



# User Guide



All you need to know about FRACO  
mast-climbing work platforms

FRSM-1500



**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](http://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:

**Julie Rainville**  
**Technical Service Director**  
Fraco Products

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

**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.**

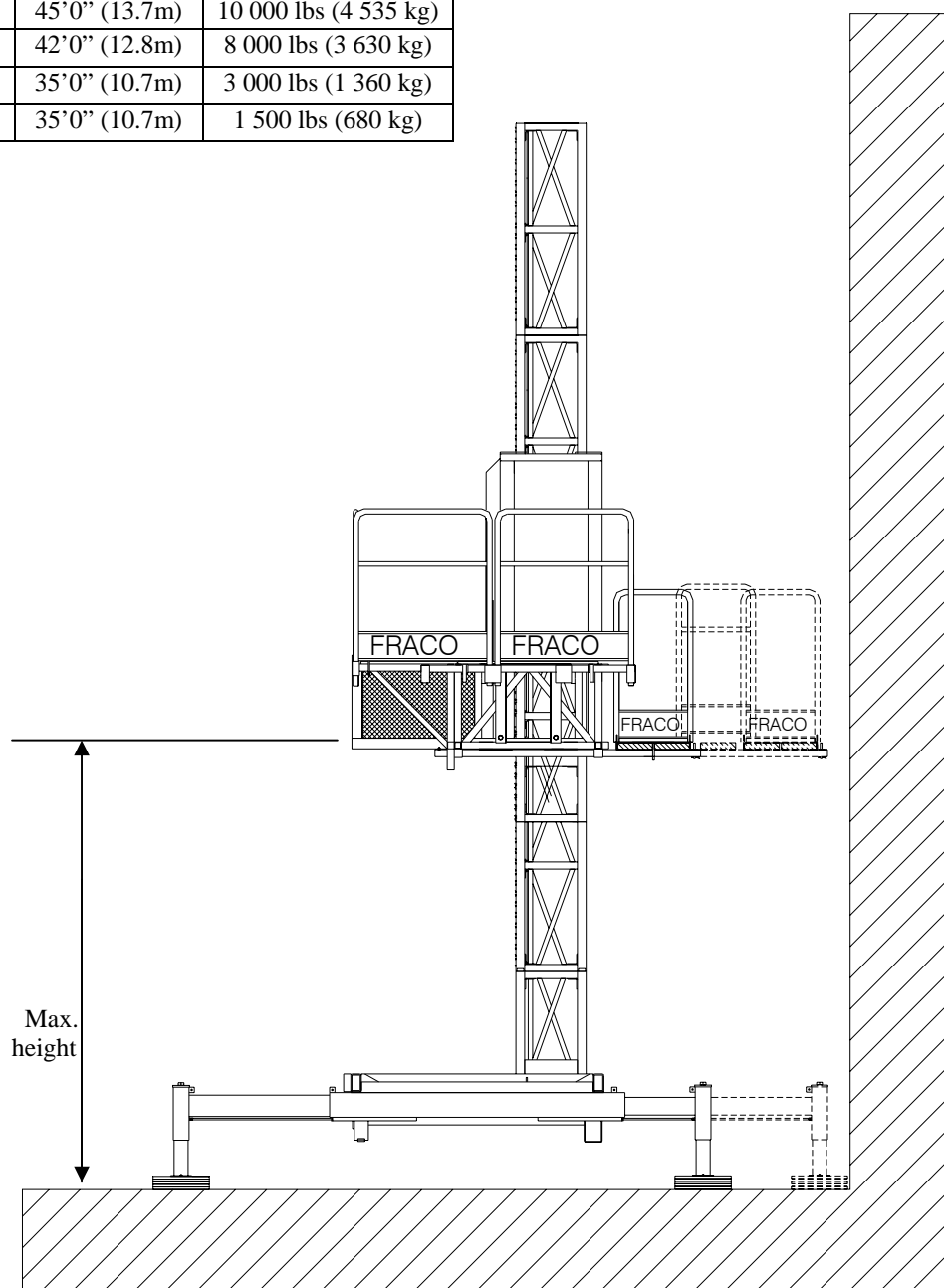
- The outriggers of the deck must not be extended longer than the outriggers of the base (maximum 3 planks, +/- 30''[76 cm]). See attached drawing.
- Do not extend the top deck outriggers if the bottom ones are already extended.
- The maximum wind speed for use and installation is 22 mph (35 km/h).
- 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)



## Locking device for FRSM-1500 mast bolts

### Situation :

Mast bolts that are incorrectly tightened can loosen further and disengage.

### Affected parts :

All FRSM-1500 mast sections

### Corrective measures :

Addition of a mast bolt locking device for all three mast section bolts. Changed the nut to serrated flange nut. Addition (if it is not already present) of a cotter pin.

### Required parts:

1 x 28027155 (Left)  
1 x 28027166 (Right)  
1 x 28027177 (Centre)

### Note :

It is strongly recommended to follow the instruction contained in this technical bulletin to remove all risk of accident and ensure the safety of the users.

### Important:

You can contact Fraco at the following email address or phone number to receive the locking devices (28027155, 28017166 and 18027177) and serrated flange nuts (ECZ-5065) **free of charge**, for all FRSM-1500 mast sections in your possession.

Email address: [michel.chamberland@fraco.com](mailto:michel.chamberland@fraco.com)

Phone number: 800-267-0094

### For further information or any questions please contact :

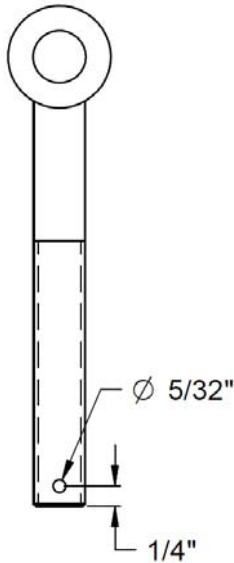
Michel Chamberland or Yannick St-Pierre

Telephone : 450-658-0094

Toll free : 800-267-0094

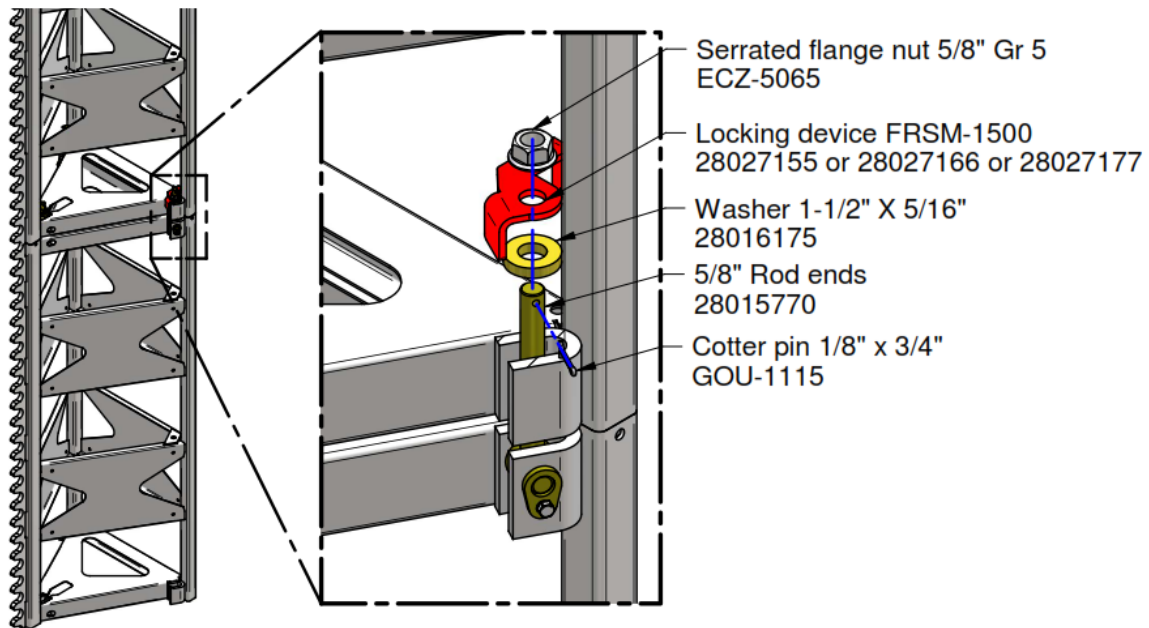
Fax : 450-658-8905

### Addition of the cotter pin



If the rod ends do not have a hole to install the cotter pin, a hole with a diameter of 4mm (5/32") must be drilled. The cotter pin GOU-1117 must then be installed.

### Installation of the locking device



The locking device must be installed between the serrated flange nut and the washer. It will prevent the rod ends from pivoting if the nut is installed incorrectly.

The cotter pin must secure the assembly.

During the assembly of the mast section, the serrated flange nut must be tightened as specified in the user guide to prevent it from loosening during use of the platform.

# Congratulations!

**You are about to use the excellent  
FRACO hydraulic mast-climbing work platform system!**

**FRACO** provides you with the ultimate in  
**SAFETY, STABILITY, and FLEXIBILITY**  
while reducing your labor 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

## TOTAL QUALITY



**FRACO is an ISO 9001 registered company**

---

**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.

The **FRACO FRSM-1500** system meets the **ANSI, OSHA, CE EN 1495:1997F** requirements, except for  
the following points: rack and pinion.

### Manufacturer



**Les Produits FRACO Ltée**

91 Chemin des Patriotes  
St-Mathias-sur-Richelieu  
Québec, Canada, J3L 6A1

[www.fraco.com](http://www.fraco.com)  
[fraco@fraco.com](mailto:fraco@fraco.com)



**APPAVE Certified**

### Distributor



If you have any questions, do not hesitate to call us at:

**(450) 658-0094**

**Canada: 1-800-267-0094**

**Europe: + 33 (0) 3 44.91.03.53**

**U.S.A.: 1-888-372 2648**

Or fax us at: (450) 658-8905



## Table of Contents

### ***Part I:***

*What You Need To You – General Information*

### ***Part II:***

*Assembly and Installation of the FRACO System*

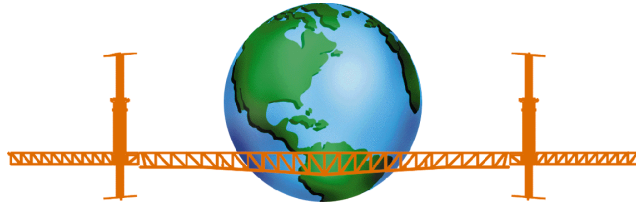
### ***Part III:***

*Options / Miscellaneous*

### ***Part IV:***

*Operating of the FRACO System*





## Part I

### What You Need to Know – General Information

#### In This Section:

- Warnings.....I-1
- Identification plate.....I-2
- General View.....I-3
- Technical Information.....I-4
- Conformity Declaration.....I-5

# 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 and local rules and regulations.**

**Before operating this FRACO System, the following safety rules must be read and completely 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 you use a gasoline engine, do not work in an explosive surrounding. (refineries, etc)
- 3- The operator should be familiar with the user's guide and understand all the functions of the platform before operating the platform.
- 4- **Never assume anything.** If you have any questions concerning the operation of the FRACO, STOP! Refer to the user's guide. If you are still unsure, do not continue and call FRACO immediately.
- 5- In order to use, install or dismantle, a minimum of 2 persons should be on the platform at all times, in case of a breakdown or rescue.
- 6- The maximum freestanding height is 11m (35ft) when in use and 3m (10ft) when not in use.
- 7- This platform must be maintained periodically as well as inspected where required by local laws and regulations. Refer to the user's guide.
- 8- In case of an electric storm, DO NOT USE the platform and GET OFF it.
- 9- For personal safety, when wind exceeds 12,5m/s (28 mp/h) do not use, install or dismantle the platform. Make sure that the platform is lowered to the minimum height when not in use.
- 10- It is the responsibility of the operator to ensure that the maximum load and the number of people allowed on the platform are respected (Refer to the standard load distribution chart).
- 11- This platform should never be used specifically as an elevator.



**Always wear your safety harness when installing and dismantling the mast sections and when manipulating the planks when passing the wall ties**

**Before raising or lowering the platform, make sure:**

- 1- That the base is properly fixed in position and leveled (see the allowable tolerance in the user's guide).
- 2- That all guardrails are in place.
- 3- That a visual inspection above and below the platform is done, before each vertical move, to ensure no protrusions will impede or inhibit the proper movement of the FRACO. Special attention is needed to verify proper clearance for the walk boards (planks).
- 4- Not to exceed the freestanding height 11m (35pi) from the ground and that the platform never exceeds the last anchor.
- 5- That all persons have been alerted.

## Identification Plate

This plate must be visible at all times.

<b>FRACO</b>	
91, CHEMIN DES PATRIOTES, ST-MATHIAS-SUR-RICHELIEU, QUÉBEC, CANADA, J3L 6A1	
SERIAL NO. NO. SÉRIE NO. SERIE SERIE NR	<input type="text"/>
Patent pending no : PTC-CA01-01125	
MODEL MODÈLE MODELO MODEL	FRSM - 1500
	YEAR ANNÉE ANO BOUWJAAR
Vertical travel speed Vitesse de déplacement vertical Velocidad de elevación Verticale verplaatsingsnelheid	
0 - 13,8 pi/min 0 - 4,2 m/min	
MADE IN FABRIQUÉ AU HECHO EN VERVAARDIGD IN	CANADA
CE	

Sérial number:

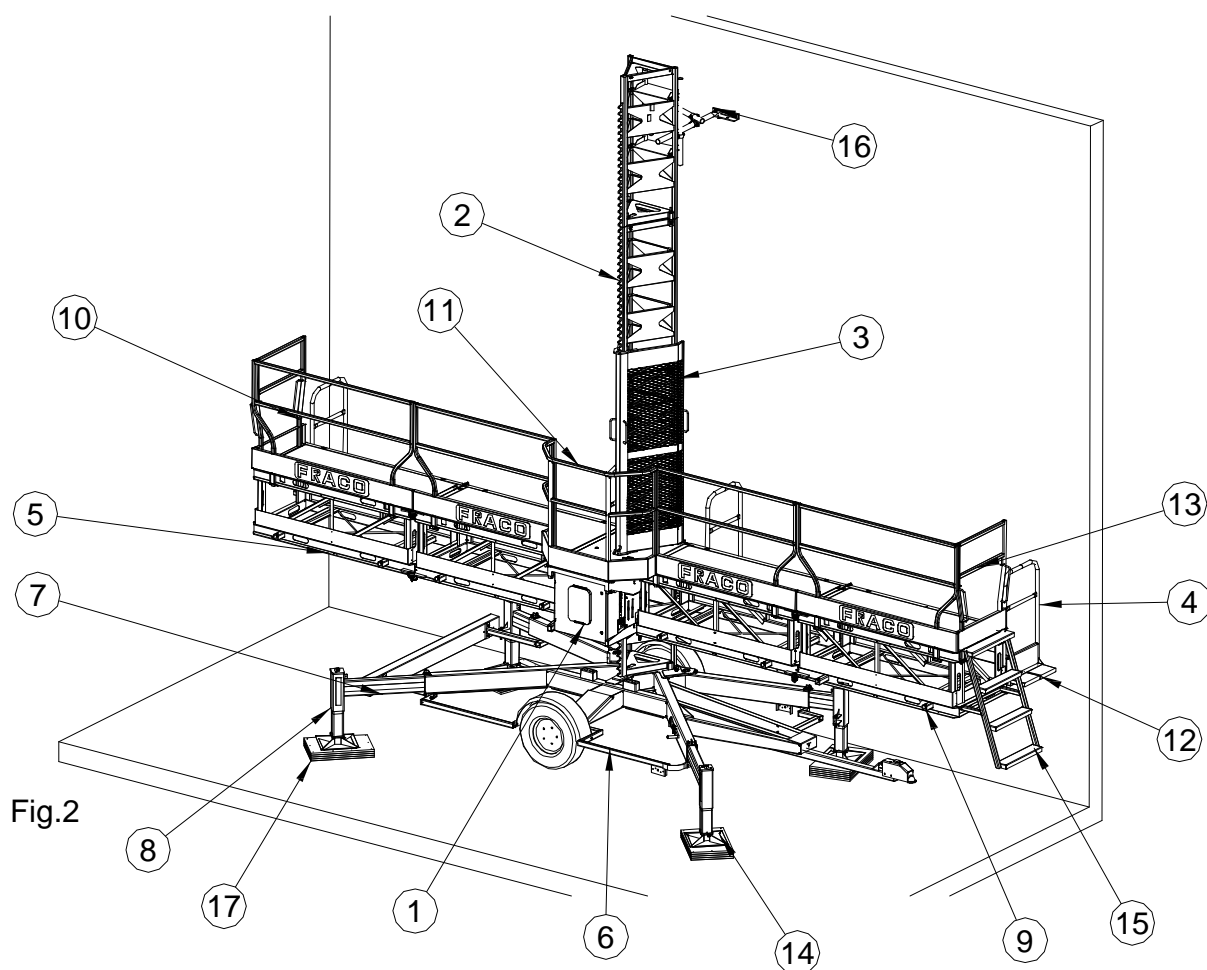
XX XX XXXX

Model number

Year of manufacturing

Platform number

## General View



Part List		
Item #	Part #	Description
1	10050028	Elevating Unit
2	13060011	Mast section
3	20490634	Protection mesh
4	17490045	Plank end guardrail
5	15050012	Platform section
6	14040021	Trailer
7	28493163	Stabilizers
	28493174	
8	-	Jack
9	19010067	Outrigger
10	-	Guardrail
11	17490247	Elevating unit guardrail
12	-	Planks
13	17490292	Sliding uardrail
14	28493196	Metal pads
15	20490713	Access staircase
16	-	Anchor system
17	20490083-	Removable jack pads

## Technical Information

Trailer		
Weight of the trailer	1594 lbs	724.5 kg
Tire dimensions	Europe : 205 R 14 C North America : 205-75 R14	
FRSM-1500		
Total length	178 in	4.5 m
Total width	82 5/8 in*	212 cm
Maximum platform length	334 in	8.5 m
Width of the lower work zone	0 in to 27 in	0 m to 0.8 m
Width of the upper circulation and loading zone	31 in	0.8 m
Lifting speed	13.7 ft / minute	4.2 m / minute
Maximum mast height (without anchors)	35 ft	11 m
Maximum mast height (with anchors)	150 ft	45.7 m
Minimum height from the ground	29 in	75 cm
Electric motor	Motor specifications	Required power
	Type : FA77BDT90L4BMG2HR, power 2 CV, Amp. 3.1, Volt. 230/460V, 3 phase 50 HZ	220V AC, 20A 1phase Europe : 50 cycles North America : 60 cycles
Mast section (Dimensions / Weight)	5 ft x 21 in x 20 in / 92 lbs	1.54 m x 0.55 m x 0.51 m / 42 kg
Elevating unit (Dimensions / Weight)	51 in x 33 in x 26 in / 1064 lbs	1.3 m x 0.86 m x 0.66 m / 484kg
Platform sections (Dimensions / Weight)	75 in x 33 in x 26 in / 250 lbs	1.91 m x 0.86 m x 0.66 m / 113 kg
Generator HX-3000 (Option)		3 000 Watt



## Les Produits Fraco Ltée

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Tel: (450) 658-0094 Fax: (450) 658-8905 CDA: 1-800-267-0094 USA: 1-888-372-2648  
www.fraco.com email: fraco@fraco.com

# DECLARATION OF CONFORMITY

N° 00770077/5162/760/01/10/1304

### 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-1500**

Serial Number:

### Technical details:

In single mast:

- |                                   |   |
|-----------------------------------|---|
| ➤ Rated load / Number of persons: | 680 kg / 2 persons                          |
| ➤ Working height:                 | 11m (Freestanding) – 100m (with anchorages) |
| ➤ Length / Width of platform:     | 8,5m / 1,65m                                |
| ➤ Trailer:                        | Towable trailer                             |

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

**APAVE Parisienne**

*No d'identification : 0077*

13 à 17, rue Salneuve – 75854 PARIS CEDEX 17

#### Technical file

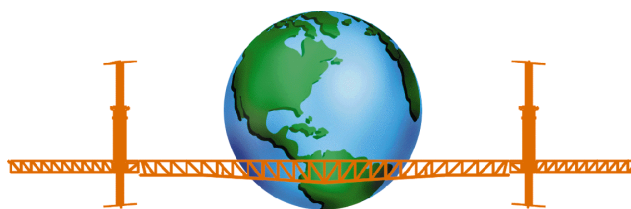
**SARL Fraco**

420 rue des Érables – F-60710 CHEVRIÈRES  
FRANCE

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

St-Mathias-Sur-Richelieu  
29 décembre 2009

TRANSLATED FROM ORIGINAL NOTICE



## Part II

### Installation of the platform

#### In This Section:

- **Assembly of the FRACO platform**
  - Installation of the platform..... II-1
  - Positioning the elevating unit..... II-2
  - Platform sections..... II-3
  - Guardrails..... II-5,15
  - Outriggers..... II-7
  - Planks..... II-8
  - Plank-end guardrails..... II-9
  - Protection mesh..... II-10
  - Access staircase..... II-11
  - Single mast blocking system..... II-17
- **Mast sections**
  - Assembly of the mast sections..... II-12
  - Installation of the mast sections..... II-13
  - Installation of the mast end section..... II-14
- **Anchors**
  - Anchor position..... II-18
  - Anchoring system..... II-19
  - Minimal opening of the turnbuckles..... II-20
  - How to level the mast with the anchoring system..... II-21
  - Installation of the anchors..... II-22
  - Anchor bolted to a brick shelf..... II-25
  - Anchor bolted to a structural beam..... II-26
  - Anchor for structure of concrete beam..... II-27
  - Horizontal concrete anchor..... II-28
  - Anchor welded to a brick shelf..... II-29
  - Anchor welded to a structural "H" beam..... II-30
  - Angle wall tie..... II-31
  - Epoxy anchor..... II-32

## Installation of the FRACO platform

Verify the ground bearing capacity and ensure that it is sufficient to adequately support the trailer jack pads.

### Ground bearing capacity:

Mast height	Capacity
0 m (0') to 30.5 m (100')	34 kN/m <sup>2</sup> (700 lb/sq.ft.)
30.5 m to 45.7 m (100' to 150')	44 kN/m <sup>2</sup> (900 lb/sq.ft.)

Installation Type	Distance "L"	Distance "D"
Standard	0.85 m (37 in)	0.75 m (29 ½ in)

- 1- Measure precisely the "L" distance between the base and the wall, taking into consideration all the obstacles that the platform must go around. (Fig. 3, page II-2)
- 2- Install the FRACO system (elevating unit and trailer) perfectly perpendicular to the wall at the appropriate "L" distance.
- 3- Pull the hand break to keep the trailer from moving.

**\*\*\*Always install the wooden jack pads under the outrigger jacks \*\*\***

- 4- Open the front outriggers and deploy them 25 cm.
- 5- Ensure that the outriggers are perfectly secured before continuing with the installation. (fig.6 + dét.1)
- 6- Extend the outriggers to a maximum (**rear : at least 1.15 m (59)**). Lower the jacks onto the wooden jack pads (see instructions on the outriggers)
- 7- Level the trailer using a bubble level. After leveling, the wheel on the trailer should turn freely, **no load must rest on the trailer tires.**
- 8- Ensure that the mast is perfectly vertical and that the trailer is level and stable.
- 9- Electric power required: 220V AC, 20A 1 phase, 50 cycles (Europe) or 60 cycles (North America)
- 10- Use a power cable of sufficient length of type H07RNF or equivalently protected against the weather or mechanical deterioration.
- 11- The platform may be used in an interior or exterior environment where the temperature is between -20 and +40 degrees Celsius.



## Positioning the elevating unit

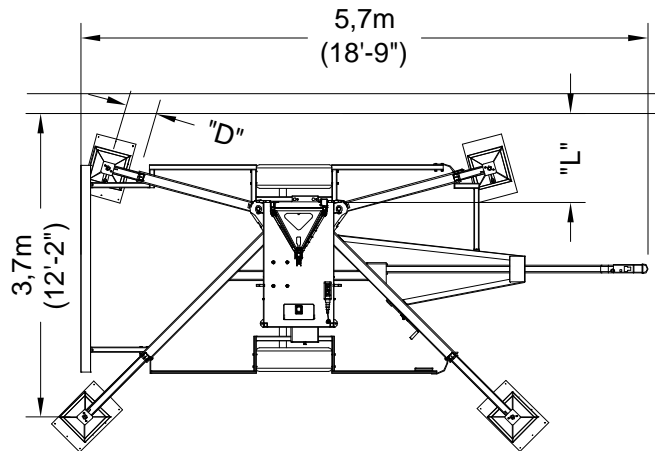


Fig.3

### Important

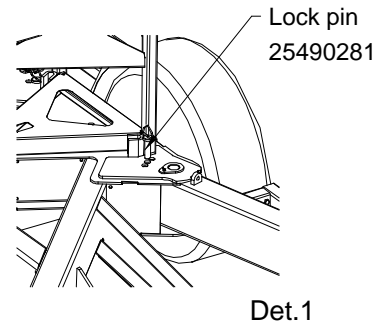
If the platform is not in front of a structure, extend the front outriggers to their maximum.

