

# Owner's Manual



SERIES



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A0680006-0000

E\_OpMan\_v1.2\_EN

## GENERAL INFORMATION

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This manual was produced by Hydro Mobile Inc. on Adobe® InDesign CS3® version 5.0.1 for Windows®.

Technical drawings were prepared using Autodesk Inventor® 1.0. Illustrations were created with Autodesk® 3ds Max®, Adobe® Illustrator CS2® for Windows® and Adobe® Photoshop® version 7.0 for Windows®.

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**This Hydro Mobile Inc. product is covered and protected by patents in Canada, the United States of America and Europe.**

United States: patent pending

Canada: patent pending

Europe: patent pending

APPAVE certification: pending

### NOTE

All assembly and operation instructions located on motorized units and bridges take precedence over information contained in this manual. Should there be any discrepancies discovered throughout any published documentation issued by Hydro Mobile or its authorized affiliates, the following order of precedence shall prevail:

1. Written documents issued by the Hydro Mobile Engineering department
2. Recall instructions
3. Assembly or operation instructions displayed on the motorized unit
4. Operator's manual

Any use of one or several Hydro Mobile motorized units, with or without accessories, in such a configuration or manner as not explicitly described in this manual is not recommended without the prior written permission of Hydro Mobile Inc.

REVISION LIST	
Date	Description
April 2009 v1.0	First edition of Operator's manual
July 2009 v1.1	Addition to specifications of planetary reducer (types of lubricants); changes to emergency descent procedure; addition of power cable selection and input voltage charts; changes to control panel cable connections; addition of left/right bypass connectors; addition to list of components included in toolbox; addition of inclinometer reset procedure; changes to control panel events; addition to mast-tie installation instructions for three-plank setups; inclusion of bridge lengths for twin mast setups (load capacities)
February 2013 v1.2	Addition of overall lengths of single and twin mast setups in <i>Load Capacities</i> ; addition of specific information in <i>Masts and Mast Ties</i>



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GENERAL INFORMATION			
Model (check one)	<input type="checkbox"/>	E230S-K	203V motorized unit
	<input type="checkbox"/>	E400S-K	400V motorized unit
Motorized unit serial number	_____		
Manufacturing date	_____		

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## Introduction

Dear owner or user:

Thank you for investing in a Hydro Mobile E Series mast climbing work platform system. The design of these new motorized unit models reflects over a decade of continued field operation, testing and research work and comes as a solution to our company's deepest concern, your safety and well being on the job.

To ensure that the workplace becomes safer and more efficient using a Hydro Mobile system, always have a competent person and backup competent person assemble, operate, dismantle and move your mast climbing work platform system. These competent persons will be required to read this operator's manual and assimilate the information contained herein. Failure to do so could lead to serious injury and/or equipment damage.

This motorized unit was designed in accordance with the following standards: US ANSI A92.9-1993, ISO 16369:2007 and EN 1495, 98/37/CE "directive machine" and 89/336/CEE "directive CEM". Furthermore, this motorized unit and its operator's manual comply with US ANSI A92.9-1993 standards, Federal Occupational Safety and Health Administration Standards OSHA 29CFR1926 subpart L, as well as applicable State and local regulation; with ISO 16369:2007 and CSA B354.5-07 as well as local regulation applicable in Canada; and with EN 1495, 98/37/CE "directive machine", 89/336/CEE "directive CEM" and ISO 16369:2007, as well as local regulation applicable in Europe.

To maximize the life expectancy of your equipment and to enjoy years of trouble free operation, we recommend that this Hydro Mobile system be serviced according to maintenance schedules and recommendations provided in this manual.

Should you have any questions or concerns, please contact the nearest authorized distributor or Hydro Mobile directly at 888-484-9376 (in the United States), (450) 589-8100 (in Canada) or +033.6.30.63.14.56 (in Europe). You can also visit our website at [www.hydro-mobile.com](http://www.hydro-mobile.com) for additional support and information on our factory safety and performance training seminars.


We wish you years and years of safe, productive construction and renovation work.

Sincerely,



Vincent Dequoy, Eng.  
President

### NOTE



The installation and operation of a mast climber is subject to hazards that can be avoided only by using extreme care and common sense. It is essential that the competent person be appropriately trained in the installation, dismantlement, proper use and safe operation of the mast climber and its accessories.

## Warranty

### Warranty period

Hydro Mobile Inc., herein referred to as Hydro Mobile, warrants its new E Series motorized units to be free from defect of materials and workmanship for a period of 15 months or a maximum of 650 operating hours whichever occurs first from the date of delivery to the authorized distributor.

Hydro Mobile also warrants its new E Series parts and accessories to be free from defect of materials and workmanship for a period of 15 months from the date of delivery to the authorized distributor.

### Product registration

The owner of a Hydro Mobile E Series unit should register the product with Hydro Mobile by filling out and returning the product registration form included in the owner's manual.

### Description of warranty

#### *Parts and accessories manufactured by Hydro Mobile*

Hydro Mobile's obligation and liability under this warranty are expressly limited to repairing or replacing with re-manufactured or new parts, at Hydro Mobile's option, any part and accessory manufactured by Hydro Mobile proven defective after inspection by Hydro Mobile which appear to have been defective in material or workmanship. Only permanent repairs will be covered under this warranty. Hydro Mobile reserves the right to ask for maintenance records of the defective part before settling a claim and to deny such claim if maintenance records are not available or not compliant with maintenance schedules.

This warranty shall not apply to component parts or accessories of products not manufactured by Hydro Mobile and which carry the warranty of the manufacturer thereof or to normal maintenance (such as engine tune-up) or any part necessary to perform such maintenance. Hydro Mobile offers no other warranty, expressed or implied, and offers no warranty of merchantability or fitness for any particular purpose.

#### *Engine*

All engines manufactured by Honda under the "GX" lineup and by Kohler are covered by an international warranty of 24 months (12 months on mufflers). To have an engine repaired under this warranty, the engine must be brought to an authorized Hydro Mobile distributor or to a Honda or Kohler authorized service center.

#### *Battery*

All the batteries shipped from the factory with new equipment are guaranteed for a period of 60 days. Any battery discharged due to operator error will not be covered under this warranty. Dead batteries that can be recharged will not be replaced under this warranty.

#### *Costs and liability associated with warranty*

Hydro Mobile's obligation under such warranty shall not include duty, taxes or any other charge whatsoever, or any liability for direct, indirect, incidental or consequential damage or delay.

#### *Exclusion*

Any use of one or several Hydro Mobile motorized units, with or without accessories, in such a configuration or manner as not explicitly described in the owner's manual is not recommended without the prior written permission of Hydro Mobile.

Any improper use, including operation after discovery of defective or worn parts, shall void this warranty. Improper use also includes operation beyond rated capacity, substitution of parts other than those approved by Hydro Mobile, including anchor systems, or any alteration, modification or repair by others in such manner as in Hydro Mobile's judgment affects the product materially and adversely.

#### *Labor*

All warranty work must be performed by a certified Hydro Mobile technician to be eligible for reimbursement under the warranty.

## Performance and Safety Rules

**SAFETY** comes first. The installation and operation of a mast climber is subject to hazards that can be avoided only by using extreme care and common sense, and by providing the **appropriate training and supervision** to all its users.

It is essential that the **installation** and **dismantlement** of the E Series motorized unit and its rated accessories be carried out according to the recommendations of the operator's manual and performed by **properly trained erectors/dismantlers** under the supervision of a competent person.

It is also imperative that the **operation** of an E Series motorized unit setup be carried out according to the recommendations of the operator's manual and performed by **properly trained operators**, under the supervision of **two** competent persons for a **single mast installation** and **four** competent persons for a **twin mast installation**.

### Operating guidelines

- 1- Prepare a layout plan showing how the mast climbing work platform system [motorized unit(s), bridges, extensions] will be positioned near structures or walls to be erected. On long walls, separate mast climber sections to allow for flexibility. Position motorized units to provide proper anchoring points for masts.
- 2- Establish the distance between the mast climbing work platform system and the structure or wall, taking into account the length of plank outriggers, as well as curvatures, balconies, columns, trees, telephone wires, electrical lines, etc.
- 3- Refer to and follow regulations governing distances between the mast climbing work platform system and electrical lines.
- 4- Make sure the ground or support surface capacity meets with values included in the *Maximum Imposed Loads* table herein (fig. 1.22, p. 14). Soil compacting, cribbing or shoring can increase bearing capacity. The **jacks on the base outriggers** are designed to level the motorized unit and **should not be used to support the load nor the motorized unit**. Contact a licensed professional engineer for assistance.
- 5- Never modify the mast climbing work platform system or use substitute factory parts. This could adversely affect worker safety, unit performance and void the warranty. In addition, this could lead to serious injury or death.
- 6- Unless authorized in writing by Hydro Mobile prior to installation, the motorized unit **must not be used** with any equipment or any accessories (hoist, weather protection, monorail, etc.) not specifically manufactured and rated by Hydro Mobile to be used on E Series motorized units. For the use and installation of any such equipment or accessories, contact the distributor or the Hydro Mobile technical support team.
- 7- Planks used for planking must be scaffold graded (SPF) and in good condition.
- 8- **IMPORTANT:** It is strongly recommended not to use equipment such as Bobcats, jack-hammers, backhoes, etc., on Hydro Mobile platforms.
- 9- Workers exposed to potential hazards must always wear proper personal protection equipment (PPE) such as a helmet, safety boots, a fall arrest harness, etc., as prescribed by OSHA or local regulations. In all cases where workers are exposed to fall hazards, fall protection is required. Installation of all the necessary guardrails is **mandatory**.
- 10- Unless authorized by Hydro Mobile prior to installation, the platform should only be used on a mast whose height does not exceed 250' (76 m). For any configuration other than those described in this operator's manual, contact the distributor or the Hydro Mobile technical support team.

## Performance and Safety Rules (cont'd)

- 11- Rely on a licensed engineer for help on special jobs and to approve plans if required by local regulation.
- 12- To ensure work efficiency, maintain an adequate equipment and parts inventory on the job site. Keep equipment in good condition. Refer to maintenance checklists recommended for this motorized unit (see p. 58).
- 13- After installation, mark off limit areas of the setup using fencing, barriers, warning tape and note emergency phone numbers (fire and police dept.) for quick reference. **Prepare an emergency evacuation plan that is specific to the job site and is in accordance with OSHA and local regulations.**
- 14- **Never load bridges or motorized units beyond their rated capacities.** Overloading may cause motorized units to bind and bridges to warp or fall, leading to serious injury or death.
- 15- Contact the distributor or Hydro Mobile for service, repair or technical advice. Refer to equipment type and serial number when calling.
- 16- Each person should access the platform by the optional access stairs.
- 17- The use of appropriate fall protection equipment is **mandatory** when modifying plank configuration. Failure to use fall protection equipment can expose the user to serious injury or death.
- 18- When the motorized unit is moving, it is **mandatory** that all workers except the operator stand in an area close to the back guardrails.
- 19- In the event of an abnormal occurrence or operation which could compromise security (ex. malfunction of a motorized unit component, collision with an obstacle, etc.), immobilize the unit and inform the competent person.
- 20- It is strongly recommended not to touch any of the moving parts on the motorized unit when it is in use.
- 21- All access doors on the motorized unit must be closed when they are not in use.
- 22- There must be at least **two** competent persons on each **single mast** motorized unit setup or **four** competent persons on each **twin mast** motorized unit setup. All motorized unit operations must be carried out at all times by at least two competent persons. A motorized unit should never be operated by a single person.
- 23- The motorized unit must not be used or operated during an electrical thunderstorm.
- 24- The deposit of loads on the setup must be done with extreme care, under proper supervision. Loads must be equally distributed on all the bridges of the setup and deposited in the middle of each bridge, whenever possible. Refer to the *Load Capacities* section on p. 47 for more information about loading the platform.
- 25- In the event of a power outage, it is recommended that all workers remain on the platform as a safety precaution until the power is restored. If the power has not been restored within a reasonable time, the emergency descent system must be used to bring the workers safely back to base level. Refer to p. 26 of the *Safety Devices* section for more information on the use of the emergency descent system.
- 26- Wind speeds must not exceed **28 mph (45 km/h)** during the **erection** and **dismantlement** of a motorized unit setup (including the base, the bridges, the masts, the mast ties and all the other components). **Freestanding installations** must not be exposed to wind speeds exceeding **28 mph (45 km/h)**. Motorized unit setups **with mast ties** must not be submitted to wind speeds exceeding **35 mph (56 km/h)** when in **operation**. Wind speeds must not exceed **94 mph (150 km/h)** when the motorized unit setup is **not in service**.

## Motorized Unit Overview

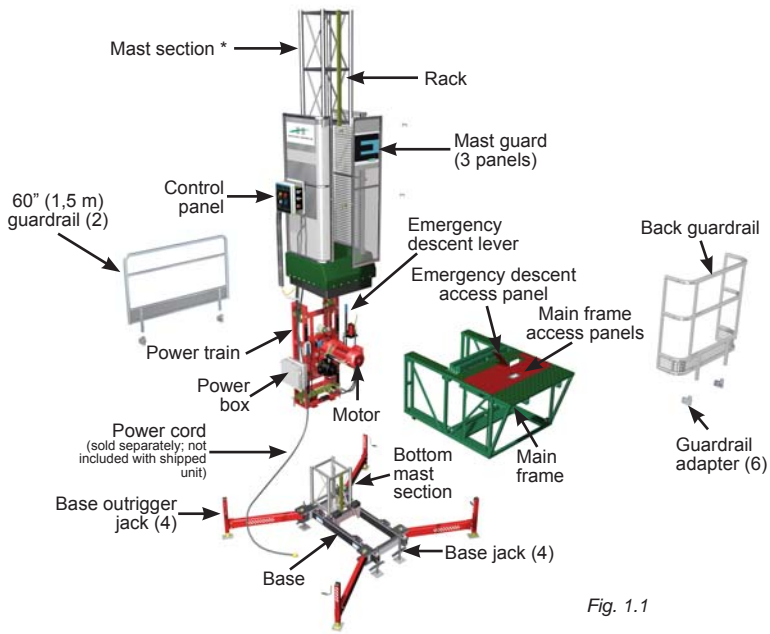


Fig. 1.1

\* Only one mast section shipped with each motorized unit.

The configuration represented in the above illustration is for informational purposes only and should not be reproduced without appropriate cribbing under the base.

Note: Items depicted in illustrations may differ from actual products.

List of Components Included with Shipped Unit	
Quantity	Component
1	E Series motorized unit
1	Operator's manual
1	MGM motor user's manual
1	base (including welded bottom mast section)
1	mast section
3	mast guard panels
2	bridge installation support brackets
2	60" (1,5 m) guardrail
1	back guardrail
6	guardrail adapter L brackets
<b>Note</b> The list of components included with each motorized unit shipped may change without notice.	

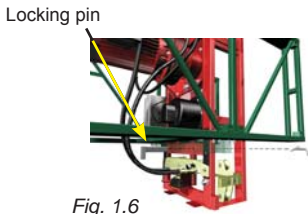
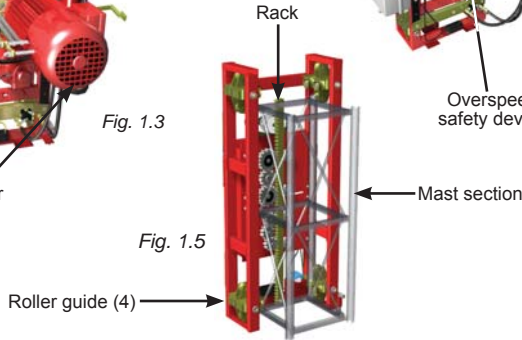
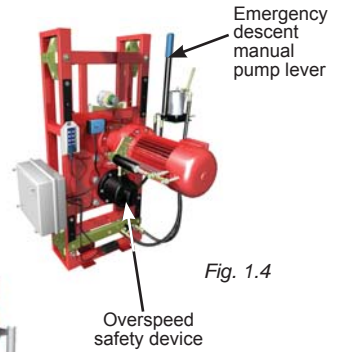
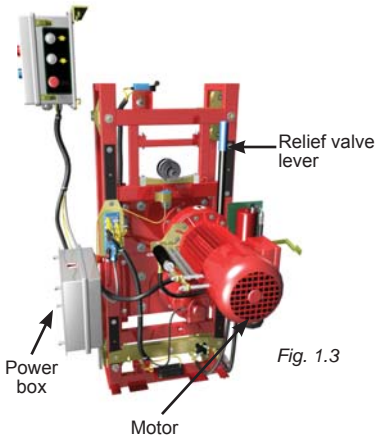
Fig. 1.2

### NOTE

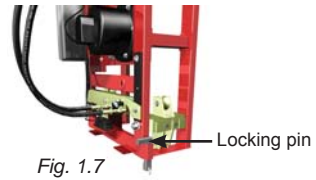
Items depicted in illustrations throughout this manual may differ from actual products.



