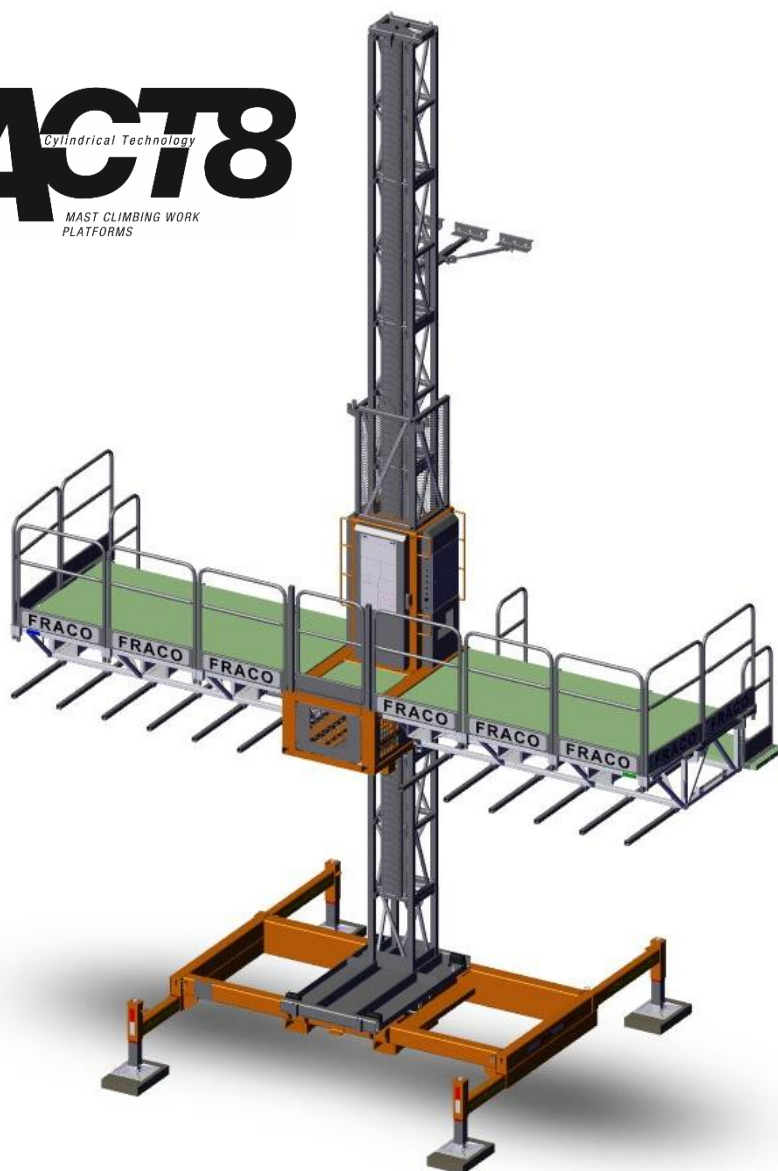


FRACO

User Manual

ACT8
Cylindrical Technology
MAST CLIMBING WORK
PLATFORMS



Summary

Chapter A - General Information and Operation.....	5
Revision table	5
Documentation and applied standards.....	5
Warranties	6
FRACO warranty program	6
FRACO-Retailer warranty program	6
Warnings	7
General view - Single mast.....	8
General view - Two-mast	9
Regulatory attachment points	10
General dimensions	11
Dimensions with ground base	11
Dimensions with freestanding base (universal, ACT-8)	12
Minimum distances and clearances.....	12
Display plates and stickers	15
Identification and serial number plate	15
Stickers.....	16
Documentation compartment	17
General Technical Specifications.....	18
Permitted configurations and load distribution.....	19
Configuration - Single mast.....	20
Configuration example (single-mast)	21
Configuration - Double mast	23
Configuration example (Double mast)	24
Operation, use of the lifting unit.....	25
Using the lifting unit (diesel-gas model)	26
Control panel (diesel - gas)	27
Using the Lifting unit (electric).....	28
Control panel (electric).....	29
Using the inclinometer (if applicable*)	30
Emergency descent procedure	31
Emergency descent procedure (older generation)	32
Chapter B – Lifting Unit and Base	35
Ground load and Load distribution	35
Ground load and maximum height.....	35
Ground load - Ground base (14030019).....	35
Ground Load - Universal freestanding base (14030109)	36
Ground Load - ACT-8 freestanding base (14030020) Former generation	37
Chapter C – Installation and Dismantling	38
Installation.....	38
Locating the installation site and taking measurements.....	38
Security perimeter	38
Taking measurements and identifying the location of the lifting unit.....	38
Electrical connection required (Electric model only)	39
Electrical connection required (Electric model only)	40
Handling and lifting operation	41
Lifting points	41
Lifting, use of the mast end section	42
Use of lifting slings	42
Installing the base unit and lifting unit	44

Installation with ground base (14030019)	44
Installation with universal freestanding base (14030109)	45
Installation with ATC-8 freestanding base (14030020)	47
Installation of stairs on the ground base (3 steps)	48
Installation of stairs on the ground base (5 steps)	49
Installation of stairs on the freestanding base (5 steps)	50
Installation of stairs on the freestanding base (7 steps)	51
Extension section.....	52
MODULAR extension section	52
NON-MODULAR extension section	53
Installation of an extension section	54
Installation of an extension section joints (20490566)	57
Installation of extension turnbuckles	57
Bridge section.....	58
MODULAR bridge section.....	58
NON-MODULAR bridge section	60
Installation of bridge sections.....	61
Installation of bridge joint with bottle (20490577)	62
Installation of individual 15'-0" or 20'-0" bridge section between two units	63
Installation of individual 15'-0" or 20'-0" bridge section on intermediate units and/or extensions.....	64
Installation of 30'-0" to 60'-0" bridge assembly between two units and/or intermediate extensions	65
Installation of an extension bridge section	66
Bolting of mast sections and mast end section	67
Mast anchor	68
Mast anchor specifications.....	68
Mast anchor opening constraints.....	70
Installation of the mast anchor device (typical).....	77
Lifting unit operation specifications	78
Installation/dismantling of mast sections	79
Installation of mast sections and anchor devices / ACT-8 platform with ground base.....	80
Installation of mast sections and anchor devices / ACT-8 platform with freestanding base (Universal and ACT-8).....	83
Installation of the self-erecting system (optional)	86
Mast leveling with anchor devices	87
Installation of the protection screen	88
Disassembly of masts and anchors with ground base	89
Disassembly of anchors with freestanding base (universal, ACT-8)	91
Chapter D - Accessories.....	93
Bridge and extension accessories	93
Installation of railing and guardrail pocket holders	93
Installation of the outriggers.....	93
Configuration of the outriggers.....	94
Detail of plankings and end of beam railing.....	98
Installation of outrigger supports for inside corner return (optional).....	99
Installation of end of outrigger guardrail	100
Installation of mast anchor devices access guardrails	101
Installation anti-pivot device, small wheel (optional).....	102
Installation anti-pivot device, large wheel (optional)	103
Installation of the descent stop	104
Installation of the inclinometer	105
Reinforced corner return support system with counterweight	106
Indoor work system	111

Rigid roof system	112
Winter shelter system	118
Monorail on platform.....	122
Mast head monorail.....	126
Crane FRH-2500.....	133
Installation	133
Operation.....	134
Loading areas	135
Periodic maintenance.....	136
Crane FRH-4000.....	137
Installation	137
Operation.....	138
Loading areas	139
Integrated self-erecting system.....	140
Periodic maintenance.....	141
Freestanding mobile base.....	142
Assembly	142
Mobile base use	147
Index.....	149
Technical data sheets	149
Lifting unit technical data sheet.....	149
Technical data sheet of the ground base.....	150
Technical data sheet of the universal freestanding base	151
Technical data sheet of the ACT-8 freestanding base	152
Mast sections technical data sheet.....	153
Distance between the masts	154
Extensions and bridges (non-modular)	155
Extensions and bridges (modular)	156
Periodic maintenance	157
Daily	157
Weekly.....	157
Monthly	157
Other (lubrication points).....	158
Daily inspection grid	162
Spare parts.....	163
Assistance	164
CE Declaration	166
.....	166
List of Figures.....	167

Chapter A - General Information and Operation

Revision table

Revision N°	Description	Date (yyyy-mm-dd)
13	General revision	2017-01-10
14	General revision	2017-11-10

Documentation and applied standards

Brand: FRACO

Model: ACT-8

Serial number: _____

- Machine Directive 2006/42/EC
- ANSI/SIA A92.9-2011 : Mast-Climbing Work Platforms
- CSA B354.5 : Mast-Climbing Work Platforms

Produced by:

Les Produits FRACO Ltée

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Saint-Mathias-sur-Richelieu

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(450) 658-0094 / www.fraco.com

NOTE: The term « FRACO » in this document refers to the company « Les Produits FRACO Ltée » and its subsidiaries. All drawings and illustrations in this document are for information purposes only. The actual product may differ. Specifications and technical data are subject to change without notice. Be sure to always have the latest version of this document.

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Warranties

FRACO warranty program

The warranty period:

A) The warranty period begins on the initial date of retail purchase by an authorized FRACO dealer. Les Produits FRACO Ltée warrants that the products distributed by Les Produits FRACO Ltée, which have defaults in normal usage condition, when installed and handled in accordance with the instructions provided to the consumer, will be repaired free of charge for parts and labor costs. Parts supplied under this warranty may be new or refurbished as selected by FRACO Ltée.

B) The warranty period for retail customers leasing the products begins on the date the product is first commissioned: a) during the leasing period; b) at the date of the retail sale; as defined in **A)**.

The product:

FRACO Unit (new)-----One year, parts and labor

FRACO Unit (used)-----3 months, parts and labor

Note: The warranty on used units is only applicable to used products sold directly by FRACO.

Said product warranty shall be applicable during its entire duration, whether the products are owned by the original owner or by a subsequent owner.

Parts: Les Produits FRACO Ltée must be notified in writing of any parts breakage within the warranty period. For parts to be replaced or repaired and for service requests, said broken parts or unit shall be delivered, at the owner's expenses, to an authorized FRACO dealer. Each part replaced within the warranty period is covered by a new 3-month warranty period for parts and labor.

What is not covered:

This warranty does not apply if the FRACO security seal is damaged, destroyed or missing.

This warranty does not cover changes not authorized in writing by Les Produits FRACO Ltée or parts that are not genuine FRACO parts.

This warranty does not apply if the serial numbers on the rack and identification plates are damaged, destroyed or missing.

To get service and parts:

FRACO Products Ltée has a number of retailers in Canada and the United States to assist you with repairs. To qualify for warranty coverage, you must complete a warranty claim form.

Date of commissioning: _____

Serial number: _____

FRACO-Retailer warranty program

Parts:

Retailers who honor warranties on behalf of: FRACO Products Ltée will be required to identify and retain all replaced parts for a period of one year from the date of the claim.

Labor:

The work performed by an authorized FRACO dealer will be reimbursed based on the hours and authorized rate by Les Produits FRACO Ltée.

Warnings

This manual is intended for anyone involved in the assembly, disassembly, use and/or maintenance of the platform.

Before installing, dismantling, operating or maintaining the platform, you must read and fully understand the instructions detailed in this manual. Failure to comply with these safety instructions may result in property damage, severe injury and even death. FRACO and/or its representative shall not under any circumstances be held responsible. Any local standards and regulations in force concerning safety and accident prevention, environmental protection and any other activities related to the assembly, dismantling, use and maintenance of this type of equipment are considered as a supplement to this manual and must be complied with. Example: the use of personal protective equipment (harness, helmet, boots, etc.).

Safety is our priority! For this reason, never remove or modify a part in order to adapt the platform to a particular condition. Contact FRACO for any assistance.

Only use genuine FRACO parts.

This manual is considered an integral part of the platform and is mandatory for communicating the necessary safety information to operators and users. A copy of this manual must always be included in the waterproof compartment provided for this purpose on the platform.

∞SEE DOCUMENTATION COMPARTMENT, ON PAGE 17.

Be sure to read and understand all the stickers, warnings and instructions displayed on the equipment, or to obtain an explanation from a qualified person.

Remember that:

- An **operator** must have successfully completed the **Level 1 (Safety and User)** training and hold a valid training card, be familiar with the contents of this manual and fully understand the applicable platform usage rules;
- An **installer** must have successfully completed the **Level 2A or 2B (Installation)** training and hold a valid training card, be familiar with the contents of this manual and fully understand the applicable platform usage rules;
- For security reasons, a **minimum of (2) two people** must be present at all times on each platform during assembly, disassembly, maintenance or use;
- Local regulations may require that the platform be permanently equipped with a fire extinguisher. Its position should be signaled on the platform in order to be readily located.

IN CASE OF FIRE: Stay calm and notify the people present on the platform. If available, use the fire extinguisher following the instructions provided. If the fire is out of control, evacuate the platform through the nearest access.


Local regulations may require adequate protection of the platform in the event of an electrical storm.

IMPORTANT: Refer to the section **OPERATION, USE OF THE LIFTING unit** for additional safety instructions concerning the use of the platform.

∞SEE, **OPERATION, USE OF THE LIFTING unit**, ON PAGE 25.

If, after consultation of this manual, you have any doubts about the assembly, dismantling, use or maintenance of the platform, contact FRACO.

In this manual, the following symbols and annotations are used:

Symbol	Description
 Danger	Major risks of personal and/or material damage to survival and safety
Warning	Risks of personal injury and/or material damage
Important!	Important points to monitor

RESIDUAL hazards:

Despite all the precautions taken, potential residual risks exist such as:

- Injuries resulting from uncoordinated tasks
- Malfunction of a control system
- Working with an electrical system
- Damage to transportation equipment
- Fall of badly secured objects
- Strong winds
- Entrance and exit
- Loud noises
- Dust
- Or any other work-related risk, etc.

General view - Single mast

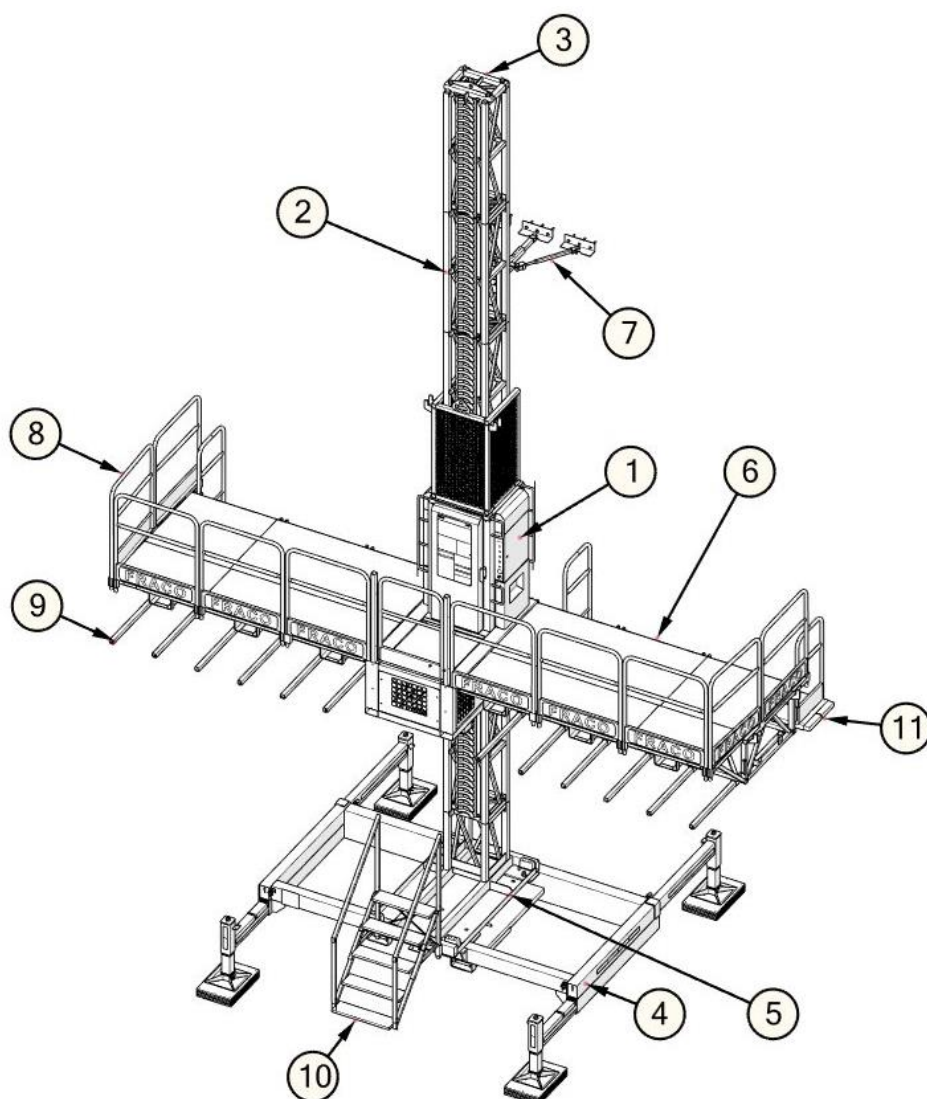


Figure 1 - ACT-8 single-mast with freestanding base

No.	Item	Description	No.	Item	Description
1	10030015	ACT-8 Elevating unit (Gas)	7	XXXXXXXXX	Mast anchor
2	13030018	Mast section 20" x 20" x 5'-0" with rail (ACT)	8	17490023	Guard-rail (3'-4" x 4'-2")
3	13030029	End mast section for 20" x 20" mast	9	190XXXXXX	Outriggers
4	14030109	Universal freestanding base	10	204XXXXXX	Stairs
5	14030019	Ground base for 20" x 20" mast (3'-6" x 6'-0")	11*	XXXXXXXXX	Planking
6	150XXXXXX	Extension section			

* The Planking is not supplied by FRACO.

General view - Two-mast

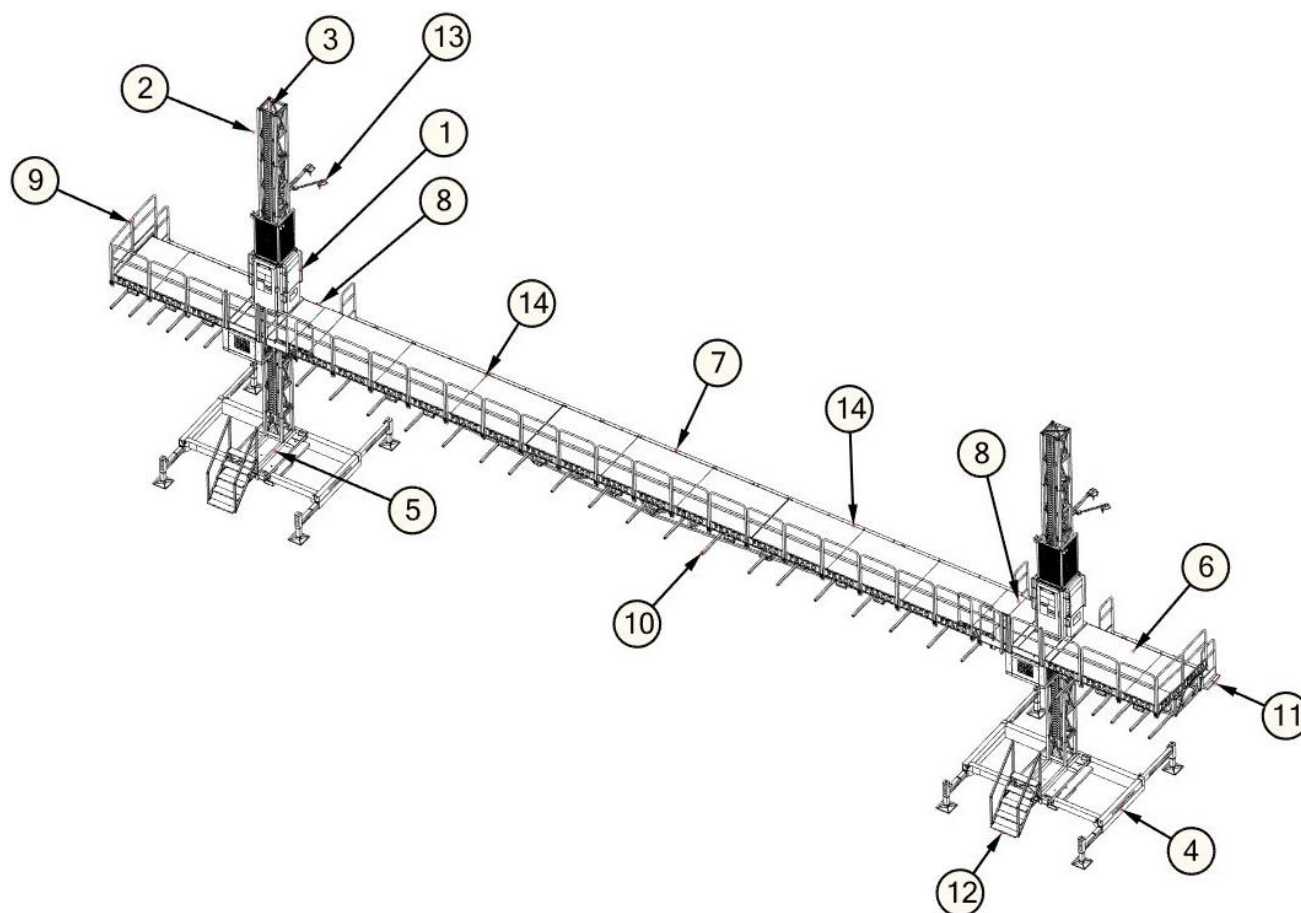


Figure 2 - ACT-8 two-mast with freestanding base

No.	Item	Description	No.	Item	Description
1	10030015	ACT-8 Elevating unit (Gas)	8	150XXXXX	Intermediate Extension section
2	13030018	Mast section 20" x 20" x 5'-0" with rail (ACT)	9	17490023	Guard-rail (3'-4" x 4'-2")
3	13030029	End mast section for 20" x 20" mast	10	190XXXXX	Outriggers
4	14030109	Universal freestanding base	11*	XXXXXXX	Planking
5	14030019	Ground base for 20" x 20" mast (3'-6" x 6'-0")	12	204XXXXX	Stairs
6	150XXXXX	Extension section	13	XXXXXXXX	Mast anchor
7	150XXXXX	Central bridge section	14	150XXXXX	Bridge section

* The planking is not supplied by FRACO.

Regulatory attachment points

Important! Wear your safety harness at all times when installing or dismantling mast sections, mast fasteners or when handling plankings in the work area.

Workers exposed to fall hazards must wear a safety harness certified in accordance with local standards. The fall arrest device must be able to withstand a load of 5 000 lb (2 270 kg) and may be equipped with a shock absorber. The attachment points presented in [Figure 3](#) of this document comply with the standards in force. We remind you, however, that improper use of the fall protection device may increase the risk of injury. Therefore, we recommend that you follow the proper training on the use of said fall protection systems before executing any works at heights.

Important!

- 1 worker per individual attachment point.
- Visually inspect the condition of an attachment point before attaching the harness.
- Never use an attachment point showing a deformation.

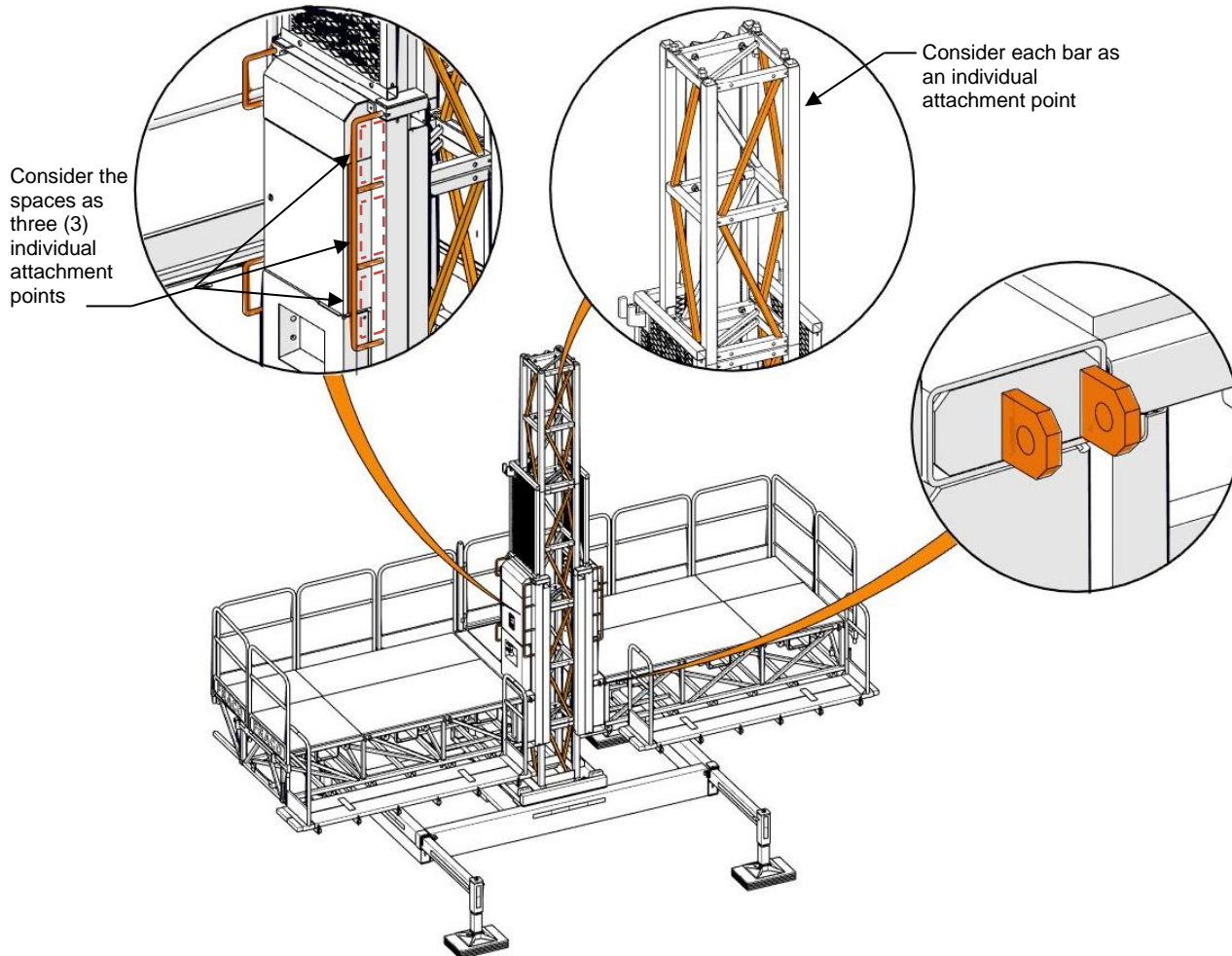


Figure 3 - Regulatory attachment points

General dimensions

Dimensions with ground base

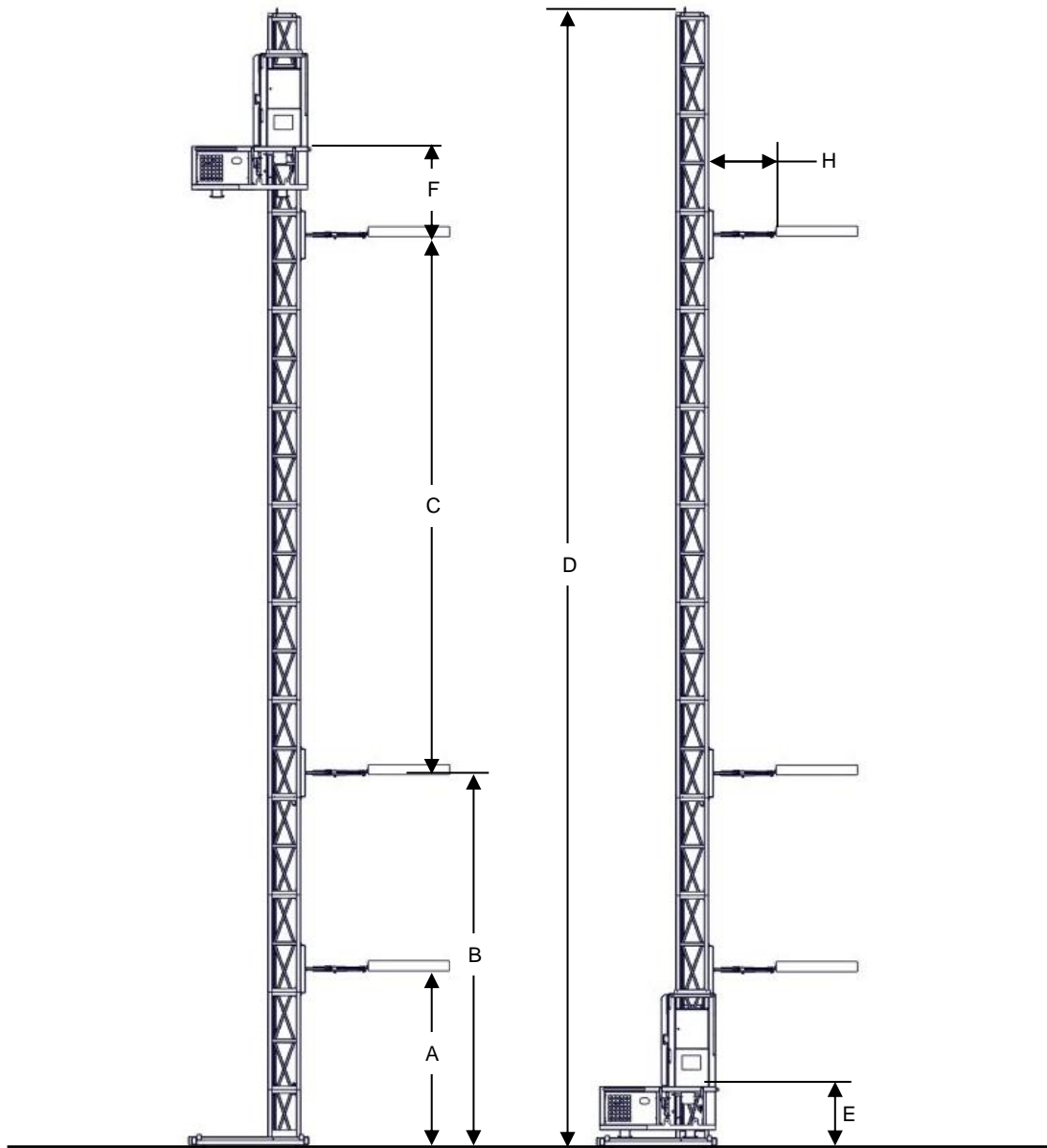


Figure 4 - Dimensions with ground base

Dimensions with freestanding base (universal, ACT-8)

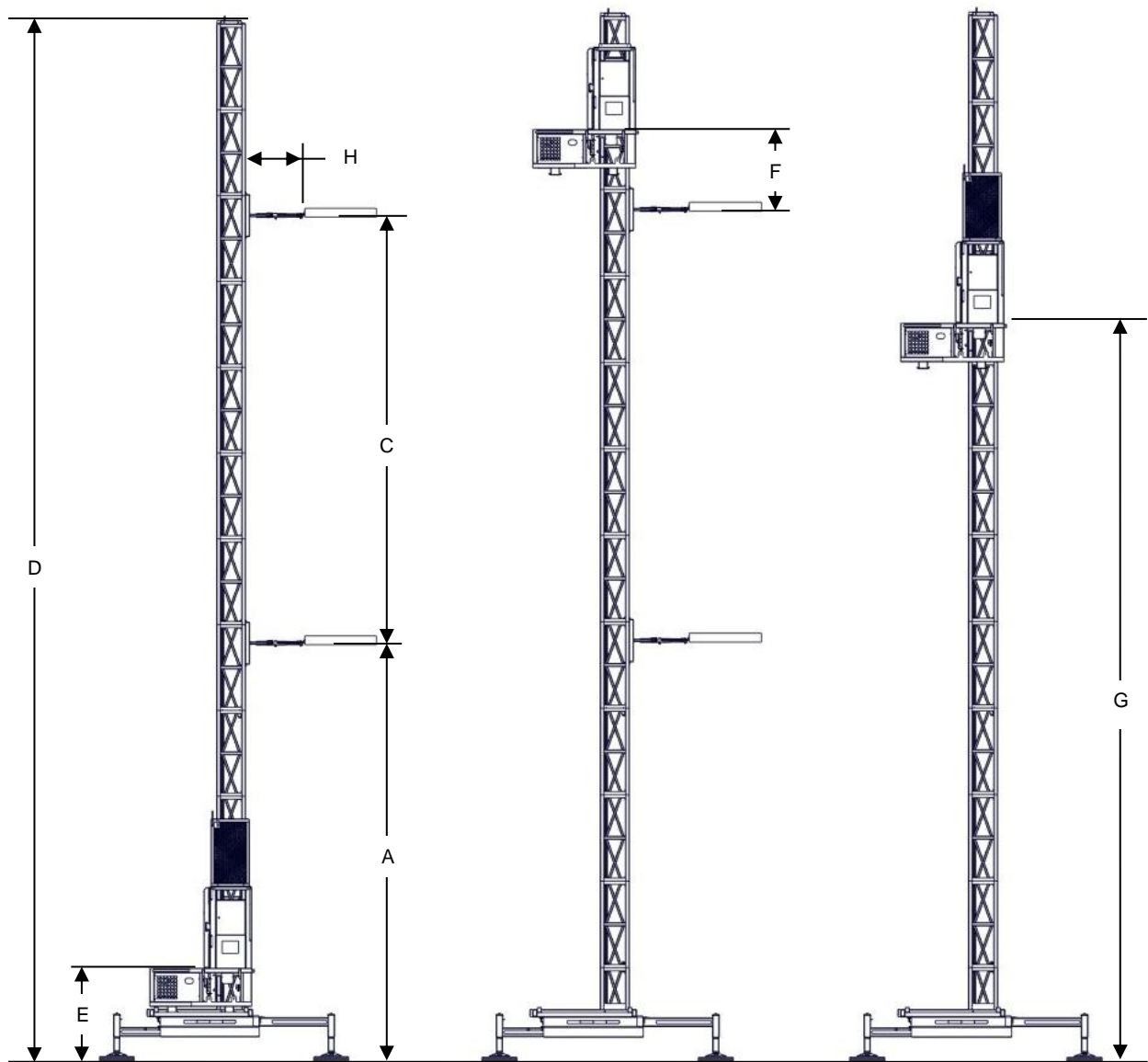


Figure 5 - Dimensions with freestanding base

Minimum distances and clearances

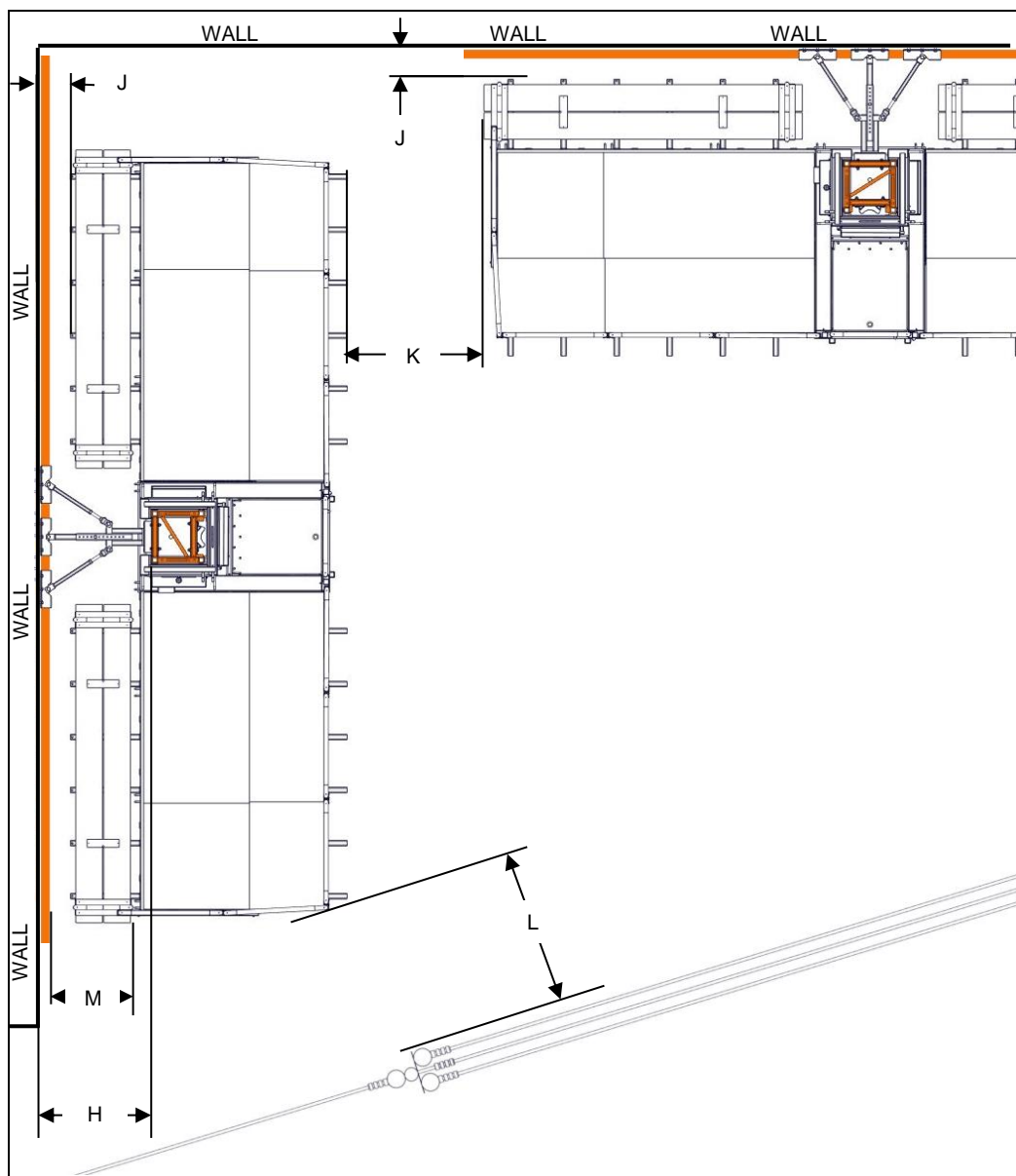


Figure 6 - Clearance to finished walls and around the units

Table 1 - Dimensions and clearance

	Description	With ground base	With freestanding base
A	Height of first mast anchor	Recommended 10'-0" (3 m)*	30'-0" (9 m) 45'-0" (13,7 m)**
B	Height of second mast anchor	Recommended 20'-0" (6,1 m)* Maximum 30'-0" (9 m)	N/A
C	Distance between mast anchors	31'-0" (9,5 m) ± 5'-0" (1,5 m)	
D	Maximum total installation height	550'-0" (168 m)	550'-0" (168 m) 200'-0" (61 m)**
E	Minimum floor height	33" (838 mm) 47'-1/2" (1 206 mm)***	60" (1 524 mm) 74'-1/2" (1 892 mm)***
F	Maximum height above last mast anchor during use	5'-0" (1,5 m) †	5'-0" (1,5 m) †
G	Maximum freestanding height	Configuration not allowed	45'-0" (13,7 m) With universal base With freestanding base ACT-8
H	Distance between the front of the mast and the face of the anchor wall (mast anchor length)	With 6" (152 mm) wall fixture [Min 16" (406 mm) - Max 22" (660 mm)] With 16" (406 mm) wall fixture [Min 26" (406 mm) - Max 30" (762 mm)] With 2'-3" (711 mm) wall fixture [Min 34" (864 mm) - Max 72" (1,830 mm)] Max 72" (1 830 mm) ‡	
J	Clearance between platform and wall / structure / obstacle	Min 6" (152 mm) 14" (356 mm)**** [Min 14" (356 mm) - Max 18" (457 mm)]*****	
K	Clearance between adjacent platforms	Min 14" (356 mm)	
L	Clearance between platform and power lines	According to local regulations in force	
M	Distance between the front of the unit and the finished wall	Depends on the length of the anchors	

Note: « freestanding » means any operational assembly of the unit on a mast without the use of any mast anchor device.

Note: The « front of the unit » is defined as the side of the unit facing the wall and the « rear of the unit » as the side with the area of circulation.

* The first two (2) anchors may be installed up to a maximum of 30'-0" (9 m) provided that a minimum spacing of 10'-0" (3 m) is maintained between the first and the second anchor.

** If the first mast anchor (A) is installed higher than 30'-0" (9 m), the maximum installation height (D) is 200'-0" (61 m). Therefore, for any installation height greater than 100'-0" (30,5 m), it is necessary to place wooden support blocks directly under the mast.

*** With tapered extension section.

**** From 14" (356 mm), guardrails must be used at the edge of the facade.

***** For facade plastering operations, the distance must be [Min 14" (356 mm) - Max 18" (457 mm)] and no guardrails should be used.

† No accessories (winter shelter, portable crane, monorail, etc.).

‡ For a distance (H) greater than 72" (1 830 mm), contact FRACO for special parts.

Display plates and stickers

Identification and serial number plate

These identification plates are located on the lifting unit and must be visible at all times. The serial number is both available on the identification plate and engraved on the steel frame above the plate.

Reading a serial number:

No. XX YY ZZZZ = XX (Model number) YY (Year of manufacture) ZZZZ (Number of the platform)

Be sure to read and fully understand all signs, warnings and instructions displayed on the platform. Ensure that this information is at all times visible, legible and in good condition.

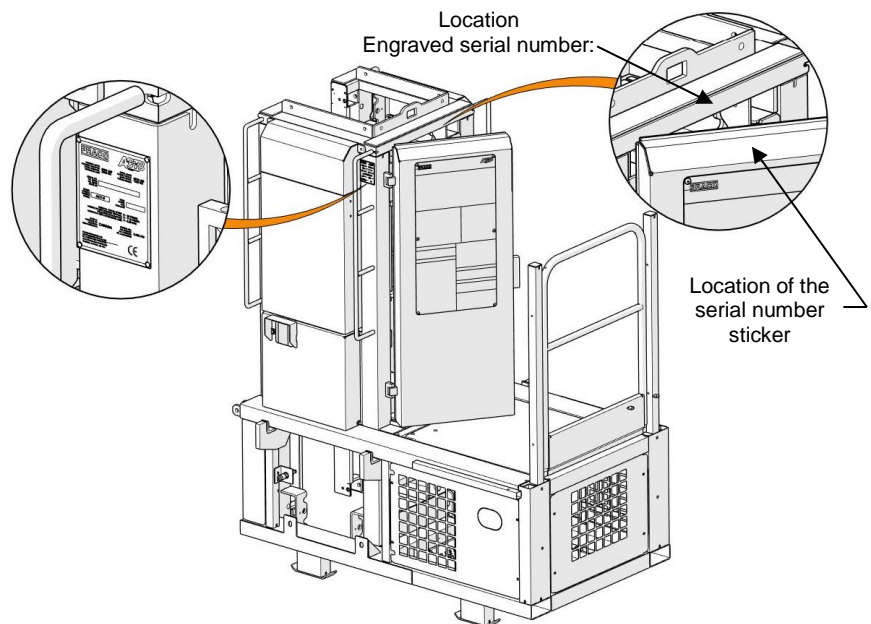
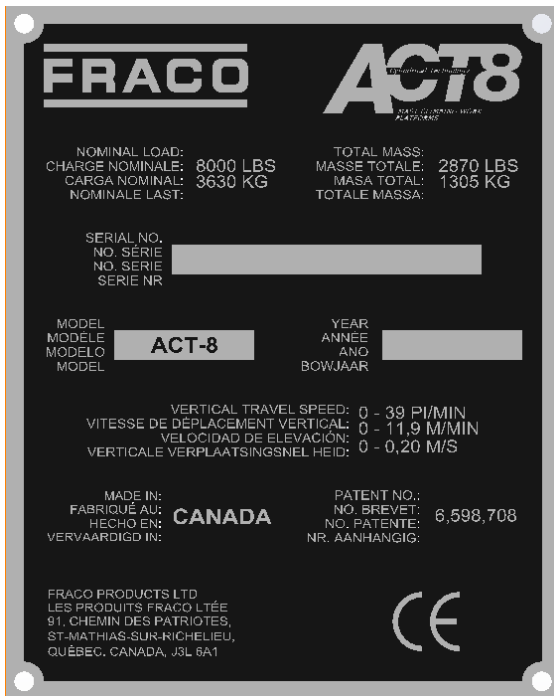
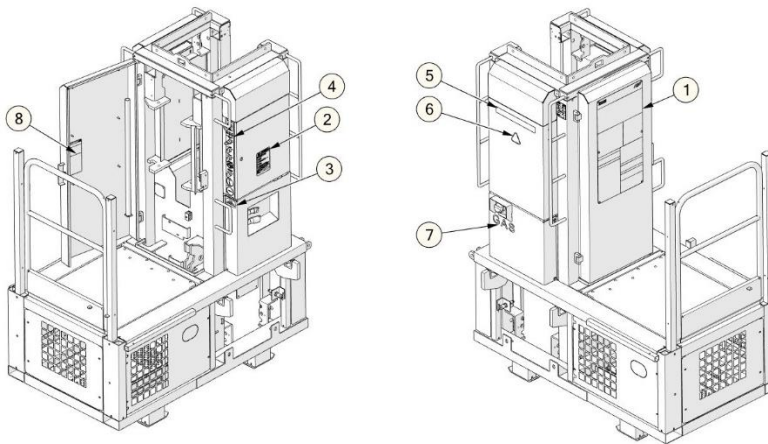
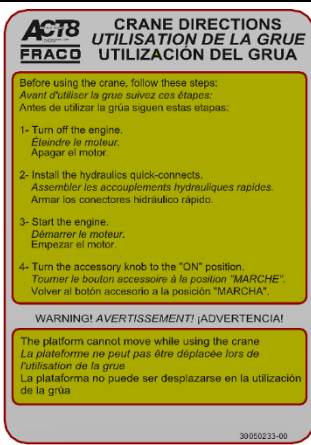


Figure 8 - Plate and Serial Number location

Figure 7 - ACT-8 Identification Plate


Stickers






(30050233)

Figure 10 - Crane operation sticker



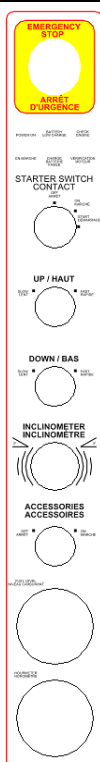
(30050255)

Figure 13 - Choke sticker




(30490028)

Figure 15 - Hot surface warning sticker



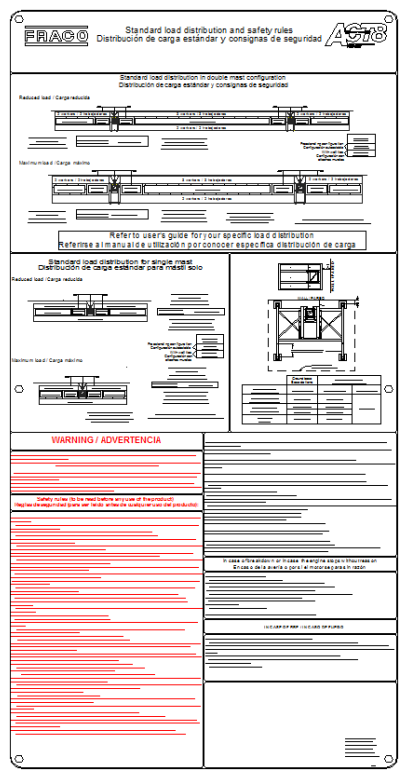
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Figure 11 - Control button sticker




(30490275)

Figure 16 - Gas sticker



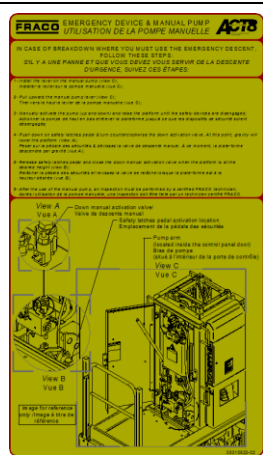
(30020027)

Figure 9 - Warning and load sticker



(30040074)

Figure 12 - Hydraulic oil only sticker



(30490264)

Figure 14 - Emergency descent sticker

98030280-14

16

Documentation compartment

The waterproof compartment on the lifting unit contains important documentation such as the (maintenance manuals), (user manual) and (engine manufacturer's manual). The document holder is located under the engine access panel.

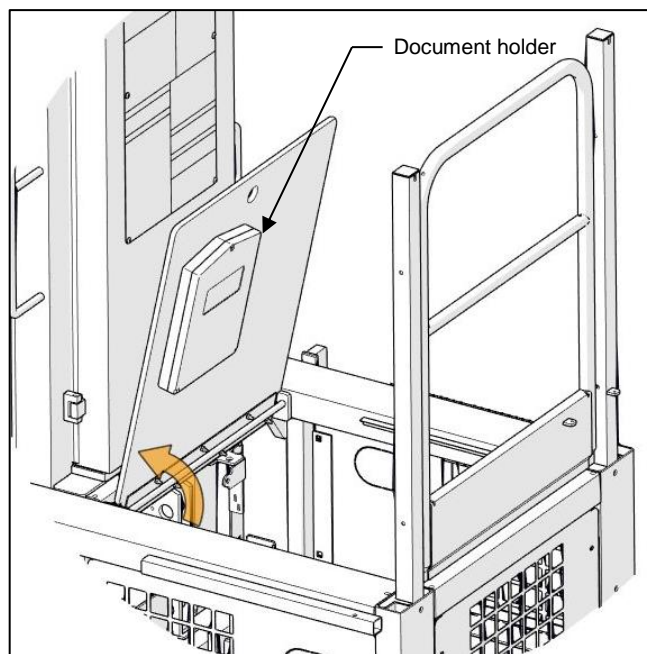


Figure 17 - Documentation compartment

General Technical Specifications

Table 2 - Technical Specifications

FRACO ACT-8 – Specifications	Data
<ul style="list-style-type: none"> Maximum load capacity: Reduced load capacity: 	8 000 lb (3 630 kg) / mast 4 000 lb (1 815 kg) / mast
<ul style="list-style-type: none"> Maximum load during installation and disassembly: 	4 500 lb (2 041 kg) / mast
<ul style="list-style-type: none"> Lifting speed (electrical): Lifting speed (diesel): Lifting speed (gas) *: 	0-35 fpm (0-10,7 m/min) 0-38 fpm (0-11,5 m/min) 0-39 fpm (0-11,9 m/min)
<ul style="list-style-type: none"> Engine type (electric) **: Engine type (diesel): Engine type (gas) *: 	20 CV, 400 AC, 60 Hz**, 20 A Kubota V1505 Honda GX690
<ul style="list-style-type: none"> Maximum platform length (single mast) 	<ul style="list-style-type: none"> Full load 56'-8" (17,3 m) Reduced load 63'-4" (19,3 m)
<ul style="list-style-type: none"> Maximum platform length (Double mast) 	<ul style="list-style-type: none"> Full load 118'-8" (36,2 m) Reduced load 125'-4" (38,2 m)
<ul style="list-style-type: none"> Maximum assembly height (without anchor) Maximum assembly height (with anchors) 	<ul style="list-style-type: none"> 45 ft (13,7 m) 550 ft (168 m)
<ul style="list-style-type: none"> Width of main platform Width of platform with supports 	<ul style="list-style-type: none"> 3'-4" (1 m) 5'-9" (1,8 m)
<ul style="list-style-type: none"> Maximum length of outriggers (standard) Maximum length of outriggers (with support) 	<ul style="list-style-type: none"> 6'-0" (1,8 m) 8'-0" (2,4 m)
<ul style="list-style-type: none"> Typical spacing between anchors 	30'-0" (9,1 m)
<ul style="list-style-type: none"> Maximum height above last anchor during operation of the unit 	5'-0" (1,5 m)
<ul style="list-style-type: none"> Mast section bolts 	Ø1"-8unc x 6-½" gr8 zinc or A325
<ul style="list-style-type: none"> Tightening torque of bolts on mast section 	265 lb-ft (360 Nm)
<ul style="list-style-type: none"> Maximum permissible wind speeds: During assembly During operation (without anchors) During operation (with anchors) Out of service (without anchors) Out of service (with anchors) 	<ul style="list-style-type: none"> 0 to 28 mph (45 km/h) 0 to 22 mph (35 km/h) 0 to 35 mph (55 km/h) 22 to 100 mph (35 to 165 km/h) 35 to 100 mph (55 to 165 km/h)
<ul style="list-style-type: none"> Lifting system 	Worm screw system with bearings

* Available in some countries only.

** Operating frequency 60 Hz (North America) and 50 Hz (Europe)

Permitted configurations and load distribution

Notes:

- The combined weight of all accessories present on the platform must be deducted from the total allowable load.
∞ SEE TABLE 17 - LOAD DEDUCTIONS, ON PAGE 160
∞ SEE TECHNICAL DATA SHEETS, ON PAGE 147
- The load distribution must be observed at all times.
- The weight of the workers must be deducted from the total allowable load. Always consider a minimum of two (2) workers present in case of an emergency. Consider that a worker has an average weight of 175 lbs (80 kg) and his equipment approximately 88 lb (40 kg). Consider the weight of the equipment for a maximum of two (2) workers, thus 176 lb (80 kg).
- For extensions longer than 13'-4" (4 m), the first extension section must be supported by a turnbuckle or be a « tapered » section (universal or tapered with adapter).
- On the ACT-8, the intermediate extension section of 5'-0" (1,5 m) **may not** be replaced by two by two sections of 2'-6" (0,75 m).
- It is **forbidden** to load on work and circulation areas. These areas are reserved for workers and tools only.
- Important!** The anti-pivot system wheels must be installed on both sides of the platform if one (1) or both (2) sides of the platform measure more than 23'-4" (7,10 m).
∞ SEE INSTALLATION ANTI-PIVOT DEVICE, SMALL WHEEL (OPTIONAL), ON PAGE 100
∞ SEE INSTALLATION ANTI-PIVOT DEVICE, LARGE WHEEL (OPTIONAL), ON PAGE 101

	Installation permitted
A-B	Installation permitted with 50% load reduction on each mentioned side
X	Installation prohibited

	=		= Intermediate 2'-6" (762 mm) extension section
	=		= Intermediate 5'-0" (1,52 m) extension section
	=		= Intermediate 3'-4" extension section
	=		= 6'-8" (2,0m) extension section
	=		= 10'-0" (3,0m) extension section
	=		= Universal tapered 10'-0" (3,0m) extension section
	=		= Bridge 20'-0" (6,1m) (adapter required) [20491501]
	=		= Bridge 40'-0" (12,2m)
	=		= Bridge 60'-0" (18,3m)
	=	Extension section turnbuckle	
	=	Tapered extension section adapter [20490971]	

*See note below for use

Legend 1 – Loads distribution

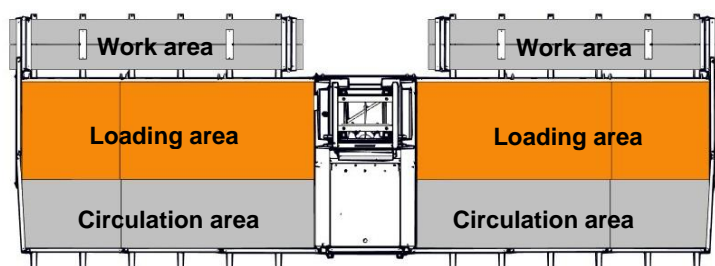
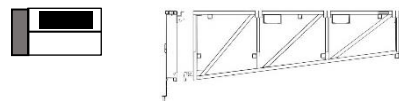


Figure 18 - Platform areas

* Note:

The tapered extension adapter is only necessary when using a non-universal tapered extension section (former model) (15060013) and (15060024).



For details concerning the installation of the tapered extension section adapter.

∞ SEE FIGURE 60 - MODULAR TAPERED EXTENSION SECTION, ON PAGE 53

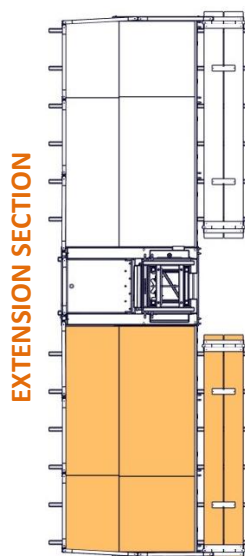
However, the adapter is not necessary if a universal tapered extension section is used (15090184) and (1509095).

Table 3 - Single mast, load distribution

Table 3 - Single mast, load distribution

A technical architectural drawing of a building section. The drawing shows a central staircase with a platform and railings. To the left of the staircase is a large white rectangular room, and to the right is a large orange rectangular room. Both rooms have a grid of structural elements. The drawing is a black and white line drawing with color fills for the rooms.

	Installation permitted
A-B	Installation permitted with 50% load reduction on each mentioned side
X	Installation prohibited

[illegible]

- 4 000 lb (1 815 kg) MAX per platform side
- Total MAX load on platform 8 000 lb (3 630 kg)

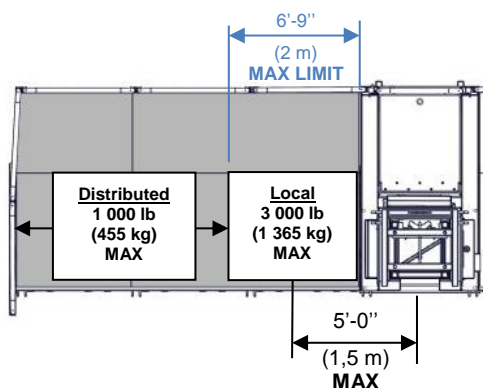


Figure 20 - Single-mast full load

CASE 1 - Reduced load on one (1) side

- 2 000 lb (907 kg) MAX on the reduced load side
- 2 000 lb (1 815 kg) MAX on the full load side
- Total MAX load on platform 6 000 lb (2 725 kg)

- 2 000 lb (907 kg) MAX on the reduced load sides
- Total MAX load on platform 4 000 lb (1 815 kg)

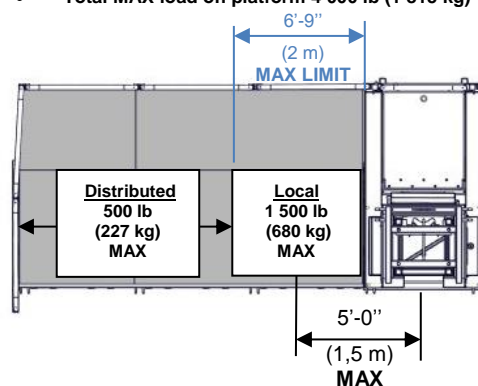


Figure 19 - Single-mast reduced load

Configuration example (single-mast)

The following is an example to help you understand how to use the configuration tables. The example of the [Table 4](#) presents a unit with short extension sections. The [Table 5](#) example presents a unit with long extension sections.

Short extensions configuration:

When the length of at least one (1) side of the unit is equal to or less than 13'-4" (4,0 m).

Long extensions configuration:

When the length of the two (2) sides of the unit is greater than 13'-4" (4,0 m).

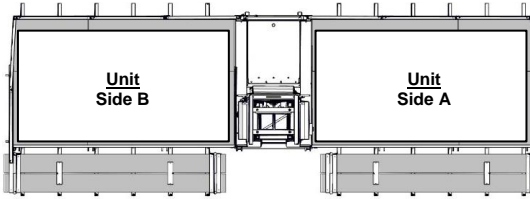


Figure 21 - Example, distribution zones per unit (single-mast)

Table 4 - Explained distribution example (single-mast, short extensions configuration)

		<p>CASE 1: (10'-0" Universal tapered extension)</p>	
		<p>CASE 2: (10'-0" standard extension)</p>	
		<p>CASE 3: (10'-0" mixed extension)</p>	

Note: For any extension length greater than 13'-4" (4,0 m) consisting of a standard 10'-0" (3 m) extension, a turnbuckle must be used on the 10'-0" (3,0 m) extension.

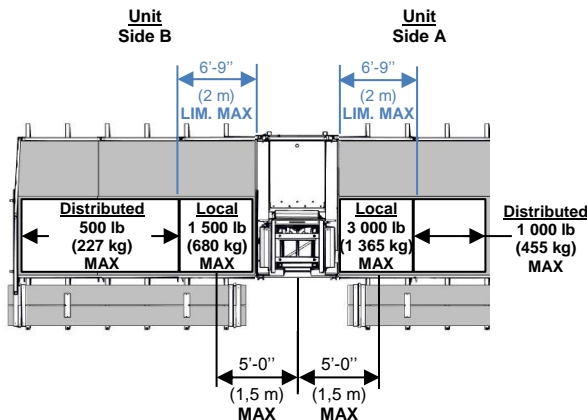


Figure 22 - Example of load distribution (single-mast, short extensions)

Configuration example (single-mast) (CONTINUED)

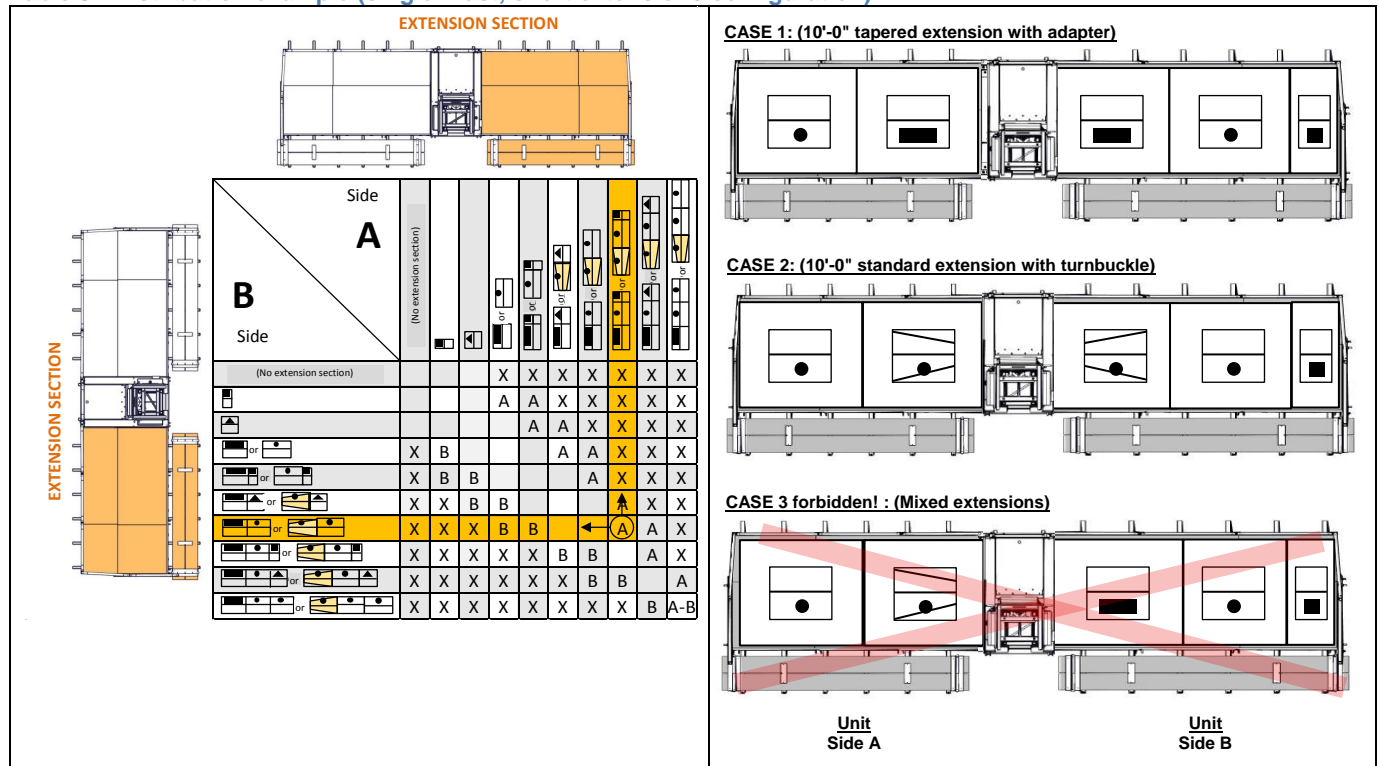
Short extensions configuration:

When the length of at least one (1) side of the unit is equal to or less than 13'-4" (4,0 m).

Long extensions configuration:

When the length of the two (2) sides of the unit is greater than 13'-4" (4,0 m).

Table 5 - Distribution example (single-mast, short extensions configuration)



Note: When using an extension turnbuckle, the first extension section installed on the lifting unit must be a 10'-0" (3,0 m) standard extension section. Extension turnbuckles must be used if the assembled extension length is greater than 13'-4" (4 m).

Note: For any extension length greater than 13'-4" (4,0 m) of the two (2) sides, the same type of 10'-0" (3,0 m) extensions must be used. Either tapered extensions or standard extensions with turnbuckles as explained in the above case.

Note: For any extension length greater than or equal to 23'-4" (7,1 m) on one side of the unit, an anti-pivot device must be installed on both (2) sides of the unit.

SEE INSTALLATION ANTI-PIVOT DEVICE, SMALL WHEEL (OPTIONAL) AND INSTALLATION ANTI-PIVOT DEVICE, LARGE WHEEL (OPTIONAL), ON PAGES 100 AND 101

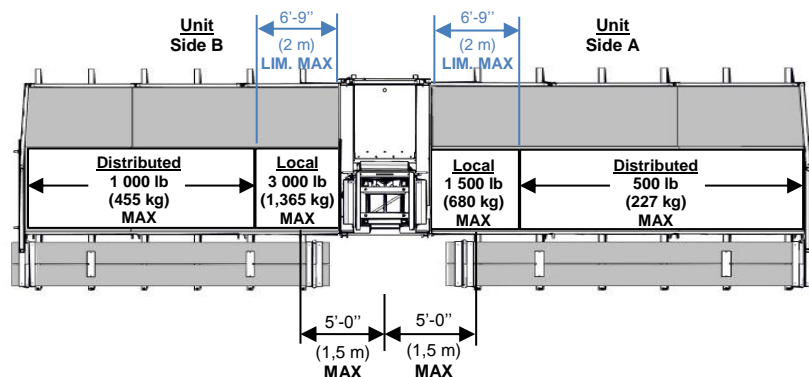


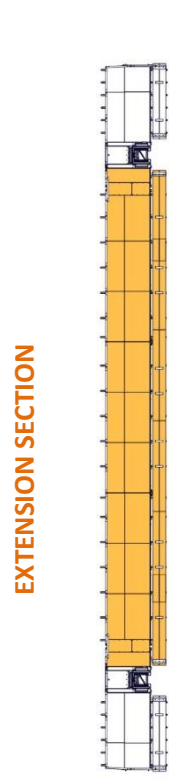
Figure 23 - Example of load distribution (single-mast, long extensions)

Configuration - Double mast

Table 6 - Double mast, load distribution

	Installation permitted
A-B	Installation permitted with 50% load reduction on each mentioned side
X	Installation prohibited

EXTENSION SECTION



Side B Side	Side A	Extension Section									
		(No extension section)									
20	(*)	X					A	X	X	X	X
40		X					A	X	X	X	X
60		X					A	X	X	X	X
20	(*)	X					A	X	X	X	X
40		X					A	X	X	X	X
60		X	B	B			A	X	X	X	X
20	(*)	X	B	B			A	X	X	X	X
40		X	B	B	B			A	X	X	X
60		X	X	X	B	B	B	A	X	X	X

* Adapter required [20491501]

Full load on the entire platform: 16 000 lb (7 260 kg) total

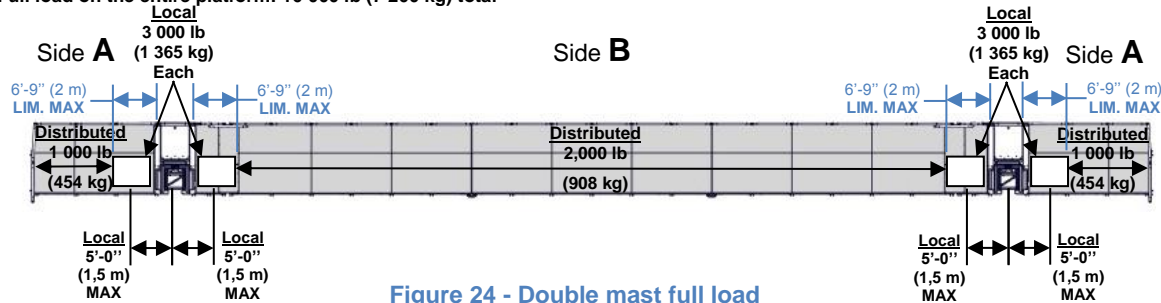


Figure 24 - Double mast full load

Reduces load on the entire platform: 8 000 lb (3 630 kg) total

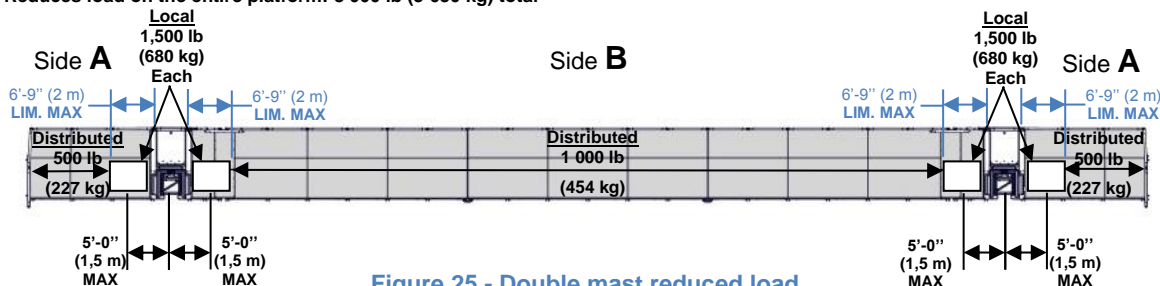


Figure 25 - Double mast reduced load

Configuration example (Double mast)

The following is an example to help you understand how to use the configuration tables. At first, in the two-mast configuration, each lifting unit is considered independently of the other within the table. In a second step, the load distributions are combined in order to obtain the total allowable distribution of the assembly. Thus, in the following example:

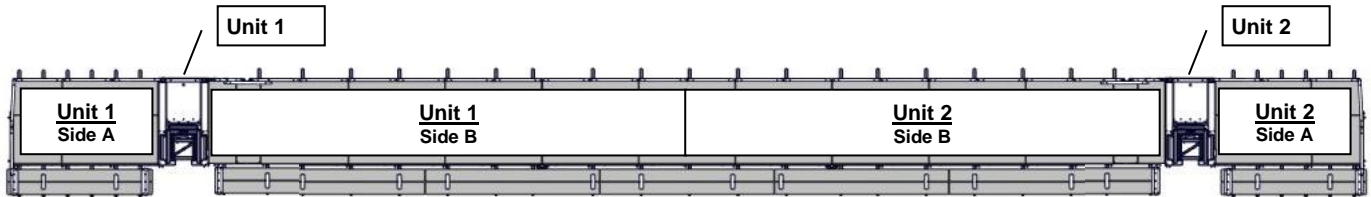


Figure 26 - Example, distribution zones per unit (double mast)

Table 7 - Example of double mast distribution

EXTENSION SECTION

EXTENSION SECTION

EXTENSION SECTION

EXTENSION SECTION

* Adapter required

* Adapter required

Note: For the bridge load distribution, always take the most restrictive configuration of the two platforms. Which is why the distribution on the central bridge is 1 000 lbs (454 kg) (Reduced load) and not 1 500 lbs. (Full load).

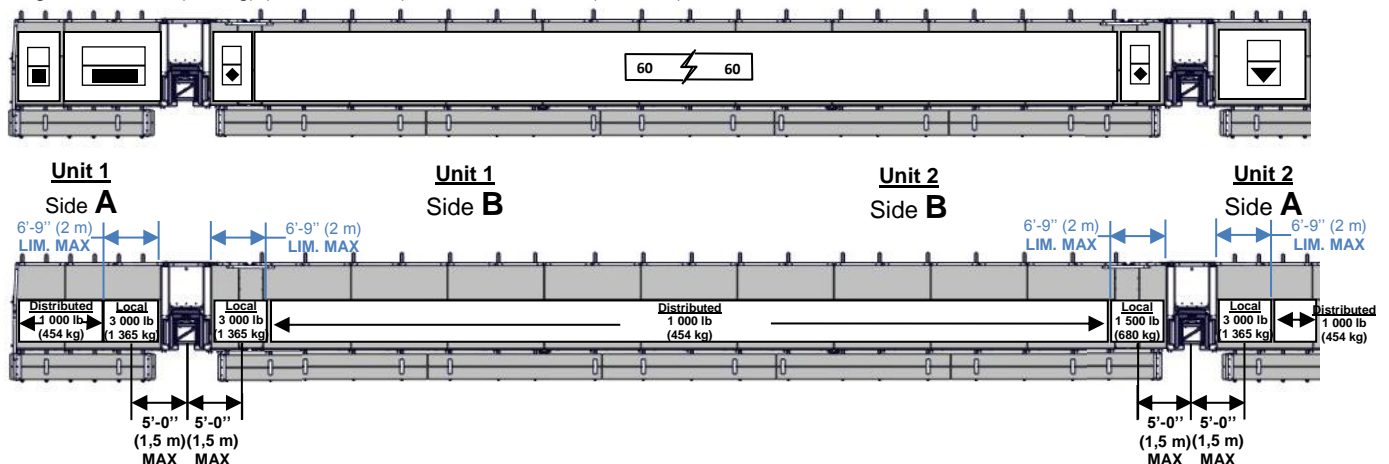


Figure 27 - Example of load distribution (Double mast)

Operation, use of the lifting unit



The operator must hold a valid Level 1 card. This person must be familiar with the instructions for use, have sufficient experience and be aware of the risks involved in the use of the platform.

- **IMPORTANT!** Refer to the section **WARNINGS** for general safety instructions and additional warnings.
∞SEE **WARNINGS**, ON PAGE 7
- **IMPORTANT!** Before use at the beginning of each shift, all points of the « **DAILY INSPECTION GRID** » must be checked, including a functional check. When using the platform, the operator must strictly follow all operating instructions.
∞SEE **DAILY INSPECTION GRID**, ON PAGE 157
- Make sure no one is under the platform or within the security perimeter. Sufficient lighting must be available to ensure safe use. Notify all persons on the platform before performing any vertical movement of the platform. Beware of presence of unauthorized persons.
- Before and during use of the platform, the operator must check for wind and unfavorable weather conditions. The platform must not be used if the wind speed exceeds the authorized limits or in the event of an electrical storm. For unfavorable wind speeds, consult the **TABLE 2 - TECHNICAL SPECIFICATIONS**.
∞SEE **GENERAL TECHNICAL SPECIFICATIONS**, ON PAGE 18
- Always use safety harnesses when handling plankings and/or guardrails when passing a mast anchor or obstacles.
∞SEE **REGULATORY**, ON PAGE 10
- The outrigger areas must be composed of FRACO outriggers and wooden plankings in compliance with applicable local regulations. Any additions must be deducted from the allowable load. Any significant addition to the outriggers (steel plate, extra planking thickness, plywood or other ...) must be verified, approved and deducted from the allowable load by a competent person.
∞SEE **PERMITTED CONFIGURATIONS AND LOAD DISTRIBUTION**, ON PAGE 19
- The operator must at all times ensure that load distributions and maximum number of people on the platform are respected. A maximum of two (2) persons per unit side must be considered, plus one (1) person operating the unit. This means a maximum of five (5) persons distributed over the entire platform surface for a single-mast assembly and ten (10) persons for a double mast assembly. Refer to the information signs present on the platform. For a distribution with a higher number of workers, contact the FRACO engineering department.
∞SEE **PERMITTED CONFIGURATIONS AND LOAD DISTRIBUTION**, ON PAGE 19
- All loads likely to slip or fall from the platform must be secured. Keep the platform free of debris, rubbish, snow, etc. Make sure that no tools or other objects extend beyond the outer perimeter of the platform limited by the plankings and guardrails. At any time, you can stop operation by pressing the **EMERGENCY STOP** button (See [Figure 28](#) and [Figure 30](#)). In the event of breakage or malfunction, secure the platform.
∞SEE **ASSISTANCE**, ON PAGE 164, and contact FRACO if the problem persists.
- When the platform is stopped after a vertical movement, make sure that it rests on the safety system. At the end of each shift or end of day, the platform must be placed in the « Out of service » position and secured to prevent any unauthorized use. The platform shall be deemed to be in the « Out of service » position when it is at an equal distance between two mast anchors and the loads on either side of the mast are balanced, or when the platform is lowered to the ground level.
∞SEE **EMERGENCY DESCENT PROCEDURE**, ON PAGE 31
- Prevent any unauthorized access to the platform. At the end of each shift, or during breaks, remove the key from the control panel. If required, padlock the access (refer to the applicable local regulations).
- If available, read the evacuation plan and its location before using the lifting unit.

Using the lifting unit (diesel-gas model)

Step 1 (Before engine start)

- 1- Make sure you have completed your daily inspection before starting the engine.
∞SEE DAILY INSPECTION GRID, ON PAGE 157
- 2- Make sure that the platform path is clear of obstacles.
- 3- Make sure the « emergency stop button » (see [Figure 28](#)) is released.
- 4- Make sure that the accessory selector is in the « OFF » position before using the lifting unit.

Check general engine condition

- 5- Remove any excessive dirt or debris, especially around the muffler.
- 6- Visually inspect for damage.
- 7- Make sure all guards and covers are in place and in good condition. Also check that all nuts, bolts and screws are tight.
- 8- Check the air filter element. A dirty air filter element limits the air flow to the carburetor, which reduces engine performance.

Step 2 (Ignition)

- 9- Make sure that the « Fuel valve lever » is in the « MARCHE/ON » position.
- 10- Make sure that the « Throttle lever » is in the « MAX » position.
- 11- Pull the « Choke knob » located above the control box on the right of the unit (see [Figure 29](#)).
- 12- Turn the « CONTACT » key (see [Figure 28](#)) to the « START » position.
- 13- When the engine is started, let the key return to the « MARCHE/ON » position. Push the « Choke knob ». The « MARCHE/ON » indicator light must be on.
- 14- After starting, the two (2) « Check engine » and « Low battery » indicator lights must go out. If they remain on, stop the engine immediately. If the problem persists, contact a FRACO representative.

Step 3 (Moving the platform)

- 15- To raise the platform, hold the « UP » selector in the « SLOW » or « FAST » position for the desired speed.
- 16- To lower the platform, hold the « DOWN » selector switch in the « SLOW » or « FAST » position for the desired speed.
- 17- To stop the movement of the platform, simply release the « UP » or « DOWN » selector.
- 18- For an emergency stop, press the « EMERGENCY STOP » pushbutton.
- 19- Once you have reached the desired height, turn off the engine power by turning the start key from the « CONTACT » position to the « OFF » position.

Control panel (diesel - gas)

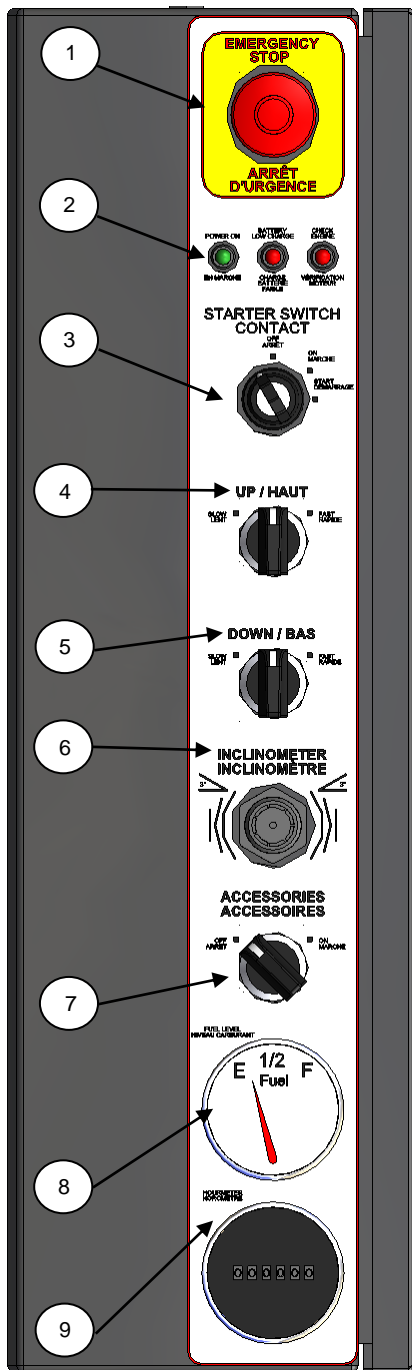


Figure 28 - ACT-8 Control panel (diesel - gas)

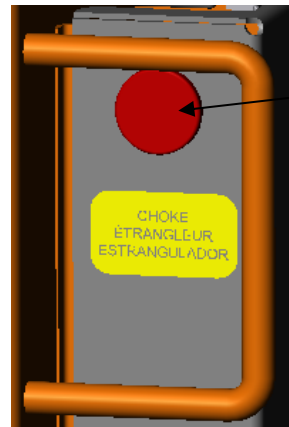
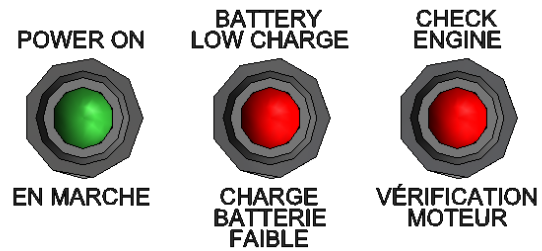


Figure 29 - Choke knob

The choke knob is located on the side of the accessory hydraulic connection panel under the control box.

Valid control box for ACT-8 (diesel and gas) lifting unit models

1. **Emergency stop button**
2. Indicator light (green MARCHÉ/ON), (center red « BATTERY LOW/BATTERIE FAIBLE ») and (right red « CHECK ENGINE/VÉRIFICATION MOTEUR »)
3. Key starter
4. « UP/HAUT » travel selector *
(●LENT/SLOW – RAPIDE/FAST●)
5. « DOWN/BAS » travel selector *
(●LENT/SLOW – RAPIDE/FAST●)
6. Inclinator alarm
7. Accessories selector
8. Fuel level indicator
9. Hour meter

* Note: The RAPIDE/FAST operating speed is available for small assembly configurations and reduced loads only. In case of full load, it is likely that the RAPIDE/FAST speed will not engage. In that case, use the LENT/SLOW speed or reduce the loads.