### Important

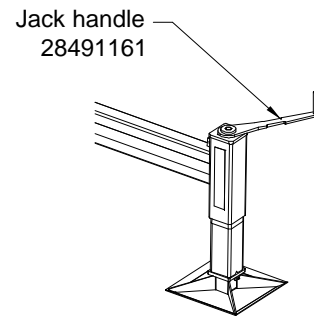
Maximum freestanding height: 11m (35')  
Maximum height on trailer: 30m (100')

### Installation:

- 1-Extend the rear outriggers to 1.15 m (3'-3")
- 2-Extend the front outriggers to 25cm (10") and adjust the angle of the opening using the pin (Dét. 1)
- 3-Install the elevating unit on the trailer perfectly perpendicular to the wall using appropriate "L" distances. (see page II-1)
- 4-Position the pads under the jacks. Use the pin to secure them in place. (fig.6)
- 5-Level the base using the crank and the outriggers. (Det. 2)



Det.1



Det. 2

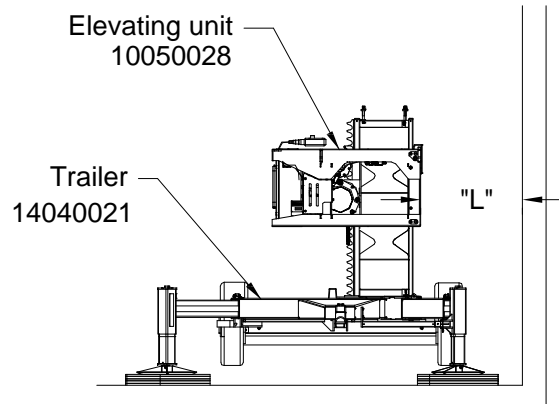


Fig.4

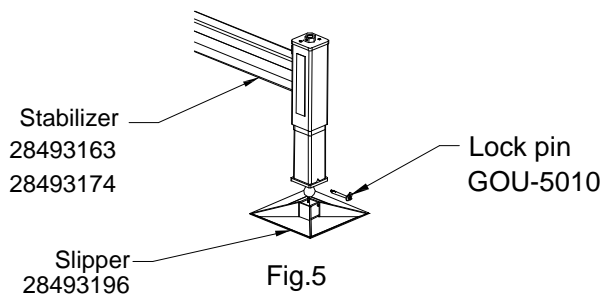


Fig.5

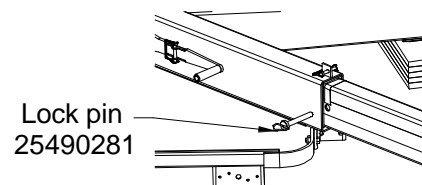


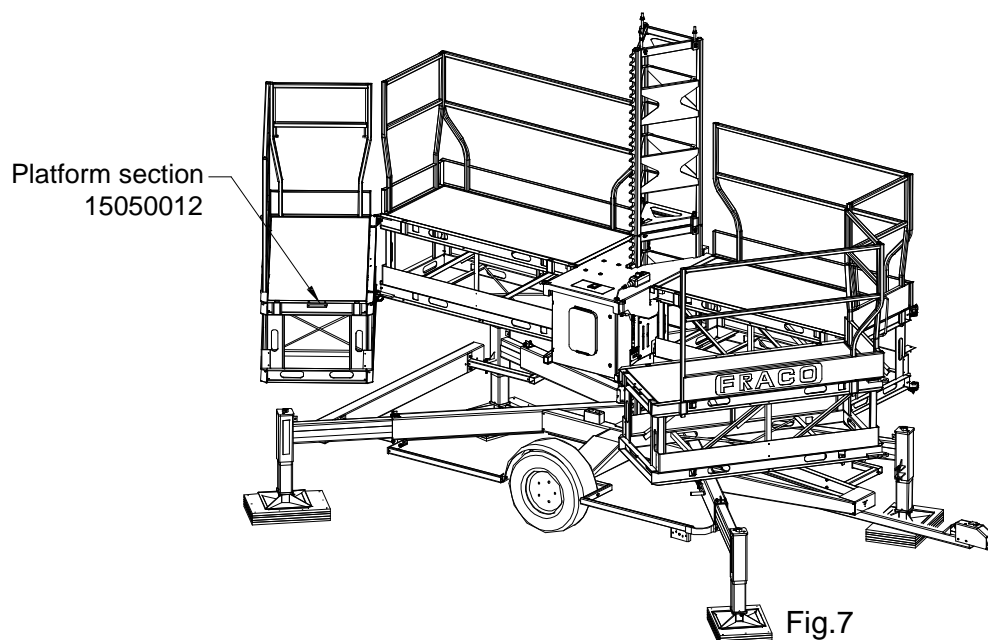
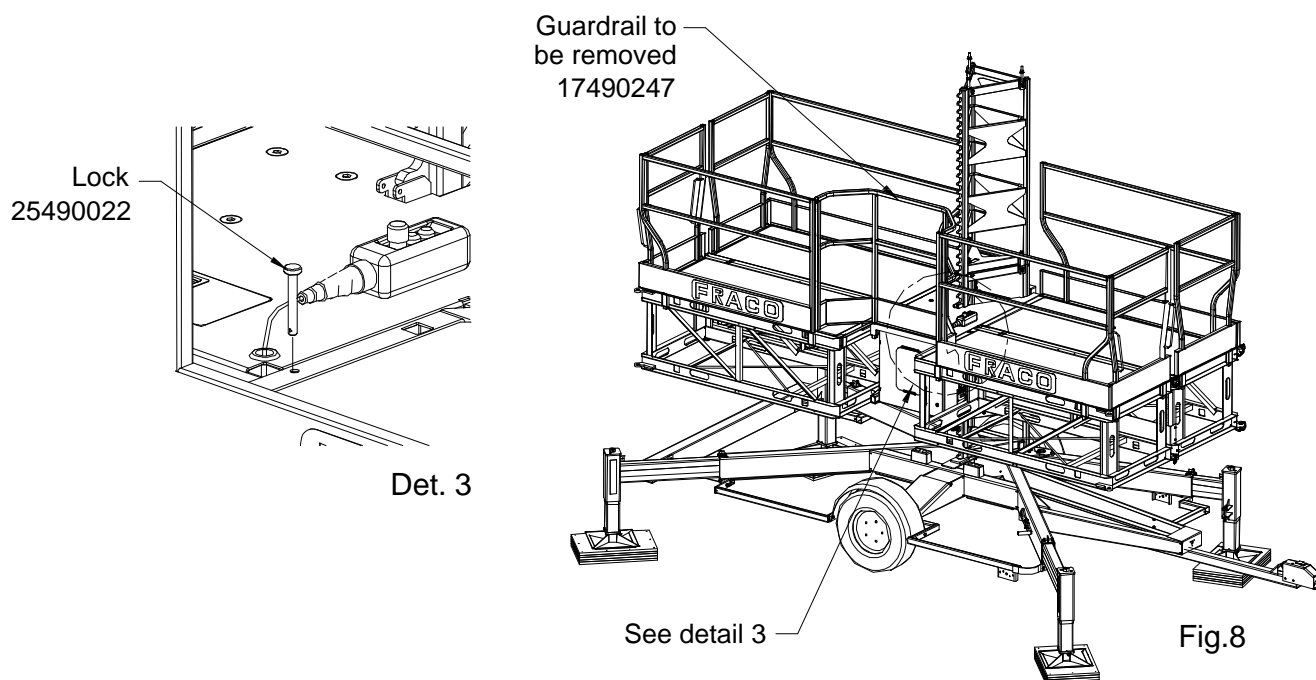
Fig.6

# Opening up the platform sections

## Step 1

### Installation:

- 1-Remove the guardrails and then the pin that holds the platform section to the elevating unit (see Fig.8 and Det.3)
- 2-Pivot the platform sections towards the outside. (Fig. 7)



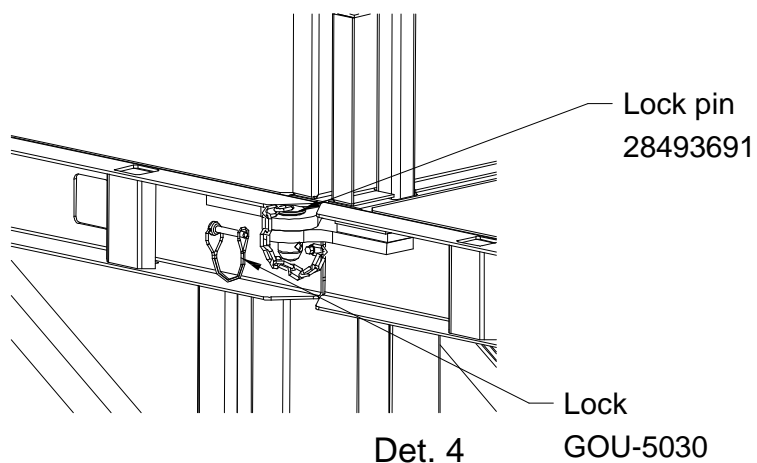
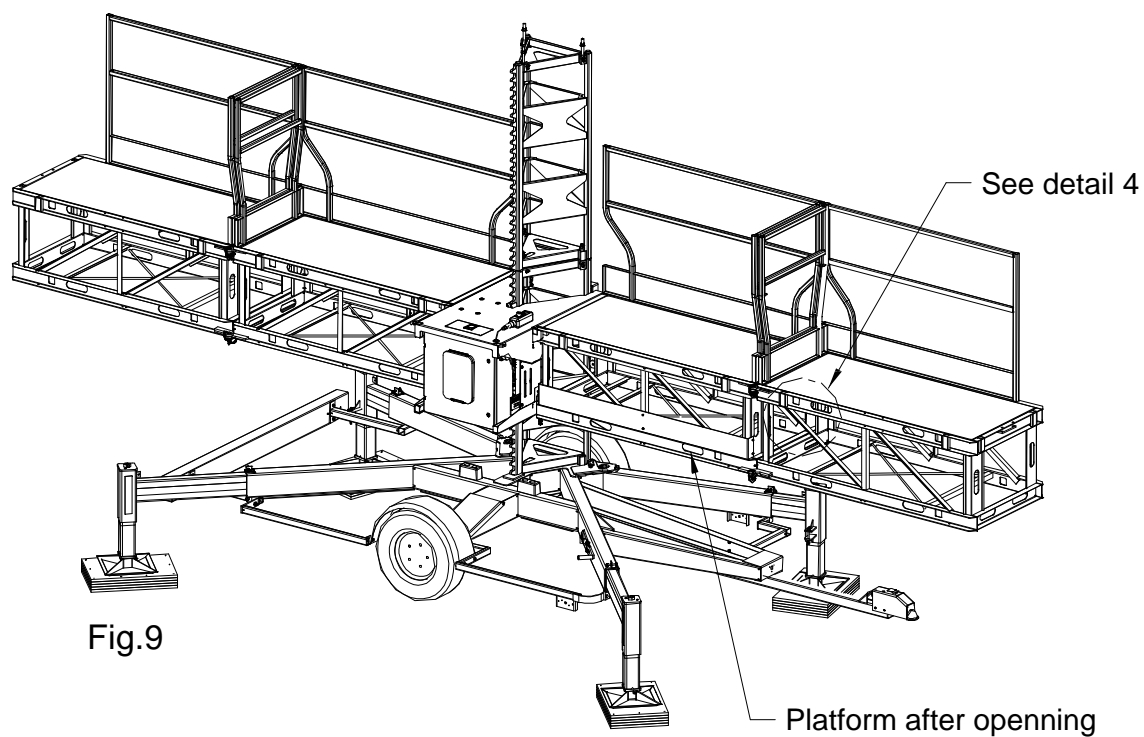
## Opening up the platform sections

Step 2.

### Installation:

1-After removing the locks and pins, extend the platform sections to their position; replace the locks and pins to secure the sections. (Det.4)

**Caution:** Never pivot the exterior platform sections towards the front.

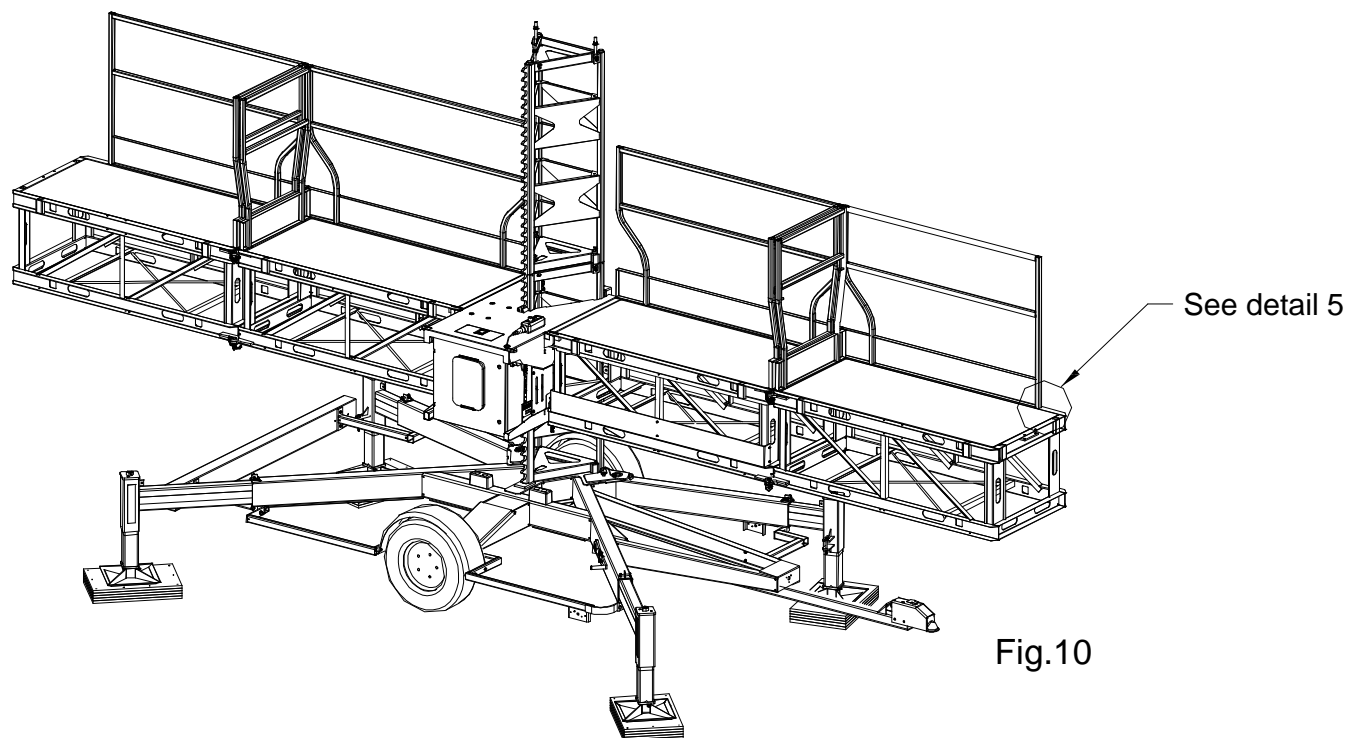
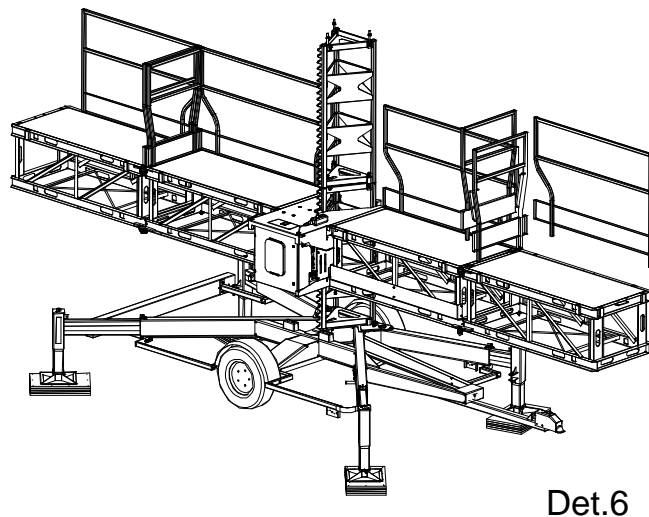
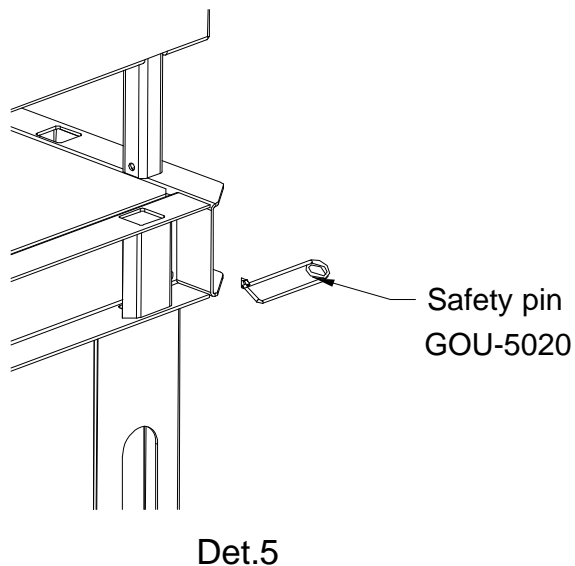


# Guardrails

## Step 1

### Installation

- 1-Remove the safety pins. (Det.5)
- 2-Remove the guardrails that must be relocated. (Det.6)
- 3-Lock the guardrails. (Det.5)



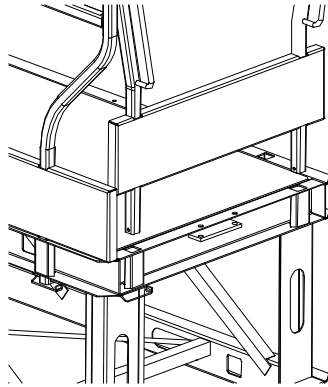
# Guardrails

## Step 2

### Installation

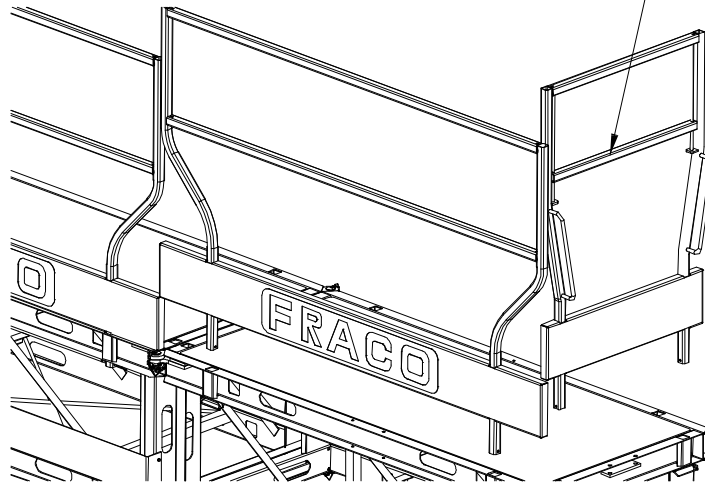
1-Place the guardrails in such a way to cover all openings to prevnt risk of falling. (Det.8)

2-Secure them using a safety pin. (Det.7)



Épingle de  
sûreté  
GOU-5020

Det.7



Access door  
17490292

Det.8

Guardrail to  
their final place

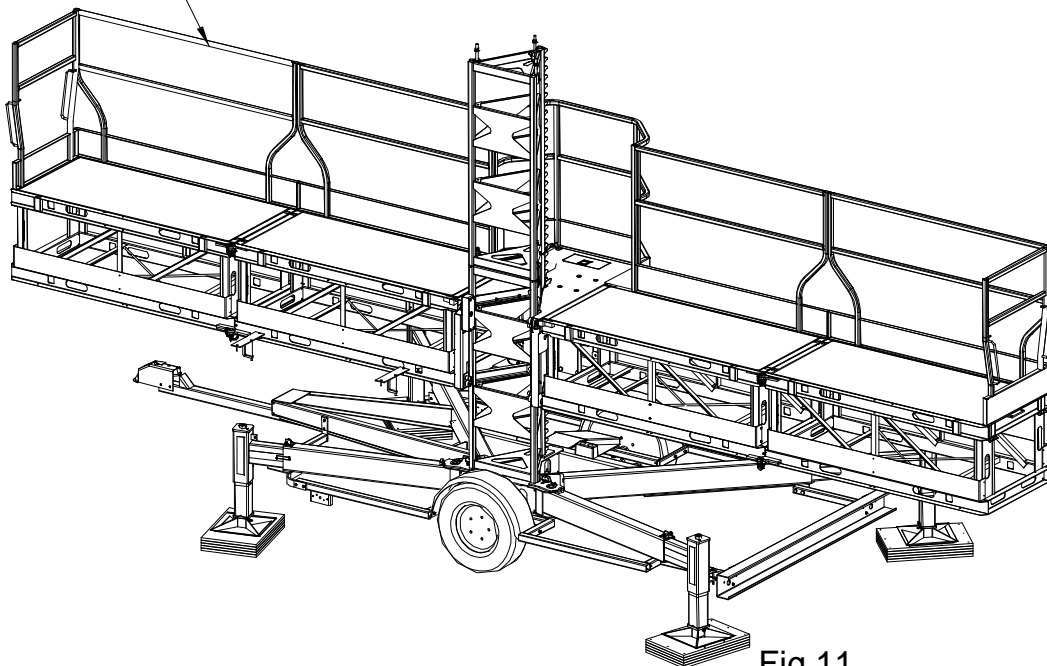


Fig.11

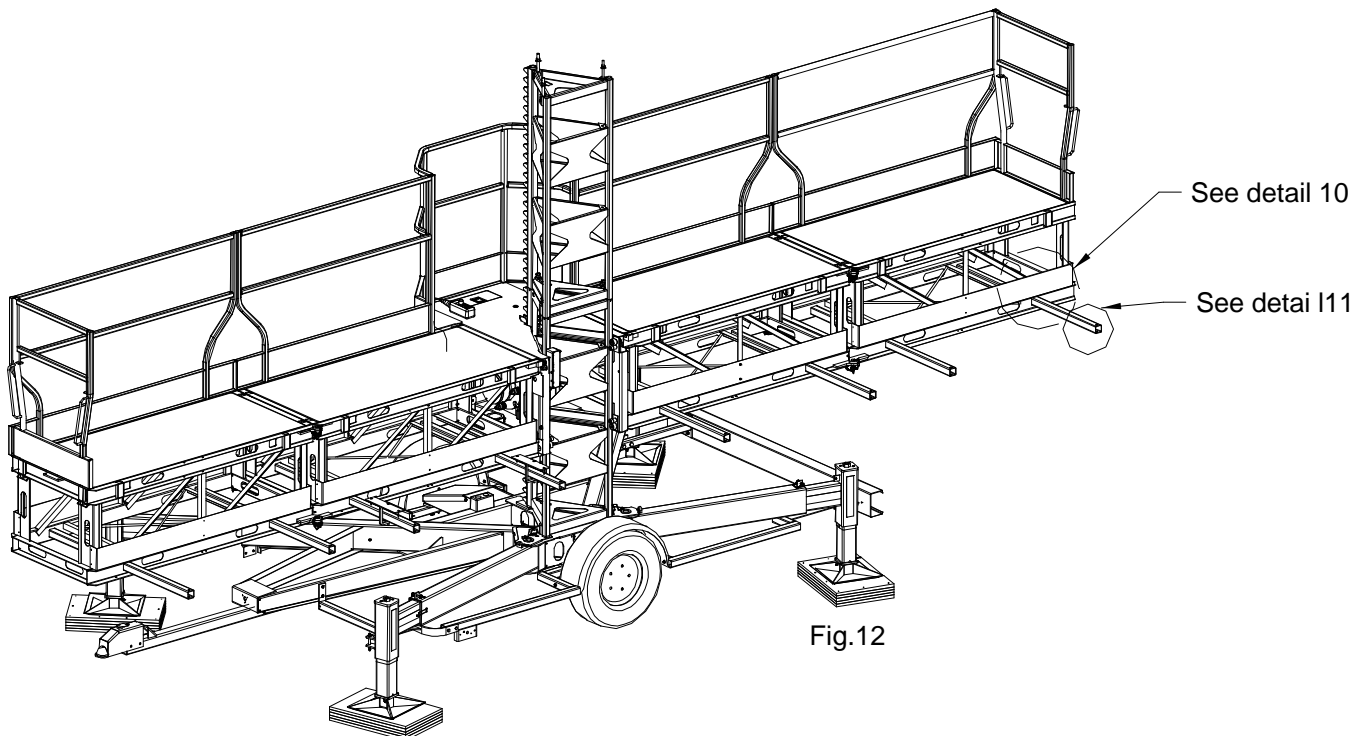
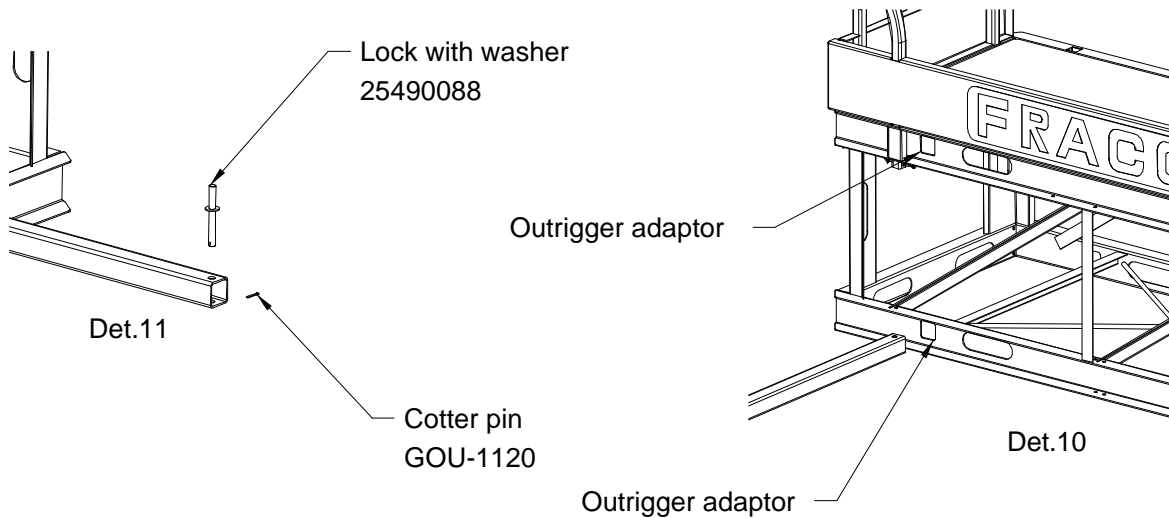
# Outriggers

## Installation:

- 1- Insert the outriggers in the adaptors found in the platform section. (Det. 10).
- 2- Insert the pin and secure it in place with the the cotter pin (Det.11)

## IMPORTANT

The outriggers cannot be extended more that 0.8 m (30 in)  
**Never place any load on the planks at any time.**



# Plank ties

## Installation:

- 1-Install the ties in such a way as to hold the outriggers and the planks together.
- 2-Nail or screw the ties to the planks in order to prevent them from moving.

