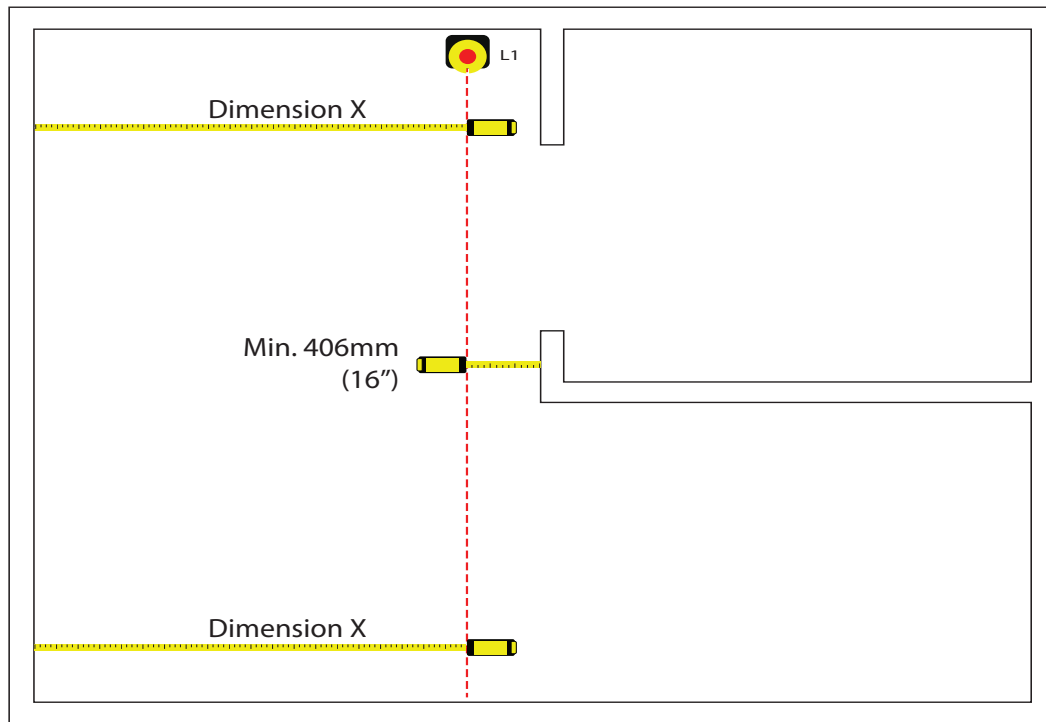
- 450 mm (17 3/4 in) centre to center (c/c) between the two moving track.
- 220 mm (8 5/8 in) MAX overhang on X-Y moving tracks, on the Gate ends.
- 590 mm (23 1/4 in) is the minimum length of the straight track section when installing the double Gates system.
- 280 mm (11 in) of clearance is required between the end of the track and the next obstacle to enable the insertion of the *Maxi Sky 2 Plus* trolley into the tracks. In the figure above, this distance is measured between the end of the track and the left wall.

Understanding SWL of the installation



SWL of each individual tracks varies from 272 kg (600 lb) to 454 kg (1000 lb). The combined tracking solution is good for a maximum of 454 kg (1000 lb).

Laser setup for fixed track in patient room



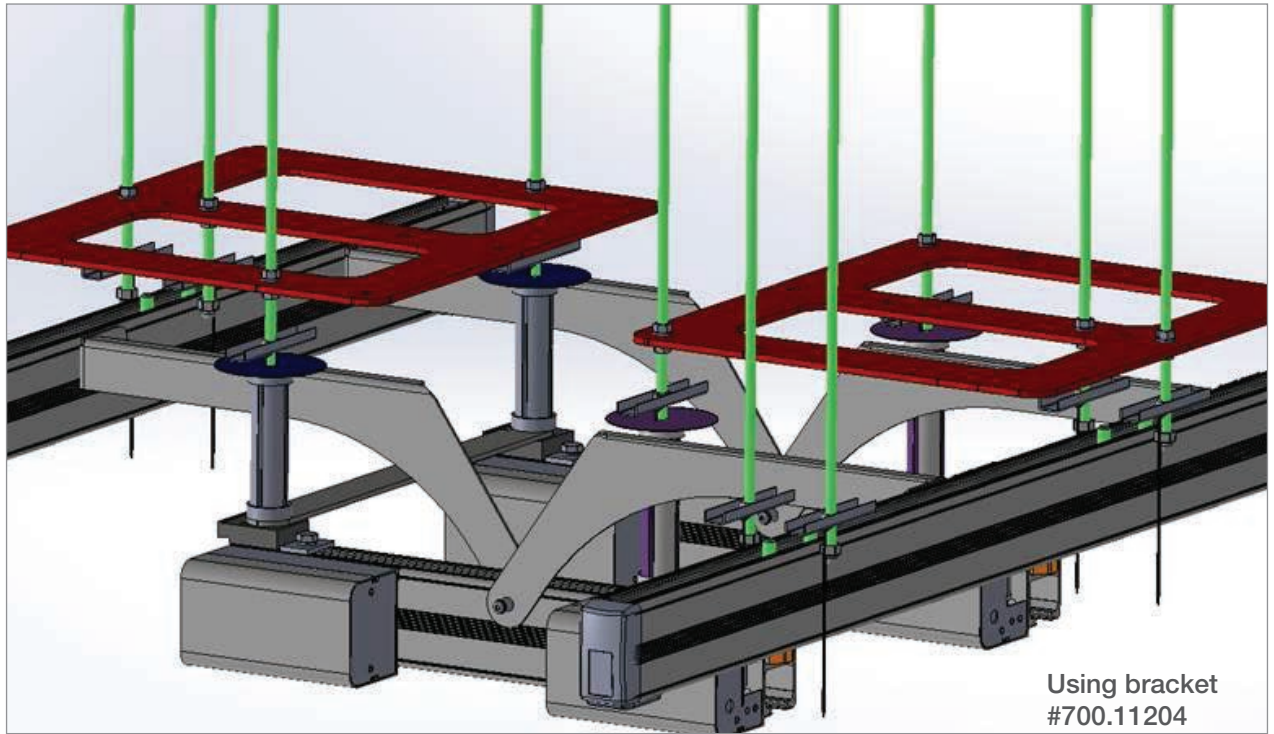
- Line up cross line laser level #1 (L1) in line with bathroom wall respecting the 406 mm (16 in) distance.
- Align the L1 in parallel with the wall. Make sure measuring tape readings (Dimension X) are equal.



NOTE...

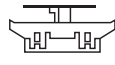
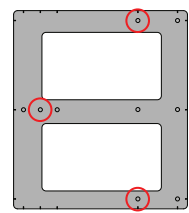
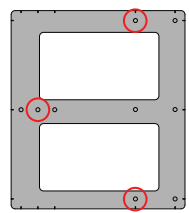
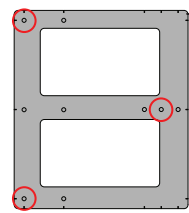
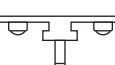
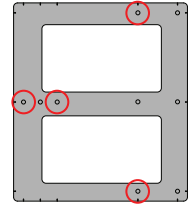
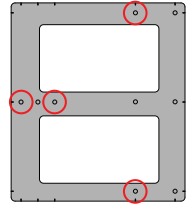
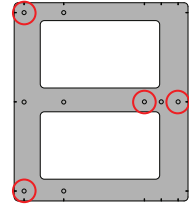
Minimum 406 mm (16 in) to avoid having the patient interfering with the side wall when being manoeuvred below the X-Y system.

