User's Guide

All you need to know about the FRACO hydraulic elevating platform

FRSM-3000

[English] FRSM-3000 06/2002 user's guide

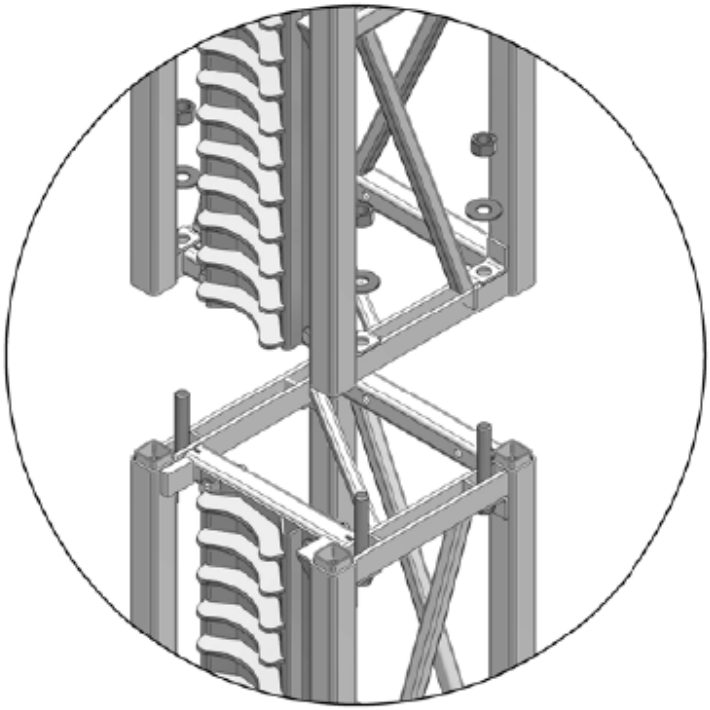
General	Model	Date of issue	Bulletin n°
	All	2006-12-19	U-T-0002-A

Mast climbing work platform

Mast bolt assembly procedure
Amendment to all the FRACO platforms User's Guide

Please read carefully the present letter and insert it in all your Fraco User's Guide:

All mast bolts must be installed head down and washer must be positioned on the nut side (see illustration). Always tighten the nut. See user's guide for specific bolt torque.



The most recent versions of our user's guide are available on our Web site (www.fraco.com). Please refer to them for assembly procedures with regards to changes above.

For more information, contact our Technical Department:

Julie Rainville
Technical Service Director
Fraco Products

T: 800-267-0094 / 450-658-0094
F: 450-658-8905

Information	Model	Date of issue	Bulletin n°
	All	2006-12-06	U-T-0003-A

Mast climbing work platform

High priority warning: Height of the first and second wall tie
Amendment to all the FRACO platforms User's Guide

Please read carefully the present letter and insert it in all your Fraco User's Guide:

Fraco is changing the anchoring procedure for all types of platforms when using ground base. The most recent versions of our user's guide are available on our Web site (www.fraco.com). Please refer to them for installation procedures with regards to changes below.

The two first ties must be at 10 and 20 feet (3m and 6 m) or at the two first accessible structural levels on the building (max 20') (max 6 m).

This new procedure is to upgrade the safety of our platform during the operation of installation and dismantling.

The platform **must be secured** by lifting equipment while installing or dismantling the two first ties. Once the second tie is in place, the installation continues by the usual procedure; reduce load platform (1/2 load) except the ACT-4 and the anchoring sequence typical for the type of platform in use as shown below:

FRSM-1500, FRSM-3000, FRSM-8000 :	20 feet (6 m)
ACT-8 et FRSM-20 K :	30 feet (9 m)
ACT-4 :	40 feet (12 m)

For more information, contact our Technical Department:

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	Technical	Model	Date of issue	Bulletin n°
		All	2007-01-16	B-T-0004-A

Mast climbing work platform

New specifications for use of free-standing bases for 20k, FRSM-8000, FRSM-3000, FRSM-1500, ACT-4 and ACT-8

Amendment to FRACO platforms User's Guides for models indicated above

Please read the following carefully and insert it in your Fraco User's Guides:

Here are the new specifications for use of free-standing bases for **20K, ACT-4 and ACT-8, FRSM-3000, FRSH-1500.**

- The outriggers of the deck must not be extended longer than the outriggers of the base (maximum 3 planks, +/- 30''[76 cm]). See attached drawing.
- Do not extend the top deck outriggers if the bottom ones are already extended.
- The maximum wind speed for use and installation is 22 mph (35 km/h).
- Use of portable crane, monorail, hard roof or weather enclosure is forbidden without adding ties.
- The outriggers of the base (back) must be fully open.

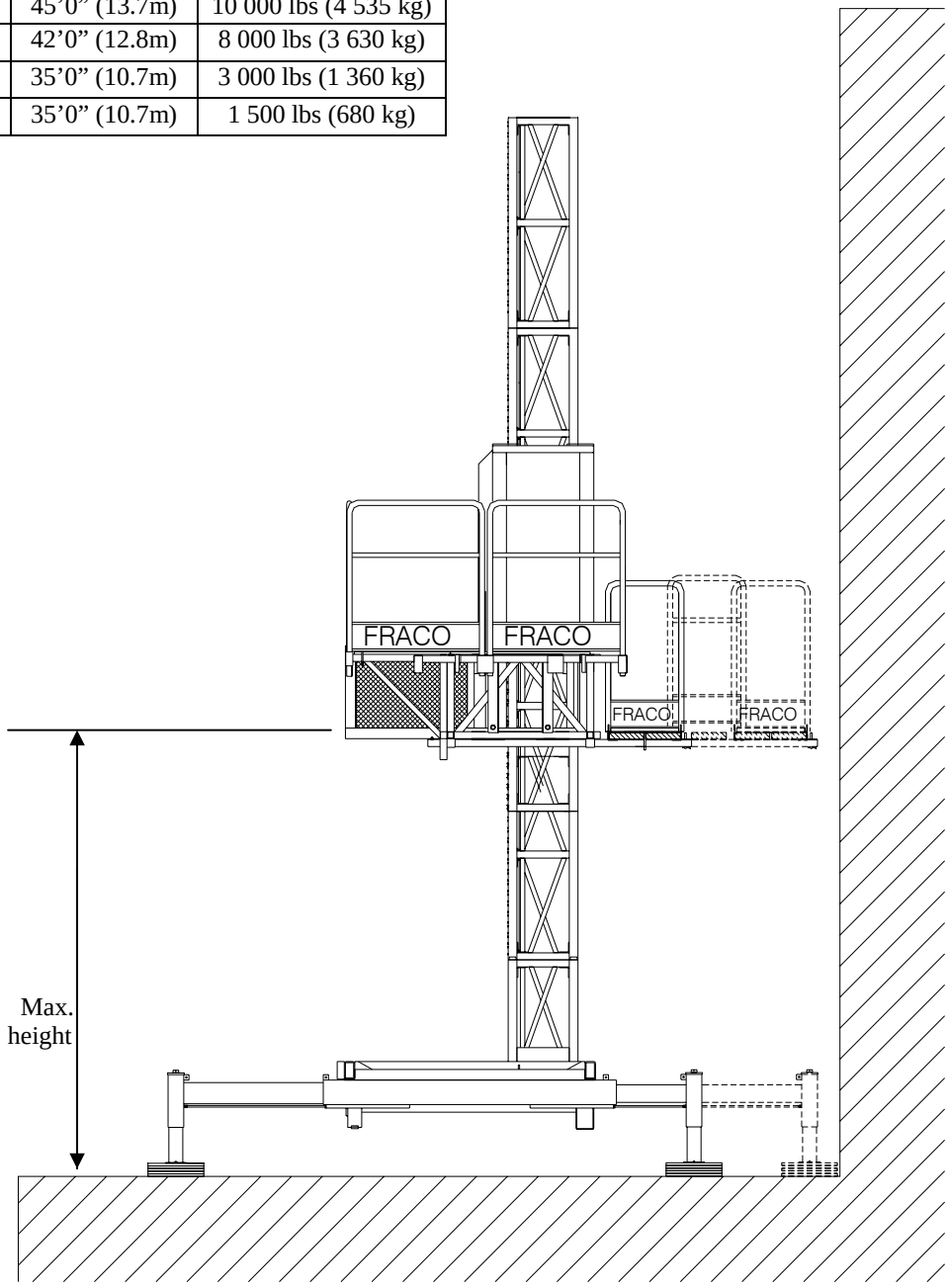
Here are the new specifications for usage of free-standing bases for **FRSM-8000.**

- The outriggers of the deck must not be extended longer than the outriggers of the base (maximum 5 planks, +/- 60''[152 cm]). See attached drawing.
- Do not extend the top deck outriggers if the bottom ones are already extended.
- The maximum wind speed for use and installation is 22 mph (35 km/h)
- Use of portable crane, monorail, hard roof or weather enclosure is forbidden without adding ties.
- The outriggers of the base (back) must be fully open.

For further information or any question please contact:

Jean-François Laurin T.P. or Jean-Sébastien Lasnier T.P.
Telephone : 450-658-0094
Toll Free : 800-267-0094
Fax : 450-658-8905

Type	Max. height	Capacity
ACT-4	60'0" (18.3m)	4 000 lbs (1 815 kg)
ACT-8	45'0" (13.7m)	8 000 lbs (3 630 kg)
20K	45'0" (13.7m)	10 000 lbs (4 535 kg)
FRSM-8000	42'0" (12.8m)	8 000 lbs (3 630 kg)
FRSM-3000	35'0" (10.7m)	3 000 lbs (1 360 kg)
FRSM-1500	35'0" (10.7m)	1 500 lbs (680 kg)



Les Produits Fraco Ltée
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DECLARATION CE OF CONFORMITY

N° 00770077/5162/760/01/10/1301

Type:
Device for the lifting of persons or persons and objects, involving a risk of falling from vertical height of more than 3 meters. Mast climbing work platform, single or twin mast.

Brand: FRACO Model: FRSM-3000
Serial Number:

Technical details:

In single mast:
- Rated load / Number of persons: 1 720 kg / 3 persons
- Working height: 11,3m (Freestanding) – 101m (with anchorages)
- Length / Width of platform: 11,2m / 3,0m
- Reduced load: 906 kg/3 persons at max length (10,8m)

In twin masts:
- Rated load / Number of persons: 3,560 kg / 7 persons
- Working height: 11,3m (Freestanding) – 101m (with anchorages)
- Length / Width of platform: 23,9 m / 3,4 m
- Reduced load: 1 816 kg/7 persons at max length (25,9m)

This model complies with all relevant provisions of the machinery directive 2006/42/CE (95/16/CE modified) on the approximation of the laws of the Member States. This model complies with the essential safety and health requirements applicable to it. This declaration concern exclusively the machines in the condition in which they entered the market, and exclude the components that have been added and/or the operations carried out afterward by the final user.

Notified Organism	**Technical file**
APAVE Parisienne	**SARL Fraco**
No d'identification : 0077	420 rue des Érables – F-60710 CHEVRIÈRES
13 à 17, rue Salneuve – 75854 PARIS CEDEX 17	FRANCE

_____

La Vice-présidente
Les Produits FRACO Ltée
Claudette L'Heureux

St-Mathias-Sur-Richelieu
29 décembre 2009

TRANSLATED FROM ORIGINAL NOTICE

Congratulations!

You are about to use the excellent
FRACO hydraulic elevating work platform system!

Unlike any other platform system on the market today,

FRACO provides you with the ultimate in **SAFETY, STABILITY** and **FLEXIBILITY**

while reducing your labour costs by up to 36%.

Due to the advanced technology of **FRACO Products**,
you can be assured of the OPTIMUM QUALITY in all our products.

FRACO is ISO 9001 registered

The instruction manual and safety rules presented on the following pages will safely guide you through all the possibilities of this system. The platform cannot be sold or rented without this user's guide.

FRACO Products Ltd reserves the right to modify the platform or its manual without notice, and will not assume any responsibility for any prejudices that may occur.

This **FRACO** system meets ANSI and OSHA requirements.

MANUFACTURER

FRACO Products Ltd
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St-Mathias-sur-Richelieu
Québec, Canada, J3L 6A1
www.fraco.com
fraco@fraco.com

Certified **APAVE**

DISTRIBUTOR

If you have any questions, do not hesitate in calling us at : **(450) 658-0094**

Canada: 1-800-267-0094
Montreal: (514) 990-7750
U.S.A.: 1-888-FRACO 4 U
1-888-372-2648
or fax us at: (450) 658-8905

Table of contents

WARNING!

SAFETY IS OUR PRIMARY CONCERN.

For this reason, never remove or alter any part in order to adapt the platform to fit a specific area of the building.

USE ONLY GENUINE FRACO PARTS

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE INSTALLATION

FRACO (and/or its importer/representative) cannot be responsible for any property damage, severe injury or death that may result from failure to comply with the following safety recommendations, local rules and regulations.

Before operating this FRACO System, the following safety rules must be read and fully understood:

1- Mark out, with beacons or barricade tape, and forbid the access around the base and the platform. This should be done according to the local rules.
2- If using a gasoline engine, do not work in an explosive environnent such as refineries, etc.
3- The operator should be familiar with the user's guide and understand all the functions of the platform.
4- **Never assume anything.** If you have any questions concerning the operation of the FRACO, STOP! Refer to the proper user's guide. If you are still unsure, do not continue and call FRACO immediately.
5- In order to use, install or dismantle the system, a minimum of 2 people should be on the platform at all times, in case of a breakdown or rescue.
6- The maximum working height is 11,58 m (38 ft) in freestanding mode when in use and 3 m (12 ft) otherwise.
7- If you need to go higher than 11,58 m (38 ft), you should use anchors. In that case, refer to the user's guide.
8- Always use anchors when you are not using the freestanding base.
9- This platform should be maintained periodically. Refer to the user's guide.
10- In case of an electrical storm, LEAVE the platform.
11- For personal safety, when the wind exceeds 50 km/h (30 mph) do not use, install or dismantle the platform. Make sure that the platform is lowered to the minimum.
12- Note the place where your fire extinguisher is located, and make sure that a certified person verifies it periodically.
13- It is the operator's responsibility to ensure that the load and the number of people allowed on the platform is complied with. (Refer to the standard load distribution chart).
14- This platform should never be specifically used as an elevator.

Always wear your safety harness when installing and dismantling the mast sections, the anchors and when manipulating the planks when passing the anchors.

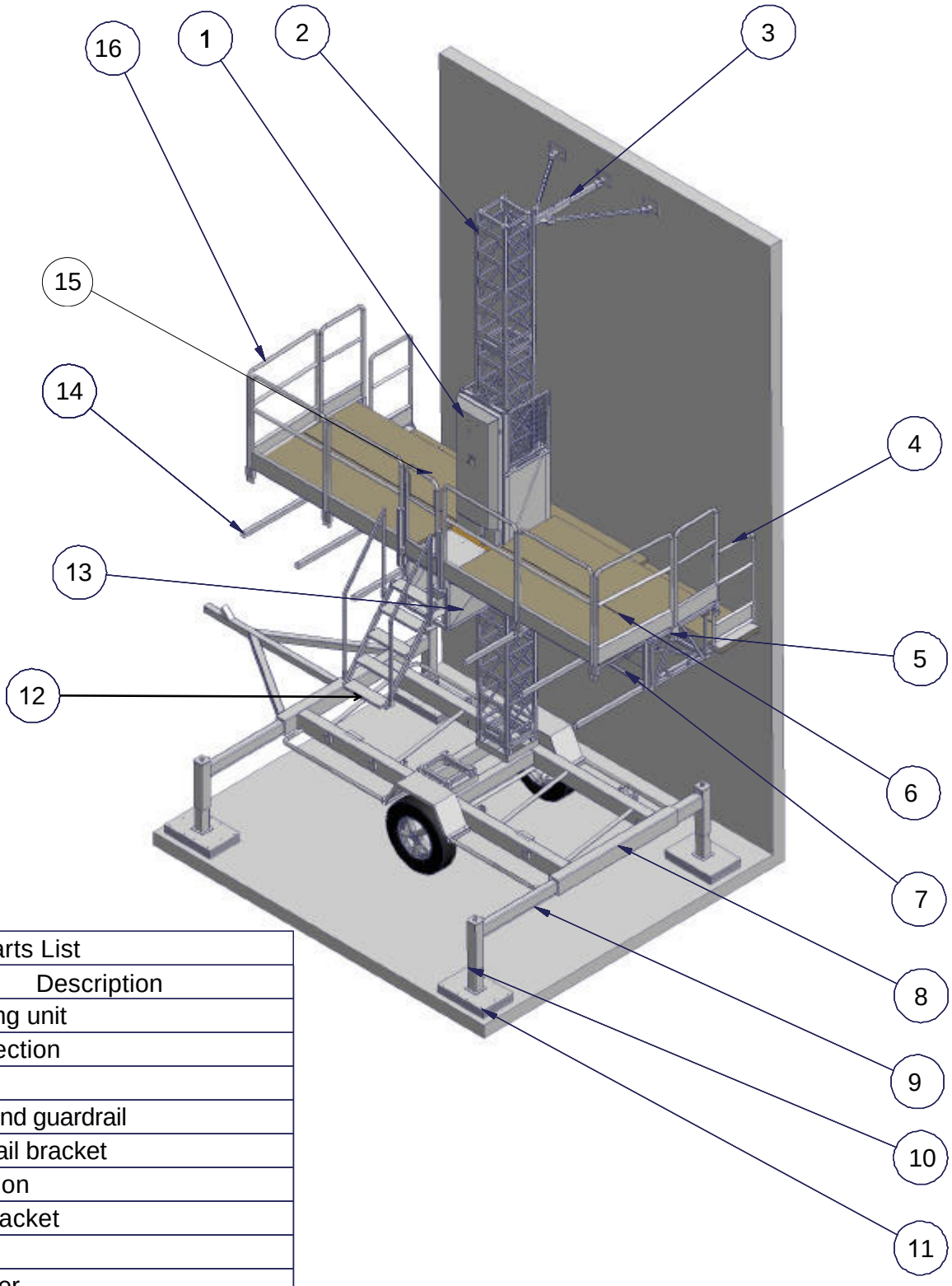
Safety harnesses that meet the local safety code must be available at all times for each person on the platform. A safety line, in compliance with the codes and of sufficient length for the working height of the platform must be available at all times on the platform ***for emergency use only****.*

Before raising or lowering the FRACO make sure:

1- That the base is properly secured in position and leveled (see the tolerances permitted in the user's guide).
2- That all guardrails are in place.
3- That a visual inspection above and below the platform is carried out, before each vertical movement, to ensure no protrusions will impede or inhibit the proper movement of the FRACO.
4- To verify proper clearance for the walk boards (planks).
5- Not to exceed the freestanding working height 11,58 m (38 ft) from the ground.
6- That the platform has not exceeded the height of the last anchor.
7- That the worker removing the boards to pass the anchors is properly harnessed.
8- That everyone on board is alerted.
9- That the safety material is in the proper place and within reach of the operators.

Honda Gas Engine
Model: GX270-QX B6
Vibration: 4.0 G Noise level: 70 dB
Operating speed: 3 600 RPM

General view



Parts List	
Item	Description
1	Elevating unit
2	Mast section
3	Anchor
4	Plank-end guardrail
5	Guardrail bracket
6	Extension
7	Side bracket
8	Trailer
9	Stabilizer
10	Jack
11	Wooden jack pad
12	Stair access
13	Engine support
14	Outrigger
15	Access door
16	Guardrail

Identification plate

This plate is found on the climbing frame and should be visible at all times

Serial number

XX XX XXXX

Model number

Year of fabrication

Platform number

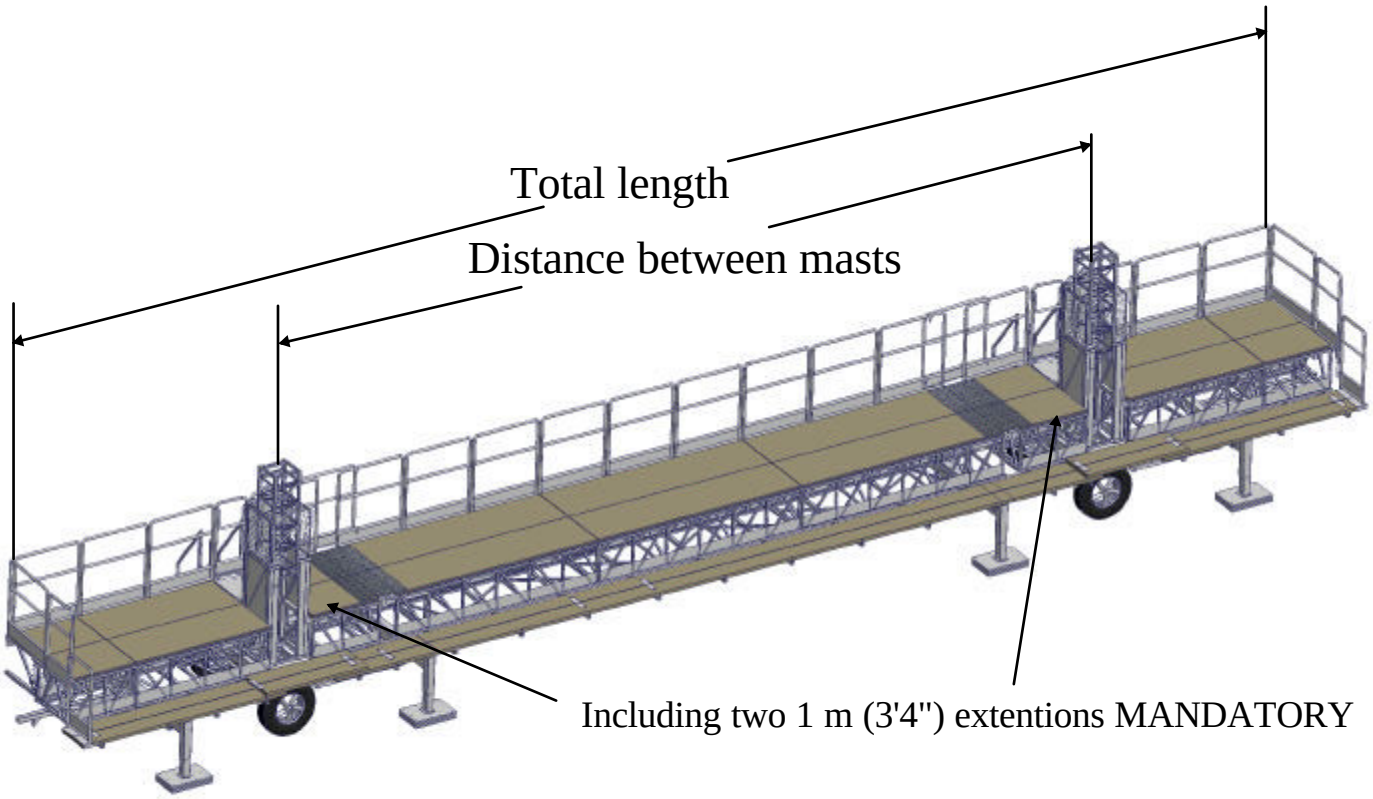
Technical data

Model number	*FRR -5000 (Trailer)*	
Weight on the hitch	**156 lbs**	**70,76 kg**
Tire dimensions	**ST 225 / 75 R 15**	
Overall length	**18 ft 6 in**	**5,64 m**
Overall width	**6 ft 1 in**	**1,85 m**
Total weight	**2 055 lbs**	**934 kg**
Total weight + FRSM-3000	**3 885 lbs**	**1 766 kg**
Ground base (dimensions / weight)	**59 in x 38 in / 285 lbs**	**1,50 m x 0,97 m / 130 kg**
Model number	*FRSM-3000*	
Maximum length of platform (single mast)	**28 ft 8 in**	**8,75 m**
Maximum length of platform (double mast)	**78 ft**	**23,77 m**
Lower working area width	**1 ft to 5 ft**	**0,3 m to 1,52 m**
Upper walking and loading area	**Standard : 4 ft 10 in**	**Standard : 1,47 m**
	Maximum : 7 ft 2 in	**Maximum : 2,18 m**
Lifting speed	**12 ft / minute**	**3,6 m / minute**
Maximum height of the mast (with anchors)	**330 ft**	**101 m**
Maximum height of the mast (without anchors)	**38 ft**	**11,58 m**
Minimum ground clearance	**32 in**	**82 cm**
HONDA engine	**9 HP**	
Mast section (dimensions / weight)	**16 in x 16 in x 5 ft / 133 lbs**	**40 cm x 40 cm x 1,52 m / 60.5 kg**
Elevating unit (dimensions / weight)	**28 in x 28 in x 60 in / 1 830 lbs**	**71 cm x 71 cm x 1,52 m / 831 kg**
Extension section (dimensions / weight)	**30 in x 26 in x 40 in / 141 lbs**	**76 cm x 66 cm x 1 m / 64 kg**
	30 in x 26 in x 80 in / 243 lbs	**76 cm x 66 cm x 2 m / 110 kg**
Bridge section (dimensions / weight)	**30 in x 27 in x 10 ft / 472 lbs**	**76 cm x 67 cm x 3 m / 214 kg**
Central bridge section (dimensions / weight)	**30 in x 27 in x 10 ft / 395 lbs**	**76 cm x 67 cm x 3 m / 200 kg**

Part II

Installing the platform

Distance between 2 mast sections



Maximum length in double mast configuration: 23,78 m (78')

Minimum length in double mast configuration: 11,58 m (38')

Maximum length in single mast configuration: 8,74 m (28'8")

Minimum length in single mast configuration: 2,64 m (8'8")

Distance between the masts in a double mast configuration*

Bridge type	Between masts minimum	Between masts standard	Between masts maximum
6 m (20')	8,97 m (29'5")	9,09 m (29'10")	9,20 m (30'2")
9 m (30')	12,01 m (39'5")	12,14 m (39'10")	12,24 m (40'2")
12 m (40')	15,06 m (49'5")	15,19 m (49'10")	15,29 m (50'2")

*The bridge arms must be extended from 5 cm (2") to 15 cm (6").