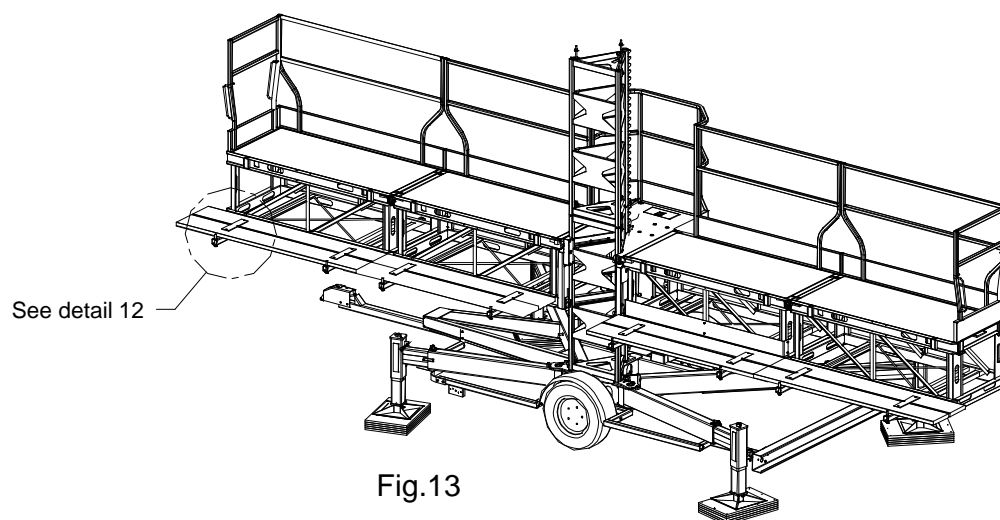
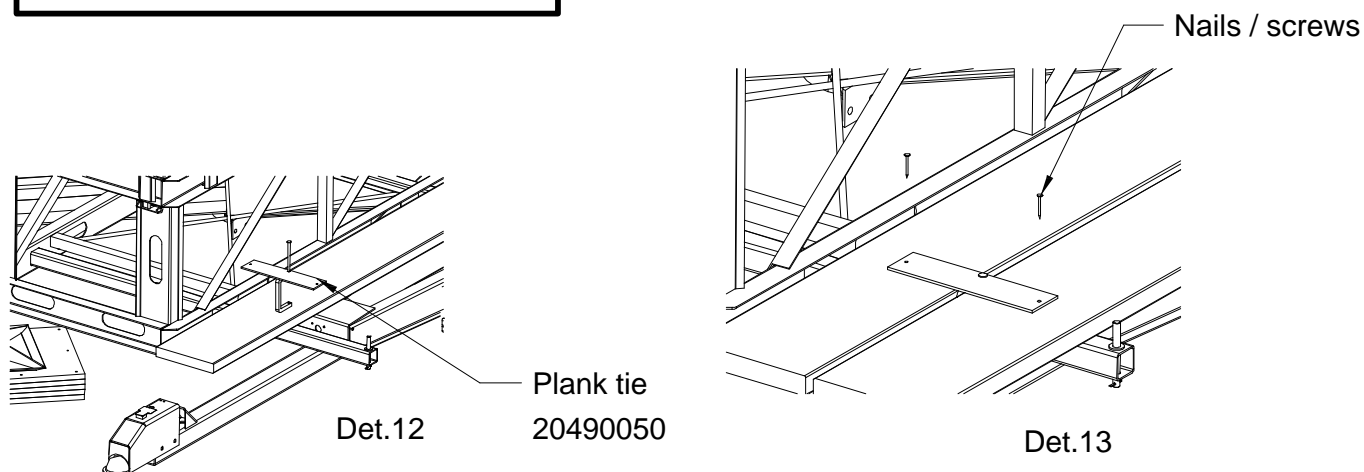
#1 category spruce or equivalent. Nominal dimensions 50 mm x 254 mm (2" x 10") for a span of less than 1.50 m (5')

Planks must be 15 cm (6") from the wall

Only use planks that are approved by the local authorities.

## **IMPORTANT**

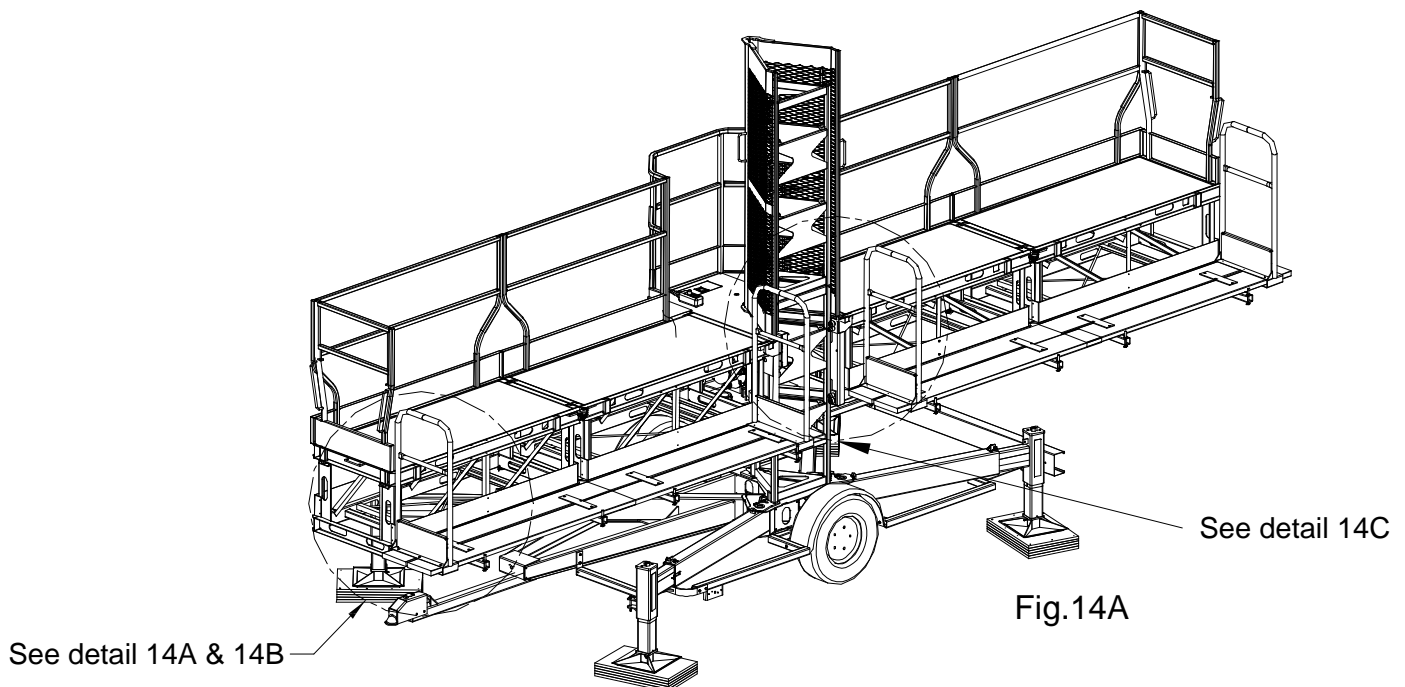
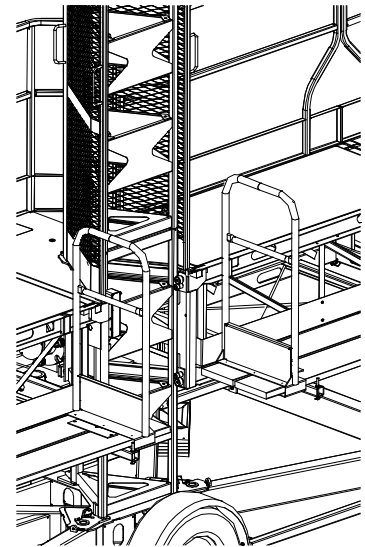
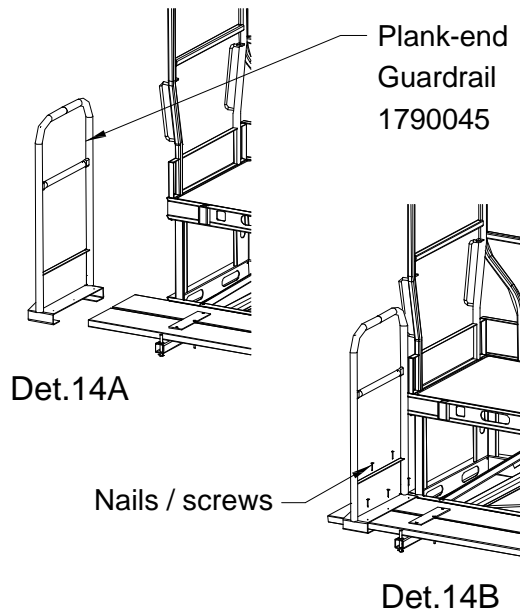
Never place any load on the planks at any time.



## Plank-end guardrail

### Installation:

- 1-Install the plank-end guardrails at the end of the planks in the work zone.
- 2-Secure them in place using nails or screws.
- 3-Place guardrails at any place required to prevent the risk of falling.
- 4-Once all the anchors are in place and secured, install the plank-end guardrails in such a way as to ensure that they do not interfere with the anchors when moving up or down.

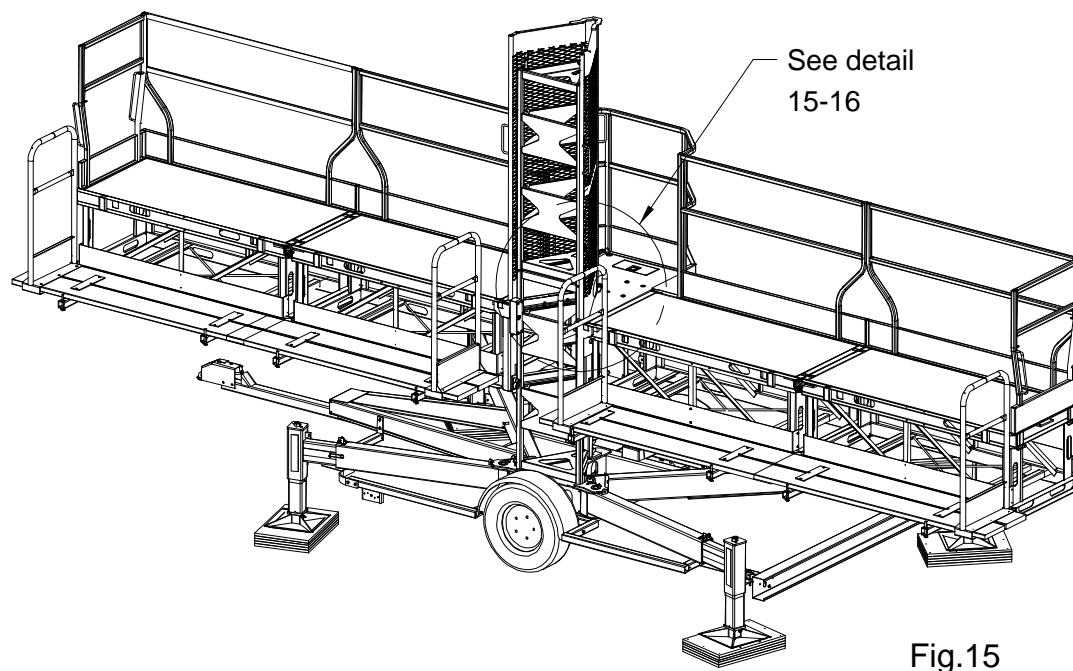
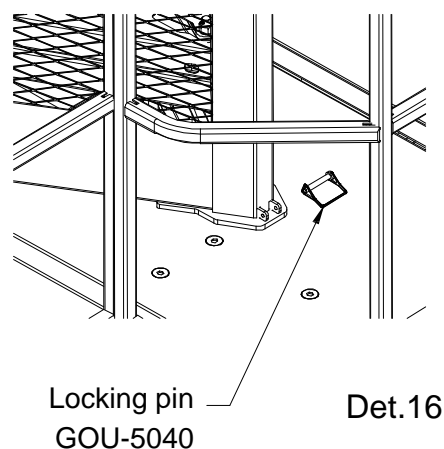
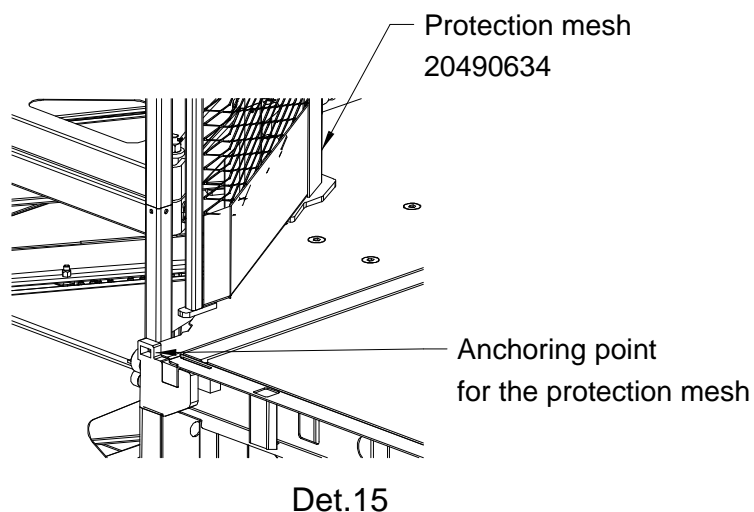




# Protection mesh

## Installation

1-After installing the masts, insert the protection mesh in the anchor points of the elevating unit hooks (Det. 15) to protect the personnel from risk of injury. Secure the mesh in place using a locking pin. (Det. 16)

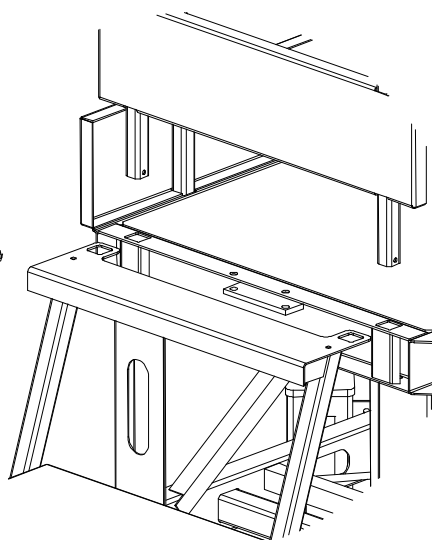


# Access staircase

## Installation

- 1-Remove the access guardrail and place the staircase on the platform. Replace the guardrail by aligning the hole of the platform with the holes of the staircase. (Det.18)
- 2-Secure the guardrail using the safety pin. (Det.19)

Safety pin  
GOU-5020

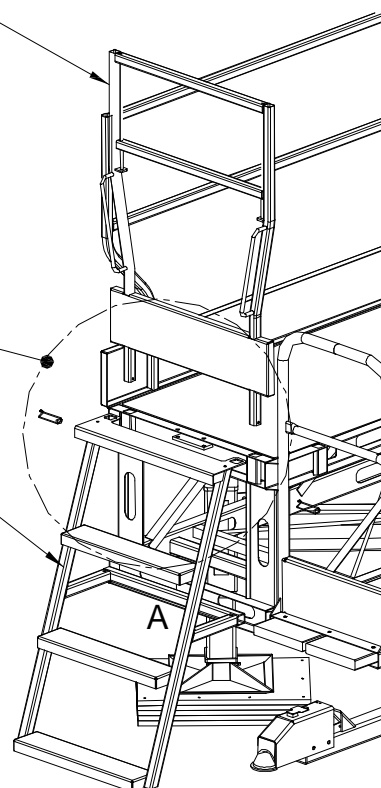


Det.18

Access guardrail  
17490292

See detail 18

Stairs  
20490713



Det.17

See detail  
17-18

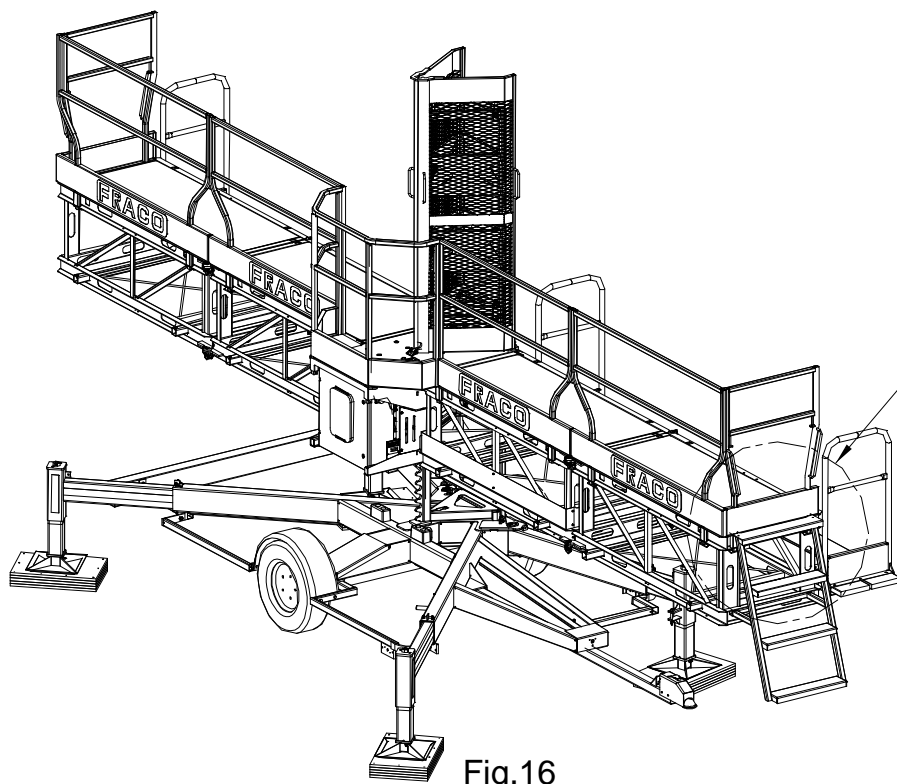


Fig.16

# **Assembly of the mast sections**

## **Installation**

1-Join the male and female sections.

2-Loosen the mast section bolts (Det.21 page II-13) and pivot them to join the mast sections together and tighten the bolts.

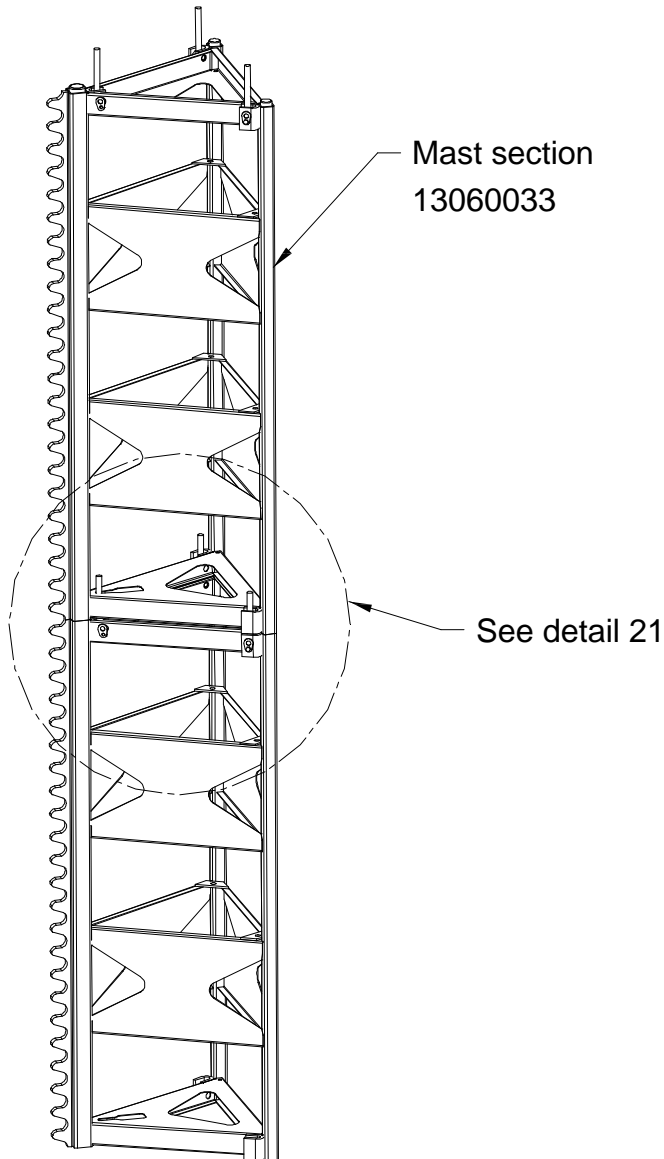


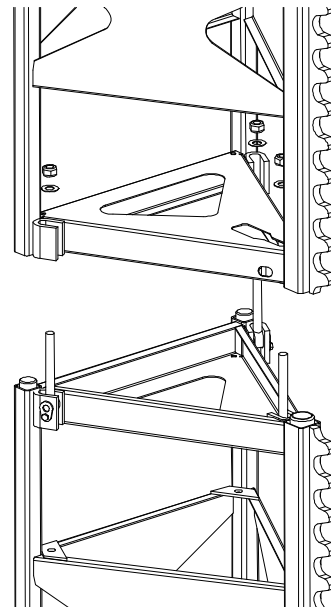
Fig.23

## **IMPORTANT**

1-Do not add more than 6 mast sections (7 sections total) to the Fraco system. The maximum freestanding height that the platform can reach is 11m (35').