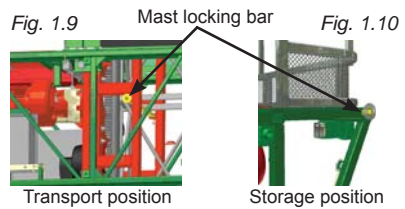
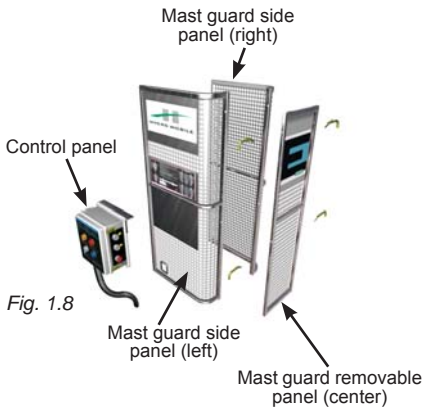
## Motorized Unit Overview



Single mast locking pin (single mast position)



Single mast locking pin (twin mast position)



## Motorized Unit Specifications

General Specifications		
<b>Motorized unit dimensions (for transport)</b>		60" x 83 1/2" x 94" (W x L x H) (152,4 cm x 212 cm x 238,8 cm)
<b>Motorized unit width</b>		4' (1,2 m)
<b>Minimum clearance for motorized unit (for transport)</b>		98" (2,5 m)
<b>Motorized unit weight</b>		2690 lb (1223 kg)
<b>Base dimensions</b>		46 5/16" x 72 1/2" x 30 9/16" (W x L x H) (1,2 m x 1,8 m x 0,8 m)
<b>Base weight</b>		910 lb (414 kg)
<b>Min. / max. platform length</b>	Single mast installation	9' / 39' (3 m / 12 m)
	Twin mast installation	48' / 98' (13 m / 30 m)
<b>Maximum extension of deck outriggers</b>		3' (1 m)
<b>Maximum height of setup</b>		Up to 250' (76 m) without prior authorization from Hydro Mobile
<b>Tie distance</b>		Up to a maximum of 30' (9 m)
<b>Freestanding height</b>	with a full load	20' (6 m)
	with a reduced load	30' (9 m)
<b>Capacity – Freestanding setup (load including 'x' workers)</b>	Single mast installation	4200 lb at 34' (1905 kg at 10,4 m), 2 workers
	Twin mast installation	5850 lb at 98' (2654 kg at 29,9 m), 4 workers
<b>Capacity – Tied setup (load including 'x' workers)</b>	Single mast installation	3650 lb at 39' (1656 kg at 11,9 m), 4 workers
	Twin mast installation	5850 lb at 98' (2654 kg at 29,9 m), 6 workers
<b>Drive system</b>		Rack and pinion drive
<b>Vertical travel speed</b>	230 V, 60 Hz	Up to 23' (7 m) per minute
	400 V, 50 Hz	Up to 19' (5,8 m) per minute
<b>Mast section</b>		23 3/4" x 22" x 60" (W x L x H) (60 cm x 56 cm x 152 cm) 210 lb (95 kg) per section
<b>Safety devices</b>	Emergency descent	Manual descent system
	Overspeed safety device	Overspeed sensor

Fig. 1.11

Planetary Reducer Specifications		
<b>Brand</b>		Dinamic Oil
<b>Model</b>		RE 313
<b>Oil</b>	Ambient temperature 32°F to 104°F (0°C to 40°C)	TOTAL LUBRICANTS CARTER SH 150 (factory fill)
	Ambient temperature -31°F to 32°F (-35°C to 0°C)	TOTAL LUBRICANTS SYNSPEC 68
<b>Maximum torque rate</b>		2000 lb-ft (2720 N-m)

Fig. 1.12

## Motorized Unit Specifications

Electrical Specifications			
		230 V unit	400 V unit
Lifting power	Single mast installation	1 x 7,5 HP	1 x 7,5 HP
	Twin mast installation	2 x 7,5 HP	2 x 7,5 HP
Power consumption	Single mast installation	1 x 25A	1 x 15A
	Twin mast installation	2 x 25A = 50A	2 x 15A = 30A
Input power		230 V / 3 ph / 60 Hz (± 5%)	400 V / 3 ph / 50 Hz (± 5%)
Control voltage		24 VDC	24 VDC
Starting current (per single mast unit)		Up to 120A	Up to 85A
Power outlet for hand tool		1 x 120V, 20A – 1 ph	1 x 230V, 16A – 1 ph
Cable up to 200' (61 m)	Single mast installation	1 x 10/4	1 x 10/5
	Twin mast installation	2 x 10/4	2 x 10/5
Cable from 200' (61 m) up to 250' (76 m)	Single mast installation	1 x 8/4	1 x 10/5
	Twin mast installation	2 x 8/4	2 x 10/5

Fig. 1.13

Motor Specifications		
	230 V unit	400 V unit
Brand	MGM	MGM
Model	BMBM 132S B5	BMBM 132S B5
Rated power	7,5 HP (5,5 KW)	7,5 HP (5,5 KW)
Rated amperage	22A	13A
Power supply – voltage, phase and frequency	230 / 3/60	400 / 3/50
Rotation speed	1725 rpm	1440 rpm
Braking torque	2 x 52 lb-ft (70,5 N-m)	2 x 52 lb-ft (70,5 N-m)
Power consumption of motor brake	2 x 76W	2 x 76W
IP protection grade	IP55	IP55

Fig. 1.14

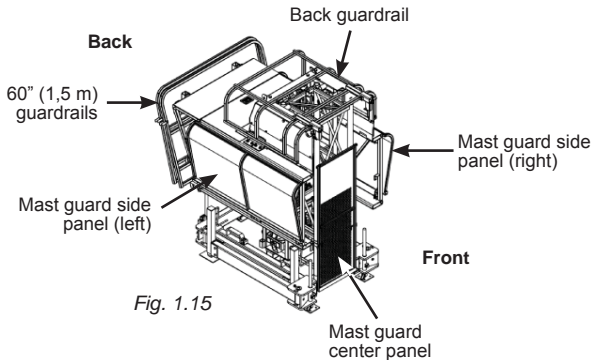


Fig. 1.15

## Motorized Unit Specifications

Weight of Components	
Description	Weight
Mast assembly	210 lb (95 kg)
Mast guard – LEFT assembly	41 lb (19 kg)
Mast guard – RIGHT assembly	41 lb (19 kg)
Mast guard – CENTER assembly	41 lb (19 kg)
Main frame	775 lb (352 kg)
Power train	1225 lb (556 kg)
Control panel	21 lb (9,5 kg)
Power box	110 lb (50 kg)
Power cable support	2 lb (1 kg)
Plank-end guardrail	27 lb (12 kg)
30" (76 cm) guardrail	35 lb (17 kg)
60" (1,5 m) guardrail	69 lb (34 kg)
30" (76 cm) bridge kit (with guardrail)	280 lb (127 kg)
60" (1,5 m) bridge kit (with guardrail)	390 lb (177 kg)
Back guardrail	63 lb (29 kg)
30" (76 cm) bridge deck extension	96 lb (43,5 kg)
60" (1,5 m) bridge deck extension	124 lb (56 kg)
Base assembly (including 4 jacks and 4 screw jacks)	910 lb (413 kg)
60" (1,5 m) door guardrail	92 lb (41 kg)
Access stairs	135 lb (61 kg)

*Fig. 1.16*

Operation Specifications	
Wind exposure	
	Maximum wind speed allowed
During operation (of a setup with mast ties)	35 mph (56 km/h)
During erecting and dismantling (all types of setups) and for freestanding installations	28 mph (45 km/h)
When unit is out of service	94 mph (150 km/h)
* Unless authorized by Hydro Mobile prior to installation, the platform should only be used on a mast whose height does not exceed 250' (76 m).	
Noise exposure	
Standard noise level	
(DB-A / 7 m) @ 3600 tr/min	70 dBA

*Fig. 1.17*

## Dimensions of the Motorized Unit

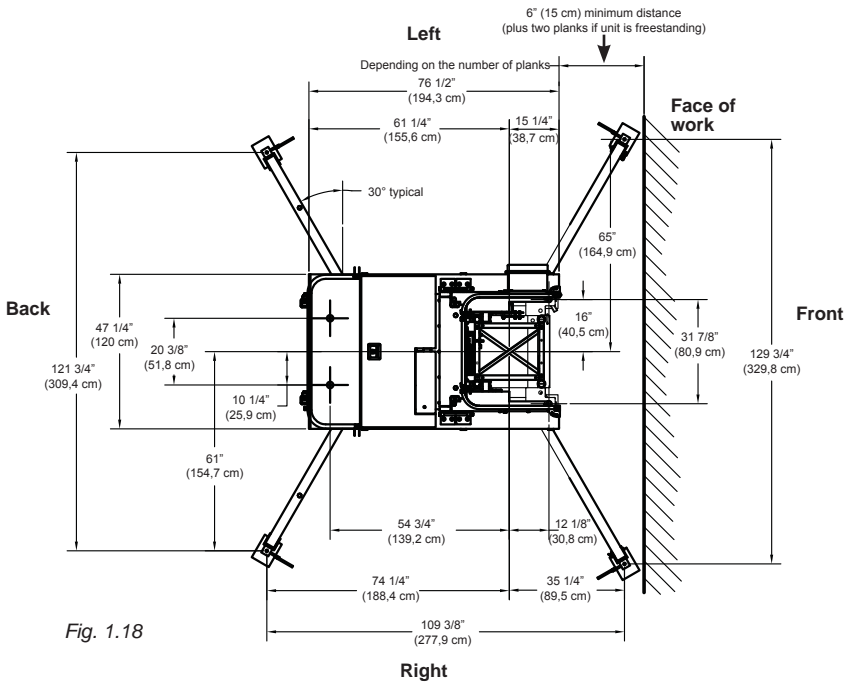


Fig. 1.18

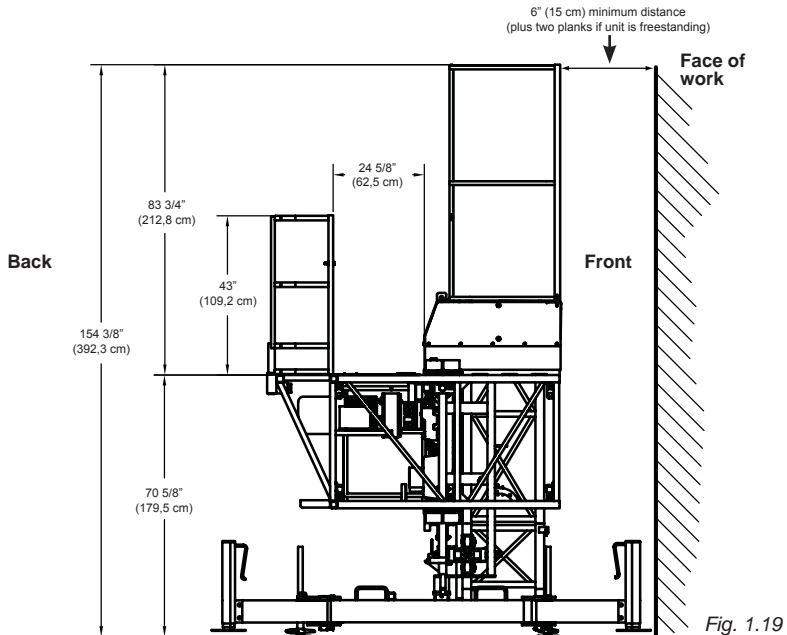


Fig. 1.19

## Positioning the Motorized Unit

### Base and cribbing

Before installing the motorized unit, make sure the bearing surface under it is level, clear of debris and has the proper bearing capacity. Appropriate cribbing must be placed under the base to distribute the load. The plywood and planks used as cribbing should be secured together to prevent slipping, leaving 1/2" (1,3 cm) of space between planks.

Suggested Cribbing		
		4' x 4' x 6 1/2" (1,2 m x 1,2 m x 16,5 cm)
①	Plywood 1/2" (1,3 cm)	4
②	2" x 6" x 48" (5 cm x 15 cm x 122 cm)	24

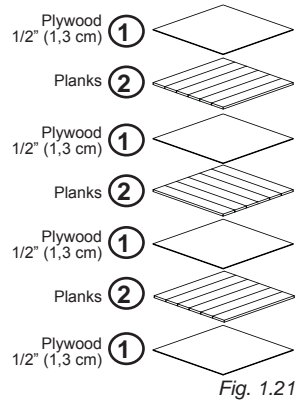


Fig. 1.21

Maximum Imposed Loads					
Height		Maximum load * (per base jack) (four jacks on each base) **		Maximum load * (per base outrigger jack) (four jacks on each outrigger) **	
ft	m	lb	kg	lb	kg
Freestanding up to 30' (9,1 m)		3920	1778	1305	592
50	15	4500	2041	N/A	
100	30	5390	2445		
150	46	6300	2858		
200	61	7190	3261		
250	76	8100	3674		

\* Activation of the overspeed safety device  
 \*\* Values in the column below must be multiplied by the number of jacks

Fig. 1.22

#### NOTE

Make sure the ground or support surface capacity meets with values included in the *Maximum Imposed Loads* table (fig. 1.22). For assistance, contact a licensed professional engineer.

## Setup and configurations

### Standard installation (single mast)

#### General installation guidelines

- 1- Installation should be carried out under the supervision of a competent person, in accordance with all applicable Federal, State, and local regulations.
- 2- In reference to the plan/layout drawing, make sure that all the components required are available. Establish the position of the motorized unit, determine if there are obstacles and what are the cribbing and wall tie requirements.
- 3- Before installing the motorized unit, determine where the cribbing will rest. The bearing surface under the motorized unit should be level, clear of debris and have the proper bearing capacity (see the *Minimum Bearing Surface Capacities* table, fig. 1.22, p. 14). Should the actual bearing capacity be inferior to the values in the table, please seek instructions and recommendations from Hydro Mobile. It is important to note that the **jacks on the base outriggers** are designed to level the motorized unit and **should not be used to support the load nor the motorized unit**.
- 4- Distance from the finished wall should be the number of planks multiplied by the width of one plank, while allowing 6 to 8" (15 to 20 cm) of play. Add an additional 2" (5 cm) if using a toe board. Refer to OSHA 1926.451 (b) and other applicable local regulation to determine play or the maximum allowable distance between the motorized unit, including its accessories, and the face of the work. Freestanding installations require a planking configuration of a minimum of two planks.

#### Preparation of the motorized unit

- 1- Unload the motorized unit with a forklift or a crane. Make sure that the mast locking bar is in place (see fig. 1.9, p. 9). Lift the motorized unit using the anchor shackles on top of the motorized unit or the forklift tubes on the base.
- 2- Lower the motorized unit on the bearing surface, making sure there are no obstacles and that the bearing surface is clear of debris.
- 3- Remove the toggle pins holding the mast guard center panel (fig. 1.8) in its storage location at the bottom, in front of the unit (fig. 1.15). Lift the panel and set it aside in a safe area, away from construction traffic. Replace the toggle pins on the panel.



**WARNING**  
The **jacks on the base outriggers** are designed to level the motorized unit and **should not be used to support the load nor the motorized unit**.

## Setup and configurations

### Standard installation (single mast)

#### Preparation of the motorized unit (cont'd)

- 4- Reaching from the **front** of the motorized unit, remove the pin assembly holding the **left** mast guard panel in its storage location on the left side of the main frame. Lift the panel and set it aside in a safe area, away from construction traffic. Replace the pin assembly in its place on the main frame. Repeat this step to remove the right mast guard panel.
- 5- Install only **one** bridge on **each side** of the mast. Refer to the *Bridges* section on p. 29 for instructions on bridge installation and on the use of bridge installation accessories such as the bridge installation support brackets.
- 6- Lift the motorized unit and align the base with the face of the work. Lower the unit into position. Open all four base outriggers and secure them in place with the lock pins. The **back** base outriggers must always be opened at an angle. In a **freestanding**, minimum two-plank installation, the **front** base outriggers must be opened at an **angle** (fig. 1.18). For a **tied** installation, the **front** base outriggers must be opened so that they are **parallel** to the face of the work. For any base outrigger configuration other than those described in this operator's manual, contact the distributor or the Hydro Mobile technical support team.
- 7- Remove the lock pin assembly and retrieve the mast locking bar from the bottom mast section. Store the mast locking bar in its storage location and secure it in place with the lock pin assembly (see fig. 1.10, p. 9).
- 8- Remove the bolt holding the two 60" (1,5 m) guardrails in their storage location at the back of the motorized unit. Lift each guardrail and set it aside in a safe area, away from construction traffic. Replace the bolt on the main frame and secure it in place.
- 9- Remove the two toggle pins holding the back guardrail (fig. 1.15) in its storage location on the top of the motorized unit. Lift the guardrail and set it aside in a safe area, away from construction traffic. Keep the toggle pins to install the mast guard side panels (see step 11).
- 10- Remove the bolt and washer holding the mast guard hinge pin in place at the top of the main frame (fig. 1.15). Lift and flip the hinge pin to insert it back into the main frame tube. Secure the hinge pin in place with the washer and bolt assembly. Make sure the bolt is tightened properly. Repeat this step for the second mast guard hinge pin.
- 11- Lift the left mast guard panel and slide it over the left hinge pin on top of the motorized unit. Close the panel and secure it in place by inserting a toggle pin at the bottom. Repeat this step to install the right mast guard panel.
- 12- To install the center mast guard panel, insert the lugs located at the top of the panel into the top of the tubes of the side mast guard panels. Gently push in the bottom of the panel. Secure the center panel to the side panels with toggle pins.