*Including two 1 m (3'4") extentions MANDATORY.

Installing the FRACO platform

Verify the ground weight bearing capacity and make sure that it can support the base and the platform:

Mast height	Ground capacity
0 to 30,5 m (100')	34 kN/sq. m (700 lbf/sq. foot)
30,5 to 61 m (100' to 200')	44 kN/sq. m (900 lbf/sq. foot)
61 m to 101 (200' to 330')	48 kN/sq. m (1 000 lbf/sq. foot)

When using the standard ground base: (see page II-4)

1- Start by levelling the ground with a maximum of 10 cm (4")of material (crushed stone is recommended).

2- Measure the exact distance "L" between the base and the wall, taking into account all obstacles that the platform will have to go around. Also take into account the mast-to-mast distance when using a double mast configuration (see page II-1).

Installation type	Distance "L"
Standard	0,76 m (30") for 2 planks
Other possibilities	1,02 m (40")
	1,27 m (50")
Maximum	1,52 m (60") for 5 planks

3- Install the FRACO system (elevating unit and base) perfectly perpendicular to the wall at the appropriate "L" distance.

4- Make sure that the mast is perfectly vertical and that the base is level and stable.

When using the trailer: (see page II-3)

1- Measure the exact distance "L" between the base and the wall, taking into account all obstacles that the platform will have to go around. (see page II- 4) Also take into account the mast-to-mast distance when using a double mast configuration (see page II- 1).

Installation type	Distance "L"	Distance "D"
Standard	0,86 m (34")	25 cm (10") MANDATORY
Maximum	1,62 m (64")	

*****Always install wooden jack pads under stabilizer jack plates*****

2- Install the FRACO system (elevating unit and trailer) perfectly perpendicular to the wall with the appropriate "L" and "D" distances.

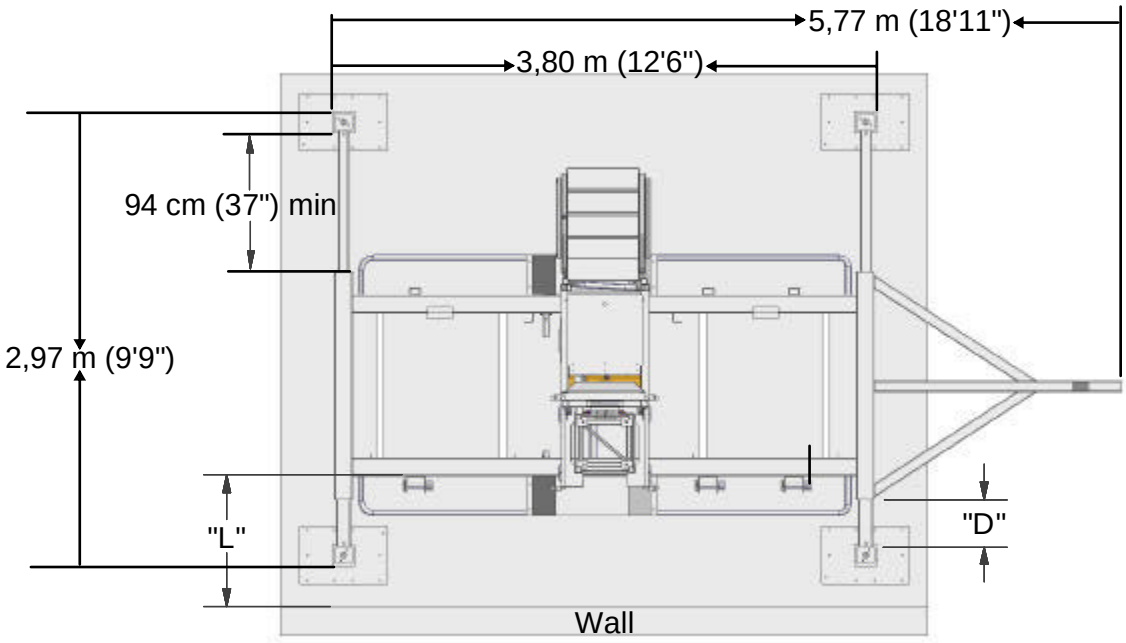
3- Extend the stabilizers of the trailer : rear ones 94 cm (37") and thef ront ones at distance "D". Lower the jacks onto the jack pads (see instructions on the stabilizers).

4- Level the mast with a bubble level. After levelling, the wheels of the trailer must turn freely and should not touch the ground.

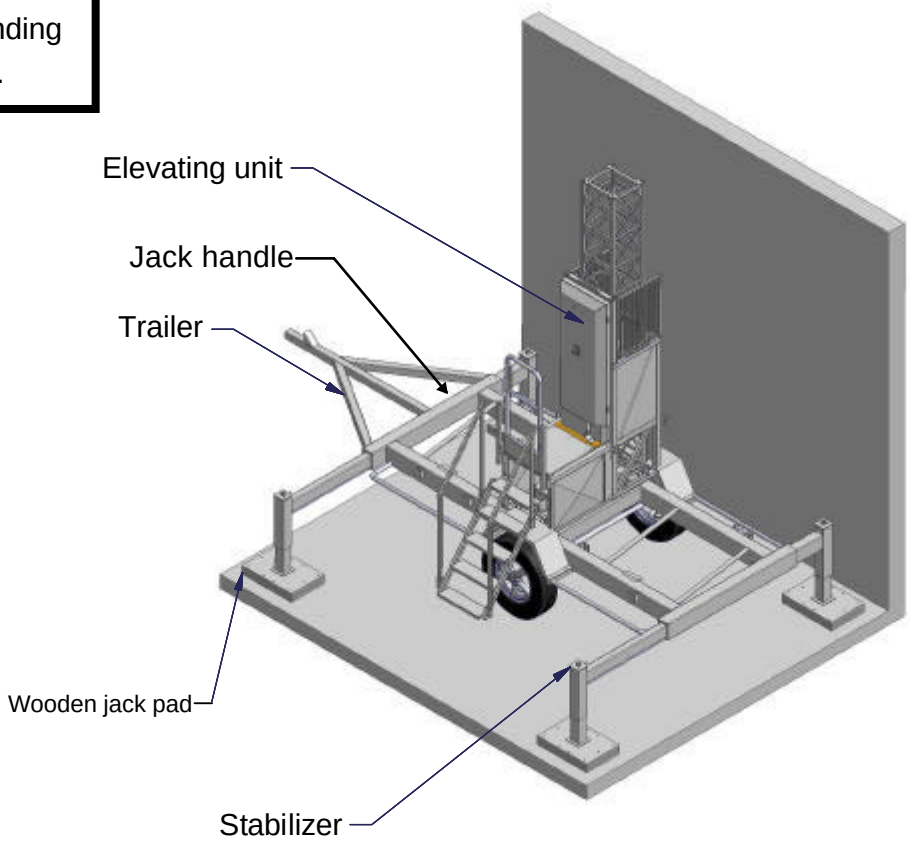
5- Make sure that the mast is perfectly vertical and that the base is level and stable.

Installing the elevating unit

Trailer



If you have to go over the freestanding height of 11,58 m (38') and use anchors, close the 4 stabilizers to the minimum
The maximum height for a freestanding base with anchors is 30,5 m (100').



Installation

1-Deploy the rear stabilizers to 0,94m (37").

2-Deploy the front stabilizers to 25 cm (10").

3-Place the 4 wooden jack pads under the stabilizers.

4-Install the elevating unit on its trailer perfectly perpenticular to the wall using the appropriate "L" and "D" distances. (page II-2)

5-Level the base using the jack handle and the stabilizers.

Installing the elevating unit

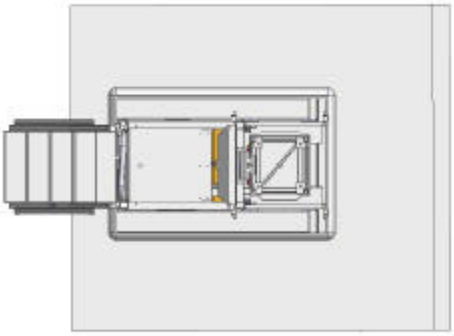
Ground base

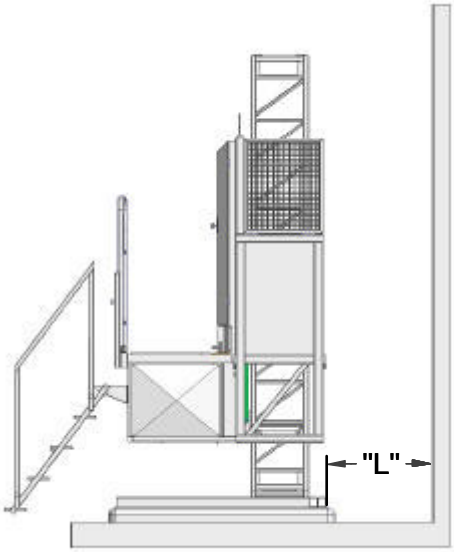
Installation

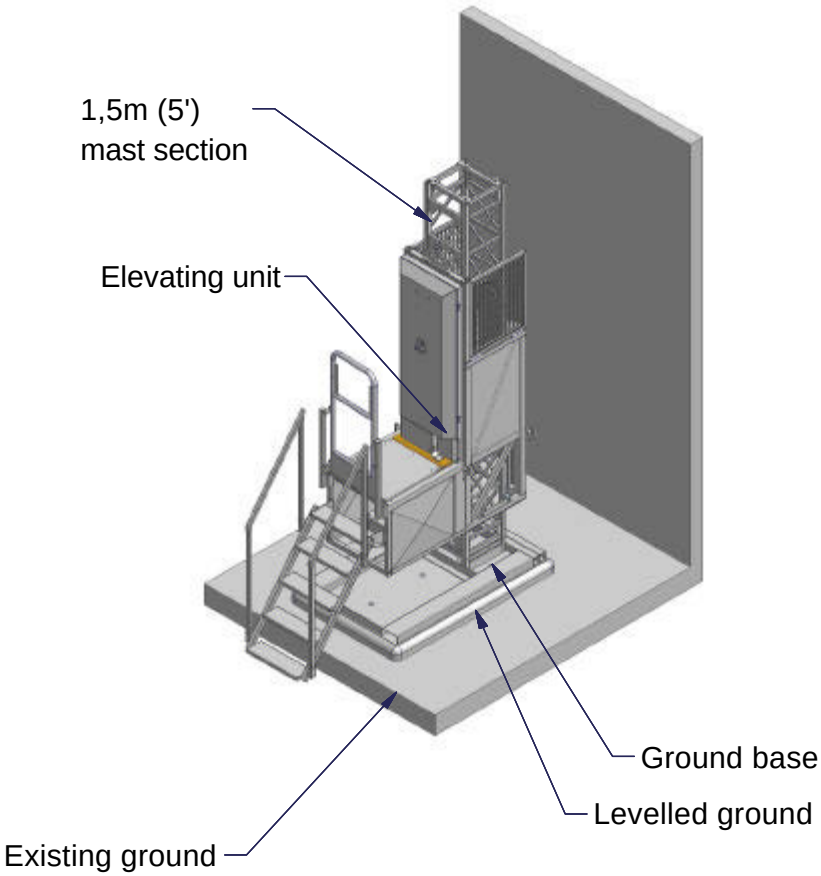
1-Make a bed of crushed stone exceeding the base by a minimum of 25 mm (1").

2-Install the elevating unit perfectly perpendicular to the wall.

3-Make sure that the unit mast is plumb.





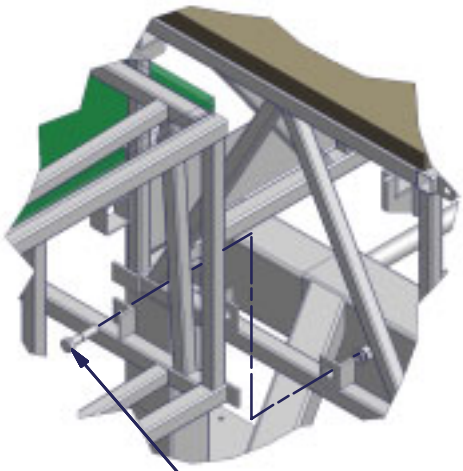


Extension

Installation

1-Install the extension on the hooks of the elevating unit or on the hooks of another extension.

2-Bolt the extension to the elevating unit or to another extension using two Ø16 mm X 50 mm (Ø5/8" x 2") bolts.

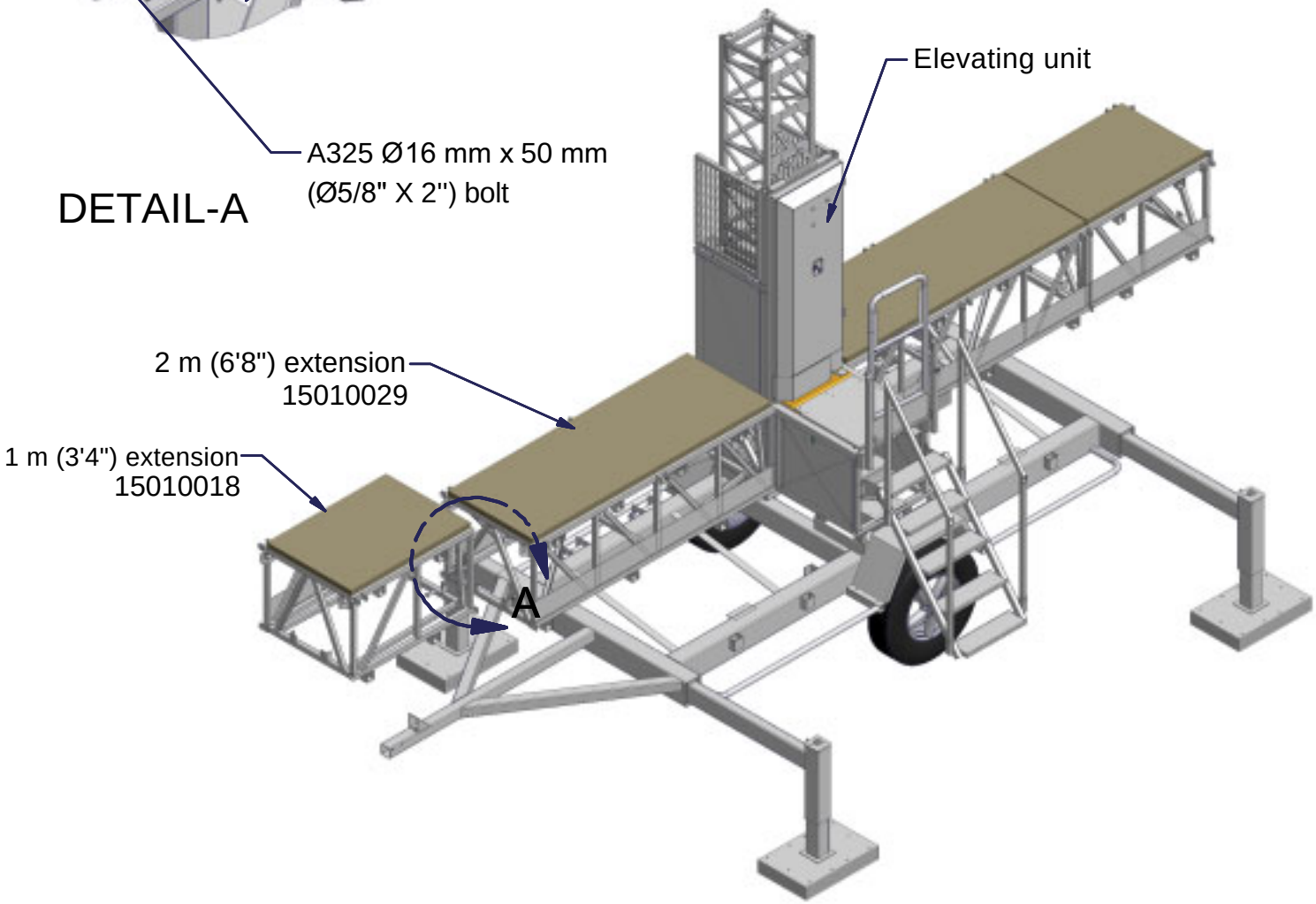


IMPORTANT:

-Make sure you do not have more than 3 m (10') of difference between the extensions during the installation.
-When you are done, there can be a maximum difference of 1 m (3'4") between the extensions.
-The maximum extension length is 4 m (13'4").

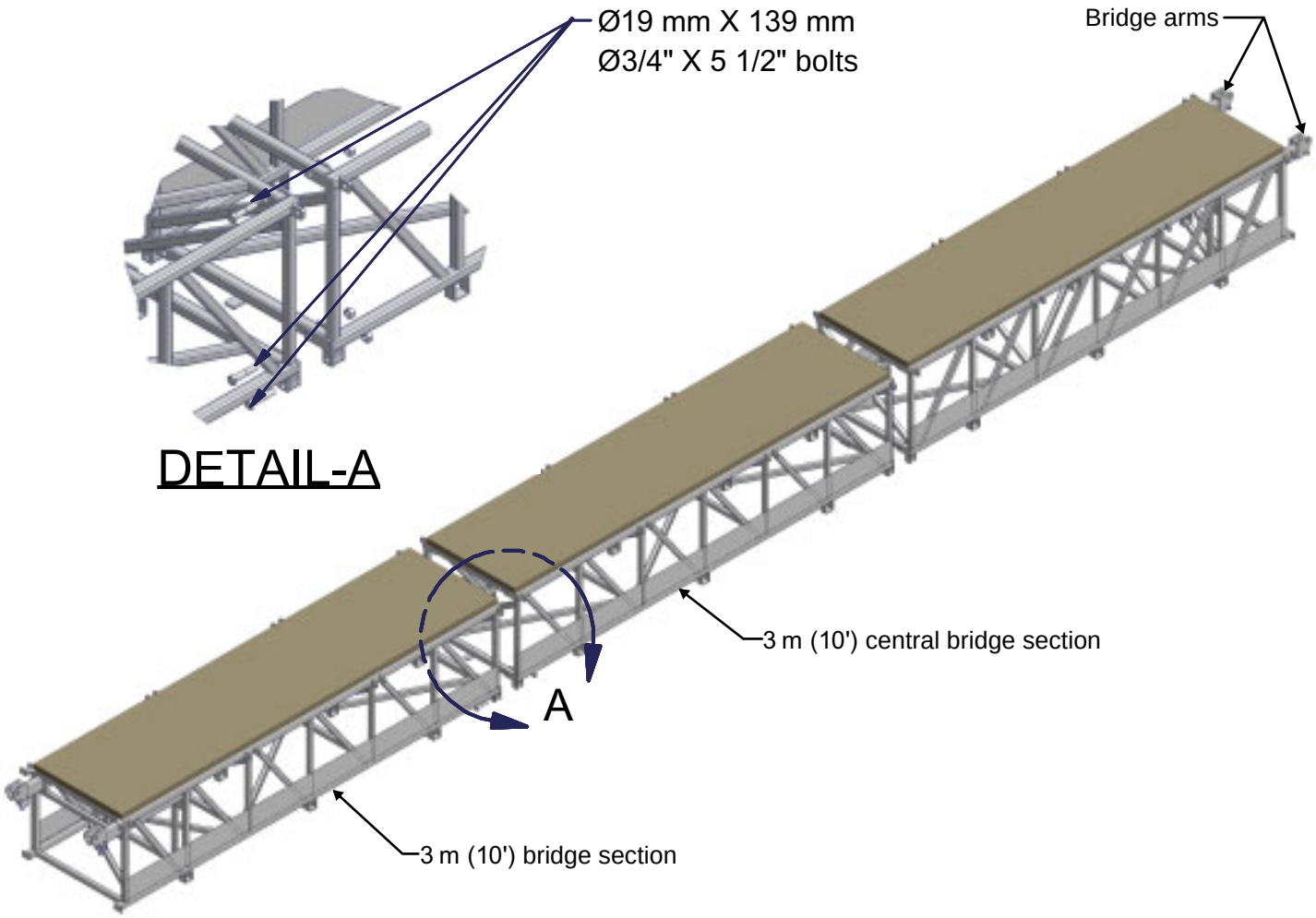
A325 Ø16 mm x 50 mm (Ø5/8" X 2") bolt

DETAIL-A



Bridge assembly

Bridge	3 m (10') section	3 m (10') central section	weight
6 m (20')	2	0	406 kg (900 lbs)
9 m (30')	2	1	580 kg (1280lbs)
12 m (40')	2	2	752 kg (1650 lbs)



1-Assemble the bridge to the desired length using the "bridge assembly" chart.
THE MAXIMUM LENGTH OF A BRIDGE IS 12 m (40').

2-Bolt all 3 m (10') sections together using six Ø19 mm x 139 mm (Ø3/4" x 5 1/2") bolts.

Bridge installation

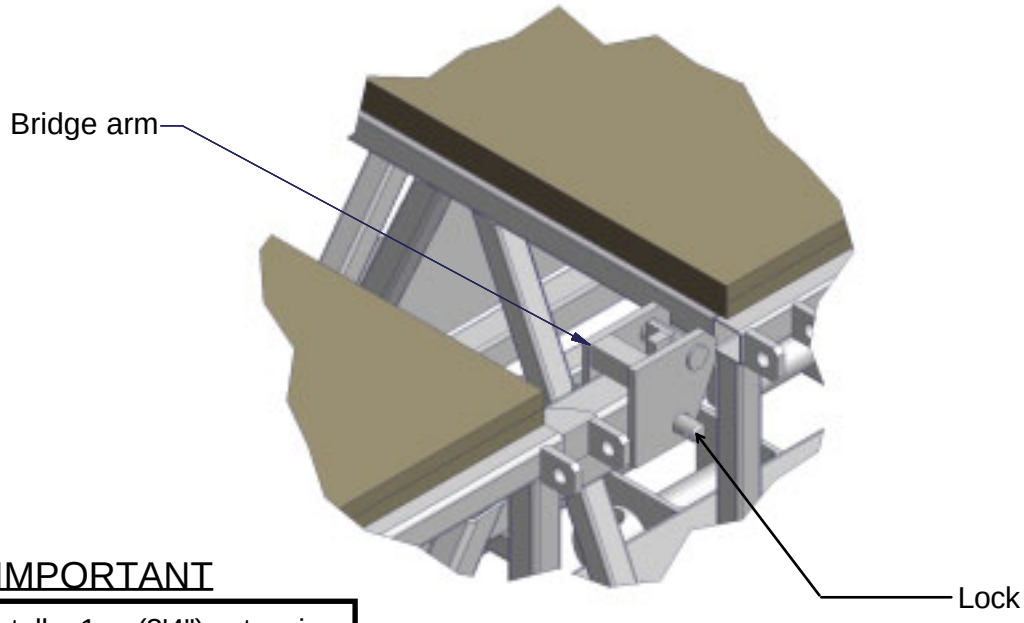
Installation

1-Install a 1 m (3'4") extension on each side of the bridge. (see page II-6)

2-Bolt the 1 m (3'4") extension to the elevating unit with 2 bolts. (see page II-6)

3-Insert the bridge arms in the hooks of the 1 m (3'4") extension section.

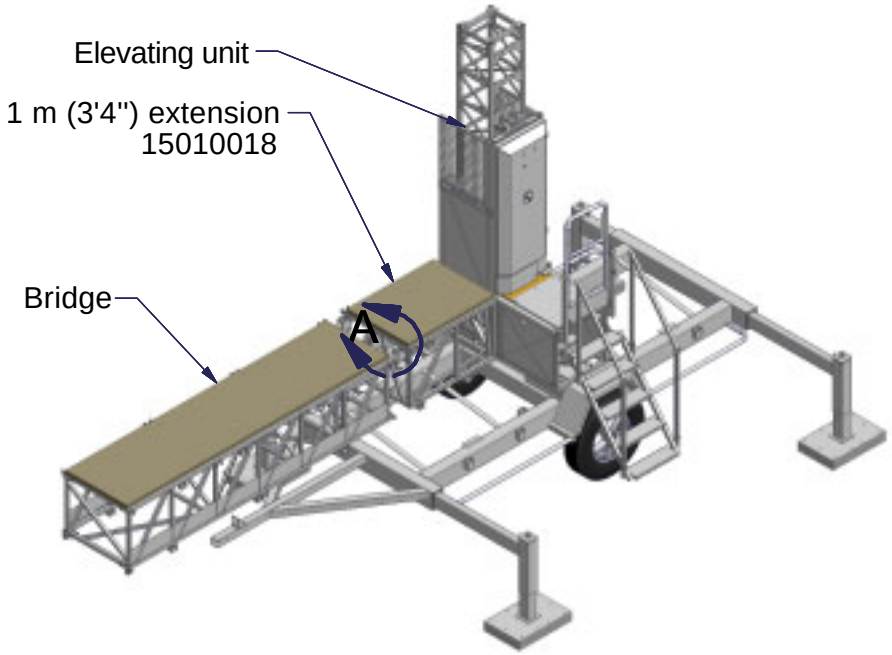
4-Install the locks to secure the bridge arms and lock them with a safety pin.