2-Be aware of the direction of the mast sections.

3-Always uniformly distribute the mast sections on the platform during installation.



Torque— 206 Newton \*-meter  
(152 Foot \* pound)

### **Do not 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 total mast height

# Installation of the mast sections

## Installation

- 1-Place the mast sections on the platform, uniformly distributed on each side of the elevating unit.
- 2-Lift the platform to the height of the last mast section and slide the next section on the other.
- 3-Follow the assembly instructions on page II-12.

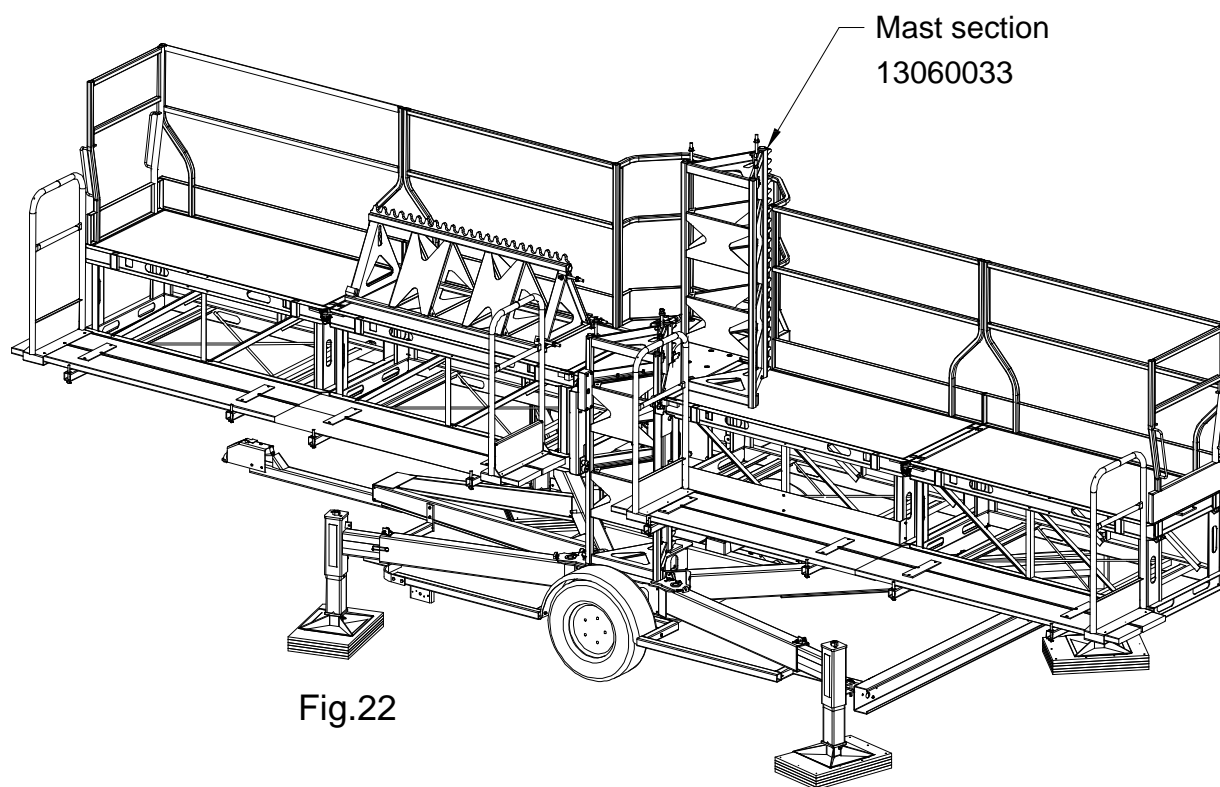


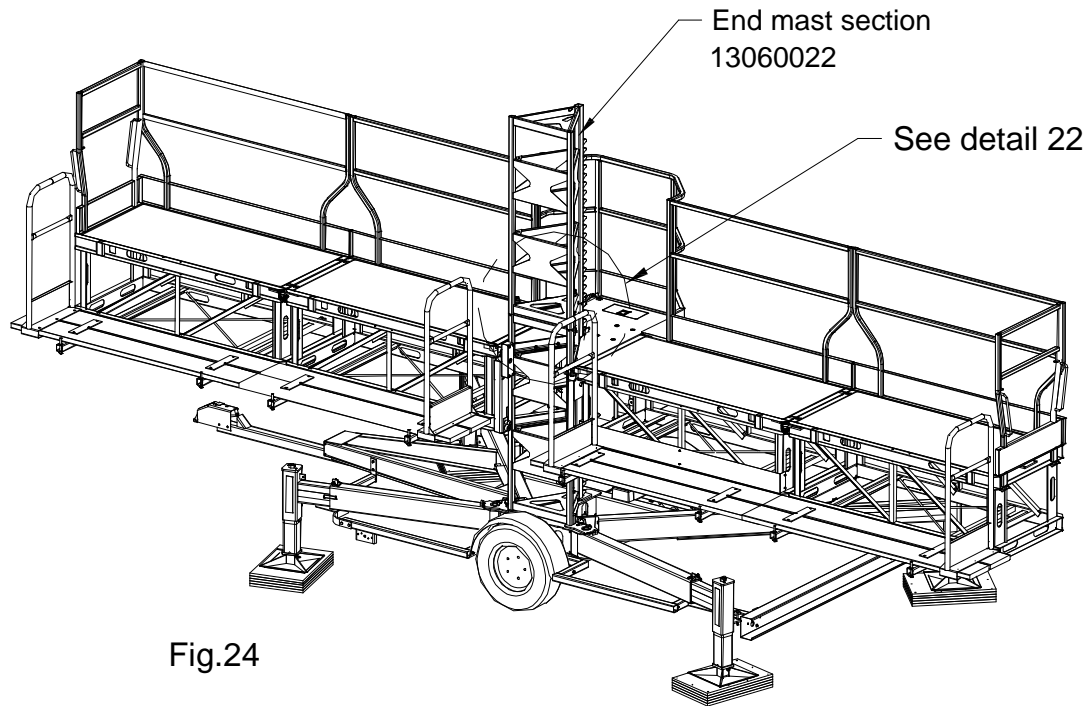
Fig.22

Torque— 206 Newton \*-meter  
(152 Foot \* pound)

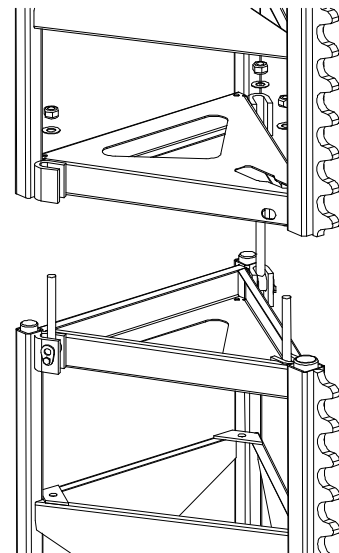
## Installation of the mast end section

### Installation

- 1-Once all the mast sections are installed, place the mast end section last.
- 2-Elevate the platform to the height of the last mast section, and slide the mast end section on the other mast section.
- 3-Follow the installation instructions on page II-12.



Torque– 206 Newton \*-meter  
(152 Foot \* pound)



Det.22

## **Outrigger guardrails**

Installation at more than 40cm (16") of the work surface

### **Installation**

- 1- Install all the guardrails in required places in order to prevent the risk of falling.
- 2- Secure all the guardrails using a pin with washer and a cotter pin.
- 3- Insert planks 50mm X 100mm (2" X 4") in the guardrail and hold them in place using nails or screws.
- 4- A board of 15cm (6") must be installed at the bottom of the guardrail to prevent debris from falling.

### **Caution !**

Never place any load on the planks at any time.

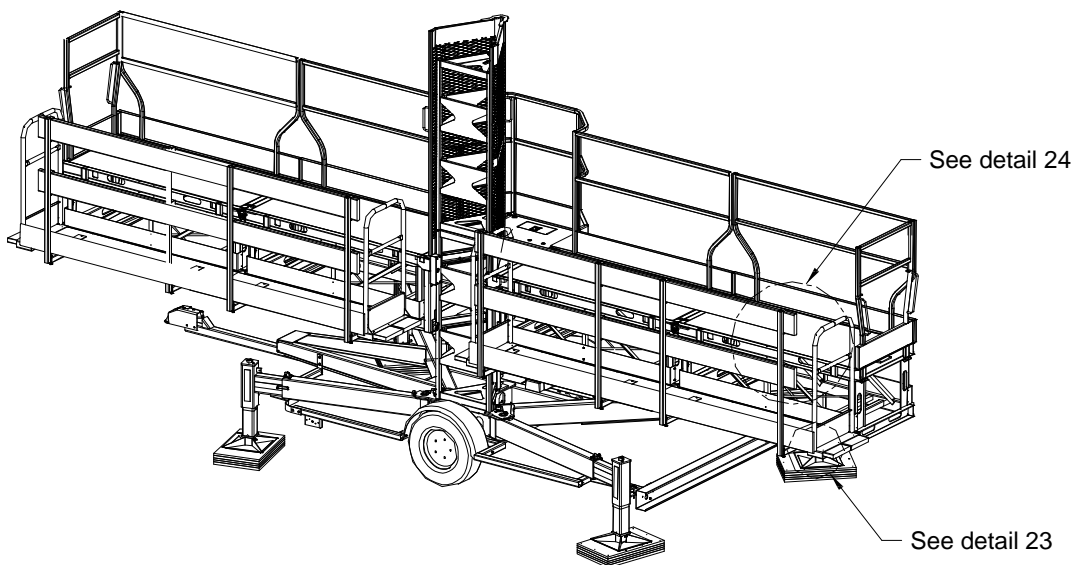
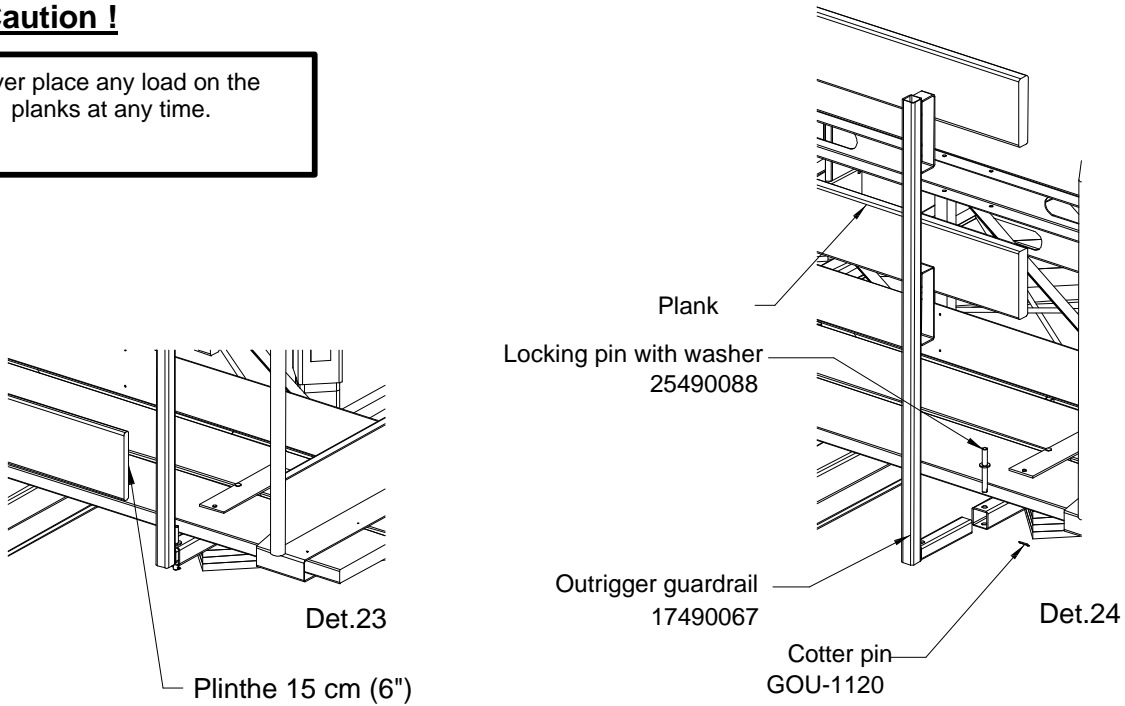


Fig.25

# Work zone outrigger guardrails

Installation at less than 40cm (16") from the work surface

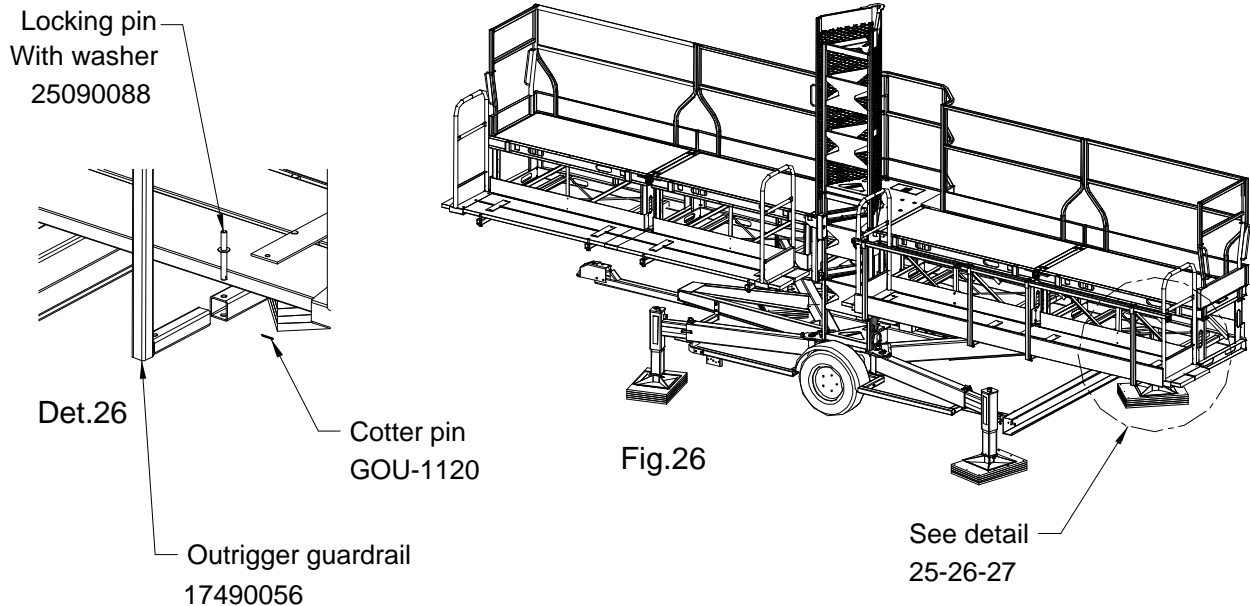
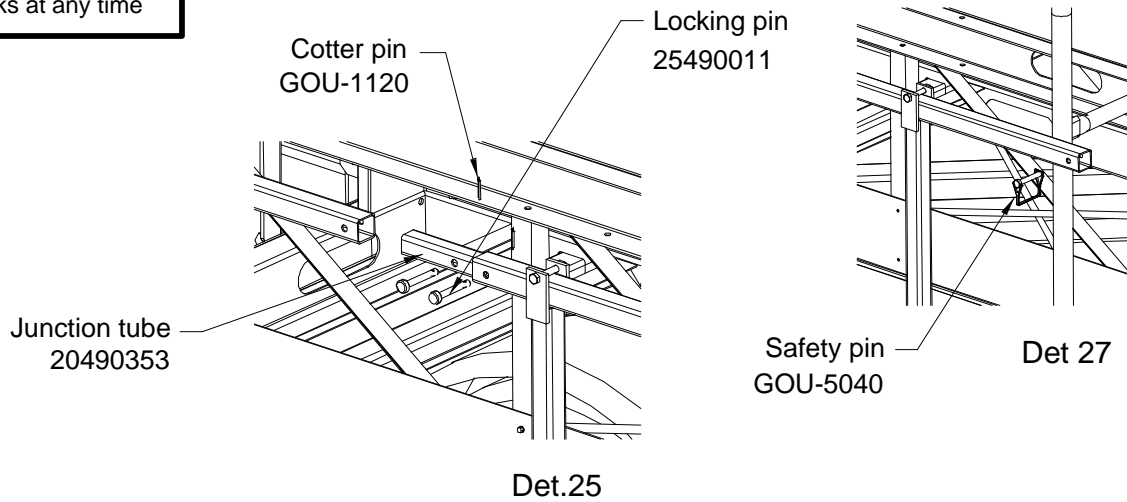
## Installation

- 1-Insert the front handrail supports in all the work zone outriggers. (Det. 26)
- 2-Secure the front handrail supports using a pin with washer 11mm and a cotter pin. (Det. 26)
- 3-Install the front handrails on the supports and secure them in place with a locking pin. (Det. 25)
- 4-To join two handrails, insert the handrail junction tube on two handrail extremities and secure them with a locking pin. (Det. 27)
- 5-A board of 15cm (6") must be installed at the bottom of the outrigger guardrail to prevent debris from falling.

It is important to install guardrails at any place required to prevent the risk of falling.

## IMPORTANT

Never place any load on the planks at any time



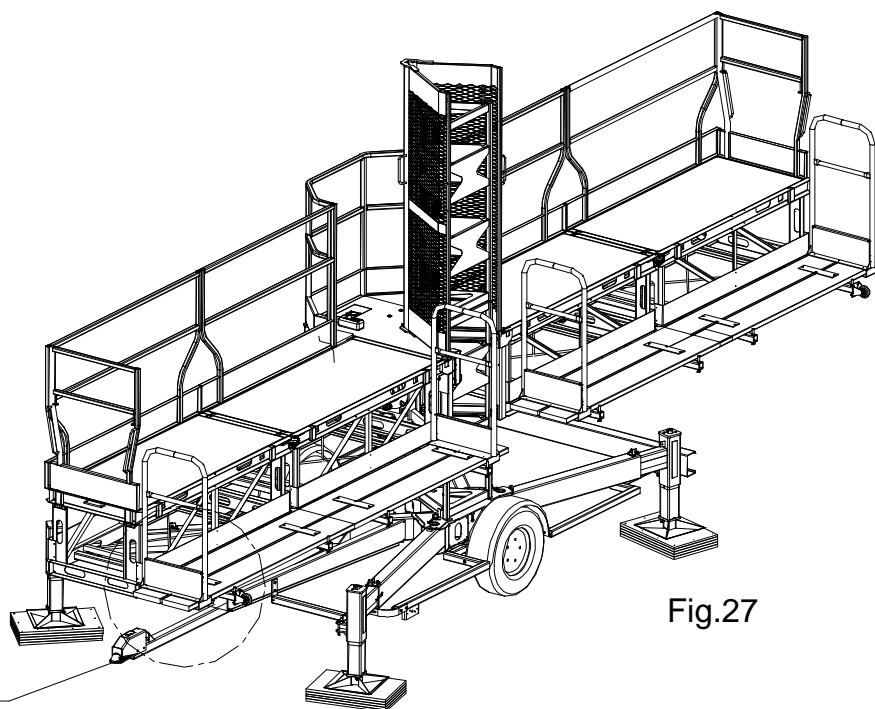
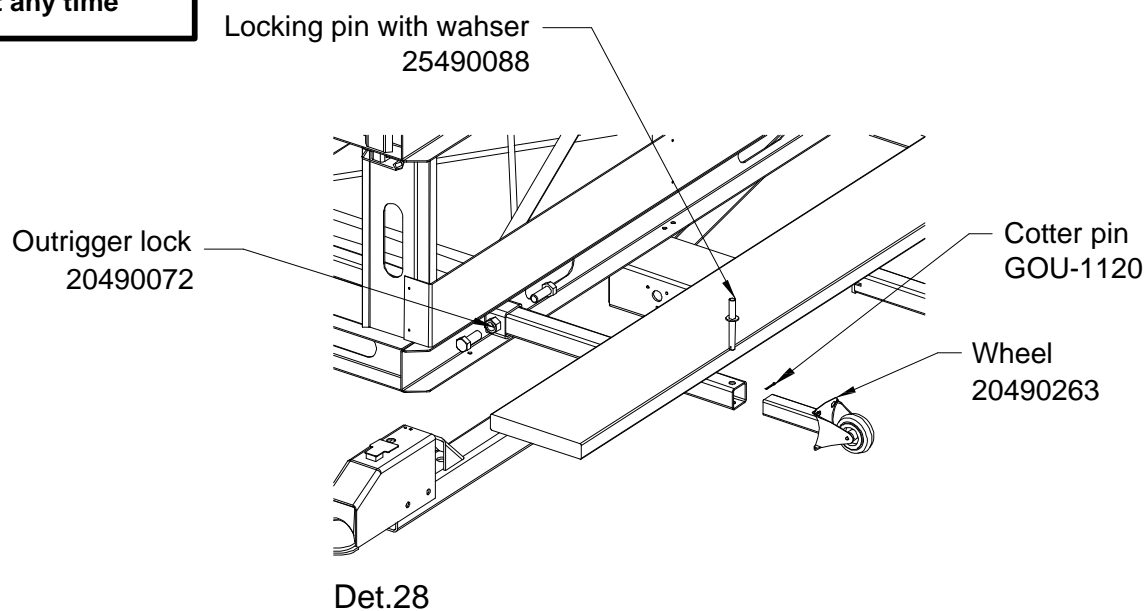
# Single mast locking system

## Installation

- 1-Insert the outrigger lock in the outriggers located at each extremity of the platform. (Det 28)
- 2-Insert the locking wheel at the end of the outrigger. (Det 29)
- 3-Secure the wheel to the outrigger using a pin with washer and a cotter pin. (Det. 29)
- 4-Adjust the length of the outriggers so that the distance with the wall is at least 3 cm (1 ½")
- 5-Tighten the bolts on the outrigger lock at the base of the platform section. (Det 28)

## IMPORTANT

**Never place a load on the outriggers at any time**





## **Anchor position**

The anchors are required when working at a height exceeding 11m (35')  
Maximum height allowed on trailer: 30m (100')

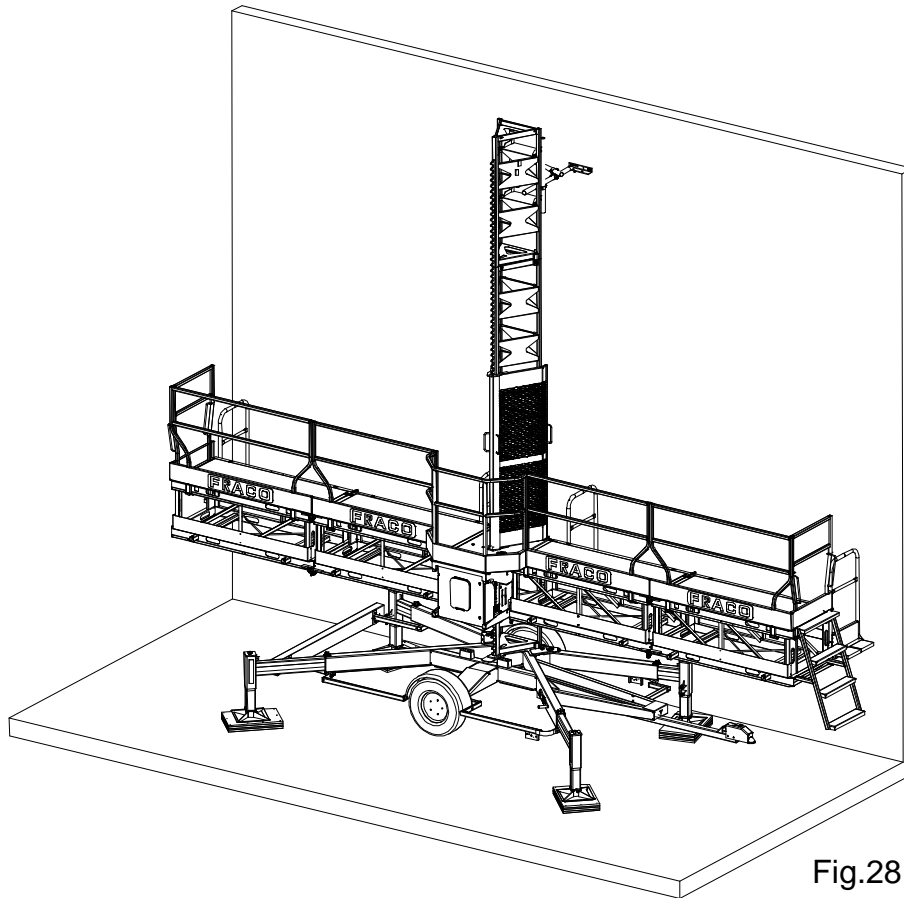


Fig.28

## **IMPORTANT**

- 1-The first anchor must be installed before placing a load on the platform.
- 2-Load the platform only with mast sections required to reach the next anchor level.
- 3-In work situation, the platform may exceed the last anchor by 1.5m (5')

### **First anchor:**

Maximum of 9.1 m (30') above ground level.