Using the Lifting unit (electric)

Step 1 (Before engine start)

- 1- Make sure you have completed your daily inspection before starting the engine.
∞SEE DAILY INSPECTION GRID, ON PAGE 157
- 2- Make sure that the platform path is clear of obstacles.
- 3- Make sure the « emergency stop button » (see [Figure 30](#)) is released.
- 4- Make sure that the accessory selector is in the « OFF » position before using the lifting unit.

Check general engine condition

- 5- Visually inspect the engine for damage.
- 6- Make sure all guards and covers are in place and in good condition. Also check that all nuts, bolts and screws are tight.
- 7- Turn the circuit breaker selector switch to the « ON » position. Make sure the « ON » indicator light turns on, confirming a normal operating condition.

Step 2 (Ignition)

- 8- Turn the « CONTACT » key (see [Figure 30](#)) to the « START » position. If the engine does not start and the « PHASE FAULT » indicator light is lit, turn the phase shift selector to another position « 0" or « 1" or « 2". This should turn off the « PHASE FAULT » indicator light. If the problem persists, contact a FRACO representative.

Step 3 (Moving the platform)

- 9- To raise the platform, hold the « UP » switch in the « SLOW » or « FAST » position for the desired speed.
- 10- To lower the platform, hold the « DOWN » selector switch in the « SLOW » or « FAST » position for the desired speed.
- 11- To stop the movement of the platform, simply release the « UP » or « DOWN » selector.
- 12- For an **emergency stop**, press the « EMERGENCY STOP » pushbutton.
- 13- Once you have reached the desired height, turn off the engine power by turning the start key from the « CONTACT » position to the « OFF » position and allow the lifting unit to descend slowly on its support elements.

Control panel (electric)

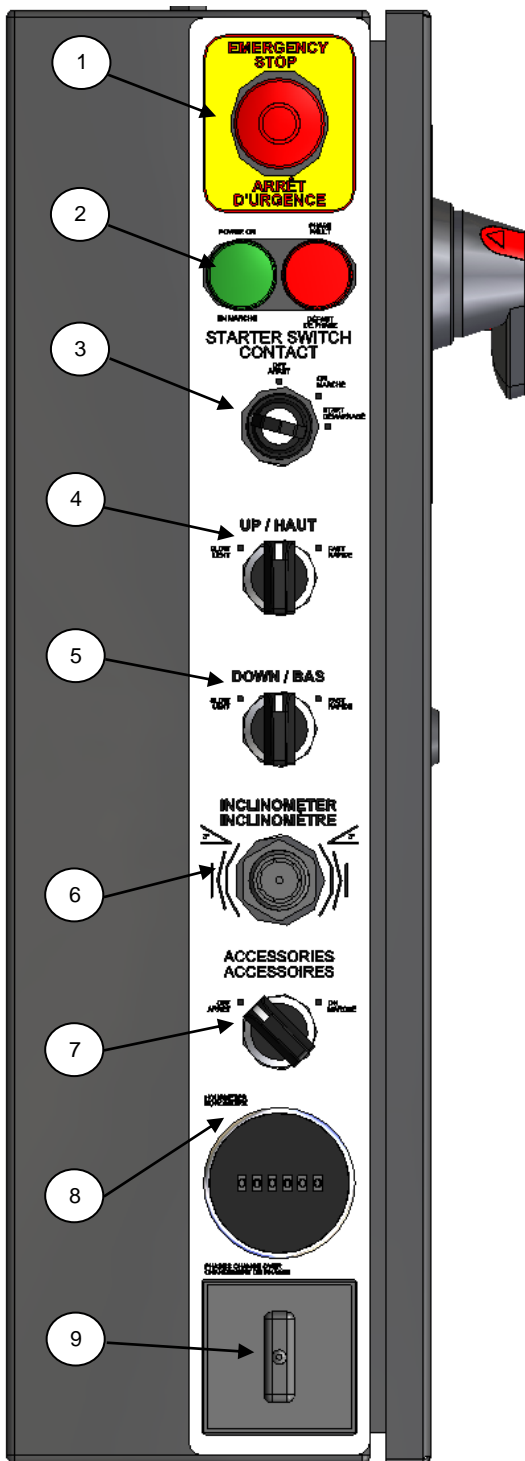
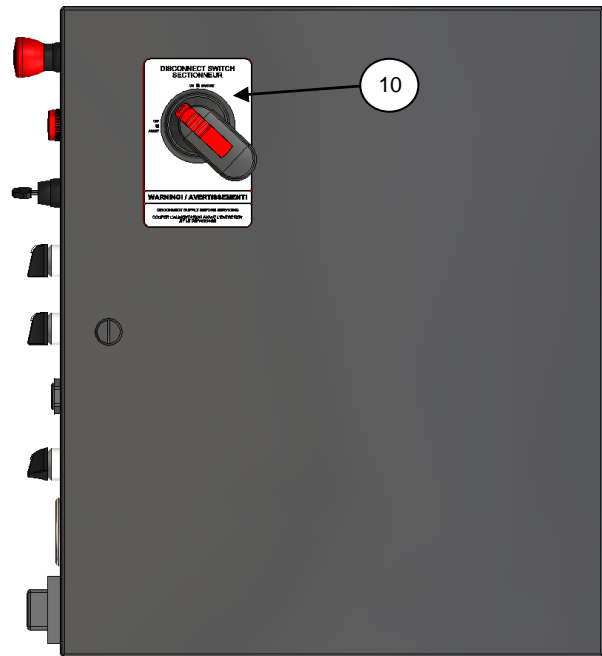


Figure 30 - ACT-8 control panel (electric)



Valid control panel for ACT-8 lifting unit models (electric)

1. **Emergency stop button**
2. Indicator light (green « MARCHÉ/ON ») and (red « PHASE FAILURE »)
3. Key starter
4. « UP/HAUT » travel selector *
(●LENT/SLOW – RAPIDE/FAST●)
5. « DOWN/BAS » travel selector *
(●LENT/SLOW – RAPIDE/FAST●)
6. Inclinator alarm
7. Accessories selector
8. Hour meter
9. Phase selector switch 0, 1, 2
10. Electrical box circuit breaker selector

* Note: The RAPIDE/FAST operating speed is available for small assembly configurations and reduced loads only. In case of full load, it is likely that the RAPIDE/FAST speed will not engage. In that case, use the LENT/SLOW speed or reduce the loads.

Using the inclinometer (if applicable*)

Inclinometer alarm (See Figure 28 and Figure 30):

In the Double mast configuration, when bridge inclination between the two units exceeds the permitted safety value of $\pm 3^\circ$, the alarm is triggered. In that case, you must stop using the unit and reduce said level difference by lowering or raising one of the lifting units. When the inclination exceeds 5° , the platform stops. **You are then in an emergency situation!**

Use the emergency descent to lower the highest lifting unit.

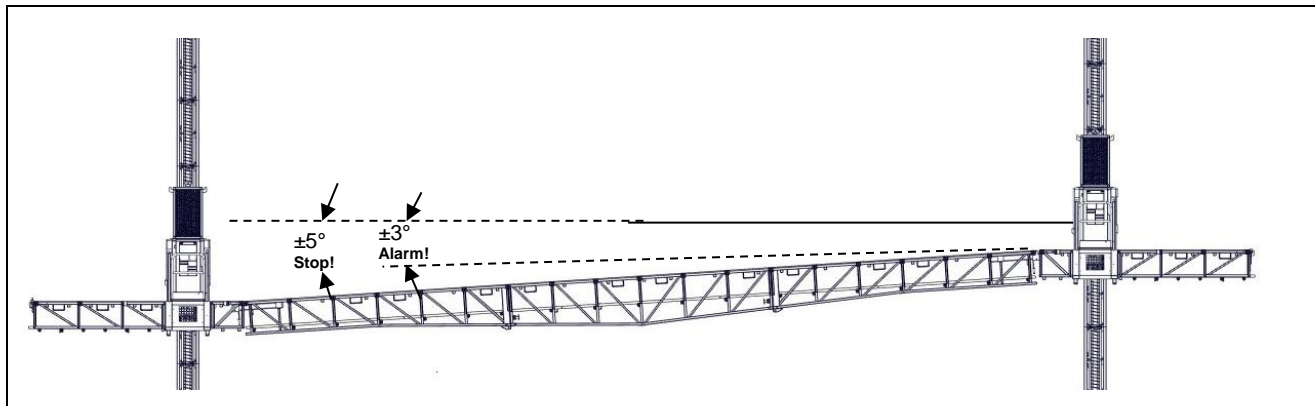
∞ SEE EMERGENCY DESCENT PROCEDURE, ON PAGE 31, AND EMERGENCY DESCENT PROCEDURE (OLDER GENERATION), ON PAGE 32

Once the angle of the platform is again within the admissible $\pm 3^\circ$ limits, normal operation is again possible.

∞ SEE EMERGENCY DESCENT PROCEDURE, ON PAGE 31

For older generations machines, make sure that the emergency descent release lever is returned to its initial position (facing down) after the platforms have been leveled.

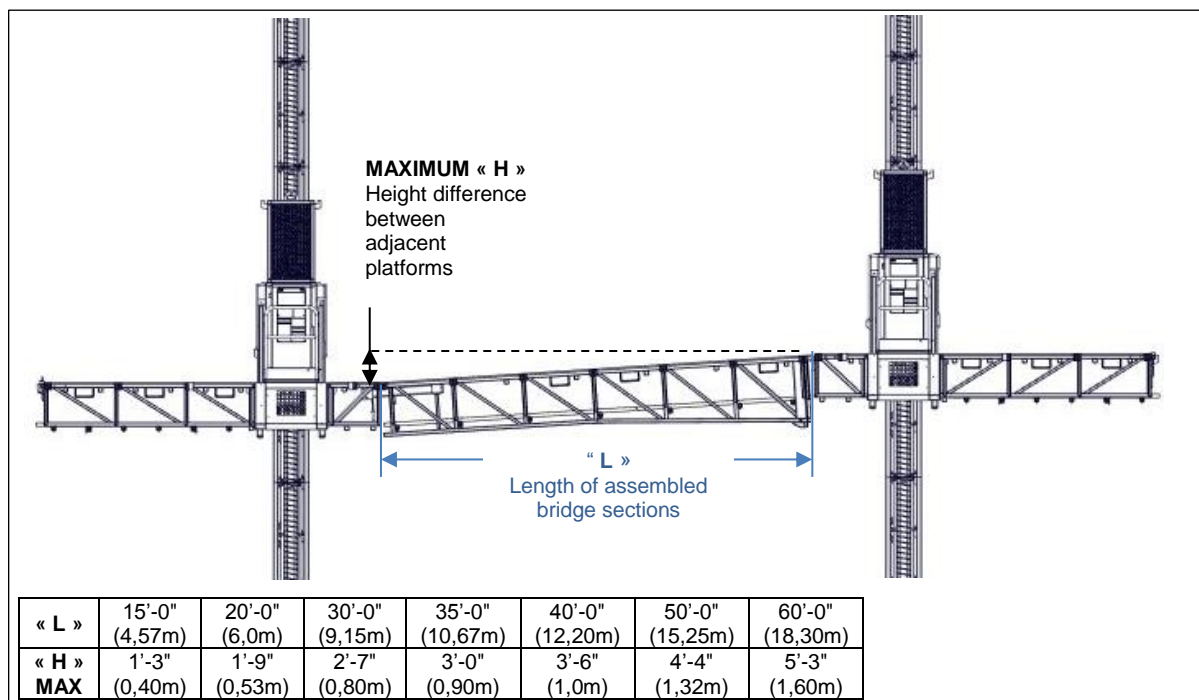
∞ SEE EMERGENCY DESCENT PROCEDURE (OLDER GENERATION), ON PAGE 32



* Note: The use of the inclinometer is mandatory in Europe. Elsewhere, comply with the applicable local regulations.

Figure 31 - Inclinometer

Maximum heights between platforms at a maximum inclination of 5°



Emergency descent procedure

In the event of a malfunction or when using the « **Emergency Stop Button** » (See [Figure 28](#) and [Figure 30](#)), or a stop caused by the inclinometer (SEE USING THE INCLINOMETER, ON PAGE 30), the emergency descend system can be used to position the platform at a lower level, allowing safe evacuation or restarting of the machine.

- 1- Open the access door to the worm screw. Take the pump arm (*item 2*) located in the door and place it on the hand pump lever (*item 1*).
- 2- Operate the pump from front to rear to raise the platform approximately 5-7/8" (150 mm) until the safety system can be released.
- 3- Press the safety release pedal to activate the release lever (*item 4*).
- 4- Use the pump arm (*item 2*) to turn the hydraulic block release valve (*item 5*). Turn slightly clockwise.
- 5- Let the platform descend by gravity.
- 6- Close the release valve. Turn fully counterclockwise.
- 7- Store the pump arm (*item 2*) in the worm screw access door (*item 3*) and close the door.

Important! Any defect must be reported and repaired by a FRACO certified technician.

Important! To return to a normal operating mode, be sure to release the emergency button and check that the safety release pedal has returned to its initial position.

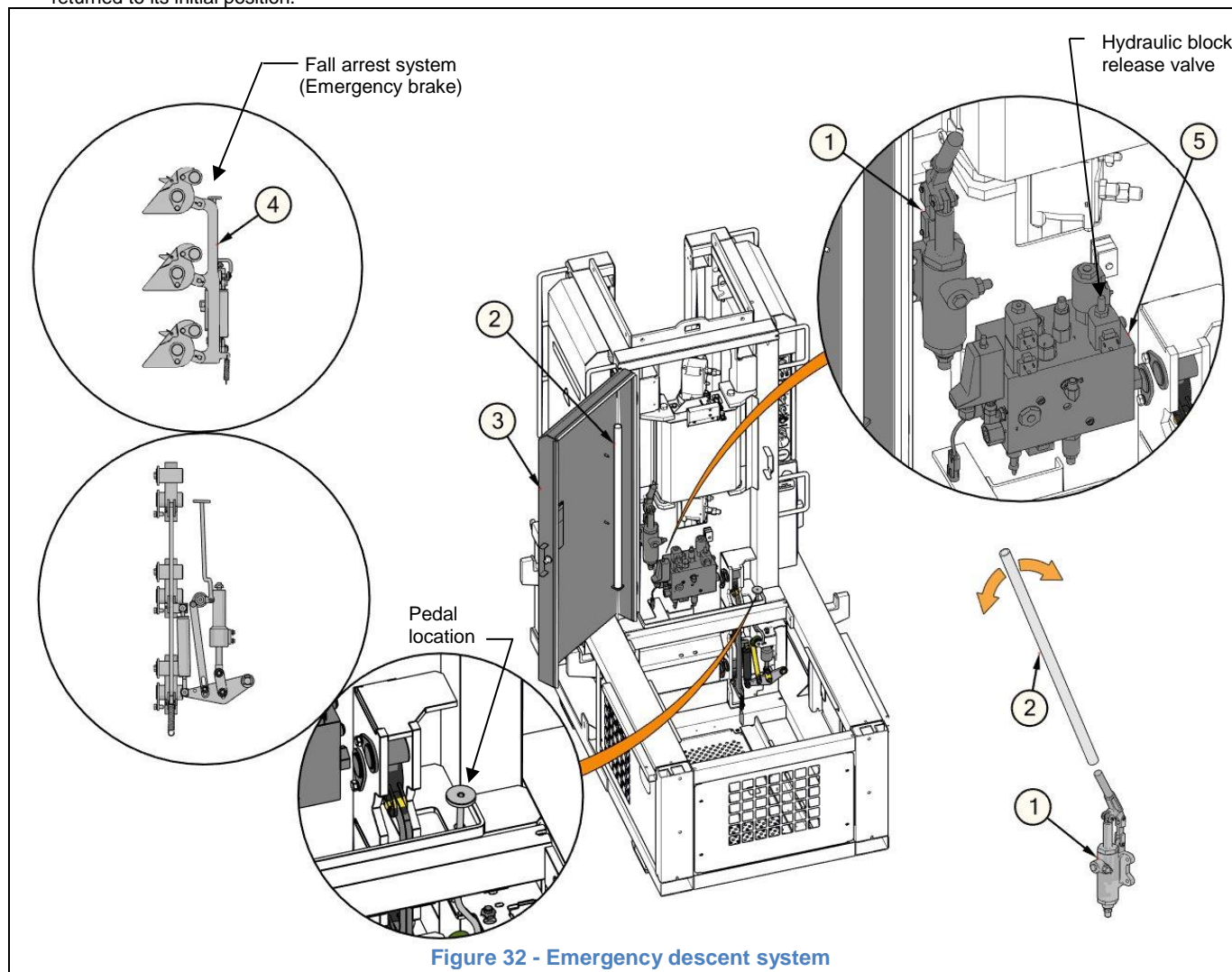


Figure 32 - Emergency descent system

No.	Item	Description	No.	Item	Description
01	32030198	Assembled manual pump	04	32030323	Security assembly
02	28050038	Pump lever	05	32030356	Hydraulic manifold assembly
03	32030389	Control door assembly (ACT-8 Gas)			

Emergency descent procedure (older generation)

FORMER MACHINE GENERATION

The less recent ACT-8 models have a different emergency descent system.

- The access door to the worm screw opens from left to right.
- The hand pump system is centrally located under the worm screw.
- The safety system has a manual release lever instead of the pedal.

In the event of a malfunction or when using the « **Emergency Stop Button** » (See [Figure 28](#) and [Figure 30](#)), or a stop caused by the inclinometer (SEE USING THE INCLINOMETER, ON PAGE 30), the emergency descend system can be used to position the platform at a lower level, allowing safe evacuation or restarting of the machine.

- 1- Open the access door to the worm screw. Take the pump arm located in the door and place it on the manual pump lever.
- 2- Operate the pump from front to rear to raise the platform approximately 5-7/8" (150 mm) until the safety system is released.
- 3- Open the floor panel to access the security system. Turn the release lever up to release the safety system.
- 4- Use the pump arm to turn the hydraulic block release valve. Turn clockwise.
- 5- Let the platform descend by gravity.
- 6- Close the hydraulic block release valve. Turn counterclockwise.
- 7- Lower the manual release lever and close the floor panel.
- 8- Store the pump arm in the worm screw access door (*item 3*) and close the door.

Important! Any defect must be reported and repaired by a FRACO certified technician.

Important! To return to a normal operating mode, be sure to release the emergency button and check that the safety release pedal has returned to its initial position, as defined in step 7.

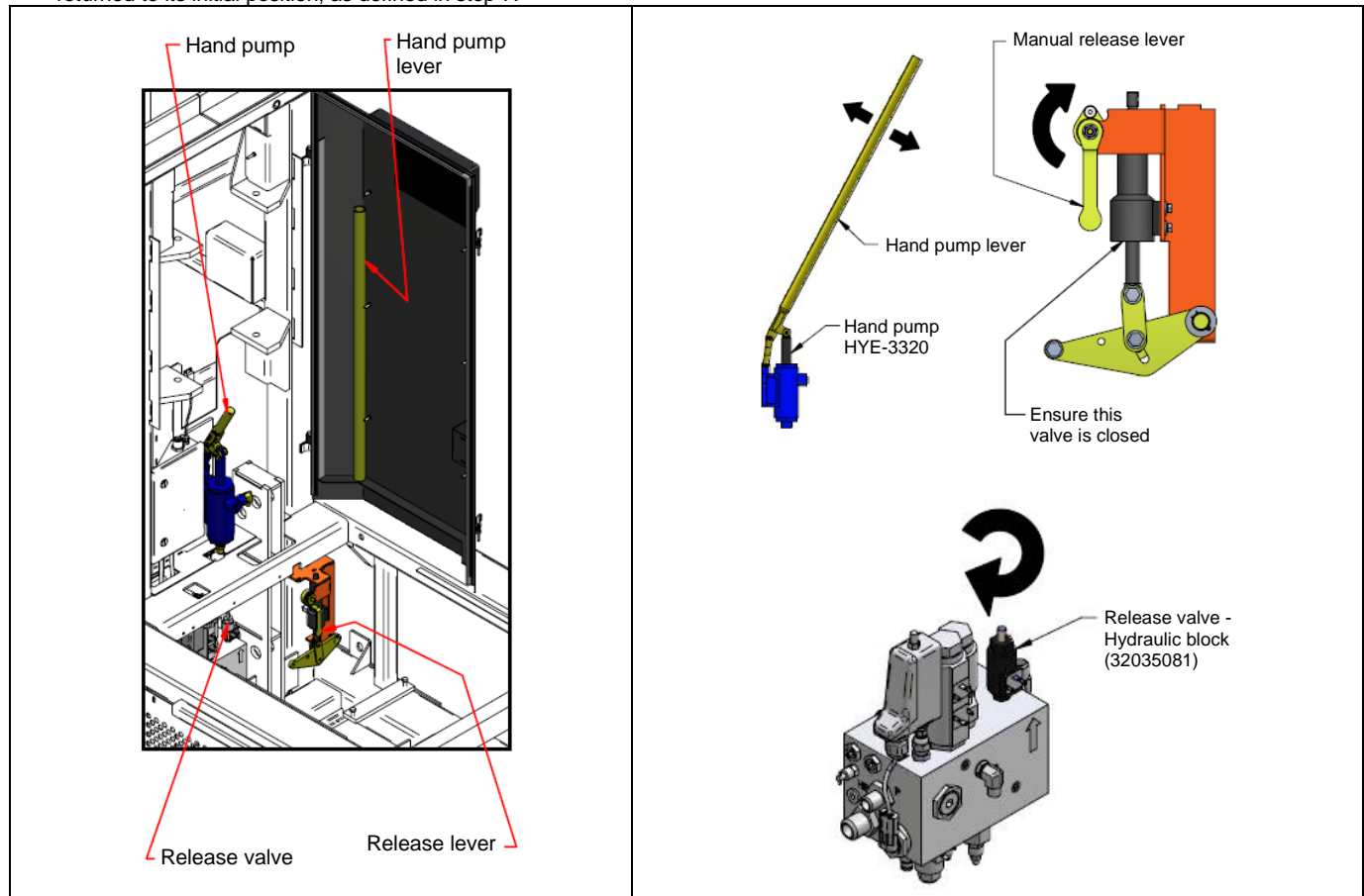


Figure 33 - Emergency descent system (Former generation)

Safety system periodic verification (DAILY)

- 1- Verify that spring pivots work well on each of the three (3) safety BLOCS. These must not clog, nor jam and the springs must work well.
Note: This verification must be carried on daily by the operator of the platform.

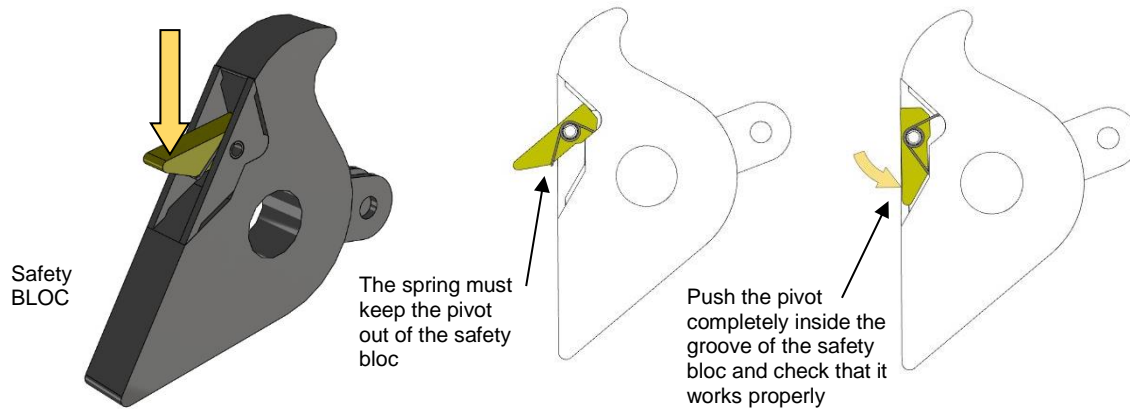
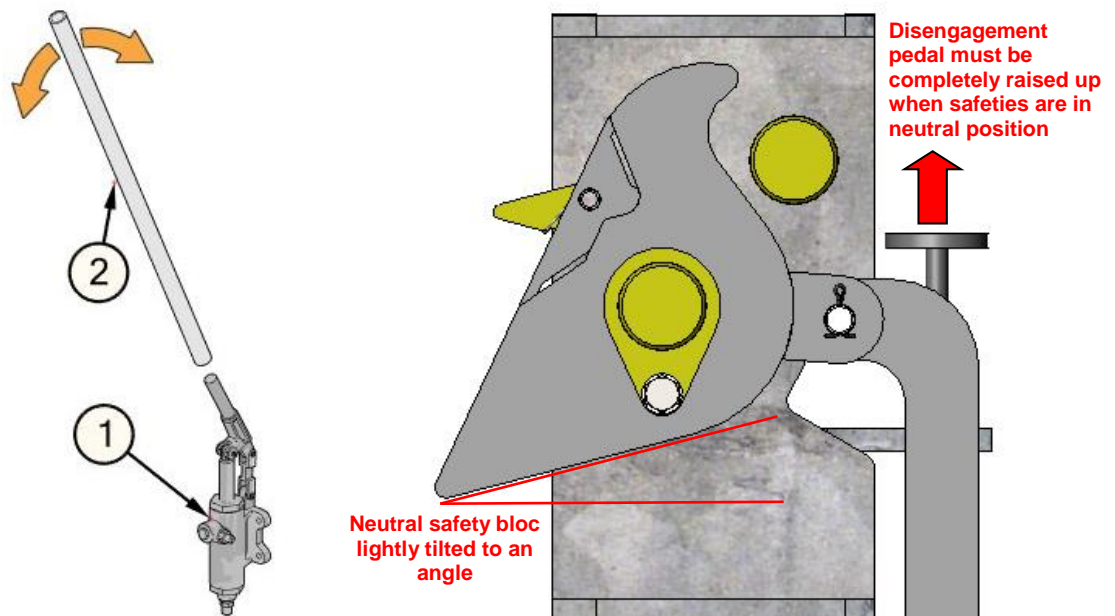


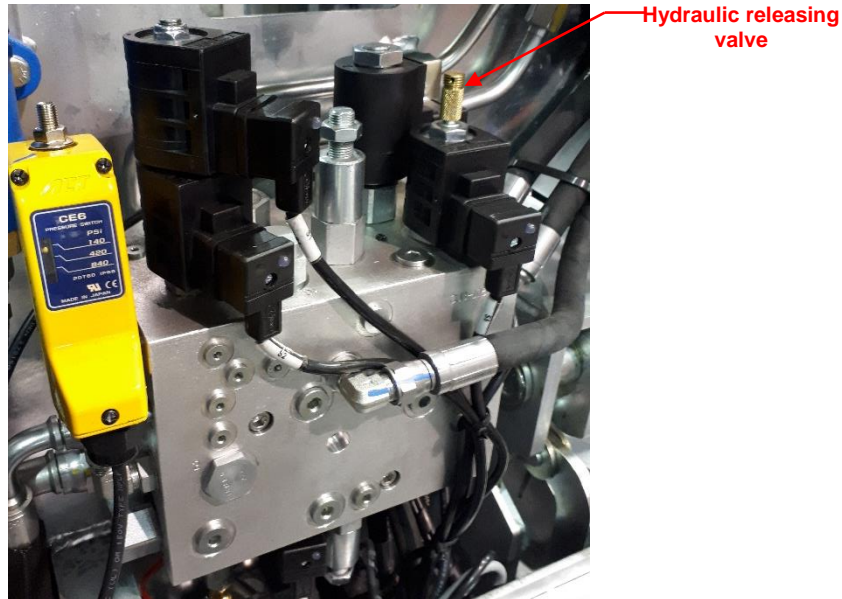
Figure 34 – Safety bloc verification

- 2- Raise the platform of approximately 3" (76 mm) and more by using the manual pump arm (items 1 and 2), until complete disengagement of the safeties.
Safety BLOCS drop to **NEUTRAL POSITION**. In this position, safety BLOCS need to be lightly tilted.

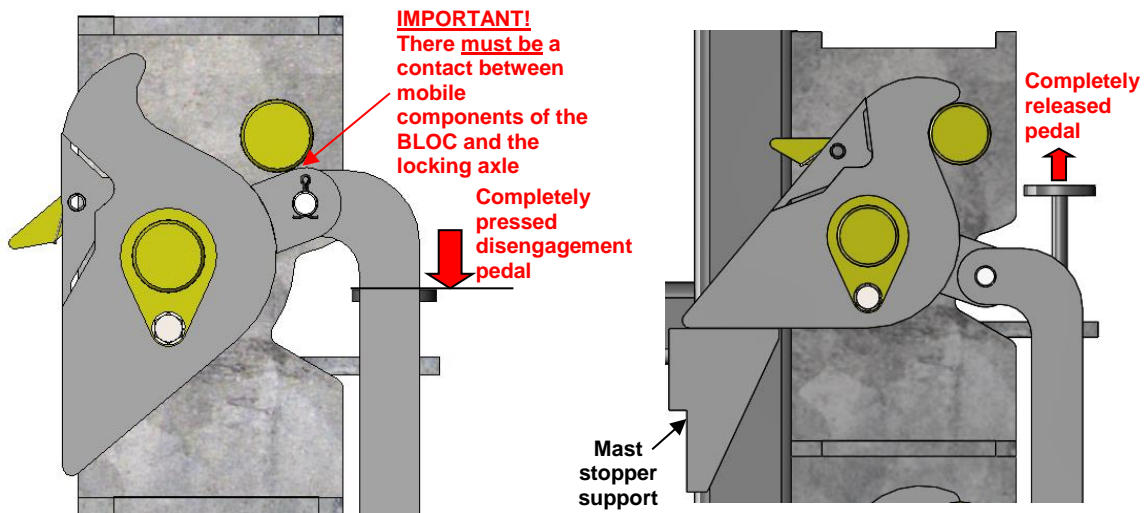


- 3- Raise the platform of approximately 60" (1,50 m) and more.
- 4- Disengage the safeties by pressing on the disengagement pedal and use the manual descent to lower the platform of at least 60" (1,50 m). Use the hydraulic release valve to slowly lower the platform.

Important! Press on the disengagement pedal at all time while lowering the platform.



- 5- After having tested the manual descent on a distance of at least 60" (1,50 m), release the disengagement pedal. The pedal must raise back to its original position automatically (**neutral position**).
- 6- Again, raise up the platform of approximately 20" (0,50 m) and more.
Important! Use the manual descent again (hydraulic release valve) to lower the platform until the safety end up resting on the next mast stopper. To approve that the safety properly works, these must rest completely on the stopper and must support the platform.



Chapter B – Lifting Unit and Base

Ground load and Load distribution

The total load of the equipment is transmitted to the ground by the base. Ensure that the floor is stable and has the necessary carrying capacity for the installation.

∞SEE TABLE 8 ON PAGE 33, TABLE 9 ON PAGE 34, TABLE 10 ON PAGE 35

The entire surface base or shims must be in contact with the foundation. The floor must be free of holes or trenches, well drained or raised to avoid any water buildup.

Ensure that no excavation work is planned during installation or use of the platform.

For a **ground base**, level the ground with 4" to 6" (100 mm to 150 mm) of 0-3/4" crushed stones as foundation and exceeding the ground base dimensions by 4" (100 mm).

∞SEE TABLE 8 - GROUND LOAD, GROUND BASE, ON PAGE 33

For freestanding bases, install shims that exceed the dimensions of the base feet to prevent the feet from sinking into the ground.

∞SEE FIGURE 35 - LOAD DISTRIBUTION, UNIVERSAL FREESTANDING BASE, ON PAGE 34

∞SEE FIGURE 36 - LOAD DISTRIBUTION, ACT-8 FREESTANDING BASE, ON PAGE 35

Ground load and maximum height

The following tables show the loads transmitted from the base to the ground. These charges include the dynamic coefficients but do not include the safety factors that must be taken into account in accordance with local regulations.

Ground load - Ground base (14030019)

Table 8 - Ground load, ground base

Installation height (with mast anchor)	Maximum load under base *
50'-0" (15,24 m)	26 800 lb (12 156 kg)
75'-0" (22,86 m)	28 450 lb (12 905 kg)
100'-0" (30,48 m)	30 100 lb (13 653 kg)
125'-0" (38,10 m)	31 750 lb (14 401 kg)
150'-0" (45,72 m)	33 400 lb (15 150 kg)
200'-0" (60,96 m)	36 700 lb (16 647 kg)
250'-0" (76,20 m)	40 000 lb (18 144 kg)
300'-0" (91,44 m)	43 300 lb (19 641 kg)
350'-0" (106,68 m)	46 600 lb (21 137 kg)
400'-0" (121,92 m)	49 900 lb (22 634 kg)
450'-0" (137,16 m)	53 200 lb (24 131 kg)
500'-0" (152,40 m)	56 500 lb (25 628 kg)
550'-0" (167,64 m)	59 800 lb (27 124 kg)

50" x 80" x 6"
(1,27 m x 2 m x 152 mm)
Approximate dimensions for
crushed stone foundation

: Effective surface area for
load distribution

* The maximum loads under the base are not factored.

Ground Load - Universal freestanding base (14030109)

Note: The universal freestanding base must be combined with a ground base (14030019) or a bolted base for mast (14030110) assembled on top of the freestanding base.

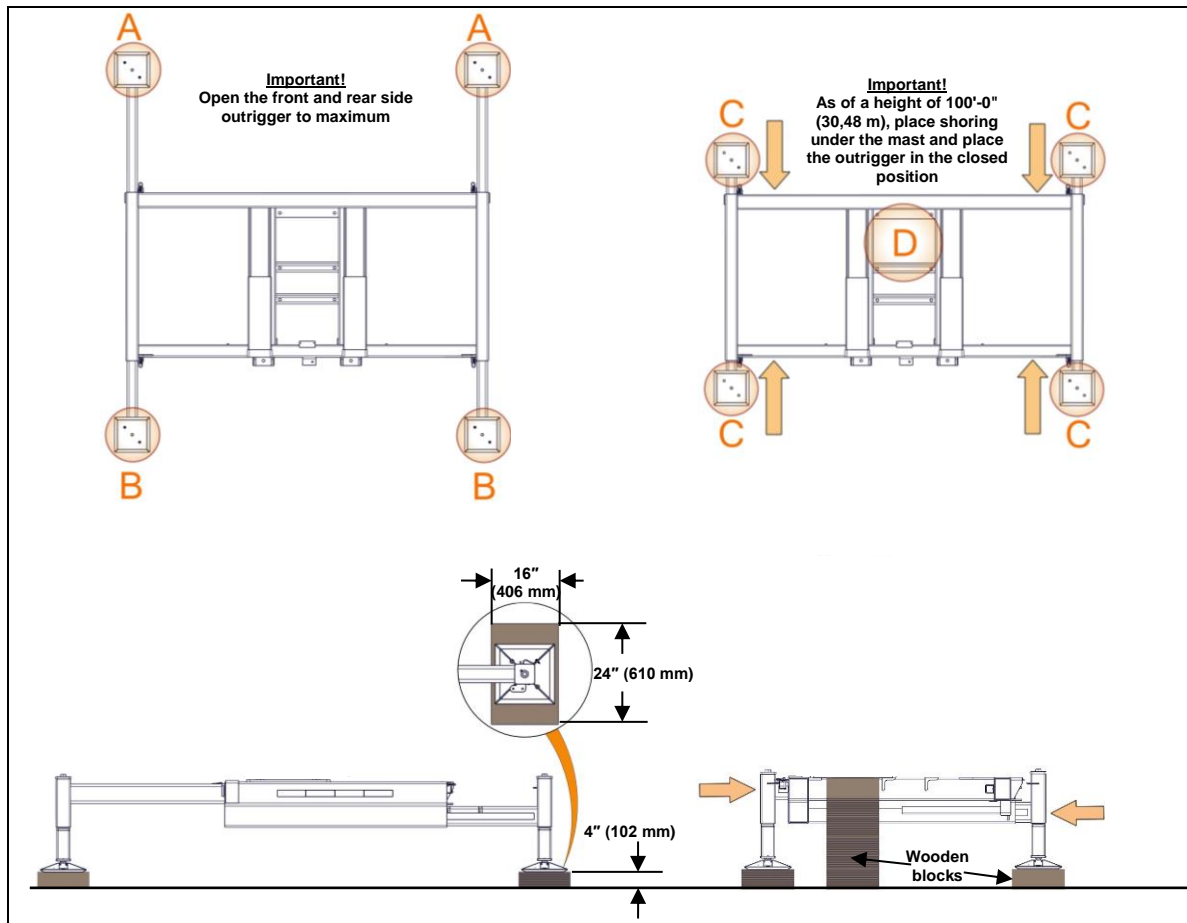


Figure 35 - Load distribution, universal freestanding base

Table 9 - Ground load, universal freestanding base

Freestanding installation height	Maximum load under base (at targeted locations) **	
45'-0" (13,72 m)	A = 12 250 lb (5 568 kg) per stand	B = 10 000 lb. (4 545 kg) per stand
Installation height	Maximum load under base**	
50'-0" (15,24 m)	A = 10 350 lb (4 705 kg) per stand	B = 8 100 lb (3 680 kg) per stand
75'-0" (22,86 m)	A = 10 900 lb (4 955 kg) per stand	B = 8 500 lb (3 865 kg) per stand
100'-0" (30,48 m)	A = 11 400 lb (5 180 kg) per stand	B = 8 900 lb (4 045 kg) per stand
Installation height	Maximum load under base**	
100'-0" (30,48 m)*	C = 3 500 lb (1 590 kg) per stand	D = 30 100 lb (13 675 kg) under the mast
125'-0" (38,10 m)*	C = 3 500 lb (1 590 kg) per stand	D = 31 750 lb (14 425 kg) under the mast
150'-0" (45,72 m)*	C = 3 500 lb (1 590 kg) per stand	D = 33 400 lb (15 175 kg) under the mast
200'-0" (60,96 m)*	C = 3 500 lb (1 590 kg) per stand	D = 36 700 lb (16 675 kg) under the mast
Over 200'-0" (60,96 m)	NOT ALLOWED	

* For an installation over 100'-0" (30,48 m), it is necessary to place shoring directly under the mast and drive the outriggers back in up to the closed position.

** The following loads are not factored.

∞ REFER TO SECTION DIMENSIONS WITH FREESTANDING BASE (UNIVERSAL, ACT-8), ON PAGE 12

Ground Load - ACT-8 freestanding base (14030020) Former generation

Note: The ACT-8 freestanding base is a model belonging to an older generation and must be combined with a Ground base (14030019).

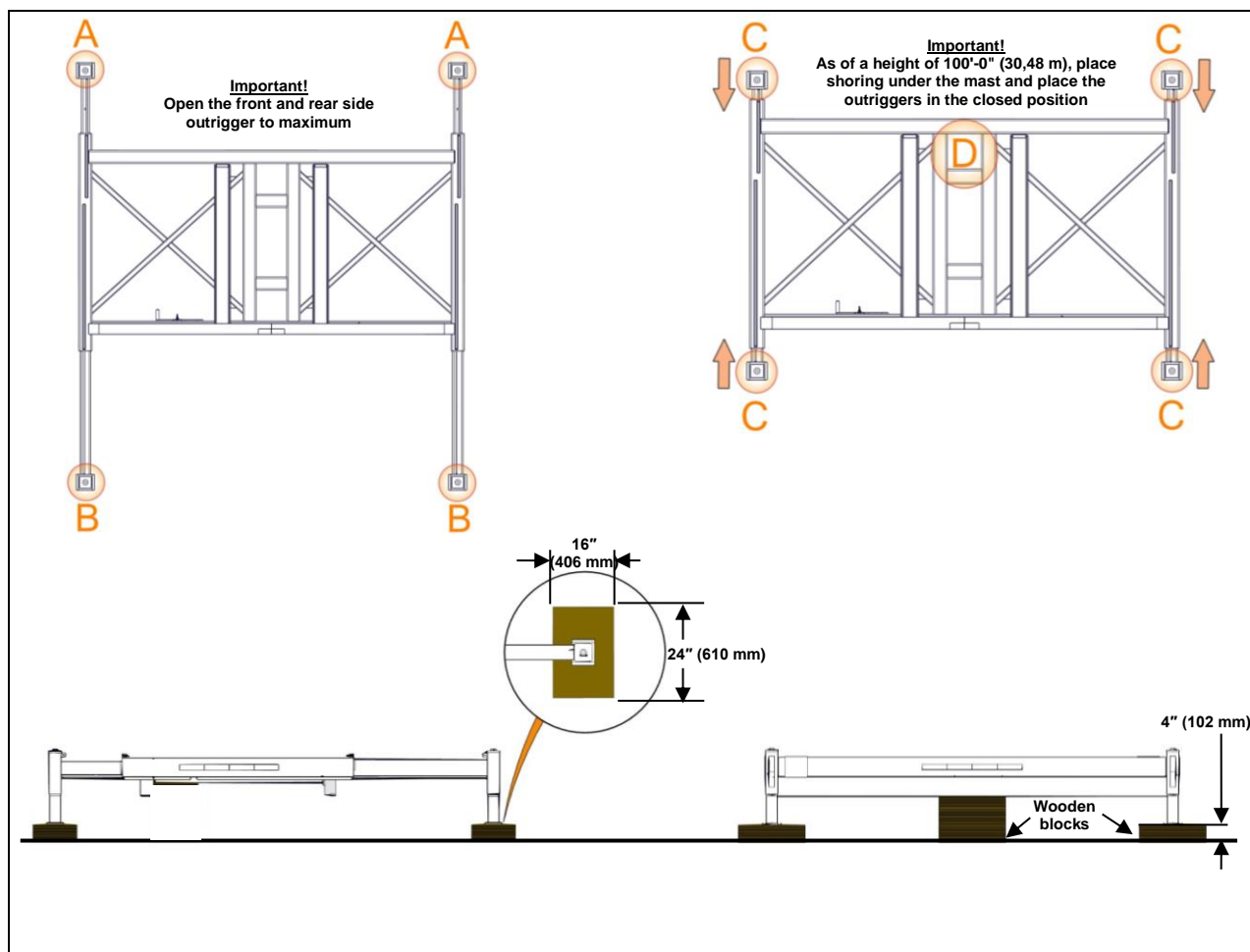


Figure 36 - Load distribution, ACT-8 freestanding base

Table 10 - Ground load, ACT-8 freestanding base

Freestanding installation height	Maximum load under base (at targeted locations) **	
45'-0" (13,72 m)	A = 13 850 lb. (6 283 kg) per stand	B = 6 450 lb (2 926 kg) per stand
Installation height	Maximum load under base**	
50'-0" (15,24 m)	A = 12 350 lb (5 602 kg) per stand	B = 4 850 lb (2 200 kg) per stand
75'-0" (22,86 m)	A = 13 050 lb (5 920 kg) per stand	B = 5 100 lb (2 315 kg) per stand
100'-0" (30,48 m)	A = 13 750 lb (6 237 kg) per stand	B = 5 300 lb (2 404 kg) per stand
Installation height*	Maximum load under base**	
100'-0" (30,48 m)*	C = 3 500 lb (1 590 kg) per stand	D = 30 100 lb (13 675 kg) under the mast
125'-0" (38,10 m)*	C = 3 500 lb (1 590 kg) per stand	D = 31 750 lb (14 402 kg) under the mast
150'-0" (45,72 m)*	C = 3 500 lb (1 590 kg) per stand	D = 33 400 lb (15 150 kg) under the mast
200'-0" (60,96 m)*	C = 3 500 lb (1 590 kg) per stand	D = 36 700 lb (16 647 kg) under the mast
Over 200'-0" (60,96 m)	NOT ALLOWED	

* For an installation over 100'-0" (30,48 m), it is necessary to place shoring directly under the mast and drive the outriggers back in up to the closed position.

** The following loads are not factored.

∞ REFER TO SECTION DIMENSIONS WITH FREESTANDING BASE (UNIVERSAL, ACT-8), ON PAGE 12

Chapter C – Installation and Dismantling

Installation

The required equipment is determined according to the specific needs of the work to be carried out (surfaces to be covered, working methods, building relevant architectural details, presence of balconies, roofing, number of planking used, etc.) and the allowed configurations.

Said information is gathered during the identification of the installation site and must be the subject of a site plan and/or quote established by an engineer. Please refer to this page for specific details, if any.

To be performed upon receipt of the equipment and after on-site equipment unloading: ensure you have all the components required to carry out the installation and that the equipment received corresponds to the packing slip. Notify the transport provider of any damage found during the receipt verification, and notify your supervisor.

Important! Refer to the section **OPERATION, USE OF THE LIFTING** unit for instructions on using the platform before you begin.

∞SEE **OPERATION, USE OF THE LIFTING** unit, ON PAGE 25

Important! Tightening the bolts when assembling the various components must be done using a pneumatic or electric shock wrench. Regardless of the method used, it is imperative to **respect the tightening torques defined** at each step.

Important! Any installation, disassembly and displacement operation must be carried out by a certified installer (Level 2A or 2B).

Important!: Always use a safety harness that is properly secured to a regulatory attachment point on the platform when assembling and dismantling the platform.

∞SEE **REGULATORY ATTACHMENT POINTS**, ON PAGE 10

Locating the installation site and taking measurements

Identify the building facade on which the platform will be installed.

Security perimeter

Determine a sufficient security perimeter and prohibit access around the base, platform and any areas at risk around said area. This must be done in accordance with applicable local safety standards and regulations. No objects or debris should be stored in this perimeter.

Taking measurements and identifying the location of the lifting unit

NOTE: The distance to the building shall be determined based on the distance from the finished wall, the most distant point (balconies, window edges, gutters, roofs, etc.) and the number of plankings placed on the outriggers used to perform the works.

Mark the exact location of the base of the unit on the ground. In case of a bridge configuration (Double mast or more), determine the exact position of each unit taking into account the distance between the masts.

∞SEE **FIGURE 6 - CLEARANCE TO FINISHED WALLS AND AROUND THE UNITS**, ON PAGE 13

∞SEE **TABLE 1 - DIMENSIONS AND CLEARANCE**, ON PAGE 14

∞SEE **SCHEDULE TABLE 16 - DISTANCE BETWEEN THE MASTS**, ON PAGE 152

Electrical connection required (Electric model only)

Electric motor WEG (USA) - MEM-2022

20 CV, 460 AC, 60 Hz, 60 A

ELF-5427 4-Wire power cable 8AWG

Linear weight: 605 lb/mft (0,91 kg/m)

Secure with ELE-1832 wire mesh Øfrom 0,75" to 0,99"

Electric motor WEG (EUROPEAN) - MEM-2022

20 CV, 380 AC, 50 Hz, 60 A

ELF-5436 5-Wire power cable 8AWG

Linear weight: 781 lb/mft (1,18 kg/m)

Secure with ELE-1832 wire mesh Øfrom 1,0" to 1,25"

A connection box with a 60A GFCI circuit breaker must be available near the base to allow electrical connection.

Ensure electrical connections are made in a safe manner and in accordance with applicable local safety standards and regulations.

Secure the cable with the wire mesh under the platform. Install the cable as far as possible from the mast and the freestanding base. Plug the cable into the junction box of the unit.

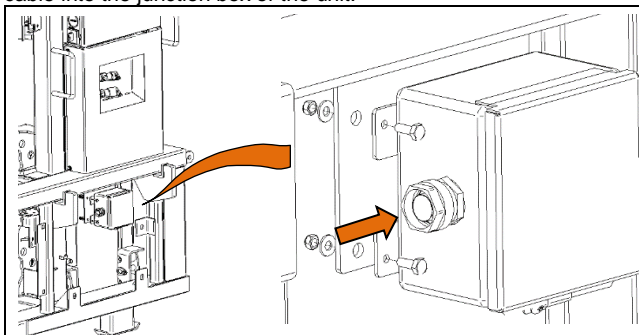
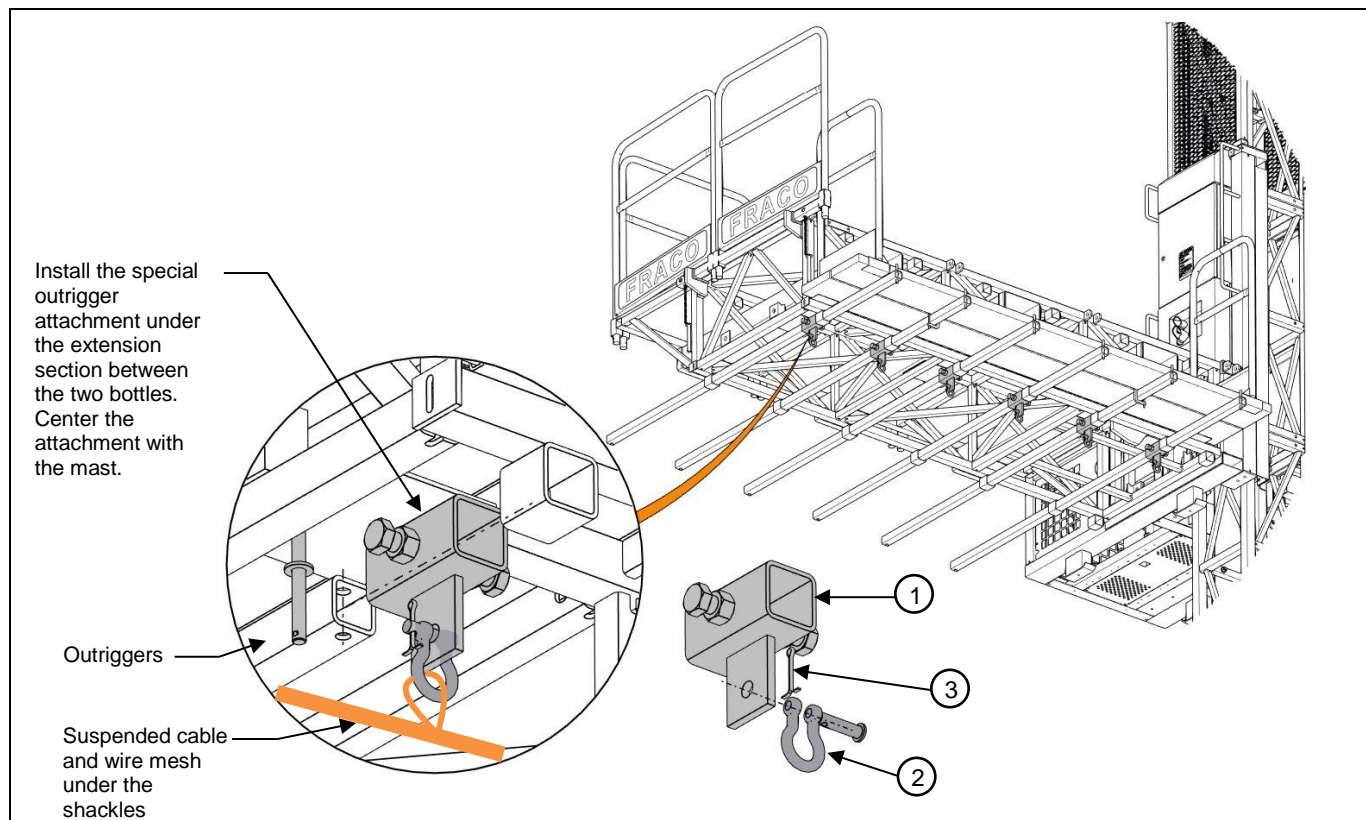


Figure 37 - Connecting to the unit box

Example of electric cable wire mesh



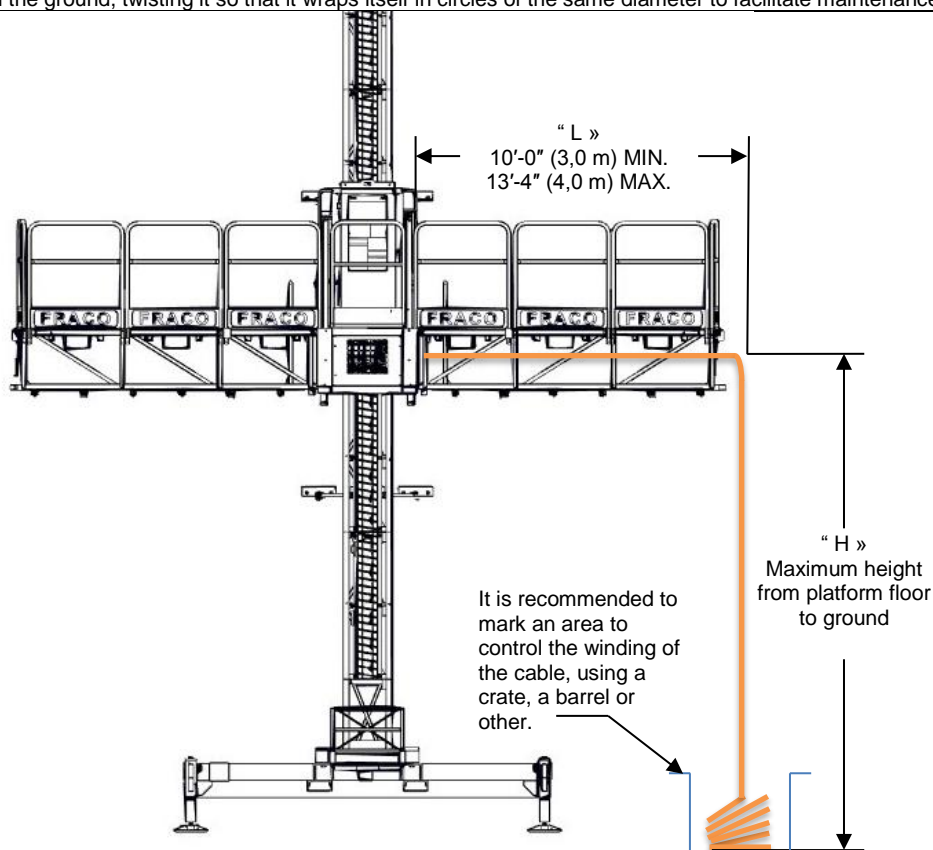
Figure 38 - Attaching the cable under the unit



No.	Item	Description	No.	Item	Description
01	20490544	Special outrigger tie	03	GOU-1125	Split Pin 3/16" x 2"
02	FOD-1086	Straight shackle 2 tons			

Electrical connection required (Electric model only)

Place the cable on the ground, twisting it so that it wraps itself in circles of the same diameter to facilitate maintenance and site safety.



Important! The weight of the cables must be deducted from the total admissible load.

∞SEE PERMITTED CONFIGURATIONS AND LOAD DISTRIBUTION, ON PAGE 19

Platform using an ELF-5427 4-wire 8AWG cable

Load to be deducted at the end of
the platform based on « L »
distance

Total installation height	10'-0" (3,0 m) MINIMUM	13'-4" (4,0 m) MAXIMUM
50'-0" (15,25 m)	30 lb (13,60 kg)	90 lb (40,82 kg)
100'-0" (30,50 m)	60 lb (27,22 kg)	180 lb (81,65 kg)
150'-0" (45,75 m)	90 lb (40,82 kg)	270 lb (122,50 kg)
200'-0" (61 m) MAXIMUM	121 lb (54,88 kg)	363 lb (164,65 kg)

Platform using an ELF-5436 5-wire 8AWG cable

Load to be deducted at the end of
the platform based on « L » distance

Total installation height	10'-0" (3,0 m) MINIMUM	13'-4" (4,0 m) MAXIMUM
50'-0" (15,25 m)	40 lb (18,15 kg)	120 lb (54,45 kg)
100'-0" (30,50 m)	78 lb (35,38 kg)	234 lb (106,15 kg)
150'-0" (45,75 m)	118 lb (53,52 kg)	354 lb (160,57 kg)
200'-0" (61 m) MAXIMUM	156 lb (70,76 kg)	470 lb (213,20 kg)

Note: For installation heights above 200'-0" (61 m), consult the FRACO engineering department.

Figure 39 - Passage of the electrical cable under the platform

Handling and lifting operation

Lifting points

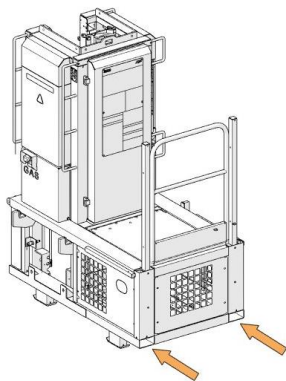
The various components of the platform can be loaded and unloaded using a forklift truck, crane truck or mobile crane, or a tower crane with sufficient capacity.

Some components such as the lifting unit, the bases or the bridge and **extension** sections have specific lifting points designed for the insertion of forklift forks.

Lifting straps can also be used to move the components.

The choice of lifting straps, their load capacity, layout, number and manner in which they are used to lift components is the responsibility of the operator of the lifting equipment. Said person must also take into account the combined total weight of the handled components.

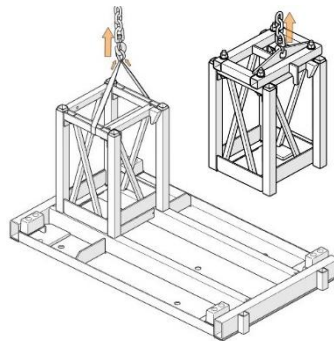
The operator must be adequately trained in the use of lifting equipment as defined in the applicable local regulations.



Lift points for forklift trucks

Figure 40 - Lift points, ACT-8 (10030015)

Lifting with a lifting strap or mast end section



The ground base may be delivered pre-assembled to the unit.

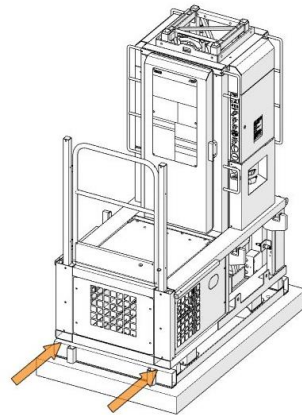
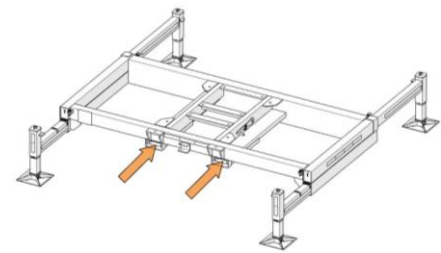
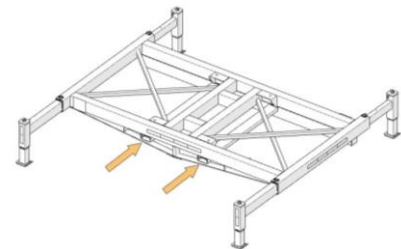


Figure 41 - Lift points, ground base (14030019)



Lift points for forklift trucks

Figure 43 - Lift points, universal freestanding base (14030109)



Lift points for forklift trucks

Figure 42 - Lift points, ACT-8 freestanding base (14030020)

Lifting, use of the mast end section

During lifting operations using the mast end section (13030029) and the mast sections (13030018) may only be moved as an assembly of 40'-0" (12,2 m) sections **MAXIMUM**. This limit eliminates the risk of bending of masts during lifting and placement of equipment. The mast end section can lift a maximum load of 6 500 lb (2 950 kg) (*Figure 44*).

Bolt each section with applying a torque of 260 ft*lb (360 N*m).

Note: For all of the following explanations, the term « **mast sections** » means an individual part (13030018) and « **mast** » means an assembly of two (2) or more mast sections. The masts may be pre-assembled on the ground or erected one section at a time.

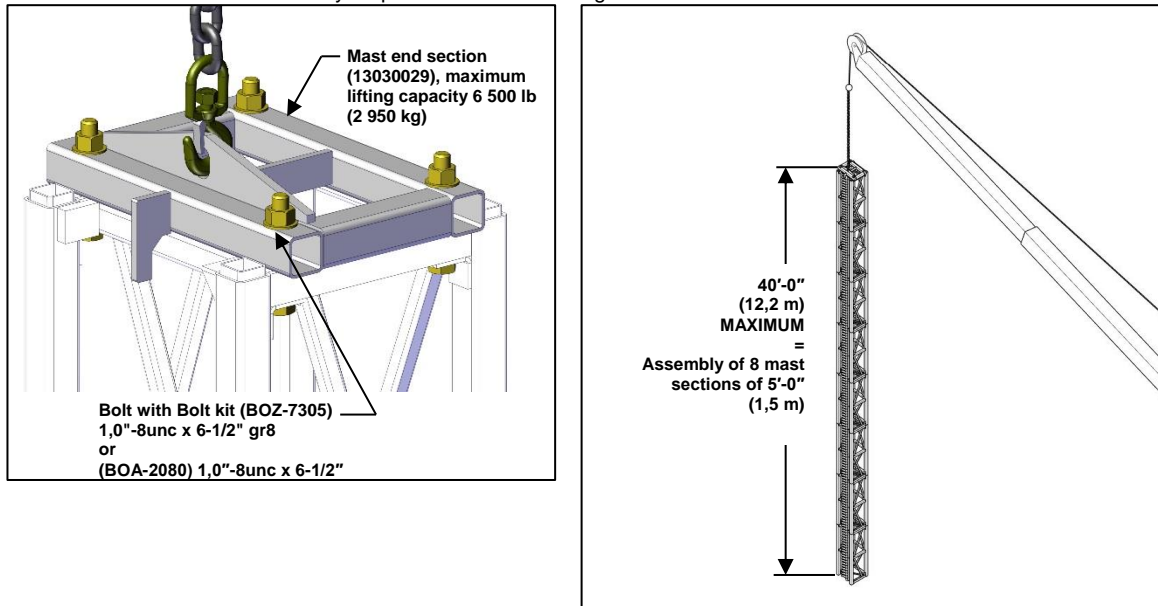


Figure 44 - Mast end section

Use of lifting slings

- Mast end sections must be removed before positioning the lifting slings or belts (*Figure 45*).
- Lifting operations of up to **MAXIMUM** 15 000 lb (6 804 kg) may be carried out using lifting slings (*Figure 45*).
- The assemblies shall have an equivalent load distribution on both (2) sides of the mast's center of gravity.
- The responsibility for checking the weights of the assembled elements belongs to the person in charge of the lifting operations.
- Only a FRACO certified installer (Level 2A and 2B) may handle, assemble or dismantle a FRACO equipment.
- Ensure that the lifting equipment used (cranes, slings, chains, belts, etc.) have the required lifting capacity.
- Ensure that the working methods used comply with all applicable local laws and regulations.

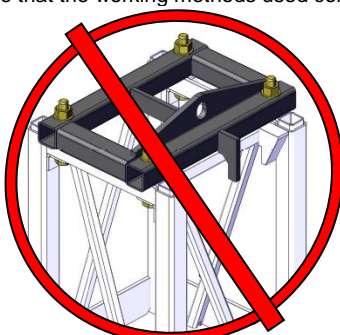


Figure 45 – Incompatibility between mast end section and lifting slings

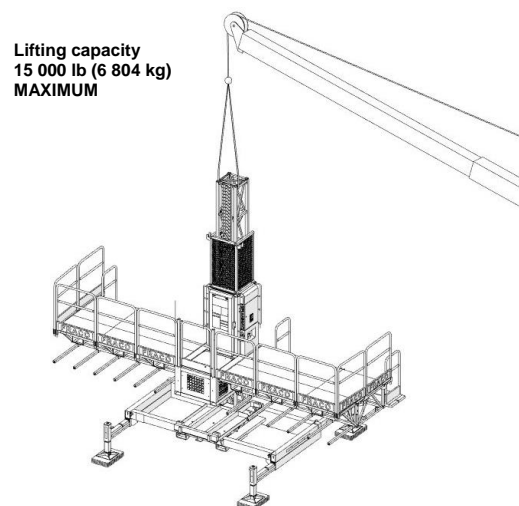


Figure 46 – Assembly lifting capacity

Use of lifting slings (CONTINUED)

- Lifting belts and slings must be positioned on the side of the worm screw rails, in the corners marked by the bolt insertion holes (*Figure 47*).
- A minimum distance of 8'-0" (2,44 m) between the end of the mast and the lifting hook must be observed (*Figure 47*).

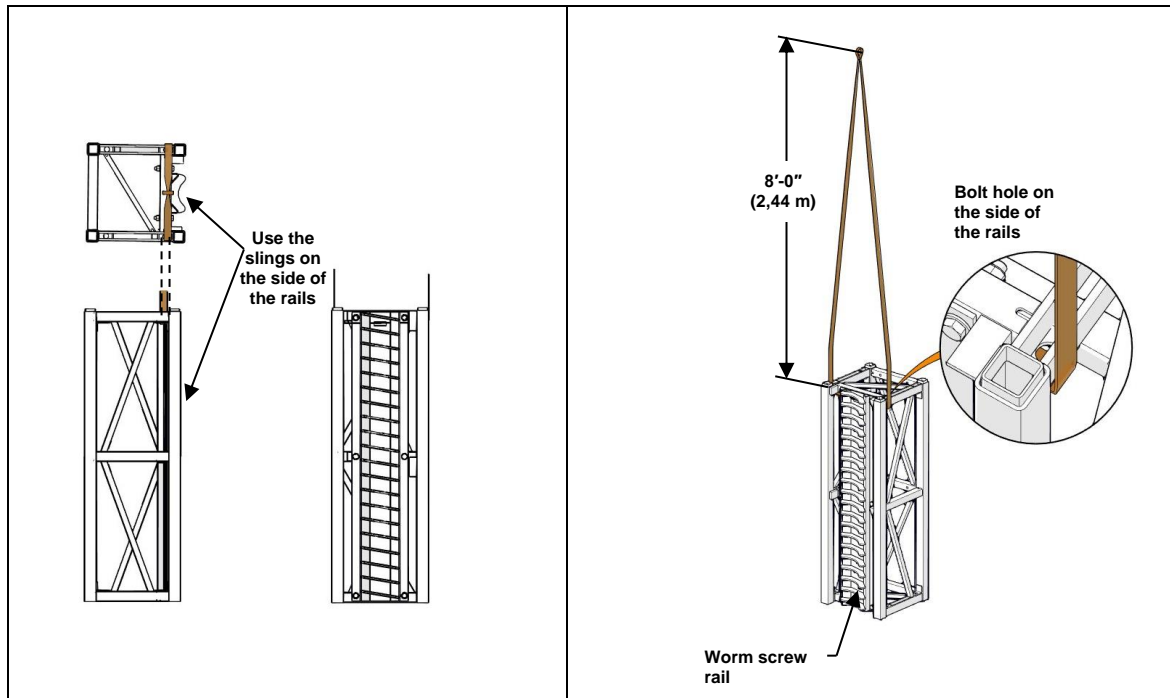
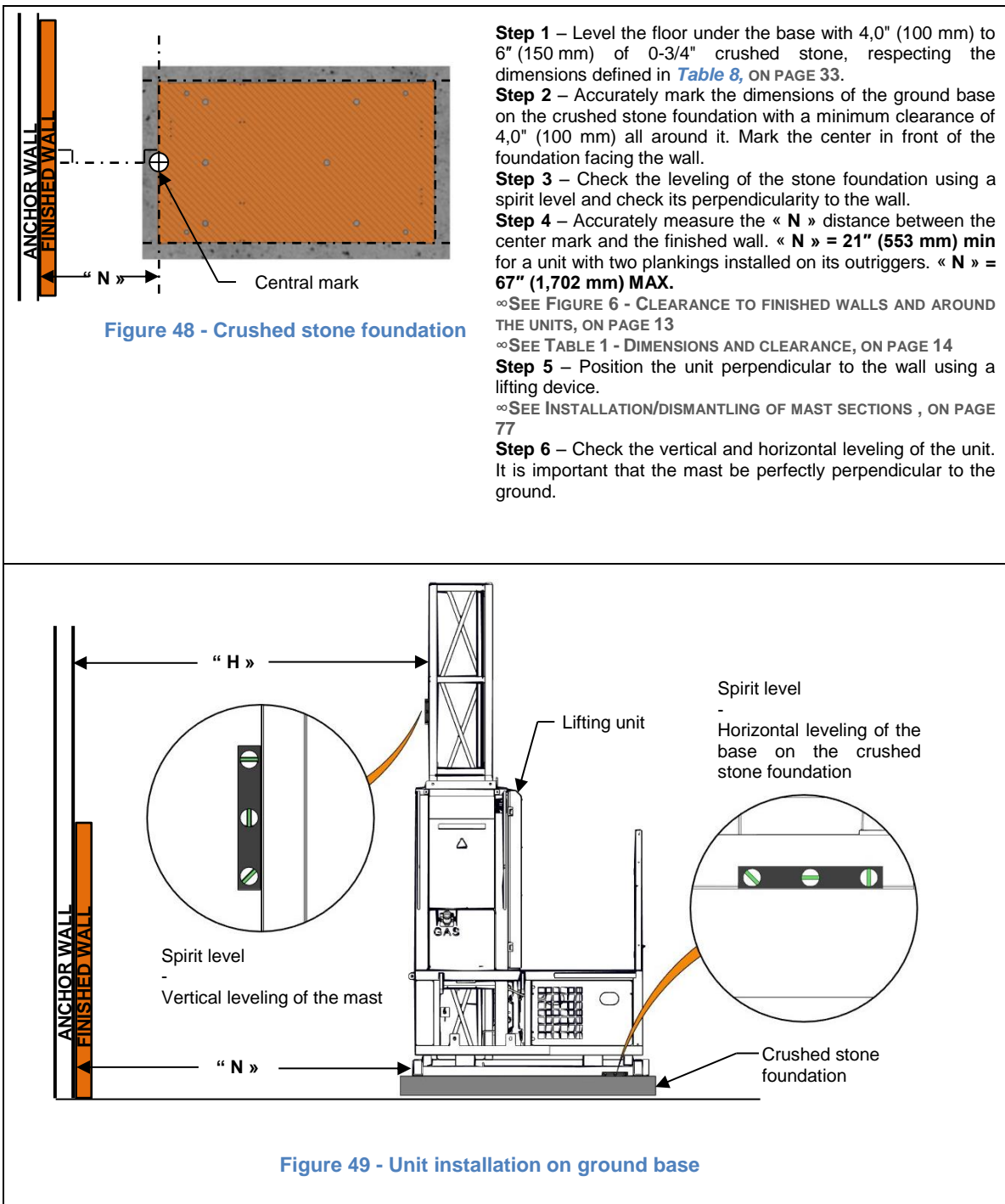


Figure 47 - Use of lifting lings and belts

Installing the base unit and lifting unit

Installation with ground base (14030019)



Installation with universal freestanding base (14030109)

Step 1 – Pull the front and rear stabilizers of the base as far as possible and lower the legs of the stabilizers onto wooden blocks. It is important to respect the **MINIMUM** and **MAXIMUM** limits of opening stickers as shown in the [Figure 138](#). For installations over 100'-0" (30 m) in height, retract the stabilizers in the closed position as shown in [Figure 35](#) and install shoring pads directly under the mast.

Step 2 – Accurately measure the « H » distance between the mast and the anchor wall and check perpendicularity to the wall.

∞ SEE [FIGURE 6 - CLEARANCE TO FINISHED WALLS AND AROUND THE UNITS, ON PAGE 13](#)

∞ SEE [TABLE 1 - DIMENSIONS AND CLEARANCE, ON PAGE 14](#)

Step 3 – Check that the mast is perfectly vertical using a spirit level. Check that the base (not the platform) is perfectly horizontal using a level. Ensure that the stabilizers are centered in the middle of the shoring pads. To level the base, use the hex wrench to adjust the stabilizer jacks.

Step 4 – Install the bolted base (14030110) or the ground base (14030019) directly onto the universal freestanding base (14030109) as shown in [Figure 50](#). Then, bolt the first mast section of the lifting unit (13030018) to the bolted base (14030110) or the ground base (14030019).

Step 5 – Bolt a mast section (13030018) above the one already presents in the unit. Lift the unit approximately 18" (460 mm) and bolt all the mast bolts with an impact wrench.

Step 6 – Lower the unit to its lowest position and recheck general leveling.

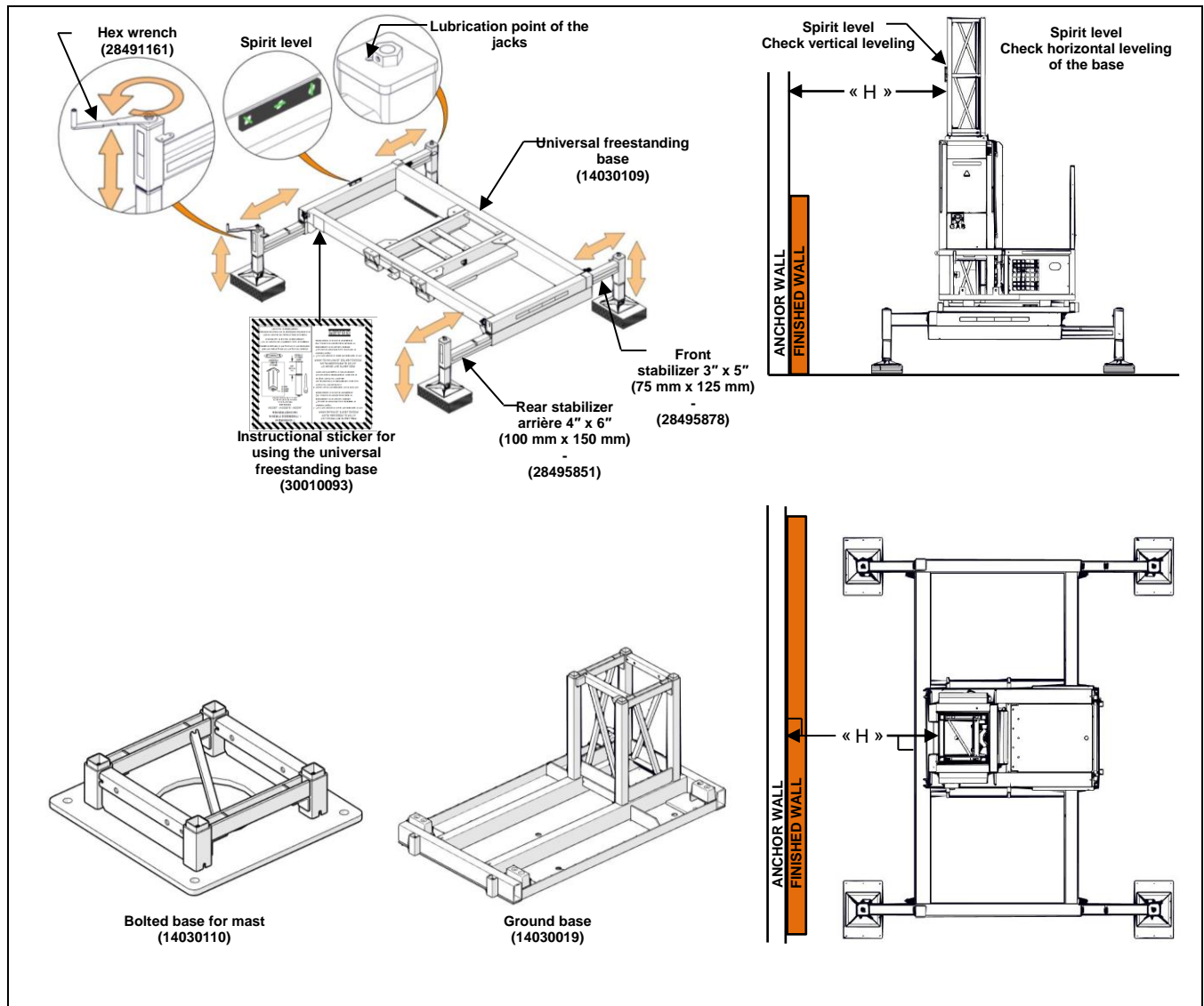


Figure 50 - Installation of universal freestanding base

Installation with universal freestanding base (14030109) (CONTINUED)

The universal freestanding base is compatible with the ground base (14030019) and the mast bolt base (14030110).

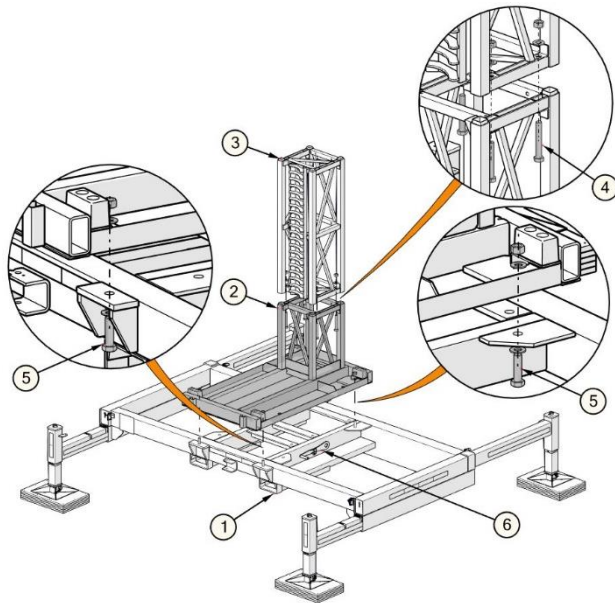


Figure 51 - Installation of ground base on universal freestanding base

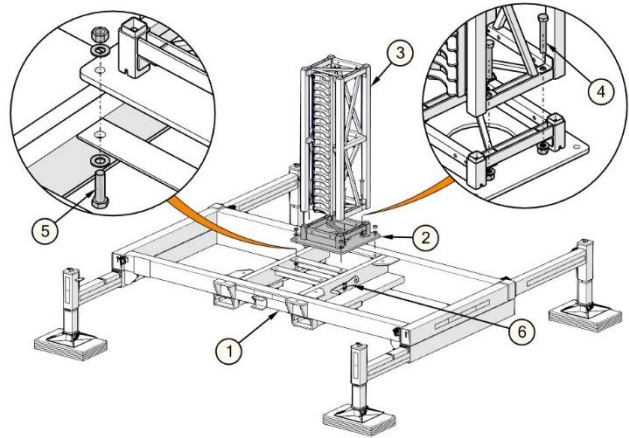


Figure 52 - Installation of mast bolts base on universal freestanding base

No.	Item	Description	No.	Item	Description
01	14030109	Universal freestanding base	01	14030109	Universal freestanding base
02	14030019	Ground base for 20" x 20" mast (3'-6" x 6'-0")	02	14030110	Bolted base for 20" x 20" mast (6'-1/2")
03	13030018	Mast section 20" x 20" x 5'-0" with rail (ACT)	03	13030018	Mast section 20" x 20" x 5'-0" with rail (ACT)
04	BOZ-7305 or BOA-2080	Bolt kit 1"-8unc x 6-1/2", gr8 zinc or Bolt kit 1"-8unc x 6-1/2", A325	04	BOZ-7305 or BOA-2080	Bolt kit 1"-8unc x 6-1/2", gr8 zinc or Bolt kit 1"-8unc x 6-1/2", A325
05	BOA-2072	Bolt kit 1"-8unc x 3-1/2", A325	05	BOA-2072	Bolt kit 1"-8unc x 3-1/2", A325
06	28491161	Hex wrench 1-5/8"	06	28491161	Hex wrench 1-5/8"

Installation with ATC-8 freestanding base (14030020)

Step 1 – Pull the front and rear stabilizers of the base as far as possible and lower the legs of the stabilizers onto wooden blocks. It is important to respect the stickers' **MINIMUM** limits as shown in the [Figure 140](#). For installations over 100'-0" (30 m) in height, retract the stabilizers in the closed position as shown in [Figure 35](#) and install shoring pads directly under the mast.

Step 2 – Accurately measure the « H » distance between the mast and the finished wall and check perpendicularity to the wall.

∞ SEE [FIGURE 6 - CLEARANCE TO FINISHED WALLS AND AROUND THE UNITS](#), ON [PAGE 13](#)

∞ SEE [TABLE 1 - DIMENSIONS AND CLEARANCE](#), ON [PAGE 14](#)

Step 3 – Check that the mast is perfectly vertical using a level. Check that the base (not the platform) is perfectly horizontal using a level. Ensure that the stabilizers are centered in the middle of the shoring pads. To level the base, use the hex wrench to adjust the stabilizer jacks.

Step 4 – Install the ground base (14030019) directly onto the ACT-8 freestanding base (14030020) as shown in [Figure 53](#). Then, bolt the first mast section of the lifting unit (13030018) to the ground base (14030019).

Step 5 – Bolt a mast section (13030018) above the one already presents in the unit. Lift the unit approximately 18" (460 mm) and bolt all the mast bolts with an impact wrench.

Step 6 – Lower the unit to its lowest position and recheck general leveling.