IMPORTANT

Always install a 1 m (3'4") extension when using a bridge

DETAIL-A

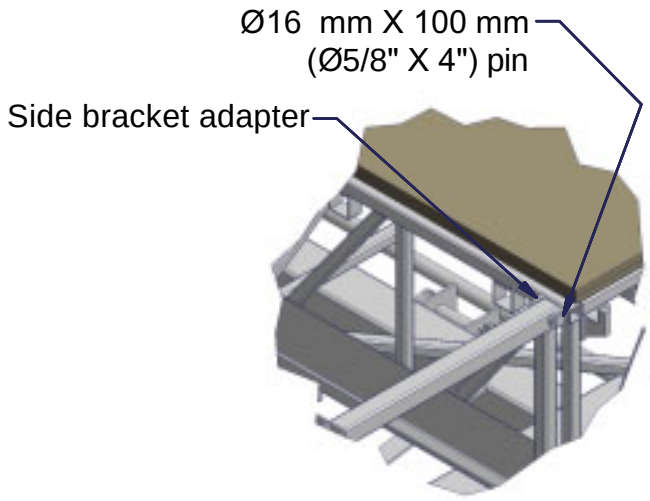


Side bracket

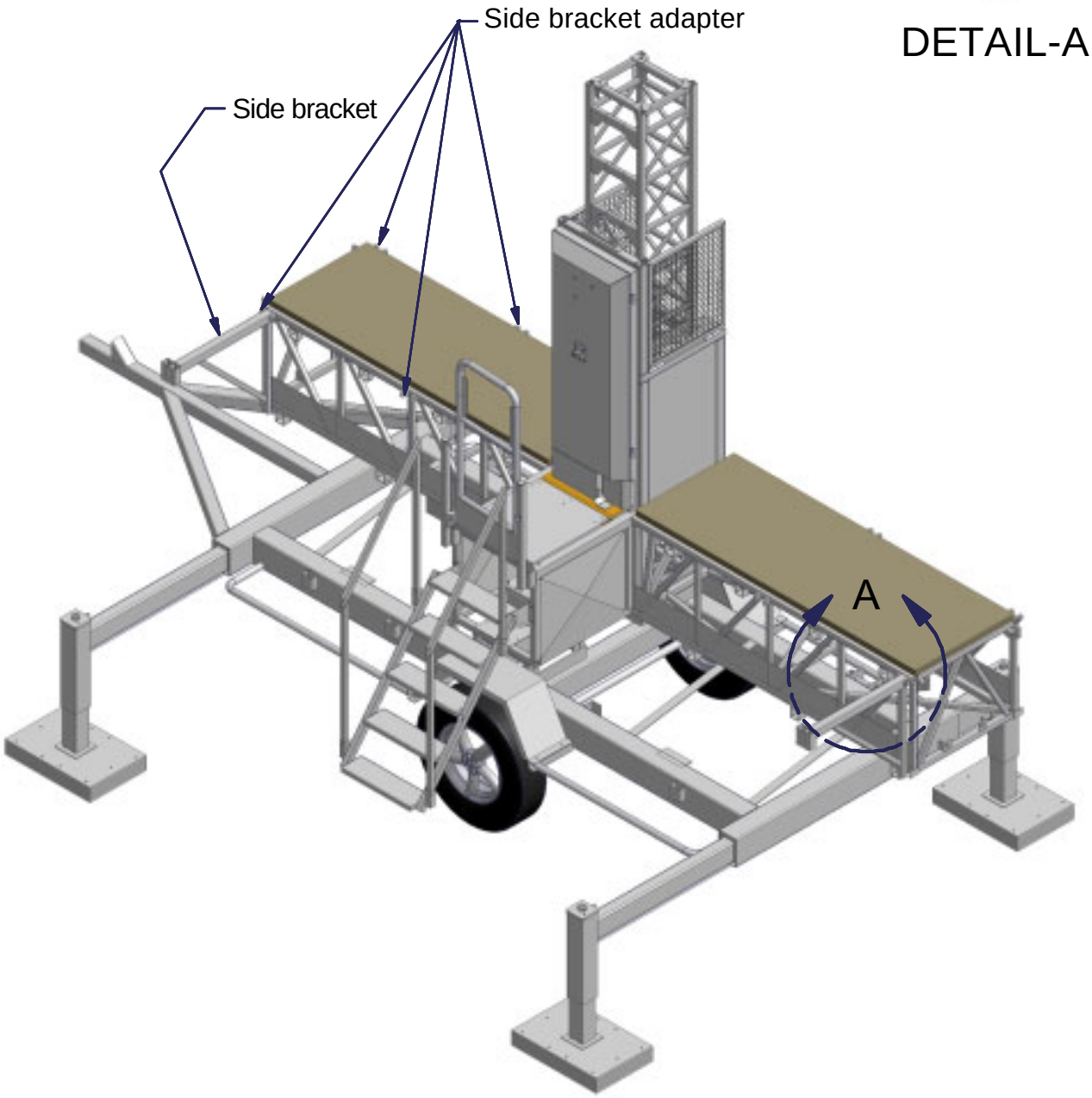
Installation

1-Insert the side bracket in its adapter.

2-Lock the side bracket with a Ø16 mm X 100 mm (Ø5/8" X 4") pin and a cotter pin.



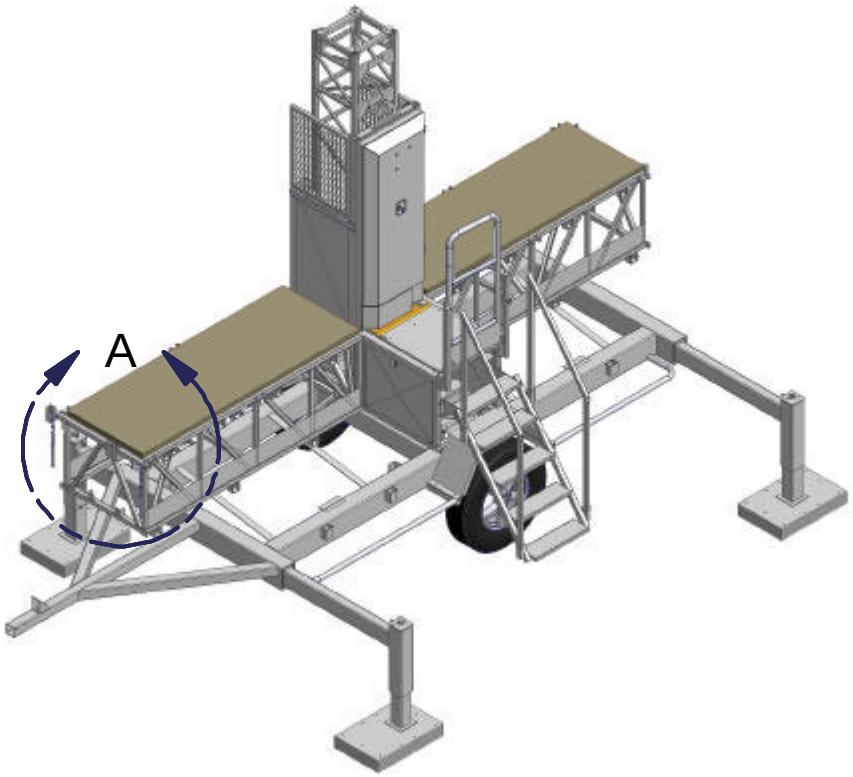
DETAIL-A

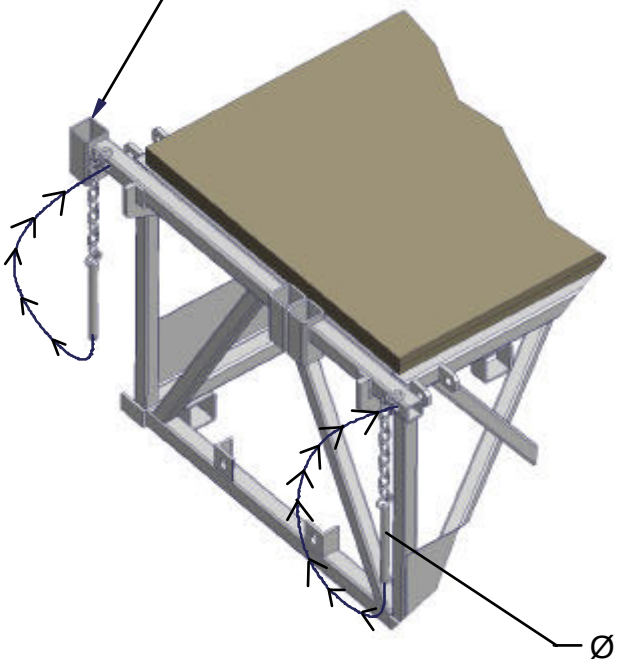


Guardrail bracket

1-Install the guardrail bracket in the hooks at the end of the last extension section.

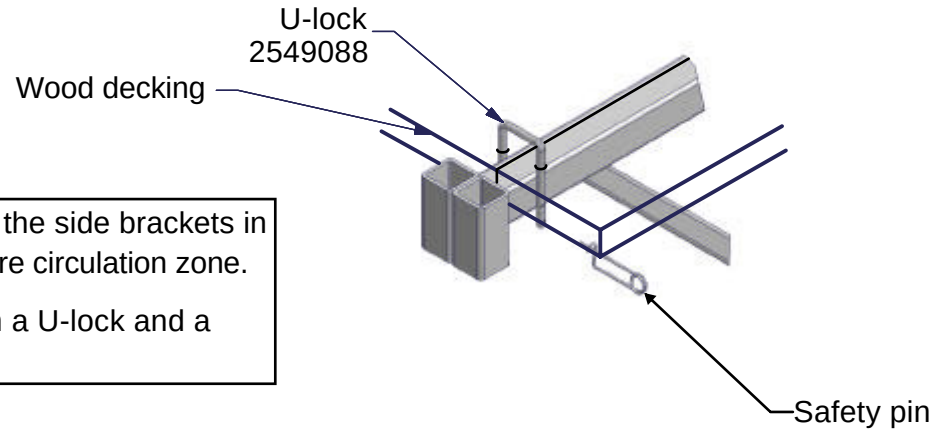
2-Secure the guardrail bracket and the side bracket with their Ø16 mm X 150 mm (Ø5/8" X 6") pins and 2 cotter pins.





DETAIL-A

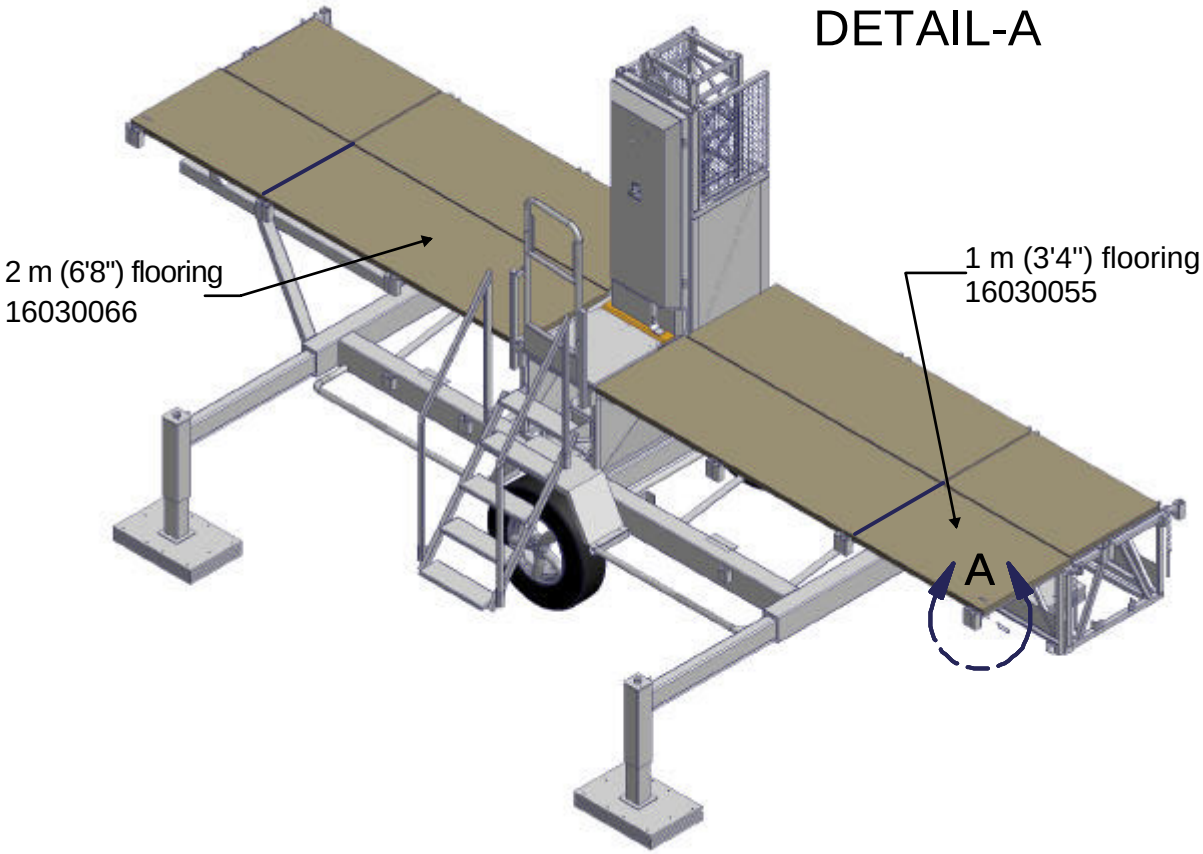
Flooring



Installation

1-Install the flooring on the side brackets in order to cover the entire circulation zone.

2-Lock the flooring with a U-lock and a safety pin.



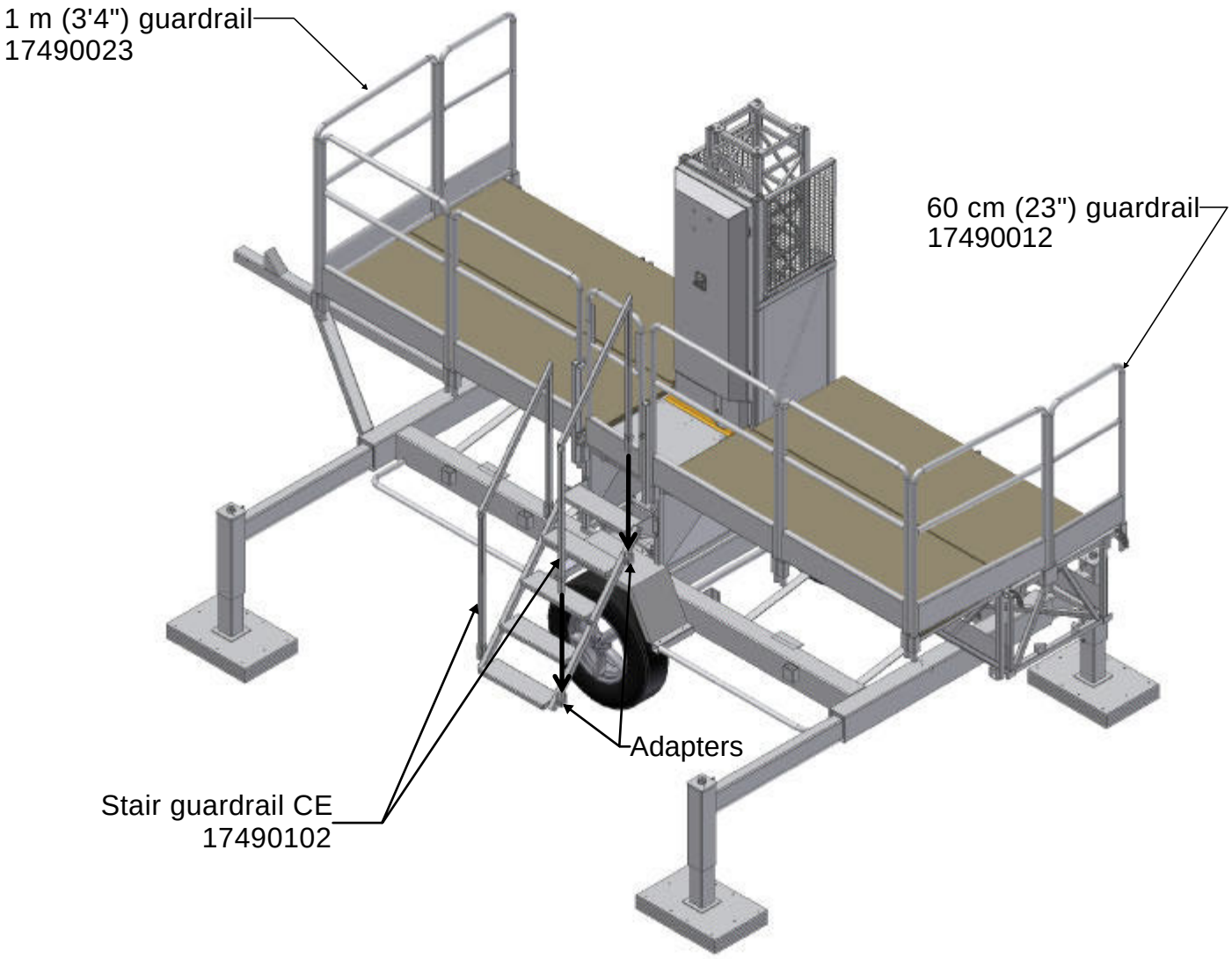
Flooring used regarding the lenght of platform

Fiber flooring / Platform lenght	1 m x 0,71 m (3'4'' x 28'')	2 m x 0,71 m (6'8'' x 28'')
1 m (3'4'') extension	1	
2 m (6'8'') extension		1
3 m (10') extension	1	1
4 m (13'4'') extension	2	1
6,10 m (20') bridge		3
9,14 m (30') bridge	1	4
12,19 m (40') bridge		6

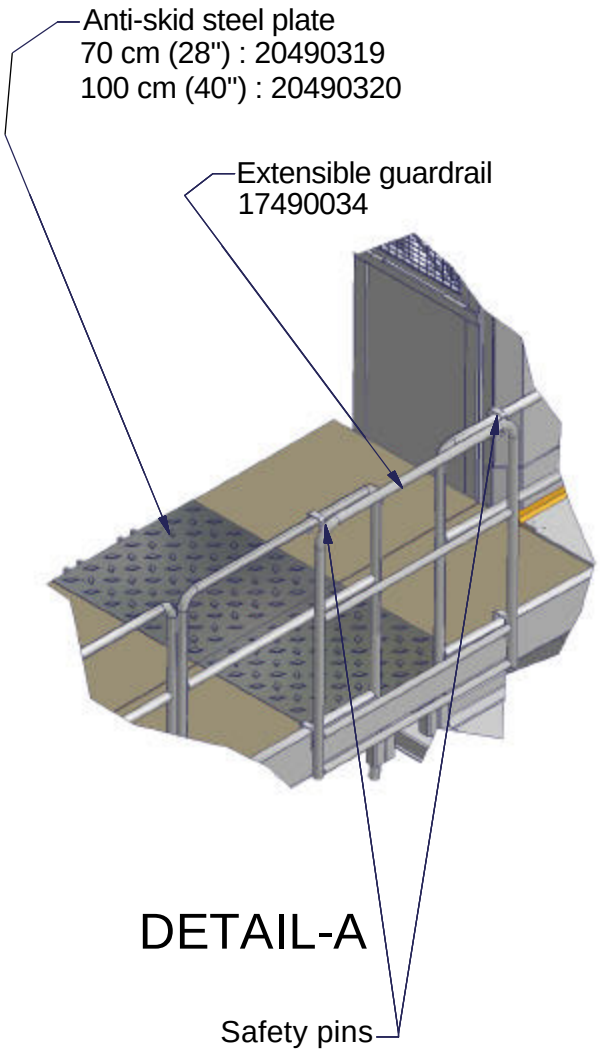
Guardrail

Installation

1-Insert the guardrail in the side bracket and the guardrail bracket.
2-Insert the two stair guardrails CE on the stair in their adapters.
3-Install the guardrails wherever there might be a risk of falling.



Extensible guardrail & anti-skid plate



Installation

Extensible guardrail

1-Install the extensible guardrail on the existing guardrails where there are gaps.

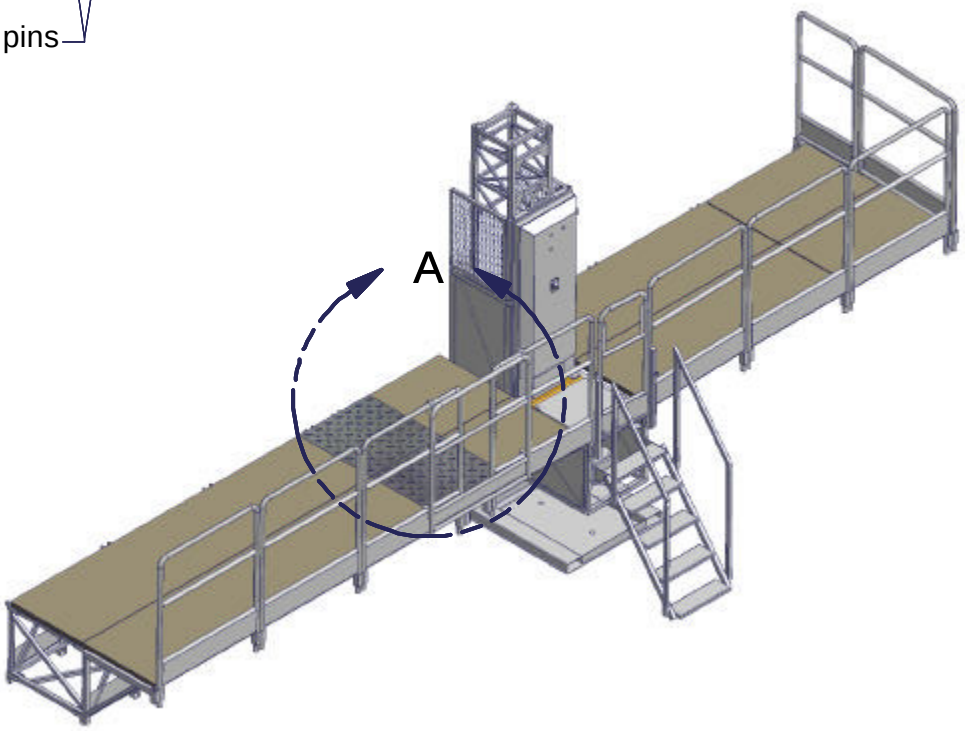
2-Lock the extensible guardrail with safety pins.

3-The safety pins must be re-installed each time the extensible guardrail is moved.

Anti-skid plate

1-Install the anti-skid plate on the gaps created by the bridge arms.

2-Secure them with screws or nails on one side only, to allow movement of the bridge arms.



Outrigger

Installation

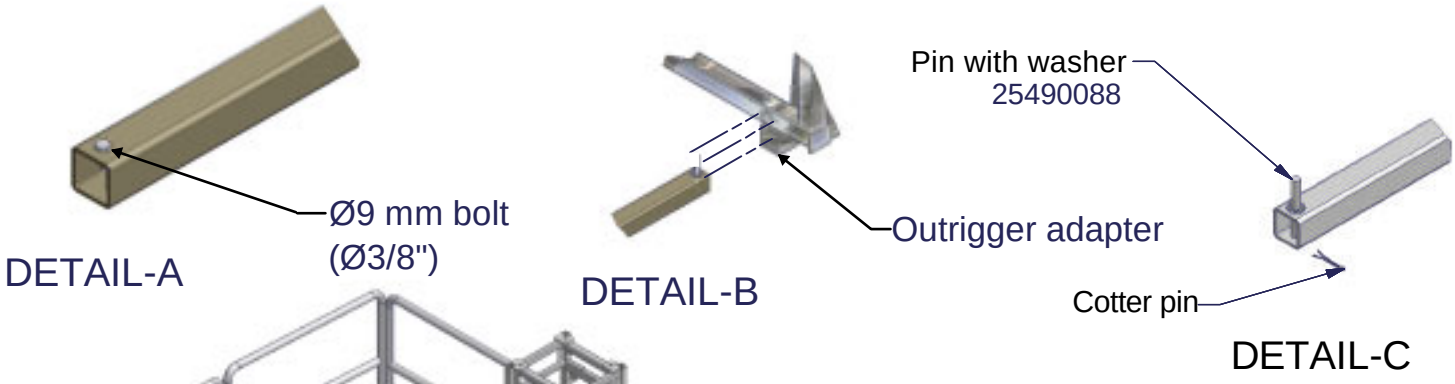
1-Make sure that a Ø9 mm (Ø3/8") bolt is in place before installing the outriggers.