### **Subsequent anchors:**

Maximum of 6.1 m (20') between each anchor.

### **\*-For the installation of the anchors only,**

It is permitted to exceed the last anchor by 6.1 m (20') with a maximum load of 454 kg (1,000 lbs), including 2 men with tools, during anchor installation.

# Anchoring system

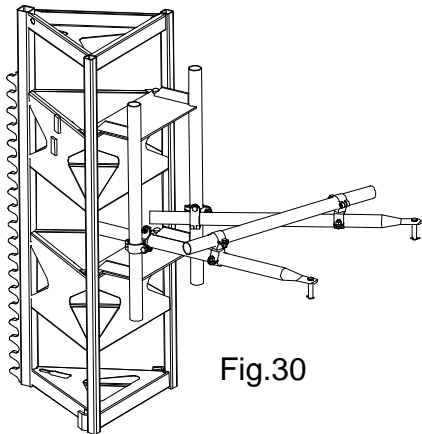


Fig.30

Anchoring system well assembly

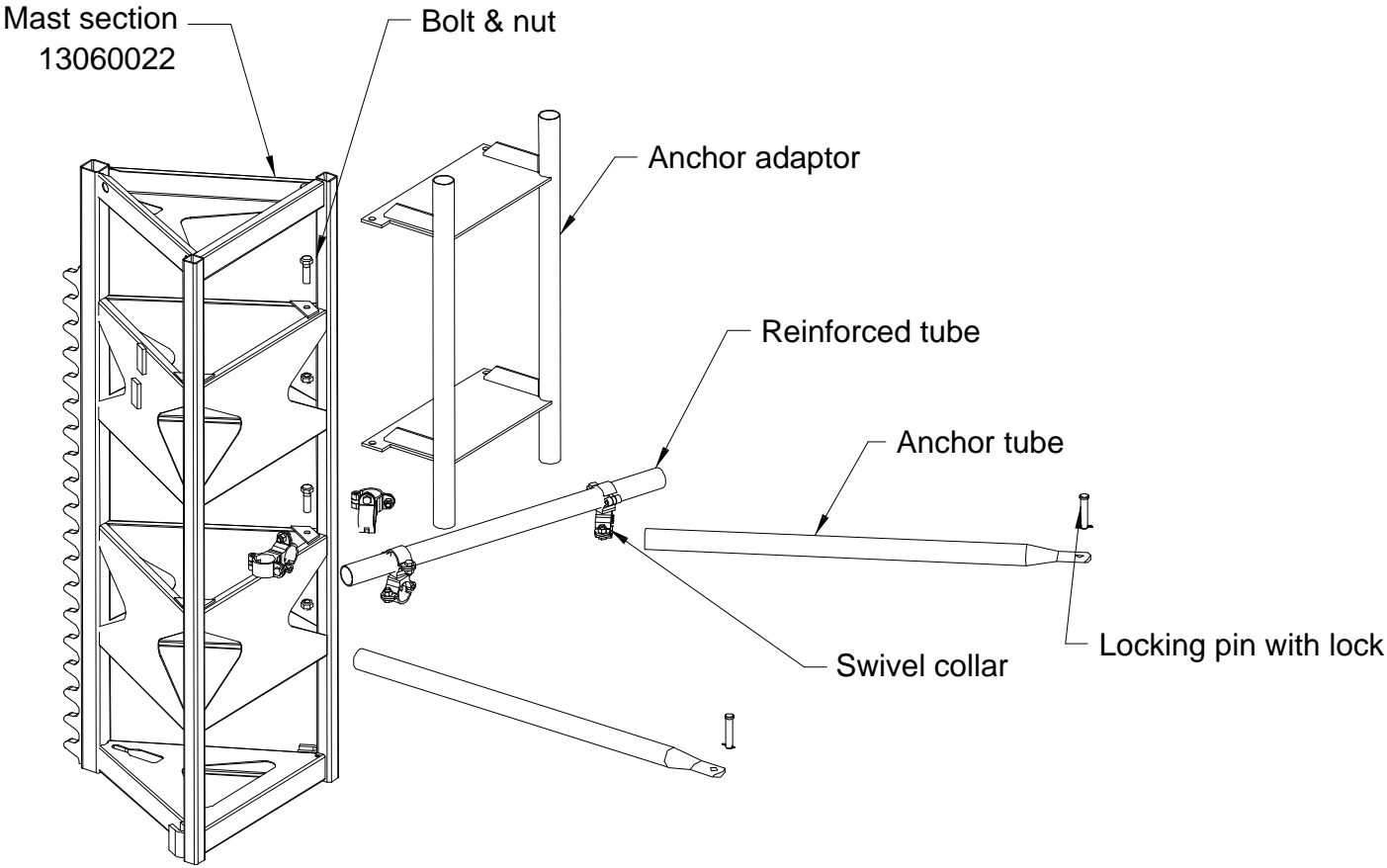


Fig.29

Exploded anchoring system

## Minimal opening of the turnbuckles

Length of the anchoring tubes	H	W
A : 0.71m B: 0.86 m	0.70 m	0.56 m
		0.78 m
A: 1.0m B: 1.17 m	0.97 m	0.71 m
		1.05 m

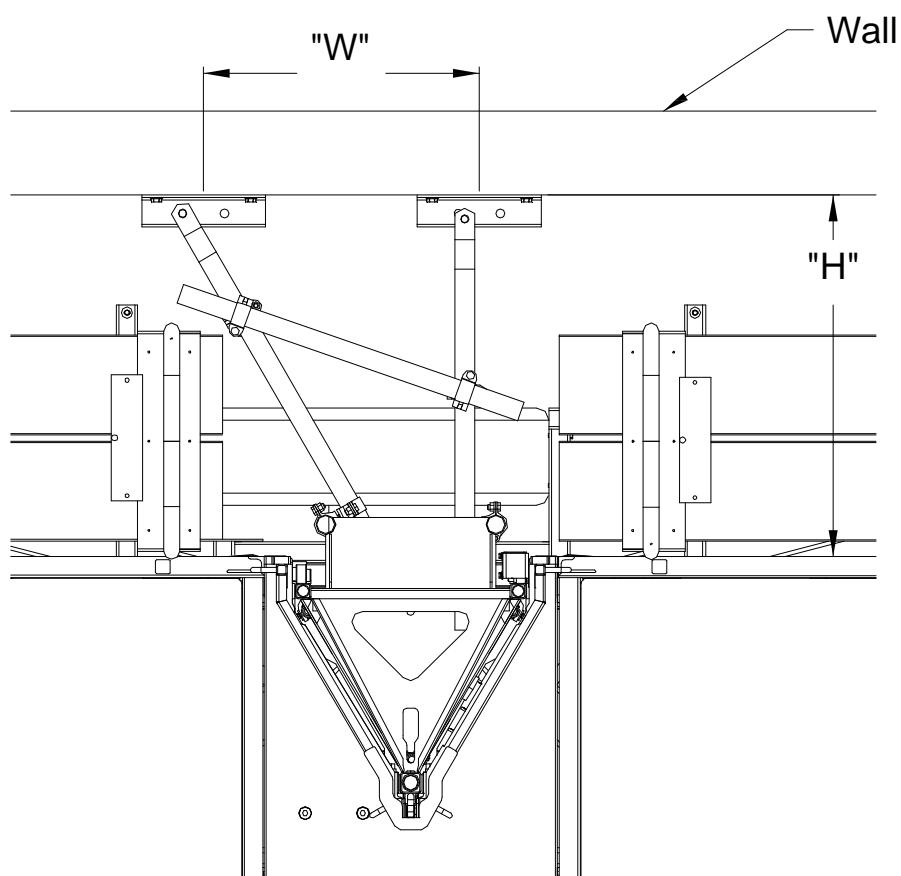


Fig.31

# How to level the mast using the anchoring system

## IMPORTANT

Do not exceed the following vertical tolerances:

- 1.25 cm (1/2") for a mast of 3 m (10').
- 2.0 cm (3/4") for a mast of 6 m (20').
- 2.5cm (1") for the total height of the mast

- Ensure that the platform and the trailer are perfectly parallel to the wall.
- Ensure that the platform is perfectly vertical using a bubble level of 1.2 m (4') length.
- If the platform leans towards the building, lift the front jacks and tighten in place.
- If the platform leans away from the building, lift the rear jacks and tighten in place.
- Load the platform uniformly to prevent it from being unbalanced.
- In case of difficulties in leveling the platform, use a strap and ratchet to level.

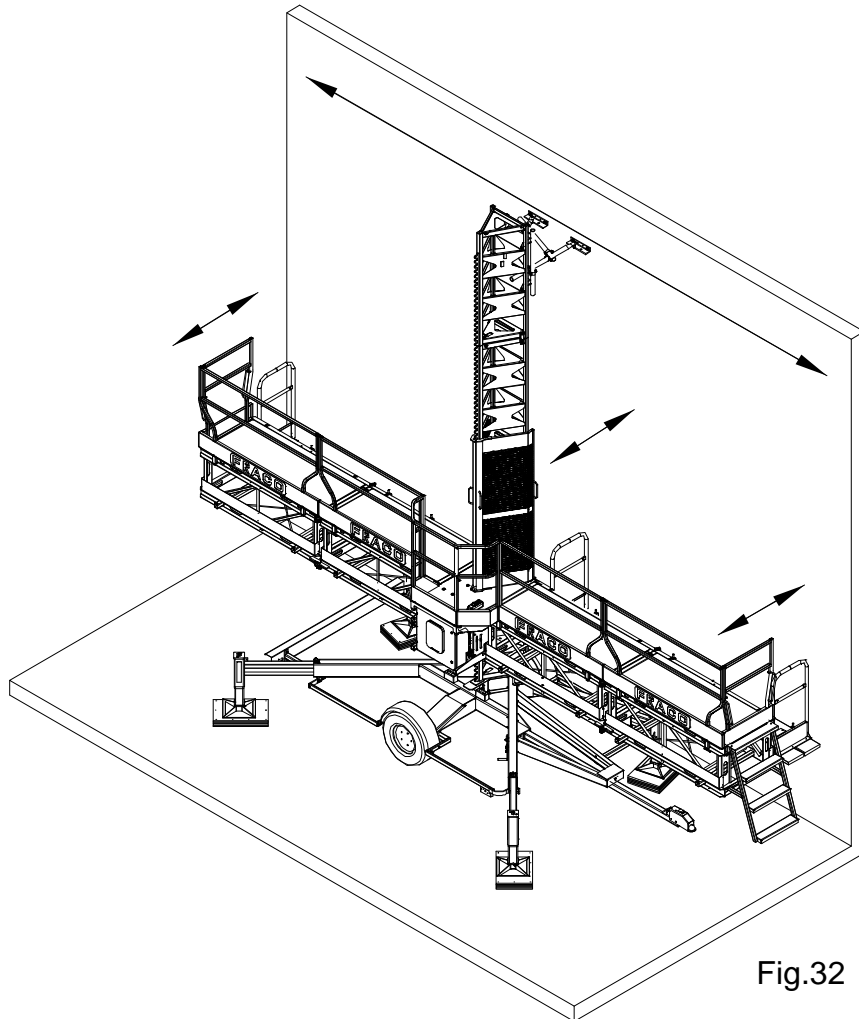


Fig.32

## Installation of the first anchor

When the assembly of the platform at ground level is completed, the first anchor must be installed to be able to raise the platform.

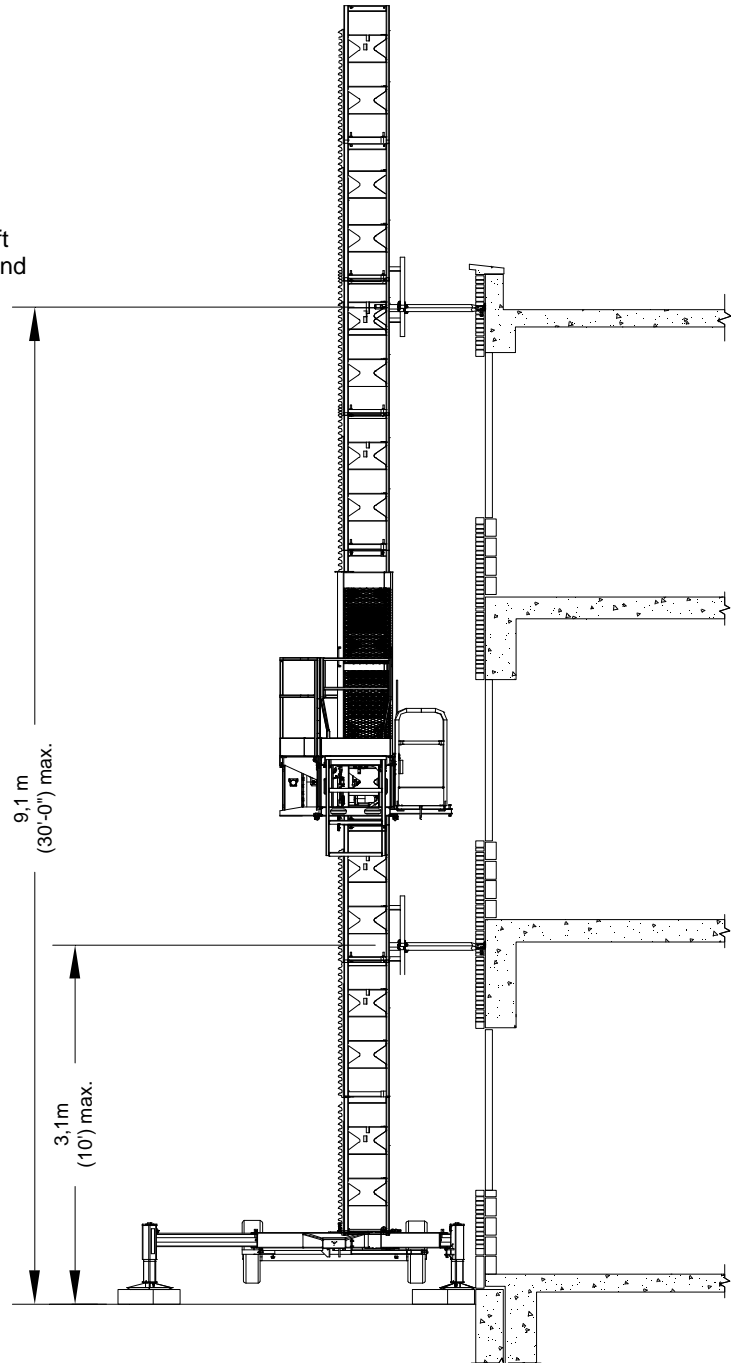
The disrespect of these installation procedures can cause serious bodily and material damages, including death. If a situation other than one described here arises, contact your Fraco representative. Fraco Products Ltd and/or its importer/representative cannot be held responsible in any case.

### **First anchor**

After assembling the platform at ground level, three techniques are available to install the first anchor. At all times, the platform cannot have more than 2 men and their tools on it.

#### **1-1st Anchor:**

After installing the platform according to this guide, lift the platform to a maximum of 9.1 m (30') above ground and proceed to the installation of the first anchor.

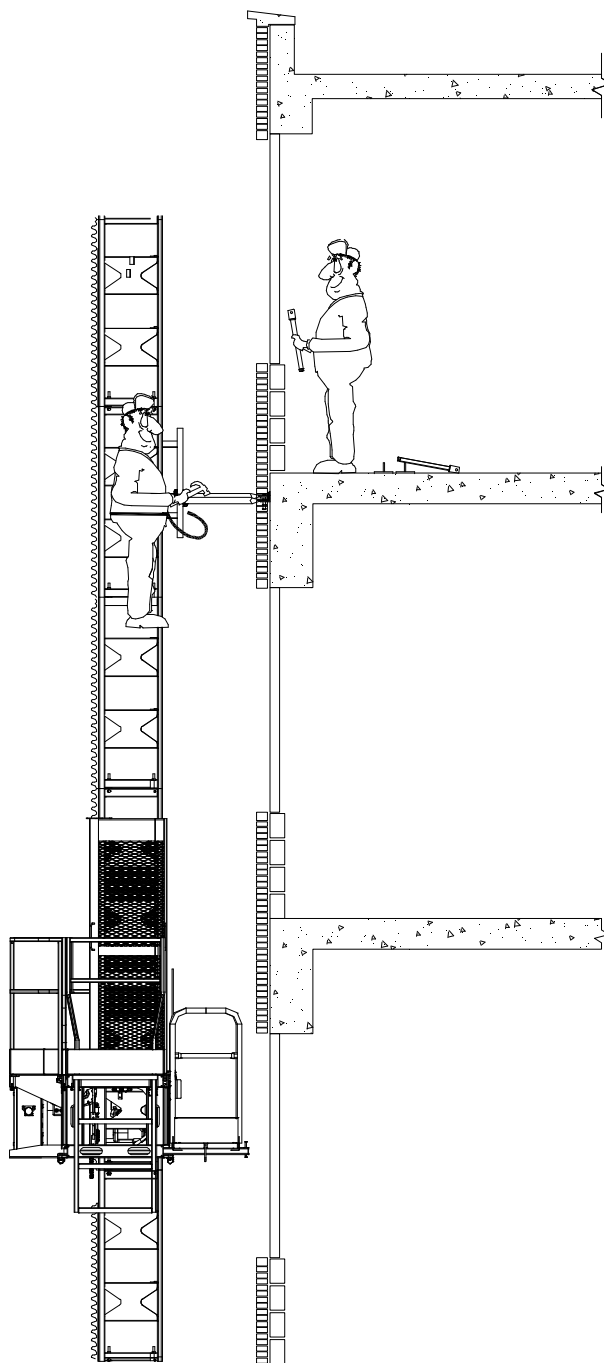


## Installation the anchors (cont'd)

### 2-Work from inside the building and positioning in the mast:

At the level of the first anchor, position a man in the mast and one inside the building with all the required equipment for one anchor. The man inside must supply the man outside with the equipment to proceed to the installation of the first anchor.

**ALWAYS wear a safety harness, securely fastened to the structure when executing this procedure.**

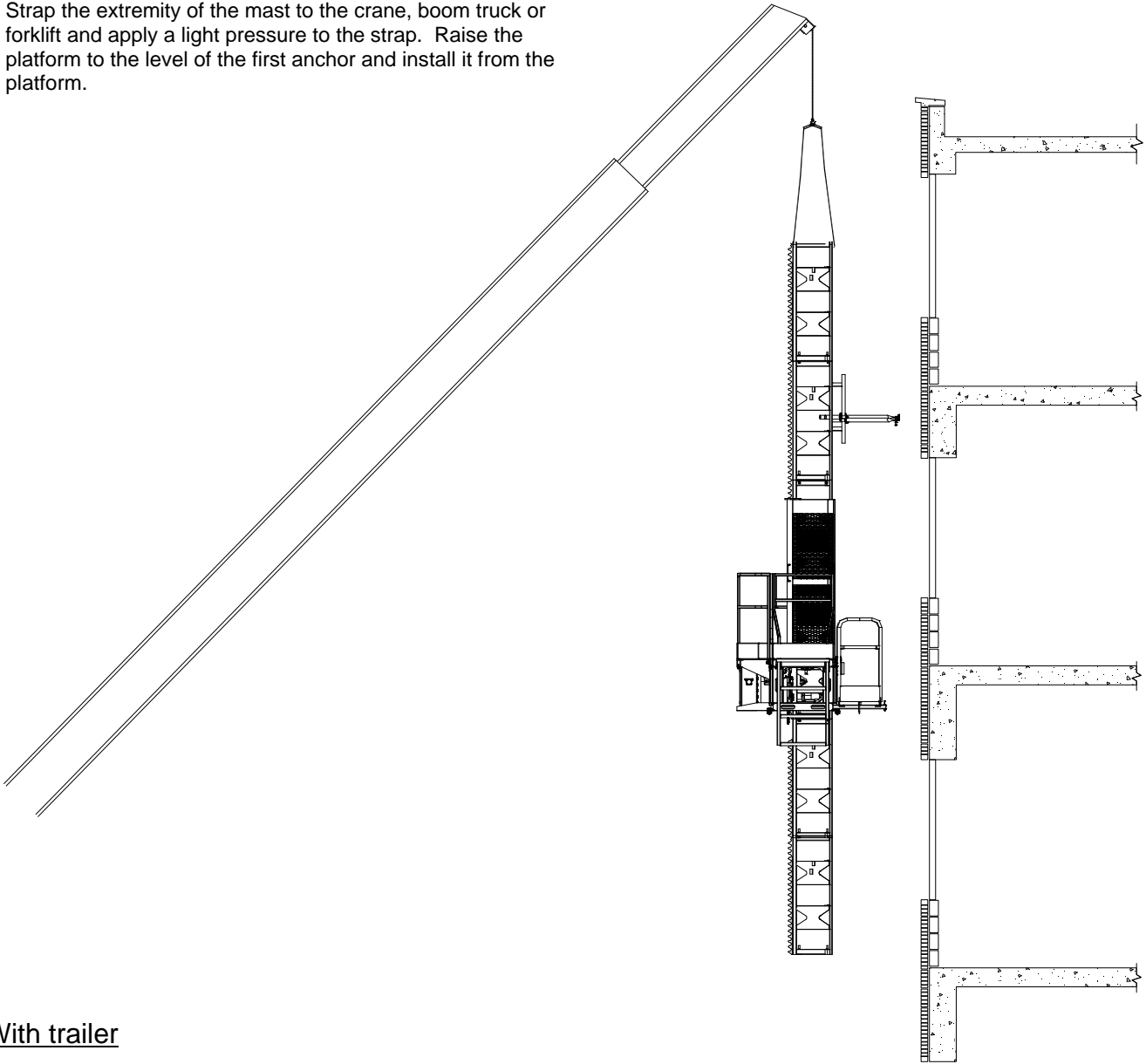


## Installation of the anchors (cont'd)

### 3-Held with a crane, boom truck or forklift:

#### Applicable only for single unit on ground base.

Strap the extremity of the mast to the crane, boom truck or forklift and apply a light pressure to the strap. Raise the platform to the level of the first anchor and install it from the platform.



### With trailer

Raise the platform to the level of the first anchor and install by working from the platform.

### Subsequent anchors

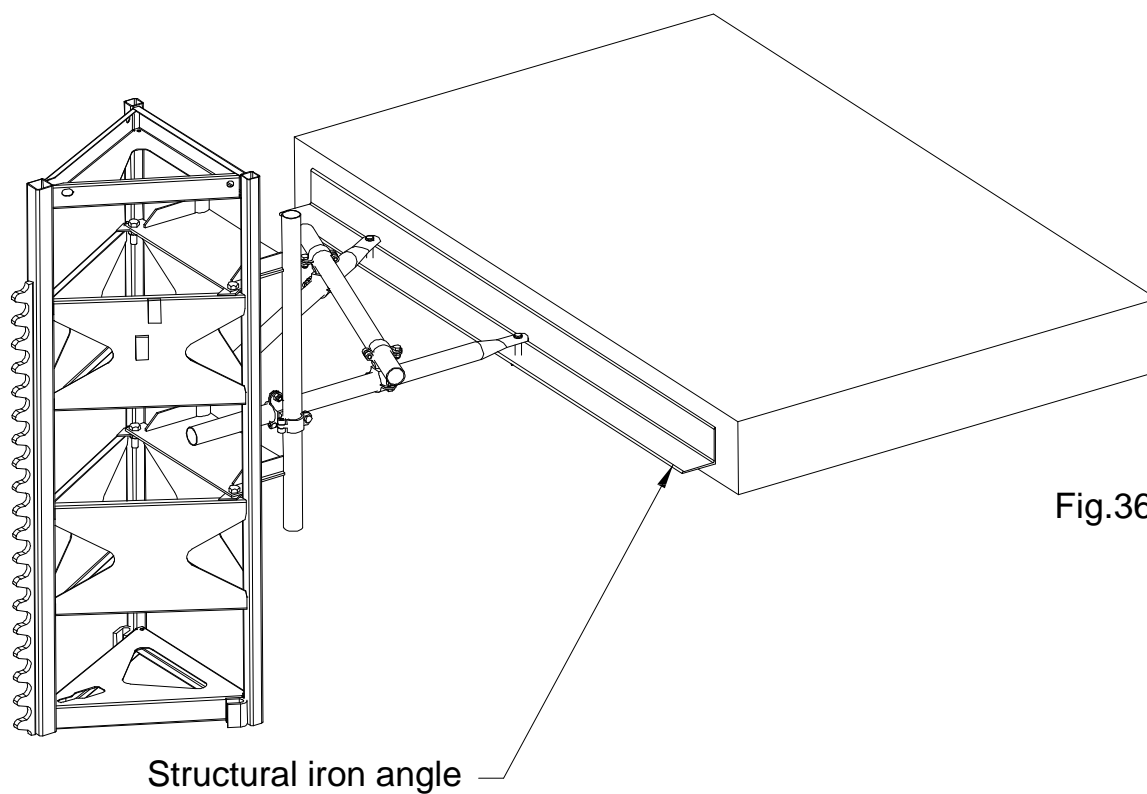
Raise the platform to the level of the next anchor and install it by working from the platform. The maximum load allowed is 454 kg (1 000 lbs) uniformly spread out, and including the workers and their tools.