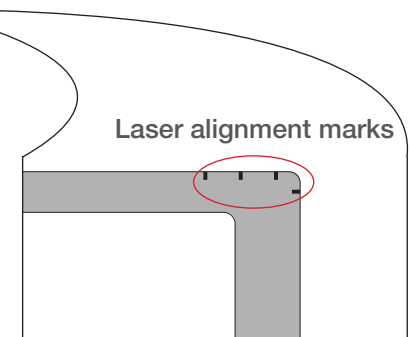
The Alignment Plate #225-31284



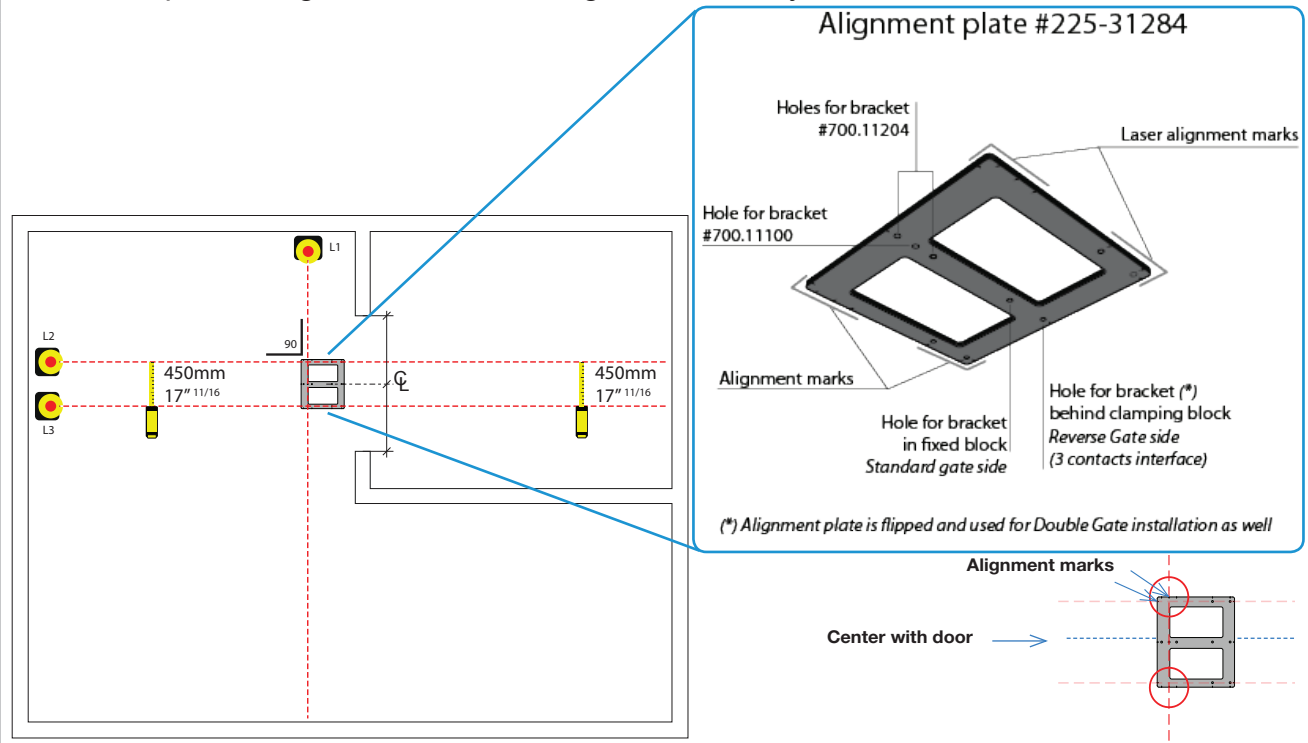
First, the alignment plate is a tool designed to help set up and mark the floor and the ceiling when the laser is aligned with the marks on the plate. Secondly, it is installed in the inner ceiling to ensure the bracket is properly positioned as well as to add stiffness to the installation, increasing Gate reliability.

This table shows which holes should be used according to the chosen bracket.

	MS2 Plus Single gate	MS2 Plus Double gate	
	Bracket position for Single gate	Bracket position for Single gate side	Bracket Position for Reverse Gate side (3 contacts interface)
Bracket #700.11100 			
Bracket #700.11204 			

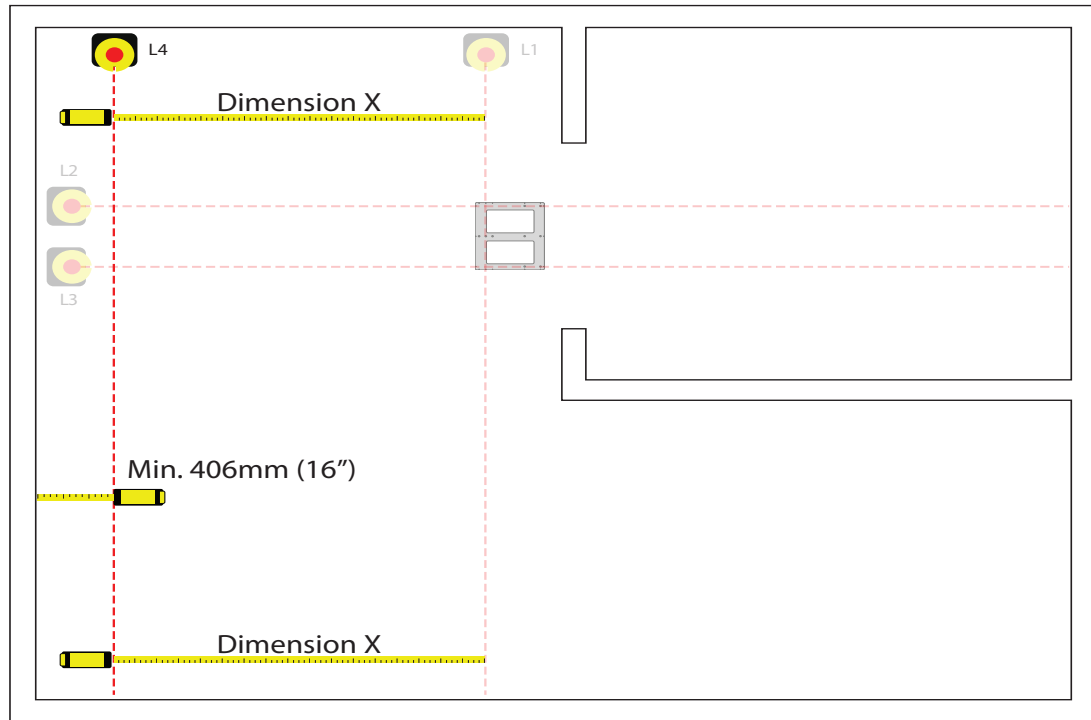


Laser setup for straight tracks connecting the two XY systems



- Place the alignment plate #225-31284 on the floor, and center it with the door.
- Use the cross line laser level #2 (L2), square it up with L1 using the alignment marks found on alignment plate.
- Add cross line laser level #3 (L3) using the alignment marks of the alignment plate.
- Ensure L3 is parallel with L2, the measuring tape readings should be 450 mm (17 11/16 in).

Laser setup for fixed track in patient room



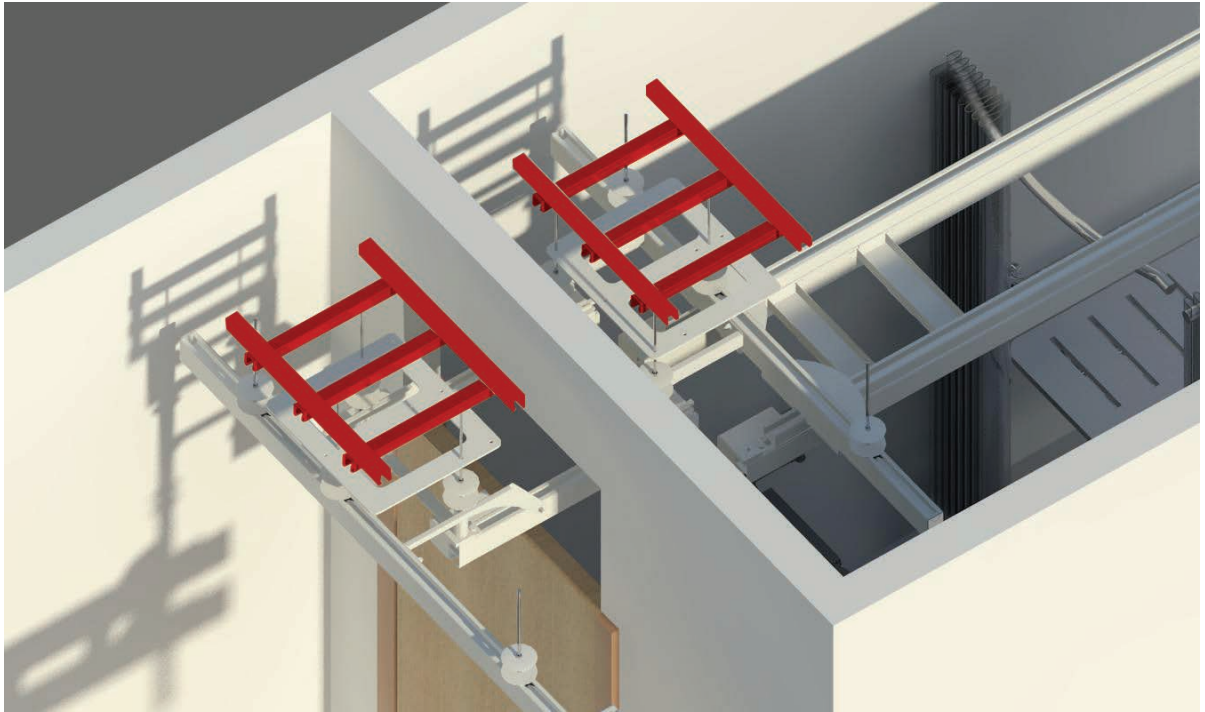
- Line up cross line laser level #4 (L4) in line with the wall respecting the 406 mm (16 in) distance.
- Ensure L4 is parallel with L1. Make sure measuring tape readings (Dimension X) are equal.