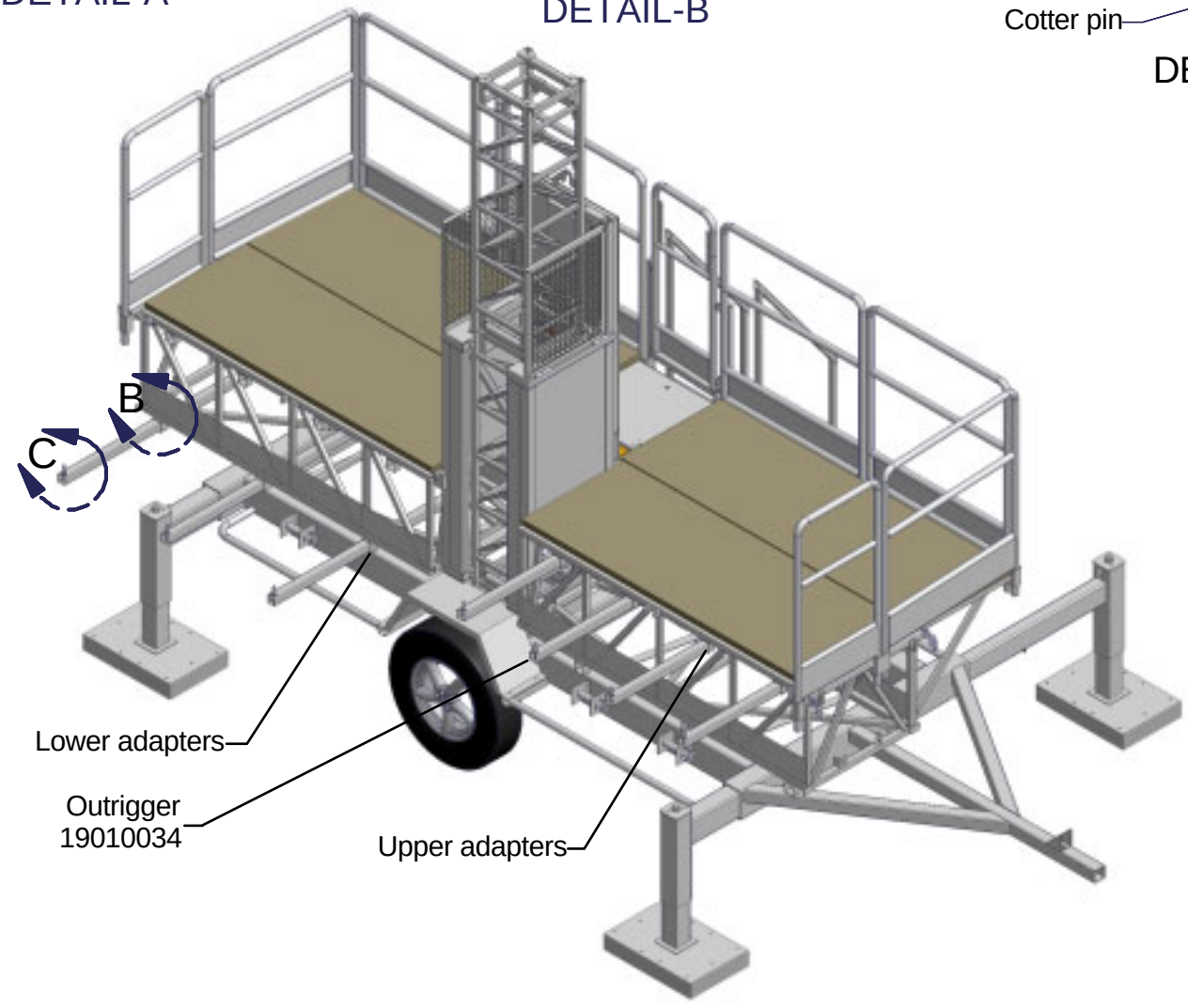
2-Install the outriggers in the lower or upper adapters. (DETAIL-A)

3-Install the outriggers so that there is no more than one free outrigger adapter between each outrigger. (DETAIL-B).

4-Install a pin with washer in each outrigger and secure with a cotter pin.

5-The outriggers cannot be deployed more than 1,52 m (5').





Plank tie

Installation

1-Install the plank ties so that they hold the outriggers and the planks together.

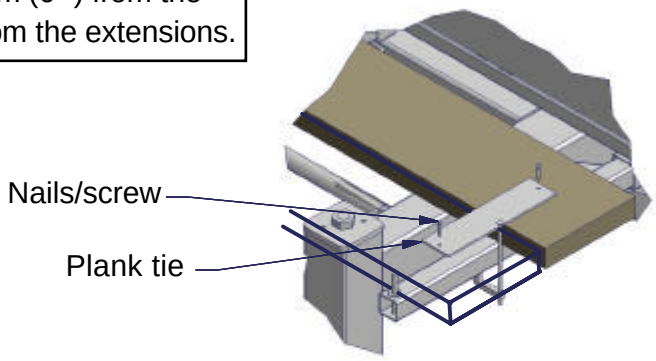
2-Nail or screw the plank ties to the planks so that they do not move.

Warning

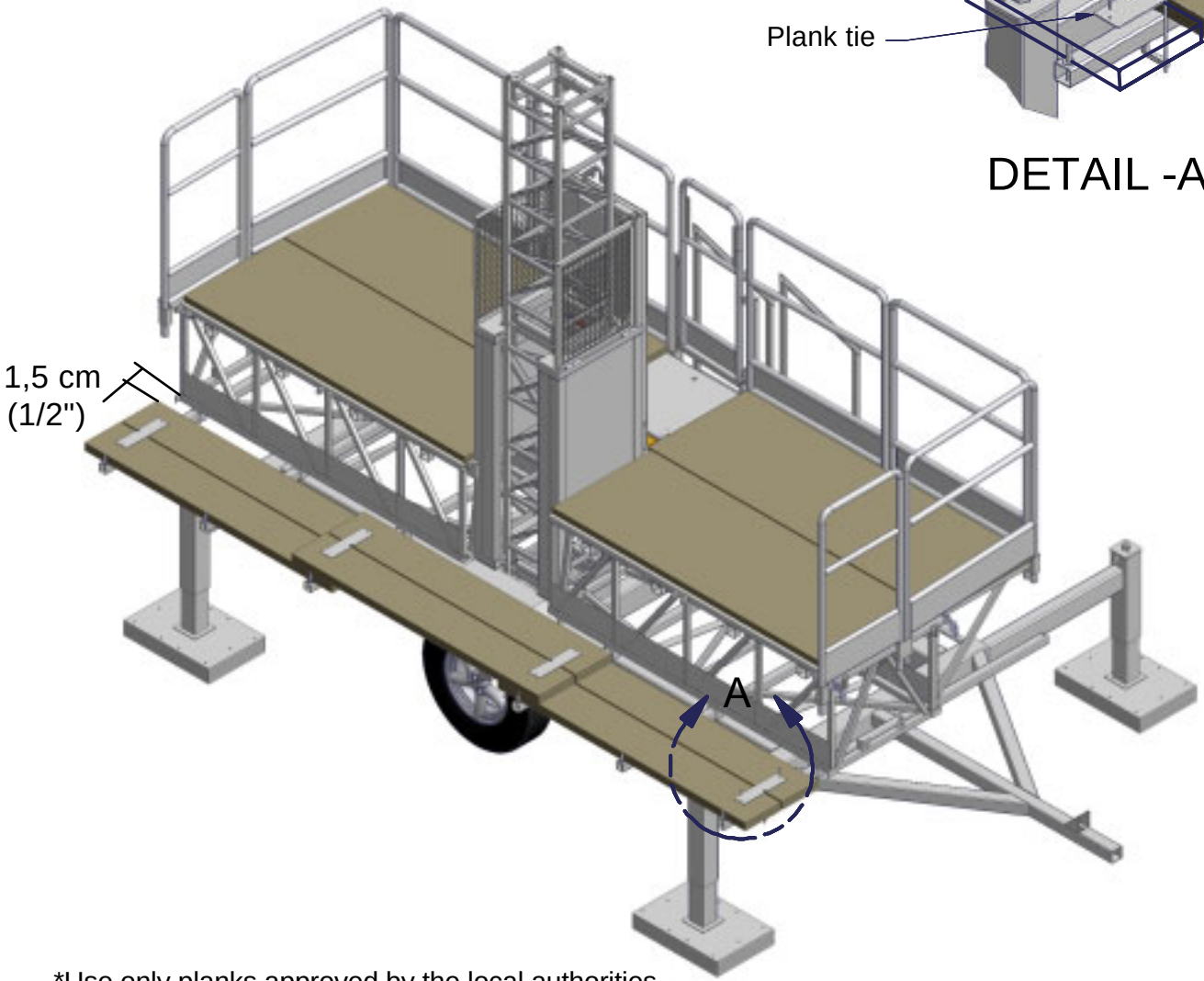
Never place any load on the planks at any time

Use only #1 category spruce or equivalent* having dimensions of 50 mm X 250 mm (2" x 10") 350 kg/m² (71.5 lbs/pi ²) for a span less than 1,80 m (6').

The planks must be 15 cm (6") from the wall and 1,5 cm (1/2") from the extensions.



DETAIL -A



*Use only planks approved by the local authorities

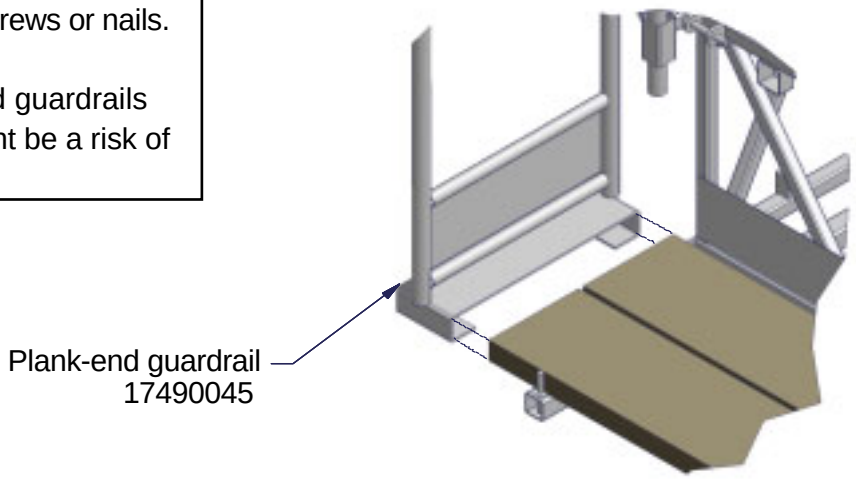
Plank-end guardrail

Installation

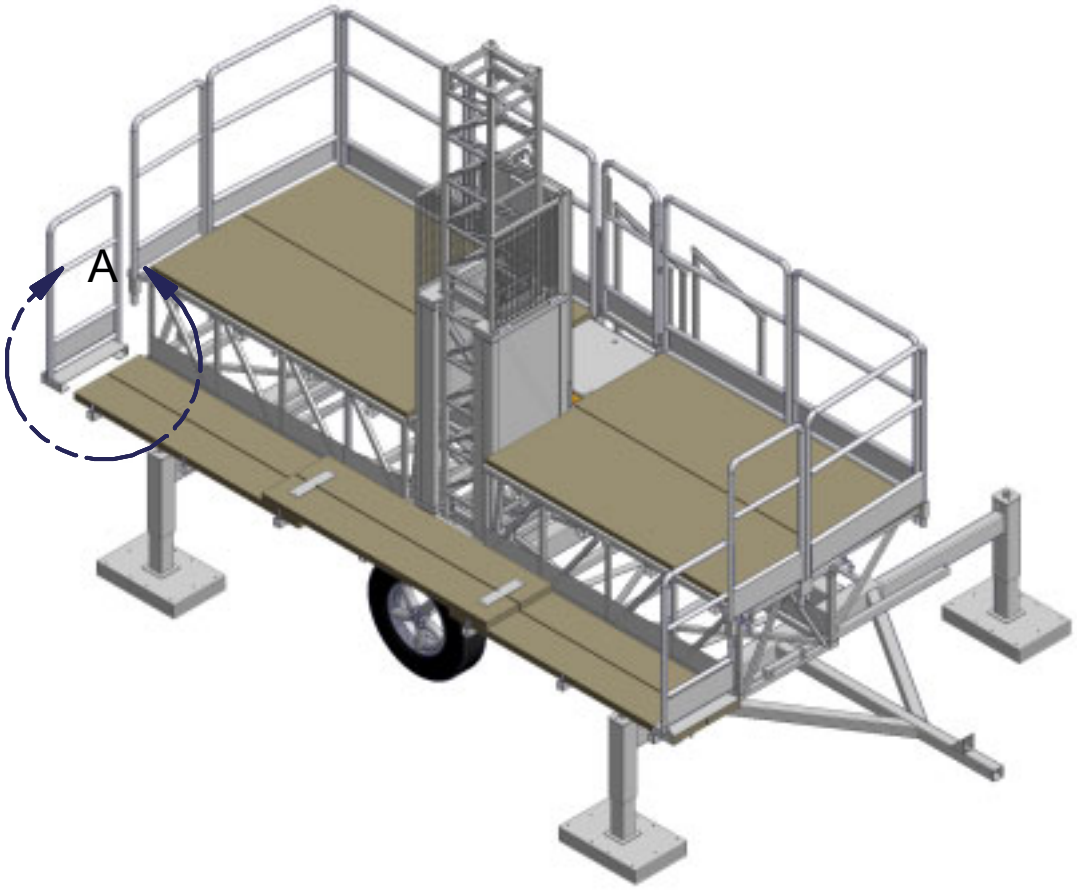
1-Install the plank-end guardrails at the end of the work zone planks.

2-Secure them with screws or nails.

3-Place the plank-end guardrails wherever there might be a risk of falling.



DETAIL-A



Part III

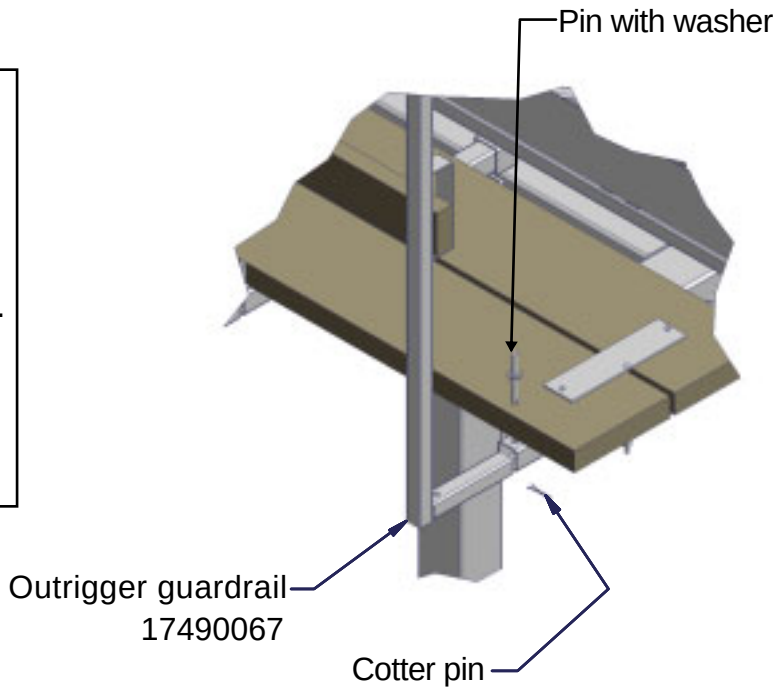
Options/Miscellaneous

Outrigger guardrail

1-Install the outrigger guardrails at all the places required to prevent any risk of falling.

2-Lock the outrigger guardrails with their pins with washer and cotter pins.

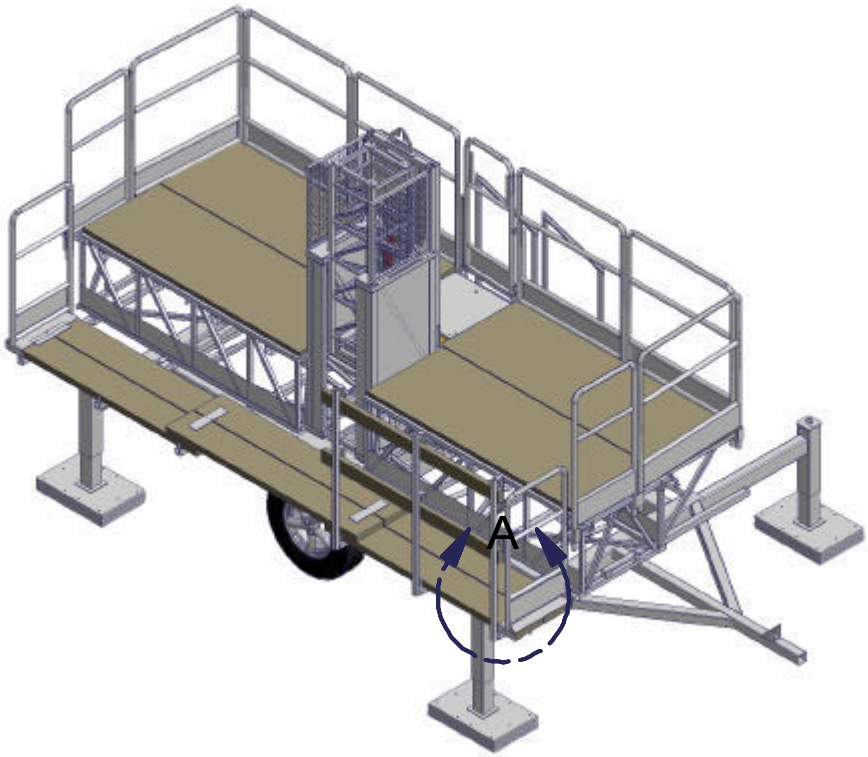
3-Insert 50mm X 100mm (2" X 4") planks in the outrigger guardrails and secure them with nails or screws.



DETAIL-A

WARNING

Never place any load on the planks at any time



Outrigger tie

Always use 2 outrigger ties for each additional outrigger

Installation

1-Install the outrigger ties on the previously installed outriggers.

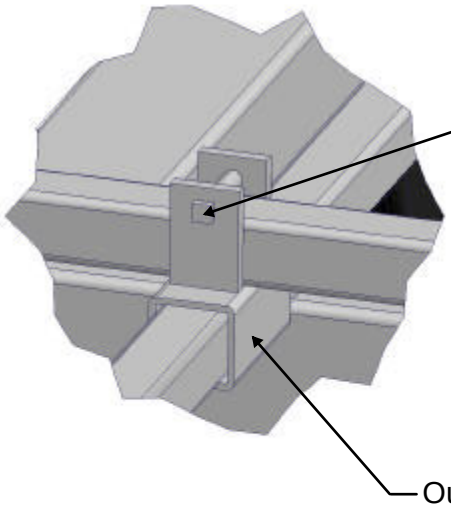
2-Secure the ties with Ø19 mm x 100 mm (Ø5/8" x 4") pins and lock them with cotter pins.

3-Install pins with washers on the new outriggers. (page II-13)

4-Place planks on the new work area.

WARNING

Never place any load on the planks at any time
Installation only permitted with 1m, 2m & 3 m (3'4 ", 6'8" & 10') extensions
Always use 2 outrigger ties for each additional outrigger



DETAIL-A

Single mast locking system

Always install a single mast locking system when in a single mast configuration

Installation

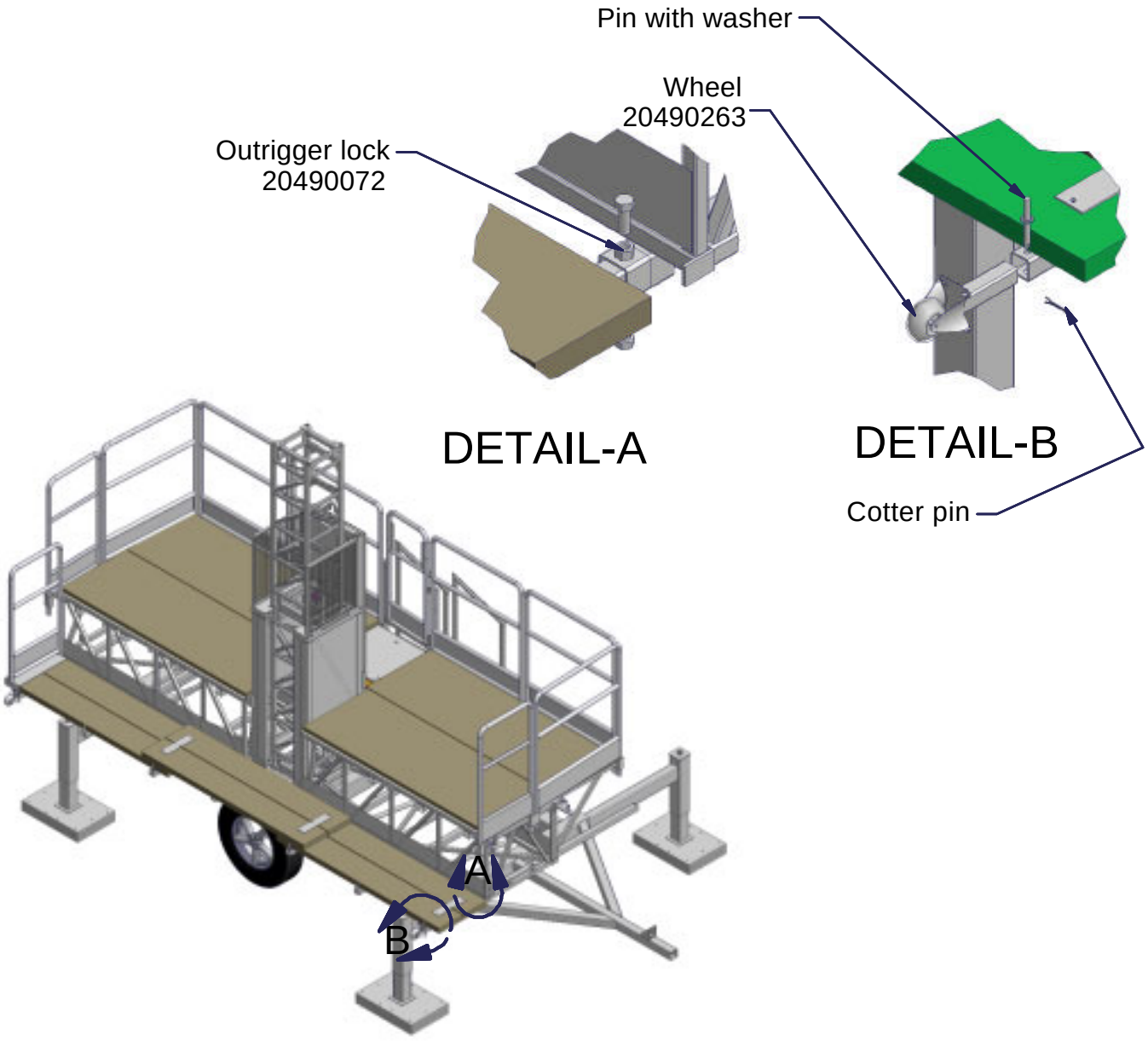
1-Insert an outrigger lock on the outrigger furthest from the mast. (DETAIL-A)

2-Install the wheel at the end of the outriggers with outrigger locks.

3-Lock the wheel with a pin with washer and a cotter pin. (DETAIL-B)

4-Adjust the distance between the wheel and the wall to 3 cm (1 1/8").

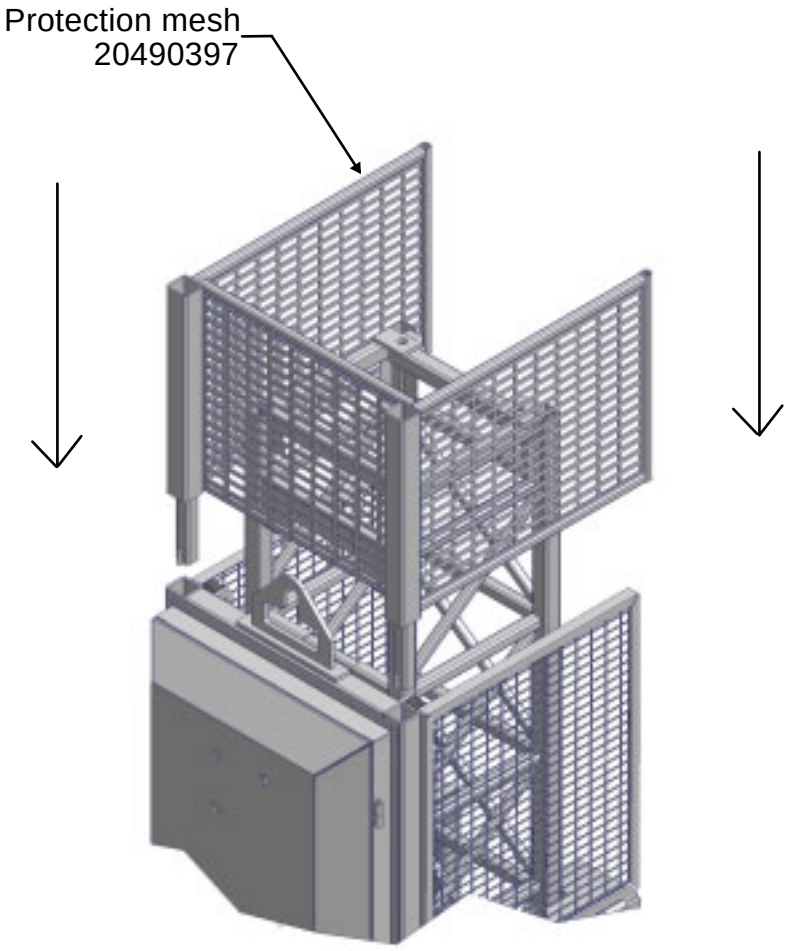
5-Tighten the bolts on the outrigger locks.



Protection mesh

Installation

1-Insert the protection mesh on top of the elevating unit to extend the protection.



Part IV

Mast and anchor installation

Installation of mast sections

Installation:

1-Divide the mast sections equally on each side of the elevating unit.