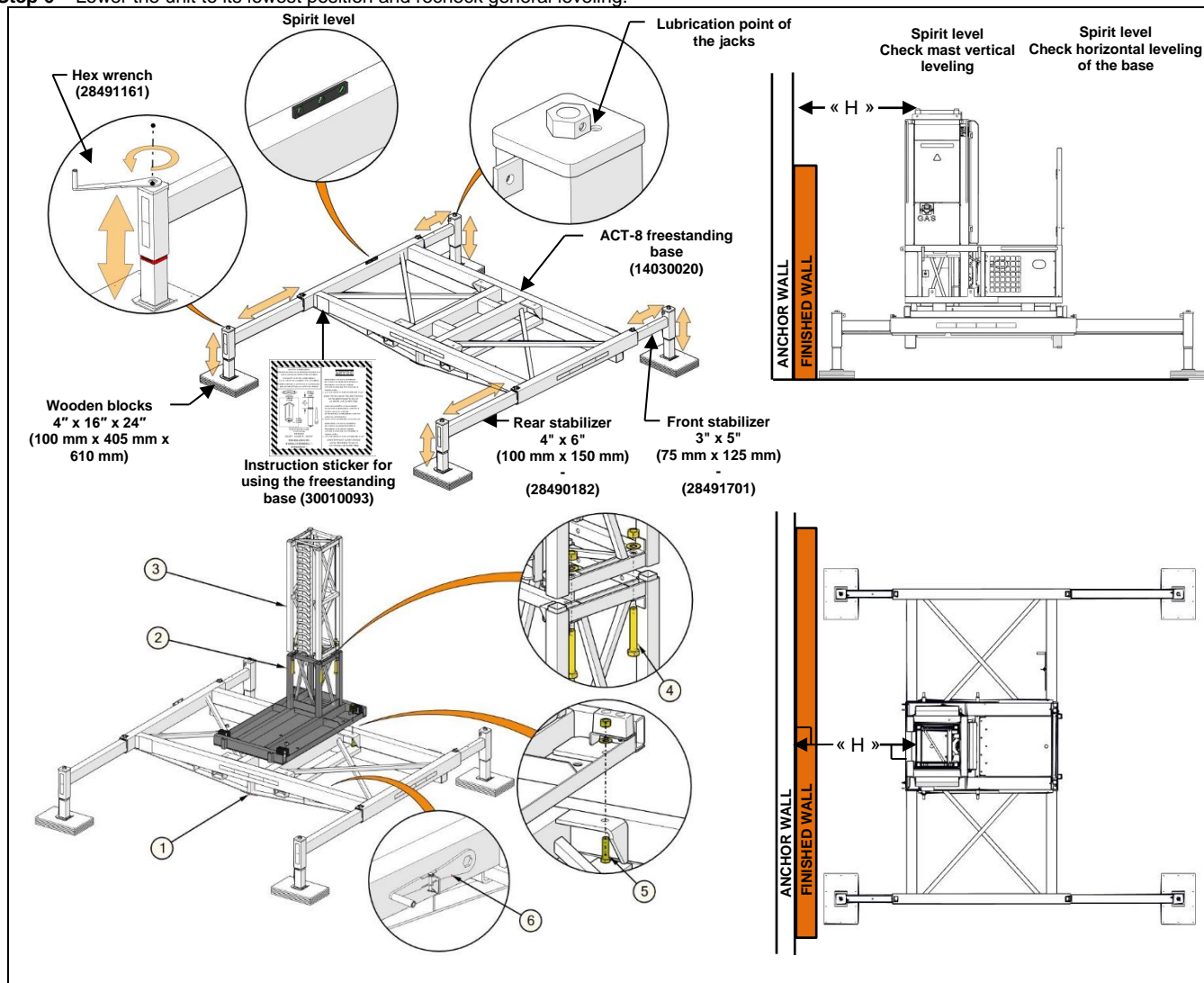


Figure 53 - Installation of ACT-8 freestanding base

No.	Item	Description	No.	Item	Description
01	14030020	Freestanding base for 20" x 20" mast overall length 13' (ACT-8)	04	BOZ-7305 or BOA-2080	Bolt kit 1"-8unc x 6-1/2", gr8 zinc or Bolt kit 1"-8unc x 6-1/2", A325
02	14030019	Ground base for 20" x 20" mast (3'-6" x 6'-0")	05	BOZ-8576 or BOA-2072	Bolt kit 1"-8unc x 3-1/2", gr8 zinc or Bolt kit 1"-8unc x 3-1/2", A325
03	13030018	Mast section 20" x 20" x 5'-0" with rail (ACT)	06	28491161	Hex wrench 1-5/8"

Installation of stairs on the ground base (3 steps)

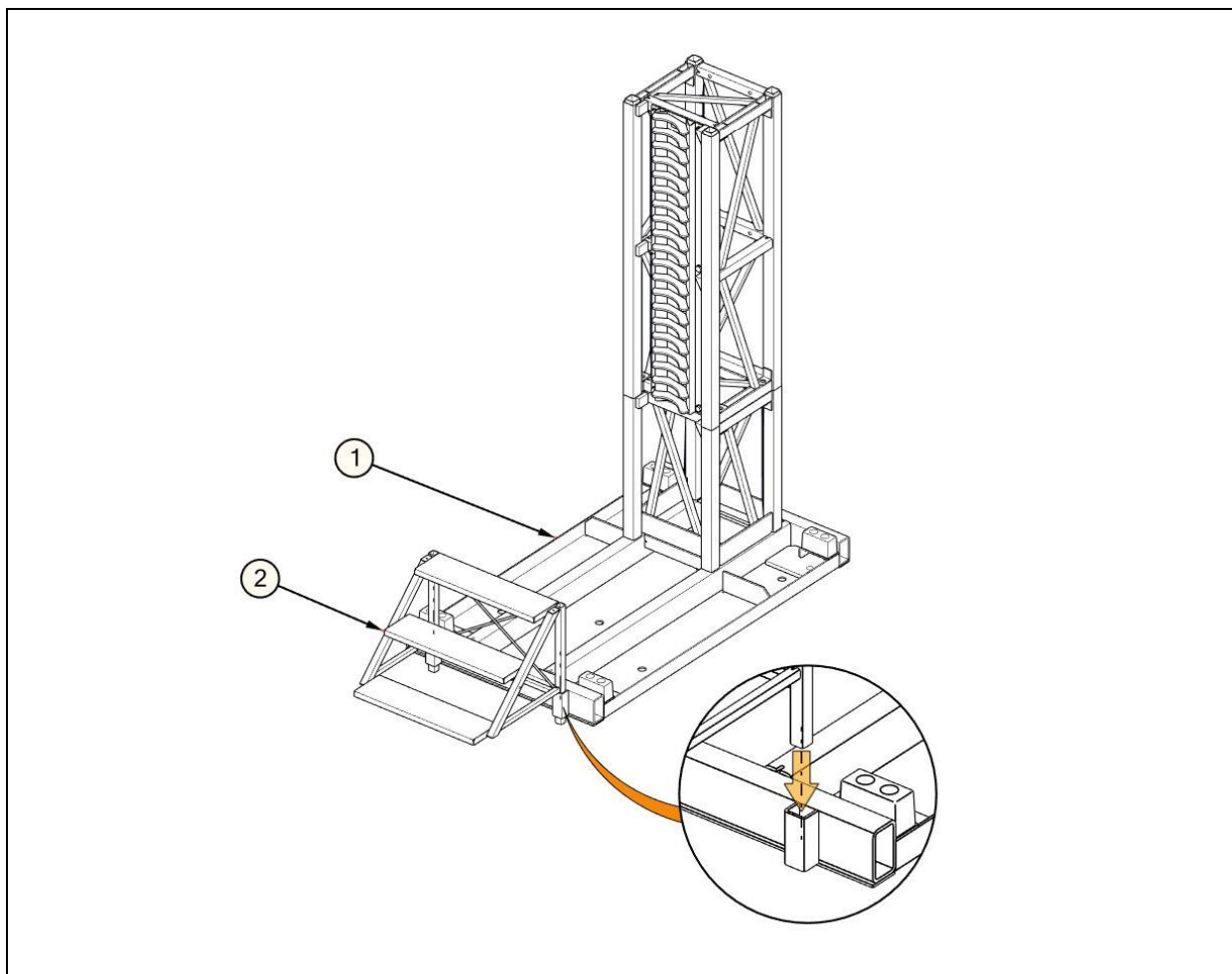


Figure 54 - Installation of stairs (3 steps) on the ground base

No.	Item	Description	No.	Item	Description
01	14030019	Ground base for 20" x 20" mast (3'-6" x 6'-0")	02	20490106	Stairs with 3 steps of 2'-3"

Installation of stairs on the ground base (5 steps)

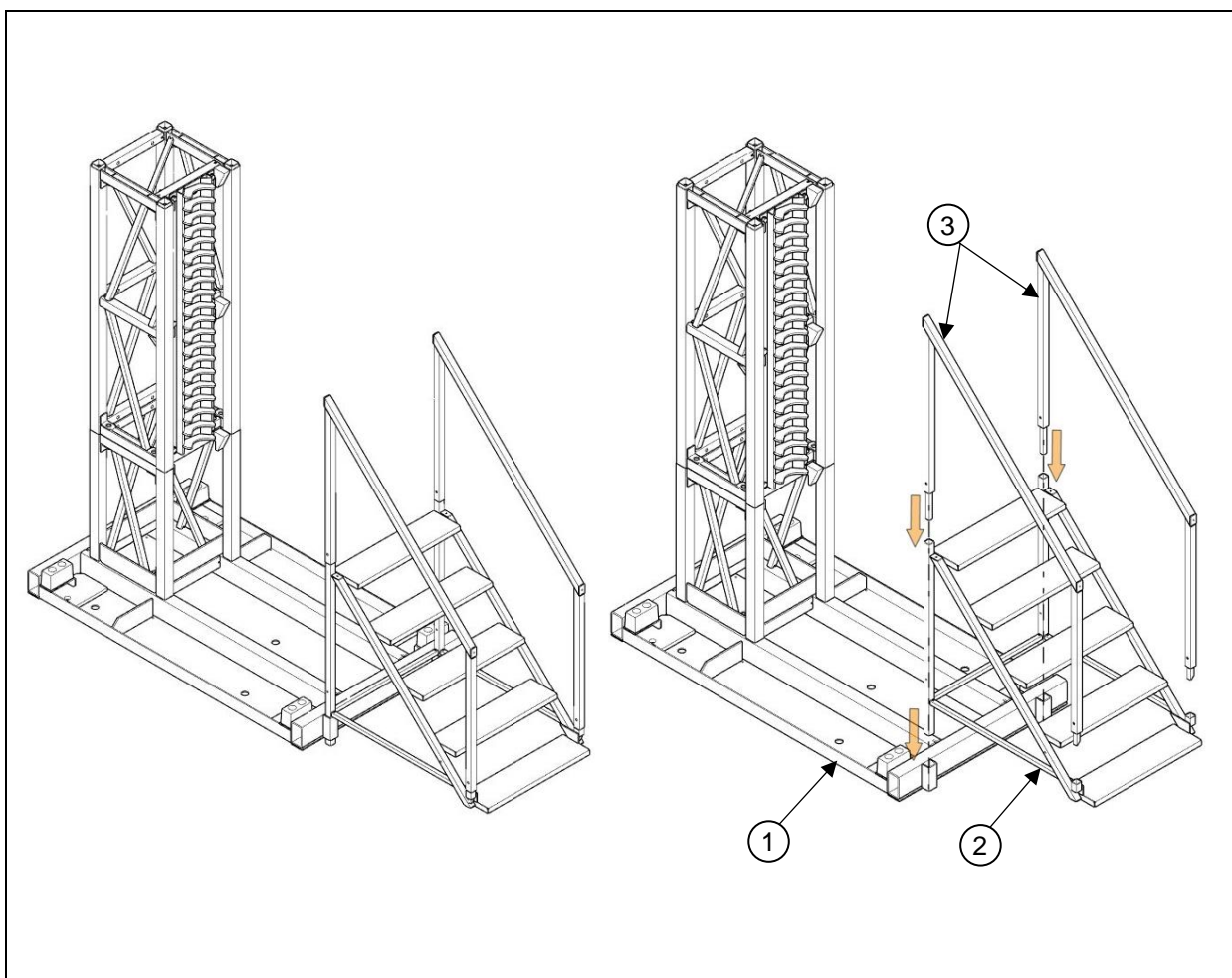


Figure 55 - Installation of stairs (5 steps) on the ground base

No.	Item	Description	No.	Item	Description
01	14030019	Ground base for 20" x 20" mast (3'-6" x 6'-0")	03	20490252	Stair rail (3'-2" x 3'-7")
02	20491310	5 steps stair (3' 4")			

Installation of stairs on the freestanding base (5 steps)

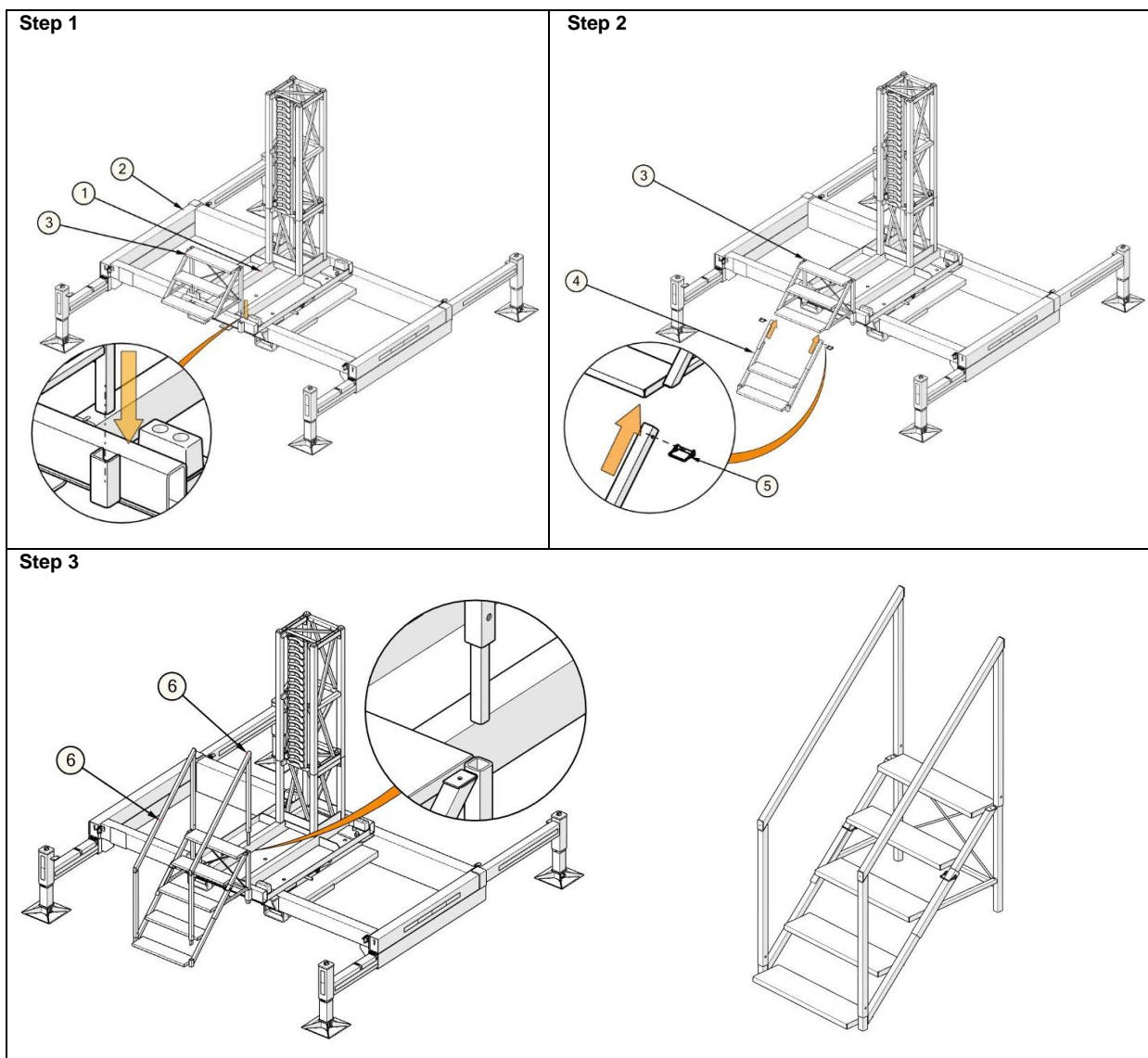


Figure 56 - Installation of stairs (5 steps) on the freestanding base

No.	Item	Description	No.	Item	Description
01	14030019	Ground base for 20" x 20" mast (3'-6" x 6'-0")	04	20490229	Stair extension with 2 steps (2'-3")
02	14030109	Universal freestanding base	05	GOU-5040	Locking pin 3/8" x 2-1/2" x 1-1/2"
03	20490106	Stair with 3 steps (2'-3")	06	20490252	Stair rail (3'-2" x 3'-7")

Installation of stairs on the freestanding base (7 steps)

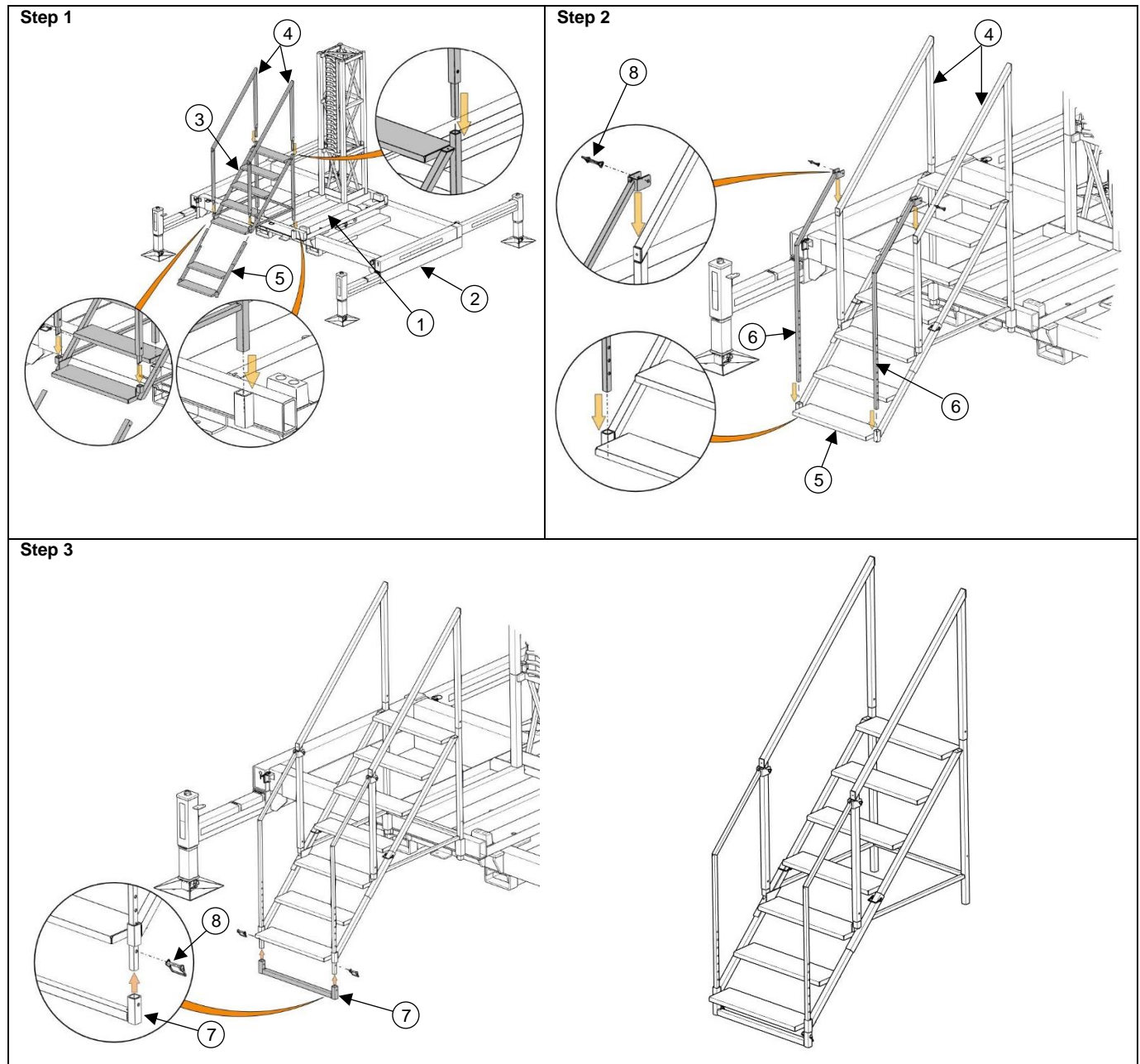


Figure 57 - Installation of stairs (7 steps) on the freestanding base

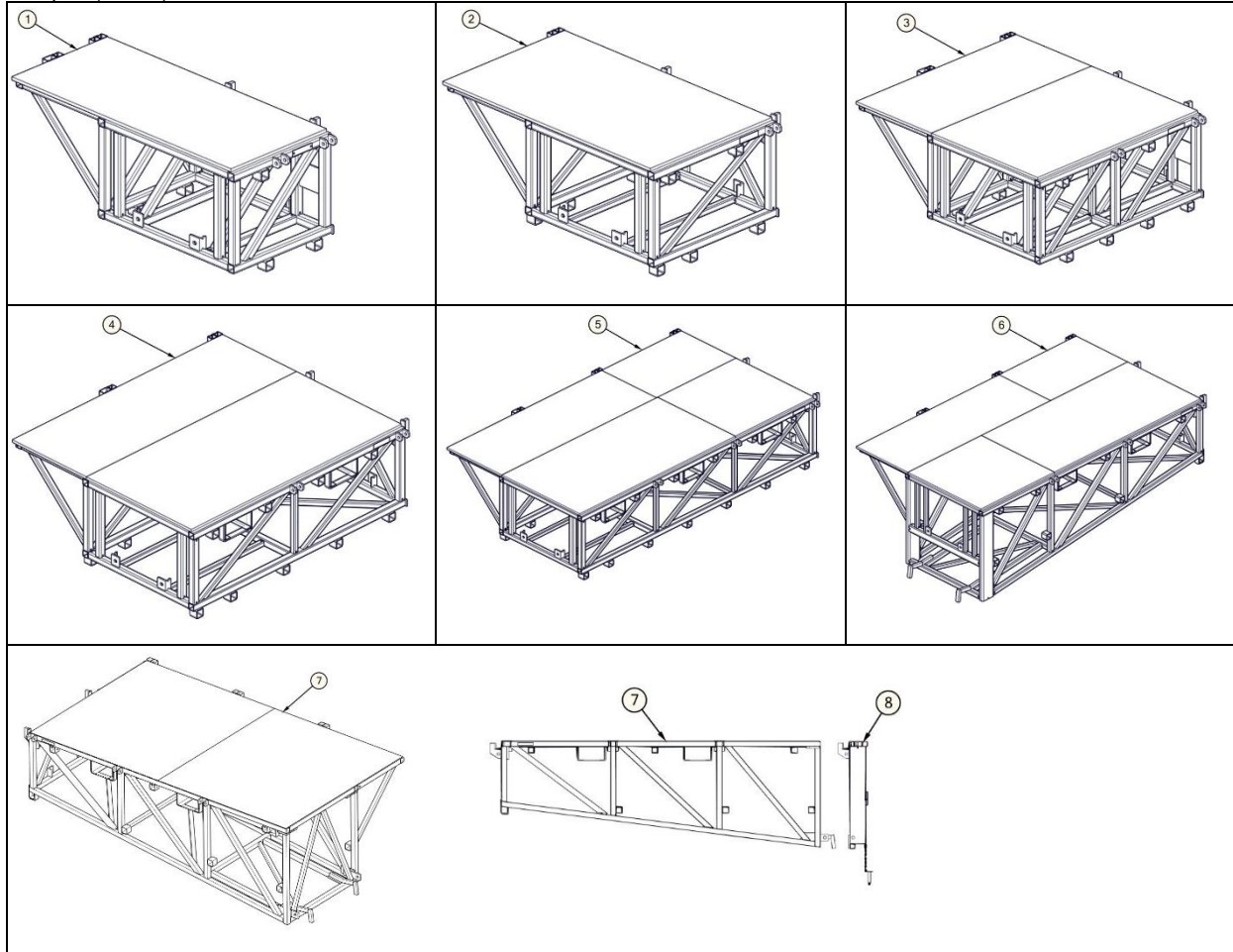
No.	Item	Description	No.	Item	Description
01	14030019	Ground base for 20" x 20" mast (3'-6" x 6'-0")	05	20490229	Stair extension with 2 steps (2'-3")
02	14030109	Universal freestanding base	06	20491321	Stair rail extension (18-3/4" x 4'-9")
03	20491310	5 steps stair (3'-4")	07	20491400	Ground foot support (1-1/2" x 2'-6")
04	20490252	Stair rail (3'-2" x 3'-7")	08	GOU-5040	Locking pin 3/8" x 2-1/2" x 1-1/2"

Extension section

MODULAR extension section

The extension sections serve to extend the platform part of the lifting unit.
The « **MODULAR** » sections do not include any removable components.

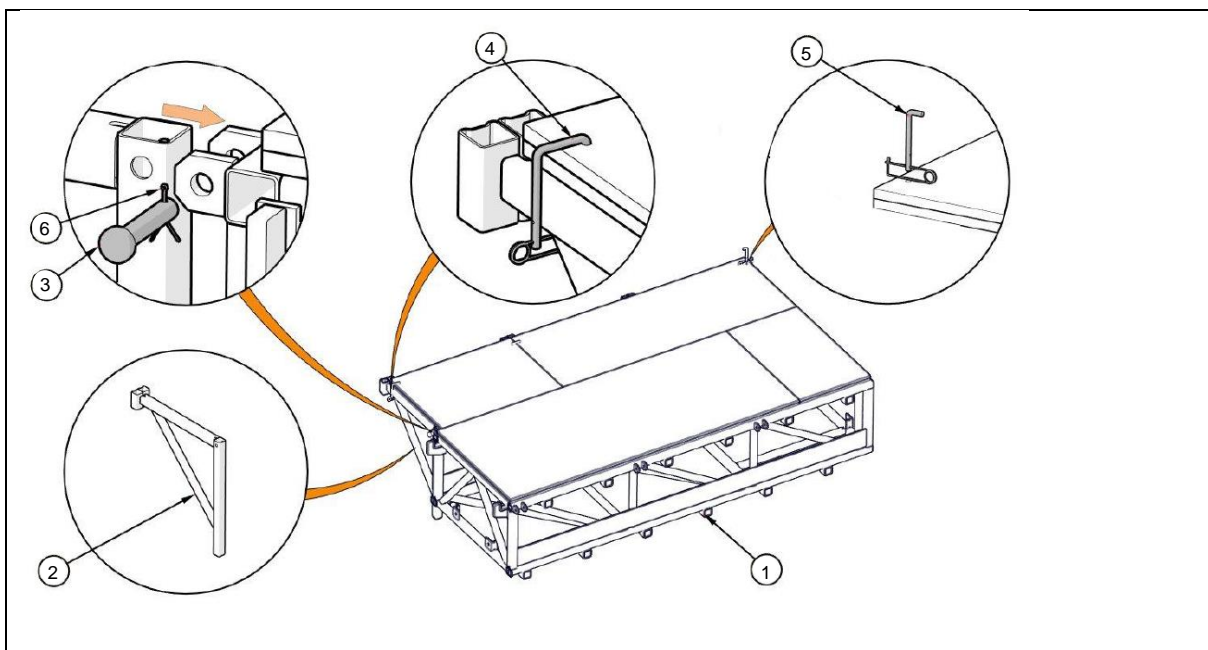
Note: The « universal » tapered extension section (**item 6**) has reinforcements and installs directly on the unit.
The tapered extension section is also available in a « regular » version (**item 7**) without reinforcements and requires the use of a tapered extension section adapter (**item 8**) between the section and the unit.



N°	FRACO code	Description
1	15090016 (Left) 15090094 (Right)	Intermediate extension section 2'-6" x 5'-9" (762 mm x 1,75 m) left (green) Intermediate extension section 2'-6" x 5'-9" (762 mm x 1,75 m) right (blue)
2	15090027 (Left) 15090106 (Right)	Extension section 3'-4" x 5'-9" (1 m x 1,75 m) left (green) Extension section 3'-4" x 5'-9" (1 m x 1,75 m) right (blue)
3	15090038 (Left) 15090117 (Right)	Intermediate extension section 5'-0" x 5'-9" (1,52 m x 1,75 m) left (green) Intermediate extension section 5'-0" x 5'-9" (1,52 m x 1,75 m) right (blue)
4	15090049 (Left) 15090128 (Right)	Extension section 6'-8" x 5'-9" (2 m x 1,75 m) left (green) Extension section 6'-8" x 5'-9" (2 m x 1,75 m) right (blue)
5	15090050 (Left) 15090139 (Right)	Extension section 10'-0" x 5'-9" (3 m x 1,75 m) left (green) Extension section 10'-0" x 5'-9" (3 m x 1,75 m) right (blue)
6	15090184 (Left) 15090195 (Right)	Universal taper extension section 10'-0" x 5'-9" (3 m x 1,75 m) left (orange) Universal taper extension section 10'-0" x 5'-9" (3 m x 1,75 m) right (white)
7	15060013 (Left) 15060024 (Right)	Tapered extension section of 10'-0" x 5'-9" (3 m x 1,75 m) left (green) Tapered extension section of 10'-0" x 5'-9" (3 m x 1,75 m) right (blue)
8	20490926	Taper extension section adapter (MODULAR)

NON-MODULAR extension section

The « **NON MODULAR** » sections have removable and reversible brackets as illustrated below.



N°	FRACO code	Description
1	150200XX	Non-modular extension section (Example)
2	18490046	Side bracket with 3/4" hole x 2'-4"
3	25490055	Pin Ø 3/4" x 4-3/16"
4	25490088	U-lock pin Ø 3/8" x 2-7/8" x 4-3/4" assembled
5	25490099	Half-U-lock pin Ø 3/8" x 4-3/4" assembled
6	GOU-1120	Split Pin 1/8" x 2" zinc
«7»	15020019	Extension section 2'-6" x 3'-6" (762 mm x 1,07 m)
«8»	15020020	Extension section 3'-4" x 3'-6" (1 m x 1,07 m)
«9»	15020031	Extension section 6'-8" x 3'-6" (2 m x 1,07 m)
«10»	15020042	Extension section 10'-0" x 3'-6" (3 m x 1,07 m)
«11»	15020086	Taper extension section 10'-0" x 3'-6" (3 m x 1,07 m)
«12»	20490971	Taper extension section adaptor (NON-MODULAR)

Note: Items numbered between « » are not shown in the illustration.

Installation of an extension section

Installation of a MODULAR extension section

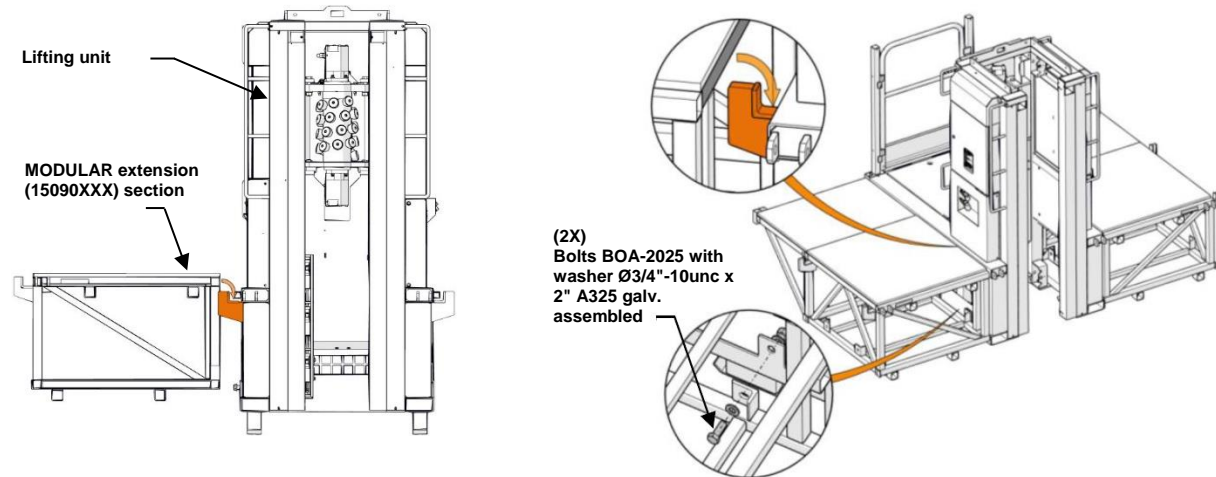


Figure 58 - MODULAR extension section

Installation of MODULAR universal tapered extension section

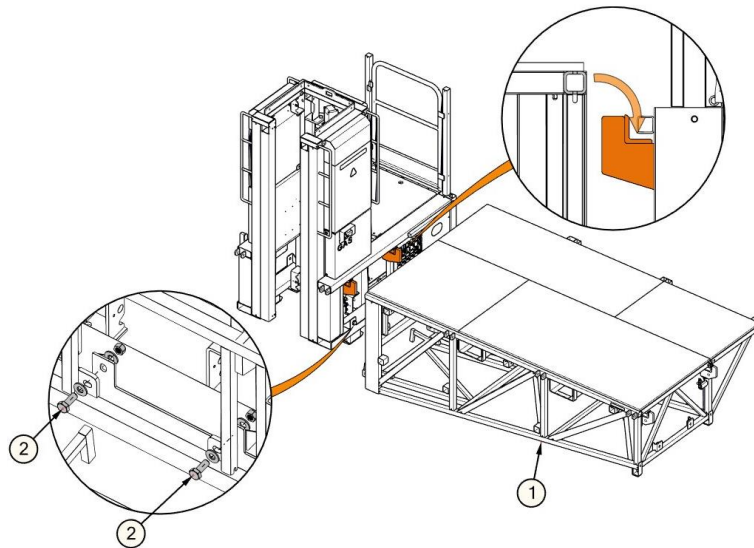


Figure 59 - MODULAR universal tapered extension section

No.	Item	Description	No.	Item	Description
01	15090184 (Left)	Universal taper extension section (MODULAR) 5'-9" x 10'-0" left (orange)	02	BOA-2025	Bolts kit (BOA-2025) Ø3/4"-10unc x 2" A325 galv. with washers and nut
	15090195 (Right)	Universal taper extension section (MODULAR) 5'-9" x 10'-0" right (white)			

Installation of an extension section (CONTINUED)

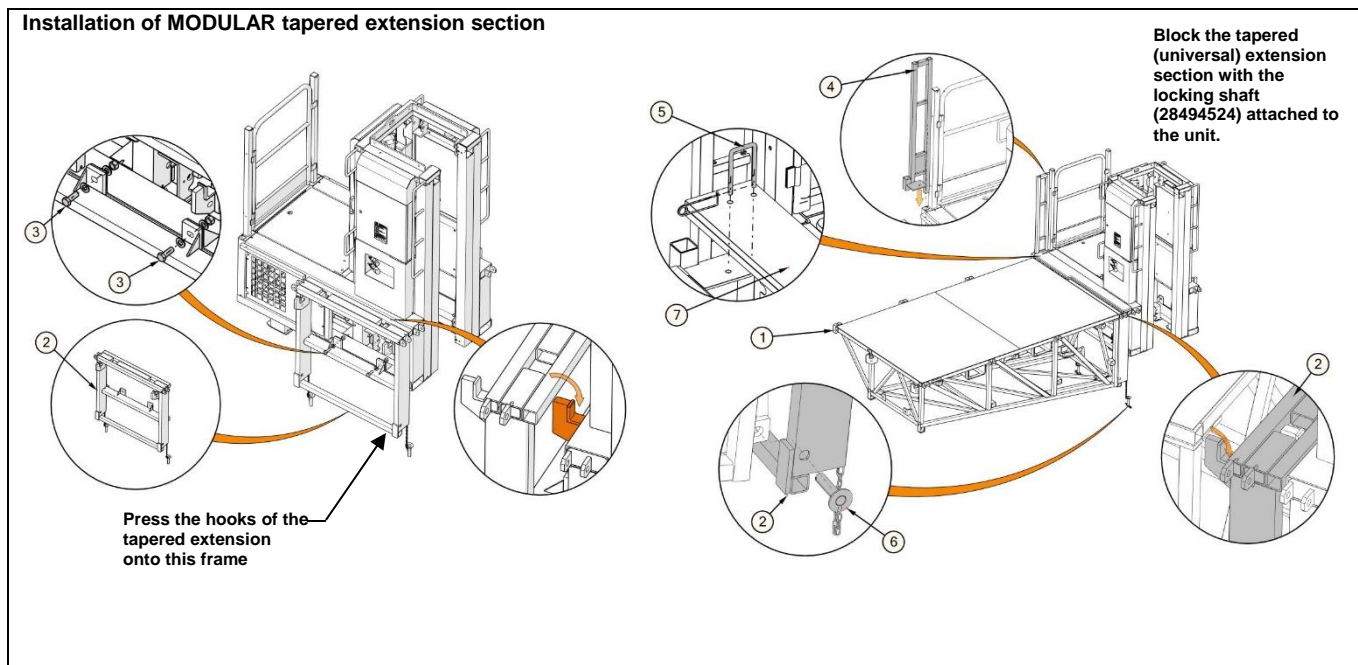


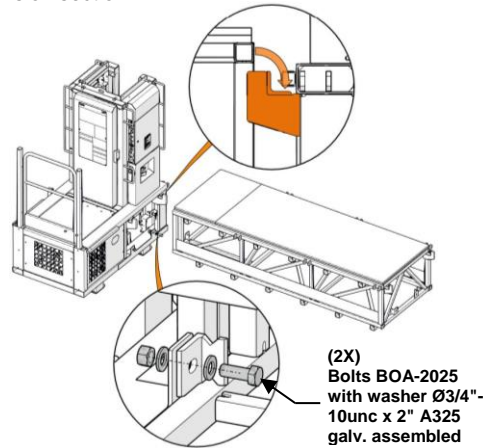
Figure 60 - MODULAR tapered extension section

No.	Item	Description	No.	Item	Description
01	15060013 (Left)	Tapered extension section (MODULAR) 5'-9" x 10'-0" left (green)	05	25490088	U-lock pin dia. 3/8" (2-7/8" x 4-3/4") assembled
	15060024 (Right)	Tapered extension section (MODULAR) 5'-9" x 10'-0" right (blue)			
02	20490926	Taper extension section adaptor	06	28494524 and GOU-1120	Locking shaft Ø 1" x 4-5/8" with 8" chain and 1/8" x 2" zinc split pin
03	BOA-2025	Bolts kit (BOA-2025) Ø3/4"-10unc x 2" A325 galv. with washers and nut	07	16030303	Flooring 1-1/2" x 7" x 5' 9" (with 42" notch)
04	17490337 (Right)	Guard-rail with plywood support 7" x 4'-2" (right)			
	17490348 (Left)	Guard-rail with plywood support 7" x 4'-2" (left)			

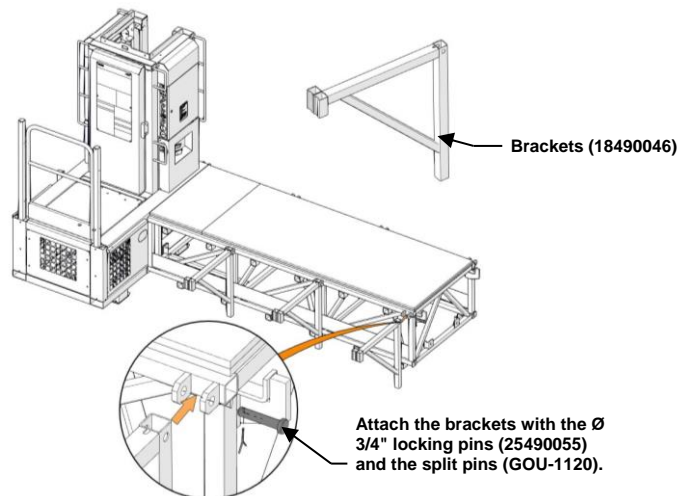
Installation of an extension section (CONTINUED)

Installation of NON-MODULAR extension section

Step 1
Install the section



Step 2
Install the brackets



Step 3
Install the plywood.

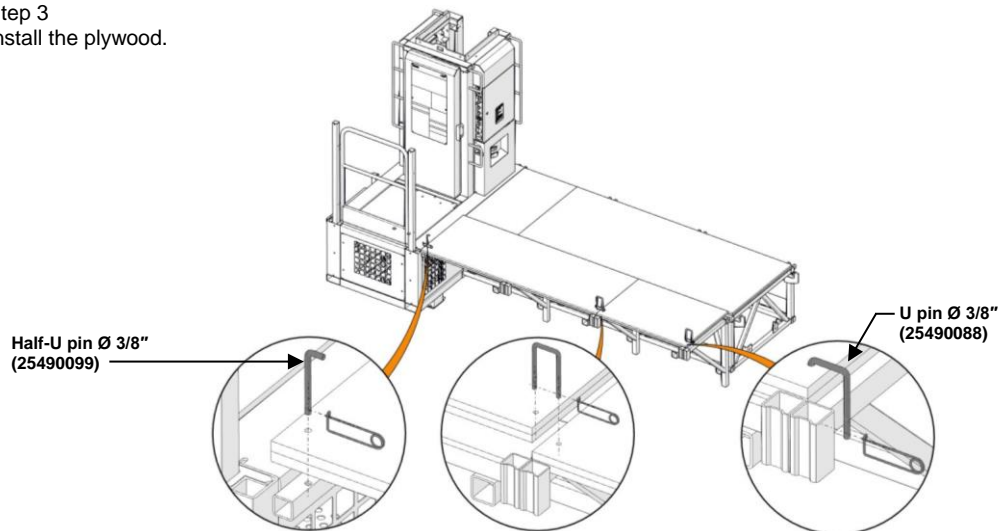


Figure 61 - NON-MODULAR extension section

Installation of an extension section joints (20490566)

Extension section joints are required to join a **MODULAR** extension section to a **NON MODULAR** section.

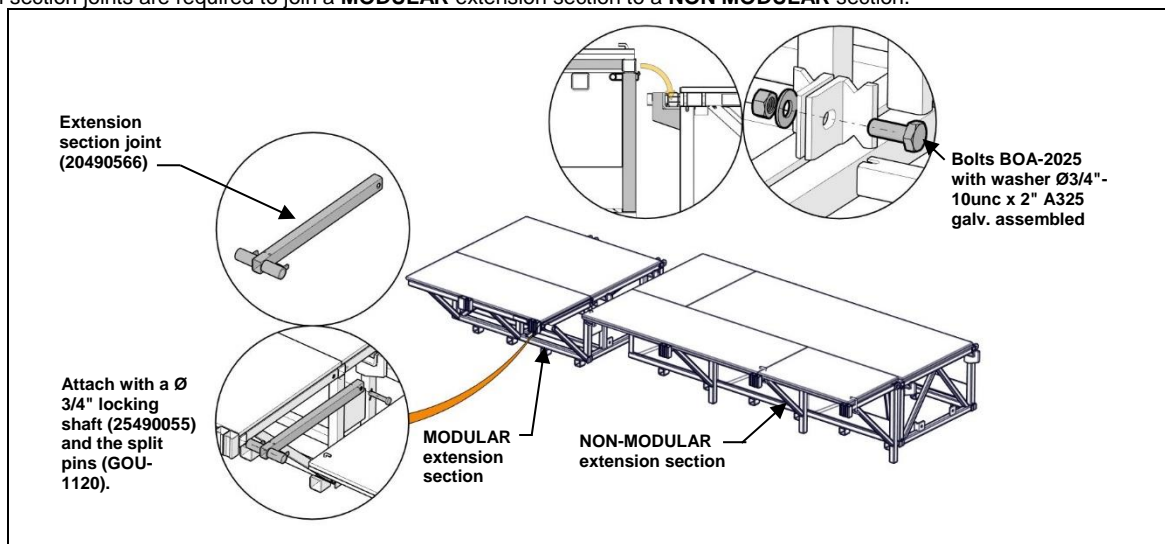


Figure 62 - MODULAR Extension joint

Installation of extension turnbuckles

Extension turnbuckles must be used for any extension section assembly greater than 13'-4" (4,0 m) composed of standard 10'-0" (3,0 m) extension sections. Turnbuckles are thus not necessary if 10'-0" (3,0 m) tapered extension sections are used. It is prohibited to use a 3'-4" (1,0 m) and 6'-8" (2,0 m) extension assembly instead of a 10'-0" (3,0 m) section.

For more information on configurations requiring the use of turnbuckles:

∞ SEE TABLE 3 - SINGLE MAST, LOAD DISTRIBUTION, ON PAGE 20

∞ SEE TABLE 6 - DOUBLE MAST, LOAD DISTRIBUTION, ON PAGE 23

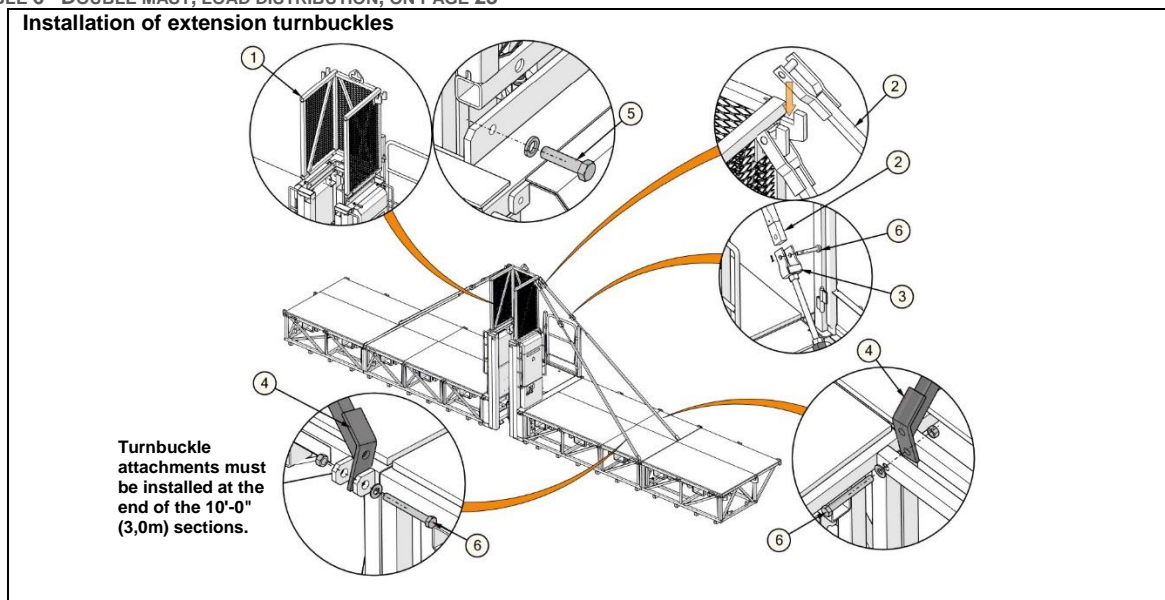


Figure 63 - Installation of extension turnbuckles

No.	Item	Description	No.	Item	Description
01	20490117	Protection screen 2'-3" x 2'-3" x 3'-11" (ACT)	04	23050044	Extension turnbuckle (1-1/2" x 1-1/2" x 9'-3")
02	23050033	Extension turnbuckle 1-1/2" x 1-1/2" x 3' 5"	05	BOA-2029	Bolts kit 3/4"-10unc x 3" A325 galv. assembled
03	23030020	Turnbuckle hand 16"	06	25490022, GOU-1115	Pin dia. 1/2" x 4-1/8" and 1/8" x 3" split pin

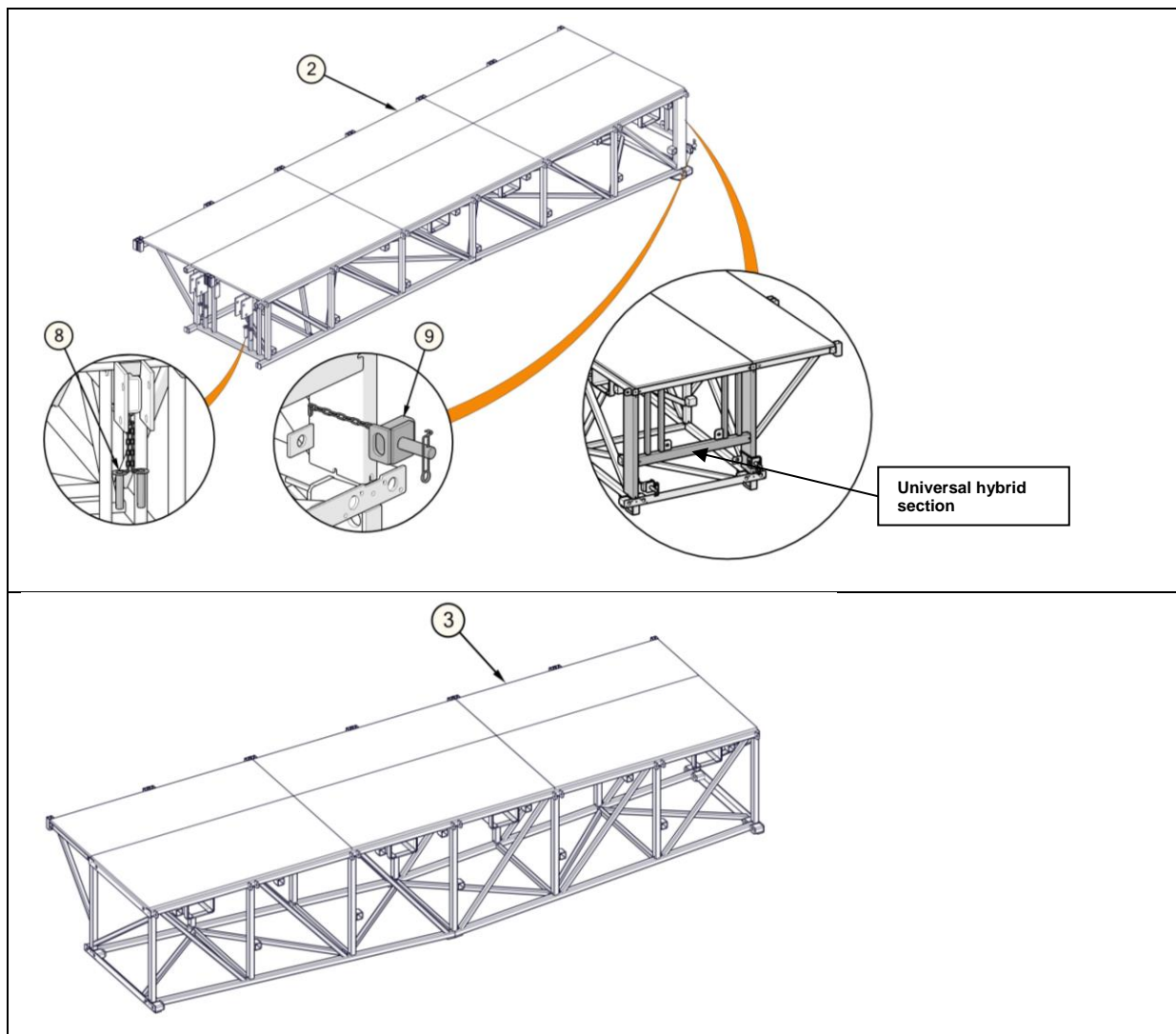
Bridge section

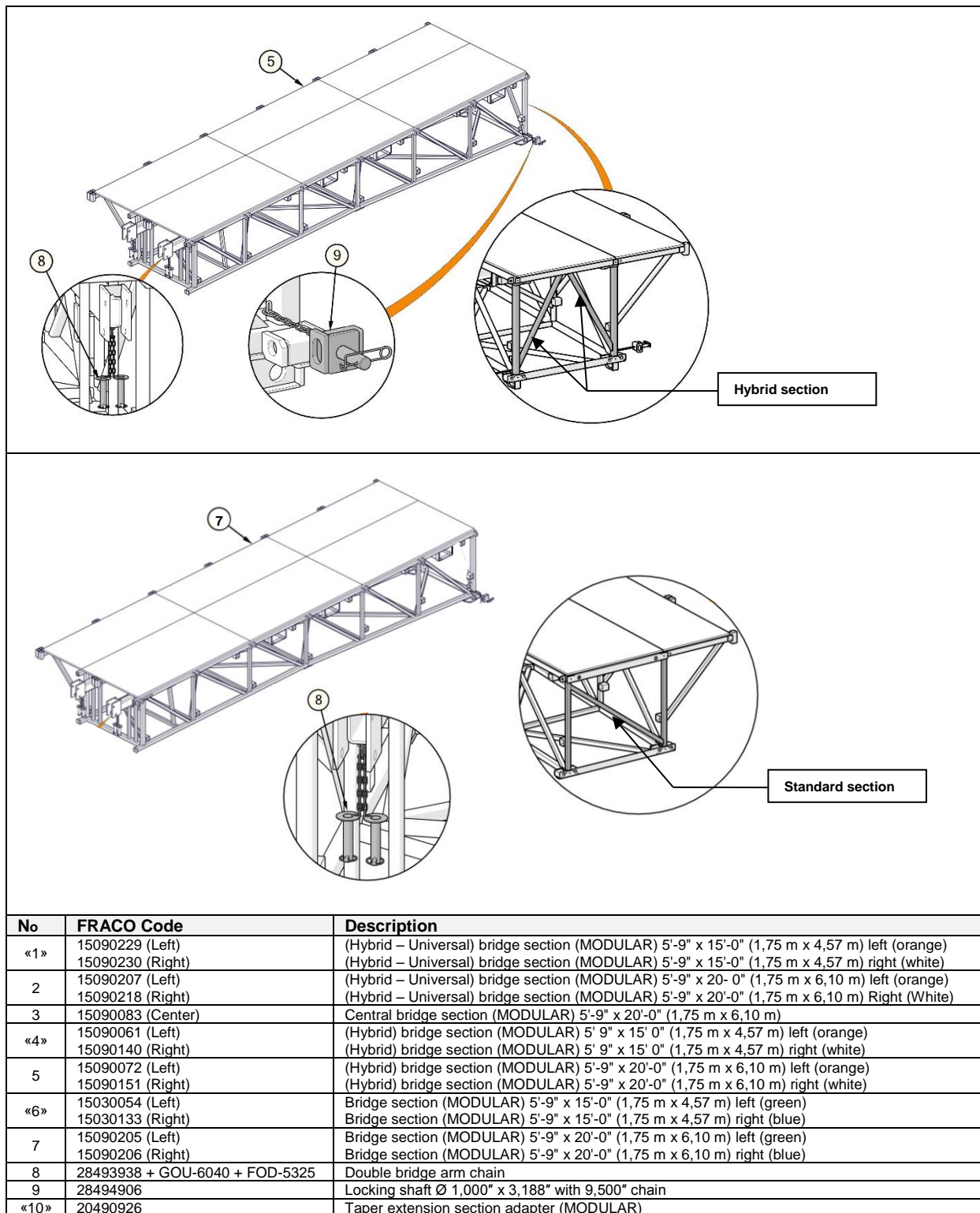
MODULAR bridge section

The bridge sections serve as a link between two units installed on independent masts.

There are 3 types of **MODULAR** bridge sections: « universal hybrid », « hybrid », « standard ».

- The « universal hybrid » bridges can serve as a bridge and can serve as extension on the **ACT-8 units**.
- The « hybrid » bridges may serve as a bridge on the **ACT-8 units**.
- The « hybrid » bridges may serve as extension on the **ACT-8 units**, provided a **MODULAR tapered extension adapter (20490926)** is used.
- The « standard » bridges may only serve as a bridge on the **ACT-8 units**.
- The « standard » bridges **may not** be used as extensions.

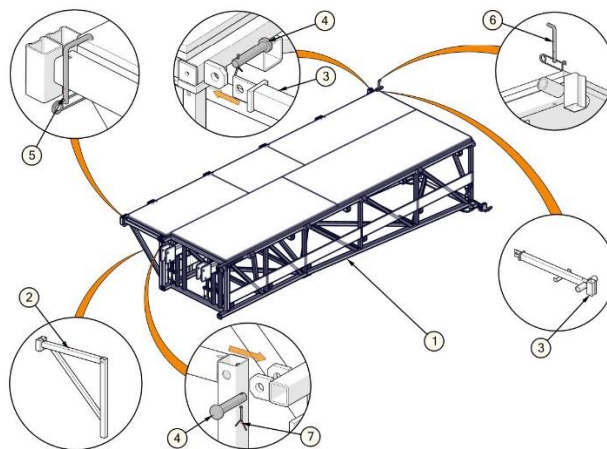




Note: Items numbered between « » are not shown in the illustration.

NON-MODULAR bridge section

The « **NON MODULAR** » sections have removable and reversible brackets as illustrated below.



No	FRACO Code	Description
1	150200XX	(NON-MODULAR) bridge section (Example)
2	18490046	Side bracket with 3/4" hole 2'-4"
3	20490577	(MODULAR) bridge joint with bottle
4	25490055	Locking pin Ø 3/4" x 4-3/16"
5	25490088	U-lock pin Ø 3/8" x 2-7/8" x 4-3/4" assembled
6	25490099	Half-U-lock pin Ø 3/8" x 4-3/4" assembled
7	GOU-1120	Split Pin 1/8" x 2" zinc
«8»	15020097	(Hybrid) bridge section (MODULAR) 3'-6" x 15'-0" (1,07 m x 4,57 m) (orange white)
«9»	15020109	(Hybrid) bridge section (MODULAR) 3'-6" x 20'-0" (1,07 m x 6,10 m) (orange-white)
«10»	15020075	Central bridge section 3'-6" x 20'-0" (1,07 m x 6,10 m)
«11»	20490971	Taper extension section adapter (NON-MODULAR)

Note: Items numbered between « » are not shown in the illustration.

Installation of bridge sections

Examples of bridge section combinations



Bridge assembly 20'-0" (6,10 m), with bridge end adapter

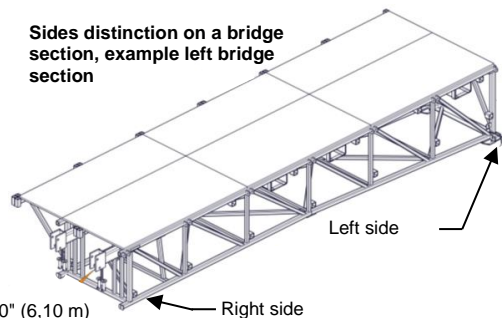


Bridge assembly 40'-0" (12,20 m), with two (2) bridges of 20'-0" (6,10 m)



Bridge assembly 60'-0" (18,30 m), with two (2) bridges of 20'-0" (6,10 m) and a central bridge 20'-0" (6,10 m)

Sides distinction on a bridge section, example left bridge section



List of all possible bridge combinations

Note: Only the MODULAR « Universal hybrid » bridge sections are shown in the components list in the table below, but all combinations can also be made using « Hybrid » and « Standard » bridge sections.

Result	Components list	
Bridge 15'-0" (4,57 m)	Bridge section 15'-0" (4,57 m)	(15090229-left) or (15090230-right) + bridge end adapter (20491501)
Bridge 20'-0" (6,10 m)	Bridge section 20'-0" (6,10 m)	(15090207-left) or (15090218-right) + bridge end adapter (20491501)
Bridge 30'-0" (9,15 m)	Bridge section 15'-0" (4,57 m)	(15090229-left) or (15090230-right) +
	Bridge section 15'-0" (4,57 m)	(15090229-left) or (15090230-right)
Bridge 35'-0" (10,67 m)	Bridge section 15'-0" (4,57 m)	(15090229-left) or (15090230-right) +
	Bridge section 20'-0" (6,10 m)	(15090207-left) or (15090218-right)
Bridge 40'-0" (12,20 m)	Bridge section 20'-0" (6,10 m)	(15090207-left) or (15090218-right) +
	Bridge section 20'-0" (6,10 m)	(15090207-left) or (15090218-right)
Bridge 50'-0" (15,25 m)	Bridge section 15'-0" (4,57 m)	(15090229-left) or (15090230-right) +
	Central bridge section 20'-0" (6,10 m)	(15090083) +
	Bridge section 15'-0" (4,57 m)	(15090229-left) or (15090230-right)
Bridge 55'-0" (16,75 m)	Bridge section 15'-0" (4,57 m)	(15090229-left) or (15090230-right) +
	Central bridge section 20'-0" (6,10 m)	(15090083) +
	Bridge section 20'-0" (6,10 m)	(15090207-left) or (15090218-right)
Bridge 60'-0" (18,30 m)	Bridge section 20'-0" (6,10 m)	(15090207-left) or (15090218-right) +
	Central bridge section 20'-0" (6,10 m)	(15090083) +
	Bridge section 20'-0" (6,10 m)	(15090207-left) or (15090218-right)

For any questions about bridge section combinations, contact the FRACO engineering department.

Example of assembly between bridge sections

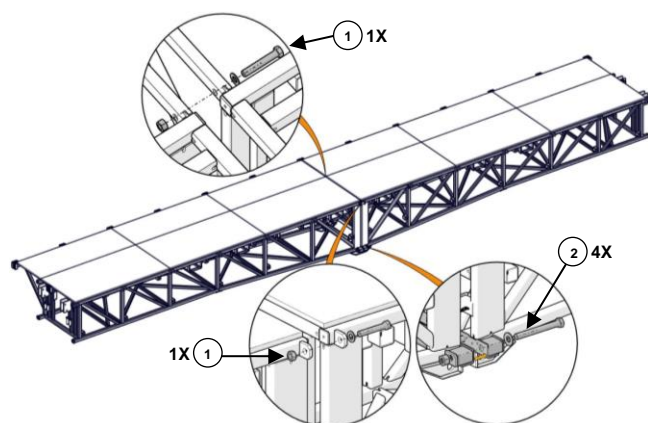


Figure 64 - Combination 20'-0" to 20'-0"

Example of assembly between bridge section and central section

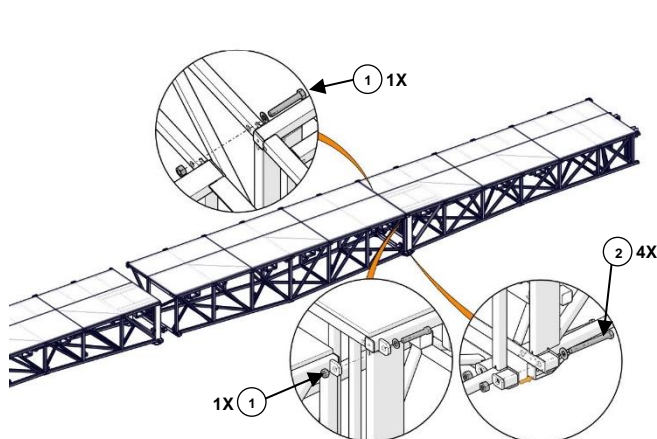


Figure 65 - Combination 20'-0" to center

No.	Item	Description	No.	Item	Description
01	BOA-2090	Bolt kit with washer and nut Ø 3/4"-10unc x 4-1/2" A325, galv.	02	BOA-2085	Bolt kit with washer and nut Ø 1"-8unc x 9" A325, galv.

Installation of bridge joint with bottle (20490577)

Bridge joints are required to join a **MODULAR** bridge section to a **NON MODULAR** bridge section.

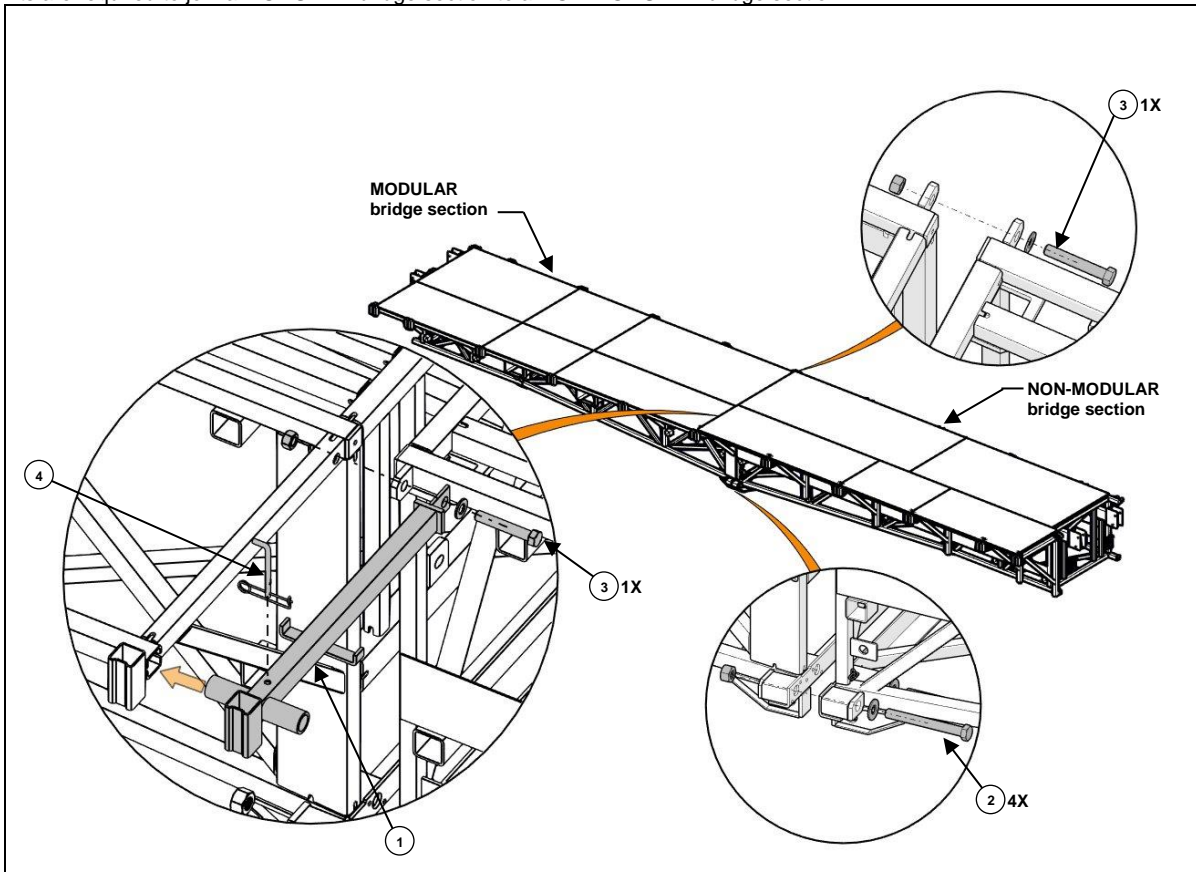


Figure 66 - Bridge joint with bottle

No.	Item	Description	No.	Item	Description
01	20490577	Bridge joint with bottle	03	BOA-2090	Bolt kit with washer and nut Ø 3/4"-10unc x 4-1/2" A325, galv.
02	BOA-2085	Bolt kit with washer and nut Ø 1"-8unc x 9" A325, galv.	04	25490099	Half-U-lock pin (dia. 3/8" x 4-3/4") assy

Installation of individual 15'-0" or 20'-0" bridge section between two units

Install a 15'-0" (4,57 m) or 20'-0" (6,10 m) bridge section directly between two (2) lifting units.

Note: When installing **only one** 15'-0" (4,57 m) or 20'-0" (6,10 m) bridge section, it is **mandatory** to use a bridge end adapter (20491501).

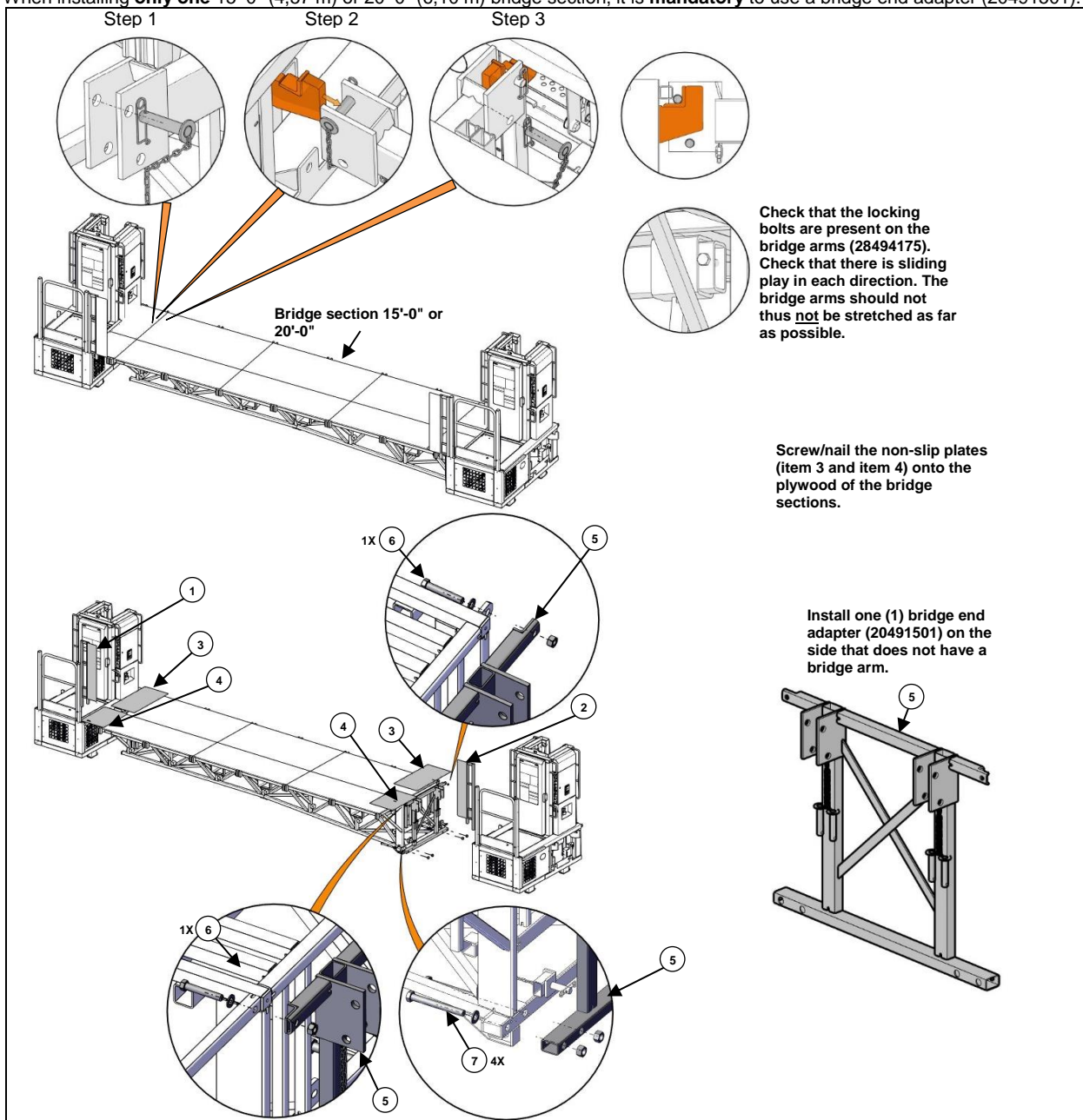


Figure 67 - Installation of 15'-0" or 20'-0" bridge section between lifting units

No.	Item	Description	No.	Item	Description
01	17490427	Covering guard-rail 13-15/16" x 4'-2" right (blue)	05	20491501	Bridge end adapter 3'-0" x 4'-0"
02	17490416	Covering guard-rail 13-15/16" x 4'-2" left (green)	06	BOA-2090	Bolt kit with washer and nut Ø 3/4"-10unc x 4-1/2" A325, galv.
03	20490320	Anti skid steel plate 1/8" x 20" x 39-1/2"	07	BOA-2085	Bolt kit with washer and nut Ø 1"-8unc x 9" A325, galv.
04	20490319	Anti skid steel plate 1/8" x 20" x 2'-4"			

Installation of individual 15'-0" or 20'-0" bridge section on intermediate units and/or extensions

Install a 15'-0" (4,57 m) or 20'-0" (6,10 m) bridge section directly between two (2) lifting units and/or intermediate extensions.

Note: When installing **only one** 15'-0" (4,57 m) or 20'-0" (6,10 m) bridge section, it is **mandatory** to use a bridge end adapter (20491501).

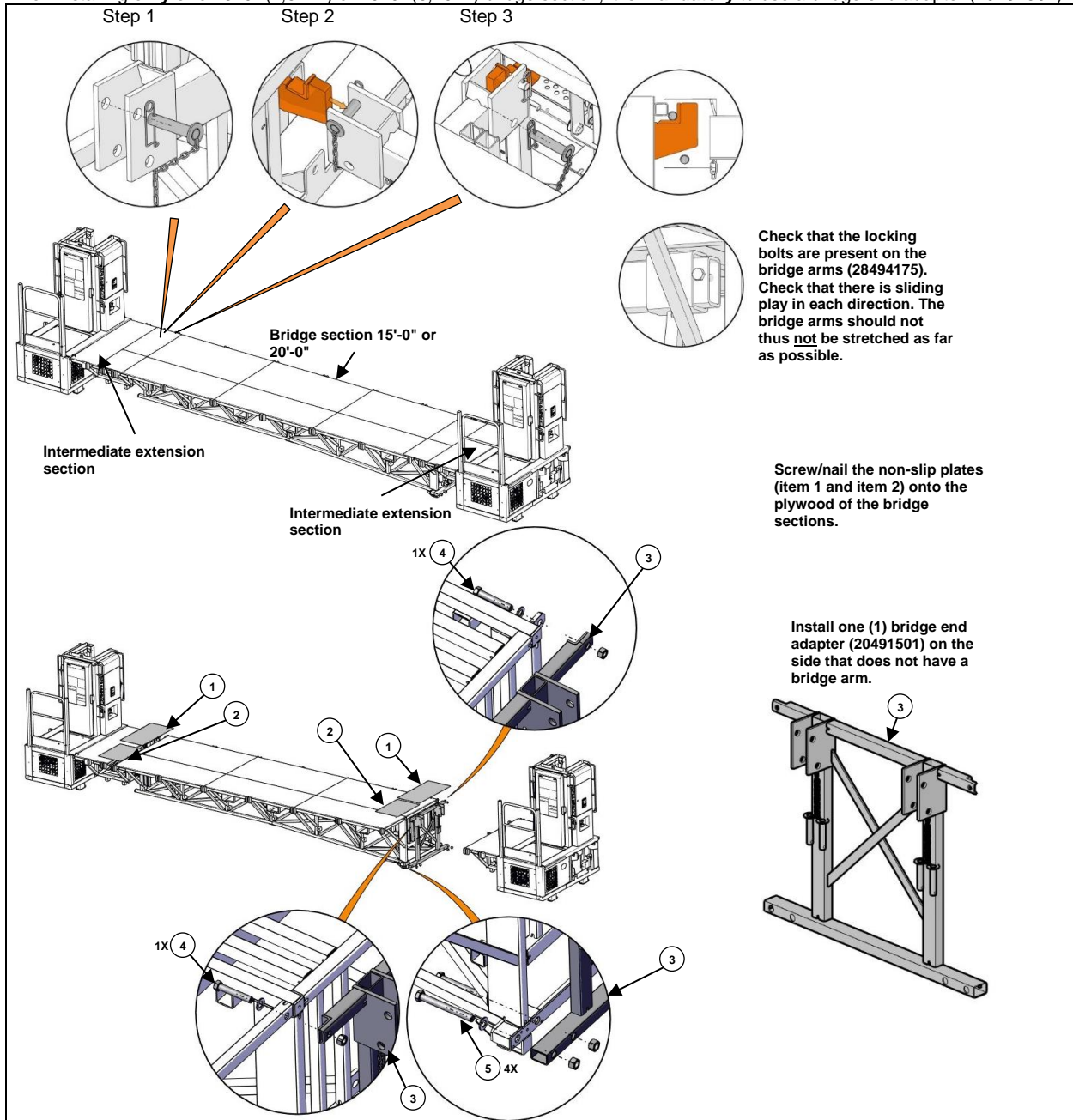


Figure 68 - Installation of 15'-0" or 20'-0" bridge section between lifting units and/or intermediate extensions

No.	Item	Description	No.	Item	Description
01	20490320	Anti skid steel plate 1/8" x 20" x 39-1/2"	04	BOA-2090	Bolt kit with washer and nut Ø 3/4"-10unc x 4-1/2" A325, galv.
02	20490319	Anti skid steel plate 1/8" x 20" x 2'-4"	05	BOA-2085	Bolt kit with washer and nut Ø 1"-8unc x 9" A325, galv.
03	20491501	Bridge end adapter 3'-0" x 4'-0"			

Installation of 30'-0" to 60'-0" bridge assembly between two units and/or intermediate extensions

Assemble 15'-0" (4,57 m) or 20'-0" (6,10 m) bridge sections and install the bridge assembly between two (2) lifting units and/ intermediate extensions.

For admissible bridge combinations, **SEE INSTALLATION OF BRIDGE SECTIONS, ON PAGE 59.**

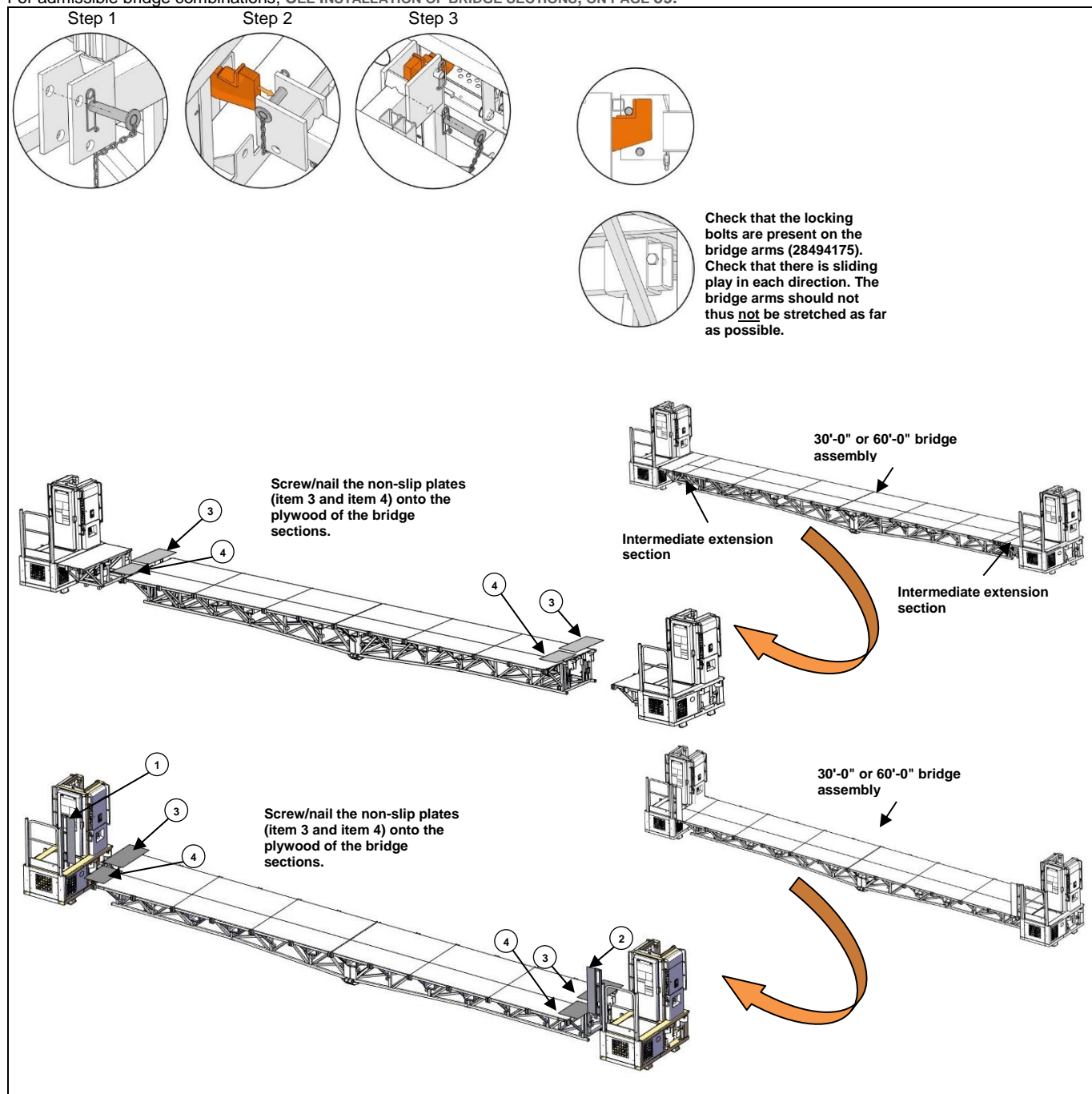


Figure 69 - Installation of 30'-0" to 60'-0" bridge assembly on the lifting unit and/or intermediate extension

No.	Item	Description	No.	Item	Description
01	17490427	Covering guard-rail 13-15/16" x 4'-2" right (blue)	03	20490320	Anti skid steel plate 1/8" x 20" x 39-1/2"
02	17490416	Covering guard-rail 13-15/16" x 4'-2" left (green)	04	20490319	Anti skid steel plate 1/8" x 20" x 2'-4"

Installation of an extension bridge section

Important! This is a **special installation** and thus requires special attention.