NOTE...

Minimum 406 mm (16 in) to avoid having the patient interfering with the side wall when being manoeuvred below the X-Y system.

Strut bridge in inner ceiling



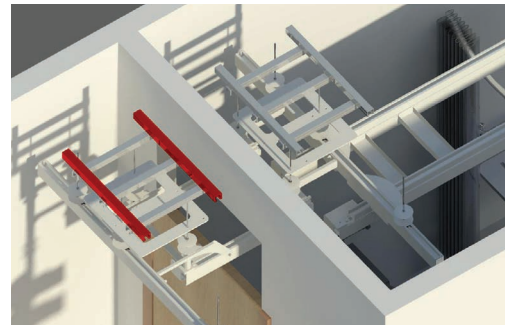
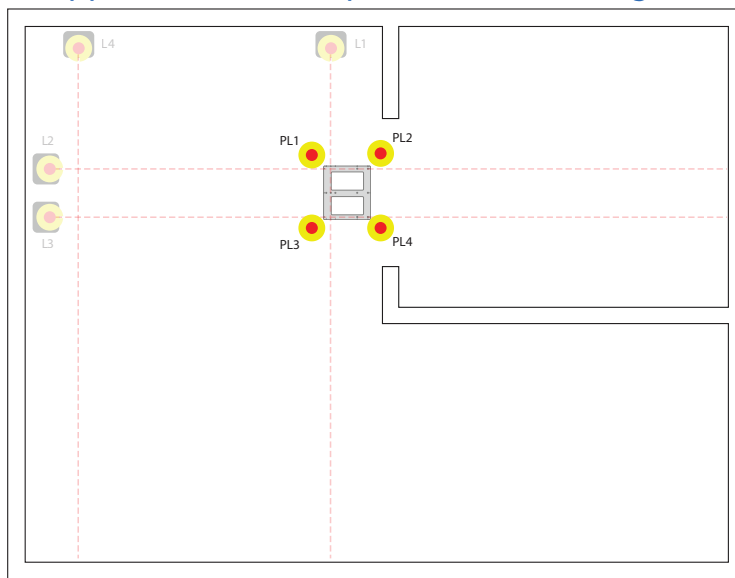
The image above shows what the strut bridge should look like when completed. In order to facilitate the positioning of the rods through the alignment plate, a strut bridge must be built above it. By doing so, the position of the rods can be adjusted precisely.



NOTE...

A strut bridge in the inner ceiling will facilitate the positioning of the rods, through the alignment plate.

Marking anchors positions for strut bridge



Note: In this step, we are focusing on strut bridge installation in patient room

The following steps will demonstrate marking each individual anchor points:

- Place 4x plumb laser outside of the area of the alignment plate in order to position the main struts of the bridge. These struts will be fastened directly to the underside of the structure.
- Mark these positions by using masking tape and your marker.



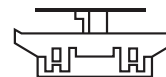
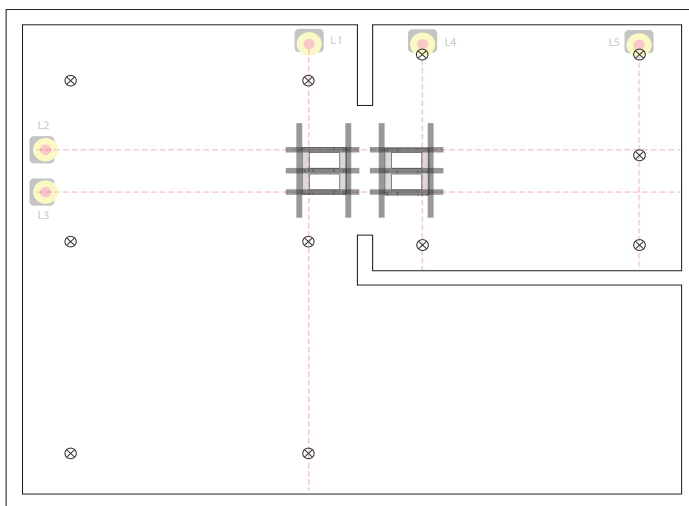
NOTE...

At each plumb laser position, we recommend you mark both the floor and ceiling using masking tape and a marker at every anchor location point.

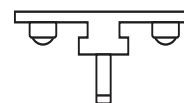
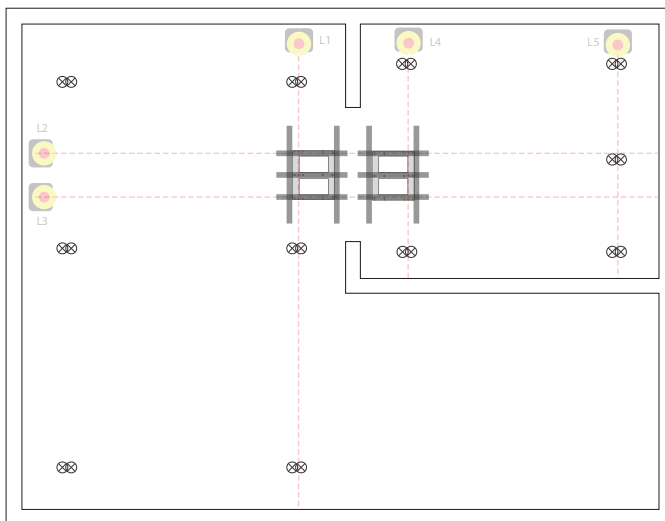
Defining track bracket type

It is possible to install the fixed track with two types of track brackets:

Track bracket #700.11100



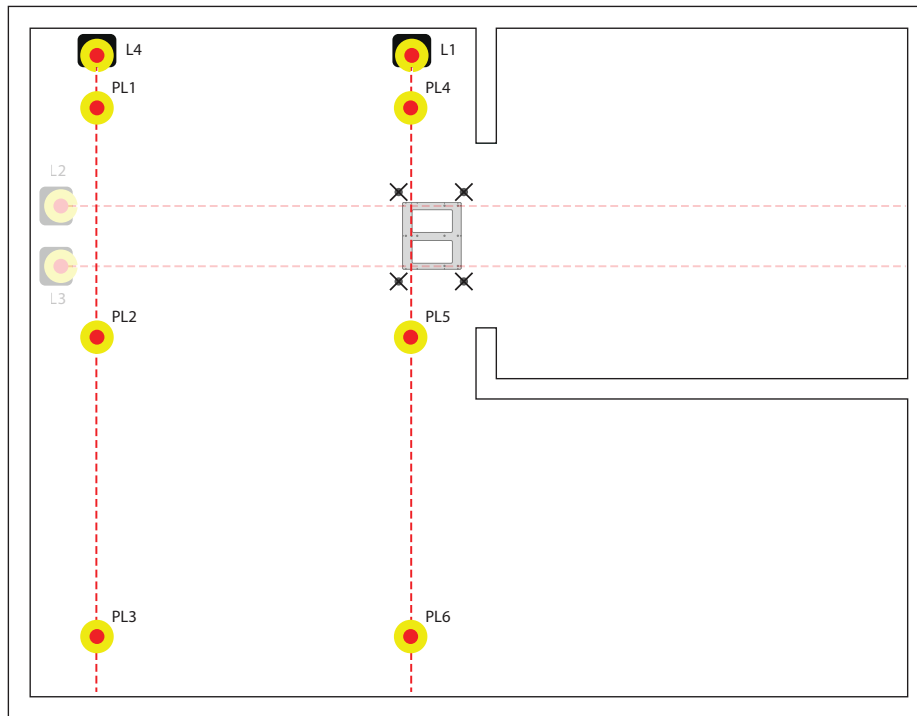
Track bracket #700.11204



If you are using #700.11204, two rod positions are required to be marked at each anchor location.