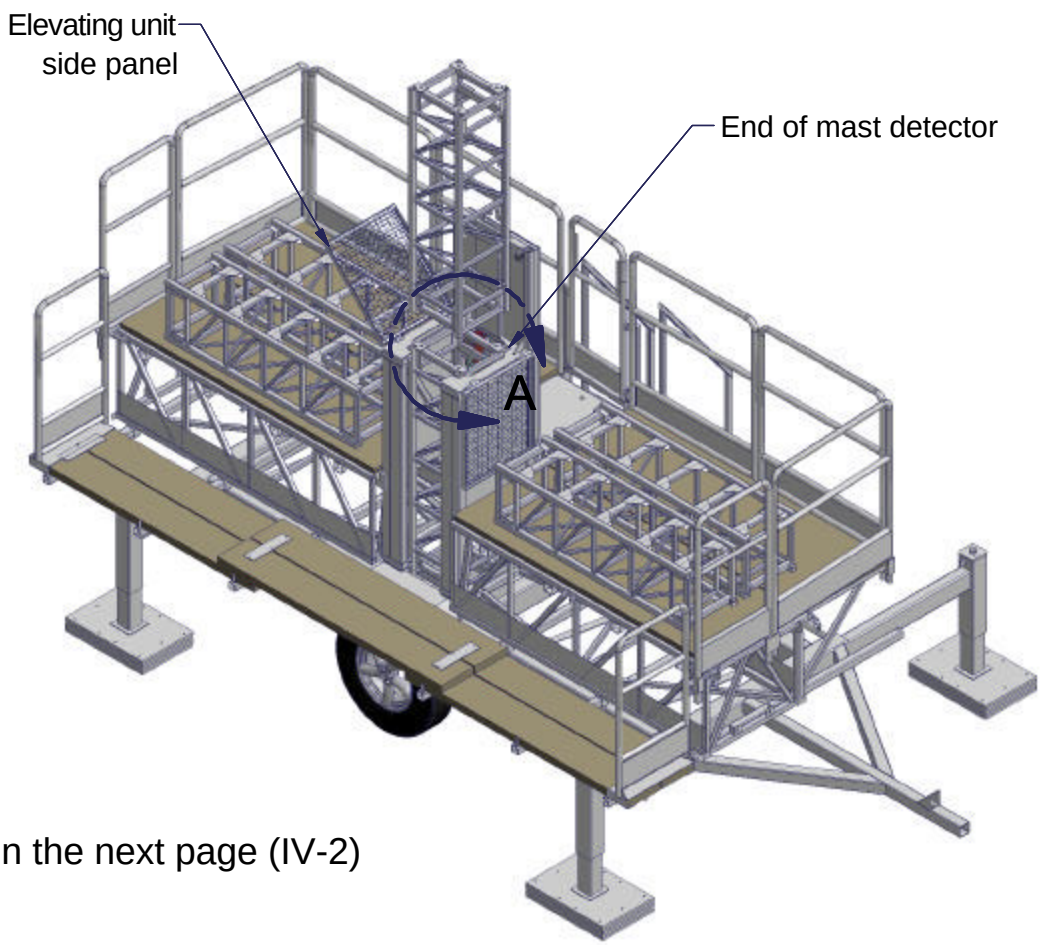
2-Flip the panels on the elevating unit and manually install the mast sections.

3-Follow the instructions on page IV-2.

WARNING

When carrying masts over the anchors, the total permissible load is 682 kg (1 500 lbs) uniformly distributed and including workers

2 workers needed



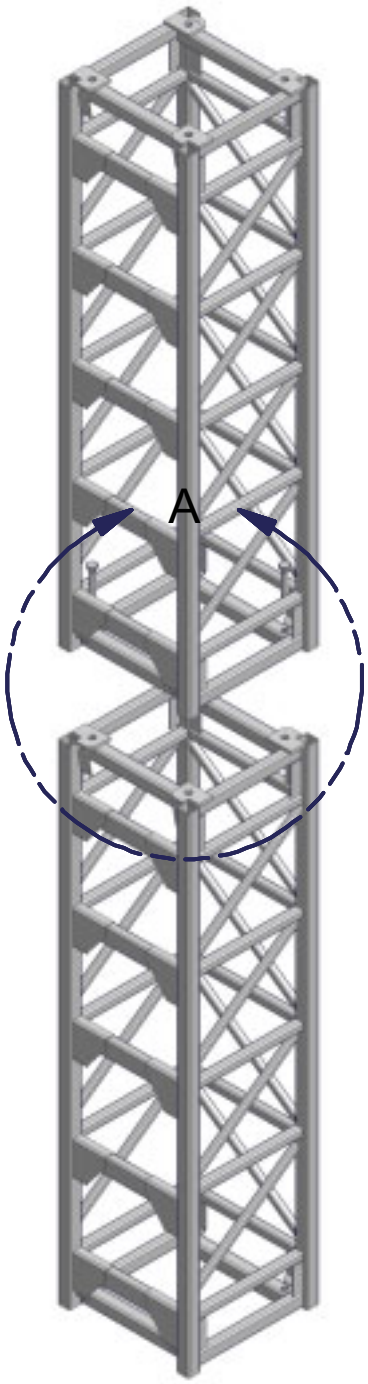
Detail-A on the next page (IV-2)

Erection of a mast

Installation

1-Join the male and female sections.

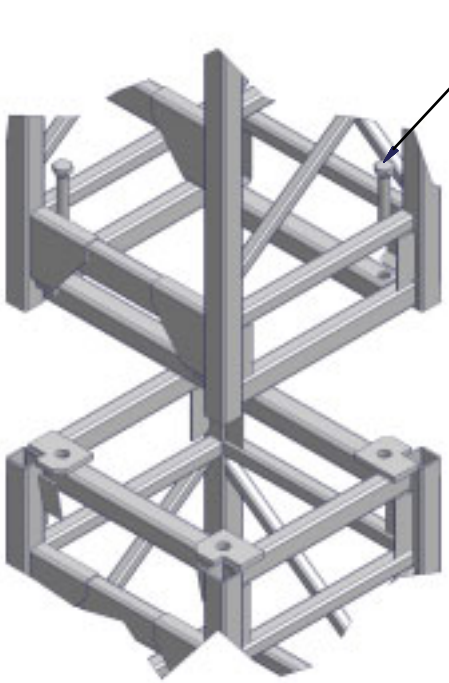
2-Bolt them together with 4 bolts.



Important:

1-Do not add more than 6 mast sections (7 mast sections total) to the FRACO system. The maximum freestanding height is 11,58 m (38').

2-Check to make sure that the claws are on the same side on each mast section.



DETAIL-A

torque = 206 newton - meter
(152 foot - pound)

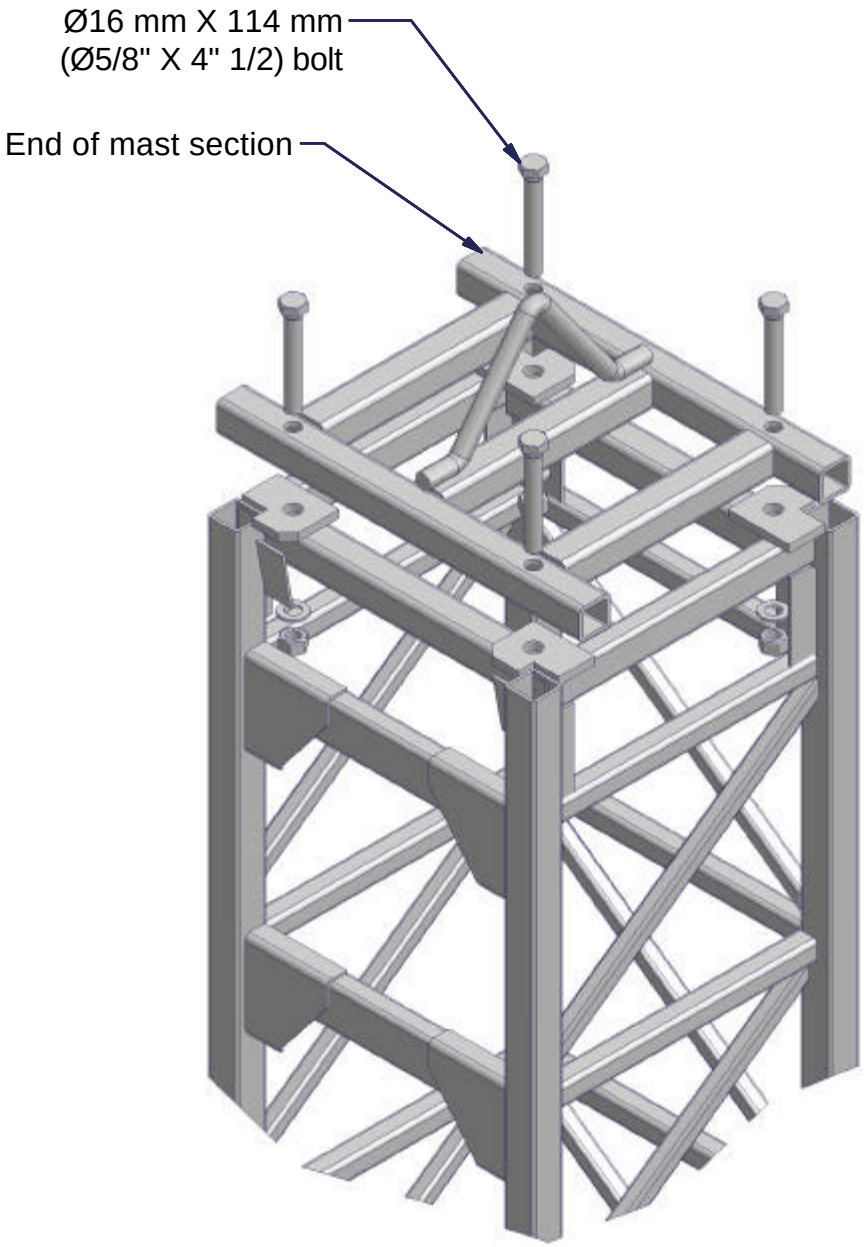
Do not exceed the following vertical tolerances

- 1,25 cm (1/2") for a 3m (10') mast.
- 2 cm (3/4") for a 6m (20') mast.
- 2,5 cm (1") for the maximum mast height.

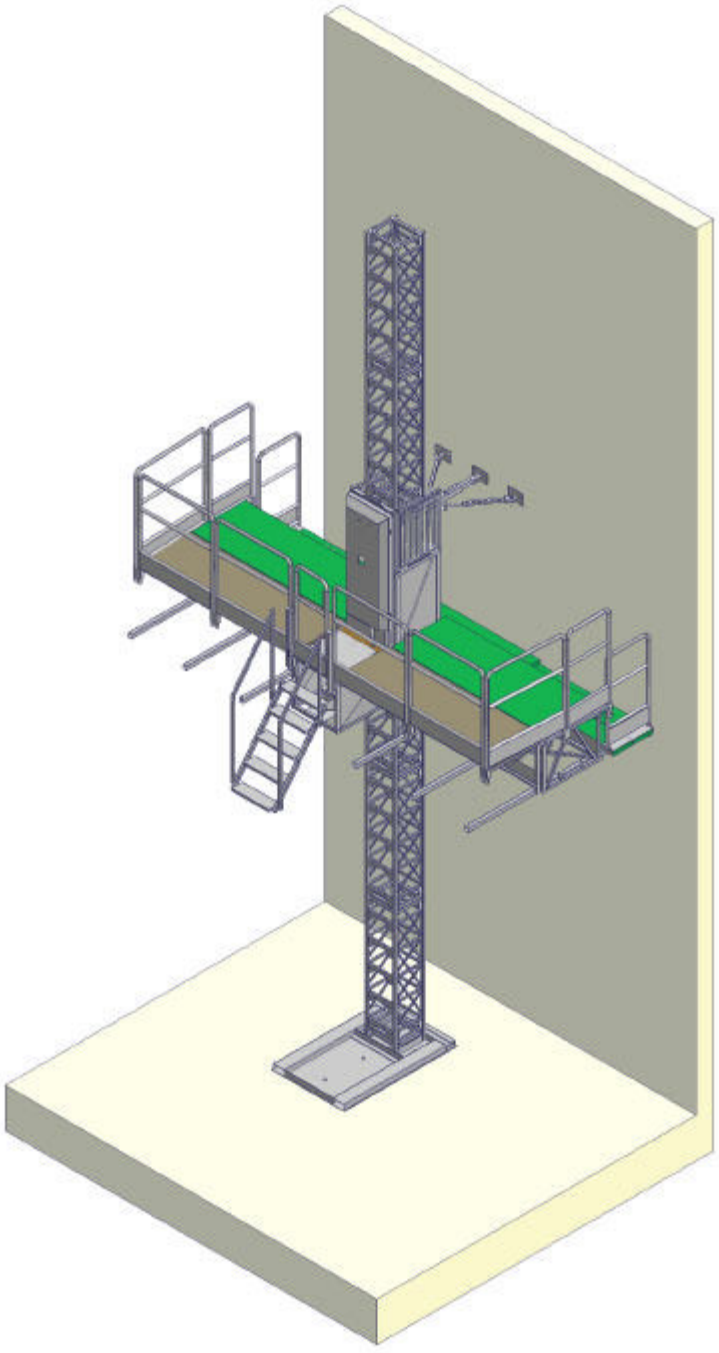
End of mast section

Installation

1-Once the last mast section is installed, bolt the end of mast section on top using four Ø16 mm X 114 mm (Ø5/8" X 4 1/2") bolts and four I.D. 16 mm (5/8") washers.



Anchor positions



IMPORTANT

1-With a ground base, the first anchor must be installed before:

Elevating the platform

Placing any load on the platform

2-Load on the platform only the mast sections required to reach the next anchor.

3-In a work situation, the platform must never go above the last anchor.*

FIRST ANCHOR:

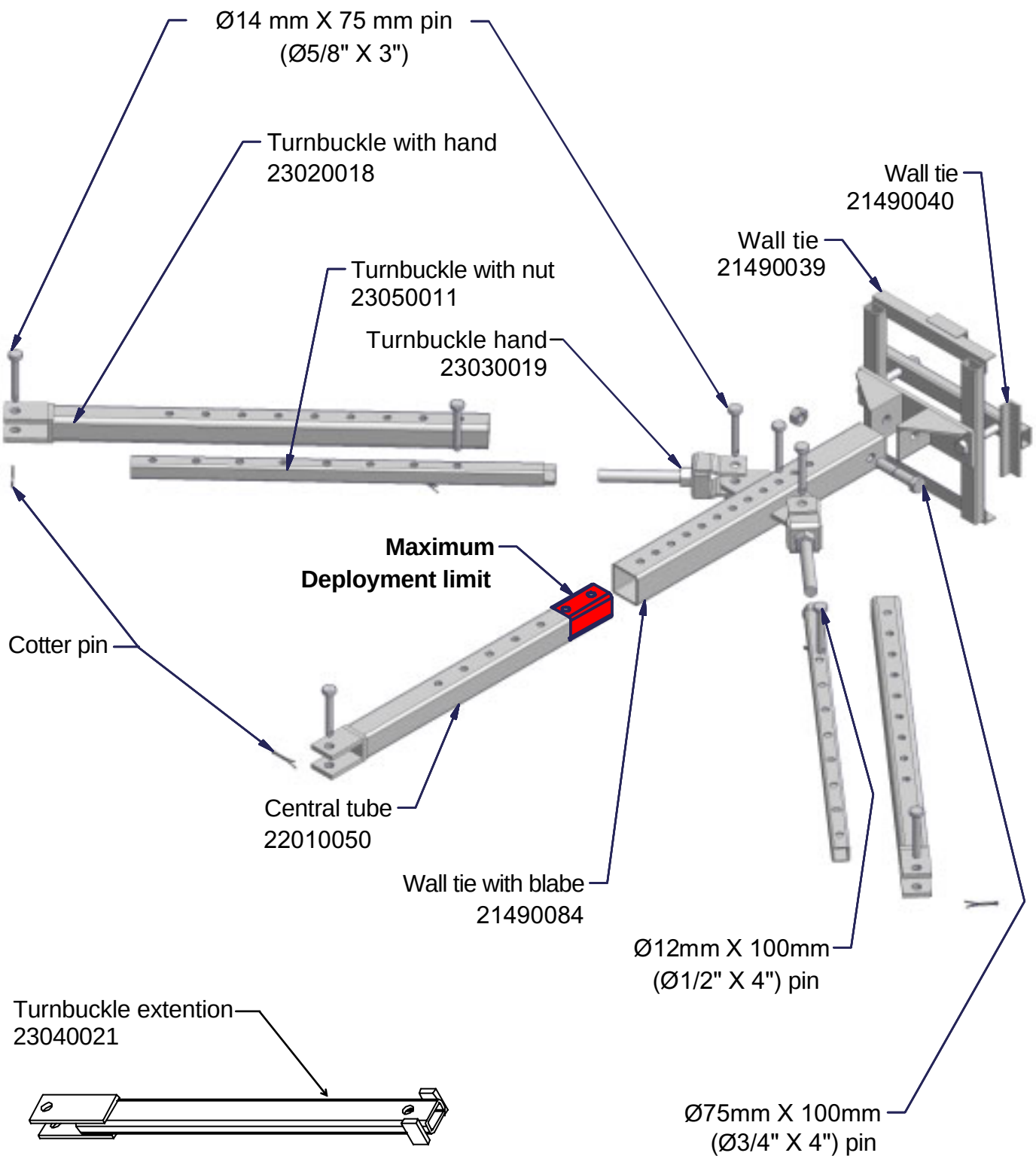
6 m (20') maximum from the ground

OTHER ANCHORS:

Maximum 6 m (20') between the anchors

*-TO INSTALL THE ANCHORS ONLY, It is permitted to exceed the last anchor by 6 m (20') with a load less than 682 kg (1 500 lbs), two men and tools when the first anchor is installed.

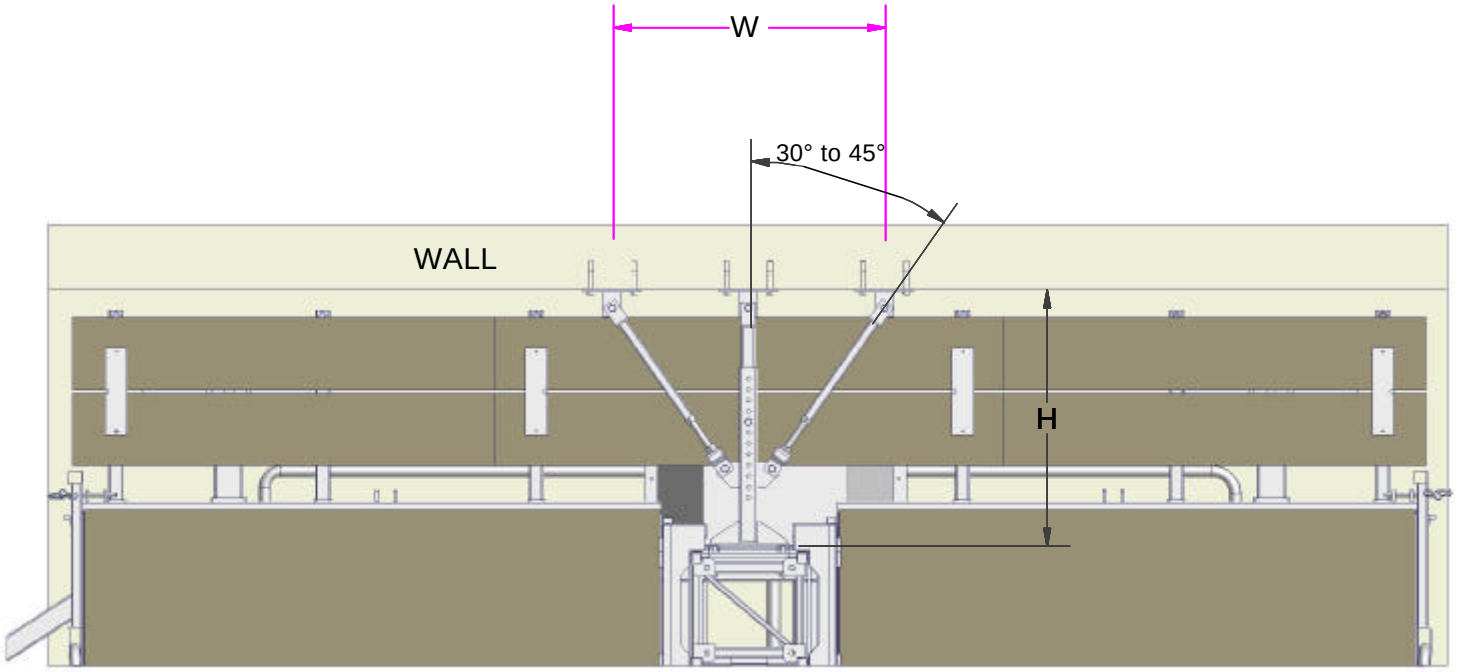
Anchor assembly



-The length of the central tube may vary depending on the needs.
-The turnbuckle may be extended with turnbuckle extention.

Minimum anchor opening relative to the distance from the wall

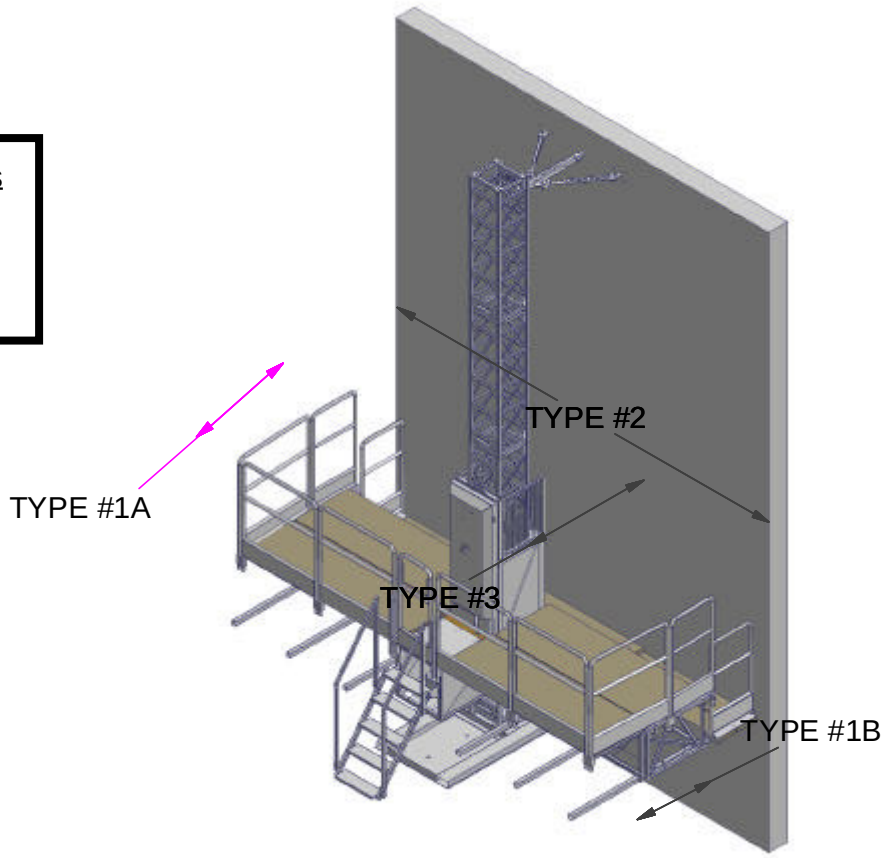
Central tube length	H (min)	H (max)	W (min) 30°	W (std) 45°
0,61 m (2')	0,66 m (2'4")		0,60 m (1'3")	0,64 m (2'1")
		0,99 m (3'3")	0,76 m (2'6")	1,30 m (5'3")
0,91 m (3')	0,97 m (3'2")		0,71 m (2'4")	1,25 m (4'1")
		1,30 m (4'3")	1,09 m (3'7")	1,91 m (6'3")
1,22 m (4')	1,27 m (4'2")		1,07 m (3'6")	1,85 m (6'1")
		1,60 m (5'3")	1,45 m (4'9")	2,51 m (8'3")
1,52 m (5')	1,58 m (5'2")		1,42 m (4'8")	2,46 m (8'1")
		1,91 m (6'3")	1,80 m (5'11")	3,12 m (10'3")
1,83 m (6')	1,88 m (6'2")		1,78 m (5'10")	3,07 m (10'1")
		2,21 m (7'3")	2,16 m (8'1")	3,73 m (12'3")



How to level the mast using the anchors

Warning

Never exceed the following vertical tolerances
- 1,25 cm (1/2") for a 3 m(10') mast.
- 2 cm (3/4") for a 6 m (20") mast.
- 2,5 cm (1") for the maximum mast height.



TYPE #1: Adjusting the distance on both sides between the platform and the wall.
TYPE #2: Levelling the mast from left to right.
TYPE #3: Levelling the mast from front to back.