## Setup and configurations

### Standard installation (single mast)

#### Preparation of the motorized unit (cont'd)

- 13- Remove the pin holding the control panel in its storage location under the main frame. Install the control panel on the left mast guard panel by sliding the two top pins in the corresponding holes in the tube in the middle of the frame. Secure the control panel in place by sliding the pin in the vertical tube to the left of the control panel.
- 14- Retrieve the plug end of the cable bundle for the control panel from under the main frame and slide it through the hole at the bottom of the left mast guard panel.
- 15- Plug in the bottom wire.
- 16- Making sure that the alignment pin is at the bottom, plug in the **inclinometer** yellow wire in the **left input** (center left, fig. 5.3, p. 36). Plug in the **top final limit switch** yellow wire in the **right input** (center right, fig. 5.3, p. 36).
- 17- Plug in the top wire. Make sure that all the wires are properly plugged in.
- 18- Install the required electrical plug on the power cable. **This installation must be performed by a certified electrician.**

#### Installation of the motorized unit

- 1- Using the jacks on the base outriggers, level the mast on both its front and side axis, then, if required, use wood or metal shims to adjust the base so it sits squarely and level on the cribbing.
- 2- Make sure that there is only **one** bridge installed on **each side** of the mast and that the setup follows the guidelines for pre-installation. Refer to p. 43 of the *Masts and Mast Ties* section for more information about pre-installation.
- 3- Connect the power cable to a reliable, appropriate power source. **This installation must be performed by a certified electrician.** Refer to p. 32 of the *Power Pack and Operating components* section for more information on the installation of the power cable. If the unit is brand-new or has been stored for a significant amount of time, remove the top limit proximity trigger plate from the bottom mast section (see fig. 6.5, p. 42) and set it aside in a safe place. Once the unit is powered up, review the control panel indicator lights. If the red and yellow lights are lit up and remain solid, switch the left-right position of the yellow wires installed in step 16 of the preparation instructions.
- 4- Using a crane or a forklift, load mast sections on the platform. **Mast sections should be distributed equally on either side of the mast to ensure good balance.** Refer to the *Load Capacities* section on p. 47 for more information about loading the platform.



#### WARNING

The installation and connection of all power components (power cable, electrical plug, connection to power source, etc.) must be performed by a **certified electrician**.

## Setup and configurations

### Standard installation (single mast)

#### Installation of the motorized unit (cont'd)

- 5- **Before installing mast sections**, turn the main disconnect switch to the ON position. Make sure that the emergency stop button is completely pulled out (fig. 5.2, p. 36). Review the indicator lights on the control panel. When the **motorized unit** is at **base level**, the **bottom final limit** and the **bottom limit indicator lights** should be **lit up**. Visually inspect the strobe under the main frame and make sure it is working appropriately.
- 6- If necessary, remove the mast handler. Install **one** mast section. Test the bottom final limit switch by turning the activating handle. If the switch is working properly, the indicator light (red) should light up and remain solid on the control panel.
- 7- Test the bottom limit switch by raising the unit about 6" (15,2 cm) above base level. If the bottom limit switch is working properly, its indicator light (yellow) should turn off on the control panel.
- 8- With the motorized unit still about 6" (15,2 cm) above base level (and with the yellow light still lit turned off the control panel), test the top limit switch by placing a metal object in front of it. The yellow indicator light should start flashing (one-second intervals) on the control panel.
- 9- If any of the limit switches are not working properly, contact the distributor or the Hydro Mobile technical support team. For more information about limit switches and their indicator lights, refer to the *Control Panel* section on p. 36.
- 10- Proceed with the installation of mast sections. Refer to p. 40 of the *Masts and Mast Ties* section for more details on how to install mast sections.

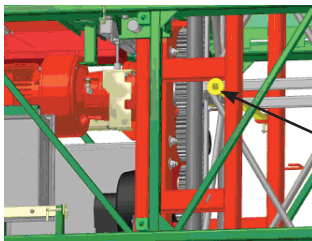
Fig. 1.24

Lock pin



Fig. 1.26

Mast locking bar



Mast locking bar



Fig. 1.23 Transport position

Storage position Fig. 1.25

## Setup and configurations

### Standard installation (single mast)

#### Installation of the motorized unit (cont'd)

- 11- Continue installing mast sections until a mast tie is required, making sure throughout the process that the mast remains plumb on both its front and side axis. Refer to the *Masts and Mast Ties* section on p. 40 for instructions about the installation of mast ties.
- 12- Install as many mast sections as required by the layout plan. A setup should not be raised over 250' (76 m) unless authorized in writing by Hydro Mobile prior to installation. Make sure that the last mast section is installed **backwards**, with the rack facing toward the face of the work, and rises **at least 3' (0,9 m)** above the mast guard. Consequently, **at least 3' (0,9 m)** of mast section must be visible above the mast guard **at all times when the motorized unit is in operation**. Install the top limit proximity trigger plate on the second to last mast section from the top. Refer to p. 42 of the *Masts and Mast Ties* section for more details on how to install the top limit proximity trigger plate.
- 13- Lower the motorized unit to base level, verifying the mast ties and the mast bolts on the way down and making sure that all are properly secured and in good condition. Once a week, **at the end of a working shift**, apply grease to the rack(s) and gears from the top of the setup down. For more information, refer to the daily inspection checklist recommended for this motorized unit. Grease must be allowed to stand for 2-3 hours before the motorized unit is used again. Use an open gear lubricant recommended by Hydro Mobile. For more information on recommended open gear lubricants, contact the distributor or the Hydro Mobile technical support team.
- 14- With the motorized unit at base level, complete the installation of bridges as required and allowed. Refer to the *Load Capacities* section on p. 47 for more information on the number of bridges allowed in a setup.
- 15- Before authorizing workers to use the motorized unit, perform every step in the daily inspection checklist. Refer to p. 58 of the *Transport, Storage and Maintenance* section for more information. Carry out the reset procedure for the inclinometer as described on p. 28 of the *Safety Devices* section.
- 16- Make sure that all the guardrails are in place and secure (see p. 51 of the *Accessories* section for more information about guardrails). Workers exposed to potential hazards must always wear proper personal protection equipment (PPE) such as a helmet, safety boots, a fall arrest harness, etc., as prescribed by OSHA or local regulations. In all cases where workers are exposed to fall hazards, fall protection is required. Adjust the outriggers and install planking, as required (see p. 50 of the *Accessories* section for more information).



#### WARNING

The last mast section must rise **at least 3' (0,9 m)** above the mast guard. Consequently, **at least 3' (0,9 m)** of mast section must be visible above the mast guard **at all times when the motorized unit is in operation**.

## Setup and configurations

### Twin mast installation

In reference to the plan/layout drawing, make sure that all the motorized units and components required are available. Establish the position of each motorized unit (see the *Distances* table, fig. 1.42 on p. 22), determine if there are obstacles and what are the cribbing and mast tie requirements.

#### Installation of the first motorized unit

- 1- Prepare the first motorized unit as described in the general installation guidelines and the preparation instructions on p. 15. If the twin mast structure will be installed on an uneven bearing surface or if there are obstacles preventing a level installation of the base of the structure, the motorized unit on the lowest grade must be installed first (see fig. 1.44, p. 24).
- 2- Install the first motorized unit setup, including mast sections and mast ties, as is required and allowed, making sure that there is only **one** bridge installed on **each side** of the mast. Make sure that the mast locking bar has been removed and that all limit switches are working properly. For more information, refer to steps 1 through 13 of the installation instructions for a single mast setup on p. 17.
- 3- Locate the trolley release bolts (fig. 1.27 and fig. 1.28). **Using a 1 1/2" wrench, loosen the inside lock nut** (closer to the power train) on the trolley release bolt (fig. 1.29 and fig. 1.31).



Fig. 1.27

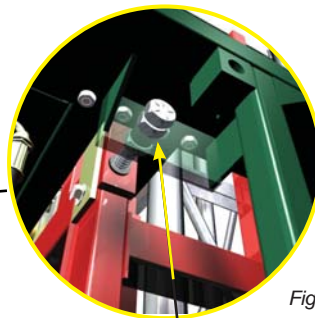


Fig. 1.28

Trolley release bolt

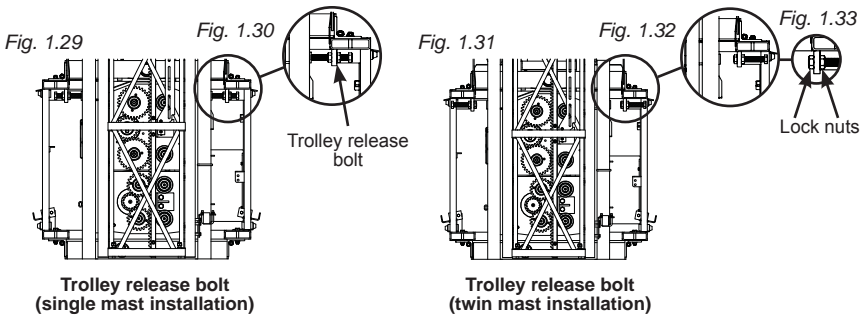
- 4- Push back the bolt by 1/4" (0,6 cm).
- 5- Secure the trolley release bolt in place by tightening the outside lock nut.

## Setup and configurations

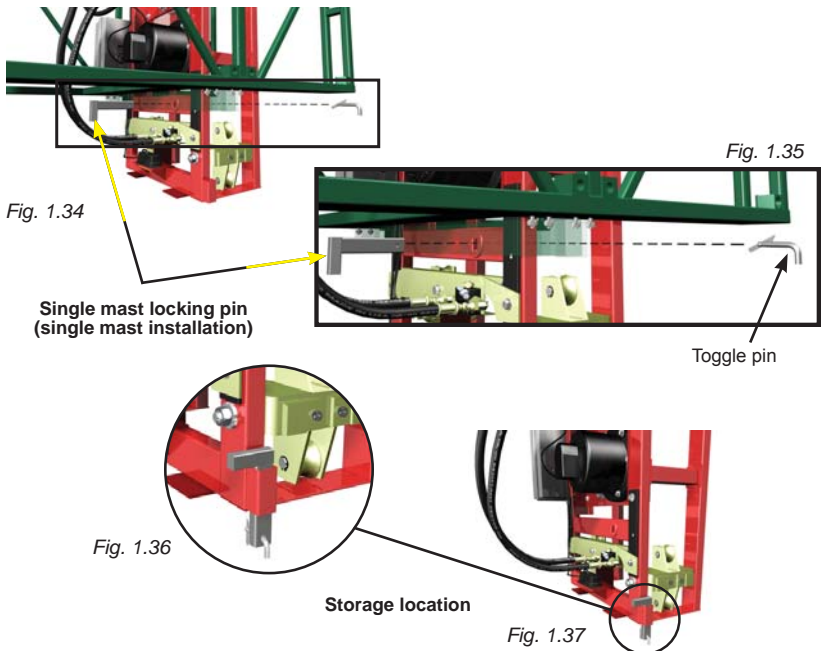
### Twin mast installation

#### Installation of the first motorized unit (cont'd)

- 6- Repeat steps 4 and 5 for the trolley release bolt on the opposite side of the power train.



- 7- Remove the toggle pin at the bottom of the power train and slide out the single mast locking pin (fig. 1.34 and 1.35). If the single mast locking pin is too tight to be removed, keep pulling on the locking pin while another erector/dismantler alternately raises and pushes down on the bridge installed on the right side of the mast. Once retrieved, slide the single mast locking pin in its storage location and secure in place with the toggle pin (fig. 1.36 and 1.37).

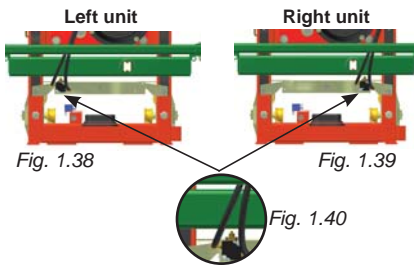


## Setup and configurations

### Twin mast installation

#### Installation of the first motorized unit (cont'd)

- 8- As shown in fig. 1.38 and fig. 1.39, the pressure control valve (fig. 1.40) on the **left** unit of the setup must be installed on the **left-hand side** at the bottom of the power train and the pressure control valve on the **right** unit of the setup must be installed on the **right-hand side** at the bottom of the power train. If required, remove the nut and bolt assemblies on the pressure control valve and reinstall the pressure control valve with the nut and bolt assemblies on the appropriate side of the power train, according to the position of the unit in the setup.



Pressure control valve



Fig. 1.41

Right unit= GREEN connector (factory default)  
Left unit= RED connector

- 9- As shown in fig. 1.41, the **green** inclinometer bypass connector must be plugged in on the **right** unit of the setup (factory default) and the **red** inclinometer bypass connector must be plugged in on the **left** unit of the setup. If necessary, unscrew the connector in the multiport connection box to replace it with the appropriate one.

#### Installation of the bridge structure

- 1- Pre-assemble and bolt together as many bridges as is required and allowed. For more information on the number of bridges required and allowed for a twin mast installation, refer to the *Distances for a twin mast installation* table below (fig. 1.42) and to the *Load Capacities* section on p. 47.
- 2- With the help of a crane or a forklift, align the assembled bridge structure with the pre-installed motorized unit (fig. 1.43, p. 23). Bolt the bridge structure to the motorized unit.

Distances for a twin mast installation (approximate distances)		
Number of bridges	Distances from center to center of masts	Distances between main frames
10	54' (16,5 m)	50' (15,2 m)
9	49' (14,9 m)	45' (13,7 m)
8	44' (13,4 m)	40' (12,2 m)
7	39' (11,9 m)	35' (10,7 m)
6	34' (10,4 m)	30' (9,1 m)
5	29' (8,8 m)	25' (7,6 m)

Fig. 1.42

## Setup and configuration

### Twin mast installation

#### Installation of the bridge structure (cont'd)

- With the bridge structure still supported by a crane or a forklift, raise the structure so that the level of the deck of the second motorized unit will be 4" (10 cm) above the top of the cribbing that will be supporting that motorized unit (see "Y" distance in fig. 1.44, p. 24).

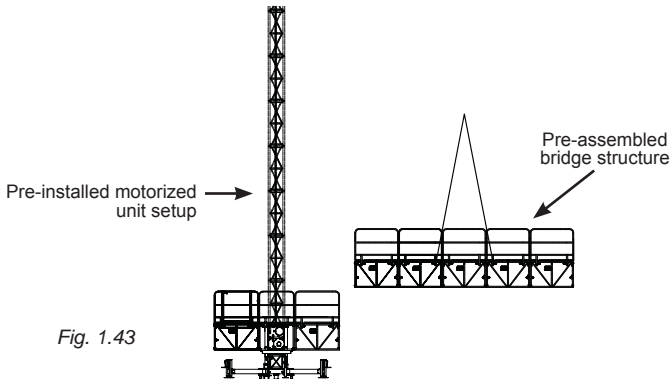


Fig. 1.43

\* For illustration purposes only, appropriate cribbing is not shown under the motorized unit in fig. 1.43

#### Installation of the second motorized unit

- Prepare the second motorized unit as described in the general installation guidelines and the preparation instructions on p. 15. Make sure that the trolley release bolts are pushed back by 1/4" (0,6 cm), as described on p. 20, and that the single mast locking pin is removed (see step 7, on p. 21).
- Temporarily connect the power cable of the motorized unit.
- Turn the main disconnect switch to the ON position. Make sure that the emergency stop button is completely pulled out (fig. 5.2, p. 36). Review the indicator lights on the control panel. When the **motorized unit** is at **base level**, the **bottom final limit** and the **bottom limit indicator lights** should be **lit up**. Visually inspect the strobe under the main frame and make sure it is working appropriately.
- Install only **one** mast section and test the limit switches as described on p. 18 of the installation instructions for a single mast setup.
- Disconnect and secure the power cable. **Reinstall the mast locking bar**.
- Lift the motorized unit and align the base with the face of the work and with the bridge structure. Before bolting the unit to the bridge structure, determine where the cribbing will rest. The bearing surface under the motorized unit must be level, clear of debris and have the proper bearing capacity (see *Minimum Ground Bearing Capacities* table, fig. 1.22, p. 14). Set the cribbing and bolt the second motorized unit to the last bridge of the bridge structure (see fig. 1.44, p. 24).