Note that in the rest of the document, we will use the single rod track bracket #700.11100.

Marking bracket position for fixed tracks of the X-Y in the patient room



The next steps are demonstrating how to mark the fixed tracks and bracket positions in the patient room. Refer to KWIKtrak Span chart #001-01014-EN.

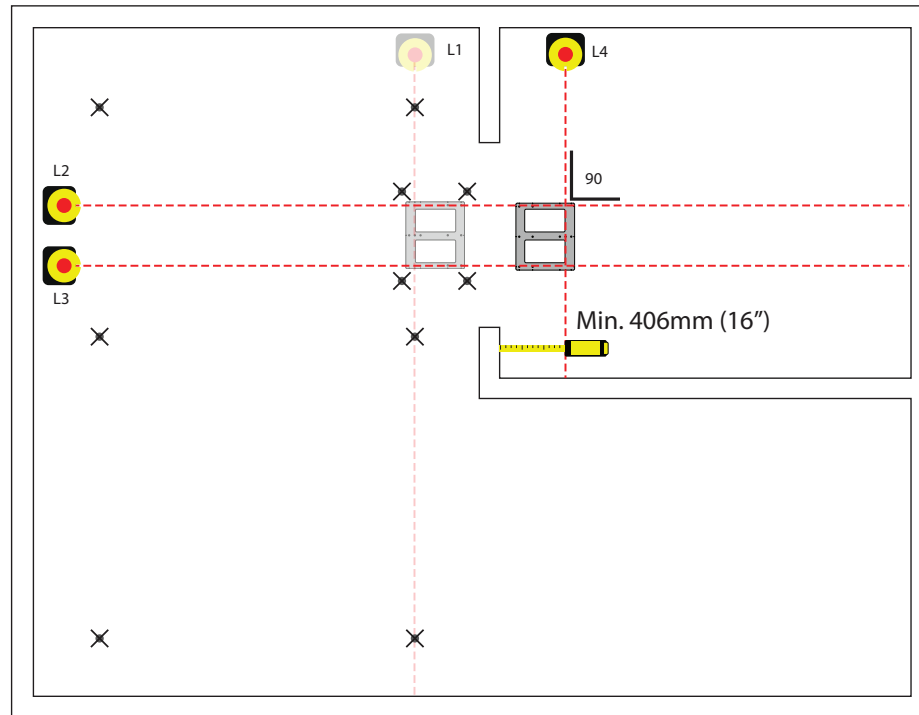
- Install the plumb laser in line with L4 at the first bracket position.
- Mark this position using masking tape and your marker.
- Continue along with plumb laser for the next bracket positions.
- Repeat step for L1. Remember that in the middle of the alignment plate, there will be a track bracket. The location of this track bracket does not need to be marked yet.



NOTE...

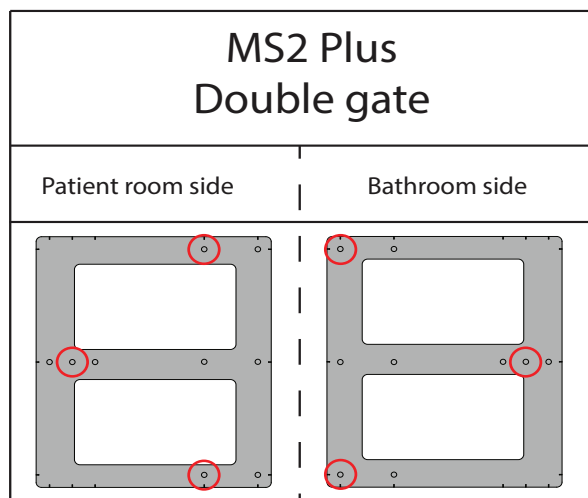
Refer to KWIKtrak Span chart #001-01014-EN under *Maxi Sky 2 Plus X-Y* system column to know the maximum span length between brackets.

Laser setup for fixed track in bathroom



Since a Double Gate is being installed, in this step we will use the 2nd alignment plate (#225-31284):

- Position L4 in line with bathroom wall while respecting the 406 mm (16 in) distance.
- Place the second alignment plate on the floor and align the marks of the plate with L2 and L3.
- Position L4 perpendicular to L2 by aligning it with the right mark on the alignment plate. Refer to image below for laser alignment marks on alignment plate.

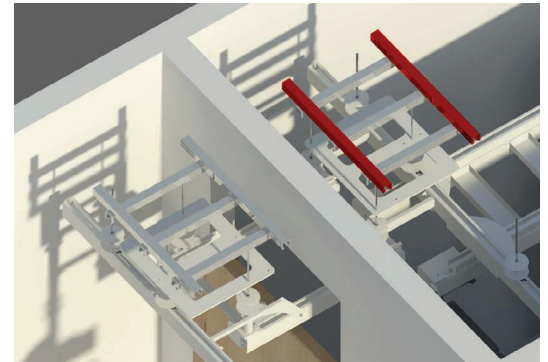
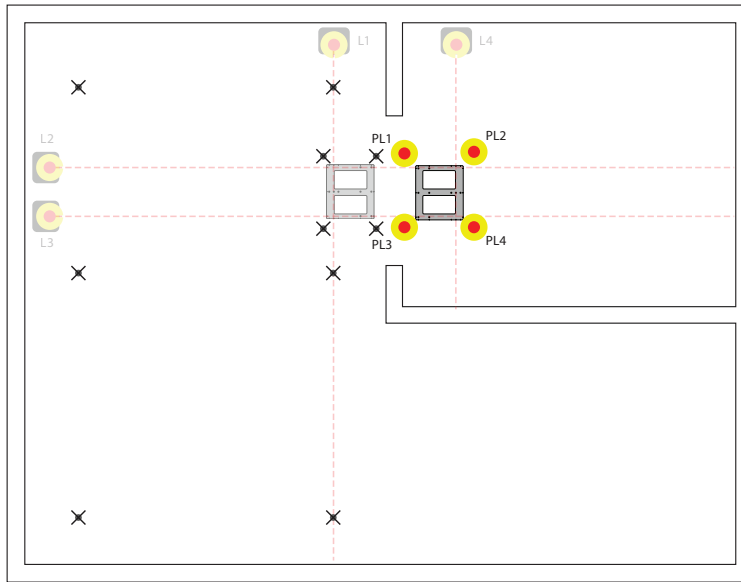


NOTE...

Minimum 406 mm (16in) to avoid having the patient interfering with the side wall when being manoeuvred below the X-Y system.



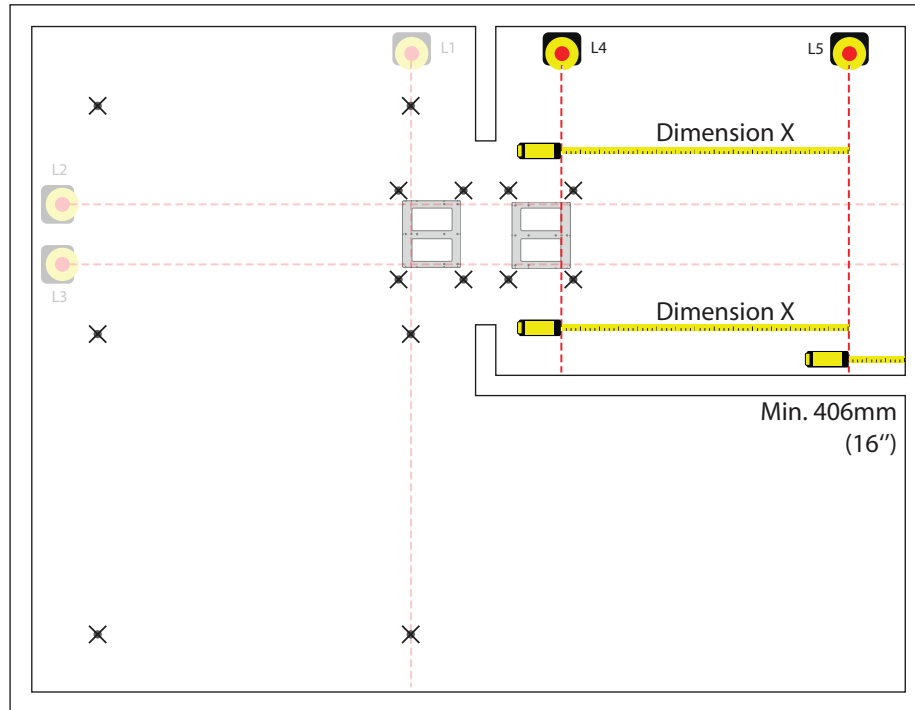
Marking anchors positions for the second trut bridge



Note: in this step, we are focusing on strut bridge installation in bathroom

- Place 4x Plumb Laser outside of the area of the alignment plate in order to position the main struts of the bridge. These struts will be fastened directly to the underside of the structure.
- Mark these positions by using masking tape and your marker.