	TYPE #1		TYPE #2		TYPE #3	
Situation	1A<1B	1A>1B	Left	Right	Front	Back
A	■					
B		■				
C			■			
D				■		
E					■	
F						■

Situations

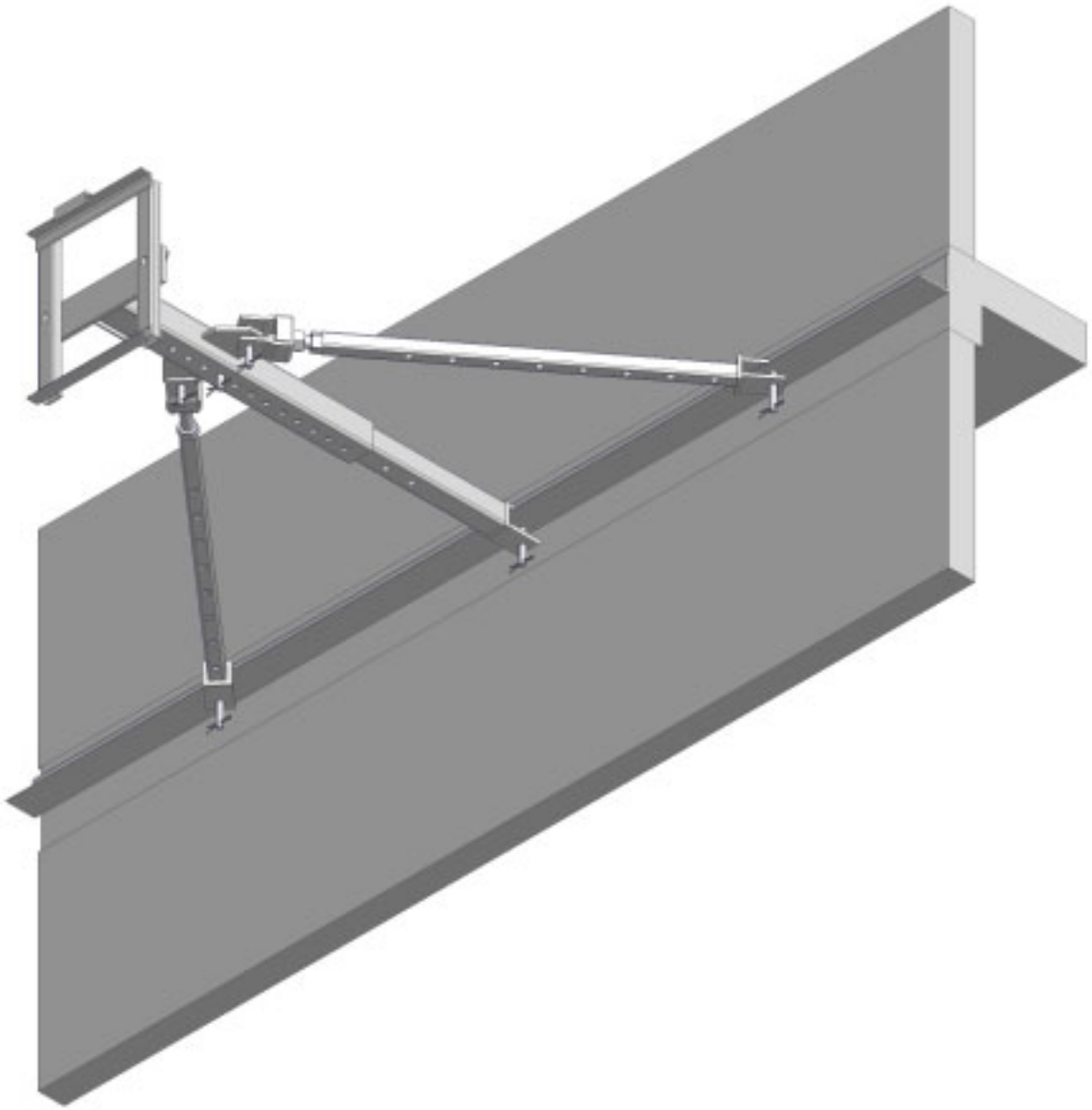
A- Move the central tube to the left.
B- Move the central tube to the right.
C- Shorten the left turnbuckle and extend the right one.
D- Shorten the right turnbuckle and extend the left one.
E- Shorten both turnbuckles and the central tube.
F- Extend both turnbuckles and the central tube.

Anchor bolted to an angle iron

WARNING : Before making any modification to a structural component, have an engineer approve it.

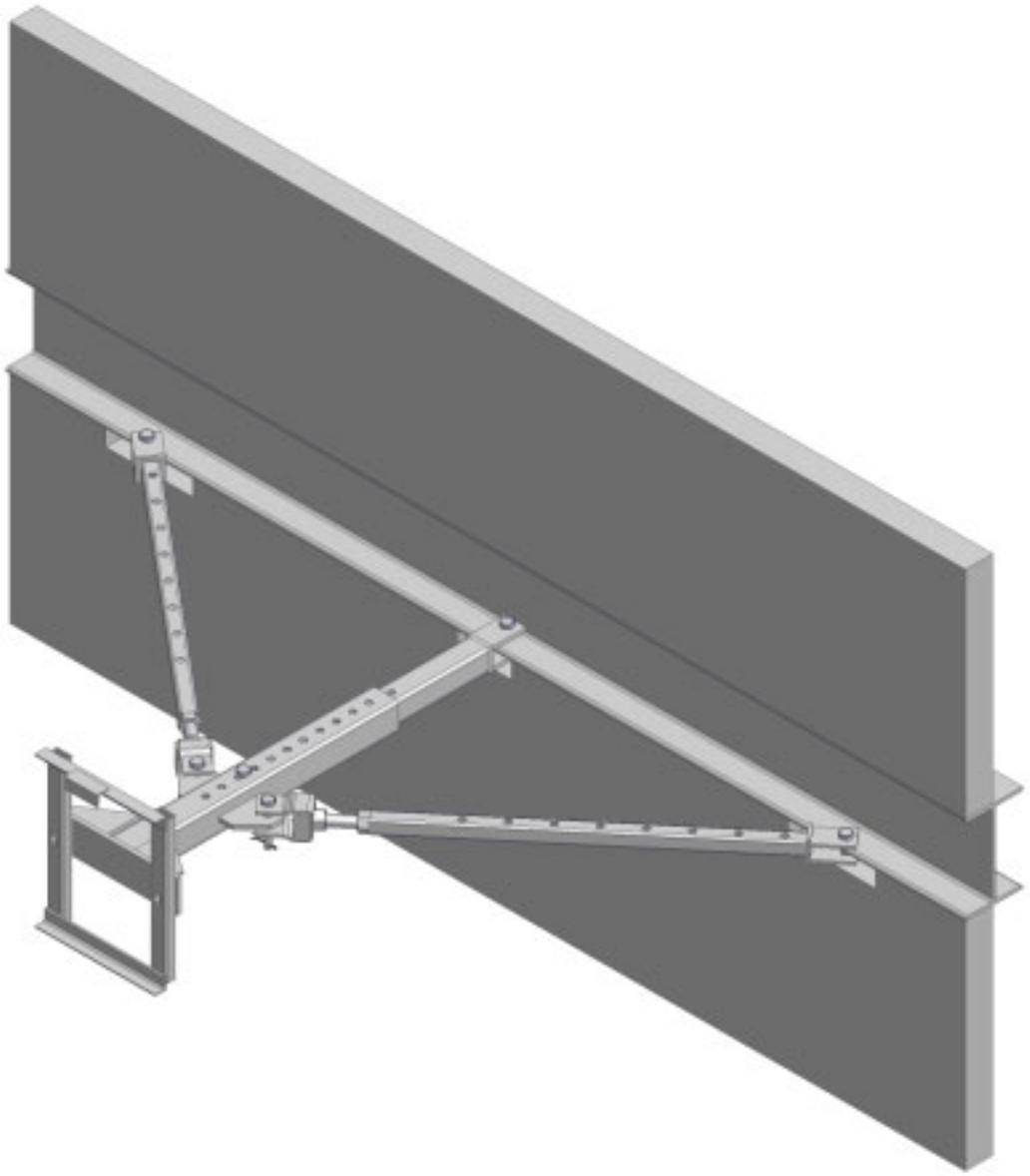
Installation

1-Install the wall tie and the central tube.
2-Locate the place to drill the holes for the turnbuckles using page IV-5.
3-Level the mast using the turnbuckles. (adjustment TYPE #2 & #3)
4-Drill a hole in the angle iron for the central tube. (adjustment TYPE #1)
5-Make sure that all the pins are in place and are secured by cotter pins.



Anchor bolted to a structural H-beam

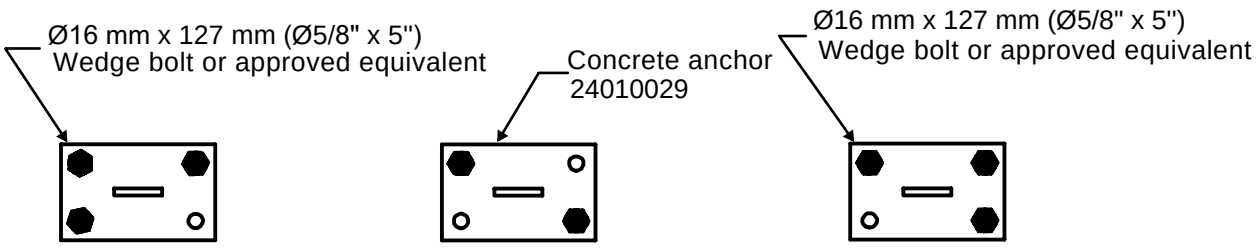
WARNING : Before making any modification to a structural component, have an engineer approve it.



Installation

1-Install the wall tie and the central tube.
2-Locate the place to drill the holes for the turnbuckles using page IV-5.
3-Level the mast using the turnbuckles. (adjustment TYPE #2 & #3)
4-Drill a hole in the structural H-beam for the central tube. (adjustment TYPE #1)
5-Make sure that all the pins are in place and are secured by cotter pins.

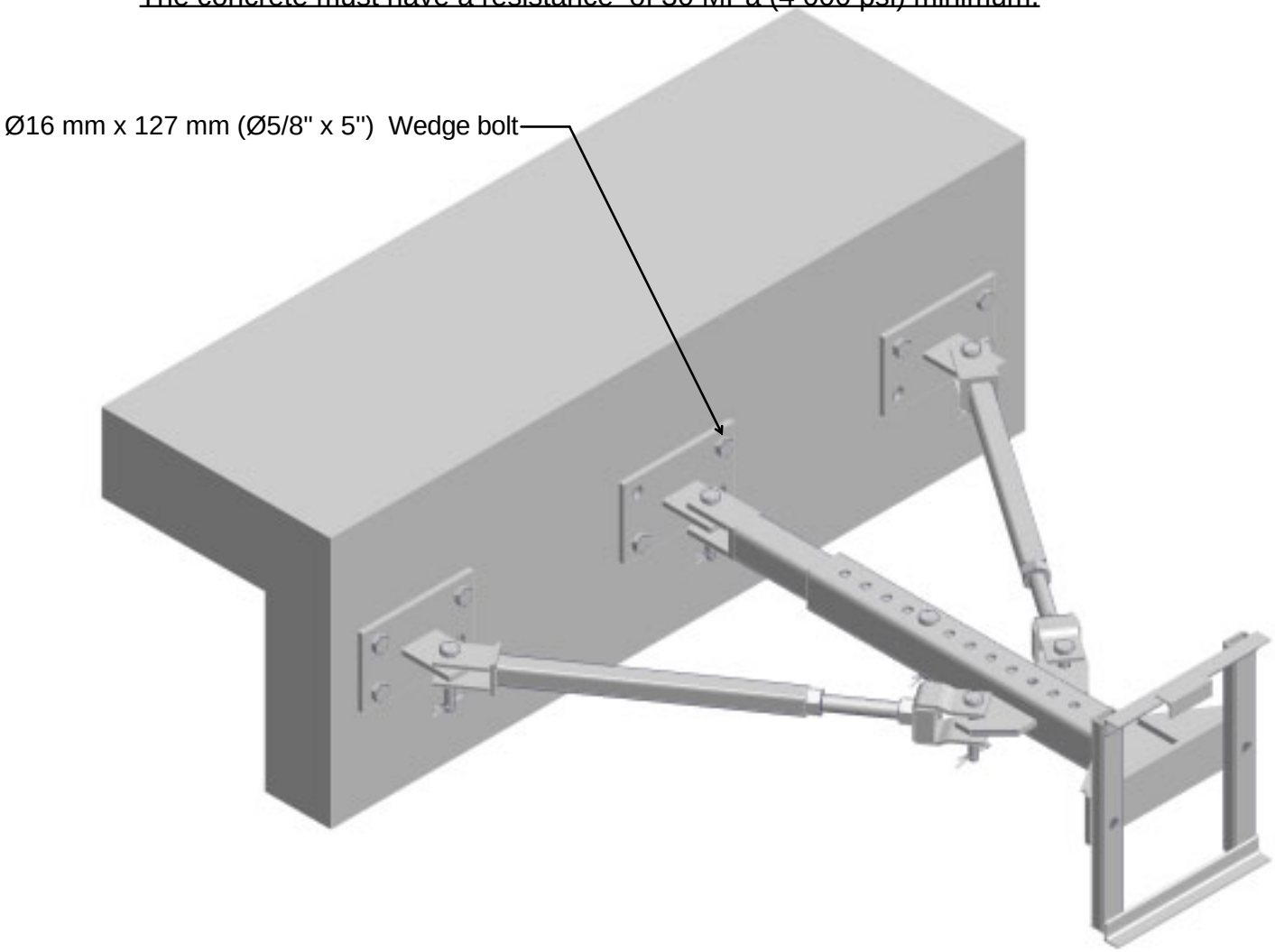
Anchor for a concrete structure or beam



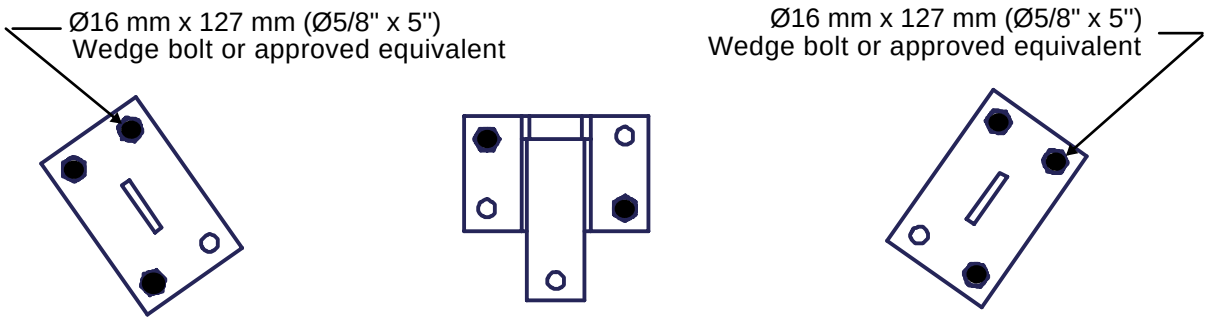
Installation:

1-Install the wall tie and the central tube.
2-Locate the place to install the concrete anchors for the turnbuckles using page IV-5.
3-Level the mast using the turnbuckles. (adjustment TYPE #2 & #3)
4-Install the concrete anchor for the central tube. (adjustment TYPE #1)
5-Make sure that all the pins are in place and are secured by cotter pins.

The concrete must have a resistance of 30 MPa (4 000 psi) minimum.



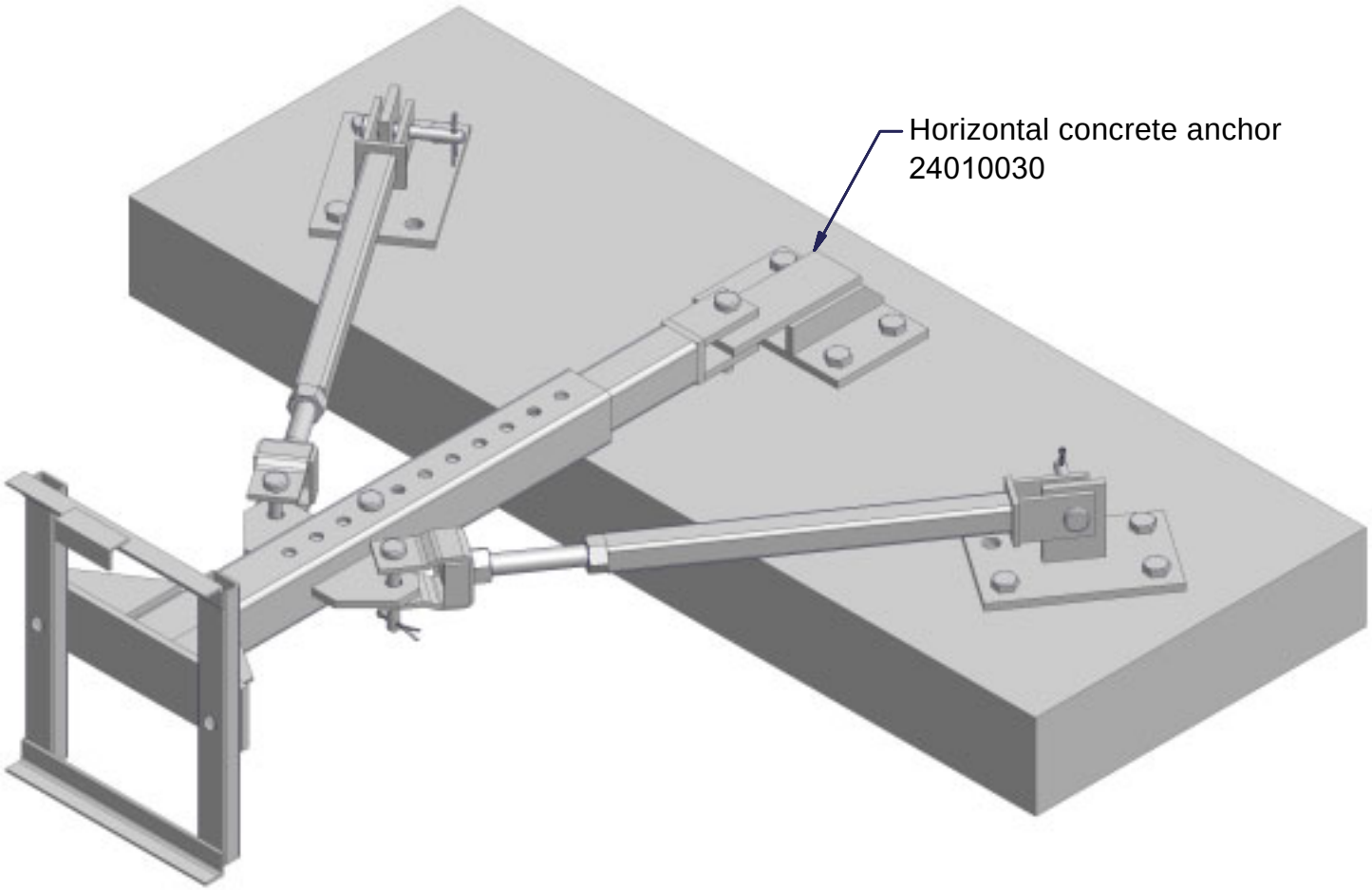
Horizontal anchor for concrete structure



Installation:

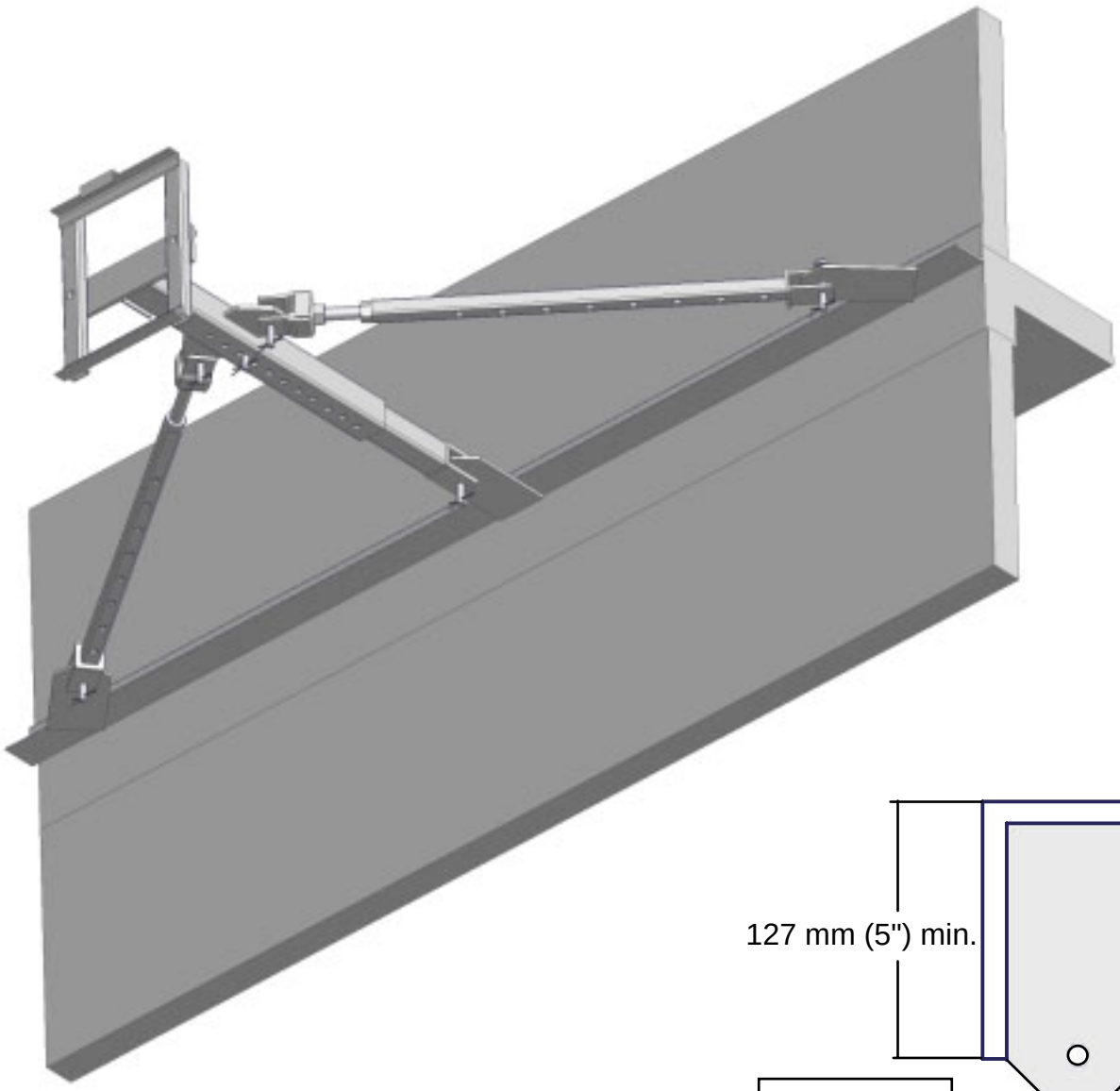
1-Install the wall tie and the central tube.
2-Locate the place to install the concrete anchors for the turnbuckles using page IV-5.
3-Level the mast using the turnbuckles. (adjustment TYPE #2 & #3)
4-Install the horizontal anchor for the central tube. (adjustment TYPE #1)
5-Make sure that all the pins are in place and are secured by cotter pins.

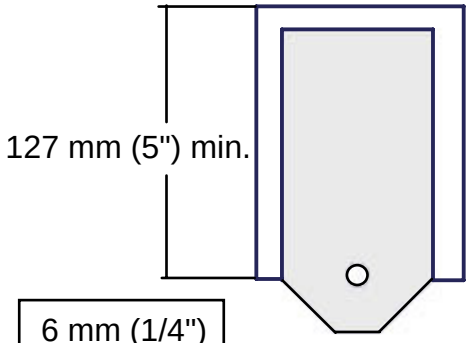
The concrete must have a resistance of 30 MPa (4 000 psi) minimum.



Anchor welded to an angle iron

WARNING : Before making any modification to a structural component, have an engineer approve it.