## Anchor bolted to a brick shelf

Caution: Before proceeding to the installation, be sure to have all the required authorizations.

### Installation

- 1- Install the wall tie and the anchor tube.
- 2- Determine the place to drill the holes for the turnbuckles using page II-12.
- 3- Adjust the verticality of the tower with the turnbuckles.
- 4- Drill the hole in the brick shelf for the anchor tube pin.
- 5- Ensure that all the pins are in place and that they are secured with cotter pins.
- 6- Secure the anchor by installing the transversal tube.



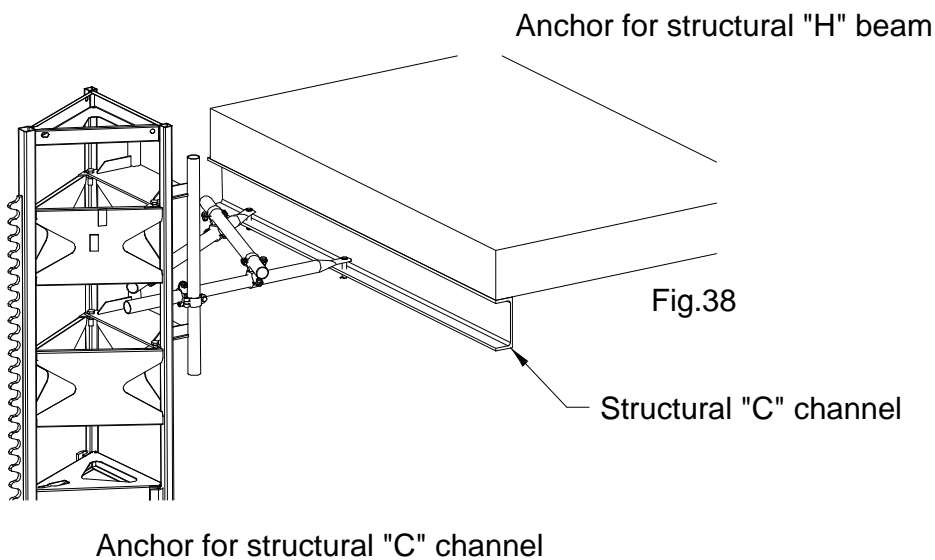
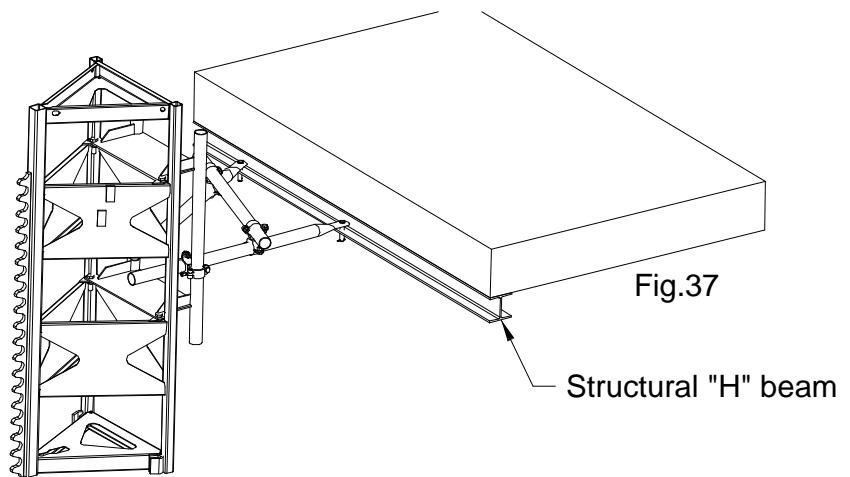


## Anchor bolted to a structural beam

Caution: Before proceeding to the installation, be sure to have all the required authorizations.

### Installation

- 1- Install the wall tie and the anchor tube.
- 2- Determine the place to drill the holes for the turnbuckles using page II-12.
- 3- Adjust the verticality of the tower with the turnbuckles.
- 4- Drill the hole in the brick shelf for the anchor tube pin.
- 5- Ensure that all the pins are in place and that they are secured with cotter pins.
- 6- Secure the anchor by installing the transversal tube.



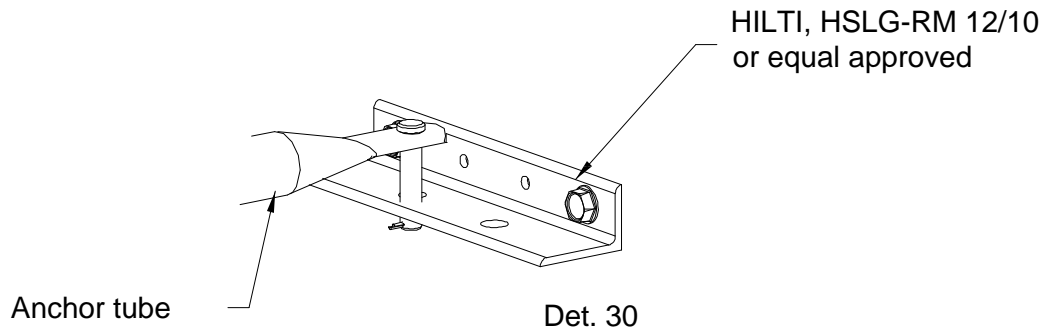
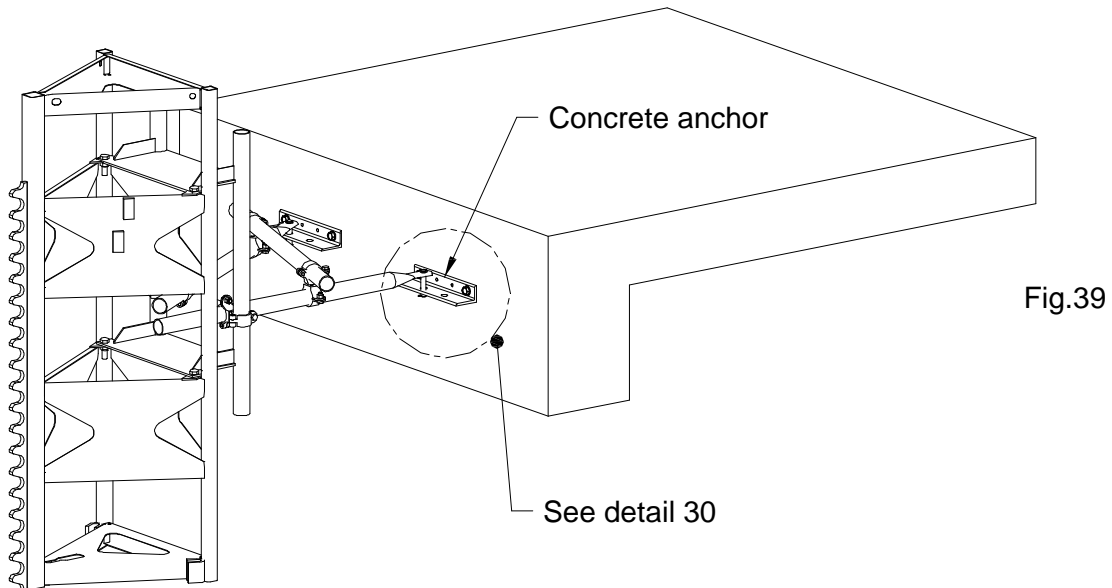
## Anchor for structure or concrete beam

Caution: Before proceeding to the installation, be sure to have all the required authorizations.

### Installation

- 1- Install the wall tie and the anchor tube.
- 2- Determine the place to drill the holes for the turnbuckles using page II-12.
- 3- Adjust the verticality of the tower with the turnbuckles.
- 4- Drill the hole in the brick shelf for the anchor tube pin.
- 5- Ensure that all the pins are in place and that they are secured with cotter pins.
- 6- Secure the anchor by installing the transversal tube.

The concrete must have a minimum capacity of 35 Mpa.



## Horizontal concrete anchor

Caution: Before proceeding to the installation, be sure to have all the required authorizations.

### Installation

- 1- Install the wall tie and the anchor tube.
- 2- Determine the place to drill the holes for the turnbuckles using page II-12.
- 3- Adjust the verticality of the tower with the turnbuckles.
- 4- Drill the hole in the brick shelf for the anchor tube pin.
- 5- Ensure that all the pins are in place and that they are secured with cotter pins.
- 6- Secure the anchor by installing the transversal tube.

The concrete must have a minimum capacity of 35 Mpa.

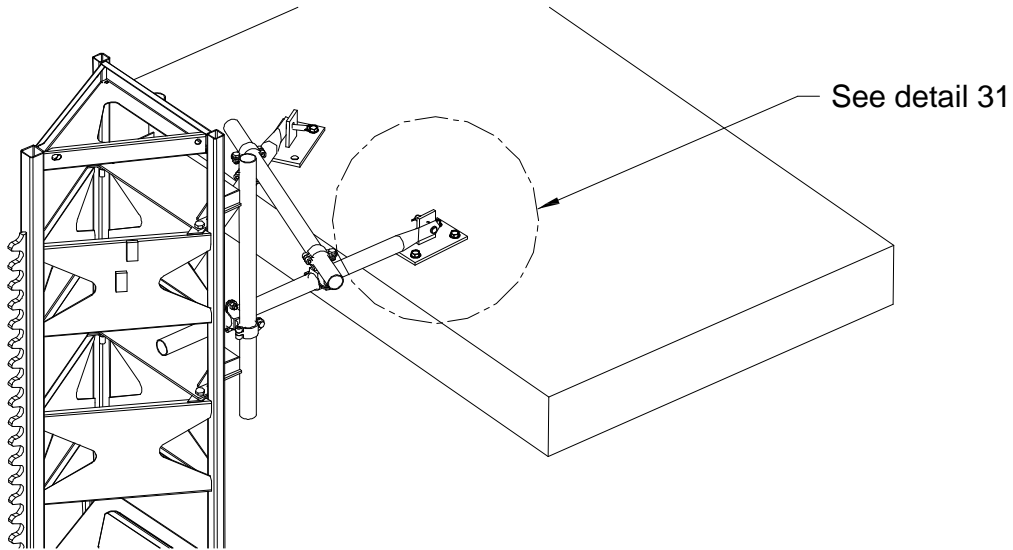
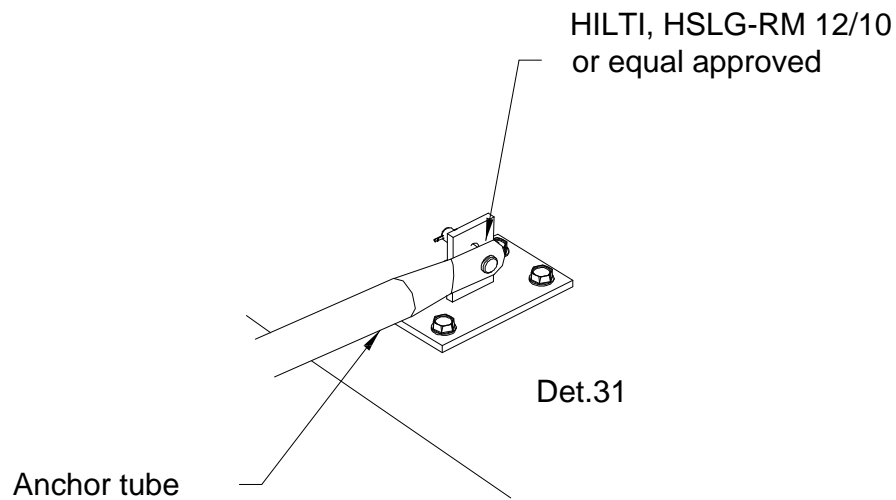


Fig.40

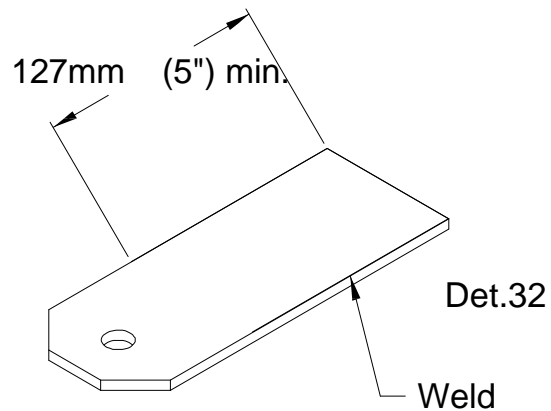
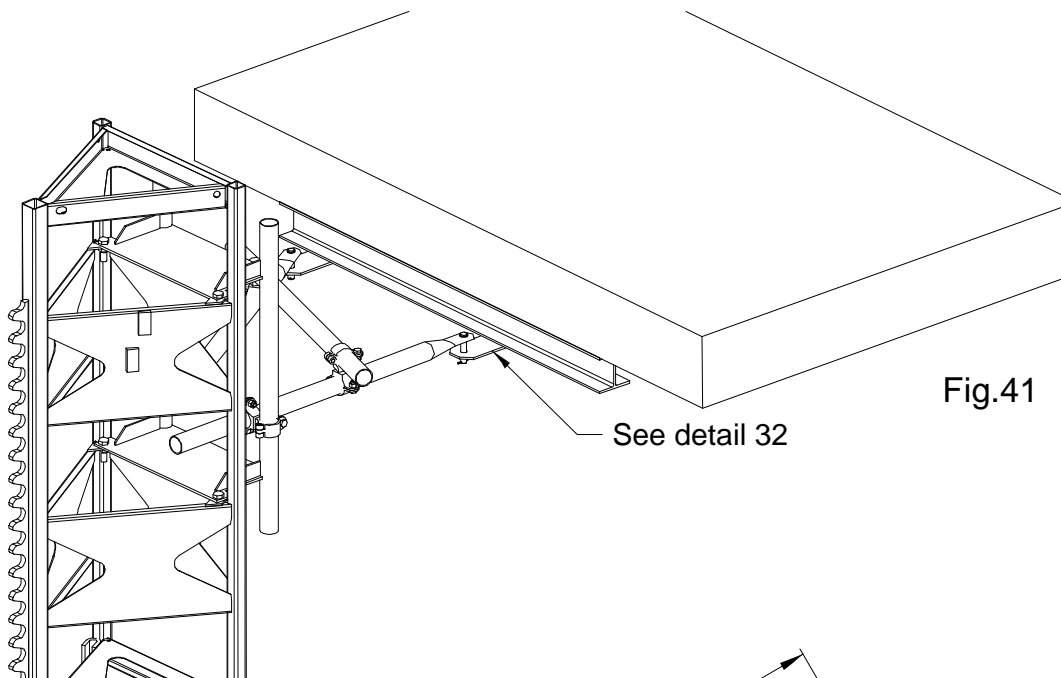


## Anchor welded to a brick shelf

Caution: Before proceeding to the installation, be sure to have all the required authorizations.

### Installation

- 1- Install the wall tie and the anchor tube.
- 2- Determine the place to drill the holes for the turnbuckles using page II-12.
- 3- Adjust the verticality of the tower with the turnbuckles.
- 4- Drill the hole in the brick shelf for the anchor tube pin.
- 5- Ensure that all the pins are in place and that they are secured with cotter pins.
- 6- Secure the anchor by installing the transversal tube.



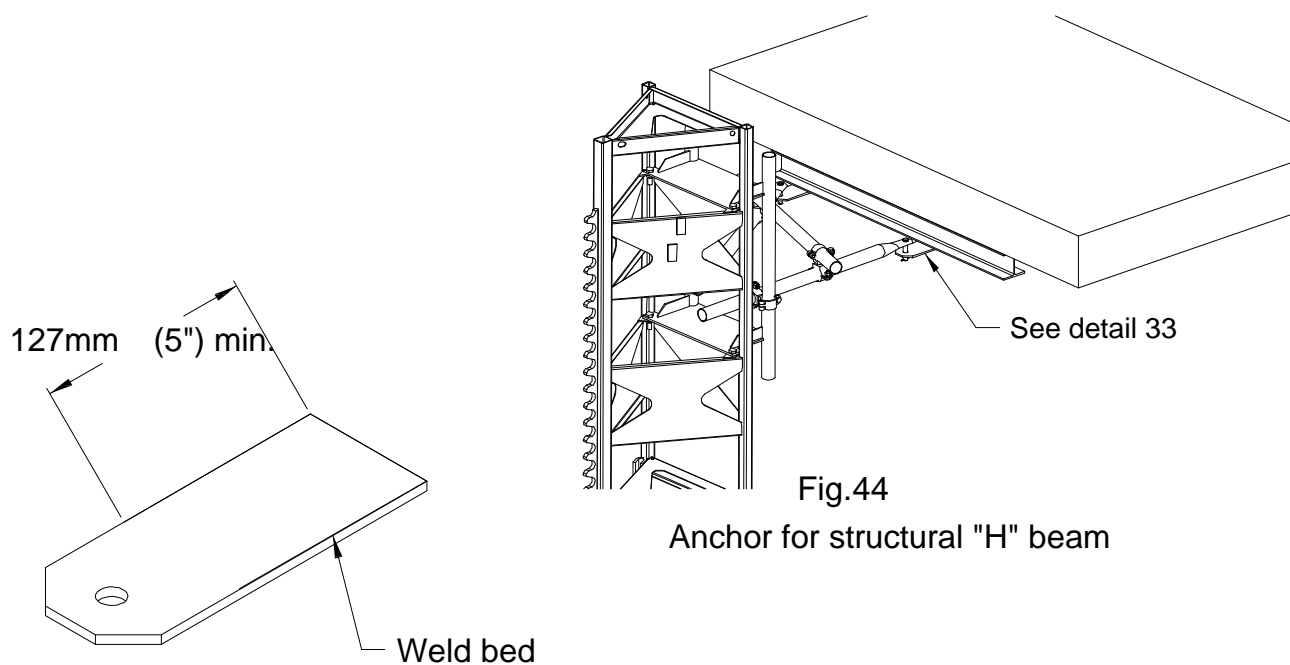
Minimum welding length

## Anchor welded to a structural beam

Caution: Before proceeding to the installation, be sure to have all the required authorizations.

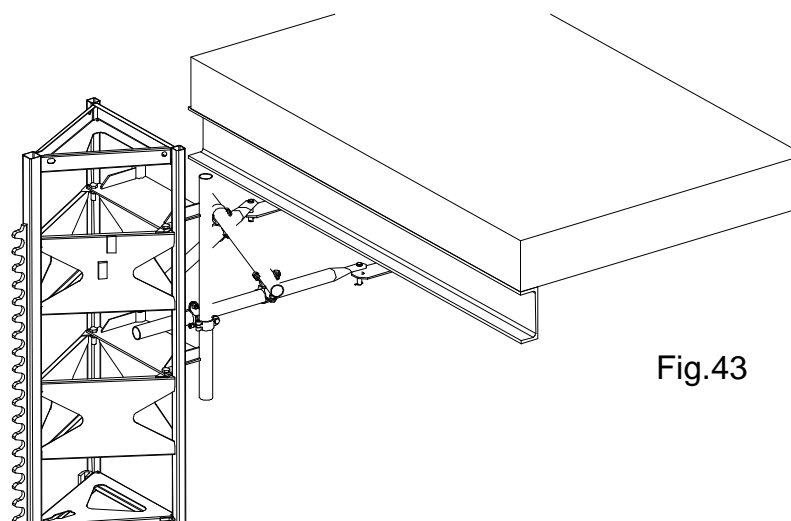
### Installation

- 1- Install the wall tie and the anchor tube.
- 2- Determine the place to drill the holes for the turnbuckles using page II-12.
- 3- Adjust the verticality of the tower with the turnbuckles.
- 4- Drill the hole in the brick shelf for the anchor tube pin.
- 5- Ensure that all the pins are in place and that they are secured with cotter pins.
- 6- Secure the anchor by installing the transversal tube.



Det.33

Minimum welding length



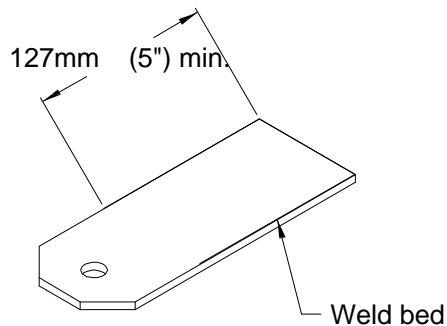
## Angle wall tie

Caution: Before proceeding to the installation, be sure to have all the required authorizations.

### Installation :

- 1- Install the wall tie and the anchor tube.
- 2- Determine the place to drill the holes for the turnbuckles using page II-12.
- 3- Adjust the verticality of the tower with the turnbuckles.
- 4- Install the concrete anchor for the anchor tube pin.
- 5- Ensure that all the pins are in place and that they are secured with cotter pins.
- 6- Secure the anchor by installing the transversal tube.

The concrete must have a minimum capacity of 35 MPa.



Det.33

Minimum welding length

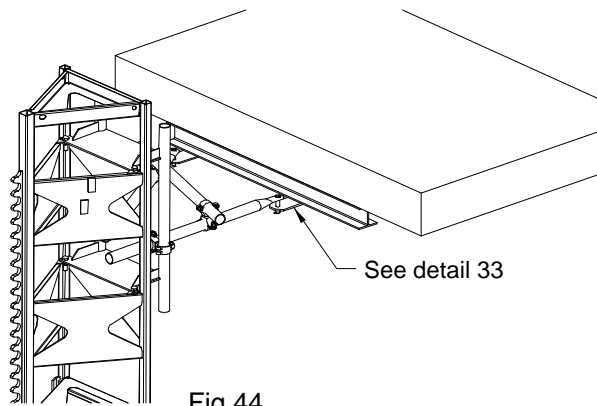


Fig.44

Anchor for structural "H" beam

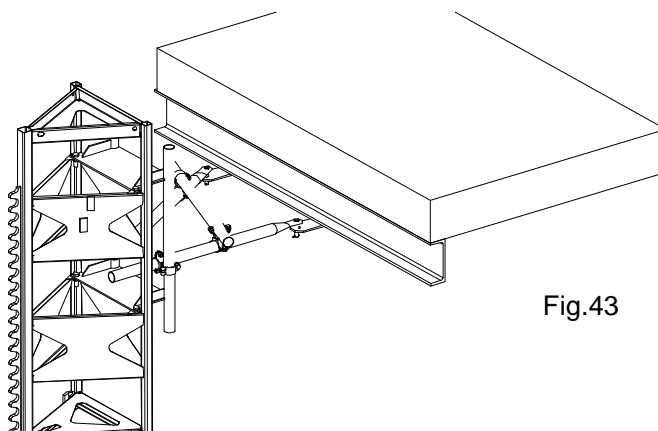


Fig.43

Anchor for Structural "C" channel

## Epoxy anchor

Caution: Before proceeding to the installation, be sure to have all the required authorizations.