For conditions of use, **SEE BRIDGE SECTION, ON PAGE 56.**

- It is possible to use a « **Universal hybrid** » 15'-0" (4,57 m) or 20'-0" (6,10 m) bridge section as an extension, directly on the lifting unit. **Excludes central bridge sections.**
- It is possible to use a « **Hybrid** » 15'-0" (4,57 m) or 20'-0" (6,10 m) bridge section as an extension on a lifting unit, provided a MODULAR (20490926) or NON-MODULAR (20490971) tapered extension adapter is used. **Excludes central bridge sections.**

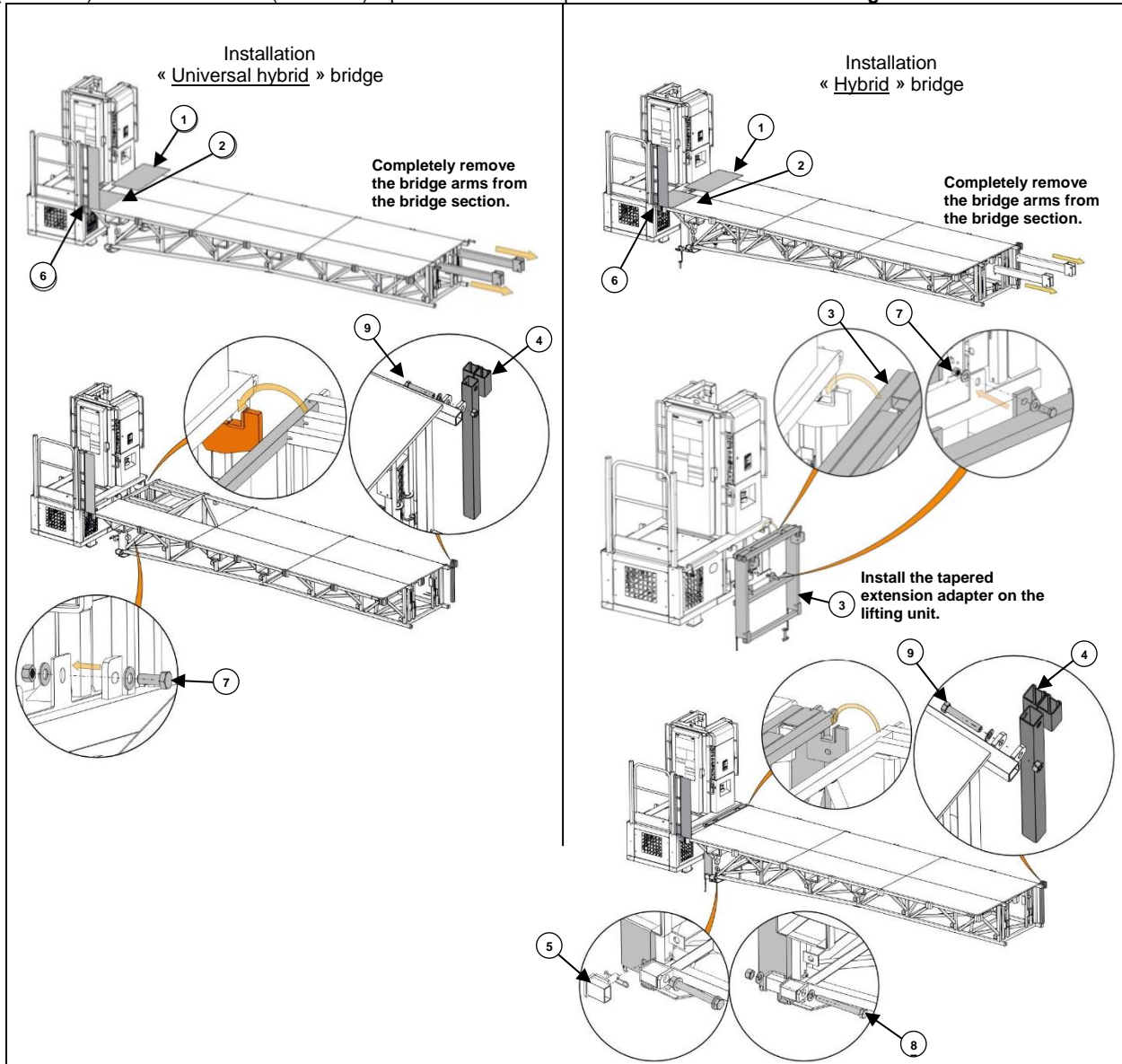


Figure 70 - Installation of an extension bridge section

No.	Item	Description	No.	Item	Description
01	20490320	Anti skid steel plate 1/8" x 20" x 39-1/2"	06	17490427 (Right)	Covering guard-rail 13-15/16" x 4'-2" right (blue)
02	20490319	Anti skid steel plate 1/8" x 20" x 2'-4"	07	17490416 (Left)	Covering guard-rail 13-15/16" x 4'-2" left (green)
03	20490926	Taper extension section adaptor (MODULAR)	08	BOA-2025	Bolt kit 3/4"-10unc x 2" A325 galv.
04	20490184	Guardrail pockets with 3/4" hole	09	BOA-2085	Bolt kit with washers and nut Ø 1"-8unc x 9" A325, galv.
05	28494906	Locking pin Ø 1,000" x 3,188" with 11" chain		BOA-2090	Bolt kit with washer and nut Ø 3/4"-10unc x 4-1/2" A325, galv.

Bolting of mast sections and mast end section

Assemble the mast sections by joining the male and female ends with the (4) four bolts (BOZ-7305 or BOA-2080). Tighten the bolts according to the prescribed tightening torque in **TABLE 15 - TECHNICAL DATA SHEET ACT-8 MAST SECTION, ON PAGE 151**.

Note: For all of the following explanations, the term « mast sections » means an individual part (13030018) and « mast » means an assembly of two (2) or more mast sections. The masts may be pre-assembled on the ground or erected one section at a time.

IMPORTANT! The bolts must always be installed from below, with nut and washer on top.

Install the mast end section to the last installed mast section using four (4) bolt kits (BOZ-7305 or BOA-2080). Tighten the bolts according to the prescribed tightening torque.

The tightening torque of the mast section bolts should be close to 260 lb-ft (360 Nm).

Do not exceed the following vertical tolerances:

- 1/2" (13 mm) for a 10'-0" mast (3 m).
- 3/4" (19 mm) for a 20'-0" mast (6,1 m).
- 1" (25 mm) for the maximum mast height.

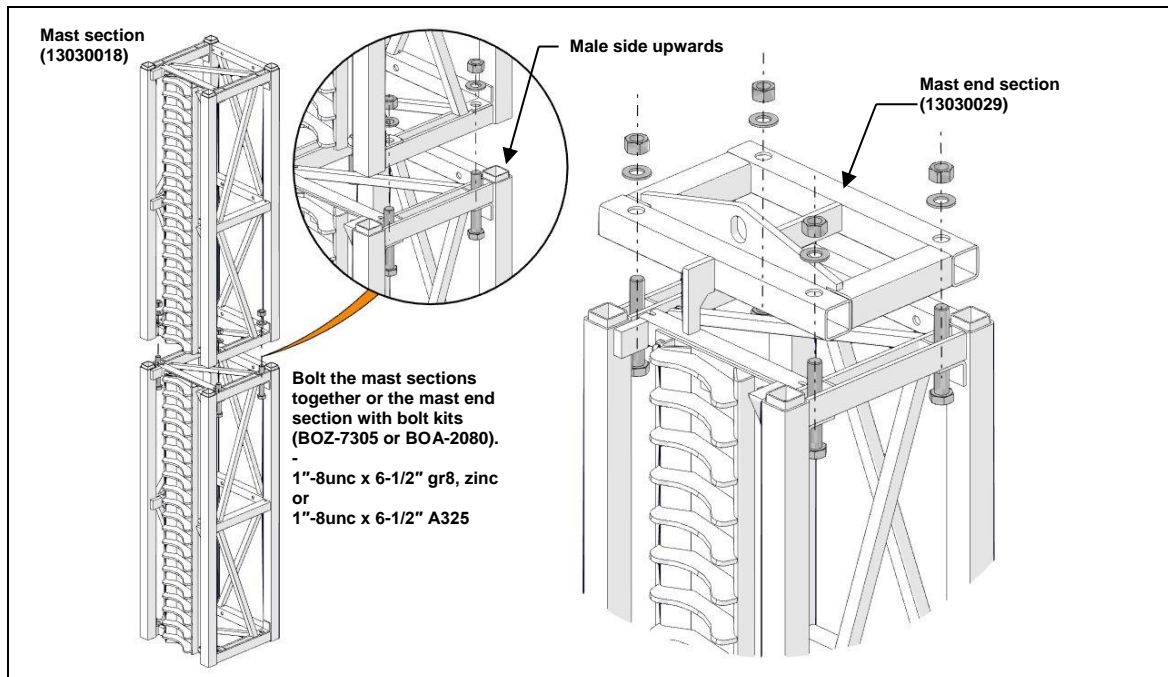


Figure 71 - Bolting of mast and mast end sections

Mast anchor

For information on detailed parts, **FRACO** part numbers and engineering data specific to the various mast anchors devices, refer to the most recent « **MAST ANCHOR SPECIFICATIONS** » documents available with the project quotation. You can also contact your **FRACO** for a copy of these documents.

Mast anchor specifications

Transmitted efforts

The following figures show the loads transmitted by the mast anchor to the building for the different types of mast anchors available. These loads **do not include** the safety factors that must be taken into account in accordance with the applicable local regulations. Refer to the anchor details of the specific installation quote for installation requirements. These loads include the dynamic coefficients.

The maximum horizontal load considered for a man's thrust is 45 lbf (200 N). If tools (such as a hydrodemolition system, a remote-controlled jackhammer, etc.) create a greater thrust, said thrust must be evaluated and approved by Fraco's engineering department.

Note: Refer to the tables of the opening angles and anchor details of **PAGES 69 TO 74**.

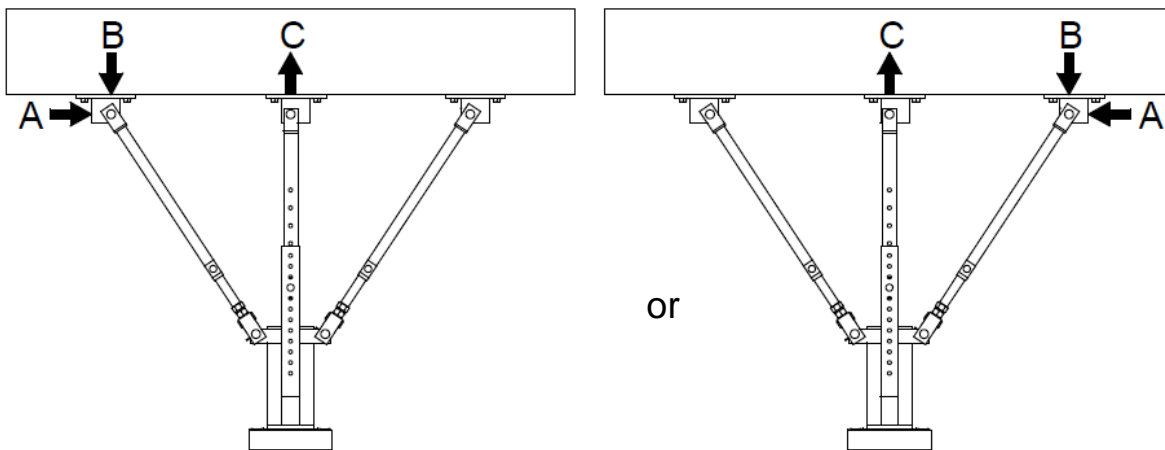
IMPORTANT: An engineer must confirm that the building will be able to withstand the efforts transmitted.

A = 2 500 lb (1 136 kg)

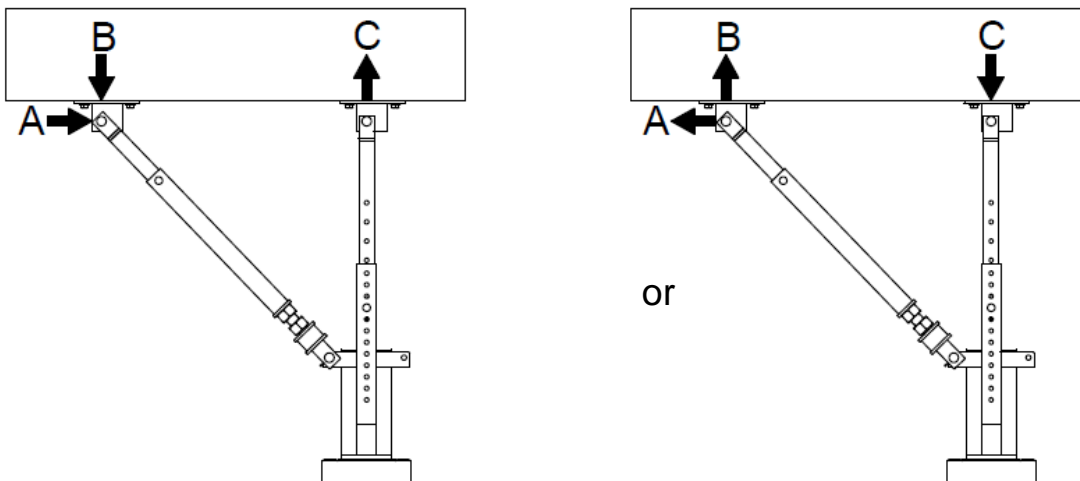
B = 4 500 lb (2 045 kg)

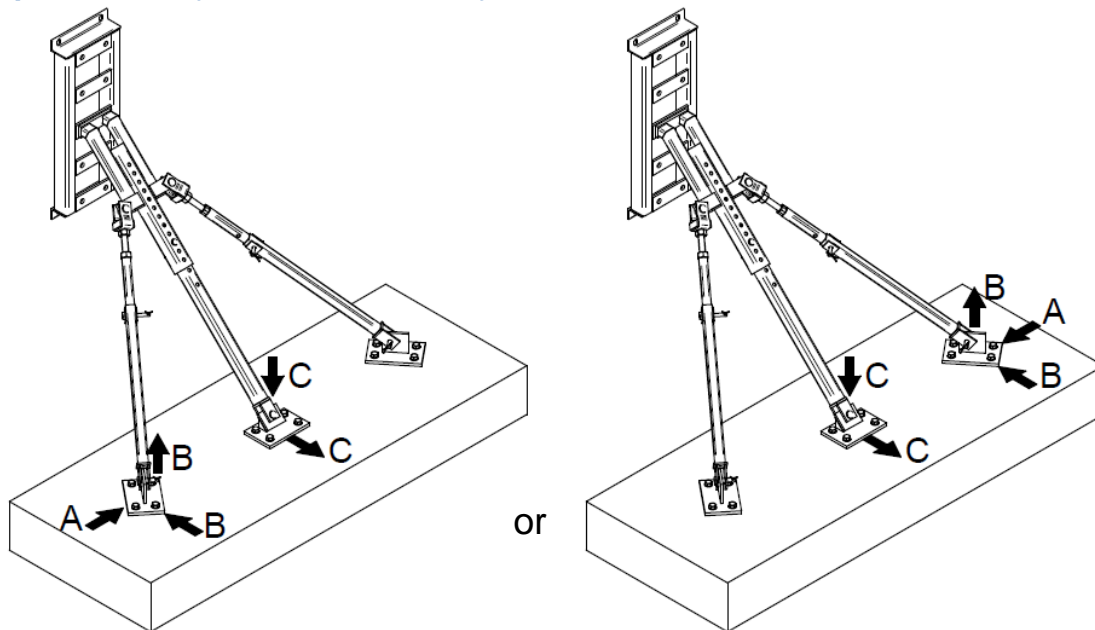
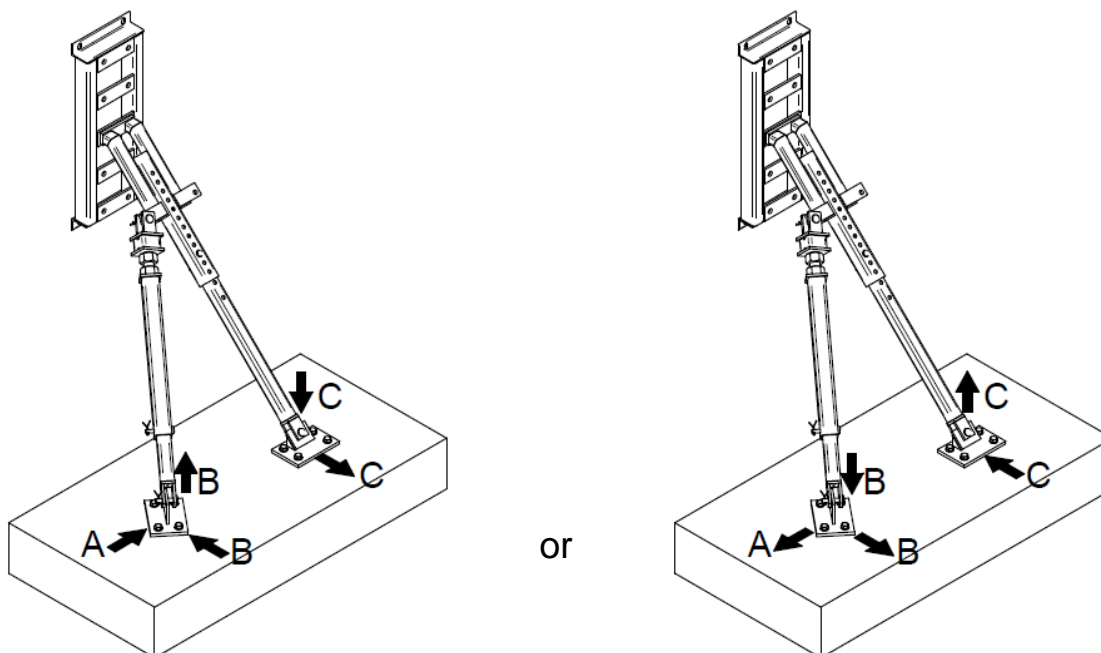
C = 5 500 lb (2 500 kg)

3-point mast attach system – vertical anchor surface



2-point mast attach system - vertical anchor surface

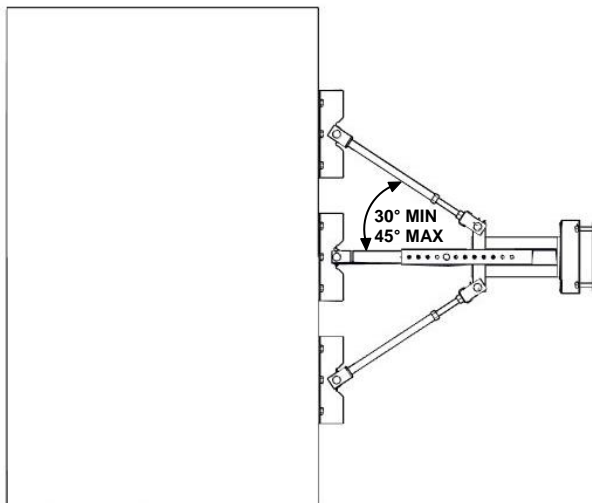
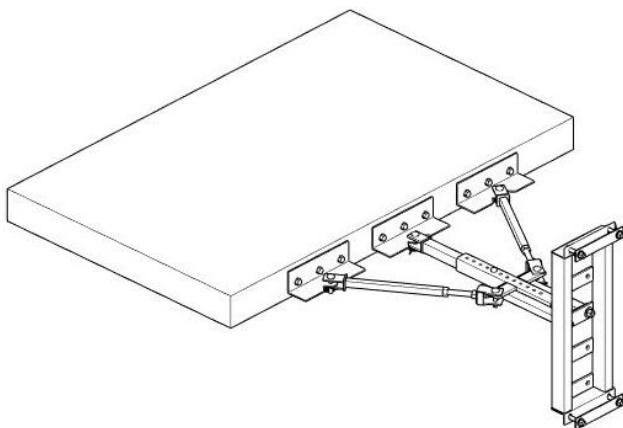


3-point mast attach system - horizontal anchor surface*2-point mast attach system - horizontal anchor surface*

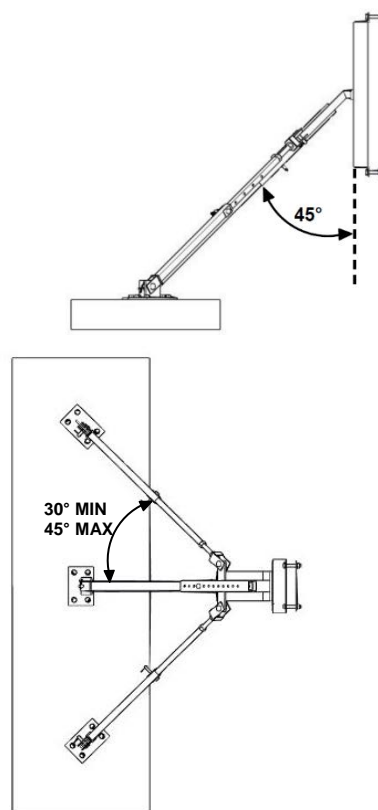
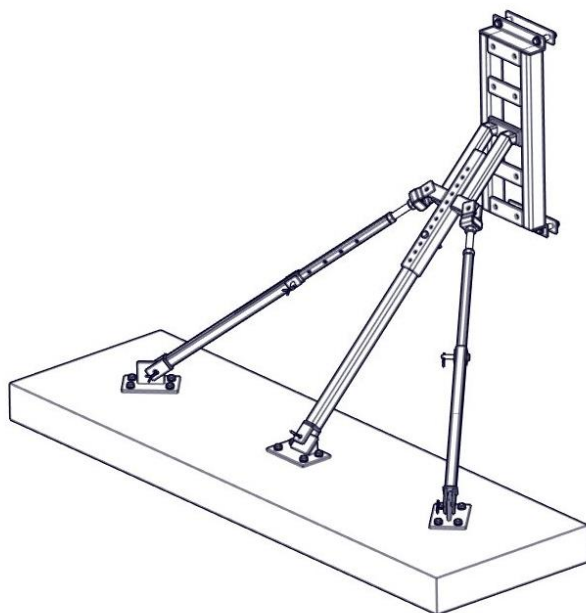
Mast attach system opening constraints

The installation distance « D » between the anchor centers is calculated based on the opening angle and the distance between the anchor wall and the « H » mast.

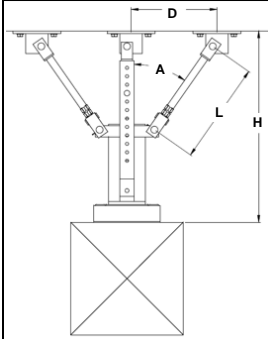
Horizontal attach system - Vertical anchor surface



45° inclined attach system - Horizontal anchor surface



Three-point (3) horizontal anchors - Composition of the mast attach



- A: Turnbuckle' opening angle
- H: Distance from wall face
- D: Distance between the anchor plates
- L: Length of assembled turnbuckle

All anchors are composed of a wall attachment, a central tube and two (2) turnbuckle assemblies. The tables show the MIN/MAX dimensions for the different turnbuckle options.

Example:

Turnbuckle option (0)

Turnbuckle option (1)

Turnbuckle option (2)

COMPONENTS COMPOSITION	Item No.	Qty
2'-0" central tube	22010027	1
14" assembled turnbuckle	23070114	2
18" assembled turnbuckle	23070147	2
24" assembled turnbuckle	23070147	2

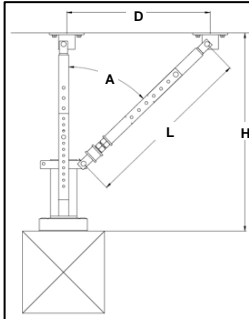
Note: For higher H dimensions, consult the FRACO Engineering Department.

Note: ext. stands for extension

Wall attachment 6" (21490118)	COMPONENTS COMPOSITION			Item No.	Qty	
	(0)	6" central tube			22020039	1
		14" assembled turnbuckle			23070114	2
	H			D	L	
	(0)	A=30°	MIN/ MAX	N/A	N/A	N/A
	(0)	A=45°	MIN/ MAX	19" (482 mm)	13" (330 mm)	14-1/4" (362 mm)
	COMPONENTS COMPOSITION			Item No.	Qty	
		15" central tube			22020028	1
		14" assembled turnbuckle			23070114	2
	H			D	L	
(0)	A=30°	MIN/ MAX	22" (560 mm)	10,54" (268 mm)	15,08" (383 mm)	
(0)	A=45°	MIN	21" (535 mm)	15,06" (382 mm)	17,06" (433 mm)	
		MAX	22" (560 mm)	16,06" (408 mm)	18,47" (470 mm)	
Wall attachment 16" (21490028)	COMPONENTS COMPOSITION			Item No.	Qty	
	(0)	15" central tube			22020028	1
	(1)	14" assembled turnbuckle			23070114	2
		18" assembled turnbuckle			23070147	2
	H			D	L	
	(0)	A=30°	MIN	29" (736 mm)	12,17" (310 mm)	15,08" (383 mm)
			MAX	30" (762 mm)	12,75" (324 mm)	16,25" (310 mm)
	(0)	A=45°	MIN	26" (660 mm)	14,70" (375 mm)	14,25" (362 mm)
			MAX	29" (736 mm)	17,70" (450 mm)	18,50" (470 mm)
	(1)	A=45°	MIN/ MAX	30" (762 mm)	18,70" (475 mm)	20" (508 mm)

Wall attachment 2'-3" (21490017)	COMPONENTS COMPOSITION			Item No.	Qty	
	2'-0" central tube			22010027	1	
	(0)	14" assembled turnbuckle			23070114	2
	(1)	18" assembled turnbuckle			23070147	2
	(2)	24" assembled turnbuckle			23070147	2
			H	D	L	
	(0)	A=30°	MIN	34" (864 mm)	13,5" (343 mm)	17,10" (435 mm)
			MAX	35" (890 mm)	14" (355 mm)	18,25" (465 mm)
	(1)	A=30°	MIN	36" (915 mm)	14,58" (370 mm)	19,40" (493 mm)
			MAX	39" (990 mm)	16,30" (414 mm)	22,88" (580 mm)
	(1)	A=45°	MIN	34" (864 mm)	19,70" (500 mm)	20,95" (532 mm)
			MAX	35" (890 mm)	20,70" (526 mm)	22,36" (568 mm)
	(2)	A=30°	MIN	40" (1,02 m)	16,90" (430 mm)	24" (610 mm)
			MAX	50" (1,27 m)	22,66" (575 mm)	35,58" (904 mm)
	(2)	A=45°	MIN	36" (915 mm)	21,70" (551 mm)	23,78" (604 mm)
			MAX	44" (1,12 m)	29,70" (755 mm)	35" (890 mm)
	COMPONENTS COMPOSITION			Item No.	Qty	
	3'-0" central tube			22010049	1	
	(0)	24" assembled turnbuckle			23070125	2
	(1)	37" assembled turnbuckle			23070013	2
			H	D	L	
	(0)	A=30°	MIN	46" (1,17 m)	20,35" (517 mm)	40" (1,02 m)
			MAX	50" (1,27 m)	22,66" (575 mm)	35,58" (904 mm)
(1)	A=30°	MIN	52" (1,32 m)	23,82" (605 mm)	37,90" (962 mm)	
		MAX	62" (1,57 m)	29,60" (752 mm)	49,50" (1,25 m)	
(1)	A=45°	MIN	46" (1,17 m)	31,70" (805 mm)	37,92" (963 mm)	
		MAX	62" (1,57 m)	47,70" (1,21 m)	60,55" (1,55 m)	
COMPONENTS COMPOSITION			Item No.	Qty		
4'-0" central tube			22010050	1		
(0)	37" assembled turnbuckle			23070013	2	
		H	D	L		
(0)	A=30°	MIN	63" (1,60 m)	30,17" (766 mm)	50,60" (1,30 m)	
		MAX	73" (1,85 m)	36" (915 mm)	62,15" (1,60 m)	
(0)	A=45°	MIN	58" (1,50 m)	43,70" (1,11 m)	54,90" (1,40 m)	
		MAX	63" (1,60 m)	48,70" (1,25 m)	62" (1,57 m)	

Two-point (2) horizontal anchors - Composition of the mast attach



- A: Turnbuckle opening angle
- H: Distance from wall face
- D: Distance between the anchor plates
- L: Length of assembled turnbuckle

Note: For higher H dimensions, consult the FRACO Engineering Department.
Note: ext. stands for extension

All anchors are composed of a wall attachment, a central tube and one (1) turnbuckle assembly. The tables show the MIN/MAX dimensions for the different turnbuckle options.

Example:

Turnbuckle option (0)
 Turnbuckle option (1)
 Turnbuckle option (2)

COMPONENTS COMPOSITION	Item No.	Qty
2'-0" central tube	22010027	1
14" assembled turnbuckle	23070114	2
18" assembled turnbuckle	23070147	2
24" assembled turnbuckle	23070147	2

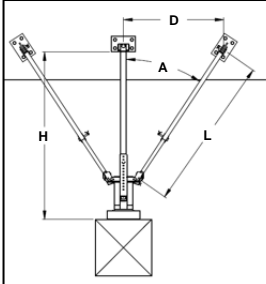
Wall attachment 2'-3" (21490017)	(0)	COMPONENTS COMPOSITION		Item No.	Qty	
		2'-0" central tube		22010027	1	
		2'-7" reinforced turnbuckle	+	23070103	1	
				2'-0" central tube		22010027
	(0)	H		D	L	
		A=30°	MIN	N/A	N/A	N/A
		A=45°	MIN	49" (1,25 m)	34,70" (880 mm)	42,16" (1,07 m)
			MAX	50" (1,27 m)	35,70" (907 mm)	43,57" (1,10 m)
	(0)	COMPONENTS COMPOSITION		Item No.	Qty	
		3'-0" central tube		22010049	1	
		2'-7" turnbuckle	+	23070103	1	
				2'-0" central tube		22010027
	(1)	2'-7" turnbuckle	+	23070103	1	
				3'-0" central tube		22010049
		(0)	A=30°	MIN	56" (1,42 m)	26,13" (664 mm)
	MAX			62" (1,58 m)	29,60" (752 mm)	49,50" (1,25 m)
	A=45°		MIN	49" (1,25 m)	34,70" (880 mm)	42,16" (1,07 m)
			MAX	57" (1,45 m)	42,70" (1,08 m)	53,50" (1,35 m)
	(1)	A=45°	MIN	58" (1,47 m)	43,70" (1,11 m)	54,90" (1,40 m)
			MAX	62" (1,58 m)	47,70" (1,20 m)	60,55" (1,54 m)
		(0)	COMPONENTS COMPOSITION		Item No.	Qty
4'-0" central tube			22010050	1		
2'-7" turnbuckle	+		23070103	1		
			2'-0" central tube		22010027	1
(1)	2'-7" turnbuckle	+	23070103	1		
			3'-0" central tube		22010049	1
	2'-7" turnbuckle	+	23070103	1		
			4'-0" central tube		22010050	1
(0)	A=30°	MIN	58" (1,47 m)	27,28" (693 mm)	44,82" (1,14 m)	
		MAX	65" (1,65 m)	31,32" (795 mm)	52,90" (1,35 m)	
	A=30°	MIN	66" (1,68 m)	31,90" (810 mm)	54" (1,37 m)	
		MAX	74" (1,88 m)	36,50" (928 mm)	63,30" (1,60 m)	
(1)	A=45°	MIN	58" (1,47 m)	43,70" (1,11 m)	54,90" (1,40 m)	
		MAX	65" (1,65 m)	50,70" (1,29 m)	64,80" (1,65 m)	
	A=45°	MIN	66" (1,68 m)	51,70" (1,30 m)	66,20" (1,68 m)	
		MAX	74" (1,88 m)	59,70" (1,52 m)	77,52" (2 m)	

Wall attachment
 2'-3"
 (21490017)

Wall attachment 2'-3" (21490017)	(0)	COMPONENTS COMPOSITION		Item No.	Qty	
		5'-0" central tube		22010061	1	
		2'-7" turnbuckle	+	23070103	1	
				22010049	1	
		2'-7" turnbuckle	+	23070103	1	
				22010050	1	
		2'-7" turnbuckle	+	23070103	1	
				22010061	1	
		2'-7" turnbuckle	+	23070103	1	
				22030074	1	
		(1)	COMPONENTS COMPOSITION		Item No.	Qty
			A=30°	MIN	70" (1,78 m)	34,20" (869 mm)
	MAX			76" (1,93 m)	37,68" (957 mm)	65,60" (1,67 m)
	A=30°		MIN	77" (1,96 m)	38,25" (972 mm)	66,75" (1,70 m)
			MAX	86" (2,18 m)	43,45" (1,10 m)	77,15" (1,96 m)
	A=45°		MIN	70" (1,78 m)	55,70" (1,40 m)	71,85" (1,82 m)
			MAX	74" (1,88 m)	59,70" (1,52 m)	77,52" (1,97 m)
	A=45°		MIN	75" (1,90 m)	60,70" (1,55 m)	78,93" (2 m)
			MAX	82" (2,08 m)	67,70" (1,72 m)	88,83" (2,25 m)
	A=45°		MIN	83" (2,10 m)	68,70" (1,75 m)	90,25" (2,30 m)
			MAX	86" (2,18 m)	71,70" (1,82 m)	94,50" (2,40 m)
	(2)		COMPONENTS COMPOSITION		Item No.	Qty
		5'-0" central tube		22010061	1	
		2'-7" turnbuckle	+	23070103	1	
22010050				1		
2'-7" turnbuckle		+	23070103	1		
			22010061	1		
2'-7" turnbuckle		+	23070103	1		
			22030074	1		
2'-7" turnbuckle		+	23070103	1		
			22030085	1		
COMPONENTS COMPOSITION		Item No.	Qty			
A=30°		MIN	85" (2,16 m)	42,87" (1,09 m)	76" (1,93 m)	
	MAX	86" (2,18 m)	43,45" (1,10 m)	77,15" (1,96 m)		
A=30°	MIN	87" (2,21 m)	44,03" (1,12 m)	78,30" (2 m)		
	MAX	97" (2,46 m)	49,80" (1,25 m)	89,85" (2,28 m)		
A=45°	MIN	85" (2,16 m)	70,70" (1,80 m)	93,07" (2,36 m)		
	MAX	91" (2,31 m)	76,70" (1,95 m)	101,56" (2,58 m)		
A=45°	MIN	92" (2,34 m)	77,70" (1,97 m)	103" (2,62 m)		
	MAX	98" (2,50 m)	83,70" (2,13 m)	111,50" (2,83 m)		

Wall attachment
 2'-3"
 (21490017)

45° inclined three-point (3) anchors - Composition of the mast attach



- A: Turnbuckle' opening angle
- H: Distance from wall face
- D: Distance between the anchor plates
- L: Length of assembled turnbuckle
- B: Attachment height

All anchors are composed of a wall attachment, a central tube and two (2) turnbuckle assemblies. The tables show the MIN/MAX dimensions for the different turnbuckle options.

Note: For higher H dimensions, consult the FRACO Engineering Department.
Note: ext. stands for extension

Example:
Turnbuckle option (0)
Turnbuckle option (1)
Turnbuckle option (2)

COMPONENTS COMPOSITION	Item No.	Qty
2'-0" central tube	22010027	1
14" assembled turnbuckle	23070114	2
18" assembled turnbuckle	23070147	2
24" assembled turnbuckle	23070147	2

		COMPONENTS COMPOSITION		Item No.	Qty
		2'-0" central tube		22010027	1
(0)		14" turnbuckle		23070114	2
(1)		18" turnbuckle		23070147	2
(2)		2'-0" turnbuckle		23070125	2
(3)		3'-1" turnbuckle		23070013	2

		H	D	L	B
(0)	A=30°	MIN	24" (610 mm)	13,31" (338 mm)	16,87" (428 mm)
		MAX	25" (635 mm)	14,13" (360 mm)	18,50" (470 mm)
(1)	A=30°	MIN	26" (660 mm)	14,95" (380 mm)	20,13" (511 mm)
		MAX	27" (686 mm)	15,75" (400 mm)	21,77" (553 mm)
(2)	A=30°	MIN	29" (737 mm)	17,40" (442 mm)	25" (635 mm)
		MAX	34" (864 mm)	21,50" (546 mm)	33,20" (843 mm)
(1)	A=45°	MIN	24" (610 mm)	19,50" (495 mm)	20,66" (525 mm)
		MAX	25" (635 mm)	20,90" (531 mm)	22,66" (575 mm)
(2)	A=45°	MIN	26" (660 mm)	22,32" (567 mm)	24,66" (626 mm)
		MAX	31" (787 mm)	29,40" (747 mm)	34,66" (880 mm)
(3)	A=45°	MIN/MAX	34" (864 mm)	33,63" (854 mm)	40,66" (1,03 m)

		COMPONENTS COMPOSITION		Item No.	Qty
		3'-0" central tube		22010049	1
(0)		3'-1" turnbuckle		23070125	2
(1)		3'-1" turnbuckle		23070013	2

		H	D	L	B
(0)	A=30°	MIN	34" (864 mm)	21,50" (546 mm)	33,20" (843 mm)
		MAX	35" (889 mm)	22,30" (566 mm)	34,83" (885 mm)
(1)	A=30°	MIN	37" (840 mm)	23,93" (608 mm)	38,10" (968 mm)
		MAX	43" (1,09 m)	28,83" (732 mm)	47,90" (1,22 m)
(1)	A=45°	MIN	34" (864 mm)	33,63" (854 mm)	40,66" (1,03 m)
		MAX	43" (1,09 m)	46,36" (1,18 m)	58,66" (1,50 m)

		COMPONENTS COMPOSITION		Item No.	Qty
		4'-0" central tube		22010050	1
(0)		3'-1" turnbuckle		23070013	2
(1)		3'-1" turnbuckle + 15-1/8" turnbuckle ext.		23070013 + 23040010	2

		H	D	L	B
(0)	A=30°	MIN	40" (1,02 m)	26,38" (670 mm)	43" (1,09 m)
		MAX	51" (1,30 m)	35,36" (898 mm)	60,96" (1,55 m)
(0)	A=45°	MIN	40" (1,02 m)	42,12" (1,07 m)	52,66" (1,34 m)
		MAX	45" (1,14 m)	49,20" (1,25 m)	62,66" (1,60 m)
(1)	A=45°	MIN	46" (1,17 m)	50,60" (1,28 m)	64,66" (1,64 m)
		MAX	51" (1,30 m)	57,67" (1,46 m)	74,66" (1,90 m)

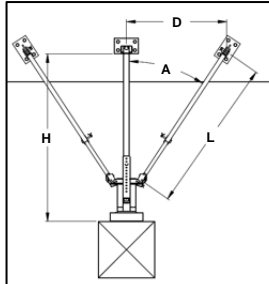
		COMPONENTS COMPOSITION		Item No.	Qty
		5'-0" central tube		22010061	1
(0)		3'-1" turnbuckle		23070013	2
(1)		3'-1" turnbuckle + 15-1/8" turnbuckle ext.		23070013 + 23040010	2
(2)		3'-1" turnbuckle + 2'-3" turnbuckle ext.		23070013 + 23040032	2
(3)		3'-1" turnbuckle + 3'-3" turnbuckle ext.		23070013 + 23040021	2

		H	D	L	B
(0)	A=30°	MIN	48" (1,22 m)	32,91" (836 mm)	56,06" (1,42 m)
		MAX	52" (1,32 m)	36,18" (919 mm)	62,59" (1,59 m)
(1)	A=30°	MIN	53" (1,35 m)	37" (940 mm)	64,22" (1,63 m)
		MAX	59" (1,50 m)	41,89" (1,06 m)	74,02" (1,88 m)
(2)	A=30°	MIN/MAX	60" (1,52 m)	42,71" (1,08 m)	75,66" (1,92 m)
			48" (1,22 m)	53,43" (1,36 m)	68,66" (1,74 m)
(1)	A=45°	MIN	51" (1,30 m)	57,67" (1,46 m)	74,66" (1,90 m)
		MAX	52" (1,32 m)	59,09" (1,50 m)	76,66" (1,95 m)
(2)	A=45°	MIN	57" (1,45 m)	66,16" (1,68 m)	86,66" (2,20 m)
		MAX	58" (1,47 m)	67,57" (1,72 m)	88,66" (2,25 m)
(3)	A=45°	MIN	60" (1,52 m)	70,40" (1,79 m)	92,66" (2,35 m)
		MAX	60" (1,52 m)	70,40" (1,79 m)	92,66" (2,35 m)

		COMPONENTS COMPOSITION		Item No.	Qty
		6'-0" central tube		22030074	1
(0)		3'-1" turnbuckle		23070013	2
(1)		3'-1" turnbuckle + 2'-3" turnbuckle ext.		23070013 + 23040032	2
(2)		3'-1" turnbuckle + 3'-3" turnbuckle ext.		23070013 + 23040021	2
(3)		15-1/8" turnbuckle ext. + 3'-3" turnbuckle ext.		23040010 + 23040021	2

		H	D	L	B
(0)	A=30°	MIN/MAX	59" (1,50 m)	41,89" (1,06 m)	74,02" (1,88 m)
			60" (1,52 m)	42,71" (1,08 m)	75,66" (1,92 m)
(1)	A=30°	MIN	67" (1,70 m)	48,42" (1,23 m)	87,09" (2,21 m)
		MAX	68" (1,73 m)	49,25" (1,25 m)	88,72" (2,25 m)
(2)	A=30°	MIN/MAX	59" (1,50 m)	67" (1,70 m)	90,66" (2,30 m)
			63" (1,60 m)	74,65" (1,90 m)	98,66" (2,50 m)
(2)	A=45°	MIN	64" (1,62 m)	76,06" (1,93 m)	100,66" (2,56 m)
		MAX	68" (1,73 m)	81,71" (2,07 m)	108,66" (2,76 m)
(3)	A=45°	MIN	64" (1,62 m)	76,06" (1,93 m)	100,66" (2,56 m)
		MAX	68" (1,73 m)	81,71" (2,07 m)	108,66" (2,76 m)

45° inclined three-point (3) anchors - Composition of the mast attach (CONTINUED)



- A: Turnbuckle' opening angle
- H: Distance from wall face
- D: Distance between the anchor plates
- L: Length of assembled turnbuckle
- B: Attachment height

Note: For higher H dimensions, consult the FRACO Engineering Department.

Note: ext. stands for extension

All anchors are composed of a wall attachment, a central tube and two (2) turnbuckle assemblies. The tables show the MIN/MAX dimensions for the different turnbuckle options. Example:

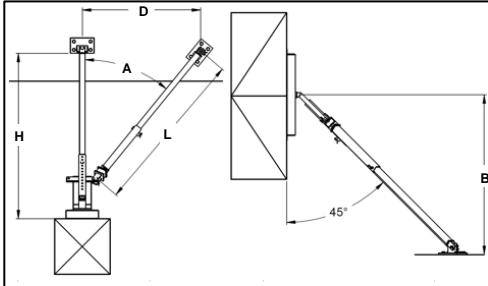
Example:

Turnbuckle option (0)
Turnbuckle option (1)
Turnbuckle option (2)

COMPONENTS COMPOSITION	Item No.	Qty
2'-0" central tube	22010027	1
14" assembled turnbuckle	23070114	2
18" assembled turnbuckle	23070147	2
24" assembled turnbuckle	23070147	2

Angled wall attachment (21490051)	(0)	COMPONENTS COMPOSITION			Item No.	Qty	
		7'-0" central tube			22030085	1	
		3'-1" turnbuckle	+	23070013			2
				2'-3" turnbuckle ext.			23040032
		3'-1" turnbuckle	+	23070013			2
				3'-3" turnbuckle ext.			23040021
		3'-1" turnbuckle	+	23070013			2
				15-1/8" turnbuckle ext.			23040010
		3'-3" turnbuckle ext.	+	23040021			2
				3'-1" turnbuckle			23070013
		2'-3" turnbuckle ext.	+	23040032			2
				3'-3" turnbuckle ext.			23040021
	3'-1" turnbuckle	+	23070013			2	
			3'-3" turnbuckle ext.			23040021	4
	(1)	H					
		A=30°	MIN/MAX	67" (1,70 m)	48,42" (1,23 m)	87,09" (2,21 m)	64,95" (1,65 m)
			MIN	68" (1,73 m)	49,25" (1,25 m)	88,72" (2,25 m)	65,95" (1,67 m)
		A=30°	MAX	74" (1,88 m)	54,15" (1,37 m)	98,52" (2,50 m)	71,95" (1,83 m)
			MIN	75" (1,90 m)	54,96" (1,40 m)	100,15" (2,54 m)	72,95" (1,85 m)
		A=30°	MAX	77" (1,96 m)	56,60" (1,44 m)	103,42" (2,63 m)	74,95" (1,90 m)
MIN			67" (1,70 m)	80,30" (2,04 m)	106,66" (2,71 m)	64,95" (1,65 m)	
A=45°		MAX	69" (1,75 m)	83,13" (2,11 m)	110,66" (2,81 m)	66,95" (1,70 m)	
	MIN	70" (1,78 m)	84,54" (2,15 m)	112,66" (2,86 m)	67,95" (1,73 m)		
A=45°	MAX	75" (1,90 m)	91,61" (2,33 m)	122,66" (3,12 m)	72,95" (1,85 m)		
	MIN	76" (1,93 m)	93,03" (2,36 m)	124,66" (3,17 m)	73,95" (1,88 m)		
A=45°	MAX	77" (1,96 m)	94,44" (2,40 m)	126,66" (3,22 m)	74,95" (1,90 m)		

45° inclined two-point (2) anchors - Composition of the mast attach



- A: Turnbuckles' opening angle
- H: Distance from wall face
- D: Distance between the anchor plates
- L: Length of assembled turnbuckle
- B: Attachment height

Note: For higher H dimensions, consult the FRACO Engineering Department.
Note: ext. stands for extension

All anchors are composed of a wall attachment, a central tube and one (1) turnbuckle assembly. The tables show the MIN/MAX dimensions for the different turnbuckle options. Example:

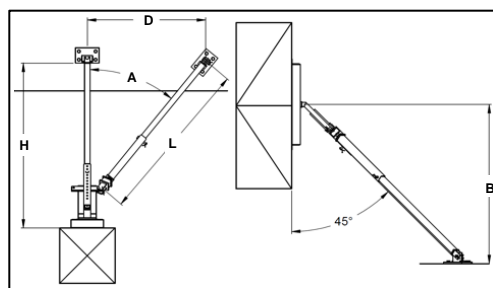
Example:
Turnbuckle option (0)
Turnbuckle option (1)
Turnbuckle option (2)

COMPONENTS COMPOSITION	Item No.	Qty
2'-0" central tube	22010027	1
14" assembled turnbuckle	23070114	2
18" assembled turnbuckle	23070147	2
24" assembled turnbuckle	23070147	2

		COMPONENTS COMPOSITION		Item No.	Qty
(0)	A=30°	3'-0" central tube		22010049	1
		2'-7" reinforced turnbuckle + 2'-0" central tube		23070103	1
	A=45°	2'-7" reinforced turnbuckle + 2'-0" central tube		22010027	1
		2'-7" reinforced turnbuckle + 3'-0" central tube		23070103	1
	A=45°	2'-7" reinforced turnbuckle + 3'-0" central tube		22010049	1
	A=30°	MIN	H: 40" (1,02 m), D: 26,38" (670 mm), L: 43" (1,09 m), B: 37,95" (964 mm)		
		MAX	H: 43" (1,09 m), D: 28,83" (732 mm), L: 47,89" (1,22 m), B: 40,95" (1,04 m)		
	A=45°	MIN	H: 35" (889 mm), D: 35,04" (1,04 m), L: 42,66" (1,08 m), B: 32,95" (837 mm)		
		MAX	H: 40" (1,02 m), D: 42,12" (1,07 m), L: 52,66" (1,34 m), B: 37,95" (964 mm)		
(1)	A=30°	MIN	H: 41" (1,04 m), D: 43,53" (1,10 m), L: 54,66" (1,39 m), B: 38,95" (989 mm)		
		MAX	H: 43" (1,09 mm), D: 46,36" (1,18 m), L: 58,66" (1,50 m), B: 40,95" (1,04 m)		
	A=45°				
	A=30°				
	A=45°				
	A=30°				
(2)	A=30°				
	A=45°				
	A=30°				
	A=45°				
	A=30°				

		COMPONENTS COMPOSITION		Item No.	Qty
(0)	A=30°	5'-0" central tube		22010061	1
		2'-7" reinforced turnbuckle + 3'-0" central tube		23070103	1
	A=45°	2'-7" reinforced turnbuckle + 4'-0" central tube		22010050	1
		2'-7" reinforced turnbuckle + 5'-0" central tube		23070103	1
	A=45°	2'-7" reinforced turnbuckle + 5'-0" central tube		22010061	1
		2'-7" reinforced turnbuckle + 6'-0" central tube		23070103	1
	A=30°	MIN	H: 48" (1,22 m), D: 32,91" (836 mm), L: 56,06" (1,42 m), B: 45,95" (1,17 m)		
		MAX	H: 54" (1,37 m), D: 37,81" (960 mm), L: 65,86" (1,67 m), B: 51,95" (1,32 m)		
	A=45°	MIN	H: 55" (1,40 m), D: 38,63" (981 mm), L: 67,50" (1,71 m), B: 52,95" (1,34 m)		
		MAX	H: 60" (1,52 m), D: 42,71" (1,08 m), L: 75,66" (1,92 m), B: 57,95" (1,47 m)		
(1)	A=30°	MIN	H: 48" (1,22 m), D: 32,91" (836 mm), L: 56,06" (1,42 m), B: 45,95" (1,17 m)		
		MAX	H: 54" (1,37 m), D: 37,81" (960 mm), L: 65,86" (1,67 m), B: 51,95" (1,32 m)		
	A=45°	MIN	H: 55" (1,40 m), D: 38,63" (981 mm), L: 67,50" (1,71 m), B: 52,95" (1,34 m)		
		MAX	H: 60" (1,52 m), D: 42,71" (1,08 m), L: 75,66" (1,92 m), B: 57,95" (1,47 m)		
	A=45°	MIN	H: 48" (1,22 m), D: 32,91" (836 mm), L: 56,06" (1,42 m), B: 45,95" (1,17 m)		
		MAX	H: 54" (1,37 m), D: 37,81" (960 mm), L: 65,86" (1,67 m), B: 51,95" (1,32 m)		
	A=45°	MIN	H: 55" (1,40 m), D: 38,63" (981 mm), L: 67,50" (1,71 m), B: 52,95" (1,34 m)		
		MAX	H: 60" (1,52 m), D: 42,71" (1,08 m), L: 75,66" (1,92 m), B: 57,95" (1,47 m)		
	A=45°	MIN	H: 48" (1,22 m), D: 32,91" (836 mm), L: 56,06" (1,42 m), B: 45,95" (1,17 m)		
		MAX	H: 54" (1,37 m), D: 37,81" (960 mm), L: 65,86" (1,67 m), B: 51,95" (1,32 m)		
(2)	A=30°				
	A=45°				
	A=30°				
	A=45°				
	A=30°				

45° inclined two-point (2) anchors - Composition of the mast attach (CONTINUED)



- A: Turnbuckles' opening angle
- H: Distance from wall face
- D: Distance between the anchor plates
- L: Length of assembled turnbuckle
- B: Attachment height

Note: For higher H dimensions, consult the FRACO Engineering Department.

Note: ext. stands for extension

All anchors are composed of a wall attachment, a central tube and one (1) turnbuckle assembly. The tables show the MIN/MAX dimensions for the different turnbuckle options. Example:

Example:

Turnbuckle option (0)

Turnbuckle option (1)

Turnbuckle option (2)

COMPONENTS COMPOSITION	Item No.	Qty
2'-0" central tube	22010027	1
14" assembled turnbuckle	23070114	2
18" assembled turnbuckle	23070147	2
24" assembled turnbuckle	23070147	2

Angled wall attachment (21490051)				COMPONENTS ACCEPTANCE		Item No.	Qty
		(0)		7'-0" central tube		22030085	1
				2'-7" reinforced turnbuckle + 5'-0" central tube		23070103	1
		(1)		2'-7" reinforced turnbuckle + 6'-0" central tube		22010061	1
				2'-7" reinforced turnbuckle + 6'-0" central tube		23070103	1
		(2)		2'-7" reinforced turnbuckle + 7'-0" central tube		22030074	1
				2'-7" reinforced turnbuckle + 7'-0" central tube		23070103	1
		(3)		2'-7" reinforced turnbuckle + 8'-0" central tube		22030085	1
				2'-7" reinforced turnbuckle + 8'-0" central tube		23070103	1
						22030096	1
						22030096	1
						22030096	1
				22030096	1		

				H	D	L	B
(0)	A=30°	MIN	67" (1,70 m)	48,42" (1,23 m)	87,09" (2,21 m)	64,95" (1,65 m)	
		MAX	68" (1,73 m)	49,25" (1,25 m)	88,72" (2,25 m)	65,95" (1,67 m)	
	(1)	A=30°	MIN	69" (1,75 m)	50,06" (1,27 m)	90,35" (2,30 m)	66,95" (1,70 m)
			MAX	76" (1,93 m)	55,77" (1,42 m)	101,78" (1,59 m)	73,95" (1,88 m)
	(2)	A=30°	MIN/MAX	77" (1,96 m)	56,59" (1,44 m)	103,42" (2,63 m)	74,95" (1,90 m)
			MIN	67" (1,70 m)	80,30" (2,04 m)	106,66" (2,71 m)	64,95" (1,65 m)
	(2)	A=45°	MAX	70" (1,78 m)	84,54" (2,15 m)	112,66" (2,86 m)	67,95" (1,73 m)
			MIN	71" (1,80 m)	85,96" (2,18 m)	114,66" (2,91 m)	68,95" (1,75 m)
	(3)	A=45°	MAX	76" (1,93 m)	93,03" (2,36 m)	124,66" (3,17 m)	73,95" (1,88 m)
			MIN	71" (1,80 m)	85,96" (2,18 m)	114,66" (2,91 m)	68,95" (1,75 m)
	(3)	A=45°	MAX	76" (1,93 m)	93,03" (2,36 m)	124,66" (3,17 m)	73,95" (1,88 m)
			MIN	71" (1,80 m)	85,96" (2,18 m)	114,66" (2,91 m)	68,95" (1,75 m)

Installation of the mast attach device (typical)

Example with horizontal attach system with vertical surface

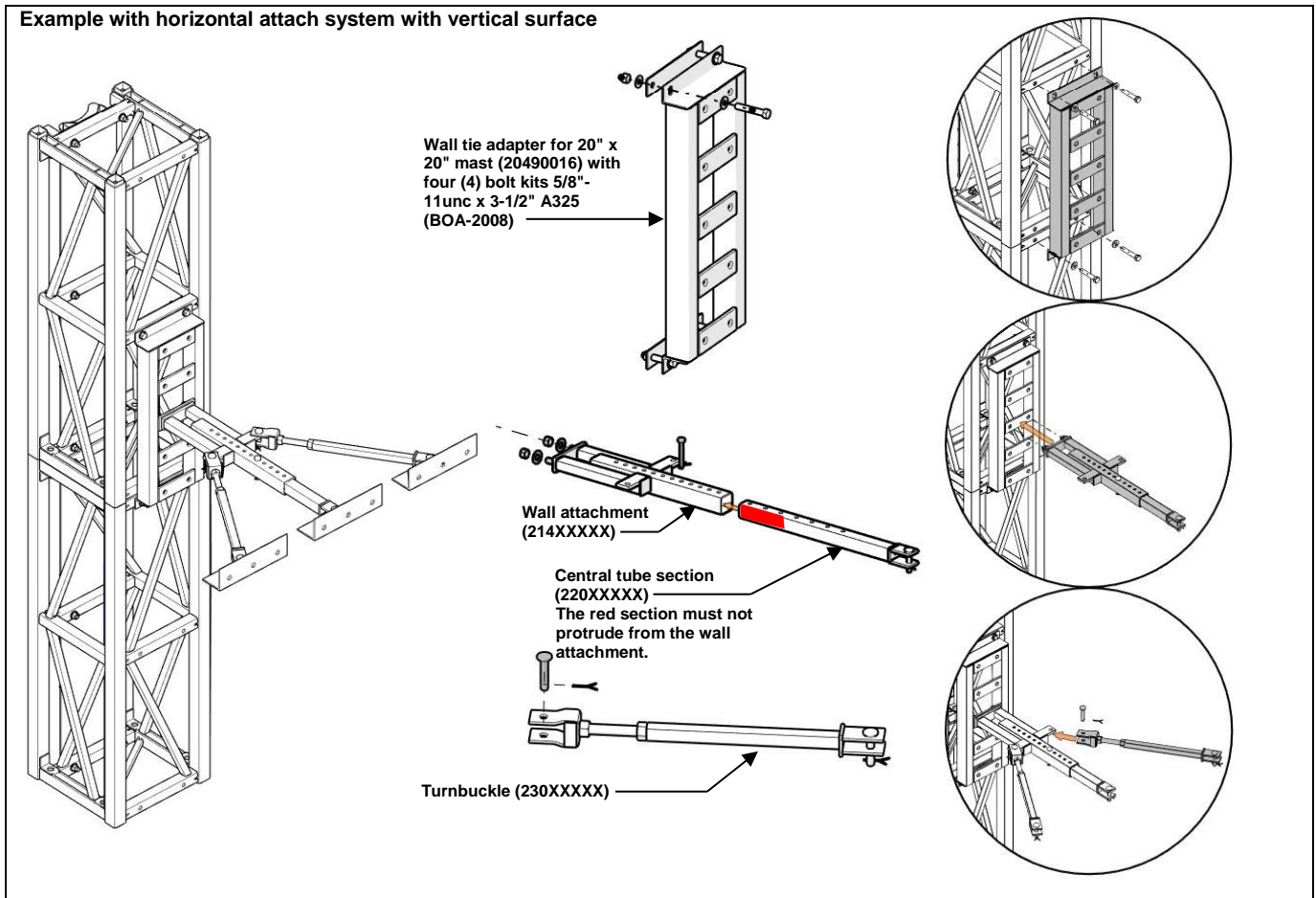


Figure 72 - Installation of mast anchors





Lifting unit operation specifications

IMPORTANT! Reminders - Operation specifications

- In the « Out of service » condition, the platform, with its balanced load on each side, must always be located between two (2) levels, at equal distance from the mast anchors, and lowered to ground level.
- The typical distance between each mast anchor is 31'-0" (9,5 m) \pm 5'-0" (1,5 m). This distance must be respected from the first or second anchor depending on the type of base used. Refer to section **INSTALLATION/DISMANTLING OF MAST SECTIONS**, ON PAGE 77.
- Positioning of the unit in relation to the highest anchor:
 - It is admissible to exceed the level of the highest anchorage by a height of 5'-0" in normal use of the unit. This permission is valid for a unit equipped with a portable crane system, or a monorail system, provided that these systems are not in operation (not loaded).
 - It is **forbidden** to exceed the level of the highest anchorage when the lifting unit is loaded, or equipped with a portable crane in operation (loaded) or monorail system in operation (loaded), or with a winter shelter accessory or a rigid roof.
- It is **forbidden** to cover guardrails and platforms with plywood (vertical faces) or to extend the guardrails without the consent of FRACO.
- Observe the maximum wind conditions:
 - [0 to 28 mph] (0 to 45 km/h) Installation wind conditions
 - [0 to 34 mph] (0 to 55 km/h) In use wind conditions
 - [34 to 102 mph] (55 to 165 km/h) Out of service wind conditions
 - [102 mph and +] (165 km/h and +): The structure requires additional reinforcement. Contact your FRACO representative.
- For use without anchorage and associated load distributions:
 - ∞SEE GROUND LOAD - UNIVERSAL FREESTANDING BASE (14030109), ON PAGE 34
 - ∞SEE GROUND LOAD - ACT-8 FREESTANDING BASE (14030020) FORMER GENERATION, ON PAGE 35
- The minimum penetration into the concrete wall/slab depends on the type of mast anchor and its use. FRACO shall not be held responsible for the use and choice of anchors other than those proposed in the project quote.
 - ∞SEE MAST ANCHOR, ON PAGE 66

For more information on the various mast anchors devices, refer to the most recent « **MAST ANCHOR SPECIFICATIONS** » documents available with the project quotation. You can also contact your FRACO for a copy of these documents.


Installation/dismantling of mast sections

-  **IMPORTANT!** At all times during the installation and dismantling of masts and anchors, the floor of the unit shall not be more than 30'-0" (9,1 m) above the last Installed anchor (highest).
-  **IMPORTANT!** During the installation of the first two (2) anchors, on a ground base assembly only, it is mandatory to support the mast with independent lifting equipment (crane, crane truck or forklift truck).
-  **IMPORTANT!** In the case of a ground base installation, the platform **MUST NEVER** be elevated and/or loaded with equipment before the installation of the (2) first mast anchors has been completed. This applies to assembly as well as the disassembly operations.
-  **IMPORTANT!** Wear a safety harness attached at all times to a regulatory attachment point during the installation and disassembly of the platform.
∞SEE FIGURE 3 - REGULATORY , ON PAGE 10

In all cases, when a mast anchor is installed or dismantled, an extension of maximum 10'-0" (3,0 m) may be installed on either side of the lifting unit.

- Complete the 10'-0" (3,0 m) extension platforms, including plankings, guardrails and accessories, before installing the mast sections and anchors.
- During the installation of the first two mast anchors, on a ground base assembly, it is forbidden to load the platform.

Max extension 10'-0" (3,0 m)	Unit	Max extension 10'-0" (3,0 m)
---------------------------------	------	---------------------------------

-  **IMPORTANT!** Failure to follow these instructions may result in serious property damage, personal injury, and eventually death. If a situation not mentioned in this manual occurs, contact your FRACO representative.



Installation of mast sections and anchor devices / ACT-8 platform with ground base

Step 1

- You may install up to a **MAXIMUM 10'-0"** (3,0 m) extension on each side of the unit during installation of the mast sections and mast anchors. Consider this as the « **Setup configuration** ».
- Install the outriggers, plankings guardrails, planking attachments, guardrails, guardrail pocket holders and plankings on the lifting unit.
- Place the plankings under the location of the anchors to be installed. Install the first mast anchor at 10'-0" (3,0 m) from the ground. This height is a recommendation. For more information on the permitted installation heights for the first anchor,
 ∞ SEE TABLE 1 - DIMENSIONS AND CLEARANCE, ON PAGE 14

Step 2

- Assemble up to five (5) mast sections on the ground.
 ∞ SEE BOLTING OF MAST SECTIONS AND MAST END SECTION, ON PAGE 65
- Lift the assembled mast sections with an independent lifting equipment (crane, crane truck or forklift truck) and position the masts opposite those of the lifting unit. Worm screw rails must be on the right side.
- Install and bolt the mast sections on those of the lifting unit. Keep the assembly secure with the independent lifting system (crane, crane truck or forklift truck).

Step 3

- Remove the plankings and planking attachments under the location of the mast anchors **before** raising the lifting unit to the height of the next mast anchor.
- Raise the unit up to the location for the second mast anchor.
- Replace the plankings and planking attachments under the location of the mast anchors to be installed.
- Install the second mast anchor at 20'-0" (6,0 m) from the ground. This height is a recommendation. For more information on the permitted installation heights for the second anchor,
 ∞ SEE TABLE 1 - DIMENSIONS AND CLEARANCE, ON PAGE 14

Once the two (2) first anchor devices are installed, you may continue the installation without needing to support the mast with the independent lifting system (crane, crane truck or forklift).

- You may now continue installing the mast sections and subsequent mast anchors. You can preassemble up to 40'-0" (12,2 m) [8 mast sections] of mast sections and lift the assembly to bolt it to the mast (See [Figure 44](#)).
- Continue with the installation respecting the a above description.
- If you are using a self-erecting system (**optional - self-erecting system**), go to **Step 4**, (See [Figure 74](#)).
- Raise the platform and complete the installation of the mast sections and anchors up to the desired height. Please observe the maximum distance of 31'-0" (9,5 m) ± 5'-0" (1,5 m) between the subsequent anchors. Also, please observe the maximum installation distance specific to the dimensions of ground base units – **Chapter A** (TABLE 1 - DIMENSIONS AND CLEARANCE, ON PAGE 14).
- Once the last mast section is installed, bolt the mast end section.
 ∞ SEE [Figure 71](#) - BOLTING OF MAST AND MAST END SECTIONS, ON PAGE 65
- Finally lower the platform to the ground and install your bridge and extension sections in accordance with the installation instructions defined in **Chapter D**. Complete the platform installation (add fittings, guardrails and other remaining accessories...) and install the protective mesh on the lifting unit (See [Figure 79](#)).

Installation of mast sections and anchor devices / ACT-8 platform with ground base (CONTINUED)

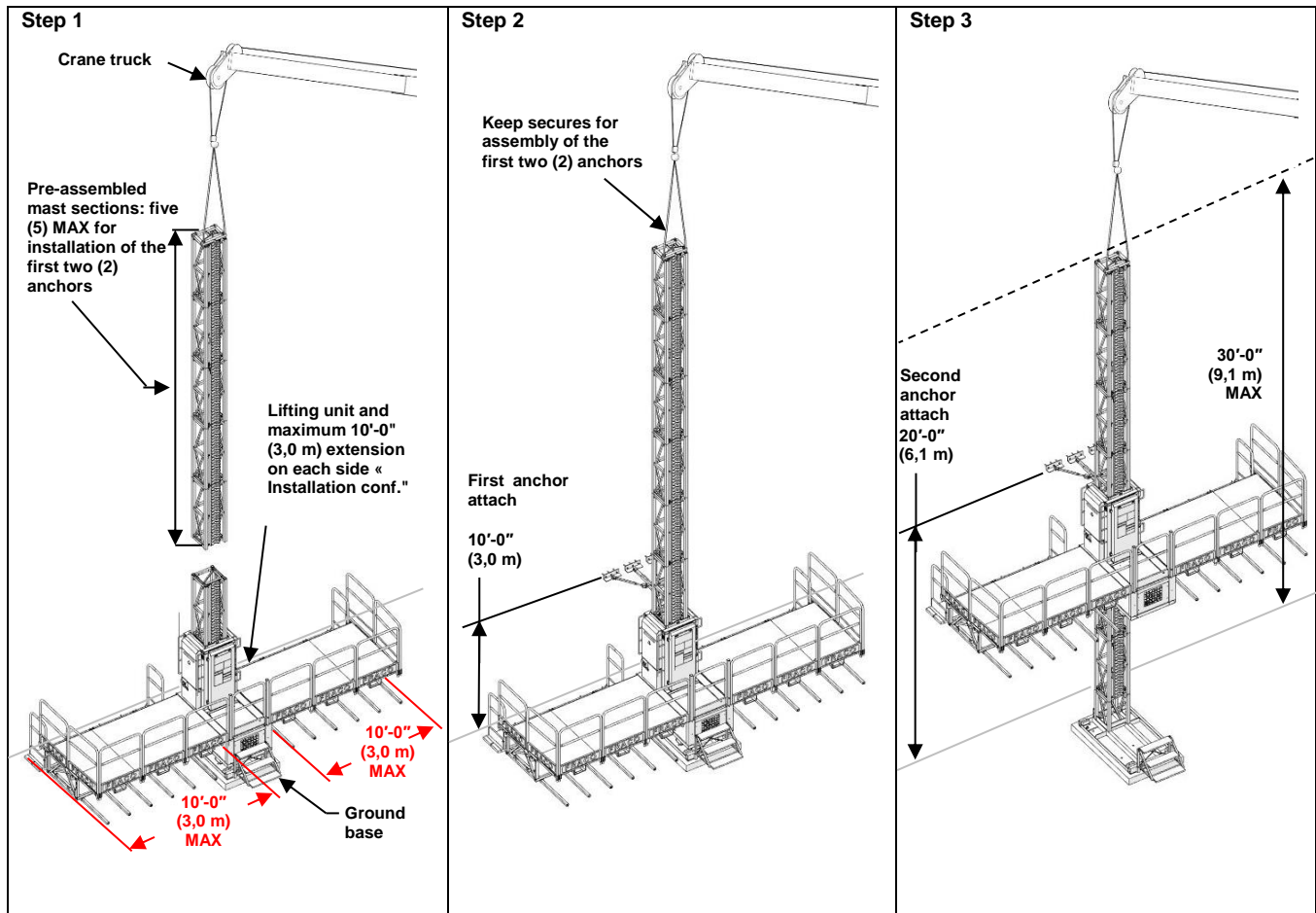


Figure 73 - Installation of masts and anchors, ground base



Installation of mast sections and anchor devices / ACT-8 platform with ground base (CONTINUED)

Step 4 (Optional - self-erecting system)

Once the first two (2) anchors have been installed, you may continue the installation using the self-erecting system.

- Lower the unit to the ground and install the self-erecting system. For more details, see [Figure 77](#).
- Load up to **MAXIMUM** six (6) mast sections on each side of the platform. Attention, it is important to always load the platform from both sides during the installation.
- Raise the platform and complete the installation of the mast sections and anchors up to the desired height. Please observe the maximum distance of 31'-0" (9,5 m) \pm 5'-0" (1,5 m) between the subsequent anchors. Also, please observe the maximum installation distance specific to the dimensions of ground base units – **Chapter A (TABLE 1 - DIMENSIONS AND CLEARANCE, EN PAGE 14)**.
- Once the last mast section is installed, bolt the mast end section.
 ∞ SEE [Figure 71 - BOLTING OF MAST AND MAST END SECTIONS, ON PAGE 65](#)
- Then lower the platform to the floor and remove the self-erecting system.
- With the platform still at ground level, install your bridge and extension sections in accordance with the installation instructions in **Chapter D**. Complete the platform installation (add fittings, guardrails and other remaining accessories...) and install the protective mesh on the lifting unit (See [Figure 79](#)).
- Make sure that all locks of the self-erecting system are present before using the self-erecting system.

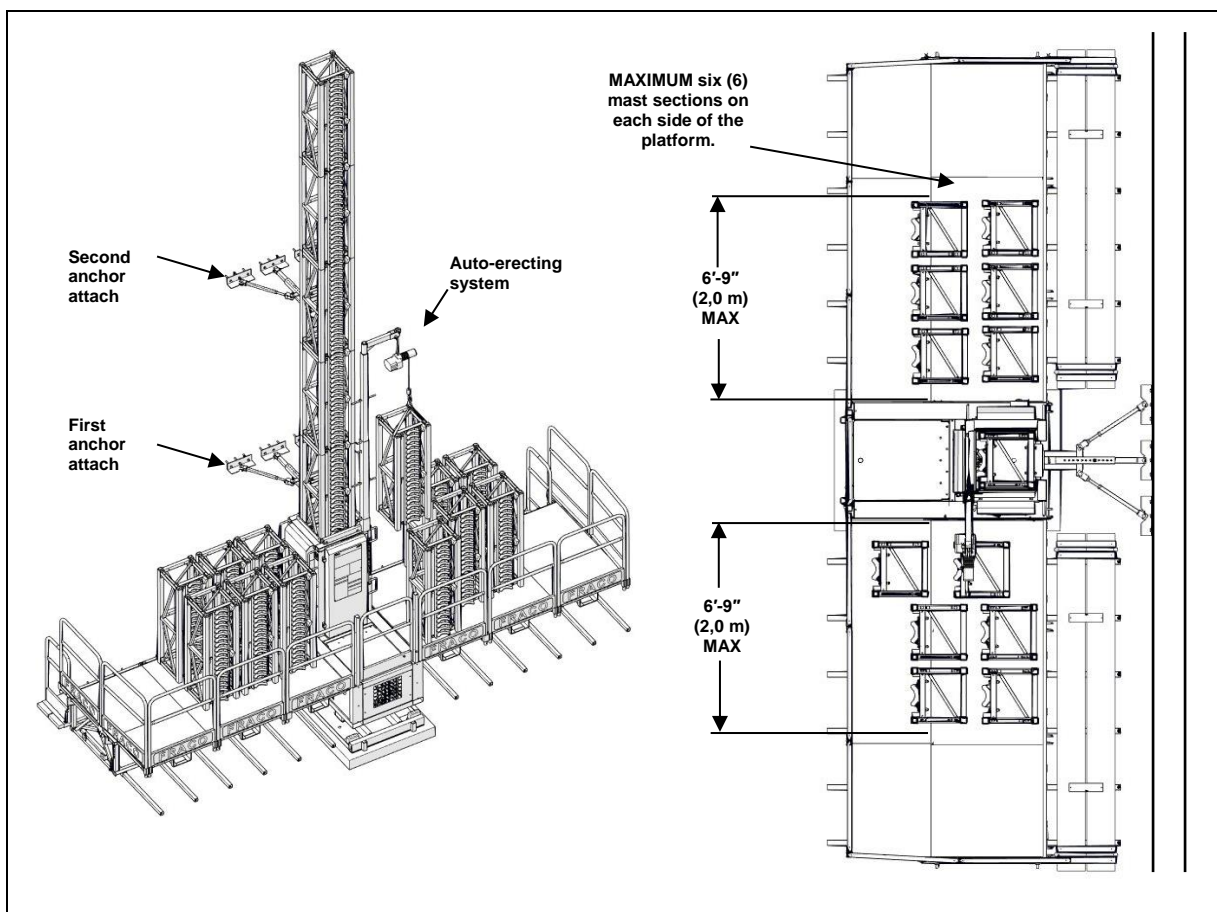


Figure 74 - Installation of masts and anchors on a ground base, self-erecting (optional)



Installation of mast sections and anchor devices / ACT-8 platform with freestanding base (Universal and ACT-8)

IMPORTANT! In the case of a freestanding installation **ONLY** (with a working height not exceeding 45'-0" [13,7 m], thus not requiring anchors), you are allowed to install the complete platform in its final working configuration, including extension, bridge, plankings, guardrails and accessories, prior to installation of the mast sections.

Step 1

- You may install up to a **MAXIMUM** 10'-0" (3,0 m) extension on each side of the unit during installation of the mast sections and mast anchors. Consider this as the « **Setup configuration** ».
- Install the outriggers, plankings guardrails, planking attachments, guardrails, guardrail pocket holders and plankings on the lifting unit.
- For installation with a crane truck, you may preassemble up to 40'-0" (12,2 m) [8 mast sections] of mast sections on the ground and install them by lifting them up with a lifting sling. Bolt the mast sections together respecting the defined tightening torques.
∞SEE **BOLTING OF MAST SECTIONS AND MAST END SECTION**, ON PAGE 65
- If you are using a self-erecting system (**optional - self-erecting system**), go to **Step 4**

Step 2

- Raise the unit up to the location of the first mast anchor.
- Place the plankings and planking attachments under the location of the mast anchors to be installed.
- Install the first mast anchor at 30'-0" (9,1 m) from the floor or at a maximum height of 45'-0" (13,7 m) from the ground (in this specific case, consult the dimensions for freestanding base in **Chapter A** (TABLE 1 - DIMENSIONS AND CLEARANCE, ON PAGE 14)).

Step 3

- You may again preassemble up to 40'-0" (12,2 m) [8 mast sections] of mast sections, position them using the crane truck over the previously installed mast and bolt the sections together.
- If you are using a self-erecting system (**optional - self-erecting system**), go to **Step 5**
- Remove the plankings and planking attachments from the space below the mast anchor **before** raising the lifting unit to the height of the next mast anchor.
- Raise the unit up to the location of the second mast anchor to be installed.
- Replace the plankings and planking attachments under the location of the second mast anchor to be installed.
- Then install the second anchor 31'-0" (9,5 m) ± 5'-0" (1,5 m) above the first. This dimension is the **MAXIMUM** authorized dimension between all subsequent anchor devices.
- Complete the installation of mast sections and anchors to the desired height and bolt the mast end section (see **Figure 71**) above the last mast section.
- Finally lower the platform to the ground and install your bridge and extension sections in accordance with the installation instructions defined in **Chapter D**. Complete the platform installation (add fittings, guardrails and other remaining accessories...) and install the protective mesh on the lifting unit (See **Figure 79**).

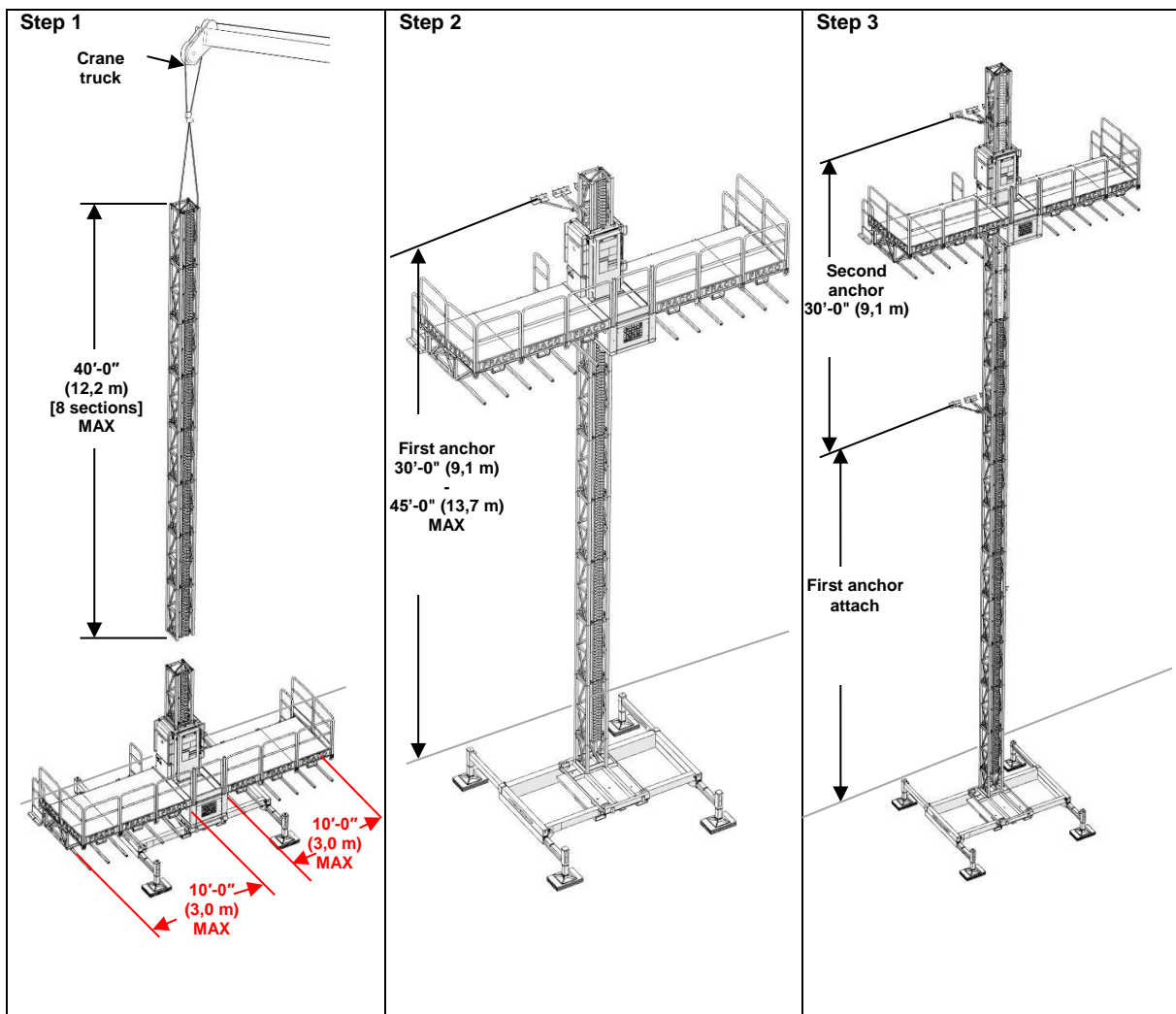


Figure 75 - Installation of masts and anchors, freestanding base

Step 4 (Optional - self-erecting system)

If you use a freestanding base, you can use the self-erecting system from the beginning of installation of the mast sections and mast anchors devices.

- Lower the unit to floor level.
- You may install up to a **MAXIMUM** 10'-0" (3,0 m) extension on each side of the unit during installation of the mast sections and mast anchors. Consider this as the « **Setup configuration** ».
- Install the outriggers, planking guardrails, planking attachments, guardrails, guardrail pocket holders and plankings on the lifting unit.
- Then install the self-erecting system and load up to six (6) mast sections on each side of the platform (twelve [12] sections per platform). Attention, it is important to always equally load the platform on both sides as shown in the [Figure 74](#).
- Raise the unit up to the location of the second mast anchor to be installed.
- Replace the plankings and planking attachments under the location of the mast anchors to be installed.
- Install the first mast anchor at 30'-0" (9,1 m) from the floor or at a maximum height of 45'-0" (13,7 m) from the floor (in this specific case, consult the dimensions for freestanding base in **Chapter A** (TABLE 1 - DIMENSIONS AND CLEARANCE, ON PAGE 14)).

Step 5 (Optional - self-erecting system)

- Load up to **MAXIMUM** six (6) mast sections on each side of the platform. Attention, it is important to always equally load the platform on both sides.
- Remove plankings and plankings attachments under the anchors and lift the platform up to under the location of the second anchor to be installed.
- Replace the plankings and planking attachments under the location of the second mast anchor to be installed.
- Then install the second anchor 31'-0" (9,5 m) \pm 5'-0" (1,5 m) above the first. This dimension is the **MAXIMUM** authorized dimension between all subsequent anchor devices.
- Proceed as such for the installation of all necessary mast sections and anchor devices until the desired height is reached.
- Once the last mast section is installed, bolt the mast end section.
 ∞ SEE [Figure 71 - BOLTING OF MAST AND MAST END SECTIONS, ON PAGE 65](#)
- Lower the platform to floor level and remove the self-erecting system.
- With the platform at ground level, install your bridge and extension sections in accordance with the installation instructions in **Chapter D**. Complete the platform installation (add fittings, guardrails and other remaining accessories...) and install the protective mesh on the lifting unit (See [Figure 79](#)).

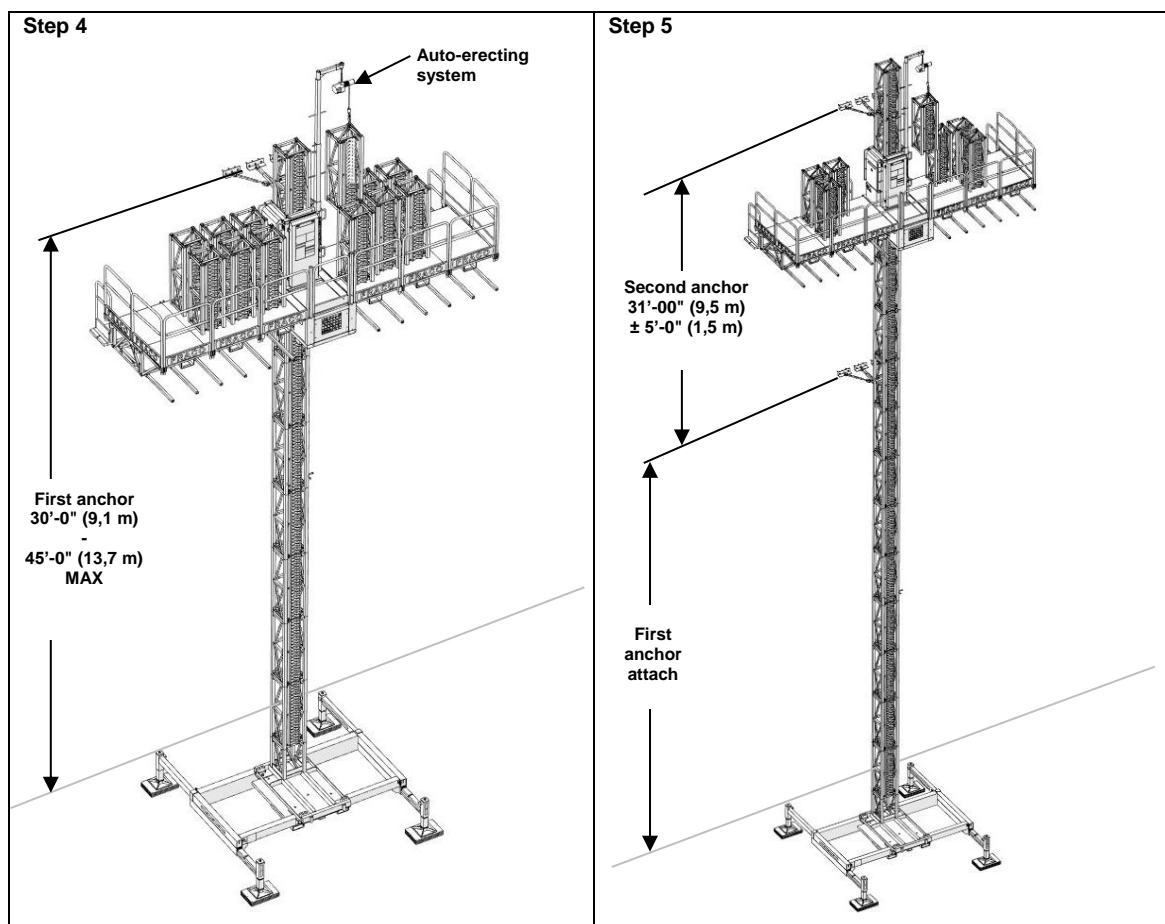


Figure 76 - Installation of masts and anchors on a freestanding base, self-erecting (optional)

Installation of the self-erecting system (optional)

IMPORTANT! Always use a safety harness that is properly secured to a regulatory attachment point on the platform when assembling and dismantling the self-erecting system.