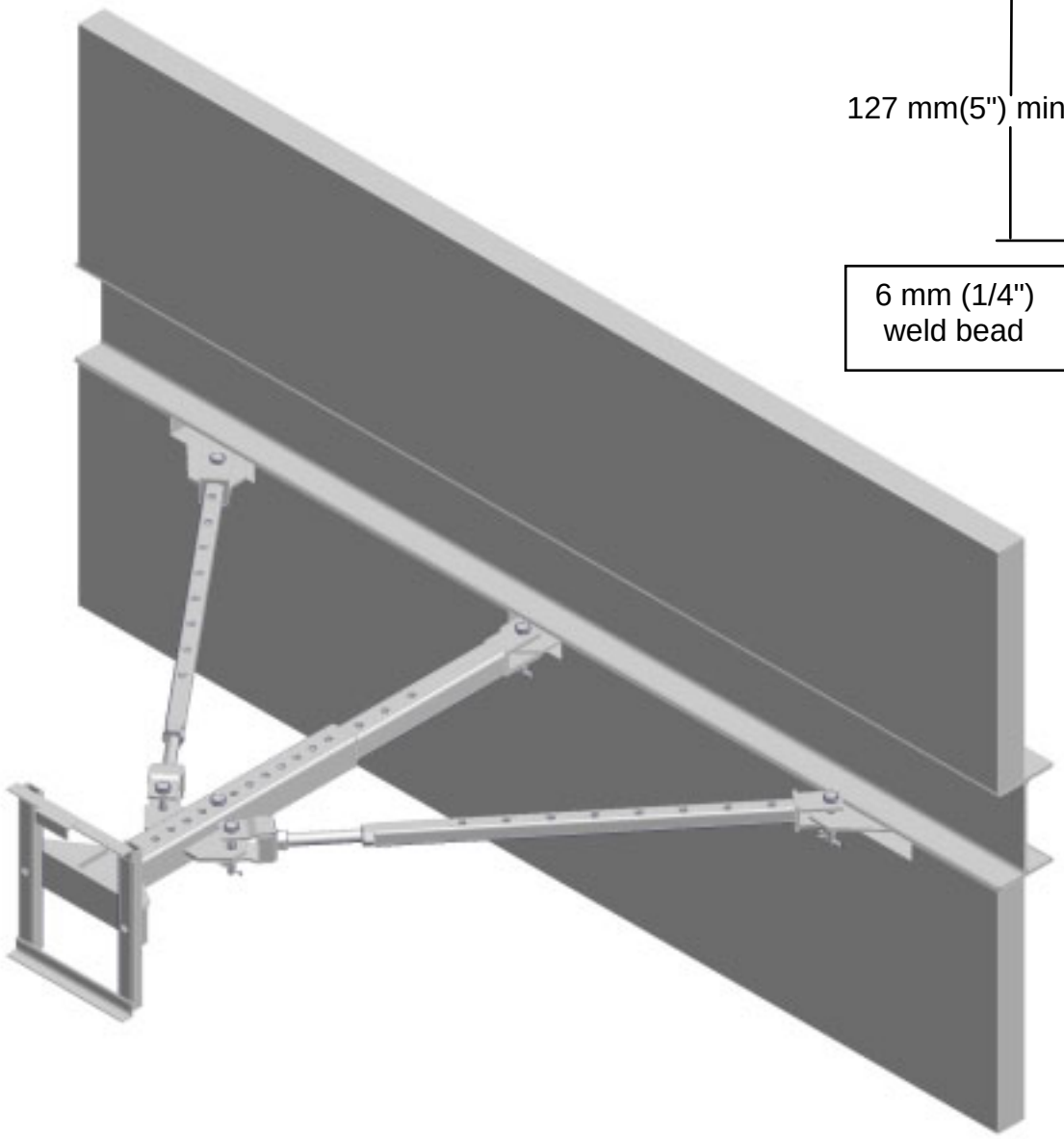
6 mm (1/4") weld bead

Installation

1-Install the wall tie and the central tube.
2-Locate the place to weld the plates for the turnbuckles using page IV-5.
3-Level the mast using the turnbuckles. (adjustment TYPE #2 & #3)
4-Weld the plate for the central tube on the angle iron. (adjustment TYPE #1)
5-Make sure that all the pins are in place and are secured by cotter pins.

Anchor welded to a structural H-beam

WARNING : Before making any modification to a structural component, have an engineer approve it.



Installation

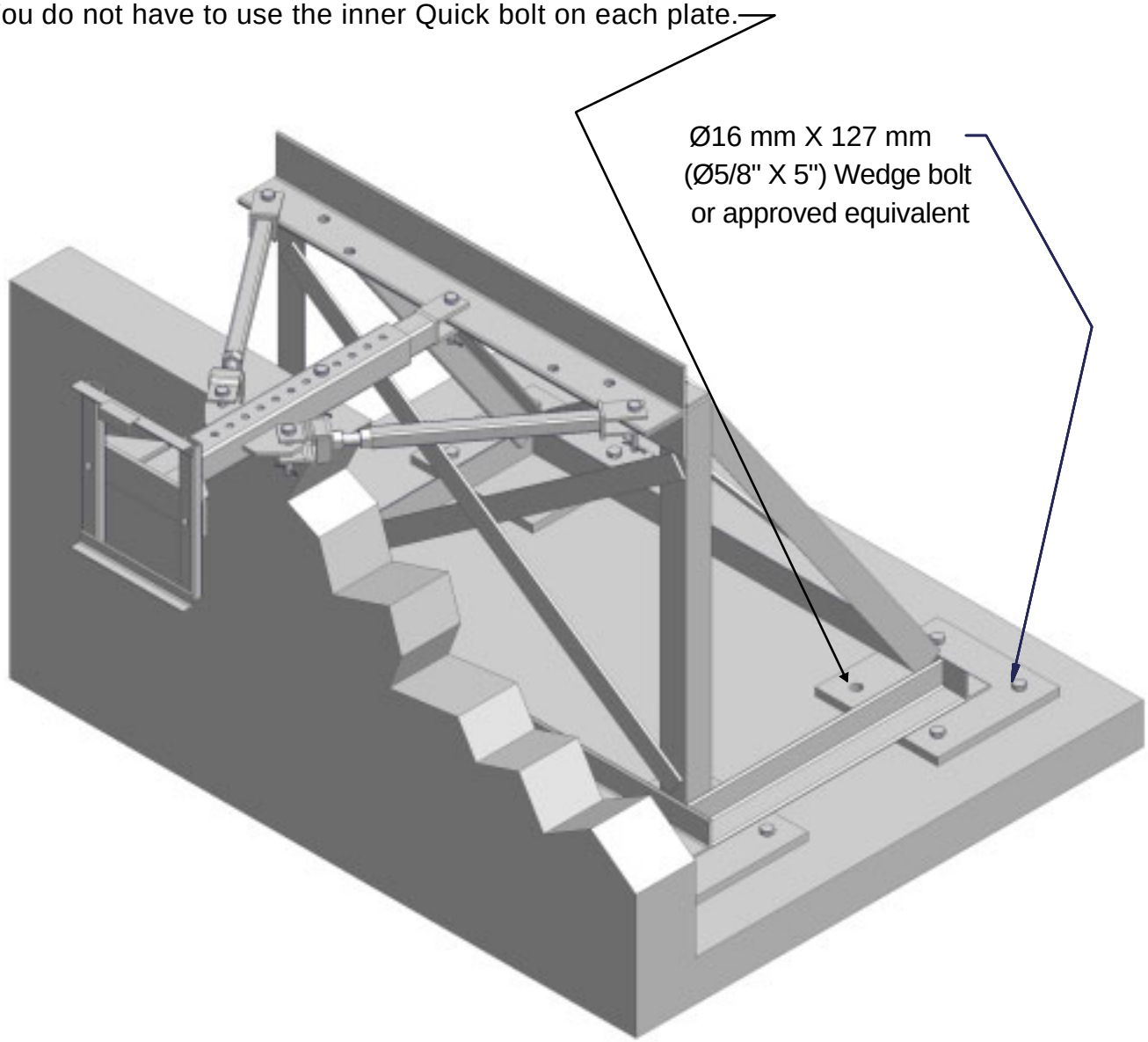
1-Install the wall tie and the central tube.
2-Locate the place to weld the plates for the turnbuckles using page IV-5.
3-Level the mast using the turnbuckles (adjustment TYPE #2 & #3)
4-Weld the plate on the structural H-beam for the central tube (adjustment TYPE #1)
5-Make sure that all the pins are in place and are secured by cotter pins.

Anchoring box for concrete floor

Installation:

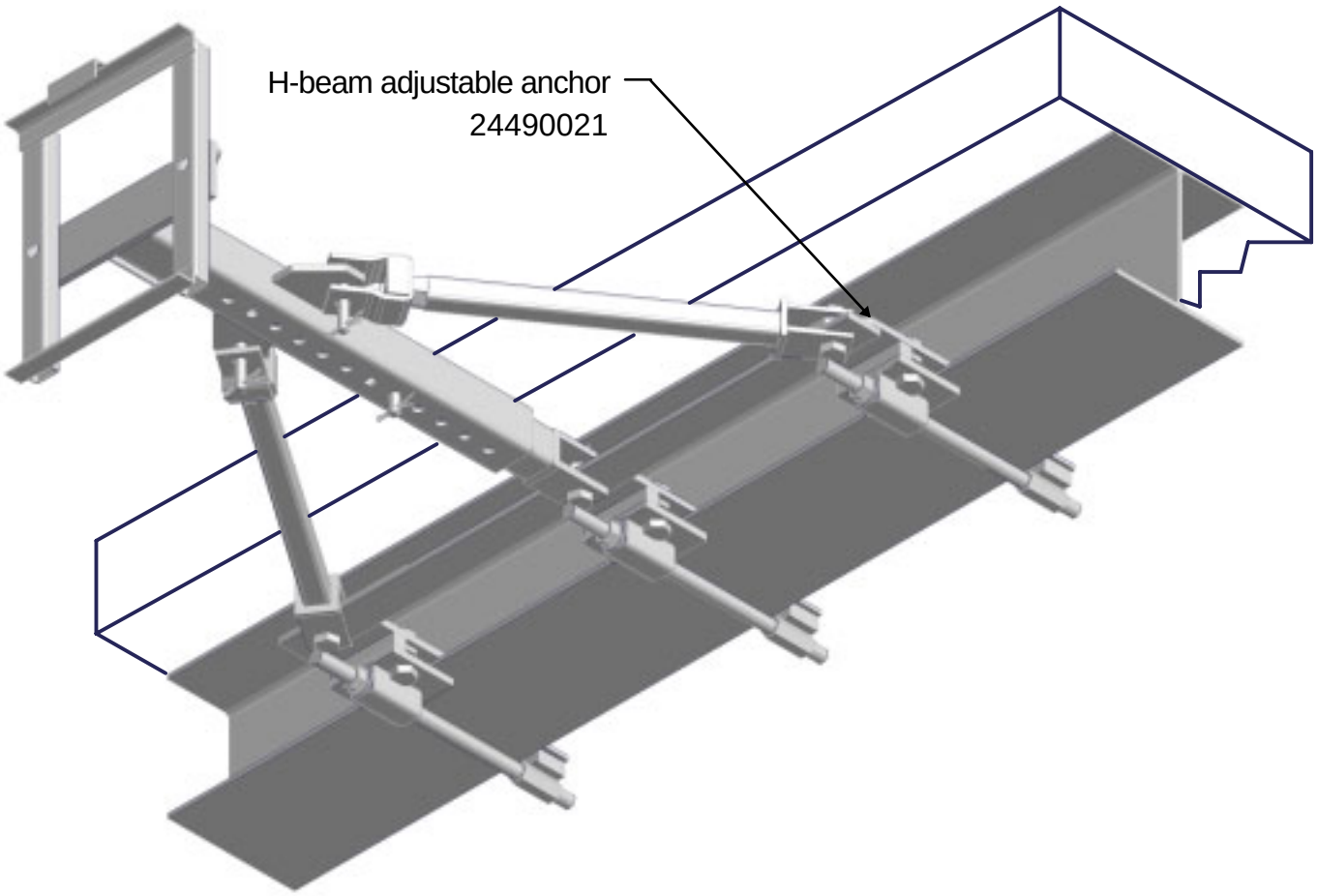
1-Install the concrete anchoring box with 3 Wedge bolts at each plate.*
2-Install the central tube in the holes already drilled on the angle iron.
3-Install the turnbuckles in the holes already drilled on the angle iron.
4-Make sure that all the pins are in place.
5-Lock the pins with cotter pins.

*-You do not have to use the inner Quick bolt on each plate.



Adjustable anchor for H-beam

WARNING: The strength of the H-beam must be tested by an engineer



Installation:

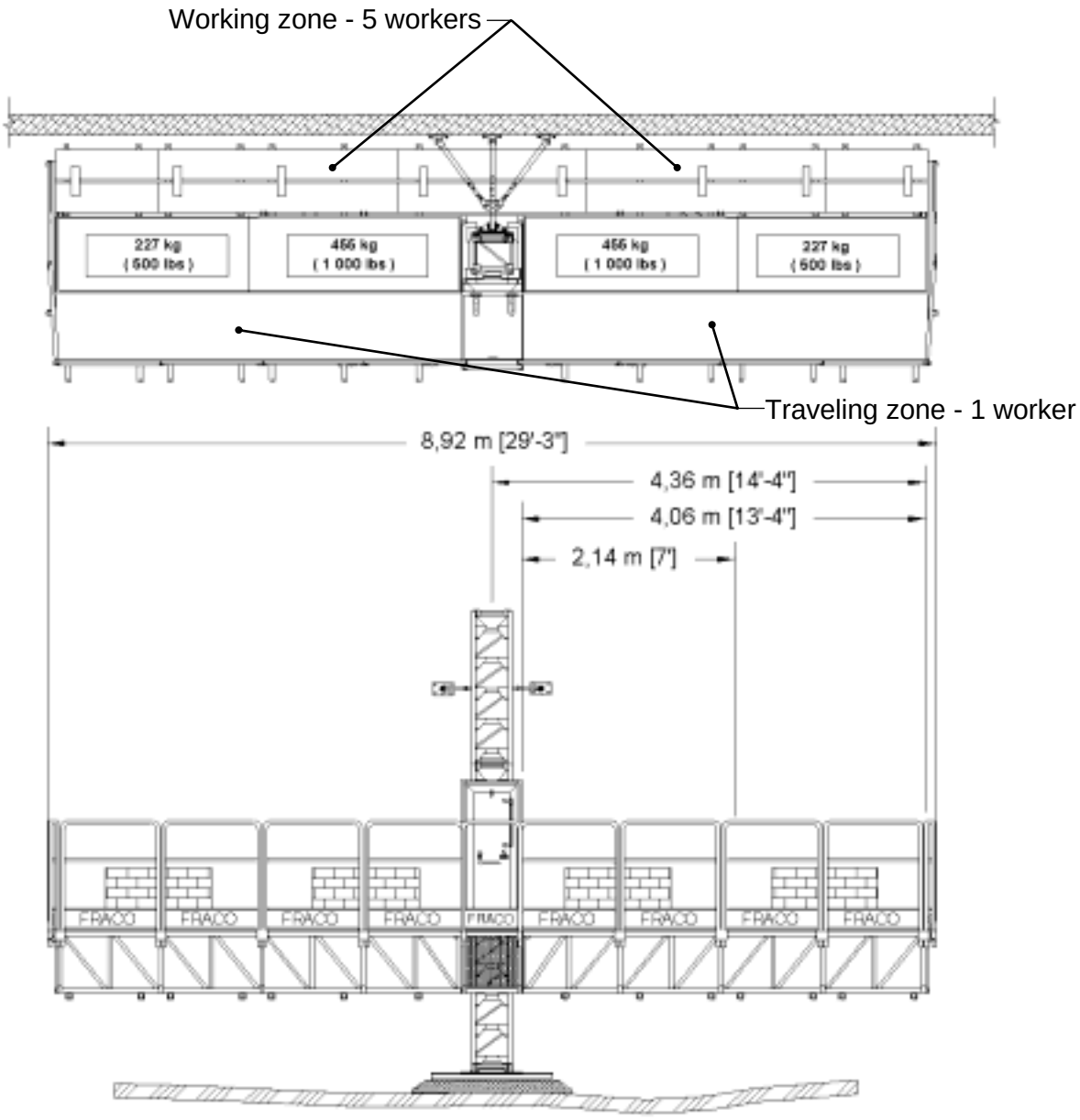
1-Install the wall tie and the central tube.
2-Install the adjustable anchors for the turnbuckles using page IV-5.
3-Level the mast using the turnbuckles (adjustment TYPE #2 & #3)
4-Install the adjustable anchor for the central tube (adjustment TYPE #1)
5-Make sure that all the pins are in place and are secured by cotter pins.

Part V

Operating the platform

Standard weight distribution

Single mast configuration



Total permissible load is 1 364 kg (3 000 lbs) including workers

The load must be uniformly distributed on the platform.

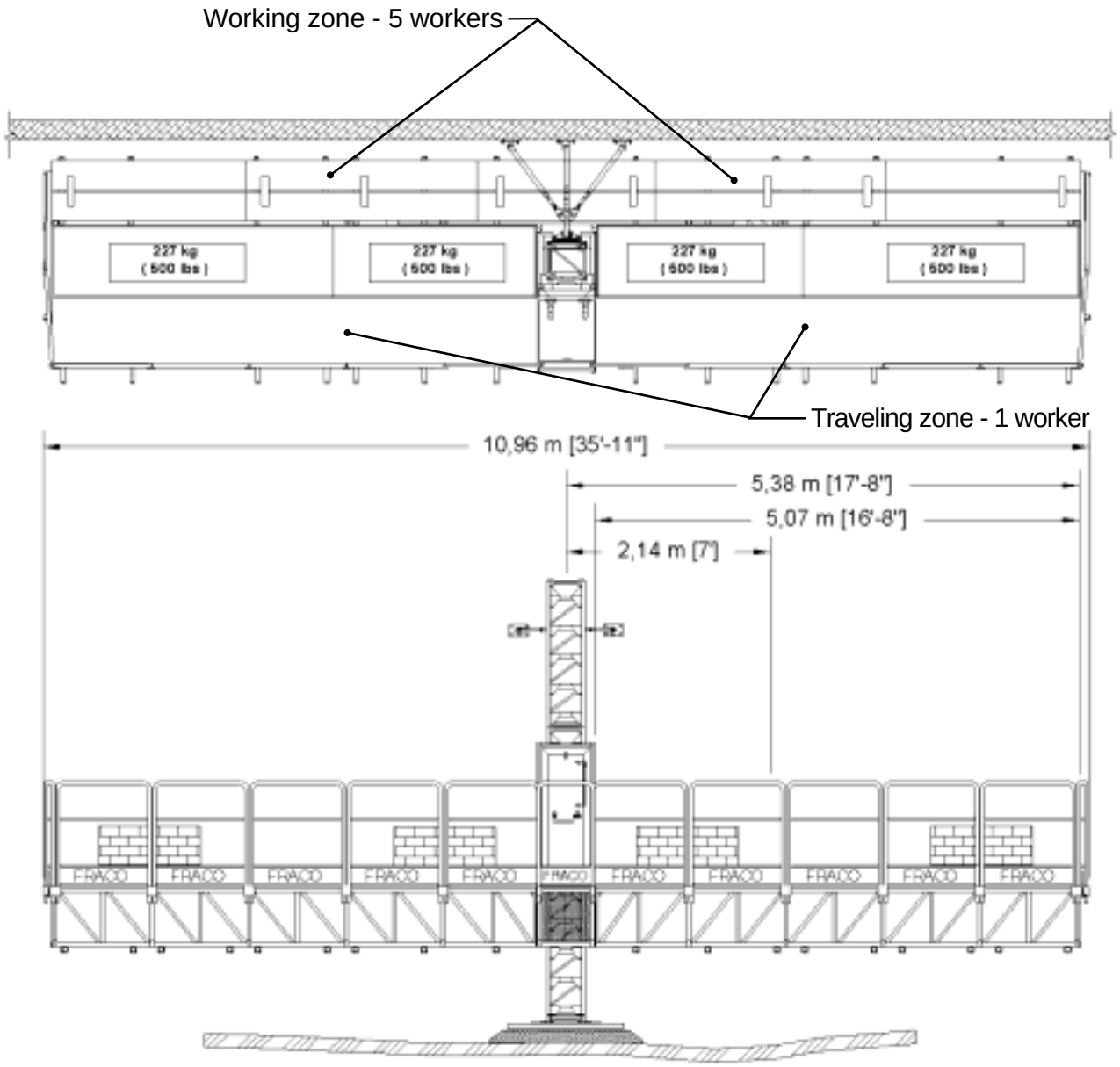
The loading zone is located with in 2 m (7') on both sides of the elevating unit.

IMPORTANT

Never place any load on the work zone or the traveling zone

Standard weight distribution

Single mast configuration



Total permissible load is 909 kg (2 000 lbs) including workers

The load must be uniformly distributed on the platform.

The loading zone is located with in 2 m (7') on both sides of the elevating unit.

IMPORTANT

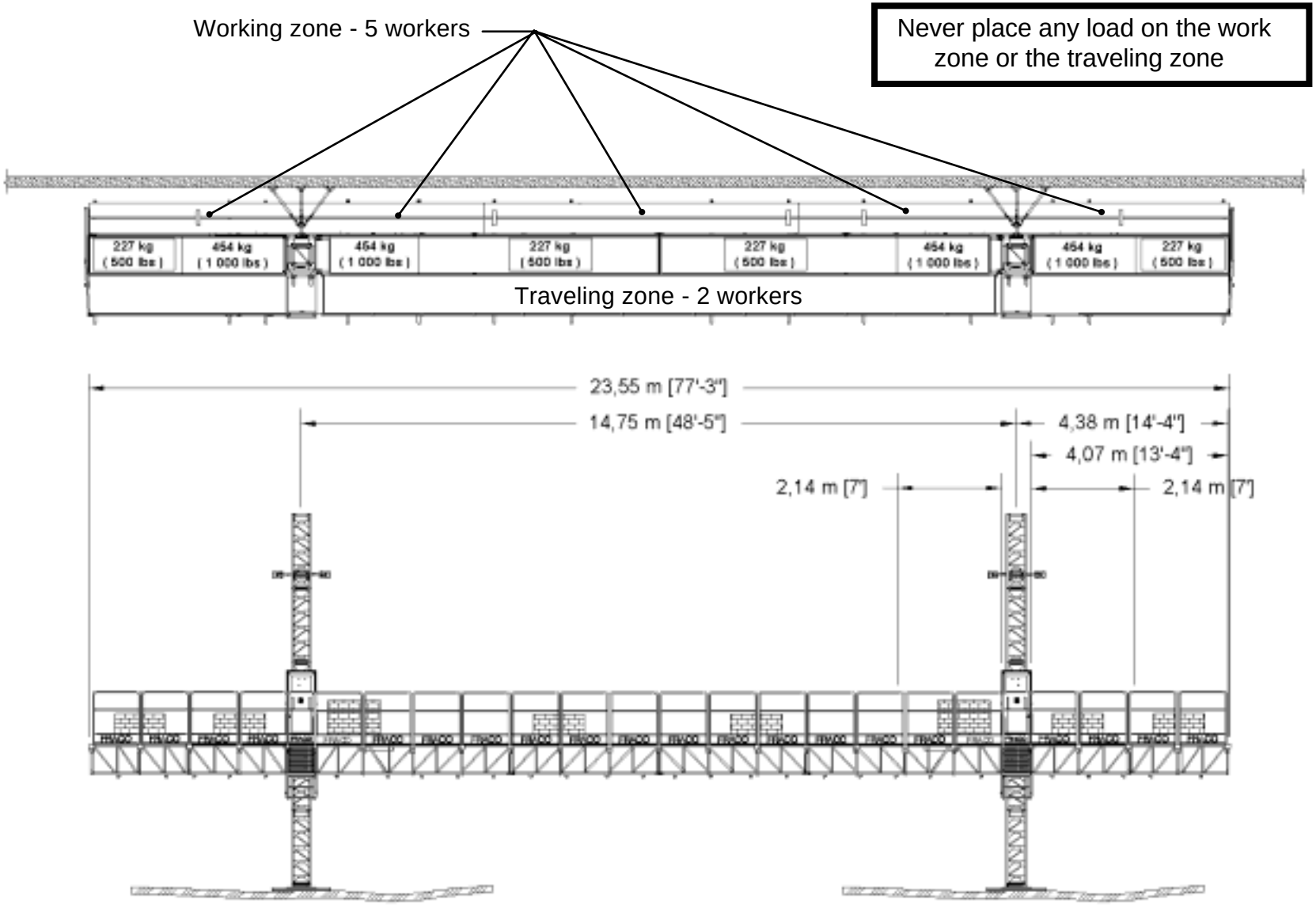
Never place any load on the work zone or the traveling zone

Standard weight distribution

Double mast configuration

IMPORTANT

Never place any load on the work zone or the traveling zone



Total permissible load is 2 727 kg (6 000 lbs) including workers.

The load must be uniformly distributed on the platform.

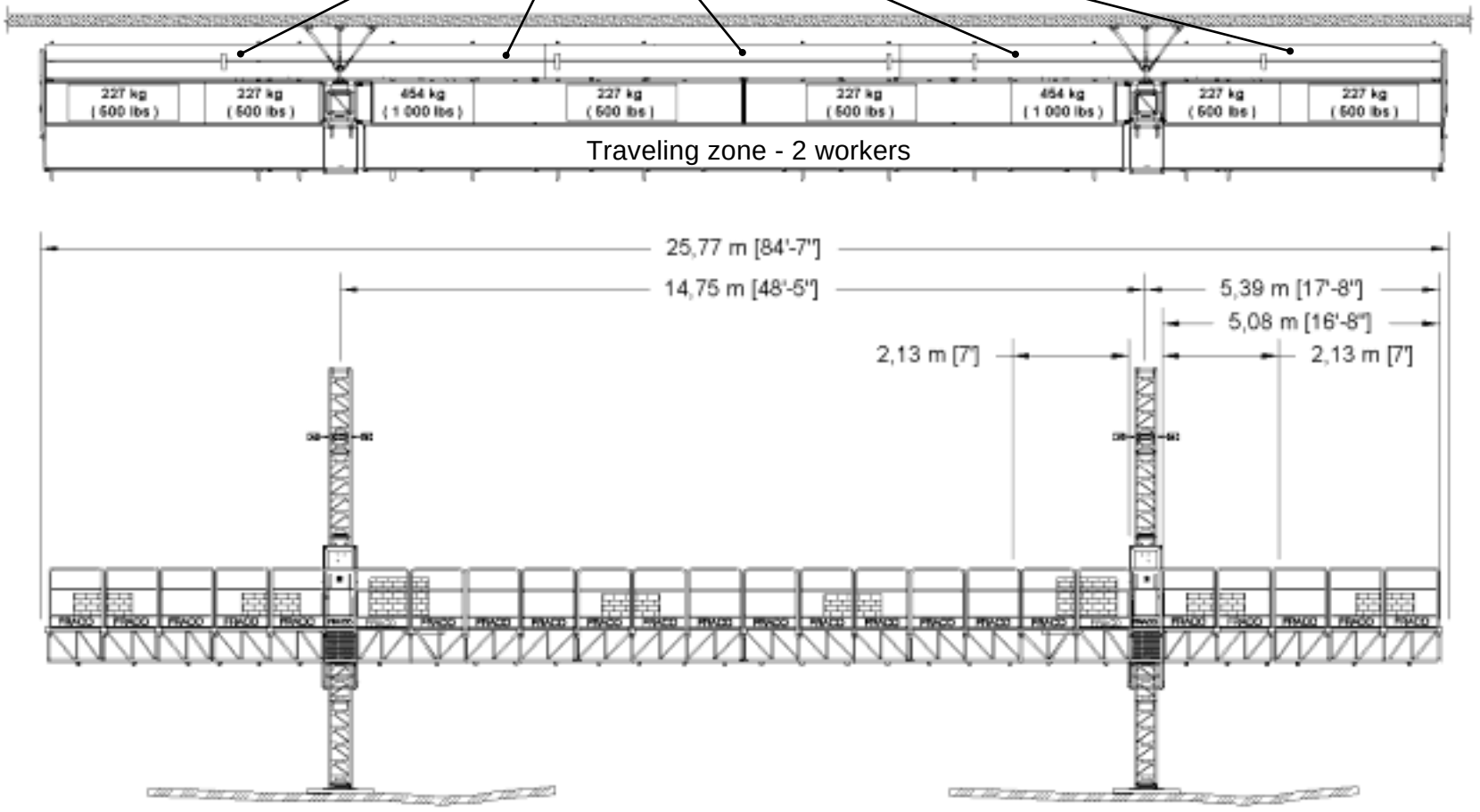
The loading zone is located with in 2 m (7') on both sides of the elevating unit.