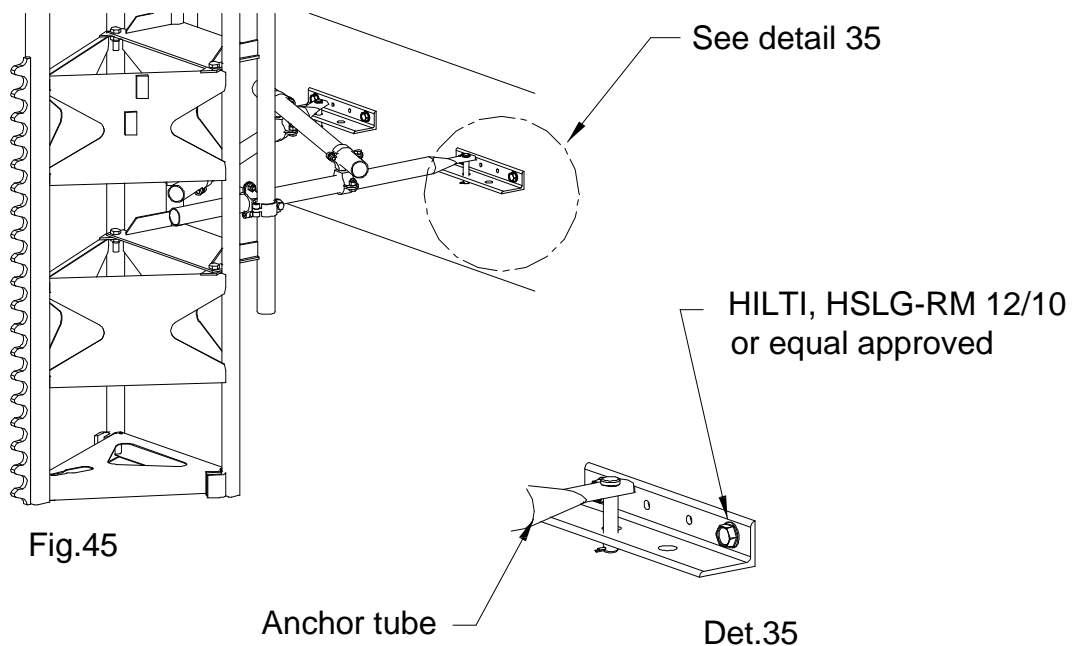
### Installation on concrete wall/slab:

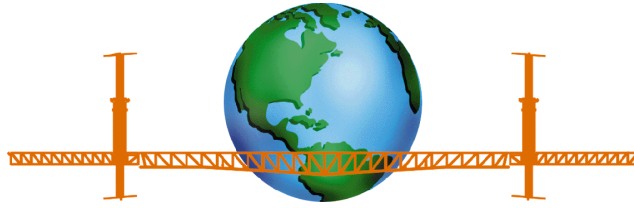
- 1- Determine the place to drill the holes for the turnbuckles using page II-12.
- 2- Drill the holes at the required places and clean out any debris that may still be in the hole.
- 3- Inject the epoxy into the hole using an epoxy screen.
- 4- Position the treaded rod and bolt the anchor plate temporarily, while the mixture hardens.
- 5- Once the epoxy has hardened, tighten the bolts.
- 6- Install the wall tie and the central tube.
- 7- Adjust the verticality of the tower using the turnbuckles.
- 8- Install the concrete anchor for the central tube pin.
- 9- Ensure that all the pins are in place and that they are secured with cotter pins.
- 10- Secure the anchor by putting tension on the turnbuckles and putting the central tube in compression.

### Installation on a concrete wall/slab with brick:

- 1- Determine the place to drill the holes for the turnbuckles using page II-12.
- 2- Drill the holes at the required places and clean out any debris that may still be in the hole.
- 3- Inject the epoxy into the hole using an epoxy screen.
- 4- Ensure that the mixture has hardened in the concrete and not in the brick wall.
- 5- Position the treaded rod and bolt the anchor plate temporarily, while the mixture hardens.
- 6- Once the epoxy has hardened, tighten the bolts.
- 7- Install the wall tie and the central
- 8- Determine the place to install the anchors for the turnbuckles using page II-12
- 9- Adjust the verticality of the tower using the turnbuckles.
- 10- Install the concrete anchor for the central tube pin.
- 11- Ensure that all the pins are in place and that they are secured with cotter pins.
- 12- Secure the anchor by putting tension on the turnbuckles and putting the central tube in compression.

The concrete must have a minimum capacity of 35 MPa





## Part III

### Options / Miscellaneous

#### In This Section:

- Configuration options.....III-1



## Configuration options

Dimensions of the platform:  
4.5m x 1.7m(176po x 68po)

Use the platform in transportation  
“configuration”. (See Fig.5 page II-3)

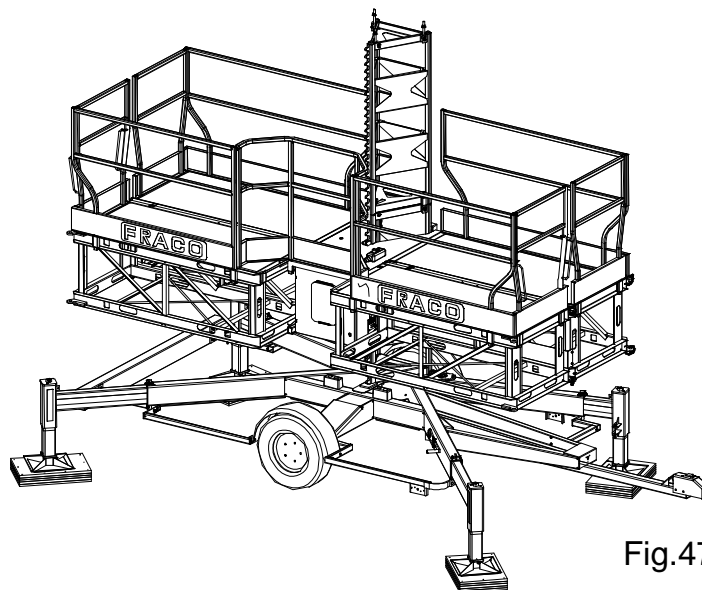


Fig.47

### **IMPORTANT:**

Always balance out the platform. Do not extend the platform sections on one side only.

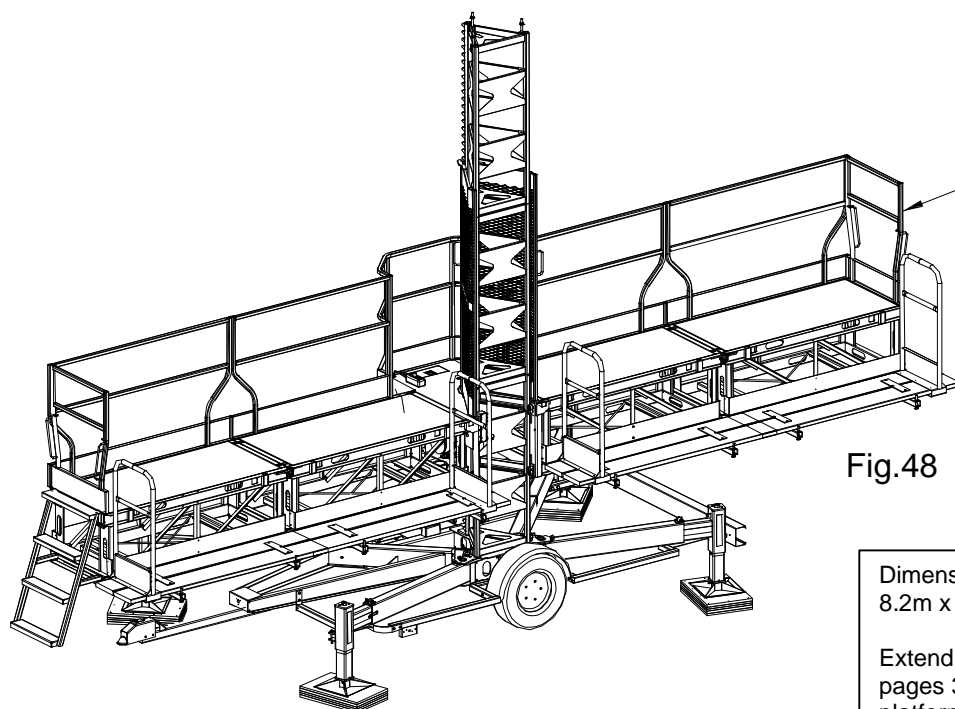
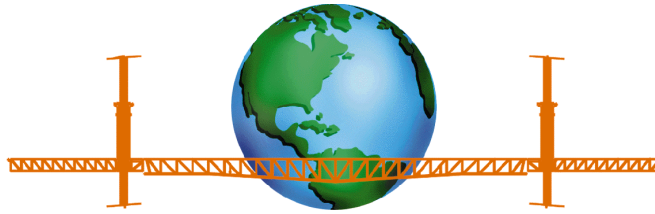


Fig.48

Dimensions of the platform:  
8.2m x 0.9m (324po x 34po)

Extend the platform sections as illustrated on  
pages 3-4-5-6 for complete use of the  
platform.



## Part IV

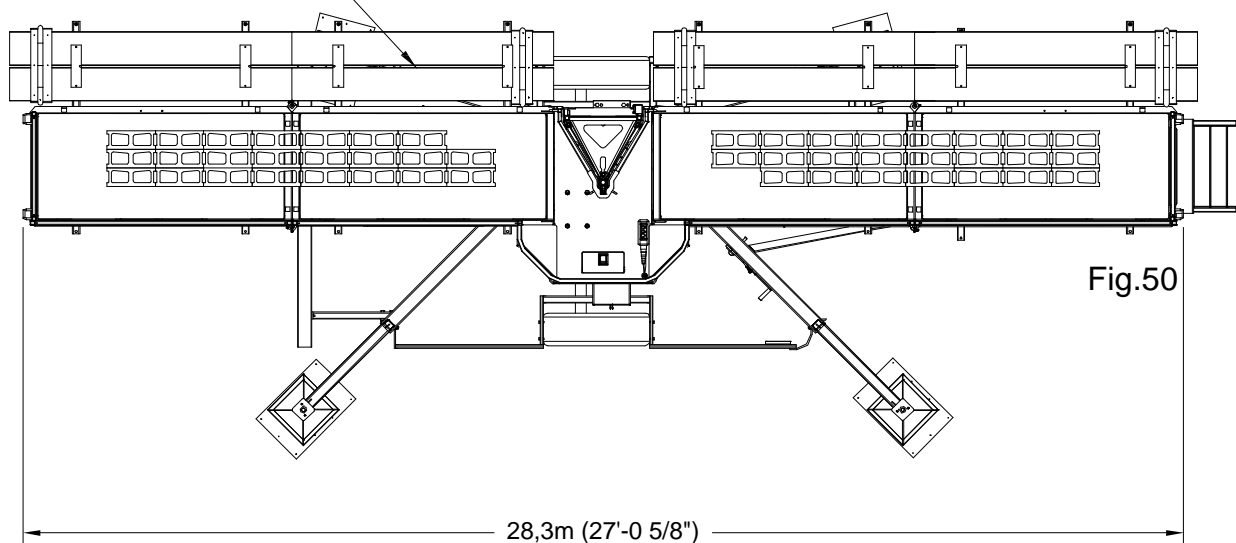
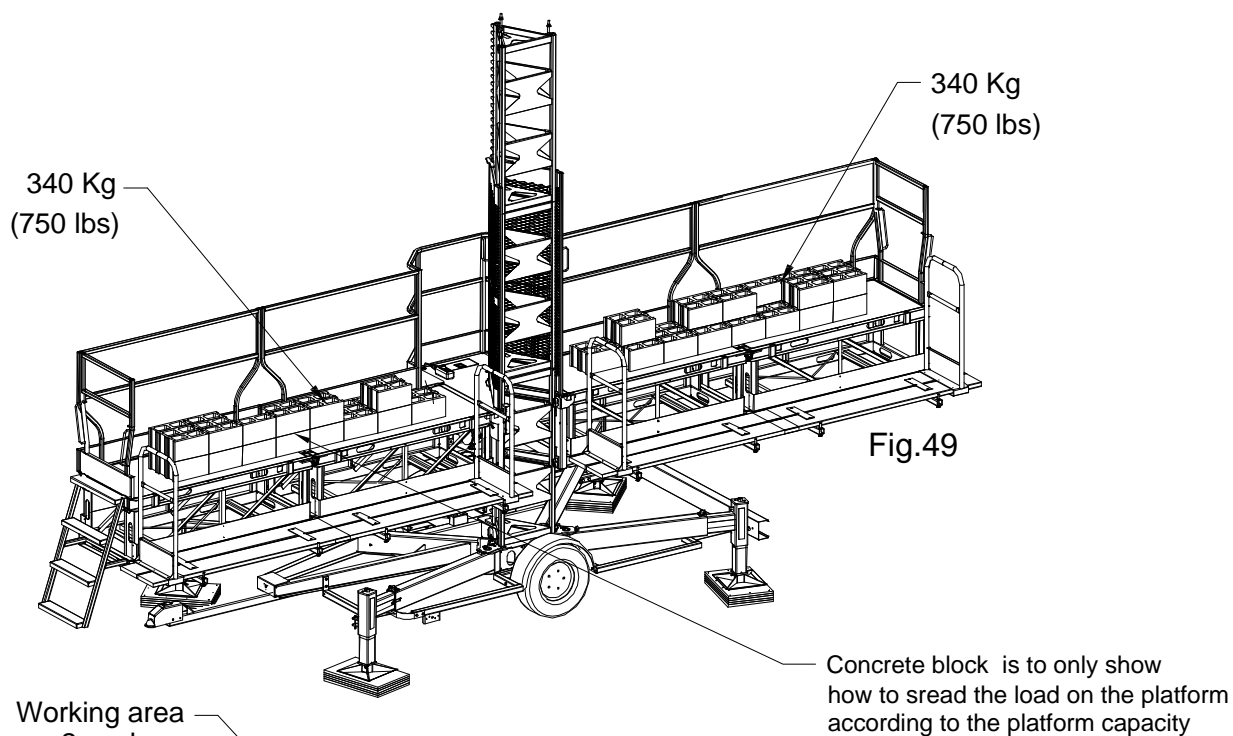
### Operating the platform

#### In This Section:

• Load distribution 8.3 m (27'-2").....	IV-1
• Load distribution, closed platform.....	IV-2
• How to raise/lower the platform.....	IV-3
• Emergency procedure.....	IV-4
• Procedure for mast, platform and anchor dismantling.....	IV-5
• Maintenance.....	IV-8
• Drop test.....	IV-9
• How to load the platform.....	IV-10
• Moving on site / platform transportation.....	IV-11

## Load Distribution

### 8.3m (27'-2") Configuration



**Nominal load: 680 kg (1,500 lbs) including 2 workers.**

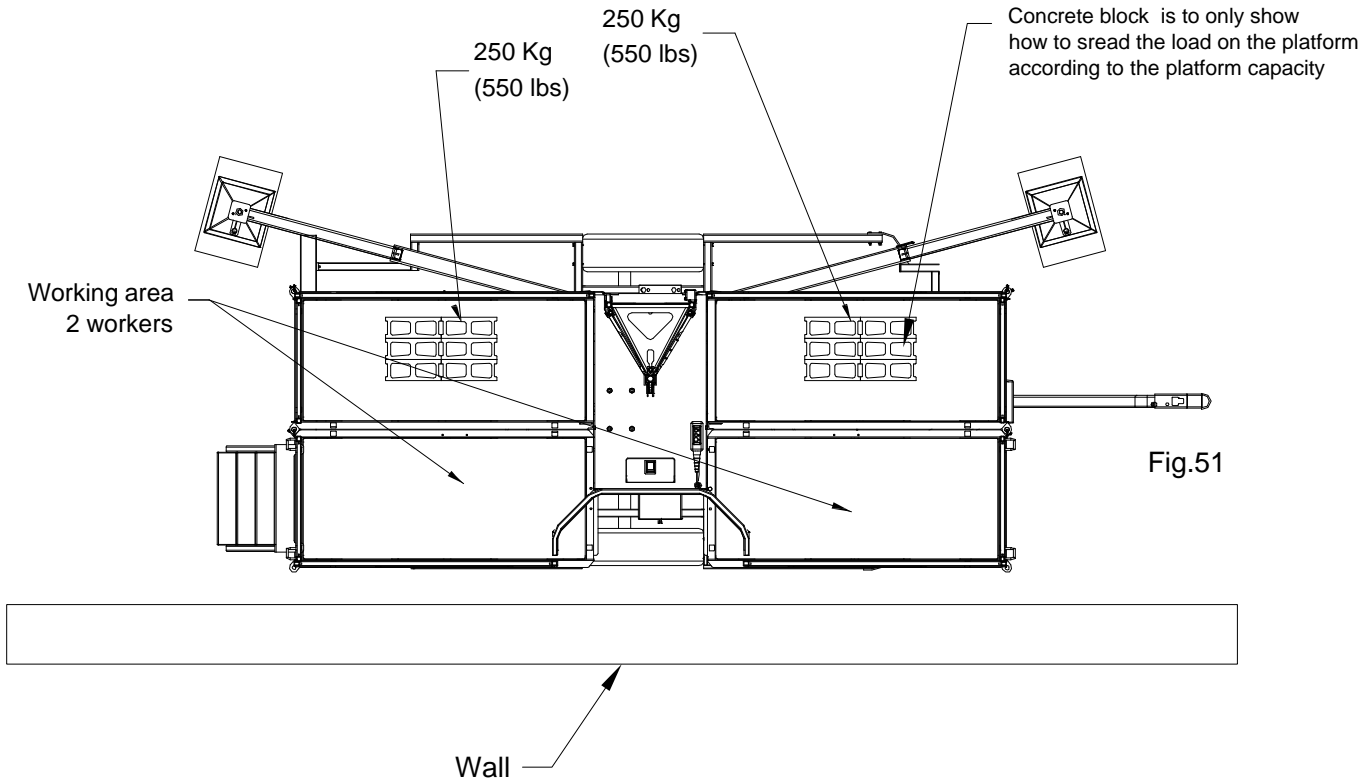
- Keep the loads as close as possible to the elevating units.

### IMPORTANT

**Never place any loads in the working or circulation zones.**

## **Load Distribution**

### **Single Mast Configuration, closed platform**



**Nominal load: 500 kg (1,100 lbs) including 2 workers.**

- The load must be distributed uniformly on the platform.

#### **Important**

1-Fold the platform sections and secure them to the elevating unit.  
(Section II, page 3)

2-Close the rear outriggers to liberate the space between the wall and the platform.

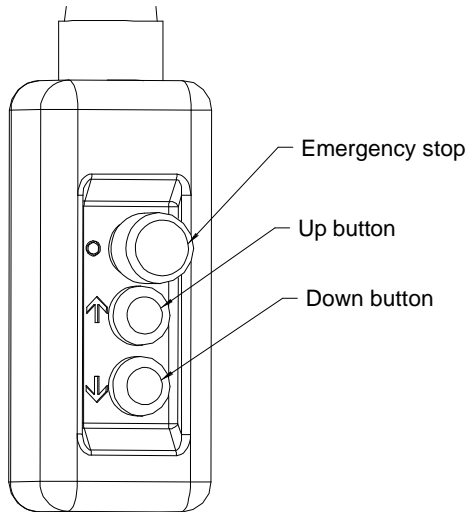
3-Open the front outriggers to their maximum and secure.  
(Section II, page 1)

**The load must be placed on the platform sections that do not pivot, and must be distributed along the length of the platform section.**

# How to raise / lower the platform

## Precautions to take before using the platform

- 1-Verify that the platform trajectory is free of any obstacles.
- 2-Never use the platform when winds exceed 45 km/h (28 mph).
- 3-Warn personnel when the platform will travel along the mast.



- 1-After road transportation, activate the bypass system in the control panel.
- 2-Raise the platform at least 152mm (6") to liberate the limit switch.
- 3-Desactivate the bypass then turn the circuit key to "ON". Then press the appropriate button to raise or lower the platform as desired.
- 4-Release the button when the desired height is reached.

### **Important :**

After using the emergency stop button, you must rearm the system by using the contact circuit found in the control panel.  
(Fig.52)

Fig.53

### Starting Procedure:

- 1-Place the selector button to 220V
- 2-Place the circuit key to "ON"

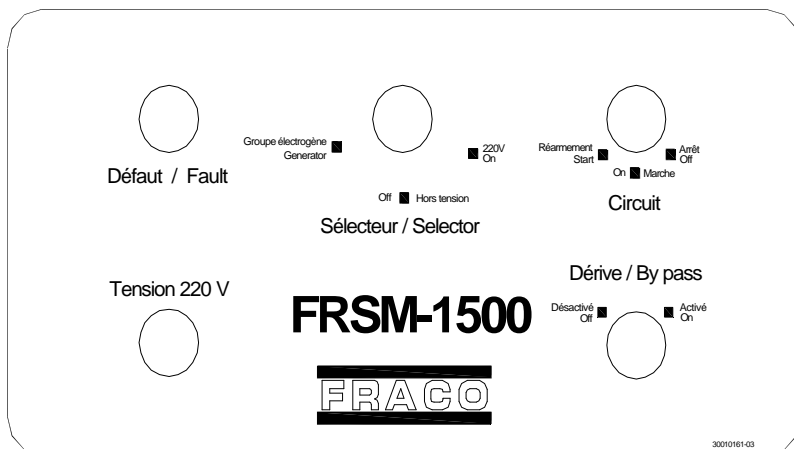


Fig.52

The buttons are of "2 phase" type  
A light pressure will use the unit's "first" speed.  
Press completely, and the unit's « second » speed will engage.

# Emergency Procedures

## **WARNING:**

### **In case of involuntary stopping of the platform**

1-Verify if the "Tension 220V" light signal is lit.  
If so, go to #2. If not, verify the platform power supply or use the self descent device in the control panel. Apply gentle pressure to control your descent to the nearest exit. (For use with the generator, see #5).

2-If the light signal is on, start the system with the circuit key in the "Start" position.

3-Verify if the "Fault" light signal stays on, lower the platform to the ground by activating the by pass key.

4-If none of these procedure work, use the manual descent.

5- Contact your FRACO representative for verification of your platform.

## Generator

- 1-Turn the selector key to "generator"
- 2-Turn the circuit key to on
- 3-Use the raise or lower button, as desired.

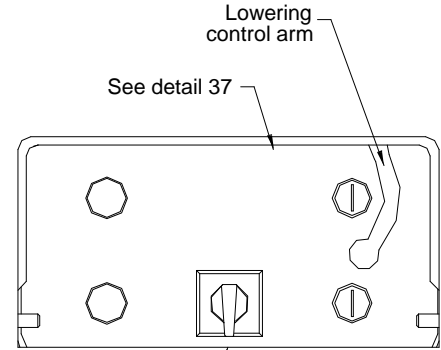
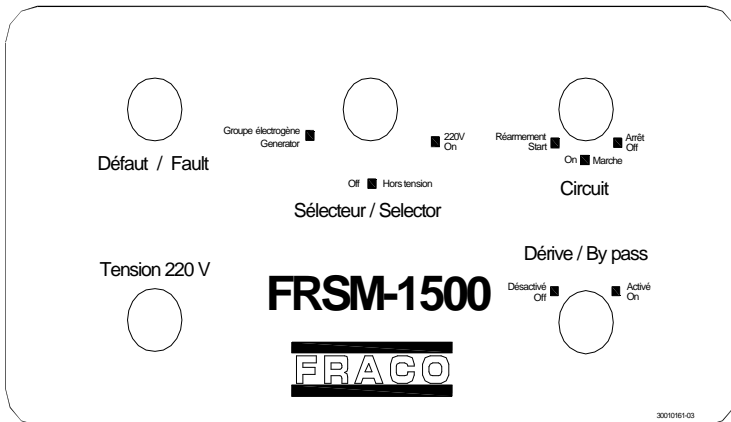


Fig.56



## Manual descent:

- 1-Place the selector key to the "Off" position.
- 2-Activate the lever located in the control panel in intermittent fashion to reach the desired level.
- 3-The platform must be inspected by a Fraco technician before it is used again.

Note : For each emergency stop, proceed to starting the platform as described above in "Involuntary stop" #1.

**Be careful not to engage the emergency brake during your descent. If this occurs, you must contact a Fraco technician to reset the circuit.**

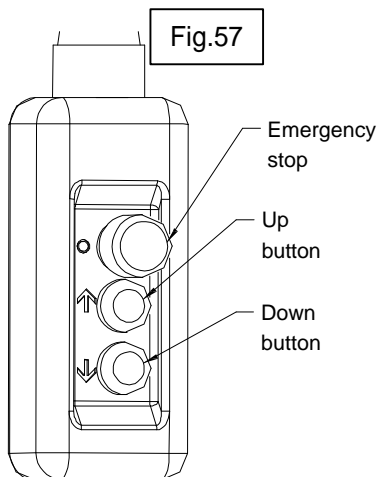


Fig.54

## Generator access door

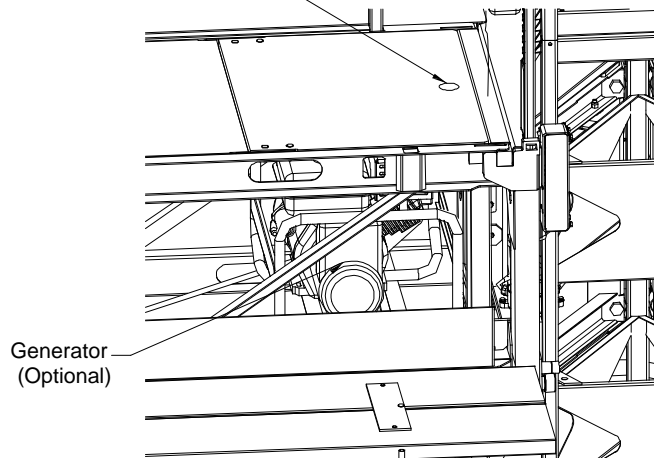


Fig.55

# Procedure for mast, platform and anchor dismantling

## Warning:

***Do not dismantle the mast in sections of more than 6.1 m (20 ft) when using a forklift, crane or boom truck.  
When dismantling manually, do not dismantle in sections of more than 1.5 m (5 ft)***

## **Notes:**

Unload the platform of all material that is not required for the dismantling of the mast and anchors.