∞SEE SECTION REGULATORY REGULATORY, ON PAGE 10

IMPORTANT! Make sure that all locks of the self-erecting system, such as items 5 and 10, are present before using the self-erecting system.

Step 1

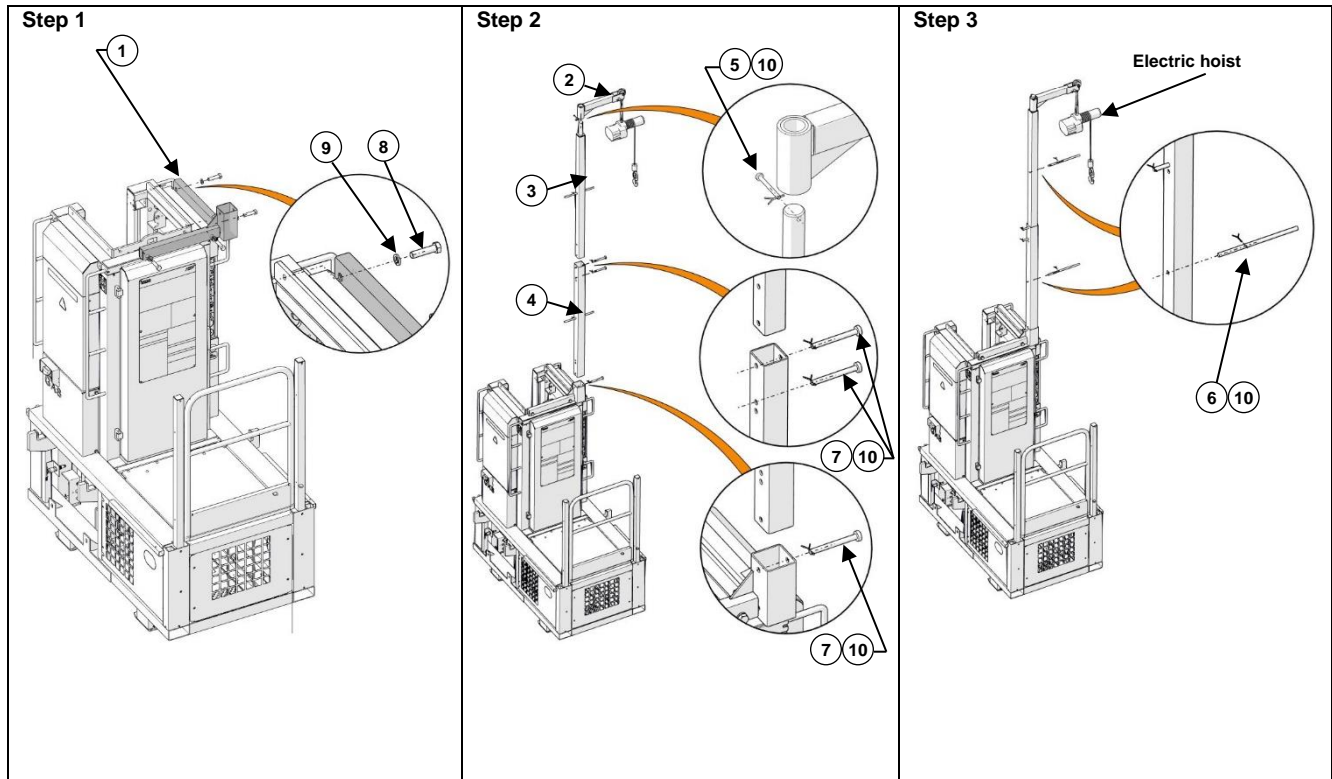
- Position and bolt the « L » self-tightening fastener (20490061) on the lifting unit.

Step 2

- Position the tubes and the boom on the auto-erecting system and lock them in place with the specified locking shafts (see [Figure 77](#)).

Step 3

- Install the washer shafts as ladder rungs. Use the ladder rungs to lift and install the electric hoist. Once the electric hoist has been installed, remove the washer shafts and store them for later use when disassembling.

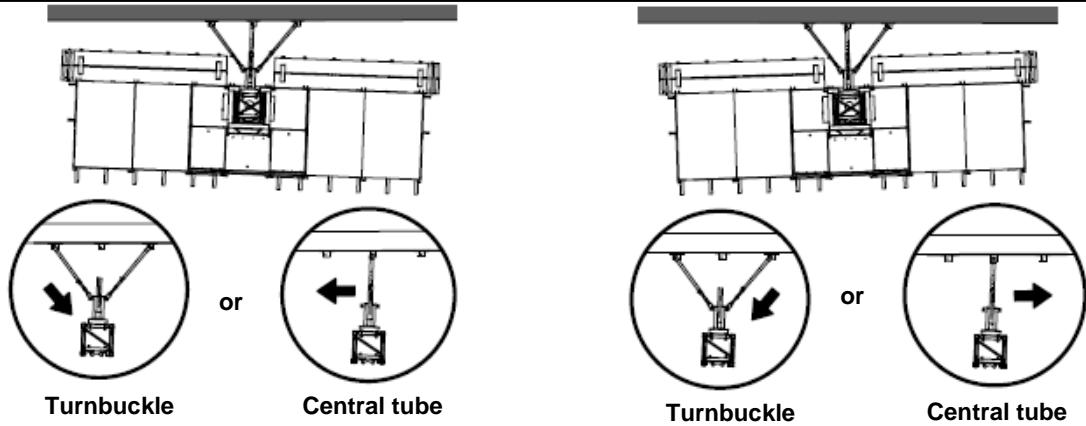


No.	Item	Description	No.	Item	Description
01	20490061	Self-erecting L tie 2'-2" x 2'-2"	06	25490077	Pin with washer Ø 5/8" x 14"
02	20490162	Self-erecting boom 3" x 3" x 21-1/4"	07	25490112	Locking pin Ø 5/8" x 6-9/16"
03	20490331	Self erecting tube with shaft 3" x 3" x 5' 10"	08	BOA-2031	Bolt 3/4"-10unc x 3" A325 galv.
04	20490342	Self erecting tube 3-1/2" x 3-1/2" x 4'-10"	09	LOZ-5050	Lock washer 3/4" zinc
05	25490011	Locking pin Ø 3/8" x 3-1/8"	10	GOU-1120	Split Pin 1/8" x 2" zinc

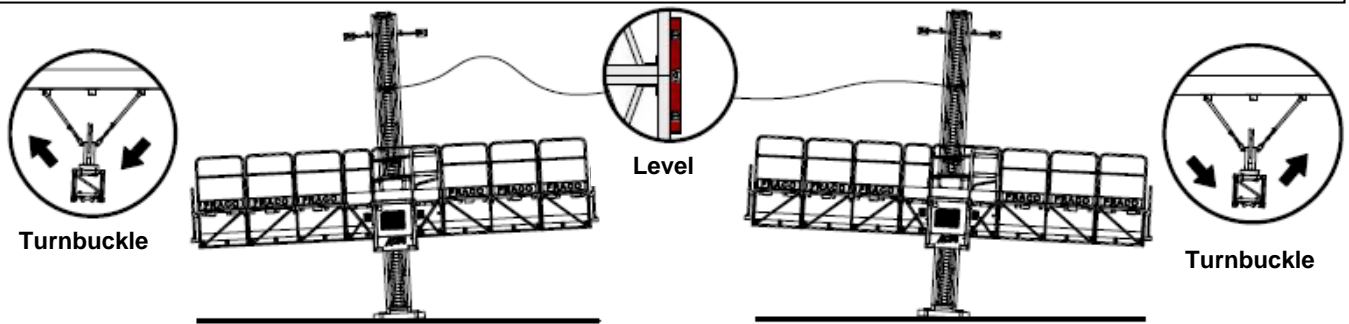
Figure 77 - Self-erecting assembly

Mast leveling with anchor devices

Type 1 - Adjusting the distance between the wall and the platform



Type 2 - Leveling the left/right mast



Type 3 - Leveling of the front/rear mast

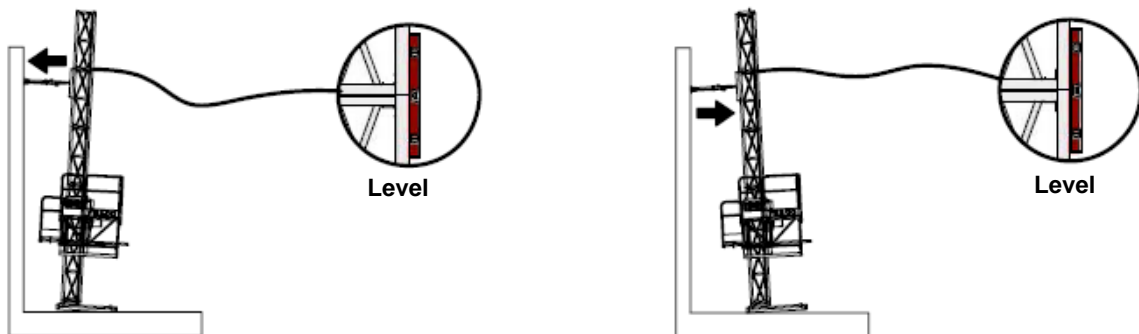


Figure 78 - Leveling with anchor devices

Installation of the protection screen

The protective wire mesh is installed in the same location as the self-erecting system using the same bolts.

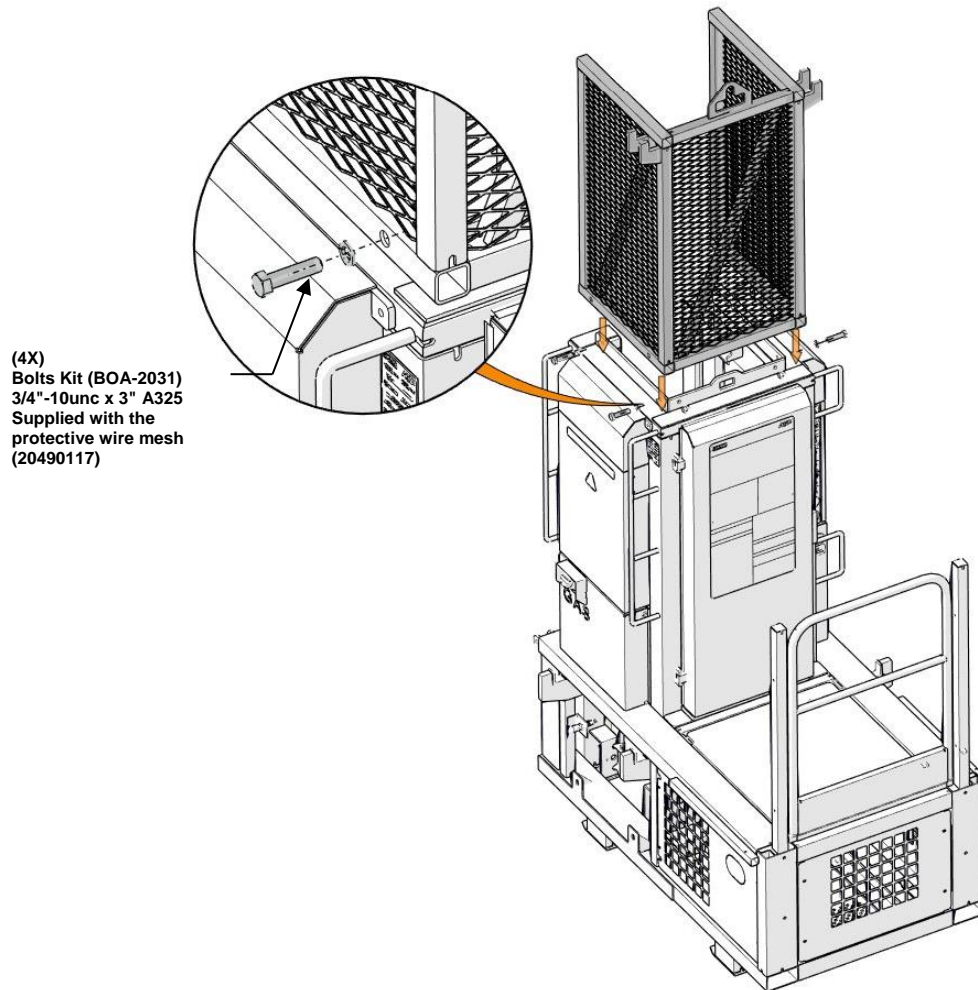


Figure 79 - protective wire mesh



Disassembly of masts and anchors with ground base

Step 1

- Lower the unit to the floor and unload all equipment, debris and materials from the platform.
- Remove the protective wire mesh (see [Figure 79](#)).
- Disassemble any extension section that does not respect a **MAXIMUM** 10'-0" (3,0 m) extension on each side of the unit during Disassembly of the mast sections and mast anchor devices. Consider this as the « **Installation configuration** ».
- If you have a self-erecting system (**optional – self-erecting system**), install it using the bolts provided in the protective wire mesh kit and go to **Step 3** once **Step 1** is completed.
- Raise the platform until reaching the top of the mast and unbolt the mast end section.
- Sling the top of the mast with an independent lifting system (crane truck, sling, belt, etc.) to dismantle several mast sections at a time. This is not necessary if you are using the self-erecting system.
- Then descend until you find the location of the highest anchor (last anchor device).

Step 2

- Place the plankings and planking attachments under the location of the anchors to be removed.
- Loosen the turnbuckles and remove the anchor devices. Perform repairs to the wall if necessary.
- Remove the plankings and planking attachments under the anchor points.
- Then lower the platform to the next anchor.
- Unbolt and remove the mast sections using an independent lifting equipment (crane, crane truck or forklift truck) following the same instructions as for the installation (see [Figure 73](#)). Dismantle up to **MAXIMUM** 40'-0" (12,2 m) [8 mast sections] mast sections at a time for all anchors located above the first two (2) mast sections.
- Replace the plankings and planking attachments under the location of the second mast anchor to be removed.
- Continue disassembling until only the first two anchor devices remain.

Step 3 (Optional - self-erecting system)

- Place the plankings and planking attachments under the location of the mast anchors to be removed.
- Loosen the turnbuckles and remove the mast anchor devices. Perform repairs to the wall if necessary.
- Remove the plankings, planking supports and planking railings at the anchor dedicated location between each movement of the platform.
- Unbolt and remove the mast sections using the self-erecting system following the same instructions as for the installation (see [Figure 74](#)). Load equally on each side of the platform up to **MAXIMUM** six (6) mast sections at a time (twelve [12] sections per platform **MAXIMUM**).
- Continue disassembling until only the first two anchor devices remain.
- Lower the platform to the floor and remove the self-erecting system.

Step 4

Important! It is mandatory to support the mast using an independent lifting system (crane truck, sling, belt, etc.) during the dismantling of the first two (2) mast anchors.

- Bring the platform underneath the second anchor device and install the plankings, planking supports and railings destined for the location under the anchors.
- Remove the second anchor device and perform any necessary repairs to the wall.
- Remove the plankings, planking attachments and railings under the location of the anchors to be removed.
- Lower the unit under the first anchor device.
- Install the plankings, planking attachments and railings under the location of the anchors to be removed.
- Remove the first anchor device and perform any necessary repairs to the wall.
- Lower the unit to the ground and unbolt the top five (5) mast sections suspended by a crane truck.
- Remove the five (5) mast sections and place them on the ground to disassemble them.
- Complete the disassembly of the unit on the base.



Disassembly of masts and anchors with ground base (CONTINUED)

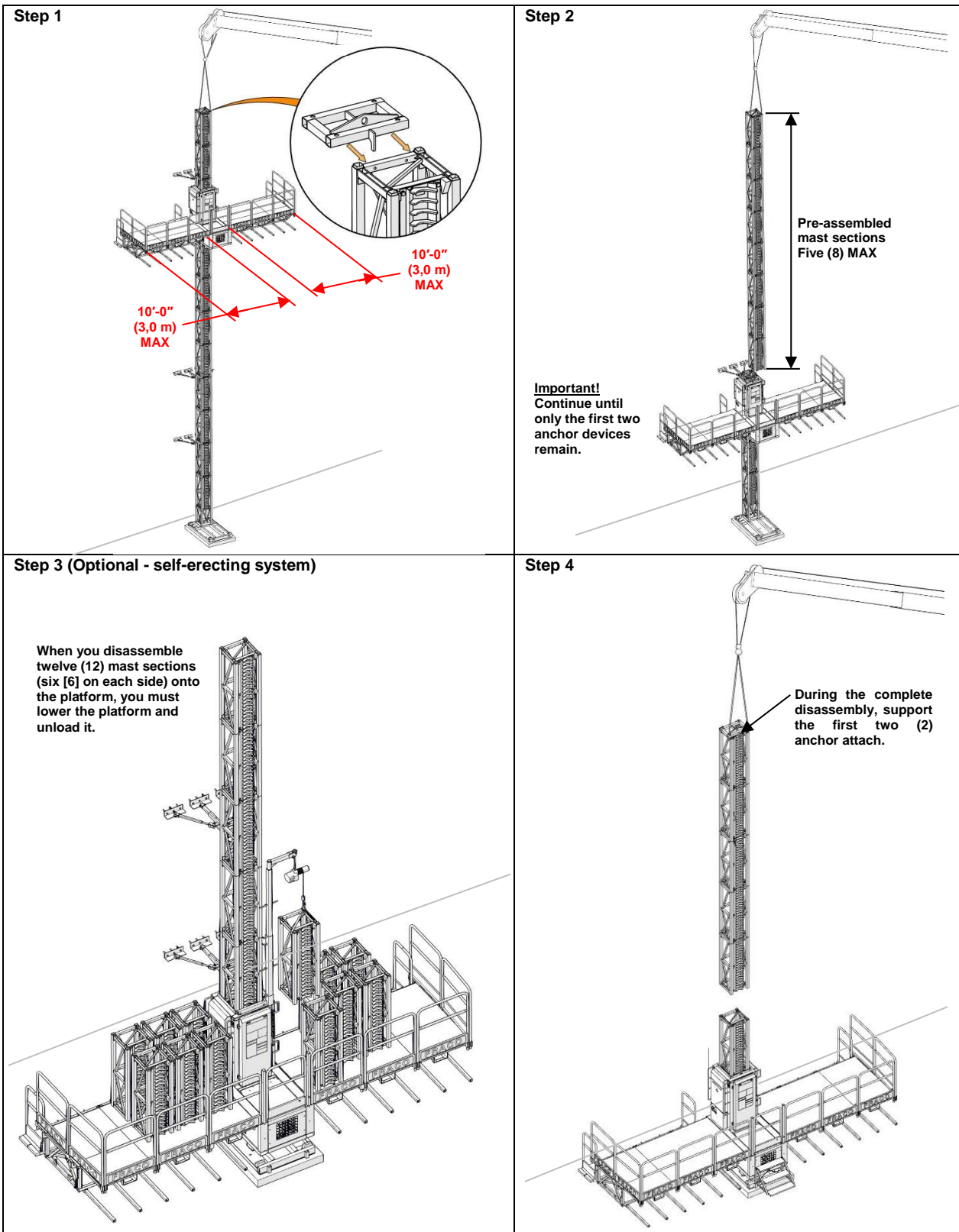


Figure 80 - Disassembly of masts and anchors, ground base



Disassembly of anchors with freestanding base (universal, ACT-8)

Step 1

- Lower the unit to the floor and unload all equipment, debris and materials from the platform.
- Remove the protective wire mesh (see [Figure 79](#)).
- Disassemble any extension section that does not respect a **MAXIMUM** 10'-0" (3,0 m) extension on each side of the unit during the disassembly of the mast sections and mast anchor devices. Consider this as the « **Installation configuration** ».
- If you have a self-erecting system (optional), install it using the bolts provided in the protective wire mesh kit and go to **Step 3** once **Step 1** is completed.
- Raise the platform until reaching the top of the mast and unbolt the mast end section.
- Sling the top of the mast with an independent lifting system (crane truck, sling, belt, etc.) to dismantle several mast sections at a time. This is not necessary if you are using the self-erecting system.
- Then descend until you find the location of the highest anchor (last anchor device).

Step 2

- Place the plankings and planking attachments under the location of the anchors to be removed.
- Loosen the turnbuckles and remove the anchor devices. Perform repairs to the wall if necessary.
- Remove the plankings, planking attachments and railings at the anchor dedicated locations.
- Then lower the platform to the next anchor.
- Unbolt and remove the mast sections using an independent lifting equipment (crane, crane truck or forklift truck) following the same instructions as for the installation (see [Figure 73](#)). Dismantle up to **MAXIMUM** 40'-0" (12,2 m) [8 mast sections] mast sections at a time for all anchors located above the first two (2) mast sections.
- Install the plankings, planking attachments and railings under the location of the anchors to be removed.
- Continue disassembling until only the first two anchor devices remain.

Step 3 (Optional - self-erecting system)

- Place the plankings, planking attachments and railings under the location of the anchors to be removed.
- Loosen the turnbuckles and remove the anchor devices. Perform repairs to the wall if necessary.
- Remove the plankings, planking supports and planking railings under the anchor dedicated location between each movement of the platform.
- Unbolt and remove the mast sections using the self-erecting system following the same instructions as for the installation (see [Figure 74](#)). Load equally on each side of the platform up to **MAXIMUM** six (6) mast sections at a time (twelve [12] sections per platform **MAXIMUM**).
- Continue disassembling until only the first two anchor devices remain.
- Lower the platform to the floor and remove the self-erecting system.

Step 4

On a freestanding base, it is not necessary to sling the mast when disassembling the first two (2) anchors.

- Lower the platform underneath the second anchor device and install the plankings, planking supports and railings destined for the location under the anchors.
- Remove the second anchor device and perform any necessary repairs to the wall.
- Remove the plankings, planking attachments and railings under the location of the anchors to be removed.
- Lower the unit under the location of the first anchor device.
- Install the plankings, planking attachments and railings destined for under the anchors.
- Remove the first anchor device and perform any necessary repairs to the wall.
- Lower the unit to the floor level and unbolt all mast sections suspended by a crane truck, except the first two (2).
- Remove the mast sections suspended by a crane truck and place them on the ground for disassembly.
- Complete the disassembly of the unit on the base.

Disassembly of anchors with freestanding base (universal, ACT-8) (CONTINUED)

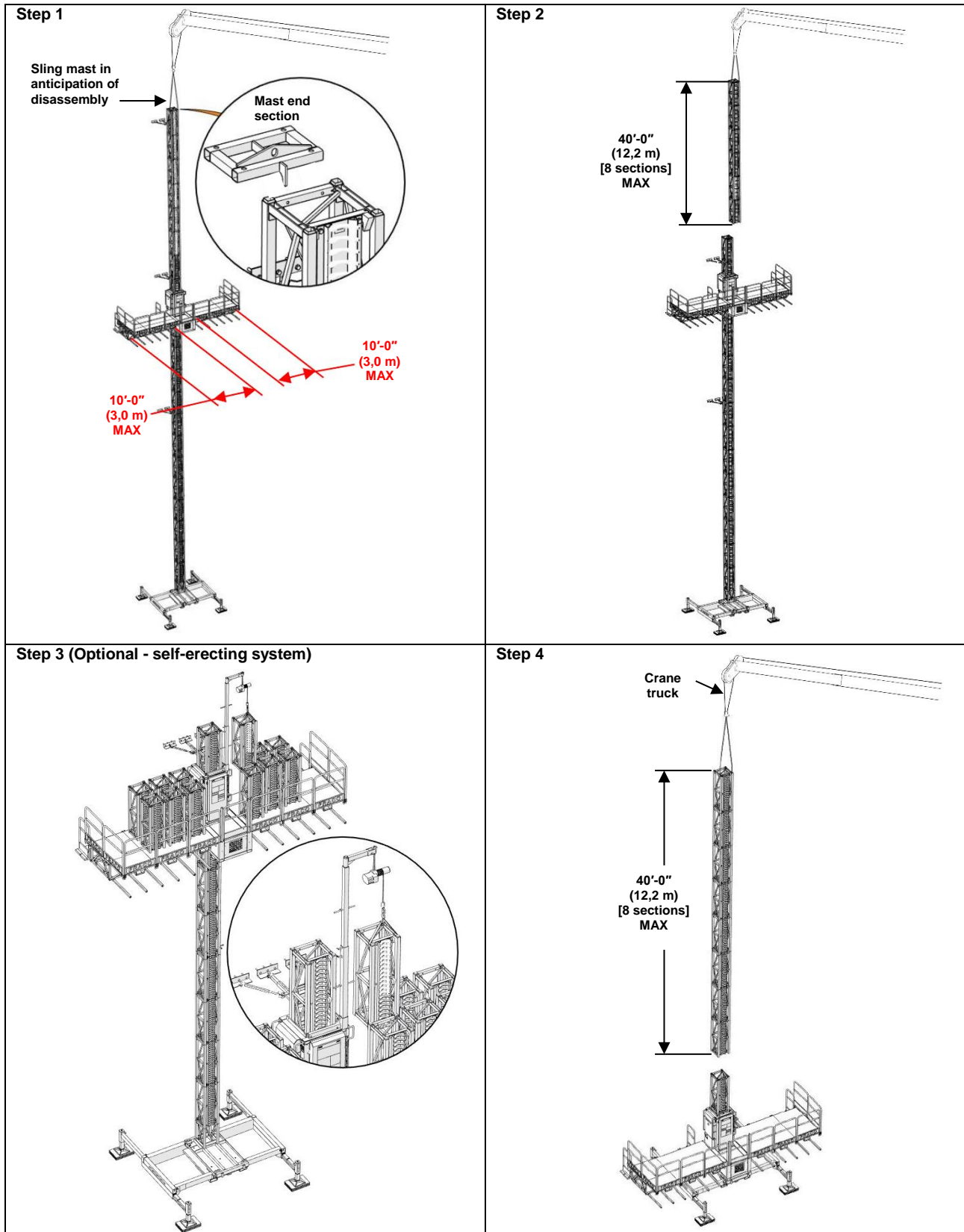


Figure 81 - Disassembly of masts and anchors, freestanding base (universal, 20K)

Chapter D - Accessories

Bridge and extension accessories

Installation of railing and guardrail pocket holders

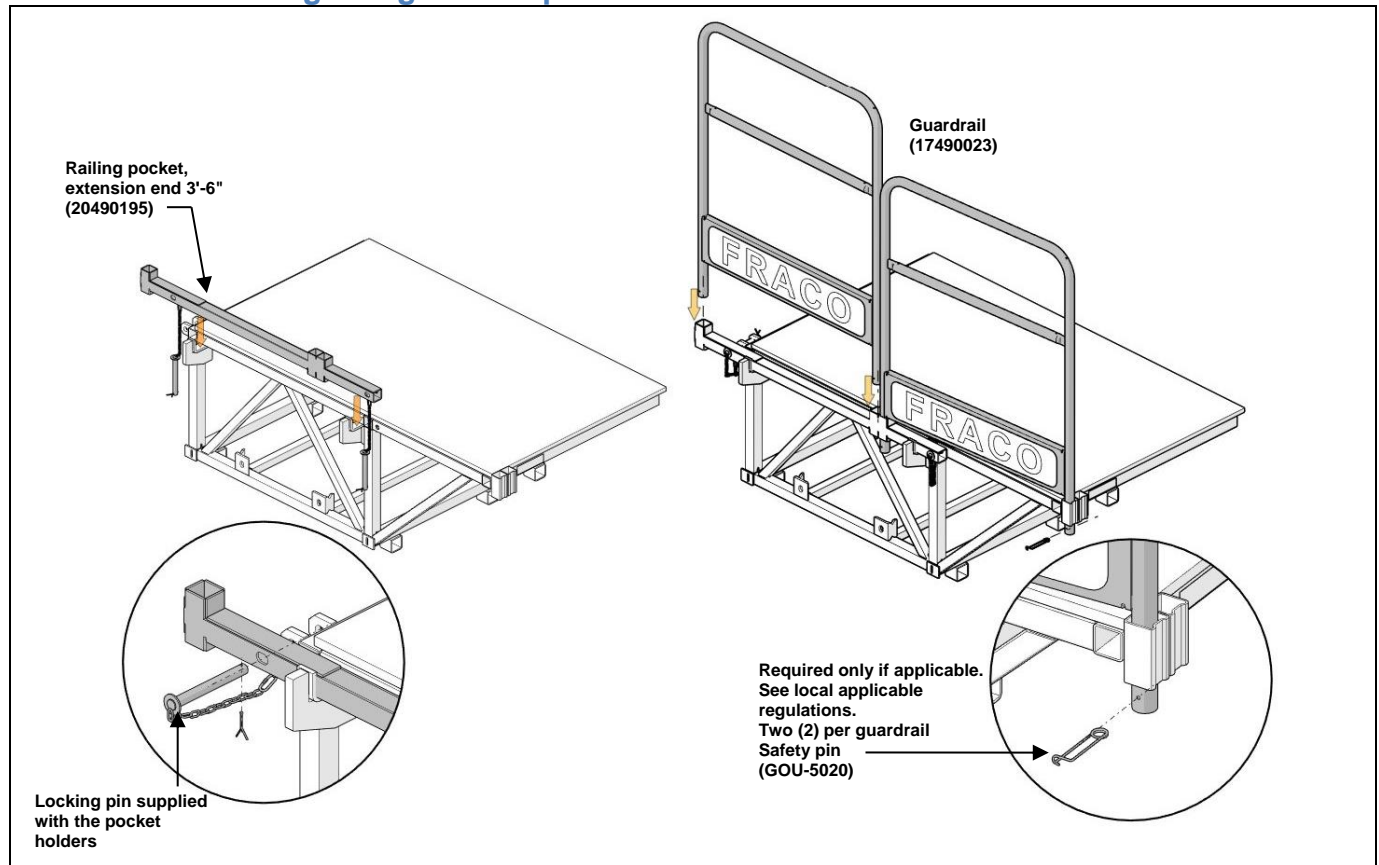


Figure 82 - Guardrails installation

Installation of the outriggers

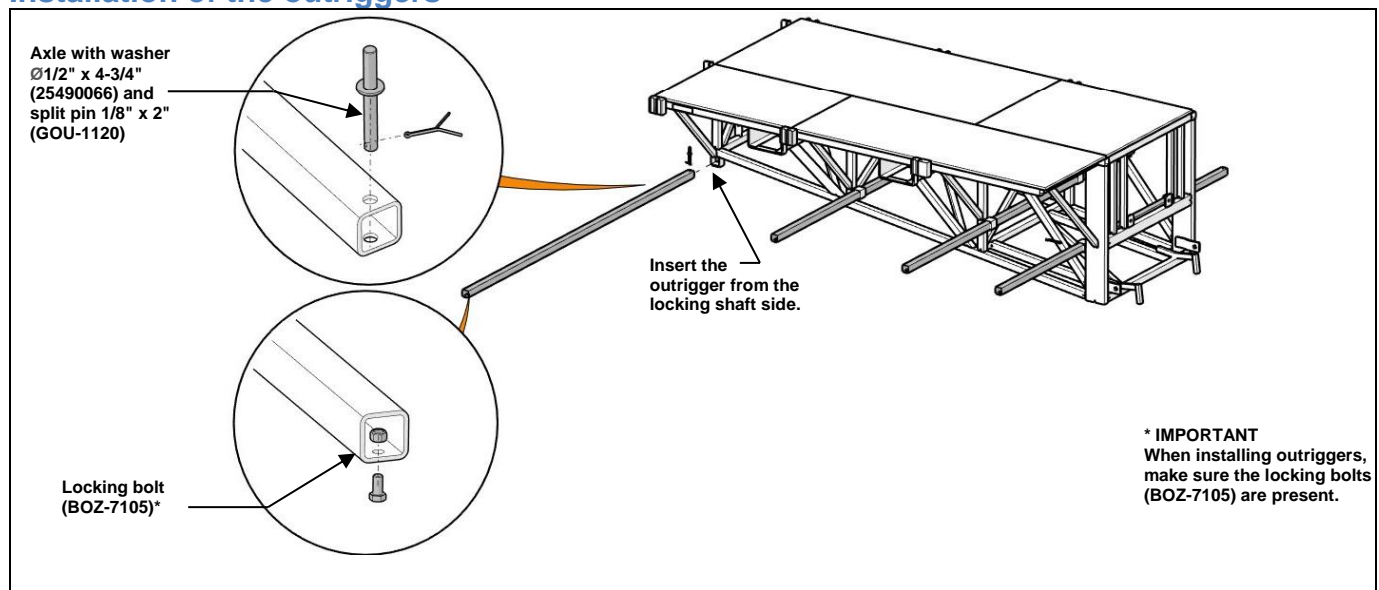


Figure 83 - Outriggers installation

Configuration of the outriggers

The configurations presented below with reinforced outriggers must have been approved by FRACO and its engineering department. In addition, the plankings must never extend beyond the last outrigger more than 12"(300 mm) laterally.

∞SEE **FIGURE 89 - DETAIL OF PLANKING INSTALLATION, ON PAGE 96**

Outriggers

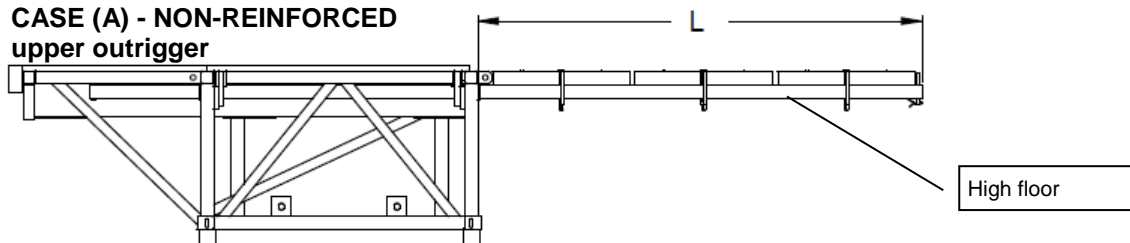
- A minimum of three (3) outriggers must be used to install plankings beyond (L) = 5'-4" (162 mm).
- The outriggers may be installed at the top or bottom of the platform as needed.
- Reinforced outriggers may only be installed at the top level.
- The reinforced outrigger fastener (20490544) must be installed from 6" (152 mm) to 36" (914 mm) from the end of the outrigger.
- The maximum length (L) at which the outrigger may be extended is given in the following table. This dimension is calculated by taking into account 2" x 10" (50 mm x 254 mm) plankings. For any installation requiring a length (L) greater than 6'-0" (1,8 m), reinforced outriggers **must** be used.

Code	Outrigger type	Max length (L)
19010034	Outrigger 3/16" x 2" x 2" x 8'-8" (4,65 mm x 50 mm x 50 mm x 2,65 m) (Standard 8'-8" [2,65m])	5'-4" (1,6 m)
19010045	Outrigger 3/16" x 2" x 2" x 10'-6" (4,65 mm x 50 mm x 50 mm x 3,20 m) (Standard 10'-6" [3,20 m]) (Requires a minimum of 3 side by side outriggers)	6'-0" (1,8 m)
*19010045	Outrigger 3/16" x 2" x 2" x 10'-6" (4,65 mm x 50 mm x 50 mm x 3,20 m) (Reinforced outrigger 10'-6" [3,20 m])	7'-0" (2,1 m) REINFORCED
*19010056	Outrigger 3/16" x 2" x 2" x 13'-6" (4,65 mm x 50 mm x 50 mm x 4,10 m) (Reinforced outrigger 13'-6" [4,10 m])	8'-0" (2,4 m) REINFORCED
20492063	Central tube 2" x 2" x 6'-0" (50 mm x 50 mm x 1,82 m) (Outrigger reinforcement 8'-8" [2,65 m] and 10'-6" [3,20 m])	

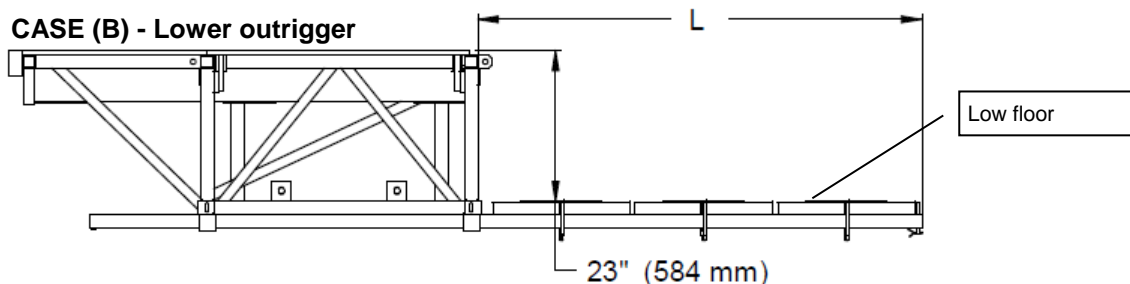
* For any installation requiring outrigger with (L) greater than 6'-0" (1.82 m), consult the FRACO engineering department.

Standard outrigger:

CASE (A) - NON-REINFORCED upper outrigger



CASE (B) - Lower outrigger



Reinforced outrigger:

CASE (C) - REINFORCED upper outrigger

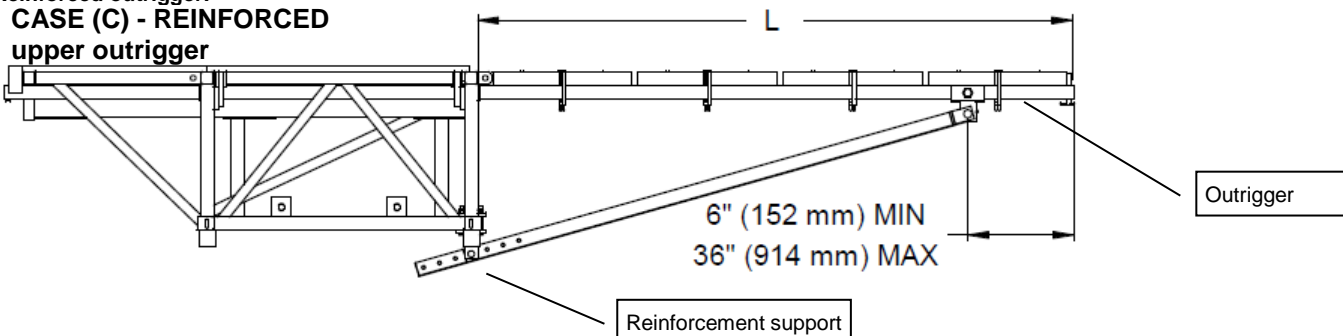


Figure 84 - Outrigger extension

- To be extended to their maximum capacity, the outrigger shall be spaced not more than 40" (1,0 m) apart.
- **Important!** Use planking approved by the local applicable regulations.
- The planking configuration presented below is for illustrative purposes only. Layout of the planking must comply with local applicable regulations.

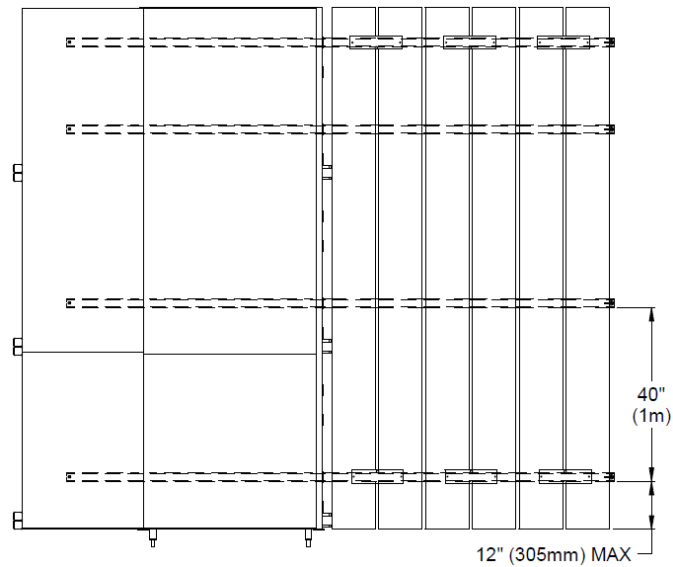
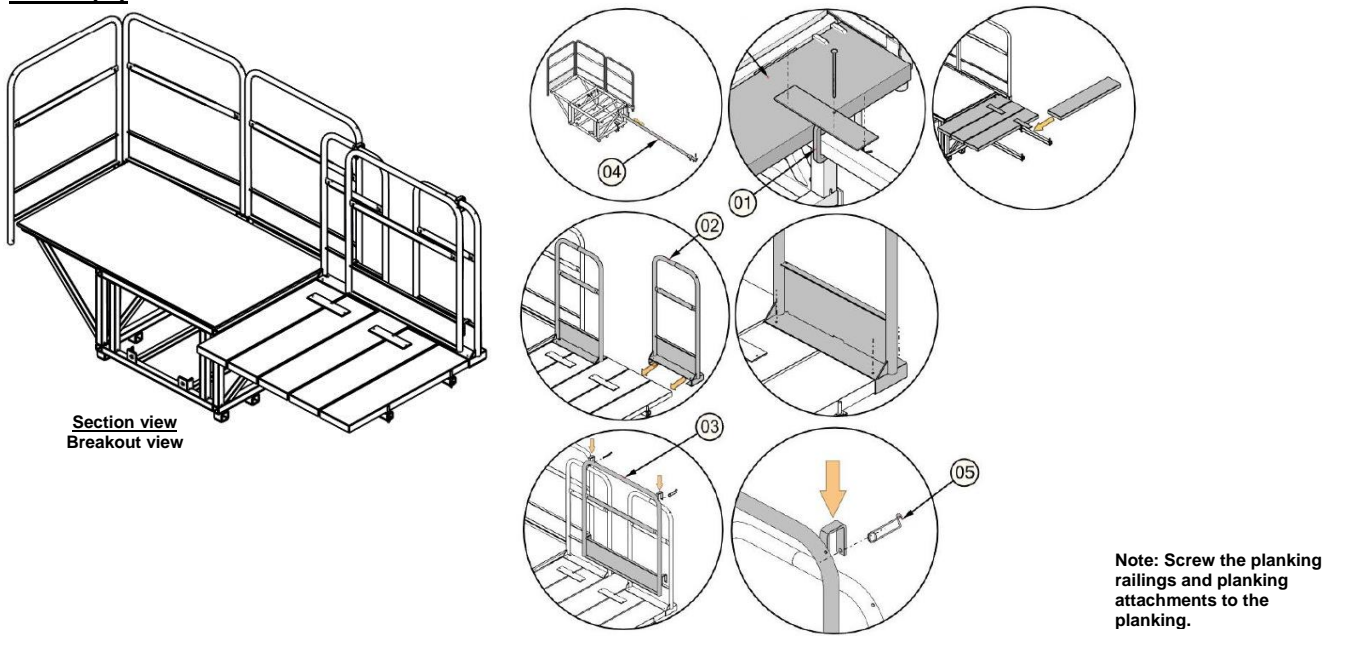
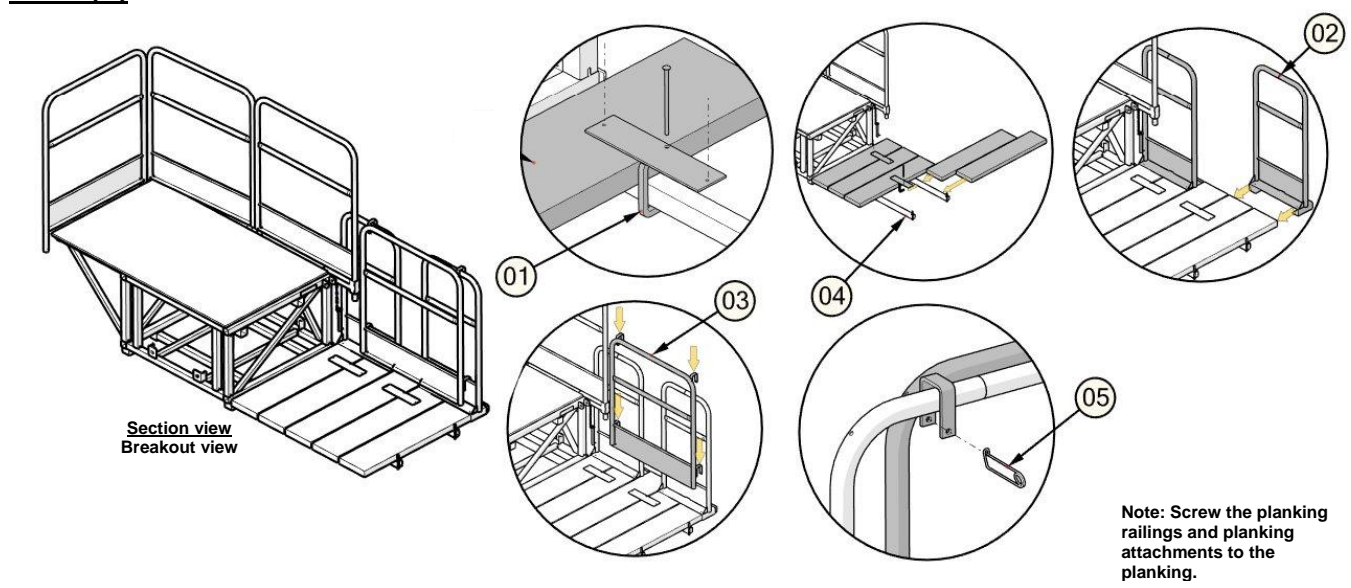


Figure 85 - Spacing between outrigger

CASE (A)

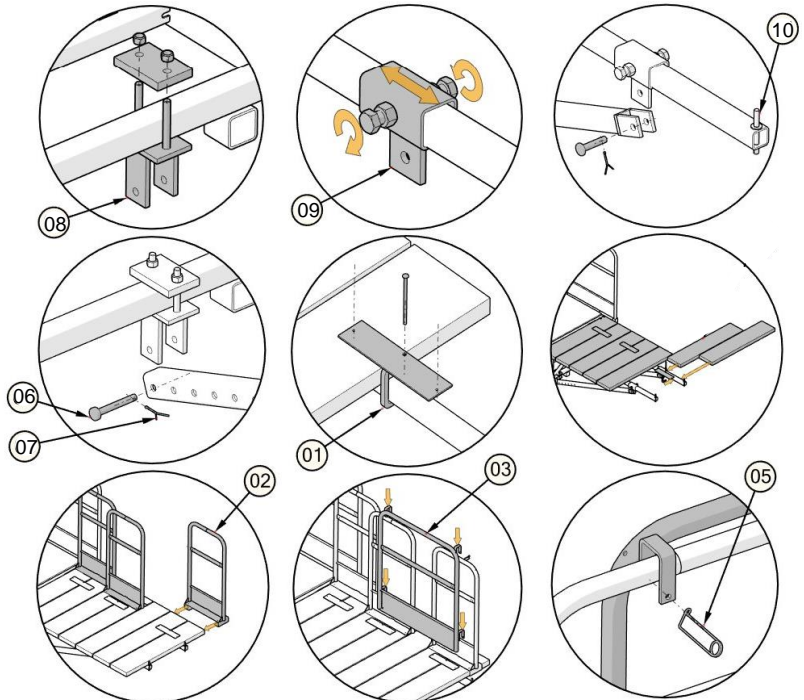
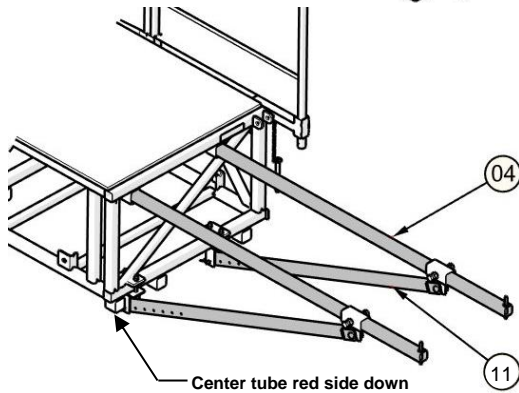
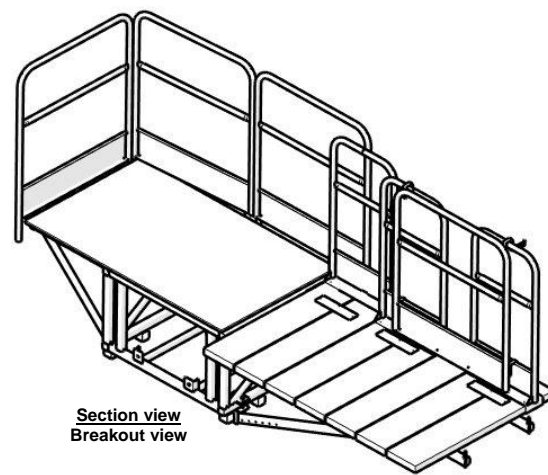
No.	Item	Description	No.	Item	Description
01	20490050	Plank tie 3" x 12"	04	19010034	Outrigger 3/16" x 2" x 2" x 8'-8"
02	17490045	Plank-end guard-rail 21" x 3'-6"	05	GOU-5020	Safety pin 1/8" x 4-1/4"
03	17490034	Extensible guard-rail 3'-4" x 3'-7"			

Figure 86 - Installation of NON-REINFORCED upper outriggers

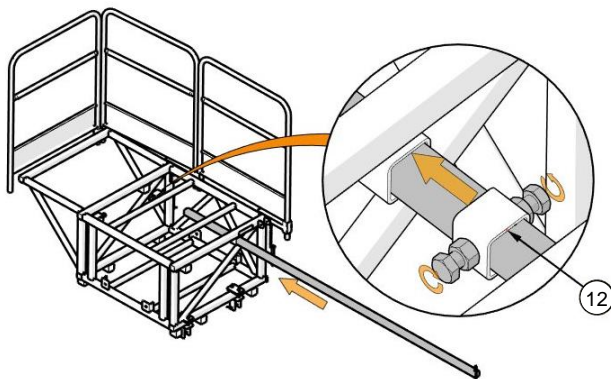
CASE (B)

No.	Item	Description	No.	Item	Description
01	20490050	Plank tie 3" x 12"	04	19010034	Outrigger 3/16" x 2" x 2" x 8'-8"
02	17490045	Plank-end guard-rail 21" x 3'-6"	05	GOU-5020	Safety pin 1/8" x 4-1/4"
03	17490034	Extensible guard-rail 3'-4" x 3'-7"			

Figure 87 - Installation of lower outriggers

CASE (C)**Compatibility table (outriggers - central tube)**

Outrigger	Description	Compatible central tube	Description
19010034	3/16" x 2" x 2" x 8'-8" outrigger (4,65 mm x 50 mm x 50 mm x 2,65 m)	22010061	Central tube 2" x 2" x 5'-0" (50 mm x 50 mm x 1,52 m)
19010045	3/16" x 2" x 2" x 10'-6" outrigger (4,65 mm x 50 mm x 50 mm x 3,20 m)	20492063	Central tube 2" x 2" x 6'-0" (50 mm x 50 mm x 1,83 m)
19010056	3/16" x 2" x 2" x 13'-6" outrigger (4,65 mm x 50 mm x 50 mm x 4,10 m)	20492063	Central tube 2" x 2" x 6'-0" (50 mm x 50 mm x 1,83 m)



Note: Screw the planking railings and planking attachments to the planking.

No.	Item	Description	No.	Item	Description
01	20490050	Plank tie 3" x 12"	07	GOU-1120	Split Pin 1/8" x 2" zinc
02	17490045	Plank-end guard-rail 21" x 3'-6"	08	20490555	Outrigger special swivel tie
03	17490034	Extensible guard-rail 3'-4" x 3'-7"	09	20490544	Special outrigger tie
04	19010034 19010045 19010056	Outrigger 3/16" x 2" x 2" x 8'-8" Outrigger 3/16" x 2" x 2" x 10'-6" Outrigger 3/16" x 2" x 2" x 13'-6"	10	25490066	Pin with washer dia. 1/2" x 4-3/4"
05	GOU-5020	Safety pin 1/8" x 4-1/4"	11	22010061 22010184	Central tube 2" x 2" x 5'-0" Central tube 2" x 2" x 10'-0"
06	25490033	Locking pin dia. 5/8" x 3-3/16"	12	20490072	Outrigger lock 1" x 2" x 2"

Figure 88 - Installation of REINFORCED upper outriggers

Detail of plankings and end of bean railing

Plankings

The type, dimensions and arrangement of plankings used on the outriggers shall be in accordance with applicable local standards and regulations. For information purposes, the plankings used should have the following characteristics:

2" x 10" or 2" x 12" (0,05 m x 0,25 m or 0,05 m x 0,30 m) capable of supporting a load of at least 265 lb (120 kg) over a minimum length of 4'-0" (1,2 m).

Other types of cover may be used, provided that the dimensions of the attachments accessories are in compliance with local standards and regulations.

Any additional weight must be taken into account and deducted from the allowed load.

∞SEE PERMITTED CONFIGURATIONS AND LOAD DISTRIBUTION, ON PAGE 19

∞SEE TABLE 17 - LOAD DEDUCTIONS, ON PAGE 160

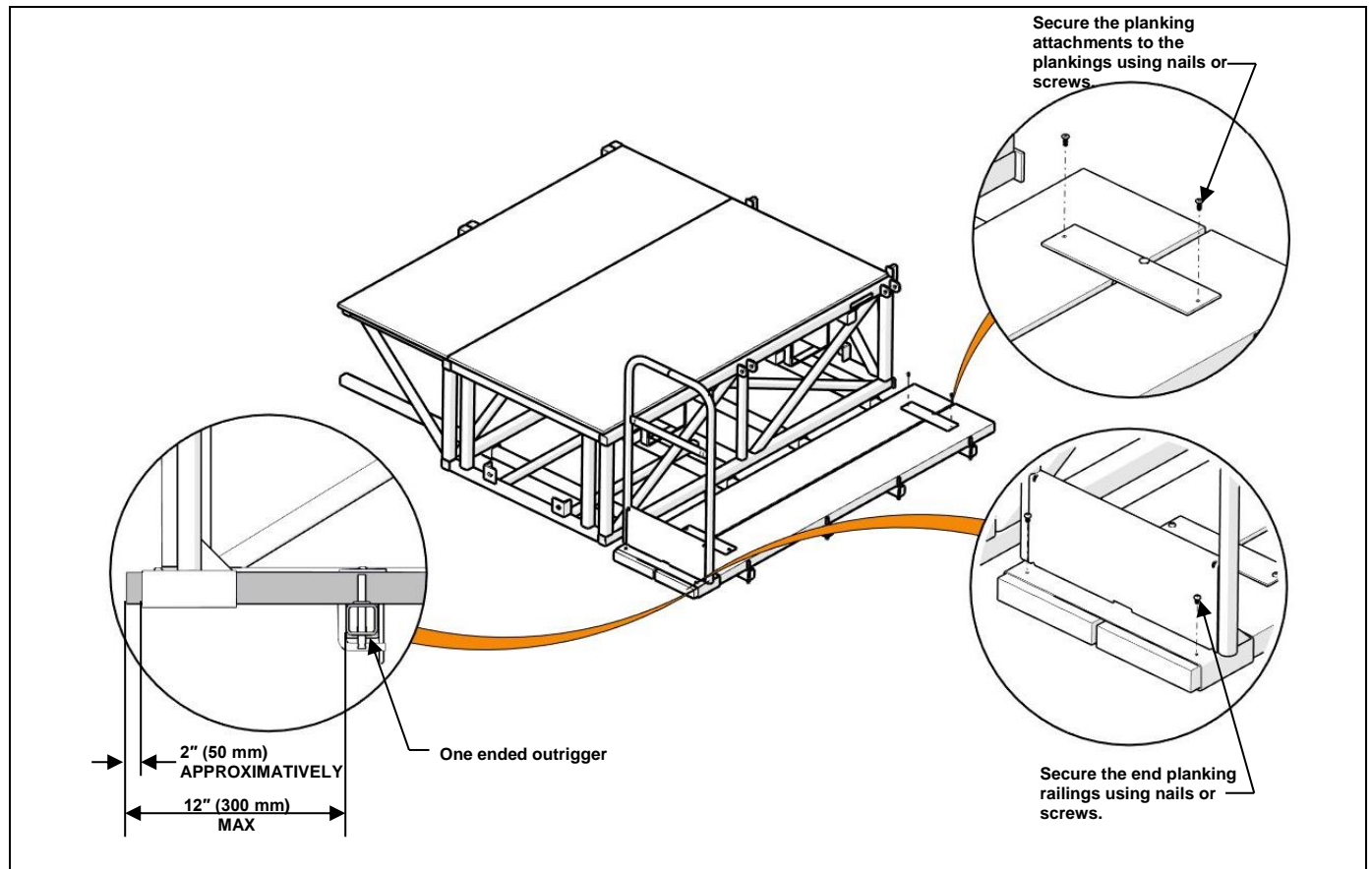


Figure 89 - Detail of planking installation

Installation of outrigger supports for inside corner return (optional)

When using outrigger supports, platform expansion must be taken into account and its influence on the permissible configurations and associated load distributions.

SEE PERMITTED CONFIGURATIONS AND LOAD DISTRIBUTION, ON PAGE 19

If the lateral extension of the extensions on one side of the platform modifies the configuration result (full load, half load, prohibited), the most restrictive result shall always be taken into account.

Example: ACT-8 platform with 20'-0" (6,10 m) on each side. If the platform is extended on one side with plankings, the platform changes from Full load → to → half load on one side. The most restrictive of the two states is thus taken into account, namely half-load on this side.

Example: ACT-8 platform with 20'-0" (6,10 m) on one side and 23'-4" (7,11 m) on the other side. If the platform is extended on the 20'-0" (6,10 m) side, the platform changes from half-load → to → full load. The most restrictive of the two states is thus taken into account, namely half-load on this side.

EXTENSION SECTION

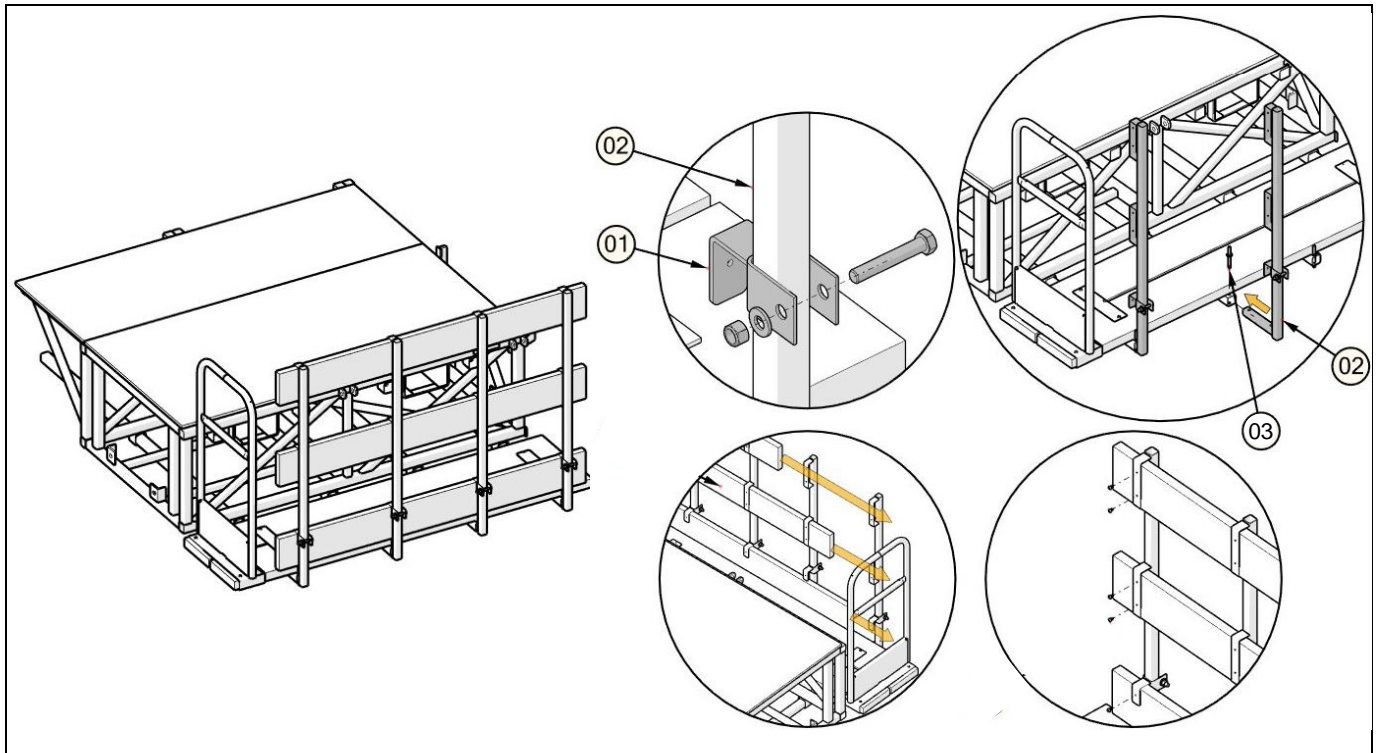
☐ Installation permise
 A-B Installation permise avec une réduction de 50% de charge du côté mentionné
 X Installation interdite

		Side A (No extension section)											
Side B (No extension section)	Side A (extension section)	Side A (No extension section)											
		1	2	3	4	5	6	7	8	9	10	11	12
1	1												
2	2												
3	3												
4	4												
5	5												
6	6												
7	7												
8	8												
9	9												
10	10												
11	11												
12	12												

No.	Item	Description	No.	Item	Description
01	20490038	Outrigger tie	05	190XXXXXX	End planking additional outrigger
02	25490055	Pin dia. 3/4" x 4-3/16"	06	20490050	Plank tie 3" x 12"
03	GOU-1120	Split Pin 1/8" x 2" zinc	07	17490045	Plank-end guard-rail 21" x 3'-6"
04	25490066	Pin with washer dia. 1/2" x 4-3/4"			

Figure 90 - Outrigger support

Installation of end of outrigger guardrail



No.	Item	Description	No.	Item	Description
01	20491646	« L » guard-rail sliding tie	03	25490066	Pin with washer dia. 1/2" x 4-3/4"
02	17490067	« L » outrigger guard-rail 4'-3"			

Figure 91 - Installation of end of outrigger guardrail

Installation of mast anchor devices access guardrails

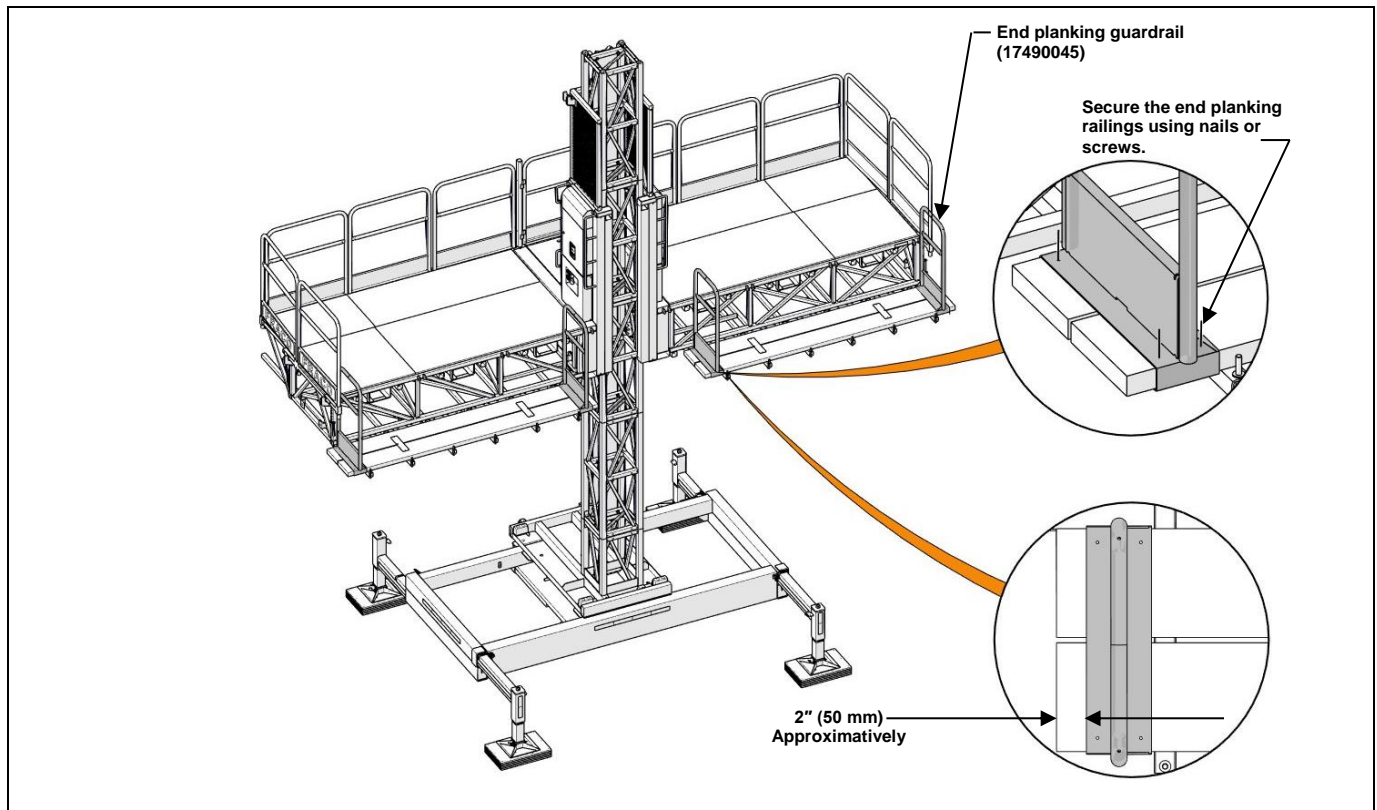
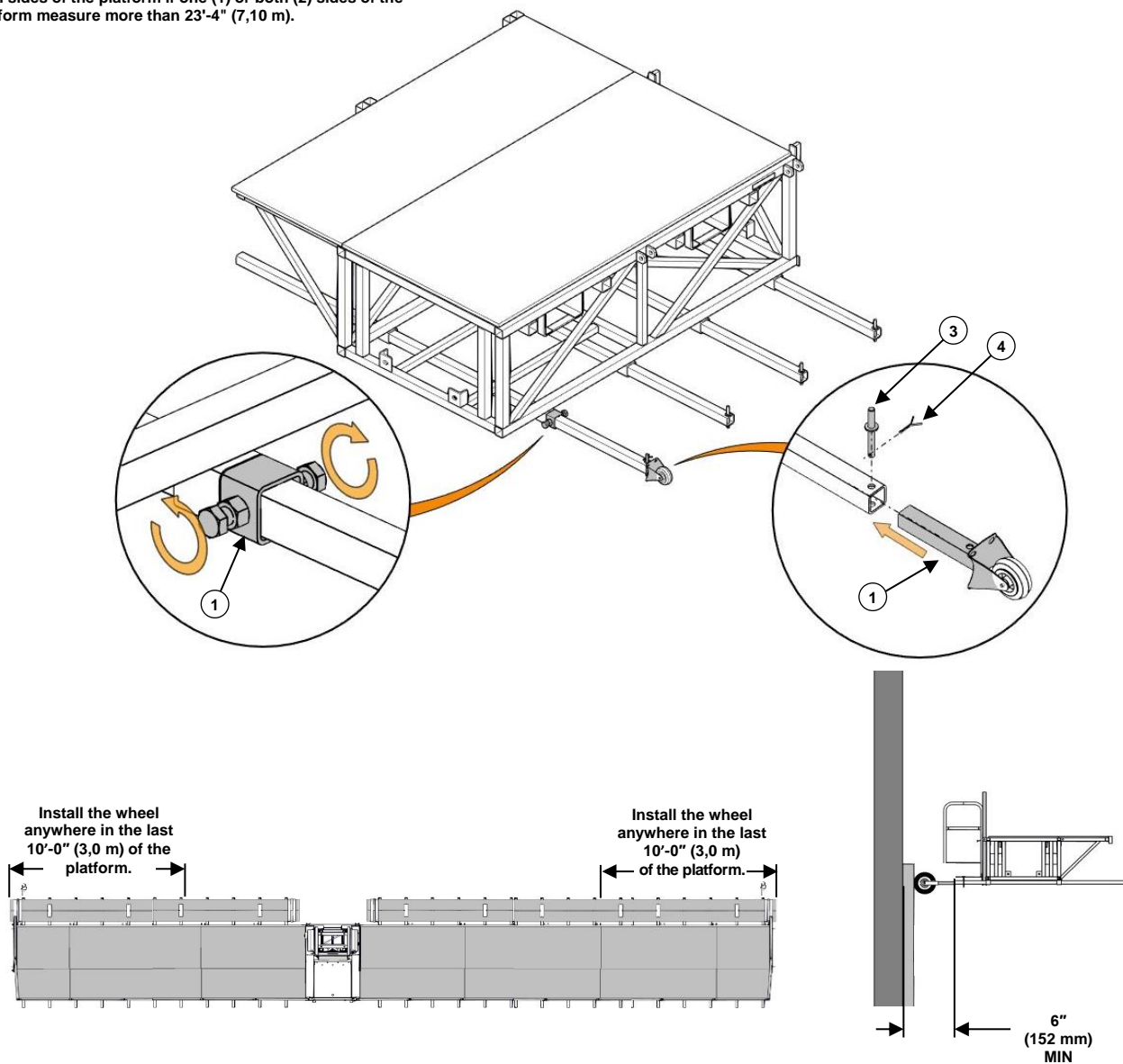


Figure 92 - Installation of guardrail at mast anchor device

Installation anti-pivot device, small wheel (optional)

Important! The anti-pivot system wheels must be installed on both sides of the platform if one (1) or both (2) sides of the platform measure more than 23'-4" (7,10 m).

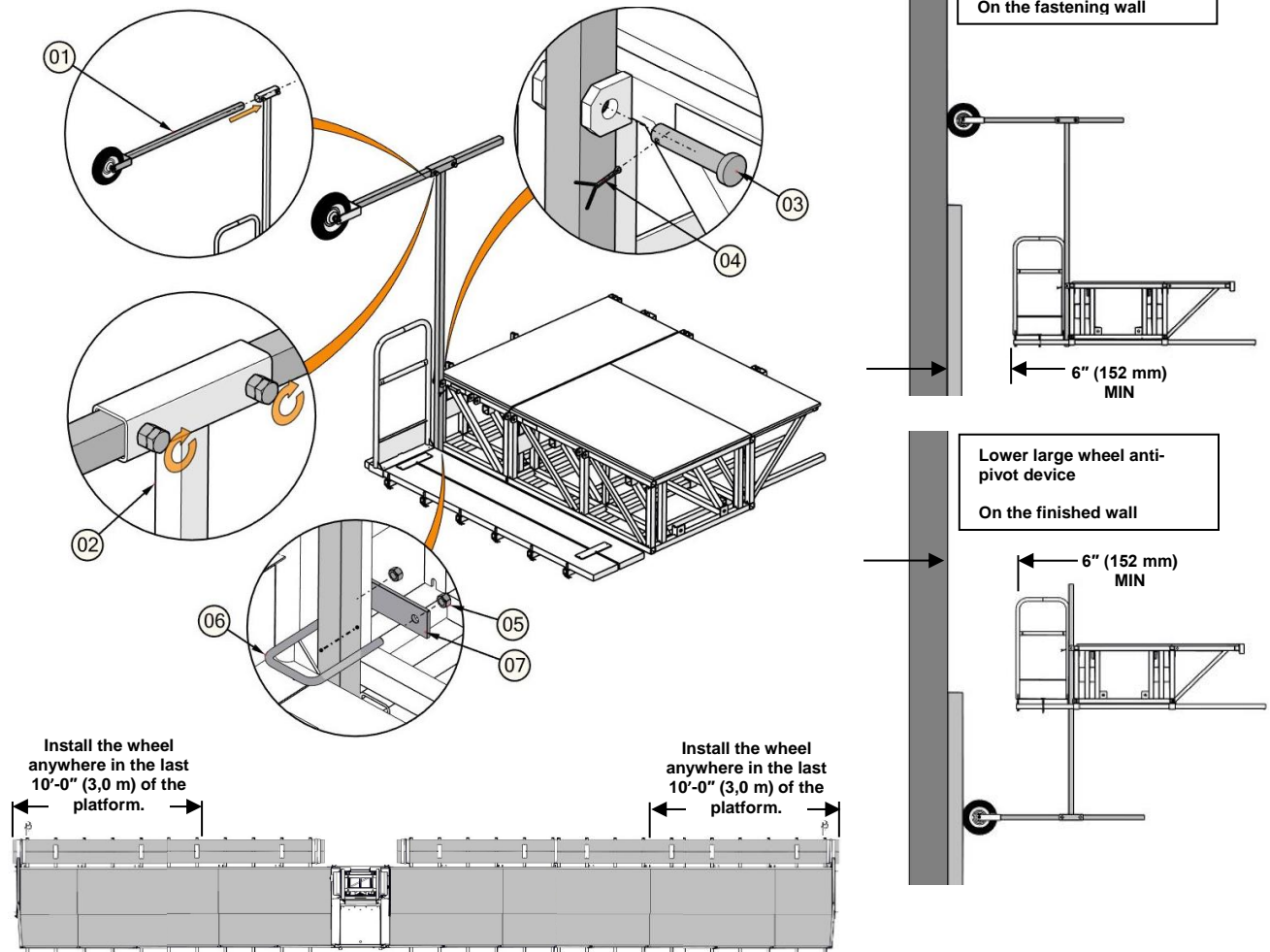


No.	Item	Description	No.	Item	Description
01	20490263	Outrigger 4" wheel	03	25490055	Locking pin dia. 3/4" x 4-3/16"
02	20490072	Outrigger lock 1" x 2" x 2"	04	GOU-1120	Split Pin 1/8" x 2" zinc

Figure 93 - Anti-pivot device (small wheel)

Installation anti-pivot device, large wheel (optional)

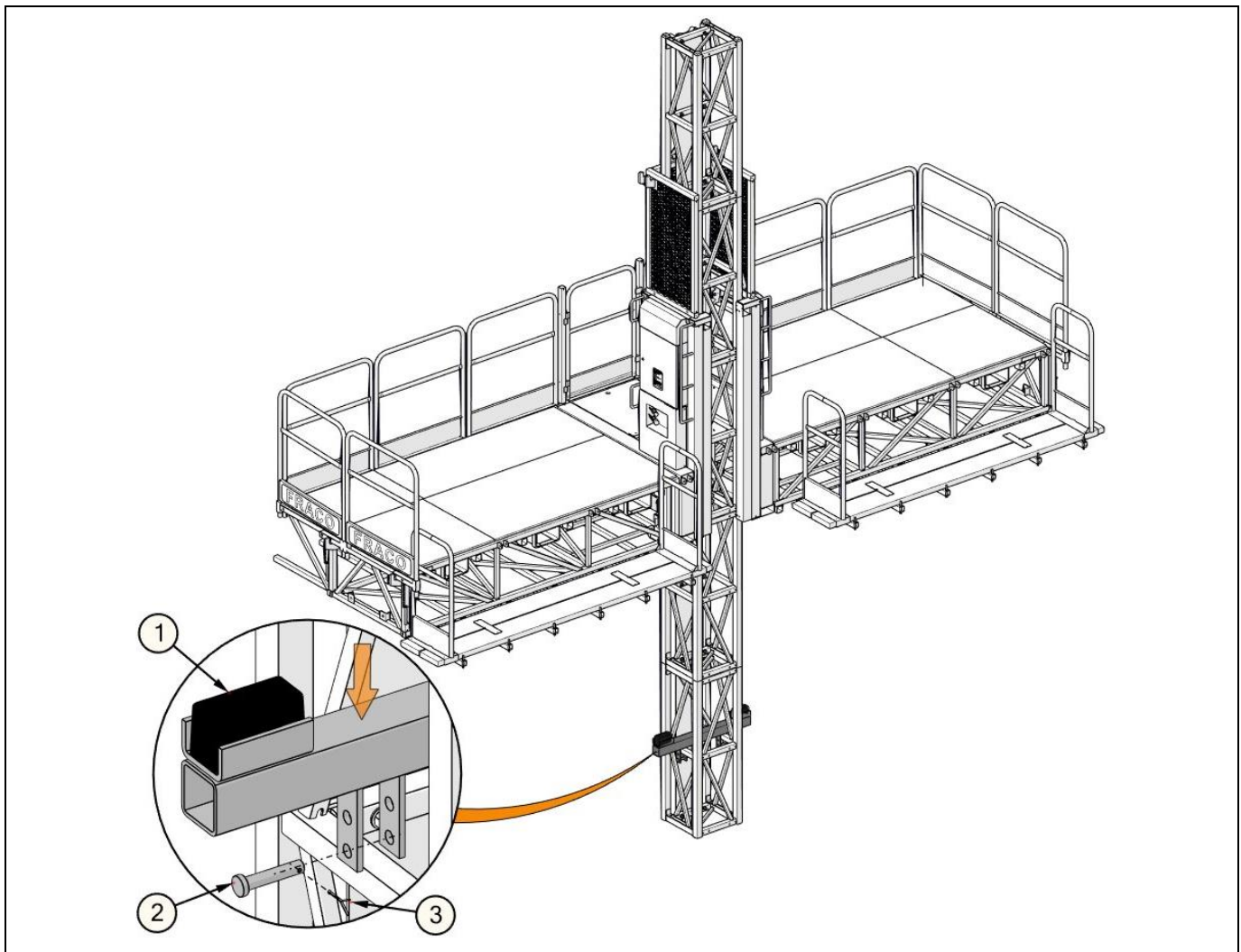
Important! The anti-pivot system wheels must be installed on both sides of the platform if one (1) or both (2) sides of the platform measure more than 23'-4" (7,10 m).



No.	Item	Description	No.	Item	Description
01	20491028	Wheel for single mast blocking system (over platform)	05	ECZ-8501	Nut 1/2"-13unc gr8 zinc
02	20491039	Support for single mast blocking system wheel (over platform)	06	25490101	Treaded U-lock 1/2-13unc 4-1/2" x 6-1/2"
03	25490055	Locking pin dia. 3/4" x 4-3/16"	07	20490173	Forge steel 1/4" x 2" x 6"
04	GOU-1120	Split Pin 1/8" x 2" zinc			

Figure 94 - Anti-pivot device (large wheel)

Installation of the descent stop

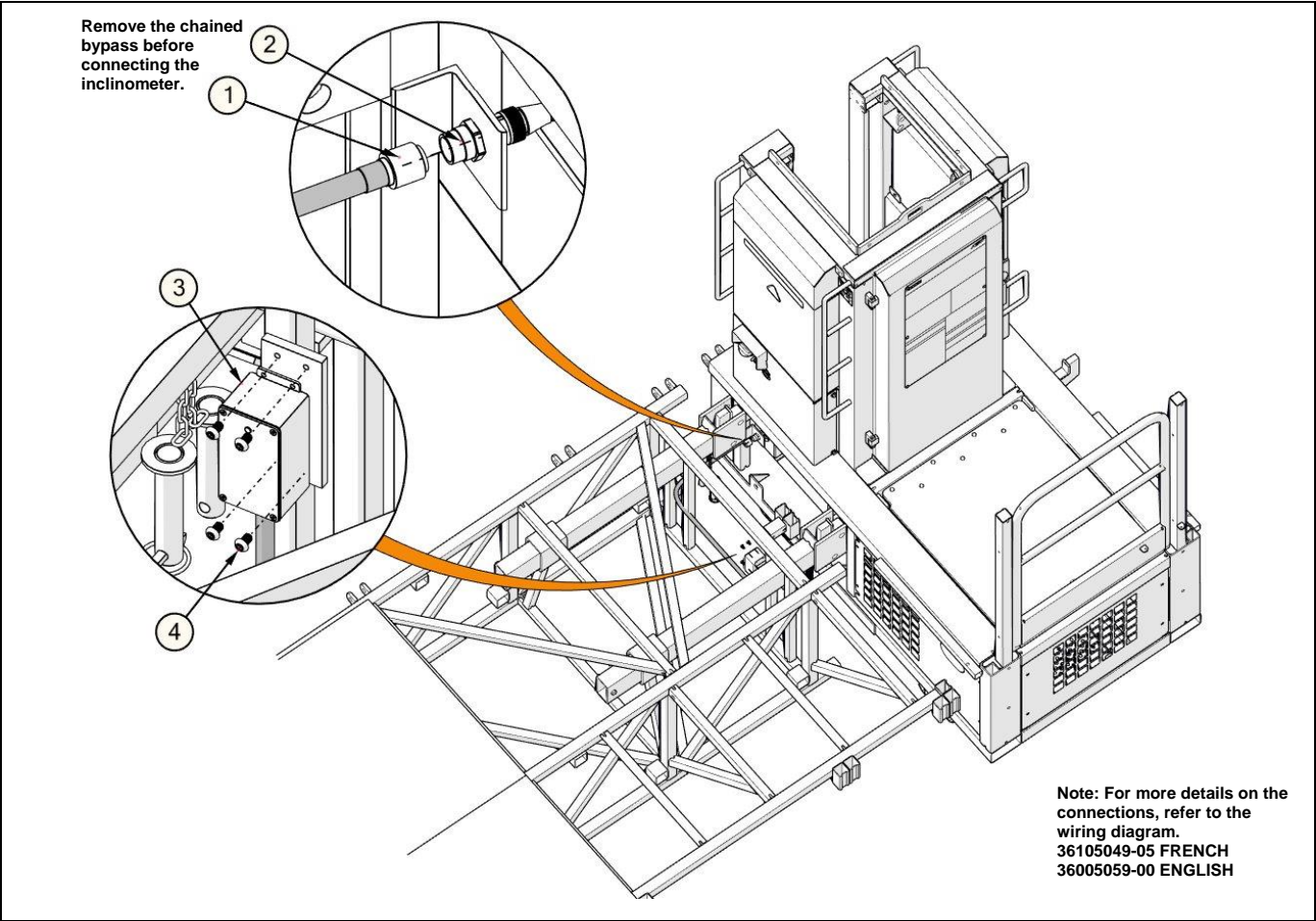


No.	Item	Description	No.	Item	Description
01	20490768	20" x 20" mast section descent limiting device	03	GOU-1120	Split Pin 1/8" x 2" zinc
02	25490055	Locking pin dia. 3/4" x 4-3/16"			

Figure 95 - Descent stop device

Installation of the inclinometer

Important! Refer to local regulations to determine if inclinometer installation is mandatory.