Standard weight distribution

Double mast configuration

IMPORTANT

Never place any load on the work zone or the traveling zone



Total permissible load is 2 273 kg (5 000 lbs) including workers.

The load must be uniformly distributed on the platform.

The loading zone is located with in 2 m (7') on both sides of the elevating unit.

How to raise the platform

Precautions to take before making any vertical movement with the patform

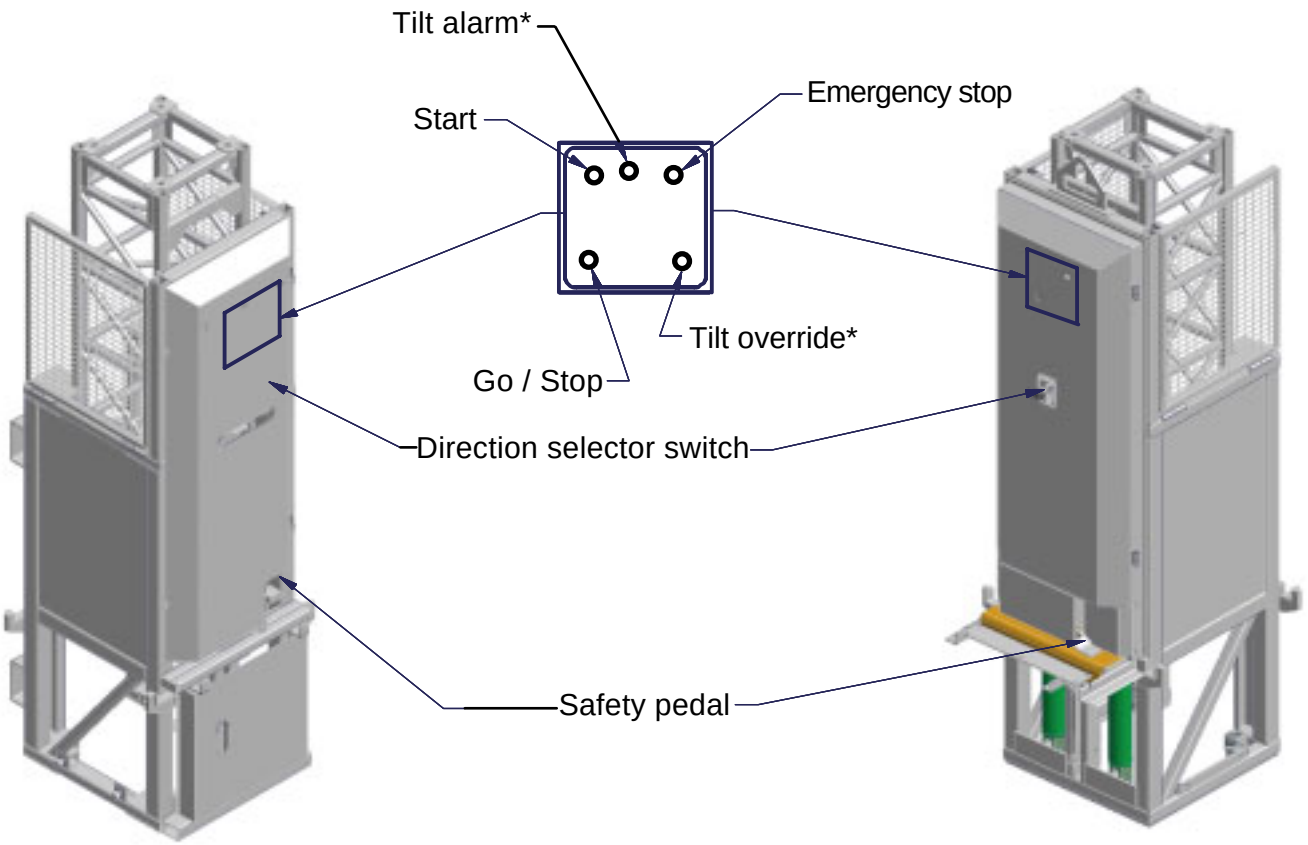
1-Tie yourself to an anchoring point or to the elevating unit and remove the planks that might interfere with the anchors.

2-Check to make sure that the platform trajectory is clear of all obstacles.

3-Do not use the platform if the wind exceeds 50 km/h (30mph).

4-Lower the anchor access barriers.*

*Optional



Manual version

1-Put the direction selecter switch in the up position.

2-Push or pull the control to raise the platform.

3-Change the position of the direction selector switch each time the indicator reaches an arrow.

4-At the end of the raising operation make sure that the safety claw rests on a mast cross lie.

Automatic version

1-Put the direction selector switch in the up position.

2-Press the go/stop button and hold to raise the platform.

3-Release the button when you have reached the desired height

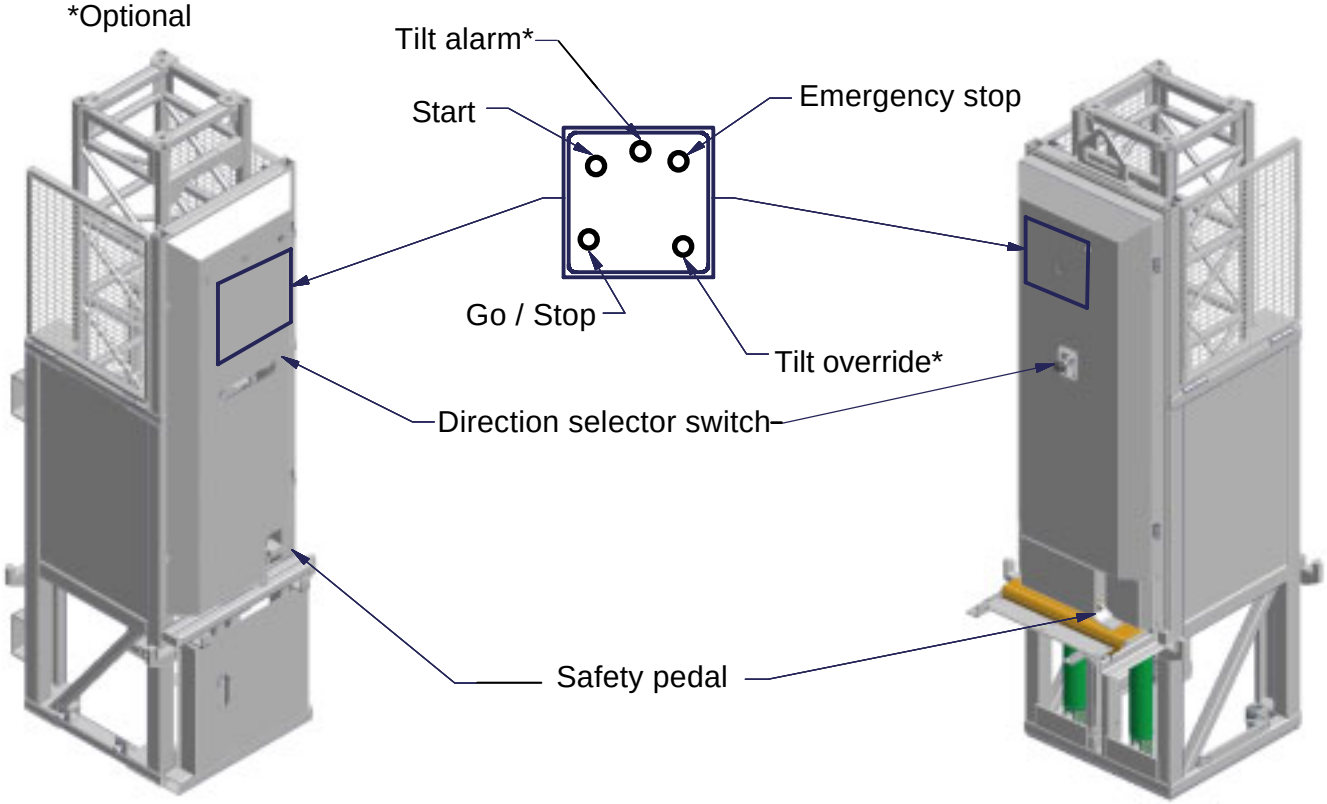
4-At the end of the raising operation make sure that the safety claw rests on a mast cross lie.

How to lower the platform

Precautions to take before any vertical movement with the platform

1-Tie yourself to an anchoring point or to the tower-guard and remove the planks that might interfere with the anchors.
2-Check to make sure that the platform trajectory is clear of all obstacles.
3-Do not use the platform if the wind exceeds 50 km/h (30 mph).
4-Lower the anchor access barriers.*

*Optional



Manual version

1-Put the direction selector switch in the down position.
2-Push or pull the control to lower the platform.
3-Press the pedal to disengage the safety claw.
4-Push or pull the control to lower the platform.
5-Change the position of the direction selector switch each time the indicator reaches an arrow.
6-At the end of the lowering operation make sure that the safety claw rests on a cross lie.

Automatic version

1-Put the direction selector switch in the down position.
2-Press the go/stop button and hold to lower the platform.
3-Press the pedal to disengage the safety claw.
4-Release the button when you have reached the desired height
5-At the end of the lowering operation make sure that the safety claw rests on a mast cross lie.

Dismantling the mast, anchors and platform

Warning :

Do not dismantle the mast by sections longer than 12m (40)' when using a forklift, crane or a boom truck.

Steps :

1- Unload the platform. When dismantling the platform, the weight must be minimized to 275 kg (600 lbs) 2 men and tools.

2- If there are anchors, remove them by 12m (40') mast section maximum.

3- Lower the platform until it is below the junction of the last section to be dismantled AND UNDER THE HIGHEST ANCHOR REMAINING.

4- Attach the top of the mast section to be dismantled to a forklift, boom truck or crane BEFORE taking off the 4 tower bolts.

5- Remove the mast sections measuring no longer than 12 m (40') maximum.

The platform must never be above the last remaining anchor unless you are dismantling anchors or mast sections

6- Repeat steps 2 to 5 until the platform reaches the lowest anchor.

*****Always leave the last anchor in place (maximum 6 m (20') above the ground)*****

On the ground:

7- Take off the guardrails, wood decking, side brackets, plank ties, planks and outriggers. Then, remove the extensions and bridge from the elevating unit.

8- Take off the last remaining anchor, the last mast section and the elevating unit.

IMPORTANT:

These instructions concern the dismantling of a regular FRACO FRSM-3000 platform using a crane, boom truck or forklift. If you still have any questions, please contact your FRACO representative.

Moving the platform

Steps :

1- To dismantle the mast sections, follow steps 1 to 6 on page V-5 "Dismantling the mast, anchors and platform".

On the ground

Single mast configuration

2- Once the platform is on the ground, remove the last anchor.

3- Strap the top of the last mast section and move the entire platform.

4- Reinstall the platform base by following the instructions on pages II-1 to II-4.

Double mast configuration

5- Once the platform is on the ground, remove all the guardrails and flooring on the extensions and the 3 floor boards at the center of the bridge.

6- Remove the extensions and the bridge.

7- Remove the remaining anchors and move the elevating units to their new location by following the instructions on pages II-1 to II-4.

8- Reinstall the bridge, extensions, decking and guardrails.

Important :

These instructions concern the moving of a platform on the ground. Moving the platform when it is not on the ground is a **special operation that requires the approval of FRACO or other competent personnel**. *If you still have any questions, please contact your FRACO representative.*

Maintenance

The frequency and the importance of the maintenance depend on the national codes, the builder's specifications, the operating conditions and frequency of use. Normally, it is not necessary to dismantle parts for regular maintenance, except if there are doubts about reliability or safety. Removing hoods, opening inspection holes or lowering the platform to its transport position are not considered as dismantling operation.

Daily

Daily inspection sheet

- ✓ Lock the motor support with a padlock to prevent any unauthorized intrusion;
- ✓ Verify the level of the mast with a 1 m (3') level (both directions);
- ✓ Check the level in the engine gas tank, having a capacity of 6 liters (1,5 gallon);
- ✓ Clean all deposits of cement or dry mortar that could hinder the proper operation of the platform.

Weekly

- ✓ Check the engine oil level;
- ✓ Grease at the locations indicated by the stickers;
- ✓ Check the hydraulic pipes for leaks;
- ✓ Check for any metal distortions on parts such as extensions, mast sections, base, hooks, etc. which could have been damaged by improper handling.

Monthly

Preventive maintenance sheet

- ✓ Verify hydraulic oil level (SAE 32 or HVI 36)

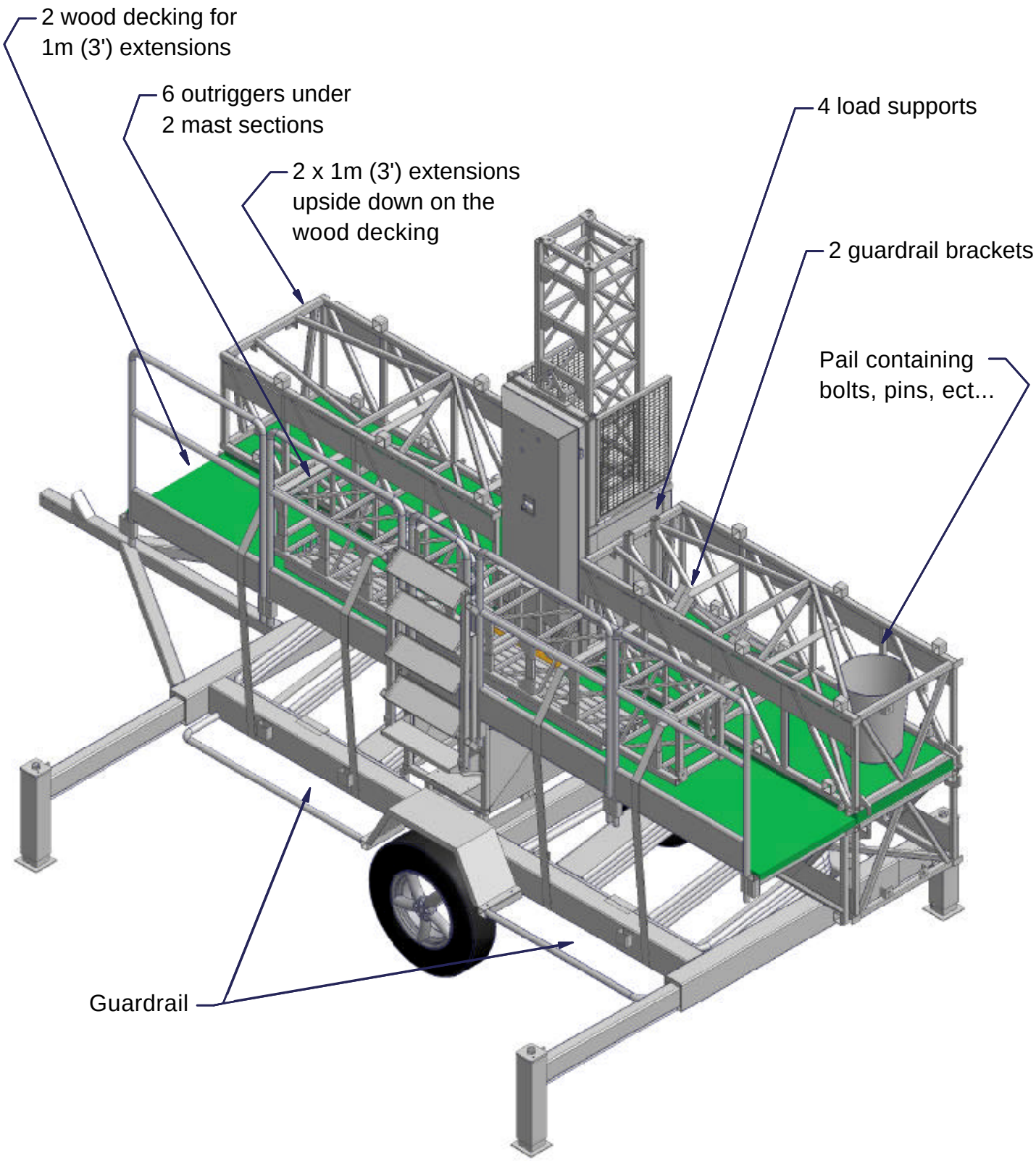
Annual

- ✓ General painting

or

- ✓ Retouch places exposed to rust.

How to load the FRSM-3000 on its trailer



Part VI

Operation options on the FRACO system

Anchor access barriers

BEFORE ANY VERTICAL MOVEMENT OF THE PLATFORM

1-Lower the anchor access barriers on both sides of the tower guard to their horizontal positions and lock them with a pin.

2-Make sure that nobody is within the safety perimeter created by the 2 anchor access barriers.

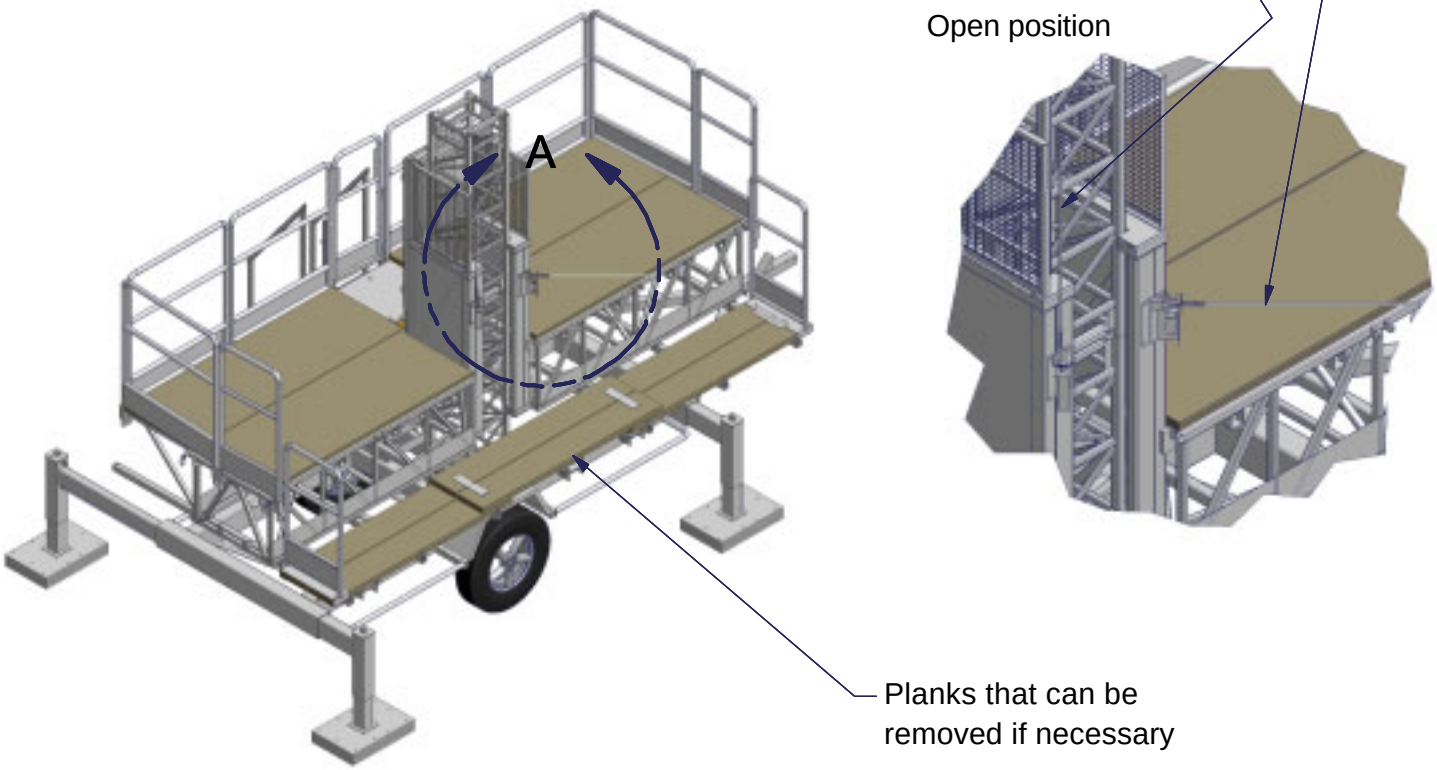
3-If necessary, remove the work zone planks so that they will not interfere with the anchors.

4-Start the engine.

5-Move the platform to the desired height using the procedures shown on pages V-3 & V-4

6-If you had to follow step 3, then put the planks back to their original positions

7-After you have stopped the engine, place the anchor access barriers in their vertical positions.



Anti-tilt protection system

Installation

Install the wire from the anti-tilt protection box located at the end of the extension, to the control box located at the bottom of the elevating unit. (See details on page VI-3)

Alarm

When a bridge is tilted by ` 4~, the alarm will sound. When this happens you MUST stop moving the platform and correct this by moving either up or down.

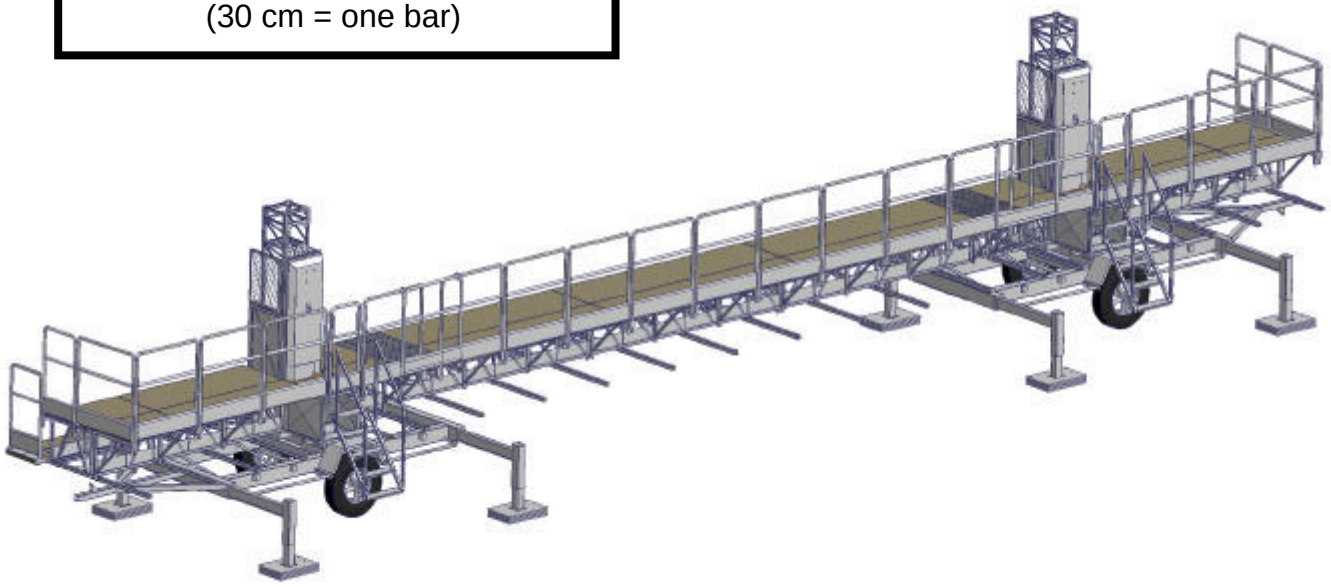
The higher unit in the case of raising operation (or the lower in case of a lowering operation) will stop when the slope reaches ± 6˚. When this happens, you will have to level the platform by raising the lower unit or lowering the higher unit to allow the anti-tilt protection to disengage.

Using the anti-tilt protection override

1-On the lower elevating unit, insert the key in the override switch and turn on. (Turn the key clockwise)
2-While keeping the override activated, lift the elevating unit the bridge is level. When the protection is deactivated, you will no longer need the override to move the elevating units.

WARNING

FRACO strongly recommends that you do not go over 30 cm (1') of lift (30 cm = one bar)



Anti-tilt protection system