## Setup and configurations

### Twin mast installation

#### Installation of the second motorized unit (cont'd)

- 7- Open all four base outriggers and secure them in place with the locking pins. Refer to p. 16 of the preparation instructions for a single mast installation for more information. If necessary, adjust the screw jacks to the lower grade.
- 8- Using the jacks on the outriggers, level the mast on both its front and side axis, then, if required, use wood or metal shims to adjust the base so it sits squarely and level on the cribbing.

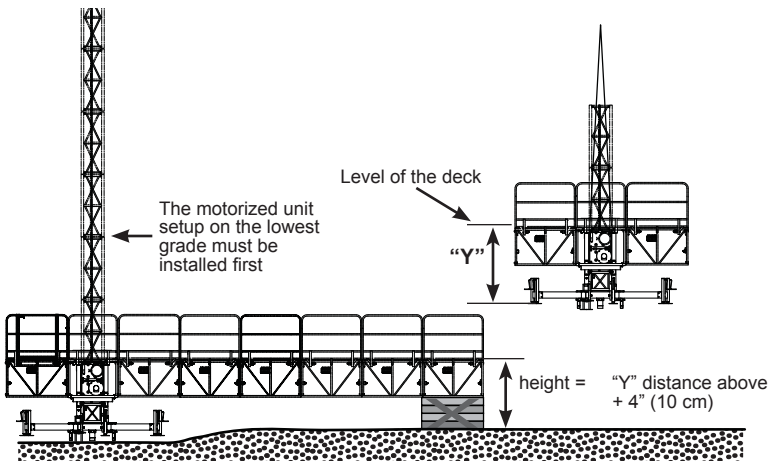


Fig. 1.44

\* For illustration purposes only, appropriate cribbing is not shown under the motorized unit in fig. 1.44

- 9- Remove the mast locking bar and reconnect the power cable. Make sure that the pressure valve and the inclinometer bypass connector are installed properly, as described on p. 22.
- 10- Verify the inclinometer located on each of the motorized units and make sure that they are both working properly. Refer to p. 28 of the *Safety Devices* for instructions on the use and adjustment of inclinometers. If necessary, install the optional communications cable to link both control panels. Make sure that the communications cable is plugged in properly, secured and does not impede circulation on the platform.
- 11- Reset the inclinometer on each unit of the installation. Refer to p. 36 of the *Control Panel* section for instructions on the reset procedure.
- 12- **Using a 1 1/2" wrench, loosen the inside lock nut** of each trolley release bolt (fig. 1.30 and fig. 1.32 on p. 21) and push back the bolt **completely** until it is even with the inside lock nut. Secure the trolley release bolt in place by tightening the outside lock nut. Perform this step for **each** trolley release bolt on **both motorized units** of the twin mast setup.



## Setup and configurations

### Twin mast installation

#### Installation of the second motorized unit (cont'd)

- 13- Using a crane or a forklift, load mast sections on the platform. **Mast sections should be distributed equally on either side of the mast to ensure good balance.** Refer to the *Load Capacities* section on p. 47 for more information about loading the platform. Install mast sections and mast ties as is required and allowed.
- 14- Lower the twin mast structure to base level, verifying mast ties and mast bolts on the way down and making sure that all are properly secured and in good condition. Once a week, **at the end of a working shift**, apply grease to the rack(s) and gears from the top of the setup down. For more information, refer to the daily inspection checklist recommended for this motorized unit. Grease must be allowed to stand for 2-3 hours before the motorized unit is used again. Use an open gear lubricant recommended by Hydro Mobile. For more information on recommended open gear lubricants, contact the distributor or the Hydro Mobile technical support team.
- 15- Install cantilever bridges on the sides of the motorized units opposite to the bridge structure, as is required and allowed. Refer to p. 30 of the *Bridges* section for more information on a cantilever installation and to the *Load Capacities* section on p. 47 for the maximum number of bridges allowed in a setup.
- 16- Before authorizing workers to use the twin mast installation, perform every step in the daily inspection checklist. Refer to p. 58 of the *Transport, Storage and Maintenance* section for more information. Make sure that all the guardrails are in place and secure (see p. 51 of the *Accessories* section for more information about guardrails). Workers exposed to potential hazards must always wear proper personal protection equipment (PPE) such as a helmet, safety boots, a fall arrest harness, etc., as prescribed by OSHA or local regulations. In all cases where workers are exposed to fall hazards, fall protection is required.
- 17- Adjust the outriggers and install planking, as required (see p. 50 of the *Accessories* section for more information).

#### Resetting a motorized unit for a single mast installation

- 1- Replace the single mast locking pin at the bottom of the power train and secure in place with the toggle pin (fig. 1.34 and 1.35, on p. 21).
- 2- Push back both trolley release bolts against the power train, making sure both bolts are of equal length on both sides (about 3 5/16" or 8,4 cm).
- 3- Reset the inclinometer as described in the instructions on p. 36 of the *Control Panel* section.

## Safety Devices

### Emergency Descent Control System

In the event of a motor failure or broken parts, use the gravity-activated emergency descent control system to bring the motorized unit safely down to base level.

#### Emergency descent procedure for a single mast installation

- 1- Open the left access panel on the main frame (fig. 2.2) and turn the main disconnect switch to the OFF position.
- 2- Retrieve the two emergency descent levers from the toolbox located under the left access panel.
- 3- Remove the right access panel and close the left panel. It is important to close the left access panel to maximize the floor area and increase security.

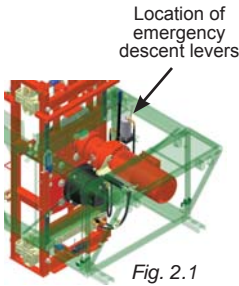


Fig. 2.1

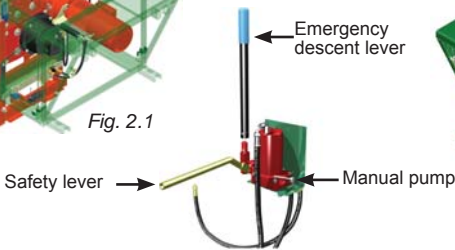


Fig. 2.3

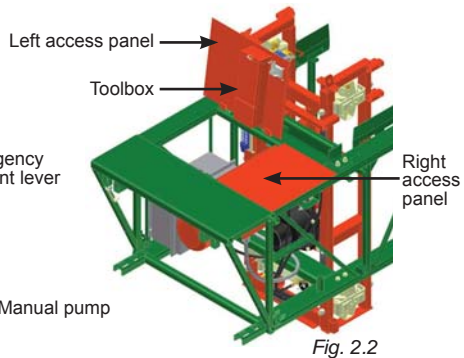


Fig. 2.2

- 4- Install both levers on their respective rods (fig. 2.3).
- 5- It is important to note that the audible alarm does not work during a manual descent of the platform. Make sure that all workers on and off the platform have been warned and that the areas below and around the descending setup have been cleared and remain free of obstacles and workers.
- 6- Raise the safety lever until it is resting against the back plate.
- 7- Activate the emergency descent lever to build up pressure in the hydraulic system. This will activate the cylinder that releases the brakes and initialize the emergency descent. The platform should start descending after ten back and forth motions. Special care and attention should be paid to the speed of descent. To stop the emergency descent of the platform, lower the safety lever.

## Safety Devices

### Emergency Descent Control System

#### Emergency descent procedure for a single mast installation (cont'd)

- 8- To make sure that the brakes do not overheat during the emergency descent, it is recommended to stop the emergency descent every 100' (30 m) and allow the brakes to cool for a 15-minute period.
- 9- Before using the motorized unit again, the brakes must be inspected by an appropriately trained and authorized, competent technician after using the emergency descent system.

#### Emergency descent procedure for a twin mast installation

- 1- Prepare both motorized units in the installation as described in steps 1 through 5 of the emergency descent procedure for a single mast installation on p. 26.
- 2- Proceed with steps 6 through 9 of the emergency descent procedure for a single mast installation, making sure they are performed **simultaneously on both units**.

It is important to note that the inclinometer does not work during the emergency descent of a twin mast structure. Any slope of the structure exceeding  $\pm 5$  degrees will be detected by the pressure control valve located at the bottom of the main frame of each motorized unit. It is also important to make sure that the structure is back to level before resuming operation of the setup. Refer to p. 26 of this section for instructions on how to bring a structure back to level.

### Overspeed Safety Device

The Hydro Mobile E Series is equipped with an overspeed safety device. This safety feature is designed to prevent the motorized unit from dropping and is triggered automatically. This device will immobilize the motorized unit instantly.

#### Activation of the overspeed safety device

- 1- In the event of an activation of the overspeed safety device, the operator must contact the distributor or the Hydro Mobile technical support team. All precautions must be immediately taken to ensure the safe return of all workers to base level according to the evacuation plan (see step 13 on p. 7 of the *Performance and Safety* section).
- 2- A thorough mechanical inspection of the motorized unit must be carried out by an appropriately trained and competent, authorized technician. Operation of the motorized unit can only be resumed once the structure has been fully inspected and the overspeed safety device has been reset.

## Safety Devices

### Inclinometer

Used only in a twin mast configuration, the inclinometer is located in the main frame. The inclinometer will detect any  $\pm 2$ -degree slope of the structure and trigger an indicator light on the control panel to warn the operator.

#### Emergency descent

During an emergency descent, the inclinometer is deactivated. Any slope of the structure exceeding  $\pm 5$  degrees will be detected by the pressure control valve located at the bottom of the main frame of each motorized unit in the installation.

#### Initialization (reset) of the inclinometer

Before operating the motorized unit, the inclinometer must be reset after each installation, transport of the unit or change in the setup (from single mast to twin mast), whether the unit is used in a single mast or a twin mast configuration. Refer to p. 36 of the *Control Panel* section for instructions on the reset procedure.

#### Testing the inclinometer

In a twin mast configuration, it is important to make sure that the inclinometers are working properly. Each inclinometer is factory-tested and fully functional when shipped but requires to be tested for proper operation. If an inclinometer is defective, the motorized units will not operate in a twin mast configuration. In that case, contact the distributor or the Hydro Mobile technical support team.

- 1- Make sure that the inclinometers are properly connected on both motorized units. Make sure also that the motorized units are not linked by a communication cable. Temporarily remove the connection, if necessary.
- 2- Make sure that the bridge structure is level and that the  $\pm 2$ -degree or  $\pm 5$ -degree indicator light is not lit up on the control panel.
- 3- Rise or lower only **one unit** of the twin mast setup to make sure that the structure will stop moving once the slope detected is over or below 2 degrees.

#### Detection of a $\pm 2$ -degree slope

When the twin mast structure is in movement, if the inclinometers detect a slope of  $\pm 2$  degrees, a signal is automatically sent to the control panels, the  $\pm 2$ -degree indicator lights (yellow) start blinking rapidly and both units stop automatically.

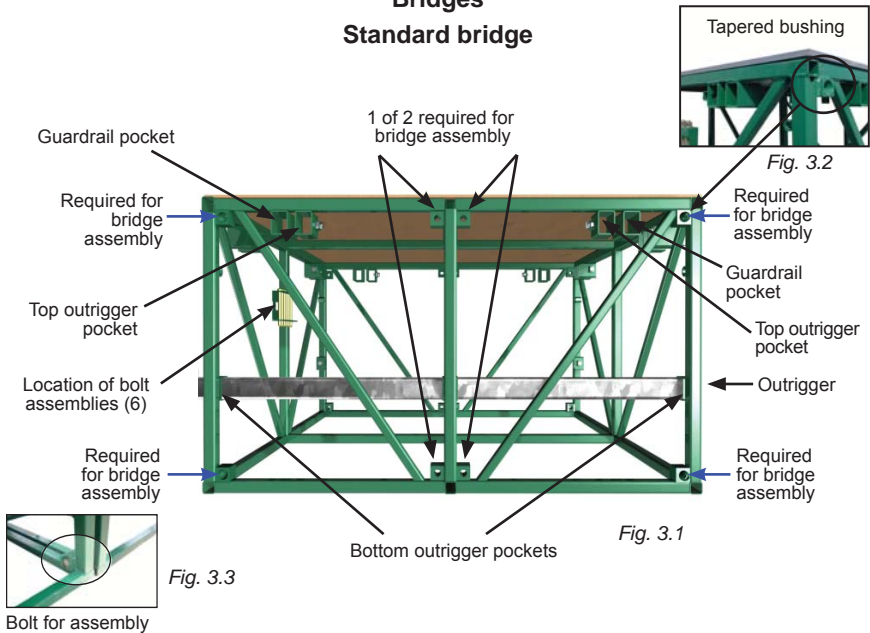
In a twin mast configuration where units are **not linked** by a communication cable and are operated by **two operators**:

- 1- **During ascent, rise the lowest** motorized unit in the configuration until the structure is brought back to level. Normal operation will resume once the alarm on the control panel has been resolved.
- 2- **During descent, lower the highest** motorized unit in the configuration until the structure is brought back to level. Normal operation will resume once the alarm on the control panel has been resolved.

In a twin mast configuration where units are **linked by a communication cable** and are operated by a single operator, the control panels will automatically adjust the movements of the units according to the signals they receive from the inclinometers and bring the structure back to level. No action is required by the operator.

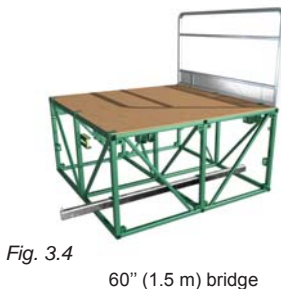
## Bridges

### Standard bridge



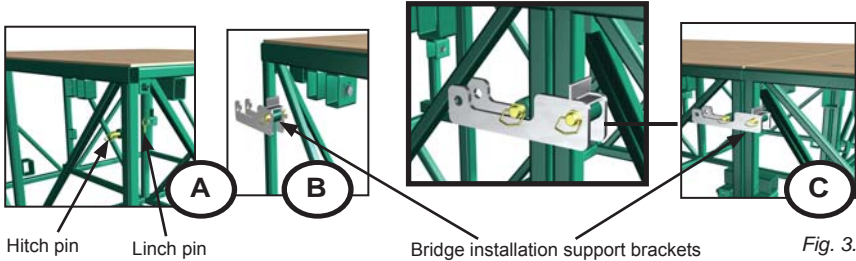
### Installation

- 1- Align both bridges using the tapered bushings (blue arrows, fig. 3.1).
- 2- Assemble both bridges together using one 5/8" x 5 1/2" (GR8) hex bolt, one 5/8" (GR8) lock washer and one 5/8" (GR8) nut in each of the four corner tapered bushings (fig. 3.1 and 3.2) and in one of the pairs of tapered bushings in the middle of the bridge (using both top and bottom bushings on the same side – left or right, fig. 3.1).
- 3- Set up bridges alternately on each side of the mast in such a sequence as to warrant the balance of the structure.



## Bridge Installation Accessories

### Bridge installation support bracket



- Step A:** Under the bridge to be installed, slide hitch pins in the designated holes on both sides of the bridge and secure them with lynch pins.
- Step B:** Using other hitch pin and lynch pin assemblies, attach the bridge installation support brackets to the bridge already bolted to the base or to another bridge.
- Step C:** Lift the bridge to be installed and lower it down so that the hitch pins are completely supported by the bridge installation support bracket. Assemble the bridges using the appropriate bolts and nuts. Remove the brackets when the bridges are bolted together.

#### NOTE

The bridge installation support bracket and the bridge installation method described above can only be used when the motorized unit is at base level.

## Cantilever Bridge

### Installation

- 1- Make sure that the single mast locking pin and the trolley release bolts are in single mast position (factory default). If necessary, refer to p. 25 of the *Motorized Unit* section for instructions on how to reset the position of the single mast locking pin and the trolley release bolts.
- 2- Using bridge installation support brackets or any other lifting device such as a crane or a forklift, bolt a bridge assembly to the main frame on one side of the mast.
- 3- Bolt a second bridge assembly to the main frame on the other side of the mast.
- 4- Install as many additional bridges as is required and allowed. It is important to install each bridge **alternately** on one side, then on the other side of the mast, to avoid throwing the structure out of balance. The number of bridges should be **equal on both sides** of a cantilever installation. Refer to the *Load Capacities* section on p. 47 for information on the number of bridges allowed in a cantilever bridge configuration.
- 5- For any configuration other than described in the previous steps or in the *Load Capacities* section, contact the distributor or the Hydro Mobile technical support team.