No.	Item	Description	No.	Item	Description
01	ELE-1402	5-pole auxiliary connector M with cable	03	ELE-1816	1-axis inclinometer box 5 relays 5A
02	ELE-1405	Receiver 5-pin F	04	XXXXXXXX	Screw ØM3

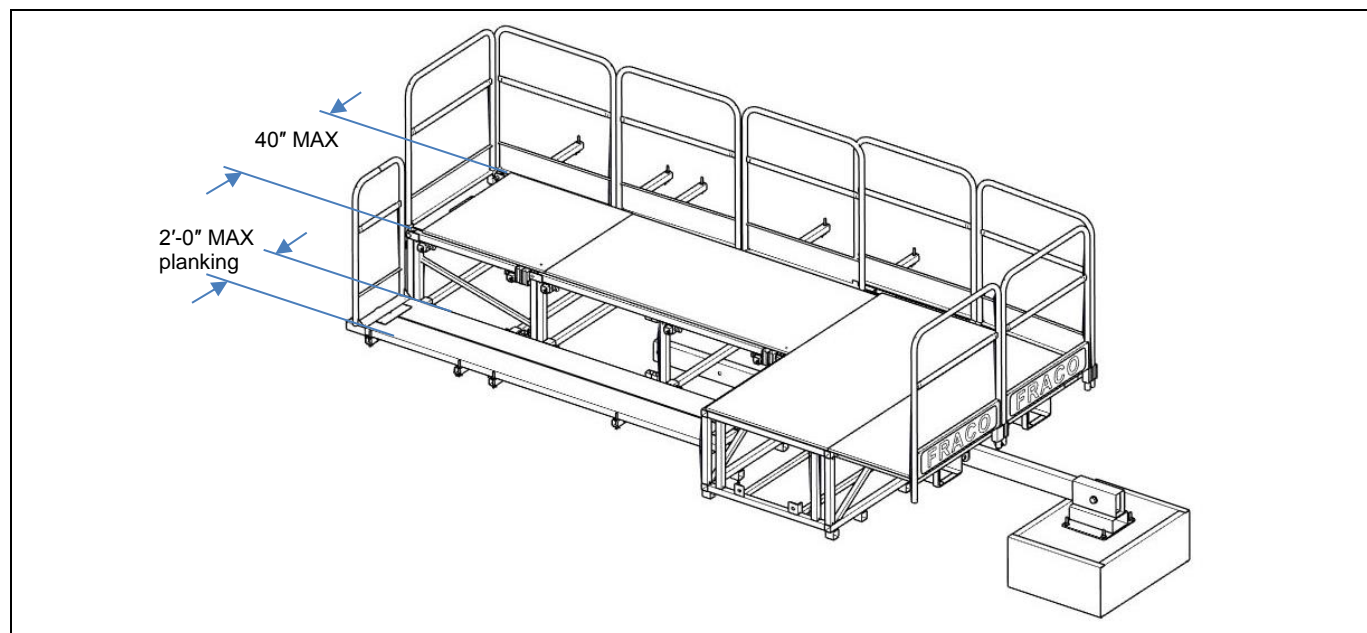
Figure 96 - Inclinometer

Reinforced corner return support system with counterweight

Important! This system can only be used with certain configurations. Consult the FRACO Engineering Department for the required configurations.

Important! It is **forbidden** to use a corner return system on a freestanding base without a wall attach system.

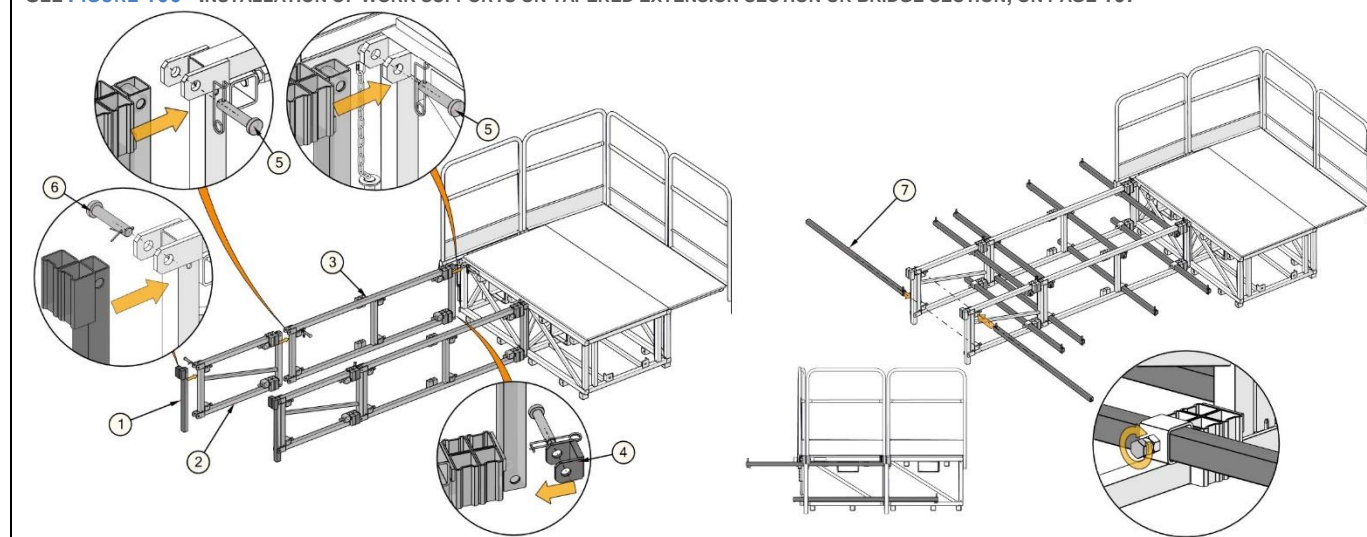
Important! It is **forbidden** to pass the last mast anchor if you use a corner return system with counterweight.



Installation of work supports on an extension section

Note: Installation on a bridge section or tapered extension requires the use of a reinforced work support attachment (20491916).

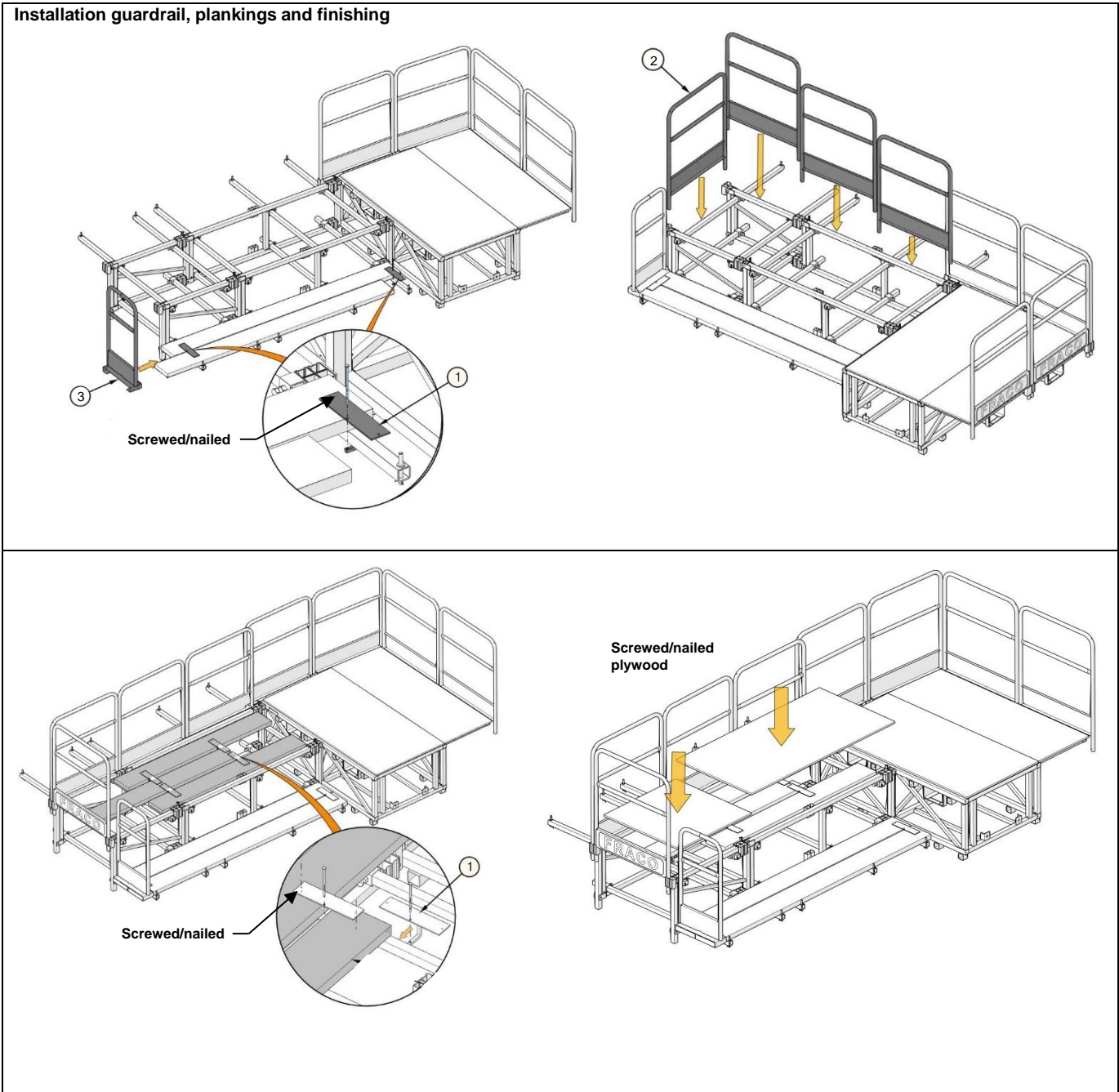
SEE [FIGURE 100 - INSTALLATION OF WORK SUPPORTS ON TAPERED EXTENSION SECTION OR BRIDGE SECTION, ON PAGE 107](#)



No.	Item	Description	No.	Item	Description
01	20490184	Guard-rail sockets with 3/4" hole	05	25490055 and GOU-5020	Pin dia. 3/4" x 4-3/16" and 1/8" x 4-1/4" safety pin
02	20491893	Reinforced working support 2'-0" x 3'-4"	06	25490055 and GOU-1120	Pin dia. 3/4" x 4-3/16" and 1/8" x 2" split pin zinc
03	20491905	Reinforced working support 2'-0" x 6'-8"	07	19010089	3/16" x 2" x 2" x 6'-6" outrigger + pin 6"
04	20491927	Truss support bloc			

Figure 97 - Corner return, installation

Reinforced corner return support system with counterweight (CONTINUED)

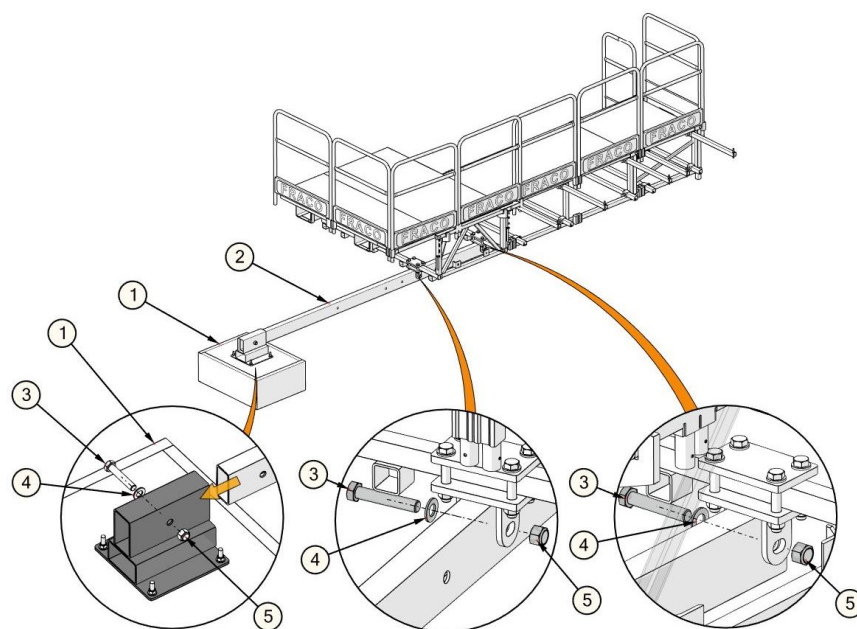
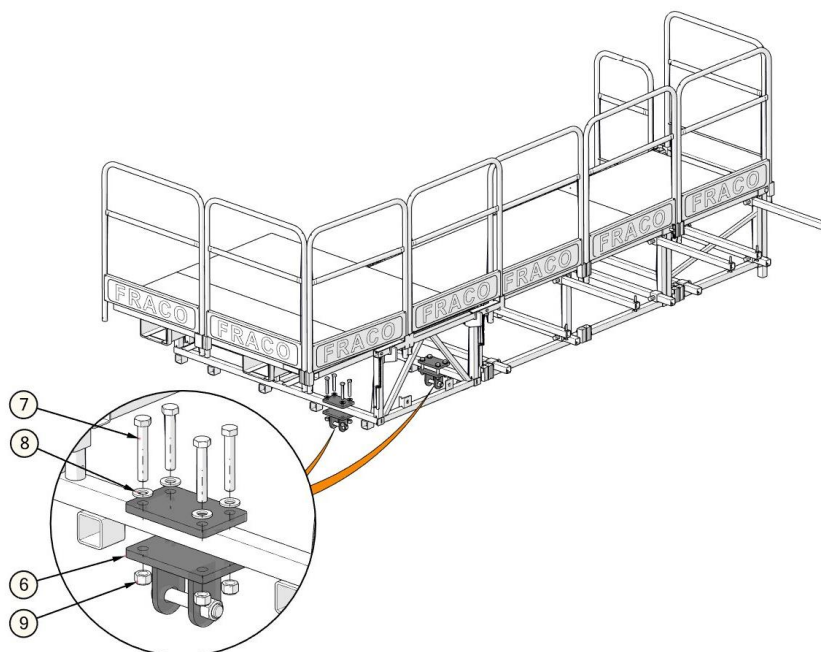


No.	Item	Description	No.	Item	Description
01	20490050	Plank tie 3" x 12"	03	17490045	Plank-end guard-rail 21" x 3'-6"
02	17490023	Guard-rail 3'-4" x 4'-2"			

Figure 98 - Corner return, installation

Reinforced corner return support system with counterweight (CONTINUED)

Installation of counterweight

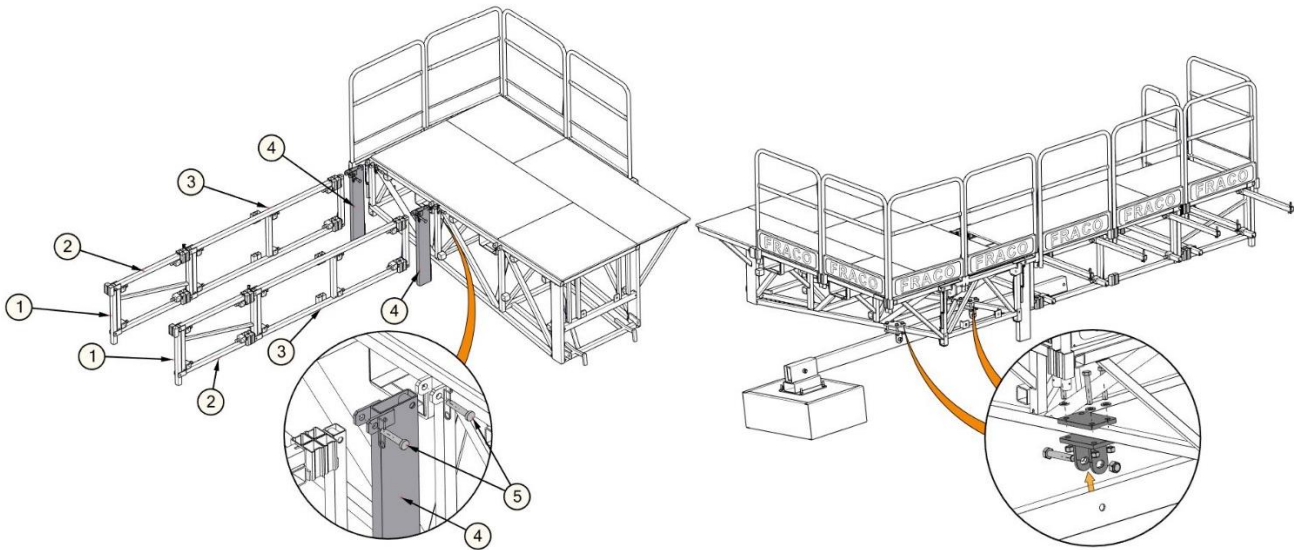
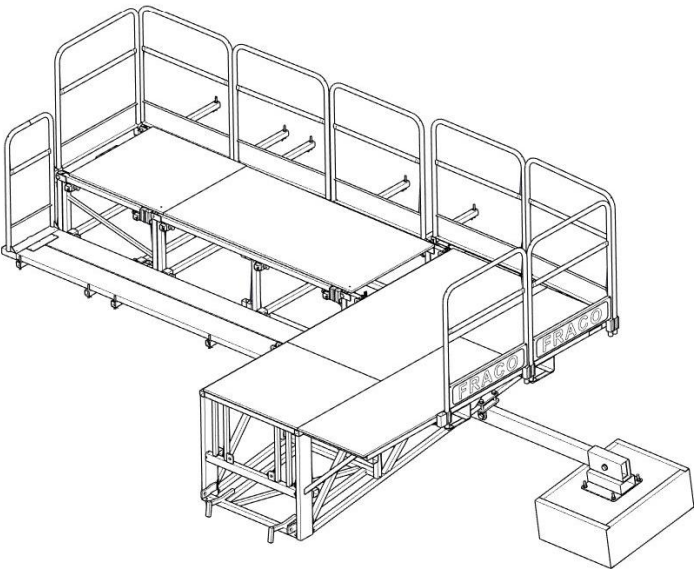


No.	Item	Description	No.	Item	Description
01	20491815	Counter-weight 1 650 lbs 15" x 30" x 40"	06	20491871	Counterweight support tie
02	20491882	Counterweigh connection tube 12'-6"	07	BOZ-7245	Bolt 3/4"-10unc x 4-1/2" gr5 zinc
03	BOZ-7262	Bolt 1"-8unc x 5-1/2" gr5 zinc	08	WAZ-7051	Washer 3/4" SAE zinc
04	WAZ-7071	Washer 1" SAE zinc	09	NYL-2050	Nylon lock nut 3/4"-10unc gr5 zinc
05	NYL-2060	Nylon lock nut 1"-8unc gr5 zinc			

Figure 99 - Corner return, installation of the counterweight

Reinforced corner return support system with counterweight (CONTINUED)

Installation of work supports on a bridge section or tapered extension section
The example shows an installation on a tapered extension section.



No.	Item	Description	No.	Item	Description
01	20490184	Guardrail pockets with 3/4" hole	04	20491916	Bridge Truss tie
02	20491893	Reinforced working support 2'-0" x 3'-4"	05	25490055 and GOU-5020	Lock pin dia. 3/4" x 4-3/16" and Safety pin 1/8" x 4-1/4"
03	20491905	Reinforced working support 2'-0" x 6'-8"			

Figure 100 - Installation of work supports on tapered extension section or bridge section

Reinforced corner return support system with counterweight (CONTINUED)

- Reinforced work support 2'-0" (610 mm) x 3'-4" (1,0 m) (20491893)
- Reinforced work support 2'-0" (610 mm) x 6'-8" (2,0 m) (20491905)

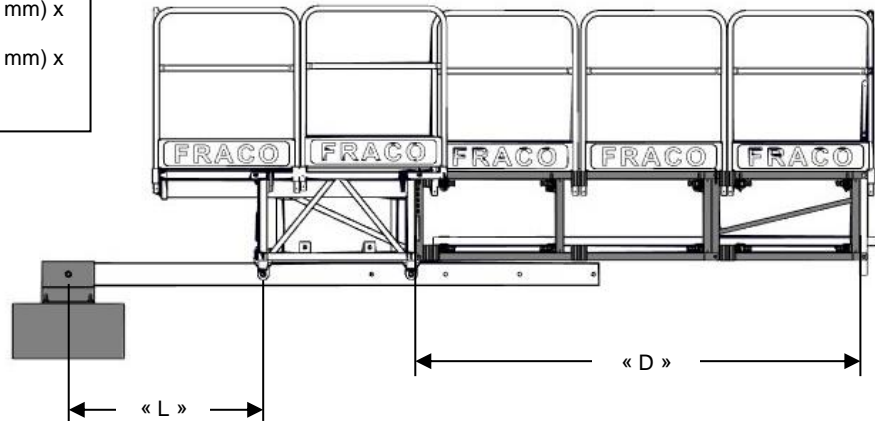


Figure 101 - Installation distance of counterweight for work support in corner return

Length « D » of the combined work supports	Combination of work support sections (truss outriggers)	Distance « L » for installation of counterweights
10'-0" (3,0 m)	[6'-8" (2,0 m) + [3'-4" (1,0 m)	50" (1,3 m)
13'-4" (4,0 m)	[6'-8" (2,0 m) + [3'-4" (1,0 m) + [3'-4" (1,0 m) or [6'-8" (2,0 m) + [6'-8" (2,0 m)	80" (2,0 m)
16'-8" (5,1 m)	[6'-8" (2,0 m) + [3'-4" (1,0 m) + [6'-8" (2,0 m)	100" (2,6 m)

Important! For the platform configurations admissible for the use of the reinforced work support system, consult the FRACO Engineering Department.

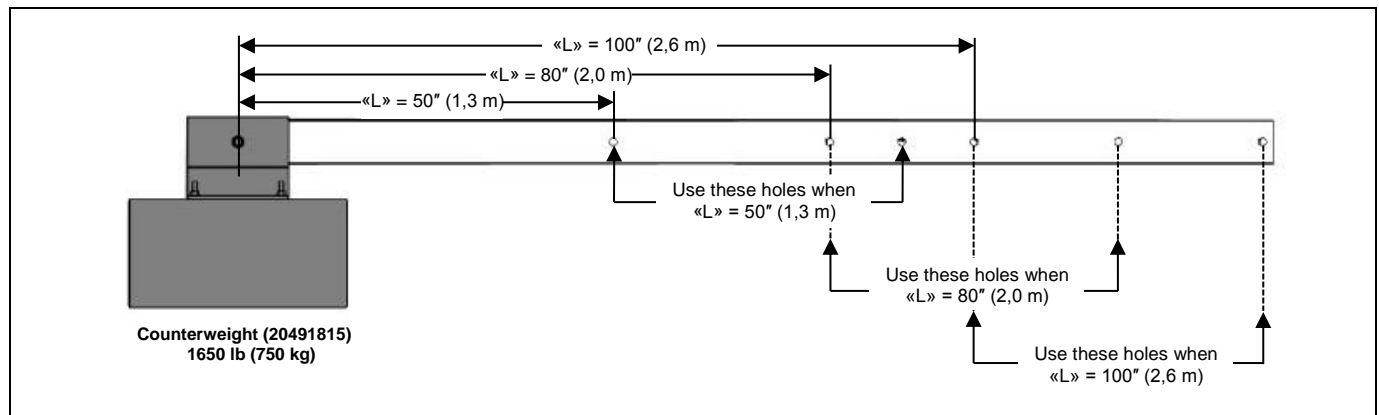


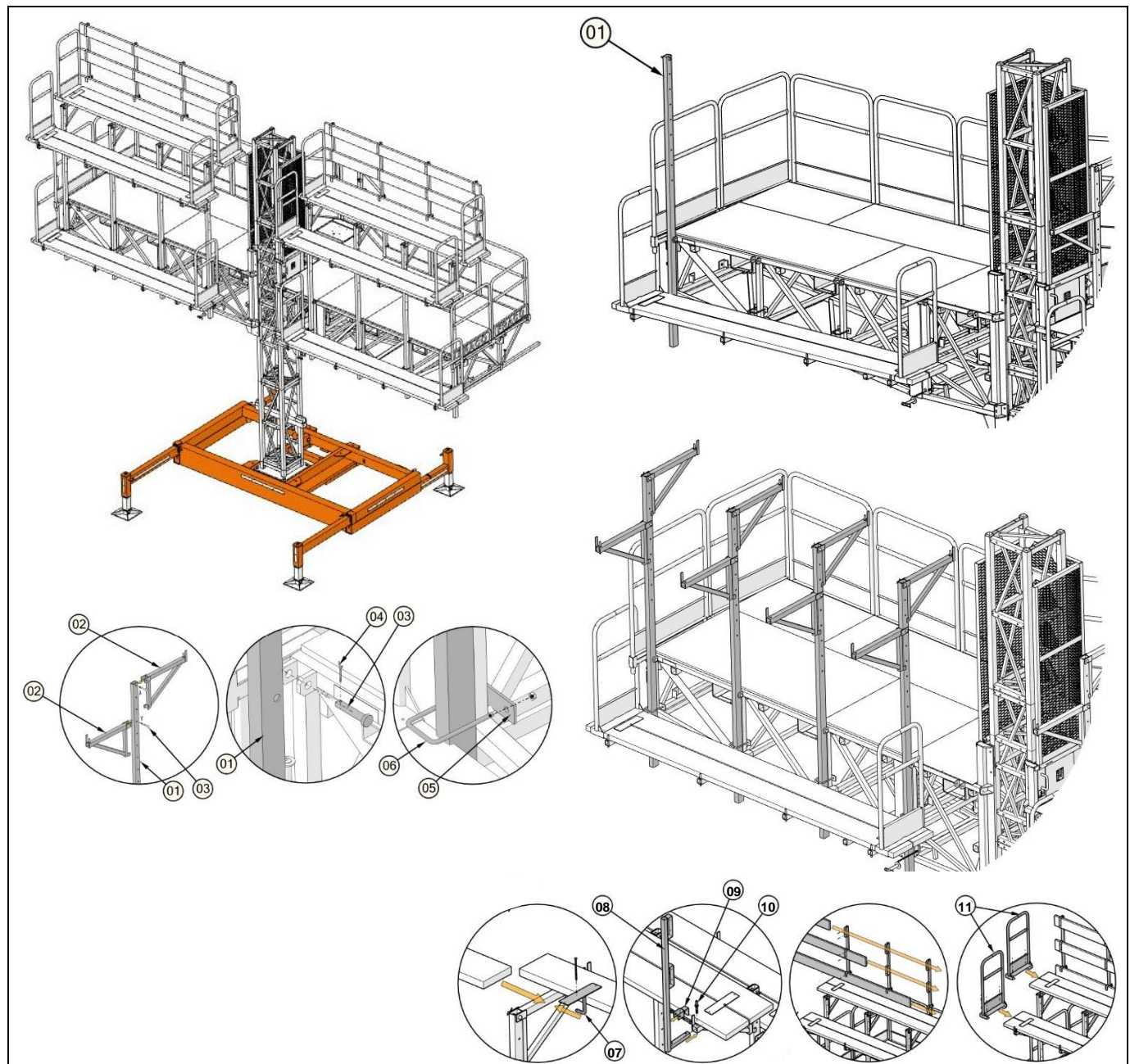
Figure 102 - Installation of counterweight outrigger

Indoor work system

Important! This system can only be used with certain configurations. Consult the FRACO Engineering Department for the required configurations.

Important! It is **forbidden** to use an indoor working system on a freestanding base without a wall attach system.

Important! It is **forbidden** to pass the last mast anchor if you use an indoor working system.



No.	Item	Description	No.	Item	Description
01	20490421	Multifunctional Tube 2" x 3" x 11'-6"	07	20490050	Plank tie 3" x 12"
02	20490386	Interior work support Bracket	08	17490067	L outrigger guard-rail 4'-3"
03	25490055	Pin dia. 3/4" x 4-3/16"	09	20491646	« L » guard-rail sliding tie
04	GOU-1120	Split Pin 1/8" x 2" zinc	10	25490066	Pin with washer dia. 1/2" x 4-3/4"
05	20490173	Forge steel 1/4" x 2" x 6"	11	17490045	Plank-end guard-rail 21" x 3'-6"
06	25490101	Treaded U-lock 1/2-13unc 4-1/2" x 6-1/2"			

Figure 103 - Installation of indoor working system

Rigid roof system

Important! This system can only be used with certain configurations. Consult the FRACO engineering department for the required configurations.

Important! It is **forbidden** to use a rigid roof system on a freestanding base without a wall attach system.

Important! It is **forbidden** to pass the last mast anchor if you use a rigid roof system

Inclination of the roof may be adjusted as needed. Refer to the positioning of the supports in a horizontal or inclined position.

∞SEE **FIGURE 105** - RIGID ROOF SYSTEM, INSTALLATION OF SUPPORTS, ON PAGE 111

It is strongly recommended to use a FIRE DELAYING bulkhead in compliance with the local applicable standards.

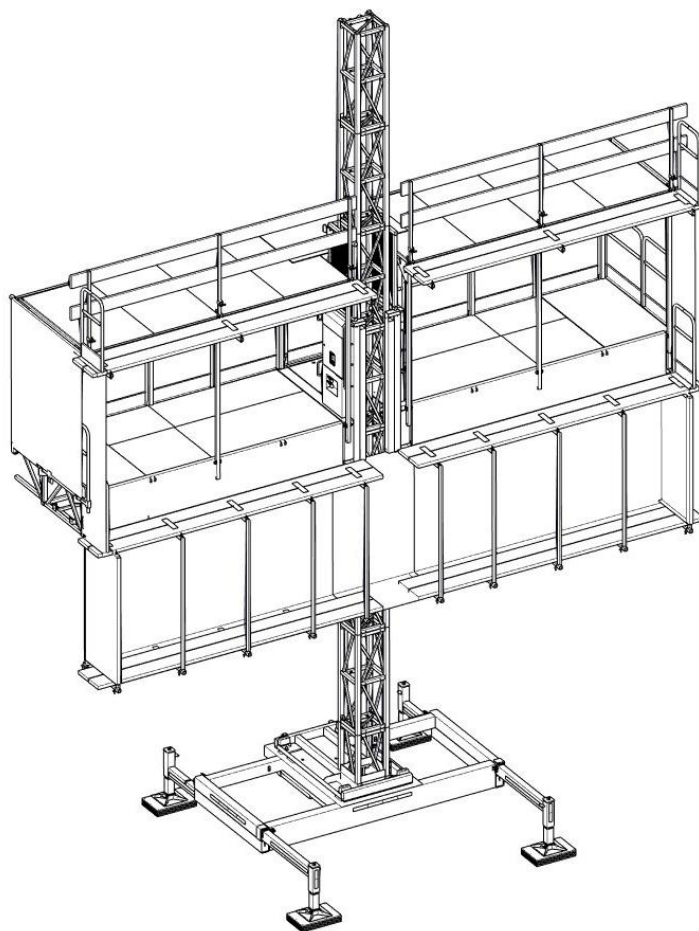
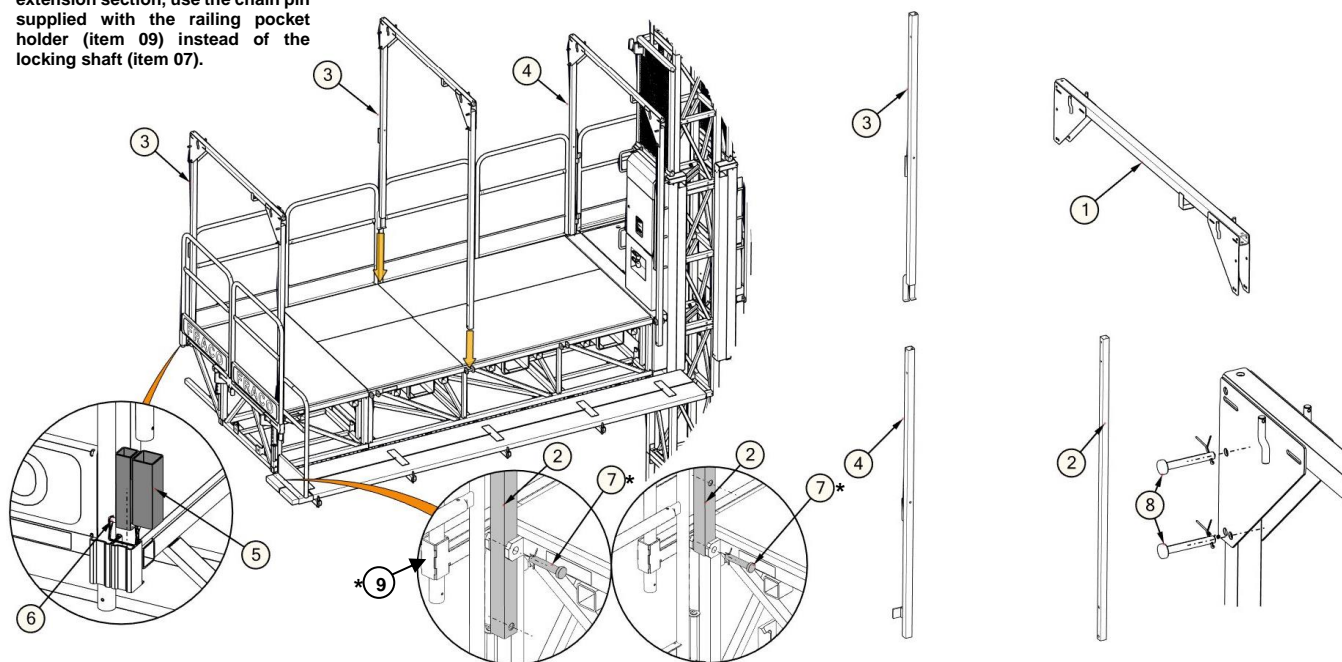


Figure 104 - Rigid roof system

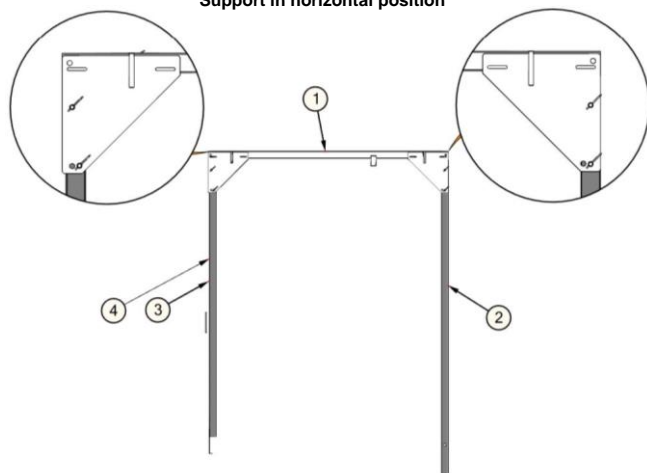
Rigid roof system (CONTINUED)

Installation of the rigid roof structure

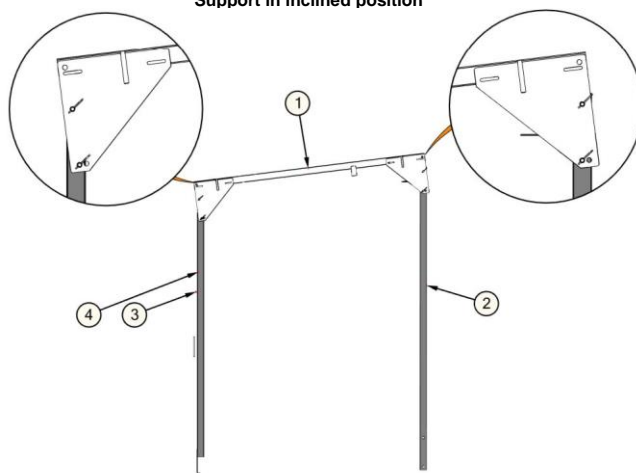
* **Note:** At the edge of the extension section, use the chain pin supplied with the railing pocket holder (item 09) instead of the locking shaft (item 07).



Support in horizontal position



Support in inclined position

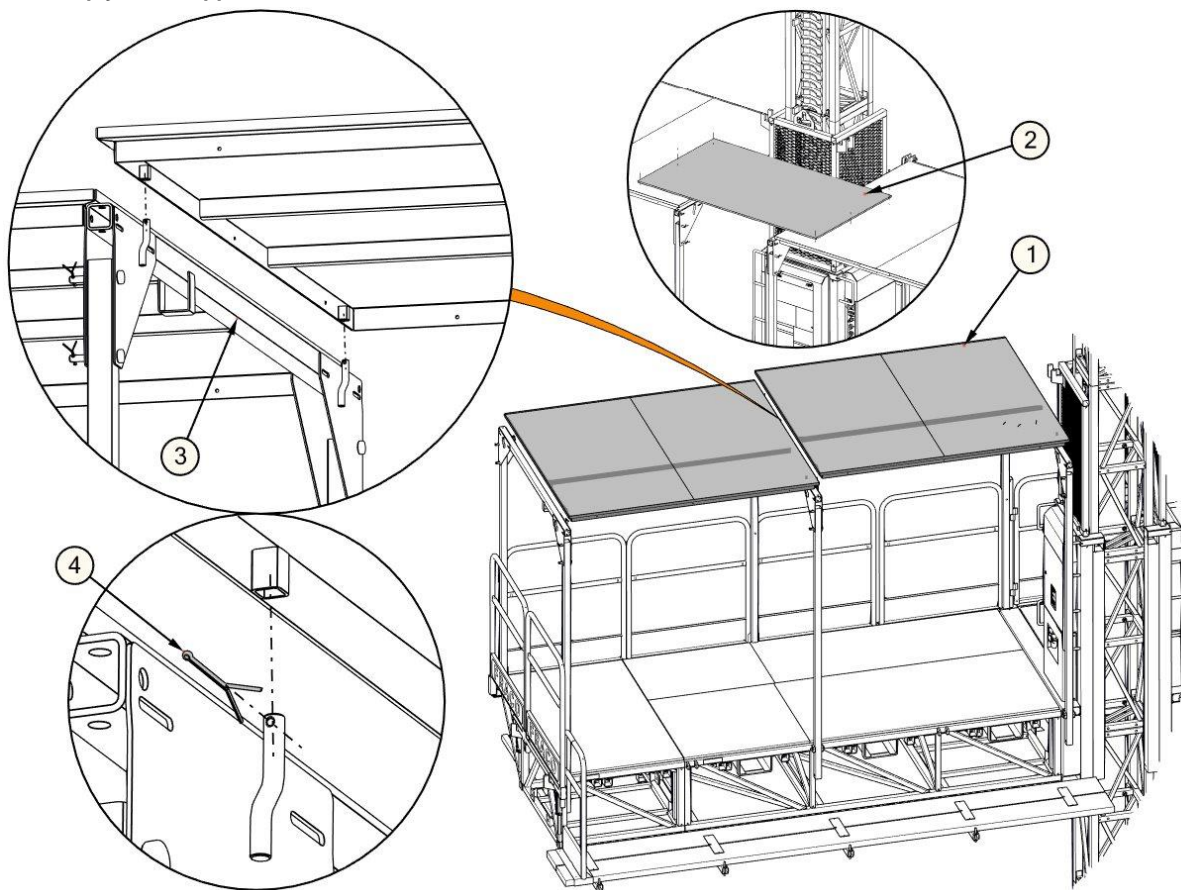


No.	Item	Description	No.	Item	Description
01	26010223	Cross support for rigid roof	06	GOU-5040	Locking pin 3/8" x 2-1/2" x 1-1/2"
02	26010188	Rigid front roof support	07*	25490055 and GOU-1120	Pin dia. 3/4" x 4-3/16" and 1/8" x 2" split pin zinc
03	26010234	Back support for rigid roof	08	25490022 and GOU-1120	Pin dia. 1/2" x 4-1/8" and Split Pin 1/8" x 2" zinc
04	26010245	ACT-8's back support for rigid roof	09*	20490195	Guard-rail sockets for 3'-6" extension
05	26010199	Guard-rail adaptor			

Figure 105 - Rigid roof system, installation of supports

Rigid roof system (CONTINUED)

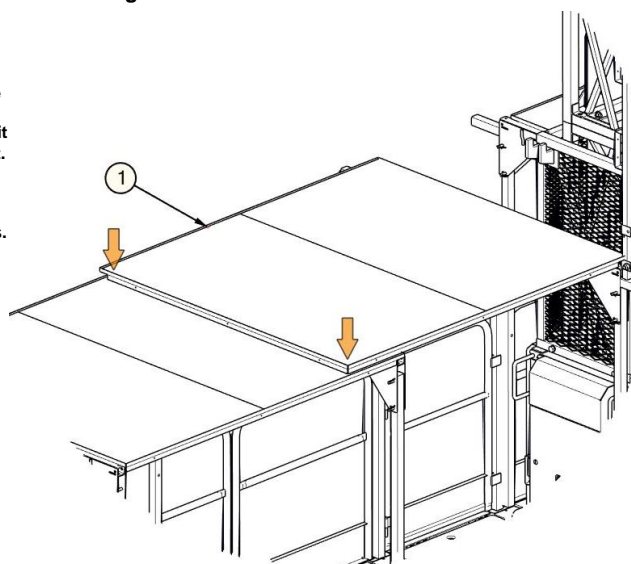
Installation of plywood supports



Installation of plywood supports on a bridge section

When installing over a bridge section, simply install the plywood support near the unit over the neighboring support.

This type of installation is necessary to follow the pivot movement of the bridge arms.



No.	Item	Description	No.	Item	Description
01	26010212	Flooring support 6'-8" x 5'-11"	03	26010223	Cross support for rigid roof
02	16030077	Flooring (1/2" x 39-3/4" x 70-5/8")	04	GOU-1120	Split Pin 1/8" x 2" zinc

Figure 106 - Rigid roof system, installation of plywood supports

Rigid roof system (CONTINUED)

Installation of canvas partitioning

Important! Canvases not included, suggested presentation. The canvases must be supplied by the contractor.

Slide the canvas segments under the planking of the work areas.

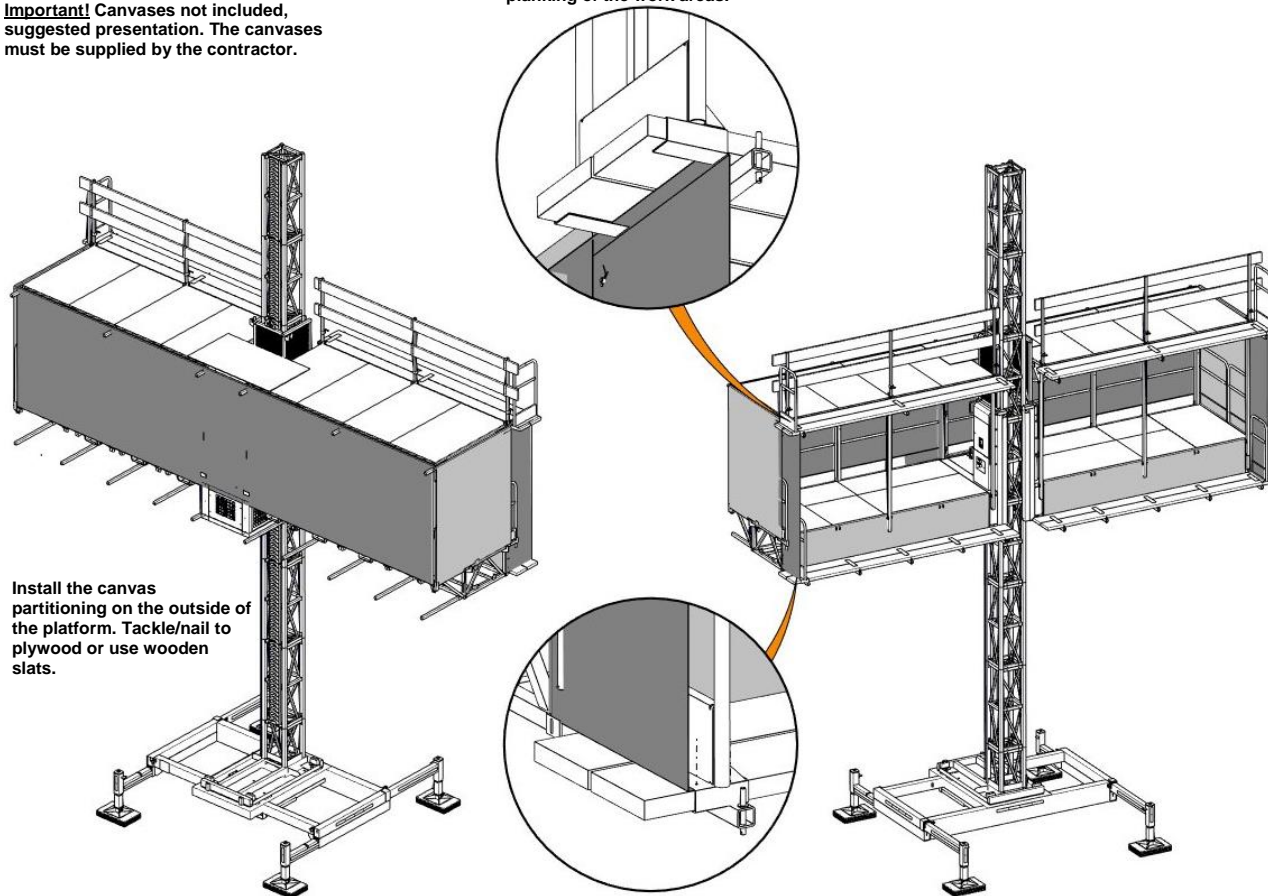
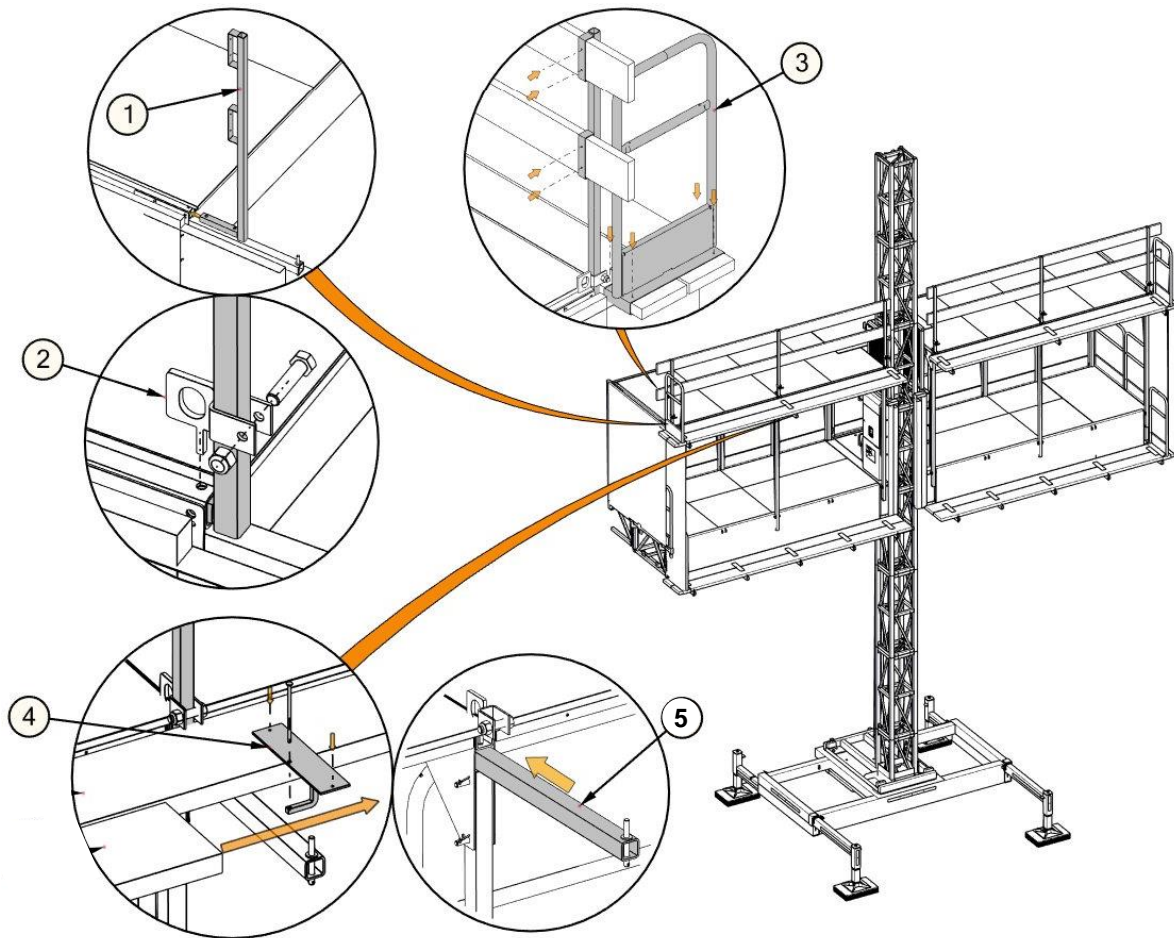


Figure 107 - Rigid roof system, installation of canvas partitions

Rigid roof system (CONTINUED)

Installation of the upper work area

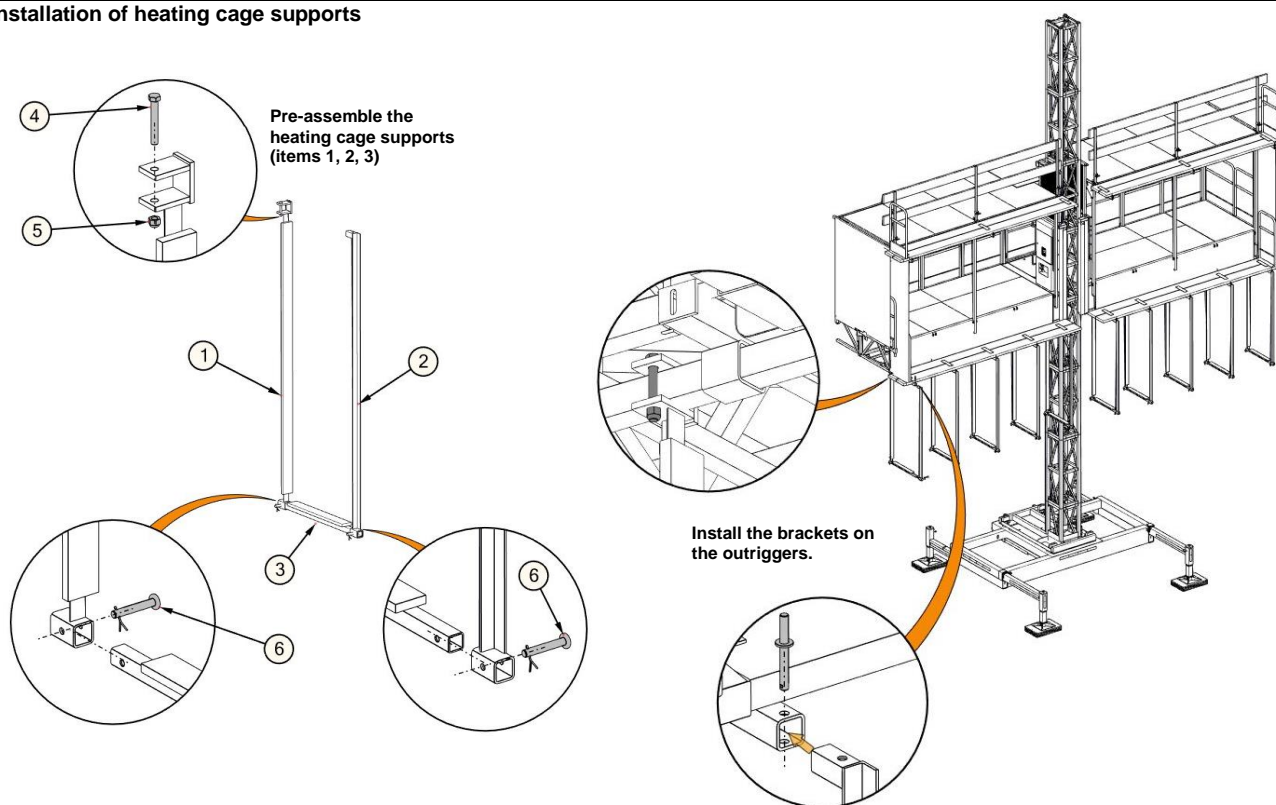


No.	Item	Description	No.	Item	Description
01	17490067	L outrigger guard-rail 4'-3"	04	20490050	Plank tie 3" x 12"
02	20490780	Tie for L outrigger guard-rail on roof	05	19010034	Outrigger 3/16" x 2" x 2" x 8'-8"
03	17490045	Plank-end guard-rail 21" x 3'-6"			

Figure 108 - Rigid roof system, upper work area

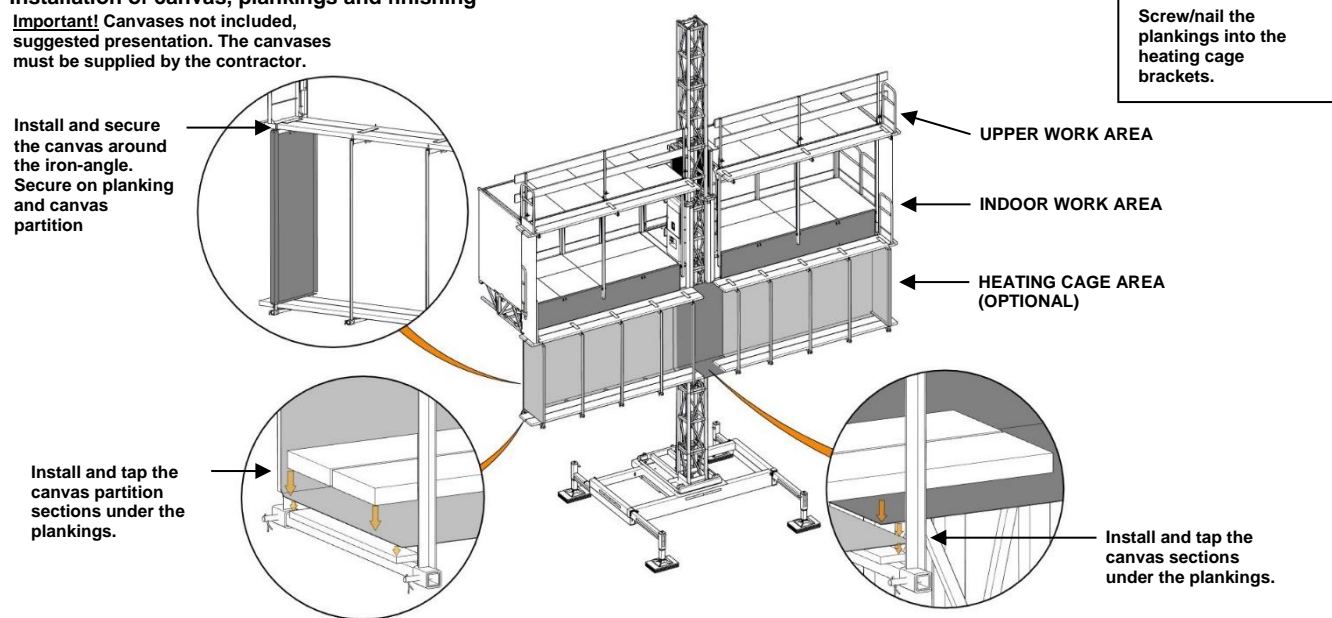
Rigid roof system (CONTINUED)

Installation of heating cage supports



Installation of canvas, plankings and finishing

Important! Canvases not included, suggested presentation. The canvases must be supplied by the contractor.



No.	Item	Description	No.	Item	Description
01	26010021	Heating cage tube with plywood 6'-10"	04	BOZ-7185	Bolt 1/2"-13unc x 3-1/2" gr5 zinc
02	26010032	Heating cage tube with tube 6'-9"	05	NYL-2030	Nylon lock nut 1/2"-13unc gr5 zinc
03	26010043	Heating cage tube with plywood 3'-0"	06	25490044 and GOU-1120	Pin dia. 5/8" x 4-3/16" and Split Pin 1/8" x 2" zinc

Figure 109 - Rigid roof system, heating cage

Winter shelter system

Important! This system can only be used with certain configurations. Consult the FRACO engineering department for the required configurations.

Important! It is **forbidden** to use a winter shelter system on a freestanding base without a wall attach system.

Important! It is **forbidden** to pass the last mast anchor if you use a winter shelter system.

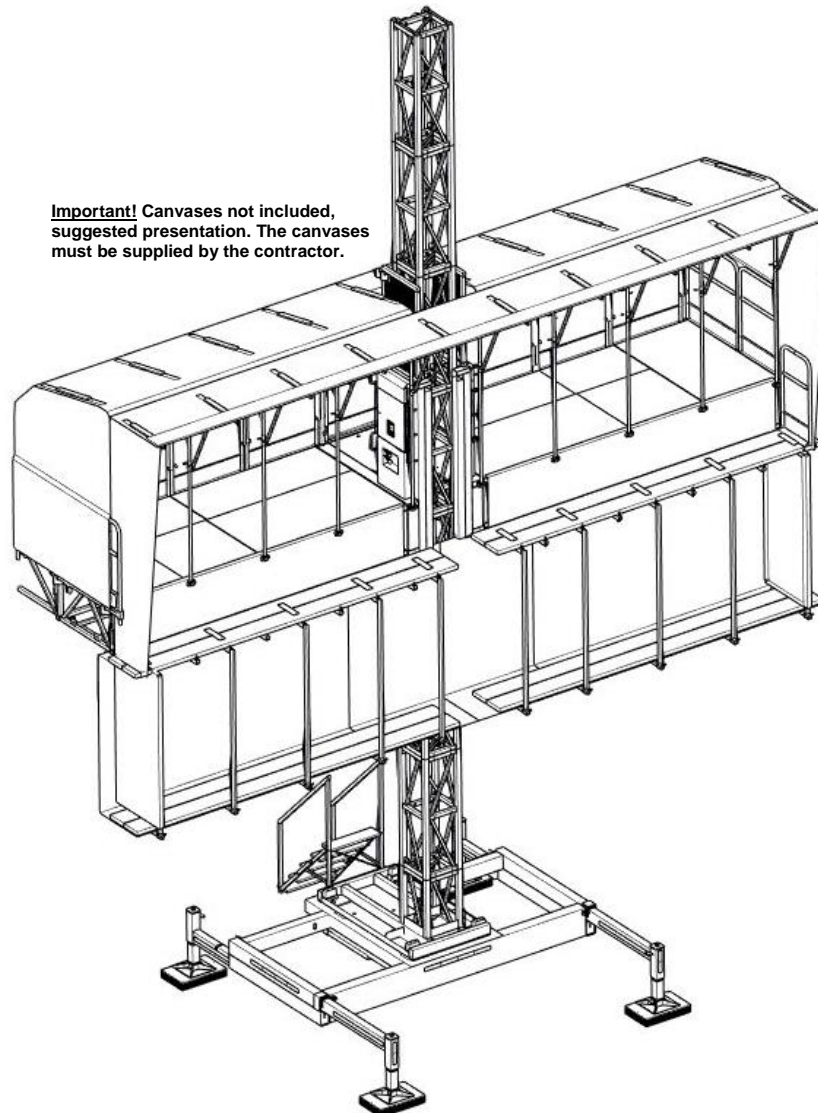
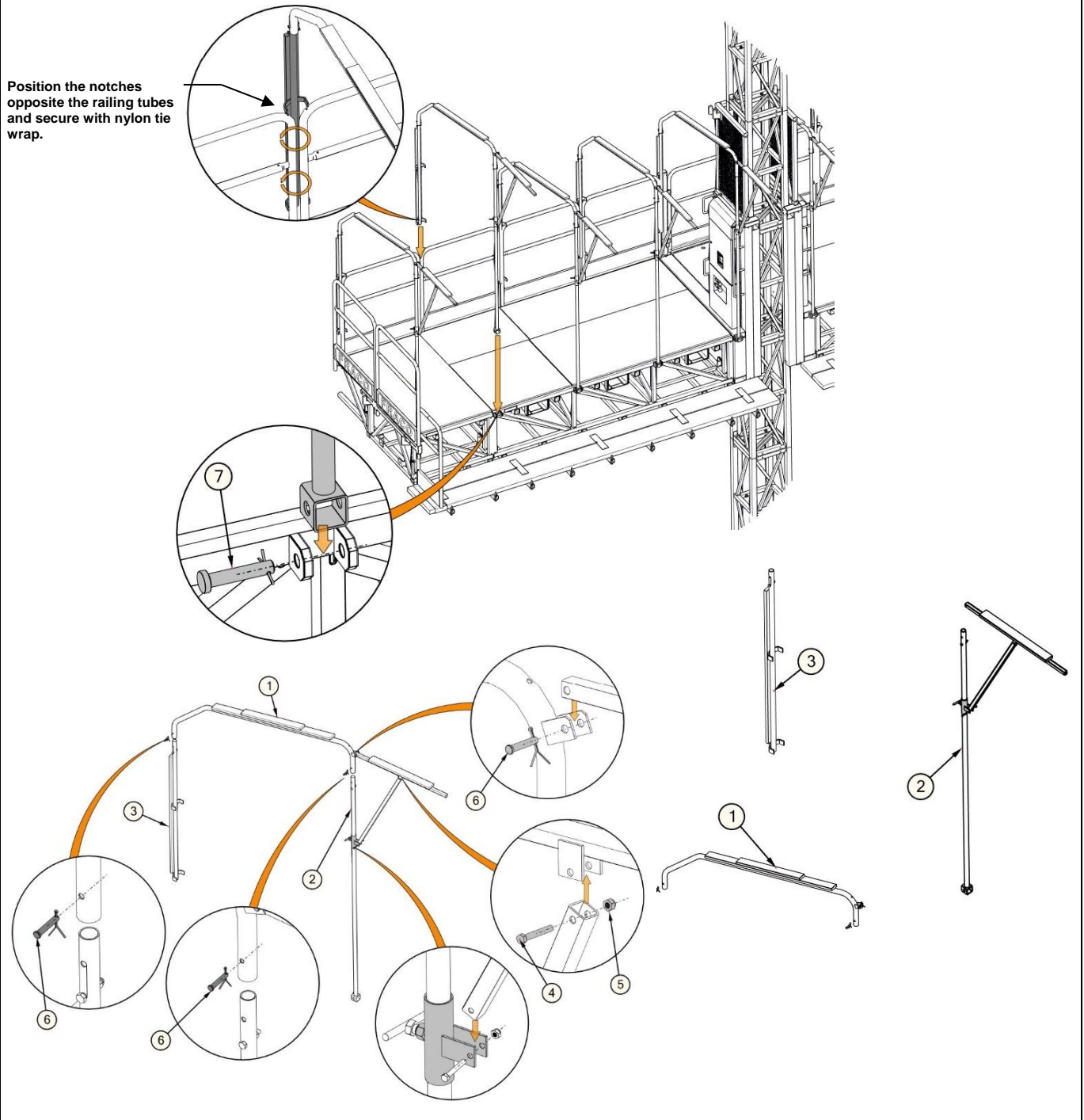


Figure 110 - Winter shelter system

Winter shelter system (CONTINUED)

Installation of the structure

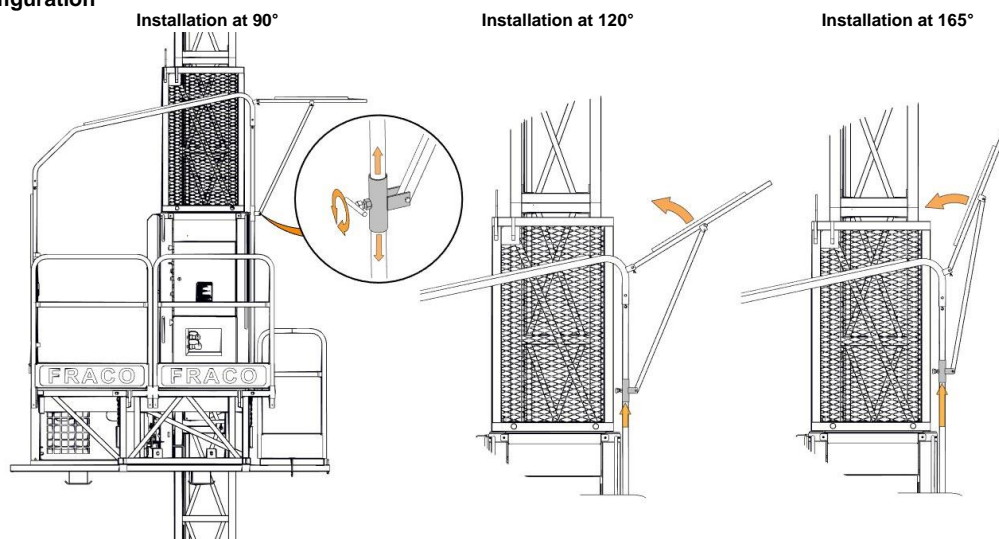


No.	Item	Description	No.	Item	Description
01	26010100	« U » Enclosure tube 5'-11"	05	NYL-2010	Nylon lock nut 1/4"-20unc gr5 zinc
02	26010098	Enclosure tube with 2 holes	06	FOD-5058	Screed axle 3/8" x 1-7/8"
	26010076	Enclosure tube with 2 plates			
	26010087	Enclosure tube 40"			
	28491284	Winter shelter support ring	07	25490055	Pin dia. 3/4" x 4-3/16"
03	26010065	Enclosure tube with 2 plates 4'-9"			
04	BOZ-7030	Bolt 1/4"-20unc x 1-3/4" gr5 zinc			

Figure 111 - Winter shelter system, installation of supports

Winter shelter system (CONTINUED)

Supports configuration

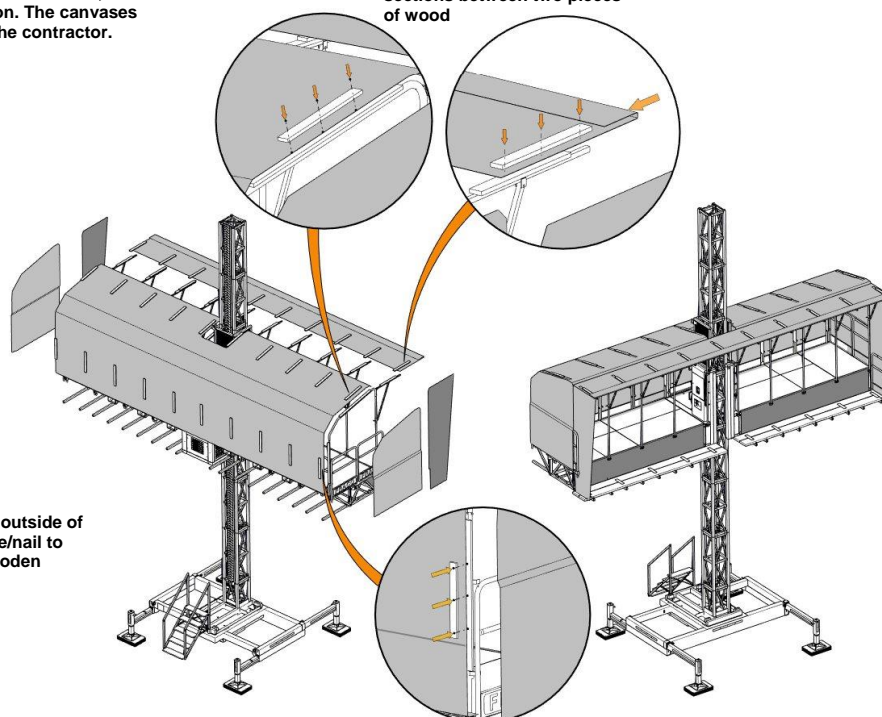


Installation of canvas partitioning

Important! Canvases not included, suggested presentation. The canvases must be supplied by the contractor.

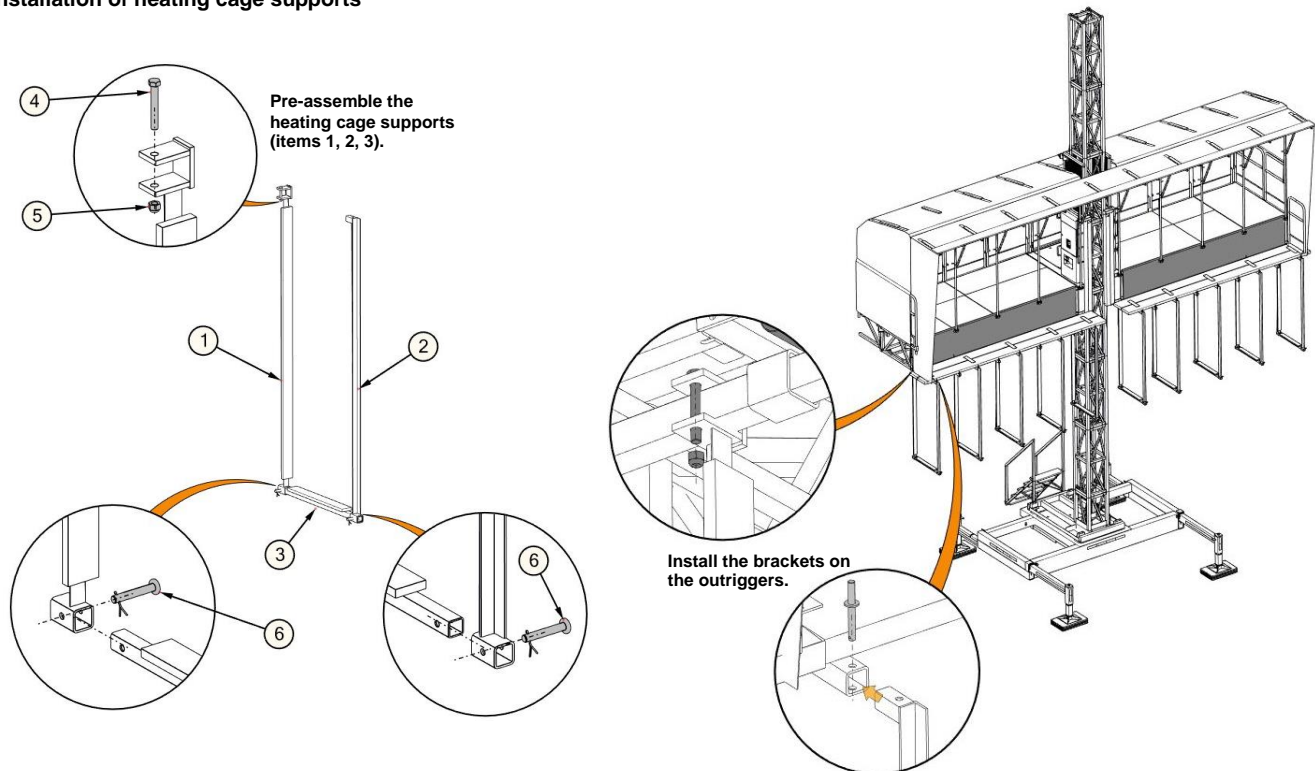
Install and screw the canvas sections between two pieces of wood

Install the canvas partitioning on the outside of the platform. Tackle/nail to plywood or use wooden slats.



Winter shelter system (CONTINUED)

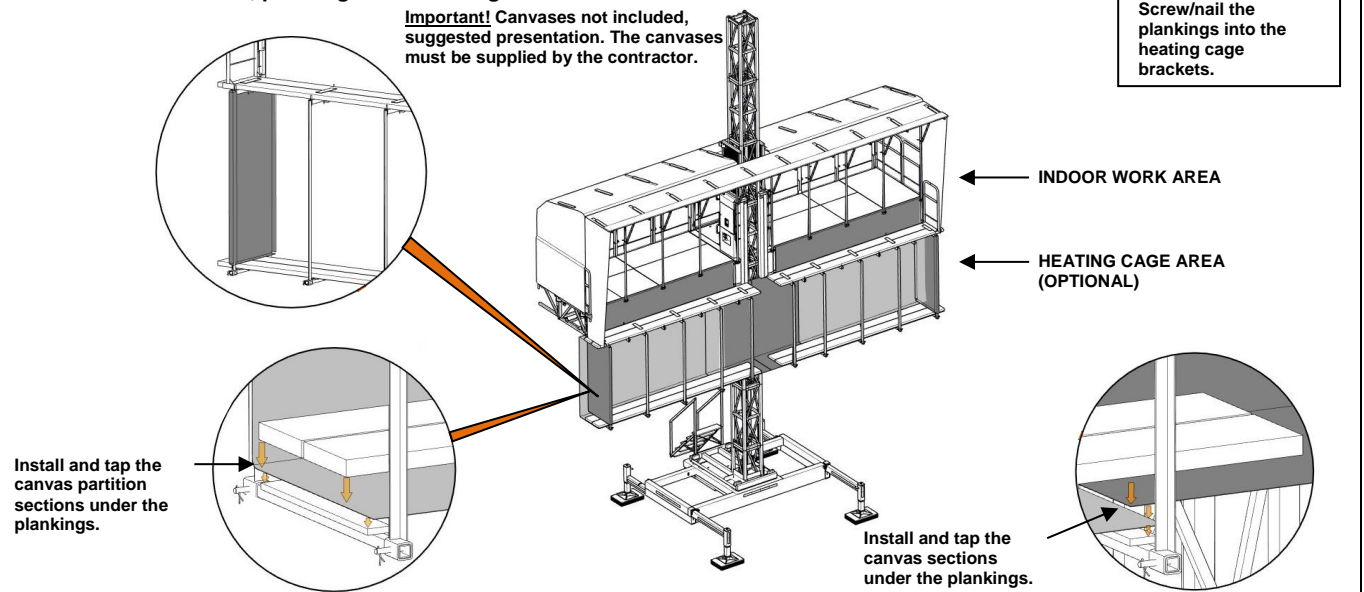
Installation of heating cage supports



Installation of canvases, plankings and finishing

Important! Canvases not included, suggested presentation. The canvases must be supplied by the contractor.

Screw/nail the plankings into the heating cage brackets.



No.	Item	Description	No.	Item	Description
01	26010021	Heating cage tube with plywood 6'-10"	04	BOZ-7185	Bolt 1/2"-13unc x 3-1/2" gr5 zinc
02	26010032	Heating cage tube with tube 6'-9"	05	NYL-2030	Nylon lock nut 1/2"-13unc gr5 zinc
03	26010043	Heating cage tube with plywood 3'-0"	06	25490044 and GOU-1120	Pin dia. 5/8" x 4-3/16" and Split Pin 1/8" x 2" zinc

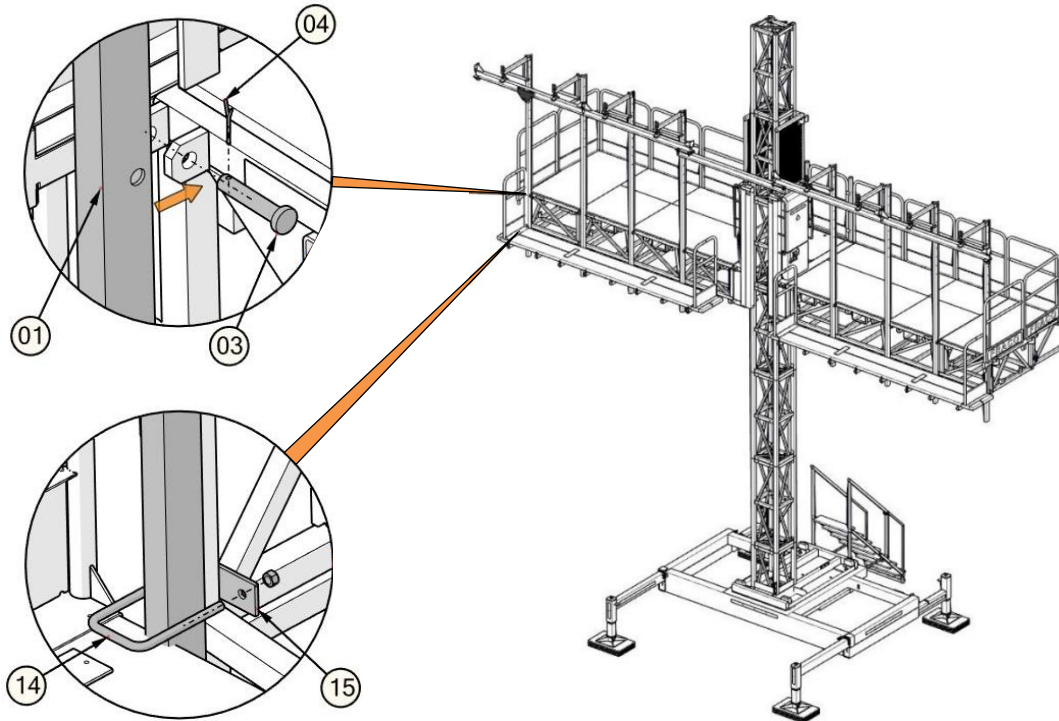
Figure 112 - Winter shelter, heating cage

Monorail on platform

Important! This system can only be used with certain configurations. Consult the FRACO engineering department for the required configurations.

Important! It is **forbidden** to use a monorail system on a freestanding base without a wall attach system.

Important! It is **forbidden** to pass the last mast anchor if you use a monorail system.



Important! To lift up to 2 000 lb (907 kg) two trolleys and a 2 000 lb (907 kg) support beam (item 12) are required.

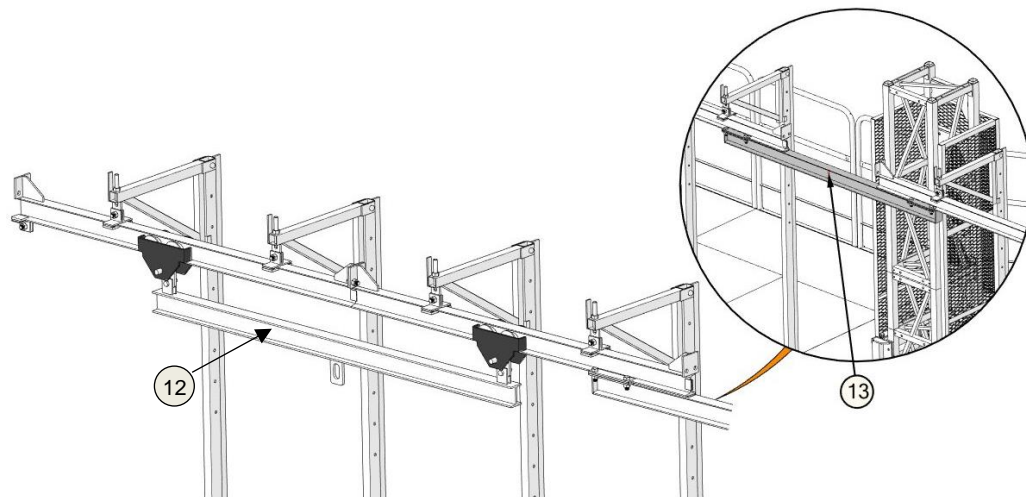
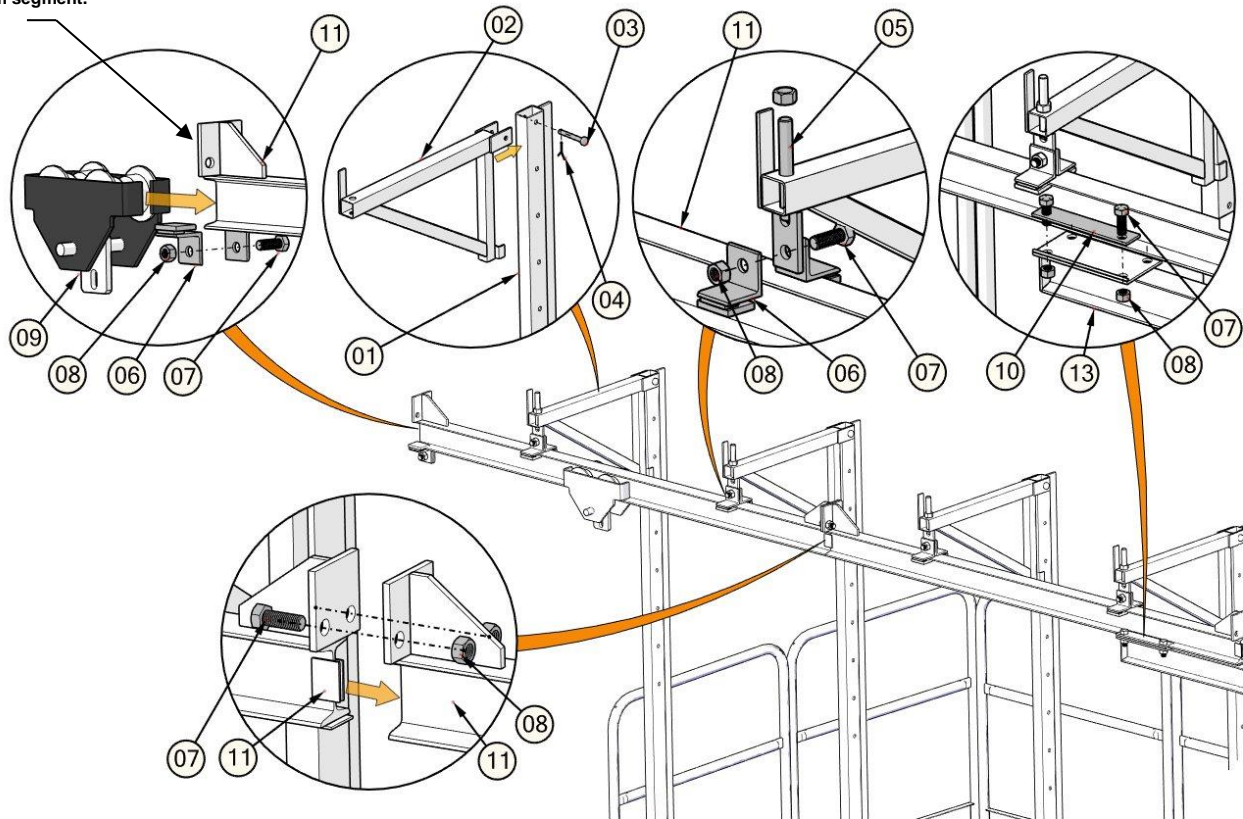


Figure 113 - Monorail on platform

Note: After the trolley is installed, bolt the clamps (item 06) to secure the beam segment.