Laser setup for fixed track in bathroom



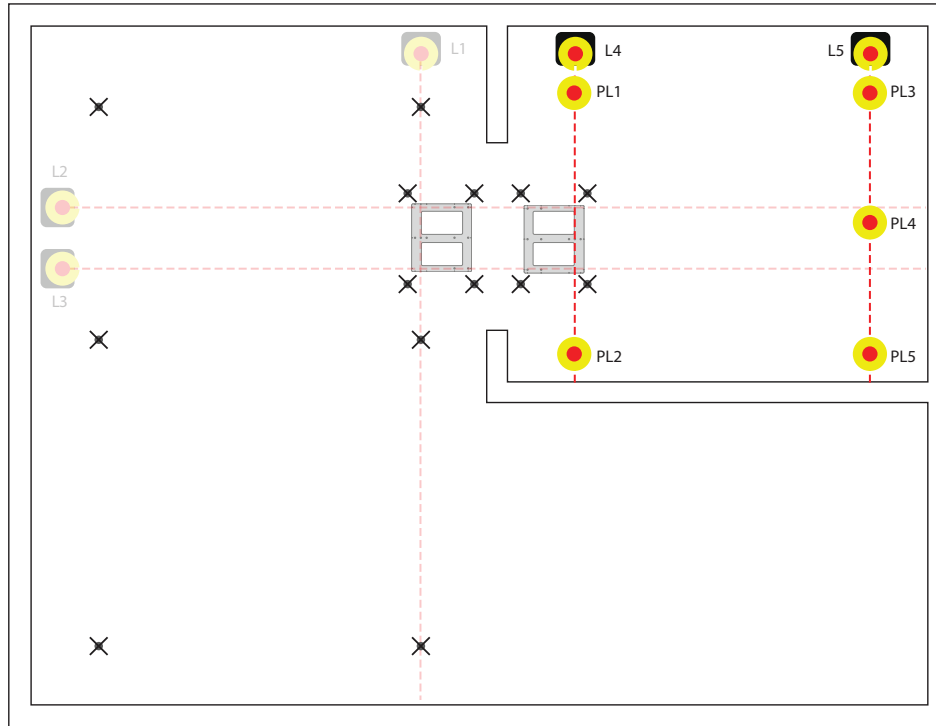
- Line up cross line laser level #5 (L5) in line with bathroom wall respecting the 406 mm (16 in) distance.
- Ensure L5 is parallel with L4. Make sure measuring tape readings (Dimension X) are equal.



NOTE...

Minimum 406 mm (16 in) to avoid having the patient interfering with the side wall when being manoeuvred below the X-Y system.

Marking bracket position for fixed track of the X-Y in the bathroom



The Next steps demonstrate how to mark the fixed tracks and bracket positions in the bathroom. Refer to KWIKtrak Span char #001-01014-EN.

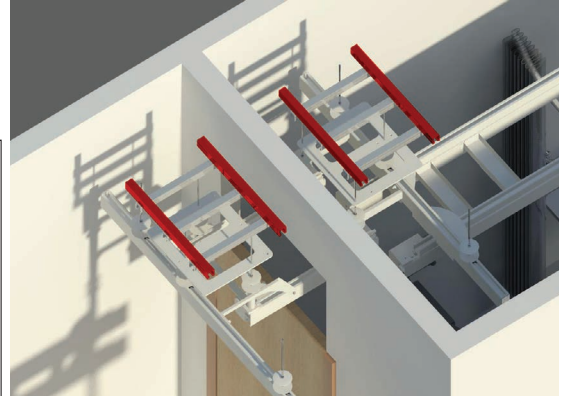
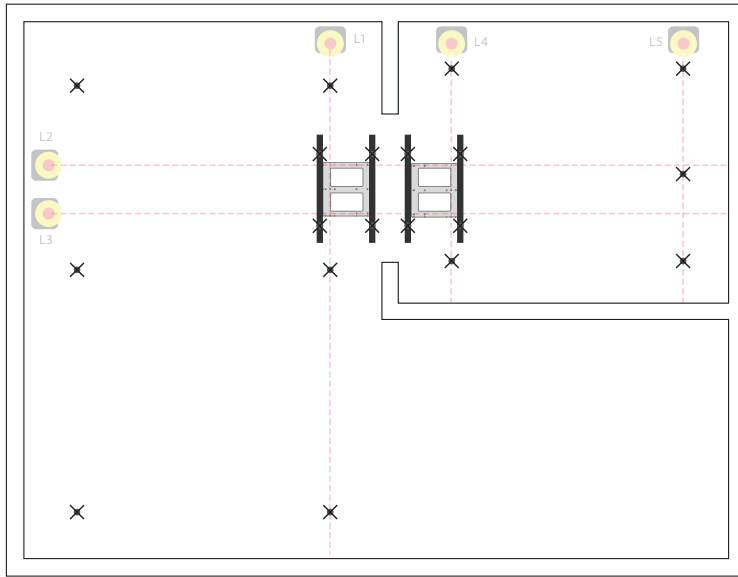
- Install the plumb laser in line with L5 at first bracket position.
- Mark this position using masking tape and your marker.
- Continue along L5 with plumb laser for next bracket positions.
- Repeat step for L4. Remember that in the middle of the alignment plate, there will be a track bracket. The location of this track bracket does not need to be marked yet.



NOTE...

Refer to KWIKtrak Span Chart #001-01014-EN, under *Maxi Sky 2 Plus X-Y* system column to know the maximum span length between brackets. .

Installing the first strut of the strut bridges







Having marked all the anchors positions, we are ready to proceed to fix the strut sections of the bridge:

- Install the appropriate anchor at each mark previously made.
- Select the strut profile according to the span chart below.
- Fix the strut to the structure. (see note below)