## Bridge Deck Extension (optional)

Bridge deck extensions can be attached to both 60" (1,5 m) and 30" (76 cm) bridges and are used to extend the width of the work area from 5' (1,5 m) to 7' (2,1 m), increasing the space available for circulation on the setup. To ensure stability, the number of bridge deck extensions installed must be equal on either side of the mast.

Bridge deck extensions **must be used only for the circulation of workers on the setup and must not be used as a storage area for material, tools, equipment or any other load.** The weight of each bridge deck extension installed must be taken into account when calculating the load capacity of a setup. Refer to the *Weight of Components* table on p. 12 of the *Motorized Unit* section.

Unless authorized by Hydro Mobile prior to installation, planking is not allowed when using bridge deck extensions in the front of a setup. For information on the number of bridges allowed in a configuration using bridge deck extensions, contact the distributor or the Hydro Mobile technical support team.

### Installation

- 1- Slide an outrigger in the top outrigger pocket of the bridge and insert a toggle pin in the hole located halfway on the outrigger to prevent it from slipping out of the outrigger pocket.
- 2- Pull out the outrigger until the toggle pin is snug against the outrigger pocket.
- 3- Tighten the nut and bolt of the outrigger pocket to secure the outrigger in place.
- 4- Repeat steps 1 through 3 for the second outrigger.
- 5- Insert the bridge deck extension on the outriggers until it is snug against the bridge. Tighten the nuts and bolts on the extension to secure it in place.
- 6- Insert plank stop pins in each of the outriggers and install the appropriate guardrails on the deck extension.

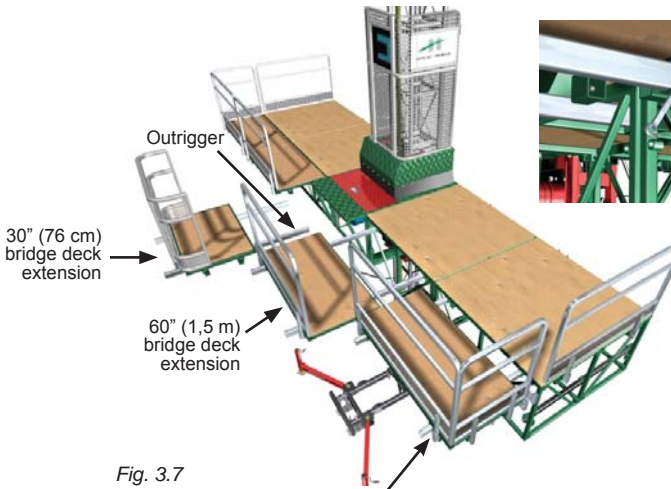


Fig. 3.7



Fig. 3.8

**Bridge deck extensions can only be used for the circulation of workers.**

## Power Pack and Operating Components

### Startup preparation instructions

- 1- Make sure that the motorized unit did not suffer any damage during transport and installation and that it can be operated safely.
- 2- Make sure that the top limit trigger plate is in place and working properly. Adjust it if necessary. Refer to p. 42 of the *Masts and Mast Ties* section for more details on the installation and adjustment of the top limit trigger plate.
- 3- Select a power cable that is suitable for the height of the setup. Hook up the power cable to the motorized unit. **This installation must be performed by a certified electrician.** Refer to the *Power Cable Selection* chart (fig. 4.1) and the *Payload vs Input voltage* chart (fig. 4.4) to select the appropriate cable for the installation.

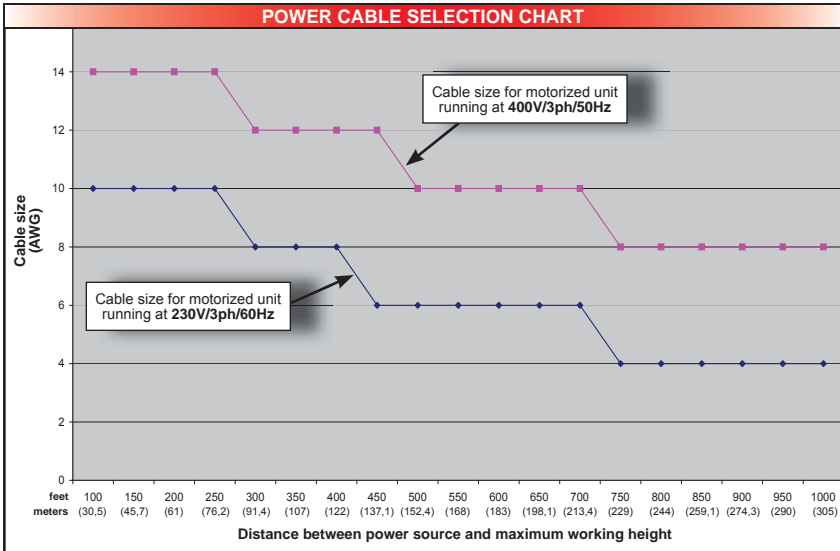


Fig. 4.1

- 4- Run the cable through to the end of the second bridge of the setup (or the end of the first bridge, if there is only one bridge on either side of the mast). The cable must clear the base completely.



Fig. 4.2

Cable support kit

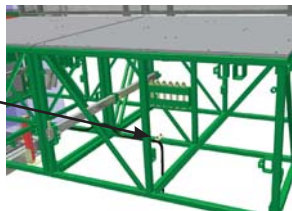


Fig. 4.3

Second bridge in setup



## Power Pack and Operating Components

### Startup preparation instructions (cont'd)

- 5- Retrieve the cable support kit from the toolbox (fig. 4.2). Using the U bolt and flat bar assembly, attach the wire mesh grip (Kellems grip) to a bridge truss (horizontal or vertical) (fig. 4.3). Run the cable through the wire mesh grip.

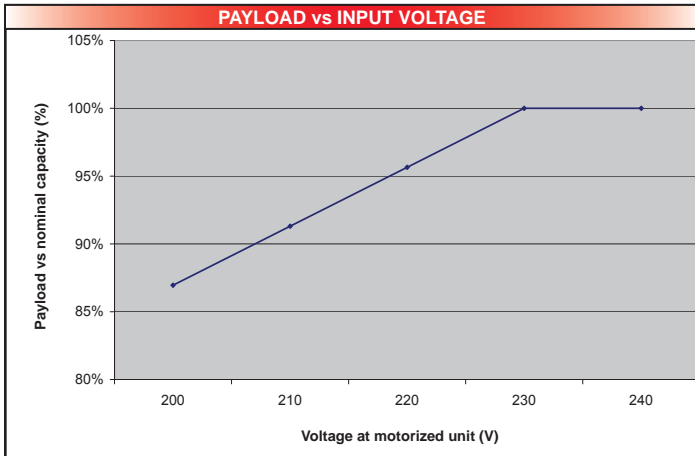


Fig. 4.4

Note: The motorized unit must not be operated if the available voltage is lower than shown on the above chart



Fig. 4.5

Control panel  
(side view)

Rise (UP) and  
descent (DOWN)  
command buttons

Emergency stop  
button

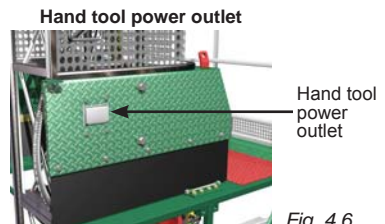


Fig. 4.6



Fig. 4.7

Hand tool power outlet

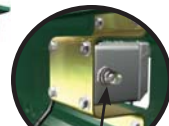


Fig. 4.8

Reset button for hand  
tool power outlet

- 6- If necessary, reset the hand tool power outlet by pressing and releasing the reset button located in the vinyl bubble on the outlet, inside the mast guard support panel (fig. 4.8).

Note: The current in the hand tool power outlet is shut off when the motorized unit is moving.

## Power Pack and Operating Components

### Motorized unit startup procedure

- 1- Prepare the motorized unit by following the *Startup Preparation Instructions* on p.32.
- 2- Connect the power cable to a safe and reliable power source (from the building or a generator). **This installation must be performed by an electrician.** Refer to fig. 1.13 on p. 11 of the *Motorized Unit* section for more information on the input power range.
- 3- Make sure the emergency stop button is completely pulled out.
- 4- Open the left access panel on the main frame (fig. 4.9, p. 34). Turn the main disconnect switch to the ON position (fig. 4.10). The POWER ON indicator light (white) will light up and remain solid on the control panel. Close the access panel.
- 5- If the POWER ON indicator light does not light up after a short period of time, make sure that the power cable is properly connected to the power source and to the motorized unit. If the cable is properly connected at both ends and the POWER ON indicator light still does not light up on the control panel, stop the operation of the motorized unit and contact a certified electrician.

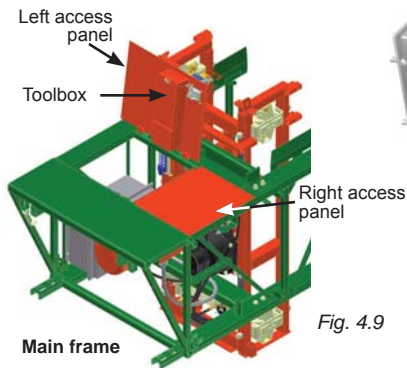


Fig. 4.9



Fig. 4.10

- 6- If any other event indicator light is lit or blinking on the control panel, take the proper corrective action. It should be noted that if the motorized unit is at base level, the **bottom final limit** and the **bottom limit indicator lights** will light up and remain lit on the control panel. If no other indicator light is on, proceed with the next step of the startup procedure.
- 7- If the motorized unit is used in a twin mast configuration, make sure that the inclinometer is functioning correctly. Refer to p. 28 of the *Safety Devices* section for more information about inclinometers.

## Power Pack and Operating Components

### Motorized unit shutdown procedure

- 1- If the motorized unit was used in a twin mast configuration, make sure that the inclinometer indicator lights on the control panels are not turned on and that the structure is level.
- 2- Bring the motorized unit down to base level.
- 3- Push in the emergency stop button.
- 4- Open the left access panel on the main frame (fig. 4.9, p. 34) and turn the main disconnect switch to the OFF position. Using a proper locking device, lock the switch to prevent unauthorized use of the motorized unit. Close the access panel.
- 5- Disconnect the motorized unit from the external power source (building, generator, etc.).
- 6- Before transporting or storing the unit for any significant length of time, make sure that the mast locking bar and the single mast locking pin are in place. Refer to step 7 on p. 16 of the *Motorized Unit* section for more information on the mast locking bar and to p. 21 of the *Motorized Unit* section for more information about the single mast locking pin.

Toolbox Components	
Quantity	Description
1	15/16" open end wrench
1	reset tool for the overspeed safety device
1	cable support kit
1	locking bar for the overspeed safety device
1	emergency descent pump lever
1	safety valve lever (for emergency descent)
1	Operator's manual
1	MGM motor owner's manual
1	12,5 oz (370 ml) aerosol can of grease for rack and pinion

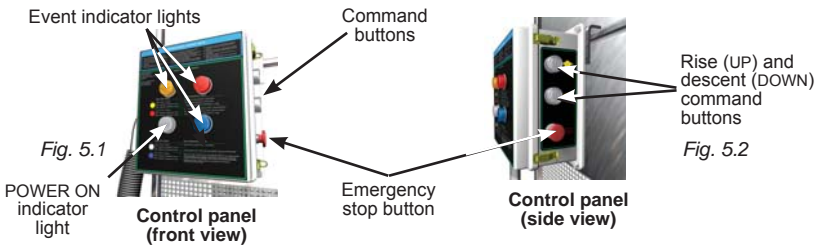
Fig. 4.11

## Control Panel

### General guidelines

The control panel on the Hydro Mobile E Series system handles motor operation and configuration control. The control panel event indicator lights are programmed to detect and analyze signals and react accordingly to notify the operator of any important event with the appropriate indicator light (see fig. 5.7 and the *Control Panel – Event Indicator Lights* descriptions and instructions, on p. 37). The descriptions and instructions on the control panel are shown in **three operating languages** (English, French and Spanish).

It is **important** to comply with the instructions included in the following pages for the operation of the control panel and to take prompt corrective action when required. For any event other than those described in this operator’s manual, contact the distributor or the Hydro Mobile technical support team.



### Initialization (reset) of the inclinometer

Before operating the motorized unit, the inclinometer must be reset after each installation, transport of the unit or change in the setup (from single mast to twin mast), whether the unit is used in a single mast or a twin mast configuration.

Make sure the inclinometer is plugged in properly (fig. 5.3) and follow the steps described in the *Inclinometer Reset Procedure* table (fig. 5.5). It is important to note that these steps must be carried out **within a 30-second time frame**. Exceeding this time limit will cause the procedure to fail and have to be repeated.



INCLINOMETER RESET PROCEDURE			
Action	Result	Action	Result
For units with serial number		For units with serial number	
Push in the emergency stop button (fig. 5.2)		Push in the emergency stop button (fig. 5.2)	
Press and hold the UP button (fig. 5.2) for 5 seconds	Blue and yellow indicator lights blink rapidly <b>five times</b>	Press and hold the UP button (fig. 5.2) for 10 seconds	Red indicator light blinks rapidly <b>five times</b>
Press the UP button twice	Blue and yellow indicator lights blink rapidly <b>five times</b>	Release the UP button and pull out the emergency stop button	
Press the DOWN button twice	Blue and yellow indicator lights blink rapidly <b>five times</b>	Procedure has been <b>successful</b>	Blue and yellow indicator lights remain solid for <b>two seconds</b>
Press the UP button three times	Blue and yellow indicator lights blink rapidly <b>five times</b>	Procedure has <b>failed</b> (wrong sequence or time limit exceeded)	Warning sound alarm is activated; procedure must be started over
Pull the emergency stop button			
Procedure has been successful	Blue and yellow indicator lights remain solid for <b>two seconds</b>		
Procedure has <b>failed</b> (wrong sequence or time limit exceeded)	Warning sound alarm is activated; procedure must be started over		

Fig. 5.5

## CONTROL PANEL – EVENT INDICATOR LIGHTS

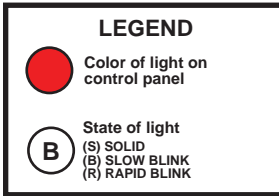


Fig. 5.6





State	Event
 Solid (S) Slow blink (B) Rapid blink (R)	Bottom limit Top limit Inclinometer ( $\pm 2$ degrees)
 Solid (S) Slow blink (B) Rapid blink (R)	Bottom final limit Top final limit Inclinometer ( $\pm 5$ degrees)
 Solid (S) Slow blink (B) Rapid blink (R)	Power ON ----- Communication error
 Solid (S) Slow blink (B) Rapid blink (R)	Alarm on remote unit Overspeed safety device engaged Mast tie door closed

Fig. 5.7

**Bottom final limit***Detection of the bottom final limit***EVENT:** Motorized unit stops moving**ACTION:** Verify the bottom limit switch and make sure it is working properly. Replace if necessary. Resume operation when the problem is resolved and raise the motorized unit.**Top final limit***Detection of the top final limit***EVENT:** Motorized unit stops moving**ACTION:** Verify the top limit proximity trigger plate and make sure it is installed properly. Adjust the installation if necessary. Verify the top limit proximity switch and make sure it is working properly. Replace if necessary. Resume operation when the problem is resolved and lower the motorized unit.**Inclinometer  $\pm 5$  degrees***Detection of a  $\pm 5$ -degree slope on a twin mast structure***EVENT:** Lowest motorized unit of the twin mast setup stops**ACTION:** The operator must refer to the instructions for the use of the inclinometer in the *Safety Devices* section of the operator's manual.**Alarm on remote unit***Detection of an event on the remote unit***EVENT:** Warning only; motorized unit is fully functional**ACTION:** This event can only happen in a twin mast configuration where units are linked with a communication cable. Operator must stop operation of the setup and take proper corrective action on the remote motorized unit.

**CONTROL PANEL – EVENT INDICATOR LIGHTS**

Continued from page 37

**B** **Overspeed safety device in gear**  
*Detection of the activation of the overspeed safety device*

**EVENT:** Motorized unit stops moving  
**ACTION:** The operator must call a Hydro Mobile technician for assistance.

**R** **Mast tie door is open (for Europe only)**  
*Detection of an opened mast tie door*

**EVENT:** Motorized unit stops moving  
**ACTION:** The operator must open the mast tie door and flip it 180 degrees until it is completely over the planks.