No.	Item	Description	No.	Item	Description
01	20490421	Multifunctional Tube 2" x 3" x 11'-6"	09	FOD-1098	Trolley 1/2 NPT for « I » beam 4" x 7,7 lb-ft
02	20490386	Interior work support Bracket	10	20490814	Tightening plate for junction planking
03	25490055	Pin dia. 3/4" x 4-3/16"	11	20490375	« I » beam 4" x 7'-0" x 7,7 lbs/pi)
04	GOU-1120	Split Pin 1/8" x 2" zinc	12	20491107	Support planking for 2 000lbs
05	20490274	Threaded planking beam support	13	20490207	Junction « I » beam 4" x 7'-0" x 7,7 lbs/pi
06	20490296	Beam clamp	14	25490101	Treaded U-lock 1/2-13unc 4-1/2" x 6-1/2"
07	BOZ-7225	Bolt 3/4"-10unc x 2" gr5 zinc	15	20490173	Forge steel 1/4" x 2" x 6"
08	ECZ-7080	Nut 3/4"-10unc gr5 zinc			

Figure 114 - Monorail installation

Monorail components 500 lb (227 kg) - Extension

Item	Description	Extension length						Unit
		3'-4" (1 m)	6'-8" (2 m)	10'-0" (3 m)	13'-4" (4 m)	16'-8" (5 m)	20'-0" (6 m)	
20490173	Forge steel 1/4" x 2" x 6"	2	2	2	3	3	3	-
20490207	Junction « I » beam 4" x 7'-0" x 7,7 lbs/pi	-	-	-	-	-	-	1
20490218	« I » beam 4" x 10'-0" x 7,7 lbs/pi	0	1	1	1	1	2	-
20490375	« I » beam 4" x 7'-0" x 7,7 lbs/pi	1	0	0	1	1	0	-
20490274	Threaded beam clamp support	2	2	2	3	3	3	-
20490296	Beam clamp	3	3	3	4	4	4	-
20490386	Interior work support Bracket	2	2	2	3	3	3	-
20490421	Multifunctional Tube 2" x 3" x 11'-6"	2	2	2	3	3	3	-
20490814	Tightening plate for junction beam	-	-	-	-	-	-	4
25490022	Locking pin dia. 1/2" x 4-1/8"	2	2	2	3	3	3	-
25490055	Locking pin dia. 3/4" x 4-3/16"	2	2	2	3	3	3	-
25490101	Treaded U-lock 1/2-13unc 4-1/2" x 6-1/2"	2	2	2	3	3	3	-
BOA-2025	Bolt 3/4"-10unc x 2" A325 galv. assembled	3	3	3	4	4	4	8
GOU-1120	Split Pin 1/8" x 2" zinc	4	4	4	6	6	6	-

Monorail components 1 000 lb (454 kg) - Extension

Item	Description	Extension length						Unit
		3'-4" (1 m)	6'-8" (2 m)	10'-0" (3 m)	13'-4" (4 m)	16'-8" (5 m)	20'-0" (6 m)	
20490173	Forge steel 1/4" x 2" x 6"	2	2	3	4	5	6	-
20490207	Junction « I » beam 4" x 7'-0" x 7,7 lbs/pi	-	-	-	-	-	-	1
20490218	« I » beam 4" x 10'-0" x 7,7 lbs/pi	0	1	1	1	1	2	-
20490375	« I » beam 4" x 7'-0" x 7,7 lbs/pi	1	0	0	1	1	0	-
20490274	Threaded planking clamp support	2	2	3	4	5	6	-
20490296	Beam clamp	3	3	4	5	6	7	-
20490386	Interior work support Bracket	2	2	3	4	5	6	-
20490421	Multifunctional Tube 2" x 3" x 11'-6"	2	2	3	4	5	6	-
20490814	Tightening plate for junction planking	-	-	-	-	-	-	4
25490022	Locking pin dia. 1/2" x 4-1/8"	2	2	3	4	5	6	-
25490055	Locking pin dia. 3/4" x 4-3/16"	2	2	3	4	5	6	-
25490101	Treaded U-lock 1/2-13unc 4-1/2" x 6-1/2"	2	2	3	4	5	6	-
BOA-2025	Bolt 3/4"-10unc x 2" A325 galv. assembled	3	3	4	5	6	7	8
GOU-1120	Split Pin 1/8" x 2" zinc	4	4	6	8	10	12	-

Monorail components 500 lb (227 kg) - Bridge

Item	Description	Intermediate extension		Bridge length						Unit
		+2'-6" (0,75 m)	+5'-0" (1,5 m)	30'-0" (9 m)	35'-0" (10,6 m)	40'-0" (12 m)	50'-0" (15 m)	55'-0" (16,5 m)	60'-0" (18 m)	
20490173	Forge steel (1/4" x 2" x 6")	+1	+1	6	7	7	9	10	10	-
20490207	Junction « I » beam 4" x 7'-0" x 7,7 lbs/pi	-	-	-	-	-	-	-	-	2
20490218	« I » beam 4" x 10'-0" x 7,7 lbs/pi	*	*	3	3	4	5	5	6	-
20490375	« I » beam 4" x 7'-0" x 7,7 lbs/pi	*	*	0	1	0	0	1	0	-
20490274	Threaded beam clamp support	+1	+1	6	7	7	9	10	10	-
20490296	Beam clamp	+1	+1	8	9	9	11	12	12	-
20490386	Interior work support bracket	+1	+1	6	7	7	9	10	10	-
20490421	Multifunctional Tube 2" x 3" x 11'-6"	+1	+1	6	7	7	9	10	10	-
20490814	Tightening plate for junction beam	-	-	-	-	-	-	-	-	4
25490022	Locking pin dia. 1/2" x 4-1/8"	+1	+1	6	7	7	9	10	10	-
25490055	Locking pin dia. 3/4" x 4-3/16"	+1	+1	6	7	7	9	10	10	-
25490101	Treaded U-lock 1/2-13unc 4-1/2" x 6-1/2"	+1	+1	6	7	7	9	10	10	-
BOA-2025	Bolt 3/4"-10unc x 2" A325 galv. assembled	+1	+1	8	9	9	11	12	12	8
GOU-1120	Split Pin 1/8" x 2" zinc	+2	+2	12	14	14	18	20	20	-

* The number of additional beams should be determined according to the type and number of intermediate extension sections used.

Monorail components 1 000 lb (454 kg) - Bridge

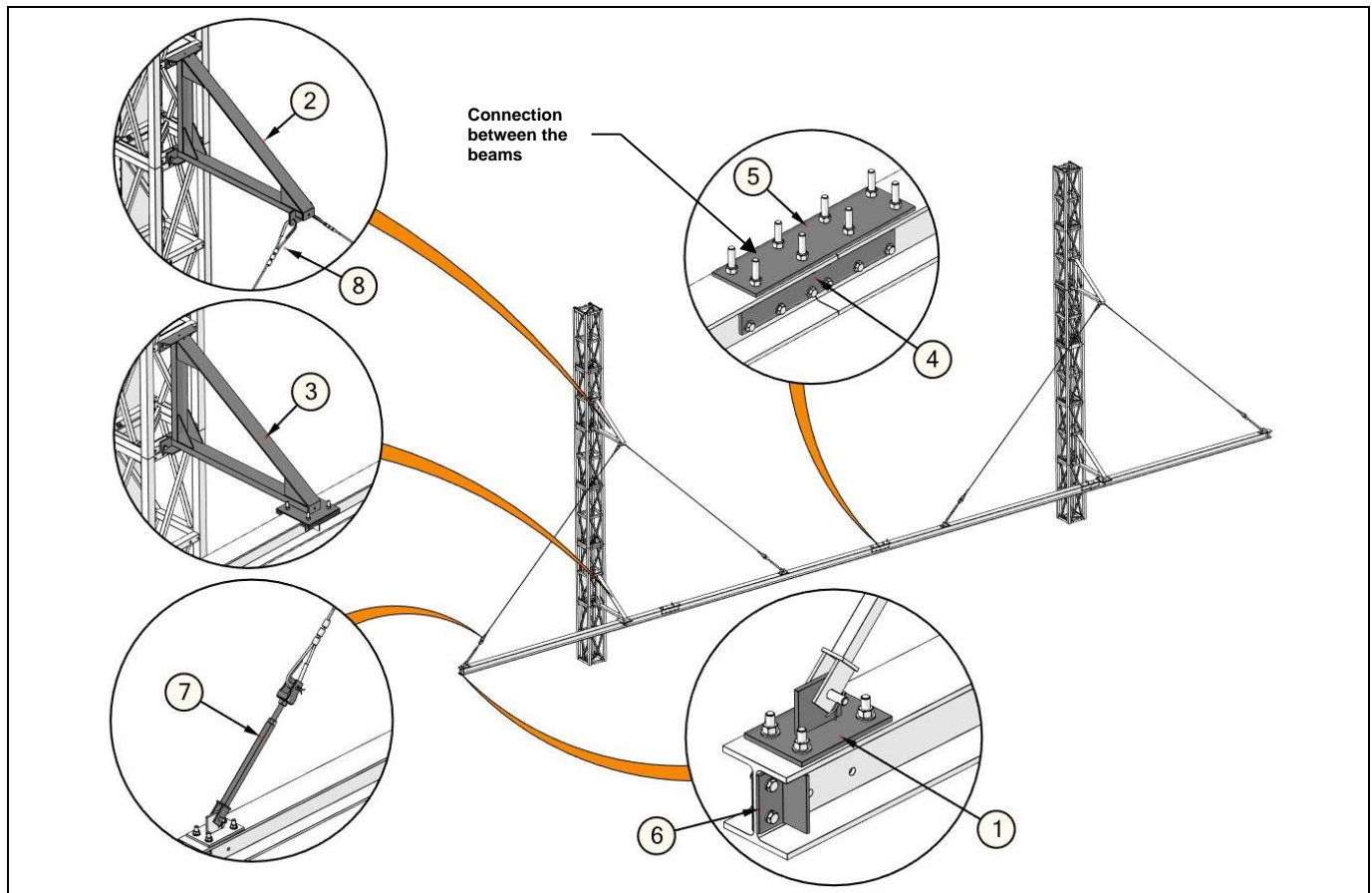
Item	Description	Intermediate extension		Bridge length						Unit
		+2'-6" (0,75 m)	+5'-0" (1,5 m)	30'-0" (9 m)	35'-0" (10,6 m)	40'-0" (12 m)	50'-0" (15 m)	55'-0" (16,5 m)	60'-0" (18 m)	
20490173	Forge steel (1/4" x 2" x 6")	+1	+1	11	12	13	17	18	19	-
20490207	Junction « I » beam 4" x 7'-0" x 7,7 lbs/pi	-	-	-	-	-	-	-	-	2
20490218	« I » beam 4" x 10'-0" x 7,7 lbs/pi	*	*	3	3	4	5	5	6	-
20490375	« I » beam 4" x 7'-0" x 7,7 lbs/pi	*	*	0	1	0	0	1	0	-
20490274	Threaded beam clamp support	+1	+1	11	12	13	17	18	19	-
20490296	Beam clamp	+1	+1	13	14	15	19	20	21	-
20490386	Interior work support bracket	+1	+1	11	12	13	17	18	19	-
20490421	Multifunctional Tube 2" x 3" x 11'-6"	+1	+1	11	12	13	17	18	19	-
20490814	Tightening plate for junction beam	-	-	-	-	-	-	-	-	4
25490022	Locking pin dia. 1/2" x 4-1/8"	+1	+1	11	12	13	17	18	19	-
25490055	Locking pin dia. 3/4" x 4-3/16"	+1	+1	11	12	13	17	18	19	-
25490101	Treaded U-lock 1/2-13unc 4-1/2" x 6-1/2"	+1	+1	11	12	13	17	18	19	-
BOA-2025	Bolt 3/4"-10unc x 2" A325 galv. assembled	+1	+1	13	14	15	19	20	21	8
GOU-1120	Split Pin 1/8" x 2" zinc	+2	+2	22	24	26	34	36	38	-

* The number of additional beams should be determined according to the type and number of intermediate extensions sections used.

Mast head monorail

Important! The mast head monorail system can only be used with double mast installations.

Important! The final height of the masts must exceed the roof of the building by at least 30'-0" (9,0 m).



No.	Item	Description	No.	Item	Description
01	24010063	Reusable concrete anchor (offset hole)	05	20490892	Top junction plate top mast mono-rail
02	20490836	Top mast monorail cable holder	06	20491613	Limit stop for monorail (2-1/2" x 2-1/2" x 4-1/2")
03	20490847	Top mast monorail beam support bracket	07	23070125	Turnbuckle assembly (2' 0")
04	20490881	Side junction plate top mast monorail	08	XXXXXXX	Steel cable 195"

Figure 115 – Mast head monorail

Mast head monorail (CONTINUED)

Raise the platform until reaching the junction between the two highest mast sections.
Install the top bracket on the upper or lower portion of the penultimate mast section.
Then install the two (2) 195" (5,0 m) steel cables in the eyelets of the top bracket, secure with three (3) cable ties.

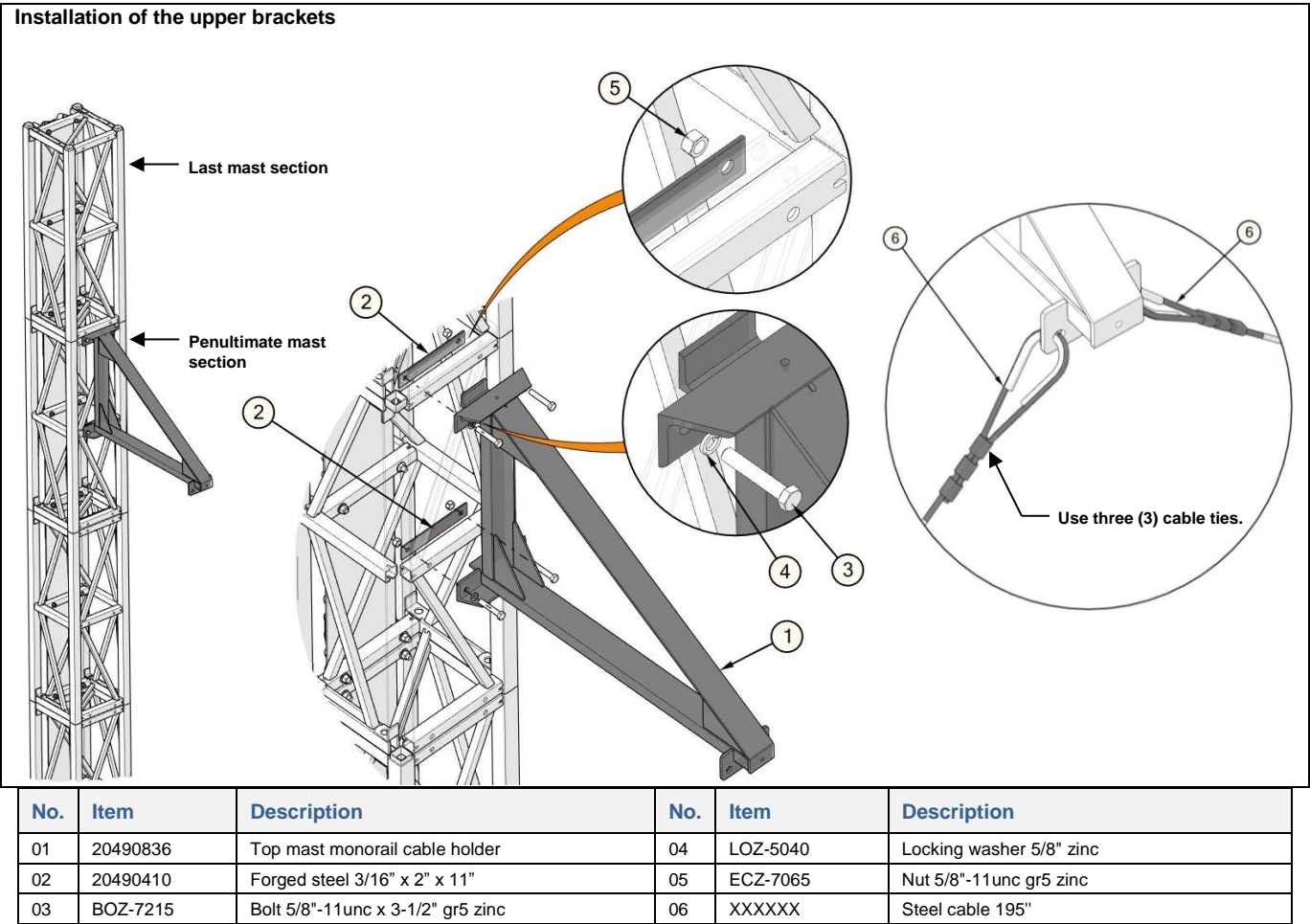
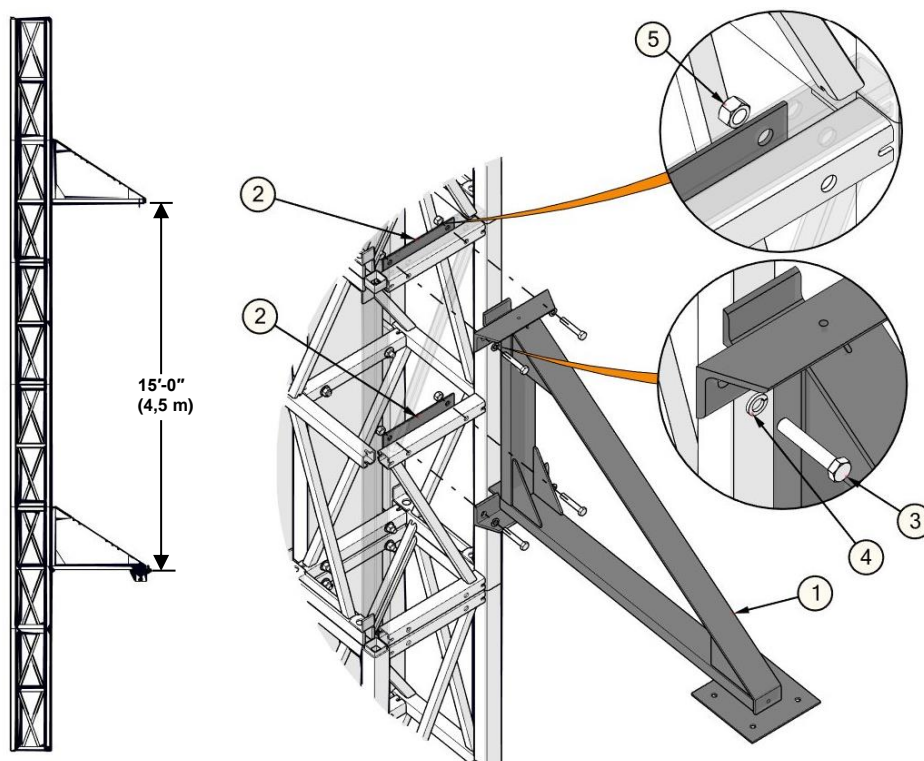


Figure 116 - Mast head monorail, installation

Monorail at mast head (CONTINUED)

Lower the platform by three (3) mast sections 15'-0" (4,5 m) and install the lower brackets. Install the bracket on the upper or lower portion of the mast section.

Installation of the lower brackets



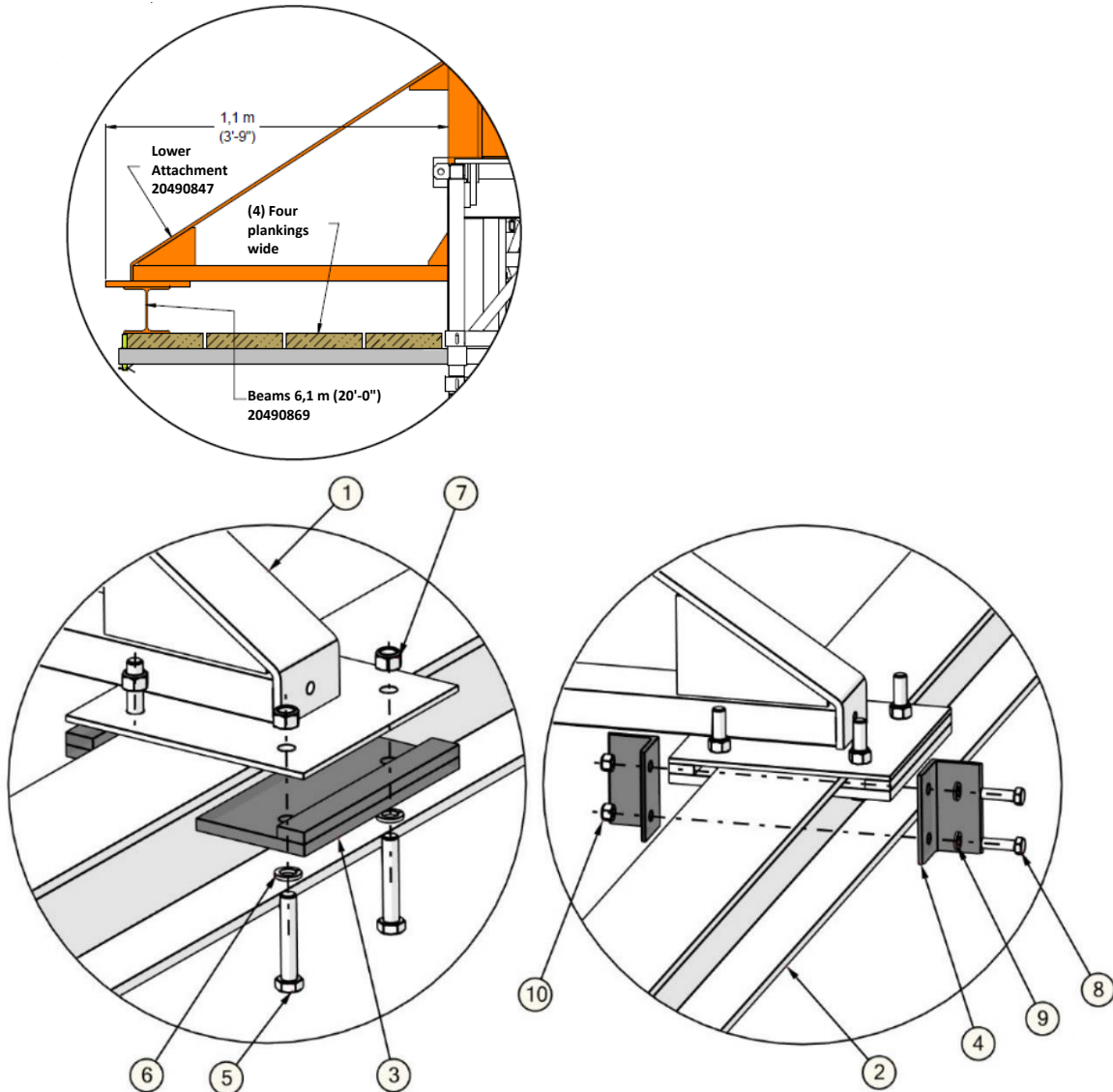
No.	Item	Description	No.	Item	Description
01	20490847	Top mast monorail planking support bracket	04	LOZ-5040	Locking washer 5/8" zinc
02	20490410	Forged steel 3/16" x 2" x 11"	05	ECZ-7065	Nut 5/8"-11unc gr5 zinc
03	BOZ-7215	Bolt 5/8"-11unc x 3-1/2" gr5 zinc			

Figure 117 - Mast head monorail, installation

Monorail at mast head (CONTINUED)

Extend the outriggers and install the planking for the required distance of approximately 3'-9" (1,1 m). Place the beam on the planking and raise the unit until it reaches the position of the lower attachments. Align the beams with the ends of the lower brackets.

Installation of beams on the lower brackets



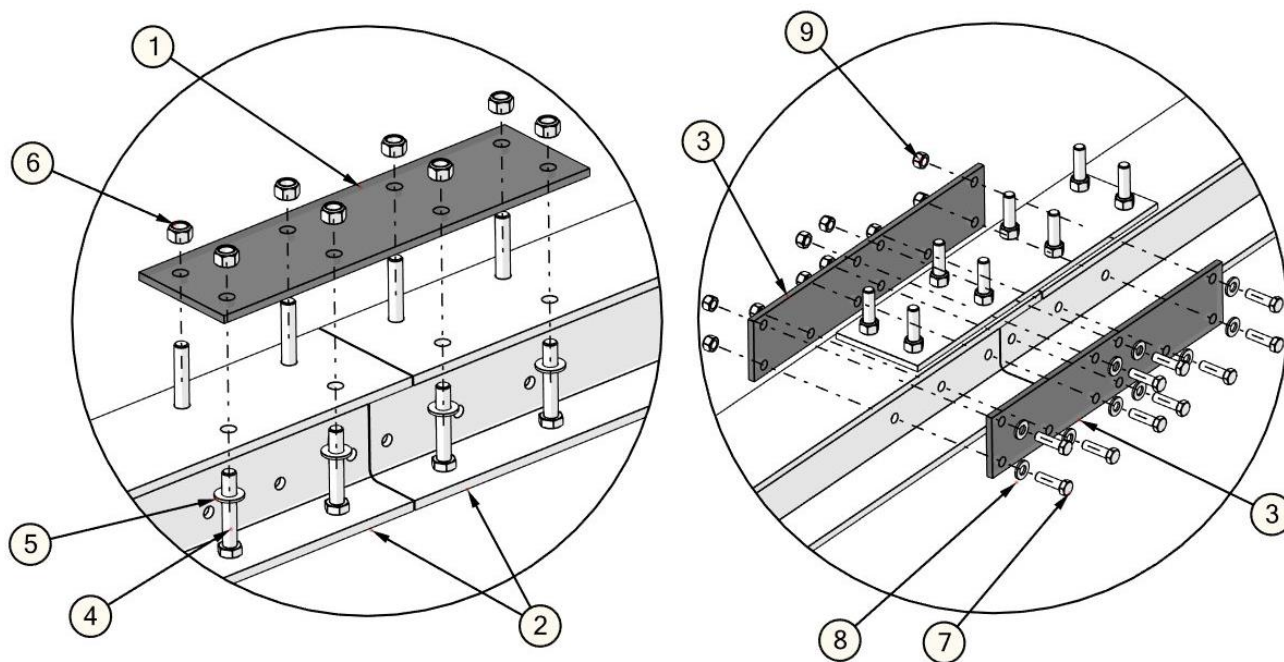
No.	Item	Description	No.	Item	Description
1	20490847	Top mast monorail beam support bracket	6	LOZ-5040	Locking washer 5/8" zinc
2	20490869	Monorail beam 20' top mast monorail	7	ECZ-7065	Nut 5/8"-11unc gr5 zinc
3	20490904	Bottom clamp plate for beam top mast monorail	8	BOZ-7157	Bolt 1/2"-13unc x 1-3/4" gr5 zinc
4	20491613	Limit stop for monorail 2-1/2" x 2-1/2" x 4-1/2"	9	LOZ-5030	Locking washer 1/2" zinc
5	BOZ-7215	Bolt 5/8"-11unc x 3-1/2" gr5 zinc	10	ECZ-7045	Nut 1/2"-13unc gr5 zinc

Figure 118 - Mast head monorail, installation

Monorail at mast head (CONTINUED)

Important! It is prohibited to overlay a concrete anchor (24010063) over a junction plate.

Installation of beam junction plates



No.	Item	Description	No.	Item	Description
1	20490892	Top junction plate top mast mono-rail	6	ECZ-7065	Nut 5/8"-11unc gr5 zinc
2	20490869	Monorail beam 20' top mast monorail	7	BOZ-7157	Bolt 1/2"-13unc x 1-3/4" gr5 zinc
3	20490881	Side junction plate top mast monorail	8	LOZ-5030	Locking washer 1/2" zinc
4	BOZ-7215	Bolt 5/8"-11unc x 3-1/2" gr5 zinc	9	ECZ-7045	Nut 1/2"-13unc gr5 zinc
5	LOZ-5040	Locking washer 5/8" zinc			

Figure 119 - Mast head monorail, installation

Monorail at mast head (CONTINUED)

Comply with the load distribution diagram shown below.

Determine the anchor locations taking into account the following MIN and MAX dimension ranges:

Option 1:

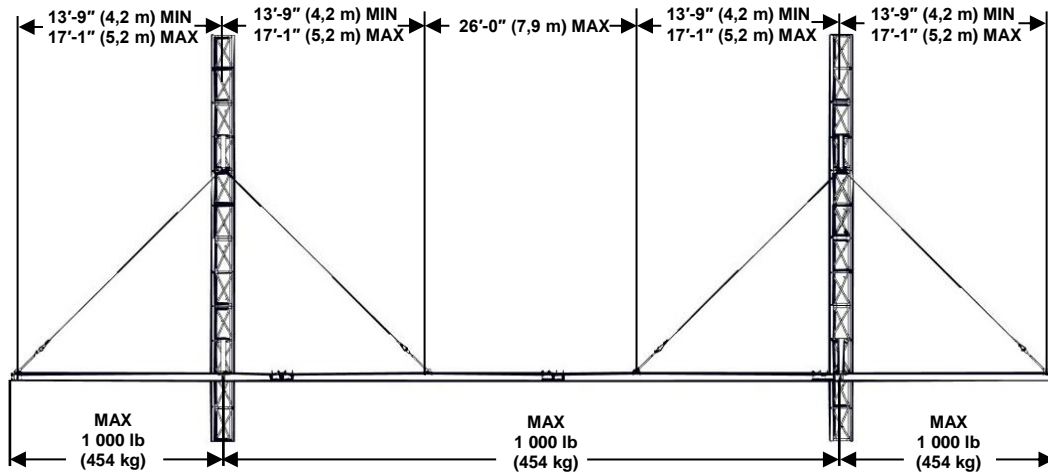


Figure 120 - Option 1, Load Distribution, mast head monorail

Option 2:

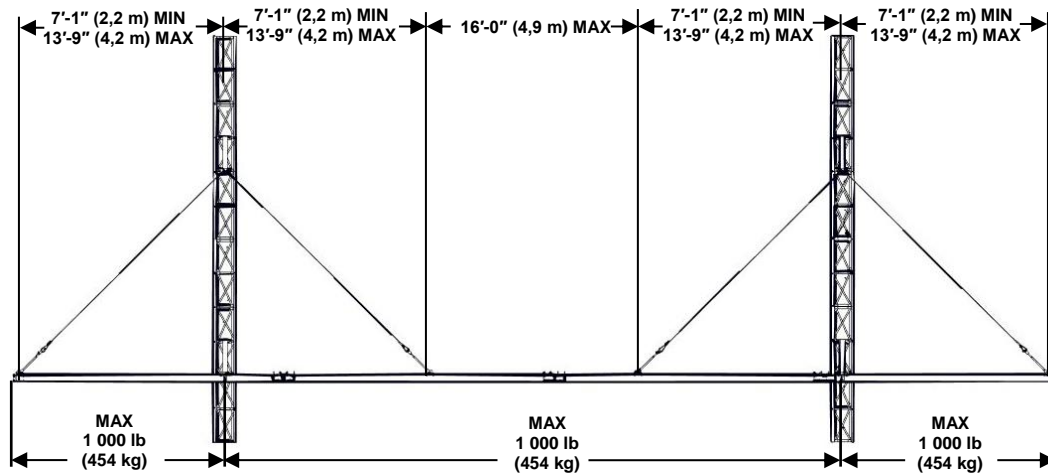


Figure 121 - Option 2, Load Distribution, mast head monorail

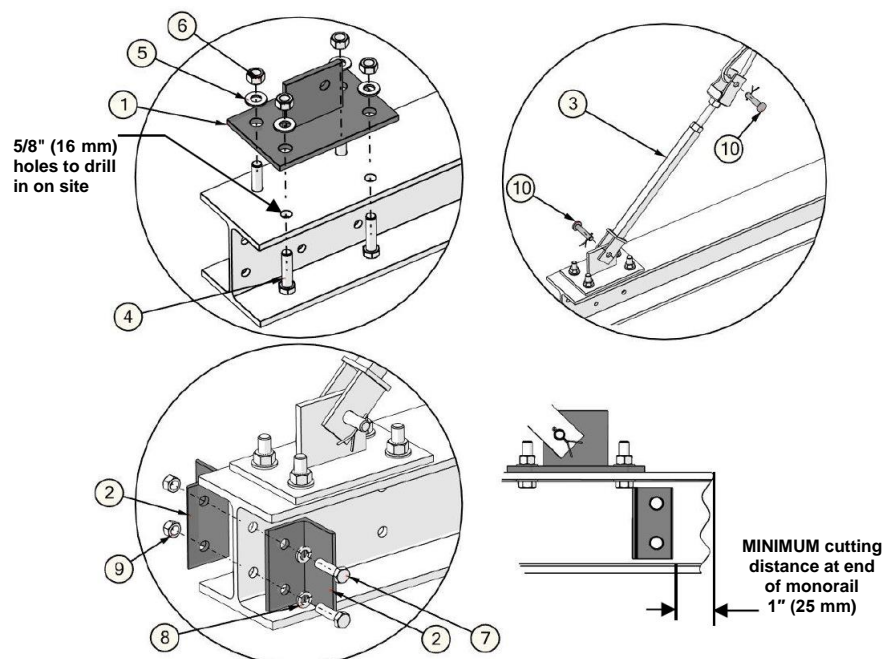
Monorail at mast head (CONTINUED)

Use the anchor plates as a drilling template to drill the beams where required. Typical 5/8" (16 mm) holes.

Install the stops at each travel limit. Drill the beam if necessary.

IMPORTANT! The customer is responsible for having the required lifting training that complies with the specifications, standards and regulations in force before using a trolley.

Installation of turnbuckle anchors and stops



No.	Item	Description	No.	Item	Description
1	24010063	Reusable concrete anchor offset hole	6	ECZ-7065	Nut 5/8"-11unc gr5 zinc
2	20491613	Limit stop for monorail 2-1/2" x 2-1/2" x 4-1/2"	7	BOZ-7157	Bolt 1/2"-13unc x 1-3/4" gr5 zinc
3	23070125	Turnbuckle assembly 2'-0"	8	LOZ-5030	Locking washer 1/2" zinc
4	BOZ-8542	Bolt 5/8"-11unc x 2-1/2" gr8 zinc	9	ECZ-7045	Nut 1/2"-13unc gr5 zinc
5	WAZ-7041	Washer 5/8" SAE zinc	10	25490033 and GOU-1120	Pin dia. 5/8" x 3-3/16" and Split Pin 1/8" x 2" zinc

Figure 122 - Monorail at mast head, installation

Crane FRH-2500

Important! Refer to section « WARNINGS » and « OPERATION, USE OF THE LIFTING UNIT » for general safety instructions and additional applicable warnings.

∞SEE WARNINGS, ON PAGE 7

∞SEE OPERATION, USE OF THE LIFTING unit, ON PAGE 25

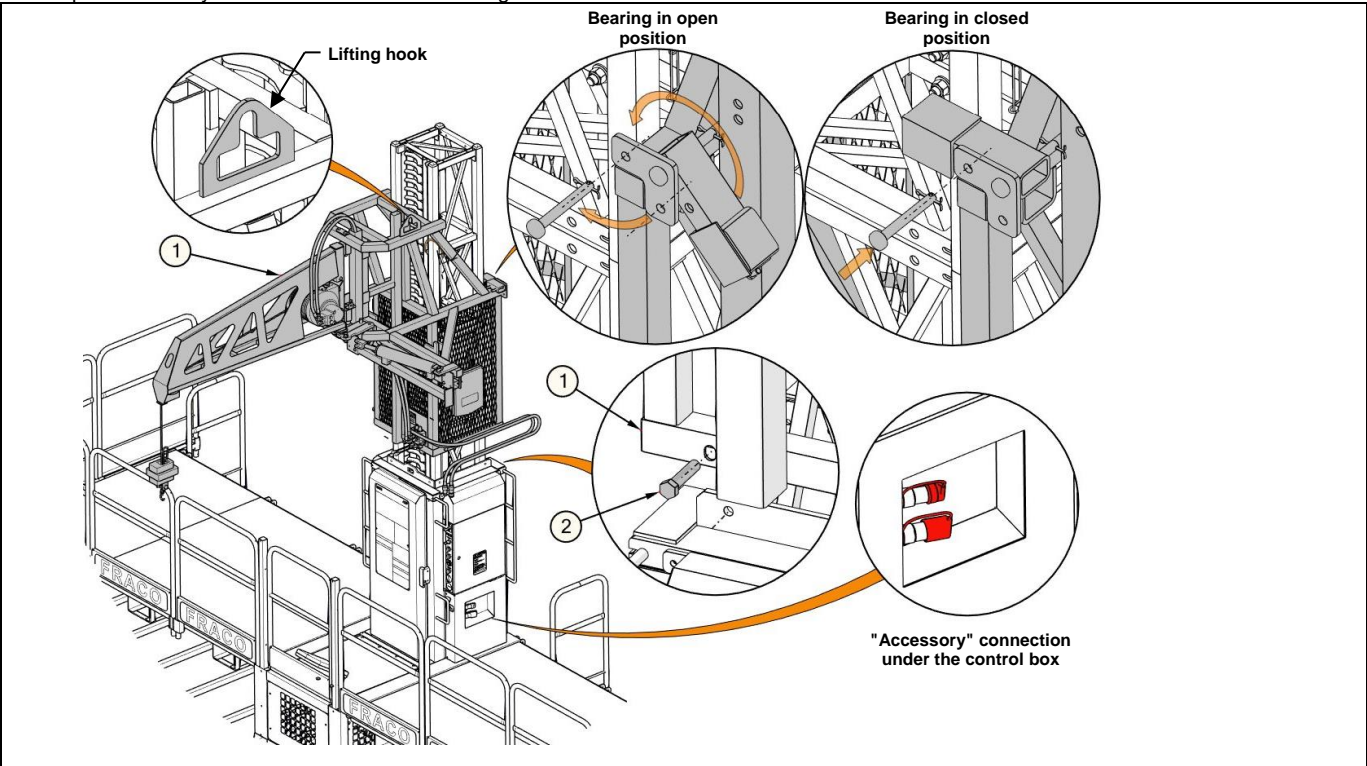
Warning:

- On the ground, establish a marked safety perimeter around the lifting area and prohibit access.
- Before using the portable crane, make sure people around are aware of the potential dangers.
- This equipment must not be used for lifting or moving personnel.
- Use the controls smoothly. Sudden movements may damage the winch.
- Never move or lift loads over a person.
- Do not leave loads suspended for long periods or unattended.
- Always remain at a safe distance from the load.
- Maintain a minimum of five (5) turns of cable on the drum at all times.
- The load must be lifted vertically.
- Allow the equipment to preheat before use, especially during cold temperatures.
- Wear appropriate clothing and keep hands away from moving parts when using the crane.
- Wear your safety harness, attached to a regulatory attachment point, if the guardrails are to be handled.
- ∞SEE REGULATORY ATTACHMENT POINTS, ON PAGE 10
- It is **forbidden** to use a crane on a freestanding base without a wall attach system.
- It is **forbidden** to position the lift unit above the highest mast anchor device when using a portable crane.

Installation

Important! If the platform is installed on a ground base, the first two (2) mast anchors must first be installed. If the platform is installed on a freestanding base, at least one (1) mast anchor must be installed.

- Use the lifting hook provided for said purpose for lifting and moving the portable crane.
- Bolt the structure on top of the lifting unit.
- Once the crane is secured on the lifting unit, place the bearings in the closed position with respect to the segments of the mast sections.
- Implement the hydraulic connections to the lifting unit.



No.	Item	Description	No.	Item	Description
01	12490073	Mobile crane FRH-2500 for 20" x 20" mast	02	BOA-2032	Bolt 3/4"-10unc x 3-1/2" A325 galv.

Figure 123 - Crane FRH-2500

Operation

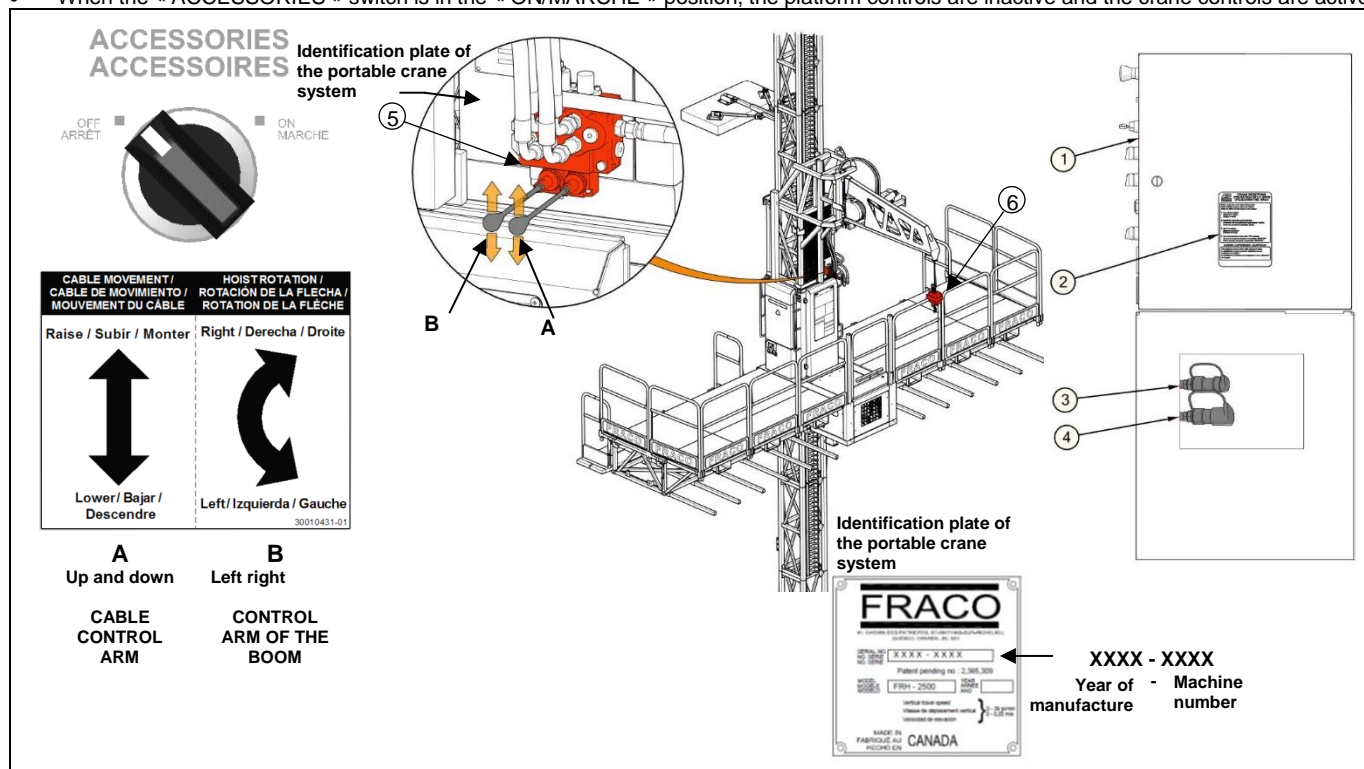
Important! Before use at the beginning of each shift, all points of the **DAILY INSPECTION GRID**, ON PAGE 157, must be checked, including a functional check. During operation, the operator must strictly follow all operating instructions.

Important! The operator of the portable crane must have the necessary skills and training to use the crane.

SEE OPERATION, USE OF THE LIFTING unit, ON PAGE 25

Start the lifting unit and set the « ACCESSORIES » switch to « ON/MARCHE ».

- When the « ACCESSORIES » switch is in the « OFF » position, the platform controls are active and the crane controls are inactive.
- When the « ACCESSORIES » switch is in the « ON/MARCHE » position, the platform controls are inactive and the crane controls are active.



Important! Be sure to read the operating instructions for the crane on the sticker under the crane's hydraulic couplings.

Important! After using the crane, turn the « ACCESSORIES » switch to the « OFF » position.

If you have any questions regarding the portable crane system, please consult the documentation or contact your FRACO representative.

No.	Item	Description	No.	Item	Description
01	32120020	ACT-8 Control Box	04	HYR-5146	Quick coupling NPT-¼-M portable crane
02	30050233	"Crane operation » sticker	05	32060012	Distributor of the FRH-2500 crane
03	HYR-5147	Quick coupling NPT-¼-F portable crane	06	28490283	Weight and lifting hook FRH-2500



Adjustment of the hydraulic pressure and installation or replacement of the steel cable must be carried out by a person holding a **valid Level 3 card**. This person must be familiar with the instructions for use, have sufficient experience and be aware of the risks involved in the use of the platform.

Valid for the Braden Gearmatic winch (Model: B64A05 119-01)

Câble Dia. 5/16 in 1,850 Psi 2,500 Lb Max			Câble Dia. 1/4 in 1,200 Psi 1,000 Lb Max		
Layer	Length	Capacity	Layer	Length	Capacity
1	33' 0"	2,500 lb	1	43' 0"	1,000 lb
2	79' 0"	2,500 lb	2	100' 0"	1,000 lb
3	129' 0"	2,500 lb	3	160' 0"	1,000 lb
4	183' 0"	2,500 lb	4	224' 0"	1,000 lb
5	241' 0"	2,500 lb	5	292' 0"	1,000 lb
			6	364' 0"	1,000 lb

Loading areas

Observe the load distribution.

∞SEE PERMITTED CONFIGURATIONS AND LOAD DISTRIBUTION, ON PAGE 19

Important! Workers must wear a safety harness properly secured to an attachment point before handling the guardrails.

∞SEE REGULATORY REGULATORY, ON PAGE 10

Remove the guardrails where necessary to allow the material to pass through and reposition the guardrails before using the platform.

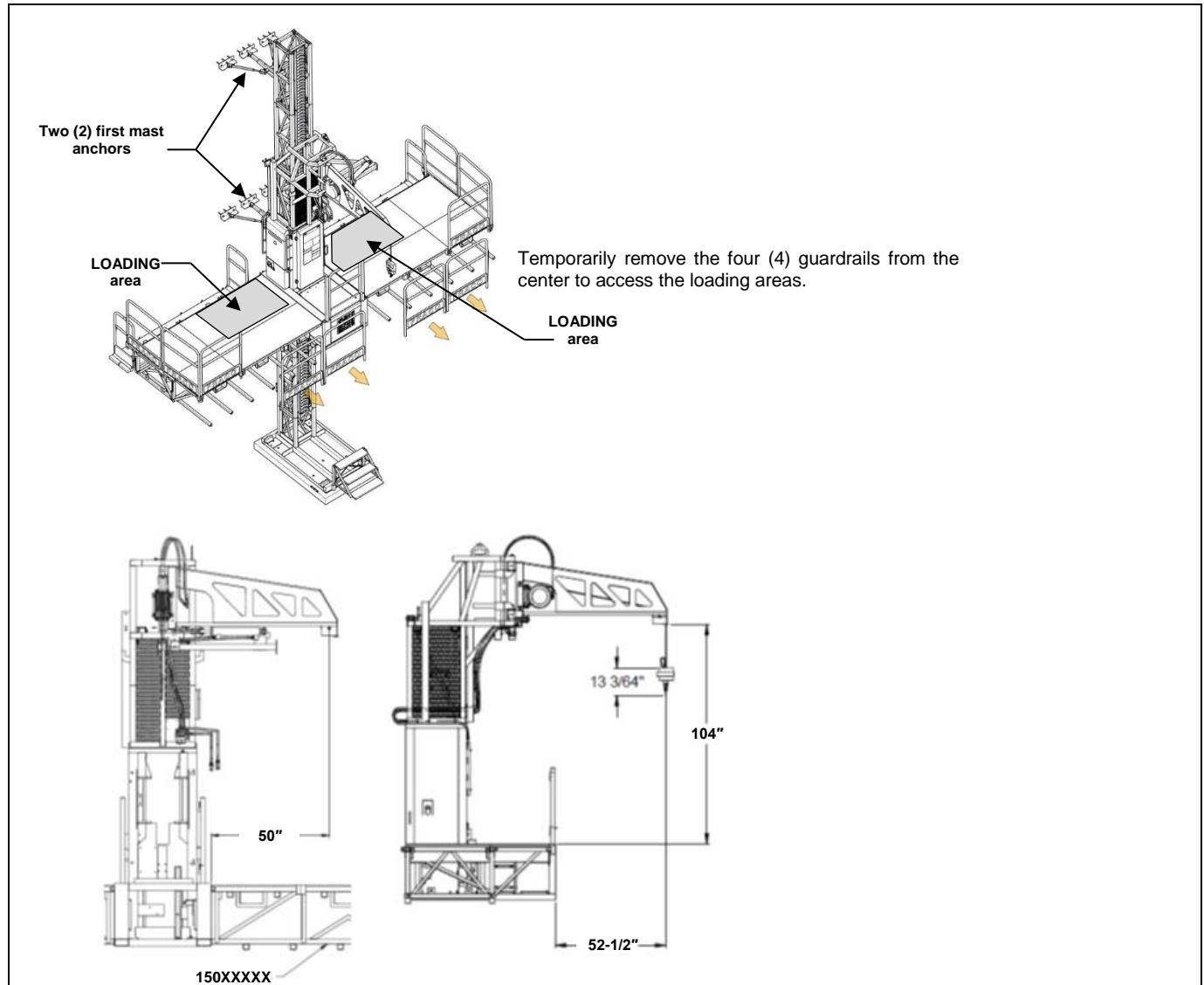


Figure 124 - Crane FRH-2500, loading area

Periodic maintenance

Refer to the « PERIODIC MAINTENANCE » section for applicable points, as well as to the inspection sheet in the model-specific and serial-specific service manual.

∞ SEE PERIODIC MAINTENANCE, ON PAGE 155

∞ SEE DAILY INSPECTION GRID, ON PAGE 157

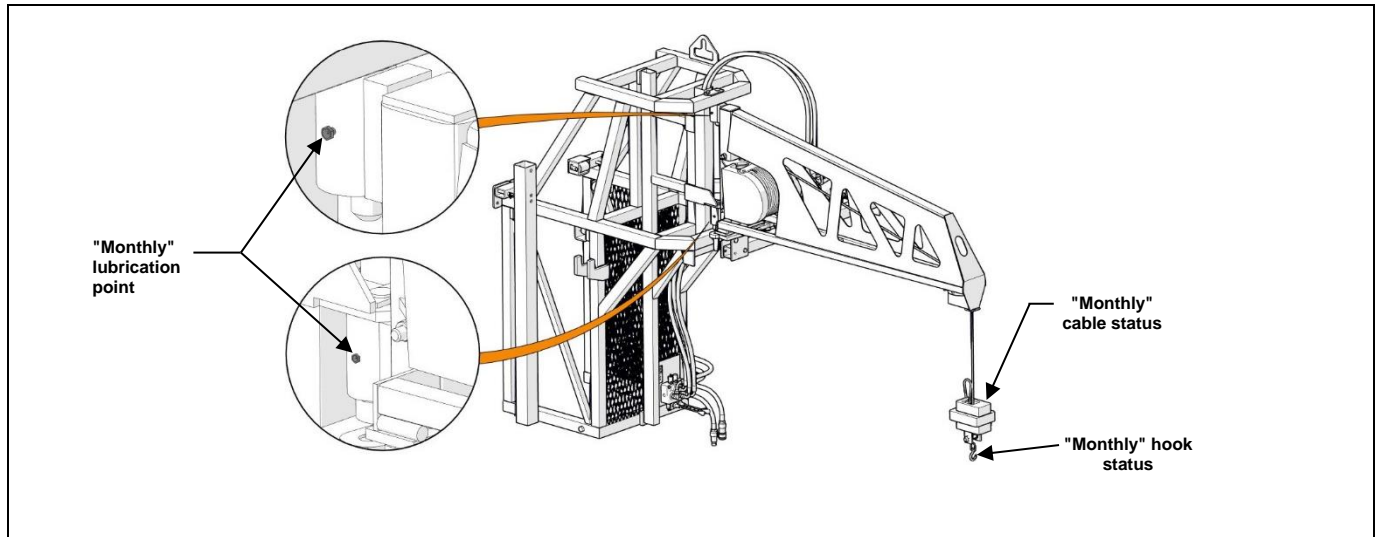


Figure 125 - Crane FRH-2500, maintenance

Crane FRH-4000

Important! Refer to section « WARNINGS » and « OPERATION, USE OF THE LIFTING unit » for general safety instructions and additional applicable warnings.

∞SEE WARNINGS, ON PAGE 7, AND OPERATION, USE OF THE LIFTING unit, ON PAGE 25.

Important! The maximum load is limited to 2 500 lb (1 134 kg) when the FRH-4000 crane is used on an ACT-8 platform. It is also important to respect the maximum punctual loads.

∞SEE PERMITTED CONFIGURATIONS AND LOAD DISTRIBUTION, ON PAGE 19

Warning:

- On the ground, establish a marked safety perimeter around the lifting area and prohibit access.
- Before using the portable crane, make sure people around are aware of the potential dangers.
- This equipment must not be used for lifting or moving personnel.
- Use the controls smoothly. Sudden movements may damage the winch.
- Never move or lift loads over a person.
- Do not leave loads suspended for long periods or unattended.
- Always remain at a safe distance from the load.
- Maintain a minimum of five (5) turns of cable on the drum at all times.
- The load must be lifted vertically.
- Allow the equipment to preheat before use, especially during cold temperatures.
- Wear appropriate clothing and keep hands away from moving parts when using the crane.
- Wear your safety harness, attached to a regulatory attachment point, if the guardrails are to be handled.
- ∞SEE REGULATORY ATTACHMENT POINTS, ON PAGE 10
- It is **forbidden** to use a crane on a freestanding base without a wall attach system.
- It is **forbidden** to position the lift unit above the highest mast anchor device when using a portable crane.

Installation

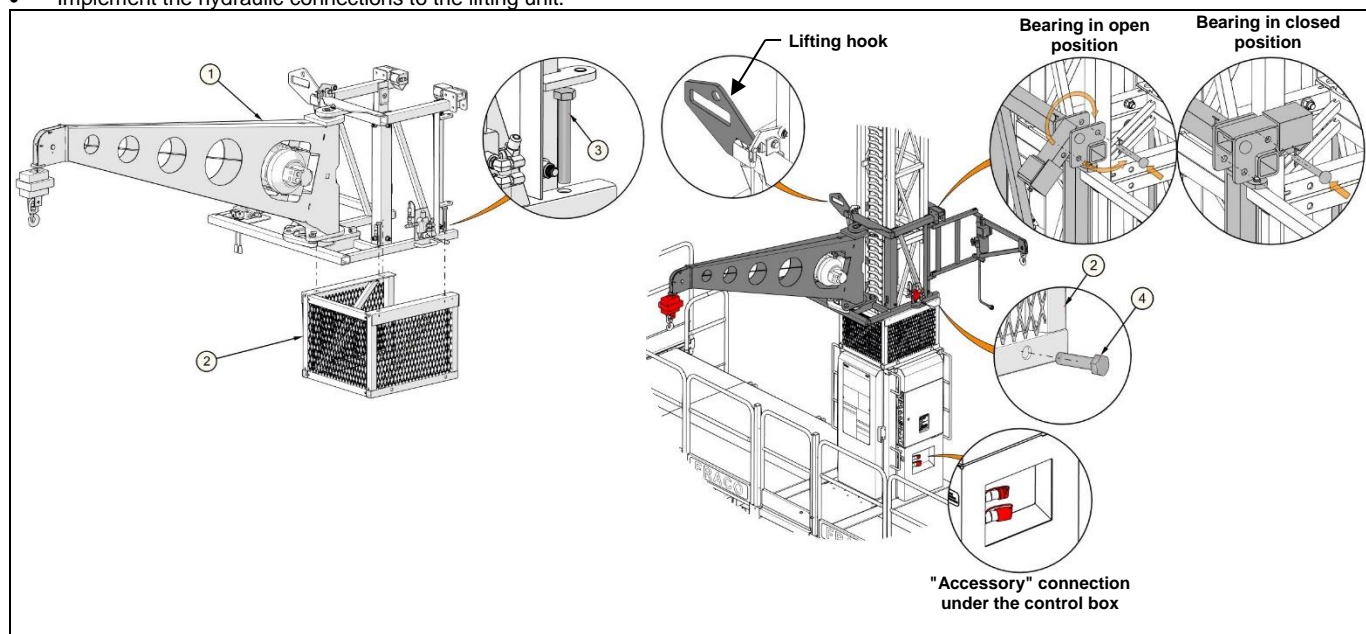
Important! If the platform is installed on a ground base, the first two (2) mast anchors must first be installed. If the platform is installed on a freestanding base, at least one (1) mast anchor must be installed.

Workers must wear a safety harness properly secured to an attachment point before handling the guardrails.

Important! It is impossible to use the crane and extension turnbuckles simultaneously. For platforms requiring more than 13'-4" extensions, be sure to use 10'-0" tapered extensions that do not require turnbuckles.

∞SEE PERMITTED CONFIGURATIONS AND LOAD DISTRIBUTION, ON PAGE 19

- Use the lifting hook provided for said purpose for lifting and moving the portable crane.
- Bolt the structure on top of the lifting unit.
- Once the crane is secured on the lifting unit, place the bearings in the closed position with respect to the segments of the mast sections.
- Implement the hydraulic connections to the lifting unit.



No.	Item	Description	No.	Item	Description
01	28494311	Mobile crane structure FRH-4000 for 20" x 20" mast	03	BOA-2030	Bolt 3/4"-10unc x 5-1/2" A325 galv. assembled
02	20491488	FRH-4000 adapter for ACT-8	04	BOA-2029	Bolt 3/4"-10unc x 3" A325 galv. assembled

Figure 126 - Crane FRH-4000

Operation

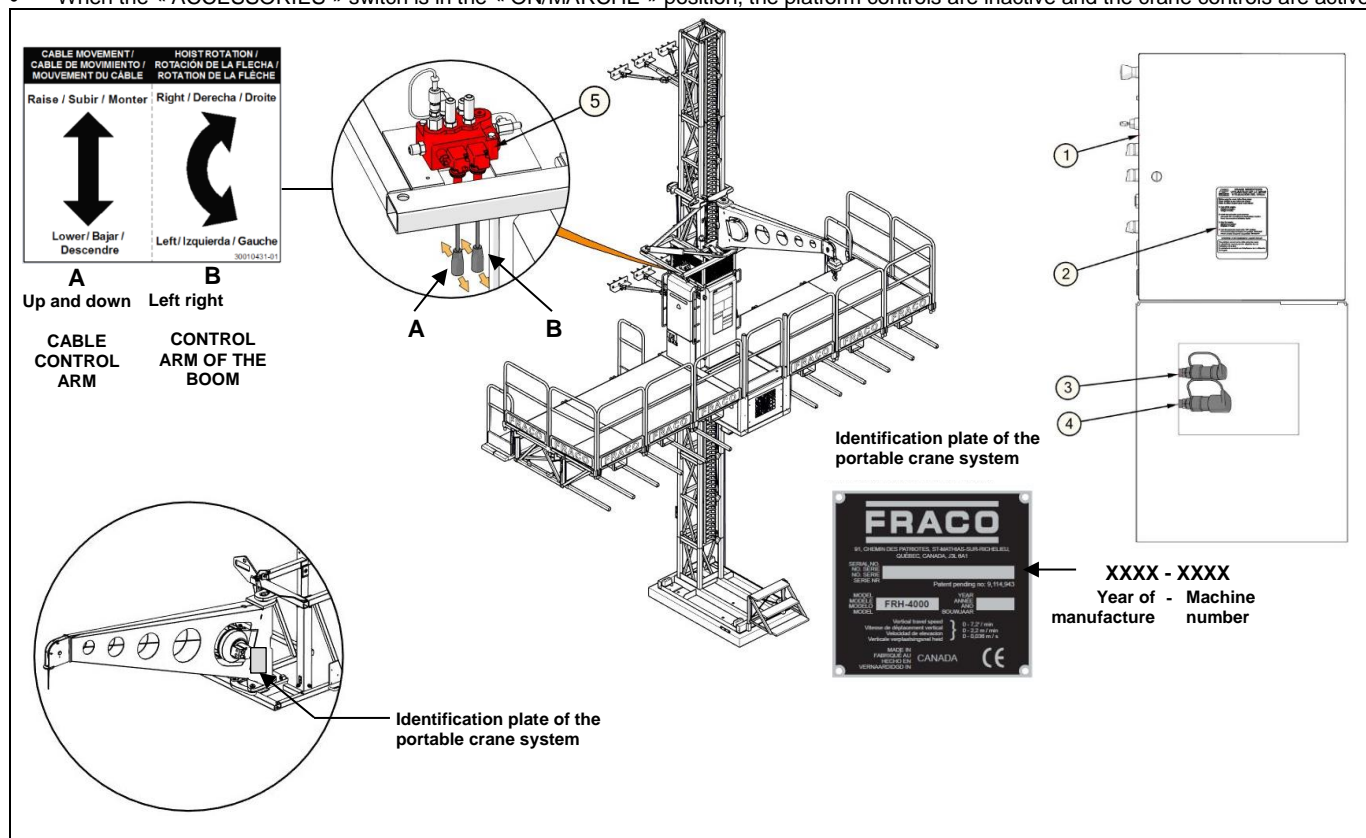
Important! Before use at the beginning of each shift, all points of the **DAILY INSPECTION GRID**, ON **PAGE 157**, must be checked, including a functional check. During operation, the operator must strictly follow all operating instructions.

Important! The operator of the portable crane must have the necessary skills and training to use the crane.

☞ **SEE OPERATION, USE OF THE LIFTING unit, ON PAGE 25**

Start the lifting unit and set the « ACCESSORIES » switch to « ON/MARCHE ».

- When the « ACCESSORIES » switch is in the « OFF » position, the platform controls are active and the crane controls are inactive.
- When the « ACCESSORIES » switch is in the « ON/MARCHE » position, the platform controls are inactive and the crane controls are active.



Important! Be sure to read the operating instructions for the crane on the sticker under the crane's hydraulic couplings.

Important! After using the crane, turn the « ACCESSORIES » switch to the « OFF » position.

If you have any questions regarding the portable crane system, please consult the documentation or contact your FRACO representative.

No.	Item	Description	No.	Item	Description
01	N/A	ACT-8 Control Box	04	HYR-5146	Quick coupling NPT-3/4-M portable crane
02	N/A	"Crane operation » sticker	05	32060056	FRH-4000 double sections valve assembly
03	HYR-5147	Quick coupling NPT-3/4-F portable crane			

Figure 127 - Crane FRH-4000, installation

Valid for the Braden Gearmatic winch (Model: B64A05 119-01)

Cable dia. 3/8 in 2,850 psi 4,000 lb Max			Cable dia. 5/16 in 1,850 psi 2,500 lb Max			Cable dia. 1/4 in 1,200 psi 1,000 lb Max		
Layer	Length	Capacity	Layer	Length	Capacity	Layer	Length	Capacity
1	26'-0"	4 000 lb	1	33'-0"	2 500 lb	1	43'-0"	1 000 lb
2	66'-0"	4 000 lb	2	79'-0"	2 500 lb	2	100'-0"	1 000 lb
3	109'-0"	4 000 lb	3	129'-0"	2 500 lb	3	160'-0"	1 000 lb
4	156'-0"	3 800 lb	4	183'-0"	2 500 lb	4	224'-0"	1 000 lb
			5	241'-0"	2,500 lb	5	292'-0"	1,000 lb
						6	364'-0"	1,000 lb

! Adjustment of the hydraulic pressure and installation or replacement of the steel cable must be carried out by a person holding a **valid Level 3 card**. This person must be familiar with the instructions for use, have sufficient experience and be aware of the risks involved in the use of the platform.

Loading areas

Observe the load distribution.

∞ SEE PERMITTED CONFIGURATIONS AND LOAD DISTRIBUTION, ON PAGE 19

Important! Workers must wear a safety harness properly secured to an attachment point before handling the guardrails.

∞ SEE REGULATORY ATTACHMENT POINTS, ON PAGE 10

Remove the guardrails where necessary to allow the material to pass through and reposition the guardrails before using the platform.

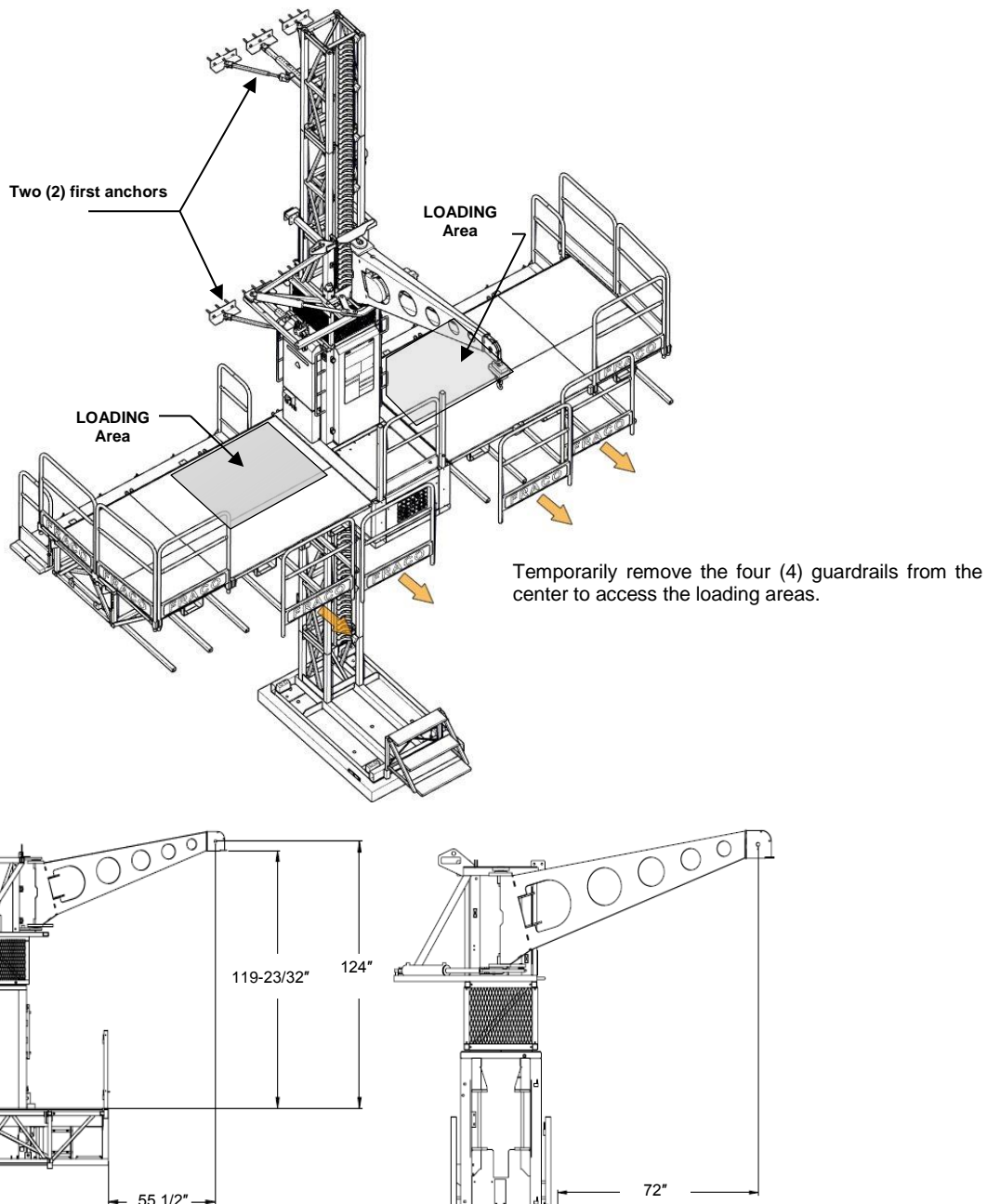


Figure 128 - Crane FRH-4000, loading area

Integrated self-erecting system

Observe the load distribution.

∞ SEE PERMITTED CONFIGURATIONS AND LOAD DISTRIBUTION, ON PAGE 19

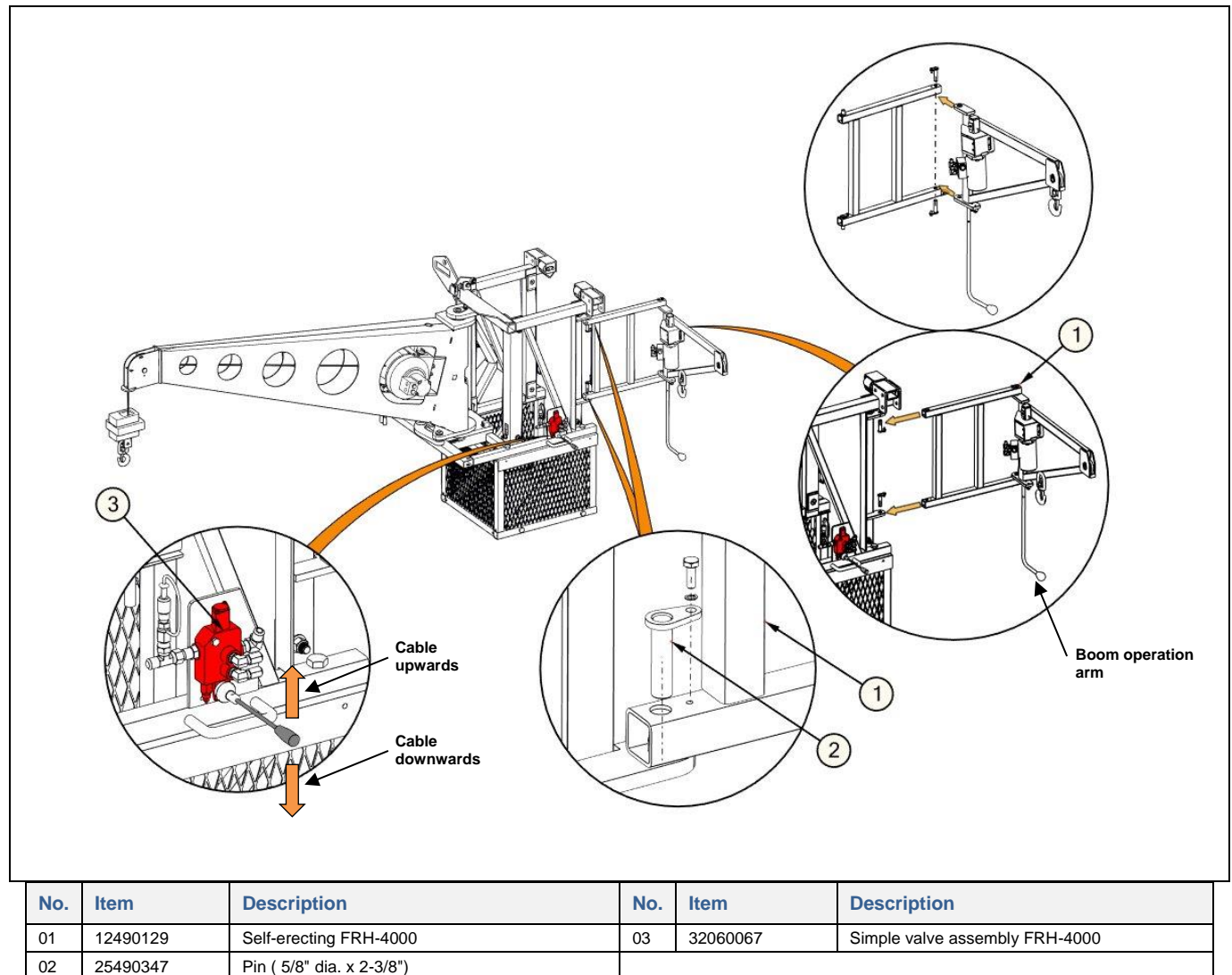


Figure 129 - Crane FRH-4000, integrated self-erecting system

Periodic maintenance

REFER TO THE PERIODIC MAINTENANCE section for applicable points, as well as to the inspection sheet in the model-specific and serial-specific service manual.

∞ SEE PERIODIC MAINTENANCE, ON PAGE 155, AND DAILY INSPECTION GRID, ON PAGE 157

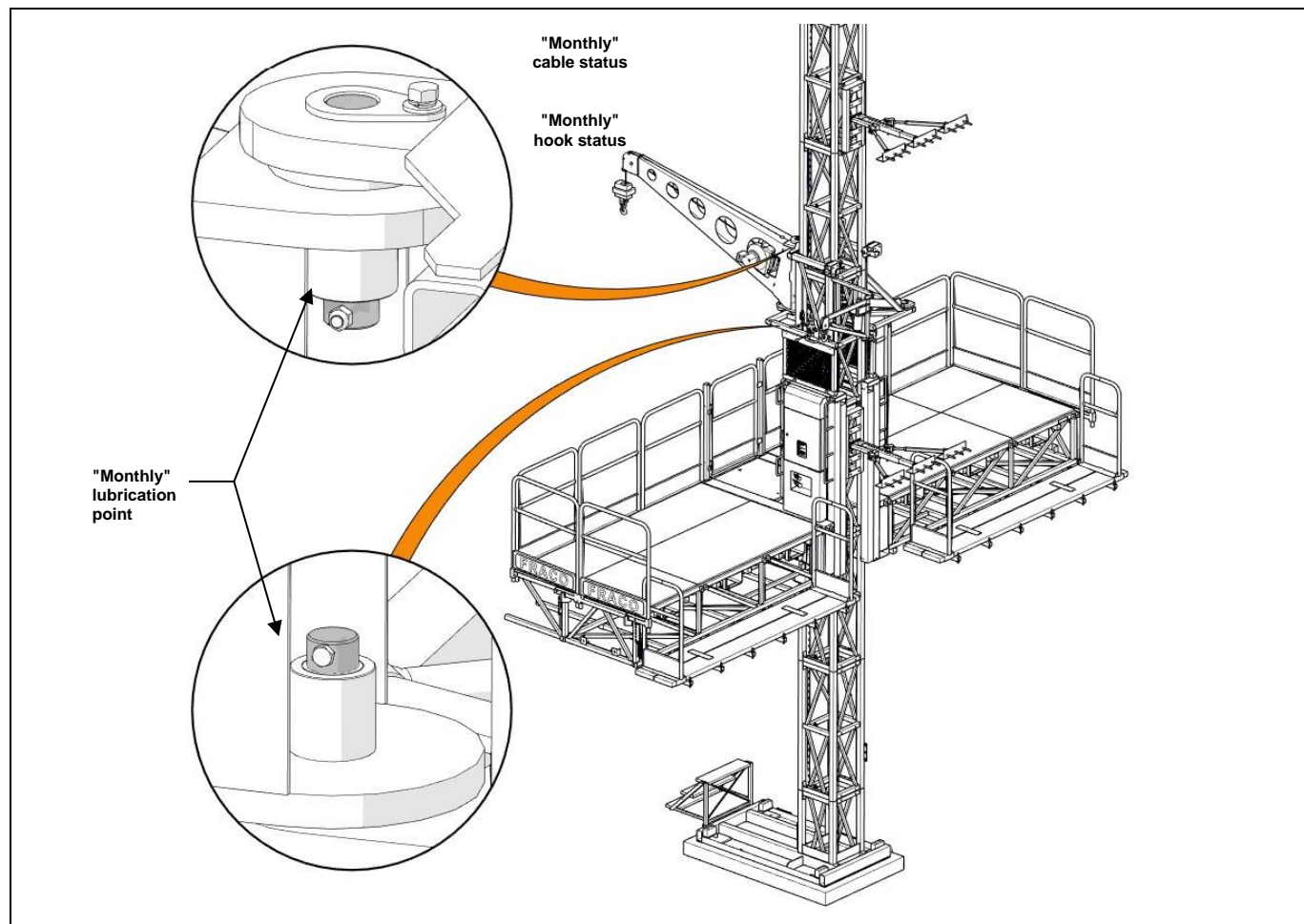


Figure 130 - Crane FRH-4000, maintenance

Freestanding mobile base

Important! These safety instructions apply specifically to this accessory and are in addition to any other safety instructions relating to the mounting, dismantling, displacement, operation and maintenance of the platform as described in the previous sections.

∞SEE WARNINGS, ON PAGE 7

The freestanding mobile base can only be used for single-mast configuration assemblies. It is **prohibited** to use mobile bases to move a two-mast configuration assembly. It is also **prohibited** to use mobile bases with the following accessories (winter shelters, rigid roof system, FRH-2500 portable crane system or FRH-4000 and monorail system).

Nominal power:

ACT-8 Diesel (35 hp/25 kW)

ACT-8 Gaz (24 hp/17,9 kW)

ACT-8 Elec. (20 hp/14,9 kW)

Assembly



Only a certified mechanic holding a valid Level 3 card may perform this assembly. This person must be familiar with the operating instructions, have sufficient experience and be aware of the risks involved in the use of the platform.