When dismantling, the maximum load supported by the platform (men, tools and mast sections) must be 454 kg (1,000 lbs).

Start dismantling the highest anchor, followed by each subsequent anchor as the platform is lowered.

If the mast sections exceed the last anchor, start by removing the mast sections that exceed the last anchor.

Otherwise, start by removing the anchor before dismantling the masts.

## **Steps to follow when dismantling the anchors:**

- 1) Remove the transversal tube between the anchor tubes.
- 2) Remove the articulated collars of the transversal tube that connect to the anchor tubes.
- 3) Continue to release the tension on the anchor tubes until the pins can be easily removed.
- 4) Do not hit the cotter pins to remove them.
- 5) Remove the anchor tubes.
- 6) Remove the wall plates from the lateral arms and repair the wall if necessary.

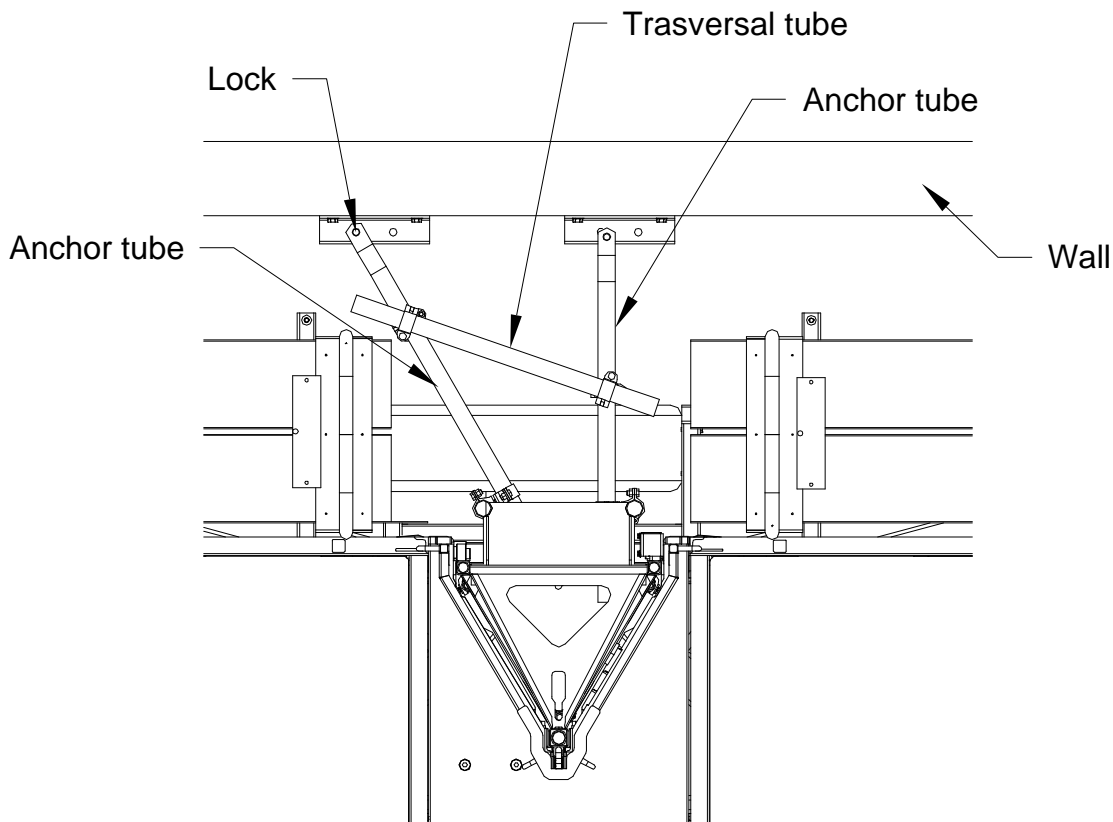


Fig.58

# **Procedure for mast, platform and anchor dismantling**

## **Steps to follow to remove the mast sections:**

### Manually:

- 1- Bring the platform just under the joint of the mast section you wish to dismantle.
- 2- Do not remove more than 1.5 m (5 ft) at a time.
- 3- Loosen the three (3) tower bolts.  
Remove the mast section and place it on the platform. Ensure that the load is evenly distributed on the platform.
- 4- Repeat steps 1 to 4 to the following anchor.

### *With a crane (or forklift or boom truck):*

- 1) Strap the top of the mast to the crane, forklift or boom truck and apply a light tension to the strap.
- 2) Remove the required anchor(s) for the length of mast to be removed by starting with the highest anchor.
- 3) Bring the platform just under the joint of the mast section you wish to dismantle.
- 4) Do not remove more than 6.1 m (20 ft) at a time.
- 5) Loosen the three (3) tower bolts.
- 6) Remove the mast section using the crane.
- 7) Repeat steps 1 to 6 as many times as required.



# Procedure for mast, platform and anchor dismantling

To remove the anchor closest to the ground, on ground base:

- 1) Strap the top of the mast section to a crane, forklift or boom truck and apply a light tension on the strap.
- 2) Remove the last anchor.
- 3) Lower the platform to the ground.
- 4) Remove and replace all the guardrails, fold the platform closed (page II-3) remove the plank ties, the planks and the outriggers.
- 5) Loosen the three (3) tower bolts.
- 6) Remove the mast section using the crane (forklift or boom truck).

**IMPORTANT:**

*These instructions are for the dismantling of a regular FRSM-1500 using a crane, forklift or boom truck. If you have any questions or doubts as to the sequence of steps or in the procedure, contact your FRACO representative.*

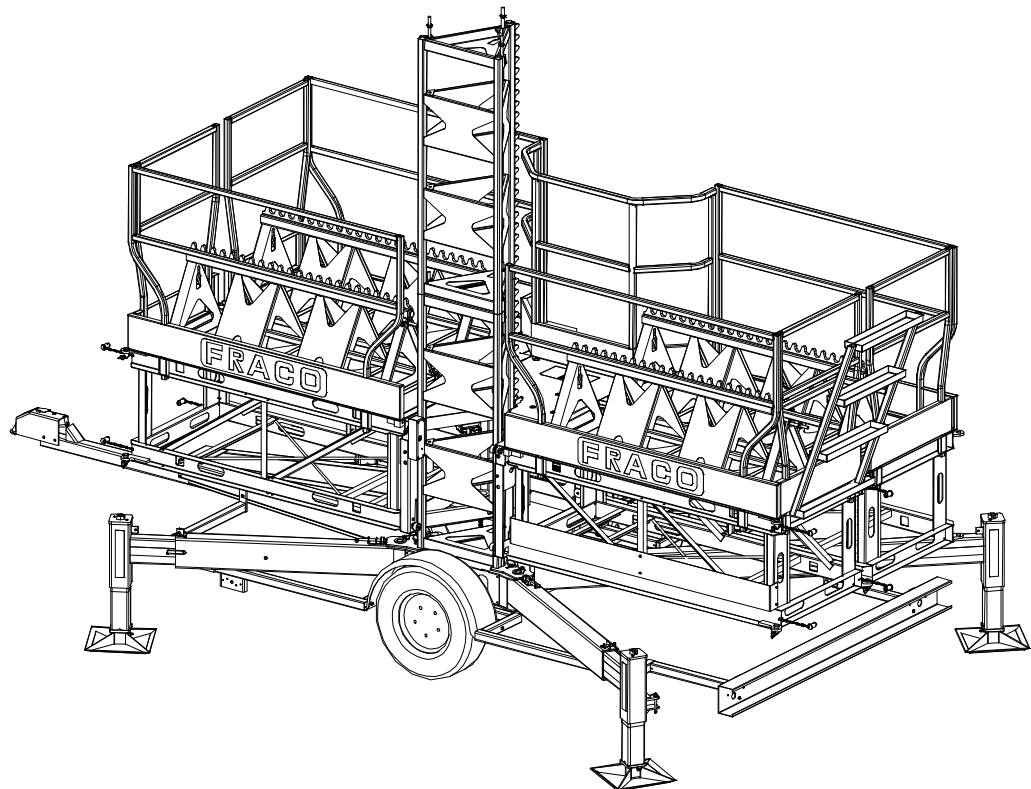
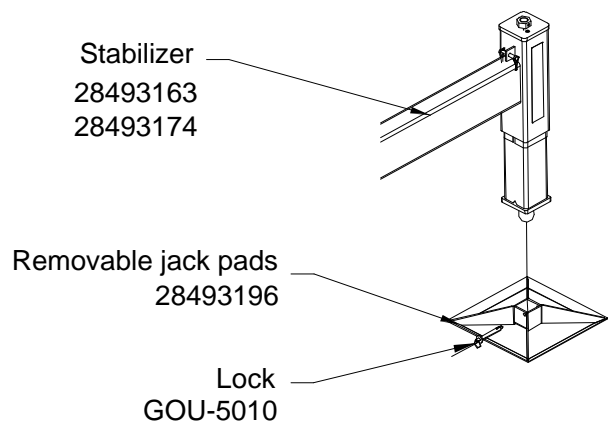


Fig.58



# **Maintenance**

## **IMPORTANT NOTE**

The frequency and the extent of the inspections and periodic tests depend on national rules and regulations, constructors specifications the operating conditions and the frequency of use. Normally, it is not necessary to dismantle parts during routine examinations, unless there is a doubt as to the reliability or the safety. Lifting the hood, inspection doors and the fact of putting the platform into transportation configuration are not considered as a dismantling.

### **Daily** **Daily Inspection Sheet**

- ✓ During verifications, stop the unit and remove the key from the “selector” switch.
- ✓ Lock the the electrical box to limit the access to authorized personnel only;
- ✓ Verify the verticality of the mast with a 1 m (3 ft) level (in both directions);
- ✓ Clean any concrete, mortar or other deposits that could impede the proper functioning of the platform.

### **Weekly**

- ✓ Verify the state of the different bearings.
- ✓ Verify that there is no distortion of the metal components in parts such as the platform sections, mast sections, the base, etc. A distortion may occur following improper equipment handling.

### **Half-Yearly**

- ✓ Verify the proper functioning of the brakes by performing a drop test (see page IV-9)

### **Monthly / Annually** **Preventive Maintenance Sheets**

- ✓ Repaint parts or touch up areas susceptible to rust.
- ✓ If parts must be replaced, use only genuine Fraco parts.

-In case of doubt or anomalies, contact your FRACO representative.

# Drop Test

## Procedures:

- 1-Place the main switch to the "STOP" position.
- 2-Open the electric panel and replace the key (Det. A) so that the section with the blue wires is connected.
- 3-Close the electric panel.
- 4-Place the main switch to the "ON" position. An alarm will sound indicating that the platform is in "TEST" mode.
- 5-Load the platform with the required nominal load.
- 6-Ensure that there is no one on the platform and that there are no obstacles in the platform trajectory.
- 7-With the lever, raise the platform to a height of about 3 m (10 ft).
- 8-Press on the descent button. The unit will free fall until the centrifugal brake is activated on its own.
- 9-If the centrifugal brake does not activate, or if there is an improper functioning, release the descent button immediately. The platform will stop.
- 10-If the test is conclusive and the centrifugal brake engaged, turn the key to OPERATION mode (red and black wire) and restart the platform.
- 11-However, in case of improper functioning, contact your FRACO representative.
- 12-The centrifugal brake must engage when the platform has fallen between 1 m and 2.5 m (3'-4" and 8'-2").

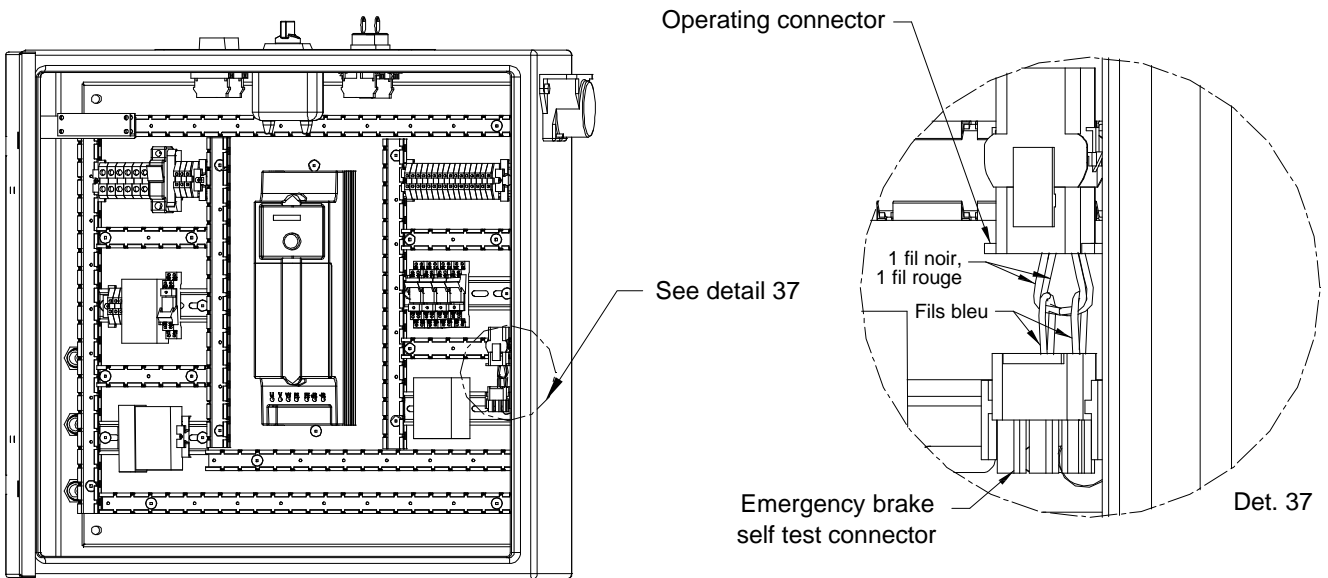


Fig.60

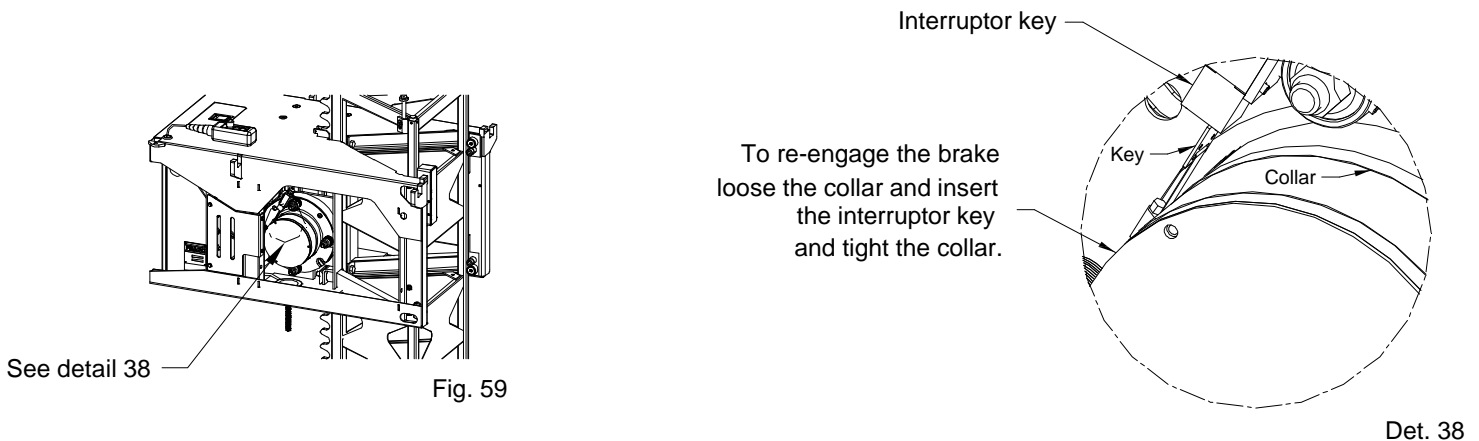


Fig. 59

Det. 38

## How to load the platform

### For road transportation

- 1-Position all the guardrails as illustrated on pages II-5 & II-6.
- 2-Lift the jacks and close the trailer outriggers and lock them in place.
- 3-Remove the planks, outriggers and place them on the platform sections along with the mast sections. Fold the platform sections and secure in place as illustrated on page II-3.
- 4-Remove the wooden jack pads. (fig.38)

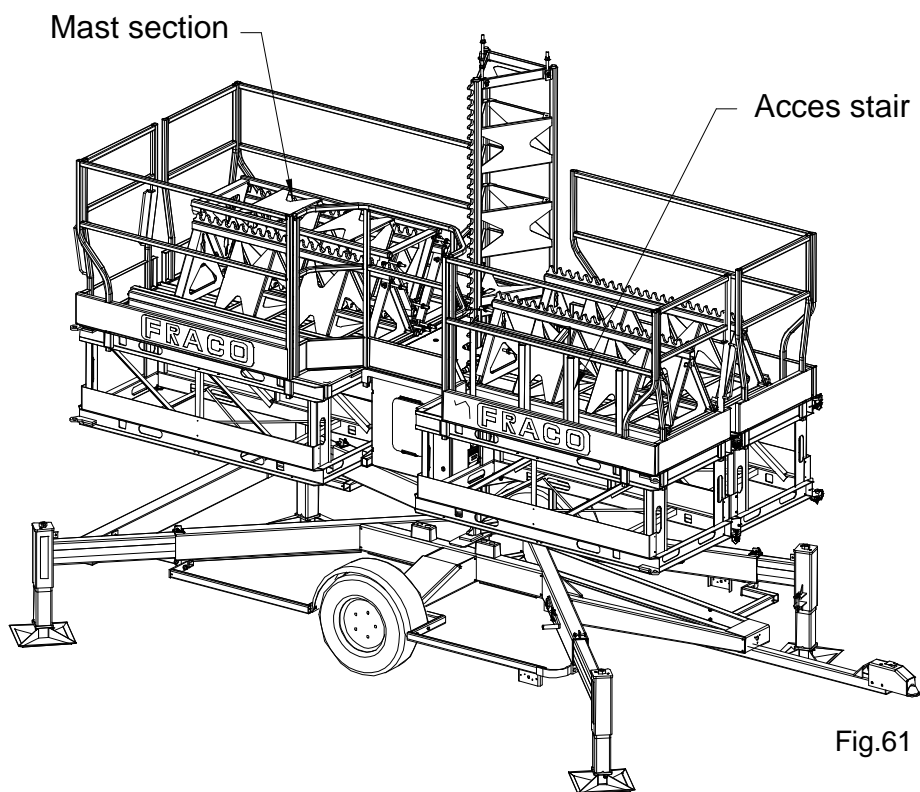
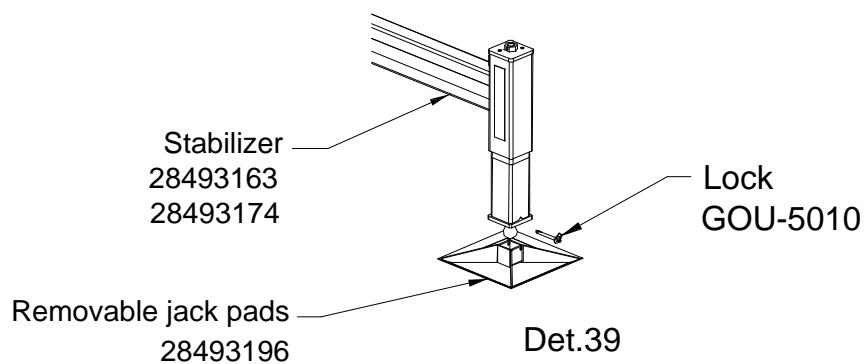


Fig.61



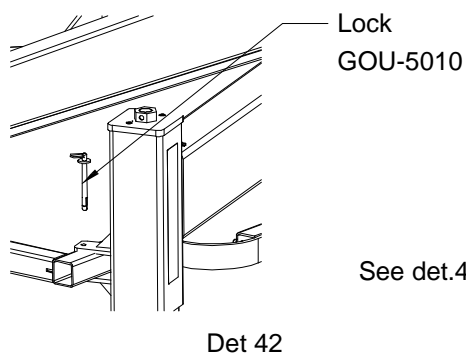
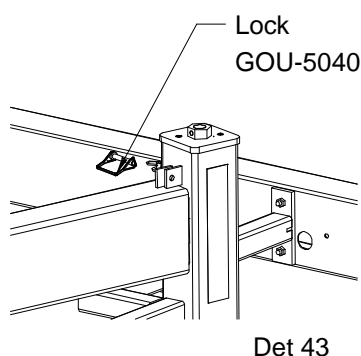
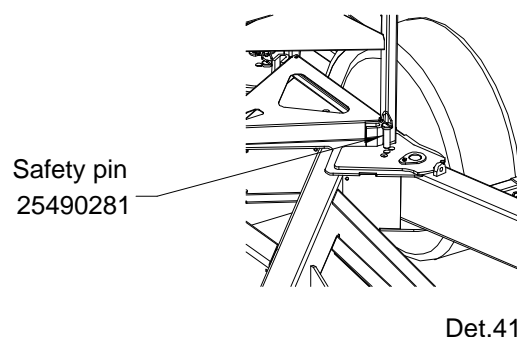
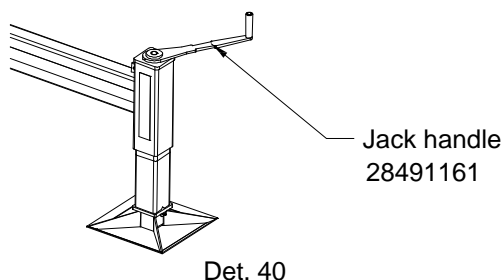
## Moving on site / platform transportation

When moving the unit on trailer on site, apply the following rules:

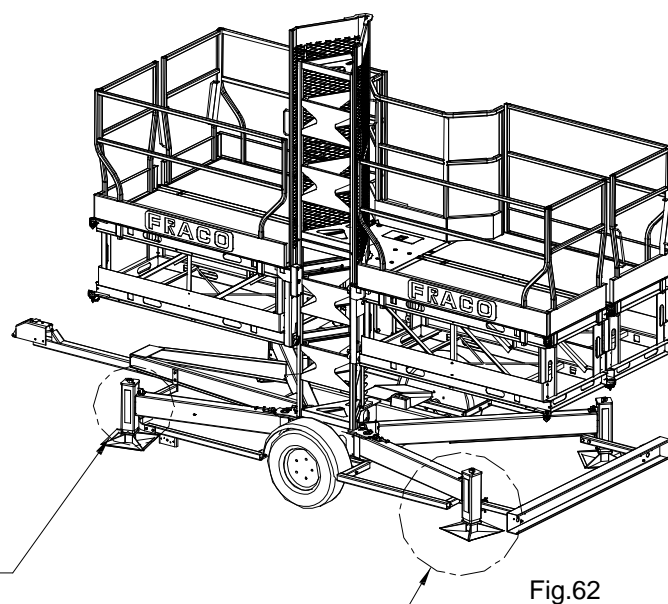
- 1- Ensure that the ground is level and that it can support the weight of the platform in the direction it will be moved.
- 2- Ensure that nothing will impede the moving of the platform (electric wires, balconies,...)
- 3- Lift and close the trailer jacks. (Det.40 & 43)
- 4- Slowly move the whole platform to the desired location.
- 5- Position the trailer and level the platform. (page II-2)

### Transportation:

- 1-Repeat steps 1 to 3 from the moving section above.
- 2-Fold in the platform sections.
- 3-Lower the platform using the manual arm located in the control panel, until it rest on the rubber bumpers.
- 4-Tie all the movable parts to prevent movement or loss during transportation.



See det.40-41



See det. 42-43