**S** **Bottom limit**  
*Detection of the bottom limit*

**EVENT:** Motorized unit stops moving  
**ACTION:** Raise the motorized unit.

**B** **Top limit**  
*Detection of the top limit*

**EVENT:** Motorized unit stops moving  
**ACTION:** Lower the motorized unit.

**R** **Inclinometer ± 2 degrees**  
*Detection of a ±2-degree slope on a twin mast structure*

**EVENT:** Both motorized units of the twin mast setup stop  
**ACTION:** The operator must refer to the instructions for the use of the inclinometer in the *Safety Devices* section of the operator's manual.

See fig. 5.7 on page 37 for the legend and control panel event indicator lights location

## CONTROL PANEL – EVENT INDICATOR LIGHTS

Continued from page 38

<b>S</b>	<b>Power ON</b> <i>Detection of POWER ON state</i>
<b>EVENT:</b> <b>Motorized unit is ready for operation</b> <b>ACTION:</b> No action required.	
<b>B</b>	<b>Control panel disabled</b> <i>Detection of an ongoing action preventing the use of the control panel</i>
<b>EVENT:</b> <b>Motorized unit cannot be operated.</b> <b>ACTION:</b> No action required. This event occurs when the inclinometer or the emergency brake is being serviced or adjusted.	
<b>R</b>	<b>Communication error</b> <i>Detection of communication error between remote and local units in twin mast setup</i>
<b>EVENT:</b> <b>Connected motorized unit cannot be operated.</b> <b>ACTION:</b> This event occurs when a communication cable is used to link two units in a twin mast configuration. The alarm means that the cable is not connected to the control panel on the remote unit and the local (connected) unit cannot be operated.	

See fig. 5.7 on page 37 for the legend and control panel event indicator lights location

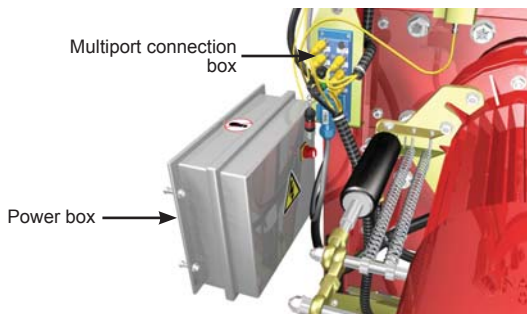


Fig. 5.8

## Masts

### Installation

- 1- Make sure that the motorized unit is installed properly. Refer to p. 15 of the *Motorized Unit* section for more information.
- 2- Refer to regulations governing distances between the mast climbing work platform system and electrical lines.
- 3- If necessary, remove the mast handler.
- 4- Remove the toggle pins from the mast guard center panel. Lift the panel and set it aside in a safe area, away from construction traffic. Remove the toggle pins, open both side panels completely and lock them in an open position with the toggle pins.
- 5- Raise the motorized unit slowly until the top of the last mast section is level with the top edge of the mast guard support.
- 6- Lift a mast section and lean its edge on the bottom edge of the mast guard structure (fig. 6.1). Raise the mast section to an upright position, making sure that the rack is on the power train side and is aligned properly with the rack on the bottom mast section. It is recommended to handle mast sections carefully so as not to damage the mast rack.
- 7- Make sure that the mast sections are properly aligned and connected together (fig. 6.2).
- 8- Using 5/8" GR8 bolts assembled with 5/8" flange nuts or 5/8" lock washer and nut assemblies, bolt all four corners together, making sure that the bolt heads are facing down (fig. 6.3). Tighten the four bolt and nut assemblies to 120 lb-ft (162 N-m) of torque to secure the mast section in place.

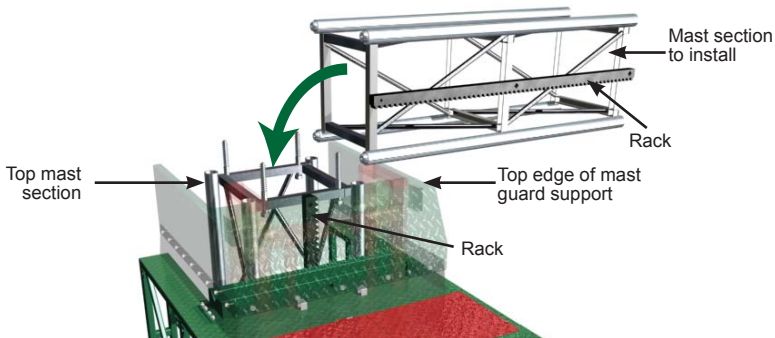


Fig. 6.1



#### WARNING

Failure to properly grease the mast rack may cause premature wear of the rack, pinion and gear and provoke down time, even lead to serious injury or death.



## Masts

### Installation (cont'd)

- 9- Repeat steps 5 through 8 for each mast section. For additional safety, install the last mast section **backwards**, with the rack facing toward the face of the work.
- 10- Make sure that the rack is sufficiently greased along the whole length of the mast. If necessary, apply grease to the rack and gears **at the end of the working shift** and allow the grease to stand for 2-3 hours. Use an open gear lubricant recommended by Hydro Mobile. For more information on recommended open gear lubricants, contact the distributor or the Hydro Mobile technical support team.
- 11- Install the top limit proximity trigger plate on the second mast section from the top. Refer to p. 42 for more information on the installation and adjustment of the top limit proximity trigger plate.
- 12- Close the mast guard side panels and secure in place. Replace the mast guard center panel and secure in place.

**Note:** Mast sections can be pre-assembled in 30' (9 m) sections to speed up assembly when using a crane. A tag line must be used to handle the pre-assembled mast sections.

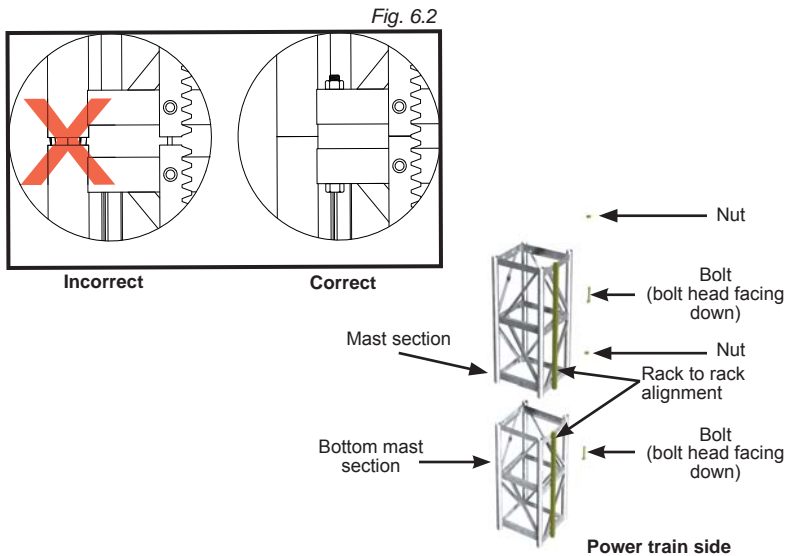


Fig. 6.3

### Lifting capacity of the optional mast handler

The optional mast handler is designed to lift **only** an assembly made up of a maximum of six mast sections and **must not be used** to lift the motorized unit.

## Masts

### Installation and adjustment of the top limit proximity trigger plate

- 1- Slide the trigger plate support bracket (fig. 6.4) in the top part of the second mast section from the top. Using the U bolts, bolt the support bracket to the top and middle bar of the mast section.

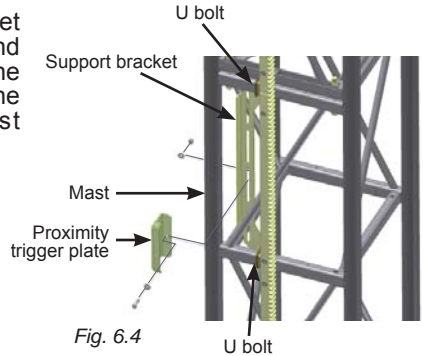


Fig. 6.4

- 2- Install the proximity trigger plate and bolt it loosely through one of the slots on the support bracket. Adjust the height of the trigger plate so the bottom part is about 8 3/4" (22 cm) below the junction between the two mast sections, as shown in fig. 6.5. Make sure that the trigger plate is properly aligned with the top limit proximity switch. Tighten the bolt assembly to secure the trigger plate in place.

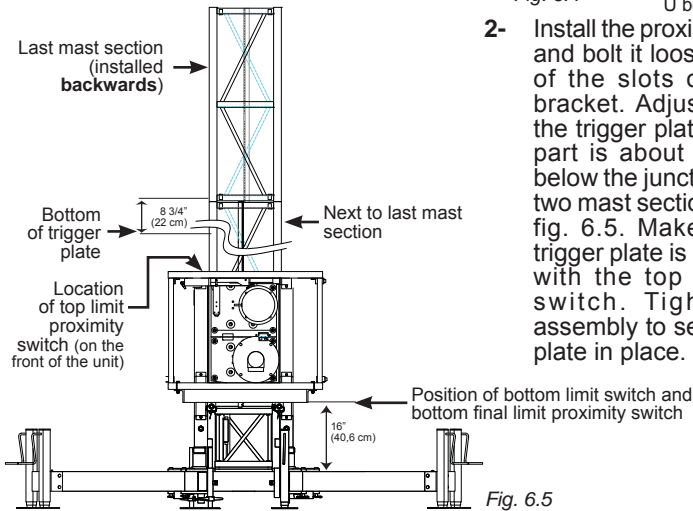
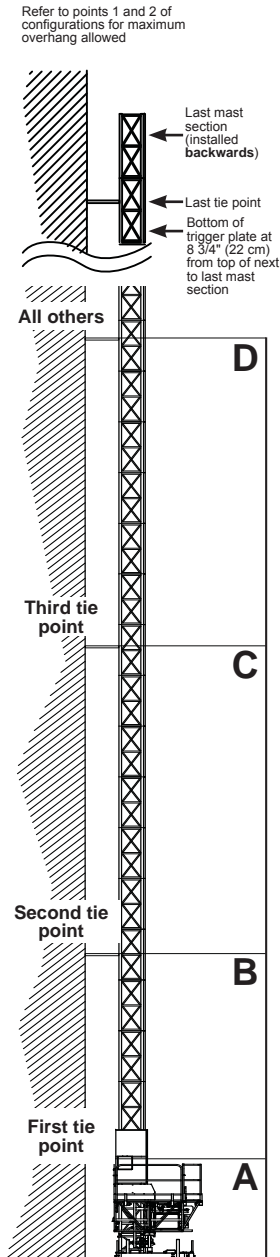


Fig. 6.5

### Storage and transport

- 1- Mast sections must be handled carefully, namely so as not to damage the mast rack(s).
- 2- Mast sections can be stored vertically or horizontally, lying on a side which has no rack, away from work areas and construction traffic.
- 3- If mast sections are to be stored on the platform during erecting and dismantling, make sure that they are equally distributed on each side of the mast to ensure good balance. Refer to the *Load Capacities* section on p. 47 to avoid overloading the platform.
- 4- Mast sections can be transported vertically or horizontally, lying on a side which has no rack.

## Mast Ties



Mast Tie Schedule		
	Base outriggers closed	Base outriggers opened
Freestanding	N/A	N/A
A (from under base)	10' (3 m)	20' (6.1 m)
B (from A)	20' (6.1 m)	30' (9.1 m)
C (from B)	30' (9.1 m)	30' (9.1 m)
D (from C)	30' (9.1 m)	30' (9.1 m)

Fig. 6.6

**Pre-installation of mast ties is mandatory**

**This schedule applies to both single and twin mast installations**

## Pre-installation

- 1- The length of the pre-installation setup must not exceed one bridge on each side of the mast.
- 2- Mast sections stored on the platform for pre-installation must be equally distributed on each side of the mast to ensure good balance. Refer to the *Load Capacities* section on p. 47 to avoid overloading the platform.

## Configurations

- 1- For all configurations described above, the **maximum overhang allowed over a mast tie is 10' (3 m) when only one mast tie is installed**. For any other configuration, contact the distributor or the Hydro Mobile technical support team.
- 2- For all configurations described above, the **maximum overhang allowed over the last mast tie is 20' (6,1 m) when two or more mast ties are installed**. For any other configuration, contact the distributor or the Hydro Mobile technical support team.
- 3- Unless authorized in writing by Hydro Mobile prior to installation, the platform should only be used on a mast whose height does not exceed 250' (76 m). For any configuration other than those described above, contact the distributor or the Hydro Mobile technical support team.

Fig. 6.7

### Mast Ties

In a **single** or **twin mast** configuration, before tying masts to the building using the mast tie system, anchor fasteners or any other attachment must be installed on a solid component of the building structure. Concrete slabs, columns, steel beams, relief angles and other structural elements can be used provided they can sustain the tension / compression and shear force of the anchoring installation chosen, as described below.

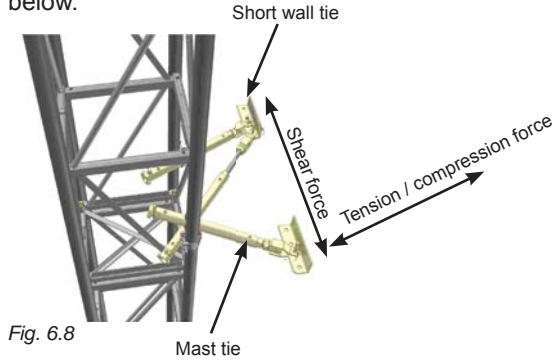


Fig. 6.8

*Note: It is important to note that mast ties were referred to as wallmounts in previous Hydro Mobile documentation. It is also important to note that wall ties were referred to as anchors in previous Hydro Mobile documentation. These changes were made in order to comply with current industry terminology.*

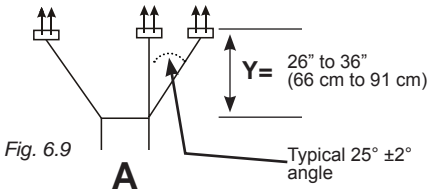


Fig. 6.9

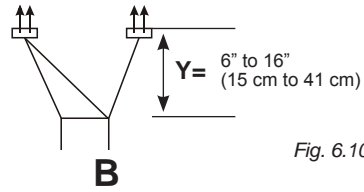


Fig. 6.10

Each anchor fastener in the installation option shown in fig 6.9 should sustain 1500 lb (682 kg) of tension / compression force and 500 lb (227 kg) of shear force. A minimum of six anchor fasteners is required.

Each anchor fastener in the installation option shown in fig. 6.10 should sustain 1500 lb (682 kg) of tension / compression force and 500 lb (227 kg) of shear force. A minimum of four anchor fasteners is required.

### Installation of mast ties

- 1- Choose the appropriate anchor fasteners. Each anchor fastener must be capable of withstanding 1500 lb (680 kg) of tension / compression per hole and 500 lb (227 kg) of shear force per hole.
- 2- Attach the wall tie to the structure.
- 3- Using the mast tie pin, attach the mast tie to the wall tie, with the adjustment rod still at least halfway inside the mast tie tube.

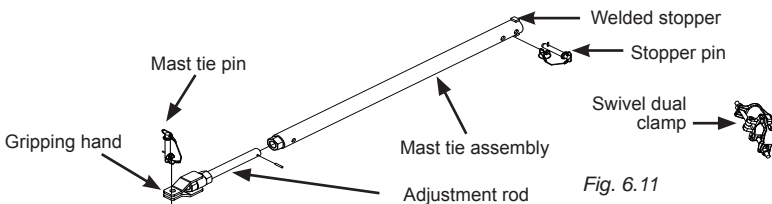


Fig. 6.11

## Mast ties

### Installation of mast ties (cont'd)

- 4- Attach the mast tie to the swivel dual clamp on the mast. Make sure that the bolt is tightened properly.
- 5- In a configuration using 3 planks or more, back or forward extensions or long outriggers, attach additional swivel dual clamps on the mast tie in front and behind the swivel dual clamp previously installed on the mast tube. Make sure all bolts are tightened. For more information, refer to the *Installation of swivel dual clamps* procedure below.
- 6- Adjust the length of the adjustment rod until the mast is plumb on both its front and side axis.
- 7- Repeat steps 3 through 6 for each mast tie.

### Installation of swivel dual clamps

In a configuration using 3 planks, deck extensions or long outriggers, the tension / compression factor is highly increased. In such situations, it is **mandatory** to attach an additional swivel dual clamp on the mast tie **in front** and **behind** the vertical mast tube (included in the optional three-plank mast tie kit).

- 1- Install the first swivel dual clamp on the vertical tube of the mast (fig. 6.12). Attach the mast tie to the swivel dual clamp. Make sure that the distance between the welded stopper (or stop pin) and the swivel dual clamp does not exceed 2" (5 cm) ("A", in fig. 6.14). Tighten the bolt.
- 2- Install additional swivel dual clamps on the mast tie in front and behind the vertical mast tube, making sure that the distance between each swivel dual clamp does not exceed 1/4" (0,6 cm) ("B", in fig. 6.14).