Strut span chart
for using with ArjoHuntleigh ceiling lifts

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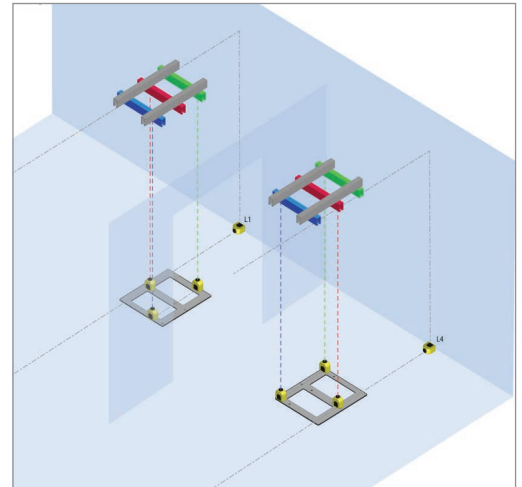
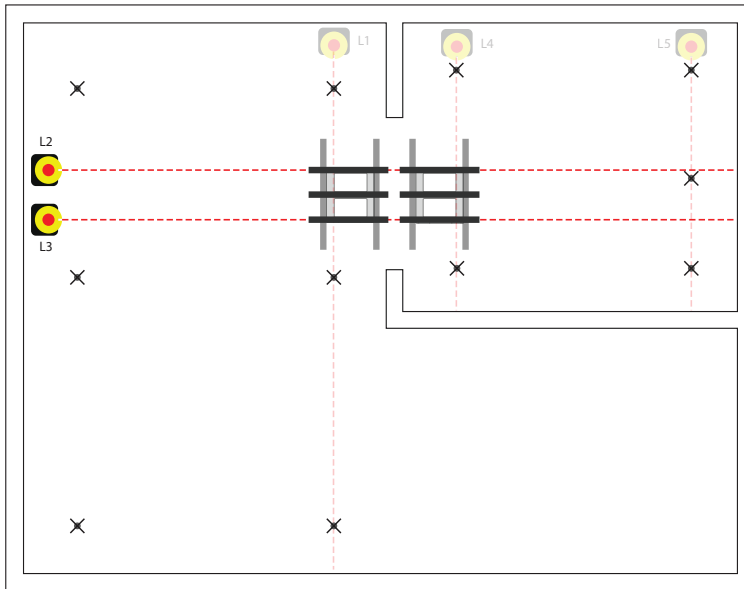
		Maximum Span			Dimensions
		200 kg 440 lb	272 kg 600 lb	454 kg 1000 lb	
MQ-21 HS-1316-12	in	380	280	N/A	 Width: 41 mm 1" 5/8 Height: 21 mm 13/16" Part #: 000.01205 Ref #: MQ-21 HS-1316-12
	mm	15	11	N/A	
MQ-41/3 HS-158-12	in	1080	790	470	 Width: 41 mm 1" 5/8 Height: 41 mm 1" 5/8 Part #: 000.01230 000.01238 Ref #: MQ-41/3 HS-158-12
	mm	42	31	19	
MQ-41/3 double HS-158-12 double	in	1520	1370	950	 Width: 41 mm 1" 5/8 Height: 62 mm 2" 7/16 Part #: 000.01238 Ref #: MQ-62 HS-2716-12
	mm	60	54	37	
MQ-62 HS-2716-12	in	1680	1460	880	 Width: 41 mm 1" 5/8 Height: 62 mm 2" 7/16 Part #: 000.01238 Ref #: MQ-62 HS-2716-12
	mm	66	58	35	
MQ-41/3 triple HS-158-12 triple	in	1740	1570	1320	
	mm	68	62	52	
MQ-62 double HS-2716-12 double	in	2120	1910	1610	
	mm	83	75	63	
MQ-62 triple HS-2716-12 triple	in	2420	2190	1840	
	mm	95	86	73	

NOTE...

Depending on the structure type, refer to www.arjohuntleighlibrary.com for detailed installation method.



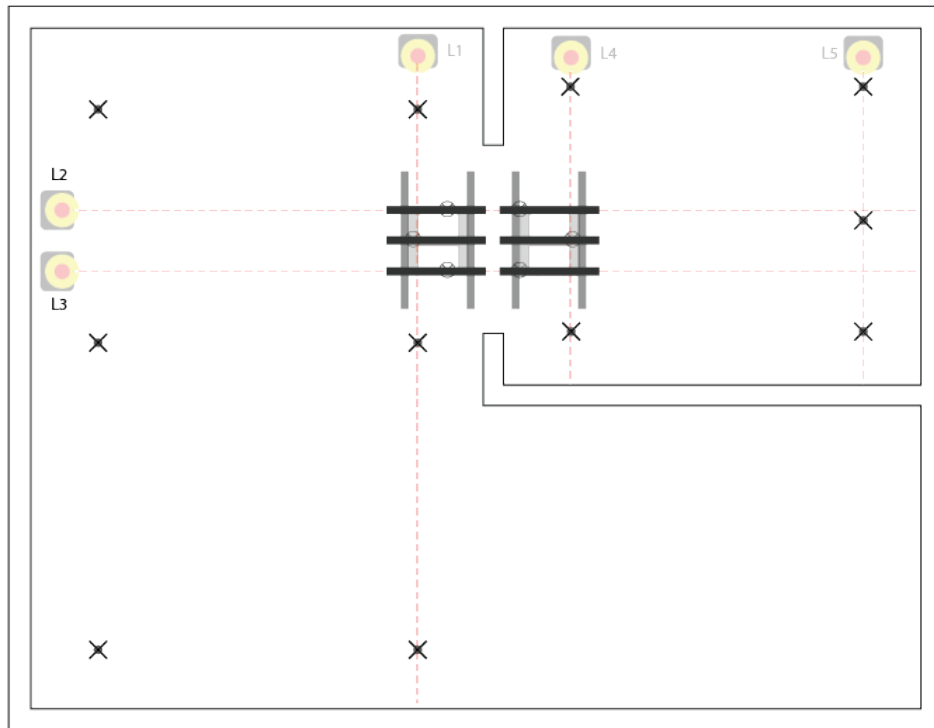
Installing the strut cross section of the strut bridges for bracket location



Having fixed the first strut, we are ready to finish the bridge:

- Position the plumb laser on the dedicated hole on the alignment plate.
- Select the strut profile according to the span chart on the previous page.
- Fix the bridging strut to the strut that is already installed.
- Using the plumb laser as a guidance, center the laser point in the center of the strut and tighten in place.

Finalizing the bracket positions on the strut bridge section



- Install the threaded rod in the strut using the plumb laser previously placed over the alignment plate. Ensure they are perfectly aligned with the plumb laser.
- Leave the threaded rod exceeding ceiling level by at least 406 mm (16 in).
- Know that this is a rough cut, you will be adjusting the length of the rods later.



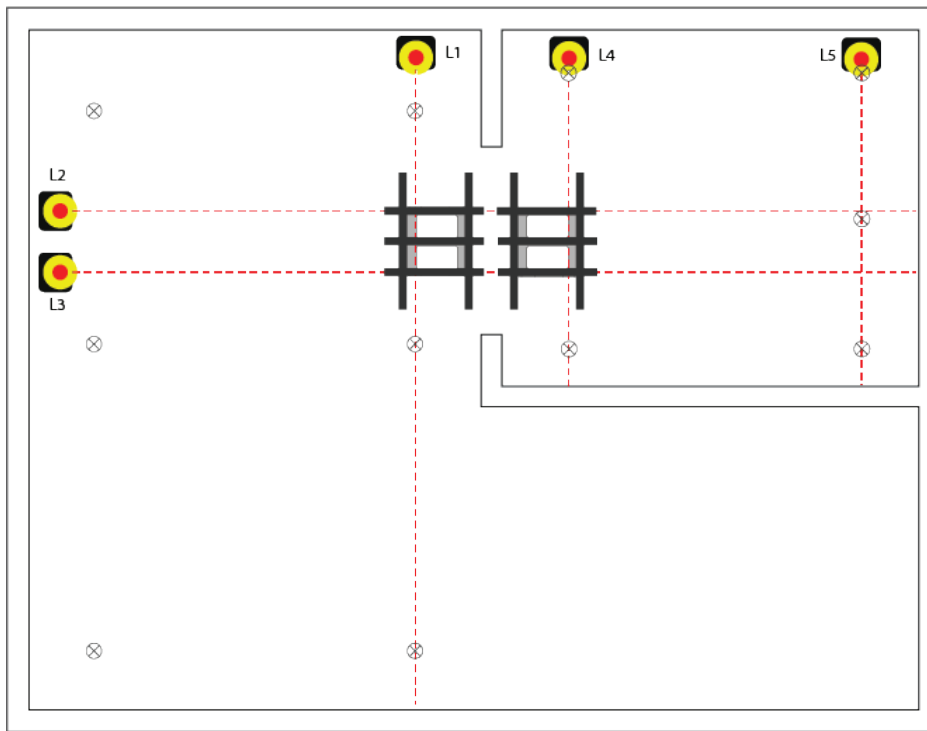
Ensure proper torque is applied to hex nut to prevent rod from moving.



NOTE...

When installing the threaded rod, ensure proper torque is applied to hex nut to prevent rod from moving.

Installing threaded rods

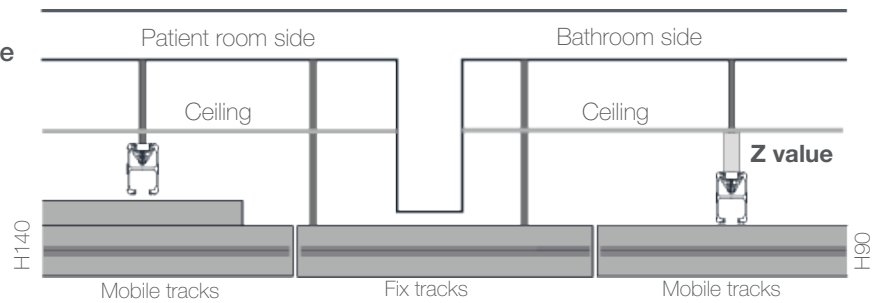


- Install a threaded rod at each mark previously made, making sure its length exceeds the ceiling level by at least 406 mm (16 in).
- Know that this is a rough cut, you will be adjusting the length of the rods later.