BASE WITH ENGINE

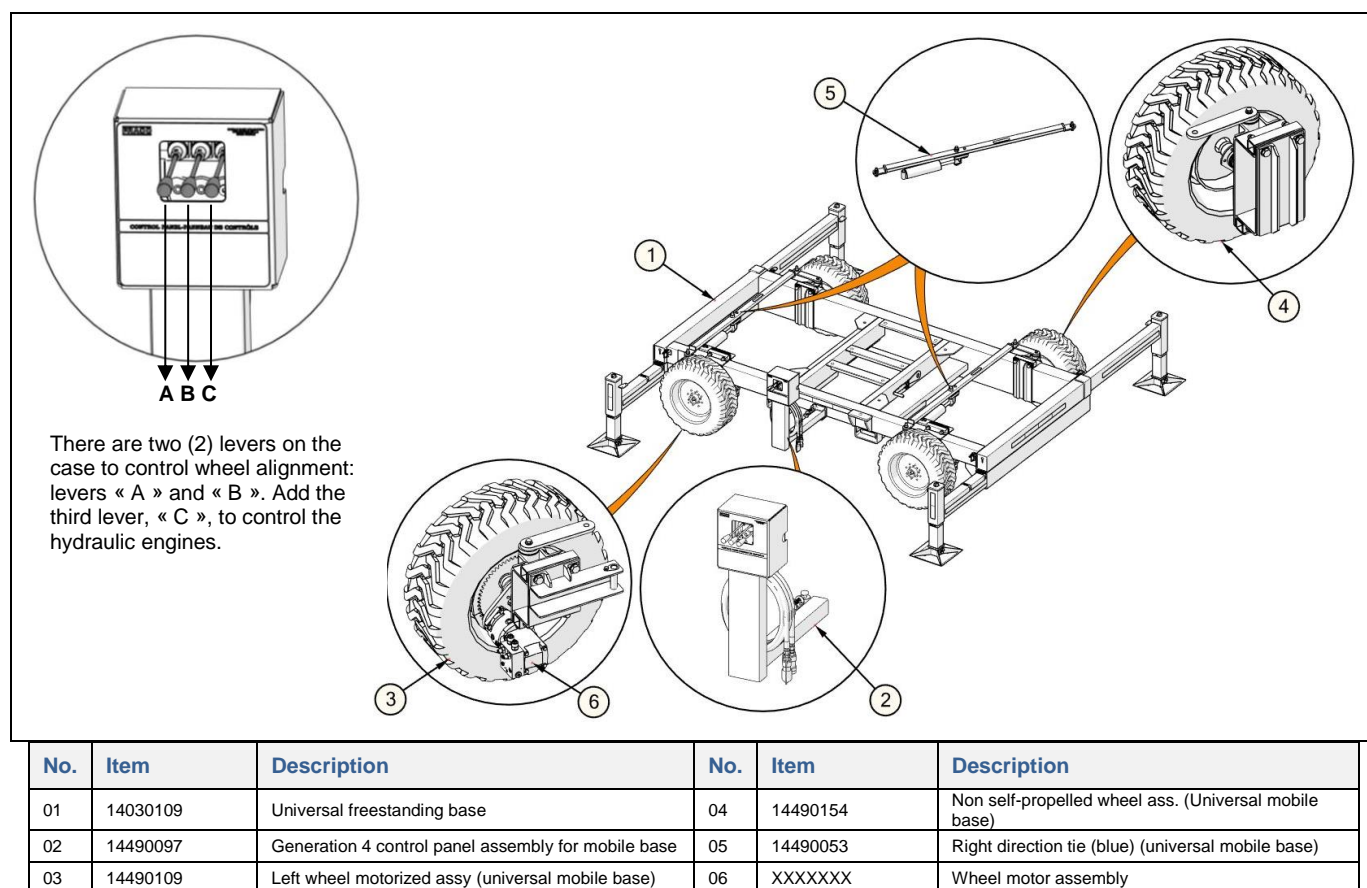
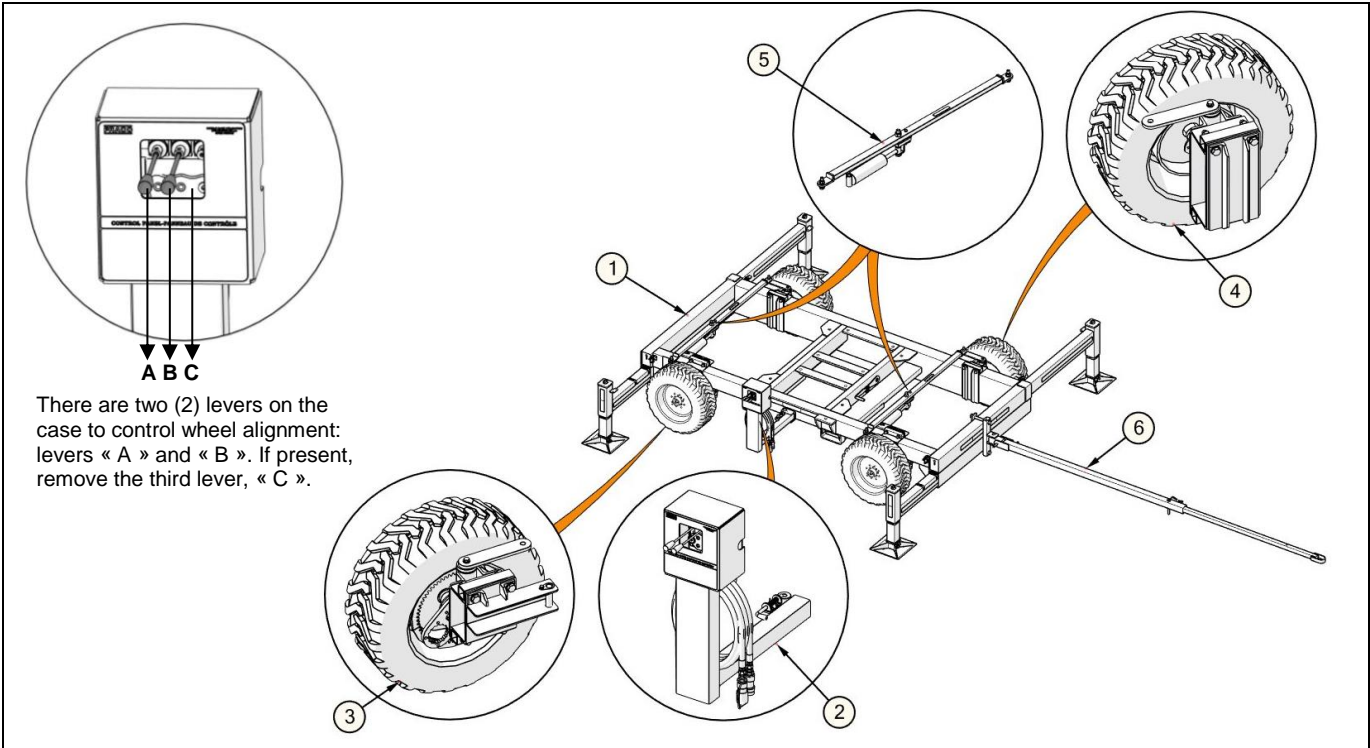


Figure 131 - Mobile base, with engine

MOBILE BASE BY TRACTION (WITHOUT ENGINE)

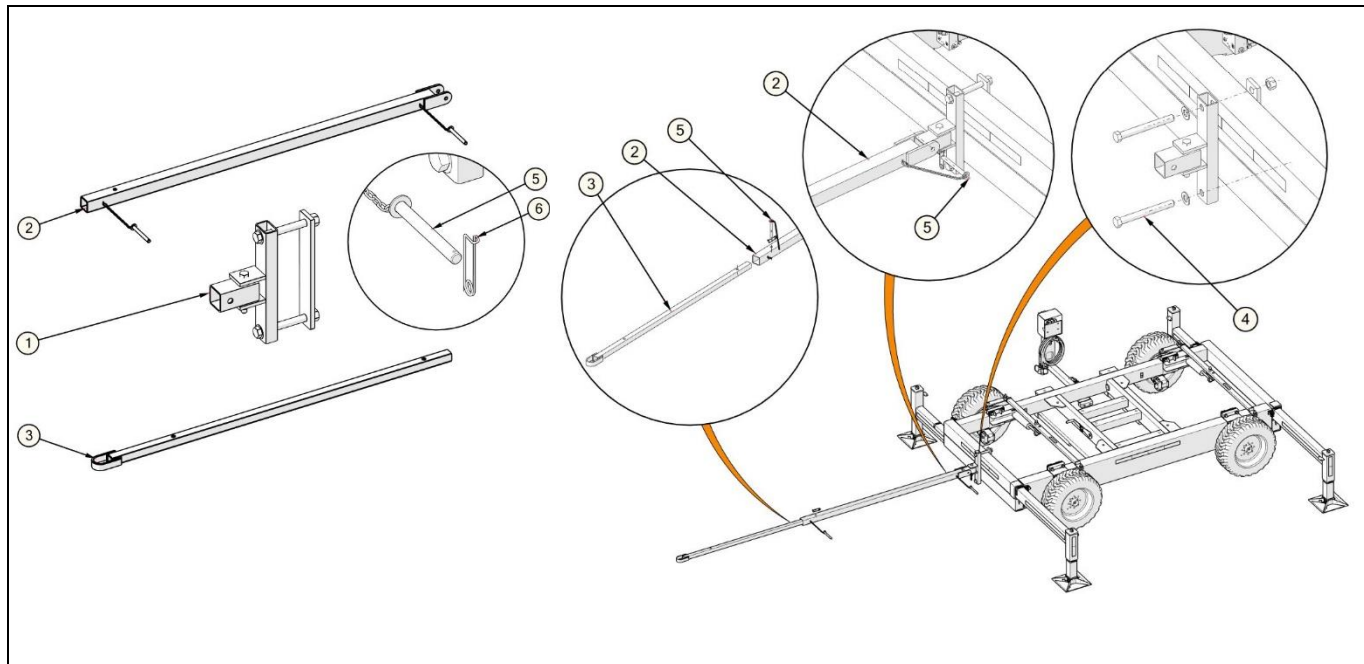


No.	Item	Description	No.	Item	Description
01	14030109	Universal freestanding base	04	14490154	Non self-propelled wheel ass. (Universal mobile base)
02	14490097	Generation 4 control panel assembly for mobile base	05	14490053	Right direction tie (blue) (universal mobile base)
03	14490109	Left wheel motorized assy (universal mobile base)	06	XXXXXXX	Steering arm assembly for traction

Figure 132 - Mobile base, traction

Installation of the traction arm (MOBILE BASE WITHOUT ENGINE)

Warning: The helm of the traction assembly must be properly secured to the moving equipment.



No.	Item	Description	No.	Item	Description
01	14490042	Universal mobile base directionnal handle tie	04	BOA-2085	Assembly, bolt 1"-8unc x 9" A325 galv. assembled
02	20491837	Universal mobile base rudder	05	28494344	Locking shaft Ø 3/4" x 7" with 11" chain
03	20490601	Directional arm with ring (2" x 2") for mobile base	06	GOU-5020	Safety pin 1/8" x 4-1/4"

Figure 133 - Mobile base, installation of traction arm

Installation of wheels

The freestanding base must be supported by its stabilizers when installing the mobile assembly. This mobile assembly model is only used with the universal freestanding base (14030109).

∞SEE TECHNICAL DATA SHEET OF THE UNIVERSAL FREESTANDING base, ON PAGE 149

Recommended tire pressure (Check the indications on the tire sidewall)	minimum 50 psi (3,45 bar)
	maximum 70 psi (4,82 bar)

Position and bolt the gear wheels on the REAR side of the base and the gearless wheels on the FRONT side (wall side).

Important! The movable axle pivot must be on top. Pay attention to the bolts' insertion direction.

Ensure there is an identical space between the top and bottom plates. The surface of the fastener must be properly supported on the sides of the tubes of the freestanding base.

GOOD ✓

BAD ✗

Gear wheel (14490109)

The hydraulic motor « wheel" is used with the motorized base only.

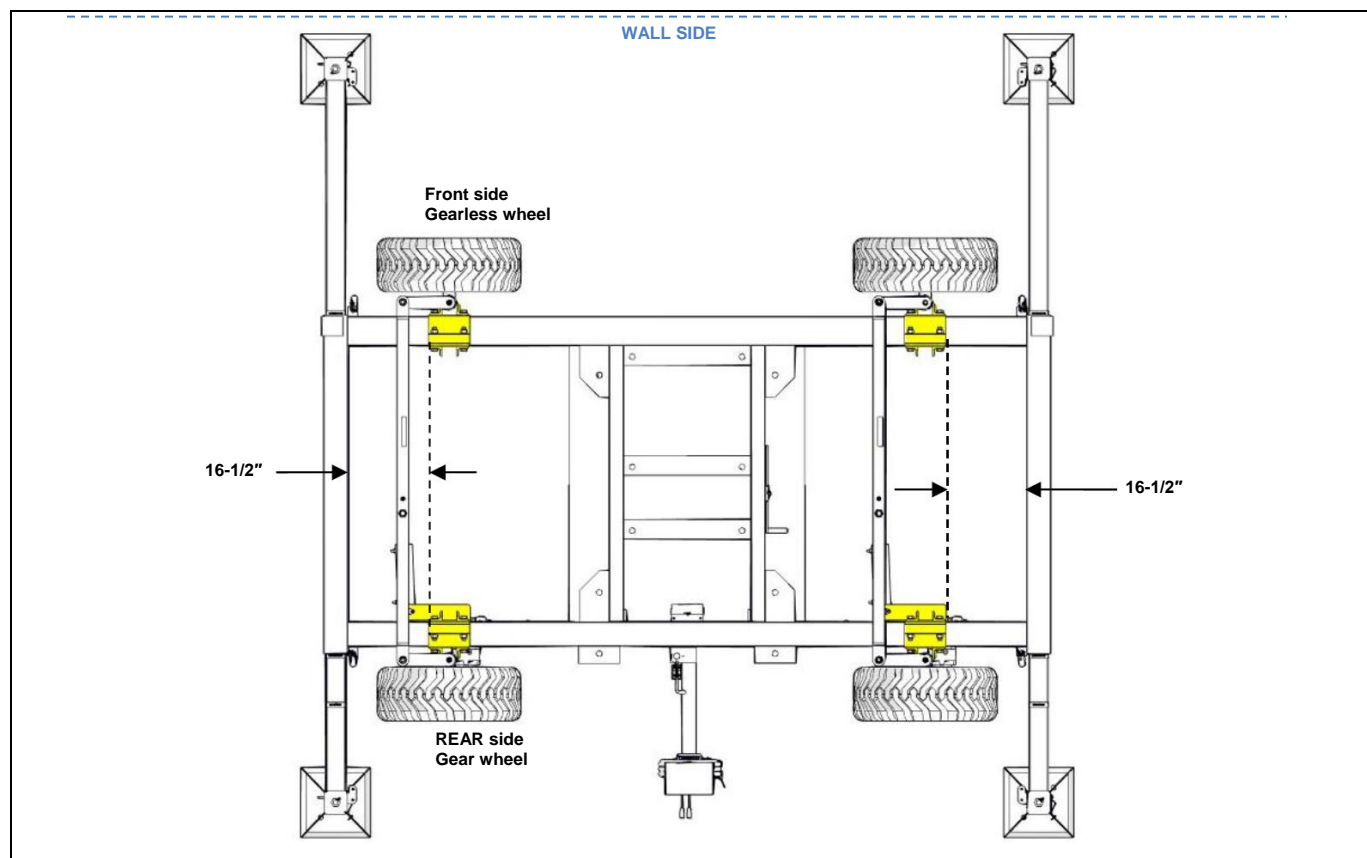
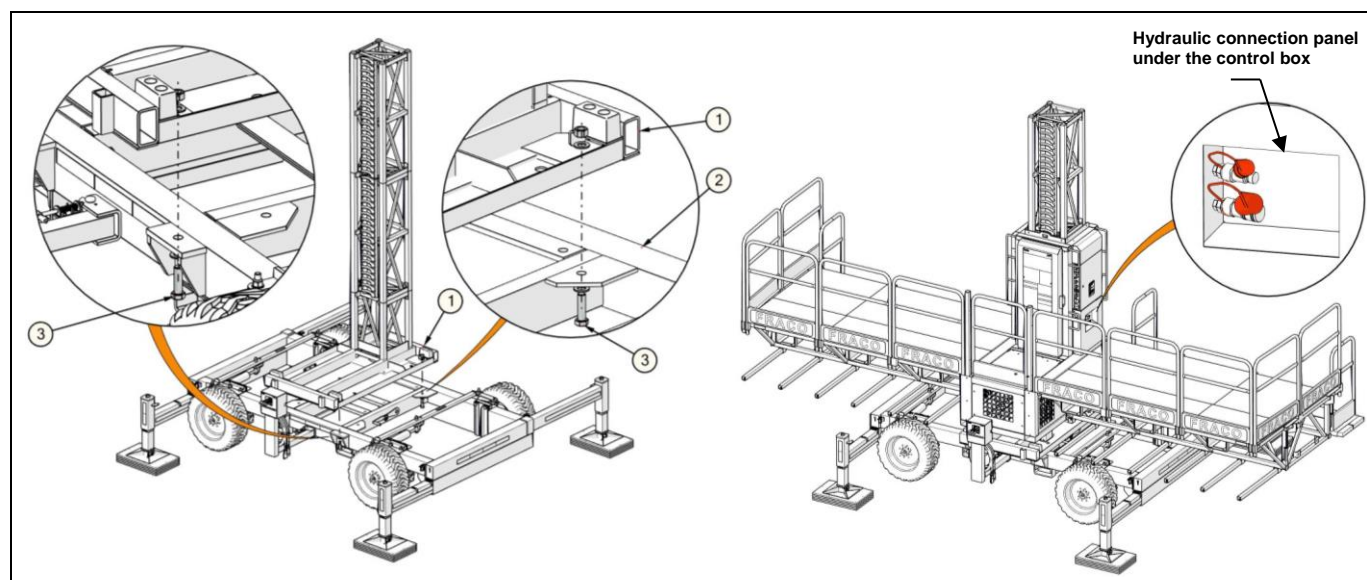
Gearless wheel (14490154)

No.	Item	Description	No.	Item	Description
01	28496368	Attachment for left axle (mobile base)	04	28496379	Attachment for right inner axle (mobile base)
02	28496380	Attachment for left inner axle (mobile base)	05	BOZ-7245	Bolt 3/4"-10unc x 4-1/2" gr5 zinc
03	28496391	Attachment for right axle (mobile base)	06	HYE-3597	Assembled hydraulic motor 400 cc - with brake + counterbalance valve

Figure 134 - Mobile base, installation of wheels

Installation of wheels (CONTINUED)

Check the installation spacing of the wheels with respect to the inside of the bracket support beams.

**Installation of the base and lifting unit**

No.	Item	Description	No.	Item	Description
01	14030019	Ground base for 20" x 20" mast 3'-6" x 6'-0"	03	BOA-2072	Bolt 1"-8unc x 3-1/2" A325 galv. assembled
02	14030109	Universal freestanding base			

Figure 135 - Mobile base, unit installation

Mobile base use



The operator must hold a **valid Level 1 card**. This person must be familiar with the instructions for use, have sufficient experience and be aware of the risks involved in the use of the platform.

Important! Before use at the beginning of each shift, all points of the « **DAILY INSPECTION GRID** » must be checked, including a functional check. During operation, the operator must strictly follow all operating instructions.

∞ SEE **DAILY INSPECTION GRID**, ON PAGE 157

Lower the platform to its lowest level (lifting unit in contact with the base).

Remove the mast sections and bridge and/or extension sections.

The movement configuration allows a maximum of 45'-0" (13,7 m) of mast sections and 20'-0" (6,1 m) of extension section on either side of the lifting unit.

Remove all loads on the platform before using the assembled mobile base.

Make sure all components are properly secured.

Check the clearance of all parts of the platform and base before starting any movement (e.g. balconies, electrical wiring, etc.).

Implement the hydraulic connections to the lifting unit.

Start the lifting unit and set the switch to « **ACCESSORIES** »

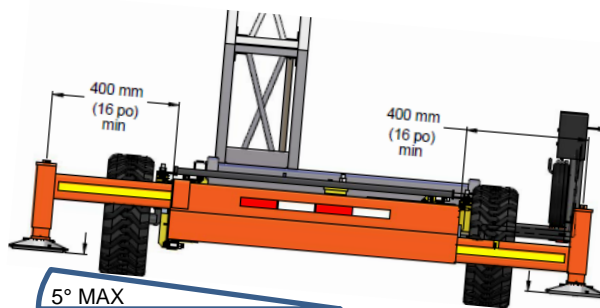
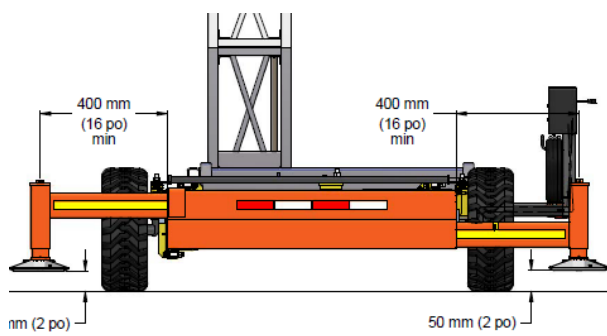
∞ SEE **OPERATION, USE OF THE LIFTING UNIT**, ON PAGE 25



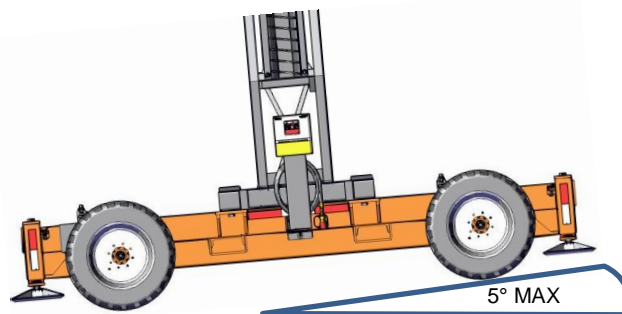
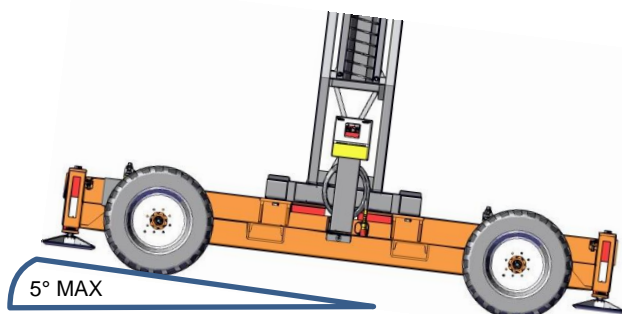
ATTENTION: When moving, the stabilizers on the movable base must be at least 16" (400 mm) extended and the pads must be at 2" (50 mm) from the ground.

Do not exceed a speed of 3,1 m/h (5 km/h) when moving the base.

Do not exceed an inclination of 5° (the ground must be relatively straight and without sudden level changes). A spirit level on the base indicates the inclination level.



Use the control box levers to steer the wheels when moving.



Control box

Lever No. 1 is used to orient the Left wheels, while Lever No. 2 is used to orient the Right wheels.

Lever No. 3 is used to actuate the hydraulic motor of the rear wheels. The lever is removed if not necessary.

The minimum turning radius is 7'-0" (2,1 m).

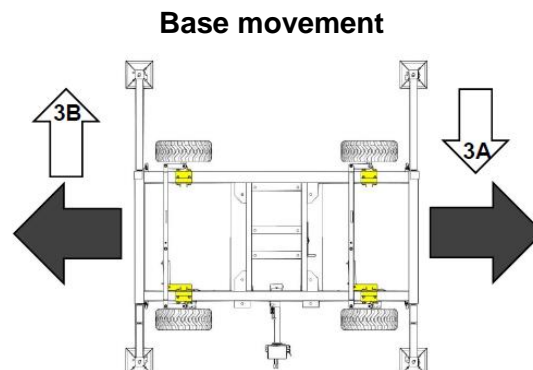
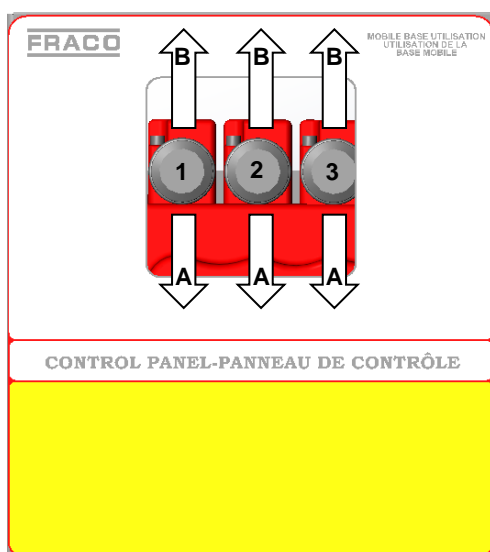
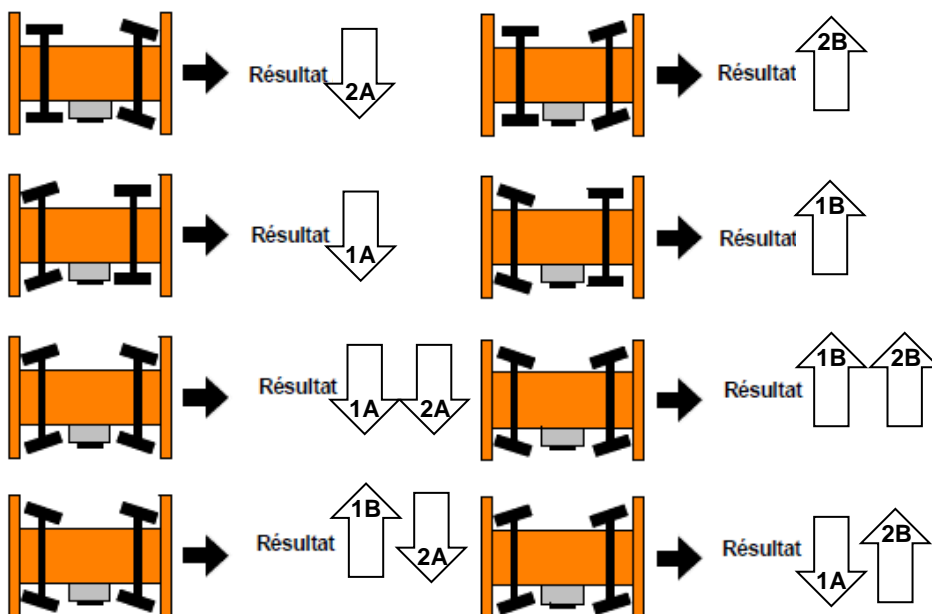


Figure 136 - Mobile base operating sticker (30060290)

Wheels pivots movement



Warning: When movement is complete and BEFORE using the platform, turn the selector switch back to the « OFF » position and disconnect the hydraulic connections to the lifting unit.

∞SEE OPERATION, USE OF THE LIFTING UNIT, ON PAGE 25



Index

Technical data sheets

Lifting unit technical data sheet

Table 11 - Technical data sheet, lifting unit

	Lifting unit (10030015-GAS), (10030048-CE_GAZ), (10030059-CE_Diesel), (10030060-CE_Électrique), (10030071-Électrique)	Imperial	Metric
A	Length (see Figure 137)	3'-3 3/8"	1 m
B	Width (see Figure 137)	5'-10 7/8"	1,8 m
C	Height (see Figure 137)	7'-2 5/8"	2,2 m
	Mass (gas/diesel lifting unit only)	2 610 lb	1 185 kg
	Mass (gas/diesel lifting unit + ground base + first mast section)	3 680 lb	1 670 kg
	Mass (electric lifting unit only)	2 785 lb	1 265 kg
	Mass (electric lifting unit + ground base + first mast section)	3 855 lb	1 750 kg
	Lifting capacity	8 000 lb	3 635 kg
	Travel speed (Gas/Diesel)	0 - 38 fpm	0 – 11,6 m/min
	Travel Speed (Electric)	0 – 34,8 fpm	0 – 10,7 m/min

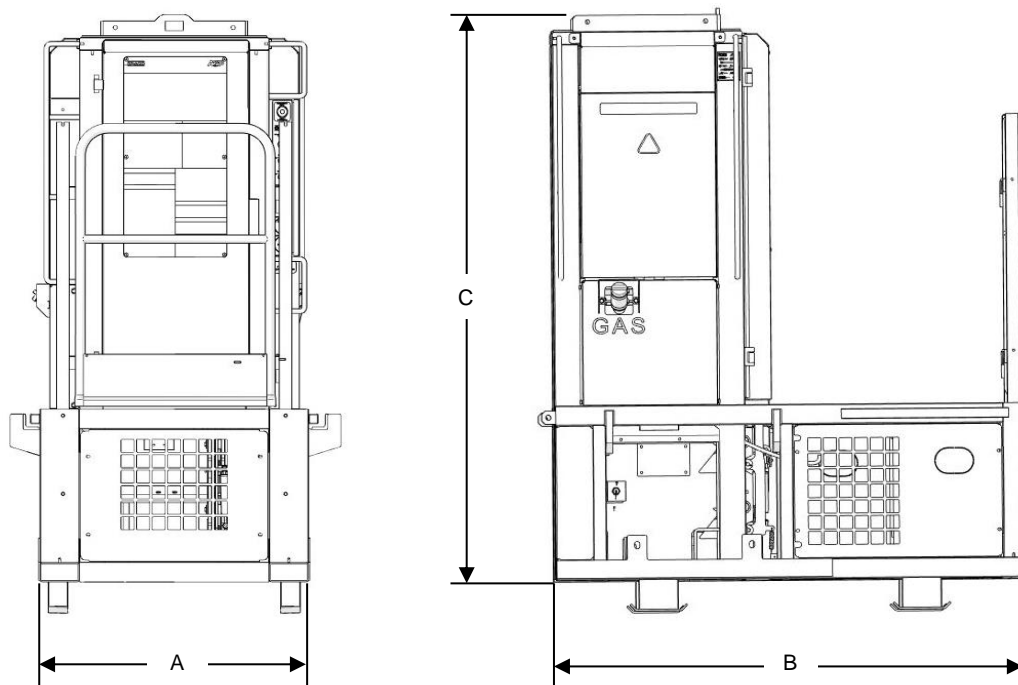


Figure 137 - Lifting unit dimensions

Technical data sheet of the ground base

Table 12 - Technical data sheet ground base

	Ground base (14030019)	Imperial	Metric
D	Length (see Figure 138)	3'-6"	1,1 m
E	Width (see Figure 138)	6'-1 7/8"	1,9 m
F	Height (see Figure 138)	2'-10 1/4"	869 mm
	Mass (Ground base only)	740 lb	335 kg
	Mass (gas/diesel lifting unit + ground base + first mast section)	3 680 lb	1 670 kg
	Mass (electric lifting unit + ground base + first mast section)	3 855 lb	1 750 kg

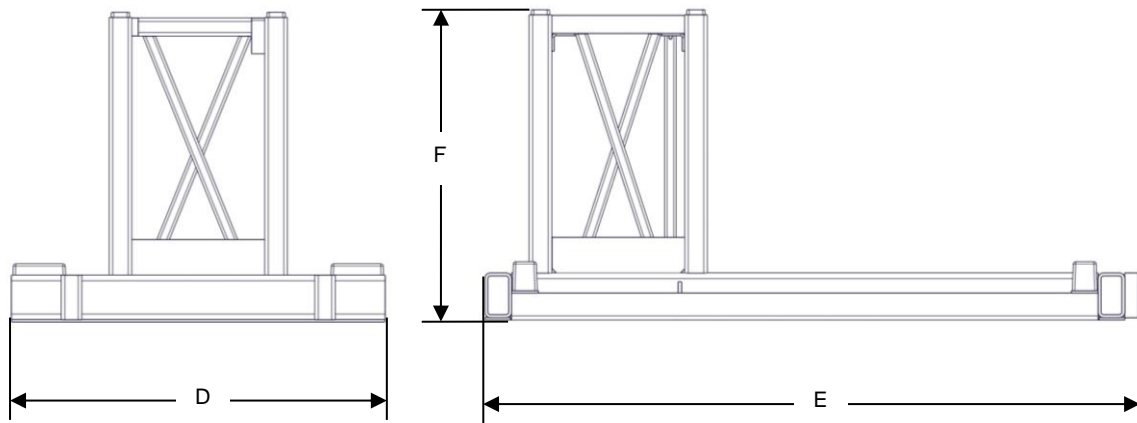


Figure 138 - Ground base dimensions

Technical data sheet of the universal freestanding base

Table 13 - Technical data sheet universal freestanding base

	Universal freestanding base (14030109)	Imperial	Metric
G	Length (see Figure 139)	12'-5"	3,78 m
H	Maximum width (see Figure 139)*	12'-10 3/4"	3,93 m
I	Minimum width (see Figure 139)*	8'-1"	2,46 m
J	Maximum height (see Figure 139)*	2'-5 5/8"	752 mm
	Mass (freestanding base only)	2 255 lb	1 025 kg
	Mass (gas/diesel lifting unit + ground base + freestanding base + first mast section)	5 935 lb	2 692 kg
	Mass (electric lifting unit + ground base + freestanding base + first mast section)	6 110 lb	2 771 kg
	<p>* The specified widths must take into account the limits imposed by the MINIMUM and MAXIMUM stickers mentioned in the notes below. Note: The permissible slope of the chassis is 0,5° MAXIMUM. Note: The « MINIMUM » stickers (see Figure 138) indicate the minimum opening of the outriggers. Note: The « MAXIMUM » stickers (see Figure 138) indicate the maximum opening of the outriggers.</p>		

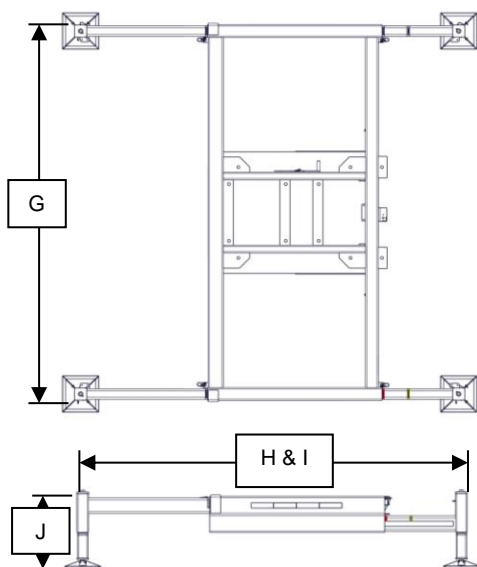


Figure 140 - Universal freestanding base dimensions

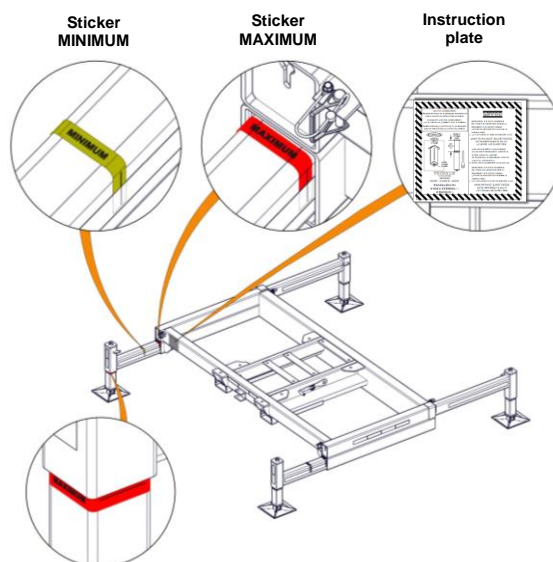


Figure 139 - Universal freestanding base stickers

Technical data sheet of the ACT-8 freestanding base

Note: This base can be found on older machines. Also, it must be assembled to a ground base (14030019)

Table 14 - Technical data sheet ACT-8 freestanding base

	ACT-8 freestanding base (14030020)	Imperial	Metric
K	Length (see Figure 141)	12'-4 1/2"	3,8 m
L	Maximum width (see Figure 141)*	12'-9 1/2"	3,9 m
M	Minimum width (see Figure 141)*	12'-1 5/8"	3,7 m
N	Minimum height (see Figure 141)	1'-3 3/4"	400 mm
P	Maximum height (see Figure 141)*	2'-1 5/8"	650 mm
	Mass (freestanding base only)	2 070 lb	940 kg
	Mass (gas/diesel lifting unit + freestanding base + first mast section)	5 010 lb	2 210 kg
	Mass (electric lifting unit + freestanding base + first mast section)	5 185 lb	2 352 kg
	* The specified widths must take into account the limits imposed by the MINIMUM and MAXIMUM stickers mentioned in the notes below. Note: The permissible slope of the chassis is 0,5° MAXIMUM. Note: There are no « MINIMUM » stickers (see Figure 140). Note: The « MAXIMUM » stickers (see Figure 140) indicate the maximum opening of the outriggers.		

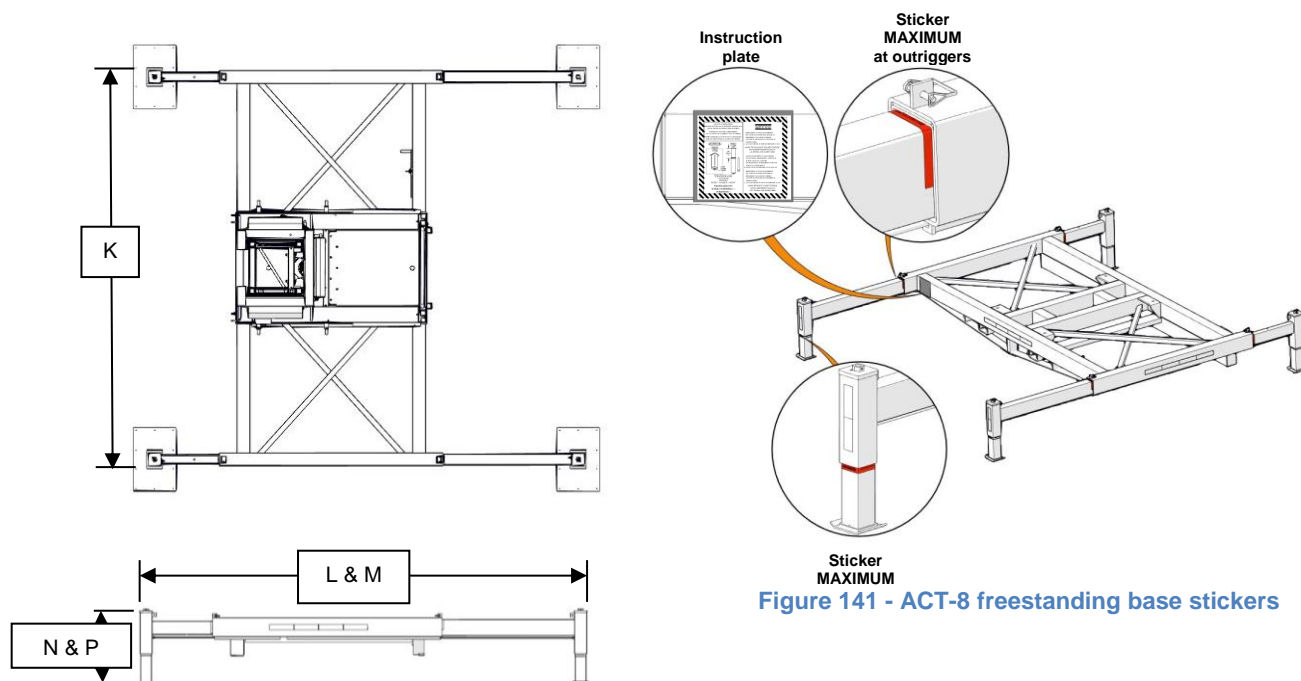


Figure 141 - ACT-8 freestanding base stickers

Figure 142 - ACT-8 freestanding base dimensions

Mast sections technical data sheet

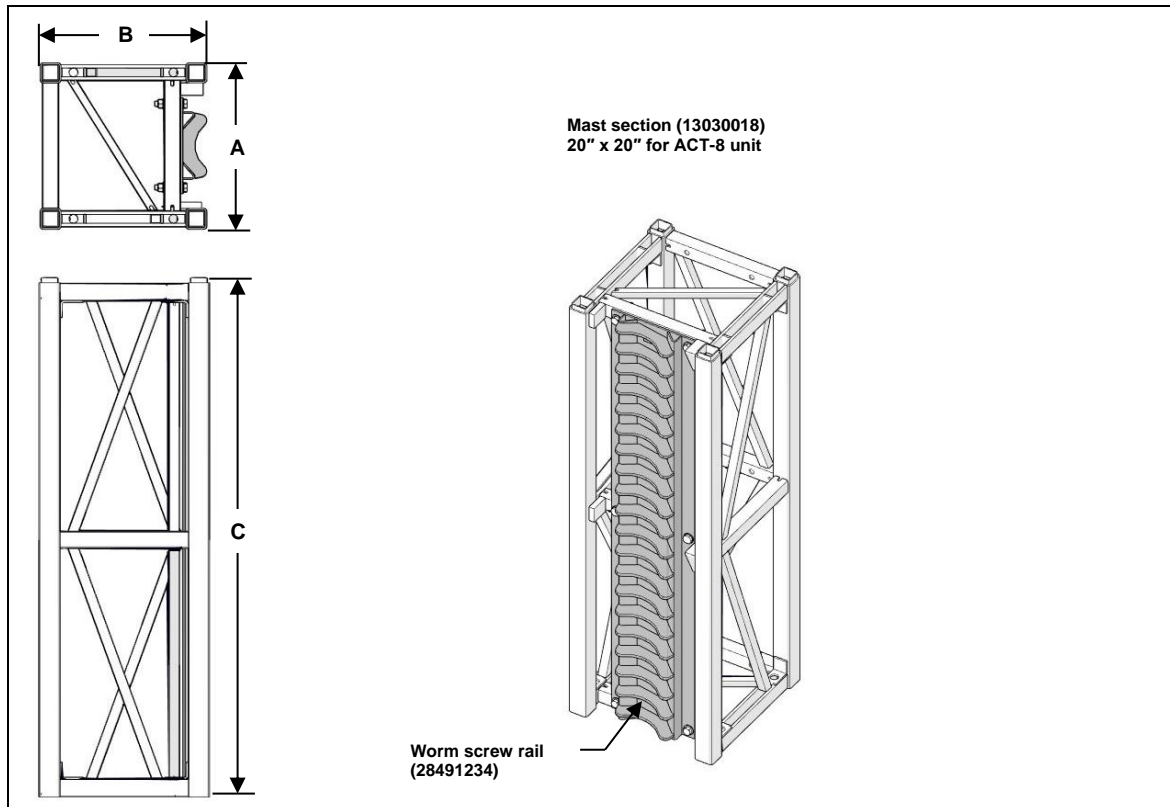


Figure 143 - ACT-8 mast section

Table 15 - Technical data sheet ACT-8 mast section

	Mast section with bars (13030018)	Imperial	Metric
A	Length (see Figure 143)	20"	0,50 m
B	Width (see Figure 143)	20"	0,50 m
C	Height (see Figure 143)	5'-0"	1,5 m
	Assembly tightening torque	265 lb-ft	360 Nm
	Weight	330 lb	150 kg
	<p>Note: The maximum working height of a mast assembled on a freestanding base (without anchors) is 45'-0" (13,7 m).</p> <p>Note: Use a forklift truck, crane truck or self-erecting system to install the masts.</p> <p>Note: When installing the masts, ensure the rails are all oriented in the proper direction.</p> <p>Do not exceed the following vertical tolerances:</p> <p>1/2" (13 mm) for a 10'-0" assembled mast (3 m)</p> <p>3/4" (19 mm) for a 20'-0" assembled mast (6,1 m)</p> <p>1" (25 mm) for a mast assembled to the maximum permitted height</p>		

Distance between the masts

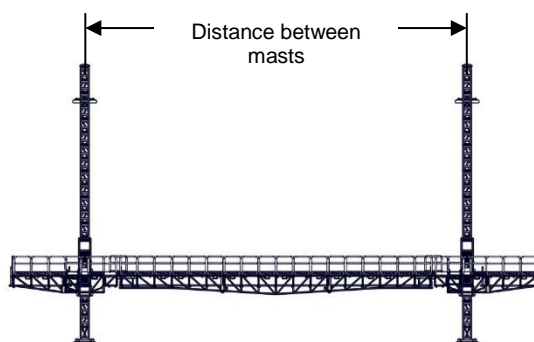


Table 16 - Distance between the masts

Configuration	Min distance	Standard distance	Max distance
20'-0" (6,1 m) bridge section	24'-5" (7,44 m)	24'-8" (7,51 m)	24'-11" (7,59 m)
Bridge section 20'-0" (6,1 m) + one (1) 2'6" (0,75 m) extension section	26'-11" (8,20 m)	27'-2" (8,28 m)	27'-5" (8,36 m)
Bridge section 20'-0" (6,1 m) + two (2) 2'6" (0,75 m) extension sections or one (1) 5'0" (1,5 m) extension section	29'-5" (8,97 m)	29'-8" (9,04 m)	29'-11" (9,12 m)
Bridge section 20'-0" (6,1 m) + one (1) 2'6" (0,75 m) extension section and one (1) 5'0" (1,5 m) extension section	31'-11" (9,73 m)	32'-2" (9,80 m)	32'-5" (9,88 m)
Bridge section 20'-0" (6,1 m) + two (2) 5'0" (1,50 m) extension sections	34'-5" (10,49 m)	34'-8" (10,57 m)	34'-11" (10,64 m)
40'-0" (12,2 m) bridge section	44'-4" (13,51 m)	44'-10" (13,67 m)	45'-4" (13,82 m)
Bridge section 40'-0" (12,2 m) + one (1) 2'6" (0,75 m) extension section	46'-10" (14,27 m)	47'-4" (14,43 m)	47'-10" (14,58 m)
Bridge section 40'-0" (12,2 m) + two (2) 2'6" (0,75 m) extension sections or one (1) 5'0" (1,5 m) extension section	49'-4" (15,04 m)	49'-10" (15,19 m)	50'-4" (15,34 m)
Bridge section 40'-0" (12,2 m) + one (1) 2'6" (0,75 m) extension section and one (1) 5'0" (1,5 m) extension section	51'-10" (15,80 m)	52'-4" (15,95 m)	52'-10" (16,10 m)
Bridge section 40'-0" (12,2 m) + two (2) 5'0" (1,50 m) extension sections	54'-4" (16,56 m)	54'-10" (16,71 m)	55'-4" (16,87 m)
60'-0" (18,3 m) bridge section	64'-4" (19,61 m)	64'-10" (19,76 m)	65'-4" (19,91 m)
Bridge section 60'-0" (18,3 m) + one (1) 2'6" (0,75 m) extension section	66'-10" (20,37 m)	67'-4" (20,52 m)	67'-10" (20,68 m)
Bridge section 60'-0" (18,3 m) + two (2) 2'6" (0,75 m) extension sections or one (1) 5'0" (1,5 m) extension section	69'-4" (21,13 m)	69'-10" (21,29 m)	70'-4" (21,44 m)
Bridge section 60'-0" (18,3 m) + one (1) 2'6" (0,75 m) extension section and one (1) 5'0" (1,5 m) extension section	71'-10" (21,89 m)	72'-4" (22,05 m)	72'-10" (22,20 m)
Bridge section 60'-0" (18,3 m) + two (2) 5'0" (1,50 m) extension sections	74'-4" (22,66 m)	74'-10" (22,81 m)	75'-4" (22,96 m)

Extensions and bridges (non-modular)

Extension section (non-modular)					
Code	Description	Weight	Length	Width	Height
15020019	28" x 43" (0,7 m x 1,1 m)	300 lb (135 kg)	30" (762 mm)	43" (1,1 m)	26,5" (673 mm)
15020020	40" x 43" (1 m x 1,1 m)	275 lb (125 kg)	40" (1 m)	43" (1,1 m)	26,5" (673 mm)
15020031	80" x 43" (2 m x 1,1 m)	450 lb (205 kg)	80" (2 m)	43" (1,1 m)	26,5" (673 mm)
15020042	120" x 43" (3 m x 1,1 m)	640 lb (290 kg)	120" (3 m)	43" (1,1 m)	26,5" (673 mm)
15020086	Tapered 120" x 43" (3 m x 1,1 m)	1 000 lb (455 kg)	120" (3 m)	43" (1,1 m)	24,5" / 40" (622 mm / 1 m)
Bridge section (non-modular)					
Code	Description	Weight	Length	Width	Height
15020053 (former code)	180" x 43" (4,6 m x 1,1 m) (hybrid)	1 200 lb (545 kg)	180" (4,6 m)	43" (1,1 m)	30" / 38" (762 mm / 953 mm)
15020064 (former code)	240" x 43" (6,1 m x 1,1 m) (hybrid)	1 675 lb (760 kg)	240" (6,1 m)	43" (1,1 m)	30" / 38" (762 mm / 953 mm)
15020097	180" x 43" (4,6 m x 1,1 m) (hybrid)	1 200 lb (545 kg)	180" (4,6 m)	43" (1,1 m)	30" / 38" (762 mm / 953 mm)
15020109	240" x 43" (6,1 m x 1,1 m) (hybrid)	1 675 lb (760 kg)	240" (6,1 m)	43" (1,1 m)	30" / 38" (762 mm / 953 mm)
15020075	Central 240" x 43" (6,1 m x 1,1 m)	1 355 lb (615 kg)	240" (6,1 m)	43" (1,1 m)	38" / 43" (953 mm / 1,1 m)

Extensions and bridges (modular)

Extension section (modular)					
Code	Description	Weight t	Length	Width	Height
15030087 / 15030010 (former codes)	28" x 70" (0,7 m x 1,8 m)	310 lb (140 kg)	28" (762 mm)	70" (1,8 m)	26,5" (673 mm)
15030098 / 15030021 (former codes)	40" x 70" (1 m x 1,8 m)	286 lb (130 kg)	40" (1 m)	70" (1,8 m)	26,5" (673 mm)
15030100 / 15030032 (former codes)	80" x 70" (2 m x 1,8 m)	595 lb (270 kg)	80" (2 m)	70" (1,8 m)	26,5" (673 mm)
15030111 / 15030043 (former codes)	120" x 70" (3 m x 1,8 m)	825 lb (375 kg)	120" (3 m)	70" (1,8 m)	26,5" (673 mm)
15060013 / 15060024 (former codes)	Tapered 120" x 70" (3 m x 1,8 m)	1210 lb (550 kg)	120" (3 m)	70" (1,8 m)	24,5" / 39,5" (622 mm / 1 m)
15090016 / 15090094	28" x 70" (0,7 m x 1,8 m)	310 lb (140 kg)	28" (762 mm)	70" (1,8 m)	26,5" (673 mm)
15090027 / 15090106	40" x 70" (1 m x 1,8 m)	286 lb (130 kg)	40" (1 m)	70" (1,8 m)	26,5" (673 mm)
15090038 / 15090117	60" x 70" (1,5 m x 1,8 m)	530 lb (240 kg)	60" (1,5 m)	70" (1,8 m)	26,5" (673 mm)
15090049 / 15090128	80" x 70" (2 m x 1,8 m)	630 lb (285 kg)	80" (2 m)	70" (1,8 m)	26,5" (673 mm)
15090050 / 15090139	120" x 70" (3 m x 1,8 m)	760 lb (345 kg)	120" (3 m)	70" (1,8 m)	26,5" (673 mm)
15090184 / 15090195	Tapered 120" x 70" (3 m x 1,8 m) (Universal)	1 150 lb (520 kg)	120" (3 m)	70" (1,8 m)	26,5" (673 mm)
15060013 / 15060024	Tapered 120" x 70" (3 m x 1,8 m)	1 210 lb (550 kg)	120" (3 m)	70" (1,8 m)	26,5" (673 mm)
20490971	Tapered extension section adapter	550 lb (250 kg)	6.75" (170 mm)	43" (1,1 m)	40" (1 m)
Bridge section (modular)					
Code	Description	Weight t	Length	Width	Height
15030223 / 15030234 (former codes)	180" x 70" (4,6 m x 1,8 m) (Hybrid-universal)	1 540 lb (700 kg)	180" (4,6 m)	70" (1,8 m)	30" / 37,5" (762 mm / 953 mm)
15030201 / 15030212 (former codes)	240" x 70" (6,1 m x 1,8 m) (Hybrid-universal)	1 880 lb (855 kg)	240" (6,1 m)	70" (1,8 m)	30" / 37,5" (762 mm / 953 mm)
15030166 / 15030177 (former codes)	180" x 70" (4,6 m x 1,8 m) (hybrid)	1 290 lb (585 kg)	180" (4,6 m)	70" (1,8 m)	30" / 37,5" (762 mm / 953 mm)
15030144 / 15030155 (former codes)	240" x 70" (6,1 m x 1,8 m) (hybrid)	1 700 lb (770 kg)	240" (6,1 m)	70" (1,8 m)	30" / 37,5" (762 mm / 953 mm)
15030054 / 15030133	180" x 70" (4,6 m x 1,8 m)	1 500 lb (680 kg)	180" (4,6 m)	70" (1,8 m)	30" / 37,5" (762 mm / 953 mm)
15090205 / 15090206	240" x 70" (6,1 m x 1,8 m)	1 690 lb (765 kg)	240" (6,1 m)	70" (1,8 m)	30" / 37,5" (762 mm / 953 mm)
15030076	Central 240" x 70" (6,1 m x 1,8 m)	1 650 lb (750 kg)	240" (6,1 m)	70" (1,8 m)	37,5" / 43" (953 mm / 1,1 m)
15090229 / 15090230	180" x 70" (4,6 m x 1,8 m) (Hybrid-universal)	1 540 lb (700 kg)	180" (4,6 m)	70" (1,8 m)	30" / 37,5" (762 mm / 953 mm)
15090207 / 15090218	240" x 70" (6,1 m x 1,8 m) (Hybrid-universal)	1 880 lb (855 kg)	240" (6,1 m)	70" (1,8 m)	30" / 37,5" (762 mm / 953 mm)
15090061 / 15090140	180" x 70" (4,6 m x 1,8 m) (hybrid)	1 290 lb (585 kg)	180" (4,6 m)	70" (1,8 m)	30" / 37,5" (762 mm / 953 mm)
15090072 / 15090151	240" x 70" (6,1 m x 1,8 m) (hybrid)	1 885 lb (855 kg)	240" (6,1 m)	70" (1,8 m)	30" / 37,5" (762 mm / 953 mm)

Periodic maintenance

IMPORTANT NOTE

The frequency and extent of periodic testing and evaluations depends on national regulations, manufacturer specifications, operating conditions and frequency of use. Normally, it is not necessary to dismantle parts during periodic reviews, unless a doubt exists as to reliability and safety. Removal of hoods, the opening of observation hatches and the lowering of the platform to its transport position are not considered as part of a disassembly operation.

IMPORTANT

Before servicing, be sure to observe the following:

- Turn off the main power supply (for example, remove the main plug or turn the key to the « OFF » position) and secure the access to prevent any unintentional restart.
- Physically secure the unit if work must be done under it.
- Only a qualified and certified FRACO mechanic may perform the maintenance and/or repair.
- Replace the disassembled parts when the operation is complete.

Daily

- Check the fuel tank level (if applicable).
- Check the base horizontal level and mast vertical level with a 1 m spirit level (in both directions).
- Remove cement or dry mortar deposits that may prevent proper operation of the platform.
- Test the good function of the emergency descent.

Weekly

- Check the hydraulic and engine oil levels (if applicable).
- Check the hydraulic hoses to ensure there are no oil leaks.
- Check that there is no metal deformation in parts such as extension sections, mast sections, base, hooks, etc. Deformation may occur as a result of improper handling.

Monthly

- Refer to the inspection sheet of the model-specific service manual and serial number.

Periodic emergency descent test (daily)

As part of the periodic maintenance, a test of the emergency descent must be conducted, as mentioned in the daily inspection grid. The following instructions show the steps of the test and specific components verification on the safety system.

∞ SEE DAILY INSPECTION GRID, ON PAGE 162.

Take notice of the emergency descent procedure for operation instruction.

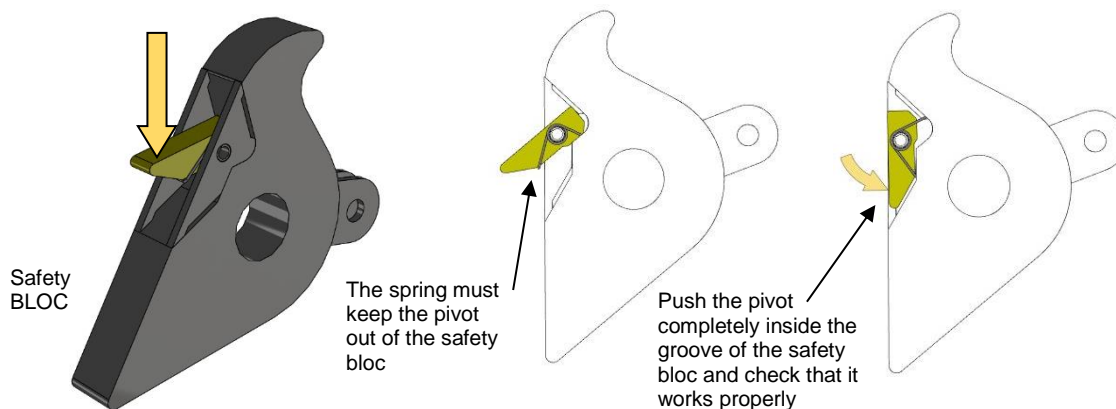
∞ SEE EMERGENCY DESCENT PROCEDURE, ON PAGE 31

∞ SEE EMERGENCY DESCENT PROCEDURE (OLDER GENERATION), ON PAGE 32

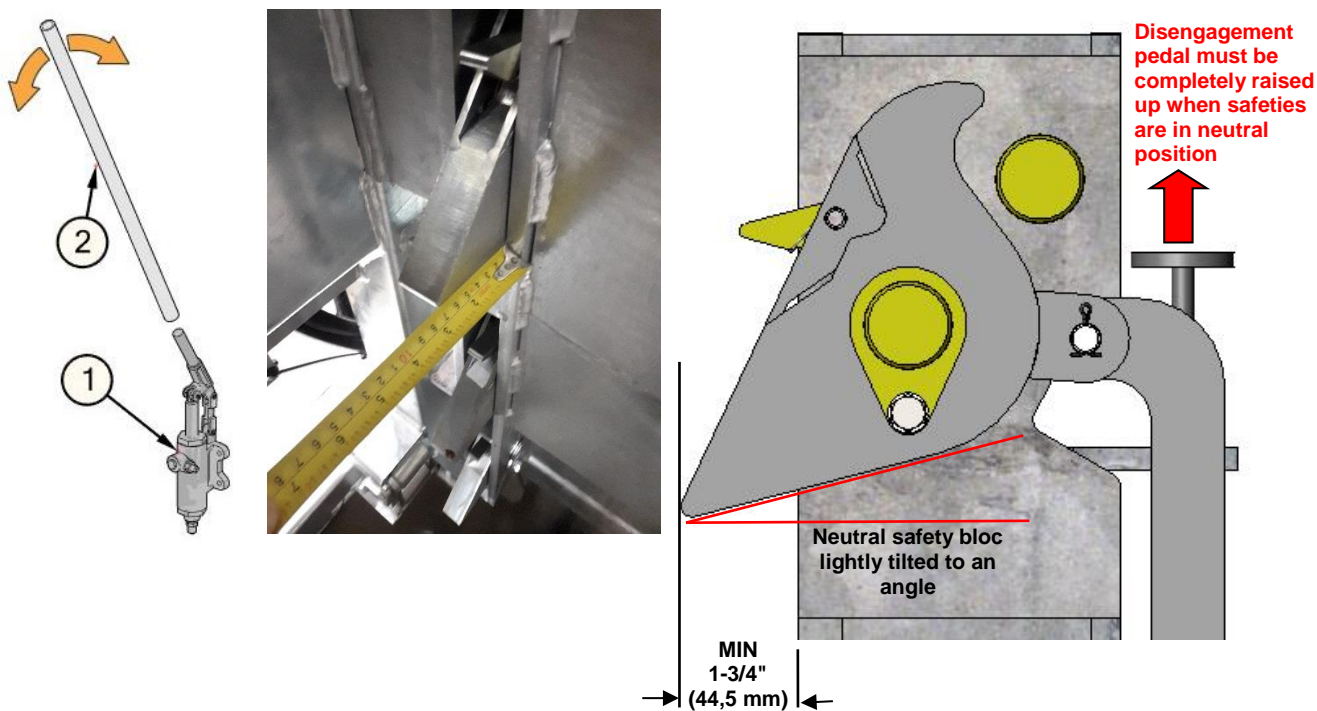
∞ SEE SAFETY SYSTEM PERIODIC VERIFICATION, ON PAGE 33

STEPS:

- 1- Verify that spring pivots work well on each of the three (3) safety BLOCS. These must not clog, nor jam and the springs must work well.
Note: This verification must be carried on daily by the operator of the platform



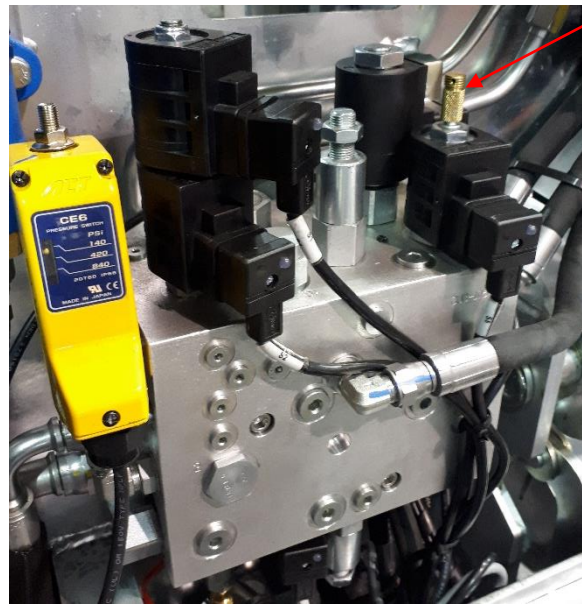
- 2- Raise the platform of approximately 3" (76 mm) and more by using the manual pump arm (items 1 and 2), until complete disengagement of the safeties. Safety BLOCS drop to **NEUTRAL POSITION**. In this position, safety BLOCS need to be lightly tilted. Check the measure specified below. **Important!** The dimension must respect a **MINIMUM of 1-3/4" (44,5 mm)** for each of the three (3) safety BLOCS.



- 3- Raise the platform of at least 60" (1,50 m) and more.
- 4- Disengage the safeties by pressing on the disengagement pedal and use the manual descent to lower the platform of at least 60" (1,50 m). Use the hydraulic release valve to slowly lower the platform.

Important! Press on the disengagement pedal at all time while lowering the platform.

∞ SEE FIGURE 145 – SAFETY DISENGAGED, BELOW



Important! Make sur that there is a contact between mobile component and locking axle.

- 5- After having tested the manual descent on a distance of at least 60" (1,50 m), release the disengagement pedal. The pedal must raise back to its original position automatically (**neutral position**).
- 7- Again, raise up the platform of approximately 20" (0,50 m) and more.
Important! Use the manual descent again (hydraulic release valve) to lower the platform until the safety end up resting on the next mast stopper. To approve that the safety properly works, these must rest completely on the stopper and must support the platform.

∞ SEE FIGURE 144 – SAFETY ENGAGED, BELOW

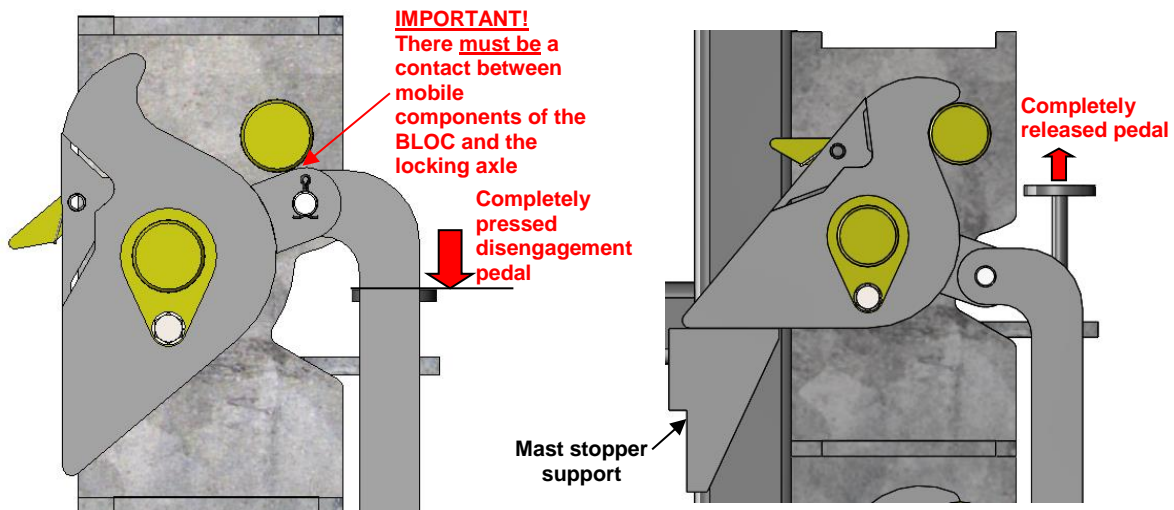
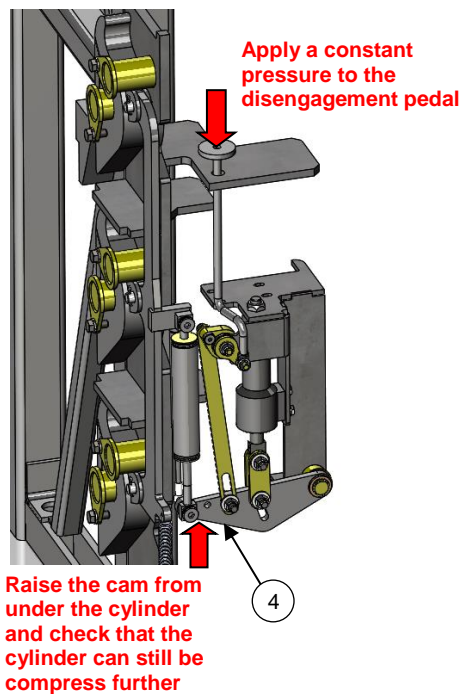
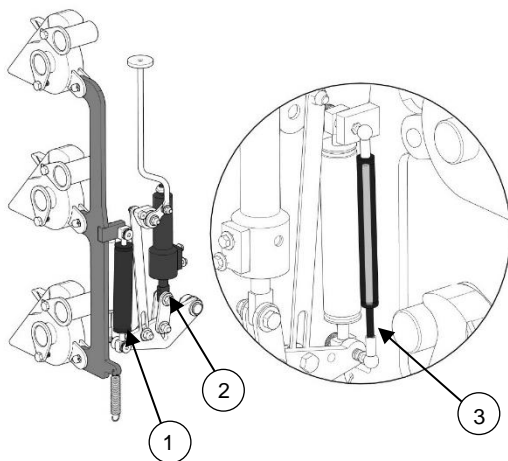


Figure 145 – Safety disengaged

Figure 144 – Safety engaged


Periodic emergency descent test (monthly)

- 1- Check the state of the gas cylinder (**items 1, 2, 3**). Check for any leaking or deformations.
 - 2- Apply a constant pressure on the disengagement pedal to completely disengage safeties. Simultaneously, raise the cam (**item 4**) and verify that both cylinders (**items 1 and 2**) can still compress further.
- In case of a noncompliance, check the integrity of the safety system (**32030323**) and repair the problematic component.



Other (lubrication points)


Refer to (30010880) the English/French « ACT-8 screw lubrication » sticker for recommended maintenance periods and lubrications.



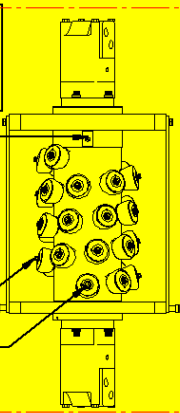
GREASE SCHEDULE FOR SCREW DRIVE
CÉDULE DE GRAISSAGE DE LA VIS
CEDULA DE LUBRICACIÓN DEL TORNILLO

TYPES OF GREASE APPROVED
TYPES DE GRAISSE APPROUVÉE
TIPOS DE GRASA APROBADOS:

- TOTAL CERAN MM used by Fraco
- Mobil Centaur Moly 1
- Shell SRS 2000 Extreme
- Total Multis Complex SHD 220
- Mobil SHC 220




Grease tip
Outil de graissage
Utl de grasa
MEC-2705



Torque
Couple de serrage
Par
50 (lb-ft)
68 (N-m)
600 (lb-in)

GREASE EVERY 50 HOURS OF USE (HOURMETER) OR 3 MONTH
 GRAISSAGE À TOUS LES 50 HEURES D'UTILISATION
 (COMPTEUR) OU À TOUS LES 3 MOIS
 LUBRICACIÓN A CADA 50 HORAS DE USO (CONTADOR)
 O EN CADA 3 MESES

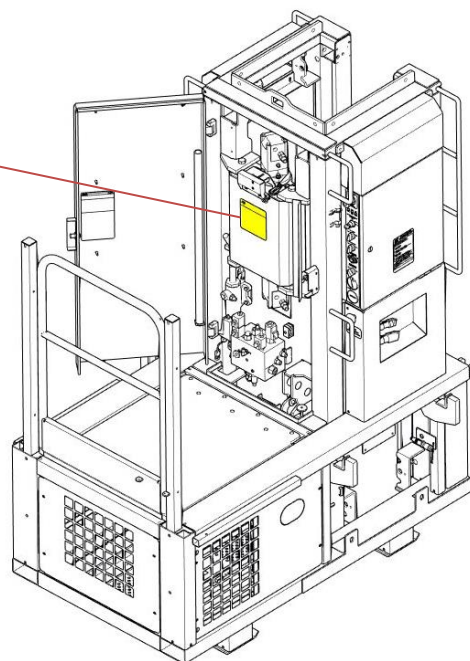
GREASE EVERY 400 HOURS OF USE (HOURMETER) OR 6 MONTHS
 GRAISSAGE À TOUS LES 400 HEURES D'UTILISATION
 (COMPTEUR) OU À TOUS LES 6 MOIS
 LUBRICACIÓN A CADA 400 HORAS DE USO (CONTADOR) O CADA 6 MESES



31 x 32030038

Note :
 -Apply only one shot from a standard grease gun (1.5ml). An excessive application can blow the seal.
 -Appliquer un seul coup d'un fusil à graisse standard (1.5ml). Une application excessive de graisse risque de faire éclater le joint d'étanchéité.
 -Aplicar un solo disparo de una pistola de grasa estándar (1.5ml). Una aplicación excesiva puede soplar el sello.

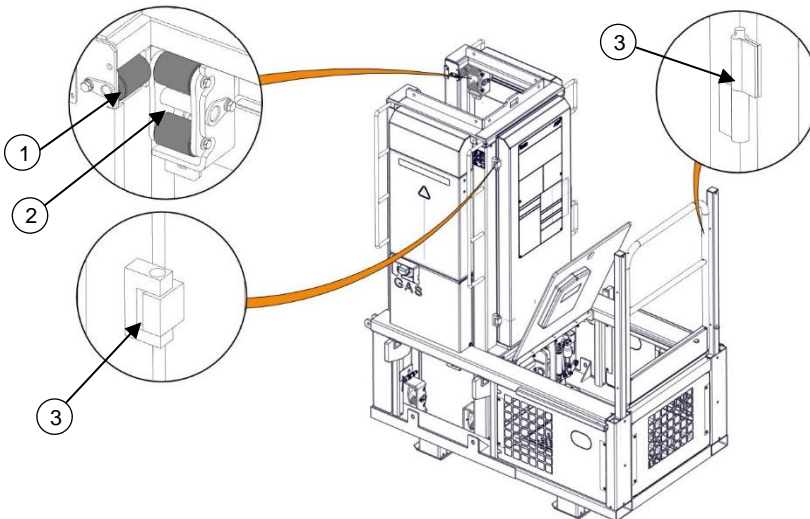
30010880-00



As part of a platform maintenance operation, it is recommended to lubricate the following points:

Use a penetrating oil lubricant,
such as: Castrol Chain Lubricant

- 1- Roller
- 2- Tandem rollers
- 3- Hinges/door pivots and panels



Daily inspection grid

Name of user:		Name of site:	
Address of site: Number / street		City	Province/State
Type of lifting unit: Single mast <input type="checkbox"/> Double mast <input type="checkbox"/>		Serial number:	
Autostable <input type="checkbox"/>		Walls attachments <input type="checkbox"/>	
FRH on lifting unit <input type="checkbox"/>		Serial number:	
Note: Mark the verified items with your initials and indicate N/A when not applicable			
Inspected Items		Checked	Comments
Ground safety perimeter			
Stability of the floor surrounding the base of the platform			
Leveling of the base and verticality of the mast			
Stabilizers/wooden blocks			
Tires and Wheels / Steering, Drives (if available)			
Lateral and vertical clearance of the platform			
Condition of platform power cable			
Structure of bridge and extension sections			
Mast structure (rail/bars)			
Safety bolts, nuts and pins			
Condition of platform floor			
Condition of plankings/ planking attachments in place			
Outriggers			
Guardrails and protective wire mesh			
Mast end and mechanical descent stop			
Anchor strength: Bolts and pins in place			
Loads distribution on the platform			
Warning sign/stickers, installed and readable			
Fuel/engine and hydraulic oil level			
Condition of hydraulic hoses			
Presence of leaks			
Condition of electrical wiring			
Battery and cables securely fixed			
User Manual, Daily inspection grid available in the documentation compartment			
Platform Operation / Security Mechanism			
FRH Operation, Cable and hook status (if available)			
Load maintained			
Emergency stop button			
Test the emergency descent			
Comments:			
Date		Name of operator:	
Name of employee:		Signature of operator:	

Any irregularity or malfunction of the platform must be corrected by a qualified and FRACO certified installer or mechanic before the platform is returned into service. A complete inspection of the platform must be carried out every 3 months.

Spare parts

When ordering spare parts, please provide the following information available on the nameplate of the lifting unit:

∞SEE IDENTIFICATION AND SERIAL NUMBER PLATE , ON PAGE 15

- Model
- Year of manufacture
- Serial number
- Operating Voltage (if electrical)
- Required part number

NOTE

Spare parts must comply with the manufacturer's technical specifications. Only use genuine FRACO parts.

To place an order for spare parts, contact FRACO customer service.

Les Produits FRACO Ltée

91, chemin des Patriotes
Saint-Mathias-sur-Richelieu
Quebec, J3L 6B6, Canada

www.fraco.com

Tel.: +1 (450) 658-0094

No charge CDA: 1-800-267-0094 / USA 1-888-FRACO 4U

France: + 33 (0)3 44.91.03.53

Assistance

Problem	Engine	Potential cause	Solution
The engine will not start	D / G / E	Emergency stop activated	Reactivate emergency stop
	D	Glow plug	Replace glow plugs
	G	Engine oil level too low	Add oil in the engine
		Plug burned	Replace spark plugs
	D / G	No fuel in the tank	Place fuel in tank
		Dead battery	Boost or replace the battery
		Fuel contaminated with water or other	Empty tank and fill with clean fuel
The engine is running, but the platform does not lift	D / G / E	Filter/feed hose blocked	Unblock hose/replace or clean fuel filter
		Accessory switch in « off/Arrêt » or « on/Marche » position	Return the selector switch to the « off/Arrêt » position
The platform does not go up or down	E	Too much load or load poorly distributed	Remove excess material and/or distribute in compliance with charter ∞SEE PERMITTED CONFIGURATIONS AND LOAD DISTRIBUTION, ON PAGE 19
The motor does not start and the « Phase » LED is lit	E	Key is in « OFF » position	Turn the key to the « ON » position
The engine will not start. The tank was dry and was filled	E	Reverse phases	Turn the phase selector located on the side of the electrical box
The engine will not start. The tank was dry and was filled	D	Presence of air in the fuel system	Perform bleeding procedure (see maintenance manual)
The engine emits smoke	D / G	Too much engine oil	Check the engine oil level
Engine starts, but stops or does not run properly	G	Choke in « ON » position	Return choke to the « CLOSED » position
Engine starts but stops quickly	D / G	Engine too cold	Allow the engine to warm up

Engine type: **D** = Diesel **G** = Gasoline* **E** = Electric

For more information, see the platform maintenance guide.

Important! All equipment repairs must be carried out by a FRACO technician or one of its representatives.

* Gas model available in some countries only.

Table 17 - Load deductions

Description	Load
FRH-2500/FRH-4000	1 350 lb (612 kg)
Monorail on platform	48 lb-ft (71,5 kg/m)
Winter shelter	9 lb-ft (161 kg/m)*
Rigid roof	31 lb/ft (555 kg/m)
Planking**	8.8 lb/ft (157,5 kg/m)
Weight of a worker	176 lb (80 kg)
Weight of a worker's equipment ***	88 lb (40 kg)

* It is also necessary to add the weight of the canvas to the total load.

** One takes into account the weight for 2"(51 mm) x 10" (254 mm) plankings.

*** The load of equipment per worker is considered only for a MAXIMUM of two (2) workers, or 176 lb (80 kg).

CE Declaration



Les Produits FRACO Ltée

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 www.fraco.com Email: fraco@fraco.com

CE COMPLIANCE STATEMENT

No. 0060 / 5162 / 760 / 01 / 10 / 1303 / REV01

Type:

**Apparatus for lifting persons or persons and objects, with a vertical drop risk greater than 3 meters.
 Hydraulic work platform moving along a mast, single and double masts.**

Brand: FRACO Model: AC T-8

Serial number:

Technical details:

In single mast:

- Nominal load / No. of persons: 4 000kg / 5 people
- Maximum height: 13,7 m (freestanding) —167 m (with anchors)
- Platform Length/Width: 11,2 m/3,4 m
- Reduced load in single mast: 1 364 kg / 3 persons at max length (15,23 m)

In double mast:

- Platform Length/Width: 36,0 m/3,4 m
- Nominal load / No. of persons: 8 200kg / 10 people
- Maximum height: 13,7 m (freestanding) —167 m (with anchors)
- Reduced load in double mast: 13,7 m (freestanding) -167 m (with anchors)

This model satisfies all the relevant provisions of Directive 2006/42/EC (95 16. EC modified) on the approximation of the laws of the Member States relating to machines. This model meets the essential health and safety requirements applicable to it. This declaration relates exclusively to machines in the state in which they were placed on the market and excludes added components and/or subsequent operations performed by the end-user.

Notified body
APAVE Parisienne SAS

Identification number: 0060
 17, rue Salneuve - 75854 PARIS CEDEX 17

Technical file
SARL Fraco

420 rue des Érables - F-60710 CHEVRIERES FRANCE

Director of Operations
Les Produits FRACO Ltée
Emmanuelle Rainville

St-Mathias-Sur-Richelieu
 December 31, 2015

ORIGINAL NOTICE

List of Figures

Figure 1 - ACT-8 single-mast with freestanding base.....	8
Figure 2 - ACT-8 two-mast with freestanding base	9
Figure 3 - Regulatory attachment points	10
Figure 4 - Dimensions with ground base	11
Figure 5 - Dimensions with freestanding base	12
Figure 6 - Clearance to finished walls and around the units	13
Figure 7 - ACT-8 Identification Plate	15
Figure 8 - Plate and Serial Number location	15
Figure 9 - Warning and load sticker	16
Figure 10 - Crane operation sticker	16
Figure 11 - Control button sticker.....	16
Figure 12 - Hydraulic oil only sticker	16
Figure 13 - Choke sticker	16
Figure 14 - Emergency descent sticker.....	16
Figure 15 - Hot surface warning sticker	16
Figure 16 - Gas sticker	16
Figure 17 - Documentation compartment.....	17
Figure 18 - Platform areas	19
Figure 19 - Single-mast reduced load	20
Figure 20 - Single-mast full load	20
Figure 21 - Example, distribution zones per unit (single-mast).....	21
Figure 22 - Example of load distribution (single-mast, short extensions)	21
Figure 23 - Example of load distribution (single-mast, long extensions)	22
Figure 24 - Double mast full load	23
Figure 25 - Double mast reduced load.....	23
Figure 26 - Example, distribution zones per unit (double mast).....	24
Figure 27 - Example of load distribution (Double mast).....	24
Figure 28 - ACT-8 Control panel (diesel - gas).....	27
Figure 29 - Choke knob	27
Figure 30 - ACT-8 control panel (electric)	29
Figure 31 - Inclinator.....	30
Figure 32 - Emergency descent system.....	31
Figure 33 - Emergency descent system (Former generation)	32
Figure 34 - Load distribution, universal freestanding base	36
Figure 35 - Load distribution, ACT-8 freestanding base	37
Figure 36 - Connecting to the unit box	39
Figure 37 - Attaching the cable under the unit	39
Figure 38 - Passage of the electrical cable under the platform.....	40
Figure 39 - Lift points, ACT-8 (10030015).....	41
Figure 40 - Lift points, ground base (14030019)	41
Figure 41 - Lift points, ACT-8 freestanding base (14030020).....	41
Figure 42 - Lift points, universal freestanding base (14030109).....	41
Figure 43 - Mast end section	42
Figure 44 - Incompatibility between mast end section and lifting slings	42
Figure 45 - Assembly lifting capacity.....	42
Figure 46 - Use of lifting lings and belts	43
Figure 47 - Crushed stone foundation.....	44
Figure 48 - Unit installation on ground base.....	44
Figure 49 - Installation of universal freestanding base	45
Figure 50 - Installation of ground base on universal freestanding base.....	46
Figure 51 - Installation of mast boltes base on universal freestanding base.....	46
Figure 52 - Installation of ACT-8 freestanding base	47
Figure 53 - Installation of stairs (3 steps) on the ground base	48
Figure 54 - Installation of stairs (5 steps) on the ground base	49
Figure 55 - Installation of stairs (5 steps) on the freestanding base	50
Figure 56 - Installation of stairs (7 steps) on the freestanding base	51
Figure 57 - MODULAR extension section	54
Figure 58 - MODULAR universal tapered extension section	54
Figure 59 - MODULAR tapered extension section	55
Figure 60 - NON-MODULAR extension section	56
Figure 61 - MODULAR Extension joint	57
Figure 62 - Installation of extension turnbuckles	57
Figure 63 - Combination 20'-0" to 20'-0"	61
Figure 64 - Combination 20'-0" to center.....	61
Figure 65 - Bridge joint with bottle	62
Figure 66 - Installation of 15'-0" or 20'-0" bridge section between lifting units.....	63
Figure 67 - Installation of 15'-0" or 20'-0" bridge section between lifting units and/or intermediate extensions.....	64
Figure 68 - Installation of 30'-0" to 60'-0" bridge assembly on the lifting unit and/or intermediate extension	65
Figure 69 - Installation of an extension bridge section	66
Figure 70 - Bolting of mast and mast end sections	67
Figure 71 - Installation of mast anchors	77

Figure 72 - Installation of masts and anchors, ground base	81
Figure 73 - Installation of masts and anchors on a ground base, self-erecting (optional)	82
Figure 74 - Installation of masts and anchors, freestanding base.....	84
Figure 75 - Installation of masts and anchors on a freestanding base, self-erecting (optional)	85
Figure 76 - Self-erecting assembly	86
Figure 77 - Leveling with anchor devices	87
Figure 78 - protective wire mesh.....	88
Figure 79 - Disassembly of masts and anchors, ground base	90
Figure 80 - Disassembly of masts and anchors, freestanding base (universal, 20K)	92
Figure 81 - Guardrails installation	93
Figure 82 - Outriggers installation.....	93
Figure 83 - Outrigger extension	94
Figure 84 - Spacing between outrigger	95
Figure 85 - Installation of NON-REINFORCED upper outriggers	96
Figure 86 - Installation of lower outriggers	96
Figure 87 - Installation of REINFORCED upper outriggers	97
Figure 88 - Detail of planking installation	98
Figure 89 - Outrigger support	99
Figure 90 - Installation of end of outrigger guardrail.....	100
Figure 91 - Installation of guardrail at mast anchor device	101
Figure 92 - Anti-pivot device (small wheel)	102
Figure 93 - Anti-pivot device (large wheel)	103
Figure 94 - Descent stop device	104
Figure 95 - Inclinator	105
Figure 96 - Corner return, installation	106
Figure 97 - Corner return, installation	107
Figure 98 - Corner return, installation of the counterweight	108
Figure 99 - Installation of work supports on tapered extension section or bridge section.....	109
Figure 100 - Installation distance of counterweight for work support in corner return	110
Figure 101 - Installation of counterweight outrigger	110
Figure 102 - Installation of indoor working system	111
Figure 103 - Rigid roof system.....	112
Figure 104 - Rigid roof system, installation of supports.....	113
Figure 105 - Rigid roof system, installation of plywood supports	114
Figure 106 - Rigid roof system, installation of canvas partitions	115
Figure 107 - Rigid roof system, upper work area	116
Figure 108 - Rigid roof system, heating cage.....	117
Figure 109 - Winter shelter system	118
Figure 110 - Winter shelter system, installation of supports	119
Figure 111 - Winter shelter, heating cage	121
Figure 112 - Monorail on platform.....	122
Figure 113 - Monorail installation.....	123
Figure 114 - Monorail at mast head	126
Figure 115 - Monorail at mast head, installation.....	127
Figure 116 - Monorail at mast head, installation.....	128
Figure 117 - Monorail at mast head, installation.....	129
Figure 118 - Monorail at mast head, installation.....	130
Figure 119 - Option 1, Load Distribution, monorail at mast Head	131
Figure 120 - Option 2, Load Distribution, monorail at mast Head	131
Figure 121 - Monorail at mast head, installation.....	132
Figure 122 - Crane FRH-2500	133
Figure 123 - Crane FRH-2500, loading area.....	135
Figure 124 - Crane FRH-2500, maintenance	136
Figure 125 - Crane FRH-4000	137
Figure 126 - Crane FRH-4000, installation.....	138
Figure 127 - Crane FRH-4000, loading area.....	139
Figure 128 - Crane FRH-4000, integrated self-erecting system	140
Figure 129 - Crane FRH-4000, maintenance	141
Figure 130 - Mobile base, with engine	142
Figure 131 - Mobile base, traction	143
Figure 132 - Mobile base, installation of traction arm	144
Figure 133 - Mobile base, installation of wheels.....	145
Figure 134 - Mobile base, unit installation.....	146
Figure 135 - Mobile base operating sticker (30060290)	148
Figure 136 - Lifting unit dimensions	149
Figure 137 - Ground base dimensions.....	150
Figure 138 - Universal freestanding base stickers	151
Figure 139 - Universal freestanding base dimensions.....	151
Figure 140 - ACT-8 freestanding base stickers.....	152
Figure 141 - ACT-8 freestanding base dimensions	152
Figure 142 - ACT-8 mast section	153