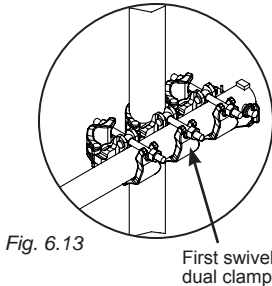


Fig. 6.13

First swivel dual clamp

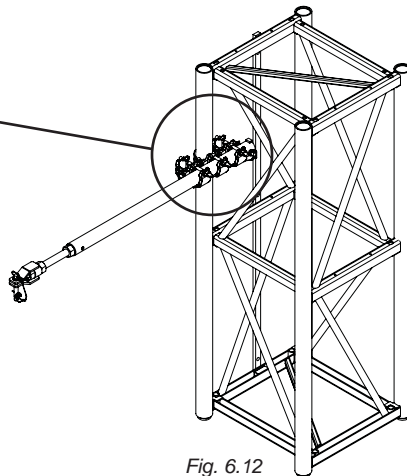


Fig. 6.12



Fig. 6.14

Mast ties

Installation of mast ties (cont'd)

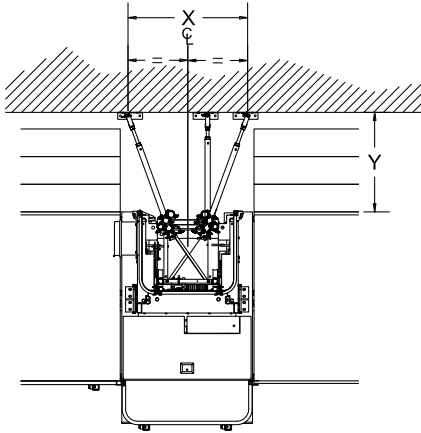


Fig. 6.15

Diagram A

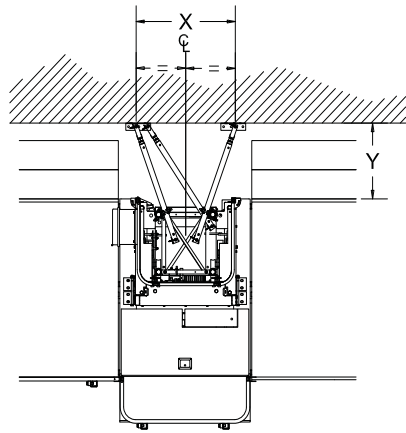


Fig. 6.16

Diagram B

Mast Tie Configurations and Components Requirements							
Diagram	Number of planks	Y Distance	A 20" (51 cm) mast tie assembly	B 36" (91 cm) mast tie assembly	C Swivel dual clamp	D Wall tie	X Distance
A	3	36" (91 cm)	—	3	9	3	42 1/2" (108 cm)
B	2	26" (66 cm)	—	3	3	2	35 1/4" (90 cm)
B	1	16" (41 cm)	3	—	3	2	28" (71 cm)
B	—	6" (15 cm)	3	—	3	2	22 1/2" (57 cm)

The "Y" anchor distances are given only as a reference. Tolerance rate is of  $\pm 2"$  (5 cm).  
 \* Refer to p. 45 of the *Masts and Mast Ties* section for more information on the use of additional swivel dual clamps.

Fig. 6.17

Note: It is important to note that mast ties were referred to as wallmounts in previous Hydro Mobile documentation. It is also important to note that wall ties were referred to as anchors in previous Hydro Mobile documentation. These changes were made in order to comply with current industry terminology.

**WARNING**  
Wind

- A mast climbing work platform system cannot be used when wind speed exceeds 35 mph (56 km/h).
- The platform cannot be left freestanding when wind speed exceeds 28 mph (45 km/h).

## Load Capacities



### WARNING

To ensure safety at all times on a mast climbing work platform system, bridges should not be loaded beyond their maximum rated weight capacities. In addition, to prevent a mast climbing work platform system from stalling because of an overload, maximum rated load capacities of the motorized unit(s) should be observed. Overloading a mast climbing work platform system could result in serious injury or death.

Weights and measures – Equivalencies (IMPERIAL – METRIC)					
Feet	Meters	Lb	Kg	Lb	Kg
4'	1,22 m	325 lb	147 kg	2200 lb	998 kg
5'	1,52 m	350 lb	159 kg	2500 lb	1134 kg
10'	3 m	450 lb	204 kg	2600 lb	1179 kg
15'	4,57 m	500 lb	227 kg	2850 lb	1293 kg
39'	11,89 m	525 lb	238 kg	2950 lb	1338 kg
48'	14,6 m	575 lb	261 kg	3250 lb	1474 kg
54'	16,46 m	700 lb	318 kg	3500 lb	1588 kg
58'	17,58 m	800 lb	363 kg	3650 lb	1656 kg
73'	22,25 m	850 lb	386 kg	4025 lb	1826 kg
78'	23,77 m	1200 lb	544 kg	4050 lb	1837 kg
83'	25,3 m	1250 lb	567 kg	4200 lb	1905 kg
93'	28,35 m	1300 lb	590 kg	4400 lb	1996 kg
98'	29,87 m	1350 lb	612 kg	5000 lb	2268 kg
		1400 lb	635 kg	5200 lb	2359 kg
		1575 lb	714 kg	5250 lb	2381 kg
		1725 lb	782 kg	5700 lb	2585 kg
		1750 lb	794 kg	5900 lb	2676 kg
		1825 lb	827 kg	7200 lb	3266 kg
		2100 lb	953 kg		

Fig. 7.1

### NOTES

- 1- The weight of planks and any additional accessory being used must be deducted from the load capacities shown in the following pages.
- 2- The cantilever bridges must have the same length on either side of the mast at all times (single mast configuration).
- 3- Each worker's weight (265 lb or 120 kg per worker) must be deducted from load capacities shown in the diagrams included in the following pages.
- 4- It is mandatory to have a minimum of two (2) workers for each of the configurations shown in the following pages or a maximum of one (1) worker per platform or bridge area of 15 linear feet (4,57 linear meters). The option allowing the greatest number of workers takes precedence over any other. However, the weight of each person working in a given area (bridge or platform) reduces the load capacity of that area.

### Load Capacities

#### Single mast setup

Imperial measures illustrated below. For metric equivalencies, refer to the table in fig. 7.1 on p. 47.

**Eccentric setups are not allowed for single mast configurations**

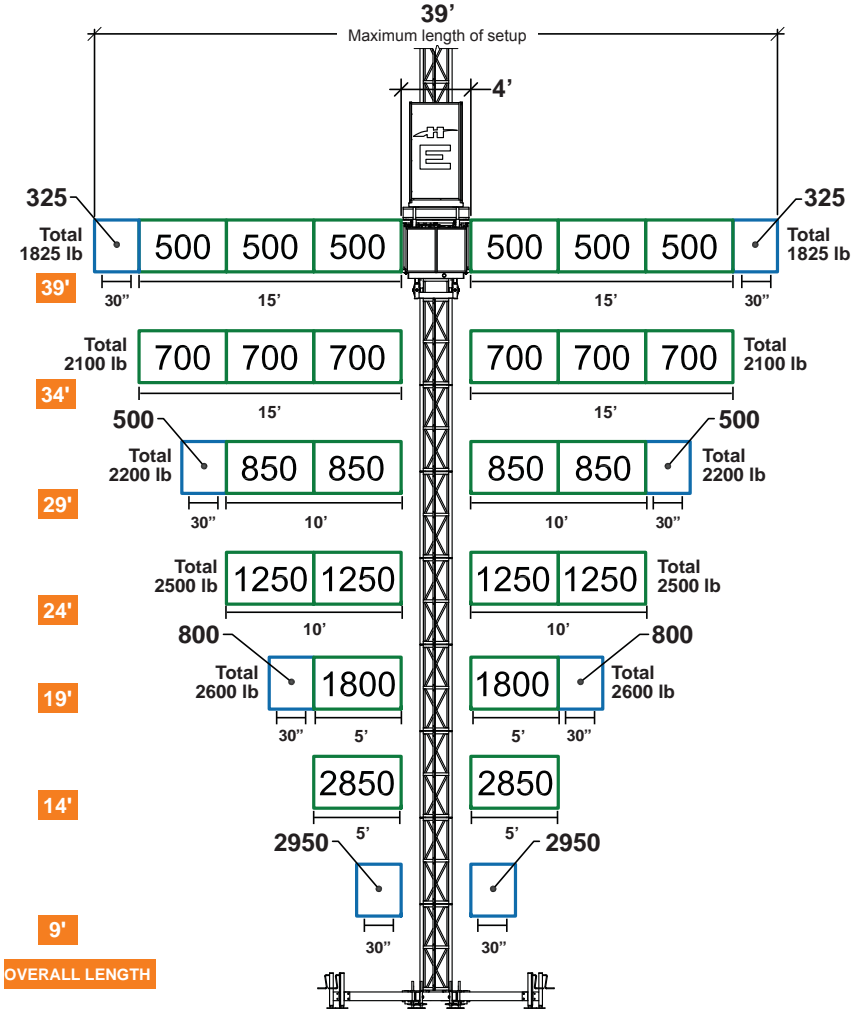





Fig. 7.2

LEGEND	
	Bridge – 30" (0,76 m)
	Bridge – 60" (1,5 m)
	X' Length of bridge setup

**NOTE:** To ensure safety at all times, refer to notes and warnings on p. 47 for more information on load capacities.

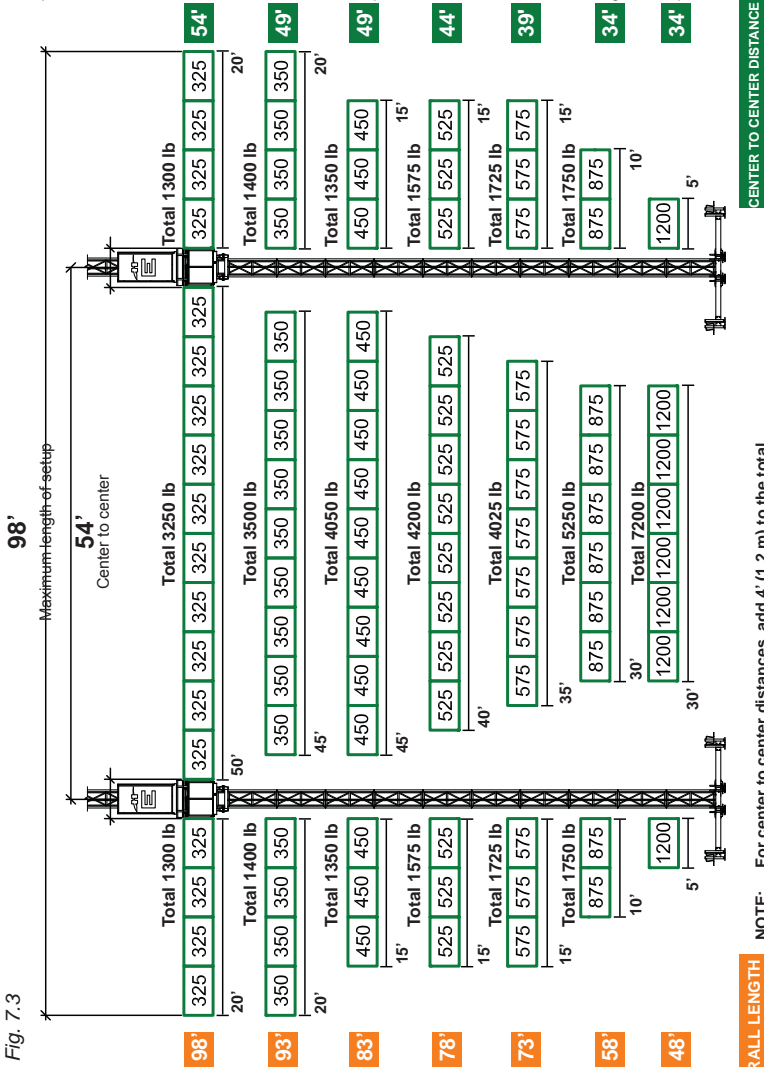


# Load Capacities

## Twin mast setup

Imperial measures illustrated below. For metric equivalencies, refer to the table in fig. 7.1 on p. 47.

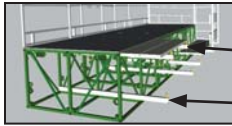
The minimum load applied on the bearing bridge must be similar to the total load applied on the cantilever bridges.



**NOTE:** To ensure safety at all times, refer to notes and warnings on p. 47 for more information on load capacities.

## Outriggers

Standard 63" (1,6 m) outriggers can be installed at two levels on a bridge as plank support (fig. 8.1). Plank support outriggers must be installed every 5' (1,5 m). E Series outriggers are not designed to support the weight of material (fig. 8.2).



Top outriggers  
Bottom outriggers

Fig. 8.1

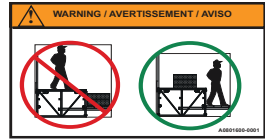


Fig. 8.2

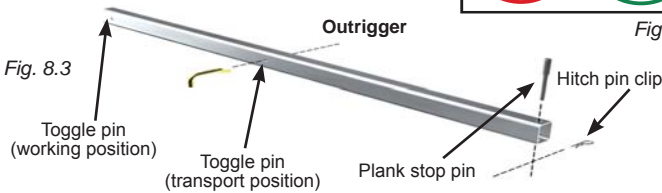


Fig. 8.3

In a standard 0 to 3-plank configuration, each E Series outrigger has a maximum load capacity of 500 lb (227 kg).

Standard outriggers, used either at the top or bottom position, can be pulled out to a maximum of 30" (76,2 cm). Longer outriggers are available for special applications. For any other configuration using longer outriggers, contact the distributor or the Hydro Mobile technical support team.

### Installation

- 1- Remove the toggle pin and the plank stop pin (fig. 8.3) and slide the outrigger in the top or bottom outrigger pockets on the bridge (see fig. 3.1 of the *Bridges* section, on p. 29), leaving enough length to install planking. Replace the plank stop pin.
- 2- Once the planks are in place, push in the outrigger until the plank stop pin rests snugly against the planks.
- 3- Secure the outrigger in place by sliding in the toggle pin at one extremity (see the working position in fig. 8.3) and tightening both outrigger pocket bolts.



### WARNING

In a standard, recommended three-plank configuration, each outrigger has a maximum load capacity of 500 lb (227 kg).

### Universal Plank Safety Support (optional)

The universal plank safety support is installed at the extremities of planking to prevent planks from lifting, tipping and slipping.

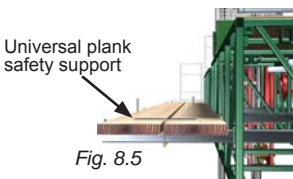


Fig. 8.5

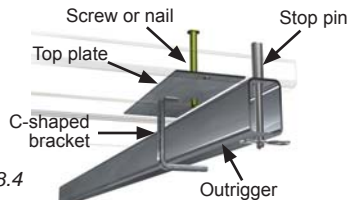


Fig. 8.4

### Installation

- 1- Remove the stop pin (fig. 8.4) and slide the plank safety support between two planks.
- 2- Secure the C-shaped bracket around the outrigger and replace the stop pin.
- 3- Using screws or nails, secure the top plate of the plank safety support to the planks (fig. 8.5).

## Cross Boxes (optional)

Cross boxes are used to install auxiliary outriggers, as required when planking the recessed area in a wall.

### Installation

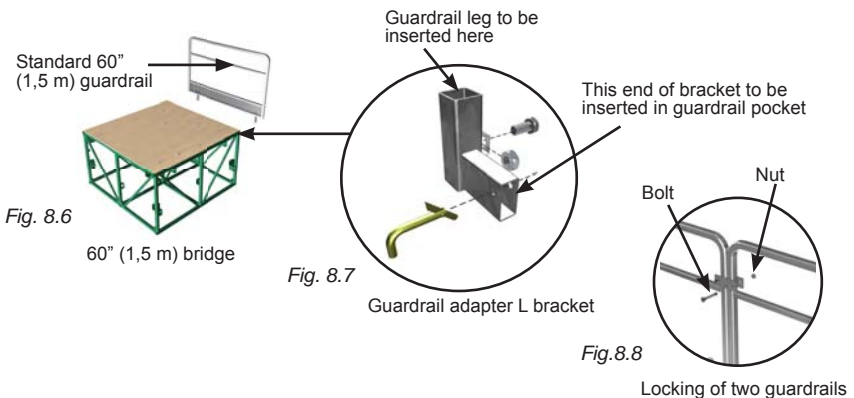
- 1- Remove the toggle pins and the plank stop pins from two outriggers.
- 2- Slide a cross box on the back and the front of each of the two outriggers. Replace the toggle pins and tighten both outrigger pocket bolts on each of the outriggers.
- 3- Slide the transversal outriggers through the cross boxes until they are halfway through.
- 4- Install a cross box on each transversal outrigger and extend each outrigger in position. Secure the transversal outriggers in place with toggle pins.
- 5- Slide auxiliary outriggers through the cross boxes on the transversal outriggers until they are in position. Secure them in place with toggle pins. Install a plank stop pin in each of the auxiliary outriggers.
- 6- Once the planks are in place, adjust the auxiliary outriggers until the plank stop pins rest snugly against the planks.
- 7- Secure the outriggers in place by tightening all the bolts on the cross boxes.