Adjusting rod length of X-Y systems and identifying if/where a “Z value” is required

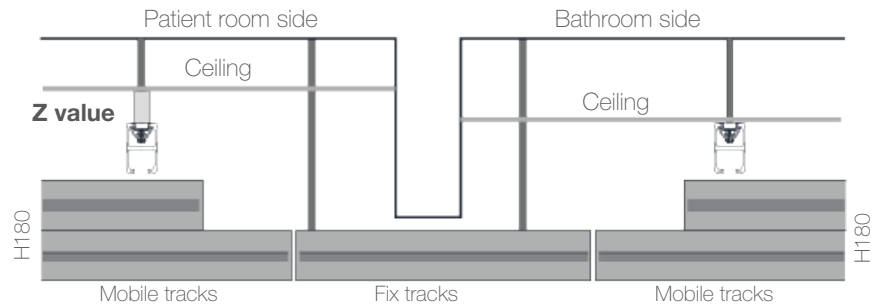
Same ceiling height

Different mobile track profile



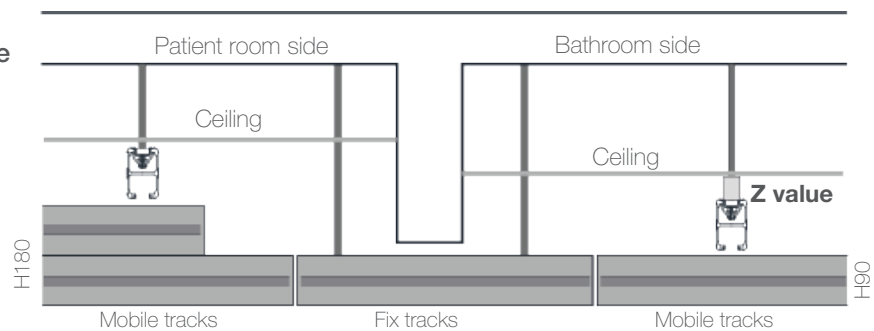
Different ceiling height

Same mobile track profile



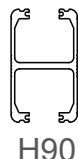
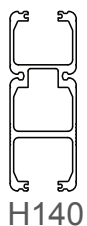
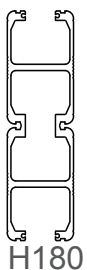
Different ceiling height

Different mobile track profile



Differences in ceiling heights and differences in mobile track profiles can lead to a “Z value”. It means that the room where the fixed track is mounted directly to the ceiling (without “Z value”) is where you will identify the datum point and begin cutting the rods.

- Cut the rod of the X-Y where the track is mounted directly to the ceiling according to the “Bracket installation” section of this manual.
- Cut the rods of the other X-Y at the required height depending of the “Z value” identified.
- Install all track brackets for both X-Y track systems.

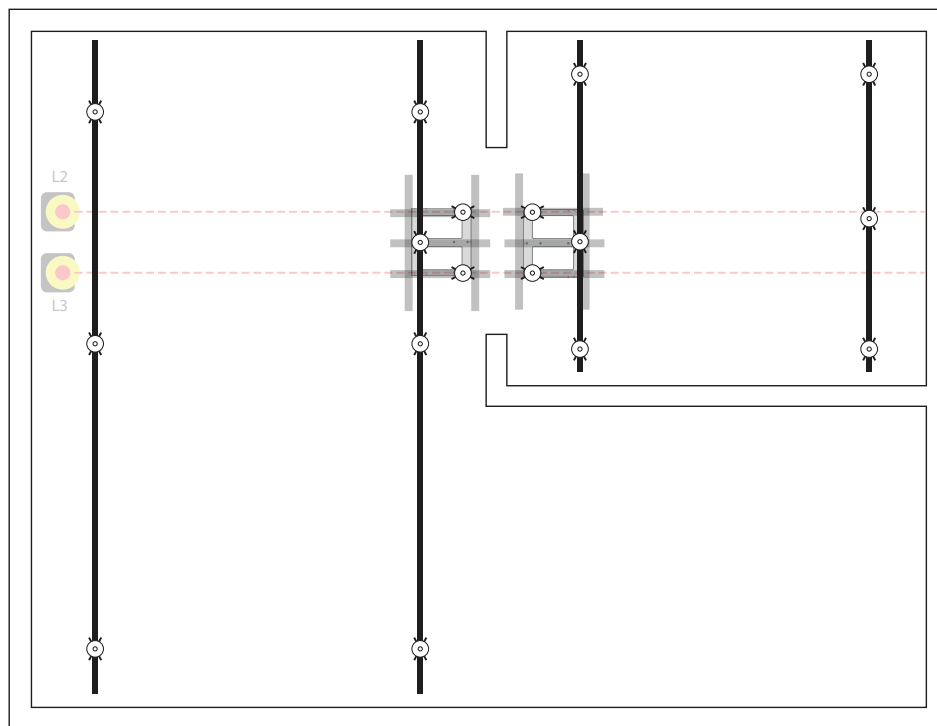


NOTE...

When ceiling heights and mobile track profiles are equal in both rooms, identify the datum point (as mentioned in the “Bracket installation” section of this manual) considering both X-Y systems at the same time.

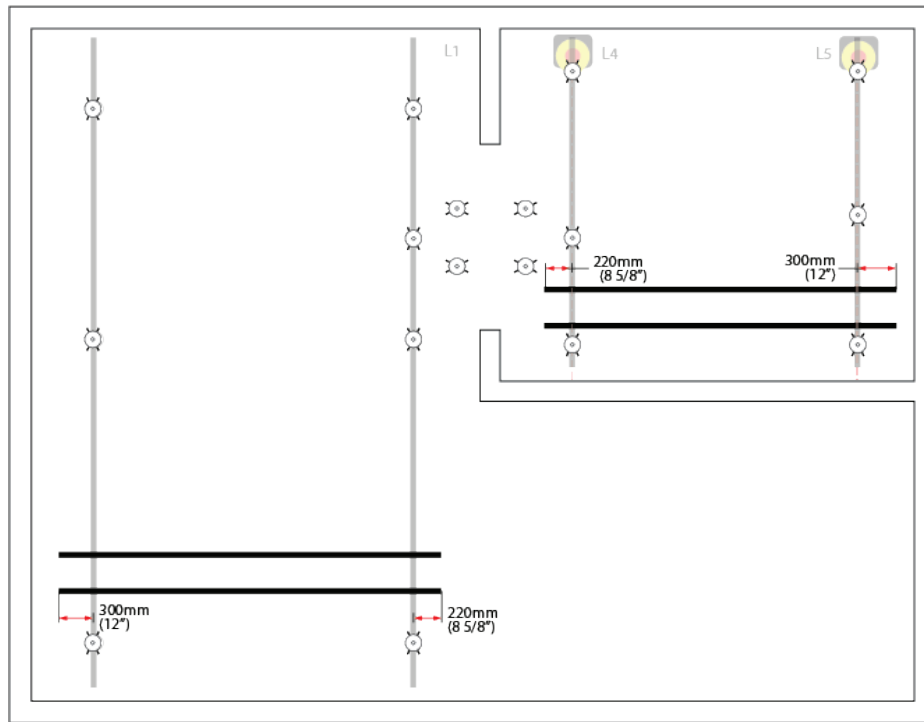
i

Installing fixed track

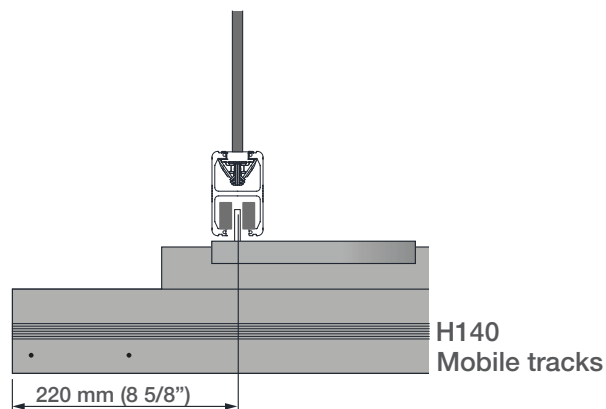


- Install all fixed tracks of both X-Y systems. Refer to “Track Installation” section of this manual.

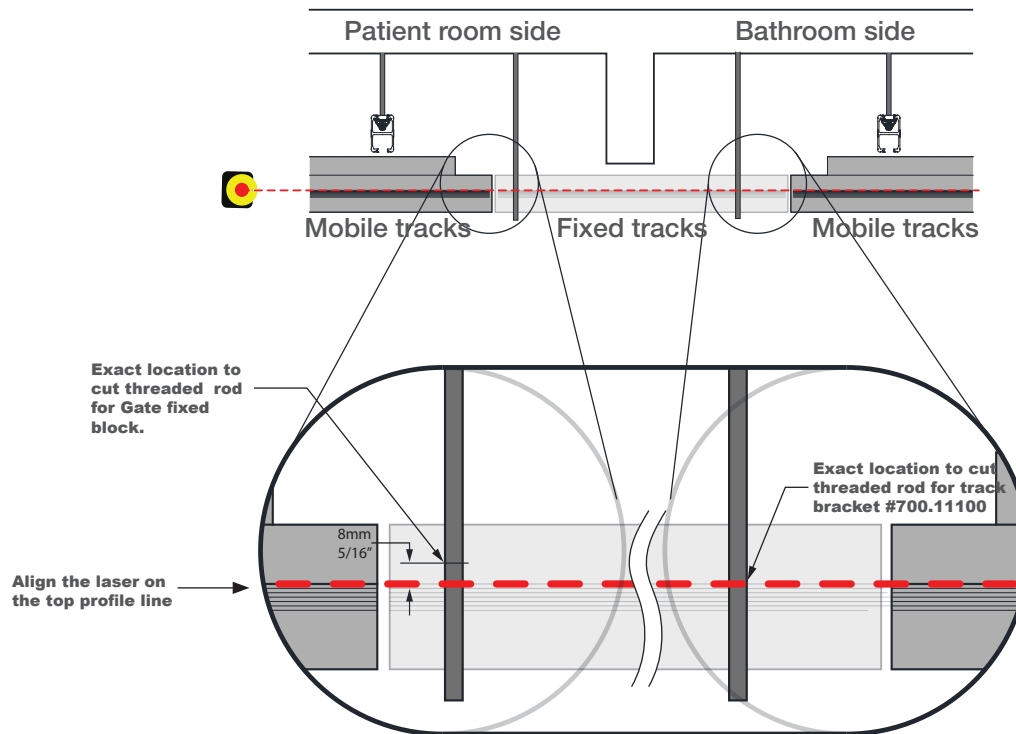
Installing mobile tracks



- Install all mobile tracks.
- Ensure maximum overhang of 220 mm (8 5/8 in) is respected on the Gate ends. (see image below)
- Refer to manual “KWIKtrak X-Y Track System” #001-11275-EN for details on how to install the X-Y for the *Maxi Sky 2 Plus*.

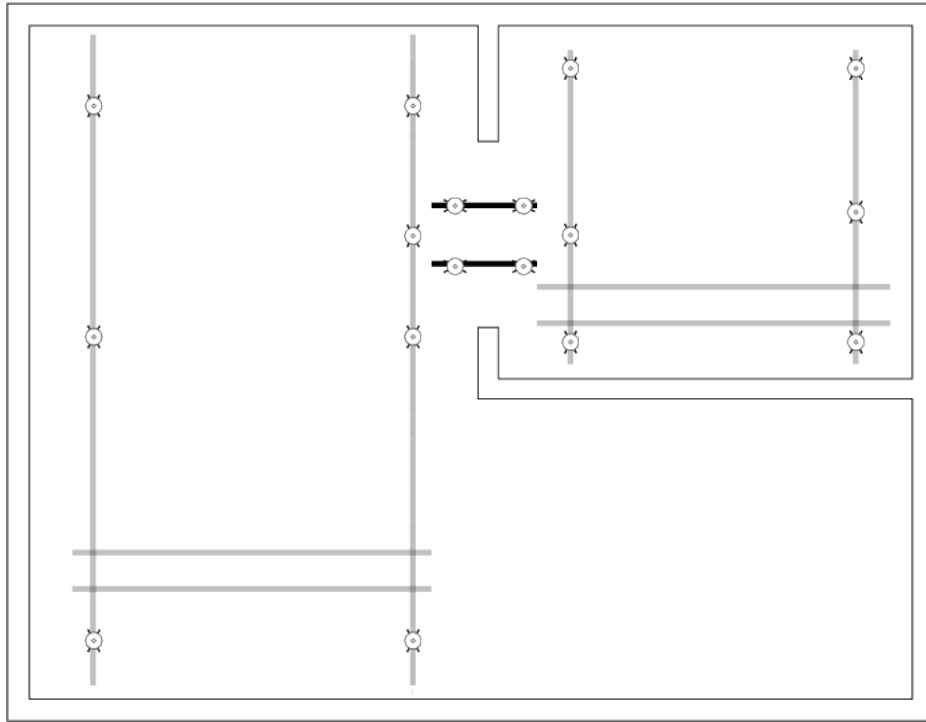


Cutting rod length of fixed tracks connecting X-Y systems

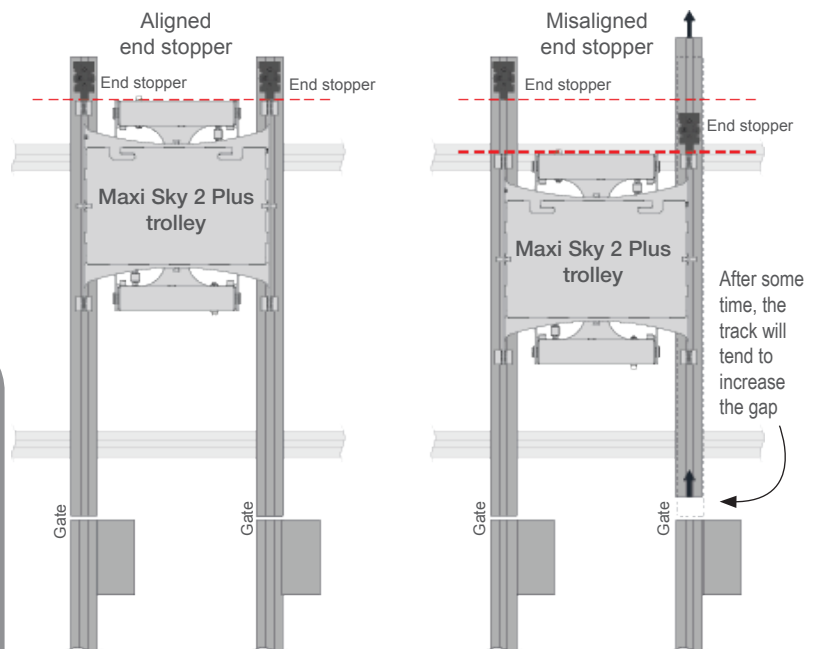


- Using a cross line level laser, align the laser with the top profile line found on the side of the moving tracks.
- Cut the rod that will have a track bracket at the spot indicated by the laser.
- For the track bracket using the fixed block of the Gate, cut the rod 8 mm (5/16 in) above the laser line.
- Install the Rail link 450 mm #225-31285 above the track bracket(s) and Gate fixed block. Refer to KWIKtrak Gate manual #001.11500.EN for details on installation of the Gate and the Rail link 450 mm.
- Install Gate fixed block and track bracket(s).

Finalizing Gate installation



- Install the two fixed tracks that will connect to both X-Y systems.
- Install all the lateral braces. Refer to Lateral Braces Installation Guide #001-01015-EN.
- Proceed with Weight Load Test (WLT). Refer to Weight Load Test form #001-11760-XX.
- Refer to "Initial Start Up" #001-31229-EN for Maxi Sky 2 Plus installation.



NOTE...

It is important to keep the end stopper aligned at track ends, to avoid the *Maxi Sky 2 Plus* trolley hits the end stoppers unevenly, which can offset the moving tracks.







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