## Guardrails

Appropriate guardrails must be installed on each E Series bridge to ensure the safety of workers at all times.

### Installation

- 1- Slide a guardrail adapter L bracket (fig. 8.7) in each of the two guardrail pockets at the top of the bridge (see fig. 8.6 and fig. 3.1 on p. 29 of the *Bridges* section) and secure them with toggle pins.
- 2- Insert the guardrail legs in the vertical part of the adapter brackets and tighten the bolts on the adapter brackets to secure the guardrail.
- 3- Install as many guardrails as is required by the setup. Make sure that all guardrails are appropriately locked together (fig. 8.8).



## Guardrails

### Movable Guardrails (optional)

To ensure the safety of workers in a more flexible way, movable guardrails may be installed on bridges. Follow the installation steps of a standard guardrail and secure the movable guardrail to the standard guardrail with toggle pins.

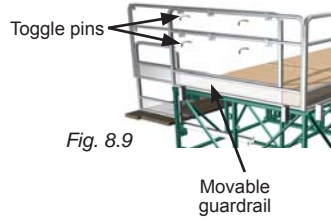


Fig. 8.9

### Plank-End Guardrails

Plank-end guardrails must be installed at the ends of planking as fall protection. In a three-plank configuration, the opening must be closed by placing two plank-end guardrails **face to face**.



Fig. 8.10

#### Installation

- 1- Slide the bottom end of the plank-end guardrail over the end of two planks.
- 2- Drive one or two nails or screws into the planks through the top plate to secure the guardrail in place.
- 3- In a three-plank configuration using two plank-end guardrails, make sure that the first guardrail is installed **backwards**. Repeat steps 1 and 2 for the installation of the second guardrail.

### Face Guardrail Brackets (optional)

Face guardrails must be installed when the distance between the edge of planking (or deck, if not using plank) and the structure is greater than what local regulation allows or where a fall hazard is present (ex. wall opening, recess in a wall, end of a building, etc.), the most stringent of conditions taking precedence over the others.

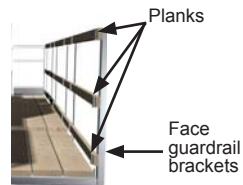


Fig. 8.11

#### Installation

- 1- Remove the plank stop pin from the outrigger and slide in the face guardrail bracket inside the outrigger tube.
- 2- Secure in place by sliding the plank stop pin through the face guardrail bracket and the outrigger. Tighten all outrigger pocket bolts properly.
- 3- Repeat steps 1 and 2 for each outrigger required to secure the hazardous opening.
- 4- Insert planks in the hooks of each face guardrail bracket to cover the hazardous opening (fig. 8.11). Secure the planks in place with nails or screws.

## Access Stairs (optional)

When the motorized unit is at base level, workers may use the optional access stairs to reach the platform.

### Installation

- 1- Install the guardrail door by sliding the guardrail legs in the guardrail pockets on the bridge. Secure the guardrail door with two toggle pins.
- 2- Slide the top part of the stairs into the top outrigger pockets. Secure in place by sliding in two toggle pins and tightening each outrigger pocket bolt.
- 3- Unfold the stair brace.
- 4- Secure the stair brace to the bottom truss of the bridge with two toggle pins.
- 5- Install the handrails and secure them in place with toggle pins.
- 6- To install an extension step, slide the lugs at the top into the extension pockets on the last step of the main stairs. Secure the extension step in place with the supplied bolt and nut assemblies.
- 7- Repeat step 6 to install each extension step required. It is important to note that the distance between the bearing surface and the bottom step must not exceed 24" (61 cm).

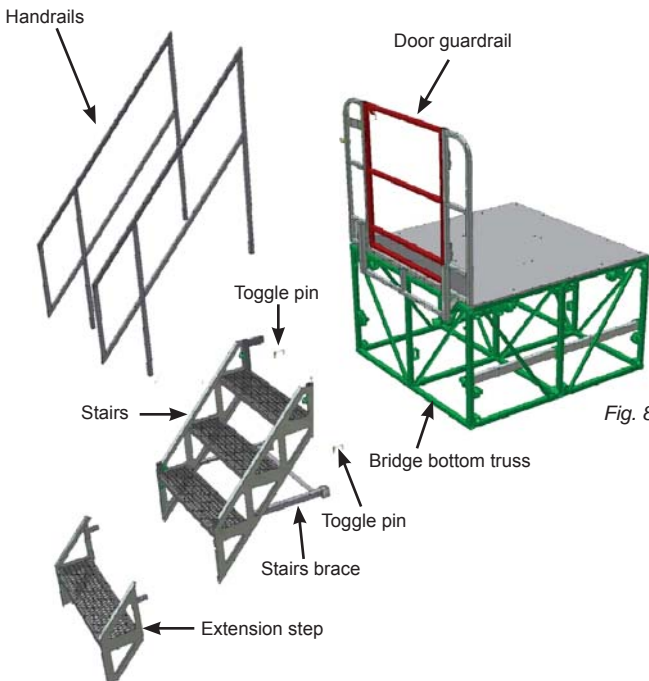


Fig. 8.12



#### WARNING

Access stairs can only be used when the motorized unit is at base level. The distance between the bearing surface and the bottom step must not exceed 24" (61 cm).

## Mast Tie Door (optional)

To safely pass mast ties, it is recommended to install an optional mast tie door. The mast tie door must be left completely open when the motorized unit is moving.

### Installation

- 1- It is recommended to wear proper fall protection equipment before installing the mast tie door assembly.
- 2- Make sure that planks are properly secured to the outriggers on either side of the main frame. It is recommended to secure planking to the outriggers using the optional universal plank safety support. Refer to p. 48 of this section for more information on the installation and use of the universal plank safety support.
- 3- Slide the hinged support bracket of the mast tie door over the end of planks (fig. 8.13). Secure the support bracket to the planks with screws.
- 4- Make sure that the mast tie door is overlapping planking on the other side (fig. 8.15).
- 5- Install the proximity switch (fig. 8.16) on the main frame. Use the upper position if the mast tie door was installed at platform level.
- 6- Connect the proximity switch to the control panel using the PRX3 connection port on the multiport connection device (fig. 8.18).
- 7- For a three-plank installation, install the mast tie door extension by sliding the tubes on the extension into the pockets on the wall tie door (fig. 8.15). Make sure that the holes on the tubes are properly aligned with the holes in the mast tie door pockets. Secure the extension in place with the supplied bolt and nut assemblies.
- 8- Tie a rope to the tie point (fig. 8.14) to facilitate the opening and closing of the mast tie door.

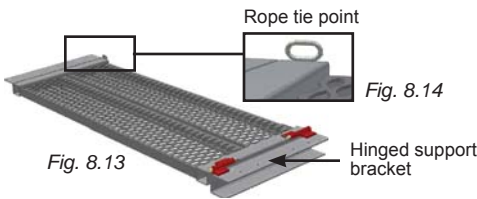


Fig. 8.14

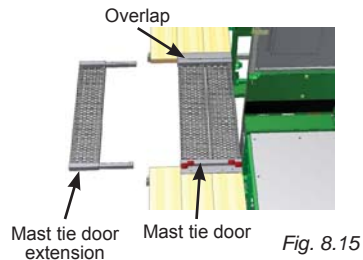


Fig. 8.16

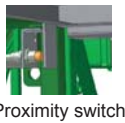


Fig. 8.18

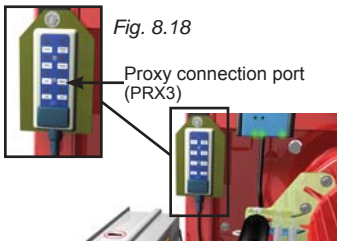
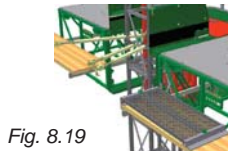


Fig. 8.17



Mast tie door (open)

Fig. 8.20



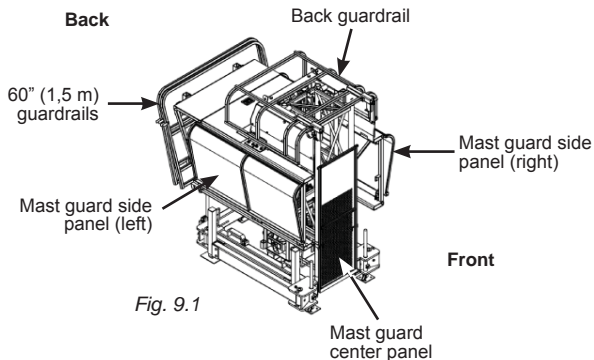
## Transport and Storage

### Transport of the motorized unit

- 1- Make sure that the access stairs and all the other accessories have been removed.
- 2- Using the emergency descent system, bring the motorized unit slowly down on the rubber blocks located on the base.
- 3- Push in and close all the base outriggers and secure them in place.
- 4- If the motorized unit was used in a twin mast configuration, make sure that the single mast locking pin and the trolley release bolts are in single mast position (factory default). Refer to p. 20 and p. 21 of the *Motorized Unit* section for instructions on how to reset the position of the single mast locking pin and the trolley release bolts.
- 5- Retrieve the mast locking bar from its storage position and secure it in position through the mast. Refer to p. 18 of the *Motorized Unit* section for information about the mast locking bar.
- 6- Make sure that the power cable is secured and cannot cause damages or destabilize the unit during transport.
- 7- Store and secure all the guardrails and mast guard panels in their storage positions (fig. 9.1). Refer to p. 15 of the *Motorized Unit* section for more information.

### Storage of the motorized unit

- 1- Follow all the steps described in the transport procedure.
- 2- Before storing the motorized unit, make sure to place sufficient cribbing under the base to prevent freezing water from causing damages to the bottom of the structure.



#### WARNING

When storing a motorized unit, there should be sufficient cribbing under the base to prevent freezing water from causing damages to the bottom of the structure.

## Maintenance and Inspection

Proper maintenance and service will warrant safe, economical, and trouble-free operation of an E Series motorized unit. While **daily** maintenance operations can be performed by a competent person, it is mandatory that any **frequent** (every three or four months) and **annual** inspection or maintenance operation be carried out by a **qualified technician**.

Daily inspection operations are only necessary when the motorized unit is in use. The owner is responsible for all other inspection and maintenance operations (frequent and annual) and these should be carried out whether the motorized unit is in use or not.

In order to ensure operational safety and avoid failures, the owner must make sure that all the scheduled inspection and maintenance operations have been effectively and timely carried out according to the inspection and maintenance schedules recommended for this motorized unit. Blank copies of the daily inspection checklist should be available on job sites at all times to be filled out when these daily inspection operations are carried out. Maintenance and inspection logs must be kept on record for warranty and safety purposes.

Copies of all the inspection and maintenance checklists recommended for this motorized unit can be obtained by contacting the distributor or the Hydro Mobile technical support team. Copies of these checklists can also be downloaded directly from the Hydro Mobile website at [www.hydro-mobile.com](http://www.hydro-mobile.com).

Tools required on job site	
Quantity	Description
1	1/2" ratchet drive with 18" handle
1	1 1/2" open end wrench
1	15/16" open end wrench
1	7/8" open end wrench
1	9/16" open end wrench
2	15/16" x 3/8" drive deep socket
1	4" x 20' (10 cm x 6 m) straps
1	3/4" cable choker
1	2-lb hammer
1	4' (1,2 m) level
1	ratchet adapter 1/2" to 3/8"
1	measuring tape

Fig. 9.2



### WARNING

While **daily** inspection operations can be performed by a competent person, it is mandatory that any **frequent** (every three or four months) and **annual** inspection and maintenance operation be carried out by a **qualified technician**.





## INSPECTION AND MAINTENANCE CHECKLISTS



# DAILY INSPECTION CHECKLIST

(to be performed by a competent person daily or before every working shift)

Maintenance and inspection logs must be kept on record for warranty and safety purposes. Blank copies of the daily inspection checklist should be available on job sites at all times to be filled out when these daily inspection operations are carried out. Copies of the daily inspection checklist recommended for this motorized unit (fig. 9.3) can be obtained by contacting the distributor or the Hydro Mobile technical support team, or be downloaded directly from the Hydro Mobile website at [www.hydro-mobile.com](http://www.hydro-mobile.com).

Fig. 9.3

Hydro Mobile E Series Daily Inspection List		For orders and information: 1-888-424-9376 (US) Toll Free in the United States (450) 989-9100 (Canada) +33-6-84-77-63-16 (Europe)						
Inspect each Hydro Mobile setup daily or before every working shift. This form can be used to monitor 6 days of inspection.								
Indicate "checkmark" for yes, "x" for no, and N/A for does not apply. For x, a corrective action must be performed / recorded to obtain a "checkmark". Record corrective action details and date on back of this sheet.								
Project:		Date (Week of):						
Location:								
Contractor:								
Competent person's full name:								
		Mon	Tues	Wed	Thurs	Fri	Sat	
<b>Base</b>								
1	Ensure base is level and that cribbing under metal mudsills has not moved.							
2	Ensure that perimeter of setup is safe and that appropriate fencing (warning tape, concrete blocks or other type of fencing) is installed to prevent any unauthorized access.							
3	Make sure construction traffic is controlled on and around jobsite (proper barriers installed).							
<b>Access</b>								
4	Make sure that the access stairs and access door to platform are clear of debris and in good condition.							
5	If work platform is accessed from inside building or off scaffold stair tower, ensure transfer is safe and free from obstruction.							
6	Make sure the evacuation plan is communicated to all the mast climber users and adapted to current site conditions.							
<b>Masts</b>								
7	Make sure masts are plumb (both front and side axis) and are square with the face of the work.							
8	Make sure mast ties are in good condition and secure (collision with plank or mast tie doors can damage ties).							
9	Once a week, at the end of a working shift, apply grease to the rack(s) and gears from the top of the setup down. Grease must be allowed to stand for 2-3 hours before the motorized unit is used again. Use an open gear lubricant recommended by Hydro Mobile.							
<b>Platform</b>								
10	Make sure all safety guardrails are in position (no fall hazard).							
11	Ensure that work and circulation areas on the platform are clear of debris.							
12	Make sure that planking is in good condition and set properly. Make sure that planking clears the building, balconies, etc. and that it is properly supported, overlapped and secured.							
13	On special façade shapes, make sure that cross box kits, face guardrails and plank guardrails are properly installed and stable.							
14	Make sure that the rollers and gears (drive) are not damaged and clear of debris (mortar, masonry material, etc.).							
15	Make sure that the top final limit is working properly by placing a metal object in front of the sensor.							
16	Make sure that the power cable clears the mast and the base, that it is free from obstruction and that it recoils properly (cable trolley).							
17	Before raising or lowering the platform, make sure it clears the building, balconies, etc.							
18	Check the emergency stop button and make sure it is working properly.							
19	Check weather conditions for the day. The motorized unit must not be operated if there are thunderstorms or wind speeds exceeding 35 mph (56 km/h).							
20	At the end of the working shift, make sure the power cable is unplugged from the external power source. Make sure also that the main disconnect switch on the power box is at the OFF position and properly locked to prevent unauthorized use of the unit.							
21	Visually inspect the structure and its components and make sure there aren't any damages.							
<b>Overspeed safety device and emergency descent system</b>								
22	Visually inspect the overspeed safety device (safety brake) mechanism daily in order to detect any apparent defect. Make sure that there isn't any grease or other substance on the brake. Grease must never be applied on the components of the overspeed safety device.							
<b>Loads</b>								
23	Make sure that loads on the platform do not exceed those prescribed by the capacity charts. Make sure loads are equally distributed.							
24	Make sure that the access door and mast tie door are clear of material and equipment.							
<b>Bridges</b>								
25	On twin mast installations, make sure the inclinometers are working properly.							
<b>General</b>								
26	Make sure minimum clearance from overhead power lines is maintained according to SIA standards and local regulation.							
27	Make sure a legible copy of operator's manual is in tool box.							

**SPECIAL NOTE: DO NOT OPERATE OR WORK OFF MOTORIZED UNIT IF WIND SPEED EXCEEDS 35mph (56 km/h). Units equipped with weather protection must not used if wind speeds exceed 20mph (32 km/h).**

Initials of the competent person conducting the daily inspection (initial under each day):

Signature of competent person(s) that conducted daily inspections during the week:



